LINE DEFLECTION CIRCUIT CHECKS

⚠ All of the following tests must be carried out with the MAINS switched OFF.

Any operations carried out with the MAINS switched ON may lead to components being destroyed.

After replacing line output transistor TL030, it is recommended that you carry out a preliminary tests to ensure that line scanning is functioning correctly.

For example, if line output transformer DST (LL008) is short circuit, TL030 will be destroyed again. To check the operation of line stage, the following configuration can be used. This will make it possible to find faults in this section without risk to any other components.

⚠ Set MAINS SWITCH to OFF.
CP170: (K/6)* short-circuited.
JL010: (M/8)* replaced by a test resistor R=100 Ohms.

Note: During these tests the power in the test resistor R will be approximately 33 W.
Using a RP022 type resistor only allows limited operation (one minute maximum) this should be long enough to check a few of the line output stage secondary voltages. For longer operation, a higher-power resistor should be used.

TV ON: check the following voltages :

U Syst :	50 Hz 131V	50Hz 132	50Hz 137V	100Hz 134V	100 Hz 137V	100 Hz 140V
Usyst (P/5)* (V+/-5V)	131	132	137	134	137	139.9
U vert / CP130 (P/4)* (V)	26	25.5	25.5	22.6	22.4	22.7
+Us / -Us (L/5-4)* (V)	15	12.2	13	18.6	16.8	13.5
7V / CP140 (J/3-4)* (V)	6.6	6.6	6.6	5.8	5.9	5.5
10V SBY/ K DP133 (N/5)* (V)	11.3	11.2	11.2	10.9	11.3	11
Vcc1 / 44-IV001 (J/7)* (V)	7.9	7.9	7.9	7.9	7.9	8
UVFB / K DL043 (K/8)* (V)	52.2	52.4	52.5	52.7	54.7	40.9
13V / CL042 (J/8)* (V)	11.6	11.6	11.6	11.2	11	9.8
200V / CL046 (P/6)* (V)	188.4	188	188	122.7 (**)	119.4 (**)	182
5V / CP143 (H/3)* (V)	5	5	5	5	5	5

(*) Components location reference
(**) With several new version of the DST (LL008) the (U syst - 1V) voltage appears at this point during the test mode or when the TV is placed in the Standby mode.
The « Family » table below shows the relation between the 200V and the DST/Tube configuration.

Family	Tube	DST	
100Hz 134V	A66EGW 48X322	10460360	
	W66EGV023X122	10468160	(*)
	W76EGV023X122	10468160	
	W76EGV023X122	10520330	(*)
	W76EGX023X122	10520330	(*)
	W76EGX023X122	10576740	(*)
	A66EHJ 48X 12	10551170	(*)
100Hz 137V	A66EGW 48X322	10468070	
	A66EGW 83X122	10510870	(*)
	A59EGD048X322	10468070	
	A68EGD038X322	10468070	
	A68EGD038X322	10510870	(*)
	A68EGV038X322	10551150	(*)
	A80AJA 16X120	10510870	(*)
	A80EJA 16X122	10510870	(*)
	A90AFX 16X120	10510870	(*)
100Hz 140V (PANORAMA)	W66EGV023X122	10576740	(*)
	W76EGV023X122	10576740	(*)
	W76EGX023X878	10576740	(*)

Family	Tube	DST	
50Hz 131V	A59EGD048X300	10517720	(*)
	A68EGD038X300	10517720	(*)
	A80AEJ15X01	10517750	(*)
50Hz 132V	A66EHJ 13X 15	10517740	(*)
50Hz 137V	W66EGV023X015	10517750	(*)
	W66EGV023X115	10517750	(*)
	W76EGX023X115	10517750	(*)

(*) DST with 200V = Usyst + Forward from the DST

Other types: 200V = Flyback from the DST

FRAME DEFLECTION CIRCUIT CHECKS

All of the following tests must be carried out with the MAINS switched OFF.

Any operations carried out with the MAINS switched ON may lead to components being destroyed.

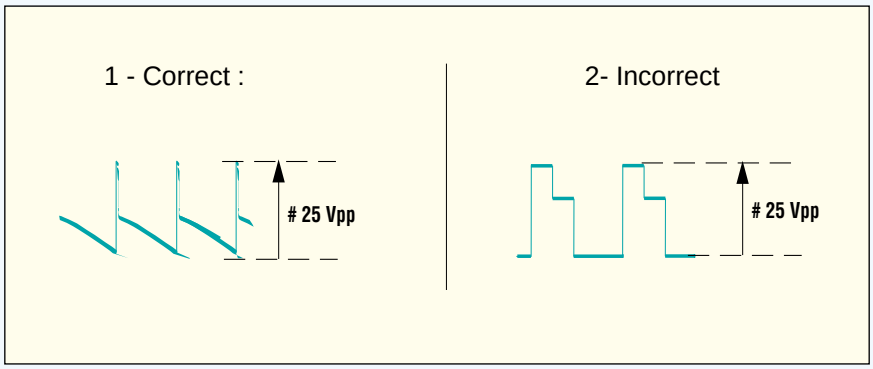
After replacing integrated circuit IF001:

Before switching power back on, it is recommended to carry out an initial test without the +UVFB voltage, because if the destruction of the component is linked to another faulty component, there is the risk of the new IF001 or other components being destroyed.

- Set mains switch to OFF.
- Unsolder pin 9 of transformer DST (LL008).

This configuration can be used to check the operation of the frame amplifier during the transient defined by normal operation of the protective circuit (1-2 seconds).
This is generally sufficient to check whether the normal frame scanning sawtooth voltage is correct during the scanning sweep.

TV ON : Examine the signal on point 5 of IF001 using an oscilloscope



If there is a fault, two states only may be observed in the place of the sawtooth:

- high at +Uvert voltage.
- low at earth.

with sudden tilting in the middle of the sweep.

Possible faults:

- Investigation in IF001-IV001 loop.
- Checks of RF024-RF023.
- New integrated circuit test: IV001 (STV2161/STV2162).

Check also :

- DL043 (risk of short-circuit) before carrying out the final test with pin 9 of DST resoldered.

OPERATION ENHANCEMENTS

ICC19 16/9 50 Hz CHASSIS
32WS88KE - 28WS78KE - 32WS83KP - 28WS73KD

- POWER SUPPLY SWITCHES TO SAFETY MODE DURING VCR OPERATING

Cause :
Missing synchronisation signal during 1 or 2 frames (bad quality video cassette)

Solution :
- Replace CL067 capacitor 100 nF 100V by 1µ 63V (Code 90568280)
- Add RL066 a melf resistor of 220k 5% 100mW (Code 10328700).

ICC19 50 Hz OR 100 Hz CHASSIS

*** A PERMANENT RESIDUAL NOISE CAN BE HEARD FROM THE SPEAKER WHEN THE SET IS IN STANDBY MODE**

- Change CP120 from 470 uF 35V to 330 uF 25V tocom 10448410.

*** INTEGRATED CIRCUIT OPERATION PRECAUTIONS**
. IN CASE OF FAILURE OF IC TDA8177F (CODE 10352880) IN POSITION IF001

WARNING
It is compulsory to use TDA8177F Tocom 10352880 designed for higher output current than TDA8177 Tocom 15053440 used in TX92.

In case of mistake the new IC would be immediately destroyed at switch on.

ICC19 100Hz CHASSIS STEREO OR DOLBY STEREO

▪MOIRE OR BLACK VERTICAL BAR ON THE SCREEN (IN VHF BAND 1)

(only applicable to Italy)

Cause :
Cross talk between power supply and tuner.

Solution :
- Replace the switch mode transformar LP020 by a new one having code :
- 10553820 (stéréo)
- 10553830 (dolby stéréo).

ICC19 100 Hz

▪TERRESTRIAL MAGNETIC FIELD

PICTURE ROTATION (MAINLY WITH 16/9 SETS - PROBLEM HIGHLIGHTED BY TELETEXT, SUBTITLE AT THE BOTTOM OF THE PICTURE)

Cause :
Depending of the orientation in terrestrial magnetic field.

Solution :
- Future 16/9 models will be equiped with (EFC) Earth field correction adjustable by software.
A kit EFC with manual adjustment is availaible for After Sales under reference 35059270. It includes module, coil, all necessary cables and mounting instructions.

Nota :
- New models EFC equiped.The models 16/9-100 Hz-28 or 32 inches, produced from week 98-11 (with serial number AK3025110 onwards) are now equiped with EFC and manual adjustments described above. It is necessary to remove the back cover to access the potentiometer.

POWER SUPPLY CHECK AND FIND «PROT» FAILURE

⚠ All of the following tests must be carried out with the MAINS switched OFF.

Any operations carried out with the MAINS switched ON may lead to components being destroyed.

to analyse a «PROT» fault condition it is possible to use the following test configuration.
In this configuration the power supply will be working with its normal regulation loop, the deflection stage and any "PROT" information is disabled in order to locate the cause of the problem.

- MAINS switched «OFF»
- CP170 short-circuited (K/6)*
- JL010 removed (M/8)* or desolder Pin 6 of DST (LL08)
- Connect a R= 75 Ohms (4W) between +Vs and -Vs (L-M/4-5)*

↓

- Switch «ON» TV : Measure the following voltages.

↓

U Syst :	50 Hz 131V	50Hz 132	50Hz 137V	100Hz 134V	100 Hz 137V	100 Hz 140V
Usyst (P/5)* (V+/-5V)	131.5	133	138	134.3	141	140
U vert / CP130 (P/4)* (V)	13	14.2	14.2	12.7	12.8	11.8
+Us / -Us (L/5-4)* (V)	6.4	6.4	6.4	8	8.3	6
7V / CP140 (J/3-4)* (V)	4.3	8.6	8.6	6.8	7.4	6.4
10V SBY/ K DP133 (N/5)* (V)	10.6	11.2	11.2	10.2	10.4	9.3
Vcc1 / 44-IV001 (J/7)* (V)	7.8	7.9	7.9	7.9	7.9	7.8
UVFB / K DL043 (K/8)* (V)	13.3	14.5	14.5	12.7	12.8	11.1
13V / CL042 (J/8)* (V)	0	0	0	0	0	0
200V / CL046 (P/6)* (V)	0	0	0	0	0	1.1
5V / CP143 (H/3)* (V)	0	0	0	0	0	0.2

(*) Components location

safety circuit block diagram only

CHECK «STANDBY POWER SUPPLY »

⚠ All of the following tests must be carried out with the MAINS switched OFF.

Any operations carried out with the MAINS switched ON may lead to components being destroyed.

To check that the « standby » status is correct , the following test configuration can be used :

- Mains switched «OFF»
- Short circuit between the base of TV002 and the ground of CV002

↓

- Main switch «ON» : check the following voltages.

↓

U Syst :	50 Hz 131V	50Hz 132	50Hz 137V	100Hz 134V	100 Hz 137V	100 Hz 140V
Usyst (P/5)* (V+/-5V)	84.3	108	114	106	114.5	94.5
U vert / CP130 (P/4)* (V)	14.3	15.1	15	14.4	14.4	13.2
+Us / -Us (L/5-4)* (V)	9	7	8	11.5	10.2	7.3
7V / CP140 (J/3-4)* (V)	4.3	7.7	7	6.6	6.7	5.8
10V SBY/ K DP133 (N/5)* (V)	11.3	11.3	11.3	11	11.4	10.8
Vcc1 / 44-IV001 (J/7)* (V)	0.2	0.9	0.9	1.1	1.2	1
UVFB / K DL043 (K/8)* (V)	13.9	14.8	14.7	14.1	14.3	12.1
13V / CL042 (J/8)* (V)	0	0	0	0	0	0
200V / CL046 (P/6)* (V)	82.7	107	113	0 (**)	0 (**)	94
5V / CP143 (H/3)* (V)	0	0	0	0	0	0

(*) Components location

(**) With several new version of the DST (LL008) the (U syst - 1V) voltage appears at this point during the test mode or when the TV is placed in the standby mode. The « Family » table below shows DST (LL008) marked (*) number.

In this mode, you can control the stability of the voltage U syst. with an oscilloscope.

Family	Tube	DST
100Hz 134V	A66EGW 48X322	10460360
	W66EGV023X122	10468160 (*)
	W76EGV023X122	10468160
	W76EGV023X122	10520330 (*)
	W76EGX023X122	10520330 (*)
	W76EGX023X122	10576740 (*)
	A66EHJ 48X 12	10551170 (*)
100Hz 137V	A66EGW 48X322	10468070
	A66EGW 83X122	10510870 (*)
	A59EGD048X322	10468070
	A68EGD038X322	10468070
	A68EGD038X322	10510870 (*)
	A68EGV038X322	10551150 (*)
	A80AJA 16X120	10510870 (*)
	A80EJA 16X122	10510870 (*)
	A90AFX 16X120	10510870 (*)
100Hz 140V (PANORAMA)	W66EGV023X122	10576740 (*)
	W76EGV023X122	10576740 (*)
	W76EGX023X878	10576740 (*)

Family	Tube	DST
50Hz 131V	A59EGD048X300	10517720 (*)
	A68EGD038X300	10517720 (*)
	A80AEJ15X01	10517750 (*)
50Hz 132V	A66EHJ 13X 15	10517740 (*)
50Hz 137V	W66EGV023X015	10517750 (*)
	W66EGV023X115	10517750 (*)
	W76EGX023X115	10517750 (*)

(*) DST with 200V = Usyst. + Forward from the DST

Other type: 200V = Flyback from the DST

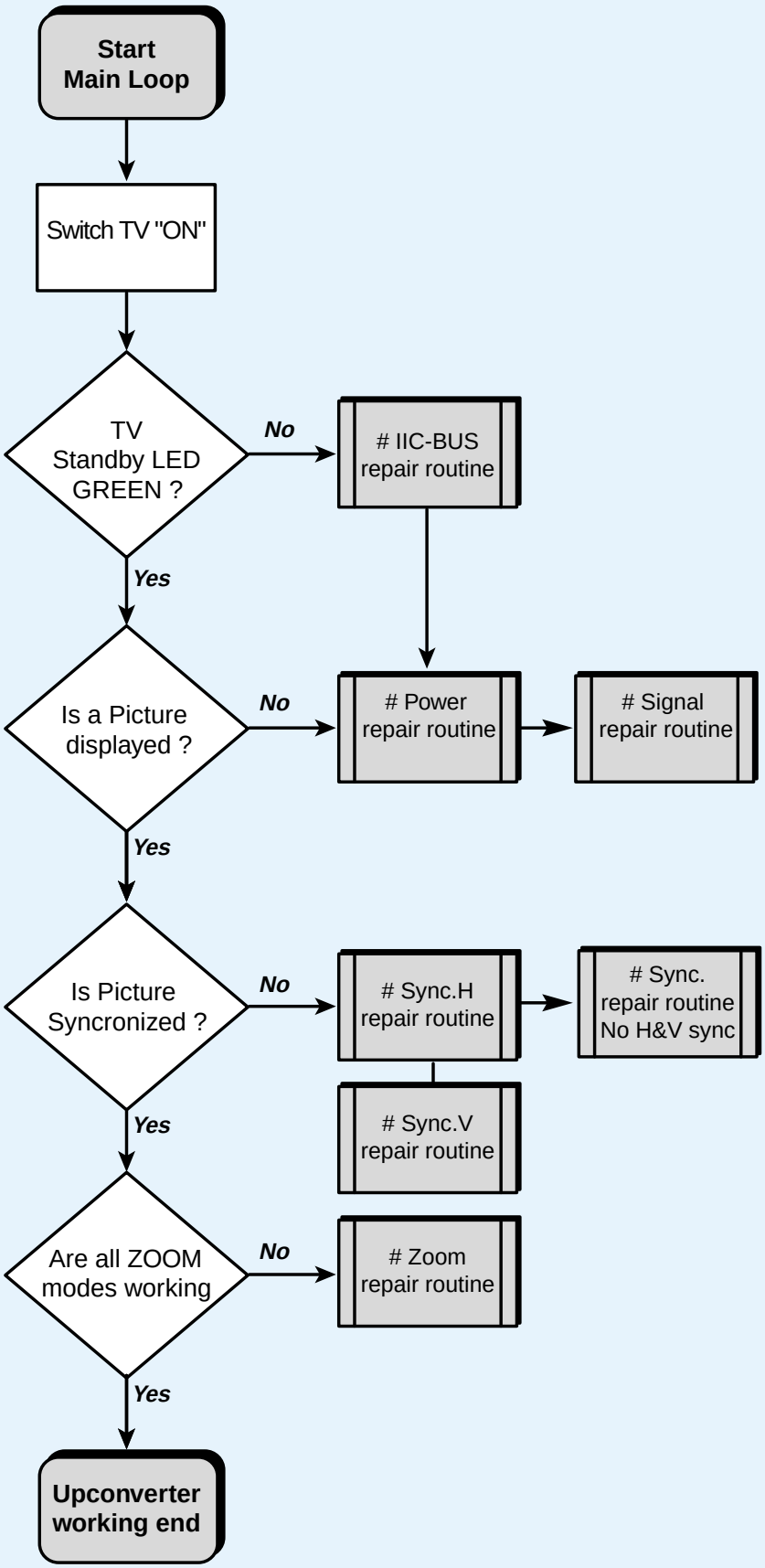
MAIN BOARD

SAFETY COMPONENTS CHECKS

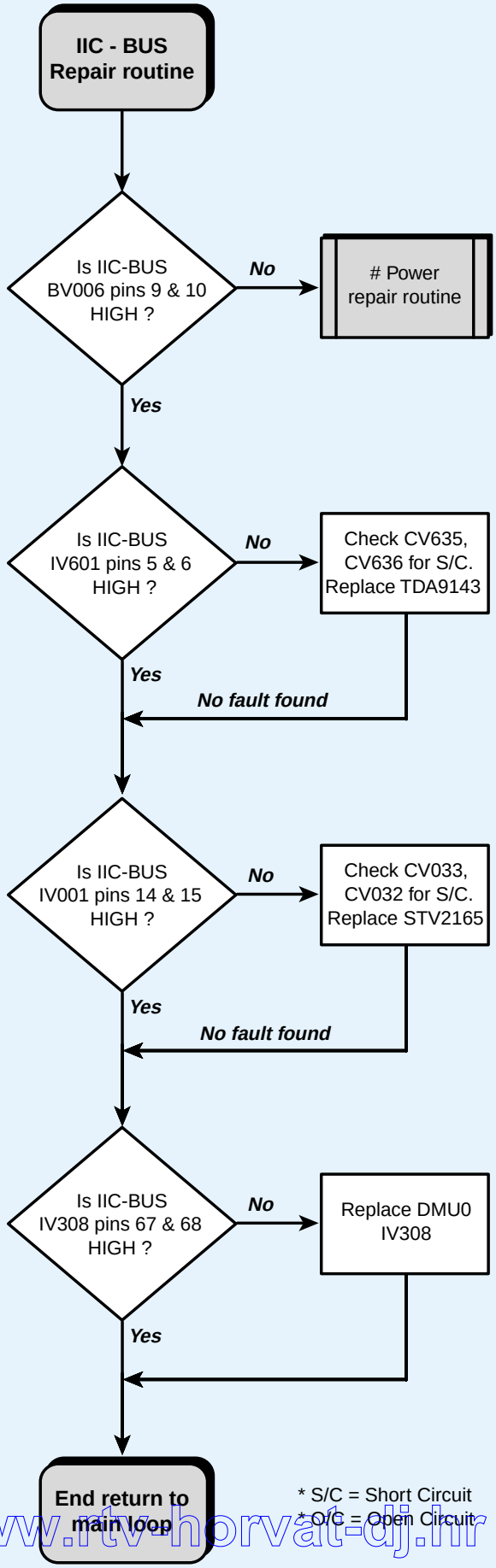
It may be prudent to check two safety components associated with secondary voltages derived from the DST.

Component Part No	Location	Value	Possible Component Failure
RL043	K/8	2.2 R	Short circuit on VFB ? Check **DL043** See Frame Deflection Circuit Checks
ZL041	K/7	0 R	Short circuit on the +13V ? Check **DL041**

CHECK VIDEO MODULE VM 19100

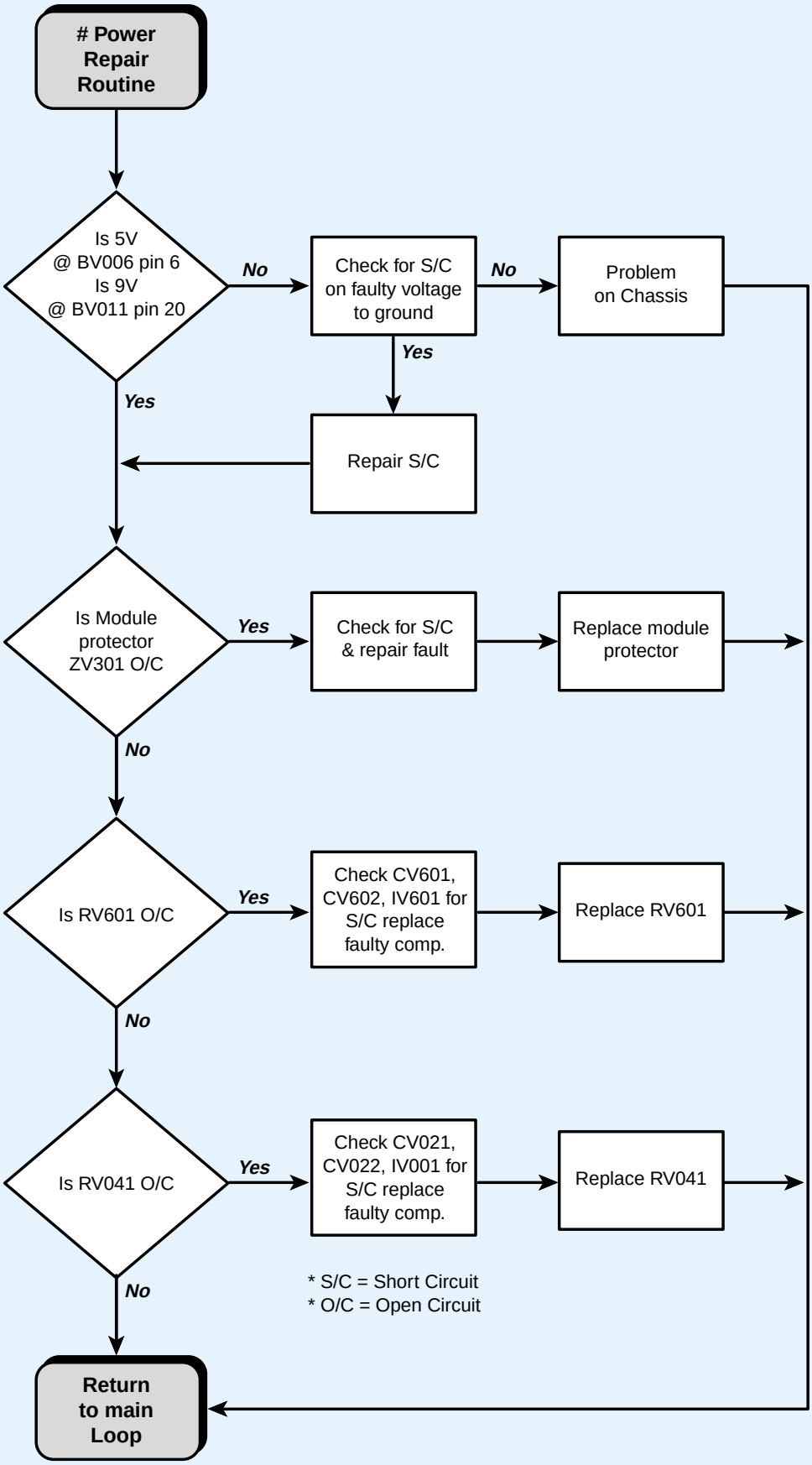


CHECK VIDEO MODULE VM 19100

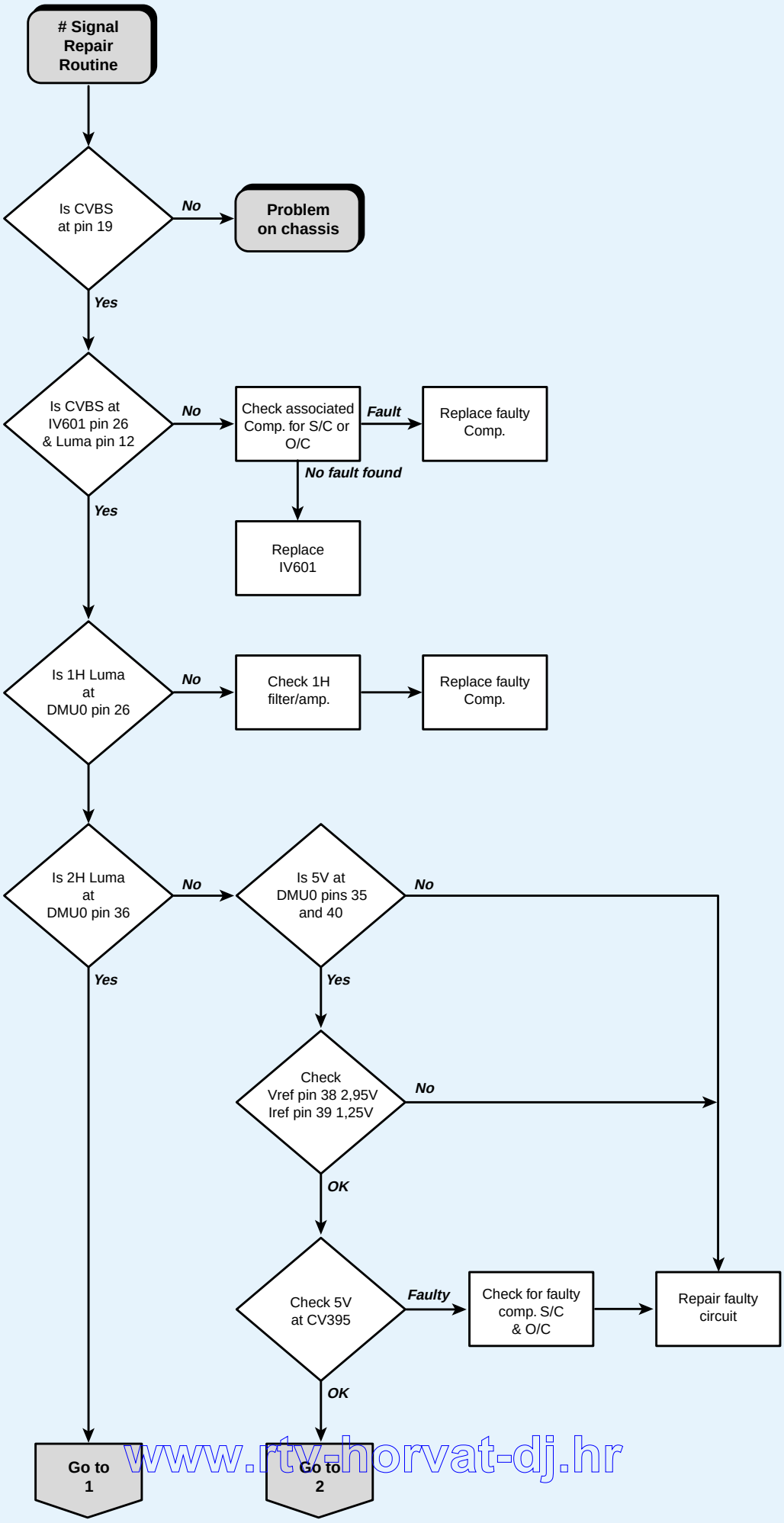


* S/C = Short Circuit
* O/C = Open Circuit

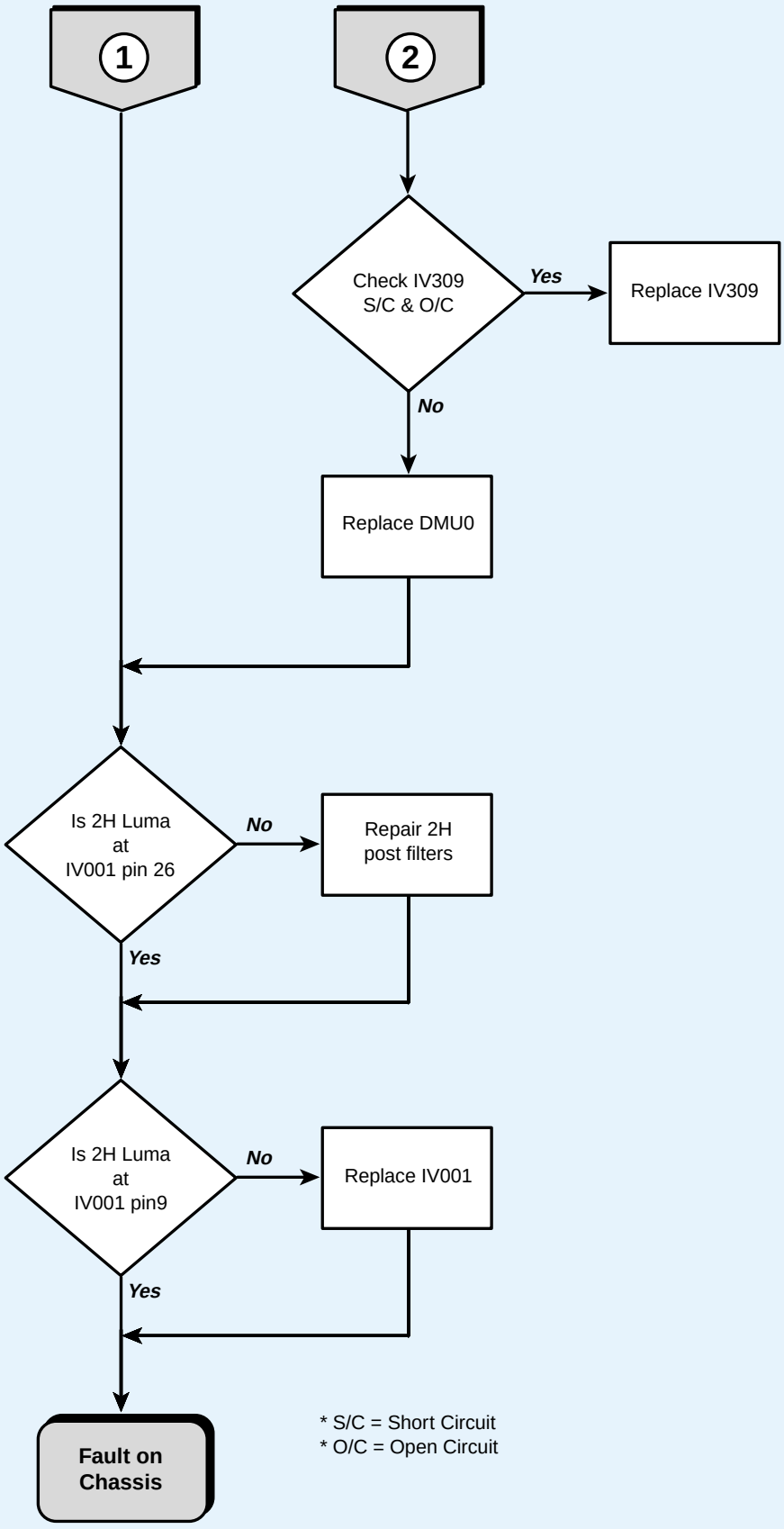
CHECK VIDEO MODULE VM 19100



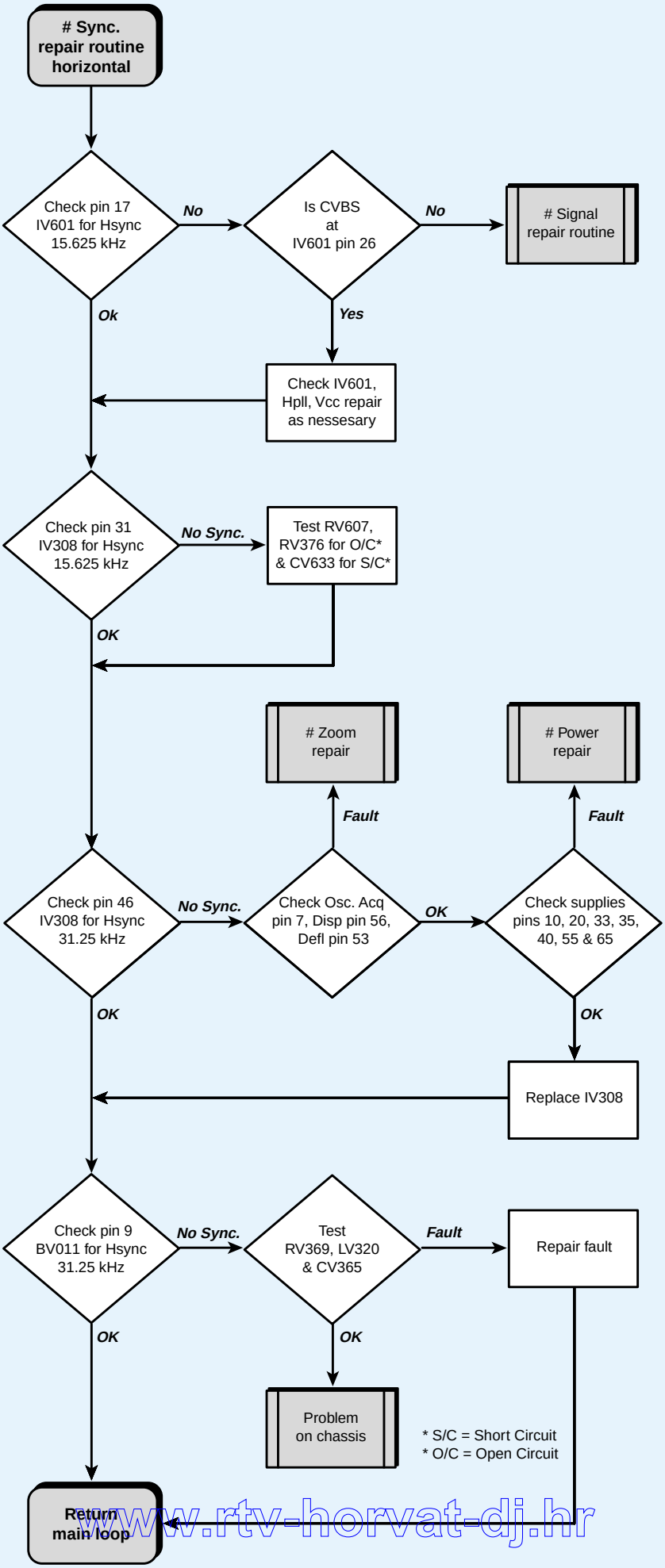
CHECK VIDEO MODULE VM 19100



CHECK VIDEO MODULE VM 19100



CHECK VIDEO MODULE VM 19100



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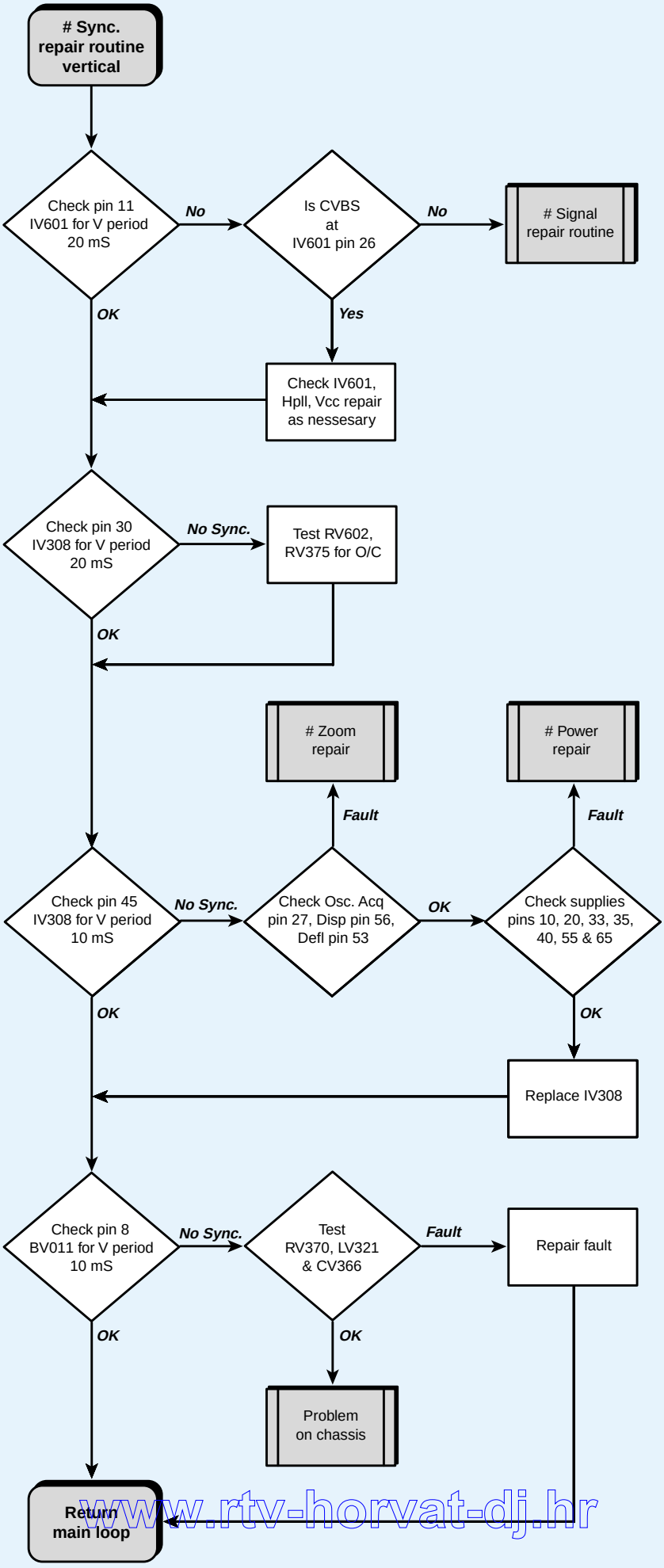

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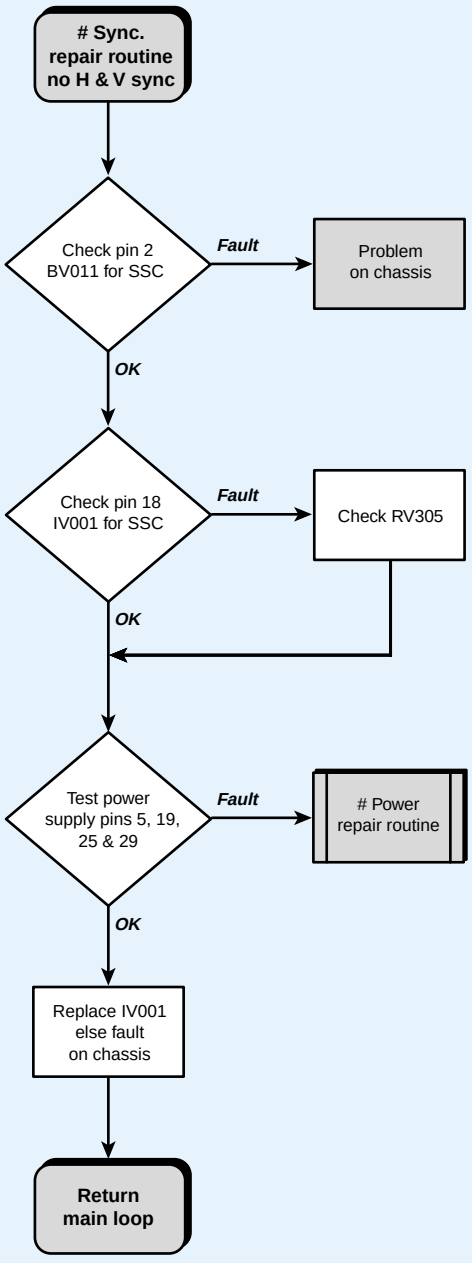

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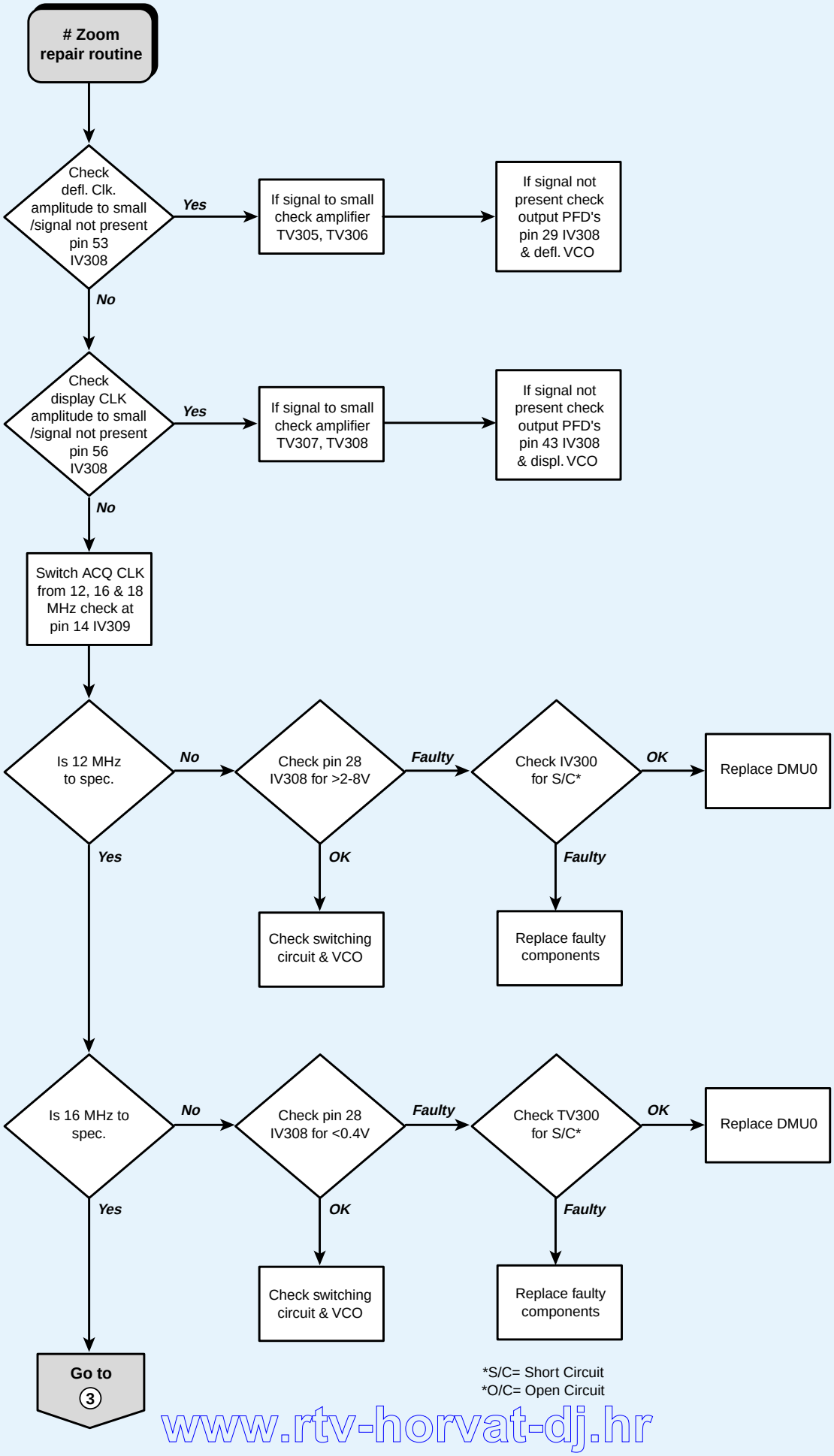

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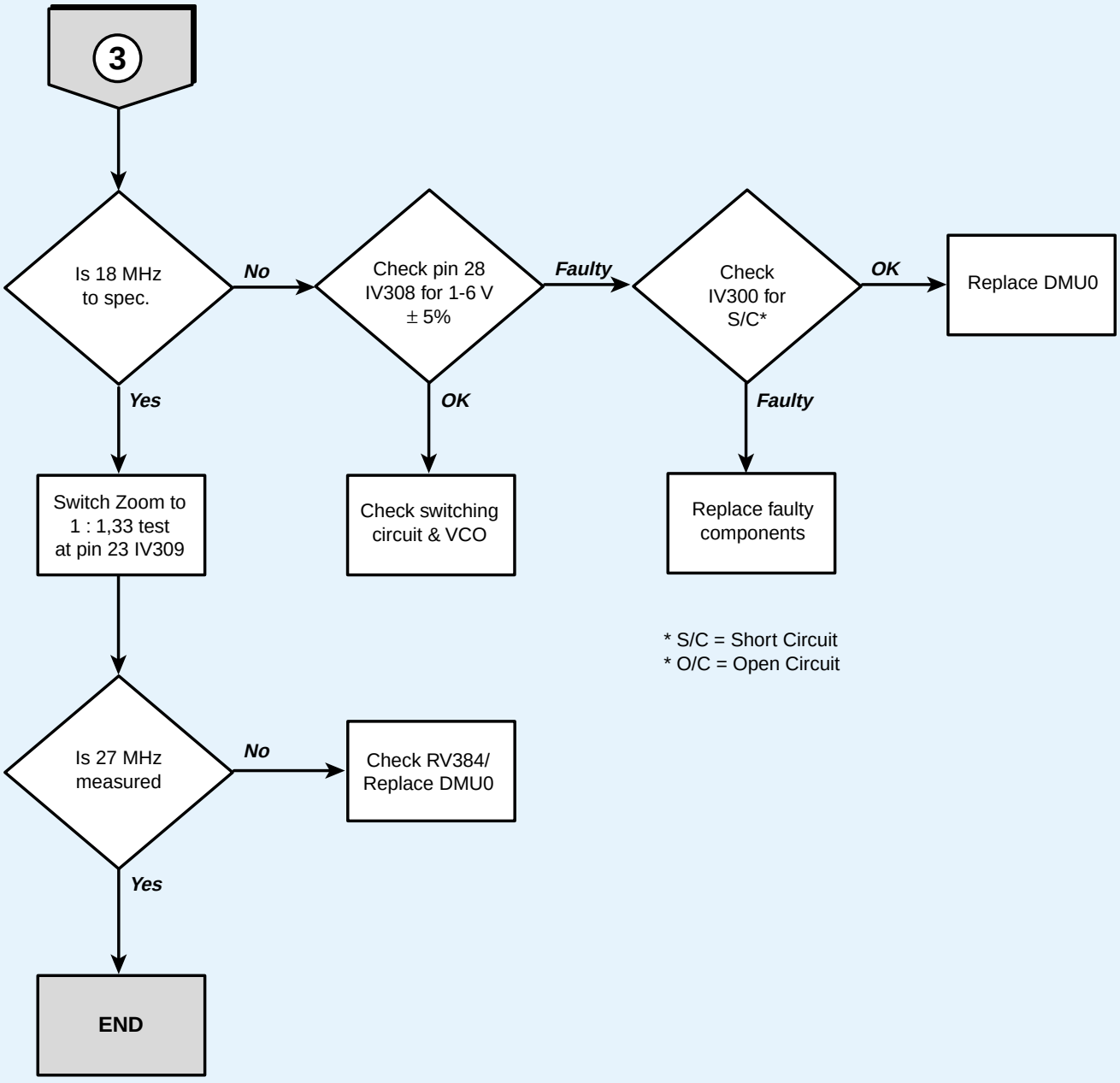
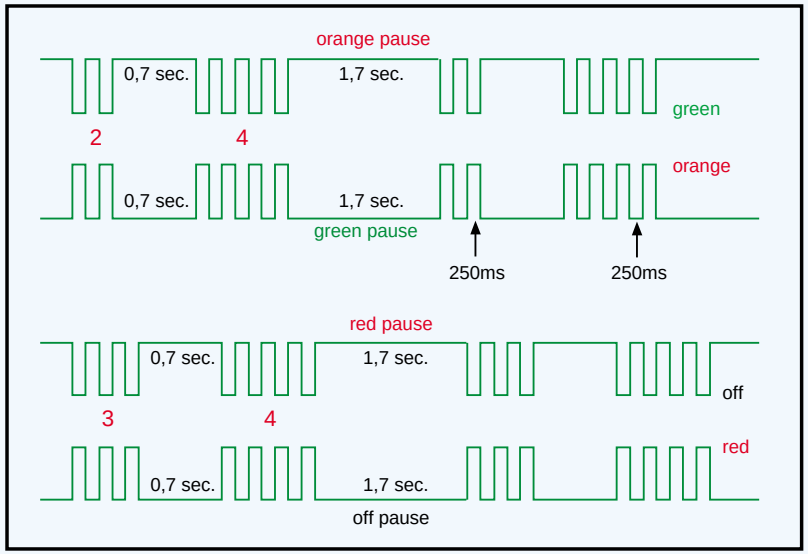


GENERAL INFORMATION - LED BEHAVIOUR

LED FLASHES

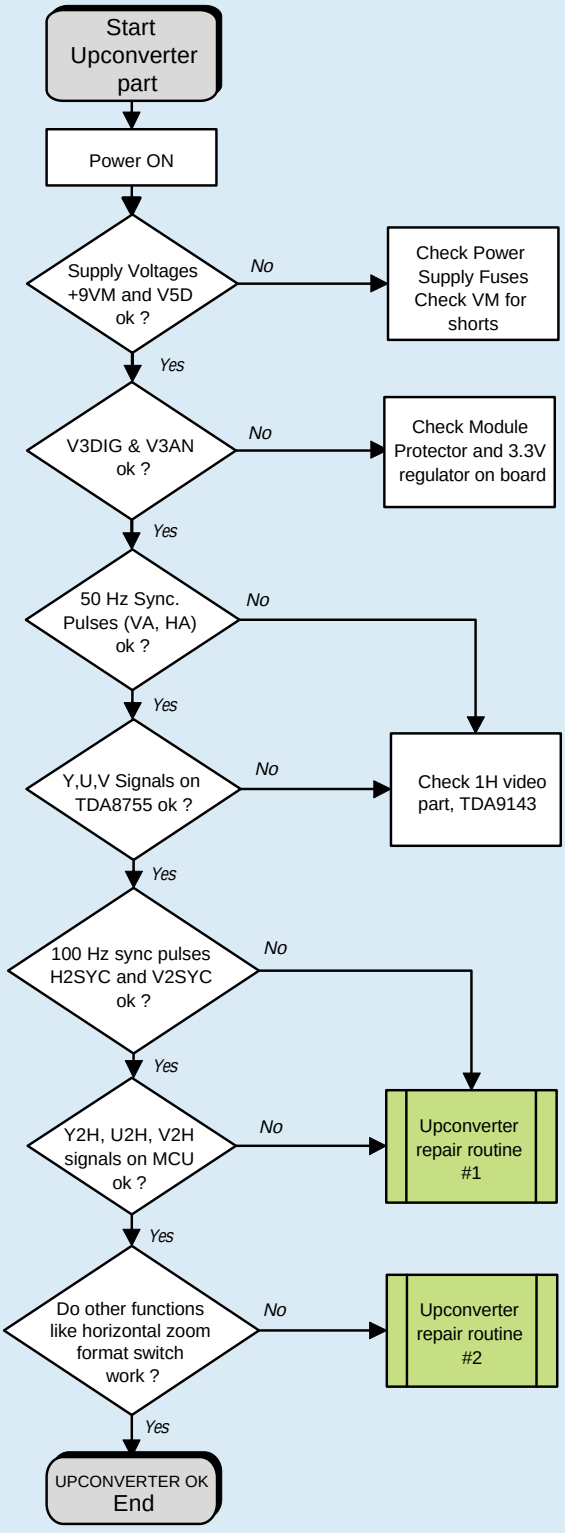
Message transmission.
The Error codes are signalled by the RED Standby LED.

Count number of flashes : error code is signalled in two burst separated by a 0.7 s pause and repeated several times.
There is 1.7 s between each code sequence .

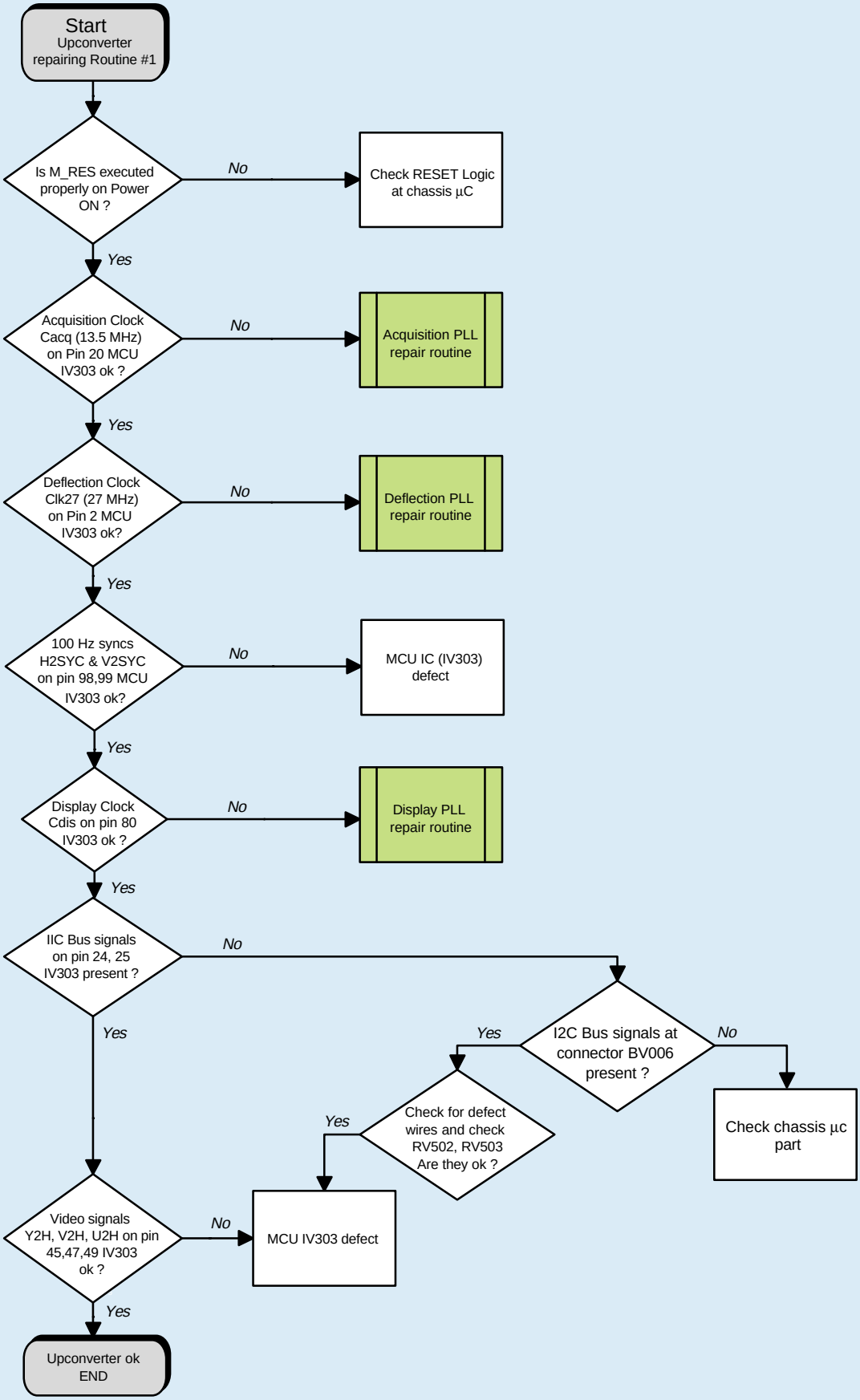


CODES	DEFAUT
11	1st Audio_MSP doesn't answer
12	2nd Audio-MSP doesn't answer
13	Audio-DSP doesn't answer
14	Video IC STV2161/2 doesn't answer
15	Chroma IC 2151/9143 doesn't answer
16	Upconverter DMU0 doesn't answer
17	Audio (or Dolby) module not detected
18	SCART IC TEA6415C doesn't answer
19	Tuner CTT5000 doesn't answer
21	I2C Bus1 data line held low
22	I2C Bus2 data line held low
23	I2C Bus1 clock line held low
24	I2C Bus2 clock line held low
25	Switched 5V not available
26	Tube doesn't get warm in time
27	Deflection detects >3 times protection (problem detected on "breathing" line)
29	DRAM memory of Megatext defect
31	RAM is full
32	Software-timer isn't available
33	The PSI chip (STV2165) doesn't answer
34	The NVM (X24C32) chip doesnt answer
35	13V not available
36	Wrong addr. NVRAM passed to the bus-handler
37	Unexpected level on NMI (Interrupt) line found (possible cause : tube flashover)
38	M3LBus for Megatext is blocked
39	Megatext (SDA5273) doesn't answer
41	bus1 Data line not recoverable
42	bus2 Data line not recoverable
43	MCU (Motion Mastering Up-Converter) doesn’t answer
44	Convergence IC (STV2040) doesn’t answer
45	Defect "Video Module" is detected
46	"Default" NVRAM of DCU doesn't answer
47	Test Pattern chip of DCU defect
48	Test Pattern NVRAM convergence chip defect
49	Convergence module doesn't answer anymore
52	The Teletext module is not conform.

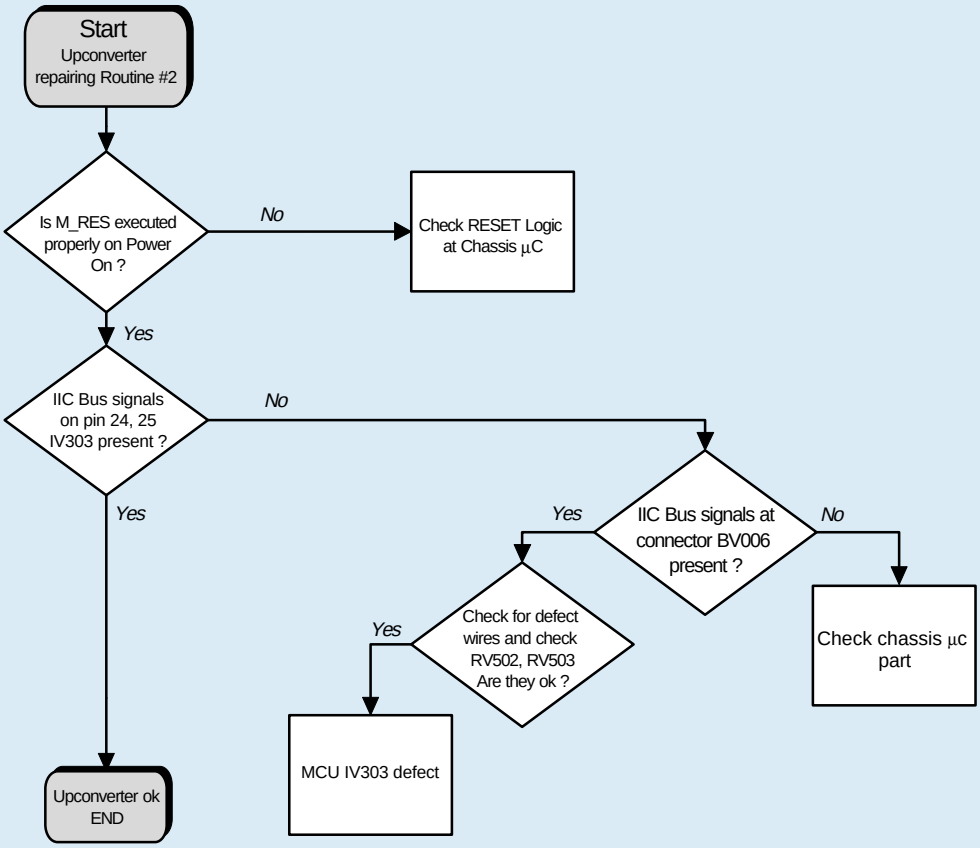
CHECK VIDEO MODULE VM19200



CHECK VIDEO MODULE VM19200



CHECK VIDEO MODULE VM19200



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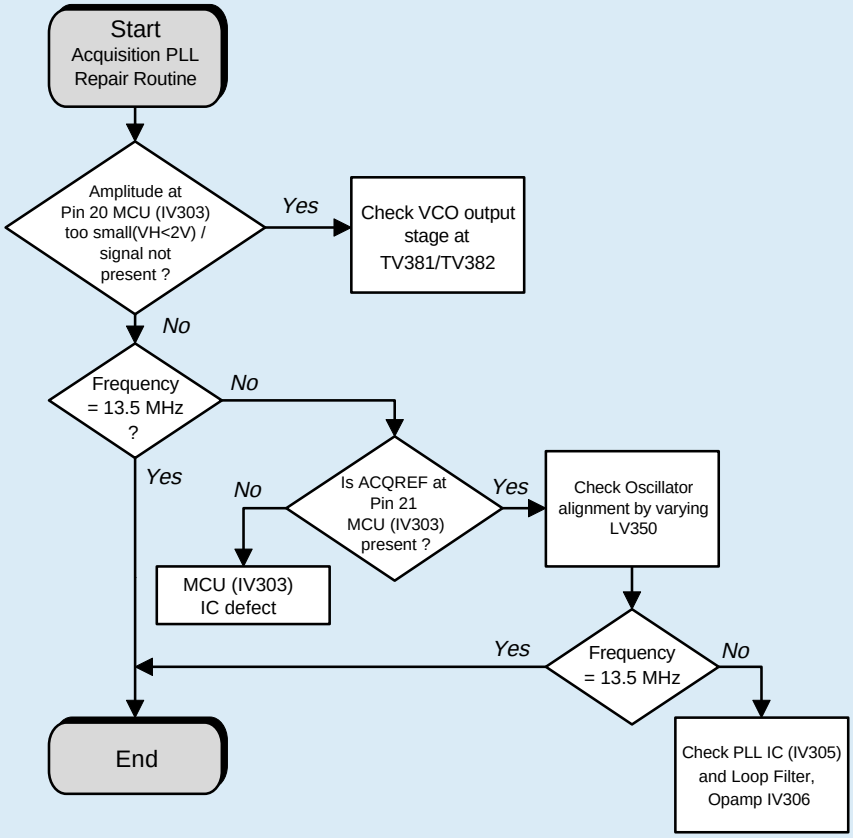
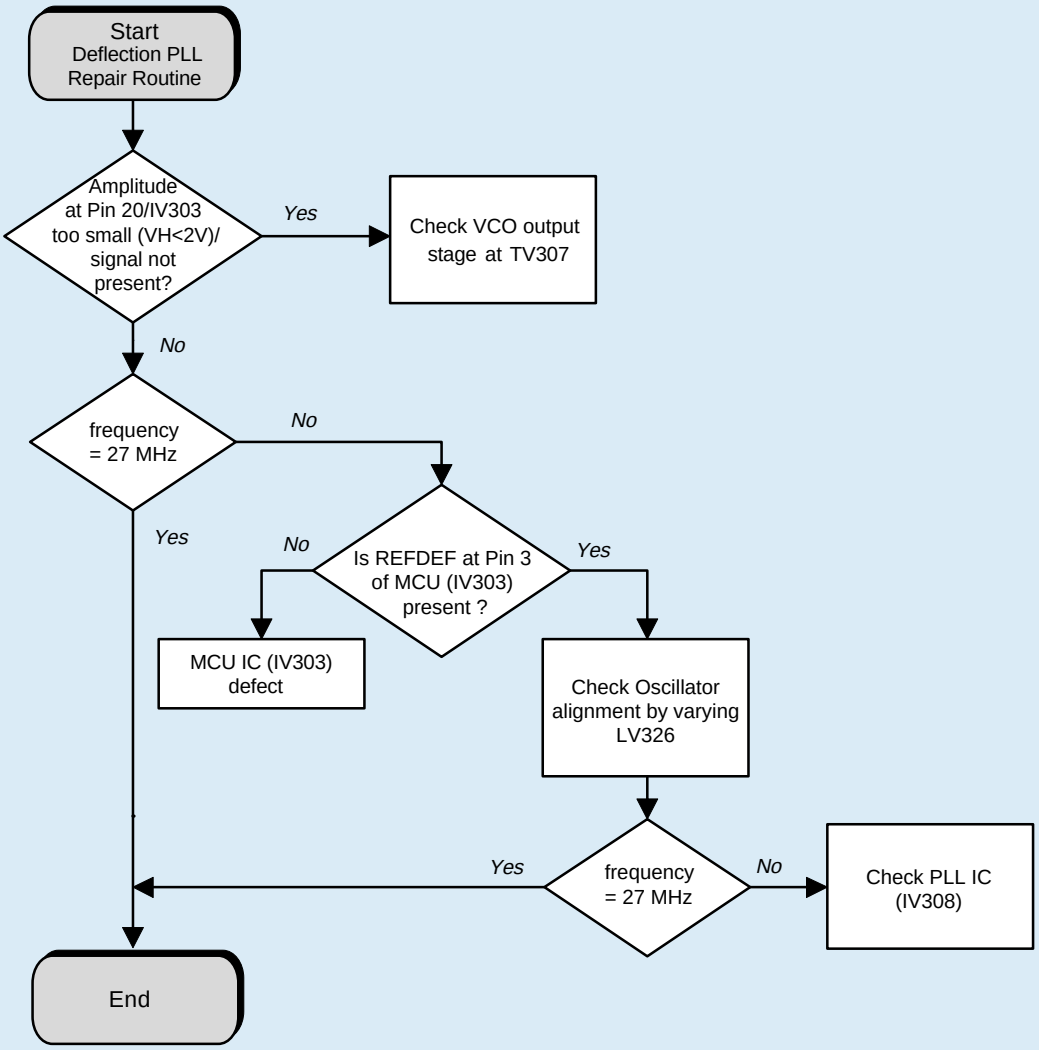
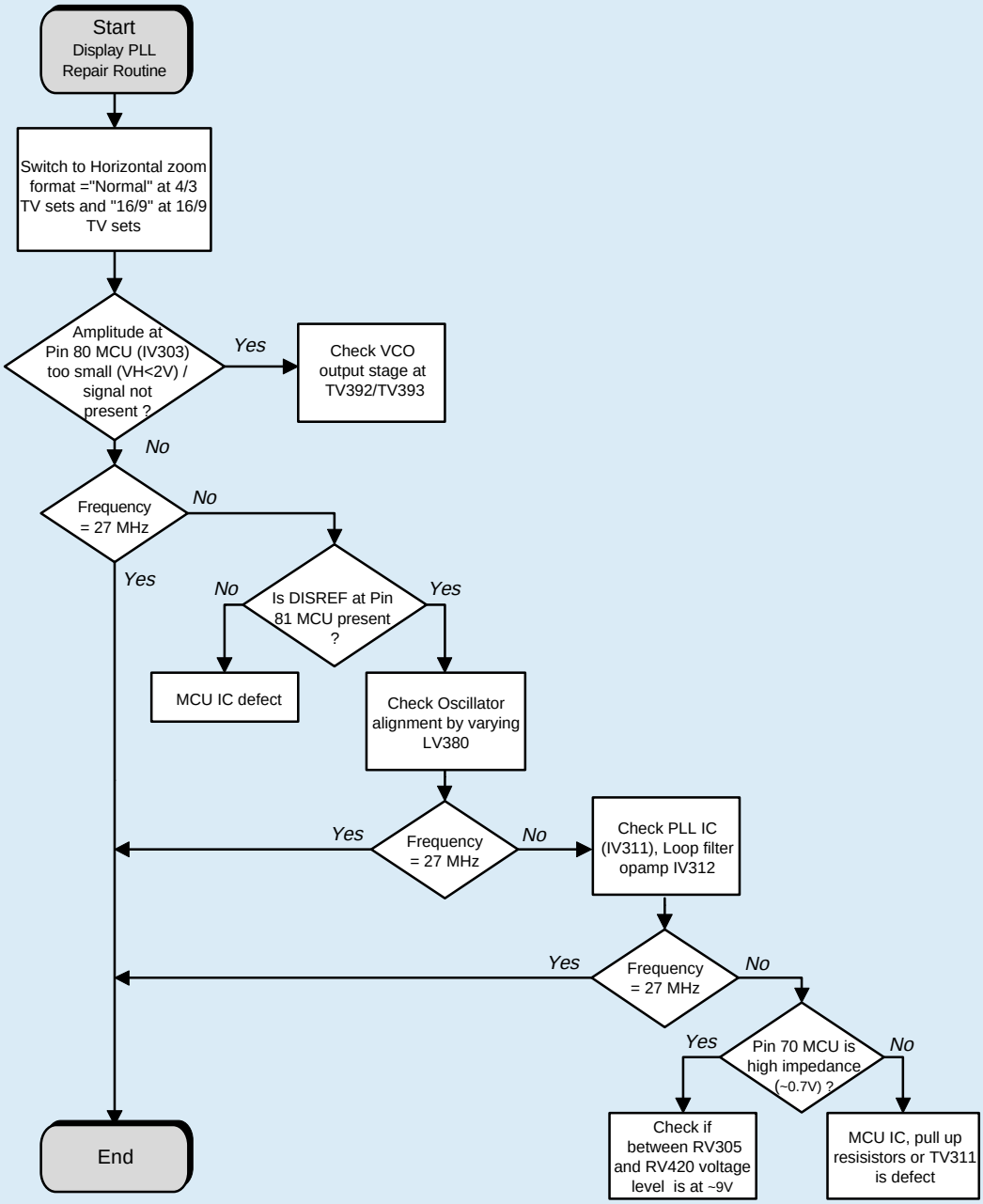


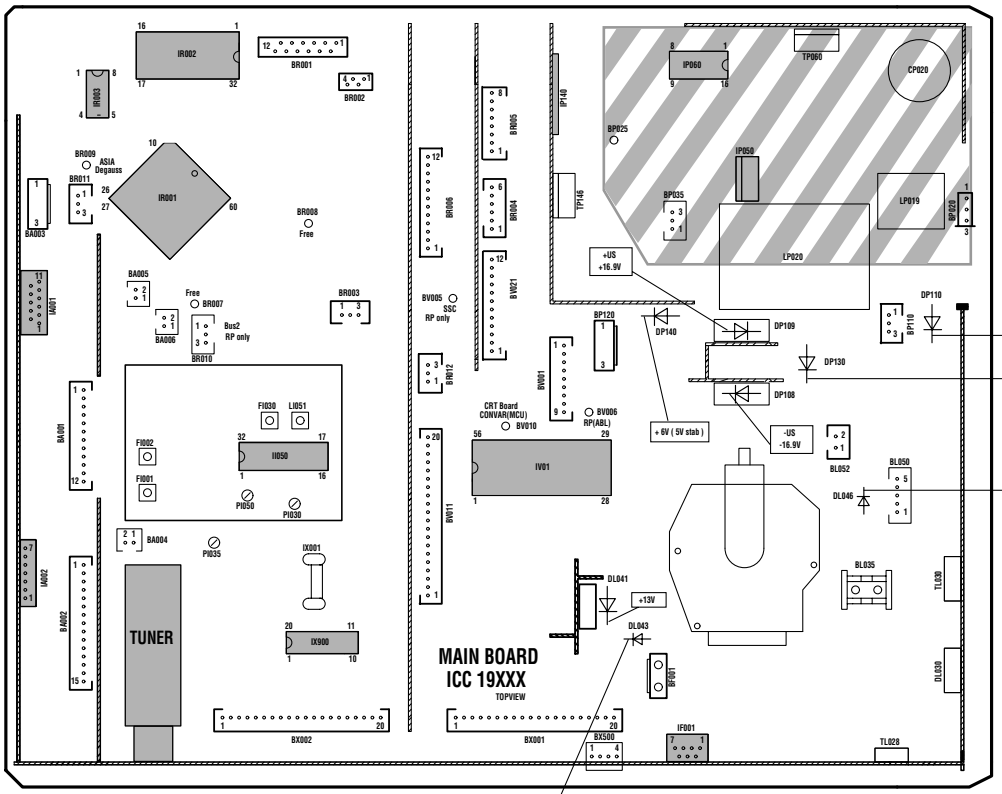
CHECK VIDEO MODULE VM19200



CHECK VIDEO MODULE VM19200



LOCATION OF CONTROLS - EMPLACEMENT DES REGLAGES - SERVICE LAGEPLAN - POSIZIONE REGOLATORI DI SERVIZIO - SITUACIÓN DE LOS AJUSTES



Do not disconnect modules when they are energized ! Repairs on power supply section are to be carried out only with isolating transformer.

Ne pas retirer les modules lorsqu'ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch mode) qu'au travers d'un transformateur d'isolement.

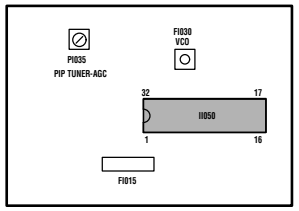
Module nicht bei eingeschaltetem Gerät entfernen ! Servcearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegare i moduli quando sono alimentati ! effetuare riparazioni sulla sezione alimentatore solo con transformatore separatore.

No desconectar los módulos cuando están activados ! Las reparaciones en la sección de alimentación de energia deben ser ejecutadas solamente con un transformador de separacíon.

Part of Board connected to mains supply.
Partie du châssis reliée au secteur.
Primärseite des Netzteils
Parte del pannello collegato alla rete di alimentazione
Parte del chasis conectada a la red

RF-IF PART FEP 19100 PIP



ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U Sys	SERVICE MODE	Standard TV - Settings : OMA Position TV to AV1 : Black test pattern	V= DP 110	TUBE NAME / DESCRIPTION / Usys jumper / Usys A59EGD048X322 4/3 25" SF JP914 137V +/- 0.5V A66EGW83X122 4/3 28"MP JP914 137V +/-0.5V A66EHJ43X12 4/3 28" MP JP915 134V +/- 0.5V A68EGD038X300 4/3 29" SF JP914 137V +/-0.5V A68EGD038X322 4/3 29" SF JP914 137V +/-0.5V A80EJA16X122 4/3 33" MP JP914 137V +/- 0.5V A90AFX14X12 4/3 37" MP JP914 137V =/-0.5V W66EGV023X122 16/9 28" SF JP915 134V +/- 0.5V W66EGV023X122 16/9 28" SF (PANORAMA) JP917 140V +/- 0.5V W76EGV023X122 16/9 32"SF JP915 134V+/- 0.5V W76EGV023X122 16/9 32"SF (PANORAMA) JP917 140V+/- 0.5V W76EGX023X122 16/9 32"SF JP915 134V +/- 0.5V
IF Alignment VCO Standard BG	FI030	Switch set to standard BG IF Signal 38.9 MHz (BG) 30 mV G 75Ω TUNER 11 NH01	V= RI078 AFC (uP) 42 IR01	Adjust FI30 / PI54 for 2,5VDC +/-0.1V
VIDEO-LEVEL Alignment	PI030 PI035	Standard Signal (BG / L) 15kHz test pattern 3 mV G 75Ω TV set Antenna	SCART Video output Oscillo.	Adjust PI030 : standard BG Adjust PI035 : standard L for V = 0,7 Vpp (Black/white level)
U G2 METHOD 1 Measurement method	G2 potentiometer	Standard TV - Settings : OMA Position TV to AV1 : Black test pattern	highest output CRT 1910X (100Hz) : R signal : IB01 Pin 15 G signal : IB03 Pin 15 B signal : IB02 Pin 15	V 1 - Adjust VG2 : V= 160V +/- 5 V 2 - Adjust Focus 3 - Adjust VG2 : V= 160V +/- 3V
METHOD 2 Cutoff counter method SERVICE MODE	SERVICE MODE	Standard TV - Settings : OMA Position No test pattern (generated by internal text processor).		Adjust R-Cut off and G-Cut-off to 80H temporary. Select G2 Alignment in Service Mode Adjust the lowest value to: Select "Restore" in Service Mode and press "OK" to restore the cut-off values. Tube Type / Value A66EGW 60H A66EHJ A59EGD 50H A68EGD 50H A68EGV 50H A80EJA W66EGV -50H W76EGV 60H W76EGX 60H A90AFX 50H
FOCUS	FOCUS	Test pattern (standard values)		Sharp picture

RF / IF PART FEP 19100 PIP

IF Alignment VCO Standard BG	FI030	Switch set to standard BG IF Signal 38.9 MHz (BG) 30 mV G 75Ω PIP TUNER 11 NH002	V= RI077 AFC 23 II050	Adjust FI30 for 2,5VDC +/-0.1V
TUNER-AGC	PI050	Signal 210.25 MHz 3 mV G 75Ω TV set Antenna input PIP Tuner	11/NH002 IF output Tuner Spectrum Analizer	Adjust PI050 : Maximum level Reduce level with PI50 about 10dB.

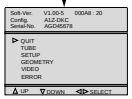
SERVICE MODE (GB) | MODE SERVICE (F) | SERVICE - MODE (D) | SERVICE - MODE (I) | MODO SERVICIO (E)

I - ENTER/EXIT SERVICE MODE - ENTREE/SORTIE DU MODE SERVICE - EIN-AUSTIEG SERVICE MODE - ACCESSO/USCITA ALLA/DALLA FUNZIONE - ENTRADA/SALIDA MODO SERVICIO

1 ACCESSING SERVICE MODE

TV Control Panel Access

- Turn "Off" thte TV using the **ON/OFF** button.
- Press the **PR-** and **VOL-** buttons ,hold them down and switch "On" the TV with the **ON/OFF** button.
- After the normal switch on time the main service menu appears on the screen.



Note :
In service mode :
- *The child lock function is re-initialized*
- *The look function (PIN Number) is ignored.*
- *Clear any wake-up/sleep timers*
- *Pin 8 of the scart plug has to be ignored.*
- *AV- Link WSS detection , EPG and Teletext have to be disabled.*
- *Automatic stand-by functions, in case of no antenna signal have to be disabled.*
- *Contrast, colour, brightness : factory settings.*
- *Sharpness : middle (nominal)*
- *Contrast expander to low.*
- *Install Mode disabled.*
- *Default format and zoom..*

Nota :
En modo servicio:
- *Se ignora la función de bloqueo y se inicializa la función "cerradura ninos".*
- *Anula todos las horas programadas*
- *La pattilla 8 del SCART es ignorada*
- *La detección WSS AV Link, EPG, y Teletxto son desactivados.*
- *El apagado automático en caso de ausencia de señal de antena es desactivado.*
- *El contraste,color y brillo son puestos a los valores de fábrica.*
- *la reloj/ez es puesta al punto medio.*
- *La expansión de contrast al nivel bajo*
- *Modo Instalación es desactivado.*
- *Zoom y formato ignorados.*

2 TEMPORARY EXIT FROM SERVICE MODE

- Press Exit on the Remote control.
- Everyday use menu can be accessed via Menu button.

- Field Service Menu can be re-entrered via Blue button.

3 EXITING FROM SERVICE MODE

Remote Control | **TV control panel** | **on/off key or Stand-by**

- Go to the point QUIT in the Field service Mode main menu.
- Press «^», «OK» or «v» button
- Stand-by function or «off» with on/off key.
- Press «VOL.+»button

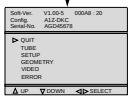
- TV mode.

Values or adjustments are no stored before exiting from service mode will not be written into the NVM

1 ACCES AU MODE SERVICE

Accès avec le clavier du téléviseur

- Arrêter le TV avec la touche **M/A.**
- Tout en appuyant sur les touches **PR -** et **VOL - ,** mettre le TV en service à l'aide de la touche **M/A**.
- Maintenir enfoncées les touches **PR -** et **VOL -**.
- Le menu suivant apparaît.



Note :
En mode service:
- *Le verrouillage parental est effacé (réinitialisé).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *La programmation des heures «reveille/matin» est annulée.*
- *Possibilité de passer en mode service avec commutation lente active.*
- *AV- Link WSS détection , EPG and Teletext have to be disabled.*
- *AV- Link , la détection WSS, l'EPG et le Vidéotexte ne sont pas validés.*
- *La fonction de stand-by automatique en cas d'absence de signal d'antenne n'est pas validée.*
- *Les valeurs de réglages usine sont affectées au contraste, à la couleur et à la lumière.*
- *Le contour est appelé à sa valeur moyenne.*
- *L'expansion contraste est au niveau bas.*
- *Le mode d'installation et l'ambiance «Light sensor» ne sont pas validés.*
- *Zoom et format ignorées.*

2 SORTIE TEMPORAIRE DU MODE SERVICE

- Utiliser la touche Exit de la télécommande.
- Le menu utilisateur peut être accessible via la touche «Menu».

- Pour entrer à nouveau dans le mode service utiliser la touche bleue.

3 SORTIE DEFINITIVE DU MODE SERVICE

télécommande | **clavier du téléviseur** | **Inter M/A ou Stand-by**

- Aller au point «QUIT» dans le menu principal du mode service.
- Appuyer sur «^», «OK» ou «v»
- Appuyer sur «VOL.+»
- Foncion Stand-by ou «off» par M/A.

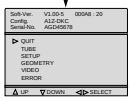
Mode TV.

Les valeurs ou réglages non mémorisées avant la sortie ne seront pas écrites en NVM.

1 EINSTIEG IN DEN SERVICE MODE

Zugriff über die Tastatur des Fernsehgerätes

- **Fernsehgerät** über die EIN/AUS - Taste ausschalten.
- Gleichzeitig die Tasten PR- und VOL- drücken und den TV über die EIN/AUS-Taste einschalten.
- Die Tasten PR- und VOL - gedrückt halten.



Anmerkung :
Im SERVICE MODE :
- *wird die Sperrfunktion (PIN-Nummer) ignoriert und die Kindersicherung gelöscht (reinitialisiert).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *wenden alle Ein- und Ausschaltzeitgeber gelöscht.*
- *wird die SCART - Schaltspannung ignoriert.*
- *wenden AV- Link WSS, EPG und Teletext gesperrt*
- *wird die Automatische Abschaltung bei fehlendem Antennensignal gesperrt.*
- *werden Kontrast, Farbe und Helligkeit auf standardwerte gesetzt.*
- *wird die bildschärfe auf Mittelstellung (nominal) gesetzt.*
- *wird der Kontrast-Expander auf "gering.." gesetzt.*
- *wird der Installations Modus gesperrt.*
- *wird das Standardformat bzw. der Standard-Zoom-modus gewählt.*

2 VORÜBERGEHENDES VERLASSEN DES SERVICE MODE

- Auf der Fernbedienung EXIT drücken.
- Mit der Taste Menü gelangen Sie zum Menü Übersicht

- Mit der blauen Taste gelangen sie zum Service-Menü.

3 ENDGÜLTIGES VERLASSEN DES SERVICE MODE

Fernbedienung | **TV-Bedienfeld** | **EIN /Aus - Taste**

- Wenn der Zeiger im Hauptmenü des Service-Modus auf BEENDEN steht
- Taste «^», «OK» oder «v»drücken
- Mit Standby-Funktion oder **EIN/AUS** - taste ausschalten
- Taste «VOL+» drücken

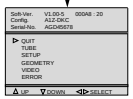
- TV Modus

Werte und Einstellungen, die nicht vor dem Verlassen des Service-Modus gespeichert wurden, werden nicht in den Permanentspeicher übernommen

1 ACCESSO AL SERVICE MODO

tramite i comandi del televisore

- Spegnere il TV mediante il pulsante ON/OFF.
- Premere i tasti **PR- e VOL-** accendendo il TV con il pulsante ON/OFF.
- Premere i pulsanti **PR - e VOL -**.



Nota :
Nel service mode:
- *la funzione Blocco (Numero Pin) viene ignorata e la funzione Blocco Bambini è reinvalizzata.*
- *Cancellare la programmazione sveglia*
- *Il piedino 8 della scart deve essere ignorato.*
- *I riconoscimenti AV-Link WSS, EPG e televideo deveno essere disabilitati.*
- *Funzione automatica di standby, nel caso di mancanza del segnale d'antenna deve essere disabilitata.*
- *Contrasto, colore, luminosità : regolazioni di fabrica.*
- *Nitidezza media (nominale)*
- *Espansore contrasto troppo basso.*
- *Modo Install disabilitato.*
- *Formato default e zoom.*

2 USCITA TEMPORANEA DAL SERVICE MODE

- Premere Exit sul telecomando.
- Al menu di uso quotidiano si accede attraverso il pulsante Menu.

- È possibile rientrate nel Menu Field Service attraverso il pulsante Blue.

3 USCIRE DAL SERVICE MODE

telecomando | **Panello controllo TV** | **Tasto on/off di**

- Andare al punto QUIT nel Modo Field service del Menu principale
- Premere «^»,«OK» o «v»
- Premere «VOL.+»

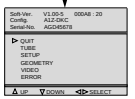
- Modo TV.

Valori e regolazioni non vengono memorizzati prima di uscire dal Modo service e non vengono scritti nell'NVM

1 ACCESO AL MODO SERVICIO

Acceso panel control TV

- Apague la TV con el botón MARCHA.PARADA.
- Pulse los botones **PR -** y **VOL -** y sin soltarlos,pulsar la tecla MARCHA.PARADA.
- Libere los botones **PR -** y **VOL -** .



Nota :
En modo servicio:
- *Se ignora la función de bloqueo y se inicializa la función "cerradura ninos":*
- *Anula todos las horas programadas*
- *La pattilla 8 del SCART es ignorada*
- *La detección WSS AV Link, EPG, y Telexto son desactivados.*
- *El apagado automático en caso de ausencia de señal de antena es desactivado.*
- *El contraste,color y brillo son puestos a los valores de fábrica.*
- *la reloj/ez es puesta al punto medio.*
- *La expansión de contrast al nivel bajo*
- *Modo Instalación es desactivado.*
- *Zoom y formato ignorados.*

2 SALIDA TEMPORAL DEL MODO SERVICIO

- Pulse Salir en el mando a distancia
- Con el botón Menu puede acceder al menú de uso cotidiano.

- Puede entrar al Menú Servicio con el botón azul.

3 SALIDA DEL MODO SERVICIO

telecomando | **Panel de control TV** | **Tecla on/off de**

- Vaya al punto QUIT del menú principal de modo Servicio
- Pulse el botón «^»,«OK» o «v»
- Función Stand-by o desconexión (off) con tecla on/off.

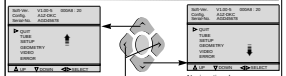
- Pulse el botón«VOL.+»

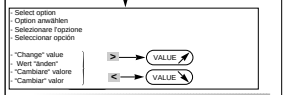
- Modo TV.

Los valores o ajustes no se guardan antes de salir del modo servicio y no se escriben en el NVM

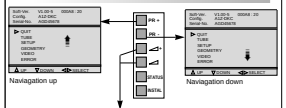
II - NAVIGATION INSIDE THE SERVICE MODE - DEPLACEMENT DANS LE MODE SERVICE SUCHE IN SERVICE MODE - OPZIONI NEL SERVICE MODE - BUSQUEDA EN MODO SERVICIO

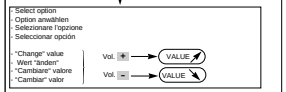
1 REMOTE CONTROL - TELECOMMANDE - FERNBEDIENUNG TELECOMANDO - MANDO A DISTANCIA





2 TV CONTROL PANEL - CLAVIER TV - TASTATUR DES FERNSEHGERÄTS - COMANDI DEL TELEVISORE -

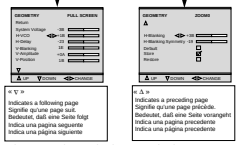


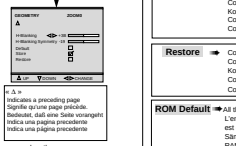


Changing page - Changement de page Seitenwechsel - Cambiare Pagina - Cambio de página

End of page
Fin de page
Am Seitenende
Fine della pagina
Fin de página

Beginning of Page
Début de page
Am Seitenanfang
Inizio della pagina
Comienzo de página



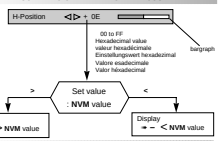


« ∇ »
Indicates a following page
Signifie qu'une page suit.
Bedeutet, daß eine Seite folgt
Indica una pagina seguente
Indica una página siguiente

« Δ »
Indicates a preceding page
Signifie qu'une page précède.
Bedeutet, daß eine Seite vorangeht
Indica una pagina precedente
Indica una página precedente

- The menu turns the page when the cursor reaches the arrow.
- Amener le curseur sur la ligne repérée par« ∇ » ou « Δ » pour passer à la page qui précède ou qui suit.
- Cursor nach « ∇ » ,« Δ » zum Seitenwechsel
- Il cursor su « ∇ » ,« Δ » cambia pagina.
- Cursor en « ∇ » ,« Δ » cambia las páginas

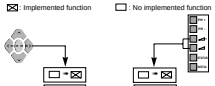
3 DISPLAYING THE VALUE OF THE SETTING - AFFICHAGE DES VALEURS - ANZEIGE DES EINSTELLUNGSWERTS VISUALIZZAZIONE DEL VALORE DELLA REGOLAZIONE - VISUALIZACION DEL VALOR DE AJUSTE



4 TOGGLE FUNCTIONS - VALIDATION DES FONCTIONS EIN-UND AUSSCHALT FUNKTIONEN - FUNZIONI DI COMMUTAZIONE - FUNCION CONMUTACION

To enable a function check (tick) ☒ the box.
Pour valider une fonction cocher ☒ la case correspondante
Zum Implementieren einer Funktion das Kontrollkästchen ☒ aktivieren (ankreuzen)
Per implementare una funzione di verifica, (vistare) ☒ la casella
Para poner en fucionamiento una función verifique (señale) ☒ la casilla

☒ : Implemented function ☐ : No implemented function



5 STORING VALUES IN MEMORY - MEMORISATION DES VALEURS - SPEICHERN DER WERTE - MEMORIZZAZ.I DI VALORI - VALORES ALMACENADOS EN LA MEMORIA

After setting, the values are stored in NVM.
Après réglages les valeurs sont mémorisées en NVM.
Nach dem Einstellen werden die Werte im NVM gespeichert.
Dopo la regolazione i valori vengono memorizzati in NVM.
Después del ajuste, los valores son almacenados en NVM

The box ☐ becomes ☒
During alignment, values are temporarily stored in RAM.
En cours d'alignement les valeurs sont mémorisées temporairement en RAM
Während des Abgleichs werden die Werte vorübergehend im RAM gespeichert
Durante l'allineamento i valori vengono memorizzati provvisoriamente sulla RAM
Durante el alineamento, los valores son almacenados temporalmente en RAM

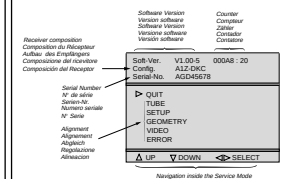
Store ➡ Copies RAM values into NVM
Copie la valeur RAM en NVM
Kopieren des Werts von RAM nach NVM
Copiare i valori RAM in NVM
Copiar valores RAM en NVM

Restore ➡ Copies all values from NVM into RAM.
Copie toutes les valeurs des données NVM en RAM
Kopiert alle NVM-Datenwerte in den RAM
Copiare tutti i valori da NVM sulla RAM
Copia todos los valores de NVM a RAM

ROM Default ➡ All the default values of a page in use are stored in RAM.
L'ensemble des valeurs par défaut d'une page courante est chargé en RAM.
Sämtliche Standardwerte der aktuellen Seite werden im RAM geladen
Tutti i valori di default di una pagina in uso vengono memorizzati sulla RAM
Todos los valores por defecto de la página en curso están almacenados en RAM.

III - LITE-MENU FOR FIELD SERVICE MODE - MENUS DU MODE SERVICE

1 MAIN MENU - MENU PRINCIPAL



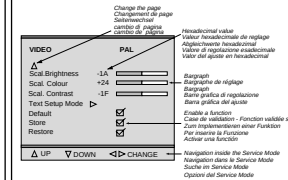
TV CONFIGURATION - CONFIGURATION DU TV - GERÄTEKONFIGURATION - CONFIGURAZIONE DEL TV - CONFIGURACIÓN Y TV

Config. A1Z-DKC

Character 1 : Tube type : «A»= 4/3 , «W» =16/9
Character 2 : Chassis type : «5» = 50Hz, «1»= 100 Hz
Character 3 : Zoom available : «Z»=yes, «-»=not
Character 4 : Ambiant Sensor : «S»= detected, «-»= not
Character 5 : Dolby : «D»=detected, «-»= not
Character 6 : AV Link detected : «K»=IR link detected, «-»= not
Character 7 : Password mode: «C»= Password stored, «-»= not

TIME COUNTER - COMPTEUR DE TEMPS - ZÄHLER - CONTATORE - CONTADOR
The counter indicates the TV's number of service hours.It counts from to 0 to 65535 hours.
The display is hexadecimal.
Le compteur de temps indique le nombre d'heures de service du TV. Il compte de 0 à 65535 heures. L'affichage est en hexadécimal.
Der Zähler zeigt an, wieviele Stunden der Fernseher in Betrieb ist. Die Anzeige ist hexadezimal.
Il contatore indica il numero di ore di servizio del TV. Puo' contatore da 0 a 65535. La visualizzazione è esadecimale.
El contador indica el número de horas de servicio de la TV. Cuenta de 0 a 65535 horas. El visualizador es hexadecimal.

2 SUBMENU - SOUS-MENU



ALIGNMENT PROCEDURE - PROCESSUS DE REGLAGES - ABGLEICH - VISUALIZZAZIONE DEL VALORE DI REGOLAZIONE - PROCEDIMIENTO DE ALINEACION

TUBE
Return
Tube type A68EGW...
Store ◁▷ ☑
Restore ☐
Δ UP ∇ DOWN ◁▷ SELECT

SETUP
Return
OSD Position -20
PIN Erase ◁▷ ☑
Clear Progs.
Standard Pan-Euro ...
WSS ☑
Picture Rot * ☑
EPG / AV Link ☑
∇
Δ UP ∇ DOWN ◁▷ CHANGE

page 1
** only some models*

SETUP
Δ
Text Lang.*/ Bus Quiet* 1
Ext.HIFI*/ Dolby Ext.* ☑
IR Download ▷
Reset Equ.* ☐
Default ☐
Store ☑
Restore ☐
Δ UP ∇ DOWN ◁▷ CHANGE

page 2
** only some models*

GEOMETRY FULL SCREEN
Return
Sys. Voltage -3B
H-VCO ◁▷+1B
H-Delay -23
V-Blanking 1E
V-Amplitude +0A
V-Position 1B
∇
Δ UP ∇ DOWN ◁▷ CHANGE

page 1
Test Bar pattern used : 4/3 with geometric circle. Adjust separate for 4/3 and 16/9 format. See annexed

GEOMETRY ZOOM1
Δ
V-Linearity -3B
H-Position ◁▷+0E
H-Amplitude -19
EW-Amplitude +1C
EW-Trapezium 2B
EW-Shape 1D
∇
Δ UP ∇ DOWN ◁▷ CHANGE

page 2

VIDEO PAL
Return
Norm. (Factory) ☑
G2 Alignment ▷
R-Cut off +1B
G-Cut off -1F
R-Drive +3A
G-Drive -3B
B-Drive
Peak-White
∇
Δ UP ∇ DOWN ◁▷ CHANGE

page 1
Color standard or RGB is autodetected and displayed opposite the displayed opposite the menu title.

VIDEO PAL
Δ
Scale Brightness -1A
Scale Colour +24
Scale Contrast -1F
Text Setup ▷
Default ☑
Store ☑
Restore ☑
UP ∇ DOWN ◁▷ CHANGE

page 2

ERROR CODE
Return
Erase Error Codes ◁▷ ☑

CODE	
11	013AF
24	008A0
78	0042A
11	0023F
51	000E3

UP ∇ DOWN ◁▷ CHANGE

PIP*
Return
PIP Contrast ◁▷
PIP H-Pos
PIP V-Pos
Default ☑
Store ☑
Restore ☑
UP ∇ DOWN ◁▷ CHANGE

** only PIP models*

TUBE

Return
Closes the sub-menu and returns to the "Main Service Menu"
Retourne au menu principal.
Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.
Chiude il sottomenu e fa apparire il menu principale Field Service Mode.
Cierra el submenú. El menú Field Service Mode aparece.
Press </>: remote control; Vol. +/- : TV keyb.

Tube type
After replacing the NVM, the correct tube type number must be entered (6 characters).
Once entered, the tubes geometry and video default values are immediately activated.
Variable geometry and video parameters are written to the NVM when the "STORE" line is selected. See below the tube type number list.

Definit le tube exact après changement de NVM.
Les nouvelles valeurs de tubes (avec video et géometrie) sont actives de suite.
Les paramètres de vidéo et de géométrie sont chargés en NVM lorsque STORE est sélectionné. Voir liste ci-dessous.

Nach dem Tausch des NVM (EEPROM) muß der richtige Bildrohrtyp eingegeben werden.
Es werden dann sofort die entsprechenden Geometrie-und Video-Defaultwerte aktiviert.
Variable Geometrie-und Videowerte müssen mit "STORE" in das NVM geschrieben werden.
Liste der Röhren: siehe unten.

Definire il tubo appropriato dopo aver cambiato la NVM; I valori per il nuovo tipo di tubo (con video e forma di default) sono immediatamente attivi. I parametri per video e forma variabili vengono immessi nella NVM quando viene selezionata la funzione Store.
Si veda la lista dei tubi riportata sotto.

Definir el tubo correcto después de haber cambiado el NVM.Los nuevos valores de tipo de tubo (con la vídeo y la geometría por defecto) se activan inmediatamente.
Los parámetros variables de geometría y vídeo se graban en el NVM al seleccionar la función Store. Vea más abajo la lista de tubos.

TUBE NAME	LIST	DESCRIPTION
A59EGD048X322	A59EGD	4/3 25" SF(1)
A66EGW 83X122	A66EGW	4/3 28" MP(1)
A66EHJ43X12	A66EHJ	4/3 28" MP(2)
A68EGD038X322	A68EGD	4/3 29" SF(1)
A80EJA16X122	A80EJA	4/3 33" MP(1)
A90AFX15X12	A90AFX	4/3 37" MP(4)
W66EGV023X122	W66EGV	16/9 28" SF(1)
W76EGV023X122	W76EGV	16/9 32"SF(1)
W76EGX023X122	W76EGX	16/9 32"SF(3)

(1) : Invar,vector gun, BSVM 100 Hz
(2) : AK, Coty-M 100 Hz.
(3) : Invar , Coty-M gun, BSVM
(4) : Invar , Coty MDF gun , BSVM 100Hz

Default tube type :
100Hz A66EGW 83X122 : A66EGW
4/3 28"MP, invar, vector gun, BSVM

➡ After setting ➡ Store (+) ☑

SETUP

Return
Closes the sub-menu and returns to the "Main Service Menu"
Retourne au menu principal.
Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.
Chiude il sottomenu e fa apparire il menu principale Field Service Mode.
Cierra el submenú. El menú Field Service Mode aparece.
Press </>: remote control; Vol. +/- : TV keyb.

OSD Position
Adjusts the position of all Megatext OSD.
Règle la position du texte OSD.
Adjusts the position of all Megatext OSD.
Adjusts the position of all Megatext OSD.
Regula la posición del OSD.

PIN Erase Erases all PINs.
☑ PIN active ☐ No PIN active
Selection : Long press:
Press </>/OK: remote control;Vol. +/- :TV keyb.
Automatically stored.

Clear Prog.
Clears all programms stored in memory and resets all Picture and Sound settings to the factory defaults. The AUTO INSTALL (out of factory) mode can be initialised by a long press (>2.5s.) of the selection button.

Efface tous les programmes mémorisés.
Valeurs SON et IMAGES: valeurs usines.
Fonction valide par une longue pression (>2.5s.) sur la touche de sélection </>.

Löscht alle Programmplätze und setzt alle Bild- und Toneinstellungen auf Fabrikwerte zurück. Der AUTO-INSTALL-Modus kann durch einen langen Knopfdruck (>2,5s) initialisiert werden.

Clear Prog.
Cancella tutti i programmi in memoria e regola i Valori analogici SUONO IMMAGINE: ailivelli di fabbrica.Riportare la TV al modo Selezione: pressione prolungata: 2,5 sec.

Programa de borrado.
Borra todos los programas almacenados en la memoria.Valores analógicos de
IMAGEN y SONIDO: valores de fábrica.Regreso a la TV para "salir del modo fábrica".Selección: Presión larga igual a 2,5 s.

Standard "Pan-Euro" or "I".
BG PAL SECAM,L SECAM (France),
DKK' SECAM,NTSC M,I PAL (UK/IRELAND)

WSS
Automatic detection of DOLBY surround sound and 16/9 format pictures via Teletext line number 23 is valid on all programmes.

Détection automatique du son surround DOLBY et du format 16/9 via la ligne 23 du Teletxte.
Valide pour tous programmes.

WSS (nur bei 16:9 oder Dolby)
Auswertung der Zeile 23 zur automatischen Format-und Dolbyumschaltung.

Identificazione "auto-surround" e "format" via televideo alla riga 23.La selezione di WSS Processing vale per tutti i programmi.

Detección "auto-surround" y "format" a través de la línea 23 de Teletext.La selección del procesamiento WSS es válida para todos los programas.

☑ Detection enable ☐ Detection disable

SETUP

Picture Rot
Enables the "Earth Field Correction" function (EFC) on ICC19-MM by adding a special bargraph in the preferences 2 menu.
It is necessary to validate this function if the SFBEFC correction circuit is fitted.

Valide la fonction "correction de champ magnétique terrestre" (EFC)sur les chassis ICC19-MM par addition d'un bargraphe spécifique dans le menu 2 des préférences. Cette fonction doit être validée lorsque le circuit de correction "SFBEFC" est monté.

Freigabe der Erdfeldkorrektur (EFC) bei ICC19-MM.
Geräten wenn ein SFBEFC-Modul eingebaut ist. Fügt im Menü "Präferenzwerte 2" einen Anzeigebalken hinzu.

Attiva la funzione "Correzione del campo magnetico terrestre" (EFC) sul telaio ICC19- MM, aggiungendo una speciale barra grafica nei menù di preferenza 2.
Se il circuito di correzione è montato, è necessario convalidare questa funzione.

Valida la función "corrección del campo magnético terrestre" (EFc) en los chasis ICC19 MM añadiendo una barra gráfica en el menú 2 de preferencias.
Es necesario validar ésta función si el circuito de corrección SFBEFC está montado.

☑ Rotation bargraph available in picture 2 menu, EFC function active
☐ Rotation bargraph suppressed from picture 2 menu, EFC function disactivated

EPG / AV Link
Enables or disables the option to decode and display EPG program data.
Validation ou inhibition du décodage/affichage des données du programme EPG.
Zulassen oder Nichtzulassen von EPG.
Abilita o disabilita l'opzione di decodifica e visualizzazione dati programmi EPG.
Valida o inhibe la opción de descodificación y visualización de datos del programa EPG.
☑ Available ☐ Not available

SETUP

Text. Lang. Teletext language :

0	1	2	3
English	Polish	English(US)	English
German	German	German	German
Swedish	Swedish	Swedish	Swedish
Italian	Italian	Italian	Italian
French	French	French	French
Portug.	Serbocroat	Portug.	Portug.
Czech/Slov.	Czech/Slov.	Czech/Slov.	Turkish.
-	Rumanian	English(UK).	-

Bus Quiet
Factory adjust reserved.

EXT.HIFI / Dolby Ext.
Dolby Internal; not available on Normal Sound TV's
☑ **Dolby with External Loudspeaker.** ☐ Dolby with Internal Loudspeakers.
External HIFI Not available on Dolby TV's
☑ External HIFI control ☐ Normal sound control

IR Download
Download screen for receiving mapping via IR data.
Ecran de chargement pour réception "mapping" via IR data
Laden des Programmschemas per AV-Link
Trasferimento IR
Trasferire schermo per ricezione mappatura via dati IR
Descarga de IR
Pantalla de descarga para recibir el mapeado a través de los datos IR.

IR Download
Programme 00
Return / Abort ◁
IR Download active

"Programme 00" : function is active or finished.
Return / Abort : To exit/Abort the menu press "left" arrow key or Volume - key of keyboard.
All other IR commands have no response.

"Programme 00" : Fonction active ou finie.
Return / Abort : Pour sortir du menu appuyer sur la touche "gauche" ou "Volume -" du clavier.
Les autres commandes IR sont sans réponse;

"Programme00":Funktion ist aktiv oder beendet
"Return/Abort": Beenden oder Abbruch der Funktion durch Drücken der linken Pfeiltaste oder "Lautstärke-" am Gerät.Alle anderen Tasten haben keine Funktion.

Programma 00: la funzione è attiva o finita.
Return/Abort: per uscire dal menu, premere il tasto "sinistra" del telecomando o il tasto Volume- della tastiera.
Tutti gli altri comandi IR sono senza risposta.

"Programme00" : función activa o terminada.
"Return / Abort" : para salir / abortar, pulsar la tecla "flechaizquierda" o la tecla "volumen -" del teclado.
Todos los demás comandos IR son inoperantes

Reset Equ. Reset Equaliser
Not available
Non disponible

➡ After setting ➡ Store (+) ☑

GEOMETRY

Return
Closes the sub-menu and returns to the "Main Service Menu"
Retourne au menu principal.
Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.
Chiude il sottomenu e fa apparire il menu principale Field Service Mode.
Cierra el submenú. El menú Field Service Mode aparece.
Press </>: remote control; Vol. +/- : TV keyb.

System Voltage
Only possible via the local keyboard Vol +/- .

TUBE NAME	DESCRIPT.	Usys
A59EGD048X322	4/3 25" SF	137V +/- 0.5V
A66EGW83X122	4/3 28"MP	137V +/-0.5V
A66EHJ43X12	4/3 28" MP	134V +/- 0.5V
A68EGD038X300/322	4/3 29" SF	137V +/-0.5V
A80EJA16X122	4/3 33" MP	137V +/- 0.5V
A90AFX15X12	4/3 37" MP	137V =/-0.5V
W66EGV023X122	16/9 28" SF	134V +/- 0.5V
	PANORAMA	140V +/- 0.5V
W76EGV023X122	16/9 32"SF	134V+/- 0.5V
	PANORAMA	140V +/- 0.5V
W76EGX023X122	16/9 32"SF	134V +/- 0.5V

H-VCO Horizontal - VCO Oscillator.
Adjust the value of H-VCO until the speed of the unsynchronised picture becomes stable. (i.e minimum roll).
Agir sur H-VCO pour obtenir une image la plus proche de la synchronisation
H_VCO auf Schwebung abgleichen.
Regolare l'H_VCO finché l'immagine non sincronizzata non avrà raggiunto la velocità minima.
Ajuste H_VCO hasta que la imagen no sincronizada alcance su velocidad más baja.
default value = 0FH
Press </>: remote control; Vol. +/- : RP keyb.

H-Delay — Horizontal delay Use "+" and "-" to adapt the image

V-Blanking
1-Adjust V-amp. for a 107% over scanned picture.
2- Reduce V-blanking for visible lines top and bottom of screen.
3-Increase step by step V-blanking until at the cut- off lines at the top and bottom of the screen disappears.
4- Increase one more step
5- Fine adjust V-amp. and V-position

1-V-amp. amplitude verticale suffisante (>7% overscan)
2- réduire V-blanking:visible en haut et bas.
3-Agir étape par étape jusqu'à disparition du blanking en bas d'image et des lignes de cut-off en haut d'écran
4- Augmenter d'une valeur.
5- Faire un réglage fin de V-amp. et V-position

1- Voreinstellung der V-amp auf: >7% Überschreibung.
2- Reduzieren Sie V-Blanking soweit bis die ersten geschriebenen Zeilen am oberen Bildrand sichtbar werden.
3- Erhöhen Sie V-Blanking Schritt für Schritt bis die Cut-Off Meßzeilen gerade am oberen Bildrand verschwinden.
4- Erhöhen Sie V-Blanking um eine Stufe.
5- Feineinstellung von V-amp und V-position.

1- Ampiezza verticale: grande a sufficienza (7% di sovrascansioni)
2- Riduzione della soppressione verticale: visibile in alto e in basso
3- Aumentare passo/passo: finche'le linee di cut off nella parte alta dello schermo scompaiono.
4- Aumentare ancora di un passo
5- Regolare con precisione l'ampiezza e la posizione verticali

1- Amplitud V: suficientemente grande (7% de sobreexploración)
2- Reducir el borrado V: visible en las partes superior e inferior.
3- Aumentar el paso a paso: el borrado en la parte inferior y las líneas de cut-off en la parte superior desaparecen.
4- Aumentar de otro paso.
5- Ajustar finamente la amplitud V y la posición V.

V-Amplitude
V-Position

➡ After setting ➡ Store (+) ☑

GEOMETRY

V-Linearity
H-Position
H-Amplitude
EW - Amplitude
EW - Trapezium
EW -Shape

GEOMETRY ZOOM0
Δ
Default ☐
Store ☑
Restore ☐
Δ UP ∇ DOWN ◁▷ CHANGE

page 3

➡ After setting ➡ Store (+) ☑

VIDEO PAL

Return
Closes the sub-menu and returns to the "Main Service Menu"
Retourne au menu principal.
Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.
Chiude il sottomenu e fa apparire il menu principale Field Service Mode.
Cierra el submenú. El menú Field Service Mode aparece.
Press </>: remote control; Vol. +/- : TV keyb.

Norm. (Factory)
Recalls the factory settings for Colour, Brightness, Contrast, Sharpness and sets Contrast Expand to "LOW".
☑ Factory settings recalled
☐ User settings kept.

G2 Alignment Special menu displayed:
Initially set R-Cut Off and G-Cut off to 80H
Return◂ R=6B G=60 B=71
RGB cutoff counters
Adjust the lowest value with SCREEN poentiometer to:

Tube Type	Value	Tube Type	Value
A59EGD	50H	A90AFX	50H
A66EGW	60H	W66EGV	50H
A66EHJ	50H	W76EGV	60H
A68EGD	50H	W76EGX	60H
A80EGV	60H		
A80EJA	60H		

To return to the Video Submenu:
Press </>/OK: remote control;Vol. +/- :TV keyb.
Select"Restore" to restore the cut off values.

R-Cut off*
G-Cut off*
☼+◑+◐=nom.
Grey scale test pattern white =100%
grey

R - Drive
G - Drive
B - Drive
☼+◑+◐=nom.
Grey scale test pattern white =100%
white

Peak-White**
☼+◐+◑=nom.
Peek white test pattern white =100%
Colourimeter

Tube Type	[Nits]	Tube Type	[Nits]
A59EGD	400	A90AFX	-
A66EHJ	300	W66EGV	480
A66EGW	370	W76EGV	380
A68EGD	350	W76EGX	380
A80EJA	350		

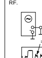
➡ After setting ➡ Store (+) ☑

Note :
* adjust separate for PAL/NTSC/SECAM and RGB/AV
* * After PEAK white adjustment control cut off setting. Repeat the adjustments if necessary.

VIDEO PAL

Scal. Brightness
☼+◑ = 50%
◐ = 100%
Grey scale test pattern white =100%
black

Scal*. Colour
☼+◑+◐=nom.
PAL (then SECAM +RGB) 75% Colour bar test pattern via RF.



Scal. Contrast factory settings.

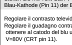
Text Set-up Mode ☼+◑+◐=nom.
Set Text Contr. to 80H.
Adjust Text Gain for V=80V at pin 11 (Blue) of the CRT

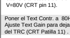
Mettre Text Contr. à la valeur 80H.
Ajuster Text Gain pour obtenir un niveau de sortie V=80V sur la cathode Bleue du tube (point 11 de la CRT).

Stellen Sie Text Contr. auf 80H ein.
Stellen Sie mit Text Gain V=80V an der Blau-Kathode (Pin 11) der Bildröhre ein.

Regolare il contrasto televideo a 80H.
Regolare il guadagno contrasto televideo per ottenere al catodo del blu un livello pari a V=80V (CRT pin 11).

Poner el Text Contr. a 80H.
Ajuste Text Gain para dejar V=80V en azul del TRC (CRT Patilla 11) .





CRT Pin 11

➡ After setting ➡ Store (+) ☑

ERROR CODE

Return
Closes the sub-menu and returns to the "Main Service Menu"
Retourne au menu principal.
Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.
Chiude il sottomenu e fa apparire il menu principale Field Service Mode.
Cierra el submenú. El menú Field Service Mode aparece.
Press </>: remote control; Vol. +/- : TV keyb.

Erase Error Codes To clear all error codes stored in the NVM. Action: Long press (> 2.5sec.).
Press </>/OK: remote control;Vol. +/- :TV keyb.

CODE LED Error Codes

The last five error codes are stored and displayed as they occured in real time, the most recent error code is displayed on the top line. A repeated top line error code has its real time count updated. There are 27 different error codes, which are signalled by the TV's Standby LED, ranging in value from 11 to 49 hex.
The error code is displayed as two separate digits separated by a suitable pause, this is repeated until the either the TV fixes the fault or the TV is repaired.
For example Error-code : 23 will be displayed thus :
2 flashes and a short pause
3 flashes and a long pause
....
List of Errors Codes : see table

Mémorise les cinq derniers codes erreurs et affiche en haut d'écran les plus récents.
27 codes erreurs différents sont signalés par deux digits selon une séquence spécifique
Exemple :
Code erreur : 23 affiché
2 flashes, courte pause
3 flashes : longue pause
....
Voir cicontre la liste des codes erreurs

Zeigt die letzen 5 Fehlercodes mit der Laufzeit an.
Der zuletzt aufgetretene Fehler steht an erster Stelle.
Sollte ein Fehler wiederholt auftreten wird nur die Laufzeit aktualisiert.
Die Fehlercodes können im Menü Error Code angezeigt werden oder über die Kontroll LED angezeigt werden;

Beispiel für die Anzeige über die Kontroll LED:

Fehlercode 23 :
Zweimaliges Blinken der LED, kurze Pause.
Dreimaliges Blinken der LED, lange Pause.
Auflistung der Fehlercodes : siehe Liste

Memorizza gli ultimi cinque codici d'errore (differenti tra loro) dopo che ognuno di essi si verrà visualizzato (attraverso il contatore della durata di esecuzione). L'errore più recente viene visualizzato in cima. La ripetizione del codice di errore in cima alla lista non farà altro che aggiornare la durata di esecuzione. Dal LED del TV vengono segnalati 27 codici d'errore differenti, numerati da 11 a 44. Il codice d'errore è indicato da due cifre separate da un opportuno intervallo di tempo e verrà ripetuto fino a quando il televisore non sarà stato riparato o non si sarà corretto da solo.
Ad es:
Il codice d'errore 23 visualizzerà:
2 segnali luminosi con pausa breve
3 segnali luminosi con pausa lunga
Per la lista dei Codici d'Errore, si veda la tabella

Guarda los últimos cinco códigos de error cuando cada uno ocurre (gracias al contador de tiempo de ejecución). El error más reciente se visualiza en la parte superior. Una repetición del código de error en la parte superior de la lista solamente actualiza el tiempo de ejecución. El indicador TV LED indica 27 códigos de error diferentes: de 11 a 44. El código de error se señala en forma de dos dígitos separados con una pausa apropiada entre los dos y se repetirá hasta que repare el TV o él se repara a sí mismo.
Por ejemplo,
Se va visualizar el código de error 23:
2 parpadeos, una pausa corta;
3 parpadeos, una pausa larga.
Para la Lista de códigos de error, consulte la tabla.

PIP

Return
Closes the sub-menu and returns to the "Main Service Menu"
Retourne au menu principal.
Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.
Chiude il sottomenu e fa apparire il menu principale Field Service Mode.
Cierra el submenú. El menú Field Service Mode aparece.
Press </>: remote control; Vol. +/- : TV keyb.

PIP Contrast ☼+◑+◐ = 50%
Video Pattern on AV1 (W=100%)

Y PIP picture = Y main picture

PIP H-Pos - PIP V-Pos
Factory adjustments.These adjustments are optimized by software.
Used only if necessary.
Réglages usines. Ces réglages sont optimisés par le software.
Ils ne sont à utiliser que si nécessaire.
Factory adjustments.These adjustments are optimized by software.
Used only if necessary.
Factory adjustments.These adjustments are optimized by software.
Used only if necessary.
Ajustes de fábrica. Estos ajustes están optimizados por software.
Utilizar sólo en caso necesario.

PIP H -Pos ☼+◑+◐=50%
Colour bar test pattern
A = B (*)

PIP V -Pos ☼+◑+◐=50%
Colour bar test pattern
(*)

(*) Center PIP image in the frame
Centrer l'image PIP
PIP -bild im fenster testbilds
Centrare l'immagine PIP sullo schermo
Centre la imagen PIP en el marco

➡ After setting ➡ Store (+) ☑

ERROR CODES

GB
11 1st Audio_MSP doesn't answer
12 2nd Audio-MSP doesn't answer
13 Audio-DSP doesn't answer
14 Video IC STV2161/2 doesn't answer
15 Chroma IC 2151/9143 doesn't answer
16 Upconverter DMU0 doesn't answer
17 Audio (or Dolby) module not detected
18 SCART IC TEA6415C doesn't answer
19 Tuner CTT5000 doesn't answer
21 I2C Bus1 data line held low
22 I2C Bus2 data line held low
23 I2C Bus1 clock line held low
24 I2C Bus2 clock line held low
25 Switched 5V not available
26 Tube doesn't get warm in time
27 Deflection detects >3 times protection (problem detected on "breathing" line)
29 DRAM memory of Megatext defect
31 RAM is full
32 Software-timer isn't available
33 The PSI chip (STV2165) doesn't answer
34 The NVM (X24C32) chip doesnt answer
35 13V not available
36 Wrong addr. NVRAM passed to the bus-handler
37 Unexpected level on NMI (Interrupt) line found (possible cause : tube flashover)
38 M3LBus for Megatext is blocked
39 Megatext (SDA5273) doesn't answer
41 Bus1 Data Line not recoverable
42 bus2 Data Line not recoverable
43 MCU (Motion Mastering Up-Converter) doesn't answer
45 Defect "Video Module" is detected
51 PIP Module doesn't answer.
52 The Teletext module is not conform .

F
11 Processeur Audio MSP ne répond plus
12 Deuxième MSP ne répond plus (Dolby)
13 Audio-DSP ne répond plus (produit Dolby)
14 Video-IC STV2161 ou 2162 ne répond plus
15 Chroma-IC STV2151 ou TDA9143 ne répond plus
16 Convertisseur de frequence d'image digital DMU0 (Intelligent Mastering) ne répond plus
17 Module son (ou Dolby) n'est pas détecté
18 Commutateur SCART TEA6415C ne répond plus
19 Tuner CTT5000 ne répond plus
21 I2C-bus 1 data bloqué au niveau bas
22 I2C-bus 1 clock bloqué au niveau bas
23 I2C-bus 2 data bloqué au niveau bas
24 I2C-bus 2 clock bloqué au niveau bas
25 Le "5V commuté" n'est pas disponible
26 Tube ne chauffe pas a temps
27 Plus que 3-fois la déflection a détecté une "protection" (c'est-a-dire qu'il y a un problème détecté sur la ligne "breathing")
29 Mémoire (DRAM) du Megatext est en panne
31 Plus de place en RAM
33 STV 2165 (PSI 100Hz) ne répond plus
34 NVM (mémoire) X24C32 ne répond plus
35 +13V n'est pas disponible
36 Adresse NVRAM inconnue
37 Problème détecté sur la ligne "Interrupt" pendant le démarrage ou le fonctionnement duTV. Possibilité: "arking"?
38 Bus M3L pour Megatext est bloqué
39 Megatext (SDA5273) ne répond plus
41 I2C-bus 1 data reste blocqué
42 I2C-bus 2 data reste blocqué
43 MCU (convertisseur de frequence d'image digital: Motion Mastering) ne répond plus
45 "Vidéo Module" erroné détecté
51 Le module PIP ne répond plus.
52 Le Module Text (DVT) n'est pas le bon.

D
11 Audio MSP Prozessor antwortet nicht.
12 Zweiter Audio MSP Prozessor antwortet nicht.(Dolby)
13 Audio DSP Prozessor antwortet nicht. (Dolby)
14 IC STV2161/62 antwortet nicht
15 IC STV2151 / TDA9143 antwortet nicht
16 DMU0 Upconverter (Videomodul) antwortet nicht
17 Audio- oder Dolby-Modul nicht erkannt
18 TEA6415C antwortet nicht (SCART-Schalter)
19 Tuner CTT5000 antwortet nicht
21 I2C Bus1 data line ist auf low
22 I2C Bus2 data line ist auf low
23 I2C Bus1 clock line ist auf low
24 I2C Bus2 clock line ist auf low
25 Geschaltete 5V nicht vorhanden
26 Röhre wird nicht rechtzeitig warm
27 Ablenkung meldet 3 mal Fehler. (Problem auf Breathing Leitung)
29 DRAM des Megatext defekt
31 RAM antwortet nicht
33 STV 2165 (PSI 100Hz) antwortet nicht
34 NVM Chip antwortet nicht (X24C32)
35 +13V nicht vorhanden
37 Unerwarteter Zustand an NMI (Interrupt) line gefunden. (Mögliche Ursache = Röhren-Überschlag")
38 M3L Bus des Megatext blockiert
39 Megatext (SDA 5273) antwortet nicht
41 Bus1 (data line) nicht möglich zu reaktivieren
42 Bus2 (data line) nicht möglich zu reaktivieren
43 MCU (Motion Mastering Up-Converter) antwortet nicht
45 falsches Videomodul (falscher MCU)
51 PIP antwortet nicht
52 Falsches Videotextmodul.

I
11 Il primo IC Audio MSP non risponde
12 Il secondo IC Audio MSP non risponde
13 L'integrato Audio DSP non risponde
14 L' IC 2161/2 non risponde
15 L'IC 2151/9143 non risponde
16 Il convertitore non risponde
17 Il Modulo Audio non viene identificato
18 Il TEA6415C non risponde
19 Il sintonizzatore non risponde
21 Linea data I2C bus 1 forzata bassa
22 Linea I2C bus 2 forzata bassa
23 Linea clock I2C bus 1 forzata bassa
24 Linea clock I2C bus 2 forzata bassa
25 La tensione 5V commutati non disponibile
26 Il tubo non raggiunge la corretta temperatura nel tempo stabilito
27 Per 3 volte, la deflessione ha rilevato una protezione (problema riscontrato dalle linee "breathing")
29 Difetto alla DRAM di Megatext
31 La RAM è satura
33 Il chip PSI non risponde
34 Il chip NVM non risponde
35 13V non disponibile
37 Livello imprevisto sulla linea NMI
38 Bus M3L per Megatext bloccato
39 Megatext non risponde
41 Bus 1 (linea dati) non ripristinabile
42 Bus 2 (linea dati) non ripristinabile
43 MCU non risponde
45 rivelato Modulo Video difettoso
51 Il Modulo PIP non viene identificato
52 Il modulo Televideo non è conforme

E
11 Procesador de audio MSP no responde
12 Segundo MSP no responde (Dolby)
13 Audio DSP no responde
14 Cir. integrado de video STV2161 ó 2162 no responde
15 Cir. integrado croma ST2151 ó TDA9143 no responde
16 Convertidor de frecuencia de imagen digital DMU0 (Mastering Inteligente) no responde
17 Módulo de sonido (o Dolby) no se detecta
18 Conmutador Scart (TEA6415C) no responde
19 Tuner CTT5000 no responde
21 Data 1 del bus I2C permanece en bajo
22 Clock 1 del bus I2C permanece en bajo
23 Data 2 del bus I2C permanece en bajo
24 Clock 2 del bus I2C permanece en bajo
25 No se dispone de los "5v conmutados"
26 El tubo tarda en calentarse
27 La protección de la deflexión actúa mas de 3 veces (el problema se detecta en la línea de "breathing")
29 La memoria DRAM del Megatext está defectuosa
31 RAM está llena
33 El chip STV2161 (PSI 100Hz) no responde
34 La memoria no volátil X24C32 no responde
35 No están disponibles los + 13 v.
37 Problema detectado en la línea "Interrupt" durante el arranque o el funcionamiento del TV.Posibilidad de chispazos en muy alta?
38 El bus M3L para el Megatext está bloqueado
39 Megatext (SDA5273) no responde
41 Data 1 del bus I2C permanece boqueado
42 Data 2 del bus I2C permanece bloqueado
43 MCU (convertidor de frecuencia de imagen digital: Motion Mastering) no responde
45 Fallo detectado en el módulo de Video
51 El módulo PIP no responde

GEOMETRY MODE ALIGNMENT - 100Hz VERSION

4/3 picture tube

Signal : 4/3 test pattern

4 / 3 standard mode zoom 0

100Hz Version : overscan V=107% , H=107%
1- Adjust Vertical position and Vertical amplitude
2- Adjust Vertical Blanking and linearity
3- Adjust Horizontal position and Horizontal ampltude
4-Adjust EW Amplitude ,EW Shape and Trapezium

<4/3> zoom 1

100 Hz Version : overscan V=120% , H=120%

16 / 9 standard mode zoom 0

Adjust the vertical height until V = 80%

<16 / 9> zoom 1

Adjust the vertical height : V =90%

16/9 picture tube

Signal : 4/3 test pattern

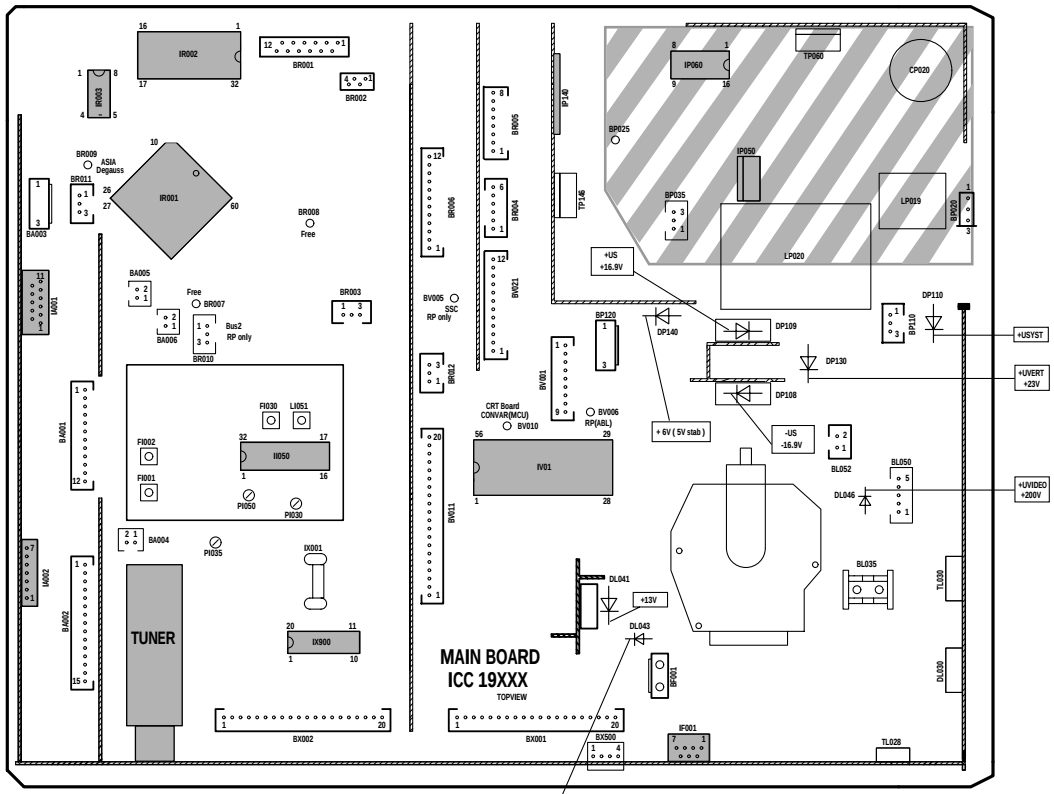
16 / 9 standard mode zoom 0

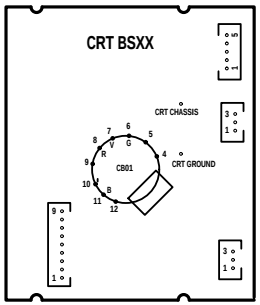
100Hz Version : overscan V=107%, H =107%
1- Adjust Vertical position and Vertical amplitude
2- Adjust Vertical Blanking and linearity
3- Adjust Horizontal position and Horizontal ampltude
4-Adjust EW Amplitude ,EW Shape and Trapezium

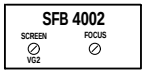
4 /3 PANORAMA mode

100Hz Version : Mode PANORAMA
overscan V=114%, H =107%
1- Adjust Vertical amplitude and Horizontal amplitude
2- Adjust Horizontal position EW Amplitude

LOCATION OF CONTROLS - EMPLACEMENT DES REGLAGES - SERVICE LAGEPLAN - POSIZIONE REGULATORI DI SERVIZIO - SITUACIÓN DE LOS AJUSTES







Do not disconnect modules when they are energized ! Repairs on power supply section are to be carried out only with isolating transformer.

Ne pas retirer les modules lorsqu'ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch mode) qu'au travers d'un transformateur d'isolement.

Module nicht bei eingeschaltetem Gerät entfernen ! Servcearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegarei moduli quando sono alimentati ! intraprendere riparazioni sulla sezione alimentatore solo con transformatore isolante.

No desconectar los módulos cuando están activados ! Las reparaciones en la sección de alimentación de energia deben ser ejecutadas solamente con un transformador de separacíon.

Part of Board connected to mains supply.
Partie du châssis reliée au secteur.
Primärseitedes Netzteils
Parte del panello collegato alla rete di alimentazione
Parte del chasis conectada a la red

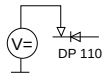
ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U Sys

SERVICE MODE

Standard TV - Settings : OMA Position

TV to AV1 : Black test pattern



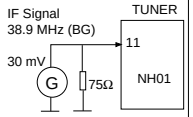
TUBE NAME	DESCRIPTION	Usys jumper	Usys
A66EGW 48X322	4/3 28" MP	JP915	134V +/- 0.5V
A59EGD048X322	4/3 25" SF	JP914	137V +/- 0.5V
A68EGD038X322	4/3 29" SF	JP914	137V +/-0.5V
A68EES038X322	4/3 29" SF	JP914	137V +/- 0.5V
W66EGV023X122	16/9 28" SF	JP915	134V +/- 0.5V
W76EGV023X122	16/9 32"SF	JP915	134V+/- 0.5V
W76EGV023X122	16/9 28"SF	JP915	134V +/- 0.5V
W76EGX023X122	16/9 32"SF	JP915	134V +/- 0.5V

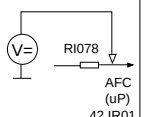
IF Alignment

VCO
Standard BG

FI030

Switch set to standard BG





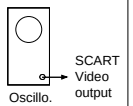
Adjust FI30 / PI54 for 2,5VDC +/-0.1V

VIDEO-LEVEL Alignment

PI030

PI035

Standard Signal (BG / L)
15kHz test pattern
3 mV
G
75Ω
TV set
Antenna



Adjust PI030 : standard BG
Adjust PI035 : standard L

for V = 0,7 Vpp (Black/white level)

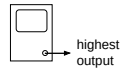
U G2

METHOD 1
Measurment method

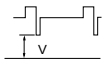
G2 poten-tiometer

Standard TV - Settings : OMA Position

TV to AV1 : Black test pattern



CRT 1910X (100Hz) :
R signal : IB01 Pin 15
G signal : IB03 Pin 15
B signal : IB02 Pin 15



1 - Adjust VG2 : V= 160V +/- 5 V
2 - Adjust Focus
3 - Adjust VG2 : V= 160V +/- 3V

METHOD 2
Cutoff counter method

SERVICE MODE

SERVICE MODE

Standard TV - Settings : OMA Position

No test pattern (generated by internal text processor).

Adjust R-Cut off and G-Cut-off to 80H temporary.
Select G2 Alignment in Service Mode
Adjust the lowest value to:

Select "Restore" in Service Mode and press "OK" to restore the cut-off values.

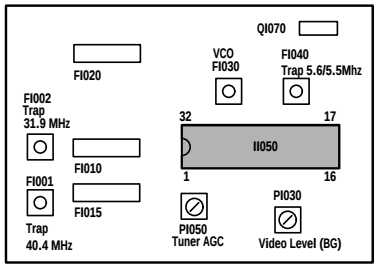
Tube Type	Value
A66EGW	60H
A59EGD	50H
A68EGD	50H
A68EES	-
W66EGV	50H
W76EGV	60H
A90AFF	50H
RP 4/3	-
RP 16/9	-

FOCUS

FOCUS

Test pattern (standard values)

Sharp picture



PI035

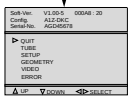
SERVICE MODE (GB) | MODE SERVICE (F) | SERVICE - MODE (D) | SERVICE - MODE (I) | MODO SERVICIO (E)

I - ENTER/EXIT SERVICE MODE - ENTREE/SORTIE DU MODE SERVICE - EIN-AUSTIEG SERVICE MODE - ACCESSO/USCITA ALLA/DALLA FUNZIONE - ENTRADA/SALIDA MODO SERVICIO

1 ACCESSING SERVICE MODE

TV Control Panel Access

- Turn "Off" thte TV using the **ON/OFF** button.
- Press the **PR-** and **VOL-** buttons ,hold them down and switch "On" the TV with the **ON/OFF** button.
- After the normal switch on time the main service menu appears on the screen.



Note :
In service mode :
- *The child lock function is re-initialized*
- *The look function (PIN Number) is ignored.*
- *Clear any wake-up/sleep timers*
- *Pin 8 of the scart plug has to be ignored.*
- *AV- Link WSS detection , EPG and Teletext have to be disabled.*
- *Automatic stand-by functions, in case of no antenna signal have to be disabled.*
- *Contrast, colour, brightness : factory settings.*
- *Sharpness : middle (nominal)*
- *Contrast expander to low.*
- *Install Mode disabled.*
- *Default format and zoom..*

Nota :
En modo servicio:
- *Se ignora la función de bloqueo y se inicializa la función "cerradura ninos".*
- *Anula todos las horas programadas*
- *La pattilla 8 del SCART es ignorada*
- *La detección WSS AV Link, EPG, y Teletxto son desactivados.*
- *El apagado automático en caso de ausencia de señal de antena es desactivado.*
- *El contraste,color y brillo son puestos a los valores de fábrica.*
- *la reloj/ez es puesta al punto medio.*
- *La expansión de contrast al nivel bajo*
- *Modo Instalación es desactivado.*
- *Zoom y formato ignorados.*

2 TEMPORARY EXIT FROM SERVICE MODE

- Press Exit on the Remote control.
- Everyday use menu can be accessed via Menu button.

- Field Service Menu can be re-entrered via Blue button.

3 EXITING FROM SERVICE MODE

Remote Control | **TV control panel** | **on/off key or Stand-by**

- Go to the point QUIT in the Field service Mode main menu.
- Press «^», «OK» or «v» button
- Stand-by function or «off» with on/off key.
- Press «VOL.+»button

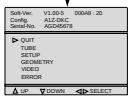
- TV mode.

Values or adjustments are no stored before exiting from service mode will not be written into the NVM

1 ACCES AU MODE SERVICE

Accès avec le clavier du téléviseur

- Arrêter le TV avec la touche **M/A.**
- Tout en appuyant sur les touches **PR -** et **VOL - ,** mettre le TV en service à l'aide de la touche **M/A**.
- Maintenir enfoncées les touches **PR -** et **VOL -**.
- Le menu suivant apparaît.



Note :
En mode service:
- *Le verrouillage parental est effacé (réinitialisé).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *La programmation des heures «reveille/matin» est annulée.*
- *Possibilité de passer en mode service avec commutation lente active.*
- *AV- Link WSS détection , EPG and Teletext have to be disabled.*
- *AV- Link , la détection WSS, l'EPG et le Vidéotexte ne sont pas validés.*
- *La fonction de stand-by automatique en cas d'absence de signal d'antenne n'est pas validée.*
- *Les valeurs de réglages usine sont affectées au contraste, à la couleur et à la lumière.*
- *Le contour est appelé à sa valeur moyenne.*
- *L'expansion contraste est au niveau bas.*
- *Le mode d'installation et l'ambiance «Light sensor» ne sont pas validés.*
- *Zoom et format ignorées.*

2 SORTIE TEMPORAIRE DU MODE SERVICE

- Utiliser la touche Exit de la télécommande.
- Le menu utilisateur peut être accessible via la touche «Menu».

- Pour entrer à nouveau dans le mode service utiliser la touche bleue.

3 SORTIE DEFINITIVE DU MODE SERVICE

télécommande | **clavier du téléviseur** | **Inter M/A ou Stand-by**

- Aller au point «QUIT» dans le menu principal du mode service.
- Appuyer sur «^», «OK» ou «v»
- Appuyer sur «VOL.+»
- Foncion Stand-by ou «off» par M/A.

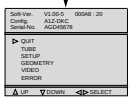
Mode TV.

Les valeurs ou réglages non mémorisées avant la sortie ne seront pas écrites en NVM.

1 EINSTIEG IN DEN SERVICE MODE

Zugriff über die Tastatur des Fernsehgerätes

- **Fernsehgerät** über die EIN/AUS - Taste ausschalten.
- Gleichzeitig die Tasten PR- und VOL- drücken und den TV über die EIN/AUS-Taste einschalten.
- Die Tasten PR- und VOL - gedrückt halten.



Anmerkung :
Im SERVICE MODE :
- *wird die Sperrfunktion (PIN-Nummer) ignoriert und die Kindersicherung gelöscht (reinitialisiert).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *wenden alle Ein- und Ausschaltzeitgeber gelöscht.*
- *wird die SCART - Schaltspannung ignoriert.*
- *wenden AV- Link WSS, EPG und Teletext gesperrt*
- *wird die Automatische Abschaltung bei fehlendem Antennensignal gesperrt.*
- *werden Kontrast, Farbe und Helligkeit auf standardwerte gesetzt.*
- *wird die bildschärfe auf Mittelstellung (nominal) gesetzt.*
- *wird der Kontrast-Expander auf "gering.." gesetzt.*
- *wird der Installations Modus gesperrt.*
- *wird das Standardformat bzw. der Standard-Zoom-modus gewählt.*

2 VORÜBERGEHENDES VERLASSEN DES SERVICE MODE

- Auf der Fernbedienung EXIT drücken.
- Mit der Taste Menü gelangen Sie zum Menü Übersicht

- Mit der blauen Taste gelangen sie zum Service-Menü.

3 ENDGÜLTIGES VERLASSEN DES SERVICE MODE

Fernbedienung | **TV-Bedienfeld** | **EIN /Aus - Taste**

- Wenn der Zeiger im Hauptmenü des Service-Modus auf BEENDEN steht
- Taste «^», «OK» oder «v»drücken
- Mit Standby-Funktion oder **EIN/AUS** - taste ausschalten
- Taste «VOL+» drücken

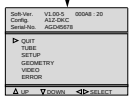
- TV Modus

Werte und Einstellungen, die nicht vor dem Verlassen des Service-Modus gespeichert wurden, werden nicht in den Permanentspeicher übernommen

1 ACCESSO AL SERVICE MODO

tramite i comandi del televisore

- Spegnere il TV mediante il pulsante ON/OFF.
- Premere i tasti **PR- e VOL-** accendendo il TV con il pulsante ON/OFF.
- Premere i pulsanti **PR - e VOL -**.



Nota :
Nel service mode:
- *la funzione Blocco (Numero Pin) viene ignorata e la funzione Blocco Bambini è reinvalizzata.*
- *Cancellare la programmazione sveglia*
- *Il piedino 8 della scart deve essere ignorato.*
- *I riconoscimenti AV-Link WSS, EPG e televideo deveno essere disabilitati.*
- *Funzione automatica di standby, nel caso di mancanza del segnale d'antenna deve essere disabilitata.*
- *Contrasto, colore, luminosità : regolazioni di fabrica.*
- *Nitidezza media (nominale)*
- *Espansore contrasto troppo basso.*
- *Modo Install disabilitato.*
- *Formato default e zoom.*

2 USCITA TEMPORANEA DAL SERVICE MODE

- Premere Exit sul telecomando.
- Al menu di uso quotidiano si accede attraverso il pulsante Menu.

- È possibile rientrate nel Menu Field Service attraverso il pulsante Blue.

3 USCIRE DAL SERVICE MODE

telecomando | **Panello controllo TV** | **Tasto on/off di**

- Andare al punto QUIT nel Modo Field service del Menu principale
- Premere «^»,«OK» o «v»
- Premere «VOL.+»

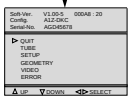
- Modo TV.

Valori e regolazioni non vengono memorizzati prima di uscire dal Modo service e non vengono scritti nell'NVM

1 ACCESO AL MODO SERVICIO

Acceso panel control TV

- Apague la TV con el botón MARCHA.PARADA.
- Pulse los botones **PR -** y **VOL -** y sin soltarlos,pulsar la tecla MARCHA.PARADA.
- Libere los botones **PR -** y **VOL -** .



Nota :
En modo servicio:
- *Se ignora la función de bloqueo y se inicializa la función "cerradura ninos":*
- *Anula todos las horas programadas*
- *La pattilla 8 del SCART es ignorada*
- *La detección WSS AV Link, EPG, y Telexto son desactivados.*
- *El apagado automático en caso de ausencia de señal de antena es desactivado.*
- *El contraste,color y brillo son puestos a los valores de fábrica.*
- *la reloj/ez es puesta al punto medio.*
- *La expansión de contrast al nivel bajo*
- *Modo Instalación es desactivado.*
- *Zoom y formato ignorados.*

2 SALIDA TEMPORAL DEL MODO SERVICIO

- Pulse Salir en el mando a distancia
- Con el botón Menu puede acceder al menú de uso cotidiano.

- Puede entrar al Menú Servicio con el botón azul.

3 SALIDA DEL MODO SERVICIO

telecomando | **Panel de control TV** | **Tecla on/off de**

- Vaya al punto QUIT del menú principal de modo Servicio
- Pulse el botón «^»,«OK» o «v»
- Función Stand-by o desconexión (off) con tecla on/off.

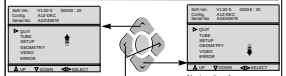
- Pulse el botón«VOL.+»

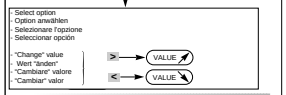
- Modo TV.

Los valores o ajustes no se guardan antes de salir del modo servicio y no se escriben en el NVM

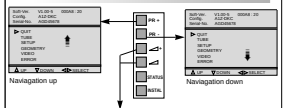
II - NAVIGATION INSIDE THE SERVICE MODE - DEPLACEMENT DANS LE MODE SERVICE SUCHE IN SERVICE MODE - OPZIONI NEL SERVICE MODE - BUSQUEDA EN MODO SERVICIO

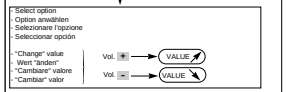
1 REMOTE CONTROL - TELECOMMANDE - FERNBEDIENUNG TELECOMANDO - MANDO A DISTANCIA





2 TV CONTROL PANEL - CLAVIER TV - TASTATUR DES FERNSEHGERÄTS - COMANDI DEL TELEVISORE -

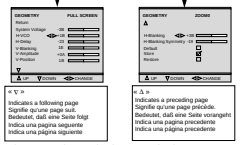


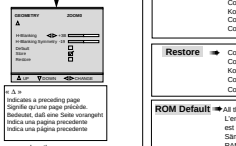


Changing page - Changement de page Seitenwechsel - Cambiare Pagina - Cambio de página

End of page
Fin de page
Am Seitenende
Fine della pagina
Fin de página

Beginning of Page
Début de page
Am Seitenanfang
Inizio della pagina
Comienzo de página



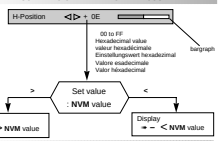


« ∇ »
Indicates a following page
Signifie qu'une page suit.
Bedeutet, daß eine Seite folgt
Indica una pagina seguente
Indica una página siguiente

« Δ »
Indicates a preceding page
Signifie qu'une page précède.
Bedeutet, daß eine Seite vorangeht
Indica una pagina precedente
Indica una página precedente

- The menu turns the page when the cursor reaches the arrow.
- Amener le curseur sur la ligne repérée par« ∇ » ou « Δ » pour passer à la page qui précède ou qui suit.
- Cursor nach « ∇ » ,« Δ » zum Seitenwechsel
- Il cursor su « ∇ » ,« Δ » cambia pagina.
- Cursor en « ∇ » ,« Δ » cambia las páginas

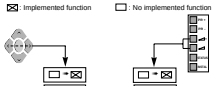
3 DISPLAYING THE VALUE OF THE SETTING - AFFICHAGE DES VALEURS - ANZEIGE DES EINSTELLUNGSWERTS VISUALIZZAZIONE DEL VALORE DELLA REGOLAZIONE - VISUALIZACION DEL VALOR DE AJUSTE



4 TOGGLE FUNCTIONS - VALIDATION DES FONCTIONS EIN-UND AUSSCHALT FUNKTIONEN - FUNZIONI DI COMMUTAZIONE - FUNCION CONMUTACION

To enable a function check (tick) ☒ the box.
Pour valider une fonction cocher ☒ la case correspondante
Zum Implementieren einer Funktion das Kontrollkästchen ☒ aktivieren (ankreuzen)
Per implementare una funzione di verifica, (vistare) ☒ la casella
Para poner en fucionamiento una función verifique (señale) ☒ la casilla

☒ : Implemented function ☐ : No implemented function



5 STORING VALUES IN MEMORY - MEMORISATION DES VALEURS - SPEICHERN DER WERTE - MEMORIZZAZ.I DI VALORI - VALORES ALMACENADOS EN LA MEMORIA

After setting, the values are stored in NVM.
Après réglages les valeurs sont mémorisées en NVM.
Nach dem Einstellen werden die Werte im NVM gespeichert.
Dopo la regolazione i valori vengono memorizzati in NVM.
Después del ajuste, los valores son almacenados en NVM

The box ☐ becomes ☒
During alignment, values are temporarily stored in RAM.
En cours d'alignement les valeurs sont mémorisées temporairement en RAM
Während des Abgleichs werden die Werte vorübergehend im RAM gespeichert
Durante l'allineamento i valori vengono memorizzati provvisoriamente sulla RAM
Durante el alineamento, los valores son almacenados temporalmente en RAM

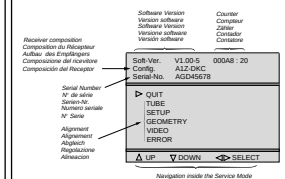
Store ➡ Copies RAM values into NVM
Copie la valeur RAM en NVM
Kopieren des Werts von RAM nach NVM
Copiare i valori RAM in NVM
Copiar valores RAM en NVM

Restore ➡ Copies all values from NVM into RAM.
Copie toutes les valeurs des données NVM en RAM
Kopiert alle NVM-Datenwerte in den RAM
Copiare tutti i valori da NVM sulla RAM
Copia todos los valores de NVM a RAM

ROM Default ➡ All the default values of a page in use are stored in RAM.
L'ensemble des valeurs par défaut d'une page courante est chargé en RAM.
Sämtliche Standardwerte der aktuellen Seite werden im RAM geladen
Tutti i valori di default di una pagina in uso vengono memorizzati sulla RAM
Todos los valores por defecto de la página en curso están almacenados en RAM.

III - LITE-MENU FOR FIELD SERVICE MODE - MENUS DU MODE SERVICE

1 MAIN MENU - MENU PRINCIPAL



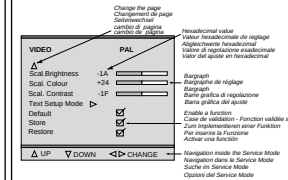
TV CONFIGURATION - CONFIGURATION DU TV - GERÄTEKONFIGURATION - CONFIGURAZIONE DEL TV - CONFIGURACIÓN Y TV

Config. A1Z-DKC

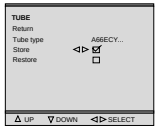
Character 1 : Tube type : «A»= 4/3 , «W» =16/9
Character 2 : Chassis type : «5» = 50Hz, «1»= 100 Hz
Character 3 : Zoom available : «Z»=yes, «-»=not
Character 4 : Ambiant Sensor : «S»= detected, «-»= not
Character 5 : Dolby : «D»=detected, «-»= not
Character 6 : AV Link detected : «K»=IR link detected, «-»= not
Character 7 : Password mode: «C»= Password stored, «-»= not

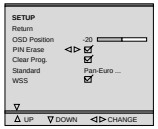
TIME COUNTER - COMPTEUR DE TEMPS - ZÄHLER - CONTATORE - CONTADOR
The counter indicates the TV's number of service hours.It counts from to 0 to 65535 hours.
The display is hexadecimal.
Le compteur de temps indique le nombre d'heures de service du TV. Il compte de 0 à 65535 heures. L'affichage est en hexadécimal.
Der Zähler zeigt an, wieviele Stunden der Fernseher in Betrieb ist. Die Anzeige ist hexadezimal.
Il contatore indica il numero di ore di servizio del TV. Puo' contatore da 0 a 65535. La visualizzazione è esadecimale.
El contador indica el número de horas de servicio de la TV. Cuenta de 0 a 65535 horas. El visualizador es hexadecimal.

2 SUBMENU - SOUS-MENU

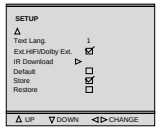


ALIGNMENT PROCEDURE - PROCESSUS DE REGLAGES - ABGLEICH - VISUALIZZAZIONE DEL VALORE DELLA REGOLAZIONE - PROCEDIMIENTO DE ALINEACION

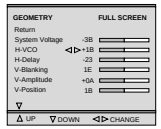




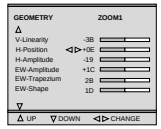
page 1



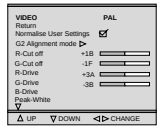
page 2



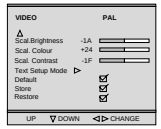
page 1



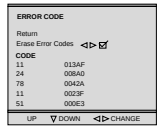
page 2



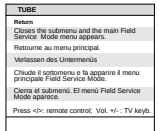
page 1

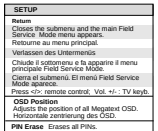


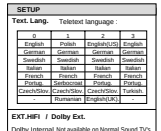
page 2

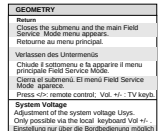


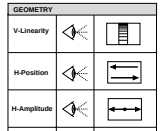
Test Bar pattern used : 4/3 with geometric circle. Adjust separate for 4/3 and 16/9 format. See annexed Color standard or RGB is autodetected and displayed opposite the displayed opposite the menu title.

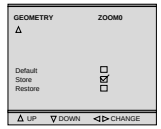




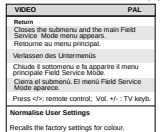






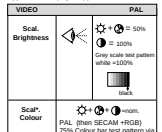


page 3

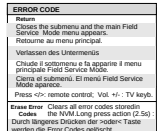


Tube Type	Value	Tube Type	Value
A66EGW	60H	W76EGX	60H
A59EGD	50H	A90EDM	60H
A68EGD	50H	A90AFF	58H
W66EGV	60H	RP 4 / 3	-
W76EGV	60H	RP 16 / 9	60H

Tube Type	[mA]	[Vpp]	Tube Type	[mA]	[Vpp]
A59EGD	670	110	A90AFF		
A66ECY	350	110	W66EGV	550	110
A66EGW	425	110	W76EGV	430	110
A59EGD	400	110	W76EGX	430	110
A90EDM					



Note :
* adjust separate for PAL/NTSC/SECAM and RGB/AV gatrennte Einstellung für PAL/SEACAM und RGB/AV
** After PEAK white adjustment control cut off setting. Repeat the adjustments if necessary. nach der Einstellung von Peak white die Cut off Einstellungen wiederholen



TUBE NAME	LIST	DESCRIPTION	tube type
A66EGW 48X322	A66EGW	4/3 28" MP, invar,vector gun, BSVM	10,100Hz
A59EGD48X322	A59EGD	4/3 25" SF,invar,vector gun, BSVM	11,100Hz
A68EGD38X322	A68EGD	4/3 29" SF, invar,vector gun, BSVM	12,100Hz
A68EES038X322	A68EES	4/3 29" SF , invar, COTY MDF gun, BSVM	12,100Hz
W66EGV023X122	W66EGV	16/9 28" SF , invar , vector gun , BSVM	13,100Hz
W76EGV023X122	W76EGV	16/9 32"SF, invar , vector gun, BSVM	14,100Hz
W76EGX023X122	W76EGX	16/9 32"SF, invar , COTY MDF gun , BSVM	14,100Hz

ICC19 100 Hz
First issue 09 / 97

ERROR CODES

GB

11	1st Audio_MSP doesn't answer
12	2nd Audio-MSP doesn't answer
13	Audio-DSP doesn't answer
14	Video IC STV2162 doesn't answer
15	Chroma IC 2151/9143 doesn't answer
16	Upconverter DMU0 doesn't answer
17	Audio (or Dolby) module not detected
18	SCART IC TEA6415C doesn't answer
19	Tuner CTT5000 doesn't answer
21	I2C Bus1 data line held low
22	I2C Bus2 data line held low
23	I2C Bus1 clock line held low
24	I2C Bus2 clock line held low
25	Switched 5V not available
26	Tube doesn't gets warm in time
27	Deflection detects >3 times protection (problem detected on "breathing" line)
29	DRAM memory of Megatext defect
33	The PSI chip (STV2165) doesn't answer
34	The NVM (X24C32) chip doesn't answer
35	+13V not available
37	Unexpected level on NMI (Interrupt) line found (possible cause : tube flashover)
38	M3LBus for Megatext is blocked
39	Megatext (SDA5273) doesn't answer
41	bus1 (data line) not recoverable
42	bus2 (data line) not recoverable
43	MCU (Motion Mastering Up-Converter) doesn't answer
44	Convergence IC (Rear Projector) doesn't answer

F

11	Processeur Audio MSP ne répond plus
12	Deuxième MSP ne répond plus (Dolby)
13	Audio-DSP ne répond plus (produit Dolby)
14	Video-IC STV2162 ne répond plus
15	Chroma-IC STV2151 ou TDA9143 ne répond plus
16	Convertisseur de fréquence d'image digital DMU0 (intelligent Mastering) ne répond plus
17	Module son (ou Dolby) n'est pas détecté
18	Commutateur SCART TEA6415C ne répond plus
19	Tuner CTT5000 ne répond plus
21	I2C-bus 1 data bloqué au niveau bas
22	I2C-bus 1 clock bloqué au niveau bas
23	I2C-bus 2 data bloqué au niveau bas
24	I2C-bus 2 clock bloqué au niveau bas
25	La 5V commutée n'est pas disponible
26	Tube ne chauffe pas a temps
27	Plus que 3-fois la déflection a détecté une "protection" (c'est-a-dire qu'il y a un problème détecté sur la ligne "breathing")
29	Mémoire (DRAM) du Megatext est en panne
33	STV 2165 (PSI 100Hz) ne répond plus
34	NVM (mémoire) X24C32 ne répond plus
35	+13V n'est pas disponible
37	Problème détecté sur la ligne "Interrupt" pendant le délenarage ou le fonctionnement du TV. Possibilité: "arking"?
38	Bus M3L pour Megatext est bloqué
39	Megatext (SDA5273) ne répond plus
41	I2C-bus 1 data reste bloqué
42	I2C-bus 2 data reste bloqué
43	MCU (convertisseur de frequence d'image digital Motion Mastering) ne répond plus
44	CI Convergence ne répond plus (rétroprojecteur)

D

11	Audio MSP Prozessor antwortet nicht.
12	Zweiter Audio MSP Prozessor antwortet nicht.(Dolby)
13	Audio DSP Prozessor antwortet nicht. (Dolby)
14	IC STV2161/62 antwortet nicht
15	IC STV2151 / TDA9143 antwortet nicht
16	DMU0 Upconverter (Videomodul) antwortet nicht
17	Audio- oder Dolby-modul nicht erkannt
18	TEA6415C antwortet nicht (SCART Schalter)
19	Tuner CTT5000 antwortet nicht
21	I2C Bus1 data line ist auf low
22	I2C Bus2 data line ist auf low
23	I2C Bus1 clock line ist auf low
24	I2C Bus2 clock line ist auf low
25	Geschaltete 5V nicht vorhanden
26	Röhre wird nicht rechtzeitig warm
27	Ablenkung meldet 3 mal Fehler. (Problem auf Breathing Leitung)
29	DRAM des Megatext defekt
33	STV 2165 (PSI 100Hz) antwortet nicht
34	NVM Chip antwortet nicht (X24C32)
35	+13V nicht vorhanden
37	Unerwarteten Zustand an NMI (Interrupt) line gefunden. (Mögliche Ursache = Röhren Überschlag")
38	M3L Bus des Megatext blockiert
39	Megatext (SDA 5273) antwortet nicht
41	Bus1 (data line) nicht möglich zu reaktivieren
42	Bus2 (data line) nicht möglich zu reaktivieren
43	MCU (Motion Mastering Up-Converter) antwortet nicht
44	Konvergenz IC antwortet nicht (Rear-Projektor)

I

11	Primo Audio MSP non risponde più
12	Secondo Audio MSP non risponde più
13	Audio DSP non risponde più
14	2161/2 non risponde più
15	2151/9143 non risponde più
16	Il convertitore non risponde più
17	Modulo Audio non trovato
18	TEA6415C non risponde più
19	Il sintonizzatore non risponde più
21	Linea I2C bus dati 1 mantenuta bassa
22	Linea I2C bus dati 2 mantenuta bassa
23	Linea I2C bus temporizatore 1 mantenuta bassa
24	Linea I2C bus temporizatore 2 mantenuta bassa
25	Commutazione 5V non disponibile
26	Il tubo non si riscalda in tempo
27	La deflezion ha rilevato più
29	Difetto alla DRAM di Megatext
33	Il chip PSI non risponde più
34	Il chip NVM non risponde più
35	13V non disponibile
37	Livello imprevisto sulla linea NMI
38	Bus M3L per Megatext bloccato
39	Megatext non risponde più
41	Bus 1 (linea dati) non ripristinabile
42	Bus 2 (linea dati) non ripristinabile
43	MCU non risponde
44	Convergenza IC non risponde

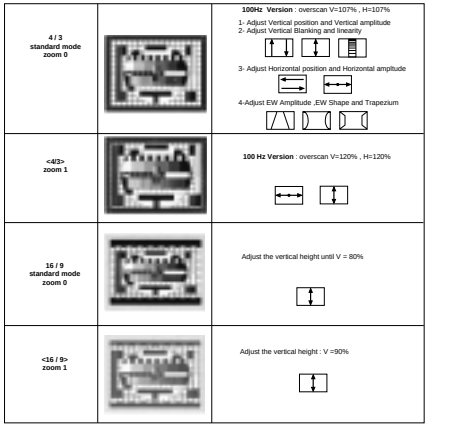
E

11	Procesador de audio MSP no responde
12	Segundo MSP no responde (Dolby)
13	Audio DSP no responde
14	Cir. integrado de vídeo STV2161 ó 2162 no responde
15	CIr. integrado croma ST2151 ó TDA9143 no responde
16	Convertidor de frecuencia de imagen digital DMU0 (Mastering Inteligente) no responde
17	Módulo de sonido (o Dolby) no se detecta
18	Conmutador Scart (TEA6415C) no responde
19	Tuner CTT5000 no responde
21	Data 1 del bus I2C permanece en bajo
22	Clock 1 del bus I2C permanece en bajo
23	Data 2 del bus I2C permanece en bajo
24	Clock 2 del bus I2C permanece en bajo
25	No se dispone de los "5v conmutados"
26	El tubo tarda en calentarse
27	La protección de la deflexión actúa mas de 3 veces (el problema se detecta en la línea de "breathing")
29	La memoria DRAM del Megatext está defectuosa
33	El chip STV2161 (PSI 100Hz) no responde
34	La memoria no volátil X24C32 no responde
35	No existe disponibles los + 13 v.
37	Problema detectado en la línea "Interrupt" durante el arranque o el funcionamiento del TV.Posibilidad de chispazos en muy alta?
38	El bus M3L para el Megatext está bloqueado
39	Megatext (SDA5273) no responde
41	Data 1 del bus I2C permanece bloqueado
42	Data 2 del bus I2C permanece bloqueado
43	MCU (convertidor de frecuencia de imagen digital Motion Mastering) no responde
44	Cir. integrado de convergencia no responde (retroproyectores)

GEOMETRY MODE ALIGNMENT - 100Hz VERSION

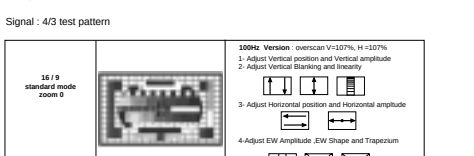
4/3 picture tube

Signal : 4/3 test pattern

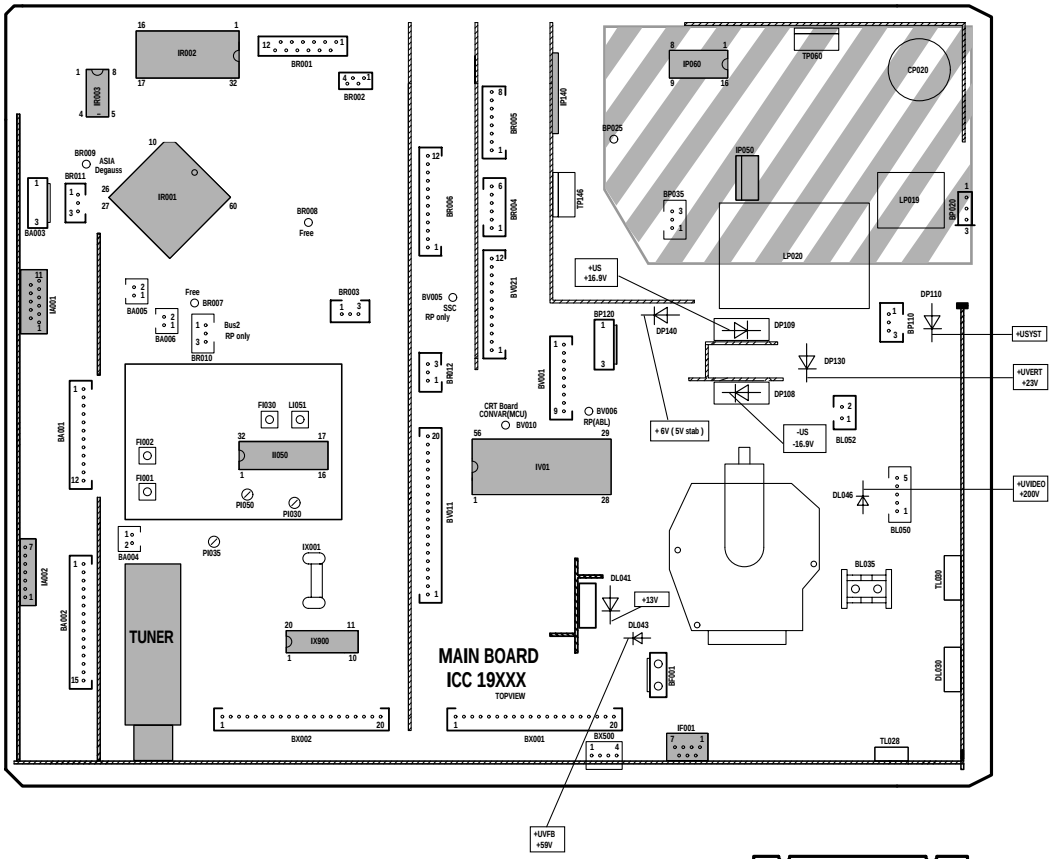


16/9 picture tube

Signal : 4/3 test pattern



LOCATION OF CONTROLS - EMPLACEMENT DES REGLAGES - SERVICE LAGEPLAN - POSIZIONE REGULATORI DI SERVIZIO - SITUACIÓN DE LOS AJUSTES



Do not disconnect modules when they are energized ! Repairs on power supply section are to be carried out only with isolating transformer.

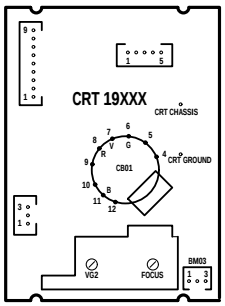
Ne pas retirer les modules lorsqu'ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch mode) qu'au travers d'un transformateur d'isolement.

Module nicht bei eingeschaltetem Gerät entfernen ! Servcearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegarei moduli quando sono alimentati ! intraprendere riparazioni sulla sezione alimentatore solo con trasformatore isolante.

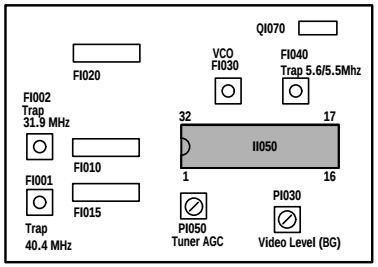
No desconectar los módulos cuando están activados ! Las reparaciones en la sección de alimentación de energia deben ser ejecutadas solamente con un transformador de separacion.

Part of Board connected to mains supply.
Partie du châssis reliée au secteur.
Primärseitedes Netzteils
Parte del panello collegato alla rete di alimentazione
Parte del chasis conectada a la red



ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U Sys	SERVICE MODE	Standard TV - Settings : OMA Position TV to AV1 : Black test pattern	V= DP 110	TUBE NAME / DESCRIPTION / Usys jumper / Usys A66ECY 13X 15 / 4/3 28" MP / JP914 / 132V +/- 0.5V A59EGD048X300 / 4/3 25" SF / JP915 / 131V +/- 0.5V A68EGD038X300 / 4/3 29" SF / JP915 / 131V +/- 0.5V W66EGV023X115 / 16/9 28"SF / JP917 / 137V +/- 0.5V W76EGX023X115 / 16/9 32"SF / JP917 / 137V +/- 0.5V
IF Alignment VCO Standard BG	FI030	Switch set to standard BG IF Signal 38.9 MHz (BG) 30 mV G 75Ω TUNER 11 NH01	V= RI078 AFC (uP) 42 IR01	Adjust FI30 / PI54 for 2,5VDC +/-0.1V
VIDEO-LEVEL Alignment	PI030 PI035	Standard Signal (BG / L) 15kHz test pattern 3 mV G 75Ω TV set Antenna	Oscillo. SCART Video output	Adjust PI030 : standard BG Adjust PI035 : standard L for V = 0,7 Vpp (Black/white level)
V G2 METHOD 1 Measurment method	G2 poten-tiometer	Standard TV - Settings : OMA Position TV to AV1 : Black test pattern	highest output CRT 1900X (50Hz) : R signal : IB01 Pin 15 G signal : IB01 Pin 12 B signal : IB01 Pin 15	V 1 - Adjust VG2 : V= 160V +/- 5 V 2 - Adjust Focus 3 - Adjust VG2 : V= 160V +/- 3V
METHOD 2 Cut-off counter method SERVICE MODE	SERVICE MODE	Standard TV - Settings : OMA Position No test pattern (generated by internal text processor).		Adjust R-Cut off and G-Cut-off to 80H temporary. Select G2 Alignment in Service Mode Adjust the lowest value to: Select "Restore" in Service Mode and press "OK" to restore the cut-off values. Tube Type / Value A66ECY 50H A79ECU - A89AEJ - A59EGD 60H A68EGD 50H W56EGV - W66EGV 50H W76EGX 60H
FOCUS	FOCUS	Test pattern (standard values)		Sharp picture



ICC19 50 Hz
First issue 09 / 97

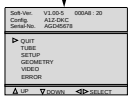
SERVICE MODE (GB) — MODE SERVICE (F) — SERVICE - MODE (D) — SERVICE - MODE (I) — MODO SERVICIO (E)

I - ENTER/EXIT SERVICE MODE - ENTREE/SORTIE DU MODE SERVICE - EIN-AUSTIEG SERVICE MODE - ACCESSO/USCITA ALLA/DALLA FUNZIONE - ENTRADA/SALIDA MODO SERVICIO

1 ACCESSING SERVICE MODE

TV Control Panel Access

- Turn "Off" the TV using the **ON/OFF** button.
- Press the **PR-** and **VOL-** buttons ,hold them down and switch "On" the TV with the **ON/OFF** button.
- After the normal switch on time the main service menu appears on the screen.

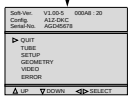


Note :
In service mode :
- *The child lock function is re-initialized*
- *The look function (PIN Number) is ignored.*
- *Clear any wake-up/sleep timers*
- *Pin 8 of the scart plug has to be ignored.*
- *AV- Link WSS detection , EPG and Teletext have to be disabled.*
- *Automatic stand-by functions, in case of no antenna signal have to be disabled.*
- *Contrast, colour, brightness : factory settings.*
- *Sharpness : middle (nominal)*
- *Contrast expander to low.*
- *Install Mode disabled.*
- *Default format and zoom..*

1 ACCES AU MODE SERVICE

Accès avec le clavier du téléviseur

- Arrêter le TV avec la touche **M/A.**
- Tout en appuyant sur les touches **PR -** et **VOL - ,** mettre le TV en service à l'aide de la touche **M/A**.
- Maintenir enfoncées les touches **PR -** et **VOL -**.
  Le menu suivant apparaît.

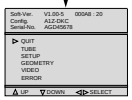


Note :
En mode service:
- *Le verrouillage parental est effacé (réinitialisé).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *La programmation des heures «réveille/matin» est annulée.*
- *Possibilité de passer en mode service avec commutation lente active.*
- *AV- Link WSS détection , EPG and Teletext doivent être désactivés.*
- *La fonction de stand-by automatique en cas d'absence de signal d'antenne n'est pas valable.*
- *Les valeurs de réglages usine sont affectées au contraste, à la couleur et à la lumière.*
- *Le contour est appelé à sa valeur moyenne.*
- *L'expansion contraste est au niveau bas.*
- *Le mode d'installation et l'ambiance «Light sensor» ne sont pas valides.*
- *Zoom et format ignorées.*

1 EINSTIEG IN DEN SERVICE MODE

Zugriff über die Tastatur des Fernsehgerätes

- Fernsegerät über die EIN/AUS - Taste ausschalten.
- Gleichzeitig die Tasten PR- und VOL- drücken und den Fernseher über die EIN/AUS-Taste einschalten.
- Die Tasten PR- und VOL - gedrückt halten.

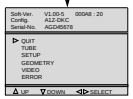


Anmerkung :
Im SERVICE MODE :
- *wird die Sperrfunktion (PIN-Nummer) ignoriert und die Kindersicherung gelöscht (reinitialisiert).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *wenden alle Ein- und Ausschaltzeitgeber gelöscht.*
- *wird die SCART - Schaltspannung ignoriert.*
- *wenden AV- Link WSS, EPG und Teletext gesperrt*
- *wird die Automatische Abschaltung bei fehlendem Antennensignal gesperrt.*
- *werden Kontrast, Farbe und Helligkeit auf standardwerte gesetzt.*
- *wird die bildschärfe auf Mittelstellung (nominal) gesetzt.*
- *wird der Kontrast-Expander auf "gering.." gesetzt.*
- *wird der Installations Modus gesperrt.*
- *wird das Standardformat bzw. der Standard-Zoom-modus gewählt.*

1 ACCESSO AL SERVICE MODO

tramite i comandi del televisore

- Spegnere il TV mediante il pulsante ON/OFF.
- Premere i tasti **PR- e VOL-** accendendo il TV con il pulsante ON/OFF.
- Premere i pulsanti **PR - e VOL -**.

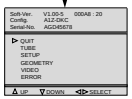


Nota :
Nel service mode:
- *la funzione Blocco (Numero Pin) viene ignorata e la funzione Blocco Bambini è reinvalizzata.*
- *Cancellare la programmazione sveglia*
- *Il piedino 8 della scart deve essere ignorato.*
- *I riconoscimenti AV-Link WSS, EPG e televideo deveno essere disabilitati.*
- *Funzione automatica di standby, nel caso di mancanza del segnale d'antenna deve essere disabilitata.*
- *Contrasto, colore, luminosità : regolazioni di fabrica.*
- *Nitidezza media (nominale)*
- *Espansore contrasto troppo basso.*
- *Modo Install disabilitato.*
- *Formato default e zoom.*

1 ACCESO AL MODO SERVICIO

Acceso panel control TV

- Apague la TV con el botón MARCHA.PARADA.
- Pulse los botones **PR -** y **VOL -** y sin soltarlos,pulsar la tecla MARCHA.PARADA.
- Libere los botones **PR -** y **VOL -** .



Nota :
En modo servicio:
- *Se ignora la función de bloqueo y se inicializa la función "cerradura ninos".*
- *Anula todos las horas programadas*
- *La patilla 8 del SCART es ignorada*
- *La detección WSS AV Link, EPG, y Telexto son desactivados.*
- *El apagado automático en caso de ausencia de señal de antena es desactivado.*
- *El contraste,color y brillo son puestos a los valores de fábrica.*
- *la nitidez es puesta al punto medio.*
- *La expansión de contrast al nivel bajo*
- *Modo Instalación es desactivado.*
- *Zoom y formato ignorados.*

2 TEMPORARY EXIT FROM SERVICE MODE

- Press Exit on the Remote control.
- Everyday use menu can be accessed via Menu button.

- Field Service Menu can be re-entrered via Blue button.

2 SORTIE TEMPORAIRE DU MODE SERVICE

- Utiliser la touche Exit de la télécommande.
- Le menu utilisateur peut être accessible via la touche «Menu».

- Pour entrer à nouveau dans le mode service utiliser la touche bleue.

2 VORÜBERGEHENDES VERLASSEN DES SERVICE MODUS

- Auf der Fernbedienung EXIT drücken.
- Mit der Taste Menü gelangen Sie zum Menü Übersicht

- Mit der blauen Taste gelangen sie wieder zum Service-Menü.

2 USCITA TEMPORANEA DAL SERVICE MODE

- Premere Exit sul telecomando.
- Al menu di uso quotidiano si accede attraverso il pulsante Menu.

- È possibile rientrate nel Menu Field Service attraverso il pulsante Blue.

2 SALIDA TEMPORAL DEL MODO SERVICIO

- Pulse Salir en el mando a distancia
- Con el botón Menu puede acceder al menú de uso cotidiano.

- Puede entrar al Menú Servicio con el botón azul.

3 EXITING FROM SERVICE MODE

Remote Control | **TV control panel** | **on/off key or Stand-by**

- Go to the point QUIT in the Field service Mode main menu.
- Stand-by function or «off» with on/off key.
- Press «<», «VOL+»button
- Press «VOL.+»button
- TV mode.

Values or adjustments are no stored before exiting from service mode will not be written into the NVM

3 SORTIE DEFINITIVE DU MODE SERVICE

télécommande | **clavier du téléviseur** | **Inter M/A ou Stand-by**

- Aller au point «QUIT» dans le menu principal du mode service.
- Fonction Stand-by ou «off» par M/A.
- Appuyer sur «<», «OK» ou «>»
- Appuyer sur «VOL+»
- Mode TV.

Les valeurs ou réglages non mémorisées avant la sortie ne seront pas écrites en NVM.

3 ENDGÜLTIGES VERLASSEN DES SERVICE MODE

Fernbedienung | **TV-Bedienfeld** | **EIN /Aus - Taste**

- Wenn der Kursor im Hauptmenü des Service-Modus auf "QUIT" steht
- Mit Standby-Funktion oder **EIN/AUS** - taste ausschalten
- Taste «<», «OK» oder «>»drücken
- Taste «VOL+» drücken
- TV Modus

Werte und Einstellungen, die nicht vor dem Verlassen des Service-Modus gespeichert wurden, werden nicht in den Permanentspeicher übernommen

3 USCIRE DAL SERVICE MODE

telecomando | **Pannello controllo TV** | **Tasto on/off di**

- Andare al punto QUIT nel Modo Field service del Menu principale
- Funzione Stand-by o «off» con il tasto on/off
- Premere «<»,«OK» o «>»
- Premere «VOL.+»
- Modo TV.

Valori e regolazioni non vengono memorizzati prima di uscire dal Modo service e non vengono scritti nell'NVM

3 SALIDA DEL MODO SERVICIO

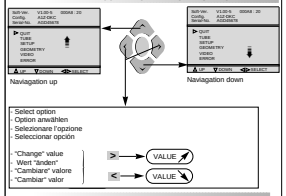
telecomando | **Panel de control TV** | **Tecla on/off de**

- Vaya al punto QUIT del menú principal de modo Servicio
- Función Stand-by o desconexión (off) con tecla on/off.
- Pulse el botón «<»,«OK» o «>»
- Pulse el botón«VOL.+»
- Modo TV.

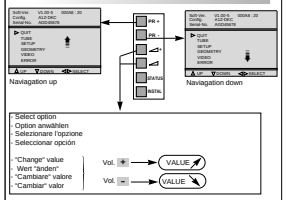
Los valores o ajustes no se guardan antes de salir del modo servicio y no se escriben en el NVM

II - NAVIGATION INSIDE THE SERVICE MODE - DEPLACEMENT DANS LE MODE SERVICE SUCHE IN SERVICE MODE - OPZIONI NEL SERVICE MODE - BUSQUEDA EN MODO SERVICIO

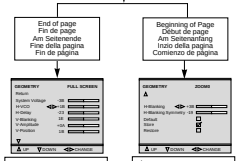
1 REMOTE CONTROL - TELECOMMANDE - FERNBEDIENUNG TELECOMANDO - MANDO A DISTANCIA



2 TV CONTROL PANEL - CLAVIER TV - TASTATUR DES FERNSEHGERÄTS - COMANDI DEL TELEVISORE -



Changing page - Changement de page Seitenwechsel - Cambiare Pagina - Cambio de página

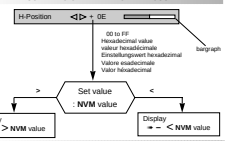


« ∇ »
Indicates a following page
Signifie qu'une page suit.
Bedeutet, daß eine Seite folgt
Indica una pagina seguente
Indica una página siguiente

« Δ »
Indicates a preceding page
Signifie qu'une page précède.
Bedeutet, daß eine Seite vorangeht
Indica una pagina precedente
Indica una página precedente

- The menu turns the page when the cursor reaches the arrow.
- Amener le curseur sur la ligne repérée par « ∇ »ou « Δ » pour passer à la page qui précède ou qui suit.
- Cursor nach « ∇ » „« Δ » zum Seitenwechsel
- Il cursor su « ∇ », « Δ » cambia pagina.
- Cursor en « ∇ », « Δ » cambia las páginas

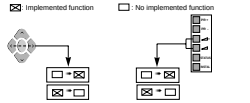
3 DISPLAYING THE VALUE OF THE SETTING - AFFICHAGE DES VALEURS - ANZEIGE DES EINSTELLUNGSWERTS VISUALIZZAZIONE DEL VALORE DELLA REGOLAZIONE - VISUALIZACION DEL VALOR DE AJUSTE



4 TOGGLE FUNCTIONS - VALIDATION DES FONCTIONS EIN-UND AUSSCHALT FUNKTIONEN - FUNZIONI DI COMMUTAZIONE - FUNCION CONMUTACION

To enable a function check (tick) ☒ the box.
Pour valider une fonction cocher ☒ la case correspondante
Zum Implementieren einer Funktion das Kontrollkästchen ☒aktivieren (ankreuzen)
Per implementare una funzione di verifica, (vistare) ☒ la casella
Para poner en fucionamiento una función verifique (señale) ☒ la casilla

☒ : implemented function ☐ : No implemented function



5 STORING VALUES IN MEMORY - MEMORISATION DES VALEURS - SPEICHERN DER WERTE - MEMORIZZAZ.I VALORI - VALORES ALMACENADOS EN LA MEMORIA

After setting, the values are stored in NVM.
Après réglages les valeurs sont mémorisées en NVM.
Nach dem Einstellen werden die Werte im NVM gespeichert.
Dopo la regolazione i valori vengono memorizzati in NVM.
Después del ajuste, los valores son almacenados en NVM

The box ☐ becomes ☒
During alignment, values are temporarily stored in RAM.
En cours d'alignement les valeurs sont mémorisées temporairement en RAM
Während des Abgleichs werden die Werte vorübergehend im RAM gespeichert
Durante l'allineamento i valori vengono memorizzati provvisoriamente sulla RAM
Durante el alineamento, los valores son almacenados temporalmente en RAM

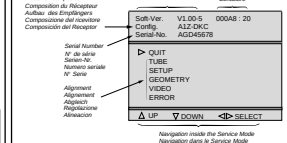
Store ➡ Copies RAM values into NVM
Copie la valeur RAM en NVM
Kopieren des Werts von RAM nach NVM
Copiare i valori RAM in NVM
Copiar valores RAM en NVM

Restore ➡ Copies all values from NVM into RAM.
Copie toutes les valeurs des données NVM en RAM
Kopiert alle NVM-datenwerte in den RAM
Copiare tutti i valori da NVM sulla RAM
Copia todos los valores de NVM a RAM

ROM Default ➡ All the default values of a page in use are stored in RAM.
L'ensemble des valeurs par défaut d'une page courante est chargé en RAM.
Sämtliche Standardwerte der aktuellen Seite werden im RAM geladen
Tutti i valori di default di una pagina in uso vengono memorizzati sulla RAM
Todos los valores por defecto de la página en curso están almacenados en RAM.

III - LITE-MENU FOR FIELD SERVICE MODE - MENUS DU MODE SERVICE

1 MAIN MENU - MENU PRINCIPAL



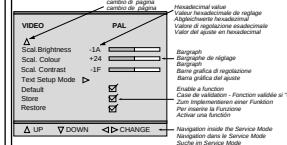
TV CONFIGURATION - CONFIGURATION DU TV - GERÄTEKONFIGURATION - CONFIGURAZIONE DEL TV - CONFIGURACIÓN Y TV

Config. A1Z-DKC

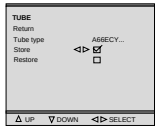
Character 1 : Tube type : «A»= 4/3 , «W» =16/9
Character 2 : Chassis type : «5» = 50Hz, «1»= 100 Hz
Character 3 : Zoom available : «Z»=yes, «-»=not
Character 4 : Ambiant Sensor : «S»= detected, «-»= not
Character 5 : Dolby : «D»=detected, «-»= not
Character 6 : AV Link detected : «K»=IR link detected, «-»= not
Character 7 : Password mode: «C»= Password stored, «-»= not

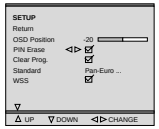
TIME COUNTER - COMPTEUR DE TEMPS - ZÄHLER - CONTATORE - CONTADOR
The counter indicates the TV's number of service hours.It counts from to 0 to 65535 hours.
The display is hexadecimal.
Le compteur de temps indique le nombre d'heures de service du TV. Il compte de 0 à 65535 heures. L'affichage est en hexadécimal.
Der Zähler zeigt an, wieviele Stunden der Fernseher in Betrieb ist. Die Anzeige ist hexadezimal.
Il contatore indica il numero di ore di servizio del TV. Puo' contatore da 0 a 65535. La visualizzazione è esadecimale.
El contador indica el número de horas de servicio de la TV. Cuenta de 0 a 65535 horas. El visualizador es hexadecimal.

2 SUBMENU - SOUS-MENU

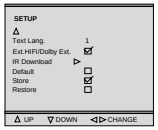


ALIGNMENT PROCEDURE - PROCESSUS DE REGLAGES - ABGLEICH - VISUALIZZAZIONE DEL VALORE DELLA REGOLAZIONE - PROCEDIMIENTO DE ALINEACION

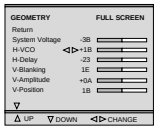




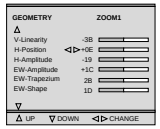
page 1



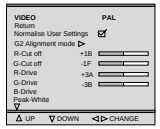
page 2



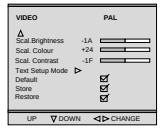
page 1



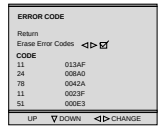
page 2



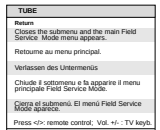
page 1

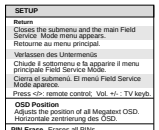


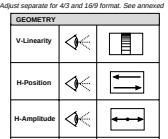
page 2



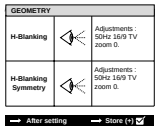
Test Bar pattern used : 4/3 with geometric circle. Adjust separate for 4/3 and 16/9 format. See annexed Color standard or RGB is autodetected and displayed opposite the displayed opposite the menu title.

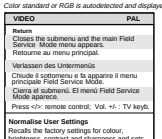


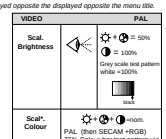


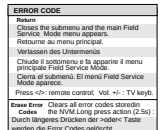


page 3









TUBE NAME	LIST	DESCRIPTION	tube type
A66ECY 13X 15	A66ECY	4/3 28" MP, AK mask COTY M gun	00, 50Hz
A59ECGD048X300	A59EGD	4/3 25" SF , invar , vector gun , BSVM	03, 50Hz
A68ECGD038X300	A68EGD	4/3 29" SF , invar , vector gun , BSVM	04, 50Hz
W66EGV023X115	W66EGV	16/9 28"SF, invar , vector gun , BSVM	06, 50Hz
W76EGX023X115	W76EGX	16/9 32"SF, invar , vector gun , BSVM	07, 50Hz

ICC19 50 Hz
First issue 09 / 97

ERROR CODES

GB

11 1st Audio_MSP doesn't answer
12 2ind Audio-MSP doesn't answer
13 Audio-DSP doesn't answer
14 Video IC STV2160 doesn't answer
15 Chroma IC 2151/9143 doesn't answer
16 Upconverteur DMUI doesn't answer
17 Audio (or Dolby) module not detected
18 SCART IC TEA6415C doesn't answer
19 Tuner CTT5000 doesn't answer
21 I2C-bus 1 data line held low
22 I2C-bus 1 data line held low
23 I2C Bus1 clock line held low
24 I2C Bus2 clock line held low
25 Switched 5V not available
26 Tube doesn't gets warm in time
27 Deflection detects >3 times protection (problem detected on "breathing" line)
29 DRAM memory of Megatext defect
33 The PSI chip (STV2165) doesn't answer
34 The NVM (X24C32) chip doesnt answer
35 +15V not available
37 Unexpected level on NMI (Interrupt) line found possible cause : tube flashover)
38 MJLBus for Megatext is blocked
39 Megatext (SDA5273) doesn't answer
41 bus1 (data line) not recoverable
42 bus2 (data line) not recoverable
43 MCU (Motion Mastering Up-Converter) doesn't answer
44 Convergence IC (Rear Projector) doesn't answer

F

11 Processeur Audio MSP ne répond plus
12 Deuxième MSP ne répond plus (Dolby)
13 Audio-DSP ne répond plus (produit Dolby)
14 Vidéo IC STV2161 ou 2162 ne répond plus
15 Chroma-IC STV2151 ou TDA9143 ne répond plus
16 Convertisseur de fréquence d'image digital DMUI (intelligent Mastering) ne répond plus
17 Module son (ou Dolby) n'est pas détecté
18 Commutateur SCART TEA6415C ne répond plus
19 Tuner CTT5000 ne répond plus
21 I2C-bus 1 data bloqué au niveau bas
22 I2C-bus 1 clock bloqué au niveau bas
23 I2C-bus 2 clock bloqué au niveau bas
24 I2C-bus 2 clock bloqué au niveau bas
25 Le "5V commuté" n'est pas disponible
26 Tube ne chauffe pas a temps
27 Plus que 3-fois la déflection a détecté une "protection" (c'est-a-dire qu'il y a un problème détecté sur la ligne "breathing")
29 Mémoire (DRAM) du Megatext est en panne
33 STV 2165 (PSI 100Hz) ne répond plus
34 NVM (mémoire) X24C32 ne répond plus
35 +15V n'est pas disponible
37 Problème détecté sur la ligne "Interrupt" pendant le démarrage ou le fonctionnement du TV. Possibilité: "arking"?
38 Bus MJL pour Megatext est bloqué
39 Megatext (SDA5273) ne répond plus
41 I2C-bus 1 data reste bloqué
42 I2C-bus 2 data reste bloqué
43 MCU (convertisseur de fréquence d'image digital Motion Mastering) ne répond plus
44 CI Convergence ne répond plus (rétroprojecteur)

D

11 Audio MSP Prozessor antwortet nicht
12 Zweiter Audio MSP Prozessor antwortet nicht.(Dolby)
13 Audio DSP Prozessor antwortet nicht. (Dolby)
14 IC STV2161/62 antwortet nicht
15 IC STV2151 / TDA9143 antwortet nicht
16 DMUI Upconverter (Videomodul) antwortet nicht
17 Audio- oder Dolby-modul nicht erkannt
18 TEA6415C antwortet nicht (SCART Schalter)
19 Tuner CTT5000 antwortet nicht
21 I2C Bus1 data line ist auf low
22 I2C Bus2 data line ist auf low
23 I2C Bus1 clock line ist auf low
24 I2C Bus2 clock line ist auf low
25 Geschaltete 5V nicht vorhanden
26 Röhre wird nicht rechtzeitig warm
27 Ablenkung meldet 3 mal Fehler. (Problem auf Breathing Leitung)
29 DRAM das Megatext defekt
33 STV 2165 (PSI 100Hz) antwortet nicht
34 NVM Chip antwortet nicht (X24C32)
35 +15V nicht vorhanden
37 Unerwarteten Zustand an NMI (Interrupt) line gefunden. (Mögliche Ursache + Röhren Überschlag)
38 MJL Bus des Megatext blockiert
39 Megatext (SDA 5273) antwortet nicht
41 Bus1 (data line) nicht möglich zu reaktivieren
42 Bus2 (data line) nicht möglich zu reaktivieren
43 MCU (Motion Mastering Up-Converter) antwortet nicht
44 Konvergenz IC antwortet nicht (Rear-Projektor)

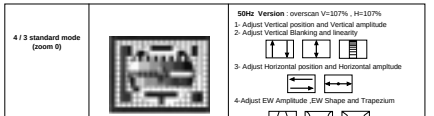
I

11 Primo Audio MSP non risponde più
12 Secondo Audio MSP non risponde più
13 Audio DSP non risponde più
14 2161/2 non risponde più
15 2151/9143 non risponde più
16 Il convertitore non risponde più
17 Modulo Audio non trovato
18 TEA6415C non risponde più
19 Il sintonizzatore non risponde più
21 Linea I2C bus dati 1 mantenuta bassa
22 Linea I2C bus dati 2 mantenuta bassa
23 Linea I2C bus temporizzatore 1 mantenuta bassa
24 Linea I2C bus temporizzatore 2 mantenuta bassa
25 Commutazione 5V non disponibile
26 Il tubo non si riscalda in tempo
27 La deflezion ha rilevato più
29 Difetto alla DRAM di Megatext
33 Il chip PSI non risponde più
34 Il chip NVM non risponde più
35 +15V non disponibile
37 Livello imprevisto sulla linea NMI
38 Bus MJL per Megatext bloccato
39 Megatext non risponde più
41 Bus 1 (linea dati) non ripristinabile
42 bus 2 (linea dati) non ripristinabile
43 MCU non risponde
44 Convergenza IC non risponde

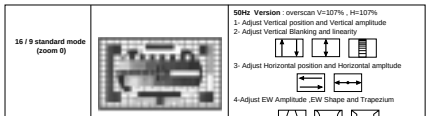
E

11 Procesador de audio MSP no responde
12 Segundo MSP no responde (Dolby)
13 Audio DSP no responde
14 Cir. integrado de vídeo STV2161 ó 2162 no responde
15 Cir. integrado croma ST2151 ó TDA9143 no responde
16 Convertidor de frecuencia de imagen digital DMUI (Mastering inteligente) no responde
17 Módulo de sonido (o Dolby) no se detecta
18 Conmutador Scart (TEA6415C) no responde
19 Tunar CTT5000 no responde
21 Data 1 del bus I2C permanece en bajo
22 Clock 1 del bus I2C permanece en bajo
23 Data 2 del bus I2C permanece en bajo
24 Clock 2 del bus I2C permanece en bajo
25 No se dispone de los "5v conmutados"
26 El tubo tarda en calentarse
27 La protección de la deflexión actúa mas de 3 veces (el problema se detecta en la línea de "breathing")
29 La memoria DRAM del Megatext está defectuosa
33 El chip STV2161 (PSI 100Hz) no responde
34 La memoria no volátil X24C32 no responde
35 No están disponibles los + 13 v.
37 Problème détecté en la línea "interrupt" durante el arranque o el funcionamiento del TV.Posibilidad de chispazos en muy alta?
38 El bus MJL para el Megatext está bloqueado
39 Megatext (SDA5273) no responde
41 Data 1 del bus I2C permanece bloqueado
42 Data 2 del bus I2C permanece bloqueado
43 MCU (convertidor de frecuencia de imagen digital Motion Mastering) no responde
44 Cir. integrado de convergencia no responde (retroproyectores)

GEOMETRY MODE ALIGNMENT - 50Hz VERSION
4/3 picture tube
Signal : 4/3 test pattern

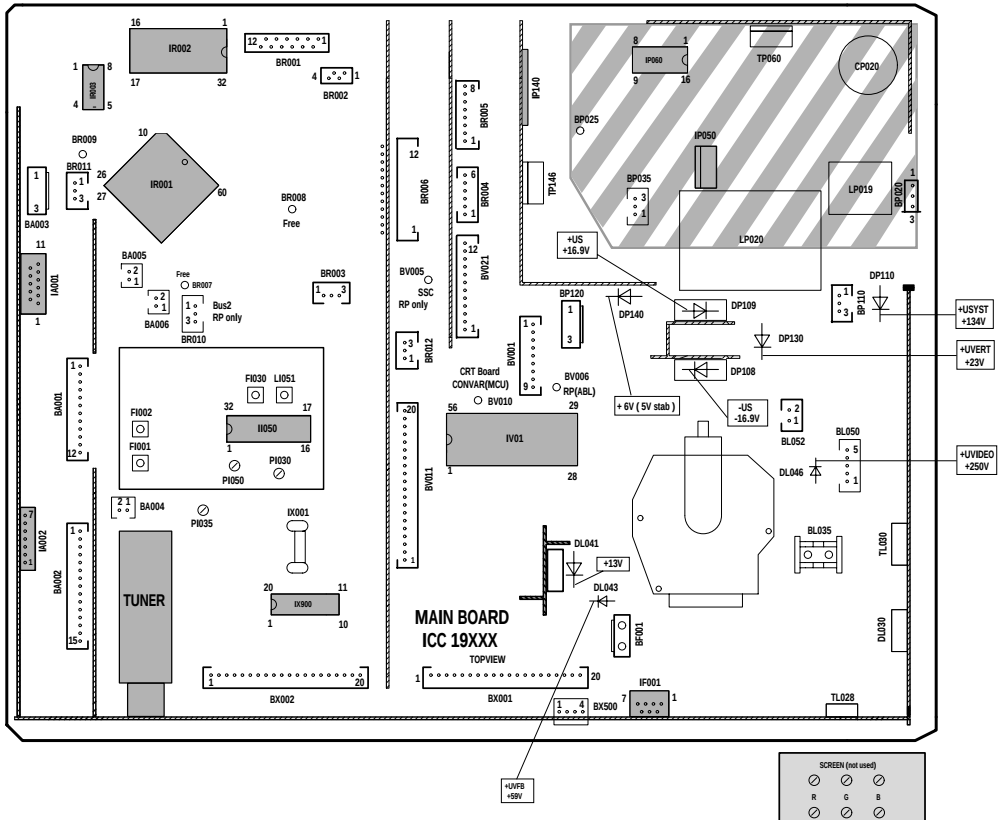


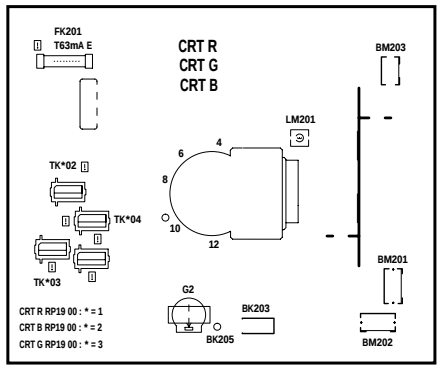
16/9 picture tube
Signal : 4/3 test pattern



LOCATION OF CONTROLS - EMPLACEMENT DES REGLAGES - SERVICE LAGEPLAN - POSIZIONE REGOLATORI DI SERVIZIO - SITUACIÓN DE LOS AJUSTES

MAIN BOARD - PLATINE PRINCIPALE - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES





Do not disconnect modules when they are energized !
Repairs on power supply section are to be carried out only with isolating transformer.

Ne pas retirer les modules lorsqu'ils sont sous tension.
N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch mode) qu'au travers d'un transformateur d'isolement.

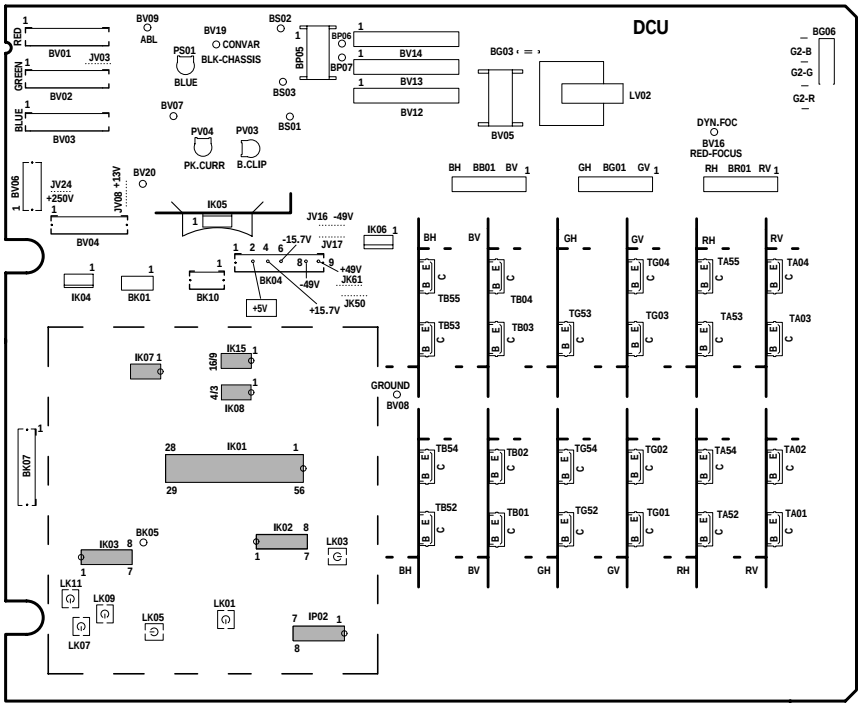
Module nicht bei eingeschaltetem Gerät entfernen !
Servcearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegare i moduli quando sono alimentati !
effettuare riparazioni sulla sezione alimentatore solo con transformatore isolante.

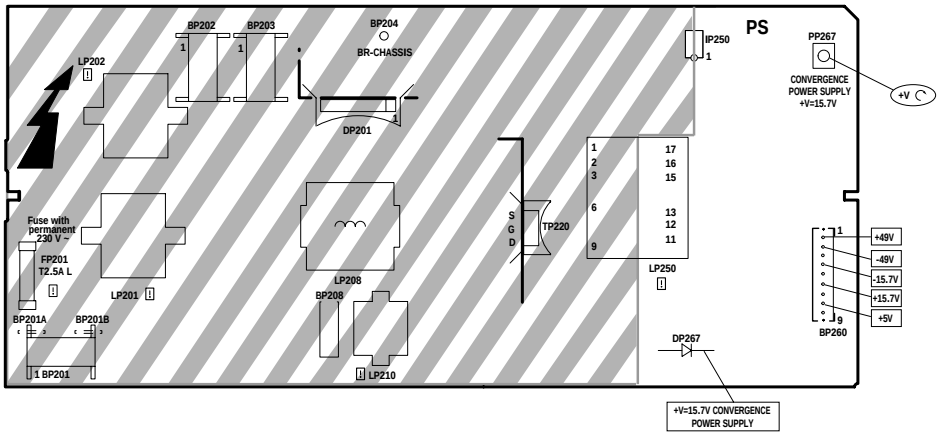
No desconectar los módulos cuando están activados !
Las reparaciones en la sección de alimentación de energia deben ser ejecutadas solamente con un transformador de separacion.

Part of Board connected to mains supply.
Partie du châssis reliée au secteur.
Primärseitedes Netzteils
Parte del pannello collegato alla rete di alimentazione
Parte del chasis conectada a la red

DIGITAL CONVERGENCE UNIT - PLATINE DE CONVERGENCE NUMERIQUE - DIGITALE KONVERGENZEINHEIT - UNITÀ DI CONVERGENZA DIGITALE - UNIDAD DE CONVERGENCIA DIGITAL



DIGITAL CONVERGENCE UNIT POWER SUPPLY - ALIMENTATION PLATINE DE CONVERGENCE NUMERIQUE - NETZTEIL KONVERGENZEINHEIT - ALIMENTAZIONE UNITÀ DI CONVERGENZA DIGITALE- ALIMENTACIÓN UNIDAD DE CONVERGENCIA DIGITAL



ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U Sys	SERVICE MODE	Standard TV - Settings : ☼ + ◑ + ◐ = 50% TV to AV1 : Black test pattern	V= DP 110	see table below
PS Convergence Power Supply	PP67	Standard TV - Settings : ☼ + ◑ + ◐ = 50%	V= DP 267	Adjust PP67 : V=15.7V +/- 0.1V
MAIN IF Alignment VCO Standard BG	FI030	Switch set to standard BG IF Signal 38.9 MHz (BG) 30 mV, G, 75Ω → TUNER 11 NH01	V= RI078 AFC (uP) 42 IR01	Adjust FI30 / PI54 for 2,5VDC +/-0.1V
MAIN VIDEO-LEVEL Alignment	PI030 PI035	Standard Signal (BG / L) 15kHz test pattern 3 mV, G, 75Ω → TV set Antenna	Oscillo. SCART Video output	Adjust PI030 : standard BG Adjust PI035 : standard L V = 0,7 Vpp (Black/white level)
H - VCO	SERVICE MODE	See Adjustment in Service Mode (GEOMETRY Menu)		
DCU Vertical Power Stage Zero	SERVICE MODE V POSITION	Standard TV - Settings : ☼ + ◑ + ◐ = 50%	V= 1 BP06, DCU Board, 1 BP07	DC Voltage - V to minimum. (=0 if possible)

TUBE NAME	DESCRIPTION	Usys jumper	Usys
RP - 4/3 RP - 16/9	4/3 46" - 52" FUTURE USE	JP915	134V +/- 0.5V

U G2 - DEFLECTION YOKE POSITION - CENTERING MAGNETS

In order to access the G2 settings (CRT G, R, B), the deflection yokes and their adjustment magnets, disengage the loudspeaker cover from the front panel then remove the panel which provides access to the setting flap.

Pour accéder aux réglages de G2 (CRT G,R,B), aux déviateurs ainsi qu'à leurs aimants de réglages déboiter le cache haut-parleur de la face avant puis retirer le panneau d'accès à la trappe de réglage.

Um Zugang zu den G2-Einstellern (CRT R, G, B), den Ablenkeinheiten und deren Einstellmagnete zu erhalten, hängen Sie die Lautsprecherabdeckung an der Frontseite des Gerätes aus und schrauben die sich darunter befindliche Abdeckplatte ab.

Per accedere alle regolazioni G2 (CTR, G, R, B), gioghi di deviazione magnetica e magneti di regolazione, liberare la maschera altoparlante del frontale quindi rimuovere il pannello d'accesso al foro di regolazione.

Para acceder a los ajustes de G2 (CRT, G, R, B), los desviadores y sus imanes de ajuste, retire la cubierta de los altavoces del panel frontal y seguidamente retire el panel que facilita el acceso a la lengüeta de ajuste.

CRT U G2 METHOD 1 Measurement method	G2 potentiometer G2 Red : PV101 G2 Blue : PV201 G2 Green : PV301	Standard TV - Settings : ☼ + ◑ + ◐ = 50% TV to AV1 : Black test pattern	Oscillo. CRT G2 pot. video Collector TK103 (radiator) CRT.G. RP 19.00 CRT R. RP 19.00 CRT B. RP 19.00	CRT 1 - Adjust VG2 CRT. R : V= 180V V 2 - Repeat for : CRT G , CRT B.
METHOD 2 Cutoff counter method SERVICE MODE	SERVICE MODE	Standard TV - Settings : OMA Position No test pattern (generated by internal text processor).	SERVICE MODE Call up VIDEO alignment menu Adjust R-Cut off and G-Cut-off to 80H temporary Select G2 Alignment in Service Mode Adjust the 3 G2 Pot. on 3 CRT Boards for R=45; G=50; B=48 Select "Restore" in Service Mode and press "OK" to restore the cut-off values.	

DEFLECTION YOKE POSITION

Yoke / Déviateur — TV : AV1 Test pattern; Standard TV - Settings : ☼ + ◑ + ◐ = 50% — Horizontal line

GREEN DEFLECTION YOKE POSITION / POSITION DEVIATEUR VERT / POSITION DER ABLENKEINHEIT FÜR GRÜN / POSIZIONE DEL GIOGO DI DEVIAZIONE MAGNETICA VERDE. / - POSICIÓN DEL DESVIADOR VERDE.

GB
- Loosen the deflection yoke securing screw B (See Fig.1 p.19).
- Rotate the deflection yoke until the centre line of the grid pattern is horizontal.
- Whilst push the deflection yoke hard up against the tubes bulb, tighten the securing screw B with a non-magnetic driver to a torque of 125 +/- 10cm.Newton's .

F
- Dessérer la vis de blocage B (Fig. 1 p.19).
- Tourner le déviateur pour obtenir la ligne centrale de la mire la plus horizontale possible.
- Pousser le déviateur dans la direction du col, et serrer la vis de blocage B avec un outil non magnétique (125 +/- 10cm.N de couple) . (Voir Fig. 1. p.19).

D
- Lösen Sie die Schraube B der Ablenkspule (Siehe Fig. 1 Seite 19).
- Drehen Sie die Ablenkeinheit so, daß die Mittellinie des Gitters horizontal verläuft.
- Drücken Sie die Spule fest in Richtung Röhrenkörper, wenn Sie die Schrauben mit einem nichtmagnetischen Werkzeug anziehen (125+/- 10 N/cm Drehmoment) (Siehe Fig. 1 Seite 19).

I
- Svitare la vite B del giogo magnetico (Vedere Illustrazione a pag.19).
- Ruotare il giogo di deviazione magnetica in modo che la linea centrale della griglia sia orizzontale.
- Spingere energicamente il gioco magnetico verso il bulbo del tubo e serrare la vite del giogo con un utensile non magnetico (utensile dinamometrico 125 +/- 10cm.). Vedere Illustrazione 1 a pag.19.

E
- Afloje el tornillo B del desviador (véase el dibujo 1, página 19).
- Gire el desviador para que la línea central de la rejilla esté horizontal.
- Empuje el desviador con fuerza en la dirección de la bombilla del tubo y ajuste el tornillo del desviador con una herramienta no magnética (125+/-10 cm.N, véase par). Vea el dibujo,página 19.

- Rotate the Green deflection yoke.
- Tourner le déviateur Vert.
- Drehen Sie die Ablenkeinheit für "Grün"
- Ruotare il giogo di deviazione magnetica Verde.
- Gire el desviador verde.

RED AND BLUE DEFLECTION YOKE POSITION / POSITION DEVIATEUR ROUGE ET BLEU / POSITION DER ABLENKEINHEITEN F¨ÜR ROT UND BLAU / - POSIZIONE DEL GIOGO DI DEVIAZIONE MAGNETICA ROSSO E BLU. / - POSICIÓN DEL DESVIADOR ROJO Y AZUL.

GB
- Cover the Blue Lens.
- Loosen the RED deflection yoke securing screw B and rotate the deflection yoke until the red horizontal centre line is parallel with the green line and tighten the securing screw.
- Cover the RED lens and repeat the process for the BLUE deflection yoke.

F
- Couvrir l'objectif du tube Bleu.
- Tourner le déviateur Rouge (voir ci-dessus) pour avoir la ligne centrale horizontale Rouge parallèle à celle de la ligne verte.
- Faire de même pour le Bleu.

D
- Decken Sie die blaue Linse ab
- Drehen Sie die "rote" Ablenkeinheit (wie oben beschriebenen) so, daß die rote Mittellinie parallel zu der grünen verläuft.
- Verfahren Sie so auch mit der "blauen" Einstellung.

I
- Coprire le lenti blu
- Ruotare il giogo di deviazione magnetica Rosso (vedere la procedura descritta in precedenza) in modo che la linea centrale Rossa sia parallela alla linea Verde.
- Seguire la medesima procedura per il giogo di deviazione magnetica Blu.

E
- Cubra la lente azul
- Gire el desviador rojo (véase el proceso anterior) para colocar la línea central horizontal roja paralela a la verde.
- Siga el mismo proceso con la azul.

- Rotate the red and Blue deflection yoke.
- Tourner les déviateurs Rouge et Bleu.
- Drehen Sie die Ablenkeinheiten für "Rot" und "Blau"
- Ruotare il giogo di deviazione magnetica Rosso e Blu.
- Gire el desviador rojo y azul.

MAGNETIC CENTERING OF GREEN RED BLUE PICTURE / CENTRAGE MAGNETIQUE DES IMAGES VERTE, ROUGE ET BLEUE / MAGNETISCHE ZENTRIERUNG DES GRÜNEN, ROTEN UND BLAUEN BILDES

Centering magnets / Aimants de réglages / Zentrier-magnete / Centrare i magneti. / Imanes de centrado.

TV : AV1 Test pattern
Standard TV - Settings : ☼ + ◑ + ◐ = 50%

1 - Set all bargraphs of convergence static adjustments to center.

1 - Positionner les bargraphs de réglages de convergence statique à mi-course.

1 - Stellen Sie alle Anzeigebalken der Statischen Konvergenzeinsteller auf Mittelstellung.

1 - Regolare al centro tutte le barre grafiche delle regolazioni di convergenza statica.

1. Fije todos los gráficos de barras de ajuste estáticos de convergencia en el centro.

CONVERGENCE: return / red horizontal / red vertical / blue horizontal / blue vertical — Using left / right keys, adjust for the best vertical lines.

INSTALLATION MENU :
- Press "INSTALL" on the RP keyb.

2 - SERVICE MODE : GEOMETRY : H AMP.

- Center the green grid with the centering magnets.
- After adjustments realign H AMP in Service Mode.
- Do the same process for Blue and Red.
- After the adjustment fix the centering magnets with a "neopren" paste.

- Centrer la grille verte avec les aimants de réglages.
- Après réglage réaligner H AMP dans le Service mode.
- Procéder de même pour le Bleu et le Rouge.
- Fixer les anneaux avec une colle de contact ("néoprène").

- Zentrieren Sie das grüne Gitter mit den Zentriermagneten.
- Nach diesen Einstellungen stellen Sie die Horizontal-amplitude im Service-Mode ein.
- Verfahren Sie so auch mit Blau und Rot.
- Nach der Justierung fixieren Sie die Zentriermagnete mit einer "Neopren-Paste"

- Centrare la griglia verde utilizzando i magneti di centratura.
- Dopo avere effettuato le regolazioni riallineare H AMP nel Service mode.
- Seguire la medesima procedura per il giogo magnetico rosso e blu.
- Dopo avere effettuato le regolazioni fissare i magneti di centratura con pasta di policloroprene.

- Centre la rejilla verde con los imanes de centrado.
- Después de realizar los ajustes, alinee de nuevo H AMP en modo servicio.
- Lleve a cabo el mismo procedimiento para azul y rojo.
- Después del ajuste, fije los imanes de centrado con una pasta de neopreno.

FOCUS

TV : AV1 Test pattern
Standard TV - Settings : ☼ + ◑ + ◐ = 50% — Sharp picture

MAIN
FOCUS Red / FOCUS Blue / FOCUS Green — FOCUS Block
FOCUS Rouge / FOCUS Bleu / FOCUS Vert — Optical Focus / Bloc optique / Optical Focus / Optical Focus / Optical Focus
FOKUS Rot / FOKUS Blau / FOKUS Grün

GB
1 - FOCUS Red
- Cover booth the Green and Blue lenses.
- Adjust the focus of the red line with the associated focus potentiometer on the Focus Block.
2 - FOCUS Green and Blue
- Repeat the procedure outlined above for both the green and blue lenses.
- When adjusting the Blue lens optimise the focus of the left-hand vertical lines.
OPTICAL FOCUS: *Access for optical focus adjustment is via the rear of the unit.*
- Loosen the lenses small locking wing nut (A) (see figure 1.)
- Finely adjust the optical focus, compromising the focus between the centre and corners.
- Tighten the small locking wing nut.

F
1 - FOCUS Rouge
- Couvrir les tubes Vert et Bleu.
- régler la concentration des lignes rouges avec le potentiometre de Focus .
FOCUS OPTIQUE :*Réglage effectué par l'arrière de l'appareil.*
- Dessérer les ailettes de blocage (A) (voir figure ci-dessous).
- Tourner la lentille pour obtenir un réglage fin: compromis entre centre et coin.
- Serrer les ailettes de blocage du bloc optique.
2 - FOCUS Vert et Bleu
répéter la totalité de la procédure pour les tubes vert et Bleu.
Pour la concentration de l'optique Bleu optimiser le réglage sur une ligne verticale à gauche de l'écran .

D
1 - FOKUS Rot
- Decken Sie die grüne und die blaue Linse ab.
- Stellen Sie den Fokus der roten Linien mit dem entsprechenden Fokuspotentiometer auf dem Fokusblock ein.
OPTISCHER FOKUS :*Die Einstellung des optischen Fokus kann von der Rückseite des Gerätes vorgenommen werden.*
- Lösen Sie die kleinen Flügelmutter (A) an der Linse (siehe Abb. 1).
- Stellen Sie vorsichtig den optischen Fokus ein: Suchen Sie einen Kompromiß im Fokus der Bildmitte und der Bildecken.
- Ziehen Sie die Flügelmuttern wieder an
2 - FOKUS Grün und Blau
Wiederholen Sie die oben beschriebenen Einstellungen für Grün und Blau.
Bei der Einstellung des optischen Fokus Blau optimieren Sie die senkrechten Linien am linken Bildrand.

I
1 - FUOCO Rosso
- Coprire le lenti verde e blu.
- Regolare il fuoco delle linee rosse utilizzando il potenziometro sul blocco della messa a fuoco.
FUOCO OTTICO: Regolazione effettuata dal retro dell'apparecchio.
- Svitare le alette (A) (Vedere illustrazione 1).
- Mettere a punto il fuoco ottico: mantenendo un compromesso tra centro e angolo.
- Fissare le alette del blocco ottico.
2 - FUOCO VERDE E blu
- Ripetere l'intera procedura per la messa a fuoco verde e blu.
- Per il fuoco ottico blu ottimizzare la linea verticale sinistra.

E
1 - FOCO rojo:
- Cubra las lentes verde y azul.
- Ajuste el foco de las líneas rojas con el potenciómetro de las mismas en el bloque de foco.
FOCO ÓPTICO :*El ajuste del enfoque óptico se realiza desde la parte trasera del aparato.*
- Aflojar la lente con la tuerca (A) (ver fig.1)
- Ajustar el enfoque óptico, manteniendo un compromiso entre el centro y las esquinas.
- Fijar la lente con la tuerca.
2 - FOCUS Green and blue
Repeat the whole procedure for green and blue.
For Blue optical focus optimize the vertical left line.

OPTICAL BLOCK :
BLOC OPTIQUE :
OPTISCHE EINHEIT :
BLOCCO OTTICO :
BLOQUE ÓPTICO :

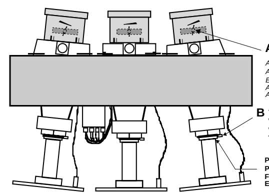


Fig. 1

DCU — DIGITAL CONVERGENCE UNIT

☼ + ◑ = 50%; ◐ = 100%; white= 100% / blanc= 100% — Oscillo. DCU BV07 1 DV11

Control CUT-OFF and DRIVE adjustment (Service Mode p.26)
Contrôler les réglages de CUT-OFF et DRIVE (Mode Service p.26)
Abgleich der CUT OFF-und DRIVE-Einstellungen (siehe Service Mode S.26)
Controllare la regolazione CUT-OFF e DRIVE (Vedere Service Mode a pag.26).
Ajustes de CUT-OFF y DRIVE (modo de servicio, pag. 26)

Peak Limiter / Blue Peak Limiter — PV03, PV04

- Turn **PVO3** fully clockwise and **PV04** fully anticlockwise.
- Slowly turn **PVO4** clockwise until the voltage **V=0.95V**, if this voltage cannot be reach then rotate **PV03** slightly anticlockwise and repeat adjustment of **PV04** until **V=0.95V**.
- Now adjust **PV03** so that **V=0.85V** and readjust **PV04** for a limit of **V=0.95 V**.

- Tourner à fond **PV03** dans le sens des aiguilles d'une montre.
- Tourner à fond **PV04** dans le sens **inverse** des aiguilles d'une montre, puis augmenter doucement jusqu'à **V=0.95V**.
(Si on ne peut pas atteindre **0.95V** tourner un peu **PV03** pour que le réglage soit possible).
- Régler ensuite **PV03** pour **V=0.85V**. et retoucher **PV04** à la limite de **V=0.85V**

- Drehen Sie den Regler **PV03** an den Rechtsanschlag.
- Drehen Sie den Regler **PV04** an den Linksanschlag und stellen Sie dann langsam **0,95 V** ein.
(Wenn keine **0.95 V** erreicht werden können, drehen Sie bitte leicht an **PV03**, so daß die Einstellung erreicht werden kann).
- Dann pegeln Sie mit **PV03 0,85 V** ein und justieren mit **PV04** die Grenze von **0,95 V**.

- Girare a fondo in senso orario **PVO3**.
- Girare a fondo in senso antiorario **PVO4**, quindi aumentare lentamente fino a **V=0,95V**.
(Se non si riesce a raggiungere **0.95V**, girare leggermente **PV03** per consentire la regolazione).
- Regolare poi **PVO3** al valore di **V=0.85V** e regolare ancora **PV04** al limite di **V=0,95V**.

- Gire **PV03** al máximo en el sentido de las agujas del reloj.
- Gire **PV04** al máximo en sentido contrario al de las agujas del reloj y después aumente suavemente hasta que **V=0.95 V**.
(Si no puede alcanzar **0.95V**, gire un poco **PV03** para posibilitar el ajuste).
- Ajuste a continuación **PV03** para que **V=0.85V** y reajuste **PV04** hasta el límite de **V=0.95 V**

DC-Compensation level (blue gamma) adjustment / Réglage du niveau de compensation (Gamma bleu) / Einstellung DC-Kompensations-Pegel (Blau Gamma) / Regolazione livello di compensazione DC (gamma blu). / Ajuste de nivel de compensación DC (gamma azul) — PS01

☼ + ◑ + ◐ = 50%
AV1 : No signal

DC= BV20 1, 6, BIAG, BV03

1- Jumper **BS02** ⟶ **BS01**
-Record the voltage value V
-Noter la valeur de la tension V
-Notieren Sie den Wert Spannung V
-Notare il valore della tensione V
-Anotar el valor de la tensión V
} 2.0V < V < 3.0V

2- Jumper **BS02** ⟶ **BS03**
-Adjust PS01 to obtain V on Pin BV20.
- Régler PS01 pour obtenir V sur BV20
-Stellen Sie an BV20 mit dem Einsteller PS01 die Spannung V ein.
-Regolare PS01 per ottenere V su pin BV20.
- Ajuste PS01 para obtener V en 1 de BV20..

After the adjustment leave BS02 to BS03.
Après réglage laisser BS02 connecté à BS03.
Nach der Einstellung lassen Sie BS02 auf BS03
Dopo avere effettuato la regolazione separare BSO2 e BSO3.
Después del ajuste, deje BS02 a BS03

GEOMETRY adjustments	SERVICE MODE	See adjustment in Service Mode (GEOMETRY Menu) Siehe Abgleich im Service Mode (GEOMETRY Menü)
COLOUR adjustments	SERVICE MODE	See adjustment in Service Mode (VIDEO Menu) Siehe Abgleich im Service Mode (VIDEO Menü)
CONVERGENCE KONVERGENZ CONVERGENZA CONVERGENCIA	SERVICE MODE	See adjustments in "Service Mode (Convergence Alignment Menu) ". Siehe Abgleich im Service Mode (CONVERGENCE Menü)

SERVICE MODE (GB) — MODE SERVICE (F) — SERVICE - MODE (D) — SERVICE - MODE (I) — MODO SERVICIO (E)

I - ENTER/EXIT SERVICE MODE - ENTREE/SORTIE DU MODE SERVICE - EIN-UND AUSSTIEG SERVICE MODE - ACCESSO/USCITA ALLA/DALLA FUNZIONE - ENTRADA/SALIDA MODO SERVICIO

1 ACCESSING THE SERVICE MODE

TV Control Panel Access

- Switch "Off" the mains supply to the TV .
- Whilst holding depressed the **PR-** and **VOL-** on the projector keyboard, switch "On" the mains supply to the TV.
- Once initialised, the Main Service Menu will appear on the screen of the TV.

Note :
In service mode :
- *The child lock function is re-initialised*
- *The lock function (PIN Number) is ignored.*
- *All Wake-up/Sleep timer settings are cleared.*
- *SCART socket pin 8 switching voltages is ignored.*
- *AV- Link WSS detection , EPG and Teletext functions are disabled.*
- *Automatic standby mode switching functions (no conditions) are disabled.*
- *Brightness, Colour and Contrast are set to factory settings.*
- *Sharpness settings are set to MID position.*
- *Contrast expander is set to low.*
- *Automatic Install mode is disabled.*
- *Format and Zoom are reset to factory defaults.*

Accès avec le clavier du téléviseur

- Arrêter le TV avec la touche **M/A.**
- Tout en appuyant sur les touches **PR -** et **VOL - ,** mettre le TV en service à l'aide de la touche **M/A**.
- Maintenir enfoncées les touches **PR -** et **VOL -**.
  Le menu suivant apparaît.

Note :
En mode service:
- *Le verrouillage parental est effacé (réinitialisé).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *La programmation des heures «réveille/matin» est annulée.*
- *Possibilité de passer en mode service avec commutation lente active.*
- *AV- Link , la détection WSS, l'EPG et le Vidéotexte ne sont pas validés.*
- *La fonction de stand-by automatique en cas d'absence de signal d'antenne n'est pas validée.*
- *Les valeurs de réglages usine sont affectées au contraste, à la couleur et à la lumière.*
- *Le contour est appelé à sa valeur moyenne.*
- *L'expansion contraste est au niveau bas.*
- *Le mode d'installation et l'ambiance «Light sensor» ne sont pas validés.*
- *Zoom et format ignorées.*

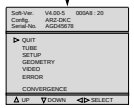
Zugriff über die Tastatur des Fernsehgeräts

- **Fernsehgerät** über die EIN/AUS - Taste ausschalten.
- Gleichzeitig die Tasten PR- und VOL- drücken und den TV über die EIN/AUS-Taste einschalten.
- Die Tasten PR- und VOL - gedrückt halten.

Anmerkung :
Im SERVICE MODE :
- *wird die Sperrfunktion (PIN-Nummer) ignoriert und die Kindersicherung gelöscht (reinitialisiert).*
- *werden alle Ein- und Ausschaltzeitgeber gelöscht.*
- *wird die SCART - Schaltspannung ignoriert.*
- *werden AV- Link WSS, EPG und Videotext gesperrt*
- *wird die Automatische Abschaltung bei fehlendem Antennensignal gesperrt.*
- *werden Kontrast, Farbe und Helligkeit auf Standardwerte gesetzt.*
- *wird die Bildschärfe auf Mittelstellung gesetzt.*
- *wird der Kontrast-Expander auf "gering.." gesetzt.*
- *wird der Installations-Modus gesperrt.*
- *wird das Standardformat bzw. der Standard-Zoom-Modus gewählt.*

tramite i comandi del televisore

- Spegnere il TV mediante il pulsante ON/OFF.
- Premere i tasti **PR- e VOL-** accendendo il TV con il pulsante ON/OFF.
- Premere i pulsanti **PR - e VOL -** .



Nota :
Nel service mode:
- *la funzione Blocco (Numero Pin) viene ignorata e la funzione Blocco Bambini è reinizializzata.*
- *Cancella la programmazione sveglia*
- *Il piedino 8 della scart viene ignorato.*
- *I riconoscimenti AV-Link WSS, EPG e televideo vengono disabilitati.*
- *Funzione automatica di standby, nel caso di mancanza del segnale d'antenna viene disabilitata*
- *Contrasto, colore, luminosità : regolazioni di fabrica.*
- *Nitidezza: media (nominale)*
- *Espansore contrasto troppo basso.*
- *Modo Instalación es desactivado.*
- *Formato default e zoom.*

Acceso panel control TV

- Apague la TV con el botón MARCHA.PARADA.
- Pulse los botones **PR -** y **VOL -** y sin soltarlos,pulsar la tecla MARCHA.PARADA.
- Libere los botones **PR -** y **VOL -** .

Nota :
En modo servicio:
- *Se ignora la función de bloqueo y se inicializa la función "cerradura ninos".*
- *Anula todos las horas programadas*
- *La pattilla 8 del SCART es ignorada*
- *La detección WSS AV Link, EPG, y Telexto son desactivados.*
- *El apagado automático en caso de ausencia de señal de antena es desactivado.*
- *El contraste,color y brillo son puestos a los valores de fábrica.*
- *la nitidez es puesta al punto medio.*
- *La expansión de contrast al nivel bajo*
- *Modo Instalación es desactivado.*
- *Zoom y formato ignorados.*

2 TEMPORARY EXIT FROM SERVICE MODE

- Press the "Exit" button on the RCU.
- Pressing the "Men" button on the RCU will active the customer menus.

- The Service Menu can be re-entered by pressing the "Blue" button on the RCU.

2 SORTIE TEMPORAIRE DU MODE SERVICE

- Utiliser la touche Exit de la télécommande.
- Le menu utilisateur peut être accessible via la touche «Menu».

- Pour entrer à nouveau dans le mode service utiliser la touche bleue.

2 VORÜBERGEHENDES VERLASSEN DES SERVICE MODE

- Auf der Fernbedienung EXIT drücken.
- Mit der Taste Menü gelangen Sie zum Übersichts menü.

- Mit der blauen Taste gelangen Sie zum Service-Menü .

2 USCITA TEMPORANEA DAL SERVICE MODE

- Premere Exit sul telecomando.
- Al menu di uso quotidiano si accede attraverso il pulsante Menu.

- È possibile rientrate nel Menu Field Service attraverso il pulsante Blue.

2 SALIDA TEMPORAL DEL MODO SERVICIO

- Pulse Salir en el mando a distancia
- Con el botón Menu puede acceder al menú de uso cotidiano.

- Puede entrar al Menú Servicio con el botón azul.

3 EXITING FROM SERVICE MODE

Remote Control | **TV Control Panel** | **"On/Off" or "Standby" buttons**

- Select the "QUIT" line of the "Main Service Menu.
- RCU "Standby" button or switch "Off" mains supply

- Press «'», «OK» or «'» button
- Press «VOL.+»button

- TV mode.

Values or adjustments not stored before exiting the service mode will not be saved in the NVM

3 SORTIE DEFINITIVE DU MODE SERVICE

télécommande | **clavier du téléviseur** | **Inter M/A ou Stand-by**

- Aller au point «QUIT» dans le menu principal du mode service.
- Fonction Stand-by ou «off» par M/A.

- Appuyer sur «'», «OK» ou «'»
- Appuyer sur «VOL.+»

- Mode TV.

Les valeurs ou réglages non mémorisées avant la sortie ne seront pas écrites en NVM.

3 ENDGÜLTIGES VERLASSEN DES SERVICE MODE

Fernbedienung | **TV-Bedienfeld** | **EIN /Aus - Taste**

- Wenn der Zeiger im Hauptmenü des Service-Modus auf BEENDEN steht
- Mit Standby-Funktion oder **EIN/AUS** - taste ausschalten

- Taste «'», «OK» oder «'»drücken
- Taste «VOL+» drücken

- TV Modus

Werte und Einstellungen, die nicht vor dem Verlassen des Service-Modus gespeichert wurden, werden nicht in den Permanentspeicher übernommen

3 USCIRE DAL SERVICE MODE

telecomando | **Panello controllo TV** | **Tasto on/off di**

- Andare al punto QUIT nel Modo Field service del Menu principale
- Funzione Stand-by o «off» con il tasto on/off

- Premere «'», «OK» o «'»
- Premere «VOL.+»

- Modo TV.

Valori e regolazioni non vengono memorizzati prima di uscire dal Modo service e non vengono scritti nell'NVM

3 SALIDA DEL MODO SERVICIO

telecomando | **Panel de control TV** | **Tecla on/off de**

- Vaya al punto QUIT del menú principal de modo Servicio
- Función Stand-by o desconexión (off) con tecla on/off.

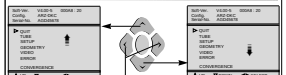
- Pulse el botón «'», «OK» o «'»
- Pulse el botón«VOL.+»

- Modo TV.

Los valores o ajustes no se guardan antes de salir del modo servicio y no se escriben en el NVM

II - NAVIGATION INSIDE THE SERVICE MODE - DEPLACEMENT DANS LE MODE SERVICE NAVIGATION IM SERVICE MODE - OPZIONI NEL SERVICE MODE - BUSQUEDA EN MODO SERVICIO

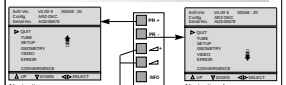
1 REMOTE CONTROL - TELECOMMANDE - FERNBEDIENUNG TELECOMANDO - MANDO A DISTANCIA



Select option
- Option anwählen
- Selezionare l'opzione
- Seleccionar opción

- "Change" value
- Wert "ändern"
- "Cambiare" valore
- "Cambiar" valor

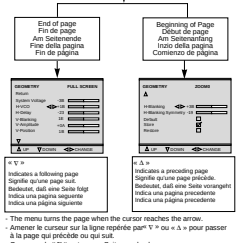
2 TV CONTROL PANEL - CLAVIER TV - TASTATUR DES FERNSEHGERÄTS - COMANDI DEL TELEVISORE -



Select option
- Option anwählen
- Selezionare l'opzione
- Seleccionar opción

- "Change" value
- Wert "ändern"
- "Cambiare" valore
- "Cambiar" valor

Changing page - Changement de page Seitenwechsel - Cambiare Pagina - Cambio de página

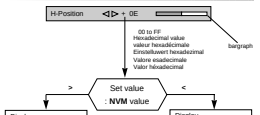


- The menu turns the page when the cursor reaches the arrow.
- Amener le curseur sur la ligne repérée par« ▽ » ou « △ » pour passer à la page qui précède ou qui suit.
- Cursor nach « ▽ », « △ » zum Seitenwechsel
- Il cursor su « ▽ », « △ » cambia pagina.
- Cursor en « ▽ », « △ » cambia las páginas

« ▽ »
Indicates a following page
Signifie qu'une page suit.
Bedeutet, daß eine Seite folgt
Indica una pagina seguente
Indica una página siguiente

« △ »
Indicates a preceding page
Signifie qu'une page précède.
Bedeutet, daß eine Seite vorangeht
Indica una pagina precedente
Indica una página precedente

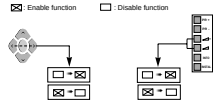
3 DISPLAYING THE VALUE OF THE SETTING - AFFICHAGE DES VALEURS - ANZEIGE DES EINSTELLWERTES VISUALIZZAZIONE DEL VALORE DELLA REGOLAZIONE - VISUALIZACION DEL VALOR DE AJUSTE



4 TOGGLE FUNCTIONS - VALIDATION DES FONCTIONS UNSCHALT FUNKTIONEN - FUNZIONI DI COMMUTAZIONE - FUNCION CONMUTACION

To enable a function check (tick) ☒ the box.
Pour valider une fonction cocher ☒ la case correspondante
Zum Implementieren einer Funktion das Kontrollkästchen ☒ aktivieren (ankreuzen)
Per validare una funzione , (vistare) ☒ la casella
Para poner en fucionamiento una función verifique (señale) ☒ la casilla

☒ : Enable function ☐ : Disable function



5 STORING VALUES IN MEMORY - MEMORISATION DES VALEURS - SPEICHERN DER WERTE - MEMORIZZARE VALORI - VALORES ALMACENADOS EN LA MEMORIA

After setting, the values are stored in NVM.
Après réglages les valeurs sont mémorisées en NVM.
Nach dem Abgleich müssen die Werte im NVM gespeichert werden.
Dopo la regolazione i valori vengono memorizzati in NVM.
Después del ajuste, los valores son almacenados en NVM

The box ☐ becomes ☒
During alignment, values are temporarily stored in RAM.
En cours d'alignement les valeurs sont mémorisées temporairement en RAM
Während des Abgleichs werden die Werte vorübergehend im RAM gespeichert
Durante l'allineamento i valori vengono memorizzati provvisoriamente nella RAM
Durante el alineamento, los valores son almacenados temporalmente en RAM

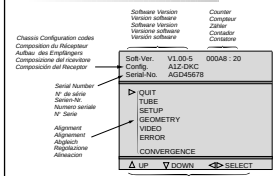
Store ➡ Copiés RAM values into NVM
Copie la valeur RAM en NVM
Kopieren der Werte von RAM nach NVM
Copiare i valori RAM in NVM
Copiar valores RAM en NVM

Restore ➡ Copies all values from NVM into RAM.
Copie toutes les valeurs des données NVM en RAM
Kopiert alle NVM-Datenwerte in den RAM
Copiare tutti i valori da NVM nella RAM
Copia todos los valores de NVM a RAM

ROM Default ➡ All the default values of a page in use are stored in RAM.
L'ensemble des valeurs par défaut d'une page courante est chargé en RAM.
Sämtliche Standardwerte der aktuellen Seite werden in das RAM geladen.
Tutti i valori di default di una pagina in uso vengono memorizzati nella RAM
Todos los valores por defecto de la página en curso están almacenados en RAM.

III - LITE-MENU FOR FIELD SERVICE MODE - MENUS DU MODE SERVICE - MENÜS IM SERVICE MODE

1 MAIN MENU - MENU PRINCIPAL - HAUPTMENÜ



Navigation inside the Service Mode
Navigation dans le Service Mode
Suche im Service Mode
Opzioni del Service Mode
Opciones del Modo Servicio

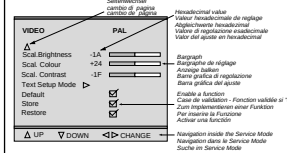
TV CONFIGURATION - CONFIGURATION DU TV - GERÄTEKONFIGURATION - CONFIGURAZIONE DEL TV - CONFIGURACIÓN DEL TV

Config. A1Z-DKC

Character 1 : Tube type : «A»= 4/3 , «W» =16/9
Character 2 : Chassis type : «5» = 50Hz, «1»= 100 Hz
Character 3 : Zoom available : «Z»=yes, «-»=not
Character 4 : Ambiant Sensor : «S»= detected, «-»= not
Character 5 : Dolby : «D»=detected, «-»= not
Character 6 : AV Link detected : «K»=IR link detected, «-»= not
Character 7 : Password mode: «C»= Password stored, «-»= not

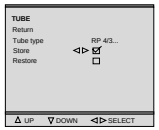
TIME COUNTER - COMPTEUR DE TEMPS - ZÄHLER - CONTATORE - CONTADOR
The counter indicates the number of hours. (0 to 65535) the TV has been operating in hexadecimal notation.
Le compteur de temps indique le nombre d'heures de service du TV. Il compte de 0 à 65535 heures. L'affichage est en hexadécimal.
Der Zähler zeigt an, wieviele Stunden der Fernseher in Betrieb war. Die Anzeige ist hexadezimal.
Il contatore indica il numero di ore di funzionamento del TV. Puo' contare da 0 a 65535. La visualizzazione è esadecimale.
El contador indica el número de horas de servicio de la TV. Cuenta de 0 a 65535 horas. El visualizador es hexadecimal.

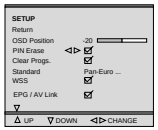
2 SUBMENU - SOUS-MENU - UNTERMENÜ



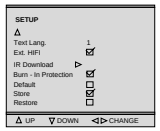
Navigation inside the Service Mode
Navigation dans le Service Mode
Suche im Service Mode
Opzioni del Service Mode
Opciones del Modo Servicio

ALIGNMENT PROCEDURE - PROCESSUS DE REGLAGES - ABGLEICH - VISUALIZZAZIONE DEL VALORE DELLA REGOLAZIONE - PROCEDIMIENTO DE ALINEACION

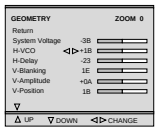




page 1

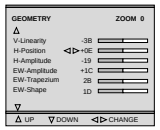


page 2

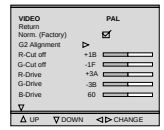


page 1

Test Bar pattern used : 4/3 with geometric circle. Adjust separate for 4/3 and 16/9 format. See annexed

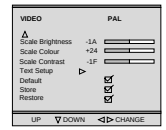


page 2

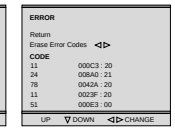


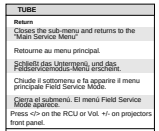
page 1

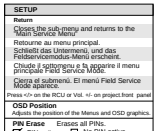
Color standard or RGB is autodetected and displayed opposite the displayed opposite the menu title.

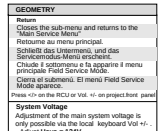


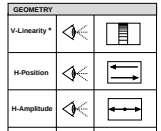
page 2

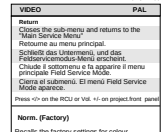


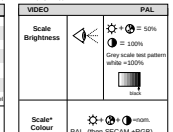


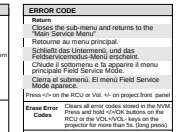












IMPORTANT

Factory setting values are indicated on a label inside the optical block housing. These should be used in preference to the default values.

Les valeurs de réglages usines sont indiquées sur une étiquette située à l'intérieur du caisson bloc-optique.Elles sont à utiliser de préférences aux valeurs par défaut

Die Fabrik-Einstellwerte sind auf einem Aufkleber im Inneren des Gehäuses des Optischen Blocks angebracht.
Diese sollten den Defaultwerten vorgezogen werden.

I valori di regolazione di fabbrica vengono indicati su una etichetta collocata all'interno del contenitore del blocco ottico.
Questi valori devono essere utilizzati di preferenza ai valori di default.

Los valores de los ajustes de fábrica se indican en una etiqueta situada en el interior de la cubierta del bloque óptico. Son de utilización preferente a los valores por defecto

RP C19
First issue 07 / 98

ERROR CODES

GB

11 1st Audio_MSP doesn't answer
12 2nd Audio-MSP doesn't answer
13 Audio-DSP doesn't answer
14 Video IC STV2161/2 doesn't answer
15 Chroma IC 2151/9143 doesn't answer
16 Upconverter DMU0 doesn't answer
17 Audio (w/ Dolby) module not detected
18 SCART IC TEA6415C doesn't answer
19 Tuner CTT5000 doesn't answer
21 I2C Bus1 data line held low
22 I2C Bus2 data line held low
23 I2C Bus1 clock line held low
24 I2C Bus2 clock line held low
25 Switched 5V not available
26 Tube doesn't gets warm in time
27 Deflection detects +3 times protection (problem detected on "breathing" line)
29 DRAM memory of Megatext defect
31 RAM is full
32 Software-timer isn't available
33 The PSI chip (STV2165) doesn't answer
34 The NVM (X24C32) chip doesnt answer
35 13V not available
36 Wrong addr. NVRAM passed to the bus-handler
37 Unexpected level on NMI (interrupt) line found (possible cause : tuba flashover)
38 M3Lbus for Megatext is blocked
39 Megatext (SDA5273) doesn't answer
41 bus1 (data line) not recoverable
42 bus2 (data line) not recoverable
43 MCU (Motion Mastering Up-Converter) doesn't answer
44 Convergence IC (STV2040) doesn't answer
45 Defect "Module Video" is detected
46 "Default" NVRAM of DCU doesn't answer
47 Test Pattern chip of DCU defect
48 Test Pattern NVRAM convergence chip defect
49 Convergence module doesn't answer anymore
52 The Teletext module is not conform .

F

11 Processeur Audio MSP ne répond plus
12 Deuxième MSP ne répond plus (Dolby)
13 Audio-DSP ne répond plus (produit Dolby)
14 Video-IC STV2161 ou 2162 ne répond plus
15 Chroma IC STV2151 ou TDA9143 ne répond plus
16 Convertisseur de frequence d'image digital DMU0 (Mastering Intelligente) ne répond plus
17 Module son (ou Dolby) n'est pas détecté
18 Commutateur SCART TEA6415C ne répond plus
19 Tuner CTT5000 ne répond plus
21 I2C-Bus 1 data bloqué au niveau bas
22 I2C-bus 1 clock bloqué au niveau bas
23 I2C-bus 2 data bloqué au niveau bas
24 I2C-bus 2 clock bloqué au niveau bas
25 Le "5V commuté" n'est pas disponible
26 Tube ne chauffe pas à temps
27 Plus que 3-fois la défléction a détecté une "protection" (c'est-a-dire qu'il y a un problème détecté sur la ligne "breathing")
29 Mémoire (DRAM) du Megatext est en panne
31 Plus de place en RAM
33 STV 2165 (PSI 100Hz) ne répond plus
34 NVM (mémoire) X24C32 ne répond plus
35 +13V n'est pas disponible
36 Adresse NVRAM inconnue
37 Problème détecté sur la ligne "Interrupt" pendant la démarrage ou le fonctionnement duTV. Possibilité: "arking"?
38 Bus M3L pour Megatext est bloqué
39 Megatext (SDA5273) ne répond plus
41 I2C-bus 1 data reste bloqué
42 I2C-bus 2 data reste bloqué
43 MCU (convertisseur de frequence d'image digital/ Motion Mastering) ne répond plus
44 Le CI Convergence (STV2040) ne répond plus
45 "Vidéo Module" erroné détecté
46 La NVRAM "Default" de la platine de convergence ne répond plus
47 Test Pattern du CI de Convergence erroné
48 Test Pattern des NVRAM de Convergence erroné
49 La platine de Convergence ne répond plus.
52 Le Module Text (DVT) n'est pas le bon.

D

11 Audio MSP Prozessor antwortet nicht.
12 Zweiter Audio MSP Prozessor antwortet nicht.(Dolby)
13 Audio DSP Prozessor antwortet nicht. (Dolby)
14 IC STV2161/62 antwortet nicht
15 IC STV2151 / TDA9143 antwortet nicht
16 DMU0 (Upconverter (Videomodul) antwortet nicht
17 Audio- oder Dolby-modul nicht erkannt
18 TEA6415C antwortet nicht (SCART Schalter)
19 Tuner CTT5000 antwortet nicht
21 I2C Bus1 data line ist auf low
22 I2C Bus2 data line ist auf low
23 I2C Bus1 clock line ist auf low
24 I2C Bus2 clock line ist auf low
25 Geschaltete 5V nicht vorhanden
26 Röhre wird nicht rechtzeitig warm
27 Ablenkung meldet 3 mal Fehler. (Problem auf Breathing Leitung)
29 DRAM des Megatext defekt
31 RAM antwortet nicht
33 STV 2165 (PSI 100Hz) antwortet nicht
34 NVM Chip antwortet nicht (X24C32)
35 +13V nicht vorhanden
37 Unerwarteter Zustand an NMI (Interrupt) line gefunden. (Mögliche Ursache = Röhren-Überschlag?)
38 M3L Bus des Megatext blockiert
39 Megatext (SDA 5273) antwortet nicht
41 Bus1 (data line) nicht möglich zu reaktivieren
42 Bus2 (data line) nicht möglich zu reaktivieren
43 MCU (Motion Mastering Up-Converter) antwortet nicht
44 Konvergenz IC (STV2040) antwortet nicht
45 falsches Videomodul (falscher MCU)
46 NVRAM für Konvergenz antwortet nicht
47 Bildmuster in Konvergenz-IC ist defekt
48 Bildmuster aus dem NVRAM ist defekt
49 Bildröhrtyp "R" ist eingestellt, aber kein Konvergenz-IC gefunden
52 Falsches Videotextmodul.

I

11 Il primo IC Audio MSP non risponde
12 Il secondo IC Audio MSP non risponde
13 L'integrato Audio DSP non risponde
14 L' IC 2161/2 non risponde
15 L'IC 2151/9143 non risponde
16 Il convertitore non risponde
17 Il Modulo Audio non viene identificato
18 Il TEA6415C non risponde
19 Il sintonizzatore non risponde
21 Linea data I2C bus 1 forzata bassa
22 Linea I2C bus 2 forzata bassa
23 Linea clock I2C bus 1 forzata bassa
24 Linea clock I2C bus 2 forzata bassa
25 La tensione 5V commutati non disponibile
26 Il tubo non raggiunge la corretta temperatura nel tempo stabilito
27 Per 3 volte, la deflessione ha rilevato una protezione (problema riscontrato dalla linee "breathing")
29 La memoria DRAM del Megatext è difettosa
31 RAM está llena
33 El chip STV2161 (PSI 100Hz) no responde
34 La memoria no voldá X24C32 no responde
35 No están disponibles los + 13 v.
37 Problema detectado en la línea "Interrupt" durante el arranque o el funcionamiento del TV.Posibilidad de chispazos en muy alta?
38 El bus M3L para el Megatext está bloqueado
39 Megatext (SDA5273) no responde
41 Data 1 del bus I2C permanece bloqueado
42 Data 2 del bus I2C permanece bloqueado
43 MCU (convertidor de frecuencia de imagen digital/ Motion Mastering) no responde
44 Cir. integrado de convergencia (STV2040) no responde
45 Fallo detectado en el módulo de Vídeo
46 Fallo en NVRAM o DCU no responde
47 Fallo en c.i. de mira o DCU
48 Fallo en c.i. NVRAM de convergencias
49 El módulo de convergencias no responde
52 El módulo Teletexto no es conforme

E

11 Processador de audio MSP no responde
12 Segundo MSP no responde (Dolby)
13 Audio DSP no responde
14 C. Ir. integrado de video STV2161 0 2162 no responde
15 C.Ir. 2151/9143 non risponde
16 Convertidor de frecuencia de imagen digital DMU0 (Mastering Inteligente) no responde
17 Módulo de sonido (o Dolby) no se detecta
18 Conmutador Scart (TEA6415C) no responde
19 Tuner CTT5000 no responde
21 Data 1 del bus I2C permanece en bajo
22 Clock 1 del bus I2C permanece en bajo
23 Data 2 del bus I2C permanece en bajo
24 Clock 2 del bus I2C permanece en bajo
25 No se dispone de los "5v conmutados"
26 El tubo tarda en calentarse
27 La protección de la deflexión actúa mas de 3 veces (el problema se detecta en la línea de "breathing")
29 La memoria DRAM del Megatext está defectuosa
31 RAM está llena
33 El chip STV2161 (PSI 100Hz) no responde
34 La memoria no voldá X24C32 no responde
35 No están disponibles los + 13 v.
37 Problema detectado en la línea "Interrupt" durante el arranque o el funcionamiento del TV.Posibilidad de chispazos en muy alta?
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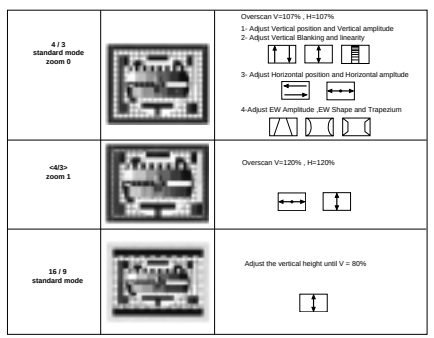
47 Fallo en c.i. de mira o DCU
48 Fallo en c.i. NVRAM de convergencias
49 El módulo de convergencias no responde
52 El módulo Teletexto no es conforme

GEOMETRY MODE ALIGNMENT

4/3 picture tube

Signal : 4/3 test pattern



Note : GEOMETRY : V-Amplitude

Vertical Interlace - Entrelacement Vertical - Vertikal Interlace
Interlaccio Verticale - Entrelazado vertical

- Check the vertical Interlace*.
- Contrôler l'entrelacement vertical*.
- Überprüfen Sie das vertikale Interlacing ("Verschachtelung") der Zeilen*.
- Controllare l'intelaccio verticale*.
- Compruebe El entralazado vertical*.

Good : Interlaced *Wrong : Paired*

If the interlace is poor, adjust the **VAMP.** by 1/2 steps (+ or -) to achieve the best interlace.

Si l'entrelacement n'est pas correct agir sur **V AMP** de une ou deux valeurs pour obtenir entrelacement correct.

Bei einer Paarigkeit der Zeilen verstellen Sie **V AMP** um 1 oder 2 Stufen (+ oder -)

Se l'interlaccio non e' idoneo, correggere **VAMP** di 1 o 2 fasi (+/-) per ottenere l'interlaccio migliore.

Si el entrelazado no es bueno, mueva **VAMP** en 1 o 2 pasos (+ o -) para conseguir la mejor.

* To check in 4:3 and in 16:9
* Contrôler en 4:3 et 16:9
* Kontrollieren Sie im 4:3 und im 16:9 Format
* Controllare nel formato 4:3 e 16:9
* Revisar en 4:3 y 16:9

GEOMETRIE / CONVERGENCE ADJUSTMENT - GEOMETRIE / REGLAGES DES CONVERGENCES / GEOMETRIE / KONVERGENZ ABGLEICH - GEOMETRIA / REGOLAZIONE CONVERGENZA - GEOMETRIA / AJUSTE DE CONVERGENCIA

ADJUSTMENTS LEVELS

For every point on the screen, each of the three beams has a specific correction possibility in both horizontal and vertical planes. To achieve this, three levels of adjustment are available in the Service Mode. The unit is also equipped with an alignment grid pattern generator incorporated on the convergence circuit board.

Trois niveaux de réglages sont accessibles dans le mode service et permettent à partir d'une mire de quadrillage générée par les circuits de convergence d'apporter une correction horizontale et verticale aux trois faisceaux de couleur.

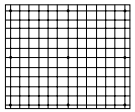
Für jeden Punkt des Bildschirmes und für jeden der drei Katodenstrahlen ist eine spezielle Korrektur sowohl horizontal als auch vertikal, möglich. Im Service-Mode sind drei Ebenen (Level) für den Abgleich der Konvergenz verfügbar. Das Gittertesbild wird von der Konvergenzschaltung erzeugt.

Per ogni punto dello schermo, ognuno dei tre raggi ha una specifica possibilità di correzione in entrambi i piani orizzontale e verticale. A questo scopo, sono disponibili tre livelli di regolazione in Service Mode. L'unità, inoltre, dispone di un generatore di griglia per l'allineamento, incorporato sulla piastra convergenza.

Tres niveles de ajustes están disponibles en Modo Servicio y permiten a partir de una mira de cuadrícula generada por los circuitos de convergencia, efectuar correcciones especificas en los planos horizontal y vertical para cada uno de los tres haces.

LEVEL 1

9 points for Green and Blue



3 X 3 points

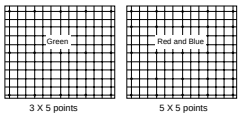
Factory adjusts reserved
Réservé aux réglages Usines
Fabrikeinstellungen
Regolazioni riservate alla fabrica
Ajustes reservados para fábrica

MUST NOT BE USED
NE DOIT PAS ETRE UTILISE
DÜRFEN NICHT VERÄNDERT WERDEN
NO DEVE ESSERE USATO
NO DEBE SER USADO

LEVEL 2

Large and general corrections
Corrections générales étendues
Grundeinstellungen
Correzioni generali estese
Correcciones generales y extendidas

15 or 25 points

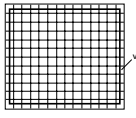


3 X 5 points 5 X 5 points

LEVEL 3

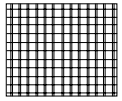
Small local corrections
Petites corrections locales
Feineinstellungen
Piccole correzioni locali
Pequeñas correcciones locales

195 points for Green, Red , Blue

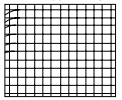


DESCRIPTION OF POSSIBLE CONVERGENCE PROBLEMS

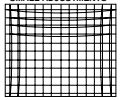
RED AND BLUE PICTURE SHIFTED



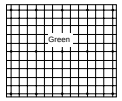
BORDERS OR SMALL AREAS ARE VERY POORLY ALIGNED



SMALL ADJUSTMENTS

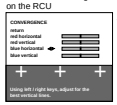


GREEN GEOMETRY IS POORLY ALIGNED



RED AND BLUE PICTURE SHIFTED (GB)

Static Adjustments
- Select "CONVERGENCE" in the Install Menu.
- Correct the shift using the "NAVIGATION" buttons on the RCU



- Press the"INSTALL." button on the projector keyboard to select in Installation menu.

- If the required alignment falls outside the central area of the barograph, set all barographs central and make the adjustments using the magnetic centring rings and blue tubes.
- Firstly, unlock the lightly glued centring rings and then make the necessary adjustments.
- Once aligned the rings must be locked using a lightweight glue or varnish in order that subsequent adjustments can be made.

CENTRAL AREA IS CORRECT. BORDERS OR A SMALL AREAS ARE VERY POORLY ALIGNED

A - GREEN geometry is correct :
- Only adjust the Red and Blue geometry using Level 3 of the convergence menu, **don't touch the green geometry !**

B - GREEN nedds a small adjustment :
- First adjust the Green geometry, then align the Red and Blue geometry using **Level 3** convergence menu.

SMALL ADJUSTMENTS ARE NECESSARY EVERYWHERE.
GREEN GEOMETRY IS CORRECT

The some convergence lines are incorrect, but Green geometry is correct.
- Adjust the Red and Blue geometry using convergence menu **Level 2**.
- Correct the borders if needed using convergence menu Level 3, **don't touch the green geometry !**.

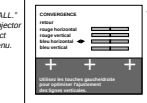
GREEN GEOMETRY IS POORLY ALIGNED

A - BLUE or RED Geometry is correct :
- Enter the convergence menu **Level 2** and press the YELLOW button on the RCU. The red, green and blue grids are displayed but only GREEN geometry can be aligned.
- Adjust the Green geometry to superimpose it on either the Red and/or Blue grid, to ease alignment select the best-converged colour and cover the others lens.

B - BLUE or RED is poorly aligned :
- Enter the Service Mode and select the GEOMETRY menu
- Adjust the alignment of the H/V Amplitudes and E/W Correction settings, if the geometry does not respond to adjustment then:
- Select convergence menu **Level 2** and press the YELLOW button on the RCU to select Green (3X5) alignment routine.
- Check that the centre point of the green grid is exactly central
- Align the grid pattern borders exactly with the screen borders.
- Align the outer edge of the picture if necessary, using convergence menu **Level 3**.
- Align RED convergence using menu **Level 2** and if necessary the borders with **Level 3**.
- Repeat the above process for BLUE alignment.

IMAGE ROUGE ET BLEUE DECALEES (F)

Réglage Statique
- Sélectionner convergence dans le menu d'installation.
- Corriger le décalage avec les touches de navigation.



- Appuyer sur la touche "INSTALL." du clavier du RP pour l'accès au menu d'installation

- Si le réglage nécessaire est loin de la position centrale des bargraphs il est recommandé de mettre ceux-ci en position centrale et de corriger avec les anneaux de centrage magnétiques des tubes correspondants.
Débloquer préalablement les anneaux fixés par un collage léger.
- refixer ensuite les anneaux avec une colle ou laque pas trop forte pour autoriser une retouche ultérieure.

CENTRE CORRECT.
BORDS OU PETITE SURFACE NON CORRECTE

A - VERT a une géométrie correcte :
- Régler seulement le Rouge et Beu avec **Level 3**, **ne pas toucher au vert !**.

B - VERT nécessite une légère correction :
- Régler le Vert avec **Level 3** et corriger ensuite le Rouge et le Bleu avec **Level 3**.

PETITES CORRECTIONS NECESSAIRES EN TOUS POINTS DE L'ECRAN.
GEOMETRIE DU VERT CORRECTE

Quelques lignes ont une convergence incorrecte mais le Vert a une géométrie correcte.
- Régler le Rouge et le Bleu avec **Level 2**.
- Corriger les bords si nécessaire avec **Level 3**, **ne pas toucher au Vert !**.

GEOMETRIE DU VERT NON CORRECTE

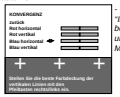
A - Géométrie du BLEU ou ROUGE correcte :
- Sélectionner **Level 2** et utiliser **la touche jaune** de la télécommande: Les images Rouge, Verte/Beue sont affichées mais la correction s'effectue sur le Vert
- Régler l'image du Vert afin de la superposer à celle du Rouge et/ou de celle du Bleu. Couvir le Bleu ou Rouge . Choisir l'image ayant la meilleure géométrie.

B - BLEU ou ROUGE ont une mauvaise géometrie :
- Selectionner dans le mode service les Réglages de géométrie H/V et Correction Est/Ouest
- Régler la Géométrie.

Si la géométrie ne peut être corrigée:
- Selectionner **Level 2** pour le Vert (3X5).
- Contrôler la position du centre.
- Régler les côtés de la mire exactement par rapport aux bords de l'écran.
- Régler les bords externes de l'image avec **Level 3** si nécessaire.
- Corriger le Rouge avec **Level 2** puis ensuite avec **Level 3** pour les bords si nécessaire.
- Procéder de même pour le Bleu.

ROTES UND BAUES BILD SIND VERSCHOBEN (D)

Statische Einstellung
-Wählen Sie im Installationsmenü "KONVERGENZ"
-Stellen Sie die beste Farbdeckung mit den Pfeil-Tasten ein.



- Drücken Sie die Taste "INSTALL" auf dem Nah-bedienfeld des Projektors um in das Installations-Menü zu kommen.

- Sollte der Einstellbereich zu klein sein oder nicht ausreichen, empfehlen wir,alle Anzeigebalken auf Mittelstellung zu bringen und eine Korrektur der Farbdeckung mittels der Zentriermagnete der jeweiligen Röhre vorzunehmen.
- Lösen Sie hierzu zuerst die Verklebung der Ringe und nehmen dann die Einstellungen vor.Danach fixieren Sie die Ringe wieder so mit einem Kleber oder mit Sicherungslack,daß ein späterer Abgleich möglich ist.

DIE BILDMITTE IST IN ORDNUNG, SCHLECHTE DECKUNG AN DEN BILDRÄNDERN ODER IN KLEINEREN FLÄCHEN.

A - GRÜN-Geometrie ist in Ordnung:
- Gleichen Sie nur Rot und Blau im **Level 3** ab, **Grün nicht verstellen !**.

B - GRÜN benötigt geringe Korrekturen:
- Gleichen Sie Grün im **Level 3** nach und korrigieren dann Blau im **Level 3**.

ÜBERALL SIND KLEINE EINSTELLUNGEN NOTWENDIG, DIE GRÜN-GEOMETRIE IST IN ORDNUNG

Einige Linien sind nicht in Konvergenz, die Geometrie von Grün ist aber in Ordnung.
- Gleichen Sie Rot und Blau im **Level 2** ab,
- Gleichen Sie die Bildränder gegebenenfalls im **Level 3** nach, **Grün nicht verstellen !**.

ABGLEICH DER GRÜN-GEOMETRIE

A - Die BLAU-oder ROT-Geometrie ist in Ordnung:
- Gehen Sie in das Konvergenzmenü **Level 2** und drücken Sie die GELBE Taste auf der Fernbedienung. Das rote, grüne und blaue Gitter werden angezeigt. Es läß sich jedoch nur die Geometrie von GRÜN einstellen.
- Bringen Sie das grüne Gitter mit dem roten oder blauen zur Deckung,Zur Vereinfachung des Abgleichs wählen Sie das am besten deckende Gitter und dunkeln die Linse der anderen Farbe ab.

B - BLAU oder ROT sind schlecht abgeglichen :
- Gehen Sie im Service Mode in das Menü "GEOMETRY"
- Gleichen Sie die H-, V-Amplitude und die Ost/West-Korrektur nach.Sollte die Geometrieeinstellung nicht reagieren:
- Gehen Sie in das Konvergenzmenü **Level 2** und drücken die GELBE Taste auf der Fernbedienung um den GRÜN (3X5)-Abgleich zu wählen.
- Überprüfen Sie ob der Mittelpunkt des grünen Gitters in der exakten Mitte des Bildschirmes ist.
- Stellen Sie die Ränder des Gittermusters exakt auf Ränder des Bildschirmes ein.
- Gegebenenfalls korrigieren Sie die Einstellungen der äußeren Ecken im Konvergenzmenü **Level 3**.
- Gleichen Sie die ROT-Konvergenz im **Level 2** ab,ggf. korrigieren Sie Ränder im **Level 3**.
- Wiederholen Sie diessen Abgleich mit BLAU.

IMMAGINE ROSSA E BLU SPOSTATA. (I)

Regolazione statica
- Selezionare Convergence nel menu Install.
- Correggere lo spostamento utilizzando i tasti numerici.

- Press the"INSTALL." button on the projector keyboard to select in Installation menu.

- Se la regolazione ottimale è lontana dalla posizione centrale della barra grafica, è consigliabile porre questi in posizione centrale ed effettuare le correzioni con gli anelli di centratura magnetici dei tubi corrispondenti.
Sbloccare inizialmente gli anelli leggermente incollati.
- Reincollarli utilizzando colla leggera o lacca per rendere possibili successivi ritocchi.

L'AREA CENTRALE È CORRETTA.
I BORDI O UNA PICCOLA AREA SONO SCORRETTI

A - La geometria del VERDE è corretta :
- Regolare solo Rosso e Blu utilizzando **Level 3**, **non toccare il Verde !**.

B - Sono necesssarie piccole modifiche anche per il VERDE:
- Regolare il Verde utilizzando **Level 3** quindi correggere Rosso e Blu utilizzando **Level 3**.

È NECESSARIO APPORTARE OVUNQUE PICCOLE MODIFICHE. LA GEOMETRIA DEL VERDE È CORRETTA.

Alcune linee non sono in convergenza ma la geometria del Verde è corretta.
- Regolare Rosso e Blu utilizzando **Level 2**.
- Se necessario, correggere i bordi utilizzando **Level 3**, **non toccare il Verde !**.

LA GEOMETRIA DEL VERDE È SCORRETTA.

A - La geometria del BLU o del ROSSO è corretta :
- Nel **Level 2** utilizzare il Pulsante giallo sul telecomando: vengono visualizzati Rosso, Verde e Blu ma le correzioni vengono effettuate nel Verde.
- Regolare il Verde perché si sovrapponga su Rosso e/o Blu.

Le lenti Rossa o Blu per una facile regolazione devono essere coperte.
Scegliere quella più visibile e che presenta la geometria migliore.

B – La geometria del BLU o del ROSSO è scorretta :
- In Service Mode Geometry selezionare: ampiezza H/V (Orizzontale/Verticale) e Est/West.
- Regolare la geometria.

Se la Geometria non è regolabile:
- Selezionare **Level 2** per il Verde (3x5).
- Controllare che il centro si trovi esattamente in centro.
- Allineare i bordi dell reticola ai bordi dello schermo.
- Se necessario, regolare la parte esterna dell'immagine utilizzando **Level 3**.
- Correggere il Rosso utilizzando **Level 2** e, se necessario, **Level 3** per i bordi.
- Ripetere la medesima procedura per il Blu.

IMAGEN ROJA Y AZUL DESPLAZADA (E)

Ajuste estático
-Seleccione la convergencia en el menú Install.
-Corrija el desplazamiento con las teclas de navegación.

- Press the"INSTALL." button on the projector keyboard to select in Installation menu.

- Si el ajuste necesario está lejos de la posición central de los gráficos de barras, se recomienda situarlos en la posición central y corregirlos con los anillos de centrado magnéticos de los tubos correspondientes.
Desbloquee previamente los anillos fijados con un pegamento ligero.
- A continuación, fije de nuevo los anillos con un pegamento o una laca no muy fuerte para permitir un ajuste posterior.

EL ÁREA CENTRAL ES CORRECTA.
LOS BORDES O UN ÁREA PEQUEÑA NO SON CORRECTOS

A - VERDE tiene una geometría correcta:
- Ajuste sólo rojo y azul con el **nivel 3**,**no altere verde !**.

B - VERDE también necesita una pequeña corrección:
- Ajuste verde con el **nivel 3** y después corrija rojo y azul con el mismo **nivel 3**.

SE NECESITAN PEQUEÑOS AJUSTES EN TODO. LA GEOMETRÍA VERDE ES CORRECTA

Algunas líneas carecen de convergencia, pero la geometría verde es correcta.
- Ajuste rojo y azul con el **nivel 2**.
- Corrija los bordes si es necesario con el **nivel 3**, **no altere el verde !**.

LA GEOMETRÍA VERDE NO ES CORRECTA

A - AZUL o ROJO tienen una geometría correcta:
- Con el **nivel 2**, utilice el botón amarillo en el control remoto: se visualizan rojo, verde y azul, pero la corrección está en verde.
- Ajuste verde para superponer en rojo o azul.

Las lentes rojas o azules se pueden cubrir. Seleccione la que sea más visible o tenga la mejor geometría.

B - AZUL o ROJO tienen también una geometría deficiente:
- En geometría del modo de servicio, seleccione: amplitud H/V y Este/Oeste.
- Ajuste la geometría.

Si esta geometría no se puede ajustar:
-Seleccione el **Nivel 2** para verde (3x5).
- Compruebe que el centro está situado exactamente en el centro.
- Realice los ajustes necesarios para que los bordes de la rejilla coincidan con los de la pantalla.
- Ajuste la parte exterior de la imagen con el **Nivel 3** si es necesario.
- Corrija rojo con el **Nivel 2** y después con el **Nivel 3** para los bordes si es necesario.
- Repita la misma operación para azul.

INFORMATION NOTE - INFORMATION - NOTA INFORMATIVA - NOTA DE INFORMACIÓN

CORRECTION OF BANDING EFFECT (GB)

The "Banding Effect" is a non-uniform area or shadow on the screen, which can happen after convergence adjustments have been performed in Level 3, The effect can be caused by either: -- two horizontal lines being to close together (a bright area).- two horizontal lines being to far apart (a dark area).The effect is most visible on a uniform pictures (see diagram below).
Adjustment Procedure :
Identify the colour causing the problem and then blank off the other two lenses.
- Enter the convergence menu at Level 3 and select the corresponding colours alignment routine.
- Using the NUMERICAL buttons (2, 8, 6 and 4) on the RCU, position the cursor on the right hand edge of the non-uniform area of the screen.
- Remove the test grid pattern by disconnecting the cable connected to socket BK01 on the DCU board.
- Adjust the brightness of the non-uniform area using the "NAVIGATION" (up, down, left and right) buttons on the RCU.
- Select the next cursor position using the NUMERICAL buttons on the RCU and adjust its brightness.
- After completing the adjustment procedure reconnect the cable to BK01 on the DCU board.

CORREZIONE DELL' EFFETTO BANDING (I)

L'« effetto banding » è costituito da un'area non uniforme (ombra) che può prodursi dopo regolazione della convergenza (p. es. Level 3).
- Quando due linee sono troppo vicine: l'immagine è più luminosa.
Ciò è visibile su un'immagine uniforme (Vedere illustrazione sottostante).
Procedura:
- Identificare quale colore provoca il difetto coprendo le due lenti in modo che sia visibile solo un colore su un monoscopio bianco.
- Selezionare level 3 per il colore corrispondente.
- Posizionare il cursore nella giusta posizone.
- Rimuovere la griglia scollegando il cavo dal connettore BK01 sul DCU.
- Correggere la non uniformità nella luminosità.
- Spostare il cursore a destra o a sinistra per correggere il punto successivo.
- Terminate le regolazioni, non dimenticare di collegare il cavo BK01.

CORRECCIÓN DEL EFECTO DE BANDA (E)

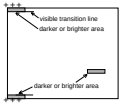
El "efecto de banda" es un área no uniforme (sombra). Puede ocurrir después de un ajuste de convergencia (por ej., nivel 3).
- Cuando 2 líneas horizontales están demasiado cercanas: el área es más brillante.
- Cuando 2 líneas horizontales están demasiado distantes: el área es más oscura.
Es visible en una imagen uniforme (vea el dibujo más abajo).
Procedimiento:
- Identifique el color que ocasiona el fallo cubriendo 2 lentes, de modo que sólo se vea un color con una plantilla de prueba blanca.
- Seleccione el nivel 3 para el color correspondiente.
- Coloque el cursor en el lugar adecuado.
- Retire la rejilla desconectando el cable del conector BK01 en la placa DCU.
- Corrija la falta de uniformidad en el brillo.
Mueva el cursor a la derecha o a la izquierda para corregir la posición siguiente.
- No olvide conectar el cable BK01 después del ajuste.

CORRECTION DE L'EFFET DE BANDE (F)

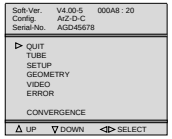
L'effet de bande est une zône d'écran non uniforme (ombre). .Ceci peut survenir après un réglage de convergence (par exemple "Level 3").
- Lorsque deux ligne horizontales sont trop proches : *la bande est brillante*
- Lorsque deux ligne horizontales sont trop distantes : *la bande est sombre.*
L'effet de bande est visible sur image fixe.(Voir Fig. ci-dessous).
Procédure :
- Identifier la couleur affectée par l'effet de bande en recouvrant deux optiques.
- Selectionner le niveau " **level 3"** correspondant à la couleur du défaut .
- Positionner le curseur à sa place exacte .
- Déséléctionner la mire interne en déconnectant le connecteur BK01 de la platine DCU.
- Corriger le phénomène .
- Déplacer le curseur à gauche ou à droite pour le réglage du point suivant .
- Ne pas omettre de reconnecter le connecteur après les réglages.

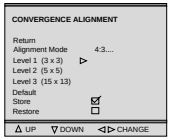
KORREKTUR DES BANDING-EFFEKTES (D)

Der Banding-Effekt ist eine ungleichmäßige Zone oder ein Schatten auf dem Bildschirm. Dies kann nach einem Konvergenzabgleich im Level 3 auftreten- Der Effekt wird verursacht von.
-zwei horizontale Linien sind zu dicht zusammen (helle Zone)
-zwei horizontale Linien sind zu weit auseinander (dunkle Zone).
Der Effekt wird bei einem einfarbigen Bild am meisten sichtbar (siehe Bild unten).
Abgleich:
Stellen Sie fest, welche Farbe den Effekt verursacht indem Sie jeweils zwei Farben abdecken.
- Gehen Sie in das Konvergenzmenü **Level 3** und wählen Sie den Abgleich für die jeweilige Farbe.
- Mit der Zifferntastatur (2, 8, 6 und 4) der Ferbedienung bringen Sie den Cursor auf die rechte Kante der Zone.
- Schalten Sie das Gittermuster durch Ziehen des Kabels vom Verbinder BK01 auf der DCU-Platine aus.
- Stellen Sie die Helligkeit der Zone mit den Pfeiltasten der Fernbedienung ein.
- Bewegen Sie den Cursor auf die nächste Position und wiederholen die Einstellung.
- Nach dem Abgleich stecken Sie das Kabel wieder auf Verbinder BK01.

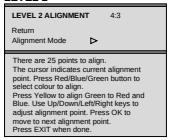


CONVERGENCE ADJUSTMENT - REGLAGES DES CONVERGENCES - KONVERGENZ ABGLEICH - REGOLAZIONE CONVERGENZA - AJUSTE DE CONVERGENCIA

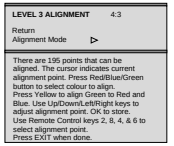


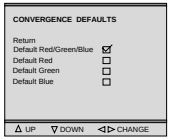


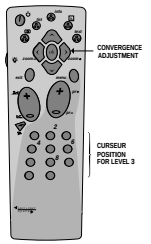
LEVEL 2



LEVEL 3







SERVICE MODE (GB)

- Select "CONVERGENCE"

- Select the "ALIGNMENT MODE" line of the convergence menu.- Start the adjustment procedures in the 4:3 format.- Select "LEVEL 2" menu line and LEVEL 2 ALIGNMENT menu will appear.

Please Note:

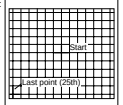
-Level 1 menu line (factory alignment) must be used.
This alignment procedure must also be repeated for 16:9 format.

LEVEL 2 ALIGNMENT MENU :

- Press the "**OK**" button on the RCU to activate the Green test grid pattern, this is used throughout the alignment procedure as a reference.
- Confirm that the Green geometry is correct.
- Press the "RED" button on the RCU to activate the red test grid, the cursor will be set to the centre point on the red grid.
- Using the "NAVIGATION" ("∧"up, " ∨" down, " ≺" left and " ≻ " right) buttons on the RCU, align the red central cursor position to the green centre grid reference point.
A long press on the associated "NAVIGATION" button on the RCU will accelerate the step size of the adjustment.
- Press the "**OK**" button on the RCU to advance to the next cursor position and repeat the alignment process until all twenty five (25th = screen bottom left) alignment position have been checked.

IMPORTANT :

When the last position has been adjusted:
- **Press** the "**OK**" button on the RCU **only one time and wait for 60s**.
The microprocessor will calculate all the intermediate positions and nothing will happen for 10s, then the cursor will disappear for 15s.Finally the cursor will re-appear move back through all adjustment points to the centre point on the test grid.



- Press the "EXIT" button on the RCU to return to "Level 2" menu.
- Select "RETURN" on the menu.
- Next select "STORE" on the convergence menu.
- Check for "Banding Effect" (see information note page 32).
- Repeat the alignment procedure for "BLUE".

LEVEL 3 ALIGNMENT :

Each one of the 195 alignment point can be reached by;
- Using the NUMERICAL buttons 2 (up), 8 (down), 6 (right) and 4 (left) on the RCU to position the cursor on the screen.
- Convergence alignment is done using the "NAVIGATION" ("(∧)"up, " ∨ " down, "≺ " left and " ≻ " right) buttons on the RCU.
- Press the "EXIT" button on the RCU to return to "Level 2" menu.
- Select "RETURN" on the menu.
- Next select "STORE" on the convergence menu.
- Check for "Banding Effect" (see information note page 32).

IMPORTANT :

Once "Level 3" alignment is completed, do not use "Level 2" otherwise all adjustments made in "Level 3" will be ERASED.

16:9 : Select 16:9 format in the Convergence Alignment menu and repeat the above procedures.

Convergence defaults :
If the convergence alignment is completely wrong most adjustments can be made starting with the factory convergence values, these are stored in the NVM as default values.
Default Red/Green/Blue :All of the colours convergence default values are stored in the Convergence RAM IC.
Default Red
Default Green | Load the values for either Red ,Green or Blue.
Default Blue
Restore : copies the last stored values from the NVM to the convergence RAM IC.
Store : Copies all Convergence RAM values to the NVM.

SERVICE MODE (F)

- Selectionner "CONVERGENCE"

- Selectionner "Alignment Mode".
- Commencer les réglages avec le format "4:3".
- Selectionner " Level 2".
Le menu de réglage " Level 2" apparaît.

Note :

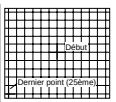
La procédure de réglage s'applique également au format 16/9.

MENU D'ALIGNEMENT "LEVEL 2" :

- Appuyer sur la touche OK de la télécommande.
La mire de convergence apparaît .
- Contrôler la Géométrie du Vert .
- Appuyer sur la touche Rouge de la télécommande pour régler le Rouge par rapport à la mire du Vert servant de référence .
Le curseur est au centre.
- Selectionner " Level 2".
- Utiliser les touches de navigation "∧", " ∨ "," ≺ ", et " ≻" de la télécommande pour effectuer le réglage.
Une longue pression permet d'obtenir un effet d'accélération du réglage.
Après le réglage du centre:
- Appuyer sur **OK** pour la sélection du point suivant à régler.
Lorsque ce second point est aligné ou si aucun réglage n'est nécessaire appuyer sur la touche "**OK**".
Effectuer ainsi jusqu'au dernier point (25)au coin inférieur gauche.

IMPORTANT :

Lorsque le dernier point est réglé :
- **Appuyer sur "OK" une seule fois et attendre 60s**.
Le microprocesseur calcule toutes les positions intermédiaires: rien ne se passe à l'écran durant 10s.Le curseur disparaît pendant 15s. Finalement, via toutes les positions, il se stabilise au centre de l'écran.



- Appuyer sur "Exit" pour retourner au menu "Level 2".
- Selectionner "Return": le menu "convergence alignment"apparaît
- Mémoriser par **"store"**.
- Contrôler l'effet de Bande (Voir ci-après la Note d'Information).
Même procédure pour le Bleu.

ALIGNEMENT LEVEL 3

Chacun des 195 points de réglage est accessible :
- Utiliser les touches numériques suivantes: **2** (haut), **8** (bas), **6** (droit) et **8** (bas).
- le réglage des convergences s'effectue au moyen des touches de navigation **haut** (∧),**bas** ∨ ,**gauche** ≺ et **droit** ≻ .
- Appuyer sur la touche "EXIT"de la télécommande pour retourner au menu "Level 2"
- Sortir du menu d'alignement des convergences et **mémoriser**.
- Contrôler l'effet de Bande (Voir la Note d'Information ci-après).

IMPORTANT :

Après avoir reglé le "level 3" ne pas utiliser le "level 2", les corrections effectuées au "level 3" seraient perdues.

16:9 : Selectionner 16:9 dans le menu Mode alignement; répéter la procédure.

Valeurs par defaults :
En cas de déréglages importants des convergences,l'alignement peut être reprit à partir des valeurs usines.
Ces valeurs par défaut sont mémorisées en NVM.
Default Red/Green/Blue :Toutes les valeurs par défaut des trois couleurs sont mémorisées dans la RAM de convergence.
Default Red
Default Green | Charge les valeurs pour le rouge, le Vert ou le Bleu.
Default Blue
Restore : copie toutes les valeurs des données NVM en mémoire RAM de convergence.
Store : Copie la valeur RAM en NVM de convergence.

SERVICE MODE (D)

- Wählen Sie "CONVERGENCE"

- Wählen Sie "ALIGNMENT MODE".
- Beginnen Sie den Abgleich im 4:3 Format
- Wählen Sie Level 2.
Das "LEVEL 2 ALIGNMENT"-Menü erscheint.

Bitte beachten sie:

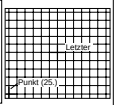
- Die Einstellungen im Level 1 sind Werkseinstellungen und sollten nicht verändert werden.
Der Konvergenzabgleich ist auch für das 16:9 Format vorzunehmen.

ABGLEICHMENÜ "LEVEL 2" :

- Drücken Sie **OK**-Taste auf der Fernbedienung um das Grün-Gittermuster zu aktivieren. Dieses dient für den gesamten Abgleich als Referenz.
- Überprüfen Sie die Grün-Geometrie.
- Drücken Sie die rote Taste auf der Fernbedienung um das rote Gittermuster zu aktivieren. Der Cursor erscheint in der Mitte des roten Gitters.
- Mit den Pfeiltasten ("∧" hoch, " ∨ " runter, " ≺ " links , " ≻ " rechts) auf der Fernbedienung bringen Sie die Mitte des roten Cursors auf die Mitte des Bezugspunktes im grünen Gitter. Ein längeres Drücken der Pfeiltasten erhöht die Schrittgröße beim Abgleich.
- Drücken Sie die OK-Taste um auf die nächste Cursor-Position zu gelangen. Wiederholen Sie den Abgleich bis alle 25 Abgleichpunkte (der 25.Punkt ist links unten) korrigiert sind.

WICHTIG :

Wenn der letzte Punkt abgeglichen wurde:
- **Drücken Sie die OK-Taste nur einmal und warten Sie etwa 60s**.
Der Microprozessor berechnet alle Zwischen-positionen. Für etwa 10s geschieht nichts,dann verschwindet der Cursor für etwa 15s. Dann läuft der Cursor über alle Abgleichpunkte zurück in die Mitte des Gittermusters.



- Drücken Sie die EXIT-Taste um in das "LEVEL 2"-Menü zurückzukehren.
- Wählen Sie im Menü "RETURN".
- Wählen Sie im Konvergenzmenü "STORE" .
- Überprüfen Sie das Bild auf den Banding-Effekt (siehe Information auf Seite 32). Wiederholen Sie den Abgleich mit BLAU.

ABGLEICH LEVEL 3 :
- Jeden der 195 Abgleichpunkte auf dem Bildschirm erreichen Sie über die Zifferntastatur der Ferbedienung ("2" hoch, "8" runter, "4" links, "6" rechts).
- Der Konvergenzabgleich wird mittels der Pfeiltasten vorgenommen "(∧)" hoch, "(∨)" runter,"(≺)" links, "(≻)" rechts.
- Drücken Sie die EXIT-Taste um in das "LEVEL 2"-Menü zurückzukehren.
- Wählen Sie im Menü "RETURN".
- Wählen Sie im Konvergenzmenü "STORE".
- Überprüfen Sie das Bild auf den Banding-Effekt (siehe Information auf Seite 32).

WICHTIG :

Nach dem Abgleich im Level 3 machen Sie keine Einstellungen mehr im Level 2, da sonst die Abgleichswerte des Level 3 gelöscht werden.

16:9 : Wählen Sie das 16:9 Format im Konvergenzmenü und wiederholen Sie den gesamten Abgleich.

Konvergenz-Defaultwerte :
Sollte der Konvergenzabgleich völlig inkorrekt sein, kann ein Neuabgleich ausgehend von den Fabrikswerten ratsam sein.
Diese sind als Defaultwerte im NVM gespeichert.
Default Rot/Grün/Blau : die Defaultwerte der Konvergenz aller Farben sind im Konvergenz-RAM gespeichert.
Default Rot
Default Grün | Laden Sie die Defaultwerte einzeln für Rot, Grün oder Blau.
Default Blau
Restore : die zuletzt in das NVM gespeicherten Werte werden ins Konvergenz-RAM kopiert.
Store : alle Werte aus dem Konvergenz-RAM in das NVM.

SERVICE MODE (I)

- Selezionare "CONVERGENCE"

- Selezionare « Alignement Mode ».
- Avviare la regolazione con formato 4:3.
- Selezionare « Level 2 ».
- Viene visualizzato il menu Level 2 alignement.

Nota :

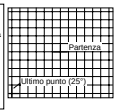
La procedura deve essere effettuata anche in modo 16/9.

LIVELLO 2 MENU DI REGOLAZIONE :

- Premere il tasto "**OK**" sul telecomando. Viene visualizzata la griglia verde.
- Controllare che la geometria della griglia Verde sia corretta.
- Premere il tasto Rosso sul telecomando per regolare il Rosso con la griglia Verde come riferimento.
- Il cursore si trova al centro.
- Utilizzare i tasti su, giù sinistra e destra sul telecomando per regolare la posizione di allineamento.
Con una lunga pressione del tasto si determina un effetto di accelerazione del passo di allineamento.
Dopo avere regolato il centro :
- Premere il tasto "**OK**" per selezionare la posizione successiva da regolare.Quando il secondo punto è stato regolato o la regolazione non è necessaria, premere il tasto "**OK**".
Proseguire la procedura fino a raggiungere l'ultimo punto (25°) sulla parte inferiore sinistra.

IMPORTANTE :

- Quando l'ultimo punto viene regolato, premere il tasto **OK una sola volta ed attendere 60 secondi.**
Il microprocessore calcola tutte le posizioni intermedie: per 10 secondi non accade nulla. Quindi, il cursore scompare per 15 secondi. Il cursore si posterà infine su tutte le posizioni fino al centro.



Premere « Exit » per ritornare al menu " Level 2 alignement ".
- Selezionare "Return": viene visualizzato il menu "Convergence Alignement".
- Memorizzare le regolazioni.
- Controllare la presenza d' « effetto Banding » (Vedere nota informativa). Seguire la medesima procedura per il blu.

LIVELLO 3 REGOLAZIONI :

- I 195 punti possono essere raggiunti mediante:
- L'uso dei tasti numerici RCU: 2 (su), 8 (giù), 6 (destra), e 4 (sinistra).
- La convergeznza viene regolata mediante i tasti up "(∧) , down "(∨)", left "(≺)" e right "(≻)".
- Uscire dal menu « Convergence alignement » e memorizzare le regolazioni acquisite.
- Controllare la presenza di effetto Banding (Vedere nota informativa).

IMPORTANTE :

Dopo avere regolato « level 3 » non utilizzare « level 2 » perchè le correzioni effettuate al « level 3 » andrebbero perse.

16:9 :Seleccione 16:9 in Alignement Mode e ripetere la procedura.

Default di convergenza :
Se l'allineamento della convergenza è completamente errato le regolazioni possono essere effettuate richiamendo i valori di convergenza di fabbrica. Questi valori vengono memorizzati come valori di default in nella NVM.
Default Red/Green/Blue : Tutti i valori di default dei tre colori vengono memorizzati nell IC RAM di convergenza.
Default Red
Default Green | Carica i valori per rosso, verde e blu
Default Blue
Restore : Copia gli ultimi valori memorizzati dalla NVM nella RAM di convergenza.
Store : Copia i valori RAM nella convergenza della NVM.

SERVICE MODE (E)

- Seleccione "CONVERGENCIA"

- Seleccione "Modo de alineación".
- Inicie los ajustes con el formato "4:3"
- Seleccione "nivel 2"
Aparece el menú de alineación de nivel 2.

Nota:

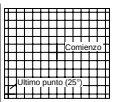
El procedimiento debe realizarse también para 16/9.

MENU DE ALINEACION "NIVEL 2":

- Pulse "**OK**" en el control remoto y aparecerá la rejilla verde.
- Compruebe si la geometría verde es correcta.
- Pulse el botón rojo en el control remoto para ajustar rojo con la rejilla verde como referencia.
El cursor está en el centro.
- Ajuste la posición de la alineación con las teclas del control remoto para moverse hacia arriba, abajo, izquierda y derecha. Si las pulsa de forma prolongada, se produce un efecto de aceleración en el tamaño del paso de la alineación.
Después del ajuste del centro:
- Pulse "**OK**" para seleccionar la posición siguiente a ajustar.
Cuando se ajusta este segundo punto o el ajuste no es necesario, pulse "**OK**".
Repita la operación hasta el último punto (nº 25) en la parte inferior izquierda.

IMPORTANTE :

Cuando se ajuste el último punto:
-Pulse **"OK" una vez y espere durante 60 segundos.**
El microprocesador calcula todas las posiciones intermedias: durante 10 segundos no ocurre nada. Después, el cursor desaparece durante 15 segundos, y finalmente se mueve a todas las posiciones hasta el centro.



- Pulse "Salida" para volver al menú "Nivel 2".
- Seleccione Return: aparece el menú de alineación de convergencia.
- Almacene.
- Compruebe si se produce el efecto de banda (vea la nota de información).Siga el mismo procedimiento para azul.

ALINEACION NIVEL 3 :
Se pueden alcanzar los 195 puntos:
- Utilice los botones de número RCU: 2 (arriba), 8 (abajo), 6 (derecha) y 4 (izquierda).
- La convergencia se ajusta mediante las teclas de navegación hacia arriba, abajo, izquierda y derecha.
- Salida a almacenar y menú de alineación de convergencia.
- Compruebe si se produce el efecto de banda (vea la nota de información)

IMPORTANTE ::

Una vez configurado el "nivel 3", no utilice el "nivel 2" o perderá las correcciones efectuadas en el 3.

16:9 :Seleccione 16:9 en el modo de alineación y repita el procedimiento

Parámetros de convergencia por defecto:
Si la alineación de convergencia es totalmente errónea, la mayor parte de los ajustes se pueden realizar con los valores de convergencia de fábrica.Estos parámetros se almacenan como valores por defecto en una memoria no volátil.
Default Red/Green/Blue :todos los valores por defecto de los tres colores se almacenan en la memoria de acceso aleatorio (RAM) IC de convergencia.
Default Red
Default Green | Cargue los valores para rojo, verde o azul.
Default Blue
Restore : copia los últimos valores almacenados de la memoria no volátil a la RAM de convergencia
Store : copia los valores RAM en la NVM de convergencia.

Note :

In the event of it being necessary to replace all three tubes (tubes marked or still operational), it is easier, when making convergence adjustments, to replace one tube first, and converge it to the two other tubes in order to keep the original geometry setting.
Then replace the two other tubes and realign them to the reference tube.

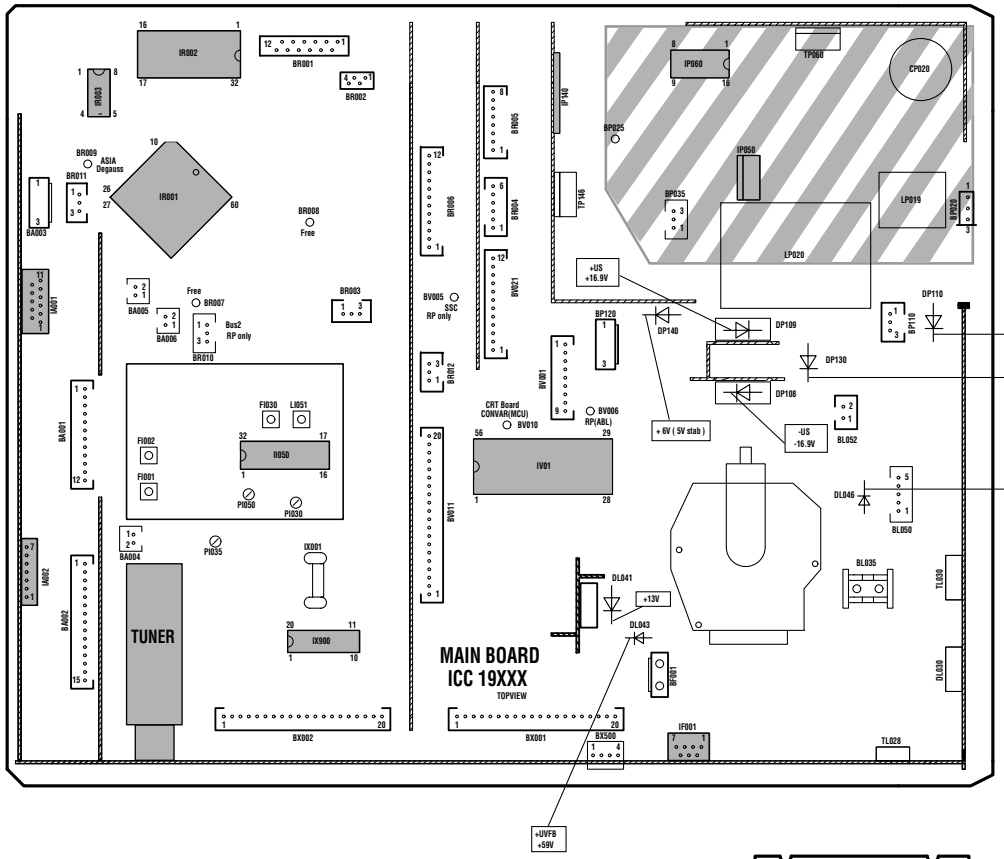
En cas de nécessité de changement des trois tubes (tubes marqués ou encore fonctionnels) il est plus simple, au niveau du réglage des convergences, de changer d'abord un tube, de le converger sur les deux autres pour conserver le réglage de géométrie original.
Ensuite changer les deux autres tubes et les réaligner sur le tube de référence.

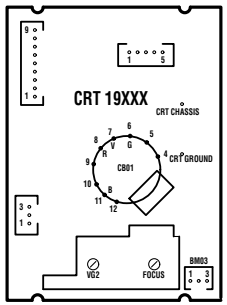
Im Falle, daß ein Auswechseln aller drei Röhren notwendig ist, ist es einfacher (falls die Röhren noch funktionsfähig sind), die notwendige Konvergenzeinstellung so vorzunehmen, daß zunächst erst eine Röhre ausgewechselt wird: Gleichen Sie diese den beiden alten Röhren an, damit Sie die originale geometrische Einstellung haben.
Wechseln Sie dann die beiden anderen Röhren und gleichen Sie diese der Referenzröhre an.

Nel caso in cui si renda necessaria la sostituzione dei tre tubi (tubi marcati o ancora in funzione) è più semplice, quando si eseguono regolazioni della convergenza, sostituire prima un tubo e convergerlo agli altri due per conservare la regolazione di geometria iniziale. Sostituire quindi gli altri due tubi e riallinearli al tubo di riferimento.

Si necesita cambiar los 3 tubos (tubos marcados o aún funcionales), resulta más fácil, en lo que respecta al ajuste de las convergencias, cambiar primero un tubo y convergirlo sobre los otros 2 para mantener la configuración de la geometría original.
Cambie seguidamente los otros dos tubos y proceda a realinearlos con el tubo de referencia.

LOCATION OF CONTROLS - EMPLACEMENT DES REGLAGES - SERVICE LAGEPLAN - POSIZIONE REGULATORI DI SERVIZIO - SITUACIÓN DE LOS AJUSTES





Do not disconnect modules when they are energized ! Repairs on power supply section are to be carried out only with isolating transformer.

Ne pas retirer les modules lorsqu'ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch mode) qu'au travers d'un transformateur d'isolement.

Module nicht bei eingeschaltetem Gerät entfernen ! Servcearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegarei moduli quando sono alimentati ! intraprendere riparazioni sulla sezione alimentatore solo con transformatore isolante.

No desconectar los módulos cuando están activados ! Las reparaciones en la sección de alimentación de energia deben ser ejecutadas solamente con un transformador de separacion.

Part of Board connected to mains supply.
Partie du châssis reliée au secteur.
Primärseitedes Netzteils
Parte del panello collegato alla rete di alimentazione
Parte del chasis conectada a la red

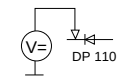
ADJUSTMENTS - REGLAGES - EINSTELLUNGEN - REGOLAZIONE - AJUSTES

U Sys

SERVICE MODE

Standard TV - Settings : OMA Position

TV to AV1 : Black test pattern



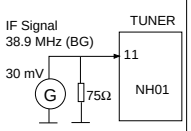
TUBE NAME	DESCRIPTION	Usys jumper	Usys
A66ECY13X15	4/3 28" MP	JP914	132V +/- 0.5V
A66EHJ43X15	4/3 28" MP	JP914	132V +/- 0.5V
A59EGD048X300	4/3 25" SF	JP915	131V +/- 0.5V
A68EGD038X300	4/3 29" SF	JP915	131V +/- 0.5V
A80AEJ15X01	4/3 33" MP	JP915	131V +/- 0.5V
W66EGV023X015	16/9 32"SF	JP917	137V +/- 0.5V
W76EGX023X115	16/9 32"SF	JP917	137V +/- 0.5V

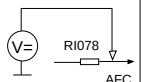
IF Alignment

VCO
Standard BG

FI030

Switch set to standard BG





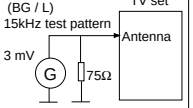
Adjust FI30 / PI54 for 2,5VDC +/-0.1V

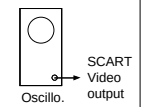
VIDEO-LEVEL Alignment

PI030

PI035

Standard Signal (BG / L)
15kHz test pattern





Adjust PI030 : standard BG
Adjust PI035 : standard L

for V = 0,7 Vpp (Black/white level)

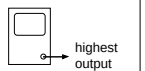
V G2

METHOD 1
Measurement method

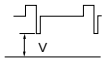
G2 poten-tiometer

Standard TV - Settings : OMA Position

TV to AV1 : Black test pattern



CRT 1900X (50Hz) :
R signal : IB01 Pin 15
G signal : IB01 Pin 12
B signal : IB01 Pin 15



1 - Adjust VG2 : V= 160V +/- 5 V
2 - Adjust Focus
3 - Adjust VG2 : V= 160V +/- 3V

METHOD 2
Cut-off counter method
SERVICE MODE

SERVICE MODE

Standard TV - Settings : OMA Position

No test pattern (generated by internal text processor).

Adjust R-Cut off and G-Cut-off to 80H temporary.
Select G2 Alignment in Service Mode
Adjust the lowest value to:

Tube Type	Value
A66ECY	50H
A66EHJ	50H
A68EGD	-
A80AEJ	-
A59EGD	60H
A68EGD	50H
W66EGV	50H
W76EGX	60H

Select "Restore" in Service Mode and press "OK" to restore the cut-off values.

FOCUS

FOCUS

Test pattern (standard values)

Sharp picture

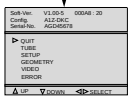
SERVICE MODE (GB) — MODE SERVICE (F) — SERVICE - MODE (D) — SERVICE - MODE (I) — MODO SERVICIO (E)

I - ENTER/EXIT SERVICE MODE - ENTREE/SORTIE DU MODE SERVICE - EIN-AUSTIEG SERVICE MODE - ACCESSO/USCITA ALLA/DALLA FUNZIONE - ENTRADA/SALIDA MODO SERVICIO

1 ACCESSING SERVICE MODE

TV Control Panel Access

- Turn "Off" the TV using the **ON/OFF** button.
- Press the **PR-** and **VOL-** buttons ,hold them down and switch "On" the TV with the **ON/OFF** button.
- After the normal switch on time the main service menu appears on the screen.

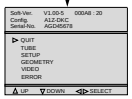


Note :
In service mode :
- *The child lock function is re-initialized*
- *The look function (PIN Number) is ignored.*
- *Clear any wake-up/sleep timers*
- *Pin 8 of the scart plug has to be ignored.*
- *AV- Link WSS detection , EPG and Teletext have to be disabled.*
- *Automatic stand-by functions, in case of no antenna signal have to be disabled.*
- *Contrast, colour, brightness : factory settings.*
- *Sharpness : middle (nominal)*
- *Contrast expander to low.*
- *Install Mode disabled.*
- *Default format and zoom..*

1 ACCES AU MODE SERVICE

Accès avec le clavier du téléviseur

- Arrêter le TV avec la touche **M/A.**
- Tout en appuyant sur les touches **PR -** et **VOL - ,** mettre le TV en service à l'aide de la touche **M/A**.
- Maintenir enfoncées les touches **PR -** et **VOL -**.
  Le menu suivant apparaît.

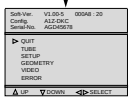


Note :
En mode service:
- *Le verrouillage parental est effacé (réinitialisé).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *La programmation des heures «réveille/matin» est annulée.*
- *Possibilité de passer en mode service avec commutation lente active.*
- *AV- Link WSS détection , EPG and Teletext doivent être désactivés.*
- *La fonction de stand-by automatique en cas d'absence de signal d'antenne n'est pas valable.*
- *Les valeurs de réglages usine sont affectées au contraste, à la couleur et à la lumière.*
- *Le contour est appelé à sa valeur moyenne.*
- *L'expansion contraste est au niveau bas.*
- *Le mode d'installation et l'ambiance «Light sensor» ne sont pas valides.*
- *Zoom et format ignorées.*

1 EINSTIEG IN DEN SERVICE MODE

Zugriff über die Tastatur des Fernsehgerätes

- Fernsegerät über die EIN/AUS - Taste ausschalten.
- Gleichzeitig die Tasten PR- und VOL- drücken und den Fernseher über die EIN/AUS-Taste einschalten.
- Die Tasten PR- und VOL - gedrückt halten.

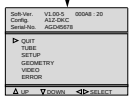


Anmerkung :
Im SERVICE MODE :
- *wird die Sperrfunktion (PIN-Nummer) ignoriert und die Kindersicherung gelöscht (reinitialisiert).*
- *La fonction de verrouillage (Pin number) est ignorée.*
- *wenden alle Ein- und Ausschaltzeitgeber gelöscht.*
- *wird die SCART - Schaltspannung ignoriert.*
- *wenden AV- Link WSS, EPG und Teletext gesperrt*
- *wird die Automatische Abschaltung bei fehlendem Antennensignal gesperrt.*
- *werden Kontrast, Farbe und Helligkeit auf standardwerte gesetzt.*
- *wird die bildschärfe auf Mittelstellung (nominal) gesetzt.*
- *wird der Kontrast-Expander auf "gering.." gesetzt.*
- *wird der Installations Modus gesperrt.*
- *wird das Standardformat bzw. der Standard-Zoom-modus gewählt.*

1 ACCESSO AL SERVICE MODO

tramite i comandi del televisore

- Spegnere il TV mediante il pulsante ON/OFF.
- Premere i tasti **PR- e VOL-** accendendo il TV con il pulsante ON/OFF.
- Premere i pulsanti **PR - e VOL -**.

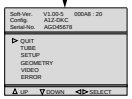


Nota :
Nel service mode:
- *la funzione Blocco (Numero Pin) viene ignorata e la funzione Blocco Bambini è reinvalizzata.*
- *Cancellare la programmazione sveglia*
- *Il piedino 8 della scart deve essere ignorato.*
- *I riconoscimenti AV-Link WSS, EPG e televideo deveno essere disabilitati.*
- *Funzione automatica di standby, nel caso di mancanza del segnale d'antenna deve essere disabilitata.*
- *Contrasto, colore, luminosità : regolazioni di fabrica.*
- *Nitidezza media (nominale)*
- *Espansore contrasto troppo basso.*
- *Modo Install disabilitato.*
- *Formato default e zoom.*

1 ACCESO AL MODO SERVICIO

Acceso panel control TV

- Apague la TV con el botón MARCHA.PARADA.
- Pulse los botones **PR -** y **VOL -** y sin soltarlos,pulsar la tecla MARCHA.PARADA.
- Libere los botones **PR -** y **VOL -** .



Nota :
En modo servicio:
- *Se ignora la función de bloqueo y se inicializa la función "cerradura ninos".*
- *Anula todos las horas programadas*
- *La patilla 8 del SCART es ignorada*
- *La detección WSS AV Link, EPG, y Telexto son desactivados.*
- *El apagado automático en caso de ausencia de señal de antena es desactivado.*
- *El contraste,color y brillo son puestos a los valores de fábrica.*
- *la nitidez es puesta al punto medio.*
- *La expansión de contrast al nivel bajo*
- *Modo Instalación es desactivado.*
- *Zoom y formato ignorados.*

2 TEMPORARY EXIT FROM SERVICE MODE

- Press Exit on the Remote control.
- Everyday use menu can be accessed via Menu button.

- Field Service Menu can be re-entrered via Blue button.

2 SORTIE TEMPORAIRE DU MODE SERVICE

- Utiliser la touche Exit de la télécommande.
- Le menu utilisateur peut être accessible via la touche «Menu».

- Pour entrer à nouveau dans le mode service utiliser la touche bleue.

2 VORÜBERGEHENDES VERLASSEN DES SERVICE MODUS

- Auf der Fernbedienung EXIT drücken.
- Mit der Taste Menü gelangen Sie zum Menü Übersicht

- Mit der blauen Taste gelangen sie wieder zum Service-Menü.

2 USCITA TEMPORANEA DAL SERVICE MODE

- Premere Exit sul telecomando.
- Al menu di uso quotidiano si accede attraverso il pulsante Menu.

- È possibile rientrate nel Menu Field Service attraverso il pulsante Blue.

2 SALIDA TEMPORAL DEL MODO SERVICIO

- Pulse Salir en el mando a distancia
- Con el botón Menu puede acceder al menú de uso cotidiano.

- Puede entrar al Menú Servicio con el botón azul.

3 EXITING FROM SERVICE MODE

Remote Control | **TV control panel** | **on/off key or Stand-by**

- Go to the point QUIT in the Field service Mode main menu.
- Stand-by function or «off» with on/off key.
- Press «<», «VOL+»button
- Press «VOL.+»button
- TV mode.

Values or adjustments are no stored before exiting from service mode will not be written into the NVM

3 SORTIE DEFINITIVE DU MODE SERVICE

télécommande | **clavier du téléviseur** | **Inter M/A ou Stand-by**

- Aller au point «QUIT» dans le menu principal du mode service.
- Fonction Stand-by ou «off» par M/A.
- Appuyer sur «<», «OK» ou «>»
- Appuyer sur «VOL+»
- Mode TV.

Les valeurs ou réglages non mémorisées avant la sortie ne seront pas écrites en NVM.

3 ENDGÜLTIGES VERLASSEN DES SERVICE MODE

Fernbedienung | **TV-Bedienfeld** | **EIN /Aus - Taste**

- Wenn der Kursor im Hauptmenü des Service-Modus auf "QUIT" steht
- Mit Standby-Funktion oder **EIN/AUS** - taste ausschalten
- Taste «<», «OK» oder «>»drücken
- Taste «VOL+» drücken
- TV Modus

Werte und Einstellungen, die nicht vor dem Verlassen des Service-Modus gespeichert wurden, werden nicht in den Permanentspeicher übernommen

3 USCIRE DAL SERVICE MODE

telecomando | **Pannello controllo TV** | **Tasto on/off di**

- Andare al punto QUIT nel Modo Field service del Menu principale
- Funzione Stand-by o «off» con il tasto on/off
- Premere «<»,«OK» o «>»
- Premere «VOL.+»
- Modo TV.

Valori e regolazioni non vengono memorizzati prima di uscire dal Modo service e non vengono scritti nell'NVM

3 SALIDA DEL MODO SERVICIO

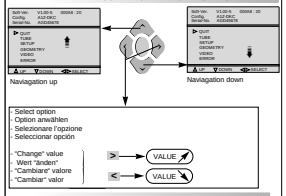
telecomando | **Panel de control TV** | **Tecla on/off de**

- Vaya al punto QUIT del menú principal de modo Servicio
- Función Stand-by o desconexión (off) con tecla on/off.
- Pulse el botón «<»,«OK» o «>»
- Pulse el botón«VOL.+»
- Modo TV.

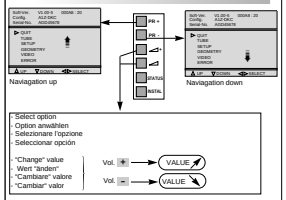
Los valores o ajustes no se guardan antes de salir del modo servicio y no se escriben en el NVM

II - NAVIGATION INSIDE THE SERVICE MODE - DEPLACEMENT DANS LE MODE SERVICE SUCHE IN SERVICE MODE - OPZIONI NEL SERVICE MODE - BUSQUEDA EN MODO SERVICIO

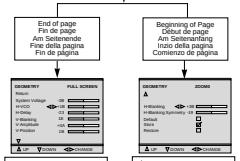
1 REMOTE CONTROL - TELECOMMANDE - FERNBEDIENUNG TELECOMANDO - MANDO A DISTANCIA



2 TV CONTROL PANEL - CLAVIER TV - TASTATUR DES FERNSEHGERÄTS - COMANDI DEL TELEVISORE -



Changing page - Changement de page Seitenwechsel - Cambiare Pagina - Cambio de página

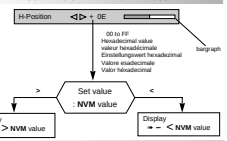


« ∇ »
Indicates a following page
Signifie qu'une page suit.
Bedeutet, daß eine Seite folgt
Indica una pagina seguente
Indica una página siguiente

« Δ »
Indicates a preceding page
Signifie qu'une page précède.
Bedeutet, daß eine Seite vorangeht
Indica una pagina precedente
Indica una página precedente

- The menu turns the page when the cursor reaches the arrow.
- Amener le curseur sur la ligne repérée par « ∇ »ou « Δ » pour passer à la page qui précède ou qui suit.
- Cursor nach « ∇ » „« Δ » zum Seitenwechsel
- Il cursor su « ∇ », « Δ » cambia pagina.
- Cursor en « ∇ », « Δ » cambia las páginas

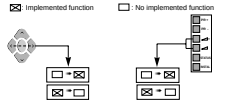
3 DISPLAYING THE VALUE OF THE SETTING - AFFICHAGE DES VALEURS - ANZEIGE DES EINSTELLUNGSWERTS VISUALIZZAZIONE DEL VALORE DELLA REGOLAZIONE - VISUALIZACION DEL VALOR DE AJUSTE



4 TOGGLE FUNCTIONS - VALIDATION DES FONCTIONS EIN-UND AUSSCHALT FUNKTIONEN - FUNZIONI DI COMMUTAZIONE - FUNCION CONMUTACION

To enable a function check (tick) ☒ the box.
Pour valider une fonction cocher ☒ la case correspondante
Zum Implementieren einer Funktion das Kontrollkästchen ☒aktivieren (ankreuzen)
Per implementare una funzione di verifica, (vistare) ☒ la casella
Para poner en fucionamiento una función verifique (señale) ☒ la casilla

☒ : implemented function ☐ : No implemented function



5 STORING VALUES IN MEMORY - MEMORISATION DES VALEURS - SPEICHERN DER WERTE - MEMORIZZAZ.I VALORI - VALORES ALMACENADOS EN LA MEMORIA

After setting, the values are stored in NVM.
Après réglages les valeurs sont mémorisées en NVM.
Nach dem Einstellen werden die Werte im NVM gespeichert.
Dopo la regolazione i valori vengono memorizzati in NVM.
Después del ajuste, los valores son almacenados en NVM

The box ☐ becomes ☒
During alignment, values are temporarily stored in RAM.
En cours d'alignement les valeurs sont mémorisées temporairement en RAM
Während des Abgleichs werden die Werte vorübergehend im RAM gespeichert
Durante l'allineamento i valori vengono memorizzati provvisoriamente sulla RAM
Durante el alineamento, los valores son almacenados temporalmente en RAM

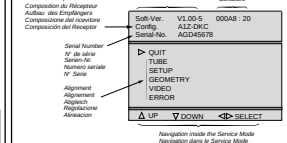
Store ➡ Copies RAM values into NVM
Copie la valeur RAM en NVM
Kopieren des Werts von RAM nach NVM
Copiare i valori RAM in NVM
Copiar valores RAM en NVM

Restore ➡ Copies all values from NVM into RAM.
Copie toutes les valeurs des données NVM en RAM
Kopiert alle NVM-datenwerte in den RAM
Copiare tutti i valori da NVM sulla RAM
Copia todos los valores de NVM a RAM

ROM Default ➡ All the default values of a page in use are stored in RAM.
L'ensemble des valeurs par défaut d'une page courante est chargé en RAM.
Sämtliche Standardwerte der aktuellen Seite werden im RAM geladen
Tutti i valori di default di una pagina in uso vengono memorizzati sulla RAM
Todos los valores por defecto de la página en curso están almacenados en RAM.

III - LITE-MENU FOR FIELD SERVICE MODE - MENUS DU MODE SERVICE

1 MAIN MENU - MENU PRINCIPAL



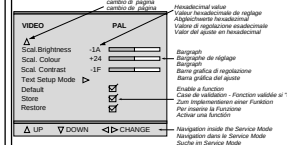
TV CONFIGURATION - CONFIGURATION DU TV - GERÄTEKONFIGURATION - CONFIGURAZIONE DEL TV - CONFIGURACIÓN Y TV

Config. A1Z-DKC

Character 1 : Tube type : «A»= 4/3 , «W» =16/9
Character 2 : Chassis type : «5» = 50Hz, «1»= 100 Hz
Character 3 : Zoom available : «Z»=yes, «-»=not
Character 4 : Ambiant Sensor : «S»= detected, «-»= not
Character 5 : Dolby : «D»=detected, «-»= not
Character 6 : AV Link detected : «K»=IR link detected, «-»= not
Character 7 : Password mode: «C»= Password stored, «-»= not

TIME COUNTER - COMPTEUR DE TEMPS - ZÄHLER - CONTATORE - CONTADOR
The counter indicates the TV's number of service hours.It counts from to 0 to 65535 hours.
The display is hexadecimal.
Le compteur de temps indique le nombre d'heures de service du TV. Il compte de 0 à 65535 heures. L'affichage est en hexadécimal.
Der Zähler zeigt an, wieviele Stunden der Fernseher in Betrieb ist. Die Anzeige ist hexadezimal.
Il contatore indica il numero di ore di servizio del TV. Puo' contatore da 0 a 65535. La visualizzazione è esadecimale.
El contador indica el número de horas de servicio de la TV. Cuenta de 0 a 65535 horas. El visualizador es hexadecimal.

2 SUBMENU - SOUS-MENU



ALIGNMENT PROCEDURE - PROCESSUS DE REGLAGES - ABGLEICH - VISUALIZZAZIONE DEL VALORE DI REGOLAZIONE - PROCEDIMIENTO DE ALINEACION

TUBE

Return		
Tube type		A66ECY...
Store	◁ ▷	☑
Restore		☐

△ UP ▽ DOWN ◁ ▷ SELECT

SETUP

Return		
OSD Position		-20
PIN Erase	◁ ▷	☑
Clear Progs.		
Standard		Pan-Euro ...
WSS		☑
EPG / AV Link		☑

▽

△ UP ▽ DOWN ◁ ▷ CHANGE

page 1

* *only some models*

SETUP

△

Text Lang.*/ Bus Quiet*	1
Ext.HIFI*/ Dolby Ext.*	☑
IR Download	▷
Reset Equ.*	☐
Default	☐
Store	☑
Restore	☐

△ UP ▽ DOWN ◁ ▷ CHANGE

page 2

* *only some models*

GEOMETRY FULL SCREEN

Return	
Sys. Voltage	-3B
H-VCO	◁ ▷ +1B
H-Delay	-23
V-Blanking	1E
V-Amplitude	+0A
V-Position	1B

▽

△ UP ▽ DOWN ◁ ▷ CHANGE

page 1

Test Bar pattern used : 4/3 with geometric circle.

GEOMETRY ZOOM1

△

V-Linearity	-3B
H-Position	◁ ▷ +0E
H-Amplitude	-19
EW-Amplitude	+1C
EW-Trapezium	2B
EW-Shape	1D

▽

△ UP ▽ DOWN ◁ ▷ CHANGE

page 2

Adjust separate for 4/3 and 16/9 format. See annexed

VIDEO PAL

Return	
Norm. (Factory)	☑
G2 Alignment	▷
R-Cut off	+1B
G-Cut off	-1F
R-Drive	+3A
G-Drive	-3B
B-Drive	
Peak-White	

▽

△ UP ▽ DOWN ◁ ▷ CHANGE

page 1

Color standard or RGB is autodetected and displayed opposite the displayed opposite the menu title.

VIDEO PAL

△

Scale Brightness	-1A
Scale Colour	+24
Scale Contrast	-1F
Text Setup	▷
Default	☑
Store	☑
Restore	☑

UP ▽ DOWN ◁ ▷ CHANGE

page 2

ERROR CODE

Return

Erase Error Codes ◁ ▷ ☑

CODE	
11	013AF
24	008A0
78	0042A
11	0023F
51	000E3

UP ▽ DOWN ◁ ▷ CHANGE

TUBE

Return

Closes the sub-menu and returns to the "Main Service Menu"

Retourne au menu principal.

Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.

Chiude il sottomenu e fa apparire il menu principale Field Service Mode.

Cierra el submenú. El menú Field Service Mode aparece.

Press </>: remote control; Vol. +/- : TV keyb.

Tube type

After replacing the NVM, the correct tube type number must be entered (6 characters).
Once entered, the tubes geometry and video default values are immediately activated.
Variable geometry and video parameters are written to the NVM when the "STORE" line is selected. See below the tube type number list.

Definit le tube exact après changement de NVM.
Les nouvelles valeurs de tubes (avec video et géometrie) sont actives de suite.
Les paramètres de vidéo et de géométrie sont chargés en NVM lorsque STORE est sélectionné. Voir liste ci-dessous.

Nach dem Tausch des NVM (EEPROM) muB der richtige Bildrohrtyp eingegeben werden.
Es werden dann sofort die entsprechenden Geometrie-und Video-Defaultwerte aktiviert.
Variable Geometrie-und Videowerte müssen mit "STORE" in das NVM geschrieben werden.
Liste der Röhren: siehe unten.

Definire il tubo appropriato dopo aver cambiato la NVM; I valori per il nuovo tipo di tubo (con video e forma di default) sono immediatamente attivi. I parametri per video e forma variabili vengono immessi nella NVM quando viene selezionata la funzione Store.
Si veda la lista dei tubi riportata sotto.

Definir el tubo correcto después de haber cambiado el NVM.Los nuevos valores de tipo de tubo (con la vídeo y la geometría por defecto) se activan inmediatamente.
Los parámetros variables de geometría y vídeo se graban en el NVM al seleccionar la función Store. Vea más abajo la lista de tubos.

TUBE NAME	LIST	DESCRIPTION
A59EGD048X300	A59EGD	4/3 25" SF(2)
A66EHJ 43X 15	A66EHJ	4/3 28" MP(1)
A66ECY 13X 15	A66ECY	4/3 28" MP(1)
A68EGD038X300	A68EGD	4/3 29" SF(2)
A80AEJ 15X01	A80AEJ	4/3 33" MP(1)
W56EGV023X015	W56EGV	16/9 32"SF(2)
W66EGV023X115	W66EGV	16/9 32"SF(2)
W76EGX023X115	W76EGX	16/9 32"SF(2)

(1) : AK mask COTY M gun 50 Hz
(2) : Invar , vector gun , BSVM 50 Hz

Default tube type :

50Hz A66ECY 13X 15 : A66ECY
4/3 28"MP, AK mask COTY M gun

⟶ After setting ⟶ Store (+) ☑

SETUP

Return

Closes the sub-menu and returns to the "Main Service Menu"

Retourne au menu principal.

Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.

Chiude il sottomenu e fa apparire il menu principale Field Service Mode.

Cierra el submenú. El menú Field Service Mode aparece.

Press </>: remote control; Vol. +/- : TV keyb.

OSD Position
Adjusts the position of all Megatext OSD.

PIN Erase Erases all PINs.

☑ PIN active ☐ No PIN active

Selection : Long press:
Press </>/OK: remote control;Vol. +/- :TV keyb.
Automatically stored.

Clear Prog.
Clears all programms stored in memory and resets all Picture and Sound settings to the factory defaults. The AUTO INSTALL (out of factory) mode can be initialised by a long press (>2.5s.) of the selection button

Efface tous les programmes mémorisés.
Valeurs SON et IMAGES: valeurs usines.
Fonction valide par une longue pression (>2.5s.) sur la touche de sélection </>.

Löscht alle Programmplätze und setzt alle Bild- und Toneinstellungen auf Fabrikwerte zurück.
Der AUTO-INSTALL-Modus kann durch einen langen Knopfdruck (>2,5s) initialisiert werden.

Clear Prog.
Cancella tutti i programmi in memoria e regolai Valori analogici SUONO IMMAGINE:ailivelli di fabbrica.Riportare la TV al modo Selezione: pressione prolungata: 2,5 sec.

Programa de borrado.
Borra todos los programas almacenados en la memoria.Valores analógicos de IMAGEN y SONIDO: valores de fábrica.Regreso a la TV para "salir del modo fábrica".Selección: Presión larga igual a 2,5 s.

Standard "Pan-Euro" or "I".
BG PAL SECAM,L SECAM (France),
DKK' SECAM,NTSC M,I PAL (UK/IRELAND)

WSS

Automatic detection of DOLBY surround sound and 16/9 format pictures via Teletext line number 23 is valid on all programmes.

Détection automatique du son surround DOLBY et du format 16/9 via la ligne 23 du Teletxte.
Valide pour tous programmes.

WSS (nur bei 16:9 oder Dolby)
Auswertung der Zeile 23 zur automatischen Format-und Dolbyumschaltung.

Identificazione "auto-surround" e "format" via televideo alla riga 23.La selezione di WSS Processing vale per tutti i programmi.

Detección "auto-surround" y "format" a través de la línea 23 de Teletext.La selección del procesamiento WSS es válida para todos los programas.

☑ Detection enable ☐ Detection disable

EPG / AV Link
Enables or disables the option to decode and display EPG program data.

Validation ou inhibition du décodage/affichage des données du programme EPG.

Zulassen oder Nichtzulassen von EPG.

Abilita o disabilita l'opzione di decodifica e visualizzazione dati programmi EPG.

Valida o inhibe la opción de descodificación y visualización de datos del programa EPG.

☑ Available ☐ Not available

SETUP

Text. Lang. Teletext language :

0	1	2	3
English	Polish	English(US)	English
German	German	German	German
Swedish	Swedish	Swedish	Swedish
Italian	Italian	Italian	Italian
French	French	French	French
Portug.	Serbocroat	Portug.	Portug.
Czech/Slov.	Czech/Slov.	Czech/Slov.	Turkish.
-	Rumanian	English(UK).	-

Bus Quiet
Factory adjust reserved.

EXT.HIFI / Dolby Ext.
Dolby Internal; not available on Normal Sound TV's

☑ **Dolby with External Loudspeaker.** ☐ Dolby with Internal Loudspeakers.

External HIFI Not available on Dolby TV's

☑ External HIFI control ☐ Normal sound control

IR Download
Download screen for receiving mapping via IR data.

Ecran de chargement pour réception "mapping" via IR data

Laden des Programmschemas per AV-Link

Trasferimento IR
Trasferire schermo per ricezione mappatura via dati IR

Descarga de IR
Pantalla de descarga para recibir el mapeado a través de los datos IR.

IR Download	
Programme	00
Return / Abort	◁
IR Download active	

"Programme 00" : function is active or finished.
Return / Abort : To exit/Abort the menu press "left" arrow key or Volume - key of keyboard.
All other IR commands have no response.

"Programme 00" : Fonction active ou finie.
Return / Abort : Pour sortir du menu appuyer sur la touche "gauche" ou "Volume -" du clavier.
Les autres commandes IR sont sans réponse;

"Programme00":Funktion ist aktiv oder beendet
"Return/Abort": Beenden oder Abbruch der Funktion durch Drücken der linken Pfeiltaste oder "Lautstärke-" am Gerät.Alle anderen Tasten haben keine Funktion.

Programma 00: la funzione è attiva o finita.
Return/Abort: per uscire dal menu, premere il tasto "sinistra" del telecomando o il tasto Volume- della tastiera.
Tutti gli altri comandi IR sono senza risposta.

"Programme00" : función activa o terminada.
"Return / Abort" : para salir / abortar, pulsar la tecla "flechaizquierda" o la tecla "volumen -" del teclado.
Todos los demás comandos IR son inoperantes

Reset Equ.	Reset Equaliser Not available Non disponible

⟶ After setting ⟶ Store (+) ☑

GEOMETRY

Return

Closes the sub-menu and returns to the "Main Service Menu"

Retourne au menu principal.

Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.

Chiude il sottomenu e fa apparire il menu principale Field Service Mode.

Cierra el submenú. El menú Field Service Mode aparece.

Press </>: remote control; Vol. +/- : TV keyb.

System Voltage
Adjustment of the system voltage Usys.
Only possible via the local keyboard Vol +/- .

TUBE NAME	DESCRIPTION	Usys
A59EGD048X300	4/3 25" SF	131V +/- 0.5V
A66ECY 13X 15	4/3 28" MP	132V +/- 0.5V
A66EHJ 43X 15	4/3 28" MP	132V +/- 0.5V
A68EGD038X300	4/3 29" SF	131V +/- 0.5V
A80AEJ 15X 01	4/3 33"MP	131V +/- 0.5V
W56EGV023X15	16/9 32"SF	137V +/- 0.5V
W66EGV023X115	16/9 32"SF	137V +/- 0.5V
W76EGX023X115	16/9 32"SF	137V +/- 0.5V

H-VCO Horizontal - VCO Oscillator.

Adjust the value of H-VCO until the speed of the unsynchronised picture becomes stable. (i.e minimum roll).

Agir sur H-VCO pour obtenir une image la plus proche de la synchronisation

H_VCO auf Schwebung abgleichen.

Regolare l'H_VCO finché l'immagine non sincronizzata non avrà raggiunto la velocità minima.

Ajuste H_VCO hasta que la imagen no sincronizada alcance su velocidad más baja.
default value = 0FH
Press </>: remote control; Vol. +/- : RP keyb.

H-Delay	Horizontal delay Use "+" and "-" to adapt the image

V-Blanking

1-Adjust V-amp. for a 107% over scanned picture.
2- Reduce V-blanking for visible lines top and bottom of screen.
3-Increase step by step V-blankink until the cut- off lines at the top and bottom of the screen disappears.
4- Increase one more step
5- Fine adjust V-amp. and V-position

1-V-amp. amplitude verticale suffisante (>7% overscan)
2- réduire V-blanking:visible en haut et bas.
3-Agir étape par étape jusqu'à disparition du blanking en bas d'image et des lignes de cut-off en haut d'écran
4- Augmenter d'une valeur.
5- Faire un réglage fin de V-amp. et V-position

1- Voreinstellung der V-amp auf: >7% Überschreibung.
2- Reduzieren Sie V-Blanking soweit bis die ersten geschriebenen Zeilen am oberen Bildrand sichtbar werden.
3- Erhöhen Sie V-Blanking Schritt für Schritt bis die Cut-Off Meßzeilen gerade am oberen Bildrand verschwinden.
4- Erhöhen Sie V-Blanking um eine Stufe.
5- Feineinstellung von V-amp und V-position.

1- Ampiezza verticale: grande a sufficienza (7% di sovrascansioni)
2- Riduzione della soppressione verticale: visibile in alto e in basso
3- Aumentare passo/passo: finche'le linee di cut off nella parte alta dello schermo scompaiono.
4- Aumentare ancora di un passo
5- Regolare con precisione l'ampiezza e la posizione verticali

1- Amplitud V: suficientemente grande (7% de sobreexploración)
2- Reducir el borrado V: visible en las partes superior e inferior.
3- Aumentar el paso a paso: el borrado en la parte inferior y las líneas de cut-off en la parte superior desaparecen.
4- Aumentar de otro paso.
5- Ajustar finamente la amplitud V y la posición V.

V-Amplitude V-Position	

⟶ After setting ⟶ Store (+) ☑

GEOMETRY

V-Linearity	
H-Position	
H-Amplitude	
EW - Amplitude	
EW - Trapezium	
EW -Shape	

GEOMETRY ZOOM0

△

H-Blanking	◁ ▷ +3B
H-Blanking Symmetry	-19
Default	☐
Store	☑
Restore	☐

△ UP ▽ DOWN ◁ ▷ CHANGE

page 3

GEOMETRY

H-Blanking	Adjustments : 50Hz 16/9 TV zoom 0.
H-Blanking Symmetry	Adjustments : 50Hz 16/9 TV zoom 0.

⟶ After setting ⟶ Store (+) ☑

VIDEO PAL

Return

Closes the sub-menu and returns to the "Main Service Menu"

Retourne au menu principal.

Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.

Chiude il sottomenu e fa apparire il menu principale Field Service Mode.

Cierra el submenú. El menú Field Service Mode aparece.

Press </>: remote control; Vol. +/- : TV keyb.

Norm. (Factory)

Recalls the factory settings for Colour, Brightness, Contrast, Sharpness and sets Contrast Expand to "LOW".

☑ Factory settings recalled
☐ User settings kept.

G2 Alignment Special menu displayed:

Initially set R-Cut Off and G-Cut off to 80H.

RGB cutoff counters

Adjust the lowest value with SCREEN poentiometer to:

Tube Type	Value	Tube Type	Value
A59EGD	50H	W66EGV	50H
A66ECY	50H	W76EGV	60H
A66EHJ	50H		
A68EGD	50H		
A80AEJ	60H		
W56EGV	50H		

To return video submenu:
Press </>/OK: remote control;Vol. +/- :TV keyb.
Select"Restore" to restore the cut off values.

R-Cut off* G-Cut off*	☼ + ◑ + ◐ =nom. Grey scale test pattern white =100% grey
R - Drive G - Drive B - Drive	☼ + ◑ + ◐ =nom. Grey scale test pattern white =100% white
Peak-White**	☼ + ◐ + ◑ =nom. Peek white test pattern white =100% Colourimeter

Tube Type	[Nits]	Tube Type	[Nits]
A59EGD	350	W66EGV	480
A66ECY	300	W76EGV	380
A66EHJ	300		
A68EGD	350		
A80AEJ	240		

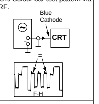
⟶ After setting ⟶ Store (+) ☑

Note :
* adjust separate for PAL/NTSC/SECAM and RGB/AV

** After PEAK white adjustment control cut off setting. Repeat the adjustments if necessary.

VIDEO PAL

Scal. Brightness	☼ + ◑ = 50% ◐ = 100% Grey scale test pattern white =100% black
Scal*. Colour	☼ + ◑ + ◐ =nom. PAL (then SECAM +RGB) 75% Colour bar test pattern via RF.
Scal. Contrast	factory settings.



Text Set-up Mode ☼ + ◑ + ◐ =nom.

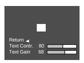
Set Text Contr. to 80H.
Adjust Text Gain for V=80V at pin 11 (Blue) of the CRT

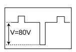
Mettre Text Contr. à la valeur 80H.
Ajuster Text Gain pour obtenir un niveau de sortie V=80V sur la cathode Bleue du tube (point 11 de la CRT).

Stellen Sie Text Contr. auf 80H ein.
Stellen Sie mit Text Gain V=80V an der Blau-Kathode (Pin 11) der Bildröhre ein.

Regolare il contrasto televideo a 80H.
Regolare il guadagno contrasto televideo per ottenere al catodo del blu un livello pari a V=80V (CRT pin 11).

Poner el Text Contr. a 80H.
Ajuste Text Gain para dejar V=80V en azul del TRC (CRT Patilla 11) .





CRT Pin 11

⟶ After setting ⟶ Store (+) ☑

ERROR CODE

Return

Closes the sub-menu and returns to the "Main Service Menu"

Retourne au menu principal.

Schließt das Untermenü, und das Feldservicemodus-Menü erscheint.

Chiude il sottomenu e fa apparire il menu principale Field Service Mode.

Cierra el submenú. El menú Field Service Mode aparece.

Press </>: remote control; Vol. +/- : TV keyb.

Erase Error Codes To clear all error codes stored in the NVM. Action : Long press (>2.5s).
Press </>/OK: remote control;Vol. +/- :TV keyb.

CODE LED Error Codes

The last five error codes are stored and displayed as they occured in real time, the most recent error code is displayed on the top line. A repeated top line error code has its real time count updated. There are 27 different error codes, which are signalled by the TV's Standby LED, ranging in value from 11 to 49 hex. The error code is displayed as two separate digits separated by a suitable pause, this is repeated until the either the TV fixes the fault or the TV is repaired. For example Error-code : 23 will be displayed thus :
2 flashes and a short pause
3 flashes and a long pause
....
List of Errors Codes : see table

Mémorise les cinq derniers codes erreurs et affiche en haut d'écran les plus récents.
27 codes erreurs différents sont signalés par deux digits selon une séquence spécifique
Exemple :
Code erreur : 23 affiché
2 flashes, courte pause
3 flashes : longue pause
....
Voir cicontre la liste des codes erreurs

Zeigt die letzen 5 Fehlercodes mit der Laufzeit an.
Der zuletzt aufgetretene Fehler steht an erster Stelle.
Sollte ein Fehler wiederholt auftreten wird nur die Laufzeit aktualisiert.
Die Fehlercodes können im Menü Error Code angezeigt werden oder über die Kontroll LED angezeigt werden;

Beispiel für die Anzeige über die Kontroll LED:

Fehlercode 23 :
Zweimaliges Blinken der LED, kurze Pause.
Dreimaliges Blinken der LED, lange Pause.
Auflistung der Fehlercodes : siehe Liste

Memorizza gli ultimi cinque codici d'errore (differenti tra loro) dopo che ognuno di essi si verrà visualizzato (attraverso il contatore della durata di esecuzione). L'errore più recente viene visualizzato in cima. La ripetizione del codice di errore in cima alla lista non farà altro che aggiornare la durata di esecuzione. Dal LED del TV vengono segnalati 27 codici d'errore differenti, numerati da 11 a 44. Il codice d'errore è indicato da due cifre separate da un opportuno intervallo di tempo e verrà ripetuto fino a quando il televisore non sarà stato riparato o non si sarà corretto da solo.
Ad es:
Il codice d'errore 23 visualizzerà:
2 segnali luminosi con pausa breve
3 segnali luminosi con pausa lunga
Per la lista dei Codici d'Errore, si veda la tabella

Almacene los últimos cinco códigos de error cuando cada uno ocurre (gracias al contador de tiempo de ejecución). El error más reciente se visualiza en la parte superior. Una repetición del código de error en la parte superior de la lista solamente actualiza el tiempo de ejecución. El indicador TV LED indica 27 códigos de error diferentes: de 11 a 44. El código de error se señala en forma de dos dígitos separados con una pausa apropiada entre los dos y se repetirá hasta que repare el TV o él se repara a sí mismo.
Por ejemplo,
Se va visualizar el código de error 23:
2 parpadeos, una pausa corta;
3 parpadeos, una pausa larga.
Para la Lista de códigos de error, consulte la tabla.

ERROR CODES

GB

11 1st Audio_MSP doesn't answer
12 2nd Audio-MSP doesn't answer
13 Audio-DSP doesn't answer
14 Video IC STV2161/2 doesn't answer
15 Chroma IC 2151/9143 doesn't answer
16 Upconverter DMU0 doesn't answer
17 Audio (or Dolby) module not detected
18 SCART IC TEA6415C doesn't answer
19 Tuner CTT5000 doesn't answer
21 I2C Bus1 data line held low
22 I2C Bus2 data line held low
23 I2C Bus1 clock line held low
24 I2C Bus2 clock line held low
25 Switched 5V not available
26 Tube doesn't get warm in time
27 Deflection detects >3 times protection (problem detected on "breathing" line)
29 DRAM memory of Megatext defect
31 RAM is full
32 Software-timer isn't available
33 The PSI chip (STV2165) doesn't answer
34 The NVM (X24C32) chip doesnt answer
35 13V not available
36 Wrong addr. NVRAM passed to the bus-handler
37 Unexpected level on NMI (Interrupt) line found (possible cause : tube flashover)
38 M3LBus for Megatext is blocked
39 Megatext (SDA5273) doesn't answer
41 bus1 Data Line not recoverable
42 bus2 Data Line not recoverable
43 MCU (Motion Mastering Up-Converter) doesn't answer
44 Convergence IC (STV2040) doesn't answer
45 Defect "Video Module" is detected
51 PIP Module doesn't answer.
52 The Teletext module is not conform .

F

11 Processeur Audio MSP ne répond plus
12 Deuxième MSP ne répond plus (Dolby)
13 Audio-DSP ne répond plus (produit Dolby)
14 Video-IC STV2161 ou 2162 ne répond plus
15 Chroma-IC STV2151 ou TDA9143 ne répond plus
16 Convertisseur de frequence d'image digital DMU0 (Intelligent Mastering) ne répond plus
17 Module son (ou Dolby) n'est pas détecté
18 Commutateur SCART TEA6415C ne répond plus
19 Tuner CTT5000 ne répond plus
21 I2C-bus 1 data bloqué au niveau bas
22 I2C-bus 1 clock bloqué au niveau bas
23 I2C-bus 2 data bloqué au niveau bas
24 I2C-bus 2 clock bloqué au niveau bas
25 Le “5V commuté” n'est pas disponible
26 Tube ne chauffe pas a temps
27 Plus que 3-fois la déflection a détecté une “protection” (c'est-a-dire qu'il y a un problème détecté sur la ligne “breathing”)
29 Mémoire (DRAM) du Megatext est en panne
31 Plus de place en RAM
33 STV 2165 (PSI 100Hz) ne répond plus
34 NVM (mémoire) X24C32 ne répond plus
35 +13V n'est pas disponible
36 Adresse NVRAM inconnue
37 Problème détecté sur la ligne “Interrupt” pendant le démarrage ou le fonctionnement duTV. Possibilité: “arking”?
38 Bus M3L pour Megatext est bloqué
39 Megatext (SDA5273) ne répond plus
41 I2C-bus 1 data reste blocqué
42 I2C-bus 2 data reste blocqué
43 MCU (convertisseur de frequence d'image digital: Motion Mastering) ne répond plus
44 Le CI Convergence (STV2040) ne répond plus
45 "Vidéo Module" erroné détecté
51 Le module PIP ne répond plus.
52 Le Module Text (DVT) n'est pas le bon.

D

11 Audio MSP Prozessor antwortet nicht.
12 Zweiter Audio MSP Prozessor antwortet nicht.(Dolby)
13 Audio DSP Prozessor antwortet nicht. (Dolby)
14 IC STV2161/62 antwortet nicht
15 IC STV2151 / TDA9143 antwortet nicht
16 DMU0 Upconverter (Videomodul) antwortet nicht
17 Audio- oder Dolby-Modul nicht erkannt
18 TEA6415C antwortet nicht (SCART-Schalter)
19 Tuner CTT5000 antwortet nicht
21 I2C Bus1 data line ist auf low
22 I2C Bus2 data line ist auf low
23 I2C Bus1 clock line ist auf low
24 I2C Bus2 clock line ist auf low
25 Geschaltete 5V nicht vorhanden
26 Röhre wird nicht rechtzeitig warm
27 Ablenkung meldet 3 mal Fehler. (Problem auf Breathing Leitung)
29 DRAM des Megatext defekt
31 RAM antwortet nicht
33 STV 2165 (PSI 100Hz) antwortet nicht
34 NVM Chip antwortet nicht (X24C32)
35 +13V nicht vorhanden
37 Unerwarteter Zustand an NMI (Interrupt) line gefunden. (Mögliche Ursache = Röhren-Überschlag")
38 M3L Bus des Megatext blockiert
39 Megatext (SDA 5273) antwortet nicht
41 Bus1 (data line) nicht möglich zu reaktivieren
42 Bus2 (data line) nicht möglich zu reaktivieren
43 MCU (Motion Mastering Up-Converter) antwortet nicht
44 Konvergenz IC (STV2040) antwortet
45 falsches Videomodul (falscher MCU)
51 PIP antwortet nicht
52 Falsches Videotextmodul.

I

11 Il primo IC Audio MSP non risponde
12 Il secondo IC Audio MSP non risponde
13 L'integrato Audio DSP non risponde
14 L' IC 2161/2 non risponde
15 L'IC 2151/9143 non risponde
16 Il convertitore non risponde
17 Il Modulo Audio non viene identificato
18 Il TEA6415C non risponde
19 Il sintonizzatore non risponde
21 Linea data I2C bus 1 forzata bassa
22 Linea I2C bus 2 forzata bassa
23 Linea clock I2C bus 1 forzata bassa
24 Linea clock I2C bus 2 forzata bassa
25 La tensione 5V commutati non disponibile
26 Il tubo non raggiunge la corretta temperatura nel tempo stabilito
27 Per 3 volte, la deflessione ha rilevato una protezione (problema riscontrato dalle linee "breathing")
29 Difetto alla DRAM di Megatext
31 La RAM è satura
33 Il chip PSI non risponde
34 Il chip NVM non risponde
35 13V non disponibile
37 Livello imprevisto sulla linea NMI
38 Bus M3L per Megatext bloccato
39 Megatext non risponde
41 Bus 1 (linea dati) non ripristinabile
42 Bus 2 (linea dati) non ripristinabile
43 MCU non risponde
44 Convergenza IC (STV2040) non risponde
45 rivelato Modulo Video difettoso
51 Il Modulo PIP non viene identificato
52 Il modulo Televideo non è conforme

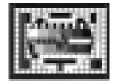
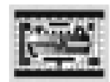
E

11 Procesador de audio MSP no responde
12 Segundo MSP no responde (Dolby)
13 Audio DSP no responde
14 Cir. integrado de video STV2161 ó 2162 no responde
15 Cir. integrado croma ST2151 ó TDA9143 no responde
16 Convertidor de frecuencia de imagen digital DMU0 (Mastering Inteligente) no responde
17 Módulo de sonido (o Dolby) no se detecta
18 Conmutador Scart (TEA6415C) no responde
19 Tuner CTT5000 no responde
21 Data 1 del bus I2C permanece en bajo
22 Clock 1 del bus I2C permanece en bajo
23 Data 2 del bus I2C permanece en bajo
24 Clock 2 del bus I2C permanece en bajo
25 No se dispone de los “5v conmutados”
26 El tubo tarda en calentarse
27 La protección de la deflexión actúa mas de 3 veces (el problema se detecta en la línea de “breathing”)
29 La memoria DRAM del Megatext está defectuosa
31 RAM está llena
33 El chip STV2161 (PSI 100Hz) no responde
34 La memoria no volátil X24C32 no responde
35 No están disponibles los + 13 v.
37 Problema detectado en la línea “Interrupt” durante el arranque o el funcionamiento del TV.Posibilidad de chispazos en muy alta?
38 El bus M3L para el Megatext está bloqueado
39 Megatext (SDA5273) no responde
41 Data 1 del bus I2C permanece boqueado
42 Data 2 del bus I2C permanece bloqueado
43 MCU (convertidor de frecuencia de imagen digital: Motion Mastering) no responde
44 Cir. integrado de covergencia (STV2040) no responde
45 Fallo detectado en el módulo de Video
51 El módulo PIP no responde

GEOMETRY MODE ALIGNMENT - 50Hz VERSION

4/3 picture tube

Signal : 4/3 test pattern

Mode	Pattern	Adjustment
4 / 3 standard mode (zoom 0)		**50Hz Version** : overscan V=107% , H=107% 1- Adjust Vertical position and Vertical amplitude 2- Adjust Vertical Blanking and linearity 3- Adjust Horizontal position and Horizontal ampltude 4-Adjust EW Amplitude ,EW Shape and Trapezium
16 / 9 standard mode zoom 0		Adjust the vertical height until it is 80% of the horizontal width.

16/9 picture tube

Signal : 4/3 test pattern

Mode	Pattern	Adjustment
16 / 9 standard mode (zoom 0)		**50Hz Version** : overscan V=107% , H=107% 1- Adjust Vertical position and Vertical amplitude 2- Adjust Vertical Blanking and linearity 3- Adjust Horizontal position and Horizontal ampltude 4-Adjust EW Amplitude ,EW Shape and Trapezium
4/3 Centered (zoom 0)		**50 Hz Version** : overscan V=107% , H=80% of the screen 1- Adjust H-amplitude & H-position 2- Adjust H- Blanking and H-blanking symmetry
< 4/3 > wide (zoom 1)		**50 Hz Version** : overscan V=133% , H=107% 1- Adjust V-amplitude
⇧ 4/3 ⇧ PANNING (zoom 1)		**50 Hz Version** : overscan V=133% , H=107% No adjustment necessary
Full Screen Zoom		**50 Hz Version** : overscan V=114% , H=107% 1- Adjust V-amplitude

TECHNICAL INFORMATION

Chassis concerned : ICC19 16/9 & 4/3
(All sets with serial number starting with AK2).

Subject : Diode Split Transformer (DST)

Solution :
The following chassis have been equipped with 2 different versions of DST transformer, which are not interchangeable. Before ordering, identify the version needed, either by the serial number (2nd version) or by referring to the number printed on the DST (1st version) to be replace.

Chassis Identification	Screen Ratio	DST Part Numbers	
		1st Version	2nd Version
IC19 B5ND0740 00	4x3	10468070	10510870
IC19 B5ND0640 00	4x3	10468070	10510870
IC19 B5ND0240 00	4x3	10468070	10510870
IC19 B5P80240 00	16X9	10468160	10520330
IC19 B5P80740 00	16X9	10468160	10520330
IC19 B5P80640 00	16X9	10468160	10520330

TECHNICAL INFORMATION

ICC19 Chassis : ALL Chassis Spare Parts Lists.

Subject : Wrong part number quoted in Spare Parts List.

Solution :
Please correct a mistake made in the spare parts list for the integrated circuit used at circuit reference IL062.
Erase **wrong** part number and description given as TL082CP IC (DIL-8 type) Part No. 46161100 and enter the **correct** description and part number, as TL082CD IC (flat SMD type) is **Part No.10364130.**

TECHNICAL INFORMATION

TV EQUIPED OF ICC19 CHASSIS (50Hz and 100Hz)

Symptom :
In case of failure of IC TDA8177F in position IF001.

Solution :
CAUTION

Version TDA8177F (Part No. 10352880) is able to carry higher output currents than the TDA8177 (Part No. 15053440) used in TX92 chassis.

If the wrong IC is used, the replacement device will be distroyed at Switch On.

TECHNICAL INFORMATION

Finished products / Chassis concerned : CC19 Intelligent Mastering TV's equipped with CRT board 19100 (Part No. 10354460)

Symptom/Problem observed :
Failure of TEA5101B integrated circuit (mainly IB02) on the CRT board.

Solution implemented :
The reliability of the video drive amplifiers used on the CRT board can be improved by removing the capacitor CB076 (adjacent to BB02)

Comment :
As a preventative measure, capacitor CB076 should be removed on all sets serviced for whatever the reason.
This change has been implemented in production since week 11-98

IRIS CODE: the code mentioned below must be used to report this failure on the warranty sheet. It will make your report easier and more reliable

Condition/ Symptom	Part No	Qty	Position	Section	Fault Code	Repair Code
			C B 0 7 6	V P A		J

You do not need to write anything in the white boxes.

TECHNICAL INFORMATION

Finished products / Chassis concerned : ICC19 CHASSIS

Symptom/ Problem observed :
When switching the TV into the Standby mode, the red LED indicator does not light.

Solution implemented :
Change resistor RP069 from a 22KΩ to 47KΩ 5% 0.10W **Part No. 40118500**
(solder side, position L0)

IRIS CODE: the code mentioned below must be used to report this failure on the warranty sheet. It will make your report easier and more reliable

Condition/ Symptom	Part No	Qty	Position	Section	Fault Code	Repair Code
1132	4011850 0	1	RP069	PSU	Y	A

You do not need to write anything in the white boxes.

TECHNICAL INFORMATION

Finished products / Chassis concerned : ICC19 CHASSIS

Symptom/ Problem observed :
When the TV is placed into the Standby mode, all customer settings (volume, programme, child lock, alarm clock settings etc.) automatically saved are not memorised.

Cause :
Incorrect RESET function.

Solution implemented :
Change resistor RP156 from a 1KΩ to 4.7KΩ 5% 0.250W **Part No. 15008490** (components side, position N4)

IRIS CODE: the code mentioned below must be used to report this failure on the warranty sheet. It will make your report easier and more reliable

Condition/ Symptom	Part No	Qty	Position	Section	Fault Code	Repair Code
1727	15008490	1	RP156	PSU	Y	A

You do not need to write anything in the white boxes.

TECHNICAL INFORMATION

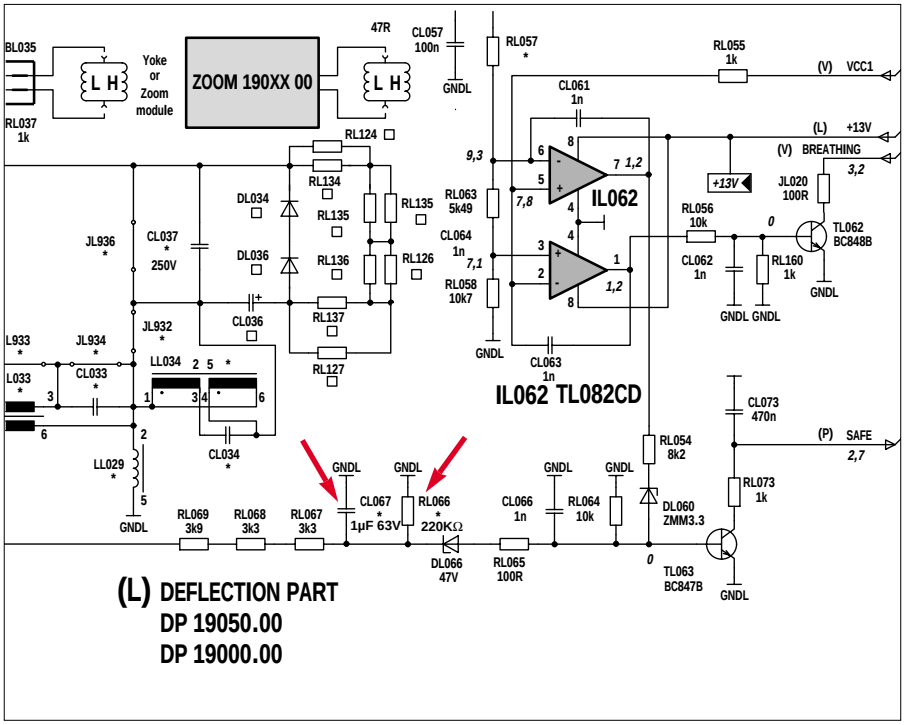
ICC19 16/9 50Hz CHASSIS ⟶

- **32WS88KE**
- **32WS83KP**
- **28WS73KD**
- **28WS78KE**

Symptom :
Power supply switches to safety mode during VCR operating.

Cause :
Loss of synchronisation signal for 1 or 2 frames (poor quality video recording).

Solution :
- Replace capacitor CL067 (100nF 100V) with a 1µF 63V (Part No. 43067772).
- Add a 220kΩ 5% 100mW melf resistor at position RL066 (Part No. 10328700)



TECHNICAL INFORMATION

Chassis concerned : ICC19 (50Hz & 100Hz)

Problem observed :
- High frequency noise due to vibration of the ferrite core of (SMT) LP020.
- Set switches to security mode when picture changed from dark to white.

Consequence :
As a consequence of the set switching to the security mode LP020 remains magnetised, this affects the reliability of transistor TP060 at switch ON.

Solution :
1) To improve the reliability of TP060 and reduce noise from the SMT.
Change resistor RP156 from a 1KΩ to 4.7KΩ ohm 5% 250mW **Part No.15008490**

2) To avoid switching to security mode when video content changes.
Change resistors RP138 and RP139 according to chassis listed in the attached table.

Chassis identification	Old value		New value-part N°	
	RP138	RP139	RP138	RP139
IC19 ABE80640 00	10KΩ	82KΩ	27KΩ-10433400	270KΩ-20150900
IC19 ABE80641 00	10KΩ	82KΩ	27KΩ-10433400	270KΩ-20150900
IC19 B5BP0240 00	10KΩ	82KΩ	24KΩ-10433300	270KΩ-20150900
IC19 B5HP0640 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 B5ND0240 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 B5ND0640 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 B5ND0740 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 B5P80240 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 B5P80640 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 B5P80740 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 C5KA0640 (FGR)	10KΩ	100KΩ	22KΩ-60080300	270KΩ-20150900
IC19 C5KA0640 00	10KΩ	100KΩ	22KΩ-60080300	270KΩ-20150900
IC19 M5F80640 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 M5LA0740 (FGR)	10KΩ	100KΩ	22KΩ-60080300	270KΩ-20150900
IC19 M5LA0740 00	10KΩ	100KΩ	22KΩ-60080300	270KΩ-20150900
IC19 M5P80240 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 M5P80640 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700
IC19 M5P90340 00	10KΩ	82KΩ	22KΩ-60080300	220KΩ-10328700

Please Note : Both problems are linked to each other, therefore RP156, RP138 and RP139 must be replaced at the same time.

TECHNICAL INFORMATION

SUBJECT : ICC19 100Hz CHASSIS STEREO or DOLBY STEREO

Symptom (only applicable to Italy) :
Picture interference when receiving VHF Band 1 signals, either moire patterning or black vertical bars on the screen.

Cause :
Cross talk between power supply and tuner.

Solution :
Replace the switch mode transformer LP020 with either :
- 10553820 (stereo).
- 10553830 (dolby stereo).

TECHNICAL INFORMATION

Chassis concerned : ICC19 (100Hz)
Model No. 28WS78M - 28WS78MP - 32WS88ME - 32WS98MP
(with serial number starting with AK3025110)

Symptom / Problem observed :
Depending on the orientation of the earth's magnetic field, the picture may be rotated (tilted) by a small amount, this is mainly noticeable on 16/9 wide screen sets. The problem is highlighted by teletext and sub title's at the bottom of the screen.

Solution implemented :
In future all 16/9 wide screen models will be equipped with (EFC) Earth Field Correction circuit adjusted via the customer menus.
An EFC kit with manual adjustment is available for After Sales under
Part No. 35059270.
It includes printed circuit board, EFC coil and all the necessary cables and mounting instructions.

Please Note:
- New models EFC equipped.
- The models 16/9- 100Hz -28 or 32 inches, produced since week11- 98 with serial number AK3025110 onwards are now equipped with EFC and manual adjustment described above. It is necessary to remove the back cover to access to the potentiometer.

TECHNICAL INFORMATION

Chassis concerned : ICC19 100Hz

Subject : Reception problem when using a set top aerial.

Symptom / Problem observed :
Moiré patterning and curtain effect (ringing) on the picture.

Cause :
Line output stage radiation.

Solution implemented :
To correct the line radiation problem, carryout the following component changes.
Change the following components :
- Change capacitor CL032 from a 24nF to 27nF +-5% 400V **Part No. 10263540.**
- Change inductor LL029 from a 110µH to 130µH **Part No. 10154270.**
- Replace inductor LL031 with a jumper link.
- Replace resistor RL030 with a jumper link.

And remove the following component :
- The inductor circuit reference LL030.

TECHNICAL INFORMATION

ICC19 CHASSIS (50Hz & 100Hz)

Subject : Improving the vertical picture stability (flickering).

Symptom :
After switching "ON" the set from cold, the pictures vertical stability is unsatisfactory, the problem can be seen when observing the central horizontal line of the H test pattern.

Cause :
High series resistance of the electrolytic capacitors used a circuit reference CV006 (100µF 25V) supplied RUBYCON.

Solution implemented :
Replace CV006 with the same value from another supplier **Part No. 10571680**

TECHNICAL INFORMATION

Chassis concerned : ICC19 (50 & 100Hz)

Subject : Software improvement IR002

Symptom/ Problem observed : (Sets with SECAM standard only)
Any of the following conditions:
- Flashing picture
- Green smeared picture
- Right hand edge of the picture is red in some formats.
- Time incorrectly displayed on some channels.

Solution implemented :
Change the microprocessor IR002 type number M27C801-120F1 for a new software version V3.10EPG **Part No. 10578170.**

IRIS CODE: the code mentioned below must be used to report this failure on the warranty sheet. It will make your report easier and more reliable

Condition/ Symptom	Part No	Qty	Position	Section	Fault Code	Repair Code
2451	10578170	1	IR002	SYS	1	2

You do not need to write anything in the white boxes.

TECHNICAL INFORMATION

Finished products / Chassis concerned : ICC19 100Hz
(32VT68VM - 32VT75ED - 32VT88NP - 32VT88NP - 32WS65EW - 32WS65UD - 32WS75EW)

Symptom/ Problem observed :
At high volume settings the picture is modulated by audio content.

Solution implemented :
- Delete resistor at location JP917.
- Add a jumper link at position JP915.

IRIS CODE: the code mentioned below must be used to report this failure on the warranty sheet. It will make your report easier and more reliable

Condition/ Symptom	Part No	Qty	Position	Section	Fault Code	Repair Code
1352		1	JP917	PSU	Y	J
		1	JP915	PSU	Z	K

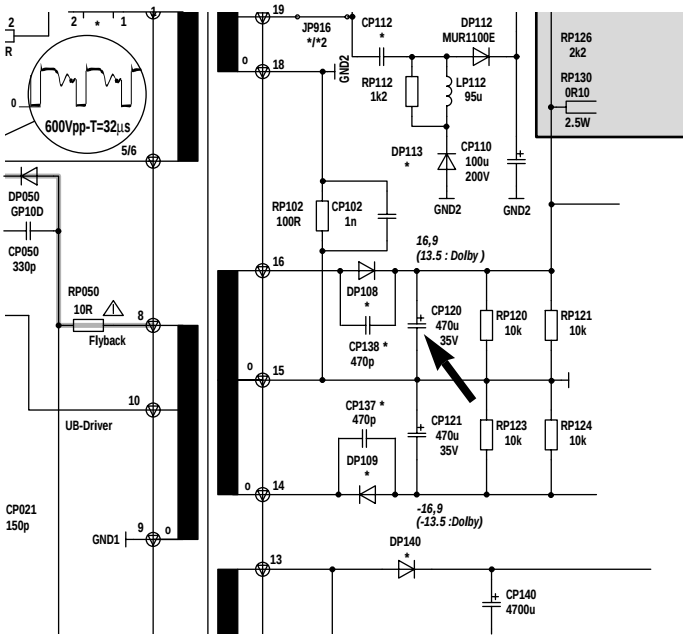
You do not need to write anything in the white boxes.

TECHNICAL INFORMATION

TV EQUIPED OF ICC19 CHASSIS (50Hz and 100Hz)

Symptom :
When the television is in the Standby Mode, residual noise can be heard from the loudspeakers.

Solution :
Change CP120 from 470µF 35V to 330µF 25V capacitor (codice 10448410)



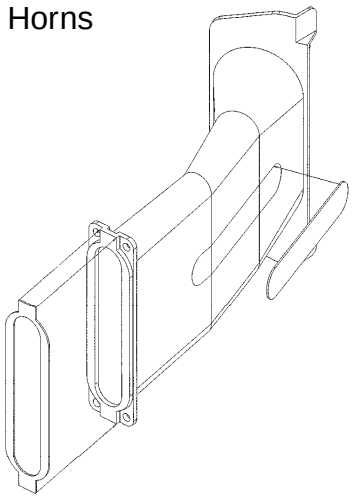
TECHNICAL INFORMATION

Finished products / Chassis concerned : ICC19
Model No. 25DU78K - 25DU78M - 29DU78K
Model No. 29DU88M - 29DU73KD - 29DU98MP

Problem observed :
Audible vibration in the acoustic horns, transmitted to the medium range speakers.

Solution implemented :
The initial recommendation was to damp the vibrations by adding a foam gasket bet ween the front cabinet and horn assembly, since then the horn assembly has been modified to overcome the vibration problem.
The latest version is available under part numbers: -
For commercial model numbers starting with 25 i.e. 25DU78K is **Part No. 25301600**
For commercial model numbers starting with 29 i.e. 29DU78K is **Part No. 25295870**

Acoustic Horns



TECHNICAL INFORMATION

Chassis : ICC19 (50 & 100Hz)

Symptom / Problem observed :
Noise in loudspeaker when in the Standby mode.

Solution implemented :
Change capacitor CP067 from a 150pF to 220pF +-10% 50V
Part No. 10311200.

TECHNICAL INFORMATION

Finished products / Chassis concerned :
ICC19 100Hz Basic CHASSIS (T7040E)

Symptom/ Problem observed :
A crackling noise emanating from the power supply when in the Standby mode and dependant upon mains supply voltage.

Solution implemented :
- Change CP067 from a 220pF to 470pF 50v **Part No. 10465400.**
- Change RP065 from a 12 kΩ to 11kΩ 5% 0.1W **Part No. 10872200**

IRIS CODE: the code mentioned below must be used to report this failure on the warranty sheet. It will make your report easier and more reliable

Condition/ Symptom	Part No	Qty	Position	Section	Fault Code	Repair Code
H546	10465440	1	CP067	PSU	Y	A
	10872200	1	RP065	PSU	Y	A

You do not need to write anything in the white boxes.

TECHNICAL INFORMATION

Finished products / Chassis concerned:
REAR PROJECTOR RP46 (ICC19 CHASSIS)

Subject : Power supply convergence

Symptom/ Problem observed :
At switch "ON" by either the mains switch or the RCU, the set takes it's times coming "ON", with no picture visible or just three flyback lines across the top of the screen which are badly distorted. Also, the LED's signal error code 49.

Cause :
Because the switching time (TON) of transistor TP220 is slow compared to the rest of the convergence power supply the transistor fails.

Solution implemented :
Change transistor TP220 type number 2SK1460 to a Sanyo device
Part No. 35069220.

IRIS CODE: the code mentioned below must be used to report this failure on the warranty sheet. It will make your report easier and more reliable

Condition/ Symptom	Part No	Qty	Position	Section	Fault Code	Repair Code
1315	35069220	1	TP220	PSU	Y	A

You do not need to write anything in the white boxes.

TECHNICAL INFORMATION

Chassis : CC19 versions of Rear Projection RP46 & RP52 TV's
46RH40U-46RH40E-52RH40E-52RH40U

I) ELECTRICAL CIRCUIT

Initial production of rear projection TV's up to and including serials numbers AK9 were equipped with the following speaker configuration :

- 1 bass boomer speaker (50Hz -500Hz) **Part No. 10517870**
- 2 medium range speakers (500Hz - 18KHz) **Part No. 10316970**
- 1 bass boomer box.

From serial number AKO onwards, the speaker configuration has been changed to incorporate weeters and change the frequency response of the medium range speakers.
New sets are equipped as follows :

- 1 bass boomer speaker (50Hz -500Hz) **Part No. 10517870**
- 2 medium range speakers (90Hz - 15KHz) **Part No. 10317130**
- 2 tweeter speakers (5KHz - 18KHz) **Part No. 10317160**
- 2 capacitors 3.3µF 50V **Part No. 60005200**

Please Note: The bass boomer box has now been cancelled

II) CABINET

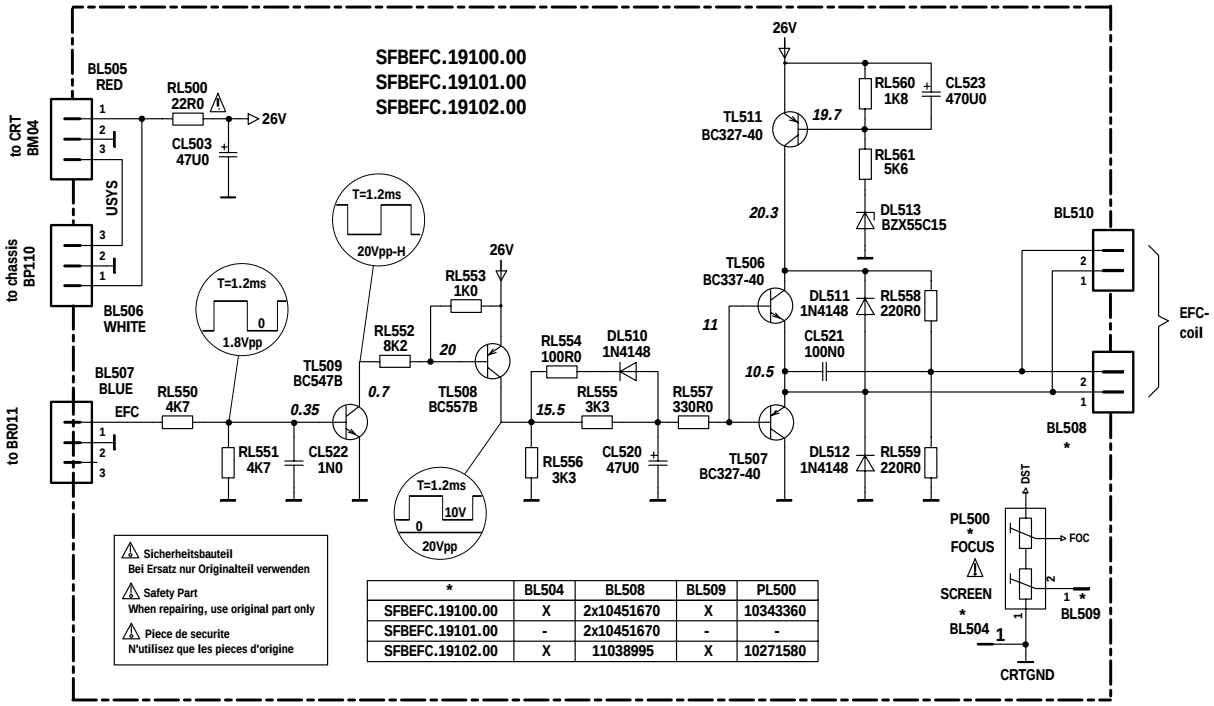
In order to carry out this sound performance enhancement, the cabinet needed to be modified to incorporate the tweeter speakers and deletion of the bass boomer box.

For exchange of the cabinet in after sales refer to the table below.

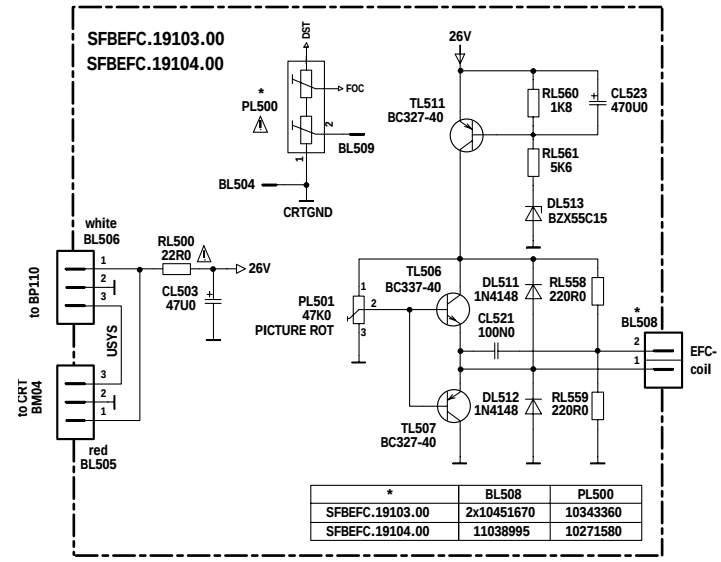
Model N°	Cabine Part N°	
	Early Version (with boomer box)	Enhanced Version (without boomer box)
46RH40U	10537350	25374050
46RH40E	10537350	25374050
52RH40E	10537360	25374020
52RH40U	10537360	25374020

Please Note: The two cabinets are NOT INTERCHAGEABLE.

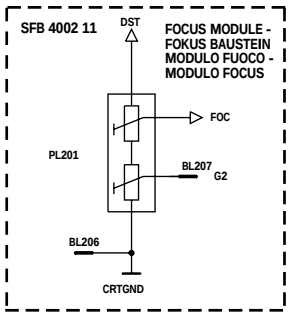
SINGLE FOCUS / EARTH-FIELD CORRECTION BOARD

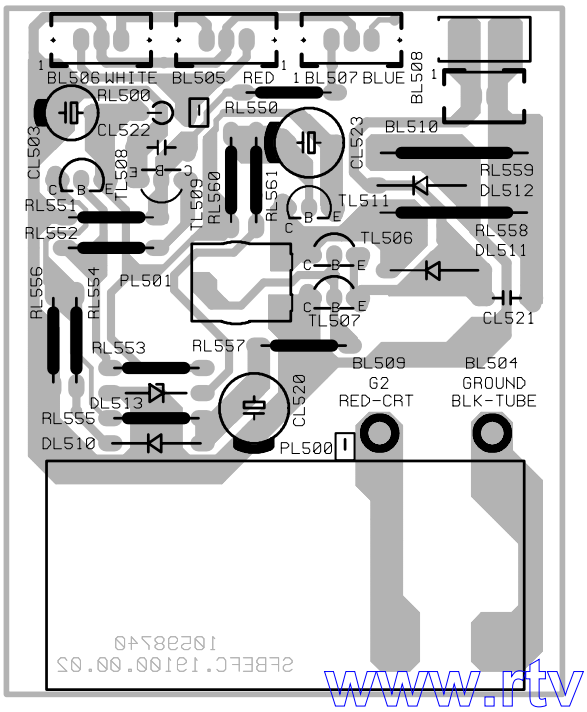


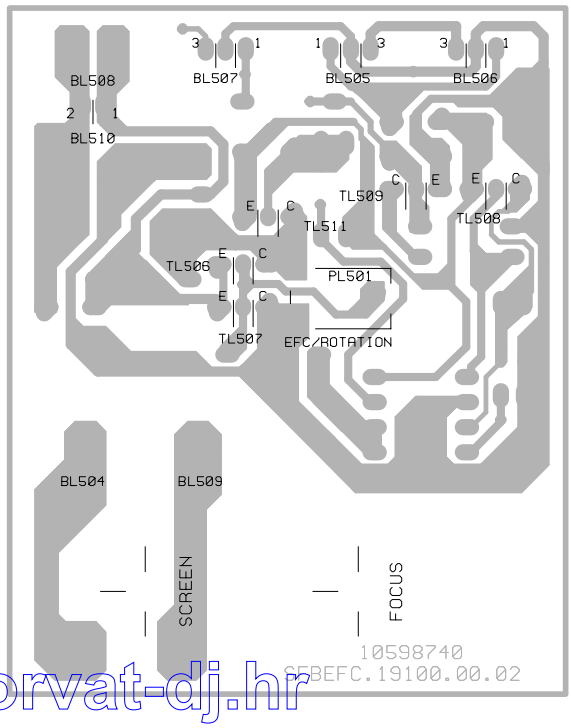
*	BL504	BL508	BL509	PL500
SFBEFC.19100.00	X	2x10451670	X	10343360
SFBEFC.19101.00	-	2x10451670	-	-
SFBEFC.19102.00	X	11038995	X	10271580



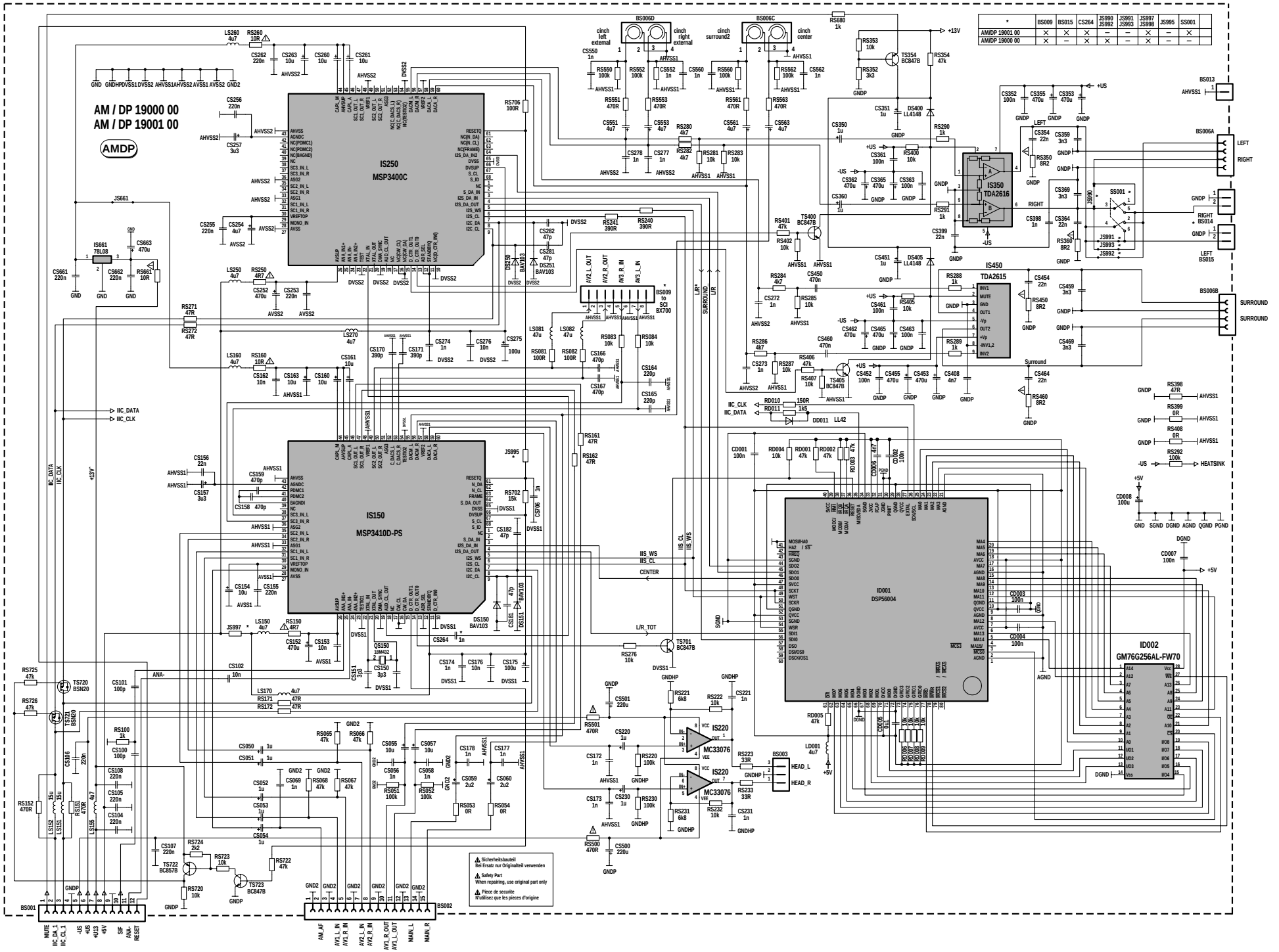
*	BL508	PL500
SFBEFC.19103.00	2x10451670	10343360
SFBEFC.19104.00	11038995	10271580



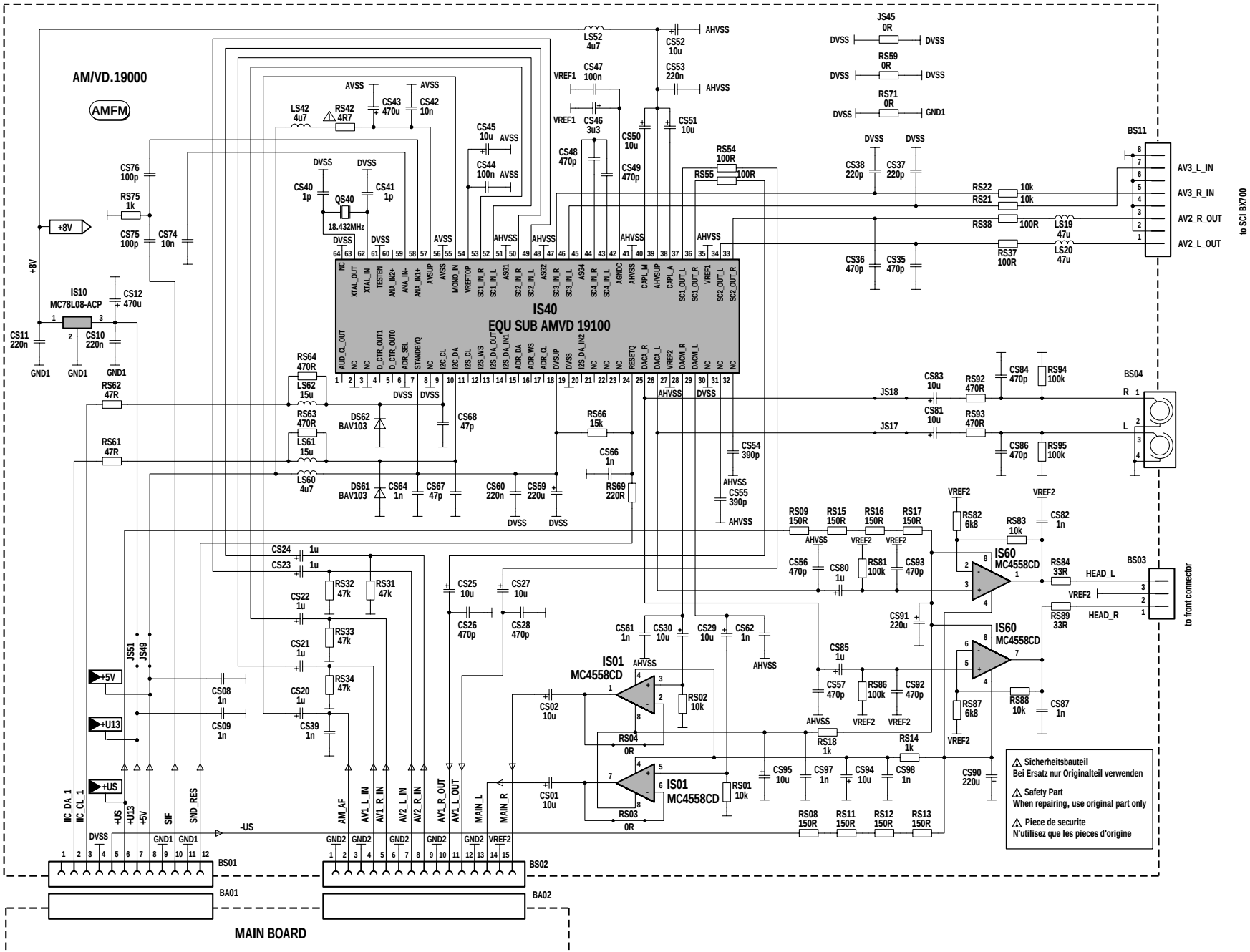


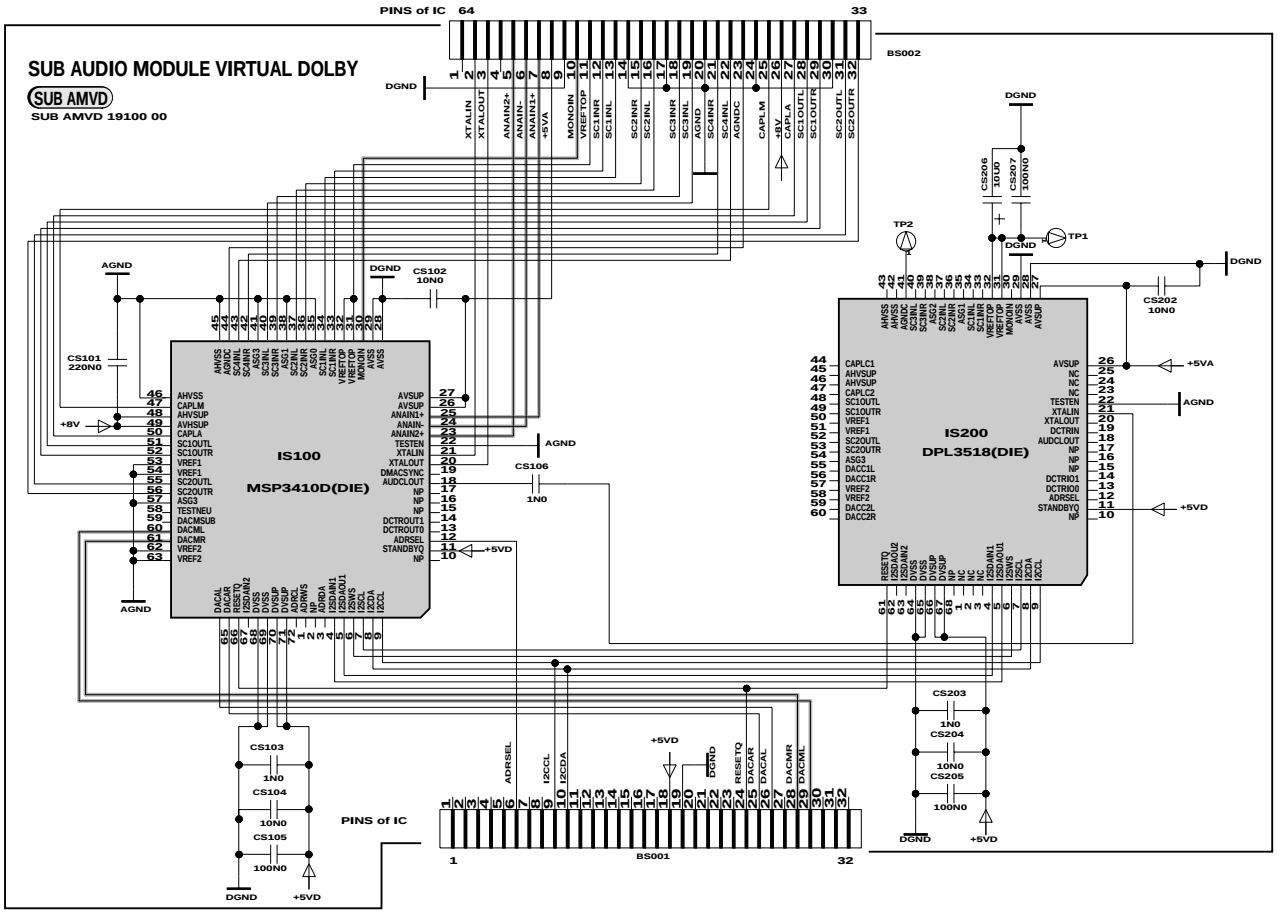


AUDIO SIGNAL/DOLBY MODULE - MODULE AUDIO/DOLBY - TON SIGNAL/DOLBY BAUSTEIN - MODULO AUDIO/DOLBY - MÓDULO AUDIO/DOLBY

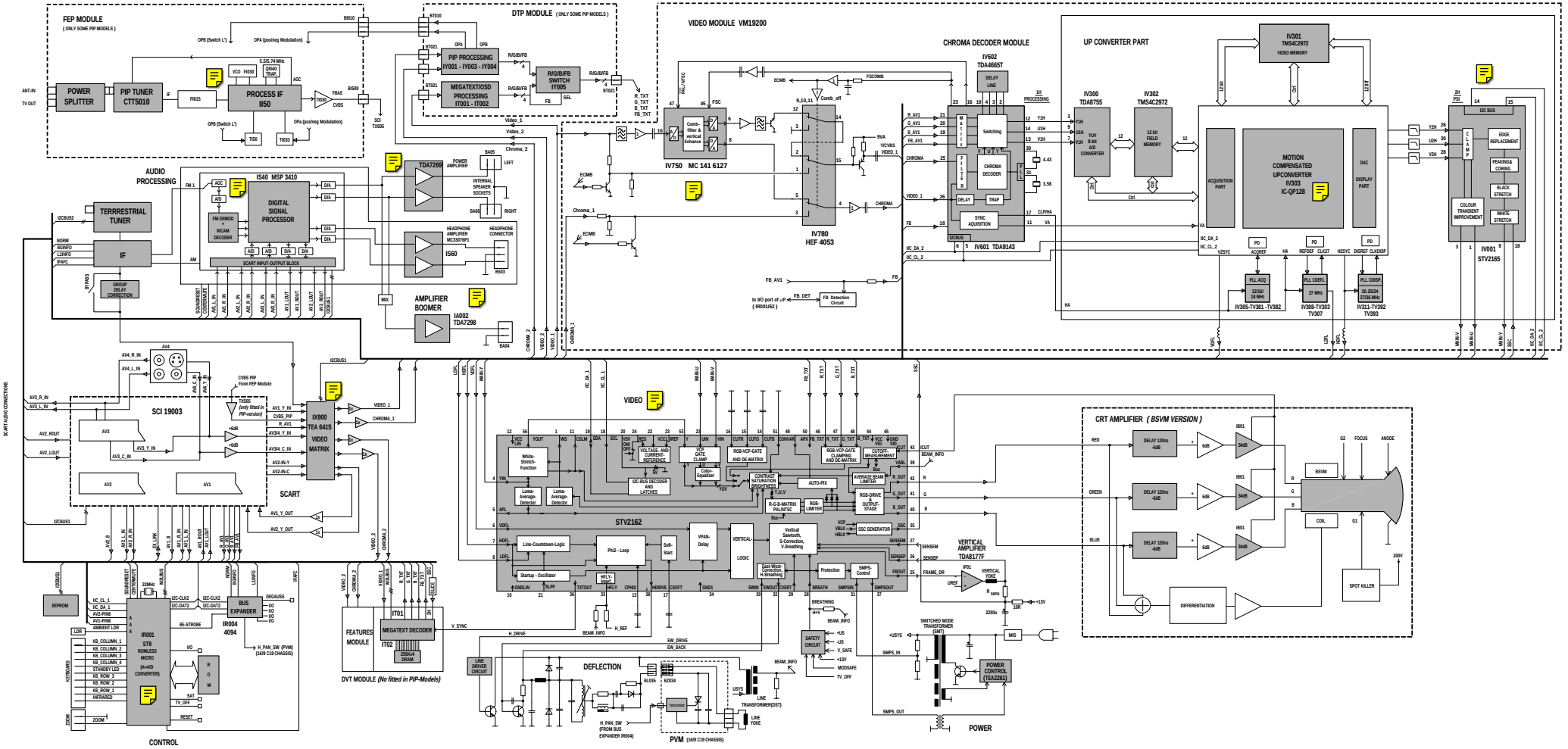


*	BS009	BS015	CS264	JS990 JS992	JS991 JS993	JS997 JS998	JS995	SS001
AM/DP 19001 00	X	X	X	–	–	X	–	X
AM/DP 19000 00	X	–	X	X	–	X	–	–

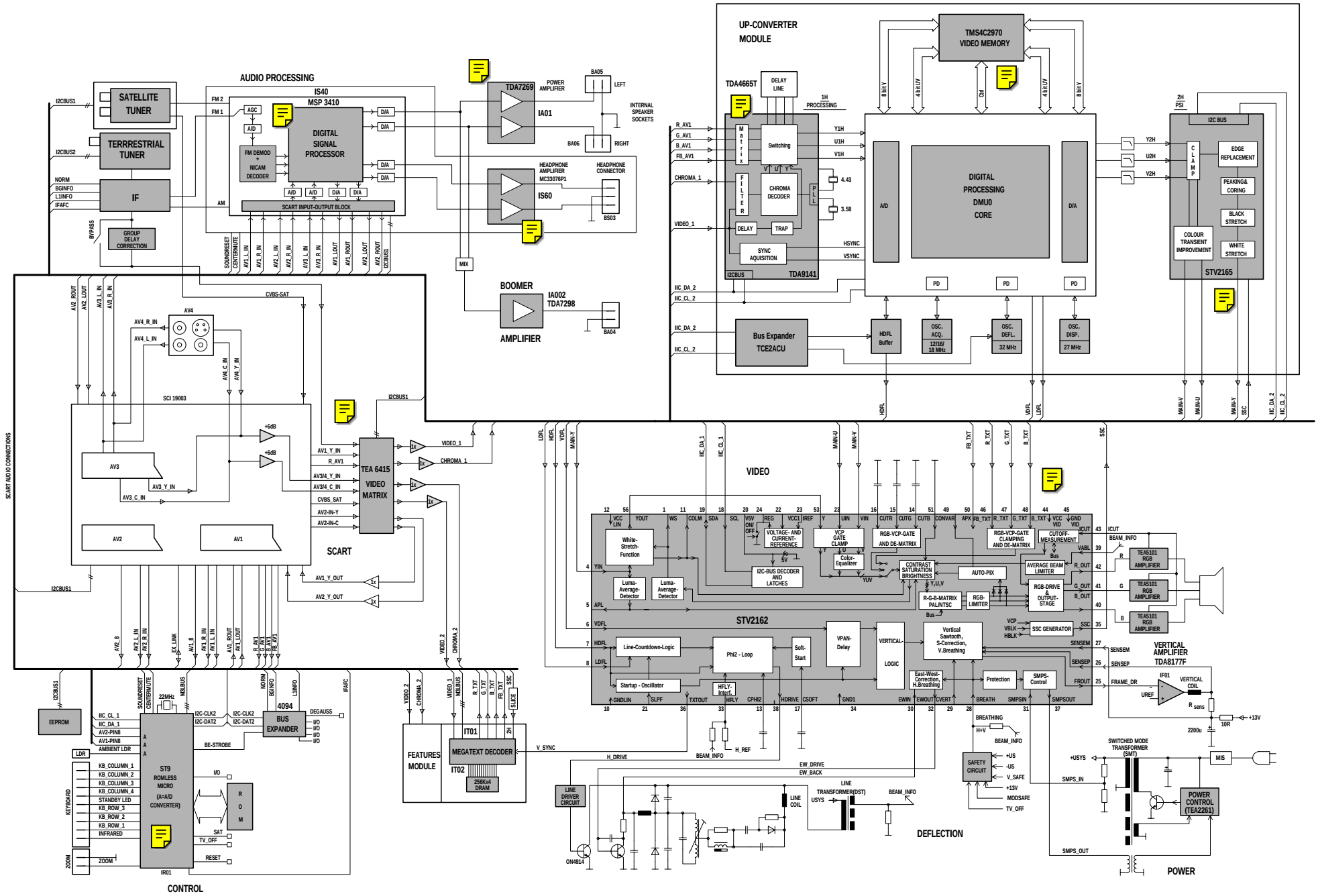

AM/VD.19000
AMFM
IS40
EQU SUB AMVD 19100
IS10
MC78L08-ACP
IS01
MC4558CD
IS60
MC4558CD
QS40
18.432MHz
BS01
BS02
BS03
BS04
BS11
BA01
BA02
MAIN BOARD
to front connector
to SCI BX700
AV3_L_IN
AV3_R_IN
AV2_R_OUT
AV2_L_OUT
HEAD_L
HEAD_R
+8V
+5V
+U13
+US
-US
AHVSS
DVSS
VREF1
VREF2
GND1
GND2
⚠ Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
⚠ Safety Part
When repairing, use original part only
⚠ Piece de securite
N'utilisez que les pieces d'origine


SUB AUDIO MODULE VIRTUAL DOLBY
SUB AMVD
SUB AMVD 19100 00
PINS of IC 64
33
BS002
IS100
MSP3410D(DIE)
IS200
DPL3518(DIE)
AGND
DGND
+8V
+5VA
+5VD
CS101 220N0
CS102 10N0
CS106 1N0
CS103 1N0
CS104 10N0
CS105 100N0
CS203 1N0
CS204 10N0
CS205 100N0
CS206 10U0
CS207 100N0
CS202 10N0
TP1
TP2
PINS of IC
BS001

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES
ICC19 MM 100 Hz - MOTION MASTERING

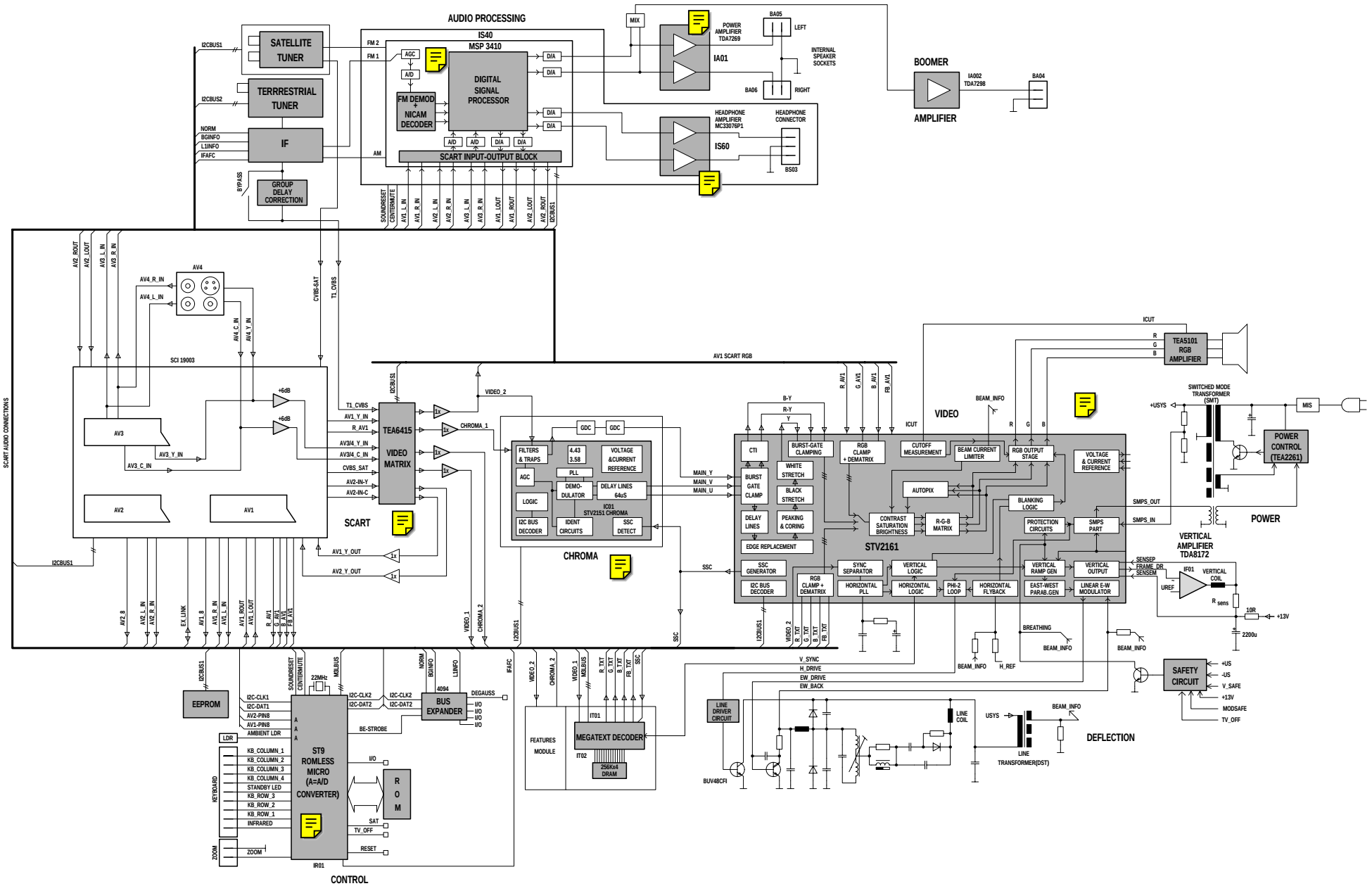


BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCI - ESQUEMA DE BLOQUES



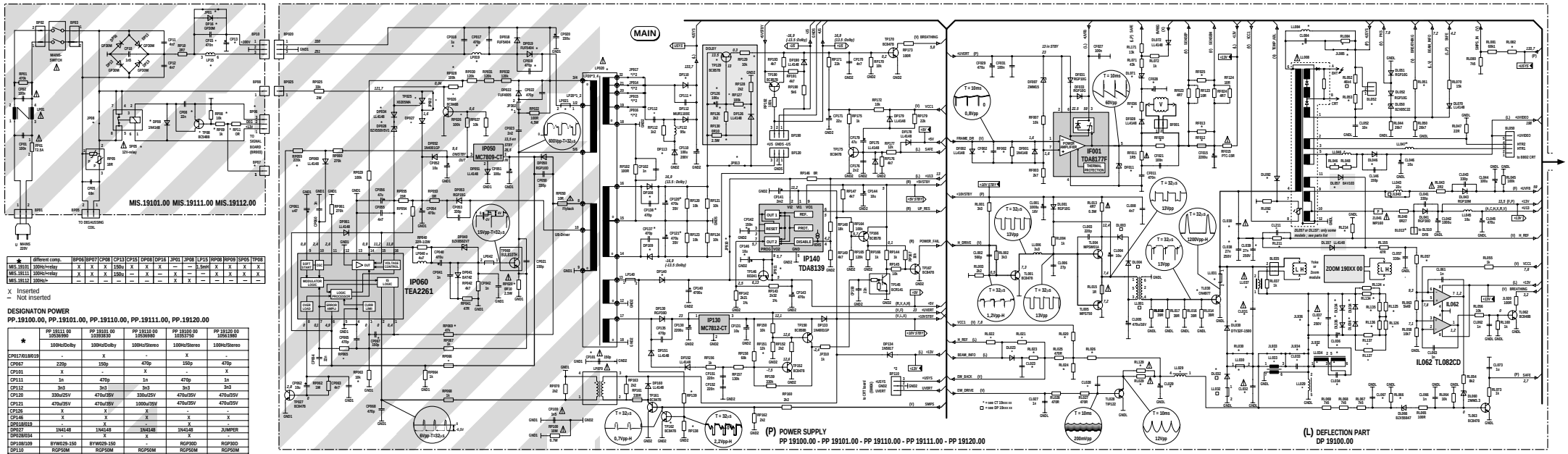
ICC19 100 Hz
First issue 09 / 97

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCI - ESQUEMA DE BLOQUES



ICC19 50 Hz
First issue 09 / 97

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



★	different comp.	BP06	BP07	CP08	CP15	DP08	DP16	JP01	JP08	LP15	RP08	RP09	SP05	TP08
MIS.19101	100Hz/relay	X	X	X	150u	X	X	X	—	—	1.5mH	X	X	X	X
MIS.19111	100Hz/relay	X	X	X	150u	—	X	X	—	—	—	X	X	X	X
MIS.19112	100Hz/n	—	—	—	—	—	—	—	X	X	—	—	—	—	—

X Inserted
– Not inserted

DESIGNATON POWER
PP.19100.00, PP.19101.00, PP.19110.00, PP.19111.00, PP.19120.00

★	PP 19111 00 10536990 100Hz/Dolby	PP 19101 00 10535830 100Hz/Dolby	PP 19110 00 10536980 100Hz/Stereo	PP 19100 00 10535750 100Hz/Stereo	PP 19120 00 10561980 100Hz/Stereo
CP017/018/019	-	X	-	X	-
CP067	220p	150p	470p	150p	470p
CP101	X	-	X	-	X
CP111	1n	470p	1n	470p	1n
CP112	3n3	3n3	3n3	3n3	3n3
CP120	330u/25V	470u/35V	330u/25V	470u/35V	470u/35V
CP121	470u/25V	470u/35V	1000u/35V	470u/35V	470u/35V
CP126	X	X	X	-	-
CP146	X	X	X	X	X
DP018/019	-	X	-	X	-
DP027	1N4148	1N4148	1N4148	1N4148	JUMPER
DP028/034	-	X	-	X	-
DP108/109	BYW029-150	BYW029-150	-	RGP30D	RGP30D
DP110	RGP50M	RGP50M	RGP50M	RGP50M	RGP50M
DP113	MUR160	MUR160E	MUR110E	MUR1100E	MUR160
DP126	X	-	-	-	-
DP140	BYW29-150	BYW63-150	MR822	MR822	MR822
JP002	X	JUMPER	X	JUMPER	X
JP002	-	-	-	-	X
JP910/911	-	-	-	-	-
JP913	-	-	-	X	X
JP914	139V	139V	139V	139V	139V
JP915	136V	136V	136V	136V	136V
JP916	130V	130V	130V	130V	130V
JP917	142V	142V	142V	142V	142V
LP019	-	105u	-	105u	-
LP020	10397920	10397920	10540750	10459670	10540720
LP021	-	X	-	X	-
LP040	4u7	2u2	4u7	2u2	4u7
LP042	JUMPER	X	JUMPER	X	JUMPER
RP026/028	X	X	X	X	-
RP054	6R8	6R8	6R8	6R8	6R8
RP063	-	47k	-	47k	-
RP065	11k	12k7	11k	12k7	11k
RP066	4k22	4k22	3k65	4k22	3k65
RP126/128	X	X	X	-	-
RP127/129	X	X	X	-	X
RP130	X	X	X	-	-
RP138	22k	10k	24k	10k	24k
RP139	220k	82k	274k	82k	270k
RP151	18k	12k	18k	12k	18k
TP025/026	X	X	X	X	-
TP129	X	X	X	X	-
TP162	-	X	X	X	X

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello châssis collegata alla rete.
Parte del chassis conectada a la red.

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
Per la riparazione utilizzare solo componenti originali
Pieza de seguridad
Utilice solo piezas originales

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.

Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).

Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).

Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).

Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

	Deflection - Basic Partlists
□	100Hz
	DP 19100 00
	10 34 99 80
DL003/04	–
DL032	BYT08-400
DL033/04	BYT01-200
JL943	–
LL001	10 46 87 60
LL031	10 25 84 40
RL052	×

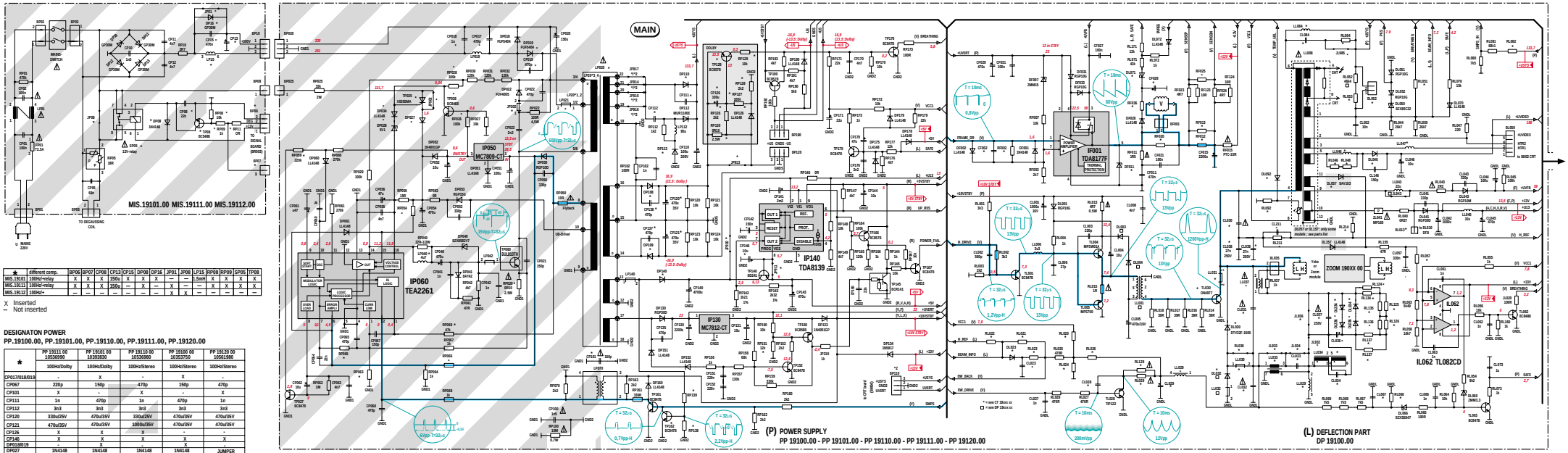
X Inserted
– Not inserted

★	Deflection - Picture Tube related Partlists							
	CT 19103 34 10 55 60 10 28"MP AK	CT 19105 37 10 35 15 30 28"MP INVAR 25"SF INVAR 29"SF INVAR	CT 19152 37 10 52 06 10 25" SF INVAR 29"SF INVAR MM Version	CT 19155 37 10 56 20 10 29" SF INVAR SS-Yoke	CT 19156 37 10 56 19 90 33"MP INVAR 37"MP INVAR	CT 19111 34 10 44 48 10 28"SF INVAR 32"IF INVAR MM Version	CT 19151 34 10 52 05 00 28"SF INVAR MM Version	CT 19251 40 10 57 85 50 28"SF INVAR 32"SF INVAR IM/MM+PVM
BL013	–	–	–	–	–	X	X	X
BL052	X	X	X	X	X	X	X	X
CP002	680p	680p	680p	680p	680p	2n2	2n2	2n2
CP028	1u0	1u0	1u0	1u0	1u0	1u0	1u0	1u0
CL023	–	–	–	–	–	–	–	–
CL028	1n0	1n0	1n0	1n0	–	56n	56n	56n
CL029	3n3	3n3	3n3	3n3	3n3	470n0	470n0	470n0
CL030	1n8/2KV	1n8/2KV	1n8/2KV	1n8/2KV	1n8/2KV	2n7/2KV	2n7/2KV	2n7/2KV
CL031	11n6/2KV	11n6/2KV	11n6/2KV	12n4/2KV	11n6/2KV	11n6/2KV	11n6/2KV	11n6/2KV
CL032	27n0/400V	27n0/400V	27n0/400V	22n0/1KV	27n0/400V	33n0/1KV	33n0/1KV	33n0/1KV
CL033	–	–	–	–	–	680n/400V	680n/400V	680n/400V
CL034	–	12n/400V	12n/400V	12n/400V	–	12n/400V	12n/400V	12n/400V
CL035	–	2u2	2u2	2u2	2u2	2u2	2u2	–
CL037	410n0/400V	410n0/400V	410n0/400V	410n0/400V	460n0/400V	560n/250V	560n/250V	–
CL067	–	–	–	–	–	100n0	100n0	100n0
CL084	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V
CL211	470p0	470p0	470p0	470p0	470p0	470p0	470p0	470p0
DF011	DTRAN5 68.0V	DTRAN5 68.0V	DTRAN5 68.0V	DTRAN5 68.0V	DTRAN5 68.0V	DTRAN5 68.0V	DTRAN5 68.0V	DTRAN5 68.0V
DL023	–	–	–	–	–	–	–	–
DL032	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600
DL034/36	–	EGP10D	EGP10D	EGP10D	EGP10D	EGP10D	EGP10D	–
DL046	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E
DL057	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103
DL157	LL4148	–	–	–	–	LL4148	–	–
DL071	BZX55C33	BZX55C33	BZX55C33	BZX55C16	BZX55C33	BZX55C24	BZX55C24	BZX55C24
DL092	–	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148
DL934/36	–	–	–	–	–	–	–	–
JL932	X	–	–	X	–	–	–	–
JL933	X	X	X	X	X	–	–	–
JL934	X	X	X	X	X	–	–	–
JL936	–	–	–	–	–	–	–	X
JL985	–	X	X	X	X	X	X	X

Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →
Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V →

★	Deflection - Picture Tube related Partlists							
	CT 19103 34 28"MP AK	CT 19105 37 28"MP INVAR 25"SF INVAR 29"SF INVAR	CT 19152 37 25"SF INVAR 29"SF INVAR MM Version	CT 19155 37 29"SF INVAR SS-Yoke	CT 19156 37 33"MP INVAR 37"MP INVAR	CT 19111 34 28"SF INVAR 32"SF INVAR IM Version	CT 19151 34 28"SF INVAR 32"SF INVAR MM Version	CT 19251 40 28"SF INVAR 32"SF INVAR IM/MM+PVM
LL008	10 55 11 70	10 51 08 70	10 51 08 70	10 51 08 70	10 51 08 70	10 52 03 30	10 52 03 30	10 57 67 40
LL029	10 15 42 70	10 15 42 70	10 15 42 70	10 15 42 70	10 15 42 70	10 34 76 50	10 34 76 50	10 34 76 50
LL031	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER
LL033	–	–	–	–	–	10 53 27 20	10 53 27 20	10 53 27 20
LL034	–	10 15 32 70	10 15 32 70	10 15 32 70	–	10 15 32 70	10 15 32 70	10 15 32 70
LL037	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 50	10 51 82 50	10 51 82 50
LL046	22u0	22u0	22u0	22u0	22u0	22u0	22u0	22u0
LL047	16u0	13u5	13u5	13u5	13u5	13u5	13u5	13u5
LL084	26u5	26u5	26u5	26u5	26u5	26u5	26u5	26u5
RF002	10k	10k	10k	10k	10k	10k	10k	10k
RF012	1R0	1R0	1R0	1R0	1R0	1R5	1R5	1R5
RF013	1R0	1R0	1R0	1R5	1R0	1R82	1R82	1R82
RF020	270R0	270R0	270R0	–	270R0	–	–	–
RF025	43R0	43R0	43R0	82R0	43R0	150R0	150R0	150R0
RF036	1k0	1K0	1K0	1k0	1k0	1K0	1K0	1K0
RL020	7x15	7x15	7x15	6K49	7x15	4k64	4k64	4k64
RL023	–	–	–	–	–	–	–	–
RL024	4k02	4k02	4k02	4k53	4k02	2k67	2k67	2k67
RL026	61k9	61k9	61k9	121K0	61k9	36k5	36k5	36k5
RL029	2R2	2R2	2R2	2R2	2R2	–	–	–
RL046/48	3k3	3k3	3k3	3k3	3k3	3k3	3k3	3k3
RL051	270k0	270k0	270k0	270k0	270k0	270k0	270k0	270k0
RL053	33k2	8k66	8k66	8k66	8k66	6k34	6k34	9K09
RL057	56k2	56k2	56k2	56k2	56k2	56k2	56k2	56k2
RL066	4k22	4k22	4k22	4k22	4k22	–	–	–
RL082	59k0	61k9	61k9	61k9	61k9	59k0	59k0	64K9
RL084	27R0	–	–	–	–	–	–	–
RL092	–	4k7	4k7	4k7	4k7	4k7	4k7	4k7
RL134/25	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL126/27	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL129	–	–	–	–	–	2R2	2R2	2R2
RL134/35	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL136/37	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL211	6k8	6k8	6k8	6k8	6k8	6k8	6k8	6k8
RL214	–	–	–	BAV103	–	–	–	–
TL036	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977
ZOOM	–	–	–	–	–	–	–	–

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



★	different comp.	BP06	BP07	CP08	CP13	CP15	DP08	DP16	JP01	JP08	LP15	RP08	RP09	SP05	TP08
MIS.19101	100Hz/+relay	X	X	X	150u	X	X	X	—	—	1.5mH	X	X	X	X
MIS.19111	100Hz/+relay	X	X	X	150u	—	X	—	X	X	—	—	X	X	X
MIS.19112	100Hz/+	—	—	—	—	—	—	—	X	X	—	—	—	—	—

X Inserted
– Not inserted

DESIGNATON POWER

PP.19100.00, PP.19101.00, PP.19110.00, PP.19111.00, PP.19120.00

★	PP 19111 00 10536990	PP 19101 00 10536930	PP 19110 00 10536980	PP 19100 00 10353750	PP 19120 00 10561380
	100Hz/Dolby	100Hz/Dolby	100Hz/Stereo	100Hz/Stereo	100Hz/Stereo
CP0170/0180/0190	-	X	-	X	-
CP067	220p	150p	470p	150p	470p
CP101	X	-	X	-	X
CP111	1n	470p	1n	470p	1n
CP112	3n3	3n3	3n3	3n3	3n3
CP120	330u/25V	470u/35V	330u/25V	470u/35V	470u/35V
CP121	470u/35V	470u/35V	1000u/35V	470u/35V	470u/35V
CP126	X	X	X	-	-
CP146	X	X	X	X	X
DP018/019		X			
DP027	1N4148	1N4148	1N4148	1N4148	JUMPER
DP028/034	-	X	X	X	-
DP108/109	BYW029-150	BYW029-150	-	RGP30D	RGP30D
DP110	RGP50M	RGP50M	RGP50M	RGP50M	RGP50M
DP113	MUR160	MUR1100E	MUR110E	MUR1100E	MUR160
DP126	X	X	-	-	-
DP140	BYW29-150	BYW3-150	MR822	MR822	MR822
JP302	X	JUMPER	X	JUMPER	X
JP902	-	-	-	-	X
JP910/911	-	-	-	-	-
JP913	-	-	-	X	X
JP914	139V	139V	139V	139V	139V
JP915	136V	136V	136V	136V	136V
JP916	130V	130V	130V	130V	130V
JP917	142V	142V	142V	142V	142V
LP019	-	100u	-	100u	100u
LP020	10397920	10397920	10549750	10459670	10549720
LP021	-	X	-	X	-
LP040	4u7	2u2	4u7	2u2	4u7
LP042	JUMPER	X	JUMPER	X	JUMPER
RP026/028	X	X	X	X	-
RP054	6R8	6R8	6R8	6R8	6R8
RP063	-	47k	-	47k	-
RP065	11k	12k7	11k	12k7	11k
RP066	4k22	4k22	3k65	4k22	3k65
RP126/128	X	X	X	-	-
RP127/129	X	X	X	-	X
RP130	X	X	X	-	-
RP138	22k	10k	24k	10k	24k
RP139	220k	82k	274k	82k	270k
RP151	18k	12k	18k	12k	18k
TP025/026	X	X	X	X	-
TP129	X	X	X	X	-
TP162	-	X	X	X	X

X Inserted
– Not inserted

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
Per la riparazione utilizzare solo componenti originali
Piece de seguridad
Utilice solo piezas originales

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.

Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).

Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).

Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).

Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

	Deflection - Basic Partlists
	100Hz
□	DP 19100 00
	10 34 99 80
DL003/004	–
DL032	BYT08-400
DL003/004	BYT01-200
JL943	–
LL001	10 46 87 60
LL001	10 25 84 40
RL052	✕

X Inserted
– Not inserted

*	CT 19103 34 10 55 60 10 28"MP AK	CT 19105 37 10 35 15 30 28"MP INVAR 25"SF INVAR 29"SF INVAR	CT 19152 37 10 52 06 10 25"SF INVAR 29"SF INVAR MM Version	CT 19156 37 10 56 20 10 28"SF INVAR SS-Yoke	CT 19116 37 10 56 19 90 33"MP INVAR 37"MP INVAR	CT 19111 34 10 44 48 10 28"SF INVAR 32"SF INVAR IM Version	CT 19151 34 10 52 05 00 28"SF INVAR 32"SF INVAR MM Version	CT 19251 40 10 57 85 50 28"SF INVAR 32"SF INVAR IM/MM+PVM
BL013	–	–	–	–	–	–	✕	✕
BL052	–	✕	✕	✕	✕	✕	✕	✕
CF002	680p	680p	680p	680p	680p	2n2	2n2	2n2
CF028	1u0	1u0	1u0	1u0	1u0	1u0	1u0	1u0
CL023	–	–	–	–	–	–	–	–
CL028	1n0	1n0	1n0	1n0	1n0	56n	56n	56n
CL029	3u3	3u3	3u3	3u3	3u3	470n0	470n0	470n0
CL030	1n8/2KV	1n8/2KV	1n8/2KV	1n8/2KV	1n8/2KV	2n7/2KV	2n7/2KV	2n7/2KV
CL031	11n6/2KV	11n6/2KV	11n6/2KV	12n4/2KV	11n6/2KV	11n6/2KV	11n6/2KV	11n6/2KV
CL032	27n0/400V	27n0/400V	27n0/400V	22n0/1KV	27n0/400V	33n0/1KV	33n0/1KV	33n0/1KV
CL033	–	–	–	–	–	680n/400V	680n/400V	680n/400V
CL034	–	12n/400V	12n/400V	12n/400V	–	12n/400V	12n/400V	12n/400V
CL036	–	2u2	2u2	–	2u2	2u2	–	–
CL037	410n0/400V	410n0/400V	410n0/400V	410n0/400V	460n0/400V	560n/250V	560n/250V	–
CL067	–	–	–	–	–	100n0	100n0	100n0
CL084	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V
CL211	470p0	470p0	470p0	470p0	470p0	470p0	470p0	470p0
DF011	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V
DL023	–	–	–	–	–	–	–	–
DL032	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600
DL034/36		EGP10D	EGP10D	EGP10D	EGP10D	EGP10D	EGP10D	
DL046	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E
DL057	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103
DL157	LL4148	LL4148	–	–	–	LL4148	LL4148	–
DL671	BZX55C33	BZX55C33	BZX55C33	BZX55C16	BZX55C33	BZX55C24	BZX55C24	BZX55C24
DL092	–	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148
DL334/36	–	–	–	–	–	–	–	–
JL932	✕	–	–	–	✕	–	–	–
JL933	✕	✕	✕	✕	✕	–	–	–
JL934	✕	✕	✕	✕	✕	–	–	–
JL936	–	–	–	–	–	–	–	✕
JL985	–	✕	✕	✕	✕	✕	✕	✕

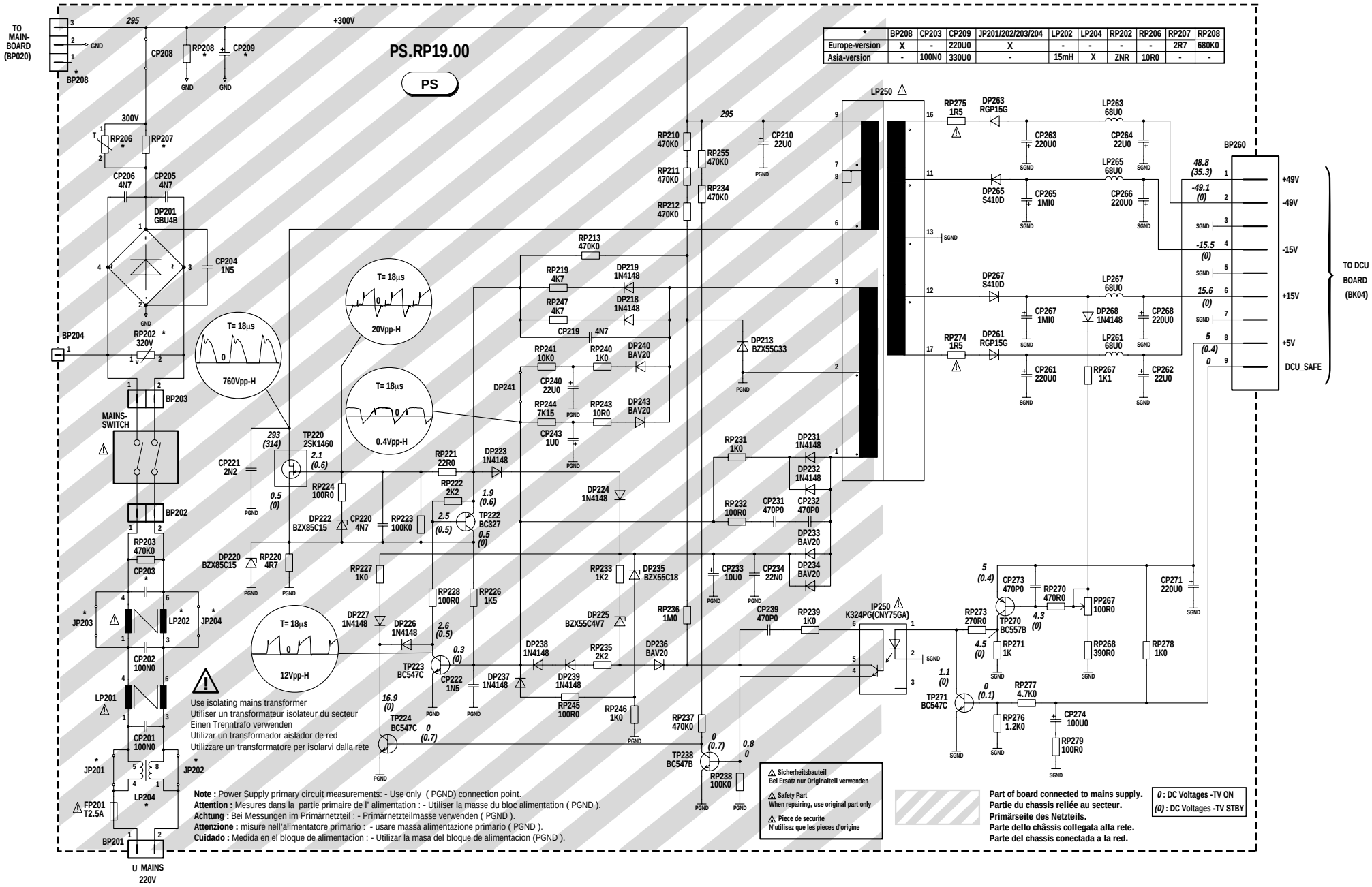
Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →

Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V →

*	CT 19103 34 28"MP AK	CT 19105 37 28"MP INVAR 25"SF INVAR 29"SF INVAR	CT 19152 37 25"SF INVAR 29"SF INVAR MM Version	CT 19156 37 29"SF INVAR SS-Yoke	CT 19116 37 33"MP INVAR 37"MP INVAR	CT 19111 34 28"SF INVAR 32"SF INVAR IM Version	CT 19151 34 28"SF INVAR 32"SF INVAR MM Version	CT 19251 40 28"SF INVAR 32"SF INVAR IM/MM+PVM
LL008	10 55 11 70	10 51 08 70	10 51 08 70	10 51 08 70	10 51 08 70	10 52 03 30	10 52 03 30	10 57 67 40
LL029	10 15 42 70	10 15 42 70	10 15 42 70	10 15 42 70	10 15 42 70	10 34 76 50	10 34 76 50	10 34 76 50
LL031	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER
LL033	–	–	–	–	–	10 53 27 30	10 53 27 30	10 53 27 30
LL034	–	10 15 32 70	10 15 32 70	–	–	10 15 32 70	10 15 32 70	10 15 32 70
LL037	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 50	10 51 82 50	10 51 82 50
LL046	22u0	22u0	22u0	22u0	22u0	22u0	22u0	22u0
LL047	16u5	13u5	13u5	13u5	13u5	13u5	13u5	13u5
LL064	26u5	26u5	26u5	26u5	26u5	26u5	26u5	26u5
RF002	10k	10k	10k	10k	10k	10k	10k	10k
RF012	1R0	1R0	1R0	1R0	1R0	1R5	1R5	1R5
RF013	1R0	1R0	1R0	1R5	1R0	1R82	1R82	1R82
RF020	270R0	270R0	270R0	–	270R0	–	–	–
RF025	43R0	43R0	43R0	82R0	43R0	150R0	150R0	150R0
RF036	1k0	1K0	1k0	1k0	1k0	1K0	1K0	1K0
RL020	7k15	7k15	7k15	6K49	7k15	4k64	4k64	4k64
RL023	–	–	–	–	–	–	–	–
RL024	4k02	4k02	4k02	4k53	4k02	2k67	2k67	2k67
RL026	61k9	61k9	61k9	121K0	61k9	36k5	36k5	36k5
RL029	2R2	2R2	2R2	2R2	2R2	–	–	–
RL046/48	3k3	3k3	3k3	3k3	3k3	3k3	3k3	3k3
RL051	270k0	270k0	270k0	270k0	270k0	270k0	270k0	270k0
RL053	33k2	8k66	8k66	8k66	8k66	6k34	6k34	9K09
RL057	56k2	56k2	56k2	56k2	56k2	56k2	56k2	56k2
RL066	4k22	4k22	4k22	4k22	4k22	–	–	–
RL082	59k0	61k9	61k9	61k9	61k9	59k0	59k0	64K9
RL094	27R0	–	–	–	–	–	–	–
RL092	–	4k7	4k7	4k7	4k7	4k7	4k7	4k7
RL124/25	–	7k5	7k5	7k5	7k5	7k5	7k5	–
RL126/27	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL129	▬	–	–	–	–	2R2	2R2	2R2
RL134/35	–	7k5	7k5	7k5	7k5	7k5	7k5	–
RL136/37	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL211	6k8	6k8	6k8	6k8	6k8	6k8	6k8	6k8
RL214	–	–	–	BAV103	–	–	–	–
TL030	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977
ZOOM	–	–	–	–	–	–	–	–

Updated 11 / 98

DIGITAL CONVERGENCE UNIT POWER SUPPLY - ALIMENTATION PLATINE DE CONVERGENCES NUMERIQUES - DIGITAL CONVERGENCE UNIT NETZTEIL - ALIMENTAZIONE CONVERGENZA DIGITALE - ALIMENTACIÓN DE LA UNIDAD DE CONVERGENCIA DIGITAL



*	BP208	CP203	CP209	JP201/202/203/204	LP202	LP204	RP202	RP206	RP207	RP208
Europe-version	X	-	220U0	X	-	-	-	-	2R7	680K0
Asia-version	-	100N0	330U0	-	15mH	X	ZNR	10R0	-	-

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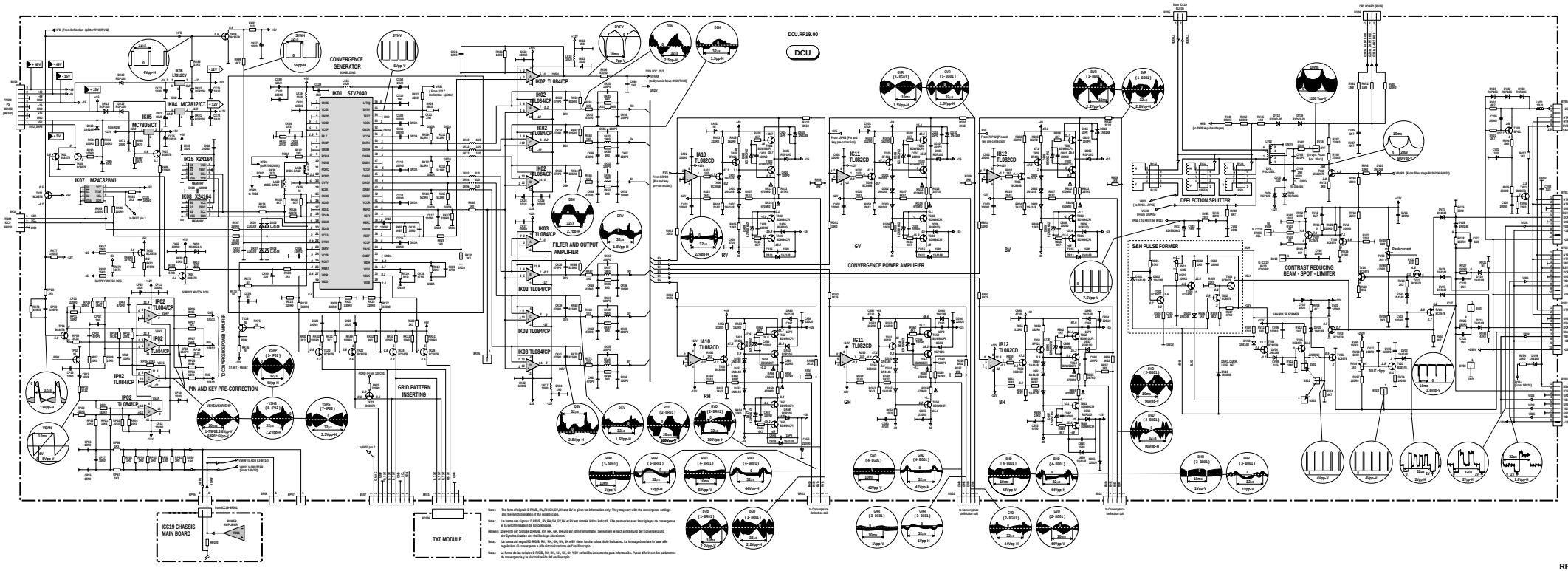
DIGITAL CONVERGENCE UNIT - PLATINE DE CONVERGENCES NUMERIQUES - DIGITALE KONVERGENZ EINHEIT - UNITÀ DI CONVERGENZA DIGITALE - UNIDAD DE CONVERGENCIA DIGITAL



Note : The form of signals D-RGB, RV,RH,GV,GH and BV is given for information only. They may vary with the convergence settings and the synchronisation of the oscilloscope.

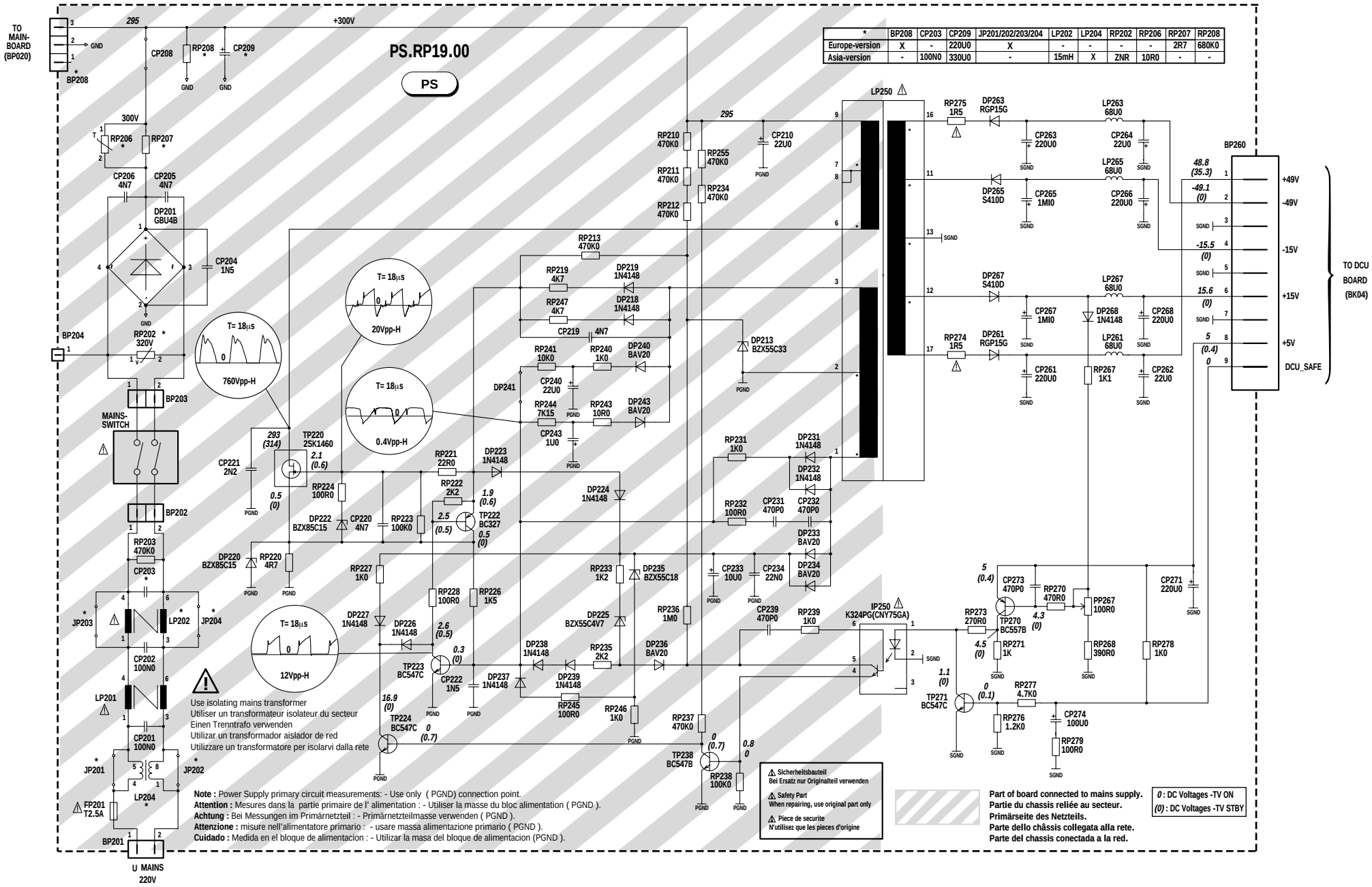
Note : La forme des signaux D-RGB, RV,RH,GV,GH et BV est donnée à titre indicatif. Elle peut varier avec les réglages de convergence et la synchronisation de l'oscilloscope.

Hinweis: Die Form der Signale D-RGB, RV, RH, GV, GH und BV ist nur informativ. Sie können je nach Einstellung der Konvergenz und der Synchronisation des Oszilloskops abweichen.

Nota : La forma dei segnali D-RGB, RV, RH, GH, GV, BH e BV viene fornita solo a titolo indicativo. La forma può variare in base alle regolazioni di convergenza e alla sincronizzazione dell'oscilloscopio.

Nota : La forma de las señales D-RGB, RV, RH, GH, GV, BH Y BV se facilita únicamente para información. Puede diferir con los parámetros de convergencia y la sincronización del osciloscopio.

DIGITAL CONVERGENCE UNIT POWER SUPPLY - ALIMENTATION PLATINE DE CONVERGENCES NUMERIQUES - DIGITAL CONVERGENCE UNIT NETZTEIL - ALIMENTAZIONE CONVERGENZA DIGITALE - ALIMENTACIÓN DE LA UNIDAD DE CONVERGENCIA DIGITAL



*	BP208	CP203	CP209	JP201/202/203/204	LP202	LP204	RP202	RP206	RP207	RP208
Europe-version	X	-	220U0	X	-	-	-	-	2R7	680K0
Asia-version	-	100N0	330U0	-	15mH	X	ZNR	10R0	-	-

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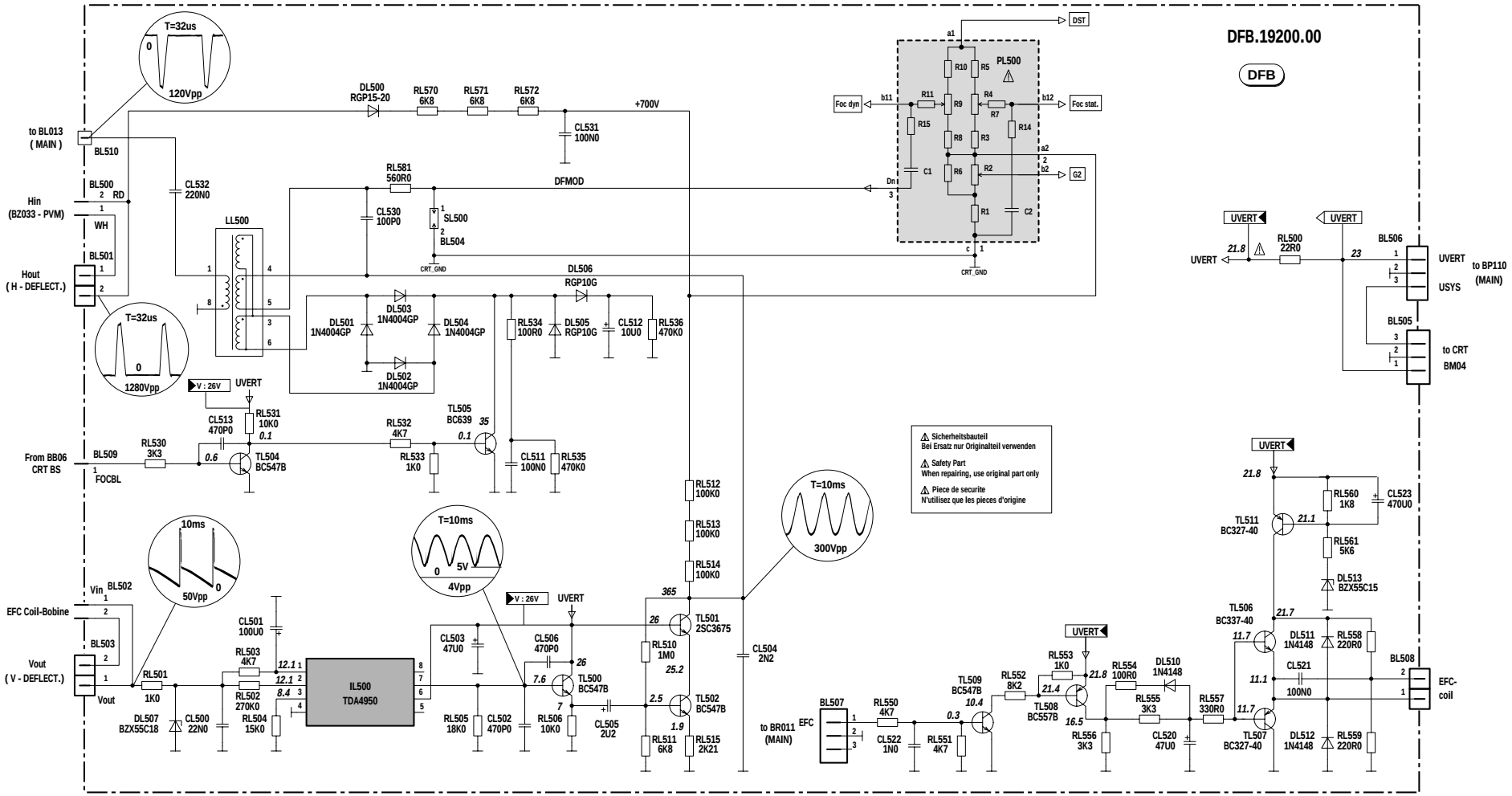
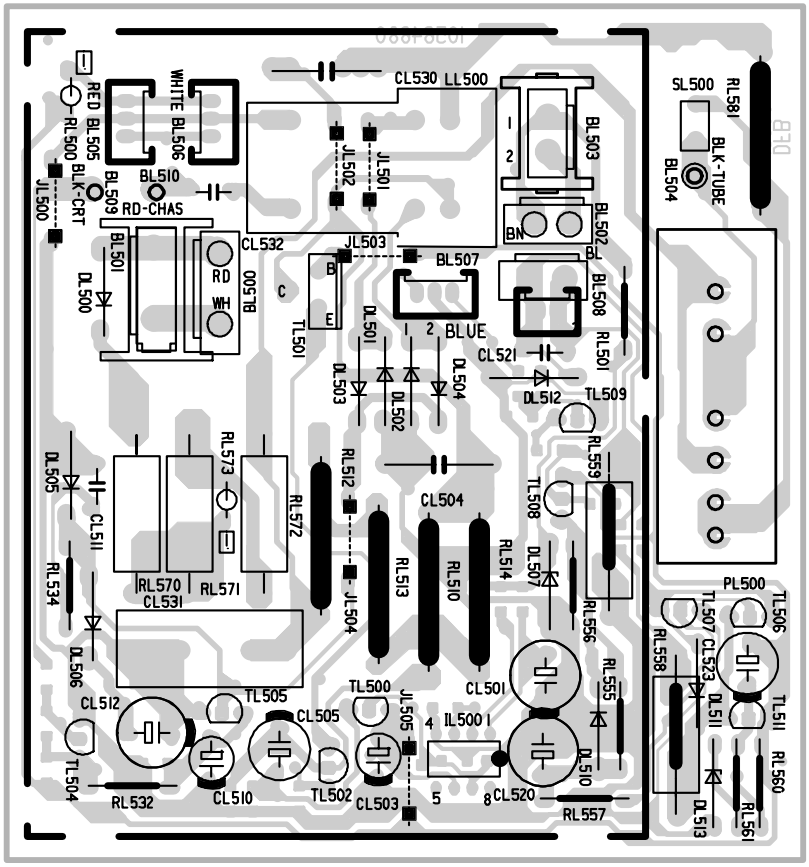
DYNAMIC FOCUS MODULE - MODULE FOCUS DYNAMIQUE - DYNAMIKFOKUS BAUSTEIN - MODULO FUOCO DINAMICO - MÓDULO FOCO DINÁMICO

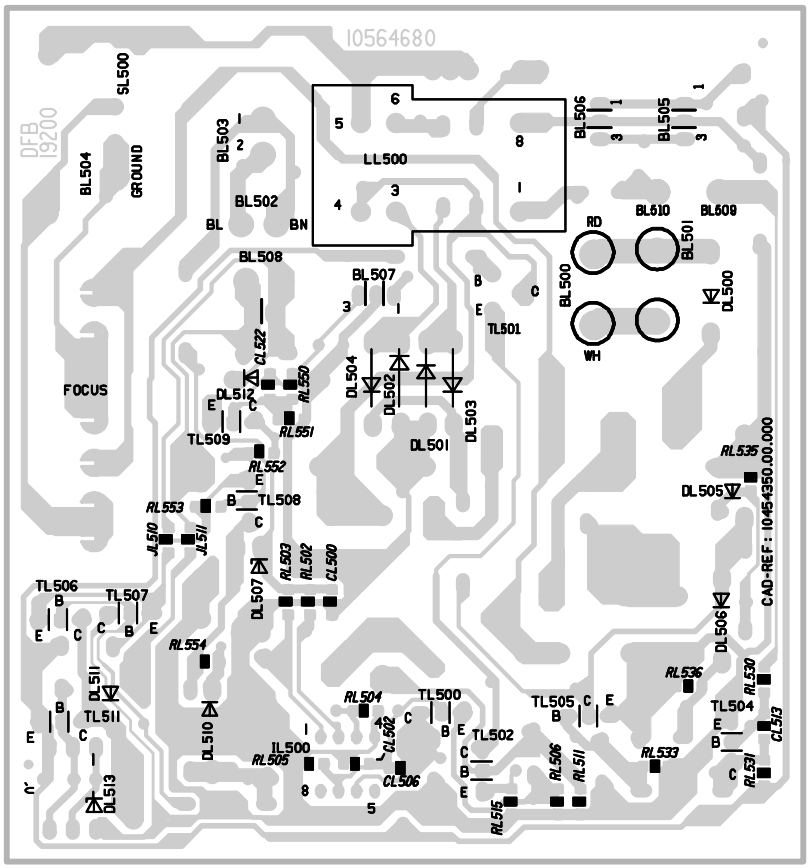


DYNAMIC FOCUS MODULE - MODULE FOCUS DYNAMIQUE - DYNAMIKFOKUS BAU-STEIN - MODULO FUOCO DINAMICO - MÓDULO FOCO DINÁMICO

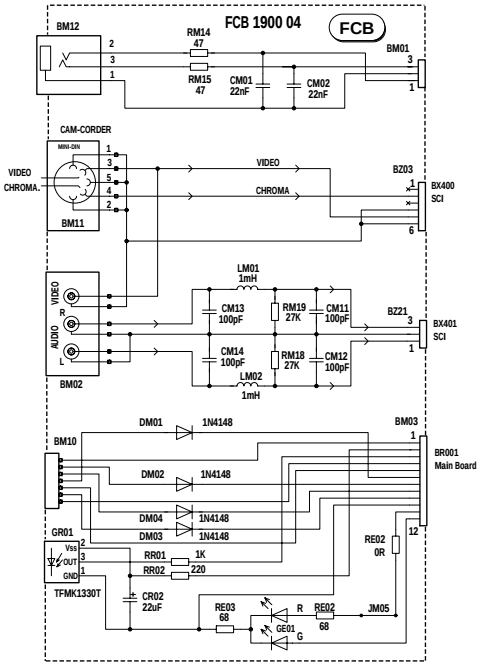
COMPONENT SIDE - CÖTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES

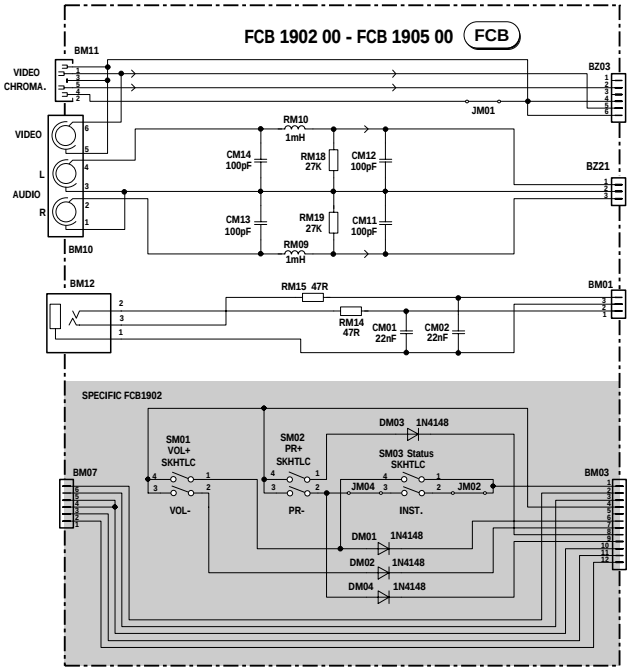


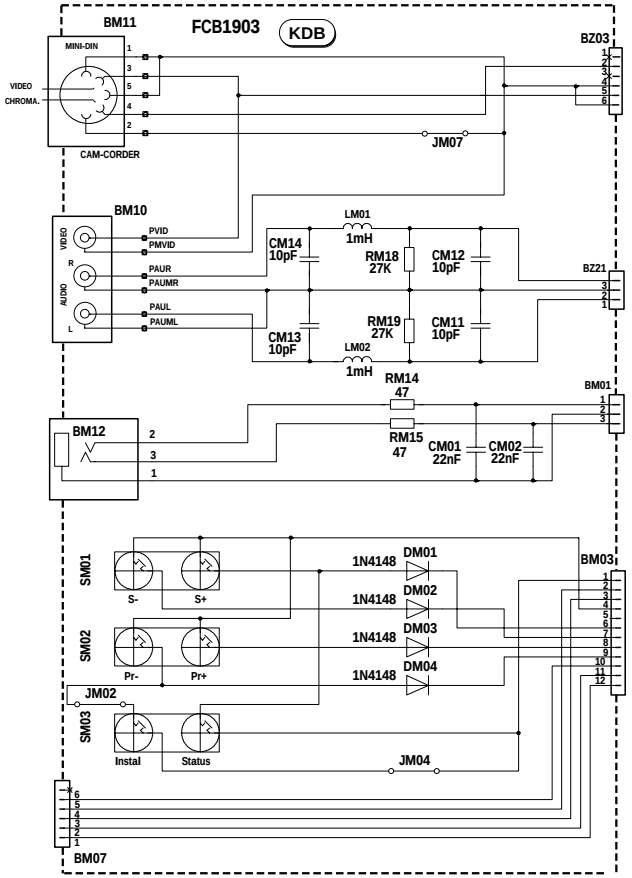
SOLDER SIDE - CÔTE SOUDURES - LÖTSEITE - LATO SALDATURE - LADO SOLDADURAS

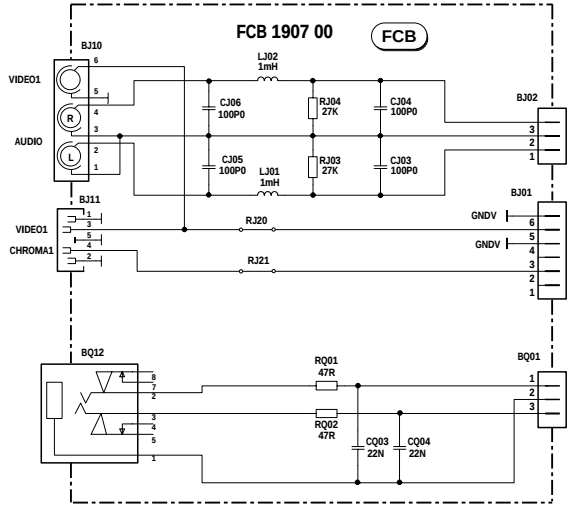


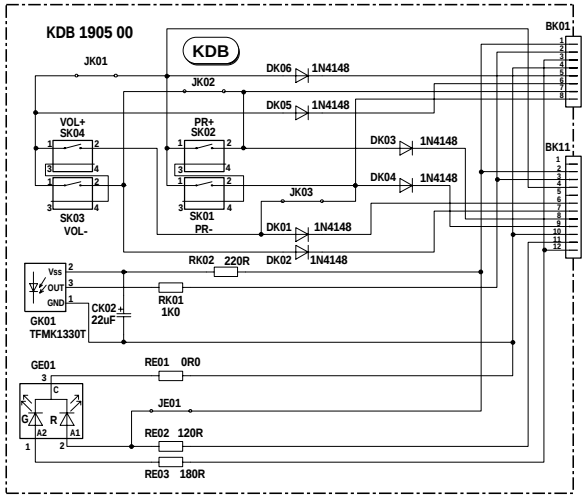
FRONT CONNECTOR BOARD - PRISES EN FACADE ET INTERCONNEXION DU CLAVIER - FRONT ANSCHLUSSPLATTE - PIASTRA CONNESSIONE FRONTALE -PLÁTINA MANDOS FRONTAL

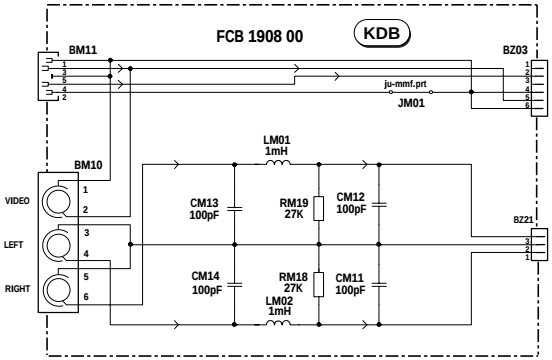




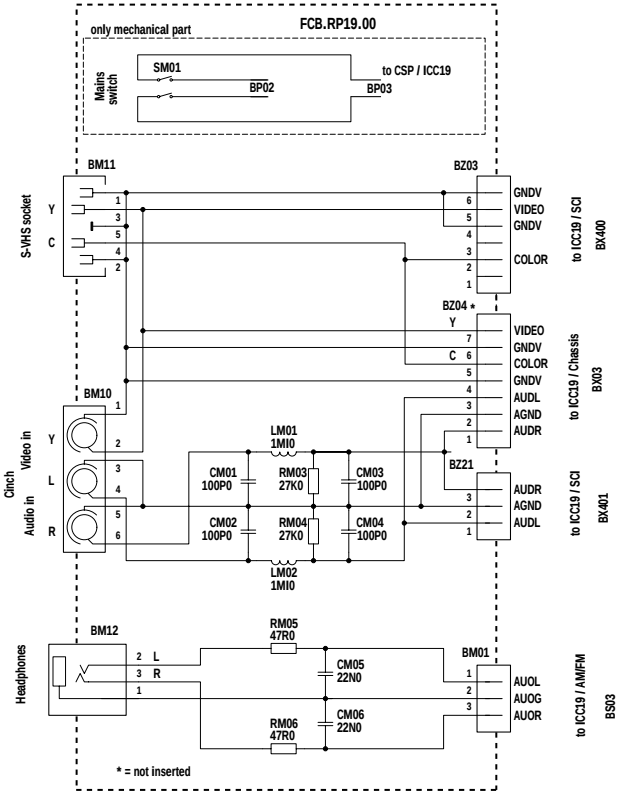




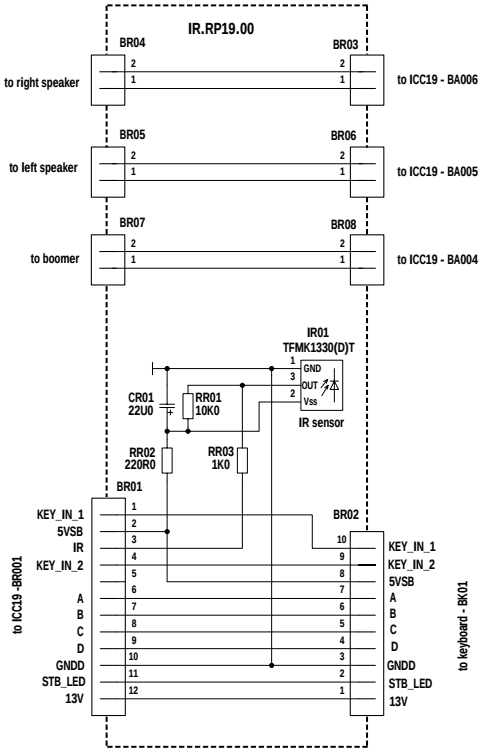




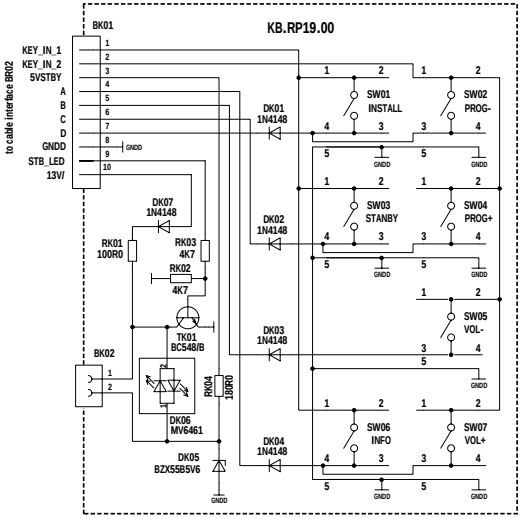
FRONT CONNECTOR BOARD - PRISES EN FACADE ET INTERCONNEXION DU CLAVIER - FRONT ANSCHLUSSPLATTE - PIASTRA CONNESSIONE FRONTALE - PLÁTINA MANDOS FRONTAL



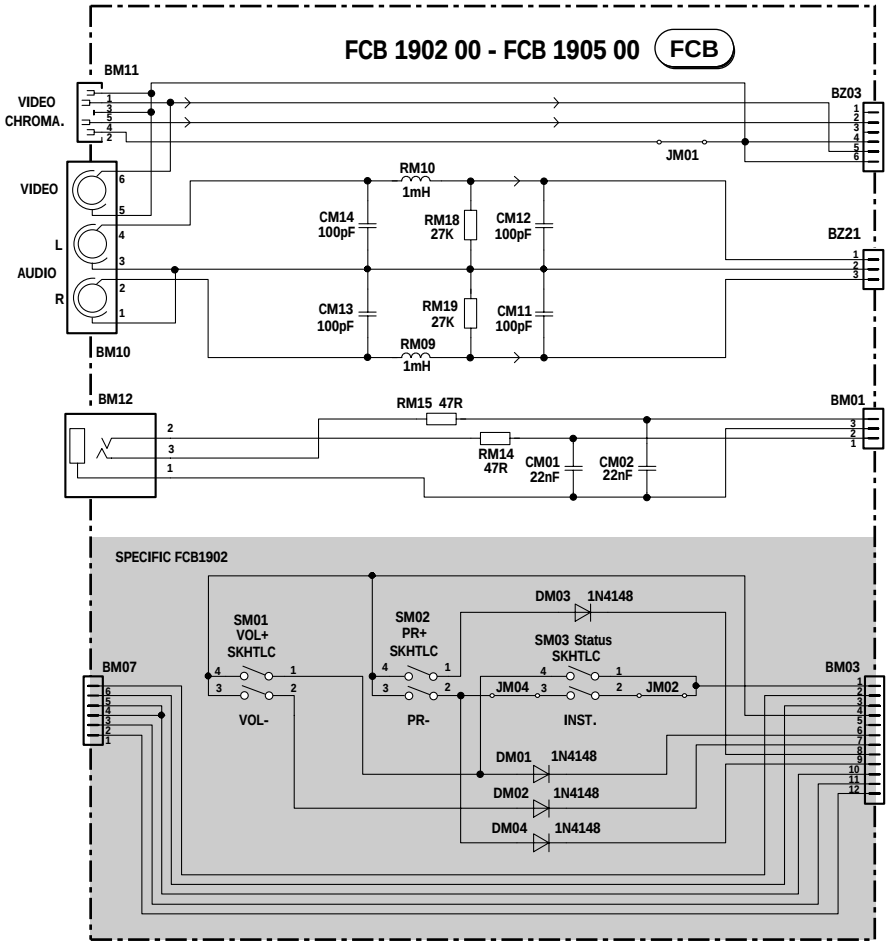
IR RECEIVER P.C.B. - PLATINE RECEPTEUR INFRA-ROUGE - IR EMPFÄNGER LTPL. PIASTRA RICEVITORE IR - PLATINA RECEPTOR IR

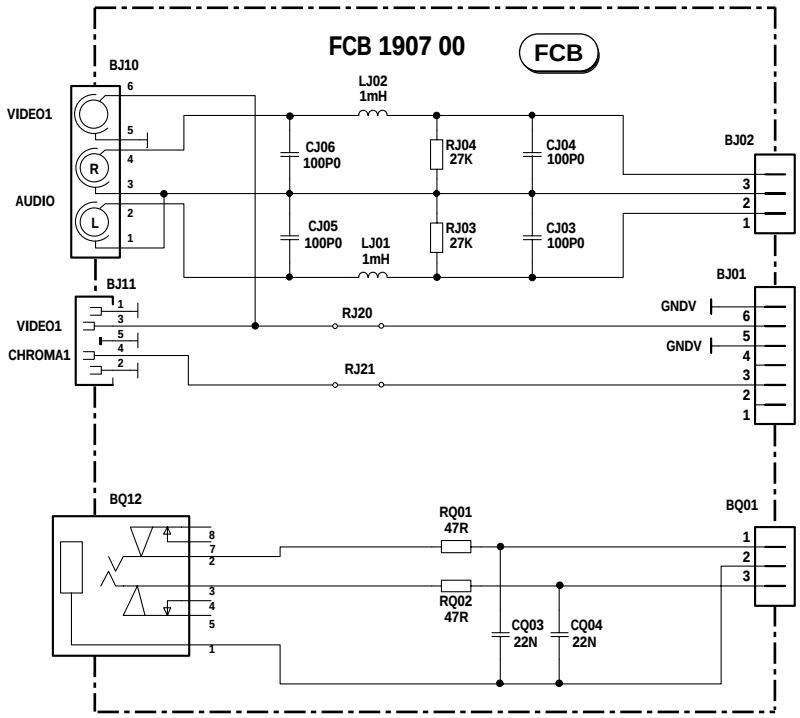


KEYBOARD MODULE - PLATINE CLAVIER - TASTATURPLATTE - PIASTRA COMANDI - PLATINA TECLADO

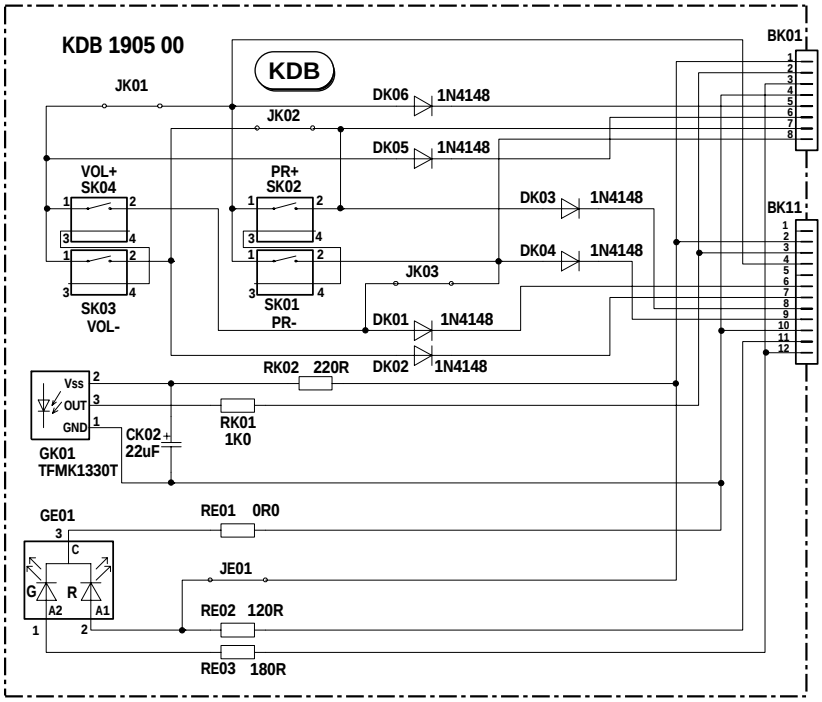


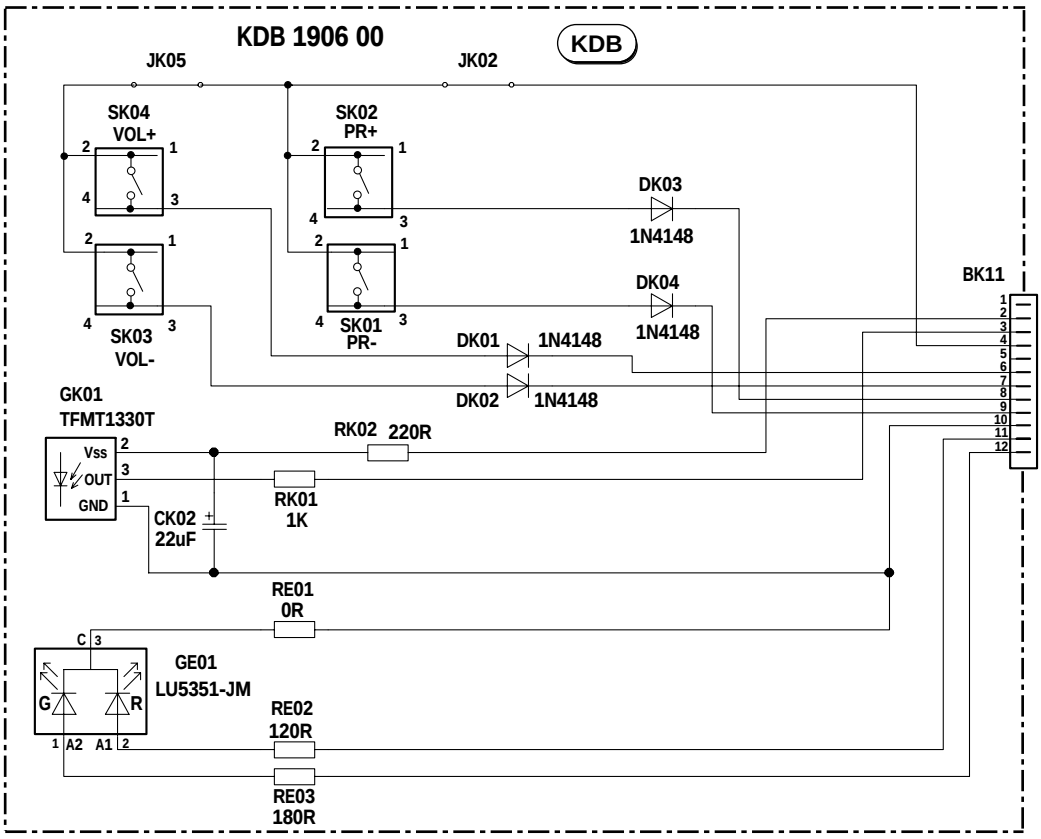
FRONT CONNECTOR BOARD - PRISES EN FACADE ET INTERCONNEXION DU CLAVIER - FRONT ANSCHLUSSPLATTE - PIASTRA CONNESSIONE FRONTALE - PLÁTINA MANDOS FRONTAL



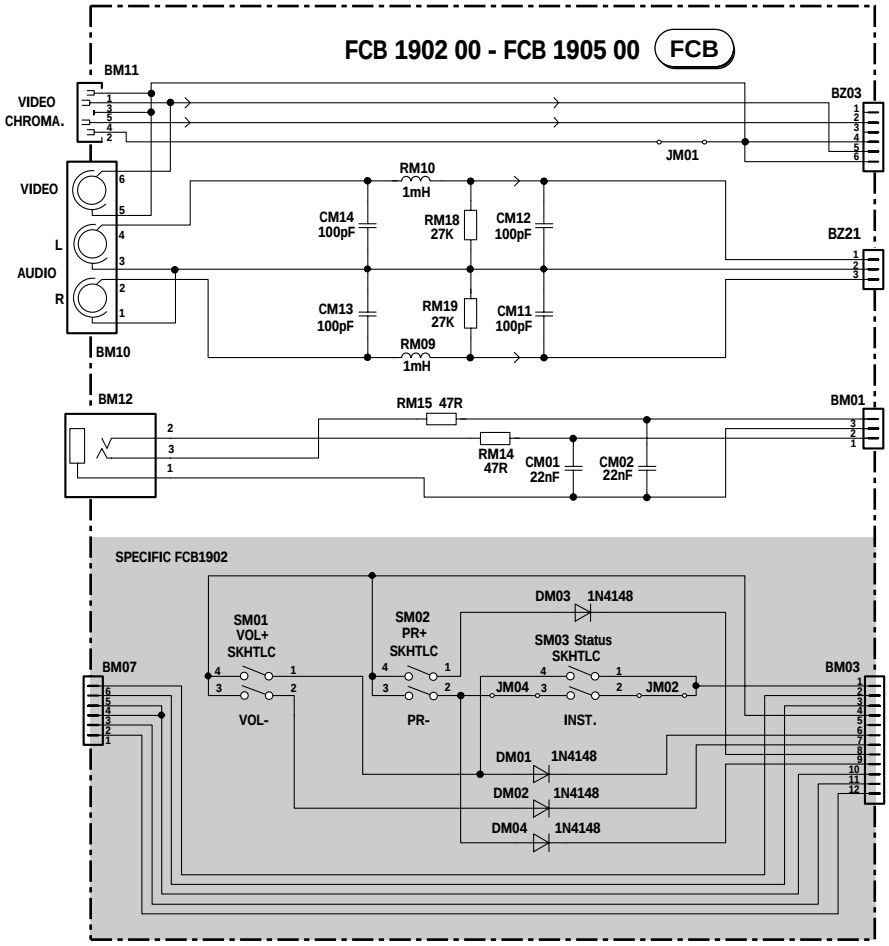


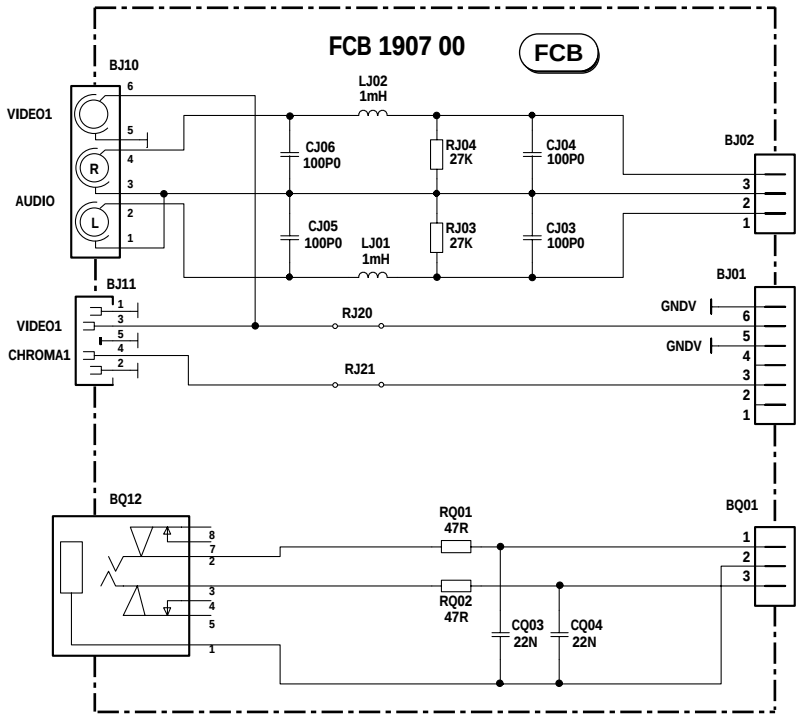
KEYBOARD MODULE - PLATINE CLAVIER - TASTATURPLATTE - PISATRA COMANDI - PLATINA TECLADO



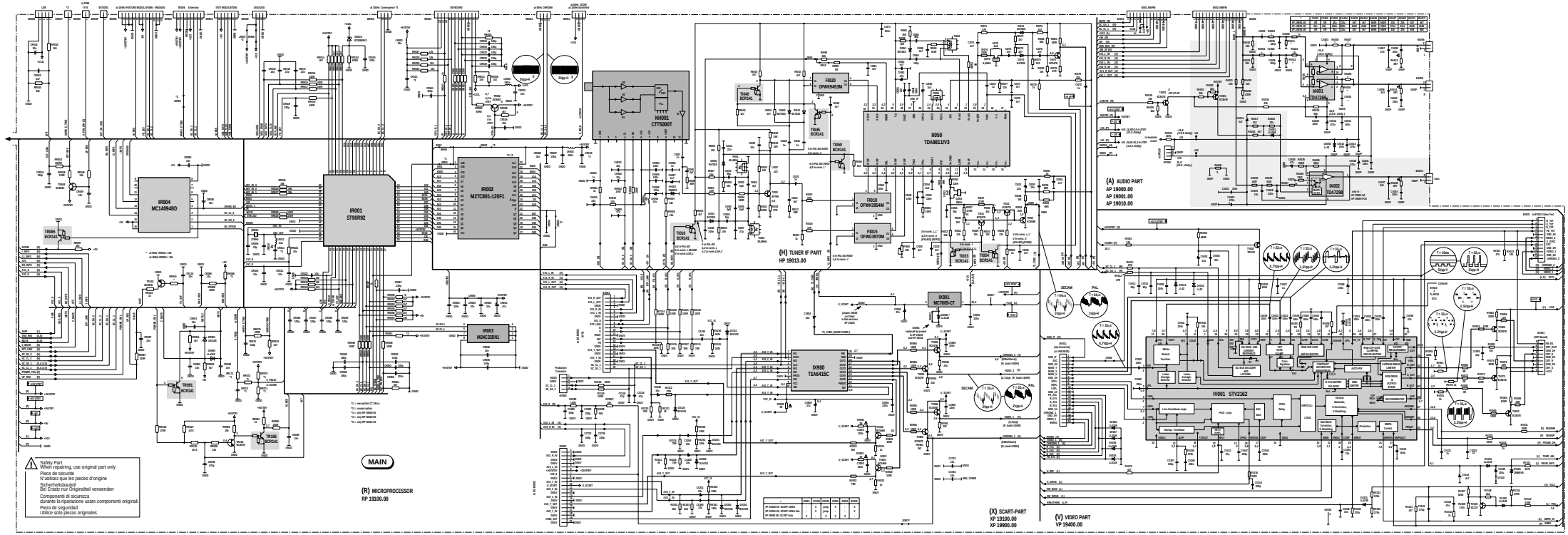


FRONT CONNECTOR BOARD - PRISES EN FACADE ET INTERCONNEXION DU CLAVIER - FRONT ANSCHLUSSPLATTE - PIASTRA CONNESSIONE FRONTALE - PLÁTINA MANDOS FRONTAL





MAIN SCHEMATIC DIAGRAM - SCHEMA PLATINE PRINCIPALE - SCHALTUNG HAUPTPLATINE - SCHEMA PIASTRA PRINCIPALE - ESQUEMA PLATINA PRINCIPAL



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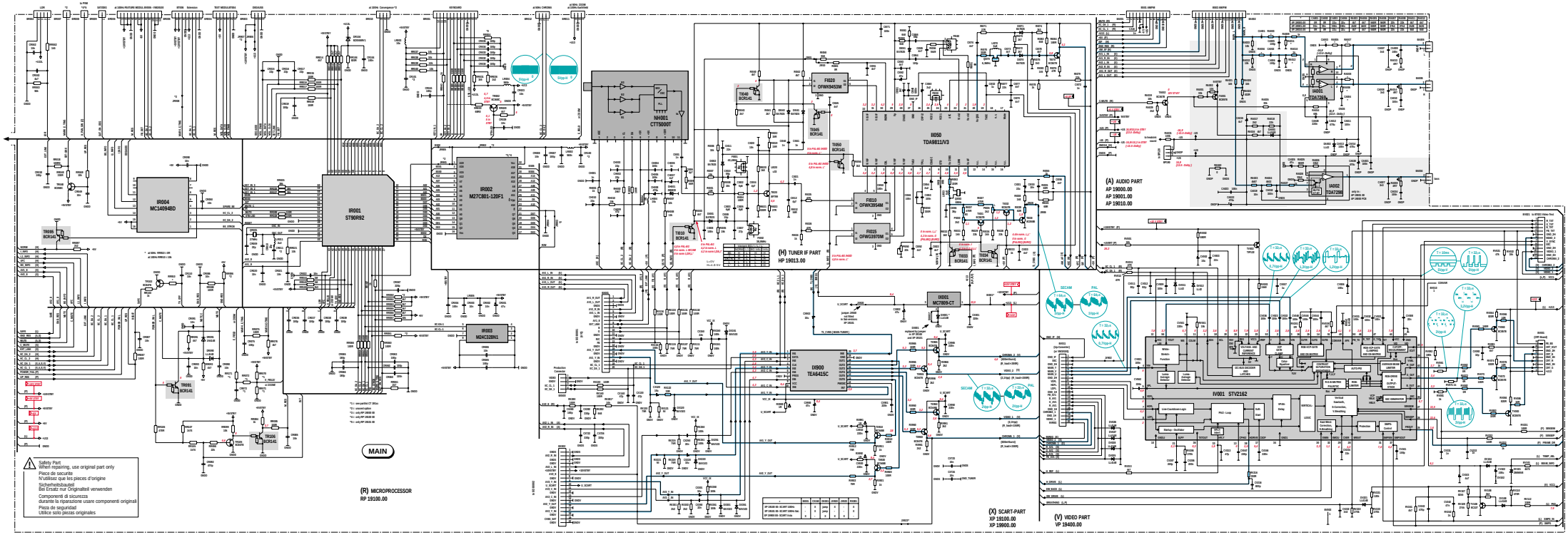
MAIN SCHEMATIC DIAGRAM - SCHEMA PLATINE PRINCIPALE - SCHALTUNG HAUPTPLATINE - SCHEMA PIASTRA PRINCIPALE - ESQUEMA PLATINA PRINCIPAL



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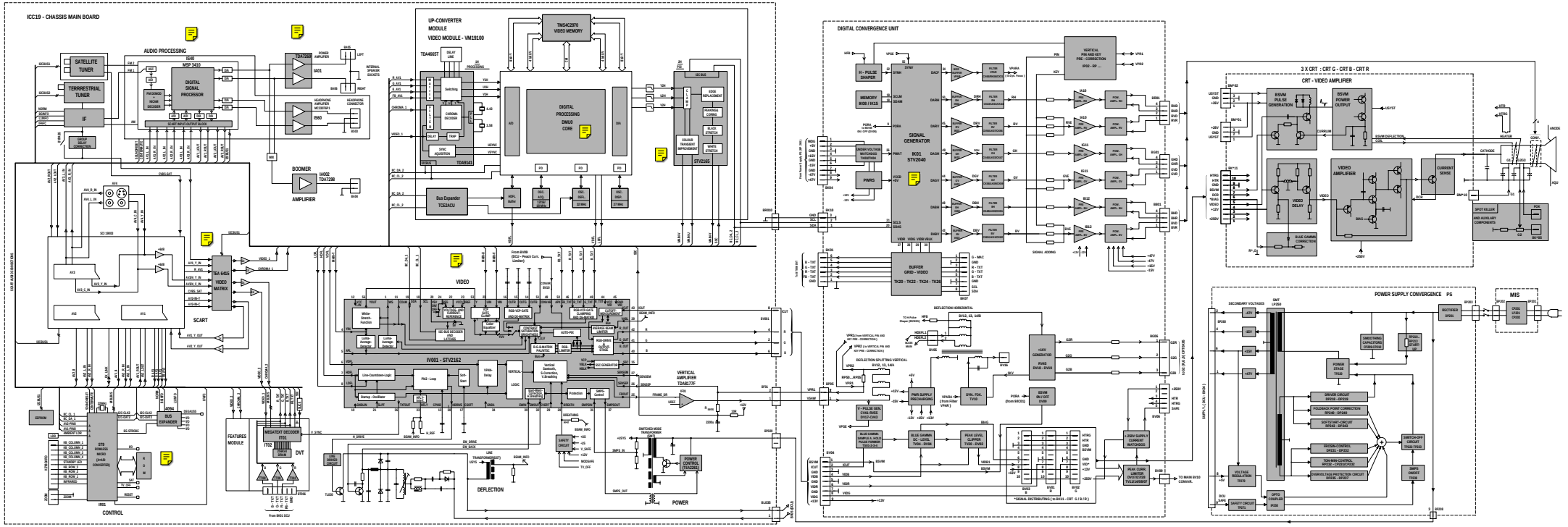
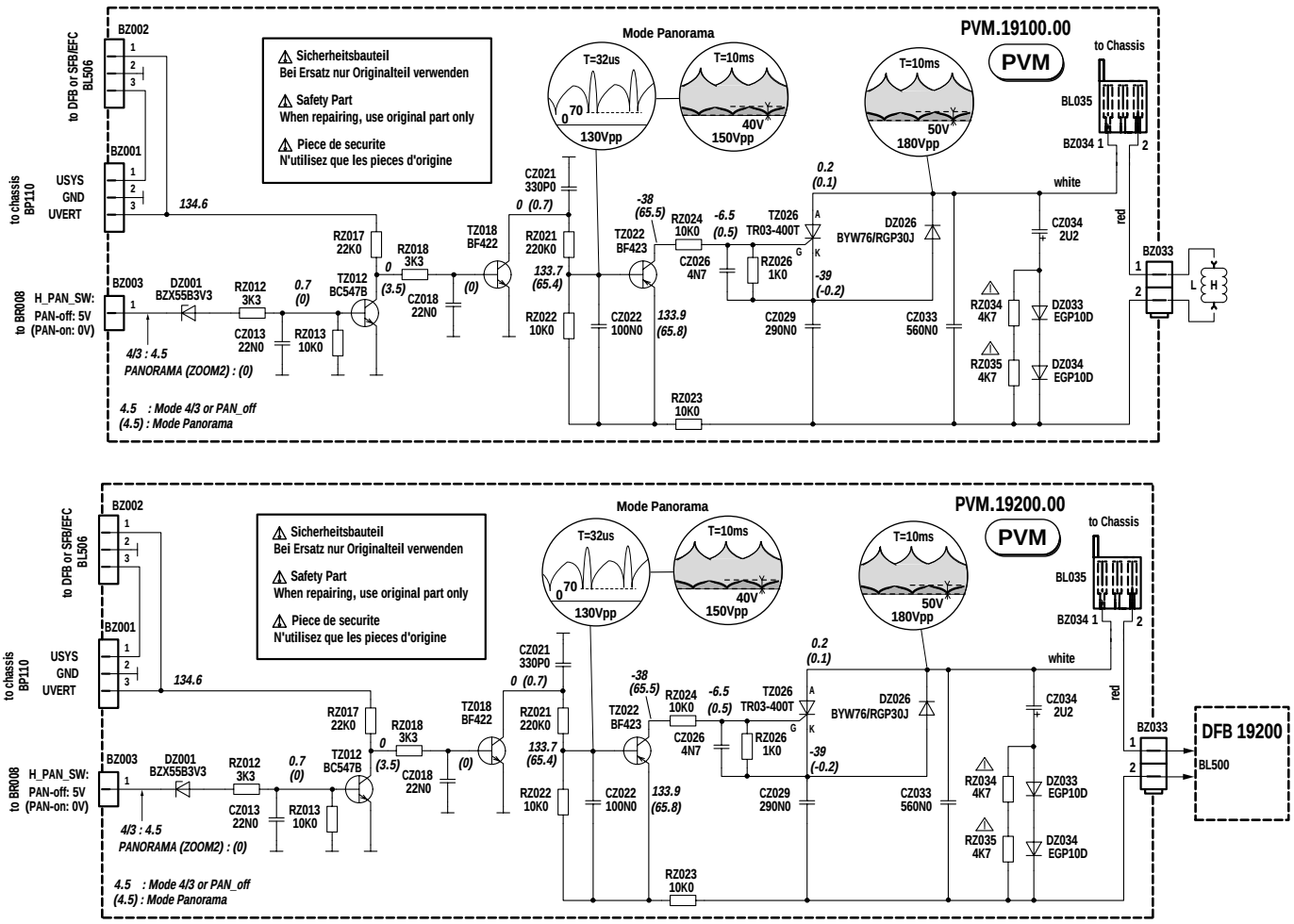
BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES

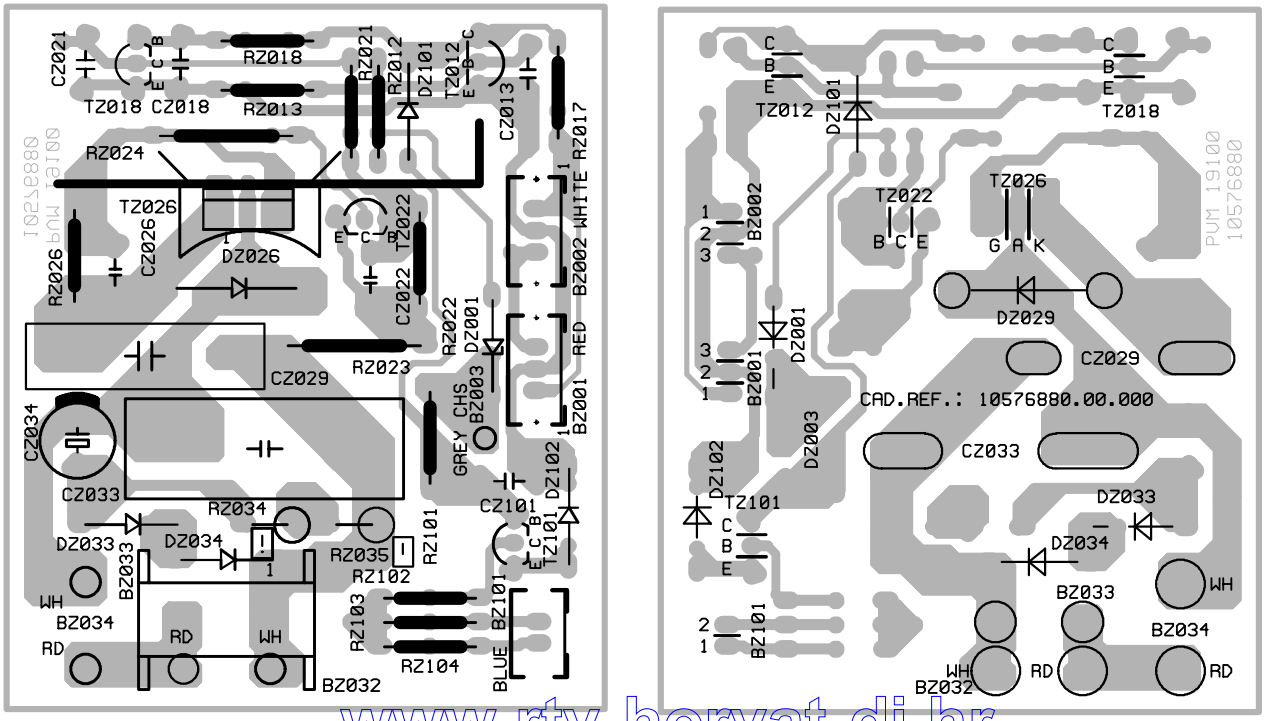


PANORAMA MODULE

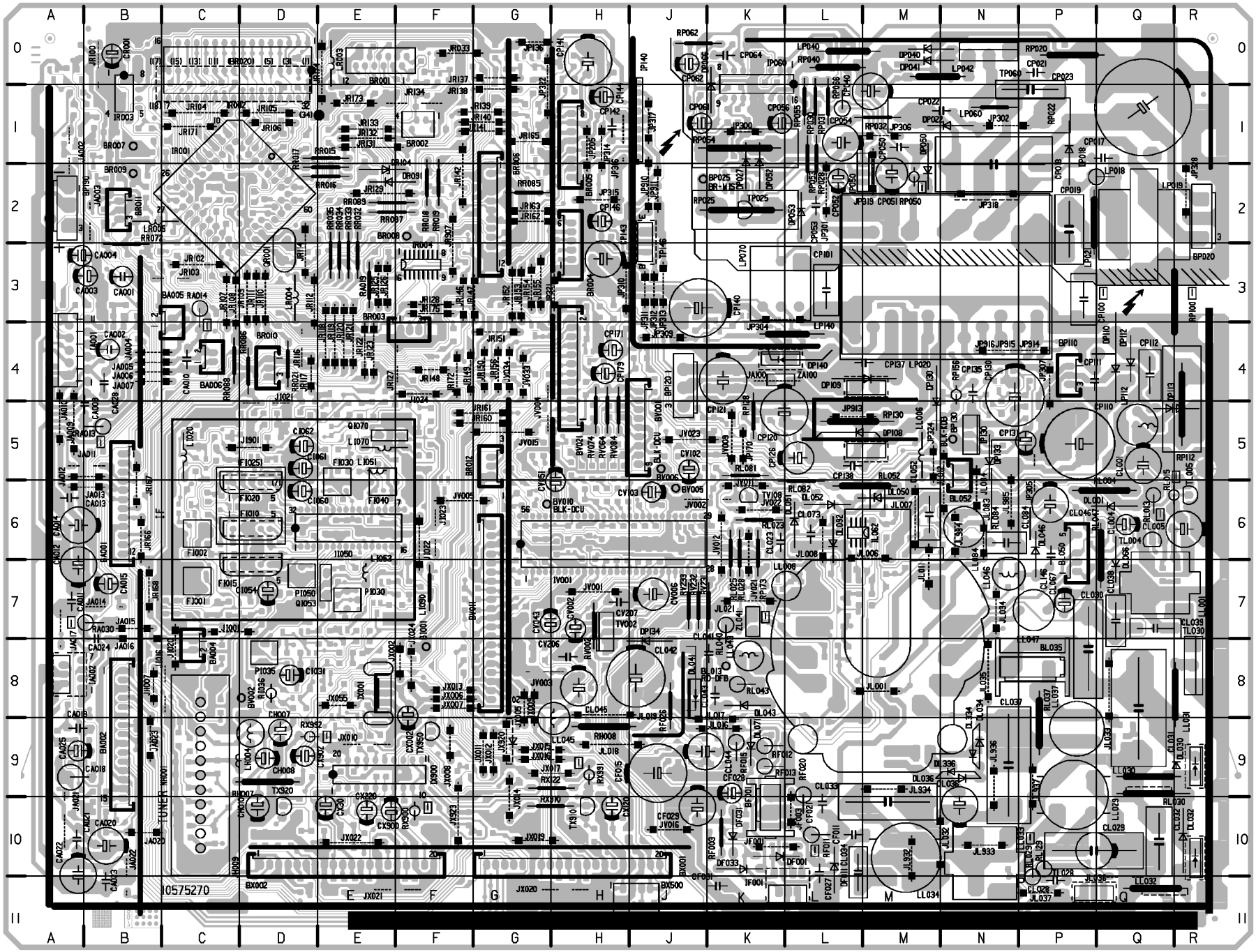


COMPONENT SIDE - CÖTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES

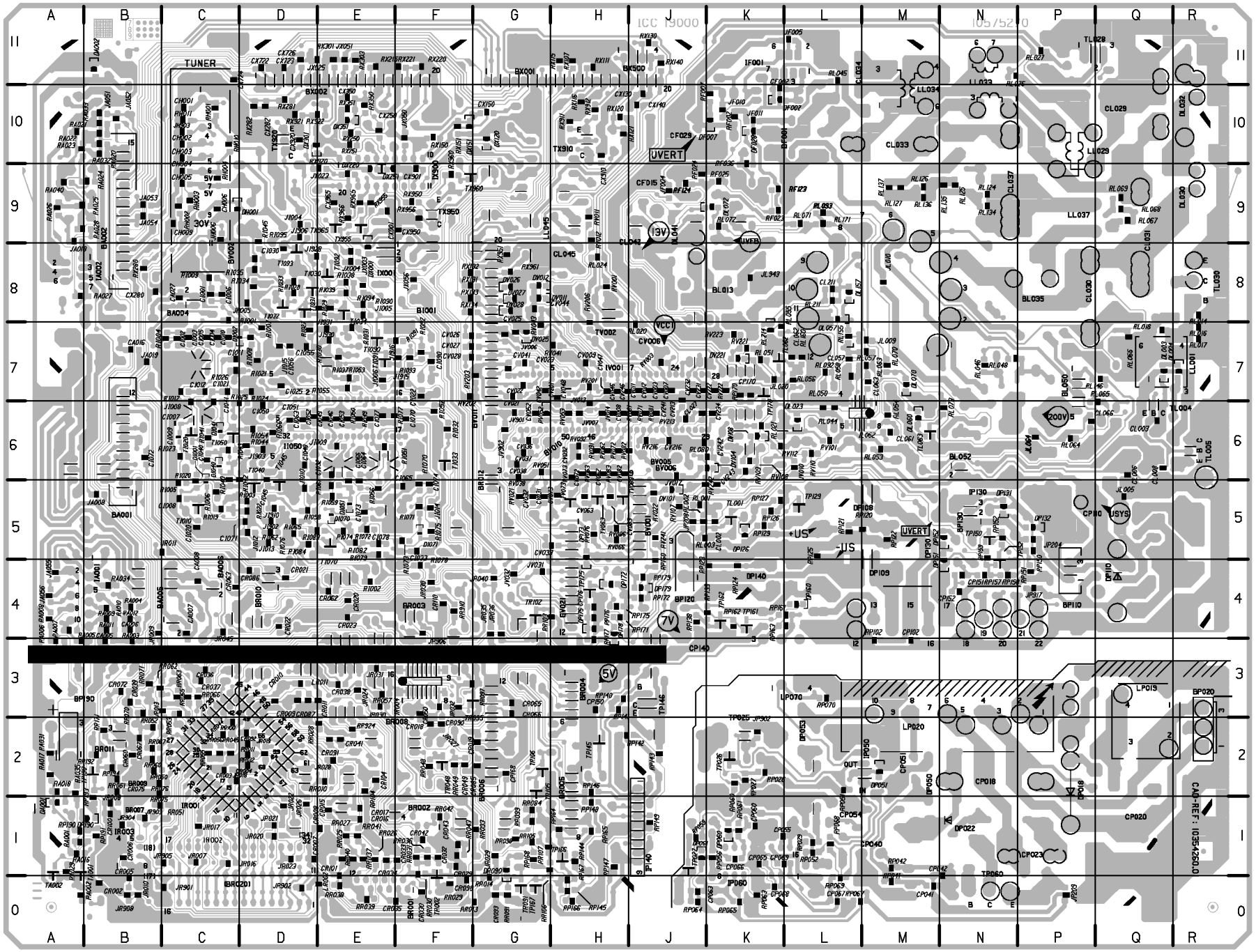
SOLDER SIDE - CÔTE SOUDURES - LÖTSEITE - LATO SALDATURE - LADO SOLDADURAS



MAIN BOARD - PLATINE PRINCIPALE - CHASSIS GRUNDPLATTE - PIASTRA PRINCIPALE - PLATINA PRINCIPAL

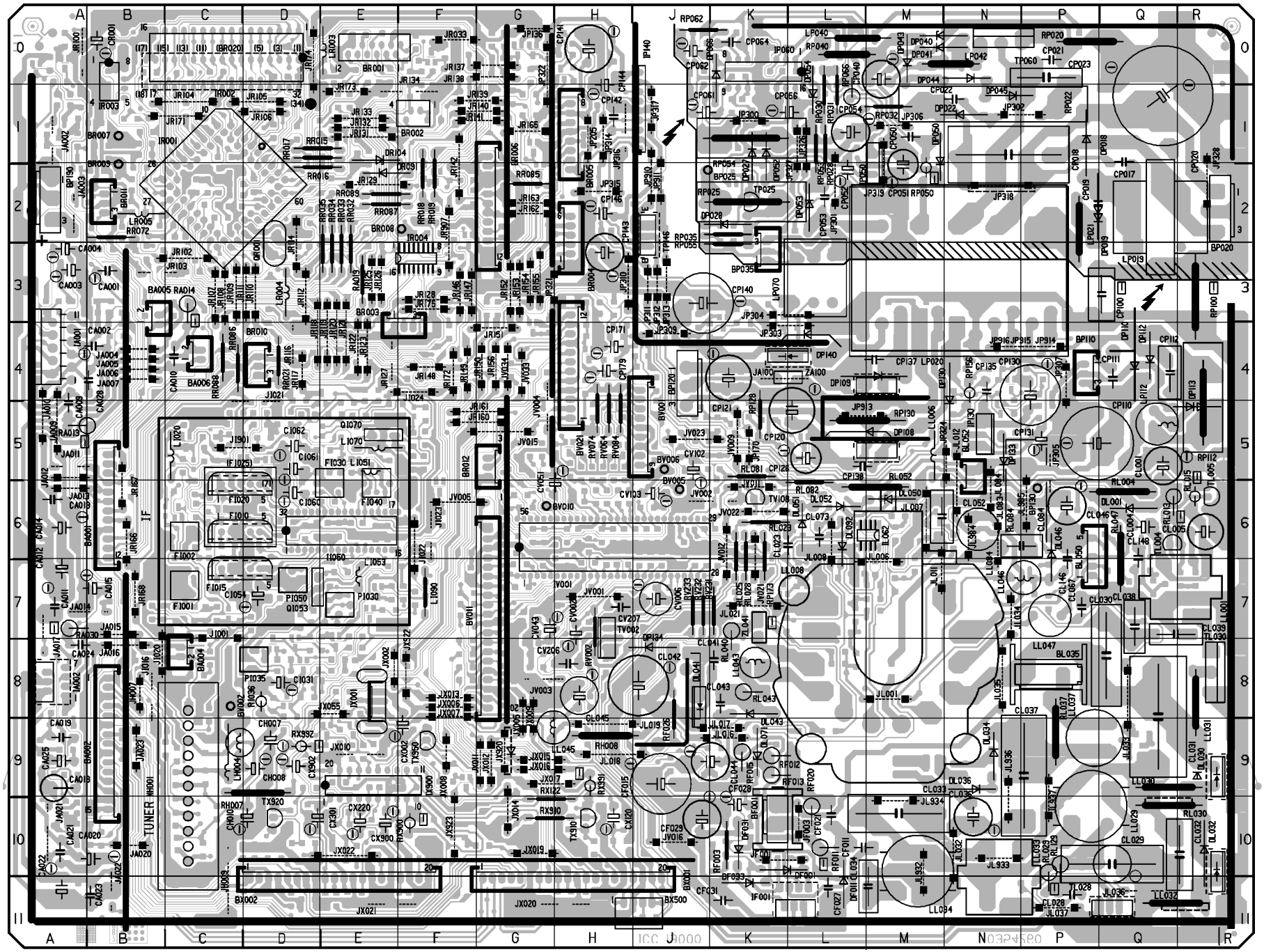


SOLDER SIDE - CÔTE SOUDURES - LÖTSEITE - LATO SALDATURE - LADO SOLDADURAS

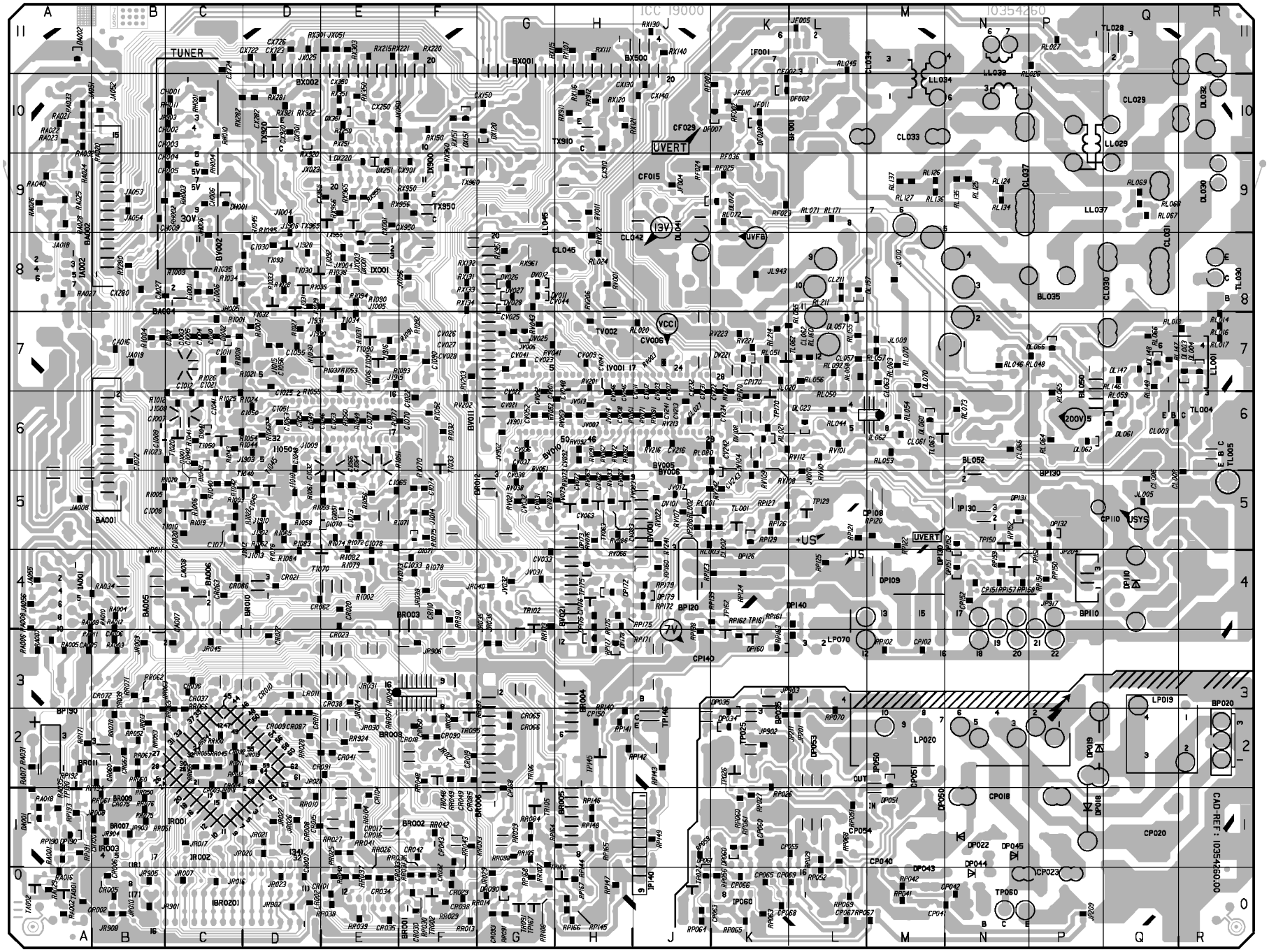


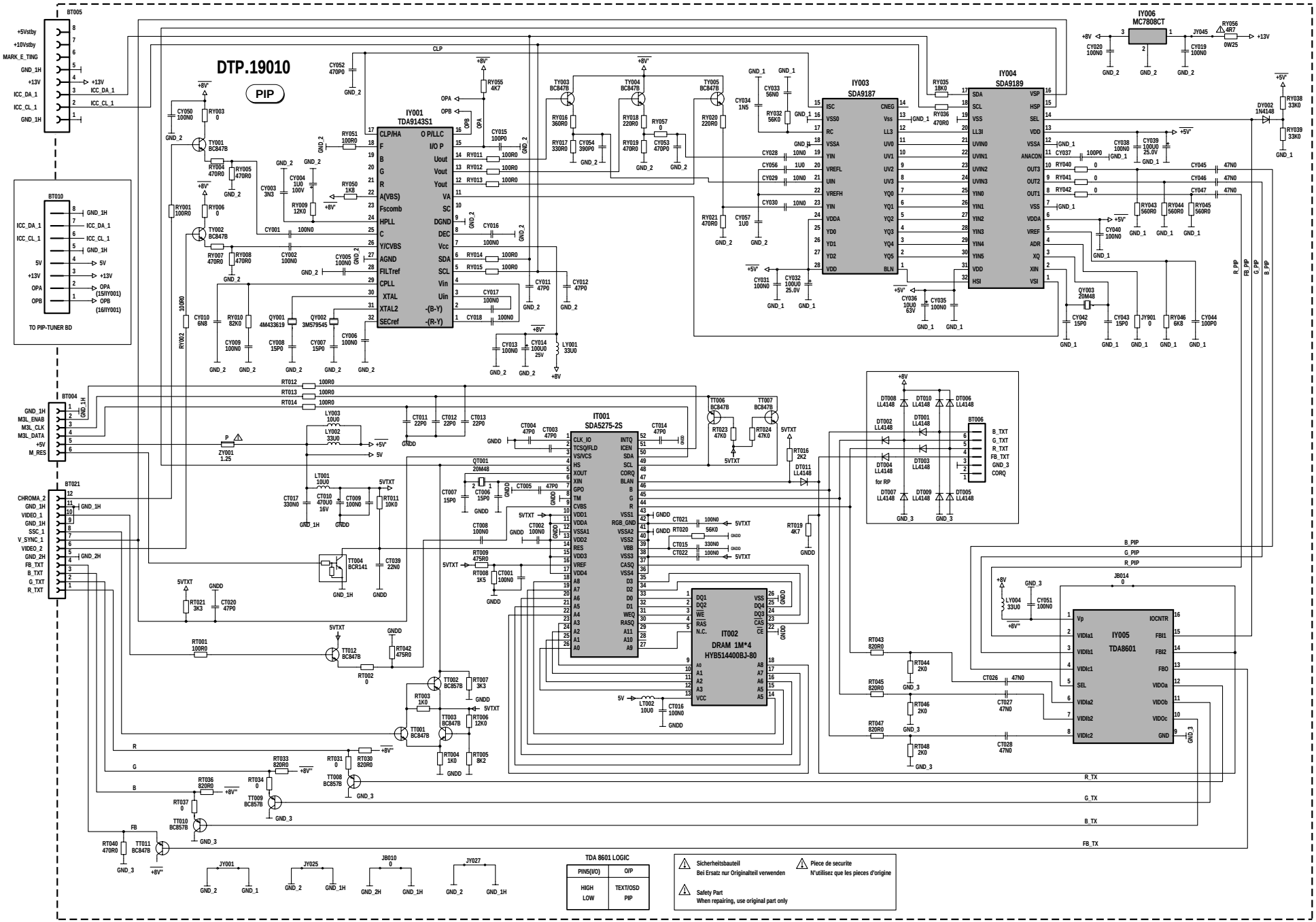
MAIN BOARD - PLATINE PRINCIPALE - CHASSIS GRUNDPLATTE - PIASTRA PRINCIPALE - PLATINA PRINCIPAL

COMPONENT SIDE - COTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES



SOLDER SIDE - CÔTE SOUDURES - LÖTSEITE - LATO SALDATURE - LADO SOLDADURAS





ICC19 100 Hz
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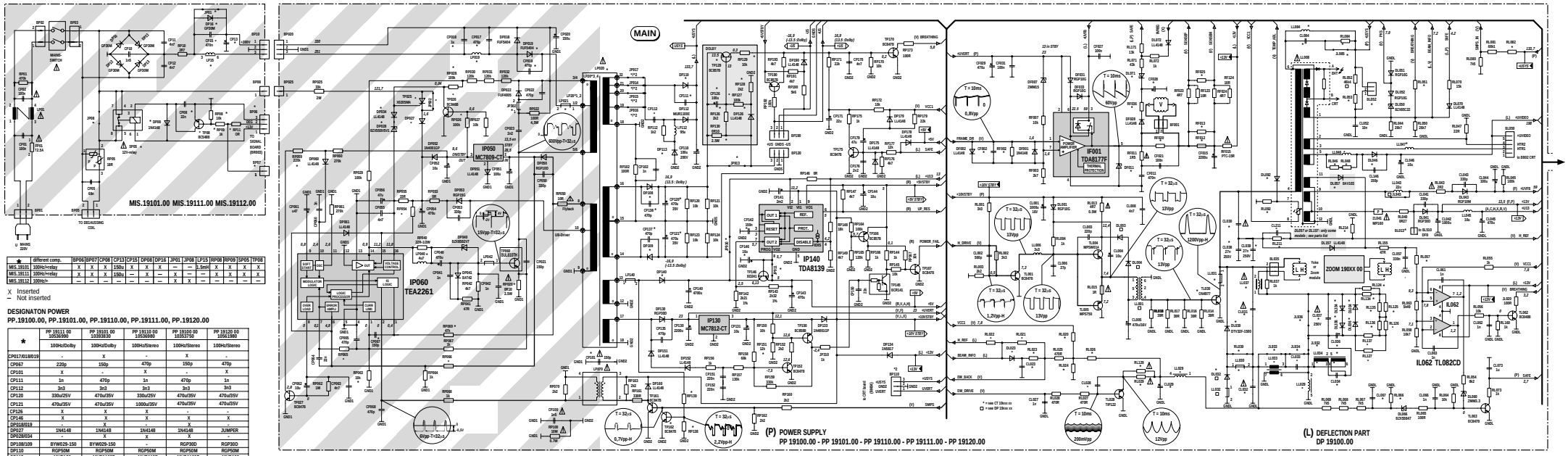
COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



★	different comp.	BP06	BP07	CP08	CP15	DP08	DP16	JP01	JP08	LP15	RP08	RP09	SP05	TP08
MIS.19101	100Hz/relay	X	X	X	150u	X	X	X	—	—	1.5mH	X	X	X
MIS.19111	100Hz/relay	X	X	X	150u	—	X	—	X	—	—	X	X	X
MIS.19112	100Hz/-	—	—	—	—	—	—	—	X	X	—	—	—	—

X Inserted
– Not inserted

DESIGNATON POWER
PP.19100.00, PP.19101.00, PP.19110.00, PP.19111.00, PP.19120.00

★	PP 19111 00 10536990 100HzDolby	PP 19101 00 10535830 100HzDolby	PP 19110 00 10536980 100HzStereo	PP 19100 00 10535750 100HzStereo	PP 19120 00 10561980 100HzStereo
CP017/018/019	-	X	-	X	-
CP067	220p	150p	470p	150p	470p
CP101	X	-	X	-	X
CP111	1n	470p	1n	470p	1n
CP112	3n3	3n3	3n3	3n3	3n3
CP120	330u/25V	470u/35V	330u/25V	470u/35V	470u/35V
CP121	470u/25V	470u/35V	1000u/35V	470u/35V	470u/35V
CP126	X	X	X	-	-
CP146	X	X	X	X	X
DP018/019	-	X	-	X	-
DP027	1N4148	1N4148	1N4148	1N4148	JUMPER
DP028/034	-	X	-	X	-
DP108/109	BYW029-150	BYW029-150	-	RGP30D	RGP30D
DP110	RGP50M	RGP50M	RGP50M	RGP50M	RGP50M
DP113	MUR160	MUR1100E	MUR110E	MUR1100E	MUR160
DP126	-	X	-	X	-
DP140	BYW29-150	BY163-150	MR822	MR822	MR822
JP002	X	JUMPER	X	JUMPER	X
JP002	-	-	-	-	X
JP910/911	-	-	-	-	-
JP913	-	-	-	X	X
JP914	139V	139V	139V	139V	139V
JP915	136V	136V	136V	136V	136V
JP916	130V	130V	130V	130V	130V
JP917	142V	142V	142V	142V	142V
LP019	-	105u	-	105u	-
LP020	10397920	10397920	10540750	10459670	10540720
LP021	-	X	-	X	-
LP040	4u7	2u2	4u7	2u2	4u7
LP042	JUMPER	X	JUMPER	X	JUMPER
RP026/028	X	X	X	X	-
RP054	6R8	6R8	6R8	6R8	6R8
RP063	-	47k	-	47k	-
RP065	11k	12k7	11k	12k7	11k
RP066	4k22	4k22	3k65	4k22	3k65
RP126/128	X	X	X	-	-
RP127/129	X	X	X	-	X
RP130	X	X	X	-	-
RP138	22k	10k	24k	10k	24k
RP139	220k	82k	274k	82k	270k
RP151	18k	12k	18k	12k	18k
TP025/026	X	X	X	X	-
TP129	X	X	X	X	-
TP162	-	X	X	X	X

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello châssis collegata alla rete.
Parte del chassis conectada a la red.

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
Per la riparazione utilizzare solo componenti originali
Pieza de seguridad
Utilice solo piezas originales

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.

Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).

Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).

Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).

Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

	Deflection - Basic Partlists
□	100Hz
	DP 19100 00
	10 34 99 80
DL003/004	–
DL032	BYT08-400
DL033/04	BYT01-200
JL943	–
LL001	10 46 87 60
LL031	10 25 84 40
RL052	×

X Inserted
– Not inserted

*	Deflection - Picture Tube related Partlists							
	CT 19103 34 10 55 60 10 28"MP AK	CT 19105 37 10 35 15 30 28"MP INVAR 25"SF INVAR 29"SF INVAR	CT 19152 37 10 52 06 10 25" SF INVAR 29"SF INVAR MM Version	CT 19155 37 10 56 20 10 29"SF INVAR SS-Yoke	CT 19156 37 10 56 19 90 33"MP INVAR 37"MP INVAR	CT 19111 34 10 44 48 10 28"SF INVAR 32"IS INVAR IM Version	CT 19151 34 10 52 05 00 28"SF INVAR 32"IS INVAR MM Version	CT 19251 40 10 57 85 50 28"SF INVAR 32"SF INVAR IM/MM+PVM
BL013	–	–	–	–	–	X	X	X
BL052	–	X	X	X	X	X	X	X
CF002	680p	680p	680p	680p	680p	2n2	2n2	2n2
CF028	1u0	1u0	1u0	1u0	1u0	1u0	1u0	1u0
CL023	–	–	–	–	–	–	–	–
CL028	1n0	1n0	1n0	1n0	–	56n	56n	56n
CL029	3n3	3n3	3n3	3n3	3n3	470n0	470n0	470n0
CL030	1n9/2KV	1n9/2KV	1n9/2KV	1n0/2KV	1n9/2KV	2n7/2KV	2n7/2KV	2n7/2KV
CL031	11n6/2KV	11n6/2KV	11n6/2KV	12n/420V	11n6/2KV	11n6/2KV	11n6/2KV	11n6/2KV
CL032	27n0/400V	27n0/400V	27n0/400V	22n0/1KV	27n0/400V	33n0/1KV	33n0/1KV	33n0/1KV
CL033	–	–	–	–	–	680n/400V	680n/400V	680n/400V
CL034	–	12n/400V	12n/400V	12n/400V	–	12n/400V	12n/400V	12n/400V
CL035	–	2u2	2u2	2u2	2u2	2u2	2u2	–
CL037	410n0/400V	410n0/400V	410n0/400V	410n0/400V	460n0/400V	560n/250V	560n/250V	–
CL067	–	–	–	–	–	100n0	100n0	100n0
CL084	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V
CL211	470p0	470p0	470p0	470p0	470p0	470p0	470p0	470p0
DF011	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V
DL023	–	–	–	–	–	–	–	–
DL032	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600
DL034/36	–	EGP10D	EGP10D	EGP10D	EGP10D	EGP10D	EGP10D	–
DL046	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E
DL057	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103
DL157	LL4148	–	–	–	–	LL4148	–	–
DL071	BZX55C33	BZX55C33	BZX55C33	BZX55C16	BZX55C33	BZX55C24	BZX55C24	BZX55C24
DL092	–	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148
DL3947/6	–	–	–	–	–	–	–	–
JL932	X	–	–	X	–	–	–	–
JL933	X	X	X	X	X	–	–	–
JL934	X	X	X	X	X	–	–	–
JL936	–	–	–	–	–	–	–	X
JL985	–	X	X	X	X	X	X	X

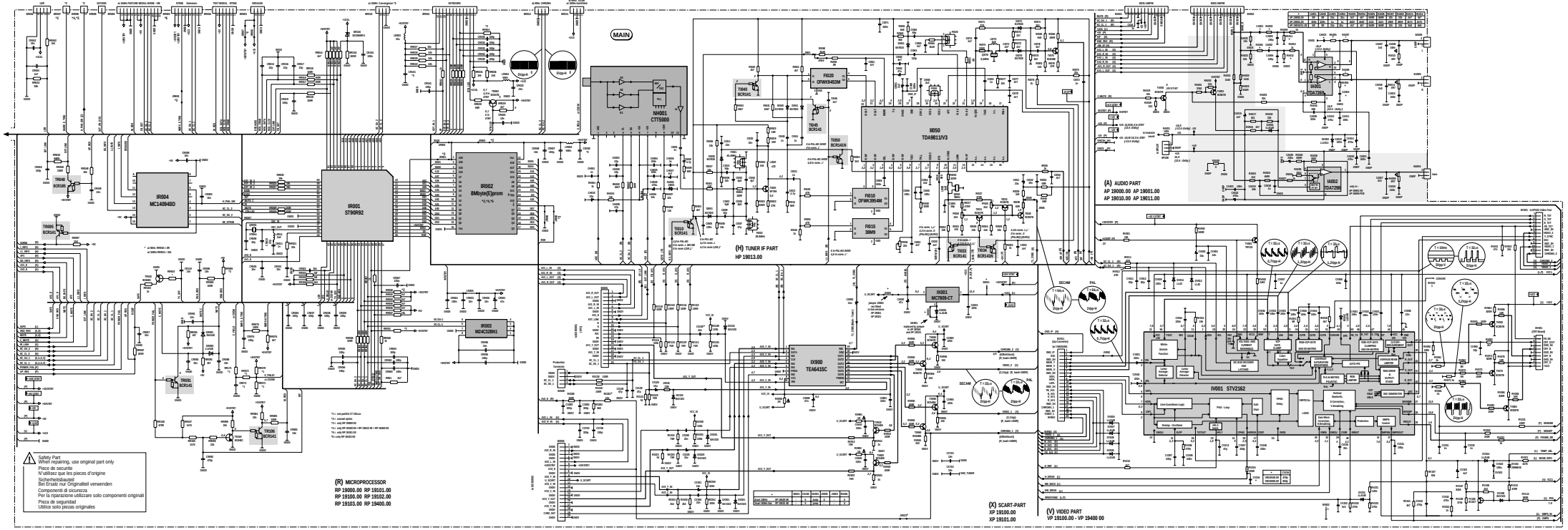
Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →
Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V →

*	Deflection - Picture Tube related Partlists							
	CT 19103 34 28"MP AK	CT 19105 37 28"MP INVAR 25"SF INVAR 29"SF INVAR	CT 19152 37 25"SF INVAR 29"SF INVAR MM Version	CT 19155 37 29"SF INVAR SS-Yoke	CT 19156 37 33"MP INVAR 37"MP INVAR	CT 19111 34 28"SF INVAR 32"SF INVAR IM Version	CT 19151 34 28"SF INVAR 32"SF INVAR MM Version	CT 19251 40 28"SF INVAR 32"SF INVAR IM/MM+PVM
LL008	10 55 11 70	10 51 08 70	10 51 08 70	10 51 08 70	10 51 08 70	10 52 03 30	10 52 03 30	10 57 67 40
LL029	10 15 42 70	10 15 42 70	10 15 42 70	10 15 42 70	10 15 42 70	10 34 76 50	10 34 76 50	10 34 76 50
LL031	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER
LL033	–	–	–	–	–	10 53 27 20	10 53 27 20	10 53 27 20
LL034	–	10 15 32 70	10 15 32 70	10 15 32 70	–	10 15 32 70	10 15 32 70	10 15 32 70
LL037	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 50	10 51 82 50	10 51 82 50
LL046	22u0	22u0	22u0	22u0	22u0	22u0	22u0	22u0
LL047	16u0	13u5	13u5	13u5	13u5	13u5	13u5	13u5
LL084	26u5	26u5	26u5	26u5	26u5	26u5	26u5	26u5
RF002	10k	10k	10k	10k	10k	10k	10k	10k
RF012	1R0	1R0	1R0	1R0	1R0	1R5	1R5	1R5
RF013	1R0	1R0	1R0	1R5	1R0	1R82	1R82	1R82
RF028	270R0	270R0	270R0	–	270R0	–	–	–
RF025	43R0	43R0	82R0	43R0	150R0	150R0	150R0	150R0
RF036	1k0	1K0	1K0	1k0	1k0	1K0	1K0	1K0
RL020	7x15	7x15	7x15	6K49	7x15	4k64	4k64	4k64
RL023	–	–	–	–	–	–	–	–
RL024	4k02	4k02	4k02	4k53	4k02	2k67	2k67	2k67
RL026	61k9	61k9	61k9	121K0	61k9	36k5	36k5	36k5
RL029	2R2	2R2	2R2	2R2	2R2	–	–	–
RL046/48	3k3	3k3	3k3	3k3	3k3	3k3	3k3	3k3
RL051	270k0	270k0	270k0	270k0	270k0	270k0	270k0	270k0
RL053	33k2	8k66	8k66	8k66	8k66	6k34	6k34	9K09
RL057	56k2	56k2	56k2	56k2	56k2	56k2	56k2	56k2
RL066	4k22	4k22	4k22	4k22	4k22	–	–	–
RL082	59k0	61k9	61k9	61k9	61k9	59k0	59k0	64K9
RL084	27R0	–	–	–	–	–	–	–
RL092	–	4k7	4k7	4k7	4k7	4k7	4k7	4k7
RL134/25	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL126/27	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL129	–	–	–	–	–	2R2	2R2	2R2
RL134/35	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL136/37	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL211	6k8	6k8	6k8	6k8	6k8	6k8	6k8	6k8
RL214	–	–	–	BAV103	–	–	–	–
TL036	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977
ZOOM	–	–	–	–	–	–	–	–

ICC19 100 Hz
First issue 09 / 97

Updated 11 / 98

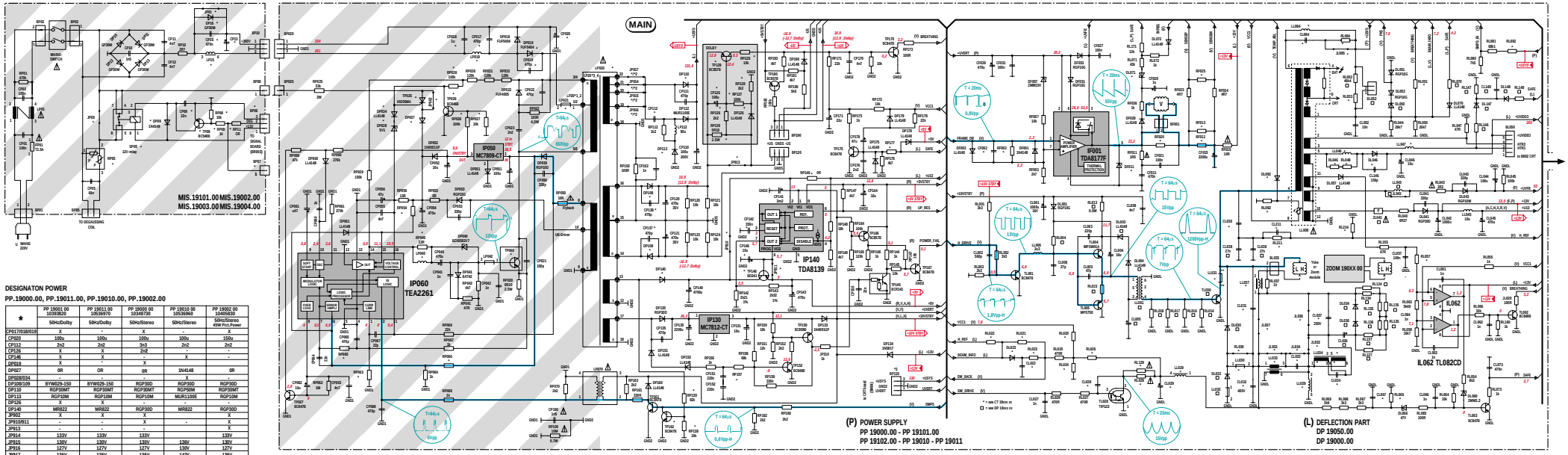
COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



ICC19 100 Hz
First issue 09 / 97

Updated 11 / 98

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



DESIGNATON POWER

PP.19000.00, PP.19011.00, PP.19010.00, PP.19002.00

★	PP 19001 00 10393820 50Hz/Dolby	PP 19011 00 10536970 50Hz/Dolby	PP 19000 00 10349730 50Hz/Stereo	PP 19010 00 10536960 50Hz/Stereo	PP 19002 00 10405830 50Hz/Stereo 45W Pict.Power
CP017/018/019	X	-	X	X	X
CP020	100u	100u	100u	100u	150u
CP112	2n2	2n2	3n3	2n2	2n2
CP126	X	X	2n2	-	-
CP148	X	X	-	X	-
DP019	X	-	X	-	X
DP027	0R	OR	0R	1N4148	0R
DP028/034	-	-	-	-	-
DP108/109	BYW62B-150	BYW62B-150	RGP30D	RGP30D	RGP30D
DP110	RGP30MT	RGP30MT	RGP30MT	RGP50M	RGP30MT
DP113	RGP10M	RGP10M	RGP10M	MUR1100E	RGP10M
DP126	X	X	-	-	-
DP140	MR822	MR822	RGP30D	MR822	RGP30D
JP902	X	X	X	-	X
JP910/911	-	-	X	-	X
JP913	-	-	-	-	X
JP914	133V	133V	133V	-	133V
JP915	130V	130V	130V	136V	130V
JP916	127V	127V	127V	130V	127V
JP917	136V	136V	136V	142V	136V
LP019	180u	X	180u	105u	180u
LP020	10385280	10536280	10378130	10459670	10378130
LP039	10385280	10536280	10378130	10459670	10378130
LP021	X	-	X	X	X
LP040	4u7	4u7	4u7	2u2	4u7
RP50/60/928	-	-	-	X	-
RP902	-	-	-	X	-
RP940	144W	144W	144W	120W	144W
RP954	5R6	5R6	5R6	6R8	5R6
RP955	10k	10k	10k	47k	10k
RP065	10k	12k1	10k	12k1	10k
RP068	3k48	3k57	3k48	3k57	3k48
RP136/128	X	X	-	-	-
RP127/129	X	X	-	-	-
RP138	X	X	-	-	-
RP138/139	-	-	-	X	-
RP146	X	X	-	X	-
RP157	150k	150k	150k	130k	150k
RP177	22k	22k	22k	130k	22k
TP025/026	-	-	X	-	X
TP050	BUV48CFI	BUV48CFI	BUV48CFI	BUL810TH	BUV48CFI
TP128	X	X	-	X	-
TP146	X	X	-	X	-
TP162	-	-	-	X	-

X Inserted
– Not inserted

★	different comp.	BP06	SP07	CP08	CP13	CP15	DP08	DP36	JP01	JP08	LP15	RP05	RP08	RP09	SP05	TP08
MIS. 19101	100Hz+Holy	X	X	X	150u	X	X	X	—	—	1.5mH	18R	X	X	X	X
MIS. 19002	50Hz	—	—	—	100u	X	—	X	—	X	3mH	2SR	—	—	—	—
MIS. 19003	50Hz+Holy	X	X	X	100u	X	X	X	—	—	3mH	18R	X	X	X	X
MIS. 19004	50Hz/45W Pict.Pow.	—	—	—	—	X	—	X	—	X	3mH	2SR	—	—	—	—
MIS. 19102	50Hz	—	—	—	100u	—	—	—	X	X	—	2SR	—	—	—	—
MIS. 19111	100Hz+Holy	X	X	X	150u	—	X	—	X	—	—	18R	X	X	X	X

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello chassis collegata alla rete.
Parte del chassis conectada a la red.

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.

Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).

Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).

Attentionze :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).

Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
durante la ripazione usare componenti originali
Pieza de seguridad
Utilice solo piezas originales

□	Deflection - Basic Partlists 50Hz 200M DP 19050 00 10 34 99 70	50Hz DP 19000 00 10 34 99 60
BL052	X	–
CL026	220u/25V	220u/25V
CL036	–	2u2/250V
CL038	27n	27n
CL039	27n	27n
CL148	–	–
DL003/04	X	X
DL050	DTV32F-1500	DTV32F-1500
DL032	BYW76	BYW76
DL034/036	–	RGP10G
DL050	BZX85C30	BZX85C30
DL057	X	X
DL147/148	–	–
JL043	X	X
LL001	10 51 81 10	10 51 81 10
LL030	–	–
LL032	Jumper	Jumper
LL043	–	–
RP015	10R	10R
RL004	1k8	1k8
RL013	10R	10R
RL014	68R	68R
RL015	2R2	2R2
RL016/17	68R	68R
RL01	-	-
RL070	33k	33k
RL071	43k	43k
RL124/127	–	7k5
RL134/137	–	7k5
RL146	–	–
RL147	–	–
RL149	–	–
TL030	BUV48CFITH16	BUV48CFITH16
ZL041	MP12S	MP12S

★	Deflection - Picture Tube related Partlists CT 19005 31 10 51 08 90 50Hz 25"SF-29"SF 4/3	CT 19003 32 10 35 15 20 50Hz 25-28"MF 4/3	CT 19031 37 10 44 62 60 50Hz 200M 28"SF-32" 16/9
CP002	1n5	1n5	1n5
CL023	10n	10n	10n
CL029	1n	47n	47n
CL029	3u3/63V	4u7/16V	4u7/16V
CL030	1n8/26V	1n8/26V	1n8/26V
CL031	14n4/16kV	12n8/1kV	12n8/1kV
CL032	33n/400V	24n/400V	24n/400V
CL033	–	1u5/16V	1u5/16V
CL034	–	–	–
CL037	510n/250V	560n/250V	–
CL067	–	100n/100V	100n/100V
CL084	4n7/250V	4n7/250V	4n7/250V
CL213	–	–	–
DP011	10 35 18 80	10 35 18 80	10 35 18 80
DL023	BAV103	BAV103	BAV103
DL046	RGP10M	RGP10M	RGP10M
DL071	BZX55C33	BZX55C33	BZX55B11
DL092	–	–	–
JL932	X	X	X
JL933	X	X	X
JL934	X	–	–
JL936	–	–	X
JL937	–	–	–
JL985	–	–	–
LL008	10 51 77 20	10 51 77 40	10 51 77 50
LL029	10 37 74 20	10 09 59 60	10 09 59 60
LL030	–	–	–
LL031	LF8EAD 90R	LF8EAD 90R	LF8EAD 90R
LL033	–	–	–
LL034	–	–	–
LL037	24u	24u	24u
LL046	–	–	–
LL047	26u	25u	23u
LL084	24u	24u	24u

★	Deflection - Picture Tube related Partlists CT 19005 31 10 51 08 90 50Hz 25"SF-29"SF 4/3	CT 19003 32 10 35 15 20 50Hz 25-28"MF 4/3	CT 19031 37 10 44 62 60 50Hz 200M 28"SF-32" 16/9
RF002	–	–	–
RF012	1R5	1R5	1R5
RF013	1R5	1R5	1R5
RF020	220R	220R	–
RF025	910	221R	240R
RL025	3k09	3k09	3k09
RL021	–	–	–
RL023	100k	120k	120k
RL024	1k62	1k82	1k62
RL026	374	374	374
RL029	2R2	2R2	2R2
RL046/48	0R	0R	0R
RL051	750k	750k	750k
RL053	5k1	30k	8k2
RL057	40k2	39k2	40k2
RL066	1k8	–	–
RL082	56k2	56k2	61k9
RL094	12R	12R	12R
RL092	–	–	–
RL129	–	–	–
RL211	12k	12k	12k
RL214	2k7	2k7	2k7
ZOOM MODULE	–	–	10 39 10 40

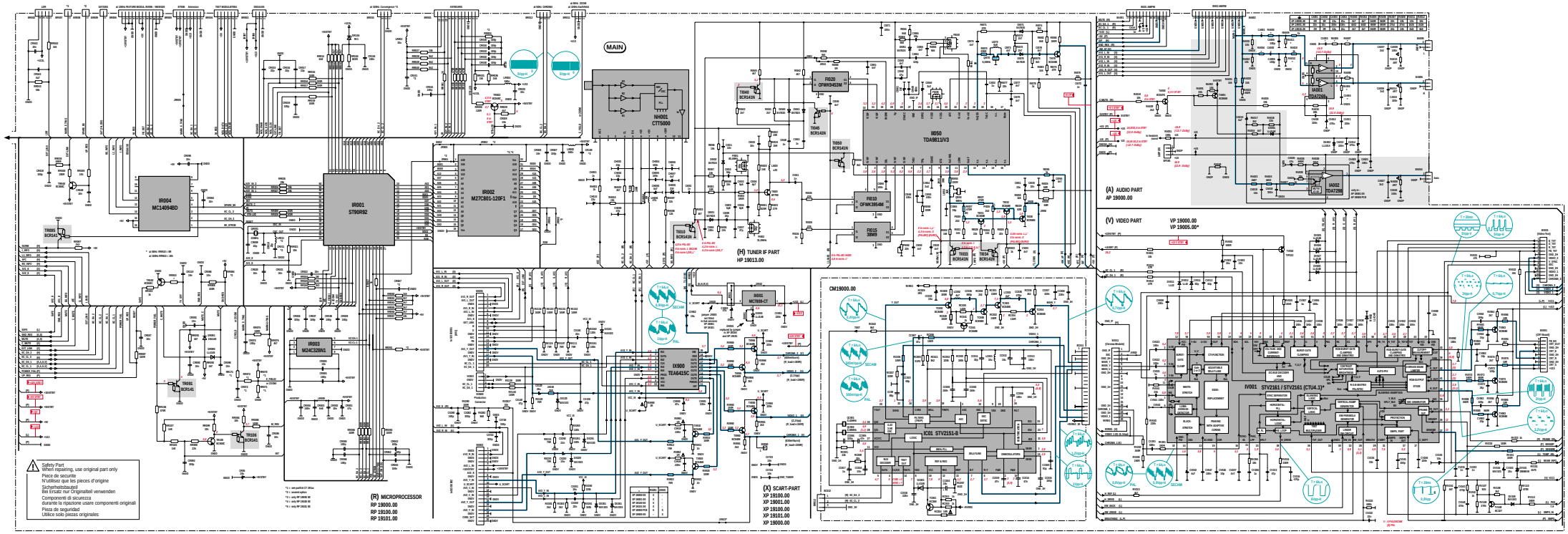
Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →

Nota : Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V

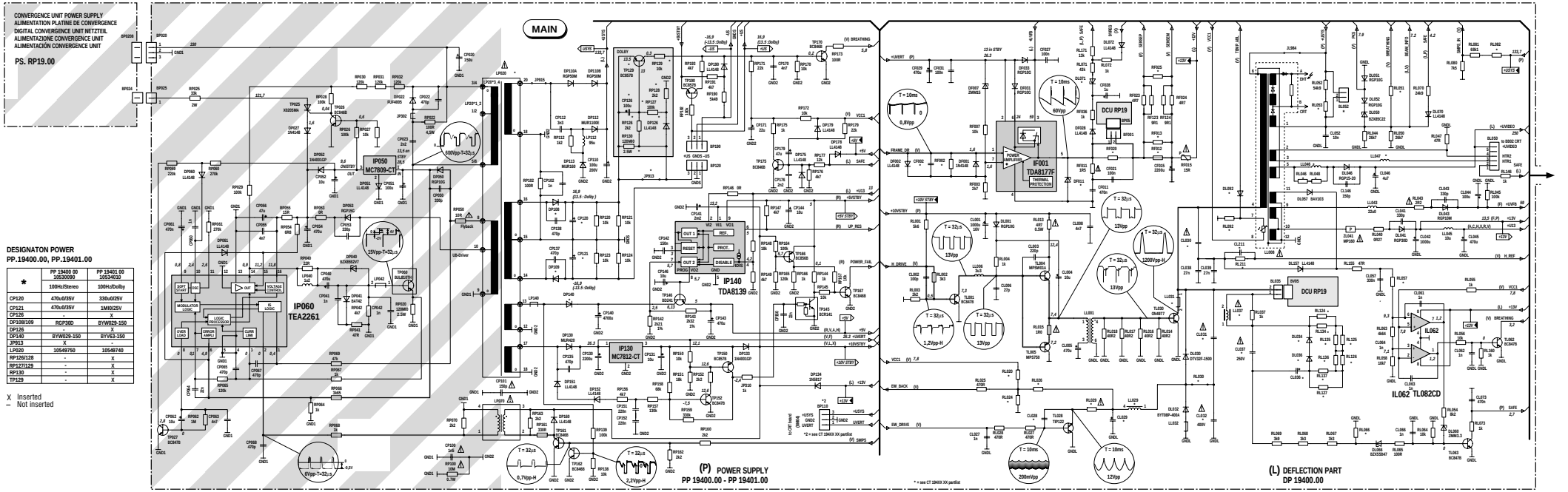
X Inserted
– Not inserted

ICC19 50 Hz
First issue 09 / 97

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



MAIN SCHEMATIC DIAGRAM - SCHEMA PLATINE PRINCIPALE - SCHALTUNG HAUPTPLATINE - SCHEMA PIASTRA PRINCIPALE - ESQUEMA PLATINA PRINCIPAL



DESIGNATON POWER
PP.19400.00, PP.19401.00

★	PP 19400 00 10530090	PP 19401 00 10534010
	100Hz/Stereo	100Hz/Dolby
CP120	470u/0/35V	330u/0/25V
CP121	470u/0/35V	1Mi0/25V
CP126	-	X
DP100/109	RGP30D	BYW029-150
DP126	-	X
DP140	BYW029-150	BYV63-150
JP913	X	-
LP020	10549750	10549740
RP126/128	-	X
RP127/129	-	X
RP130	-	X
TP129	-	X

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello châssis collegata alla rete.
Parte del chassis conectada a la red.

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.
Attention :
Mesure dans la partie primaire de l'alimentation
- Utiliser la masse du bloc alimentation (GND1).
Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).
Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).
Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

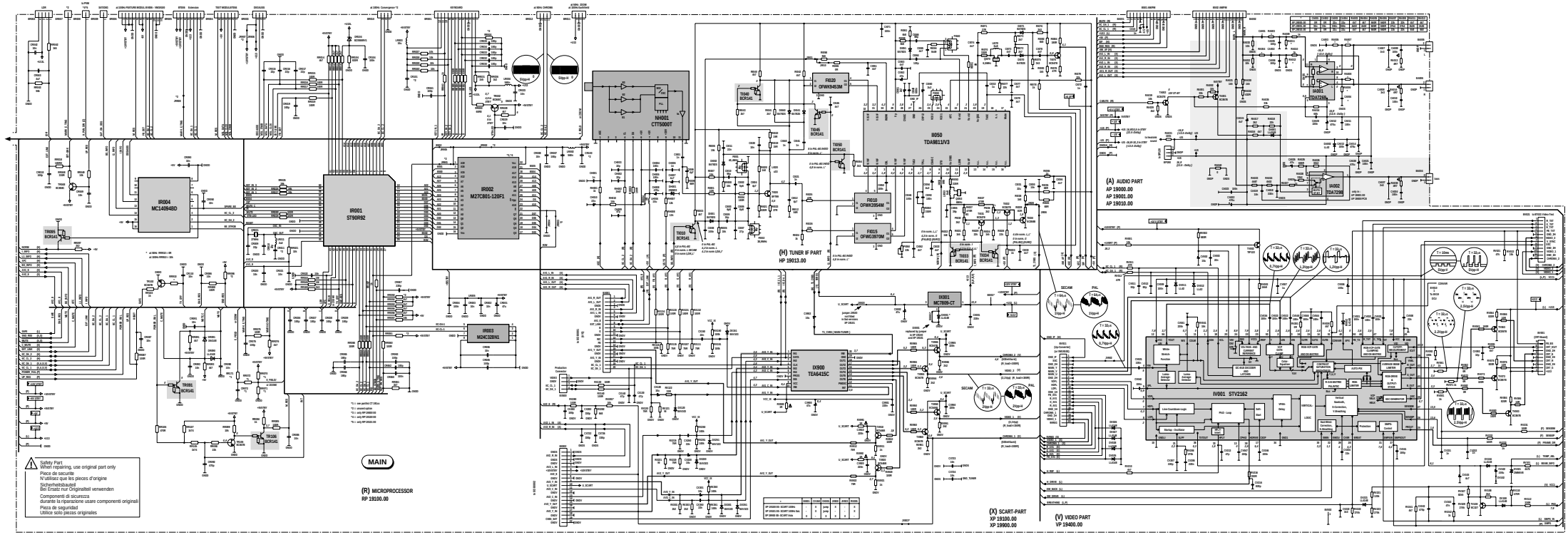
Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
durante la riparazione usare componenti originali
Pieza de seguridad
Utilice solo piezas originales

★	Deflection - Basic Partlists 100Hz CT 19400 34 10 53 01 10
CF002	680p/50V
CL028	1n/100V
CL029	3u3/63V
CL030	1n8/2kV
CL031	10n/1kV
CL032	20n/400V
CL036	2u2/250V
CL037	510n/250V
CL211	470p/50V
DF011	BZW04-4B 56V
DL034-036	BYT01-200 200V
DL071	BZX55C20
DL092	1N4148
LL008	DST-GDS35
LL029	130uH
LL030	900HM 50MHz
LL031	WIREBARE
LL037	9uDH
LL046	22uDH
LL047	13uSH
RF002	10k
RF012	1R
RF013	1R21
RF020	270R

★	Deflection - Basic Partlists 100Hz CT 19400 34 10 53 01 10
RF025	100R
RL071	43k
RL020	7k15
RL024	61k9
RL026	100R
RL029	2K2
RL046	3k3
RL048	3k3
RL051	270k
RL053	16k2
RL057	60k4
RL066	1k74
RL082	59k
RL092	4k7
RL124	7k5
RL125	7k5
RL126	7k5
RL127	7k5
RL134	7k5
RL135	7k5
RL136	7k5
RL137	7k5
RL211	6k8
RL030	2R2

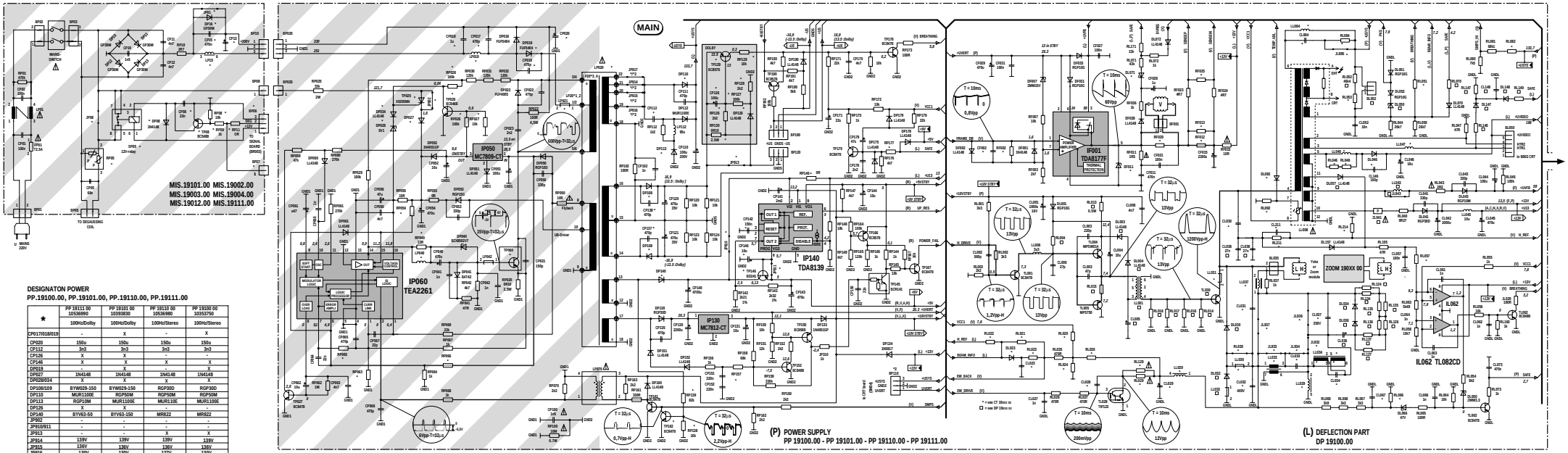
Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19400 34 Usys 134V →
Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19400 34 Usys 134V →

MAIN SCHEMATIC DIAGRAM - SCHEMA PLATINE PRINCIPALE - SCHALTUNG HAUPTPLATINE - SCHEMA PIASTRA PRINCIPALE - ESQUEMA PLATINA PRINCIPAL



RP C19
First issue 07 / 98

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



DESIGNATON POWER
PP.19100.00, PP.19101.00, PP.19110.00, PP.19111.00

★	PP 19111 00 10536900	PP 19101 00 10393830	PP 19110 00 10536380	PP 19100 00 10352750
	100Hz/Dolby	100Hz/Dolby	100Hz/Stereo	100Hz/Stereo
CP017/018/019	-	X	-	X
CP020	150u	150u	150u	150u
CP112	3n3	3n3	3n3	3n3
CP126	X	X	-	-
CP146	X	X	X	X
CP019	-	-	-	X
DP027	1N4148	1N4148	1N4148	1N4148
DP028/034	X	X	X	X
DP108/109	BYW029-150	BYW029-150	RGP30D	RGP30D
DP110	MUR1100E	RGP50M	RGP50M	RGP50M
DP113	RGP10M	MUR1100E	MUR110E	MUR1100E
DP126	X	-	-	-
DP140	BYW63-50	BYW63-150	MR822	MR822
JP902	-	-	-	-
JP903/911	-	-	-	-
JP913	-	-	X	X
JP914	139V	139V	139V	139V
JP915	139V	139V	139V	139V
JP916	130V	130V	127V	130V
JP917	142V	142V	142V	142V
LP019	-	105u	-	105u
LP020	10397920	10397920	10397920	10459670
LP021	-	X	-	X
LP040	2u2	2u2	2u2	2u2
RP026/028	X	X	X	X
RP027	X	X	X	X
RP040	1/2W	1/2W	1/2W	1/2W
RP054	6R8	6R8	6R8	6R8
RP063	-	47k	-	47k
RP065	11k	12k1	11k	12k1
RP066	4k22	3k57	4k22	3k57
RP126/128	X	X	-	-
RP127/129	X	X	-	-
RP130	X	X	-	-
RP138/139	X	X	X	X
RP146	X	X	X	X
RP157	130k	130k	130k	130k
RP317	12k	12k	12k	12k
TP025/026	X	X	X	X
TP060	BUL810TH	BUL810TH	BUL810TH	BUL810TH
TP128	X	X	-	-
TP146	X	X	X	X
TP162	-	-	X	X

X Inserted
– Not inserted

★	different comp.	BP06	BP07	CP08	CP13	CP15	DP08	DP16	JP01	JP08	LP15	RP05	RP08	RP09	SP05	TP08
MIS. 19101	100Hz/+relay	X	X	X	150u	X	X	X	–	–	5mH	18R	X	X	X	X
MIS. 19002	50Hz	–	–	–	100u	X	–	X	–	X	3mH	25R	–	–	–	–
MIS. 19003	50Hz/+relay	X	X	X	100u	X	X	X	–	–	3mH	18R	X	X	X	X
MIS. 19004	50Hz/40W Pict.Pow.	–	–	–	–	–	X	–	X	–	3mH	25R	–	–	–	–
MIS. 19012	50Hz	–	–	–	100u	–	–	–	X	X	–	25R	–	–	–	–
MIS. 19111	100Hz/+relay	X	X	X	150u	–	X	–	X	–	–	18R	X	X	X	X

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello chàssis collegata alla rete.
Parte del chassis conectada a la red.

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.

Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).

Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).

Attentionze :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).

Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
durante la ripazione usare componenti originali
Pieza de seguridad
Utilice solo piezas originales

□	Deflection - Basic Partlists
	100Hz
	DP 19100 00
	10 34 99 80
BL052	–
CL005	470u/16V
CL036	2u2/250V
CL038	–
CL039	54n
CL148	220n
DL003/004	–
DL030	DTV32F-1500
DL032	BYT08-400
DL034/035	BYT01-200
DL050	BZX85C22
DL057	–
DL147/148	LL4148
JL043	–
LL001	10 46 87 60
LL030	–
LL032	10 25 54 40
LL043	22u
RF015	PTC-150
RL004	1k
RL013	4R7
RL014	40R2
RL015	1R
RL016/17	40R7
RL018	40R2
RL070	15k
RL071	43k
RL124/127	7k5
RL134/137	7k5
RL146	100R
RL147	4k7
RL149	1k
TL030	DN4977
ZL041	MP160

★	Deflection - Picture Tube related Partlists					
	CT 19101 34	CT 19105 37	CT 19152 37	CT 19111 34	CT 19112 34	CT 19151 34
	10 36 28 80	10 35 15 30	10 52 06 10	10 44 48 10	10 47 54 60	10 52 06 00
	100Hz	100Hz	100Hz-MCU	100Hz	100Hz	100Hz-MCU
	25-28"MP 4/3	29"SF 4/3	29"SF 4/3	28"SF 16/9	32"SF 16/9	32"SF 16/9
CF002	680p	680p	680p	2n2	2n2	2n2
CL023	–	–	–	–	–	–
CL028	56n	1n	1n	56n	56n	56n
CL029	470n/63V	3u3/63V	3u3/63V	470n/63V	470n/63V	470n/63V
CL030	1n8/2KV	1n8/2KV	1n8/2KV	2n7/2KV	2n7/2KV	2n7/2KV
CL031	11n6/2KV	11n6/2KV	11n6/2KV	11n6/2KV	11n6/2KV	11n6/2KV
CL032	33n/400 V	24n/400V	24n/400V	33n/400V	33n/400V	33n/400V
CL033	560n/250V	–	–	680n/250V	680n/250V	680n/250V
CL034	12n/400V	12n/400V	12n/400V	12n/400V	12n/400V	12n/400V
CL037	680n/250V	410n/400V	410n/400V	560n/250V	560n/250V	560n/250V
CL067	100n/100V	–	–	100n/100V	100n/100V	100n/100V
CL084	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V
CL211	470p	470p	470p	470p	470p	470p
DF011	10 36 82 10	10 36 82 10	10 36 82 10	10 36 82 10	10 36 82 10	10 36 82 10
DL023	–	–	–	–	–	–
DL046	MUR160	MUR160	MUR1100E	MUR160	MUR160	MUR1100E
DL071	BZX55C33	BZX55C33	BZX55C33	BZX55C24	BZX55C24	BZX55C24
DL092	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148
JL932	–	–	–	–	–	–
JL933	–	X	X	–	–	–
JL934	–	X	X	–	–	–
JL936	–	–	–	–	–	–
JL937	–	–	–	–	–	–
JL985	X	X	X	X	X	X
LL008	10 46 03 60	10 46 80 70	10 51 98 70	10 46 81 60	10 46 81 60	10 52 03 30
LL029	10 34 76 50	10 15 42 70	10 15 42 70	10 34 76 50	10 34 76 50	10 34 76 50
LL030	–	LFBEAD 90R	LFBEAD 90R	–	–	–
LL031	LFBEAD 90R	JUMPER	JUMPER	LFBEAD 90R	LFBEAD 90R	LFBEAD 90R
LL033	10 34 76 60	–	–	10 34 76 60	10 34 76 60	10 34 76 60
LL034	10 15 32 70	10 15 32 70	10 15 32 70	10 15 32 70	10 15 32 70	10 15 32 70
LL037	4u2	3u	3u7	4u	4u	4u2
LL046	47u	47u	22u	47u	47u	22u
LL047	13u5	13u5	13u5	13u5	13u5	13u5
LL084	29u5	29u5	29u5	29u5	29u5	29u5

★	Deflection - Picture Tube related Partlists					
	CT 19101 34	CT 19105 37	CT 19152 37	CT 19111 34	CT 19112 34	CT 19151 34
	10 36 28 80	10 35 15 30	10 52 06 10	10 44 48 10	10 47 54 60	10 52 06 00
	100Hz	100Hz	100Hz-MCU	100Hz	100Hz	100Hz-MCU
	25-28"MP 4/3	29"SF 4/3	29"SF 4/3	28"SF 16/9	32"SF 16/9	32"SF 16/9
RF002	10k	10k	10k	10k	10k	10k
RF012	1R	1R	1R	1R5	1R5	1R5
RF013	1R	1R	1R	1R82	1R82	1R82
RF020	180R	270R	270R	–	–	–
RF025	39R	43R	43R	150R	150R	150R
RL020	4k64	7k15	7k15	4k64	4k64	4k64
RL021	–	–	–	–	–	–
RL023	–	–	–	–	–	–
RL024	2k67	4k02	4k02	2k67	2k67	2k67
RL026	36k5	61k9	61k9	36k5	36k5	36k5
RL029	–	2R2	2R2	–	–	–
RL044/48	3k3	3k3	3k3	3k3	3k3	3k3
RL051	270k	270k	270k	270k	270k	270k
RL056	6k34	8k66	8k66	6k34	6k34	6k34
RL057	26k1	27k4	56k2	47k5	47k5	56k2
RL066	–	2K2	2K2	–	–	–
RL082	59k	61k9	61k9	59k	59k	59k
RL084	–	–	–	–	–	–
RL092	4k7	4k7	4k7	4k7	4k7	4k7
RL129	2R2	–	–	2R2	2R2	2R2
RL211	6k8	6k8	6k8	6k8	6k8	6k8
RL214	–	–	–	–	–	–
ZOOM MODULE	–	–	–	–	–	–

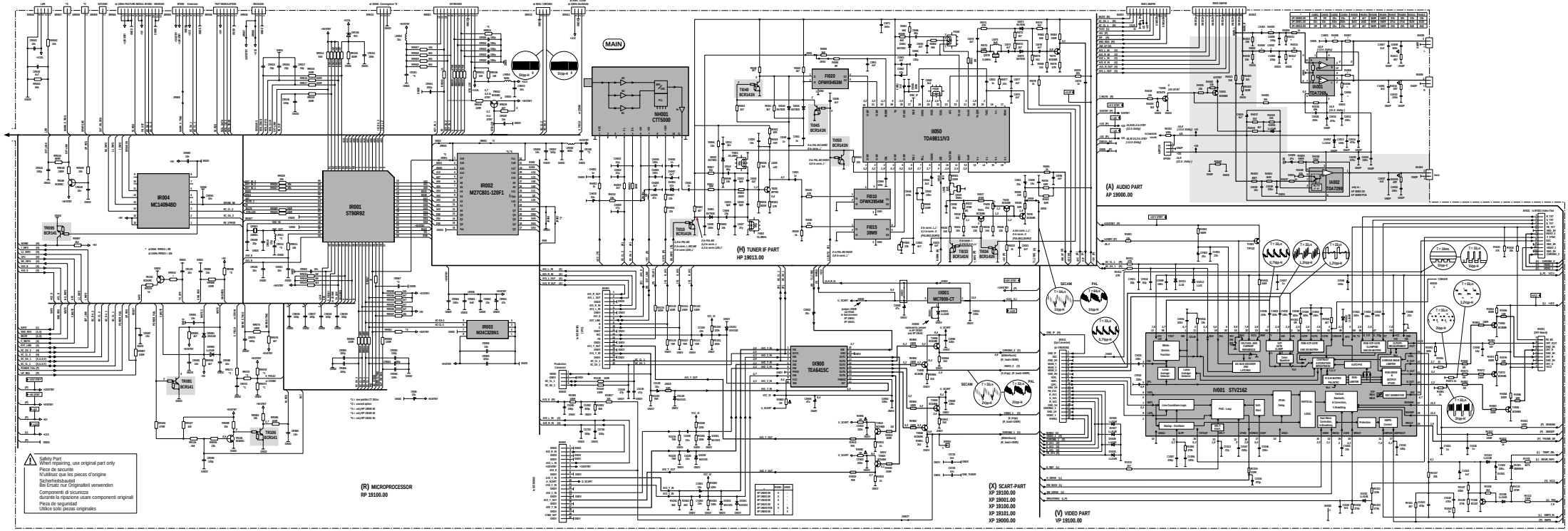
Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →

Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V →

X Inserted
– Not inserted

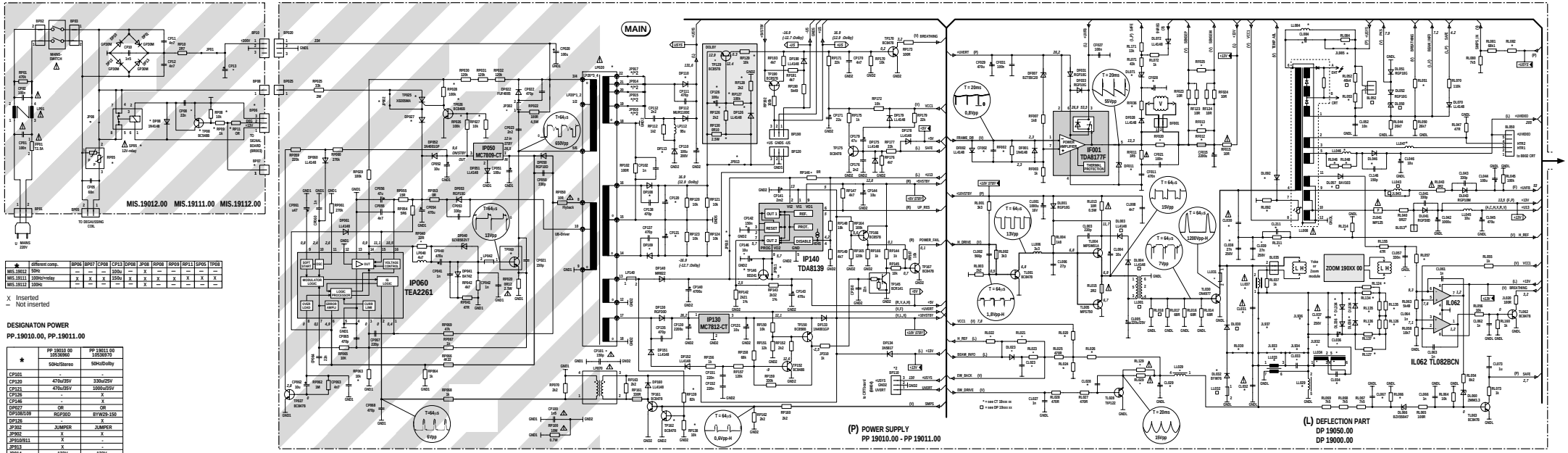
ICC19 100 Hz
First issue 09 / 97

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



ICC19 100 Hz
First issue 09 / 97

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



★	different comp.	BP05	BP07	CP08	CP13	DP08	JP08	RP08	RP09	RP11	SP05	TP08
MIS.19012	50Hz	–	–	–	100u	–	X	–	–	–	–	–
MIS.19111	100Hz/Hrelay	X	X	X	150u	X	X	X	X	X	X	X
MIS.19112	100Hz	–	–	–	–	–	X	–	–	–	–	–

X Inserted
– Not inserted

DESIGNATON POWER
PP.19010.00, PP.19011.00

★	PP 19010 00 10539080	PP 19011 00 10539070
	50Hz/Stereo	50Hz/Dolby
CP101	-	-
CP120	470u/35V	330u/25V
CP121	470u/35V	1000u/35V
CP126	-	X
CP146	-	X
DP027	OR	OR
DP108/109	RGP30D	BYW29-150
DP126	-	X
JP302	JUMPER	JUMPER
JP902	X	X
JP910/911	X	-
JP913	X	-
JP914	133V	133V
JP915	130V	130V
JP916	127V	127V
JP917	136V	136V
LP020	10536270	10536280
LP042	10206140	10206140
RP026/028	-	-
RP040	1/4W	1/4W
RP063	X	X
RP126/130	-	X
RP138	-	-
RP139	-	-
RP146	-	X
TP25/026	-	-
TP560	BUV48CF1	BUV48CF1
TP129	-	X
TP162	-	-

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello châssis collegata alla rete.
Parte del chassis conectada a la red.

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
Per la riparazione utilizzare solo componenti originali
Pieza de seguridad
Utilice solo piezas originales

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.
Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).
Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).
Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).
Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

□	Deflection - Basic Partlists	
	50Hz ZOOM	50Hz
	DP 19050 00 10 34 99 70	DP 19000 00 10 34 99 60
BL052	X	–
DL003/004	X	X
DL032	BYW76	BYW76
DL050	BZX85C22	BZX85C22
DL057	X	X
JL943	X	X
LL001	10 51 81 10	10 51 81 10
LL032	JUMPER	JUMPER
LL043	–	–
RL018	–	–
RL052	–	X

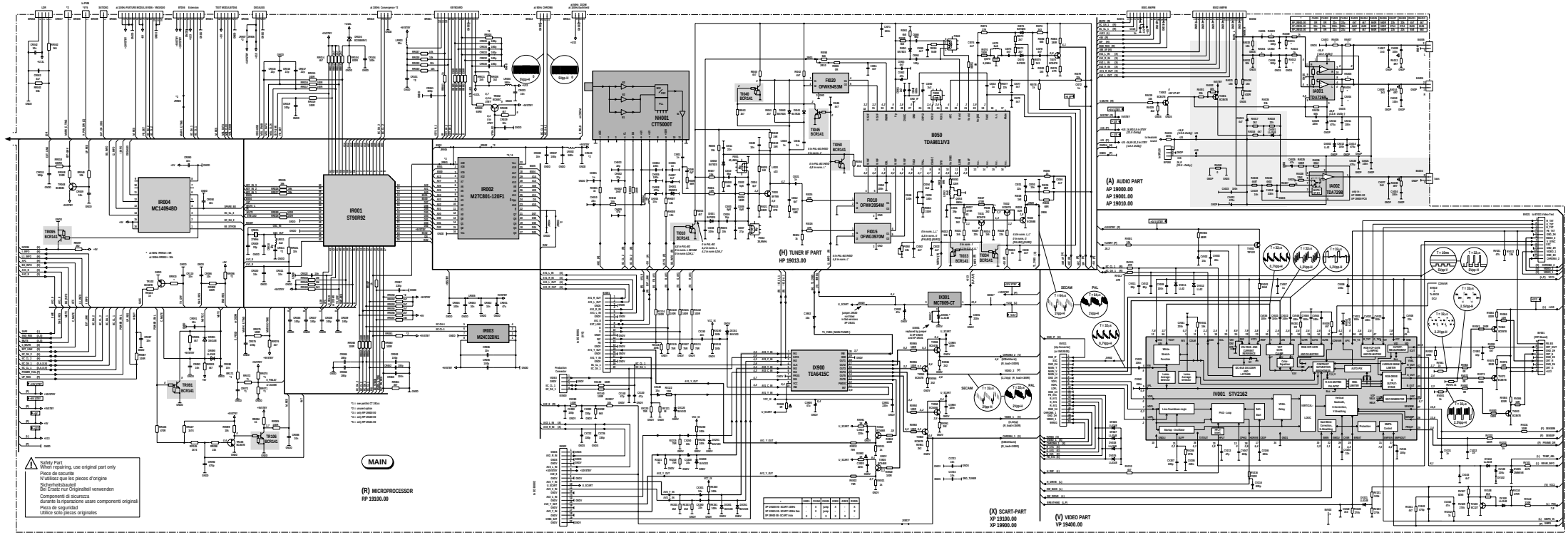
X Inserted
– Not inserted

*	Deflection - Picture Tube related Partlists			
	CT 19003 32 10 35 15 20 28"MP AK	CT 19032 37 10 39 10 10 28"SF INVAR 32"SF INVAR	CT 19005 31 10 351 08 90 25"SF INVAR 29"SF INVAR	CT 19006 31 10 35 18 40 33"MP AK
BL013	–	–	–	–
BL052	–	–	–	–
CF002	1n5	1n5	1n5	1n5
CF028	1u0	10u0	1u0	1u0
CL023	10n	10n	10n	10n
CL028	47n	47n	1n5	1n5
CL029	4u7	4u7	3u3	3u3
CL030	1n8/2KV	1n8/2KV	1n8/2KV	2n7/2KV
CL031	12n8/1K6V	12n8/1K6V	14n4/1K6V	14n4/1K6V
CL032	24n0/1K6V	24n0/1K6V	33n0/1K6V	33n0/1K6V
CL033	1u5/160V	1u5/160V	–	–
CL034	–	–	–	–
CL036	1u0	–	1u0	1u0
CL037	680v/400V	–	510v/250V	560v/250V
CL067	100n0	1u0	100n0	100n0
CL084	4n7/250V	4n7/250V	4n7/250V	4n7/250V
CL211	–	–	–	–
DF011	DTRANS 56.0V	DTRANS 56.0V	DTRANS 56.0V	DTRANS 56.0V
DL023	BAV103	BAV103	BAV103	BAV103
DL032	–	–	–	–
DL034/36	–	–	–	–
DL046	RGP10M	RGP10M	RGP10M	RGP10M
DL057	–	–	–	–
DL071	BZX55C27	BZX55B16	BZX55C27	BZX55C27
DL092	–	–	–	–
DL934/36	RGP10G	–	RGP10G	RGP10G
JL932	X	X	X	X
JL933	X	X	X	X
JL934	–	–	X	X
JL935	–	X	–	–
JL985	–	–	–	–

Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →
Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V →

*	Deflection - Picture Tube related Partlists			
	CT 19003 32 28"MP AK	CT 19032 37 28"SF INVAR 32"SF INVAR	CT 19005 31 25"SF INVAR 29"SF INVAR	CT 19006 31 33"MP AK
LL008	10 51 77 40	10 51 77 50	10 51 77 20	10 51 77 20
LL029	10 09 50 60	10 09 50 60	10 37 74 20	10 37 74 20
LL031	LFBEAD 90R	LFBEAD 90R	LFBEAD 90R	LFBEAD 90R
LL033	–	–	–	–
LL034	–	–	–	–
LL037	50 87 32 54	10 52 61 40	50 87 32 54	50 87 32 54
LL046	–	–	–	–
LL047	26u0	23u0	26u0	26u0
LL084	24u0	24u0	24u0	24u0
RF002	–	–	–	–
RF012	1R5	1R5	1R5	1R5
RF013	1R5	1R5	1R5	1R5
RF020	220R0	–	220R0	220R0
RF025	221R0	240R0	91R0	91R0
RF036	1K0	470R0	1K0	1K0
RL020	3k09	3k09	3k09	3k09
RL023	129k0	129k0	100k0	100k0
RL024	1k62	1k62	1k62	1k62
RL026	37k4	37k4	37k4	37k4
RL029	2R2	2R2	2R2	2R2
RL046/48	0R	0R	0R	0R
RL051	750k0	750k0	750k0	750k0
RL053	30k0	–	5k1	18K0
RL057	39k2	40k2	40k2	40k2
RL066	–	220k0	–	–
RL082	56k2	61k9	56k2	56k2
RL094	12R0	12R0	12R0	12R0
RL092	–	–	–	–
RL124/25	3K3	–	3K3	3K3
RL126/27	3K3	–	3K3	3K3
RL128	–	–	–	–
RL134/35	3K3	–	3K3	3K3
RL136/37	3K3	–	3K3	3K3
RL211	12k0	12k0	12k0	12k0
RL214	2k7	2k7	2k7	2k7
TL030	BUV48CRTH16	BUV48CRTH16	BUV48CRTH16	BUV48CFTH16
ZOOM	–	10 39 10 40		–

MAIN SCHEMATIC DIAGRAM - SCHEMA PLATINE PRINCIPALE - SCHALTUNG HAUPTPLATINE - SCHEMA PIASTRA PRINCIPALE - ESQUEMA PLATINA PRINCIPAL



RP C19
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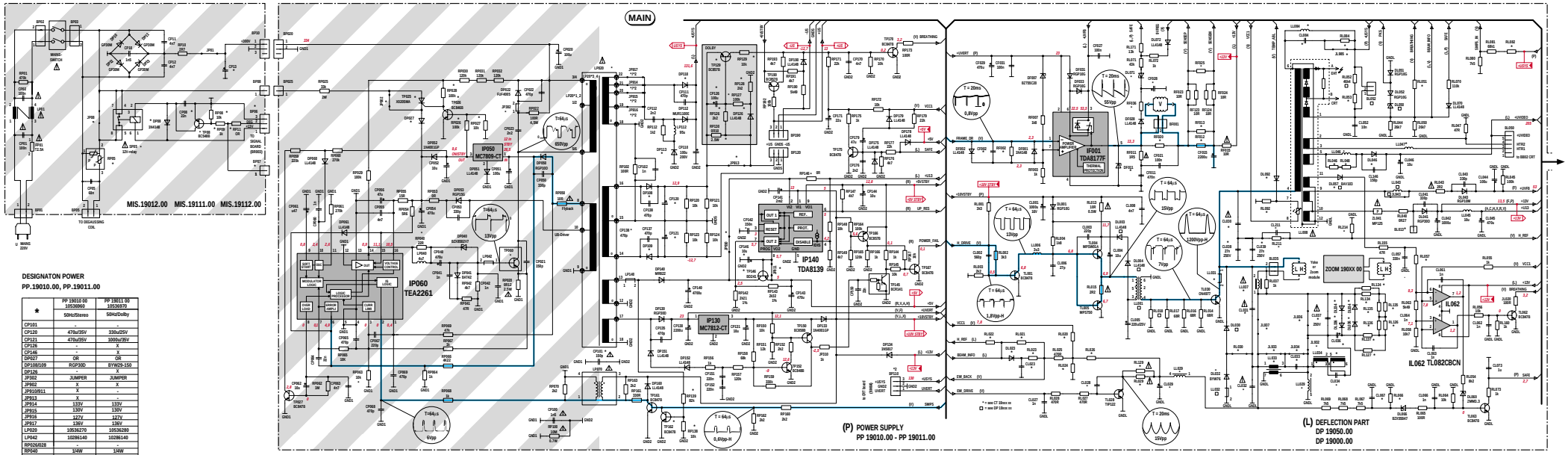
COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



DESIGNATON POWER
PP.19010.00, PP.19011.00

*	PP 19010 00 10536960	PP 19011 00 10536970
	50Hz/Stereo	50HzDolby
CP101	-	-
CP120	470uF/35V	330uF/25V
CP121	470uF/35V	1000uF/35V
CP126	-	X
CP146	-	X
DP027	OR	OR
DP108/109	RGP30D	BYW29-150
DP126	-	-
JP302	JUMPER	JUMPER
JP902	X	X
JP910/911	X	-
JP913	X	-
JP914	132V	132V
JP915	139V	139V
JP916	127V	127V
JP917	139V	139V
LP020	10536270	10536280
LP042	10286140	10286140
RP026/028	-	-
RP040	1/4W	1/4W
RP063	X	X
RP126/130	-	X
RP138	-	-
RP139	-	-
RP146	-	X
TP025/026	-	-
TP060	BUV48CFI	BUV48CFI
TP129	-	X
TP162	-	-

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello châssis collegata alla rete.
Parte del chassis conectada a la red.

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
Per la riparazione utilizzare solo componenti originali
Pieza de seguridad
Utilice solo piezas originales

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.
Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).
Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).
Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).
Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

□	Deflection - Basic Partlists	
	50Hz ZOOM DP 19050 00 10 34 99 70	50Hz DP 19000 00 10 34 99 60
BL052	X	–
DL003/04	X	X
DL052	BYW76	BYW76
DL050	BZX85C22	BZX85C22
DL057	X	X
JL943	X	X
LL001	10 51 81 10	10 51 81 10
LL032	JUMPER	JUMPER
LL043	–	–
RL018	–	–
RL052	–	X

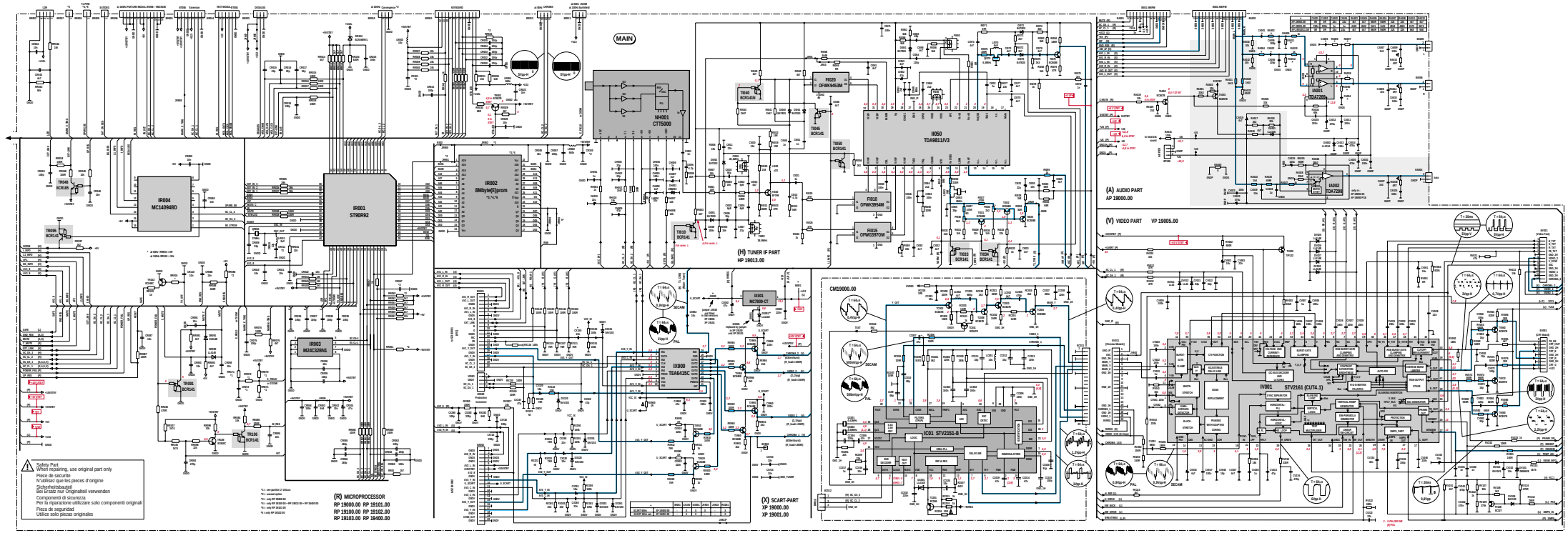
X Inserted
– Not inserted

*	Deflection - Picture Tube related Partlists			
	CT 19003 32 10 35 15 20 28"MP AK	CT 19032 37 10 39 10 10 28"SF INVAR 32"SF INVAR	CT 19005 31 10 51 08 90 25"SF INVAR 29"SF INVAR	CT 19006 31 10 35 18 40 33"MP AK
BL013	–	–	–	–
BL052	–	–	–	–
CF002	1n5	1n5	1n5	1n5
CF028	1u0	10u0	1u0	1u0
CL023	10n	10n	10n	10n
CL028	47n	47n	1n5	1n5
CL029	4u7	4u7	3u3	3u3
CL030	1n6/2KV	1n6/2KV	1n6/2KV	2n7/2KV
CL031	12n8/1KV	12n8/1KV	14n4/1K6V	14n4/1K6V
CL032	24n0/1KV	24n0/1KV	33n0/1K0V	33n0/1K0V
CL033	1u5/160V	1u5/160V	–	–
CL034	–	–	–	–
CL036	1u0	–	1u0	1u0
CL037	680n/400V	–	510n/250V	560n/250V
CL067	100n0	1u0	100n0	100n0
CL084	4n7/250V	4n7/250V	4n7/250V	4n7/250V
CL111	–	–	–	–
DF011	DTRANS 56.0V	DTRANS 56.0V	DTRANS 56.0V	DTRANS 56.0V
DL023	BAV103	BAV103	BAV103	BAV103
DL032	–	–	–	–
DL034/36	–	–	–	–
DL046	RGP10M	RGP10M	RGP10M	RGP10M
DL057	–	–	–	–
DL071	BZX55C27	BZX55B16	BZX55C27	BZX55C27
DL092	–	–	–	–
DL33/47/48	RGP10G	–	RGP10G	RGP10G
JL932	X	X	X	X
JL933	X	X	X	X
JL934	–	–	X	X
JL936	–	X	–	–
JL985	–	–	–	–

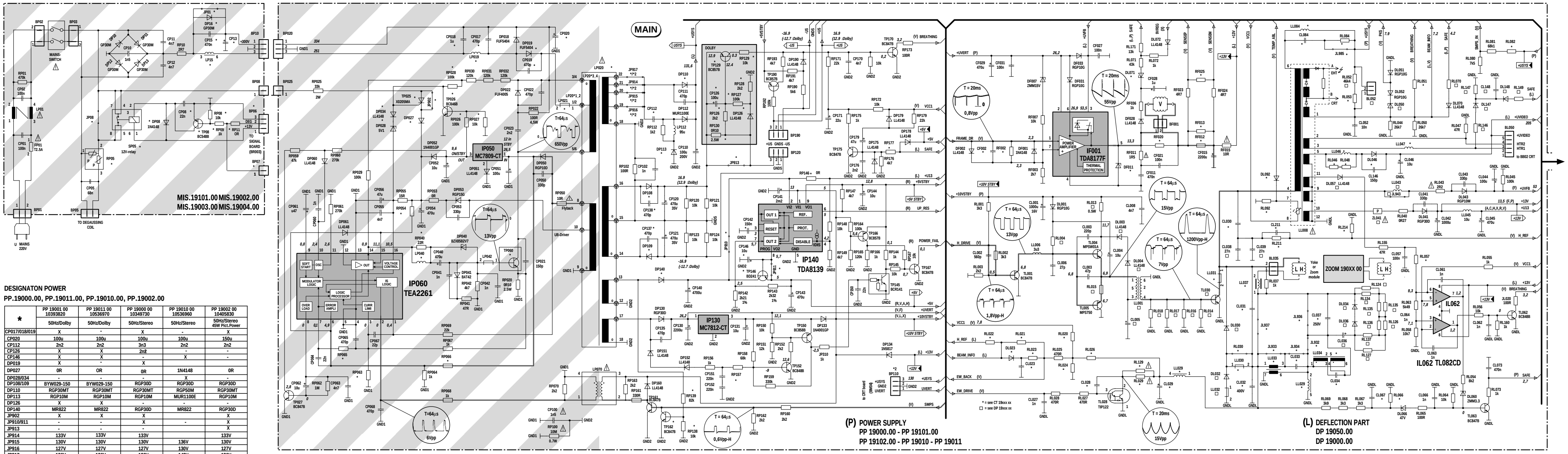
Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →
Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V →

*	Deflection - Picture Tube related Partlists			
	CT 19003 32 28"MP AK	CT 19032 37 28"SF INVAR 32"SF INVAR	CT 19005 31 25"SF INVAR 29"SF INVAR	CT 19006 31 33"MP AK
LL008	10 51 77 40	10 51 77 50	10 51 77 20	10 51 77 20
LL029	10 09 50 60	10 09 50 60	10 37 74 20	10 37 74 20
LL031	LFBEAD 90R	LFBEAD 90R	LFBEAD 90R	LFBEAD 90R
LL033	–	–	–	–
LL034	–	–	–	–
LL037	50 87 32 54	10 52 61 40	50 87 32 54	50 87 32 54
LL046	–	–	–	–
LL047	26u0	23u0	26u0	26u0
LL084	24u0	24u0	24u0	24u0
RF002	–	–	–	–
RF012	1R5	1R5	1R5	1R5
RF013	1R5	1R5	1R5	1R5
RF020	220R0	–	220R0	220R0
RF025	221R0	240R0	91R0	91R0
RF036	1K0	470R0	1K0	1K0
RL020	3k09	3k09	3k09	3k09
RL023	100k0	120k0	100k0	100k0
RL024	1k62	1k62	1k62	1k62
RL026	37k4	37k4	37k4	37k4
RL029	2R2	2R2	2R2	2R2
RL034/48	0R	0R	0R	0R
RL051	750k0	750k0	750k0	750k0
RL053	30k0	–	5k1	18K0
RL057	39k2	40k2	40k2	40k2
RL066	–	220k0	–	–
RL082	59k2	61k9	59k2	59k2
RL084	12R0	12R0	12R0	12R0
RL092	–	–	–	–
RL124/25	3K3	–	3K3	3K3
RL126/27	3K3	–	3K3	3K3
RL129	–	–	–	–
RL134/35	3K3	–	3K3	3K3
RL136/37	3K3	–	3K3	3K3
RL211	12k0	12k0	12k0	12k0
RL214	2k7	2k7	2k7	2k7
TL030	BUV48CFITH16	BUV48CFITH16	BUV48CFITH16	BUV48CFITH16
ZOOM	–	10 39 10 40		–

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



DESIGNATON POWER

PP.19000.00, PP.19011.00, PP.19010.00, PP.19002.00

*	PP 19001 00 10393820	PP 19011 00 10536970	PP 19000 00 10349730	PP 19010 00 10536960	PP 19002 00 10405830
	50Hz/Dolby	50Hz/Dolby	50Hz/Stereo	50Hz/Stereo	50Hz/Stereo 45W Pict.Power
CP017/018/019	X	-	X	-	X
CP020	100u	100u	100u	100u	150u
CP112	2n2	2n2	3n3	2n2	2n2
CP126	X	X	2n2	-	-
CP146	X	X	-	X	-
DP019	X	-	X		
DP027	0R	OR	0R	1N4148	0R
DP028/034	-	-	-	X	-
DP108/109	BYW029-150	BYW029-150	RGP30D	RGP30D	RGP30D
DP110	RGP30MT	RGP30MT	RGP30MT	RGP50M	RGP30MT
DP113	RGP10M	RGP10M	RGP10M	MUR1100E	RGP10M
DP126	X	X	-	-	-
DP140	MR822	MR822	RGP30D	MR822	RGP30D
JP902	X	X	X		X
JP910/911	-	-	X	-	X
JP913	-	-	-		X
JP914	133V	133V	133V		133V
JP915	130V	130V	130V	136V	130V
JP916	127V	127V	127V	130V	127V
JP917	136V	136V	136V	142V	136V
LP019	180u	X	180u	105u	180u
LP020	10385280	10536280	10378130	10459670	10378130
LP020	10385280	10536280	10378130	10459670	10378130
LP021	X	-	X	X	X
LP040	4u7	4u7	4u7	2u2	4u7
RP026/028	-	-	-	X	-
RP027	-	-	-	X	-
RP040	1/4W	1/4W	1/4W	1/2W	1/4W
RP054	5R6	5R6	5R6	6R8	5R6
RP063	10k	10k	10k	47k	10k
RP065	10k	12k1	10k	12k1	10k
RP066	3k48	3k57	3k48	3k57	3k48
RP126/128	X	X	-	-	-
RP127/129	X	X	-	-	-
RP130	X	X	-	-	-
RP138/139	-	-	-	X	-
RP146	X	X	-	X	-
RP157	150k	150k	150k	130k	150k
RP177	22k	22k	22k	130k	22k
TP025/026	-	-	X	X	-
TP060	BUV48CFI	BUV48CFI	BUV48CFI	BUL810TH	BUV48CFI
TP129	X	X	-	X	-
TP146	X	X	-	X	-
TP162	-	-	-	X	-

X Inserted
– Not inserted

*	different comp.	BP06	BP07	CP08	CP13	CP15	DP08	DP16	JP01	JP08	LP15	RP05	RP08	RP09	SP05	TP08
MIS.19101	100Hz/+relay	X	X	X	150u	X	X	X	—	—	1.5mH	18R	X	X	X	X
MIS.19002	50Hz	—	—	—	100u	X	—	X	—	X	3mH	25R	—	—	—	—
MIS.19003	50Hz/+relay	X	X	X	100u	X	X	X	—	—	3mH	18R	X	X	X	X
MIS.19004	50Hz/45W Pict.Pow.	—	—	—	—	X	—	X	—	X	3mH	25R	—	—	—	—
MIS.19012	50Hz	—	—	—	100u	—	—	—	X	X	—	25R	—	—	—	—
MIS.19111	100Hz/+relay	X	X	X	150u	—	X	—	X	—	—	18R	X	X	X	X

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello châssis collegata alla rete.
Parte del chassis conectada a la red.

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.

Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).

Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).

Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).

Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
durante la ripazione usare componenti originali
Pieza de seguridad
Utilice solo piezas originales

Deflection - Basic Partlists		
□	50Hz ZOOM	50Hz
	DP 19050 00	DP 19000 00
	10 34 99 70	10 34 99 60
BL052	X	—
CL005	220u/25V	220u/25V
CL036	—	2u2/250V
CL038	27n	27n
CL039	27n	27n
CL148	—	—
DL003/04	X	X
DL030	DTV32F-1500	DTV32F-1500
DL032	BYW76	BYW76
DL034/036	—	RGP10G
DL050	BZX85C30	BZX85C30
DL057	X	X
DL147/148	—	—
JL943	X	X
LL001	10 51 81 10	10 51 81 10
LL030	—	—
LL032	Jumper	Jumper
LL043	—	—
RF015	10R	10R
RL004	1k8	1k8
RL013	10R	10R
RL014	68R	68R
RL015	2R2	2R2
RL016/17	68R	68R
RL01	-	-
RL070	33k	33k
RL071	43k	43k
RL124/127	—	7k5
RL134/137	—	7k5
RL146	—	—
RL147	—	—
RL149	—	—
TL030	BUV48CFITH16	BUV48CFITH16
ZL041	MP125	MP125

Deflection - Picture Tube related Partlists			
*	CT 19005 31	CT 19003 32	CT 19031 37
	10 51 08 90	10 35 15 20	10 44 62 60
	50Hz 25"SF-29"SF 4/3	50Hz 25-28"MP 4/3	50Hz ZOOM 28"SF-32" 16/9
CF002	1n5	1n5	1n5
CL023	10n	10n	10n
CL028	1n	47n	47n
CL029	3u3/63V	4u7/160V	4u7/160V
CL030	1n9/2KV	1n9/2KV	1n9/2K0V
CL031	14n4/1K6V	12n8/1K6V	12n8/1K6V
CL032	33n/400V	24n/400V	24n/400V
CL033	—	1u5/160V	1u5/160V
CL034	—	—	—
CL037	510n/250V	560n/250V	—
CL067	—	100n/100V	100n/100V
CL084	4n7/250V	4n7/250V	4n7/250V
CL211	—	—	—
DF011	10 35 18 80	10 35 18 80	10 35 18 80
DL023	BAV103	BAV103	BAV103
DL046	RGP10M	RGP10M	RGP10M
DL071	BZX55C33	BZX55C33	BZX55B11
DL092	—	—	—
JL932	X	X	X
JL933	X	X	X
JL934	X	—	—
JL936	—	—	X
JL937	—	—	—
JL985	—	—	—
LL008	10 51 77 20	10 51 77 40	10 51 77 50
LL029	10 37 74 20	10 09 50 60	10 09 50 60
LL030	—	—	—
LL031	LFBEAD 90R	LFBEAD 90R	LFBEAD 90R
LL033	—	—	—
LL034	—	—	—
LL037	24u	24u	24u
LL046	—	—	—
LL047	26u	26u	23u
LL084	24u	24u	24u

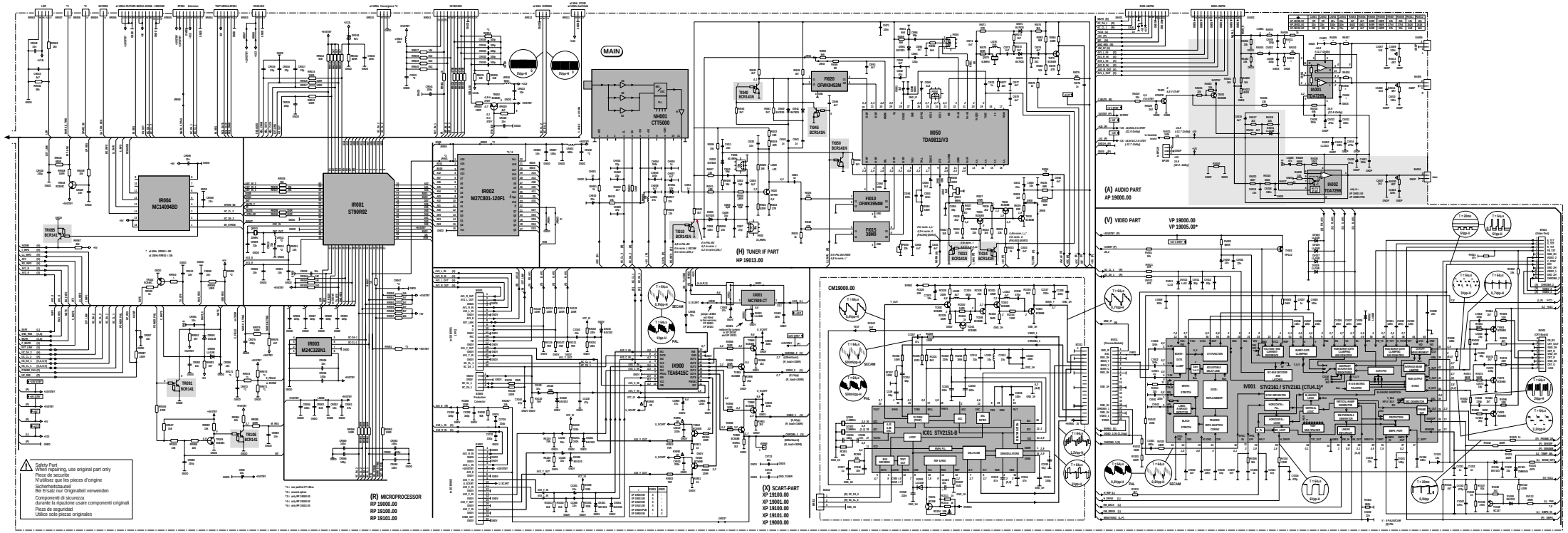
Deflection - Picture Tube related Partlists			
*	CT 19005 31	CT 19003 32	CT 19031 37
	10 51 08 90	10 35 15 20	10 44 62 60
	50Hz 25"SF-29"SF 4/3	50Hz 25-28"MP 4/3	50Hz ZOOM 28"SF-32" 16/9
RF002	—	—	—
RF012	1R5	1R5	1R5
RF013	1R5	1R5	1R5
RF020	220R	220R	—
RF025	91R	221R	240R
RL020	3k09	3k09	3k09
RL021	—	—	—
RL023	100k	120k	120k
RL024	1k62	1k82	1k62
RL026	37k4	37k4	37k4
RL029	2R2	2R2	2R2
RL046/48	0R	0R	0R
RL051	750k	750k	750k
RL053	5k1	30k	8k2
RL057	40k2	39k2	40k2
RL066	1k8	—	—
RL082	56k2	56k2	61k9
RL084	12R	12R	12R
RL092	—	—	—
RL129	—	—	—
RL211	12k	12k	12k
RL214	2k7	2k7	2k7
ZOOM MODULE	—	—	10 39 10 40

Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →

Nota : Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V

X Inserted
– Not inserted

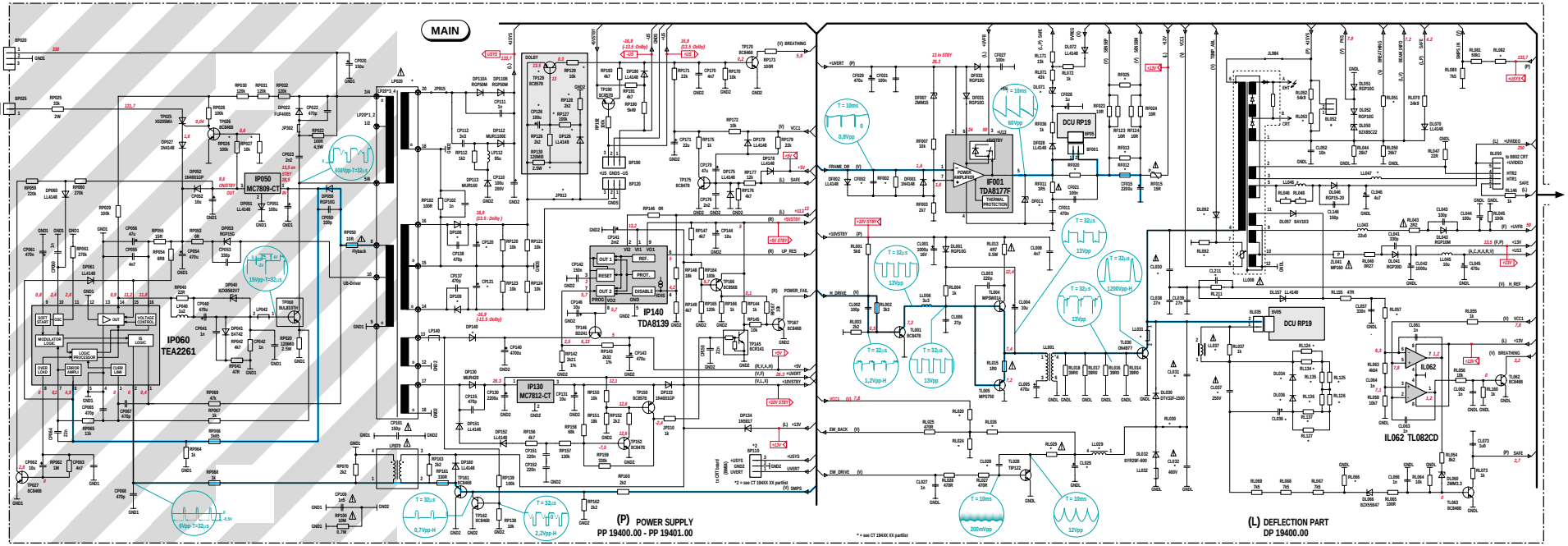
COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



MAIN SCHEMATIC DIAGRAM - SCHEMA PLATINE PRINCIPALE - SCHALTUNG HAUPTPLATINE - SCHEMA PIASTRA PRINCIPALE - ESQUEMA PLATINA PRINCIPAL

CONVERGENCE UNIT POWER SUPPLY
ALIMENTATION PLATINE DE CONVERGENCE
DIGITAL CONVERGENCE UNIT NETZTEIL
ALIMENTAZIONE CONVERGENCE UNIT
ALIMENTACIÓN CONVERGENCE UNIT

PS. RP19.00



DESIGNATON POWER
PP.19400.00, PP.19401.00

★	PP 19400 00 10530090 100Hz/Stereo	PP 19401 00 10534010 100Hz/Dolby
CP120	470u/35V	330u0/25V
CP121	470u/35V	1M00/25V
CP126	-	X
DP108/109	RGP30D	BYW029-150
DP126	X	-
DP140	BYW029-150	BYV63-150
JP913	X	-
LP020	10549750	10549740
RP126/128	-	X
RP127/129	-	X
RP130	-	X
TP129	-	X

X Inserted
– Not inserted

Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteils.
Parte dello châssis collegata alla rete.
Parte del chassis conectada a la red.

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.

Attention :
Mesure dans la partie primaire de l'alimentation
- Utiliser la masse du bloc alimentation (GND1).

Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).

Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).

Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

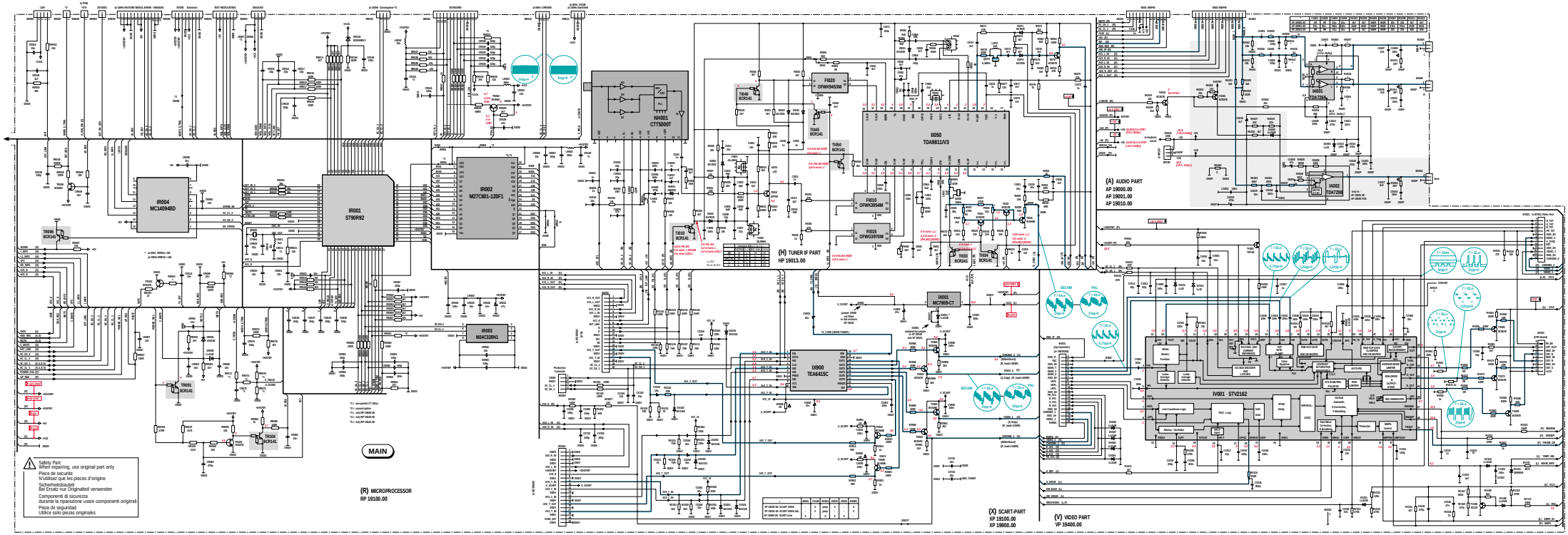
Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
durante la riparazione usare componenti originali
Pieza de seguridad
Utilice solo piezas originales

★	Deflection - Basic Partlists 100Hz CT 19400 34 10 53 32 90
CF002	680p/50V
CL028	1n/100V
CL029	3n3/63V
CL030	1n8/2kV
CL031	10n/1kV
CL032	22n/400V
CL036	2n2/250V
CL037	510n/250V
CL211	470p/50V
DF011	BZW04-4B 56V
DL034-036	BYT01-200 200V
DL071	BZX55C20
DL092	1N4148
LL008	DST-GDS35
LL029	130u0H
LL030	900HM 50MHz
LL031	WIREBARE
LL037	9u0H
LL046	22u0H
LL047	13u0H
RF002	10k
RF012	1R
RF013	1R21
RF020	270R

★	Deflection - Basic Partlists 100Hz CT 19400 34 10 53 32 90
RF025	100R
RL071	43k
RL020	7k15
RL024	61k9
RL026	100R
RL029	2R2
RL046	3k3
RL048	3k3
RL051	270k
RL053	1k62
RL057	60k4
RL066	1k74
RL082	59k
RL082	4k7
RL124	7k5
RL125	7k5
RL126	7k5
RL127	7k5
RL134	7k5
RL135	7k5
RL136	7k5
RL137	7k5
RL211	6k8
RL030	2R2

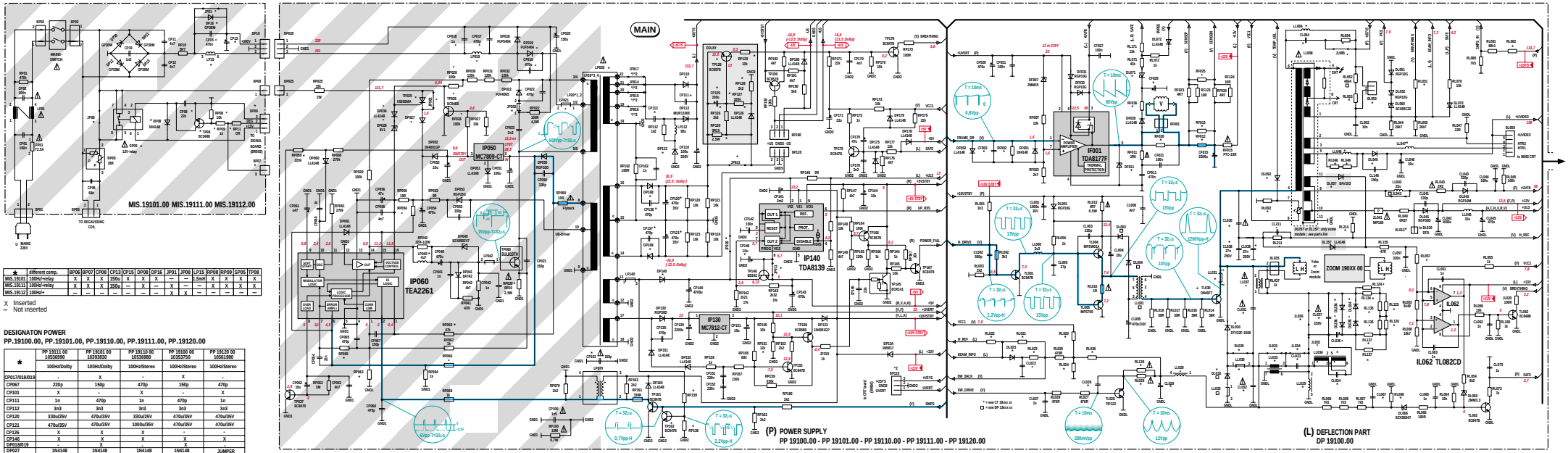
Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19400 34 Usys 134V →
Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19400 34 Usys 134V →

MAIN SCHEMATIC DIAGRAM - SCHEMA PLATINE PRINCIPALE - SCHALTUNG HAUPTPLATINE - SCHEMA PIASTRA PRINCIPALE - ESQUEMA PLATINA PRINCIPAL



RP C19
First issue 07 / 98

COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



★	different comp.	BP06	BP07	CP08	CP13	CP15	DP08	DP16	JP01	JP08	LP15	RP08	RP09	SP05	TP08
MIS.19101	100Hz/+relay	X	X	X	150u	X	X	X	—	—	1.5mH	X	X	X	X
MIS.19111	100Hz/+relay	X	X	X	150u	—	X	—	X	—	—	X	X	X	X
MIS.19112	100Hz/+	—	—	—	—	—	—	—	X	X	—	—	—	—	—

X Inserted
– Not inserted

DESIGNATON POWER
PP.19100.00, PP.19101.00, PP.19110.00, PP.19111.00, PP.19120.00

★	PP 19111 00 10536990	PP 19101 00 10536930	PP 19110 00 10536980	PP 19100 00 10353750	PP 19120 00 10561380
	100Hz/Dolby	100Hz/Dolby	100Hz/Stereo	100Hz/Stereo	100Hz/Stereo
CP0170/0180/0190	-	X	-	X	-
CP067	220p	150p	470p	150p	470p
CP101	X	-	X	-	X
CP111	1n	470p	1n	470p	1n
CP112	3n3	3n3	3n3	3n3	3n3
CP120	330u/25V	470u/35V	330u/25V	470u/35V	470u/35V
CP121	470u/25V	470u/35V	1000u/35V	470u/35V	470u/35V
CP126	X	X	X	-	-
CP146	X	X	X	X	X
DP018/019	-	X	-	-	-
DP027	1N4148	1N4148	1N4148	1N4148	JUMPER
DP028/034	-	X	X	X	-
DP108/109	BYW029-150	BYW029-150	-	RGP30D	RGP30D
DP110	RGP50M	RGP50M	RGP50M	RGP50M	RGP50M
DP113	MUR160	MUR1100E	MUR110E	MUR1100E	MUR160
DP126	X	X	-	-	-
DP140	BYW29-150	BYW3-150	MR822	MR822	MR822
JP302	X	JUMPER	X	JUMPER	X
JP902	-	-	-	-	X
JP910/911	-	-	-	-	-
JP913	-	-	-	X	X
JP914	139V	139V	139V	139V	139V
JP915	136V	136V	136V	136V	136V
JP916	130V	130V	130V	130V	130V
JP917	142V	142V	142V	142V	142V
LP019	-	100u	-	100u	100u
LP020	10397920	10397920	10540750	10459670	10540720
LP021	-	X	-	X	-
LP040	4u7	2u2	4u7	2u2	4u7
LP042	JUMPER	X	JUMPER	X	JUMPER
RP026/028	X	X	X	X	-
RP054	6R8	6R8	6R8	6R8	6R8
RP063	-	47k	-	47k	-
RP065	11k	12k7	11k	12k7	11k
RP066	4k22	4k22	3k65	4k22	3k65
RP126/128	X	X	X	-	-
RP127/129	X	X	X	-	X
RP130	X	X	X	-	-
RP138	22k	10k	24k	10k	24k
RP139	220k	82k	274k	82k	270k
RP151	18k	12k	18k	12k	18k
TP025/026	X	X	X	X	-
TP129	X	X	X	X	-
TP162	-	X	X	X	X

X Inserted
– Not inserted

Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Componenti di sicurezza
Per la riparazione utilizzare solo componenti originali
Piece de seguridad
Utilice solo piezas originales

Note :
Power Supply primary circuit measurements.
- Use only (GND1) connection point.

Attention :
Mesure dans le bloc alimentation
- Utiliser la masse du bloc alimentation (GND1).

Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (GND1).

Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (GND1).

Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (GND1).

Use isolating mains transformer
Utilise un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizar un transformador aislador de red
Utilizzare un transformatore per isolarvi dalla rete

	Deflection - Basic Partlists
□	100Hz DP 19100 00 10 34 99 80
DL003/004	–
DL032	BYT01-400
DL003/004	BYT01-200
JL943	–
LL001	10 46 87 60
LL001	10 25 84 40
RL052	✕

X Inserted
– Not inserted

*	CT 19103 34 10 55 60 10 28"MP AK	CT 19105 37 10 35 15 30 28"MP INVAR 25"SF INVAR 29"SF INVAR	CT 19152 37 10 52 06 10 25"SF INVAR 29"SF INVAR MM Version	CT 19155 37 10 56 20 10 28"SF INVAR SS-Yoke	CT 19156 37 10 56 19 90 33"MP INVAR 37"MP INVAR	CT 19111 34 10 44 48 10 28"SF INVAR 32"SF INVAR IM Version	CT 19151 34 10 52 05 00 28"SF INVAR 32"SF INVAR MM Version	CT 19251 40 10 57 85 50 28"SF INVAR 32"SF INVAR IM/MM+PVM
BL013	–	–	–	–	–	–	X	X
BL052	–	X	X	X	X	X	X	X
CF002	680p	680p	680p	680p	680p	2n2	2n2	2n2
CF028	1u0	1u0	1u0	1u0	1u0	1u0	1u0	1u0
CL023	–	–	–	–	–	–	–	–
CL028	1n0	1n0	1n0	1n0	1n0	56n	56n	56n
CL029	3u3	3u3	3u3	3u3	3u3	470n0	470n0	470n0
CL030	1n8/2KV	1n8/2KV	1n8/2KV	1n8/2KV	1n8/2KV	2n7/2KV	2n7/2KV	2n7/2KV
CL031	11n6/2KV	11n6/2KV	11n6/2KV	12n4/2KV	11n6/2KV	11n6/2KV	11n6/2KV	11n6/2KV
CL032	27n0/400V	27n0/400V	27n0/400V	22n0/1KV	27n0/400V	33n0/1KV	33n0/1KV	33n0/1KV
CL033	–	–	–	–	–	680n/400V	680n/400V	680n/400V
CL034	–	12n/400V	12n/400V	12n/400V	–	12n/400V	12n/400V	12n/400V
CL036	–	–	2u2	2u2	2u2	2u2	2u2	–
CL037	410n0/400V	410n0/400V	410n0/400V	410n0/400V	460n0/400V	560n/250V	560n/250V	–
CL067	–	–	–	–	–	100n0	100n0	100n0
CL084	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V	3n9/400V
CL211	470p0	470p0	470p0	470p0	470p0	470p0	470p0	470p0
DF011	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V	DTRANS 68.0V
DL023	–	–	–	–	–	–	–	–
DL032	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600	BYR29F-600
DL034/36	–	EGP10D	EGP10D	EGP10D	EGP10D	EGP10D	EGP10D	–
DL046	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E	MUR1100E
DL057	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103	BAV103
DL157	LL4148	LL4148	–	–	–	LL4148	LL4148	–
DL671	BZX55C33	BZX55C33	BZX55C33	BZX55C16	BZX55C33	BZX55C24	BZX55C24	BZX55C24
DL092	–	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148	1N4148
DL334/36	–	–	–	–	–	–	–	–
JL932	X	–	–	–	X	–	–	–
JL933	X	X	X	X	X	–	–	–
JL934	X	X	X	X	X	–	–	–
JL936	–	–	–	–	–	–	–	X
JL985	–	X	X	X	X	X	X	X

Note : the last two numbers of the CT xxxx part list name indicates the system voltage.
e.g. CT 19005 31 Usys 131V →
Nota: Los dos últimos números de la denominación CT xxxx, indica la tensión Usys
e.g. CT 19005 31 Usys 131V →

*	CT 19103 34 28"MP AK	CT 19105 37 28"MP INVAR 25"SF INVAR 29"SF INVAR	CT 19152 37 25"SF INVAR 29"SF INVAR MM Version	CT 19155 37 29"SF INVAR SS-Yoke	CT 19156 37 33"MP INVAR 37"MP INVAR	CT 19111 34 28"SF INVAR 32"SF INVAR IM Version	CT 19151 34 28"SF INVAR 32"SF INVAR MM Version	CT 19251 40 28"SF INVAR 32"SF INVAR IM/MM+PVM
LL008	10 55 11 70	10 51 08 70	10 51 08 70	10 51 08 70	10 51 08 70	10 52 03 30	10 52 03 30	10 57 67 40
LL029	10 15 42 70	10 15 42 70	10 15 42 70	10 15 42 70	10 15 42 70	10 34 76 50	10 34 76 50	10 34 76 50
LL031	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER	JUMPER
LL033	–	–	–	–	–	10 53 27 30	10 53 27 30	10 53 27 30
LL034	–	10 15 32 70	10 15 32 70	10 15 42 70	–	10 15 32 70	10 15 32 70	10 15 32 70
LL037	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 30	10 51 82 50	10 51 82 50	10 51 82 50
LL046	22u0	22u0	22u0	22u0	22u0	22u0	22u0	22u0
LL047	16u5	13u5	13u5	13u5	13u5	13u5	13u5	13u5
LL084	26u5	26u5	26u5	26u5	26u5	26u5	26u5	26u5
RF002	10k	10k	10k	10k	10k	10k	10k	10k
RF012	1R0	1R0	1R0	1R0	1R0	1R5	1R5	1R5
RF013	1R0	1R0	1R0	1R5	1R0	1R82	1R82	1R82
RF020	270R0	270R0	270R0	–	270R0	–	–	–
RF025	43R0	43R0	43R0	82R0	43R0	150R0	150R0	150R0
RF036	1k0	1K0	1k0	1k0	1k0	1K0	1K0	1K0
RL020	7k15	7k15	7k15	6K49	7k15	4k64	4k64	4k64
RL023	–	–	–	–	–	–	–	–
RL024	4k02	4k02	4k02	46k3	4k02	2k67	2k67	2k67
RL026	61k9	61k9	61k9	121K0	61k9	36k5	36k5	36k5
RL029	2R2	2R2	2R2	2R2	2R2	–	–	–
RL046/48	3k3	3k3	3k3	3k3	3k3	3k3	3k3	3k3
RL051	270k0	270k0	270k0	270k0	270k0	270k0	270k0	270k0
RL053	33k2	8k66	8k66	8k66	8k66	6k34	6k34	9K09
RL057	56k2	56k2	56k2	56k2	56k2	56k2	56k2	56k2
RL066	4k22	4k22	4k22	4k22	4k22	–	–	–
RL082	59k0	61k9	61k9	61k9	61k9	59k0	59k0	64K9
RL094	27R0	–	–	–	–	–	–	–
RL092	–	4k7	4k7	4k7	4k7	4k7	4k7	4k7
RL124/25	–	7k5	7k5	7k5	7k5	7k5	7k5	–
RL126/27	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL129	–	–	–	–	–	2R2	2R2	2R2
RL134/35	–	7k5	7k5	7k5	7k5	7k5	7k5	–
RL136/37	–	7K5	7K5	7K5	7K5	7K5	7K5	–
RL211	6k8	6k8	6k8	6k8	6k8	6k8	6k8	6k8
RL214	–	–	–	BAV103	–	–	–	–
TL030	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977	ON4977
ZOOM	–	–	–	–	–	–	–	–

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ICC19 100 Hz
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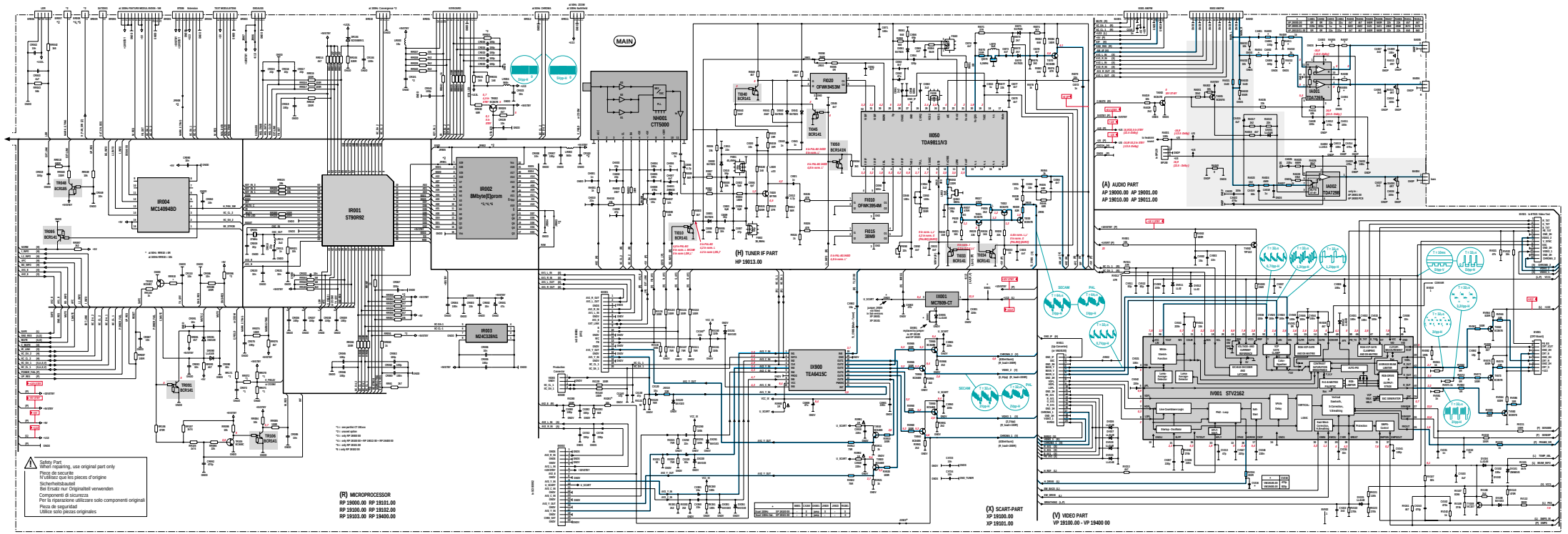
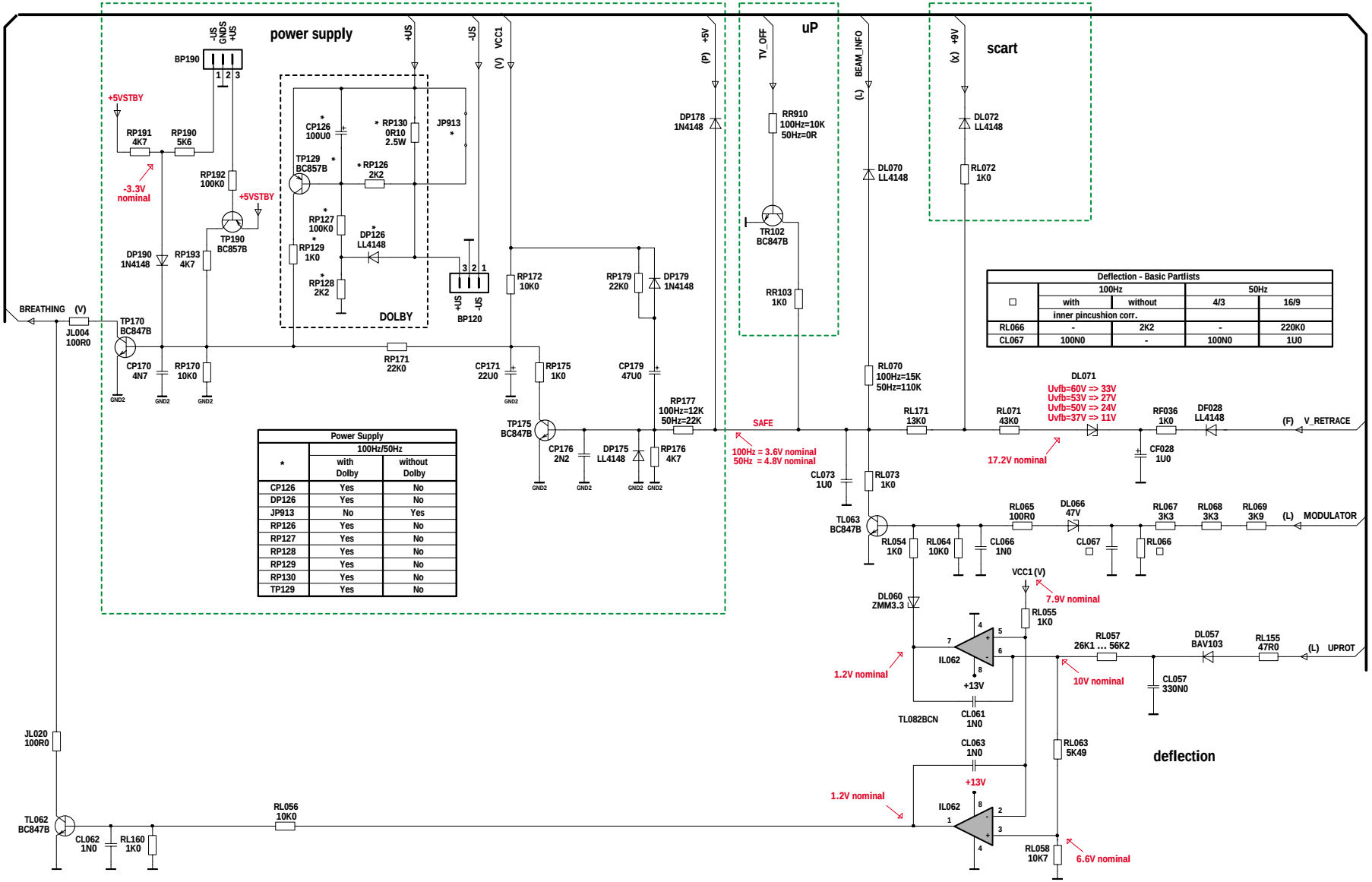
COMPLETE PCB DIAGRAM - SCHEMA PLATINE PRINCIPALE EQUIPEE - SCHALTUNG LEITERPLATTE KPL - SCHEMA PIASTRA COMPLETA - ESQUEMA PLATINA EQUIPADA



ICC19 100 Hz
First issue 09 / 97

Updated 11 / 98

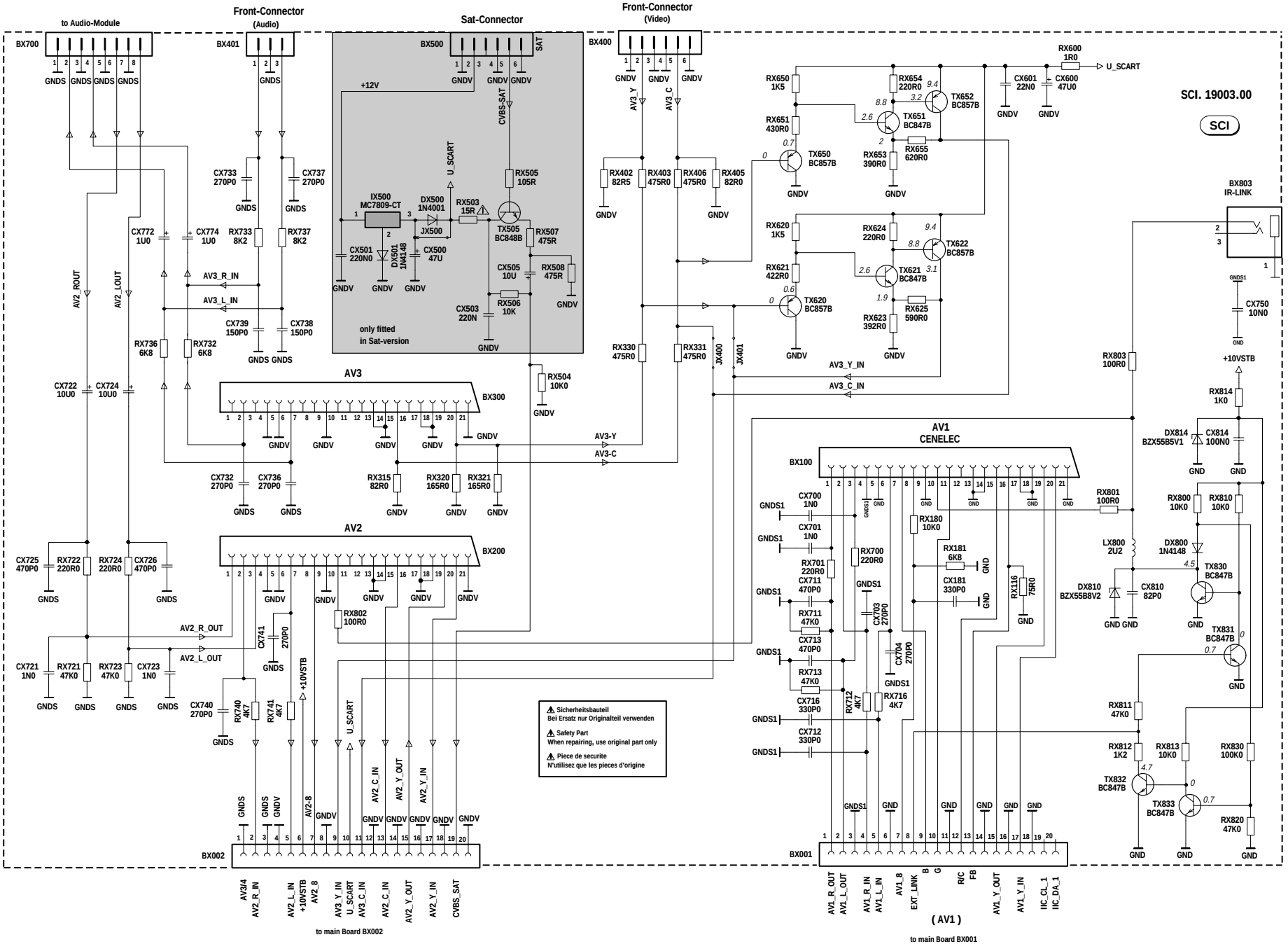
SAFETY CIRCUIT - CIRCUITS DE SECURITES - SCHUTZSCHALTUNG - CIRCUITO DI PROTEZIONE - CIRCUITO DE SEGURIDADES

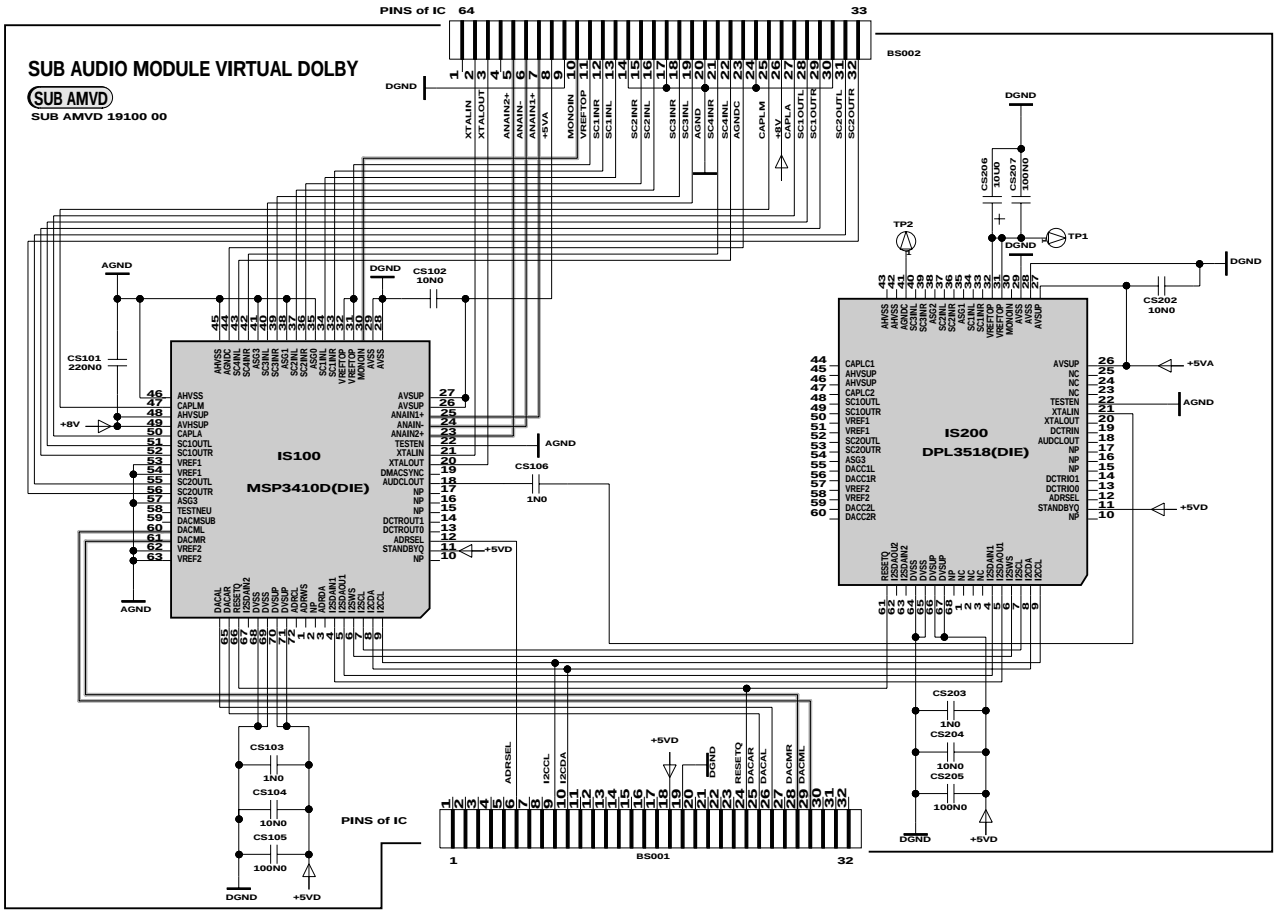


Power Supply		
*	100Hz/50Hz	
	with Dolby	without Dolby
CP126	Yes	No
DP126	Yes	No
JP913	No	Yes
RP126	Yes	No
RP127	Yes	No
RP128	Yes	No
RP129	Yes	No
RP130	Yes	No
TP129	Yes	No

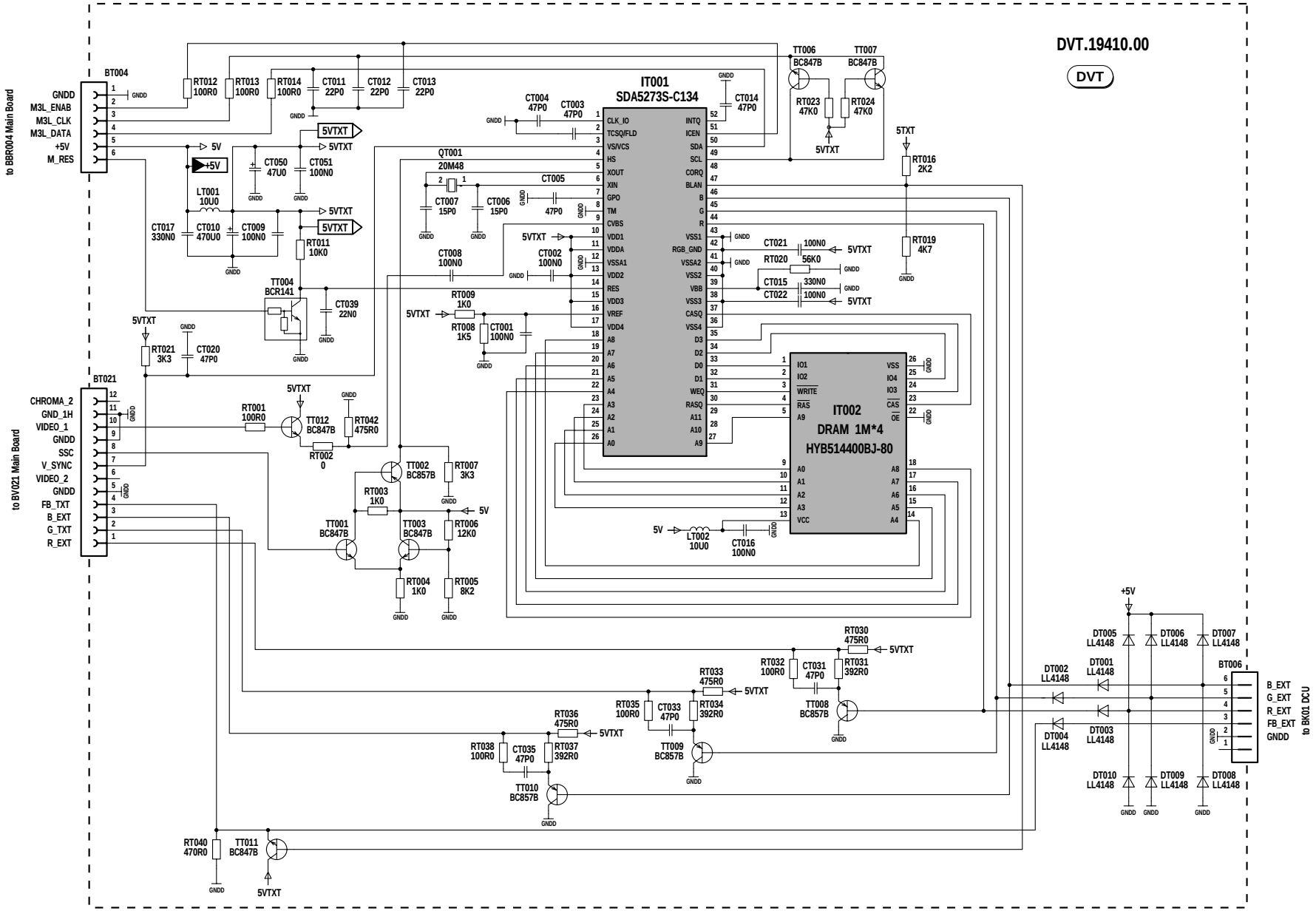
Deflection - Basic Partlists				
□	100Hz		50Hz	
	with inner pincushion corr.	without	4/3	16/9
RL066	-	2K2	-	220K0
CL067	100N0	-	100N0	1U0

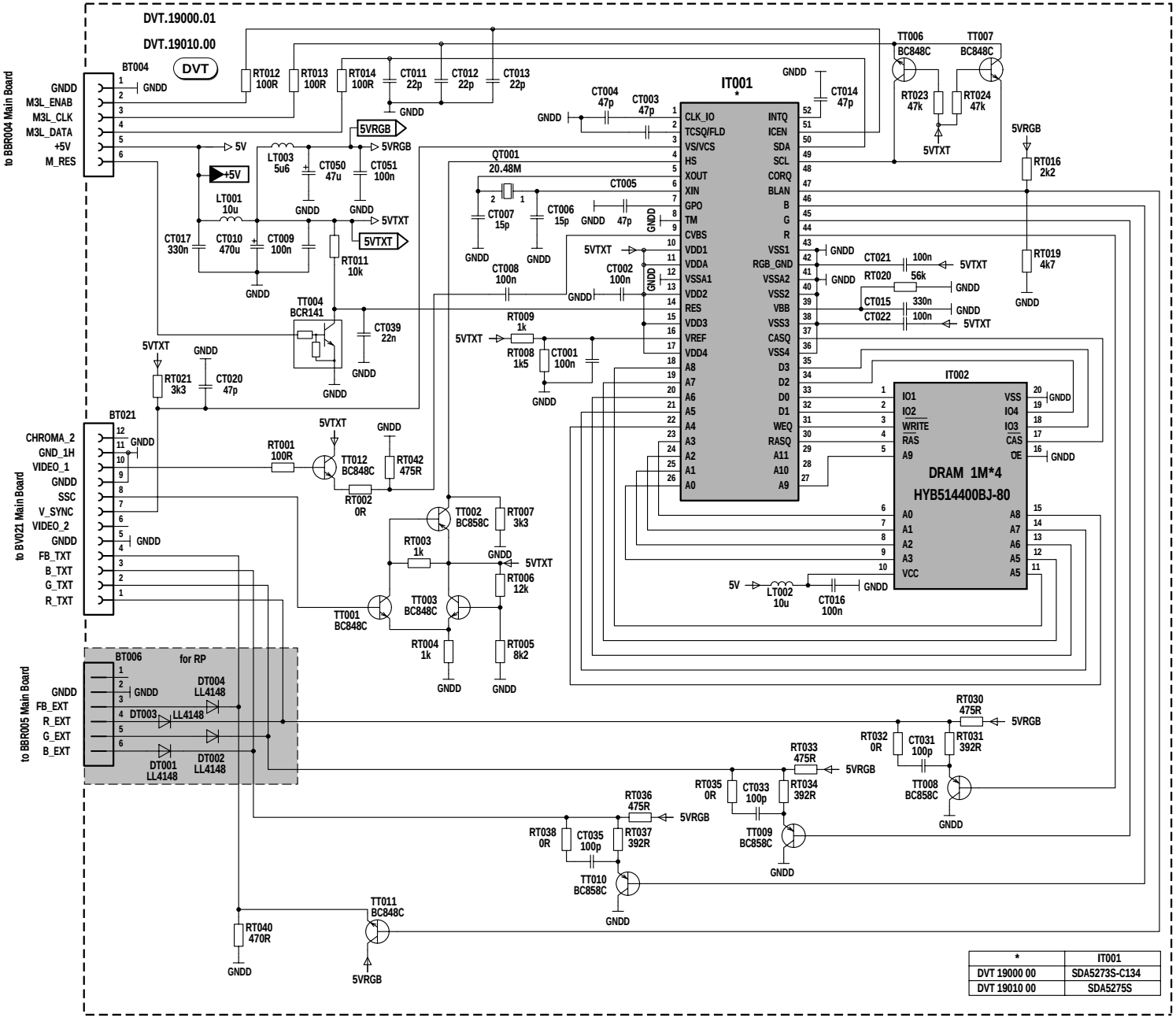
SCART INTERFACE MODULE - MODULE INTERFACE PERITELEVISION - SCART INTERFACE - MODULO PRESA PERITEL - MODULO EUROTOMA



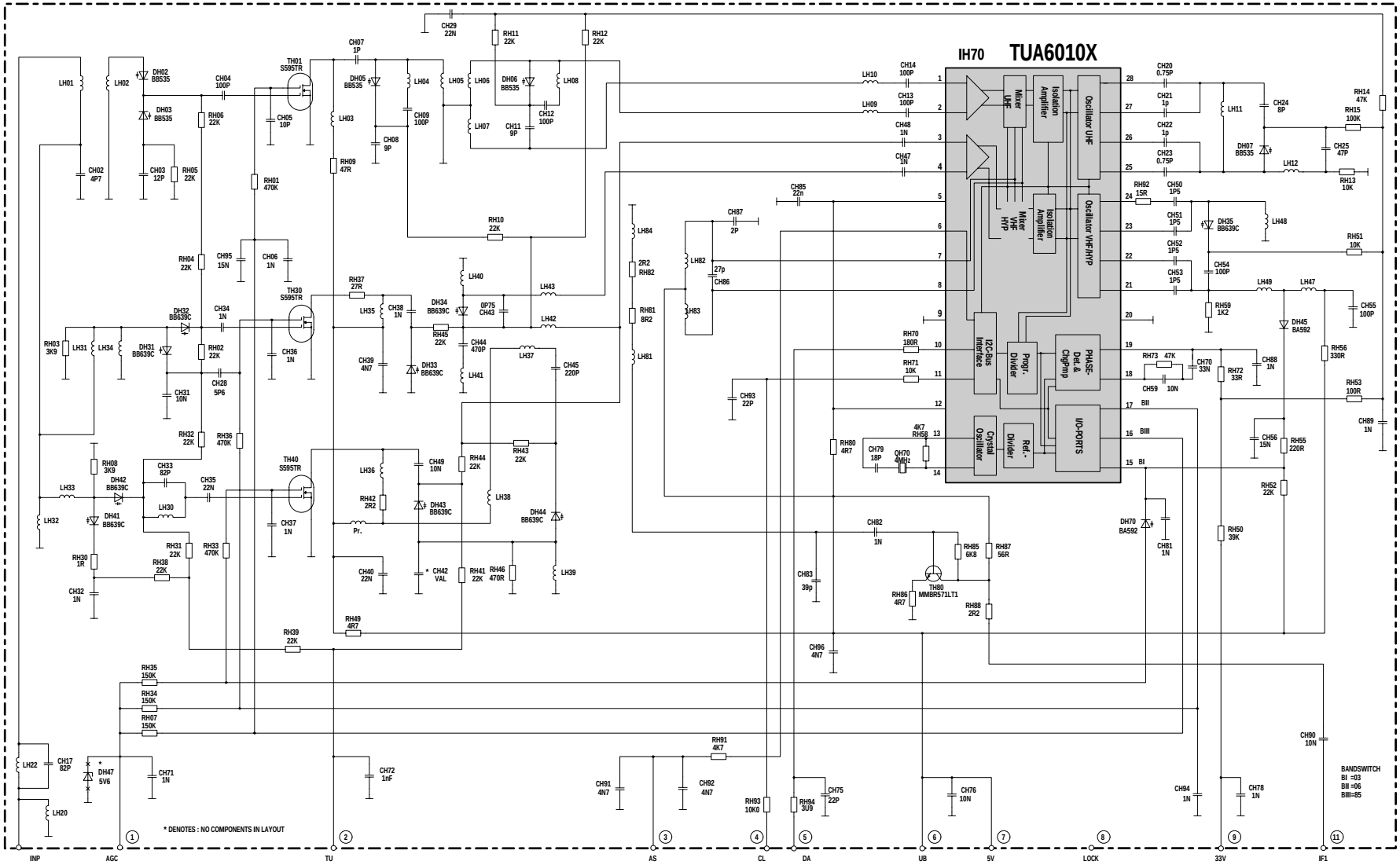

SUB AUDIO MODULE VIRTUAL DOLBY
SUB AMVD
SUB AMVD 19100 00
PINS of IC 64
33
BS002
IS100
MSP3410D(DIE)
IS200
DPL3518(DIE)
AGND
DGND
+8V
+5VA
+5VD
CS101 220N0
CS102 10N0
CS106 1N0
CS103 1N0
CS104 10N0
CS105 100N0
CS203 1N0
CS204 10N0
CS205 100N0
CS206 10U0
CS207 100N0
CS202 10N0
TP1
TP2
PINS of IC
BS001

TELETEXT MODULE - MODULE TELETEXTE - VIDEOTEXT MODUL - MODULO TELEVIDEO - MÓDULO TELETEXTO

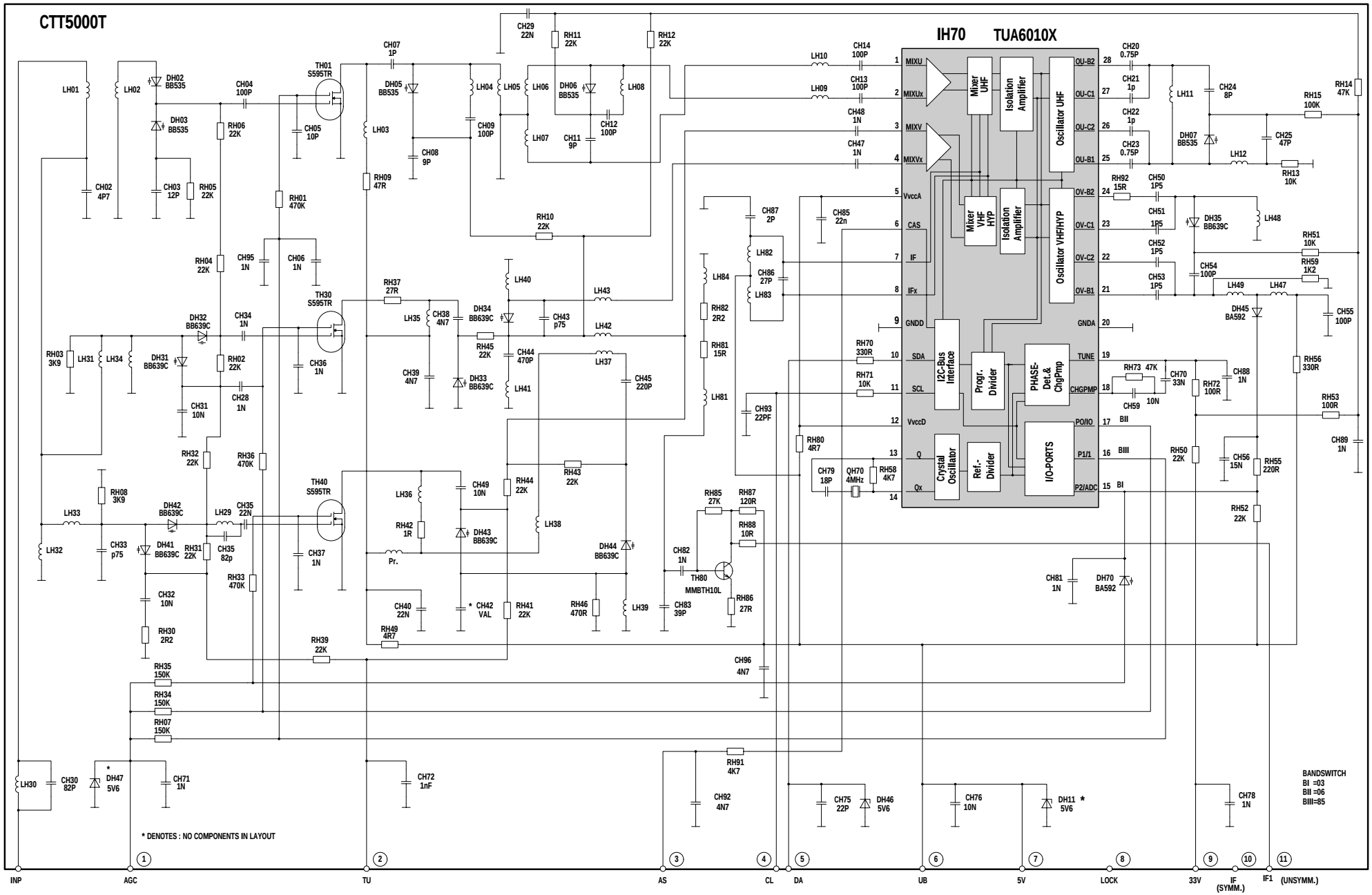



DVT.19000.01
DVT.19010.00
DVT
IT001
*
IT002
DRAM 1M*4
HYB514400BJ-80
to BBR004 Main Board
to BV021 Main Board
to BBR005 Main Board
for RP
* | IT001
DVT 19000 00 | SDA5273S-C134
DVT 19010 00 | SDA5275S

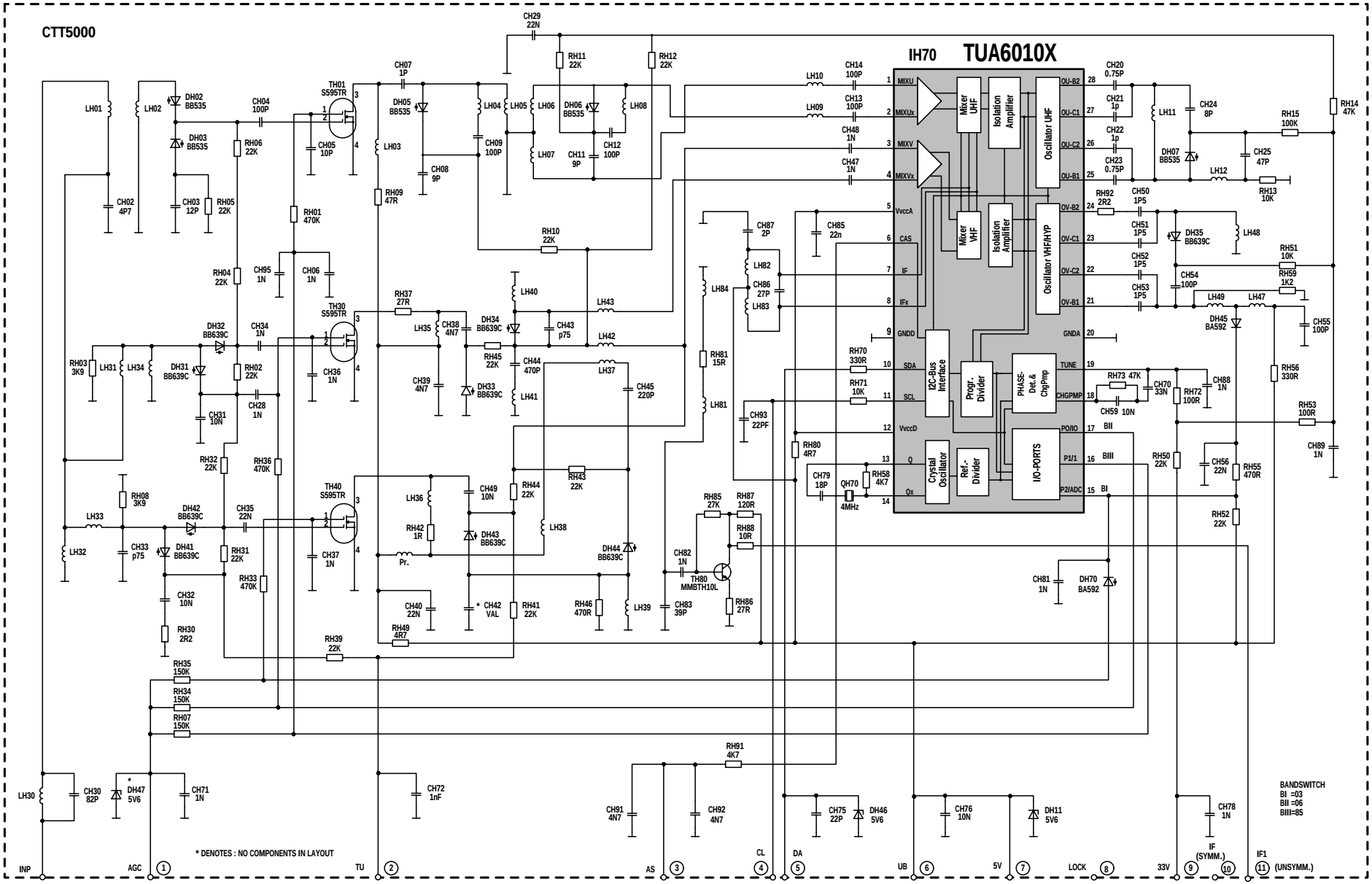
VHF / UHF TUNER CTT5010 (For information only)



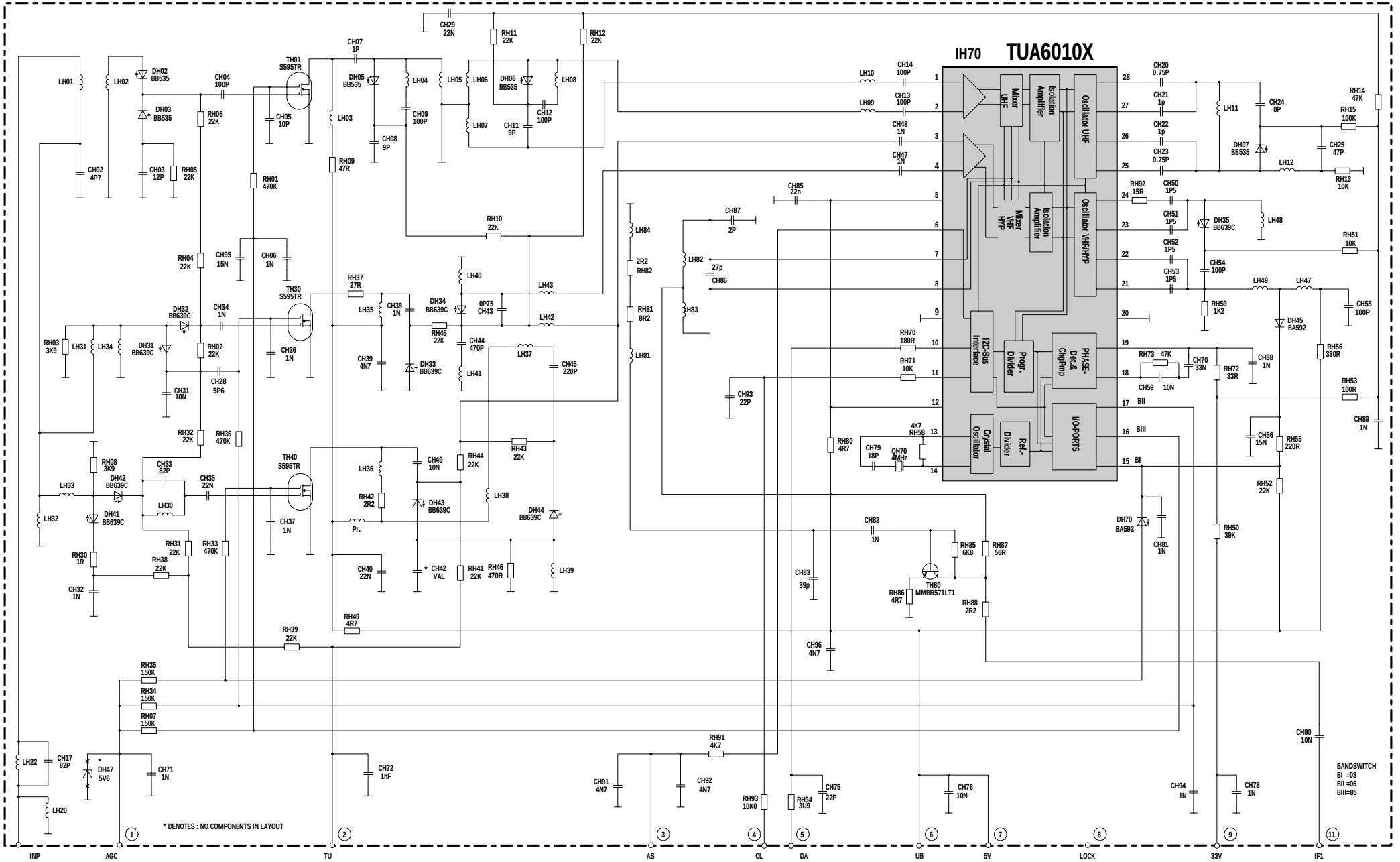
VHF / UHF TUNER CTT5000T (For information only)

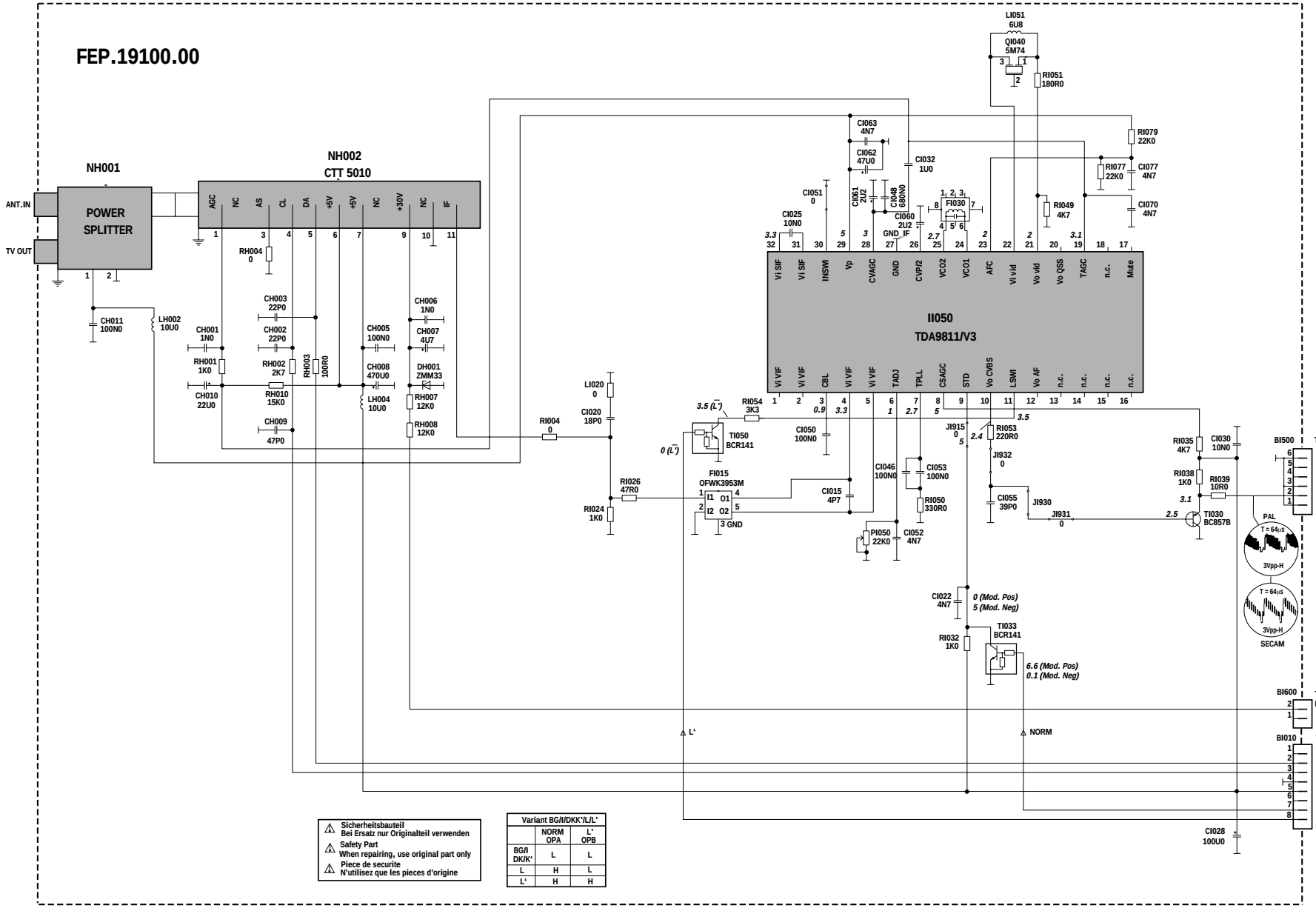


VHF / UHF TUNER CTT5000 (For information only)



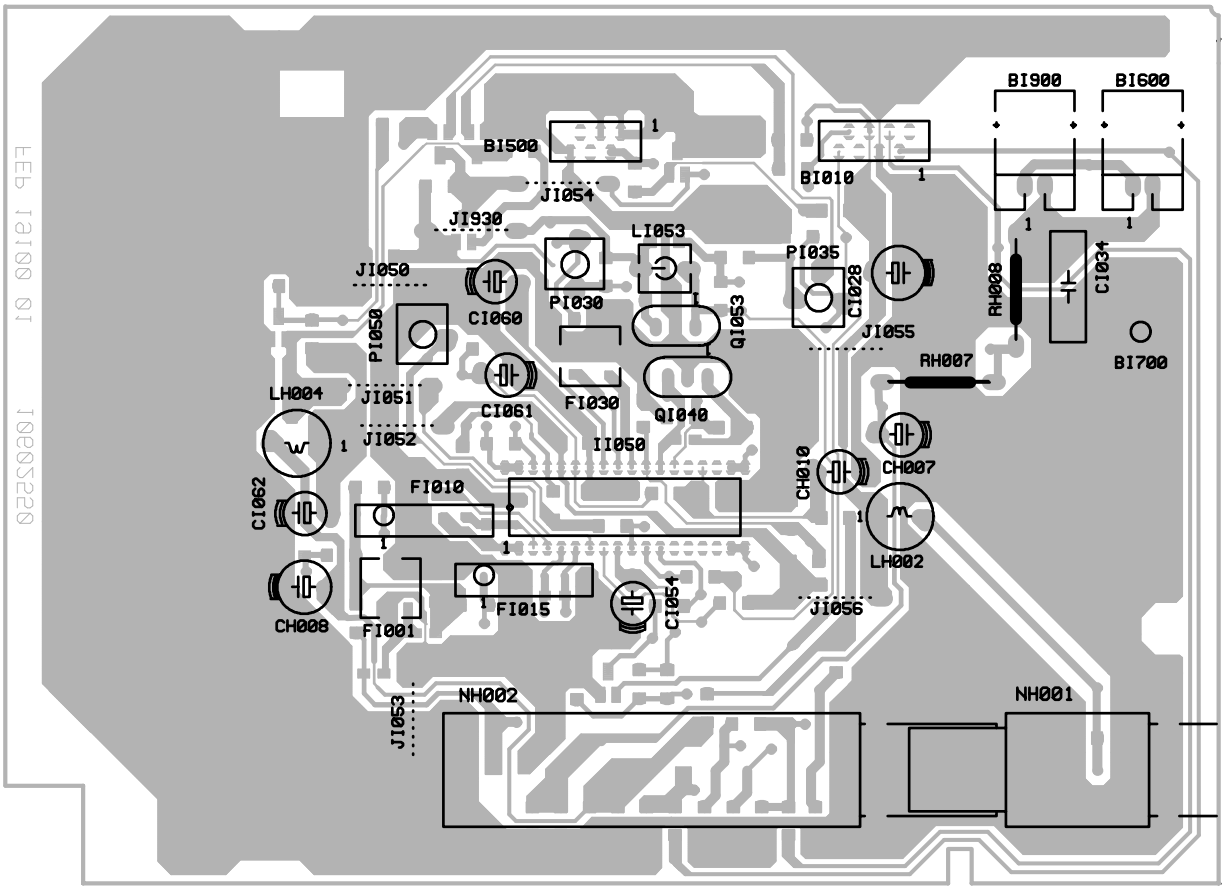
VHF / UHF TUNER CTT5010 (For information only)



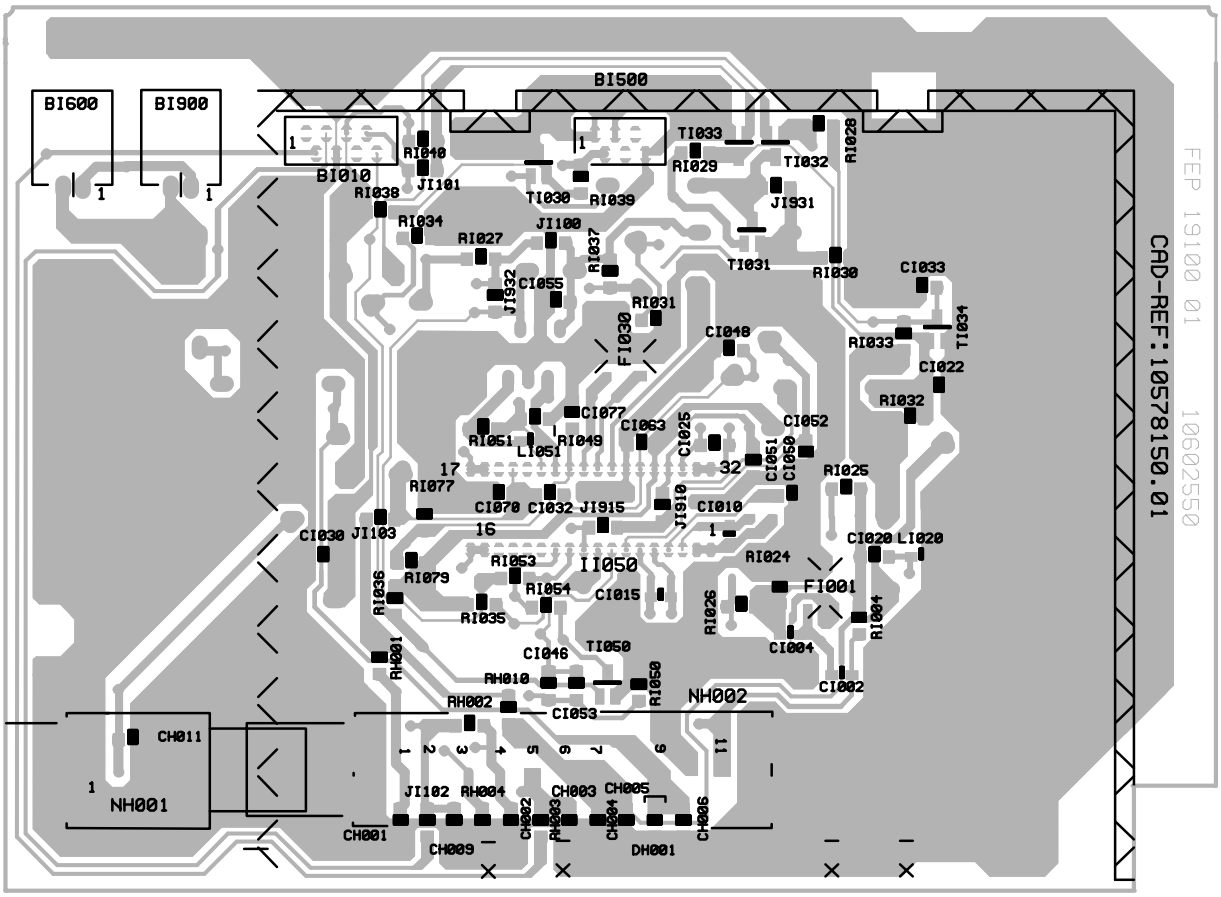

FEP.19100.00
NH001
POWER SPLITTER
ANT.IN
TV OUT
NH002
CTT 5010
AGC
NC
AS
CL
DA
+5V
+5V
NC
+30V
NC
IF
LI051 6U8
QI040 5M74
RI051 180R0
CI063 4N7
CI062 47U0
CI032 1U0
RI079 22K0
RI077 22K0
CI077 4N7
CI070 4N7
RI049 4K7
CI051 0
CI061 2U2
CI048 680N0
CI025 10N0
CI060 2U2
FI030
II050
TDA9811/V3
Vi SIF
Vi SIF
INSWI
Vp
CVAGC
GND
CVP/2
VCO2
VCO1
AFC
Vi vid
Vo vid
Vo QSS
TAGC
n.c.
Mute
Vi VIF
Vi VIF
CBL
Vi VIF
Vi VIF
TADJ
TPLL
CSAGC
STD
Vo CVBS
LSWI
Vo AF
n.c.
n.c.
n.c.
n.c.
GND_IF
CH011 100N0
LH002 10U0
CH001 1N0
RH001 1K0
CH010 22U0
CH003 22P0
CH002 22P0
RH002 2K7
RH010 15K0
CH009 47P0
RH003 100R0
RH004 0
CH005 100N0
CH008 470U0
LH004 10U0
CH006 1N0
CH007 4U7
DH001 ZMM33
RH007 12K0
RH008 12K0
LI020 0
CI020 18P0
RI004 0
RI026 47R0
RI024 1K0
RI054 3K3
TI050 BCR141
CI050 100N0
FI015 OFWK3953M
CI046 100N0
CI053 100N0
RI050 330R0
CI015 4P7
PI050 22K0
CI052 4N7
JI915 0
RI053 220R0
JI932 0
CI055 39P0
JI930
JI931 0
RI035 4K7
RI038 1K0
RI039 10R0
TI030 BC857B
CI030 10N0
BI500
To "SAT" SCI
GND
GND
CVBS
GND
PAL
T = 64µs
3Vpp-H
SECAM
CI022 4N7
0 (Mod. Pos)
5 (Mod. Neg)
TI033 BCR141
RI032 1K0
6.6 (Mod. Pos)
0.1 (Mod. Neg)
L'
NORM
BI600
To BL052
Main Board
BI010
To BT010
DTP19010
I2C DA
I2C CLK
GND
+5V
OPA
OPB
CI028 100U0
Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
Safety Part
When repairing, use original part only
Piece de securite
N'utilisez que les pieces d'origine
Variant BG/I/DKK'/L/L'
NORM OPA
L' OPB
BG/I DK/K'
L
L
L
H
L
L'
H
H

RF - IF PART PIP - FEP 19100

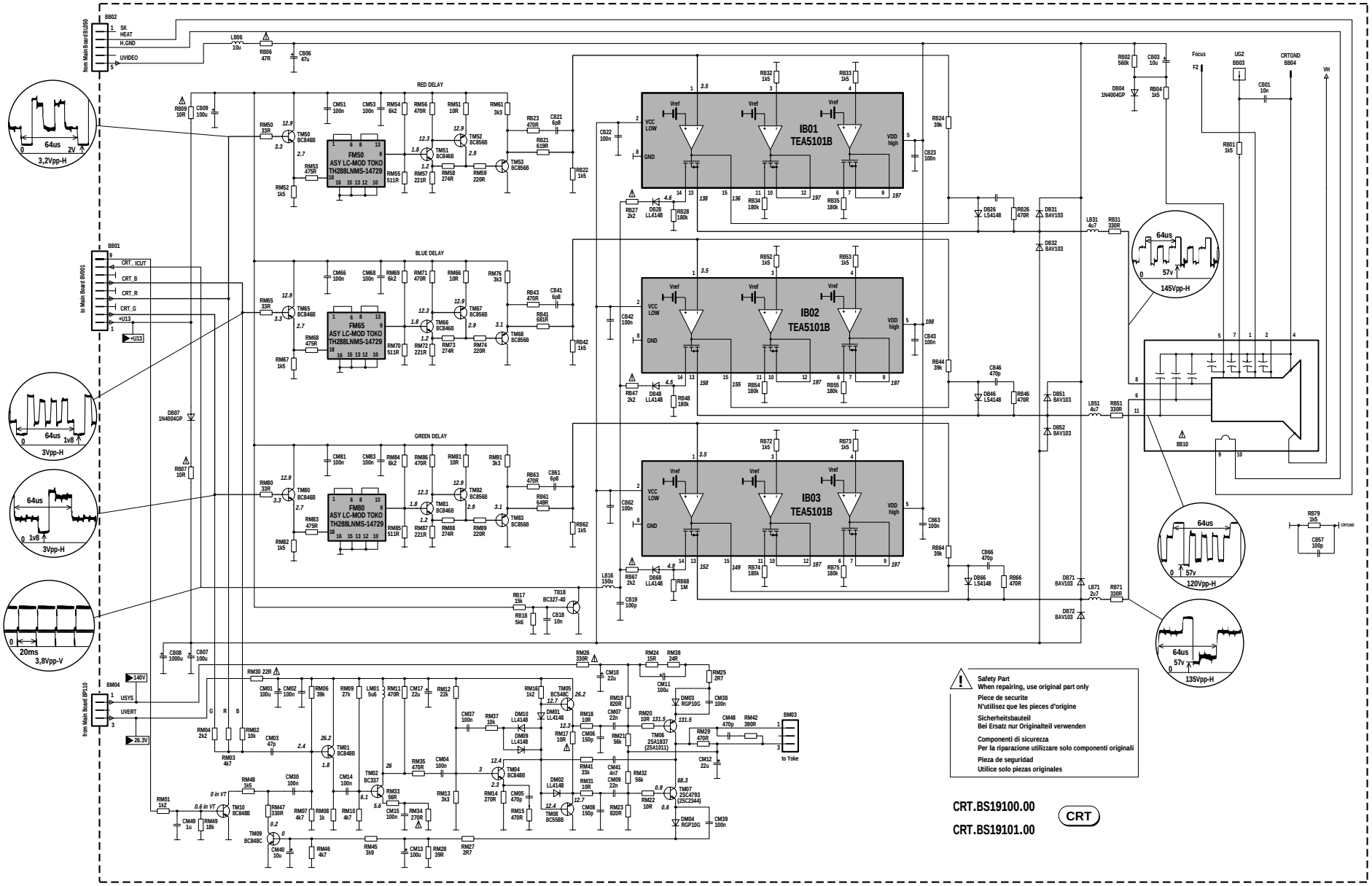
COMPONENT SIDE - CÖTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES



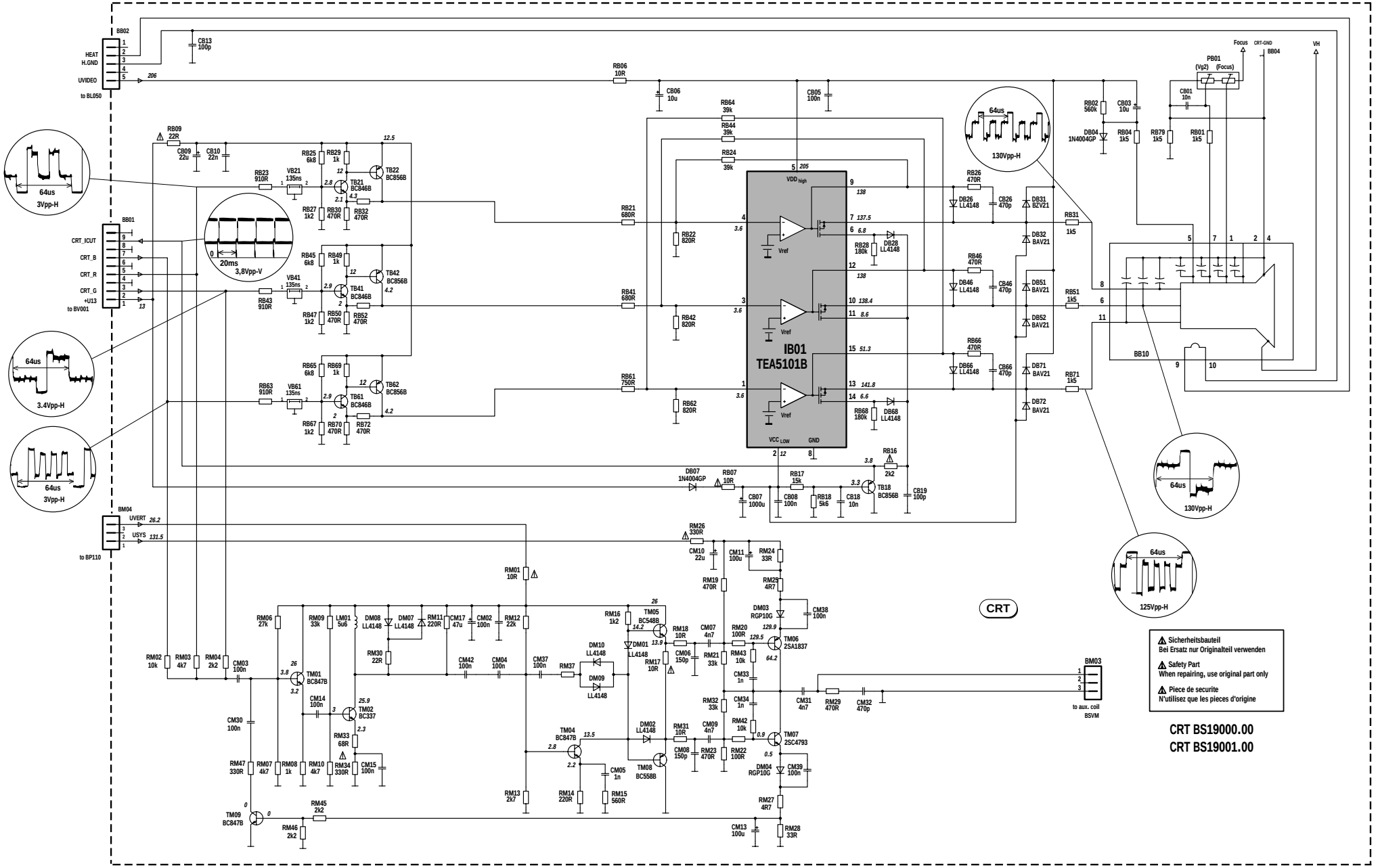
SOLDER SIDE - CÔTE SOUDURES - LÖTSEITE - LATO SALDATURE - LADO SOLDADURAS



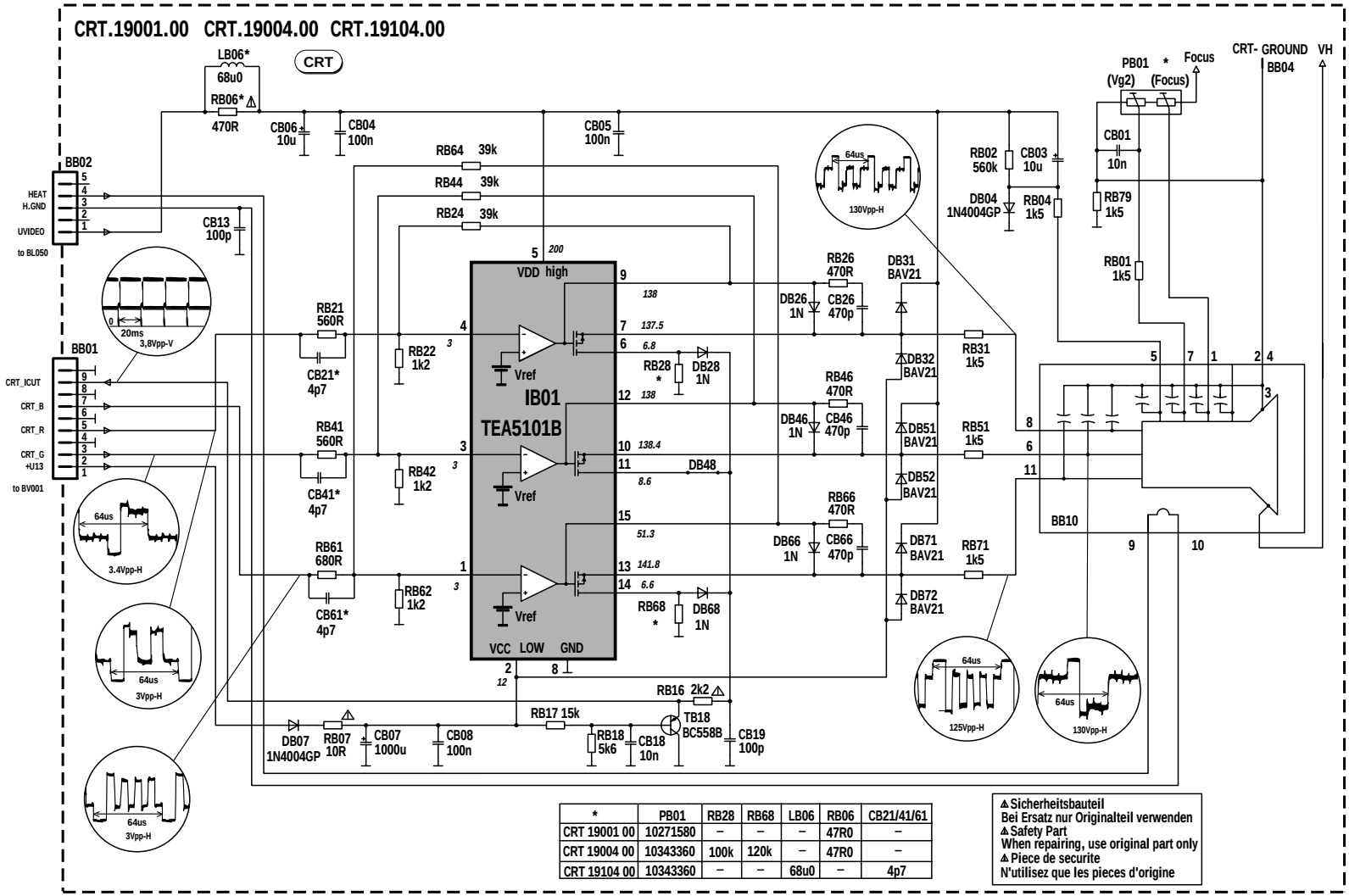
VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO
CRT BS19100 - CRTBS19101



VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO



VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO

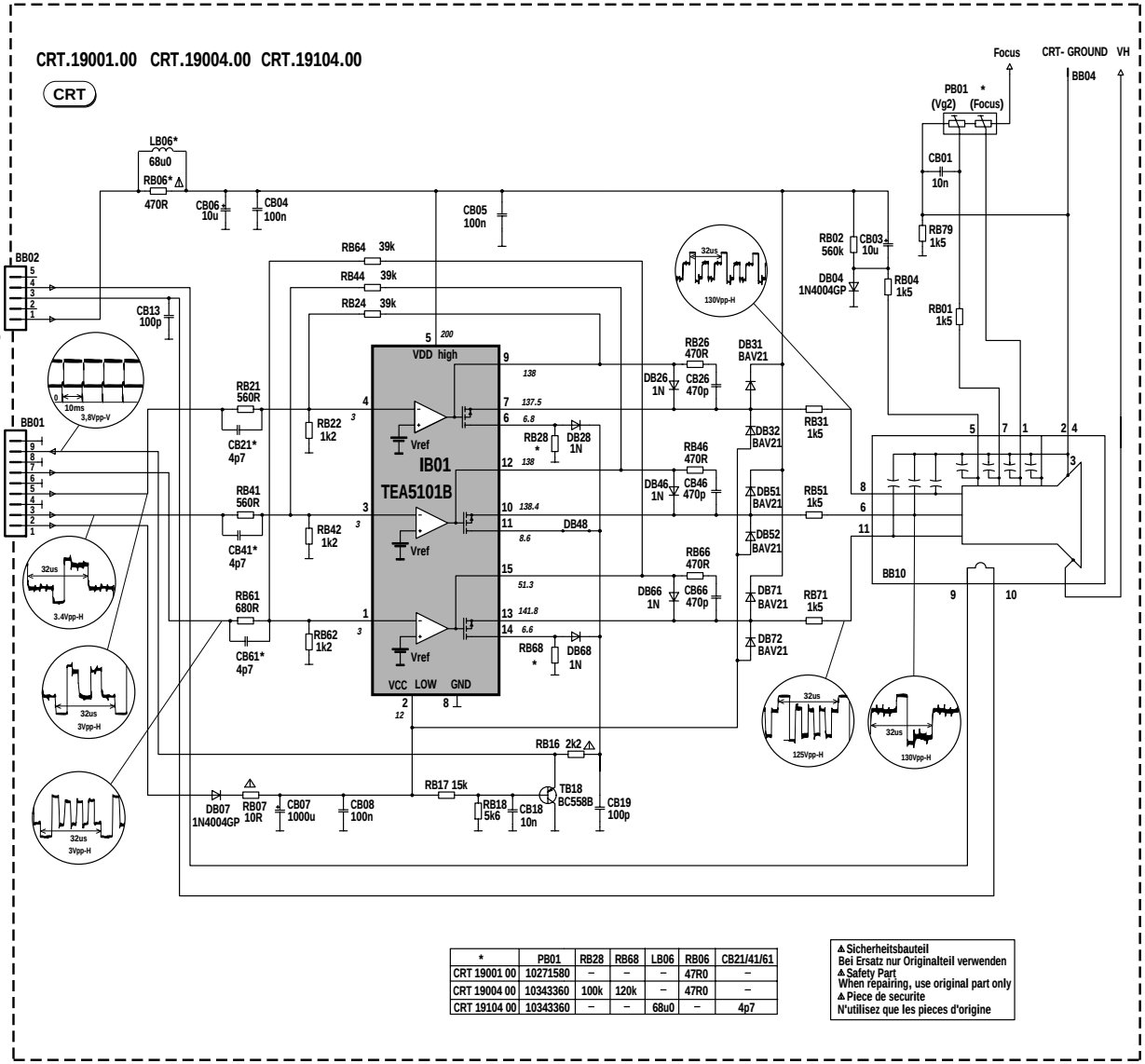


*	PB01	RB28	RB68	LB06	RB06	CB21/41/61
CRT 19001 00	10271580	–	–	–	47R0	–
CRT 19004 00	10343360	100k	120k	–	47R0	–
CRT 19104 00	10343360	–	–	68u0	–	4p7

⚠ Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
⚠ Safety Part
When repairing, use original part only
⚠ Piece de securite
N'utilisez que les pieces d'origine

VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO

CRT1904 - CRT19104



*	PB01	RB28	RB68	LB06	RB06	CB21/41/61
CRT 19001 00	10271580	–	–	–	47R0	–
CRT 19004 00	10343360	100k	120k	–	47R0	–
CRT 19104 00	10343360	–	–	68u0	–	4p7

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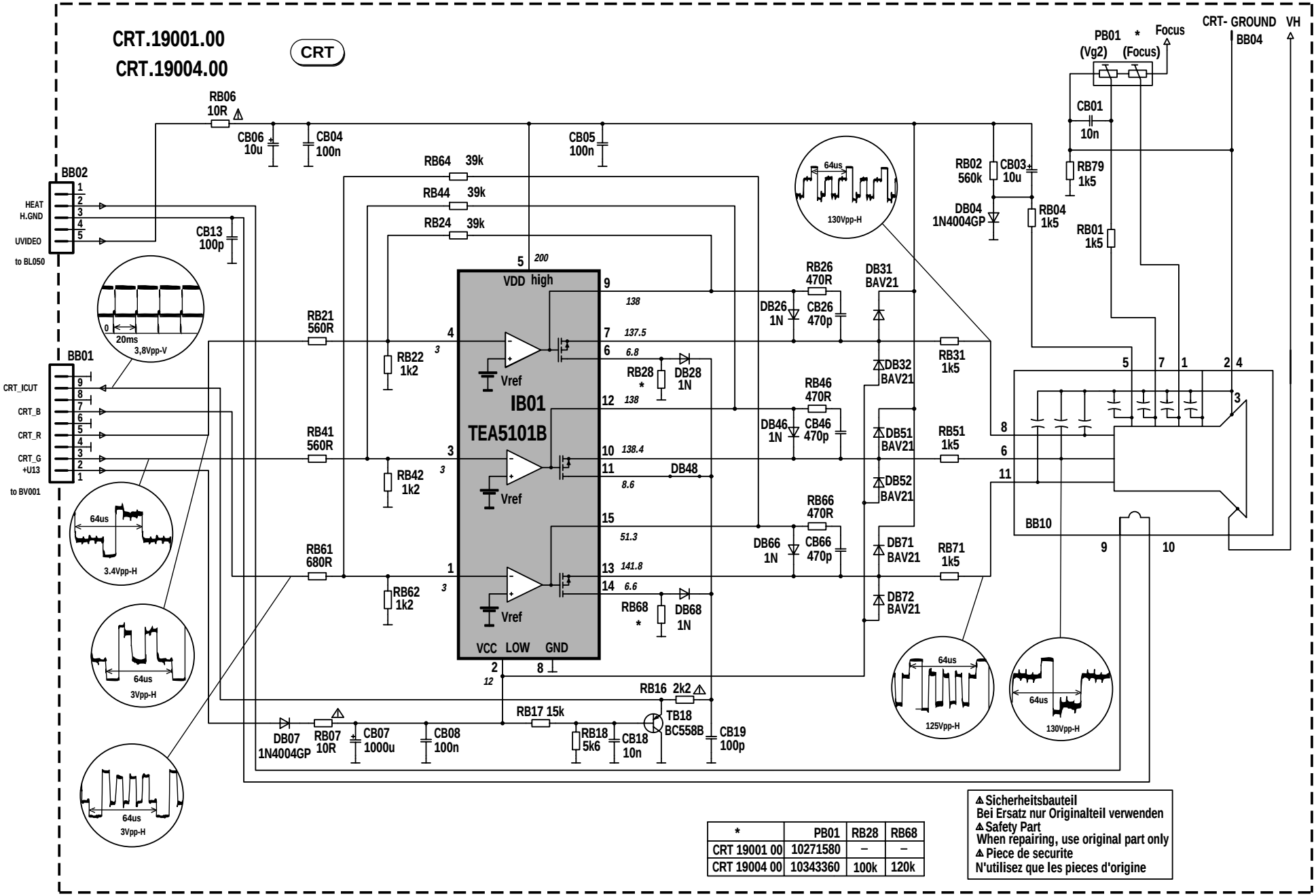
VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE
PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO



*	PB01	RB28	RB68
CRT 19001 00	10271580	–	–
CRT 19004 00	10343360	100k	120k

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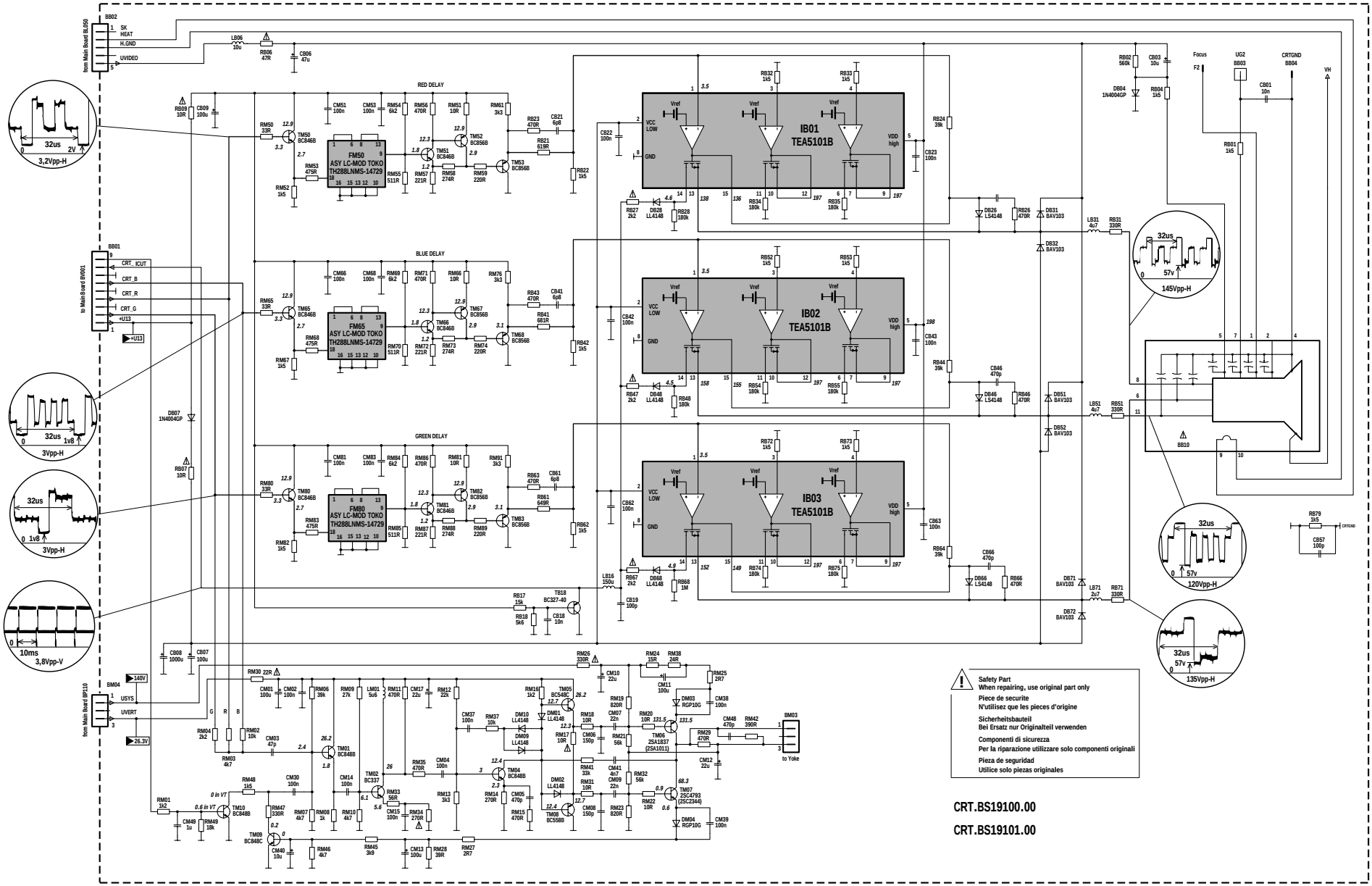
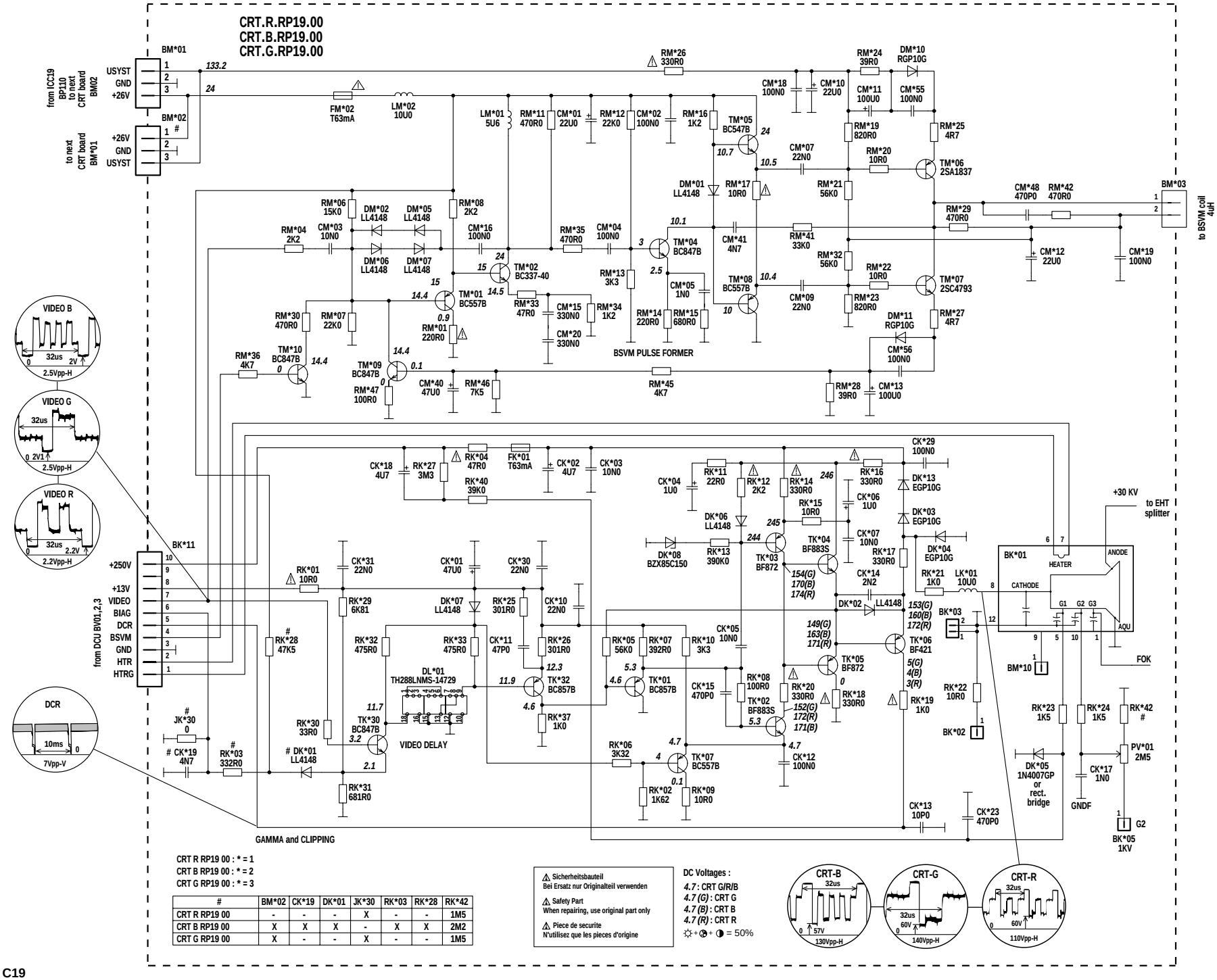
VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO
CRTBS19100 - CRTBS19101



VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO



#	BM*02	CK*19	DK*01	JK*30	RK*03	RK*28	RK*42
CRT R RP19 00	-	-	-	X	-	-	1M5
CRT B RP19 00	X	X	X	-	X	X	2M2
CRT G RP19 00	X	-	-	X	-	-	1M5

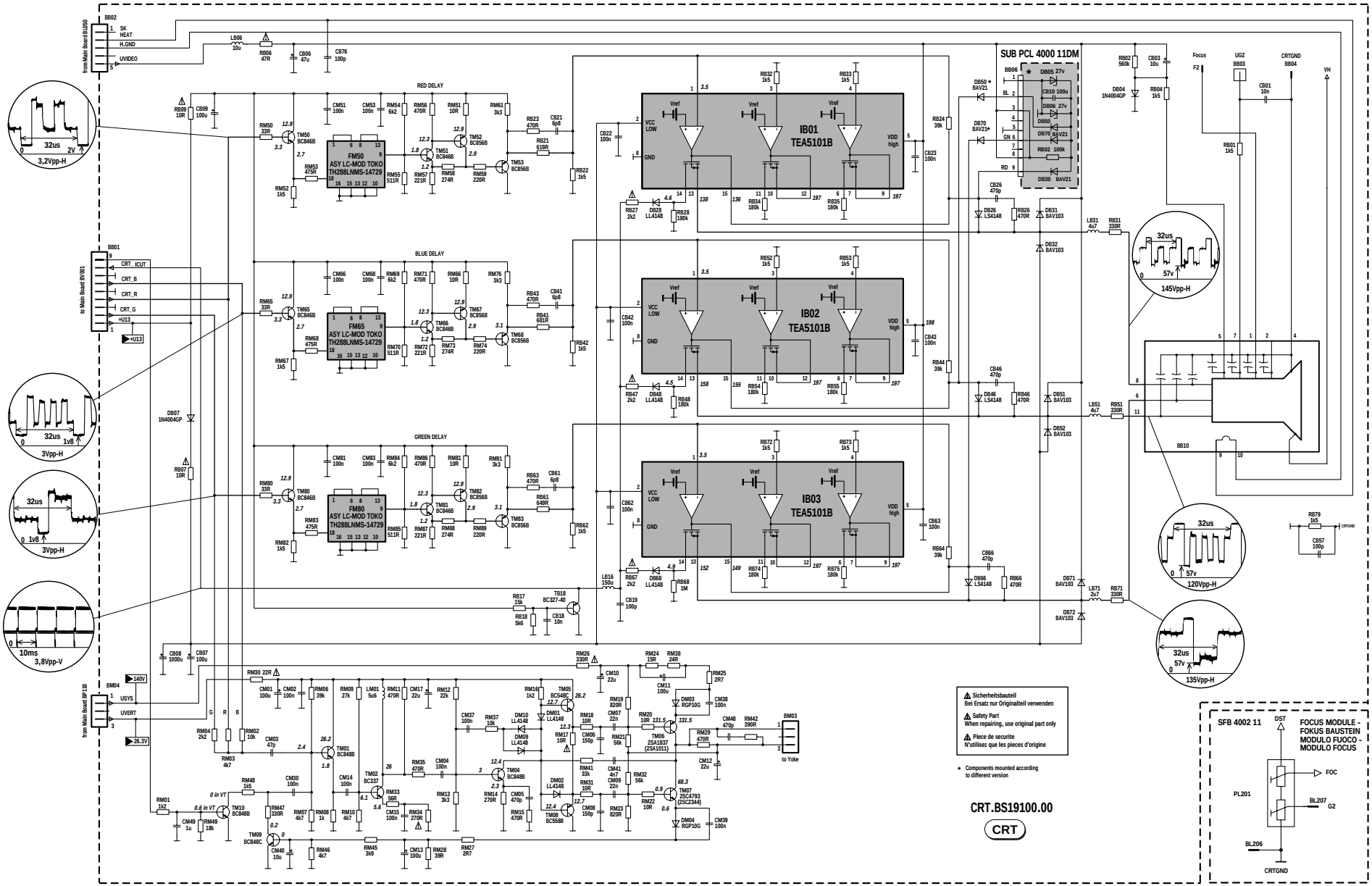
⚠ Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden

⚠ Safety Part
When repairing, use original part only

⚠ Piece de securite
N'utilisez que les pieces d'origine

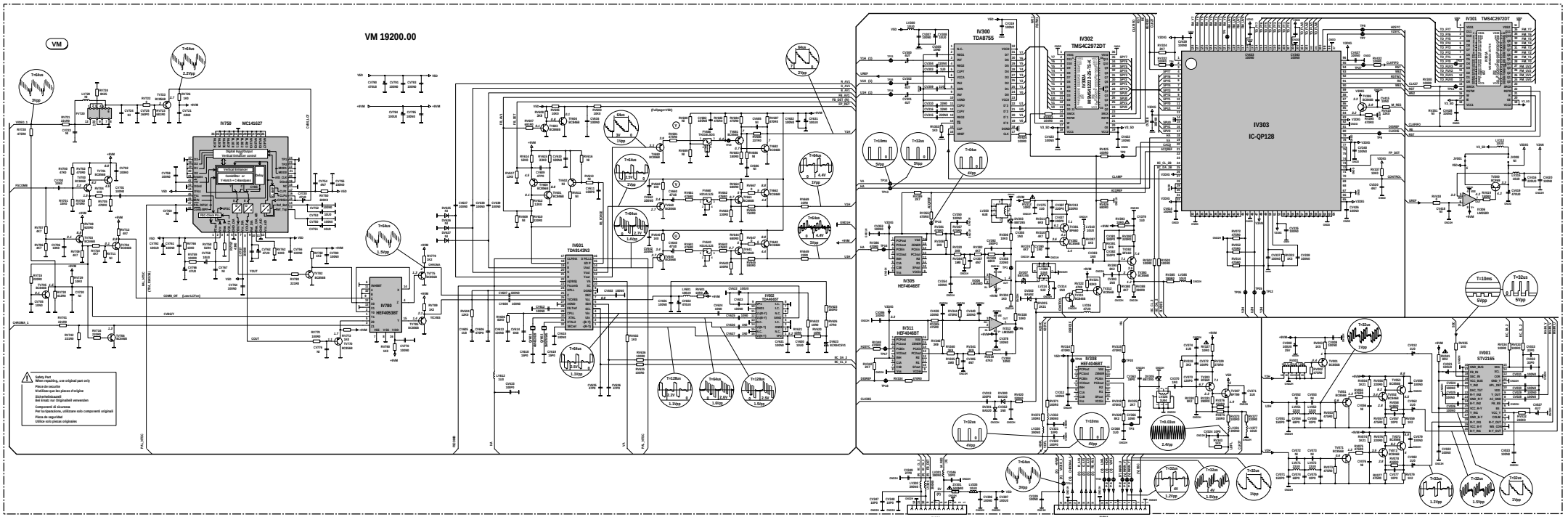
DC Voltages :
4.7 : CRT G/R/B
4.7 (G) : CRT G
4.7 (B) : CRT B
4.7 (R) : CRT R
☼+◔+◑ = 50%

VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO



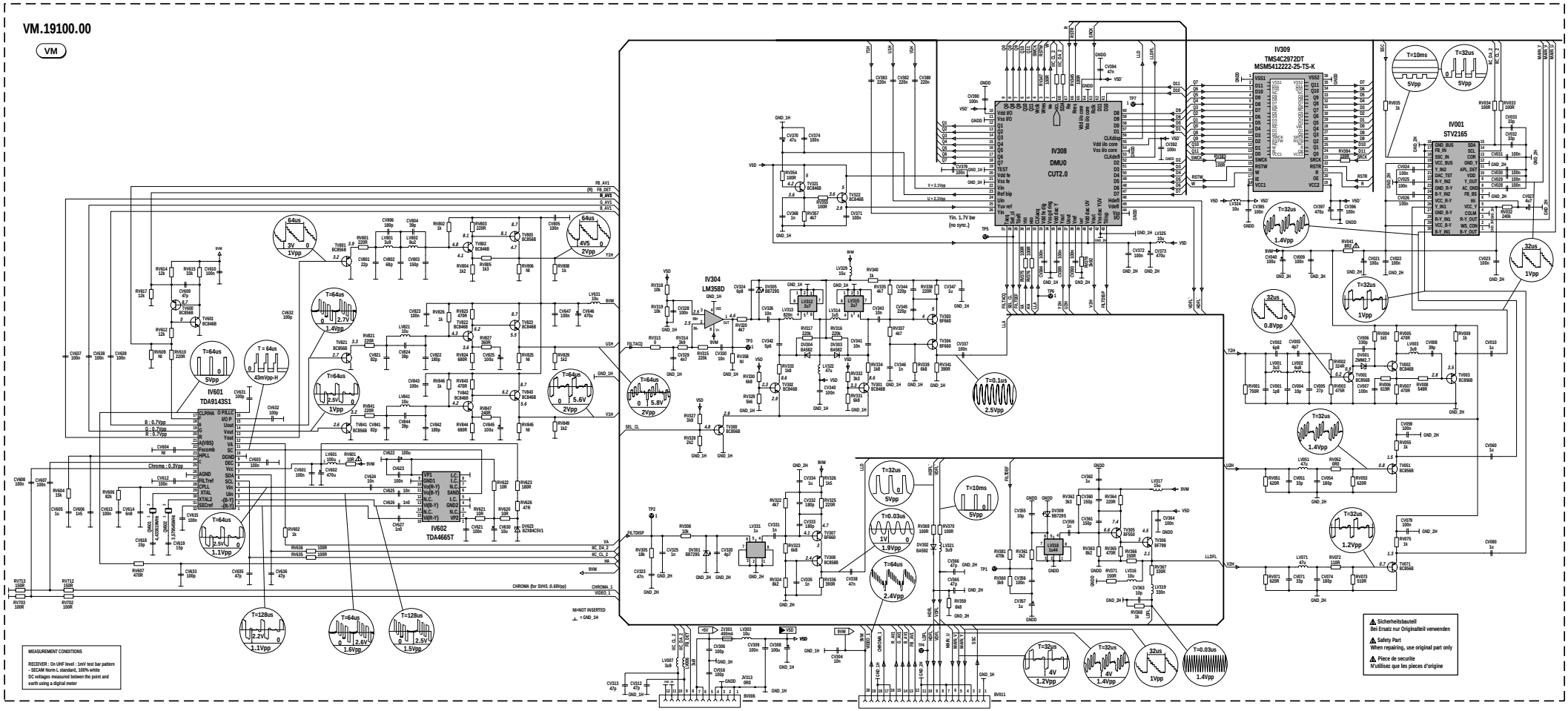
ICC19 100 Hz
First issue 09 / 97

VIDEO MODULE - MODULE VIDEO - VIDEO BAUSTEIN - MODULO VIDEO - MÓDULO VIDEO



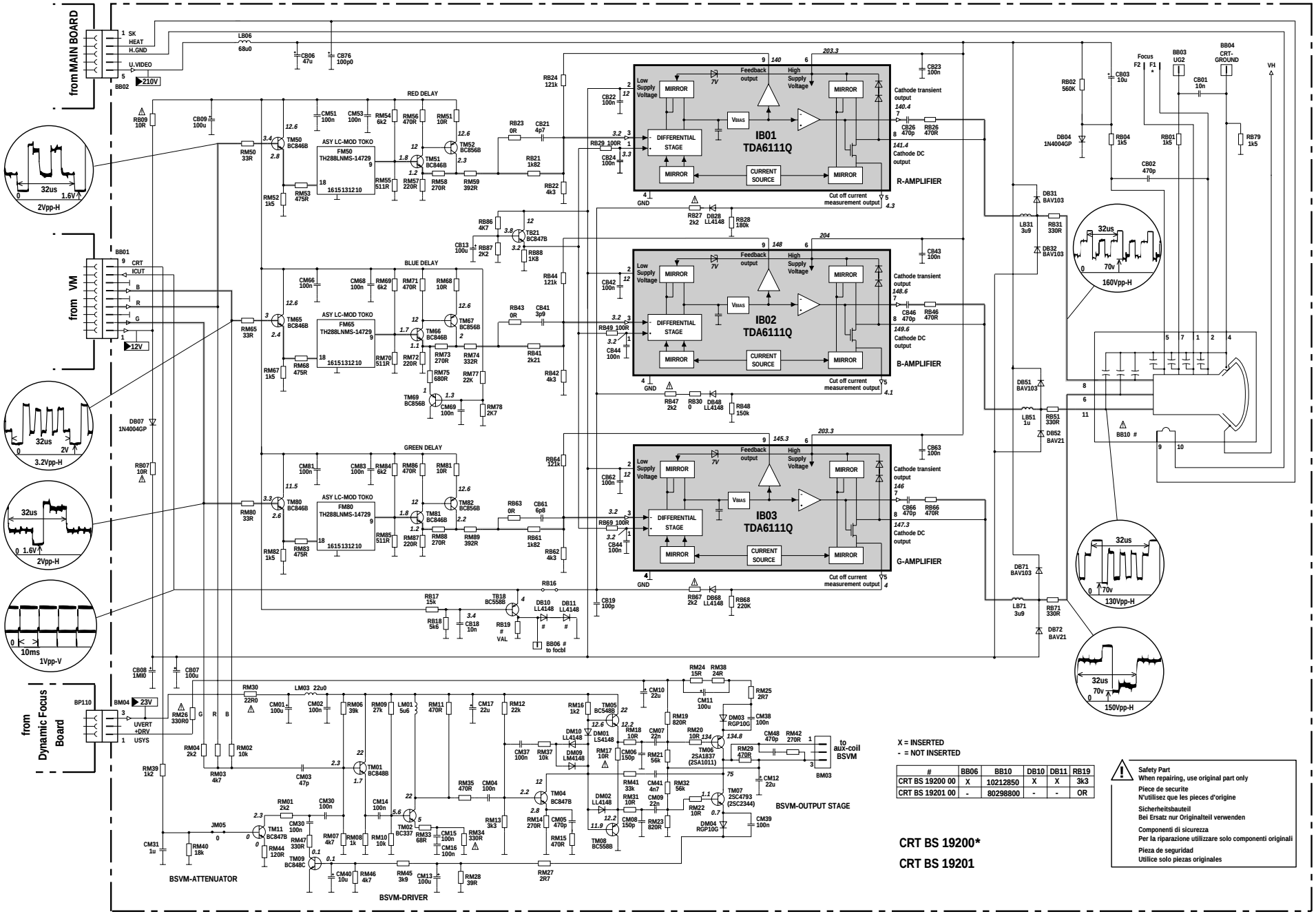
Updated 11 / 98

VIDEO MODULE - MODULE VIDEO - VIDEO BAUSTEIN - MODULO VIDEO - MÓDULO VIDEO



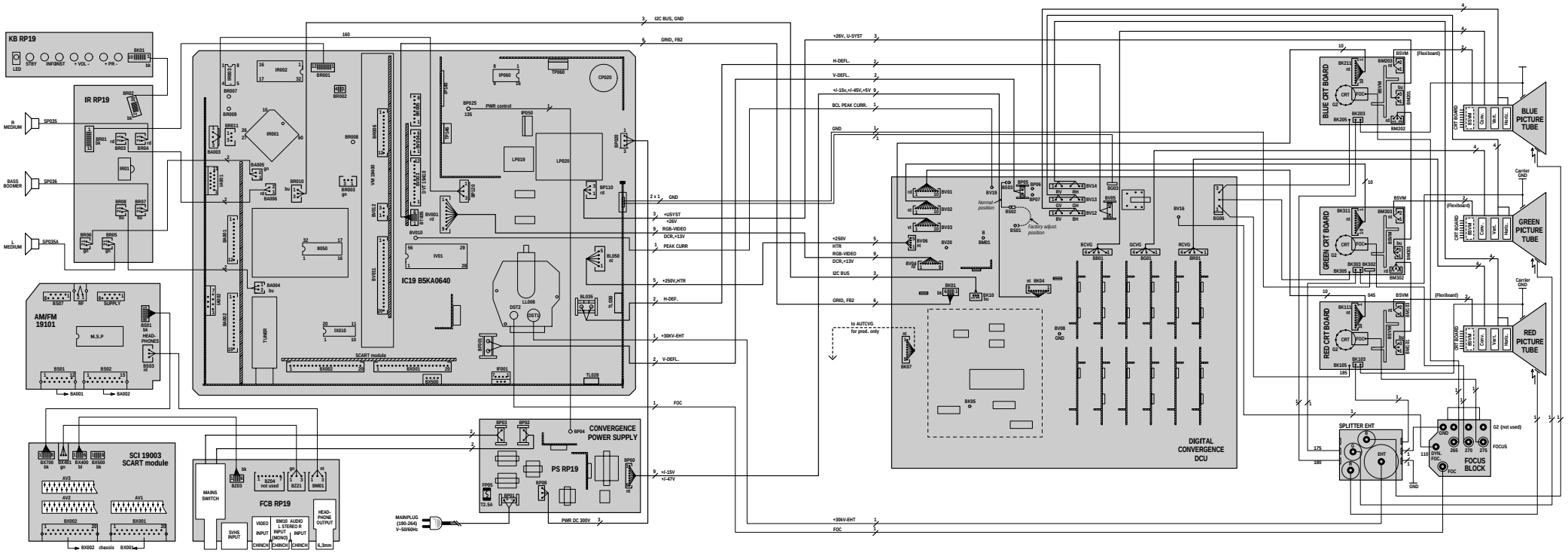
RP C19
First issue 07 / 98

VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO
CRTBS19200 - CRTBS19201



#	BB06	BB10	DB10	DB11	RB19
CRT BS 19200 00	X	10212850	X	X	3k3
CRT BS 19201 00	-	80298800	-	-	OR

WIRING DIAGRAM - SCHEMA D'INTERCONNEXIONS - VERDRAHTUNGSPLAN - DIAGRAMMA DELLE INTERCONNESSIONI - ESQUEMA DE INTERCONEXIONES



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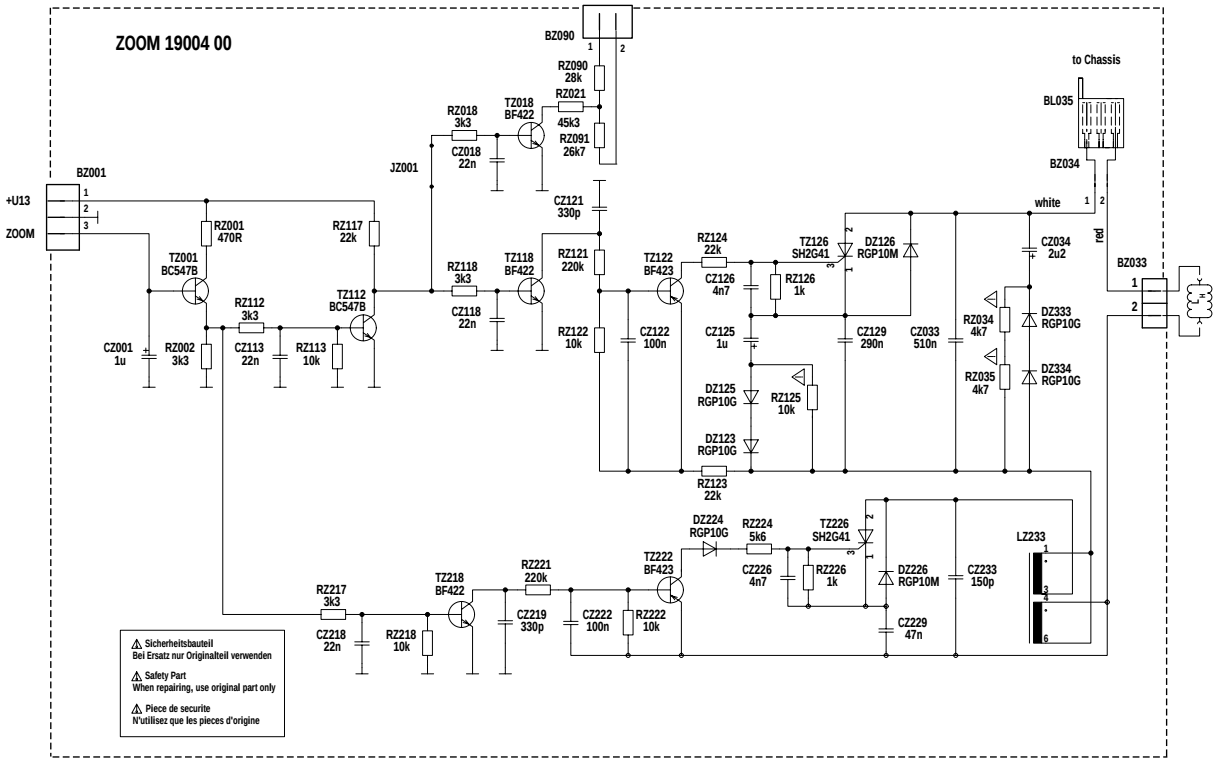
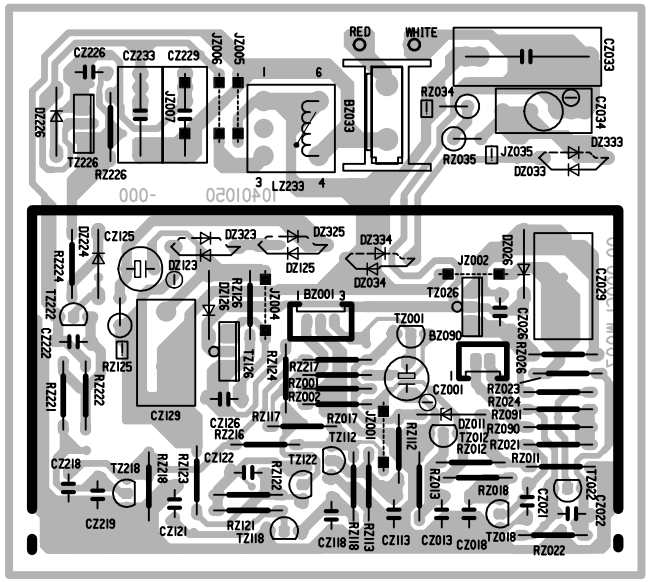
ZOOM 19004 00



COMPONENT SIDE - COTE COMPOSANTS - BESTÜCKUNGSSEITE
LATO COMPONENTI - LADO COMPONENTES



SOLDER SIDE - CÔTE SOUDURES - LÖTSEITE - LATO SALDATURE - LADO SOLDADURAS