

General Information

1996
11AK10 Chassis
CRT's: A48JLL90X01
A48ECR11X60
A51EAL55X01
A51EBV13X01
A51ELQ10X03

Specifications

Power Supply:
Nominal: 220 - 240V AC 50Hz
The chassis is fully mains isolated and is stabilised across mains voltage range from 175V to 265V for less than 0.75% change in picture size. No mains input adjustment needed.
Power Consumption: Typically: 50W
Maximum: 70W (20" & 21" models)
Frequency Coverage:
Hyperband (VHF CH 2 to 47 - 862 MHz
UHF CH 69 inc. CATV: 471 - 862 MHz
UHF (CH 21 - 69): 34dBmV (or less for any channel with a locked colour picture)
Max. Signal Input: 95dBmV (or more for any channel)
IF Frequencies (in MHz):
Vision: B/G (Europe): 38.9
I (UK): 39.5
L' (France): 32.7
L (France): 39.2
D/K (Russia): 38.0
B/G (Europe): 33.4
I (UK): 33.5
L' (France): 39.2
L (France): 32.7
D/K (Russia): 31.5
Sound: B/G (Europe): 33.4
I (UK): 33.5
L' (France): 39.2
L (France): 32.7
D/K (Russia): 31.5
Audio Output: Max: 2.5W RMS
(20" & 21" models, at less than 10% THD for 1KHz, 30% modulation factor)
Beam Current Limiting: 1200uA
(20" & 21" models)
EHT: Max: 26KV (20" & 21" models)

Service Adjustments

Safety Precautions

Servicing of this TV should only be carried out by a qualified person.
* Components marked with the warning symbol on the circuit diagram are critical for safety and must only be replaced with an identical component.
* Power resistor and fusible resistors must be mounted in an identical manner to the original component.
* When servicing this TV, check that the EHT does not exceed 26KV.

TV Set Switched Off

Make short circuit between HV-CRT clip and CRT ground layer.

Short C808 (150mF) before changing IC801 or other components in primary side of SMPS.

Measurements

Voltage readings and oscilloscope traces are measured under following conditions.
* Antenna signal 60dBuV from colour bar generator (100% white, 75% colour saturation).
* Brightness, contrast, colour set for a normal picture.
* Mains supply 220V AC, 50HZ.

Servicing Adjustments and Alignments

The following pre-set adjustment procedures are not required during installation and should be made, if necessary, after servicing.

Warning: EHT Shock Hazard!

The EHT must be safely discharged before attempting to disconnect the EHT lead from the tube anode.
Clip one end of a convenient lead, such as a meter lead, to the tube earthing strap on the tube body, fold back the suction cap and discharge the EHT through the lead. Press in one side of the spring clip which protects into the tube cavity to ease removal of the EHT connector.

Important: do not disturb the tube neck adjustments as these have been set for optimum performances during tube manufacture.

Before attempting the following adjustments, the receiver should be tuned with the brightness, contrast and colour controls adjusted for the best picture and all measurements are to be made after a warm-up period of approximately 5 minutes, unless otherwise stated.
* 60dBmV signal at any channel frequency.
* Colour bar pattern and 1KHz sound signal.
* Mains 220 - 240V AC, 50Hz.
the adjustments should be carried out in the following order for convenience.

SMPS System Voltage

- Set the BCS (Brightness, Contrast, Saturation) and VOL (Volume) to minimum.
- Check the voltage at the shorted pins of socket PL602 (TP1).
- If necessary, adjust VR801 115 ± 0.5V_{DC} (20" and 21" models).
- Set the BCS and VOL to normal picture and sound.

Vision Demodulator and AFC

- Set the pattern generator for 10mV, 38.9 MHz (B/G models) or 39.5 MHz (for I models) or 38.0 MHz (for D/K models) RF output.
- Connect the RF output of the pattern generator to any one input of SAW filter and connect the other input of SAW filter to ground through 10nF capacitor, (no antenna input applied).
- Check the voltage at the base of Q201 (TP2).
- Adjust VL401 for 3.5 ± 0.1 V_{DC}.

Picture Geometry and Focus

- Set the pattern generator for centre-cross, circle and crosshatch composite pattern.

- Adjust VR702 for vertical size, VR701 for vertical linearity, VR703 for vertical shift, VR401 for horizontal centring and focus potentiometer (on EHT transformer) for optimum focusing.

Tuner AGC

- Check the voltage at pin 1 of TUNER (TP4).
- Adjust VR402 for 1V less than maximum.

Screen Voltage

- Set the pattern generator for grey scale.
- Set the BCS to minimum.
- Measure cathode voltages on the CRT base board by using a 1/1000 probe.
- Adjust screen pot of FBT for 175 ± 2V reading on maximum cathode voltage.

CRT Base Board: Cut-Off Voltages and White Balance

- Set the pattern generator for grey scale.
- Set the BCS to minimum.

TDA 8362A	
Symbol/Pin	Voltage
1	3
2	6
3	6
4	5
5	0.5-4
6	4
7	3.25
8	1.8
10	8
12	3.25
13	4.25
14	4
15	3.5
16	0(TV)-8(AV)
17	1-3.5
18	2.5-3.5
19	2.5-3.5
20	2.5-3.5
22	3.3
23	3.3
24	3.3
25	0-3
26	0-3
27	6
28	4
29	4
30	1.5
31	1.5
32 (PAL)	1.6
32 (SECAM)	4.5
33	4.5
34	3
35	2
36	8
37	0.6Vp-p 15.6kHz
39	3
40	3.75
42	2.5
43	2.5
44	2.5
45	4
46	4
48	4
50	3.4
51	4.5
52	6.5

Voltage Charts

TDA 4661	
Symbol/Pin	Voltage
1	5
11	3.25
12	3.25
14	1.35
16	1.35

ST24C02	
Symbol/Pin	Voltage
1	5
5	5
6	5
7	5
8	5

TDA3653B	
Symbol/Pin	Voltage
1	1.2
3	1.2
5	13
6	26
8	8
9	26

LA 7910				
Symbol/Pin	Voltage			
	WHF-L	VHF-H	UHF	CATV
1	12	0	0	0
2	0	12	0	0
3	0	1	0	0
4	0	0	1	1
6	13.5	13.5	13.5	13.45
7	0	0	12	0
8	0	0	0	12
9	12	12	12	12

PCA 84C841 (CTV 422M)	
Symbol/Pin	Voltage
1	5 (front) 0 (end)
2	0-5
3	0-5
5	0-5
9	2-4
12	5(TV) - 0(AV)
20	5
28	5
29	5
32	2
33	5
34	4.5
35	4
39	5
40	5
41	0(St-By)5(Open)
42	5

PCA 84C841 (CTV 351S)	
Symbol/Pin	Voltage
1	5 (front) -0 (end)
2	0-5
3	0-5
5	0-5
9	2-4
12	5(TV) - 0(AV)
20	5
28	5
29	5
32	2
33	5
34	4.5
35	4
39	5
40	5
41	0(St-By) 5(Open)
42	5

PCA 84C641/ PCA 84C444	
Symbol/Pin	Voltage
1	5 (front) 0 (end)
2	0-5
3	0-5
5	0-5
9	5
12	5(TV) - 0(AV)
20	5
28	5
29	5
32	2
33	5
34	4.5
35	4
39	5
40	5
41	0(St-By) 5(Open)
42	5

TDA 2546A	
Symbol/Pin	Voltage
1	4.8
2	4.8
3	6.15
4	0.6
5	4.77
6	4.12
7	3
8	3
9	5.64
10	5.64
11	2
12	2
13	2
14	6.08
15	12.52
17	4.8
18	4.83

TDA 1512A	
Symbol/Pin	Voltage
1	13.5
2	13.7
3	13.6
4	13.7
6	13.67
7	27.18
8	13.65
9	13.4

SAA 7283	
Symbol/Pin	Voltage
1	5
2	2.54
3	5
5	2.52
6	0.33
7	2.52
8	2.51
11	2.52
15	2.53
16	2.53
17	0.4
18	4.9
23	2.5
25	2.53
26	5.83
27	5
28	2.4
29	2.52
30	2.51
31	2.47
32	2.5
33	2.38
34	2.51
35	2.456
36	2.5
37	5
39	1.97
40	3.11
41	2.6
43	2.5
45	0.5
46	5
47	4.7
48	2.5
49	4.4
50	4.4
52	5

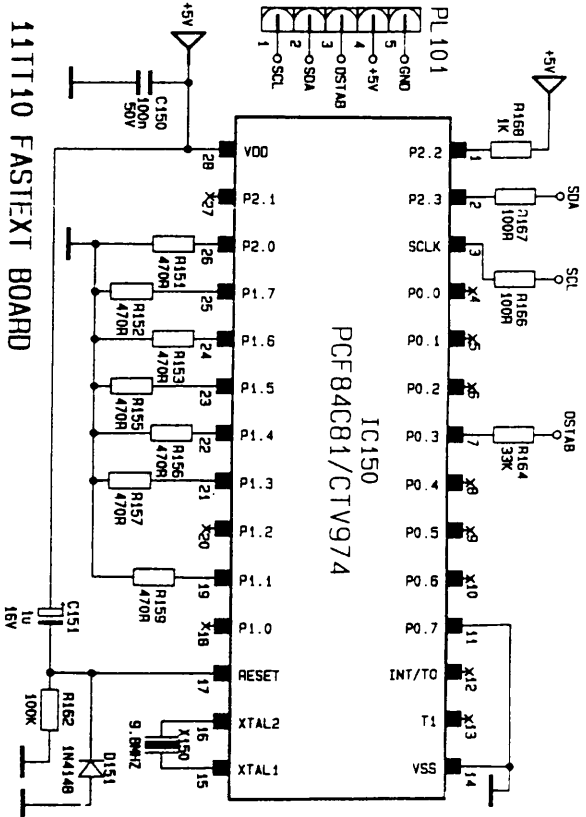
TDA 8245/V7	
Symbol/ Pin	Voltage
1	5.83
2	11.66
3	5.84
4	11.76
6	5.84
7	5.85
8	5.85
11	4.3
12	4.3
13	5.85
14	5.85
15	5.85
16	5.84
17	5.84
18	5.83
19	5.83
20	5.83

PCF 84C81		
Symbol/ Pin	Voltage	
	With Text	Without Text
1	5	5
2	4.4	4.4
3	4.4	4.4
4	5	5
5	5	5
7	4.18	
8	5	5
10	5	5
12	0.2	
13	0.2	
15	2.46	2.46
16	2.46	2.46
17	5	
18	5	5
19	5	5
20		5
22	5	5
24	5	5
26	5	5
27	5	5
28	5	5

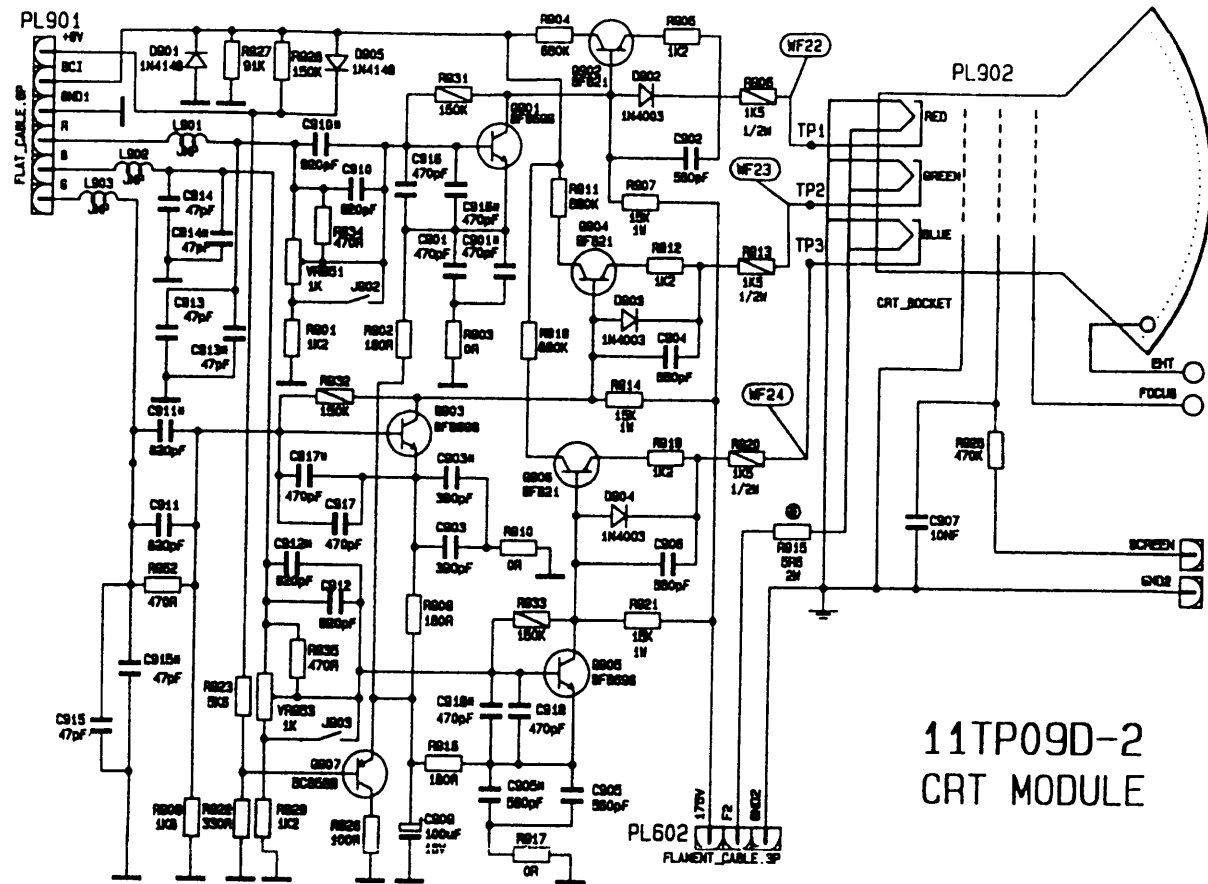
TDA4605-2		
Symbol/Pin	Voltage	
	ST-BY	NORM
1	0.4	0.4
2	1	1.2
3	2.1	2
5	0.8	8
6	12	12.8
7	1.1	1.9
8	0.3	0.4

TDA 2611A	
Symbol/ Pin	Voltage
1	28
2	2.2Vp-p 1khz, 13.2 DC, 14.2 (Mute)
7	1.25

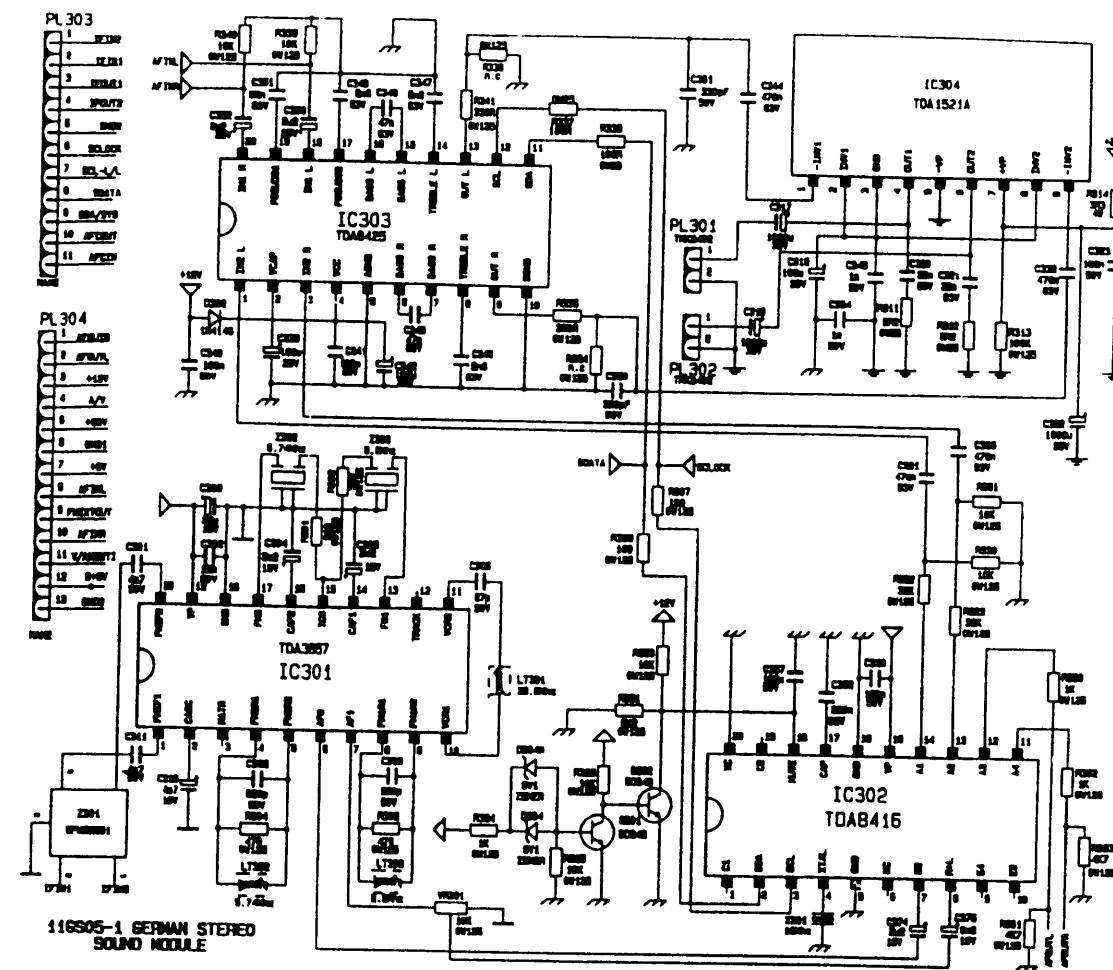
Fast Text Diagram



CRT Diagram "A"

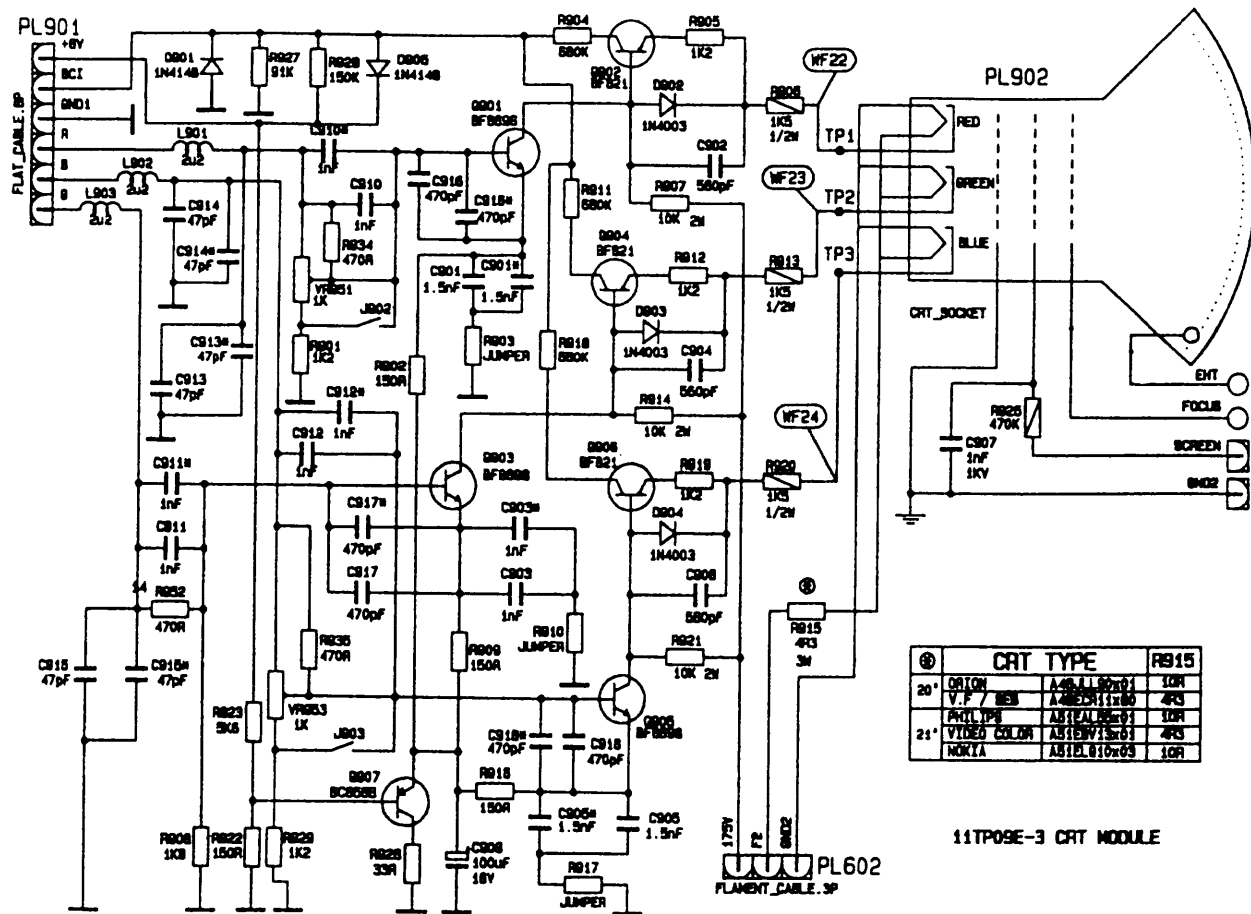


German
Stereo
Sound
Diagram



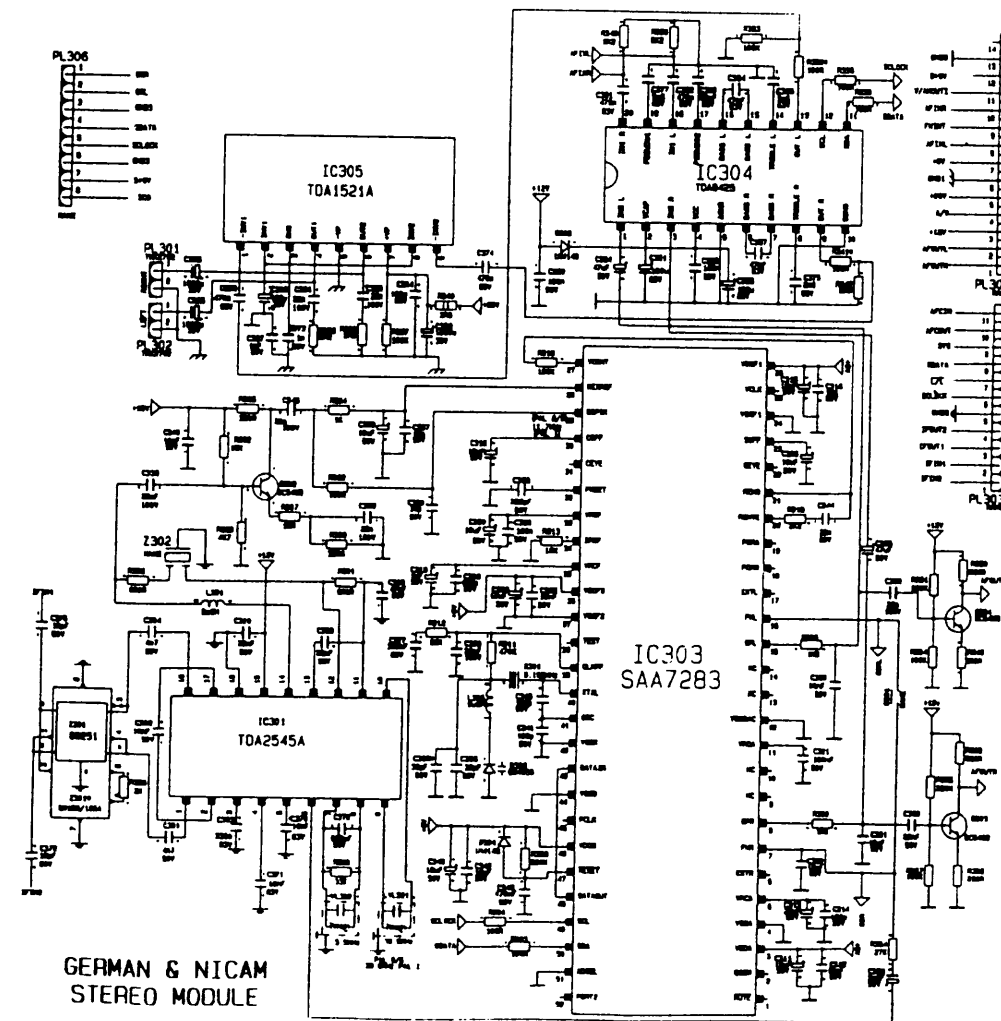
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CRT Diagram "B"



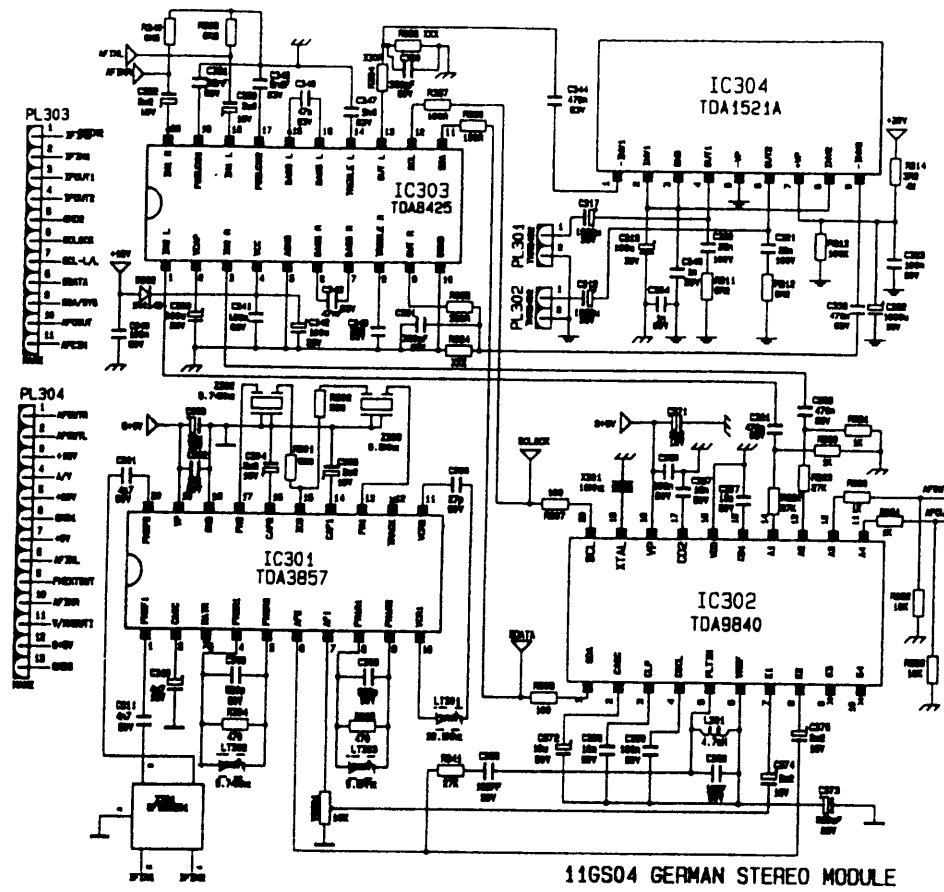
②	CRT TYPE	RS15
20"	ORION	AS18L110x01 10R
19"	PHILIPS	AS18L110x01 10R
21"	VIDEO COLOR	AS18L110x01 10R
NOKIA		AS18L110x01 10R

German
NICAM
Diagram

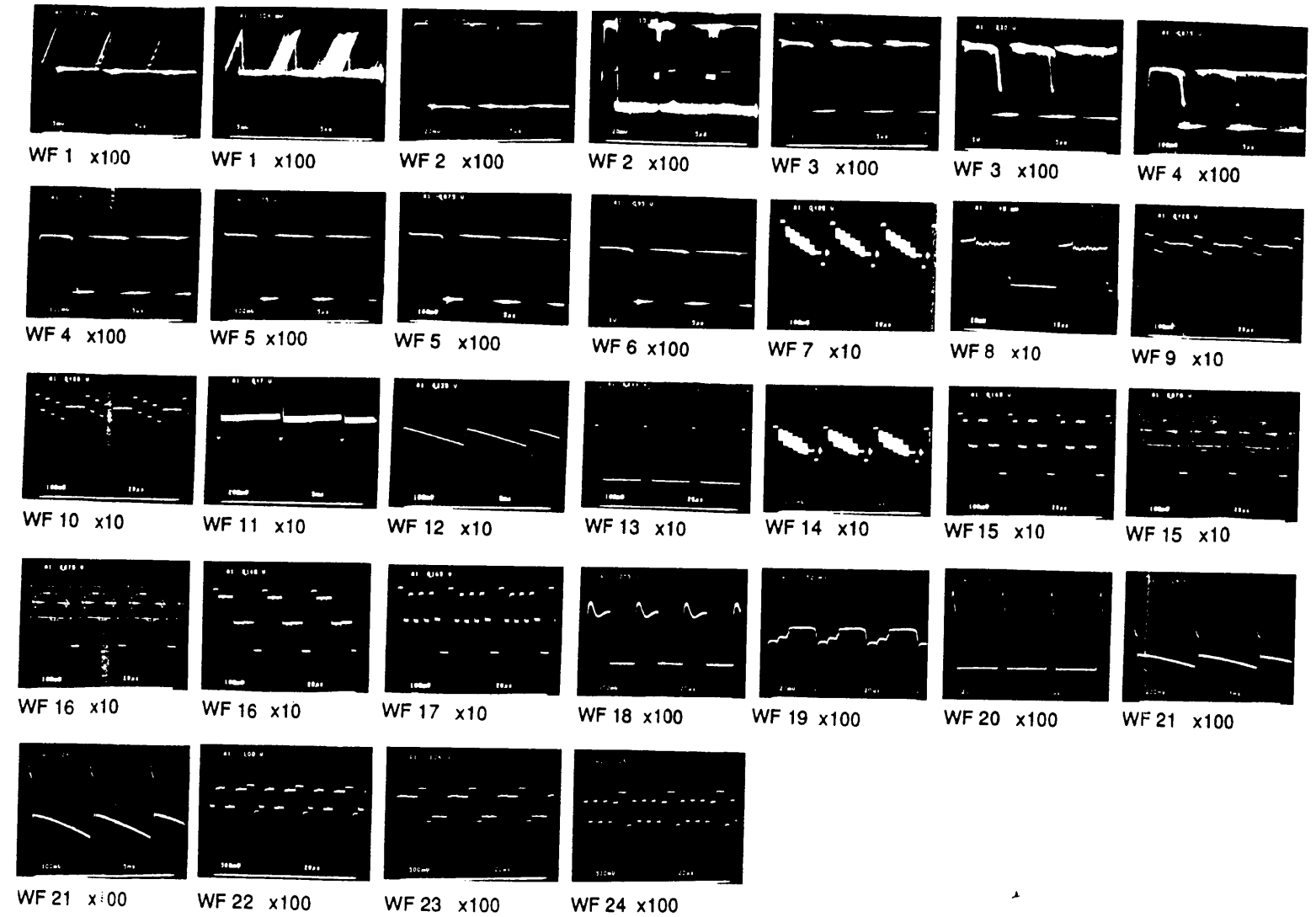


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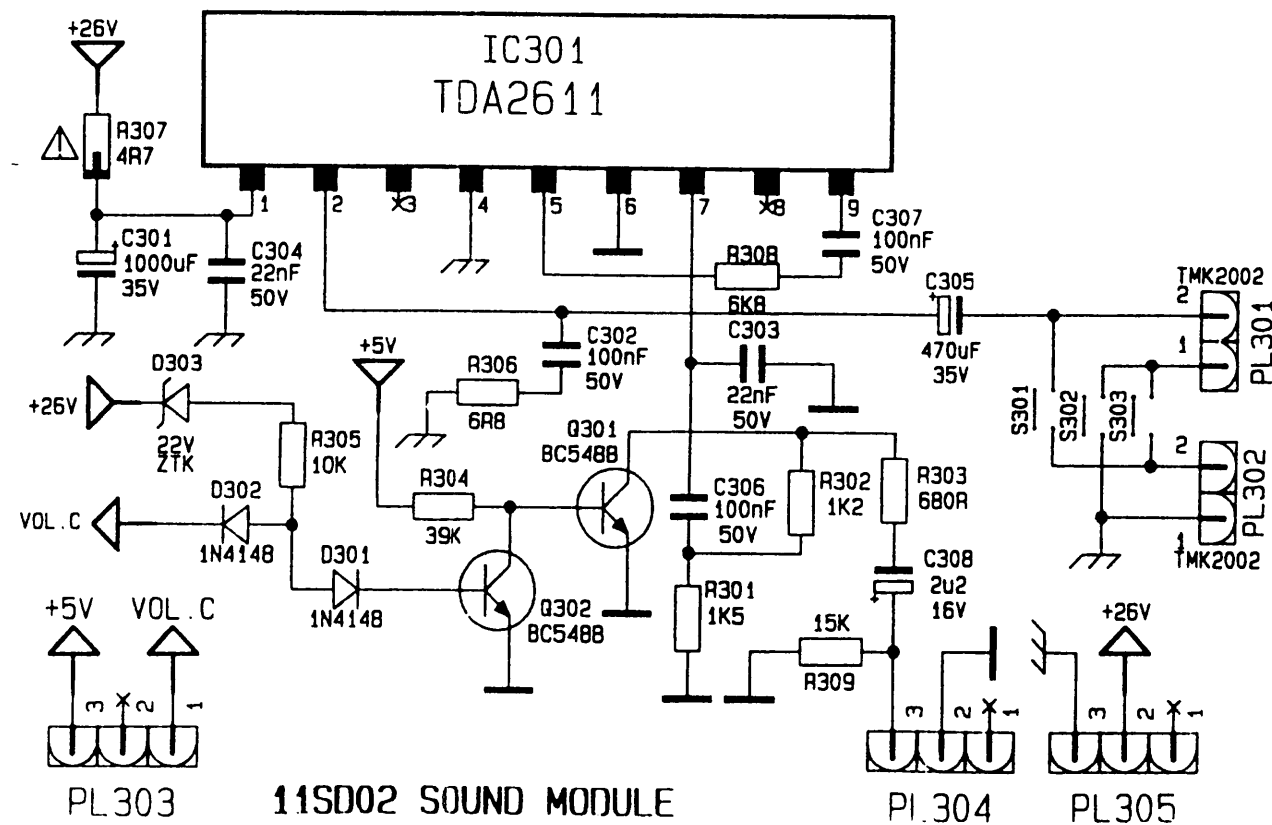
German Stereo Diagram



Waveforms - Main Diagram



Sound Module Diagram



Top Text Diagram

