

General Information

1996
Chassis: 11AK12

Specifications

Power Supply:
Nominal: 220 - 240V AC 50Hz
This 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 is required.
Power Consumption: Maximum: 120W
Minimum: 130W
Frequency Coverage:
Hyperband (VHF CH 2 to UHF CH 69 inc. CATV): 47 - 862 MHz
UHF (CH 21 - 69): 471 - 862 MHz
Sensitivity: 34dBuV or less, for any channel with a locked colour picture
Max. Signal Input: 95 dBuV 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
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 x 8W RMS (Audio power output 8w at 10% THD)
Beam Current Limiting: 1300uA
EHT: Max. 27KV

Service
Adjustments

Safety Precautions

Note:
Do not change any module unless the set is switched off.
The mains supply side of the switch mode power supply transformer is "live" use an isolating transformer.
The receivers fulfil completely the safety requirements.
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 27KV.

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 the following conditions:
* Antenna signal 60dBmV from colour bar generator, (100% white, 75% colour saturation).
* Brightness, contrast and colour set for a normal picture.
* Mains supply, 220V AC, 50 Hz.

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 performance during the tube manufacture. Before attempting any of 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 1 KHz sound signal.
- * Mains 220 - 240V AC, 50 Hz.

The adjustments should be carried out in the following order for convenience.

SMPS System Voltage

- 1: Set the BCS (Brightness, Contrast, Saturation) and VOL (Volume) to minimum.
- 2: Check the voltage at the shortened pins of socket PL602 (TP1).
- 3: If necessary, adjust VR801 150 ± 0.5V_{DC}.
- 4: Set the BCS and VOL to normal picture and sound.

Vision Demodulator and AFC

- 1: 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.
- 2: 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).
- 3: Check the voltage at the base of Q201 (TP2).
- 4: Adjust the VR401 3.5 ± 0.1 V_{DC} (M 4).
- 5: After the adjustment procedure, please disconnect all external connections.

Picture Geometry and Focus

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

- 2: VR702: adjustment of vertical size.
VR701: adjustment of vertical linearity.
VR703: adjustment of vertical shift.
VR652: adjustment of horizontal width.
VR650: adjustment of pincushion correction.
VR401: adjustment of horizontal centring.
and focus potentiometer (on EHT transformer) for optimum focusing.

Tuner AGC

- 1: Check the voltage at pin 1 of TUNER (TP4).
- 2: Adjust the VR402 to get 1V voltage at 4M by decreasing the amplitude of the signal from maximum to the desired value.

Screen Voltage

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

CRT Base Board
Cut-Off Voltages and White Balance

- 1: Set the pattern generator for grey scale.
- 2: Use 1/1000 probe to measure the voltage at green cathode. Adjust the voltage obtained at this cathode by the screen potentiometer (on EHT transformer) so that the voltage will be 10V less than its maximum value.
- 3: Display the white pattern on screen and set all analog controls to its minimum value.
- 4: You can adjust the white balance by the colour analyser. Place the probe of the colour analyser to the centre of the screen and adjust the potentiometers VR951 and VR953 to get X = 285 ± 1V and Y = 293 ± 1V value on analyser.

Voltage Charts

IC 402	
Symbol/Pin	Voltage
1	5
11	3.25
12	3.25
14	1.35
16	1.35

IC 701	
Symbol/Pin	Voltage
1	2.2
3	1.1
5	13
6	26
7	5.2
8	6
9	26

IC 801		
Symbol/Pin	Stand By	Normal
1	0.4	0.4
2	1	1.2
3	2.1	2
4	0	0
5	0.8	8
6	12	12.8
7	1	1.9
8	0.3	0.4

IC 401	
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	1.6(P) - 4.5(S)
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

IC 501 Option 1 PCA84C841	
Symbol/Pin	Voltage
1	5 - 0
2	0 - 5
3	0 - 5
4	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

IC501 Option 2 P835C055	
Symbol/Pin	Voltage
1	5 - 0
2	0 - 5
3	0 - 5
4	0 - 5
5	0 - 5
9	5
12	5(TV) - 0(AV)
20	5
26	0
28	5
29	5
33	2
34	5
35	4
39	5
40	5
41	0(St-By) - 5(Open)
42	5

IC 403	
Symbol/Pin	Voltage
1	1.6(P) 4.5(S)
3	8
7	3.25
8	4.25
9	1.5
10	1.5
16	5.5
P - PAL, S - SECAM	

IC 304	
Symbol Pin	Voltage
1	13.5
2	13.7
3	13.6
4	13.7
5	0
6	13.67
7	27.18
8	13.65
9	13.4

IC 301 Option 1 TDA3857	
Symbol/Pin	Voltage
1	1.8
2	2.06
3	2.5
4	1.8
5	1.8
6	2.13
7	2.1
8	1.8
9	1.8
10	4
11	4
12	2
13	0
14	2.48
15	1.55
16	1.8
17	0.11
18	0
19	5
20	1.8

IC 303	
Symbol/Pin	Voltage
1	5.83
2	11.66
3	5.84
4	11.76
5	0
6	5.84
7	5.85
8	5.85
9	5.85
10	0
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

IC 101 Option 1 SAA 5254P/T		
Symbol/Pin	Voltage	
	TV	TEXT
1	5	5
2	2	2
3	3.5	3.5
4	0	0
5	0	0
6	5	5
7	2.2	2.2
8	2.5	2.5
9	2.5	2.5
10	5	5
11	5	5
12	1.6	1.9
13	5	5
14	0	0
15	0	0.7
16	0	0.7
17	0	0.7
18	5	5
19	0	3
20	0	0
21	4	0
22	0	2.5
23	0	0
24	5	3
25	5	2.5
26-40	5	5

IC 302 Option 2 TDA 8416	
Symbol/Pin	Voltage
1	5.7
2	11.5
3	5.7
4	11.6
5	0
6	5.7
7	5.8
8	5.8
9	5.8
10	0
11	3.10
12	3.16
13	5.78
14	5.78
15	5.78
16	5.76
17	5.75
18	5.75
19	5.75
20	2.75

IC 301 Option 2 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
16	0
17	4.8
18	4.83

IC 101 Option 2 SAA 5246A P/T		
Symbol/Pin	Voltage	
	TV	TEXT
1	5	5
2	2	2
3	3.5	3.5
4	3.5	3.5
5	0	0
6	5	5
7	2.2	2.2
8	2.5	2.5
9	2.5	2.5
10	5	5
11	5	5
12	1.6	1.9
13	5	5
14	0	5
15	0	5
16	0	5
17	0	5
18	2.5	2.5
19	0	2.3
20	0	2.3
21	4.5	2.45
22	0	0
23	4.5	4.5
24	4.5	4.5
25	0	0
47	4.5	4.5
48	5	5

Component Differences Tables

Component Differences Depending on Text			
	Type	1 Page Simple Text	4 Page Simple Text
S Text	Its components are on chassis	Connected	Connected
IC101*	SAA5246/SAA5254	SAA5254AP(3)	SAA5246AP(4)
IC102*	SRAM 8K8	----	Connected
X101*	27 Mhz	Connected	Connected
JT1	Jumper Wire	Connected	----
C101*	CAP SER 22NF 50V ZF	Connected	Connected
C102*	CAP EL 10UF 50V M	Connected	Connected
C103*	CAP MY 100NF 50V K	Connected	Connected
C104*	CAP SER 15PF 56PF 50V J SL	CAP SER 15PF 50V J SL	CAP SER 56PF 50V J SL
C105*	CAP SER 10PF 15PF 50V J CH	CAP SER 10F 50V J CH	CAP SER 15F 50V J CH
C106*	CAP SER 1NF 50V KB	----	Connected
C108*	CAP EL 3.3UF 50V M	Connected	Connected
C109*	CAP EL 3.3UF 50V M	Connected	Connected
C110*	CAP MY 100NF 50V K	Connected	Connected
C111*	CAP MY 100NF 50V K	Connected	Connected
C112*	CAP MY 100NF 50V K	Connected	Connected
C113*	CAP EL 10UF 50V M	Connected	Connected
C114*	CAP SER 22NF 50V ZF	Connected	Connected
C115*	CAP EL 10UF 50V M	Connected	Connected
C116*	CAP SER 1 NF 50V KB	----	Connected
C117*	CAP EL 10UF 50V M	----	Connected
C118*	CAP SER 1NF 50V KB	Connected	----
C130*	CAP SER 47PF 50V J	Connected	Connected
C133*	CAP SER 390PF 50V J CH	Connected	Connected
D102*	DIODE 1N4148	Connected	Connected
D103*	DIODE 1N4148	Connected	Connected
D104*	DIODE 1N4148	Connected	Connected
D105*	DIODE 1N4148	Connected	Connected
D106*	DIODE 1N4148	Connected	Connected
D107*	DIODE 1N4148	Connected	Connected
D108*	DIODE 1N4148	Connected	Connected
L101*	FIXED COIL 1UH Q45 M-A	----	Connected
L102*	FIXED COIL 4.7UH Q70 K-A	Connected	Jumper Wire
L103*	FIXED COIL 10UH Q65 K-A	Connected	Connected
Q101*	TR BC548B	Connected	Connected
Q102*	TR BC548B	Connected	Connected
Q103*	TR BC548B	Connected	Connected
Q104*	TR BC548B	----	Connected
Q105*	TR BC548B	Connected	Connected
R102*	RES CF 1/4W 1K J	Connected	Connected
R103*	RES CF 1/4W 22K J	Connected	Connected
R104*	RES CF 1/4W 47K J	Connected	Connected
R105*	RES CF 1/4W 1K J	Connected	Connected
R106*	RES CF 1/4W 2.2K J	Connected	Connected
R107*	RES CF 1/4W 1K J	Connected	Connected
R108*	RES CF 1/4W 27K J	Connected	Connected
R110*	RES CF 1/4W 10K J	Connected	Connected
R111*	RES CF 1/4W 27K J	Connected	Connected
R112*	RES CF 1/4W 10K J	Connected	Connected
R113*	RES CF 1/4W 1K J	Connected	Connected
R114*	RES CF 1/4W 1K J	Connected	Connected
R116*	RES CF 1/4W 1K J	Connected	Connected
R117*	RES CF 1/4W 2.7K J	Connected	Connected
R118*	RES CF 1/4W 10K J	Connected	Connected
R119*	RES CF 1/4W 33K J	Connected	Connected
R120*	RES CF 1/4W 22K J	Connected	Connected
R121*	RES CF 1/4W 100R J	Connected	Connected
R122*	RES CF 1/4W 100R J	Connected	Connected
R123*	RES CF 1/4W 2.2K J	Connected	Connected
R124*	RES CF 1/4W 2.2K J	Connected	Connected
R125*	RES CF 1/4W 2.2K J	Connected	Connected
R126*	RES CF 1/4W 1K J	Connected	Connected
R128*	RES CF 1/4W 33K J	Jumper Wire	Jumper Wire
R130*	RES CF 1/4W 4.7K J	Connected	Connected
R131*	RES CF 1/4W 3.3K J	Connected	----
R132*	RES CF 1/4W 27K J	Connected	Connected
R133*	RES CF 1/4W 100R J	Connected	Connected
R707*	RES CF 1/4W 3.3K J	Connected	Connected
S101	Jumper Wire	Connected	----
S102	Jumper Wire	Connected	----
S103	Jumper Wire	Connected	----
S104	Jumper Wire	Connected	----
S105	Jumper Wire	----	Connected
S106	Jumper Wire	Connected	----
S107	Jumper Wire	Connected	----
S109	Jumper Wire	Connected	Connected
S110	Jumper Wire	Connected	Connected
S121	Jumper Wire	Connected	Connected

Component Differences Depending on FTZ			
	Type	Without FTZ	With FTZ
CABLE	220V Cable	Connected (1)	VDE & Filter (2)
C413*	CAP SER 820PF 50V K B	----	Connected
C439*	CAP SER 820PF 50V K B	----	Connected
C465*	CAP SER 47PF 50V J SL	----	Connected
C466*	CAP SER 47PF 50V J SL	----	Connected
C467*	CAP SER 47PF 50V J SL	----	Connected
C496*	CAP SER 1.5NF 50V K B	----	Connected
C497*	CAP SER 1.5NF 50V K B	----	Connected
R418*	RES CF 1/4W 100R/270R J	RES CF 1/4W 100R J	RES CF 1/4W 270R J
R419*	RES CF 1/4W 100R/270R J	RES CF 1/4W 100R J	RES CF 1/4W 270R J
R420*	RES CF 1/4W 100R/270R J	RES CF 1/4W 100R J	RES CF 1/4W 270R J
R433*	RES CF 1/4W 1K J	Jumper Wire	Connected
R434*	RES CF 1/4W 1K J	Jumper Wire	Connected
R489*	RES CF 1/4W 560R J	Jumper Wire	Connected
R493*	RES CF 1/4W 560R J	Jumper Wire	Connected
R494*	RES CF 1/4W 560R J	Jumper Wire	Connected
S400	Jumper Wire	Connected	----

Component Differences Depending on Sound			
	Type	German Stereo	NICAM + German Stereo
11GN02	NICAM + German Stereo	----	Connected
11GN03	NICAM Stereo	----	Connected
11GS04	German Stereo	Connected	----
PL303*	Conn Male 11p	Connected	Connected
PL304*	Conn Male 14p	Connected	Connected
C505*	CAP EL 1UF 50V M	----	----
C403*	CAP EL 2.2UF 16V M	----	----
C433*	CAP SER 47PF 50V J SL	----	----
C447*	CAP EL 2.2UF 16V M	----	----
C450*	CAP SER 1NF 50V K B	----	----
C452*	CAP EL 33UF 16V M	----	----
C484*	CAP EL 33UF 16V M	Connected	Connected
C485*	CAP EL 33UF 16V M	Connected	Connected
C486*	CAP EL 10UF 50V M	----	----
C836*	CAP SER 100NF 50V ZF	Connected	Connected
C837*	CAP EL 100UF 25V M	Connected	Connected
D501*	Diode 1N4148	----	----
Q406*	TR BC548B	----	----
Q413*	TR BC548B	----	----
R404*	RES CF 1/4W 1K J	Connected	Connected
R408*	RES CF 1/4W 1K J	Connected	Connected
R424*	RES CF 1/4W 820R J	----	----
R450*	RES CF 1/4W 150R J	----	----
R451*	RES CF 1/4W 220K J	----	----
R452*	RES CF 1/4W 100K J	----	----
R453*	RES CF 1/4W 10K J	----	----
R454*	RES CF 1/4W 10K J	Jumper Wire	Jumper Wire
R478*	RES CF 1/4W 100K J	----	----
R479*	RES CF 1/4W 100K J	----	----
R490*	RES CF 1/4W 56K J	----	----
R491*	RES CF 1/4W 68K J	----	----
R492*	RES CF 1/4W 1K J	----	----
R495*	RES CF 1/4W 1K J	----	----
R508*	RES CF 1/4W 270K J	----	----
R509*	RES CF 1/4W 1K J	----	----
R520*	RES CF 1/4W 6.8K J	Connected	Connected
S201	Jumper Wire	Connected	Connected
S202	Jumper Wire	Connected	Connected
S402	Jumper Wire	Connected	Connected
S405	Jumper Wire	----	----
S407	Jumper Wire	----	----
S410	Jumper Wire	----	----
S415	Jumper Wire	Connected	Connected
S416	Jumper Wire	Connected	Connected
S503	Jumper Wire	----	----
S506	Jumper Wire	----	----
S512	Jumper Wire	Connected	Connected
S513	Jumper Wire	Connected	Connected

Component Differences Depending on System								
Type	PAL B/G	PAL-SEC B/G	PAL-SEC B/G-L/L	PAL-SEC B/G-D/K	SECAM D/K	PAL I-1 (UHF)	PAL I-2 (VHF/UHF)	
TU101*	Tuner KHC2000/TFK3011	KHC2000	KHC2000	KHC2000	KHC2000	TFK3011	KHC2000	
IC403*	IC TDA8395	....	Connected	Connected	....	....	....
IC503*	IC LA7910	Connected	Connected	Connected	Connected	....	Connected
Z201*	Filter Saw	OFWG1963	OFWG1963	OFWK2954	OFWK2954	OFWJ1953(3)	OFWJ1953(3)	
Z401*	Filter Ser Trap Tps 5.5/6.0 MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz	6.0mhz	
Z402*	Filter Ser Trap Tps 6.5MHz	....	....	Connected	Connected	....	....
Z403*	Filter Ser 5.5/6.0mhz Sfe 5.5/6.0MB	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz	6.0MHz	
Z404*	Filter Ser 6.5mhz SFE 6.5MB	....	....	Connected	Connected	....	....
C204*	CAP SER 100NF 50V Z F	Connected	Connected	Connected	Connected	....	Connected
C205*	CAP SER 100NF 50V Z F	Connected	Connected	Connected	Connected	....	Connected
C208*	CAP EL 10UF 50V M	Connected	Connected	Connected	Connected	....	Connected
C209*	CAP EL 10UF 50V M	Connected	Connected	Connected	Connected	....	Connected
C441*	CAP SER 100NF 50V Z F	....	Connected	Connected	....	....	....
C442*	CAP SER 100NF 50V Z F	....	Connected	Connected	....	....	....
C443*	CAP MKT 220NF 63V J	....	Connected	Connected	....	....	....
C460*	CAP SER 1NF 50V K B	....	Connected	Connected	....	....	....
C510*	CAP SER 100NF 50V Z F	Connected	Connected	Connected	Connected	....	Connected
C514*	CAP EL 10UF 50V M	Connected	Connected	Connected	Connected	....	Connected
D502*	DIODE 1N4148	Connected	Connected	Connected	Connected	....	Connected
D503*	DIODE 1N4148	Connected	Connected	Connected	Connected	....	Connected
D520*	DIODE 1N4148	Connected	Connected	Connected	Connected	....	Connected
D522*	DIODE 1N4148	....	Jumper Wire	Connected	Connected	....	Connected
J01	Jumper Wire	....	....	Connected	....	....	LINK
J02	Jumper Wire	....	....	....	....	....	....
J03	Jumper Wire	....	....	....	....	....	....
L402*	Fixed Coil 6.8uH	Jumper Wire	Jumper Wire	Connected	Connected	Connected	Connected	
Q412*	TR BC558B	....	....	Connected	....	LINK	LINK
Q510*	TR BC548B	....	....	Connected	....	....	....
R470*	RES CF 1/4W 10K J	....	Connected	Connected	....	....	....
R474*	RES CF 1/4W 1K J	....	....	Connected	....	....	....
R522*	RES CF 1/4W 5.6K J	Connected	Connected	Connected	Connected	....	Connected
R523*	RES CF 1/4W 5.6K J	Connected	Connected	Connected	Connected	....	Connected
R524*	RES CF 1/4W 2.7K J	Connected	Connected	Connected	Connected	....	Connected
R556*	RES CF 1/4W 56K J	....	....	Connected	Connected	....	Connected
R557*	RES CF 1/4W 10K J	....	....	Connected	....	....	....
S401	Jumper Wire	Connected	Connected	Connected	Connected	Connected	Connected	
S501	Jumper Wire	....	....	....	....	Connected	....
S502	Jumper Wire	....	....	....	....	Connected	....
S505	Jumper Wire	Connected	Connected	Connected	Connected	Connected	

Component Differences Tables Cont'd.

Component Differences Depending on TDA 8362A N1/N2					
	Type	CTV351S VE1 TDA 8362A N1	CTV351S VE1 TDA8362A N2	CTV551S VE1 TDA 8362A N1	CTV551S VE1 TDA 8362A N2
IC401*	TDA 8362A N1/N2	TDA 8362A N1	TDA 8362A N2	TDA 8362A N1	TDA 8362A N2
R115*	RES CF 1/4W 8.2K/6.8K J	RES CF 1/4W 8.2K J	RES CF 1/4W 6.8K J	RES CF 1/4W 8.2K J	RES CF 1/4W 6.8K J
R127*	RES CF 1/4W 1K/2.7K J	RES CF 1/4W 1K J	RES CF 1/4W 2.7K J	RES CF 1/4W 1K J	RES CF 1/4W 2.7K J
R150*	RES CF 1/4W 15K/3.9K J	----	RES CF 1/4W 15K J	----	RES CF 1/4W 15K J
R436*	RES CF 1/4W 47K/8.2K J	RES CF 1/4W 47K J	RES CF 1/4W 8.2K J	RES CF 1/4W 47K J	RES CF 1/4W 8.2K J
R511*	RES CF 1/4W 39K/22K/180K/82K J	RES CF 1/4W 39K J	RES CF 1/4W 22K J	RES CF 1/4W 180K J	RES CF 1/4W 82K J
R517*	RES CF 1/4W 10K/15K/180K/62K J	RES CF 1/4W 10K J	RES CF 1/4W 15K J	RES CF 1/4W 180K J	RES CF 1/4W 62K J
R518*	RES CF 1/4W 39K 47K/15K/18K J	RES CF 1/4W 39K J	RES CF 1/4W 47K J	RES CF 1/4W 15K J	RES CF 1/4W 18K J

Component Differences Depending on CRT			
	Type	28" PHILIPS A66EAK77X01	28" THOMSON (VCL) A66ECY13X31
R709*	RES CF 1/2W 330R J	RES CF 1/2W 330R J	RES CF 1/2W 330R J
C705*	CAP EL 3.3UF 50V M	CAP EL 3.3UF 50V M	CAP EL 3.3UF 50V M
R705*	RES CF 1/4W 10K J	RES CF 1/4W 10K J	RES CF 1/4W 10K J
R710*	RES CF 1/2W 270R J	RES CF 1/2W 270R J	RES CF 1/2W 270R J

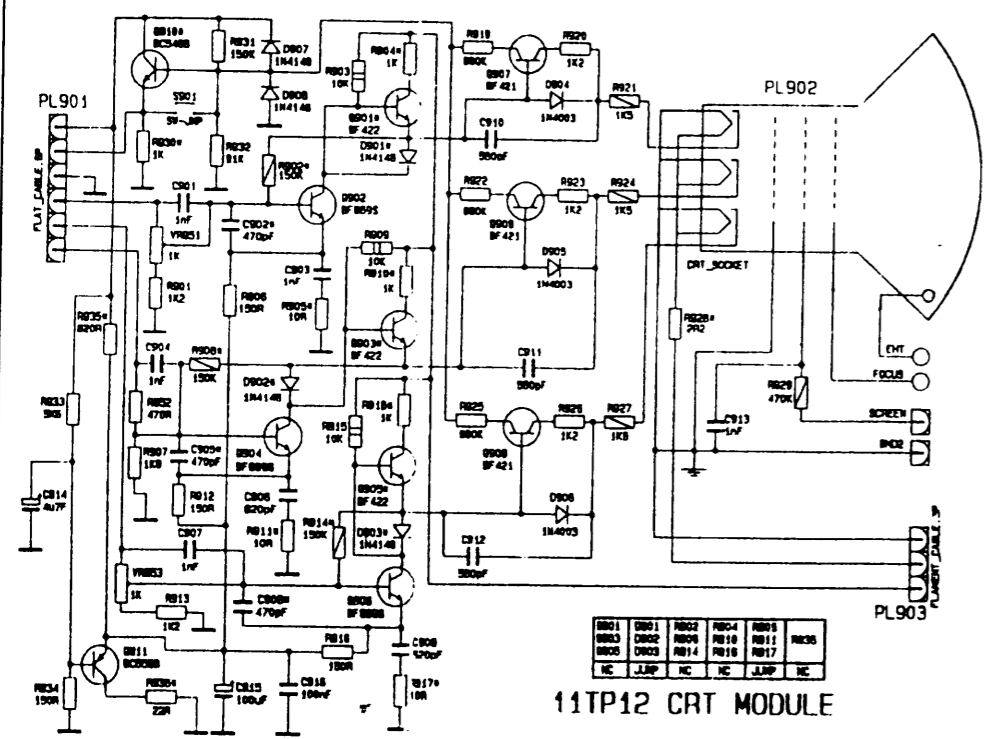
Component Differences Depending on Sound and control System			
	Type	STEREO CTV551S VE1	STEREO CTV351S VE1
D399*	DIODE 1N4148	Connected	----
D400*	DIODE 1N4148	Connected	Connected
D521*	DIODE 1N4148	Connected	----
J207	Jumper Wire/DIODE 1N4148	Connected	Connected
J456	Jumper Wire/RES CF 1/4W 560R	Connected	Connected
R460*	RES CF 1/4W 1K/3.3K J	RES CF 1/4W 1K J	RES CF 1/4W 1K J
R475*	RES CF 1/4W 33K J/DIODE 1N4148	DIODE 1N4148	----
R572*	RES CF 1/4W 1K/330R J	RES CF 1/4W 1K J	RES CF 1/4W 1K J

Component Differences Depending on SCART and Sound			
	Type	SINGLE SCART	GERMAN STEREO DOUBLE SCART
	CABLE 0.6MM BLUE (8CM)	----	Connected
11SS02	SCART MODULE	----	Connected
SC402*	SCART SOCKET	----	Connected
C440*	CAP EL 100UF 16V M	----	Connected
C462*	CAP EL 33UF 16V M	----	Connected
C463*	CAP EL 33UF 16V M	----	Connected
D524*	DIODE 1N4148	----	Connected
J401	Jumper Wire/RES CF 1/4W 10K J	Connected	RES CF 1/4W 10K J
J402	Jumper Wire/RES CF 1/4W 10K J	Connected	RES CF 1/4W 10K J
Q414*	TR BC548B	----	Connected
Q415*	TR BC548B	----	Connected
Q416*	TR BC548B	----	Connected
R409*	RES CF 1/4W 100R/1K J	RES CF 1/4W 100R J	RES CF 1/4W 10K J
R416*	RES CF 1/4W 10K/1K J	RES CF 1/4W 10K J	RES CF 1/4W 1K J
R417*	RES CF 1/4W 10K/1K J	RES CF 1/4W 10K J	RES CF 1/4W 1K J
R465*	RES CF 1/4W 75R J	----	Connected
R483*	RES CF 1/4W 1K J	----	Connected
R484*	RES CF 1/4W 820R/330R J	----	RES CF 1/4W 330R J
R485*	RES CF 1/4W 1K J	----	Connected
R486*	RES CF 1/4W 820R/330R J	----	RES CF 1/4W 330R J
R487*	RES CF 1/4W 75R J	----	Connected
R488*	RES CF 1/4W 1K J	----	Connected
R497*	RES CF 1/4W 100R J	----	Connected
S200	Jumper Wire	Connected	----
S408	Jumper Wire	Connected	----
S409	Jumper Wire	Connected	----
S411	Jumper Wire	----	----
S412	Jumper Wire	Connected	----
S414	Jumper Wire	----	----

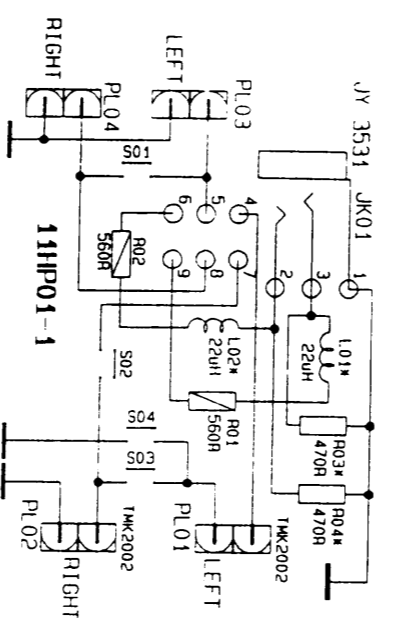
Component Differences Depending on System			
	Type	CTV551S VE1	CTV3651S VE1
IC501*	IC CTV 551S/422M/351S/322M	CTV551S VE1	CTV351S VE1
IC502*	IC PCF8594/24C04/24C02	IC PCF8594/24C04	IC 24C02
X501*	XTAL 12MHZ/10MHZ	XTAL 12MHZ	XTAL 10MHZ
C511*	CAP SER 33PF/18PF 50V J SL	CAP SER 33PF 50V J SL	CAP SER 18PF 50V J SL
C512*	CAP SER 33PF/18PF 50V J SL	CAP SER 33PF 50V J SL	CAP SER 18PF 50V J SL
C517*	CAP MKT 100NF 63V J	Connected	----
C831*	CAP EL 10UF 50V/ 100UF 16V M	CAP EL 100UF 16V M	CAP EL 10UF 50V M
D510*	Res Cf 1/4W 10K J/Diode 1N4148	RES CF 1/4W 10K J	DIODE 1N4148
D511*	DIODE 1N4148	----	----
D512*	Res Cf 1/4W 3.3K J/Diode Zener 3.6	RES CF 1/4W 3.3K J	DIODE 1N4148
D514*	Diode Zener 3.6V/Res Cf 1/4W 390R	RES CF 1/4W 390R J	DIODE ZENER 3.6V
D518*	Diode Zener 3.6V/Res Cf 1/4W 390R	DIODE ZENER 3.6V	RES CF 1/4W 390R J
D525*	DIODE 1N4148	----	Connected
Q407*	TR BC548B	----	----
Q503*	TR BC558B/BC548B	TR BC548B	TR BC558B
Q504*	TR BC548B	Connected	Connected
Q511*	TR BC548B	Connected	----
R206*	RES CF 1/4W 10M J	----	----
R448*	RES CF 1/4W 10K J	----	----
R449*	RES CF 1/4W 62K J	----	----
R510*	RES CF 1/4W 27K/10K J	RES CF 1/4W 27K J	RES CF 1/4W 10K J
R512*	RES CF 1/4W 27K/82K J	RES CF 1/4W 27K J	RES CF 1/4W 82K J
R513*	RES CF 1/4W 150K/390	RES CF 1/4W 150K J	RES CF 1/4W 390K J
R514*	RES CF 1/4W 27K/15K J	RES CF 1/4W 27K J	RES CF 1/4W 15K J
R515*	RES CF 1/4W 270K/100K J	RES CF 1/4W 270K J	RES CF 1/4W 100K J
R519*	RES CF 1/4W 47K/15K J	RES CF 1/4W 47K J	RES CF 1/4W 15K J
R525*	RES CF 1/4W 47K J	Connected	----
R526*	RES CF 1/4W 47K	Connected	----
R533*	RES CF 1/4W 47K/22K J	RES CF 1/4W 47K J	RES CF 1/4W 22K J
R534*	RES CF 1/4W 33K J	----	Connected
R535*	RES CF 1/4W 47K J	----	----
R542*	RES CF 1/4W 4.7K J	Jumper Wire	Connected
R545*	RES CF 1/4W 1K J	Connected	----
R546*	RES CF 1/4W 5.6K J	Connected	----
R547*	RES CF 1/4W 47K J	Connected	----
R548*	RES CF 1/4W 47K J	Connected	----
R549*	RES CF 1/4W 62K J	Connected	Connected
R550*	RES CF 1/4W 5.6K J	Connected	Connected
R561*	RES CF 1/4W 18K J	Connected	Connected
R564*	RES CF 1/4W 4.7K J	Connected	----
R565*	RES CF 1/4W 4.7K J	Connected	----
R566*	RES CF 1/4W 4.7K J	Connected	Jumper Wire
R573*	RES CF 1/4W 12K J	Connected	----
R574*	RES CF 1/4W 47K J	Connected	----
R575*	RES CF 1/4W 47K J	Connected	----
R576*	RES CF 1/4W 47K J	Connected	----
R581*	RES CF 1/4W 1K J	Connected	----
R582*	RES CF 1/4W 4.7K J	Connected	----
R583*	RES CF 1/4W 4.7K J	Connected	----
R584*	RES CF 1/4W 4.7K J	Connected	----
R614*	RES CF 1/4W 4.7K/10K J	RES CF 1/4W 4.7K J	RES CF 1/4W 10K J
R618*	RES CF 1/4W 27K/10K J	RES CF 1/4W 27K J	RES CF 1/4W 10K J
S504	Jumper Wire	----	----
S508	Jumper Wire	----	Connected
S514	Jumper Wire	Connected	----
S515	Jumper Wire	----	Connected
S516	Jumper Wire	Connected	Connected
S517	Jumper Wire	----	Connected
S518	Jumper Wire	----	Connected
S850	Jumper Wire	----	Connected
S851	Jumper Wire	Connected	----

Component Differences on All Models		
	Type	All Option
PL801*	2P 220V SOCKET	Connected
C448*	CAP SER	Connected
C449*	CAP SER	Connected
C494*	CAP SER	----
C498*	CAP SER	----
C499*	CAP SER	----
C516*	CAP SER	Connected
C603*	CAP SER	----
C811*	CAP SER	----
D401*	DIODE 1N4148	----
D405*	DIODE 1N4148	Jumper Wire
D430*	DIODE 1N4148	Connected
D652*	DIODE 1N4148	Connected
D655*	DIODE 1N4148	----
D813*	DIODE 1N4148	----
F802*	Jumper Wire	Jumper Wire
J603	Jumper Wire	RES CF 1/4W 6.8R
J800	Jumper Wire	----
L201*	Fixed Coil	Connected
L403*	Fixed Coil	Connected
L404*	Fixed Coil	Connected
L802*	Fixed Coil	Connected
R109*	RES CF 1/4W	----
R207*	RES CF 1/4W	----
R208*	RES CF 1/4W	----
R476*	RES CF 1/4W	----
R507*	Jumper Wire	----
R515*	Jumper Wire	Connected
R516*	Jumper Wire	----
R527*	RES CF 1/4W	----
R528*	RES CF 1/4W	Jumper Wire
R529*	RES CF 1/4W	Jumper Wire
R530*	RES CF 1/4W	Jumper Wire
R541*	RES CF 1/4W 1K J	Connected
R559*	RES CF 1/4W	Connected
R563*	RES CF 1/4W	----
R569*	CF 270R 1/4W J	----
R570*	CF 680R 1/4W J	Jumper Wire
R577*	RES CF 1/4W	----
R580*	Jumper Wire	----
R655*	RES CF 1/4W	Connected
R806*	RES CF 1/4W	----
R811*	RES CF 1/4W	Connected
S111	Jumper Wire	----
S404	Jumper Wire	----
S420	Jumper Wire	Connected
S483	Jumper Wire	----
S509	Jumper Wire	----
S510	Jumper Wire	Connected
S511	Jumper Wire	Connected
S552	Jumper Wire	----
S601	Jumper Wire	Connected
S602	Jumper Wire	----
S604	Jumper Wire	----
S801	Jumper Wire	----

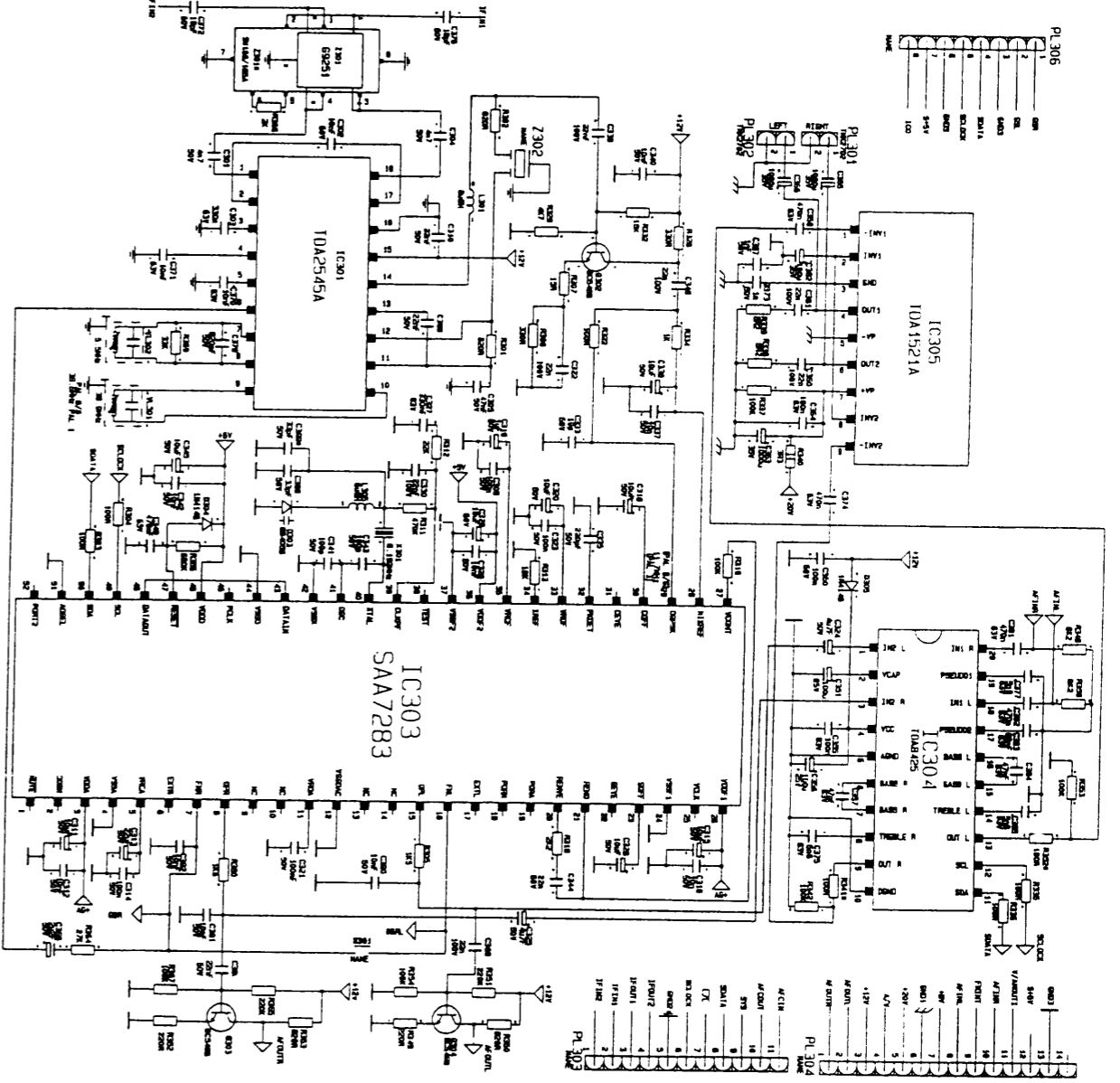
CRT Diagram



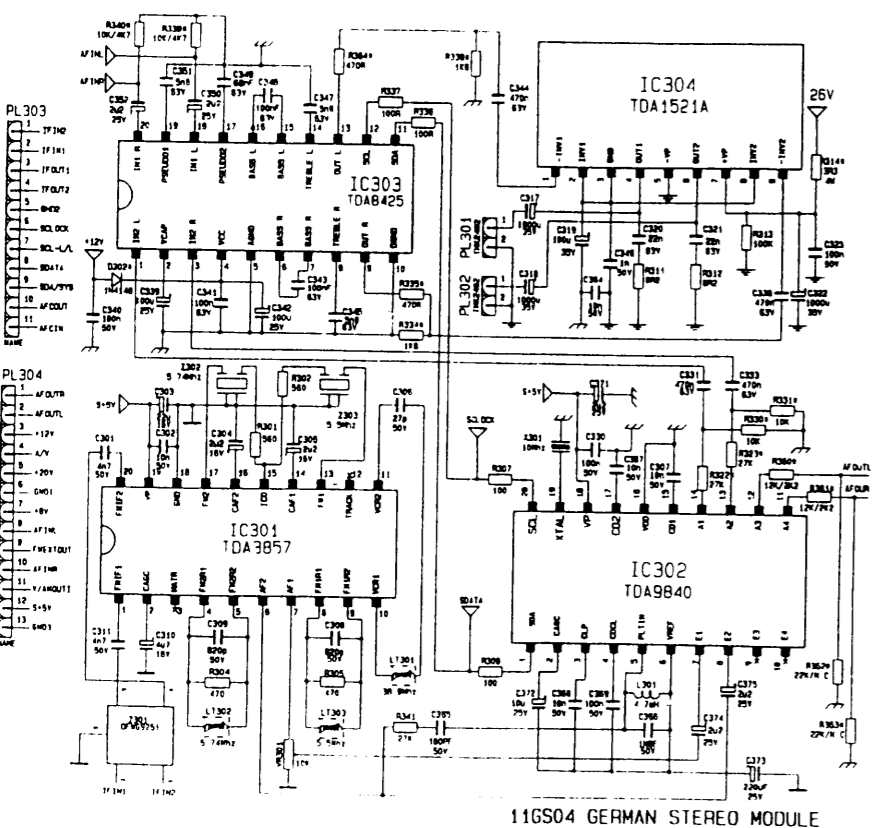
Headphone Diagram



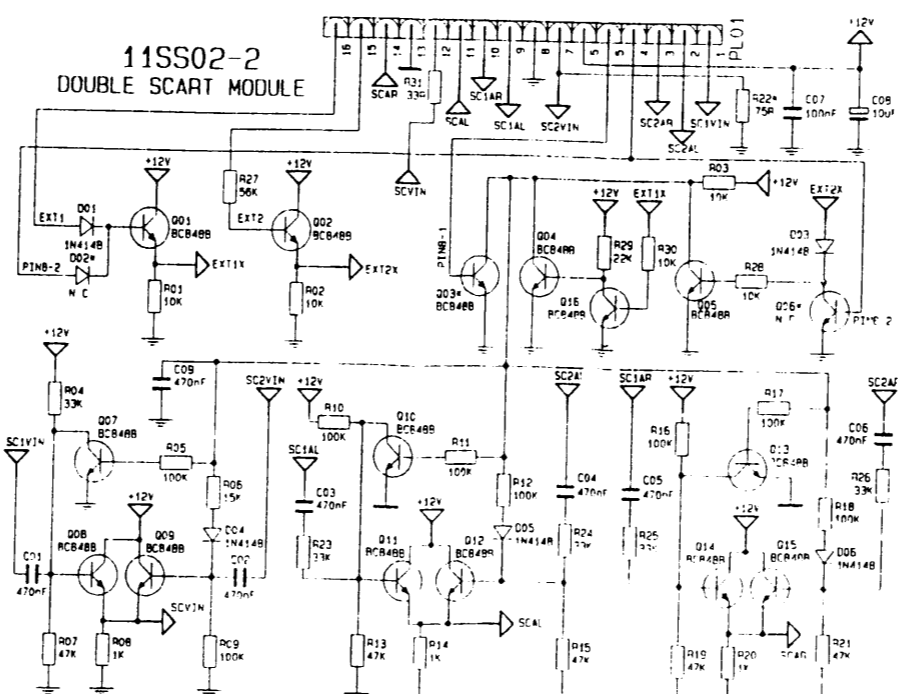
German NICAM Diagram



German Stereo "A" Diagram



Double Scart Diagram



German Stereo "B" Diagram

