

General Information

1996

CRT: A48ECR11X16

Remote Control: 243001

Door Flap: 243010

Main Power Button:

242969

Battery Cover: 242981

Matrix

Item See Model

Safety Notes Amstrad CTV 1400
Specifications Amstrad CTV 20TService
Adjustments

Alignment Procedures

VIF Alignment

Preparation Set-up
(see fig. 1)

- 1: Connect AGC bias voltage to TP105, the DC supply turned off.
- 2: Connect a +14V bias to D404 and GND.
- 3: Connect AGC bias voltage to C917 and GND.
- 4: Connect sweep generator to tuner test point and GND.

Tank Coil Alignment Set-up
(see fig. 2)

- 1: Calibrate the division of wave detector to 1V/DIV.
- 2: The output of sweep generator should be -50dB.
- 3: Connect the waveform detector to

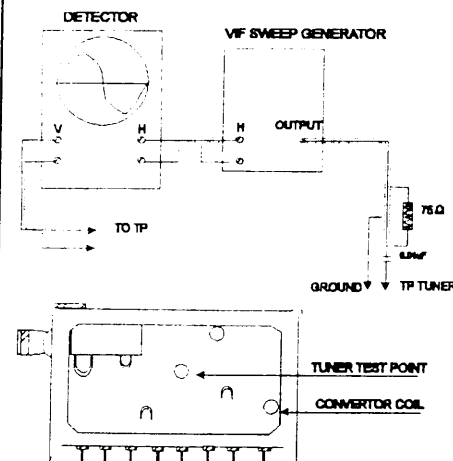


Fig 1.

- 4: Connect a 47K resistor to IC102 between pin 7 and pin 23.
- 5: Adjust AGC bias until the output waveform equals to 8Vp-p.
- 6: Turn T101 to obtain the waveform as in fig. 2.

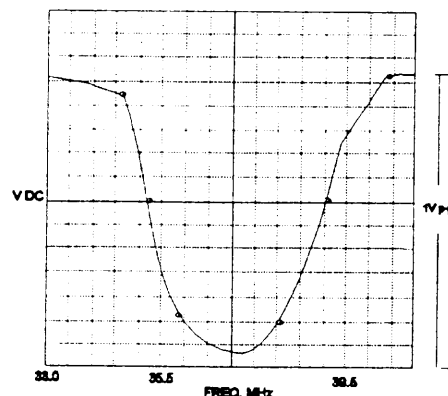


Fig 2.

VIF Alignment

- 1: Connect the waveform detector to TP102 and GND.
- 2: Connect 100 W resistor between TP103 and TP104.

- 3: Adjust T105 to obtain max. amplitude. Refer to fig. 3.
- 4: The output of sweep generator should be -50dB.
- 5: Adjust AGC bias to maintain the waveform achieved, i.e. 1Vp-p.
- 6: Adjust tuner converter coil to obtain waveform as in fig. 3.

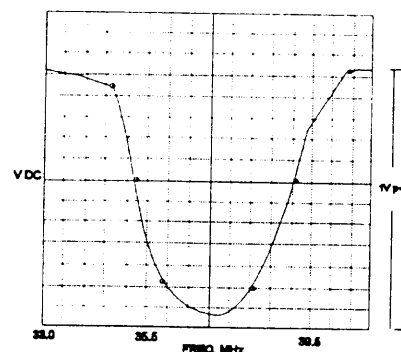


Fig 3.

SIF Alignment

- 1: Connect the sweep generator to TP107.
- 2: Connect waveform detector to pin 1 and pin 3 of CN306.
- 3: Connect AGC bias voltage to TP101.
- 4: Output of sweep generator should be -40dB.
- 5: Adjust T104 and T102 to obtain the waveform as in fig. 4.

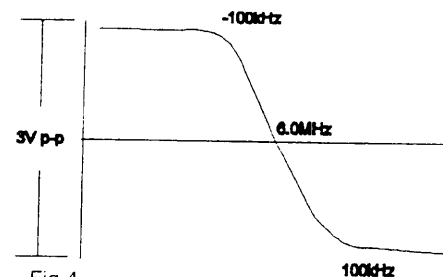


Fig 4.

Sound Tank Coil Alignment

- 1: Connect pattern generator to tuner test point and GND. Frequency: 39.5 MHz.
- 2: Connect DVM to pin 12 of IC101.
- 3: Adjust T103 to obtain a DC 2.8V ± 0.1V.

PAL Colour Adjustment

- 1: Receive pattern generator signal.
- 2: Connect oscilloscope to TP304.
- 3: Set colour control to minimum position.
- 4: Adjust T301 and VR302 to obtain waveform as in fig. 5.

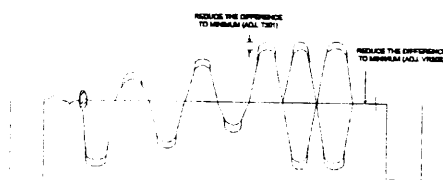


Fig 5.

B+ Adjustment

- 1: Connect DVM to TP B+ and ground.
- 2: Set brightness, colour and contrast to minimum.
- 3: Adjust VR901 to read 112VDC.

AGC Alignment

- 1: Receive Ch. 69 (UHF) and input field strength in 63dB ± 3dB input.
- 2: Adjust VR101 until noise disappears.

Focus Alignment

- 1: Set brightness and contrast to mid position.
- 2: Receive monochrome pattern.
- 3: Adjust focus control to get sharpest picture.

Horizontal Hold Adjustment

- 1: Receive monoscope pattern input signal to 80dBmV.
- 2: Connect 10mf/16V Elec. cap. across pin 25 of IC102.
- 3: Adjust VR103 to obtain picture in the centre.

Vertical Hold Adjustment

- 1: Receive the monoscope pattern.
- 2: Adjust V. size VR401 to obtain a normal picture.

White Balance Adjustment

- 1: Degauss the picture tube if necessary. Receive signal from pattern generator and switch off the generator.
- 2: Turn the brightness, contrast and colour controls to minimum.
- 3: Turn VR501, VR502 and VR504 to centre positions and VR503, and VR505 to mid position.
- 4: Turn VR301 to mid position.
- 5: Receive black and white pattern.
- 6: Connect a DVM between G2 and ground on CRT PCB.
- 7: Adjust screen control on FBT to obtain 310VDC.
- 8: Adjust VR 502 - VR505 to obtain uniform white picture 93000°K.

Sub Brightness Alignment

- 1: Receive a colour bar pattern.
- 2: Turn brightness, colour and contrast to minimum.
- 3: Adjust VR301 until brightest of the bars just becomes visible.

Voltage Charts

IC901 L7805CV	
Pin No.	Volts DC
1	15.1
2	GND
3	5.0

IC103 L7812CV	
Pin No.	Volts DC
1	15.2
2	GND
3	12.3

IC304 TDA3504	
Pin No.	Volts DC
1	3.5
2	11.7
3	8.3
4	8.4
5	8.0
6	0.9
7	0.1
8	4.1
9	4.3
10	4.1
11	2.8
12	4.9
13	NC
14	4.1
15	0.7
16	2.3
17	2.2
18	GND
19	3.5
20	3.5

IC301 PC74HCT241P	
Pin No.	Volts DC
1	0.01
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	GND
11	2.3
12	0
13	2.3
14	0
15	2.3
16	0
17	0.01
18	0
19	0.01
20	5

IC401 TDA3653B	
Pin No.	Volts DC
1	1.2
2	GND
3	1.3
4	GND
5	12.0
6	25.0
7	NC
8	2.9
9	25.0

IC602 ST24C02AB1	
Pin No.	Volts DC
1	GND
2	5.0
3	GND
4	GND
5	2.6
6	3.1
7	5.0
8	5.0

IC305 TDA4510	
Pin No.	Volts DC
1	7.8
2	7.8
3	0
4	2.4
5	2.4
6	8.4
7	12.0
8	7.9
9	3.4
10	8.2
11	3.0
12	7.9
13	2.3
14	7.6
15	0.99
16	NC

IC101 TDA3857	
Pin No.	Volts DC
1	1.8
2	2.0
3	2.5
4	1.9
5	2.1
6	NC
7	2.1
8	1.8
9	1.8
10	4.1
11	4.1
12	3.8
13	0.05
14	1.5
15	2.0
16	NC
17	NC
18	GND
19	5.2
20	1.8

IC201 LA4445	
Pin No.	Volts DC
1	1.2
2	0.01
3	GND
4	17.2
5	0.01
6	1.2
7	16.0
8	8.9
9	17.3
10	8.9
11	1.6
12	0

IC007, 008 NE5532N	
Pin No.	Volts DC
1	5.2
2	1.4
3	1.4
4	GND
5	5.2
6	5.2
7	5.2
8	11.4

IC601 CTV322S	
Pin No.	Volts DC
1	4.49
2	0.16
3	4.9
4	4.9
5	4.9
6	NC
7	0
8	5.0
9	0
10	0.57
11	GND
12	4.16
13	5.0
14	5.0
15	5.0
16	5.0
17	5.0
18	0.1
19	5.0
20	5.0
21	GND
22	0
23	0
24	0
25	0
26	0.4
27	-0.24
28	5.0
29	4.9
30	GEN
31	2.48
32	2.1
33	5.0
34	4.96
35	4.9
36	0.2
37	0.02
38	GND
39	3.16
40	2.8
41	0.16
42	5.0

IC801 SAA5254 P/T	
Pin No.	Volts DC
1	5.0
2	2.1
3	3.56
4	0.01
5	GND
6	4.9
7	2.2
8	2.4
9	2.5
10	5.0
11	GND
12	2.1
13	5.0
14	GND
15	0.42
16	0.5
17	0.4
18	3.8
19	4.5
20	0
21	NC
22	NC
23	NC
24	3.2
25	2.8
26	NC
27	NC
28	NC
29	NC
30	NC
31	NC
32	NC
33	NC
34	NC
35	NC
36	NC
37	NC
38	NC
39	NC
40	NC
41	
42	

IC303 TA8628N	
Pin No.	Volts DC
1	5.3
2	0
3	4.1
4	0
5	4.0
6	3.6
7	GND
8	GND
9	3.4
10	4.1
11	1.3
12	5.4
13	5.4
14	NC
15	4.7
16	10.3
17	3.5
18	9.8
19	NC
20	3.3
21	NC
22	4.7
23	GND
24	5.4

IC005 TC4052BP	
Pin No.	Volts DC
1	2.1
2	0.78
3	0.61
4	0.61
5	0.61
6	GND
7	GND
8	GND
9	3.1
10	7.1
11	0.61
12	2.1
13	0.78
14	0.78
15	0.78
16	11.3

IC302 TEA5114A	
Pin No.	Volts DC
1	3.6
2	GND
3	3.6
4	3.6
5	3.6
6	3.6
7	3.6
8	0
9	0.14
10	0.02
11	3.0
12	0.02
13	3.0
14	12.0
15	0.02
16	2.9

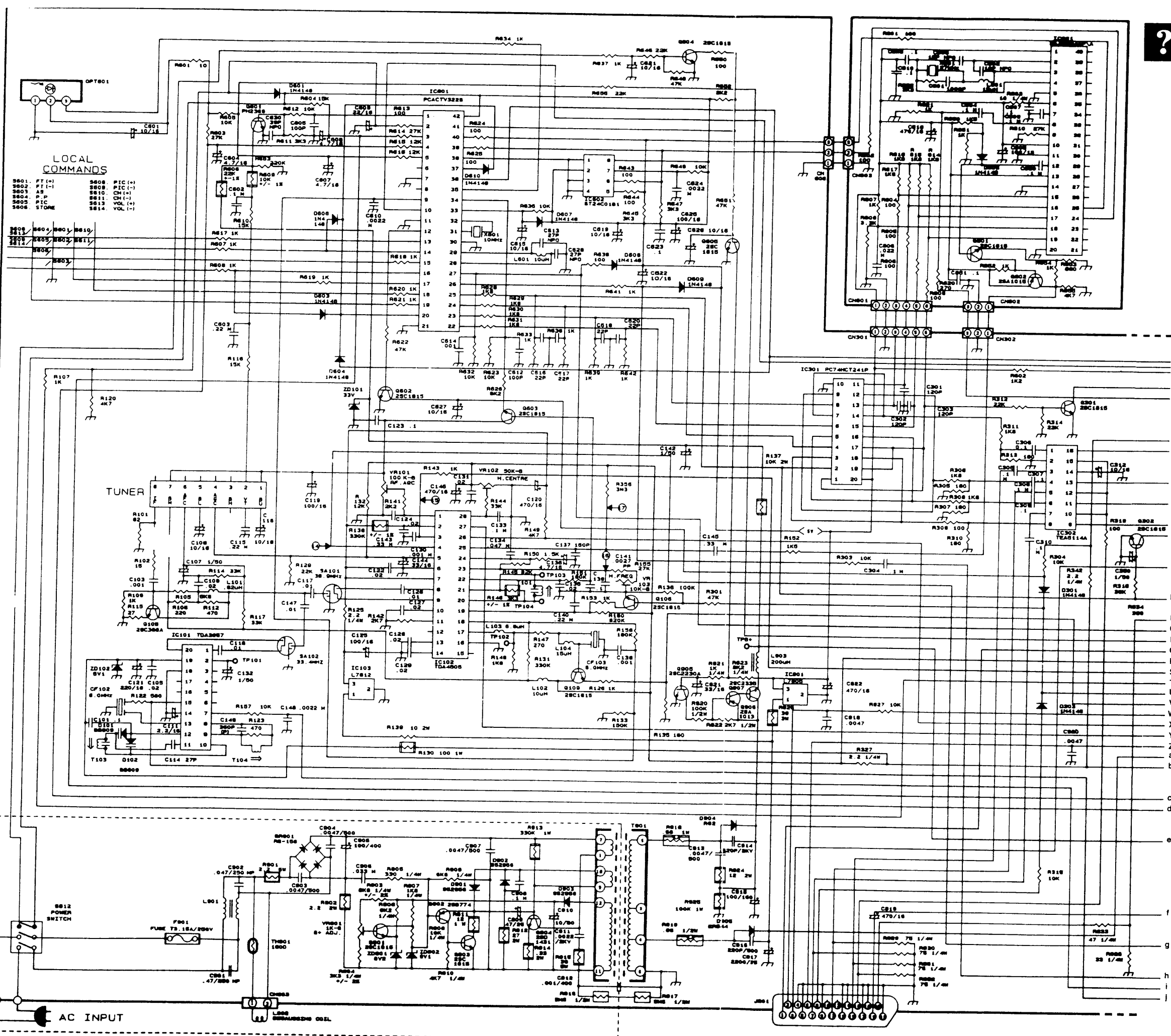
IC102 TEA4505E	
Pin No.	Volts DC
1	5.4
2	2.5
3	2.8
4	3.2
5	3.7
6	GND
7	11.8
8	3.4
9	3.4
10	3.3
11	1.8
12	NC
13	3.0
14	1.4
15	NC
16	GND
17	4.0
18	6.5
19	5.1
20	7.2
21	7.2
22	10.0
23	2.6
24	2.6
25	5.3
26	0.8
27	0.9
28	3.1

IC006 TDA8732	
Pin No.	Volts DC
1	2.0
2	GND
3	2.3
4	5.3
5	3.9
6	4.0
7	4.0
8	3.9
9	1.2
10	2.1
11	4.2
12	5.3
13	4.2
14	GND
15	2.3
16	2.6
17	NC
18	NC
19	GND
20	3.3

IC009 TDA1543	
Pin No.	Volts DC
1	2.6
2	2.6
3	2.6
4	GND
5	5.2
6	1.4
7	1.4
8	1.4

Recommended Safety Parts

Item	Part No.	Description
C418	273711	Polypropylene 0.0033μF 1.6kV
C420	242604	Metal Poly 0.0022μF 1.6kV
C501	272099	Capacitor Ceramic 0.001 μF 2kV
C901	242517	Metal Poly 0.47μF 250V
C902	253611	Metal Poly 0.047μF 250V
C912	253609	Capacitor Ceramic 0.001μF 400V
C914	171643	Capacitor Ceramic 820pF 2kV
F901	171531	Fuse T3.15A 250V
L901	242987	Coil Line Filter 70mH
L902	242940	Degaussing Coil 60T 20"
L903	242923	Coil Choke 200UH
R203, R422	178043	Non Flammable Fuse 2.2 Ω 2W
R423, R424,		
R918	242741	Non Flammable Fuse 0.68 Ω 1W
R501	242862	Non Flammable Fuse 1.5 Ω 2W
R901	241920	Wire Wound Cement 2.2 Ω 5W
R919	242571	Non Flammable Fuse 0.68 Ω 1/2W
T401	242986	TX Horizontal Drive R1005
T401	242918	TX Flyback FCM20B027
T901	242988	TX Switching Power KB40C214D
TH901	242752	Thermistor ZPB53 BL200C



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Transistors

TR No.	B DVC	C VDC	E VDC
Q105	1.13	8.5	0.4
Q110	4.1	9.6	0.7
Q111	0.01	4.8	0
Q201	16.3	15.7	15.6
Q301	0	2.9	0
Q302	2.13	11.4	1.5
Q305	0	1.9	0
Q401	0.4	56.2	-0.01
Q402	-0.08	108.9	0
Q601	0.6	2.01	0
Q602	0.7	0.06	0
Q603	9.2	12.2	8.7
Q604	0	0.24	0
Q605	0.3	1.1	0
Q901	9	19.7	8.4
Q902	7.9	0.07	2.3
Q903	0.07	2.0	0
Q904	-1.69	258	0.6
Q905	0.6	0.04	0
Q906	109.5	110	110.1
Q907	110	110.1	109.4
Q501	3.13	134.2	2.6
Q502	3.6	128.4	2.6
Q503	3.1	127.4	2.6
Q701	0	3.0	0
Q801	1.8	4.3	1.2
Q802	4.3	2.3	4.9

Continued at 1

Ref.	20" Value
CRT	20" CRT
L501	180 uH
C419	200P/2KV

40p	90p
IC602 ST24CC01B1	IC602 ST24C02AB1
IC602 '1' connect GND	IC602 '1' connect +5V
IC602 '2' connect +5V	IC602 '2' connect GND
HYPER TUNER	NORMAL TUNER
R606 15K	R606 22K
R610 10K	R610 15K
R116 10K	R116 15K

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LOCAL COMMANDS FOR IC701						
1.	0	9	8	17	VOL.PIC (+)	25 CH (+)
		10	9	18	VOL.PIC (-)	26 CH (-) LIST
3.	2	11	-- PAGE (+)	19	PAGE HOLD	27 TIMER
4.	3	12	PAGE (-)	20	SUBCODE	28 AV
5.	4	13	STAND BY	21	LARGE	29 PIC
6.	5	14	MUTE	22	REVEAL	30 TX
7.	6	15	P.P	23	CANCEL	31 TV ON
8.	7	16	RECALL	24	MIX	32 ST.MC.L!!