

# TEAC

## SERVICE MANUAL

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**CT-M3497/3497MK2**

**CT-M3498**

**34cm CTV**

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SPECIFICATION

SYSTEM	:	PAL-B/G	
DESTINATION	:		
CHANNEL	VHF LOW	:	0 - 5 CH
COVERAGE	VHF HIGH	:	5A - 11 CH
	UHF	:	21 - 65 CH
	FREQUENCY RANGE	:	
	VHF LOW	:	46.25 - 102.25 MHz
	VHF HIGH	:	138.25 - 216.25 MHz
	UHF	:	471.25 - 823.25 MHz
SCANNING	LINES	:	625 LINES
	HORIZONTAL	:	15625 Hz
	VERTICAL	:	50 Hz
IF FREQUENCY	:		
	VIDEO	:	38.9 MHz
	SOUND	:	33.4 MHz
	CHROMA	:	37.13 MHz
VISION/SOUND SEPARATION	:	5.5	MHz
SENSITIVITY	:		
	VHF LOW	:	32 uV
	UHF HIGH	:	56 uV
	UHF	:	80 uV
OUTPUT POWER MAXIMUM	:	1000	mW
	10% THD	:	700 mW
CRT	:	14" (35.5cm) DIAGONAL, 22.5 mm NECK DIAMETE 90° DEFLECTION ANGLE	
SPEAKER	:	3" 16 OHM 1W	
ANTENNA IMPEDANCE	:	75 OHM	
POWER CONSUMPTION	:	60 Watts	

# VIF ALIGNMENT

## A. Preparation Step (See Fig. 1)

- (i) Connect AGC bias voltage to TP101, the DC supply should be turned off this time.
- (ii) Connect 14V B+ bias voltage to D404 (-) and Ground.
- (iii) Connect sweep generator to tuner test point and Ground.
- (iv) Connect waveform detector to TP105 and Ground.

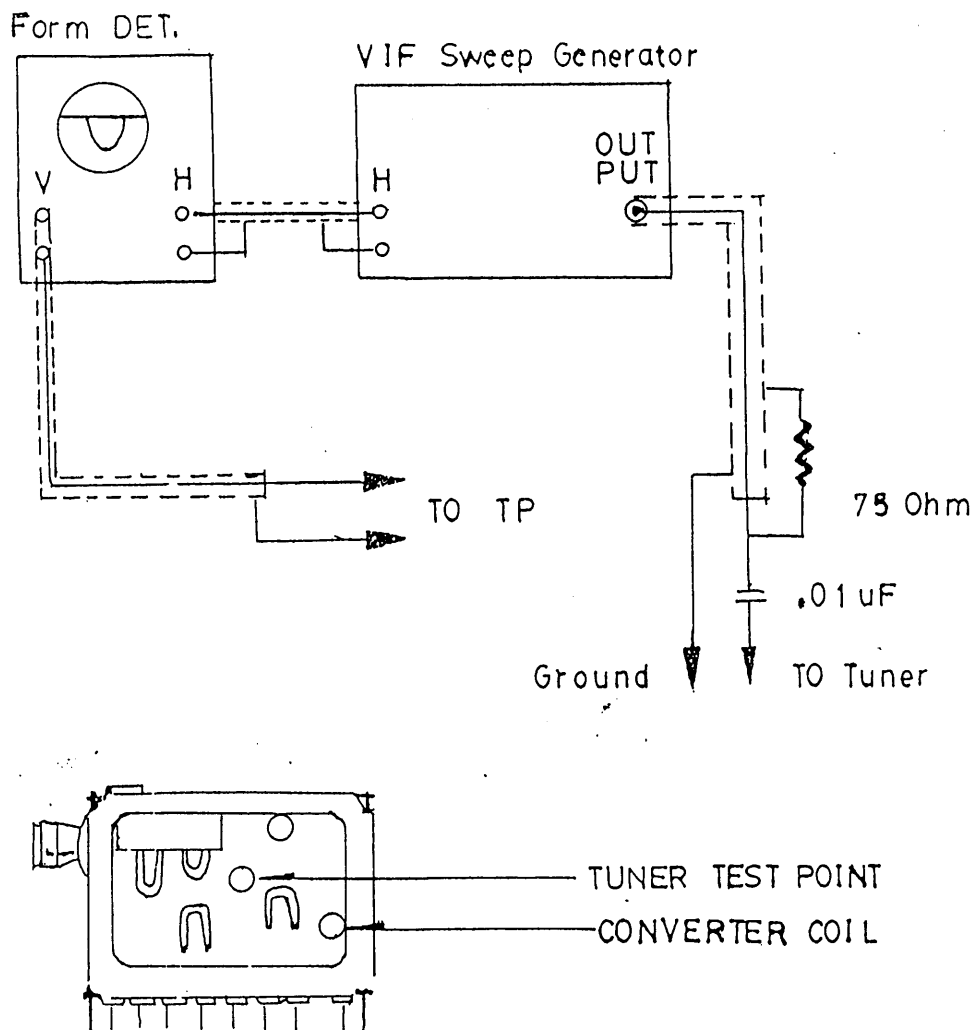


Fig.1

B. Tank Coil Alignment Step (See Fig. 2)

- (i) Calibrate the Division of waveform Detector equal to 100 mV per div.
- (ii) The output of sweep generator should be -50dB.
- (iii) Connect TP001 to Ground.
- (iv) Adjust AGC bias until the output waveform equal to 1V p.p. (10 div.)

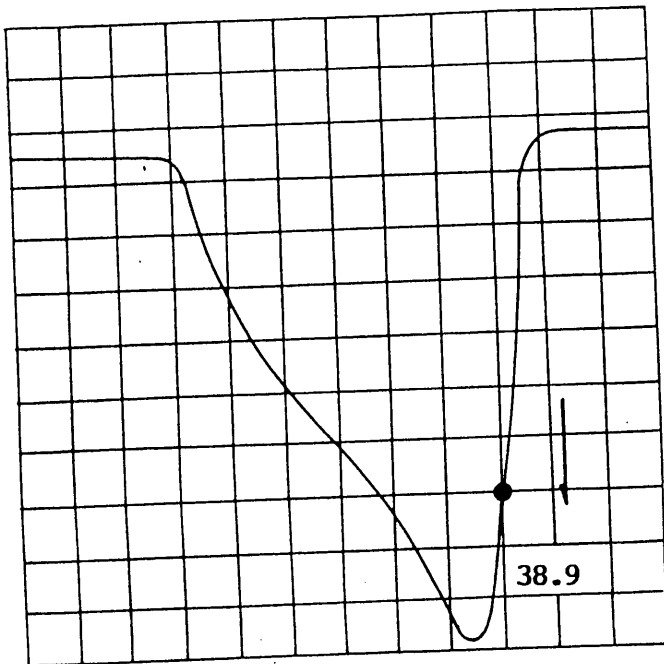


Fig. 2

- (v) Turn T101 until the marker 39.5MHz falls to the lowest point as Fig.2.

C. VIF Alignment

- (i) Connect 100 ohm resistor between TP103 and TP104.
- (ii) Adjust T104 until obtain the maximum waveform amplitude. (If Provided.)
- (iii) Adjust AGC bias, and maintain the waveform achieve 1V pp.

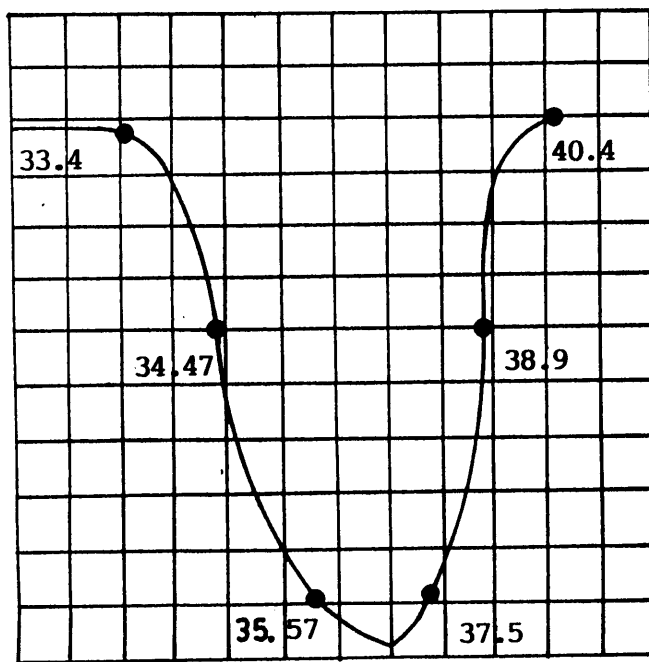
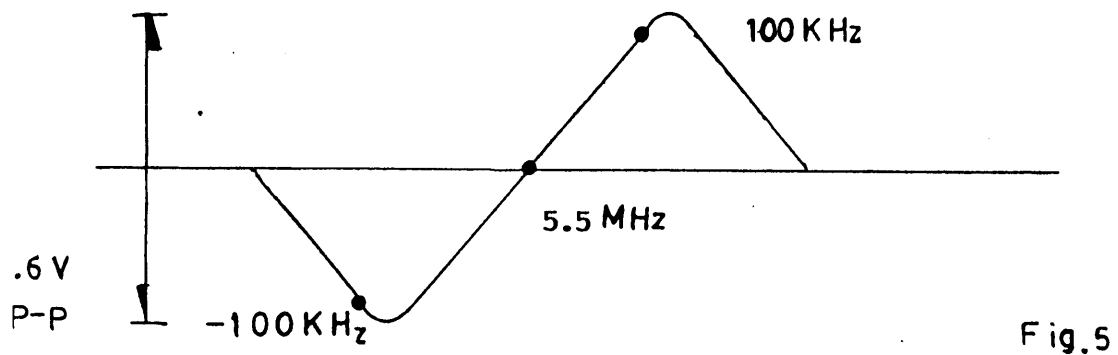


Fig.3

## B. SIF Alignment

- (i) Connect the sweep generator to TP105.
- (ii) Connect waveform detect to TP106.
- (iii) The output of sweep generator should be -50dB.
- (iv) Adjust T102 to obtain the waveform as Fig.5.



D. AFC Alignment

- (i) Remove the 100 ohm resistor from TP103 and TP104.
- (ii) Connect the waveform detector to TP102. The output of sweep generator should be -40dB.
- (iii) Adjust AGC bias to 5V.
- (iv) Adjust T103 to obtain waveform as Fig.4.

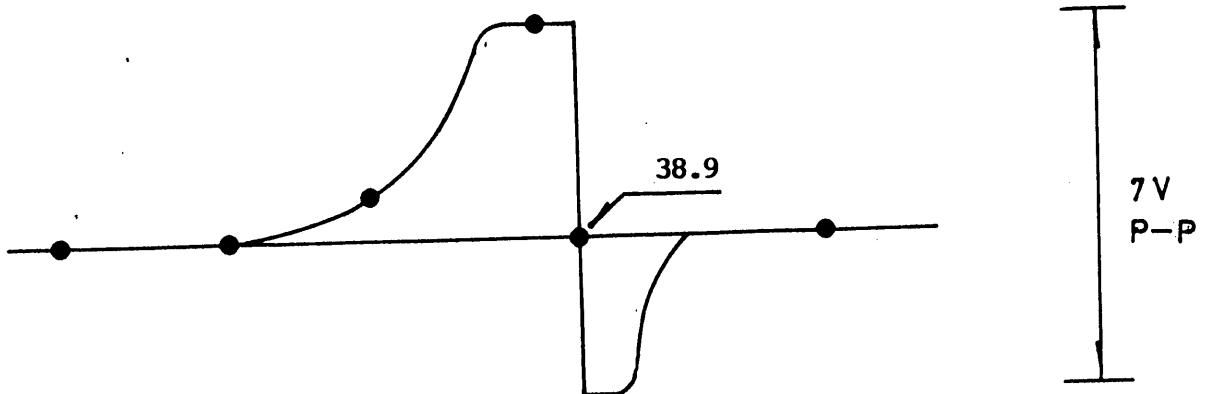


Fig.4

#### B+ ADJUSTMENT

- 1) Connect a digital volt meter to TPB+ and ground.
- 2) Set Brightness, contrast and colour to maximum.
- 3) Adjust VR901 and obtain a reading of 112V.

#### HORIZONTAL CIRCUIT ADJUSTMENT

- 1) Receive Monoscope Pattern input signal 80dBuV.
- 2) Connect terminal TP305 and the earth with the short Jumper wire.
- 3) Adjust VR304 to obtain the picture running at center.
- 4) Adjust VR303 to obtain the picture at center.

#### VERTICAL CIRCUIT ADJUSTMENT

- 1) Receive the Monoscope Pattern.
- 2) Adjust V-size (VR301) to obtain a normal picture.

#### WHITE BALANCE ALIGNMENT STEP

(deguss the picture by deguassing coil if necessary)

- 1) Turn the brightness, contrast and picture control to minimum value.
- 2) Turn VR501,503,505 to middle position. Turn VR502,504 to minimum position.
- 3) Turn VR306 to middle position.
- 4) Receive a black and white pattern.
- 5) Set S301 to service position.
- 6) Turn off the screen voltage.
- 7) Turn on the screen control volume on flyback transformer, & a horizontal red line appears.
- 8) Adjust VR502 to obtain a yellow line.
- 9) Adjust VR504 to obtain a white line.
- 10) Set S301 to normal position.
- 11) Adjust VR503, 505 to make the picture uniformly white.(9300°K)

#### SUB-BRIGHTNESS ALIGNMENT

- 1) Receive a colour bar pattern.
- 2) Turn the brightness, contrast and colour to minimum.
- 3) Adjust VR306 until the brightest bar can just be seen.

#### FOCUS ALIGNMENT

- 1) Set the brightness and contrast to middle position.
- 2) Receive a monoscope pattern.
- 3) Adjust focus control to obtain sharpest picture.

#### AGC ALIGNMENT

- 1) Receive CH69 (UHF) and input field strength in 63dB  $\pm$ 3dB input.
- 2) Adjust VR101 to the point where noise is disappeared.



#### PAL COLOUR ALIGNMENT

- (1) Receive Philips Pattern.
- (2) Connect Oscilloscope to TP303
- (3) Set the service switch (S301) to service position.
- (4) Set color control to maximum position.
- (5) Adjust T301, 302 and VR305 to obtain the waveform as Fig.6.

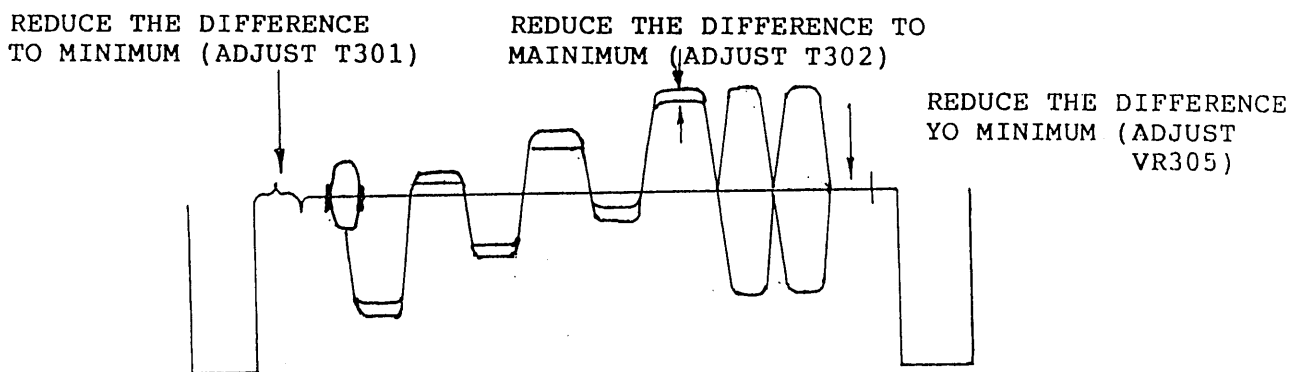


Fig.6

#### COLOR SYNC. ADJUSTMENT

- (1) Receive Philips pattern and warm up for five minutes.
- (2) Connect terminal TP302 and the earth with the short Jumper wire.
- (3) Connect the TP306 and TP301 with 10K OHM resistor so that the color killer turns off.
- (4) Then the color stripes appear on the screen when the adjustment is inconnect. Adjust the color sync (CT301) so that the PHILIPS pattern stands still.
- (5) Remove the 10K ohm resistor and jumper wire.

VOLTAGE TABLE FOR IC						
PIN NO.	SYMBOL	IC101 (V)	IC102 (V)	IC601 (V)	IC301	
					PAL	SECAM
1		4.4	4	4.86	3.7	
2		0	1.9	4.86	12.23	
3		0	7	0	4.55	
4		1.6	0	0	4.37	
5		GEN	6.64	NC	1.1	
6		13.22	4.85	NC	9.6	
7		11.55	4.87	4.86	6.1	
8		2.1	4.87	2.4	9.5	
9		11.67	4.85	4.84	6.1	
10			4.64	0.67	7.5	
11			3.97	6.6	0	
12			GEN	4.13	9.4	
13			4.76	9.3	9.9	
14			8.34	4.85	3.6	
15			3.55	0	3.6	
16			4.17	1.3	8.6	
17			7.93	1.9	4.2	
18			7.93	GEN	8.8	
19			4.17	GEN	4.2	
20			11.66	0.86	7.5	
21			4.5	GEN	7.5	
22			4.5	1.46	7.4	
23			2.79	4.86	5.8	
24			4.5	1.6	0.8	
25				4.86	4	
26				0.2	8	
27				0.2	7.9	
28				0.2	-0.4	
29				0.56	2.9	
30				0	GEN	
31				0	GEN	
32				0.34	0.4	
33				4.1	8.6	
34				2.26	4.7	
35				2.27	5.1	
36				0.1	3.2	
37				NC	-0.2	
38				4.7	0.8	
39				4.0	4	
40				0.2	6.5	
41				0.08	7.8	
42				4.86	9.4	

NOTE : VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

CONTRAST : Maximum Position  
 BRIGHTNESS : Maximum Position  
 COLOR : Maximum Position  
 SIGNAL INPUT : 80 dBuV  
 CHANNEL SETTING : The Last Channel of UHF High  
 SIGNAL PATTERN : Colour Bar

VOLTAGE TABLE FOR IC						
SYMBOL PIN NO.	IC201	IC401	IC701			
	(V)	(V)	(V)			
1	0.7	GEN	GEN			
2	0.5	13	GEN			
3	9.5	25.9	3			
4	7.8	0.8	0			
5	16.4	0.3	3			
6	16.4	1.1	0			
7	10.2	25.7	3			
8			3			
9			3			
10			3			
11			NC			
12			0			
13			0			
14			0			
15			0			
16			0			
17			0			
18			0			
19			0			
20			3			

NOTE : VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

- CONTRAST : Maximum Position
- BRIGHTNESS : Maximum Position
- COLOR : Maximum Position
- SIGNAL INPUT : 80 dBuV
- CHANNEL SETTING : The Last Channel of UHF High
- SIGNAL PATTERN : Colour Bar

VOLTAGE TABLE FOR TRANSISTOR							
SYMBOL	B (V)	C (V)	E (V)	SYMBOL	B (V)	C (V)	E (V)
Q101	0.4	8.4	0	Q601	5.6	0	5.6
Q102	1.0	8.1	0.3	Q602	0	5.6	0
Q103	0.1	5.0	0	Q603	0.7	0	0
Q104	0.2	2.8	0	Q604	6.3	14.6	5.6
Q105	2.6	11.0	2.0	Q605	10.1	10.8	10.9
Q106	0	5.6	0	Q606	10.9	0	10.9
Q107	0.1	0	0	Q607	0	0	10.9
Q108	5.7	11.7	5.0	Q608	5.4	-1.4	0
Q201	13.6	16.7	13.1	Q609	0	5.1	0
Q301	0	2.5	0	Q610	-0.5	4.7	0
Q302	0	0.7	0	Q611	0	5.6	0
Q303	0.7	0	0	Q612	0.7	0.9	0
Q304	0	11.7	0	Q613	0	3	0
Q401	0	111.8	0	Q907	0.3	11.1	0
Q402	0.3	81.1	0	Q908	2.1	4.1	1.5
Q501	4.5	84.8	4	Q909	-2.4	26.2	0
Q502	4.5	84.3	3.9	Q910	0	1.4	0
Q503	4.5	91.1	3.9	Q911	5.8	0	2.0
Q504	2.0	84.3	2.8	Q912	9.1	14.3	0

NOTE : Voltage are taken under tuned condition with

CONTRAST : Maximum Position  
 BRIGHTNESS : Center Position  
 COLOR : Center Position  
 SIGNAL INPUT : 80 dBuV Philips Pattern  
 CHANNEL SETTING : The 48 Channel of UHF

PART_NO	DESC	QTY	LOCATION
107-800455-4G	RESONATOR 455 KHZ ET455Z PO TUNG	1	CF701
113-109005-17	CARBON FILM RESISTOR 1 OHM 1/16W +-5%	1	R704
113-223005-17	CARBON FILM RESISTOR 22K OHM 1/16W +-5%	1	R703
113-332005-17	CARBON FILM RESISTOR 3.3K OHM 1/16W +-5%	1	R701
113-470005-17	CARBON FILM RESISTOR 47 OHM 1/16W +-5%	1	R702
123-101350-60	CERAMIC CAP. 100 PF 50V +-10% (SL TYPE) "SMART GOOD"	3	C701,702,703
127-106042-06	ELECT CAP. 10 MFD 16V +-20% {TAPING TYPE}	1	C704
130-134148-01	SILICON DIODE IN4148	7	D701,702,703,704,705, 706,707
130-600101-0G	INFRARED EMITTER EL-1L1 KODENS HI "GUANG ZHOU XIONGGUANG"	1	LED701
131-230945-01	TRANSISTOR 2SC945P "YOUNG GUANG"	1	Q701
131-232001-01	TRANSISTOR 2SC2001L "GUANGDONG SEMI- CONDUCTOR"	1	Q702
133-350560-12	IC M50560 MITSUBISHI	1	IC701
190-882000-02	REMOTE P.C.B.	1	
773-000802-00	BATTERY CONTACT PLATE (B) (+VE,-VE) W/NICKEL PLATING	1	
773-881301-00	BATTERY CONTACT PLATE (+)	1	
773-881302-00	BATTERY CONTACT PLATE (-)	1	
964-881300-00	SENSOR LENS	1	
516-260408-10	SELF-TAPPING SCREW 2.6 X 8 P/T (HARDEN)	1	CAB. MTG.
849-881301-00	CONTACT RUBBER KEY PAD (24 KEYS)	1	
892-881302-12	DIAL KEY PLATE - TEAC DESIGN {RC-644}	1	
910-881301-01	BATTERY DOOR	1	
900-881310-01	HANDSET TOP CABINET - BLACK MOULDED	1	(MATCH W/902- 881310-01)
900-881311-01	HANDSET TOP CABINET - BLACK MOULDED	0	
902-881310-01	HANDSET BOTTOM CABINET - BLACK MOULDED	1	
902-881311-01	HANDSET BOTTOM CABINET - BLACK MOULDED	0	
001-214189-05	FLYBACK TRANSFORMER 154-189H GOLDSTAR "FOR CAIHONG CRT"	1	T402
003-131424-02	TUNER OSCAR UVE33-W24/R16-3649 MITSUMI (HIGH JACK)	1	
012-103330-06	SEMI-FIXED RESISTOR EVND 2AA 03B14 10KB	3	VR504,502,501
012-301330-0B	SEMI-FIXED RES. WI06-1AL-300 "SHENZHEN YUNGJIANG"	2	VR505,503
105-150103-16	FIXED INDUCTIVE COIL 15UH 10% AL0305-150K "BOLUO DUIWANG"	1	L104
105-181103-08	FIXED INDUCTOR COIL 180 UH +-10% AXIAL 0410 "WITTIS"	1	L501
105-650152-01	LINEARITY COIL 34UH "LI TONE"	1	L401
113-104105-17	CARBON FILM RESISTOR 100K OHM 1/4W +-5%	1	R357
113-121105-17	CARBON FILM RESISTOR 120 OHM 1/4W +-5%	1	R507
113-122105-17	CARBON FILM RESISTOR 1.2K OHM 1/4W +-5%	1	R509
113-123405-75	METAL OXIDE FILM RESISTOR 12K OHM 2W +-5%	3	R508,514,518

113-151105-17	CARBON FILM RESISTOR 150 OHM 1/4W +-5%	5	R503,506,510,513,517
113-159405-42	NON-FLAMMABLE FUSE RESISTOR 1.5 OHM 2W +-5%	1	R501
113-183105-17	CARBON FILM RESISTOR 18K OHM 1/4W +-5%	1	R307
113-184105-17	CARBON FILM RESISTOR 180K OHM 1/4W +-5%	1	R369
113-222105-17	CARBON FILM RESISTOR 2.2K OHM 1/4W +-5%	3	R504,512,516
113-223105-17	CARBON FILM RESISTOR 22K OHM 1/4W +-5%	2	R302,326
113-272205-12	CARBON FILM RESISTOR 2.7K OHM 1/2W +-5%	3	R519,520,521
113-332105-17	CARBON FILM RESISTOR 3.3K OHM 1/4W +-5%	3	R505,515,511
113-473105-17	CARBON FILM RESISTOR 47K OHM 1/4W +-5%	2	R148,383
113-562105-17	CARBON FILM RESISTOR 5.6K OHM 1/4W +-5%	1	R502
113-563105-17	CARBON FILM RESISTOR 56K OHM 1/4W +-5%	2	R404,353
113-683105-17	CARBON FILM RESISTOR 68K OHM 1/4W +-5%	1	C631
113-823105-17	CARBON FILM RESISTOR 82K OHM 1/4W +-5%	1	R303
123-102350-90	CERAMIC CAP. 0.001 MFD 50V +-10% (B TYPE)	3	C502,505,507
123-102850-10	CERAMIC CAP. 0.001 MFD 2KV +-10% MATSUSHITA	1	C508
123-331350-60	CERAMIC CAP. 330 PF 50V +-10% (SL TYPE)	2	C501,506
123-560340-60	CERAMIC CAP. 56PF 50V +-5% (SL TYPE)	1	C503
126-152161-41	METALIZED POLYPROPYLENE 0.0015 MFD 1600V +-10%	1	C421
126-274201-31	POLYPROPYLENE CAP. 0.27 MFD 200V +-10%	1	C413
126-332161-41	METALIZED POLYPROPYLENE CAP. 0.0033 MFD 1600V +-10%	1	C419
127-106042-06	ELECT CAP. 10 MFD 16V +-20% (TAPING TYPE)	1	C504
127-106104-03	ELECT CAP. 10 MFD 100V +-20% 105°C	1	C910
127-476094-03	ELECT CAP. 47 MFD 63V +-20% 105°C	1	C909
131-232482-0A	TRANSISTOR 2SC2482 TOSHIBA	5	Q501,502,503,504,505
160-101001-08	PIN CONNECTOR 1 PIN PLUG STRAIGHT	1	FOR CN501
161-540105-00	CRT SOCKET ISL-01 IN CHANG	1	
171-550084-D0	84" AC LINE CORD W/SAA APP. 10A 250V	1	
172-726000-99	BARE WIRE 54MM	0.1	W501
179-105000-00	UL PVC TUBE 5mm DIA	0.1	80MM FOR AC LINE CORD
179-107300-00	UL PVC TUBE 7.3MM DIA.	0.2	220MM FOR `X`,`Y`
179-110500-00	UL PVC TUBE 11MM DIA.	0.1	60MM FOR AC LINE CORD
190-881305-00	P.C.BOARD CRT (120593)	1	
191-100030-10	1 PIN SOCKET ASS'Y L=300MM	1	CRT CND TO CN501
191-300030-09	3 PIN SOCKET ASSM'Y	1	CN402 `1`TO`I`, `2`TO`J`,`3`TO`K` ON CRT BOARD
191-400042-10	4 PIN HOUSING ASS'Y L=420MM	1	
191-801104-07	8 PINS SOCKET ASS'Y	1	CN302 `1` TO CRT `A`, `2`TO`B`,`3`TO`C`,` `4`TO`D`
191-801104-07	8 PINS SOCKET ASS'Y	0	`5` TO `E`,`6` TO `F`,`7` TO `G`,`8` TO `H`

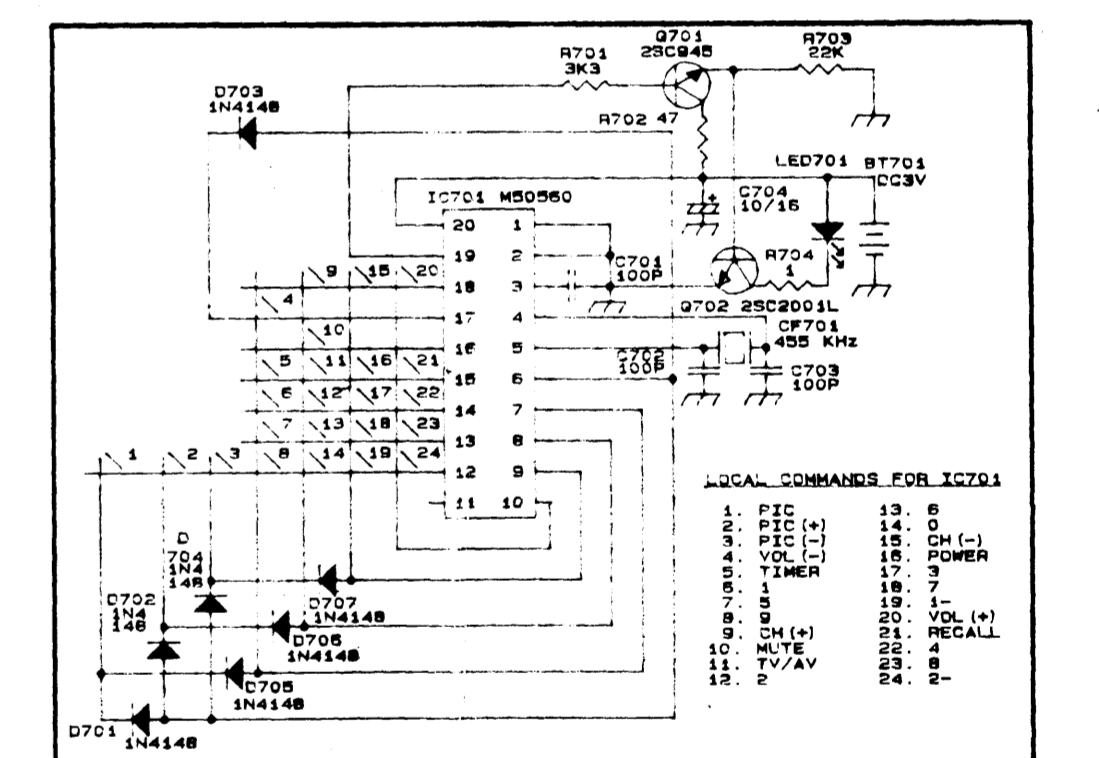
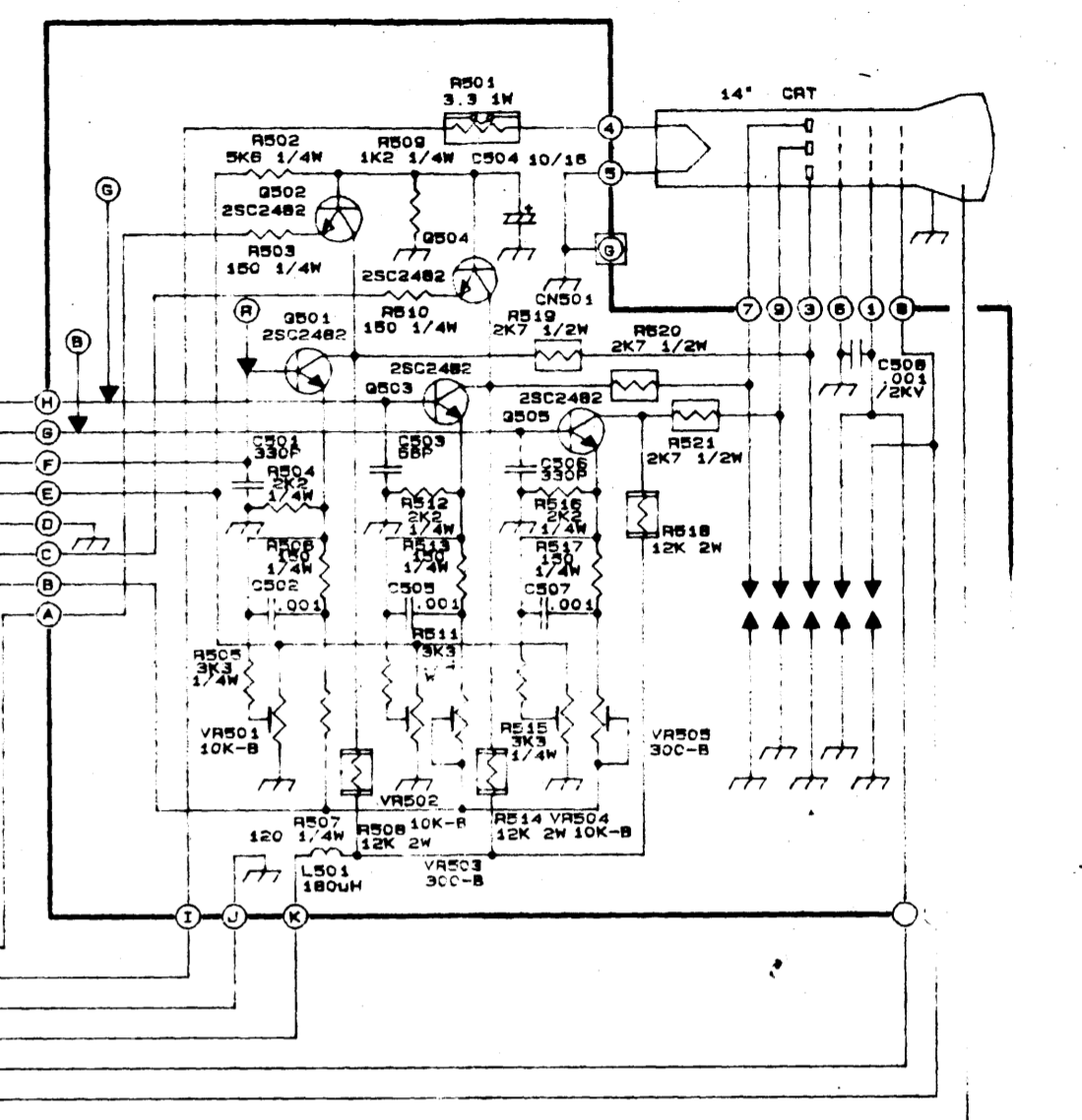
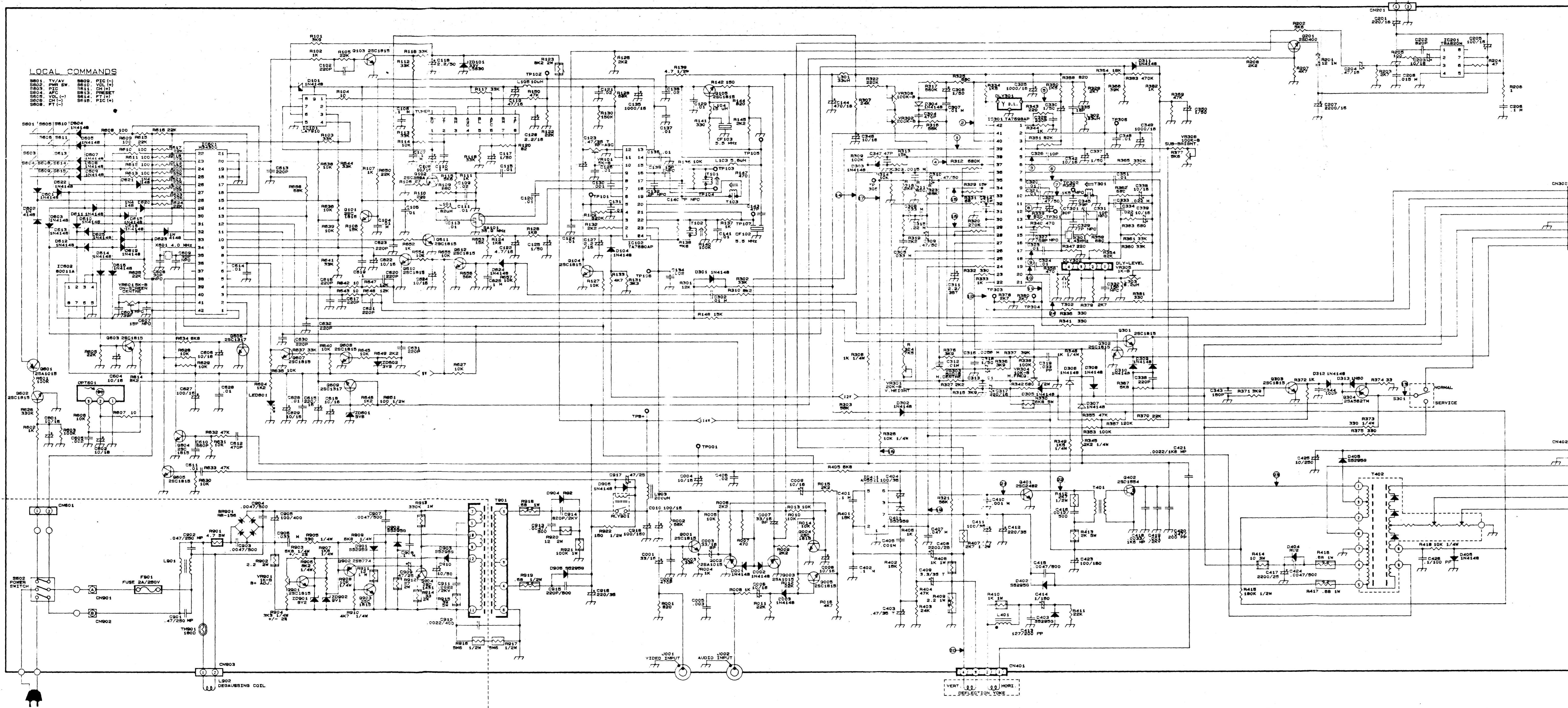
580-101261-01	CABLE TIE L=100MM	10	FOR CRT BOARD, CONNECTON AC CORD
008-550151-05	DEGAUSSING COIL 40T (W/FIVE LAYERS OF TAPE)	1	L903
166-162030-00	SPEAKER 3" 2W 16 OHM "TCL"	1	
179-105000-00	UL PVC TUBE 5mm DIA	0.3	260MM FOR CN202
191-200030-10	2 PIN SOCKET ASS'Y L=300MM	1	CN202 `1' TO SPK. `+',`2' TO SPK. `-'
514-400435-10	SELF-TAPPING SCREW 4 X 35 B/T (HARDEN)	2	REAR CAB. TO FRONT CAB.
514-500435-10	SELF-TAPPING SCREW B/T 5 X 35 HEAD DIA. =8.5MM (MAX)(HARDEN)	6	2-FOR REAR CAB. TO FRONT CAB.,4-FOR CRT MTG.
622-882802-00	FELT L240 X W17 X T0.5MM W/TAPE	4	FOR REAR CAB.
744-881301-00	SPRING FOR C.R.T. MOUNTING 5.2 X 42 X 0.6MM	1	
777-881301-00	SPRING IN 10 X L12	1	FOR POWER KNOB
834-230801-00	RUBBER WASHER OD=23 , ID=8 , T=1.0	4	FOR CRT ADJUSTMENT
834-230802-00	RUBBER WASHER OD=23, ID=8, T=2	2	CRT MTG. DOWN
834-230805-00	RUBBER WASHER OD=23 ID=8 T=0.5	2	CRT MTG. UP
840-011024-21	PAD CORD L240 X W10 X T1 MM W/TAPE	4	FOR BETWEEN CRT AND FRONT CAB.
954-882804-00	HIGH VOLTAGE CABLE SPACER	1	FOR CRT
002-114022-40	14" CRT #37SX110Y22-DC05A S/H CAI HONG	1	
162-110010-00	ANTENNA MATCHING TRANSFORMER (300 OHM TO 75 OHM)	1	
186-624500-11	HI-WATT SUPER HEAVY DUTY 1.5V 0% MERCURY 3A ER03X ALUM.CASE	2	
516-260408-10	SELF-TAPPING SCREW 2.6 X 8 P/T (HARDEN)	3	TO VOLUME KNOB SET
669-881301-18	RATING LABEL - TEAC DESIGN {CT-M3497} (240V)	1	
782-721942-00	DOUBLE ROD ANTENNA 4 SECTIONS (300 OHM ) 850MM "TIMPOLAR"	1	
884-881303-01	JACK PLATE - W/AV IN/WHITE SS ENG STD	1	
884-881310-01	PRESET PLATE-BLK W/L.GREY SS. ENG STD (9 KEY HOLES W/O SW.)	1	
887-881302-01	COVER PLATE (L) - BLANK	1	
900-881303-06	FRONT CABINET - GREY (426U) {OUT DATE}	1	
902-881305-U1	REAR CABINET - MOULDED BLACK SPRAY (UL)	1	
917-881302-01	REMOTE LENS - RED, W/ L.GREY SS. ENG STD (B)	1	
919-881301-76	PRESET DOOR - TEAC DESIGN W/CABLE READY {CT-M3497}	1	
939-881302-00	POWER SWITCH ADAPTOR	1	
948-881302-00	DEGAUSSING COIL MTG. CLIP	4	
973-881304-01	VOLUME / CHANNEL KNOB SET - BLACK MOULDED (B)	1	
986-931301-06	NAME PLATE - TEAC DESIGN	1	
991-881301-01	POWER KNOB - BLACK MOULDED	1	
610-881301-1A	GIFT BOX - TEAC DESIGN {CT-M3497}	1	

663-230559-96	SERIAL NO.LABEL - OC:GT-559/96	2	1PC STUCK ON CTN, 1PC STUCK ON RATING LABEL
670-881300-0U	I/MANUAL - TEAC DESIGN {CT-M3497} (30 PROG)	1	
678-881304-04	SCREEN STICKER - TEAC DESIGN {CT-M3497}	1	
678-881306-01	EASY TUNE CARD (D) - TEAC (A) DESIGN	1	
678-931315-02	TOTAL CARE LABEL - TEAC DESIGN (BLK & WHITE)	1	
690-922139-01	WARRANTY CARD- TEAC (A) DESIGN	1	
693-881300-20	EAN CODE LABEL - 9313060005290	1	
800-881311-00	POLYFOAM (1)	1	
800-881312-00	POLYFOAM (2)	1	
800-881313-00	POLYFOAM (3)	1	
800-881314-00	POLYFOAM (4)	1	
810-041104-13	POLYBAG 4" X 11" X 0.04MM W/RE-CYCLING MARK	1	FOR HANDSET
810-052204-14	POLYBAG 5" X 22" X 0.04MM W/RE-CYCLING MARK {P/O MAT}	1	FOR AC LINE CORD
810-091504-13	POLYBAG 9" X 15" X 0.04MM W/ RE-CYCLING P.E.MARK	1	FOR INSTRUCTION MANUAL
810-303004-14	POLYBAG 30"X30"X0.04MM W/PUNCH HOLE/RE- CYCLING MARK(P/O MAT.)	1	FOR UNIT
826-221505-00	FOAM SHEET 22" X 15" X 0.5MM	1	FOR UNIT



**LOCAL COMMANDS**

SB01 TV/AV	SB02 PIC
SB03 PWR SW	SB04 VCL (+)
SB05 PIC	SB06 CH (+)
SB07 AFC	SB08 PRESET
SB09 VCL (-)	SB10 FT (+)
SB11 CH (-)	SB12 PIC (-)
SB13 CH (+)	SB14 FT (-)



**LOCAL COMMANDS FOR IC201**

1. PIC	13. 8
2. PIC (-)	14. 0
3. PIC (+)	15. CH (-)
4. POWER	16. 3
5. TIMER	17. 3
6. 2	18. 1
7. 5	19. 1
8. CH (+)	20. 1
9. MUTE	21. RECALL
10. 1	22. 0
11. TV/AV	23. 8
12. 2	24. 2

- NOTE:**
- (1) ALL CAPACITORS ARE IN  $\mu F$  UNLESS OTHERWISE NOTED
  - (2) ALL CAPACITORS ARE BOW UNLESS OTHERWISE NOTED
  - (3) CAPACITORS NOT SPECIFICALLY DESIGNATED ARE CERAMIC CAPACITOR.
  - (4) ELECTROLYTIC CAPACITOR
  - (5) BI-POLAR ELECTROLYTIC CAPACITOR
  - (6) TANTALUM CAPACITOR
  - (7) NYLON CAPACITOR
  - (8) METALLIZED POLYESTER
  - (9) POLYESTER FILM CAPACITOR
  - (10) POLYPROPYLENE CAPACITOR
  - (11) ALL RESISTORS ARE IN  $\Omega$  UNLESS OTHERWISE NOTED.
  - (12) RESISTORS NOT SPECIFICALLY DESIGNATED ARE CARBON FILM RESISTORS.
  - (13) CARBON COMPOSITION RESISTOR
  - (14) METAL OXIDE RESISTOR
  - (15) CEMENT RESISTOR
  - (16) FUSEBLE RESISTOR
  - (17) THERMISTOR
- DC VOLTAGE ARE MEASURED FROM POINTS INDICATED TO THE CIRCUIT  
 WAVEFORMS ARE TAKEN WITH SETTING CONTROLS TO A NORMAL  
 CONDITIONS (COLOUR BAR PATTERN)  
 THIS CIRCUIT DIAGRAM IS SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.  
 ON THE SCHEMATIC SHOULD BE REPLACED WITH EXACT  
 MANUFACTURER RECOMMENDED PARTS.