

# TEAC<sup>®</sup>

## SERVICE MANUAL

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# CTM4828H

48cm CTV

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# SERVICE MANUAL

14" 20" 21"  
SOLID STATE  
Color Television  
Receiver

ART-TECH. TV.

PAL SECAM VERSION  
TOSHIBA I<sup>2</sup>C IC

This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product.

Document : SM - 32PM      Date : 5-11-99      Approved by : \_\_\_\_\_  
( Sunny Cheung )

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(PAK FUNG PAN                      WONG YIM FAI)

## CONTENTS

1. SPECIFICATION.....
2. BLOCK DIAGRAM.....
3. ALIGNMENT INSTRUCTION.....
4. VOLTAGE TABLE.....
5. IC601 DATA.....
6. WIRING DIAGRAM.....

This manual is the latest at the time of Printing, and does not include the modification which may be made after the Printing, by the constant improvement of Product.

<u>ITEMS OF MEASUREMENT</u>	<u>STANDARD</u>	<u>UNIT</u>	
VIDEO SENS. AT S/N 30db	L - VHF H - VHF UHF	≤ 57 ≤ 57 ≤ 60	dbuv dbuv dbuv
SOUND SENS. AT S/N 30db	L - VHF H - VHF UHF	≤ 42 ≤ 42 ≤ 48	dbuv dbuv dbuv
AGC CHARACTER		≥ 60	db
SELECTIVITY -1.5 MHz + 8 MHz		≥ 35 ≥ 40	db db
COLOR SENS.		≤ 45	dbuv
COLOR LOCK - IN RANGE		≥ ±300	Hz
VERTICAL LOCK - IN RANGE		≥ 6	Hz
HORIZONTAL LOCK - IN RANGE		≥ 400	Hz
MAX BRIGHTNESS		≥ 140	cd / m2
MAX OUTPUT POWER		≥ 1	W
OUTPUT POWER AT 10% THD		≥ 0.7	W
BUZZ		≤ -40	db
AFC RANGE		≥ +1 ≥ -0.5	MHz MHz
MIN. VOL HUM		≤ 20	mV
RESOLUTION HORIZONTAL VERTICAL		≥ 300 ≥ 400	LINES LINES
LINEARITY DISTORTION VERTICAL HORIZONTAL		≤ 10 ≤ 10	% %
RASTER DISTORTION		≤ 5	%
REMOTE CONTROL DISTANCE ANGLE		≥ 5 ≥ ±15	METER DEGREE
POWER CONSUMPTION ( AT NORMAL CONDITION ) POWER CONSUMPTION ( AT MAX. CONDITION )		≤ 60 ≤ 70	WATTS WATTS
CONVERGENCE DISLOCATION AT AREA "A" AREA "B" ( see fig.1 )		≤ 0.4 ≤ 0.8	% %

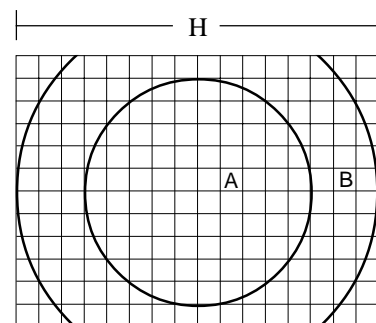


Fig.1

VIDEO INPUT LEVEL : 1.0V P-P ± 3dB  
AUDIO INPUT LEVEL : 0.5V RMS ± 3dB

<u>ITEMS OF MEASUREMENT</u>	<u>STANDARD</u>	<u>UNIT</u>	
VIDEO SENS. AT S/N 30db	L - VHF H - VHF UHF	≤ 57 ≤ 57 ≤ 60	dbuv dbuv dbuv
SOUND SENS. AT S/N 30db	L - VHF H - VHF UHF	≤ 42 ≤ 42 ≤ 48	dbuv dbuv dbuv
AGC CHARACTER		≥ 60	db
SELECTIVITY -1.5 MHz + 8 MHz		≥ 35 ≥ 40	db db
COLOR SENS.		≤ 45	dbuv
COLOR LOCK - IN RANGE		≥ ±300	Hz
VERTICAL LOCK - IN RANGE		≥ 6	Hz
HORIZONTAL LOCK - IN RANGE		≥ 400	Hz
MAX BRIGHTNESS		≥ 120	cd/m2
MAX OUTPUT POWER		≥ 1.8	W
OUTPUT POWER AT 10% THD		≥ 1.3	W
BUZZ		≤ -40	db
AFC RANGE		≥ +1 ≥ -0.5	MHz MHz
MIN. VOL HUM		≤ 20	mV
RESOLUTION HORIZONTAL VERTICAL		≥ 300 ≥ 400	LINES LINES
LINEARITY DISTORTION VERTICAL HORIZONTAL		≤ 10 ≤ 10	% %
RASTER DISTORTION		≤ 5	%
REMOTE CONTROL DISTANCE ANGLE		≥ 5 ≥ ±15	METER DEGREE
POWER CONSUMPTION ( AT NORMAL CONDITION ) POWER CONSUMPTION ( AT MAX. CONDITION )		≤ 70 ≤ 85	WATTS WATTS
CONVERGENCE DISLOCATION AT AREA "A" AREA "B" ( see fig.2 )		≤ 0.4 ≤ 0.8	% %

VIDEO INPUT LEVEL : 1.0V P-P ± 3dB  
AUDIO INPUT LEVEL : 0.5V RMS ± 3dB

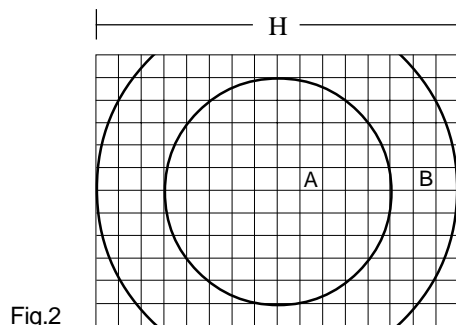


Fig.2

## SPECIFICATION

SUPPLY VOLTAGE : AC220V 50Hz  $\geq + 10\%$  /  $-20\%$

MODEL : 14"

SYSTEM :	PAL - I / I	PAL - BG	PAL - I (UK)	PAL - SECAM - BG / DK	PAL - SECAM - BG / DK (HYPER)	PAL - BG (HYPER)	PAL - BG (CATV)	SECAM - L	L'	
CHANNEL L - VHF : H - VHF : UHF :	4 - 13 21 - 69	2 - 4 5 - 12 21 - 69	21 - 69	1 - 5 6 - 12 21 - 69	1 - 5 6 - 12 21 - 69	E2 - S10 E5 - S41 E21 - E69	E2 - S2 E5 - S20 E21 - E69	1 - Q 21 - 69	FB - FC	CH CH CH
VIF FREQUENCY :	38.9	38.9	39.5	38.0	38.9	38.9	38.9	38.9	32.7	MHz
SIF FREQUENCY :	32.9	33.4	33.5	31.5 32.5	32.4 33.4	33.4	33.4	32.4	39.2	MHz
CHROMA IF FREQUENCY :	34.47	34.47	35.07	33.57 33.57	34.47 34.47	34.47	34.47	34.47		MHz
INTER-CARRIER FREQUENCY :	6.0	5.5	6	6.5 5.5	6.5 5.5	5.5	5.5	6.5	6.5	MHz
SCANNING HORIZONTAL : VERTICAL :	15625 LINE 50 Hz									
ANTENNA INPUT IMPEDANCE :	75 OHM									
CRT :	14"									

## SPECIFICATION

SUPPLY VOLTAGE : AC220V 50Hz  $\geq + 10\%$  /  $-20\%$

MODEL : 20" - 21"

SYSTEM :	PAL - I / I	PAL - BG	PAL - I (UK)	PAL - SECAM - BG / DK	PAL - SECAM - BG / DK (HYPER)	PAL - BG (HYPER)	PAL - BG (CATV)	SECAM - L	L'	
CHANNEL L - VHF : H - VHF : UHF :	4 - 13 21 - 69	2 - 4 5 - 12 21 - 69	21 - 69	1 - 5 6 - 12 21 - 69	1 - 5 6 - 12 21 - 69	E2 - S10 E5 - S41 E21 - E69	E2 - S2 E5 - S20 E21 - E69	1 - Q 21 - 69	FB - FC	CH CH CH
VIF FREQUENCY :	38.9	38.9	39.5	38.0	38.9	38.9	38.9	38.9	32.7	MHz
SIF FREQUENCY :	32.9	33.4	33.5	31.5 32.5	32.4 33.4	33.4	33.4	32.4	39.2	MHz
CHROMA IF FREQUENCY :	34.47	34.47	35.07	33.57 33.57	34.47 34.47	34.47	34.47	34.47		MHz
INTER-CARRIER FREQUENCY :	6.0	5.5	6	6.5 5.5	6.5 6.5	5.5	5.5	6.5	6.5	MHz
SCANNING HORIZONTAL : VERTICAL :	15625 LINE 50 Hz									
ANTENNA INPUT IMPEDANCE :	75 OHM									
CRT :	20" - 21"									

## **ALIGNMENT INSTRUCTION**

### **I. PLEASE READ BEFORE ATTEMPTING SERVICE**

1. Do not connect any antenna plug directly to the tuner socket and do not connect any equipments directly to the TV chassis, otherwise it may be burnt out the TV or equipment, except an isolation transformer is used for main power source or the TV sets.
2. Never disconnect any leads while receiver is in operation.
3. Disconnect all power before attempting any repairs.
4. Do not short any portion of the circuit while power is on.
5. For safety reasons, all parts replaced should be identical (for parts and part numbers see parts list).
6. Before alignment the set must be pre-heated for 30 minutes or more and erase magnetism thoroughly from CRT front chassis frame by erase coil.

### **II. TEST EQUIPMENT**

- |                               |  |
|-------------------------------|--|
| 1. Colour Bar/Dot/Cross Hatch | 5. High Voltage Meter                    |
| 2. Oscilloscope               | 6. Ampere Meter (0.5 Class, DC 3mA Max.) |
| 3. Vacuum Tube Voltmeter      | 7. Demagnetizing Coil                    |
| 4. Volt Ohmmeter              | 8. Closed Caption Encoder                |
|                               | 9. High Pot Tester.                      |

### **I. B+ ADJUSTMENT**

1. Connect a digital voltmeter to B+ and Ground.
2. Set Brightness Contrast to minimum.
3. Adjust Screen Volume on FBT until the picture can just be seen.
4. Adjust VR901 to obtain a reading of  $112 \pm 0.5V$  (FOR samsung CRT).

### **II. AFC ALIGNMENT**

1. Disconnect the soldering pad 'F'.
2. Input the signal from Pattern Generator ( IF 38.9MHz ) colour bar to R101 and GND.
3. Adjust the T101 until the colour bar show on the screen.
4. Select 'SELF VCO' in D-MODE.
5. Press the AFC button on the handset.
6. About few seconds screen will show AFT OK.

\*REMARK: No this factory on Normal R.C.

### **III. AGC ALIGNMENT**

1. Receive CH69 (UHF) and input filed strength. TUNER INput Signal  $62 \pm 3dB$ ,
  2. Connect a digital Voltmeter between the TUNER AGC Terminal and Ground.
  3. Select RAGC item, Adjust the value to 3F, and then adjust the AGC value obtain the voltage drop down 0.4V.
- Remark: 1 The drop down voltage should be more than and tends to 0.4V.  
2 No observable noise can be seen.

### **IV. VERTICAL LINEARTY ADJUSTMENT**

1. PAL (50Hz) Adjustment
  - (1). Receive Crosshatch Pattern (50Hz) .
  - (2). Select VLIS item adjust value to normal regular picture.
2. NTSC (60Hz) Adjustment.
  - (1). Receive Cross hatch Patter (60Hz).
  - (2). Select VILN item adjust value to normal regular picture.
  3. Repeat 1.2. receive Cross hatch 50Hz and 60Hz is same picture.

### **V. VERTICAL HEIGHT ADJUSTMENT**

1. PAL (50Hz) Adjust .
  - (1). Receive Mono scope Patter (50Hz).
  - (2). Select HITS item adjust value to normal regular picture.
2. NTSC (60Hz).
  - (1). Receive Mono scope Patter (60Hz).
  - (2). Select HIT item adjust value to normal regular picture
  3. Repeat 1.2. receive Mono Scope Patter 50Hz and 60Hz is same picture.



## VI. VERTICAL S-CORRECTION ADJUSTMENT

1. Receive Cross hatch Pattern
2. Select VSC item adjust value to normal, regular picture.

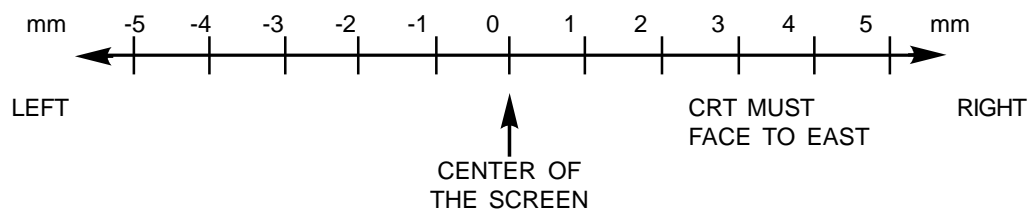
## VERTICAL CENTER ADJUSTMENT

1. PAL (50Hz) Adjustment
  - (1). Receive Monoscope Pattern (50Hz).
  - (2). Select VP50 item adjust value to obtain the picture at center .
2. NTSC (60Hz) Adjustment
  - (1). Receive Monoscope Pattern (60Hz).
  - (2). Select VP60 item adjust value to obtain the picture at center.
  3. Repeat 1.2. receive Mono Scope Pattern 50Hz and 60Hz is same picture center.

## VII. HORIZONTAL PHASE ADJUSTMENT

1. PAL(50Hz)Adjustment.
  - (1).Receive Mono Scope Pattern (50Hz).
  - (2).Select HPS item adjust value to normal regular Picture.
- 2.NTSC(60Hz)
  - (1).Receive Mono Scope Pattern (60Hz).
  - (2).Select HPOS item adjust value to normal regular Picture.
  - 3.Repeat 1. 2. receive Mono Scope Pattern (50Hz) and (60Hz) is Same Picture.

DISTRICT	CENTRE (mm) POSITION	LIMIT (mm)	SCANNING SIZE (%)	SCANNING SIZE LIMIT (%)
THAILAND	-1	0 ~ -2	90	88 ~ 92
FRANCE	+3	0 ~ +5	90	88 ~ 94
GERMANY	+3	0 ~ +5	90	90 ~ 95
*GROUP A	-2	-5 ~ -1	90	88 ~ 94
*GROUP B	0	-2 ~ +2	90	88 ~ 94
*GROUP C	+3	0 ~ +5	90	88 ~ 94



REMARK :

1. SUITABLE FOR 14" OR ABOVE TV.
2. Adjust the centre position must take the upper side of monoscope pattern for standard.
3. Group A : AUSTRALIA, NEW ZEALAND, TAHITI.
4. Group B : HONG KONG, CHINA, AMERICA, CANADA, MALAYSIA, MEXICO.
5. Group C : ENGLAND, ITALY, GERMANY, RUSSIA, SWITZERLAND, JUGOSLAVIA, SPANISH.  
If the above countries are not include, please consult to Engineering Dept.

### VIII. WHITE BALANCE ALIGNMENT STEP

(Deqauss the picture by deqaussing coil if necessary)

1. Disconnect the any input signal,set the blue black OFF.
2. Enter to D HODE.
3. Adjust the RCUT,GCUT,BCUT value to 80,GDRV,BDRV to 45,BRTS to CO.
4. Adjust the BRIGHT,CONT to min.
5. Akjust the screen VR (on the FBT) until the show cannot just be screen.
6. Connect the VOLT meter '+' to CRT BOARD G2,(-) to GND and get the reading value.
7. Adjust the screen VR lead the reading value reduce  $25 \pm 5v$
8. Adjust the BRTS set to F6,and set BRIGHT,CONT to mid.
9. Receive a Black and White Pattern.
10. Select Remote handset direct key (2) and (3) button adjust GCUT and BCUT to minimum value,Press(1) button adjust RCUT to middle value.
11. Press Picture mode, select Brightness and Contrast adjust value to minimum.
12. Press handset direct key (2) button to obtain a yellow line.
13. Press handset direct key (3) button to obtain a white line.
14. Press handset direct key (-/--) button again.
15. Press CH button select GDRV and BDRV item adjust value to make the
16. picture unifoumlywhite ( $9300 K \pm 3JND$ ).

### IX. SUB-BRIGHTNESS ALIGNMENT

1. Receive a Colour Bar Pattern.
2. Press PICTURE mode select BRIGHTNESS, CONTRAST adjust value to minimum.
3. Select BRTS in D-MODE.
4. Adjust value the brightness bar can just be seen.

### X. FOCUS ALIGHMENT

1. Set the Brightness and Contrast to middle position.
2. Receive a Monoscope Pattern.
3. Adjust focus control to obtain sharpest picture.

### XI. HIGH POT TESTING

- 1) Short the L-pole and N-pole of AC line cord.
- 2) Switch on the power switch of the TV Set.
- 3) Connect The High Pot Tester (-) to L and N pole, (+) to the METAL PART of CABINET.

SAFETY STD. / CONDITION	TEST SYANDARD	TEST STANDARN FOR PRODUCTION
VDE,SAA	3.0KV 10mA / 1MIN	$\geq 3.5KV \leq 10mA / \geq 10 SEC.$
UL	1.0KV 5mA / 1MIN	$\geq 1.25KV \leq 5mA / \geq 1 SEC.$

REMARK:

- (1). If no other specity,the strength of input signal should be  $70dB \pm 10dB$ .
- (2). The HIGH POT TESTER can have  $\leq \pm 5\%$  tolerance.

Model: 21j<sup>a</sup>  
 Chassis: I<sup>2</sup>C technology.  
 Picture Tube: SAMSUNG, Type:A51KQK99X01, S/N:2090344252

Service Mode Data

Item	Parameter	Code	Value
			SAMSUNG 21j <sup>a</sup>
1	RCUT	I	83
2	GCUT	I	D8
3	BCUT	I	85
4	GDRV	I	49
5	BDRV	I	49
6	CNTX	A	3A
7	BRTC	A	47
8	COLC	A	30
9	TNTC	A	3A
10	COLP	A	33
11	COLS	A	2E
12	SCNT	A	0E
13	CNTC	A	2B
14	CNTN	A	06
15	BRTX	A	23
16	BRTN	A	21
17	COLX	A	25
18	COLN	A	00
19	TNTX	A	30
20	TNTN	A	30
21	ST3	A	09
22	SV3	A	09
23	ST4	A	09
24	SV4	A	10
25	SHPX	A	12
26	SHPN	A	05
27	TXCX	I	2A
28	RGCN	I	1E
29	VMO	N	2C
30	VM1	N	00
31	HPOS	I	06

32	VP50	I			03		
33	HIT	I			16		
34	HPS	I			04		
35	VP60	I			00		
36	HITS	I			02		
37	VLIN	I			0C		
38	VSC	I			08		
39	VLIS	I			FF		
40	DPC	N			00		
41	DPCS	N			00		
42	KEY	N			00		
43	KEYS	N			00		
44	WID	N			00		
45	WIDS	N			00		
46	VCP	N			00		
47	CNR	N			00		
48	HCP	N			00		
49	SBY	A			08		
50	SRY	A			08		
51	RAGC	I			21		
52	AFT	N			27		
53	HAFC	N			00		
54	V25	A			3E		
55	V50	A			4A		
56	BRTS	I			04		
57	VM2	N			30		
58	MOD0	A			00		
59	MOD1	A			12		
60	MOD2	N			00		
61	SELF	N			00		
62	SELF VCO	N			80		
63	SELF AGC	N			69		
64	SELF BRTC	N			75		
65	SELF CNTC	N			23		
66	SELF TINTC	N			00		
67	SELF COL	N			20		
68	LOGO	A			01		
69	LANG	A			00		
70	IF FREQ	A			03		
71	OSD	I			02		
72	OPT	N			04		

SAMSUNG, Type: A51KQK99 X01

**Adjustment codes:**

- I Data adjustable individually for each unit.
- A Adjustable parameter.Changes need Engineering Department approval.
- N Non adjustable parameter.

Model: 21 i<sup>a</sup>  
 Chassis: I<sup>2</sup>C technology.  
 Picture Tube: ~~SEC-HITACHI~~, Type:A51JSY63X13, S/N:SH9E210453

**Service Mode Data**

Item	Parameter	C o d e		Value HITACHI 21 i <sup>a</sup>		
1	RCUT	I		83		
2	GCUT	I		84		
3	BCUT	I		86		
4	GDRV	I		4A		
5	BDRV	I		43		
6	CNTX	A		3A		
7	BRTC	A		43		
8	COLC	A		30		
9	TNTC	A		3A		
10	COLP	A		30		
11	COLS	A		2F		
12	SCNT	A		0E		
13	CNTC	A		27		
14	CNTN	A		06		
15	BRTX	A		2A		
16	BRTN	A		21		
17	COLX	A		25		
18	COLN	A		00		
19	TNTX	A		30		
20	TNTN	A		30		
21	ST3	A		09		
22	SV3	A		09		
23	ST4	A		09		
24	SV4	A		10		
25	SHPX	A		12		
26	SHPN	A		05		
27	TXCX	I		27		
28	RGCN	I		27		
29	VMO	N		2C		
30	VM1	N		00		
31	HPOS	I		09		

32	VP50	I			03		
33	HIT	I			11		
34	HPS	I			04		
35	VP60	I			01		
36	HITS	I			02		
37	VLIN	I			0C		
38	VSC	I			08		
39	VLIS	I			FF		
40	DPC	N			00		
41	DPCS	N			00		
42	KEY	N			00		
43	KEYS	N			00		
44	WID	N			00		
45	WIDS	N			00		
46	VCP	N			00		
47	CNR	N			00		
48	HCP	N			00		
49	SBY	A			08		
50	SRY	A			08		
51	RAGC	I			1F		
52	AFT	N			40		
53	HAFC	N			00		
54	V25	A			3E		
55	V50	A			4A		
56	BRTS	I			08		
57	VM2	N			30		
58	MOD0	A			00		
59	MOD1	A			12		
60	MOD2	N			00		
61	SELF	N			00		
62	SELF VCO	N			80		
63	SELF AGC	N			69		
64	SELF BRTC	N			75		
65	SELF CNTC	N			23		
66	SELF TNTC	N			00		
67	SELF COL	N			20		
68	LOGO	A			01		
69	LANG	A			00		
70	IF FREQ	A			03		
71	OSD	I			00		
72	OPT	N			04		

SEG-HITACHI , Type : A51JSY63X13

**Adjustment codes:**

- I Data adjustable individually for each unit.
- A Adjustable parameter.Changes need Engineering Department approval.
- N Non adjustable parameter.

Model: 20 i<sup>a</sup>  
 Chassis: I<sup>2</sup>C technology.  
 Picture Tube: IG, Type:A48QAD220X06, S/N:C9806005382 S

**Service Mode Data**

Item	Parameter	C o d e		Value LG 20 i <sup>a</sup>		
1	RCUT	I		0		
2	GCUT	I		65		
3	BCUT	I		64		
4	GDRV	I		55		
5	BDRV	I		4A		
6	CNTX	A		3F		
7	BRTC	A		45		
8	COLC	A		30		
9	TNTC	A		3A		
10	COLP	A		33		
11	COLS	A		2E		
12	SCNT	A		0E		
13	CNTC	A		25		
14	CNTN	A		06		
15	BRTX	A		20		
16	BRTN	A		21		
17	COLX	A		25		
18	COLN	A		00		
19	TNTX	A		30		
20	TNTN	A		30		
21	ST3	A		09		
22	SV3	A		09		
23	ST4	A		09		
24	SV4	A		10		
25	SHPX	A		16		
26	SHPN	A		05		
27	TXCX	I		20		
28	RGCN	I		20		
29	VMO	N		2C		
30	VM1	N		00		
31	HPOS	I		0A		

32	VP50	I			03		
33	HIT	I			05		
34	HPS	I			04		
35	VP60	I			00		
36	HITS	I			01		
37	VLIN	I			0D		
38	VSC	I			07		
39	VLIS	I			FF		
40	DPC	N			00		
41	DPCS	N			00		
42	KEY	N			00		
43	KEYS	N			00		
44	WID	N			00		
45	WIDS	N			00		
46	VCP	N			00		
47	CNR	N			00		
48	HCP	N			00		
49	SBY	A			08		
50	SRY	A			08		
51	RAGC	I			1A		
52	AFT	N			19		
53	HAFC	N			00		
54	V25	A			3E		
55	V50	A			4A		
56	BRTS	I			0A		
57	VM2	N			30		
58	MOD0	A			00		
59	MOD1	A			12		
60	MOD2	N			00		
61	SELF	N			00		
62	SELF VCO	N			80		
63	SELF AGC	N			69		
64	SELF BRTC	N			75		
65	SELF CNTC	N			23		
66	SELF TNTC	N			00		
67	SELF COL	N			20		
68	LOGO	A			01		
69	LANG	A			00		
70	IF FREQ	A			03		
71	OSD	I			06		
72	OPT	N			04		

IG,4828

**Adjustment codes:**

- I Data adjustable individually for each unit.
- A Adjustable parameter.Changes need Engineering Department approval.
- N Non adjustable parameter.



Model: 14 j<sup>a</sup>  
 Chassis: I<sup>2</sup>C technology.  
 Picture Tube: SAMSUNG, Type:A34KQV42X02, S/N:7881202225

**Service Mode Data**

Item	Parameter	C o d e			Value SAMSUNG 14 j <sup>a</sup>		
1	RCUT	I			80		
2	GCUT	I			67		
3	BCUT	I			6D		
4	GDRV	I			4A		
5	BDRV	I			44		
6	CNTX	A			3A		
7	BRTC	A			4C		
8	COLC	A			40		
9	TNTC	A			3A		
10	COLP	A			31		
11	COLS	A			2E		
12	SCNT	A			0E		
13	CNTC	A			24		
14	CNTN	A			0C		
15	BRTX	A			22		
16	BRTN	A			32		
17	COLX	A			25		
18	COLN	A			00		
19	TNTX	A			30		
20	TNTN	A			30		
21	ST3	A			07		
22	SV3	A			07		
23	ST4	A			07		
24	SV4	A			10		
25	SHPX	A			10		
26	SHPN	A			05		
27	TXCX	I			25		
28	RGCN	I			20		
29	VMO	N			2C		
30	VM1	N			00		
31	HPOS	I			11		

32	VP50	I			05		
33	HIT	I			14		
34	HPS	I			08		
35	VP60	I			01		
36	HITS	I			00		
37	VLIN	I			0A		
38	VSC	I			08		
39	VLIS	I			FF		
40	DPC	N			00		
41	DPCS	N			00		
42	KEY	N			00		
43	KEYS	N			00		
44	WID	N			00		
45	WIDS	N			00		
46	VCP	N			00		
47	CNR	N			00		
48	HCP	N			00		
49	SBY	A			08		
50	SRY	A			08		
51	RAGC	I			25		
52	AFT	N			40		
53	HAFC	N			00		
54	V25	A			3E		
55	V50	A			4A		
56	BRTS	I			FD		
57	VM2	N			30		
58	MOD0	A			00		
59	MOD1	A			02		
60	MOD2	N			00		
61	SELF	N			00		
62	SELF VCO	N			80		
63	SELF AGC	N			69		
64	SELF BRTC	N			75		
65	SELF CNTC	N			23		
66	SELF TNTC	N			00		
67	SELF COL	N			20		
68	LOGO	A			01		
69	LANG	A			00		
70	IF FREQ	A			03		
71	OSD	I			00		
72	OPT	N			04		

## Adjustment codes:

- I Data adjustable individually for each unit.
- A Adjustable parameter.Changes need Engineering Department approval.
- N Non adjustable parameter.

Model: 14j<sup>a</sup>  
 Chassis: I<sup>2</sup>C technology.  
 Picture Tube: IRICO, Type:37SX110Y22-DC05, S/N:97020510

**Service Mode Data**

Item	Parameter	Code	Value
			IRICO 14j <sup>a</sup>
1	RCUT	I	82
2	GCUT	I	CA
3	BCUT	I	85
4	GDRV	I	52
5	BDRV	I	4A
6	CNTX	A	3F
7	BRTC	A	3F
8	COLC	A	30
9	TNTC	A	3A
10	COLP	A	30
11	COLS	A	2E
12	SCNT	A	0E
13	CNTC	A	2A
14	CNTN	A	0C
15	BRTX	A	22
16	BRTN	A	36
17	COLX	A	25
18	COLN	A	00
19	TNTX	A	30
20	TNTN	A	30
21	ST3	A	07
22	SV3	A	07
23	ST4	A	07
24	SV4	A	10
25	SHPX	A	10
26	SHPN	A	05
27	TXCX	I	25
28	RGCN	I	20
29	VMO	N	2C
30	VM1	N	00
31	HPOS	I	0B

32	VP50	I			02		
33	HIT	I			12		
34	HPS	I			04		
35	VP60	I			02		
36	HITS	I			2E		
37	VLIN	I			0B		
38	VSC	I			08		
39	VLIS	I			FF		
40	DPC	N			00		
41	DPCS	N			00		
42	KEY	N			00		
43	KEYS	N			00		
44	WID	N			00		
45	WIDS	N			00		
46	VCP	N			00		
47	CNR	N			00		
48	HCP	N			00		
49	SBY	A			08		
50	SRY	A			08		
51	RAGC	I			24		
52	AFT	N			1E		
53	HAFC	N			00		
54	V25	A			3E		
55	V50	A			4A		
56	BRTS	I			14		
57	VM2	N			30		
58	MOD0	A			00		
59	MOD1	A			02		
60	MOD2	N			00		
61	SELF	N			00		
62	SELF VCO	N			80		
63	SELF AGC	N			69		
64	SELF BRTC	N			75		
65	SELF CNTC	N			23		
66	SELF TNTC	N			00		
67	SELF COL	N			20		
68	LOGO	A			01		
69	LANG	A			00		
70	IF FREQ	A			03		
71	OSD	I			12		
72	OPT	N			04		

Picture Tube: IRICO,Type:37SX110Y22-DC05, S/N:97020510

**Adjustment codes:**

- I Data adjustable individually for each unit.
- A Adjustable parameter.Changes need Engineering Department approval.
- N Non adjustable parameter.

Model: 14 j<sup>a</sup>  
 Chassis: I<sup>2</sup>C technology.  
 Picture Tube: Orion, Type:A34JLL90X32

**Service Mode Data**

Item	Parameter	Code	Value Orion 14 j <sup>a</sup>
1	RCUT	I	7E
2	GCUT	I	94
3	BCUT	I	6D
4	GDRV	I	40
5	BDRV	I	41
6	CNTX	A	3F
7	BRTC	A	4C
8	COLC	A	33
9	TNTC	A	3A
10	COLP	A	29
11	COLS	A	2E
12	SCNT	A	0E
13	CNTC	A	20
14	CNTN	A	0C
15	BRTX	A	22
16	BRTN	A	32
17	COLX	A	25
18	COLN	A	00
19	TNTX	A	30
20	TNTN	A	30
21	ST3	A	07
22	SV3	A	07
23	ST4	A	07
24	SV4	A	10
25	SHPX	A	10
26	SHPN	A	05
27	TXCX	I	25
28	RGCN	I	20
29	VMO	N	2C
30	VM1	N	00
31	HPOS	I	0C

32	VP50	I			00		
33	HIT	I			12		
34	HPS	I			03		
35	VP60	I			01		
36	HITS	I			03		
37	VLIN	I			0C		
38	VSC	I			09		
39	VLIS	I			02		
40	DPC	N			00		
41	DPCS	N			00		
42	KEY	N			00		
43	KEYS	N			00		
44	WID	N			00		
45	WIDS	N			00		
46	VCP	N			00		
47	CNR	N			00		
48	HCP	N			00		
49	SBY	A			08		
50	SRY	A			08		
51	RAGC	I			25		
52	AFT	N			13		
53	HAFC	N			00		
54	V25	A			3E		
55	V50	A			4A		
56	BRTS	I			15		
57	VM2	N			30		
58	MOD0	A			00		
59	MOD1	A			02		
60	MOD2	N			00		
61	SELF	N			00		
62	SELF VCO	N			80		
63	SELF AGC	N			69		
64	SELF BRTC	N			75		
65	SELF CNTC	N			23		
66	SELF TNTC	N			30		
67	SELF COL	N			20		
68	LOGO	A			01		
69	LANG	A			00		
70	IF FREQ	A			03		
71	OSD	A			00		
72	OPT	N			04		

Orion, Type: A34JLL90 X32

Adjustment codes:

- I Data adjustable individually for each unit.
- A Adjustable parameter. Changes need Engineering Department approval.
- N Non adjustable parameter.

TB1238N Adjustment in D-Mode  
 Show the D-Mode Items information

Mode	For PAL	For NTSC	Remark
D	RCUT	RCUT	R CUTOFF
	GCUT	GCUT	G CUTOFF
	BCUT	BCTU	B CUTOFF
	GDRV	GDRV	G DRIVE
	BDRV	BDRV	B DRIVE
	CNTX	CNTX	SUB CONTRAST MAX
	BRTC	BRTC	SUB BRIGHT CENTER
	COLC	COLC	SUB COLOR CENTER for NTSC
	TNTC	TNTC	SUB TINT CENTER
	COLP		SUB COLOR CENTER for PAL (DIFFERENCE)
	COLS		SUB COLOR CENTER for SECAM
	SCNT	SCNT	Y-SUB CONTRAST
	CNTC	CNTC	SUB CONTRAST CENTER
	CNTN	CNTN	SUB CONTRAST MINIMUM
	BRTX	BRTX	SUB BRIGHT MAX (DIFFERENCE)
	BRTN	BRTN	SUB BRIGHT MIN (DIFFERENCE)
	COLX	COLX	SUB COLOR MAX (DIFFERENCE)
	COLN	COLN	SUB COLOR MIN
	TNTX	TNTX	SUB TINT MAX (DIFFERENCE)
	TNTN	TNTN	SUB TINT MIN (DIFFERENCE)

Mode	For PAL	For NTSC	Remark
D	ST3	ST3	SUB SHARP CENTER NTSC3.58 in TV
	SV3	SV3	SUB SHARP CENTER NTSC3.58 in VIDEO
	ST4	ST4	SUB SHARP CENTER other color system in TV
	SV4	SV4	SUB SHARP CENTER other color system in VIDEO
	SHPX		SUB SHARPNESS MAX points from Center value
	SHPN		SUB SHARPNESS MIN points from Center value
	TXCX		RGB Contrast data at MAX data of user contrast
	RGCN		RGB Contrast data at MIN data of user contrast
	VM0		VCD mode data 0 (Setting Data of TB1238) Bit 7: F-ID, Bit 6: CW-SW, Bit 5,4: BAL Start Point Bit 3,2: ABL-Gain Bit 1: WPS Bit 0: ID-SW
	VM1		VCD mode data 1 (Setting Data of TB1238) Bit 7: No use , Bit 6: N-COM, Bit 5-1: V-Mute Timing Bit 0: BLK V-Mute Timing = 200ms + 8ms * Data
	HPOS		50Hz Horizontal Phase
	VP50		50Hz Vertical Phase
	HIT		50Hz Vertical Amplitude
	HPS	HPS	Shift data of 50Hz / 60 Hz Horizontal Phase
	VP60	VP60	60Hz Vertical Phase
	HITS	HITS	Shift data of 50Hz / 60Hz Vertical Amplitude
	VLIN		V-LINEARITY
	VSC		V-S CORRECTION
	VLIS	VLIS	Shift data of 50Hz / 60Hz V-LINEARITY
	DPC		
	DPCS		
	KEY		
	EKYS		
	WID		
	WIDS		
	VCP		
	CNR		
	HCP		
	SBY		SECAM B-Y
	SRY		SECAM R-Y
	RAGC	RAGC	RF AGC adjustment
	AFT		PIF VCO adjustment
	HAFC		1/2 AFC data adjustment
	V25		Volume output data at 25%
	V50		Volume output data at 50%
	BRTS		SUB Brightness (DIFFERENCE)
	VM2		
	MOD0		
	MOD1		
	MOD2		
	SELF		
	SELF VCO		
SELF AGC			
SELF BRTC			
SELF CNTC			
SELF TNTC			
SELF COL			
LOGO			
LANG			
IF FREQ			
OSD			
OPT			



MOD0

SYS	DATA
PAC SECAM TEXT CCD NTSC	46
PAC SECAM NTSC TEXT	42
PAC SECAM NTSC CCD	44
PAC NTSC TEXT CCD	06
PAC NTSC TEXT	02
PAC NTSC CCD	04
PAL NTSC	00
PAL SECAM NTSC	40

TABLE 1.

MOD1

PROGRAM	VIDEO	DATA
50	TV—VIDEO	00
100	TV—VIDEO	02
50	TV—VIDEO 1—VIDEO 2	10
100	TV—VIDEO 1—VIDEO 2	12

TABLE 2.

MOD2

SOUND	SYSTEM	DATA
BG or DK or I		00
DK . I		0A
BG . DK		0C
BG . I		06

TABLE 3.

LOGO

NO LOGO	00
TEAC	01
ROWA	02

TABLE 4.

LANG

ENGLISH	00
ENGLISH OR FRANCAIS	01

TABLE 5.

IF FREQ

MHz	DATA
39.5	02
38.9	03
38.0	04

TABLE 6.

For 14;"

VOLTAGE TABLE FOR TRANSISTOR (ONLY FOR REFERENCE)							
SYMBOL	B (V)	C (V)	E (V)	SYMBOL	B (V)	C (V)	E (V)
Q101	1.3	9.0	0.6	Q507	0	9.0	0.1
Q102	3.6	8.9	2.9	Q508	0.5	0	1.2
Q103	4.3	8.9	3.7	Q601	5.0	5.1	4.5
Q104	2.8	0	3.5	Q603	0.6	0	0
Q105	6.3	8.9	5.5	Q604	0	5.1	0
Q106	1.4	0	2.1	Q605	0	4.9	0
Q201	17.5	1.1	17.2	Q606	-0.8	4	0
Q202	0.6	0	0	Q801	3.0	2.3	2.3
Q203	16	15.3	15.3	Q803	0.67	0	0
Q301	0.1	22.8	0	Q901	8.8	11.9	8.2
Q401	0.3	14.9	0	Q902	5.1	-0.05	1.6
Q402	-0.2	106.0	0	Q903	0	1.1	0
Q403	5.5	7.7	4.9	Q904	-2.5	296.7	0
Q501	9.0	107	8.5	Q905	0.6	0	0
Q502	9.0	108.7	8.5	Q906	109.4	110	110
Q503	9.0	105.3	8.5	Q907	110	110	109.3
Q504	2.6	8.5	2.1	Q108	3.1	5.1	2.4
Q505	2.6	8.5	2.1	Q109	5.1	8.9	4.5
Q506	2.7	8.5	2.3	Q110	5.9	9.0	5.2

NOTE: VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

CONTRAST : Maximum Position  
 BRIGHNESS : Maximum Position  
 COLOR : Maximum Position  
 SIGNAL INPUT : 70dB ± 10dB  
 CHANNEL SETTING : The Last Channel of UHF High  
 SIGNAL PATTERN : Colour Bar

FOR 20" ~ 21"

VOLTAGE TABLE FOR TRANSISTOR (ONLY FOR REFERENCE)							
SYMBOL	B (V)	C (V)	E (V)	SYMBOL	B (V)	C (V)	E (V)
Q101	1.3	9.0	0.6	Q603	0.6	0	0
Q102	3.6	8.9	2.9	Q604	0	5.1	0
Q103	4.3	8.9	3.7	Q605	0	4.9	0
Q104	2.8	0	3.5	Q606	-0.8	4	0
Q105	6.3	8.9	5.5	Q901	8.8	11.9	8.2
Q106	1.4	0	2.1	Q902	5.1	-0.05	1.6
Q108	3.1	5.1	2.4	Q903	0	1.1	0
Q109	5.1	8.9	4.5	Q904	-2.5	296.7	0
Q110	5.9	9.0	5.2	Q905	0.6	0	0
Q201	17.5	1.1	17.2	Q906	109.4	110	110
Q202	0.6	0	0	Q907	110	110	109.3
Q203	16	15.3	15.3	Q001	0	8.9	GND
Q301	0.1	22.8	0				
Q401	0.3	14.9	0				
Q402	-0.2	106.1	0				
Q403	5.5	7.7	4.9				
Q501	9.0	107	8.5				
Q502	9.0	108.7	8.5				
Q503	9.0	105.7	8.5				
Q504	2.6	8.5	2.1				
Q505	2.6	8.5	2.1				
Q506	2.7	8.5	2.3				
Q507	0	9.0	0.1				
Q508	0.5	0	1.2				
Q601	5.0	5.1	4.5				
Q801	3.0	2.3	2.3				
Q803	0.67	0	0				

NOTE: VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

- CONTRAST : Maximum Position
- BRIGHTNESS : Maximum Position
- COLOR : Maximum Position
- SIGNAL INPUT : 70dB ± 10dB
- CHANNEL SETTING : The Last Channel of UHF High
- SIGNAL PATTERN : Colour Bar

VOLTAGE TABLE FOR IC ( ONLY FOR REFERENCES ) ( FOR 1P.TEXT )						
PIN NO.	SYMBOL	IC101	IC601	IC801	IC802	IC302
1		5	GND	5	0	2.6
2		3.6	4.7	2	0	NC
3		8.9	5	3.6	0	2.5
4		2.5	0	0	0	2.5
5		0	0	GND	5	2.5
6		0.4	0	5	4	2.5
7		0	5	2.2	0	4.6
8		4.5	5	2.4	1.6	NC
9		4.2	5	2.5	0	4.9
10		2.3	0	5	0	NC
11		2.5	5	GND	1.1	0
12		0	5	NC	GND	2.9
13		0	2.6	5	5	3.3
14		2.6	NC	GND	NC	2.5
15		2.4	5	0.2	3.2	2.6
16		2.6	5	0.2	2.9	NC
17		9	NC	0.2	NC	0.7
18		2.9	NC	2.6	0	4.9
19		2.7	NC	1.6	0	2.7
20		2.8	NC	GND		NC
21		5.3	GND	NC		1.4
22		4	0	2.5		
23		4.8	0	NC		
24		1	0	2.9		
25		1.8	0	3.2		
26		5	4	NC		
27		5	4.9	NC		
28		9	5	NC		
29		5.2	5	NC		
30		1.6	GND	NC		
31		4.8	2.2	NC		
32		1.9	2.2	NC		
33		GND	0.2	NC		
34		1.2	0.2	NC		
35		2.9	5	NC		
36		5.2	4.8	NC		
37		2.5	5	NC		
38		2.5	3.2	NC		
39		2.9	0.3	NC		
40		7	0	NC		
41		1.6	0			
42		GND	5			
43		3.2				
44		2.3				
45		2.9				
46		4.9				
47		3.7				
48		4				
49		GND				
50		8				
51		8				
52		8.8				
53		4.6				
54		5.8				
55		8.8				
56		5.5				

NOTE : VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH  
SHARP : Maximum Position  
CONTRAST : Maximum Position  
BRIGHNESS : Maximum Position  
COLOR : Maximum Position  
SIGNAL INPUT : 70dB ±10dB  
CHANNEL SETTING : The Last Channel of UHF High  
SIGNAL PATTERN : Colour Bar

VOLTAGE TABLE FOR IC ( ONLY FOR REFERENCES )  
( FOR 1P.TEXT )

PIN NO. \ SYMBOL	IC401	IC402	IC201	IC901	IC301
1	GND	12.2	2	11.2	8.8
2	12.7	GND	2.1	GND	0
3	24.4	9	GND	5	0
4	0.9		5.2		0
5	0.9		GND		GND
6	24.3		7.5		10.4
7	1.2		15.3		0
8					0
9					9
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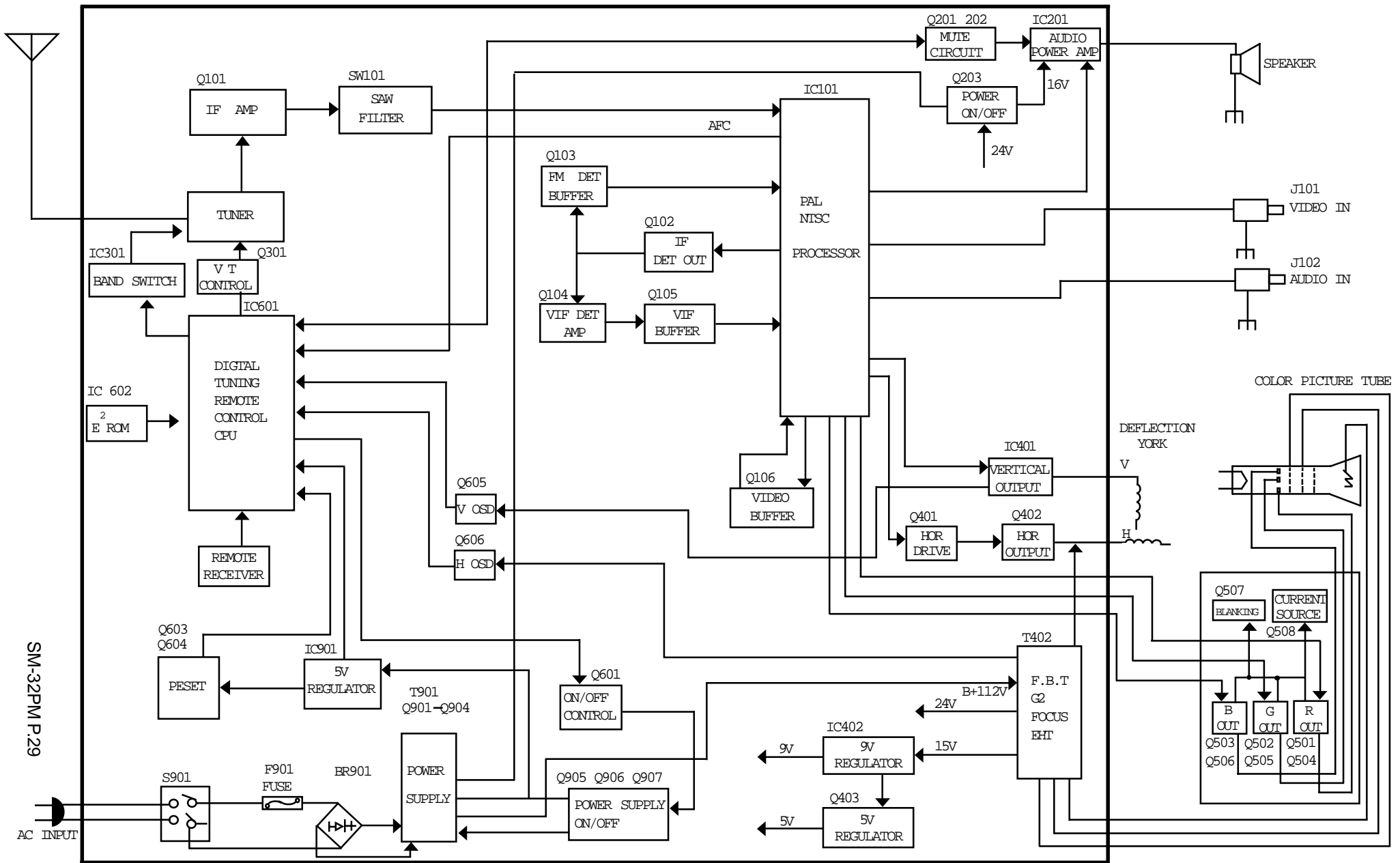
NOTE : VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

CONTRAST : Maximum Position  
 BRIGHNESS : Maximum Position  
 COLOR : Maximum Position  
 SIGNAL INPUT : 70dB ±10dB  
 CHANNEL SETTING : The Last Channel of UHF High  
 SIGNAL PATTERN : Colour Bar

VOLTAGE TABLE FOR IC ( ONLY FOR REFERENCES ) ( FOR 1P.TEXT )					
PIN NO.	SYMBOL	IC001	IC602		
1		GND	GND		
2		GND	GND		
3		2.4	GND		
4		4.4	GND		
5		0	5		
6		GND	5		
7		GND	0		
8		GND	5		
9		0			
10		0			
11		0			
12		4.4			
13		1.7			
14		4.4			
15		NC			
16		9			
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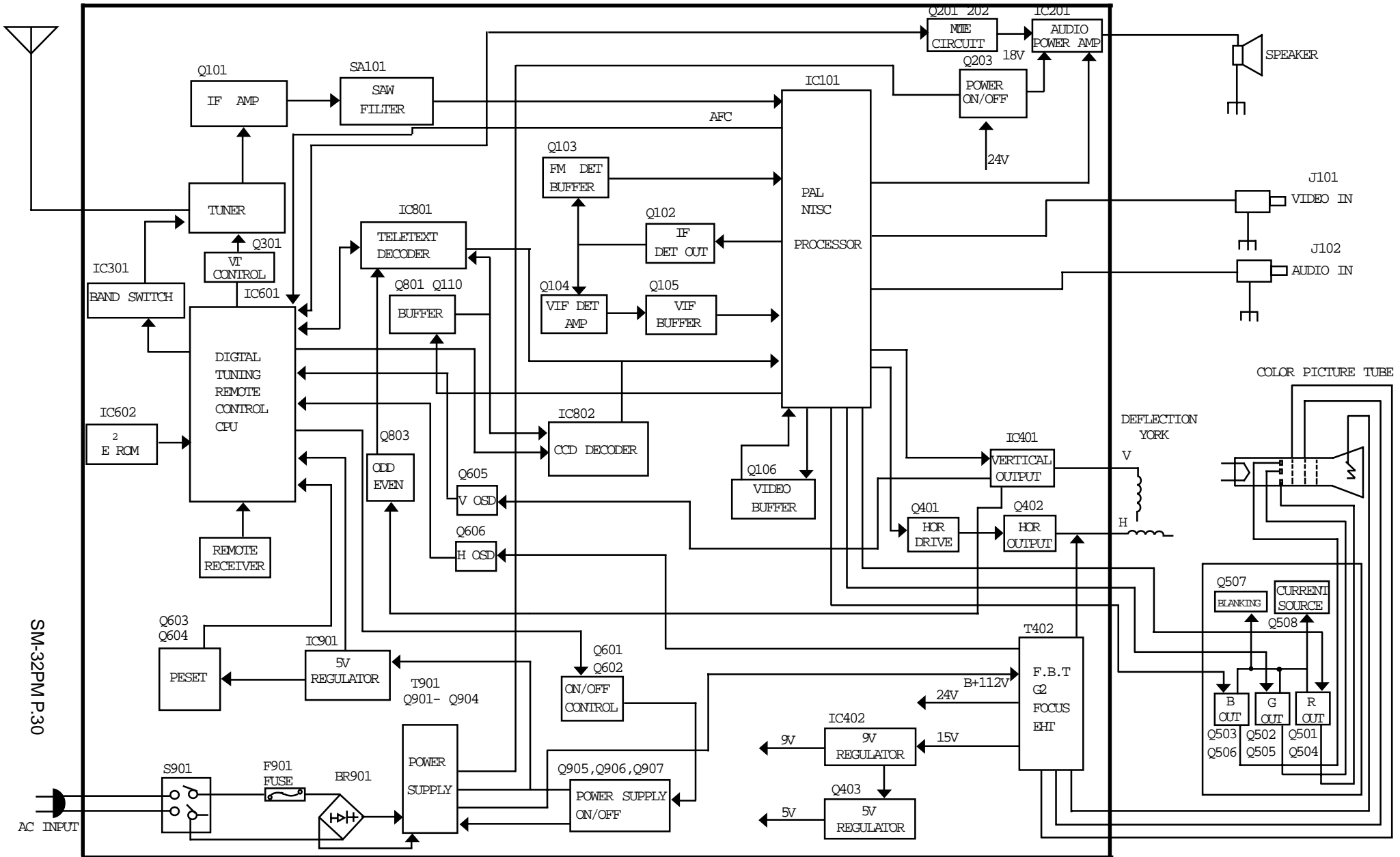
NOTE : VOLTAGE ARE TAKEN UNDER TUNED CONDITION WITH

- CONTRAST : Maximum Position
- BRIGHNESS : Maximum Position
- COLOR : Maximum Position
- SIGNAL INPUT : 70dB  $\pm$ 10dB
- CHANNEL SETTING : The Last Channel of UHF High
- SIGNAL PATTERN : Colour Bar



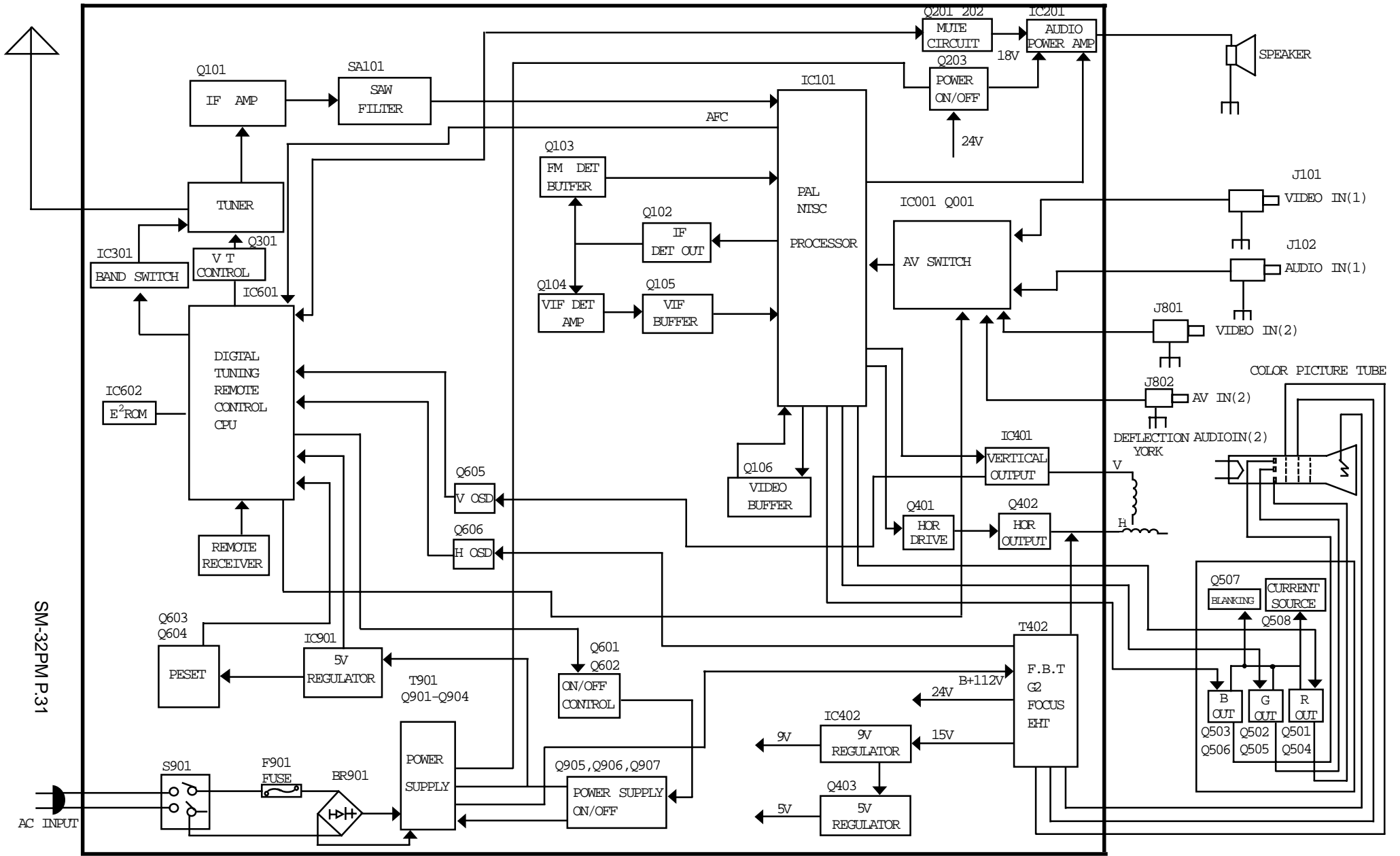
**BLOCK DIAGRAM  
FOR '14' MODEL**

SM-32PM P.29



**BLOCK DIAGRAM  
FOR '14' MODEL W TELETEXT & CCD**

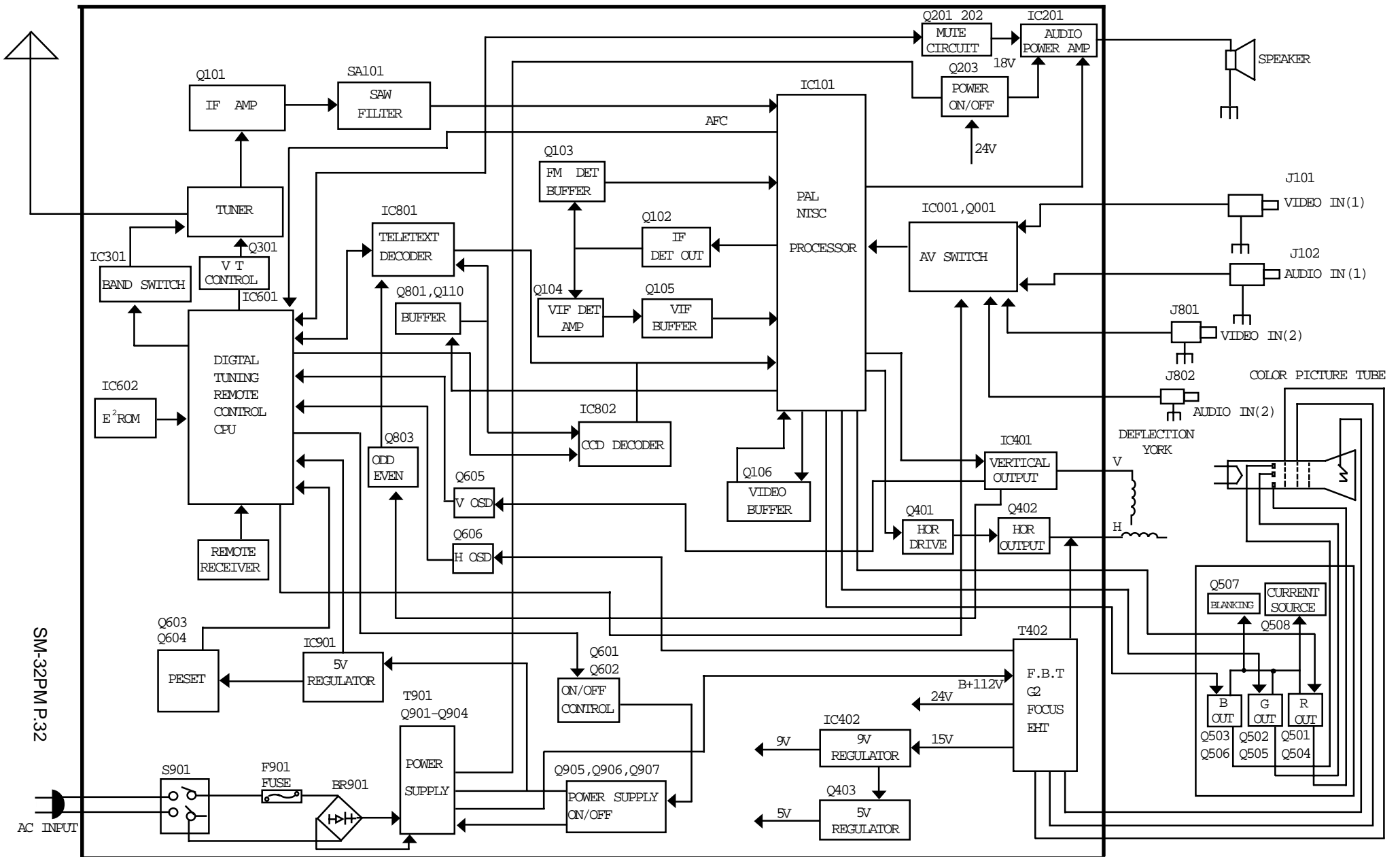




**BLOCK DIAGRAM**

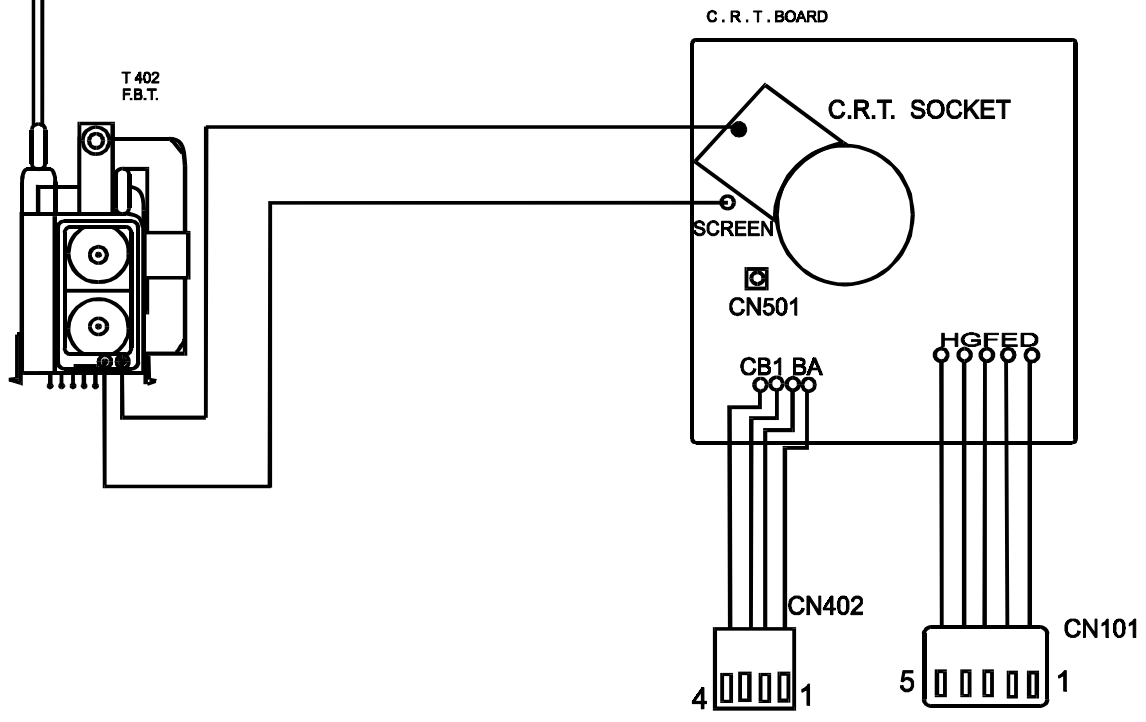
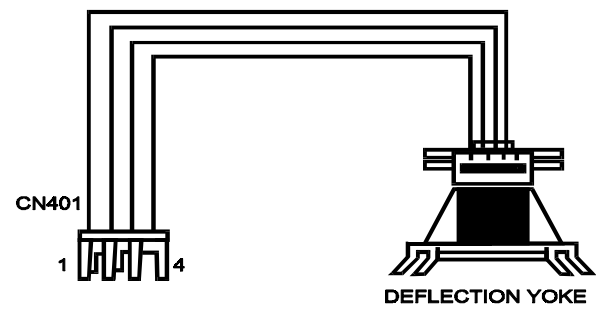
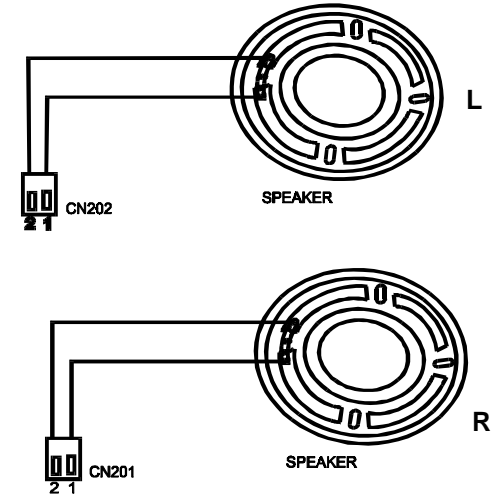
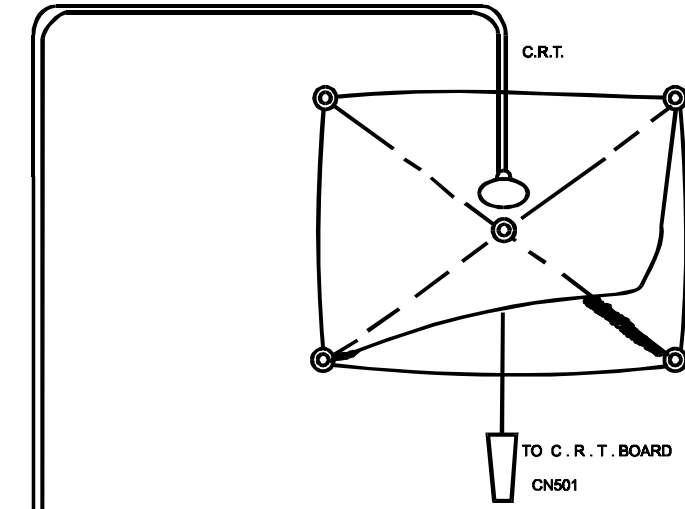
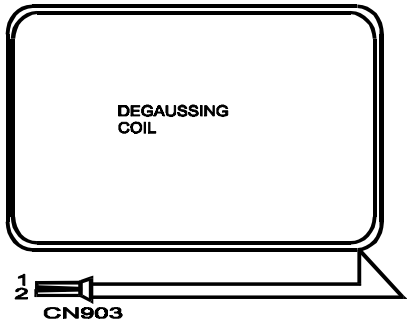
**FOR 20",21" MODEL**

SM-32PM P.31



**BLOCK DIAGRAM  
FOR 20",21" MODEL W TELETEXT & CCD**

WIRING DIAGRAM



CTM4828H

<b>PART_NO</b>	<b>DESC</b>	<b>QTY</b>	<b>LOCATION</b>
RC-747	REMOTE		
107-800455-4G	RESONATOR 455 KHZ ET455Z PO TUNG	1	CF701
113-229105-17	CARBON FILM RESISTOR 2.2 OHM 1/4W +-5%	1	R701
113-562005-17	CARBON FILM RESISTOR 5.6K OHM 1/16W +-5%	1	R703
113-682005-17	CARBON FILM RESISTOR 6.8K OHM 1/16W +-5%	1	R702
123-101350-60	CERAMIC CAP. 100 PF 50V +-10% (SL TYPE) "SMART G	2	C701,702
127-106042-0T	ELECT CAP. 10 MFD 16V +-20% {TAPING} "NANTONG"	1	C703
130-134148-01	SILICON DIODE IN4148	7	D701-707
130-600101-0G	INFRARED EMITTER EL-1L1 KODENS HI "GUANG ZHOU	1	LED701
131-232001-00	TRANSISTOR 2SC2001L NEC	1	Q701
133-119028-14	I.C. TC9028AF-023 TOSHIBA	1	IC701
172-726000-99	BARE WIRE 54MM		W701
190-R63314-02	REMOTE P.C.B.(050199)	1	
516-260408-10	SELF-TAPPING SCREW 2.6 X 8 P/T (HARDEN)	2	FOR HANDSET
774-R63301-00	BATTERY SPRING (+VE)	1	
774-R63302-00	BATTERY SPRING (-VE)	1	
774-R63303-00	BATTERY SPRING (+-VE)	1	
810-041104-13	POLYBAG 4" X 11" X 0.04MM W/RE-CYCLING MARK	1	FOR HANDSET
849-R63301-00	KEY PAD {FULL 40 KEYS}	1	
892-R63330-01	DIAL KEY PLATE - W/CCD/TXT/SYS (TOSHIBA IyC)(13 t	1	
900-R63302-55	HANDSET TOP CAB.- MATT BLK W/ SILVER 8001C S.S.	1	
902-R63302-03	HANDSET BOTTOM CABINET - MATT BLACK SPRAYED	1	
910-R63301-0W	REMOTE BATTERY DOOR - TEAC DESIGN {RC-747}{CT	1	
973-R63301-00	VOLUME/CHANNEL KNOB - MOULDED BLACK	1	
514-400312-10	SELF-TAPPING SCREW 4 X 12 B/A (HARDEN)	1	FOR FBT MTG
514-400425-10	SELF-TAPPING SCREW 4 X 25 B/T (HARDEN)	2	FOR CABINET MTG.
515-303408-10	SELF-TAPPING SCREW 3 X 8 W/B/T (HARDEN)	11	8-SPK MTG.,3- LENS TO F.CAB.
515-303410-10	SELF-TAPPING SCREW 3 X 10 W/B/T (HARDEN)	4	FOR FUNCTION KNOB
515-303412-10	SELF-TAPPING SCREW 3 X 12 W/B/T (HARDEN)	1	FOR AV PCB TO FRONT CAB
516-500435-10	SEIF-TAPPING SCREW 5X35 P/T (HARDEN) HEAD DIA.	4	FOR CABINET MTG.
524-932901-01	CRT MOUNTING SCREW 7 X 40 VP (HARDEN)	4	FOR CRT MTG
622-882802-00	FELT L240 X W17 X T0.5MM W/TAPE	8	FOR FRONT CABINET & BACK CABINET

CTM4828H

PART_NO	DESC	QTY	LOCATION
777-921301-00	POWER KNOB SPRING (ID=9MM,L=10MM)	1	FOR POWER KNOB
810-052204-14	POLYBAG 5" X 22" X 0.04MM W/RE-CYCLING MARK {P/	1	FOR AC LINE CORD
810-091504-13	POLYBAG 9" X 15" X 0.04MM W/ RE-CYCLING P.E.MARI	1	FOR I/MANUAL
834-230801-00	RUBBER WASHER OD=23 , ID=8 , T=1.0	2	FOR CRT MTG.(LOWER)
834-230802-00	RUBBER WASHER OD=23, ID=8, T=2	6	4 FOR CRT MTG.(UP),2 FOR CRT
834-230805-00	RUBBER WASHER OD=23 ID=8 T=0.5	2	6 MTG.(LOWER) FOR CRT
840-011024-21	PAD CORD L240 X W10 X T1 MM W/TAPE	6	2 MTG.(UP) 6 FOR BETWEEN CRT AND FRONT CAB.
840-051020-11	RUBBER PAD (UL 94VO)	2	1 FBT.,1 TRANSFORME R
929-881301-00	LED HOLDER BKT	1	FOR LED601
939-942101-00	POWER KNOB ADAPTOR	1	FOR POWER SWITCH
954-882100-00	AC LINE CORD CLIP	1	
954-882804-00	HIGH VOLTAGE CABLE SPACER	2	FOR FBT.
002-120001-46	CRT20" A48KRD82X09/A48KRD89X09 (SOUTH HEMISP	1	
003-131302-01	TUNER 38.9MHZ(BG) WSP{9V} #ENV 59D04F2E "MATSU	1	TUNER
102-372007-02	TANK COIL 45 MHZ KHIC-842607 COILS	1	T101
105-109103-16	FIXED INDUCTIVE COIL 1UH 10% AL0305-1R0K "BOLUC	1	L201
107-105500-66	SOUND TRAP CERAMIC FILTER 5.5MHZ WEI HAW	1	CF102
107-305500-16	SOUND BYPASS CERAMIC FILTER 5.5MHZ WEI HAW	1	CF101
107-738955-0C	SAW FILTER OFWK2955M SIEMENS	1	SA101
113-151105-17	CARBON FILM RESISTOR 150 OHM 1/4W +-5%	1	R209
123-103370-90	CERAMIC CAP. 0.01 MFD 50V +80 -20%	1	C212
123-222466-50	CERAMIC CAP. 0.0022 MFD 400VAC +-20% ECKDNA222	2	C912,925
160-103255-27	PIN CONNECTOR 3 PINS PLUG	1	CN203
161-103504-20	HEADPHONE JACK DIA=3.5MM KUNMING=HTJ035-17AI	1	J201
161-381802-23	I.C. SOCKET 18 PINS "TRI-MARK"	1	FOR IC802
161-384002-00	I.C. SOCKET 40 PINS #2227227-40	1	FOR IC801
161-471003-02	RCA JACK 3 PIN YELLOW #UIC-032-04AY "CHINA LAND	1	J007
161-473204-00	RCA JACK 3 PIN UIC-032-04AR RED "UNITRONIC"	1	J008
166-445023-4L	SPEAKER 2" X 3-1/2" 4 OHM 5W #YDT5090-5A SHEN ZH	2	
171-550084-D1	7' SAA APP. LINE CORD W/PLUG E-CUTTING 45MM,15M	1	

CTM4828H

<b>PART_NO</b>	<b>DESC</b>	<b>QTY</b>	<b>LOCATION</b>
172-726000-99	BARE WIRE 54MM	0	R102
177-655123-02	FLAT CABLE 2 PIN L=120MM AWG26 UL2468	1	MAIN PCB `A' TO `A`,`B' TO `B' 40MM FOR SOLDERING
179-403080-00	SHRINKABLE TUBE	0	LUG
186-624500-11	HI-WATT SUPER HEAVY DUTY 1.5V 0% MERCURY 3A E	2	PACKED IN G/B
190-821B02-08	FRONT AV(MONO)IN P.C.B. (060598)	1	J008
190-821B06-08	HEADPHONE JACK P.C.B.	1	EAR PHONE PCB `1' TO CN203
191-301022-10	3 PIN SOCKET ASS'Y L=220MM	1	`1`,`2' TO `3`,`3'T O`2' 1 FOR FRONT AV,2 FOR HEARPHONE
515-303408-10	SELF-TAPPING SCREW 3 X 8 W/B/T (HARDEN)	3	PCB
515-303412-10	SELF-TAPPING SCREW 3 X 12 W/B/T (HARDEN)	1	FOR FRONT AV (LENS & PCB TO F.CAB)
610-942101-3X	GIFT BOX - TEAC DESIGN (CT-M4828H)	1	2-R & L SIDES OF EACH CTN,1-R/L,1- WARRANTY CARD
663-230166-99	SERIAL NO.LABEL - TEAC DESIGN	4	
669-820B01-08	RATING LABEL - TEAC DESIGN (CT-M4828H) 240V	1	
670-820B00-20	I/MANUAL - TEAC DESIGN (CT-M4828H) "TOSHIBA IyC"	1	
678-820B01-04	SCREEN STICKER - TEAC DESIGN (CT-M4828H)	1	STUCK ON "PAGE 7/9" OF EACH I/M
678-931301-26	I/MANUAL LABEL B - TEAC DESIGN	1	
678-931315-07	TOTAL CARE LAEBL - TEAC (B) DESIGN	1	
690-942039-02	WARRANTY CARD -TEAC (C) DESIGN	1	
693-820B01-04	EAN CODE LABEL - TEAC DESIGN	2	STUCK ON L & R SIDES OF EACH CTN
703-821B11-03	SPK.GRILLE - METALLIC GREY (8403C) 0.5MM THK ?.0	2	
710-942102-01	NAME PLATE - TEAC (B) DESIGN (ELECTROFORMED)	1	
800-821B11-00	POLYFOAM (B) - TOP LEFT	1	
800-821B12-00	POLYFOAM (B) - TOP RIGHT	1	
800-821B13-00	POLYFOAM (B) - BOTTOM LEFT	1	

CTM4828H

PART_NO	DESC	QTY	LOCATION
800-821B14-00	POLYFOAM (B) - BOTTOM RIGHT	1	
810-404004-62	POLYBAG 40"X40"X0.04MM W/PUNCH [TEAC DESIGN (	1	FOR UNIT
826-302005-00	FOAM SHEET 30" X 20" X 0.5MM THK.	1	FOR TOP UNIT
884-882025-04	JACK COVER W/VIDEO IN/AUDIO IN (FOR TOSHIBA IyC	1	
889-942101-00	AV COVER PLATE (UL)	1	FOR FRONT AV
900-820B01-02	FRONT CABINET (B) - METALLIC GREY (8403C)	1	
902-942111-U4	BACK CABINET - METALLIC GREY (8403C) (UL)	1	
917-821B41-03	FUN.LENS - TEAC DESIGN (CT-M4828H)(W/HOTEL FUN	1	
977-821B01-00	FUNCTION KNOB (FOR AUTO TUNNING FUNCTION)	1	
977-821B02-00	FUNCTION KNOB (FOR VOLUME CHANNEL FUNCTION)	1	
991-821B01-01	POWER KNOB - METALLIC GREY (8403C)	1	
180820BT035CF	MAIN P.C.B.		
001-220027-07	FLYBACK TRANSFORMER FCM20B027 SAMSUNG	1	T402
008-550201-05	DEGAUSSING COIL 60T 44MM X 34 MM (W/FIVE LAYER	1	
012-102340-0B	SEMI-FIXED RES. WI06-2AL-1K "SHENZHEN YUNGJIAN	1	VR901
101-191009-96	HORIZONTAL DRIVE TRANSFORMER (R1009)	1	T401
101-288820-95	LINE FILTER 70MH	1	L901
101-410214-94	SWITCHING POWER TRANSFORMER KB40C214D (HIG	1	T901
105-109103-16	FIXED INDUCTIVE COIL 1UH 10% AL0305-1R0K "BOLUC	1	L101
105-201106-02	CHOKE COIL 200UH 10% CH9012- 201K (ELEC PRODUC	1	L902
105-330101-02	FIXED INDUCTIVE COIL 33uH +-10 %	1	L601
105-399103-08	FIXED INDUCTIVE COIL 3.9 UH +-10% (WITTIS)	1	L801
105-479103-16	FIXED INDUCTIVE COIL 4.7UH 10% AL0305-4R7K "BOLL	1	L301
105-560103-16	FIXED INDUCTIVE COIL 56UH +-10% AL0305 "BOLUO D	1	L102
105-569103-08	FIXED INDUCTIVE COIL 5.6UH +-10% AXIAL	2	L103,603
105-650152-29	LINEARITY COIL 65UH TW52-03 "WEI HAW"	1	L401
105-829103-08	FIXED CONDUCTOR COIL 8.2 UH +-10% AXIAL	1	L104
113-100105-17	CARBON FILM RESISTOR 10 OHM 1/4W +-5%	3	R602,802,001
113-100105-42	FUSING RESISTOR 10 OHM 1/4W +-5%	1	R428
113-101005-17	CARBON FILM RESISTOR 100 OHM 1/16W +-5%	1	R117
113-102005-17	CARBON FILM RESISTOR 1K OHM 1/16W +-5%		R124,146,145,4
			01,402,525,601,
			606,607,646,02
		12	0,303
			R614,615,633,6
113-102005-17	CARBON FILM RESISTOR 1K OHM 1/16W +-5%		34,635,636,637,
		10	638,135,023
			R808,320,806,0
113-102005-17	CARBON FILM RESISTOR 1K OHM 1/16W +-5%	5	13,008
113-102105-17	CARBON FILM RESISTOR 1K OHM 1/4W +-5%	2	R311,156
113-102205-12	CARBON FILM RESISTOR 1K OHM 1/2W +-5%	1	R436

CTM4828H

PART_NO	DESC	QTY	LOCATION
113-103005-17	CARBON FILM RESISTOR 10K OHM 1/16W +-5%	8	R109,123,122,1 51,206,432,433, 641 R643,649,648,6
113-103005-17	CARBON FILM RESISTOR 10K OHM 1/16W +-5%	8	44,301,307,308, 816 R012,015,021,0
113-103005-17	CARBON FILM RESISTOR 10K OHM 1/16W +-5%	9	05,006,002,661, 024,824
113-103101-67	METAL FILM RESISTOR 10K OHM 1/4W +-1%	3	R803,306,305
113-103105-17	CARBON FILM RESISTOR 10K OHM 1/4W +-5%	2	R908,928
113-103205-12	CARBON FILM RESISTOR 10K OHM 1/2 +-5%	2	R419,434
113-104005-17	CARBON FILM RESISTOR 100K OHM 1/16W +-5%	2	R004,007
113-104205-12	CARBON FILM RESISTOR 100K OHM 1/2W +-5%	2	R431,921
113-104305-75	METAL OXIDE FILM RESISTOR 100K OHM 1W +-5%	1	R931
113-113105-17	CARBON FILM RESISTOR 11K OHM 1/4W +-5%	2	R621,624
113-120305-75	METAL OXIDE FILM RESISTOR 12 OHM 1W +-5%	1	R912
113-120405-75	METAL OXIDE FILM RESISTOR 12 OHM 2W +-5%	1	R919
113-121005-17	CARBON FILM RESISTOR 120 OHM 1/16W +-5%	1	R104
113-122005-17	CARBON FILM RESISTOR 1.2K OHM 1/16W +-5%	3	R656,657,658
113-122205-12	CARBON FILM RESISTOR 1K2 OHM 1/2W +-5%	3	R517,518,519
113-123005-17	CARBON FILM RESISTOR 12K OHM 1/16W +-5%	2	R143,820
113-124005-17	CARBON FILM RESISTOR 120K OHM 1/16W +-5%	2	R112,413
113-124205-12	CARBON FILM RESISTOR 120K OHM 1/2W +-5%	1	R418
113-129305-75	METAL OXIDE FILM 1.2 OHM 1W +-5%	1	R407
113-129405-42	FUSING RESISTOR 1.2 OHM 2W +-5%	1	R501
113-150005-17	CARBON FILM RESISTOR 15 OHM 1/16W +-5%	1	R521
113-151005-17	CARBON FILM RESISTOR 150 OHM 1/16W +-5%	1	R412
113-151405-75	METAL OXIDE FILM RESISTOR 150 OHM 2W +-5%	1	R160
113-152005-17	CARBON FILM RESISTOR 1.5K OHM 1/16W +-5%	4	R127,129,613,8 14
113-152105-17	CARBON FILM RESISTOR 1.5K OHM 1/4W +-5%	1	R205
113-153005-17	CARBON FILM RESISTOR 15K OHM 1/16W +-5%	1	R630
113-181105-17	CARBON FILM RESISTOR 180 OHM 1/4W +-5%	1	R148
113-182105-17	CARBON FILM RESISTOR 1.8K OHM 1/4W +-5%	1	R906
113-183405-75	METAL OXIDE FILM RESISTOR 18K OHM 2W +-5%	3	R502,503,504
113-202605-75	METAL OXIDE FILM RESISTOR 2K OHM 5W +-5%	1	R417
113-204005-17	CARBON FILM RESISTOR 200K OHM 1/16W +-5%	1	R403
113-221005-17	CARBON FILM RESISTOR 220 OHM 1/16W +-5%	4	R114,119,429,1 80
113-222005-17	CARBON FILM RESISTOR 2.2K OHM 1/16W +-5%	4	R133,645,144,9 25



CTM4828H

<b>PART_NO</b>	<b>DESC</b>	<b>QTY</b>	<b>LOCATION</b>
113-223005-17	CARBON FILM RESISTOR 22K OHM 1/16W +-5%	4	R622,625,823,8 17
113-223105-17	CARBON FILM RESISTOR 22K OHM 1/4W +-5%	2	R424,208
113-224005-17	CARBON FILM RESISTOR 220K OHM 1/16W +-5%	1	R304
113-229105-17	CARBON FILM RESISTOR 2.2 OHM 1/4W +-5%	2	R202,138
113-229105-42	FUSING RESISTOR 2.2 OHM 1/4W +-5%	1	R163
113-229205-12	CARBON FILM RESISTOR 2.2 OHM 1/2W +-5%	1	R116
113-229405-75	METAL OXIDE FILM RESISTOR 2.2 OHM 2W +-5%	2	R201,903
113-229605-51	WIRE WOUND CEMENT RESISTOR 2.2 OHM 5W +-5%	1	R902
113-270405-75	METAL OXIDE FILM RESISTOR 27 OHM 2W +-5%	1	R913
113-271005-17	CARBON FILM RESISTOR 270 OHM 1/16 W +-5%	5	R121,164,165,1 66,181
113-271105-17	CARBON FILM RESISTOR 270 OHM 1/4W +-5%	3	R155,603,604
113-272005-17	CARBON FILM RESISTOR 2.7K OHM 1/16W +-5%	2	R147,655
113-272105-17	CARBON FILM RESISTOR 2.7K OHM 1/4W +-5%	1	R523
113-272205-17	CARBON FILM RESISTOR 2.7K OHM 1/2W +-5%	3	R416,409,920
113-273005-17	CARBON FILM RESISTOR 27K OHM 1/16W +-5%	2	R804,174
113-303005-17	CARBON FILM RESISTOR 30K OHM 1/16W +-5%	1	R110
113-330005-17	CARBON FILM RESISTOR 33 OHM 1/16W +-5%	1	R106
113-331005-17	CARBON FILM RESISTOR 330 OHM 1/16W +-5%	2	R118,126
113-331105-17	CARBON FILM RESISTOR 330 OHM 1/4W +-5%	1	R909
113-332005-17	CARBON FILM RESISTOR 3.3K OHM 1/16W +-5%	2	R801,807
113-332105-17	CARBON FILM RESISTOR 3.3K OHM 1/4W +-5%	1	R905
113-333005-17	CARBON FILM RESISTOR 33K OHM 1/16W +-5%	5	R618,619,642,3 12,313
113-334305-75	METAL OXIDE FILM RESISTOR 330K OHM 1W +-5%	1	R914
113-338405-75	METAL OXIDE FILM RESISTOR 0.33 OHM 2W +-5%	1	R916
113-390405-75	METAL OXIDE FILM RESISTOR 39 OHM 2W +-5%	1	R930
113-390605-75	METAL OXIDE FILM RESISTOR 39 OHM 5W +-5%	1	R917
113-392005-17	CARBON FILM RESISTOR 3.9K OHM 1/16W +-5%	3	R809,810,811
113-393005-17	CARBON FILM RESISTOR 39K OHM 1/16W +-5%	1	R207
113-470005-17	CARBON FILM RESISTOR 47 OHM 1/16W +-5%	1	R609
113-471005-17	CARBON FILM RESISTOR 470 OHM 1/16W +-5%	3	R105,125,812
113-471205-12	CARBON FILM RESISTOR 470 OHM 1/2W +-5%	1	R408
113-472005-17	CARBON FILM RESISTOR 4.7K OHM 1/16W +-5%	1	R302
113-472105-17	CARBON FILM RESISTOR 4.7K OHM 1/4W +-5%	4	R520,911,631,6 32
113-473005-17	CARBON FILM RESISTOR 47K OHM 1/16W +-5%	3	R134,022,014
113-473105-17	CARBON FILM RESISTOR 47K OHM 1/4W +-5%	1	R204
113-479105-17	CARBON FILM RESISTOR 4.7 OHM 1/4W +-5%	1	R120
113-519505-75	METAL OXIDE FILM RESISTOR 5.1 OHM 3W +-5%	1	R427
113-560105-17	CARBON FILM RESISTOR 56 OHM 1/4W +-5%	1	R526
113-561005-17	CARBON FILM RESISTOR 560 OHM 1/16W +-5%	1	R411
113-561105-17	CARBON FILM RESISTOR 560 OHM 1/4W +-5%	3	R505,506,507
113-562005-17	CARBON FILM RESISTOR 5.6K OHM 1/16W +-5%	1	R210

CTM4828H

<b>PART_NO</b>	<b>DESC</b>	<b>QTY</b>	<b>LOCATION</b>
113-563005-17	CARBON FILM RESISTOR 56K OHM 1/16W +-5%	3	R108,404,410 R923,924,2
113-565210-99	CARBON COMPOSITION RESISTOR 5.6M OHM 1/2W +-5%	4	FOR SPK. TO GRILLE
113-680005-17	CARBON FILM RESISTOR 68 OHM 1/16W +-5%	1	R178
113-681005-17	CARBON FILM RESISTOR 680 OHM 1/16W +-5%	1	R103
113-681105-17	CARBON FILM RESISTOR 680 OHM 1/4W +-5%	2	R524,522
113-681305-75	METAL OXIDE FILM RESISTOR 680 OHM 1W +-5%	1	R423
113-682005-17	CARBON FILM RESISTOR 6.8K OHM 1/16W +-5%	2	R805,323
113-682102-17	CARBON FILM RESISTOR 6.8K OHM 1/4W +-2%	1	R904
113-682105-17	CARBON FILM RESISTOR 6.8K OHM 1/4W +-5%	3	R910,608,612
113-682505-75	METAL OXIDE FILM RESISTOR 6.8K OHM 3W +-5%	1	R161 R405,406,623,6
113-683005-17	CARBON FILM RESISTOR 68K OHM 1/16W +-5%	5	26,173
113-688205-42	FUSING RESISTOR 0.68 OHM 1/2W +-5%	2	R421,918
113-688305-42	FUSING RESISTOR 0.68 OHM 1W +-5%	2	R422,929 R101,435,010,0
113-820005-17	CARBON FILM RESISTOR 82 OHM 1/16W +-5%	4	09 R508,509,510,5
113-821105-17	CARBON FILM RESISTOR 820 OHM 1/4W +-5%	7	11,512,513,196
113-822005-17	CARBON FILM RESISTOR 8.2K OHM 1/16W +-5%	1	R822
113-822105-17	CARBON FILM RESISTOR 8.2K OHM 1/4W +-5%	1	R907
113-824005-17	CARBON FILM RESISTOR 820K OHM 1/16W +-5%	1	R115
113-912105-17	CARBON FILM RESISTOR 9.1K OHM 1/4W +-5%	1	R321
114-210200-01	THERMISTOR (NICHICON ZPB53 BL 200C)	1	TH901
123-100340-60	CERAMIC CAP. 10PF +-5% 50V (SL TYPE)	1	C802
123-100340-93	CERAMIC CAP. 10 PF 50V +-5% (NPO)	1	C604 C444,616,121,6
123-101350-60	CERAMIC CAP. 100 PF 50V +-10% (SL TYPE) "SMART G	6	20,621,301
123-102350-90	CERAMIC CAP. 0.001 MFD 50V +-10% (B TYPE)	3	C138,804,005 C104,105,106,1
123-103370-90	CERAMIC CAP. 0.01 MFD 50V +80 -20%	11	22,129,141,609, 161,402,101,00
123-103370-90	CERAMIC CAP. 0.01 MFD 50V +80 -20%	3	2 C117,320,443 C132,151,152,1
123-104270-90	CERAMIC CAP. 0.1 MFD 25V +80 -20%	12	53,159,155,433, 434,162,920,11 6,817 C163,611,801,8
123-104270-90	CERAMIC CAP. 0.1 MFD 25V +80 -20%	7	06,807,810,112
123-120340-93	CERAMIC CAP. 12PF 50V +-5% (NPO)	1	C124
123-122550-95	CERAMIC CAP. 1200PF 500V +-10% "YINAN DON'S"	1	C416
123-150340-93	CERAMIC CAP. 15 PF 50V +-5% (NPO)	1	C803
123-221551-90	CERAMIC CAP. 220 PF 500V +-10% MATSUSHITA	1	C913

CTM4828H

PART_NO	DESC	QTY	LOCATION
123-222850-10	CERAMIC CAP. 0.0022 MFD 2KV +-10% MATSUSHITA	2	C911,421
123-330340-93	CERAMIC CAP. 33 PF 50V +-5% (NPO)	2	C602,603
123-391355-60	CERAMIC CAP. 390PF 50V +-10% (SL TYPE) "CHENGDL	4	C406,504,505,506
123-470340-60	CERAMIC CAP. 47 PF 50V +-5% (SL TYPE)	2	C142,143
123-471850-10	CERAMIC CAP. 470 PF 2KV +-10% MATSUSHITA	1	C420
123-472552-90	CERAMIC CAP. 0.0047 MFD 500V +-10% (B TYPE) SMAL	3	C903,904,905
123-472552-95	CERAMIC CAP. 0.0047 MFD 500V +-10% (B TYPE) "YINA	4	C425,426,441,915
123-509340-93	CERAMIC CAP. 5 PF 50V +-5% (NPO)	1	C605
123-821350-60	CERAMIC CAP. 820 PF 50V +-10% (SL TYPE)	1	C513
123-821850-10	CERAMIC CAP. 820 PF 2KV +-10% (SL TYPE) MATSUSHT	2	C501,916
124-224061-03	TANTALIUM CAP. 0.22 MFD 35V +-10%	2	C126,130
126-102071-01	MYLAR CAP. 0.001 MFD 50V +-10%	4	C209,404,617,131
126-103071-01	MYLAR CAP. 0.01 MFD 50V +-10%	2	C108,208
126-104071-01	MYLAR CAP. 0.1 MFD 50V +-10%	6	C148,203,326,327,808,910
126-104101-35	POLYPROPYLENE CAP. 0.1 MFD 100V +-10% "XIAMEN	1	C423
126-152071-01	MYLAR CAP. 0.0015 MFD 50V +-10%	2	C120,412
126-222071-01	MYLAR CAP. 0.0022 MFD 50V +-10%	1	C125
126-224071-01	MYLAR CAP 0.22 MFD 50V +-10%	4	C407,303,304,302
126-333071-01	MYLAR CAP. 0.033 MFD 50V +-10%	1	C907
126-472071-01	MYLAR CAP. 0.0047 MFD 50V +-10%	1	C149
126-472160-45	METALIZED POLY.CAP. 0.0047 MFD 1600V +-5% "XIAME	1	C422
126-473071-01	MYLAR CAP. 0.047 MFD 50V +-10%	1	C413
126-473222-41	METALIZED POLYPROPYLENE CAP. 0.047 MFD 275V +	1	C902
126-474071-01	MYLAR CAP. 0.47 MFD 50V +-10%	1	C403
126-474201-31	POLYPROPYLENE CAP 0.47 MFD 200V +-10%	1	C418
126-474222-45	METALIZED POLY.CAP. 0.47 MFD 275VAC +-20% "XIAM	1	C901
126-563071-01	MYLAR CAP. 0.056 MFD 50V +-10%	1	C408
126-682071-01	MYLAR CAP. 0.0068 MFD 50V +-10%	1	C809
126-683071-01	MYLAR CAP. 0.068 MFD 50V +-10%	1	C811
127-105072-0T	ELECT CAP. 1 MFD 50V +-20% {TAPING} "NANTONG"	4	C123,205,401,107
127-105072-0T	ELECT CAP. 1 MFD 50V +-20% {TAPING} "NANTONG"	1	C136
127-105132-07	ELECT CAP. 1 MFD 160V +-20% "NICHICON"	1	C419
127-106042-07	ELECT CAP. 10 MFD 16V +-20% "NICHICON"	1	C210
127-106042-0T	ELECT CAP. 10 MFD 16V +-20% {TAPING} "NANTONG"	7	C128,204,207,137,601,003,139
127-106072-03	ELECT. CAP. 10 MFD 50V +-20%	1	C446
127-106104-0D	ELECT CAP. 10 MFD 100V +-20% 105øC "NANTONG"	2	C909
127-106252-08	ELECT CAP. 10 MFD 250V +-20% "JAMICON"	1	C424
127-107042-03	ELECT. CAP. 100 MFD 16V +-20%	2	C012,503

CTM4828H

<b>PART_NO</b>	<b>DESC</b>	<b>QTY</b>	<b>LOCATION</b>
127-107042-0D	ELECT CAP. 100 MFD 16V +-20% "NAM TUNG"	10	C111,437,503,1 54,115,133,158, 610,805,001
127-107062-08	ELECT CAP. 100 MFD 35V +-20% "JAMICON"	1	C405
127-107132-07	ELECT. CAP. 100 MFD 160V +-20% "NICHICON"	2	C917,918
127-107402-03	ELECT. CAP. 100 MFD 400V +-20%	1	C906
127-225071-0D	ELECT CAP. 2.2 MFD 50V +-10% (TIME CONSTANT) "NA"	1	C409
127-225072-06	ELECT CAP. 2.2 MFD 50V +-20% {TAPING TYPE}	3	C306,307,308 C127,206,510,6
127-226042-0T	ELECT CAP. 22 MFD 16V +-20% {TAPING} "NANTONG"	4	18
127-227062-08	ELECT CAP. 220 MFD 35V +-20% "JAMICON"	1	C914
127-228052-0D	ELECT CAP. 2200 MFD 25V +-20% "NAM TUNG"	3	C410,432,202
127-336042-0T	ELECT CAP. 33 MFD 16V +-20% {TAPING} "NANTONG"	3	C165,813,815 C150,134,512,1
127-474072-08	ELECT CAP. 0.47 MFD 50V +-20% "JAMICON"	4	35
127-475072-0T	ELECT CAP. 4.7 MFD 50V +-20% {TAPING} "NANTONG"	2	C110,427
127-476042-0D	ELECT CAP. 47 MFD 16V +-20% "NAM TUNG"	3	C211,436,608
127-476094-0D	ELECT CAP. 47 MFD 63V +-20% 105øC "NANTONG"	2	C908,213 C201,435,511,1
127-477042-0T	ELECT CAP. 470 MFD 16V +-20% {TAPING} "NANTONG"	6	56,921,145
127-477062-06	ELECT CAP. 470 MFD 35V +-20% {TAPING TYPE}	1	C411
130-130138-00	SILICON DIODE 1SS138 ROHM	2	D506,101
130-130146-00	SILICON DIODE 1SS146 ROHM	3	D501,502,503 D201,202,203,2
130-134148-01	SILICON DIODE IN4148	10	04,403,504,505, 602,809,507 D801,802,803,8
130-134148-01	SILICON DIODE IN4148	9	04,805,806,807, 808,302
130-310012-00	RECTIFIER DIODE RU2 SANKEN	1	D405
130-310033-50	DIODE BYD33D	1	D910
130-310095-50	DIODE BYW95B	1	D911
130-310133-50	DIODE BYD33J	3	D907,908,909
130-310206-04	BRIDGE RECIFIER KBP206 "HIGHLAND"	1	BR901 D401,402,404,4
130-315295-00	RECTIFIER DIODE S5295G TOSHIBA	7	06,912,913,914
130-410039-01	ZENER DIODE 3.9V	1	ZD601
130-410051-01	ZENER DIODE 5.1V 1/2W +-5%	1	ZD106
130-410056-01	ZENER DIODE 5.6V	1	ZD402
130-410082-01	ZENER DIODE 8.2V	1	ZD905
130-410574-00	ZENER DIODE UPC 574J NEC	1	ZD101 ZD103,104,105,
130-411091-01	ZENER DIODE 9.1V	6	107,401,906
130-513144-00	LED LAMPS 3MM RED (ROUND) #03144PR "GLORY"	1	LED601
131-211013-15	TRANSISTOR 2SA1013(O) TOSHIBA	1	Q906

CTM4828H

PART_NO	DESC	QTY	LOCATION
131-211015-00	TRANSISTOR 2SA1015 TOSHIBA	4	Q104,106,201,5 08
131-220774-20	TRANSISTOR 2SB774/Q/R/S MATSUSHITA	1	Q902
131-231809-0A	TRANSISTOR 2SC1809 ROHM	1	Q101
131-231815-0A	TRANSISTOR 2SC1815 TOSHIBA	11	Q102,103,105,2 02,504,505,506, 601,603,604,60 5
131-231815-0A	TRANSISTOR 2SC1815 TOSHIBA	8	Q606,801,803,9 01,903,110,001, 002
131-232230-00	NPN-TR 2SC2230A-Y (TOSHI) TO92 VCE=180V IC=.1A F	1	Q905
131-232335-30	TRANSISTOR 2SC2335 L/K NEC	1	Q907
131-232482-0A	TRANSISTOR 2SC2482 TOSHIBA	5	Q401,501,502,5 03,507
131-235287-01	TRANSISTOR 2SC5287 SANKEN	1	Q904
131-240400-00	TRANSISTOR 2SD400E/F SANYO	1	Q403
131-241406-27	TRANSISTOR 2SD1406-GR TOSHIBA	1	Q203
131-241555-00	TRANSISTOR 2SD1555 TOSHIBA	1	Q402
131-462369-00	TRANSISTOR PH2369 PHILIPS	1	Q301
133-101238-14	I.C. TB1238AN TOSHIBA	1	IC101
133-102404-31	I.C. M24C04B6 SGS-THOMSON	1	IC602
133-107910-16	IC LA7910 SANYO	1	IC301
133-207805-31	I.C. L7805CV SGS	1	IC901
133-207809-31	REGULATOR 7809 9V SGS	1	IC402
133-208213-14	I.C. TA8213K AUDIO POWER AMP. TOSHIBA	1	IC201
133-208403-14	I.C. TA8403K TOSHIBA	1	IC401
133-328738-14	I.C. TMP87CM38KS-3663 W/CCD & TXT TOSHIBA	1	IC601
133-404053-33	I.C. HEF4053BP PHILIPS	1	IC001
136-500002-00	REMOTE RECEIVER (HC-SZ02)	1	OPT601
137-270000-30	CRYSTAL 27 MHZ HOORAY	1	X801
137-443618-20	CRYSTAL 4.43 MHZ "TEC"	1	X101
137-800000-20	CRYSTAL 8.0 MHZ KITRONICS	1	X601
146-100006-14	POWER SWITCH PS5E-B "CHINA LANDMARK"	1	S901
146-104105-00	TACT SWITCH KPT-1105S "UNITRONIC"	4	S601,602,603,6 04
146-104112-03	TACT SWITCH 4 PIN L=3.85MM 100G #1102VA-4 "PROM	3	S605,606,607
160-101001-08	PIN CONNECTOR 1 PIN PLUG STRAIGHT	3	CN501,901,902
160-102255-27	PIN CONNECTOR 2 PINS PLUG STRAIGHT (UL) (S.H.S)	2	CN201,202
160-102805-08	PIN CONNECTOR 2 PIN PLUG STRAIGHT	1	CN903
160-104255-27	PIN CONNECTOR 4 PINS PLUG (SHS)	1	CN001 PIN 1 - PIN 4
160-104805-08	PIN CONNECTOR 4 PIN PLUG STRAIGHT	1	CN401
160-105255-27	PIN CONNECTOR 5 PINS WAFER 2.5 PITCH	1	CN101
161-470002-00	RCA JACK HYJ-032-03BB BLACK "MING FUNG"	1	J102

CTM4828H

<b>PART_NO</b>	<b>DESC</b>	<b>QTY</b>	<b>LOCATION</b>
161-470003-00	RCA JACK HYJ-032-03BY YELLOW "MING FUNG"	1	J101
161-543505-05	CRT SOCKET ISHL-35 IN CHANG	1	
172-620020-40	UL 1007 TOP COAT WIRE AWG 20 200MM BLACK 10 X	1	CRT FLAT BRIDED WIRE TO TUNER
172-626006-40	UL 1007 TOP COAT WIRE #26 60MM BLACK 5 x 5 mm	1	GND W094 TO SHIELD CAN COVER
172-626008-40	UL 1007 TOP COAT WIRE AWG 26 80MM BLACK 10 X 11	1	Q904 LUG TO MAIN PCB `E' FOR
172-626014-40	UL 1007 TOP COAT WIRE AWG 26 140MM BLACK 10 X 11	2	SPK.GRILLE IN SERIES RES.5M6 W001-028,030- 068,070- 095,097- 102,105,501- 505,507 RA03,438,111,C 006,007,619,D3 04,L602 FROM TUNER TO SHIELD CAN MAIN PCB `A',`B'
172-726000-99	BARE WIRE 54MM	5	
172-726000-99	BARE WIRE 54MM	0	
172-726000-99	BARE WIRE 54MM	0	
172-726000-99	BARE WIRE 54MM	0	
172-830120-99	FLAT BRIDED WIRE	1.2	FOR CRT BOARD 20-BR901,20- D901,20- D903,20- D906,20- D405,10-D914 L=60MM FOR AC LINE CORD,60MM FOR TWO 1PIN SOCK ASS
179-001010-00	OIL SLEEVING 1 mm DIA.	0.1	
179-105000-00	UL PVC TUBE 5mm DIA	0.1	

CTM4828H

PART_NO	DESC	QTY	LOCATION
179-105000-00	UL PVC TUBE 5mm DIA	0.9	L=950MM,40M M FOR SPK.`L',550MM FOR SPK.`R'
179-110500-00	UL PVC TUBE 11MM DIA.	0.8	L=50MM FOR AC LINE CORD,360MM FOR CN001
179-110500-00	UL PVC TUBE 11MM DIA.	0	FOR FRONT AV WIRE
179-403080-00	SHRINKABLE TUBE	0.1	60MM FOR AC LINE,60MM FOR TWO 1 PIN SOCK
182-233150-03	FUSE T3.15A 250V	1	F901
190-942001-P0	CRT P.C.B. (290599)REV1	1	
190-942030-P1	MAIN P.C.B. (060799) REV4 L-1 LED	1	
191-100030-10	1 PIN SOCKET ASS'Y L=300MM	1	FROM CRT GND TO CN501
191-101016-10	1 PIN DOUBLE INSOLATION WIRE AWG 18 L=340MM BI	1	FROM CN901 TO `A' TO ON MAIN PCB
191-101017-10	1 PIN DOUBLE INSOLATION WIRE AWG 18 L=340MM BI	1	FROM CN902 TO `B' ON MAIN PCB
191-200044-10	2 PIN SOCKET ASS'Y L=440MM	1	FROM CN202`1' TO L- SPEAKER `+',`2' TO SPEAKER `-'
191-200056-10	2 PIN SOCKET ASS'Y L=560MM	1	FROM CN201`1' TO R- SPEAKER `+',`2' TO SPEAKER `-'
191-401039-10	4 PIN SOCKET ASS'Y L=420MM (FLAT CABLE) UL2468 #	1	CN402`1' TO CRT PCB `A',`2',`3' TO `B',`3' TO `C'

CTM4828H

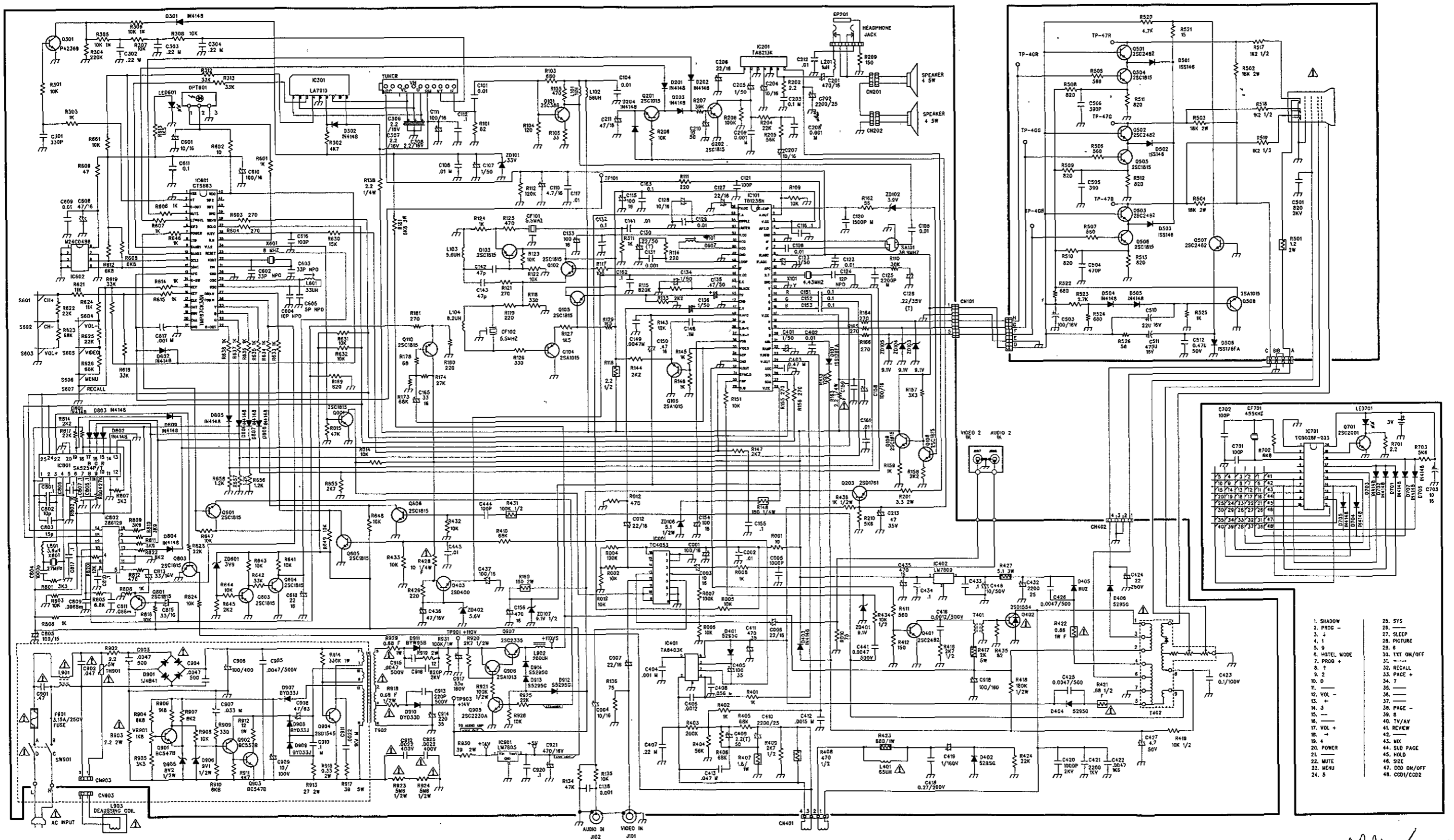
PART_NO	DESC	QTY	LOCATION
191-401045-10	4 PIN L=400MM (P 1-2 GREY, P3- 4 BROWN W/S.SHIELD)	1	CN001 `1' TO FRONT AV PCB
191-401045-10	4 PIN L=400MM (P 1-2 GREY, P3- 4 BROWN W/S.SHIELD)	0	`G', `2' TO `E', `3' TO `D', `4' TO `C' FROM MAIN PCB CN101
191-501027-10	5 PIN SOCKET ASS'Y L=360MM (FLAT CABLE) #26 UL24	1	`1'TO`D', `2'TO`E', `3'TO`F', `4'TO`G', `5'TO`H' ON CRT PCB
191-501027-10	5 PIN SOCKET ASS'Y L=360MM (FLAT CABLE) #26 UL24	0	FOR IC201,901 MTG.
504-305008-10	MACHINE SCREW 3 X 8 B/M (WHITE)	2	FOR IC401,402,Q402
515-303310-10	SELF-TAPPING SCREW 3 X 10 W/P/A (HARDEN)	3	FOR Q904
517-303312-10	SELF-TAPPING SCREW 3 X 12 W/A W/H=7MM (HARDEN)	1	
540-017040-01	EYELET 1.7 X 4 MM	9	2-R423, 2-L401, 2-D906, 3-T901 `6', `9', `11'
540-020030-01	EYELET 2 X 3 MM	7	4-S901 `A1', `B1', `C1', `D 1', 2- T402 `1', `2', 1- Q402 `C'
580-101261-01	CABLE TIE L=100MM	9	1-FBT, 2-CRT PCB, 1-CN402, 1-CN101, 3- POWER SWITCH FOR DEGAUSSING COIL MTG.
580-102261-00	CABLE TIE L=200MM W=3.5MM	4	
744-881301-00	SPRING FOR C.R.T. MOUNTING 5.2 X 42 X 0.6MM	1	TP101 ON MAIN P.C.B.
746-063101-00	TEST PIN:TOTAL LENGTH 18.6mm THK:0.8mm	1	



CTM4828H

<b>PART_NO</b>	<b>DESC</b>	<b>QTY</b>	<b>LOCATION</b>
746-063101-01	AC LINE CORD PIN	4	A.B.C.D. ON MAIN P.C.B.
750-063101-00	SOLDERING LUG LEG:8X4MM	1	FOR Q904
750-063102-01	35MM SOLDERING LUG OD:7 ID:3.2 LEG:4X35MM	4	FOR AC LINE CORD, SPK.CONNECT OR
766-686801-00	FUSE HOLDER	2	FOR FB901
779-882001-01	IRON HEAT SINK (D)	1	FOR IC901
779-931302-00	IRON HEAT SINK	1	FOR IC201
781-931302-01	ALUMINIUM HEAT SINK	1	FOR IC401,IC402,Q4 02
781-942112-00	HEAT SINK (A)	1	FOR Q904
783-931304-02	SHIELD CAN	1	
783-931305-06	SHIELD CAN COVER "NEW"	1	

REVISION RECORD		
LT#	ECO NO.	APPROVED DATE



1. SHADOW
2. PROC -
3. 4
4. 1
5. 9
6. HOTEL MODE
7. PROC +
8. 1
9. 2
10. 0
11. -
12. VOL -
13. -
14. 3
15. -
16. -
17. VOL +
18. +
19. 4
20. POWER
21. -
22. MUTE
23. MENU
24. 5
25. SYS
26. -
27. SLEEP
28. PICTURE
29. 6
30. TEXT ON/OFF
31. -
32. RECALL
33. PAGE +
34. 7
35. -
36. -
37. -
38. PAGE -
39. 8
40. TV/AV
41. REVIEW
42. -
43. MIX
44. SUB PAGE
45. HOLD
46. SIZE
47. CDD ON/OFF
48. CDD/CDD2

CTM88H / CTM5122H

COMPANY: ART-TECH ENGINEERING LTD.		SYSTEM: PAL BG IP TEXT AV/M CDD HEADPHONE JACK HOTEL LOCK	
DRAWN: ZHANG CAI FANG	DATED: 12/27/99	Document: 942030P-03	180-942030-P1
CHECKED: HUANG YAN HUI	DATED: 12/27/99	CODE: A0	DRAWING NO: REV:
RELEASED:	DATED:	SCALE:	SHEET: OF