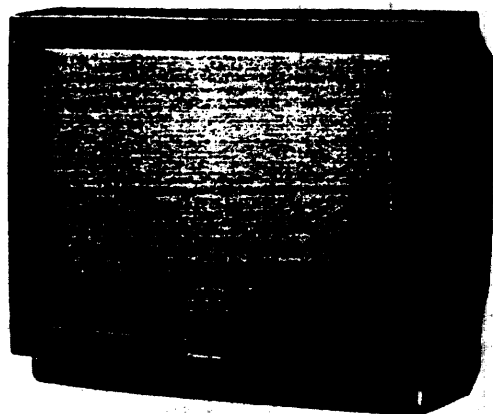


Service Manual

Color Television

TC-29V2PX**NMX-M16MB chassis**

Specifications

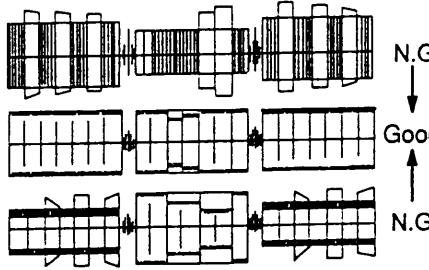
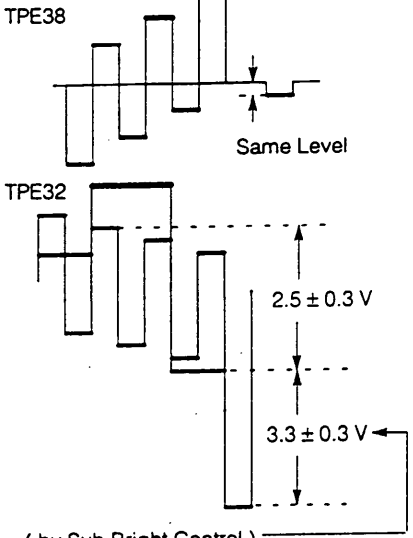
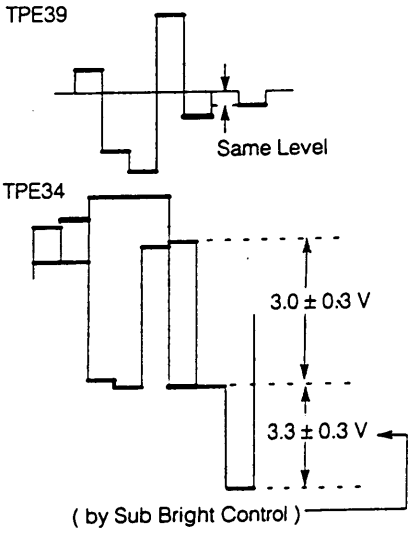
Power Source :	AC Automatic Voltage Selection 120 - 240 V, 50 / 60 Hz	Video / Audio Terminals :	
Power Consumption :	210 W (Max.) 18.0 W (Stand-by condition)	AV1, 2, 3 IN Video (Phono) 1 Vp-p 75 Ω S-Video Y : 1.0 Vp-p 75 Ω C : 0.3 Vp-p 75 Ω Audio (Phono) Approx. 400mV	
Aerial Impedance :	75 Ω unbalanced, Coaxial type	Monitor OUT Video (Phono) 1 Vp-p 75 Ω Audio (Phono) Approx. 400mV	
Receiving System :	21 Systems	High Voltage :	31.0 kV (+1.0, -1.0) kV at zero beam current
Receiving Channels :		Picture Tube :	M68KPH165X M68KPH166X(Philippines) M68KPH167X(South Africa) Type 29 (72 cm) measured diagonally , 106° deflection
VHF Band	2 - 12 (PAL / SECAM - B) 1 - 12 (PAL / SECAM - D) 1 - 12 (NTSC - M Japan) 2 - 13 (NTSC - M U. S. A.)	Audio Output :	
UHF Band	21 - 69 (PAL - G, I / SECAM - G) 21 - 69 (SECAM - K) 13 - 56 (PAL - D) 13 - 62 (NTSC - M Japan) 14 - 69 (NTSC - M U. S. A.)	Internal Speaker	12 W (Max.) x 2 Impedance 8 Ω
CATV	U. S. A. VHF Band (4 + (formerly 5A), ICC5, ICC6) Mid Band (A - 5 - A-1, A - I.) Super Band (J - W) Hyper Band (AA - ZZ, AAA, BBB) Ultra Band (65 - 94)	External Speaker	12 W (Max.) x 2 Impedance 8 Ω
	Europe S1 - S3, M1 - M10	Speaker :	2 way 2 speaker system, L / R
Intermediate Frequency :		Dimensions :	Height : 55.9 cm Width : 69.8 cm Depth : 49.9 cm
Video	38.0 MHz	Mass :	43.5 kg (Net)
Sound	31.5 MHz (D, K) 32.0 MHz (I) 32.5 MHz (B, G) 33.5 MHz (M)	Accessories supplied :	Remote Controller x 1 " R6 " Battery x 2
Color	33.57 MHz (PAL) 33.60 MHz (SECAM) 33.75 MHz (SECAM) 34.42 MHz (NTSC)		

Specifications are subject to change without notice.
Mass and dimensions shown are approximate.

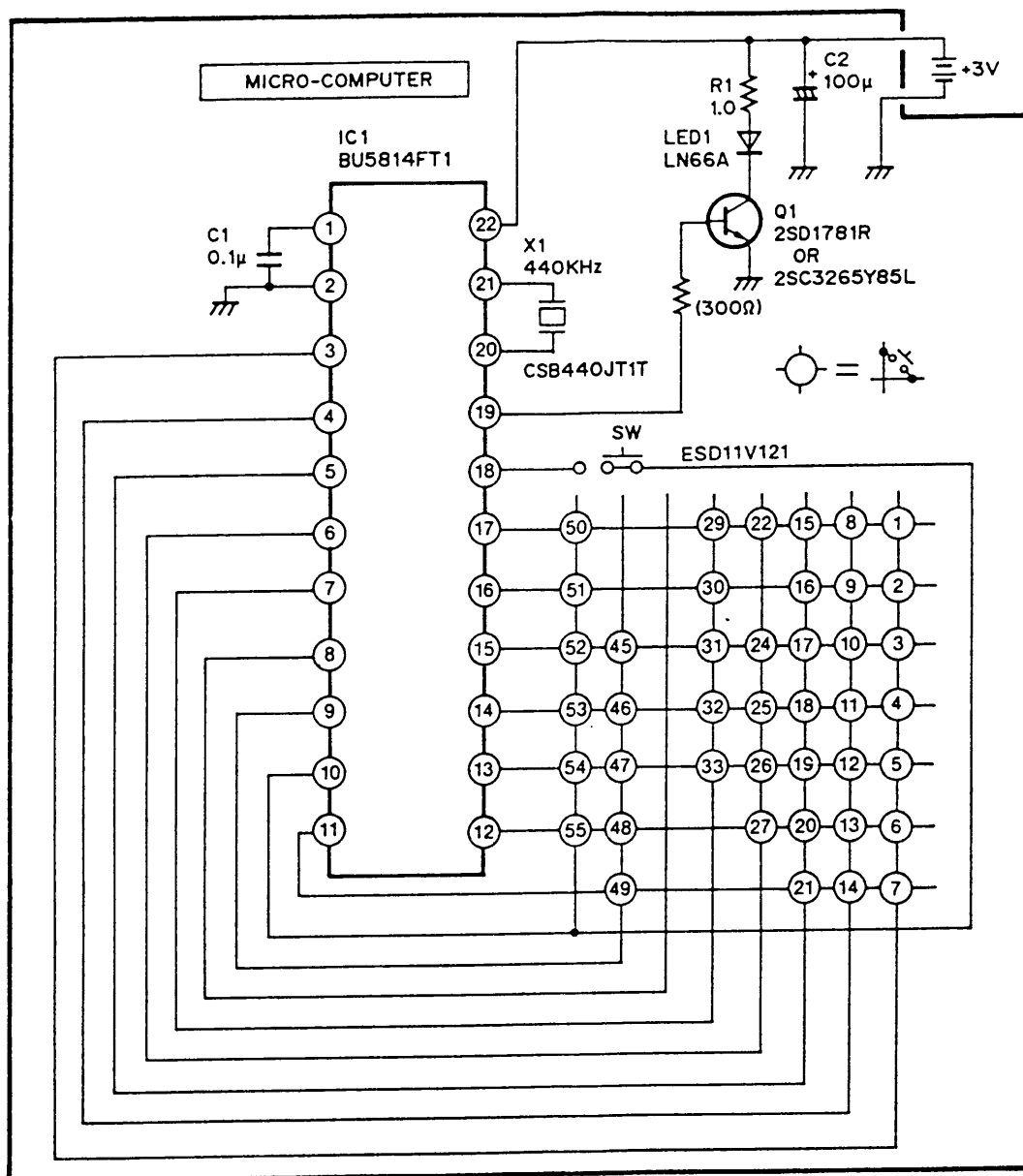
Panasonic.

TC-29V2PX

Item / Preparation	Adjustment Procedure	Waveform
Sub Contrast 1. Receive a color bar pattern. 2. Connect an oscilloscope to TPE32. 3. Connect a short jumper between TPD11 and TPD12. 4. Select the " PICTURE 1 " (Standard) by picture menu button and push Normal button.	1. Adjust Sub Bright Control : $3.5 \pm 0.2 \text{ V}$ 2. Adjust Sub Contrast control (R3130) : $3.1 \pm 0.1 \text{ V}$ (Waveform should not be saturated.)	Fig. 12
Delay Line 1. Receive PAL color bar pattern. 2. Connect an oscilloscope to TPE32. 3. Select the " PICTURE 1 " (Standard) by picture menu button and push Normal button.	1. Adjust the position (A) shown in Fig. 13 to zero level by R611. 2. Minimize the difference (B) shown in Fig. 13 by L601.	Fig. 13
PAL Color Output 1. Receive PAL color bar pattern. 2. Connect an oscilloscope to TPE32. 3. Connect a short jumper between TPD11 and TPD12. 4. Select the " PICTURE 1 " (Standard) by picture menu button and push Normal button.	1. Adjust Sub Bright Control : $3.5 \pm 0.2 \text{ V}$ 2. Adjust Sub Color control (R672) : $2.5 \pm 0.2 \text{ V}$ 3. Connect the oscilloscope to TPE34. 4. Confirm that the amplitude of waveform $3.0 \pm 0.5 \text{ V}$	Fig. 14
NTSC / Modified NTSC Color Adjustment 1. Apply NTSC rainbow pattern. 2. Connect an oscilloscope to TPE34. 3. Connect a short jumper between TPD11 and TPD12. 4. Select the " PICTURE 1 " (Standard) by picture menu button and push Normal button.	1. Confirm that the amplitude of waveform $1.3 \pm 0.5 \text{ V o-p}$ 2. Set Color control to maximum and confirm that the color level is saturated enough. 3. Set Tint control (DAC) to centre and adjust Sub Tint control (R674) to obtain waveform at TPE34 as shown in Fig.15. 4. Set Tint control to maximum and confirm that the variable range is more than 15°. 5. Set Tint control to minimum and confirm that the variable range is more than 15°.	Fig. 15

Item / Preparation	Adjustment Procedure	Waveform
Bell Filter / Line Discriminator 1. Receive SECAM color bar pattern. 2. Connect an oscilloscope to TPE36 through 10 kΩ resistor. 3. Set the System II switch to 5.5 MHz. 4. Push the Normal button for normal condition.	1. Adjust L653 to obtain waveform as shown in Fig. 16. 2. Connect a DC voltmeter to TPE35. 3. Adjust L652 to obtain voltage at TPE35 for maximum. 4. Make sure the voltage is more than 7V. 5. Confirm that the color output is normal.	 Fig. 16
SECAM Demodulator / Color Output – Blue 1. Receive SECAM color bar pattern. 2. Set the System I switch to SECAM. 3. Set the System II switch to 5.5 MHz. 4. Select PICTURE 1 (Standard) from picture menu and push the Normal button. 5. Connect an oscilloscope to TPE32 and TPE38.	1. Adjust L650 to obtain waveform at TPE38 as shown in Fig. 17. 2. Connect the oscilloscope to TPE32. 3. Adjust SECAM B-Color Gain control (R651) : 2.5 ± 0.3 V 4. Connect the oscilloscope to TPE38. 5. Confirm that the waveform is as shown in Fig. 17.	 Fig. 17
SECAM Demodulator / Color Output – Red Note : Before making this adjustment, " SECAM Demodulator / Color Output- Blue " adjustment must be finished. 1. Receive SECAM color bar pattern. 2. Push the Normal button for normal condition. 3. Connect an oscilloscope to TPE34 and TPE39.	1. Adjust L651 to obtain waveform at TPE39 as shown in Fig. 18. 2. Connect the oscilloscope to TPE34. 3. Adjust SECAM R-Color Gain control (R652) : 3.0 ± 0.3 V 4. Connect the oscilloscope to TPE39. 5. Confirm that the waveform is as shown in Fig. 18.	 Fig. 18

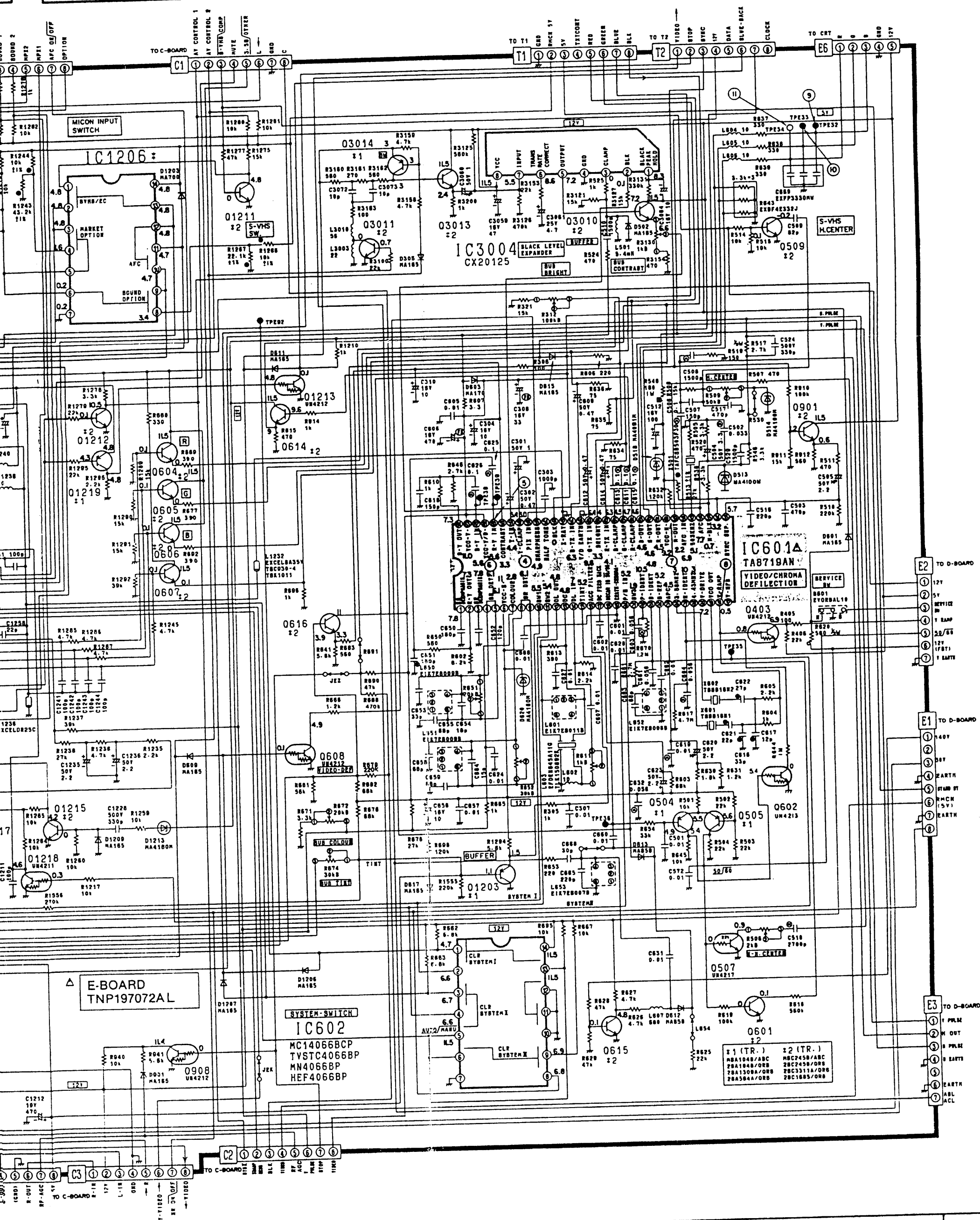
Remote Controller EUR50700



KEY FUNCTION TABLE

KEY NO.	DATA CODE	FUNCTION	KEY NO.	DATA CODE	FUNCTION	KEY NO.	DATA CODE	FUNCTION
1	0F	OFF TIMER	16	20	VOL. UP.	33	33	NICAM/MONO
2	05	TV/AV	17	39	RECALL	45	33	SOUND SELECT
3	6D	AV SELECT	18	19	0	46	35	VCR CH. DN.
4	3D	POWER	19	3B	- / - - (2DIGIT)	47	34	VCR CH. UP.
5	10	1	20	21	VOL. DN.	48	3D	VCR POWER
6	11	2	21	07	SOUND FUNC.	49	00	VCR STOP
7	12	3	22	08	FUNC. UP.	50	06	VCR PAUSE
8	34	CH. UP.	24	0A	NR	51	0C	VCR ADVANCE
9	13	4	25	32	MUTE	52	08	VCR REC.
10	14	5	26	06	PICTURE FUNC.	53	02	VCR REW.
11	15	6	27	09	FUNC. DN.	54	0A	VCR PLAY
12	35	CH. DN.	29	50	PICTURE MENU	55	03	VCR F.F.
13	16	7	30	51	SOUND MENU			
14	17	8	31	31	SURROUND			
15	18	9	32	0C	NORMAL			

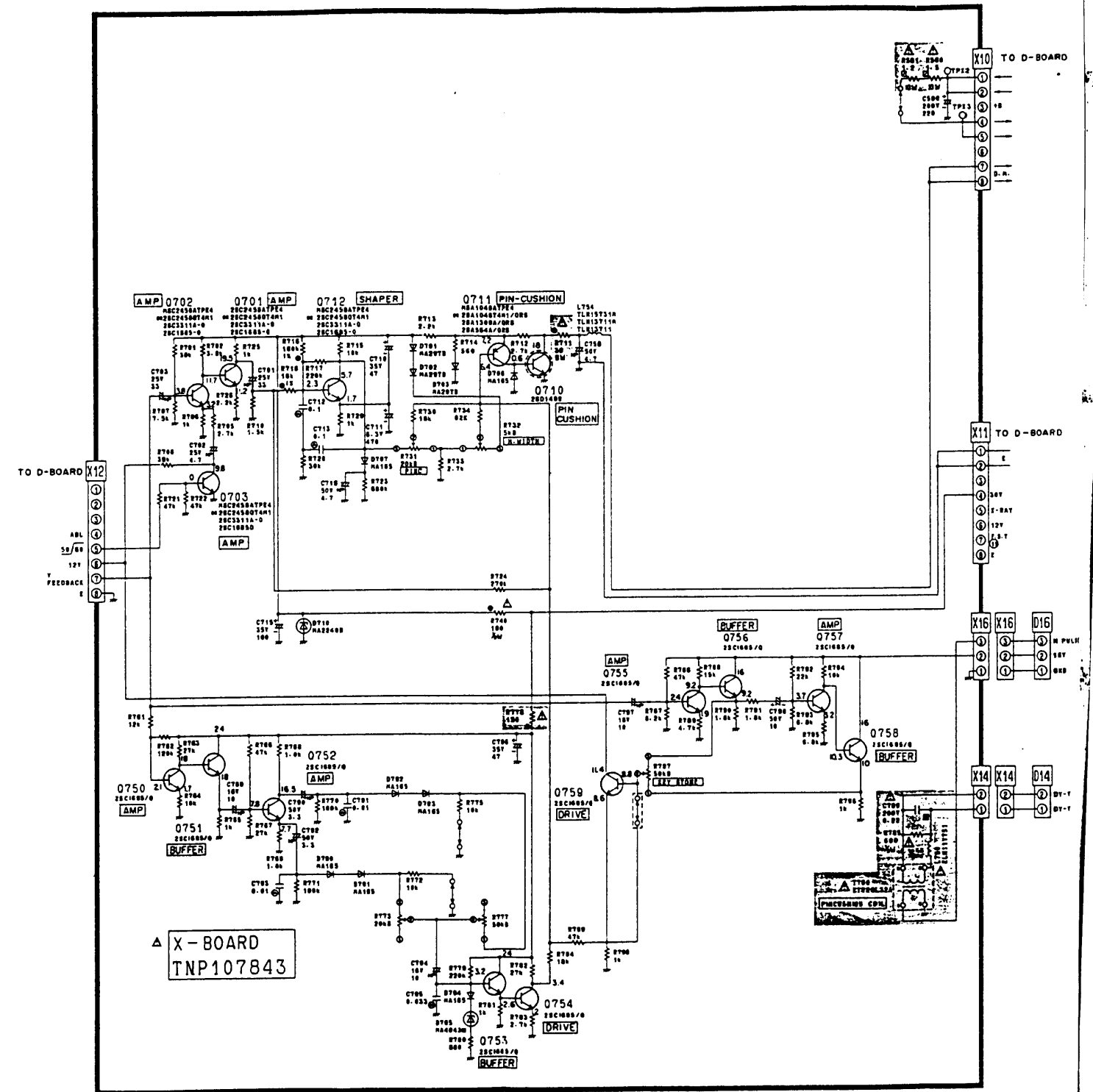
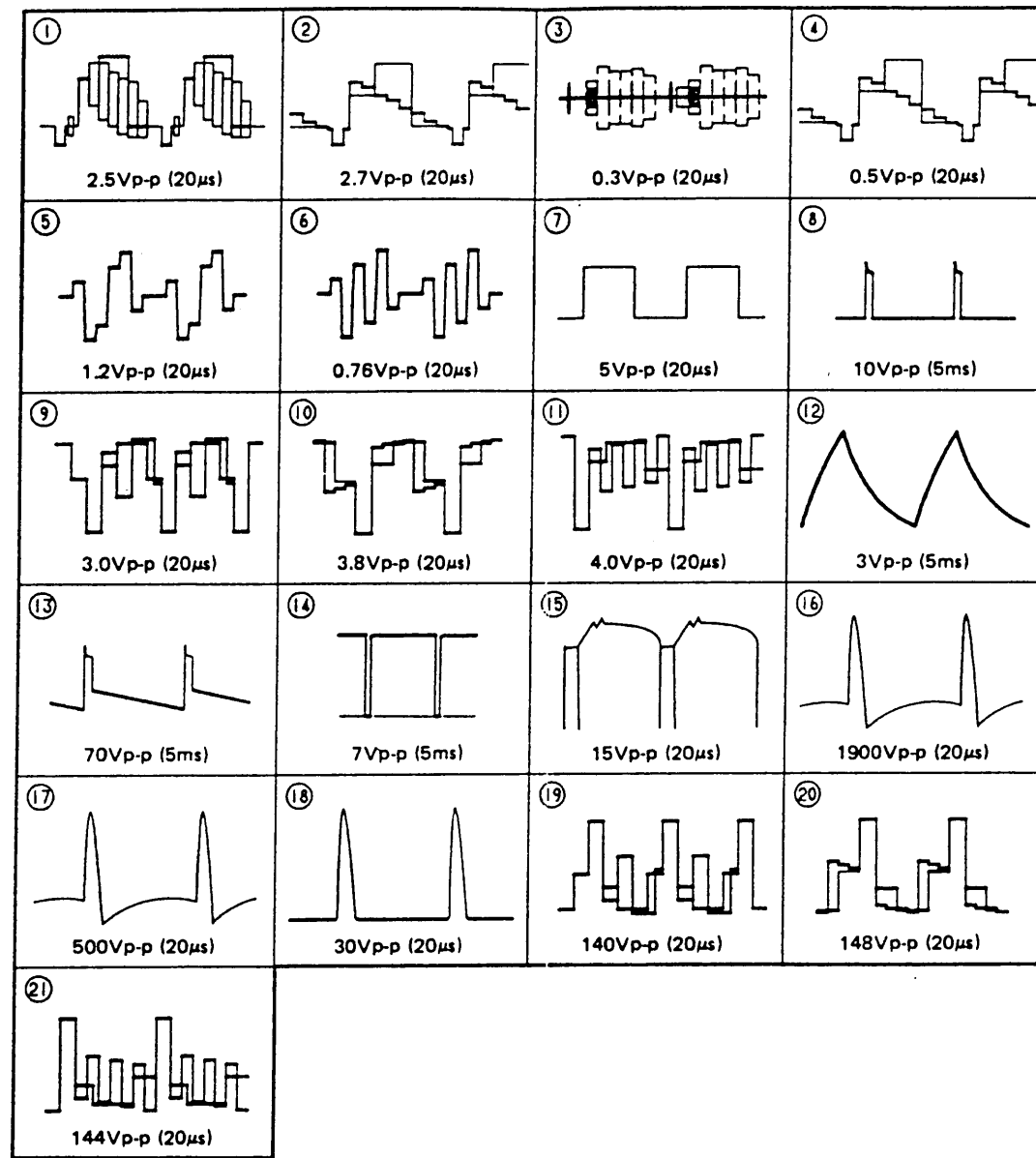
TC-29V2PX

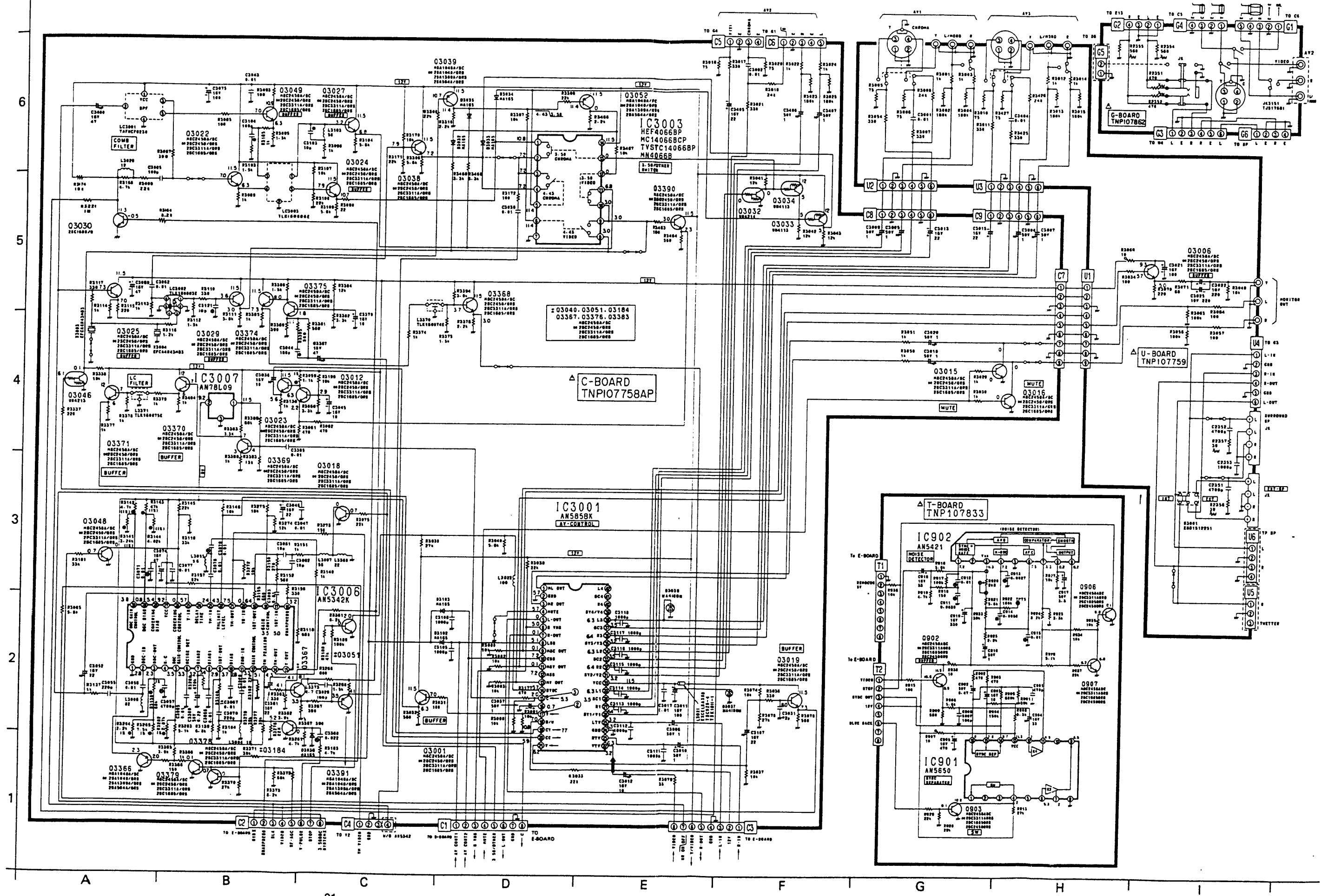


TC-29V2PX

TC-29V2PX

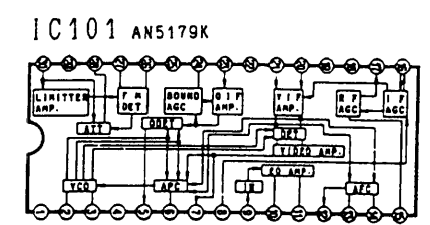
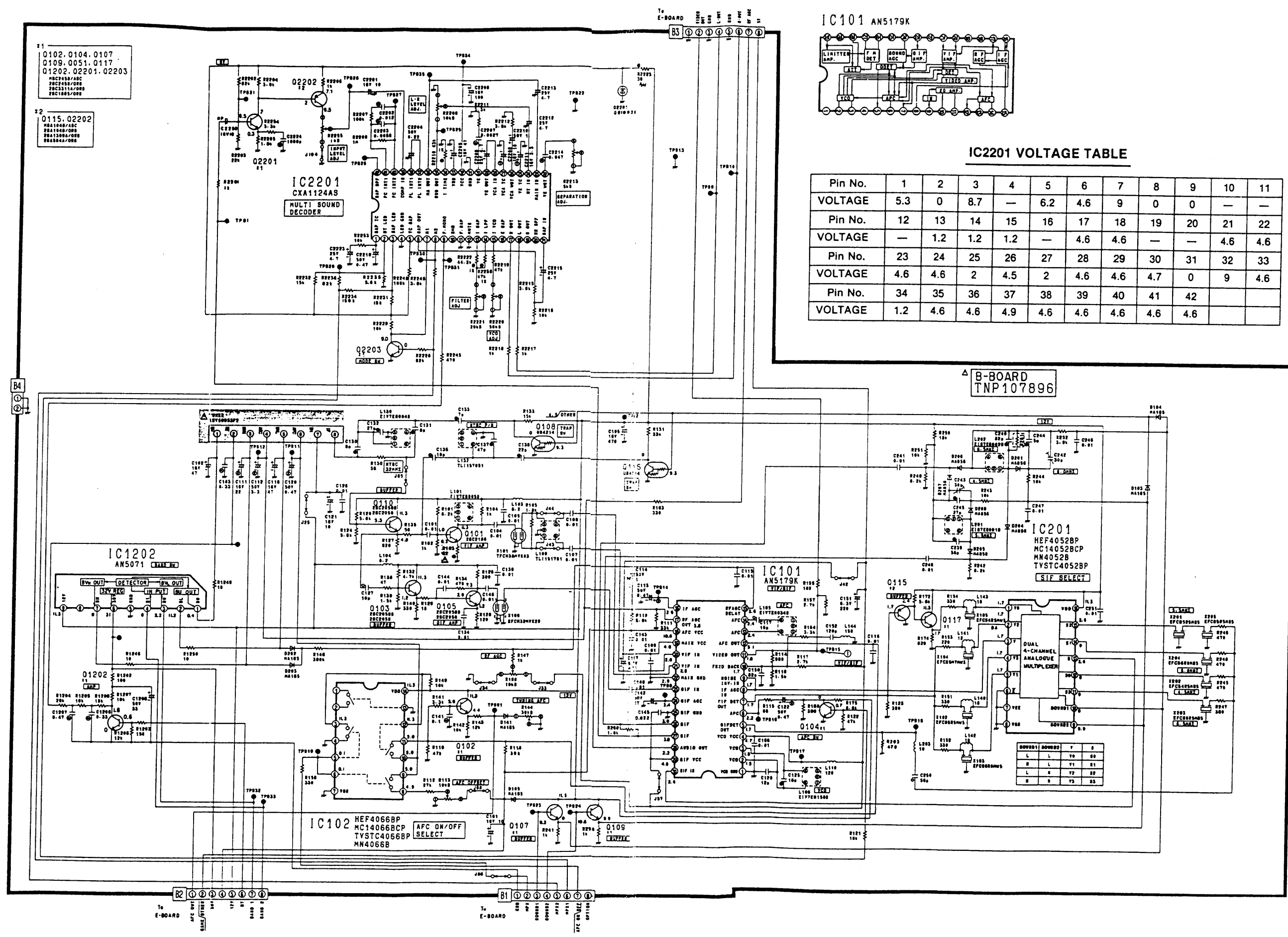
WAVEFORM PATTERN TABLE





11
0102, 0104, 0107
0109, 0051, 0117
01202, 02201, 02203
RBC2458/ABC
RBC2458/ORS
RBC2458/ORS
RBC2458/ORS

12
0115, 02202
RBC2458/ORS
RBC2458/ORS
RBC2458/ORS



IC2201 VOLTAGE TABLE

Pin No.	1	2	3	4	5	6	7	8	9	10	11
VOLTAGE	5.3	0	8.7	—	6.2	4.6	9	0	0	—	—
Pin No.	12	13	14	15	16	17	18	19	20	21	22
VOLTAGE	—	1.2	1.2	1.2	—	4.6	4.6	—	—	4.6	4.6
Pin No.	23	24	25	26	27	28	29	30	31	32	33
VOLTAGE	4.6	4.6	2	4.5	2	4.6	4.6	4.7	0	9	4.6
Pin No.	34	35	36	37	38	39	40	41	42		
VOLTAGE	1.2	4.6	4.6	4.9	4.6	4.6	4.6	4.6	4.6		

B-BOARD
TNP107896

F G H I J K L M N