PX

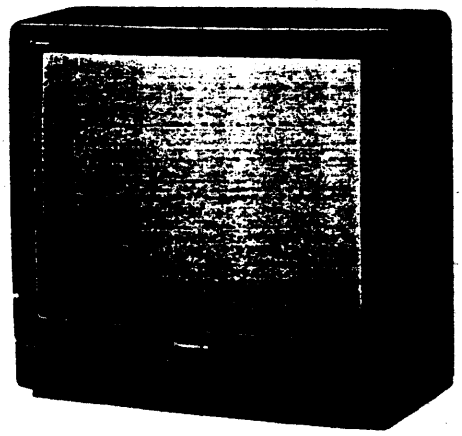
ORDER NO. ITD9107063C6

Service Manual

Color Television

TC–26L1PX

NMX–M16MA chassis



Specifications

Power Source : AC Automatic Voltage Selection 120 – 240 V, 50 / 60 Hz

Power Consumption : 165 W (Max.) 18.0 W (Stand–by condition)

Aerial Impedance : 75 Ω unbalanced, Coaxial type

Receiving System : 21 Systems

Receiving Channels :

VHF Band	2 – 12	(PAL / SECAM – B)
	1 – 12	(PAL / SECAM – D)
	1 – 12	(NTSC – M Japan)
	2 – 13	(NTSC – M U. S. A.)
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.)
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)
	Europe	S1 – S3, M1 – M10

Intermediate Frequency :

Video	38.0 MHz	
Sound	31.5 MHz	(D, K)
	32.0 MHz	(I)
	32.5 MHz	(B, G)
	33.5 MHz	(M)
Color	33.57 MHz	(PAL)
	33.60 MHz	(SECAM)
	33.75 MHz	(SECAM)
	34.42 MHz	(NTSC)

Video / Audio Terminals :

AV 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
Monitor OUT	Video (Phono)	1 V p–p 75 Ω
	Audio (Phono)	Approx. 400mV

High Voltage : 28.5 kV (+1.0, –1.0) kV at zero beam current

Picture Tube : M63JUA025X Type 26 (66 cm) measured diagonally , 110° deflection

Audio Output :

Internal Speaker 3 W (Max.) Impedance 16 Ω

Speaker : 2 Speaker System

Dimensions : Height : 56.3 cm Width : 62.2 cm Depth : 45.8 cm

Mass : 32.0 kg (Net)

Accessories supplied : Remote Controller x 1 " R6 " Battery x 2

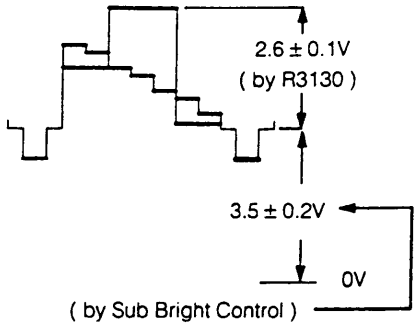
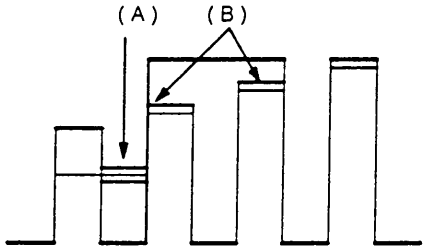
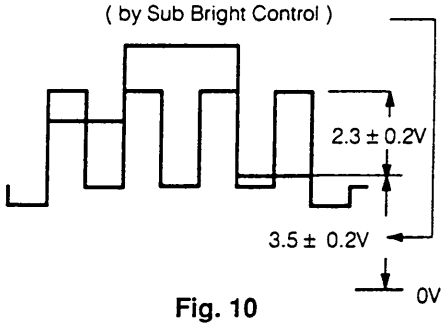
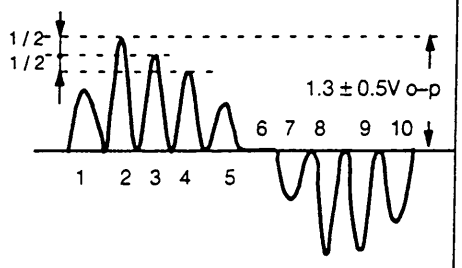
Specifications are subject to change without notice.
Mass and dimensions shown are approximate.

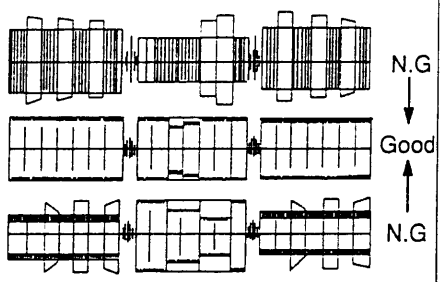
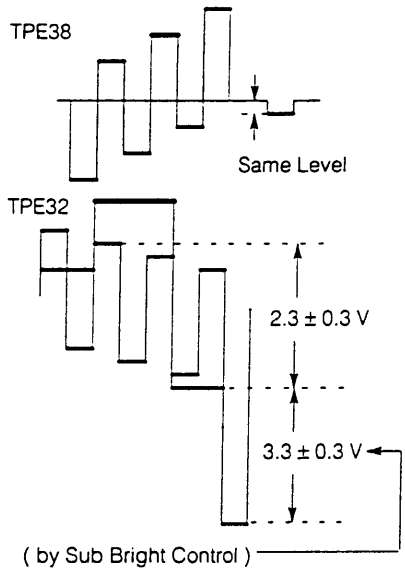
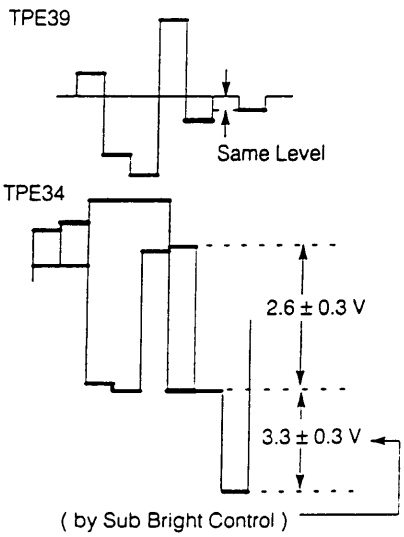
Panasonic.

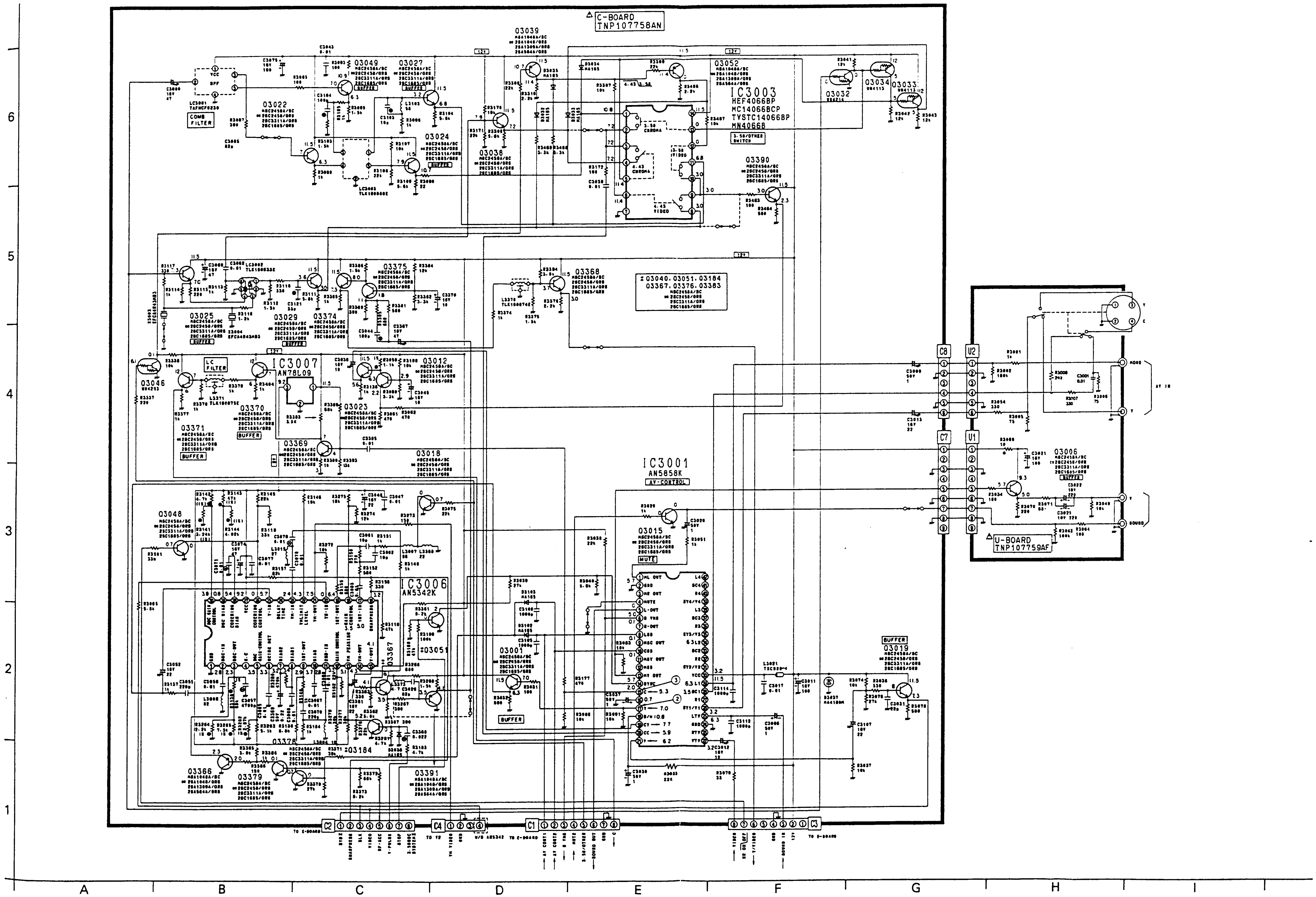
TC–26L1PX

Adjustments

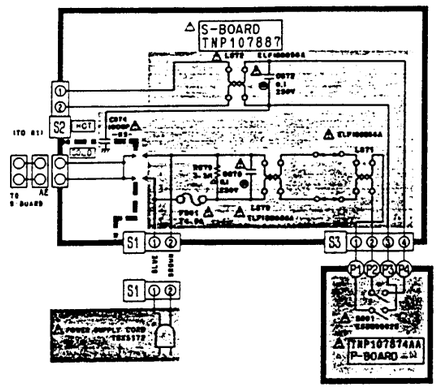
Item / Preparation	Adjustment Procedure
B Voltage 1. Operate the TV set. 2. Set controls : Bright ..... minimum Sub Bright ..... minImum	1. Confirm that the indicated test points for the specified voltage: TPD1 : 139.6 ± 2.0 V TPD2 : 15.5 ± 1.0 V TPD3 : 12.0 ± 1.0 V TPD4 : 8.5 ± 1.0 V TPD 5 : 5.0 ± 0.5 V TPD 6 : 17.5 ± 2.0 V TPD 9 : 31.4 ± 1.5 V TPD10 : 223.0 ± 10.0 V
RF AGC 1. Receive a color bar pattern. 2. Set the input level to 60 ± 2 dB. (75 Ω opened) 3. Connect an oscilloscope to TPB12 with DC mode.	1. Turn RF AGC control (R108) fully clockwise. 2. Slowly turn R108 counterclockwise to set it at the point just before voltage at TPB12 drops. 3. Increase the input level by 2 dB and confirm that the voltage changes.
High Voltage 1. Receive a crosshatch pattern. 2. Set controls : Bright ..... minimum Contrast ..... minimum Sub Bright ..... minimum	1. Connect a DC voltage meter to TPD1 and confirm the voltage is 139.6 ± 2V. 2. Connect a high voltage meter (Electrostatic Type) to an anode of the picture tube. 3. Confirm that the high voltage is within a range of 28.5 (+ 1.0, –1.0) kV.
Noise Detect 1. Operate the TV set. and confirm the B voltage. 2. Connect a frequency counter to TPT5.	1. Adjust R920 Reading of the counter : 15.675 KHz ± 150 Hz

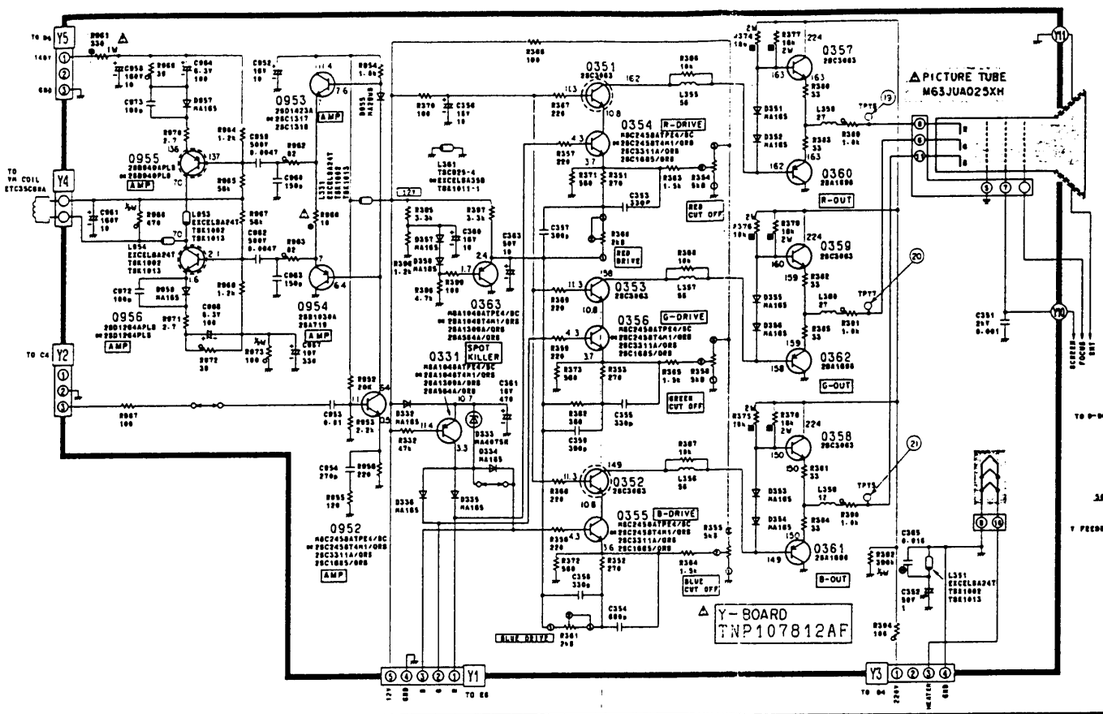
Item / Preparation	Adjustment Procedure	Waveform
Sub Contrast 1. Receive a color bar pattern. 2. Connect an oscilloscope to TPE32. 3. Connect a short jumper between TPD11 and TPD12. 4. Select the " PICTURE 1 " (Standard) by picture menu button and push Normal button.	1. Adjust Sub Bright Control : 3.5 ± 0.2 V 2. Adjust Sub Contrast control (R3130) : 2.6 ± 0.1 V (Waveform should not be saturated.)	 Fig. 8
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. 9** to zero level by R611. 2. Minimize the difference (B) shown in **Fig. 9** by L601.	 Fig. 9
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 ± 0.2 V 2. Adjust Sub Color control (R672) : 2.3 ± 0.2 V 3. Connect the oscilloscope to TPE34. 4. Confirm that the amplitude of waveform 2.6 ± 0.5 V	 Fig. 10
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 ± 0.5 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.11**. 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. 11

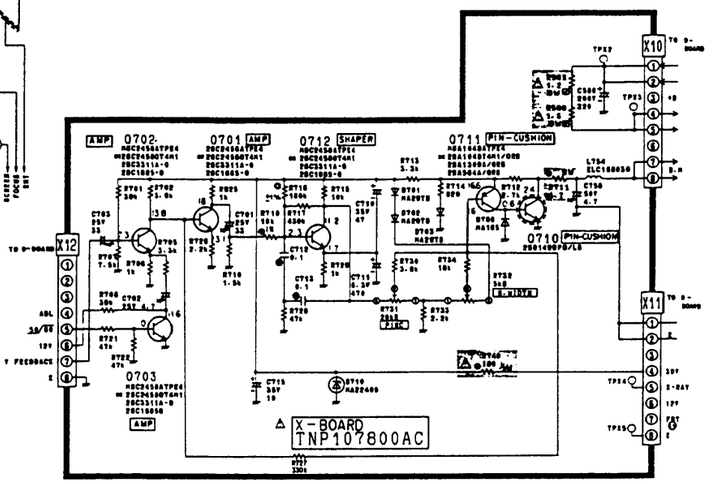
Item / Preparation	Adjustment Procedure	Waveform
Bell Filter / Line Discriminator 1. Receive SECAM color bar pattern. 2. Connect an oscilloscope to TPE36 through 10 kΩ resistor. 3. Set the System II switch to 5.5 MHz. 4. Push the Normal button for normal condition.	1. Adjust L653 to obtain waveform as shown in **Fig. 12** . 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 colour output is normal.	 **Fig. 12**
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. 13** . 2. Connect the oscilloscope to TPE32. 3. Adjust SECAM B–Color Gain control (R651) : 2.3 ± 0.3 V 4. Connect the oscilloscope to TPE38. 5. Confirm that the waveform is as shown in **Fig. 13** .	 **Fig. 13**
SECAM Demodulator / Color Output – Red **Note :** Before making this adjustment, " SECAM Demodulator / Color Output– Blue " adjustment must be finished. 1. Receive SECAM color bar patern. 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. 14**. 2. Connect the oscilloscope to TPE34. 3. Adjust SECAM R–Color Gain control (R652) : 2.6 ± 0.3 V 4. Connect the oscilloscope toTPE39. 5. Confirm that the waveform is as shown in **Fig. 14**.	 **Fig. 14**

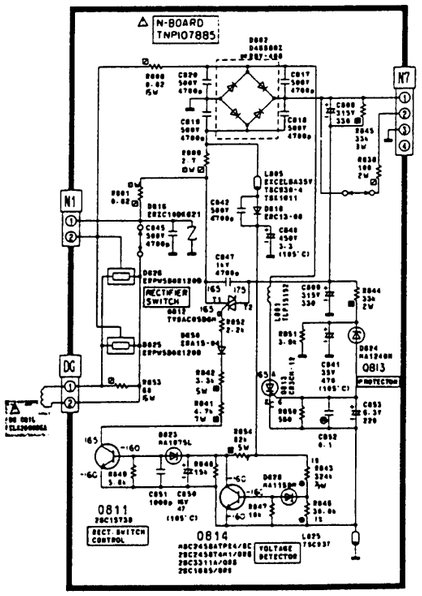

C-BOARD
TNP10775BAN
IC3003
HEF4066BP
MC14066BCP
TYSTC14066BP
MN4066B
IC3007
AN78L09
IC3006
AN5342K
IC3001
AN5858K
AV-CONTROL
U-BOARD
TNP10775 9AF
COMB FILTER
LC FILTER
BUFFER
MUTE

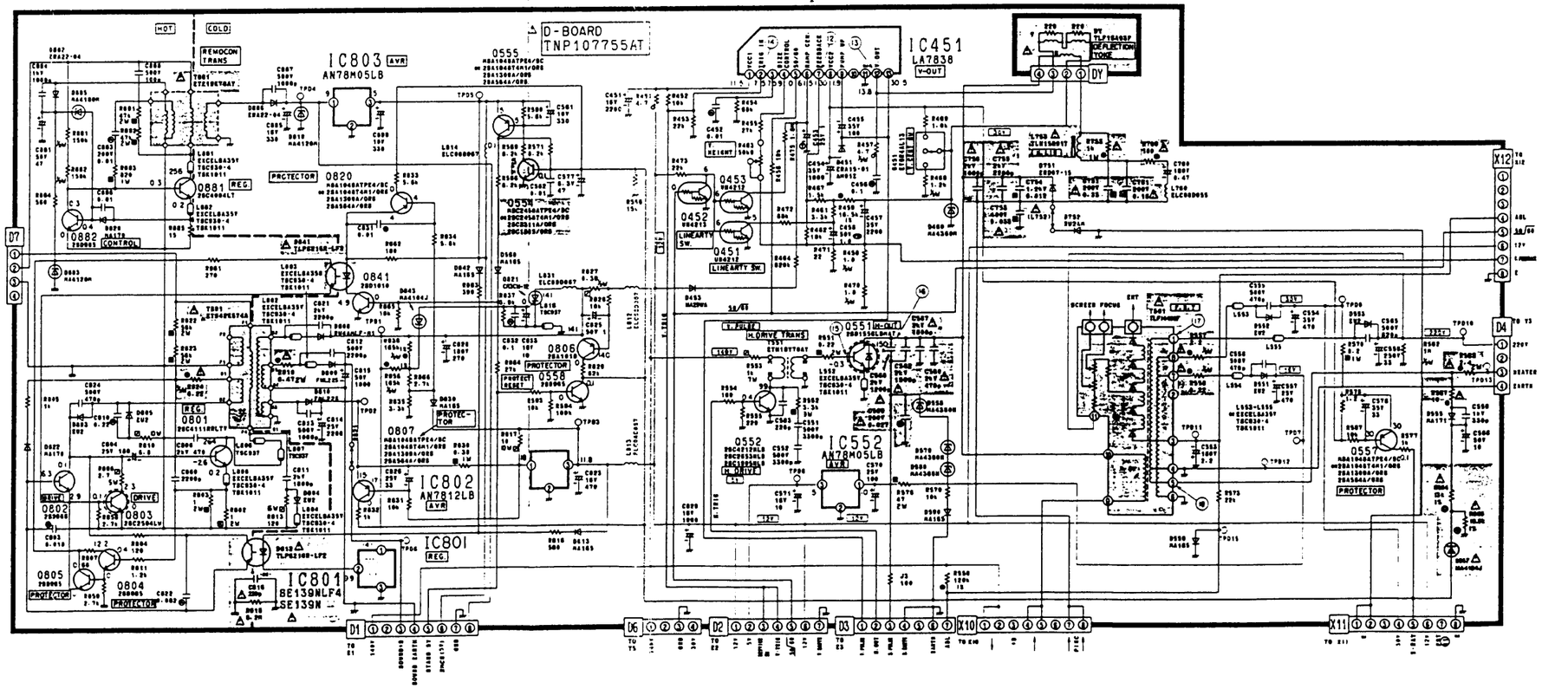
TC-26L1PX


S-BOARD
TNP107887
TNP107874AA
P-BOARD


Y-BOARD
TNP107812AF
PICTURE TUBE
M63JUA025XH


X-BOARD
TNP107800AC


N-BOARD
TNP107885


D-BOARD
TNP107755AT
IC803
AN78M05LB
IC451
LA7838
IC802
AN7812LB
IC801
IC552
AN78M05LB

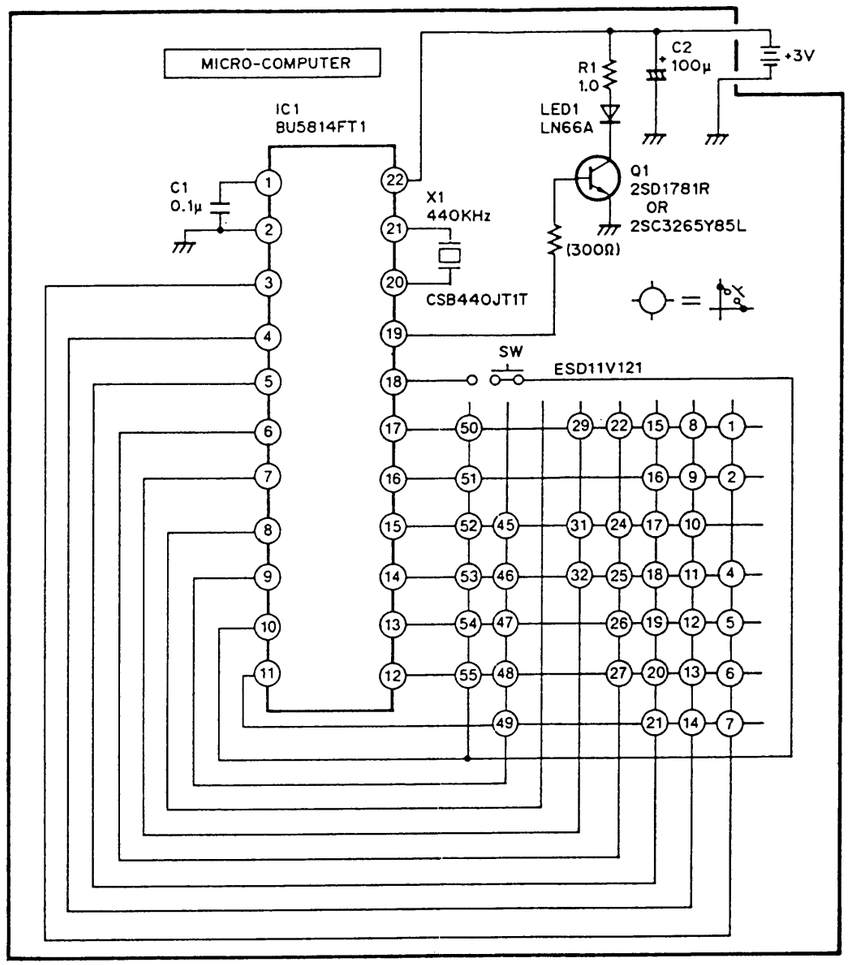
WAVEFORM PATTERN TABLE

① 2.5Vp-p (20μs)	② 2.7Vp-p (20μs)	③ 0.3Vp-p (20μs)	④ 0.5Vp-p (20μs)
⑤ 1.2Vp-p (20μs)	⑥ 0.76Vp-p (20μs)	⑦ 5Vp-p (20μs)	⑧ 10Vp-p (5ms)
⑨ 3.0Vp-p (20μs)	⑩ 3.8Vp-p (20μs)	⑪ 4.0Vp-p (20μs)	⑫ 3Vp-p (5ms)
⑬ 70Vp-p (5ms)	⑭ 7Vp-p (5ms)	⑮ 15Vp-p (20μs)	⑯ 1900Vp-p (20μs)
⑰ 500Vp-p (20μs)	⑱ 30Vp-p (20μs)	⑲ 140Vp-p (20μs)	⑳ 148Vp-p (20μs)
㉑ 144Vp-p (20μs)			

O P Q R S

TC–26L1PX

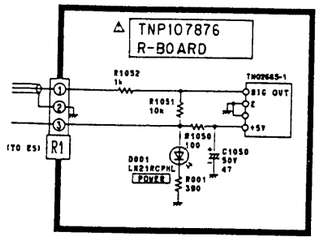
Remote Controller EUR50705



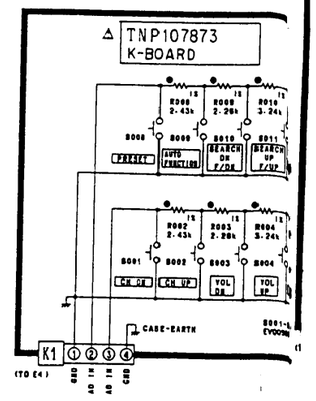
KEY FUNCTION TABLE

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

△ TNP107876
R-BOARD



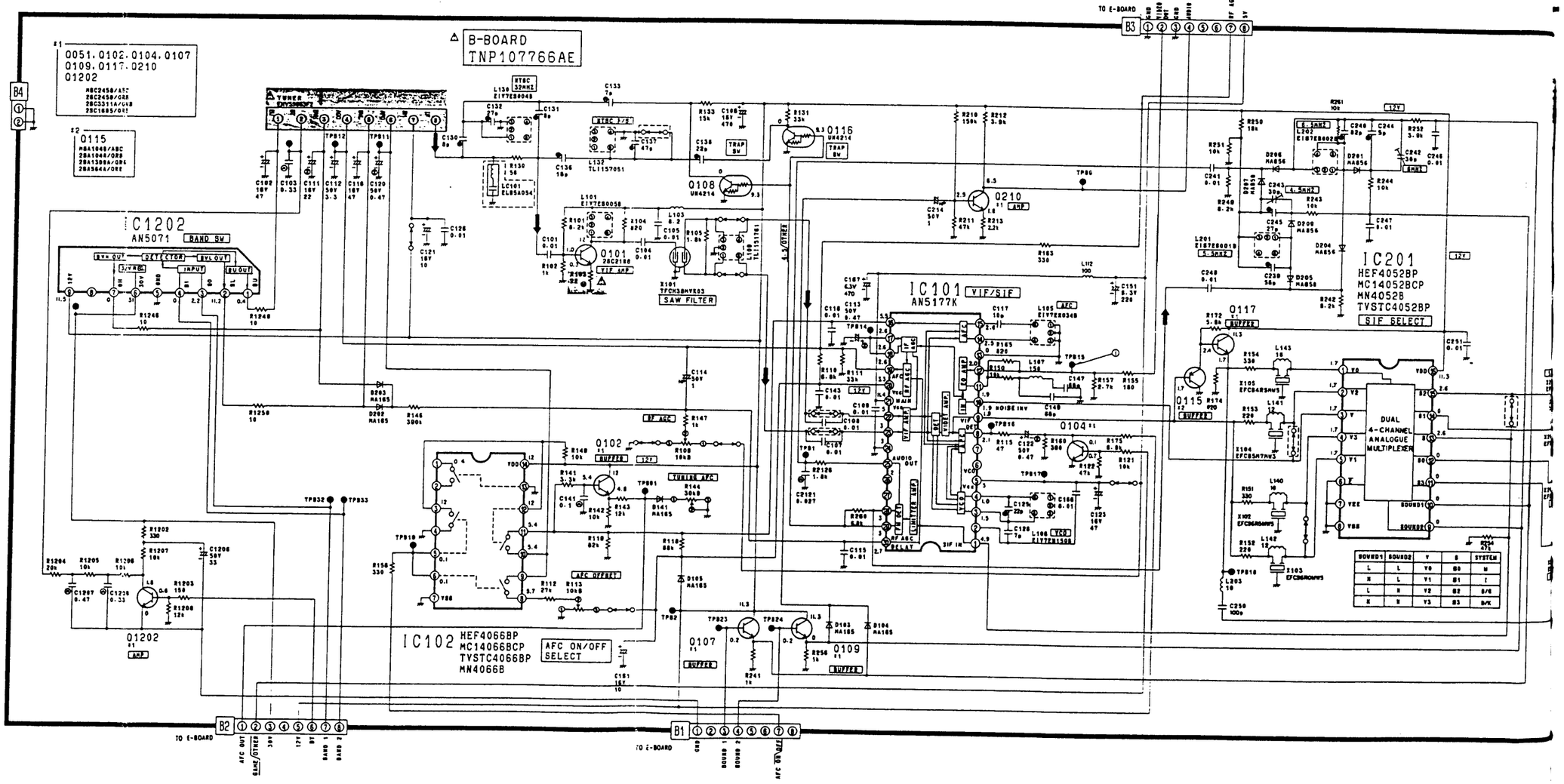
△ TNP107873
K-BOARD

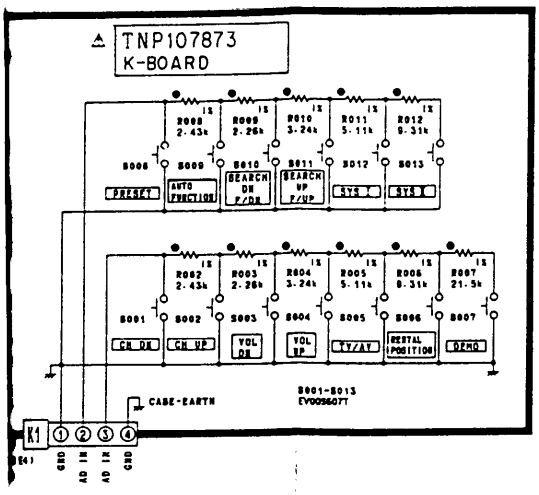


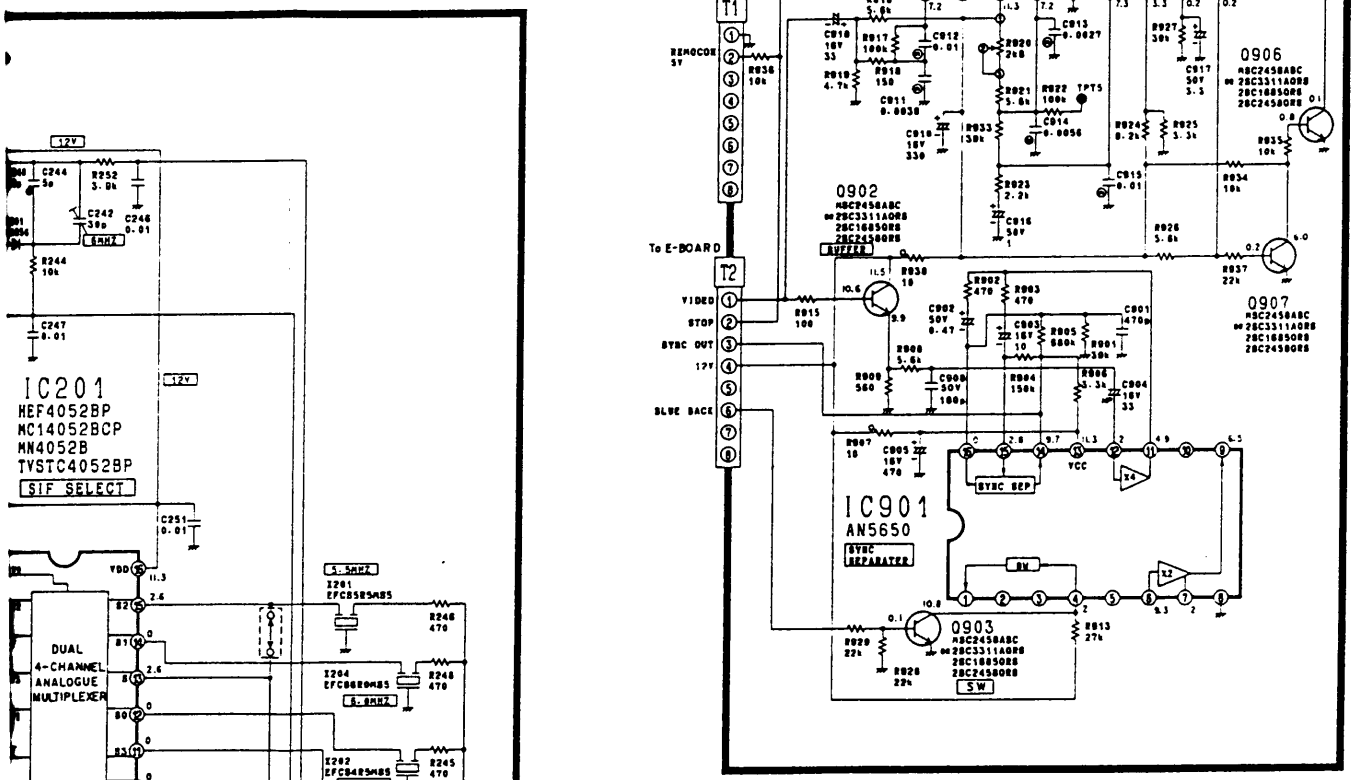
△ B-BOARD
TNP107766AE

#1
0051.0102.0104.0107
0109.0117.0210
01202
2SC2458/GR
2SC2458/GRB
2SC3311A/GRB
2SC1685/GR1

#2
0115
2SA1048/ABC
2SA1048/ORB
2SA1388A/ORL
2SA564A/ORE




TNP107873
K-BOARD
PRESET
AUTO FUNCTION
SEARCH DN P/DN
SEARCH UP P/UP
CH DN
CH UP
VOL DN
VOL UP
CASE-EARTH
K1


T-BOARD
TNP107833
IC902
AN5421
NOISE DETECTOR
IC901
AN5650
SYNC SEPARATER
IC201
HEF4052BP
MC14052BCP
MN4052B
TVSTC4052BP
SIF SELECT
DUAL 4-CHANNEL ANALOGUE MULTIPLEXER
To E-BOARD
T1
T2
0902
0903
0906
0907

TC-26L1PX

TC-2

△ TNP107872AA
A-BOARD

SPEAKER

IC2210
AN5265
AUDIO OUT

SOUND OUTPUT
SOUND CONTROL
MUTE
VOLUME

IC1211
24C02AIPA21
MEMORY

IC1212
(MN1381R)
MN1280R
RESET

IC1213
MN1872419TWC
AFC ON/OFF

* IC1205
IC1206
MC14066BCP
TYBTC4066BP
MN4066B
HEF4066BP

MICON
INPUT SWITCH

* IC1205

OPTION
(A/B)

AV
OPTION

MARKET
OPTION

SYSTEM
SW.

E-BOARD
TNP197(

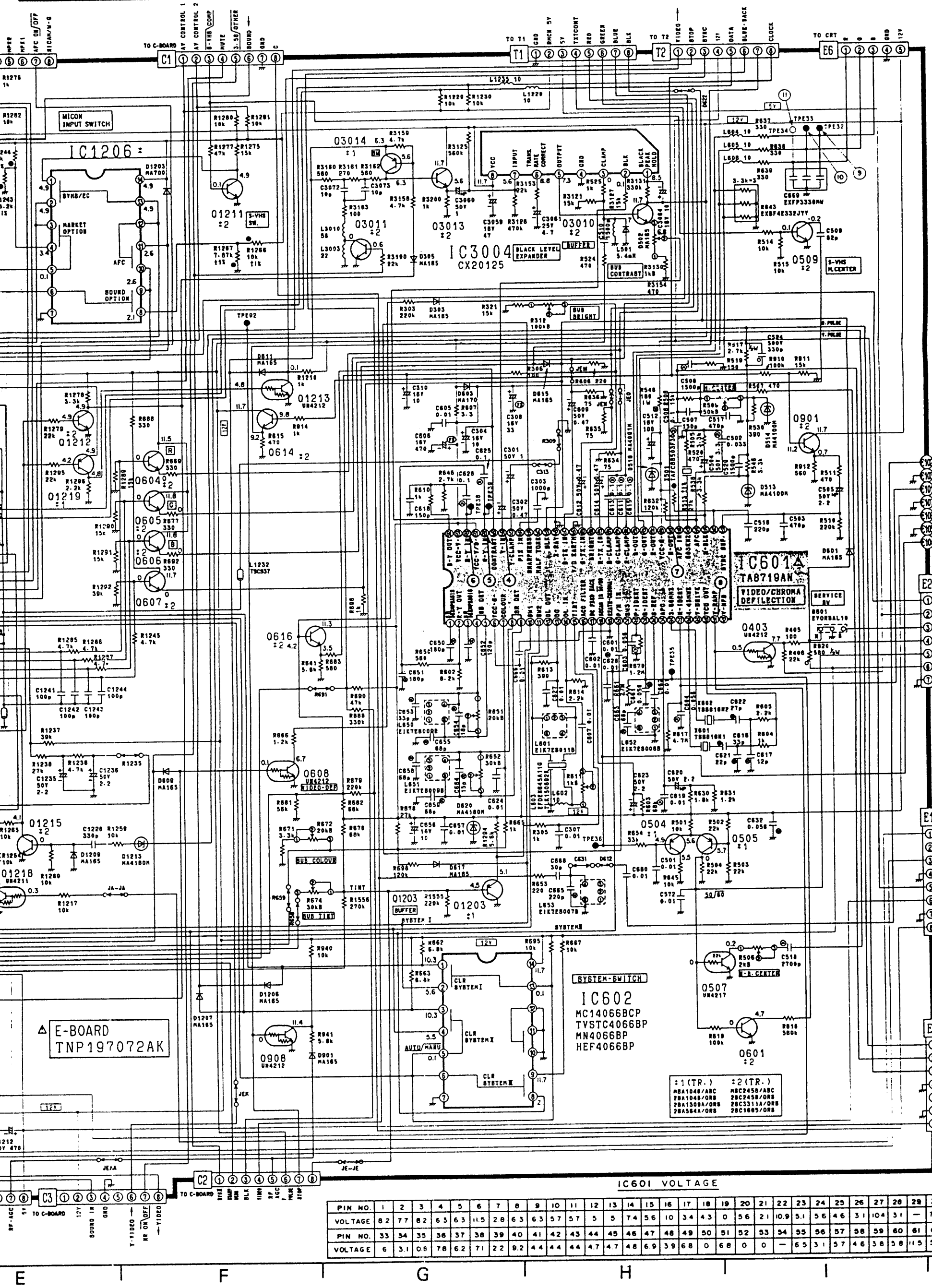
TO B-BOARD

TO C-BOARD

5 4 3 2 1

A B C D E

TC-26L1PX



IC601 VOLTAGE

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
VOLTAGE	8.2	7.7	8.2	6.3	6.3	11.5	2.8	6.3	6.3	5.7	5.7	5	5	7.4	5.6	10	3.4	4.3	0	5.6	2.1	10.9	5.1	5.6	4.6	3.1	10.4	3.1	—	7.8	0.5	—
PIN NO.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
VOLTAGE	6	3.1	0.8	7.8	6.2	7.1	2.2	9.2	4.4	4.4	4.4	4.7	4.7	4.8	6.9	3.9	6.8	0	6.8	0	0	—	6.5	3.1	5.7	4.6	3.8	5.8	11.5	5.8	11.5	7.7

E F G H I