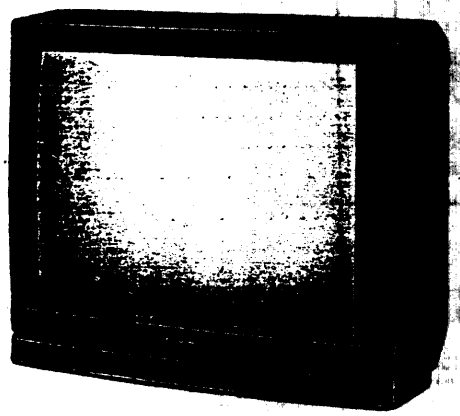
ORDER NO. ITD9306016C3

Service Manual

Colour Television

TC-M29

M16MV3 chassis



Specifications

Power Source : AC Automatic Voltage Selection
110 – 240 V, 50 / 60 Hz

Power Consumption : 185 W (Max.)
16.0 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 – 57	(PAL – D, K)
	13 – 62	(NTSC – M Japan)
	14 – 69	(NTSC – M U. S. A.)

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)
Colour	33.57 MHz	(PAL)
	33.6 MHz	(SECAM)
	33.75 MHz	(SECAM)
	34.42 MHz	(NTSC)

Video / Audio Terminals :

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

High Voltage : 31.0 kV at zero beam current

Picture Tube : M68JUA125X
M68JUA126X(Singapore)
Type 29 (72 cm)
measured diagonally ,
110° deflection

Audio Output :
Internal Speaker 7 W (Max.) x 2
Impedance 8 Ω

Headphones : Impedance 8 Ω

Speaker : 2 speaker system, L / R

Dimensions :

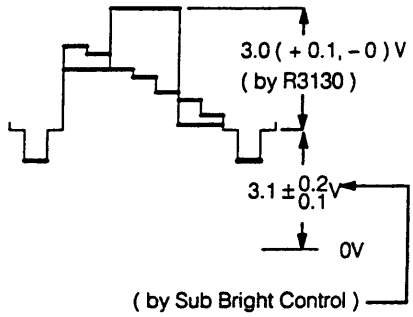
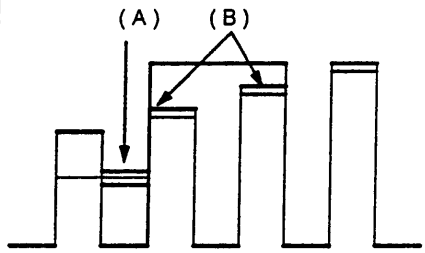
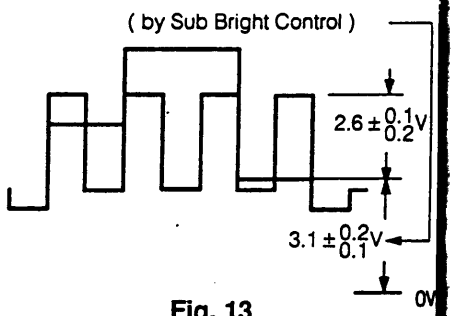
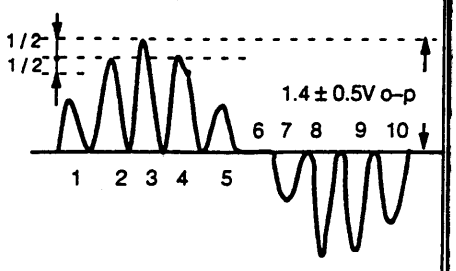
Height :	57.7 cm
Width :	70.0 cm
Depth :	49.5 cm

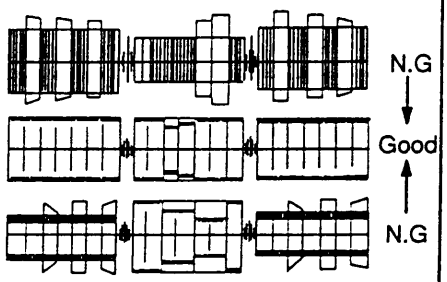
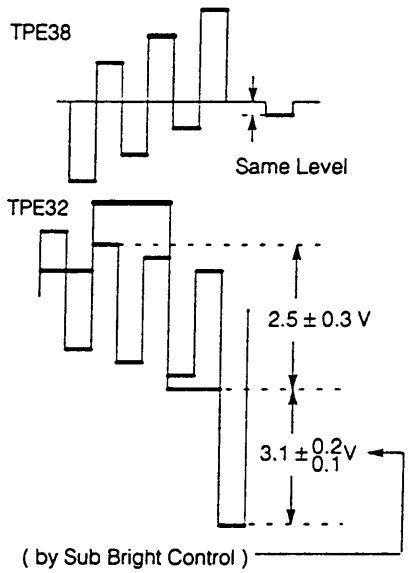
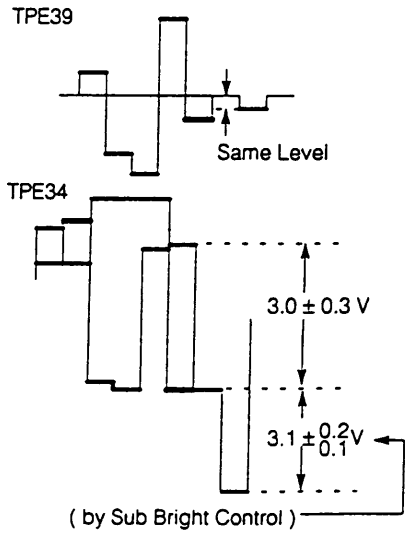
Mass : 41.0 kg (Net)

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

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

Panasonic

Item / Preparation	Adjustment Procedure	Waveform
Sub Contrast 1. Receive a colour 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. 5. Set AI to OFF position.	1. Adjust Sub Bright Control : 3.1 (+ 0.2, – 0.1) V 2. Adjust Sub Contrast control (R3130) : 3.0 (+ 0.1, – 0) V (Waveform should not be saturated.)	 Fig. 11
Delay Line 1. Receive PAL colour 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. 12** to zero level by R611. 2. Minimize the difference (B) shown in **Fig. 12** by L601.	 Fig. 12
PAL Colour Output 1. Receive PAL colour 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 : 3.1 (+ 0.2, – 0.1) V 2. Adjust Sub Colour control (R672) : 2.6 (+ 0.1, – 0.2) V 3. Connect the oscilloscope to TPE34. 4. Confirm that the amplitude of waveform 3.0 ± 0.5 V	 Fig. 13
NTSC / Modified NTSC Colour 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 1.4 ± 0.5 V o–p 2. Set Colour control to maximum and confirm that the colour level is saturated enough. 3. Set Tint control (DAC) to centre and adjust Sub Tint control (R674) to otain waveform at TPE34 as shown in **Fig. 14** .. 4. Set Tint control to maximum and cofirm- 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. 14

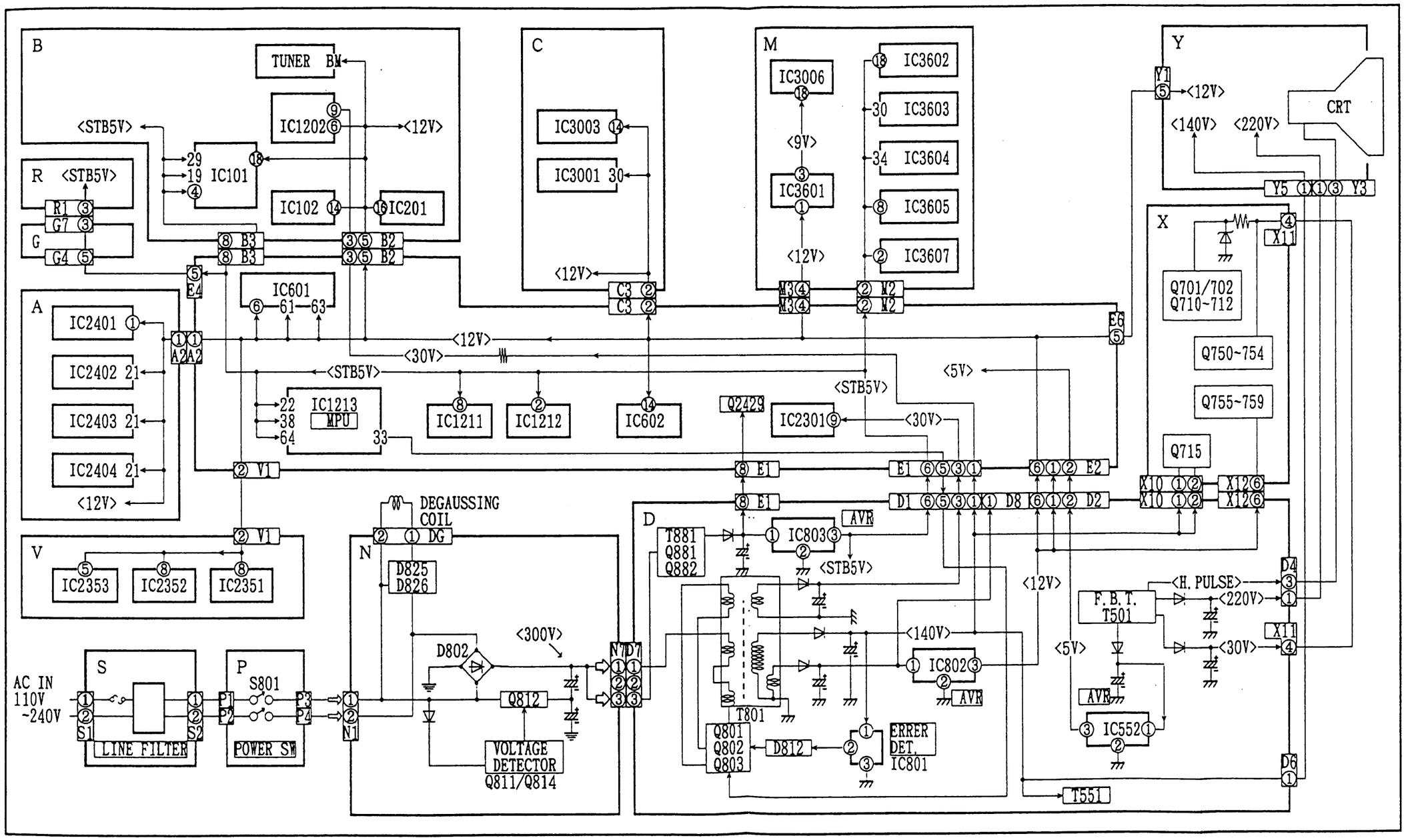
Item / Preparation	Adjustment Procedure	Waveform
Bell Filter / Line Discriminator 1. Receive SECAM colour bar pattern. 2. Connect an oscilloscope to Pin No.18 of IC601 through 10 kΩ resistor. 3. Set the Sound System to 5.5 MHz. 4. Push the Normal button for normal condition.	1. Adjust L653 to obtain waveform as shown in **Fig. 15** . 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. 15**
SECAM Demodulator / Colour Output – Blue 1. Receive SECAM colour bar pattern. 2. Set the Colour System to SECAM. 3. Set the Sound System 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. 16** . 2. Connect the oscilloscope to TPE32. 3. Adjust SECAM B–Colour Gain control (R651) : 2.5 ± 0.3 V 4. Connect the oscilloscope to TPE38. 5. Confirm that the waveform is as shown in **Fig. 16** .	 **Fig. 16**
SECAM Demodulator / Colour Output – Red **Note :** Before making this adjustment, " SECAM Demodulator / Colour Output– Blue " adjustment must be finished. 1. Receive SECAM colour 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. 17** . 2. Connect the oscilloscope to TPE34. 3. Adjust SECAM R–Colour Gain control (R652) : 3.0 ± 0.3 V 4. Connect the oscilloscope toTPE39. 5. Confirm that the waveform is as shown in **Fig. 17** .	 **Fig. 17**

Adjustments

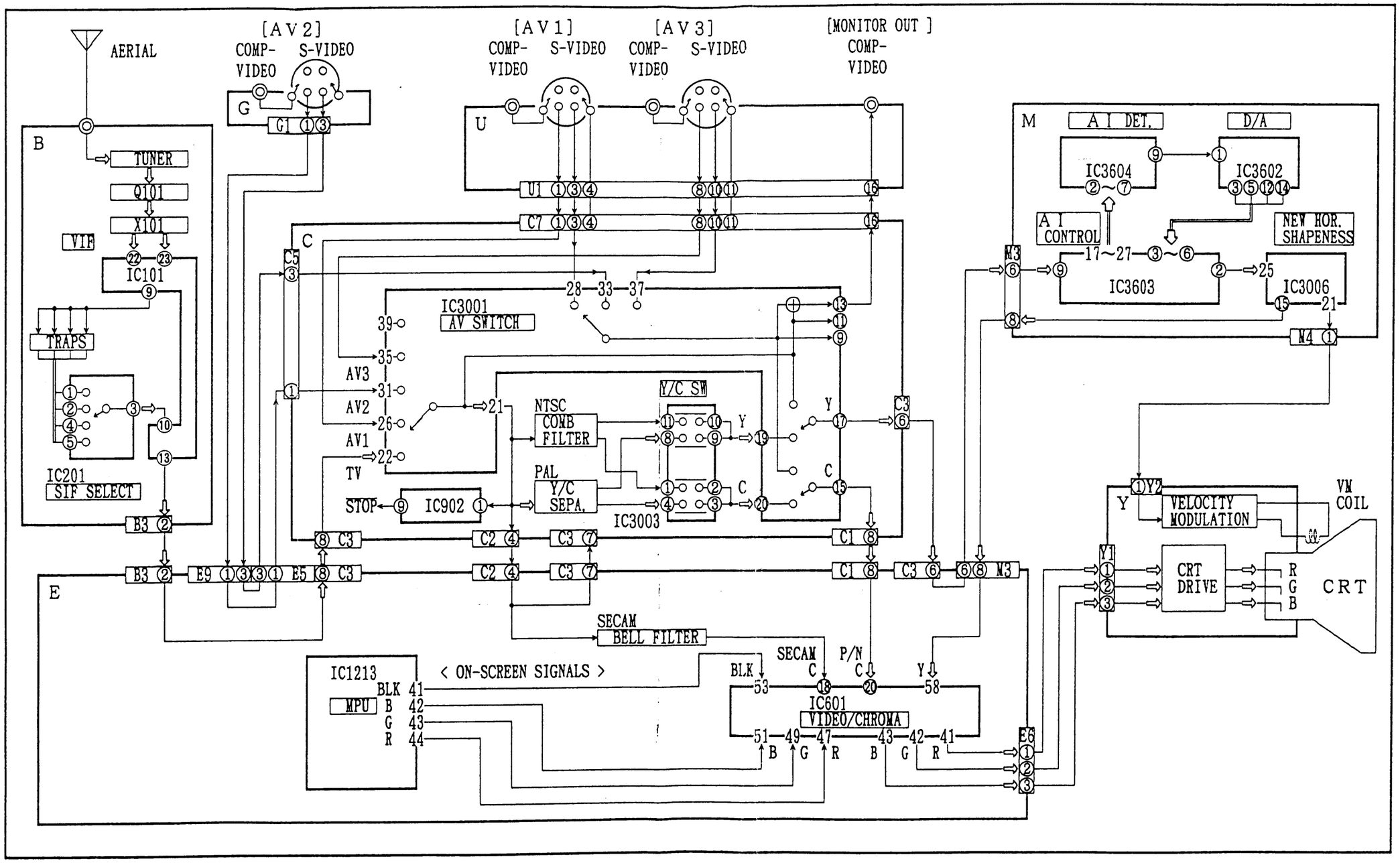
Item / Preparation	Adjustment Procedure
B Voltage 1. Operate the TV set. 2. Set controls : Bright ..... minimum Sub Bright ..... minImum	1. Confirm that the indicated test points for the specified voltage: TPD1 : 140.0 ± 2.0 V TPD2 : 16.0 ± 1.0 V TPD3 : 12.0 ± 1.0 V TPD4 : 8.5 ± 1.0 V TPD 5 : 5.0 ± 0.5 V TPD 6 : 23.5 ± 2.0 V TPD 9 : 31.4 ± 1.5 V TPD10 : 223.0 ± 12.0 V
RF AGC 1. Receive a colour bar pattern. 2. Set the input level to 63 ± 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 140.0 ± 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 31.0 (+ 1.0, –1.0) kV.
Noise Detect 1. Operate the TV set. and confirm the B voltage. 2. Connect a frequency counter to TPC1.	1. Adjust R920 Reading of the counter : 15.625 KHz ± 100 Hz

Block Diagrams

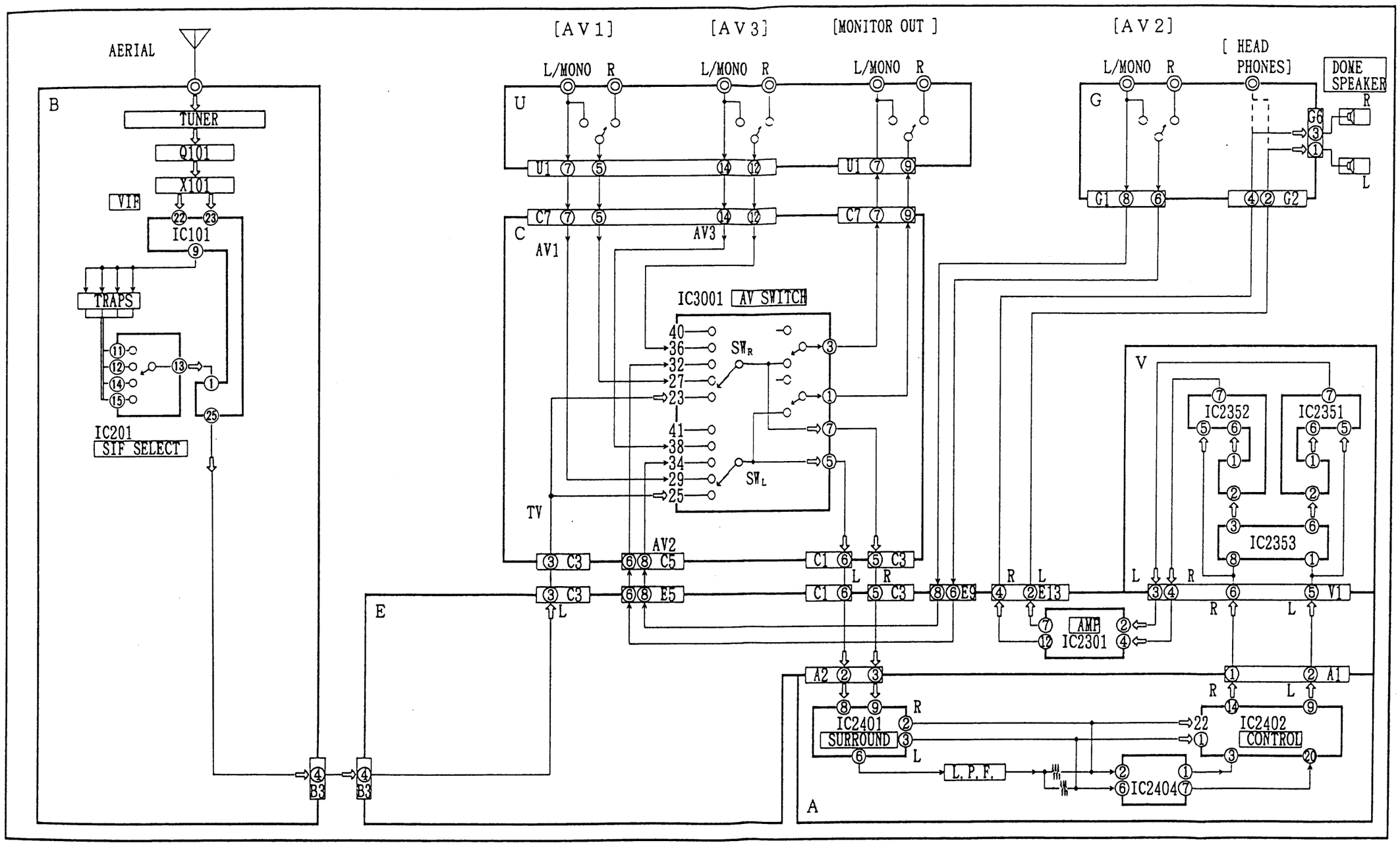
Power Supply Block



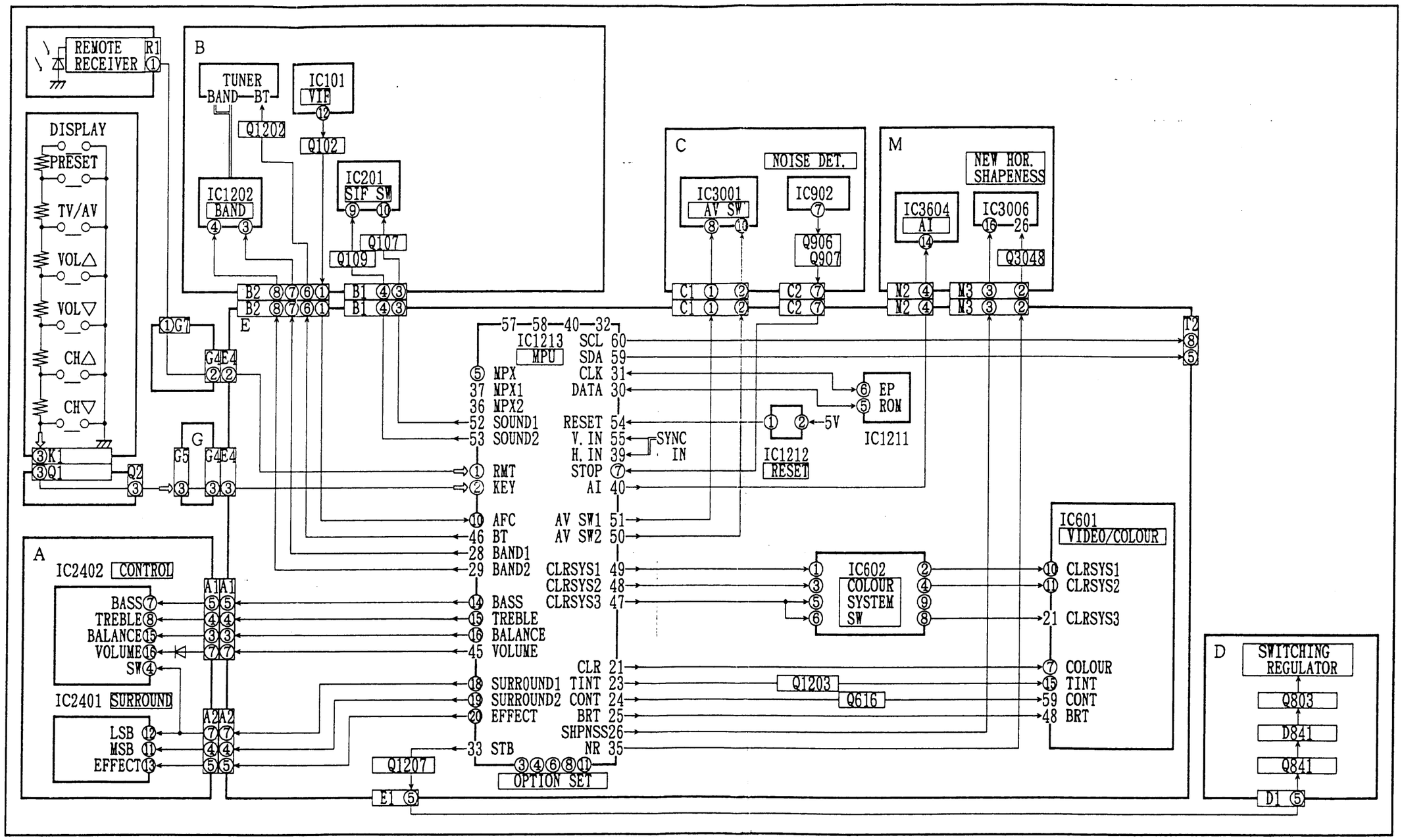
Video Block


AERIAL
[AV2]
COMP-VIDEO
S-VIDEO
[AV1]
COMP-VIDEO
S-VIDEO
[AV3]
COMP-VIDEO
S-VIDEO
[MONITOR OUT]
COMP-VIDEO
B
TUNER
Q101
X101
VIF
IC101
TRAPS
IC201
SIF SELECT
G
U
C
M
A I DET.
D/A
IC3604
IC3602
A I CONTROL
NEW HOR. SHAPENESS
IC3603
IC3006
IC3001
AV SWITCH
AV3
AV2
AV1
TV
NTSC
COMB FILTER
PAL
Y/C SEPA.
Y/C SW
IC902
STOP
IC3003
SECAM
BELL FILTER
VELOCITY MODULATION
VM COIL
CRT DRIVE
CRT
R
G
B
E
IC1213
MPU
< ON-SCREEN SIGNALS >
BLK
IC601
VIDEO/CHROMA
SECAM
P/N

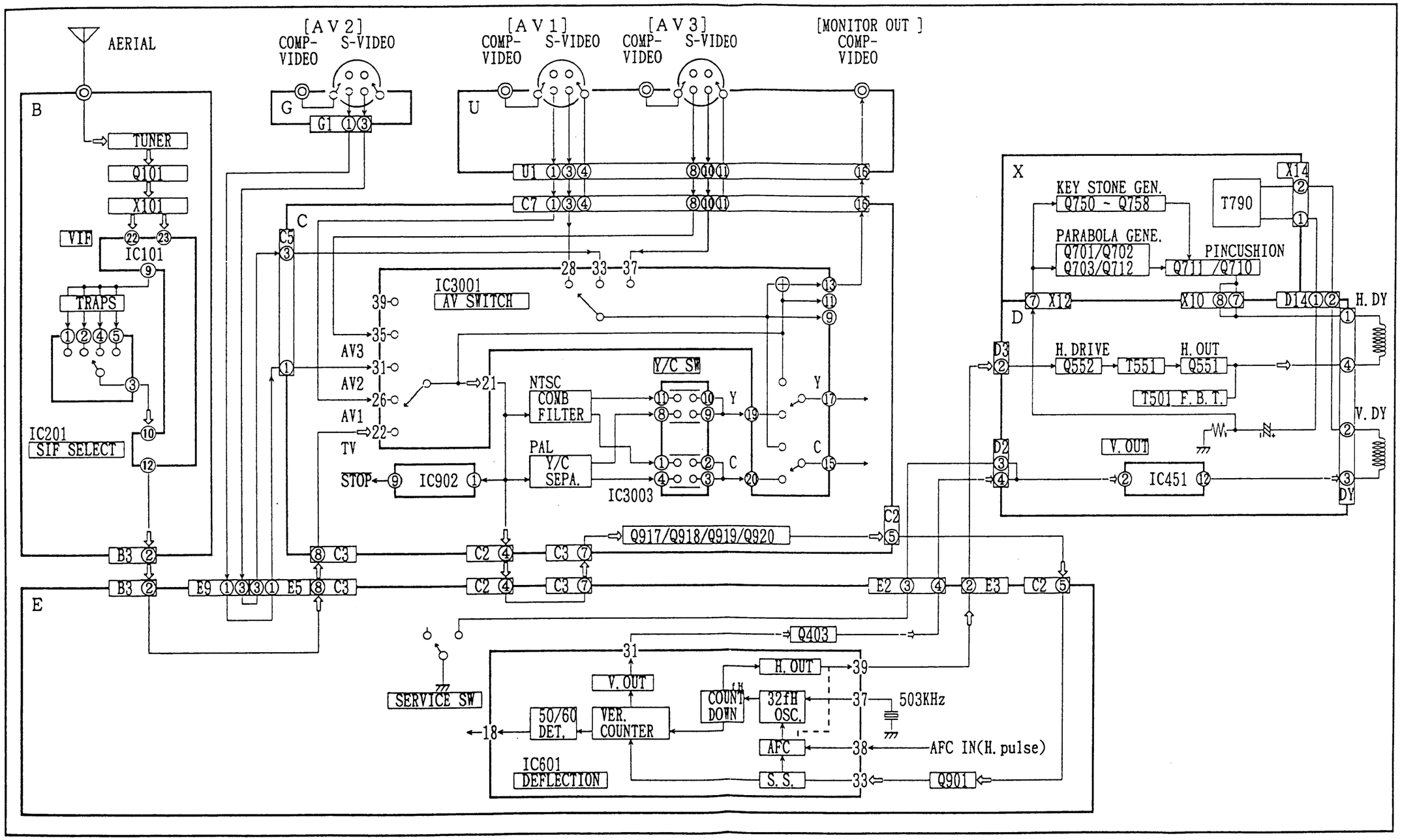
Audio Block


AERIAL
B
TUNER
Q101
X101
VIF
22
23
IC101
9
TRAPS
11
12
13
14
15
1
25
IC201
SIF SELECT
4
B3
4
B3
E
[AV1]
[AV3]
[MONITOR OUT]
L/MONO R
L/MONO R
L/MONO R
U
U1 7 5
14 12
U1 7 9
C7 7 5
14 12
C7 7 9
C
AV1
AV3
IC3001 AV SWITCH
40
36
32
27
23
41
38
34
29
25
SW_R
SW_L
3
1
7
5
TV
AV2
3 C3
6 8 C5
C1 6
5 C3
3 C3
6 8 E5
C1 6
5 C3
8 6 E9
L
R
R
L
4 2 E13
L
R
R
L
3 4
6
5 V1
7
AMP
12
IC2301
2
4
A2 2 3
1 2 A1
R
L
8 9
IC2401
SURROUND
2
3
6
R
L
L.P.F.
22
1
3
IC2402
CONTROL
20
2
6
IC2404
1
7
A
[A V 2]
[HEAD PHONES]
L/MONO R
G
G1 8 6
4 2 G2
DONE SPEAKER
R
L
G6
3
1
V
7
IC2352
5 6
1
2
3
IC2353
8
7
IC2351
6 5
1
2
6
1
R
L
14
9

Control Block



Deflection Block



Schematic Diagram for model TC–M29 (M16MV3 Chassis)

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

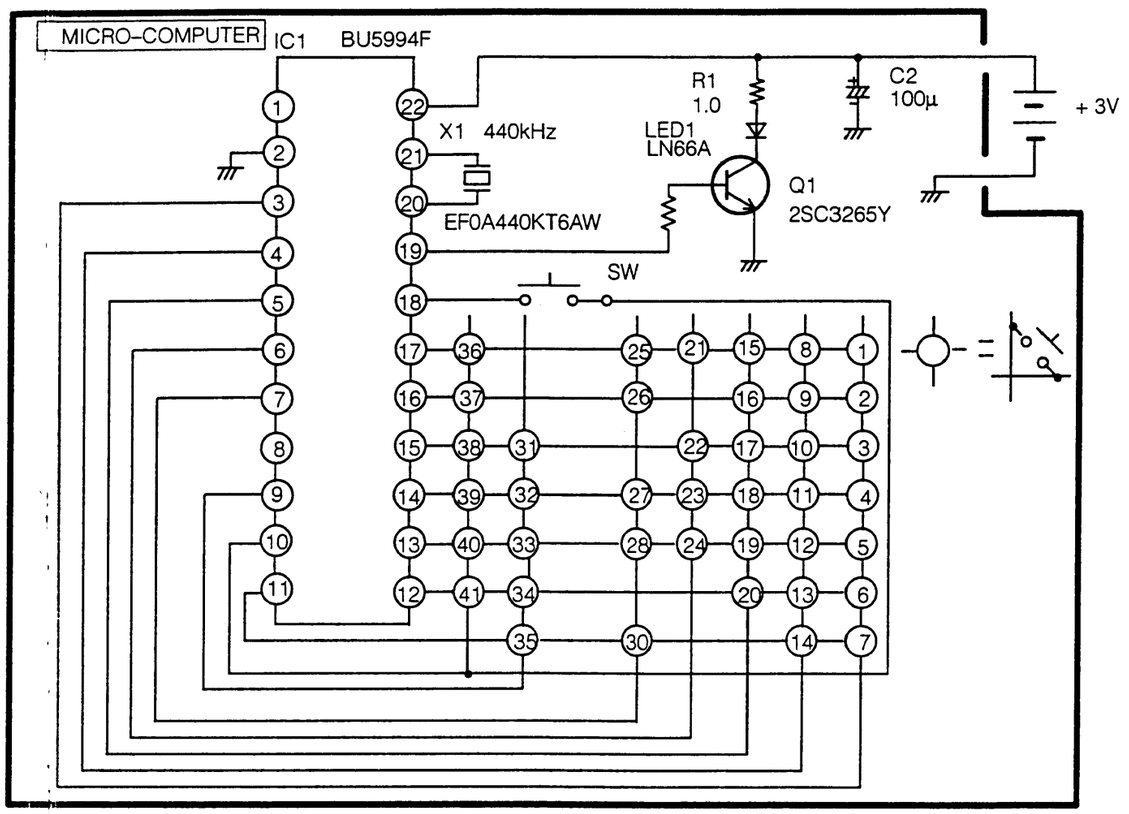
Notes :

1. Resistor
   All resistors are carbon 1/4W resistor, unless marked as follows :
   Unit of resistance is OHM [Ω] (K=1,000 , M=1,000,000).
   ◯ : Nonflammable ⊠ : Metal Oxide
   △ : Solid ◎ : Metal Film
   ⊡ : Wire Wound ⊗ : Fuse
2. Capacitor
   All capacitors are ceramic 50V capacitor, unless marked as follows :
   Unit of capacitance is μF, unless otherwise noted.
   ⊗ : Temperature Compensation +‖– : Electrolytic
   Ⓜ : Polyester NP‖ : Bipolar
   ⓜ : Metalized Polyester Ⓣ : Dipped Tantalum
   ⊠ : Polypropylene Ⓩ : Z-Type
3. Coil
   Unit of inductance is μH, unless otherwise noted.
4. Test Point
   ⚲ : Test Point position
5. Earth Symbol
   ⏚ : Chassis Earth (Cold) ⊥ : Line Earth (Hot)
6. Voltage Measurement
   Voltage is measured by a DC voltmeter.
   Conditions of the measurement are the following :
   Power Source ..... AC 220V, 50Hz
   Receiving Signal ..... Colour Bar signal (RF)
   All customer's controls ..... Maximum positions
7. Number in red circle indicates waveform number.
   (See waveform pattern table.)
8. When arrow mark (➶) is found, connection is easily found from the direction of arrow.
9. Indicates the major signal flow. : Video ➡ Audio ⇨
10. This schematic diagram is the latest at the time of printing and subject to change without notice.

Remarks :

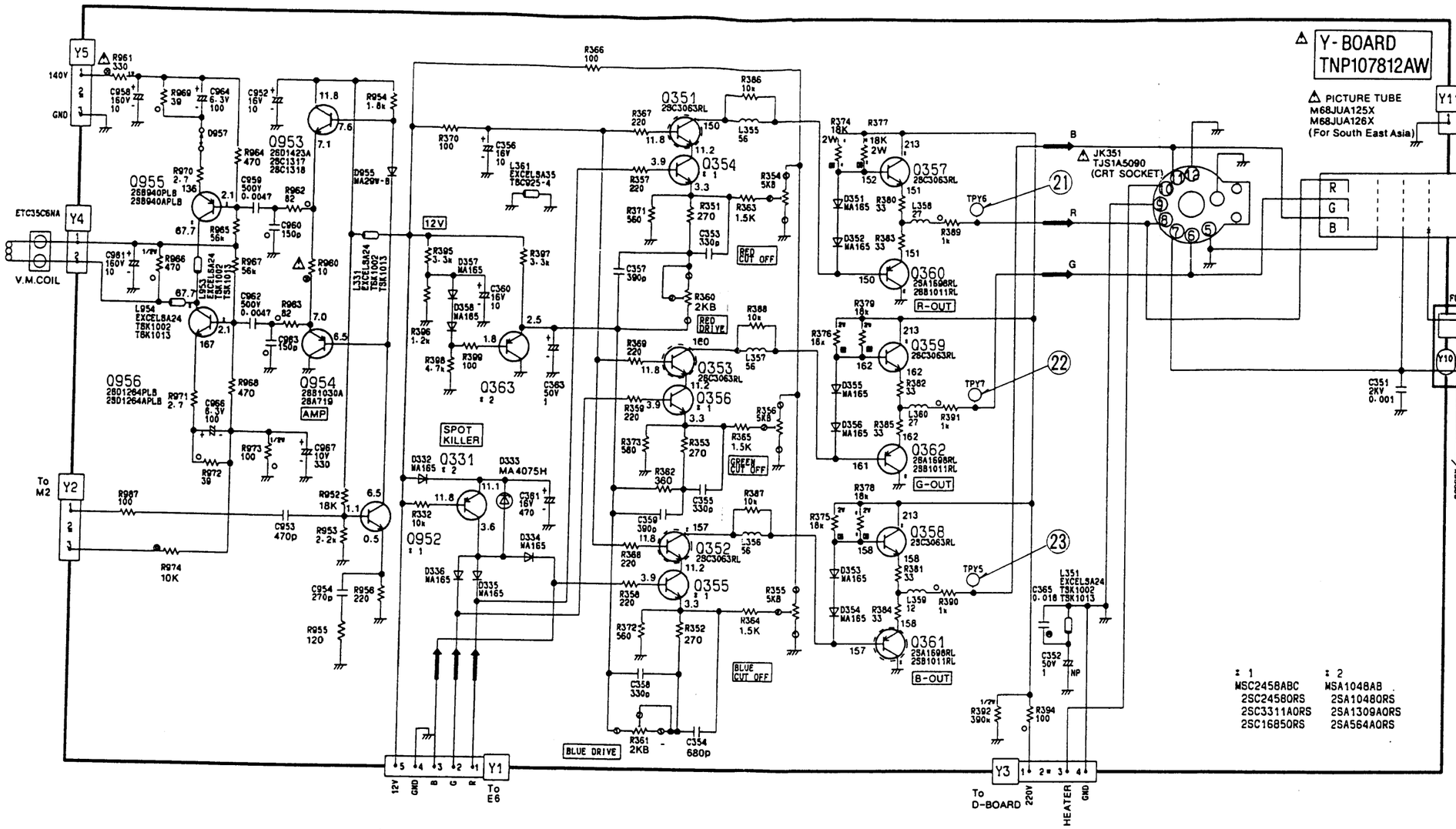
1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.
   The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.
   All circuits, except the Power Circuit, are cold.
   Precautions
   a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
   b. Do not short-circuit the hot and cold circuits or a fuse may blow and parts may break.
   c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow. Connect the earth of instruments to the earth connection of the circuit being measured.
   d. Make sure to disconnect the power plug before removing the chassis.
2. Following diodes are interchangeable.
   MA150 – MA162 (Replacement part)

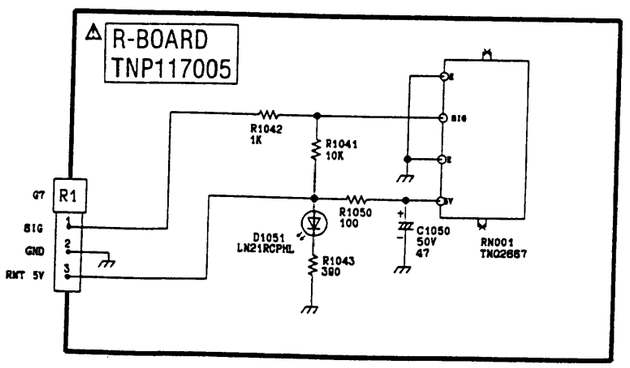
Remote Controller EUR 50711

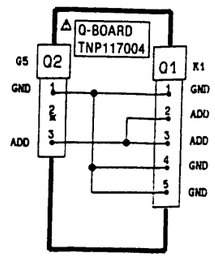


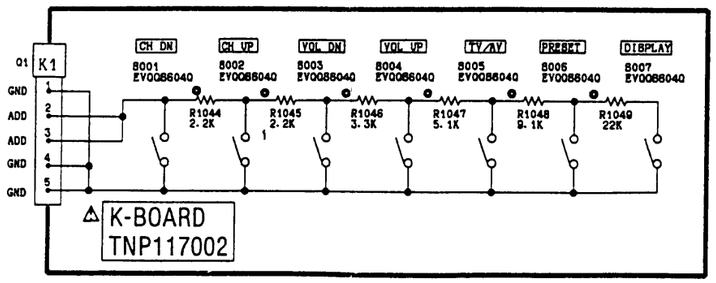
Key Function Table

Key No.	Data Code	Function	Key No.	Data Code	Function	Key No.	Data Code	Function
1	0F	OFF TIMER	15	18	9			
2	05	TV / AV	16	20	VOL. UP.			
3	6D	MUTE	17	39	RECALL	31	2A	VCR / TV
4	3D	POWER	18	19	0	32	23	VCR CH. DN.
5	10	1	19	3B	–/– –(2DIGIT)	33	22	VCR CH. UP.
6	11	2	20	21	VOL. DN.	34	20	VCR POWER
7	12	3	21	49	NORMAL	35	00	VCR STOP
8	34	CH. UP.	22	52	FEATURE MENU	36	06	VCR PAUSE
9	13	4	23	50	PICTURE MENU	37	0C	VCR ADVANCE
10	14	5	24	4A	POSITION UP.	38	08	VCR REC.
11	15	6	25	51	SOUND MENU	39	02	VCR REW.
12	35	CH. DN.	26	4F	POSI. RIGHT	40	0A	VCR PLAY
13	16	7	27	4E	POSITION LEFT	41	03	VCR FF.
14	17	8	28	4B	POSITION DN.			


Y-BOARD
TNP107812AW
PICTURE TUBE
M68JUA125X
M68JUA126X
(For South East Asia)
JK351
TJS1A5090
(CRT SOCKET)
CRT
R-OUT
G-OUT
B-OUT
RED CUT OFF
RED DRIVE
GREEN CUT OFF
BLUE CUT OFF
BLUE DRIVE
SPOT KILLER
AMP
V.M.COIL
ETC35C6NA
To M2
To E6
To D-BOARD
: 1
MSC2458ABC
2SC2458ORS
2SC3311AORS
2SC1685ORS
: 2
MSA1048AB
2SA1048ORS
2SA1309AORS
2SA564AORS


R-BOARD
TNP117005
R1042 1K
R1041 10K
R1050 100
D1051 LN21RCPHL
R1043 390
C1050 50V 47
RN001 TN02667


Q-BOARD
TNP117004


K-BOARD
TNP117002
CH DN
CH UP
VOL DN
VOL UP
TV/AV
PRESET
DISPLAY
R1044 2.2K
R1045 2.2K
R1046 3.3K
R1047 5.1K
R1048 9.1K
R1049 22K

TC-M29

S.P BOX

G-BOARD
TNP117001

JK3151
TJB18631

INSERT---OFF

(AV2)

A-BOARD
TNP107950

SURROUND

IC2401
UPC1891ACY

SURROUND MODE

OFF	L	L
STEREO	H	L
MONO	H	H

IC2402
CXA1279AS

IC2404
XRA15218N
TVSM5218L
BA15218N

Q2401
2SC1685Q

Q2402
2SC1685Q

To E-BOARD

A2
12V
L-IN
R-IN
SURROUND 2
EFFECT
GND
SURROUND 1

A1
MUTE
VOLUME
GND
BASS
TREBLE
BALANCE
L-OUT
R-OUT

To E-BOARD

6 5 4 3 2 1

O P Q R S

A B C D E

M-BOARD
TNP107930AD

9V
IC3601
AN78N09
12V
9.0
11.8

IC3006
AN5342K
NA5342K

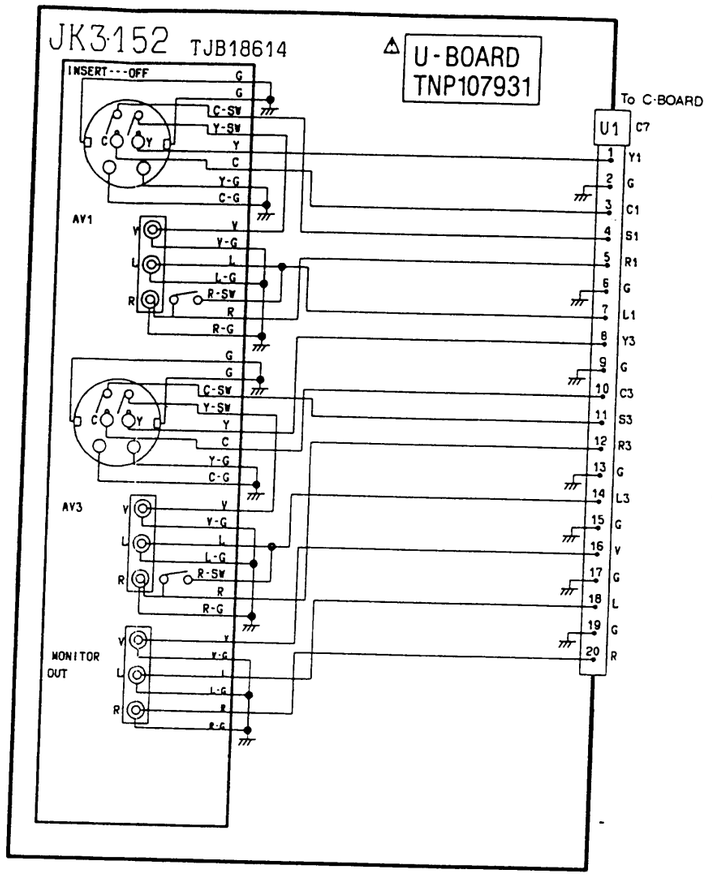
JS8

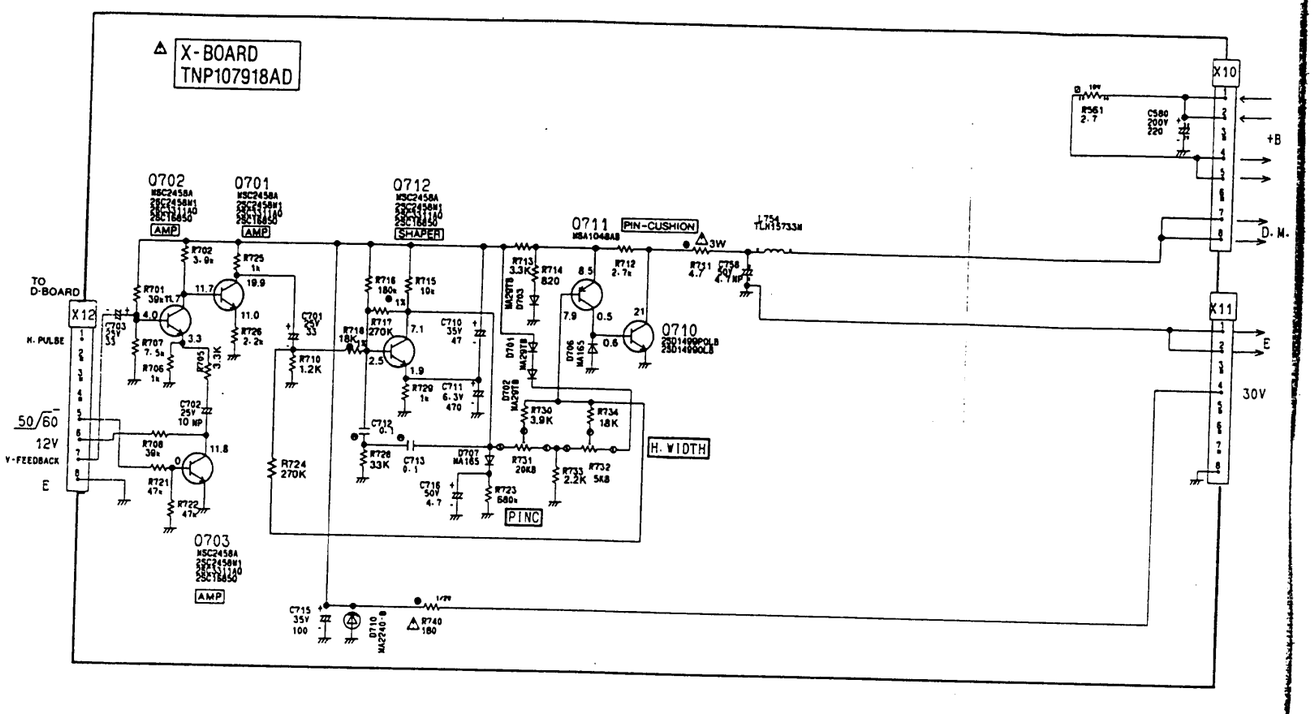
03614
03601
03048
03184
03367
03391
03607
03608
03606
03604

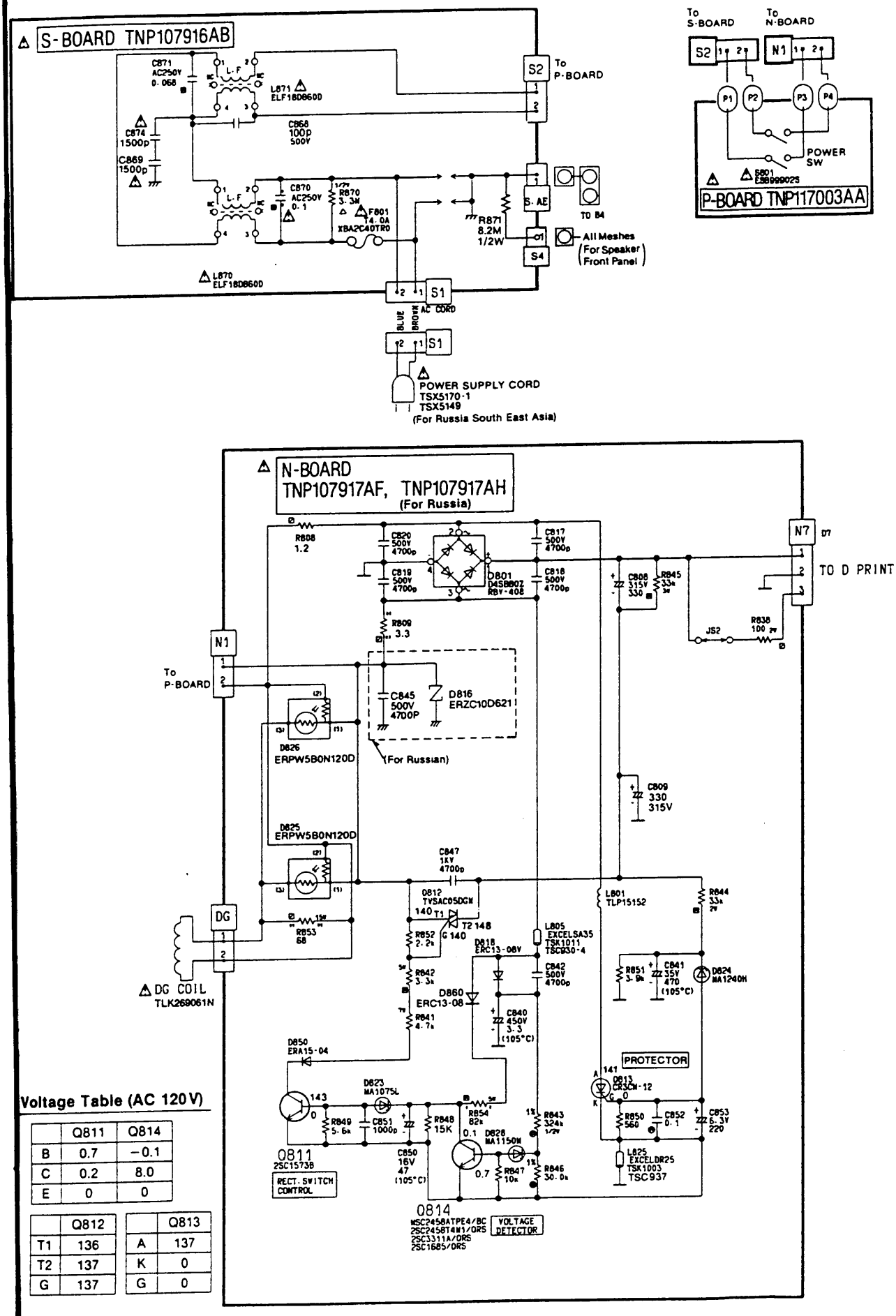
TO E-BOARD
M3 BLK P-WR SHARPNESS 12V 3.58/4.43 Y-IN GND Y-OUT
M4 FROM Y-2 V.W V.W LIMIT
M2 50/60 RHCN SW V.P ON/OFF H.OUT GND V.P VIDEO

G H I J K L M N O

TC–M29


JK3152 TJB18614
△ U-BOARD
TNP107931
INSERT---OFF
AV1
AV3
MONITOR OUT
To C-BOARD
U1
C7
Y1
G
C1
S1
R1
G
L1
Y3
G
C3
S3
R3
G
L3
G
V
G
L
G
R


△ X-BOARD
TNP107918AD
TO D-BOARD
X12
H. PULSE
50/60
12V
V-FEEDBACK
E
0702
0701
0712
AMP
SHAPER
0711
PIN-CUSHION
0710
0703
PINC
H. WIDTH
X10
X11
+B
D. M.
30V

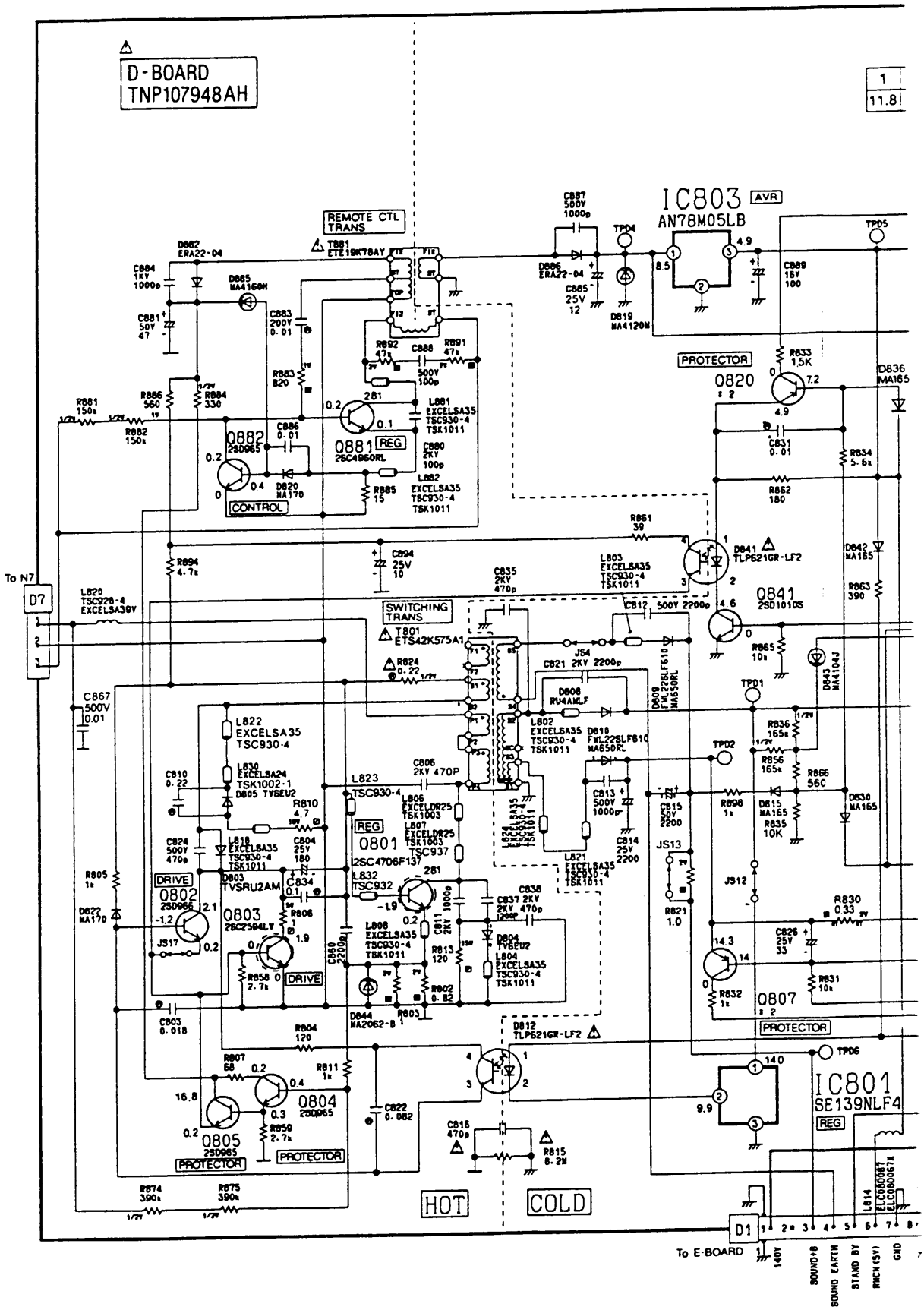


Voltage Table (AC 120V)

	Q811	Q814
B	0.7	−0.1
C	0.2	8.0
E	0	0

	Q812
T1	136
T2	137
G	137

	Q813
A	137
K	0
G	0


D-BOARD
TNP107948AH
1
11.8
REMOTE CTL TRANS
SWITCHING TRANS
IC803 AVR
AN78M05LB
IC801
SE139NLF4
REG
PROTECTOR
CONTROL
DRIVE
HOT
COLD
To N7
To E-BOARD
T881 ETE19K78AY
T801 ETS42K575A1
Q881 2SC4960RL
Q882 2SD965
Q883 2SC2594LV
Q802 2SD966
Q803 2SC4706F137
Q804 2SD965
Q805 2SD965
Q807 2SD965
Q841 2SD1010S
D841 TLP621GR-LF2
D812 TLP621GR-LF2
D808 RU4AMLF
D809 FML228LF610 MA650RL
D810 FML22SLF610 MA650RL
D804 TV6EU2
D803 TVSRU2AM
D805 TV6EU2
D822 MA170
D844 MA2062-B
D819 MA4120M
D885 MA4160H
D886 ERA22-04
D882 ERA22-04
D620 MA170
D836 MA165
D842 MA165
D843 MA4104J
D830 MA165
D815 MA165
JS13
JS12
JS54
JS17
TPD1
TPD2
TPD4
TPD5
TPD6
D1
1 2 3 4 5 6 7 8
140V
SOUND+B
SOUND EARTH
STAND BY
RMCN (5V)
GND
G
H
I
J

Voltage Table for IC451

1	2	3	4	5	6	7	8	9	10	11	12	13
11.8	6.1	5.9	6.0	0	6.0	5.4	28.3	2.1	1.4	—	14.4	28.7

‡ 1	‡ 2
MSC2458ABC	MSA1048AB
2SC2458ORS	2SA1048ORS
2SC3311AORS	2SA1309AORS
2SC1685ORS	2SA564AORS

IC803 AN78M05LB AVR

IC451 LA7638 V-OUT

IC802 AN7812 AVR

IC552 AN78M05LB AVR

IC801 SE139NLF4 REG

DY TLY15482F DEFLECTION YORK

COLD

PROTECTOR

PROTECT RESET

12V 30V 8V 5V 220V

To E-BOARD

To Y5

To E2

To E3

To X-BOARD

To Y-BOARD

To X-BOARD

TC-M29

C-BOARD
TNP107929 AB

IC3003
MC14066BCP
HEF4066BP
TVSTC4066DP
MN4066B
3-5B/OTHER SWITCH

IC3001 AV-CONTROL
AN5858K

IC902
AN5421
NOISE DETECTOR

03027 03039 03049 03052 03032 03034 03033 03022 03024 03030 03020 03038 03390 03025 03029 03046 03023 03021 03370 03371 03369 0920 0919 0918 0917 0907 0906 03001 03036 03037 03019 03006 03015 03016

AV1-Y
AV1-C
AV1-SVHS
AV1-R
AV1-L
AV3-Y
AV3-C
AV3-SVHS
AV3-R
AV3-L
MONITOR-VIDEO
MONITOR-L
MONITOR-R

TO E-BOARD
TO E-BOARD
TO E-BOARD

1 1 2SC2458ABC 2SC2458ORS 2SC3311AORS 2SC1685ORS
1 2 2SA1048AB 2SA1048ORS 2SA1309AORS 2SA564AORS

E-BOARD
TNP197077 BB
TNP197077 BC
(For Saudi Arabia)

1	2
MSC2458ABC	MSA1048AS
2SC2458ORS	2SA1048ORS
2SC3311AORS	2SA1309AORS
2SC1685ORS	2SA564AORS

Voltage Table for IC801

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
—	4.9	4.0	4.6	—	—	—	3.3	0.1	2.5	3.4	—	2.4	3.2	3.1	2.4	4.1	4.6	4.6	—	2.5	4.9	3.2	4.7	2.5	2.5	—	4.7	—	4.8	4.8	—
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
4.8	4.8	2.4	—	—	—	4.1	4.8	—	—	—	—	0.7	4.3	—	—	—	—	—	—	—	11.2	4.9	4.7	4.8	—	—	0.2	—	4.8	1.6	1.8	—

Voltage Table for IC801

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
8.3	7.9	8.4	8.4	8.4	11.7	2.9	8.4	6.4	5.8	5.7	5.1	5.1	7.5	5.2	10.2	3.4	4.4	0	5.7	2.1	10.7	5.1	5.7	4.7	3.2	0.5	3.2	—	8.1	0.5	—
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
7.0	3.2	0.7	7.7	5.1	6.9	2.2	9.1	3.7	3.8	3.8	5.0	4.9	4.9	7.0	2.9	8.9	0	6.9	0	0	1.7	5.2	3.1	5.7	4.7	3.4	5.9	11.7	5.9	11.7	7.9

IC1211
24C02A1PA21
UPD6262CX

IC1212
MN1280-R
RESET

IC1213
MN18724327W1

IC2301
MC13500T2
TA8200AH
AUDIO AMP

IC3004 CX20125

IC601
TA8719AN
VIDEO/CHROMA DEFLECTION

IC602
HEF4066BP
TVSTC4066BP
MN4066B
MC14066BCP

IC 3004 CX20125

TO A-BOARD
TO V-BOARD
TO B-BOARD
TO C-BOARD
TO M-BOARD
TO D2
TO D1
TO D3
TO 813
TO Y1
TO M-BOARD

BLACK LEVEL EXPANDER
BUFFER
SUB CONTRAST
SUB BRIGHT
SUB COLOUR
SUB TINT
SUB SHARPNESS
VIDEO DEF
SOUND DEF
OFF DEF
SYSTEM-SWITCH
NTSC SENSITIVITY SW
H. CENTER
H. PULSE
V. PULSE

B-BOARD
TNP107766AF

IC1202
AN5071-MECS
AN5071
BAND SW

IC102
MC14066BCP
TVSTC4066BP
MN4066B
HEF4066BP
AFC ON/OFF SELECT

IC101
AN5177NK
VIF/SIF

Q116
UN4214
TRAP SW

Q101
2SC2186
VIF AMP

SAW FILTER

0102 BUFFER

TUNING AFC

0107 BUFFER

0109 BUFFER

01202 AMP

0210 AMP

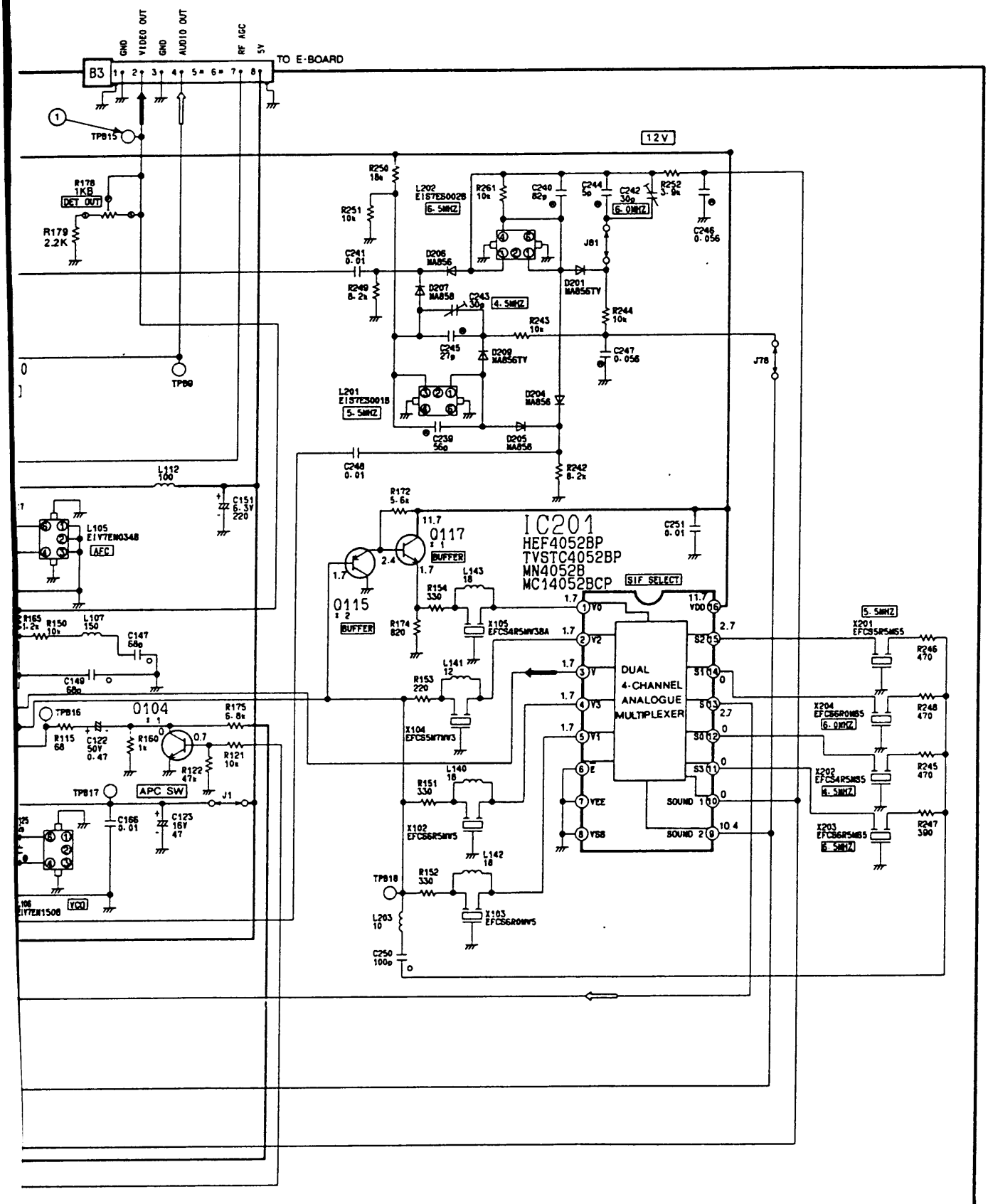
0104 APC SW

TO E-BOARD

TO E-BOARD

Voltage Table for IC101

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
4.9	0	1.5	1.0	5	—	—	2.1	1.9	1.9	1.9	2.0	0	2.5	2.6
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
5.5	2.6	2.6	2.6	3.3	11.7	5	3	0	2	—	—	3	3	2.7



SOUND 1	SOUND 2	V	S
L	L	V0	S0
H	L	V1	S1
L	H	V2	S2
H	H	V3	S3

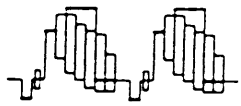
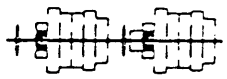
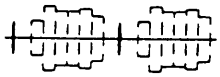
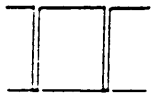
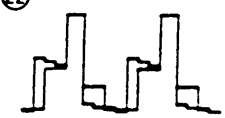
12	13	14	15
20	0	2.5	2.6
27	28	29	30
-	3	3	2.7

: 1
MSC2458ABC
2SC2458ORS
2SC3311AORS
2SC1685ORS

: 2
MSA1048AB
2SA1048ORS
2SA1309AORS
2SA564AORS

J K L M

WAVEFORM PATTERN TABLE

①  1.1 Vp-p (20µs)	②  2.7 Vp-p (20µs)	③  0.6 Vp-p (20µs)	④  0.9 Vp-p (20µs)
⑤  1.9 Vp-p (20µs)	⑥  1.2 Vp-p (20µs)	⑦  5 Vp-p (20µs)	⑧  10 Vp-p (5ms)
⑨  1.1 Vp-p (20µs)	⑩ SECAM  0.29 Vp-p (20µs)	⑪  3.3 Vp-p (20µs)	⑫  3.3 Vp-p (20µs)
⑬  3.2 Vp-p (20µs)	⑭  2.5 Vp-p (5ms)	⑮  56 Vp-p (5ms)	⑯  6.3 Vp-p (5ms)
⑰  5 Vp-p (20µs)	⑱  1200 Vp-p (20µs)	⑲  230 Vp-p (20µs)	⑳  12 Vp-p (20µs)
㉑  116 Vp-p (20µs)	㉒  120 Vp-p (20µs)	㉓  114 Vp-p (20µs)	