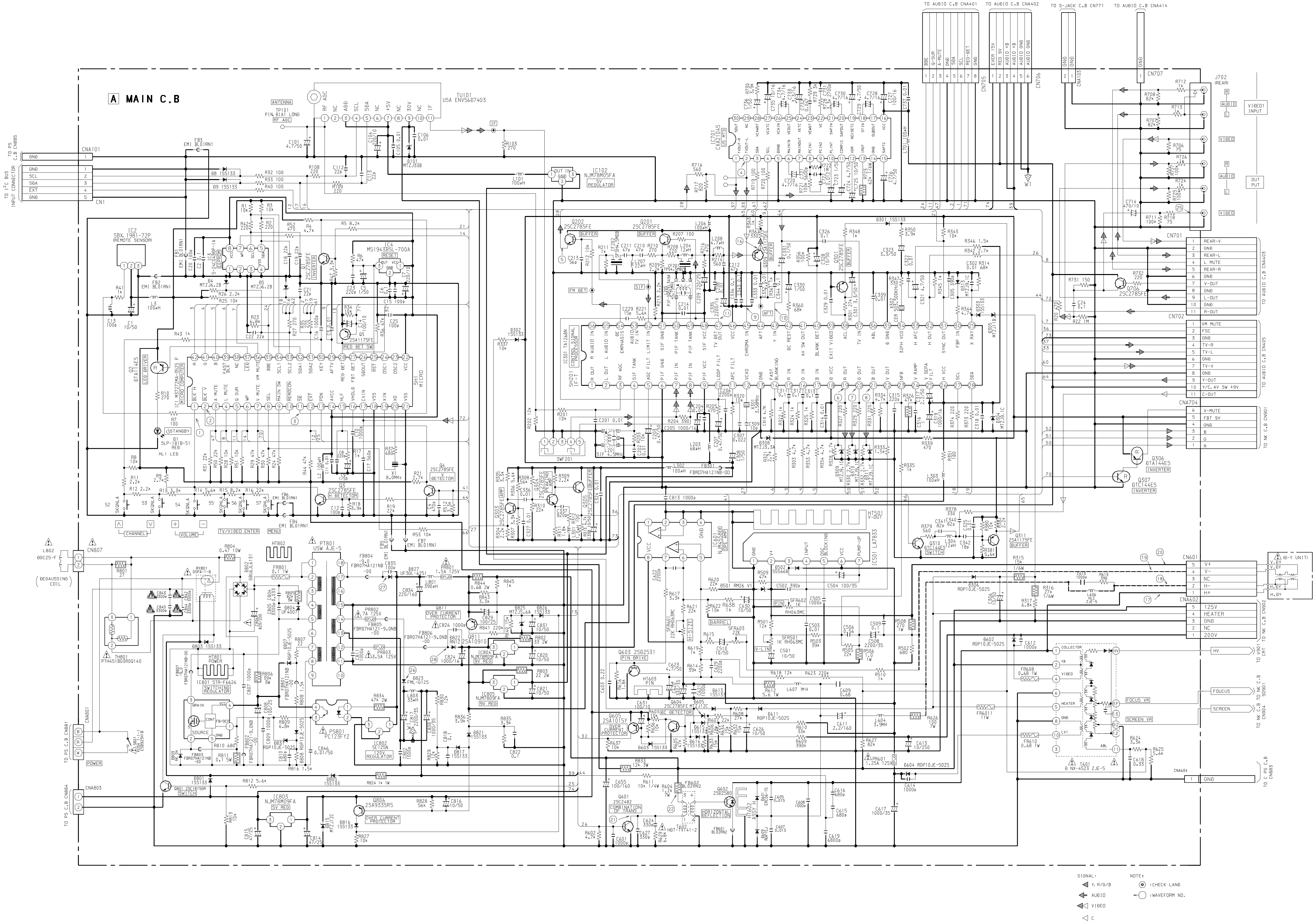
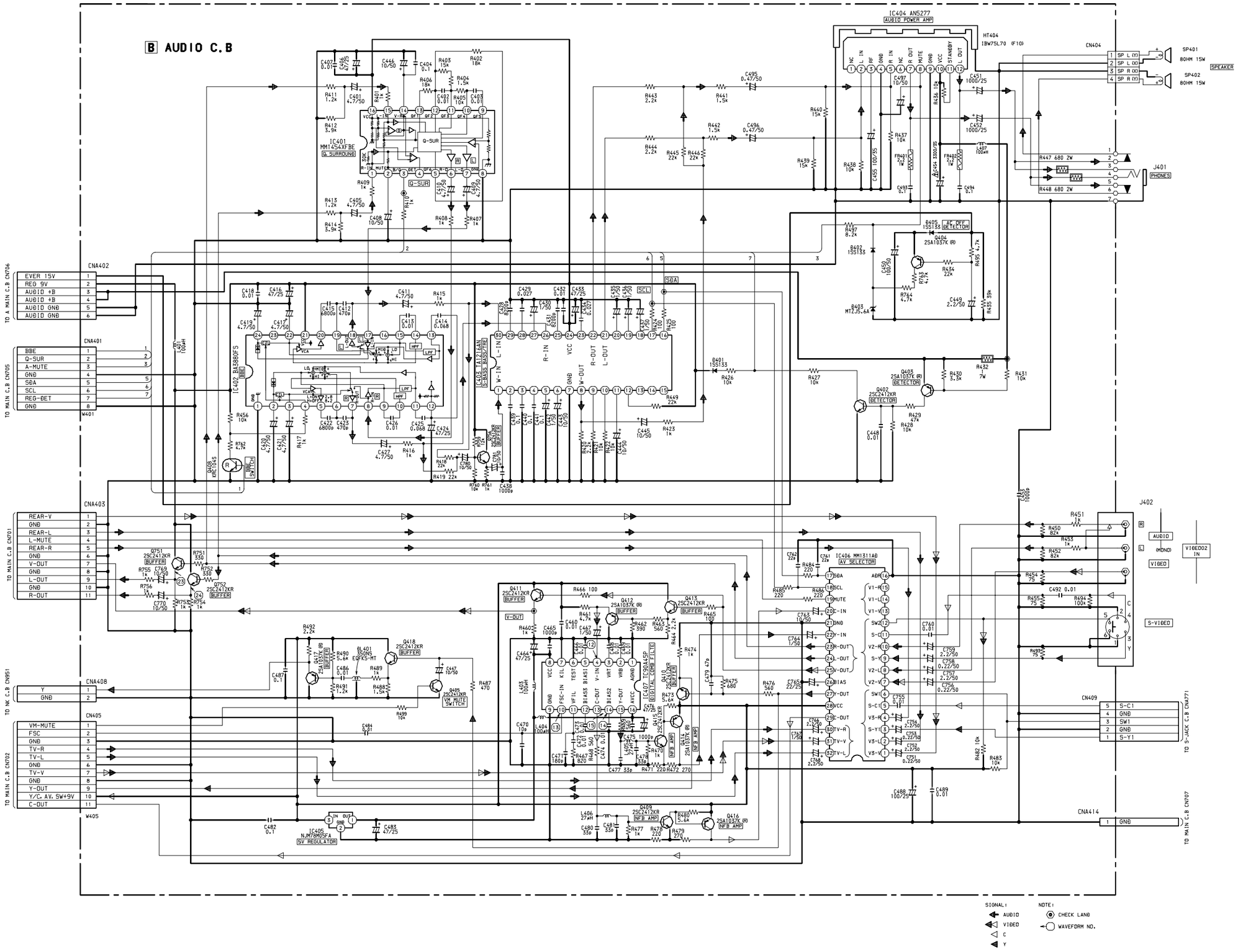
SCHEMATIC DIAGRAM -1 (MAIN)



SCHEMATIC DIAGRAM - 2 (AUDIO)



C NK C.B

ANODE CAP

V907
A60LST196X04 (0)

SQ901
CRT 11P
HPS1521-013411

CRT GND

C917
4700p

CN903

CN904

HV
FOUCUS
SCREEN

TO MAIN C.B T601

CN902

TO MAIN C.B CNA602

125V	5
HEATER	4
GND	3
NC	2
200V	1

C902
680p

C914
2.2/250

R935
220k

C915 47/25

C916 0.01

R

G

B

R901
8.2k
5W

R902
8.2k
5W

R903
8.2k
5W

R904
2.2k

R905
2.2k

R906
2.2k

L901
33μH

L902
33μH

L903
33μH

HT901
NECK1

HT902
NECK1

HT903
NECK1

29

30

31

Q901
2SC5147D
AMP

Q902
2SC5147D
AMP

Q903
2SC5147D
AMP

R907
220

R908
220

R909
220

R910 470

R911 470

R912 470

R915 560

R914 560

R913 560

Q904
2SC2785FE
R DRIVER

Q905
2SC2785FE
G DRIVER

Q906
2SC2785FE
B DRIVER

R916
68

D904
1SS133

D901 1SS133

D905
1SS133

D902
1SS133

D906
1SS133

D903
1SS133

R919
82

C911 560p

R920 82

C912 560p

R921 82

C913
560p

R917 68

R918 68

R922 100

Q907
2SC2785FE
SPCT KILLER

R924
27

C907
470/16

C906
0.47/50

D907
1SS133

R951
560

Q908
2SA1175FE
RGB DRIVER

R936
820

D908
1SS133

D909
1SS133

D910
1SS133

R937
270

C901
10/50

R938
1.5k

C903
10/50

R928
150

R931
470

R929
150

R932
470

R930
150

R934
470

C908
680p

C909
820p

C910
680p

R939
1.5k

Q954, 955
OP AMP

Q955
2SD774

R963
100k

R964
22k

R965
820

D955
1SS119

D954
1SS119

C956
10/50

Q950
2SC1740SRS

R968
120 2W

L951
56μH

R957
390

C953
100p

D951
1SS119

R954
100

Q952
2SA933SRS

C951
330/16

R959
33k

R962
1.5k

C955
10/50

Q953
2SC1740SRS

R958
33k

R960
6.8k

R961
270

C957
180p

R966
10k

R967
560

C958
100p

R952
100

Q951
2SC1740SRS

R953
2.2k

R955
1.2k

R956
1.8k

D952
1SS119

D953
1SS119

C954
10/50

R974
180
3W

VM. DRIVER. 2

HT952
NECK 2

C966
0.1

HT951
NECK 2

VM. DRIVE. 1

L952
47μH

C960
470/10

C961
33/160

C959
4700p

R969
47
1/2W

R970
2.7
1/4W

R971
560
1/4W

Q956
2SA1837

R973
1k 1/4W

D956
MTZJ39B

D957
MTZJ39B

R975
18k

R972
18k

C962
0.047

C963
1000p

C964
1000p

C967
0.047

R976
560
1/4W

R978
47
1/4W

Q957
2SC4793

R977
2.7
1/4W

C968
470/10

C965
2.2/160

115V

9V

CN951

TO AUDIO C.B CNA408

Y	1
GND	2

CN952

TO CRT VELOCITY MODULATION COIL

VM	1
GND	2

CN901

TO MAIN C.B CNA704

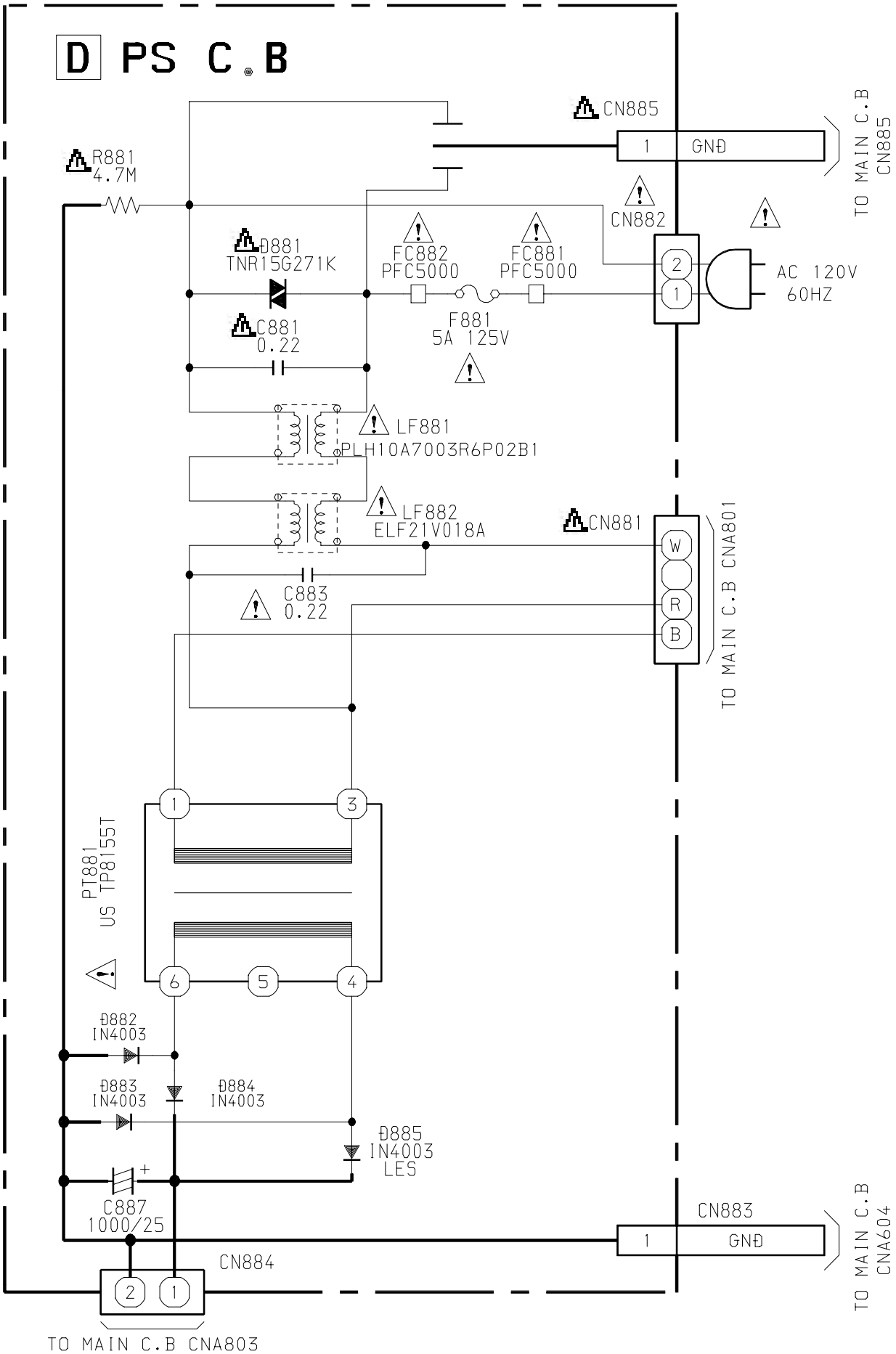
V-MUTE	6
FBT 9V	5
GND	4
B	3
G	2
R	1

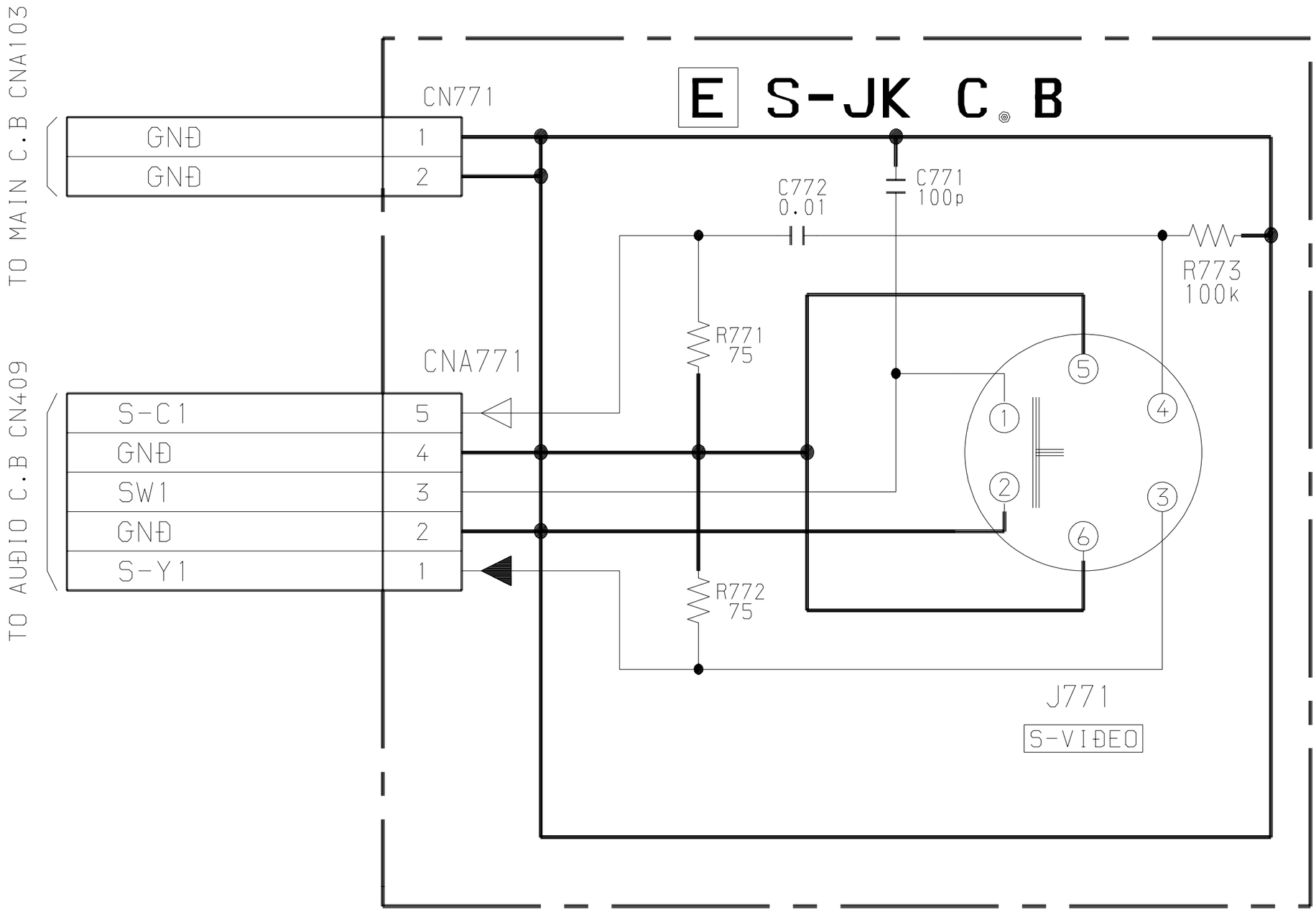
NOTE:

:WAVEFORM NO.

SIGNAL:

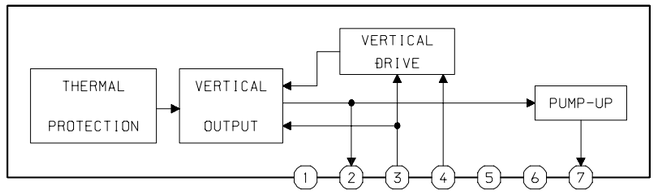
:R/G/B


D PS C.B
CN885
1
GND
TO MAIN C.B CN885
R881 4.7M
CN882
D881 TNR15G271K
FC882 PFC5000
FC881 PFC5000
2
1
AC 120V 60HZ
C881 0.22
F881 5A 125V
LF881 PLH10A7003R6P02B1
LF882 ELF21V018A
CN881
W
R
B
TO MAIN C.B CNA801
C883 0.22
1
3
PT881 US TP8155T
6
5
4
D882 IN4003
D883 IN4003
D884 IN4003
D885 IN4003 LES
C887 1000/25
CN883
1
GND
TO MAIN C.B CNA604
CN884
2
1
TO MAIN C.B CNA803

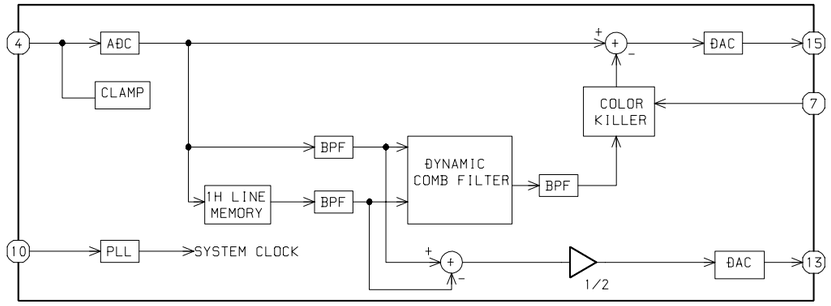

E S-JK C.B
CN771
GND 1
GND 2
TO MAIN C.B CNA103
C772 0.01
C771 100p
R773 100k
R771 75
CNA771
S-C1 5
GND 4
SW1 3
GND 2
S-Y1 1
TO AUDIO C.B CN409
R772 75
J771
S-VIDEO

IC BLOCK DIAGRAM

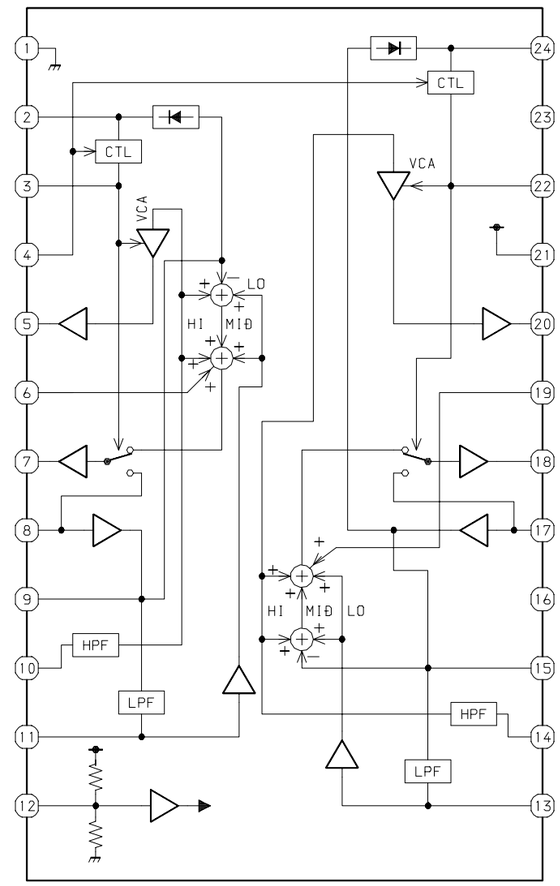
IC, LA7833



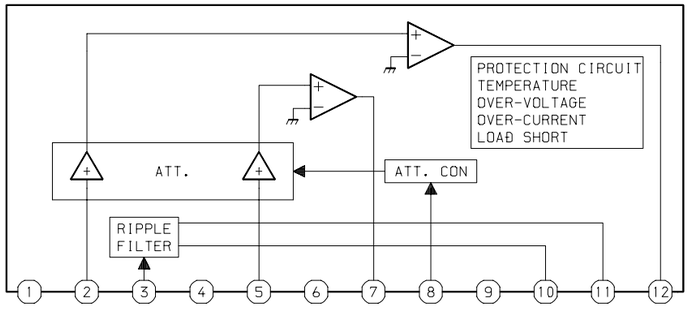
IC, TC90A45P



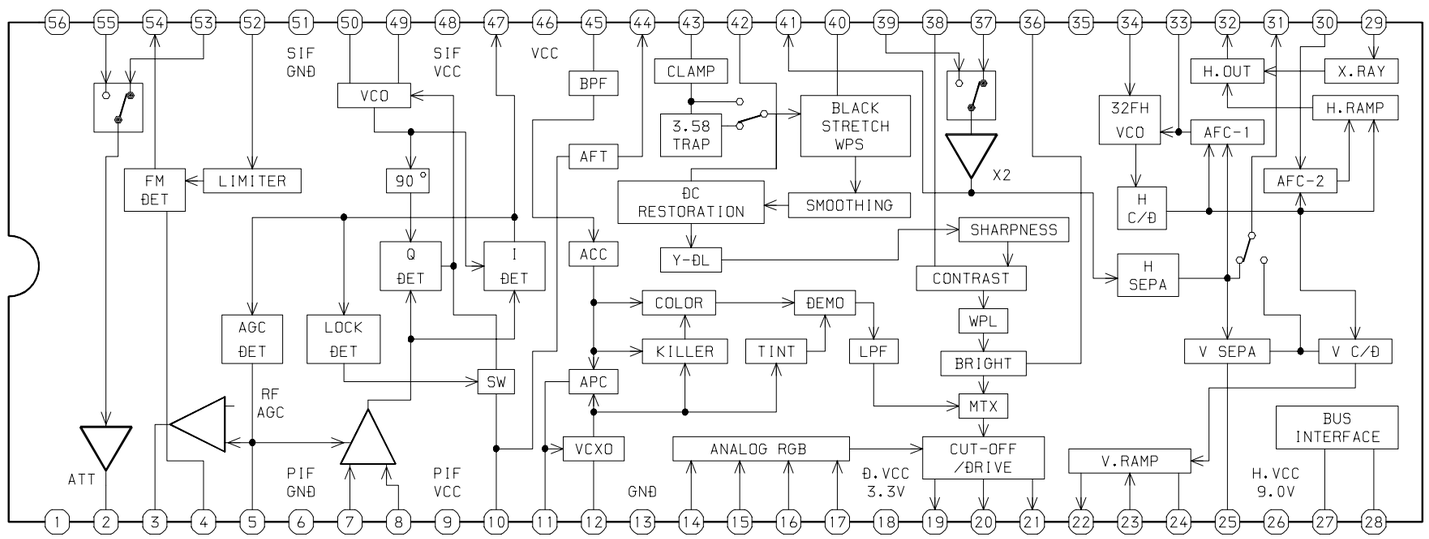
IC, BA3880FS



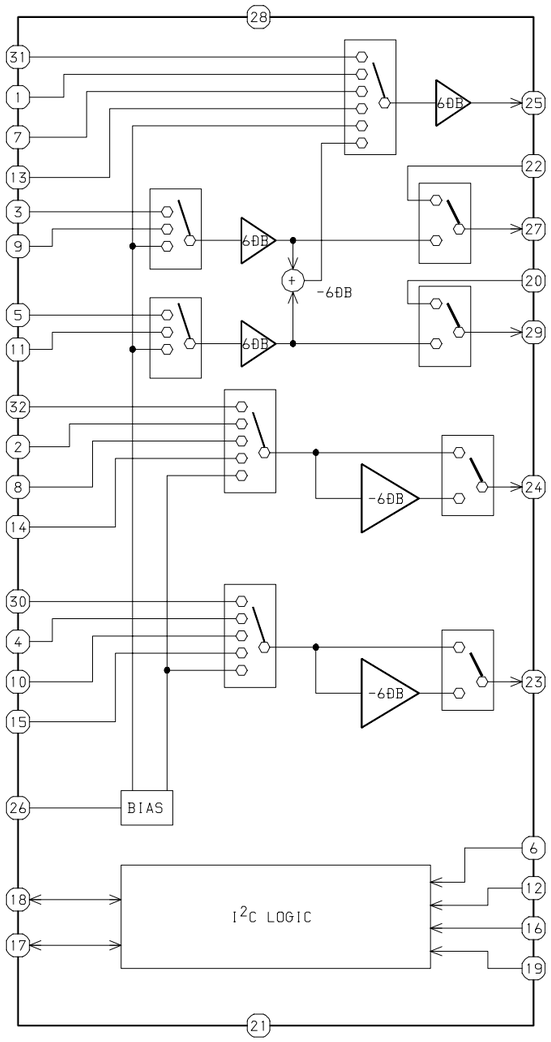
IC, AN5277



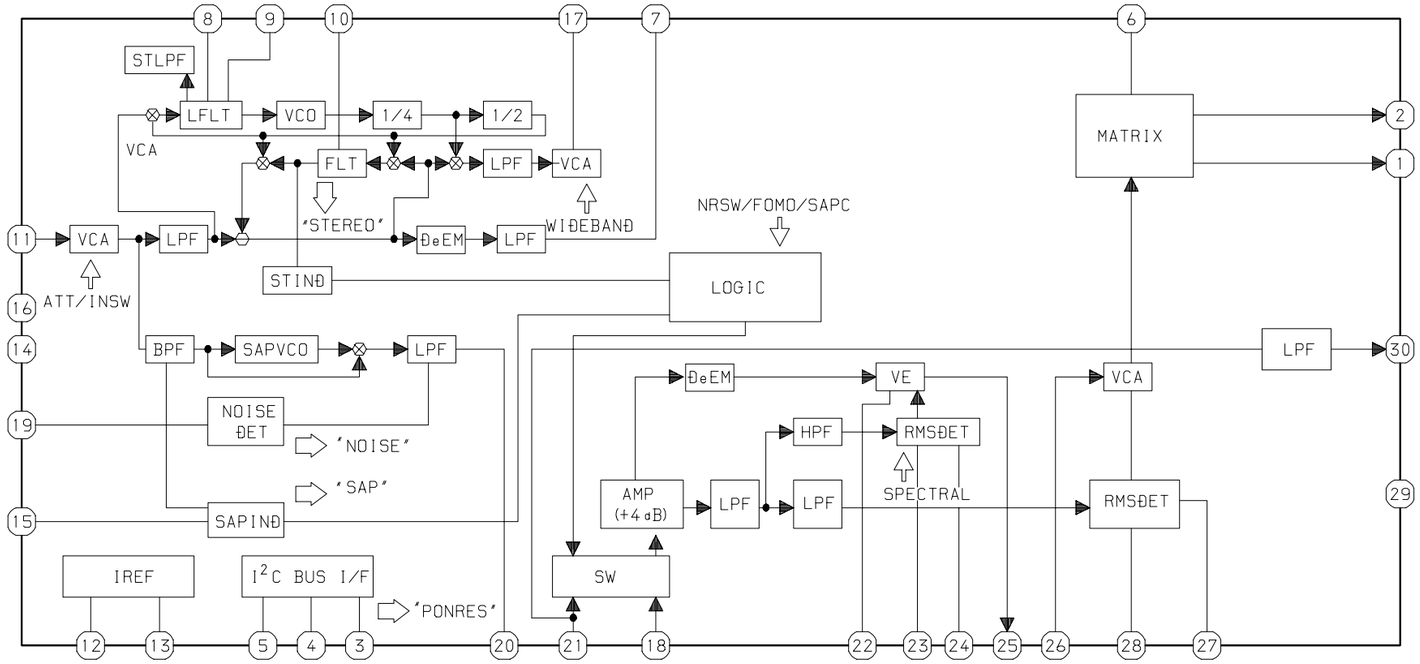
IC, TA1268N



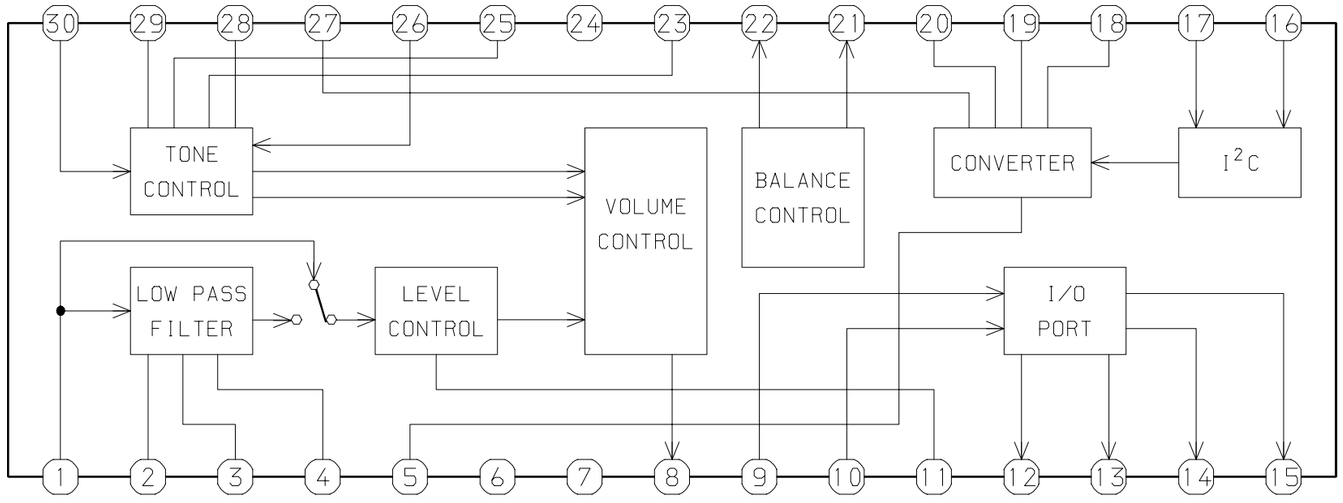
IC, MM1311AÐ



IC, CXA2104S



IC, TA1216AN

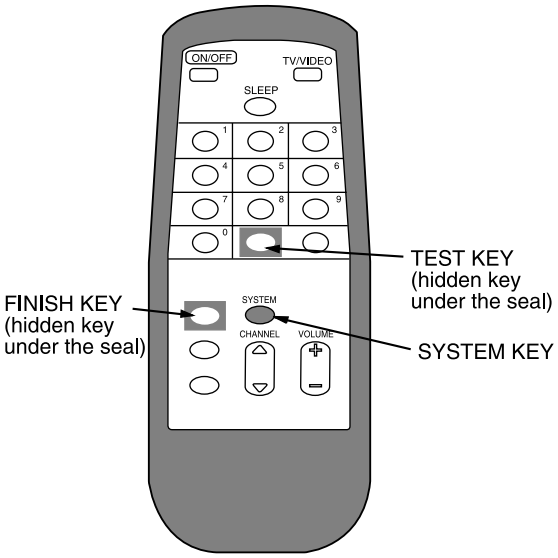


Setting of IIC BUS Data

This model is designed with the ability to adjust most parts of the image projection and deflection system by using the jig remote controller.

Preparations :

- Modify the hidden keys on the RC-6VT06 jig remote controller (TV-C142/86-LB4-951-010) so that they can easily be pressed.
  2 keys to be modified. (Refer to the below illustration)



Aging Mode Operation Method :

Make sure that confirmation is done after replacing the EEP ROM.

<TV-F2400>

1. Enter to the aging mode by pressing the “TEST” key on the remote controller. (Fig. 1a)

2. Press “SYSTEM” key and confirm the condition of the distinction switch. (Fig. 2a)
   Confirm the following items before doing the electrical adjustment.
   - In case the contents are different, press “5” key and select [US25] for the destination.
   - In case the data is different use the “CHANNEL” key to scroll through 0~F and set to the correct data value of “0” or “1” by the volume key.
   - All the settings are stored when the “TEST” key is pressed to complete the correction.

<TV-F2500>

1. Enter to the aging mode by pressing the “TEST” key on the remote controller. (Fig. 1b)

2. Press “SYSTEM” key and confirm the condition of the distinction switch. (Fig. 2b)
   Confirm the following items before doing the electrical adjustment.
   - In case the contents are different, press “4” key and select [NH25] for the destination.
   - In case the data is different use the “CHANNEL” key to scroll through 0~F and set to the correct data value of “0” or “1” by the volume key.
   - All the settings are stored when the “TEST” key is pressed to complete the correction.

Starting the “Service Mode” :

Hidden key / “TEST”

- Press the “TEST” key on the jig remote controller once to enter to the “Aging Mode” (Refer Fig. 1).
- Press the “TEST” key on the jig remote controller again to enter the “Adjustment Mode”.

Hidden key / “FINISH”

- The accumulated hours in the “Aging Mode” will be reset by pressing the “FINISH” key on the jig remote controller.
- Avoid to press this key during general repairs.

```
AGING  AFT  OK  0000H US25
```

Fig.1a

```
AGING  AFT  OK  0000H NH25
```

Fig.1b

```
1  US21
2  TW21
3  NH21
4  NH25
5  US25
6  TW25
   0 1 2 3 4 5 6 7 8 9 A B C D E F
   0 1 1 1 0 1 1 1 1 1 1 1 1 1 0 0
```

Fig.2a

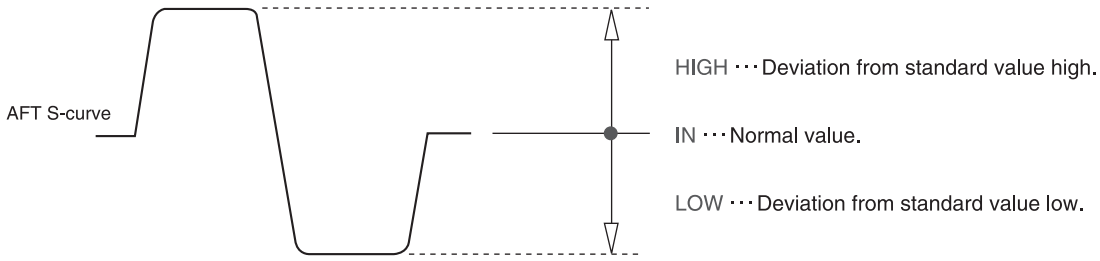
```
1  US21
2  TW21
3  NH21
4  NH25
5  US25
6  TW25
   0 1 2 3 4 5 6 7 8 9 A B C D E F
   0 1 1 1 0 1 1 1 1 1 1 0 1 1 0 0
```

Fig.2b

Contents of Aging Mode :

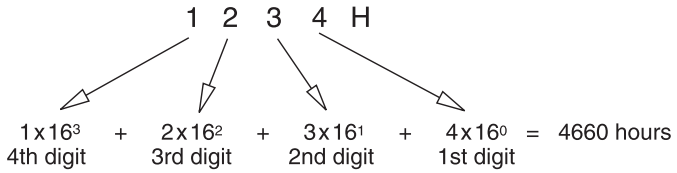
1. Release “Auto Power Off” function
   Release “Auto Power Off” function when no input is supplied.
   Use this mode for warming up (aging) during CRT adjustment.

2. AFT S-curve status indication
   The condition of FT S-curves are indicated by “OK” for suitable tuning, “UP” for too high or “DN” for too low.



3. Display of “CRT ON” accumulated hours
   The CRT usage time is accumulated on an hourly basis and is displayed in hexadecimal figures.

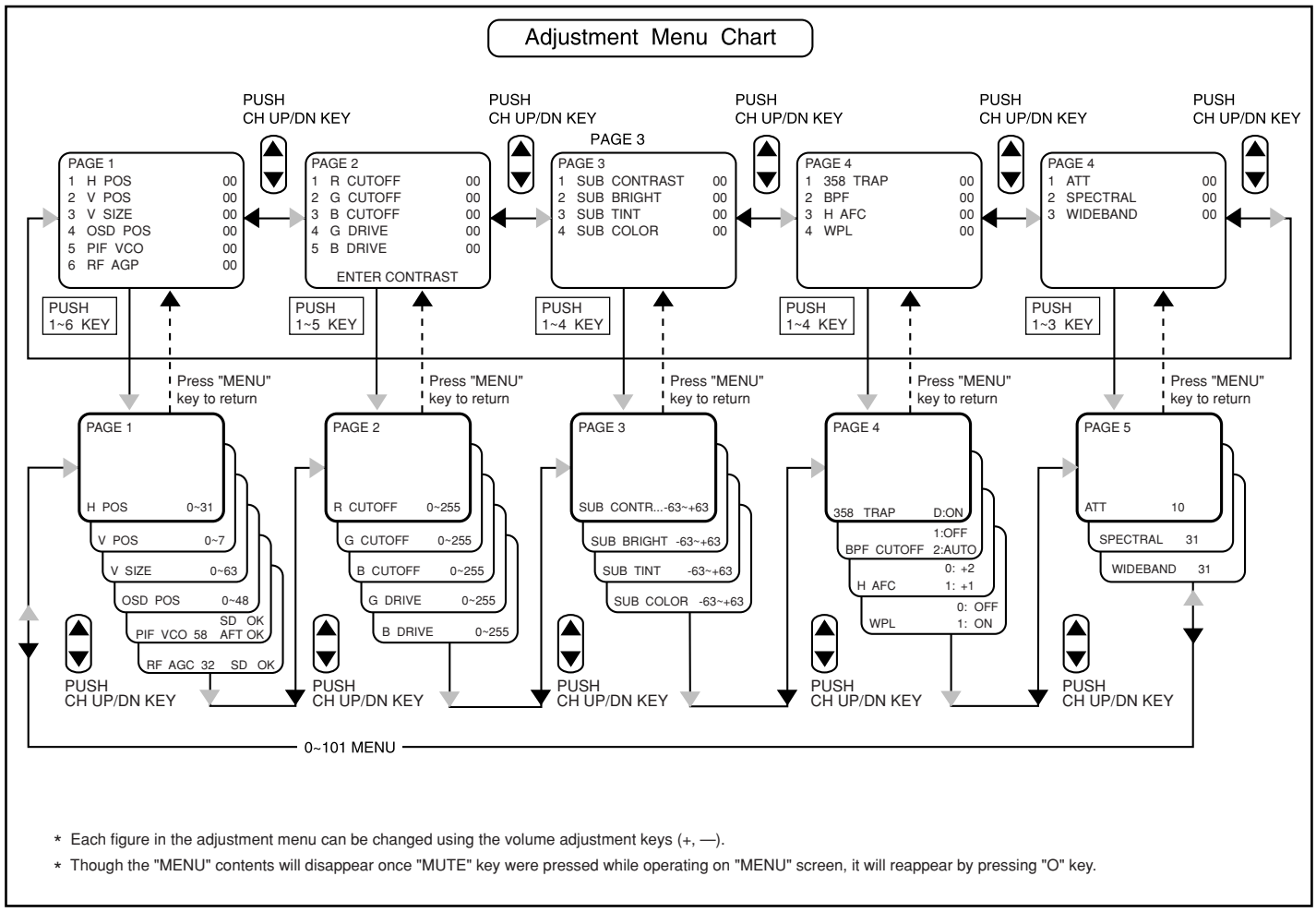
   Sample calculation of displayed hexadecimal figures: AFT OK 1234 H US25



   • The display will be reset to 0000H when the accumulated hours exceed 7FFFH(32768 hours).

Adjustment Mode Operation Method :

1. Return to the aging display by pressing the “SYSTEM” key and press “TEST” key to display the adjustment menu screen.



* Each figure in the adjustment menu can be changed using the volume adjustment keys (+, —).
* Though the "MENU" contents will disappear once "MUTE" key were pressed while operating on "MENU" screen, it will reappear by pressing "O" key.

Fig.3

ADJUSTMENT

Electrical adjustment:

- Operate after inputting the following initial figures when replacing EEP ROM.
- Check the condition and adjust the area where the general repair is carried out.

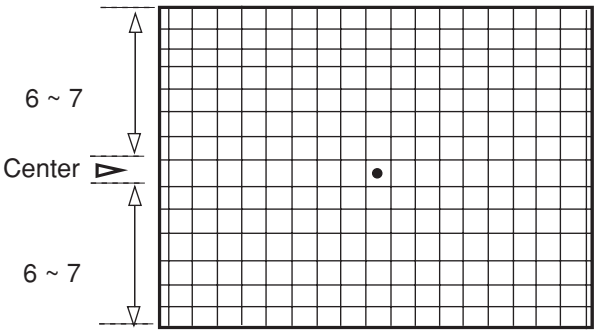
	Initial Value
PAGE 1	
1. H POS	16
2. V POS	3
3. V SIZE	30
4. OSD POS	6
5. PIF VCO	58
6. RF AGC	32
PAGE 2	
1. R CUT OFF	127
2. G CUT OFF	127
3. B CUT OFF	127
4. G DRIVE	127
5. B DRIVE	127
PAGE 3	
1. SUB CONTRAST	– 5
2. SUB BRIGHT	+ 32
3. SUB TINT	+ 16
4. SUB COLOR	+ 16
PAGE 4	Specific Value
1. 3.58 TRAP	OFF
2. BPF	AUTO
3. H AFC	+ 1
4. WPL	OFF
PAGE 5	
1. ATT	10
2. SPECTRAL	24
3. WIDEBAND	44

PWB Adjustment / Do before entering the adjustment mode

1. H SIZE Horizontal Size Crosshatch

   Input Signal : Crosshatch
   Adjustment Point : SFR601
   Measuring Instrument : Pattern generator / reader: LCG-401

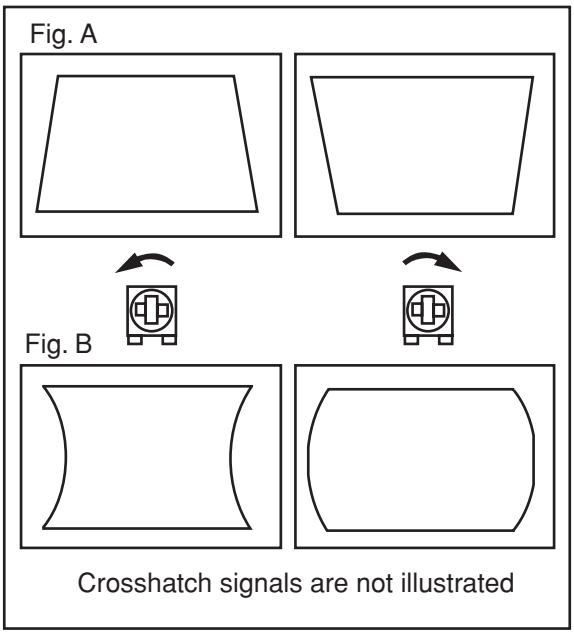
   - Use SFR601 to adjust the dot mark of the crosshatch to the center.
     (So that the number of measure become the same horizontally and vertically)



2. PIN & BARREL Pin Phase & Pin Amplitude (Barrel) Adjustment (Linearity).

   Input Signal : Crosshatch
   Adjustment Point : SFR602 / PIN (Fig. A)
   SFR603 / BARREL (Fig. B)
   Measuring Instrument : Pattern generator / reader: LCG-401

   - Adjust the crosshatch distortion.
     1. Use SFR602 to adjust the vertical distortion (Fig. A).
     2. Use SFR603 to adjust the horizontal distortion (Fig. B).
   - Repeat 1~2 until the vertical lines become straight.



PAGE 1

1-1. H POS Horizontal Positioning Adjustment / Adjustment Menu Screen: PAGE 1-1

Input Signal : Crosshatch
Measuring Instrument : Pattern generator / reader: LCG-401

- Use the volume keys on the jig remote controller to adjust the dot mark in the centre of crosshatch screen to the exact centering position by allocating an equal number of squares on the left and right side of the dot. (Fig. 1-1)

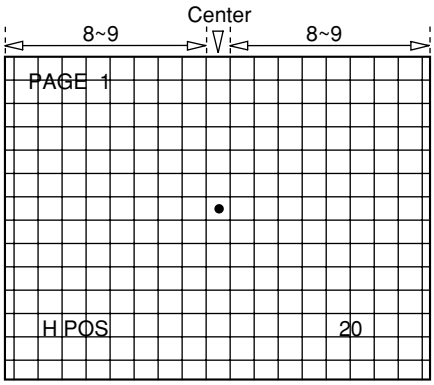


Fig. 1-1

1-2. V POS Vertical Positioning Adjustment / Adjustment Menu Screen: PAGE 1-2

Input Signal : Crosshatch
Measuring Instrument : Pattern generator / reader : LCG-404

- Using the volume keys on the jig remote controller to adjust the dot mark to the exact vertical centre position in the crosshatch screen. (Fig. 1-2)

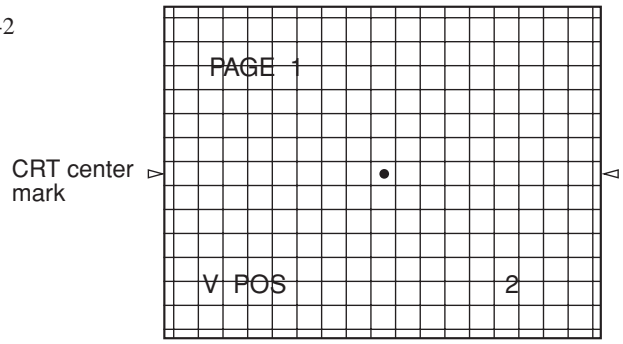


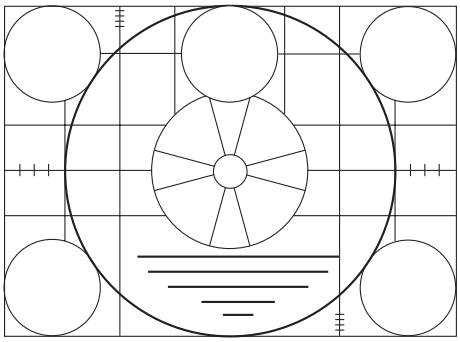
Fig. 1-2

V LINEARITY Vertical Linearity Adjustment

Input Signal : Monoscope (LION MARK)
Measuring Instrument : Monoscope / NTSC

Use the volume key on the jig remote controller to adjust the 6 circular figures on monoscope to be true circles.

<Simple Adjustment>
Input Signal : Crosshatch
Adjustment Location : SFR501
Measuring Instrucment : Pattern generator / NTSC
Adjust SFR501 so that the crosshatch patterns is square.



∗ Adjust V POS (PAGE 1-2) and Linearity repeatedly. If it does not work, adjust V Size (PAGE 1-3) first and try the adjustment again.

1-3 V SIZE Vertical Size Adjustment / Adjustment Menu Screen : PAGE 1-3

Input Signal : Crosshatch
Measuring Instrument : Pattern generator / reader : LCG-401

- Use the volume keys on the jig remote controller to adjust the number of the squares of the crosshatch pattern to 13~14. (Fig. 1-3)

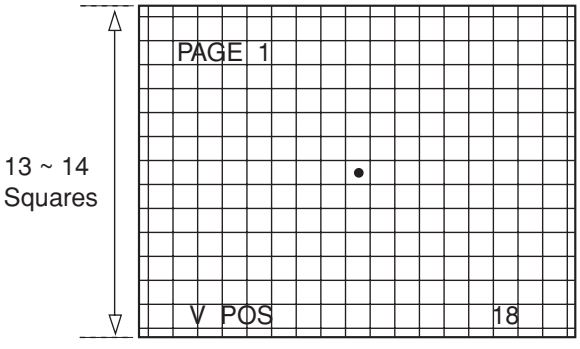


Fig. 1-3

1-4. OSD POS OSD Positioning Adjustment / Adjustment Menu Screen: PAGE 1-4

Input Signal: Not specified.

- Use the volume keys on the jig remote controller to adjust the position of the + sign on both right and left sides shown on the OSD screen to be equivalent from the screen edge. A=B Fig. 1-4

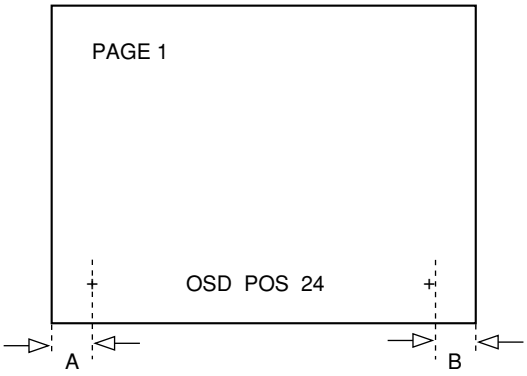


Fig. 1-4

1-5. PIF VCO Video IF/ VCO Adjustment / Adjustment Menu Screen: PAGE 1-5

Input Signal: ANT RF-INPUT
Colour Bar
Measuring Instrument: Oscilloscope Pattern generator / reader: LCG-401

- Use the volume keys on the jig remote controller to adjust the status of AFT on the screen to "OK". Fig. 1-5
- If "OK" status can be obtained from multiple numbers of ranges, select the intermediate value.

* SD will display "NG" while the screen has no signals. There will be no problem with VCO Adjustment. (e.g. when there is no signal with Video input) In this case, it is possible to make adjustments as long as ANT is loaded.

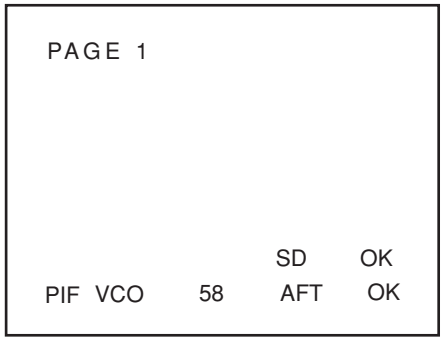


Fig. 1-5

1-6. RF AGC RF-AGC/ Adjustment Menu Screen: PAGE1-6

Input Signal: ANT RF-INPUT
Color Bar
Test Point: TP101 RF AGC
Measuring Instrument: Oscilloscope
Pattern generator / reader: LCG-401

1. Connect the oscilloscope to TP101.
2. Using the volume keys on the jig remote controller to adjust the test point voltage value to 4.0 ± 0.5VDC. Then check if the status of AFT on the Adjustment Menu Screen is displayed "OK" as shown in Fig. 1-6.

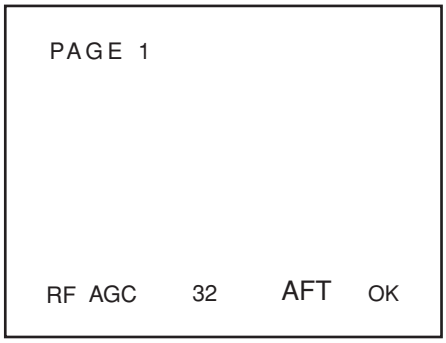


Fig. 1-6

PAGE 2

White Balance Adjustment : Adjustment Menu Screen: PAGE 2-1~5

*User's picture quality will be cleared when the adjustment menu screen appears.
Input signal : White raster
Contents of Adjustment :

1. R CUT OFF
2. G CUT OFF
3. B CUT OFF
4. G DRIVE
5. B DRIVE

* More than 20 minutes of aging is required before the adjustment.
* The whole process should be repeated several times for the adjustment.

Measuring instrument : Pattern generator / reader: LCG-401

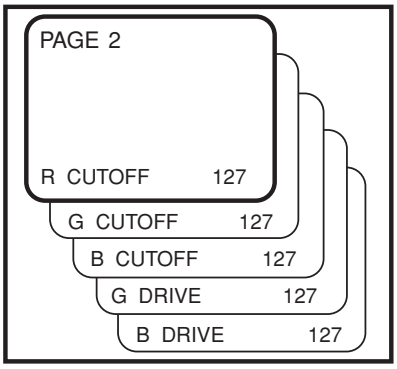


Fig. 2-1

Cut Off Adjustment :

2-1. Use the pattern generator to input the white raster signal.
2-2. Using the volume keys on the jig remote controller, fix the figure of the strongest color on the screen to 127 and adjust the other 2 cut off figures until white picture appears on the screen.

Drive Adjustment :

2-3. Using the volume keys on the jig remote controller, bring the figure of the 4.G DRIVE up to more than 200 till the color becomes greenish.
2-4. Then reduce the numeric figure to the point where the greenish color disappears completely.
2-5. Using the volume keys on the jig remote controller, bring the figure of the 5.B DRIVE up to more than 200 till the color becomes bluish.
2-6. Then reduce the numeric figure to the point where the bluish color disappears completely.
2-7. Repeat the process of 1~6 for several times and adjust for whiter look.

Focus Adjustment :

Input Signal : Dot pattern
Adjustment Point : SFR located at upper part of FBT (T601)
Measuring Instrument : Pattern generator / reader: LCG-401

- Adjust SFR which is located at upper part of FBT (T601) in order to get the best focus for the dot.

Screen Adjustment :

Input Signal : No Signal (No Raster)
Adjustment Point : SFR located at lower part of FBT (T601)
Measuring Instrument : Pattern generator / reader: LCG-401

Fig. 2-2

1. Enter to " Aging Mode Screen" by pressing " TEST" key on the jig remote controller once.
2. Press "10" key of the numeric channal keypad to get a horizontal single line screen (Fig.2-2).
3. Adjust SFR located at lower part of FBT (T601) until the horizontal line starts to be slightly brightened.
4. Repeat the process of step 2 and return to the "Adjustment Menu Screen".

PAGE 3

3-1. SUB BRIGHT Sub-brightness Adjustment / Adjustment Menu Screen: PAGE3-2 (careful with the order)

Input Signal: Color Bar (Stair step)
Measuring Instrument: Pattern generator / reader: LCG-401

- Using the volume keys on the jig remote controller to adjust the scale of the second last from right to be slightly brightened.

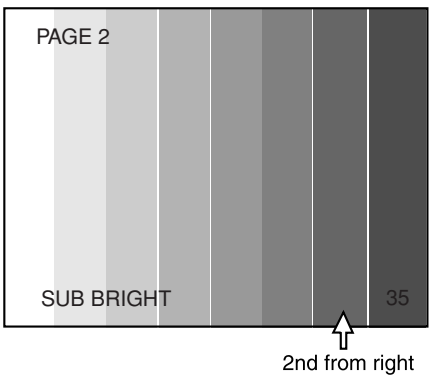


Fig. 3-1

3-2. SUB CONTRAST Sub-contrast Adjustment / Adjustment Menu Screen: PAGE 3-1

Input Signal: Color Bar (QIW)
croma/OFF
Measuring Instrument: Oscilloscope Pattern generator / reader:

Test Point: S0901 R(R CATHODE)

1. Connect the oscilloscope to S0901 R.
2. Using the volume keys on the jig remote controller adjust the pedestal level and the voltage of 100% white to 105 ± 2.0V, according to Fig. 3-2.

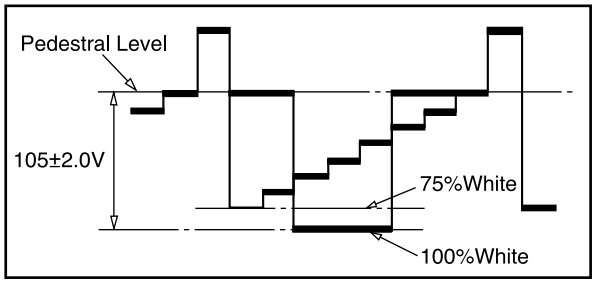


Fig. 3-2

3-3. SUB TINT Sub-Tint Adjustment / Adjustment Menu Screen: PAGE 3-3

Input Signal: Color Bar (VIDEO IN)
Measuring Instrument: Oscilloscope / Pattern generator / reader:
LCG4-1
Test Point: CNA704 ③ PIN B

1. Connect the oscilloscope to CNA704 ③ PIN B.
2. Using the volume keys on the jig remote controller, a djust the top excursions of waveform “Magenta” and “Blue” to be linear (Fig. 3-3).

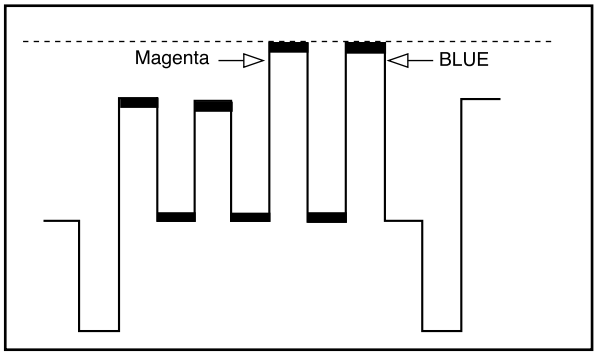


Fig. 3-3

3-4. SUB COLOR Sub-color Adjustment / Adjustment Menu Screen: PAGE3-4

Input Signal: Color Bar (VIDEO IN)
Measuring Instrument: Oscilloscope / Pattern generator / reader:
LCG-401
Test Point: CNA704 ③ PIN B

1. Connect the oscilloscope to CNA704 ③ PIN B.
2. Using the volume keys on the jig remote controller, adjust the top excursions of waveform to be linear (Fig. 3-4).

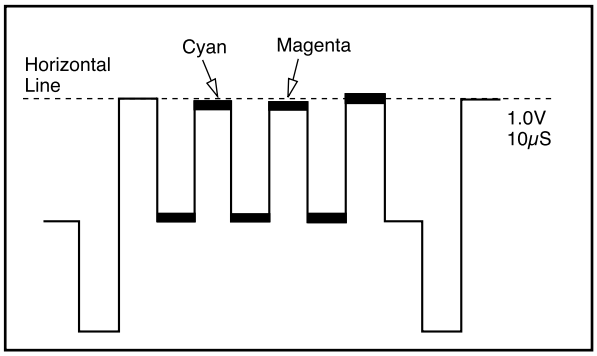


Fig. 3-4

PAGE 4

4. TV SETTING CHECK Confirmation of Model Setting / Adjustment Menu Screen: PAGE4-1~4

Each setting is particular to each model. Do not make any changes to these fixed setting.

- Check if the details of the Adjustment Menu Screen are the same as those in Fig. 4. If they were different, readjust them accordingly using the volume keys on the jig remote controller.

3.58 TRAP	0 : ON
BPF	2 : AUTO
H AFC	1 : +1
WPL	0 : OFF

* The details of 3.58 TRAP cannot be controlled.

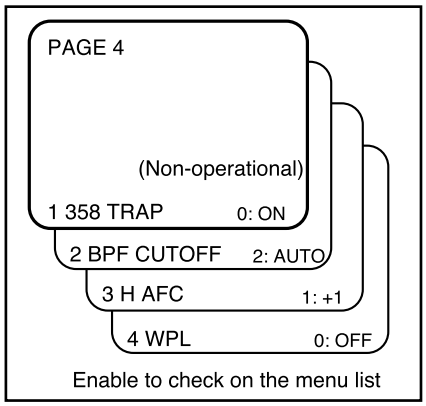


Fig. 4

PAGE 5

5-1. ATT ALIGNMENT ATT Adjustment / Adjustment Menu Screen: PAGE 5-1

Input Signal: ANT RF-INPUT / Color Bar
Measuring Instrument: Oscilloscope / Pattern generator / reader: LCG-401
Test Point: IC701 ② PIN TV OUT-L

1. Connect the oscilloscope to IC701 ② PIN
2. Using the volume keys on the jig remote controller, adjust the value of IC701 ② PIN to 490 ± 20mVrms.

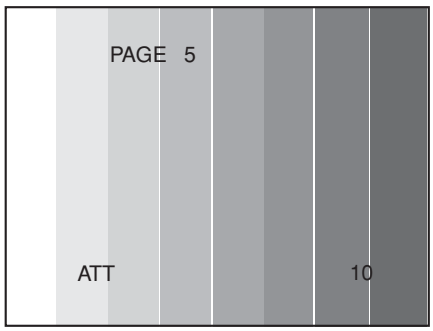


Fig. 5-1

5-2. SEPARATION ALIGNMENT Adjustment of Stereo Sound Separation Degree/Adjustment Menu Screen: PAGE 5-2~3

Input Signal: Setting of TV Multiplex Transmission Signaler

Variation	Internal
Internal Variation	400 Hz
Audio	L ch
Channel	2 ch
Video Signal	Color Bar

Multiplex Transmission Signaler RF Output / 2CH

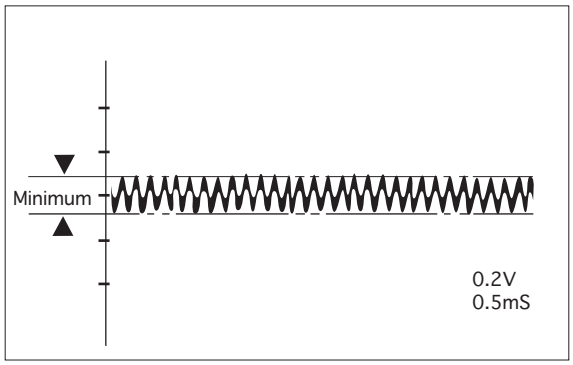


Fig. 5-2

Measuring Instrument: Oscilloscope / TV Multiplex Transmission Signaler / reader: 236A
Test Point: IC701 ① PIN TV OUT-R

1. Connect the oscilloscope to IC701 ① PIN
2. Start receiving signals from TV 2CH.
3. PAGE5-3

Using the volume keys on the jig remote controller, adjust the voltage width of IC701 ① PIN waveform to the minimum as in Fig 5-3.

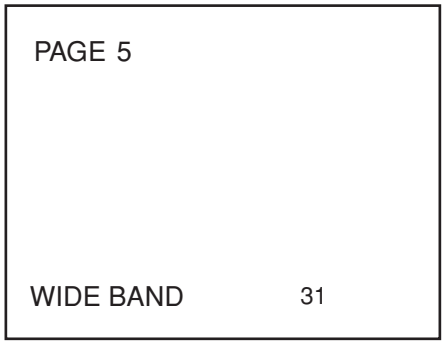


Fig. 5-3

4. Adjust the internal Variation of TV Multiplex Transmission Signaler to 1kHz and perfrom the same method as in step 3. (Fig 5-4)
5. Repeat the step 3~4 for several times to adjust for the minimum value.

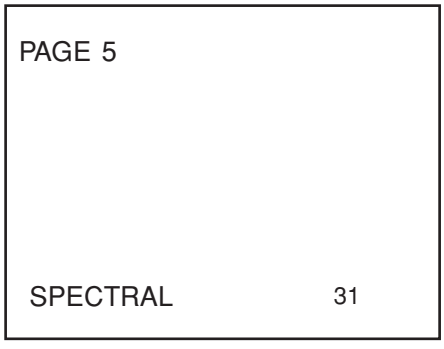


Fig. 5-4

TUNER ADJUSTMENT

If adjustment elements were replaced for repair, conduct the following set of adjustments. And then, further adjustments should be conducted on the Adjustment Menu Screen.
If this set of adjustments was not completed, no further adjustments on the Adjustment Menu Screen can be conducted.

The elements whose circuit condition will be altered depending on repair.
• VCO coil
• SIF coil

6-1. VCO ADJUSTMENT VCO (PIF) Adjustment / Video Transfer Frequency Free-Running Adjustment

Input Signal: RF-Color Bar
Input Level: 90dBμ V
BROADCAST CH/fc=45.75MHz
MODE: TUNER
Test Point: IN-PUT / TU101-11PIN IF
OUT-PUT / IC301-44PIN AFT
Measuring Location: L205/P-IF
Measuring Instrument: Oscilloscope / Pattern generator / reader: LCG401

1. Connect the oscilloscope to IC301-44PIN.
2. Enter the specific level of RF signal to TU101-11PIN, and adjust L205 so that the voltage of IC301-44PIN will be 2.8±0.2VDC.

6-2. SIF ADJUSTMENT Audio IF Variation Adjustment

Input Signal: AM/FM-SG RF OUT/4.5MHz-SIF
MOD OFF
90dB μV

• The simple way to make adjustment is to receive a normal broadcasting.

MODE: TUNER
Test Point: IN-PUT/IC301-52PIN SIF
OUT-PUT/IC301-54PIN FM DET
Measuring Location: L201/S-IF
Measuring Instrument: Oscilloscope
Am/FM-Signal Generator

1. Connect the oscilloscope to IC301-54PIN.
2. Enter the specific signal to IC301-52PIN, and adjust L201 so that the voltage of IC301-54PIN will be 4.5 ± 0.2VDC.

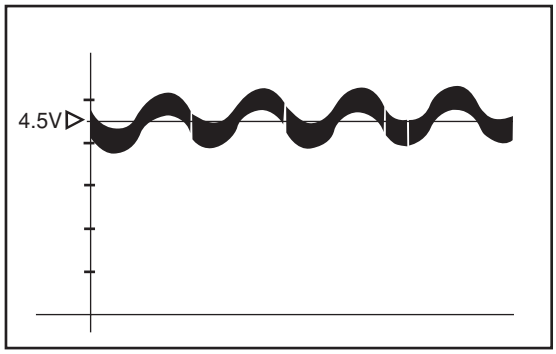


Fig.6-1.