# 4. ALIGNMENT INSTRUCTIONS

1. SERVICE REMOCON & EEPROM PRESETTING DATA
   1-1. SERVICE REMOCON : R-34SVC (S/N:48B3034SVC)
   1-2. EEPROM PRESETTING DATA

| KEY | Name | Details | BARE | | | NORMAL | | FLAT | | WIDE | remark |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PAL | NTSC | NT=PAL+xxx | PAL | NTSC | PAL | NTSC | | |
| S1 | Heat-Run | - | | - | | | - | | | | |
| S2 | Screen | - | | - | | | - | | | | |
| S3 | Sound Test | - | | - | | | - | | | | |
| S4 | Picture Test | - | | - | | | - | | | | |
| S5 | BCL | BCL THR | | - | | | 200 | | 180 | | |
| | | BCL GAIN | | | | | 12 | | 12 | | |
| | | WHITE PEAK | | | | | ON | | ON | | |
| S6 | Geometry | V-CENTER | 3930 | 3952 | 182 | | 4170 | | 3550 | | ADJUST DATA |
| | | V-SIZE | 121 | 120 | -1 | 147 | 152 | 164 | 169 | | ADJUST DATA |
| | | H-CENTER | 82 | 83 | 1 | | 86 | | 88 | | ADJUST DATA |
| | | H-SIZE | -160 | -294 | -134 | 560 | 410 950 | | 800 | | ADJUST DATA |
| | | PARABOLA | -160 | -158 | 2 | | -92 | | -140 | -71 | ADJUST DATA |
| | | EW TRAPEZ | 36 | -3 | -39 | | 66 | | 41 | | |
| | | CORNER | 120 | 120 | 0 | | 90 | | 55 | | |
| | | H BOW | 143 | 140 | -3 | | -277 | | -2 | | |
| | | H PARALL | -2 | -2 | 0 | | 20 | | 10 | | ADJUST DATA |
| | | V LINEAR | -3 | -5 | +2 | | 1 | | 3 | | |
| | | S CORRECT | -27 | -27 | 0 | | -22 | | -32 | | |
| S7 | PIP | P H POS | | 29 | | | 33 | | 33 | | |
| | | P V POS | | 9 | | | 27 | | 27 | | |
| | | P R/G/B Peak | | 150/150/150 | | | 85/85/85 | | 85/85/85 | | |
| | | P CONT | | 04 | | | 10 | | 10 | | |
| | | P BRIGHT | | 01 | | | 15 | | 15 | | |
| S8 | WHITE BALANCE | R/G/B DRIVE | | 170/170/170 | | | 195/195/195 | | 175/175/175 | | |
| | | R/G/B BIAS | | 40/40/40 | | | 80/80/80 | | 80/80/80 | | |
| S9 | SUB BRI | BRM | | 140 | | | 140 | | 140 | | For SUB-Bright Adjust Reference |
| S10 | NORMAL DATA | BRIGHT | | 32 | | | 32 | | 32 | | |
| | | CONTRAST | | 58 | | | 63 | | 63 | | |
| | | COLOR | | 32 | | | 32 | | 32 | | |
| | | SHARPNESS | | 48 | | | 48 | | 48 | | |
| S11 | OPTION | PIP | | | | | | | | | ME/MP:ON, MZ/MT:OFF |
| | | DIGIT.EYE | | ON | | | ON | | OFF | | |
| | | TEXT SEL. | | | | | | | | | |
| | | TELETEXT | | | | | | | | | ME/MT:ON, MZ/MP:OFF |
| | | LARGE | | OFF | | | ON | | ON | | |
| | | VID FRAME | | OFF | | | ON | | ON | | |
| | | HOTEL VOL | | +00000 | | | +00000 | | +00000 | | |
| | | HOTELMODE | | OFF | | | OFF | | OFF | | |
| S12 | Shipping | - | | - | | | - | | | | |
| SVC Main Menu | | CONT | | 32 | | | 32 | | 32 | | |
| | | IBRM | | 140 | | | 30 | | 30 | | For Screen Adjust Reference |

## ALIGNMENT INSTRUCTIONS

# ■ SVC KEY EXPLAIN

**(S5) BCL THD :** MAX BEAM CURRENT ADJUST,DIFFERENT DATA FOR INCH.
**BCL GAIN :** AVERAGE BEAM ADJUST.
**(S6) GEOMETRY :** PAL (50Hz) adjust.
AV NTSC is auto correction.
**(S10) NORMAL :** PICTURE NORMAL data setting.
**(SLEEP) :** TXT CHECK ON LINE
**(SIZE) :** GAME FUNCTION CHECK ON LINE
**(S11) OPTION**
**- HOTEL VOLUME :** HOTEL MODE MAX VOL DATA SETTING
**- HOTEL MODE OFF :** ON--> VOL MAX SET& INSTALL DONT OPERATING

* Software option for Function Change

| | |
|---|---|
| PIP (ON) | - ON : With PIP Models (xxxxME/MP seiese)<br>- OFF : Without PIP Models (xxxxMT/MZ seriese) |
| Digital EYE (ON) | - ON : Enable the Digital Sensor (DTC-29M5xx, KR29M5-xx)<br>- OFF : Disable the Digital Sensor (DTC-29U1xx, DTC-29U5xx) |
| LARGE (OFF) | - ON : For 29 inch Models CM-907/F<br>- OFF : For 14~21"" inch Models CM-907S |
| TEXT sel. (OFF) | LATIN : English,French,Swedish,Czech,German,Spanish,Italian,Estonian<br>EAST: English,Slovakian,Hungarian,Serbian,Albanian,Polish,Turkian,Rumanian<br>RUSSIA : English,Russian,Bulgaian,Ukrainian,Serbian,Montenegro<br>PERSIAN : English,Farsi<br>ARAB : English,Arabic<br>OFF : Teletext Language depends on OSD Language selection<br>※ Note : If OSD language & text selec. is different then Teletext depends on Text selec. |

2.The confirmation of Protection circuit
Protection circuit confirmation is omitted in case of mass production in the factory
2-1. Over Current Protecor (OCP) circuit confirmation
2-1-1. Receive PAL RETMA PATTERN(signal of company:2CH., PAL-B) and adjust STANDARD MODE in PICTURE.
2-1-2. Connect 1MΩ 1/2W between BASE of Q801 and GND, to confirm operating of PROTECTOR.
The next place, to confirm normal operation when the resister(1MΩ) is removed.
2-1-3. After Main Power Switch OFF/ON, to confirm normal operation of picture and sound when turn the set on by remocon.

3.The adjustment of SCREEN

3-1. Confirm the presetting 'IBRM' data of EEPROM according to CRT.

3-2. Press the [S2] KEY of SVC Remocon, horizontal line will be displayed.

3-3. Adjust SCREEN V/R of FBT so that the horizontal line reach the cut-off point.

3-4 To be completed adjustment of screen. Press the [S2] key to escape screen adjustment mode.

4.The adjustment of FOCUS

4-1. Receive PAL RETMA PATTERN(signal of company:2CH., PAL-B).

4-2. Adjust the picture to best distinct picture of 350 Line by revolve Focus Volume.

5.The adjustment of WHITE BALANCE

5-1. NITSUKI Setting : Set Nitsuki to the 'Auto Mode', Reference to the 'B', and System to the 'PAL'.

5-2. Setting the Normal Stats

5-2-1. Adjust Picture to Normal mode.

5-2-2. Adjust the Gain of Nitsuki to suitability by manual when condition is Normal.

- Adjust the standard illumination take within limit bright of Nitsuki and luminosity of SET into acount.
- Exhortative Standard illumination, : High 70Cd/㎡, LOW BEAM : about 15Cd/㎡"

5-2-3. Press the [S8]key of SVC remocon to adjustment of Whit Balance.

X=0.288, Y=0.301

5-2-4. Memorize in Nitsuki after Adjustment of White Balance.

5-3. Adjustment of White Balance

5-3-1.Receive Nitsuki signal.

5-3-2.Adjust Picture to Normal mode.

5-3-3.The Adjustment of High Beam : Adjust R-DRIVE and G-DRIVE to R,G,B BAR come to center.

5-3-4.The Adjustment of Low Beam : Adjust R-BIAS and G-BIAS to R,G,B BAR come to center.

5-3-5.Repeat 5-3-3 and 5-3-4 to R,G,B BAR come to within center±1.

6.The adjustment of GEOMETRY

6-1. Press the [S-6]key on the SVC remocon to call up the Geometry mode.
And then, Geometry OSD will be displayed.

6-1-1. All adjustment is base on PAL(50Hz),
but it can be base on NTSC(60Hz) in case of need.

6-2. The adjustment of VERTICAL CENTER

6-2-1.Receive PAL RETMA pattern(signal of company:PAL-B 2CH).

6-2-2.Press the PR up/down Keys(▲/▼) to select V CENTER.
Adjust with Vol Up/Down (◀/▶) keys so that the center mark of the CRT may be located on the horizontal line in the middle of the pattern. In case of no center mark, adjust with Vol Up/Down (◀/▶) keys to obtain a vertically symmetrical pattern.

6-3. The adjustment of VERTICAL SIZE

6-3-1. Receive PAL RETMA pattern(signal of company:PAL-B 2CH).

6-3-2. Press the PR up/down Keys (▲/▼) to select V-SIZE.
Adjust with Vol Up/Down (◀/▶) keys so that the upper and the lower of RETMA pattern may be located at the boundaries of the screen.

6-4. The adjustment of HORIZONTAL CENTER

6-4-1. Receive PAL RETMA pattern(signal of company:PAL-B 2CH).

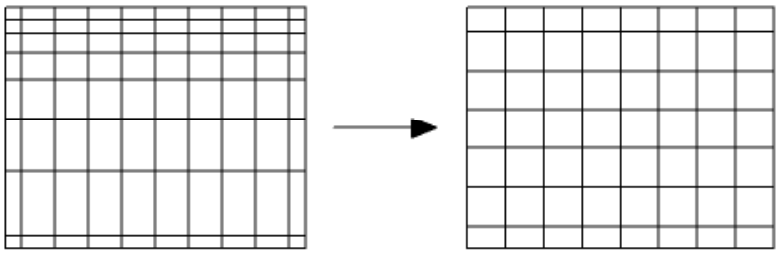
6-4-2. Press the PR up/down Keys (▲/▼) to select V-SIZE.
Referring to the both side scales, adjust with Vol Up/Down (◀/▶) keys so that RETMA pattern may be symmetrical.

6-5. The adjustment of Vertical Linearity

6-5-1. Receive PAL CROSSHATCH pattern(signal of company:PAL-B 5CH).

6-5-2. Fix adjustment of Vertical Linearity after EEPROM presetting, but it can be adjusted in case of need.

6-5-3. Press the PR up/down Keys (▲/▼) to select V LINEAR.
Adjust Vertical Linearity with Vol Up/Down (◀/▶) keys.

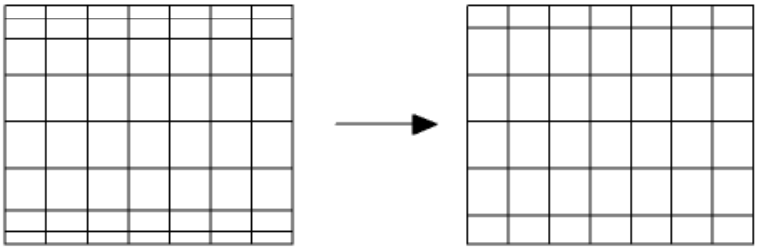


6-6. The adjustment of VERTICAL S-Correction

6-6-1. Receive PAL CROSSHATCH pattern(signal of company:PAL-B 5CH).

6-6-2. Fix adjustment of Vertical S-Correction after EEPROM DATA presetting, but it can be adjusted in case of need.

6-6-3. Press the PR up/down Keys (▲/▼) to select S CORRECT.
Adjust S-Corrction with Vol Up/Down (◀/▶) keys.



7. THE ADJUSTMENT OF SUB-PICTURE (SUB-BRIGHT,SUB-CONTRAST)

7-1. Receive PAL RETMA PATTERN(signal of company:2CH., PAL-B)

7-2. Press the [S9] KEY of SVC Remocon, BRM OSD wil be displayed.

7-3. The adjustment of SUB-BRIGHT

7-3-1. Press the PR up/down Keys (▲/▼) to select SUB-BRIGHT in SUB-PICTURE MENU. Adjust SUB-BRIGHT with Vol Up/Down (◀/▶) keys.

7-3-2. Adjust With BRM, When SUB-BRIGHT is lacking in margin of adjustment.

7-3-3. Standard of adjustment : Adjust till instant of 1, 2th cordon disappear in RETMA CONTRAST CHART(signal of company).

7-3-4. When Sub-Picture mode was exited after SUB's adjustment, Normal vlaue is brighter(about 18%) than adjustment-point(about 10%) of adjustment-mode because BRIGHT is set to rise 2~3 step.

8. THE ADJUSTMENT OF PIP

8-1. Receive PAL RETMA pattern(signal of company:PAL-B 2CH) and Color Bar.

8-2. Press the [S7] KEY of SVC Remocon, PIP-Adjustment OSD wil be displayed.

8-3. Fix adjustment of PIP after EEPROM DATA presetting, but it can be adjusted in case of need.

8-4. Adjust PIP after GEOMETRY, WHITE BALANCE and SUB-BRIGHT are adjusted.

8-5. List of adjustment

① PIP H POSITON : Adjustment of H-position Sub-Picture,
(Reference : Presetting Value of EEPROM = 38)

② PIP V POSITON : Adjustment of V-position of Sub-Picture,
(Reference : Presetting Value of EEPROM = 27)

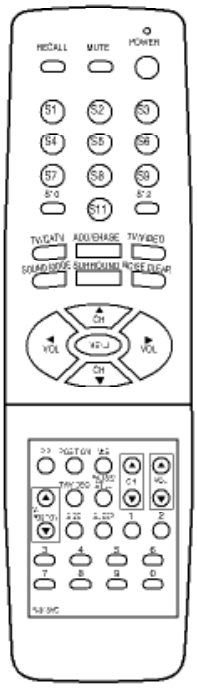
③ PIP R/G/B Peak : Adjustment of Gain of PIP IC R,G,B Output
(Reference : Presetting Value of EEPROM = 85)

④ P CONTRAST : Adjustment of AC Gain(Contrast) of PIP IC RGB Output
(Reference : Presetting Value of EEPROM = 10)

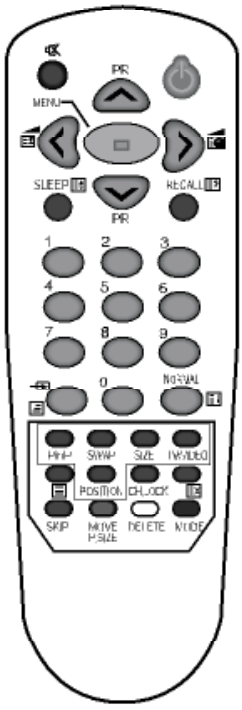
⑤ P BRIGHT : Adjustment of DC Level(SUB BRIGHT) of PIP IC RGB Output
(Reference : Presetting Value of EEPROM = 15)

9. REMOCON

9-1. SERVICE REMOCON



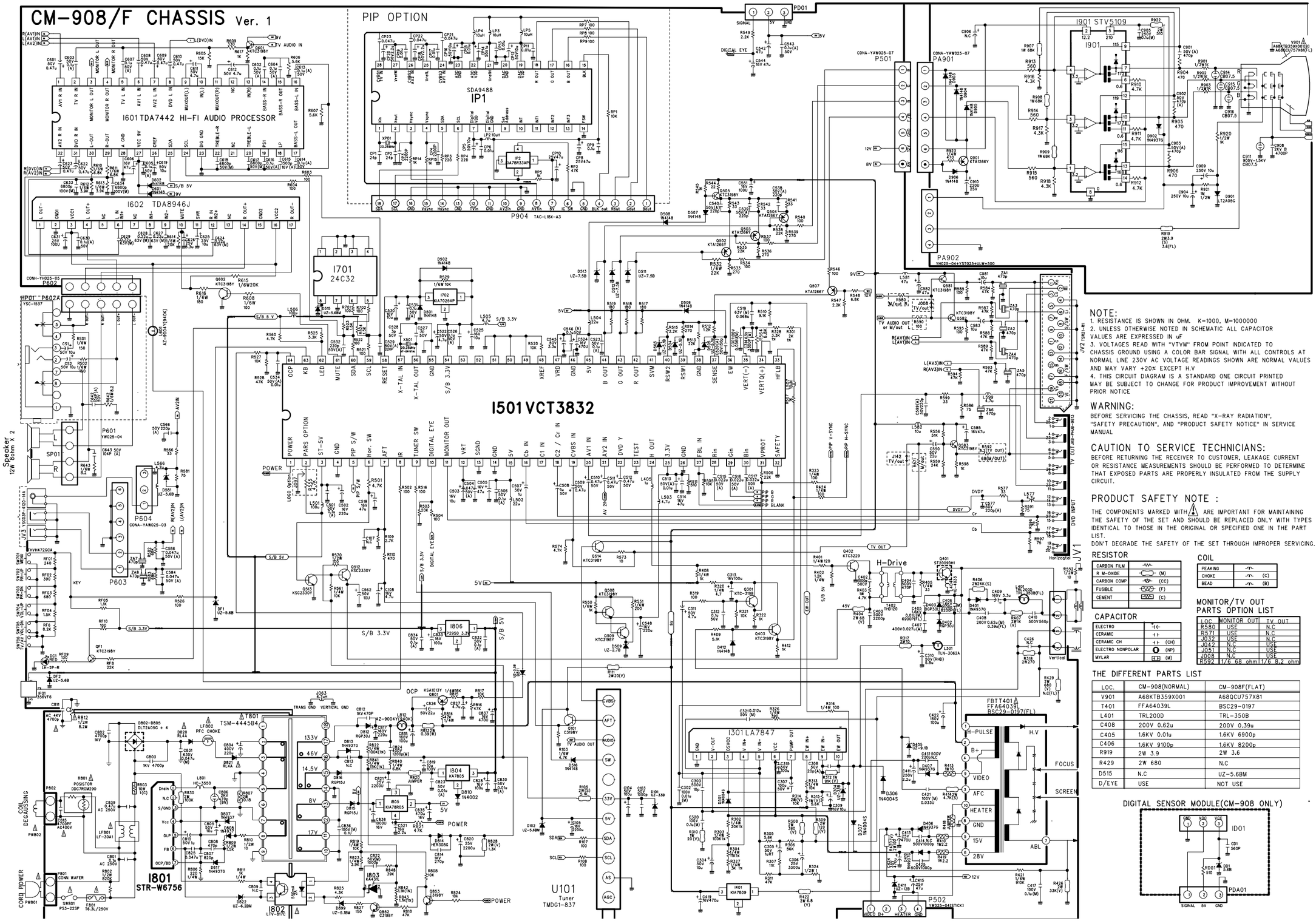

9-2. USER REMOCON




9-3. SERVICE REMOCON

1) Enter SERVICE MODE : Press keys of User Remocon, as follows.
   Ch91, Sharpness 0, Skip(red), Move(green), Menu.
2) Choice SERVICE MENU : Pr-Up/Down
3) Enter SERVICE SUB MENU : Vol-Up/Down

# CM-908/F CHASSIS Ver. 1




## NOTE:

1. RESISTANCE IS SHOWN IN OHM. K=1000, M=1000000
2. UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITOR VALUES ARE EXPRESSED IN uF
3. VOLTAGES READ WITH "VTVM" FROM POINT INDICATED TO CHASSIS GROUND USING A COLOR BAR SIGNAL WITH ALL CONTROLS AT NORMAL LINE 230V AC VOLTAGE READINGS SHOWN ARE NORMAL VALUES AND MAY VARY +20% EXCEPT H.V
4. THIS CIRCUIT DIAGRAM IS A STANDARD ONE CIRCUIT PRINTED MAY BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE

## WARNING:

BEFORE SERVICING THE CHASSIS, READ "X-RAY RADIATION", "SAFETY PRECAUTION", AND "PRODUCT SAFETY NOTICE" IN SERVICE MANUAL

## CAUTION TO SERVICE TECHNICIANS:

BEFORE RETURNING THE RECEIVER TO CUSTOMER, LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS SHOULD BE PERFORMED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

## PRODUCT SAFETY NOTE :

THE COMPONENTS MARKED WITH ⚠ ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET AND SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ORIGINAL OR SPECIFIED ONE IN THE PART LIST.
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

### RESISTOR

| | | | |
|---|---|---|---|
| CARBON FILM | | | |
| R M-OXIDE | | (M) | |
| CARBON COMP | | (CC) | |
| FUSIBLE | | (F) | |
| CEMENT | | (C) | |

### COIL

| | | |
|---|---|---|
| PEAKING | | |
| CHOKE | | (C) |
| BEAD | | (B) |

### CAPACITOR

| | | |
|---|---|---|
| ELECTRO | + | |
| CERAMIC | + | |
| CERAMIC CH | + | (CH) |
| ELECTRO NONPOLAR | | (NP) |
| MYLAR | | (M) |

### MONITOR/TV OUT PARTS OPTION LIST

| LOC. | MONITOR OUT | TV OUT |
|---|---|---|
| R580 | USE | N.C |
| R571 | USE | N.C |
| J042 | USE | N.C |
| J042 | N.C | USE |
| J051 | N.C | USE |
| J008 | N.C | USE |
| R592 | 1/6 68 ohm | 1/6 8.2 ohm |

### THE DIFFERENT PARTS LIST

| LOC. | CM-908(NORMAL) | CM-908F(FLAT) |
|---|---|---|
| V901 | A68KTB359X001 | A68QCU757X81 |
| T401 | FFA64039L | BSC29-0197 |
| L401 | TRL200D | TRL-350B |
| C408 | 200V 0.62u | 200V 0.39u |
| C405 | 1.6KV 0.01u | 1.6KV 6900p |
| C406 | 1.6KV 9100p | 1.6KV 8200p |
| R919 | 2W 3.9 | 2W 3.6 |
| R429 | 2W 680 | N.C |
| D515 | N.C | UZ-5.6BM |
| D/EYE | USE | NOT USE |

### DIGITAL SENSOR MODULE(CM-908 ONLY)