

| Pin No. | Name      | Function                                           | Operation of Terminals (during power on)                       | I/O | PDP-502MX | PDP-502MXE | PDP-505HD |
|---------|-----------|----------------------------------------------------|----------------------------------------------------------------|-----|-----------|------------|-----------|
| 39      | *YLW      | Yellow LED lighting                                | Low: In lighting Yellow LED                                    | O   | O         | O          | O         |
| 40      | I_DET     | Not used                                           |                                                                |     |           |            |           |
| 41      | IP_BUSY   | BUSY signal from IP u-com                          | High: At the timing of VD SYNC                                 | I   | O         | O          | O         |
| 42      | IP_ERR    | Communication error signal from IP u-com           | Low: Normal                                                    | I   | O         | O          | O         |
| 43      | VPOL_U    | Not used                                           |                                                                |     |           |            |           |
| 44      | V_MUTE    | Analog video mute output                           | High: When muting, Low: Normal                                 | O   | O         | O          | O         |
| 45      | (E) SCL   | I <sup>2</sup> C-BUS Clock for E <sup>2</sup> PROM | High: Normal, 0–5V clock signal: During communication          | I/O | O         | O          | O         |
| 46      | (E) SDA   | I <sup>2</sup> C-BUS Data for E <sup>2</sup> PROM  | High: Normal, 0–5V serial signal: During communication         | I/O | O         | O          | O         |
| 47      | *PN_MUTEX | X Drive Panel mute output                          | High: Normal, Low: When muting                                 | O   | O         | O          | O         |
| 48      | *PN_MUTEY | Y Drive Panel mute output                          | Fixed "High"                                                   | O   | O         | O          | O         |
| 49      | *V_STDO   | Not used                                           |                                                                |     |           |            |           |
| 50      | STDSW     | Not used                                           |                                                                |     |           |            |           |
| 51      | *PN_CE    | Chip Enable for Panel u-com & IP u-com             | High: Normal, Low: During communication                        | O   | O         | O          | O         |
| 52      | *PLL_CE   | Chip Enable for PLL IC                             | High: Normal, Low: During communication (Approx.80ms interval) | O   | O         | O          | O         |
| 53      | *OSD_CE   | Chip Enable for OSD IC                             | High: Normal, Low: During communication                        | O   | —         | —          | O         |
| 54      | HPOL_U    | Not used                                           |                                                                |     |           |            |           |
| 55      | PGM_OE    | Not used                                           |                                                                |     |           |            |           |
| 56      | *PLD_CE   | Chip Enable for PLD (Analog Video Assy)            | High: Normal, Low: During communication (Approx.80ms interval) | O   | O         | O          | O         |
| 57      | *SU_CE    | Chip Enable for SYNC u-com                         | High: Normal, Low: During communication                        | O   | O         | O          | O         |
| 58      | *ZOOM_CE  | Chip Enable for Full Auto Zoom IC                  | High: Normal, Low: During communication                        | O   | —         | —          | O         |
| 59      | *A_MUTE1  | Audio Mute 1                                       | High: Normal, Low: When muting                                 | O   | O         | O          | —         |
| 60      | *A_MUTE2  | Audio Mute 2 Muting audio out                      | High: Normal, Low: When muting                                 | O   | O         | O          | —         |
| 61      | FAN_MAX   | Command to rotate Fan with max. speed              | High: In setting Fan max. speed, Low: Normal                   | O   | O         | O          | O         |
| 62      | A_MUTE3   | Audio Mute 3 Mute in suspending                    | High: When muting, Low: Normal                                 | O   | O         | O          | —         |
| 63      | *OSD_CLR  | Reset signal output to OSD IC                      | High: Normal, Low: In resetting                                | O   | O         | O          | —         |
| 64      | OSD_H     | OSD Timing Pulse for SYNC processing               | Pulse input                                                    | I   | —         | —          | O         |
| 65      | ——        | No allocation (Not used)                           |                                                                |     |           |            |           |
| 66      | DRV_OFF   | Not used                                           |                                                                |     |           |            |           |
| 67      | *CB_MUTE  | Combination Mute                                   | High: When ID is set, Low: Normal                              | O   | O         | O          | —         |
| 68      | REMSW     | Not used                                           |                                                                |     |           |            |           |
| 69      | PLK_ID    | Not used                                           |                                                                |     |           |            |           |
| 70      | ——        | No allocation (not used)                           |                                                                |     |           |            |           |
| 71      | VCC       | Power source input                                 | STB +5V                                                        | I   | O         | O          | O         |
| 72      | VREF      | Reference voltage input of AD/DA Converters        | STB +5V                                                        | I   | O         | O          | O         |
| 73      | AVSS      | Analog power input of AD/DA Converters             | STBGND                                                         | I   | O         | O          | O         |
| 74      | S_D       | Shut down detection for high temperature           | High: In high temperature, Low: Normal                         | I   | O         | O          | O         |
| 75      | TEMP2     | Not used                                           |                                                                |     |           |            |           |
| 76      | TEMP      | Temperature detection for On screen bar display    | 0–5V DC value                                                  | I   | O         | O          | O         |
| 77      | ——        | No allocation (Not used)                           |                                                                |     |           |            |           |
| 78      | ——        | No allocation (Not used)                           |                                                                |     |           |            |           |
| 79      | ——        | No allocation (Not used)                           |                                                                |     |           |            |           |
| 80      | PM_ST     | Not used                                           |                                                                |     |           |            |           |





C

D

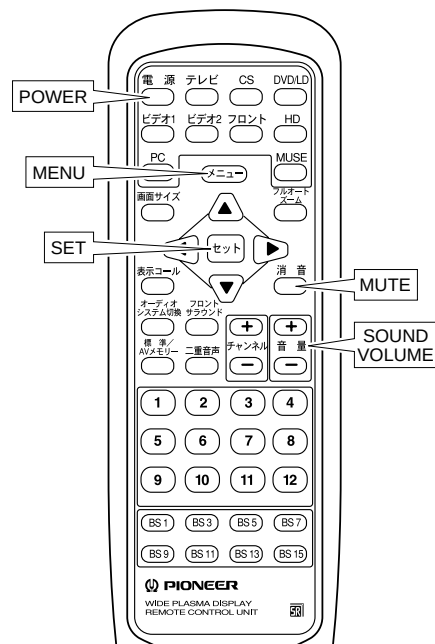




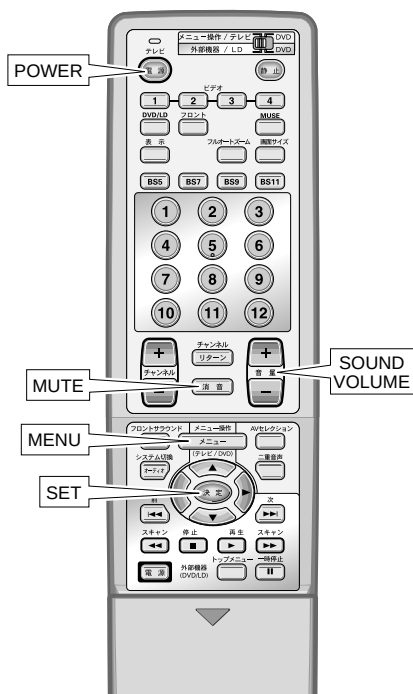
## 6. ADJUSTMENT

### ■ SERVICE FACTORY MODE

Perform the operations of Service factory mode using the remote control unit provided with the PDP-501HD (CU-PD001: AXD1432) or the remote control unit provided with the PDP-502HD (CU-PDP009: AXD1673).

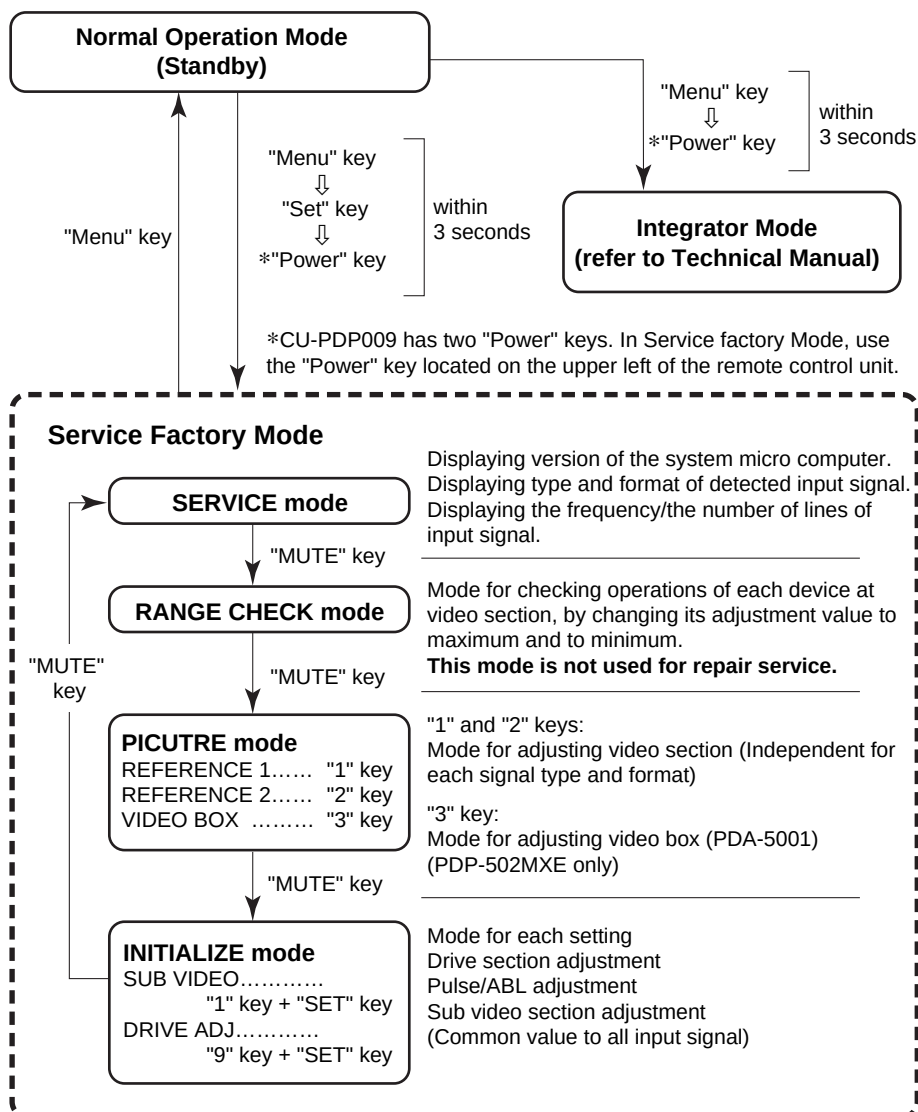


CU-PDP001  
(AXD1432)



CU-PDP009  
(AXD1673)

### ■ Entering Service Factory Mode

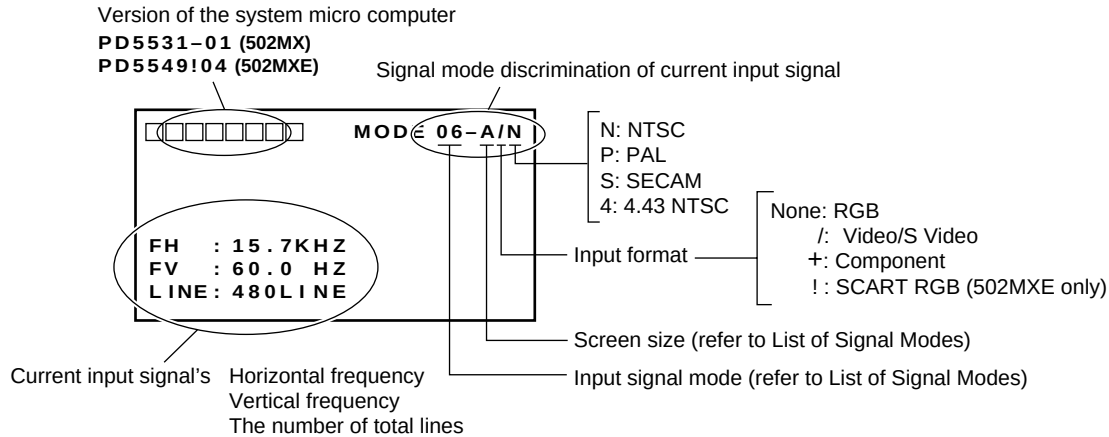


- In each adjustment mode, adjusted values can be changed with +/- of "SOUND VOLUME" key on the remote control unit.
- After adjustment, adjusted values can be fixed by pressing "SET" key.

Note)

- When an input signal mode is changed, the adjustment mode is set to Normal operation mode automatically.
- SETTING (PC/VIDEO) and SIGNAL (RGB/COMPONENT) can not be changed in the service factory mode.
- When entering Service factory mode, all items of PICTURE adjustment in Normal menu/ Integrator mode and all items of SCREEN menu (such as position adj.), except for CLK Phase, are reset to their initial value.

## SERVICE MODE



## List of Signal Modes

| Vertical Frequency<br>Fv (Hz) | Horizontal Frequency<br>Fh (Hz) | Input Signal<br>Dot * Line                                                                                                                                                   | Signal Mode |       | Panel Display<br>Dot * Line | OSD          | Remarks                                        |
|-------------------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|-----------------------------|--------------|------------------------------------------------|
|                               |                                 |                                                                                                                                                                              | PC          | VIDEO |                             |              |                                                |
| 50.0                          | 15.625K                         | PAL<br>SECAM<br>PAL-N (502MX only)<br>NTSC-50<br>SCART RGB (50Hz) (502MXE only)                                                                                              | —           | 01-6  | 984 * 768                   | 4:3 NORMAL   | 01-6 – 01-A : RGB                              |
|                               |                                 |                                                                                                                                                                              | —           | 01-7  | 1280 * 768                  | FULL         | 01-6+ – 01-A+: Y color-difference              |
|                               |                                 |                                                                                                                                                                              | —           | 01-8  | ↑                           | ZOOM         | 06-6/ – 06-A/: Video/S Video                   |
|                               |                                 |                                                                                                                                                                              | —           | 01-9  | ↑                           | CINEMA WIDE  | 01-6! – 01-A!: SCART RGB (502MXE only)         |
|                               |                                 |                                                                                                                                                                              | —           | 01-A  | ↑                           | NATURAL WIDE |                                                |
|                               | 31.3K                           | Double-speed PAL                                                                                                                                                             | —           | 02-6  | 984 * 768                   | 4:3 NORMAL   | 02-6 – 02-A: RGB                               |
|                               |                                 |                                                                                                                                                                              | —           | 02-7  | 1280 * 768                  | FULL         | 02-6+ – 02-A+: Y color-difference              |
|                               |                                 |                                                                                                                                                                              | —           | 02-8  | ↑                           | ZOOM         |                                                |
|                               |                                 |                                                                                                                                                                              | —           | 02-9  | ↑                           | CINEMA WIDE  |                                                |
|                               |                                 |                                                                                                                                                                              | —           | 02-A  | ↑                           | NATURAL WIDE |                                                |
| 56.0                          | 24.8K                           | 640 * 400 (PC-98)                                                                                                                                                            | 03-2        | —     | 1280 * 768                  | FULL         | FULL display only                              |
|                               | 35.2K                           | 800 * 600 (SVGA 56Hz)                                                                                                                                                        | 04-0        | —     | 800 * 600                   | ORIGINAL     | (VESA: 35.156k/56.250)                         |
|                               |                                 |                                                                                                                                                                              | 04-1        | —     | 1024 * 768                  | 4:3 NORMAL   |                                                |
|                               |                                 |                                                                                                                                                                              | 04-2        | —     | 1280 * 768                  | FULL         |                                                |
|                               | 45.1K                           | 1280 * 768 (WIDE-XGA)                                                                                                                                                        | 05-2        | —     | 1280 * 768                  | ORIGINAL     | Exclusive video card<br>No 4:3 squeeze display |
| 60.0                          | 15.734K                         | NTSC<br>4.43NTSC<br>PAL-M (502MX only)<br>PAL-60<br>SECAM-60<br>SCART RGB (60Hz) (502MXE only)<br>SDTV16:9 (704 * 480 i)<br>SDTV 4:3 (704 * 480 i)<br>SDTV 4:3 (640 * 480 i) | —           | 06-6  | 984 * 768                   | 4:3 NORMAL   | 06-6 – 06-A: RGB                               |
|                               |                                 |                                                                                                                                                                              | —           | 06-7  | 1280 * 768                  | FULL         | 06-6+ – 06-A+: Y color-difference              |
|                               |                                 |                                                                                                                                                                              | —           | 06-8  | ↑                           | ZOOM         | 06-6/ – 06-A/: Video/S Video                   |
|                               |                                 |                                                                                                                                                                              | —           | 06-9  | ↑                           | CINEMA WIDE  | 06-6! – 06-A!: SCART RGB (502MXE only)         |
|                               |                                 |                                                                                                                                                                              | —           | 06-A  | ↑                           | NATURAL WIDE |                                                |
|                               | 31.5K<br>32.0K                  | 640 * 480 (VGA)<br>852 * 480 (WIDE-VGA)<br>864 * 480 (WIDE-VGA)<br>Double-speed NTSC<br>SDTV16:9 (704 * 480 p)<br>SDTV 4:3 (704 * 480 p)<br>SDTV 4:3 (640 * 480 p)           | 07-0        | —     | 640 * 480                   | ORIGINAL     | PC setting                                     |
|                               |                                 |                                                                                                                                                                              | 07-1        | —     | 1024 * 768                  | 4:3NORMAL    | (VESA: 31.469k/59.940)                         |
|                               |                                 |                                                                                                                                                                              | 07-2        | —     | 1280 * 768                  | FULL         |                                                |
|                               |                                 |                                                                                                                                                                              | —           | 07-6  | 984 * 768                   | 4:3NORMAL    | VIDEO setting                                  |
|                               |                                 |                                                                                                                                                                              | —           | 07-7  | 1280 * 768                  | FULL         | 07-6 – 07-A: RGB                               |
|                               |                                 |                                                                                                                                                                              | —           | 07-8  | ↑                           | ZOOM         | 07-6+ – 07-A+: Y color-difference              |
|                               |                                 |                                                                                                                                                                              | —           | 07-9  | ↑                           | CINEMA WIDE  |                                                |
|                               |                                 |                                                                                                                                                                              | —           | 07-A  | ↑                           | NATURAL WIDE |                                                |

# PDP-502MX, PDP-502MXE

| Vertical Frequency<br>Fv (Hz) | Horizontal Frequency<br>Fh (Hz) | Input Signal<br>Dot * Line      | Signal Mode |       | Panel Display<br>Dot * Line | OSD         | Remarks                                                                  |
|-------------------------------|---------------------------------|---------------------------------|-------------|-------|-----------------------------|-------------|--------------------------------------------------------------------------|
|                               |                                 |                                 | PC          | VIDEO |                             |             |                                                                          |
| 60.0                          | 33.8K                           | Hi-Vision INTERLACE (1035 i )   | —           | 08-7  | 1280 * 768                  | FULL (HD)   | 08-7+: Y color-difference<br>08-7: RGB                                   |
|                               |                                 | HDTV16:9 (1920 * 1080 i )       | —           | 09-7  |                             |             |                                                                          |
|                               |                                 | Hi-Vision INTERLACE (1080 i )   | —           | 09-7  |                             |             |                                                                          |
|                               | 37.9K<br>38.0K                  | 800 * 600 (SVGA)                | 0A-0        | —     | 800 * 600                   | ORIGINAL    | (VESA: 37.879k/60.317)                                                   |
|                               |                                 | 1072 * 600 (WIDE-SVGA)          | 0A-1        | —     | 1024 * 768                  | 4:3NORMAL   |                                                                          |
|                               |                                 |                                 | 0A-2        | —     | 1280 * 768                  | FULL        |                                                                          |
|                               | 45.0K                           | HDTV16:9 (1280 * 720 p )        | —           | 0B-7  | 1280 * 768                  | FULL (HD)   | 0B-7+: Y color-difference<br>0B-7: RGB                                   |
|                               |                                 |                                 | —           | 0B-7  | 1280 * 768                  | FULL (HD)   |                                                                          |
|                               |                                 |                                 | —           | 0B-7  | 1280 * 768                  | FULL (HD)   |                                                                          |
|                               | 48.4K<br>48.4K<br>48.0K         | 1024 * 768 (XGA)                | 0C-1        | —     | 1024 * 768                  | ORIGINAL    | (VESA: 48.363k/60.004)<br>No 4:3 squeeze display<br>Switches by the menu |
|                               |                                 | 1280 * 768                      | 0C-2        | —     | 1280 * 768                  | ORIGINAL    |                                                                          |
|                               |                                 | 1376 * 768 (WIDE-XGA)           | 0C-2        | —     | 1280 * 768                  | FULL        |                                                                          |
|                               | 53.7K                           | 1152 * 864                      | 0D-1        | —     | 1024 * 768                  | 4:3 (TYPE)  |                                                                          |
|                               |                                 |                                 | 0D-2        | —     | 1280 * 768                  | FULL (TYPE) |                                                                          |
|                               |                                 |                                 | 0D-2        | —     | 1280 * 768                  | FULL (TYPE) |                                                                          |
|                               | 60.0K                           | 1280 * 960                      | 0E-1        | —     | 1024 * 768                  | 4:3 (TYPE)  | (VESA: 60.000k/60.000)                                                   |
|                               |                                 |                                 | 0E-2        | —     | 1280 * 768                  | FULL (TYPE) |                                                                          |
|                               |                                 |                                 | 0E-2        | —     | 1280 * 768                  | FULL (TYPE) |                                                                          |
|                               | 64.0K<br>64.3K<br>64.6K         | 1280 * 1024 (SXGA)              | 0F-1        | —     | 960 * 768                   | 4:3 (TYPE)  | (VESA: 63.981k/60.020)<br>Trimming display                               |
|                               |                                 |                                 | 0F-2        | —     | 1280 * 768                  | FULL (TYPE) |                                                                          |
|                               |                                 |                                 | 0F-3        | —     | 1280 * 768                  | ZOOM        |                                                                          |
|                               | 67.5K<br>67.5K<br>75.0K         | Hi-Vision PROGRESSIVE (1035 p ) | —           | 10-7  | 1280 * 768                  | FULL (HD)   | 10-7+: Y color-difference<br>10-7: RGB                                   |
|                               |                                 | HDTV16:9 (1920 * 1080 p )       | —           | 10-7  | 1280 * 768                  | FULL (HD)   |                                                                          |
|                               |                                 |                                 | —           | 10-7  | 1280 * 768                  | FULL (HD)   |                                                                          |
|                               | 75.0K                           | 1600 * 1200 (UXGA)              | 11-1        | —     | 1024 * 768                  | 4:3 (TYPE)  | (VESA: 75.000k/60.000)                                                   |
|                               |                                 |                                 | 11-1        | —     | 1024 * 768                  | 4:3 (TYPE)  |                                                                          |
|                               |                                 |                                 | 11-1        | —     | 1024 * 768                  | 4:3 (TYPE)  |                                                                          |
| 65.0                          | 81.3K                           | 1600 * 1200 (UXGA)              | 12-1        | —     | 1024 * 768                  | 4:3 (TYPE)  | (VESA: 81.250k/65.000)                                                   |
| 66.7                          | 35.0K                           | 640 * 480 (Macintosh 13)        | 14-0        | —     | 640 * 480                   | ORIGINAL    |                                                                          |
|                               |                                 |                                 | 14-1        | —     | 1024 * 768                  | 4:3 NORMAL  |                                                                          |
|                               |                                 |                                 | 14-2        | —     | 1280 * 768                  | FULL        |                                                                          |
|                               | 62.0K                           | 1152 * 900 (SUN LO)             | 13-1        | —     | 1024 * 768                  | 4:3 (TYPE)  | Mode for SUN (UNIX)                                                      |
|                               |                                 |                                 | 13-2        | —     | 1280 * 768                  | FULL (TYPE) |                                                                          |
| 70.1                          | 31.5K                           | 640 * 400 (PC-H98)              | 15-2        | —     | 1280 * 768                  | FULL        | 720 * 400 can be displayed<br>(Data amount drops)                        |
|                               |                                 |                                 | 15-2        | —     | 1280 * 768                  | FULL        |                                                                          |
|                               | 56.5K                           | 1024 * 768 (XGA)                | 16-1        | —     | 1024 * 768                  | ORIGINAL    | (VESA: 56.476k/70.069)                                                   |
|                               |                                 |                                 | 16-2        | —     | 1280 * 768                  | FULL        |                                                                          |
| 72.0                          | 37.9K                           | 640 * 480 (VGA)                 | 18-0        | —     | 640 * 480                   | ORIGINAL    | (VESA: 37.861k/72.809)                                                   |
|                               |                                 |                                 | 18-1        | —     | 1024 * 768                  | 4:3 NORMAL  |                                                                          |
|                               |                                 |                                 | 18-2        | —     | 1280 * 768                  | FULL        |                                                                          |
|                               | 48.1K                           | 800 * 600 (SVGA)                | 19-0        | —     | 800 * 600                   | ORIGINAL    | (VESA: 48.077k/72.188)                                                   |
|                               |                                 |                                 | 19-1        | —     | 1024 * 768                  | 4:3 NORMAL  |                                                                          |
|                               |                                 |                                 | 19-2        | —     | 1280 * 768                  | FULL        |                                                                          |
|                               | 64.9K                           | 1152 * 864                      | 1A-1        | —     | 1024 * 768                  | 4:3 (TYPE)  |                                                                          |
|                               |                                 |                                 | 1A-2        | —     | 1280 * 768                  | FULL (TYPE) |                                                                          |
|                               |                                 |                                 |             |       |                             |             |                                                                          |
| 75.0<br><br>(74.6)            | 37.5K                           | 640 * 480 (VGA)                 | 1C-0        | —     | 640 * 480                   | ORIGINAL    | (VESA:37.500k/75.000)                                                    |
|                               |                                 |                                 | 1C-1        | —     | 1024 * 768                  | 4:3 NORMAL  |                                                                          |
|                               |                                 |                                 | 1C-2        | —     | 1280 * 768                  | FULL        |                                                                          |
|                               | 46.9K                           | 800 * 600 (SVGA)                | 1D-0        | —     | 800 * 600                   | ORIGINAL    | (VESA:46.875k/75.000)                                                    |
|                               |                                 |                                 | 1D-1        | —     | 1024 * 768                  | 4:3 NORMAL  |                                                                          |
|                               |                                 |                                 | 1D-2        | —     | 1280 * 768                  | FULL        |                                                                          |
|                               | 49.7K                           | 832 * 624 (Macintosh 16)        | 1E-0        | —     | 832 * 624                   | ORIGINAL    | 4:3/FULL → Top & bottom<br>are masked                                    |
|                               |                                 |                                 | 1E-1        | —     | 1024 * 748                  | 4:3 NORMAL  |                                                                          |
|                               |                                 |                                 | 1E-2        | —     | 1280 * 748                  | FULL        |                                                                          |

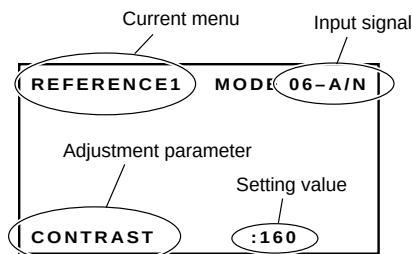


| Vertical Frequency<br>Fv (Hz)              | Horizontal Frequency<br>Fh (Hz) | Input Signal<br>Dot * Line | Signal Mode |       | Panel Display<br>Dot * Line | OSD             | Remarks                                                         |
|--------------------------------------------|---------------------------------|----------------------------|-------------|-------|-----------------------------|-----------------|-----------------------------------------------------------------|
|                                            |                                 |                            | PC          | VIDEO |                             |                 |                                                                 |
| 75.0<br>(74.9)<br><br>(75.1)<br><br>(76.1) | 60.0K                           | 1024 * 768 (XGA)           | 1F-1        | —     | 1024 * 768                  | ORIGINAL        | (VESA: 60.023k/75.029)                                          |
|                                            | 60.2K                           | 1024*768 (Macintosh 19)    | 1F-2        | —     | 1280 * 768                  | FULL            | 74.9/60.2K.....MAC                                              |
|                                            | 67.7K                           | 1152 * 864                 | 20-1        | —     | 1024 * 768                  | 4:3 (TYPE)      | (VESA: 67.500k/75.000)                                          |
|                                            |                                 |                            | 20-2        | —     | 1280 * 768                  | FULL (TYPE)     |                                                                 |
|                                            | 68.7K                           | 1152 * 870 (Macintosh 21)  | 21-1        | —     | 1024 * 768                  | 4:3 (TYPE)      |                                                                 |
|                                            |                                 |                            | 21-2        | —     | 1280 * 768                  | FULL (TYPE)     |                                                                 |
|                                            | 71.7K                           | 1152 * 900 (SUN HI)        | 2A-1        | —     | 1024 * 768                  | 4:3 (TYPE)      |                                                                 |
|                                            |                                 |                            | 2A-2        | —     | 1280 * 768                  | FULL (TYPE)     |                                                                 |
|                                            | 80.0K                           | 1280 * 1024 (SXGA)         | 22-1        | —     | 960 * 768                   | 4:3 (TYPE)      | (VESA: 79.976k/75.025)                                          |
|                                            | 81.0K                           | 1600 * 1024 (WIDE-SXGA)    |             |       |                             |                 |                                                                 |
| 85.0                                       | 43.3K                           | 640 * 480 (VGA)            | 23-0        | —     | 640 * 480                   | ORIGINAL        | (VESA: 43.269k/85.008)                                          |
|                                            |                                 |                            | 23-1        | —     | 1024 * 768                  | 4:3NORMAL       |                                                                 |
|                                            |                                 |                            | 23-2        | —     | 1280 * 768                  | FULL            |                                                                 |
|                                            | 53.7K                           | 800 * 600 (SVGA)           | 24-0        | —     | 800 * 600                   | ORIGINAL        | (VESA: 53.674k/85.061)<br>4:3/FULL → Top & bottom<br>are masked |
|                                            |                                 |                            | 24-1        | —     | 1024 * 720                  | 4:3NORMAL       |                                                                 |
|                                            |                                 |                            | 24-2        | —     | 1280 * 720                  | FULL            |                                                                 |
|                                            | 68.7K                           | 1024 * 768 (XGA)           | 25-1        | —     | 1024 * 768                  | ORIGINAL        | (VESA: 68.677k/84.997)                                          |
|                                            |                                 |                            | 25-2        | —     | 1280 * 768                  | FULL            |                                                                 |
|                                            | 91.1K                           | 1280 * 1024 (SXGA)         | 26-1        | —     | 960 * 768                   | 4:3 (TYPE)      | (VESA: 91.146k/85.024)                                          |
| 87.0<br>INTERLACE                          | 35.5K                           | 1024 * 768 (XGA)           | 27-1        | —     | 1024 * 768                  | ORIGINAL (TYPE) | (VESA: 35.522k/43.479<br>INTERLACED)                            |
|                                            |                                 |                            | 27-2        | —     | 1280 * 768                  | FULL (TYPE)     |                                                                 |
|                                            | 46.4K                           | 1280 * 1024 (SXGA)         | 28-2        | —     | 1280 * 768                  | FULL (TYPE)     |                                                                 |

## ■ Items to adjust and set value in Each Adjustment mode

### ■ PICUTRE mode

- PICTURE mode has three menus, "REFERENCE 1", "REFERENCE 2" and "VIDEO BOX".
- Press "1" key on the remote control unit to enter "REFERENCE 1", press "2" key on the remote control unit to enter "REFERENCE 2" and press "3" key on the remote control unit to enter "VIDEO BOX". For "VIDEO BOX" mode, refer to the service manual ARP3038 for PDA-5001/ZYVLPK
- Do not operate keys that have no parameters applied to the current input signal mode.



### ● REFERENCE 1 mode

Adjustment mode independent of input signal format / Data stored in EEPROM of U-COM ASSY

| Remote Control Key | Adjustment Parameter | Adjusting & Setting Item                          | Setting Value                |     |       |        |           |       |           |     |      |           |     |      |    |
|--------------------|----------------------|---------------------------------------------------|------------------------------|-----|-------|--------|-----------|-------|-----------|-----|------|-----------|-----|------|----|
|                    |                      |                                                   | C. VIDEO/YC                  |     |       |        | SCART RGB |       | COMPONENT |     |      | RGB VIDEO |     |      | PC |
|                    |                      |                                                   | NTSC                         | PAL | SECAM | 4.43NT | RGB60     | RGB50 | STD       | × 2 | HDTV | STD       | × 2 | HDTV |    |
| 1                  | CONTRAST             | Contrast adjustment                               | Adjustment required          |     |       |        |           |       |           |     |      |           |     |      |    |
| 2                  | BRIGHT               | Brightness adjustment                             |                              |     |       |        |           |       |           |     |      |           |     |      |    |
| 3                  | COLOR                | Color adjustment                                  | Adjustment required          |     |       |        |           |       |           |     |      |           |     |      |    |
| 4                  | TINT                 | Tint adjustment (C.Video signal input only)       |                              |     |       |        |           |       |           |     |      |           |     |      |    |
| 5                  | H. SHARP             | Horizontal sharpness setting (Video signal input) | 128                          | 140 | 140   | 128    | 128       | 140   | 113       | 128 | 128  | 128       | 128 | —    |    |
|                    | H. ENHANCE           | Horizontal sharpness setting (PC signal input)    | —                            | —   | —     | —      | —         | —     | —         | —   | —    | —         | —   | 128  |    |
| 6                  | DETAIL               | Detail setting                                    | 128                          | 128 | 128   | 128    | 128       | 128   | 128       | 128 | 128  | 128       | 128 | 128  |    |
| 7                  | R HIGH               | White Balance adjustment                          | Adjustment required          |     |       |        |           |       |           |     |      |           |     |      |    |
| 8                  | G HIGH               |                                                   |                              |     |       |        |           |       |           |     |      |           |     |      |    |
| 9                  | B HIGH               |                                                   |                              |     |       |        |           |       |           |     |      |           |     |      |    |
| 10                 | R LOW                |                                                   |                              |     |       |        |           |       |           |     |      |           |     |      |    |
| 11                 | G LOW                |                                                   |                              |     |       |        |           |       |           |     |      |           |     |      |    |
| 12                 | B LOW                |                                                   |                              |     |       |        |           |       |           |     |      |           |     |      |    |
| BS5                | V. SHARP             | Vertical sharpness setting (Video signal input)   | 128                          | 140 | 140   | 128    | 128       | 140   | 113       | 128 | 128  | 128       | 128 | —    |    |
|                    | V. ENHANCE           | Vertical sharpness setting (PC signal input)      | —                            | —   | —     | —      | —         | —     | —         | —   | —    | —         | —   | 128  |    |
| BS9                | ABL LEV OFFSET       | ABL Level offset adjustment                       | Adjustment required (note 2) |     |       |        |           |       |           |     |      |           |     |      |    |
| BS11               | PLS NUM OFFSET       | Pulse number offset adjustment                    | 8                            | 8   | 8     | 8      | 8         | 8     | 8         | 8   | 8    | 8         | 8   | 8    |    |

SCART RGB: PDP-502MXE Only

### ● REFERENCE 2 mode

Adjustment mode independent of input signal format / Data stored in EEPROM of VIDEO ASSY

| Remote Control Key | Adjustment Parameter | Adjusting & Setting Item                                    | Setting Value       |        |        |        |           |       |           |     |      |           |      |      |    |
|--------------------|----------------------|-------------------------------------------------------------|---------------------|--------|--------|--------|-----------|-------|-----------|-----|------|-----------|------|------|----|
|                    |                      |                                                             | C. VIDEO/YC         |        |        |        | SCART RGB |       | COMPONENT |     |      | RGB VIDEO |      |      | PC |
|                    |                      |                                                             | NTSC                | PAL    | SECAM  | 4.43NT | RGB60     | RGB50 | STD       | × 2 | HDTV | STD       | × 2  | HDTV |    |
| 1                  | R-Y/R                | Matrix demodulation angle setting (Video signal input only) | 6(10)               | 11(13) | 11(13) | 6(10)  | 10        | 13    | 6         | 6   | 6    | 6         | 6    | 6    | —  |
| 2                  | R-Y/B                |                                                             | 12(15)              | 14(15) | 14(15) | 12(15) | 15        | 15    | 12        | 12  | 12   | 12        | 12   | 12   | —  |
| 3                  | G-Y/R                |                                                             | 7                   | 9(10)  | 9(10)  | 7      | 10        | 10    | 7         | 7   | 10   | 7         | 7    | 10   | —  |
| 4                  | G-Y/B                |                                                             | 8                   | 6(4)   | 6(4)   | 8      | 5         | 4     | 8         | 8   | 5    | 8         | 8    | 5    | —  |
| 9                  | ENHANCER MAIN        | Sharpness setting                                           | 0(0)                | 0(0)   | 0(0)   | 0(0)   | 0         | 0     | 0         | 0   | 0    | 0(0)      | 0(0) | 0    | —  |
| 10                 | ENHANCER V           |                                                             | 0(0)                | 0(0)   | 0(0)   | 0(0)   | 0         | 0     | 0         | 0   | 0    | 0(0)      | 0(0) | 0    | —  |
| 11                 | ENHANCER M           |                                                             | 0(0)                | 0(0)   | 0(0)   | 0(0)   | 0         | 0     | 0         | 0   | 0    | 0(0)      | 0(0) | 0    | —  |
| 12                 | ENHANCER H           |                                                             | 0(0)                | 0(0)   | 0(0)   | 0(0)   | 0         | 0     | 0         | 0   | 0    | 0(0)      | 0(0) | 0    | —  |
| BS5                | R-Y LEVEL            | Color-difference adjustment (INPUT 1, 2 only)(502MX only)   | Adjustment required |        |        |        | —         | —     | —         | —   | —    | —         | —    | —    | —  |
| BS7                | B-Y LEVEL            |                                                             |                     |        |        |        | —         | —     | —         | —   | —    | —         | —    | —    | —  |
| BS9                | Y DELAY              | Y delay setting (INPUT 1, 2 only)(502MX only)               | 1                   | 0      | 3      | 4      | —         | —     | —         | —   | —    | —         | —    | —    | —  |
| BS11               | CTI LEVEL            | Color transient setting (INPUT 1, 2 only)                   | 1(2)                | 2      | 2      | 2      | 2         | 2     | —         | —   | —    | —         | —    | —    | —  |

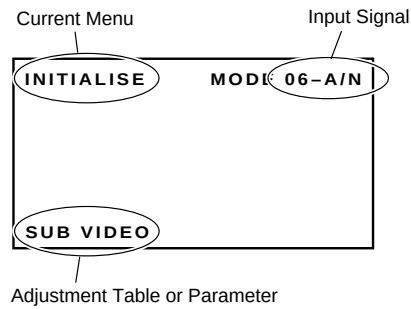
SCART RGB: PDP-502MXE Only, ( ): PDP-502MXE

Note 1) For Parameter  , adjustment values are fixed.

Note 2) If unnecessarily adjusted, power consumption of the unit is changed and the panel is damaged.

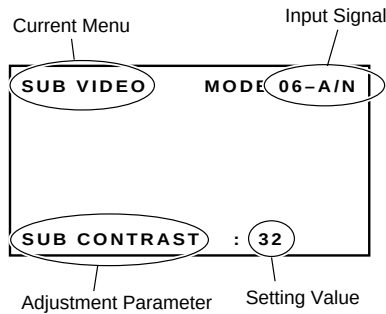
Adjust only in case of necessity.

## ■ INITIALIZE mode (Common for all input signal types and formats)



| Remote Control Key | Adjustment Parameter      | Adjusting & Setting Item                                                            | Setting Value |
|--------------------|---------------------------|-------------------------------------------------------------------------------------|---------------|
| 1                  | SUB VIDEO                 | Go to SUB VIDEO adjustment menu with "SET" key                                      | —             |
| 2                  | MIRROR MODE (502MX only)  | Setting Mirror mode<br>OFF → X<br>XY ← Y                                            | OFF           |
| 3                  | FULL MASK                 | Setting Full mask display OFF ↔ ON                                                  | OFF           |
| 4                  | COLOR DETECT (502MX only) | Setting Color detecting<br>EURO<br>ALL ← SA                                         | EURO mode     |
| 5                  | HOURL METER (502MX only)  | Displaying operation hour meter                                                     | —             |
| 6                  | BAUD RATE (502MX only)    | Setting Baud rate<br>1200 → 2400<br>19200 ← .....                                   | 4800          |
| 7                  | EEPROM INIT.              | Initializing EEPROM (Do not use)                                                    | —             |
| 8                  | MASK CONTROL              | Setting Original /4:3 displaying area motion mode.<br>OFF ↔ ON                      | ON            |
| 9                  | DRIVE ADJ                 | Go to DRIVE adjustment menu with "SET" key                                          | —             |
| 11                 | INTE. MODE                | Setting Integrator mode lock/ free<br>LOCK<br>ON ← FREE                             | ON            |
| BS5                | FINAL SET UP              | Setting to default factory setting with "SET" key (refer to Details of FINAL SETUP) | —             |

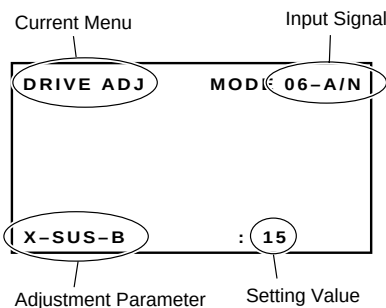
## ● SUB VIDEO mode (Common for all input signal types and formats)



| Remote Control Key | Adjustment Parameter      | Adjusting & Setting Item                  | Setting Value       |
|--------------------|---------------------------|-------------------------------------------|---------------------|
| 1                  | SUB CONTRAST              | Sub Contrast adjustment (except for PC)   | Adjustment required |
| 2                  | SUB BRIGHT                | Sub Brightness adjustment (except for PC) | Adjustment required |
| 3                  | SUB TINT (502MX only)     | Sub Tint setting (except for PC)          | 64                  |
| 8                  | PULSE NUMBER (502MX only) | Base pulse number adjustment (note)       | 8                   |
| 9                  | ABL LEVEL (502MX only)    | ABL Level value adjustment (note)         | 128                 |
| BS5                | ACL SW                    | ACL setting OFF ↔ ON                      | ON                  |
| BS11               | D RANGE SW                | Dynamic Range setting OFF ↔ ON            | OFF                 |

Note ) If unnecessarily adjusted, power consumption of the unit is changed and the panel is damaged. Adjust only in case of necessity.

## ● DRIVE ADJ mode (Common for all input signal types and formats)



| Remote Control Key | Adjustment Parameter | Adjusting & Setting Item       | Setting Value       |
|--------------------|----------------------|--------------------------------|---------------------|
| 1                  | X-SUS-B              | Sustain Drive Pulse adjustment | Adjustment required |
| 2                  | X-SUS-G              |                                | 8                   |
| 3                  | Y-SUS-B              |                                | Adjustment required |
| 4                  | Y-SUS-G              |                                | 8                   |
| 10                 | R SIDE LEVEL         | Side Mask color/level setting  | 100                 |
| 11                 | G SIDE LEVEL         |                                | 97                  |
| 12                 | B SIDE LEVEL         |                                | 100                 |
| BS5                | R FULL LEVEL         | Full Mask color/level setting  | 255                 |
| BS7                | G FULL LEVEL         |                                | 255                 |
| BS9                | B FULL LEVEL         |                                | 255                 |

## ■ Details of FINAL SETUP ( Factory default setting)

| Item                      |         | Default Setting                            | Remarks                                                                                   |
|---------------------------|---------|--------------------------------------------|-------------------------------------------------------------------------------------------|
| Power(STAND-BY/ON)        |         | STANDBY                                    |                                                                                           |
| Input function            |         | INPUT1 (502MX), INPUT3 (502MXE)            |                                                                                           |
| Displaying size           |         | NATURAL WIDE                               | (On video signal input) For each input function                                           |
|                           |         | (PC ①) ORIGINAL (including TYPE)           | (On PC signal input) For INPUT 3, 4 ∩ each signal mode<br>The priority order is ① → ② → ③ |
|                           |         | (PC ②) 4: 3NORMAL (including TYPE)         |                                                                                           |
|                           |         | (PC ③) FULL (including TYPE)               |                                                                                           |
| V. POSITION               |         | 0                                          | (On video signal input) For each input function                                           |
|                           |         | 0                                          | (On "mode0F-3" input) For each INPUT 3, 4                                                 |
| KEYLOCK                   |         | UNLOCK                                     | Common for all input functions                                                            |
| VOLUME                    |         | 0                                          | Common for all input functions                                                            |
| MUTING                    |         | OFF                                        | Common for all input functions                                                            |
| PICTURE                   |         | Center value for all adjustment items      | For each input function ∩ each signal mode                                                |
| SCREEN                    |         | Center value for all adjustment items      | For each input function ∩ each signal mode                                                |
| POWER SAVE                | (VIDEO) | OFF                                        | (On video signal input) Common for all input functions                                    |
|                           | (PC)    | OFF                                        | (On PC signal input) Common for INPUT 3, 4                                                |
| COLOR SYSTEM              |         | AUTO                                       | For each INPUT 1, 2                                                                       |
| 3D Y/C MODE (502MX only)  |         | MOTION                                     | For only INPUT 1                                                                          |
| SETTING/SIGNAL            |         | PC/RGB                                     | For each INPUT 3, 4                                                                       |
| CLAMP                     |         | MODE1                                      | (On RGB signal input) For each INPUT 3, 4                                                 |
| HIGH CONTRAST             |         | OFF                                        | (On video signal input) Common for all input functions                                    |
| ABL                       |         | ON                                         | (On PC signal input) For each INPUT 3, 4                                                  |
| H. ENHANCE                |         | Center value                               | (On PC signal input) For each INPUT 3, 4                                                  |
| V. ENHANCE                |         | Center value                               | (On PC signal input) For each INPUT 3, 4                                                  |
| PICTURE                   |         | Adjustment values for all adjustment items | Memory cleared for PC<br>For each input function ∩ each signal mode                       |
| WHITE BALANCE             |         | Adjustment values for all adjustment items | Memory cleared for PC<br>For each input function ∩ each signal mode                       |
| SCREEN                    |         | Center value for all adjustment items      | For each input function ∩ each signal mode                                                |
| SIDE MASK                 | R LEVEL | 100                                        | Common for all input functions                                                            |
|                           | G LEVEL | 97                                         |                                                                                           |
|                           | B LEVEL | 100                                        |                                                                                           |
| COLOR MODE                |         | 1                                          | Common for all input functions                                                            |
| MIRROR MODE               |         | OFF                                        | Common for all input functions                                                            |
| BRIGHT ENHANCE            | (VIDEO) | OFF                                        | (On video signal input) Common for all input functions                                    |
|                           | (PC)    | OFF                                        | (On PC signal input) Common for INPUT 3,4                                                 |
| OSD                       |         | ON                                         | Common for all input functions                                                            |
| BAUD RATE                 |         | 4800BPS                                    | Common for all input functions                                                            |
| FAN CONTROL               |         | AUTO                                       | Common for all input functions                                                            |
| HOUR METER                |         | 0                                          | Operation hour                                                                            |
| SUB VOLUME                | INPUT1  | 63                                         | Independent sound volume for each input function                                          |
|                           | INPUT2  | 63                                         |                                                                                           |
|                           | INPUT3  | 63                                         |                                                                                           |
|                           | INPUT4  | 63                                         |                                                                                           |
| FULL MASK                 |         | OFF                                        |                                                                                           |
| COLOR DETECT (502MX only) |         | EURO                                       |                                                                                           |
| MASK CONTROL              |         | ON                                         |                                                                                           |
| INTE. MODE                |         | ON                                         | Integrator mode operable.                                                                 |
| ID No.                    |         | -- (Not given)                             | Only commands with ID:** operable                                                         |

## ■ Adjustments required when the set is repaired or replaced

### ■ VIDEO ASSY

#### ● When repaired

- 1) (Procedure 1) Color difference (R-Y/B-Y) adjustment (502MX only)
- 2) (Procedure 2) Sub-Contrast/Sub-Bright adjustment
- 3) (Procedure 8) White balance adjustment

#### ● When replaced

- 3) (Procedure 8) White balance adjustment

### ■ MAIN POWER ASSY

#### ● When repaired

- 1) (Procedure 3) VSUS/VADR/STB5V/+14V voltage adjustment
- 2) (Procedure 4) VSUS UVP/+B voltage adjustment

#### ● When replaced

- 1) (Procedure 3) VSUS voltage adjustment  
(Adjust the voltage to the voltage value mentioned on the "Drive voltage label")

### ■ DIGITAL VIDEO ASSY

#### ● When replaced

- 1) (Procedure 5) 5V/3.3V voltage adjustment

#### ● When replaced

No adjustment required.

### ■ Y DRIVE ASSY

#### ● When repaired

- 3) (Procedure 6) VOFS/VH/IC5V voltage adjustment

#### ● When replaced

- 1) (Procedure 6) VOFS voltage adjustment  
(Adjust the voltage to the voltage value mentioned on the "Drive voltage label")

### ■ U-COM ASSY

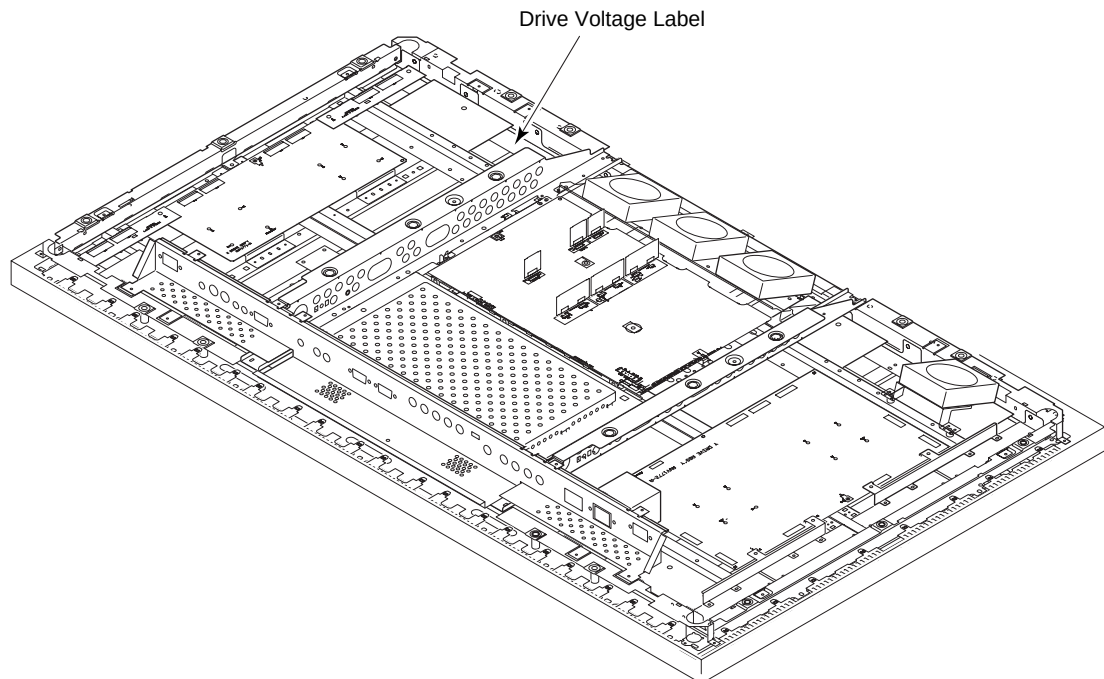
#### ● When replaced

Remove IC3601, EEPROM (24LC64(1)SN-TBB) from the defect ASSY and replace it with the one on the new ASSY.

#### Caution: Setting of SW, S111 at MAIN POWER ASSY

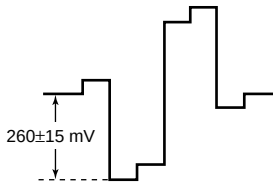
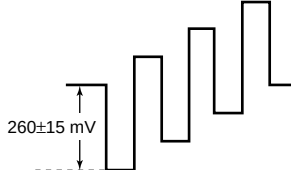
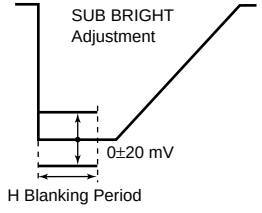
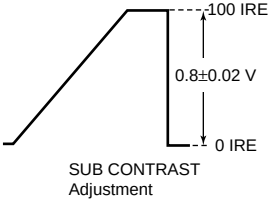
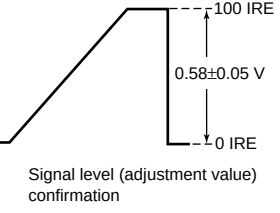
PDP-502MXE Only: Set the SW, S111 to AC220V side.  
Otherwise the power will shutdown.

PDP-502MX/505HD: Set the SW, S111 to AC100V side.

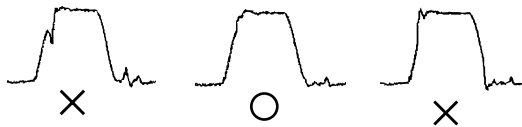
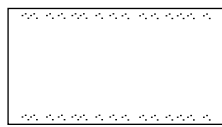


Position of Drive Voltage Label

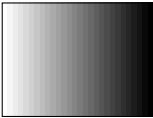
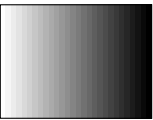
## ■ Adjusting Method

| Procedure | Adjusting Item                                                        | Input signal                | Adjusting Point                                                                                                             | Adjusting Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1         | Color-difference Level adjustment (R-Y LEVEL/ B-Y LEVEL) (502MX only) | Full Field Color bar signal | REFERENCE 2 in Factory mode<br>R-Y LEVEL .....<br>"BS5" Key                                                                 | <b>R-Y LEVEL adjustment</b><br>Observe R-Y color-difference waveform at Pin 3 (INT_Cr) of IC1401 (MATRIX IC) in VIDEO Assy. Adjust R-Y LEVEL so that the point indicated in the right figure becomes "260mV±15mV".<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|           |                                                                       |                             | REFERENCE 2 in Factory mode<br>B-Y LEVEL .....<br>"BS7" Key                                                                 | <b>B-Y LEVEL adjustment</b><br>Observe B-Y color-difference waveform at Pin 4 (INT_Cb) of IC1401 (MATRIX IC) in VIDEO Assy. Adjust B-Y LEVEL so that the point indicated in the right figure becomes "260mV±15mV".<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2         | SUB CONTRAST/ SUB BRIGHTNESS adjustment                               | RAMP signal                 | SUB VIDEO mode in Factory mode<br>SUB CONTRAST.....<br>"1" Key<br>SUB BRIGHT .....<br>"2" Key<br>ACL. SW .....<br>"BS5" Key | <b>SUB BRIGHT / SUB CONTRAST adjustment</b><br>1) SUB BRIGHT rough adjustment<br>Set P. ACL. SW OFF.<br>Observe signal at K2417 in Video Assy. Adjust so that the blanking period level of the signal becomes 0 IRE level.<br><br>2) SUB CONTRAST adjustment<br>Set P. ACL. SW OFF.<br>Adjust so that 0 to 100 IRE level of the signal at K2417 in Video Assy becomes "0.8V".<br><br>3) SUB BRIGHT fine adjustment<br>Set P. ACL. SW ON.<br>Adjust so that the signal level in blanking period at K2417 in Video Assy becomes 0 IRE level.<br>4) Signal level (adjustment value) confirmation<br>Set P. ACL. SW ON.<br>Observe the signal at K2417 in Video Assy .<br>Confirm that the 0 IRE to 100 IRE level of the signal is "0.58V".<br> |

| Procedure | Adjusting Item                                 | Input signal                                                                                                                                                                                                                                  | Adjusting Point                                         | Adjusting Method                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3         | VSUS/VADR/<br>STB5V/+14V<br>Voltage adjustment | White 100%<br>signal                                                                                                                                                                                                                          | VR201 (VSUS)<br>MAIN POWER ASSY                         | <b>VSUS (Sustain voltage) adjustment</b><br>Adjust so that the voltage between TP201(VSUS) and TP202 (SUS GND) becomes ±1V of the voltage indicated at the "voltage indication label".<br><br><b>The symptom in case of mis-adjustment</b><br>If the VSUS adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will stop lighting. |
|           |                                                |                                                                                                                                                                                                                                               | VR301 (VADR)<br>MAIN POWER ASSY                         | <b>VADR (Address voltage) adjustment</b><br>Adjust so that the voltage between TP301(VADR) and TP302 (ADR GND) becomes "59V±0.5V".<br><br><b>The symptom in case of mis-adjustment</b><br>If the VADR adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will light white.                                                       |
|           |                                                |                                                                                                                                                                                                                                               | VR111 (STB5V)<br>MAIN POWER ASSY                        | <b>STB5V adjustment</b><br>Adjust so that the voltage between TP111(STB5V) and TP113(STB GND) becomes "+5V ± 0.1V".                                                                                                                                                                                                                                                                                                        |
|           |                                                |                                                                                                                                                                                                                                               | VR356 (+14V)<br>MAIN POWER ASSY                         | <b>+14V adjustment</b><br>Adjust so that the voltage between TP355(+14V) and TP356 (AGND) becomes "+14V ± 0.1V".                                                                                                                                                                                                                                                                                                           |
|           |                                                |                                                                                                                                                                                                                                               | Note) Be sure to measure between specified test points. |                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4         | VSUS UVP/+B<br>Voltage adjustment              | White 100%<br>signal                                                                                                                                                                                                                          | VR401 (VSUS UVP)<br>MAIN POWER ASSY                     | <b>VSUS UVP adjustment</b><br>Adjust so that the voltage between TP404 (V1) and TP405 (V2) becomes "0V ± 10mV".                                                                                                                                                                                                                                                                                                            |
|           |                                                |                                                                                                                                                                                                                                               | VR131 (+B)<br>MAIN POWER ASSY                           | <b>+B Voltage adjustment</b><br>Adjust so that the voltage between TP131 (+B) and TP132 (P. GND) becomes "+380V ± 1.0V".                                                                                                                                                                                                                                                                                                   |
|           |                                                | Note) Normally, these adjustments are not needed in repair service. Adjust them only when VR is rotated by mistake and it needs to be re-adjusted.<br>Moreover, be sure to measure between specified test points in adjustment.               |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5         | 5V/3.3V<br>Voltage adjustment                  | Any input signal                                                                                                                                                                                                                              | VR552 (5V)<br>DIGITAL VIDEO ASSY                        | <b>+5V adjustment</b><br>Adjust so that the voltage between TP553 (5V) and TP554 (DGND) becomes "+5V ± 0.05V".                                                                                                                                                                                                                                                                                                             |
|           |                                                |                                                                                                                                                                                                                                               | VR602 (3.3V)<br>DIGITAL VIDEO ASSY                      | <b>+3.3V adjustment</b><br>Adjust so that the voltage between TP601 (3.3V) and TP602 (DGND) becomes "3.3V ± 0.05V".                                                                                                                                                                                                                                                                                                        |
|           |                                                | Note) Be sure to use a non-metallic screw driver such as a ceramic screw driver in the adjustment.<br>If a metallic screw driver is used, DC/DC converter may operate wrongly.<br>Moreover, be sure to measure between specified test points. |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                            |

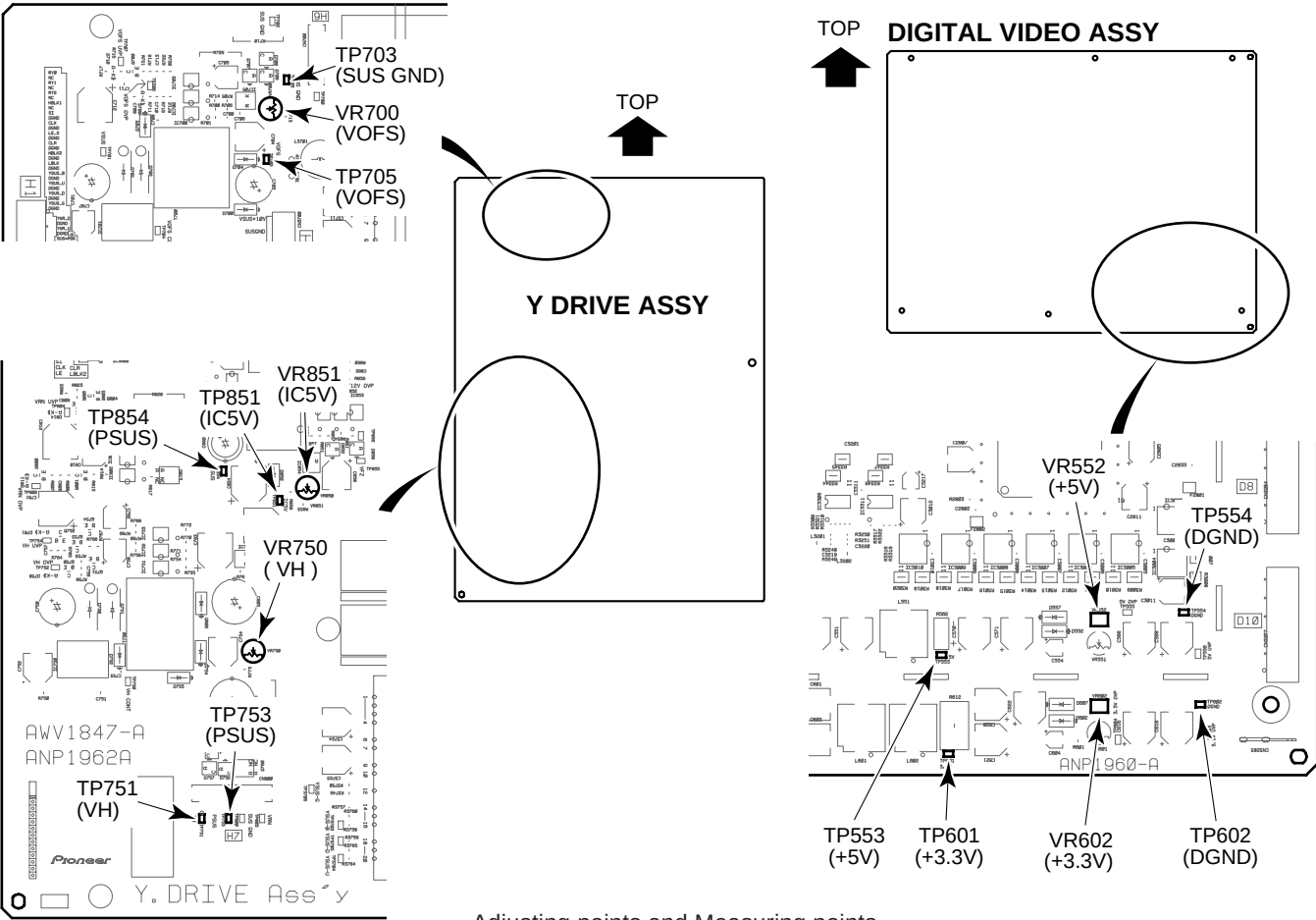
| Procedure                                               | Adjusting Item                          | Input signal         | Adjusting Point                                                                   | Adjusting Method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------|-----------------------------------------|----------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6                                                       | VOFS/VH/IC5V<br>Voltage adjustment      | White 100%<br>signal | VR700 (VOFS)<br>Y DRIVE ASSY                                                      | <b>VOFS (Offset voltage) adjustment</b><br>Adjust so that the voltage between TP705 (VOFS) and TP703 (SUS GND) becomes ± 0.5V" of the voltage indicated at the "voltage indication label".<br><br><b>The symptom in case of mis-adjustment</b><br>If the VOFS adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will light white.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                         |                                         |                      | VR750 (VH)<br>Y DRIVE ASSY                                                        | <b>VH (voltage for Scan IC) adjustment</b><br>Adjust so that the voltage between TP751 (VH) and TP753 (PSUS) becomes "103V ± 0.5V".<br>PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit.<br><br><b>The symptom in case of mis-adjustment</b><br>If the VH adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, panel will light white.                                                                                                                                                                                                                                                                                                           |
|                                                         |                                         |                      | VR851 (IC5V)<br>Y DRIVE ASSY                                                      | <b>IC5V adjustment</b><br>Adjust so that the voltage between TP851 (IC5V) and TP854 (PSUS) becomes "+5.0V ± 0.1V".<br>PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Note) Be sure to measure between specified test points. |                                         |                      |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7                                                       | Sustain Pulse<br>Waveform<br>adjustment | White 100%<br>signal | DRIVE ADJ mode<br>in Factory mode<br>X-SUS-G....."2" Key<br>Y-SUS-G ..... "4" Key | <b>X-SUS-G, Y-SUS-G adjustment</b><br>Set to the indicated value with a key on the remote control unit.<br>(refer to DRIVE ADJ mode)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                         |                                         |                      | DRIVE ADJ mode<br>in Factory mode<br>X-SUS-B....."1" Key<br>Y-SUS-B ..... "3" Key | <b>X-SUS-B, Y-SUS-B adjustment</b><br>1) Set adjustment value to "8", and confirm that green mis-discharging dots do not appear within 20mm from top & bottom of Screen.<br>2) When green mis-discharging dots appear, decrease the adjustment value "1" by "1" until green mis-discharging dots will disappear.<br>Set the adjustment value when the green disappear.<br>3) Observe sustain waveform at each Drive Assy, between K3402 (X-PSUS) and K3404 (SUS-GND), and TP3716 (Y-PSUS) and TP3713 (SUS-GND). Confirm that the waveform is not distorted.<br><br><br><br><b>The symptom in case of mis-adjustment</b><br> Green mis-discharging dots appear within 20mm from top & bottom of Screen. |



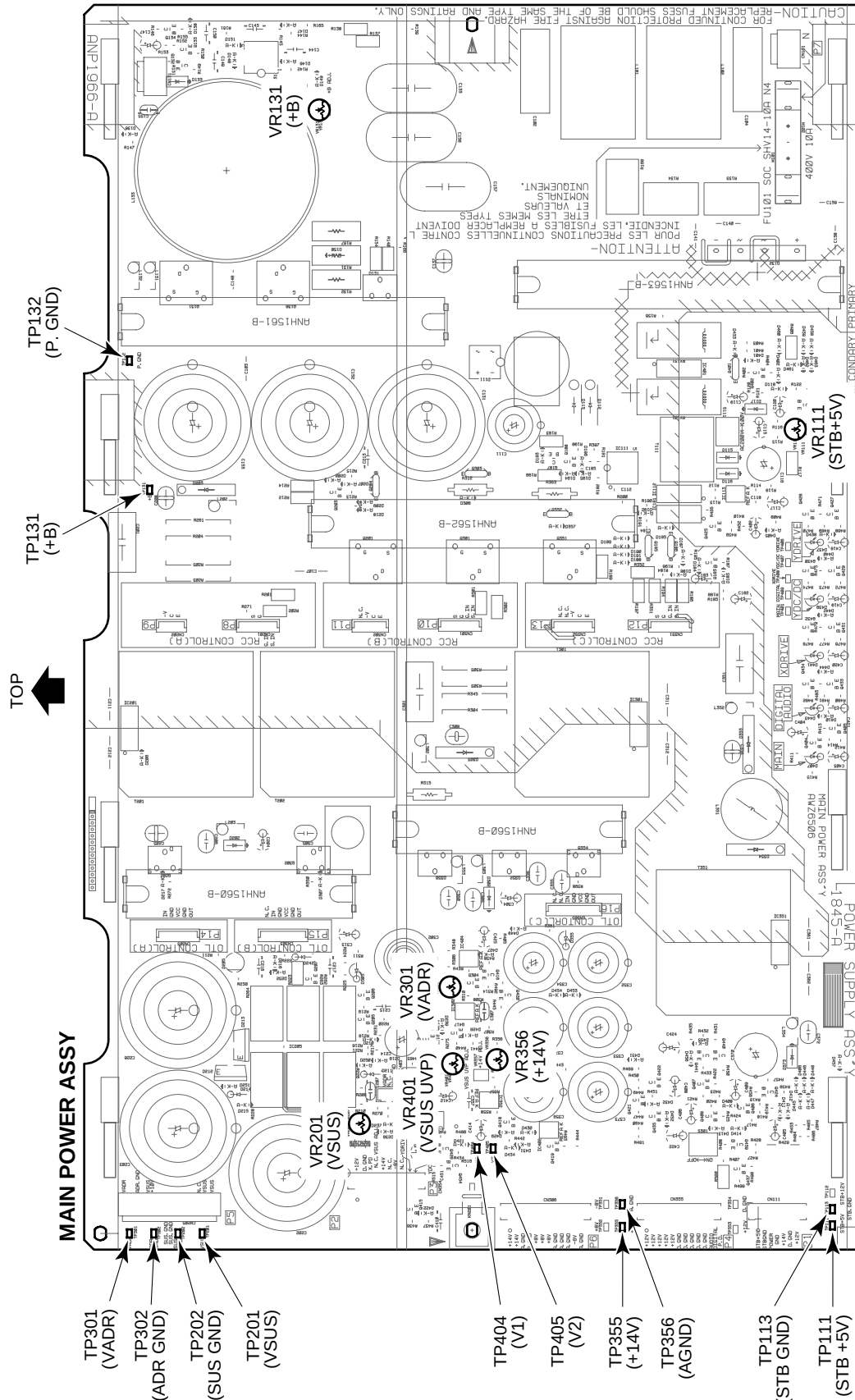
| Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Adjusting Item                | Input signal                                                                                        | Adjusting Point                                                                                                                         | Adjusting Method                                                                                                                                                                                                                                                                                                                                                                                                     |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|--|------|-----|----|----|---------------|-------------------------------|---|-----|-----|-----|-----|---|-----|-----|-----|-----|---|-----|-----|-----|-----|-------------------------------|---|-----|-----|-----|-----|---|-----|-----|-----|-----|---|------|------|------|------|------------|-----------------------|---|-----|-----|-----|---|---|-----|-----|-----|---|
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | White Balance adjustment      | Preparation setting                                                                                 | REFERENCE 1<br>in Factory mode<br>CONTRAST....."1" Key<br>BRIGHT ..... "2" Key                                                          | Set CONTRAST to "128" and BRIGHT to "128".                                                                                                                                                                                                                                                                                                                                                                           |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | 1) RAMP signal<br> | REFERENCE 1<br>in Factory mode<br>R LOW..... "10" Key<br>G LOW..... "11" Key<br>B LOW..... "12" Key                                     | <b>LOW LIGHT adjustment</b><br>1) Observe the signals at TP terminals R: K2423, G: K2424, B: K2425, of VIDEO ASSY. Adjust with the keys on the remote control unit, so that the black level (0 IRE) of the signal is within the DC voltage range of "1.85V ± 0.05V".<br>2) Adjust with the keys on the remote control unit, so that the image on the screen becomes a little greenish white (T=8500k, dev.=0.005uv). |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | 2) White Signal<br>(14 IRE: Gray)                                                                   |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                      |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | 3) RAMP signal<br> | REFERENCE 1<br>in Factory mode<br>R HIGH..... "7" Key<br>G HIGH..... "8" Key<br>B HIGH..... "9" Key                                     | <b>HIGH LIGHT adjustment</b><br>3) Set P. ACL. SW OFF.<br>Observe TP terminals R: K2423, G: K2424, B: K2425 of VIDEO ASSY. Adjust with the keys on the remote control unit, so that the white level (100 IRE) is within the DC voltage range of "2.8V ± 0.05V".<br>4) Adjust with the keys on the remote control unit. so that the image on the screen becomes a little greenish white (T=8500k, dev.=0.005uv).      |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | 4) White Signal<br>(56 IRE: Gray)                                                                   | SUB VIDEO mode<br>in Factory mode<br>ACL. SW<br>....."BS5" Key                                                                          | <b>Convergence adjustment</b><br>5) Repeat procedure 2) and 4) to converge the white balance.<br>6) After the adjustment, set ACL. SW ON.                                                                                                                                                                                                                                                                            |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | Skin color                                                                                          | REFERENCE 1<br>in Factory mode<br>COLOR....."3" Key<br>TINT ..... "4" Key                                                               | <b>Color balance adjustment</b><br>After adjusting the white balance, check the skin color of figures in LD still pictures. If the color is not natural, adjust it with the keys on the remote control unit.                                                                                                                                                                                                         |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
| (Reference) Adjustment values using the Minolta color-difference meter (CA-100)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                                                     |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                      |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
| <table><tr><td></td><td></td><td></td><td>NTSC</td><td>PAL</td><td>HD</td><td>PC</td></tr><tr><td rowspan="6">White Balance</td><td rowspan="3">20% Window-Step signal (−3dB)</td><td>x</td><td>291</td><td>293</td><td>291</td><td>291</td></tr><tr><td>y</td><td>307</td><td>301</td><td>307</td><td>307</td></tr><tr><td>Y</td><td>3.9</td><td>2.9</td><td>2.9</td><td>2.5</td></tr><tr><td rowspan="3">80% Window-Step signal (−3dB)</td><td>x</td><td>291</td><td>293</td><td>291</td><td>293</td></tr><tr><td>y</td><td>307</td><td>301</td><td>307</td><td>301</td></tr><tr><td>Y</td><td>87.2</td><td>72.5</td><td>87.2</td><td>64.3</td></tr><tr><td rowspan="2">Skin Color</td><td rowspan="2">Window -chroma signal</td><td>x</td><td>466</td><td>440</td><td>428</td><td>—</td></tr><tr><td>y</td><td>388</td><td>370</td><td>377</td><td>—</td></tr></table> |                               |                                                                                                     |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                      |      |      |  | NTSC | PAL | HD | PC | White Balance | 20% Window-Step signal (−3dB) | x | 291 | 293 | 291 | 291 | y | 307 | 301 | 307 | 307 | Y | 3.9 | 2.9 | 2.9 | 2.5 | 80% Window-Step signal (−3dB) | x | 291 | 293 | 291 | 293 | y | 307 | 301 | 307 | 301 | Y | 87.2 | 72.5 | 87.2 | 64.3 | Skin Color | Window -chroma signal | x | 466 | 440 | 428 | — | y | 388 | 370 | 377 | — |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                                                     | NTSC                                                                                                                                    | PAL                                                                                                                                                                                                                                                                                                                                                                                                                  | HD   | PC   |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
| White Balance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20% Window-Step signal (−3dB) | x                                                                                                   | 291                                                                                                                                     | 293                                                                                                                                                                                                                                                                                                                                                                                                                  | 291  | 291  |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | y                                                                                                   | 307                                                                                                                                     | 301                                                                                                                                                                                                                                                                                                                                                                                                                  | 307  | 307  |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | Y                                                                                                   | 3.9                                                                                                                                     | 2.9                                                                                                                                                                                                                                                                                                                                                                                                                  | 2.9  | 2.5  |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 80% Window-Step signal (−3dB) | x                                                                                                   | 291                                                                                                                                     | 293                                                                                                                                                                                                                                                                                                                                                                                                                  | 291  | 293  |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | y                                                                                                   | 307                                                                                                                                     | 301                                                                                                                                                                                                                                                                                                                                                                                                                  | 307  | 301  |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | Y                                                                                                   | 87.2                                                                                                                                    | 72.5                                                                                                                                                                                                                                                                                                                                                                                                                 | 87.2 | 64.3 |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
| Skin Color                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Window -chroma signal         | x                                                                                                   | 466                                                                                                                                     | 440                                                                                                                                                                                                                                                                                                                                                                                                                  | 428  | —    |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               | y                                                                                                   | 388                                                                                                                                     | 370                                                                                                                                                                                                                                                                                                                                                                                                                  | 377  | —    |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MASK Level adjustment         | Any input                                                                                           | DRIVE ADJ mode<br>in Factory mode<br>R SIDE LEVEL<br>....."10" Key<br>G SIDE LEVEL<br>....."11" Key<br>B SIDE LEVEL<br>....."12" Key    | <b>Side mask Color/Level adjustment</b><br>Set to the indicated value with the keys on the remote control unit.<br>(refer to DRIVE ADJ Mode)                                                                                                                                                                                                                                                                         |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                                                     | DRIVE ADJ mode<br>in Factory mode<br>R FULL LEVEL<br>....."BS5" Key<br>G FULL LEVEL<br>....."BS7" Key<br>B FULL LEVEL<br>....."BS9" Key | <b>Full mask Color/Level adjustment</b><br>Set to the indicated value with the keys on the remote control unit.<br>(refer to DRIVE ADJ Mode)                                                                                                                                                                                                                                                                         |      |      |  |      |     |    |    |               |                               |   |     |     |     |     |   |     |     |     |     |   |     |     |     |     |                               |   |     |     |     |     |   |     |     |     |     |   |      |      |      |      |            |                       |   |     |     |     |   |   |     |     |     |   |

PDP-502MX, PDP-502MXE

| Procedure | Adjusting Item                            | Input signal                                                                                                                 | Adjusting Point                                                  | Adjusting Method                                                                                    |
|-----------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 10        | Base Pulse number Adjustment (502MX only) | Any input                                                                                                                    | SUB VIDEO mode in Factory mode<br>PULSE NUMBER<br>....."8" Key   | Set to the indicated value with the keys on the remote control unit.<br>(refer to SUB VIDEO mode)   |
|           |                                           | Note) If unnecessarily adjusted, power consumption is changed and the panel is damaged.<br>Adjust only in case of necessity. |                                                                  |                                                                                                     |
| 11        | ABL Level Value Adjustment (502MX only)   | Any input                                                                                                                    | SUB VIDEO mode in Factory mode<br>ABL LEVEL ...."9" Key          | Set to the indicated value with the keys on the remote control unit.<br>(refer to SUB VIDEO mode)   |
|           |                                           | Note) If unnecessarily adjusted, power consumption is changed and the panel is damaged.<br>Adjust only in case of necessity. |                                                                  |                                                                                                     |
| 12        | ABL Level Offset adjustment               | Any input                                                                                                                    | REFERENCE 1 in Factory mode<br>ABL LEV OFFSET<br>....."BS9" Key  | Adjust to the ABL value mentioned on the "Drive voltage label" at the chassis of the glass panel.   |
|           |                                           | Note) If unnecessarily adjusted, power consumption is changed and the panel is damaged.<br>Adjust only in case of necessity. |                                                                  |                                                                                                     |
| 13        | Pulse Number Offset adjustment            | Any input                                                                                                                    | REFERENCE 1 in Factory mode<br>PLS NUM OFFSET<br>....."BS11" Key | Set to the indicated value with the keys on the remote control unit.<br>(refer to REFERENCE 1 mode) |
|           |                                           | Note) If unnecessarily adjusted, power consumption is changed and the panel is damaged.<br>Adjust only in case of necessity. |                                                                  |                                                                                                     |



Adjusting points and Measuring points



Adjusting points and Measuring points

## 7. GENERAL INFORMATION

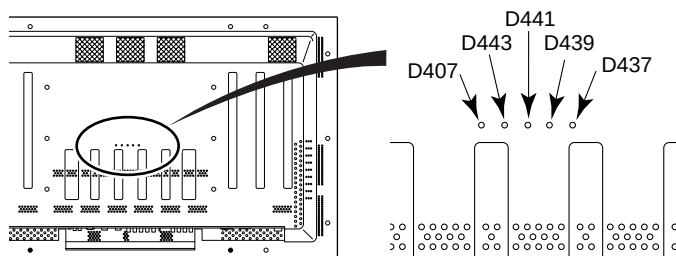
### 7.1 DIAGNOSIS

#### 7.1.1 DIAGNOSIS METHOD

This PDP has several protection circuits, and the operation of the circuits activate power down circuit and set the unit automatically to standby mode in order to protect the circuit.

Power shut down operation of the unit can roughly be diagnosed by LED indicators at Main Power Assy.

Lighting of LEDs can be confirmed through five holes on Rear Panel.



#### ■ Diagnosis of malfunctions when power down occurs (in lighting LEDs at Main Power Assy)

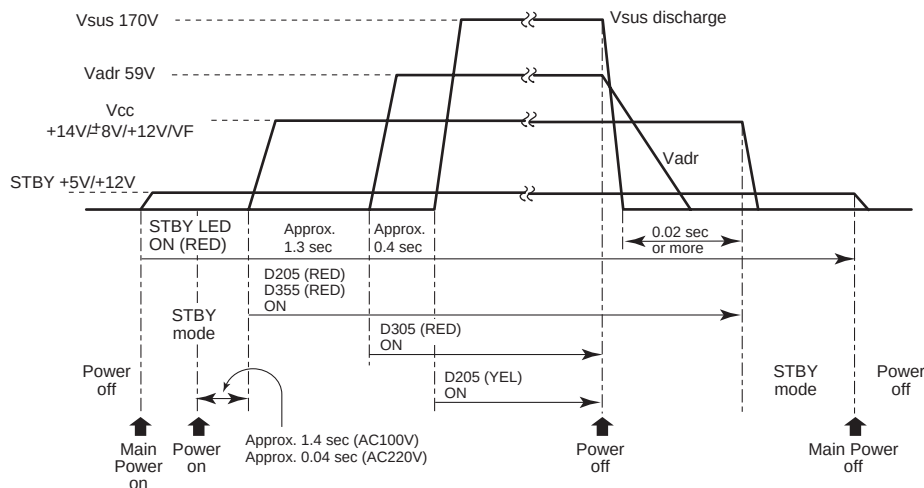
| Lighting LED | The state of circuit                                     | P.D. circuit in operation | Diagnosis                                                                                                                      | Failure points       | Estimated failure parts                 |
|--------------|----------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------|
| D407         | High between base & emitter of Q415                      | VSUS OVP                  | When RCC Control (A) Assy is replaced, P.D. does not occur.                                                                    | RCC Control (A) Assy | IC203 • Q208 • R232 • D224 • 226        |
|              |                                                          |                           | When OTL Control(A) Assy is replaced, P.D. does not occur.                                                                     | OTL Control (A) Assy | IC204 • Q209 • 210 • R260               |
|              |                                                          |                           | Even when RCC Control(A) Assy and OTL Control(A) Assy are replaced, P.D occurs.                                                | MAIN POWER Assy      | IC201 • 202                             |
|              | High between base & emitter of Q417                      | VADR OVP                  | When RCC Control (B) Assy is replaced, P.D. does not occur.                                                                    | RCC Control (B) Assy | IC303 • Q305 • R316 • 314               |
|              |                                                          |                           | When OTL Control (B) Assy is replaced, P.D. does not occur.                                                                    | OTL Control (B) Assy | IC304 • Q306 • 307 • R346               |
|              |                                                          |                           | Even when RCC Control(B) Assy and OTL Control (B) Assy are replaced, P.D occurs.                                               | MAIN POWER Assy      | IC301 • 302                             |
|              | High between base & emitter of Q419                      | 14V OVP                   | When RCC Control (C) Assy is replaced, P.D. does not occur.                                                                    | RCC Control (C) Assy | IC353 • Q353 • R364 • D362 • 364        |
|              |                                                          |                           | When OTL Control(C) Assy is replaced, P.D. does not occur.                                                                     | OTL Control (C) Assy | IC354 • Q356 • 357 • R396               |
|              |                                                          |                           | Even when RCC Control (C) Assy and OTL Control (C) Assy are replaced, P.D occurs.                                              | MAIN POWER Assy      | IC351 • 352                             |
|              | D408 Anode is High / High between base & emitter of Q426 | VSUS UVP                  | When CN205 is disconnected, P.D. occurs, and when RCC Control (A) Assy is replaced, P.D. does not occur.                       | RCC Control (A) Assy | IC203 • Q208 • R232 • 254 • C221        |
|              |                                                          |                           | When CN205 is disconnected, P.D. occurs, and when OTL Control (A) Assy is replaced, P.D. does not occur.                       | OTL Control (A) Assy | IC204 • Q209 • 210 • R260               |
|              |                                                          |                           | When CN205 is disconnected, P.D. occurs, and even when RCC Control (A) Assy and OTL Control (A) Assy are replaced, P.D occurs. | MAIN POWER Assy      | IC201 • 202 • D212 • 214                |
|              |                                                          |                           | When CN3401 is disconnected, P.D. does not occur.                                                                              | X DRIVE Assy         | Pulse module<br>IC3402 • 3405           |
|              |                                                          |                           | When CN3601 is disconnected, P.D. does not occur.                                                                              | Y DRIVE Assy         | Pulse module<br>IC3604 • 3609 • 3610    |
|              | D408 Anode is High / High between base & emitter of Q416 | VADR UVP                  | When CN205 is disconnected, P.D. occurs, and when RCC Control (B) Assy is replaced, P.D. does not occur.                       | RCC Control (B) Assy | IC303 • Q305 • R316 • 338 • D320 • C317 |
|              |                                                          |                           | When CN205 is disconnected, P.D. occurs, and when OTL Control (B) Assy is replaced, P.D. does not occur.                       | OTL Control (B) Assy | IC304 • Q306 • 307 • R346               |

| Lighting LED | The state of circuit                                    | P.D. circuit in operation | Diagnosis                                                                                                                      | Failure points                             | Estimated failure parts                                                                           |
|--------------|---------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------|
| D407         | D408 Anode is High/ High between base & emitter of Q416 | VADR UVP                  | When CN205 is disconnected, P.D. occurs, and even when RCC Control (B) Assy and OTL Control (B) Assy are replaced, P.D occurs. | MAIN POWER Assy                            | IC301 • 302 • Q302                                                                                |
|              |                                                         |                           | When CN205 is disconnected, P.D. does not occur.                                                                               | CABLE Assy                                 |                                                                                                   |
|              | D408 Anode is High/ High between base & emitter of Q418 | 14V UVP                   | When CN306 & 354 are disconnected, P.D. occurs.                                                                                | MAIN POWER Assy<br>14V D/D CONV. BLOCK     | RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352                                         |
|              |                                                         |                           | When CN306 is disconnected, P.D. does not occur.                                                                               | ANALOG VIDEO Assy                          |                                                                                                   |
|              |                                                         |                           | When CN354 is disconnected, P.D. does not occur.                                                                               | Y DRIVE Assy<br>IC5V D/D CONV. BLOCK       | IC852                                                                                             |
|              | D408 Anode is High/ High between base & emitter of Q421 | 12V UVP                   | When CN355 is disconnected, P.D. occurs.                                                                                       | MAIN POWER Assy<br>12V D/D CONV. BLOCK     | RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352<br>IC551 • 601 • Q554 • 555 • 604 • 605 |
|              |                                                         |                           | When CN356 is disconnected, P.D. does not occur.                                                                               | DIGITAL VIDEO Assy<br>D/D CONV. BLOCK      |                                                                                                   |
|              | D408 Anode is High/ High between base & emitter of Q420 | 8V UVP                    | When CN306 is disconnected, P.D. occurs.                                                                                       | MAIN POWER Assy<br>8V D/D CONV. BLOCK      | RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352                                         |
|              |                                                         |                           | When CN306 is disconnected, P.D. does not occur.                                                                               | ANALOG VIDEO Assy                          |                                                                                                   |
|              | D408 Anode is High/ High between base & emitter of Q435 | -8V UVP                   | When CN306 is disconnected, P.D. occurs.                                                                                       | MAIN POWER Assy<br>-8V D/D CONV. BLOCK     | RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352 • D373                                  |
|              |                                                         |                           | When CN306 is disconnected, P.D. does not occur.                                                                               | ANALOG VIDEO Assy                          |                                                                                                   |
| D407 • D443  | D405 Anode is High                                      | B OVP                     |                                                                                                                                | MAIN POWER Assy<br>PFC BLOCK               | IC131                                                                                             |
|              | High between base & emitter of Q111                     | AC200V P.D.               | AC power input is appropriate.                                                                                                 | MAIN POWER Assy<br>STB BLOCK               | IC111 • 112 • 113 • T111                                                                          |
|              | D852 Anode is High.                                     | VF OVP                    |                                                                                                                                | Y DRIVE Assy                               | IC852 • 853 • 854                                                                                 |
|              | TP555 Hi                                                | 5V OVP                    |                                                                                                                                | DIGITAL VIDEO Assy<br>5V D/D CONV. BLOCK   | IC551                                                                                             |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              | TP556 Hi                                                | 5V UVP                    |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              | TP604 Hi                                                | 3.3V OVP                  |                                                                                                                                | DIGITAL VIDEO Assy<br>3.3V D/D CONV. BLOCK | IC601                                                                                             |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              | TP603 Hi                                                | 3.3V UVP                  |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              | TP555 Lo                                                | ICP OPEN                  | When the power supply is turned on, a part of the screen shines in white momentarily and P.D. occurs.                          | CABLE Assy<br>RESONATOR BLOCK              | IC1008 • Q1001–Q1006                                                                              |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              | TP556 Lo                                                |                           |                                                                                                                                | Address Module                             | UPD16340 (IC???????)                                                                              |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              | TP603 Lo                                                |                           |                                                                                                                                | DIGITAL VIDEO Assy<br>DIGITAL BLOCK        | IC2201                                                                                            |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              | TP604 Lo                                                |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              |                                                         |                           |                                                                                                                                |                                            |                                                                                                   |
|              | D4501 Anode is High.                                    | AUDIO P.D.                |                                                                                                                                | AUDIO Assy                                 | IC4502 • C4520 • 4522                                                                             |
| D407 • D441  | D3457 Anode is High.                                    | 12V OCP                   |                                                                                                                                | X DRIVE Assy<br>Pulse Module               | Pulse module<br>IC3402 • 3405                                                                     |
|              |                                                         |                           |                                                                                                                                | X DRIVE Assy<br>RESET DRIVE BLOCK          | Q3401 • 3402 • 3403                                                                               |
| D407 • D439  | K706Hi                                                  | VOFS OVP                  |                                                                                                                                | Y DRIVE Assy<br>VOFS D/D CONV. BLOCK       | IC702 • 704                                                                                       |
|              | K705Hi                                                  | VOFS UVP                  | Drive section (drive control signals & drive signal output elements) in normal operation.                                      | Y DRIVE Assy<br>VOFS D/D CONV. BLOCK       | IC701 • 702 • 704                                                                                 |
|              |                                                         |                           | VOFS D/D Conv. Block in normal operation                                                                                       | Y DRIVE Assy<br>SUS_MSK BLOCK              | R3717 • 3730                                                                                      |
|              | K754Hi                                                  | VH OVP                    |                                                                                                                                | Y DRIVE Assy<br>VH D/D CONV. BLOCK         | IC751 • 752                                                                                       |

| Lighting LED      | The state of circuit | P.D. circuit in operation | Diagnosis                                                                                 | Failure points                       | Estimated failure parts                                    |
|-------------------|----------------------|---------------------------|-------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------|
| D407<br>•<br>D439 | K751Hi               | VH UVP                    | Drive section (drive control signals & drive signal output elements) in normal operation. | Y DRIVE Assy<br>VH D/D CONV. BLOCK   | IC751 • 752 • 755                                          |
|                   |                      |                           | VH D/D Conv.Block in normal operation                                                     | SCAN MODULE                          | SCAN IC                                                    |
|                   |                      |                           | Scan Module in normal operation.                                                          | Y DRIVE Assy<br>IC5V D/D CONV. BLOCK | IC851 • 852 • 853                                          |
|                   | K804Hi               | VRN OVP                   | Drive section (drive control signals & drive signal output elements) in normal operation. | Y DRIVE Assy<br>VRN D/D CONV. BLOCK  | IC801 • 803                                                |
|                   | K801Hi               | VRN UVP                   | VRN D/D Conv. Block in normal operation.                                                  | Y DRIVE Assy<br>VRN D/D CONV. BLOCK  | IC801 • 802 • 803                                          |
|                   |                      |                           |                                                                                           | YDRIVE Assy<br>SUS_MSK BLOCK         | R3717 • 3730                                               |
|                   | K854Hi               | IC5V OVP                  |                                                                                           | Y DRIVE Assy<br>IC5V D/D CONV. BLOCK | IC851 • 853                                                |
| D407<br>•<br>D437 | K3607Hi              | 12V OCP                   | Output voltage of IC3606, 3607, 3608 are normal                                           |                                      | Pulse module<br>IC3604 • 3605 • 3609 • 3610                |
|                   |                      |                           | Output voltage of IC3606, 3607, 3608 are abnormal.                                        |                                      | IC3611 • 3612 • 3613 • 3615 • 3601<br>• 3602 • 3603 • 3614 |
|                   | K3704Hi              | RESET OCP                 |                                                                                           | Y DRIVE Assy<br>RESET BLOCK          | Q3708                                                      |
|                   | D3751 Anode is High. | DRIVE STOP P.D.           |                                                                                           | DIGITAL VIDEO Assy                   | IC2201 (IC23)                                              |

OVP: Over Voltage Protection, OCP: Over Current Protection, UVP: Under Voltage Protection

## ■ Diagnosis of malfunctions by power coming up sequence



The power coming up sequence of power supply

## ■ Simple diagnosis using LEDs at Main Power Assy

| The state of LEDs at Main Power Assy                                                          | Estimated P.D. circuit in operation |
|-----------------------------------------------------------------------------------------------|-------------------------------------|
| After D205 lights up in red, D407 lights up. (D205 lights up in yellow in normal operation.)  | VSUS UVP                            |
| After D305 is put out the light, D407 lights up. (D305 lights up in red in normal operation.) | VADR UVP                            |
| After D355 is put out the light, D407 lights up. (D355 lights up in red in normal operation.) | 14V • 12V • ±8V UVP, B OVP, VF OVP  |
| D407 lights up at the stand-by mode.                                                          | AC200V P.D.                         |
| After D205, D305 and D355 lights up normally, D407 lights up.                                 | VSUS OVP                            |
| After D305 and D355 lights up normally, D407 lights up.                                       | VADR OVP                            |
| After D355 lights up normally, D407 lights up.                                                | 14V OVP                             |

■ Diagnosis when under voltage is detected at V SUS / V ADR voltage lines.

- Disconnect connector CN205 P5 at Main Power Assy and turn on the power.  
If the power is turned on and D205 at Main Power Assy lights up in yellow, cause of the under voltage is not inside Main Power Assy.  
If P.D. occurs, V SUS / V ADR DC-DC Converter block at Main Power Assy may be defective.

■ Diagnosis when under voltage is detected at 14V, 12V, +-8V voltage lines

- Be sure to turn off High Power CUT SW, S301 at Power Supply Assy. (important)
- Disconnect CN306 P6, CN355 P4, CN354 P3, CN353 P2 at Main Power Assy one by one, and turn on the power of the unit.  
(Do not disconnect all four connectors at the same time and turn on the power. Because this leads to no load of power supply and that is very dangerous.)
- When the power is turned on with a connector disconnected, and if Low power supply DC-DC Converter operates normally with lighting D355 and D205 in red, cause of under voltage is not inside Main Power Assy.
- If P.D. still occurs after disconnecting each connector, 14V DC-DC Converter block at Main Power Assy may be defective.

■ The function of High Power CUT SW, S301 at Main Power Assy

- When S301 is turned off, V SUS / V ADR DC-DC Converter does not operate. However, 14V DC-DC Converter operates normally.
- Therefore, diagnosis from Signal Input circuit to before Drive circuit is possible without danger of breaking Drive section by mistake.

■ AC100V/AC200V Change-over SW, S111 at Main Power Assy

- Only PDP-502MXE is set to AC200V.
- When the SW is set to AC100V, AC200V P.D. detecting circuit will operate. (Even when the unit is in Stand-by mode, the detecting circuit is in operation.)

■ Diagnoses of the malfunctions by LEDs at Digital Video Assy, D2302/D2306

| LED   | Title (Color of Light) | The timing of lighting                                                                                                         | Estimated failure parts                               |
|-------|------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| D2302 | STOP (GREEN)           | Lights on in normal operation<br>It lights up at every V rate, when Drive pulse output from IC2201 is normal.                  | Around IC2101/IC2151/IC2801 /X3202 (Xtal)             |
| D2302 | PBusy (RED)            | Light is put off in normal operation.<br>It lights up when System Control CPU (IC3604) and Panel CPU are communicating.        | Around Connector and Panel CPU and X3202/X3201 (Xtal) |
| D2306 | IP Busy (RED)          | It lights up at every V rate during IP processing.(Video input)<br>Light is put off when IP processing is not done. (PC input) | Around IC1801/IC1901/IC2001                           |

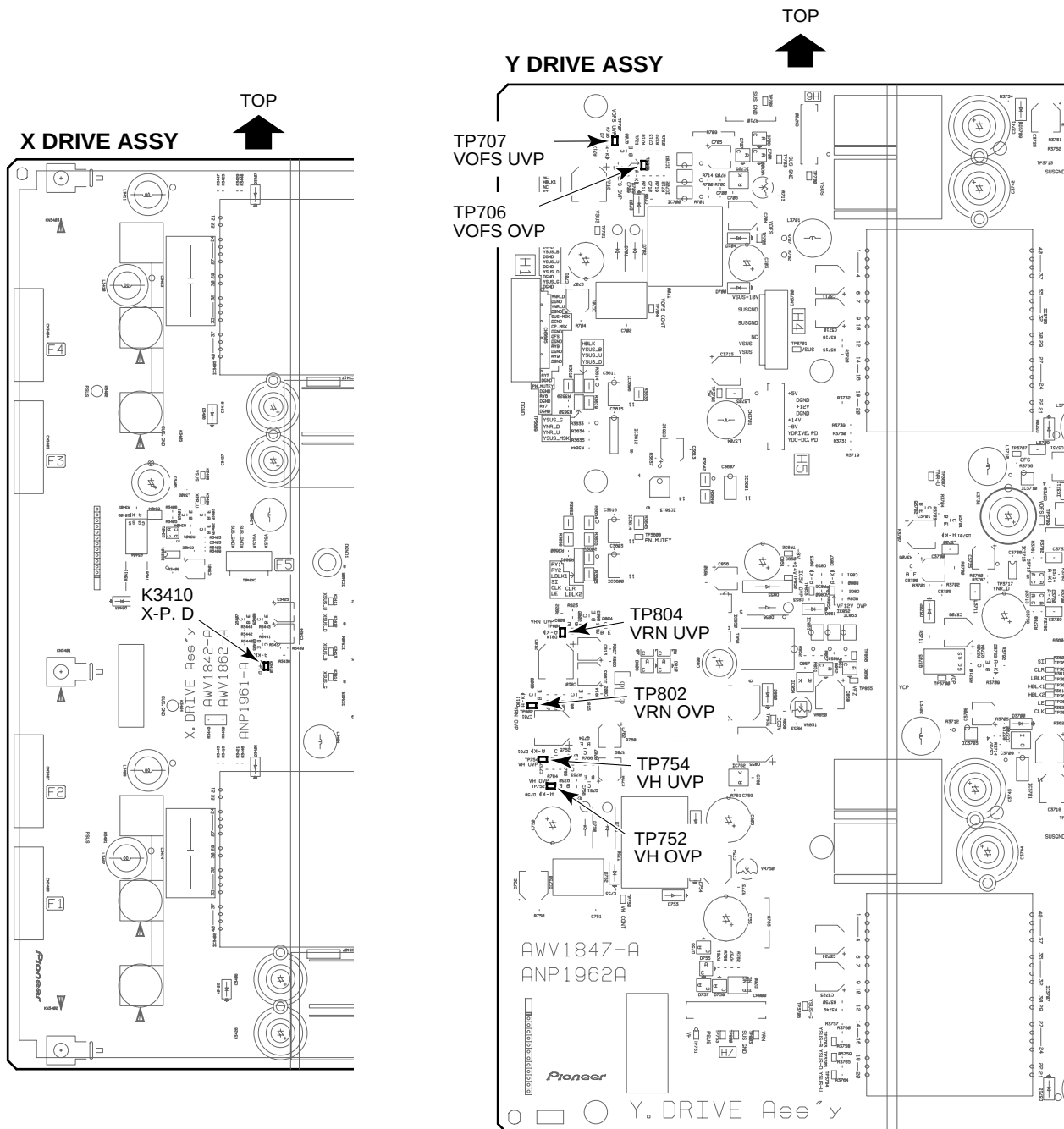
■ Diagnosis of malfunctions other than the operation of protection circuits

| The state of the unit                                                                      | Estimated failure mode                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| STBY indicator does not light at all                                                       | <ul style="list-style-type: none"> <li>● AC power input is not appropriate.</li> <li>● Stand-by power supply block is defective.</li> <li>● U-com Assy is defective.</li> <li>● Connectors disconnected.</li> </ul>                                                                                                                                            |
| Power does not go on<br>Power shuts down immediately after power on.<br>(back to Stand-by) | <ul style="list-style-type: none"> <li>● U-com Assy is defective.</li> </ul>                                                                                                                                                                                                                                                                                   |
| Dots like luminance spots appear on the screen.                                            | <ul style="list-style-type: none"> <li>● Drive section voltage is abnormal. (VSUS, VADR, VOFS, VH, VRN)</li> <li>● X Drive Assy and Y Drive Assy are defective.</li> <li>● Scan Module is defective.</li> </ul>                                                                                                                                                |
| Screen does not emit lights at all.                                                        | DIGITAL VIDEO Assy is defective.                                                                                                                                                                                                                                                                                                                               |
| Fuse is blown.                                                                             | <ul style="list-style-type: none"> <li>● Q131-Q136, D131, IC131 Defective</li> <li>● R133, R134, R168 Defective</li> <li>● Q201, Q202, RCC Control (A) Assy, OTL Control (A) Assy Defective</li> <li>● Q301, Q302, RCC Control (B) Assy, OTL Control (B) Assy Defective</li> <li>● Q351, Q354, RCC Control (C) Assy, OTL Control (C) Assy Defective</li> </ul> |

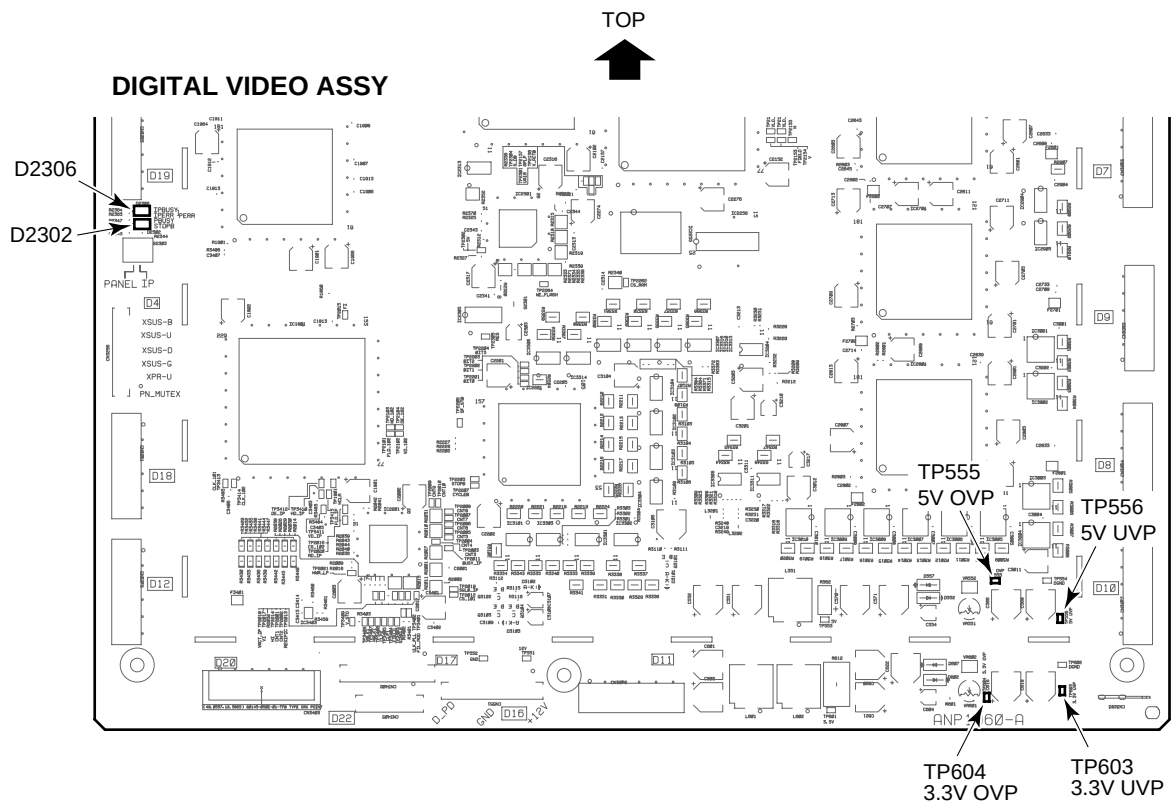
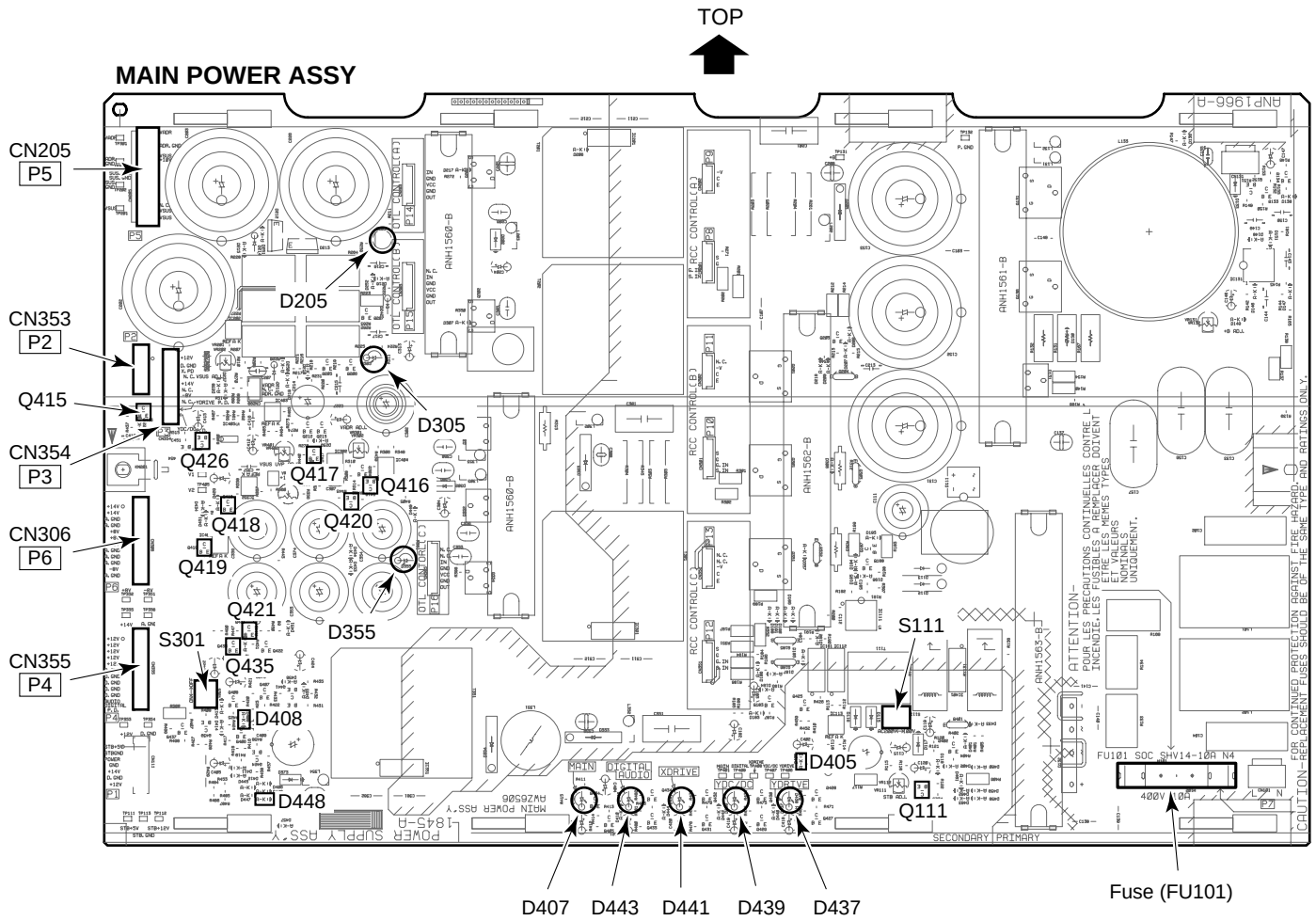


## ■ Note for repairing in case of blown fuses

- Never turn on the power of the unit again just by replacing the fuse, when the fuse is blown.  
Because, it is rare case that the fuse itself is defective. If the power is turned on again without resolving the cause of over current, the unit is damaged more.
- Be sure to check parts such as In-Rush current protective resistors where excessive current may flow.  
Because, they may be damaged secondarily.
- Be sure to find out all defective parts caused by a blown fuse.  
Because, if the power is turned on with even one defective part left in the circuit, this may lead the other parts to become defective again.

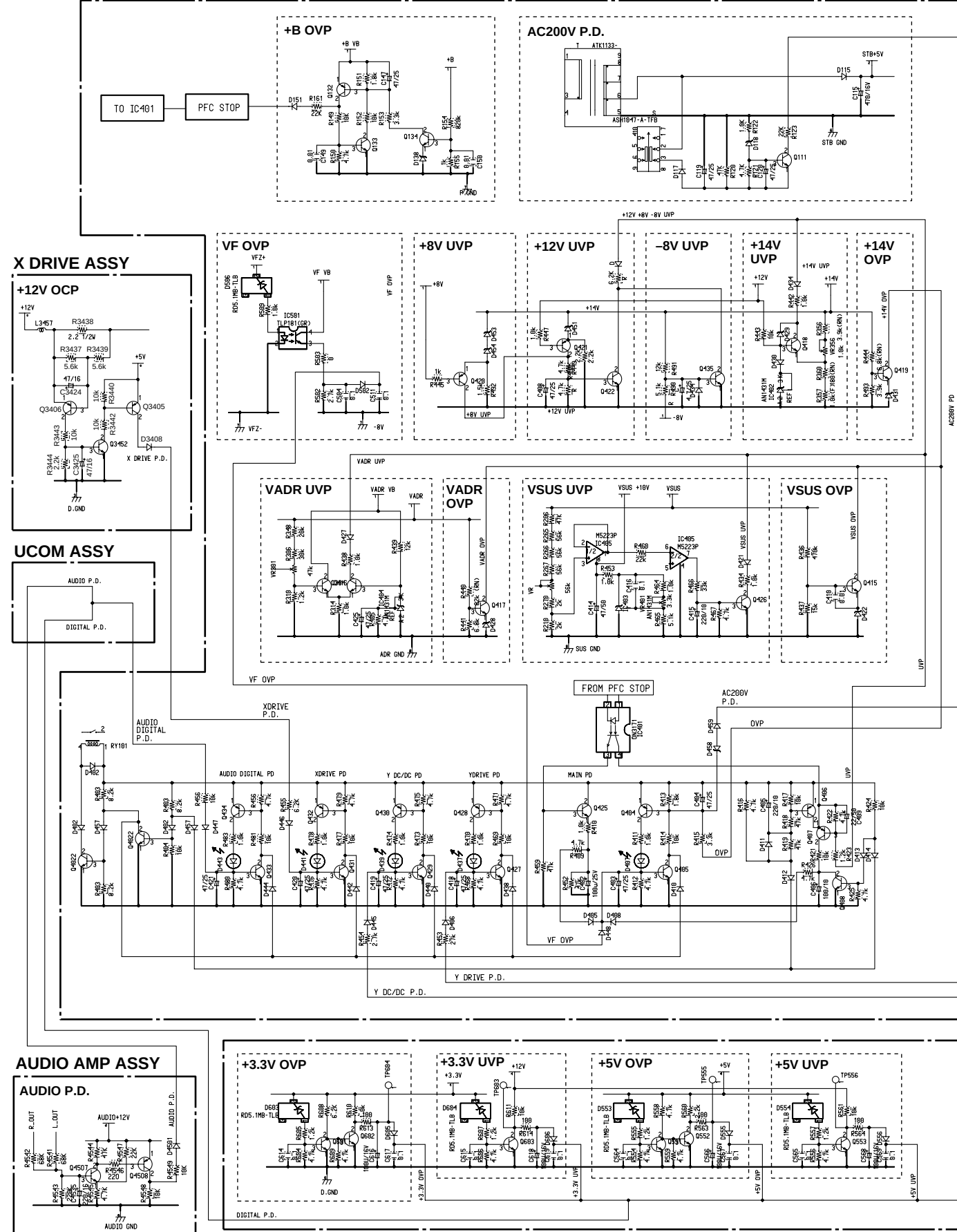






## Protection Circuits

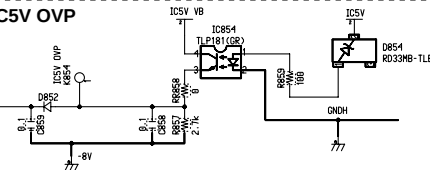
### MAIN POWER ASSY



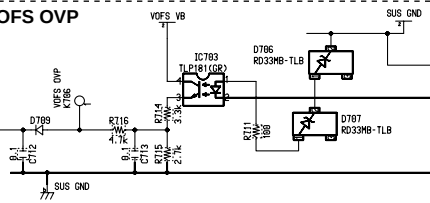
## Y DRIVE ASSY

## Y DC/DC BLOCK

## IC5V OVP

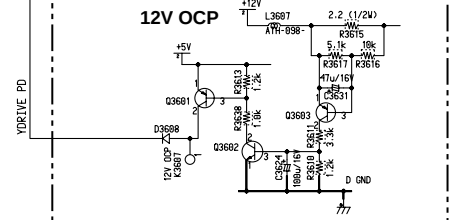


## VOFS OVP

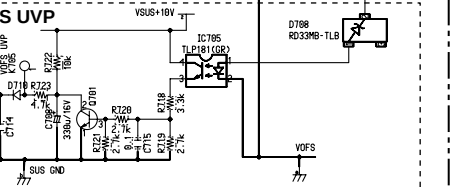


## Y DRIVE BLOCK

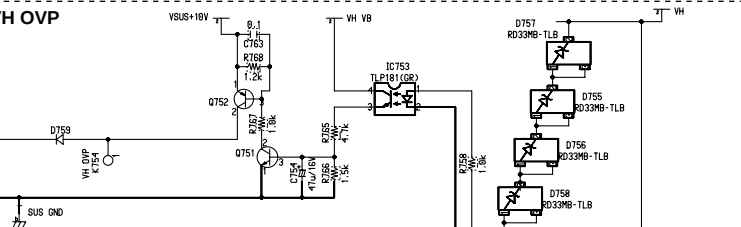
## 12V OCP



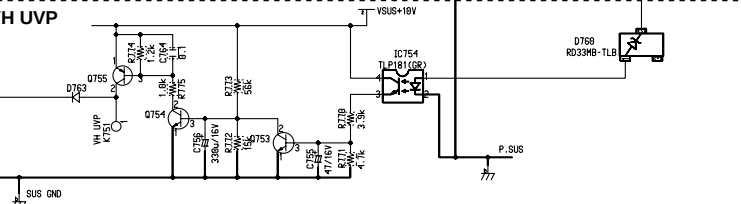
## VOFS UVP



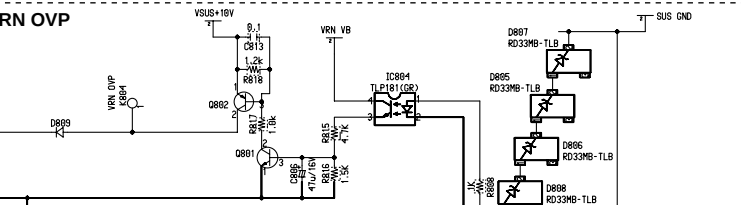
## VH OVP



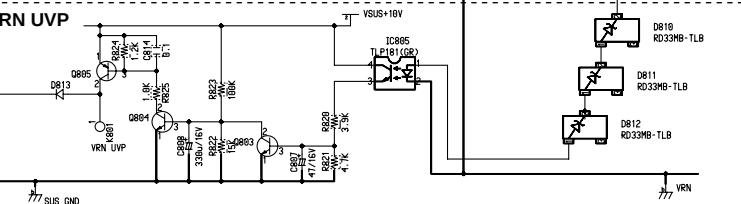
## VH UVP



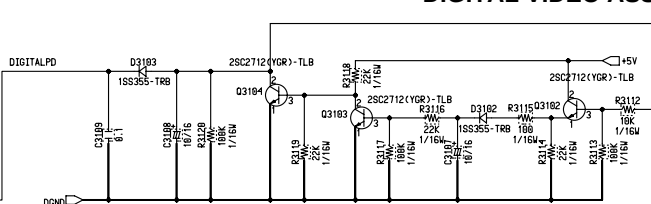
## VRN OVP



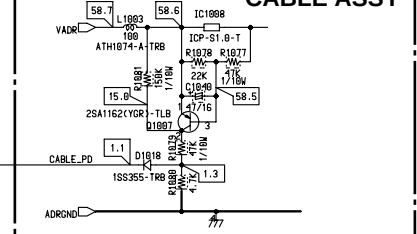
## VRN UVP



## DIGITAL VIDEO ASSY



## CABLE ASSY



■ Service Position

1. MAIN POWER ASSY

