SONY

HD ELECTRONIC VIEWFINDER

HDVF-C730W

MAINTENANCE MANUAL
1st Edition
Serial No. 10001 and Higher

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

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1. Service Overview

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4. Block Diagram

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Manual Structure

Purpose of this manual

This manual is the maintenance manual for HD Electronic Viewfinder HDVF-C730W.
This manual describes the information items necessary when the unit is supplied and installed, items that premise the service based on the components parts such as service overview, electrical alignment, spare parts lists, block diagram and schematic diagrams, assuming use of system and service engineers.

Relative manual

Besides this maintenance manual the following manual is available for this unit.

- **Operation Manual (supplied with this unit)**
  This manual is necessary for application and operation of this unit.

Contents

The following are summaries of all the sections for understanding the contents of this manual.

Section 1 Service Overview

Describes location of printed circuit board, replacement of parts, function of internal switches and notes on service.

Section 2 Electrical Alignment

Describes the electrical alignment for the maintenance.

Section 3 Spare Parts

Describes exploded views, parts list and supplied accessories used in the unit.

Section 4 Block Diagram

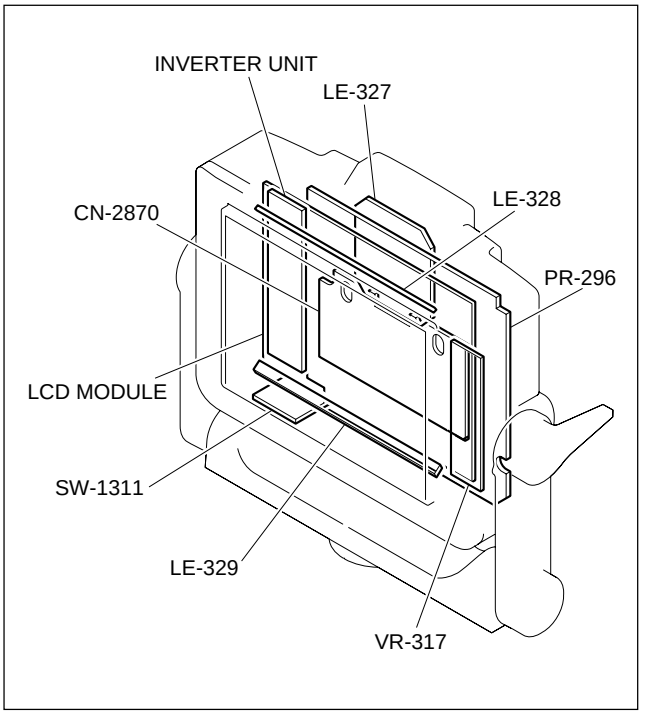
Describes overall block diagram of this unit.

Section 5 Schematic Diagrams

Describes schematic diagrams for every circuit board.

Section 1
Service Overview

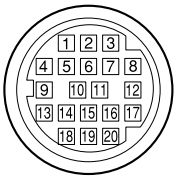
1-1. Location of Printed Circuit Boards



1-2. Connector Output/Input Signals

Output/input signals of the main connectors are as follows.

CAMERA (20P MALE)



(External view)

No.	Signal	I/O	Specifications
1	S-DATA	IN/OUT	TTL level
2	NC		No connection
3	POWER OFF	IN	ON : OPEN OFF : GND
4	SCK	IN	TTL level
5	COLOR/BW	OUT	B/W : GND COLOR : OPEN
6	NC		No connection
7	UNREG	IN	+10.5 V to 17 V
8	G TALLY	IN	ON : +5 V OFF : GND
9	PEAKING CTL	IN	ON: +5 V OFF: GND
10	NC		No connection
11	UNREG GND	——	GND for UNREG
12	Y VIDEO	IN	1.0 V p-p (Zi = 75 Ω)
13	VIDEO GND	——	GND for VIDEO
14	P_B VIDEO	IN	0.7 V p-p, Zi = 75 Ω
15	P_R VIDEO	IN	0.7 V p-p, Zi = 75 Ω
16	NC		No connection
17	R TALLY	IN	ON : +5 V OFF : GND
18	NC		No connection
19	UNREG GND	——	GND for UNREG
20	UNREG	IN	+10.5 V to 17 V

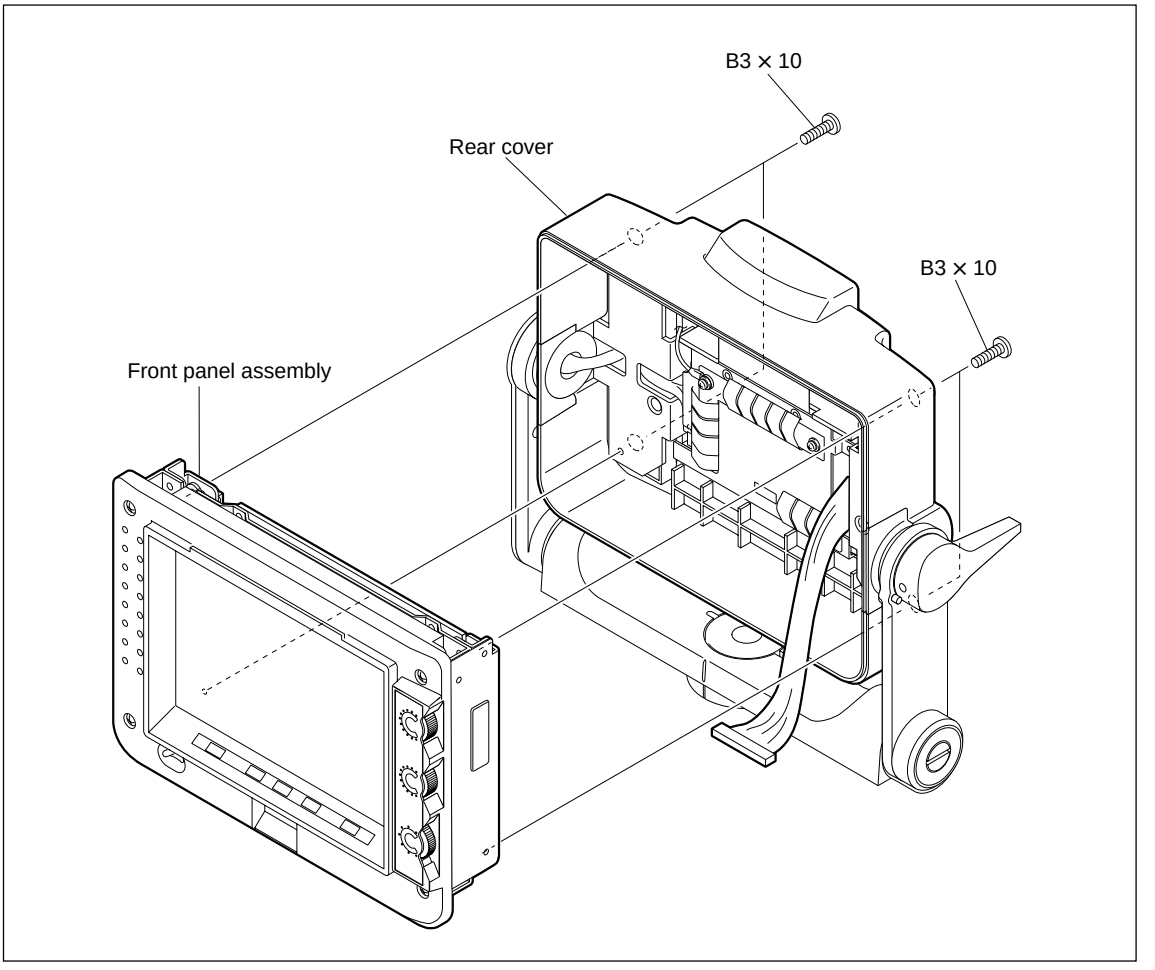
1-3. Removing/Reattaching LCD Module

Note

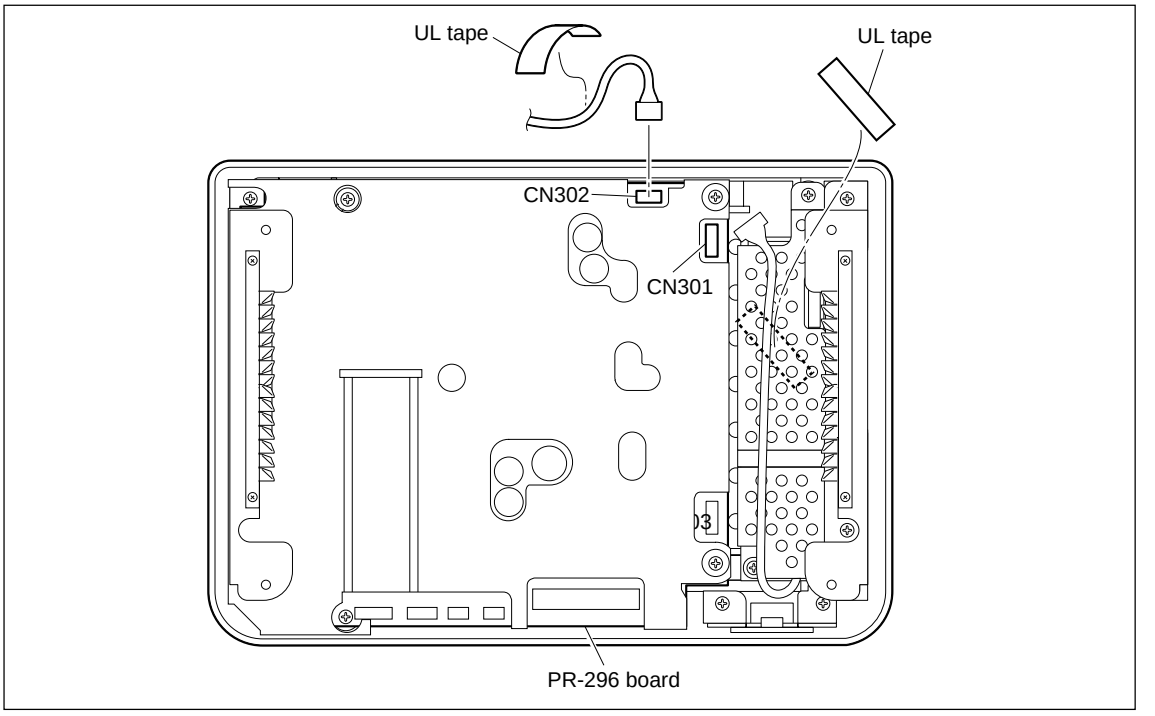
Replace the cushions (UPPER/LOWER), and cushions (RIGHT/LEFT) with new ones.

Removal

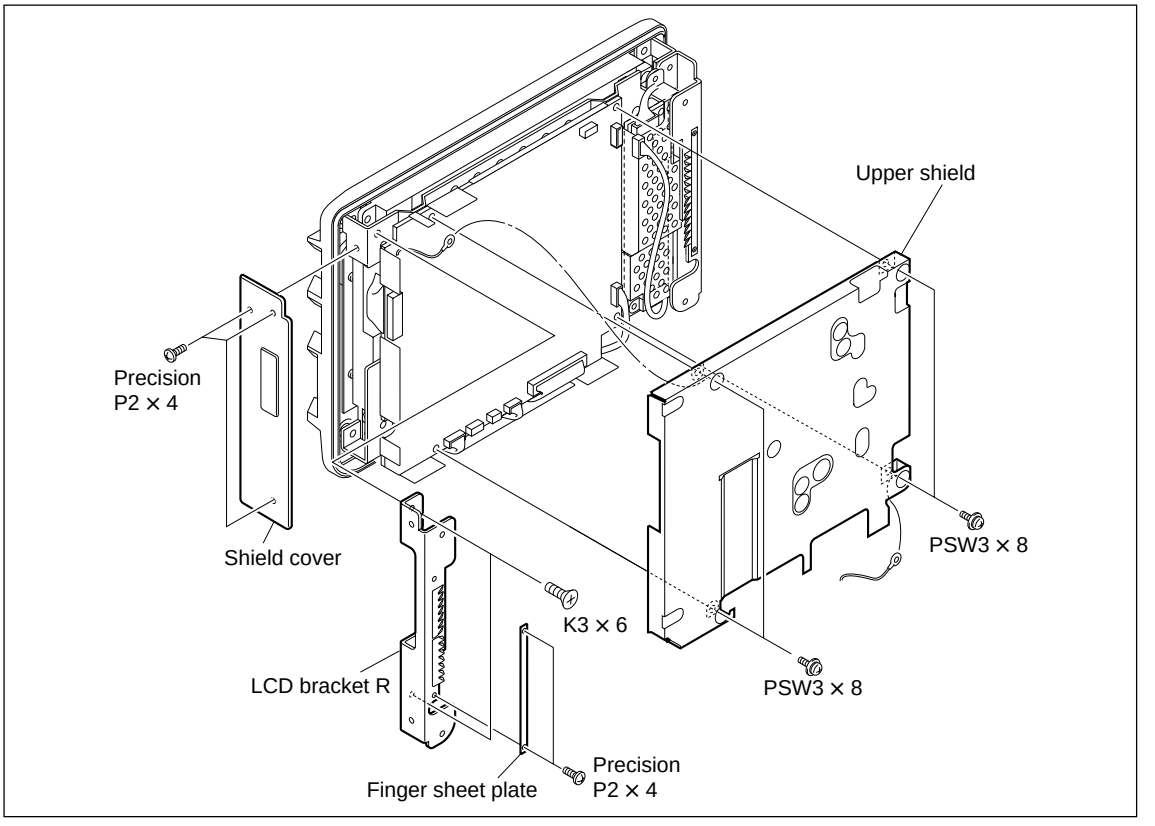
1. Remove the four screws from the rear cover.
2. Disconnect the harness, and remove the front panel assembly from the rear cover.



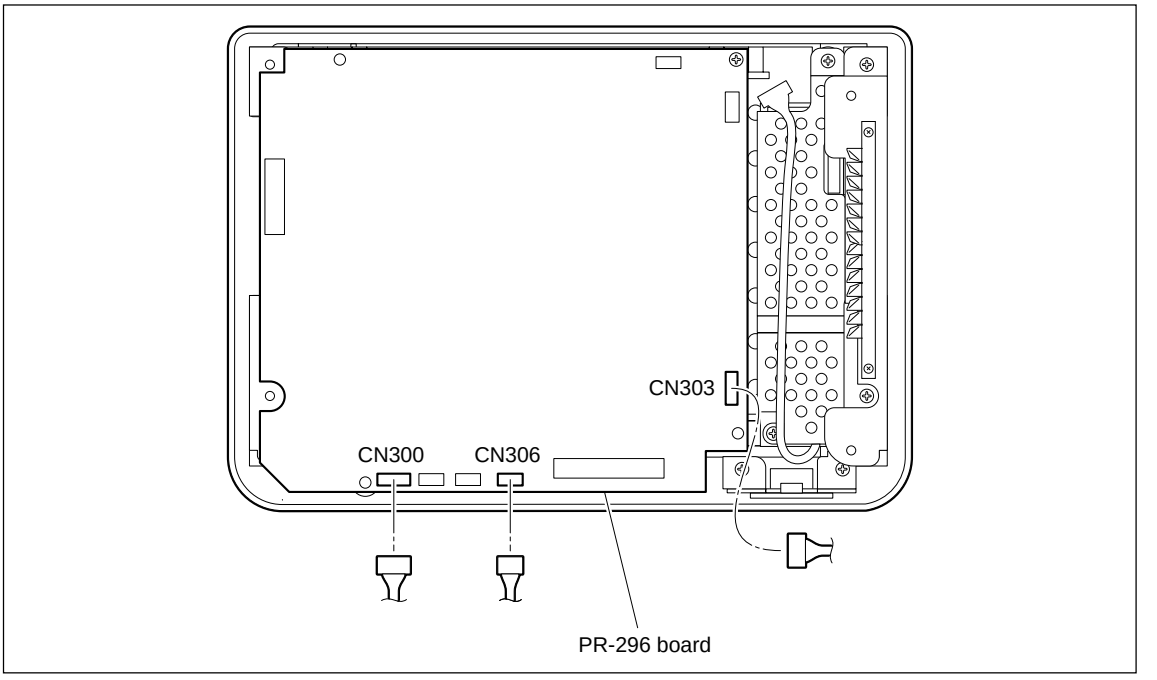
3. Remove the UL tapes.
4. Disconnect the harnesses from the connectors CN301, CN302 on the PR-296 board.



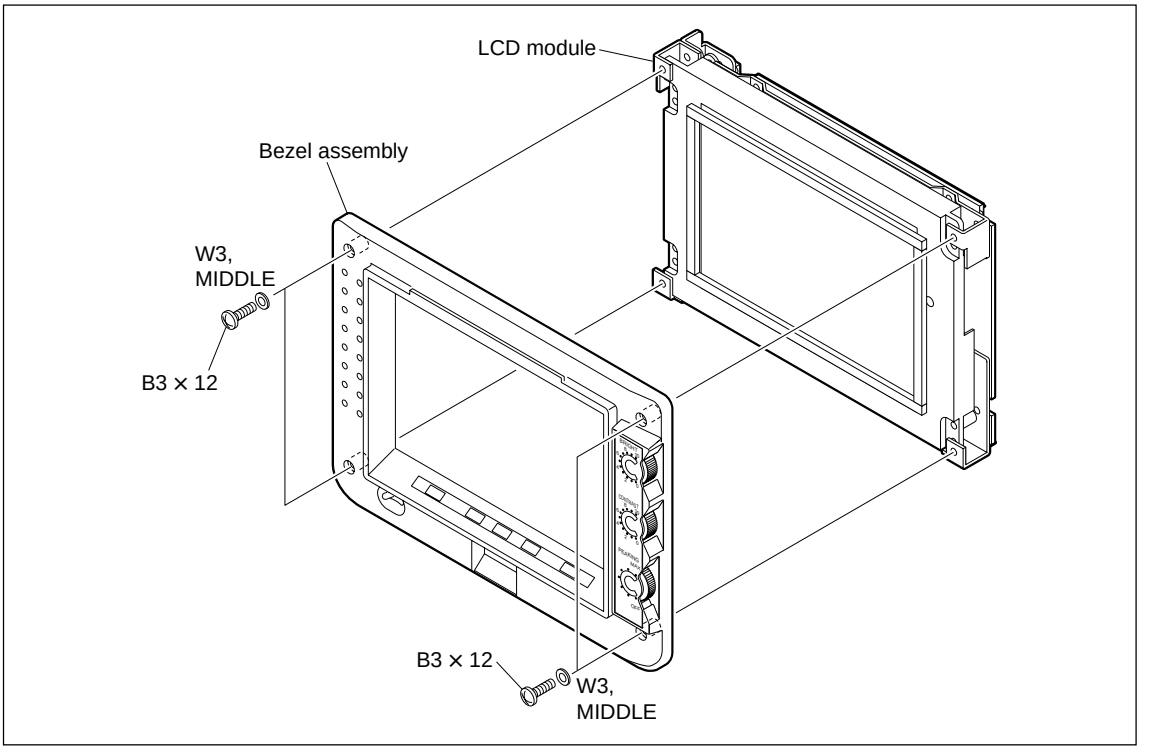
5. Remove the two screws (P2 × 4) to detach the finger sheet plate.
6. Remove the three screws (P2 × 4) to detach the shield cover.
7. Remove the two screws (K3 × 6) to detach the LCD bracket R.
8. Remove the four screws (PSW3 × 8) to detach the upper shield.



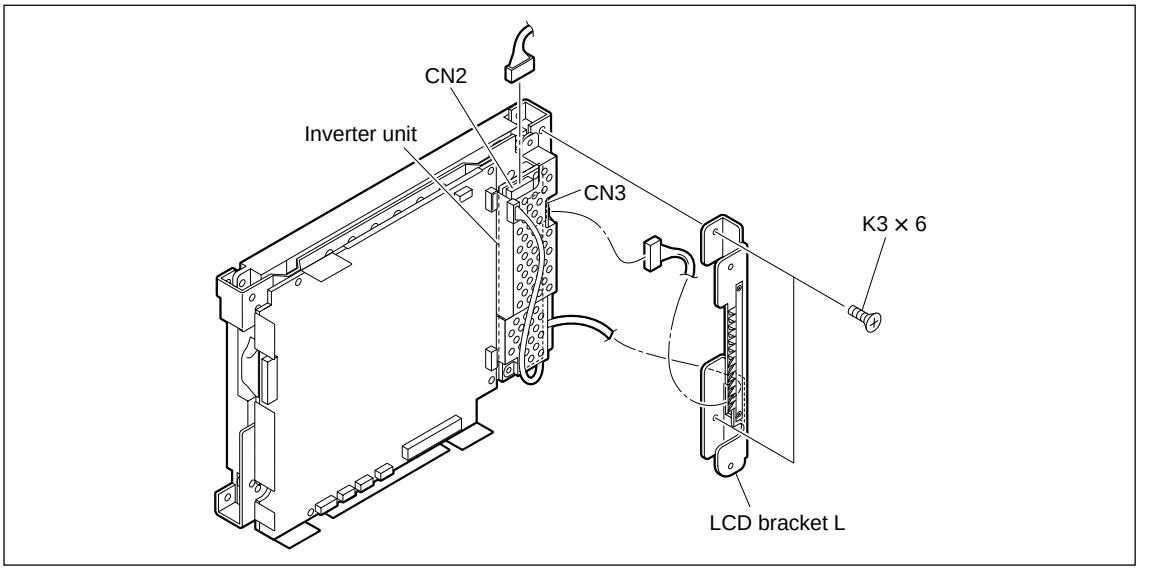
9. Disconnect the harnesses from the connectors CN300, CN303, and CN306 on the PR-296 board.



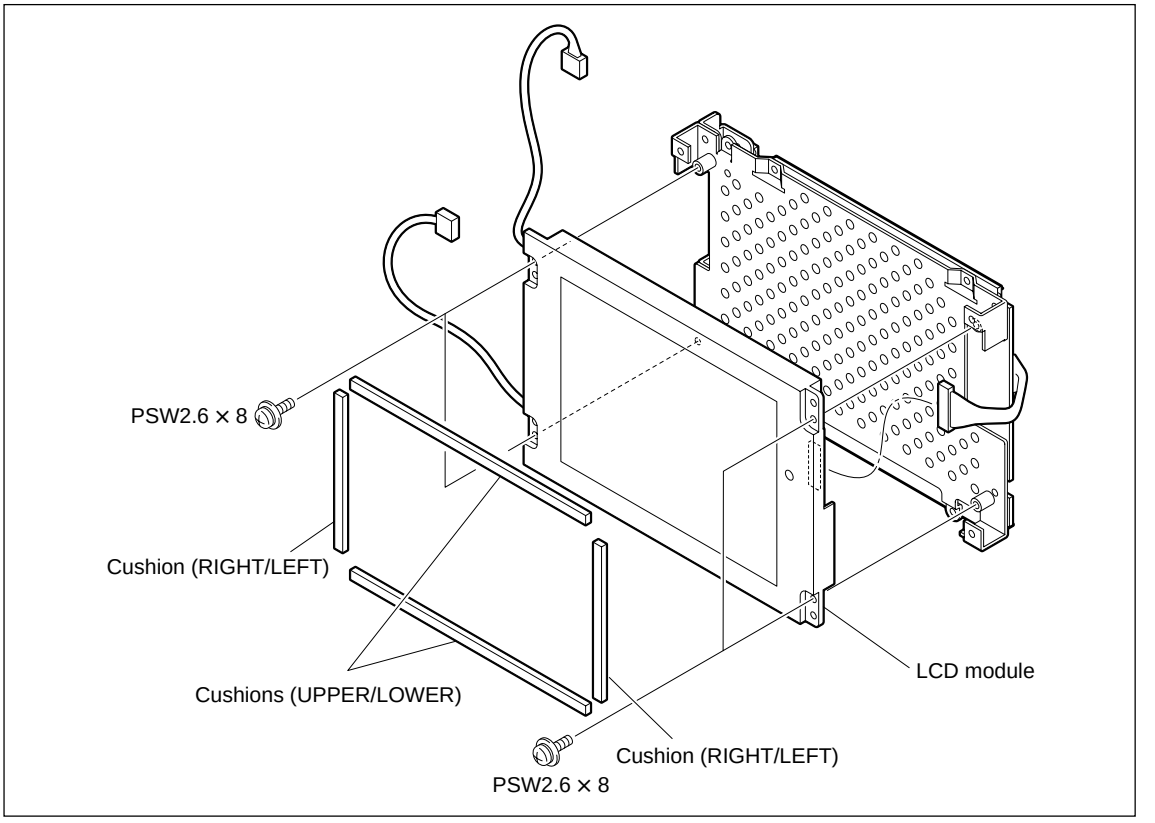
10. Remove the four screws to detach the bezel assembly.



11. Remove the two screws to detach the LCD bracket L.
12. Disconnect the harnesses from the connectors CN2, CN3 on the inverter unit.



13. Remove the four screws to detach the LCD module.
14. Remove the cushions (UPPER/LOWER), and cushions (RIGHT/LEFT) from the LCD module.



Reattaching

1. Reattach the LCD module by reversing steps of removal.

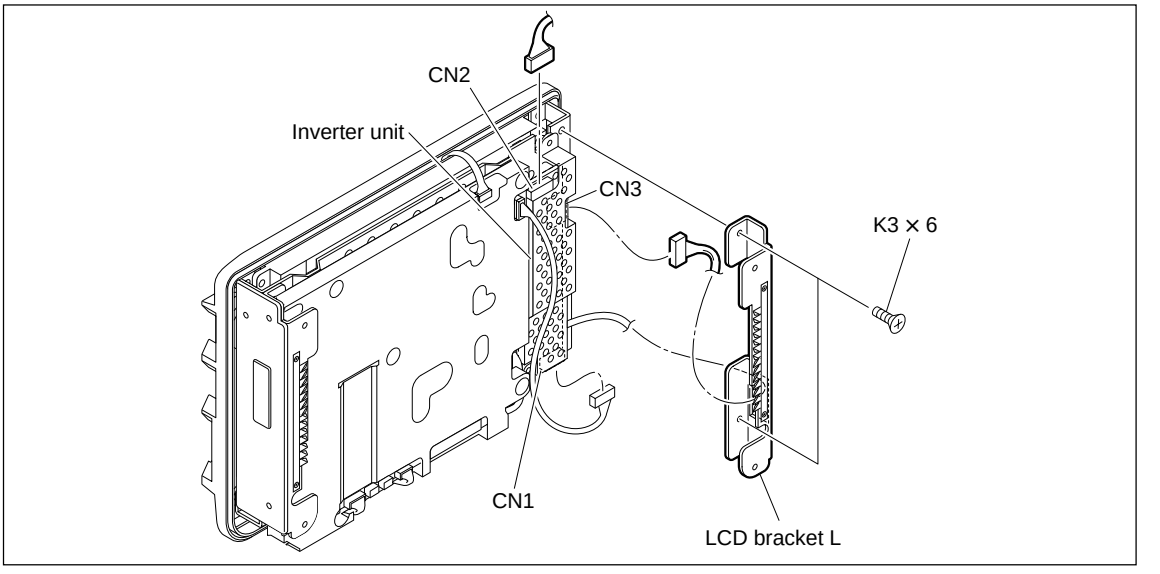
1-4. Removing/Reattaching Inverter Unit

Note

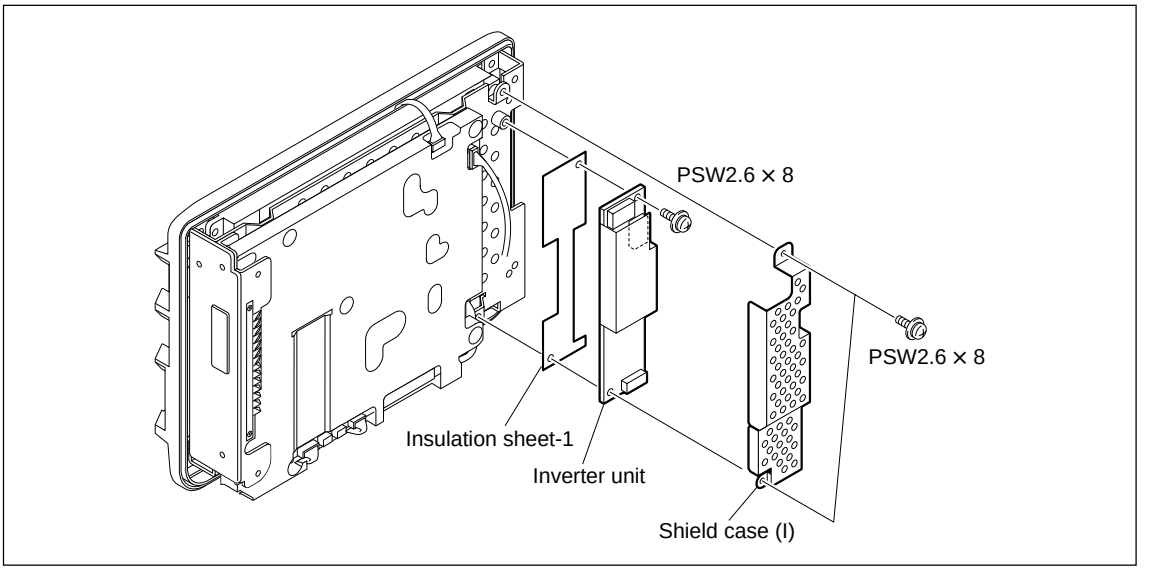
Be sure to turn off the power of the unit before removing/reattaching the inverter unit.

Removal

1. Remove the front panel assembly.
   (Refer to Section 1-3 “Removing/Reattaching LCD Panel”, steps 1 and 2.)
2. Remove the two screws to detach the LCD bracket L.
3. Disconnect the harnesses from the connectors CN1, CN2, CN3 on the inverter unit.



4. Remove the two screws to detach the shield case (I).
5. Remove the screw to detach the inverter unit and the insulation sheet-1.



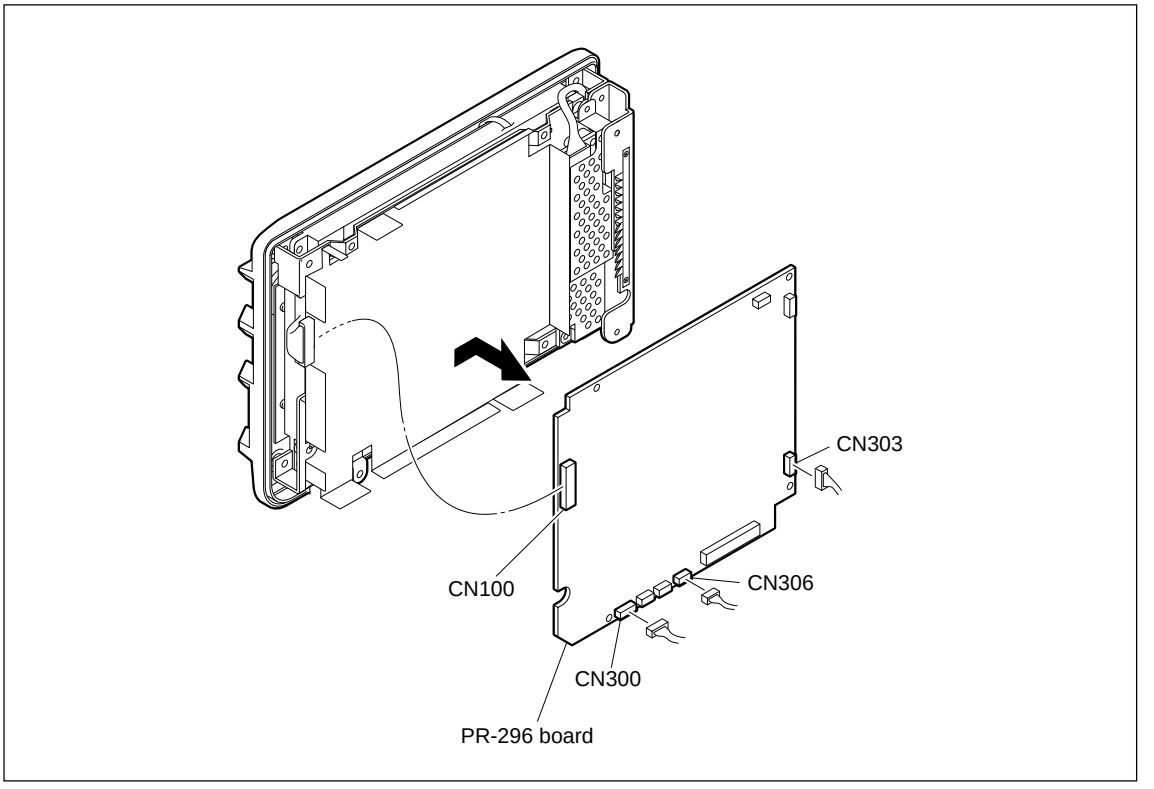
Reattaching

1. Reattach the inverter unit by reversing steps of removal.

1-5. Replacement of Main Boards

1-5-1. Replacing PR-296 Board

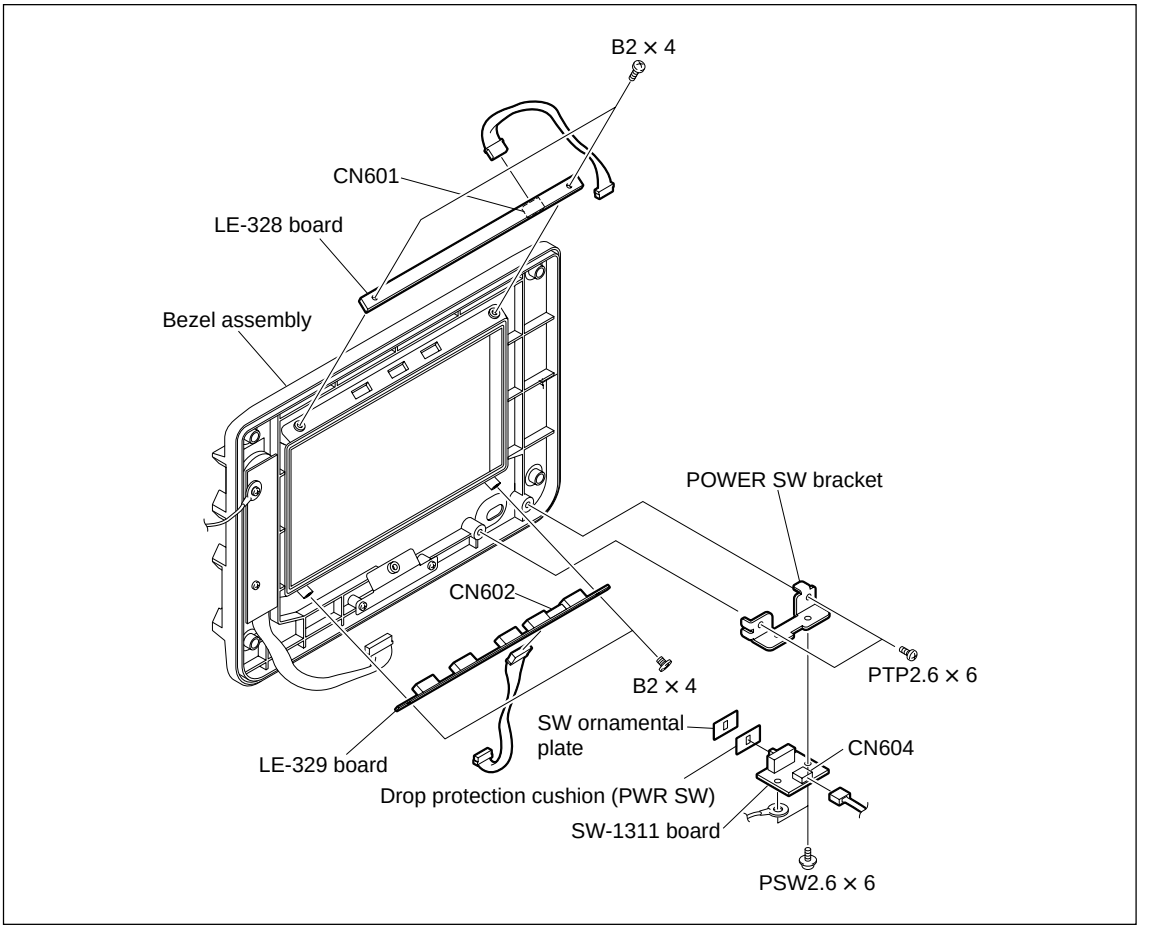
1. Remove the upper shield. (Refer to Section 1-3 “Removing/Reattaching LCD Module”, steps 1 to 8.)
2. Disconnect the harnesses from the connectors CN100, CN300, CN303, and CN306 on the PR-296 board.
3. Remove the PR-296 board in the direction of the arrow.



4. Reinstall the PR-296 board by reversing steps of removal.

1-5-2. Replacing LE-328 Board/LE-329 Board/SW-1311 Board

1. Remove the bezel assembly.
   (Refer to Section 1-3 “Removing/Reattaching LCD Module”, steps 1 to 10.)
2. Remove the two screws (B2 × 4) to detach the LE-328 board from the bezel assembly.
3. Disconnect the harness from the connector CN601 on the LE-328 board.
4. Remove the two screws (PTP2.6 × 6) to detach the POWER SW bracket from the bezel assembly.
5. Remove the two screws (PSW2.6 × 6) to detach the SW-1311 board from the POWER SW bracket.
6. Disconnect the harness from the connector CN604 on the SW-1311 board.
7. Remove the SW ornamental plate and the drop protection cushion (PWR SW) from the SW-1311 board.
8. Remove the two screws (B2 × 4) to detach the LE-329 board from the bezel assembly.
9. Disconnect the harness from the connector CN602 on the LE-329 board.



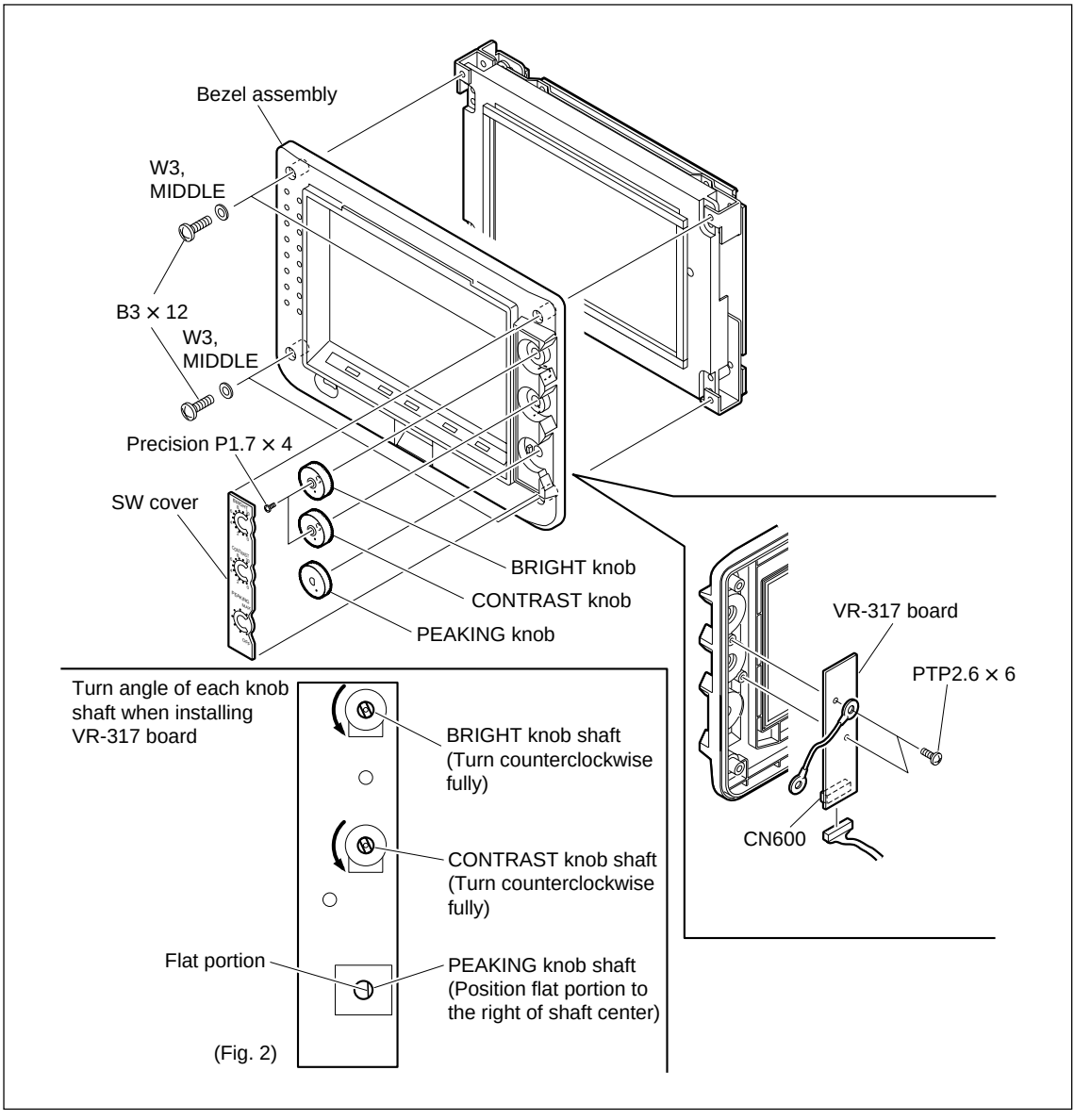
10. Reinstall the removed boards by reversing steps of removal.

1-5-3. Replacing VR-317 Board

Note

The SW cover cannot be reused. Replace the SW cover with a new one.

1. Remove the bezel assembly.
   (Refer to Section 1-3 “Removing/Reattaching LCD Module”, steps 1 to 10.)
2. Detach the SW cover, and remove the two screws (P1.7 × 4).
3. Remove the BRIGHT, CONTRAST, and PEAKING knobs.
4. Remove the two screws (PTP2.6 × 6), and remove the VR-317 board from the bezel assembly.
5. Disconnect the harness from the connector CN600 on the VR-317 board.



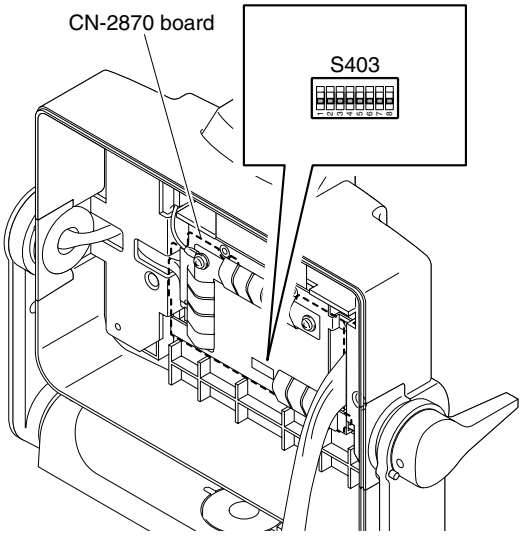
6. Reinstall the VR-317 board by reversing steps of removal.

Note

Adjust the respective knobs (BRIGHT/CONTRAST/PEAKING) in the directions shown in Fig. 2.
BRIGHT knob, CONTRAST knob: Fully counterclockwise
PEAKING knob: Flat portion to the right

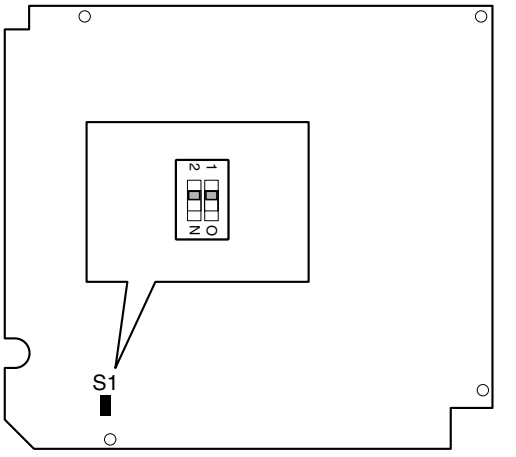
1-6. Function of Internal Switches

CN-2870 board



Ref. No.	Bit	Description	Factory setting
S403	1	INDICATOR function ON/OFF switch. (LED except the BATT IND) OFF : ENABLE ON : DISENABLE	OFF
	2	Sets the direction of display. OFF : Normal display ON : Reversed display	OFF
	3	Sets the scan size. OFF : UNDERSCAN ON : ZEROSCAN	ON
	4 to 7	Not used	OFF
	8	2VF setting. (IIC address setting) sync display. OFF : 1VF ON : 2VF	OFF

PR-296 Board



PR-296 Board (Side A)

Ref. No.	Bit	Description	Factory setting
S1	1	Sets the memory protection. OFF : WRITE PROTECT ON : WRITE ENABLE	OFF
	2	Not used	OFF

1-7. Replacing the Fuse

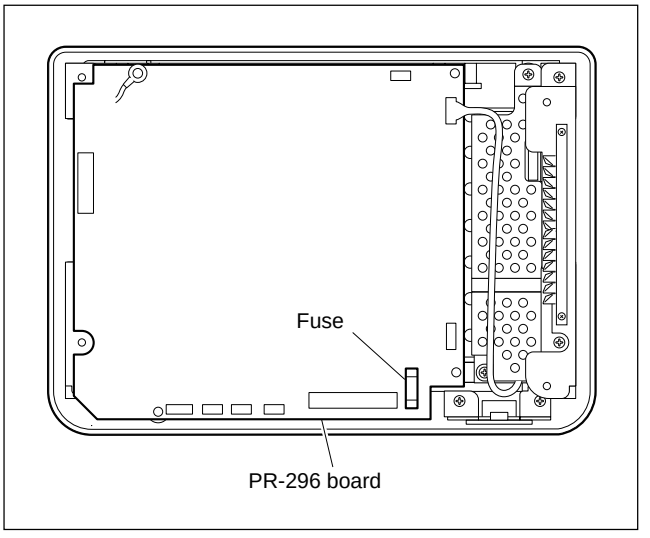
The PR-296 board of the unit is equipped with circuit protection parts such as fuse.
The fuse melt when overcurrent flows or the unit overheats when problems occur.
When replacing the fuse, be sure to use the following designated part.
Correct the cause resulting in the melting of the fuse before replacement.

WARNING

Use Designated Parts
The fuse/IC link is an important part for ensuring safety. Replacement with parts other than those designated will result in fire hazards and electric hazards.
Therefore be sure to use only designated parts.

Replacement

1. Remove the upper shield.
   (Refer to Section 1-3 “Removing/Reattaching LCD Panel”, steps 1 to 8.)
2. remove the fuse from the PR-296 board, and replace the fuse.



1-8. Unleaded Solder

Boards requiring use of unleaded solder are printed with a lead free mark (LF) indicating the solder contains no lead. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Notes

- Be sure to use the unleaded solder for the printed circuit board printed with the lead free mark.
- The unleaded solder melts at a temperature about 40 °C higher than the ordinary solder, therefore, it is recommended to use the soldering iron having a temperature regulator.
- The ordinary soldering iron can be used but the iron tip has to be applied to the solder joint for a slightly longer time. The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful.

Section 2
Adjustment

Note

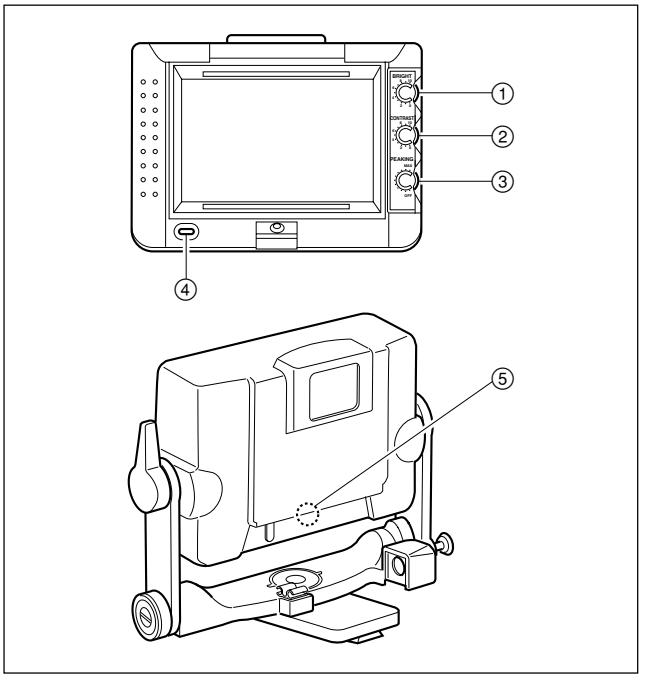
This unit is adjusted at factory shipment, and the adjustment data is saved in the PR-296 board.
Perform all the adjustments described in this section after replacing the LCD module or PR-296 board.
Be sure to perform the adjustment in order.

2-1. Preparation

2-1-1. Setting Switches/Controls

Note

Set the Switches and controls used for adjustments in this section as follows unless otherwise specified.



①	BRIGHT control:	Center (5)
②	CONTRAST control:	MAX (Fully clockwise ↻)
③	PEAKING control:	OFF (Fully counterclockwise ↺)
④	POWER switch:	ON
⑤	B&W switch:	OFF

2-1-2. Equipment

Measuring equipment

- Color analyzer CA-210/110

Related equipment

- HD camera HDC1500, HDC-900/950 or equivalent
- Camera AC adapter AC-550/AC-DN10/DN2B or equivalent

Tools

- Waveform monitor
  HD digital waveform monitor
  Leader Electronics LV5150D, Tektronix WFM1125, or equivalent
- Pattern box PTB-500
  Sony part No.: J-6029-140-B
- Extension tool for operating the service mode (SWITCH-TEST-BOARD)
  Sony part No.: J-7120-210-1

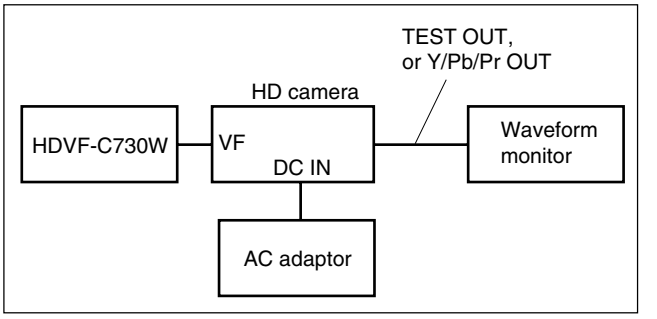
  Note

  When SWITCH-TEST-BOARD is not provided, use switches S300 to S306 on the PR-296 board for starting/operating the service mode menus.

2-1-3. Connection

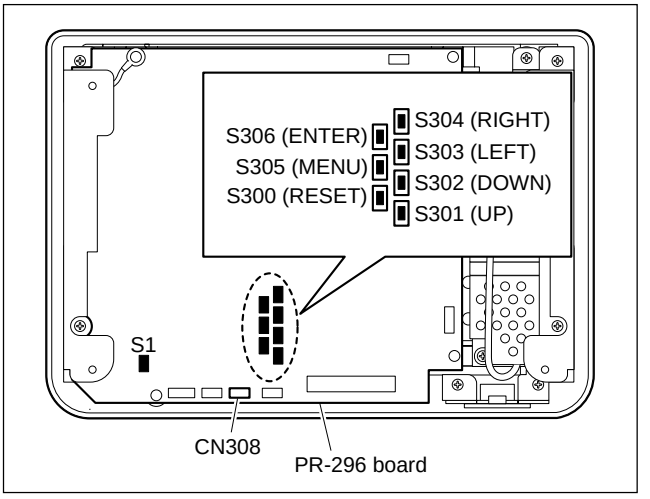
Note

When input signal from the TEST OUT connector of camera to the waveform monitor, set the camera so that the HD-Y signal is output from the TEST OUT connector.



2-1-4. Service Mode

Adjust the unit by using the menus of service mode 1 and service mode 2.
Use switches S300 to S306 on the PR-296 board or connect SWITCH-TEST-BOARD to CN308 on the PR-296 board to start and operate the service mode menus.
Refer to Section 2-5 for service mode items.



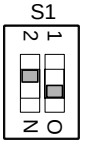
Name	Ref.No/ PR-296 board	SWITCH-TEST-BOARD	Function
MENU button	S305	MENU	Displays service mode menus. Shifts the cursor to a position before the item selected with the RIGHT/ENTER button. (Returns to the previous menu.)
RESET button	S300	RESET	Clear the selection item selected with the RIGHT/ ENTER button. Cancels adjustment data. (Returns to the previous menu.)
ENTER button	S306	ENTER	Enters the item at the cursor position. Determine the adjustment data. (Returns to the previous menu.)
UP button	S301	UP	Moves up the cursor. Changes adjustment values.
DOWN button	S302	DOWN	Moves down the cursor. Changes adjustment values.
RIGHT button	S304	RIGHT	Enters the item at the cursor position. Shifts a selected item or adjustment item.
LEFT button	S303	LEFT	Shifts a selected item or adjustment item.

Starting service mode

1. Press the MENU button.
   The menu selection window of service mode 1 appears.
2. Press the RESET button three times, and then press the ENTER button.
   Service mode 2 starts.

2-1-5. Memory Protection for Adjustment Data

Adjustment data of the unit is saved in the EEPROM (IC304) on the PR-296 board. “Memory protect” is set for data protection when the unit is shipped.
Be sure to set the switch S1-1 on the PR-296 board to ON (WRITE ENABLE) before starting adjustments to release “Memory protect”.
Otherwise no adjustment data can be saved after adjustment.



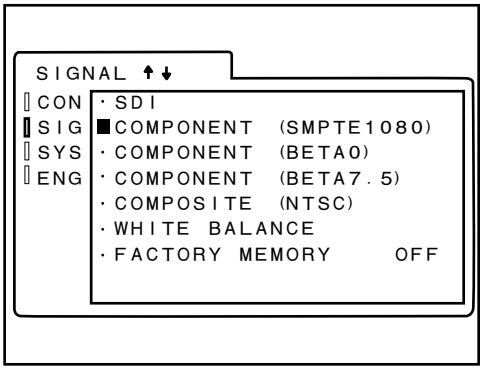
2-2. Component (SMPTE1080) Adjustment

1. Input the all-black signal (signal level: 0 IRE) from the camera to display the screen.

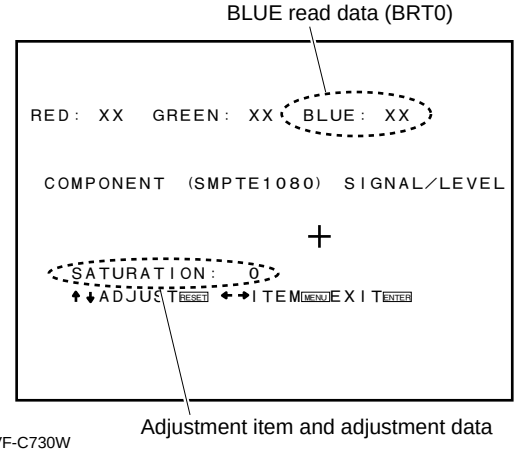
   Note

   When input the all-black signal, perform the following steps (1) and (2).
   (1) Perform ABB (Auto Black Balance) of the camera.
   (2) Adjust the MASTER BLACK LEVEL (BLACK M) of the camera menu to set the signal level to 0 IRE while confirming the waveform monitor.

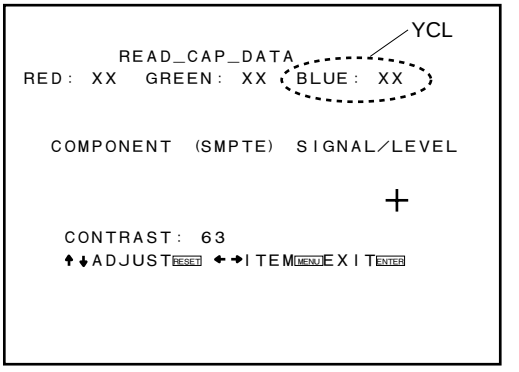
2. Start the service mode 2. (Refer to Section 2-1-4.)
3. Select the SIGNAL menu with the UP/DOWN buttons, and then press the RIGHT button.



4. Select the COMPONENT (SMPTE1080) adjustment mode with the UP/DOWN buttons, and then press the ENTER button.
   The adjustment window appears.
5. Set the following in the COMPONENT (SMPTE1080) adjustment mode, and then take note of the BLUE read data (BRT0).
   This data is named “BRT0”.
   BRIGHT: 64
   CONTRAST: 0
   SATURATION: 0



6. Set CONTRAST to “63” and adjust Y CLAMP so that the BLUE read data equals BRT0.
   This BLUE read data is named “YCL”.
   Specification: YCL = BRT0 ±1

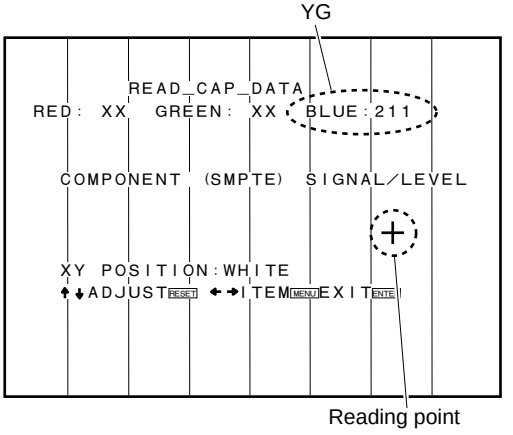


7. Set SATURATION to “127” and adjust U CLAMP so that the BLUE read data equals YCL.
   This BLUE read data is named “UCL”.
   Specification: UCL = YCL ±1

8. Adjust V CLAMP so that the RED read data equals YCL.
   This RED read data is named “VCL”.
   Specification: VCL = YCL ±1

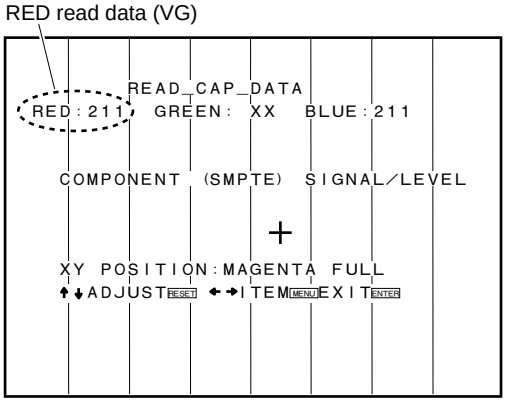
9. Change the COMPONENT (SMPTE1080) adjustment mode as follows to input 100% color-bar signal from the camera.
   BRIGHT: 16
   CONTRAST: 31
   SATURATION: 61

10. Set XY POSITION to “WHITE” and adjust Y GAIN so that the BLUE read data equals “211 ±2”.
    This BLUE read data is named “YG”.
    Specification: YG = 211 ±2



11. Set XY POSITION to “BLUE FULL” or “BLUE” and move the reading point “+” onto the blue of the color-bar.
12. Adjust U GAIN so that the BLUE read data equals YG.
    This BLUE read data is named “UG”.
    Specification: UG = YG ±1

13. Set XY POSITION to “MAGENTA FULL” or “MAGENTA” and move the reading point “+” onto the magenta of the color-bar.
14. Adjust V GAIN so that the RED read data equals YG.
    This RED read data is named “VG”.
    Specification: VG = YG ±1



15. Press the ENTER button to close the adjustment mode, and then re-start the connected camera.

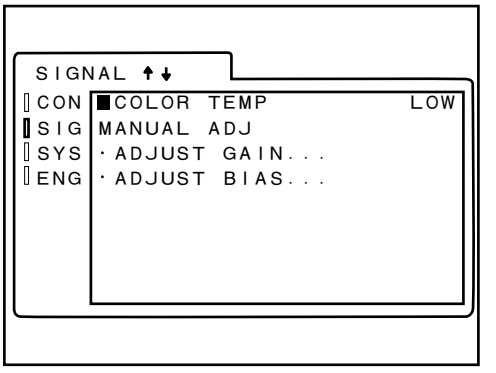
2-3. White Balance Adjustment

Shoot the white image of the pattern box with the camera, and perform the white balance adjustment after input the following signals.

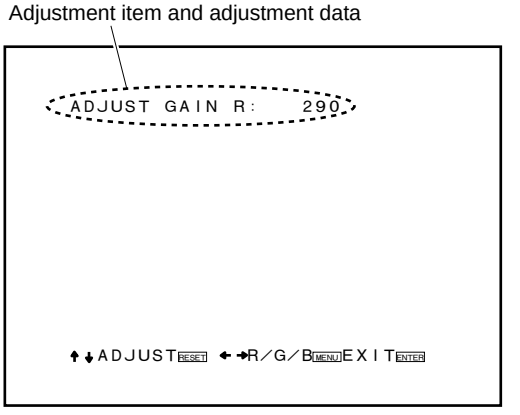
- 20 IRE image (gray)
  Perform ABB (Auto Black Balance) of the camera, and then set the signal level to 20 IRE while confirming the waveform monitor.

- 100 IRE image (white)
  Perform AWB (Auto White Balance) of the camera, and then set the signal level to 100 IRE while confirming the waveform monitor.

1. Start the service mode 2. (Refer to Section 2-1-4.)
2. Select the SIGNAL menu with the UP/DOWN buttons, and then press the RIGHT button.
3. Select the WHITE BALANCE menu with the UP/DOWN buttons, and then press the RIGHT button.
4. Set COLOR TEMP to “LOW”.



5. Perform the following steps (1) to (5) to execute ADJUST GAIN.
   (1) Input the 100 IRE image signal (white) from the camera.
   (2) Select the ADJUST GAIN menu with the UP/DOWN buttons, and then press the RIGHT button.
   (3) Set the R data to “290”. (R = 290 fixed)



(4) Adjust the G and B values so that the color temperature meets the specification.

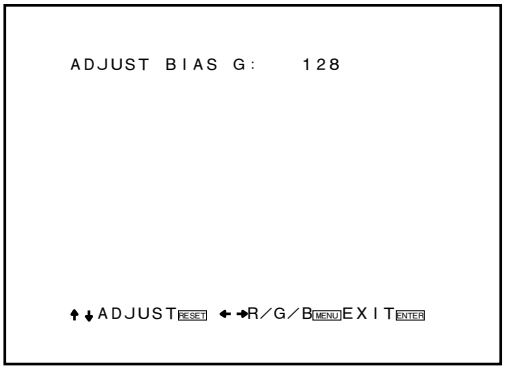
Note

Be careful to adjust these values not exceeding 290.

Input signal:	100 IRE image signal (white)
Measuring equipment:	Color analyzer
Specification (6500 K):	x = 0.3133 ±0.015
	y = 0.3297 ±0.015

(5) Press the ENTER button to determine the adjustment data.

6. Perform the following steps (1) to (5) to execute ADJUST BIAS.
   (1) Input the 20 IRE image signal (gray) from the camera.
   (2) Select the ADJUST BIAS menu with the UP/DOWN buttons, and then press the RIGHT button.
   (3) Set the G data to “128”. (G = 128 fixed)



   (4) Adjust the R and B values so that the color temperature meets the specification.

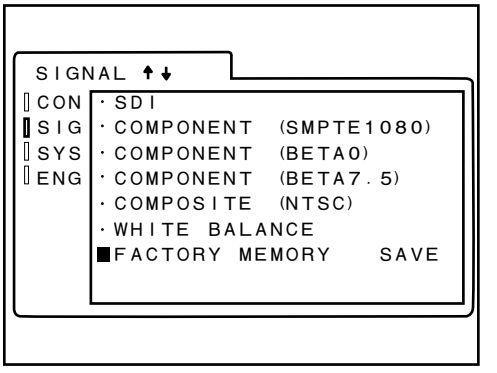
Input signal:	20 IRE image signal (gray)
Measuring equipment:	Color analyzer
Specification (6500 K):	x = 0.3133 ±0.015
	y = 0.3297 ±0.015

   (5) Press the ENTER button to determine the adjustment data.

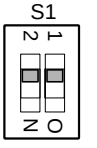
7. Repeat steps 5 and 6 to satisfy each specification.
8. Display the SIGNAL menu.
9. Set FACTORY MEMORY to “SAVE” and press the ENTER button.

Note

If the ENTER button is pressed when FACTORY MEMORY is “LOAD”, the all adjustment must be performed again.



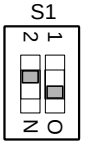
10. Turn off the power of the connected camera.
11. Set the switch S1-1 on the PR-296 board to OFF (WRITE PROTECT).



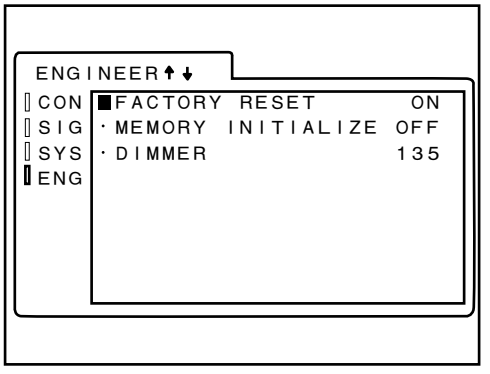
2-4. Initialization to Factory Settings

Perform the following steps to initialize the settings of the unit to the factory settings.

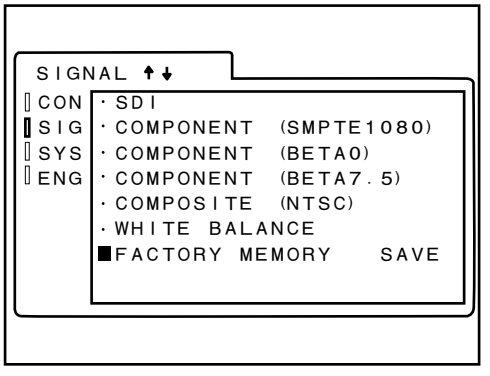
1. Set the switch S1-1 on the PR-296 board to ON (WRITE ENABLE) to release “Memory protect”.



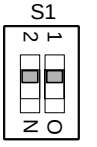
2. Turn on the power of the connected camera.
3. Start the service mode 2. (Refer to Section 2-1-4.)
4. Select the ENGINEER menu with the UP/DONG buttons, and then press the RIGHT button.
5. Set FACTORY RESET to “ON” and then press the ENTER button.



6. Re-start the connected camera.
7. Start the service mode 2. (Refer to Section 2-1-4.)
8. Select the SIGNAL menu with the UP/DONG buttons, and then press the RIGHT button.
9. Set FACTORY MEMORY to “SAVE”, and then press the ENTER button.



10. Turn off the power of the connected camera.
11. Set the switch S1-1 on the PR-296 board to OFF (WRITE PROTECT).

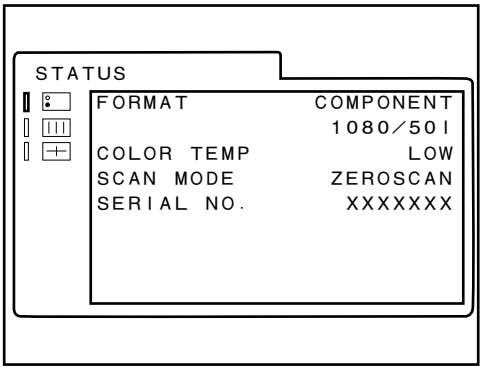


2-5. Service Mode Menu List

This section lists the service mode menus.
For starting service mode menus, refer to Section 2-1-4.

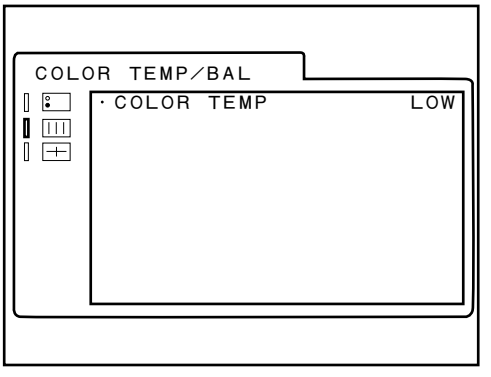
2-5-1. Service Mode 1

STATUS menu



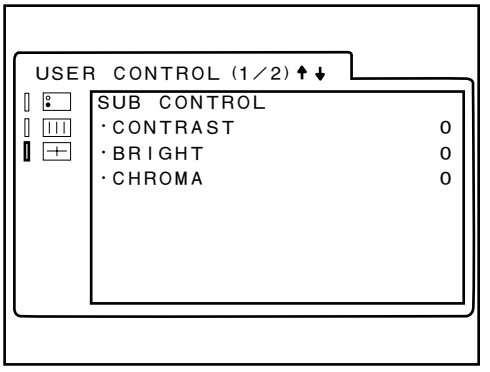
Item	Setting	Description	Factory setting
FORMAT	—	Displays format of input signals.	—
COLOR TEMP	—	Displays color temperature setting status.	LOW (6500K)
SCAN MODE	—	Displays set scan mode.	ZEROSCAN
SERIAL NO.	—	Displays serial number of the unit. (Not used)	—

COLOR TEMP/BAL menu



Item	Setting	Description	Factory setting
COLOR TEMP	LOW	Sets color temperature. **Note** Always use LOW (6500K).	LOW (6500K)

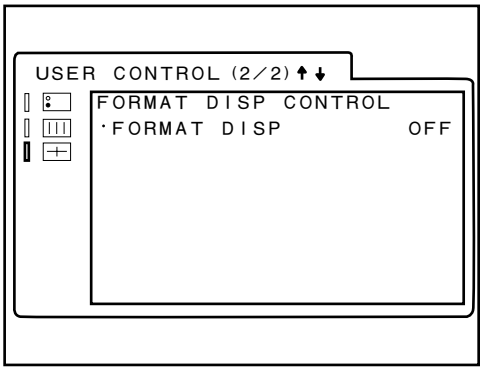
USER CONTROL menu (1/2)



Item	Sub menu	Setting	Description	Factory setting
SUB CONTROL	CONTRAST*	MIN, –29 to +29, MAX	Sets reference contrast value.	0
	BRIGHT*	MIN, –29 to +29, MAX	Sets reference brightness value.	0
	CHROMA*	MIN, –29 to +29, MAX	Sets reference chroma value.	0

*: Displayed when the cursor is moved up/down within the USER CONTROL menu.

USER CONTROL menu (2/2)

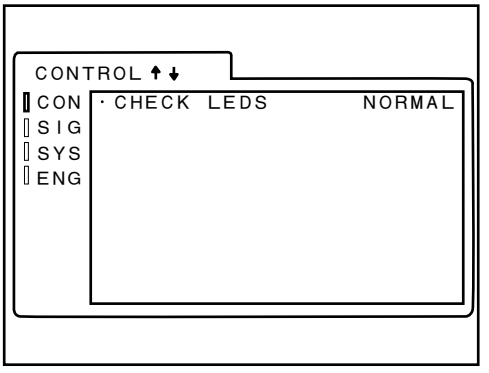


Item	Sub menu	Setting	Description	Factory setting
FORMAT DISP CONTROL	FORMAT DISP*	ON, OFF, AUTO	Displays input signal format/ scan mode on the LCD. ON: Display always OFF: Not display AUTO: Display for 10 seconds from signal input.	OFF

*: Displayed when the cursor is moved up/down within the USER CONTROL menu.

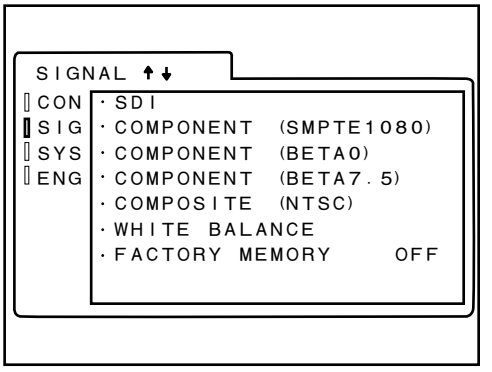
2-5-2. Service Mode 2

CONTROL menu



Item	Sub menu	Setting	Description	Factory setting
CHECK LEDS	—	NORMAL	Not used	NORMAL

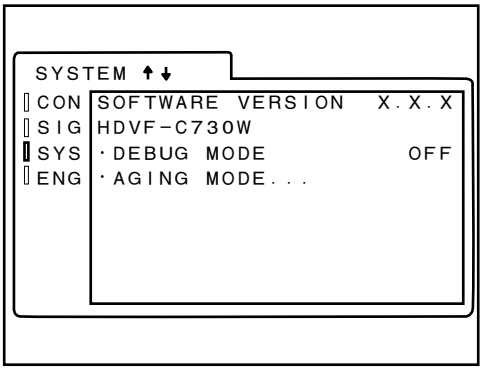
SIGNAL menu



Item	Sub menu	Setting	Description	Factory setting
SDI	—	—	Not used	—
COMPONENT (SMPTE1080)	BRIGHT	0 to 127	Brightness adjustment	—
	CONTRAST	0 to 63	Contrast adjustment	—
	BLACK LEVEL	0 to 255	Black level adjustment	—
	SATURATION	0 to 127	Saturation adjustment	—
	XY POSITION	BLUE FULL, MAGENTA FULL, CYAN FULL, CENTER, MAGENTA, CYAN, BLUE, WHITE	Adjustment position (XY) setting	—
	Y CLAMP	0 to 1023	Y clamp adjustment	—
	U CLAMP	0 to 1023	U clamp adjustment	—
	V CLAMP	0 to 1023	V clamp adjustment	—
	Y GAIN	0 to 255	Y gain adjustment	—
	U GAIN	0 to 255	U gain adjustment	—
	V GAIN	0 to 255	V gain adjustment	—
COMPONENT (BETA0)	—	—	Not used	—
COMPONENT (BETA7.5)	—	—	Not used	—
COMPOSITE (NTSC)	—	—	Not used	—
WHITE BALANCE	COLOR TEMP	LOW, HIGH	Color temperature adjustment mode setting LOW: 6500K HIGH: Not used (Adjustment enabled, but setting is not allowed.)	LOW
	MANUAL ADJUST GAIN R/G/B	0 to 511	White balance gain adjustment for R, G, and B respectively	—
	MANUAL ADJUST BIAS R/G/B	0 to 255	White balance bias adjustment for R, G, and B respectively	—
FACTORY MEMORY	—	OFF, SAVE, LOAD	Adjustment data read/write SAVE*: Writes current adjustment data. LOAD*: Reads saved adjustment data. OFF: No read/write	OFF

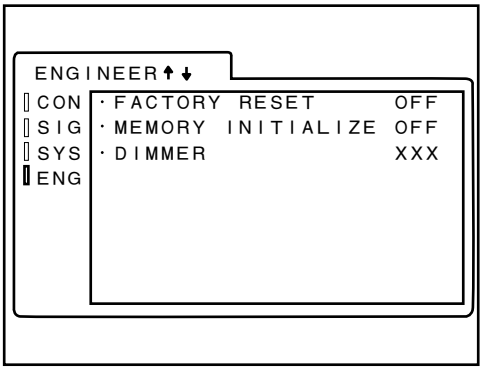
*: Press the ENTER button to execute this menu.

SYSTEM menu



Item	Sub menu	Setting	Description	Factory setting
SOFTWARE VERSION	—	—	Displays software version and model of the unit.	—
DEBUG MODE	—	ON, OFF	Factory use	OFF
AGING MODE	—	—	Factory use **Note** If this menu is wrongly operated, the screen is left white. To restore the screen, turn off and on the connected camera.	—

ENGINEER menu



Item	Sub menu	Setting	Description	Factory setting
FACTORY RESET	—	ON, OFF	Resets the settings of other than adjustment data (settings of service mode 1 USER CONTROL menu) to the factory settings.	OFF
MEMORY INITIALIZE	—	ON, OFF	Initializes all adjustment data.	OFF
DIMMER	—	XXX	Not used	XXX

Section 3
Spare Parts

3-1. Notes on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts list has the present standardized repair parts.

3. Stock of Parts

Parts marked with “o” at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. Harness

Harnesses with no part number are not registered as spare parts.

3-1. 補修部品注意事項

1. 安全重要部品

⚠警告

⚠印のついた部品は安全性を維持するために重要な部品です。したがって，交換する時は必ず指定の部品を使ってください。

2. 部品の共通化

ソニーから供給する補修用部品は，セットに使われているものと異なることがあります。
これは部品の共通化，改良等によるものです。
部品表には現時点での共通化された補修用部品が記載されています。

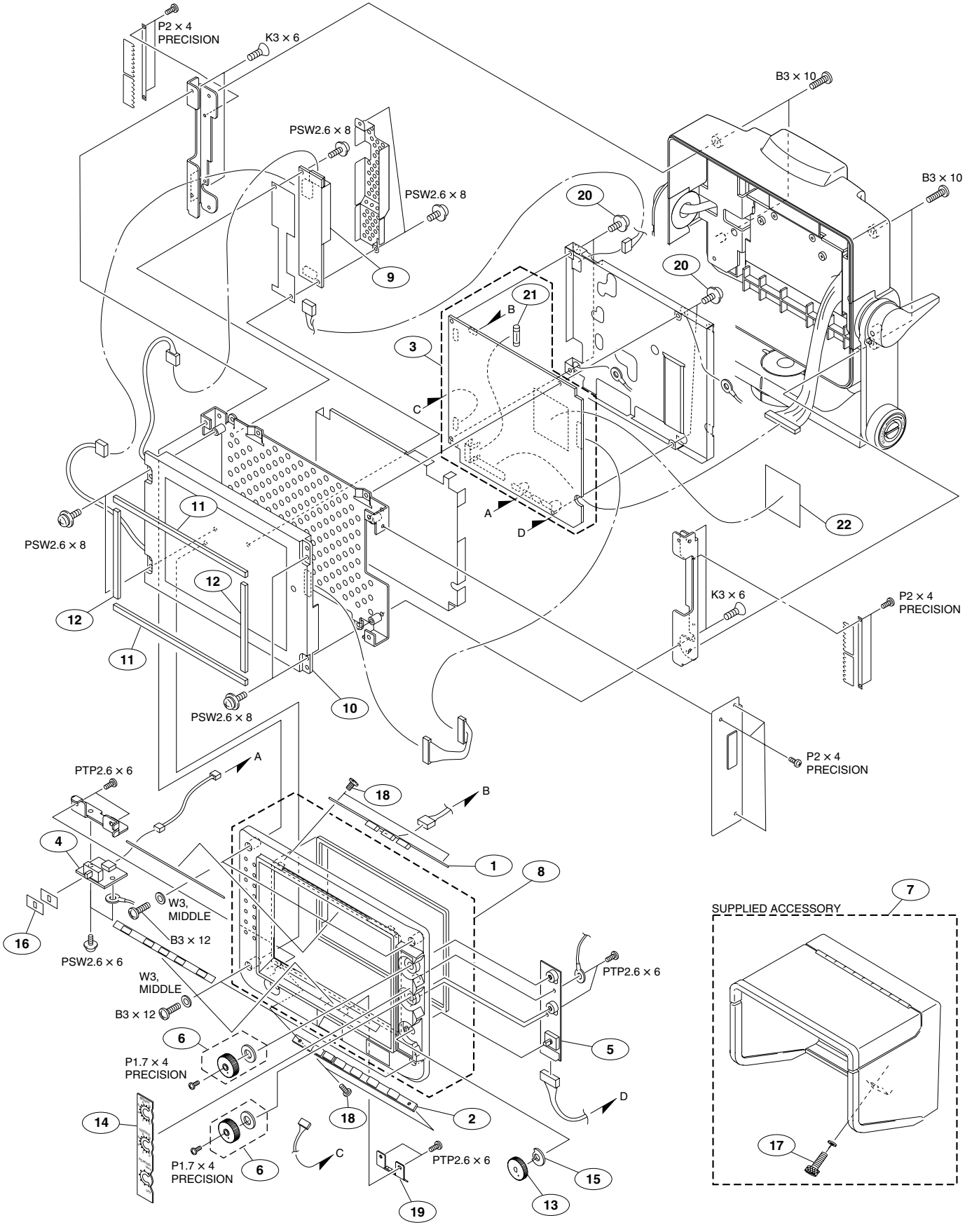
3. 部品の在庫

部品表のSP (Supply code) 欄に“o”で示される部品は在庫していないことがあり，納期が長くなることがあります。

4. ハーネス

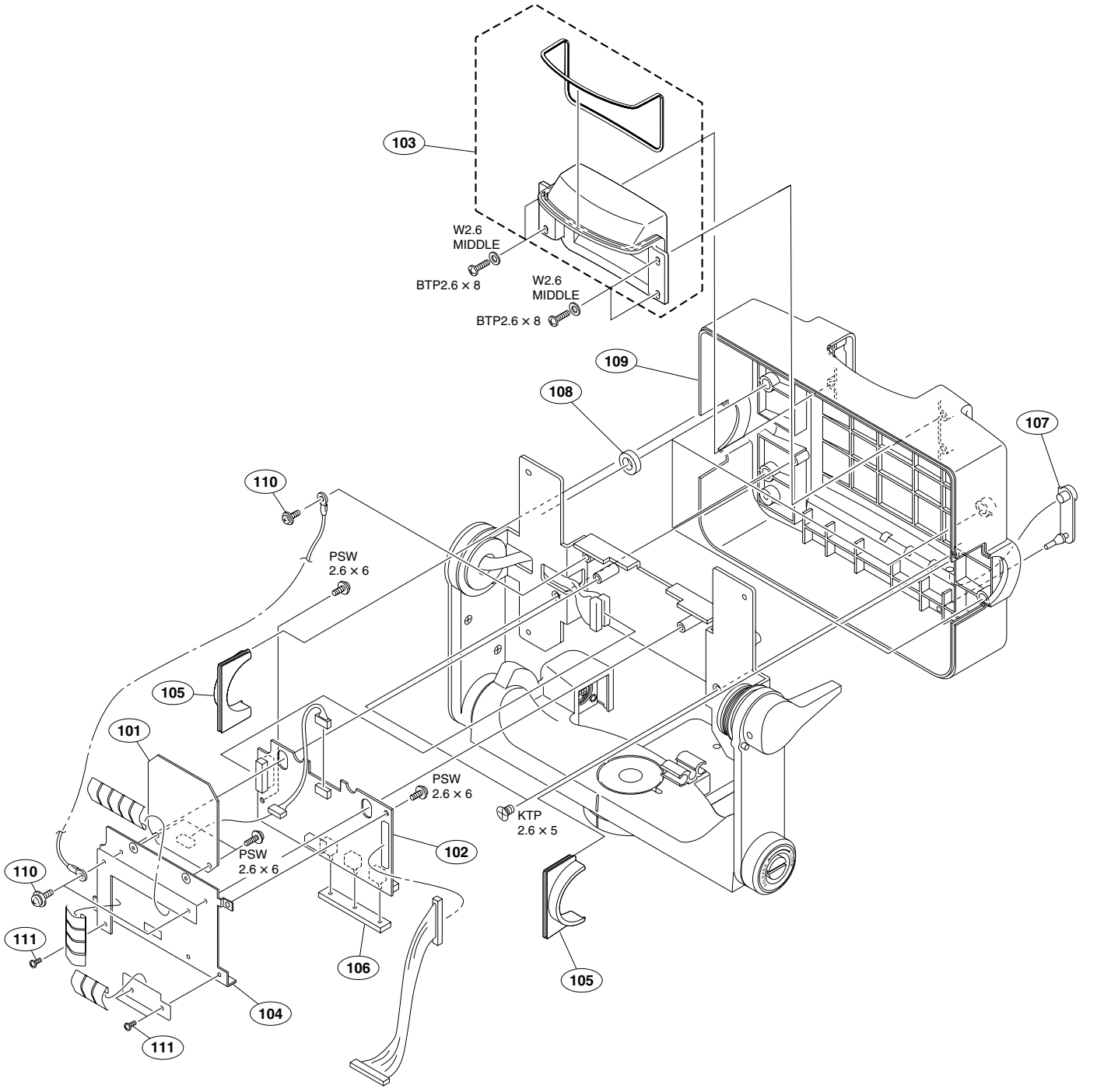
部品番号が記載されていないハーネスは，サービス部品として登録されていません。

3-2. Exploded Views



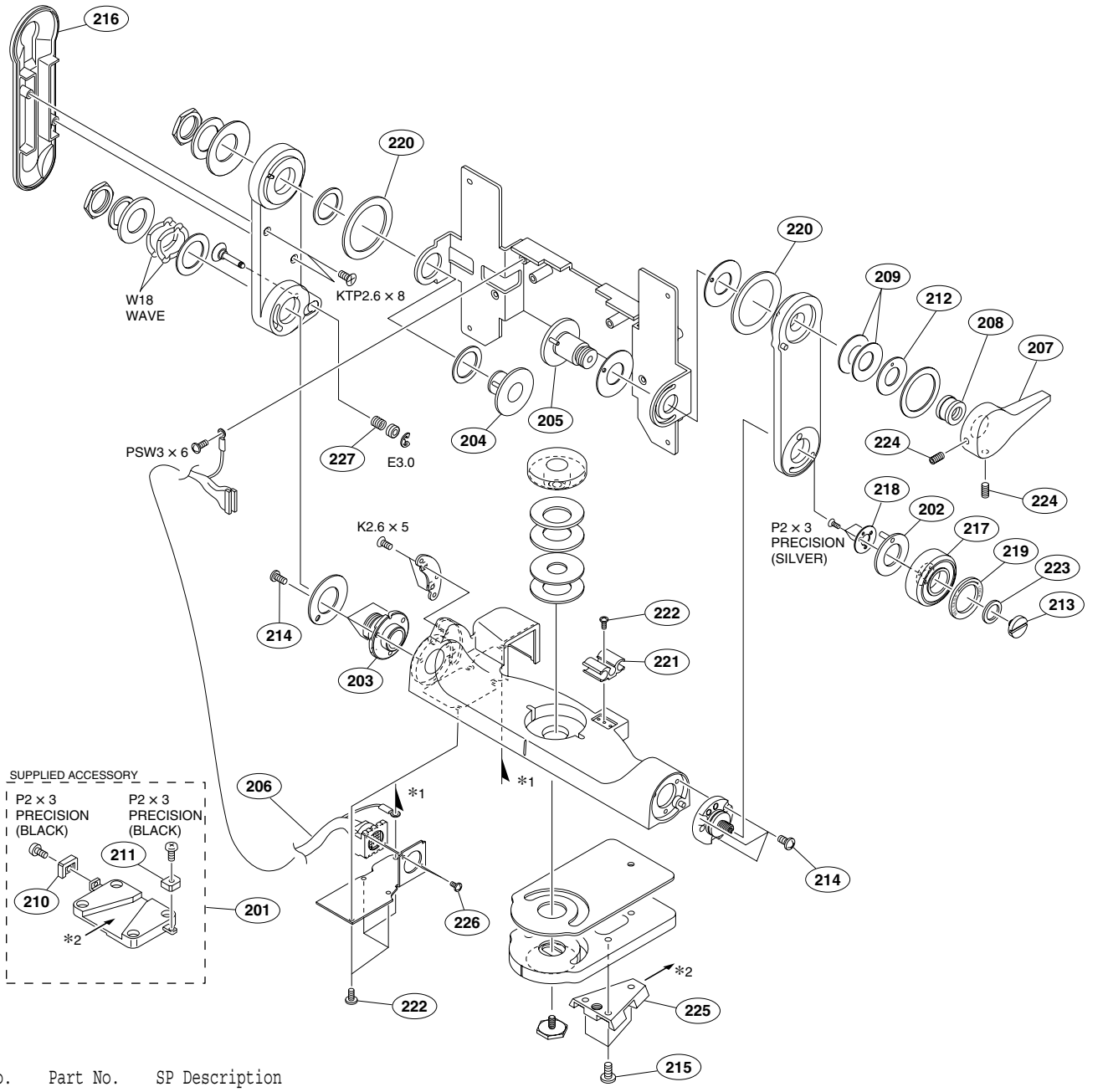
No.	Part No.	SP	Description
1	A-1159-135-A	s	MOUNTED CIRCUIT BOARD, LE-328
2	A-1159-136-A	s	MOUNTED CIRCUIT BOARD, LE-329
3	A-1176-502-A	s	MOUNTED CIRCUIT BOARD, PR-296
4	A-1176-503-A	s	MOUNTED CIRCUIT BOARD, SW-1311
5	A-1159-137-A	s	MOUNTED CIRCUIT BOARD, VR-317
6	X-3605-936-1	o	ASSY,BRIGHT KNOB
7	X-3166-281-7	s	HOOD ASSY, INDOOR
8	X-3704-819-1	s	ASSY,BEZEL(N)
9	⚠ 1-477-607-11	s	INVERTER UNIT (LCD MODULE)
10	⚠ 1-802-042-11	s	LCD MODULE
11	2-674-843-01	s	CUSHION-UPPER/LOWER
12	2-674-843-11	s	CUSHION-RIGHT/LEFT
13	3-625-364-01	o	KNOB, PEAKING
14	3-625-394-03	s	COVER, SW
15	3-626-825-01	o	SHEET,DROP PROTECTION
16	3-717-394-21	s	PLATE (SMALL), ORNAMENTAL, SW
17	3-680-616-15	s	SCREW (M4), BINDING
18	3-729-076-11	s	SCREW (+B) (2X4)
19	3-869-871-01	s	NUT, HOOD N
20	4-382-854-01	s	SCREW (M3X8), P, SW (+)
21	⚠ 1-576-231-51	s	FUSE (H.B.C.) (4A/250V)
22	3-623-693-02	o	SHEET(F),HEAT CONDUCTION
	7-621-759-45	s	+PSW, 2.6X6
	7-621-759-65	s	+PSW, 2.6X8
	7-627-552-48	s	SCREW,PRECISION +P 1.7X4
	7-627-553-47	s	SCREW,PRECISION +P 2X4
	7-682-247-04	s	SCREW +K 3X6
	7-682-549-09	s	SCREW +B 3X10
	7-682-550-09	s	SCREW +B 3X12
	7-685-133-11	s	SCREW +PTP 2.6X6 TYPE2
	7-688-003-12	s	W 3, MIDDLE

Rear Block



No.	Part No.	SP	Description
101	A-1159-134-A	s	MOUNTED CIRCUIT BOARD, LE-327
102	A-1159-133-A	s	MOUNTED CIRCUIT BOARD, CN-2870
103	X-3605-938-2	s	ASSY,TALLY COVER
104	X-2148-097-1	s	PLATE ASSY,CONNECTOR
105	3-625-360-02	o	COVER,SHAFT
106	3-626-817-02	s	CUSHION,DROP PROTECTION
107	3-626-822-02	o	PLUG,DROP PROTECTION
108	3-626-876-02	s	CUSHION(HANDLE),DROP PROTECTION

No.	Part No.	SP	Description
109	3-869-880-01	s	COVER,REAR (N)
110	4-382-854-01	s	SCREW (M3X8), P, SW (+)
111	9-885-104-55	s	SCREW+FLH 2.6X5
	7-621-759-45	s	+PSW, 2.6X6
	7-685-232-19	s	SCREW +KTP 2.6X5 TYPE2NON-SLIT
	7-685-534-14	s	SCREW +BTP 2.6X8 TYPE2 N-S
	7-688-002-11	s	W 2.6, MIDDLE



No.	Part No.	SP	Description
201	A-7612-405-B	s	SHOE ASSY, V EDGE
202	X-3605-892-2	s	PLATE ASSY, PIN
203	X-3605-893-1	o	SHAFT(LEFT)ASSY,ARM
204	X-3605-894-3	o	SHAFT(LEFT)ASSY,TILT
205	X-3605-895-3	o	SHAFT(RIGHT)ASSY,TILT
206	1-963-786-11	s	SUB HARNESS (VF CONNECTION HARNESS)
207	3-167-481-02	o	TILT LOCK LEVER
208	3-167-482-11	o	SCREW, LOCK, TILT
209	3-167-487-01	o	SPRING, PLATE
210	3-167-513-01	o	KNOB, RELEASE LEVER
211	3-167-514-01	o	KNOB, STOPPER
212	3-169-580-02	s	WASHER, THRUST
213	3-173-371-02	s	SCREW, PUNCHING STOPPER
214	3-364-941-22	s	SCREW (+B) (2.6X5), NYLOK
215	3-604-479-02	s	ALOCK +B4X8
216	3-625-369-03	o	COVER(L),ARM
217	3-625-379-01	s	KNOB, ARM LOCKING
218	3-625-381-02	s	RETAINER,PIN PLATE
219	3-625-384-01	o	LABEL,LOCKING KNOB
220	3-626-824-01	o	SPACER,DROP PROTECTION

No.	Part No.	SP	Description
221	3-679-659-05	s	CLAMP,CABLE
222	3-694-181-03	s	TYPE1,AROCK PRECISION +P2.6X5
223	3-701-447-21	s	WASHER, 10
224	3-701-512-01	s	SET SCREW, DOUBLE POINT,(M4X8)
225	3-716-391-02	o	WEDGE, MOUNTING
226	3-719-381-12	s	SCREW (M2X5)
227	3-951-828-01	s	SPRING, COMPRESSION
	7-621-559-32	s	SCREW +K 2.6X5
	7-623-710-97	s	WASHER 18, WAVE TYPE
	7-624-106-04	s	STOP RING 3.0, TYPE -E
	7-627-553-37	s	SCREW,PRECISION +P 2X3 (SILVER)
	7-627-553-38	s	SCREW,PRECISION +P 2X3 (BLACK)
	7-685-234-19	s	SCREW +KTP 2.6X8 TYPE2NON-SLIT

3-3. Supplied Accessories

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-7612-405-B	s	SHOE ASSY, V EDGE
1pc	X-3166-281-7	s	HOOD ASSY, INDOOR
1pc	1-830-631-11	s	CORD,CONNECTION (VF)
1pc	3-991-539-01	s	OPERATION MANUAL
1pc	4-027-937-03	s	PLATE, NUMBER
4pcs	7-683-421-04	o	BOLT,HEXAGON SOCKET 4X12
1pc	7-721-130-20	s	WRENCH, L (3.0MM)

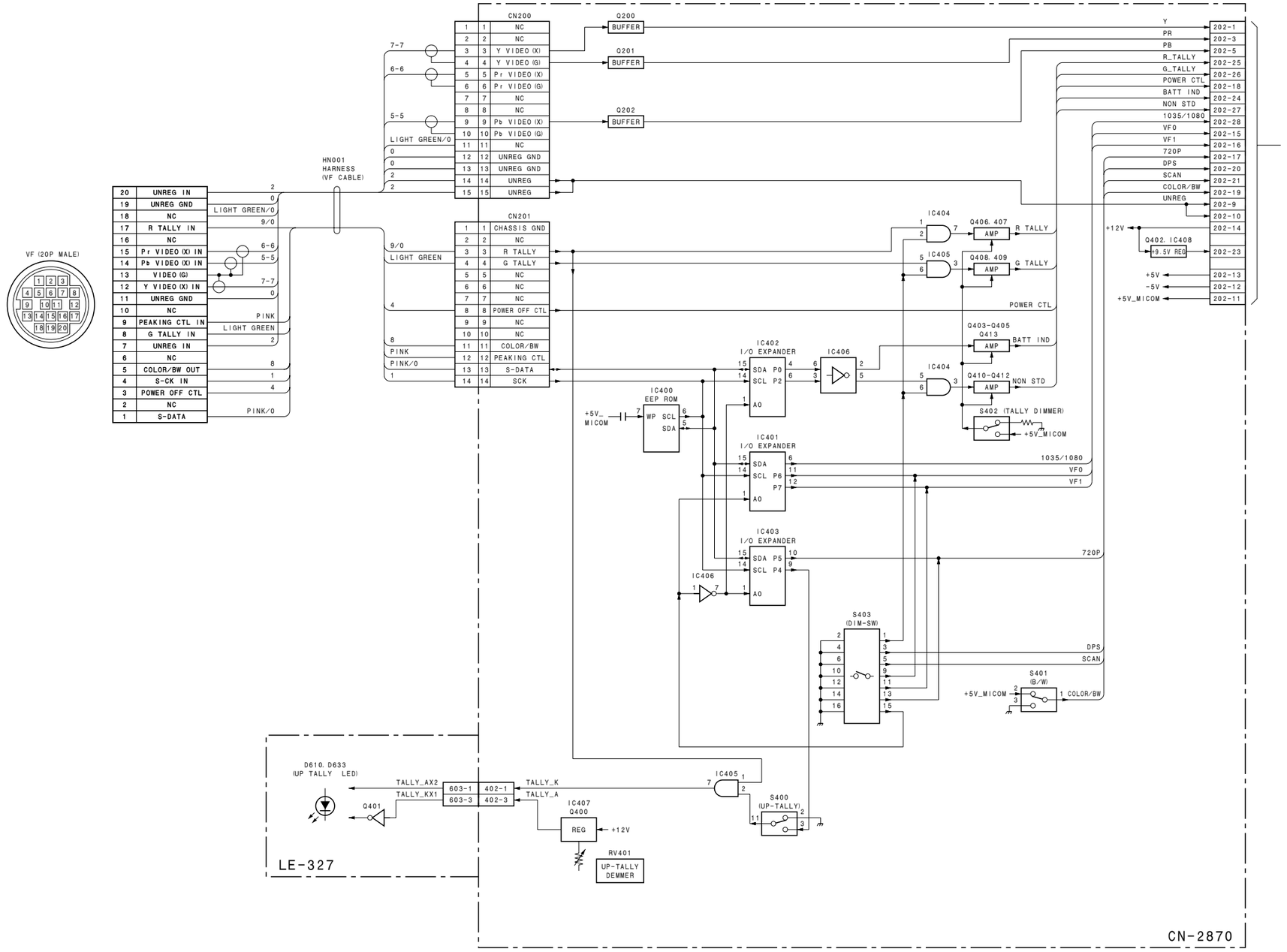
3-4. Optional fixture

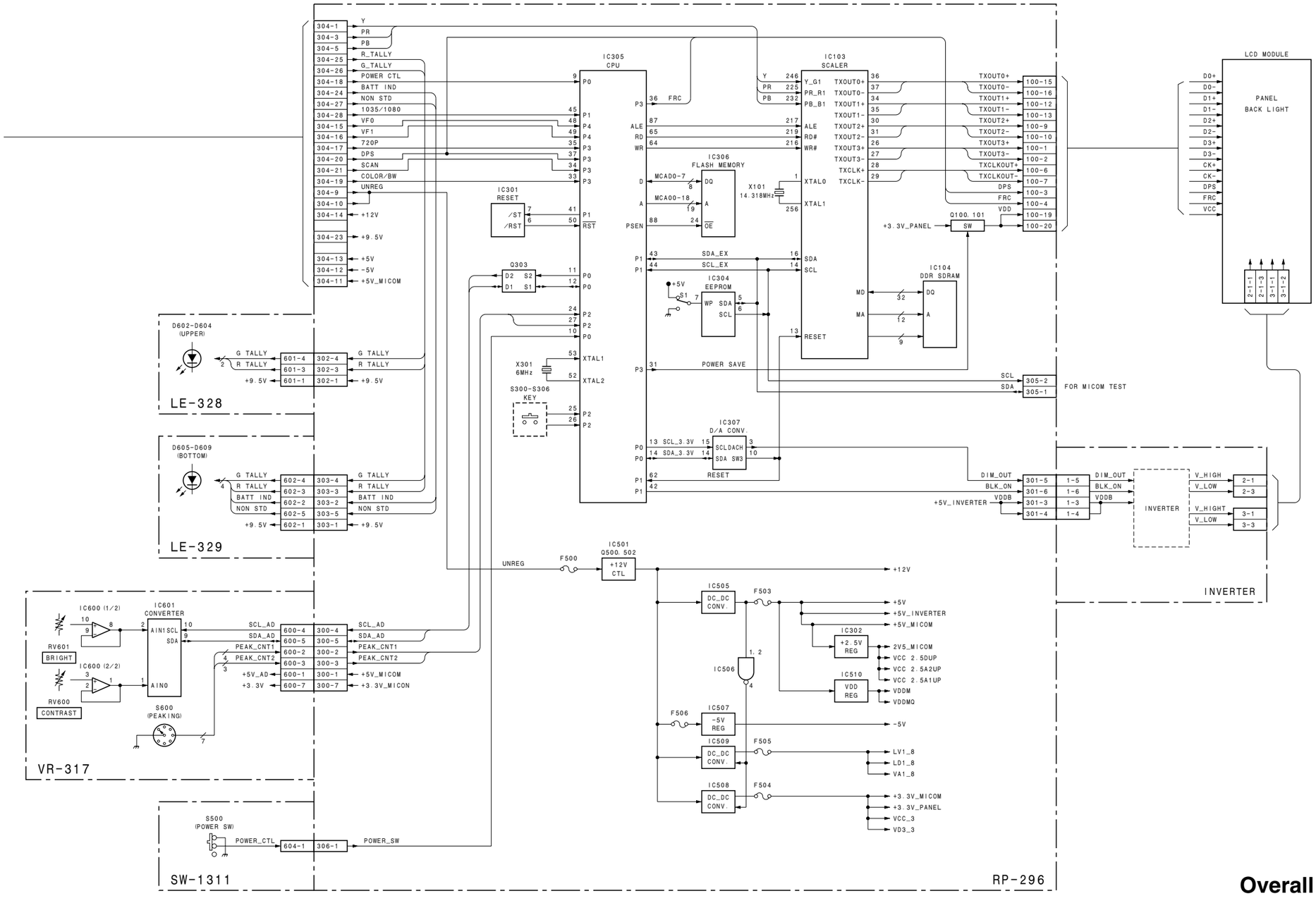
Part No.	SP	Description
J-7120-210-1	s	SWITCH-TEST-BOARD

Section 4
Block Diagram

Index

Page


VF (20P MALE)
HN001
HARNESS
(VF CABLE)
20 UNREG IN
19 UNREG GND
18 NC
17 R TALLY IN
16 NC
15 Pr VIDEO (X) IN
14 Pb VIDEO (X) IN
13 VIDEO (G)
12 Y VIDEO (X) IN
11 UNREG GND
10 NC
9 PEAKING CTL IN
8 G TALLY IN
7 UNREG IN
6 NC
5 COLOR/BW OUT
4 S-CK IN
3 POWER OFF CTL
2 NC
1 S-DATA
LIGHT GREEN/0
LIGHT GREEN
PINK
PINK/0
CN200
1 NC
2 NC
3 Y VIDEO (X)
4 Y VIDEO (G)
5 Pr VIDEO (X)
6 Pr VIDEO (G)
7 NC
8 NC
9 Pb VIDEO (X)
10 Pb VIDEO (G)
11 NC
12 UNREG GND
13 UNREG GND
14 UNREG
15 UNREG
CN201
1 CHASSIS GND
2 NC
3 R TALLY
4 G TALLY
5 NC
6 NC
7 NC
8 POWER OFF CTL
9 NC
10 NC
11 COLOR/BW
12 PEAKING CTL
13 S-DATA
14 SCK
Q200 BUFFER
Q201 BUFFER
Q202 BUFFER
IC400 EEP ROM
IC401 I/O EXPANDER
IC402 I/O EXPANDER
IC403 I/O EXPANDER
IC404
IC405
IC406
Q406. 407 AMP
Q408. 409 AMP
Q403-Q405 Q413 AMP
Q410-Q412 AMP
Q402. IC408 +9.5V REG
S402 (TALLY DIMMER)
S403 (DIM-SW)
S400 (UP-TALLY)
S401 (B/W)
D610. D633 (UP TALLY LED)
Q401
IC407 Q400 REG
RV401 UP-TALLY DEMMER
TALLY_AX2
TALLY_KX1
TALLY_K
TALLY_A
603-1
603-3
402-1
402-3
+5V_MICOM
+12V
Y
PR
PB
R_TALLY
G_TALLY
POWER CTL
BATT IND
NON STD
1035/1080
VF0
VF1
720P
DPS
SCAN
COLOR/BW
UNREG
+5V
-5V
202-1
202-3
202-5
202-25
202-26
202-18
202-24
202-27
202-28
202-15
202-16
202-17
202-20
202-21
202-19
202-9
202-10
202-14
202-23
202-13
202-12
202-11
LE-327
CN-2870


IC305
CPU
IC103
SCALER
LCD MODULE
PANEL
BACK LIGHT
IC306
FLASH MEMORY
IC301
RESET
Q303
X301
6MHz
X101
14.318MHz
IC304
EEPROM
IC104
DDR SDRAM
Q100, 101
IC307
D/A CONV.
S300-S306
KEY
FOR MICOM TEST
D602-D604
(UPPER)
LE-328
D605-D609
(BOTTOM)
LE-329
INVERTER
IC600 (1/2)
IC600 (2/2)
IC601
CONVERTER
RV601
BRIGHT
RV600
CONTRAST
S600
(PEAKING)
VR-317
IC501
Q500, 502
+12V
CTL
F500
UNREG
IC505
DC_DC
CONV.
F503
IC506
IC302
+2.5V
REG
IC510
VDD
REG
F506
IC507
-5V
REG
IC509
DC_DC
CONV.
F505
IC508
DC_DC
CONV.
F504
S500
(POWER SW)
SW-1311
RP-296

Overall

Section 5
Schematic Diagrams

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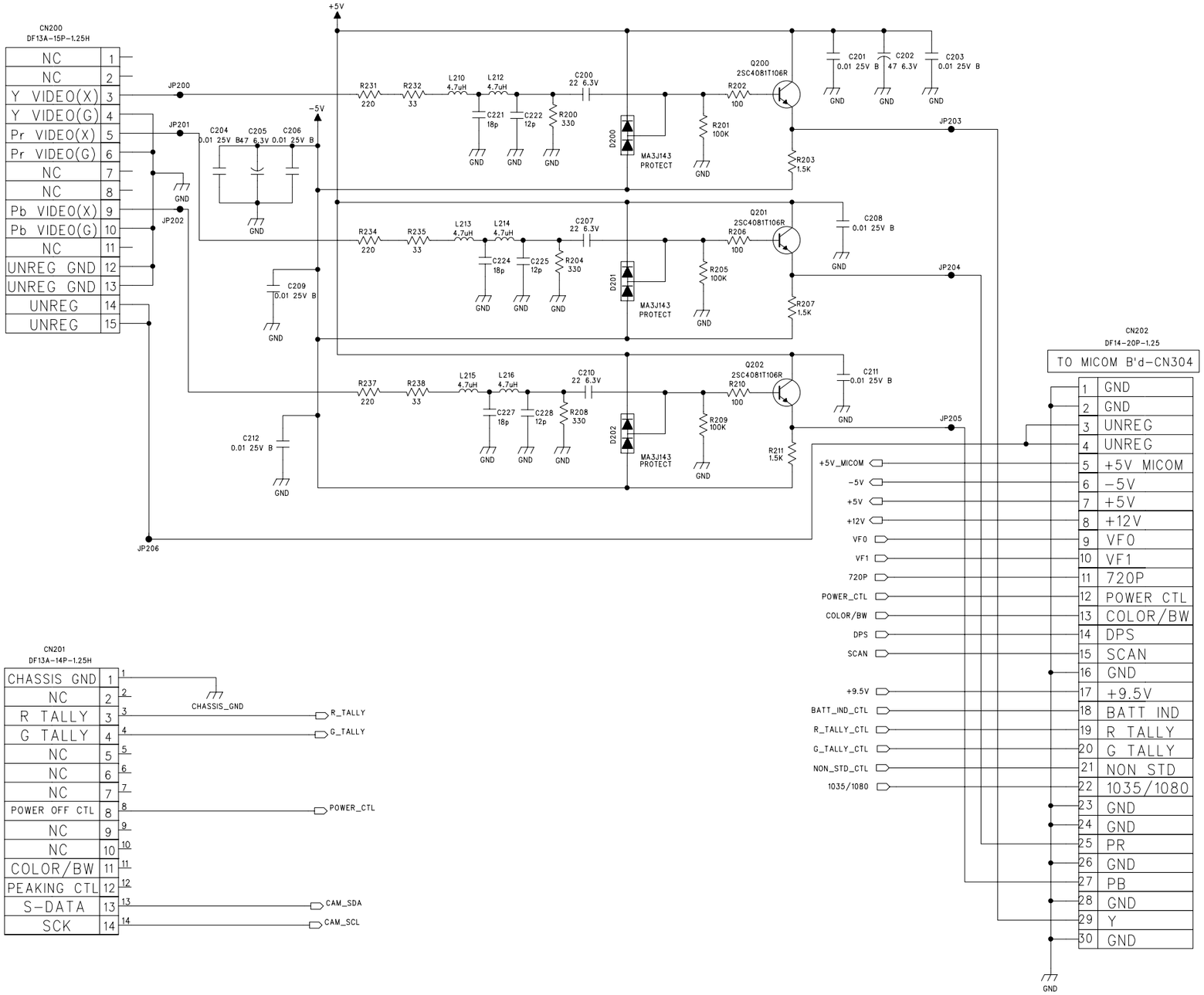
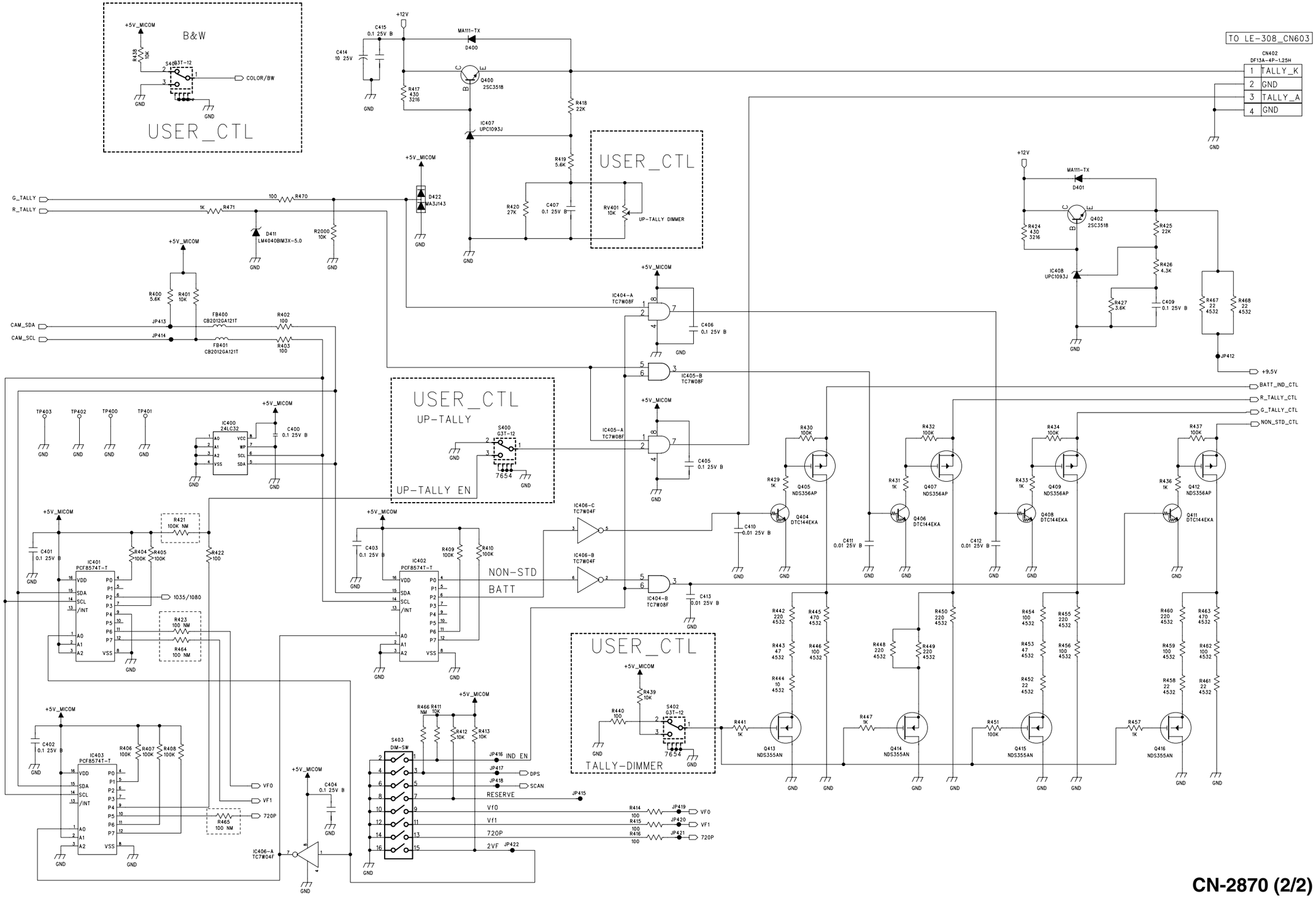

CN200
DF13A-15P-1.25H
NC 1
NC 2
Y VIDEO(X) 3
Y VIDEO(G) 4
Pr VIDEO(X) 5
Pr VIDEO(G) 6
NC 7
NC 8
Pb VIDEO(X) 9
Pb VIDEO(G) 10
NC 11
UNREG GND 12
UNREG GND 13
UNREG 14
UNREG 15
+5V
-5V
JP200
JP201
JP202
JP203
JP204
JP205
JP206
R231 220
R232 33
L210 4.7uH
L212 4.7uH
C200 22 6.3V
C221 18p
C222 12p
R200 330
Q200 2SC4081T106R
R202 100
R201 100K
R203 1.5K
D200 MA3J143 PROTECT
C201 0.01 25V B
C202 47 6.3V
C203 0.01 25V B
C204 0.01 25V B
C205 47 6.3V
C206 0.01 25V B
R234 220
R235 33
L213 4.7uH
L214 4.7uH
C207 22 6.3V
C224 18p
C225 12p
R204 330
Q201 2SC4081T106R
R206 100
R205 100K
R207 1.5K
D201 MA3J143 PROTECT
C208 0.01 25V B
C209 0.01 25V B
R237 220
R238 33
L215 4.7uH
L216 4.7uH
C210 22 6.3V
C227 18p
C228 12p
R208 330
Q202 2SC4081T106R
R210 100
R209 100K
R211 1.5K
D202 MA3J143 PROTECT
C211 0.01 25V B
C212 0.01 25V B
GND

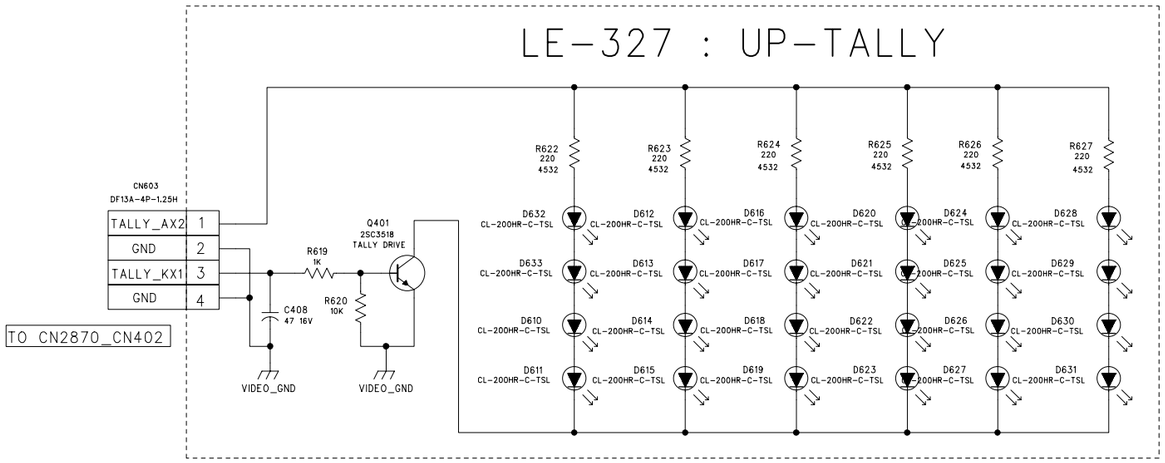
CN201
DF13A-14P-1.25H
CHASSIS GND 1
NC 2
R TALLY 3
G TALLY 4
NC 5
NC 6
NC 7
POWER OFF CTL 8
NC 9
NC 10
COLOR/BW 11
PEAKING CTL 12
S-DATA 13
SCK 14
CHASSIS_GND
R_TALLY
G_TALLY
POWER_CTL
CAM_SDA
CAM_SCL

CN202
DF14-20P-1.25
TO MICOM B'd-CN304
1 GND
2 GND
3 UNREG
4 UNREG
5 +5V MICOM
6 -5V
7 +5V
8 +12V
9 VF0
10 VF1
11 720P
12 POWER CTL
13 COLOR/BW
14 DPS
15 SCAN
16 GND
17 +9.5V
18 BATT IND
19 R TALLY
20 G TALLY
21 NON STD
22 1035/1080
23 GND
24 GND
25 PR
26 GND
27 PB
28 GND
29 Y
30 GND
+5V_MICOM
-5V
+5V
+12V
VF0
VF1
720P
POWER_CTL
COLOR/BW
DPS
SCAN
+9.5V
BATT_IND_CTL
R_TALLY_CTL
G_TALLY_CTL
NON_STD_CTL
1035/1080
GND

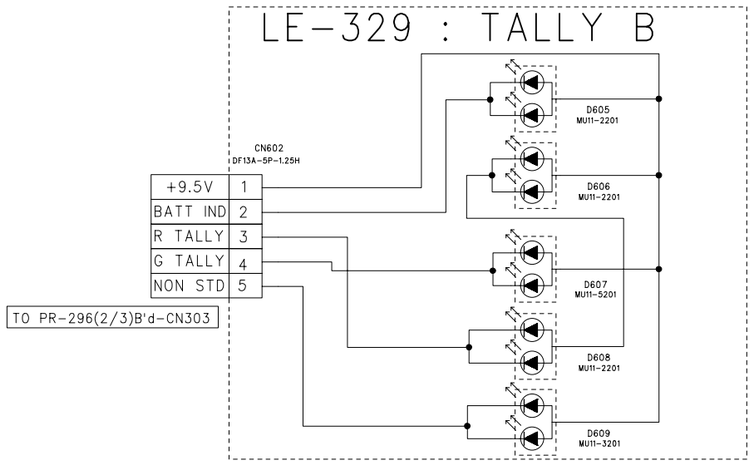
CN-2870 (1/2)


B&W
USER_CTL
COLOR/BW
TO LE-308_CN603
CN402
DF13A-4P-1.25H
1 TALLY_K
2 GND
3 TALLY_A
4 GND
UP-TALLY DIMMER
UP-TALLY
UP-TALLY EN
NON-STD
BATT
TALLY-DIMMER
1035/1080
VF0
VF1
720P
DPS
SCAN
RESERVE
IND EN
2VF
+9.5V
BATT_IND_CTL
R_TALLY_CTL
G_TALLY_CTL
NON_STD_CTL
G_TALLY
R_TALLY
CAM_SDA
CAM_SCL

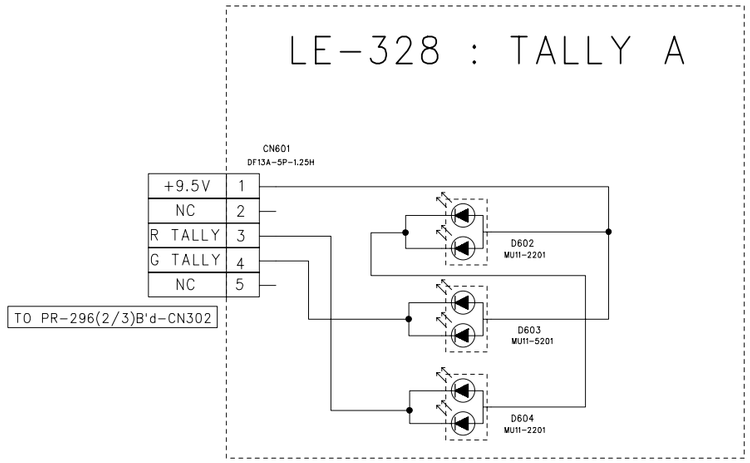
CN-2870 (2/2)



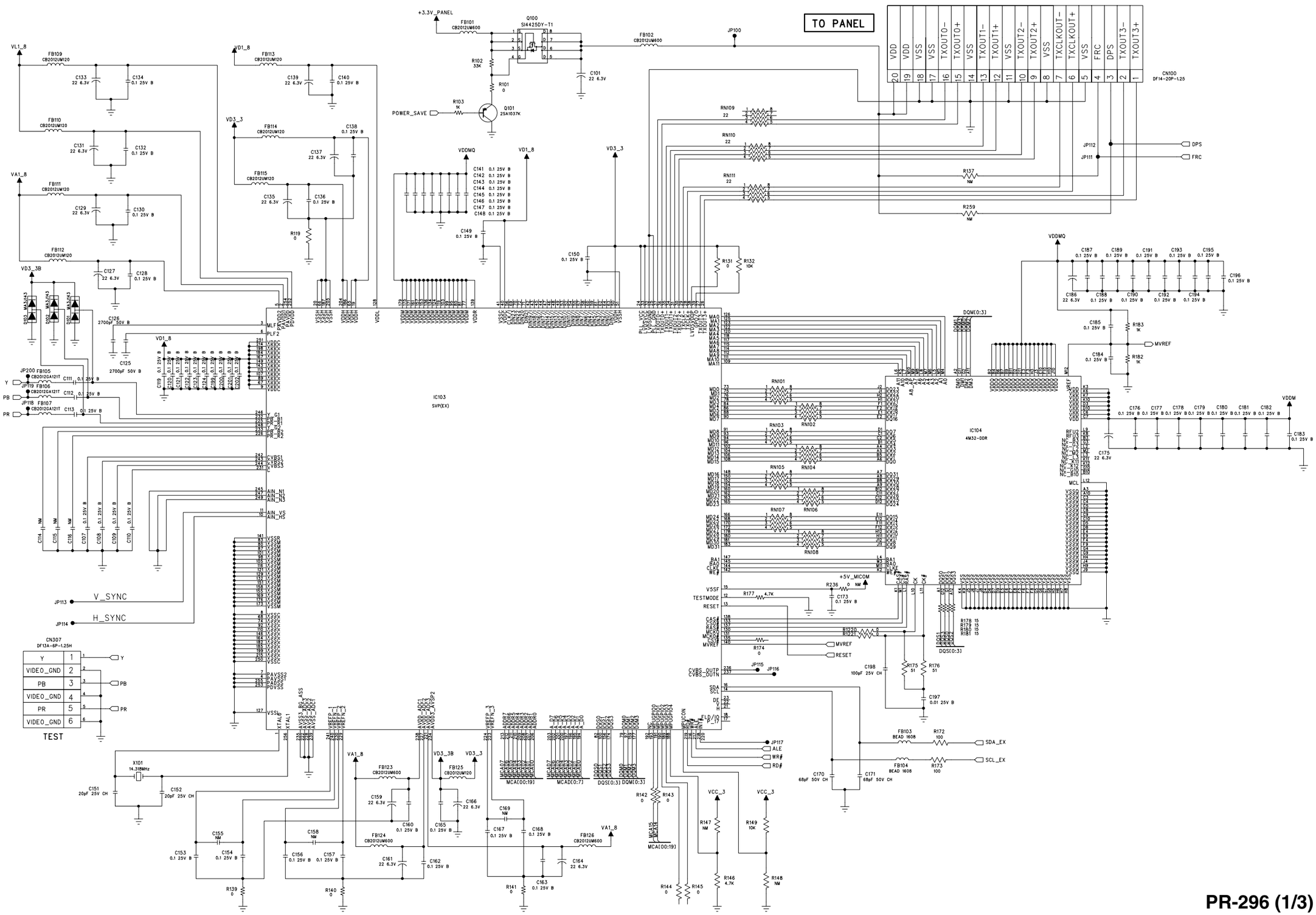
LE-327



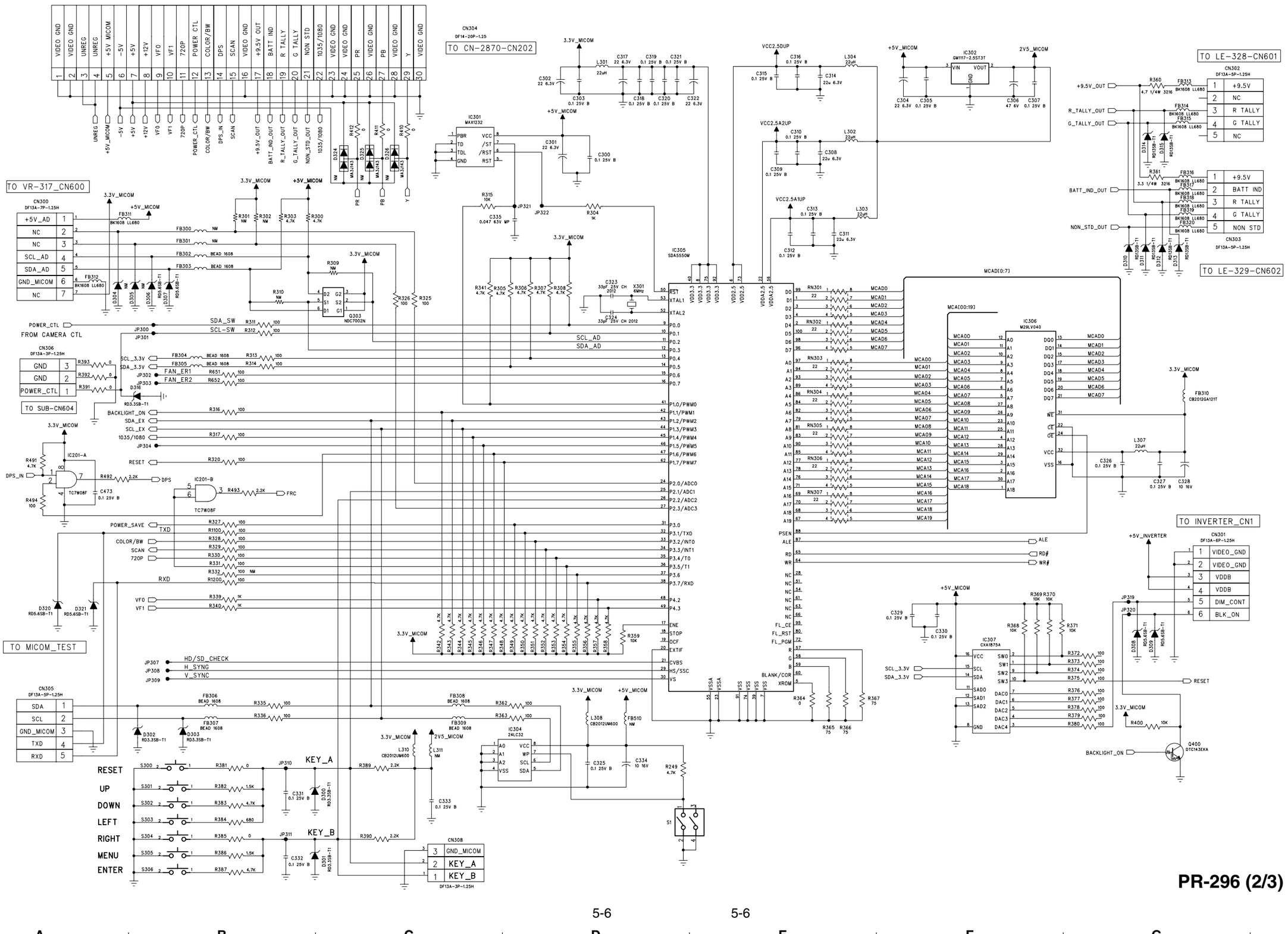
LE-329



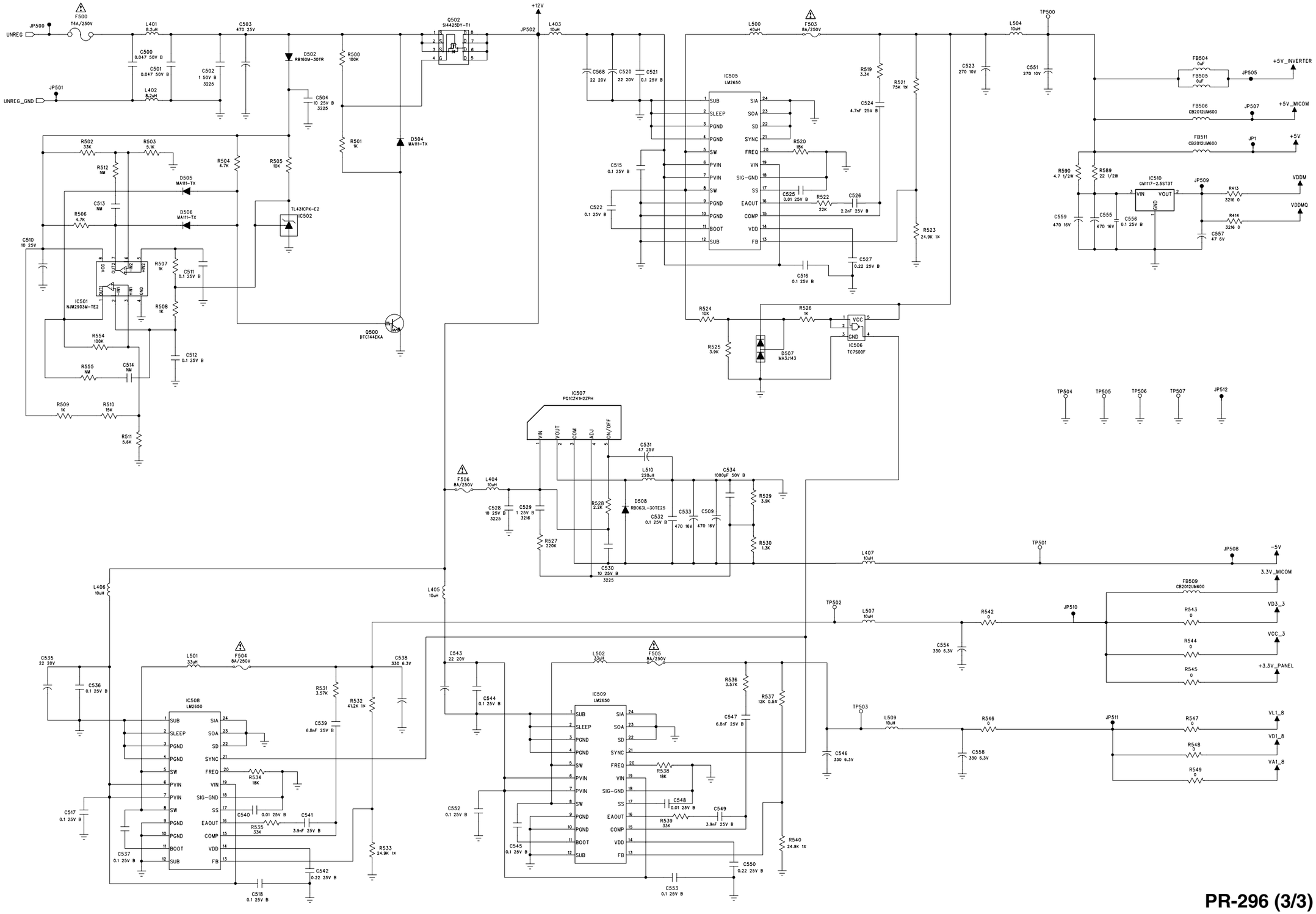
LE-328


TO PANEL
CN100
DF14-20P-1.25
VDD
VSS
TXOUT0-
TXOUT0+
TXOUT1-
TXOUT1+
TXOUT2-
TXOUT2+
TXCLKOUT-
TXCLKOUT+
FRC
DPS
TXOUT3-
TXOUT3+
+3.3V_PANEL
POWER_SAVE
Q100 SI4425DY-T1
Q101 2SA1037K
JP100
JP112
JP111
DPS
FRC
VDDMQ
VD1_8
VD3_3
VA1_8
VD3_3B
IC103
SVP(EX)
IC104
4M32-DDR
MVREF
RESET
+5V_MICOM
V_SYNC
H_SYNC
TEST
CN307
DF13A-6P-1.25H
Y
PB
PR
VIDEO_GND
X101
14.318MHz
SDA_EX
SCL_EX
ALE
WR#
RD#
MCA(00:19)
MCAD(0:7)
DQS(0:3)
DOM(0:3)
DQS(0:3)

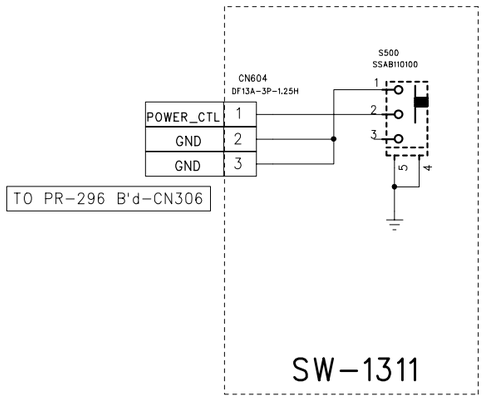
PR-296 (1/3)


TO CN-2870-CN202
TO VR-317_CN600
TO LE-328-CN601
TO LE-329-CN602
TO SUB-CN604
TO MICOM_TEST
TO INVERTER_CN1
FROM CAMERA CTL
VIDEO GND
UNREG
-5V
+5V
+12V
VF0
VF1
720P
POWER_CTL
COLOR/BW
DPS
SCAN
+9.5V OUT
BATT IND
R TALLY
G TALLY
NON STD
1035/1080
PR
PB
Y
3.3V_MICOM
+5V_MICOM
2V5_MICOM
IC305 SDA5550M
IC306 M29LV040
IC307 CXA1875A
IC304 24LC32
IC301 MAX1232
IC201-A
IC201-B
SDA_SW
SCL_SW
SCL_AD
SDA_AD
RESET
UP
DOWN
LEFT
RIGHT
MENU
ENTER
KEY_A
KEY_B
BACKLIGHT_ON
HD/SD_CHECK
H_SYNG
V_SYNC
MCAD[0:7]
MCA[00:19]

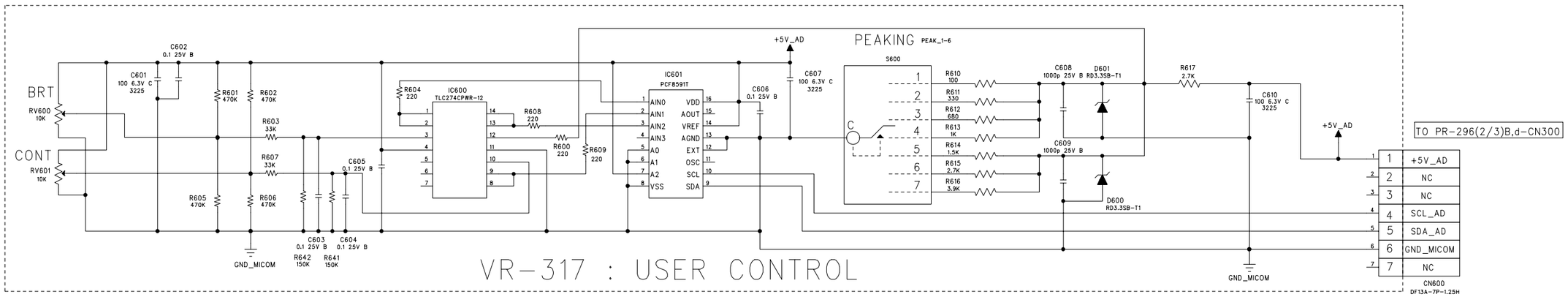
PR-296 (2/3)


+12V
JP500
UNREG
JP501
UNREG_GND
F500
T4A/250V
L401
8.2uH
L402
8.2uH
C500
0.047 50V B
C501
0.047 50V B
C502
1 50V B
3225
C503
470 25V
D502
RB160M-30TR
C504
10 25V B
3225
R500
100K
R501
1K
Q502
SI4425DY-T1
D504
MA111-TX
JP502
L403
10uH
C568
22 20V
C520
22 20V
C521
0.1 25V B
L500
40uH
F503
8A/250V
IC505
LM2650
SUB
SLEEP
PGND
PGND
SW
PVIN
PVIN
SW
PGND
PGND
BOOT
SUB
SIA
SOA
SD
SYNC
FREQ
VIN
SIG-GND
SS
EAOUT
COMP
VDD
FB
R519
3.3K
R521
75K 1%
C524
4.7nF 25V B
R520
18K
C525
0.01 25V B
R522
22K
C526
2.2nF 25V B
C515
0.1 25V B
C522
0.1 25V B
C527
0.22 25V B
C516
0.1 25V B
R523
24.9K 1%
L504
10uH
TP500
C523
270 10V
C551
270 10V
FB504
0uF
FB505
0uF
JP505
+5V_INVERTER
FB506
CB2012UM600
JP507
+5V_MICOM
FB511
CB2012UM600
JP1
+5V
R590
4.7 1/2W
R589
22 1/2W
IC510
GW1117-2.5ST3T
VIN
VOUT
GND
JP509
VDDM
VDDMQ
R413
3216 0
R414
3216 0
C559
470 16V
C555
470 16V
C556
0.1 25V B
C557
47 6V
R502
3.3K
R503
5.1K
R504
4.7K
R505
10K
R512
NM
D505
MA111-TX
C513
NM
R506
4.7K
D506
MA111-TX
TL431CPK-E2
IC502
C510
10 25V
IC501
NJM2903M-TE2
R507
1K
C511
0.1 25V B
R508
1K
R554
150K
R555
NM
C514
NM
C512
0.1 25V B
R509
1K
R510
18K
R511
5.6K
Q500
DTC144EKA
R524
10K
R526
1K
R525
3.9K
D507
MA3J743
IC506
TC7S00F
VCC
GND
TP504
TP505
TP506
TP507
JP512
IC507
PQ1CZ41H2ZPH
VIN
VOUT
COM
ADJ
ON/OFF
C531
47 25V
L510
220uH
C534
1000pF 50V B
F506
8A/250V
L404
10uH
C528
10 25V B
3225
C529
1 25V B
3216
R528
2.2K
D508
RB063L-30TE25
C533
470 16V
C509
470 16V
C532
0.1 25V B
R529
3.9K
R530
1.3K
R527
220K
C530
10 25V B
3225
L406
10uH
L405
10uH
L407
10uH
TP501
JP508
-5V
3.3V_MICOM
FB509
CB2012UM600
VD3_3
VCC_3
+3.3V_PANEL
TP502
JP510
R542
0
R543
0
R544
0
R545
0
C554
330 6.3V
C535
22 20V
C536
0.1 25V B
L501
3.3uH
F504
8A/250V
C538
330 6.3V
IC508
LM2650
R531
3.57K
R532
41.2K 1%
C539
6.8nF 25V B
R534
18K
C540
0.01 25V B
C541
3.9nF 25V B
R535
33K
C517
0.1 25V B
C537
0.1 25V B
C542
0.22 25V B
R533
24.9K 1%
C518
0.1 25V B
C543
22 20V
C544
0.1 25V B
L502
33uH
F505
8A/250V
IC509
LM2650
R536
3.57K
R537
12K 0.5%
C547
6.8nF 25V B
R538
18K
C548
0.01 25V B
C549
3.9nF 25V B
R539
33K
C552
0.1 25V B
C545
0.1 25V B
C550
0.22 25V B
R540
24.9K 1%
C553
0.1 25V B
TP503
L509
10uH
R546
0
JP511
R547
0
R548
0
R549
0
VL1_8
VD1_8
VA1_8
C546
330 6.3V
C558
330 6.3V

PR-296 (3/3)

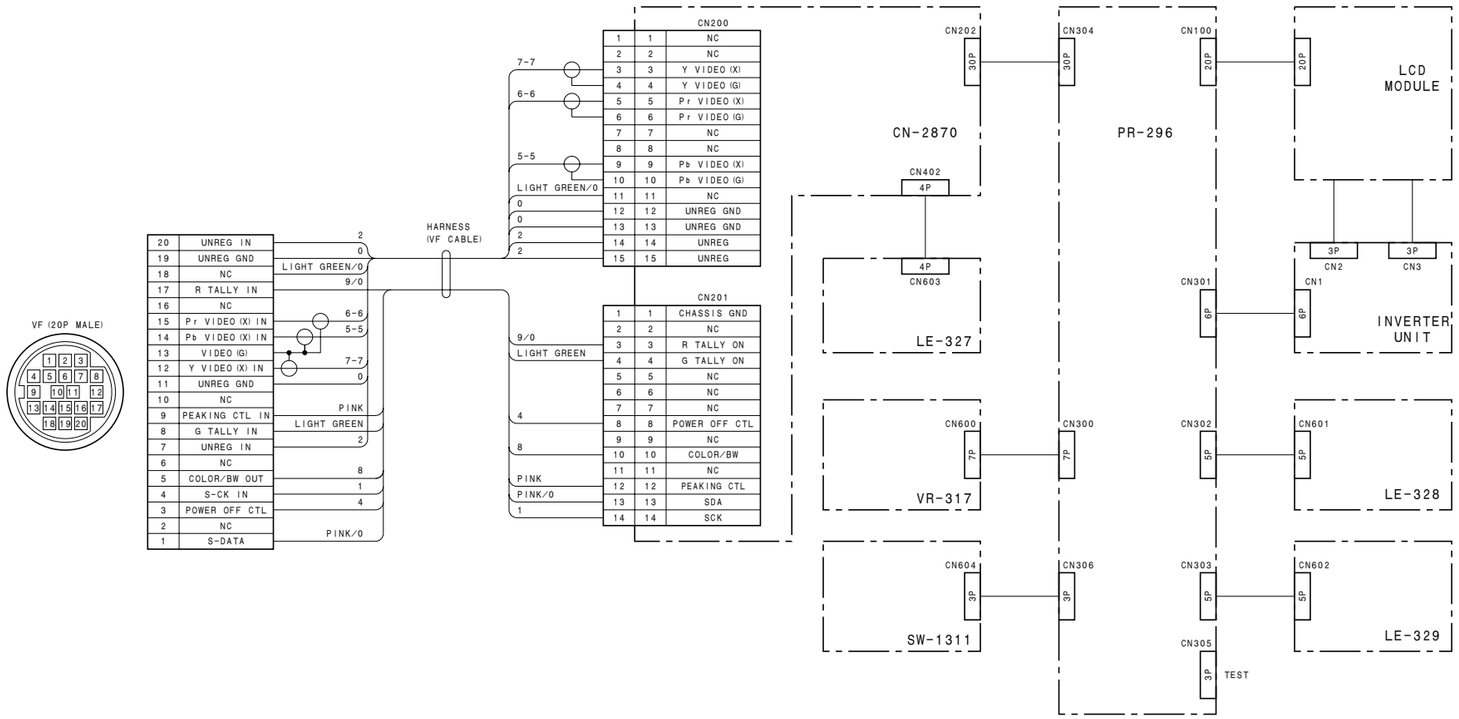


SW-1311



VR-317

Frame Wiring



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