SONY

CAMERA ADAPTOR

CA-950
CA-950P

MAINTENANCE MANUAL
Volume 1 1st Edition (Revised 2)
Serial No. 10001 and Higher: CA-950 (JN)
Serial No. 40001 and Higher: CA-950P (CE)

⚠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。

設置や保守，点検，修理などを行う前に，別冊のオペレーションマニュアルの「安全のために」を必ずお読みください。

⚠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

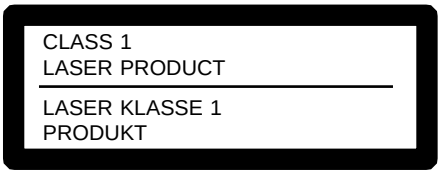
Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. 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.

Laser Diode Properties

Material	: In GaAsP
Wave length	: 1310 nm
Emission duration	: Pulse code modulation
Laser output power	: –8 dBm



This camera adaptor is classified as a CLASS 1 LASER PRODUCT.
The CLASS 1 LASER PRODUCT label is located on the 68-pin connector panel.

Table of Contents

Manual Structure

1. Service Overview

2. Replacement of Main Parts

3. Electrical Alignment

Manual Structure

Purpose of this manual

This manual is the maintenance manual volume 1 for Camera Adaptor CA-950/950P.
This manual describes the information items on maintenance, and items that premise the service based on the components parts such as service overview, replacement of parts and alignment, assuming use of system and service engineers.

Relative manuals

Besides this “maintenance manual volume 1” the following manuals are available for this unit.

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

- **Installation and Maintenance Manual (Supplied with this unit)**
  This manual describes the installation and maintenance information that is necessary at the time of primary service, assuming use of system and service engineers.

- **Maintenance Manual Volume 2 (Available on request)**
  This manual describes the information items that premise the service based on the components parts such as exploded views, schematic diagrams, board layouts and spare parts list, assuming use of system and service engineers.
  If this manual is required, please contact your local Sony Sales Office/Service Center.
  Part number: 9-968-572-XX

- **“Semiconductor Pin Assignments” CD-ROM (Available on request)**
  This “Semiconductor Pin Assignments” CD-ROM allows you to search for semiconductors used in Communication System Solutions Network Company equipment.
  Semiconductors that cannot be searched for on this CD-ROM are listed in the maintenance manual for the corresponding unit. The maintenance manual contains a complete list of all semiconductors and their ID Nos., and thus should be used together with the CD-ROM.
  Part number: 9-968-546-XX

Contents

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

Section 1 Service Overview

Describes information about board locations, circuit description, function of internal switches and notes on services.

Section 2 Replacement of Main Parts

Describes about the replacement of the switching requlator, fun and circuit boards.

Section 3 Electrical Alignment

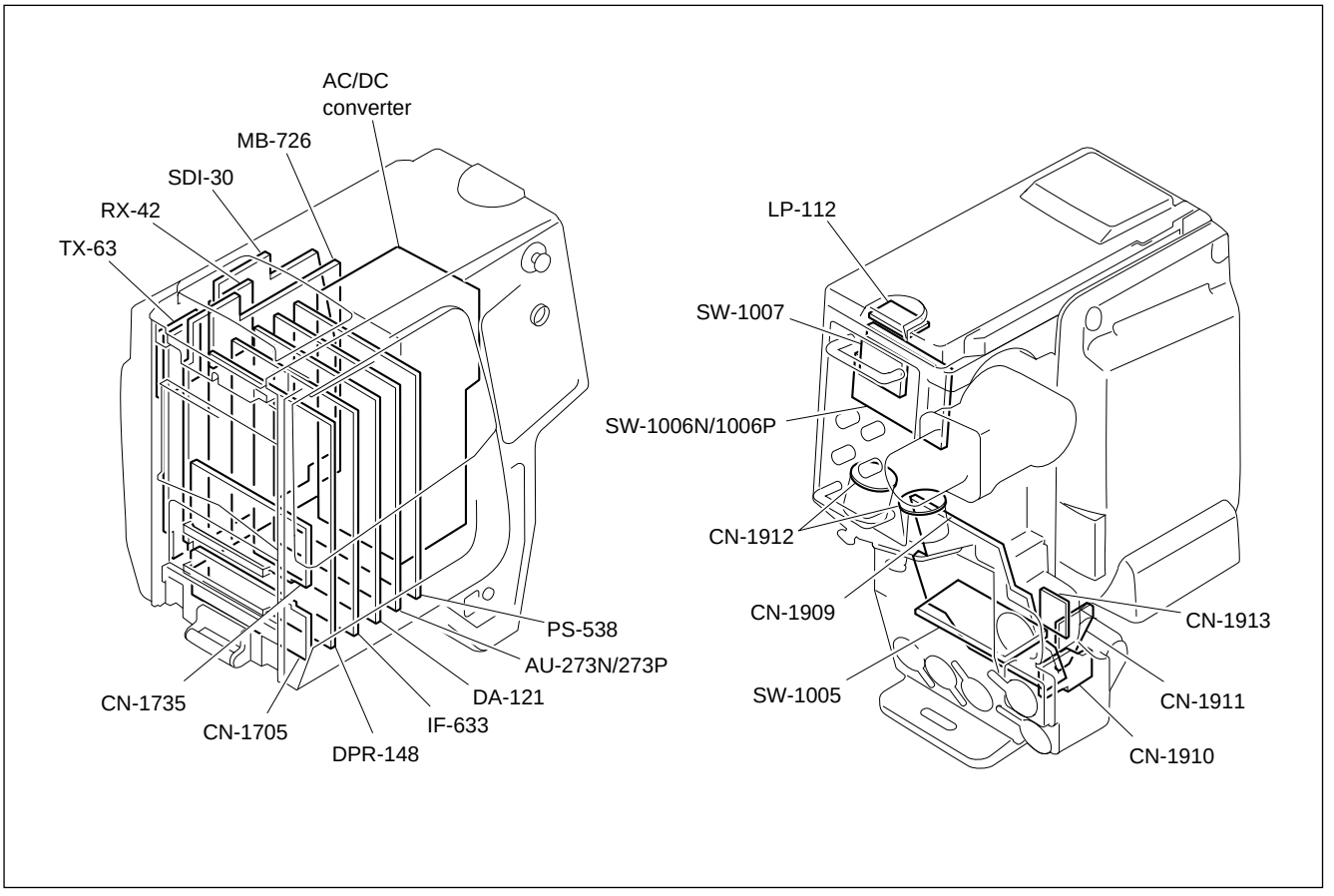
Describes electrical adjustment necessary for maintenance of the unit or replacement of parts.

Section 1
Service Overview

1-1. Optional Fixtures

Name	Sony Part No.	Remarks
EX-464 Board	A-8318-864-A	For extension of plug-in board
Alignment sleeve remover HC-001	J-6480-010-A	For female connector
Cotton swab	——	Diameter about 4 mm Any available on the market

1-2. Location of Printed Wiring Board



1-3. Circuit Description

DPR-148 Board

The DPR-148 board performs DA processing of the RETURN VIDEO signal and AD/DA processing of the prompter video signal. Switching of the PROMPTER VIDEO signal and GEN LOCK signal is performed by the S3 switch on the board. The “CCU → CAM” or “CAM → CCU” switching of the direction of the PROMPTER VIDEO signal is performed by the S1 switch on the board.
The DPR-148 board also has a power supply sub-regulator that improves S/N.

IF-633 Board

The IF-633 board has a CPU for setting LSI according to the using state in the CA-950/950P and for controlling other devices.
Information exchange between the camera and rear panel is performed via the I/O.
In addition, the IF-633 board also performs CCU connection control, external power supply voltage detection, TEST OUT signal processing, and DATA signal processing for the REMOTE connector.

DA-121 Board

The DA-121 board performs AD/DA processing of the INCOM, PGM, and MIC signals, processing of the MONITOR OUT signals, and EARPHONE drive and EARPHONE line selection. The signal of either of the MIC connectors on the CHU and CA-950/950P can also be selected to be transmitted to the CCU as the MIC1.
The DA-121 board also includes a MIC PHANTOM POWER ON/OFF circuit. Self-diagnosis is performed by detecting the power supply voltage.
The DA-121 board also has a power supply sub-regulator for enhancing S/N.

AU-273N/273P Board

The AU-273N/273P board also performs base band signal processing of mainly the INCOM/PGM. It has the INCOM MIC selector circuit, INCOM/PGM mix mode selector circuit, headset drive amplifier, and EVR circuit. The EVR circuit controls the output level of the INCOM/PGM. Self-diagnosis is performed by detecting the power supply voltage.

PS-533 board

The PS-533 board generates various voltages used in the CA-950/950P.

RX-42 board

The optical signal transmitted from the camera control unit is converted to an electric signal by the RX-42 board, and converted signal is output to the SDI-30 board. And the RX-42 board detects the photo-receptive level, and the detection value is output to the IF-633 board via SDI-30 board.

SDI-30 board

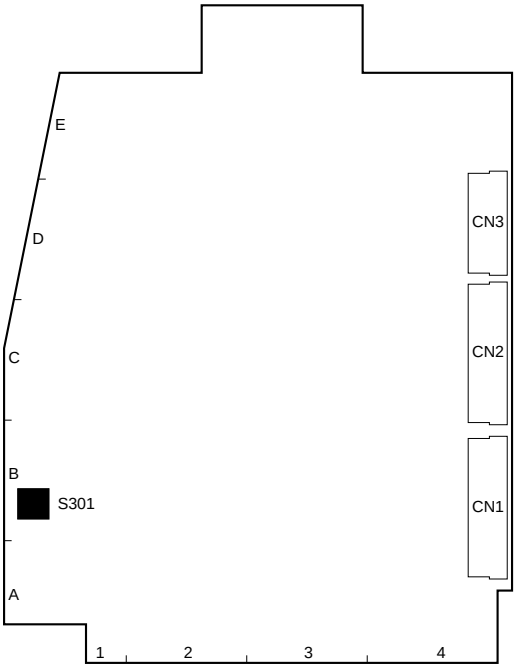
The SDI-30 board performs processing of digital signals. The sampling rate of video signal from the camera are converted here to component digital signals and digital audio signals and command signals are multiplexed. The return signal sent from the CCU is separated into the video signal, digital audio signal, and command signal.

TX-63 board

The serial signal multiplexed on the SDI-30 board is converted to an optical signal by the TX-63 board, and this signal is output to the camera control unit.

1-4. Function of Internal Switches

1-4-1. SDI-30 board



SDI-30 board (A side)

Note

Never change the settings of the “Factory use” switches.

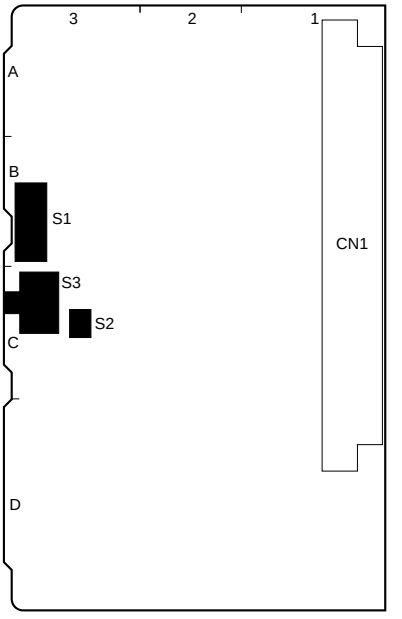
CA-950 : Serial No. 10011 and Higher
CA-950P : Serial No. 40008 and Higher

Ref. No.	Switch name	Description	Factory setting
S301-1	SDI Free-Run	Selects ON/OFF of SDI output free-run frequency. Turn on when adjusting the free-run frequencies of IC303 and IC304 on the SDI-30 board. **Note** After adjustment, be sure to reset this switch to off.	OFF
S301-2	—	Factory use	OFF

CA-950 : Serial No. 10001 through 10010
CA-950P : Serial No. 40001 through 40007

Ref. No.	Switch name	Description	Factory setting
S301	SDI Free-Run	Selects ON/OFF of SDI output free-run frequency. Turn on when adjusting the free-run frequencies of IC303 and IC304 on the SDI-30 board.	Momentary

1-4-2. DPR-148 board



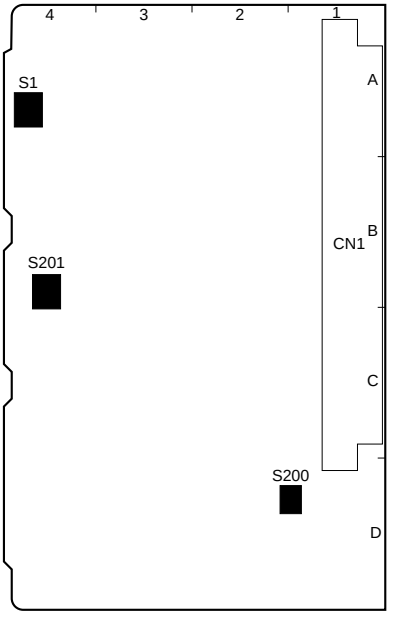
DPR-148 board (A side)

Note

Never change the settings of the “Factory use” switches.

Ref. No.	Switch name	Description	Factory setting
S1	PROMPTER SELECT	Switches the direction of transmission of prompter signals. IN: Outputs a video signal that is input from the PROMPTER/GEN LOCK connector to the CCU. OUT: Outputs a video signal that is input from the CCU to the PROMPTER/GEN LOCK connector.	OUT
S2-1, 2	—	Factory use	OFF
S3	PROMPTER/GEN LOCK	Switches the functions of the PROMPTER/GEN LOCK connector. PROMPTER: Inputs or outputs prompter signals. GEN LOCK: Inputs an external sync signal.	PROMPTER

1-4-3. IF-633 board



IF-633 board (A side)

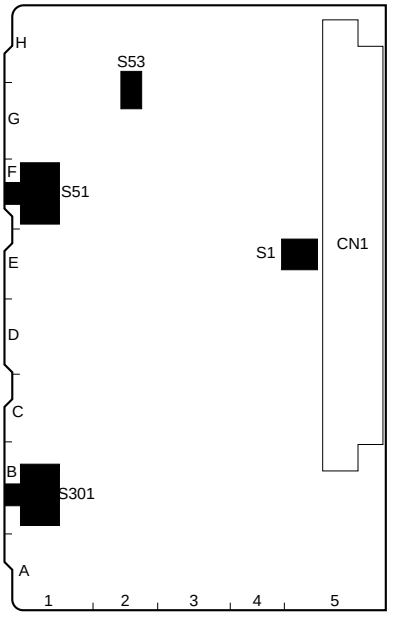
Note

Never change the settings of the “Factory use” switches.

Ref. No.	Switch name	Description	Factory setting
S1-1	BATTERY ALARM	Turn ON to mix and output the battery alarm signal to the TALLY lamp.	OFF
S1-2	TEST OUT SELECT	Switches the output signal of the TEST OUT connector. ON: Outputs the VBS signal from the camera. OFF: Outputs the return video signal.	ON
S1-3	TEST OUT SELECT	Switches the VBS video output signal and the monitor output signal. ON: Outputs the monitor output signals to the TEST OUT connector. OFF: Outputs the VBS output signal to the TEST OUT connector.	ON
S1-4	TEST OUT SELECT	Selects whether the unit accepts the control signal from the RET CONT connector. ON: Outputs the return video signal only when the return control signal is low. OFF: Outputs the return video signal only when the CCU is connected.	ON
S200-1	–	Factory use	OFF
S200-2	RET/SDI SEL	ON: With return video selector such as CAC-6 connected to the RET CONT connector, switching this switch ON can select the SERIAL OUT signal. To switch the SERIAL OUT output, use the control button of the return video selector. The setup menu for CCU determines the selection of signals. **Note** With this switch set to ON, the return video selector functions only for selecting the SERIAL OUT signal, and it cannot select the return signal output to VF or TEST OUT of this unit. To select the return signal output to VF or TEST OUT of this unit, use the return video selection switch on the rear panel of this unit, or on the camera handle, or the side of the camera. OFF: Normal mode.	OFF
S201-1, 2, 4	–	Factory use	OFF
S201-3 *	SETUP	Sets ON or OFF the setup function of the return video signal to be output to VF or TEST OUT. ON: Setup of 7.5 IRE is available. OFF: Setup is unavailable.	OFF

* : Only used for CA-950, not for CA-950P.

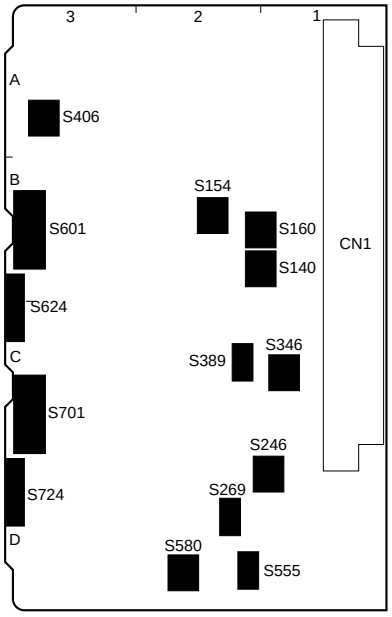
1-4-4. DA-121 board



DA-121 board (A side)

Ref. No.	Switch name	Description	Factory setting
S1-1	PGM	Turns on and off the function to monitor the PGM (program audio) by the earphone ON: Monitoring is enabled OFF: Monitoring is disabled	ON
S1-2	INCOM 2	Turns on and off the function to monitor the INCOM 2 intercom audio by the earphone ON: Monitoring is enabled OFF: Monitoring is disabled	OFF
S1-3	INCOM 1	Turns on and off the function to monitor the INCOM 1 intercom audio by the earphone ON: Monitoring is enabled OFF: Monitoring is disabled	OFF
S1-4	MIC1	Turns on and off the function to output the MIC1 input audio by the earphone. ON: Monitoring is enabled OFF: Monitoring is disabled	OFF
S51	MIC1 SELECT	Selects the MIC1 input from the camera or AUDIO IN1 connector. FRONT: MIC1 input is the signal from the MIC1 connector of the camera. REAR: MIC 1 input is the signal from the AUDIO IN1 connector.	REAR
S53	MIC +12 V	Sets MIC POWER +12 V ON or OFF. When using AB POWERING +12 V microphone, set ON. **Note** When MIC POWER switch on the rear panel is set to OFF or +48 V, the power cannot be supplied even if this switch is turned ON.	OFF
S301	MIC TEST	Turn ON when monitoring microphone inputs on the headset.	OFF

1-4-5. AU-273N/273P board

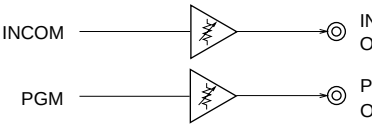
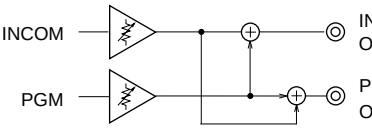
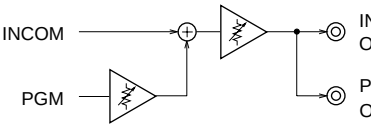


AU-273N/273P board (A side)

Ref. No.	Switch name	Description	Factory setting
S140-1 *	INCOM1 PGM MIX	Selects the method of outputting INCOM and PGM of the INCOM1 connector by the combination of S160-1, S160-3 and S246-1 switches. (See the figure below.)	OFF
S140-2 *	INCOM2 PGM MIX	Selects the method of outputting INCOM and PGM of the INCOM2 connector by the combination of S154-2, S154-4 and S346-2 switches. (See the figure below.)	OFF
S140-3	RTS2 TO PGM1 (for AU-273N) RTS2 TO TRACKER (for AU-273P)	ON : Mixes RTS2 TALK line to PGM1. (for AU-273N) ON : Mixes RTS2 TALK line to TRACKER. (for AU-273P) OFF : Normal mode	OFF
S140-4	RTS1 TO PGM2 (for AU-273N) RTS1 TO PGM (for AU-273P)	ON : Mixes RTS1 TALK line to PGM2. (for AU-273N) ON : Mixes RTS1 TALK line to PGM. (for AU-273P) OFF : Normal mode	OFF

* : Only used for AU-273N. For AU-273P, always set to OFF.

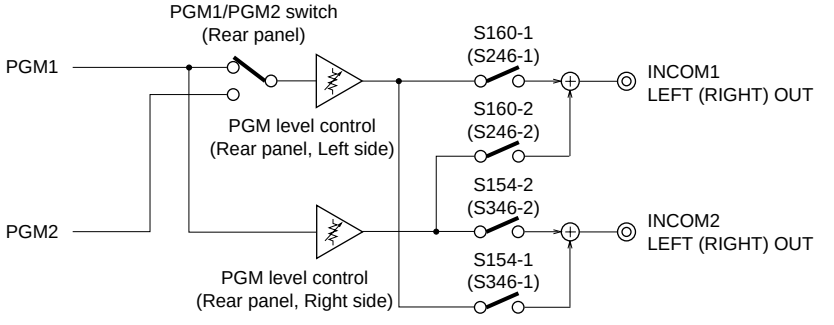
INCOM/PGM MIX mode select switches (for AU-273N only)

INCOM1	S140-1	S160-1	S160-3	S246-1	S246-3	Description
INCOM2	S140-2	S154-2	S154-4	S346-2	S346-4	
	OFF (Factory setting)	ON	OFF	OFF	ON	 INCOM and PGM are output independently
	OFF	ON	ON	ON	ON	 Mixed signal of INCOM and PGM is output as INCOM and PGM outputs. INCOM level control knob adjusts INCOM audio level and PGM level control knob adjusts the PGM audio level.
	ON	OFF	ON	OFF	ON	 Mixed signal of INCOM and PGM is output as INCOM and PGM outputs. INCOM level control knob adjusts mixed signal level of the INCOM and PGM, and PGM level control knob adjusts the balance between them.

INCOM SELECT switch (S160, S246, S154, S346) (for AU-273N)

Ref. No.	Switch name	Description	Factory setting
S160	INCOM1 LEFT SELECT	Selects output of INCOM1 to the left ear.	
S160-1	PGM1/2 ∗1	Turns PGM1/2 ON or OFF. ∗3	ON
S160-2	PGM1 ∗2	Turns PGM1 ON or OFF. ∗3	OFF
S160-3	INCOM1	Turns INCOM1 ON or OFF. ∗3	OFF
S160-4	INCOM2	Turns INCOM2 ON or OFF. ∗3	OFF
S246	INCOM1 RIGHT SELECT	Selects output of INCOM1 to the right ear.	
S246-1	PGM1/2 ∗1	Turns PGM1/2 ON or OFF. ∗3	OFF
S246-2	PGM1 ∗2	Turns PGM1 ON or OFF. ∗3	OFF
S246-3	INCOM1	Turns INCOM1 ON or OFF. ∗3	ON
S246-4	INCOM2	Turns INCOM2 ON or OFF. ∗3	OFF
S154	INCOM2 LEFT SELECT	Selects output of INCOM2 to the left ear.	
S154-1	PGM1/2 ∗1	Turns PGM1/2 ON or OFF. ∗3	OFF
S154-2	PGM1 ∗2	Turns PGM1 ON or OFF. ∗3	ON
S154-3	INCOM1	Turns INCOM1 ON or OFF. ∗3	OFF
S154-4	INCOM2	Turns INCOM2 ON or OFF. ∗3	OFF
S346	INCOM2 RIGHT SELECT	Selects output of INCOM2 to the right ear.	
S346-1	PGM1/2 ∗1	Turns PGM1/2 ON or OFF. ∗3	OFF
S346-2	PGM1 ∗2	Turns PGM1 ON or OFF. ∗3	OFF
S346-3	INCOM1	Turns INCOM1 ON or OFF. ∗3	OFF
S346-4	INCOM2	Turns INCOM2 ON or OFF. ∗3	ON

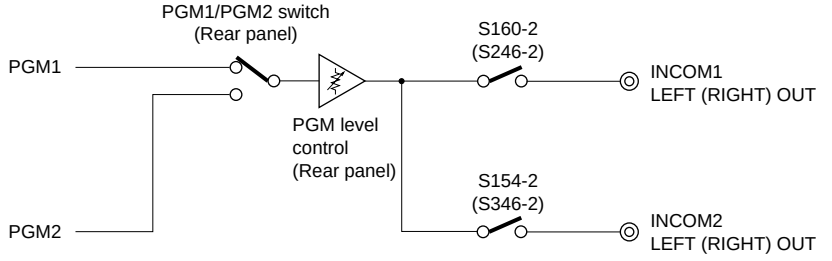
∗1: In PGM1/2 setting, PGM1 or PGM2 is output by the PGM1/PGM2 switch on the rear panel. (See the figure below.)
∗2: In the PGM1 setting, PGM1 is output regardless of the PGM1/PGM2 switch on the rear panel. (See the figure below.)
∗3: Volume is adjustable by level controls for each of INCOM and PGM on the rear panel.



INCOM SELECT switch (S160, S246, S154, S346) (for AU-273P)

Ref. No.	Switch name	Description	Factory setting
S160	INCOM1 LEFT SELECT	Selects output of INCOM1 to the left ear.	
S160-1	TRACKER	Turns TRACKER ON or OFF ∗2	OFF
S160-2	PGM1/2 ∗1	Turns PGM1/2 ON or OFF ∗2	ON
S160-3	ENG	Turns ENG ON or OFF ∗2	OFF
S160-4	PROD	Turns PROD ON or OFF ∗2	OFF
S246	INCOM1 RIGHT SELECT	Selects output of INCOM1 to the right ear.	
S246-1	TRACKER	Turns TRACKER ON or OFF ∗2	ON
S246-2	PGM1/2 ∗1	Turns PGM1/2 ON or OFF ∗2	ON
S246-3	ENG	Turns ENG ON or OFF ∗2	ON
S246-4	PROD	Turns PROD ON or OFF ∗2	ON
S154	INCOM2 LEFT SELECT	Selects output of INCOM2 to the left ear.	
S154-1	TRACKER	Turns TRACKER ON or OFF ∗2	OFF
S154-2	PGM1/2 ∗1	Turns PGM1/2 ON or OFF ∗2	ON
S154-3	ENG	Turns ENG ON or OFF ∗2	OFF
S154-4	PROD	Turns PROD ON or OFF ∗2	OFF
S346	INCOM2 RIGHT SELECT	Selects output of INCOM2 to the right ear.	
S346-1	TRACKER	Turns TRACKER ON or OFF ∗2	ON
S346-2	PGM1/2 ∗1	Turns PGM1/2 ON or OFF ∗2	ON
S346-3	ENG	Turns ENG ON or OFF ∗2	ON
S346-4	PROD	Turns PROD ON or OFF ∗2	ON

∗1: In PGM1/2 setting, PGM1 or PGM2 is output by the PGM1/PGM2 switch on the rear panel. (See the figure below.)
∗2: Volume is adjustable by a level control for each of TRACKER, PGM, ENG and PROD on the rear panel.



Ref. No.	Switch name	Description	Factory setting
S269	RTS1	Sets when connecting RTS kit to INCOM1 connector. RTS: Can use RTS CH1 as INCOM1 connector NORM: Normal mode	NORM
S389	RTS2	Sets when connecting RTS kit to INCOM2 connector. RTS: Can use RTS CH2 as INCOM2 connector NORM: Normal mode	NORM
S406-1	PGM1 TO TRACKER	ON: Mixes PGM1 to TRACKER. OFF: Does not mix.	ON
S406-2	PGM2 TO TRACKER	ON: Mixes PGM2 to TRACKER. OFF: Does not mix.	OFF
S406-3	INCOM2 R TO TRACKER (for AU-273N)	ON: Mixes INCOM2 RECEIVE to TRACKER. OFF: Does not mix.	OFF
	PROD R TO TRACKER (for AU-273P)	ON: Mixes PROD RECEIVE to TRACKER. OFF: Does not mix.	ON
S406-4	INCOM2 T TO TRACKER (for AU-273N)	ON: Mixes INCOM2 TALK to TRACKER. OFF: Does not mix.	OFF
	PROD T TO TRACKER (for AU-273P)	ON: Mixes PROD TALK to TRACKER. OFF: Does not mix.	ON
S555	TRACKER (T) 0/–20	Selects TRACKER TALK level of TRACKER connector. 0: 0 dBu (Standard) –20: –20dBu (Use this when input level is low.) (0 dBu = 0.775 Vrms)	0 (0 dBu)
S580-1*	TRACKER TO INCOM1 R	ON: Mixes TRACKER to INCOM1 RECEIVE. OFF: Does not mix.	ON (for AU-273N) OFF (for AU-273P)
S580-2*	TRACKER TO INCOM2 R	ON: Mixes TRACKER to INCOM2 RECEIVE. OFF: Does not mix.	OFF
S580-3	TRACKER TO INCOM1 T	ON: Mixes TRACKER to INCOM1 TALK. OFF: Does not mix.	ON
S580-4	TRACKER TO INCOM2 T	ON: Mixes TRACKER to INCOM2 TALK. OFF: Does not mix.	ON
S601	INCOM1 CM/DYM	Select according to the type of microphone of the headset connected. CM: Carbon microphone DYM: Dynamic microphone	CM
S701	INCOM2 CM/DYM	Select according to the type of microphone of the headset connected. CM: Carbon microphone DYM: Dynamic microphone	CM
S624	INCOM1 GAIN	Switches the gain of the microphone. +: about 6 dB higher than standard gain 0: standard gain –: about 6 dB lower than standard gain	0 (0 dB)
S724	INCOM 2 GAIN	Switches the gain of the microphone. +: about 6 dB higher than standard gain 0: standard gain –: about 6 dB lower than standard gain	0 (0 dB)

* : Only used for AU-273N. For AU-273P, always set to OFF.

1-5. Description on Flexible Card Wire

1-5-1. Disconnecting/Connecting Flexible Card Wire

The four flexible card wires are used as follows :
Take care not to break the flexible card wire. This shorten the wire life.

- Between CN-1705 and SDI-30 : Qt'y 3
- Between CN-1735 and MB-726 : Qt'y 2
- Between CN-1909 and MB-726 : Qt'y 1
- Between SW-1006N/1006P and MB-726 : Qt'y 1

Disconnecting

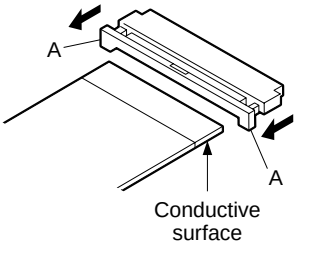
1. Turn off the power.
2. Slide portions A in the direction of the arrow to unlock and pull out the flexible card wire.

Connecting

Note

- Be careful not to insert the flexible card wire obliquely.
- Check that the conductive surface of the flexible card wire is not soiled with dust.

1. Slide portions A in the direction of the arrow and insert the flexible card wire as far as it will go with the conductive surface down.
2. Slide portions A in the reverse direction to lock.



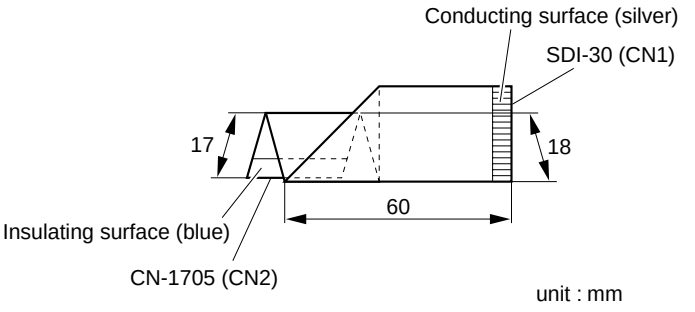
1-5-2. Forming Before Installation

If using a new flexible card wire, be sure to hand-form it as shown in the figure before installation.

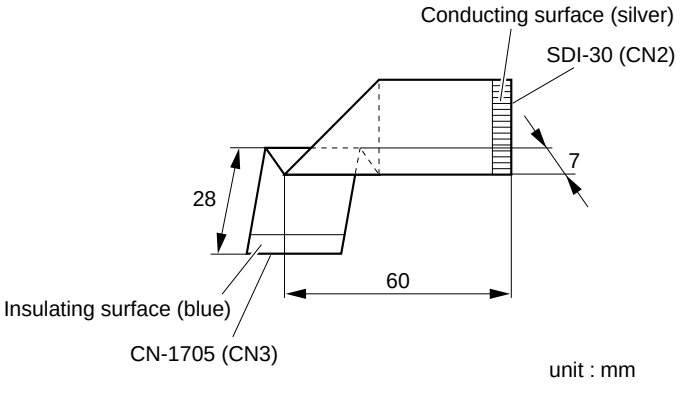
Note

Never fold it back after being formed once.

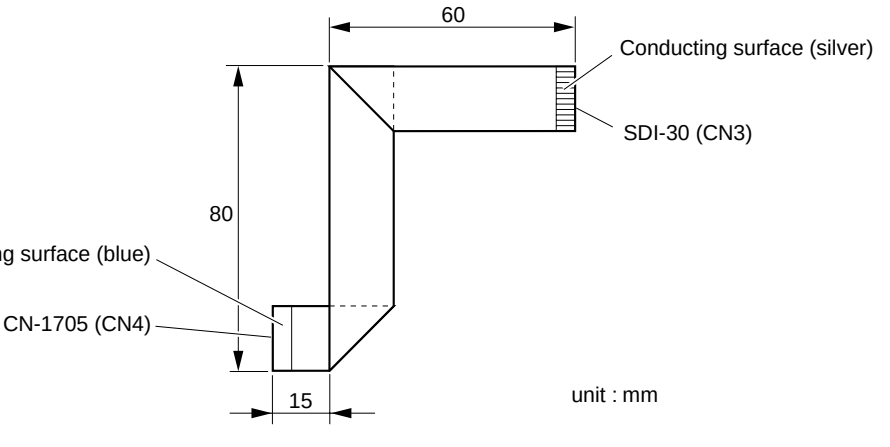
• CN-1705 board CN2 ↔ SDI-30 board CN1



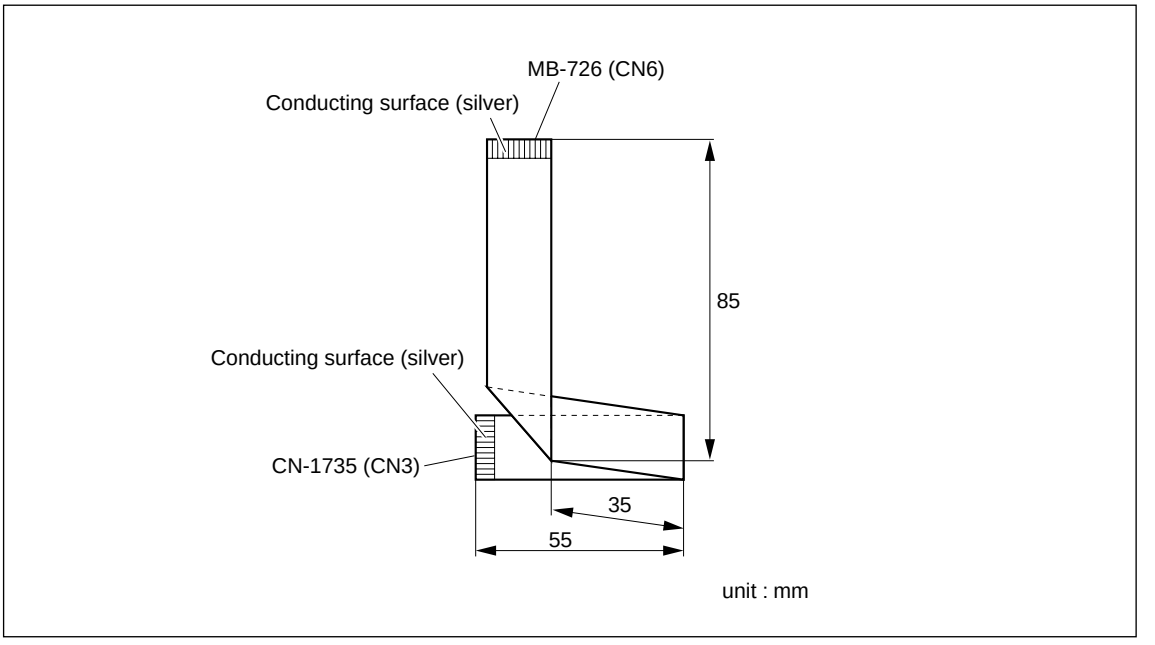
• CN-1705 board CN3 ↔ SDI-30 board CN2



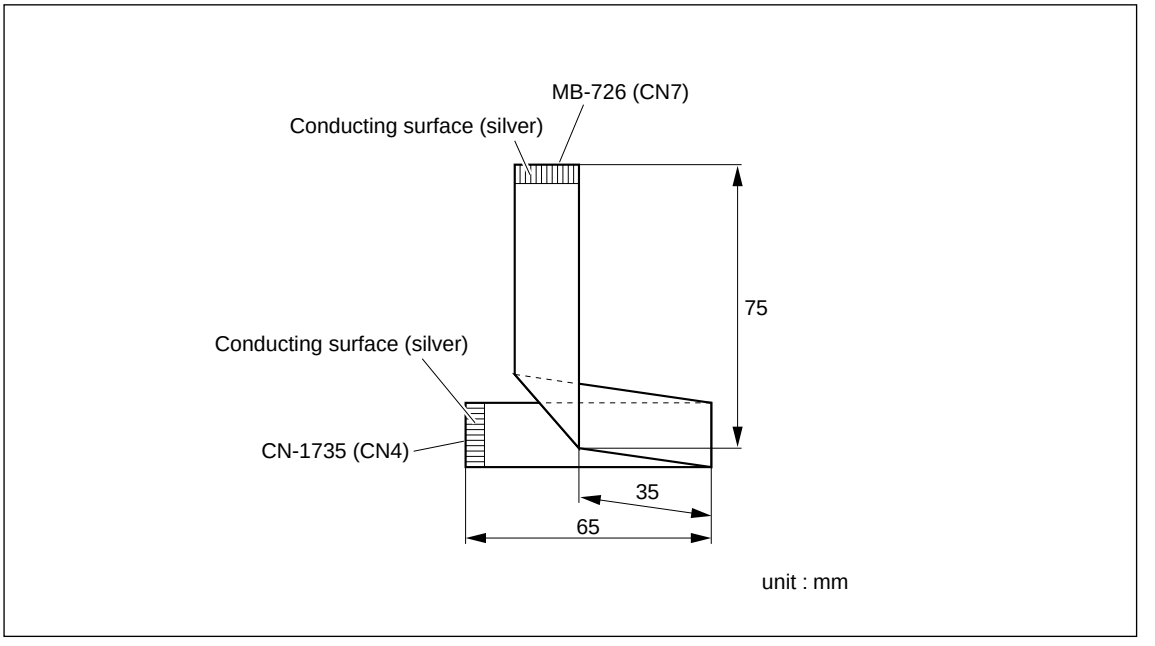
• CN-1705 board CN4 ↔ SDI-30 board CN3



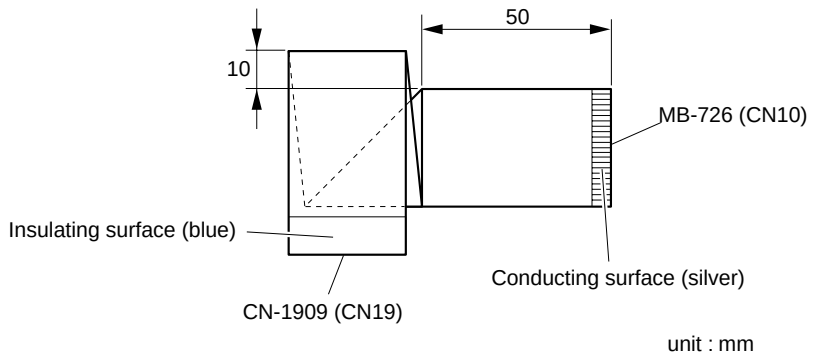
• CN-1735 board CN3 ↔ MB-726 board CN6



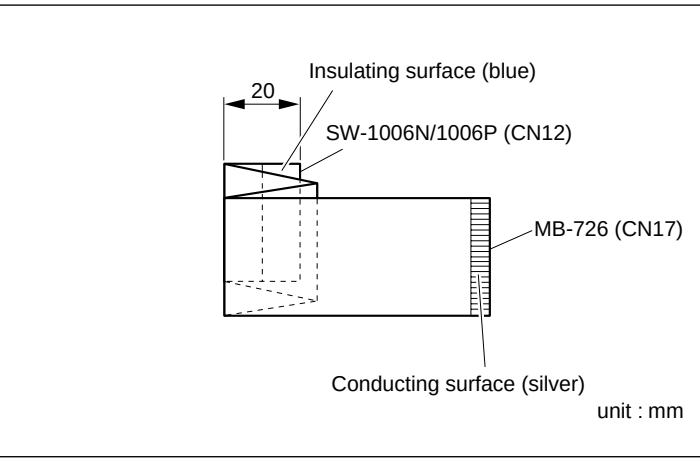
• CN-1735 board CN4 ↔ MB-726 board CN7



• MB-726 board CN10 ↔ CN-1909 board CN19



• MB-726 board CN17 ↔ SW-1006N/1006P board CN12



1-6. Cleaning of Connector/Cable

The photo-receptive condition is displayed on the POWER lamp.
The photo-receptive condition is displayed in three steps.

- OK: Lights up
- CARE: Blinks at about 0.5 through 0.6 second interval
- WARNING: Blinks at about 0.2 through 0.3 seconds interval

If the POWER lamp blinks, it is recommended to clean the optical contacts of the followings.

- CCU connector of this unit
- CAMERA connector of the camera control unit
- Optical/Electrical cable

In addition, when the CCU connector, RX-42 board or TX-63 board is replaced, be sure to perform the cleaning.

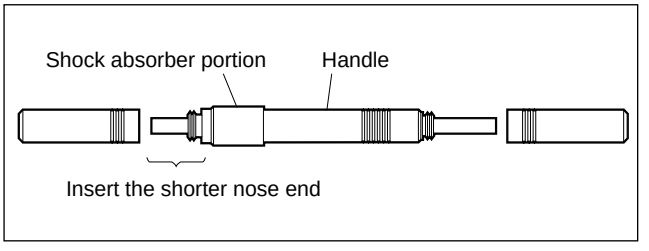
Follow the procedures below for cleaning.

Tools Required

- Alignment sleeve remover HC-001
  (for female connector)
  Sony P/N: J-6480-010-A

Note

Insert the shorter nose end when removing/installing the alignment sleeve.
Grasp not the shock absorber portion of the remover but the handle in use.



- Cotton swabs (commercially available)

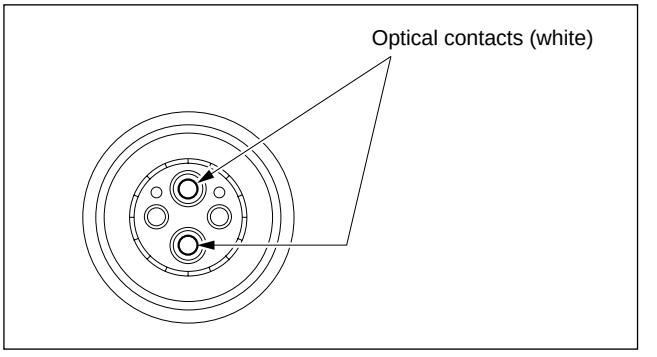
Note

Use the cotton swab with its diameter of around 4mm. The cotton swab with its diameter more than 5mm does not enough reach to the inner part of the cable, so that cannot clean the tip of the optical contact.

Cleaning

Male connector

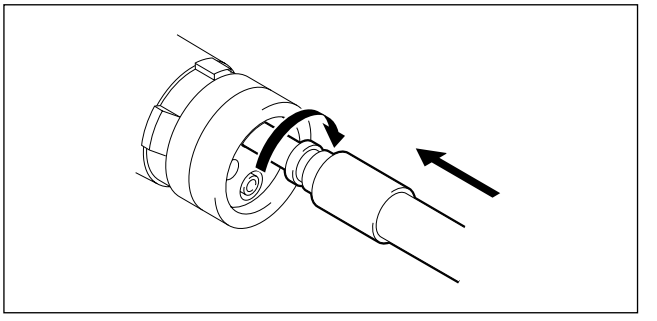
Clean the tip of the white optical contacts by a cotton swab moistened with alcohol.



Female connector

The optical contacts for female connector are in an unexposed state. In cleaning, it is necessary to be exposed by removing the alignment sleeve in advance. Proceed as follows.

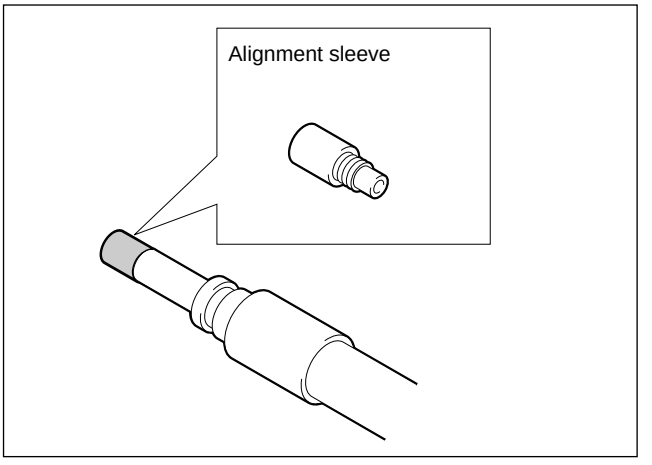
1. Insert the alignment sleeve remover into the alignment sleeve in the straight line and turn it clockwise.



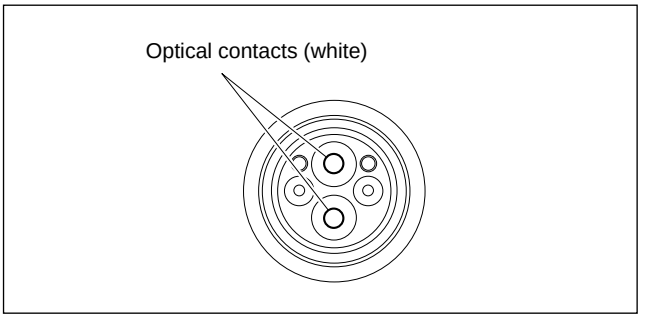
2. When the turn stops, pull out the remover in the straight line forcedly.

Note

The alignment sleeve can be removed/reinstalled with the sleeve itself attached to the tip of the remover. Great care should be taken so as not to lose or damage the alignment sleeve.
(Alignment sleeve: Sony P/N 9-980-074-01)



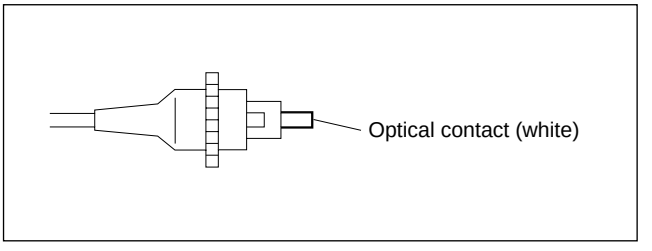
3. Clean the tip of the white optical contacts by a cotton swab moistened with alcohol.



4. Insert the remover with the alignment sleeve attached to its tip, and push it until it clicks.
5. Rotate the remover counterclockwise to install the alignment sleeve, and extract the remover.

Connecting connector

Clean the tip of the white optical contact by a cotton swab moistened with alcohol.



1-7. Notes on Service

1-7-1. Notes on Replacing the RX-42/TX-63 Boards

The electrical components on the RX-42 board and TX-63 board cannot be replaced or adjusted. The whole board must be replaced when any one component becomes faulty.

1-7-2. Circuit Protection Device

The CN-1909/1911 and MB-726 boards are provided with positive thermistors for power line to protect circuits. This device limits a current by steeply increasing the inner resistance when the device rises to a certain temperature due to overcurrent or high ambient temperature. If the device is activates once, turn off the power and check an equipment concerned; camera adaptor or other equipment connected to the DC OUT, TRACKER or REMOTE connector of the camera adaptor. After the cause is eliminated and the device cools off, turn on the power again. If there is no trouble, the unit will operate normally. It takes about a minute for the device to cool off after powering off the unit.

Board	Ref No.	Address	Equipment protected
CN-1909	CB1	C2	Camera and circuits in the camera adaptor
	THP2	A1	Equipment connected to TRACKER connector
	THP3	A2	Equipment connected to TRACKER connector
CN-1911	CB2	—	Equipment connected to DC OUT connector
MB-726	THP2	A4	Equipment connected to REMOTE connector

1-7-3. 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.
In need of repair, get components shown in the list and repair using them.

5. Destination Representation

The part indicated “For JN/CE” in the spare parts list is used in the unit written below.
For JN: The part is used in a unit for Japan, the U.S.A. and Canada.
For CE: The part is used in a unit for regions except the above countries.

1-8. Self-Diagnosis

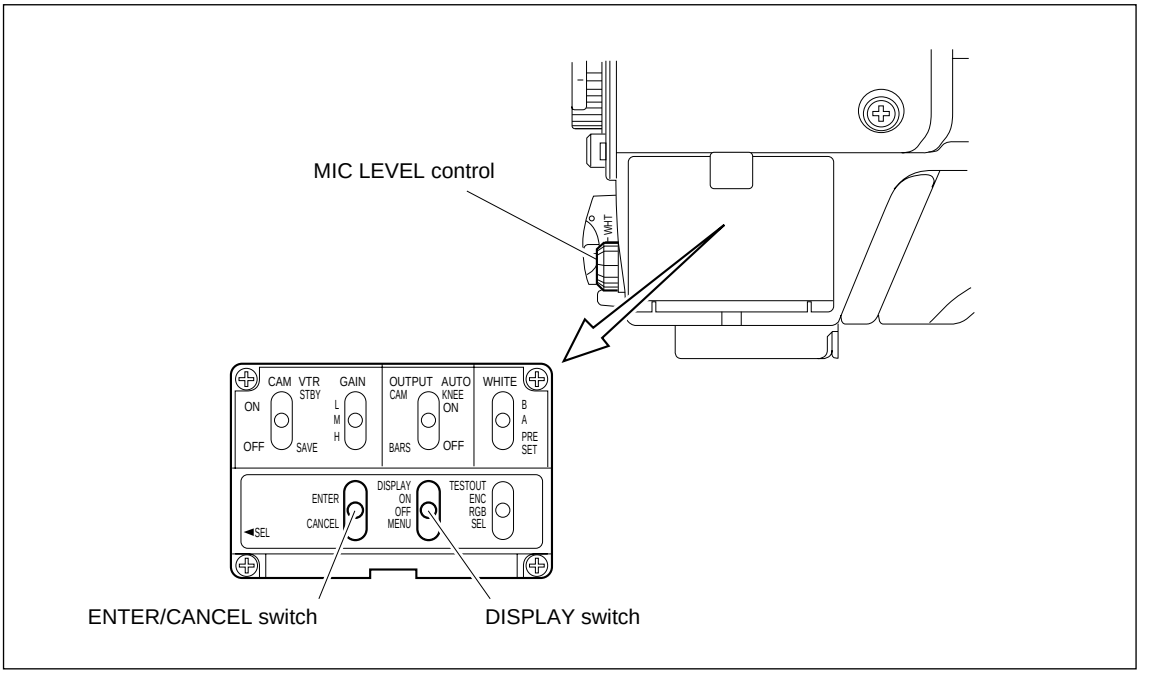
The Diagnosis page of the Operation menu is used for self-diagnosis of every plug-in board.
The Operation menu appears on the viewfinder screen.

Equipment required

Color video camera	BVP-950/950P/950WSPK/9500WS/9500WSP
CCD unit	OHB-730/750A series (Not required for BVP-9500WS/9500WSP)
Viewfinder	BVF-10/C10W/20W series

Supply power from a camera control unit CCU-900/900P or AC adaptor AC-550/550CE.

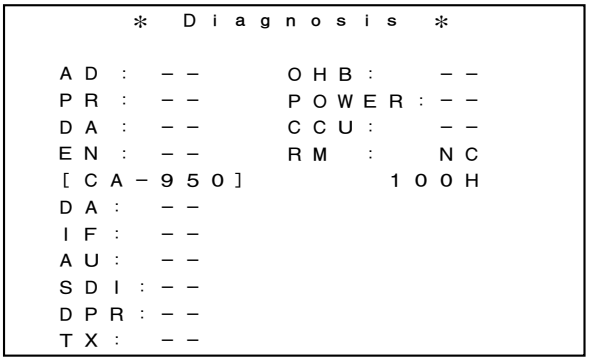
Switches and control knob



Operational procedures

1. Change the DISPLAY switch from OFF to MENU. The Operation menu is displayed.
2. Turn the MIC LEVEL control to display the Diagnosis page.
3. Press the MIC LEVEL control or set the ENTER/CANCEL switch to ENTER.
4. The menu page is returned to the previous page every time the ENTER/CANCEL switch is set to CANCEL.
5. To cancel the menu operation, set the DISPLAY switch to OFF.

Display descriptions



Marks	Board	Judging Point	Suspected Abnormality when NG is displayed
DA	DA-121	Various power supply voltages	• Drop in power supply voltage inside board • Faulty board connection
IF	IF-633	Various power supply voltages	• Drop in power supply voltage inside board • Faulty board connection
SDI	SDI-30	Various power supply voltages	• Drop in power supply voltage inside board • Faulty board connection
DPR	DPR-148	Various power supply voltages	• Drop in power supply voltage inside board • Faulty board connection
TX	TX-63	Laser light-emission stop	• Faulty board connection

Notes

- When the camera adaptor is not connected with an optical/electrical cable, “CCU: – –” will not be displayed.
- For items other than “DA” to “TX”, refer to the maintenance manual for the camera (BVP-950/950P/950WSPK or BVP-9500WS/9500WSP) used.

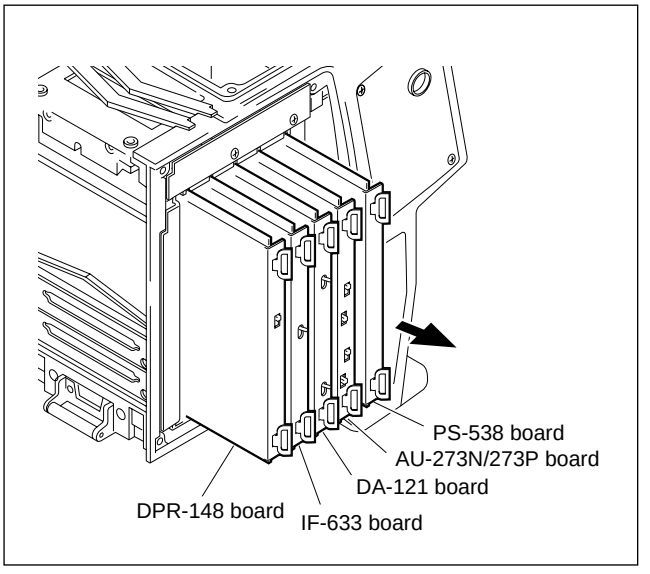
Section 2
Replacement of Main Parts

2-1. Replacing the Switching Regulator

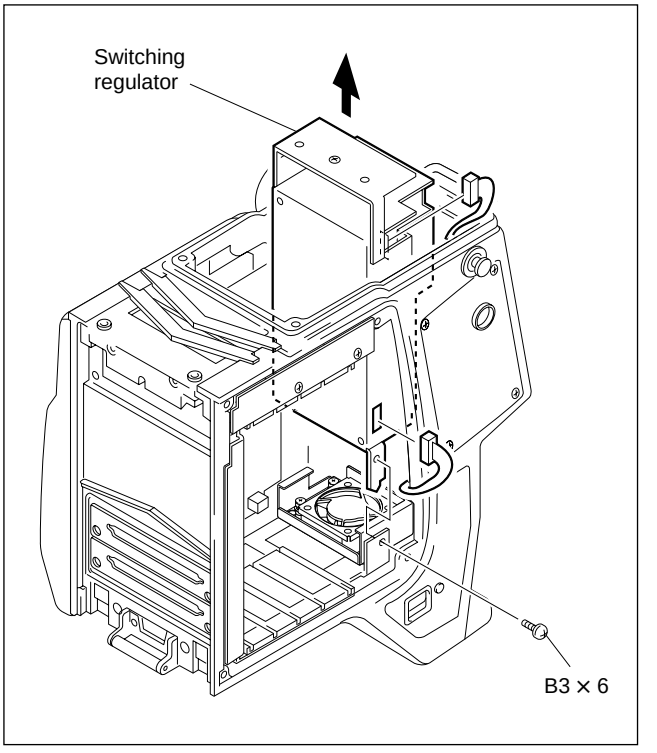
CAUTION

When opening the side panel during or immediately after use of the unit, be careful as the board panel is very hot and touching it may result in burns. When opening the side panel to perform inspections and adjustments, turn off the power and wait 10 minutes for the unit to cool down first.

1. Remove the right side panel and top panel. (Refer to Section 1-4 in the installation and maintenance manual.)
2. Pull out the card boards (PS-538 board, AU-273N/273P board, DA-121 board, IF-633 board, DPR-148 board) along the groove of the board rails to remove.



3. Disconnect the harness from the connector on the lower part of the switching regulator, and remove one screw.
4. Lift the switching regulator upwards, and remove the harness from the connector.
5. Remove the switching regulator while paying careful attention not to scratch the flexible card cable and harness.



6. Attach the new switching regulator in the reverse order of steps 1 to 5.

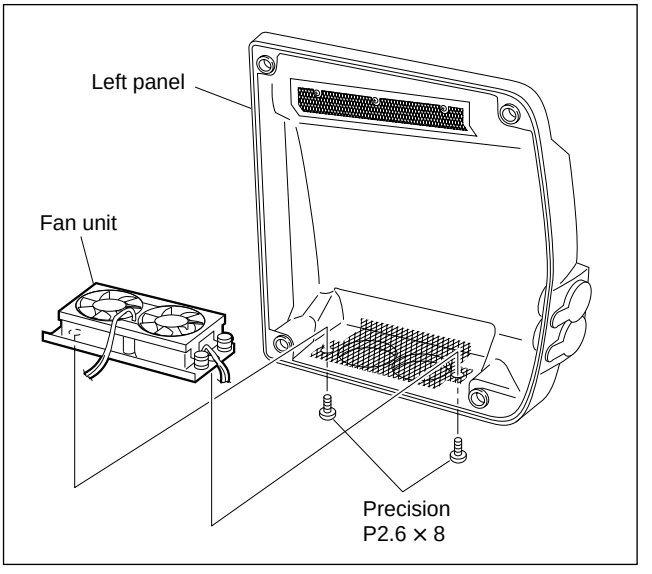
2-2. Replacing the Fan

CAUTION

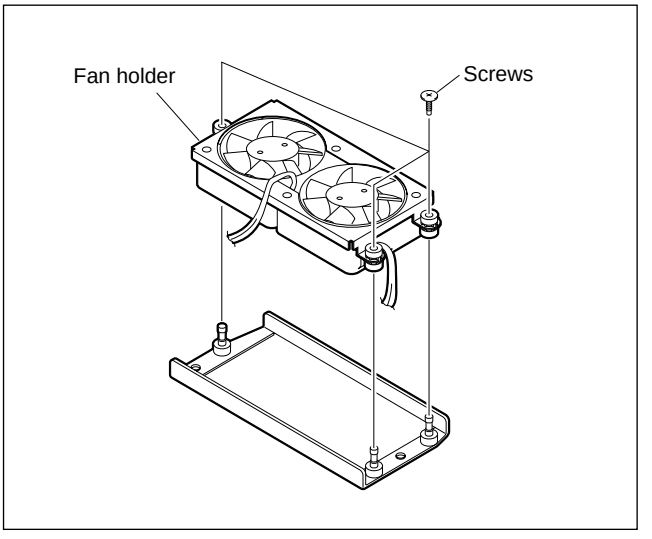
When opening the side panel during or immediately after use of the unit, be careful as the board panel is very hot and touching it may result in burns. When opening the side panel to perform inspections and adjustments, turn off the power and wait 10 minutes for the unit to cool down first.

2-2-1. Replacing the Fans of the Left Panel

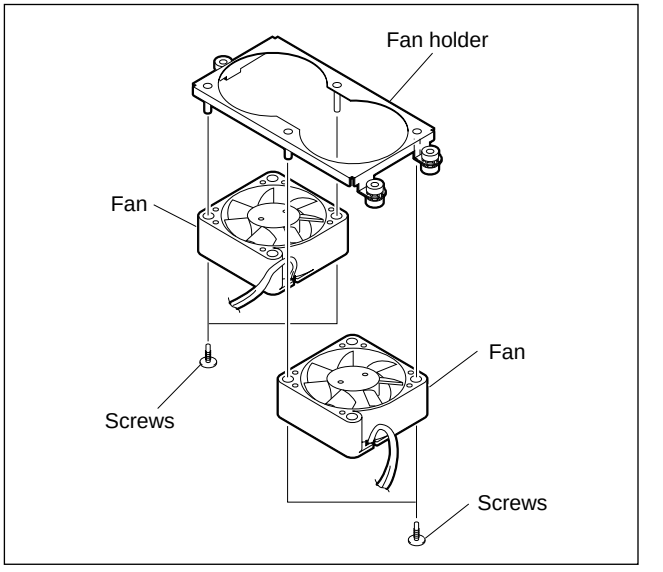
1. Remove the left panel. (Refer to Section 1-4 in the installation and maintenace manual.)
2. Remove the two screws, and remove the fan unit.



3. Remove the three screws of the fan holder, and remove the fan holder.



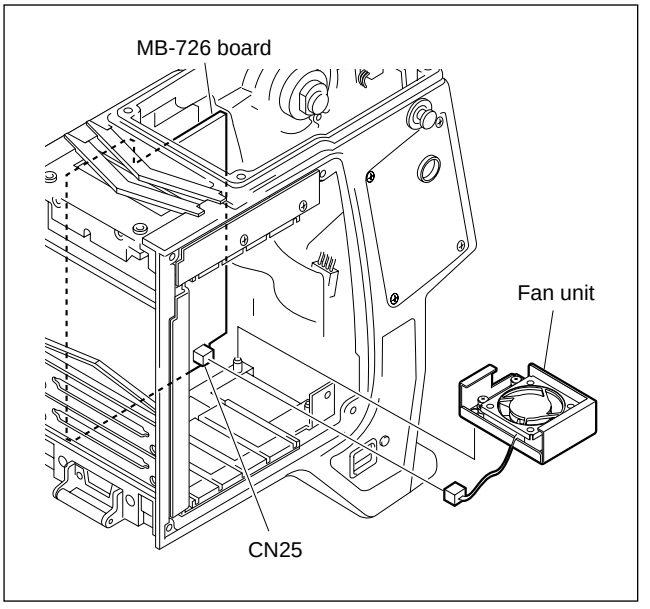
4. Remove the two screws securing each of the two fans, and remove the two fans.



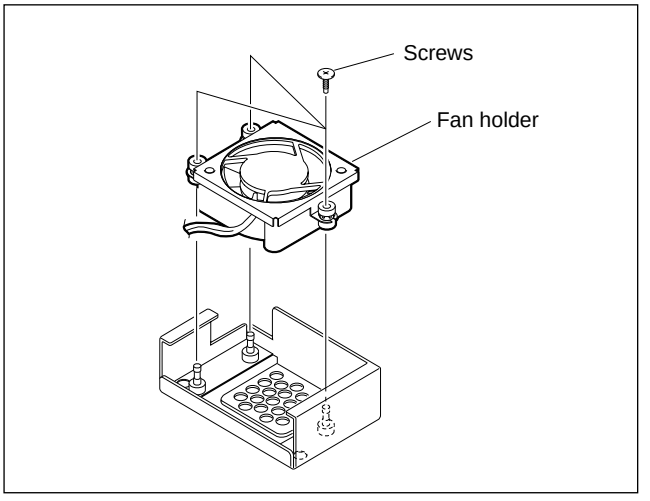
5. Attach the new fans in the reverse order of steps 1 to 4.

2-2-2. Replacing the Fan of the bottom of Switching Regulator

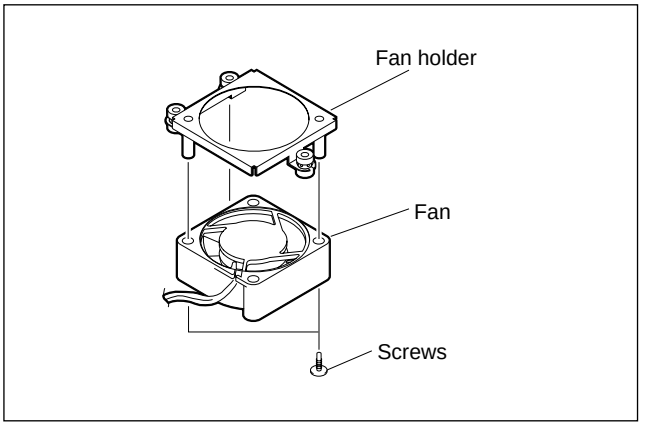
1. Remove the switching regulator. (Refer to Section 2-1.)
2. Disconnect the harness from the connector (CN25) on the MB-726 board, and remove the fan motor assembly.



3. Remove the three screws of the fan holder, and remove the fan holder.



4. Remove the two screws securing the fan, and remove the fan.



5. Attach the new fan in the reverse order of steps 1 to 4.

2-3. Replacing the RX-42/TX-63 Boards

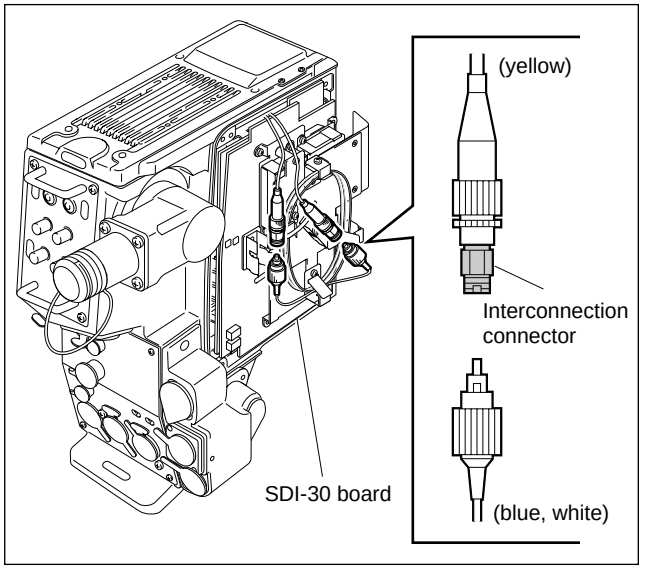
Notes

- Every electrical part mounted on the RX-42 board and TX-63 board cannot be replaced. If there is any defective part, replace the board itself.
- Pulling the optical connector cable or bending it with strong force may cause disconnection. Handle the optical connector cable with care.

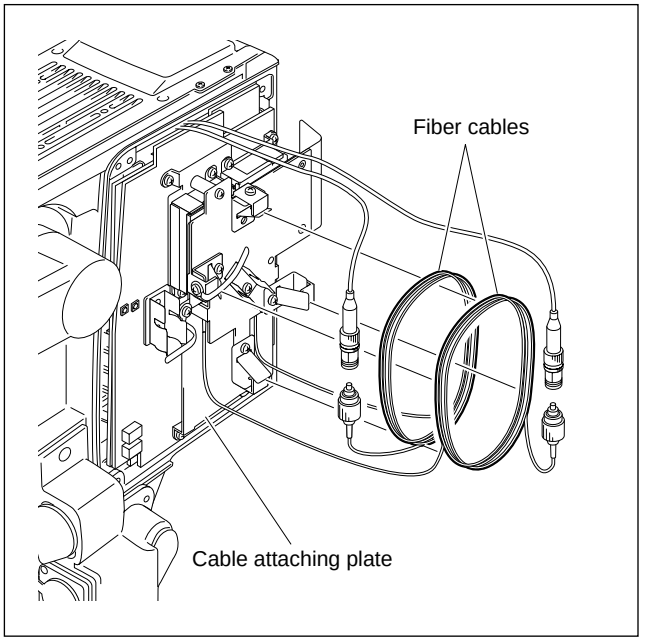
1. Remove the left panel. (Refer to Section 1-4 in the installation and maintenace manual.)
2. Disconnect the two optical connector cables (blue and white).

Note

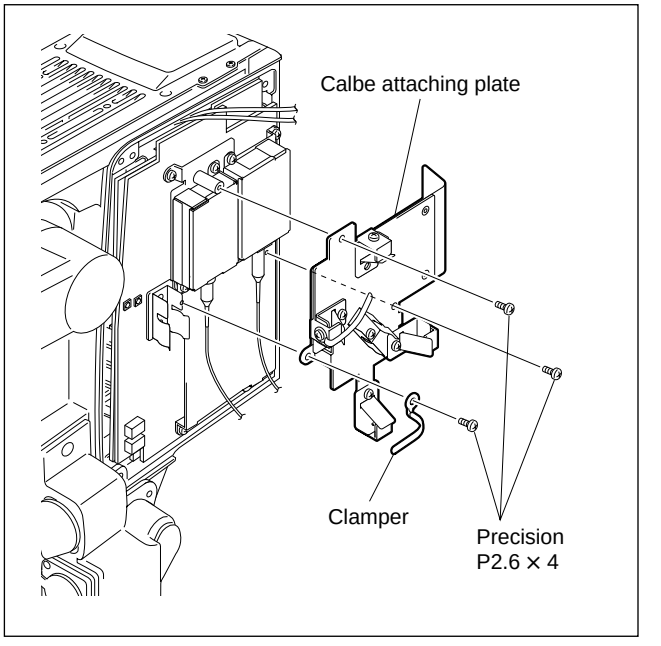
The interconnection connector should be remain connected to the mate connector (yellow). To avoid the signal degradation, do not touch an exposed tip of the connector.



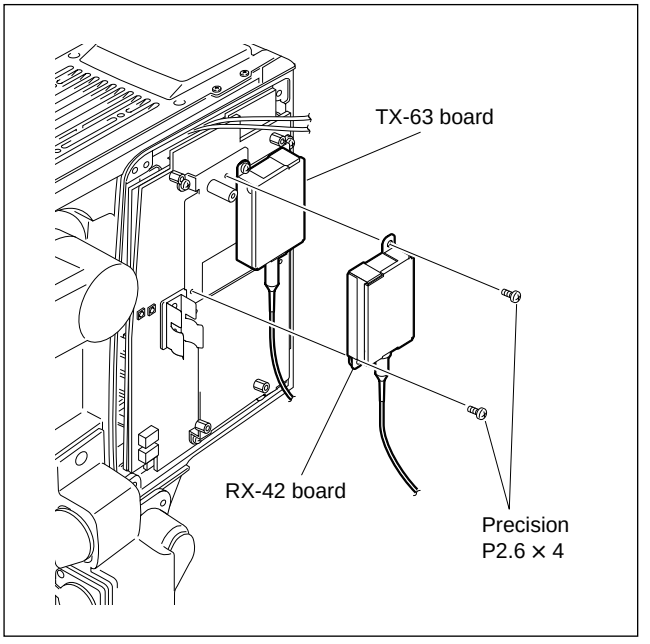
3. Disconnect the fiber cable wound around the cable attaching plate.



4. Remove the three screws shown in the figure, and remove the cable attaching plate.



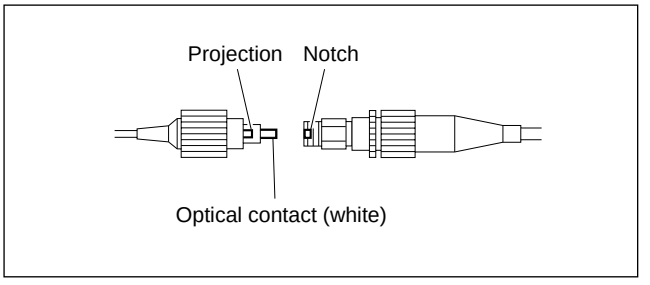
5. Remove the two screws, and remove the RX-42 board or TX-63 board.



6. Attach the new board in the reverse order of steps 1 to 5.

[Notes at installation]

- Before connecting the connection connector, clean the white optical contact at the tip of connector with alcohol.
- Align the projection of the connector with the notch of the interconnection connector in connecting.



2-4. Replacing the MB-726 Board

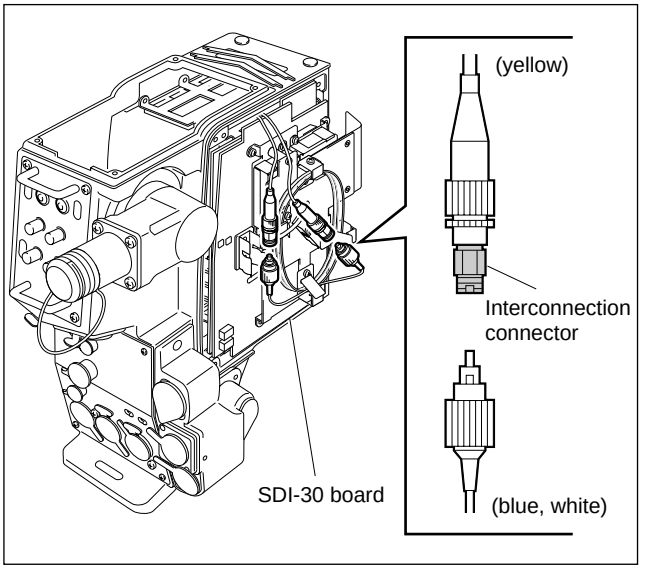
Note

Pulling the optical connector cable or bending it with strong force may cause disconnection. Handle the optical connector cable with care.
For details on handling the flexible card cable, refer to Section 1-5.

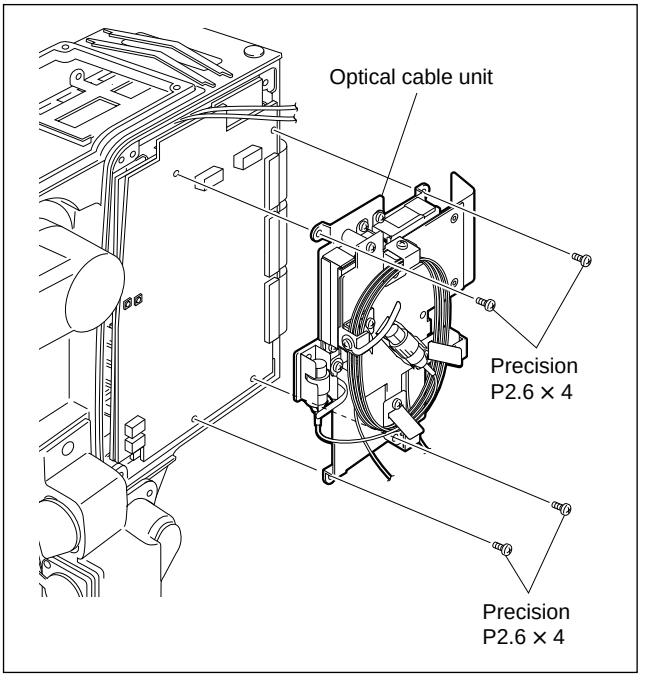
1. Remove the switching regulator. (Refer to Section 2-1.)
2. Remove the left side panel. (Refer to Section 1-4 in the installation and maintenance manual.)
3. Disconnect the two optical connector cables (blue and white).

Note

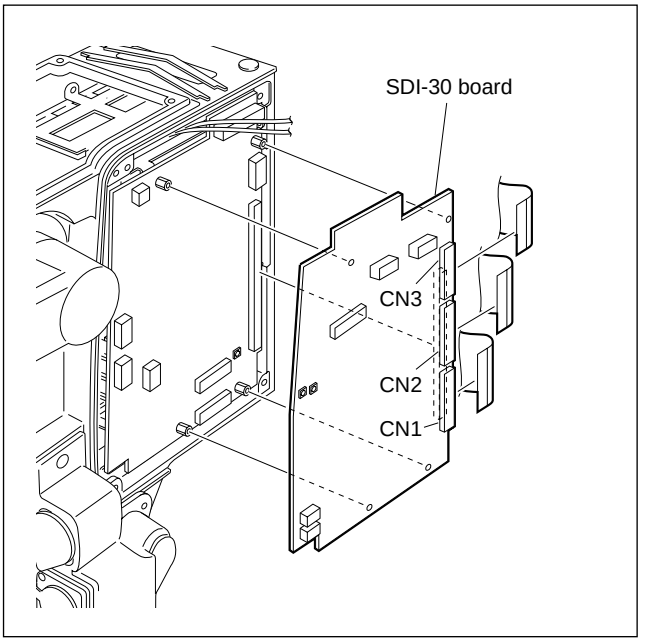
The interconnection connector should be remain connected to the mate connector (yellow). To avoid the signal degradation, do not touch an exposed tip of the connector.



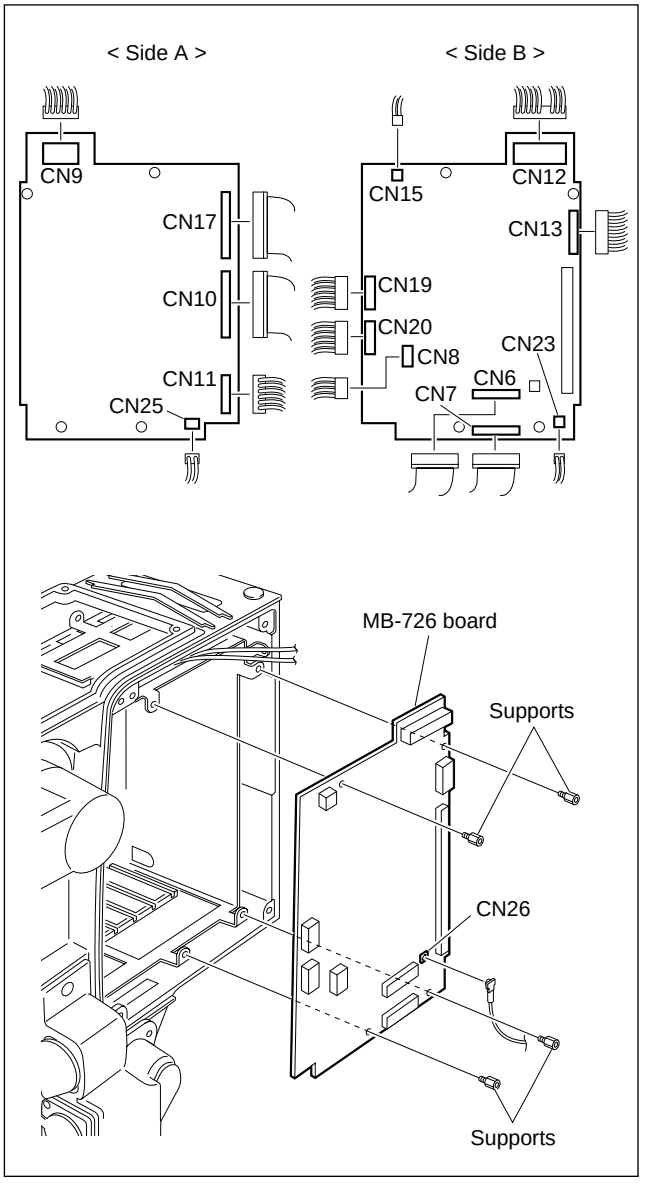
4. Remove the four screws shown in the figure, and remove the optical cable unit.



5. Disconnect the flexible card cable from the connectors (CN1, CN2, CN3) of the SDI-30 board and remove the SDI-30 board.



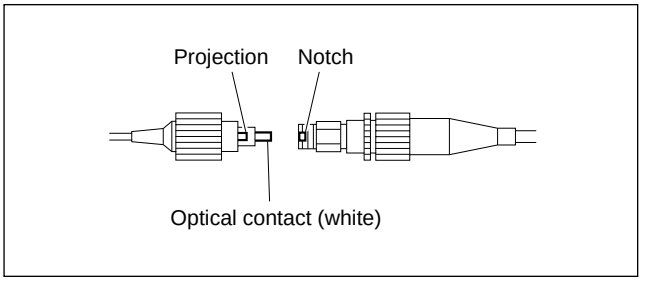
6. Disconnect the harnesses from the connectors (CN8, CN12, CN13, CN15, CN19, CN20, and CN23) of the MB-726 board, the coaxial cable from the connector (CN26), and flexible card cable from the connectors (CN6, CN7).
7. Disconnect the harnesses from the connectors (CN9, CN11, CN25) on side A of the MB-726 board, and the flexible card cable from the connectors (CN10, CN17).
8. Remove the four supports, and remove the MB-726 board.



9. Attach the new MB-726 board in the reverse order of steps 1 to 8.

[Notes at installation]

- Before connecting the connection connector, clean the white optical contact at the tip of connector with alcohol.
- Align the projection of the connector with the notch of the interconnection connector in connecting.

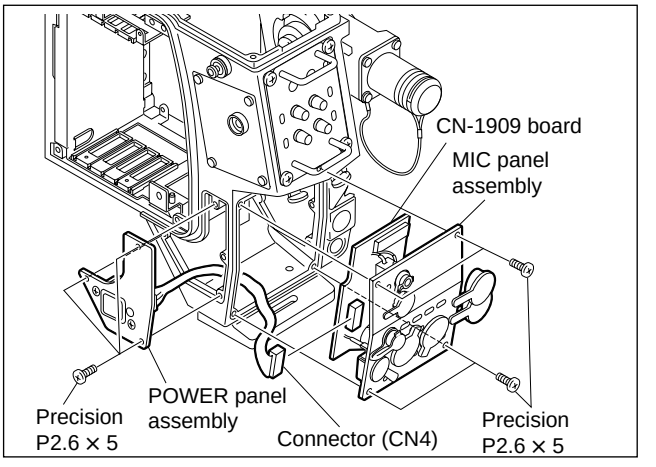


2-5. Replacing the CAMERA Connector (68P)

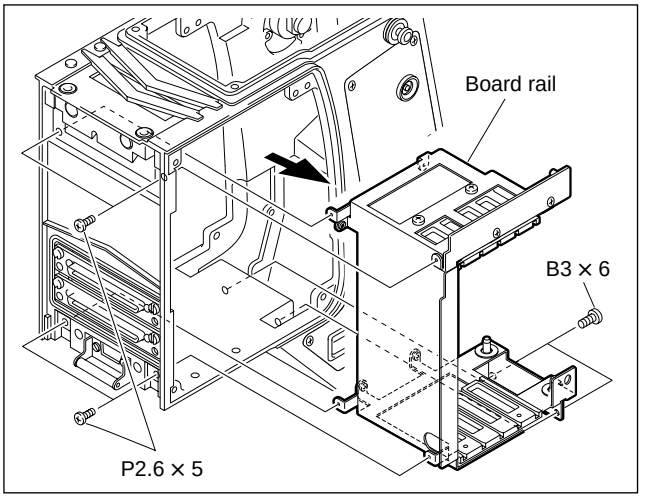
Note

Pulling the optical connector cable or bending it with strong force may cause disconnection. Handle the optical connector cable with care.
For details on handling the flexible card cable, refer to Section 1-5.

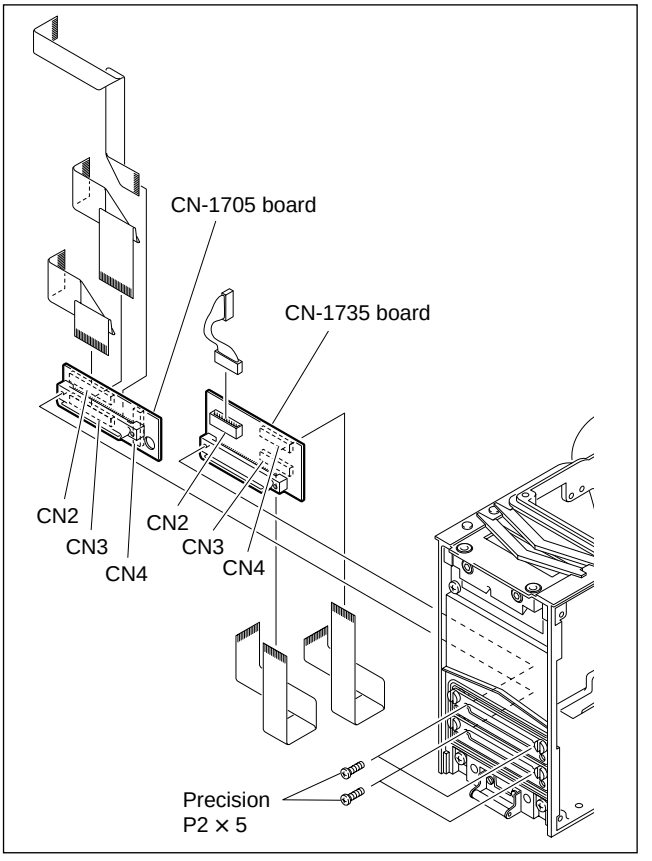
1. Remove the MB-726 board. (Refer to Section 2-1.)
2. Remove the fan of the bottom of switching regulator. (Refer to Section 2-2-2.)
3. Disconnect the harness from the connector (CN4) of the CN-1909 board.
4. Remove the three screws, and remove the POWER panel assembly.
5. Remove the four screws, and remove the MIC panel assembly.



6. Remove the four screws in front of the chassis assembly and two screws of the board rail, and remove the board rail from the right side.



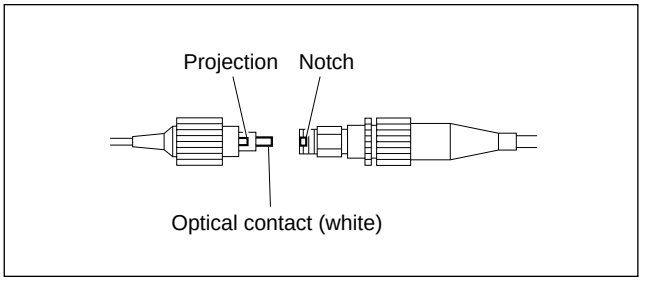
7. Remove the two screws in front of the chassis assembly, and remove the CN-1705 board and CN-1735 board.
8. Disconnect the harness from the connector (CN2) of the CN-1735 board, and remove the flexible card cable from the connectors (CN3, CN4).
9. Disconnect the flexible card cable from the connectors (CN2, CN3, and CN4) of the CN-1705 board.



10. Attach the new 68P connector in the reverse order of steps 1 to 9.

[Notes at installation]

- Before connecting the connection connector, clean the white optical contact at the tip of connector with alcohol.
- Align the projection of the connector with the notch of the interconnection connector in connecting.



2-6. Replacing the CCU Connector

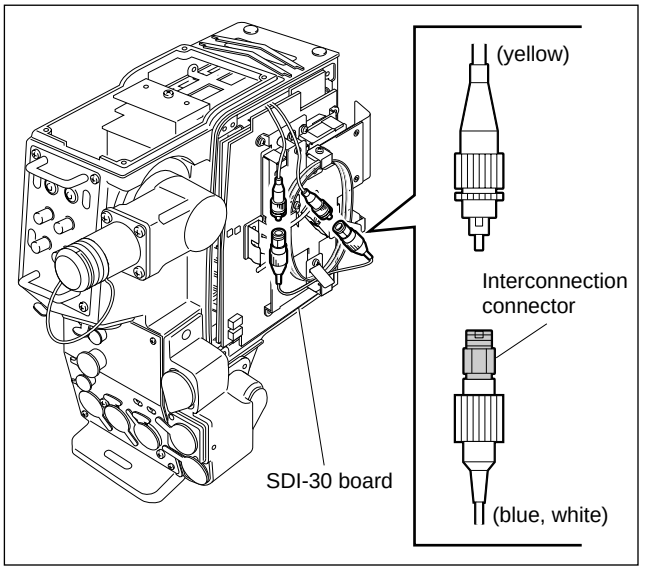
Note

Pulling the optical connector cable or bending it with strong force may cause disconnection. Handle the optical connector cable with care.

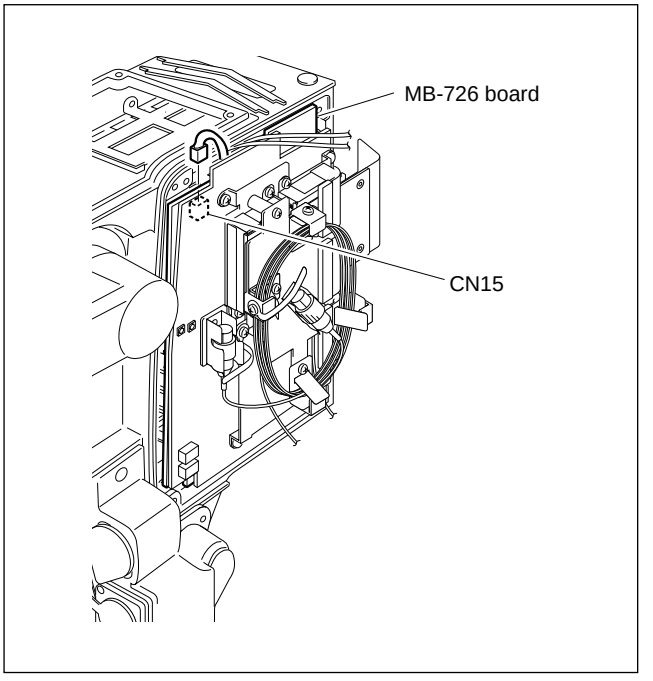
1. Remove the left panel. (Refer to Section 1-4 in the installation and maintenance manual.)
2. Disconnect the two optical connector cables (yellow).

Note

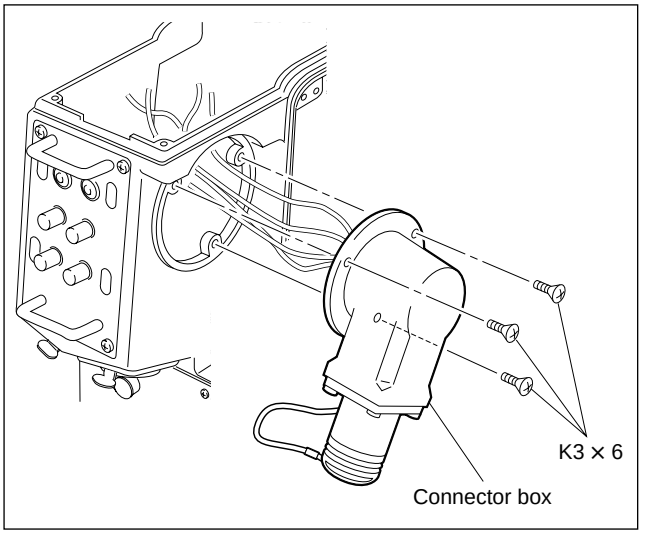
The interconnection connector should be remain connected to the mate connector (blue, white). To avoid the signal degradation, do not touch an exposed tip of the connector.



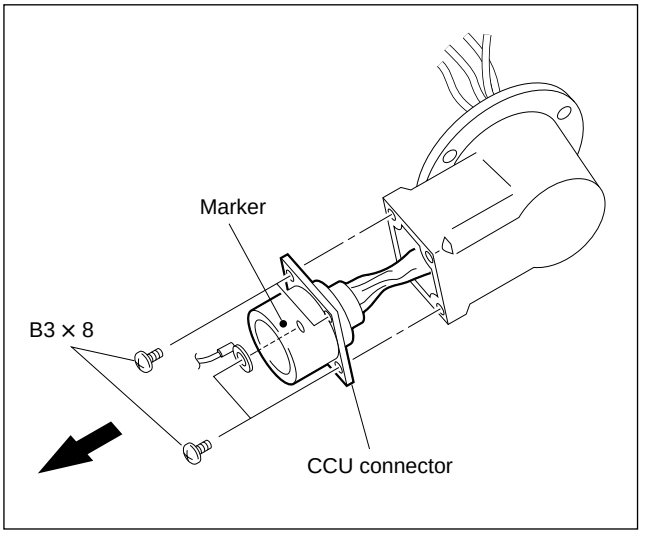
3. Remove the switching regulator. (Refer to Section 2-1.)
4. Disconnect the harness from the connector (CN15) of the MB-726 board.



5. Remove the three screws, and remove the connector box.



6. Remove the four screws, and remove the CCU connector.



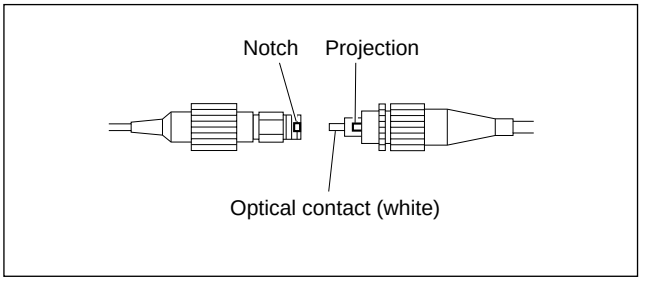
7. Attach the new CCU connector in the reverse order of steps 1 to 6.

Note

When attaching the CCU connector, be sure that the marker is positioned as shown in the figure.

[Notes at installation]

- Before connecting the connection connector, clean the white optical contact at the tip of connector with alcohol.
- Align the projection of the connector with the notch of the interconnection connector in connecting.



Section 3
Electrical Alignment

3-1. Preparation

3-1-1. Equipment required

Tools

- Extension board EX-464 (Sony Part No.: A-8318-864-A)
- Extension board BKP-7900 (For extending a plug-in board of the CCU-900/900P)

Equipment

- DC variable voltage supply
- Frequency counter: Advantest TR5821AK or equivalent
- Audio level meter: Tektronix SG-505 (OP.02) or equivalent
- Audio generator: Tektronix SG-5010 or equivalent
- Oscilloscope: Tektronix 2465 or equivalent
- Waveform monitor/Vectorscope: Tektronix 1750 (for NTSC)/1751 (for PAL) or equivalent
- Digital voltmeter: Advantest TR6845 or equivalent
- Video signal generator: Tektronix 1410 (for NTSC)/1411 (for PAL) or equivalent
- Color monitor or black and white monitor: Sony BVM-1410/1411P or equivalent (Color monitor)

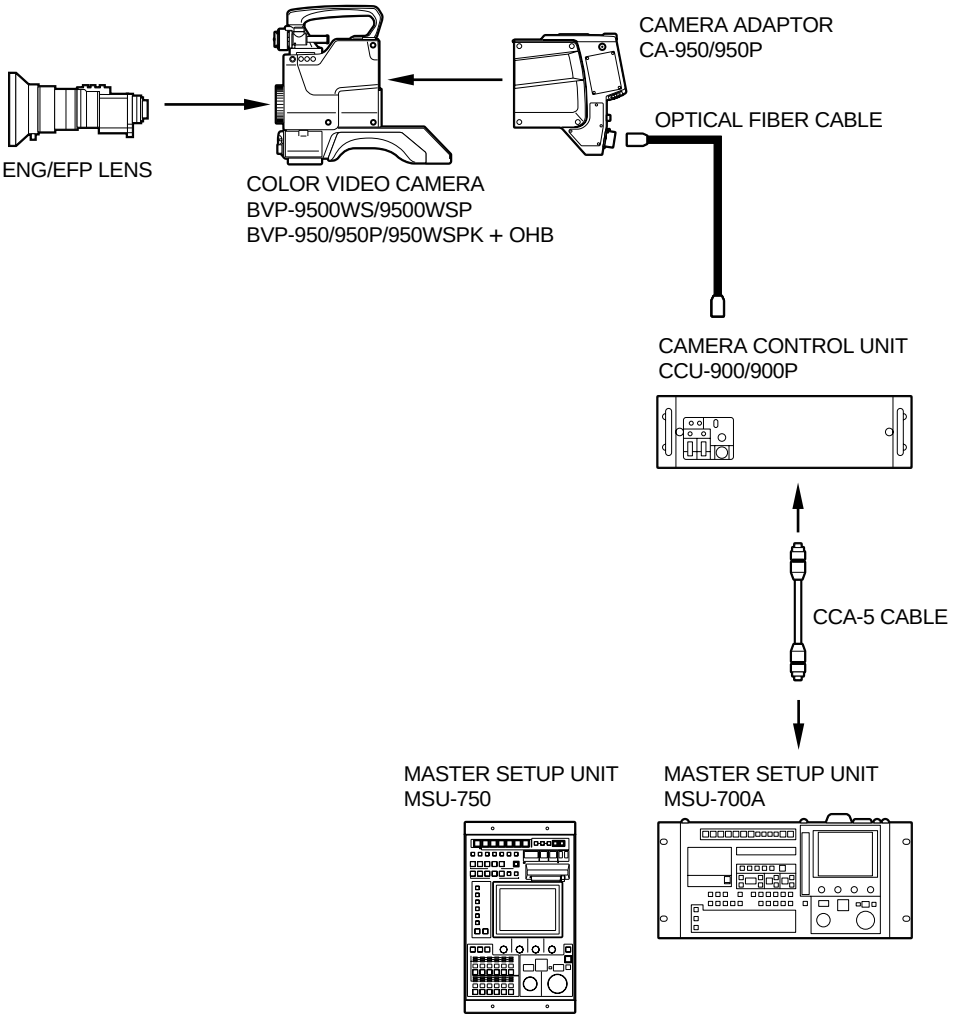
Peripheral equipment

- BVP-950/950P/950WSPK camera system
  BVP-950/950P/950WSPK
  OHB-730/750A series, or
  BVP-9500WS/9500WSP camera system
  BVP-9500WS/9500WSP
- Camera control unit: CCU-900/900P
- Master setup unit: MSU-700A/750
- AC adapter: AC-550/550CE
- RTS kit (Commercially available)

3-1-2. Notes on adjustment

- All measuring equipment should be calibrated.
- All the adjustment of peripheral equipment (BVP, OHB, CCU, MSU) should be completed.
  Be sure to check the ROM version when BVP-950/950P/950WSPK and MSU-700A/750 are used.
  For details, refer to Section 1-1, installation and maintenance manual of this unit.
- As for initial settings before beginning adjustment, refer to section 3-1-4.
- Close the camera lens during adjustment.
- Be sure to power off before disconnecting boards.
- Before adjustment, allow for more than 10 minutes warm-up time.

3-1-3. Connection



3-1-4. Initial Settings

CA-950/950P

Note

When switching the following switches from a customer-set position, it is recommended to record the setting state of the customer in the table below.
After adjustment is complete, be sure to return the switches to their customer-set position.

Board position	Switch	Initial setting	Customer-set
DPR-148	S1	OUT	
	S3	PROMPTER	
IF-633	S1-1	OFF	
	S1-2 to 4	ON	
DA-121	S51	REAR	
AU-273N/273P	S269	NORM	
	S389	NORM	
	S555	0 (0 dB)	
	S601	CM (Carbon)	
	S624	0 (0 dB)	
	S701	CM (Carbon)	
	S724	0 (0 dB)	

MSU Operation Panel

When MSU-700A is used

- Power/Signal output select buttons
  - ALL button → OFF (dark)
  - CAM PW button → ON (lit)
  - TEST 1 button → OFF (dark)
  - TEST 2 button → OFF (dark)
  - BARS button → OFF (dark)
  - CLOSE button → ON (lit)
- Camera/CCU function ON/OFF buttons
  - KNEE OFF button → OFF (lit)
  - DETAIL OFF button → OFF (lit)
  - MATRIX OFF button → OFF (lit)
  - AUTO KNEE button → OFF (dark)
- Others
  - GAMMA OFF button → ON (dark)
  - MASTER GAIN button → 0 (0 dB)

When MSU-750 is used

- Power/Signal output select buttons
  - ALL button → OFF (dark)
  - CAM PW button → ON (lit)
  - TEST button → OFF (dark)
  - BARS button → OFF (dark)
  - CLOSE button → ON (lit)
- Camera/CCU function ON/OFF buttons
  - Knee Off * button → OFF (lit in reverse)
  - Detail Off * button → OFF (lit in reverse)
  - Matrix Off * button → OFF (lit in reverse)
  - AUTO KNEE button → OFF (dark)
- Others
  - Gamma Off * → ON (lit normally)
  - Master Gain* → 0 (0 dB)

* : Press FUNCTION button and select from function menu screen.

3-2. DPR-148 board Adjustment

3-2-1. PROMPTER IN VIDEO LEVEL Adjustment

Equipment: Oscilloscope

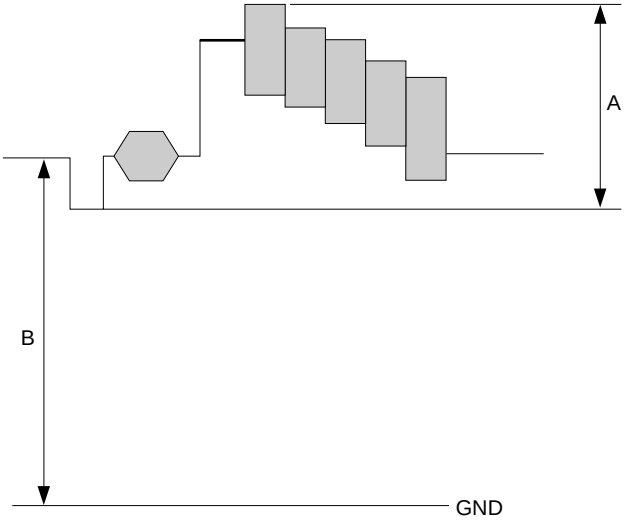
Preparation

- Extends DPR-148 board with extension board (EX-464).
- S3/DPR-148 board → PROMPTER
- S1/DPR-148 board → IN
- Inputs a 100 % color bar from the video signal generator to PROMPTER/GENLOCK connector/CA rear panel.

Adjustment procedure

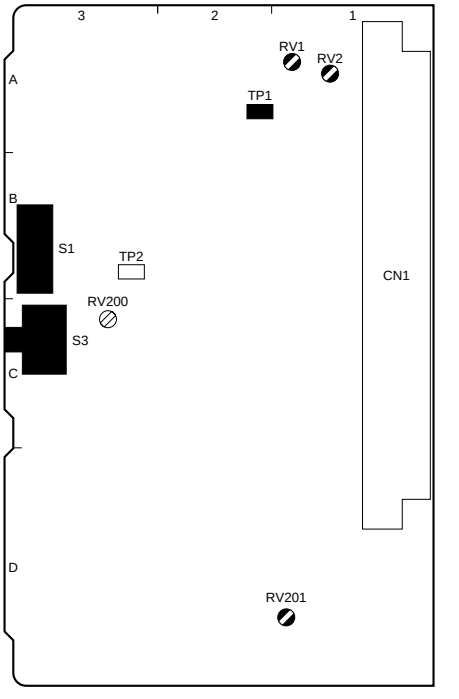
1. Video level
   Test point: TP1/DPR-148 board
   GND: GND/EX-464 board
   Adj. point: ⊘RV1/DPR-148 board
   Specification: A = 1.60 ±0.02 V p-p

1. Blanking DC level
   Test point: TP1/DPR-148 board
   GND: GND/EX-464 board
   Adj. point: ⊘RV2/DPR-148 board
   Specification: A = 2.08 ±0.02 V p-p



Setting after adjustment

S1/DPR-148 board → OUT



DPR-148 BOARD (A SIDE)

3-2-2. RET VIDEO LEVEL Adjustment

Equipment: Oscilloscope

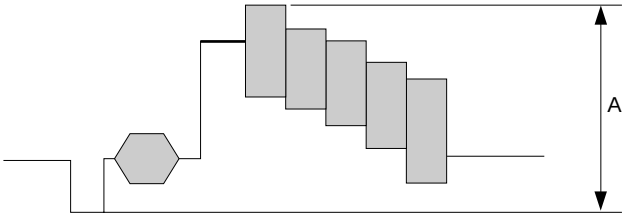
Preparation

- Extends DPR-148 board with extension board (EX-464).
- Settings of MSU-700A/750
  BARS button → ON (lit)
- Settings of CCU-900/900P *
  (1) Connect the external monitor to the PIX1/2, SERIAL MONITOR or CHARACTER connector of CCU-900/900P.
  (2) Set the MENU ON/OFF switch on the AT-122 board panel to ON so that the SETUP MENU is displayed.
  (3) Select the “Return” page with the rotary encoder.
  (4) Set the “RET1” item to “CAM” with the rotary encoder .

  ∗: For details, refer to installation and maintenance manual of CCU-900/900P.

Adjustment procedure

1. Video level
   Test point: Pin 13/EX-464 board
   GND: GND/EX-464 board
   Adj. point: ⊘RV201/DPR-148 board
   Specification: A = 1.00 ± 0.01 V p-p



3-3. IF-633 board Adjustment

3-3-1. VBS/MONITOR Level Adjustment

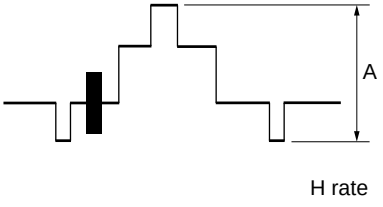
Equipment: Waveform monitor

Preparation

- Connect the waveform monitor with the TEST OUT connector of CA-950/950P.
- S1-3, S1-4/IF-633 board → OFF
- S1-2/IF-633 board → ON
- Settings of MSU
  When MSU-700A is used: TEST2 button → ON (lit)
  When MSU-750 is used: TEST button → ON (lit)

Adjustment procedure

1. Test point: TEST OUT connector/CA-950/950P
   Adj. point: ⊘RV2 (TEST OUT)/IF-633 board
   Specification: A = 140 ±1 IRE [NTSC]
   A = 1000 ±5 mV [PAL]



Setting after adjustment

S1-3, S1-4/IF-633 board → ON

3-3-2. Battery Alarm Set Adjustment

Equipment: Digital voltmeter

Note

Adjustment for ⊘RV1/IF-633 board is very critical. Do not turn it as far as the circuit operates normally.

Preparation

- Extends IF-633 board with extension board (EX-464).
- Supply about +13 V dc from the DC variable voltage supply to DC IN connector.
- ⊘RV1/IF-633 board → Turn fully clockwise
- S1-1/IF-633 board → ON
- TALLY switch/CA rear panel → ON

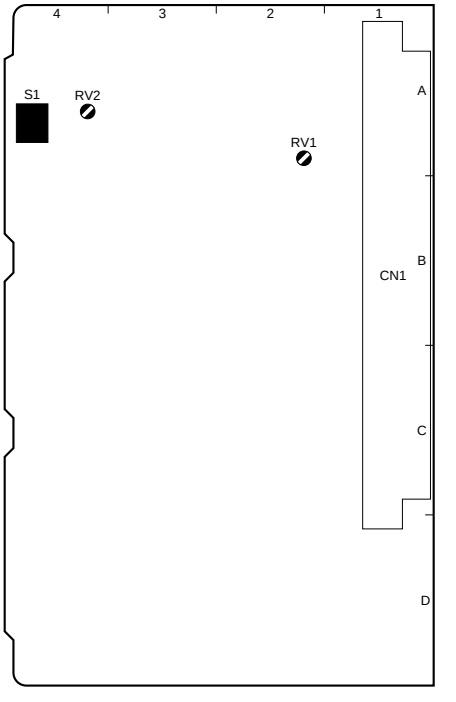
Adjustment procedure

1. Test point: Pin 90/EX-464 board
   Adj. point: Voltage adjustment control/DC variable voltage supply
   Specification: +10.80 ±0.05 V dc

2. Adj. point: ⊘RV1/IF-633 board
   Specification: Turn ⊘RV1 counterclockwise showly and stop where the TALLY indicator/CA rear panel starts to blink.

Settings after adjustment

- S1-1/IF-633 board → OFF
- TALLY switch/CA rear panel → OFF



IF-633 BOARD (A SIDE)

3-4. DA-121 board Adjustment

3-4-1. MIC 1 GAIN Adjustment

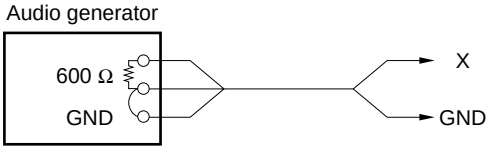
Equipment: Oscilloscope or audio level meter

Preparation

- Extends DA-121 board with extension board (EX-464).
- AUDIO IN 1 (LINE/MIC) switch/CA bottom of rear panel → LINE
- S51/DA-121 board → REAR

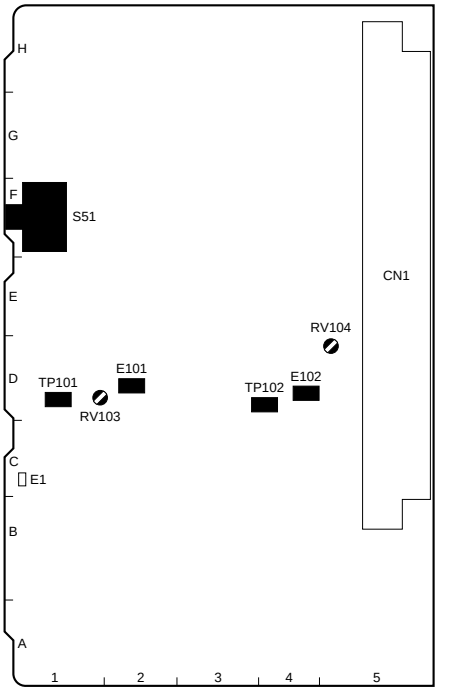
Adjustment procedure

1. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 77 (X), pin 78 (GND)/EX-464 board
   Signal: sine wave
   Frequency: 1 kHz



2. Test point: Pin 77/EX-464 board
   GND: Pin 78/EX-464 board
   Adj. point: ◓Output level adjustment control/audio generator
   Specification: A = 220 mV p-p (−20 dBu)

3. Test point: TP101/DA-121 board
   GND: E101/DA-121 board
   Adj. point: ◓RV103/DA-121 board
   Specification: B = 180 mV p-p (−21.7 dBu)



DA-121 BOARD (A SIDE)

3-4-2. MIC 2 GAIN Adjustment

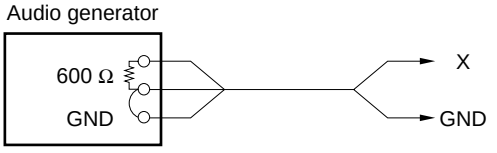
Equipment: Oscilloscope or audio level meter

Preparation

- Extends DA-121 board with extension board (EX-464).
- AUDIO IN 2 (LINE/MIC) switch/CA bottom of rear panel → LINE

Adjustment procedure

1. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 73 (X), pin 74 (GND)/EX-464 board
   Signal: sine wave
   Frequency: 1 kHz



2. Test point: Pin 73/EX-464 board
   GND: Pin 74/EX-464 board
   Adj. point: ⊘Output level adjustment control/audio generator
   Specification: A = 220 mV p-p (−20 dBu)

3. Test point: TP102/DA-121 board
   GND: E102/DA-121 board
   Adj. point: ⊘RV104/DA-121 board
   Specification: B = 180 mV p-p (−21.7 dBu)

3-5. AU-273N/273P board Adjustment

In adjustments using the audio generator, the output impedance of the audio generator is taken as 600 Ω.

3-5-1. INCOM 1 Side Tone Adjustment

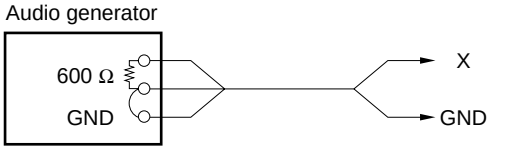
Equipment: Oscilloscope or audio level meter, Audio generator

Preparation

- Extends AU-273N/273P board with extension board (EX-464).
- Extends AT-122 board (CCU-900/900P) with extension board (BKP-7900).
- INCOM 1 (LEVEL/MIC) switch/CA rear panel → REAR/ON (for CA-950)
- LEVEL switch/CA rear panel → REAR (for CA-950P)
- INCOM 1 (PROD/ENG) switch/CA rear panel → ENG (for CA-950)
- MIC LINE switch/CA rear panel → ENG (for CA-950P)
- S601/AU-273N/273P board → CM
- S624/AU-273N/273P board → 0

Adjustment procedure

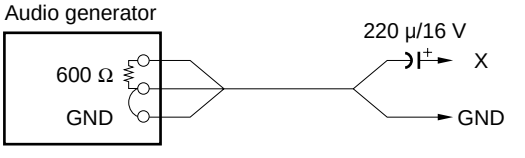
1. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 75A (X), pin 75C (GND)/BKP-7900
   Signal: sine wave
   Frequency: 1 kHz



2. Test point: Pin 42/EX-464 board
   GND: Pin 40/EX-464 board
   Adj. point: ⊘Output level adjustment control/audio generator
   Specification: A = 200 mV p-p (−21 dBu)

3. Test point: Pin 57/EX-464 board
   GND: Pin 58/EX-464 board
   Adj. point: ⊘INCOM 1 level adjustment control/CA rear panel (for CA-950)
   ⊘ENG level adjustment control/CA rear panel (for CA-950P)
   Specification: B = 2.2 V p-p (0 dBu)

4. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 25 (X) , pin 26 (GND)/EX-464 board
   Signal: sine wave
   Frequency: 1 kHz
   Output level: 220 mV p-p (−20 dBu)



5. Test point: Pin 57/EX-464 board
   GND: Pin 58/EX-464 board
   Adj. point: ⊘RV226/AU-273N/273P board
   Specification: C = 220 ±10 mV p-p (−20.0 ±0.4 dBu)

3-5-2. RTS 1 CANCEL Adjustment

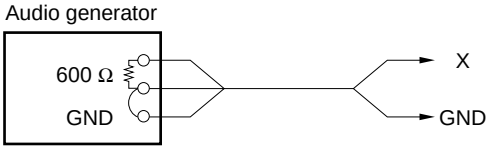
Equipment: Oscilloscope or audio level meter, Audio generator

Preparation

- Connect RTS kit with INCOM 1 connector.
- Extends AU-273N/273P board with a extension board (EX-464).
- Extends AT-122 board (CCU-900/900P) with extension board (BKP-7900).
- S269/AU-273N/273P board → RTS
- INCOM 1 (PROD/ENG) switch/CA rear panel → ENG (for CA-950)
- MIC LINE switch/CA rear panel → ENG (for CA-950P)

Adjustment procedure

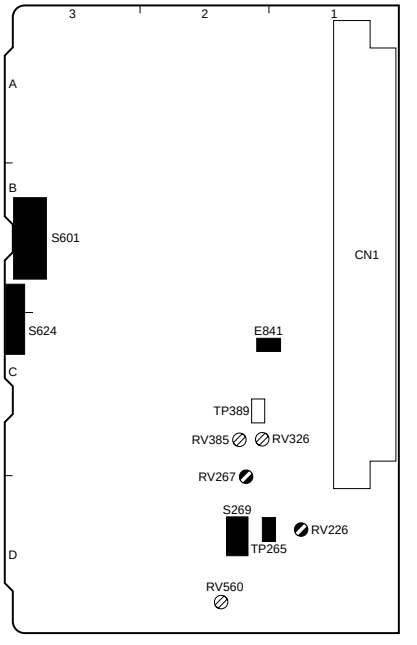
1. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 75A (X), pin 75C (GND)/BKP-7900
   Signal: sine wave
   Frequency: 1 kHz



2. Test point: Pin 42/EX-464 board
   GND: Pin 40/EX-464 board
   Adj. point: ⊘Output level adjustment control/audio generator
   Specification: A = 200 mV p-p (−21 dBu)

3. Test point: Pin 57/EX-464 board
   GND: Pin 58/EX-464 board
   Adj. point: ⊘INCOM 1 level adjustment control/CA rear panel (for CA-950)
   ⊘ENG level adjustment control/CA rear panel (for CA-950P)
   Specification: B = 2.2 V p-p (0 dBu)

4. Test point: TP265/AU-273N/273P board
   GND: E841/AU-273N/273P board
   Adj. point: ⊘RV267/AU-273N/273P board
   Specification: C = Minimize



AU-273N/273P BOARD (A SIDE)

Setting after adjustment

- Disconnect RTS kit from INCOM 1 connector.
- S269/AU-273N/273P board → NORM

3-5-3. INCOM 2 Side Tone Adjustment

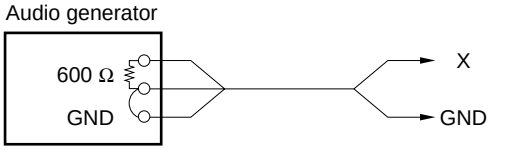
Equipment: Oscilloscope or audio level meter, Audio generator

Preparation

- Extends AU-273N/273P board with extension board (EX-464).
- Extends AT-122 board (CCU-900/900P) with a extension board (BKP-7900).
- INCOM 2 (LEVEL/MIC) switch/CA rear panel → REAR/ON (for CA-950)
- LEVEL switch/CA rear panel → REAR (for CA-950P)
- INCOM 2 (PROD/ENG) switch/CA rear panel → PROD (for CA-950)
- MIC LINE switch/CA rear panel → PROD (for CA-950P)
- S701/AU-273N/273P board → CM
- S724/AU-273N/273P board → 0

Adjustment procedure

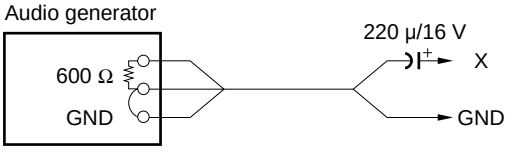
1. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 77A (X), pin 77C (GND)/BKP-7900
   Signal: sine wave
   Frequency: 1 kHz



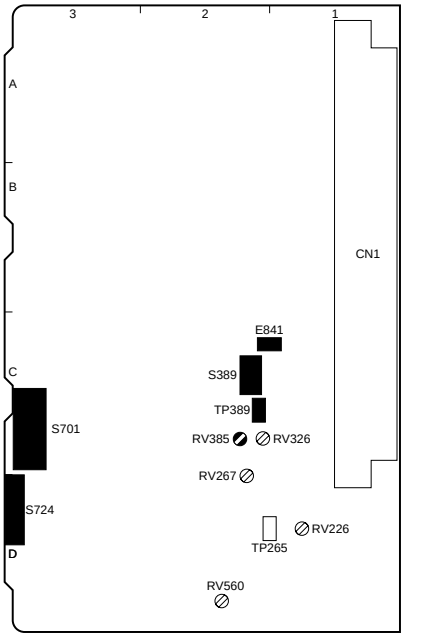
2. Test point: Pin 38/EX-464 board
   GND: Pin 36/EX-464 board
   Adj. point: ⊘Output level adjustment control/audio generator
   Specification: A = 200 mV p-p (−21 dBu)

3. Test point: Pin 61/EX-464 board
   GND: Pin 62/EX-464 board
   Adj. point: ⊘INCOM 2 level adjustment control/CA rear panel (for CA-950)
   ⊘PROD level adjustment control/CA rear panel (for CA-950P)
   Specification: B = 2.2 V p-p (0 dBu)

4. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 21 (X), pin 22 (GND)/EX-464 board
   Signal: sine wave
   Frequency: 1 kHz
   Output level: 220 mV p-p (−20 dBu)



5. Test point: Pin 61/EX-464 board
   GND: Pin 62/EX-464 board
   Adj. point: ⊘RV385/AU-273N/273P board
   Specification: C = 220 ±10 mV p-p (−20.0 ±0.4 dBu)



AU-273N/273P BOARD (A SIDE)

3-5-4. RTS 2 CANCEL Adjustment

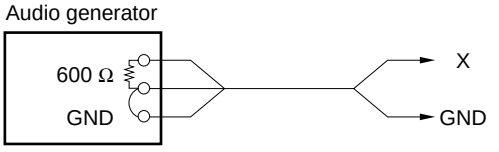
Equipment: Oscilloscope or audio level meter, Audio generator

Preparation

- Connect RTS kit with INCOM 2 connector.
- Extends AU-273N/273P board with extension board (EX-464).
- Extends AT-122 board (CCU-900/900P) with a extension board (BKP-7900).
- S389/AU-273N/273P board → RTS
- INCOM 2 (PROD/ENG) switch/CA rear panel → PROD (for CA-950)
- MIC LINE switch/CA rear panel → PROD (for CA-950P)

Adjustment procedure

1. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 77A (X), pin 77C (GND)/BKP-7900
   Signal: sine wave
   Frequency: 1 kHz



2. Equipment: Oscilloscope or audio level meter
   Test point: Pin 38/EX-464 board
   GND: Pin 36/EX-464 board
   Adj. point: ⊘Output level adjustment control/audio generator
   Specification: A = 200 mV p-p (−21 dBu)

3. Test point: Pin 61/EX-464 board
   GND: Pin 62/EX-464 board
   Adj. point: ⊘INCOM 2 level adjustment control/CA rear panel (for CA-950)
   ⊘PROD level adjustment control/CA rear panel (for CA-950P)
   Specification: B = 2.2 V p-p (0 dBu)

4. Test point: TP389/AU-273N/273P board
   GND: E841/AU-273N/273P board
   Adj. point: ⊘RV385/AU-273N/273P board
   Specification: C = Minimize

Setting after adjustment

- Disconnect RTS kit from INCOM 2 connector.
- S389/AU-273N/273P board → NORM

3-5-5. TRACKER (T) Level Adjustment

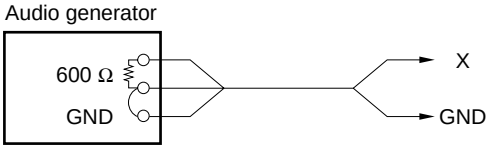
Equipment: Oscilloscope or audio level meter, Audio generator

Preparation

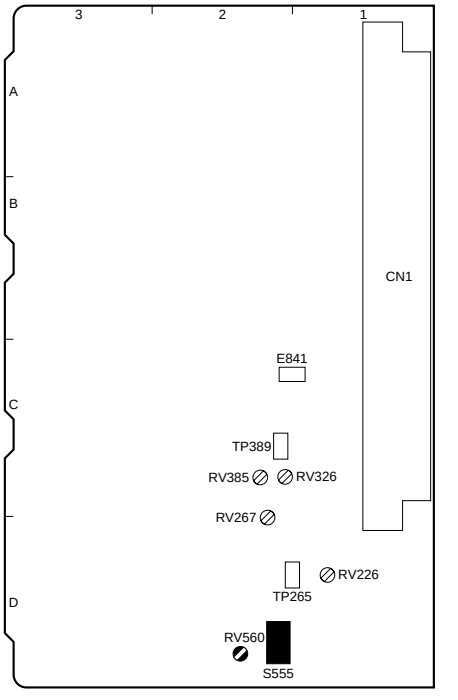
- Extends AU-273N/273P board with extension board (EX-464).
- S555/AU-273N/273P board → 0

Adjustment procedure

1. Connect the audio generator as shown in the figure and inputs the following signal.
   Input points: pin 29 (X), pin 30 (GND)/EX-464 board
   Signal: sine wave
   Frequency: 1 kHz
   Output level: 2.2 V p-p (0 dBu)



2. Test point: Pin 16/EX-464 board
   GND: Pin 14/EX-464 board
   Adj. point: ⊘RV560/AU-273N/273P board
   Specification: A = 200 ±10 mV p-p (−21.0 ±0.4 dBu)



AU-273N/273P BOARD (A SIDE)

3-6. SDI-30 board Adjustment

3-6-1. SDI Free-Run Frequency Adjustment

Equipment: Oscilloscope, Frequency counter

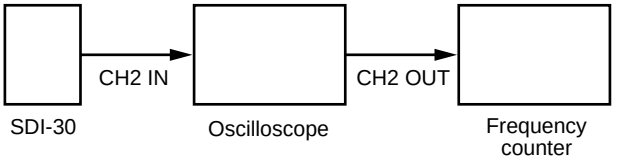
Preparation

- S301-1/SDI-30 board → ON*2
- Disconnect the optical cable unit. *1 (Refer to Section 2-4.)

Adjustment procedure

Note

Each of volume adjustment, be sure to perform when SDI-30 board (S301) is pressed.*1



1. Connect the oscilloscope and the frequency counter as shown in the figure.

2. Test point: TP301/SDI-30 board
   GND: E1/SDI-30 board
   Adj. point: ⊘RV301/SDI-30 board
   Specification: 27.00 ±0.05 MHz

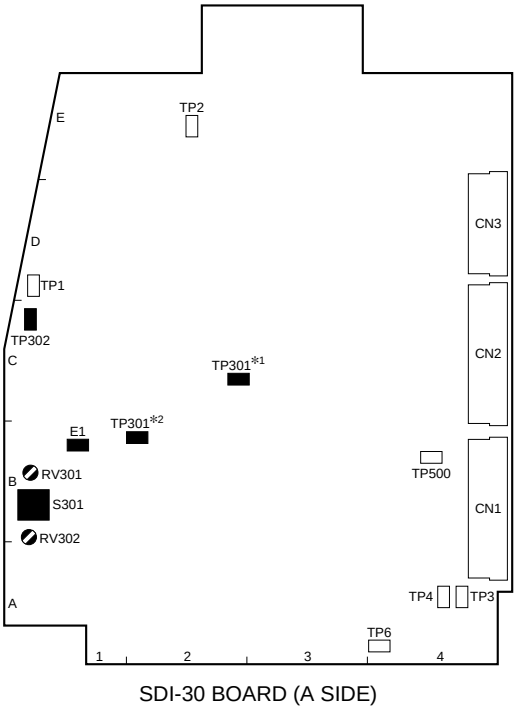
3. Test point: TP302/SDI-30 board
   GND: E1/SDI-30 board
   Adj. point: ⊘RV302/SDI-30 board
   Specification: 27.00 ±0.05 MHz

Setting after adjustment

- S301-1/SDI-30 board → OFF*2
- Connect the optical cable unit.*1 (Refer to Section 2-4.)

∗1 :
CA-950 : Serial No. 10001 through 10010
CA-950P : Serial No. 40001 through 40007

∗2 :
CA-950 : Serial No. 10011 and Higher
CA-950P : Serial No. 40008 and Higher



SDI-30 BOARD (A SIDE)

CA-950 (JN)
CA-950P (CE) J, E
9-968-571-03

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