⚠️ 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.

MVS-8000A  Serial No. 10001 and Higher
MVS8000ASF  Serial No. 10001 and Higher
HK-PSU04    Serial No. 10001 and Higher
MKS-8160A   Serial No. 10001 and Higher
MKS-8162A   Serial No. 10001 and Higher
MKS-8210A   Serial No. 10001 and Higher
MKS-8440A   Serial No. 10001 and Higher
MKS-8110M   Serial No. 10001 and Higher
MKS-8111M   Serial No. 10001 and Higher
MKS-8161M   Serial No. 10001 and Higher
MKS-8170M   Serial No. 10001 and Higher
MKS-8420M   Serial No. 10001 and Higher
BZS-8250    Serial No. 10001 and Higher
Attention—when the product is installed in Rack:

1. Prevention against overloading of branch circuit
   When this product is installed in a rack and is supplied power from an outlet on the rack, please make sure that the rack does not overload the supply circuit.

2. Providing protective earth
   When this product is installed in a rack and is supplied power from an outlet on the rack, please confirm that the outlet is provided with a suitable protective earth connection.

3. Internal air ambient temperature of the rack
   When this product is installed in a rack, please make sure that the internal air ambient temperature of the rack is within the specified limit of this product.

4. Prevention against achieving hazardous condition due to uneven mechanical loading
   When this product is installed in a rack, please make sure that the rack does not achieve hazardous condition due to uneven mechanical loading.

5. Install the equipment while taking the operating temperature of the equipment into consideration
   For the operating temperature of the equipment, refer to the specifications of the Operation Manual.

6. When performing the installation, keep the rear of the unit 10 cm (4 inches) or more away from walls in order to obtain proper exhaust and radiation of heat.

When using a LAN cable:
   For safety, do not connect to the connector for peripheral device wiring that might have excessive voltage.
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## 2. Service Overview

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Purpose of this manual

This manual is the installation manual of Switcher Processor Pack MVS-8000A-C/MVS8000AS-C and their optional boards and units. This manual is intended for use by trained system and service engineers, and describes the information on installing the MVS-8000A-C/MVS8000AS-C system.

Related manuals

The following manuals are prepared for MVS-8000A-C/MVS8000AS-C and their optional boards and units.

- **Operation Manual (Supplied with MVS-8000A-C/MVS8000AS-C)**
  This manual describes the application and operation of MVS-8000A-C/MVS8000AS-C.

- **System Setup Manual (Available on request)**
  This manual describes the information that is required to connect the MVS-8xxx/MVE-8000/DCU-8000/CCP-8000 to the MVS-8000 system, and to start up the system.
  If this manual is required, please contact your local Sony Sales Office/Service Center.

- **Maintenance Manual (Available on request)**
  This manual describes the detailed service information.
  If this manual is required, please contact your local Sony Sales Office/Service Center.

- **“Semiconductor Pin Assignments” CD-ROM (Available on request)**
  This “Semiconductor Pin Assignments” CD-ROM allows you to search for semiconductors used in B&P 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

This manual is organized by following sections.

**Section 1 Installation**
This section describes the operating environment, power supply, installation space, installation of optional boards and units, rack mounting, connectors, input and output signals of connectors, checking upon completion of installation, and system configuration.

**Section 2 Service Overview**
This section describes the troubleshooting and periodic inspection and maintenance.
Section 1
Installation

1-1. Operating Environment

Operating guaranteed temperature : +5 °C to +40 °C
Performance guaranteed temperature : +10 °C to +35 °C
Operating humidity : 10 % to 90 % (relative humidity)
Storage temperature : −20 °C to +60 °C
Mass (when all options are installed) :
  MVS-8000A : Approx. 51 kg
  MVS-8000ASF : Approx. 28 kg

Prohibited locations for installation
- Areas where the unit will be exposed do direct sunlight or any other strong lights.
- Dusty areas
- Areas subject to vibration.
- Areas with strong electric or magnetic fields.
- Areas near heat sources.
- Areas subject to electrical noise.
- Areas subject where is subjected to static electricity.

Ventilation
The inside of the MVS-8000A-C/MVS8000AS-C (MVS-8000A series hereafter) is cooled by a fan (both sides).
The power supply can be damaged if the exhaust vent (both sides) and air intake (front panel) are blocked or the fan is stopped.
Therefore, leave a blank space of more than 10 cm in the front and both sides of the DVS-9000 series).

1-2. Power Supply

1-2-1. Power Specifications

A switching regulator is used for the power supply of this unit. The voltage within the range of 100 V to 240 V can be used without changing the supply voltage.

Power requirements : AC 100 to 240 V ±10 %
Power frequency : 50/60 Hz
Current consumption (when all options are installed) :
  MVS-8000A : 15 to 6.25 A
  MVS-8000ASF : 7.5 to 3.1 A

Notes
- As the inrush current at turn-on is a maximum 120 A (at 100 V)/150 A (at 230 V), the capacity of the AC power source must be commensurate with this load.
  If the capacity of the AC power is not adequately large, the AC power source breaker will operate or the unit will abnormally operate.
  The MVS-8000A contains the two power supply units as the standard configuration. A maximum of four power supply units may be installed. When starting up the MVS-8000A, be sure to turn on the power of two or more power supply units.
  The MVS-8000ASF contains the single power supply unit as the standard configuration. A maximum of two power supply units may be installed. When starting up the MVS-8000ASF, be sure to turn on the power of one or more power supply units.

1-2-2. Recommended Power Cord

WARNING
- Use the approved Power Cord (3-core mains lead)/Appliance Connector/Plug with earthing-contacts that conforms to the safety regulations of each country if applicable.
- Use the Power Cord (3-core mains lead)/Appliance Connector/Plug conforming to the proper ratings (Voltage, Ampere).

If you have questions on the use of the above Power Cord/Appliance Connector/Plug, please contact your local Sony Sales Office/Service Center.

CAUTION
- Never use an injured power cord.
- Plugging the power cord in the AC inlet, push as far as it will go.

For customers in the U.S.A. and Canada
  1. Power cord, 125 V 10 A (2.4 m) : 1-557-377-11

For customers in the all European countries
  1. Power cord, 250 V 10 A (2.4 m) : 1-782-929-12
1-3. Installation Space (External dimensions)

1-3-1. MVS-8000A

![Diagram of MVS-8000A showing installation space dimensions.](image)
1-3-2. MVS-8000ASF

![Diagram of MVS-8000ASF with dimensions in mm.](image-url)
1-4. Installing the Options

The MVS-8000A-C/MVS8000AS-C is shipped from the factory with the necessary option boards (refer to the following table) already installed in accordance with the specified system configuration.

The following options are available for the MVS-8000A/8000ASF.

MVS-8000A/8000ASF Option List

<table>
<thead>
<tr>
<th>Model name</th>
<th>Board configuration</th>
<th>Plug-in board</th>
<th>Connector board</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKS-8160A (MVS-8000A only)</td>
<td>OUT-28 board</td>
<td>CNO-25 board</td>
<td></td>
</tr>
<tr>
<td>24 Output Board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKS-8162A (MVS-8000ASF only)</td>
<td>CNO-25 board</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>12 Output Connector Board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKS-8210A Mix/Effect Board</td>
<td>MIX-48 board</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>MKS-8440A Frame Memory Board</td>
<td>MY-112B board</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>MKS-8170A DME Interface Board</td>
<td>DIF-141 board</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>MKS-8420A Color Correction Board</td>
<td>CC-90 board</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>MKS-8161M (MVS-8000A only)</td>
<td>–</td>
<td>CNO-24 board</td>
<td></td>
</tr>
<tr>
<td>8 Monitor Output Board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKS-8110M 17 Input Board</td>
<td>–</td>
<td>CNI-22 board</td>
<td></td>
</tr>
<tr>
<td>MKS-8111M (MVS-8000A only)</td>
<td>–</td>
<td>CNI-23 board</td>
<td></td>
</tr>
<tr>
<td>Additional 12 Input Board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HK-PSU04 Power Supply Unit</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>BZS-8250* Simple P/P Software</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

* : BZS-8250 is the software options.

1-4-1. Installing the Plug-in Boards

Each plug-in board of the Production Switcher Processor MVS-8000A/8000ASF is allocated to a specific slot into which they must be installed. Check to see that the respective plug-in boards are installed in their respective slots. The name of the board is shown near the eject lever at the right-most end of each plug-in board.

Names of the plug-in boards and the slot numbers, to which the plug-in boards are allocated, are shown on the Extract PWB stopper assembly inside the front panel of the MVS-8000A/8000ASF. Install the respective plug-in boards according to this instruction.

**Note**

Check to see that connectors of the plug-in boards are securely inserted into the mother board (MVS-8000A : MB-1014 board, MVS-8000ASF : MB-1034 board) without loose contact.

If any plug-in board is inserted into the incorrect slot, it causes a system error and the system will not work correctly.

**CAUTION**

Be sure to turn off the POWER switch before starting installation work.

If installation work is started with the POWER switch left on, it may cause electrical shock or damage to printed circuit boards.
**Installation Procedure**

1. Turn off the main power of this unit (MVS-8000A or MVS-8000ASF) and disconnect the AC power cord from the wall outlet.
2. Loosen the four screws (with drop-safe) and remove the front panel to the arrow.
3. Remove the fixing screws (MVS-8000A: 6 screws, MVS-8000ASF: 4 screws) and remove the Extract PWB stopper assembly.
4. While the eject levers are opened as shown in the illustration, insert the plug-in board into the board guide rail.
5. While closing the eject levers in the direction of arrow ①, push in the plug-in board.

6. Attach the plug-in board loose-proof assembly and the front panel by reversing the installation steps of 2, 3.

MVS-8000A option

<table>
<thead>
<tr>
<th>Name of option</th>
<th>Name of board</th>
<th>Slot on the front side</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKS-8160A</td>
<td>OUT-28 board</td>
<td>14</td>
</tr>
<tr>
<td>MKS-8210A</td>
<td>MIX-48 board</td>
<td>1, 3</td>
</tr>
<tr>
<td>MKS-8440A</td>
<td>MY-112B board</td>
<td>15, 16</td>
</tr>
<tr>
<td>MKS-8170M</td>
<td>DIF-141 board</td>
<td>4</td>
</tr>
<tr>
<td>MKS-8420M</td>
<td>CC-90 board</td>
<td>13</td>
</tr>
</tbody>
</table>

MVS-8000ASF option

<table>
<thead>
<tr>
<th>Name of option</th>
<th>Name of board</th>
<th>Slot on the front side</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKS-8210A</td>
<td>MIX-48 board</td>
<td>1</td>
</tr>
<tr>
<td>MKS-8440A</td>
<td>MY-112B board</td>
<td>7</td>
</tr>
<tr>
<td>MKS-8170M</td>
<td>DIF-141 board</td>
<td>2</td>
</tr>
<tr>
<td>MKS-8420M</td>
<td>CC-90 board</td>
<td>6</td>
</tr>
</tbody>
</table>

1-4-2. Installing the Connector Board

1. Remove the two screws and remove the blank panel.  

   **Note**
   Store the removed blank panel in a safe place.
2. Insert the connector board horizontally level and secure it with the two fixing screws.

**MVS-8000A option**

<table>
<thead>
<tr>
<th>Name of option</th>
<th>Name of board</th>
<th>Slot on the rear side</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKS-8160A</td>
<td>CNO-25 board</td>
<td>14, 15</td>
</tr>
<tr>
<td>MKS-8161M</td>
<td>CNO-24 board</td>
<td>5</td>
</tr>
<tr>
<td>MKS-8110M</td>
<td>CNI-22 board</td>
<td>9, 10, 11</td>
</tr>
<tr>
<td>MKS-8111M</td>
<td>CNI-23 board</td>
<td>7</td>
</tr>
</tbody>
</table>

**MVS-8000ASF option**

<table>
<thead>
<tr>
<th>Name of option</th>
<th>Name of board</th>
<th>Slot on the rear side</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKS-8162A</td>
<td>CNO-25 board</td>
<td>6</td>
</tr>
<tr>
<td>MKS-8110M</td>
<td>CNI-22 board</td>
<td>4</td>
</tr>
</tbody>
</table>

---

**Installing the CN-2135 board**

- **How to install the board**

  The CN-2135 board is packed separately at the time of shipment, though it is the main unit constituent board. This board should be installed in the main unit before use of the MVS-8000A/8000ASF. How to install this board is described below.

  Insert the CN-2135 board into the rear-side slot (MVS-8000A : 4, MVS-8000ASF : 2) and secure it with the two screws (with drop-safe).
Connecting the DME Special Cable

1. Loosen the two screws (B3 x 6) ① of the cable support bracket.
2. Loosen the two screws (B3 x 6) ② of the cable support bracket.

3. Pull the retaining bracket in the direction of the arrow to open it.

4. Connect the DME special cable to each connector.

5. Set the retaining bracket to the original position.
6. Secure the retaining bracket with the two screws ② that have been removed.
7. Tighten the two screws ①.
1-4-3. Installing the HK-PSU04

The HK-PSU04 is used after it is installed in the MVS-8000A or MVS-8000ASF.

**Note**

Before installing the HK-PSU04, be sure to turn off the main power. If the HK-PSU04 is installed while the main power is turned on, it can result in electrical shock or damage to printed circuit boards.

**Installation procedure**

1. Remove the front panel of the MVS-8000A/8000ASF. (Refer to Section 1-4-1.)
2. Remove the two screws (B3 x 5) fixing the PS cover, and remove the PS cover.
3. Remove the two screws (PSW3 x 6) fixing the blank panel to the location where the HK-PSU04 is going to be installed. Then remove the blank panel.
   **Note**
   Store the removed blank panel in a safe place.

4. Push the portion of the HK-PSU04 marked by the arrow and insert the HK-PSU04 into deep end as far as it will go.
5. Secure the HK-PSU04 with the two screws removed in step 3.

6. Attach the PS cover and the front panel by reversing the installation steps of 1, 2.

1-4-4. Installing the BZS-8250

For the installation procedure of the software options BZS-8250, refer to the MVS-8000A/8000ASF System User’s Guide.
1-5. Rack Mounting

The MVS-8000A/8000ASF is mounted in the 19-inch standard rack. To mount the MVS-8000A/8000ASF in the rack, use the specified rack mount kit and follow the procedure described below.

Specified rack mount kit : RMM-10N

*Note*
If other than the specified rack mount kit is used, the unit may not be mounted in the 19-inch standard rack.

Parts of the RMM-10N

- Rack tool 2 pcs
- Right rack mount adapter 1 pc
- Left rack mount adapter 1 pc
- Rack tool attaching screw 6 pcs
  (B4×6 : 7-682-560-09)
- Rack tool attaching screw 6 pcs
  (B4×10 : 7-682-560-10)

Other required parts
To mount in the rack, the rack mount kit RMM-10N and the following part are required.
- Screw for rack mounting 4 pcs
  (B5×12 : 7-682-576-04)

1. Precautions for Rack Mounting

**WARNING**
- To prevent the rack from falling or moving, fix the rack on a flat and steady floor and the like using bolts or others. If the rack falls due to the weight of the equipment, it may cause death or serious injury.
- Be sure to use the specified rack mount kit. If not, injury may result and the equipment may fall due to insufficient strength.
- After rack mounting, be sure to tighten the screws on the rack angle and fix the unit in the rack. If the screws on the rack angle are not tightened, the unit may slip from the rack and fall, causing injury.

**CAUTION**
When mounting the unit in the rack, note the following:
- Be sure to mount in the rack with two persons or more.
- Be careful not to catch your fingers or hands in the rack mount rail or others.
- Mount in the rack in a stable position.

**Note**
If several units are mounted in a rack, it is recommended to install a ventilation fan to prevent temperature rise inside the rack.

2. Rack Mounting Procedure

This section describes the rack mounting procedure using the RMM-10N rack mount kit.

1. Loosen the four screws (PS4 × 8) and remove the four feet.

2. Attach the rack tool to the side of the equipment using the specified six screws.

  *Note*
  Use B4 × 6 screws.
  Tighten the screws to the following torque.
  Tightening torque : 120 × 10⁻² N·m {12.2 kgf·cm}
3. Loosen the screws on the rear of the right and left adapters and adjust the length of the adapter according to the depth of the rack.  
(The illustration below shows the left adapter.)

![Diagram of rack tool placement](image)

**Note**
Maximum depth of adapter: 750 mm  
Minimum depth of adapter: 595 mm

4. Attach the right and left adapters to the rack completely using the specified six screws.  
(The illustration below shows the left adapter.)

![Diagram of adapter attachment](image)

5. Tighten the screws (B4 × 6: two screws each on the right and left) for adjusting the length of the adapter completely (the screws that were loosened in step 3).

6. Remove the front panel of the equipment.  
(Refer to Section 1-4-1.)

7. Align the groove of the rack tool at the side of the equipment with the rail, and slide the equipment to the rear.  
**Note**  
The rack tools are hooked on the rails as shown below.

![Diagram of tool placement](image)

8. Fix the rack angle in the rack using the specified screws.

![Diagram of screw placement](image)

9. Attach the front panel to the equipment.  
(Refer to Section 1-4-1.)
### 1-6. Matching Connectors

Use the following connectors, cables or equivalents when connecting cables to the unit.

<table>
<thead>
<tr>
<th>Model name</th>
<th>Panel indication</th>
<th>Connector name</th>
<th>Matching connector and cable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Name</td>
<td>Sony part No.</td>
</tr>
<tr>
<td>MKS-8160A</td>
<td>OUTPUTS 25 to 48</td>
<td>BNC, 75 Ω</td>
<td>Belden 8281 coaxial cable (SDTV system)</td>
</tr>
<tr>
<td>MKS-8162A</td>
<td>OUTPUTS 13 to 24</td>
<td></td>
<td>or Belden 1694 coaxial cable (HDTV system)</td>
</tr>
<tr>
<td>MKS-8161M</td>
<td>MONITOR OUTPUTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>49 to 56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKS-8110M</td>
<td>PRIMARY INPUTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18 to 34</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35 to 52</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>53 to 68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKS-8111M</td>
<td>PRIMARY INPUTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>69 to 80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MVS-8000A</td>
<td>OUTPUTS 1 to 24</td>
<td>BNC, 75 Ω</td>
<td>Belden 8281 coaxial cable (SDTV system)</td>
</tr>
<tr>
<td>MVS-8000ASF</td>
<td>PRIMARY INPUTS</td>
<td></td>
<td>or Belden 1694 coaxial cable (HDTV system)</td>
</tr>
<tr>
<td></td>
<td>1 to 17 or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>REF IN</td>
<td>D-sub 9-pin, Female</td>
<td>D-sub 9-pin, Male Connector 9-pin, Male Junction Shell 9-pin 1-560-651-00 1-561-749-00</td>
</tr>
<tr>
<td></td>
<td>REF OUT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>REMOTE 1 to 4</td>
<td>D-sub 25-pin, Female</td>
<td>D-sub 25-pin, Male Connector 25-pin, Male Junction Shell 25-pin 1-560-904-11 1-563-377-11</td>
</tr>
<tr>
<td></td>
<td>TERMINAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPI</td>
<td></td>
<td>D-sub 9-pin, Female</td>
<td>D-sub 9-pin, Male Connector 9-pin, Male Junction Shell 9-pin 1-560-651-00 1-561-749-00</td>
</tr>
<tr>
<td></td>
<td>DATA CTRL</td>
<td>RJ-45 modular jack</td>
<td>Dedicated cable (supplied with the MVE-8000A and MVE-9000)</td>
</tr>
<tr>
<td>DME 1A, 1B, 2A, 2B</td>
<td>MDR 68-pin, Female</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 : The following crimp contact is required for the plug.
AWG#18 to #22 : 1-566-493-21
AWG#22 to #24 : 1-564-774-11
AWG#24 to #30 : 1-564-775-11

*2 : Conforms to the IEEE 802.3 Ethernet 100BASE-TX standards.
1-7.  Input/Output Signals of Connectors

The input/output signals of the connectors at the rear panel are as follows.

**TERMINAL**: RS-232C (D-sub 9-pin, Female)

to Terminal

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Signal Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DCD</td>
<td>Data Carrier detect (*)</td>
</tr>
<tr>
<td>2</td>
<td>RXD</td>
<td>Received data</td>
</tr>
<tr>
<td>3</td>
<td>TXD</td>
<td>Transmitted data</td>
</tr>
<tr>
<td>4</td>
<td>DTR</td>
<td>Data terminal ready (*)</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>6</td>
<td>DSR</td>
<td>Data set ready (*)</td>
</tr>
<tr>
<td>7</td>
<td>RTS</td>
<td>Request to send (*)</td>
</tr>
<tr>
<td>8</td>
<td>CTS</td>
<td>Clear to send (*)</td>
</tr>
<tr>
<td>9</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

(*): Pins 1, 4 and 6 are internally connected together on the CN-2535B board.

**GPI**: (D-sub 25-pin, Female)

**INPUT × 8, TTL**

**OUTPUT × 4, relay contacts 30 V 0.1 A (resistive load)**

**OUTPUT × 4, open collector, 30 V rated voltage**

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Signal Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>3</td>
<td>GPI IN 2</td>
<td>General-purpose input</td>
</tr>
<tr>
<td>4</td>
<td>GPI IN 4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>GPI IN 6</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>GPI IN 8</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>GPI OUT 1B</td>
<td>General-purpose relay output (B)</td>
</tr>
<tr>
<td>8</td>
<td>GPI OUT 2B</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>GPI OUT 3B</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>GPI OUT 4B</td>
<td></td>
</tr>
</tbody>
</table>

Note

A and B of the same number constitute a pair of relay contacts.

(*3) <Relay>

(*4) <Open collector output>
REMOTE 1 to 4: RS-422A (D-sub 9-pin, Female)

<DEVICE> (*5) from External Devices

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Signal Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FG</td>
<td>Frame ground</td>
</tr>
<tr>
<td>2</td>
<td>TX−</td>
<td>Transmitted data (−)</td>
</tr>
<tr>
<td>3</td>
<td>RX+</td>
<td>Received data (+)</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
<td>Common ground</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>No Connection</td>
</tr>
<tr>
<td>6</td>
<td>GND</td>
<td>Common ground</td>
</tr>
<tr>
<td>7</td>
<td>TX+</td>
<td>Transmitted data (+)</td>
</tr>
<tr>
<td>8</td>
<td>RX−</td>
<td>Received data (−)</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>No Connection</td>
</tr>
</tbody>
</table>

(*5) <DEVICE>: The controlling device.

DATA/CTRL: 100BASE-TX, RJ-45 (8-pin)

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Signal Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TX+</td>
<td>Transmitted data (+)</td>
</tr>
<tr>
<td>2</td>
<td>TX−</td>
<td>Transmitted data (−)</td>
</tr>
<tr>
<td>3</td>
<td>RX+</td>
<td>Received data (+)</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>No Connection</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>No Connection</td>
</tr>
<tr>
<td>6</td>
<td>RX−</td>
<td>Received data (−)</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>No Connection</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>No Connection</td>
</tr>
</tbody>
</table>
1-8. Checks on Completion of Installation

1-8-1. Description of On-board Switches and LEDs

**Note**
The number shown in the parentheses ( ) indicated the address on the circuit board.

1. CA-54 board

<LED>

**D4 (A-1) : +3.3 V**
+3.3 V power supply status indication.
Lit when the +3.3 V power is supplied.

**D5 (A-2) : +12 V**
+12 V power supply status indication.
Lit when the +12 V power is supplied.
If this LED does not light, the fuse may have blown.

**D101, D102, D103, D104 (A-4), ND101 (A-3), ND102 (A-4) : MAIN CPU status LED**
Main CPU status indication.

**D409 (A-2) : RE0SET status LED**
System reset status indication.
Lit when S401 is pressed or the power voltage drops to +3.3 V.

**D410 (A-2) : CPU RESET status LED**
CA-54 board reset status indication.
Lit when S402 is pressed or the power voltage drops to +3.3 V.

**D601 (A-2) : REF EXT status LED**
REF IN signal presence/absence status indication.
Lit when the REF signal is input to the REF IN connector.
Not lit when the REF signal is not input to the REF IN connector.

**D602 (A-2) : PLL LOCK status LED**
REF IN signal format status indication.
Lit when the REF IN signal matches with the switcher format setup.
S102 (A-2) : Group ID setting switch for LAN
Sets the group ID for connecting LAN. Do not change the setting. In the default settings when shipped from the factory, Bit 1 is set to ON and Bits 2 to 8 are set to OFF.

S103 (A-2) : Unit ID setting switch for LAN
Sets the group ID for connecting LAN. Do not change the setting. In the default settings when shipped from the factory, Bit 1 is set to ON and Bits 2 to 8 are set to OFF.

S104 (A-4) : Monitor reset switch for the main CPU
Pressing this switch resets the system while maintaining this unit through the main CPU control terminal connector.

S401 (A-1) : System reset switch
Pressing this switch activates the system reset and the system re-starts.

S402 (A-1) : CA-CPU reset switch
Pressing this switch resets the CA-54 board.

S403 (B-1) : Switch setting the number of the power supply units
Sets the number of the power units required for the MVS-8000A/8000ASF.
Default settings when shipped from the factory:
MVS-8000A : Bits 1, 2, and 4 are set to OFF, and bit 3 is set to ON.
MVS-8000ASF : Bits 1, 2, and 3 are set to OFF, and bit 4 is set to ON.

S901 (A-4) : Monitor reset switch for the COM CPU-1
Pressing this switch resets the system while maintaining this unit through the COM CPU-1 control terminal.

S902 (A-4) : Modes setting switch for the COM CPU-1
Sets the modes of the COM CPU-1.
Default setting when shipped from the factory is all OFF.

S1101 (A-4) : Monitor reset switch for the COM CPU-2
Pressing this switch resets the system while maintaining this unit through the COM CPU-2 control terminal.

S1102 (A-4) : Modes setting switch for the COM CPU-2
Sets the modes of the COM CPU-2.
Default setting when shipped from the factory is all OFF.

<LED on the CPU-DR module> : Main CPU
D10 (A-1) : RUN status LED
RUN status indication.
Lit when the CPU-DR module starts operating.
**D12 (A-4)** : CD (Card Detect) status LED
Lit when the CPU-DR module is inserted correctly into the parent board.

**D13 (A-1)** : +2.5 V
Indicates the status of the +2.5 V power that is generated by the VCC (CORE) and supplied to the CPU-DR module.
Lit while the specified power is turned on.

**D14, D15, D16, D17 (A-3)** : STATUS1 to STATUS4 status LED
Used for maintenance purpose. Only the STATUS1 LED is lit in normal operation.

**D18 (A-4)** : +3.3 V
Indicates the status of the VCC (I/O) power that is supplied to the CPU-DR module.
Lit while the specified power is turned on.

**D19 (A-4)** : CORE status LED
Indicates the status of the VCC (CORE) power that is supplied to the CPU-DR module.
Lit while the specified power is turned on.

**<Switch on the CPU-DR module>** : Main CPU

**SW1 (A-1)** : RESET switch
Pressing this switch resets the CPU-DR module.

**Note**
In some machines in which the CPU-DR module is installed, the system reset may be activated.

**SW2 (A-2)** : MODE switch
8-pin DIP switch
Used only for production in the assembly factory. All switches are set to OFF for normal operation.

**<LED on the SG-272 board>**

**D100 (B-1)** : REF OK status LED
Lit while V sync of the reference input is detected.

**D101 (B-1)** : REF EXT status LED
Lit while sync signal is input to the reference input.

**D200 (B-1)** : LOCK status LED
Lit while the machine is locked to the reference signal.

**<LED on the SIO-26 board>**

**D200 (A-3)** : Communication error indication
Lit when a communication error occurs through the Editor port or the Serial Tally port.

**D201 (A-3)** : Communication status indication
Flashes when a communication is performed through the Editor port.

**D202 (A-3)** : Communication status indication
Flashes when a communication is performed through the Serial Tally port.

**<Switch on the SIO-26 board>**

**S300 (A-3)** : Switch for production
Used only for production in the assembly factory.
Do not change the setting.
Default setting when shipped from the factory is all OFF.

**S500 (A-3)** : Reset switch
Initializes the SIO-26 board.
2. MIX-48 board

<LED>

**D204, D208, D304 (A-3) : +1.5 V-1 to 3**
+1.5 V-1 to 3 power supply status indication.
Lit when the +1.5 V-1 to 3 power are supplied.

**D308 (A-3) : +2.5 V**
+2.5 V power supply status indication.
Lit when the +2.5 V power is supplied.

**D409 (A-2) : +3.3 V**
+3.3 V power supply status indication.
Lit when the +3.3 V power is supplied.

**D410 (A-2) : +12 V**
+12 V power supply status indication.
Lit when the +12 V power is supplied.
If this LED does not light, the fuse may have blown.

**D3701 (A-6) : CONFIG. ERROR status LED**
Indicates the configuration error of the FPGA.
If this LED lit, the FPGA can possibly be working incorrectly.

**D3702, D3704, D3705 (A-6) : C2, C1 and C0 status LED**
Indicates the status of CPU on the circuit board.

**D3703 (A-6) : PLL UNLOCK status LED**
Indicates lock/unlock of the PLL (Phase Locked Loop) in the FPGA.
If this LED lit, the PLL can possibly be unlocked.
<Switch>
S401 (A-5) : MIX-CPU reset switch
Pressing this switch initializes the CPU on the MIX-48 board.

S2702 (A-5) : Monitor reset switch
The reset switch that is used to reset the monitor during maintenance through the terminal.

<Slit land>
SL1, SL2 (A-4) and SL3 (A-5) : JTAG chain switching
They are the slit lands that are used to switch the JTAG chains. Connect these slit lands to open or to close them so that the following statuses can be obtained.

<table>
<thead>
<tr>
<th>SL1</th>
<th>SL2</th>
<th>SL3</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>short</td>
<td>open</td>
<td>open</td>
<td>The chain of CPLD only is established.</td>
</tr>
<tr>
<td>open</td>
<td>short</td>
<td>short</td>
<td>All of the JTAG devices are connected in chain.</td>
</tr>
</tbody>
</table>

<LED on the CPU-DR module> (C-7)
Refer to < LED on the CPU-DR module > in “1. CA-54 board”.

<Switch on the CPU-DR module> (C-7)
Refer to < Switch on the CPU-DR module > in “1. CA-54 board”.
3. DIF-141 board (MKS-8170M)

<LED>
D2700 (A-7) : CONF ERR status LED  
FPGA (EP20K100E and Spartan II) CONFIG DONE status indication.  
Not lit when all configurations are completed.

D2701 (B-7), D2702 (B-6), D2703 (B-6) : MAIN CPU status LED  
Main CPU status indication.

D3700 (A-4) : +12 V  
+12 V power supply status indication.  
Lit when the +12 V power is supplied.  
If this LED does not light, the fuse may have blown.

D3701 (A-5) : +1.8 V  
+1.8 V power supply status indication.  
Lit when the +1.8 V power is supplied.

D3702 (A-5) : +2.5 V  
+2.5 V power supply status indication.  
Lit when the +2.5 V power is supplied.

D3703 (A-4) : +3.3 V  
+3.3 V power supply status indication.  
Lit when the +3.3 V power is supplied.

<Switch>
S2300 (A-9) : RESET switch  
Pressing this switch resets the DIF-141 board.

S2301 (A-5) : MONITOR reset switch  
The reset switch that is used to reset the monitor in the maintenance from the TERMINAL.
S2700 (A-7) : JTAG switch
Used only for production in the assembly factory. Set this switch to ON only when writing program in the JTAG device with ISP.

<LED on the CPU-DK module> (C-10)
Refer to < LED on the CPU-DK module > in “1. CA-54 board”.

<Switch on the CPU-DK module> (C-10)
Refer to < Switch on the CPU-DK module > in “1. CA-54 board”.
4. XPT-25 board (MVS-8000A/8000ASF)

**<LED>**

**D9901 (A-8) : RESET status LED**
System reset status indication.
Lit:
- When S9902 is pressed.
- When the following power voltage drops. 3.3 V, 2.5 V-1 to 4
- When the reset signal is received from the CPU in the chassis in use.

**D9801 (A-9) : CONFIG. ERROR**
Indicates the configuration error of the FPGA.
If this LED lit, the FPGA can possibly be working incorrectly.

**D2 (A-9) : +12 V**
+12 V power supply status indication.
Lit when the +12 V power is supplied.
If this LED does not light, the fuse may have blown.

**D6 (A-9): +3.3 V**
+3.3 V power supply status indication.
Lit when the +3.3 V power is supplied.

**D7 (A-10), D8 (A-11): +2.5 V-1, -2, -3**
+2.5 V power supply status indication.
Lit when the +2.5 V power is supplied.

* : CPU-DK and the IF-937 board are not mounted on the XPT-25 board inserted into the SLOT9 of the MVS-8000A.
<Switch>
**S9902 (A-8) : XPT-CPU reset switch**
Pressing this switch initializes the CPU on the circuit board.

**S9501 (A-7) : Monitor reset switch**
The reset switch that is used for maintenance through the terminal.

<LED on the CPU-DK Module> (C-10)
Refer to <LED on the CPU-DK Module> in “1. CA-54 board”.

<Switch on the CPU-DK Module> (C-10)
Refer to <Switch on the CPU-DK Module> in “1. CA-54 board”.
5. OUT-28 board (MKS-8160)
OUT-28A board (MVS-8000A/8000ASF)

* : CPU-DR and IF-937 board are installed only on the OUT-28A board.

**LED**

D303, D307 (A-3) : +1.5 V-1,-2
+1.5 V power supply status indication.
Lit when the +1.5 V power is supplied.

D503 (A-3) : +3.3 V
+3.3 V power supply status indication.
Lit when the +3.3 V power is supplied.

D507 (A-2) : +12 V
+12 V power supply status indication.
Lit when the +12 V power is supplied.
If this LED does not light, the fuse may have blown.

D2700 (A-2) : +5 V
+5 V power supply status indication.
Lit when the +5 V power is supplied.

D3900 (A-6) : CONFIG. ERROR
Indicates the configuration error of the FPGA.
If this LED is lit, the FPGA can possibly be working incorrectly.

D3901 (A-6) : PLL UNLOCK
Indicates lock/unlock of the PLL (Phase Locked Loop) in the FPGA.
If this LED is lit, the PLL can possibly be unlocked.

D3902, D3903, D3904 (A-6) : C0, C1, C2 status LED
Indicates the status of CPU on the circuit board. (Valid only for OUT-28A board)
**Switch**

**S500 (A-5) : OUT-CPU reset switch**
Pressing this switch initializes the CPU on the circuit board. (Valid only for the OUT-28A board)

**S5300 (A-6) : MONITOR reset switch**
The reset switch that is used to reset the monitoring during maintenance through the terminal. (Valid only for the OUT-28A board)

**<LED on the CPU-DR Module> (C-7)**
Refer to <LED on the CPU-DR Module> in “1. CA-54 board”. (CPU-DR is installed only on the OUT-28A board.)

**<Switch on the CPU-DR Module> (C-7)**
Refer to <Switch on the CPU-DR Module> in “1. CA-54 board”.


6. CC-90 board (MKS-8420M)

A side/Component side

D101 (A-3) : +3.3 V
+3.3 V power supply status indication.
Lit when the +3.3 V power is supplied.

D102 (A-4) : +1.8 V-1
+1.8 V-1 power supply status indication.
Lit when the +1.8 V-1 power is supplied.

D103 (A-4) : +1.8 V-2
+1.8 V-2 power supply status indication.
Lit when the +1.8 V-2 power is supplied.

D107 (A-3) : +12 V
+12 V power supply status indication.
Lit when the +12 V power is supplied.
If this LED does not light on, the fuse may have blown.

D801 (A-10) : DLL status LED
Indicates lock/unlock of the DLL (Delay Locked Loop) in
the CC-90 board.
If this LED lit, the DLL can possibly be unlocked.

D802 (A-10) : FPGA CONFIG status LED
CC-90 board FPGA CONFIG DONE status indication.
Not lit when all configurations are completed.

D803, D804, D805 (A-10) : CC-CPU status LED
Indicates the CPU status on the CC-90 board.
<Switch>
S101 (A-8) : CC-CPU reset switch
Pressing this switch initializes the CPU on the CC-90 board.

S400 (A-8) : Monitor reset switch
The reset switch that is used to reset the monitor during maintenance through the terminal.

S2001 (A-5) : JTAG switch
Used only for production in the assembly factory. Set this switch to ON only when writing program in the JTAG device with ISP.

<LED on the CPU-DR module> (C-10)
Refer to < LED on the CPU-DR module > in “1. CA-54 board”.

<Switch on the CPU-DR module> (C-10)
Refer to < Switch on the CPU-DR module > in “1. CA-54 board”.
7. **MY-112B board (MKS-8440A)**

![Diagram of MY-112B board](image)

- **LED**
  - **D204, D208 (A-3)**: +1.5 V-1, 2
    +1.5 V power supply status indication.
    Lit when the +1.5 V power are supplied.

  - **D304, D308 (A-3)**: +2.5 V-1, 2
    +2.5 V power supply status indication.
    Lit when the +2.5 V power is supplied.

  - **D401 (A-2)**: +12 V
    +12 V power supply status indication.
    Lit when the +12 V power is supplied.
    If this LED does not light, the fuse may have blown.

  - **D409 (A-2)**: +3.3 V
    +3.3 V power supply status indication.
    Lit when the +3.3 V power is supplied.

- **D2601 (A-6)**: PLL UNLOCK
  Indicates lock/unlock of the PLL (Phase Locked Loop) in the FPGA.
  If this LED lit, the PLL can possibly be unlocked.

- **D2602 (A-6)**: CONFIG. ERROR
  Indicates the configuration error of the FPGA.
  If this LED lit, the FPGA can possibly be working incorrectly.

- **D2603, D2604, D2605 (A-6)**: C2, C1 and C0 status LED
  Indicates the status of CPU on the circuit board.
  (This LED is invalid for the MY-112B board in the SLOT15 of the MVS-8000A.)

---

* : Remove the CPU-DK and the IF-937 boards (two pieces) when using the MY-112B board inserted into the SLOT15 of the MVS-8000A.
D3801 (A-5) : FM_DATA ACT status LED
Ethernet communication status indication of FM_DATA. Lit while the data send or receive is in progress. (This LED is invalid for the MY-112B board in the SLOT15 of the MVS-8000A.)

D3802 (A-5) : FM_DATA 100 status LED
Ethernet communication speed status indication of FM_DATA.
- Lit : 100 Mb/s
- Not lit : 10 Mb/s
(This LED is invalid for the MY-112B board in the SLOT15 of the MVS-8000A.)

<Slit land>
SL1 (A-4), SL2 (H-5) and SL3 (A-5) : JTAG chain switching
They are the slit lands that are used to switch the JTAG chains. Connect these slit lands to open or to close them so that the following statuses can be obtained.

<table>
<thead>
<tr>
<th>SL1</th>
<th>SL2</th>
<th>SL3</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>short</td>
<td>open</td>
<td>open</td>
<td>The chain of CPLD only is established.</td>
</tr>
<tr>
<td>open</td>
<td>short</td>
<td>short</td>
<td>All of the JTAG devices are connected in chain.</td>
</tr>
</tbody>
</table>

<LED on the CPU-DR module> (F-3)
Refer to < LED on the CPU-DR module > in “1. CA-54 board”.

<Switch on the CPU-DR module> (F-3)
Refer to < Switch on the CPU-DR module > in “1. CA-54 board”.
1-8-2. Checks on the Switch Setting the Number of Power Supply Units

Before turning on the power of the MVS-8000A/8000ASF, confirm that the switch S403 on the CA-54 board is set in the following position (default setting).

S403 (B-1)/CA-54 board : Switch setting the number of power supply units (DIP type)

- MVS-8000A
  - S403-1 : OFF
  - S403-2 : OFF
  - S403-3 : ON
  - S403-4 : OFF

- MVS-8000ASF
  - S403-1 : OFF
  - S403-2 : OFF
  - S403-3 : OFF
  - S403-4 : ON
1-9. System Connection

Configure the MVS-8000A series system connections referring to the connection example as shown below.

1. Connection example of the MVS-8000A system (The same type of configuration is possible with a MVS-8000ASF system.)

a) : Connect each LAN (DATA/CTRL) to the separate Ethernet switches respectively.

b) : Terminate the system with the 75 Ω terminators supplied. The 75 Ω terminators are supplied with the equipment.
2. Flow of Video Signals

The figure below shows the flow of video signals in a MVS-8000A system. The flow of signals is the same in a MVS-8000ASF system.

- For the AC power cord, refer to Section "1-2-2. Recommended Power Cord".
- Terminate the system with the 75 Ω terminators supplied. The 75 Ω terminators are supplied with the equipment.
2-1. Troubleshooting

The main power of the MVS-8000A cannot be turned on. (Indicator does not light green.)

The main power of the MVS-8000A cannot be turned on. (Indicator does not light green.)

Are the POWER switches A and B of the MVS-8000A both turned ON?

YES

NO

Set A and B both to ON.

Are the POWER switches A and B of the MVS-8000A both turned ON?

YES

NO

Connect it correctly.

Is the power cord of the MVS-8000A connected correctly?

YES

NO

The power supply unit is probably defective.

The monitor picture is not displayed correctly.

A picture is not displayed on the monitor screen even though the main power of the MVS-8000A/MVS-8000ASF is turned on.

Are the standard boards installed into the specified slots?

YES

NO

Install the standard boards into the specified slots. (Refer to the MVS-8000A/MVS-8000ASF Maintenance Manual.)

Are the option boards installed into the specified slots?

YES

NO

Install the option boards into the specified slots. (Refer to Section 1-4.)

Are the input and output cables connected correctly?

YES

NO

Check connections of the input and output equipment.

Is the Software installed correctly?

YES

NO

Install the software correctly. (Refer to the User's Guide.)

MVS-8000A/MVS-8000ASF is probably defective.

The main power of the MVS-8000ASF cannot be turned on. (Indicator does not light green.)

The main power of the MVS-8000ASF cannot be turned on. (Indicator does not light green.)

Are the POWER switch A of the MVS-8000ASF turned ON?

YES

NO

Set A to ON.

Are the POWER switch A of the MVS-8000ASF turned ON?

YES

NO

Connect it correctly.

Is the power cord of the MVS-8000ASF connected correctly?

YES

NO

The power supply unit is probably defective.
2-2. Periodic Inspection and Maintenance

2-2-1. Cleaning

1. Front panel
The filter on the rear of the front panel can easily accumulate the dust. Be sure to remove dust by cleaning as follows.
(1) Remove the front panel. (Refer to Section 1-4-1.)
(2) Remove the dust accumulated on the filter with a vacuum cleaner.

**Note**
Cleaning the filter by washing in water is recommended when there is a heavy accumulation of dust. Be sure to dry the filter completely after it has been washed.

2. Fan
MVS-8000A/8000ASF series is air-cooled by the fans (on both sides). If dust has accumulated in the intake of the fan, air is prevented from flowing smoothly and this may result in a temperature rise inside the machine. This may have an adverse effect on performance and the life of the machine. Cleaning of the fan every month is recommended. Contact your local Sony Sales Office/Service Center for information on cleaning the fan.
2-3. About the Data Backup Capacitor

A large capacitor is installed on the CA-54 board in order to backup the memory storing the setup and other data in the MVS-8000A/8000ASF series. Leave the main power of the MVS-8000A/8000ASF series turned on for one hour or longer in order to charge the large capacitor. The data can be backed up for about one week when the capacitor is fully charged under the normal operating temperature.
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