SONY

ROUTING SWITCHER CONTROLLER

HKSP-R80

ROUTING SWITCHER BACKUP CPU

HKSP-R81

⚠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，本体（PFV-SPシリーズ）に付属のインストレーションマニュアルおよび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.

INSTALLATION MANUAL

1st Edition (Revised 4)
Serial No. 10001 and Higher (HKSP-R80)
Serial No. 20001 and Higher (HKSP-R81)

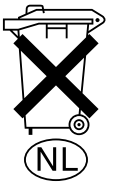
3620722050

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

For the customers in the Netherlands
Voor de klanten in Nederland

Hoe u de batterijen moet verwijderen, leest u in de Onderhoudshandleiding.

Gooi de batterij niet weg maar lever deze in als klein chemisch afval (KCA).



Für Kunden in Deutschland

Entsorgungshinweis: Bitte werfen Sie nur entladene Batterien in die Sammelboxen beim Handel oder den Kommunen. Entladen sind Batterien in der Regel dann, wenn das Gerät abschaltet und signalisiert “Batterie leer” oder nach längerer Gebrauchsdauer der Batterien “nicht mehr einwandfrei funktioniert”. Um sicherzugehen, kleben Sie die Batteriepole z.B. mit einem Klebestreifen ab oder geben Sie die Batterien einzeln in einen Plastikbeutel.

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Purpose of this manual

This manual is an installation manual of Routing Switcher Controller HKSP-R80 and Routing Switcher Backup CPU HKSP-R81.
This manual is intended for use by trained system and service engineers, and describes information regarding installation.

Related manuals

Besides this installation manual, the following manuals are available for the HKSP-R80/R81.

- System Setup Manual (Supplied with HKSP-R80)
  This manual describes the software initialization or operation confirmation.
- Maintenance Manual (Available on request)
  This manual describes the information that premises the parts level service (adjustment, parts list, diagrams, etc.). If this manual is required, please contact your local Sony Sales Office/Service Center.
- Protocol Manual (Available on request)
  This manual describes the protocol for controlling this unit. The manual below is provided for the protocol that this unit can support.
  If this manual is required, please contact your local Sony Sales Office/Service Center.
  S-BUS PROTOCOL AND COMMAND SPECIFICATIONS (S-BUS remote terminal control protocol)
  Part No.: 9-977-477-1X
- "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.
  Part number: 9-968-546-XX

1. Installation

The HKSP-R80 consists of the main board (CPU-355 board), connector panel (CN-2334 board/CN-2335 board), unit label (2), CD-ROM (1) (backup software, routing switcher remote control software, S-BUS subnet controller, installation manual, system setup manual), 75 Ω terminator (3), and T-type bridge.

The HKSP-R81 is available as an optional board (for backup purpose) of the HKSP-R80. Installing HKSP-R81 together with HKSP-R80 in the PFV-SP series always enables the CPU backup operation. In this manual, the CPU-355 board performing main operation is described as "main CPU" and the other CPU-355 board performing backup is described as "backup CPU".

Attaching HKSP-R80/R81

The HKSP-R80/R81 is designed to be installed and operated in the signal processing unit PFV-SP series.
In accordance with the installation manual of the PFV-SP series, be sure to attach the main board and connector panel of the HKSP-R80/R81.

Notes

- Do not touch the CPU-355 board with bare hands. When the CPU-355 board is touched with bare hands, the initial information stored in the mobile board may be damaged. ("E.50" is displayed on the indicator panel.) If there is a possibility that the initial information has been damaged, initialize the setting data (Set the rotary switch S804 to "D" and restart the HKSP-R80.) and set the time again (Refer to Section 2-4 of the system setup manual.).
- When attaching the connector panel, remove the two-slot blank panel.
- It is recommended to insert the first CPU-355 board in the main slot (slot with smaller number). The CPU-355 board inserted in the main slot always operates as a main CPU (becomes active state) when the power is turned on. For the CPU backup operation, insert the second CPU-355 board in the backup slot.
- When installing the optional board HKSP-R81, insert it into the slot that has the connector panel of the HKSP-R80. If it is inserted in other slot, it does not normally function as a backup controller.

Matching connector/cable

When external cables are connected to the connectors on the connector panel, the hardware listed below (or equivalents) must be used.

REMOTE1 (A, B1, B2), TIME CODE

Matching connector: BNC
Matching cable: Belden 8281 coaxial cable

REMOTE2

Matching connector: D-sub 9-pin, male
• 1-560-651-00*1 (connector)
• 1-561-749-00 (shell)

REMOTE3

Matching connector: D-sub 9-pin, female
• 1-563-815-21*1 (connector)
• 1-561-749-00 (shell)

DATA

Matching connector/cable: 100BASE-TX standardized cable*2
10BASE-T standardized cable*2

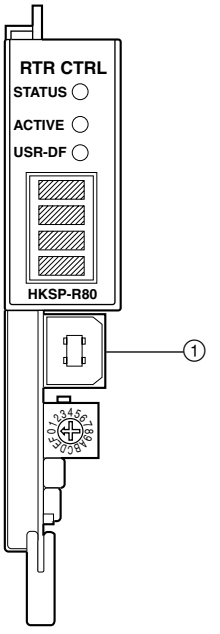
∗1: The following solderless contacts are required for the plug.
AWG#18 to #22: 1-566-493-21
AWG#22 to #24: 1-564-774-11
AWG#24 to #30: 1-564-775-11

∗2: Use shield type.

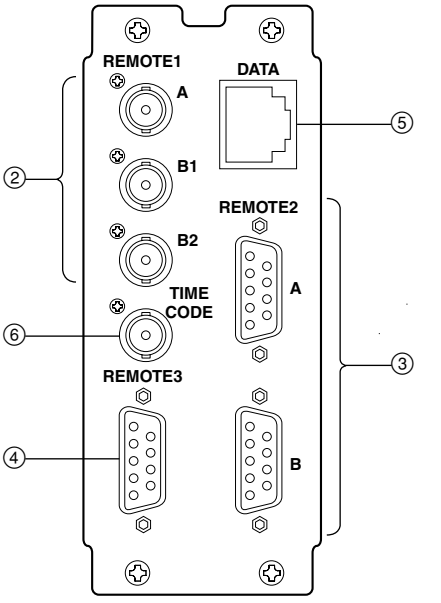
Note

USB (CPU-355 board front side)
Matching cable: USB cable available on the market

2. Name and Function of Connector



CPU-355 board front side



Connector panel

① USB connector (USB series B connector)

Not used in normal operation.

② REMOTE1 (A/B1/B2) connectors (BNC type)

These connectors are used for S-BUS communications.

The REMOTE1 connectors have two channels, A and B (B1/B2), and these connectors are connected to the S-BUS data link.

For details, refer to "5. System Connection".

Note

Connect the supplied 75 Z terminator to the unused connectors in both primary and secondary stations.

③ REMOTE2 (A/B) connectors (D-sub 9 pin)

These connectors are used for RS-422A communications.

These connectors are used when connecting the external controller.

The HKSP-R80 enters the S-BUS conversion mode when it is set to the primary station (S/P switch is set to P) and then the S-BUS control is enabled using these connectors.

④ REMOTE3 connector (D-sub 9 pin)

This connector is used for RS-232C communications.

When the HKSP-R80 is set to the system primary station (S/P switch is set to P), this connector is connected to the control terminal to make the setting required for the system.

Note

When using this connector, set S803-3 on the CPU-355 board to P.

⑤ DATA connector (Conforming to RJ-45)

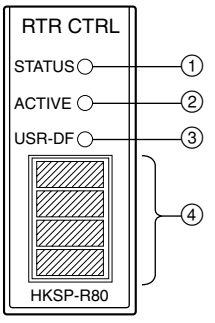
This connector is used for 10BASE-T/100BASE-TX communications.

It is connected to the Ethernet connector of the PC in which the supplied software is installed.

⑥ TIME CODE connector (BNC type)

This connector is used for time code signal input.

3. Name and Function of Switch and Indicator



Indicator panel

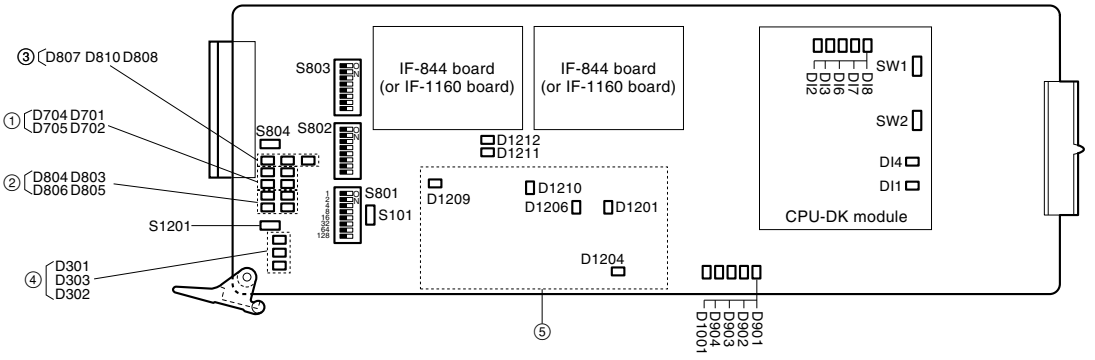
Indicator panel

No.	Name	Function
①	STATUS	Lights in green: Under normal operation Blinks in green: A warning occurs. Blinks in red: An error occurs. **Note** For details on error, refer to Section 6.
②	ACTIVE	Lights in green: The CPU-355 board operates as a main CPU. Off: The CPU-355 board operates as a backup CPU. (Not operating as a main CPU.)
③	USR-DF	Lights in green: When restarting the HKSP-R80, the setting data written in the flash memory as user default is enabled (S802-8 is set to ON). Off: When restarting the HKSP-R80, the previous setting data is enabled.

Display

No.	Name	Function
④	Status indicator	Indicates errors and various information. The displayed information is switched depending on the setting of rotary switch S804. (Refer to “S804”.) **Notes** • When the board operates as a backup CPU, the display is slightly darker than when the board operates as a main CPU. • When there is no error during normal operation, “R80” is displayed. On similar occasions, when the BZR-IF810 is installed in the HKSP-R80, “810” is displayed. (For details on the BZR-IF810, refer to Section 8.)

Main Board (CPU-355 board)



Main board (CPU-355 board: side A)

Indicators

① Status of REMOTE1 connector (Data transmission/reception with S-BUS data link)

Ref. No. (Address)	LED name	Function (Lights on for 0.015 sec.)
D701 (A-3)	REMOTE1 A RX	Lights in green: When data is received from the data link of REMOTE1 A or A2 connector
D704 (A-3)	REMOTE1 A TX	Lights in green: When data is transmitted to the data link of REMOTE1 A or A2 connector
D702 (A-3)	REMOTE1 B RX	Lights in green: When data is received from the data link of REMOTE1 B1 or B2 connector
D705 (A-3)	REMOTE1 B TX	Lights in green: When data is transmitted to the data link of REMOTE1 B1 or B2 connector

② Status of REMOTE2 connector (Data transmission/reception with RS-422A data line)

Ref. No. (Address)	LED name	Function (Lights on for 0.015 sec.)
D803 (A-3)	REMOTE2 A RX	Lights in green: When data is received from the line of REMOTE2 A connector
D804 (A-3)	REMOTE2 A TX	Lights in green: When data is transmitted to the line of REMOTE2 A connector
D805 (A-3)	REMOTE2 B RX	Lights in green: When data is received from the line of REMOTE2 B connector
D806 (A-3)	REMOTE2 B TX	Lights in green: When data is transmitted to the line of REMOTE2 B connector

③ Status of the HKSP-R80

Ref. No. (Address)	LED name	Function
D807 (A-3)	PRIM-A	Lights in green: When S-BUS A channel is set to the primary station
D810 (A-3)	PRIM-B	Lights in green: When S-BUS B channel is set to the primary station
D808 (A-3)	REF-IN	Lights in green: When valid signal is input to the reference connector selected by S802-7

④ Status of data link connected to DATA LAN (DATA connector)

Ref. No. (Address)	LED name	Function
D301 (A-3)	100/10	Lights in green: When device in data link operates in 100BASE-TX
D303 (A-3)	LINK	Lights in green: When devices are normally linked in data link
D302 (A-3)	ACT	Lights in green: When data is transmitted/received between data links

⑤ Status of power supply block

Ref. No. (Address)	LED name	Function
D1201 (D-3)	2.5 V	Lights in green: Power supply of +2.5 V is normal
D1204 (D-3)	12 V	Lights in green: Power supply of +12 V is normal.
D1206 (C-3)	5 V-1	Lights in green: Power supply of +3.3 V and +5 V are normal.
D1209 (C-3)	3.3 V	Lights in green: Power supply of +3.3 V is normal.
D1210 (D-3)	5 V	Lights in green: Power supply of +5 V is normal.

Others

Ref. No. (Address)	LED name	Function
D901 (E-3)	–	Factory use only
D902 (E-3)	–	Factory use only
D903 (E-3)	–	Factory use only
D904 (E-3)	–	Factory use only
D1001 (E-3)	–	Factory use only
D1211 (B-2)	–	Factory use only
D1212 (B-2)	–	Factory use only

Switch

Note

If the HKSP-R80 and HKSP-R81 are installed, the two CPU-355 boards must have the exactly same setting.

S101 (A-3): MON

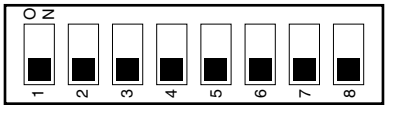
This switch is used for test. (Factory use only)

S1201 (A-3): RESET

This switch resets the operation of the CPU-355 board.

S801 (A-3): Station ID/ Unit ID setting switch

8-pin DIP switch



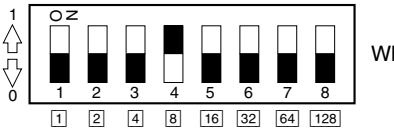
Factory setting (■ indicates the switch lever position.)

Sets the station ID of the HKSP-R80 when the HKSP-R80 is connected to the S-BUS data link as follows.
When the HKSP-R80 is used as the primary station, the station ID is set to “1” regardless of setting of this switch.
When the HKSP-R80 is used as the secondary station, set the station ID to any number other than “0”, “1” and “255”. Be careful not to duplicate the same number of the other equipment in the secondary station when setting the station ID.

Sets the unit ID that is the 4th byte of the IP address using the DIP switch (S802-4 is set to OFF) when the HKSP-R80 is connected to DATA LAN (Ethernet). For details, refer to Section 4.

Even if the setting is changed while the power is on, the station/unit ID is not updated.
In order to change the station/unit ID, change the setting. Then either turn off the main power and back on, or press the reset switch (S1201) on the CPU-355 board.

Setup example



When the setting value is 8

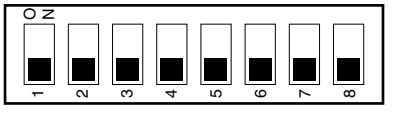
<Setting value>

8 : 0 0 0 1 0 0 0 0 1 ; ON
30 : 0 1 1 1 1 0 0 0 0 ; OFF
(16 + 8 + 4 + 2)

254 : 0 1 1 1 1 1 1 1
(128 + 64 + 32 + 16 + 8 + 4 + 2)

S802 (A-2)

8-pin DIP switch



Factory setting (■ indicates the switch lever position.)

BIT1 : Virtual matrix function valid/invalid selector switch

Set this switch when you want to use the virtual matrix function. Even if the setting is changed while the power is on, the operation mode is not updated.
In order to change the operation mode, change the setting. Then either turn off the power and back on, or press the reset switch (S1201) on the CPU-355 board.

ON : Virtual matrix functions.
OFF : Virtual matrix does not function.

BIT2 : Cross-level Tie Line function valid/invalid selector switch

Set this switch when you want to enable the cross-level tie line function when the tie line system is constructed using the HKSP-R80. Even if the setting is changed while the power is on, the operation mode is not updated.
In order to change the operation mode, change the setting. Then either turn off the power and back on, or press the reset switch (S1201) on the CPU-355 board.

ON : Cross-level tie line function is made valid.
OFF : Cross-level tie line function is made invalid.

BIT3 : Tie Line full display function valid/invalid selector switch

Set this switch when you want to enable the cross-level tie line full display function when the tie line system is constructed using the HKSP-R80. Even if the setting is changed while the power is on, the operation mode is not updated.
In order to change the operation mode, change the setting. Then either turn off the power and back on, or press the reset switch (S1201) on the CPU-355 board.

ON : Cross-level tie line full display function is made valid.
OFF : Cross-level tie line full display function is made invalid.

BIT4 : Unit ID/IP setting method selector switch

Used to select the method of setting the IP address in the data link that is connected to the DATA connector.
Even if the setting is changed while the power is on, the operation mode is not updated. In order to change the operation mode, change the setting. Then either turn off the power and back on, or press the reset switch (S1201) on the CPU-355 board.

ON : A value that is set from a personal computer connected to REMOTE3 becomes valid.
OFF : The IP address is "10.129*1.6. [value of S801]".
∗1: Can be changed between 129 and 191. For details, refer to Section 4.

Note

For the details of the IP address setting, refer to Section 4.

BIT5: TBL-PROT valid/invalid selector switch

Used to select whether the S-BUS table data stored in the HKSP-R80 is protected or not, when the HKSP-R80 is set as the primary station.
Even when a setting is changed while the power is on, the setting is reflected on the operation of the board.

ON : Write-protects the S-BUS table data.
OFF : Enables to write in the S-BUS table data.

BIT6: Not used

BIT7: REF A/B switch

Used to select which connector to be used as the reference signal between REF IN A connector of the PFV-SP series and REF IN B connector.
Even when a setting is changed while the power is on, the setting is reflected on the operation of the board.

ON : REF IN B connector
OFF : REF IN A connector

BIT 8: USER-DEF switch

Used to select which setting to be enabled when the HKSP-R80 is restarted.

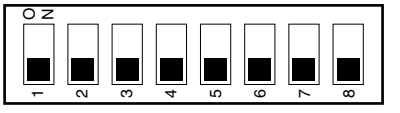
ON: Setting data written in the flash memory as user default
OFF: Setting data just before restarting

Note

For the procedure to write the user default value in the flash memory, refer to the menu item "W: SAVE CURRENT TABLE" of the secondary station (system setup manual supplied with the HKSP-R80).

S803 (A-2)

8-pin DIP switch



Factory setting (■ indicates the switch lever position.)

BIT1 : SYNC/ASYNC selector switch

Used to select whether the communication on the REMOTE1 data link is carried out in synchronization with the input reference signal that is connected to the REF IN A or REF IN B connector selected by S802-7, or is communicated asynchronous with the input reference signal. However, the routing switcher system will operate in the asynchronous mode if the reference video signal is not input to the PFV-SP series connector (REF IN A or REF IN B) even if this switch is set to the SYNC position. Even when a setting is changed while the power is on, the setting is reflected on the operation of the HKSP-R80.

ON : ASYNC (asynchronous mode)
OFF : SYNC (synchronous mode)

BIT2 : BIT3: S/P selector switch

- **BIT2 : REMOTE1 A connector**
- **BIT3 : REMOTE1 B (B1, B2) connectors**

Used to assign the HKSP-R80 either to the primary station or to the secondary station when the HKSP-R80 is connected to the S-BUS data link with the above connector. Set BIT2 and BIT3 in accordance with the connector used.

ON : PRIMARY
OFF : SECONDARY

Even if the setting is changed while the power is on, the operation mode is not updated.
In order to change the operation mode, change the setting. Then either turn off the main power and back on, or press the reset switch (S1201) on the CPU-355 board.
Set the two selector switches in accordance with the desired operations as shown below.

Operation	S803-2 (S-BUS A P/S)	S803-3 (S-BUS B P/S)
HKSP-R80 operates as primary station.	P	P
REMOTE1 A is connected to higher-level controller (4093 × 4093 area control)	S	P
HKSP-R80 operates as secondary station	–*1	S

P: PRIMARY
S: SECONDARY
∗1: When S803-3 is “SECONDARY”, S-BUS A is forced to become “SECONDARY”.

BIT4: Table data size selector switch

Used to select the S-BUS table data size that is output when the unit operates as the primary station in the S-BUS data link of REMOTE1.

ON : 32 bytes
OFF : 128 bytes

BIT5 and BIT6 : Baud rate selector switch

- **BIT5 : REMOTE1 A connector**
- **BIT6 : REMOTE1 B connector**

Sets the baud rate when the HKSP-R80 is connected to the S-BUS data link using the above connectors.
All of the equipment that are connected to the same S-BUS data link must have the same setting for the baud rate speed. Set BIT5 and BIT6 in accordance with the connectors used. Even when a setting is changed while the power is on, the setting is reflected on the operation of the HKSP-R80.
If there is any possibility to disconnect the cables between the equipment while they are operating, set the switch to the OFF position.

ON : 1250 kbps
OFF : 312 kbps

BIT7: Not used

BIT8: A2 channel valid/invalid switch

Sets whether the S-BUS communications by REMOTE connector of the PFV-SP series is enabled.
Even when a setting is changed while the power is on, the setting is reflected on the operation of the HKSP-R80.

ON: Enabled (The HKSP-R80 is recognized as REMOTE1 A2 channel)
OFF: Disabled

S804 (A-3) : Test rotary switch

Run the system with 0 (default) position of this switch.

Note

Be aware that if S804 is set to 8 or 9, the information stored in the board may be damaged. In case of setting S804 to 8, all the information set in the HKSP-R80 may be erased affecting the operation of the HKSP-R80. In case of setting S804 to 9, the information in the ROM I^2C EEPROM (CPU-355: IC807, CN-2334: IC102, CN-2335: IC102) will be erased.

Factory setting

Notes

- When this switch is set to any position of 1 to 5 while the power is on, the setting is reflected on the operation of the HKSP-R80. Set this switch to 0 to return to the normal operation.
- Even the setting is changed to A to F while the power is on, the operation mode is not updated. In order to change the operation mode to A to F, change the setting. Then re-start the CPU-355 board (either turn off the power and back on, or press the reset switch (S1201) on the CPU-355 board). Set this switch to 0 and re-start the CPU-355 board to return to the normal operation.

0 : Normal operation
The error that is detected first by self-diagnosis is indicated on the status indicator as an error code. The error code that is displayed first, is kept stored until the CPU-355 board is re-started or until this switch is set to the position 5.

1 : Displays the station ID (valid during operation).
The station ID of the HKSP-R80 is displayed on the status indicator.

2 : Displays the total count of the errors that are detected by self-diagnosis (decimal number) on the status indicator.
When the reset switch (S1201) on the CPU-355 board is pressed or this switch is set to "5", the total count is re-set to "0000".

3 : Displays the IP address (valid during operation).
The IP address set to the HKSP-R80 is displayed on the status indicator.

4 : Displays the setting state of the switch (valid during operation).
The contents of the switches S802 and S803 on the CPU-355 board are displayed on the status indicator in hexadecimal.

5 : Resets the error indication of status indicator (valid during operation).
When returning the rotary switch from 5 to 0, the error code displayed on the status indicator is reset, and "R80" is displayed. (When the BZR-IF810 is installed in the HKSP-R80, "810" is displayed.)
The total count of error detected by self-diagnosis is also reset.

6. 7 : Not used

8 : Factory use only (valid only during startup)
Used for adjustment in the factory.
If this mode is executed, all of the setting data are deleted. Before executing this mode, implement the backup of the setup data using the attached BZR-20 software. After execution of the this mode, return the setup data.

9 : Factory use only
I^2C EEPROM (serial ROM) data edit mode (valid only during startup)
When this mode is executed, the critical information on the service stored in the board may be damaged. When the HKSP-R80 is accidentally activated in this mode, immediately set this switch to 0 and restart the HKSP-R80.

A, B : Not used

C : Clears the system status log.
(Valid only during startup)
Clears the system status log.

D: Initialization of setting (valid only during startup)
Returns all of the setup items to the default setup when shipped from the factory. However, the IP address is not initialized.

E : Network setting mode (valid only during startup)
Used for the setting, such as the IP address setting to connect the HKSP-R80 to the network.
For details, refer to Section 4.

F : Forced program download mode (valid during startup)
Used for service maintenance.

IF-844 board

Indicator

D1 (B-1): SRX

Lights about 0.015 second when it receives the data from the S-BUS link.

Switch

S1 (B-3) : RESET

Reset switch of MPU on the IF-844 board.

IF-1160 Board

Indicators

D201 (B-3): STAT1

Indicates completion of initialization of the CPU software.
Not lit during startup.
Lights when the CPU software has been initialized.

D202 (B-3): STAT2

Indicates operation of the CPU.
Blinks at intervals of one second while the CPU is running normally.

D203 (B-3): STAT3

Indicates that the IF-1160 board version upgrade is in progress.
Lights during upgrade of the IF-1160 board version and goes out when the upgrade has been completed.

D204 (B-3): STAT4

Indicates operation of the primary station and secondary station.
Lights while the primary station is working.
Not lit while the secondary station is working.

D205 (A-3): DONE

Indicates configuration status of the FPGA.
Lights when the FPGA configuration has been completed.

Switch

S201 (A-2): CONF

FPGA reconfiguration switch
This switch performs FPGA reconfiguration to totally reboot the hardware and the CPU software.

S202 (A-2): RST

CPU software reboot switch
Reboots only the CPU software.
This switch does not perform FPGA reconfiguration.

CPU-DK module

Indicator

DI1 (green) : CD (Card Detect) status LED

Lights on when the CPU-DK module is inserted correctly to the CPU-355 board.

DI4 (green) : +3.3 V

Indicates the status of the power supplied to the CPU-DK module.
Lights on while the power is on.

DI8 (green) : STATUS1 status indicator

Used for maintenance purpose. Lights in normal operation.

DI7 (green) : STATUS2 status indicator

Used for maintenance purpose. Lights off in normal operation.

DI6 (green) : STATUS3 status indicator

Used for maintenance purpose. Lights off in normal operation.

DI3 (green) : STATUS4 status indicator

Used for maintenance purpose. Lights off in normal operation.

DI2 (green) : RUN status indicator

Lights on when the CPU-DK module starts operating.

<Switches>

SW1 : RESET switch

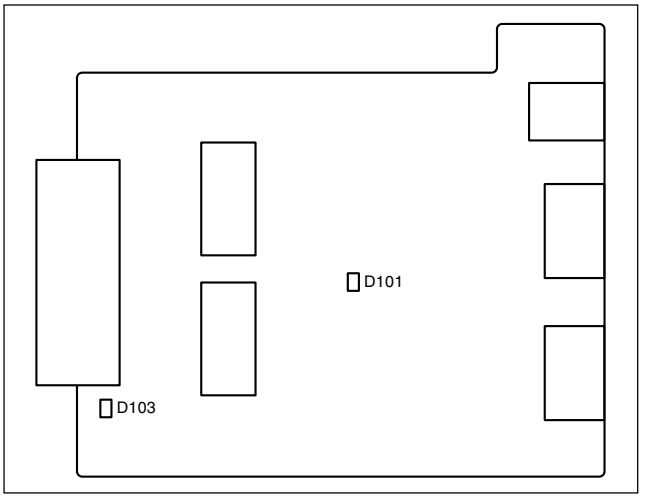
Resets the CPU-DK module.

SW2 : MODE switch

8-pin DIP switch

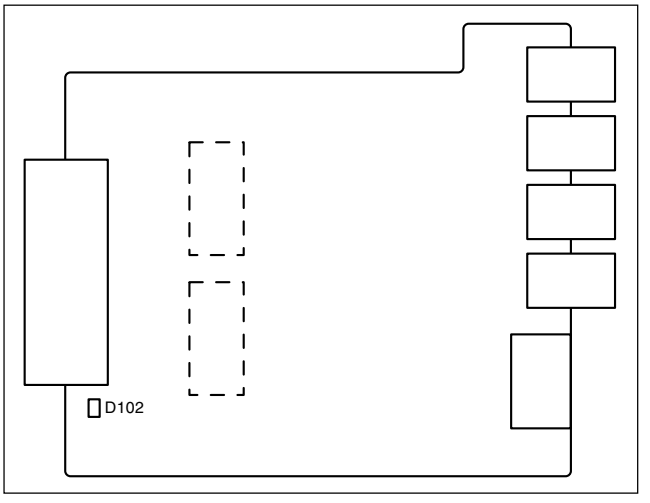
This switch is factory use only. Do not change this setting.
The default setting is all OFF.

CN-2334 board



Ref. No. (Address)	LED name	Status during ON
D101 (B-3)	12 V	Lights in green: Power supply of +12 V is normal.
D103 (A-1)	3.3 V	Lights in green: Power supply of +3.3 V is normal.

CN-2335 board



Ref. No. (Address)	LED name	Status during ON
D102 (A-1)	5 V	Lights in green: Power supply of +5 V is normal.

4. Setting Network Connection (IP Address)

Note

When the following related to a network is set in a main CPU, the same value is automatically set in the backup CPU.

This unit has the following two types of IP address.

- Arbitrary IP address
- 10. [group ID] .6. [unit ID] (the 1st byte and 3rd byte are fixed.)
  The group ID can be set in the range from 129 to 191.

The IP address can be selected with the switch S802-4.

S802-4	IP address
ON	Arbitrary IP address
OFF	10. [group ID] .6. [unit ID] (Factory setting: “10.129.6.1”) • Set the group ID in the following procedure. • Set the unit ID with S801.

Group ID and a desired IP address can be set on the same PC screen.
The settings can be set with the included GUI software BZR-25 for network setting or with the following setting procedure.
For details about installing BZR-25, see “9-2. Installing BZR-20/BZR-25”. For details about using BZR-25, see the BZR-25 online help.
To activate the BZR-25 settings, the switch S802-4 must be turned to ON.

Setting Procedure

1. Turn off the power of the PFV-SP series.
2. Connect a PC to the REMOTE3 connector.
3. Set the switch S804 on the CPU-355 board to “E”.
4. Turn on the power of the PFV-SP series.
5. The following display appears on the PC screen.

IP ADDRESS	=	192.168.0.135	IP address that is enabled when S802-4 is set to ON
GROUP ID	=	129	Group ID that is enabled when S802-4 is set to OFF
TERM PORT	=	1001	Terminal port No. } Do not change the settings.
LOG PORT	=	8001	Log port No. } Do not change the settings.
DEF GWAY	=		Default gateway
SNET MASK	=		Subnet mask
OPT IP	=		IP address of host controller (BZR-IF830, etc.) connected via Ethernet
OPT1 PORT	=	0	TCP/IP port of host controller (BZR-IF830, etc.) connected via Ethernet
OPT2 PORT	=	0	UDP port of host controller (BZR-IF830, etc.) connected via Ethernet
TERM T OUT	=	10	Time out period when the terminal is connected via Ethernet: 0 to 999 (unit: minute). When 0 is input, time out does not occur.
SNMP TRAP1	=	43.1.32.26	SNMP trap destination 1
SNMP TRAP2	=	43.1.32.27	SNMP trap destination 2
GMT(+)	=	09	Time difference from the Greenwich mean time (unit: hour)
Contact	=		Information about the administrator of equipment
Name	=		Information required for controlling the equipment (Device No.)
Location	=		Information about the place where the equipment is installed

Note

In the case that this unit is connected to the host controller (BZR-IF830, etc.) via Ethernet, set the same number as the host controller in “OPT1 PORT=” and “OPT2 PORT=”.

6. Move the cursor to the item to be set. Press the Enter. The entry becomes possible.
7. Input data in the required entry items.
8. Press the Enter to terminate the setting.
9. Turn off the power and then back on of the PFV-SP series.
10. Check to see that the set IP address and group ID are displayed on the PC screen.
11. Set the switch S804 on the CPU-355 board to“0” and turn off the power and then back on or press the reset switch (S1201) on the CPU-355 board to return to the normal operation mode.
12. Check that the backup CPU is activated. After waiting for about 5 seconds, turn off the power and back on again or press the reset switch of the CPU-355 board to restart the main CPU.

5. System Connection

5-1. S-BUS Data Link

The routing switcher system is connected with the S-BUS data link using a 75 Ω coaxial cable.
The main equipment of the S-BUS data link is shown in the table below.

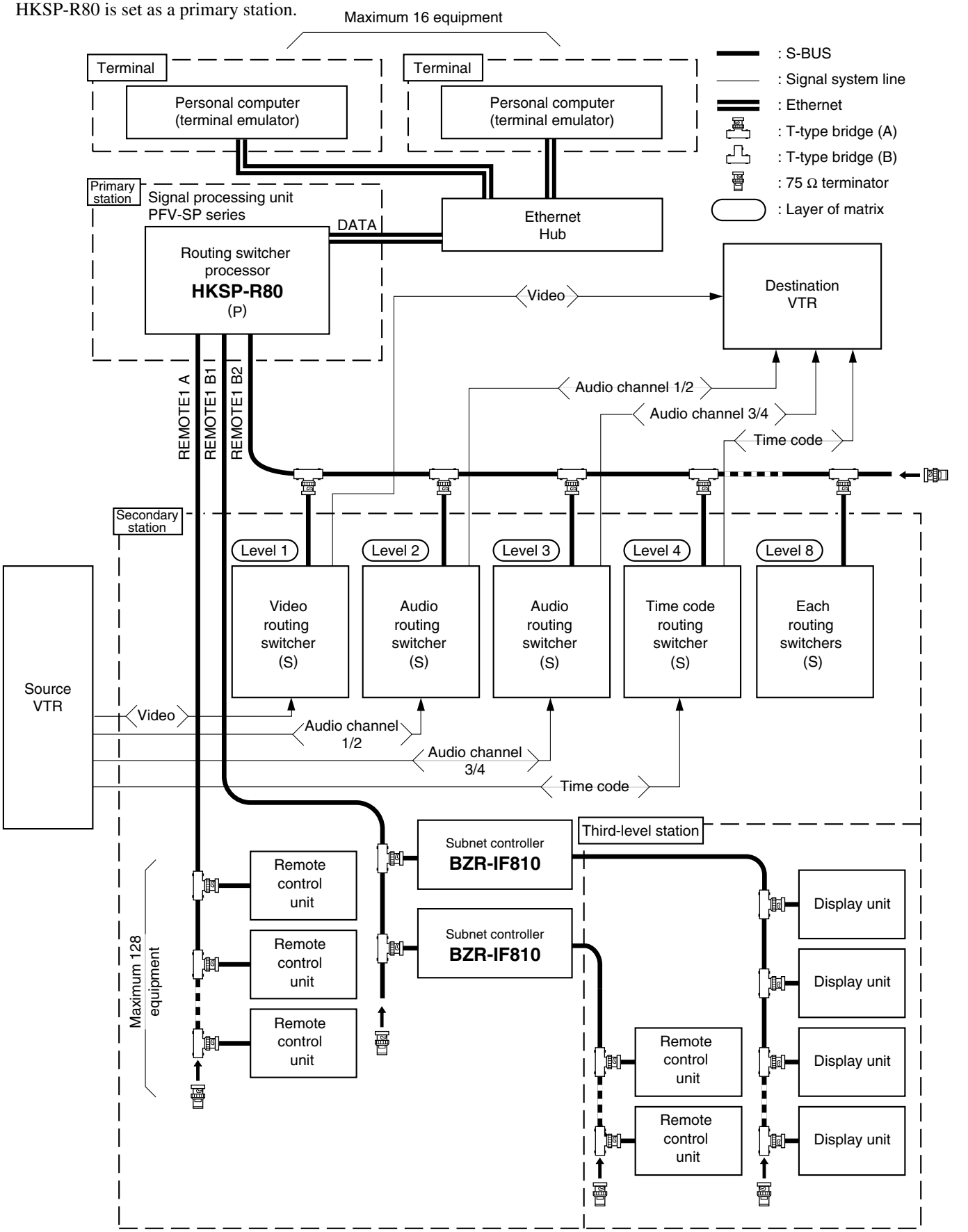
Type in S-BUS data link	Model (function name)	Quantity	Function/rule
Primary station (P)*	Controller HKSP-R80 (routing switcher controller)	1	Controls the entire S-BUS data link. Can also function as a secondary station.
Secondary station (S)*	Switcher HDS-X5800 (routing switcher processor) DVS-V6464B/M (video routing switcher) HDS-X3400/X3600/X3700 (multi bit rate routing switcher) DVS-A3232 (audio routing switcher) DVS-RS1616 (RS-422A remote routing switcher) DVS-TC3232 (time code routing switcher) Remote control unit BKS-R3220 (X-Y control unit) BKS-R3219 (32 button control unit) BKS-R1617 (universal control unit) BKS-R1618 (16 button control unit) BKS-R3216 (8 destination control unit) BKS-R3280 (single status display unit) BKS-R3281 (single status display unit)	253 (max.)	Controls the individual secondary station. Communicates in accordance with the commands from the primary station.
Terminal	Personal computer (terminal emulator)	1	Establishes the various setups of the system. The errors that have occurred in the S-BUS line are displayed and managed by the emulator.

*: (P) and (S) indicate the setting of the S/P selector switch on the CPU board in the controller and routing switcher.

Note

Switchers other than the HKSP-R80 can be also set as a primary station. In this case, some functions are limited.

The following diagram shows an example of the connection for the data link of the S-BUS when the HKSP-R80 is set as a primary station.

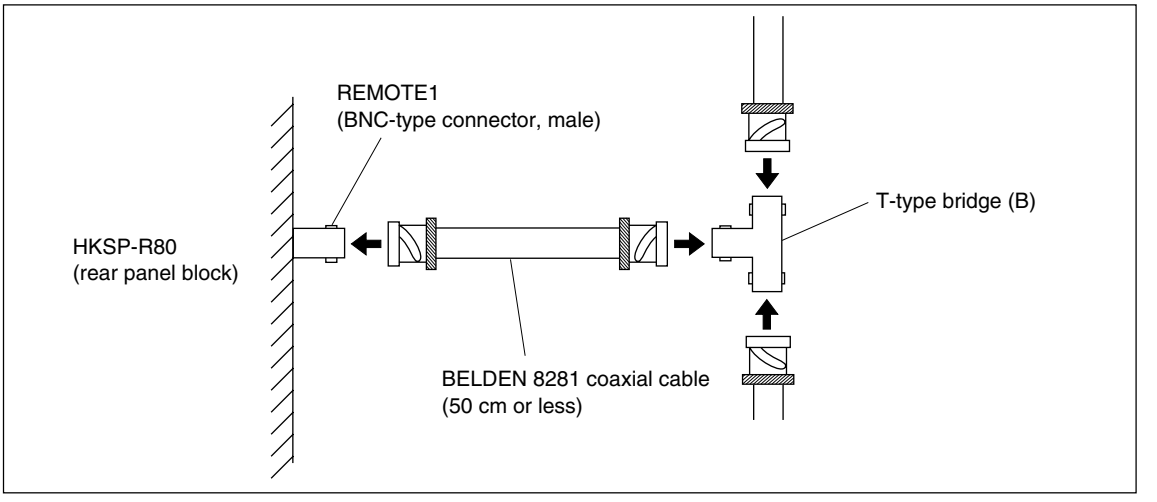


Precautions for connection

- For the controller and routing switcher that are used as the primary station, set the S/P selector switch on the CPU board to the “P” position.
- For the controller and routing switcher that are used as the secondary station, set the M/S switch on the CPU board (S/P selector switch in the HKSP-R80) to the “S” position.
- A primary station can control up to 253 secondary stations.
- A single S-BUS line can be connected to up to 128 secondary stations.
- The maximum length of a single S-BUS line cable is 500 m (when the BELDEN 8281 cable is used).
- Terminate the T-type bridge that is connected to the last machine of the S-BUS line with a 75 Ω terminator. Also, terminate the unused REMOTE1 connector of each switcher with a 75 Ω terminator.
- In the primary controller or routing switcher, two or more REMOTE 1 connectors can be used.
- In the secondary controller and routing switcher, only one REMOTE 1 connector can be used each.

How to use the T-type bridge

The B type of T-type bridge is supplied with the HKSP-R80. Prepare coaxial cable (BELDEN 8281) of 50 cm or less and use the T-type bridge as follows.



5-2. Recommended Ethernet Switch

We have confirmed that the following Ethernet switches work without problems on the Sony routing switcher system. However, you have to disable the spanning tree function of the Ethernet switch.

Manufacturer	Series or Model
Cisco Systems	Catalyst 2950 Series
	Catalyst 2960 Series

When connecting the Sony routing switcher system to Ethernet, if a certain Ethernet switch is used, the routing switcher system may not function as intended. As a concrete example of this trouble, when the back-up CPU board changes over the dual main CPU board of routing switcher, the control fails momentarily or the response becomes slow. This is due to the following cause. To prevent the data from circulating eternally in the loop formed network, the high functioning Ethernet switch performs the spanning tree control. When using the Ethernet switch on which this function is functioning, the retarded data arrival between the routing switcher system equipment and PCs is confirmed. To deal with such a situation, use either the Ethernet switch having no spanning tree function or turn off the function using the Ethernet switch that can disable the spanning tree function.

6. Error Indication

When an error or warning occurs, PFV-SP series and HKSP-R80 operate as follows.

- The output of 4-pin (BOARD ERROR OUT) or 5-pin (BOARD WARNING OUT) of the STATUS OUT connector of the connector panel of the PFV-SP series becomes high impedance (low level in normal operation).
- The STATUS indicator of the PFV-SP series blinks in red (error) or in green (warning).
- The STATUS indicator of the indicator panel of the CPU-355 board blinks in red (error) or in green (warning).
- The error code and error symbol are displayed on the STATUS indicator of the indicator panel of the CPU-355 board alternately.

The error code and error symbol are shown in the table below.
For details on the remedies for the errors, refer to the maintenance manual.
If two or more errors occur at the same time, only the error code that is detected first is displayed. In order to display the second error, either remove the cause of the first error or clear the display by setting the rotary switch (S804) on the CPU-355 board to "5" position.

When there is no error, "R80" is displayed on the status indicator. On similar occasions, when the BZR-IF810 is installed in the HKSP-R80, "810" is displayed. (The STATUS indicator lights in green.)

Note

For the error message displayed on the personal computer (terminal emulator) connected to the REMOTE3 connector or DATA connector, refer to the system setup manual supplied with the HKSP-R80.

Error code

Error code	Error symbol	Description
E.27	SBUS	Connection error of S-BUS
E.50	BT	Error of lithium battery (BT501) for backup
E.80	MEM	Error of the checksum of ROM (IC602 to IC605) or writing error of RAM (IC503 to IC506) **Note** When restarting the HKSP-R80 after rewriting the application software, this error code is displayed. However, it does not indicate abnormal state.
E.FE	PG	System does not start for a reason that the program is not downloaded correctly.
E.FF	CN	Connector board is not installed in the correct slot or no connector board is installed in the slot.

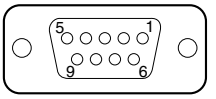
Warning code

Error code	Error symbol	Description
W.60	REF	Although S803-1 is set to OFF (SYNC), no reference signal is input.
(Not displayed)		Although the CPU-355 board for backup is installed, system does not start.

7. Input and Output Signals of Connectors

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

REMOTE2 A/B : RS-422A (D-sub 9-pin, Female)

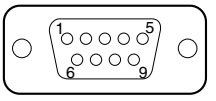


– EXT VIEW –

Pin No.	Signal name	Input/Output	Function
1	FG	–	Frame ground
2	TX (–)	O	Transmitted data (–)
3	RX (+)	I	Received data (+)
4	GND	–	Common ground
5	–	–	No connection
6	GND	–	Common ground
7	TX (+)	O	Transmitted data (+)
8	RX (–)	I	Received data (–)
9	–	–	No connection

The frame ground and the common ground are connected internally inside the system.

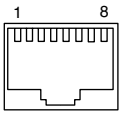
REMOTE3 : RS-232C (D-sub 9-pin, Male)



– EXT VIEW –

Pin No.	Signal name	Input/Output	Function
1	DCD	I	Date carrier detect
2	RX	I	Received data
3	TX	O	Transmitted data
4	DTR	O	Data terminal ready
5	GND	–	Signal ground
6	DSR	I	Date set ready
7	RTS	O	Request to send
8	CTS	I	Clear to send
9	–	–	No connection

DATA :
10BASE-T/100BASE-TX (RJ-45 8-pin Modular jack)



– EXT VIEW –

Pin No.	Signal name	Input/Output	Function
1	TDB	O	Transmitted data B
2	TDA	O	Transmitted data A
3	RDB	I	Received data B
4	BI_D3+	–	(∗1)
5	BI_D3–	–	(∗1)
6	RDA	I	Received data A
7	BI_D4+	–	(∗1)
8	BI_D4–	–	(∗1)

∗1 : This signal line is not used in this system. It is connected to the termination circuit inside the system.

8. About Supplied Software BZR-IF810

8-1. Outline

The S-BUS subnet controller software BZR-IF810 is software installed on the routing switcher controller HKSP-R80 to construct an S-BUS subnet. The HKSP-R80 on which the BZR-IF810 is installed is referred to as an S-BUS subnet controller in this manual.

8-1-1. Features

BZR-IF810 enables you to increase the number of units to be controlled in an S-BUS network and at the same time to reduce the response time by decreasing the apparent number of units to be controlled from the primary station. It also offers functions to separate communication using subnets.

Increasing the number of units controllable in an S-BUS network

An S-BUS network can include up to 253 subnets, each of which up to 253 units can be connected to.

Note

If all stations, ID number 2 to 254, are extended, some 60,000 units can be controlled at a time. The time for setting up a system increases as the number of units to be controlled increases.

Flexible and reliable distributed processing environment

The BZR-20 enables you to back up and restore setting data for each subnet. It is also possible to have the bus protection of the primary station and subnets in common. When HKSP-R80 and HKSP-R81 with BZR-IF810 installed are used, tandem operations are available.

Integrated setting and data management for a whole system

The BZR-2000 (optional) allows you to make settings for all the units and back up the setting data at a time. Distributed processing and integrated processing are used as follows:

- Setting of the units in a subnet from the subnet terminal
- Setting of the whole network from the system terminal

Note

If system setup is performed with the BZR-2000 of version earlier than V1.40, only the remote panel and the UMD (Under Monitor Display) can be used for extension.

Improving the response time for operation and display

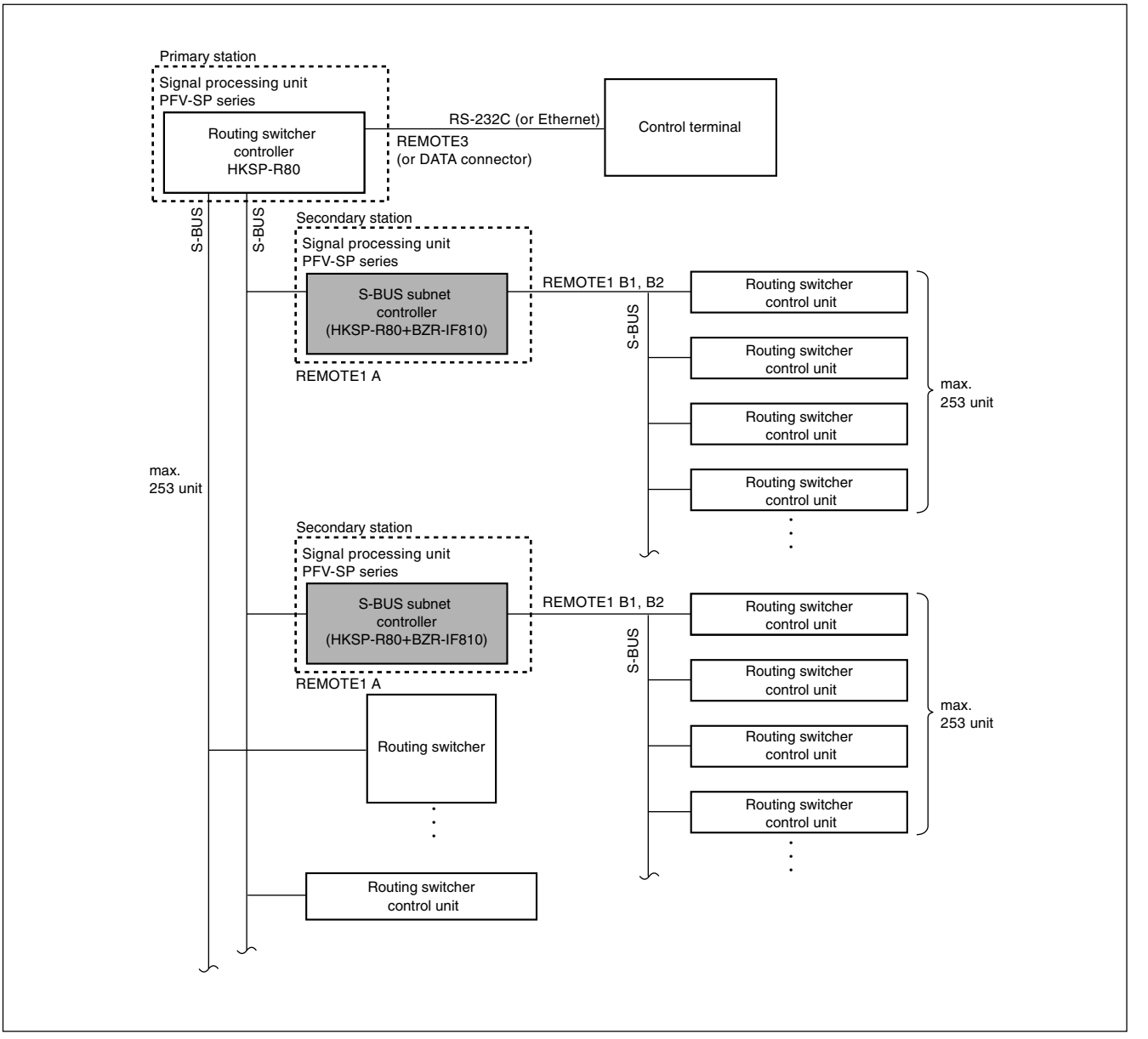
Response time for tally data sent to the UMD is improved by distributing the communication load.

8-1-2. System Connection

Two possible systems using an S-BUS subnet controller are introduced here.
One is to extend the number of units to be controlled. Another is to separate the system for each subnet to use the subnets in separate studios. If the system is separated into subnet systems, effects of updating a program, disconnecting units, operation errors, etc. are limited to only the affected subnet within the subnet system.

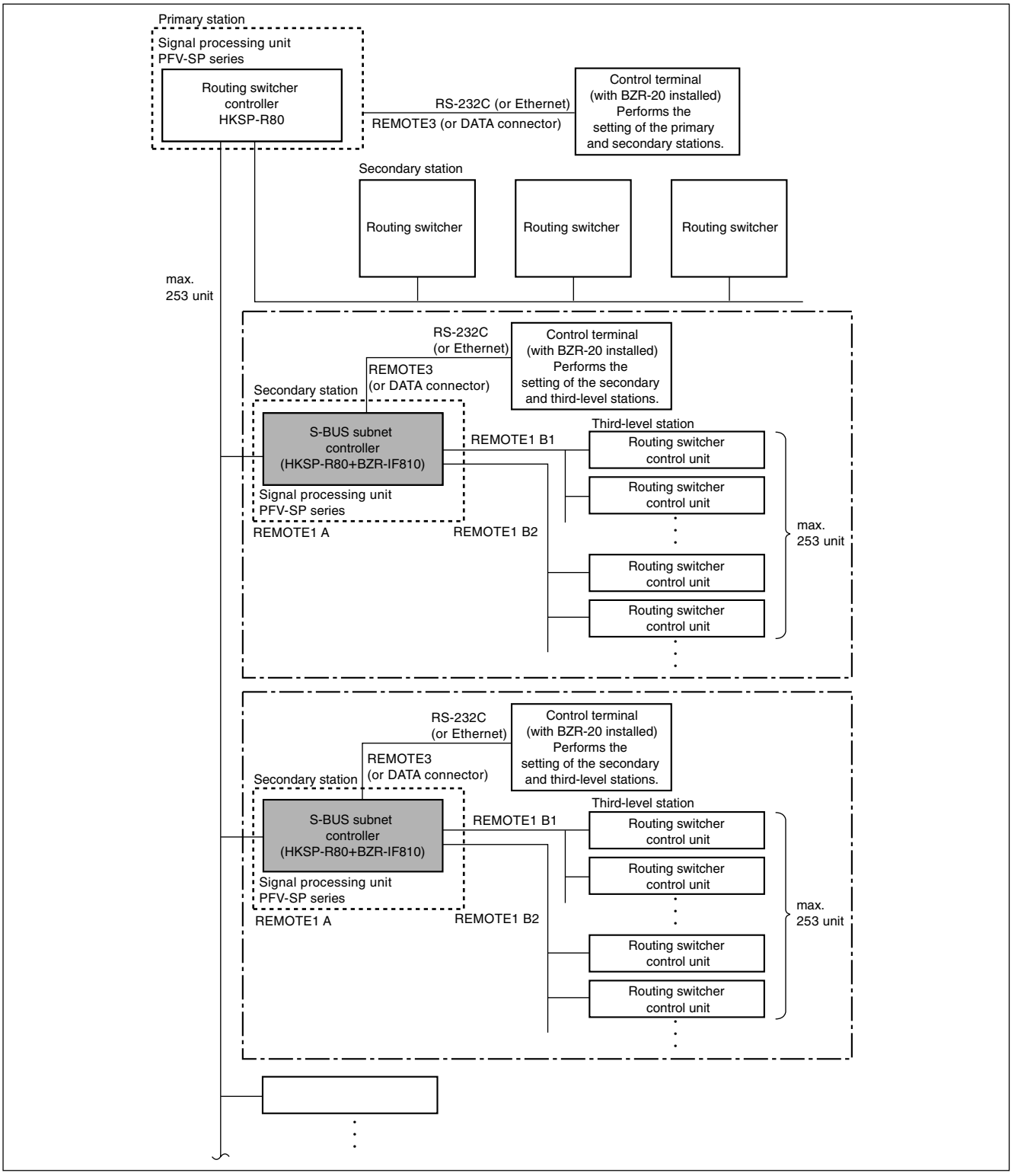
System to extend the number of units connectable

System setup is performed for a system including routing switcher control units connected to the S-BUS subnet controller (the secondary station) with a control terminal connected to the primary station's HKSP-R80.



System separated into subnets

Settings for the third-level units are made from a control terminal connected via the REMOTE3 or DATA connector of the S-BUS subnet controller on the secondary station. The REMOTE3 connector or DATA connector of the S-BUS subnet controller (secondary station) can back up and restore the setting data of the third-level station using the BZR-20 (supplied). The control terminal connected to the S-BUS subnet controller cannot be used to change the settings for the whole system or for a third-level station connected to another S-BUS subnet controller of the secondary station. So the functions are securely limited to each subnet.



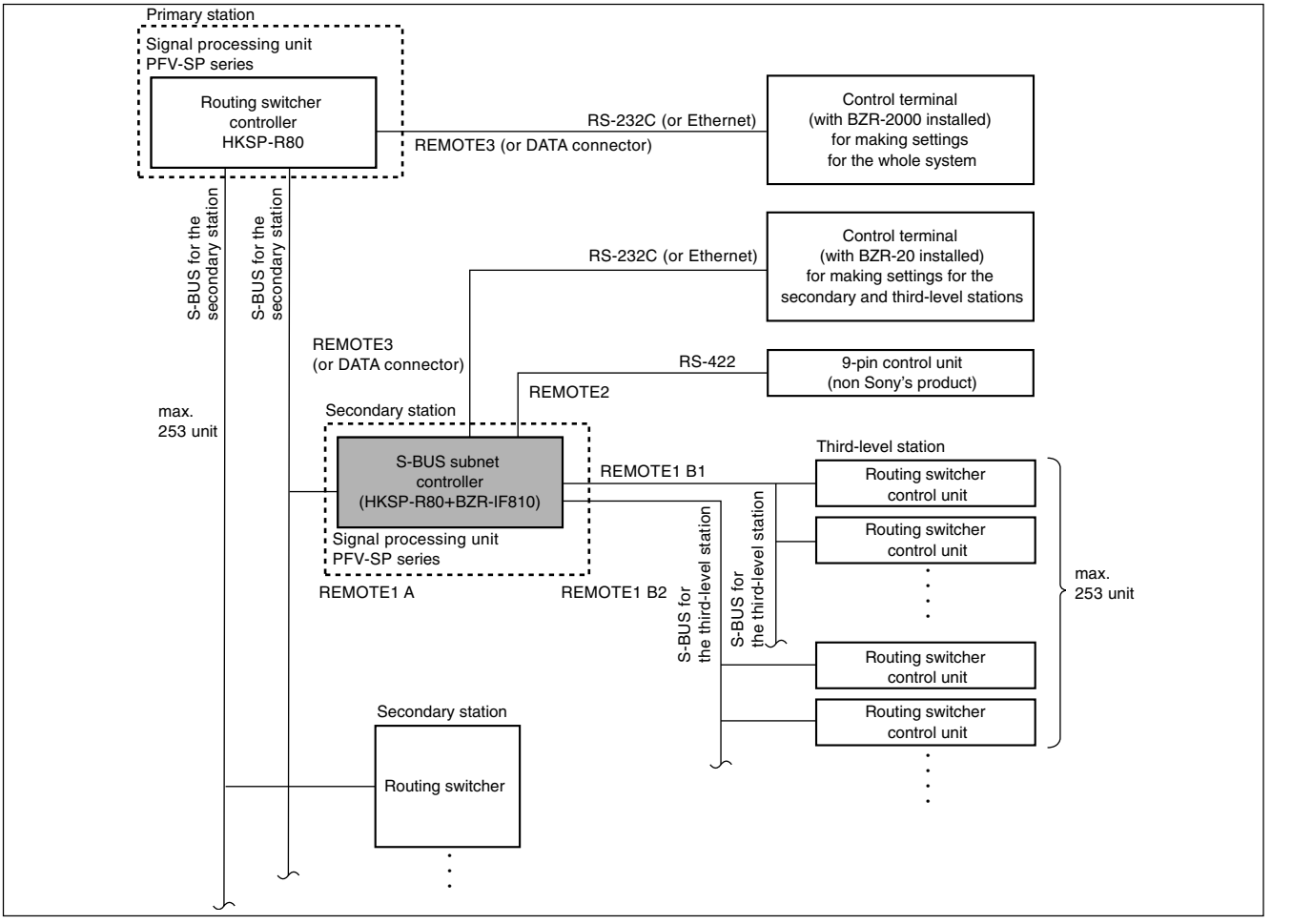
8-1-3. Change of HKSP-R80 Function

When the BZR-IF810 is installed, the HKSP-R80 functions as an S-bus subnet controller as described below.

Function (S-BUS subnet controller)

If BZR-IF810 is installed on a HKSP-R80, it functions as the secondary station, and the functions of the REMOTE1 A and B connectors are separated. The REMOTE1 A connector is for connection with the primary station, and the REMOTE1 B1 and B2 connectors are for connection with the third-level stations. The figure shows one S-BUS data link constructed with the devices connected via the REMOTE1 connector of the primary station's HKSP-R80, and settings are made from the control terminal connected via the REMOTE3 or DATA connector. The third-level station's units are connected via the REMOTE1 B1 and B2 connectors of the HKSP-R80 (with BZR-IF810 installed) that is connected as a secondary station to this data link, which forms another S-BUS data link. The settings for this data link are made from the control terminal connected via the REMOTE3 or DATA connector of the secondary station's HKSP-R80.
The REMOTE2 connector accepts the 9-pin remote protocol (CART++ protocol), which is translated to S-BUS commands and output from the REMOTE1 connectors.
The computer connected to the REMOTE3 or DATA connector is able to back up the setup data, restore the setting and download the program using the BZR-20 (supplied).

The bus protection for the units connected to the S-BUS data link of the primary station can be used with all of the control units in the system as common data so that the bus protection set on the third-level stations will be in effect for the whole system.



Connector Functions

REMOTE1 connector (S-BUS)

The A connector is for the S-BUS data link for the primary station, and the B1 and B2 connectors are for connecting the third-level stations.

REMOTE2 connector (RS-422A)

The input control commands are translated to S-BUS protocol to switch signals on the routing switcher on the S-BUS data link.

REMOTE3 connector (RS-232C)

The REMOTE3 connector is connected with the RS-232C port of the PC, then one of the following three functions becomes available.

- Control terminal for setup of the third-level station
- Backup and restore of the third-level station's setup data using BZR-20
- Download of program (The downloaded program is written in the flash memory.)

DATA connector (Ethernet)

The DATA connector is connected to the Ethernet connector of PC via the Ethernet hub, then one of the following three functions becomes available.

- Control terminal for setup of the third-level station
- Backup and restore of the third-level station's setup data using BZR-20
- Download of program (The downloaded program is written in the flash memory.)

Switches on the board

Only the following settings are enabled for the switches on the CPU-355 board. For the details of each switch, refer to "3. Name and Function of Switch and Indicator".

S801 (A-3): Station ID/Unit ID setting switch

S802 (A-2)

- BIT4: Unit ID/IP setting method selector switch
- BIT7: REF A/B switch

S803 (A-2)

- BIT1: SYNC/ASYNC selector switch
- BIT4: Table data size selector switch
- BIT5, BIT6: Baud rate selector switches
- BIT8: A2 channel valid/invalid switch

8-2. Installation of BZR-IF810

Notes

- Before starting installation/upgrade, be sure to open the Readme files in the CD-ROM supplied with this unit and read it with care.
- Be sure to install the program into the board in the main slot. When this unit is used in the redundant configuration, remove the board from the backup slot.

Software installation time

Connection method	Transfer time	Writing time between flash memories	Total time
Ethernet (DATA connector)	Approx. 30 sec.	Approx. 80 sec.	Approx. 110 sec. (Approx. 2 min.)
RS-232C (REMOTE3 connector)	Approx. 2300 sec.	Approx. 80 sec.	Approx. 2380 sec. (Approx. 40 min.)

Preparations

About Terminal Emulator

For downloading a program or setting up the system, a terminal emulator is necessary.

A terminal is a device to display the character codes sent, and a terminal emulator is software to perform the operations of a terminal device on a computer, controlling the RS-232C and Ethernet (TCP/IP) communication function. For emulation function, VT100 or higher is required.

The terminal emulator program can be downloaded from the on-line network.

After activating the terminal emulator, assignment of the function keys may be changed, and the functions of the keys differ from those displayed on the System Setup menu. Reassign the keys so that the same functions are obtained. For key assignment, refer to the operation manual for the downloaded program. For details, refer to "2-2. Preparations" in the system setup manual.

1. Turn off the power of the PFV-SP series and disconnect all the cables connected to other devices from the rear connector of this unit.
2. Set S803-3 to ON.

   Note

   Switches other than S803-3 are not reflected on the setting.

3. Connect this unit with the PC.
   When connecting using Ethernet:
   Connect the hub for LAN with the DATA connector using a specified cable.
   When connecting using RS-232C:
   Connect the PC with REMOTE3 connector using the RS-232C cable.

Installation

1. Turn on the power of the PC.
2. Copy all of the program data to the PC.
3. When this unit is used in the redundant configuration, remove the backup CPU.
4. Turn on the power of the PFV-SP series.
5. Start the terminal software of the PC.
6. Set the communication conditions of the PC.
   When DATA connector is used for connection:
   Set the TCP/IP for the terminal software the same as the IP address of this unit and set the port number to 1001.
   Note
   When connecting the PC with this unit using Ethernet, set the high-order 1st byte to 3rd byte of the IP address of the PC to the address same as the IP address of this unit.

   When REMOTE3 connector is used for connection:

Baud rate	38400 bps
Data bit	8 bits
Parity	None
Stop bit	1 bit
Flow control	None

7. Send the program data to this unit from the terminal software.
   Note
   Check that the codes in hexadecimal are displayed in sequence on the status indicator of the indicator panel of the CPU-355 board during data transmission.
8. After completion of transmission, the data is written in the flash memory and the CPU-355 board is automatically reset.
   Note
   If the hardware reset is activated or the power is shutdown while data is being written to flash memory, the program downloading is ended in failure. If the CPU-355 board fails to start up for this reason, contact your local Sony Sales Office/Service Center.
9. Terminate the terminal software.
10. When connecting with the DATA connector, initialize the information on the PC network.
    Note
    When connecting with REMOTE3 connector, initialization is not required.

    Initialization procedure
    (1) Display the MS-DOS prompt or command prompt screen.
    (2) Enter the following command from the command line.
    "arp ␣-d ␣XXX.XXX.X.XXX"
    (Enter the IP address set to this unit to the XXX.XXX.X.XXX portion. "␣" indicates a space.)
    (3) Press the Enter key.

11. Repeat the steps from 5 to 9 and send all of the program data to this unit.

Proceed to step 12 and the subsequent steps when this system is used in the redundant configuration.

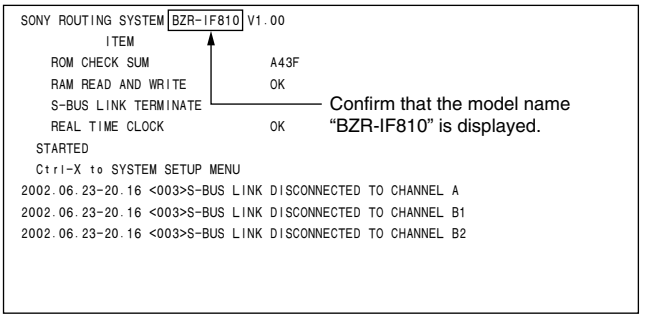
12. Turn off the power of the PFV-SP series.
13. Remove the main CPU and install the backup CPU in the main slot.
14. Turn on the power of the PFV-SP series.
15. Repeat steps 5 to 11 and install the BZR-IF810 in the backup CPU.
16. Turn off the power of the PFV-SP series.
17. Remove the backup CPU from the main slot and install it in the backup slot.
18. Install the main CPU in the main slot.

Confirmation after Installation

The following procedure assumes that this unit is connected to a PC using the RS-232C.

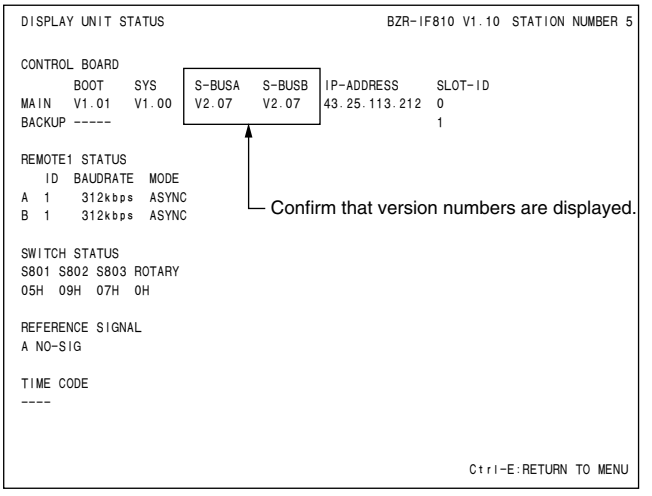
1. Set the switch S803-3 on the CPU-355 board to the ON position.
2. Connect a PC to the REMOTE3 connector using the RS-232C cable.
3. Make sure that the communication conditions of the PC as follows:
   38.4 kbps, 8 bits, no parity, no check

4. Turn the power off and back on. Check that the system status screen appears on the display.
   Check also that “BZR-IF810” is displayed in the top line as the model name.



Example of system status screen

5. Check that the version numbers are displayed at the following portion on the V: DISPLAY UNIT STATUS menu of the system setup menu.



Example of menu screen

Note

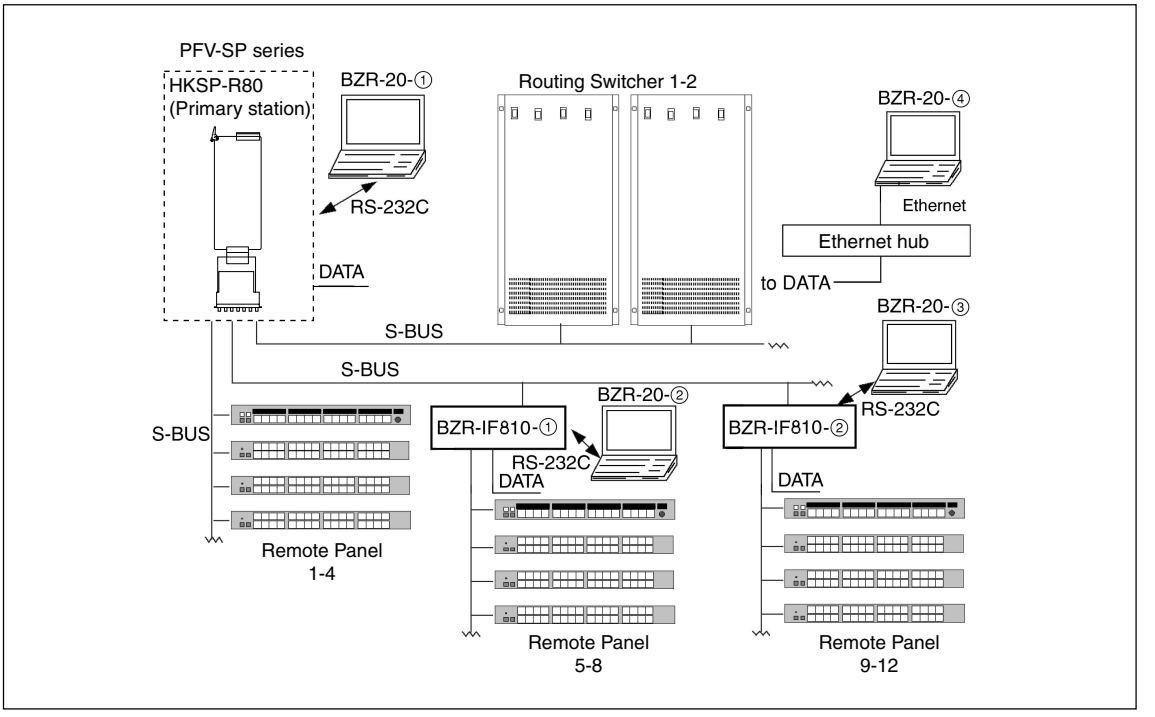
If “BZR-IF810” is not displayed or the version number is not displayed, refer to “11. Troubleshooting” of this manual and take appropriate action.

9. Backup of Setup Data

The table data that are set from the personal computer (to be abbreviated as PC hereafter) are stored in the RAM on the CPU-355 board. Backing up the stored data is recommended in the case of emergency such as data are damaged or lost.
Backing up the stored data is performed using the software BZR-20 supplied with the HKSP-R80.

9-1. Connection

Connect the equipment as shown below for uploading and downloading the stored data.



Method of connecting each BZR-20 that is shown in the illustration, and the stored data that can be uploaded and/or downloaded are described below.

BZR-20	Connection	Connection method	Setup data that can be uploaded/downloaded
BZR-20-①	REMOTE3 connector of the HKSP-R80 and a PC	RS-232C crossover cable (9-pin to 9-pin)	The various setup data of the primary station (HKSP-R80), the Routing Switchers 1 to 2, the Remote Panels 1 to 4, and the BZR-IF810-① to ②
BZR-20-②	BZR-IF810-① and a PC	RS-232C crossover cable (9-pin to 9-pin)	The various setup data of the Remote Panels 5 to 8, and the BZR-IF810-①
BZR-20-③	BZR-IF810-② and a PC	RS-232C crossover cable (9-pin to 9-pin)	The various setup data of the Remote Panels 9 to 12, and the BZR-IF810-②
BZR-20-④	DATA connector of the primary station (HKSP-R80) and the BZR-IF810-① to ②	Ethernet	The various setup data of the primary station (HKSP-R80), the Routing Switchers 1 to 2, the Remote Panels 1 to 4, and a PC and the BZR-IF810-① to ② The various setup data of the Remote Panels 5 to 8 and 9 to 12.

9-2. Installing BZR-20/BZR-25

BZR-20/BZR-25 can be used in the IBM PC/AT compatible PC in which the Windows 2000 Professional or Windows XP Professional or Windows Vista Business of the Microsoft company is installed.

Operating environment

Hardware:	IBM PC/AT compatible PC in which the Windows 2000 Professional or Windows XP Professional or Windows Vista Business is installed
CPU:	Operating clock 300 MHz or higher
Main memory:	128 MB or more
Hard disk empty space:	10 MB or more
Display:	Resolution of 800 × 600 dots or more
Serial I/F:	RS-232C or Ethernet (BZR-20) Ethernet with 10BASE-T or faster transmission speed (BZR-25)

Procedure

1. Insert the supplied CR-ROM into CD-ROM drive of the PC.
2. Copy all of the programs in the \BZR-20 or \BZR-25 folder in the CD-ROM to any folder in the hard disk.

   Note (BZR-20 only)

   When creating a new folder, be sure to use only alphanumeric characters.
   The folder name using any characters other than alphanumeric characters will be corrupted.

3. Upon completion of copying, double-click the “setup.exe” icon.
4. Installation program starts up. Perform installation following the instructions on screen.

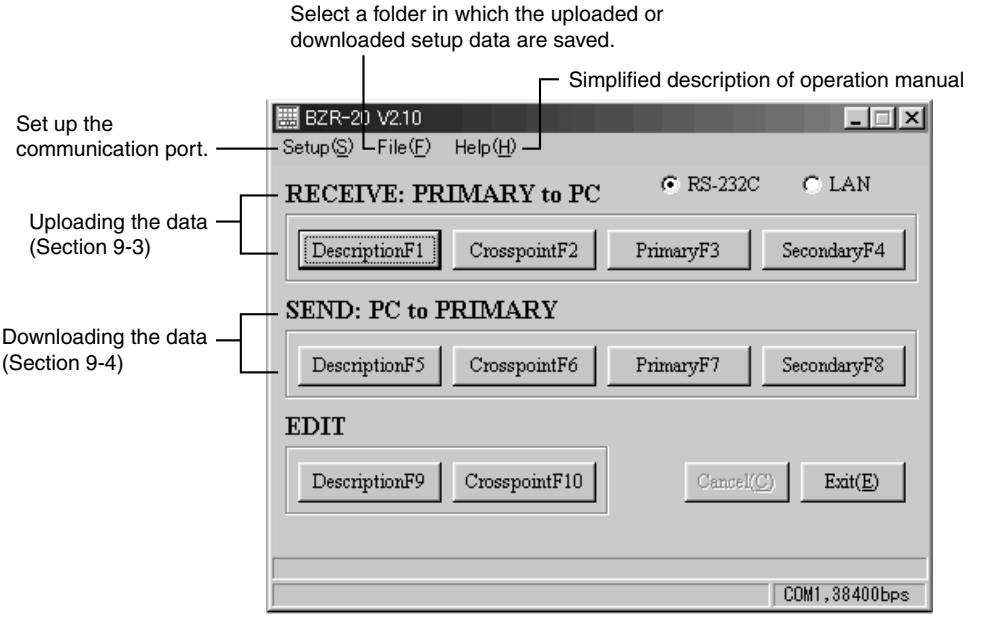
   Note

   The copied files are not needed after installation. The files can be deleted.

9-3. Uploading the Data

Upload the various setup data of the system equipment from primary stations to a PC.

1. Install the BZR-20 software. (Refer to Section 9-2.)
2. Turn on the power of all the equipment on the S-BUS data link.
3. Connect the PC to the REMOTE3 connector or the DATA connector of the HKSP-R80 (or connect the PC to each equipment). (Refer to Section 9-1.)
4. Turn on the power of the PC.
5. Click the BZR-20 icon to start up the BZR-20 software. The following menu appears.



6. Select a desired folder (any folder in the hard disk or FD drive) in which the uploaded setup data are saved, from the File (F) menu of the menu bar. Press [OK].

   Note

   You cannot create a new folder at this step.
7. Select the desired button from "RECEIVE: PRIMARY to PC" column that suits to the contents of the uploaded data and press the button.

   DescriptionF1 : It uploads the names of the total 2048 connectors of the SOURCE (input) and DESTINATION (output) that are assigned to the primary station.

   CrosspointF2 : It uploads the latest cross-point status data (1024 sources and 1024 destinations, level: 8) that are saved in the primary station.

   PrimaryF3 : It uploads the setup data that are saved in the primary station. (The data as the secondary station that are stored in the primary station are uploaded at the same time.)

   Note

   When uploading the setup data that are stored in the primary station, name of the connecter and the cross-point data are not included.

   SecondaryF4 : It uploads the setup data of the equipment that is connected to the S-BUS remote.

   Press Cancel (C) to stop uploading.
8. When uploading is completed, press Exit (E) and close the BZR-20 window.

9-4. Downloading the Data

Downloads the various setup data that are saved in a PC, to the system equipment through primary station.

1. Install the BZR-20 software. (Refer to Section 9-2.)
2. Connect the PC to the HKSP-R80 (or connect the PC to each equipment) and start up the BZR-20 software. (Refer to Section 9-3, steps 2 to 5.)
3. Select a desired folder (the folder in the hard disk or FD drive) in which the setup data are saved, from the File (F) menu of the menu bar. Press [OK].

   Note

   You cannot create a new folder at this step.
4. Select the desired button from "SEND: PC to PRIMARY" column that suits to the contents of the downloaded data and press the button.

   DescriptionF5 : It downloads the names of the total 2048 connectors of the SOURCE (input) and DESTINATION (output) that are stored in the PC.

   CrosspointF6 : It downloads the latest cross-point status data (1024 sources and 1024 destinations, level: 8) that are saved in the PC.

   PrimaryF7 : It returns the setup data of the primary station to the original state. (The data as the secondary station that are stored in the primary station are also returned to the original state.)

   Note

   The name of the connector and the cross-point data are not downloaded.

   SecondaryF8 : It downloads the setup data of the secondary equipment that is connected to the S-BUS remote. Either all of the setup data that are stored in the specified folder, or any single specified secondary station can be selected for downloading.

   Press Cancel (C) to stop downloading.
5. When downloading is completed, press Exit (E) and close the BZR-20 window.

Note

In the case that the BZR-20 is connected to the S-BUS subnet controller (Refer to Section 8.), the primary station indicates the S-BUS subnet controller and the secondary station indicates the third-level station connected to the S-BUS subnet controller in the above description.

10. Lithium Battery

A lithium battery is mounted on the CPU-355 board for backing up RAM and for driving internal watch while the power is turned off.
Replace the battery before the replacement time shown below comes. (For details on the procedures for replacement, refer to the maintenance manual.)

Status of usage of this machine	Replacement time
The battery has never been replaced since purchase of this machine.	Non power-on period of this machine is shorter than approx. 3 years . (Because consumption of battery has started already at the time of purchase of this machine.)
The battery is replaced by the new battery last time.	Non power-on period of this machine is approx. 3 years.
This machine has been used with always power-on.	Period of usage of this machine is shorter than 5 years. (Because the battery life is 5 years and the consumption of the battery has already started at the time of purchase of this machine.)

The table data that are set using the control terminal is stored in RAM on the CPU-355 board. Before replacing the lithium battery, back up the settings using the BZR-20 backup software. (Refer to Section 9.)

11. Troubleshooting

Failed to download the program data.

Condition : The hardware is reset (i.e. the RESET button is pressed) or the power is off while writing data into flash ROM.

Countermeasure :
- When failure occurred when downloading the S-BUS driver software :
  The IF-844 board or IF-1160 board module should be replaced. Contact your local Sony Sales Office/Service Center.
- When failure occurred when downloading the application program:
  Set the switch S804 on the CPU-355 board to "F" and press the switch S1201. Then download the application program through Ethernet again.

Connection is suddenly lost while the terminal is being set up using Ethernet.

Cause : If no key entry is made for a certain period of time (default setting is 10 minutes), the HKSP-R80 detects a timeout and the connection is stopped from the HKSP-R80 side automatically.

Countermeasure : Set the timeout time to an appropriate value by referring to "4. Setting Network Connection (IP Address)".

Note

If the timeout time is set to 0, it means the timeout time is infinite. When the timeout is set to 0 and you quit HKSP-R80 without shutting down the connection between the PC and HKSP-R80 that has already been connected before using Ethernet, the corresponding port is left open and cannot be closed except by a hardware reset.

Backup CPU board is started but cannot be connected to the PC via Ethernet.

Cause : A mismatch of information occurred between the backup board and the PC network when the CPU-355 board is switched over between the main CPU-355 board and the backup board.

Countermeasure : Initialize the information regarding the PC network as described in the following procedure.

Initialization procedure

(1) Display the MS-DOS prompt or command prompt screen.
(2) Enter the following command from the command line.
"arp ␣-d ␣XXX.XXX.X.XXX"
(Enter the IP address set to this unit to the XXX.XXX.X.XXX portion. "␣" indicates a space.)
(3) Press the Enter.

System status screen is not displayed when the power is turned on.

Countermeasure :
- Check whether the unit is correctly connected by the cable to the PC.
- Check that the switch S803-3 on the CPU-355 board is set to ON.
- Check the communication conditions by referring to Section 8-2.
- Reinstall the program data correctly again by referring to Section 8-2.

Version number of the software is not correctly displayed in the V:DISPLAY UNIT STATUS menu or the message "FAIL" appears.

Countermeasure : Check that the program data is correctly installed by referring to Section 8-2.
If the version number of the software is not correctly displayed even though the program data is correctly installed, a component must be replaced. Contact your local Sony Sales Office/Service Center.

12. Specifications

General

Performance guaranteed temperature	+10 ˚C to +35 ˚C
Function guaranteed temperature	+5 ˚C to +40 ˚C
Operating humidity	10% to 90% (Non-condensing)
Maximum outer dimensions (Width × height × depth)	Main board: 388.3 × 112.2 × 18 mm Connector board: 152.5 × 130 × 38 mm
Mass	Main board: (Common between HKSP-R80/R81) Approx. 500 g Connector board: (Only for HKSP-R80) Approx. 400 g
Power requirements	+12 V dc
Power consumption	1.0 A (HKSP-R80) 0.7 A (HKSP-R81)

Input/Output

REMOTE1 (BNC type)

Protocol	S-BUS control
Data transfer system	Bi-Phase Space
Data transfer rate	312.5 kbps/1250 kbps
Signal transmission distance	500 m/125 m (When using the Belden8281 coaxial cable)
Signal level	1.8 ±0.3 V (75 Ω) 1.1 ±0.3 V (75 Ω)

REMOTE2 (D-sub 9 pin, female)

Signal format	Conforms to RS-422
Protocol	CART++
Data transfer rate	38.4 kbps
Data format	Data: 8 bits Parity: None Stop: 1

REMOTE3 (D-sub 9 pin, male)

Signal format	Conforms to RS-232
Data transfer rate	38.4 kbps
Data format	Data: 8 bits Parity: None Stop: 1

REF IN (supplied by PFV-SP series, BNC type)

Input signal	Analog black burst signal or tri-level sync signal
Level	440 mV p-p ± 10% (analog black burst signal) 600 mV p-p ± 10% (tri-level sync signal)

DATA (RJ-45 modular jack type)

Signal format	Conforms to 10BASE-T/100BASE-TX

TIME CODE (BNC type)

Signal format	Conforms to SMPTE/EBU time code
Format	Analog time code signal (LTC) 1 V p-p to 18 V p-p, unbalanced

Design and specifications are subject to change without notice.

HKSP-R80 (SY) J, E
3-620-722-05

Sony Corporation

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