SONY

X-Y CONTROL UNIT

BKS-R3220

OPERATION MANUAL English

1st Edition

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.
To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

VORSICHT

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.
Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

For the customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.
The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

WARNING: THIS WARNING IS APPLICABLE FOR USA ONLY.
If used in USA, use the UL LISTED power cord specified below.
DO NOT USE ANY OTHER POWER CORD.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P Configuration)
Cord	Type SJT, three 16 or 18 AWG wires
Length	Less than 2.5 m (8 ft. 3 in.)
Rating	Minimum 10 A, 125 V

Using this unit at a voltage other than 120V may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

For the customers in Europe

This product with the CE marking complies with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.
Compliance with these directives implies conformity to the following European standards:
• EN60950: Product Safety
• EN55103-1: Electromagnetic Interference (Emission)
• EN55103-2: Electromagnetic Susceptibility (Immunity)
This product is intended for use in the following Electromagnetic Environment(s):
E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors) and E4 (controlled EMC environment, ex. TV studio).

Pour les clients européens

Ce produit portant la marque CE est conforme à la fois à la Directive sur la compatibilité électromagnétique (EMC) (89/336/CEE) et à la Directive sur les basses tensions (73/23/CEE) émises par la Commission de la Communauté Européenne.
La conformité à ces directives implique la conformité aux normes européennes suivantes:
• EN60950: Sécurité des produits
• EN55103-1: Interférences électromagnétiques (émission)
• EN55103-2: Sensibilité électromagnétique (immunité)
Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants:
E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé ex. studio de télévision).

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt sowohl die EMV-Direktive (89/336/EEC) als auch die Direktive Niederspannung (73/23/EEC) der EG-Kommission.
Die Erfüllung dieser Direktiven bedeutet Konformität für die folgenden Europäischen Normen:
• EN60950: Produktsicherheit
• EN55103-1: Elektromagnetische Interferenz (Emission)
• EN55103-2: Elektromagnetische Empfindlichkeit (Immunität)
Dieses Produkt ist für den Einsatz unter folgenden elektromagnetischen Bedingungen ausgelegt:
E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtbereich im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

WARNING

This unit has no power switch.
When installing the unit, incorporate a readily accessible disconnect device in the fixed wiring, or connect the power cord to socket-outlet which must be provided near the unit and easily accessible.
If a fault should occur during operation of the unit, operate the disconnect device to switch the power supply off, or disconnect the power cord.

WARNUNG

Dieses Gerät hat keinen Netzschalter.
Beim Einbau des Geräts ist daher im Festkabel ein leicht zugänglicher Unterbrecher einzufügen, oder das Netzkabel muß mit in der Nähe des Geräts befindlichen, leicht zugänglichen Wandsteckdose verbunden werden.
Wenn während des Betriebs eine Funktionsstörung auftritt, ist der Unterbrecher zu betätigen bzw. das Netzkabel abzuziehen, damit die Stromversorgung zum Gerät unterbrochen wird.

AVERTISSEMENT

Cet appareil n'a pas d'interrupteur d'alimentation.
Quand vous installez l'appareil, branchez un interrupteur d'alimentation facile d'accès sur le câble fixe ou raccordez le cordon d'alimentation à une prise proche de l'appareil et facile d'accès.
En cas de problème en cours d'utilisation, déconnectez l'appareil par l'interrupteur d'alimentation ou débranchez le cordon d'alimentation.

WARNING
THIS APPARATUS MUST BE EARTHED.

WARNUNG
DIESES GERÄT MUSS GEERDET WERDEN.

AVERTISSEMENT
CET APPAREIL DOIT ÊTRE RELIÉ À LA TERRE.

Table of Contents

Overview

The BKS-R3220 X-Y Control Unit switches the signal (called a source) fed to one of the routing switchers that is adapted to the S-BUS remote and connected to the S-BUS data link, and supplies the selected signal to the designated output (called a destination). You may also switch the monitor signals using the BKS-R3220 by connecting it to the monitor S-BUS remote. Source, destination, and monitor switching is performed with the select buttons, whose functions you define with the control terminal connected to the primary station of the S-BUS data link.

Features

Up to 1024 sources and 1024 destinations controllable

The BKS-R3220 selects an input signal (source) and designates the output (destination) using a source name and destination name which have been defined with the control terminal using the type name and a number from 1 to 999, such as VTR999.

Two source selection systems, Type + Number selection system and BPS selection system

You can select a source with either the two systems, the Type + Number selection system or BPS selection system. With the Type + Number selection system, a source is selected by designating a type name and number, and up to 1024 sources are selectable. With the BPS selection system, a source is selected just by pressing a source select button, and up to 16 sources are selectable. The selection system is set on the control terminal in advance.

1024 destinations controllable

The BKS-R3220 can control up to 1024 destinations with a single unit.

Large select buttons

Large select buttons on the front panel are designed for easy operation. They light in different colors, dimly or brightly to show their functions and the currently selected source and level.

Displaying a source or destination name on the buttons

The source or destination name defined with the control terminal can be shown on a key label on a button. You can easily replace the key label so that an updated indication can follow any setting change on the control terminal.

Expanding the number of controllable sources and destinations

You can use a BKS-R3220 and multiple BKS-R3219 Universal Control Units in combination so as to work as one unit to expand the number of sources to be controlled. One switching system can have up to ten sets of combinations like this, and up to 253 control units can be used in one set. The maximum number of control units which can be used in one switching system is also 253.

Controllable up to eight levels[1)]

Up to eight-level control is possible when assigned on the control terminal or with the level select buttons on this unit.

Different sources for levels selectable (break-away function)

You can select and display different sources for levels. This is called the break-away function.

Monitor function to watch the selection for the other destination

When a destination you wish to monitor is set as a monitor destination, the same source as the signal for the monitor destination is automatically obtained when the monitor function is set to ON.

Chop function to switch two sources alternately

Two sources are switched alternately in a specific interval automatically.

Several crosspoints switchable with the touch of a button (phantom function or sarvo function)

When multiple crosspoints have been set as a phantom on the control terminal, all the crosspoints defined with a phantom name can be switched by pressing one button.

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1) Levels

To handle different kinds of signals simultaneously, it is necessary to use a routing switcher for each type of signal and these types are called “levels.”

For example, a recording to be made on a VTR requires the use of five signal levels: video, audio 1, audio 2, time code and remote-control signals.

Connectable with a single cable

The unit can be connected to the S-BUS data link of a digital routing switcher using a single 75-ohm coaxial cable, and can control the switcher.

Status display function

The currently selected source name, destination name and various error messages are displayed in the display window.

Self-diagnosis function

When the power is turned on, the ROM, RAM, and S-BUS data link, are automatically checked as to whether they function correctly. The buttons on the front panel light one after another to show that there is no problem on internal connection.

Operation on 100 V to 240 V AC without voltage selection

The unit can operate on voltage between 100 and 240 V AC without voltage adaptation.

Selection System and Button Functions

The BKS-R3220 can select a source either with the BPS selection system or Type + Number selection system. The system to be used is set on the control terminal in advance or be selected using the BPS/TPN button on the front panel. The functions of the source/destination select buttons differ depending on the system used.

For details on making settings on the control terminal, refer to the installation manual supplied with the routing switcher.

BPS selection system

With the touch of a button, the source and the output destination assigned to the button is selected. When this system is used, source names and destination names should be assigned to the 16 source/destination select buttons on the control terminal in advance.

When the BKS-R3220 is used with BKS-R3219s

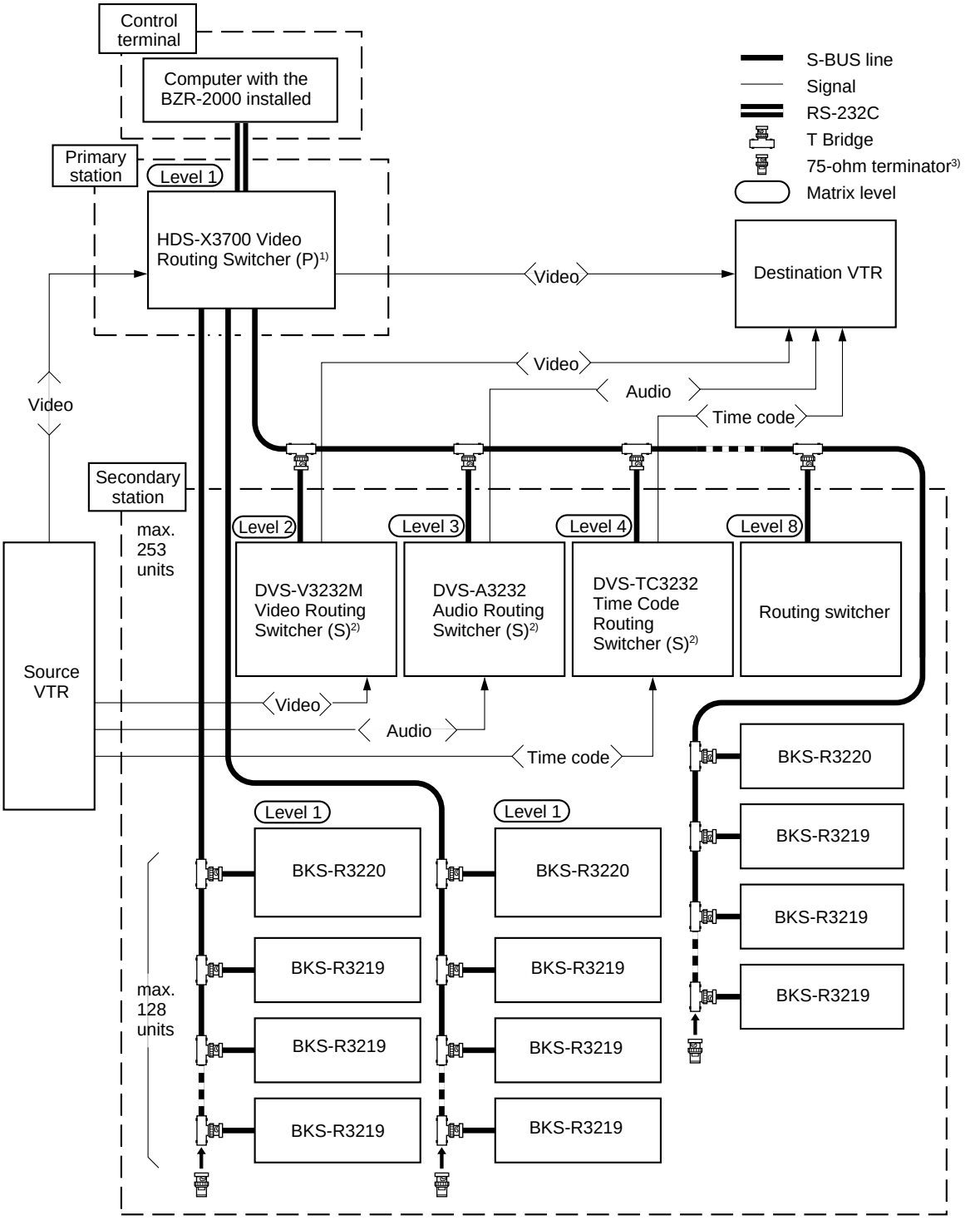
The BKS-R3220 functions as the mother unit and the BKS-R3219s as daughter units. One switching system can have up to ten combinations of the BKS-R3220 and BKS-R3219s, and a maximum of 253 control units can be used in the system.

For details on the setting, refer to the installation manual supplied with the routing switcher.

Type + Number selection system

To select a source, designate a type name such as VTR, FLM, and a number from 001 through 999. On the source/destination select buttons, the type names should be assigned on the control terminal in advance. With this system, the BKS-R3220 functions as a 1024-source/1024-destination selector. The destinations and sources which can be controlled with the BKS-R3220 can be limited on the control terminal when required.

System Connection Example



Only one of the REMOTE 1 connectors on a routing switcher used as a secondary station will be active.
1) (P): The P/S select switch on the CPU board of the routing switcher is set to P.
2) (S): The P/S select switch on the CPU board of the routing switcher is set to S.
3) Connect 75-ohm terminators to the T-bridge connected to the last unit of the S-BUS data link and to the unused REMOTE 1 connectors.

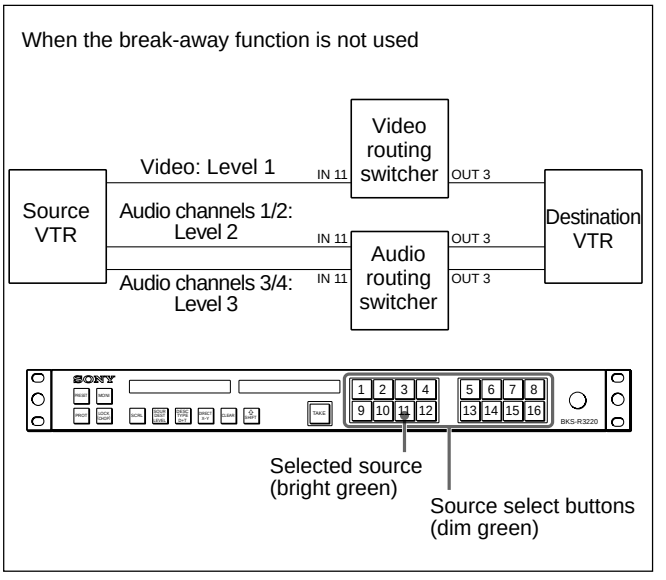
Break-away Function

Different sources can be switched for levels. This is called the break-away function.
When the break-away function is used, the display of the source/destination select buttons is different from that when this function is not used.
Display examples are shown below.

When the break-away function is not used

A single source is used for all the levels to be controlled.

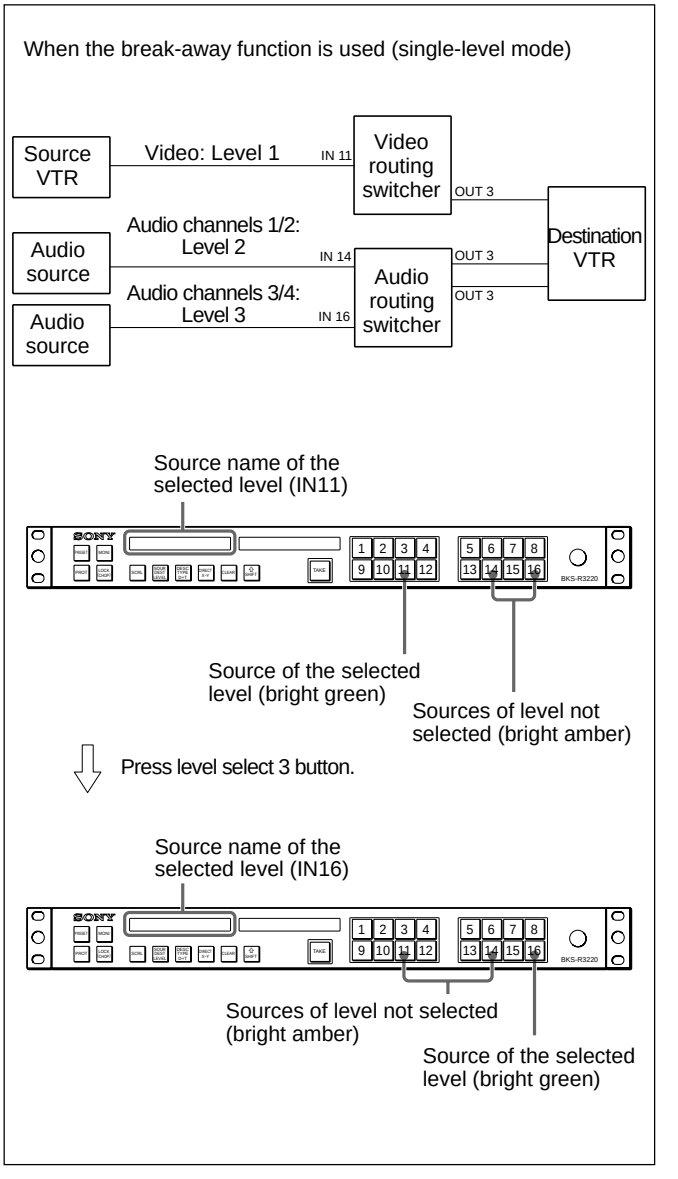
Level	Source	Destination
LEVEL 1	IN 11	OUT 3
LEVEL 2	IN 11	OUT 3
LEVEL 3	IN 11	OUT 3



When the break-away function is used

Different sources are used for each level.

Level	Source	Destination
LEVEL 1	IN 11	OUT 3
LEVEL 2	IN 14	OUT 3
LEVEL 3	IN 16	OUT 3



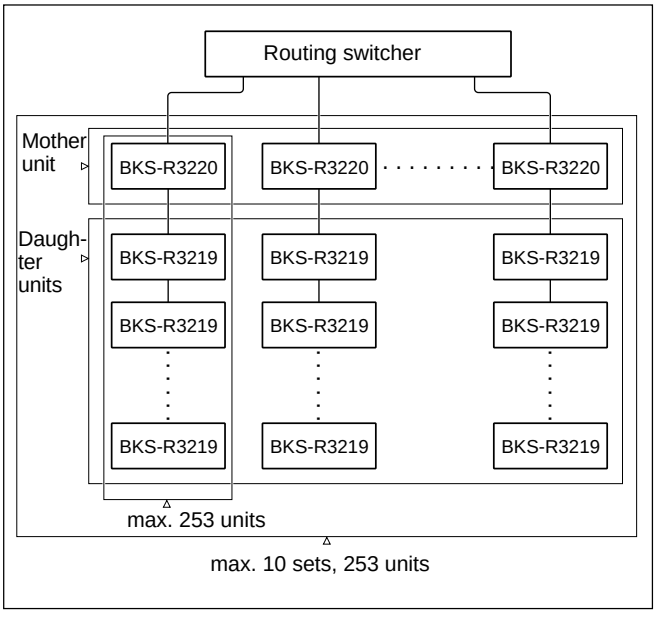
Hint

You can confirm the SOURCE name for each broken-away level in the status and preset display window by pressing the SCRL button.

Use of Multiple Control Units

When you control the routing switcher using the BKS-R3220, the number of controllable sources and destinations can be expanded by using one BKS-R3220 and multiple BKS-R3219 units in combination. One switching system can have up to ten sets of multiple control units, and in one set, up to 253 control units can be used. The total number of control units used in ten sets within one switching system is also 253.
When using multiple control units in combination, one is to be set as the mother unit and the others as daughters on the control terminal. In one combination, only one unit can be used as the mother unit.

For details on setting a unit as the mother unit or a daughter unit, refer to the installation manual supplied with the routing switcher.

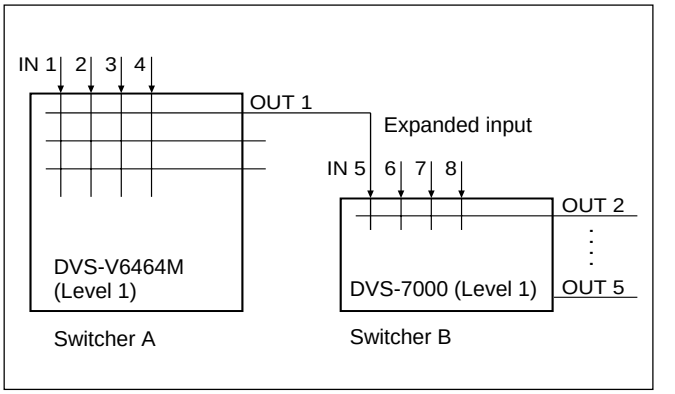


Route Function

When you use a switcher B having no cascade function such as a DVS-7000 and expand the number of sources by connecting another switcher A, the source name of switcher B is displayed as a selected source, and not the source name selected on switcher A. To display the actually selected source name, you must set the route function with the control terminal. Then when you select the crosspoint set on the route function, the source on switcher A is searched for, and the name is displayed. For example, when a crosspoint is switched on switcher A in the figure below, normally IN5 appears as the source name. If the route function has been set, the source name selected on switcher A appears.
To activate the route function, set the destination of switcher A, destination and source of switcher B, and level. In the case of the figure below, set "OUT1:OUT2 <IN5 10000000."
When you use the route function, switching is possible with simple settings. For example, if you select a source (IN1) for a destination (OUT1) on switcher A, the crosspoint on switcher B (IN5-OUT2) is automatically switched.
However, when you select a source (IN1) for a destination (OUT2) on switcher A, you have to set a phantom including IN1-OUT1 and IN5-OUT2 previously. Then IN1-OUT2 is displayed if the route has been set.
For details on setting the route function, refer to the installation manual supplied with the routing switcher.

Destination offset route

The destination offset route sets the destination to a substitute parameter such as "(DST + *)," where "*" is an offset value of the connector number of the destination. "DST" is automatically substituted with the destination selected with this unit. This function makes it possible to use expanded input for multiple destinations.



Phantom Function

This control unit has three phantom functions; global phantom, local phantom, and destination offset local phantom. The phantom functions have the following features.

Global phantom

The global phantom allows you to switch up to 2,800 crosspoints by pressing a single button. This function may be used to switch crosspoints defined for a phantom name with two or more control units.

Note

The global phantom is set on the primary station, so the route function does not work in combination with it. To activate the route display function in conjunction with the global phantom function, all crosspoints to be switched must be set on the phantom.

Local phantom

The local phantom allows you to switch multiple crosspoints by pressing a single button, or to switch crosspoints independently from destinations controlled on the unit. Up to 64 crosspoints can be set for a phantom name.

Destination offset local phantom

The destination offset local phantom sets the destination of the local phantom to a substitute parameter such as "(DST + *)," where "*" is an offset value of the connector number of the destination. "DST" is automatically substituted with the connector number of the destination selected when phantom-switching. For example, if the destination is OUT005, the connector number of the destination is 015, and the offset value is 2 (* = 2), the destination 017 is switched.
To execute the destination offset local phantom, first select and check the destination.

Examples of this Phantom are given below.

Example 1
Assign a source (audio source AUD007 for example) of a level to multiple sources of another level (video source IN001 and IN005 for example)

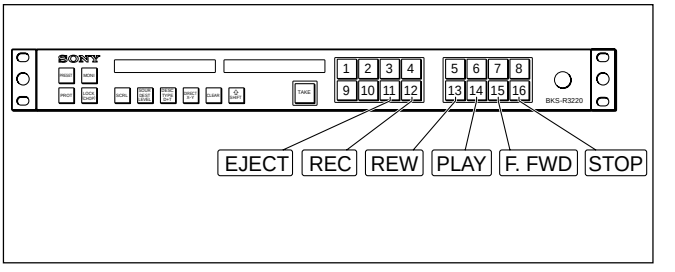
Source name for each level			Setting of destination offset local phantom	
Source name	LEVEL1	LEVEL2		
IN001	IN001	AUD007	IN001: DST+0<IN001	-10000000
			IN001: DST+0<AUD007	-01000000
IN005	IN005	AUD007	IN005: DST+0<IN005	-10000000
			IN005: DST+0<AUD007	-01000000

Example 2
To set a pair of crosspoints (multiple audio channels, video key signal for example)

Setting of Destination Offset Phantom
IN001: DST + 0<IN001-10000000
IN001: DST + 1<IN002-10000000
IN003: DST + 0<IN003-10000000
IN003: DST + 1<IN004-10000000

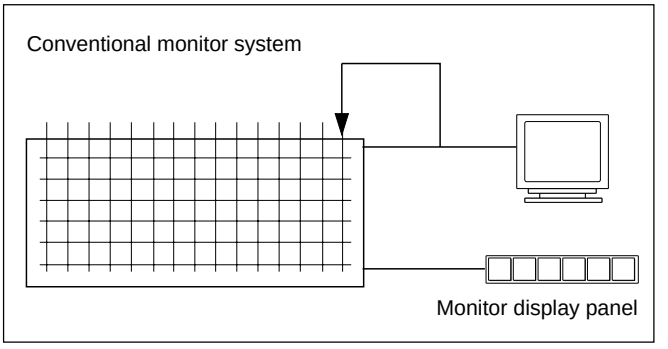
VTR Control

You can assign tape-transport functions (EJECT, STOP, PLAY, REW, F FWD, REC) to source/ destination select buttons and control a VTR from the control panel.

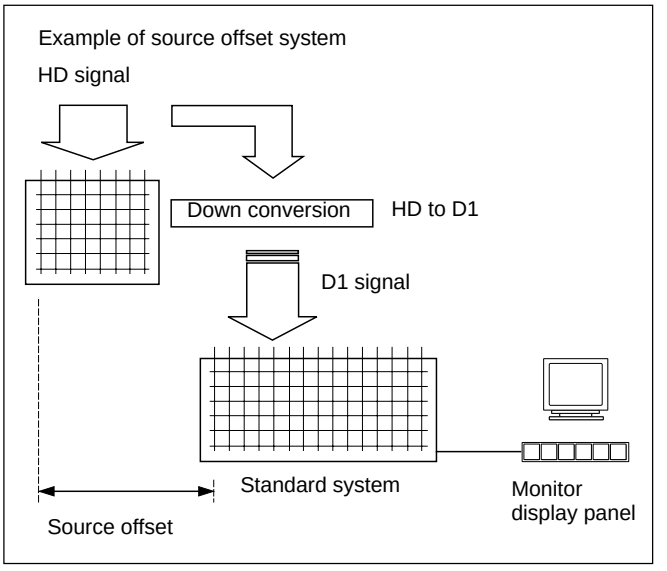


Monitor Function

When the destination to be monitored has been specified on the terminal, the monitor display panel automatically selects the source for that destination when the monitor function is ON.
With the conventional system, the monitor signal is returned to the input, as shown below, to monitor the destination.

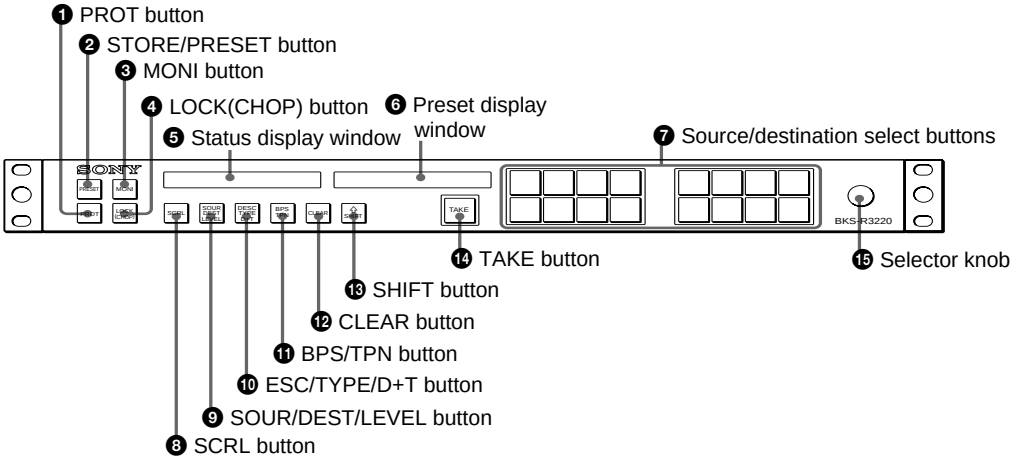


Such a process is not required for the monitor function, which uses no extra crosspoint, and eliminates signal delay in loopback.
An offset can be added to the automatically selected source, which provides various monitoring possibilities (e.g. monitoring an HD source with D1).



Locations and Functions of Parts

Front Panel



❶ PROT (protect) button

This button has two functions; to set and release protection for the output (destination) and to indicate whether the currently selected output is protected or not.

Protection function

When you press this button, the button is lit and the currently selected destination (output) is protected. When a destination is protected, switching of sources for the destination is disabled. When you use multiple control units in combination, the indicators of the PROT buttons on all control units which select the same destination light, and source switching is disabled.

Protection indication function

When the currently selected destination is protected, the indicator is lit, and the source select buttons are disabled. When the protection is set on this unit, the button is lit in green, while it is lit in red when the protection is set on another unit. When a protect error is generated, the error message "Protect" and the ID of the station on which the protection for the destination has been set are displayed on the preset display window.

To release protection

There are two methods as follows:

- Press the PROT button on the unit for which protection has been set, and the button goes out.
- Release protection on the control terminal connected to the primary station.

❷ STORE/PRESET button

This button functions as the PRESET button when the SHIFT button is unlit, and it functions as the STORE button when the SHIFT button is lit.

PRESET button

A stored set of source and destination is displayed in the preset display window. When you press the TAKE button, the displayed source and destination are selected.

STORE button

Use to store a source and a destination as a preset combination.

To store:

1. Press and light the SHIFT button.
2. Press the STORE/PRESET button.
3. Display the source and destination to be stored as a set.
4. Press the TAKE button.

❸ MONI (monitor) button

When you press and light the button in green, the unit enters MONI mode. In MONI mode, the destination set on the control terminal is monitored, and the source selected for the destination or the source with offset is automatically selected.

For MONI mode settings, refer to the installation manual supplied with the routing switcher

❹ LOCK(CHOP) button

This button has two functions; to turn on/off LOCK mode and to turn on/off CHOP mode.

LOCK mode

When you press and light this button in red, the unit enters LOCK mode, and the buttons on the front panel other than this button are disabled. This prevents switching by touching the select buttons accidentally. To release the LOCK mode, press this button again.

CHOP mode

When you hold the LOCK(CHOP) button pressed for more than 3 seconds, the button lights up in green, and the unit enters CHOP mode. The PRESET display window now indicates "CHOP."
In CHOP mode, the two signals selected on this unit just before and after the button is pressed are output alternately at a specified interval. Use this mode to adjust two signals while comparing them.
For example, to compare the signals assigned to source select buttons 1 and 2, press source select button 1, the LOCK(CHOP) button (three seconds), and source select button 2 in that order. Then the assigned signals are output alternately. If source select button 3 is pressed consecutively, the signals assigned to source select buttons 1 and 3 are output alternately.
The interval of outputs can be adjusted by turning the SELECTOR knob.
To release the CHOP mode, press the LOCK(CHOP) button again.

❺ Status display window

The selected source names or destination names appear.
In scroll mode, it shows the selection state of the corresponding level.

❻ PRESET display window

Normally, the selected source name, phantom name or destination name are displayed in the left half, and the level setting is displayed in the right half (− = OFF).
When trouble occurs with this unit, an error message appears. The displayed error message automatically disappears after a few seconds. Pressing the CLEAR button also makes the displayed error message disappear. However the message "Com Err," which indicates trouble on the communication line, remains displayed until the correct communication is obtained.
For details on error messages, see "Error Messages" (page 23).

Note

The level setting is not displayed in description display mode.

❼ Source/destination select buttons

These buttons function as source/destination select button when the BKS-R3220 is used with the BPS selection system.
When used with the Type + Number selection system, these have two functions, a source select function and a destination-set function.
When they function as source select buttons, they are lit in dim green, and when they function as destination set buttons, they are lit in dim amber. When you press one of the buttons, the pressed button become brighter to indicate that it is selected.

Source selecting function

With the BPS selection system, when you press and light a source button in green, the signal (source) fed to the switcher corresponding to the pressed button is selected and is supplied to the output connector (destination). The pressed button lights in bright green to show the selected source.
With the Type + Number selection system, press the buttons corresponding to the type name and number. The designated source name appear on the PRESET display window and the source is selected when you press the TAKE button.

Note

When the PROT button is lit, the source select buttons have no effect (in ON AIR mode).

Destination selecting function

In the BPS selection system, you can change the destination by pressing the destination button (lit in amber).
In the Type + Number selection system, press the button corresponding to the type name with a number. The name of the specified destination is displayed in the preset display window. Press the TAKE button to change the destination.

For details on setting the button functions, refer to the installation manual supplied with the routing switcher, or see "Making the Settings with the Buttons (Setup Function)" (page 19).

❽ SCRL (scroll) button

Each time you press the button, the sources specified for three levels for the currently selected destination are displayed in sequence in the status and preset display windows (the button lights in red).
The current level number is displayed in the right half of the preset display window.
Each press of the button changes the level, and all the levels have been displayed, the button lights in green.

❾ SOUR/DEST/LEVEL (operation mode select) button

Press to change the operation mode of this unit.
Each time you press this button, source selection mode, destination set mode, or level selection mode is selected, in sequence.

- **SOUR (source selection) mode (the button lights in green):** The source can be selected using the source/destination select buttons or the selector knob.
- **DEST (destination set) mode (the button lights in amber):** All the 1 to 8 display windows show the destination names, which can be changed with the source/destination select buttons or selector knob.
- **LEVEL (level selection) mode (the button lights in red):** Source/destination select buttons 1 to 8 function as level select buttons.

• When a source is defined for several levels (the break-away function is not used)

All the buttons corresponding to the levels which have been set for the currently selected destination light in bright green. When you wish to change the level to be controlled, press the corresponding button and the pressed button lights in bright green.

• When the break-away function is used

The buttons which have not been set for the selected destination light in dim green, and that which have been set light in bright green or amber.

Single-level mode (factory setting): Press one of the level select buttons, and the pressed button and the corresponding source select button light in bright green. The other level and source select buttons which are defined to be controlled for the selected destination light in bright amber.
When you wish to check the currently selected source for each level, press the button of the level to be checked. The source name for that level is displayed in the status display window.

Multi-level mode: Each time the level select button is pressed, ON (the button lights in bright green) or OFF (the button lights in amber or dim green)[1)] mode is selected alternately. The name of the source selected for the level that corresponds the level select button lit in green is displayed in the status display window.
The source selection is performed for the level whose select button is lit in green.

For setting the single- or multi-level mode, refer to the installation manual of the routing switcher, or see "Making the Settings with the Buttons (Setup Function)" on page 19.

❿ DESC/TYPE/D+T (display mode select) button

Press to change the display mode of the display windows.
Each time you press this button, the mode changes in sequence.

- **DESC (description) mode (the button lights in green):** The windows show description names.
- **TYPE mode (the button lights in amber):** The windows show type names with numbers.
- **D+T (description + type) mode (the button lights in red):** The preset display window shows both a description name and a type name with a number. The status display window shows description names.
  When the primary station is in the Type + Num mode, the type name is displayed with a number. When the primary station is in the DESCRIP.NAME mode, the description name is displayed.

⓫ BPS/TPN (selection-system select) button

Press to switch between the BPS selection system and Type + Number (TPN) selection system.
Each time you press this button, the system is toggled.

- **BPS (the button lights in green):** BPS selection system
- **TPN (the button lights in amber):** Type + Number selection system

1)The level select button which is set to ON on the control terminal, and defined to be controlled for the selected destination, but not selected on the front panel, lights in amber, and the button which is set to OFF on the control terminal, lights in dim green.

⓬ CLEAR button

Press this button in the following cases:

- When you want to cancel the data input to the preset or the status display window before registering them
- When you want to cancel the operation being executed
- When you want to release the level settings made with the level select buttons on this unit and to retrieve the settings made on the control terminal
- When an error message is shown in the PRESET display window (The displayed message will disappear.)

⓭ SHIFT button

Press and light this button in the following cases:

- When using the function indicated above the vertical line of a button that has two functions separated with a vertical line, such as STORE/PRESET (i.e. store function in case of the STORE/PRESET button.)
- When switching type names from 0 to F to type G to V (0 to F can be selected with the SHIFT button unlit, and G to V can be selected with the SHIFT button lit)
- To display and select levels 9 through 16 in 16-level mode
- When searching among sources/destinations of the same type names

For the search function, see "To search for the desired source or destination by specifying the type name" (page 21).

⓮ TAKE button

Use this button to change the preset source and destination when this unit is in source selection or destination set mode.

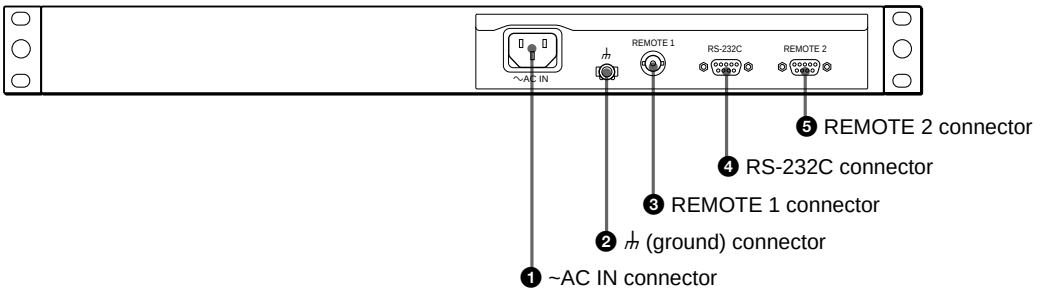
⓯ Selector knob

Turning the knob clockwise increases the number of the destination or source displayed in the preset display window one by one. Turning it counterclockwise decreases the number of the destination or source displayed in the preset display window one by one. If you have limited the destination or source that may be selected on the control terminal in advance, unnecessary destinations can be skipped when changing destinations or sources.

For details on limiting the selectable destinations, refer to the installation manual supplied with the routing switcher.

When this unit is in CHOP mode, the output interval can be adjusted with this knob.

Rear Panel



❶ ~AC IN (AC power input) connector
Connect to an AC power source using the designated AC power cord.

❷ ⏚ (ground) connector
For signal grounding

❸ REMOTE 1 connector (BNC type)
Connect to the S-BUS line using the T bridge (supplied) and 75-ohm coaxial cable (BELDEN 8281 or equivalent).

❹ RS-232C connector (D-sub 9-pin)
For servicing. Connect to a computer for downloading software or monitoring communication status.

❺ REMOTE 2 connector (D-sub 9-pin)
To connect an RS-422 communication line

Settings on the Control Terminal

Before switching signals with this unit, the following preparations should be made on the control terminal connected to the primary station of the S-BUS data link.
For details on making the settings, refer to the installation manual supplied with the routing switcher.

1 Set the type of the input and output connector name to either the type name and number mode or the description name mode.

2 Set the type names of sources, such as VTR, FLM, AUX, etc.

Up to 32 type names may be set.

3 Set the source names using a type name and number from 001 to 999, such as FLM034.

A list of the registered source names is called the source table.

4 Set the destination names using a type name and number from 001 to 999, such as VTR089.

A list of the registered destination names is called the destination table.

5 Set the phantom names.

A list of the registered phantom names is called the phantom table.

6 **When using the unit in the Type + Number selection system,** select the destination names from the destination table to be designated with this unit.

A list of the selected destination names is called the available destination table.
(This step is not necessary if you want to use all the destinations or when this unit is used in the BPS selection system.)

7 Set the level to be controlled.

8 Set the mother unit and daughter units when multiple control units are to be used in combination.

9 Assign the sources and destinations for the source/destination select buttons.

10 Select the selection system, the Type + Number selection system or the BPS selection system.

11 Make the route setting if the route function is to be used.

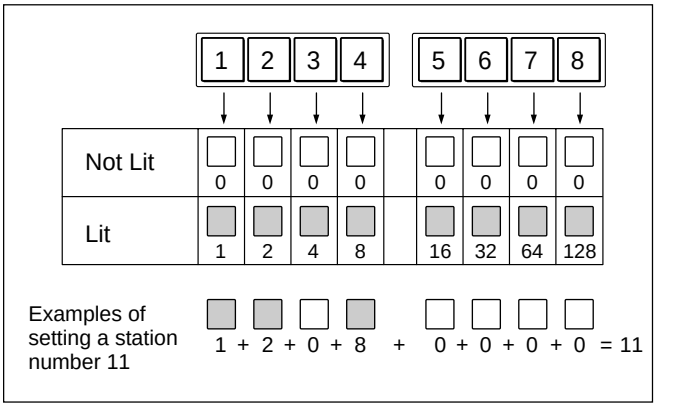
12 Specify the available sources when input selection is to be limited.

Preparation for the BKS-R3220

You may use up to 253 control units, including this unit, in combination to expand the number of sources and destinations, or use this unit alone. The required settings may differ depending on whether it is used alone or in combination. Make the necessary settings shown below to suit your system.
When multiple units are used in combination, define one as the mother unit and the others as daughter units.

Setting the station number

Set the station number using the source/destination select button 1 to 8. The station number is obtained by adding the binary place values of the buttons that are lit. For example, if the buttons 1, 2 and 4 are lit as shown below, the station number is 11 (=1+2+8).



Note

Do not assign the same number to more than one unit in a routing system.

1 Press and hold the LOCK(CHOP) button and PROT button for about five seconds to reset the software.

2 Press and hold the source/destination select buttons 1, 2, 3, and 4 to enter station number setting mode.

Note

When the power is turned ON for the first time, station number setting mode is automatically set, and steps **1** and **2** are not required.

3 Press the appropriate source/destination select buttons so that the desired station number is obtained.

4 Press the TAKE button.

The set station number is registered

Key label indications

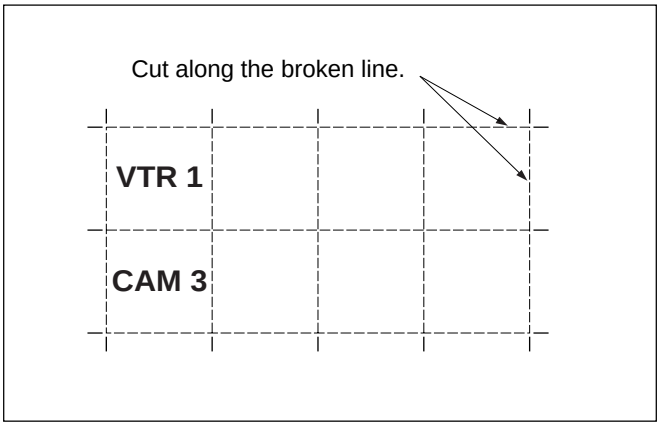
It is recommended to write the source, destination or level name on the labels (these are called key labels), and attach them on the source/destination select buttons. Then you can see at a glance what functions you have assigned to each button.

Making a key label

1 Copy the key label guide shown on the next page onto a sheet of OHP paper.

2 Write the name on the copied paper.

3 Cut the paper to the button size as shown below.



Attaching a key label

Attach the key labels to the buttons with the following procedure.

For details on the key label, refer to the installation manual.

1 Attach the key-cap puller to the indentations of the sides of the key cap.

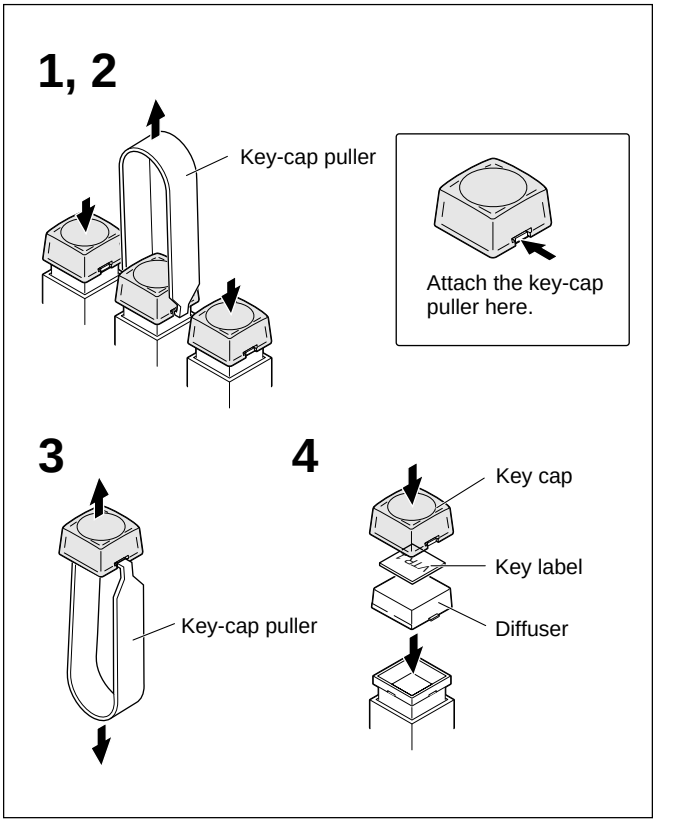
You can easily attach the puller if you press the buttons on both sides.

2 Remove the key cap by pulling the key-cap puller.

3 Rotate the key-cap puller downwards while pinching the key-cap, and pull it down to separate the key cap, key label and diffuser.

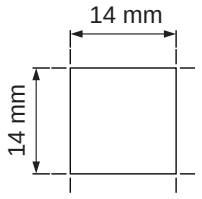
4 Put the key cap, key label with the name written, and diffuser on the button and replace them as they were.

As for the key-cap puller (part number: 3-179-054-01), consult your Sony personnel.

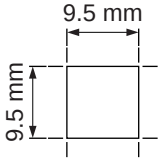


Key label guide

For a large button (14 × 14 mm)

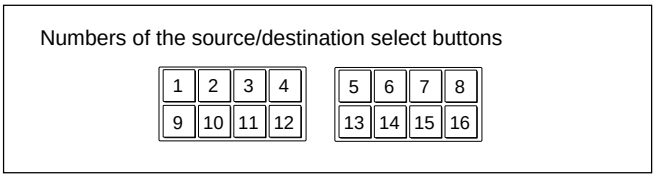


For a small button (9.5 × 9.5 mm)



Making the Settings with the Buttons (Setup Function)

With the S-BUS system, the necessary items are normally set at the control terminal connected to the primary station. However, the following items may be set on the unit by turning the power on while holding down the two or more select buttons, or by press the buttons during button-illuminating test after software reset. The buttons to press are shown below.



Initializing the settings

While holding down buttons 1 and 2, turn the power on.
The following items are set to the factory-set conditions.
1) Type + Number selection system
2) The buttons 1 through 16 correspond with sources 1 through 16
3) Single-use mode
4) Single-level mode

Setting the level select buttons to multi-level mode

While holding down buttons 1 and 6, turn the power on.
The level select buttons function in multi-level mode.

Setting the level select buttons to single-level mode

While holding down buttons 1 and 7, turn the power on.
The level select buttons function in single-level mode.

Setting single-use mode (when this unit is to be used alone)

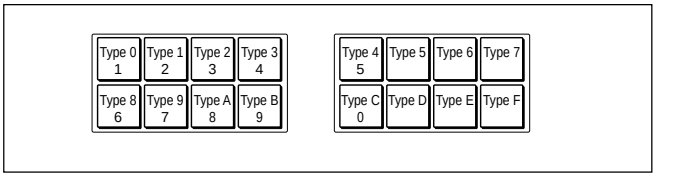
While holding down buttons 5 and 8, turn the power on.

Specifying the BKS-R3220 for the mother unit

While holding down buttons 6 and 7, turn the power on.
The unit then functions as the mother unit in combination use with other control units.

Selecting the Type + Number selection system

While holding down buttons 6, 7 and 8, turn the power on.
When the Type + Number selection system is selected: The type number and a number are assigned to the source select buttons as shown below.



Type names should be defined as Type 0 through Type F on the control terminal in advance. For example, when "0=VTR" has been defined on the control terminal, the type name set to Type 0 is "VTR."
To select a source with the Type + Number selection system, first define a source type by pressing one of the Type 0 through Type F buttons, then define the number by pressing the buttons 1 through 0, then press the TAKE button.
When you press and light the SHIFT button, you can define Type G through Type V in place of Type 0 through Type F.

Selecting the BPS selection system

While holding down buttons 7 and 8, turn the power on.

Entering station number setting mode

While holding down buttons 1, 2, 3 and 4, turn the power on.
The station number can be set with binary coding using buttons 1 through 8.

Initializing the settings

1 Press and hold the LOCK (CHOP) button and PROT button simultaneously for five seconds to reset the software.

2 Press and hold the source/destination select buttons 1 and 2 simultaneously.

The software is initialized, and the factory settings are retrieved.

Note on setting procedure

First set the unit to the single-use mode or to the mother unit in combination-use mode, then set the selection system, Type + Number selection system or BPS selection system. The BKS-R3220 cannot use the Type+Number selection system when the unit is used as the mother unit in combination-use mode.

List of setup operations

Settings	Buttons to be pressed
Initializing the settings	1, 2
Setting the level select buttons to multi-level mode	1, 6
Setting the level select buttons to single-level mode	1, 7
Setting single-use mode	5, 8
Specifying the BKS-R3220 for the mother unit	6, 7
Selecting the Type + Number selection system	6, 7, 8
Selecting the BPS selection system	7, 8
Entering station number setting mode	1, 2, 3, 4

First select the destination then the source. The level selection depends on the setting at the control terminal. Before starting the operations, turn on this unit and other system equipment, and check that the PROT button lamp is not lit.

Selecting the Source and Destination

With the BPS selection system

1 Press a destination select button to select the destination.

The pressed button lights in bright amber.
If the destination select function is not assigned to this unit (when all the select buttons light in green), this step is not required. The destination set at the control terminal is automatically selected.

2 Press the source select button to select the source.
The pressed button lights in bright green.

With the Type + Number selection system

1 Press the SOUR/DEST/LEVEL (operation mode select) button to set it in Destination set mode (the button lights in amber).

2 Specify the destination with the type name with a number using the source/destination select button.

The type names 0 to F can be selected when the SHIFT button is unlit, and G to V can be selected when the SHIFT button is lit.

3 Press the TAKE button.

The destination displayed in the preset display window is selected.
The status display window shows the name of the connected source.

4 Press the SOUR/DEST/LEVEL button to set it in Source selection mode (the button lights in green).

Specify the source with the type name and a number using the source/destination select buttons.

5 Press the TAKE button.

The source displayed in the preset display window is selected.

To search for the desired source or destination by specifying the type name

When you select a source or destination, you can search for it after specifying the type name.

1 Press and light the SHIFT button.

2 Turn the selector knob.

The type names are displayed in the preset display window in turn.

3 When the desired type name is displayed, press the SHIFT button so that it goes dark.

4 Turn the selector knob.

Only the sources having the specified type name are displayed in turn.

Condition of the source select button when selecting a destination

When the display mode is set to “Status,” a source selected for the destination that is currently selected is always displayed.

When there is a source button selected for the destination on the panel
The source button selected for the destination is lit in bright green.

When there is no source button selected for the destination on the panel
All the source buttons are lit in dim green.

To change the level

When selecting the source only for a certain level, specify the level before selecting the source.

1 Press the SOUR/DEST/LEVEL (operation mode select) button to set it in Level set mode (the button lights in red).

(Continued)

2 Specify the level by using the source/destination button 1 to 8. (Light the button only for the level in green).

The level selection is maintained until you press the CLEAR button in Level set mode or change the destination.

Selecting when the unit is connected to the monitor S-BUS data link

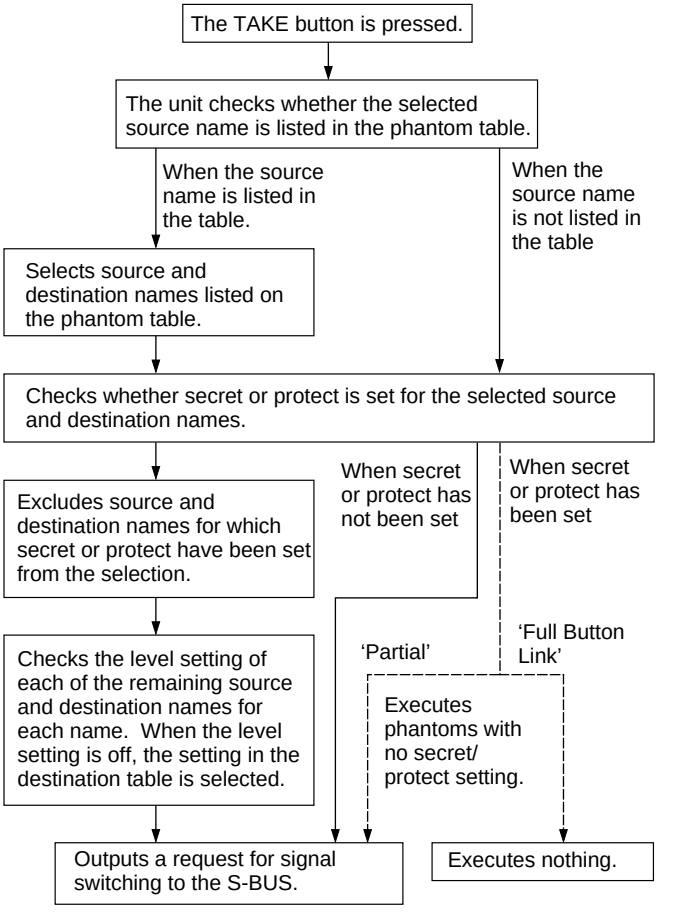
When you wish to monitor the input and output signals of the DVS-V3232M/V6464M Video Routing Switcher with an optional BKDS-V3292B Monitor Board installed or the DVS-128, you may switch the monitor signals using the BKS-R3220. Before switching signal with this unit, you should make the signal settings at the control terminal.
For details on making the settings, refer to the Installation Manual supplied with the routing switcher.

Lighting status of the source/destination select buttons

The source select buttons are normally lit in dim green, and the destination select buttons are lit dim amber. When you press a button for selecting a signal to be monitored, the pressed source or destination button lights in bright green.

Processing when the TAKE button is pressed in source selection mode

When you press the TAKE button, this unit carries out the following processing.



Error Messages

When trouble occurs with this unit, the following error messages appear in the display window. The displayed message will automatically disappear after a few seconds. Pressing the CLEAR button also makes the displayed message disappear.

Error messages	Contents	Remarks
Pac Err	Reception error on the S-BUS data link	If this occurs only once every several minutes, it is not a problem. Power source noise or an S-BUS remote cable longer than 500 m using BELDEN cable or equivalent may be the cause. If the same errors still occurs on this unit when used under conditions without the above causes, the trouble may be in this unit.
Reset-P	The primary station has been reset.	This occurs when the primary station is turned on, or when some trouble occurs in the S-BUS data link.
Secret	A source set as secret is to be selected.	A source set as secret cannot be selected on a unit other than the primary station.
Com Err[a)]	Communication error of the S-BUS data link	This may occur when the communication period is too long. The primary station may be turned off, or the remote cable may be disconnected.
Protect	The destination is protected.	The protected destination cannot be switched. In the preset display window, the ID of the station which has set the protection for the destination, is displayed.
NotFound	The name cannot be found	The designated type name for type-number selection does not exist in the table.
Lvl Err	All levels are not controllable.	All levels are set not to be controlled.
No Dest	The destination has not been set.	The designated destination has not been set. Change the selection or setting.
Not Avail	The source is out of the available sources.	The source to be switched is not found within the range of the available sources. The source cannot be changed.

a) "Com Err" remains displayed until the correct communication is obtained.

Specifications

REMOTE 1	BNC type × 1, S-BUS Data transfer method: BI-PHASE SPACE Data transfer rate: 312.5 kbps/ 1250 kbps
REMOTE 2	D-sub 9-pin × 1, RS-422 Data transfer method: Conforms to EIA RS-422A Data transfer rate: 38.4 kbps
RS-232C	D-sub 9-pin × 1 Data transfer method: 8 bits, No parity, No check Data transfer rate: 19.2 kbps
Signal transfer distance	500 m (1640 feet) max. (75-ohm coaxial cable, BELDEN 8281 or equivalent)
Operating temperature	0°C to 45°C (32°F to 113°F)
Power requirements	100 to 120 V AC (for the U.S.A. and Canada), 100 to 240 V AC (for the other countries), 50/60 Hz
Current consumption	0.25 A
Peak inrush current	(1) Power ON, current probe method: 28A (240V) (2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 8A (230V)
Dimensions	440 × 44 × 120 mm (w/h/d) (17 3/8 × 1 3/4 × 4 3/4 inches)
Mass	Approx. 1.5 kg (3 lb 5 oz)
Supplied accessories	Operation Guide (1) T-bridge (1)

Design and specifications subject to change without notice.

Sony Corporation
Communication System Solutions Network Company

BKS-R3220 (WW)
3-204-576-**21**(2)

Sony online http://www.world.sony.com/

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