Document for System Integration

System Setup Guide

Rev	1.01
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1. Overview

This document systematically describes the system setup of a router and a switcher by collecting scattered information.

The system setup is to make settings of S-BUS (Serial Bus) of the router and the parallel tally of DCU (Device Control Unit) of the switcher.

This document clarifies the setup of the router and the switcher, which is closely correlated each other.

Definitions of terms

This document writes a routing switcher and a video production switcher as the Router and the Switcher respectively.

To set up the Router, connect your computer to the Router and the Router control board. The setup tool you use for the setup is officially called the Routing System Setup menu, but it is called the Router Setup in this document.

Set up Switcher on the control panel. The set up tool should be the engineering setup officially but is called the Switcher Setup in this document.

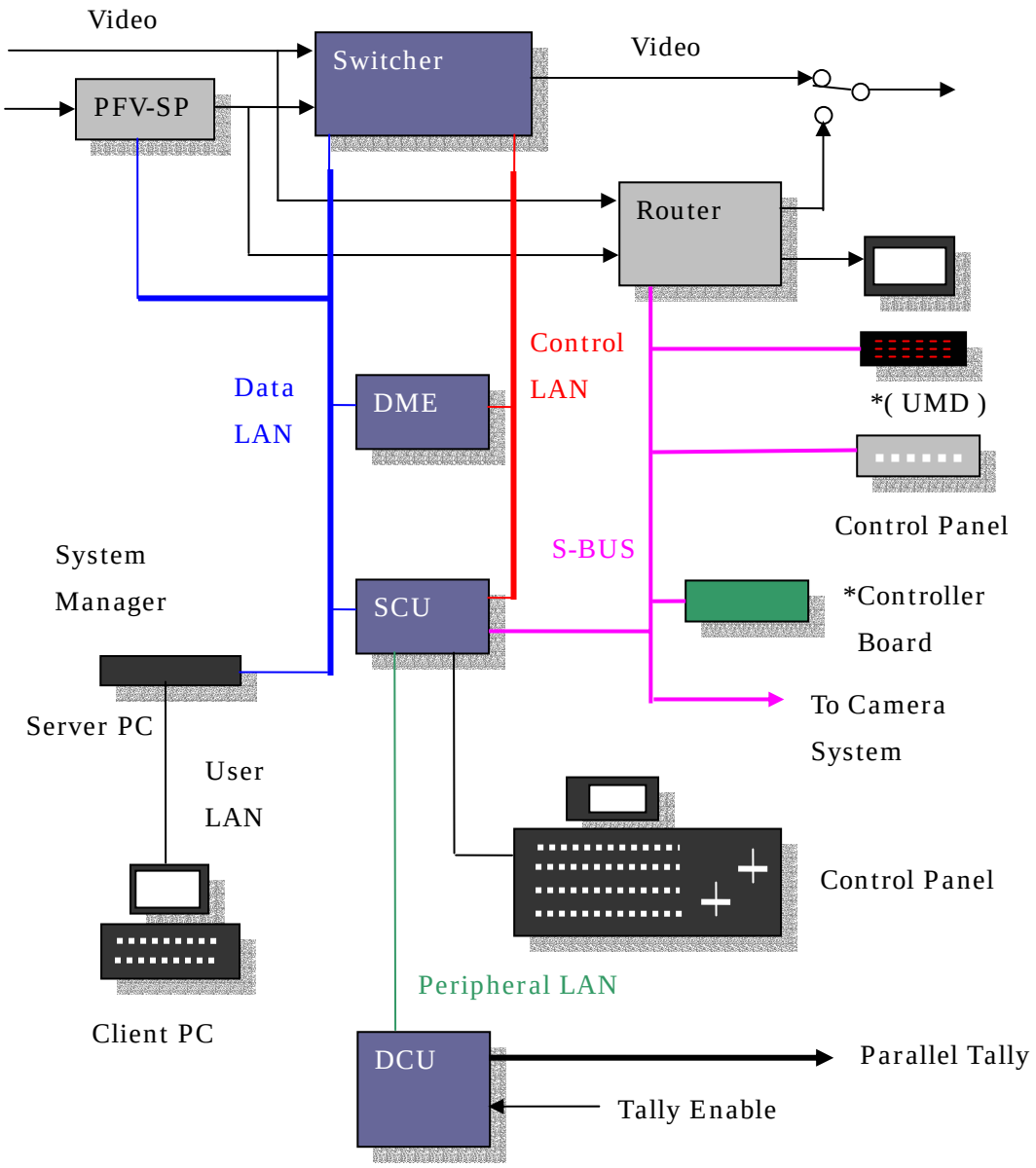
The official name of the equipment that switches the Router is a control unit, which is called the Control Panel here.

For other Sony-specific product name and technical terms included in this documents, refer to the last page of this document “Descriptions of Terms (A to Z)”.

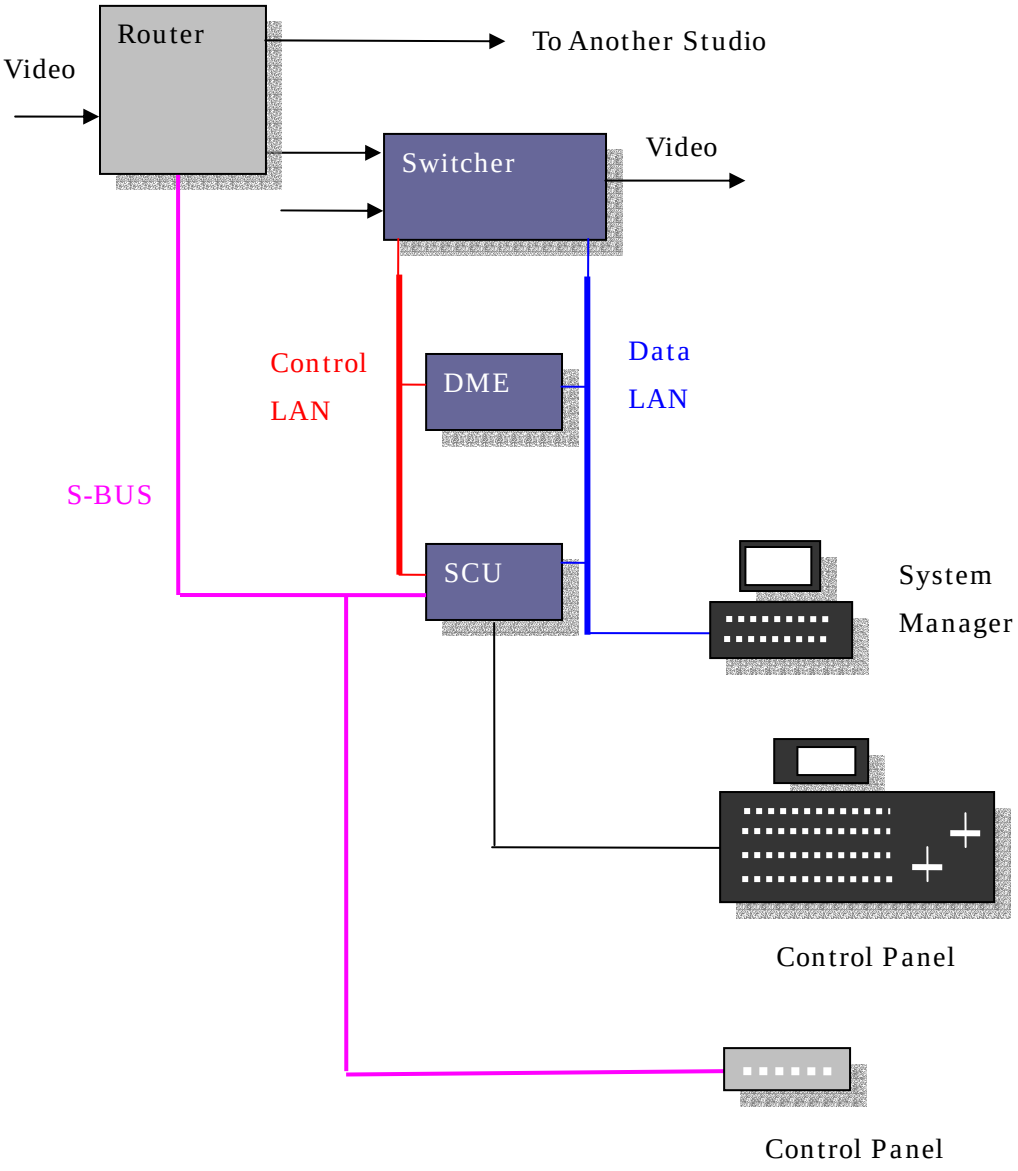
1-1. System Chart

The following chart shows the basic configuration of the Router and the Switcher.

The controller board of the Router is installed to the chassis of PFV-SP in reality.



1-1. System Chart (continued)



1-2. Equipment Configuring System

The following are the outlines of equipment that configures the system.
For specific product names, refer to “Descriptions of Terms (A to Z)”.

(1) PFV-SP

PFV-SP indicates the peripheral devices such as an up converter, which converts SD signals to HD signals, and a down converter that converts HD signals to SD signals.

(2) Switcher

In addition to the switching of video signals, you can mix key signals and/or add special effects with the use of a DME device.

(3) Router

It is used to select video inputs, Audio inputs and inputs through RS-442A.
Different from the Switcher, it cannot synthesize multiple video signals.

(4) DME device

It stands for a digital multi effect device.
It is a device to add special effects to video signals
There are board-type DME devices that can be built in the Switcher.

(5) SCU

It means a system control unit.
It controls tallies as well as the Control Panel of the Switcher.

(6) DCU

It indicates a device control unit.
It is mainly used to output parallel tallies.
It can be used singly or in combination.

(7) UMD

It means an under monitor display.
It is placed under a monitor display to show the names of the signals displayed on the monitor. It is sometimes placed on top of the monitor.
Some of other manufacturers have UMDs equipped with Sony S-BUS and/or Sony Serial Tally protocol.

1-2. Equipment Configuring System (continued)

(8) Router Control Panel
It is the Control Panel to switch the input of the Router.

(9) Router Control Board
It is the board for controlling the Router, the Control Panel of the Router and UMD.
It is installed to the chassis of PFV-SP.
There are some systems that do not use this board as the Router itself provides the control function.
Turning on V-MTX with a dip switch on the board would enable you to switch inputs even if no Router is available.

Descriptions on the network connecting the devices
(1) Data LAN
100Mbps Ethernet
It is mainly used for the transfer of setup files and the image files of the frame memory of the Switcher.

(2) Control LAN
100Mbps Ethernet
It is used for SCU to control the Switcher and DME.
The commands issued by SCU are processed by the Switcher and DME in real time.

(3) Peripheral LAN
100Mbps Ethernet
It is a dedicated communication channel between SCU and DCU.

(4) S-BUS
312Kbps HDLC (High-Level Data Link Control)
Network that connects the Router and its control panels to UMD
A primary station sends polling messages sequentially to multiple secondary stations to check their requests. The secondary stations cannot send the request before they receive this polling message.

2. Before Connections are Established

The SONY Router configures the system with the serial interfaces in the so-called S-BUS format in principle.

It is necessary to make the following settings at least before connecting equipment with S-BUS.

2-1. Station ID

(1) The devices to be connected with S-BUS are numbered 1 through 254.

(2) “1” is for the primary station.

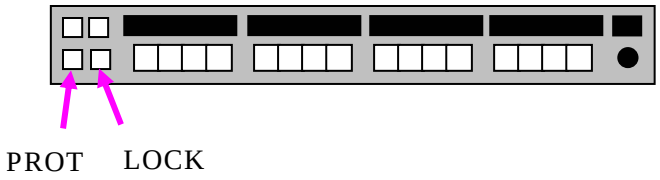
The primary station may be the Router itself or the Router Control Board.

(3) “255”, called a broadcast address, is not assigned to a device as its station ID because it is used for communication messages to be received by all devices.

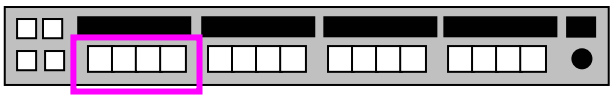
(4) “0” does not mean anything. If it is given to a secondary station, it cannot be recognized by the primary station.

(5) Some models uses DIP switches to set the station ID while some others use buttons instead of the DIP switches.

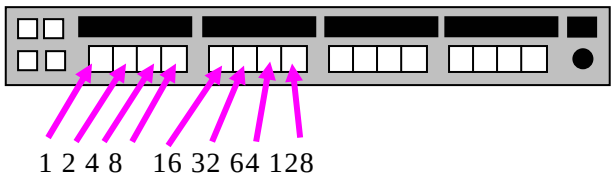
The model BKS-R1617 will be restarted when you hold down the leftmost PROT and LOCK buttons for 5 seconds.



Hold down 4 buttons shown below while the machines is restarting up and a station ID appears.



Use 8 buttons shown below to set a station ID.



2-1. Station ID (continued)

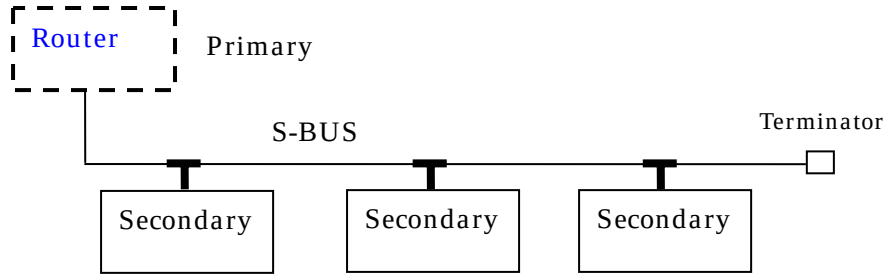
Prepare the following table to control the station ID.

Station ID	Model Name		
1 (Primary)			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
:			
:			
254			

2-1. Station ID (continued)

(5) There are following 3 types of primary stations.

(A) The Router itself works as a primary station.

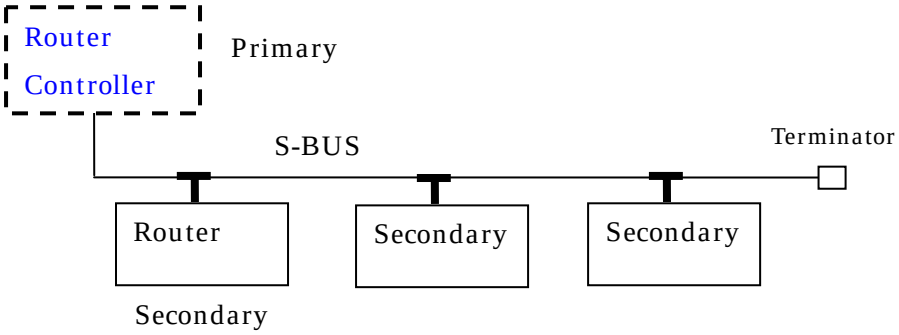


(B) Routing Switcher Control Board (HKSP-R80)

As this board makes it possible to switch inputs without the Router, it is often used for comparatively small-scale systems.

The installation of the board HKSP-R81 could make the primary station redundant.

If one board malfunctions, another one is automatically activated to support the primary station.

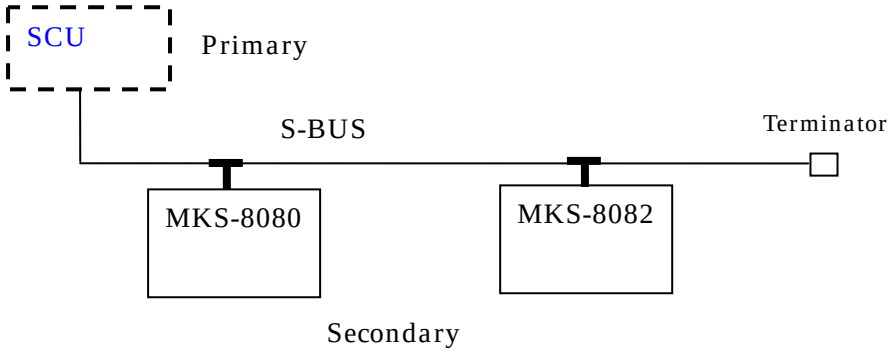


2-1. Station ID (continued)

(C) SCU (System Control Unit) of Switcher

It is limitedly used for such purposes as connection with the AUX Bus Control Panel. The station ID of SCU can be set with the DIP switches with the description of “Station ID” on the CPU board. Its default station ID is 2.

To connect SCU only to the AUX Bus Control Panel, its station ID must be set to 1.

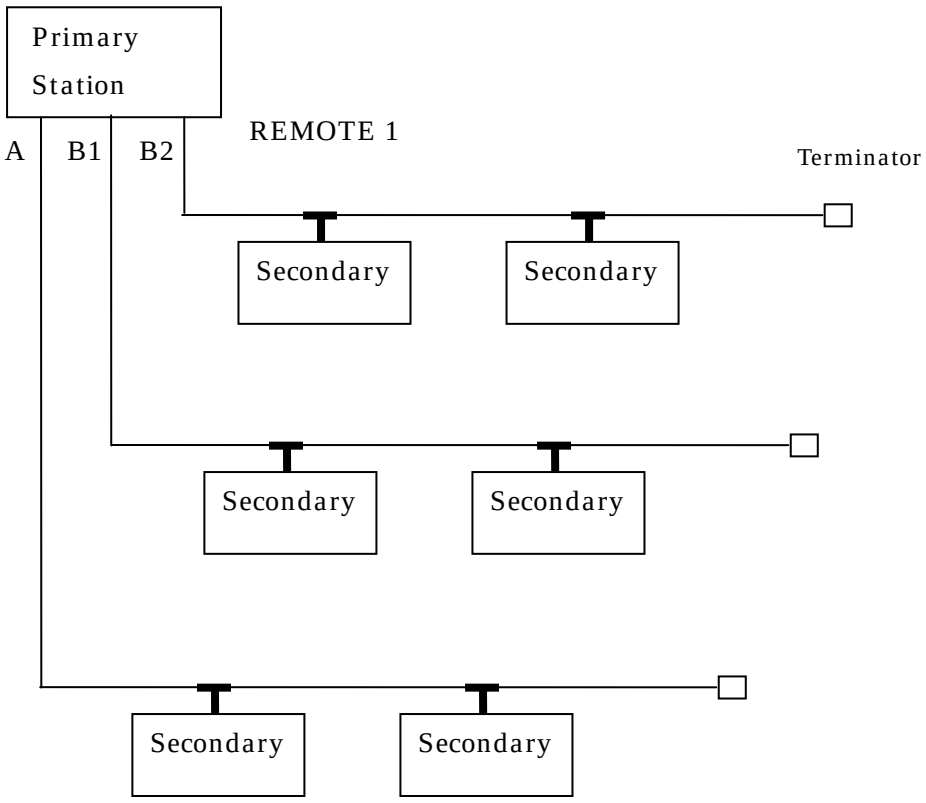


When the router's control panel MKS-8080/8082 that the customer already owns is used as the AUX Bus Control Panel, the SCU that functions as the primary station does not have the setup function as a secondary station. Thus, the HKSP-R80 is temporarily required for the setup.

3. Connection

The primary station provides 3 coaxial connectors called REMOTE 1. They are named as A, B1 and B2.

The S-BUS specification allows the connections of 253 secondary stations. Connecting all of them to one connector of a primary station, however, would deteriorate electric characteristics and so 3 connectors must be used.



When the HKSP-R80 in which is installed the BZR-IF830 or the PC on which is installed the BZR-240 is connected to the “A” connector of the primary station, the “B1” and “B2” connectors should be used for the secondary stations.

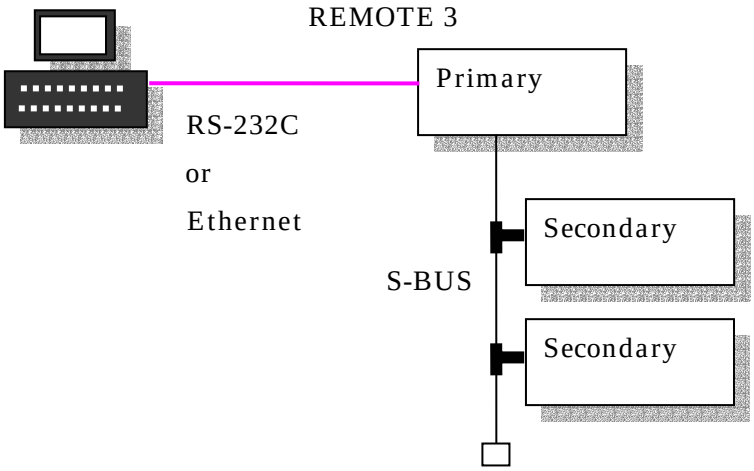
The “A” connector has the dedicated communication CPU. The other communication CPU controls both “B1” and “B2” connectors. To complete the processing in frame, up to 64 devices should be connected to one communication CPU.

4. When Connections are Established

When you establish S-BUS connections, turn on the devices. Now, you will be able to check the existence of the secondary stations from the primary station.

To do it, connect your computer to the primary station through RS-232C or Ethernet and operate the Router Setup with the terminal software.

To use Ethernet, you need to check the IP address of the primary station (Refer to 4-3).



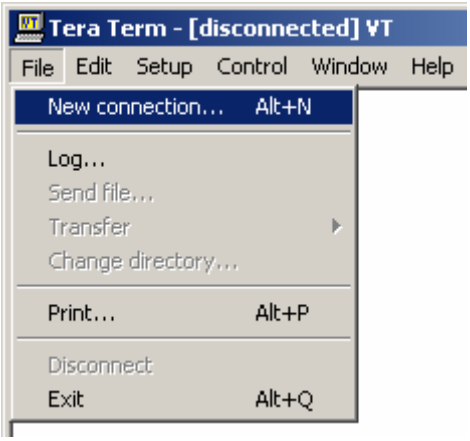
4-1. Connect PC to Primary Station through RS-232C

(1) Connect your computer to the REMOTE 3 connector of the primary station with an RS-232C crossing cable. It is easy to identify the REMOTE 3 connector as it is the only male 9-pin connector among three connectors.

(2) Start the terminal software such as Tera Term.

This document uses Tera Term as an example.

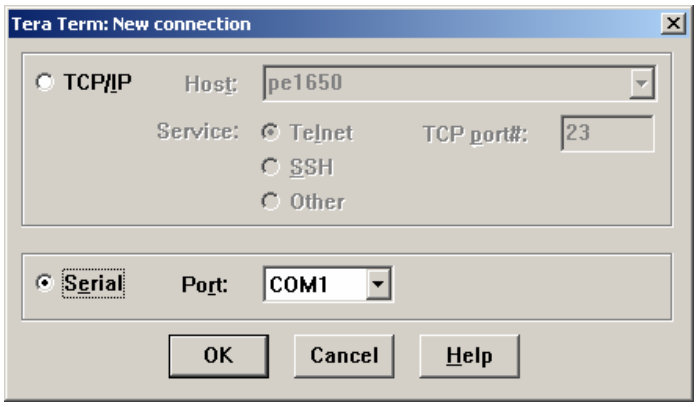
When the window of Tera Term appears, click File - New connection to show the menu.



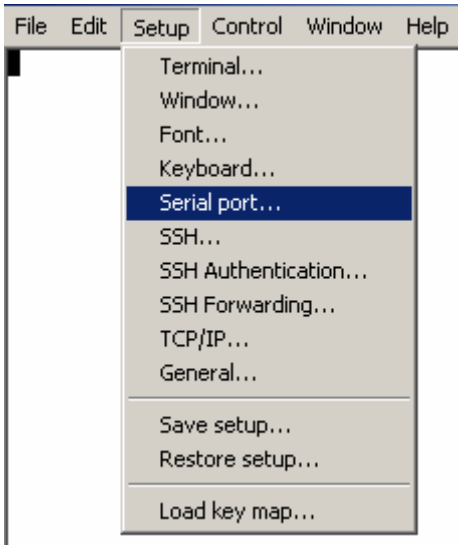
4-1. Connect PC to Primary Station with RS-232C (continued)

Select the connected serial port and click the OK button.

In this example, COM1 is selected.

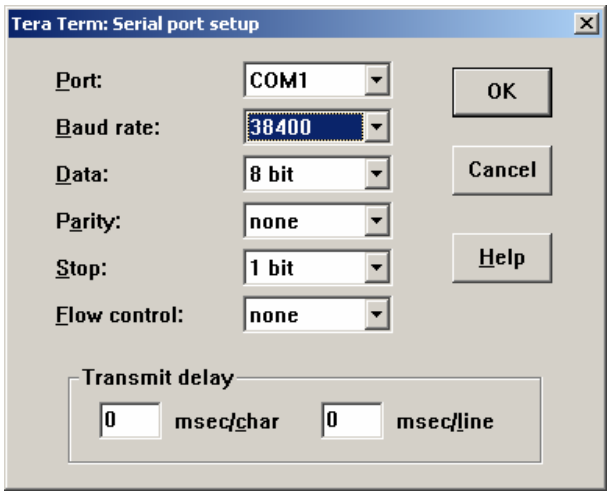


(3) Click Setup - Serial port to show the menu.



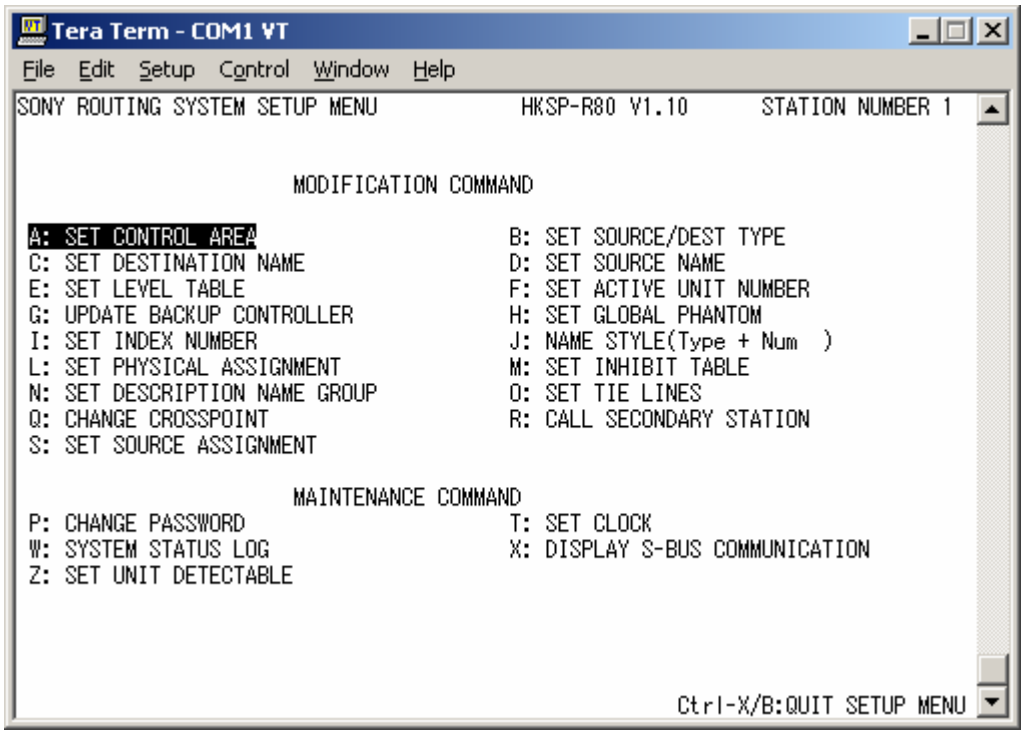
4-1. Connect PC to Primary Station with RS-232C (continued)

Select 38400 for the Baud rate and click the OK button.



(4) Press Ctrl - X keys and the setup menu of the Router appears.

Press a given alphabet or move the cursor onto the item you wish to show and press the Enter key. The menu appears.



4-1. Connect PC to Primary Station with RS-232C (continued)

Notes on function keys

Some menus show the functions of function keys at the bottom of the window.

Some computers have a different keyboard layout of function keys.

To execute the function of F1 shown below, for example, you may need to press F6.

To solve this problem, you must edit the file “KEYBOARD” in the folder included in the programs of Tera Term.

Press the F1 key and a key code 59 will be issued, which results in deleting the function XF1 originally assigned to this key.

By the same token, cancel the assignment of function keys from F2 to F5.

```
[X function keys]
; F1 key
;XF1=59
; F2 key
;XF2=60
; F3 key
;XF3=61
; F4 key
;XF4=62
; F5 key
;XF5=63
```

Assign the function keys from F6 to F10 to the key codes from 69 to 63.

```
;F6 key
;F6=64
F6=59
;F7 key
;F7=65
F7=60
;F8 key
;F8=66
F8=61
;F9 key
;F9=67
F9=62
;F10 key
;F10=68
F10=63
```

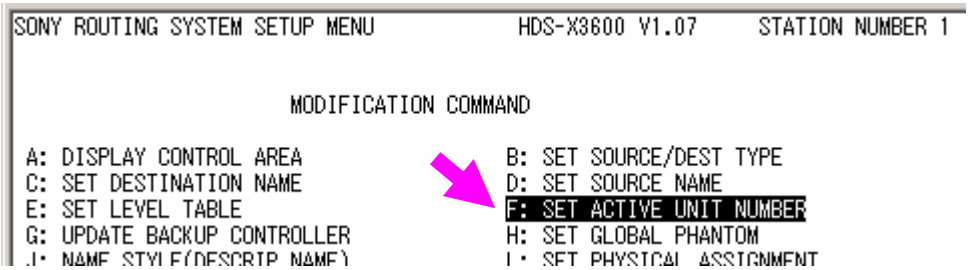
4-2. Check that Secondary Stations Exist

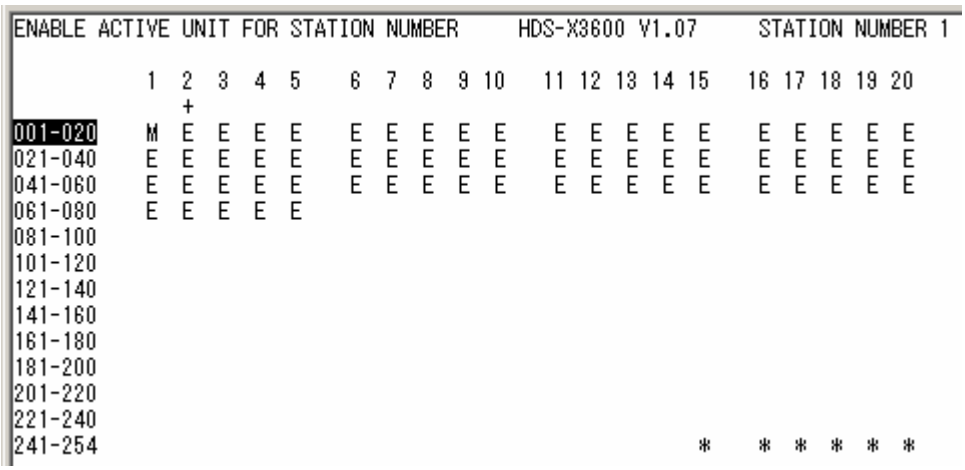
(1) Use the F: Set Active Unit Number menu.

Specify the station IDs of secondary stations to which the primary station initiates polling (periodic call). If you specify non-existing station IDs, the response speed becomes slow as polling to other IDs will not be performed until timeout takes place.

Eliminate the non-existing station IDs from the targets of polling.

Delete E on the following window.





Check the station IDs in use on the list shown in 2-1.

4-2. Check that Secondary Stations Exist (continued)

(2) Z: Set Unit Detectable Menu

Check the model name of each station ID.

The secondary station with a station ID 2 shows 49 in this example, and so you can find out from the table below that its model name is BKS-R1617.

```
SET UNIT DETECTABLE                        HDS-X3600 V1.07     STATION NUMBER 1

          1  2  3  4  5    6  7  8  9 10   11 12 13 14 15   16 17 18 19 20
             +
001-020   M 49
021-040
041-060
061-080
081-100
101-120
121-140
141-160
161-180
181-200
201-220
221-240
241-254                                                  *    * * * * *

  41:BKS-R3242   42:BKS-R3284   43:DVS-V6464M  44:DVS-V3232M  45:HDS-X3700
  46:HDS-X3600   47:HDS-X3400   48:BKS-R3216   49:BKS-R1617   50:BKS-R1618
  51:BKS-R3219   52:BKS_R3220   53:BKPF-L4000  54:BZR-IF310
```

(3) R: Call Secondary Station

It shows the setup menu of the secondary station.

Since the menu appears based on the response from the secondary station, you can ensure that the secondary station is running.

```
CALL STATION NUMBER ? 2
```

```
SONY ROUTING SYSTEM SETUP MENU          BKS-R1617 V1.07    STATION NUMBER 2

                      MODIFICATION COMMAND

          H: SET PHANTOM TABLE

          N: SET PANEL TABLE

          O: SET AVAILABLE SOURCE/DESTINATION

          R: SET ROUTE

          I: COPY TABLE DATA FROM
```

4-3. Connect PC to Primary Station through Ethernet

To connect your computer to the primary station, you need to know the IP address of the primary station.

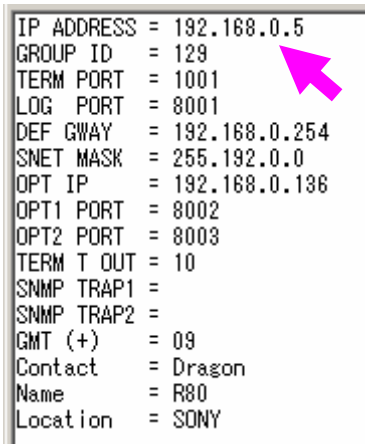
You can get it by connecting your computer to the primary station with RS-232C.

When the Router Controller Board HKSP-R80 is used, set the rotary switch on the board to the position F and turn it on. The IP address appears.

The default position of this rotary switch is 0.

When you have checked the IP address, return the position of the rotary switch to 0 and then turn on the board again.

To operate this rotary switch, remove the front panel of PFV-SP3100 or PFV-SP3300 to which chassis HKSP-R80 is installed.



HDS-X3700, HDS-X3600 and HDS-X3400 have an Ethernet connector but they do not support Ethernet.

Do not use the IP address of the HKSP-R80 with its factory default value "192.168.0.135".

Be sure to set an IP address other than that.

If several units of HKSP-R80 are used, troubles may occur as their IP address become identical.

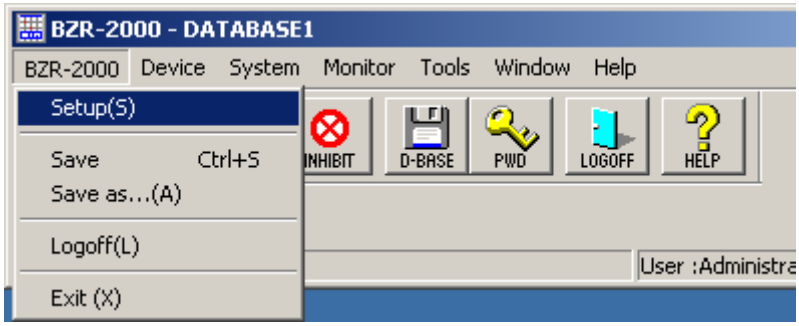
4-4. Run BZR-2000

You can also connect BZR-2000 to the primary station through RS-232C or Ethernet as is the case with the Router Setup.

The BZR-2000 V1.4 or higher supports the Ethernet.

(1) Start BZR-2000.

Click BZR-2000 - Setup to show the Setup menu.

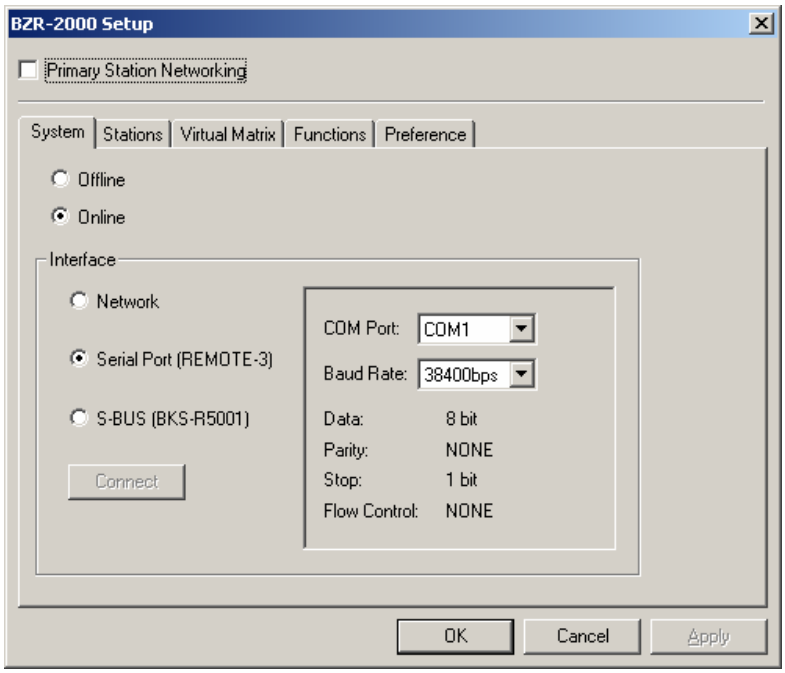


Select Serial Port (REMOTE 3) as an interface and choose an active COM Port.

Click the Connect button.

When connection is successfully established, the Connect button will be grayed out.

Click the OK button to hide this window.

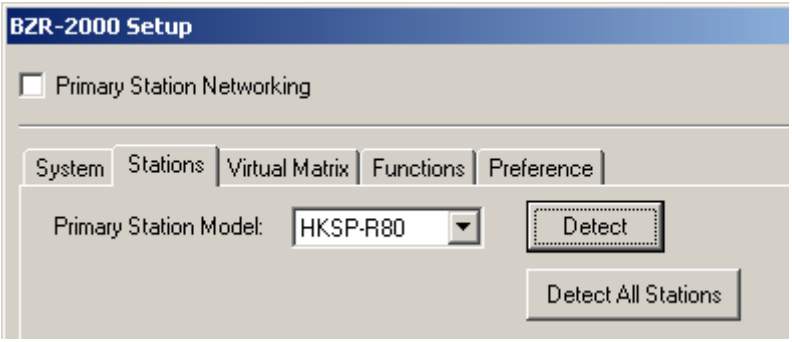


4-4. Run BZR-2000 (continued)

(2) Select the Stations tab and click the Detect button.

As a result, the model name of the primary station appears.

Now, it has become possible to carry out communications between BZR-2000 and the primary station.

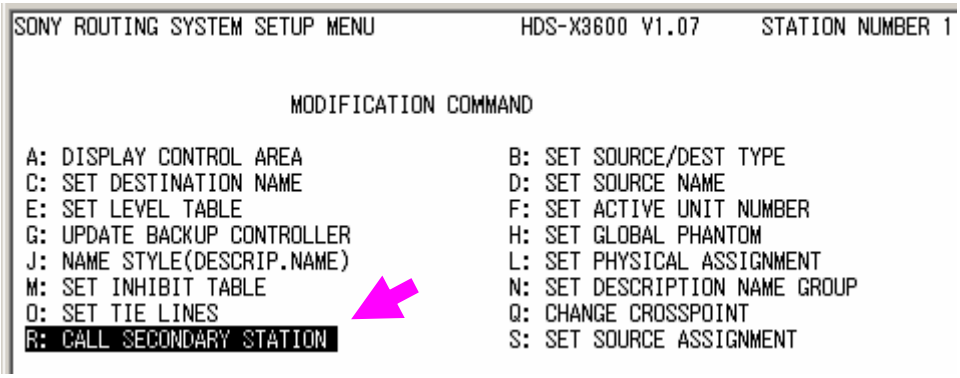


5. Initialization

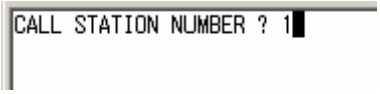
5-1. Initialization

When you have configured the system for the first time, carry out the following procedures to initialize the settings of the primary station that controls S-BUS.

(1) Select R: CALL SECONDARY STATION menu.



(2) Enter 1, the station ID of the primary station, to STATION NUMBER.



(3) Select K: RESET TO DEFAULT TABLE menu.

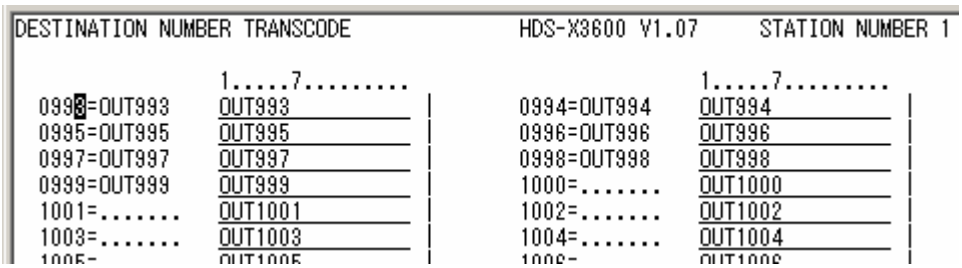
(4) When “Reset to Default table ? (y/n)” appears, enter “y” and initialization starts.

5-2. Settings after Initialization

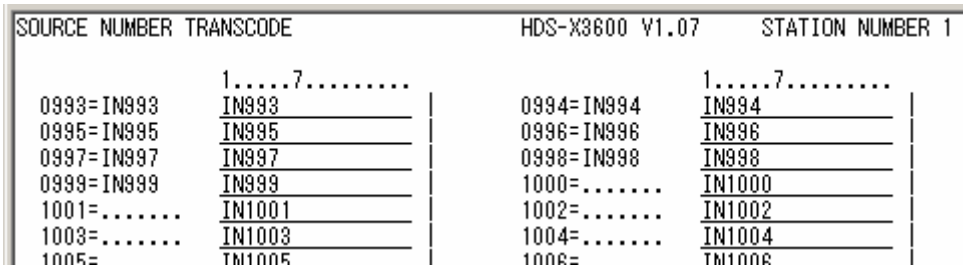
(1) The format of a signal name is set to Type + Number.

The same name expressed in Type + Number is automatically copied to Description Name.

(2) The names from OUT001 to OUT999 are set to Destination Name.



(3) The names from IN001 to IN999 are set to Source Name.



(4) The initialized signal name data is also sent to the secondary stations connected through S-BUS.

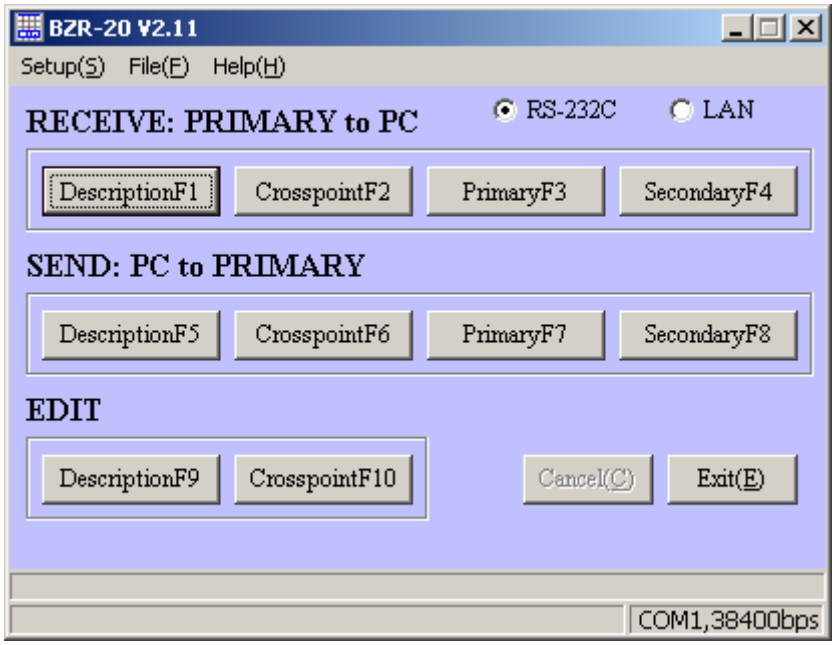
When you manually enter signal names, you need to carry out the operation for sending them from the primary station to the secondary stations. Refer to 8-5.

5-3. Backup

To save the original settings, use the standard software BZR-20 supplied with the Router before carrying out initialization.

BZR-20 allows the computer to receive or send the following data.

1. Description name
2. Cross point status
3. Setup data of the primary station
4. Setup data of the secondary station



Although the BZR-2000 seems not to save the cross point status, that is actually possible.

6. Layout in Matrix Space

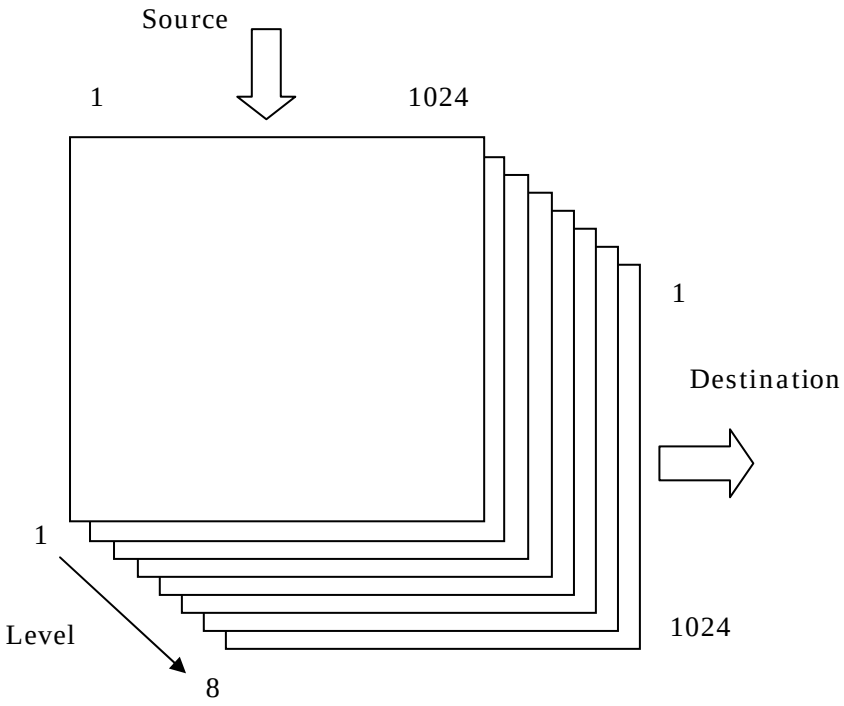
Lay out the Router and the Switcher on a two-dimensional plane of 1024 x 1024 to carry out the operations of setup and/or signal switches.

Combining multiple two-dimensional planes, you can expand the two-dimensional plane to a three-dimensional space.

To identify each plane in the three-dimensional space, the concept “Level” is used.

The three-dimensional space is used by assigning different types of signals such as SD video signals, HD video signal and audio signals to each level.

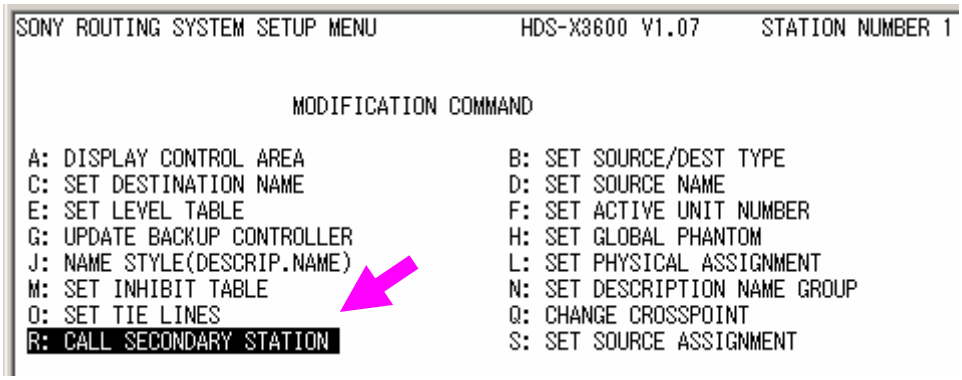
For the typical application example of the level, refer to 10-1.

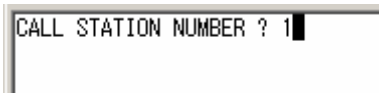


6-1. Layout of Router

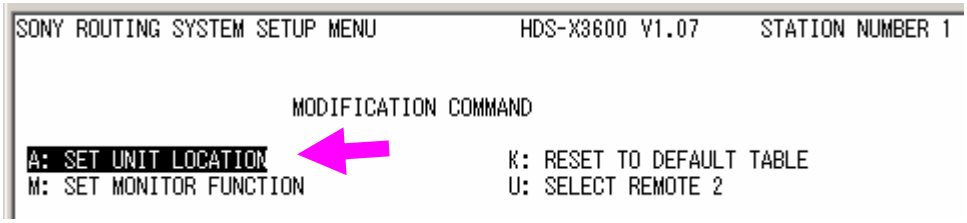
(1) Use the R: Call Secondary Station menu.

The name of menu includes “Secondary”, but you should specify 1 to it, which is the station ID of the primary station, when the primary station is used as a router.



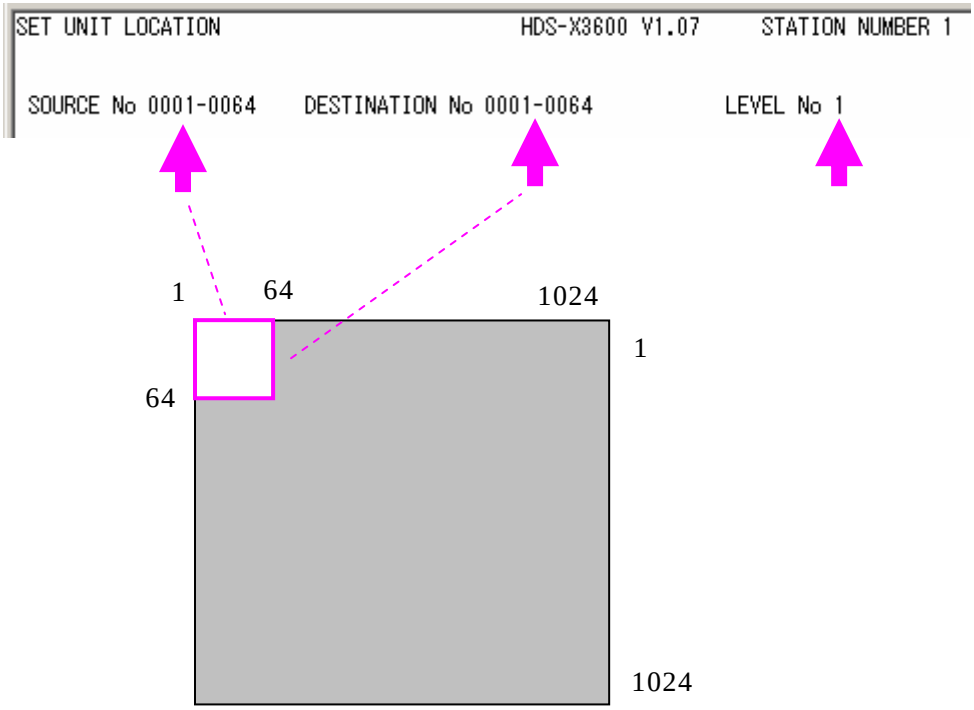


(2) Select the A: Set Unit Location menu.



6-1. Layout of Router (continued)

The value shown in this menu indicates the location where the Router is arranged in the matrix space.



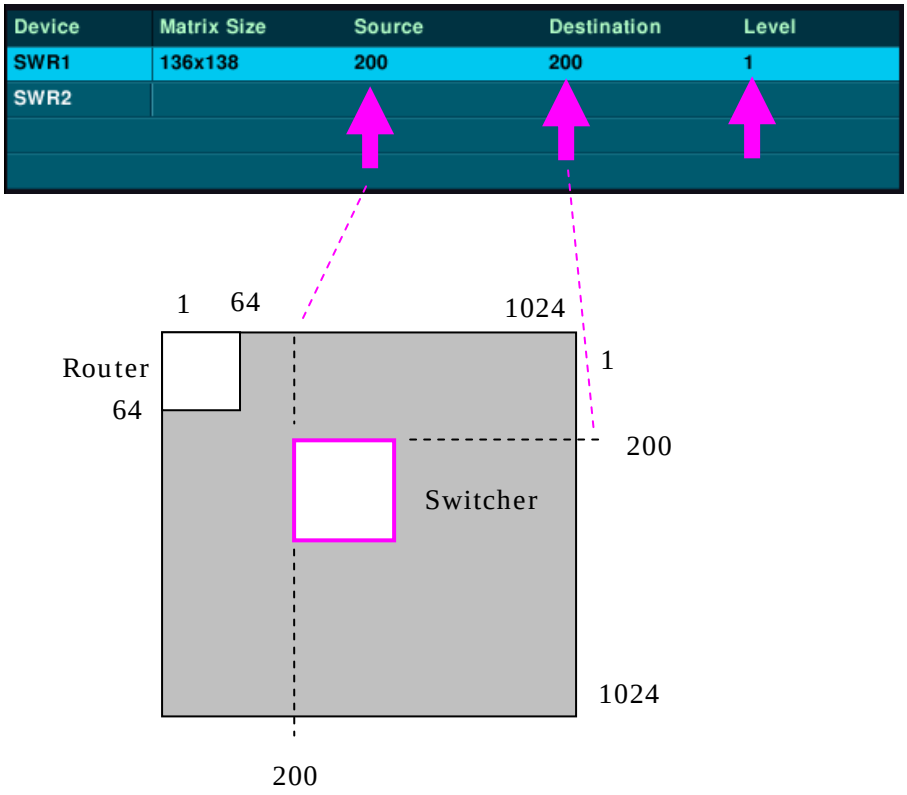
6-2. Layout of Switcher

Click Engineering Setup - the Router/Tally - Router (No. 7361) to open the Router menu and set the Switcher on it.

(1) Select Standard (136 x 138) normally for the matrix size. When you wish to select a smaller matrix size due to the scarceness of matrix space, you may choose Compact (128 x 128).
For the signal assignment to the matrix space, refer to 6-4: Switcher Matrix (Source) and 6-5: Switcher Matrix (Destination).

(2) Select the positions that do not overlap those of other devices and set them to Source and Destination respectively.

(3) Set Level as well.



The specification of the Switcher matrix assignment has been changed for the MVS version 5.00. Note that, when you try to use Multi Program 2, a new function added to Ver.5.00, the destinations are assigned to 4 different locations from those of the standard version. Those destinations are related to Utility-3, having new numbers 70, 85, 100 and 115.

6-3. Connection between Router and Switcher

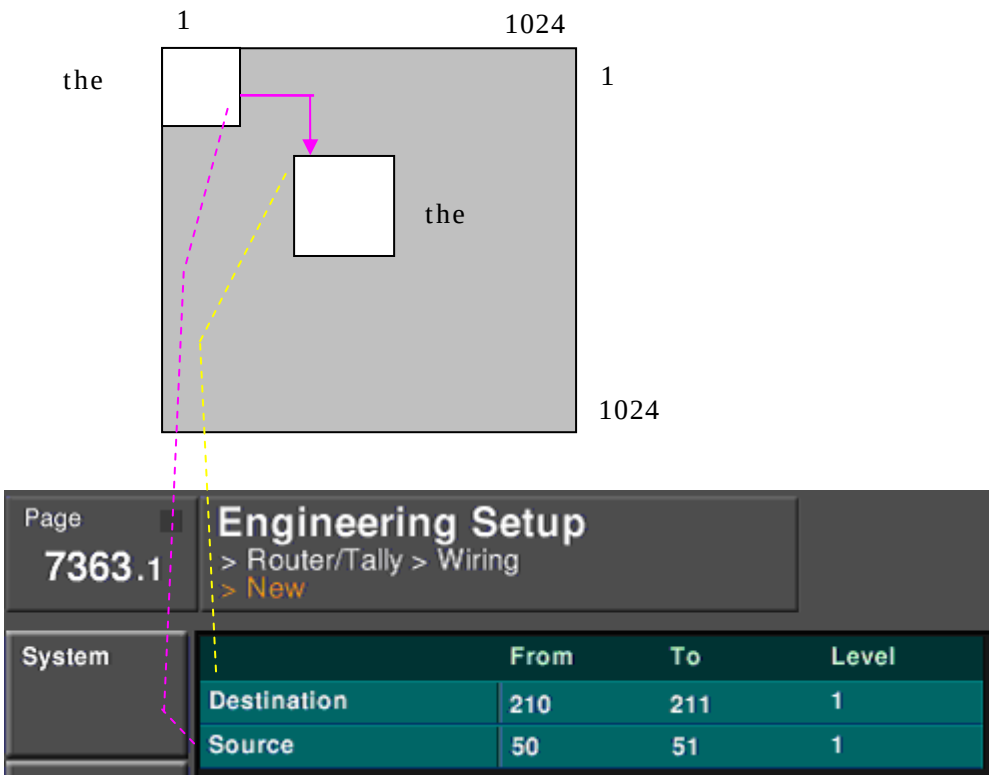
Make the settings between the Router and the Switcher.

The settings here mean the connection of the output terminal of the Switcher to the input of the Router and vice versa.

Such settings make it possible to notify that the input from the Router is actually on air when the output of the Switcher, which has been arranged to receive signals from the Router, is broadcast.

The following is the example of the connections between the outputs 50 and 51 of the Router and the inputs 210 and 211 of the Switcher in the matrix space.

Click Engineering Setup - Router/Tally - Wiring to show the Wiring menu (No. 7363) and make the settings there.



6-4. Switcher Matrix Assignment (Source)

No.	Source (Standard)	Source (Compact)
1 to 80	Primary 1 to 80	Primary 1 to 80
81	Black	Black
82	White	White
83	Color Bkgd 1	Color Bkgd 1
84	Color Bkgd 2	Color Bkgd 2
85	Frame Memory 1	Frame Memory 1
86	Frame Memory 2	Frame Memory 2
87	Frame Memory 3	Frame Memory 3
88	Frame Memory 4	Frame Memory 4
89	Frame Memory 5	Frame Memory 5
90	Frame Memory 6	Frame Memory 6
91	Frame Memory 7	Frame Memory 7
92	Frame Memory 8	Frame Memory 8
93	Color Correction 1	Color Correction 1
94	Color Correction 2	Color Correction 2
95	DME Monitor Video	DME Monitor Video
96	DME Monitor Key	DME Monitor Key
97	M/E-1 Out 1	M/E-1 Out 1
98	M/E-1 Out 2	M/E-1 Out 2
99	M/E-1 Out 3	M/E-1 Out 3
100	M/E-1 Out 4	M/E-1 Out 4
101	M/E-1 Out 5	M/E-1 Out 5
102	M/E-1 Out 6	M/E-1 Out 6
103	M/E-1 Proc Video	M/E-2 Out 1
104	M/E-1 Proc Key	M/E-2 Out 2
105	M/E-2 Out 1	M/E-2 Out 3
106	M/E-2 Out 2	M/E-2 Out 4
107	M/E-2 Out 3	M/E-2 Out 5
108	M/E-2 Out 4	M/E-2 Out 6
109	M/E-2 Out 5	M/E-3 Out 1
110	M/E-2 Out 6	M/E-3 Out 2

6-4. Switcher Matrix Assignment (Source)

No.	Source (Standard)	Source (Compact)
111	M/E-2 Proc Video	M/E-3 Out 3
112	M/E-2 Proc Key	M/E-3 Out 4
113	M/E-3 Out 1	M/E-3 Out 5
114	M/E-3 Out 2	M/E-3 Out 6
115	M/E-3 Out 3	P/P Out 1
116	M/E-3 Out 4	P/P Out 2
117	M/E-3 Out 5	P/P Out 3
118	M/E-3 Out 6	P/P Out 4
119	M/E-3 Proc Video	P/P Out 5
120	M/E-3 Proc Key	P/P Out 6
121	P/P Out 1	DME 1
122	P/P Out 2	DME 2
123	P/P Out 3	DME 3
124	P/P Out 4	DME 4
125	P/P Out 5	DME 5
126	P/P Out 6	DME 6
127	P/P Proc Video	DME 7
128	P/P Proc Key	DME 8
129	DME 1	-
130	DME 2	-
131	DME 3	-
132	DME 4	-
133	DME 5	-
134	DME 6	-
135	DME 7	-
136	DME 8	-

6-5. Switcher Matrix Assignment (Destination)

No.	Bus (Standard)	Bus (MP2)	Bus (Compact)
1 to 48	Out 1 to 48 Assignable Output	Out 1 to 48 Assignable Output	Out 1 to 48 Assignable Output
49	Monitor Out 1	Monitor Out 1	Monitor Out 1
50	Monitor Out 2	Monitor Out 2	Monitor Out 2
51	Monitor Out 3	Monitor Out 3	Monitor Out 3
52	Monitor Out 4	Monitor Out 4	Monitor Out 4
53	Monitor Out 5	Monitor Out 5	Monitor Out 5
54	Monitor Out 6	Monitor Out 6	Monitor Out 6
55	Monitor Out 7	Monitor Out 7	Monitor Out 7
56	Monitor Out 8	Monitor Out 8	Monitor Out 8
57	M/E-1 Bkgd A	M/E-1 Bkgd A	M/E-1 Bkgd A
58	M/E-1 Bkgd B	M/E-1 Bkgd B	M/E-1 Bkgd B
59	M/E-1 Utility 1	M/E-1 Utility 1	M/E-1 Utility 1
60	M/E-1 Utility 2	M/E-1 Utility 2	M/E-1 Utility 2
61	M/E-1 Key 1 Fill	M/E-1 Key 1 Fill	M/E-1 Key 1 Fill
62	M/E-1 Key 1 Source	M/E-1 Key 1 Source	M/E-1 Key 1 Source
63	M/E-1 Key 2 Fill	M/E-1 Key 2 Fill	M/E-1 Key 2 Fill
64	M/E-1 Key 2 Source	M/E-1 Key 2 Source	M/E-1 Key 2 Source
65	M/E-1 Key 3 Fill	M/E-1 Key 3 Fill	M/E-1 Key 3 Fill
66	M/E-1 Key 3 Source	M/E-1 Key 3 Source	M/E-1 Key 3 Source
67	M/E-1 Key 4 Fill	M/E-1 Key 4 Fill	M/E-1 Key 4 Fill
68	M/E-1 Key 4 Source	M/E-1 Key 4 Source	M/E-1 Key 4 Source
69	M/E-1 DME Video	M/E-1 DME Video	M/E-2 Bkgd A
70	M/E-1 DME Key	* M/E-1 Utility 3	M/E-2 Bkgd B
71	M/E-1 Ext DME	M/E-1 Ext DME	M/E-2 Utility 1
72	M/E-2 Bkgd A	M/E-2 Bkgd A	M/E-2 Utility 2
73	M/E-2 Bkgd B	M/E-2 Bkgd B	M/E-2 Key 1 Fill
74	M/E-2 Utility 1	M/E-2 Utility 1	M/E-2 Key 1 Source
75	M/E-2 Utility 2	M/E-2 Utility 2	M/E-2 Key 2 Fill
76	M/E-2 Key 1 Fill	M/E-2 Key 1 Fill	M/E-2 Key 2 Source
77	M/E-2 Key 1 Source	M/E-2 Key 1 Source	M/E-2 Key 3 Fill
78	M/E-2 Key 2 Fill	M/E-2 Key 2 Fill	M/E-2 Key 3 Source

6-5. Switcher Matrix Assignment (Destination)

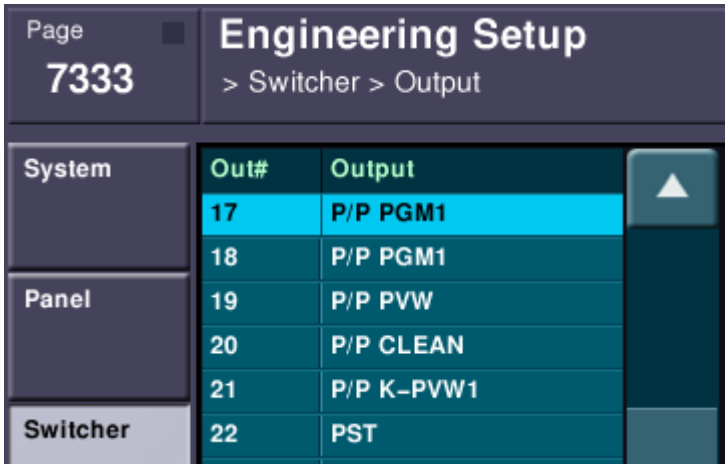
No.	Bus (Standard)	Bus (MP2)	Bus (Compact)
79	M/E-2 Key 2 Source	M/E-2 Key 2 Source	M/E-2 Key 4 Fill
80	M/E-2 Key 3 Fill	M/E-2 Key 3 Fill	M/E-2 Key 4 Source
81	M/E-2 Key 3 Source	M/E-2 Key 3 Source	M/E-3 Bkgd A
82	M/E-2 Key 4 Fill	M/E-2 Key 4 Fill	M/E-3 Bkgd B
83	M/E-2 Key 4 Source	M/E-2 Key 4 Source	M/E-3 Utility 1
84	M/E-2 DME Video	M/E-2 DME Video	M/E-3 Utility 2
85	M/E-2 DME Key	* M/E-2 Utility 3	M/E-3 Key 1 Fill
86	M/E-2 Ext DME	M/E-2 Ext DME	M/E-3 Key 1 Source
87	M/E-3 Bkgd A	M/E-3 Bkgd A	M/E-3 Key 2 Fill
88	M/E-3 Bkgd B	M/E-3 Bkgd B	M/E-3 Key 2 Source
89	M/E-3 Utility 1	M/E-3 Utility 1	M/E-3 Key 3 Fill
90	M/E-3 Utility 2	M/E-3 Utility 2	M/E-3 Key 3 Source
91	M/E-3 Key 1 Fill	M/E-3 Key 1 Fill	M/E-3 Key 4 Fill
92	M/E-3 Key 1 Source	M/E-3 Key 1 Source	M/E-3 Key 4 Source
93	M/E-3 Key 2 Fill	M/E-3 Key 2 Fill	P/P Bkgd A
94	M/E-3 Key 2 Source	M/E-3 Key 2 Source	P/P Bkgd B
95	M/E-3 Key 3 Fill	M/E-3 Key 3 Fill	P/P Utility 1
96	M/E-3 Key 3 Source	M/E-3 Key 3 Source	P/P Utility 2
97	M/E-3 Key 4 Fill	M/E-3 Key 4 Fill	P/P Key 1 Fill
98	M/E-3 Key 4 Source	M/E-3 Key 4 Source	P/P Key 1 Source
99	M/E-3 DME Video	M/E-3 DME Video	P/P Key 2 Fill
100	M/E-3 DME Key	* M/E-3 Utility 3	P/P Key 2 Source
101	M/E-3 Ext DME	M/E-3 Ext DME	P/P Key 3 Fill
102	P/P Bkgd A	P/P Bkgd A	P/P Key 3 Source
103	P/P Bkgd B	P/P Bkgd B	P/P Key 4 Fill
104	P/P Utility 1	P/P Utility 1	P/P Key 4 Source
105	P/P Utility 2	P/P Utility 2	P/P DME Video
106	P/P Key 1 Fill	P/P Key 1 Fill	DME Utility 1
107	P/P Key 1 Source	P/P Key 1 Source	DME Utility 2
108	P/P Key 2 Fill	P/P Key 2 Fill	Frame Memory Source 1
109	P/P Key 2 Source	P/P Key 2 Source	Frame Memory Source 2
110	P/P Key 3 Fill	P/P Key 3 Fill	-

6-5. Switcher Matrix Assignment (Destination)

No.	Bus (Standard)	Bus (MP2)	Bus (Compact)
111	P/P Key 3 Source	P/P Key 3 Source	-
112	P/P Key 4 Fill	P/P Key 4 Fill	DME 1 Video
113	P/P Key 4 Source	P/P Key 4 Source	DME 1 Key
114	P/P DME Video	P/P DME Video	DME 2 Video
115	P/P DME Key	* P/P Utility 3	DME 2 Key
116	P/P Ext DME	P/P Ext DME	DME 3 Video
117	DME Utility 1	DME Utility 1	DME 3 Key
118	DME Utility 2	DME Utility 2	DME 4 Video
119	Frame Memory Source 1	Frame Memory Source 1	DME 4 Key
120	Frame Memory Source 2	Frame Memory Source 2	DME 5 Video
121	-	-	DME 5 Key
122	-	-	DME 6 Video
123	DME 1 Video	DME 1 Video	DME 6 Key
124	DME 1 Key	DME 1 Key	DME 7 Video
125	DME 2 Video	DME 2 Video	DME 7 Key
126	DME 2 Key	DME 2 Key	DME 8 Video
127	DME 3 Video	DME 3 Video	DME 8 Key
128	DME 3 Key	DME 3 Key	-
129	DME 4 Video	DME 4 Video	-
130	DME 4 Key	DME 4 Key	-
131	DME 5 Video	DME 5 Video	-
132	DME 5 Key	DME 5 Key	-
133	DME 6 Video	DME 6 Video	-
134	DME 6 Key	DME 6 Key	-
135	DME 7 Video	DME 7 Video	-
136	DME 7 Key	DME 7 Key	-
137	DME 8 Video	DME 8 Video	-
138	DME 8 Key	DME 8 Key	-

6-6. Assignable Output of Switcher

You can check the assignments of signals to the outputs of the Switcher on the Output (No. 7333), which you can show by clicking Engineering Setup - Switcher - Output.



You can plan and manage the assignments of signals (Buses) to up to 48 assignable outputs of the Switcher on the following list.

The terminal number indicates a number in the matrix space.

Output Number	Bus	Terminal Number	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			

6-6. Assignable Output of Switcher (continued)

Output Number	BUS	Terminal Number	
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			

6-6. Assignable Output of Switcher (continued)

The following lists the buses assignable to the outputs of the Switcher.

	Bus			Bus
1	Undefined		26	M/E-2 K-PVW1
2	Color Bkgd 2		27	M/E-2 Out 5
3	Frame Memory 1		28	M/R-2 Out 6
4	Frame Memory 2		29	M/E-2 Proc Video
5	Frame Memory 3		30	M/E-2 Proc Key
6	Frame Memory 4		31	M/E-3 PGM1
7	Frame Memory 5		32	M/E-3 PVW
8	Frame Memory 6		33	M/E-3 CLEAN
9	Frame Memory 7		34	M/E-3 K-PVW1
10	Frame Memory 8		35	M/E-3 Out 5
11	Color Corrector 1		36	M/R-3 Out 6
12	Color Corrector 2		37	M/E-3 Proc Video
13	DME Monitor Video		38	M/E-3 Proc Key
14	DME Monitor Key		39	P/P PGM1
15	M/E-1 PGM1		40	P/P PVW
16	M/E-1 PVW		41	P/P CLEAN
17	M/E-1 CLEAN		42	P/P K-PVW1
18	M/E-1 K-PVW1		43	P/P Out 5
19	M/E-1 Out 5		44	P/P Out 6
20	M/R-1 Out 6		45	P/P Proc Video
21	M/E-1 Proc Video		46	P/P Proc Key
22	M/E-1 Proc Key		-	
23	M/E-2 PGM1		-	
24	M/E-2 PVW		-	
25	M/E-2 CLEAN		-	

You can select AUX busses from 1 to 48, EDIT PVW and PST in addition to those buses.

7. Confirmation of Switching Operation

7-1. Switch Destinations on Router Setup

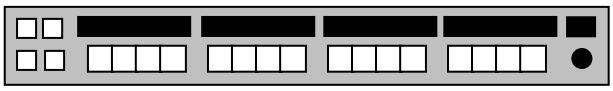
Open the Q: Change Cross Point menu of the Setup.

Place the cursor on the destination you want to select.

Specify the destination with a type + number or a description name to select it.

```
CHANGE CROSSPOINT                          HDS-X3600 V1.07     STATION NUMBER 1
                                                                    LEVEL=1
 DEST    SOURCE      DEST    SOURCE      DEST    SOURCE      DEST    SOURCE
 OUT001 -IN001       OUT002 -IN001       OUT003 -IN003       OUT004 -IN004
 OUT005 -IN005       OUT006 -IN006       OUT007 -IN007       OUT008 -IN006
 OUT009 -IN009       OUT010 -IN010       OUT011 -IN011       OUT012 -IN012
 OUT013 -IN013       OUT014 -IN014       OUT015 -IN015       OUT016 -IN016
 OUT017 -IN017       OUT018 -IN018       OUT019 -IN019       OUT020 -IN020
 OUT021 -IN021       OUT022 -IN022       OUT023 -IN023       OUT024 -IN024
```

7-2. Switch Destination/Source on Control Panel



The following is the example of using BKS-R1617 as the Control Panel.

(1) Setup of Control Panel

Enter the station ID of the Control Panel that you want to set to show the menu of the secondary station.

```
SONY ROUTING SYSTEM SETUP MENU             HDS-X3600 V1.07     STATION NUMBER 1


                      MODIFICATION COMMAND

 A: DISPLAY CONTROL AREA                  B: SET SOURCE/DEST TYPE
 C: SET DESTINATION NAME                  D: SET SOURCE NAME
 E: SET LEVEL TABLE                       F: SET ACTIVE UNIT NUMBER
 G: UPDATE BACKUP CONTROLLER              H: SET GLOBAL PHANTOM
 J: NAME STYLE(Type + Num  )              L: SET PHYSICAL ASSIGNMENT
 M: SET INHIBIT TABLE                     N: SET DESCRIPTION NAME GROUP
 O: SET TIE LINES                         Q: CHANGE CROSSPOINT
 R: CALL SECONDARY STATION                S: SET SOURCE ASSIGNMENT
```

```
CALL STATION NUMBER ? 2
```

7-2. Switch Destination/Source on Control Panel (continued)

Open the N: SET PANEL TABLE menu.

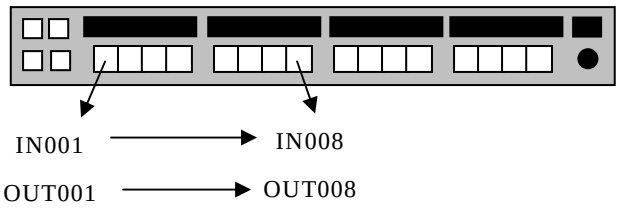
```
SONY ROUTING SYSTEM SETUP MENU          BKS-R1617 V1.07    STATION NUMBER 2

                      MODIFICATION COMMAND

          H: SET PHANTOM TABLE

          N: SET PANEL TABLE

          O: SET AVAILABLE SOURCE/DESTINATION

          R: SET ROUTE

          L: COPY TABLE DATA FROM

          Y: SET DISPLAY MODES

          Z: SET PANEL STATUS
```

Make the settings of 16 buttons on the panel to specify their sources and destinations when you press them.

```
SONY ROUTING SYSTEM SETUP MENU          BKS-R1617 V1.07    STATION NUMBER 2
 SET PANEL TABLE(SOURCE)   CONTROL DESTINATION = OUT002
01 KEY=IN001        02 KEY=IN002        03 KEY=IN003        04 KEY=IN004
05 KEY=IN005        06 KEY=IN006        07 KEY=IN007        08 KEY=IN008
09 KEY=.......      10 KEY=.......      11 KEY=.......      12 KEY=.......
13 KEY=.......      14 KEY=.......      15 KEY=.......      16 KEY=.......



 SET PANEL TABLE(DESTINATION)
01 KEY=OUT001       02 KEY=OUT002       03 KEY=OUT003       04 KEY=OUT004
05 KEY=OUT005       06 KEY=OUT006       07 KEY=OUT007       08 KEY=OUT008
09 KEY=.......      10 KEY=.......      11 KEY=.......      12 KEY=.......
13 KEY=.......      14 KEY=.......      15 KEY=.......      16 KEY=.......
```

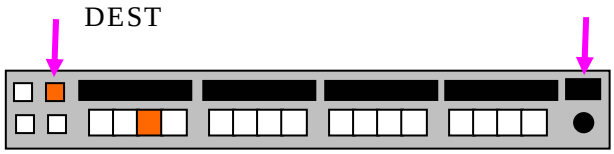
This setting example shows that 8 sources and 8 destinations are respectively assigned to IN and OUT of the leftmost switching buttons.

Whether you operate a source button or a destination button will be described in the following.



7-2. Switch Destination/Source on Control Panel (continue)

(2) Switching Operation

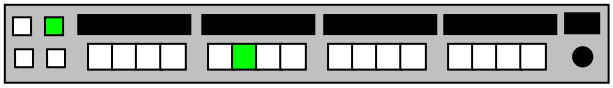


When you press the DEST button at the left and it lights orange, you can select a destination.

The indicator shows the assignment of destination to each button.

When you press the DEST button, DEST or SOUR appears temporarily in the indicator at the right to show the specified mode.

When you press the DEST button and it lights green, you can select a source.

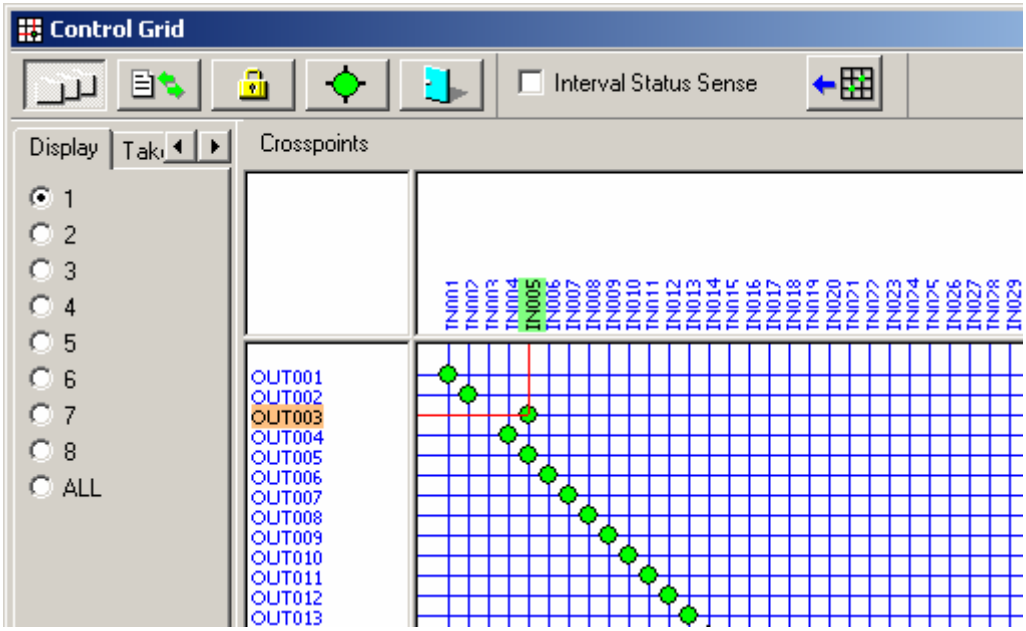


The following picture shows that selecting a button on the Control Panel changes the display of UMD as well.

7-3. Switch Destination/Source with BZR-2000

To make the selection on BZR-2000, open the Control Grid menu by clicking Tool - Control Grid.

The following picture shows that the source of OUT003 has been changed to IN005 by double-clicking on the cross point of OUT003 and IN005.

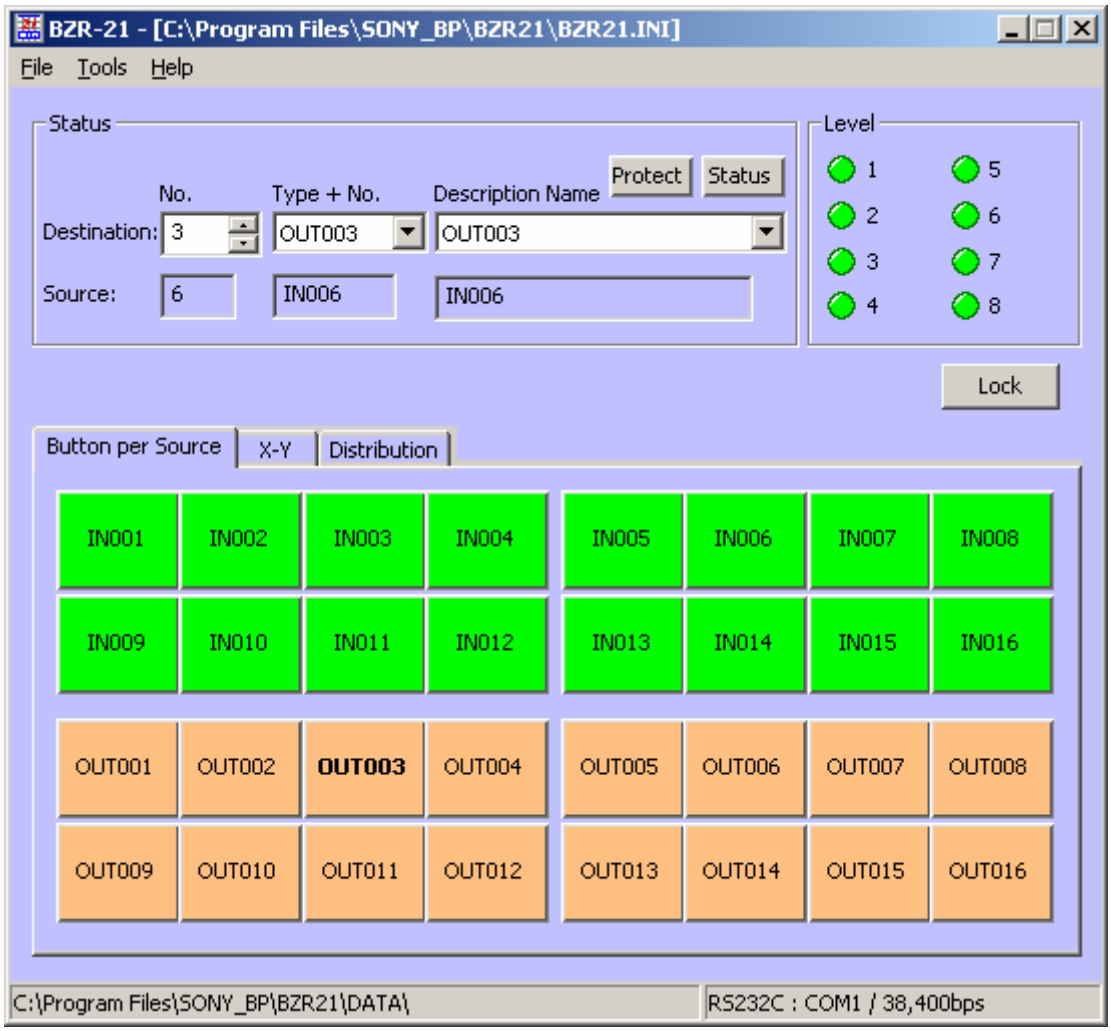


7-4. Switch Destination/Source with BZR-21

BZR-21 is the software dedicated to the selection of destinations/sources.

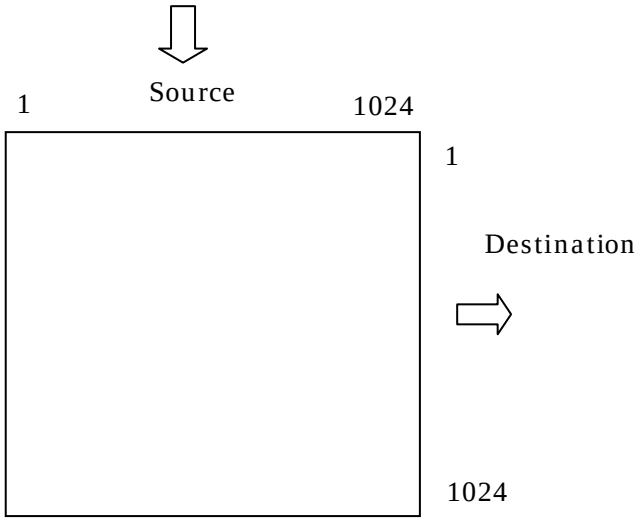
To use it, the computer should be connected to the primary station through RS-232C or Ethernet.

Select a destination with a button in 2 lower lines and then do a source with a button in 2 upper lines.



8. Settings of Terminal Names

Set name data (called terminal names) to the sources and destinations in the 1024 x 1024 matrix space for easier selection of signals.



It is not necessary to set terminal names to all of 1024 sources and destinations respectively. Set the names only to the terminals to which sources and/or destinations of the Routers or the Switchers are connected.

Devise and prepare the following list to manage them.

Source Terminal Name				
Source Number	Terminal Name (Type + Number)	Terminal Name (Description)	Device Source Number	
1				
2				
3				
:				
1024				

The device source numbers are what are given to the respective Switchers and Routers. Even if you assign the number 200 and on to the Switchers in the matrix space, you should enter the first Switcher in the source number 1 column for easier identification.

8. Settings of Terminal Names (continued)

Destination Terminal Name				
Destination Number	Terminal Name (Type + Number)	Terminal Name (Description)	Device Source Number	
1				
2				
3				
:				
1024				

8-1. Selection of Type + Number and Description Name

Using the Router, you can select either type + number or description name to set and display a terminal name.

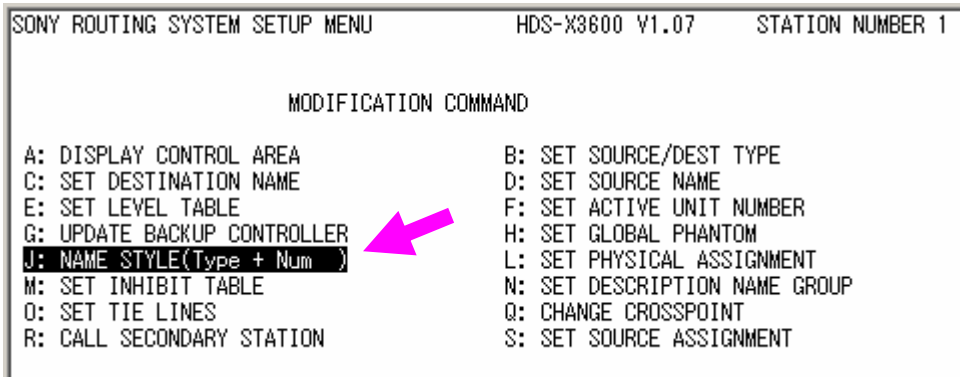
Select it on the J: NAME STYLE menu of Setup.

This menu alternates between Type + Name and DESCRIP everything you press the J key on the keyboard.

This selection also changes simultaneously the signal name shown on the device connected to S-BUS.

The Control Panel of the Switcher does not work with it.

For the selection of the Switcher, refer to 8-4.

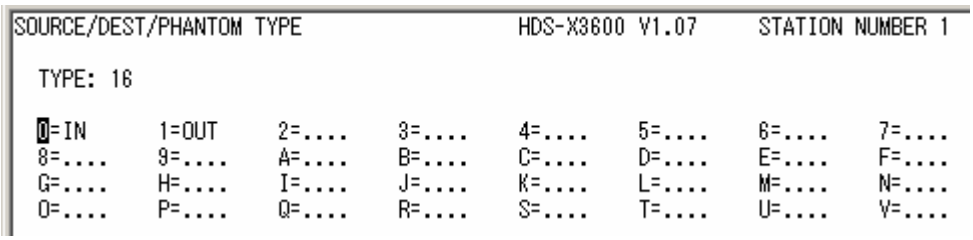


8-2. Type + Number

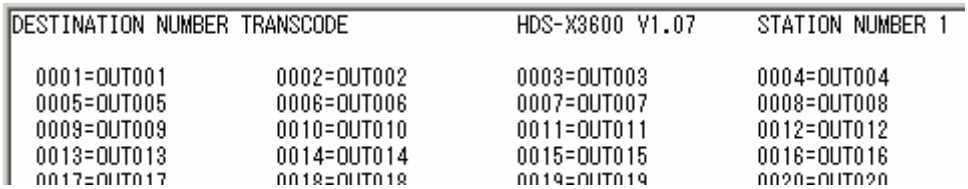
It is a combination of 4 characters called Type and a 3-digit number.

Setting 0 or 1 to the forth character of Type could show a 4-digit number.

First of all, make the settings of Type on the B: SET SOURCE/DEST TYPE menu of Setup.



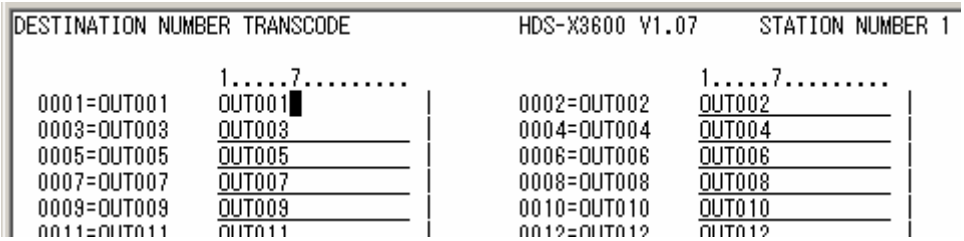
Next, set signal names to outputs and inputs on the C: SET DESTINATION NAME or D: SET SOURCE NAME menu.



8-3. Description Name

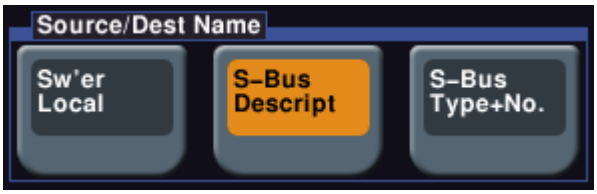
You may set any name in up to 16 characters.

Set signal names to outputs and inputs on the C: SET DESTINATION NAME or D: SET SOURCE NAME menu.



8-4. Display of Source/Destination Name on Switcher Control Panel

Click Engineering Setup - Panel - Operation on the Switcher. When the Operation (No. 7326) menu appears, select a signal name unique to the Switcher, Description or Type + Number of the Router.



To update the display of the Control Panel of the Switcher when you have changed Description Name on Setup of the Router, click Engineering Setup - Panel - Operation to show the Operation (No.7326) menu and then turn on the S-Bus Name Link button.

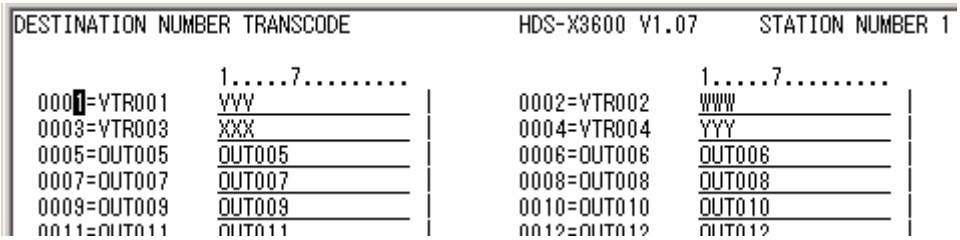
Note: When the S-BUS descript is selected, the display name of the switcher control panel changes from the signal names unique to the switcher (Sw'er Local) to the Description Names of the router (S-BUS descript).

8-5. Send Description Name to Control Panel of Router

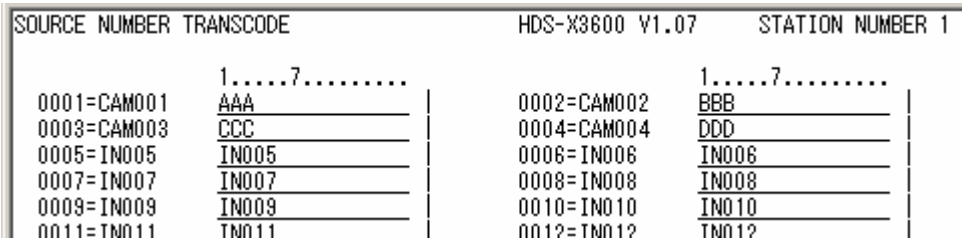
When you change the settings on the primary station, the name in the Type + Number format is automatically notified to the secondary stations.

For the name in the Description format, you will have to go through a little more complicated procedure.

(1) Change the initial value to another value on the C: SET DESTINATION NAME menu.



(2) Do the same on the D: SET SOURCE NAME menu.

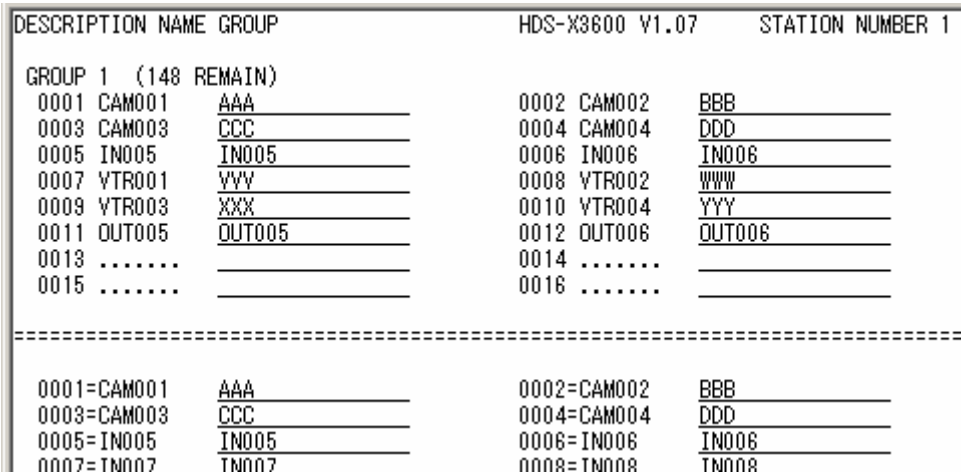


(3) Group the new values on the N: SET DESCRIPTION NAME GROUP menu and then send them to the secondary stations.

Select Destination/Source names from the candidates shown in the lower part of the window and register them respectively to the upper part of the window one by one.

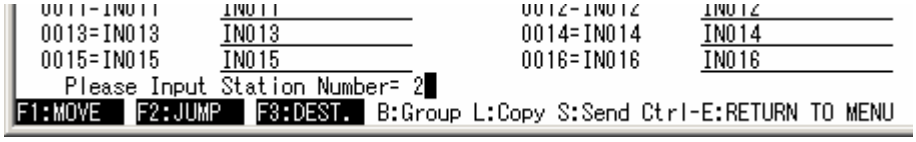
Delete the registered names, if necessary, with the backspace key.

Register the mixture of the destination and source names as one group.



8-5. Send Description Name to Control Panel of Router (continued)

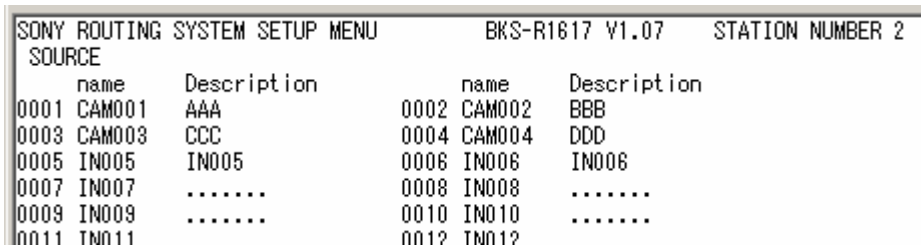
(4) Press the S key, enter the station ID of the destination of the secondary station and send the description name.



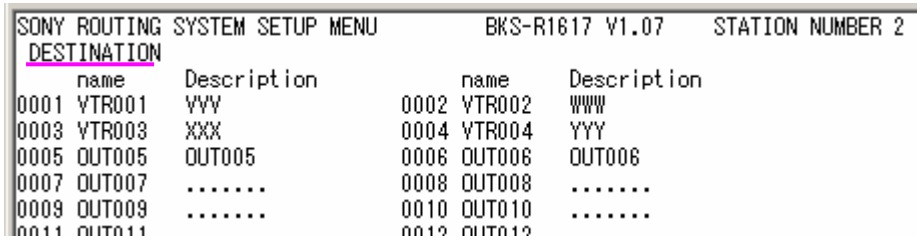
(5) Check the data that the Control Unit received.

Select the R: CALL SECONDARY STATION menu and enter the station ID of the secondary station.

Select the S: DISPLAY DESCRIPTION NAME menu and show the received data.



Press the right arrow key and the destination data appears.



8-5. Send Description Name to Control Panel of Router (continued)

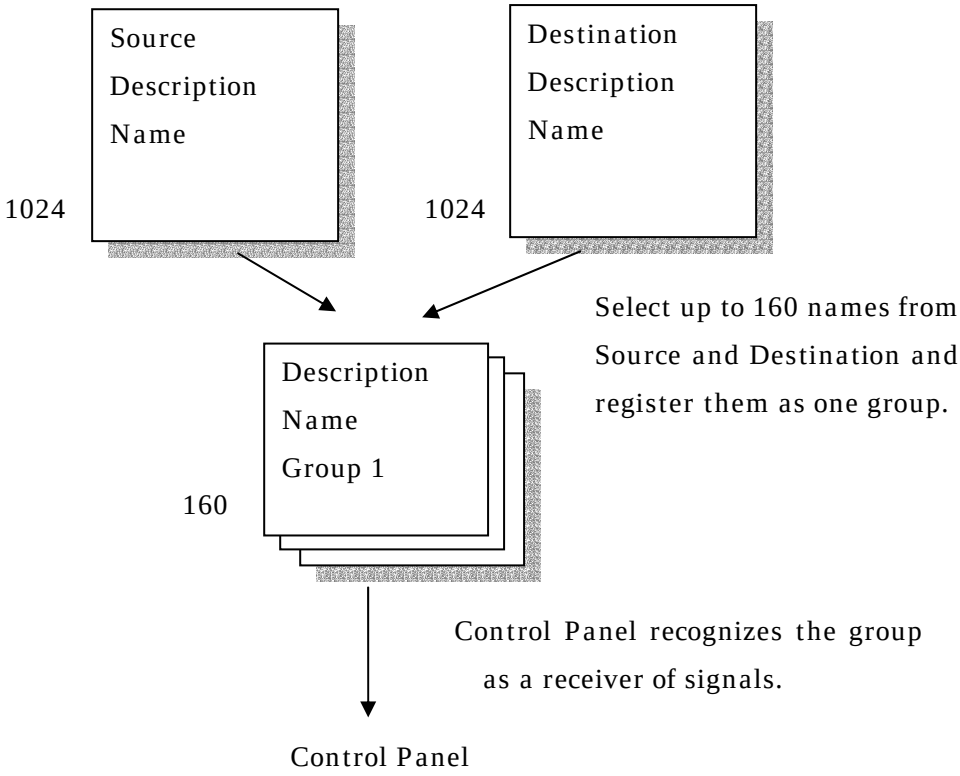
(6) Assign sources and destinations to the buttons on the panel on the N: SET PANEL TABLE menu.

```
SONY ROUTING SYSTEM SETUP MENU          BKS-R1617 V1.07    STATION NUMBER 2
 SET PANEL TABLE(SOURCE)   CONTROL DESTINATION = YYY
01 KEY=AAA          02 KEY=BBB          03 KEY=CCC          04 KEY=DDD
05 KEY=.......      06 KEY=.......      07 KEY=.......      08 KEY=.......
09 KEY=.......      10 KEY=.......      11 KEY=.......      12 KEY=.......
13 KEY=.......      14 KEY=.......      15 KEY=.......      16 KEY=.......




 SET PANEL TABLE(DESTINATION)
01 KEY=VVV          02 KEY=WWW          03 KEY=XXX          04 KEY=YYY
05 KEY=.......      06 KEY=.......      07 KEY=.......      08 KEY=.......
09 KEY=.......      10 KEY=.......      11 KEY=.......      12 KEY=.......
13 KEY=.......      14 KEY=.......      15 KEY=.......      16 KEY=.......
```

Once they are assigned, the inputs of the Router change when you operate the Control Unit.

For the operation procedure, refer to “7-2. Switch Destination/Source on Control Panel”.

The above-mentioned procedures may be illustrated as follows.

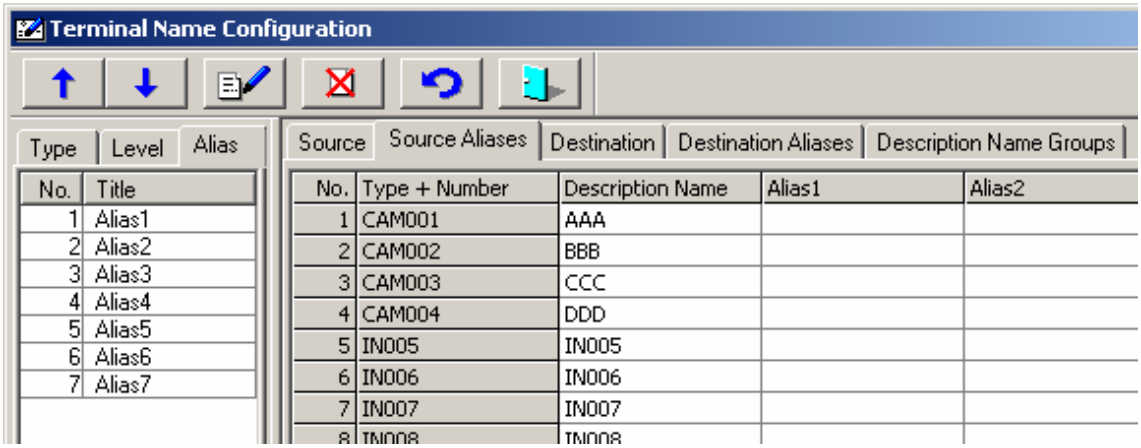


8-6. Alias Name

You can use 7 kinds of name tables in addition to Type + Number and Description Name.

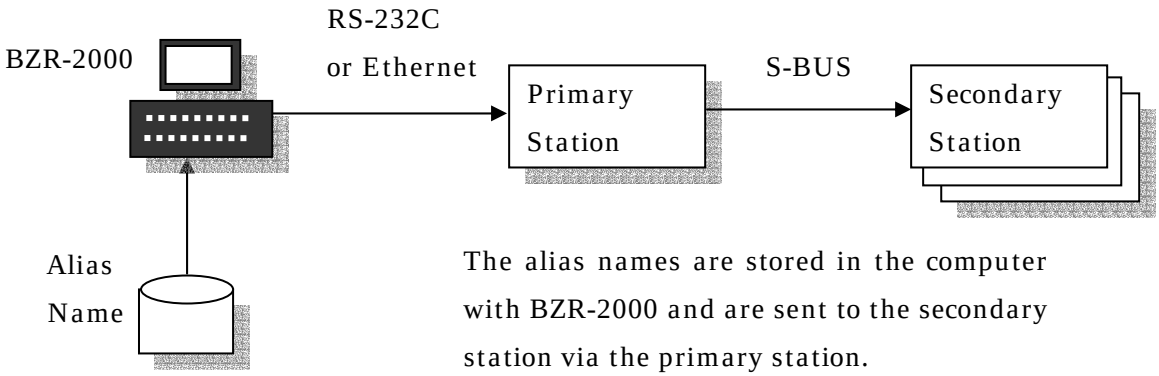
The data is stored in the computer in which BZR-2000 is running.

The computer sends all of 7 kinds of alias names to the secondary stations, from which the secondary stations select a table including the necessary alias numbers and display it.



Click Engineering Setup - the Router/Tally - Router to show the Router (No.7361) menu and select an alias name on it.

You can enter 0 as a value, but 0 indicates the use of names other than the alias names.



The alias names are stored in the computer with BZR-2000 and are sent to the secondary station via the primary station.

Both Source and Destination data can be sent by one click.

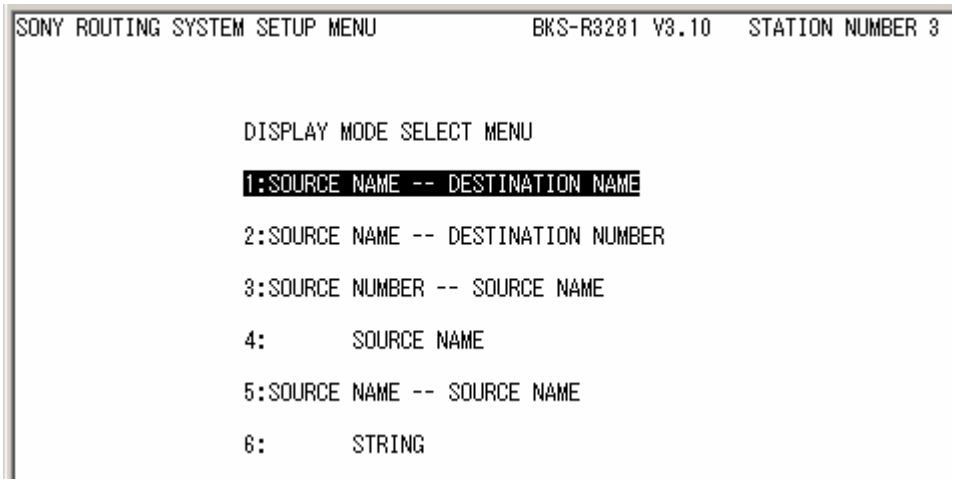
Although the data is sent to the secondary stations via the primary station, the data is not stored in the primary station.

8-7. Show Terminal Name on UMD

UMD is usually placed under or above the display unit connected to one destination.
It shows the destination assignment in the terminal name and/or the source to be outputted from the destination.

(1) Selection of Display Format

The following shows the setup menu of the single status display unit BKS-R3281.
Specify whether the sources or the destinations should be displayed or both of them should be done.
In addition to the terminal names of the sources and the destinations, it is capable of showing character strings.



(2) Specification of Destination

On the Setup menu, specify the destination of the display unit to which UMD is connected.
When UMD is notified of the change of the source of the specified destination through S-BUS, it shows the signal name of a new source.

8-8. Import cvs Files

Set a signal name to a csv file and you can send it to the primary station using the Import function of BZR-2000.

The following shows the contents of the cvs file.

1024 source names are listed in the initial part of the file.

```
// AliasName Source
No,Description Name,Alias1,Alias2,Alias3,Alias4,Alias5,Alias6,Alias7
  1,IN001,,,,,,,
  2,IN002,,,,,,,
  3,IN003,,,,,,,
  4,IN004,,,,,,,
  5,IN005,,,,,,,
```

1024 destination names are listed in the latter part of the file.

You need to scroll the window to see the destination names.

```
1023,IN1023,,,,,,,
1024,IN1024,,,,,,,

// AliasName Destination
No,Description Name,Alias1,Alias2,Alias3,Alias4,Alias5,Alias6,Alias7
  1,OUT001,,,,,,,
  2,OUT002,,,,,,,
  3,OUT003,,,,,,,
  4,OUT004,,,,,,,
  5,OUT005,,,,,,,
```

They are shown in an Excel list.

	A	B	C	D	E	F	G	H	I
1	// AliasName Source								
2	No	Description	Alias1	Alias2	Alias3	Alias4	Alias5	Alias6	Alias7
3	1	IN001							
4	2	IN002							
5	3	IN003							
6	4	IN004							
7	5	IN005							
8	6	IN006							

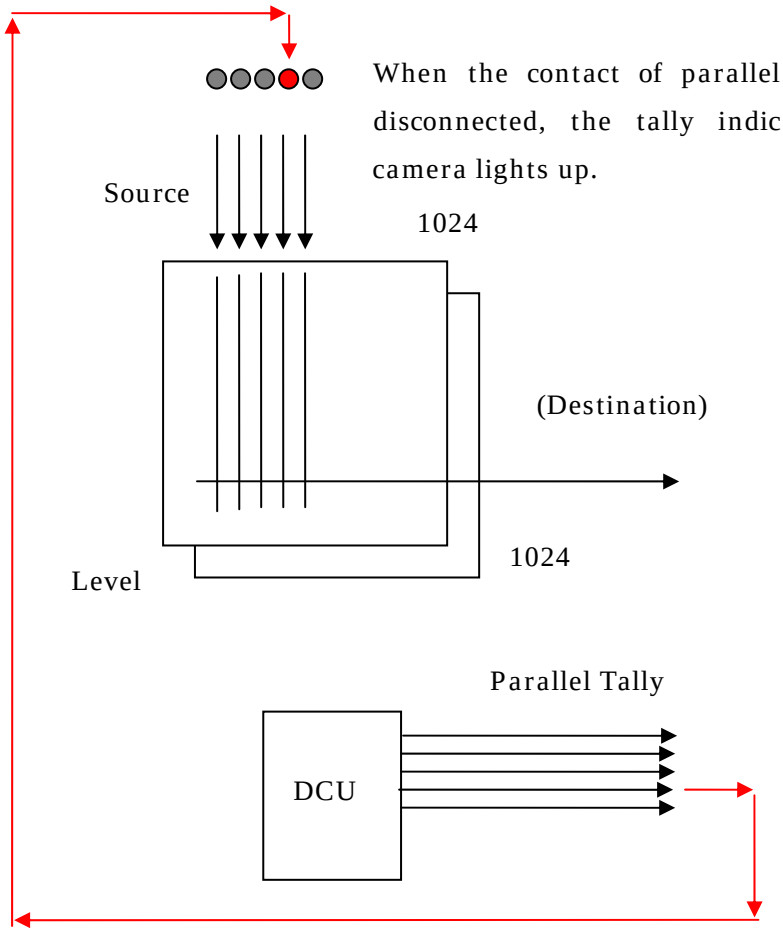
9. Settings of Tally

The tally is the function to turn on an indicator in order to indicate that a given source, which is outputted to a destination, is on air.

Make the settings of tallies in the following order.

(1) Assign a tally type (e.g. Red (R1) to the destination from which the signals from a source are broadcast.

(2) Select one from multiple sources and output it to the destination. Arrange that one of the parallel tallies of DCU increments when a given source is selected.



9-1. Parallel Tally

Settings of the relay output that DCU (Device Control Unit) of the Switcher provides

(1) Tally Type

Usually, there are 2 kinds of tallies.

One is the red tally indicating that a source is on air, and the other is the green tally indicating that a source will be on air next.

The Switcher Setup shows them as R1 and G1 respectively.

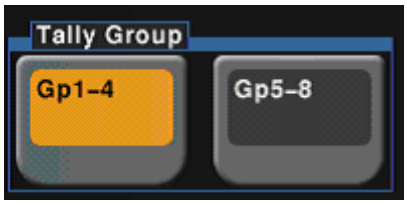
R2 and G2 can be used for the tallies for 2 different studios or for the yellow tally that indicates a source is being recorded to VTR instead of being on air.

To assign tally types to destinations, click Engineering Setup - the Router/Tally - Tally Enable and do it on the Tally Enable (No.7364) menu.

Specify tally types (any of R1, G1, R2, G2, R3, G3, R4 or G4) to the combinations of destinations and levels in the matrix space.

A tally type is comprised with a pair of a red and a green tally and up to 8 pairs are defined. There is a menu on which you can specify a pair to use by grouping 8 pairs into a R1-R4/G1-G4 group and a R5-R8/G5-G8 group.

It is the Group Tally menu (No.7362) that you can show by clicking Engineering Setup - Router/Tally - Group Tally.



9-1. Parallel Tally (continued)

When both red and green tallies as Tally Type are respectively assigned to one Destination,
the tally may light in umber. It depends on the type of the display device.

<How to assign both red and green tallies to one Destination>
1) Click the Engineering Setup - Router/Tally - Tally Enable and then click the New
on the Tally Enable menu (No. 7364).
2) For example, select R3 as the Tally Type for one Destination.
Likewise, select G3 for the above Destination.
(The number for the red tally and that for green tally must be identical.)

Note:
When several SCUs set in the same group (Group 1-4 or Group 5-9) are connected to the same S-BUS, troubles may occur. When one SCU in the same group is updated. all the tally status of all the SCUs in the group is also updated.
For example, when the SCU that is set the tally in the Group 1 and the SCU that is set tallys in the Group 2 exist in the same group, each SCU updates the status of Group 1-4 respectively.

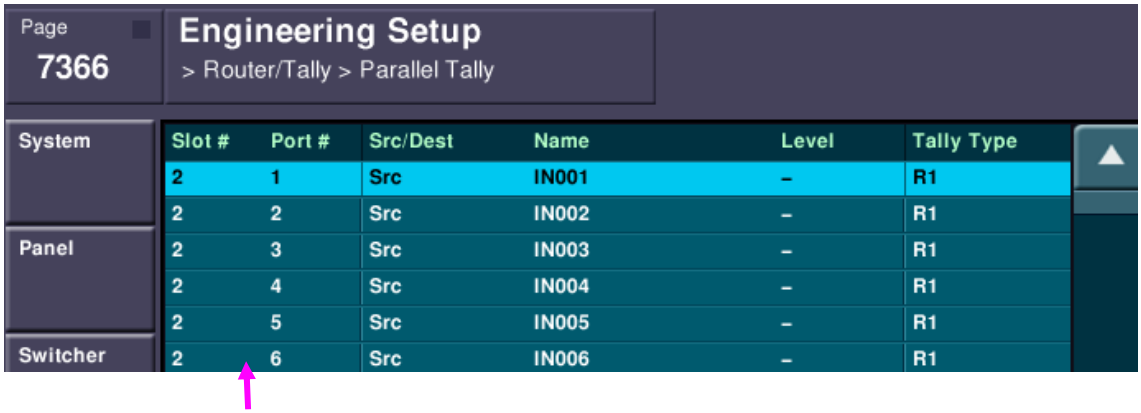
MVS V5.00
One SCU can be output all the parallel tallies for the Group 1-8 (both Group1-4 or Group5-9).
The menu to be selected either Group1-4 or Group5-9 still remains because the S-BUS control is available only for either one of these groups.

9-1. Parallel Tally (continued)

(2) Parallel Tally

Associate a source in the matrix space with a parallel tally of DCU.

Click Engineering Setup - the Router/Tally - Parallel Tally and use the appeared Parallel Tally menu (No.7366).

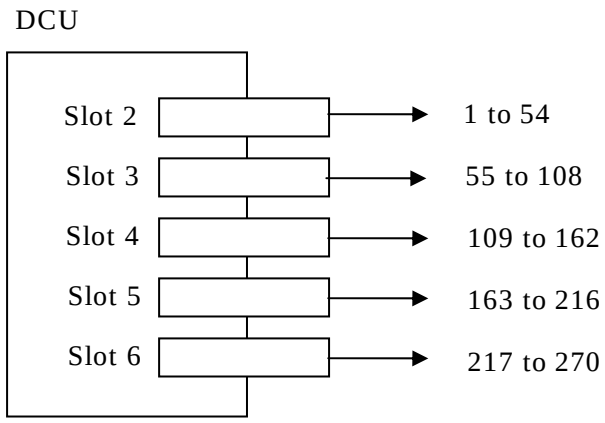


Slot number and Port number of DCU

To DCU (MKS-8700), you can install up to 5 boards to its slots (No.2 to 6).

Each board contains 54 parallel tally outputs.

Associate each parallel tally output with a source, destination and level in the matrix space.



One DCU can provide up to 270 parallel tallies.

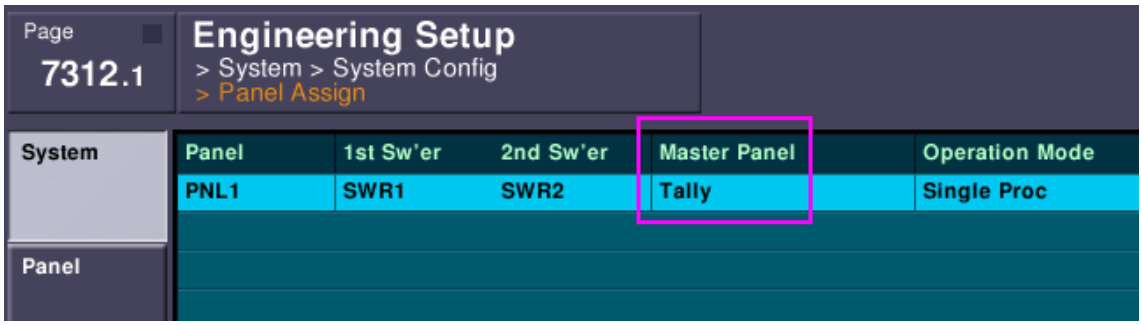
Since it is possible to connect up to 2 DCUs, 540 parallel tallies is available in total.

9-1. Parallel Tally (continued)

(3) Master Panel

Specify the control panel that creates tallies when multiple control panels of the Switcher exist.

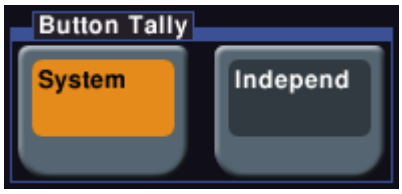
Make the settings so that the characters “Tally” appears even if only one control panel exists.



(4) Button Tally (Tally Button)

On the Switcher Setup, click Engineering Setup - Panel - Operation and make the settings on the appeared Operation menu (No.7326).

When you select “Independ”, only the tally of the Switcher is available.



Only the tally of the switcher means that the tally is generated for the input signal that is output from the PGM OUT of the switcher.

9-1. Parallel Tally (continued)

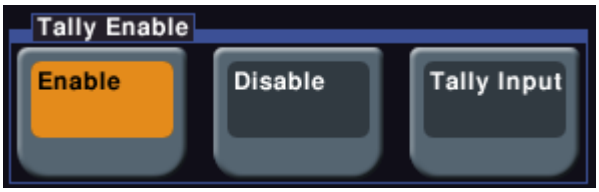
(5) Tally Enable

DCU allows signals from outside to enable or disable its tally function.

On the Switcher Setup, click Engineering Setup - Router/Tally - Tally Enable and make the setting on the displayed Tally Enable menu (No.7364).

To use this function, select Tally Input on the Tally Enable menu and set the input to use to the Input # item.

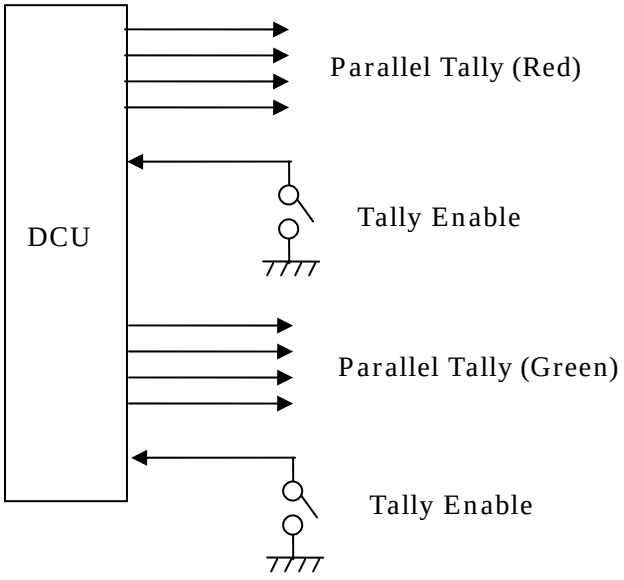
DCU (MKS-8700) provides 102 tally inputs.



When you select Enable as shown above, a tally is outputted independently of external signals once an input signal is selected.

When you select Disable, no tally will be outputted even if an input signal is selected.

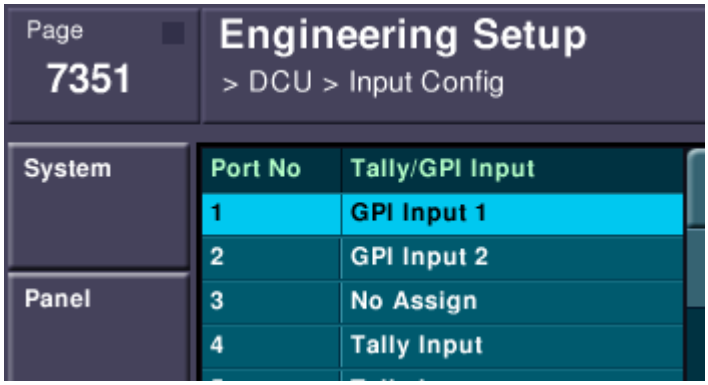
Assigning one Tally Enable to all Red tallies could select whether or not the Red tally should be displayed with a single button operation.



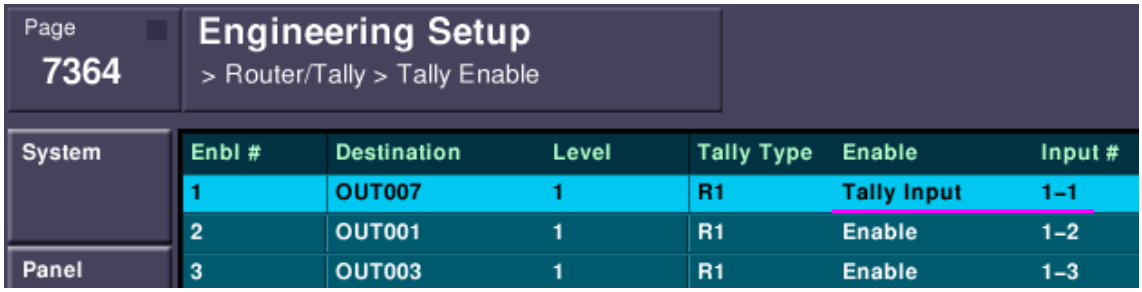
9-1. Parallel Tally (continued)

For your reference

(6) You can assign GPI Input to the input of DCU on the Input Config menu (No.7351), which you can open by clicking Engineering Setup - DCU - Input Config from the Switcher Setup menu.



Selecting Tally Input on the Tally Enable menu (No.7364), which you can open by clicking Engineering Setup - Router/Tally - Tally Enable on the Switcher Setup, would prioritize the settings here.



Open the No.7351 menu and you can check that Tally Input is selected.

9-1. Parallel Tally (continued)

(8) List for design and administration

id	Slot Number	Port Number	Src/Dest	Src or Dest Name	Level (1 to 8)	Tally Type (R1 to G8)	Destination	Enable
DCU 1								
1	2	1						
2	2	2						
:	:	:						
54	2	54						
55	3	1						
:	:	:						
108	3	54						
109	4	1						
:	:	:						
162	4	54						
163	5	1						
:	:	:						
216	5	54						
217	6	1						
:	:	:						
270	6	54						
DCU 2								
271	2	1						
:	:	:						
540	6	54						

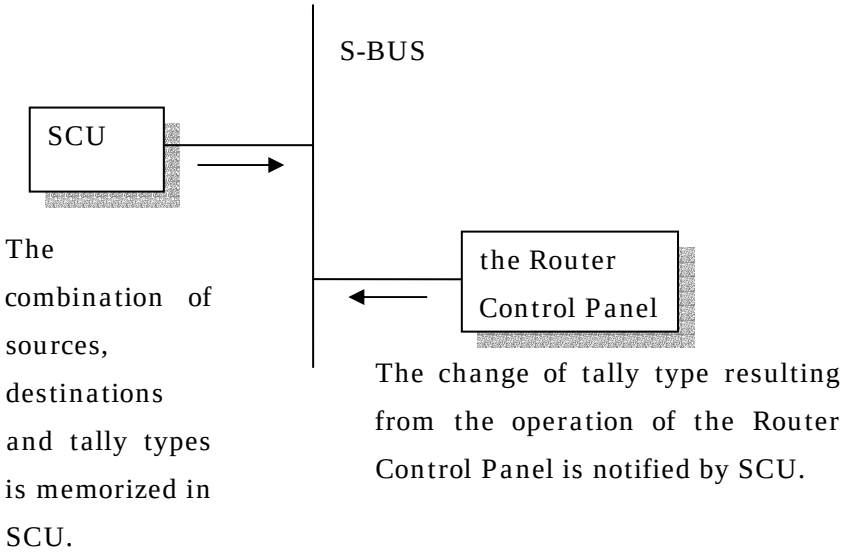
9-2. S-BUS Tally

You cannot set it on the primary station.

On the secondary station, you need to select tallies that should be displayed.

Specify tallies to be outputted to the destinations in the matrix space on the Setup menu of the Switcher (refer to 9-1).

If you have changed a source to a destination in the matrix space and try to set a tally to the destination, SCU sends a message that notifies S-BUS of the change of tally.



The message is comprised of the following elements.

(1) Source Number (1 to 1024)

The input number of a new source or the number of input connected previously

The third parameter of the new input source is notified when it is enabled.

Upon receipt of the parameter, the machine to show the tally turns on the indicator.

The third parameter of the previously connected input is notified when it is disabled.

Upon receipt of the parameter, the machine to show the tally turns off the indicator.

9-2. S-BUS Tally (continue)

(2) Tally Type

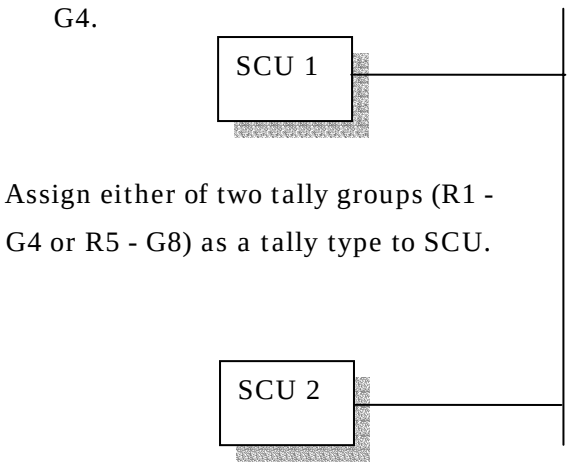
You can assign any of the tally types from R1 to G8 to a destination by operating the Switcher Setup.

To one SCU, however, it is a tally of either group (a group from R1 to G4 or another group from R5 to G8) that you can assign.

When 2 SCUs, which are installed to 2 studios separately, are connected with the same S-BUS, one can use the tally types from R1 - G4 and the other can do those from R5 to G8. SCU has some limitations on the use of the tally group, but it can use all the tally types from R1 to G8 through S-BUS.

Some devices that can be connected to S-BUS, however, can support only the tally types from R1 to G4.

SCU 1 uses such tally types as R1, G1, R2, G2, R3, G3, R4 and G4.



Assign either of two tally groups (R1 - G4 or R5 - G8) as a tally type to SCU.

When 2 different tally groups are assigned to SCU, all the tally types from R1 to G8 run on S-BUS.

SCU 2 uses such tally types as R5, G5, R6, G6, R7, G7, R8 and G8.

S-BUS Tally Enable

On the Group Tally menu, specify whether SCU should output tallies to S-BUS.

Turn on the SBus Tally Enable button and the tallies are outputted.

The menu number of Group Tally is 7362.

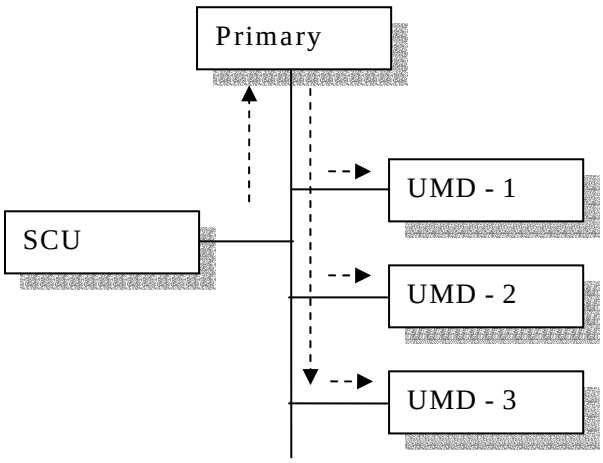
9-3. Show Tally on UMD

There are following two methods to show tallies on UMD.

(1) UMD receives a tally status through S-BUS.

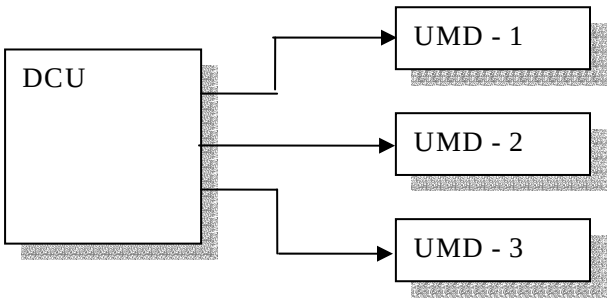
SCU issues the tally status, which is sent to all UMDs, the secondary stations, through the primary station.

When a UMD finds that it is addressed to itself, it updates its tally display.



(2) Connect UMDs to the parallel tally of DCU.

DCU is required. UMD does not need to process the tally status it received through S-BUS.



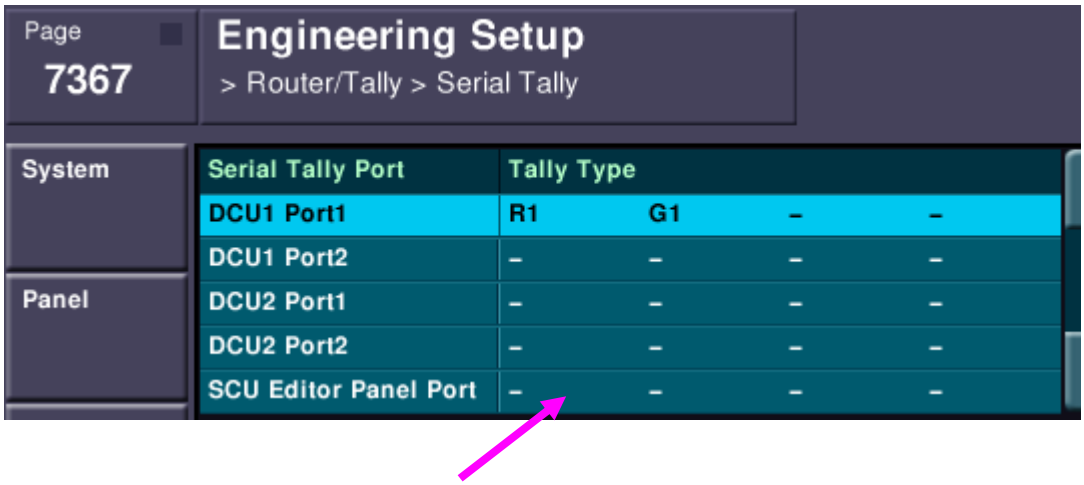
9-4. Serial Tally

The tally statuses are also sent from DCU and SCU through their RS-422A ports.

Setup

(1) Specify an RS-422 port to use.

Make the settings on the Serial Tally menu (No.7367) from Engineering Setup - Router/Tally - Serial Tally of the Switcher Setup.



(2) You can specify up to 4 tally types to one serial tally port.

For the relation between tally types and destinations, refer to 9-1 (1).

When you have assigned the group 5 - 8 to the tally group on the Group Tally menu (No.7362), the display changes as follows (from R5 to G8).

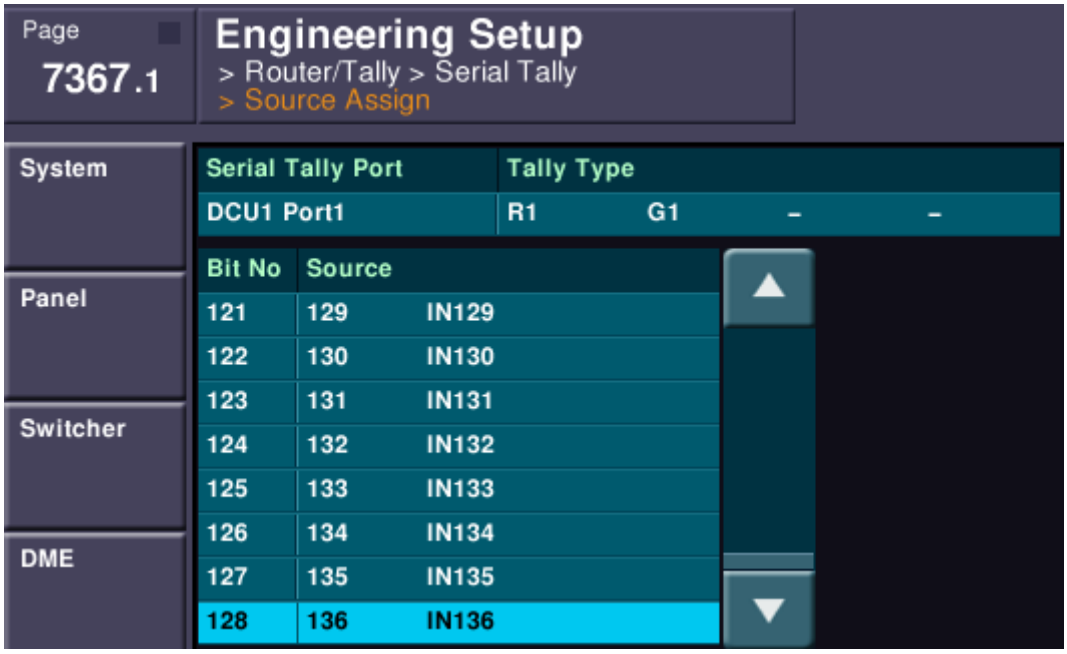
9-4. Serial Tally (continued)

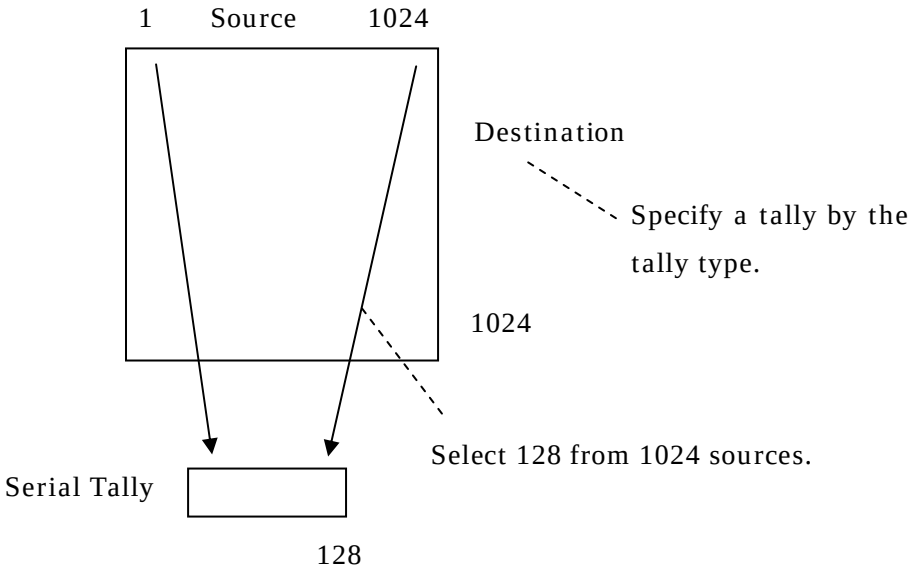
(3) Selection of sources in the matrix space

The serial tally uses 128 sources by selecting them from 1024 sources in the matrix space.

Make the settings on the Source Assign menu (No.7367.1) from Engineering Setup - Router/Tally - Serial Tally - Source Assign of the Switcher Setup.

You can assign different sources to the serial tally ports.





10. Expanded Functions

10-1. Level & Physical Assignment

The Router HDS-X3600 provides 64 inputs and 64 outputs.

Dividing them by 16 in/out blocks, you can use them independently for specific purposes.

This document shows an example of using 64 inputs/outputs as the Router for SD signals and that for DH signals by dividing them into 2 blocks, each of which has 32 inputs/outputs.

Requested specifications

The requested specifications for the above example are defined as follows.

(1) Divide 64 inputs x 64 outputs to 2 blocks of 32 inputs x 32 outputs.

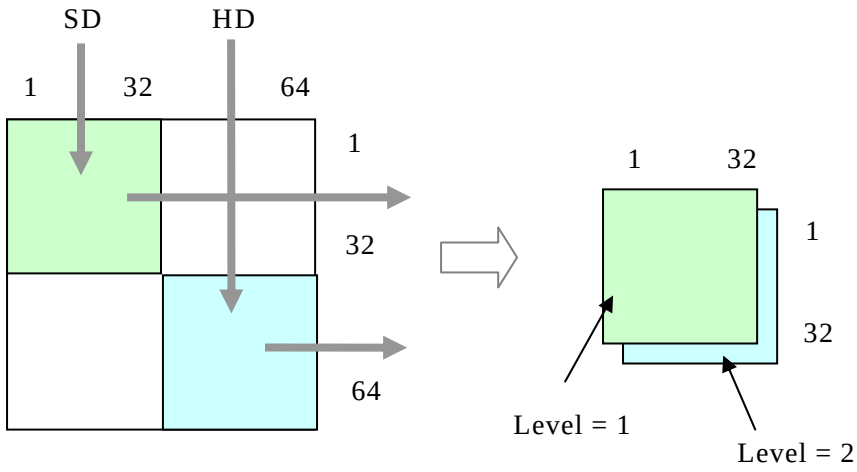
(2) The block of physical inputs/outputs from 1 to 32 is for the processes of SD video signals.

(3) Define the SD block as Level 1.

(4) The block of physical inputs/outputs from 33 to 64 is for the processes of HD video signals.

(5) Define the HD block as Level 2.

(6) Pressing one button on the control unit of the Router could switch SD video signals to HD video signals or vise versa.



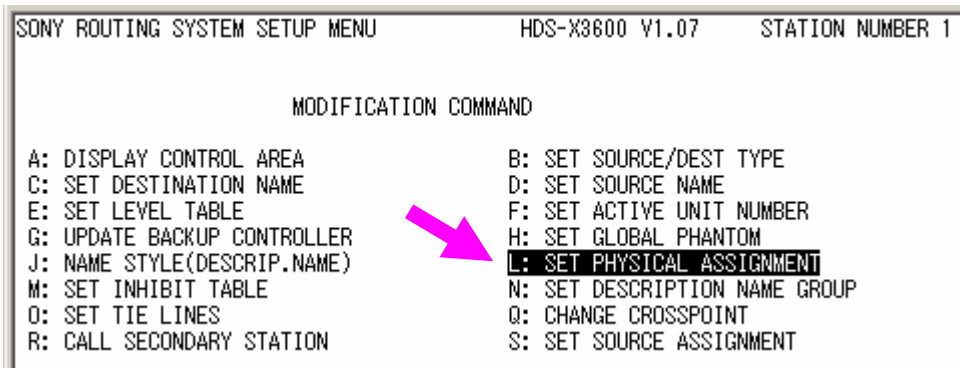
10-1. Level & Physical Assignment (continued)

Setting example

On the Physical Assignment menu, set the physical inputs from 33 to 64 in the HD video block to the numbers from 1 to 32 in the matrix space.

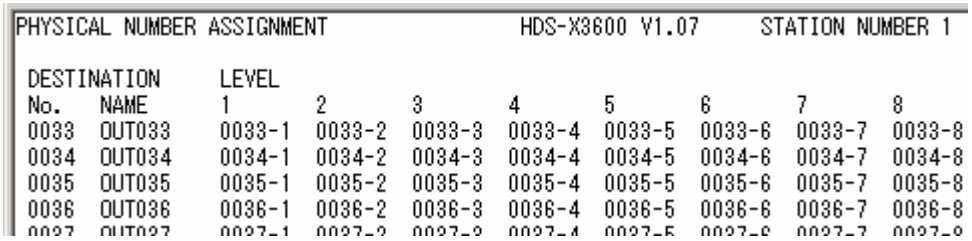
Select the Level 2.

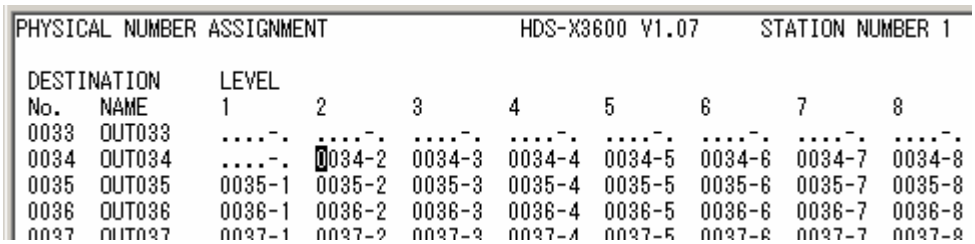
(1) Select the **L**: SET PHYSICAL ASSIGNMENT menu.



(2) Release the settings from 33 to 64 to appear.

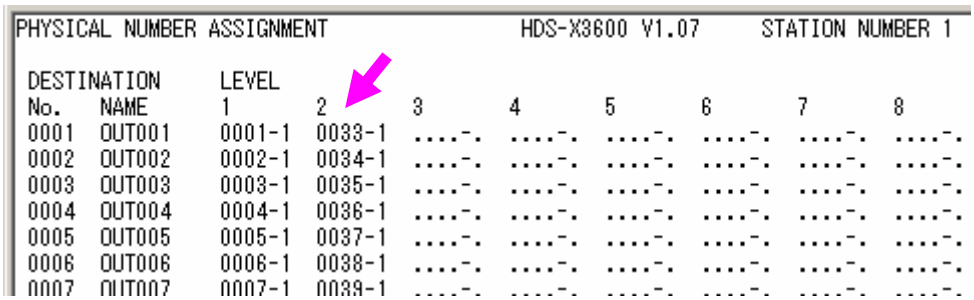
Place the cursor on target data and press the **Ctrl - P** keys. The target data is deleted and the column becomes blank.



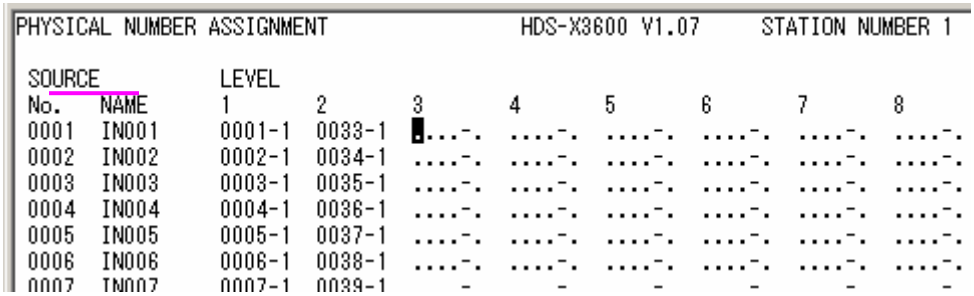


10-1. Level & Physical Assignment (continued)

(3) Assign the physical outputs 33 - 64 to the level 2 of the destination from 1 to 32.

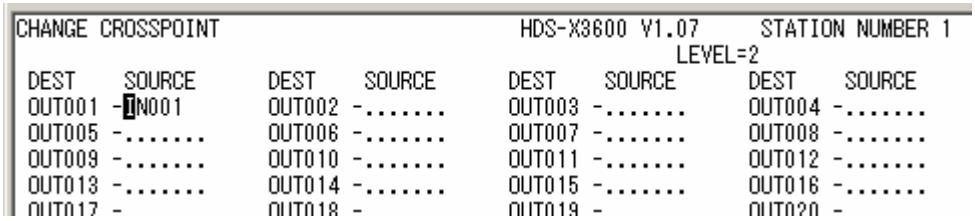


(4) Carry out the same settings for the sources



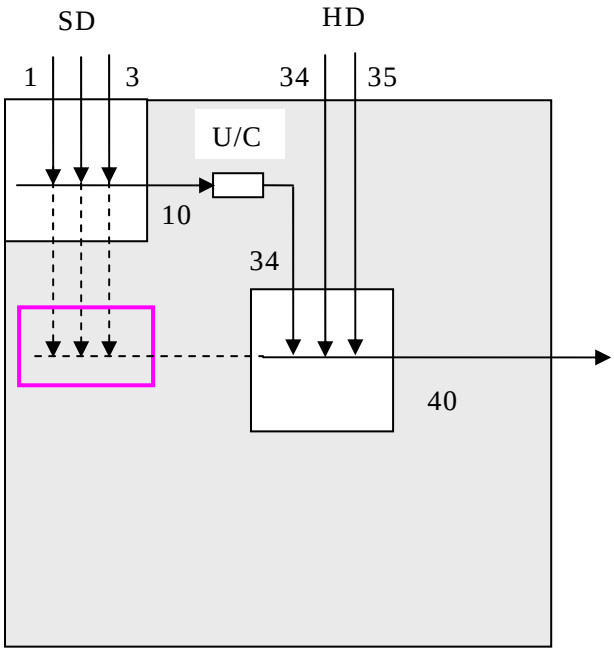
2. Operation check

Try the switching operation on the **Q**: CHANGE CROSSPOINT menu.



10-2. Tie Line

This is a useful function to use the SD outputs from the Router as the HD signals by converting them to the HD signals with an up-converter.



To carry out the conversion, select one out of the sources 1 - 3, which are not actually connected to the destination 40.
Specify a route of the signals on the Setup menu and they actually flow to the destination.

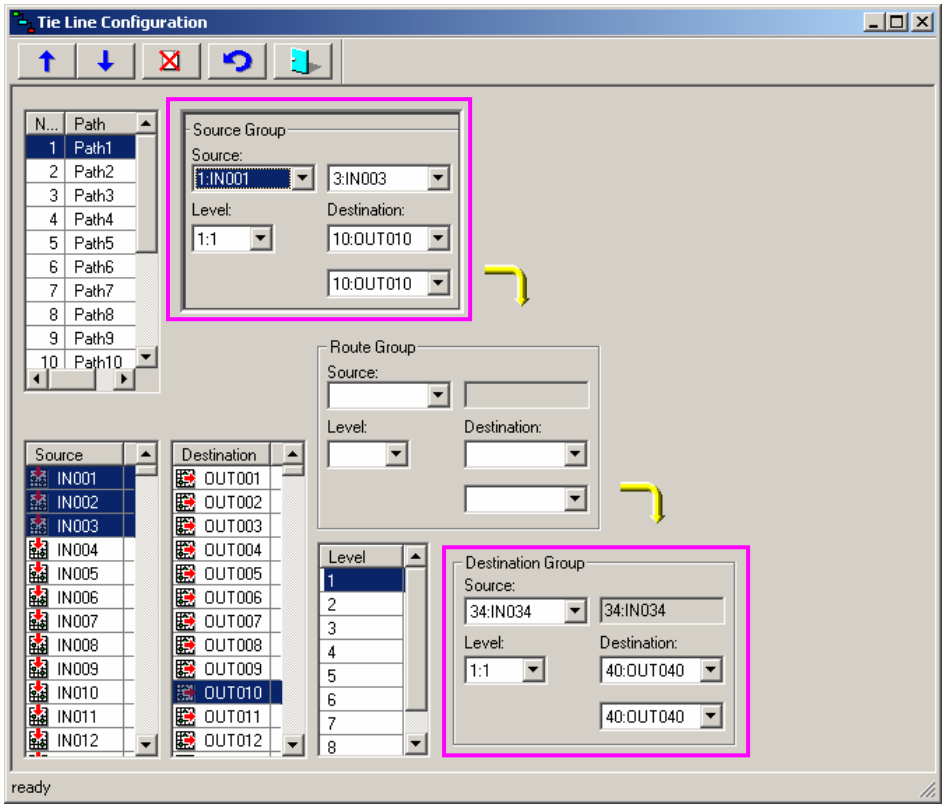
Select the source 1 for the destination 40 and
the destination 10 selects the source 1, and then
the source 34 flows into the destination 40.

When the above arrangement is made on the Router Setup menu, it will be shown as below.

```
SET TIE LINES                          HKSP-R80 V1.10      STATION NUMBER 1

--PATHS 1-------------------------------------------------------------------
SOURCE:   SOURCE No.   DESTINATION No.   ROUTE:   SOURCE No.   DESTINATION No.
  L1      0001 - 0003  0010 - 0010          L.     .... - ....  .... - ....
                                      DESTINATION:SOURCE No.   DESTINATION No.
                                           L1     0034 - 0034  0040 - 0040
```

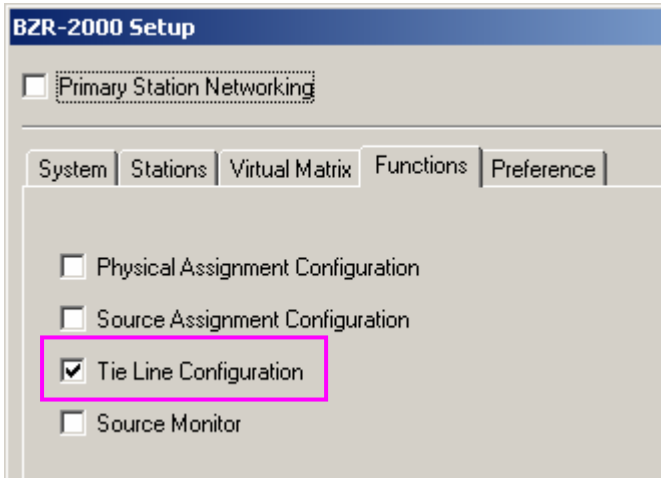
10-2. Tie Line (continued)

BZR-2000 shows the Tie Line status as follows.



You cannot select the Tie Line function in the normal state of BZR-2000.

To use it, show the Functions tab on the Setup (S) menu of BZR-2000 and turn on the checkbox of Tie Line Configuration.

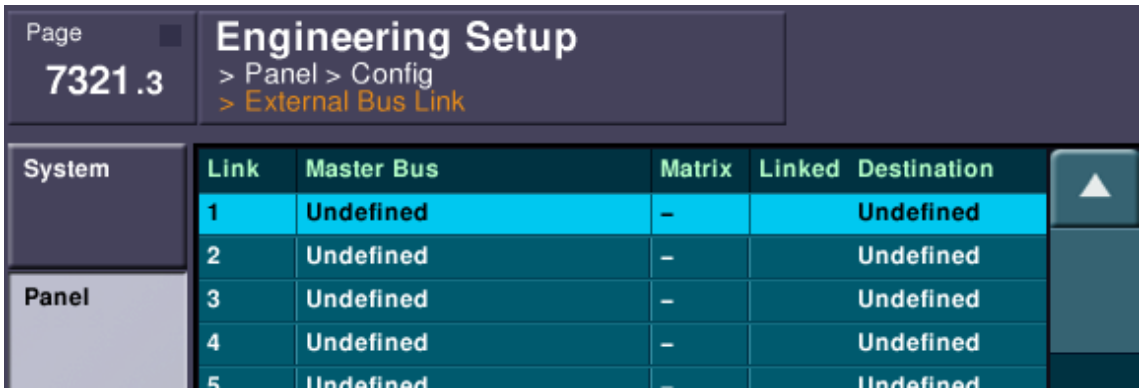


Then, the Tie Line start button appears on the tool bar. 

10-3. External Bus Link

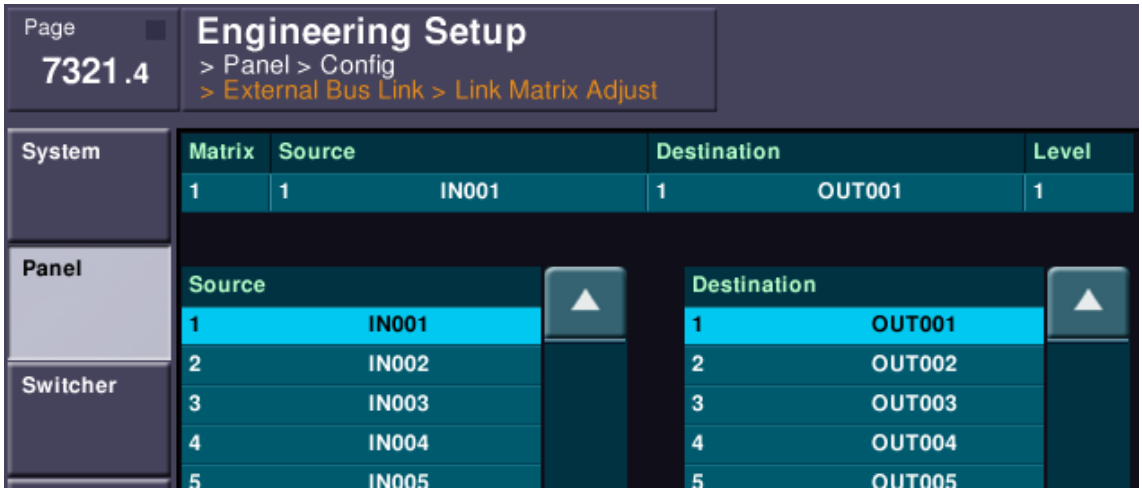
This is the function to switch the input of the Router simultaneously when you have changed the input of the Switcher.

(1) Press the External Bus Link button on the Config menu (No. 7321) from Engineering Setup - Panel - Config of the Switcher Setup.

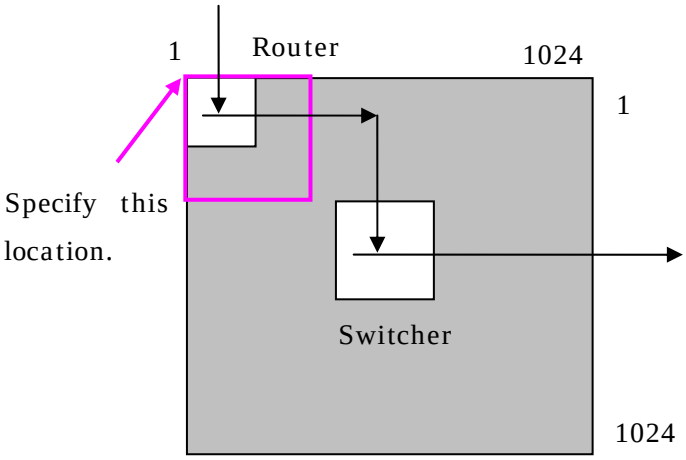


(2) Press the Link Matrix Adjust button and select an area to link in the matrix space (most difficult part).

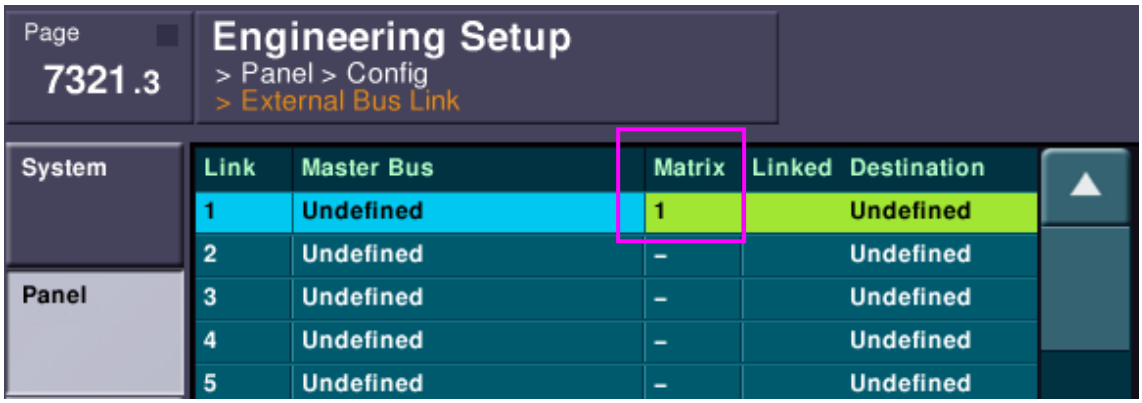
You must select a 128 x 128 area.



10-3. External Bus Link (continued)



(3) Show the External Bus Link menu again and enter the number of the set matrix. Press the Link Matrix Set button at the lower left corner to fix the matrix number.

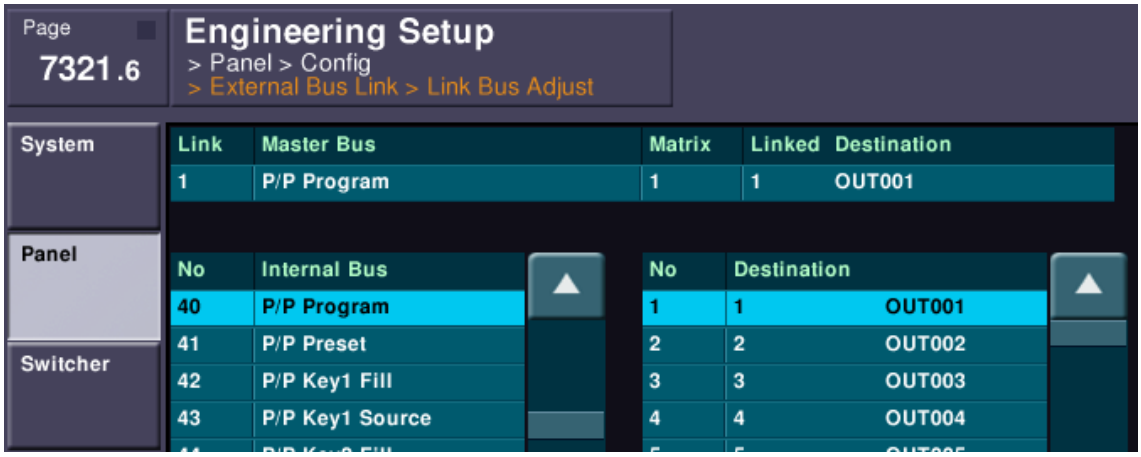


10-3. External Bus Link (continued)

(4) Press the Link Bus Adjust button to show the menu where you can select 2 buses to link.

Specify the bus to switch to the master bus.

Specify the bus to link in the matrix space to a destination.



This menu simply shows sequential numbers from OUT001 to OUT 1024 in Destination without showing any description name.

You must, therefore, check the assignments of signals to the terminals from No. 1 to No. 1024 using the list created in “8. Settings of Terminal Names”.

11. List of Configuration Parameters

The parameters are listed as follow to make your checking operation easier.

11-1. Matrix Space

Id	*Parameters*	*Contents to check*	*Location to check [in this document]*
1	Unit Location	Locations where the source, the destination and the level of the Router are arranged	Router Setup (Secondary) Menu = A [6-1]
2	Source Destination	Locations where the source, the destination and the level of the Switcher are arranged	Switcher Setup Menu No. = 7361 [6-2]
3	Wiring	Connections between the outputs of the Switcher and the inputs of the Router or Connections between the outputs of the Router to the inputs of the Switcher	Switcher Setup Menu No. = 7363 [6-3]

11-2. Settings of Terminal Names

Id	*Parameters*	*Contents to check*	*Location to check [in this document]*
1	Type + Number or Description	The format of the name that a device connected through S-BUS shows	Router Setup Menu = J [8-1]
2	Type + Number or Description	The format of the name that appears on the control panel of the Switcher	Switcher Setup Menu No. = 7326 [8-4]
3	S-BUS Name Link	To reflect a new name on the control panel of the Switcher when a destination name has been changed on the Setup menu of the Router	Switcher Setup Menu No. = 7326 [8-4]
4	Alias Name Group	An alias name to be shown on the control panel of the Switcher	Switcher Setup Menu No. = 7361 [8-6]

11-3. Settings of Tally

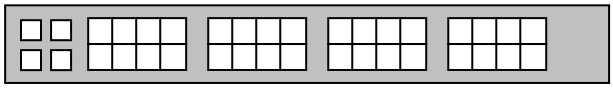
Id	*Parameters*	*Contents to check*	*Location to check [in this document]*
1	Tally Type	Whether a tally type (R1 to G8) is set to a destination in the matrix space	Switcher Setup Menu No. = 7364 [9-1 (2)]
2	Tally Enable	Whether Enable is selected Whether Low is selected for the input of Tally Input	Menu No. = 7364 [9-1 (4)]
3	Tally Group	Whether a correct group is selected R1-G4 or R5-G8	Menu No. = 7362 [9-1 (2)]
4	SBus Tally Enable	Whether S-BUS Tally is enabled	Menu No. = 7362 [9-1 (2)]
5	Tally Master	Whether one of the Switcher control panels is specified as a tally master when multiple control panels exist Even if only one control panel exists, it must be specified as a tally master.	Menu No. = 7312. 1 [9-1 (5)]
6	Button Tally	Whether System is selected	Menu No. = 7326 [9-1 (6)]

12. Descriptions of Terms (A to Z)

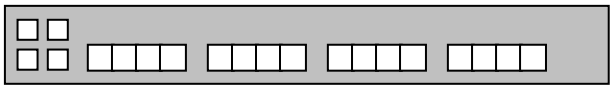
B

BKS : Names of the products such as control panels that switch a routing switcher
The products are written as control units in manuals.
Sony offers the following 5 models.

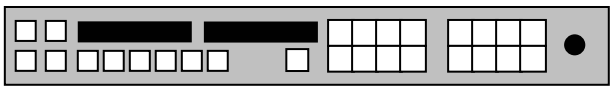
BKS-R3219 : Universal Control Unit



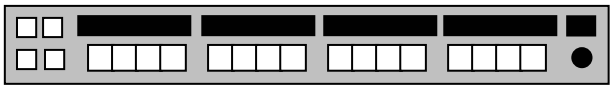
BKS-R1618 : Universal Control Unit



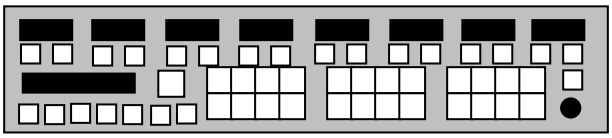
BKS-R3220: X-Y Control Unit



BKS-R1617: Multi Display Control Unit



BKS-R3216: Multi Bus Control Unit



BZR :

BZR-20: Backup software
BZR-21: Routing the Switcher remote control software
BZR-2000: Routing the Switcher system setup software
BZR-8000: System management software
BZR-8001: the Switcher setup software
BZR-8002: PFV-SP setup software

BZR-240: GUI software for the BZR-IF830, which is installed on the PC connected to the HKSP-R80.

BZR-IF830: Matrix size of 4093 inputs x 4093 outputs is available with the several units of the HKSP-R80.

D

DCU: Device Control Unit

This device, connected to SCU through a peripheral LAN, outputs parallel tallies mainly.

MKS-8700 provides up to 270 parallel tallies while MKS-2700 does 36. You can connect up to 2 DCUs to SCU through the peripheral LAN.

DSK: Down Stream Key

Key signals to be synthesized at the nearest point to the last output

DVS: SD Video Switcher

DVS-9000: 80 inputs, from 2ME to 3ME + PP(4ME)

DVS-9000SF: 34 inputs, from 1ME to 2ME + Simple PP(2.5 ME)

H

HDS-X : Product symbol for Multi Bit-Rate Routing Switchers

HDS-X5800: 264 inputs x 272 outputs of matrix size (22U)

HDS-X3700: 128 x 128 (8U)

HDS-X3600: 64 x 64 (4U)

HDS-X3400: 16 x 16 (1U)

HKSP: Product symbol for the peripheral boards to process video signals

The boards are used by installing to the PFV-SP chassis.

HKSP-**R80**: Routing Switcher controller

HKSP-R81: Routing Switcher controller backup

HKSP-**008**HD: Frame synchronizer

HKSP-**300**: CPU board

HKSP-**313**: Color corrector

HKSP-**525**: Down converter

HKSP-**1125**: Up converter

I

IXS: New Routers to be released in 2005

IXS-6700: 128 x 128 (8U)

IXS-6600: 64 x 64 (4U)

M

MVS: Multi Format Video Switcher

MVS-8000A: 80 inputs, from 2ME to 3ME + PP(4ME)

MVS-8000ASF: 34 inputs, from 1ME to 2ME + Simple PP(2.5 ME)

P

PFV-SP: Symbols of peripheral devices

There are 2 types, PFV-SP3100 and PFV-SP3300.

PFV-SP3100 is a chassis of 1U in height, to which up to 4 boards can be installed.

PFV-SP3300 is a chassis of 3U in height, to which up to 17 boards can be installed.

For the installable boards, refer to “HKSP”.

S

S-BUS: Serial BUS

It uses HDLC (High Level Data Link Control), the communication method that was popular during the 1980s, in the physical layer. An 8-bit address called a station ID is added to the beginning of a receiving/sending message.

There exists one controlling primary station that controls other secondary stations. The secondary stations can send a message only when they receive a polling message from the primary station.

SCU: System Control Unit

Unit that controls the control panel of the Switcher

It generates the statuses of tallies and outputs them to S-BUS.

It sends the statuses of tallies to DCU to make DCU output parallel tallies.

System Manager:

Its official product name is the system management software “BZPS-8000”.

It can save setup files of all devices in the computer except the Router.

It can send image files to the frame memory of the Switcher.

U

UMD: Under Monitor Display

Usually placed under a monitor, it shows the types of outputs connected to the monitor in signal names.

When the signals are used for recording or broadcasting, it shows a red tally.

Changes

2005/11/02 Rev 1.01

page-6	Added another System Chart.
page-11	Added explanation about router's control panel.
page-12	Added about BZR-240 and BZR-IF830.
page-19	Added about default IP address of R80.
page-20	Added about BZR-2000 V1.4.
page-24	Added BZR-2000.
page-47	Added about S-SUB Description.
page-51	Added …
page-56	Added about umber tally, note and MVS V5.00.
page-58	Added about Independent mode.
page-79	Added BZR-240 and BZR-IF830.
-	About DVS-9000 changed from 3ME+PP.
-	About DVS-9000SF changed from 1ME+PP.
Page-80	About MVS-8000A changed from 3ME+PP.
-	About MVS-8000ASF changed from 1ME+PP.