

OPERATION MANUAL

HVS-AUX16A

HVS-AUX16B

HVS-AUX16C

HVS-AUX16D

HVS-AUX32A

HVS-AUX64A

Auxiliary Unit

6th Edition - Rev. 1

Edition Revision History

Edit.	Rev.	Date	Description	Section/Page
1	-	2014/05/19		
2	-	2014/06/06	Supported HVS-390HS	
3	-	2015/04/14	Supported HVS-2000 Changed model names (HVS-XT100/110 >> HVS-100/110)	Sec. 3-3
4	-	2015/07/27	Added HVS-AUX16B.	
5	-	2018/07/27	Supported HVS-490 and HVS-1200	
6	-	2019/02/25	Added HVS-AUX16C/16D Supported HVS-2000/6000	
6	1	2019/06/26	Supported HVS-490/1200	

Precautions

Important Safety Warnings

[Power]

 Caution	Operate unit only at the specified supply voltage.
 Disconnect	Disconnect the power cord via the power plug only. Do not pull on the cable portion.
 Stop	Do not place or drop heavy or sharp-edged objects on the power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check the power cord for excessive wear or damage to avoid possible fire / electrical hazards.
 Caution	Ensure the power cord is firmly plugged into the AC outlet.

[Grounding]

 Caution	Ensure the unit is properly grounded at all times to prevent electrical shock.
 Hazard	Do not ground the unit to gas lines, units, or fixtures of an explosive or dangerous nature.

[Operation]

 Hazard	Do not operate the unit under hazardous or potentially explosive atmospheric conditions. Doing so could result in fire, explosion, or other hazardous results.
 Hazard	Do not allow liquids, metal pieces, or other foreign materials to enter the unit. Doing so could result in fire, other hazards, or a unit malfunction.
 Disconnect	If a foreign material does enter the unit, turn the power off and immediately disconnect the power cord. Remove the material and contact an authorized service representative if damage has occurred.

[Transportation]

 Hazard	Handle with care to avoid impact shock during transit, which may cause malfunction. When you need to transport the unit, use the original or suitable alternative packing material.
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[Circuitry Access]

 Disconnect	Do not remove covers, panels, casing, or access the circuitry with power applied to the unit. Turn the power off and disconnect the power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.
 Stop	Do not touch any parts / circuitry with a high heat factor. Capacitors can retain enough electric charge to cause mild to serious shock, even after the power has been disconnected. Capacitors associated with the power supply are especially hazardous.

 Hazard	Unit should not be operated or stored with cover, panels, and / or casing removed. Operating the unit with circuitry exposed could result in electric shock / fire hazards or a unit malfunction.
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[Potential Hazards]

 Caution	If abnormal odors or noises are noticed coming from the unit, immediately turn the power off and disconnect the power cord to avoid potentially hazardous conditions. If problems similar to the above occur, contact an authorized service representative before attempting to operate the unit again.
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[Rack Mount Brackets, Ground Terminal, and Rubber Feet]

 Caution	To rack-mount or ground the unit, or to install rubber feet, do not use screws or materials other than those supplied. Doing so may cause damage to the internal circuits or components of the unit. If you remove the rubber feet that are attached to the unit, do not reinsert the screws that secure the rubber feet.
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[Consumables]

 Caution	Consumable items that are used in the unit must be periodically replaced. For further details on which parts are consumables and when they should be replaced, refer to the specifications at the end of the Operation Manual. Since the service life of the consumables varies greatly depending on the environment in which they are used, such items should be replaced at an early date. For details on replacing consumable items, contact your dealer.
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Upon Receipt

HVS-AUX16A, HVS-AUX16B, HVS-AUX16C, HVS-AUX16D, HVS-AUX32A and HVS-AUX64A units and their accessories are fully inspected and adjusted prior to shipment. Operation can be performed immediately upon completing all required connections and operational settings.

Check your received items against the packing lists below. Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

◆ HVS-AUX16A / 32A / 64A

ITEM	QTY	REMARKS
HVS-AUX16A HVS-AUX32A HVS-AUX64A	1	
AC Adapter	1	
AC Cord	1 set	DC power cord retaining clip
Operation Manual	1	(This manual)

◆ HVS-AUX16B /16D

ITEM	QTY	REMARKS
HVS-AUX16B HVS-AUX16D	1	
AC Adapter	1	
AC Cord	1	
Operation Manual	1	(This manual)

◆ HVS-AUX16C

ITEM	QTY	REMARKS
HVS-AUX16C	1	
Rack Mount Brackets	1 set	
AC Adapter	1	
AC Cord	1	
Operation Manual	1	(This manual)

◆ User-supplied cable

ITEM	QTY	REMARKS
LAN cable	1	For switcher connection. For a hub connection, use a straight-through cable. For direct connection, use a cross-over cable.

DC Cord Clamp Installation (HVS-AUX16A/32A/64A)

Insert the DC cord into the DC IN connector, then secure the cord with the DC cord clamp attached to the hole as shown in the figure.

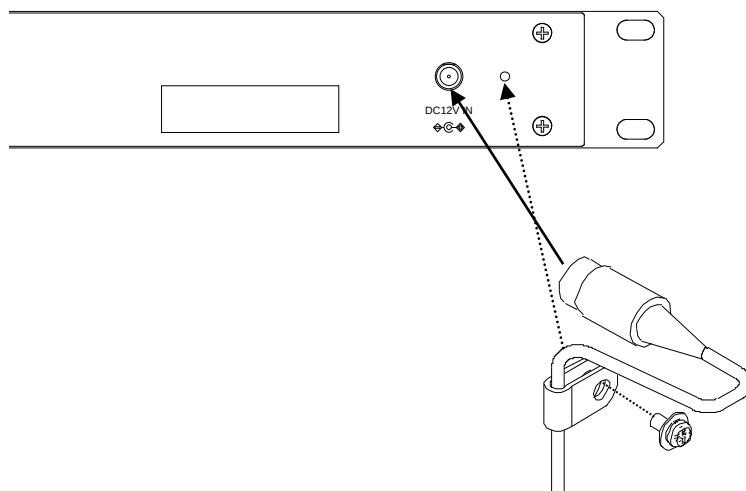


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1. Prior to Starting

1-1. Overview

Auxiliary Units, HVS-AUX16A, HVS-AUX16B, HVS-AUX16C, HVS-AUX16D, HVS-AUX32A and HVS-AUX64A (hereafter called AUX unit), are designed to remotely control M/E (PGM/PST) and auxiliary outputs of the Hanabi series switchers and Multiviewers.

◆ Supported Switchers

Switcher	Max. Connections
HVS-100/110	5 units
HVS-390HS	10 units
HVS-490	12 units
HVS-1200	12 units
HVS-2000	12 units
HVS-6000	12 units

* HVS-AUX16C/16D support HVS-2000/6000/490/1200 only.

◆ Supported Multiviewers

Multiviewers	Max. Connections
MV-1620HSA	2
MV-4200/4210/4220/4300/4320/4340	8
MV-1200	6

* Hereafter, "Switchers" in this document includes "Multiviewers."

* HVS-AUX16C/16D does not support Multiviewers.

1-2. Features

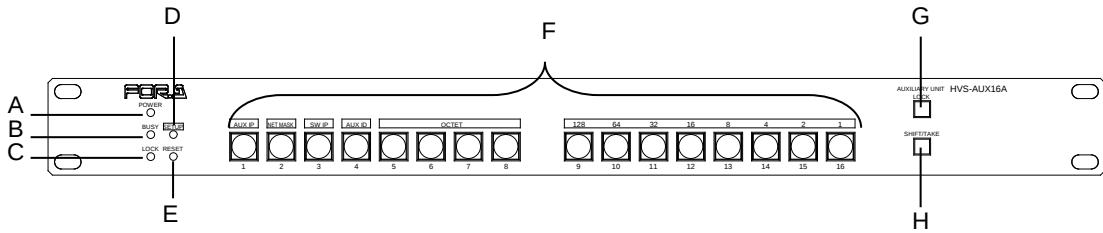
All buttons are user assignable: HVS-AUX16A and HVS-AUX16B - 16 buttons
HVS-AUX32A - 32 buttons
HVS-AUX64A - 64 buttons
HVS-AUX16C and HVS-AUX16D - 16 buttons and
4-page switching by rotary encoder allows total of
virtual 64 buttons.

- AUX front panel LOCK function
- Multiple AUX units connection available through an Ethernet Hub
- HVS-AUX16B and HVS-AUX16D are a desktop type model.
- HVS-AUX16C and HVS-AUX16D are a model with button displays.

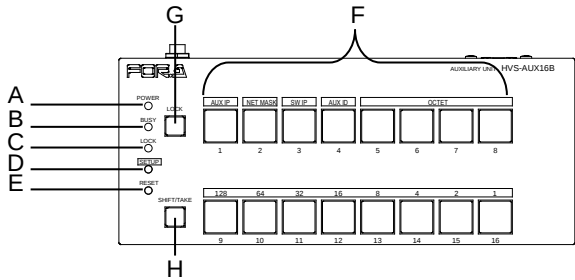
2. Panel Descriptions

2-1. Front Panel

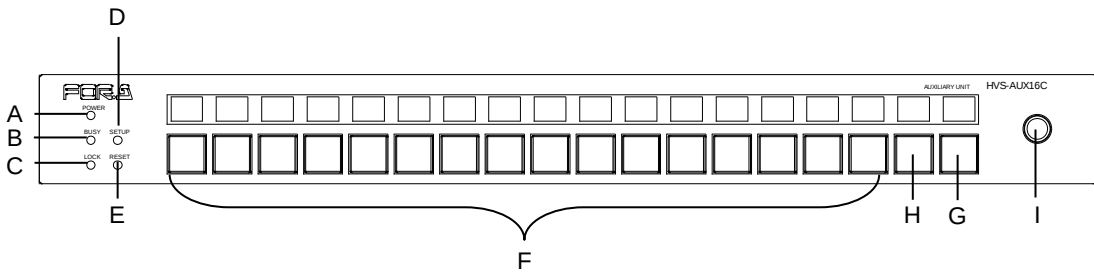
◆ HVS-AUX16A



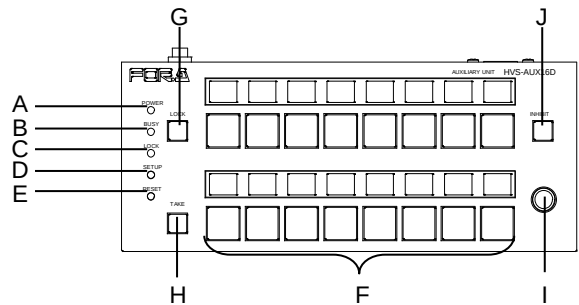
◆ HVS-AUX16B



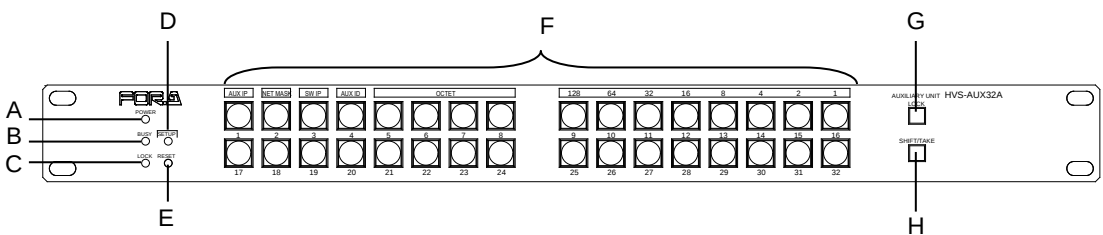
◆ HVS-AUX16C



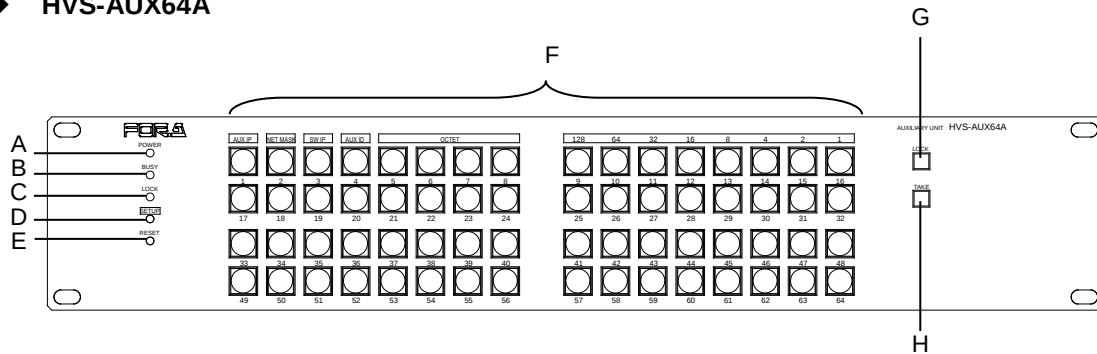
◆ HVS-AUX16D



◆ HVS-AUX32A



◆ HVS-AUX64A



Letter	Name	Description
A	POWER	Displays the power status. ► See the table on the next page for details on indications.
B	BUSY	Displays the flash memory writing status for backup settings. ► See the table on the next page for details on indications.
C	LOCK	Displays the LOCK status. ► See the table on the next page for details on indications. ► See section 5-1. "LOCK (Front Panel Lock)" for details on the lock function.
D	SETUP	Used to set IP address or other settings. ► See section 4-1 "SETUP Menu" for SETUP menu details.
E	RESET	Used to re-initialize the AUX Unit.
F	Buttons	All buttons are user assignable. (Buttons turn green when selected.)
G	LOCK	Used to disable switcher control from the AUX Unit.
H	SHIFT/TAKE	Used as an assignable SHIFT or TAKE button on the switcher. (Only TAKE can be assigned on HVS-AUX64A/16C/16D units.)
I	Rotary Encoder	Used to switch pages and change settings. (Pushing the rotary encoder on HVS-AUX16C/16D units make the connected main unit name (Ex. HVS-6000) appears on the display.)
J	INHIBIT	Used to toggle INHIBIT function that inhibits/enables respective buttons and the rotary encoder. (HVS-AUX16D only.) ► See Sec.5-2. "INHIBIT Function (HVS-AUX16D)" for details.

◆ LED Color indications

LED color	Green	Red	Orange	Unlit
LED				
POWER	Normal			
BUSY	Normal processing		Writing to flash memory	Un-connected to the switcher
LOCK		Unit locked		Unit unlocked

* All indicators, POWER, BUSY and LOCK, light orange when the SETUP menu is displayed.

IMPORTANT

Do **not** power OFF the unit while BUSY LED is **lit orange**.

◆ Changing Button Labels

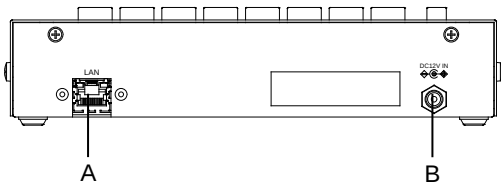
Button labels can be changed for user-assignable buttons. Download and use the appropriate label template from the FOR-A Website product page. (See the back cover.)

2-2. Rear Panel

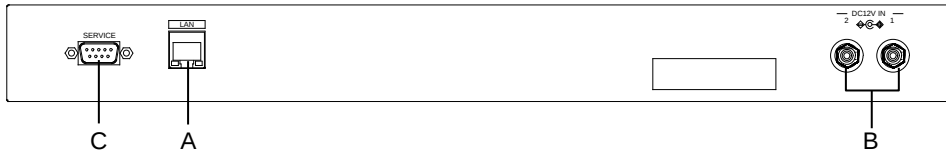
◆ HVS-AUX16A/32A/64A



◆ HVS-AUX16B/16D



◆ HVS-AUX16C

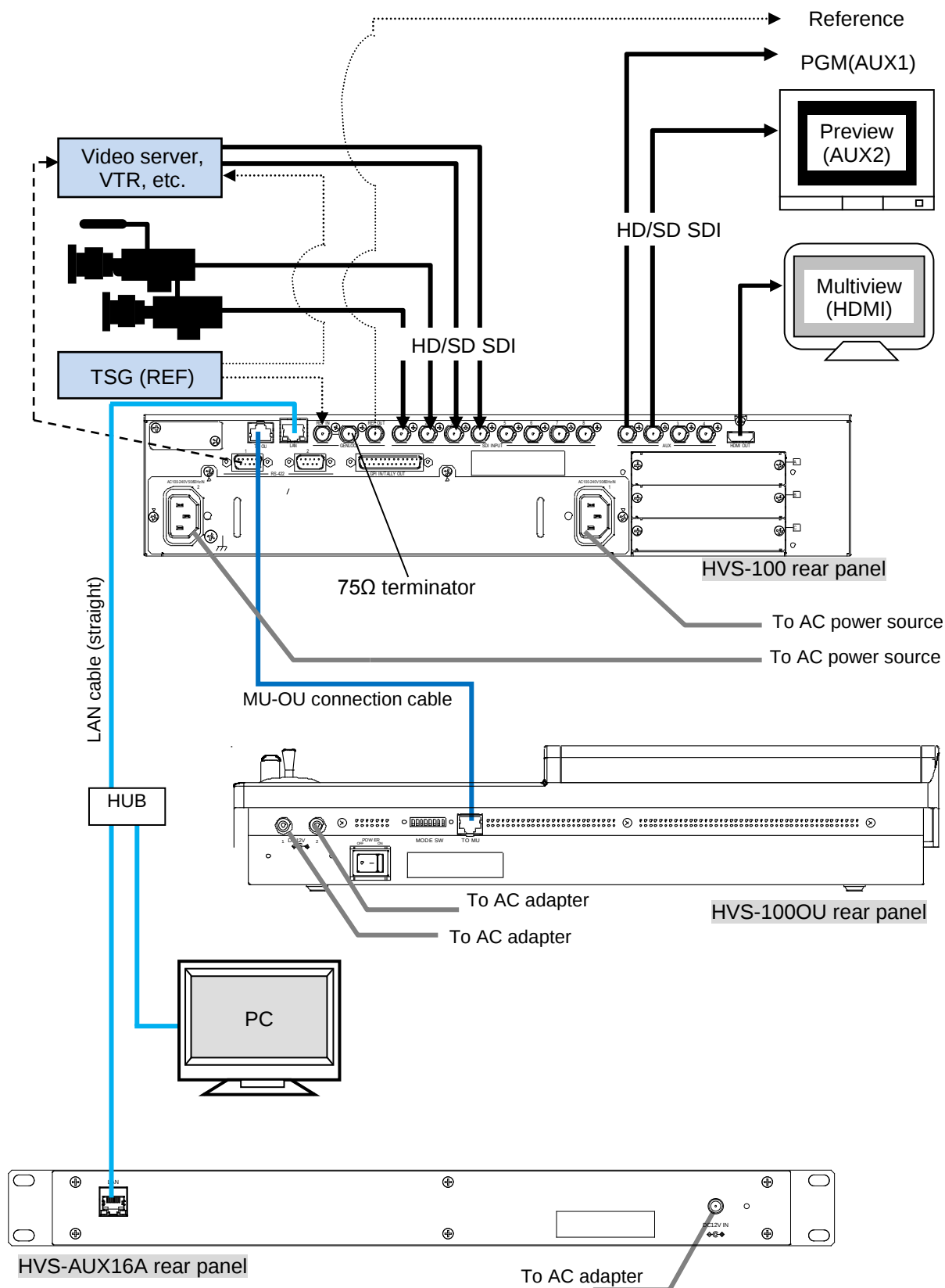


Letter	Name	Description
A	LAN	For switcher connection Ethernet port (100BASE-TX, RJ-45)
B	DC12V IN	12 V DC power inlet A redundant power supply is provided for HVS-AUX16C.
C	SERVICE	Not used

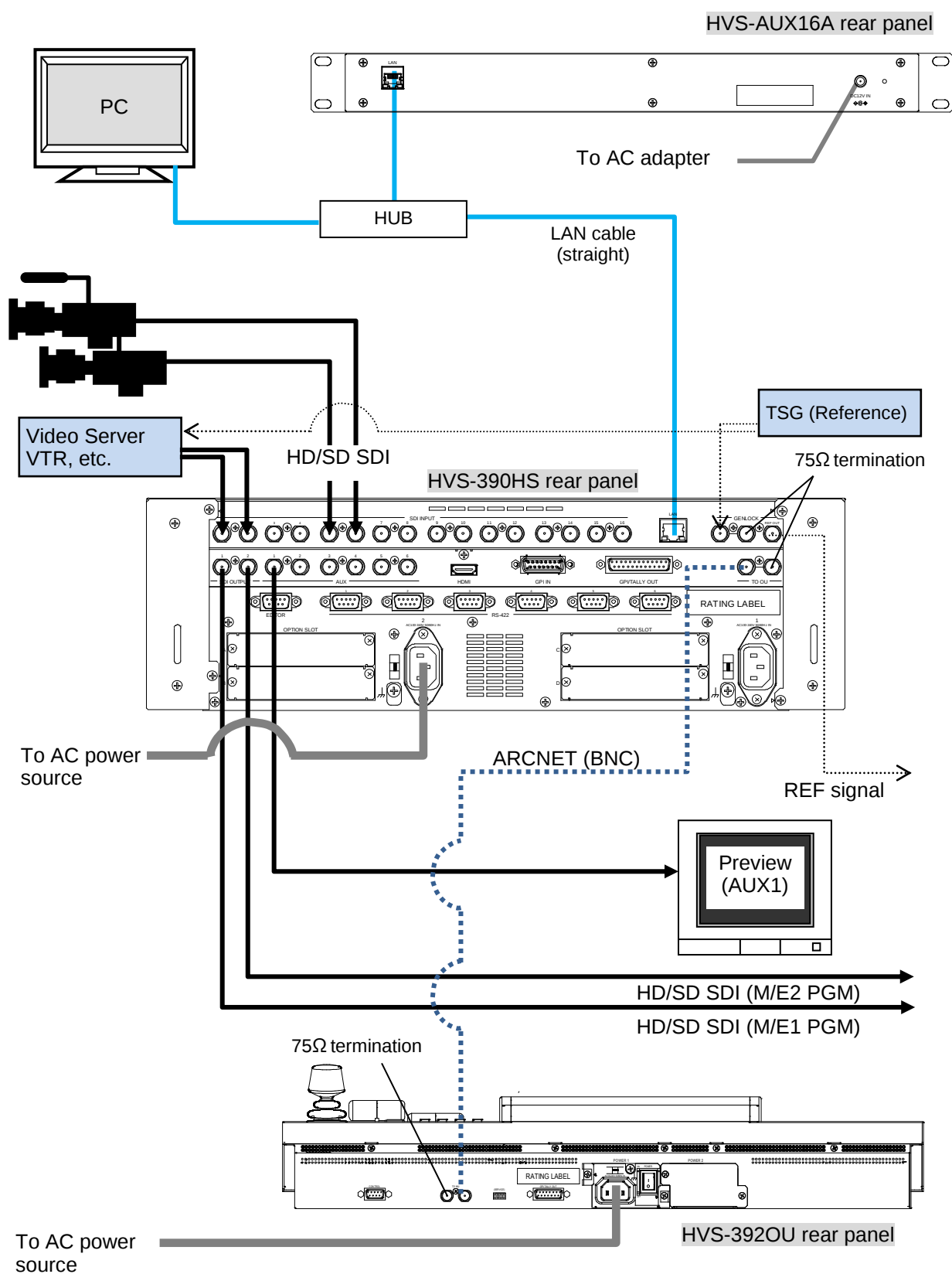
3. Connection

The example systems shown below are for switchers HVS-100, HVS-390HS and HVS-2000. Refer to each switcher operation manual for connections other than these switchers.

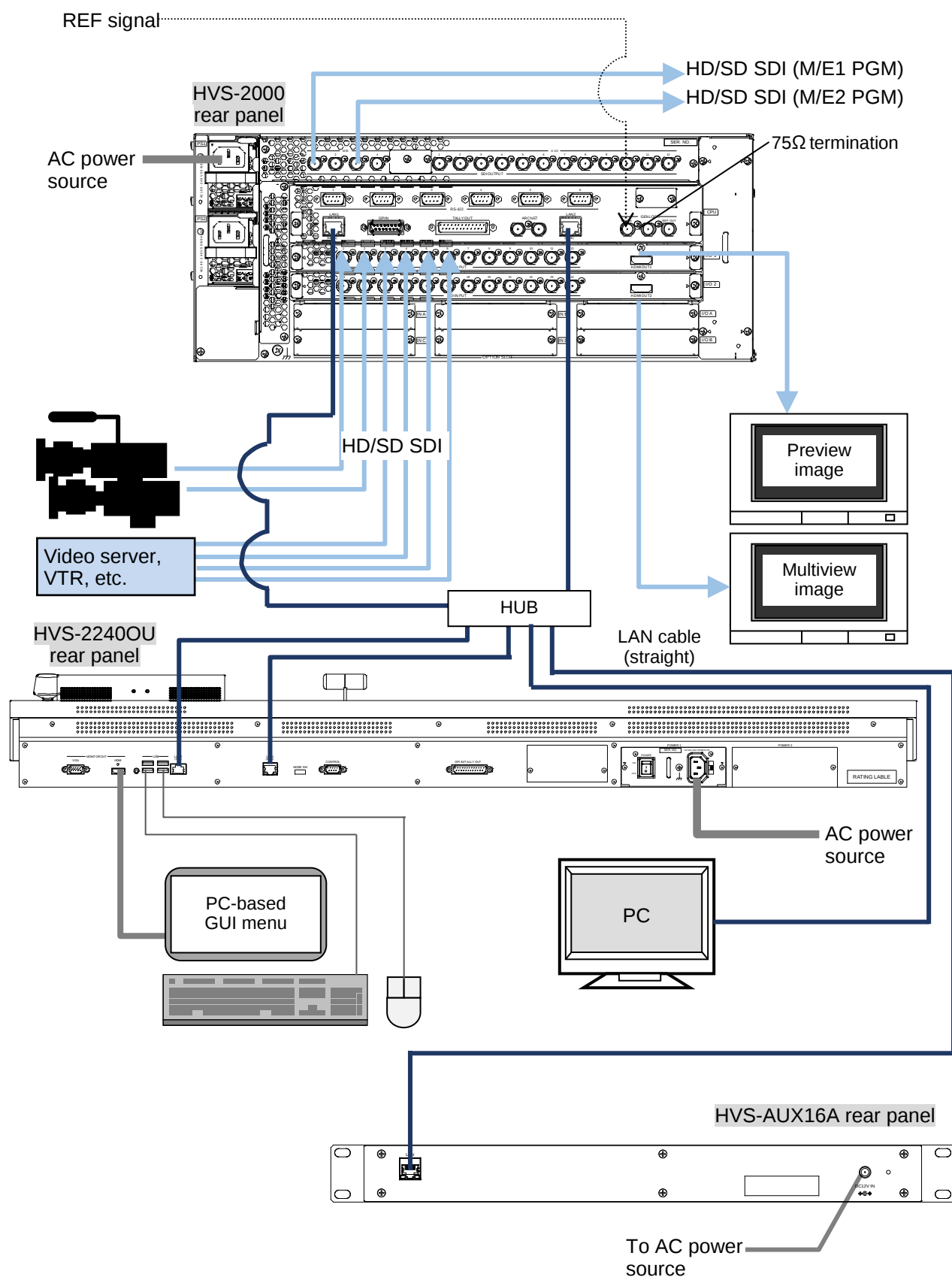
3-1. Connecting HVS-100/110



3-2. Connecting HVS-390HS



3-3. Connecting HVS-2000



4. Setup (Network Settings)

Network settings should be changed for multiple AUX units connected to a switcher, since identical IP addresses within a network are not allowed.

4-1. SETUP Menu

The **SETUP** button allows you to enter **Setup Menu** mode, in which AUX Unit network settings can be displayed and changed. The left four buttons (The three buttons for HVS-AUX16C/16D) are used to select information to be displayed. To exit Setup Menu mode, press the **SETUP** button again.

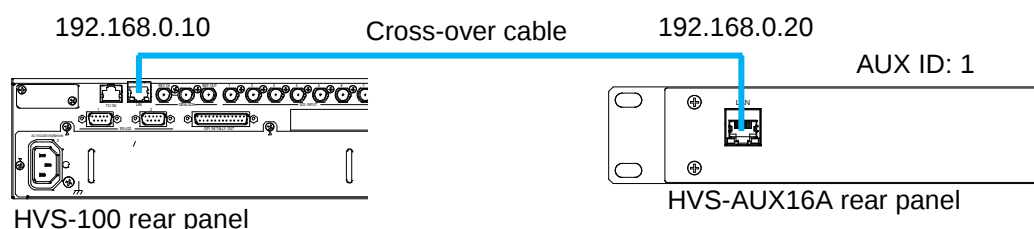
HVS-AUX16A/16B/32A/64A

Button name	Default setting	Description
AUX IP	192.168.0.20	Sets the AUX Unit IP address.
NETMASK	255.255.255.0	Sets the AUX Unit Netmask.
AUX IP + NETMASK	192.168.0.1	Sets the AUX Unit default Gateway.
SW IP	192.168.0.10	Specifies the IP address of the switcher to be connected.
AUX ID	1	Sets the AUX Unit ID number.

HVS-AUX16C/16D

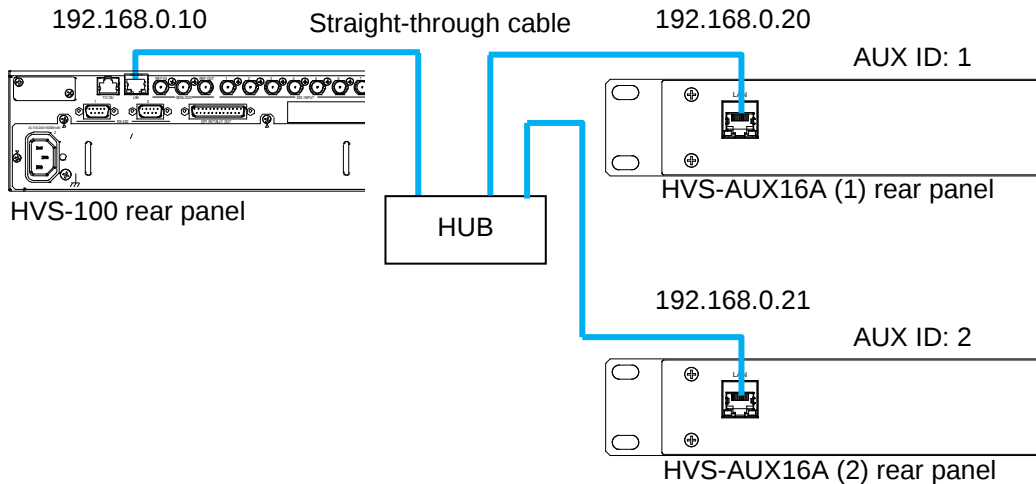
Indicator display		Default setting	Description
AUX SET1	IP	192.168.0.20	Sets the AUX Unit IP address.
	MASK	255.255.255.0	Sets the AUX Unit Netmask.
AUX SET2	GW	192.168.0.1	Sets the AUX Unit default Gateway.
	ID	1	Sets the AUX Unit ID number.
	FMT	FIX	Sets the AUX Unit LCD display. (See. Sec. 6-2. for details.)
TARGET SET	IP	192.168.0.10	Specifies the IP address of the connecting switcher.

4-2. Connecting a Single AUX Unit to a Switcher



No network settings are required. Connect and use your AUX Unit under the factory default settings.

4-3. Connecting Two or More AUX Units to a Switcher



When connecting two or more AUX Units to a switcher, each AUX Unit should have a different IP address and AUX ID number. Refer to the following sections to change these settings.

4-3-1. Changing the AUX Unit IP Address

◆ HVS-AUX16A/16B/32A/64A

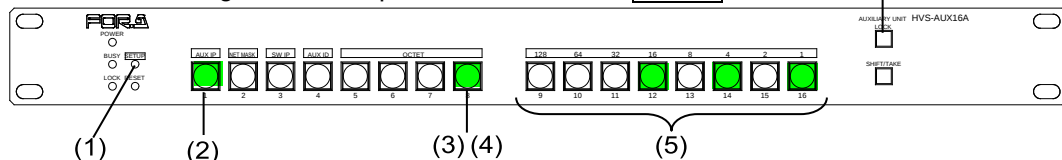
The following setting procedure changes the IP address of HVS-AUX16A (2) in the above figure example, from **192.168.0.20** to **192.168.0.21**.

- (1) Press **SETUP**. All indicators turn orange and indicate that the AUX Unit is in menu SETUP mode.
- (2) Press **AUX IP**.
- (3) To obtain the current IP address, respectively press Buttons **5** to **8**, which represent each octet of the IP address. Each octet number will be displayed on Buttons **9** to **16** in binary mode: On or Off.

IP address	1st octet	2nd octet	3rd octet	4th octet
192.168.0.20	192	168	0	20

- (4) **Press and hold down** **8** (the fourth octet button). The button will blink.
- (5) To change the fourth octet number, use **9** to **16**. In this example, the number should be changed from **20** to **21** (16+4+1), then turn the buttons on or off as shown in the figure below: **off, off, off, on, off, on, off, on**.
- (6) Once the IP address is changed, **LOCK** will blink. **Press and hold down** **LOCK** to confirm the change. The AUX Unit restarts automatically. (To cancel the process, press **SHIFT/TAKE** without pressing **LOCK**.)

To return settings to default, press and hold down **AUX IP**.



128	64	32	16	8	4	2	1	
0	0	0	1	0	1	0	0	20
0	0	0	1	0	1	0	1	21

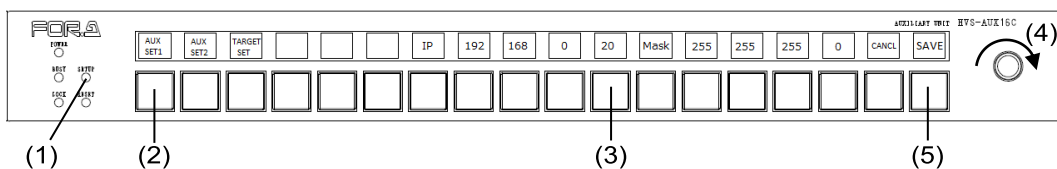
- (7) To verify the change, press **SETUP**, **AUX IP**, and then **8**. Check whether Buttons **9** to **16** show number “21” in binary mode.

* Use the same procedure to change NETMASK, SW IP or DEFAULT GATEWAY, as necessary.

◆ HVS-AUX16C/16D

The setting procedure of HVS-AUX16C/16D is different from that of HVS-AUX16A. The procedure of HVS-AUX16C is explained here as an example.

The following setting procedure changes the IP address of HVS-AUX16C from **192.168.0.20** to **192.168.0.21**.



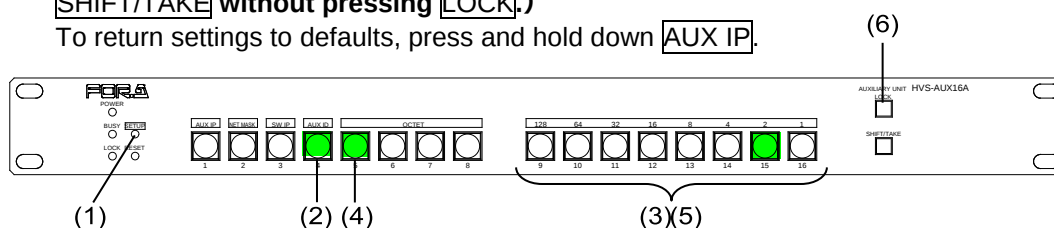
- (1) Press **SETUP**. All displays change to SETUP menu mode.
- (2) Press **AUX SET1**.
- (3) The current IP address and Netmask are displayed. **Press and hold down** an octet button for change. (In this example, Button no. **11**). The button blinks.
- (4) Turn the rotary encoder to select the number for the IP address. Change 20 to **21** in this example.
- (5) Press and hold down **SAVE**. AUX unit re-starts automatically.

4-3-2. Changing the AUX ID Number

◆ HVS-AUX16A/16B/32A/64A

- (1) Press **SETUP**. All indicators turn orange to indicate the AUX Unit is in SETUP menu mode.
- (2) Press **AUX ID**.
- (3) The current AUX ID number will be displayed on Buttons **9** to **16** in binary mode: On or Off.
- (4) **Press and hold down** **5**. The button will blink.
- (5) To change the ID number, use **9** to **16**. In this example, the number should be changed from **1** to **2**, then turn the buttons on or off as shown in the figure below: **off, off, off, off, off, off, on, off**.
- (6) Once the ID number is changed, **LOCK** will blink. **Press and hold down** **LOCK** to confirm the change. The AUX unit will automatically reset. (To cancel the process, press **SHIFT/TAKE** without pressing **LOCK**.)

To return settings to defaults, press and hold down **AUX IP**.



- (7) To verify the change, press **SETUP**, then **AUX ID**. Check whether Buttons **9** to **16** show number "2" in binary mode (see the figure above).

◆ HVS-AUX16C/16D

- (1) Press **SETUP**. All displays change to SETUP menu mode.
- (2) Press **AUX SET2**.
- (3) Default gateway, Unit ID and FMT are displayed. **Press and hold down** the octet button to change. (In this example, Button no. **14**). The button blinks.
- (4) Turn the rotary encoder to select the number for the ID. Change 1 to **2** in this example.
- (5) Press and hold down **SAVE**. (The AUX unit does not re-start automatically for ID or FMT change).

5. LOCK and INHIBIT

LOCK and INHIBIT functions are used to prevent operation mistakes. LOCK function disables AUX unit operation and INHIBIT function disables selected buttons or rotary encoder. (INHIBIT function is available only on HVS-AUX16D)

5-1. LOCK (Front Panel Lock)

The LOCK function allows you to disable AUX Unit front panel control.

◆ **To disable front panel operation:**

Press and hold **LOCK** down for 3 or more seconds until the button blinks.
The LOCK indicator also blinks red and panel control is disabled.

◆ **To unlock the front panel:**

Press and hold **LOCK** down for 3 or more seconds until the button turns off.
The LOCK indicator also turns off and panel control is enabled.

5-2. INHIBIT (HVS-AUX16D)

Procedure to inhibit Button no. **1** and the rotary encoder operation is explained as an example.

- (1) Press Button **1** while holding down **INHIBIT**.
- (2) Press the rotary encoder while holding down **INHIBIT**.
- (3) **Press and hold down** **INHIBIT**. **INHIBIT** blinks and **INHIBIT** function is enabled.
Button **1** is disabled. If pressed, the button LCD displays "x".
The rotary encoder operation is disabled. If operated, **INHIBIT** blinks.

To release INHIBIT function, **press and hold down** **INHIBIT** to turn off the button.

To release INHIBIT settings on Button **1** and the rotary encoder, repeat steps (1) and (2).

6. LCD Indicators (HVS-AUX16C/16D)

LCD button displays are installed on HVS-AUX16C and HVS-AUX16D.

They can display assigned signal names, unit name, AUX ID, page no. and target switcher (See the table below.)

See the Operation Manual of the destination unit for details on inputting display letters.

Display	How to display
AUX ID	HVS-AUX16C: Always displays
Page	HVS-AUX16D: Displays for a second after operation or when the rotary encoder is pressed and held.
Destination	Displays while the rotary encoder is pressed and held.

6-1. Switching Pages

Turning the rotary encoder allows you to switch pages. PAGE1 displays buttons 1-16, PAGE 2 displays buttons 17-32, PAGE 3 displays buttons 33-48 and PAGE 4 displays buttons 49-64.

6-2. FMT Setting

LCD button displays on HVS-AUX16C/16D show up to 14 characters in two lines. When total character number is 6 or less, the text is centered in a line regardless of the FMT setting.

Select a feed line setting from **FIX** or **AUTO**.

- (1) Press **SETUP**. LCD button displays are switched to SETUP menu mode.
- (2) Press **AUX SET2**.
- (3) Press and hold **--FMT--**. The button starts to blink.
- (4) Select **FIX** or **AUTO** by turning the rotary encoder.

FMT Setting	Description
FIX (Default)	Breaks the line after 7 characters. 6 characters or less text is centered.
AUTO	Automatically breaks the line. When the line feed point is not judged, operates as FIX . ▶ See Appendix 1. "Auto Line Feed Line" for details.

- (5) Press and hold **SAVE**. The screen returns to operation mode.

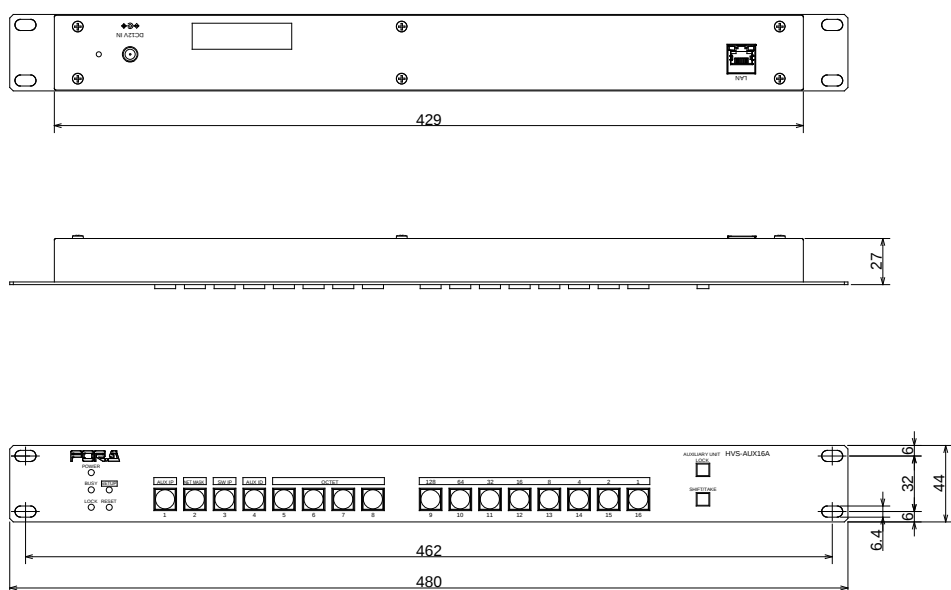
7. Specifications and Dimensions

7-1. Unit Specifications

		16A	32A	64A	16B	16C	16D
Free Buttons		16	32	64	16	16	16
LOCK button		Available	Available	Available	Available	Available	Available
SHIFT/TAKE button		Available	Available	TAKE only	Available	TAKE only	TAKE only
INHIBIT button		-	-	-	-	-	Available
Rotary Encoder (PAGE switching)		-	-	-	-	Available (4 PAGE)	Available (4 PAGE)
Interface (LAN)		100BASE-TX RJ-45 x 1 (For switcher connection. Hub required for multiple units connection)					
Temperature		0°C to 40°C					
Humidity		30% to 85% (no condensation)					
Power		+12 V DC, Pin connector x 1				+12 V DC, Pin connector x 2 (Redundant as standard)	+12 V DC, Pin connector x 1
Consumption	AC100-120V	8VA (3W)	10VA (4W)	15VA (7W)	12VA (4W)	14VA (6W)	12VA (5W)
	AC220-240V	11VA (3W)	13VA (4W)	20VA (8W)	13VA (4W)	18VA (6W)	15VA (6W)
Dimensions		480(W) x 44(H) x 27(D) mm EIA1RU		480(W) x 88(H) x 27(D) mm EIA2RU	215(W) x 43(H) x 88(D) mm EIA2RU half-rack size	430(W) x 44(H) x 42(D) mm EIA1RU	215(W) x 43(H) x 88(D) mm EIA2RU half-rack size
Weight		1 kg		1.5 kg	0.8 kg	2 kg	1 kg
Consumables		AC adapter: Replace every 5 years					

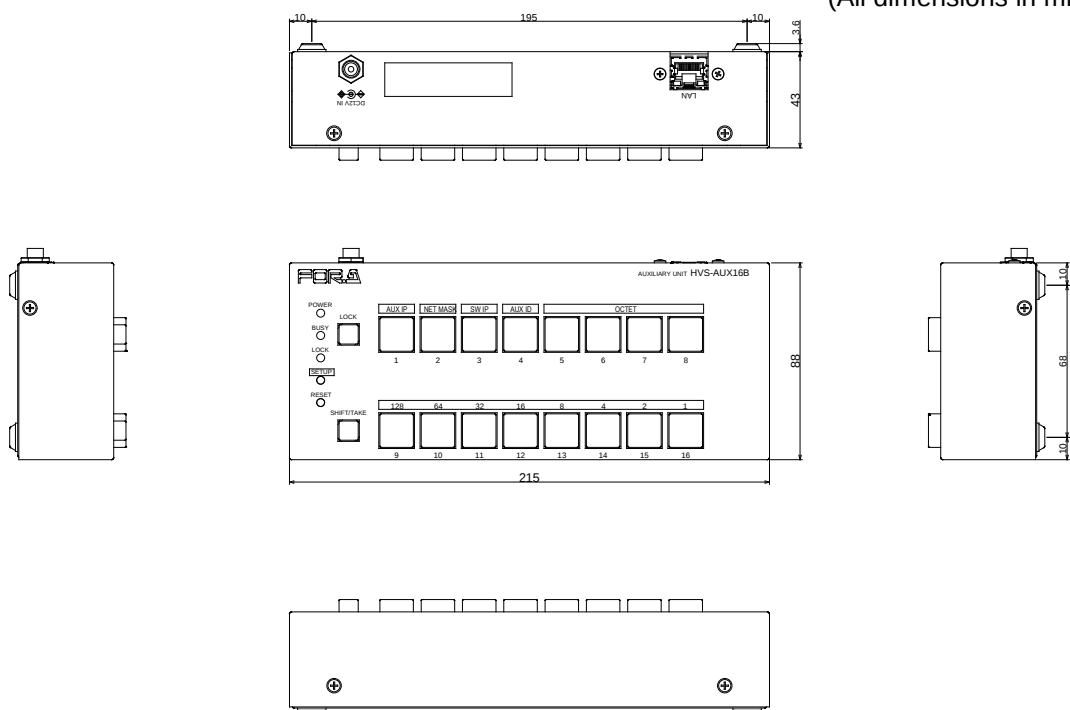
7-2-1. HVS-AUX16A

(All dimensions in mm.)

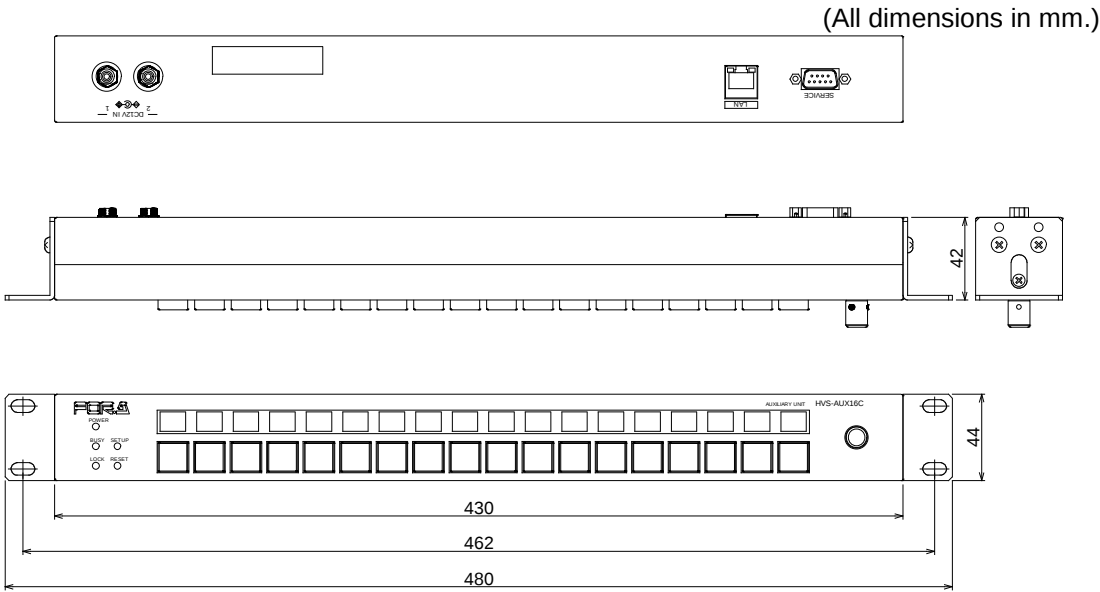


7-2-2. HVS-AUX16B

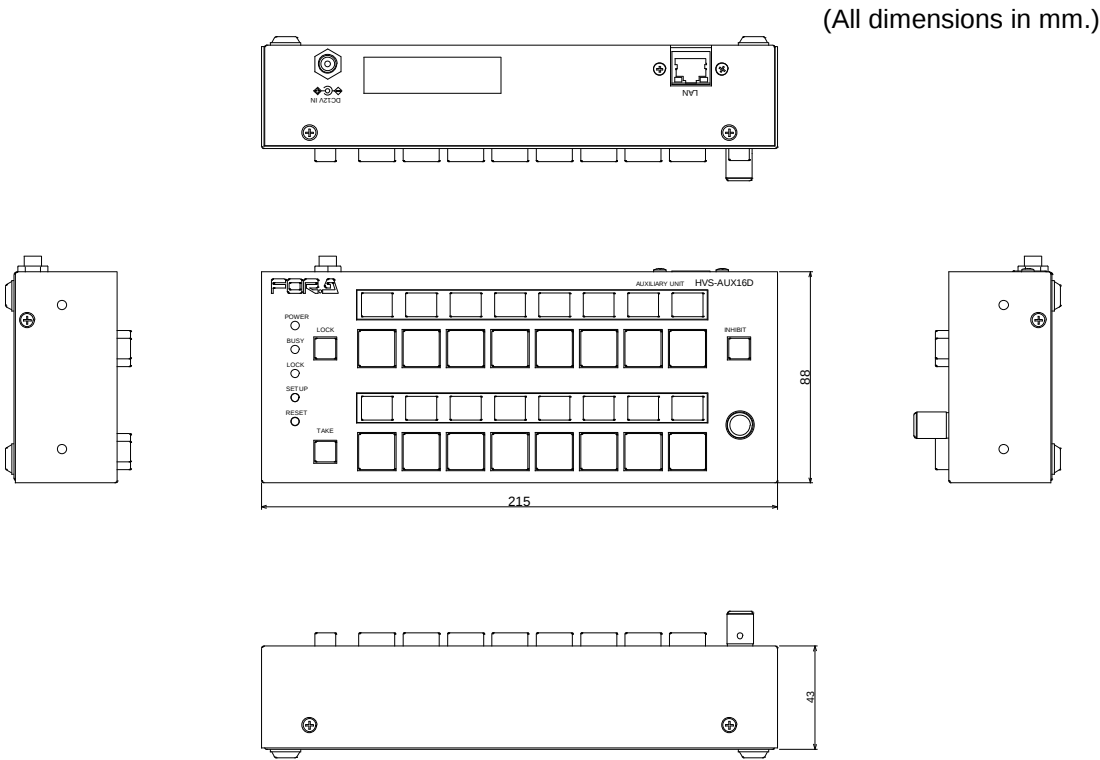
(All dimensions in mm.)



7-2-3. HVS-AUX16C

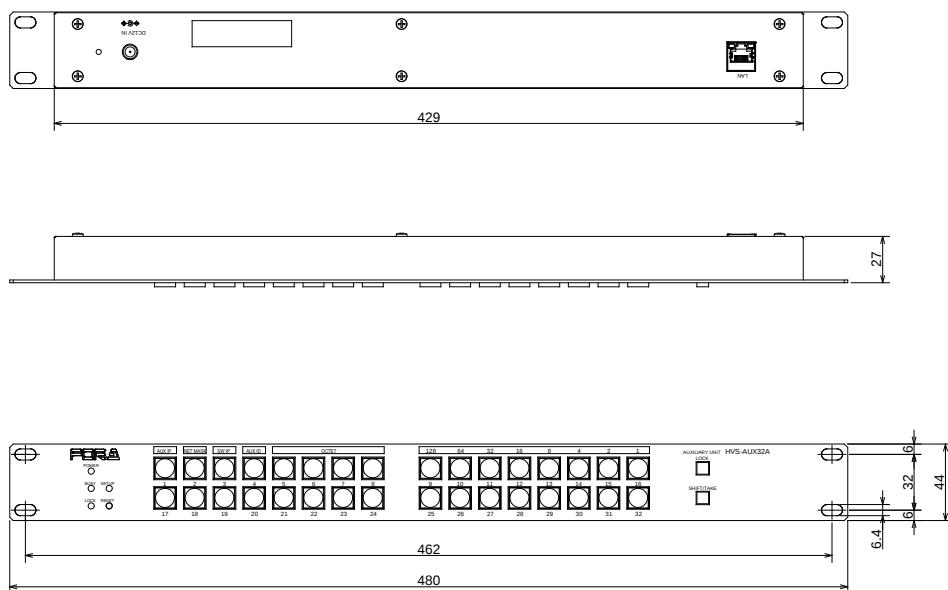


7-2-4. HVS-AUX16D



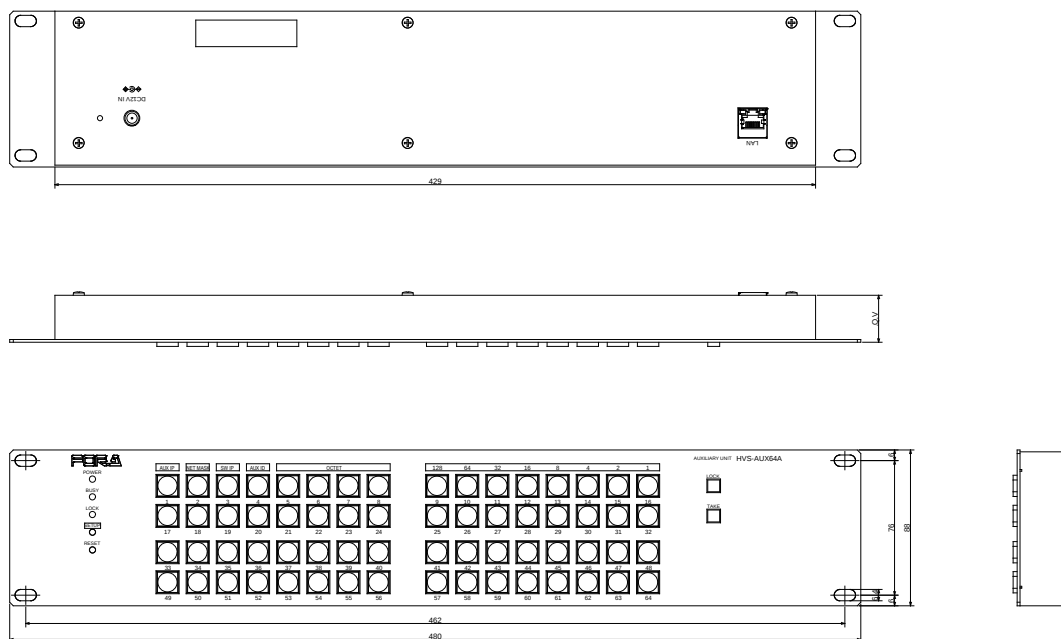
7-2-5. HVS-AUX32A

(All dimensions in mm.)



7-2-6. HVS-AUX64A

(All dimensions in mm.)



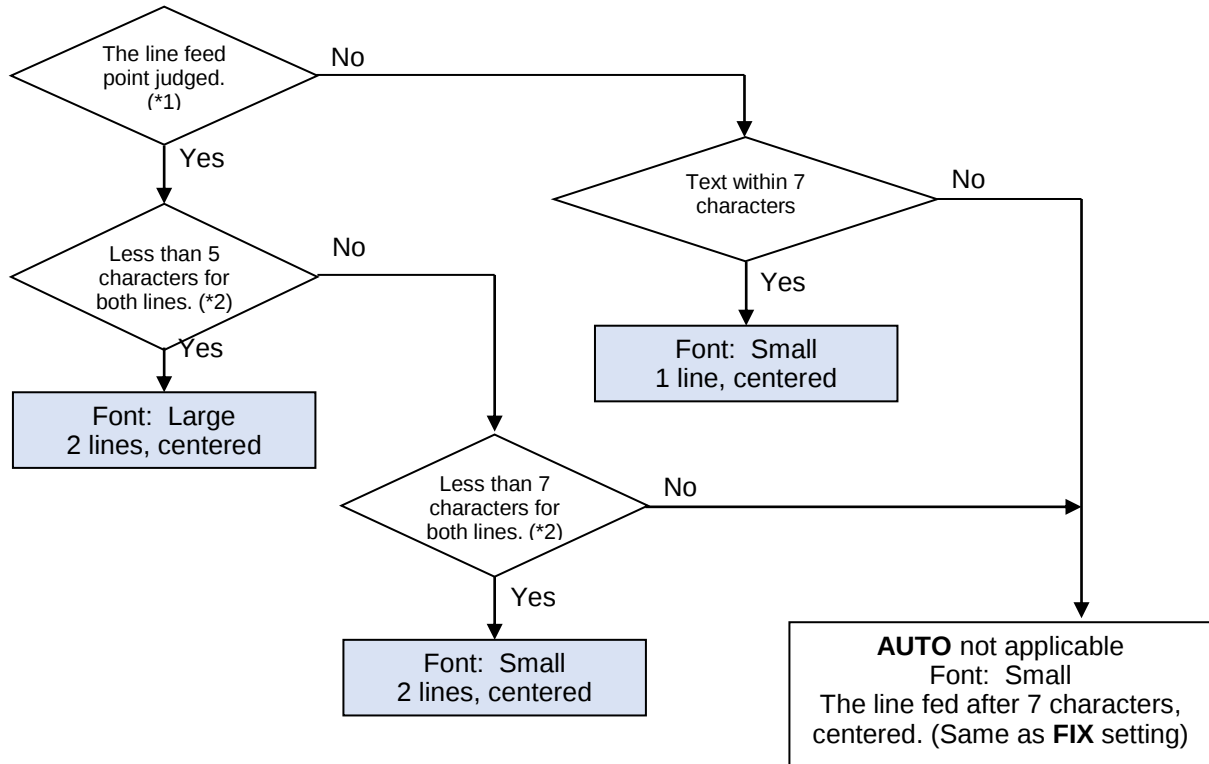
Appendix 1. Auto Line Feed

The **AUTO** line feed function judges the breaking point of 6-14 character text automatically and displays 2 centered lines. (When total letter number is 5 or less, text is centered in a single line.)

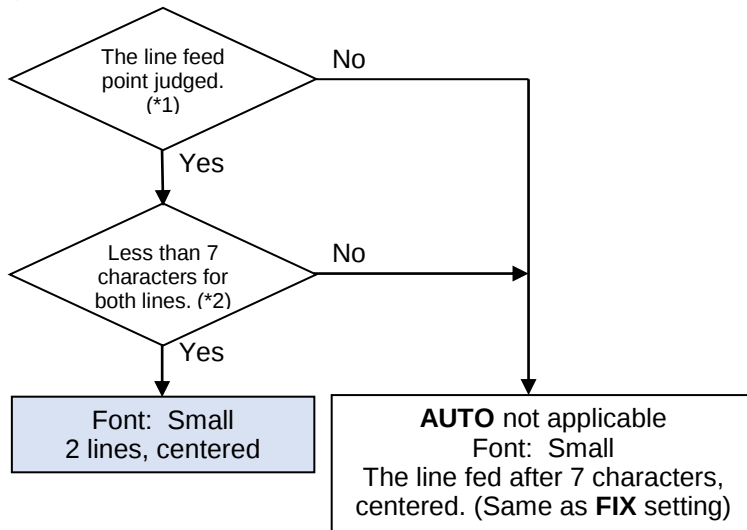
* The auto line feed is not applicable to a text with over 15 characters.

Flow charts are as shown below.

◆ 6-10 characters



◆ 11-14 characters



(*1) Deciding the Line Breaking Point

A breaking point is judged from the following conditions. If the text does not fit into the following conditions, automatic line feed is not applied.

1. Text with multiple type characters (Ex. No. 1 and 5)

Characters are classified into 3 types.

(a) Alphabet (a, b, ... X, Y, Z)

* Strings of only upper-case letters are separated from lower-case letters strings and handled as a different type.

(b) Number (0, 1,...8, 9)

(c) Punctuation Marks (Letters other than (a) and (b). Ex.: -, :, Space symbol, etc.)

For alphabet and number characters, one of the breaking point choices is where the character type changes.

As for punctuation marks, one of the breaking point choices is where the punctuation marks change to other characters. (Punctuation marks are displayed at the end of the first line.)

2. Capitalized text (Ex. No. 4 below)

The breaking point choice is the one in front of the upper-case character

◆ Breaking point priority

When there are multiple breaking point choices, a point is decided according to following listed priority order.

1. Not breaking the word inside a pair of punctuation marks. (< >, (), [], "", etc.). (Ex. No. 8)
2. To be able to display in big font (5 letters x 2 lines). (Ex. No. 7, 8)
3. Break a line before/after a space symbol. (Ex. No. 2)
4. Break a line around the center of a text. (Ex. No. 6)

(*2) Deciding the Font Size

The font size is decided automatically according to the following conditions. Large font is 9 x 15 pixels and small font is 6 x 8 pixels.

When both first and second lines are within 5 letters, two lines are displayed in large font. (Ex. No. 1-8).

When either first or second line is 6-7 letters (Ex. No. 9), two lines are displayed in small font.

Space mark is included in the letter number, but ignored for centering. Centering is done by displayed letters and symbols only.
(If the beginning or last letter is a space mark, the space is ignored for centering.)

◆ Examples -AUTO Line Feed

No.	Input	LCD Display	Description
1	input001	input 001	Breaks a line in between alphabet and number.
2	AuxID 9	AuxID 9	Breaks a line after 5 letters. A space mark is located at the end of first line.
3	SrcVTR	Src VTR	Breaks a line in between upper-case and lower-case characters.
4	VTRSrc	VTR Src	Breaks a line in front of an upper-case with successive lower-case characters.
5	VTR.SRC	VTR. SRC	Breaks a line after a punctuation mark.
6	SrcVTR01	Src VTR01	Breaks a line around center of the text.

7	CAM01-SRC	CAM01-SRC	Breaks a line after 5 letters. The punctuation mark is located at the beginning of the second line.
8	a(12)bcd	a(12) bcd	Breaks a line for not separating paired punctuation marks.
9	Source001	Source 001	Breaks a line in between alphabet and number. Small font is employed because letters in first line are 6.

Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of 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.



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