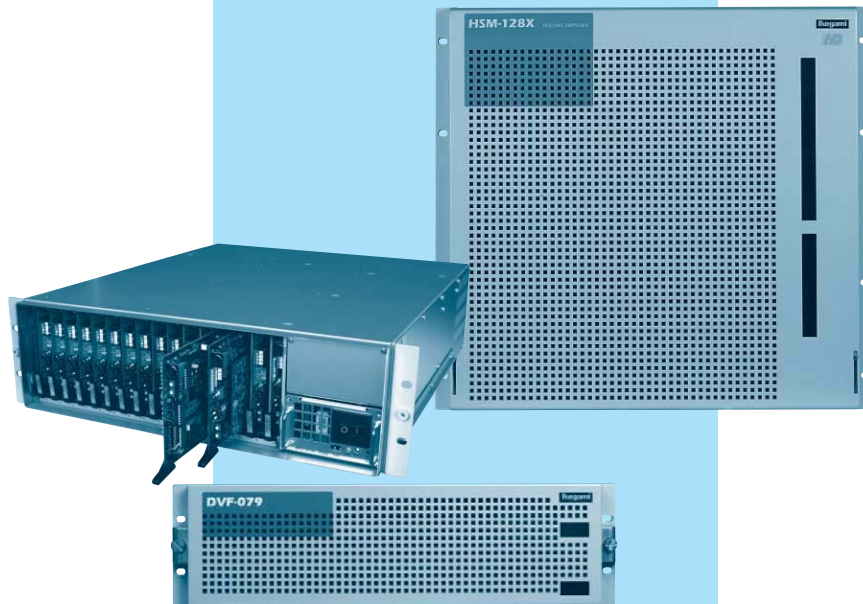


# Modular Type Converter Unit & Routing Switcher

for HDTV/SDTV System



# Modular Type Converter Unit for HDTV/SDTV System

- Video and Audio Modules can be mounted into the same Main Frame.
- Both Digital and Analog signals can be handled in the same Main Frame as well.
- Hot Swappable Module capability allows immediate module change for emergency service.
- Redundant power supply and 16 Slot capacity for Modules in 3RU Main Frame.
- Front process/control module and rear distributor/selector/connector-panel module configuration.



■ Hot Swap

## Main Frame Units and Power Supplies



3RU Main Frame  
DVF-079



1RU Main Frame  
DVF-086



Half-Rack size Main Frame  
DVF-083

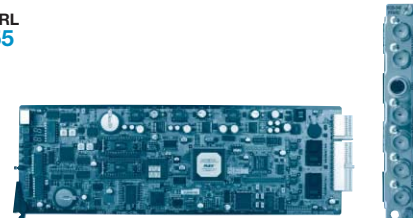
Single Power Unit  
DPU-077



Description	Model	Feature
PF3U-CTL, 3RU Main Frame (for remote control & genlock applications)	DVF-079	3RU, 16 Slot Configuration. Redundant Power capability. For External Sync or Parameter Control required application.
PF3U, 3RU Main Frame	DVF-085	3RU, 16 Slot Configuration. Redundant Power capability. For neither External Sync nor Control required application.
PS3U, Single Power Unit for 3RU Frame	DPU-077	300W Power Unit for DVF-079/085 Main Frame. Redundant installation available.
PF1U-CTL, 1RU Main Frame (for remote control & genlock applications)	DVF-086	1RU, 4 Slot Configuration. Redundant Power capability. For External Sync or Parameter Control required application.
PF1U, 1RU Main Frame	DVF-080	1RU, 4 Slot Configuration. Redundant Power capability. For neither External Sync nor Control required application.
PS1U, Single Power Unit for 1RU Frame	DPU-078	83W Power Unit for DVF-080/086 Main Frame. Redundant installation available.
PF1UH, 1RU, Half-Rack Size Main Frame	DVF-083	1RU, Half-Rack Size, 2 Slot Configuration. Single Power capability. With or Without External Sync or Parameter Control application can be changed by jumper connection on Mother Board.
PS1UHF, Power Unit for 1RU, Half Rack Size Frame	DPU-085	50W Power Unit for DVF-083. Only single installation available.

## Sync Generator and Control Module

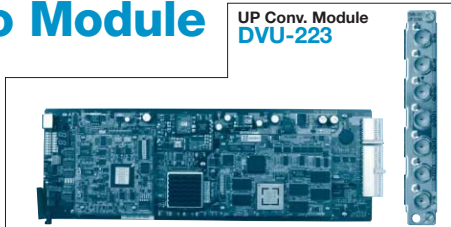
PFARC-CTRL  
DCU-055



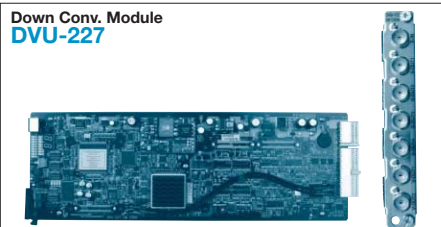
Description	Model	Feature	Power Consumption	Slot Required	Rear Panel Layout
PFARC (Rear Module)	DCB-349	By the input of BBS or Tri-Level Sync, each of HD/SD/Audio reference signals are generated and distributed for installed modules in the same Main Frame. This module should be installed in the Main Frame if output signal should be synchronized to reference signal. 2 Arcnet and 1 GPI connector facility.	5W	1 Slot	
PFARC-CTRL (Including PFARC Module)	DCU-055	By the input of BBS or Tri-Level Sync, each of HD/SD/Audio reference signals are generated and distributed for installed modules in the same Main Frame. This module should be installed in the Main Frame if output signal should be synchronized to reference signal. Used for network control. 2 Arcnet and 1 GPI connector facility.	15W	1 Slot	
PFPIO (Front and Rear Module Set)	DCU-057	Control Module for M42SEL, M84SEL, A42SEL, A84SEL, A-A84SEL modules. Can be used for AUX parallel I/O. TTL input and Open Correcor Output. Optional software designation required.	10W	2 Slot	

## Video Module

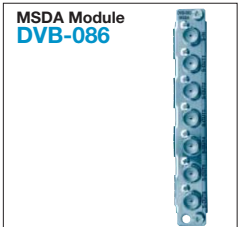
UP Conv. Module  
DVU-223



Down Conv. Module  
DVU-227



MSDA Module  
DVB-086



# Ikegami Modular Type Converter Unit supports both HD and SD format for the current period of transition. Main Frame and Modular construction provides easy system-up and system-expansion to meet various configuration.

## Video Module

Description	Model	Feature	Power Consumption	Slot Required	Rear Panel Layout
MSDA (Rear Module)	DVB-083	Multi-Rate HD signal and SD-SDI distribution amplifier module. 1 input and 6 outputs. 270MHz or 1.5Gbps signal is re-clocked(auto sensing). Other formats are bypassed(auto-sensing). Using with DCU-058 SDI-MON Module, signal monitoring will be possible.	5W	1 Slot	
TSDA (Rear Module)	DVB-086	Distribution amplifier module specified for 270MHz signal. Reclocked and all positive outputs. Supports DVB-ASI(270MHz).	5W	1 Slot	
EQA (Front and Rear Module Set)	DVU-213	Distribution amplifier module for NTSC analog composite or BBS(Including Tri-Level Sync). 1 input and 6 outputs. Internal termination can be set ON/OFF by jumper setting. Gain control capability. Up to 250m length of 5C-2V cable can be equalized for signal attenuation.	3W	1 Slot	
M42SEL (Rear Module)	DVB-127	Multi-rate 4 inputs and 2 outputs selector module (143/177/270/360/540/1483.5/1485Mbps, Auto-sensing and re-clocked). Using with DCU-057, parallel I/O operation will be available. -90H switch point setting available.	9W	1 Slot	
M84SEL (Rear Module)	DVB-128	Multi-rate 8 inputs and 4 outputs selector module(143/177/270/360/540/1483.5/1485Mbps, Auto-sensing and re-clocked). Using with DCU-057, parallel I/O operation will be available. -90H switch point setting available. Using with one more DVU-128 module plugged-in next slot, 16 inputs and 8 outputs operation will be also available.	11W	2 Slot	
A42SEL (Rear Module)	DVB-129	NTSC Analog Composite 4 inputs and 2 outputs selector module. Using with DCU-057, parallel I/O operation will be available.	3W	1 Slot	
A84SEL (Rear Module)	DVB-097	NTSC Analog Composite 8 inputs and 4 outputs selector module. Using with DCU-057, parallel I/O operation will be available. Using with one more DVU-097 module plugged-in next slot, 16 inputs and 8 outputs operation will be also available.	4W	2 Slot	
A/D1 (Front and Rear Module Set)	DVU-212	NTSC Analog Composite to SD-SDI(D1) converter module. Using with Sync-generator module, Frame synchronizer and 3H-AVDL functions will be available. V-BL offset function(11H/19H). 2 Analog Composite Loop-through output and 4 SD-SDI(D1) output facility.	18W	1 Slot	
D1/A (Front and Rear Module Set)	DVU-211	SD-SDI(D1) to NTSC analog composite converter module. Using with Sync-generator module, Frame synchronizer and 3H-AVDL functions will be available. V-BL offset function(9H/14H/20H). 3H-COMB Filter ON/OFF function. 2 Analog Composite Loop-through output and 4 D1(SD-SDI) output facility.	10W	1 Slot	
UP CONV (Front and Rear Module Set)	DVU-223	SD-SDI(D1) to HD-SDI(1080i) up converter module. By-pass mode capability for HD-SDI input. Various aspect ratio conversion mode selectable. HD-SDI Back ground capability. Supports embedded audio. 4 HD-SDI output facility. Sync generator module is required for the same main frame.	22W	1 Slot	
UP CONV-AI (Front and Rear Module Set)	DVU-225	SD-SDI(D1) to HD-SDI(1080i) up converter module supports 8ch embedded audio input and employs audio input connectors. By-pass mode for HD-SDI input capability. 4 HD-SDI output facility. Sync generator module is required for the same main frame.	25W	2 Slot	
UP CONV-AO (Front and Rear Module Set)	DVU-226	SD-SDI(D1) to HD-SDI(1080i) up converter module supports 8ch embedded audio output and employs audio output connectors. 4 HD-SDI output facility. Audio down-mix function(fixed rate) available. Sync generator module is required for the same main frame.	25W	2 Slot	
DW CONV (Front and Rear Module Set)	DVU-227	HD-SDI(1080i) to SD-SDI(D1) down converter module. By-pass mode capability for SD-SDI input. Various aspect ratio conversion mode selectable. HD-SDI Back ground capability. Supports embedded audio. 4 SD-SDI output and 2 NTSC analog composite output facility. Sync generator module is required for the same main frame.	22W	1 Slot	
DW CONV-AI (Front and Rear Module Set)	DVU-229	HD-SDI(1080i) to SD-SDI(D1) down converter module supports 8ch embedded audio input and employs audio input connectors. 4 SD-SDI output and 2 NTSC analog composite output facility. Sync generator module is required in the same main frame.	25W	2 Slot	
DW CONV-AO (Front and Rear Module Set)	DVU-240	HD-SDI(1080i) to SD-SDI(D1) down converter module supports 8ch embedded audio output and employs audio output connectors. 4 SD-SDI output facility. Sync generator module is required in the same main frame.	25W	2 Slot	
MAVDL (Front and Rear Module Set)	DVU-219	HD-SDI(1080i) and SD-SDI(D1) auto sensing multi-rate AVDL module. 5H AVDL function available(Sync generator module required). Simple color corrector function available(Sync generator module and external control panel required). Audio mute, BL process ON/OFF and audio remove functions available. 1 video input, 4 video output and 2 video loop-through output facility.	14W	1 Slot	
MV-MIX (Front and Rear Module Set)	DVU-217	HD-SDI(1080i) and SD-SDI(D1) auto sensing multi-rate video mixer module. 5H AVDL function available(Sync generator module required). External key mix function available. 4H edge plus function. Separate PWW I/O facility. Line/PWW Bypass function. Sync generator module and external control panel required.	22W	1 Slot	
MEMBFS (Front and Rear Module Set)	DVU-221	HD-SDI(1080i) and SD-SDI(D1) auto sensing embedded audio control and frame synchronizer(FS) module. AVDL, FS(Delay), 8ch embedded audio(Sync generator module and control panel required except Delay function). Simple color corrector function available(Sync generator module and external control panel required). Sound skip proof at video skip proof and Audio mute functions available.	18W	1 Slot	
MMPX (Front and Rear Module Set)	DVU-207	HD-SDI(1080i) and SD-SDI(D1) auto sensing audio multiplexor module. 8ch embedded audio multiplex and AVDL functions(Sync generator module required). 2 video outputs facility.	14W	1 Slot	
M-DMPX (Front and Rear Module Set)	DVU-208	HD-SDI(1080i) and SD-SDI(D1) auto sensing audio de-multiplexor module. 8ch embedded audio de-multiplex, AVDL and audio mute functions(Sync generator module required). 2 video outputs facility.	14W	1 Slot	
MMPXFS (Front and Rear Module Set)	DVU-245	FS(Delay) function added to DVU-207(Sync generator module required except Delay function).	18W	1 Slot	
MMPXFS (Front and Rear Module Set)	DVU-246	FS(Delay) function added to DVU-208(Sync generator module required except Delay function).	18W	1 Slot	

Ⓜ : Serial Video Input(HD-SDI or SD-SDI)

Ⓜ : Serial Video Output(HD-SDI or SD-SDI)

Ⓜ : Serial Video Active-through(Re-clocked) Output(HD-SDI or SD-SDI)

Ⓜ : Analog Video Input(NTSC/Composite)

Ⓜ : Analog Video Input(NTSC/Composite)

Ⓜ : Analog Video Loop-through Output(NTSC/Composite)

Ⓜ : AES/EBU Audio Input(Stereo)

Ⓜ : AES/EBU Audio Output(Stereo)

Ⓜ : AES/EBU Audio Active-through Output(Stereo)



## Audio Module

Description	Model	Feature	Power Consumption	Slot Required	Rear Panel Layout
ADA (Front and Rear Module Set)	DAU-059	1 analog stereo audio input and 6 outputs distributor module. L-only or L+R audio output mode can be selectable. Input/output gain can be set at 0dB or 20dB by front switch and +/-10dB each variable control available.	10W	1 Slot	
A-EQA (Front and Rear Module Set)	DAU-060	1 analog stereo audio input and 6 outputs equalizer module. Equalizing gain can be set by front switch(Center frequency: 10KHz/20KHz, Equalizing gain 4dB to 24dB, 4 of Q-value mode selectable). Input/output gain can be set +/-10dB each variable control available.	10W	1 Slot	
DDA (Rear Module)	DAB-071	1 AES/EBU digital audio input and 6 outputs distributor module. Re-clock and sampling rate conversion(SRC) function available(Sync generator module is required for SRC control).	4W	1 Slot	
DDA-DL (Rear Module)	DAU-057	Using with DAB-071 together. Can be set up to 5sec delay. L-only or L+R audio mode can be selectable. Level control capability available.	8W	1 Slot	
A-84SEL (Front and Rear Module Set)	DAU-058	Analog stereo audio 8 inputs and 4 outputs cross-point module. Using with DCU-057, parallel I/O operation will be available. Using with one more DAU-058 module plugged-in next slot, 16 inputs and 8 outputs operation will be also available.	4W	2 Slot	
A-A/D (Front and Rear Module Set)	DAU-049	1 analog stereo audio input and 2 analog output plus 4 AES outputs A/D converter and distributor module. Input impedance can be selectable(600 ohm or High:20K ohm). Reference level against input level can be set at -20/0/+2/+4dBm. -18/-20dBFS reference level, L-only output selectable. Sync generator is required for Genlock operation. 48KHz sampling.	9W	1 Slot	
A2-A/D (Front and Rear Module Set)	DAU-051	2 ch input type module of DAU-049. 2 ch analog stereo audio input and 2 ch analog output plus 2 ch AES outputs converter and distributor module.	12W	1 Slot	
A2-A/D (Front and Rear Module Set)	DAU-053	3 ch input type module of DAU-049. 3 ch analog stereo audio input and 3 ch AES output converter and distributor module.	15W	1 Slot	
A3-A/D FL (Front and Rear Module Set)	DAU-055	3 ch input and 2 slot width type module of DAU-049. 3 ch analog stereo audio input and 3ch analog output plus 3 ch AES output converter and distributor module.	17W	2 Slot	
A-D/A (Front and Rear Module Set)	DAU-050	1 AES input and 4 analog stereo outputs plus 2 AES outputs D/A converter and distributor module. Analog output level can be set at 0/+2/+4dBm against -18/-20dBFS input reference level. TSG function available for analog output.	10W	1 Slot	
A2-D/A (Front and Rear Module Set)	DAU-052	2 ch input type module of DAU-050. 2 ch AES input and 2 ch analog stereo output plus 2 ch AES output converter and distributor module.	13W	1 Slot	
A3-D/A (Front and Rear Module Set)	DAU-054	3 ch input type module of DAU-050. 3 ch AES input and 3 ch analog stereo output converter and distributor module.	15W	1 Slot	
A3-D/A (Front and Rear Module Set)	DAU-056	3 ch input and 2 slot width type module of DAU-050. 3 ch AES input and 3ch analog output plus 3 ch AES output converter and distributor module.	17W	2 Slot	

: AES/EBU Audio Input(Stereo)  
 : AES/EBU Audio Output(Stereo)  
 : AES/EBU Audio Active-through Output(Stereo)

: Stereo Analog Input(Balanced)  
 : Stereo Analog Output(Balanced)  
 : Stereo Analog Active-through Output(Balanced)

## Remote Control Panel

### Multi RC Panel DCP-064



Description	Model	Feature	Power Consumption
Multi RC Panel	DCP-064	Required for parameter setting of up converter, down converter or frame synchronizer etc. Multiple modules can be controlled by one DCP-064. 1RU Size.	10W

# HSM Series Multi-format Routing Switchers for HD/SD Systems

The Ikegami HSM Series routing switchers are multi-format routers which enable flexible system integration in the transition period to DTV with HD and SD coexisting.

Multi-format 128x128 configuration in a 10 RU size

## HSM-128X

The I/O signal is based on HD-SDI, but SD-SDI can be handled under the through mode (without re-clocking). The HSM-series routers can accept HD only, SD only, and HD/SD simultaneous application.

### Features

#### Inputs and Outputs

Since internal signals are handled with serial digital signal, almost no distortion is generated in the routing switcher.

#### Changeable number of Inputs/Outputs

Each Input Module and Output Module has 16 connectors in one unit. By changing the number of modules, increasing / decreasing the number of inputs/outputs is possible.

#### Various format capability

Under through mode(without re-clocking), SD-SDI (D1) signal can be handled. Positive polarity output signal allows matrix switching of DVB-ASI signal.

#### Flexible HD/SD assignment

In the HD/SD coexisting application, independent HD/SD assignment is available in the single unit.

#### Redundant Power Supplies

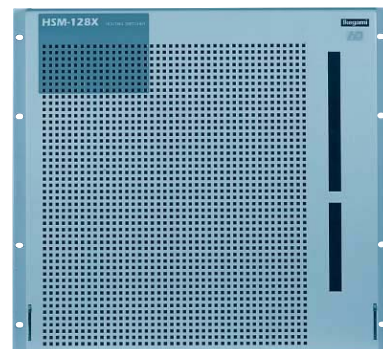
The HSM-128X works with two power units normally. Three or four power unit configuration is available. In the case of four power unit configuration, two units are for main power supply and the other two for back-up. The HSM-6464 and HSM-3216 can have a two power unit configuration, one for back-up.

#### Redundant CPU Board

The HSM-128X has two CPU board slots. Adding secondary CPU board, allows redundant configuration. Since each CPU board has a communication connector(Arcnet), the control path becomes redundant accordingly.

#### Arcnet facility

The HSM-series routers employ Arcnet for communication to the Control Panel. Command response doesn't change if multiple control panels are connected.



■ Front Panel



■ Rear Panel

### Ratings and Performance

Input signal: HD-SDI(SMPTE292M/BTA S-004B) / SD-SDI(SMPTE259M) / DVB-ASI

Output signal: HD-SDI(SMPTE292M/BTA S-004B) / SD-SDI(SMPTE259M)

Power Voltage: AC 85V to 255V

Power Consumption: 500VA

Operating Temperature: 0 to 45 degree C

Dimensions:

H443.7(10RU) x W482.6 x D430mm for HSM-128X

H221.5(5RU) x W482.6 x D430mm for HSM-6464

H 88(2RU) x W482.6 x D430mm for HSM-3216

H 44(1RU) x W482.6 x D430mm for HSM-0808

Multi-format 64 x 64 configuration in a 5 RU size

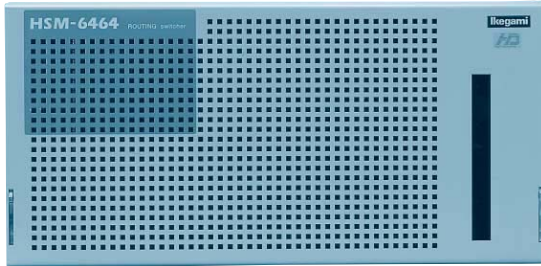
# HSM-6464

Multi-format 32 input and 16 output configuration in 2 RU size

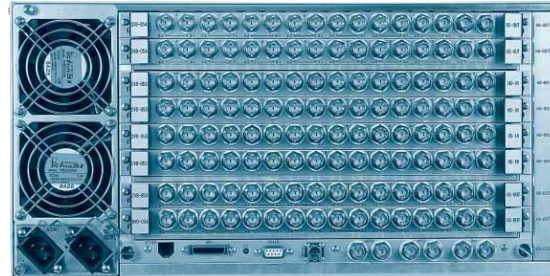
# HSM-3216

Multi-format 8 x 8 configuration in a 1 RU size

# HSM-0808



■ HSM-6464 Front Panel



■ HSM-6464 Rear Panel

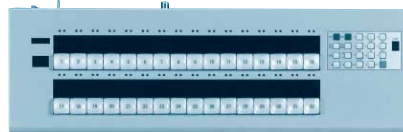
## Control Panel

To accommodate the various number of cross-points and panel locations, seven types of Control Panels are available. The control panels are connected to the router by a single 75ohm coax cable.

In addition, external PC and optional software can manage cross-point assignment and source ID indication.



■ DCX-062



■ DCX-063



■ DCP-063

Model Name	Type	Dimensions
<b>DCP-059</b>	8 buttons/Rack-Mount	H44xW218xD250mm/H1.73xW8.58xD9.84inches
<b>DCP-060</b>	16 buttons/Rack-Mount	H44xW482.6xD350mm/H1.73xW19xD13.78inches
<b>DCP-061</b>	32 buttons/Rack-Mount	H88xW482.6xD350mm/H3.46xW19xD13.78inches
<b>DCP-063</b>	X-Y/Rack-Mount	H44xW218xD350mm/H1.73xW8.58xD13.78inches
<b>DCX-062</b>	16 buttons/Box	H65xW440xD135mm/H2.56xW17.32xD5.31inches
<b>DCX-063</b>	32 buttons/Box	H65xW440xD135mm/H2.56xW17.32xD5.31inches
<b>DCX-064</b>	64 buttons/Box	H65xW440xD235mm/H2.56xW17.32xD9.25inches

Design and specifications are subject to change without notice.

SH34C064-HI-K1 Printed in Japan

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