

OPERATION MANUAL

USF-1013DEMUX Digital Audio Demultiplexer


2nd Edition

Software Version 2.00 - Higher



Precautions

Important Safety Warnings


[Power]

 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.
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[Circuitry Access]

 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.

[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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[[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

The USF1013DEMUX module is fully inspected and adjusted prior to shipment. 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.

◆ **USF1013DEMUX**

ITEM	QTY	REMARKS
USF-1013DEMUX	1	USF-1013DEMUX front module USF-1013DEMUX rear module
Screws for rear module installation	2 pcs.	
CD-ROM	1	Operation manual (PDF)

The USF-1013DEMUX is used by installing into a USF-212S frame.
The USF-1013DEMUX is not installed into a USF-212 frame.
Up to 12 USF-1013DEMUX can be installed into a USF-212S frame.

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1. Prior to Starting

1-1. Overview

The USF-1013DEMUX is a module type digital audio de-multiplexer to be mounted into a USF-212S frame.

The USF-1013DEMUX de-multiplexes audio from 3G-SDI, HD-SDI or SD-SDI signal and outputs AES/EBU audio.

AES 7/8 output can be switched to LTC signal output under GUI settings.

1-2. Features

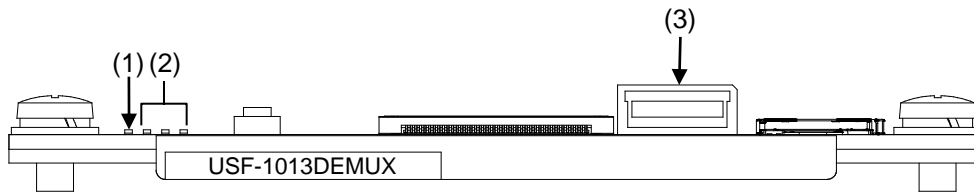
- De-multiplexes audio from SDI signals into AES/EBU audio output.
- 3G/HD/SD-SDI input and output x 1
- Gain adjustment for audio input/ output
- Timecode (LTC) output (AES7/8 switching)





1-3. About This Manual

This manual is intended to help the user easily operates this product and make full use of its functions during operation. Before installing or operating your module, read this operation manual thoroughly to ensure you understand the product. Afterwards, store this manual in a safe place for future reference.

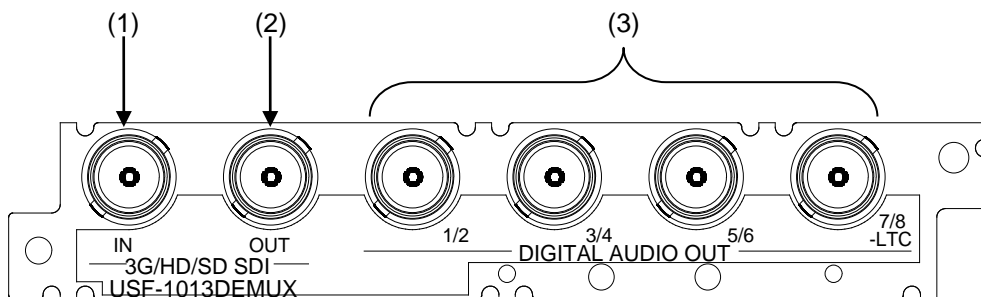
2. Panel Descriptions

2-1. Front Panel



No.	Name	Description
1	POWER	Lights green when power is supplied from USF frame and internal CPU is functioning.
2	SDI-IN	Lights green when SDI signal is normally input. (Lights green )  : SD input  : 1.5G-SDI input  : 3G-SDI input
3	μSD card connector	Used when upgrading USF-1013DEMUX software. (Do not insert μSD card in normal operation.)

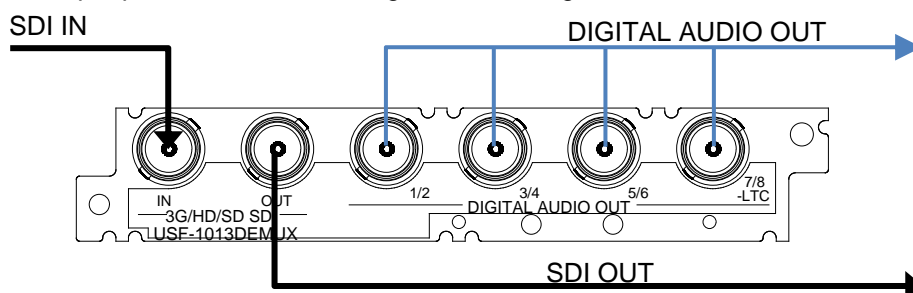
2-2. Rear Panel



No.	Name	Description
1	3G/HD/SD-SDI	IN SDI input connector
2		OUT SDI output connector
3	DIGITAL AUDIO OUT 1/2 to 7/8	4-pair AES/EBU output connector 7/8 can be used as LTC output connector by switching.

3. Connection

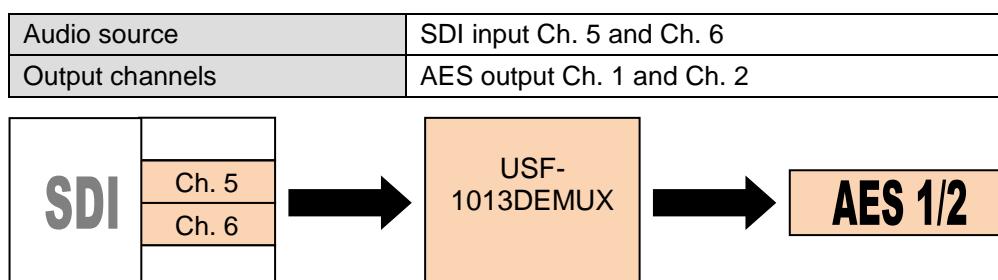
Connect peripheral devices referring to the drawing as shown below.



4. Operation Examples

4-1. AES Output of SDI Embedded Audio

This example assigns Ch. 5/6 SDI de-embedded audio to Ch. 1/2 AES audio output.



◆ Setting Required Parameters

Menu	Parameter	Channel	Setting	Description	Refer to
Mapping	SDI Audio Output Mappings	Ch. 1	SDI Ch. 5	Assigns SDI audio Ch. 5/6 to AES output Ch. 1/2.	5-2-1
		Ch. 2	SDI Ch. 6		

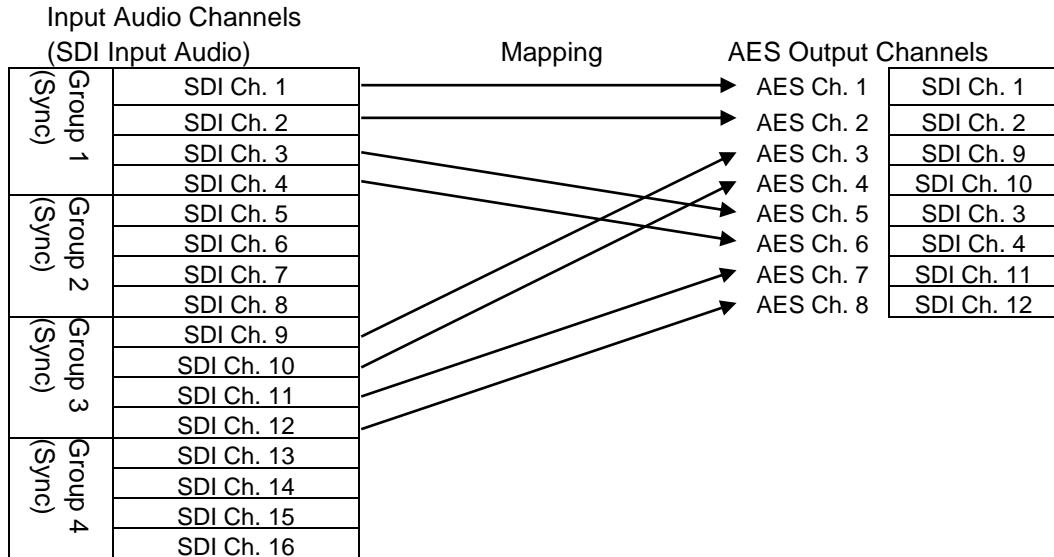
◆ Adjustable Parameters

Menu	Parameter	Channel	Default Setting	Description	Refer to
Input	SDI Audio Clock	Group 2	Auto	Allows you to select Sync. or Async. for audio sources.	5-1-1
	SDI PCM Mode	Ch. 5/6	Auto	Allows you to select PCM or NON-PCM for audio sources.	5-1-2
Output	AES Mono Sum	Ch. 1/2	Stereo	Allows you to select stereo or mono for output audio.	5-3-1
	AES Audio Resolution	Ch. 1/2	24bit	Allows you to select bit depth for output audio.	5-3-2
	AES Audio Gain	Ch. 1/2	0.0dB	Allows you to adjust output gain.	5-3-3
System	Sync Format	---	Auto	Allows you to select an SDI format. Select Auto to switch multiple formats.	5-4-1
	Audio Test Signal Output	---	Off	Allows you to output audio test signal. Select 1kHz Tone to output audio test signal.	5-4-1

4-2. Synchronous / Asynchronous Audio Mapping

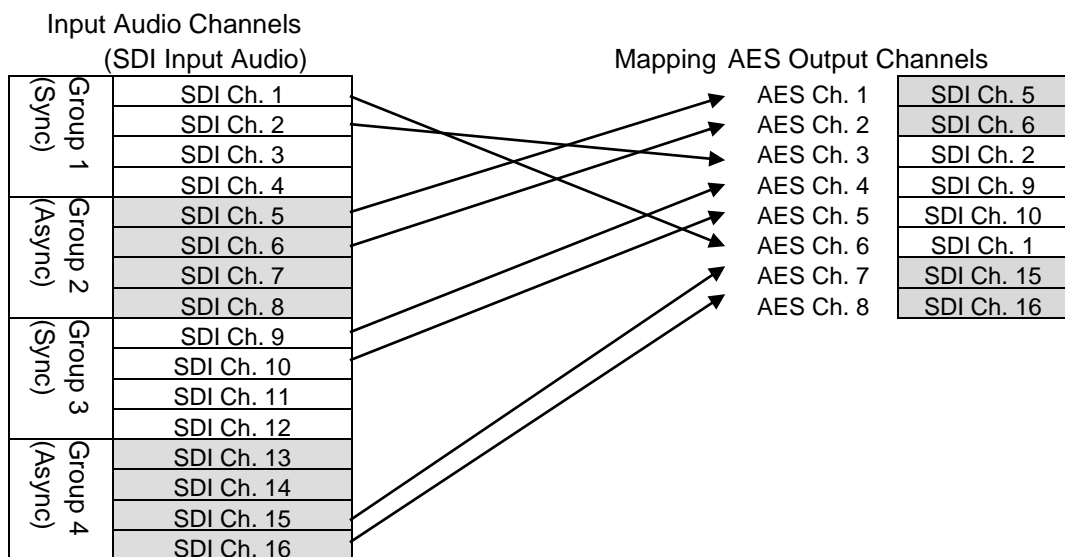
If audio source channels are synchronized with VIDEO, they can be freely mapped to SDI audio output channels. If audio source channels are asynchronous, they are mapped on a per-group basis.

◆ Synchronous Audio Mapping Example (Freely assignable on a per-channel basis)



◆ Synchronous and Asynchronous Audio Mapping Example

Synchronous audio is assignable on per-channel and Asynchronous audio is assignable on group basis.

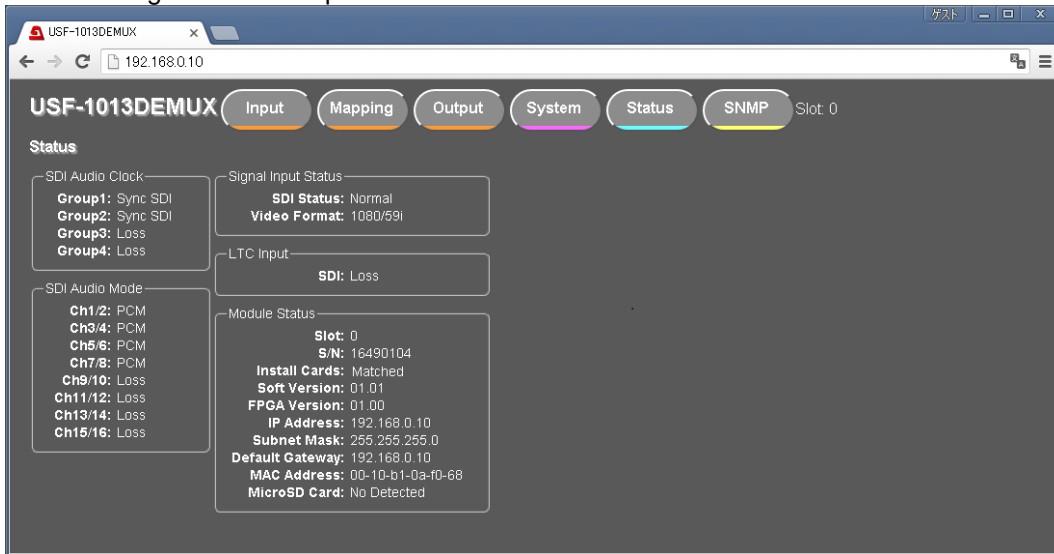


IMPORTANT

If audio channels are mapped on a per-channel basis and some audio channels are changed from synchronous to asynchronous during processing, the audio channels may play out improperly or noisily. In such case, verify and remap the channels on a per-group basis.

5. Web GUI

Start up a web browser on the PC and connect to the USF-1013DEMUX installed in a USF-212S frame. The following window will open.



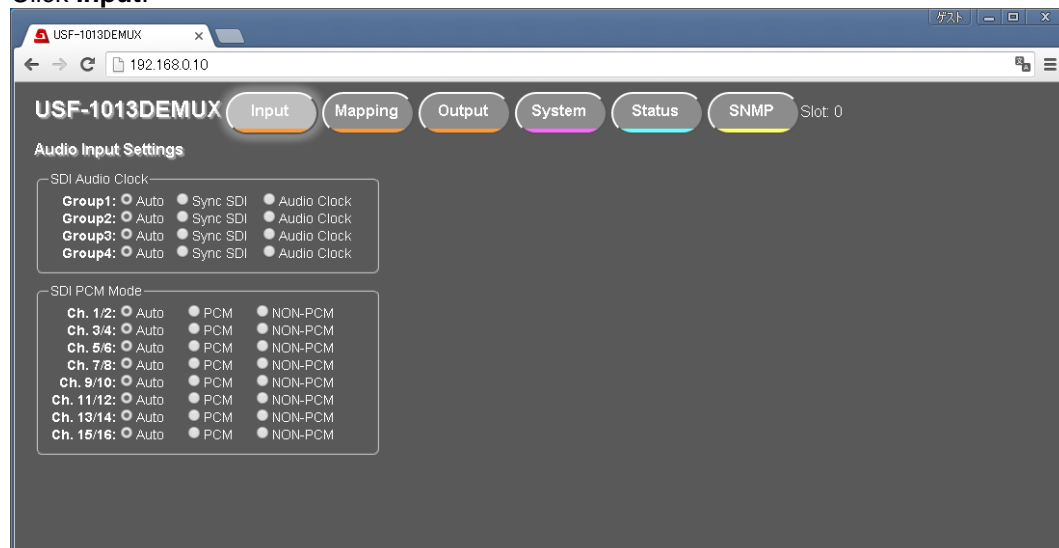
* Refer to the USF-212S operation manual for details on how to connect to a USF-1013DEMUX from the web browser.

Clicking on a tab, **Input**, **Mapping**, **Output**, **System**, **Status**, or **SNMP** enables you to select a top menu.

Menu	Description
Input	Menu related to embedded SDI audio input
Mapping	Assigns respective channels of SDI input embedded audio to AES output audio channels.
Output	Configures AES audio output.
System	Configures system and SDI signal set-up.
Status (Display only)	Status of embedded audio and LTC input is displayed.
SNMP	Sends / Does not send SNMP trap.

5-1. Audio Input Settings

Click **Input**.



5-1-1. SDI Audio Clock

Channel	Default	Setting	Description
Group1-4	Auto	Auto Sync SDI Audio Clock	<p>Selects the Sync. Mode for embedded audio processing. (3G/HD-SDI)</p> <p>Auto: Automatically selects Sync. or Async. Mode according to the flag in embedded audio.</p> <p>Sync SDI: Forcibly processes audio in Sync. Mode.</p> <p>Audio Clock: Forcibly processes audio in Async. Mode.</p>

- * The flag in embedded audio refers to UDW, asx bit.
- * In case of forcibly Sync. Mode, output UDW, asx bit is set to Sync. Mode.
- * In case of forcibly Async. Mode, output UDW, asx bit is set to Async. Mode.

IMPORTANT

Asynchronous audio channels can be mapped on a per-group basis. If mapped on a per-channel basis, synchronous and asynchronous signals are mixed in a group and the audio channels may play out improperly or noisily.

5-1-2. SDI PCM Mode

Channel	Default	Setting	Description
Ch.1/2 to Ch.15/16	Auto	Auto PCM NON-PCM	<p>Selects the embedded audio processing from PCM mode (Linear PCM, uncompressed) or NON-PCM mode (Nonlinear PCM).</p> <p>Auto: Automatically selects PCM or NON-PCM according to the flag in embedded audio.</p> <p>PCM: Forcibly processes audio in PCM mode.</p> <p>NON-PCM: Forcibly processes audio in NON-PCM mode.</p>

- * Flag in embedded audio refers to the corresponding channel status bit.

◆ PCM and NonPCM

Linear PCM audio indicates raw and uncompressed digital audio data, which is encoded from analog audio signals using the Linear Pulse Code Modulation (LPCM) method.

NonPCM (non-linear) audio indicates digital audio data other than linear PCM audio and includes compressed audio streams such as Dolby E or AC3.

IMPORTANT

Note that some audio channels may be output improperly if PCM and non-PCM or non-PCM of different-format audio channels are included in a group.

5-2. Audio Output Mapping

Click **Mapping**.

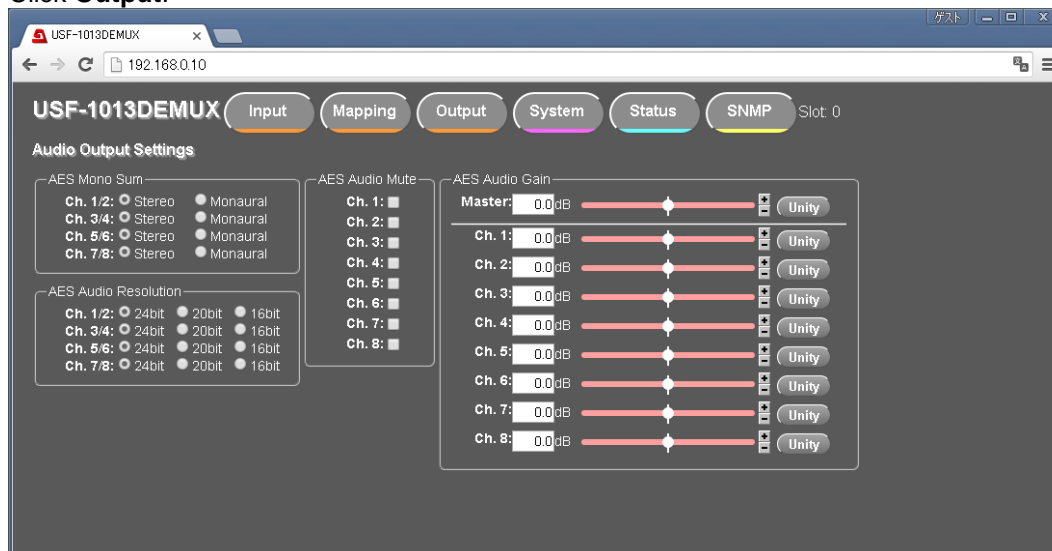


5-2-1. AES Audio Output Mapping

Channel	Default	Setting	Description
Ch. 1 to 8	Same as SDI IN	SDI Ch.1 to 16	Assigns SDI audio input channels to AES audio output channels.

5-3. Audio Output Settings

Click **Output**.



5-3-1. AES Mono Sum

Channel	Default	Setting	Description
Ch. 1/2 to Ch. 7/8	Stereo	Stereo Monaural	Stereo: Outputs audio in normal Stereo mode. Monaural: Outputs L and R mixed audio (Monaural) for both channels.

5-3-2. AES Audio Resolution

Channel	Default	Setting	Description
Ch. 1/2 to Ch. 7/8	24bit	24bit 20bit 16bit	Sets the sampling resolution (bit depth) for output audio. 24bit: Outputs 24-bit audio. 20bit: Outputs 20-bit audio. 16bit: Outputs 16-bit audio.

5-3-3. AES Audio Mute

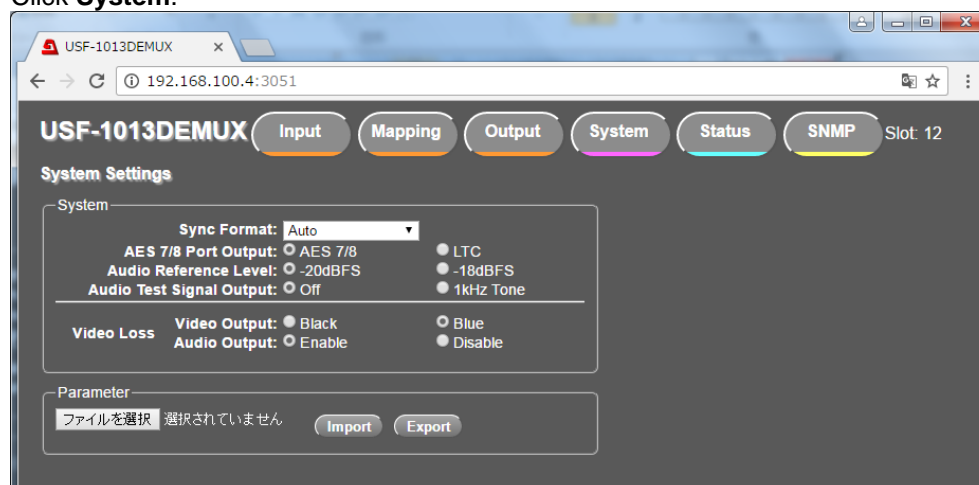
Channel	Default	Setting	Description
Ch. 1 to 8	OFF	OFF ON	Checkmark ON to mute audio output

5-3-4. AES Audio Gain

Channel	Default	Setting Range (Step)	Description
Master	0.0dB	-20.0dB to +20.0dB (0.1dB step)	Adjusts output gain for all audio channels, Ch. 1 to Ch. 8.
Ch. 1 to 8			Adjusts output gain for each audio channel.

5-4. System Settings

Click **System**.



5-4-1. System

Parameter	Default	Setting	Description
Sync Format	Auto	(See the table "Format Settings" as shown on next page.)	Selects video format of SDI signal. The formats listed on the table as shown on next page can be selected. Multiple video formats that are used need to be selected each time a format is switched. Auto: Selects video format automatically. When different signal other than the selected video format is input, an image selected in Video Loss Mode will be output.

Parameter	Default	Setting	Description
AES 7/8 Port Output	AES 7/8	AES7/8 LTC	Selects signal to output in the AES CH7/8 port. AES7/8: AES CH7/8 audio signals are output. LTC: Timecode signals are output. If LTC signal is embedded in SDI input, LTC signal will output. If LTC signal is not embedded in SDI input, VITC signal will output.
Audio Reference Level	-20dBFS	-20dBFS -18dBFS	Sets the audio test signal output level in DIGITAL AUDIO OUT. -20dBFS: Test signal will be output at -20dBFS level. -18dBFS: Test signal will be output at -18dBFS level.
Audio Test Signal Output	Off	Off 1kHz Tone	Outputs audio test signal when 1kHz Tone is selected. Off: Selected input audio signal will be output. 1kHz Tone: Internally generated 1kHz TEST signal will be output.
Video Loss Video Output	Black	Black Blue	Selects black or blue video for output if SDI is not input, or the input video format is different from the Sync Format setting (See Sec. 5-4-1.) Note that these video signals are output asynchronous with the system. In addition, no payload ID is passed through. Black: Outputs black video. Blue: Outputs blue video.
Video Loss Audio Output	Enable	Enable Disable	Selects whether to output audio signal if SDI is not input or the input video format is different from the Sync Format setting. (See Sec. 5-4-1.) Enable: Outputs silence signal asynchronous to the system. Disable: Outputs no audio signal.

◆ **Format Settings**

3G SDI	HD SDI		SD SDI
1080/59p(Level-A)	1080/59i	720/59p	525/60
1080/50p(Level-A)	1080/50i	720/50p	625/50
1080/60p(Level-A)	1080/60i	720/60p	
1080/59p(Level-B)	1080/30p	720/24p	
1080/50p(Level-B)	1080/29p	720/23p	
1080/60p(Level-B)	1080/25p	1035/59i	
	1080/24p	1035/60i	
	1080/23p		
	1080/24PsF		
	1080/23PsF		

5-4-2. Parameter

Button	Description
Import Export	Import: Selects a file by clicking the File Selection button and loads the settings in GUI. Export: Downloads a GUI settings file.

IMPORTANT

Setting data loaded by **Export** is not compatible between USF-1013DEMUX Software Version 1.00 and Version 2.00 or later. Setting data cannot be loaded and an error message "Setting file Imported failed." appears, if the data is incompatible with the system.

5-5. Status (Display Only)

Click **Status**.



5-5-1. SDI Audio Clock

Channel	Description
Group1 to 4	Displays if SDI input embedded audio is synchronous or asynchronous per group. Sync SDI: Synchronous mode Audio Clock: Asynchronous mode Loss: No audio

5-5-2. SDI Audio Mode

Item	Description
Ch. 1/2 to Ch. 15/16	Displays if SDI input embedded audio is PCM or NON-PCM per stereo pair. PCM: PCM mode NON-PCM: NON-PCM mode Loss: No audio

5-5-3. Signal Input Status

Item	Description
SDI Status	Displays SDI input signal status. Normal: Normal input is detected. Lock Error: No input or SDI lock error is detected. CRC Error: No input or CRC error is detected. Loss: SDI signal is lost.
Video Format	Displays video format of SDI input signal. Loss: SDI signal is lost.

5-5-4. LTC Input

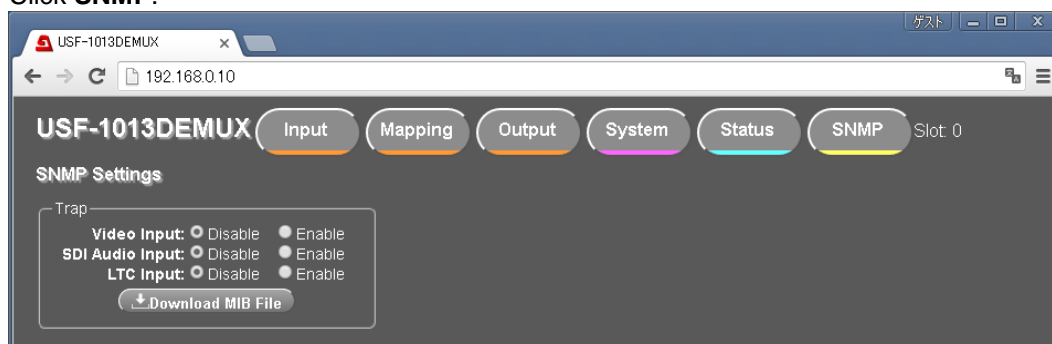
Item	Description
SDI	Displays LTC input signal detection. Detected: LTC or VITC signal is detected. Loss: LTC OR VITC signal is not detected.

5-5-5. Module Status

Item	Description
Slot	Slot no. of USF-212S on which the module is installed.
S/N	Serial no. of USF1013DEMUX
Install Cards	Indicates whether or not the front and rear modules match. Matched: Correct (front/rear) modules are installed. Mismatched: Incorrect rear module is installed. Install correct rear module.
Soft Version	Software version of USF1013DEMUX
FPGA Version	FPGA version of USF1013DEMUX
IP Address	Assigned IP address
Subnet Mask	Assigned subnet mask
Default Gateway	Assigned default gateway address
MAC Address	Displays the MAC address
MicroSD Card	Indicates whether or not a microSD card is installed. No Detected: Not installed. Detected: Installed.

5-6. SNMP Settings

Click **SNMP**.



5-6-1. Trap

Parameter	Setting	Description
Video Input	Disable Does not send SNMP traps. Enable: Sends SNMP traps.	Sends SNMP traps when changes occur in SDI input signal format.
SDI Audio Input		Sends SNMP traps when changes occur in embedded audio input.
LTC Input		Sends SNMP traps when changes occur on LTC input signal.
Download MIB File		Enables you to download an MIB file.

6. About SNMP

6-1. Overview

The USF-1013DEMUX can be remotely monitored using an external SNMP monitoring system that supports SNMPv2C. MIB (Management Information Base) files required for the SNMP monitoring system can be downloaded from web GUI. Refer to Sec.5-6. "SNMP Settings, Downloading the MIB (Management Information Base) File" for details. Refer to "USF-212S Operation Manual" for SNMP settings.

6-2. USF-1013DEMUX GET/SET List

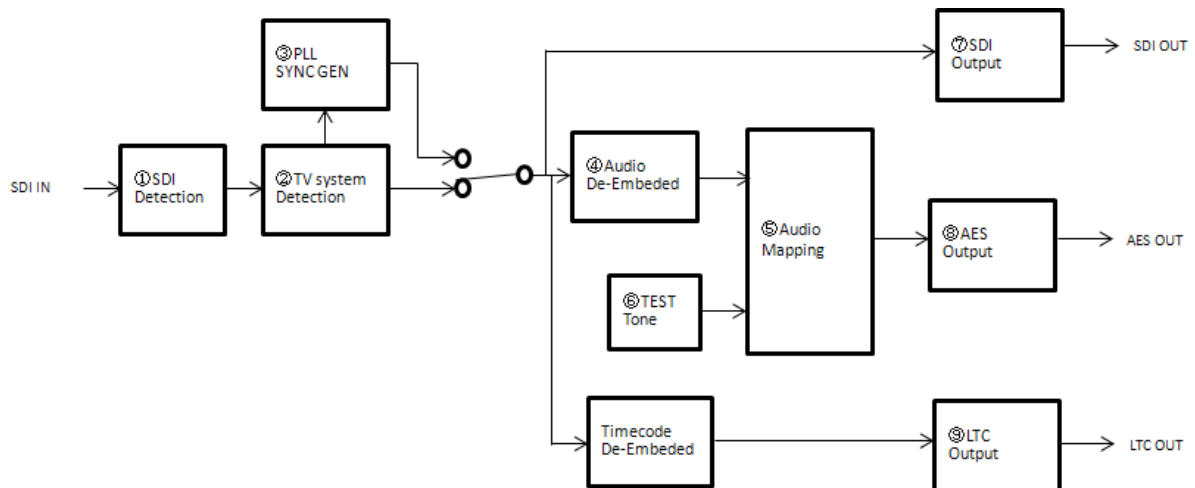
Object Group	Item Name	Object name in MIB file	Value	OID	GET /SET	Type	TRAP Function	Notes
OID: 1.3.6.1.4.1.20175.1.316.1. (Unit Info)								
Module Info	Product Name	usf1013DemuxProductName	USF-1013DEMUX	1	GET	OCTET STRING		
	Product Code	usf1013DemuxProductCode	1023812	2	GET	INTEGER		
	Serial Number	usf1013DemuxSerialNumber		3	GET	INTEGER		
	Soft Ver	usf1013DemuxSoftVersion		4	GET	OCTET STRING		
	FPGA Ver	usf1013DemuxFpgaVersion		5	GET	OCTET STRING		
	Slot No	usf1013DemuxSlotNumber		6	GET	INTEGER		
	SDI Input Status	usf1013DemuxInputVideoStatus	0: loss 1: format525-60 2: format625-50 4: format1080-59i 5: format1080-50i 6: format1080-60i 7: format1080-30p 8: format1080-29p 9: format1080-25p 10: format1080-24p 11: format1080-23p 12: format1080-24psf 13: format1080-23psf 14: format1080-59pA 15: format1080-59pB 16: format1080-50pA 17: format1080-50pB 18: format1080-60pA 19: format1080-60pB 23: format720-59p 24: format720-50p 25: format720-60p 26: format720-24p 27: format720-23p 30: format1035-59i 31: format1035-60i 50: CRC error 51: Lock error	7	GET	INTEGER	✓	
	SDI Audio Info Ch1	usf1013DemuxAudioInCh1	0: loss 1: pcm 2: nonPCM 3: asyncPCM 4: asyncNonPCM	8	GET	INTEGER	✓	
	SDI Audio Info Ch2	usf1013DemuxAudioInCh2	Same as above	9	GET	INTEGER	✓	
	SDI Audio Info Ch3	usf1013DemuxAudioInCh3	Same as above	10	GET	INTEGER	✓	
	SDI Audio Info Ch4	usf1013DemuxAudioInCh4	Same as above	11	GET	INTEGER	✓	
	SDI Audio Info Ch5	usf1013DemuxAudioInCh5	Same as above	12	GET	INTEGER	✓	
	SDI Audio Info Ch6	usf1013DemuxAudioInCh6	Same as above	13	GET	INTEGER	✓	
	SDI Audio Info Ch7	usf1013DemuxAudioInCh7	Same as above	14	GET	INTEGER	✓	
SDI Audio Info Ch8	usf1013DemuxAudioInCh8	Same as above	15	GET	INTEGER	✓		
SDI Audio Info Ch9	usf1013DemuxAudioInCh9	Same as above	16	GET	INTEGER	✓		
SDI Audio Info Ch10	usf1013DemuxAudioInCh10	Same as above	17	GET	INTEGER	✓		

Object Group	Item Name	Object name in MIB file	Value	OID	GET /SET	Type	TRAP Function	Notes
OID: 1.3.6.1.4.1.20175.1.316.1. (Unit Info)								
	SDI Audio Info Ch11	usf1013DemuxAudiolnCh11	Same as above	18	GET	INTEGER	✓	
	SDI Audio Info Ch12	usf1013DemuxAudiolnCh12	Same as above	19	GET	INTEGER	✓	
	SDI Audio Info Ch13	usf1013DemuxAudiolnCh13	Same as above	20	GET	INTEGER	✓	
	SDI Audio Info Ch14	usf1013DemuxAudiolnCh14	Same as above	21	GET	INTEGER	✓	
	SDI Audio Info Ch15	usf1013DemuxAudiolnCh15	Same as above	22	GET	INTEGER	✓	
	SDI Audio Info Ch16	usf1013DemuxAudiolnCh16	Same as above	23	GET	INTEGER	✓	
	LTC Input SDI	usf1013DemuxEmbLTCIn	0: notDetected 1: Detected	40	GET	INTEGER	✓	
	Test Signal	usf1013DemuxTestSignal	0: Off 1: 1kHz Tone	41	GET / SET	INTEGER		

6-3. USF-1013DEMUX TRAP List

Object group	Item Name	Object name in MIB file	OID	Type	Reference Object
OID: 1.3.6.1.4.1.20175.1.316.0. (TRAP)					
TRAP	Video In	usf1013DemuxInputVideoChange	1	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxInputVideoStatus
	SDI Audio Info Ch1	usf1013DemuxAudiolnCh1Change	2	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh1
	SDI Audio Info Ch 2	usf1013DemuxAudiolnCh2Change	3	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh2
	SDI Audio Info Ch 3	usf1013DemuxAudiolnCh3Change	4	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh3
	SDI Audio Info Ch 4	usf1013DemuxAudiolnCh4Change	5	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh4
	SDI Audio Info Ch 5	usf1013DemuxAudiolnCh5Change	6	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh5
	SDI Audio Info Ch 6	usf1013DemuxAudiolnCh6Change	7	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh6
	SDI Audio Info Ch 7	usf1013DemuxAudiolnCh7Change	8	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh7
	SDI Audio Info Ch 8	usf1013DemuxAudiolnCh8Change	9	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh8
	SDI Audio Info Ch 9	usf1013DemuxAudiolnCh9Change	10	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh9
	SDI Audio Info Ch 10	usf1013DemuxAudiolnCh10Change	11	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh10
	SDI Audio Info Ch 11	usf1013DemuxAudiolnCh11Change	12	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh11
	SDI Audio Info Ch 12	usf1013DemuxAudiolnCh12Change	13	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh12
	SDI Audio Info Ch 13	usf1013DemuxAudiolnCh13Change	14	INTEGER	usf1013DemuxSlotNumber
				INTEGER	usf1013DemuxAudiolnCh13
SDI Audio Info Ch 14	usf1013DemuxAudiolnCh14Change	15	INTEGER	usf1013DemuxSlotNumber	
			INTEGER	usf1013DemuxAudiolnCh14	
SDI Audio Info Ch 15	usf1013DemuxAudiolnCh15Change	16	INTEGER	usf1013DemuxSlotNumber	
			INTEGER	usf1013DemuxAudiolnCh15	
SDI Audio Info Ch 16	usf1013DemuxAudiolnCh16Change	17	INTEGER	usf1013DemuxSlotNumber	
			INTEGER	usf1013DemuxAudiolnCh16	
LTC Input SDI	usf1013DemuxEmbLTCInChange	40	INTEGER	usf1013DemuxSlotNumber	
			INTEGER	usf1013DemuxEmbLTCIn	

7. Work Block Chart



No.	Process	Menu Parameter Reference Chapters			
1	SDI Input Signal Detection	5-5-3			
2	TV System Detection	5-5-3			
3	Sync Generator	5-5-3	5-4-1		
4	SDI Audio De-embedding Process	5-1-1	5-1-2		
5	Channel Mapping	5-2-1			
6	Test Tone Generation	5-4-1			
7	SDI Output Process	5-4-1			
8	AES Audio Output Process	5-3-1	5-3-2	5-3-3	5-4-1
9	LTC Output Process	5-4-1			

8. Troubleshooting

If any of the following problems occur while operating the USF1013DEMUX, follow the troubleshooting procedures below to see if the problem can be corrected before assuming a unit malfunction has occurred.

IMPORTANT

If a problem is not corrected by performing the procedure described below, turn the unit off and then on again. If this still does not correct the problem, contact your dealer.

Problem	Check	Action
No video displayed.	<SDI signal connection> Are SDI signals present? Is [SDI Status] indicated as "Normal?" (See Sec.5-5-3.)	Verify the physical SDI connection.
	<SDI signal format> Is the SDI input format supported? Is [Video Format] indicated as "Loss?" (See Sec.5-5-3.)	Input supported SDI signals. (See Sec. 5-4-1.)
	<SDI signal format> Does the [Sync Format] setting (See Sec. 5-4-1) match SDI input format?	Set [Sync Format] to Auto or set [Sync Format] to the SDI input format. (See Sec. 5-4-1.)
Downstream devices do not operate properly when SDI is not input.	Does the [Sync Format] setting (See Sec. 5-4-1) match SDI input format? If set to Auto , video images may be distorted when SDI signals are not input.	Set the SDI input format to [Sync Format]. (See Sec.5-4-1.)
A downstream audio mixer is disturbed by noise when SDI is not input.	Is [Video Loss Audio Output] set as Enable ? If set to Enable , and SDI signals are not input, asynchronous silence signals are output. If the downstream audio mixer does not support asynchronous audio, noise may be generated.	Set [Video Loss Audio Output] to Disable . (See Sec.5-4-1.)
When SDI is not input, SDI output does not synchronize to the system.	/	Normal operation, input SDI signals. USF-1013DEMUX outputs SDI signals according to SDI input. When SDI input is not present, SDI output does not synchronize with the system.
Video images are distorted on downstream devices when SDI input is not present in 4K mode.	/	Normal operation, input SDI signals. When SDI input is not present, SDI output does not synchronize with the system. Payload ID is not passed through either.
Abnormal or noisy sound output. (AES)	Are asynchronous or non-PCM audio forcibly assigned per channel? (See Sec. 4-2)	Assign audio per group if an asynchronous or non-PCM audio channel is included in a group.
Unable to output (embed) AES signal from AES7/8.	Is "AES 7/8 Output" set as "LTC?"	Change setting to "AES 7/8."

9. Specifications and Dimensions

9-1. Specifications

Video formats	3G-SDI: 1080/59.94p, 50p, 60p (Level-A and Level-B) HD-SDI: 1080/59.94i, 50i, 60i 1080/30p, 29.97p, 25p, 24p, 23.98p, 24PsF, 23.98PsF 720/59.94p, 50p, 60p, 24p, 23.98p 1035/59.94i, 60i SD-SDI: 525/60,625/50
SDI Input	3G-SDI: 3 Gbps HD-SDI: 1.5 Gbps SD-SDI: 270 Mbps 75Ω BNC x 1
SDI Output	3G-SDI: 3 Gbps HD-SDI: 1.5 Gbps SD-SDI: 270 Mbps 75Ω BNC x 1
Audio Input	
SDI Embedded	3G/HD-SDI Number of channels 16 ch Sampling bit rate 16/20/24-bit Sampling frequency 48 kHz (Synchronous) 48 kHz (Asynchronous, per group) SD-SDI Number of channels 16 ch Sampling bit rate 16/20-bit Sampling frequency 48 kHz (Synchronous only)
Audio output	
SDI embedded	3G/HD-SDI Number of channels 16 ch Sampling bit rate 16/20/24-bit Sampling frequency 48 kHz (Synchronous) 48 kHz (Asynchronous, per group) SD-SDI Number of channels 16 ch Sampling bit rate 16/20-bit Sampling frequency 48 kHz (Synchronous only)
AES/EBU	Unbalanced, 75Ω BNC x 4 Number of channels 8 ch Sampling bit rate 16/20/24-bit Sampling frequency 48 kHz (SD - Synchronous only) 48 kHz (3G/HD - Synchronous and Asynchronous)
Audio in/out gain	Adjustable from -20 dB to +20 dB (in 0.1 dB steps)
I/O delay (SDI IN - OUT)	3G Level-A: Less than 1.0 μs 3G Level-B: Less than 1.5 μs HD: Less than 1.5 μs SD: Less than 2.0 μs.
I/O delay (Audio IN-SDI OUT)	Less than 1.0 ms
Temperature	0°C to 40 °C
Humidity	30% to 85% (no condensation)
Power	+12V DC (Supplied by USF frame)

Power consumption	1 A
Dimensions	Front Module: 106 (W) x 356 (D) mm Rear module: 114(W) x 20.2 (H)
Weight	0.5 kg
Consumables	None

9-2. External Dimensions

