

OPERATION MANUAL

USF-204ADAC


Audio Digital Analog Converter

1st Edition - Rev.1



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

USF-204ADAC Audio Digital Analog Converters and their accessories are fully inspected and adjusted prior to shipment. Check your received items against the packing list below. Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

◆ **USF-204ADAC Box**

ITEM	QTY	REMARKS
USF-204ADAC	1	USF-204ADAC Front Module USF-204ADAC Rear Module
DVD	1	Operation Manual (PDF)

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1. Prior to Starting

1-1. Overview

USF-204ADAC modules are Audio Digital Analog Converters mountable on USF frames. USF-204ADAC modules convert two AES digital audio inputs synchronized with Genlock signal to 4 ch analog audio signals.

Monitoring input status and changing settings available from Web GUI.

SNMP monitoring via PC web browser is also available.

1-2. Features

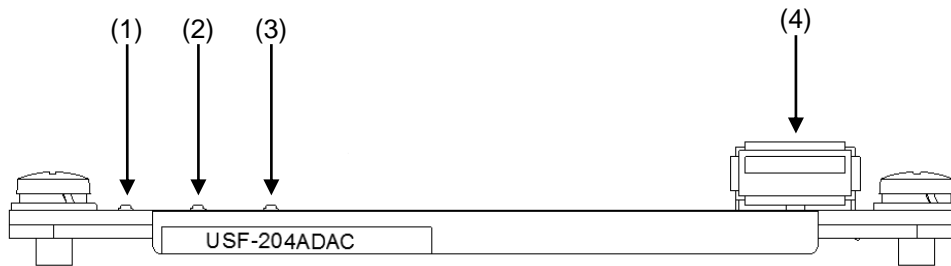
- Outputs analog audio signal from two AES/EBU inputs
- Input signal reference level selectable from -18dBFS or -20dBFS
- Output signal reference level selectable from -10dBm, 0dBm, +4dBm or +8dBm
- ± 20 dB gain adjustment
- Silence alarm according to set audio level
- Audio Silence time settable (1-10 sec.)
- Settings changeable via Web GUI
- SNMP monitoring

1-3. About This Manual

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

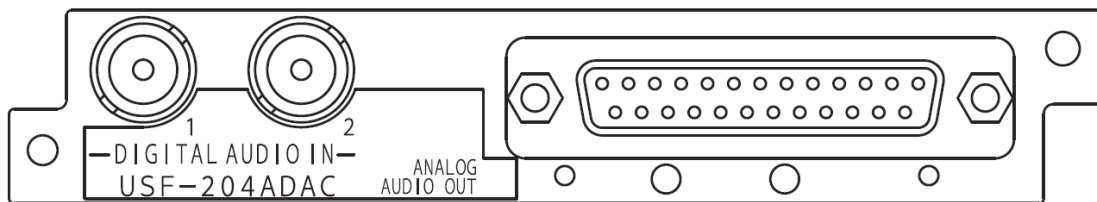
2. Panel Descriptions

2-1. Front Panel



No.	Name	Description
1	POWER	Lights green when power is supplied from the USF frame.
2	REF	Lights green when a genlock signal is supplied by the USF frame. Selects Genlock 1 or 2 if installed on a USF-212S/AS frame. See Sec. 5-3. "Reference Setting."
3	Update	Normally unlit. Blinks while updating USF-204ADAC software.
4	USB connector	Used when updating USF-204ADAC software.

2-2. Rear Panel



Name	Description
DIGITAL AUDIO IN 1-2	AES digital audio input. BNC x 2
ANALOG AUDIO OUT	Analog Audio Output. 25-pin D-sub, female See Sec. 3. "ANALOG AUDIO OUT Pin Assignment Table" for pin assignment.

IMPORTANT

Input AES digital audio signal synchronized with Genlock signal into DIGITAL AUDIO IN 1-2.
Input Genlock signal into the USF frame.
If AES digital audio signal asynchronous with Genlock signal is input, malfunction may occur.

3. ANALOG AUDIO OUT Pin Assignment Table

25-pin D-sub, female

Pin No.	Signal Name	Pin No.	Signal Name
1	GND	14	GND
2	GND	15	GND
3	GND	16	GND
4	GND	17	GND
5	GND	18	GND
6	GND	19	GND
7	CH4 OUT+	20	CH4 OUT -
8	CH4 OUT COM	21	CH3 OUT +
9	CH3 OUT -	22	CH3 OUT COM
10	CH2 OUT +	23	CH2 OUT -
11	CH2 OUT COM	24	CH1 OUT +
12	CH1 OUT -	25	CH1 OUT COM
13	GND		

4. Dipswitch Settings

Switch No.	Function	Default Setting
DS1	None	All switches 1 to 8: OFF (Do not change setting.)
DS2	None	
DS3	None	
DS4	None	
DS5	None	
DS6	None	
DS7	None	
DS8	None	

5. Web GUI

Module information display on Web GUI and settings change are available by connecting to USF-204ADAC module cards from a web browser. SNMP monitoring is also available. See the USF frame Operation Manual for details on how to display a web browser.

NOTE

USF-204ADAC does not support simultaneous Web GUI access from multiple PCs. To simultaneously monitor a USF-204ADAC from multiple PCs, use the SNMP function.

USF-204ADAC

Module Information

Slot: 9
S/N: 18320006
Soft Version: 1.02
FPGA Version: 1.01
IP Address: 192.168.0.19
MAC Address: 00-10-B1-11-10-06
Genlock: Genlock 1 : Lock

[Download MIB File](#)

Audio Status

AES Input	DIGITAL AUDIO IN 1 48kHz		DIGITAL AUDIO IN 2 48kHz	
	Ch 1	Ch 2	Ch 3	Ch 4
Audio Alarm	-	-	-	-

Reference Setting

Genlock: Genlock1 Genlock2

Audio Settings

Digital Reference Level: -20dBFS

Analog Output Ch 1/2: DIGITAL AUDIO IN 1 DIGITAL AUDIO IN 2
Analog Output Ch 3/4: DIGITAL AUDIO IN 1 DIGITAL AUDIO IN 2

Audio Gain Ch 1: 0.0 dB Unity

Audio Gain Ch 2: 0.0 dB Unity

Audio Gain Ch 3: 0.0 dB Unity

Audio Gain Ch 4: 0.0 dB Unity

Analog Output Level: +4dBm

Silence Alarm Settings

Audio Silence Alarm: Disable Enable

Alarm Level: -72.0 dBFS Unity

Alarm Detect Time: 2 sec Unity

SNMP Trap Settings

AES Input Trap

IN 1: Disable Enable
IN 2: Disable Enable

Silence Alarm Trap

Ch 1: Disable Enable
Ch 2: Disable Enable
Ch 3: Disable Enable
Ch 4: Disable Enable

System Trap

Genlock: Disable Enable

[Refresh](#)

5-1. Module Information

Item	Description
Slot	USF frame slot no. in which the USF-204ADAC is installed
S/N	Serial number of USF-204ADAC
Soft Version	Software version of USF-204ADAC
FPGA Version	FPGA version of USF-204ADAC
IP Address	IP address of USF-204ADAC
MAC Address	MAC address of USF-204ADAC
Genlock	<p>Genlock status of audio D/A conversion.</p> <p>Lock: Synchronized D/A conversion is possible using the USF frame-supplied genlock signal. When noise is generated in output analog audio in spite of Lock state, check whether AES input is synchronized with the genlock signal since this may be one of the causes of noises.</p> <p>Unlock: Synchronized D/A conversion is not possible. When Unlock is displayed, noise is generated in output analog audio. Check following items.</p> <ul style="list-style-type: none"> - Check the genlock signal level. - Check if AES input is synchronized with the genlock signal. - If the USF-204ADAC is installed into a USF-212S/AS, check if the genlock signal selection (Genlock1 or 2) is correct. See Sec. 5-3. "Reference Setting."

5-2. Audio Status

Item	Description
AES Input	AES digital audio input signal status
Alarm CH1-4	<p>Alarm detection status</p> <p>– : Input signal is unable to find or Alarm Settings are not set. See Sec. 5-5. "Alarm Settings" for details.</p> <p>Normal: Normal state.</p> <p>Silence: Silence (set under Silence Alarm) state.</p>

5-3. Reference Setting

Item	Description
Genlock	<p>Selects Genlock1 or 2 to be used for D/A conversion if USF-204ADAC is installed in USF-212S or USF-212AS.</p> <p>Default is Genlock1.</p>

5-4. Audio Settings

Item	Description
Digital Reference Level	Selects AES digital reference level from -18dBFS or -20dBFS. Default setting is -20dBFS.
Audio Ch 1/2 Audio Ch 3/4	Selects input signals that are output from Analog Output Ch 1/2 - 3/4. Default settings are; DIGITAL AUDIO IN 1 for Audio Ch 1/2 DIGITAL AUDIO IN 2 for Audio Ch 3/4
Audio Gain Ch1 to Audio Gain Ch4	Adjusts the digital audio input gain between -20.0dB and +20dB. Default setting is 0dB.
Analog OUT Level	Selects the analog audio output level from -10, 0, +4 or +8 dBm. Default setting is +4 dBm.

5-5. Silence Alarm Settings

USF-204ADAC modules can detect input audio **Silence**. The status is displayed under **Audio Status** and can be sent using SNMP traps. See Sec. 6. "SNMP Function" for details.


Item	Description
Audio Silence Alarm	Enable: Monitors input audio signal Silence . Disable: Does not monitor input audio signal Silence . (Default) Audio Silence is detected according to the conditions set by Alarm Level and Alarm Detect Time .
Alarm Level	Sets the Silence reference level between -72.0 and 0.0 dBFS. Default is -72.0 dBFS.
Alarm Detect Time	Sets Alarm Level detecting time between 1 and 10 seconds. Default is 2 seconds.

Common to input signals CH1 to CH4.

5-6. SNMP Trap Settings

Item	Description
AES Input Trap	Enable: Sends DIGITAL AUDIO IN 1-2 status change traps to SNMP manager. Disable: Does not send traps to SNMP manager. (Default)
Silence Alarm Trap	Enable: Sends input Ch 1-4 Silence traps to SNMP manager. Disable: Does not send Silence traps to SNMP manager. (Default)
System Trap - Genlock	Enable: USF-204ADAC audio D/A conversion Genlock status traps to SNMP manager. Disable: Does not send Genlock status traps to SNMP manager. (Default)

5-7. Downloading MIB File

1. Click  to download SNMP Manager MIB (Management Information Base)
2. Select SAVE (s) from the opened dialog box.
3. FORA-USF204ADAC-MIB.zip downloads.
4. Unzip the file and load it from SNMP Manager.

6. SNMP (Simple Network Message Protocol) Function

The USF-204ADAC can be remotely monitored using the SNMP (Simple Network Message Protocol) v2C protocol. An MIB (Management Information Base) required in monitoring is downloaded from Web GUI. (See Sec. 5-7. "Downloading MIB file" for details.

See the USF frame Operation Manual for details on SNMP network settings.

◆ GET

Category	Object name	Object name in MIB file	Value	OID	Type	Trap
OID: 1.3.6.1.4.1.20175.1.352.1. (Unit Info)						
Module information	Product Name	usf204AdacProductName	USF-204ADAC	1	OCTET STRING	
	Product Code	usf204AdacProductCode	1023869	2	INTEGER	
	Serial Number	usf204AdacSerialNumber	1832****	3	INTEGER	
	Soft Version	usf204AdacSoftVersion	** **	4	OCTET STRING	
	FPGA Version	usf204AdacFpgaVersion	** **	5	OCTET STRING	
	Slot Number	usf204AdacSlotNumber	1~12	6	INTEGER	
	Genlock	usf204AdacGenlockStatus	0: unLock 1: lock	7	INTEGER	✓
	AES Input1 Status	usf204AdacAesIN1	0:loss 1:pcm48kHz 2:pcm32kHz	8	INTEGER	✓
	AES Input2 Status	usf204AdacAesIN2	Same as above	9	INTEGER	✓
	Silence Alarm Ch1	usf204AdacSilenceAlarmCh1	-1:notAvailable 0:silence 1:normal	14	INTEGER	✓
	Silence Alarm Ch2	usf204AdacSilenceAlarmCh2	Same as above	15	INTEGER	✓
Silence Alarm Ch3	usf204AdacSilenceAlarmCh3	Same as above	16	INTEGER	✓	
Silence Alarm Ch4	usf204AdacSilenceAlarmCh4	Same as above	17	INTEGER	✓	

* No item can be set from SNMP.

◆ TRAP

Category	Object name / Trap output conditions	Object name in MIB file	OID	Type	Reference object
OID: 1.3.6.1.4.1.20175.1.352.0. (TRAP)					
Trap	AES Input 1 Change	usf204AdacAesChangedIN1	1	INTEGER	usf204AdacSlotNumber usf204AdacAesIN1
	AES Input 2 Change	usf204AdacAesChangedIN2	2	INTEGER	usf204AdacSlotNumber usf204AdacAesIN2
	Ch1 In Silence Alarm	usf204AdacSilenceAlarmChangedCh1	7	INTEGER	usf204AdacSlotNumber usf204AdacSilenceAlarmCh1
	Ch2 In Silence Alarm	usf204AdacSilenceAlarmChangedCh2	8	INTEGER	usf204AdacSlotNumber usf204AdacSilenceAlarmCh2
	Ch3 In Silence Alarm	usf204AdacSilenceAlarmChangedCh3	9	INTEGER	usf204AdacSlotNumber usf204AdacSilenceAlarmCh3
	Ch4 In Silence Alarm	usf204AdacSilenceAlarmChangedCh4	10	INTEGER	usf204AdacSlotNumber usf204AdacSilenceAlarmCh4
	Genlock Change	usf204AdacGenlockStatusChanged	11	INTEGER	usf204AdacSlotNumber usf204AdacGenlockStatus

7. Specifications and Dimensions

7-1. Unit Specifications

Audio input	AES/EBU (Unbalanced 1V p-p) 75Ω BNC x 2
Audio output	4 channels (Balanced) 25-pin D-sub, female
Maximum output level	+24 dBm
Output impedance	Less than 100Ω
Output load resistance	More than 600Ω
Frequency Characteristics	20 Hz to 20 kHz within ±0.2 dB (Standard: 1kHz)
Digital audio reference	-18 dBFS, -20 dBFS
Gain adjustable range	-20.0 dB to +20.0 dB (in 0.1dB increments)
Sampling frequency	32 kHz /48 kHz
Quantization	24-bit
Distortion ratio	Less than 0.05 % (for +20dBFS input at 1kHz)
S/N ratio	More than 80 dB (A-Weight Filter)
Genlock Input	BB: 0.429 Vp-p (NTSC)/PAL: 0.45 Vp-p, Tri-level sync (HDTV), Supplied from USF frame
SNMP	Supports version v2C
Temperature	0°C to 40°C
Humidity	30% to 90% (no condensation)
Power	+12 V DC (supplied by USF frame)
Power consumption	Approx. 830 mA (+12V)
Weight	250 g
Dimensions	Front Module: 106 (W) x 356 (D) mm Rear Module: 114 (W) x 20.2 (H) mm
Required slot	1 slot

7-2. External Dimensions

(All dimensions in mm.)

