HMX6811N/HMX6812N High-definition digital Audio Embedding Module

USER MANUAL

OSEE TECHNOLOGY CO., LTD.

Product Information

Model: HMX6811N/HMX6812N High-definition digital Audio Embedding Module
Version: V010001
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Company

OSEE TECHNOLOGY CO., LTD.

Contact Information

Address: No.22 Building, No.68 zone, Beiqing Road, Haidian District, Beijing, China
Post Code: 100094
Tel: (+86) 010-62434168
Fax: (+86) 010-62434169
Web: http://www.osee-dig.com/
E-mail: sales@osee-dig.com

About this manual

The manual applies to the following models:

- HMX6811N
- HMX6811N -3G
- HMX6812N
- HMX6812N -3G

Any different specifications are detailed in the manual.

Please make sure your device model before you read it.

Content

Chapter 1 Overview

1.1 Introduction

The HMX6811N/HMX6812N high-definition digital audio embedding modules can be installed in 6800N series frame.

HMX6811N/HMX6812N modules support 4 pairs (8 channels) digital audio embedding. The user can choose input audio or other audio synthesized by system and embed them into any group of audio. The modules provide 1 channel adaptive 3G/HD/SD-SDI video output and 1 channel HDMI output which superimposed 8-channel audio meter for monitoring the 8-channel embedded audio.

Each module has its own distinct feature as follows:

The HMX6811N supports unbalanced AES input, and the HMX6812N supports balanced AES input.

HMX6811N/HMX6812N support HD/SD-SDI video input, but if the users use the 3G authorization code to upgrade the module through the WEB into HDX6811N-3G/HDX6812N-3G, the modules can also support 3G video signal format.

Each module has its own features stated as Tab. 1-1:

Table 1-1 Input and output

Module	Input	Output
HMX6811N	• 1 channel adaptive 3G/HD/SD-SDI video input • 3-channel unbalanced AES input • 1 channel optional AES input	• 2-channel 3G/HD/SD-SDI output with reclocking • 1 channel optional SDI output • 1 channel HDMI output for monitoring
HMX6812N	• 1 channel adaptive 3G/HD/SD-SDI video input • 4-channel balanced AES input	• 3-channel 3G/HD/SD-SDI output with reclocking • 1 channel HDMI output for monitoring

Note: For the HMX6811N modules, one channel SDI output and one channel AES input would share one port, the user can set the options to select. For more information, please refer to the instructions for option setup

1.2 Feature

The HMX6811N/HMX6812N offers the following features:

- Support various audio embedded
- Support 4 pairs, 8-channel digital audio embedded
- Support 20 bits, 24bits embedded audio
- Support the sampling frequency of 32kHz to 192kHz digital audio input

- SDI output with equalization and reclocking
- One channel HDMI output monitoring
- SDI video input auto-detect and input status feedback
- Support 8-channel audio metering display
- Optional embedded audio and embedded mode
- Support a fixed-frequency tone signal embedding in
- Support maximum 2.7 seconds audio delay, invert and mute
- Support the audio gain adjust, inverted, silencers, exchange processing
- EDH /CRC error detection tracking and re-insertion
- Built-in audio test signal
- Video loss, freeze frame, black field detection
- Provide network control functions, for the local and remote set of modules

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

1.3 Module Descriptions

1.3.1 The Front Part of Module

Figure 1-1 shows the control switch and LED indicator in front of the module

HMX6811N/HMX6812N.

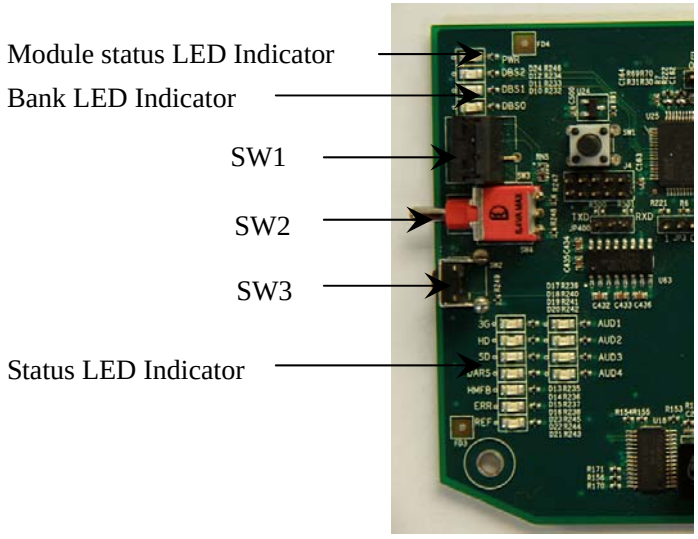


Fig. 1-1 The control switch and LED indicator of HMX6811N/HMX6812N

Table 1-2 describes the control switch and status LED. About the detailed instructions, refer to Chapter 3 Operation and Control.

Table 1-2 the control switch and LED indicator

Function	Description
Module status LED	Used to indicate the working status of the module. Refer to Chapter 3 LED instructions for more information.
BANK LED	Display the module BANK choice, for more detail information refer to Table 3-7.
SW1	Used to select various settings and parameters.
SW2	Through the switch up (UP) or down (DOWN) to toggle to set various control parameters.
SW3	(Reserved)
Status LED	Shows some basic information of the module, for more detail information refer to Table 3-7.

1.3.2 Rear panel connector

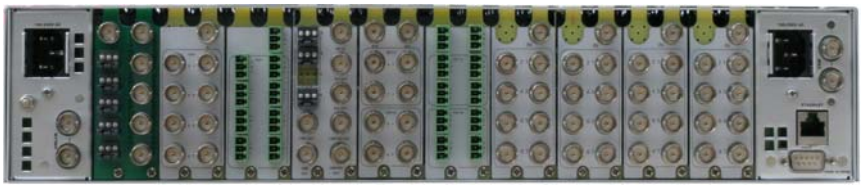


Fig. 1-2 Rear panel connector

1.3.3 The back of HMX6811N/HMX6812N

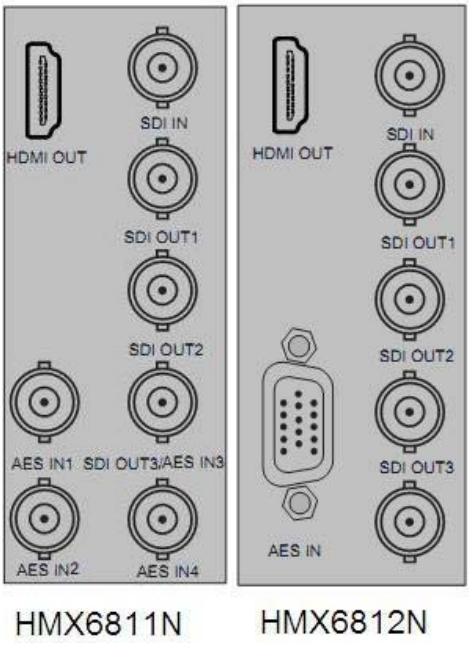


Fig. 1-3 The back of HMX6811N/HMX6812N

The Back Connector of HMX6811N/HMX6812N is showed as fig 1-3. The HMX6811N supports unbalanced digital audio input, and the HMX6812N supports balanced digital audio input.

Table 1-3 Description of HDX6811N/HDX6812N Back Connector

Item	Description
HDMI OUT	HDMI output
SDI IN	3G/HD/SD-SDI input
SDI OUT 1	3G/HD/SD-SDI output channel 1
SDI OUT 2	3G/HD/SD-SDI output channel 2
SDI OUT 3	3G/HD/SD-SDI output channel 3
SDI OUT 3/AES IN 3	Optional SDI output channel 3 or AES audio input channel 3
AES IN 1	AES digital audio input channel 1
AES IN 2	AES digital audio input channel 2
AES IN 4	AES digital audio input channel 4
AES IN	AES digital audio input channel (DB15 connector, and as defined below)

Note: 1, For the HMX6811N modules, SDI OUT 3 and AES IN 3 shared an optional port, the users can set the option to select the setting.

2, The DB15 interface of the HMX6812N modules supports the AES IN1 and the AES IN2 two-channel digital audio input. It defined as follows:

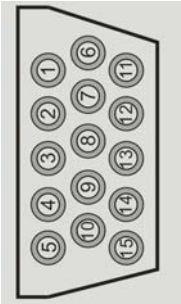


Fig. 1-4 the DB15

Table 1-4 Instruction for DB15

Item	Description
PIN1:	DARS+
PIN6:	DARS-
PIN5:	AES_IN1+/AES_OUT1+
PIN10:	AES_IN1-/AES_OUT1-
PIN14:	AES_IN2+/AES_OUT2+
PIN15:	AES_IN2-/AES_OUT2-
PIN11:	AES_IN3+/AES_OUT3+
PIN12:	AES_IN3-/AES_OUT3-
PIN2:	AES_IN4+/AES_OUT4+
PIN7:	AES_IN4-/AES_OUT4-
PIN3,PINI4， PIN8，PIN9，PIN13:	GND

1.4 Signal Flow

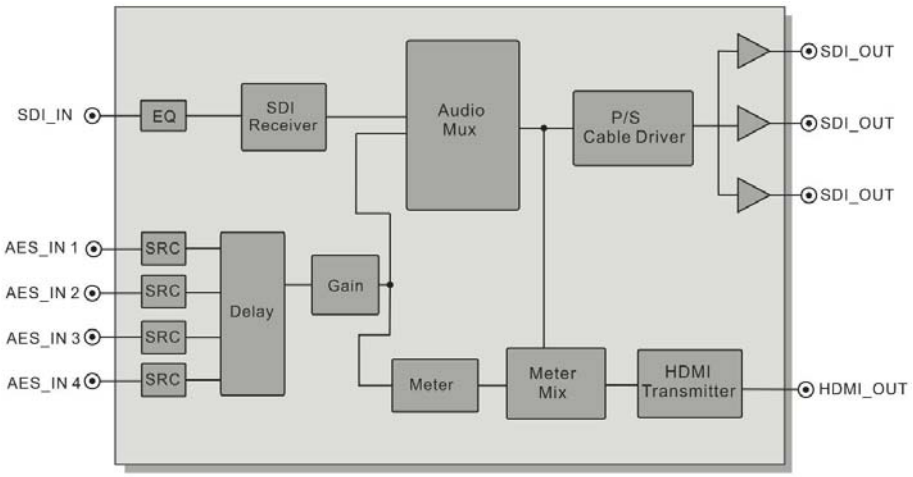


Fig. 1-4 Signal Flow of HMX6811N/HMX6812N

Chapter 2 Installation

2.1 Overview

The power consumption for module and the maximum power ratings that frame can sustain have to be confirmed before installing the module.

In this chapter, the following topics on installation process for HFS6860N are discussed below:

- Unpacking the module
- Installing the module
- Making the connections
- Removing the module

2.2 Maximum Power Ratings for Frame

The maximum power ratings that different types of frames can sustain are listed in the Table 2-1

Tab. 2-1 Maximum Power Consumption

Frame	Maximum Voltage	Redundant Power Supplies	Numbers of Slots
6800N-1U	40W	Yes	4
6800N-2U	60W	Yes	10

2.3 Unpacking the Module

2.3.1 Preparing the Product for Installation

Contact your dealer right now if any items are missing. Please follow the procedures below before installing the module:

- Check the equipment for any invisible damage that may have occurred during transit.
- Confirm all the items listed on the packing list have been received.
- Remove all the packing material including electrostatic-resistant packing.
- Retain these packing for future use.

2.3.2 Check the Packing List

Tab. 2-2 Packed Components

Model Name	Description
HMX6811N	HMX6811N module (1pc); back connector (1pc), and other accessories
HMX6812N	HMX6812N module (1pc); back connector (1pc), and other accessories

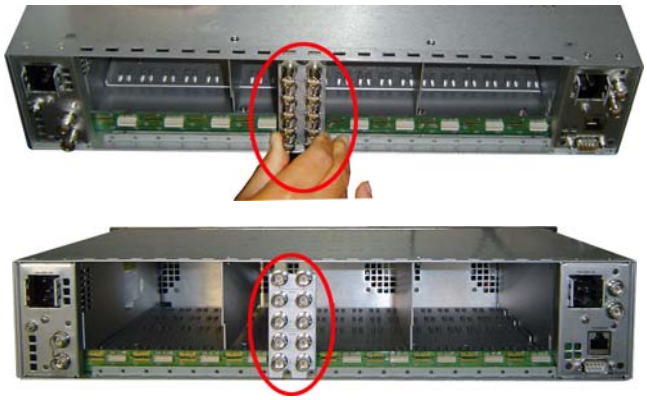
2.4 Installing the Module

Caution：Static electricity may cause sensitive semiconductor out of order. Avoid installing or removing the module in the electrostatic-induced environment.

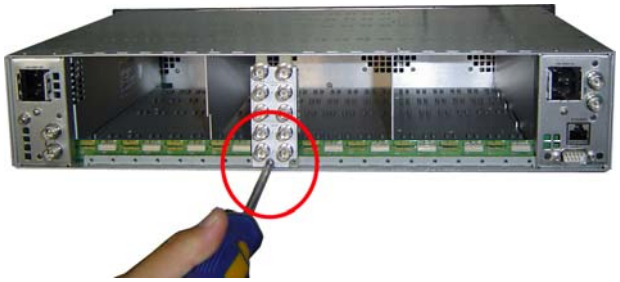
Please carefully read safety instructions particularly for the information on fire electric shock and personal injury, and strictly observe it before installing the module.

Follow the next steps to install the module:

Step 1



Step2



Step3

Step 4

Step5

Fig. 2-1 Installation of 2U Frame of 6800N Series

- ✓ Locate the position for back connector and insert the back connector.
- ✓ Fasten the screw to fix the back connector.
- ✓ Locate the slot for module.
- ✓ Get the module installed in the slot, push the module slightly along the slot, press module again to confirm that the module is installed firmly and then close swivel handle.
- ✓ Install the front panel.

2.5 Making the Connections

Please connect signals based on Fig. 1-3.

2.6 Removing the Module

Follow the following steps to remove the modules:

1. Open the front part of frame.
2. Open the swivel handle to the full.

3. First make sure the frame stands firmly, and then pull the module gently along the slot till out of frame.
4. Install the front panel.

Chapter 3 Operation and Control

3.1 Switches

The control switch is shown in Figure 3-1.

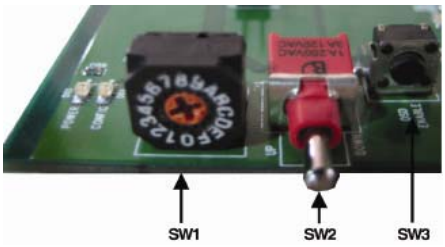


Fig. 3-1 Switches and Key

1. SW1

   SW1 is a 16-position rotary switch, which is used to select the specific setting.
   The selection range is: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F.

2. SW2

   SW2 is a 3-position toggle switch, used to adjust the parameters of the setting made by SW1.
   To keep SW2 at the position of “UP” or “DOWN”, the continuous adjustment can be achieved.

3. SW3

   For reserved.

Audio meter is superimposed onto the HDMI output. The users can monitor the 4-channel AES audio input channel though the meter. The factory default is enabled, also the TC.
When set the parameter, the LED will show the module status.

3.2 Parameter settings

The module has Bank 0~2 3 type-status., and the detail information refers to Table 3-2. There are 16 options in every Bank. The 16-position corresponds to each parameter setup, the user can set these parameters to control module, or monitor the module status.
Rotate the SW1 at the position of “0”. The position of “0” is always used to select BANK.

Turn SW2 up or down to select BANK.

Turn SW1 to the appropriate location, and then toggle SW2 to set the parameters.

3.2.1 Option Description

Below will describe the parameter and function of Bank 0~2.

HMX6811N：

Table 3-1 Bank 0 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0
1	Embed 1 Embed Bits	20bits/24bits	24 bits
2	Reserve		
3/7	Embed 1 Enable	Enable/Disable	Enable
4	Embed Group	Group 1/Group 2/ Group 3/Group 4	Group 1
5	Embed 2 Embed Bits	20bits/24bits	24 bits
6	Reserve		
8	Embed Group	Group 1/Group 2/ Group 3/Group 4	Group 2
9	Embed 1 Ch1 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 1A
A	Embed 1 Ch2 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 1B
B	Embed 1 Ch3 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 2A
C	Embed 1 Ch4 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 2B
D	Embed 2 Ch1 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 3A
E	Embed 2 Ch2 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in	in 3B

SW1	Function	Options	Default
		2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	
F	Factory Recall		

Table 3-2 Bank 1 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0
1	Embed 2 Ch3 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 4A
2	Embed 2 Ch4 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 4B
3	AES Input 1 Channel 1 Level	-96 to +12dB in 0.5dB step(0-216 step set)	+0.0dB
4	AES Input 1 Channel 2 Level	-96 to +12dB in 0.5dB step(0-216 step set)	+0.0dB
5	AES Input 2 Channel 1 Level	-96 to +12dB in 0.5dB step(0-216 step set)	+0.0dB
6	AES Input 2 Channel 2 Level	-96 to +12dB in 0.5dB step(0-216 step set)	+0.0dB
7	AES Input 3 Channel 1 Level	-96 to +12dB in 0.5dB step(0-216 step set)	+0.0dB
8	AES Input 3 Channel 2 Level	-96 to +12dB in 0.5dB step(0-216 step set)	+0.0dB
9	AES Input 4 Channel 1 Level	-96 to +12dB in 0.5dB step(0-216 step set)	+0.0dB
A	AES Input 4 Channel 2 Level	-96 to +12Db in 0.5Db step(0-216 step set)	+0.0dB
B	AES Input 1 Channel 1 Delay	0 to 2700 mS in 1ms step	0
C	AES Input 1 Channel 2 Delay	0 to 2700 mS in 1ms step	0ms
D	AES Input 2 Channel 1 Delay	0 to 2700 mS in 1ms step	0ms
E	AES Input 2 Channel 2 Delay	0 to 2700 mS in 1ms step	0ms
F	AES Input 3 Channel 1 Delay	0 to 2700 mS in 1ms step	0ms

Table 3-3 Bank 2 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0

SW1	Function	Options	Default
1	AES Input 3 Channel 2 Delay	0 to 2700 mS in 1ms step	0ms
2	AES Input 4 Channel 1 Delay	0 to 2700 mS in 1ms step	0ms
3	AES Input 4 Channel 2 Delay	0 to 2700 mS in 1ms step	0ms
4	AES Input 1 Channel 1 Invert	On/Off	Off
5	AES Input 1 Channel 2 Invert	On/Off	Off
6	AES Input 2 Channel 1 Invert	On/Off	Off
7	AES Input 2 Channel 2 Invert	On/Off	Off
8	AES Input 3 Channel 1 Invert	On/Off	Off
9	AES Input 3 Channel 2 Invert	On/Off	Off
A	AES Input 4 Channel 1 Invert	On/Off	Off
B	AES Input 4 Channel 2 Invert	On/Off	Off
C	Meter Enable	On/Off	On
D	TC Enable	On/Off	On
E	SDI Output Select	SDI/HDMI Input, Color output, Black output	SDI/HDMI Input
F	Color or black output format	625i, 525i, 720p50, 720p60&59.94, 1080i50, 1080i60&59.94, 1080p25, 1080p30&29.97, 1080p24&23.98, 1080psf24, 1080p50 , 1080p60&59.94	1080i50

HMX6812N：

Table 3-4 Bank 0 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0

SW1	Function	Options	Default
1	Embed 1 Embed Bits	20bits/24bits	20 bits
2	Reserve		
3/7	Embed 1 Enable	Enable/Disable	Enable
4/8	Embed Group	Group 1/Group 2/ Group 3/Group 4	Group 1
5	Embed 2 Embed Bits	20bits/24bits	20 bits
6	Reserve		
9	Embed 1 Ch1 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 1A
A	Embed 1 Ch2 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 1B
B	Embed 1 Ch3 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 2A
C	Embed 1 Ch4 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 2B
D	Embed 2 Ch1 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 3A
E	Embed 2 Ch2 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 3B
F	Factory Recall		

Table 3-5 Bank 1 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0
1	Embed 2 Ch3 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in 2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	in 4A
2	Embed 2 Ch4 Selection	in 1A, in 1B, in 2A, in 2B, in 3A, in 3B, in 4A, in 4B, in 1 sum, in	in 4B

SW1	Function	Options	Default
		2 sum, in 3 sum, in 4 sum, tone 1, tone 2, mute	
3	AES Input 1 Channel 1 Level	-96 to +12dB in 0.5dB step(0-216 step set)	0
4	AES Input 1 Channel 2 Level	-96 to +12dB in 0.5dB step(0-216 step set)	0
5	AES Input 2 Channel 1 Level	-96 to +12dB in 0.5dB step(0-216 step set)	0
6	AES Input 2 Channel 2 Level	-96 to +12dB in 0.5dB step(0-216 step set)	0
7	AES Input 3 Channel 1 Level	-96 to +12dB in 0.5dB step(0-216 step set)	0
8	AES Input 3 Channel 2 Level	-96 to +12dB in 0.5dB step(0-216 step set)	0
9	AES Input 4 Channel 1 Level	-96 to +12dB in 0.5dB step(0-216 step set)	0
A	AES Input 4 Channel 2 Level	-96 to +12Db in 0.5Db step(0-216 step set)	0
B	AES Input 1 Channel 1 Delay	0 to 2700 mS in 1ms step	0
C	AES Input 1 Channel 2 Delay	0 to 2700 mS in 1ms step	0
D	AES Input 2 Channel 1 Delay	0 to 2700 mS in 1ms step	0
E	AES Input 2 Channel 2 Delay	0 to 2700 mS in 1ms step	0
F	AES Input 3 Channel 1 Delay	0 to 2700 mS in 1ms step	0

Table 3-6 Bank 2 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0
1	AES Input 3 Channel 2 Delay	0 to 2700 mS in 1ms step	0
2	AES Input 4 Channel 1 Delay	0 to 2700 mS in 1ms step	0
3	AES Input 4 Channel 2 Delay	0 to 2700 mS in 1ms step	0
4	AES Input 1 Channel 1 Invert	On/Off	Off
5	AES Input 1 Channel 2 Invert	On/Off	Off

SW1	Function	Options	Default
6	AES Input 2 Channel 1 Invert	On/Off	Off
7	AES Input 2 Channel 2 Invert	On/Off	Off
8	AES Input 3 Channel 1 Invert	On/Off	Off
9	AES Input 3 Channel 2 Invert	On/Off	Off
A	AES Input 4 Channel 1 Invert	On/Off	Off
B	AES Input 4 Channel 2 Invert	On/Off	Off
C	Meter Enable	On/Off	On
D	TC Enable	On/Off	On
E	SDI Output Select	SDI/HDMI Input, Color output, Black output	Black output
F	Color or black output format	625i, 525i, 720p50, 720p60&59.94, 1080i50, 1080i60&59.94, 1080p25, 1080p30&29.97, 1080p24&23.98, 1080psf24, 1080p50 , 1080p60&59.94	720p60&59.94

3.3 LED Indicator

This section will describe the LED indicator, and the user can validity check the LED by the printing fonts above the module.

Table 3-7 LED Indicator function

Item（color）	Description
POWER (Green)	On: Power is supplied. Off: The power supply is not normal.
DBS2 (Green)	DBS2 shows BANK state. In BANK0 state, DBS0 ~ 2 light is off. In BANK1 state, DBS1 light is on. In BANK2 state, DBS2 light is on. In BANK3 state, DBS1 ~ 2 lights are on.
DBS1 (Green)	DBS1 shows the BANK state, set by SW1.
DBS0 (Green/Orange)	DBS0（Orange） On: Operated.
3G (Green)	On: 3G signal input
HD (Green)	On: HD signal input

Item（color）	**Description**
SD (Green)	On: SD signal input
DARS (Green)	On: DARS signal input
AUD1 (Green)	In the SDI signal group, there is information about Group 1.
AUD2 (Green)	In the SDI signal group, there is information about Group 2.
AUD3 (Green)	In the SDI signal group, there is information about Group 3.
AUD4 (Green)	In the SDI signal group, there is information about Group 4.
REF (Green)	On: There is Reference signal.
ERR (Green)	On: In input signal, there is information about EDH/CRC with error.
HDMI/fiber (Green)	On: In HDMI or optical fiber mode. OFF: In SDI mode.

Chapter 4 HDMI Add-on modules

There is HDMI input sub-module/ HDMI output sub- module / HDMI input and output sub-module as optional add-on modules.

Type	Description
HD_6800N_HI	HDMI output module
HD_6800N_HO	HDMI input module
HD_6800N_HIO	HDMI input and output module

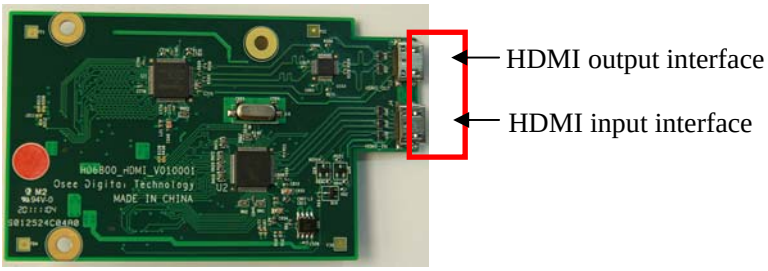


Fig 4-1 HDMI input/output module

4.1 Install

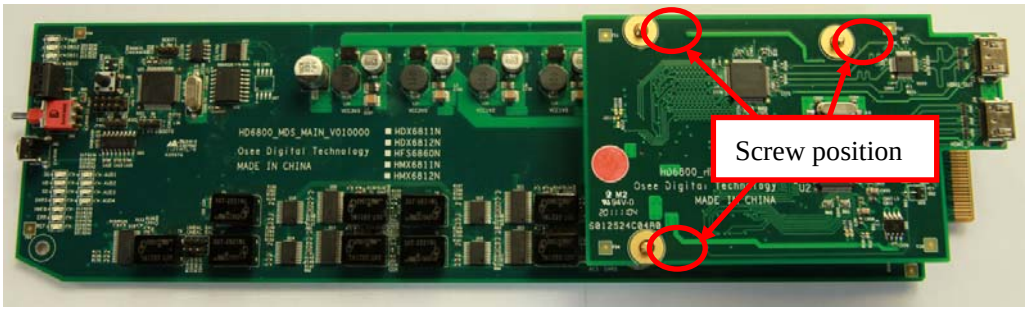


Fig 4-2 Installed state (1)

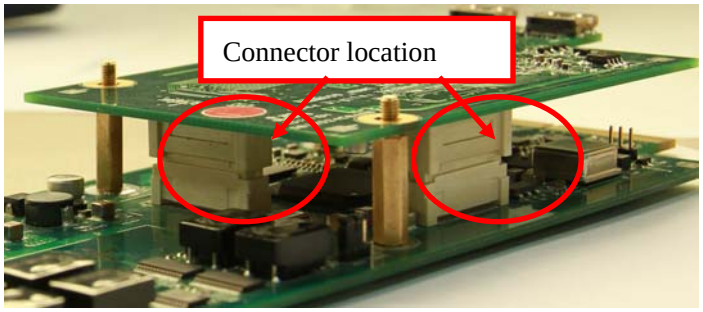


Fig 4-3 Installed state (2)

Installation instructions: (As figs shown)

1, Connect the connectors.

2, Fix the screws.

4.2 Description

HDMI input module, HDMI output module, and HDMI input and output module are optional sub-module which can be used in the HD 6800 series modules.

Through them, the HD 6800 series modules all can support HDMI input/output.

Chapter 5 Specifications

In this chapter, the specifications in the following subjects are introduced:

- SDI digital video input
- Digital video output
- Digital audio input
- HDMI Output

5.1 SDI digital video input

Table 5-1 SDI digital video input Specifications

Item	**Parameter**
Standards	SMPTE 259M; 270 Mbps, 525/625 digital component
Impedance	75Ω
Return Loss	>15dB,5MHz to 3GHz;
Connector	BNC (IEC169-8)
Equalization	30dB@270 Mbps
Supported formats	480i、576i、1080i60、1080i50、1080Psf24、1080p60、1080p50、1080p30、1080p25、1080p24、720p60、720p50

5.2 Digital video output

Table 5-2 Digital video output Specifications

Item	**Parameter**
Standards	SMPTE 259M; 270 Mbps, 525/625 digital component
Impedance	75Ω
Connector	BNC (IEC169-8)
Return Loss	>15dB to 270MHz
Signal Level	800 mV ± 10%
DC Offset	0 V ± 0.5 V
Rise/Fall Time	400 to 1500ps (20% to 80%)
Overshoot	<10%
Jitter	<0.2 UI（740ps）, < 500ps

5.3 Digital audio input

Table 5-3 Digital audio unbalanced input Specifications (for HMX6811N)

Item	**Parameter**
Connector	BNC (IEC169-8)
Signal Level	1.0 V +/-10% (peak to peak)
DC offset	0.0V±50.0mV
Rise/Fall Time	30 to 44 ns (10% to 90%)
Impedance	75Ω
Return Loss	>25 dB, 0.1 to 6.0 MHz

Table 5-4 Digital audio balanced input Specifications (for HMX6812N)

Item	**Parameter**
Connector	3-pin connector (male)
Signal Level	2.0 to 7.0 V (peak to peak)
Jitter	+/-20 ns
Rise/Fall Time	5 to 30 ns (10% to 90%)
Impedance	110Ω +/- 20% (0.1 to 6 MHz)
Rejection ratio	>30 dB below output signal (0 to 6 MHz)

5.4 HDMI output

Table 5-5 HDMI output Specifications

Item	**Parameter**
Signal format	1080i60、1080i50、1080p60、1080p50、1080p30、1080p25、720p60、720p50
Standards	HDMI 1.3（CEA-861-B）2.25Gbps
Connector	HDMI
Equalization	0-30m

Note: The specs are subject to change without prior notice!