
HDX6811N/HDX6812N
High-definition Digital
Audio De-embedder

USER MANUAL

osee

Product Information

Model: HDX6811N/HDX6812N High-definition Digital Audio De-embedder
Version: V010001
Release Date: May 22th, 2012

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:

- HDX6811N
- HDX6811N -3G
- HDX6812N
- HDX6812N -3G

Any different specifications are detailed in the manual.

Please make sure your device model before you read it.

Content

Chapter 1 Overview	1
1.1 Introduction.....	1
1.2 Feature.....	1
1.3 Module Descriptions	2
1.3.1 The Front Part of Module	2
1.3.2 Rear panel connector	3
1.3.3 The back of HDX6811N/HDX6812N.....	4
1.4 Signal Flow	5
Chapter 2 Installation.....	6
2.1 Overview	6
2.2 Maximum Power Ratings for Frame.....	6
2.3 Unpacking the Module.....	6
2.3.1 Preparing the Product for Installation	6
2.3.2 Check the Packing List	6
2.4 Installing the Module	7
2.5 Making the Connections	8
2.6 Removing the Module.....	8
Chapter 3 Operation and Control.....	8
3.1 Switches	8
3.2 Parameter settings	9
3.2.1 Option Description.....	9
3.3 LED Indicator	15
3.4 Setting Jumper.....	16
Chapter 4 HDMI Add-on modules	16
4.1 Install.....	17
4.2 Description.....	17
Chapter 5 Specifications	17
5.1 SDI digital video input.....	18
5.2 Digital video output	18
5.3 Digital audio output	18
5.4 HDMI input.....	19

Chapter 1 Overview

1.1 Introduction

The HDX6811N/HDX6812N High-definition Digital Audio De-embedder modules can be installed in 6800N series frame.

HDX6811N/HDX6812N modules provide 1 channel adaptive 3G/HD/SD-SDI video input or 1 channel HDMI input which supports HDCP, 1 channel digital audio reference signal input.

They support 3 channels 3G/HD/SD-SDI video output and 1 channel HDMI output for monitoring. And 4 pairs of AES/EBU balanced or unbalanced outputs are supported.

The user can choose any channel out of four embedded audio groups as audio output, or choose the synthesized audio as output signal. The modules support 8-channel audio meter for monitoring the four pairs of AES/EBU output.

Each module has its own distinct feature as follows:

The HDX6811N has unbalanced AES output, and the HDX6812N has balanced AES output.

HDX6811N/ HDX6812N supports HD/SD-SDI video input, but if the users use the 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.

Note: The 3G high-definition video signal authorization code is optional.

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

Table 1-1 Input and output

Module	Input	Output
HDX6811N	<ul style="list-style-type: none"> • 1 channel adaptive 3G/HD/SD-SDI video input • 1 channel unbalanced DARS input 	<ul style="list-style-type: none"> • 2-channel 3G/HD/SD-SDI output with reclocking • 1 channel optional SDI output • 1 channel HDMI output for monitoring • 4 pairs of unbalanced AES audio output
HDX6812N	<ul style="list-style-type: none"> • 1 channel adaptive 3G/HD/SD-SDI video input • 1 channel unbalanced/balanced DARS input • 1 channel HDMI input 	<ul style="list-style-type: none"> • 3-channel 3G/HD/SD-SDI output with reclocking • 1 channel HDMI output for monitoring • 4 pairs of balanced AES audio output

1.2 Feature

The HDX6811N/HDX6812N offers the following features:

- ◆ De-embedding audio from 3G/HD/SD-SDI input signal, supporting 4 pairs (8 channels)of AES/EBU outputs
- ◆ De-embedding HD, 3G, and other various video formats
- ◆ SDI output with equalization and reclocking

- ◆ One channel HDMI output monitoring
- ◆ A variety of available signal sources for each audio output
- ◆ Video input auto-detect and input status feedback
- ◆ Support 20-bit and 24-bit audio processing
- ◆ Support 8-channel audio metering display
- ◆ Generate Text signal at fixed frequency rate
- ◆ 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 video detection signal generator, and 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 HDX6811N/HDX6812N.

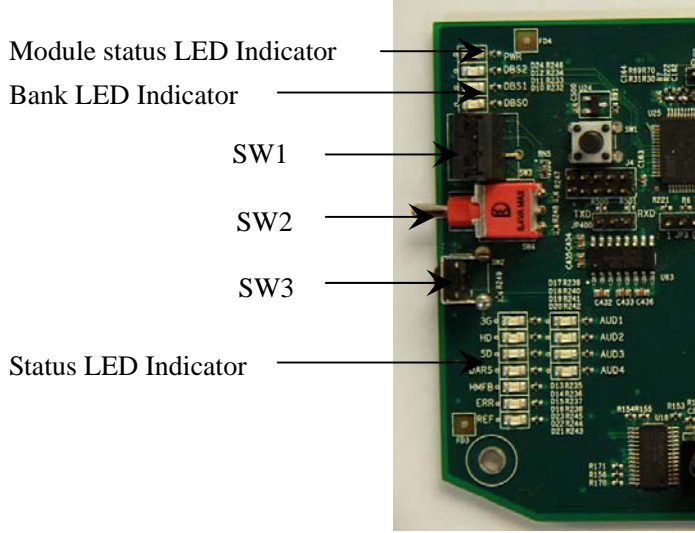


Fig. 1-1 The control switch and LED indicator of HDX6811N/HDX6812N

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

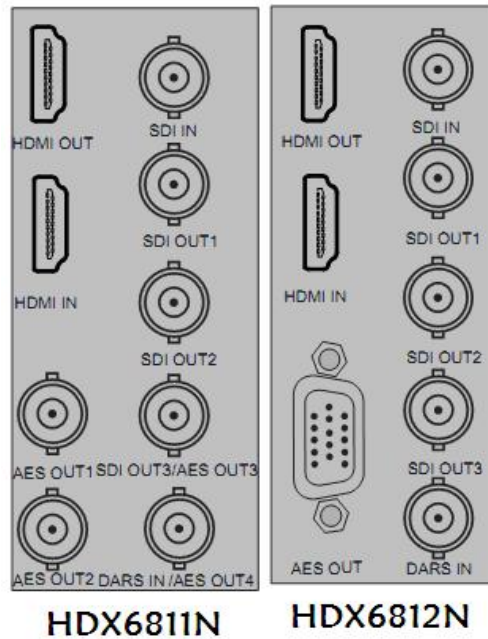
Function	Description
Module status LED	Used to indicate the working status of the module. Refer to Chapter 3 LED instructions for more information.
BANK LED	Display the module BANK choice, for more detail information refer to Table 3-7.
SW1	Used to select various settings and parameters.
SW2	Through 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 HDX6811N/HDX6812N


Fig. 1-3 The back of HDX6811N/HDX6812N

The Back Connector of HDX6811N/HDX6812N is showed as fig 1-3. But HDX6811N supports unbalanced digital audio output, and DARS input only supports unbalanced type. And HDX6812N supports balanced digital audio output, and the DARS input supports balanced and unbalanced two types.

Table 1-3 Description of HDX6811N/HDX6812N Back Connector

Item	Description
HDMI OUT	HDMI output
HDMI IN	HDMI input
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 OUT 3	Optional SDI output channel 3 or AES audio output channel 3
AES OUT	AES digital audio output
AES OUT1	AES digital audio output channel 1
AES OUT2	AES digital audio output channel 2
DARS IN	DARS audio input
DARS IN/ AES OUT4	Optional AES digital audio output channel 4 or DARS audio input, the user can set it by jumper.

Note: When the user select DARS audio output as reference, users firstly need to set DARS input in balanced or unbalanced type (HDX6811N only supports unbalanced type), then set the jumper (refer to Table 3-8), select the appropriate input mode, and then provide a standard 48kHz AES/EBU digital audio signal as the reference signal. When the user don't choose DARS as a reference signal, the port is unbalanced AES output.



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

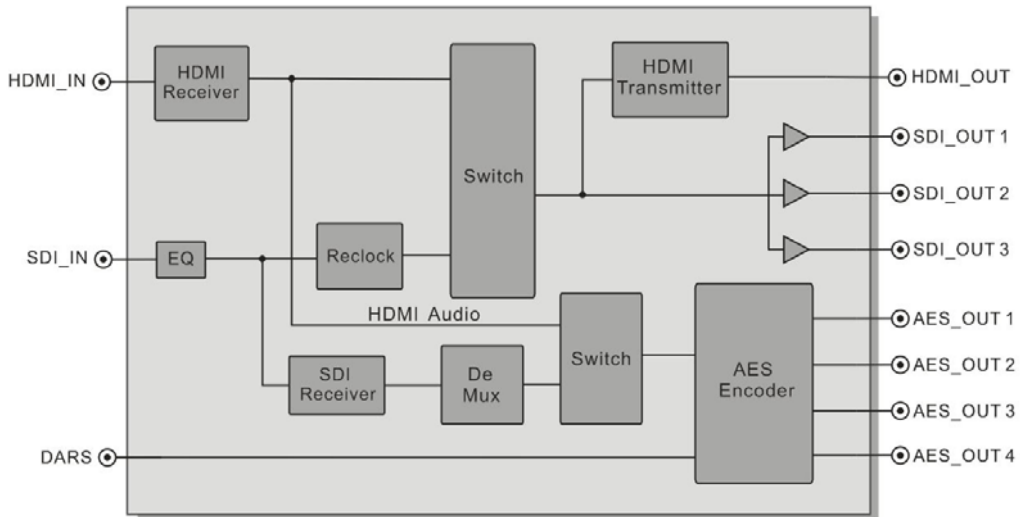


Fig. 1-5 Signal Flow of HDX6811N/HDX6812N

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
HDX6811N	HDX6811N module (1pc); back connector (1pc), and other accessories
HDX6812N	HDX6812N module (1pc); back connector (1pc), and other accessories

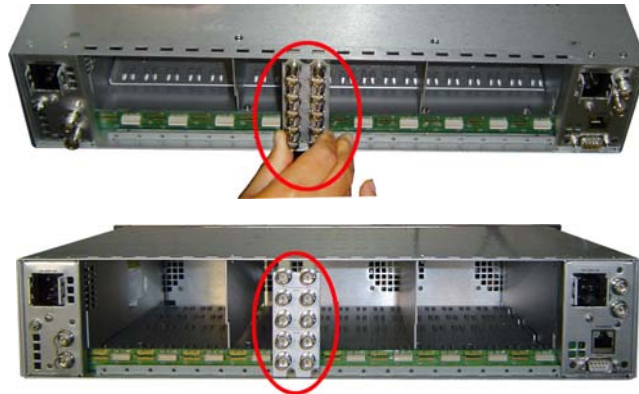
2.4 Installing the Module

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.

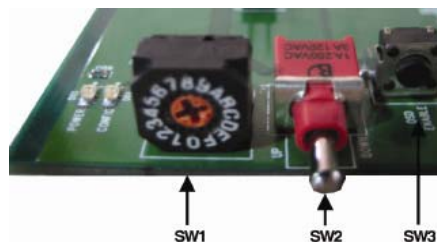


Fig. 3-1 Switches and Key

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

Reserved.

Audio meter is superimposed onto the HDMI output. The users can monitor the 4-channel AES audio output channel through 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.

HDX6811N:

Table 3-1 Bank 0 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0
1	Video source select	SDI/HDMI/Fiber	SDI
2	Demux Err Ctl	Pass/mute	Pass
3	V-bit Mute	Disable/Enable	Disable
4	AES Lock Mode	None /DARS	None
5	AES 1 Bits	24bits/20bits	24bits
6	AES 2 Bits	24bits/20bits	24bits
7	AES 3 Bits	24bits/20bits	24bits
8	AES 4 Bits	24bits/20bits	24bits

SW1	Function	Options	Default
9	Out Ch 1A Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 1
A	Out Ch 1B Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 2
B	Out Ch 2A Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 3
C	Out Ch 2B Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 4
D	Out Ch 3A Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 5
E	Out Ch 3B Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 6
F	Factory Recall		

Note: When select the SDI output mode, CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH13, CH 14, CH 15, CH 16, 1 & 2 sum, 3 & 4 sum, 5 & 6 sum, 7 & 8 sum, 9 & 10 sum, 11 & 12 sum, 12 & 14 sum, 15 & 16 sum, tone 1, tone 2, mute select items are all effective, When select the HDMI output mode, only CH 1, of CH 2, of CH 3, CH 4, of CH 5, of CH 6, of CH 7, of CH 8, 1 & 2 sum, 3 & 4 sum, 5 & 6 sum, 7 & 8 sum, tone 1, tone 2 select items are effective, also HDX6812N.

Table 3-2 Bank 1 parameter and function setup

SW1	Function	Options	Default
-----	----------	---------	---------

0	Bank Select	Bank 0~Bank 2	Bank 0
1	Out Ch 4A Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 7
2	Out Ch 4B Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 8
3	Out Ch 1A Level	-96 to +12dB in 0.5dB step	+0.0dB
4	Out Ch 1B Level	-96 to +12dB in 0.5dB step	+0.0dB
5	Out Ch 2A Level	-96 to +12dB in 0.5dB step	+0.0dB
6	Out Ch 2B Level	-96 to +12dB in 0.5dB step	+0.0dB
7	Out Ch 3A Level	-96 to +12dB in 0.5dB step	+0.0dB
8	Out Ch 3B Level	-96 to +12dB in 0.5dB step	+0.0dB
9	Out Ch 4A Level	-96 to +12dB in 0.5dB step	+0.0dB
A	Out Ch4B Level	-96 to +12dB in 0.5dB step	+0.0dB
B	Out Ch 1A Delay	0 to 2700mS in 1ms step	0ms
C	Out Ch 1B Delay	0 to 2700mS in 1ms step	0ms
D	Out Ch 2A Delay	0 to 2700mS in 1ms step	0ms
E	Out Ch 2B Delay	0 to 2700mS in 1ms step	0ms
F	Out Ch 3A Delay	0 to 2700mS 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
1	Out Ch 3B Delay	0 to 2700mS in 1ms step	0ms
2	Out Ch 4A Delay	0 to 2700mS in 1ms step	0ms
3	Out Ch 4B Delay	0 to 2700mS in 1ms step	0ms

SW1	Function	Options	Default
4	Out Ch1A Inv	On/Off	Off
5	Out Ch1B Inv	On/Off	Off
6	Out Ch2A Inv	On/Off	Off
7	Out Ch2B Inv	On/Off	Off
8	Out Ch3A Inv	On/Off	Off
9	Out Ch3B Inv	On/Off	Off
A	Out Ch4A Inv	On/Off	Off
B	Out Ch4B Inv	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, 080p60&59.94	1080i50

HDX6812N:

Table 3-4 Bank 0 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0
1	Bank Select	Bank 0~Bank 2	Bank 0
2	Video source select	SDI/HDMI/Fiber	SDI
3/7	Demux Err Ctl	Pass/mute	Pass
4/8	V-bit Mute	Disable/Enable	Disable
5	AES Lock Mode	None /DARS	None

SW1	Function	Options	Default
6	AES Bits	24bits/20bits	24bits
9	AES Bits	24bits/20bits	24bits
A	Out Ch 1B Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 2
B	Out Ch 2A Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 3
C	Out Ch 2B Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 4
D	Out Ch 3A Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 5
E	Out Ch 3B Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 6
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	Out Ch 4A Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7,	CH 7

		CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	
2	Out Ch 4B Sel	CH 1, CH 2, CH 3, CH 4, CH 5, CH 6, CH 7, CH 8, CH 9, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, 1&2 sum, 3&4 sum, 5&6 sum, 7&8 sum, 9&10 sum, 11&12 sum, 13&14 sum, 15&16 sum, tone 1, tone 2, mute	CH 8
3	Out Ch 1A Level	-96 to +12dB in 0.5dB step	+0.0dB
4	Out Ch 1B Level	-96 to +12dB in 0.5dB step	+0.0dB
5	Out Ch 2A Level	-96 to +12dB in 0.5dB step	+0.0dB
6	Out Ch 2B Level	-96 to +12dB in 0.5dB step	+0.0dB
7	Out Ch 3A Level	-96 to +12dB in 0.5dB step	+0.0dB
8	Out Ch 3B Level	-96 to +12dB in 0.5dB step	+0.0dB
9	Out Ch 4A Level	-96 to +12dB in 0.5dB step	+0.0dB
A	Out Ch4B Level	-96 to +12dB in 0.5dB step	+0.0dB
B	Out Ch 1A Delay	0 to 2700mS in 1ms step	0ms
C	Out Ch 1B Delay	0 to 2700mS in 1ms step	0ms
D	Out Ch 2A Delay	0 to 2700mS in 1ms step	0ms
E	Out Ch 2B Delay	0 to 2700mS in 1ms step	0ms
F	Out Ch 3A Delay	0 to 2700mS in 1ms step	0ms

Table 3-6 Bank 2 parameter and function setup

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 2	Bank 0
1	Out Ch 3B Delay	0 to 2700mS in 1ms step	0ms

2	Out Ch 4A Delay	0 to 2700mS in 1ms step	0ms
3	Out Ch 4B Delay	0 to 2700mS in 1ms step	0ms
4	Out Ch1A Inv	On/Off	Off
5	Out Ch1B Inv	On/Off	Off
6	Out Ch2A Inv	On/Off	Off
7	Out Ch2B Inv	On/Off	Off
8	Out Ch3A Inv	On/Off	Off
9	Out Ch3B Inv	On/Off	Off
A	Out Ch4A Inv	On/Off	Off
B	Out Ch4B Inv	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	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
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.

3.4 Setting Jumper



JP1 and JP2

JP5

JP6

Fig 3-3 Jumper of HFS6860N

Table 3-8 Description of HFS6860N Jumper

Item	Description
JP1, JP2	Select balanced or unbalanced DARS signal. When select the UNBAL, it will be unbalanced, or select the BAL, it is balanced.
JP5	Select multifunctional BNC function, choose AES port as AES output 4, choose DARS port as DARS input channel.

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

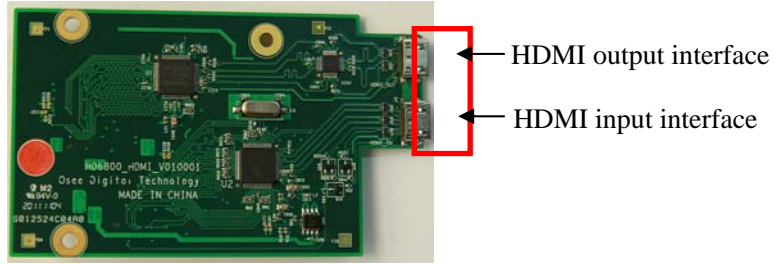


Fig 4-1 HDMI input/output module

4.1 Install

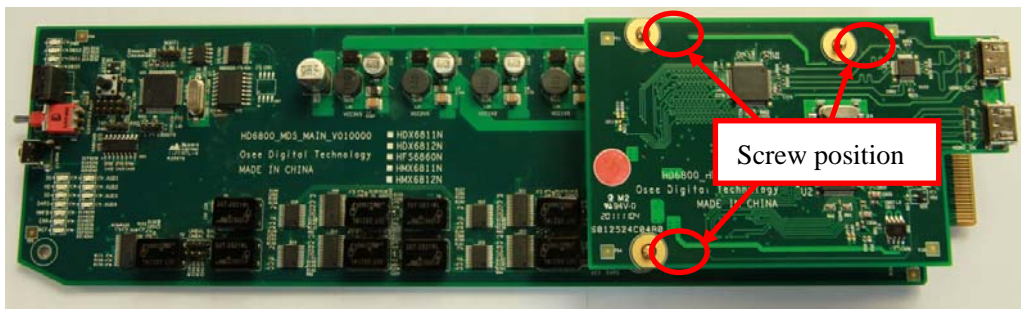


Fig 4-2 Installed state (1)

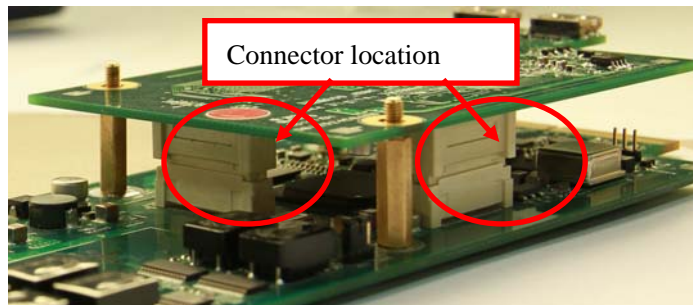


Fig 4-3 Installed state (2)

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 output
- HDMI Input

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	75 Ω
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	75 Ω
Connector	BNC (IEC169-8)
Return Loss	>15dB to 270MHz
Signal Level	800 mV \pm 10%
DC Offset	0 V \pm 0.5 V
Rise/Fall Time	400 to 1500ps (20% to 80%)
Overshoot	<10%
Jitter	<0.2 UI (740ps) , < 500ps

5.3 Digital audio output

Table 5-3 Digital audio unbalanced output Specifications (for HDX6811N)

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

Table 5-4 Digital audio balanced output Specifications (for HDX6812N)

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	110 Ω +/- 20% (0.1 to 6 MHz)
Rejection ratio	>30 dB below output signal (0 to 6 MHz)

5.4 HDMI input

Table 5-5 HDMI input 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!