SMX6811N(S)8/SMX6812N(S)8

8-channel AES Audio Embedding Module

USER MANUAL

OSEE TECHNOLOGY CO., LTD.

Product Information

Model: SMX6811N(S)8/SMX6812N(S)8 8-CHANNEL AES Audio Embedding Module
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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

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Chapter 1 Introduction

Overview

The SMX6811N(S)8 / SMX6812N(S)8 are 8-channel AES audio embedding module. All modules support 4 pairs (8 channels) of AES audio embedding. The user can choose input audio or other audio synthesized by system and embed them into two audio groups via menu and embed them into any two groups out of four audio.

Each module has its distinct feature as follows:

- The SMX6811N8 has 4 pairs of unbalanced AES inputs;
- The SMX6811NS8 has 4 pairs of unbalanced AES inputs, and audio tracking;
- The SMX6812N8 has 4 pairs of balanced AES inputs;
- The SMX6812NS8 has 4 pairs of balanced AES inputs and audio tracking.

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

Tab. 1-1 SMX6811N(S)8 / SMX6812N(S)8

Module	INPUT	OUTPUT
SMX6811N8	• One channel SD-SDI input • Four pairs unbalanced AES input	• Four channels SD-SDI output with reclocking and embedded audio • One channel analog composite video output
SMX6811NS8	• One channel SD-SDI input • Four pairs unbalanced AES input	• Three channels SD-SDI output with reclocking and embedded audio • One channel analog composite video output • One channel selectable SD-SDI output with reclocking and embedded audio
SMX6812N8	• One channel SD-SDI input • Four pairs balanced AES input	• Four channels SD-SDI output with reclocking and embedded audio • One channel analog composite video output
SMX6812NS8	• One channel SD-SDI input • Four pairs balanced AES input • One channel DATA IN	• Three channels SD-SDI output with reclocking and embedded audio • One channel analog composite video output • One channel selectable SD-SDI output with reclocking and embedded audio

Note: For SMX6811NS8 and SMX6812NS8, one SDI output and DATA IN input share the same connector. The user can set by the jumper JP5. Please refer to Tab. 2-3 for the details of Jumper setting.

Features

The SMX6811N(S)8/SMX6812N(S)8 offer the following features:

- ✓ Supporting audio embedding in 525/625 video standard
- ✓ Supporting 4 pairs (8-channel) AES audio embedding
- ✓ Supporting 20-bit and 24-bit audio embedding
- ✓ Both embedded audio group and embedded code selectable
- ✓ Audio tracking（only applicable to SMX6811NS8 & SMX6812NS8）
- ✓ Embedded SDI output with reclocking
- ✓ One analog composite video output monitoring
- ✓ SD-SDI video input auto detection and input status feedback
- ✓ Supporting 4-channel audio metering display
- ✓ Embedding tone signal at fixed frequency rate
- ✓ Supporting maximum 1.3 second audio delay
- ✓ Supporting audio gain adjustment, invert and mute
- ✓ Input EDH monitoring
- ✓ Re-insert EDH
- ✓ Freeze frame, black field and video loss detection
- ✓ Audio loss and audio overload detection

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.

Module Descriptions

The Front Part of Module

Figure 1-1 shows the board of SMX6811N(S)8/SMX6812N(S)8

Fig. 1-1 The board of SMX6811N(S)8/SMX6812N(S)8

Back Connector

SMX6811N(S)8/SMX6812N(S)8

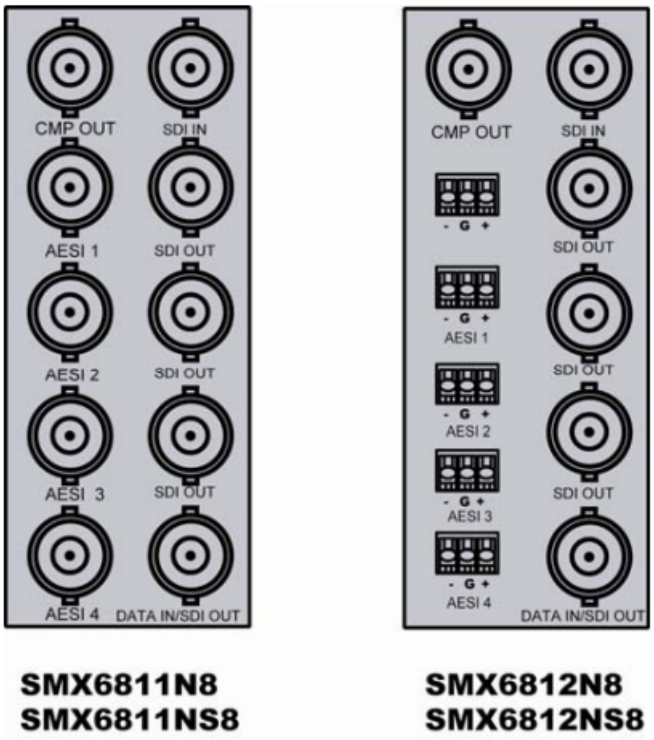


Fig.1-2 Back Connector of SMX6811N(S)8/SMX6812N(S)8

Tab. 1-2 Description of SMX6811N(S)8/SMX6812N(S)8 Back Connector

Item	Description
CMP OUT	Analog composite video output.
AESI 1，AESI 2 AESI 3，AESI 4	AES digital audio input
SDI IN	SD-SDI input
SDI OUT	Re-clocked SDI output
DATA IN / SDI OUT	• For SMX6811N8 and SMX6812N8, it is only used for SDI output. • For SMX6811NS8 and SMX6812NS8, it can be set between DATA IN input and SDI output, by the jumper JP5. DATA IN is the audio tracking signal. The default factory value is DATA IN. Please refer to Tab. 2-3 for the details of Jumper setting.

Signal Flow

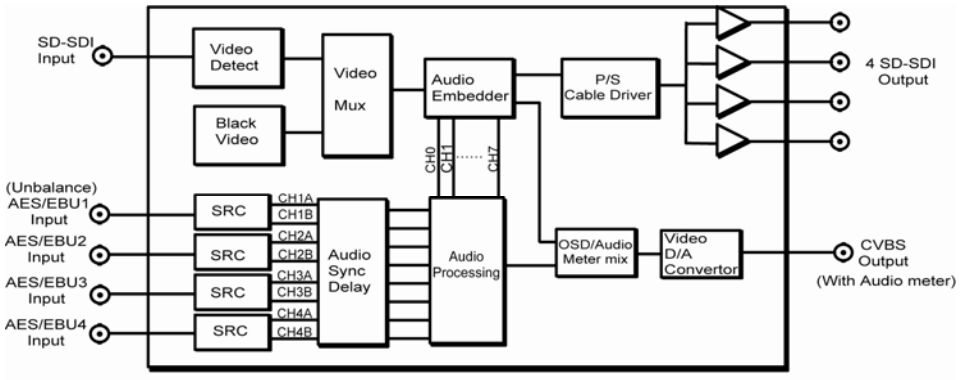


Fig.1-4 Signal Flow of SMX6811N8

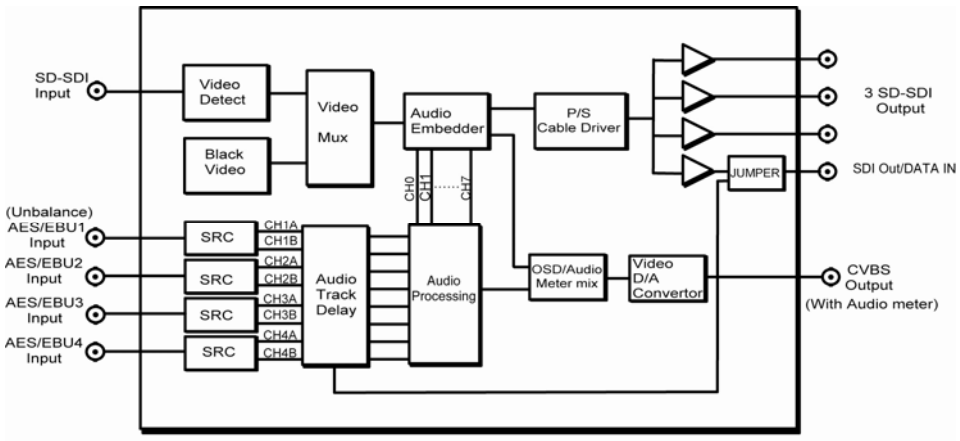


Fig.1-5 Signal Flow of SMX6811NS8

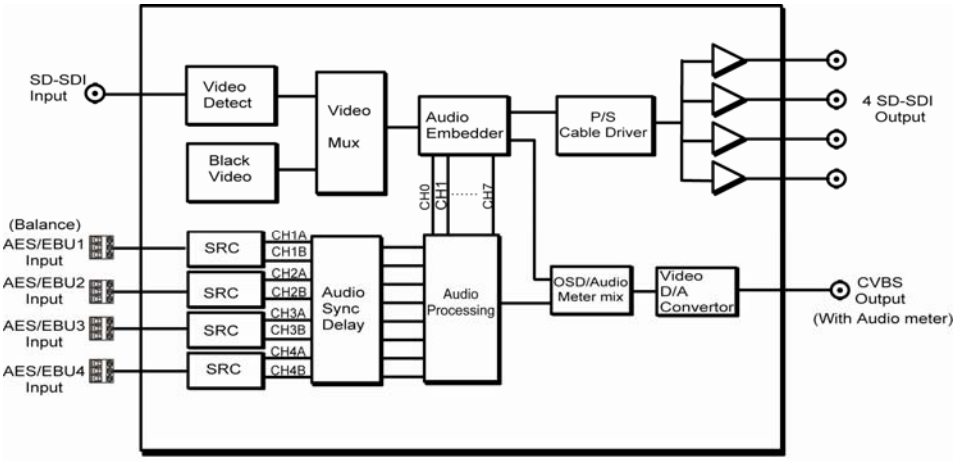


Fig.1-6 Signal Flow of SMX6812N8

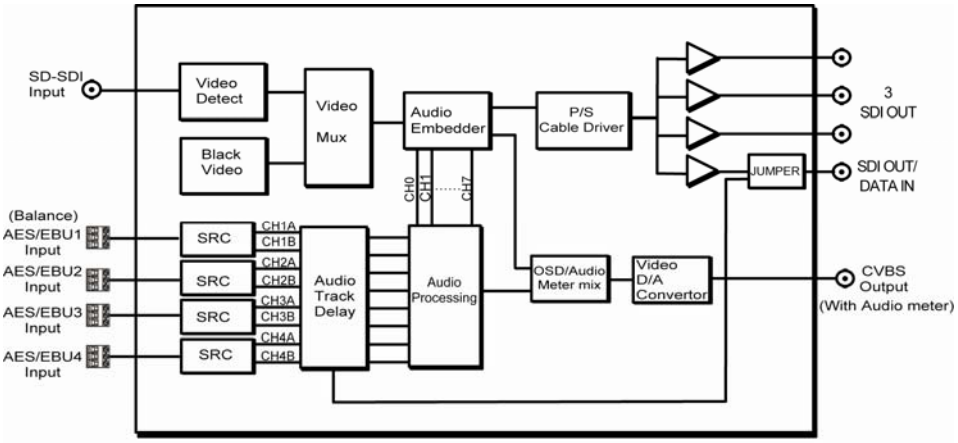


Fig.1-7 Signal Flow of SMX6812NS8

Chapter 2 Installation

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 SMX6811N(S)8/SMX6812N(S)8 are discussed below:

- Unpacking the module
- Installing the module
- Making the connections
- Removing the module
- Setting Jumper
- LED indicator

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

Unpacking the Module

Preparing the Product for Installation

Contact your dealer right now if any items are missing.

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.

Check the Packing List

Tab. 2-2 Packed Components

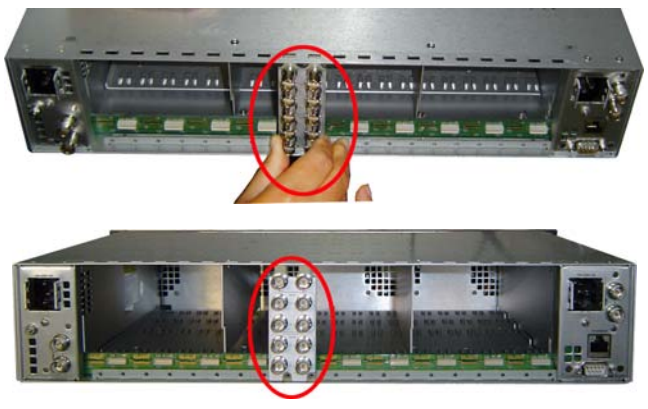
Model Name	Description
SMX6811N(S)8/SMX6812N(S)8	SMX6811N(S)8/SMX6812N(S)8 module (1pc); back connector (1pc), and other accessories

Installing the Module

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

Follow the following steps to install the module:

Step 1



Step2

Step3

Step 4

Step5

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

Install the front panel. Making the Connections

Please connect signals based on Fig. 1-2.

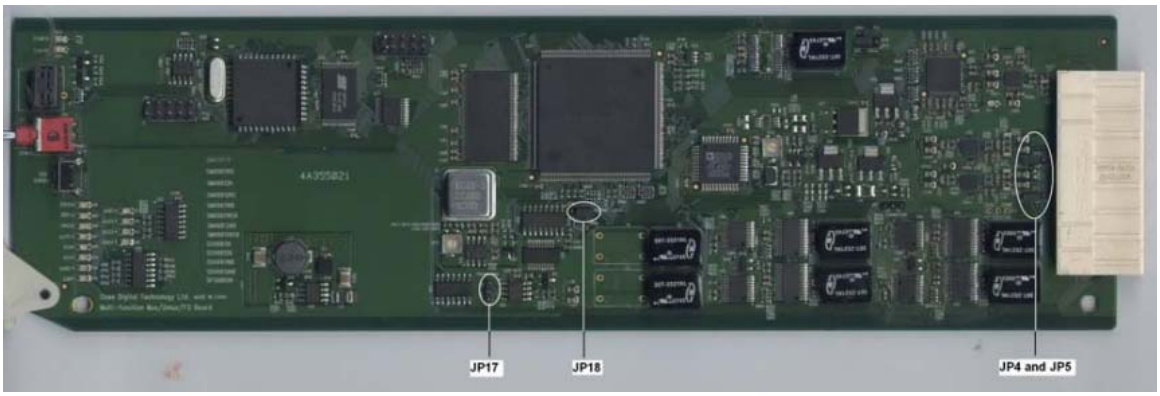
Removing the Module

Follow the following steps to remove SMX6811N(S)8/SMX6812N(S)8 module:

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.

Setting Jumper



Tab. 2-3 Description of SMX6811N(S)8/SMX6812N(S)8 Jumpers

Item	Description
JP4	It is not adjustable. The default setting is SDI_03.
JP5	SDI_04/CMP_04. • For SMX6811N8 and SMX6812N8. It is not adjustable. The default setting is SDI_04, it is only used for SDI output. • For SMX6811NS8 and SMX6812NS8, it is a selectable jumper and can be set between DATA IN input and SDI output. DATA IN is the audio tracking signal. The default setting is "CMP_04". 1. When it is set to "SDI_04", the back connector port of "SDI OUT/DATA IN" outputs the SDI with reclocking and embedded audio. 2. When it is set to "CMP_04", the back connector port of "SDI OUT/DATA IN" is used for DATA IN.
JP17	DATA IN TERMINATION ON/OFF. It is used for the termination of the DATA IN signal and only used for SMX6811NS8 and SMX6812NS8 Module. When many modules share one DATA signal, just jumper to ON to enable the 75Ω input termination. The default setting is ON. • ON: 75Ω input termination is available. • OFF: 75Ω input termination is unavailable.
JP18 （select the control mode）	(LOC/RMT)/LOCAL. It is adjustable. The default setting is LOC/RMT. • When the "LOC/RMT" is selected, the module is controlled not only by a variety of switches on the local module card, but also by the remote control network. • When the "LOCAL" is selected, the module is controlled only by the switches on the local module card.

LED Indicator

Table 2-4 LED Indicator Function

Item	Description
POWER (green)	**On**: Power is supplied.
CONFIG (orange)	**On**: The device is Initializing.
DBS0/DBS1/DBS2 (orange)	**On:** select BANK. The combination of the three LED lights indicates the present state of Bank. It indicates the Bank number in binary mode. For the details, please see the Tab.2-5.
AUTO（green）	**On**: Input Video standard is set to AUTO, and it can be auto detected.
525（green）	• **On**: the input video format is 525 and conforms to the input video format what you have set. • **Flickering**: the input doesn't conform to the input video format 525 what you have set. • **Off**: no 525 signal input.
625（green）	• **On**: the input video format is 625 and conforms to the video format what you have set. • **Flickering**: the input doesn't conform to the input video format 625 what you have set. • **Off**: no 625 signal input.
DARS（green）	It is unavailable and always off.
EBD（green）	• On: the embedded audio is right. • Flickering: there is wrong information about embedded audio. • Off: no embedded audio information.
AUD1（green）	• On: In SDI output, there is right information about embedded audio 1. • Flickering: In SDI output, there is wrong information about embedded audio 1. • Off: In SDI output, there is no information about embedded audio 1.
AUD2 (green）	• On: In SDI output, there is right information about embedded audio 2. • Flickering: In SDI output, there is wrong information about embedded audio 2. • Off: In SDI output, there is no information about embedded audio 2.
AUD3（green）	• On: In SDI output, there is right information about embedded audio 3. • Flickering: In SDI output, there is wrong information about embedded audio 3. • Off: In SDI output, there is no information about embedded audio 3.
AUD4（green）	• On: In SDI output, there is right information about embedded audio 4. • Flickering: In SDI output, there is wrong information about embedded audio 4. • Off: In SDI output, there is no information about embedded audio 4.

Note: When the audio is embedded with errors, the EBD LED will flash. The errors of embedded audio may occur in the following three modes.

1. Overwrite error mode.

In the overwrite error mode, the user intends to embed one audio group, but it does not exist this audio group in the input video source, or, the bits of original embedded audio group and prospective embedded audio group do not match.

2. Append error mode

In the Append error mode, the user intends to embed one audio group, but this audio group already exists in the input video source.

3. Overflow error mode

In the overflow error mode, it lacks the space to embed new audio group or EDH packet in the blanking interval of the input video source.

Tab. 2-5 Description of DBS Indicator

BS0	BS1	BS2	Bank Number
off	off	off	Bank 0
on	off	off	Bank 1
off	on	off	Bank 2
on	on	off	Bank 3
off	off	on	Bank 4
on	off	on	Bank 5

Chapter 3 Operation and Control

Switches and Key

Refer to **Figure 3-1** or **Table 3-1**（BANK 0）or **Table 3-2**（BANK 1）or **Table 3-3**（BANK 2）or **Table 3-4**（BANK 3）or **Table 3-5**（BANK 4）or **Table 3-6**（BANK 5）to complete control

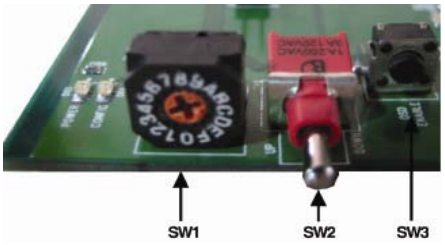


Fig. 3-1 Switches and key

Rotate SW1 at the position of 0, and select the proper BANK by SW2.

BANK Selection
The SW1 has four Banks
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.

1. SW1 Mode Selection

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 Mode Selection

SW2 is a toggle switch, which is used to decide the concrete figure of the setting made by SW1.
SW2 is a 3-position toggle switch, used to decide the concrete figure of the setting made by SW1.

To keep SW2 at the position of "UP" or "DOWN", the continuous adjustment can be achieved.

3. SW3

Press the SW3 to activate OSD.

When the user does not operate the board, the OSD menu will disappear after 10 seconds.

For analog Composite output, it adds the audio meter and the OSD menu. To monitor the audio and the menu item, please connect the analog Composite output signal to one monitor which supports the analog Composite video input.

The audio meter and the OSD menu are shown as bellow.

OSD menu

Tab. 3-1 BANK 0 Function Setting

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 5	Bank 0
1	Vid Std Sel: Select the input video signal standard.	525/625/AUTO	AUTO
2	Out Vid Std: Select the output video signal standard. Only for the input video signal of 525 standard. For 625 standard, this item is unavailable.	NTSC/PAL-M	NTSC
3	Audio Track: Enable the audio tracking or not.（only used for SMX6810NS module）	ON/OFF	ON
4	ANC Clean: Clean the auxiliary datum of SDI input signal	ON/OFF	OFF

SW1	Function	Options	Default
	or not.		
5	Embed 1 Bit: Set the bits of embedded audio Group 1, including Ch 1A, Ch 1B, Ch 2A, and Ch 2B	20bits/24bits	24
6	Embed 1 Mod: Set the mode of embedded audio Group 1.	overwrite/Append /Auto	Auto
7	Embed 1 En: Enable the embedded audio Group 1 or not.	Enable/Disable	Enable
8	Embed 1 Group: Select the embedded Group 1	Group 1/Group 2/ Group 3/Group 4	Group 1
9	Embed 2 Bit: Set the bits of embedded audio Group 1, including Ch 1A, Ch 1B, Ch 2A, and Ch 2B	PCM/non-PCM	PCM
A	Embed 2 Mod: Set the mode of embedded audio Group 2	overwrite/Append /Auto	Auto
B	Embed 2 En: Enable the embedded audio Group 2 or not.	Disable/Enable	Enable
C	Embed 2 Group: Select the embedded Group 1	Group 1/Group 2/ Group 3/Group 4	Group 1
D~E	Reserve		
F	Recall def: Recall the default setting.	Restore ?/Restored	

Note:

1) For Bank 0 "6", audio embedded mode:

- *For the overwrite mode, in the video source, it must exist the audio group where can be embedded. For example, in order to embed audio Group 1, there must be the audio Group1 existing in the SDI input signal.*
- *For the Append mode, in order to embed audio Group, there must* ***not*** *be the audio Group1 existing in the video source.*
- *For the Auto mode, regardless of the existence of embedded audio Group in the video sources, all can be embedded the audio.*

2) The eight embedded audios are divided into two groups:

- *Audio group1:1A，1B，2A，2B*
- *Audio group2:3A，3B，4A，4B.*

Tab. 3-2 BANK 1 Function Setting

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 5	Bank 0
1	Out Ch1A Sel: Select audio source of the embedded audio output channel 1A	In 1A/ In 1B/ In 2A/ In 2B/ In 3A/In 3B/ In 4A/In 4B/ In 1 Sum/ In 2 Sum/Tone 1/ Tone 2/Mute	In 1A
2	Out Ch1B Sel: Select audio source of the embedded audio output channel 1B	In 1A/ In 1B/ In 2A/ In 2B/ In 3A/In 3B/ In 4A/In 4B//In 1 Sum/ In 2 Sum/Tone 1/ Tone 2/Mute	In 1B
3	Out Ch2A Sel: Select audio source of the embedded audio output channel 2A	In 1A/ In 1B/ In 2A/ In 2B/In 1 Sum/ In 2 Sum/Tone 1/ Tone 2/Mute	In 2A
4	Out Ch2B Sel: Select audio source of the embedded audio output channel 2B	In 1A/ In 1B/ In 2A/ In 2B/In 1 Sum/ In 2 Sum/Tone 1/ Tone 2/Mute	In 2B
5	Out Ch3A Sel: Select audio source of the embedded audio output channel 3A	In 1A/ In 1B/ In 2A/ In 2B/ In 3A/In 3B/ In 4A/In 4B/ In 1 Sum/ In 2 Sum/Tone 1/ Tone 2/Mute	In 3A
6	Out Ch3B Sel: Select audio source of the embedded audio output channel 3B	In 1A/ In 1B/ In 2A/ In 2B/ In 3A/In 3B/ In 4A/In 4B//In 1 Sum/ In 2 Sum/Tone 1/ Tone 2/Mute	In 3B
7	Out Ch4A Sel: Select audio source of the embedded audio output channel 4A	In 1A/ In 1B/ In 2A/ In 2B/In 1 Sum/ In 2 Sum/Tone 1/ Tone 2/Mute	In 4A
8	Out Ch4B Sel: Select audio source of the embedded audio output channel 4B	In 1A/ In 1B/ In 2A/ In 2B/In 1 Sum/ In 2 Sum/Tone 1/ Tone 2/Mute	In 4B
9	AES1 Format: Select the format of the AES 1	PCM/non-PCM	PCM

SW1	Function	Options	Default
	input signal.		
A	AES2 Format: Select the format of the AES 2 input signal.	PCM/non-PCM	PCM
B	AES3Format: Select the format of the AES 3 input signal.	PCM/non-PCM	PCM
C	AES4Format: Select the format of the AES 4 input signal.	PCM/non-PCM	PCM
D~F	Reserve		

Tab. 3-3 BANK 2 Function Setting

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 5	Bank 0
1	In Ch1A Lev: Adjust the levels of input audio channel 1A.	-96 to +12dB in 0.5dB step	+0.0dB
2	In Ch1B Lev: Adjust the levels of input audio channel 1B.	-96 to +12dB in 0.5dB step	+0.0dB
3	In Ch2A Lev: Adjust the levels of input audio channel 2A.	-96 to +12dB in 0.5dB step	+0.0dB
4	In Ch2B Lev: Adjust the levels of input audio channel 2B.	-96 to +12dB in 0.5dB step	+0.0dB
5	In Ch3A Lev: Adjust the levels of input audio channel 3A.	-96 to +12dB in 0.5dB step	+0.0dB
6	In Ch3B Lev: Adjust the levels of input audio channel 3B.	-96 to +12dB in 0.5dB step	+0.0dB
7	In Ch4A Lev: Adjust the levels of input audio channel 4A.	-96 to +12dB in 0.5dB step	+0.0dB
8	In Ch4B Lev: Adjust the levels of input audio channel 4B.	-96 to +12dB in 0.5dB step	+0.0dB
9	Meter1 Type: Select the display type of audio meter1(CH1A，CH1B)	Off/VU/ PPM/VU+PPM	VU+PPM
A	Meter2 Type: Select the display type of audio meter2(CH2A，CH2B)	Off/VU/ PPM/VU+PPM	VU+PPM
B	Meter3 Type: Select the display type of audio meter3(CH3A，CH3B)	Off/VU/ PPM/VU+PPM	VU+PPM

SW1	Function	Options	Default
C	Meter4 Type: Select the display type of audio meter4(CH4A，CH4B)	Off/VU/ PPM/VU+PPM	VU+PPM
D	Meter1 H Pos: Select the horizontal position of audio Meter1 (CH1A，CH1B, CH2A，CH2B)	1 to 163	7
E	Meter2 H Pos: Select the horizontal position of audio Meter2 (CH3A，CH3B, CH4A，CH4B)	6 to 169	162
F	Test Level: Select the test level of audio meter.	-18dB/-20dB	-18dB

Tab. 3-4 BANK 3 Status Displaying Table

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 5	Bank 0
1	Ch1A Delay: Adjust the delay of input audio channel 1A.	0 to 1320ms in 1ms step	0ms
2	Ch2A Delay: Adjust the delay of input audio channel 2A.	0 to 1320ms in 1ms step	0ms
3	Ch1B Delay: Adjust the delay of input audio channel 1B.	0 to 1320ms in 1ms step	0ms
4	Ch2B Delay: Adjust the delay of input audio channel 2B.	0 to 1320ms in 1ms step	0ms
5	Ch1C Delay: Adjust the delay of input audio channel 1C.	0 to 1320ms in 1ms step	0ms
6	Ch2C Delay: Adjust the delay of input audio channel 2C.	0 to 1320ms in 1ms step	0ms
7	Ch1D Delay: Adjust the delay of input audio channel 1D.	0 to 1320ms in 1ms step	0ms
8	Ch2D Delay: Adjust the delay of input audio channel 2D.	0 to 1320ms in 1ms step	0ms
9~F	Reserved		

Tab. 3-5 BANK 4 Status Displaying Table

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 5	Bank 0
1	In Ch1A Inv: Adjust the embedded input audio channel 1A to invert.	On/Off	Off

SW1	Function	Options	Default
2	In Ch1B Inv: Adjust the embedded input audio channel 1B to invert.	On/Off	Off
3	In Ch2A Inv: Adjust the embedded input audio channel 2A to invert.	On/Off	Off
4	In Ch2B Inv: Adjust the embedded input audio channel 2B to invert.	On/Off	Off
5	In Ch3A Inv: Adjust the embedded input audio channel 3A to invert.	On/Off	Off
6	In Ch3B Inv: Adjust the embedded input audio channel 3B to invert.	On/Off	Off
7	In Ch4A Inv: Adjust the embedded input audio channel 4A to invert.	On/Off	Off
8	In Ch4B Inv: Adjust the embedded input audio channel 4B to invert.	On/Off	Off
9	Black Thd: The threshold of Black burst triggering.	1 to 255 in 1 step	30
A	Freeze Delay: The delay of Freeze detected	1 to 255 in 1 step	30
B	Freeze Thd: The threshold of Freeze triggering.	1 to 255 in 1 step	30
C	No Aud Delay: The delay of no audio detected	1 to 255 in 1 step	30
D	No Audio Thd: The threshold of no audio detected.	-72 dB, -66 dB, -60 dB, -54 dB, -48dB	-60dB
E~F	Reserved		

Tab. 3-6 BANK5 Status Displaying Table

SW1	Function	Options	Default
0	Bank Select	Bank 0~Bank 5	Bank 0
1	Video Std: Display the input video standard.	525 / 625	Read only
2	In vid status: Display the input video status.	Loss, Black, Freeze, Normal	Read only
3	In Aud Group: Display the audio group embedded in the input video.	--------/G1------ /--G2----/G1G2---- /----G3--/G1--G3-- /--G2G3--/G1G2G3--	Read only

SW1	Function	Options	Default
		/------G4/G1----G4 /--G2--G4/G1G2--G4 /----G3G4/G1--G3G4 /--G2G3G4/G1G2G3G4	
4	In AES: Display the status of the four pairs of input embedded audio.	O: overload/ V: normal , /--:no audio	Read only
5	Out Aud Stu: Display the status of the four pairs output embedded audio.	O: overload/ V: normal , / X :no audio	Read only
6	EDH Status: Display the status of the EDH Packet	no EDH/Detect EDH /EDH Err	Read only
7	EDH Err Num: The sum of EDH error numbers. (Clear the counter by the toggle switch up or down)	0 to 32767	
8~C	Reserved		
D	Modular mod: Display the modular mode.	SMX6811N8/ SMX6811NS8/ SMX6812N8/ SMX6812NS8	Read only
E	Version info: Version information.	Display the version of hardware and software.	Read only
F	Hardware sta: Hardware status	Correct/Error	Read only

Note: *the Bank 5 is used to display the status.*

"3" In Aud Group: Display the audio group embedded in the input video. For example, the"G1--G3--" indicates that there are audio Group 1and Group 3 embedded in input video.

Chapter 4 Specifications

SDI Video Input

Item	Parameter
Standards	SMPTE 259M-C, 270 Mbps，525/625 SDI Component
Impedance	75Ω termination
Return Loss	>18dB to 360MHz
Connector	BNC (IEC169-8)
Equalization	Auto to 30dB@270 Mbps

SDI Video Output

Item	Parameter
Standards	SMPTE 259M-C, 270 Mbps，525/625 SDI component
Connector	BNC (IEC169-8)
Impedance	75Ω
Return Loss	>18dB to 270MHz
Signal Level	800 mV ± 10%
DC Offset	0 V ± 0.5 V
Rise/Fall Time	400 to1500ps（20% to 80% of amplitude）
Overshoot	<10%
Jitter	<0.2 UI（740ps）Peak

Analog Composite Video Output

Item	Parameter
Standard	NTSC, PAL or PAL-M
Level	1Vp-p +/-3dB
Impedance	75 Ω
Connector	BNC(IEC169-8)
Return loss	>40 dB to 5 MHz
DC offset	0V±0.05 V
Frequency response	±0.2 dB to 5 MHz
Differential gain	<1%
Differential phase	<1.5°
Propagation delay	+/-10ns to 5 MHZ

DATA IN (for SMX6811NS8 and SMX6812NS8)

Item	Parameter
Input Impedance	75 Ω /high impedance (jumper selectable)
Input Sensitivity	500mV pk to pk (minimum value)
Input Cable Length	100 meter
Return Loss	<-20dB

Unbalanced AES Input (for SMX6811N8 and SMX6811NS8)

Item	Parameter
Connector	BNC(IEC 169-8)

Item	Parameter
Impedance	75Ω
Signal standard	AES 3：1992，AES3id：1995，SMPTE276M
Rise and Fall Time	30 to 44ns

Balanced AES Input (for SMX6812N8 and SMX6812NS8)

Item	Parameter
Connector	3-pin (male)
Impedance	110Ω
Signal standard	AES 3：1992，AES3id：1995，SMPTE276M
Rise and Fall Time	5 to 30ns

Power Consumption

Power: 3.25W; Positive Rail : 500 mA; Negative Rail : 10 mA

Note: Specifications are subject to change without notice

Chapter 5 Warranty for osee product

What the warranty covers:

osee warrants its products to be free from defects in material and workmanship during the warranty period of two year from purchase date. If a product proves to be defective in material or workmanship during the warranty period, osee will, at its sole option, repair or replace the product with a similar product. The replacement unit will be covered by the balance of the time remaining on the customer's original limited warranty.

No sales personnel of the seller or any other person is authorized to make any warranties other than those described above, or to extend the duration of any warranties on behalf of osee, beyond the time period describe above.

This warranty is extended to the first consumer only, and proof of purchase is necessary to honor the warranty. If there is no proof of purchase provided with a warranty claim, osee reserves the right not to honor the warranty set forth above. Therefore, labor and parts may be charged to the consumer.

What the warranty does not cover:

1. Any product, on which the serial number has been defaced, modified or removed.
2. Damage, deterioration or malfunction resulting from:
   - Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product
   - Repair or attempted repair by anyone not authorized by osee
   - Any damage of the product due to shipment.
   - Removal or installation of the product.
   - Causes external to the product, such as electric power fluctuations or failure.
   - Use of supplies or parts not meeting osee product's specifications.
   - Normal wear and tear.
   - Any other cause which does not relate to a product defect.