



SWIT ELECTRONICS CO., LTD.

BM-NDI® 4K Studio LCD Monitor

Model: BM-215NDI, 245NDI



User Manual

Thank you for choosing SWIT products, please read this user manual seriously before using

Ver: D

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Statement

- Any internal technology (including hardware, software design and product trademark) of the product shall be protected by law, and any infringement of intellectual property rights of the product shall be investigated for legal liability;
- All the brand and trademark in this product are protected by law, all other company's brand and trademark in this product are protected by their owner's law;
- In order to better service majority users, SWIT products will keep improving and developing, SWIT keep the right to revise and improve this user manual without previous notice;
- The warranty period of this product are two years, the following condition are not covered by the warranty:
 - (1) The appearance and the LCD panel are damaged by man-made out force;
 - (2) The amount of defective pixels are under three;
 - (3) The product is damaged by using incompatible power adaptor;
 - (4) The product is damaged by failure to use, maintain or storage according to the user manual;
 - (5) The product is disassembled by user in the process of using;
 - (6) Other faults or damages not caused by design ,technology,manufacture and quality.
- * Any sales person has no right to provide extra warranty beyond these terms
- Please feel free to contact with us by phone,fax or e-mail when you have any question or need any help in the process of using.

—— This user manual applies to all BM-NDI model monitor,all the illustration take BM-215-NDI for example,any difference of specification or appearance,this manual will be attached text explanation;

Attention

Warning

1. Do not put the monitor in rainy or wet environment to avoid the dangerous of fire or electric shock;
2. Do not put the monitor close to any device with high-intensity magnetic.

Warning of power connection

1. Please using original power adaptor to avoid damage;
2. When using other DC power ,make sure the range of voltage,output power and polarity of it meet requirements;
3. Please cut off the power including AC power cable or battery under below conditions:
 - (A) .If the monitor will not be used for along time.
 - (B) .If the power cable or power socket is damaged.
 - (C) .If the housing of the monitor is broken by out-force or falling.

Warning of using

1. Do not touch the surface of screen directly to avoid damage,also the fingerprint on the screen will be hard to clean.
2. Do not put pressure on the LCD screen because LCD screen is fragile;
3. Do not put the monitor on anywhere unstable to avoid falling.

Maintenance and cleaning

1. Use soft dry cloth and LCD screen clean liquid to clean the dust and stain on the screen.
2. Do not put pressure on LCD screen when doing cleaning.
3. Do not clean the LCD screen by water or other chemical liquid to avoid damage.

Packing list

No.	Standard accessories	Quantities
1	Monitor	x 1
2	Battery plate (V-mount or Gold-mount)	x 1
3	Monitor stand	x 2
4	Power cable	x 1

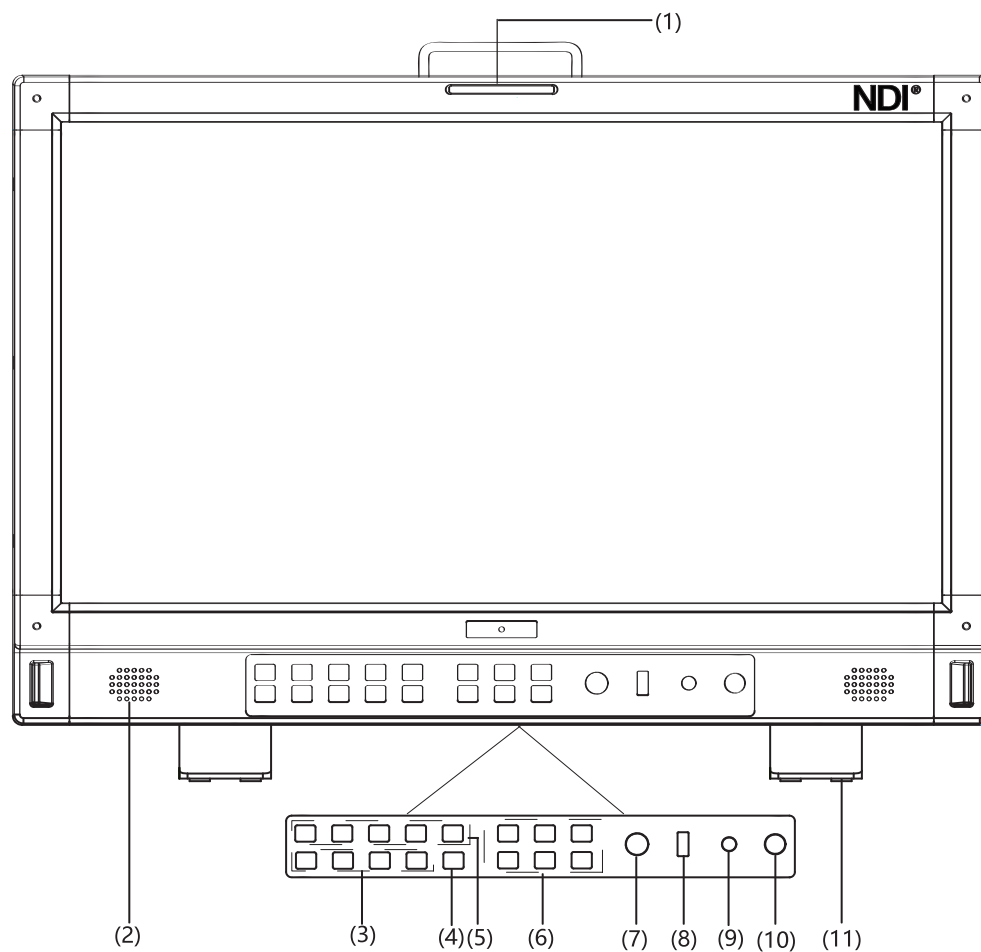
Overview

The resolution of BM-NDI series LCD monitor is up to 1920*1080, H178°/ V178° super wide angle of view, support 2* 3G/HD/SD-SDI input、1* HDMI 2.0 input and 1* NDI input, 1* 3G/HD/SD-SDI loop out、1* NDI to SDI loop out, 1* 3.5mm jack input and speaker.

Product feature

- 1920×1080 HD resolution;
- Support NDI signal input、multi signal source input;
- Support PIP and PBP function;
- Support 16 channel embedded audio bar,any of two channel can be chosen to output;
- Waveform Y/Cb/Cr/R/G/B/RGB, support single line waveform;
- Support vector scope、R/G/B/Y histogram、red/blue focus assist;
- Support 3DLUT (17x17x17) Auto self-calibration;
- Safety Marker:4:3/13:9/14:9/15:9/16:9/1.85:1/2.35:1/2.39:1/2:1/User 1/User 2;
- Support USB firmware update and LOG file uploading (The format of USB driver should be FAT 32) ;
- Supports remote configuration through the Web UI.
- Support 4kp30 Full NDI.

• Front panel view



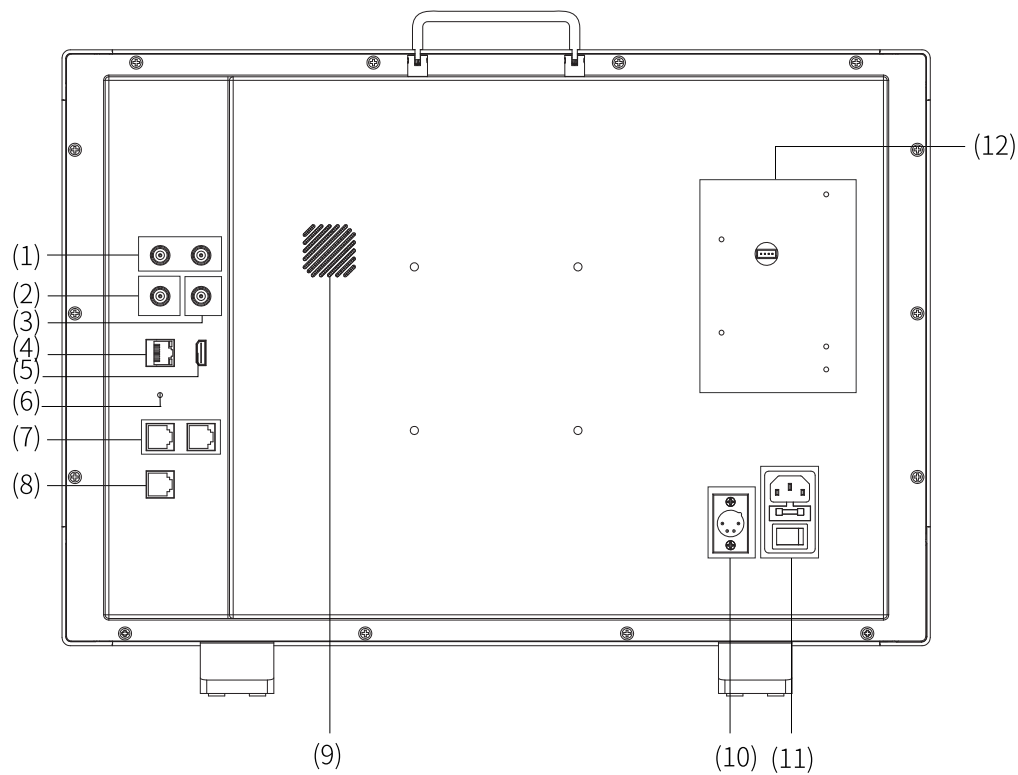
- (1) Tally light: Can be set to red、green and yellow;
- (2) Speaker: Can play embedded audio of HDMI、SDI and NDI. (Speaker will not work when earphone is connecting) ;
- (3) User1~User4: In order to quickly enter in the mode which was preset already . Long press to save user setting. Refer to " IX. System setting" for details.
- (4) INFO: Press "INFO" to remove or recover all current function in display like status information and A/V analyzed pattern; Press "INFO" to exit menu when the menu is on;
- (5) F1~F5 Function key: User can set these function key to different function according to their requirement;

(6)

<div><div>Brightness</div><div>Contrast</div><div>Saturation</div><div>Backlight</div><div>Volume</div><div>Source</div></div>	<p>Brightness: Brightness control,Range:-100~100, Default value:0</p> <p>Contrast: Contrast control,Range:-100~100, Default value: 0</p> <p>Saturation: Saturation control,Range:-100~100, Default value:0</p> <p>Backlight: Backlight control,Range:0~100, Default value:16</p> <p>Volume: Volume control,Range:0~100, Default value:36</p>
<p>Press “Brightness”、“Contrast”、“Saturation、Backlight”、“Volume” on the front panel to choose corresponding functions,turn “MENU” knob left and right to control the corresponding value。</p>	
<div><div>Source</div><div>NDI</div><div>HDMI</div><div>SDI1</div><div>SDI2</div><div>Multiview</div></div>	<p>Source: Input signal source selection</p>

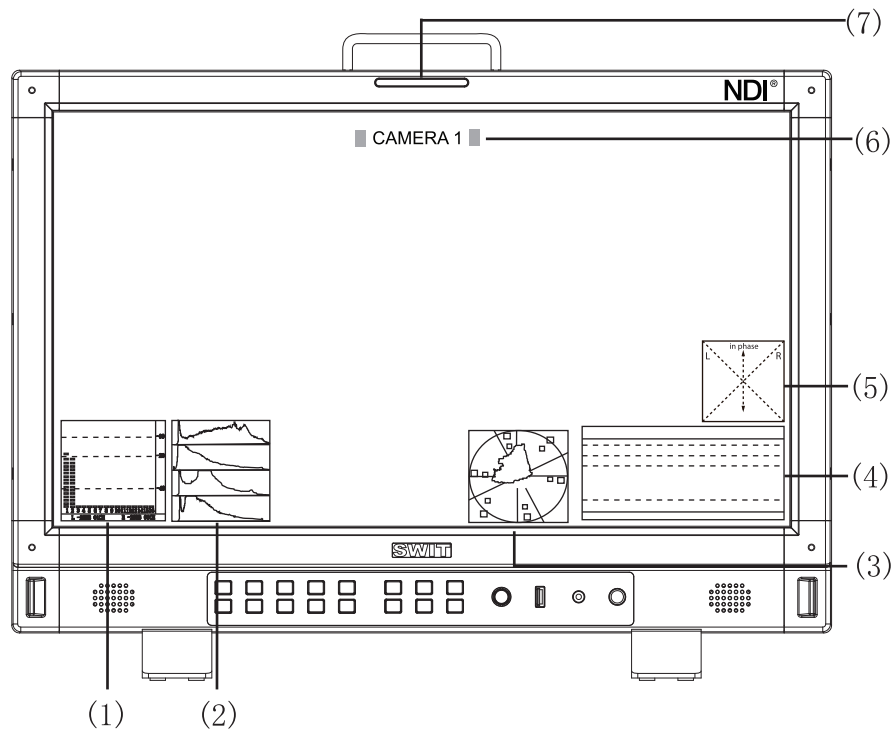
- (7) Menu/Enter:When menu is off,press the button directly to open the Main Menu; rotate “MENU” to choose different setting selection or adjust the value;press the knob to confirm the setting;
- (8) LUT/Firmware:Firmware update or LUT file upload;
- (9) PHONE:3.5mm jack input, monitor the embedded signal of NDI、SDI and HDMI;
- (10) Power:power switch.
- (11) Desktop stand feet ;

• Back side view



- (1) SDI IN1/2: 3G-SDI Input.
- (2) NDI to SDI out: 3G-SDI to NDI output.
- (3) SDI loop: 3G-SDI loop out.
- (4) NDI ETHERNET: 100M/1G/10G.
- (5) HDMI IN 2.0: 3G HDMI Input, will not show the content protected by HDCP.
- (6) Reset: For resetting the monitor.
- (7) RS485: TSL UMD control port.
- (8) GPI: GPI control port.
- (9) Fan.
- (10) DC IN: 12V~17V.
- (11) AC IN: 100V~240V.
- (12) Battery plate: Support V-mount battery or Gold-mount battery.

• OSD



(1) Audio meter

For monitoring audio information, users can enable/disable this function by setting the shortcut key (F1-F5) on the front panel as "audio table" or the GPI pin as "audio table". Audio table display position, display channel number, transparency and other related parameters, in the audio Settings sub-menu to set.

(2) Histogram

Users can enable or disable this function by setting the shortcut key (F1 to F5) on the front panel to "Histogram" or the GPI pin to "Histogram".

(3) Vector scope

Users can set the shortcut key (F1-F5) on the front panel as "Vector image" function or the GPI pin as "vector image" function to enable/disable this function. The display position, color, transparency and other related parameters of vector image can be set in the "Vector Image Settings" submenu.

(4) Waveform

The shortcut key (F1-F5) on the front panel can be set as "Waveform" or the GPI pin can be set as "Waveform" to enable or disable this function. If different types of waveform are set, the parameters of waveform, such as position, transparency, and color, can be set in the "Waveform Settings" submenu.

(5) Lissajous pattern

Lissajous diagram showing audio signals. Users can enable or disable this function by setting the shortcut keys (F1-F5) on the front panel as Lissajous diagram or the GPI pin as Lissajous diagram.

(6) Source name/UMD

Displays the source name/UMD (TSL3.1/4.0), which the user can set in the UMD submenu.

(7) TALLY Light

Display the signal of Tally through GPI control.

• Status

Main Menu		Status	
Exit&Status	>	Format	XX (1)
Input	>	Channel	XX (2)
Picture	>	Color Temp	XX (3)
Color Management	>	F1	XXX (4)
Control	>	F2	XXX
Assist	>	F3	XXX
De-embed	>	F4	XXX
Auto Calibration	>	F5	XXX
NDI Source	>	Loaded Profile	XX (5)
NDI Settings	>	Network	XX (6)
Multiview Setting	>	Version	XX (7)
System	>	Model	XX (8)

Press “Menu/Enter”, the menu will show in the top left corner of screen, “Exit & status” will show current working status of monitor.

(1) Format

Display the current input signal system; If there is no identifiable signal input, no signal is displayed. When the current channel is selected as an NDI channel, the input signal system of the NDI channel is displayed. Other FULLNDI and NDI/HX that are not supported will show “not supported”.

(2) Channel

Show current chosen input source.

(3) Color temp

Show current color temperature.

(4) Function Key F1~F5

Show the function of Key F1~F5.

(5) Loaded Profile

Show current user mode.

(6) Network

Show the connection status of Internet. (Link down/100M/1G/10G)

(7) Version

Show version of current firmware .

(8) Model

Show the model of this monitor.

Operation

Steps

1. Press “Menu/Enter” knob, the menu will show on top left corner of screen.
2. Turn “Menu/Enter” left and right to choose different sub-menu, the chosen one will show yellow backlight, press “Menu/Enter” knob to set the corresponding parameter.
3. Turn “Menu/Enter” knob left and right to set corresponding parameter, press “Menu/Enter” knob, the chosen one will show yellow backlight.
4. Turn “Menu/Enter” knob left and right to set corresponding parameter, press “Menu/Enter” knob to save the setting after finish adjustment.
5. Turn “Menu/Enter” knob to choose “EXIT”, press “Menu/Enter” knob, exit the sub menu, choose “EXIT & STATUS” in the main menu, press “Menu/Enter” knob to exit main menu.

Attention

- * The options which shown grey can not be set.
- * The menu will save and exit automatically when no operation is performed within a period of time.
- * If the key lock function is enabled, all other items are displayed in gray except system Settings. If you want to adjust any items, please set the key lock function to "Off" first.

The menu content

“The menu content” will introduce the specific contents of setting in menu and sub-menu, the menu option which is noted with “*” will be explained in detail under the list.

Input—Set the color of input video

Menu option	Instruction	The range of value
Input range *1	Set the input range of video	0-1023, 4-1019, 64-940, 64-1023
YUV Color Matrix	Choose YUV Color Matrix	Auto, BT.601, BT.709, BT.2020
Red Gain	Adjust the value of Red Gain	-100 ~ +100
Green Gain	Adjust the value of Green Gain	-100 ~ +100
Blue Gain	Adjust the value of Blue Gain	-100 ~ +100
Red Bias	Adjust the value of Red Bias	-100 ~ +100
Green Bias	Adjust the value of Green Bias	-100 ~ +100
Blue Bias	Adjust the value of Blue Bias	-100 ~ +100
Reset	Reset the value of Gain and Bias	/

*1 Input range

Set the input range to compatible with input video signal, the default input range is 64-940 which is compatible with broadcast application program.

Picture *1—Set the display of input video

Menu option	Instruction	The range of value
Contrast	Adjust the contrast of video	-100 ~ +100
Brightness	Adjust the brightness of video	-100 ~ +100
Saturation	Adjust the saturation of video	-100 ~ +100
Sharpness	Adjust the sharpness of video	0 ~ +100
Backlight	Adjust the backlight of video	0 ~ +100

*1 Picture

The value of “Contrast”, “Brightness”, “Saturation”, “Sharpness” and “Backlight” can be quickly adjusted by the shortcut key on the front panel.

■ Color management—Set the color of input video

Menu option		Instruction	The range of value
Color Gamut *1		Set the Color Gamut	LCD Panel, DCI-P3, Rec.709, Rec.2020
Gamma		Set the value of Gamma	1.0, 1.8, 2.2, 2.4, 2.6, PQ1000, HLG1000, S-Log3
These option will only show under the value of specific Color Gamut and Gamma	HLG System Gamma *2	Set HLG System Gamma	1.0,1.1,1.2 (default) ,1.3,1.4,1.5
	D-Log to 709 *3	Set the camera LUT when Color Gamut is Rec 709.	OFF, J-Log1, Log-C, S-Log2, C-Log, V-Log, RedLogFilm, S-Log3, User-Log
	D-Log to PQ	Set the camera LUT when Color Gamut is Rec.2020, Gamma is PQ1000	OFF,ARRI_LogC_PQ,Canon_CLog2Cin_PQ, Canon_CLog3Cin_PQ, Panasonic_VLog_PQ, RED_L3G10_PQ, Sony_SLog3_Cin_PQ, Sony_SLog3_SG3_PQ
	D-Log to HLG	Set the camera LUT when Color Gamut is Rec.2020, Gamma is HLG1000	OFF,ARRI_LogC_HLG,Canon_CLog2Cin_HLG, Canon_CLog3Cin_HLG, Panasonic_VLog_HLG, RED_L3G10_HLG, Sony_SLog3_Cin_HLG, Sony_SLog3_SG3_HLG
Color temp		Set the value of color temperature	2000K~10000K, D55,D65,D75,D93,USER1,USER2
Color temp(USER)		Set the value of color temperature (USER)	2000K~10000K, D55, D65, D75, D93
Red Gain		Adjust the value of Red Gain(USER)	-100 ~ +100
Green Gain		Adjust the value of Green Gain(USER)	-100 ~ +100
Blue Gain		Adjust the value of Blue Gain(USER)	-100 ~ +100
Red Bias		Adjust the value of Red Bias(USER)	-100 ~ +100
Green Bias		Adjust the value of Green Bias(USER)	-100 ~ +100
Blue Bias		Adjust the value of Blue Bias(USER)	-100 ~ +100
Import*4		Choose the cube file which need to be imported	None, 3DLut.cube

*1 Color Gamut

Set the Color Gamut to match with input video.

*2 HLG System Gamma

Only adjustable when Gamma is HLG1000

*3 D-Log to 709

Only adjustable when Color Gamut is Rec.709 and Gamma is between 1.0, 1.8, 2.2, 2.4, 2.6

*4 Import

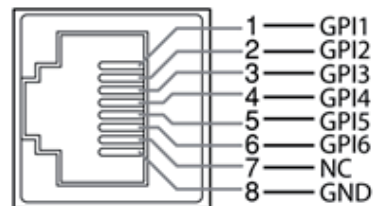
Put the cube file in the root of USB driver, connect USB driver with the monitor via USB interface on the front panel,choose and import corresponding file in the menu.

■ Control-Monitor control TALLY/GPI/UMD Control

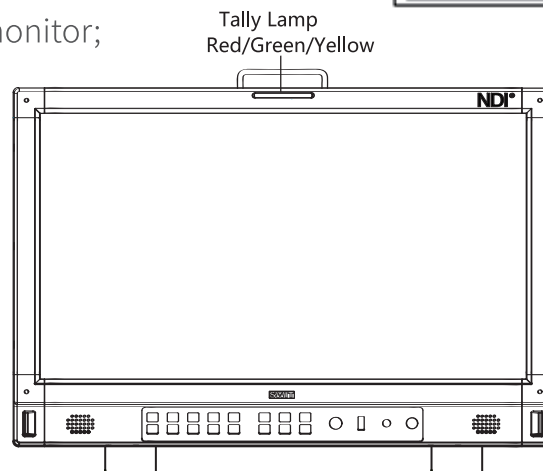
Menu option	Instruction	Selection
GPI control *1	Enable/disable GPI Countrol	OFF, ON
GPI 1Pin	Set the function of each pin of the GPI terminal	SDI1、SDI2、HDMI、NDI、Red Tally、Green Tally、Yellow Tally、Marker、Waveform、Blue Only、Audio Bar、Vector、Histogram、Lissajous
GPI 2Pin		
GPI 3Pin		
GPI 4Pin		
GPI 5Pin		
GPI 6Pin		
F1	Set the control function of the function key	Waveform, Marker, Blue only, Audio Bar, Vector, Histogram, Lissajous
F2		
F3		
F4		
F5		
UMD *2	Turns UMD display on or off	OFF, ON
UMD Color	Set the color of UMD character	White, Red, Green, Blue, Black, Gray
UMD Position	Set the position of UMD character	Top, Bottomn
UMD Size	Set the size of UMD character	Large, Small
UMD Blending	Set the transparency of UMD backgroud	OFF, LOW, HIGH
Display Type	Show source ID or UMD	Source ID, UMD
Baud Rate	Default value is 115200	115200, 8, n, 1
RS485 Address	Set RS485 address	1~126
Source ID	Set displaying Source ID	A-Z, a-z, 0-9, [\]^_`{ }~@?>=<.,/.-+*()’&%\$#’ ’ !

*1 GPI control

Connect to the GPI remote control terminal through the GPI port on the rear panel of the monitor, turn on GPI Control, and set the function of GPI 1-6.

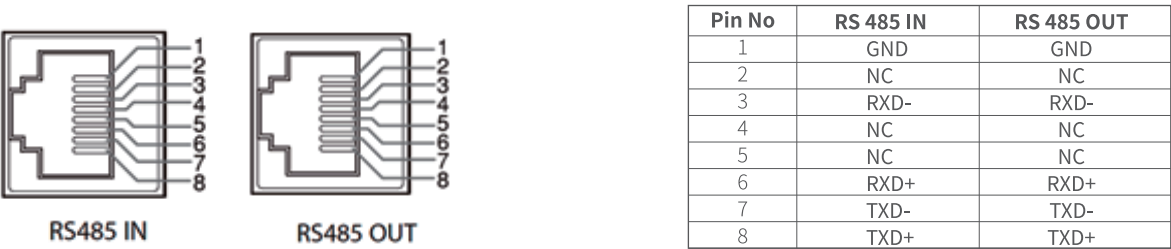


GPI controls Tally lights on monitor;

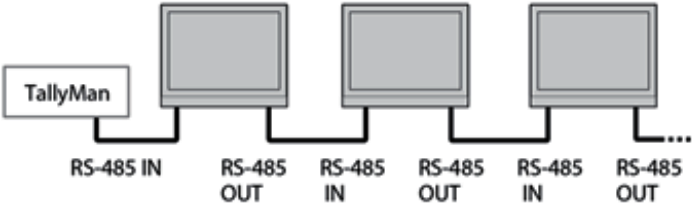


*2 UMD

If the display type is set to UMD, TSL UMD can be used for control. When dual screen is selected, the UMD of screen 1 and screen 2 can be displayed separately.



concatenation :



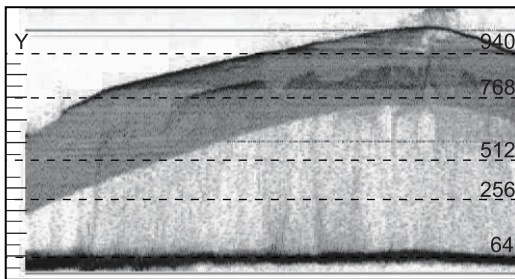
Assist

Menu option		Instruction	Selection
False color		Switch on/off false color function	OFF,ON
Blue only		Switch on/off Blue only function	OFF,ON
Focus assist		Switch on/off Focus assist function and choose the color of it.	OFF,Blue,Red
Zebra		Switch on/off Zebra function	OFF,ON
Waveform Setting	Waveform	Switch on/off waveform function	OFF,ON
	WFM Type	Set the type of Waveform	Y, Cb, Cr, R,G,B, RGB
	WFM Position	Set the display position of Waveform pattern	Bottom left,Bottom right,Top left,Top right
	WFM Blending	Set the transparency of the background of Waveform pattern	OFF,LOW,HIGH
	WFM Bright	Waveform background color	MEDIUM, LOW,HIGH
	WFM Color	Set the color of the Waveform	White,Green,Color
	WFM Single Line*1	Switch on/off Single line Waveform function	OFF,ON
	WFM Line Count	Adjust to show Waveform of specific lines	1-1080
Vector Setting	Vector	Switch on/off Vector function	OFF, ON
	Vector Position	Set the display position of Vector pattern.	Bottom left,Bottom right,Top left,Top right
	Vector Blending	Set the transparency of the background of Vector pattern .	OFF,LOW,HIGH
	Vector Bright	Sets the brightness of the background color of the vector image	MEDIUM, LOW,HIGH
	Vector color	Set the color of Vector pattern	White,Green,Color
CIE	CIE	Turn on or off the color gamut	OFF,ON
	CIE Position	Adjust the display position of the color gamut on the screen	Bottom left,Bottom right, Top left,Top right
	CIE Blending	Sets the transparency of the background color of the Color gamut	OFF,LOW,HIGH
	CIE Bright	Sets the brightness of the background color of the Color gamut	MEDIUM, LOW,HIGH
	CIE color	Sets the color of the Color gamut	White,Green,Color

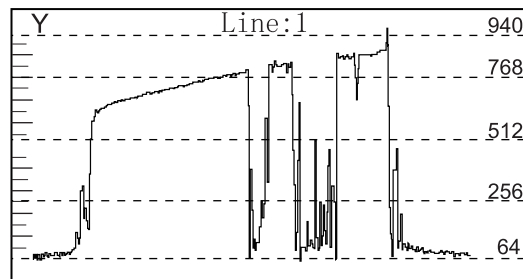
Histogram setting	Histogram	Switch on/off Histogram pattern	OFF,ON
	Histogram Position	Set the display position of Histogram pattern	Bottom left,Bottom right,Top left,Top right
	Histogram Blending	Set the transparency of the background of Histogram pattern	OFF,LOW,HIGH
Marker setting	Marker	Switch on/off Marker function	OFF,Marker,Safety zone,All
	Marker Select	Set the ratio of Marker	16:9, 15:9, 14:9, 13:9, 4:3, 2.39:1, 2.35:1, 2:1, 1.85:1, USER 1, USER 2
	Safety area	Set the ratio of Safety area	80%~99%
	Fit Marker	Switch on/off Fit Marker function	OFF,ON
	Center Marker	Switch on/off Center Marker function	OFF,ON
	Marker Color	Set the color of Marker	White,Red,Green,Blue,Black,Grey
	Marker Type	Set the type of Marker	Type 1, Type 2
	Marker Outside	Switch on/off Marker Outside function and change the color.	OFF,Black,Grey

*1 WFM Single line

Switch on “WFM Single line” function,Monitor only show one line waveform of video.Turn “Menu/Enter” knob left and right to choose the number of waveform lines. (The selected range of waveform lines depends on the current signal format.)



WFM Single Line: OFF



WFM Single Line:ON

De-embed

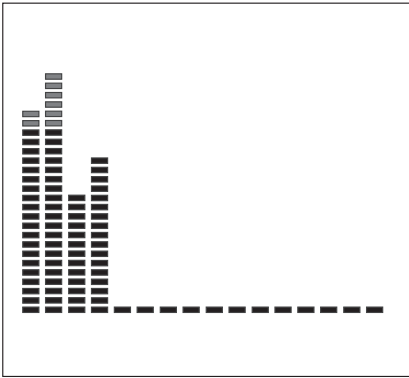
Menu option	Instruction	Selection
Lissajous	Switch on/off Lissajous pattern	OFF,ON
Lissajous Position	Set the display position of Lissajous Pattern	Bottom left,Bottom right,Top left,Top right
Audio Bar	Switch on/off Audio Bar function	OFF,ON
Bar Position	Set the display position of Audio Bar	Bottom left,Bottom right,Top left,Top right
Bar blending	Set the transparency of the background of Audio Bar	OFF,LOW,HIGH
Bar type*1	Set the type of Audio Bar	Type 1, Type 2
Left Channel	Select left input audio channel	Channel 1~16
Right Channel	Select Right input audio channel	Channel 1~16
Volume	Adjust the volume of audio signal	0~100

*1 Bar type:Audio bar show 16 channel

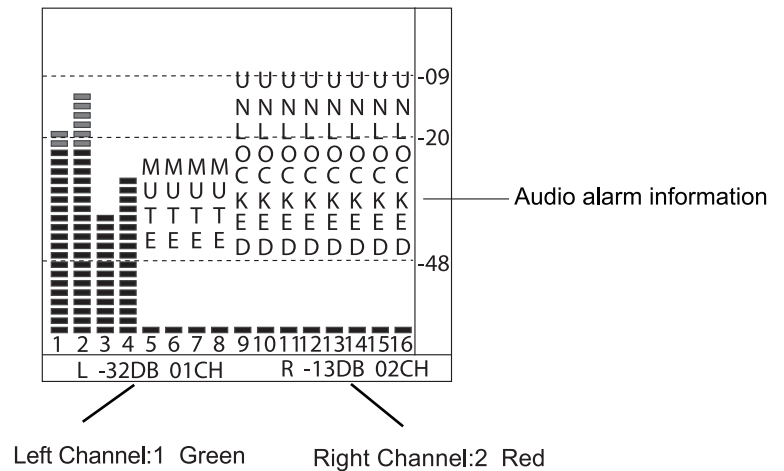
Type 1:Audio bar only.

Type 2:Show db value of audio signal, audio warning signal and right/left channel information

Type 1



Type 2



■ Auto Calibration*1

Menu option	Instruction	Selection
Probe Select*2	Select the calibrator	X-rite I1 Pro OEM, Jeti Specbos 1211
Start Calibration*3	Start to calibrate or not	NO/YES
Measurement*4	Test current color	NO/YES

*1 Auto Calibration

Monitor internally installed 3DLUT Calibrate software, support to directly connect with below calibrator via USB interface on the front panel.

When start to calibrate, calibrate probe will read the standard color created by monitor and upload the result to monitor via USB interface.

Monitor will compare the color which created by calibrate probe with standard color and create a 3D LUT file and finish calibrating automatically.

*2 Probe Select

This monitor support below kinds of calibrate probe:

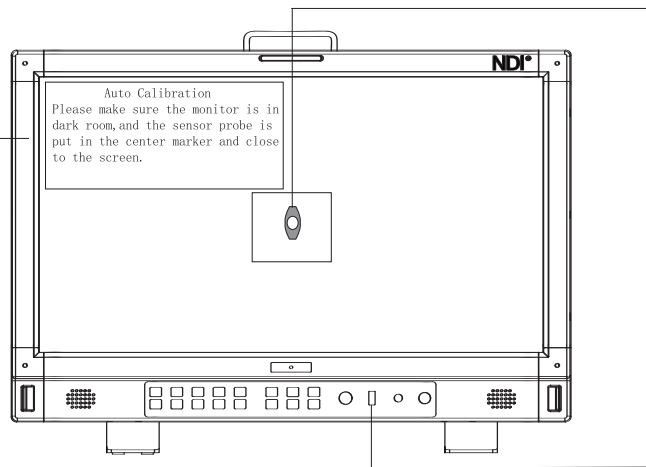
Brand	Model
X-rite	I1 Pro OEM
JETI	Specbos 1211

*3 Start Calibration

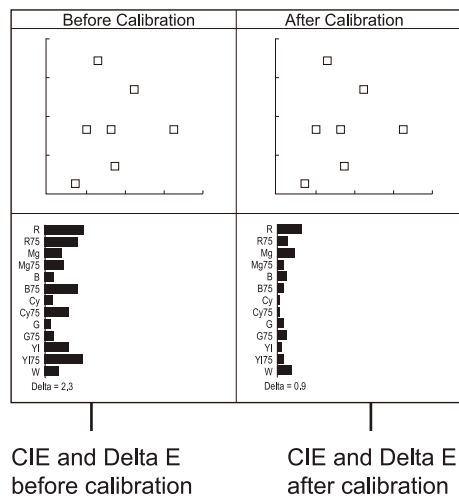
Steps:

1. Switch on monitor.
2. Connect Calibrator with monitor via USB interface on the front panel (Compatible with X-rite and JETI). Make sure monitor and calibrator is in good condition and the aging time of monitor is over 30 minutes.
3. Before the calibration, please choose "System" - "Recall Profile" - "Factory" to recall your monitor, then choose "Auto Calibration" - "Probe Select" - "X-rite I 1 pro OEM".
4. Select "Start Calibration" - "YES" to start calibrating. Monitor will show into box and calibrate position hint box, make sure the lens of calibrator is forward to the calibrate position hint box. Do not push the LCD screen when setting the calibrator.

Auto Calibration
Please make sure the monitor is in dark room, and the sensor probe is put in the center marker and close to the screen.
Select MENU to start!
MENU:OK INFO:Quit



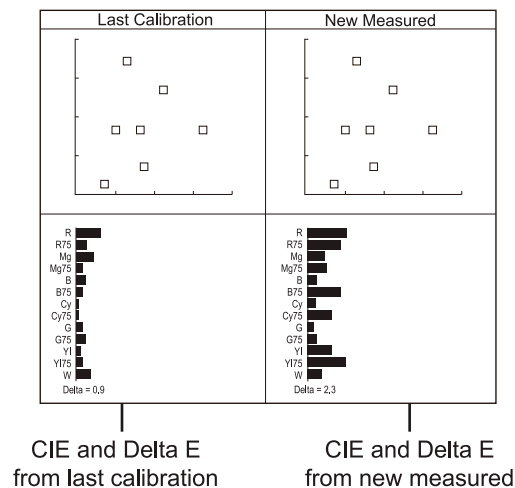
5. Select “OK” to do auto-calibration. Calibrator will measure the color of screen and calibrate the screen automatically, please pay attention to the progress bar.
6. When the calibration is finished, press “INFO” to switch off the menu and use normally.
7. The screen will show the Delta value before and after calibration, shown as below:



*4 Measurement

Monitor have calibrated in factory already but also need to re-calibrate after a period of time using. Before re-calibrating, “Measurement” function will show Delta value of last time calibration, user can decide to calibrate or not from comparing the Delta value.

Before the measurement, please choose “System” - “Recall Profile” - “Factory” to recall your monitor, Connect your probe with the monitor and put it on the right position, choose “Auto Calibration” - “Measure”, monitor will do auto measurement and finished in 30 seconds. The Result is as follows:



■ NDI Source

Menuitem	Menu Description	Selection
Page	Page turning	1/2
QC1141*1	Name of NDI device	Page, Test Pattern*2

*1 and *2 NDI Device name and NDI source name

The monitor automatically scans the local network and displays all public NDI sources. Select the NDI device name from the first-level Menu and the NDI source name from the second-level Menu. Press Menu/Enter to select the corresponding NDI source signal. The currently selected device and signal name are represented by an asterisk (*).

■ NDI Setting

Menuitem	Menu Description	Selection
Discovery Sever*1	Switch on/off Discovery server function	ON/OFF
Sever IP*2	Show the IP address of Discovery server	192.168.1.200

1 Discovery Sever

In the Discovery Server module, enter the IP address of the server whose Discovery Server service is enabled to register the NDI monitor with the server. If the device that sends the NDI source is also registered with the server, the NDI monitor can detect the NDI source sent by the device.

*2 Sever IP

The button between "Off" and "on" controls the Discovery Sever function on and off. When the button is selected as "Off", the Sever IP below will not be displayed. If the button is "On", 192.168.1.200 is displayed under the server IP by default. Enter the IP address of the server you want to connect to (the server must have Discovery Server enabled).

■ Multiview Setting

Menu option	Instruction	Selection
Multiview Type*1	Set the type of Multiview function	PBP,PIP
PIC 1 *2	Set the signal channel of Multiview function	SDI1, SDI2, HDMI,NDI
PIC 2		
PIP Window Position	Set the Position of PIP on screen	Bottom left,Bottom right,Top left, Top right,Center
Border	Set the border of PIP function	ON, OFF

*1 Multiview Type

“Multiview Setting” is available when signal channel is Multiview,otherwise “Multiview setting” will show grey and unavailable;

Part of menu function will be disabled when signal channel is Multiview.

*2 PIC 1、PIC 2

When signal channel is “Multiview”, “PIC 1” and “PIC 2” can not show SDI1 and SDI2 in the same time.

System

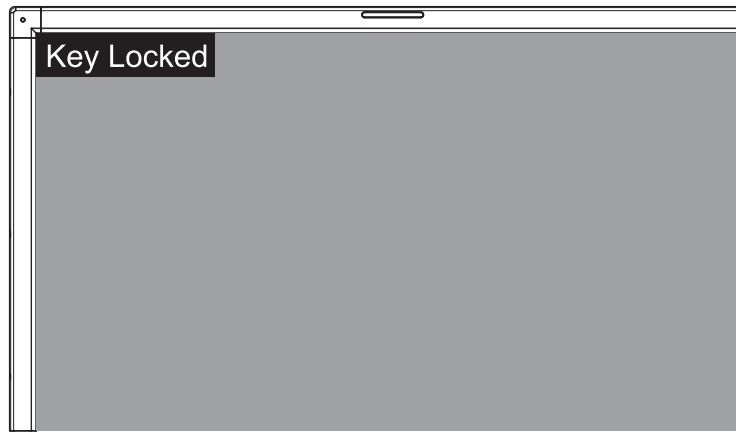
Menu option	Instruction	Selection
Key Lock *1	Set key lock function	OFF,Lock All,Lock Rotary Knobs, Lock Key Buttons
Recall Profile *2	Select current Mode	Factory, USER1~USER4
Save Profile	Save current setting to one of USER setting	USER1~USER4
Green Mode*3	Set the display mode of Green Mode	Black Bcklight,Grey Backlight
Idle Duration	Set the stand-by time before switch on Green Mode	30s, 1hour, 2hour, 4hour, OFF
DHCP*4	Switch on/off DHCP Mode	ON,OFF
IP *5	Show current network information of monitor	192.168.001.200
Net mask		255.255.255.000
Gateway		192.168.001.001
OSD TIME	Set the lasting time of OSD	5~180s
Language	Select the operation language of monitor	中文(Chinese), English
System Reset	Reset all setting in the menu	NO/YES
Update *6	To do update for monitor	NO/YES

*1.Key Lock



When “Key Lock” function is “ON”, part of menu will be hidden,only “Menu” button is available, other button will be locked.

Screen will show “Key Locked” when the locking button is pressed,shown as below:



***2 Recall Profile/Save Profile**

Monitor supply 4 User setting, User can save current setting according to demand and habit to (USER1~USER4). After that, user only need to select “USER1~USER4” to show corresponding menu setting.

For example: Adjust “Color Temp” to 2200K, switch on assist function such as “Histogram”, set function key such as F1 to “Only Blue”, now save all these setting to “USER 1”, turn “Menu/Enter” to select “Recall Profile” - “USER 1”, monitor will change all setting to the setting which saved in “USER 1”.

***3 Green Mode**

If the monitor receives no identifiable signal and the time reaches the value of Idle time, it enters the energy saving mode, that is, green Color Mode setting state.

For example, if Power Saving mode is set to Black screen and Idle Time is set to 2 hours, the product channel has no identifiable signal.

***4 DHCP**

Connect monitor to the LAN with NDI IN/ETHERNET port in order to control monitor by website.

User can set IP/Net mask/Gateway manually to match their own Network segment when “DHCP” function is “OFF” in order to detect the NDI signal source in system.

***5 IP**

Show the IP address of Monitor.

***6 Update**

Firmware can be updated via USB port, update steps as below:

1. Update the latest firmware to the root of USB driver
2. Switch on monitor, connect your USB driver with monitor
3. Select “MENU” - “SYSTEM” - “Update”, the monitor will update automatically.
4. Monitor will reboot automatically after successfully updating.

UPDATE

Do you want to update now?
Select MENU to start !

MENU:OK

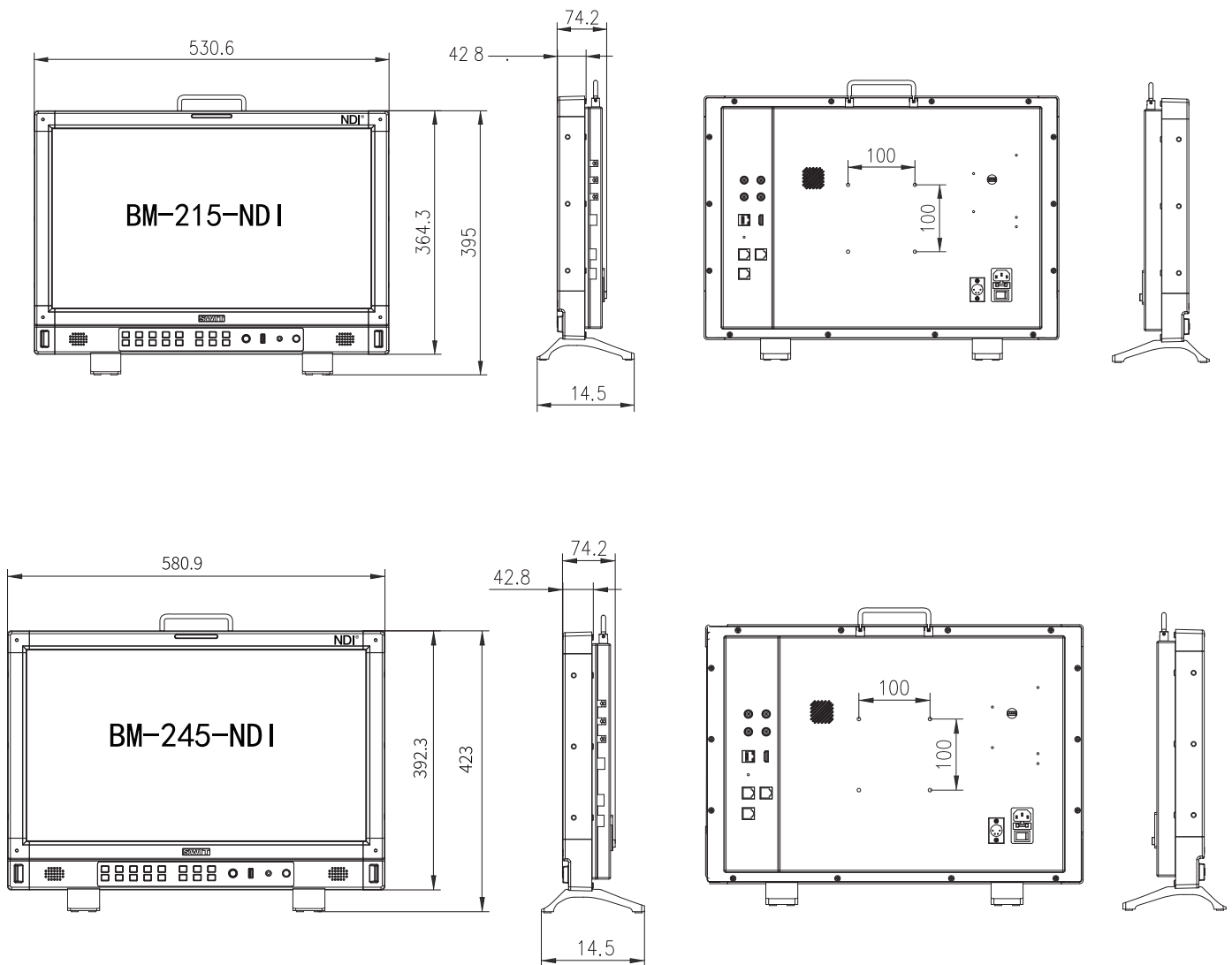
INFO: Quit

※Caution

- 1、Make sure only one firmware is copied to the root of USB driver one time.
- 2、Do not cut off the power when doing update.

Overall Dimension

Dimension (mm)



Specification

LCD Performance		
Model	BM-215-NDI	BM-245-NDI
Size	21.5 inches	23.8 inches
Display area	495.6×292.2mm	543.0×316.72mm
Resolution	1920×1080	1920×1080
Display color	8bit	8bit
Display ratio	16:9	16:9
Brightness	300 nits	400 nits
Contrast	1000:1	1000:1
Viewing angle	H/ V:178°/ 178°	H/ V:178°/ 178°
Input /Output		
Input	BNC×2	3G/HD/SD-SDI×2
	HDMI×1	HDMI Input
	RS-485×2	UMD×1
	GPI×1	
	USB×1	
	ETHERNRT/NDI	100M/1G/10G
Output	BNC×1	3G/HD/SD-SDI×1
	BNC to NDI×1	3G/HD/SD-NDI×1
	RS-485×1	UMD×1
Other specification		
Working voltage	AC:100V~240V	
	DC/Battery:12V~17V	
Power consumption	45W	
Working Temperature	0°C~+50°C	
Working Humidity	10%~90%	
Storage Temp	- 15°C~ + 60°C	
Storage Humidity	10%~90%	
Overall Dimension	530.6×364.3×74.2mm	580.9×392.3×74.2mm
Net weight (Only monitor body)	6.5KG	8.87KG

Supported format: Below signal format can be displayed on the monitor

No.	Format	Input terminal			Signal format shown in the Status Display as		
		SDI1/2	NDI	HDMI	SDI	HDMI	NDI
1	720×480/60I	✓	—	—	720*480I60	—	—
2	720×480/60P	✓	—	✓	720×480/60P	720*480P60	—
3	720×576/50I	✓	—	—	720×576/50I	—	—
4	720×576/50P	✓	—	✓	720×576/50P	720*576I50	—
5	1280×720/23.98P	✓	—	✓	1280×720/23.98P	1280*720P24	—
6	1280×720/24P	✓	—	✓	1280×720/24P	1280*720P24	—
7	1280×720/25P	✓	—	✓	1280×720/25P	1280*720P25	—
8	1280×720/29.97P	✓	—	✓	1280×720/29.97P	1280*720P30	—
9	1280×720/30P	✓	—	✓	1280×720/30P	1280*720P30	—
10	1280×720/50P	✓	✓	✓	1280*720P50	1280*720P50	1280*720P50
11	1280×720/59.94P	✓	✓	✓	1280*720P59.94	1280*720P60	1280*720P59.94
12	1280×720/60P	✓	✓	✓	1280*720P60	1280*720P60	1280*720P60
13	1920×1080/50I	✓	✓	✓	1920*1080I50	1920*1080I50	1920*1080I50
14	1920×1080/59.94I	✓	✓	✓	1920*1080I59.94	1920*1080I60	1920*1080I60
15	1920×1080/60I	✓	✓	✓	1920*1080I59.94	1920*1080I60	1920*1080I60
16	1920×1080/23.98PSF	✓	—	✓	1920×1080/23.98PSF	1920*1080PSF24	—
17	1920×1080/24PSF	✓	—	✓	1920×1080/24PSF	1920*1080PSF24	—
18	1920×1080/23.98P	✓	✓	✓	1920×1080/23.98P	1920*1080P24	1920*1080P24
19	1920×1080/24P	✓	✓	✓	1920*1080P23.98	1920*1080P24	1920*1080P24
20	1920×1080/25P	✓	✓	✓	1920*1080P25	1920*1080P25	1920*1080P25
21	1920×1080/29.97P	✓	✓	✓	1920*1080P29.97	1920*1080P30	1920*1080P30
22	1920×1080/30P	✓	✓	✓	1920*1080P29.97	1920*1080P30	1920*1080P30
23	1920×1080/48P	✓	—	✓	1920×1080/48P	1920*1080P48	—
24	1920×1080/50P	✓	✓	✓	1920*1080P50	1920*1080P50	1920*1080P50
25	1920×1080/59.94P	✓	✓	✓	1920*1080P59.94	1920*1080P60	1920*1080P59.94
26	1920×1080/60P	✓	✓	✓	1920*1080P59.94	1920*1080P60	1920*1080P60
27	2048×1080/23.98PSF	✓	—	✓	2048×1080/23.98PSF	2048*1080PSF24	—
28	2048×1080/24PSF	✓	—	✓	2048×1080/24PSF	2048*1080PSF24	—
29	2048×1080/25PSF	✓	—	✓	2048×1080/25PSF	2048*1080PSF25	—
30	2048×1080/29.97PSF	✓	—	✓	2048×1080/29.97PSF	2048*1080PSF30	—
31	2048×1080/30PSF	✓	—	✓	2048×1080/30PSF	2048*1080PSF30	—
32	2048×1080/23.98P	✓	—	✓	2048×1080/23.98P	2048*1080P24	—
33	2048×1080/24P	✓	—	✓	2048×1080/24P	2048*1080P24	—
34	2048×1080/25P	✓	—	✓	2048×1080/25P	2048*1080P25	—
35	2048×1080/29.97P	✓	—	✓	2048×1080/29.97P	2048*1080P30	—
36	2048×1080/30P	✓	—	✓	2048×1080/30P	2048*1080P30	—
37	2048×1080/47.94P	✓	—	✓	2048×1080/47.94P	2048*1080P50	—
38	2048×1080/48P	✓	—	✓	2048×1080/48P	2048*1080P48	—
39	2048×1080/50P	✓	—	✓	2048×1080/50P	2048*1080P50	—

No.	Format	Input terminal			Signal format shown in the Status Display as		
		SDI1/2	NDI	HDMI	SDI	HDMI	NDI
40	2048×1080/59.94P	✓	—	✓	2048×1080/59.94P	2048*1080P60	—
41	2048×1080/60P	✓	—	✓	2048×1080/60P	2048*1080P60	—
42	3840×2160/23.98P	—	✓	—	—	—	3840*2160P23.98
43	3840×2160/24P	—	✓	—	—	—	3840*2160P24
44	3840×2160/25P	—	✓	—	—	—	3840*2160p25
45	3840×2160/29.97P	—	✓	—	—	—	3840*2160P29.97
46	3840×2160/30P	—	✓	—	—	—	3840*2160P30
47	3840×2160/47.94P	—	—	—	—	—	—
48	3840×2160/48P	—	—	—	—	—	—
49	3840×2160/50P	—	—	—	—	—	—
50	3840×2160/59.94P	—	—	—	—	—	—
51	3840×2160/60P	—	—	—	—	—	—
52	4096×2160/23.98P	—	✓	—	—	—	4096*2160p23.98
53	4096×2160/24P	—	✓	—	—	—	4096*2160p24
54	4096×2160/25P	—	✓	—	—	—	4096*2160p25
55	4096×2160/29.97P	—	✓	—	—	—	4096*2160p29.97
56	4096×2160/30P	—	✓	—	—	—	4096*2160p30
57	4096×2160/47.94P	—	—	—	—	—	—
58	4096×2160/48P	—	—	—	—	—	—
59	4096×2160/50P	—	—	—	—	—	—
60	4096×2160/59.94P	—	—	—	—	—	—
61	4096×2160/60P	—	—	—	—	—	—

✓: Support

—: Nonsupport

※ 3G support level A/level B;support RGB444

Troubleshooting

Problem	Possible fault reasons	Solution
No video	Monitor have not switched on	Check the power connection of monitor,press “POWER” button on the front panel.
	Wrong input source is selected.	Press “Source” button to change the input source
	No NDI signal source is selected	Select NDI signal in “NDI source”
	Input voltage is not stable	Reconnect the power
	Signal cable loose/wrong connection	Check signal cable,make sure the signal cable connection is right
	The battery power is out of power when powered by battery	Change a new battery
	The polarity is reversed when using DIY power supply	Reconnect the cable refer to standard power supply
	The Network segment of monitor and NDI source is not same.	Make sure the segment of monitor and NDI source is same. Switch on “DHCP” function to assign the IP address automatically.
Abnormal Video or Color	Signal cable is in poor contact	Change a new signal cable
	Video signal interference	Remove interference sources
	Parameters of color is over adjust	Upload User mode to “Factory”
	Video is distorted	Reset the aspect ratio
	Video show all blue	Switch off “Blue only” function
	The “focus assist” function is “ON”	Switch off “Focus assist” function
	The “False Color” function is “ON”	Switch off “False Color” function
No audio output	Monitor is set to mute mode	Turn “MENU/ENTER” knob left and right to adjust volume
	Audio cable is in poor contact	Change audio cable
	Audio cable is disconnected or connect wrong.	Check and reconnect the audio cable
Can not calibrate properly		
	<p style="text-align: center;">Auto Calibration</p> <p>Failed! Err: 304 x-rite device error. Press INFO to cancel!</p> <p>MENU:OK INFO:Quit</p>	<ol style="list-style-type: none"> 1. Check whether the calibration probe is selected correctly; 2. Check whether the calibration probe is connected with Monitor via USB; 3. Check whether the calibration can be used normally.

Can not measure properly	<div>Measure</div> <div>Fai led! Err: 604 x-rite device error . Press INFO to cancel ! MENU:OK INFO:Quit</div>	<ol style="list-style-type: none"> 1. Check whether the calibration probe is selected correctly; 2. Check whether the calibration probe is connected with Monitor via USB; 3. Check whether the calibration can be used normally.
Can not update	<div>UPDATE</div> <div>Update fai led! Err: 501 'BM XXX -NDI_ _vx.x.XXx' File not found. Press INFO to cancel! MENU:OK INFO:Quit</div>	<ol style="list-style-type: none"> 1. Check whether the firmware is connected with monitor via USB 2. Check whether the firmware is right.
	The monitor web page url does not match	Enter the correct url for the monitor
	The file name for the monitor page upgrade is incorrect	Use the correct upgrade package (.img file)
Can not upload cube file.	<div>Import file</div> <div>3DLut . cube import failed! Err: 109 File not found. Press INFO to cancel ! MENU: OK INFO:Quit</div>	<ol style="list-style-type: none"> 1. Check whether the cube file is saved In the root of U-disk,make sure the cube file is right; 2. Check whether the U-disk is connected with monitor via USB; 3. Check whether the U-disk can be used normally.
Monitor resetting	<ol style="list-style-type: none"> 1.Switch off the monitor; 2.Find a suitable tool to hold the button (do not release it) ; 3.Press “POWER” to switch on the monitor, Tally shows red light (can release the reset button after tally shows red light, do not shut down the monitor when the tally light shows red light) ; 4. Monitor will reboot after reset; 5. After reboot,monitor will show current firmware version (shown as below) <div>Updates</div> <div>V12.7.23R</div> <div>MENU:OK INFO:Quit</div>	Reset may cause the Settings to be lost. You are advised to perform the reset operation under the vendor's guidance

Web Server

■ Login through wired network

Set the IP address of your computer and monitor to the same segment.

- 1) Set the IP address based on the IP address setting method of the Windows version.
- 2) Start the browser and write down the IP of your monitor to get into the webserver.
- 3) After getting into the “User Login”, enter the user name and password,the default user namer is “admin”,the default password is “admin”.



Fig.1

■ Network Setting

1. Choose “Network Setting” on the left side.
2. “Auto” or “Manual” can be selected for network access; There are two methods for Ethernet network access , one is DHCP access IP automatically,another one is manually setting.When use DHCP to access IP,make sure the DHCP serve of router or switcher is enabled,this way is more convenient,but the IP address is constantly changing,user can enter into the manage ment interface of Router and switcher to check the IP address of monitor.When using manual setting way,user need to assign an IP address to the device,the IP address is fixed unless restore factory setting(When DHCP is enabled,the IP address will be removed).User can choose according to their requirements.
3. Click “Apply” after entering IP address,Mask,Gateway;If the network access way is changing from “Auto” to “Manual”,user need to refresh the page to show previous “IP Address”、“Mask”、“Gateway” and “Mac”(See Fig.2).

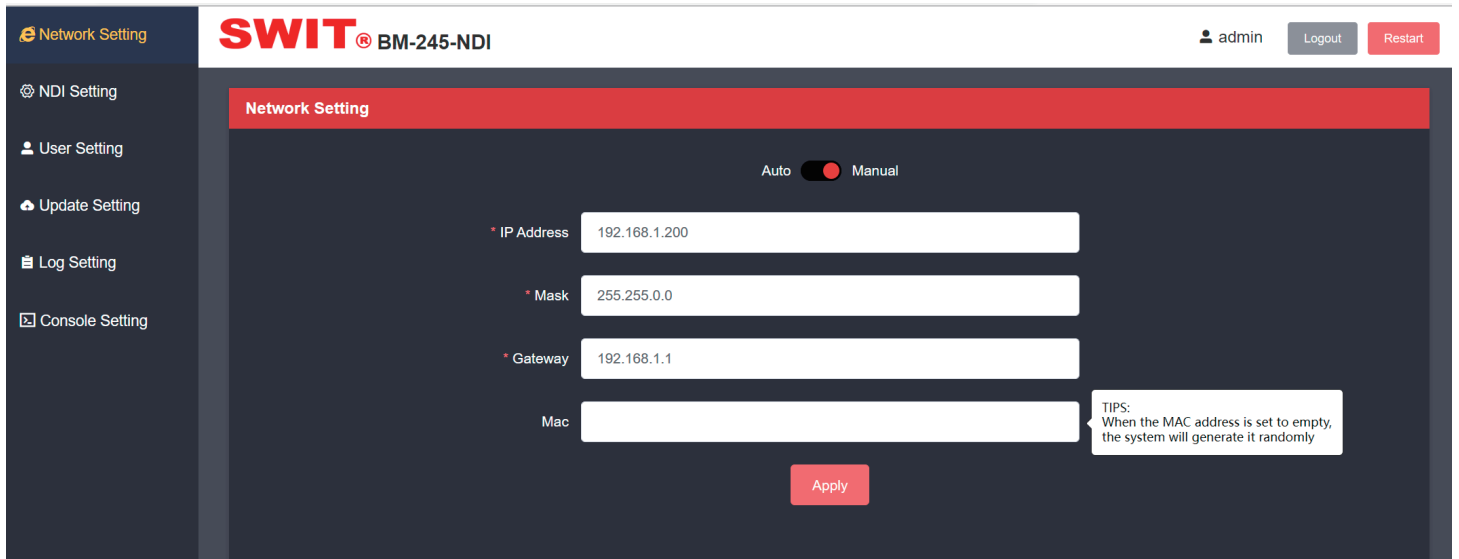


Fig.2

■ NDI Setting

Source:

1. Choose “NDI Setting” on the left side.
2. There are five parts in NDI Setting, which is Sources、Groups、Discovery Sever、External Sources、Machine Name。
3. In “Sources”, “The Currently Selected” show currently selected NDI source, “Device Name” show the name of NDI device, “Channel Name” show the source name in this NDI device;
4. When new NDI source is accessed, user can click “Refresh” to show the new NDI source, one NDI device can produce more than one source, so one NDI device can correspond to multiple NDI source names;
5. If multiple NDI sources exist, click The Switch button corresponding to the NAME of the NDI source. Click the Switch button to switch to the corresponding NDI source, and the green button on the right is on。
6. When switching to The current NDI source, The Currently Selected NDI source will be displayed with a gray background.
7. In the Search Search box, Search by the known NDI device name or NDI source name for quick Search. See Fig.3 below for details.

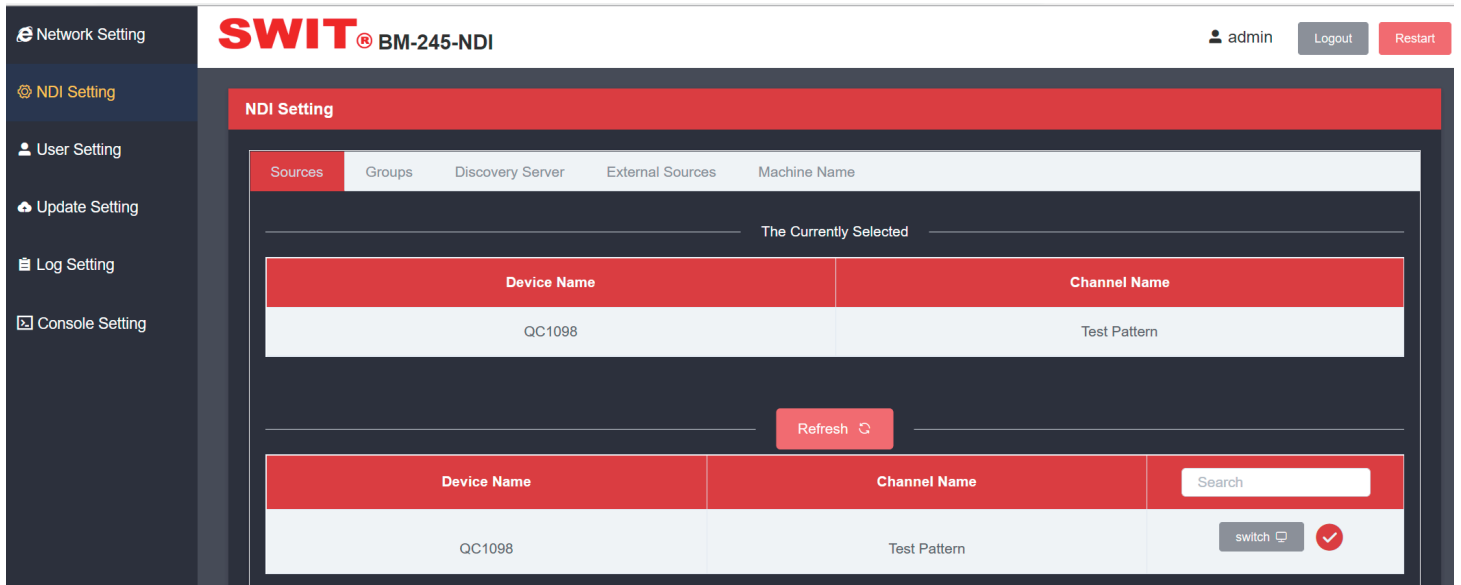


Fig.3

Groups:

- 1 . Choose “NDI Setting” on the left.
- 2 . In the Groups module, you can add, delete, and modify group names as required. The current NDI group name is displayed in the box below Groups.
- 3 . Click “Edit” to modify the current NDI group name. In the displayed dialog box, click “Delete” to Delete the current NDI group name.
- 4 . To add an NDI Group, click “New Group” . A confirmation window is displayed. Enter the Name of the Group you want to add in the "Groups Name" input box and click "OK".
- 5 . After the new NDI group name is confirmed, the new NDI group name is displayed in the box below Groups.
- 6 . In the Search box, you can Search for an NDI group based on the known NDI group name.
If the current group is empty, the Groups switch generates a Public group by default. See Figure 4 below for details . All changes to Groups must be made by hitting Apply.

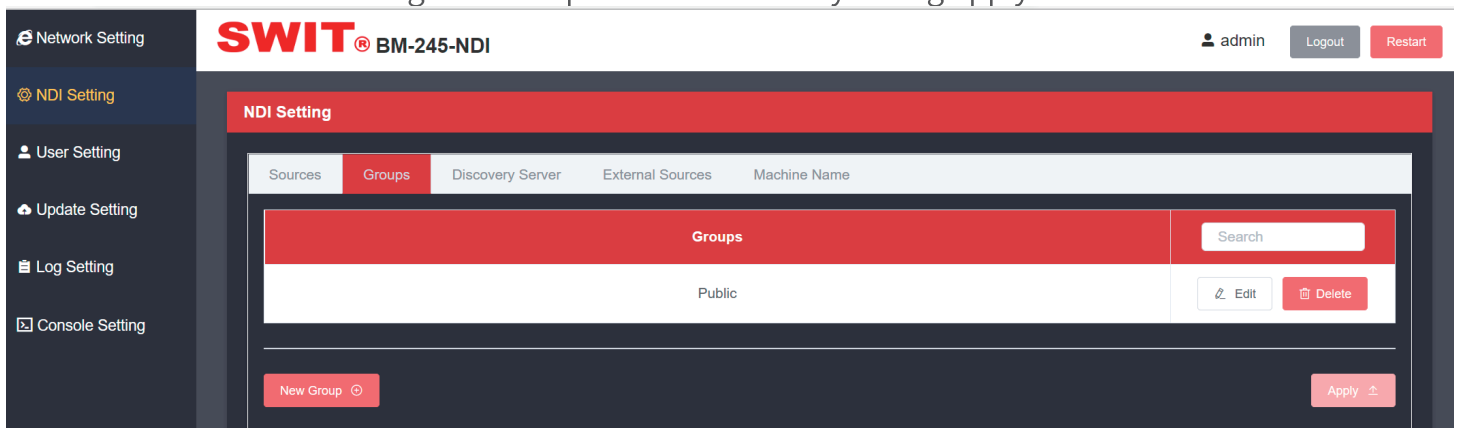


Fig.4

Discovery server:

1. Choose “NDI Setting” on the left side.
2. In the Discovery Server module, enter the IP address of the server whose Discovery Server service is enabled to register the NDI monitor with the server. If the device that sends the NDI source is also registered with the server, the NDI monitor can detect the NDI source sent by the device.
3. The button between "OFF" and "ON" controls the switch of Discovery Server functionality. If the button is set to OFF, IP cannot be entered in the IP address input box below.
4. When the above button is selected as "ON", you can enter the IP address input box below, enter the IP address of the server to be connected (the server must have Discovery Server service enabled), and click "Apply". See Fig. 5 below for details.

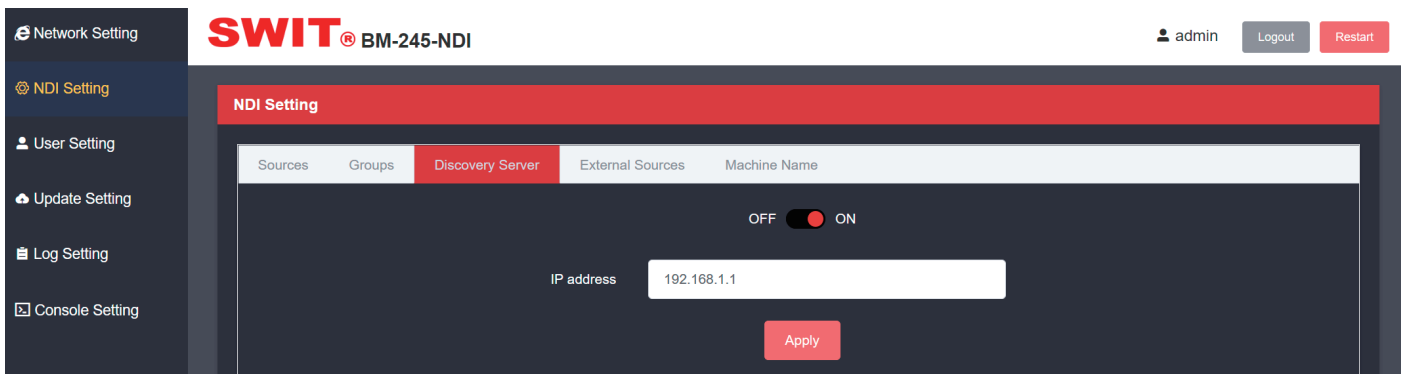


Fig.5

External Sources:

1. Choose “NDI Setting” on the left side.
2. In the External Sources module, add corresponding IP addresses to obtain NDI Sources sent by device on different subnets or solve other local discovery problems.
3. You can add, delete, and modify IP addresses in “IP Address”. The current IP Address is displayed in the box below the IP Address. You must click Apply to make the Settings take effect.
4. To add an NDI group, click “New External Source” to add an IP Address. A confirmation dialog box is displayed. In the IP Address text box, enter the DESIRED IP Address and click OK. After adding an IP address to “External Source”, restart the NDI monitor to display the detected NDI sources. See Fig. 6 below for details.

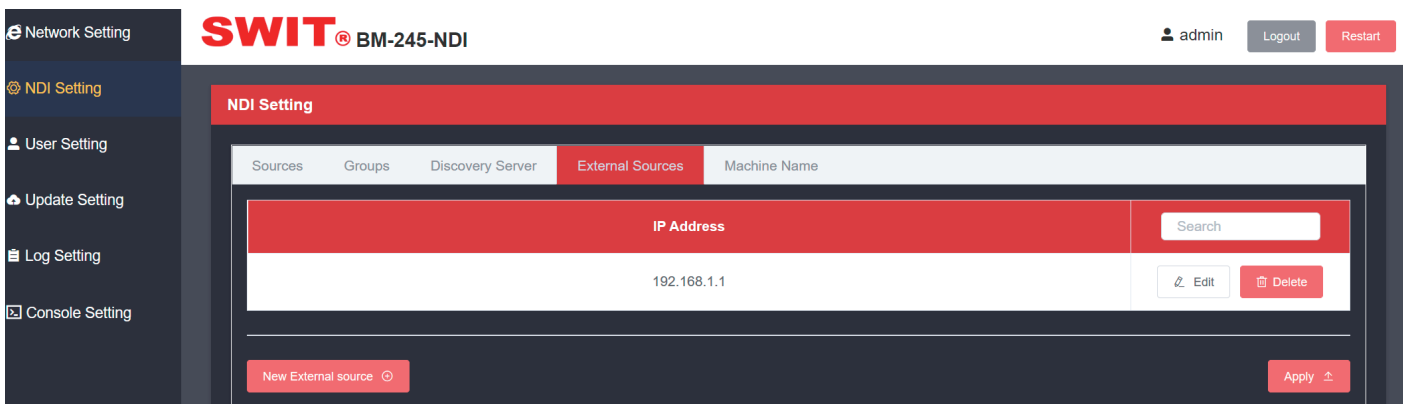


Fig.6

Machine Name:

1. Choose "NDI Setting" on the left side.
2. In the Machine Name module, the default NDI monitor Name is BM-245-NDI.
3. You can change the device name according to your requirements and click "Apply" to modify it successfully. See Fig. 7 below for details.

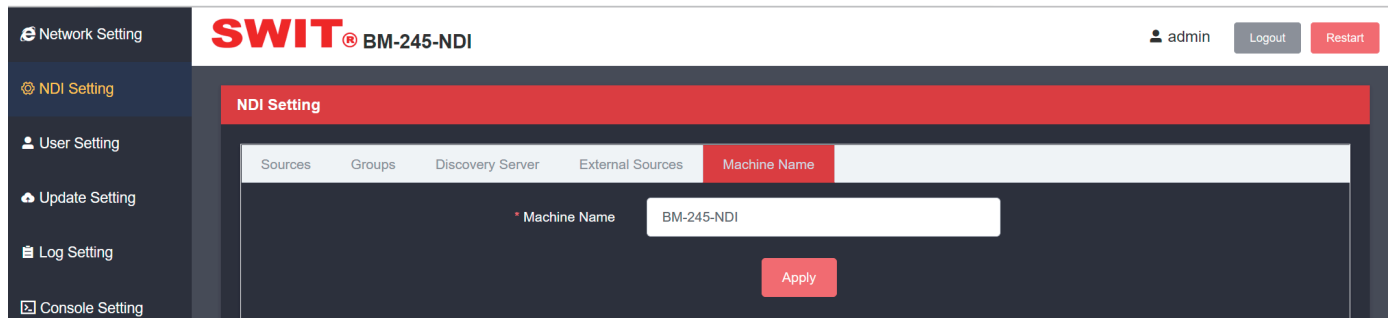


Fig.7

User Setting

1. Choose "User Setting" on the left.
2. Click "New Password" and enter the New Password.
3. Click "Confirm Password" to Confirm the Password and enter the new Password again.
4. Click "Apply" to change the password successfully. You can click the "Little Eyes" icon to view the password. The password must be blank and cannot contain more than 16 characters, and cannot contain Chinese characters. See Figure 8 below for details.

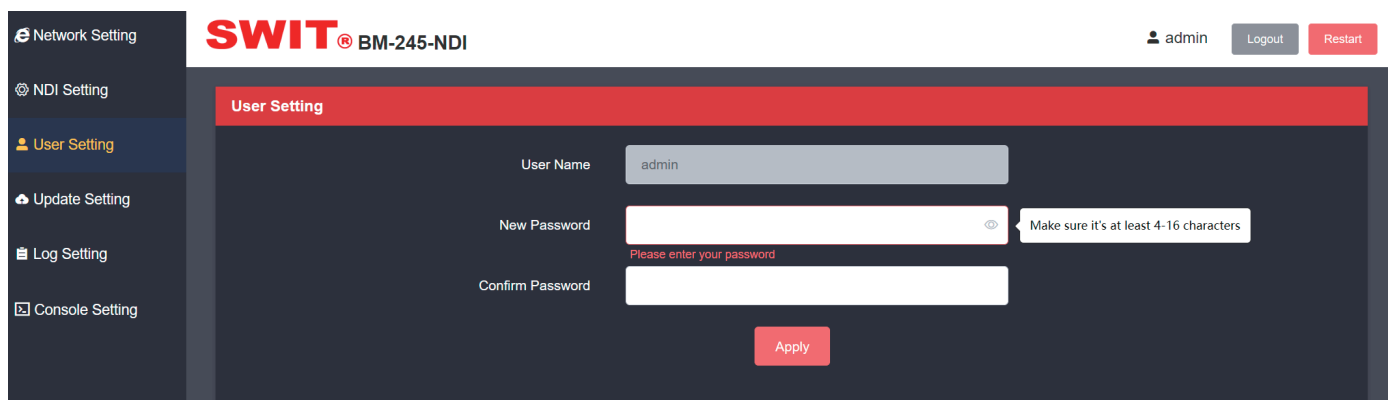


Fig.8

Update Setting

1. Choose "Update Setting" on the left.
2. Drag the upgrade package to the file box (the default extension of the upgrade package is .img file) and click the "Upload" button to start the upgrade, or directly click the "Upload" button, select the correct upgrade package, click open, and click "Upload" to Upload the upgrade. (if need to change

to select upgrade packages, click select upgrade package to the right of the x cancel the upgrade package) throughout the upgrade process will last about 1 to 3 minutes (according to the size of the firmware and the network the case may be), the top of the monitor Tally lights from red to green, the device will automatically restart, upgrade process don't power outages, Otherwise, the upgrade fails and the device is abnormal.

3. If necessary, please log in the official website of Osev to obtain the upgrade package. See Figure 9 below for details.

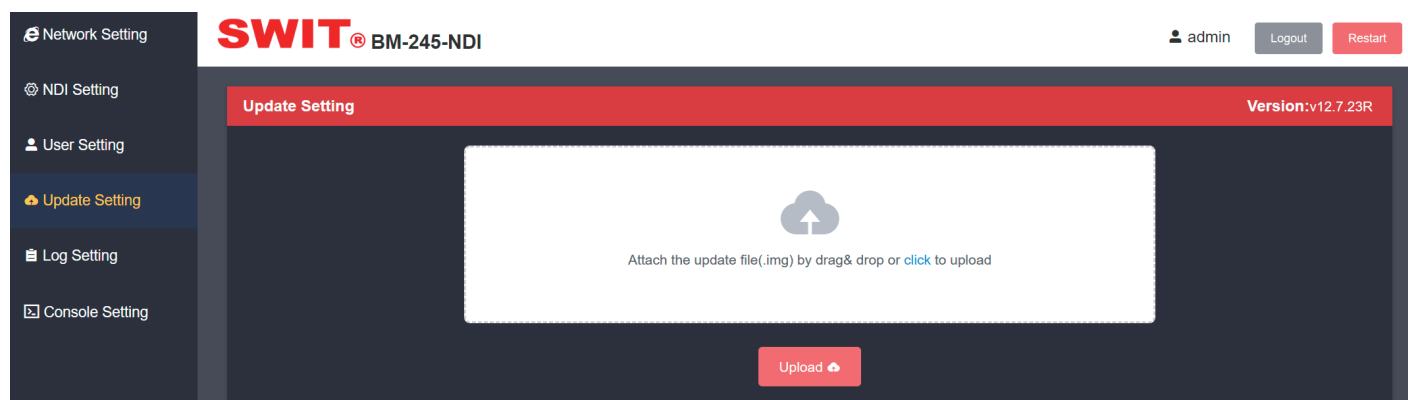


Fig.9

Log Setting

1. Choose “Log Setting”
2. All logs are displayed in the box below Log. Date is the Date of logging, Log is the Log information, and Type is the Log Type. Click Type to select a Log Type from the drop-down list box. See Fig.10 below for details.

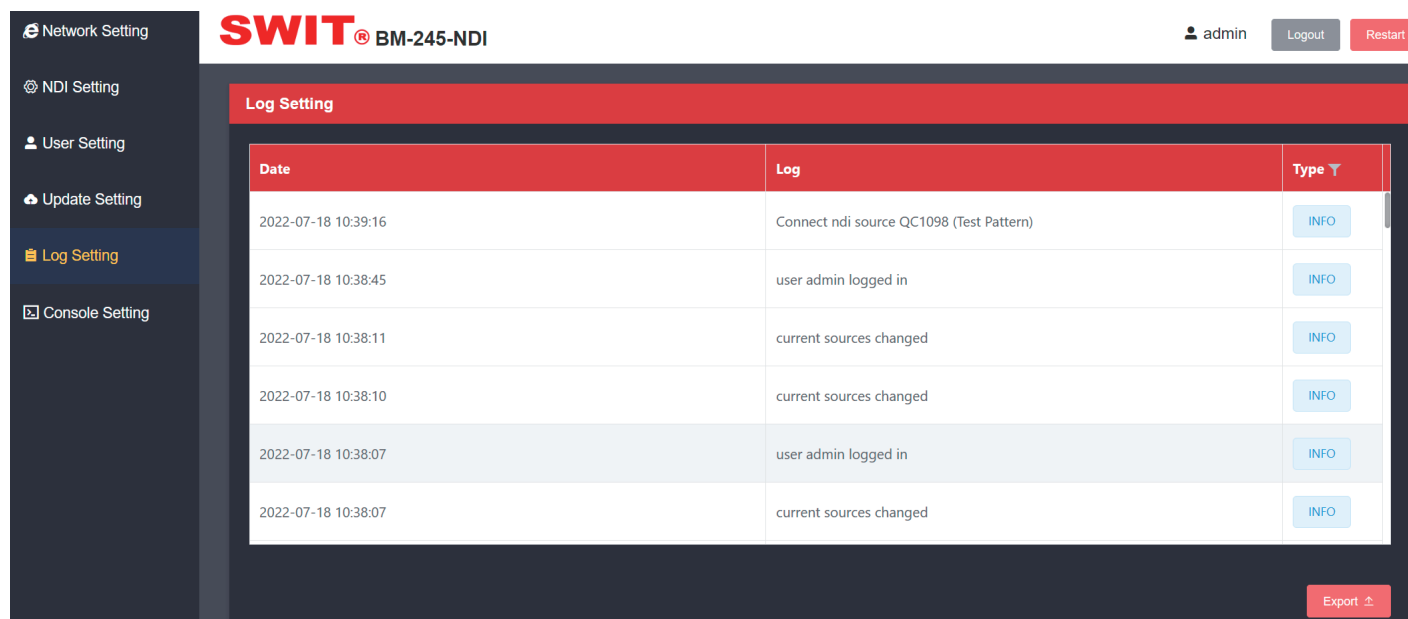


Fig.10

3. Click “Export” to Export logs. In the dialog box that is displayed, name the log file named Filename.
4. Select the file saving type. There are four options for the file saving type. You can save the file according to your own requirements.
5. After setting the Export file, click Export in the lower right corner of the popup window to download the log file to the local PC. See Fig. 11 below for details.

Fig.11

■ Console Setting

1. Choose “Console Setting” on the left;
2. The Console Setting module has six functions: "ping", "ifConfig", "Traceroute", "ifstat", "iperf3-client" and "iperf3-Server", which are used for debugging network configuration functions. If you have any questions or need more technical information when using this product, please contact us by telephone, fax, email, etc.

■ Restart

1. In the upper right corner of the main menu, click Restart to Restart the NDI monitor.
2. Wait for the restart progress bar to reach 100%. The restart process takes about 3 minutes. The NDI monitor will restart to complete. The login page is displayed immediately. See Figure 12 and Figure 13 below for details.

Fig.12

restarting please wait

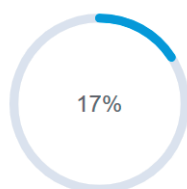


Fig.13



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