



**NTI**® NETWORK  
TECHNOLOGIES  
INCORPORATED

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## VIDMUX® Series

# SE-4K18GB-4RS

## 4K@60Hz 4 x 1 HDMI Switch

### Installation and Operation Manual

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**CHANGES**

The material in this guide is for information only and is subject to change without notice. Network Technologies Inc reserves the right to make changes in the product design without reservation and without notification to its users.

## INTRODUCTION

SE-4K18GB-4RS is an HDMI switch (Switcher) that enables multiple digital video and audio; sources to share one video display. A built in Auto Scan and Auto Jump function provides versatility for a variety of applications. The SE-4K18GB-4RS is perfect for home theater systems eliminating the hassle of manually plugging in different HDMI connectors to view different video sources. (ex: DVD player, setup top box, DVR, etc.)

### Features:

- Switch easily between any four HDMI sources by remote control of front push button.
- Built in RS232 for remote PC control or firmware updates.
- HDMI 2.0 compliant
- HDCP 1.4/2.2 compliant
- HDCP pass-through.
- Supports Deep Color 12 Bits/Color, Data rates up to 18Gbps and 3D capable.
- Supports high resolution input: 480i, 576i, 480p, 576p, 720p, 1080i, 1080p@60Hz, 4K2K@30hz, 4K2K@60hz(YCbCr 4:4:4)
- Adjustable LED brightness
- Built in auto scan switching (to automatically select the next consecutive live input signal).
- Built in auto jump function (to automatically select a newly connected video input).

## MATERIALS

### Materials supplied with this kit:

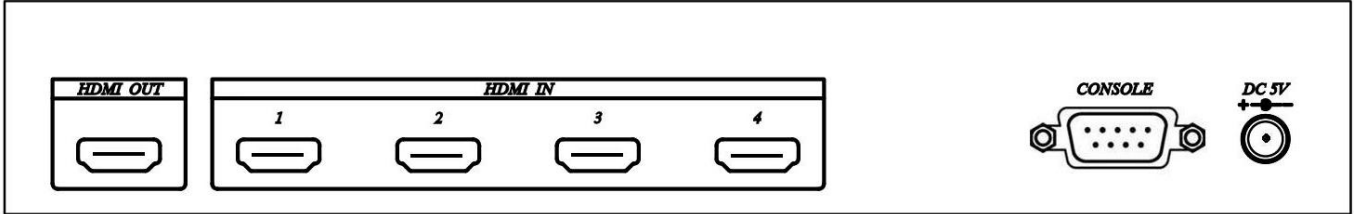
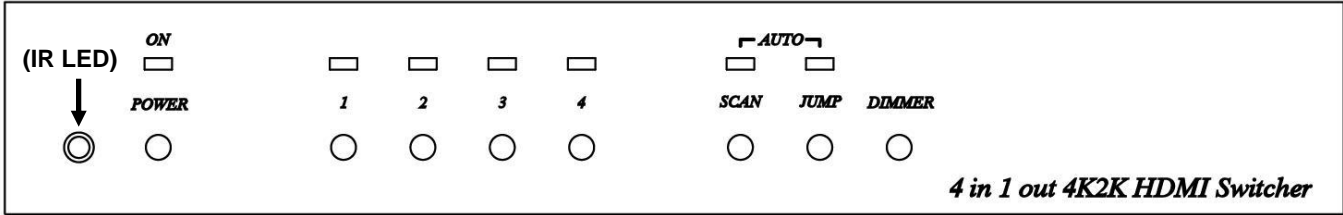
- NTI SE-4K18GB-4RS
- 100-240VAC, 50 or 60Hz-5VDC/2A AC Adapter
- IR Remote Control
- Mounting screw pack
- URL Slip with path to this manual

### Materials *Not* supplied but **REQUIRED**:

HD-xx-MM HDMI Male to HDMI Male Video Cables (xx= 3,6,10,15,20,30,50,75 and 100 feet)

*Cables can be purchased from Network Technologies Inc by calling (800) 742-8324 (800-RGB-TECH) in the US and Canada or (330) 562-7070 (worldwide).*

## INSTALLATION



### LED Indications

Label	Status	Meaning
POWER	ON/OFF	System Ready/ Standby
	Flashing	Panel Button or IR Remote Control has been disabled by RS232 connected PC
AUTO SCAN	ON/OFF	Auto Scan activated/ disabled
AUTO JUMP	ON/OFF	Auto Jump activated/disabled
1,2,3,4	ON	Currently the selected input channel
	Flashing	No Signal Input
None (See "IR LED" above)	Flashing	Receiving signal from IR Remote

### Panel Button Functions

Label	Function
Power	SYSTEM Activate/ Put on Standby
AUTO SCAN	Auto Scan Activate/Deactivate
AUTO JUMP	Auto Jump Activate/Deactivate
DIMMER	LED Brightness Control
1,2,3,4	Select associated input channel and deactivate Auto Scan

### Remote Control Functions- A,B Mode Switching


There are two remote control activated operating modes. While powered ON, switch between Mode A and B by pressing the front panel "POWER" and the Remote Control "\*" (asterisk) buttons at the same time.

Mode A: Auto Scan and Auto Jump functions are available for use.

Mode B: Auto Scan and Auto Jump functions are disabled. Only the buttons 1,2,3,4 will be used for switching input channels.


**The unit is in Mode A by default.**

**Remote Control Features in Mode A**

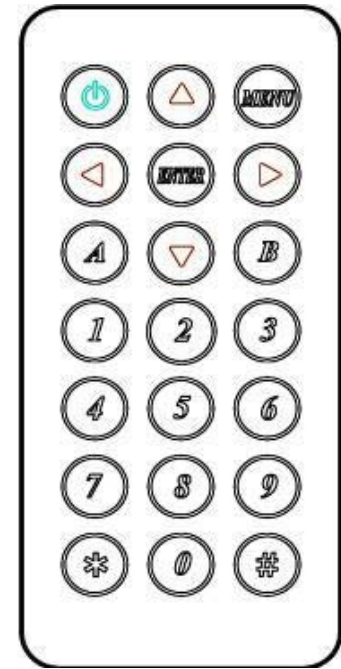
Button	Function
Power Button 	System Activate/ Standby
Up Arrow ( $\Delta$ )	Select next available input and activate Auto Scan
Down Arrow ( $\nabla$ )	Select previous available input and activate Auto Scan
Left Arrow ( $\triangleleft$ )	Select previous input and deactivate Auto Scan
Right Arrow ( $\triangleright$ )	Select next available input and deactivate Auto Scan
1,2,3,4 (5,6,7)	Select associated input and disable Auto Scan
0	Activate/Deactivate Auto Jump
#	LED Brightness adjust

Menu, Enter, \*, 5-9 buttons are not used.

**Remote Control Features in Mode B**

Button	Function
Power Button 	System Activate/ Standby
Up Arrow ( $\Delta$ )	Select next available input and activate system
Down Arrow ( $\nabla$ )	Select previous available input and activate system
Left Arrow ( $\triangleleft$ )	Select previous available input and activate system
Right Arrow ( $\triangleright$ )	Select next available input and activate system
1,2,3,4 (5,6,7)	Select associated input and activate system
#	LED Brightness adjust

Menu, Enter, \*, 5-0 buttons are not used.



IR Remote Control

**Auto Scan (with Switcher in Mode A)**

When the current channel loses video signal for over 0.5 second, the device will automatically jump to the next active input channel, (meaning an input channel with a live video source).

**For example**, suppose Auto Scan is active and all four inputs are connected to video sources. While the monitor is displaying video from input channel 3, disconnect input 3. The Switcher will automatically switch to input channel 4 and show it on the display.

Pressing the  $\nabla$  button on the IR remote control or sending the "PRE" command via RS232 command will switch the device to the previous active input channel.

Pressing the  $\Delta$  button on the IR remote control or sending the "NEXT" command via RS232 will switch the device to the next active input channel.

Imagine you are switching your TV channels and the remote automatically skips those channel numbers with empty source. Pressing the  $\triangleleft$  and  $\triangleright$  button on the IR remote will switch to the exact previous or next consecutive channel number, whether a video source is present or not.

Now, if we press  $\nabla$  once, the Switcher will switch the video source from channel 4 to channel 2, skipping channel 3 since it's unavailable.

If we press  $\triangleleft$  4 times, the Switch will switch the video source to channels 1-4-3 and back to 2. Note that even though channel 3 does not have any input, the switch will still connect the display to that channel when this button is pressed.

**Auto Jump**

When Auto Jump is enabled, if a new video signal is connected to the Switcher, the Switcher will automatically switch to the port with that new video signal.

## LED Brightness

LED brightness can be set at 4 different levels:

1. Minimum Brightness
2. Normal Brightness
3. Maximum Brightness
4. Auto-Changing Brightness

By default, brightness is factory set at level 3.

Under Auto-Changing brightness, press any switcher button or IR remote control button, change any video input channel, change any condition on the Switcher at all and the LED brightness will change to maximum brightness for 5 seconds and then return to minimum brightness.

## RS232 Control

When an RS232 cable is connected between the Console port on the Switcher and a PC, the Switcher can be controlled using RS232 commands. Using a terminal program with the port settings of 9600,8,N,1 (9600 baud, 1 start bit, 8 data bits, 1 stop bit) commands can be sent to control connections.

When the prompt displays "COMMAND", a connection is made and it is ready to accept commands.

Command	Action
n	Currently select input and disable auto scan
PRE	Select previous available input and activates auto scan.
NEXT	Select next available input and activates auto scan.
SCAN y	Auto scan function activated/disabled.
JUMP y	Auto jump function activated/disabled.
ACTIVATE	System activate.
STANDBY	System standby.
MODE x	Select operation mode A/B.
IR y	Enable/disable the IR Remote
KEY y	Enable/disable buttons on front panel
LED n	LED brightness adjustment.
SAVE	Save current Switcher settings to memory.
LOAD	Load last saved Switcher settings from memory.
KEYPAD	Switches to "Virtual Remote Control via RS232" (see page 5)
SIGNAL	Display input signal status
STATUS	Display setting
VERSION	Display firmware version
?	Show all commands

**Note:** The configuration saved to memory by the SAVE command will only remain in memory provide the Switcher is not power-cycled.

### Parameters Key

n = 1, 2, 3, 4

x = A or B

y = ON or OFF

Spaces between the command and parameters will be ignored.

## Virtual Remote Control via RS232

After issuing the RS232 command "KEYPAD", the commands sent will simulate using the IR Remote Control. The prompt will display "KEYPAD:".

### System Activate Virtual Remote Control Mode A/B Operation Description

#### Mode A

Command	Action
1,2,3,4	Select input and disable auto scan
-	Select previous available input and activates auto scan.
+	Select next available input and activates auto scan.
L	Select previous input and disable autoscan
R	Select next input and disable auto scan
0	Auto jump function activated/disabled.
/	System activate/standby.
.	LED brightness adjustment.
Q	Switches back to COMMAND mode
S	Display setting and input signal status
?	Show all commands

#### Mode B

Command	Action
1,2,3,4	Select input
-	Select previous input
+	Select next input
L	Select previous input
R	Select next input
/	System activate/standby.
.	LED brightness adjustment.
Q	Switches back to COMMAND mode
S	Display setting and input signal status
?	Show all commands

**System Standby Virtual Remote Control Mode A/B Operation Description**

**Mode A**

Command	Action
/	System activate/standby.
Q	Switches back to COMMAND mode
S	Display setting and input signal status
?	Show all commands

**Mode B**

Command	Action
1,2,3,4	Select input and system activate
-	Select previous input and system activate
+	Select next input and system activate
L	Select previous input and system activate
R	Select next input and system activate
/	System activate/standby.
Q	Switches back to COMMAND mode
S	Display setting and input signal status
?	Show all commands

**NOTE:**

**Some DVD equipment have +5V signal output even when powered OFF. This will cause Auto Jump and Auto Scan features to function abnormally. If these functions behave other than as described in this manual, disable them by setting the Switcher in Mode B as described on page 2.**

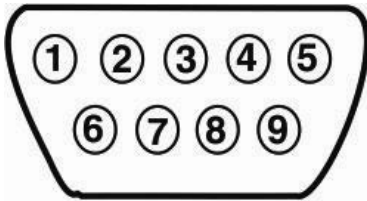
**TECHNICAL SPECIFICATIONS**

Resolution	Up to 1080p/60Hz/48 bpp, 3D, 4K2K@60Hz (YCbCr 4:4:4)
HDMI Connector	HDMI Female Type A (Input x 4, Output x 1)
Console	RS232 Female
Power Supply	100-240VAC @50/60Hz/ 5VDC 1A
Power Consumption	370mA (Max)
Dimensions (WxDxH)	9.96 x 5.63 x 1.58 in (253 x 143 x 40 mm)
Operating temperature	32-131°F (0 to 55°C)
Storage temperature	-4 to 185°F (-20 to 85°C)
Operating/storage relative humidity	Up to 95% RH
Weight	800g
Certifications	RoHS, CE, FCC, C-Tick

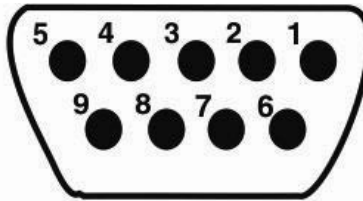


## RS232 Cable Pinout

DB9 Male (Connect To Switcher) DCE	Signal		DB9 Female (Connect To PC) DTE	Signal
3	TXD IN	←	3	TXD OUT
2	RXD OUT	→	2	RXD IN
5	GND		5	GND



Mating Face  
of DB9 Male

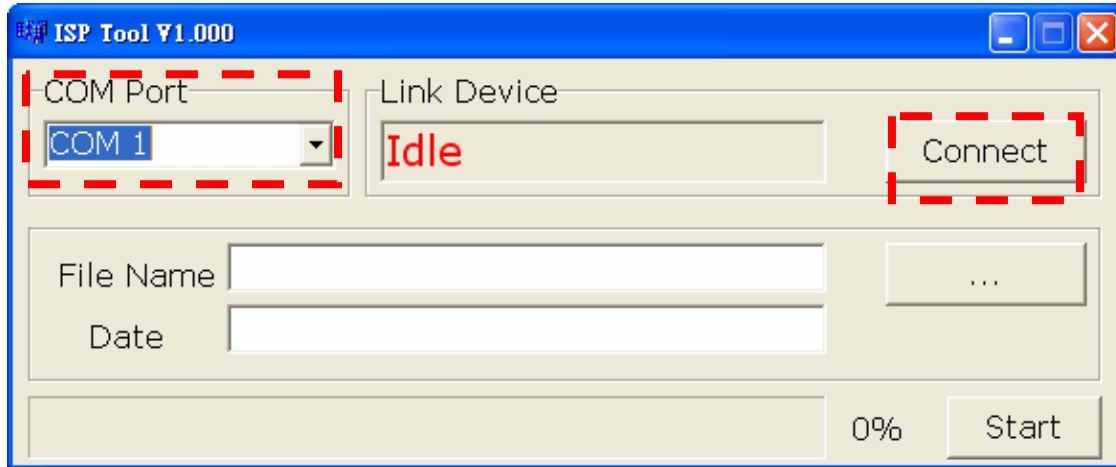


Mating Face  
of DB9 Female

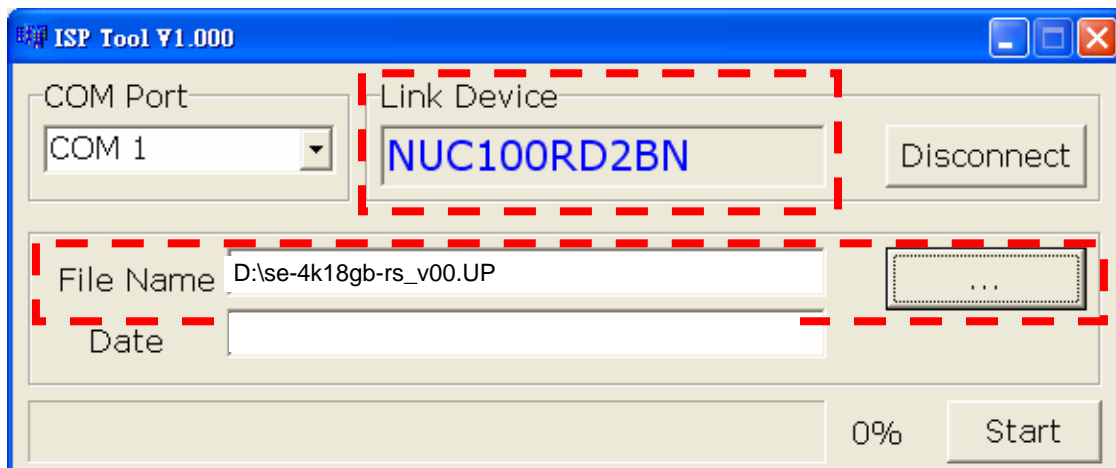
## FIRMWARE UPDATE INSTRUCTION FOR SE-4K18GB-RS

**Note:** As of this printing, no firmware updates are available.

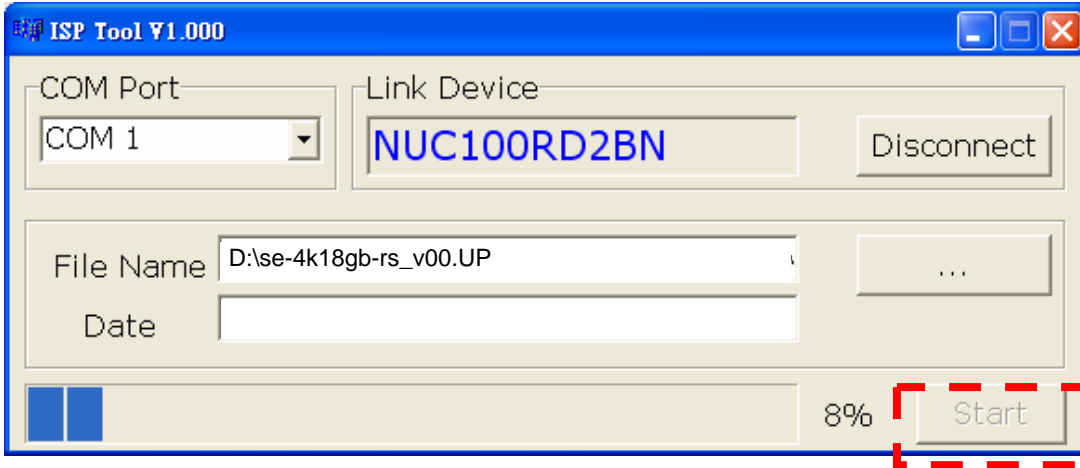
1. Copy the ISP .exe and firmware file se-4k18gb-rs\_vxx.UP from our website to your PC.
2. Use RS232 Cable (female to male, wired straight through, pins 2,3, and 5 connected) to connect the PC to the SE-4K18GB-4RS.
3. After the SE-4K18GB-4RS boots up, run the ISP.exe program, select the COM Port of the PC and click "Connect".



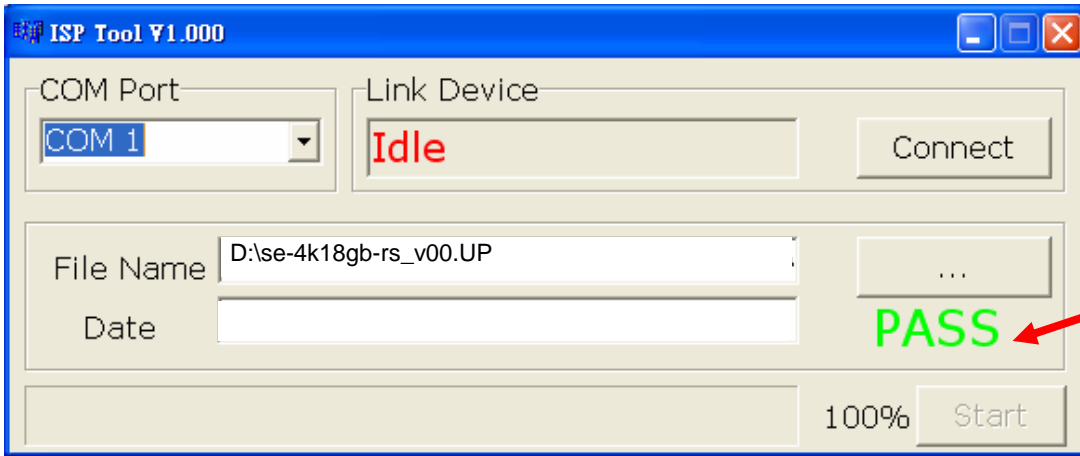
4. After making connection, the "Link Device" will show the name of MCU. Browse to the se-4k18gb-rs\_vxx.UP file on your PC.



5. Click "Start" to perform the update.



6. After the update is complete it will show "PASS"



## WARRANTY INFORMATION

The warranty period on this product (parts and labor) is two (2) years from the date of purchase. Please contact Network Technologies Inc at **(800) 742-8324** (800-RGB-TECH) or **(330) 562-7070** or visit our website at <http://www.networktechinc.com> for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

