INSTALLATION GUIDE FOR THE

2/4-PORT DVI VIDEO/AUDIO SWITCH

SE-DVI-2A / SE-DVI-4A / SE-DVI-2ARS /

SE-DVI-4ARS

INTRODUCTION

The VIDMUX® DVI/HDMI video/audio switch (VIDMUX) enables one DVI/HDMI display and speakers to be switched between up to four single-link digital DVI/HDMI video sources.

- Supports DVI interface for crisp and clear video quality on flat panel display.

- Supports HDTV resolutions up to 1080p and computer resolutions to 1920x1200 (WUXGA).

- Eliminates redundant video displays.

- Compliant with HDMI 1.3 and HDCP standards.

- Supports the DDC2B protocol.

- 3.5mm stereo audio input for each channel.

- Passes HDMI audio signal through DVI-I port.

    o   Transmit audio and video over a single cable with the DVI-HDMI-xx-MM male DVI-D to male HDMI cable.

- Control via push button, infrared remote (IR) control, or optional RS232.

- IR remote control includes power ON/OFF, mute function, and break-away audio (switch audio independent of video).

**Optional**: RS232 Control in models with "RS" (i.e. SE-DVI-2A**RS**).

MATERIALS

Materials supplied with this kit:

- VIDMUX DVI/HDMI Video/Audio Switch
- 110-240VAC, 50 or 60Hz-5VDC/1A AC Adapter
- 6" Male-to-Male stereo audio cables (2pcs-2 port, 4pcs-4 port)
- CD containing a pdf of this manual and an RS232 program

Materials *Not* supplied but *REQUIRED:*

- DVI-IS-xx-MM DVI-I cable to connect a DVI-D source or display
- SA-xx-MM Male to Male Stereo Audio cable to connect an audio source
- DVI-HDMI-xx-MM DVI-D to HDMI interface cable to connect the video source or display with integrated speakers
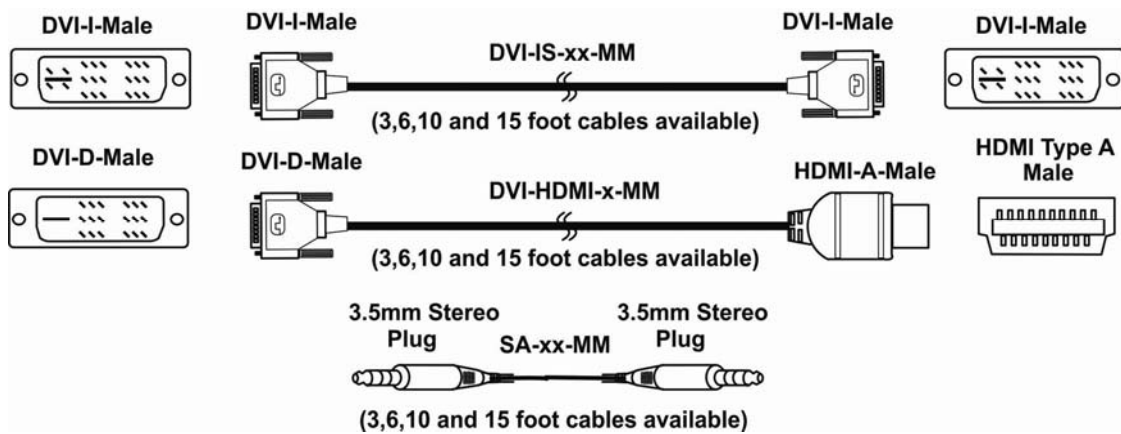
INSTALLATION

1. Turn OFF power to video source(s), display and speakers.

FOR MODEL SE-DVI-2/4A

2. Connect the video port of one DVI video source to the "DVI IN 1" port on the unit using a DVI-IS-xx-MM cable (xx= 3, 6, and 10 foot lengths- sold separately.) Repeat for each video source, connecting to each "DVI IN x" port.

3. Connect the stereo audio port of an audio source to the "AUDIO IN 1" port on the unit.   Six inch cables are supplied, but for longer cable use SA-xx-MM (xx= 3, 6, 10, 15, 25, 25, 50, and 100 foot lengths- sold separately). Repeat for each audio source, connecting to each "AUDIO IN x" port.

4. Connect the monitor using a DVI-HDMI-xx-MM cable to the "DVI OUT" port on the unit (xx- 3, 6, 10 and 15 foot lengths- sold separately).

Note: If speakers are not built in to your display, connect your self-powered stereo speakers to the "Audio Out" port.
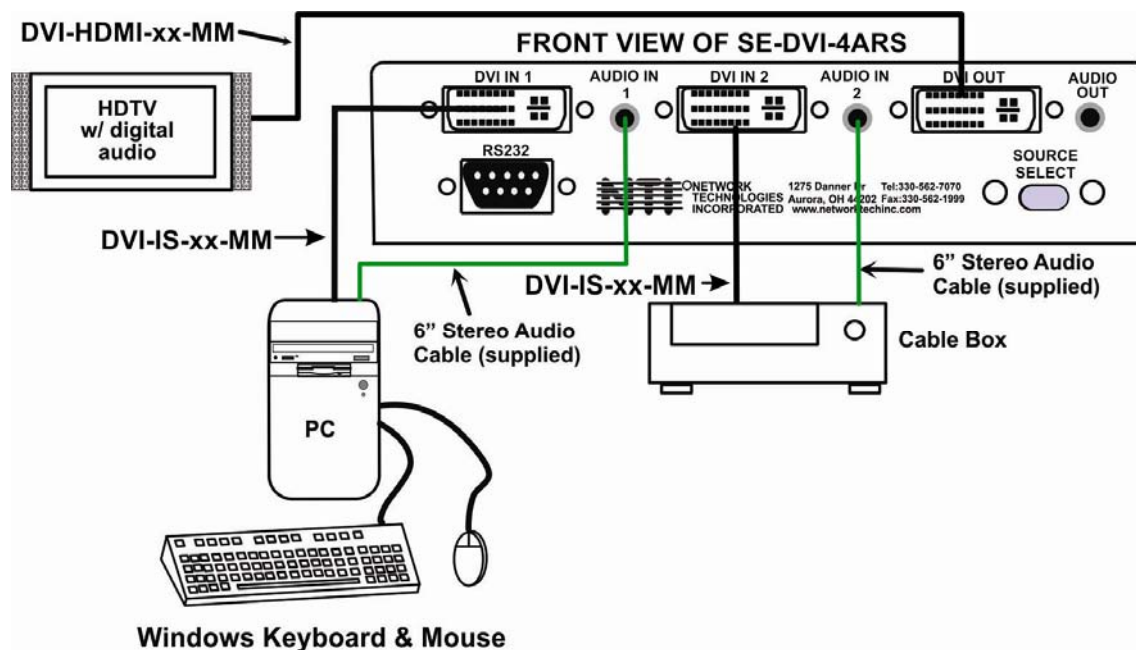
Figure 1- Cable connections to the VIDMUX

5. Secure the power cable to the cable tie on the VIDMUX and connect the power plug from the AC adapter to the connection port.

6. Plug in the AC adapter and power-up the switch. To switch ON, press and hold the "Source Select" (or "AV Sync") button for 5 seconds until the "DVI 1" LED and "AUD IN 1" LED on top of the VIDMUX illuminates, indicating a connection between the display and the video and audio source connected to "DVI IN 1" and "AUD IN 1".   To switch OFF, press and hold the "Source Select" (or "AV Sync") button again for 5 seconds.

Note: If the RS232 feature is present, the VIDMUX will switch ON automatically when power is applied.
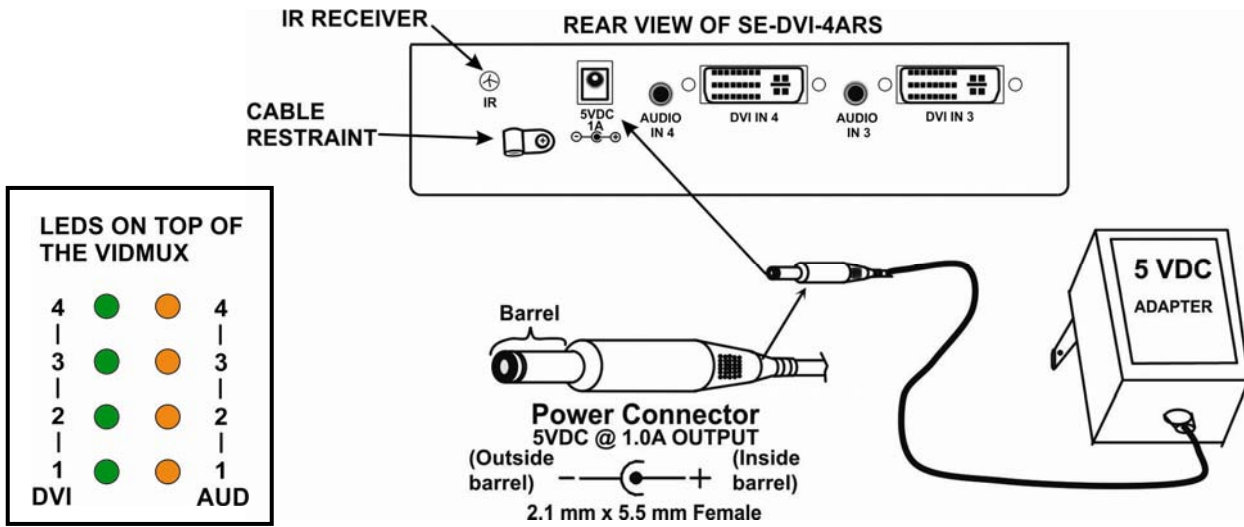
7. Apply power to the video and audio sources and display.

Figure 2- Connect AC adapter to VIDMUX

SWITCH CONTROL

The VIDMUX can be controlled using either the

- "AV Sync" button on the top (SE-DVI-2/4A models only)
- "Source Select" button on the front (SE-DVI-2/4ARS models only)
- Infrared Remote Control
- RS232 Control (SE-DVI-2/4ARS models only)

PUSH BUTTON CONTROL

The push button on the VIDMUX ("AV Sync" or "Source Select" depending upon your model) will change the connected input to the next consecutive input (video and audio together) with each press. To switch video or audio separately, use the infrared control.

"AV Sync" Button

SE-DVI-2A
Front View

"Source Select" Button
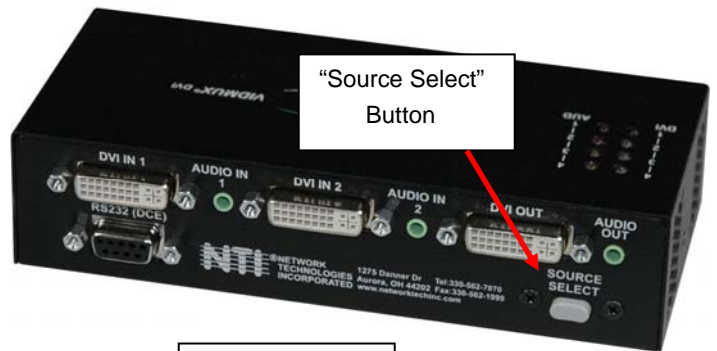
SE-DVI-4A-RS
Front View

INFRARED CONTROL

The infrared remote control can be used to change connections or disconnect video and audio altogether.

Press "Power Off" to blank the video to the DVI OUT port and mute the AUDIO OUT signal. Press "Power On" to restore video and audio connections.

Press "Mute" to disrupt the AUDIO OUT signal, and press any button in the Audio column to restore audio, or press "Mute" again.

Press any button in the Video or Audio column to switch the respective output to that input. Video and audio inputs will change independently.
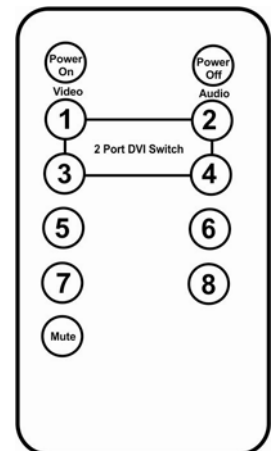
INFRARED REMOTE

RS232 CONTROL (SE-DVI-2/4ARS Only)

RS232 Control enables the SE-DVI-xARS to be remotely controlled via RS232.   To control the SE-DVI-xARS via RS232 the user has three options:

- write a program that runs on a PC using the Command Protocol (below)
- use the NTI Switch Control Program (page 8) provided on the CD
- use the SerTest program (page 8) provided on the CD

If your VIDMUX includes the RS option, a terminal can be connected to it to control the VIDMUX using RS232 control from a separate user terminal or CPU with a terminal program.   To make a terminal connection, connect a serial cable (specifications on page 3) between the user terminal and the 9 pin DIN female connector on the VIDMUX labeled "RS232". Configure the terminal program for the default baud rate of 9600.
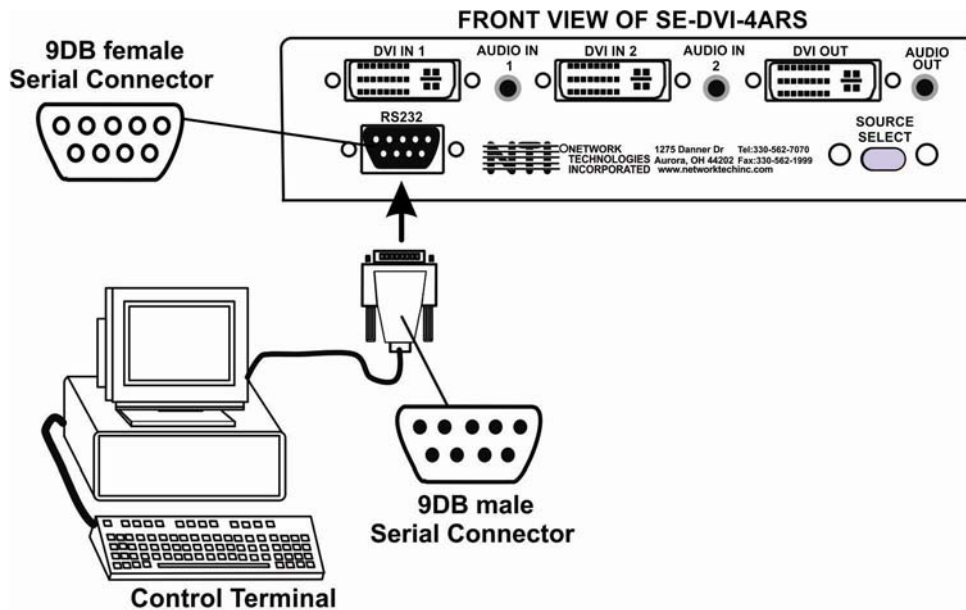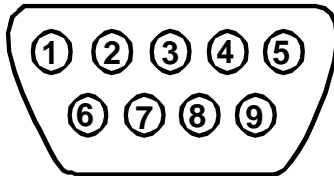

Figure 3- Connect Terminal to VIDMUX with RS232 Support

REMOTE CONNECTION

The RS232 Interface is designed to meet the RS232C standard and can be controlled from any CPU or other controller with an RS232 communications port. The pin-out for the 9DB connector on the unit is as follows:

**Mating Face
of a 9DB Male**

RS232 CONNECTOR (9DB FEMALE)

PIN	SIGNAL	FUNCTION
1	CD	Carrier Detect
2	TXD	Transmit data (RXD at host)
3	RXD	Receive data (TXD at host)
4	DTR	Data terminal ready
5	GND	Signal ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	-	No connection

On the 9DB female connector, pins 1 (DCD), 4 (DTR), and 6 (DSR) are shorted and pins 7 (RTS) and 8 (CTS) are shorted. Therefore, host handshaking is bypassed and TXD and RXD are the only active signals. A straight-through 9DB serial cable **(not null modem- see cable specifications on page 4**) will work for most CPUs.

COMMAND PROTOCOL

CPU controller commands supported by the unit are defined below. All commands should be terminated with a <CR> (carriage return). All characters in the command string should be upper case, and all numbers below 10 should have a leading 0 (ex: 1 = 01).

Legend: (All numbers must be two digits)

BR   :   Baud Rate Code (03,06,12,24,48,96)
OP   :   Output Port (01,02)
<CR>   :   Carriage Return (Hex 0xD)

Command Definitions

Command String	Good Response	Description
CS 01,IP,OP	*<CR>	Connect Video Output to Specified Video Input Port
AS 01,IP,OP	*<CR>	Connect Audio Output to Specified Audio Input Port
RO 01,OP	*<CR>IP<CR>	Read Video Input Connection to the Output Port
AO 01,OP	*<CR>IP<CR>	Read Audio Input Connection to the Output Port
PO 01,OP	*<CR>string\0<CR>	Power On Outputs
PF 01,OP	*<CR>string\0<CR>	Power Off Outputs
AM 01	*<CR>	Mute Audio Input
CB 00,BR	None	Change baud rate of serial line **BR=03(00),06(00),12(00),24(00),48(00),96(00)** Factory default is 9,600 *(see note below)*
RS 01	*<CR>	Internal Reset
RV 01,00	*<CR>string\0<CR>	Read NTI Version String
RU 01	*<CR>IP,OP<CR>	Read Unit Size

If the syntax of a command is incorrectly entered, the command will be ignored or the switch will answer with a bad response ?<CR>.

NTI Switch Control Program For Windows 9X, NT, 2000, XP and 7

The NTI Switch Control Program is an easy and powerful graphical program that controls NTI switches through an RS232 interface.   The NTI Switch Control Program is included on the manual CD packaged with the SE-DVI-xARS.   The NTI Switch Control Program can be downloaded to your computer by clicking on the link "**Download NTI Switch Control Program**" found on the web page that appears when you insert the instruction manual CD into your CD ROM drive.

To install the NTI Switch Control Program after downloading it to your computer from the manual CD:

1. Locate the *Setup.exe* in the directory the program was downloaded to and double-click on it
2. Follow the installation instructions on the screen

The NTI Switch Control Program performs best on monitors set to a screen resolution of at least 800 X 600. Instruction for using the NTI Switch Control Program is available by opening "MSCP Help" in the "NTI" program group once the program has been installed and is open on the screen.

To open "MSCP Help" from the Windows desktop:

1. Click on **START**
2. Click on **PROGRAMS**
3. Click on **NTI**
4. Click on **MSCP Help**

SerTest- RS232 Interface Test Program

This software allows a user to test the functions of an NTI server switch, matrix switch, Ethernet switch, or Multi-user/Multi-platform switch RS232 interface.   The program SERTEST along with the NTI Switch Control Program (above) is installed from the CD packaged with this switch. SERTEST generates a main menu with the 4 selections described below:

Main Options

- Switch Operations   - send commands to the SE-DVI-xARS
- Ethernet Operations   - set Ethernet connection variables (**not applicable to this switch**)
- Setup Options   - set COM port, baud rate, and unit address
- About SerTest   - display the program version

Switch Operations

Key	Selection	Description
1)	Connect Video Output/User to an Input/CPU	- connect an output (COMMON) to an input(SELECTABLE)
2)	Connect All Video Outputs/Users to an Input/CPU	- connect all outputs to an input
3)	Connect Audio Output/User to an Input/CPU	- connect an output to an input (audio ports only)
4)	Connect All Audio Outputs/Users to an Input	- connect all outputs to an input (audio ports only)
5)	Change Mute Status for Audio Output/User	- mute or un-mute the Audio port output

Selections in the "Key" column that are gray are not applicable to this product.

Key	Selection	Description
6)	Change Volume for Audio Output/User	- change Audio port output volume
7)	Read Connection for Video Output/User	-read the connection of a specific video output (COMMON (01))
8)	Read Connection for Audio Output/User	-read the connection of a specific audio output
9)	Read Mute and Volume for Audio Output/User	- read the volume and the mute status of the specified audio output
a)	Save I/O Connections into Unit Memory	-save the connections into switch memory bank
b)	Restore I/O Connections from Unit Memory	-restore the connections from switch memory bank
c)	Change All Units Baud Rate (9600/COM1:)	-change RS-232 Baud rate of all switches -the current baud rate and serial port are displayed in parentheses
d)	Reset Unit	- send a reset command to the switch - the current unit address is displayed in parentheses
e)	Reset All Units	- send an internal reset command to all switches
f)	Read Unit Size	- read the switch size (number of inputs and outputs)
g)	Read Unit Version/Revision String	-read a string containing the switch version, type, and size
h)	Save All Units I/O Connections into Units Memory	-save the connections into switch memory bank, command for all switches
i)	Restore All Units I/O Connections from Units Memory	-restore the connections from switch memory bank, command for all switches

Selections in the "Key" column that are gray are not applicable to this product.

Setup Options

| Key	Selection	Description
1)	select Com port current: (COM1:)	- select PC serial port - the current PC serial port is displayed in parentheses
2)	select Baud rate current: (9600)	- select PC serial port baud rate - the current baud rate is displayed in parentheses
3)	set unit Address current: (1)	- select the unit address - the current address is displayed in parentheses

For any selection that requires user input, the user is prompted. When commands are sent to the switch, the command string and switch responses are echoed to the screen. All commands generated by the program are formatted according to the information provided in sections above. If any transmission problems are detected, an error message is displayed.

Press <Esc> or <Enter> to back out to the main menu and press again to exit.

SPECIFICATIONS FOR STRAIGHT-THROUGH RS232 SERIAL CABLE

VIDMUX to PS2 CPU (9 PIN)

VIDMUX		Signal	PS/2 CPU	
9 pin		**Direction**	**9 pin**	
Function	**Pin #**		**Pin #**	**Function**
RxD	3	←	3	TxD
TxD	2	⟶	2	RxD
CTS	7	←	7	RTS
RTS	8	⟶	8	CTS
DSR	4	←	4	DTR
DTR	6	⟶	6	DSR
SG	5	—	5	SG

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 ①  ②  ③  ④  ⑤
   ⑥  ⑦  ⑧  ⑨
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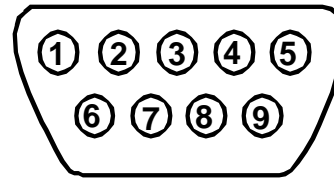
**Mating Face
of a 9DB Male**

Terminals 7 and 8 are jumpered together and terminals 4 and 6 are jumpered together.

TECHNICAL SPECIFICATIONS

Video Input	Female DVI-I connectors- supports single link DVI sources
Audio Input	3.5mm stereo audio jacks
Video Output Connector	1-Female DVI-I connector - supports single link DVI-D Signal
Resolutions supported	HDTV- to 1080p Computer- 1920X1200 (WUXGA)
Audio Output Connector	1- 3.5mm Stereo Audio Jack
RS Control	DB9 Female connector
Baud Rates	300 through 9600
Power	120VAC or 240VAC@50 or 60Hz-5VDC/2.0A AC Adapter

WARRANTY INFORMATION

The warranty period on this product (parts and labor) is two (2) years from date of purchase. Please contact Network Technologies Inc at (800) 742-8324 (800-RGB-TECH) in the U.S. and Canada or 330-562-7070 (worldwide) for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

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MAN132   **Revised 3/5/12**