

## General

These commercial video routers provide the systems professional with an uncompromising combination of high performance, small size and low cost. They are perfectly suited for NTSC, PAL, composite, RGB or RGBHV analog video signals up to 500MHz (VSU2).

Compact and high performance, these units provide a cost effective, flexible switching capacity for smaller installations. The smaller 1RU unit is offered in three different configuration choices of full fan-out, non-blocking switching configurations with two different control configurations (serial only, or serial and Ethernet). The larger 2RU unit comes in one standard 32x32 configuration and includes dual serial ports and built-in 10/100baseT.

Complete control and status of the unit is available at both the front panel controls or remote interface(s). The front panel includes LED illuminated push-buttons (to control and status the unit), an LED illuminated super-twist LCD display, plus bi-color status LED's.

The unit has a universal AC power input and AC switch at the rear panel. Also included is our US-Link port for integrating multiple units together for common control (RGB/HV), or connecting our line of control panels (Series RCPA).

## Applications

- Digital broadcast facilities or production studios
- Airborne surveillance systems
- Communication installations
- Imaging and animation production facilities
- NTSC, PAL, DS3, DVB or SECAM routing
- Security systems
- Factory automation monitoring

## Features

- High reliability solid-state switching
- Full fanout non-blocking configurations
- >500MHz analog bandwidth (VSU2 only)
- BNC signal connectors (75 ohm)
- Super-twist LED illuminated LCD display
- Field configurable serial port (RS-232C/422A/485)
- Ethernet port (10/100baseT) with TCP/IP (VSU2)
- International AC power input, or optional DC
- Certified CE EN61010 (LVD)
- LabVIEW drivers available



Model VSU1-3208  
24 input, 8 output



Model VSU2-6432  
Rear view of 2RU unit



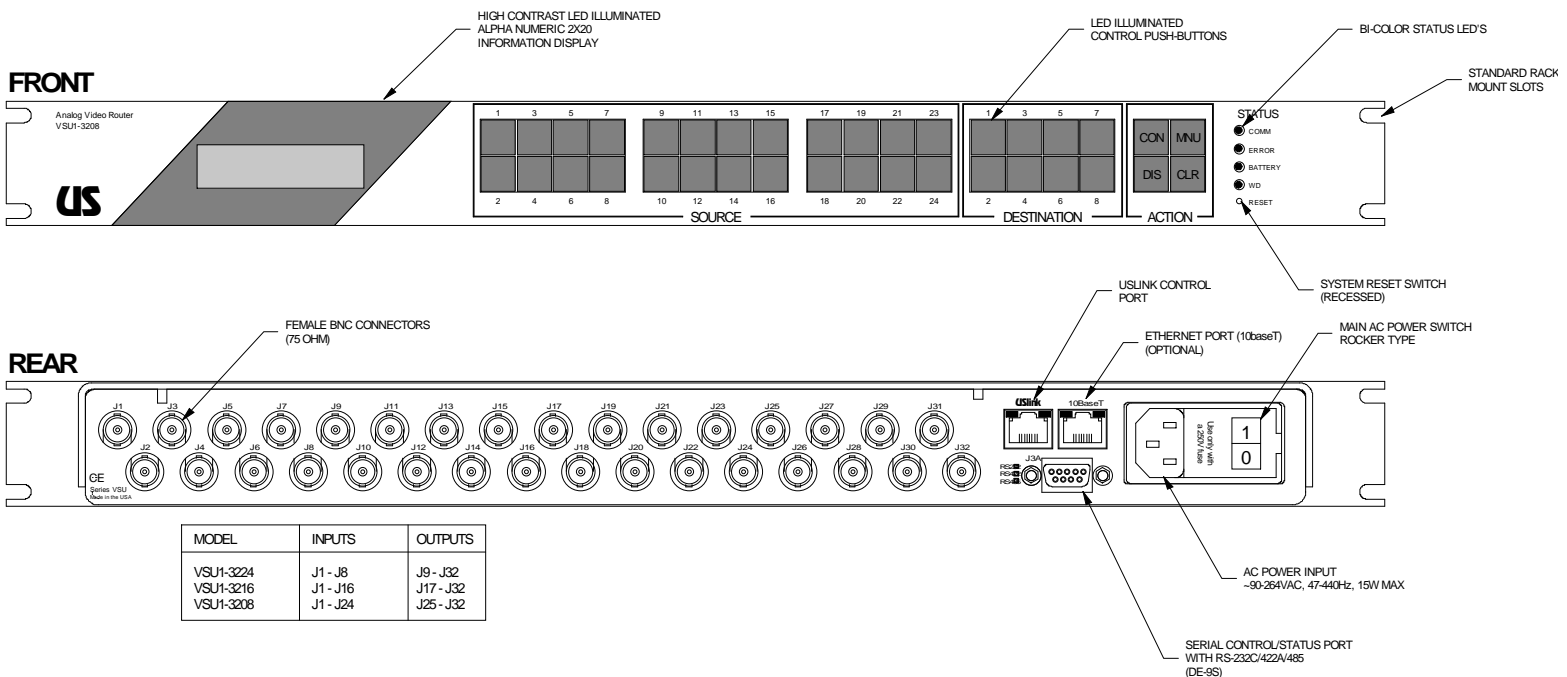
## Configurations

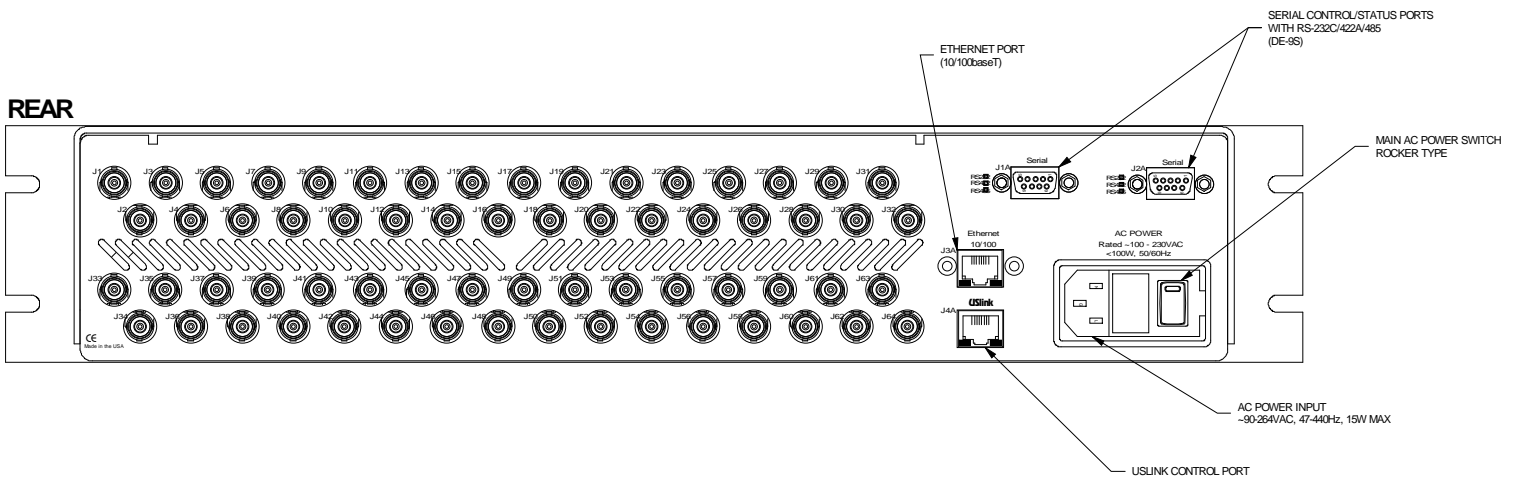
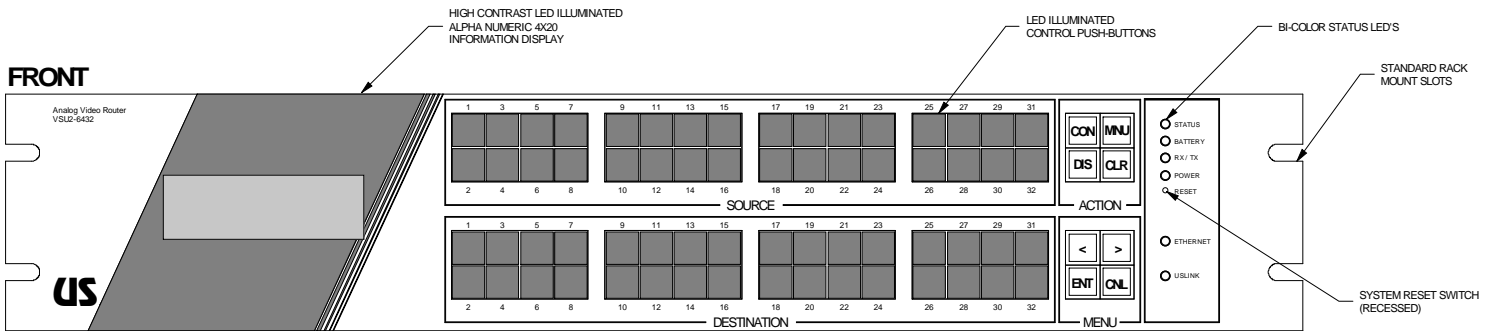
Model	Configuration	Conn	Control
■ VSU1-3208	24 input, 8 output	BNC	Serial
■ VSU1-3216	16 input, 16 output	BNC	Serial
■ VSU1-3224	8 input, 24 output	BNC	Serial
■ VSU1-3208-E10	24 input, 8 output	BNC	Serial/Ethernet (10baseT)
■ VSU1-3216-E10	16 input, 16 output	BNC	Serial/Ethernet (10baseT)
■ VSU1-3224-E10	8 input, 24 output	BNC	Serial/Ethernet (10baseT)
■ VSU2-6432-E10	32 input, 32 output	BNC	Serial/Ethernet (10/100BaseT)

**NOTE:** The units are delivered "jumper configured" for RS-232C. The user must remove the cover and change configuration jumpers to configure the serial port for RS-422 or RS-485 protocol.



Model VSU1-3208  
24 input, 8 output





## Command Protocol

The control command protocol for the unit is simple and streamlined, yet powerful and comprehensive for a switch of its size. All commands are standard ASCII strings, and must be terminated with a <CR>. The "x"s below represent digits specific to the command. The following commands are available:

Cxxxxx	Connect a source port to a destination port
Dxxxxx	Disconnect source port from destination port
Vxxxxx	Verify the status of connection
STxxx	Store switching configuration
RExxx	Recall switching configuration
clear	Clear all connections
DLOAD	Download switch configuration
RESET	Reset the system to factory default (clear all configuration data)
VER	Request for firmware version
MON	Enables Serial port output of commands from other ports
MOF	Disables monitoring of commands from other ports
lxx	Sets the baud rate of the serial communications port
LCK	Locks the front panel controls
UNL	Unlocks the front panel controls
BPx	Controls conditions for internal beeper usage
RON	Enables the system "Auto Restore" mode
ROF	Disables the system "Auto Restore" mode
Axx	Changes the RS-485 address

## Serial Pin Assignment

### RS-232C Version

Pin	Function	Designation
1	Not Used	
2	Transmit Data	TXD
3	Receive Data	RXD
4	Not Used	
5	Signal Ground	GND
6	Not Used	
7	Clear To Send	CTS
8	Ready To Send	RTS
9	Not Used	

### RS-422A Version

Pin	Function	Designation
1	Transmit Data (-)	TXD -
2	Transmit Data (+)	TXD +
3	Receive Data (+)	RXD +
4	Receive Data (-)	RXD -
5	Signal Ground	GND
6	Clear To Send (-)	CTS -
7	Clear To Send (+)	CTS +
8	Ready To Send (+)	RTS +
9	Ready To Send (-)	RTS -

### RS-485 Multidrop Version

Pin	Function	Designation
1	TR Data (-)	485 -
2	TR Data (+)	485 +
3	Not Used	
4	Not Used	
5	Signal Ground	GND
6	Not Used	
7	Not Used	
8	Not Used	
9	Not Used	

## Specifications

Array sizes	.24x8, 16x16, 8x24, 32x32
Switching technology	.High reliability solid-state
Type of system	.Non-blocking full fan-out MxN
Architecture	.Fixed size array
Signal connector location	.Rear panel
Frequency response (VSU1)	.DC-300MHz (1:1 connections)
Frequency response (VSU2)	.DC-500MHz (1:1 connections)

### Input Characteristics

Type	.Single-ended
Signal connector	.BNC female (75 ohm type)
Coupling	.DC
Impedance	.75 ohm
Return loss	.20dB
Nominal signal level	.±2VDC
Maximum input level	.±5.2VDC (no damage)

### Output Characteristics

Type	.Single-ended
Signal connector	.BNC female (75 ohm type)
Coupling	.DC
Impedance	.75 ohm
Maximum output level	.±2VDC (into 75 ohm load)

## General Specifications

Switching	.Asynchronous
Power supply section	.Universal type (non-redundant)
Power supply monitoring	.Included
Remote control interfaces	.Serial (RS-232C, RS-422A or RS-485 multi-drop)
Serial port connector	.DE-9S (D-Type female)
US-Link connector	.RJ-45
Ethernet	.RJ-45 (standard on VSU2)
Status LED's	.Bi-Color on front panel
Front panel display	.Illuminated super-twist LCD
Configuration memory	.Lithium-back RAM
Memory retention	.>10 years
Cooling	.Convection
AC power requirements	.90-264VAC, 47-440Hz
Power cord	.6-foot (Belden 17250)
Fuse protection	.2A, 5mm (dual), AC models only
Weight	.7 lbs (VSU1) 15lbs (VSU2)
Size (VSU1)	.1.73H x 9.55D x 19.00W (1RU)
Size (VSU2)	.3.47H x 9.55D x 19.00W (2RU)
Operating temp	.0 to +60C
Non-operating temp	-.20 to +85C
Humidity	.0 to 95% (NC @ +25C)
MTBF	.>35,000 hours
Certifications	.CE EN61010

Universal Switching's policy is one of continuous development. Consequently, the company reserves the right to vary from the descriptions and specifications shown in this publication.