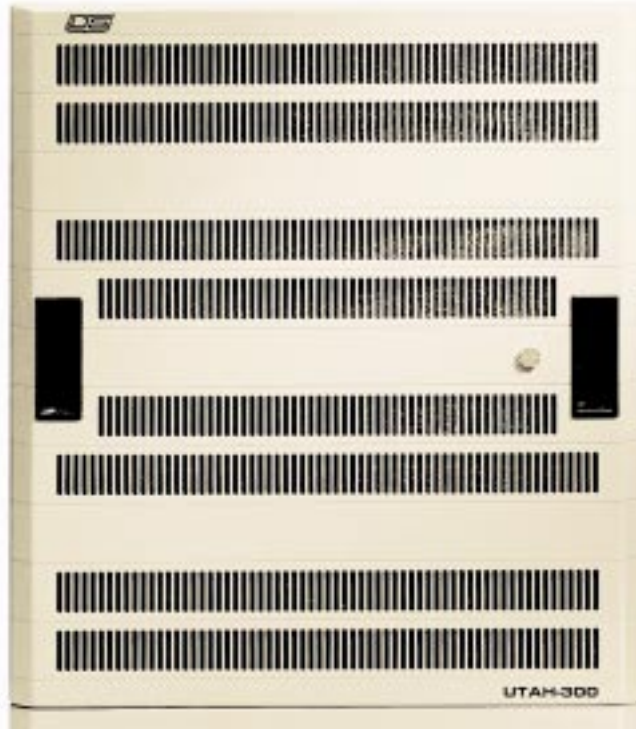


# UTAH-300

## ROUTING SWITCHER



The UTAH-300 provides the ideal solution for large and medium-sized routing systems, while delivering a variety of frame types for modular growth and space-efficient rackframe planning. The UTAH-300 features high crosspoint densities and interchangeable analog/digital card technologies.

An efficient 32x32 matrix building block provides the optimal balance between rackframe density and modularity. In the area of control, the UTAH-300 is backward-compatible with all Utah Scientific matrices, for easy upgrade to existing routing installations.

### UTAH-300 FEATURES

- Expandable to 512x512, 32 levels.
- Analog and digital signals in the same frame
- Output-based digital video signal reclocking
- Multiple frame styles and sizes

The UTAH-300 is the culmination of years of routing and control R&D and a history of super high quality, flexible routing systems, offering a cost-efficient routing solution for both analog and digital signals. It features solid analog video performance, modular growth in both inputs and outputs, and the specifications you've come to expect from all Utah Scientific routing systems.

### Video

The digital video portion of the UTAH-300 offers the latest in digital signal switching technologies. It provides automatic EQ and output reclocking at the industry's common digital data rates of 143 Mb/sec (NTSC Composite), 177 Mb/sec (PAL Composite) and 270 Mb/sec (Component).

The UTAH-300 also handles the 360 Mb/sec bandwidth developed to support emerging DTV signal formats. The UTAH-300 reclocks on the routing switcher output, so it optimally reduces jitter from the digital video signal. This is especially important in digital edit suites where multiple routes of the same signal frequently occur.

Both the analog and digital video systems are capable of working with 525 or 625 line signals. An output monitor matrix is standard with the UTAH-300.

The UTAH-300 video routing systems are available in three frame types for both medium and large routing applications: A 7 RU frame for 32x32 video and audio, a 7 RU frame for 64x64 video only and a 12 RU frame for 128x128 video only is available.

Expansion beyond 128x128 is available, consult Utah Scientific for details.



### Audio

The UTAH-300 audio routing system provides a full complement of signaling needs in very space-efficient packages. The analog audio portion features a modular swap/sum card for greater audio routing flexibility.

Left and right channels can be swapped with one another, or "summed" into one another.

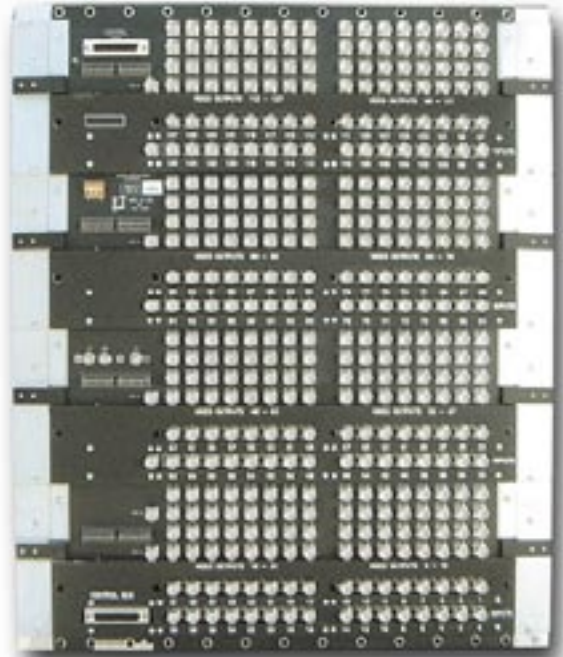
The analog audio features removable terminal wiring blocks for easier wiring to the frame itself.

The UTAH-300 digital audio handles the emerging AES/EBU signal distribution needs, providing the compact engineering and high signal integrity found in all Utah routing systems. AES/EBU signaling can also be shared in the same frame as analog audio, providing a modular, efficient growth path into digital audio.

As with video, output monitoring is standard on both analog and digital matrices. Three frame types are available for audio routing: a 7 RU frame that supports 32x32 stereo audio in addition to 32x32 video. 7 RU and 12 RU frames for stand alone 64x64 and 128x128 video or stereo audio switching. 256x128 mono in 12 RU is also possible.

### Frames and Power Supplies

All UTAH-300 frames feature modular, plug-in, DC-powered fans, rear-mounted for easy maintenance and removal. All frames have removable doors for easy access to the horizontally-mounted matrix cards. Status indicator lights and rear panel alarm outputs provide improved system status monitoring. Power supplies reside in a separate power supply frame. The main power supply, along with the optional redundant unit, uses an independent power cord for even greater assurance of zero downtime.



### UTAH-300 HIGHLIGHTS

- Analog/Digital in the Same Frame -- Provides built-in upgradability.
- 360Mbps Digital Video I/O -- Ready for emerging DTV signal formats.
- L/R Audio Swap & Sum -- Allows channels to be swapped or summed together.
- High Speed MX Matrix Control Bus -- Provides networking growth path.
- Backward-Compatible Control -- Works together with all existing Utah routers.
- Reduced Rack Space Requirements -- Compact design conserves rack space.
- Monitor Output -- Simplifies system monitoring.
- Wide Variety of Matrix Frames -- For small or large system requirements.
- Modular Power Supply Frame -- Eliminates confusing multiple supply requirements.
- Plug-in Cooling Fans -- Simplifies maintenance.

## UTAH-300 SPECIFICATIONS

### Analog Video:

Input Impedance	75 Terminating
Nominal Input Level	1V p-p
Clip Level 2	V p-p
Input Return Loss @4.43 MHz	40 dB typical
Input Coupling	DC
Input Gain Adj. Range	±2.5 dB
Differential Phase	0.10°
Differential Gain 0	.15%
Throughput Delay, Typical	32 ns
Input/Input Delay Scatter	±1 ns
Output/Output Delay Scatter	±1 ns
Chrominance/Luminance Gain	±0.05 dB
Chrominance/Luminance Delay	±0.5 ns
Crosstalk @4.43 MHz	-60 dB
K Factor -- Pulse/Bar ratio & shape	<0.1%
Gain Uniformity -- Any input to any output	± 0.1 dB
Hum/Noise (5MHz/CCIR451-2)	-75 dB
Frequency Response to 5MHz	± 0.05 dB
to 10MHz	± 0.1 dB
to 30MHz	± 1.0 dB
-3dB point	60 MHz
Output Gain Adj. Range	± 0.25dB
Switch Transient AC	<50 mVp-p (5MHz BW)
Switch Transient DC	<50 mVp-p
Output to Output Isolation	>40dB (DC to 5MHz)
Output Return Loss, @4.43 MHz	>35dB typical
Output Equalization 10MHz	200 ft 8281 coax
30MHz	100 ft 8281 coax

### Deluxe Video Input Module Option:

CMR @50/60Hz	60 dB
Common Mode Voltage	± 1.5 V
Input Coupling	DC/Clamped, jumper selectable
Equalization, 8281 coax at 10MHz	500 ft
30MHz	200 ft
Eq. Frequency Response Loss	± 0.1 dB/dB

### Power Requirements

PS-3 Power supply 100-240 VAC, 50/60 Hz  
 All power supplies are UL-listed and IEC950 approved  
 True Power Consumption 800 W DV

### Physical Characteristics

EIA 19" Rack Space requirements	
128 V or AA Frame	12RU (21"/53.34cm)
64 V or AA Frame	7RU (12.25"/31.12cm)
PS-3 Frame	2RU (3.5"/8.89cm)
All units 19"/48.26cm deep	
Approximate Weights	
128x128 video, full frame	110 pounds
128x128 audio, full frame	80 pounds
Power supply module	9 pounds
Dual power supply frame with supplies	33 pounds

### Environmental

Temperature Range	10-45° C
Relative humidity	0-90%(non-condensing)

### Analog Audio:

Max. Input Level, Bal.	24 dBu
Clip Level	25 dBu
Input Impedance (for 128 outs)	200 k
THD @24dBu, 20Hz to 20kHz	0.05%
IMD @24dBu, 20Hz to 20kHz	0.05%
Hum and Noise, @15kHz	-85 dBu typical
Crosstalk @20kHz	-90 dB typical
Freq Resp, 20Hz to 20kHz	± 0.05 dB
to 1 MHz	+ 0.1,-3 dB
Gain Uniformity	± 0.05 dB
Input Gain Adj. Range	± 2.5 dB
CMR @50/60Hz	70 dB
Common Mode Voltage	± 10v
Output Source Impedance	< 1
Max cable length (w/ 600 load)	500 ft typical
DC on Output	± 30 mV max.

### Digital Video:

Conforms to SMPTE 259M	
Data Rates: 360, 270, 177, 143 Mbits/s typical	
Input Return Loss 270MHz	15 dB
Automatic Input Equalization, 8281 coax	
@143,177,270 Mbit/s	1000 Ft
@360 Mbit/s	600 Ft
Signal level	800mV p-p ±10%
Output Return Loss to 270MHz	15 dB typical
Output Reclock	Yes

### Digital Audio

Conforms to AES3-1992	
Balanced (Differential) Inputs/Outputs	
Input Impedance	110
Input Level, minimum	200 mV p-p
maximum	7 V p-p
Common Mode Level, DC to 20 kHz	±7 V
Output Impedance	110
Output Level, 110 termination	2 V p-p typical
Output Common Mode; DC to 6 MHz	>30 dB below signal
Rise and Fall Times	28ns typical
Unbalanced Inputs/Outputs (BNC)	
Input Impedance	75
Return Loss, 0.1 to 6.0 MHz	>25 dB
Input Amplitude,	
Minimum	100 mV p-p
Maximum	2.5 V p-p
Output Impedance	75
Return Loss, 0.1 to 6.0 MHz	>25 dB
Output Level, 75 term. 1	.0 V p-p typical
Rise and Fall Times	
Minimum	30 ns
Maximum	44 ns

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