

ECT1000 SERIES

ECT1000 MULTI-CHANNEL DIGITAL MULTIPLEXER



FEATURES

- Up to 10 Broadcast Quality 12-bit Video Channels
- Up to 20 Industrial Quality CCTV Video Channels
- Up to 160 Audio Channels
- Up to 80 T1 or 60 E1 Data Channels
- Up to 160 RS-422/RS-232/TTL/CMOS Data Channels
- Up to 20 10Mbps Ethernet Data Channels

- Any Combination of Video, Audio or Data Channels
- Multi-Format PTZ Support
- Diagnostic/Status LED Indicators
- Battery Back-Up Support
- Fiber Link Redundancy Option
- Video Cable Equalization

The ECT1000 is a high capacity fiber optic multiplexer that enables transmission of a variety of video, voice and data signals over a single fiber. The system is designed to serve as a backbone for studio broadcast, CCTV security/surveillance, industrial control/telemetry and intelligent transportation fiber optic networks.

The ECT1000 supports simplex or duplex point-to-point operation or alternatively can be configured for multi-node operation with full drop-and-insert capability. The system capacity may be doubled to 20 broadcast or 40 CCTV video channels over a single fiber by the use of Wave Division Multiplexing technology. The system utilizes high speed Analog/Digital Conversion, Digital Signal Processing and Time Division Multiplexing with a data rate of 1.6 Gbps over each wavelength.

The system features a modular and flexible design allowing for hot-swappable operation. The universal chassis with integrated power supply accommodates the optical transmitter and optical receiver modules with a variety of options available. The interface cards plug into the 20 available slots with any combination of video, voice and data cards supported. The system provides optional connections for a secondary stand-by power source or battery to preserve uninterrupted operation and also features multi-functional diagnostics with external alarm signaling.



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The ECT1000 is factory-configured to support a variety of applications. The system is available in two configurations – 6-bit and 8-bit architecture. Typically the 6-bit architecture is utilized for high bandwidth CCTV video applications (necessary for the transmission of PAL video) and high quality 12-bit broadcast video transmission. The 8-bit architecture provides higher quality NTSC CCTV video transmission and offers greater audio and data channel capacity.

SPECIFICATIONS – 6-Bit Architecture

Broadcast Quality Video Channels

Number of Channels	Up to 10 per Wavelength (1 channel per dual slot card)
Conversion Format	12 bit
Video Formats Supported	NTSC, PAL, Component (YUV, RGB & YC)
Video Input	75Ohm, balanced
Video Input/Output Level	NTSC: 1.0 V p-p, PAL: 1.3 V p-p
Video Cable Equalization	300 meters
Video Bandwidth to –3dB	5.5MHz
Differential Gain	< 0.5 %
Differential Phase	< 0.5°
Signal-to-Noise Ratio	> 74dB
Luminance Non-Linearity	< 2.0%
Chrominance/Luminance Delay	< 30ns
K-2T Factor	< 1.0%

CCTV Quality Video Channels

Number of Channels	Up to 20 per Wavelength (1 channel per single card)
Conversion Format	6 bit
Video Formats Supported	NTSC, PAL
Video Input	75Ohm, balanced
Video Input/Output Level	NTSC: 1.0 V p-p, PAL: 1.3 V p-p
Video Cable Equalization	300 meters
Video Bandwidth to –3dB	5.5MHz
Differential Gain	< 1.5 %
Differential Phase	< 1.5°
Signal-to-Noise Ratio	> 45dB
Luminance Non-Linearity	< 5.0%
Chrominance/Luminance Delay	< 150ns
K-2T Factor	< 4.0%



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Broadcast Quality Audio Channels

Number of Channels	Up to 160 per Wavelength (8 channels per card)
Conversion Format	24 bit
Audio Input	600 Ohm or 10k - balanced or unbalanced (set up with dip switches)
Audio Input Level	0dBm \pm 10dBm
Audio Output	Balanced or unbalanced (set up with dip switches)
Audio Output Level	0dBm \pm 6dBm (600 Ohm load)
Audio Bandwidth to -3dB	10Hz to 20kHz
Signal-to-Noise Ratio	> 86dB (0dBm level, 600 Ohm load)
THD	< 0.01% (0dBm level, 600 Ohm load)

Industrial Quality Audio Channels

Number of Channels	Up to 80 per Wavelength (4 full duplex channels per card)
Conversion Format	16 bit
Audio Input	Balanced, 600 Ohm or 47k (set up with jumpers)
Audio Input Level	0dBm \pm 10dBm
Audio Output	Balanced or unbalanced (set up with switches)
Audio Output Level	0dBm \pm 6dBm (600 Ohm load)
Audio Bandwidth to -3dB	10Hz to 20kHz
Signal-to-Noise Ratio	> 80dB (0dBm level, 600 Ohm load)
THD	< 0.03% (0dBm level, 600 Ohm load)

Data Channels

Data Rate	Up to 2.1Mbps
Number of RS-232/RS-422/TTL Channels	Up to 120 (6 channels/card)
Number of RS-485 Channels	Up to 60 (3 channels/card)
Number of T1/E1 Channels	Up to 60 (3 channels/card)



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SPECIFICATIONS – 8-Bit Architecture

CCTV Quality Video Channels

Number of Channels	Up to 20 per Wavelength (1 channel per single card)
Conversion Format	8 bit
Video Formats Supported	NTSC
Video Input	75 Ohm, balanced
Video Input/Output Level	1.0 V p-p
Video Cable Equalization	300 meters
Video Bandwidth to -3dB	4.25 MHz
Differential Gain	< 1.5 %
Differential Phase	< 1.5°
Signal-to-Noise Ratio	> 56dB
Luminance Non-Linearity	< 3.0%
Chrominance/Luminance Delay	< 90ns
K-2T Factor	< 3.0%

High Quality Audio Channels

Number of Channels	Up to 160 per Wavelength (8 channels per card)
Conversion Format	24 bit
Audio Input	600 Ohm or 10k - balanced or unbalanced (set up with dip switches)
Audio Input Level	0dBm \pm 10dBm
Audio Output	Balanced or unbalanced (set up with dip switches)
Audio Output Level	0dBm \pm 6dBm (600 Ohm load)
Audio Bandwidth to -3dB	10Hz to 16kHz
Signal-to-Noise Ratio	> 86dB (0dBm level, 600 Ohm load)
THD	< 0.01% (0dBm level, 600 Ohm load)

Industrial Quality Audio Channels

Number of Channels	Up to 80 per Wavelength (4 full duplex channels per card)
Conversion Format	16 bit
Audio Input	Balanced, 600 Ohm or 47k (set up with jumpers)
Audio Input Level	0dBm \pm 10dBm
Audio Output	Balanced or unbalanced (set up with switches)
Audio Output Level	0dBm \pm 6dBm (600 Ohm load)
Audio Bandwidth to -3dB	10Hz to 20kHz
Signal-to-Noise Ratio	> 80dB (0dBm level, 600 Ohm load)
THD	< 0.03% (0dBm level, 600 Ohm load)



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Data Channels

Data Rate	Up to 1.6 Mbps
Number of RS-232/RS-422/TTL Channels	Up to 160 (8 channels/card)
Number of RS-485 Channels	Up to 80 (4 channels/card)
Number of T1 Channels	Up to 80 (4 channels/card)

SPECIFICATIONS – Universal

Optical

Wavelength	1310nm or/and 1550nm
Optical Transmitter	Laser Diode
Optical Receiver	PIN Diode
Optical Connector	FC/PC or ST
Fiber Cable	8.3/125 Singlemode
Output Power	-4 dBm (available with higher output lasers)
Receiver Sensitivity	-23 dBm
Optical Loss Budget	19 dB

Environmental

Temperature Range	-10°C to +65°C
Humidity	0% to 90% non-condensing

Power Requirements

Operating Voltage	11V d.c. to 15V d.c.
Power Consumption	80W per Unit (@12V d.c.)

ORDERING INFORMATION

ECT1000-xyz

xy = 60 for 6-bit architecture
= 61 for 6-bit architecture with PTZ support
= 80 for 8-bit architecture
= 81 for 8-bit architecture with PTZ support

Z = 1 for 1 x 1310nm Tx + Rx
= 2 for 1 x 1310nm Tx + Redundant Rx
= 3 for 2 x 1310nm Tx + Redundant Rx
= 4 for 1 x 1550nm Tx + Rx
= 5 for 1 x 1550nm Tx + Redundant Rx
= 6 for 2 x 1550nm Tx + Redundant Rx
= 7 for 1 x 1310nm Tx + 1 x 1550 Tx + Redundant Rx



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