

# LW50

## Lightwinder Colosseum Series

The Lightwinder Colosseum Series (LW-50) is a multi-channel audio and data transmission system for sending multiple signals over long distances. A system consists of two to sixteen Mainframes, each holding from two to eight modules. With modules for Mic/Line input, AES/EBU input and output, Line output and Intercom, the LW-50 can be custom configured for any application. All of these features can be completely controlled and

monitored by the LightView™ software, which runs under Windows NT™, Windows 95™ or Windows 98™.

In addition to transmitting audio signals, the Video Link option allows for broadcast quality transmission of NTSC and PAL video. The LW-50 accepts external video, word clock or frame sync signals at 48 kHz or 44.1 kHz, and a sync reference output is provided. The LW-50 can also be equipped with RS-232 and RS-422 interfaces for bi-directional communication and machine control.

The Lightwinder Colosseum is the best sounding and most reliable multi-channel optical transmission system available. For more detailed information and product demonstration, contact Otari today.

### PRODUCT HIGHLIGHTS:

- Up to 64 channels of 24-bit audio in each direction
- Fiber-optic transmission impervious to RFI/EMI interference
- Any combination of digital and analog inputs and outputs
- Fault-tolerant and redundant
- Up to 16 separate stations in a single system
- Connects to Lightwinder Hub/Router for much larger systems
- Built-in test oscillator
- Remote routing control
- Remote level control
- Remote status monitor



# LW50 SPECIFICATIONS:

## CONNECTIVITY

<b>Optical Input/Output</b>	Fiber Optic Cable: Multi-Mode, 62.5 $\mu$ m Connector: ST-type Max Distance: 3,000 meters
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## COMMUNICATION

<b>A/D Module:</b>	
<b>Input Impedance</b>	-62 to -21 dB: 2 k $\Omega$ , 2 k $\Omega$ (+48 V) -20.5 to +12 dB: 10 k $\Omega$ , 5 k $\Omega$ (+48 V)
<b>Amplifier Range Gain</b>	62 to -12 dBu
<b>Maximum Level (without clipping)</b>	+36 dBu
<b>Sampling Frequency</b>	48 kHz / 44.1 kHz (with EXT SYNC)
<b>A/D Conversion</b>	20-bit $\Delta$ E 64X over-sampling
<b>Frequency Response</b>	10 Hz to 22 kHz
<b>Noise</b>	Mic input EIN : Max. -123 dB, (Maximum Gain, 200 $\Omega$ terminated)
<b>THD</b>	Max. 0.008% (1 kHz, peak)
<b>S/N Ratio</b>	Min. 102 dB (1 kHz, A-WTD)
<b>Crosstalk</b>	Min. 100 dB (1 kHz)
<b>A/D Module, D/A Module:</b>	
<b>Output Impedance</b>	Max. 5 $\Omega$
<b>Nominal Level</b>	+4 dBu (-20 dB from digital peak)
<b>Maximum Level (without clipping)</b>	+24 dBu (digital peak)
<b>Sampling Frequency</b>	48 kHz / 44.1 kHz (with EXT SYNC)
<b>D/A Conversion</b>	20-bit 8X over-sampling
<b>Frequency Response</b>	10 Hz to 22 kHz
<b>Total Harmonic Distortion</b>	Max. 0.008% (1 kHz, peak)
<b>S/N Ratio</b>	Min. 102 dB (1 kHz, A-WTD)
<b>Crosstalk</b>	Min. 100 dB (1 kHz)
<b>AES/EBU IN Module:</b>	
<b>Signal Format</b>	IEC 958, EIAJ CP-340, AES/EBU, S/PDIF Digital audio interface (with transformer)
<b>Impedance</b>	110 ohm
<b>Sampling Rate Converter</b>	Input range : 9 kHz - 59 kHz
<b>AES/EBU OUT Module:</b>	
<b>Signal Format</b>	IEC 958, EIAJ CP-340, AES/EBU S/PDIF Digital audio interface (with transformer)
<b>Impedance</b>	110 $\Omega$
<b>INCOM Module:</b>	
<b>A/D Converter</b>	16-bit sampling, delta-sigma ADC
<b>D/A Converter</b>	16-bit sampling, delta-sigma DAC
<b>Sampling frequency</b>	16 kHz / 14.7 kHz (with EXT SYNC)
<b>Number of Quantization Bits</b>	14 bits
<b>Maximum I/O level</b>	2.8 Vp-p
<b>Standard I/O level</b>	280 mVp-p
<b>Termination</b>	Unbalanced: Impedance 220 $\Omega$
<b>Balanced: Impedance</b>	320 $\Omega$
<b>Power Supply</b>	DC Output (single channel): 100 mA /2.4W
<b>Headphone Output</b>	Mono, 8 ohm, 6.3mm st. phone jack

## SYNCHRONIZATION

<b>EXT SYNC Module:</b>	
<b>VIDEO Sync</b>	Format: NTSC,PAL,SECAM ( $\pm$ 100ppm), 0.3-4 Vp-p (at 75 $\Omega$ )
<b>WORD Sync</b>	Frequency: 44.1, 48 kHz ( $\pm$ 100ppm)
<b>FRAME Sync</b>	Frequency: 24, 25, 29.97, 30 Hz ( $\pm$ 100ppm)
<b>Format</b>	Sync to rising edge of square wave
<b>Electric Characteristics</b>	TTL Level
<b>Input Impedance</b>	75 $\Omega$ (with termination switch)
<b>Connector</b>	BNC
<b>RS-422A Module:</b>	
<b>Signal Format</b>	RS-422A (TIA/EIA-422-B)
<b>Number of Connectable Devices</b>	1 Driver, 10 Receivers
<b>Maximum Cable Length</b>	1200 m
<b>Maximum Transmission Speed</b>	100 kbps
<b>RS-232C Module:</b>	
<b>Signal Format</b>	RS-232C (TIA/EIA-232-E)
<b>Number of Connectable Devices</b>	1 Driver, 1 Receiver
<b>Maximum Cable Length</b>	NA (max. 2500 pF)
<b>Maximum Transmission Speed</b>	20 kbps

## PHYSICAL DIMENSIONS

<b>Operation Environment</b>	-10 -50°C, 20-80% Rel. hum. (non-cond.)
<b>Weight</b>	LW50-2 25 kg LW50-4 20 kg LW50-6 25 kg LW50-8 30 kg PWR SPLY 14 kg
<b>Dimensions (W x H x D)</b>	LW50-2 482x x400 mm LW50-4 482x265x400 mm LW50-6 482x354x400 mm LW50-8 482x442x400 mm PWR SPLY 482x132x400 mm

## ELECTRICAL

<b>Power</b>	100-120 VAC ( $\pm$ 10%), Single Phase, 50/60 Hz, 300 VA
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