MultiDyne
Video & Fiber Optic Systems

HD-3000 Series

Single & Dual Channel Multi-Rate Fiber Optic Transmitters, Receivers, and Transceivers

Features

- Fiber transport from 5Mbps to 3Gbps
- Transport one or two streams of video/data
- Nine different models to choose from
- Supports SMPTE 424M, 292M, 259M, 310M, 344M, 305M & DVB-ASI
- Reclocks SMPTE standards 424M, 292M, 259M (switchable)
- AutoMute non-standard SMPTE signals (switchable)
- Equalizes long runs of standard coax cable:
  » 120m at 3 Gb/sec
  » 150m at 1.5 Gb/sec
- Supports embedded audio and data
- Monitor laser status, data rate, HD lock, power
- Multimode or Single Mode
- Choose ST, SC, LC, or FC connectors
- Small, rugged, portable
- Stand alone or rack mountable

Applications

- Sports production
- Remote camera links
- Distance learning
- OB Van Inter-connects
- Pre-fibered venues
- Courtesy feeds

Small in Size But Big on Features and Value

HD-3000-TX
Single channel transmitter with loop output (front)

HD-3000-RX
Single channel receiver with dual outputs (rear)

Maximum Choice, With "Drop & Repeat"

The HD-3000 is a family of nine compact, portable fiber optic transmitters, receivers, and transceivers. The different modules can send one or two HD/SDI signals over individual fibers, or two signals over a single strand, one-way or bidirectionally. The unique HD-3000 "Drop & Repeat" unit allows a signal to be received at one location and continue on via fiber to one or more additional locations.

All Formats

The HD-3000 family supports the industry's broadest range of digital transmission rates while maintaining the quality that broadcasters demand, including applicable SMPTE, ATSC, and DVB standards:

- 3 Gb/s HD/SDI
- 1.5 Gb/s HD/SDI
- 540 Mb/s
- 360 Mb/s serial component & compressed HDTV
- DVB/ASI
- 270 Mb/s serial component
- 177 Mb/s PAL composite
- 143 Mb/s NTSC composite
- 19.4 Mb/s ATSC
- All rates in-between

Reclock & AutoMute

Reclocking can be turned on or off, as can a unique "AutoMute" function, which eliminates digital noise when signals don't meet SMPTE standards. With the ability to EQ up to 120m of coax at 3Gb speeds, you have the flexibility to easily customize your signal distribution.

Stand Alone, Rack Mount, Cross-Compatible

Featuring easy-to-read LED indicators on the front panel and all connectors on the rear, the HD-3000 is convenient and practical to use as a stand-alone when placed on a table-top. Alternately, six units can be racked-mounted into a single RU with a convenient rack kit.

All modules are fully compatible with MultiDyne's Silver Bullet, HD-6000, LightBox and LightCube portable systems and the EOS router.
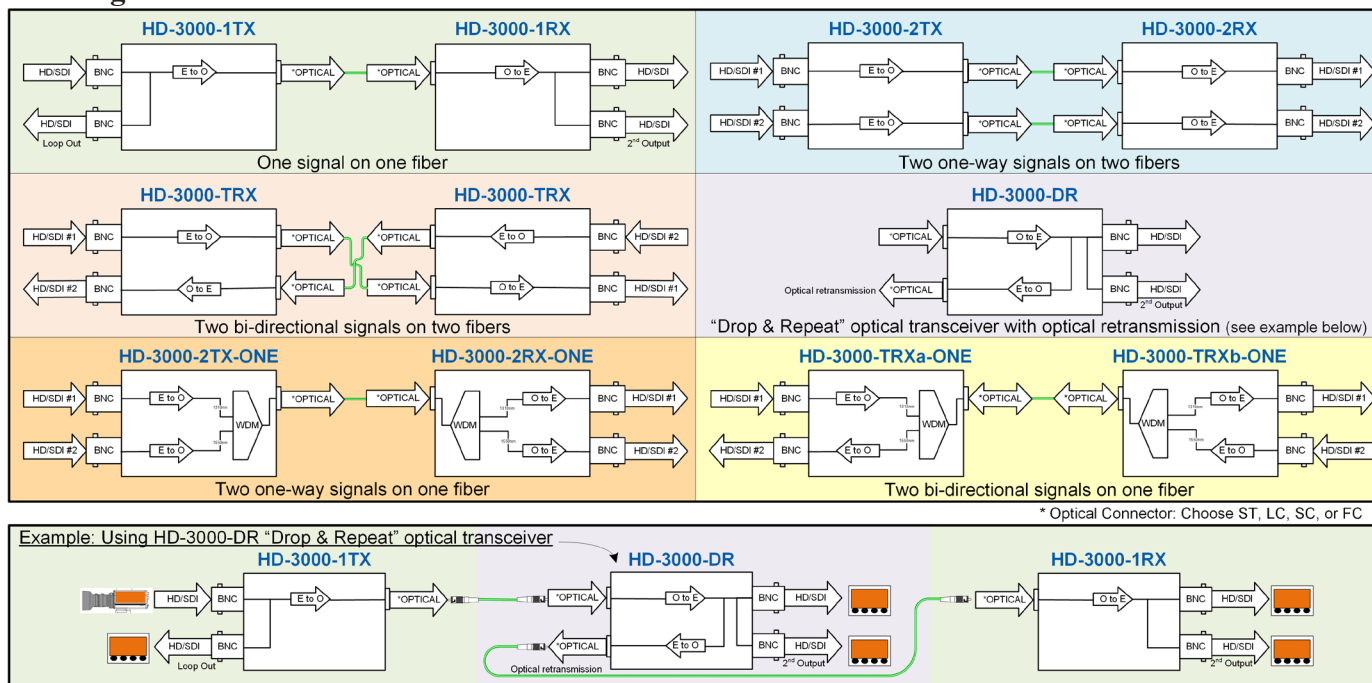
Choice of Fiber & Connectors

These modules can be fitted with the optical connector of your choice (ST, SC, LC, FC) and will operate on multimode or single mode fiber, but for best performance over longer distances at the highest bit-rates, single mode fiber is recommended.

Designed and manufactured in New York.

HD-3000-TRX
Bi-directional transceiver (front and rear)

Block Diagrams

HD-3000-1TX — **HD-3000-1RX**
One signal on one fiber

HD-3000-2TX — **HD-3000-2RX**
Two one-way signals on two fibers

HD-3000-TRX — **HD-3000-TRX**
Two bi-directional signals on two fibers

HD-3000-DR
"Drop & Repeat" optical transceiver with optical retransmission (see example below)

HD-3000-2TX-ONE — **HD-3000-2RX-ONE**
Two one-way signals on one fiber

HD-3000-TRXa-ONE — **HD-3000-TRXb-ONE**
Two bi-directional signals on one fiber

* Optical Connector: Choose ST, LC, SC, or FC

Example: Using HD-3000-DR "Drop & Repeat" optical transceiver
HD-3000-1TX — **HD-3000-DR** — **HD-3000-1RX**

Specifications

Video, Digital
Signal Count .... 1 or 2 (model dependant)
Data Rate...................................5 Mb/s to 3 Gb/s
Reclock & Automute ....
.... SMPTE 425M (2.97Mb/s), 292M (1.49Mb/s),
..259M-C (270Kb/s) (enable/disable via int. dip switch)
Input/Output Level...................800 mV (peak to peak)
Input/Output Impedance .... 75 Ohms
Return Loss................> 15 dB typical (5 – 1500MHz)
.... > 10 dB typical (1.5 – 3GHz)

Cable Equalization (Gepco VSD2001/Belden 1694A):
270 MHz .... up to 500m
1.5 GHz .... up to 200m
3 GHz .... up to 150m

Electro-Optical
Nominal Optical Loss Budget Values
TX Laser output power (std./DFB)-5 dBm/0 dBm
RX Sensitivity, HD/SDI (bars)................ -22 dBm
Wavelengths...................................1310nm (standard)
.... 1310/1550nm (WDM) or 1271-1611nm (CWDM)
Fiber Compatibility..........Multimode or Single Mode
.................................(Single Mode recommended)
Optical Connector Options .... ST, SC, FC, LC

Mechanical/Environmental
Dimensions (WxLxD)................ 2.75" x. 1.125" x. 5"
Weight..7 oz.
Power Input...9-24VDC
Power Consumption.....................<5 watts@12VDC
Temperature Range .... 0° to +70°C
Humidity Range........... 0 to 95% RH, Noncondensing

Compliance
Laser Safety ....Class 1 Laser
Other ....RoHS

Ordering Information

Part #*	Description (includes Power Supply)
HD-3000-1TX-ST	Multi-rate Serial Digital Video Transmitter @ 1310nm, -5dBm
HD-3000-1TX-xxxx-ST	Multi-rate Serial Digital Video Transmitter, CWDM wavelengths, 0 dBm (Specify CWDM wavelength)
HD-3000-1RX-ST	Multi-rate Serial Digital Video Receiver, Sensitivity -20dBm
HD-3000-TRX-ST	Two-Way Multi-rate Serial Digital Video Transceiver @ 1310nm, TWO fibers
HD-3000-DR-ST	Multi-rate Serial Digital Video Drop Transmitter @ 1310nm, TWO fibers Optical IN and OUT with two BNC outputs
HD-3000-2TX-ST	Dual One-Way Multi-rate Serial Digital Video Transmitter @ 1310nm, TWO fibers
HD-3000-2RX-ST	Dual One-Way Multi-rate Serial Digital Video Receiver, TWO fibers
HD-3000-2TX-ONE-ST	Dual One-Way Multi-rate Serial Digital Video Transmitter, ONE fiber
HD-3000-2RX-ONE-ST	Dual One-Way Multi-rate Serial Digital Video Receiver, ONE fiber
HD-3000-TRXa-ONE-ST	Two-Way Multi-rate Serial Digital Video Transceiver, Tx: 1310nm, Rx: 1550nm, ONE fiber
HD-3000-TRXb-ONE-ST	Two-Way Multi-rate Serial Digital Video Transceiver, Tx: 1550nm, Rx: 1310nm, ONE fiber
Accessories	
RM6	6 unit rack-mounting kit, mount 6 HD-1500, HD-3000, SD-270 or HDMI-ONE in 1 Rack Unit
BP-6	Blank panel for RM6 rack-mounting kit
HD-3000-PS	Spare 12VDC Power Supply for HD-3000 modules

*For alternate optical connectors, replace "ST" with "SC", "FC" or "LC".   CWDM wavelengths available; contact dealer or factory.