The HD-3500 series offers multi-rate HD-SDI fiber optic transport with options for multiple audio, intercom and bi-directional data over a single fiber, with high definition transport up to 1080p 3G HD-SDI, uncompressed.

MultiDyne’s HD-3500 series gives broadcasters and A/V professionals an innovative solution for moving high definition video as well as analog or AES audio, intercom, GPIO’s and tally. The data and GPIO channels can be used to control equipment in remote locations, and the tally relay can be used to control a camera tally light. The system has audio inputs for two channels of outbound digital AES audio or four analog audio channels with two more bi-directional audio channels for 4-wire intercom.

In addition, you can cross-convert audio signals, by inputting analog or AES audio and getting both analog and AES out, saving the cost of A/D converters. The HD-3500 also gives users three discreet bi-directional RS-232, 422 or 485* data channels as well as four GPIO’s and one tally. Embedded audio within the HDSDI video signal is supported as long as the resultant signal is SMPTE compliant.

Applications for the HD-3500 include remote camera control in broadcast environments, point-of-view (POV) cameras, action sports shots, sky cams and intelligent transportation systems as well as for high definition surveillance, casinos and Homeland Security. The HD-3500 can be used as a stand-alone product or, alternately, can be rack mounted with our convenient Rack Kits. When integrated into the MultiDyne LightBox or LightCube and combined with our other industry-leading fiber transport products, a variety of completely custom solutions can be suited to most any purpose; from campus interconnects to remote outside broadcast applications. Rely on the MultiDyne HD-3500’s to provide unsurpassed reliability with no quality loss or delay, whether within a studio or across town.
The HD-3500 system provides all of the signals needed to remotely operate any camera, up to 40km away from its base station. The 3G HD uncompressed video is transported without any loss or degradation of the signal. Data paths allow for easy remote control of critical camera parameters and the tally circuit lets the camera operator know when he is "hot". Audio paths allow for multiple line level audios from the camera-end of the link as well as bi-directional 4-wire circuits for intercom. In addition, you can take advantage of your digital audio sources and mics by inputting AES signals and get both analog and AES out at the control room.

The HD-3500 packs a lot of functionality into a very small package...and at a great price.

The HD-3521 system has everything from the 3500 system minus the audio and intercom functions. For customers looking for the capability to remotely control a distant camera with or without a PTZ (Pan-Tilt-Zoom) head minus the audio, intercom, GPIO AND 3rd DATA CHANNEL, this is the system for you. The system transports full resolution, uncompressed 3G HDTV from the camera and has two data paths for camera control, PTZ control and other accessories such as rain wipers. Why pay for audio and intercom if you don’t need it? The HD-3521 is THE cost-effective way to operate your remote camera whether on the roof or across town.

The HD-3540 gives you the same uncompromised video quality and AES or analog audio for fixed camera positions such as weather or scoreboard cameras. As with the HD-3500, you have the capability of inputting either analog or digital AES audio signals and getting both analog and digital signals out at the control room. For fixed surveillance application, the HD-3540 is an extremely cost efficient and small package that will fit into most weatherproof enclosures and most budgets.
The HD3500GE series includes all of the features and functionality of the 3500 family of transceivers, but also adds bi-directional Sync and GigE (Ethernet) transport capability to address unique applications where these two features are critical. The HD3500GE series includes a new and more rugged enclosure than the standard HD3500 series, but can also be rack mounted when necessary. These units are ideal to drive remotely operated PTZ cameras that include a GigE port as well as support for Internet streaming and tally light applications. It’s also ideal for accurately synchronizing multiple cameras.

**Applications**

- **Basic CCU Control**
- **INTERNET**
- **TALLY**
- **HD**
- **Gig E**
- **Gig E CTRL & PAINT**
- **1.5M Fiber**
- **HD Gig E CTRL**
- **Gig E CTRL & PAINT**
- **Basic CCU Control**
- **INTERNET**
- **TALLY**
- **HD**
- **Gig E**
- **Gig E CTRL & PAINT**
- **1.5M Fiber**
- **HD Gig E CTRL**
**Specifications**

### Digital Video
- **# of Inputs**: 1 w/ loop out, Dual outs on RX  
- **Interface**: SMPTE 424M, 297M, 292M, M294M-C, DVB-ASI  
- **Input Coax EQ**  
  - @3 Gbps: 80m  
  - @1.485 Gbps: 150m  
  - @143-360 Mbps: 350m  
- **Input level**: 100mV (peak to peak)  
- **Impedance**: 75 Ohms  
- **Bit-error rate**: 10^-12  
- **Jitter**: < 0.033UI under 1 MHz  
- **Rise/fall times**: < 270ps  
- **Return Loss**: > 15 dB at 5 MHz - 1.485 GHz  
- **Gigabit Ethernet**: 10/100/1000 Mbps  
- **Sync**: Analog NTSC-PAL, HDTV Tri-Level  

### Data
- **232/422**: DC-3Mbps  
- **232 In V**: +/- 25V max, 2V min  
- **232 Out V**: +/- 5V @ 3Kohm, 1.6V Sens.  
- **422,485 In V**: -7V to 12V, 0.2V diff min  
- **GPI/GPO**: Normally Open, Form 1 SPST  

### Analog Audio
- **S/N**: > 90db  
- **Frequency Response**: < +/-0.1db (20Hz - 20kHz)  
- **Distortion**: < 0.05%  
- **Level Adjust**: 28,16,10,4 dBu  
- **Impedance In (bal)**: 600 Ohms +  
- **Impedance Out (bal)**: 10 Ohms  
- **Impedance In**: 10 K Ohm  
- **Impedance Out**: < 50 Ohm  

### Digital Audio
- **Input/Output**: Balanced, AES3/AES3id  
- **I/O Impedance**: 110 Ohms/75 Ohm (DIP Sw)  
- **Mini/Max Input**: +/-20%, 0.1MHz-6.0MHz  
- **Rise/Fall time**: 2-7 Vpp into 110 Ohms  
- **Jitter**: < 20ns  

### Electro-Optical
- **Operating Wavelengths**: DFB 1271-1591 nm  
- **TX Laser output power**: -2 - 0dBm, Class 1  
- **Receiver Sensitivity**: -20 dBm  
- **Fiber Compatibility**: single or multimode  
- **Optical Connector**: ST, LC, SC  
- **Distance limit**: 40km w/singlemode  

### Mechanical, Environmental
- **Dimensions (LxWxH)**: 7.25"x5.75"x1.75"  
- **Weight**: 1 lb  
- **Video connectors**: BNC  
- **Audio/data connector**: DB-44F  
- **Temperature Range**: -25° to +55°C  
- **Humidity Range**: 0 to 95% RH  
- **Power Input**: 2.5mm jack  
- **Power rating, nominal**: 50w max@14 VDC  
- **Power Requirement**: <10w @9-24VDC  

### Standard Box:
- **Dimensions (LxWxH)**: 6.75"x5.5"x1.56"  
- **Weight**: 1.5 lbs.
# Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3500</td>
<td>3 Gbps Serial Digital Video Transceiver, with 4-Ch Audio or 2-CH AES Audio, 2-Ch 4W Intercom, 2-way 3-Ch Data &amp; Tally, 3 Multimode Fibers</td>
</tr>
<tr>
<td>HD-3500-TX-2-LC</td>
<td>3 Gbps Serial Digital Video Transceiver, w/ 4-Ch Audio or 2-CH AES Audio, 2-Ch 4W Intercom, 2-way 3-Ch Data &amp; Tally, 3 Multimode Fibers</td>
</tr>
<tr>
<td>HD-3500-RX-2-LC</td>
<td>3 Gbps Serial Digital Video Transceiver, w/ 4-Ch Audio or 2-CH AES Audio, 2-Ch 4W Intercom, 2-way 3-Ch Data &amp; Tally, 3 Multimode Fibers</td>
</tr>
<tr>
<td>HD-3500-TX-ST</td>
<td>3 Gbps Serial Digital Video Transceiver, w/ 4-Ch Audio or 2-CH AES Audio, 2-Ch 4W Intercom, 2-way 3-Ch Data &amp; Tally, 1 Singlemode Fiber</td>
</tr>
<tr>
<td>HD-3500-RX-ST</td>
<td>3 Gbps Serial Digital Video Transceiver, w/ 4-Ch Audio or 2-CH AES Audio, 2-Ch 4W Intercom, 2-way 3-Ch Data &amp; Tally, 1 Singlemode Fiber</td>
</tr>
<tr>
<td>HD-3500-TX-CWDM-ST</td>
<td>3 Gbps Serial Digital Video Transceiver, w/ 4-Ch Audio or 2-CH AES Audio, 2-Ch 4W Intercom, 2-way 3-Ch Data &amp; Tally, 3 Fiber for CWDM</td>
</tr>
<tr>
<td>HD-3500-RX-CWDM-ST</td>
<td>3 Gbps Serial Digital Video Transceiver, w/ 4-Ch Audio or 2-CH AES Audio, 2-Ch 4W Intercom, 2-way 3-Ch Data &amp; Tally, 3 Fiber for CWDM</td>
</tr>
<tr>
<td>HD-3500-GE-TX-ST-S</td>
<td>All of the features above, plus Gigabit Ethernet connectivity and full camera Synchronization</td>
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<td>HD-3500-GE-RX-ST-S</td>
<td>All of the features above, plus Gigabit Ethernet connectivity and full camera Synchronization</td>
</tr>
<tr>
<td>3520/3521</td>
<td>3.0 Gbps Serial Digital Video Transceiver, with 2-Ch Two-way Data over 2 Single-mode fibers (RMT kit for rack mounting)</td>
</tr>
<tr>
<td>HD-3520-TX-33-ST</td>
<td>3.0 Gbps Serial Digital Video Transceiver, with 2-Ch Two-way Data over 2 Single-mode fibers (RMT kit for rack mounting)</td>
</tr>
<tr>
<td>HD-3521-TX-35-ST</td>
<td>3.0 Gbps Serial Digital Video Transceiver, with 2-Ch Two-way Data over 1 Single-mode fiber (RMT kit for rack mounting)</td>
</tr>
<tr>
<td>HD-3521-RX-53-ST</td>
<td>3.0 Gbps Serial Digital Video Transceiver, with 2-Ch Two-way Data over 1 Single-mode fiber (RMT kit for rack mounting)</td>
</tr>
<tr>
<td>HD-3521-GE-TX-ST-S</td>
<td>All of the features above, plus Gigabit Ethernet connectivity and full camera Synchronization</td>
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<td>HD-3521-GE-RX-ST-S</td>
<td>All of the features above, plus Gigabit Ethernet connectivity and full camera Synchronization</td>
</tr>
<tr>
<td>3540</td>
<td>3.0 Gbps Serial Digital Video Transmitter, with 4-Ch One-way Analog Audio over 1 Single-mode fiber (RMT kit for rack mounting)</td>
</tr>
<tr>
<td>HD-3540-TX-ST</td>
<td>3.0 Gbps Serial Digital Video Receiver, with 4-Ch One-way Analog Audio over 1 Single-mode fiber (RMT kit for rack mounting)</td>
</tr>
<tr>
<td>ACCESSORIES</td>
<td>Replacement Power Supply for HD-3500 units</td>
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<tr>
<td>HD-3500-PS</td>
<td>Replacement Power Supply for HD-3500 units</td>
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<tr>
<td>PS3-12VDC</td>
<td>Three Output DC Power Supply for up to three HD-3500 Series modules</td>
</tr>
<tr>
<td>RMT</td>
<td>Triple Rack-mount Kit (1 kit)</td>
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<tr>
<td>BP-T</td>
<td>Blank panel for RMT rack-mounting kit</td>
</tr>
<tr>
<td>HDAUDIO35</td>
<td>Audio and Data screw terminal break-out adapter “diving Board” (formerly DVMAUDIO35)</td>
</tr>
<tr>
<td>XLR-HD35-TX</td>
<td>XLR Audio Adapter Cable for HD-3500-FTX-ST transmitter (formerly part # DVMXLR35)</td>
</tr>
<tr>
<td>XLR-HD35-RX</td>
<td>XLR Audio Adapter Cable for HD-3500-FRX-ST receiver (formerly part # DVMXLR35)</td>
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</tbody>
</table>

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