



**Telecast**  
*Fiber Systems, Inc.*

A **BELDEN** BRAND



# Fiber Optic Video and Audio Product Guide

for  
Television Broadcast Production  
and Digital Cinema



# OVERVIEW

## ABOUT TELECAST

We specialize in fiber optics for television broadcast production and digital cinematography. Our founders are pioneers in the fiber optic industry, having created many of the industry's "firsts" since 1974 including the first commercial single mode fiber and cable and the first fiber optic network broadcast in 1980. Over the last 20 years, Telecast has worked to perfect this technology by developing products specifically for TV broadcast production, without compromise. Our fiber systems are used worldwide by the most prominent networks and organizations, and they bring you the highest profile events. Now that we are proudly part of the Belden family, we can offer you even more in the line of electronics, fiber and broadcast cable technology. We hope that you will try our products and systems in your project, event or facility.

## PRODUCT EXPERIENCE

Telecast systems work. Every day, around the world. They are the product of intensive research, in the field and in our customers' facilities. The result is a comprehensive family of fiber optic communications systems that provide transmission of virtually all the signals used in television broadcast production—everything from the latest in digital video technology to the most basic of intercom systems interfaces. Whether your application is to produce the Olympics, create a studio-transmitter link, or "fiber" your studio, campus or venue, we have the product set to suit your requirements. You can depend on Telecast, because our products are based on your needs. And they work...every day, around the world.

## SERVICE & SUPPORT

Depend on Telecast for your fiber optic communications. While we supply the most dependable video and audio systems available, the key ingredient is service and support. Our applications engineers will help you design your project, specify your products and give you insight into the technical and operational aspects that make fiber your best choice. We value the importance of good on-site support. We appreciate and understand your problems when the big event or installation occurs, and we are by your side when you need us.

## IN THIS PRODUCT GUIDE

We give you a brief overview of our comprehensive family of systems. This is not a data sheet, but an introduction. Our products are unique, and you should see each one in detail. Get complete details in our product data sheets, which you may download in .pdf (Adobe Acrobat) format from our website at:

[www.telecast-fiber.com](http://www.telecast-fiber.com)

# CAMERA SOLUTIONS

## CopperHead™ Series 3000

Camera Mounted System for ENG, Sports and Digital Cinematography



*“Dual-Purposes” Any Camcorder for Live News, Studio and Multi-Camera Production*

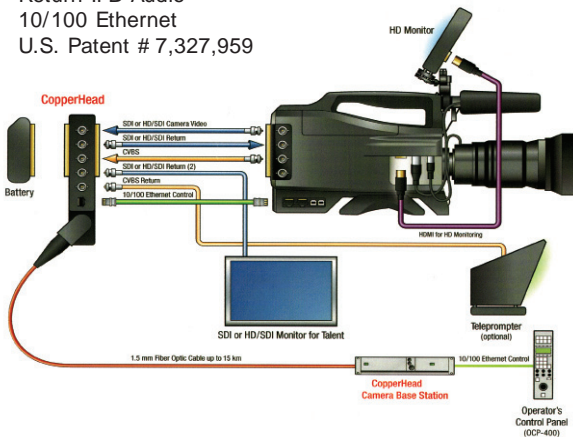
- **CopperHead Pro for Image Magnification**
- **CopperHead Visa for ENG**
- **CopperHead 3050 for ENG**
- **CopperHead 3200 for Dual Purposing Cameras**
- **CopperHead 3400 for Dual Link and 3D**

### Features

- All camera signals on a single cable
- Battery power with Tac™ military cable or via **Power Wafer** with SMPTE hybrid cable
- HD-SDI program video plus VBS
- Up to 3 VBS video returns for prompter, genlock, sync
- Dual 24-bit program audio channels
- Tally/Call, RS232, CCU data & TimeCode
- Dual two-way headset intercom
- Return IFB Audio
- 10/100 Ethernet
- U.S. Patent # 7,327,959



Power Wafer™



# CAMERA SOLUTIONS

## Robotic & POV Systems

Bi-directional Video/Audio/Data Links

Extend HD/SDI Robotic Cameras 30Km



### Features

- Supports virtually all robotic camera systems
- Bi-directional video, audio, data & GPI on one or two fiber strands
- 1.5 Gbps uncompressed HD/SDI
- Return video or tri-level sync (HD)
- Up to 6 Duplex data paths (RS 232/RS 422/485)
- GPI relay circuit each way
- Bi-directional audio
- Throw down Mini-Mussel Shell enclosures or rack mountable in 1RU frames

## Cobra2DT™

Triax to Fiber Converter

Now for Sony Digital Triax Cameras

20x the distance 1/20th the weight



### Robust Digital transmission of your triax signals

- Remote your Sony HXC-100 and HXC-300 triax cameras on lightweight tactical or stadium fiber
- 40km range
- All 2-way triax signals on just one fiber
- Portable, rack mountable
- Provides camera power
- Drives long triax runs
- Installs and strikes quickly
- US Patent # 6,115,159

# CAMERA SOLUTIONS

## SMPTE Camera Cable Solutions

### SHED™ and HDX™

#### SMPTE Hybrid Elimination Device



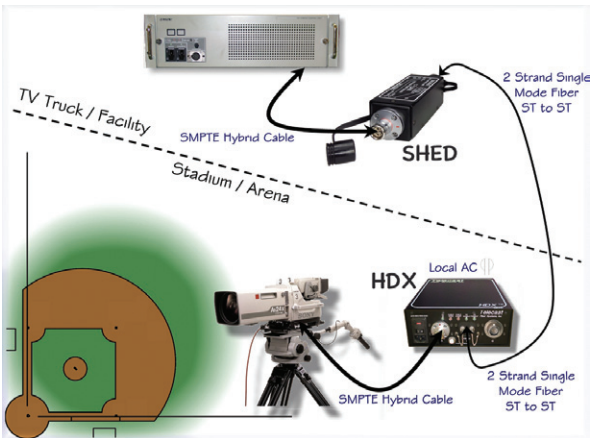
#### *With Remote Camera Shutoff*

Runs Hi-Def Cameras on inexpensive Single Mode Fiber • For Sony® Ikegami®, Panasonic®, Hitachi® or Grass Valley® HD or Super



Motion cameras • Converts Lemo® or Fischer® hybrid to ST, SC or MX connectors • HDX unit powers camera

- Remote camera shutoff option • Faster setup/strike and longer distances for remote events
- Lower cost infrastructure for stadiums, arenas and studios



### ScAmp™

#### SMPTE Cable Amplifier

#### *With In-Line Power Meters*

Boosts Digital Signals on SMPTE Cable

Runs • Small in-line 2-way optical amplifiers

- Solves problem of lossy cables • Works with Sony or Ikegami cameras • Provides up to 30dB optical boost • Powered by SMPTE cable





# OUTSIDE BROADCAST

## Viper™

Portable Fiber System for Production  
For HD/SDI, NTSC/PAL, Audio, Intercom & Data



*Available as a  
factory custom  
build, with  
10/100 or  
Gigabit  
Ethernet*

### Features

- Rack mount "442" or portable "Mussel Shell" enclosures
- Modular construction
- Multichannel Video & Audio
- Up to 4 video plus 8 audio channels, 2 intercoms and 4 data or tally circuits
- Serial Digital Video, including ITU-R 601 (Std. Def). & SMPTE-292M (Hi-Def)
- Wideband NTSC/PAL/SECAM video—Studio quality, RS250-C (SH)
- Mic/Line audio, 24-bit audio
- AES/EBU digital audio
- Intercom option includes RTS®, Clear-Com® or 4-wire
- Four channels of duplex data incl. RS232, RS422, Sony CCU or tally/call switch closure
- 10/100 Base Ethernet option
- Battery or AC operated
- Anton/Bauer Snap-On® or PAG option
- Alarmed UPS protection
- SMPTE-standard military connector on Mussel Shell
- Use outdoors or indoors
- Multimode or single mode fiber
- (C)WDM

Function module sets include:

TX/RX103 NTSC/PAL Video  
TX/RX259 Serial Digital Video  
TX/RX292 SDTV & HDTV SDI  
TX/RX260 AES/EBU Audio

TX/RX280 Analog Audio Mux

TX/RX380 Analog Slave Audio

Intercom Module, Telex RTS

Intercom Module, Clear-Com™

Intercom Module, 4-wire balanced

## Sidewinder™

Portable Companion for Viper

- Hub-mounted Viper modules
- Rugged, lightweight unit
- Military tactical cable with SMPTE-standard connector
- 2 Video, 4 Audio, Intercom & Data on one cable
- Link to Viper 442 frame or Mussel Shell
- Small and medium reels



# MODULAR SYSTEMS

## Viper II™

Modular Communications Platform

Combine Rack-Mount with “Throw Down” Units



### Features

- Universal 16-slot card cage
- Rack mounted modules or stand-alone, “throw down” modules —convertable to rack mount
- 120/240VAC or DC operated
- Redundant power option
- Alarmed UPS protection
- Low power consumption
- CWDM

Plug-In Function Modules, include:

- TR6442i—CommLink, Fiber Optic Intercomm Link
- TX/RX6292—HD/SDI video, 1 channel; 19.4 Mbps to 1.5 Gbps
- TR6292—One channel of HD/SDI video each way on one fiber
- TX/RX6492 —Two channels of HD/SDI on one fiber
- TX/RX6080—8-Channel 24-bit audio multiplexer/demultiplexer set
- TR5900 or TR5950—40/100 Base or Gigabit Ethernet transceiver
- SW6031—SMPTE hybrid switch module, with integrated SHED
- CWDM—Up to 8 signals per fiber via wavelength multiplexing
- AES Audio Expander—4 additional AES channels in/out (6269)
- PS6000—Rack mounted power supply

# HD/SDI LINKS

## Rattler™

### Mini HD/SDI Fiber Modules

The HD Problem Solvers...in your Pocket

#### Features

Convenient BNC to ST digital video media converters

- Transmitters (red) & receivers (blue), only 2.5 x 0.7 x 0.7 in. • 18dB optical link budget
- EQ for TX coax input • Standards compliant • RX unit Includes integral power meter • Powered by low cost, ordinary USB (four Rattlers per 4-port hub) • Free from pathological errors • Remote diagnostics interface • Compatible and interoperable with Vipers, Pythons, etc.



## Rattler™ 3G

### Modular 3Gbps HD/SDI Video Links

Reconfigurable, Serviceable and Revolutionary

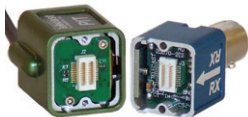


Create precisely the conversion device you need, and change it when your needs change. Based on Telecast's groundbreaking TeleCube™ (patent pending) modular media interface technology, the Rattler 3G can be configured using red transmitter cubes and blue receiver cubes, where each cube is a fiber (ST) or 75 ohm coaxial (BNC) input or output. Just plug a different Cube into the green center "Pit", and you have a completely different Rattler.

#### Create the Rattler You Need

Swap out TeleCubes to configure:

- BNC to ST Fiber Transmitter
- CWDM TX (18 wavelengths)
- ST to BNC Fiber Receiver
- ST to ST Fiber Mode Converter
- ST to ST CWDM Wavelength Shifter
- BNC to BNC Coaxial Equalizer





# INFRASTRUCTURE FIBER

## Teleport™ 3G

### CWDM Wavelength Manager

Increases Fiber Capacity, Easily & Flexibly



#### Features

- Makes nearly all your Telecast fiber systems CWDM-ready • Mux up to 16 optical signals on 1 fiber • Up to 2.5 Gbps/channel • 30km range • Dual CWDM single fiber outputs • Front panel & remote monitoring • Compatible with most Telecast products • Lets you use fewer fibers to send more signals • Lowers cable life cycle costs • Simplifies CWDM design and spares requirements

## Python™ II 3G

### 8-16 Channel HD/SDI Transport

Distributes 19.4 Mbps to 1.5 Gbps HD/SDI



#### Features

- 8 to 16 Channels of HD/SDI per 1 RU chassis • One way or 8x8 Transceiver • Wide range of digital formats • 19.4 Mbps to 1.5 Gbps uncompressed HD/SDI transport • Compatible with SMPTE 292M & 259M • DVB/ASI • Input coax EQ • 16 HD/SDI per fiber via CWDM available • Monitors RX optical power for

## Telethon™

### HD/SDI & Optical Wavelength Mux

Combines Teleport and CWDM Python Units



#### Features

- Transmit digital signals from both optical and electrical (BNC) sources • High density fiber transmission and wavelength management • Low profile • Monitors RX optical power • Optional hot

## Thor Family™ Extenders & Converters



### Thor Product List

- Thor-EU - Extends Uncompressed DVI/KVM signals
- Thor-E - Extends DVI/KVM Signals, up to 10km
- Thor-HE - Extends Multimedia over 1 or 4 Fibers & Catx
- Thor-DE - Extends DVI signals, up to 1km & audio signals up to 2km
- Thor-CBL-HDMI - HDMI Cable Extender
- Thor-CBL-DP - Cable Extender
- Thor-DA - HDMI Distribution Amplifier 1x4 or 1x8



## Thor Family™ Switchers



### Thor Product List

- Thor-C - Converts SDI, VGA, S-video, Composite, and component to DVI
- Thor-SSM - Switches 8 DVI/KVM Channels
- Thor-SLG - DVI/KVM Cross Point Switcher, switches 32 sources with up to 16 workstations
- Thor-SXL - Mission Critical Router for HD Video and DVI/KVM systems - up to 288 ports

## TR6442i CommLink™

Extend two channels of Partyline or Digital Matrix intercom over a single strand of fiber



### Features

- Intercom runs over 30Km
- Works with RTS and Clear-Com
- Matrix or Party Line
- Connect Matrix to PL without add 'I hybrid
- Digital Auto-nulling
- Powers up to 10 belt packs

## Terrapin™

3 Gb/s Digital Video Fiber Transceiver w/ integral Distribution Amplifier



### Features

- One Piece Fiber optic transmitter and receiver (transceiver)
- Tap & Drop
- Integral six-output digital distribution amplifier
- 4 user-selectable optical/electrical modes
- Intuitive LED Indications and signal flow arrows
- Built-in optical power meter for instant troubleshooting

## DiamondBack™ II

NTSC/PAL/SECAM Video Multiplexer 4x4 video with 10/100 Ethernet & Adder Port



### Features

- 4 video channels both ways or 8 videos one way on one fiber
- >67 dB S/N
- Aux BNC carries multichannel audio/data/intercom from Adder II products
- Dual optical paths for redundancy or splits
- Front BNC monitors any video channel
- 30 km range
- 4x4 includes data, talk path & Ethernet

# MULTICHANNEL AUDIO

## The Adder™ II Family

Audio, AES, Data & Intercom Muxes

Twice the Capacity & Density; from 2RU to 10RU



### Features

- Pristine Audio Quality: 24-Bit digitally transmitted; >100 dB S/N
- Low latency; <500µsec from A to D, TX+RX and back to analog
- Scalable; up to 64 audio simultaneously in both directions
  - Analog audio modules, 16-channel XLR transmit or receive
  - AES audio modules, 8- or 16-ch BNC (unbal) or XLR (bal)
  - 882i module, up to 8 intercoms: 4-wire, Clear-Com® or RTS®
    - Two channels each of RS232, RS422 and RS485 data
    - Two bidirectional switch closure interfaces
- Converts between analog audio and AES digital audio signals
- Accepts external input to synchronize to your house AES clock
- Dual redundant optical paths, also serves as optical split
- Coaxial input/outputs, compatible with DiamondBack aux ports
- Integral tone generator, with analog and AES monitoring ports
  - Built-in speaker, audio level display and headphone jack
- Mic/line audio inputs, with local and remote gain control
- 12/24 volt phantom bias, with local and remote control
- Digital readout displays local & remote received optical power
- Available in configurations

### SuperBooth™

Uses just half a Tac-4

Complete facilities—on only 2 fibers • Stack these muxes for your ideal signal complement

- Adder II for all your audios, AES, data and intercom needs
- DiamondBack 4x4 for your analog video and 10/100 Ethernet
- TeleThon carries your HD/SDI signals & your fiber camera signals and optically (CWDM) multiplexes everything onto one fiber pair
  - Dual redundant configuration available
  - Includes “RackBack” dual redundant AC/DC power system
  - Includes pre-mounted MX mini-Expanded beam connector(s)



## Fiber Optic Cable Assemblies

### Tac-Series Battlefield-rated cables

The toughest fiber optic cable you can buy • Military, tactical design • Flexible in cold weather • Multimode or single mode •

1 to 12 fibers

### OX-Frame Reel

Three sizes: SM size reel holds 150m of our 6mm OD Tac-4 cable; MD holds 300m; and the XL: 500m. Open center design provides protection for inside cable end. Includes friction brake, integrated handle and stacking feet.

### Optical Connectors

Our cable assemblies fit your needs. For extreme mobile applications, we offer the SMPTE standard *military hermaphroditic* connector, right.

Our revolutionary *MX™* Mini-eXpanded beam connector, right, delivers reliable lensed connectivity coupled with easy maintainability and cleaning. Just a fraction of the size of conventional multifiber plugs, the field durable MX simplifies and lightens your mobile load.

We also support the innovative *Neutrik opticalCON®* connector for both Tac-Series cables and for low-voltage applications of hybrid fiber/wire cable, such as our CopperHead PowerWafer products line.

### SMPTE Hybrid Cable Assemblies

The enhanced connectors coupled with the exceptional workmanship and outstanding quality that Telecast brings to its SMPTE hybrid fiber assemblies makes Telecast the clear leader in the field.



Download individual data sheets  
in .pdf format at:  
[www.telecast-fiber.com](http://www.telecast-fiber.com)



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