



Telecast
Fiber Systems, Inc.

CopperHead™

Camera-Mounted ENG/SNG Fiber Optic Transceiver System



Features

- All camera signals on lightweight fiber cable
- Wideband NTSC/PAL video and 24 bit audio
- Return Video and Black Burst Return Video
- Two-Way Headset Intercom & Return Audio
- Tally/Call, plus RS232 and CCU data circuits
- Up to 20 dB optical link budget
- Wide temperature range
- Low power consumption, battery powered
- Durable, High Reliability design
- Battery back-up in Base Station Unit
- Multimode or Singlemode Versions Available

All Your ENG/SNG Camera Signals on a Single Fiber

CopperHead is the new fiber optic multiplexing system that fits on the back of your ENG/SNG camera. It gives you all the signals you need in your remote TV production, and it delivers the high quality and reliability you expect of our fiber optic interface systems. All bi-directional signals are digitally converted and transmitted up and down a single optical fiber within the low cost, durable Tac-1 fiber optic cable.

The compact CopperHead is your solution to the size, weight and transmission problems of ordinary coax and multicore cabling. You will save time and effort, and your job will become a lot easier.

Specifications

Program Video

Interface	RS170, NTSC, PAL
Frequency Response	30Hz-5MHz/-3dB point ±0.15 dB/≥8 MHz
Video Signal to Noise Ratio	≥67 dB
Differential Gain/Phase	<2%/<0.7°

Audio

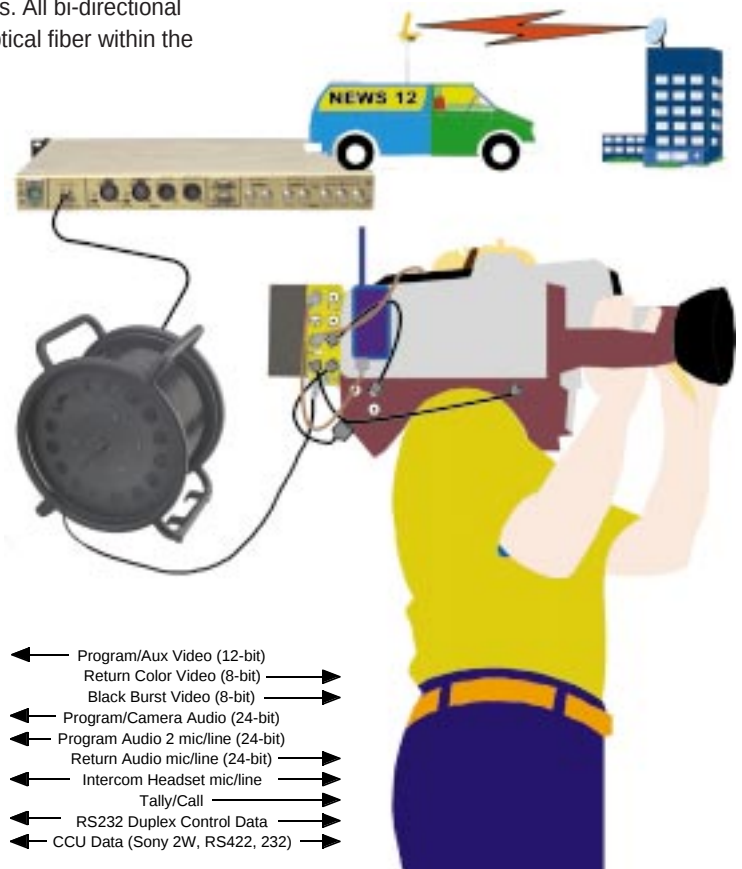
Input/Output Impedance	10 kΩ/30 Ω
Frequency Response	±0.2 dB, 20Hz to 20kHz
Audio Signal to Noise Ratio	>90 dB
Total Harmonic Distortion (20Hz to 20kHz)	<0.1%

Electro-Optical

Operating Wavelengths	1300 nm/1550 nm
Transmitter Laser output power	-6 dBm
Receiver Sensitivity	-26 dBm
Fiber Compatibility	single mode or multimode
Optical Connector	ST type

Mechanical/Environmental

Dimensions (WxLxD)	5" x 6.12" x 2.2"
Weight	1.5 lb
Power Req. (typical, each end)	6 watts@10-18VDC
Temperature Range	-25° to +55°C
Humidity Range	0 to 95% RH, Noncondensing



Operating Notes for: CopperHead ENG/SNG Multiplexer

Power Requirements, Camera Unit

The CopperHead derives power from the battery plate, and passes power on to the camera head. CopperHead side plates are available for PAG and Anton/Bauer. Consult factory for other battery types.

Connections, Camera Unit

Video In Camera **Program** Video via Hirose 12-pin Signal connector.
Auxiliary Video In (dominant) via 75Ω BNC.

Video Out **Black Burst** via BNC only
Return Video via BNC and 12-pin Signal connector.

Audio 1 In Camera **Program** Audio via Hirose 12-pin Signal connector. Internal mic/line switch, default is line.

Audio 2 In **Auxiliary** audio in via 3-pin XLR.
Return audio out via 3-pin XLR.

Intercom Headset in/out via 5-pin XLR.

Tally/Call Closure output via 12-pin "Signal".

RS232 Data In/Out via 10-pin "Remote".

CCU Data In/Out via 10-pin "Remote" connector. Select appropriate camera cable jumper for RS232, RS422 or Sony (2-wire) CCU.

Fiber ST receptacle accepts a fiber cable terminated with ST type connector.

Note: Internal 2-way coupler is either singlemode or multimode. Use cable with the corresponding fiber type.

Connections, Base Station Unit

Video In **Black Burst** via 75Ω BNC, loopthru, external term. required.

Video In **Return Video** via BNC, loopthru, ext. termination required.

Video Out **Program/AUX Video** via 3-port distribution amplifier output.

Audio In **Return Audio** in via female 3-pin XLR. Mic/Line switchable.

Audio 1 Out Camera **Program Audio** via male 3-pin XLR.

Audio 2 Out **Auxiliary Audio** via male 3-pin XLR.

Intercom Headset in/out via 5-pin XLR. Input is Mic/Line switchable.

CCU Data In/Out via top 9-pin D connector.. Select appropriate pins for RS232, RS422 or Sony (2-wire) CCU.

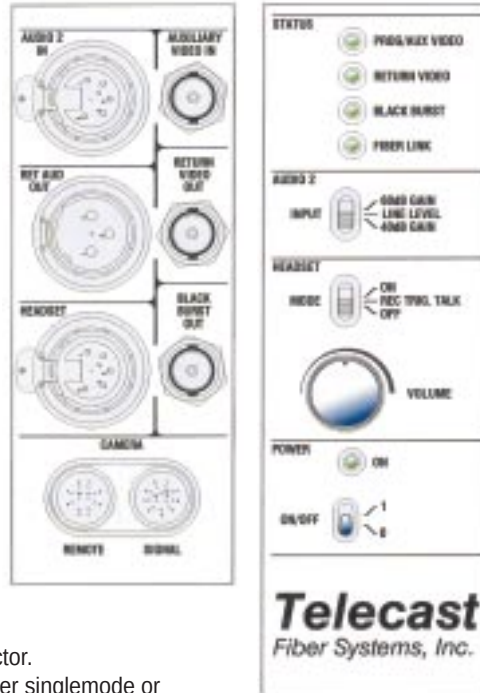
Tally/Call Closure input via bottom 9-pin D connector.

RS232 Data In/Out via bottom 9-pin D connector.

Fiber ST receptacle accepts a fiber cable terminated with ST type connector. Note: Internal 2-way coupler is either singlemode or multimode. Use cable with the corresponding fiber type.

Control Panel, Camera Unit

This side of the CopperHead Camera Unit faces the operator. On this panel are the status LED indicators, audio mic/line control, the intercom headset controls and the ON/OFF switch.



STATUS LEDs indicate critical signal status:

Prog/AUX When green, video is present from the camera or the auxiliary BNC input source.

Return Video When green, a return video signal is present on both the 12-pin and BNC outputs.

Black Burst When green, a return video signal is present on the BNC.

Fiber Link When green, good optical link; when red, insufficient power; when bi-color (red-green) signal power is marginal.

Audio 2 Input Slide switch controls gain of Audio 2 signal. Select 40 dB or 60 dB gain for mic input, or unity gain for line level input.

HEADSET Controls affect Intercom use:

Mode Switch ON: Listen On/Talk On
REC Trigger Talk: Talk only when camera Record is OFF.
OFF: Listen On/Talk Off

VOLUME: Adjusts listen level.

Power Switch turns unit ON/OFF. Illuminated green LED indicates power ON.

Indicators, Base Station Unit

Signal Indicators

Video When green, indicates presence of corresponding video signal.

Data When green, indicates presence of corresponding data signal.

Audio When green, indicates presence of corresponding audio signal.

System Indicators

Fiber Link When green, good optical link; when red, insufficient power; when bi-color (red-green) power is marginal. Alarm condition.

Ext. Pwr. When green, indicates external power to base station is OK.

Int. Pwr. When green, indicates internal battery is charged or charging; when red, indicates battery is discharging. Alarm condition.

Alarm Switch disables audible alarm of Base Station Unit.

