

CopperHead 3200

Fiber Optic Camera Transceiver



Lightweight, easy-to-deploy fiber connectivity solutions.

The CopperHead 3200 system from Grass Valley, a Belden Brand, is a robust fiber optic link between your camcorder and your truck, control room or “video village” position.

The system will simultaneously transport both digital (SDI or HD-SDI) and analog (NTSC or PAL) program video, as well as all two-way camera control, audio, video, data, tally/call and intercom signals between the camera and the base station.

CopperHead 3200 Fiber Optic Camera Transceiver

KEY FEATURES

- All camera signals on lightweight fiber cable
- Broadcast quality video and audio
- Return HD video
- Two-channel intercom
- Long distance range (multiple kilometers)
- Battery mount options for Anton/Bauer or V-Mount
- Wide temperature range
- Low power consumption
- Multiple fiber connector options
- Two fiber cable options
- Tactical fiber
 - Military specification, battlefield proven
 - Requires local power at camera
- SMPTE hybrid fiber
 - Internal power supply delivers 95W power to the camera up to 213m (780 ft.)
 - External PowerPlus delivers 100W power to the camera up to 2 km (1.2 mi.) 150W opt.
- Use the TelePort 3G system to multiplex up to eight CopperHead 3200 systems onto a single strand of fiber
- Durable, high reliability design

SPECIFICATIONS

Video, Digital (bi-directional)

Interface: SMPTE 259M, 292M

Data rate: 270 Mb/s or 1.5 Gb/s

Input level: 800 mV p-p

I/O impedance: 75Ω

Output impedance: 75Ω

Bit-error rate at -22 dBm: 10-12

Jitter (pathological data): <0.2 UI

Rise/fall times: <270 ps

Video, Analog (bi-directional)

Interface: RS-170, NTSC, PAL

Frequency response:

30 Hz - 4.2 MHz: ±0.25 dB

8 MHz: -3 dB

Video signal to noise ratio: ≥70 dB

Differential gain: <2%

Differential phase: <2°

Ethernet

Data support: 10BaseT/100BaseT

Connector: Twisted pair RJ45

Cable compatible: UTP 100Ω Cat5

I/O impedance: 10 kΩ / 30Ω

Audio

Number of channels: 1 to 4

Type: Balanced, line level **Impedance:** >15 kΩ

Maximum input level: 24 dBu

Quantization: 24 bits, 128X (oversampled)

Sample rate: 48 kS/s

Frequency response: ±0.1 dB, 20 Hz to 20 kHz

Intercom

Number of channels: 2

Interface types (base): RTS, Clear-Com or 4-Wire

Frequency response: 200-18 kHz, ±3dB

Max distortion: ≤0.5 %

Noise: <-60 dBu

Max gain (RTS or Clear-Com): ≥24 dB

Min gain (RTS or Clear-Com): ≤-45 dB

Electro-Optical

Operating wavelengths: 1310/1550 nm

Tx laser output power (std./opt): -6/0 dBm

Rx sensitivity, HD-SDI: -22 dBm

Fiber compatibility: Single-mode

Optical connector options - camera unit:

Local power: MX or opticalCON

Remote power: Short range power, SMPTE 304M or opticalCON

Long range power, SMPTE 304M

Optical connector options - base station:

Unpowered (TAC Cable): ST or opticalCON

Remote power (hybrid fiber): Standard power: SMPTE 304M, opticalCON, or STs and Molex

Distance Limit*

TAC Cable (local power at camera):

Standard laser: 15 dB optical loss (≥5 km*)

Optional DFB laser: 19 dB optical loss (~30 km*)

SMPTE 311M hybrid fiber:

Standard internal power supply w/PowerWafer: ~300m (984 ft.), 95W at 12 VDC*

Long range: HDX w/PowerPlus, LP: ~2 km (6,562 ft.): 100W cont. / 150W peak*

Mechanical/Environmental

Dimensions (W x H x D):

Camera unit: 63.5 x 55.9 x 165.1 mm (2.5 x 2.2 x 6.5 in.)

Base station: 444.5 x 44.5 x 228.6 mm (17.5 x 1.75 x 9 in.)

PowerWafer: 127 x 55.9 x 155.5 mm (5 x 2.2 x 6.12 in.)

PowerPlus LP (100W): 127 x 63.5 x 152.4 mm (5 x 2.5 x 6 in.)

PowerPlus HP (150W): 127 x 94 x 152.4 mm (5 x 3.7 x 6 in.)

HDX: 330.2 x 215.9 x 88.9 mm (13 x 8.5 x 3.5 in.)

Weight:

Camera unit: 0.68 kg (1.5 lbs.)

Base station: 2.27 kg (5 lbs.)

PowerWafer: 0.68 kg (1.5 lbs.)

PowerPlus: LP: 1.04 kg (2.3 lbs.), HP: 1.13 kg (2.5 lbs.)

HDX: 4.76 kg (10.5 lbs.)

Power consumption:

Camera unit: 8W at 10-18 VDC

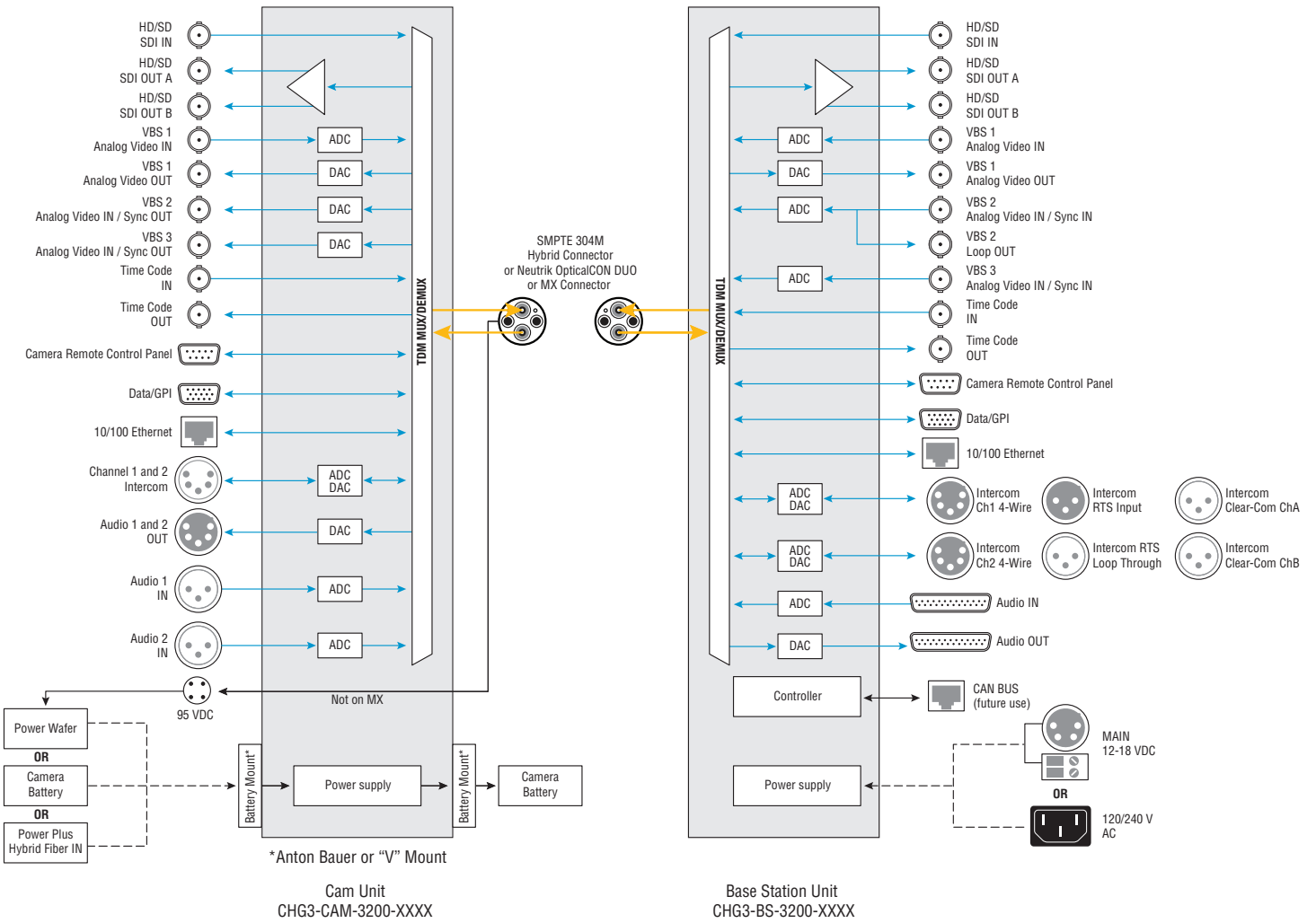
Base station (TAC Cable): 10W at 10-18 VDC

Temperature range: -25° to 45° C

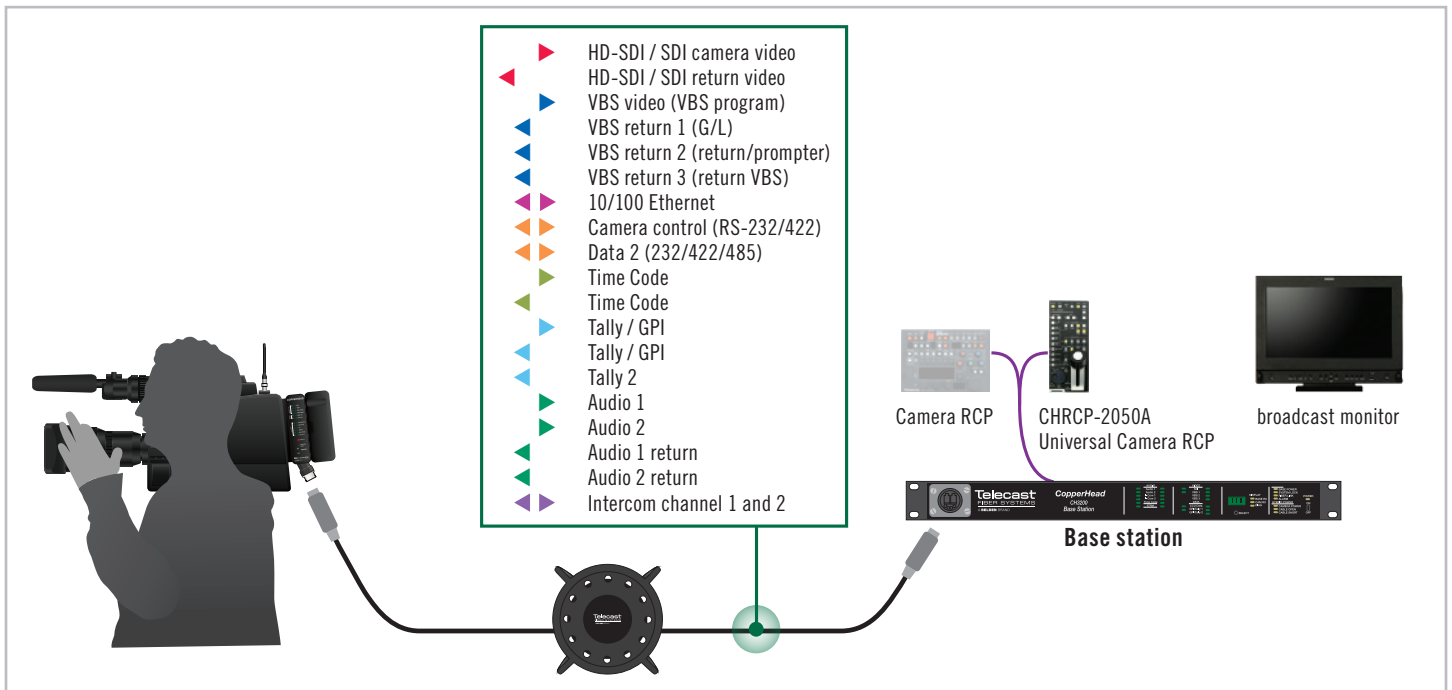
Humidity range: 0 to 95% RH, non-condensing

* The maximum cable length varies due to optical loss that can depend on cable quality, dirt/dust/contamination on connectors, and number of fiber interconnects. When using hybrid cable for power, the size of the hybrid cable, as well as the power draw of the camera, lens and accessories are also factors.

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CopperHead 3200 System Functional Block Diagram



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ORDERING

CHG3-CAM-3200-#1-#2	Camera unit w/MX, opticalCON or SMPTE 304M fiber connector
CHG3-BS-3200-#3-#4	Standard base station 2 STs or opticalCON connector
CHG3-BS-3200-95VD-#3-#4	Base station w/internal power supply, opticalCON or 304M
ADAP-AC-04	AC adaptor (for CHG3-BS-3050 base station)
CHG3-PW-95V-EGG-#5	PowerWafer camera adaptor (for use with CH3-BS-3050-95VD-BS-95VD)
CH3-MPS-95VD-#6-#7	External power supply for PowerWafer
CH3BAI-3200-D25-5XL3F	Base audio input breakout cable with coms
CH3BAO-D25-4XL3M	Base audio output breakout cable with coms
CHBR-#8	Base remote cable
CHCR-#8	Camera remote cable
CH3BS-#8	Base data/tally breakout cable
CH3CS-#8	Camera signal cable

Use the variables in green below to build your order code

#1 Cam Unit Fiber Connector

MX2	MX
NEU2	OpticalCON
304M	SMPTE 304M

#2 Cam Unit Batt. Interface Plates

AB-AB	Two gold mounts
AB-V	Gold mount to cam, V-shoe to batt
V-AB	V-Mount to cam, gold mount to batt
V-V	V-Mount on both sides

#3 Base Station Fiber Connectors

NEU2	OpticalCON
304M	SMPTE 304M
ST2	2 Sts

#4 Base Station Intercom Interfaces

4W	4-Wire
CC	Clear-Com
RTS	RTS 2-Wire

#5 Power Adaptor Interface Plate

AB	Gold mount
V	V-Mount

#6 Power Supply Fiber Conns (Dry)

ST2	Sts
NEU2	OpticalCON

#7 Power Supply Fiber Conns (Wet)

NEU2	OpticalCON
304M	SMPTE 304M

#8 Interface Cables

Visit www.grassvalley.com for interface cables to match your specific camera, controller and tally configuration.

Example 1

CHG3-CAM-3200-NEU2-AB-AB

CopperHead 3200 camera unit, OpticalCON cam unit fiber connector, two gold mounts cam unit batt. interface plates

Example 2

CH3-MPS-95VD-NEU2-304M

External power supply for PowerWafer, OpticalCON power supply fiber conns (dry), SMPTE 304M power supply fiber conns (wet)



GVB-1-0222A-EN-DS

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