Datasheet

CommLink TR6442i
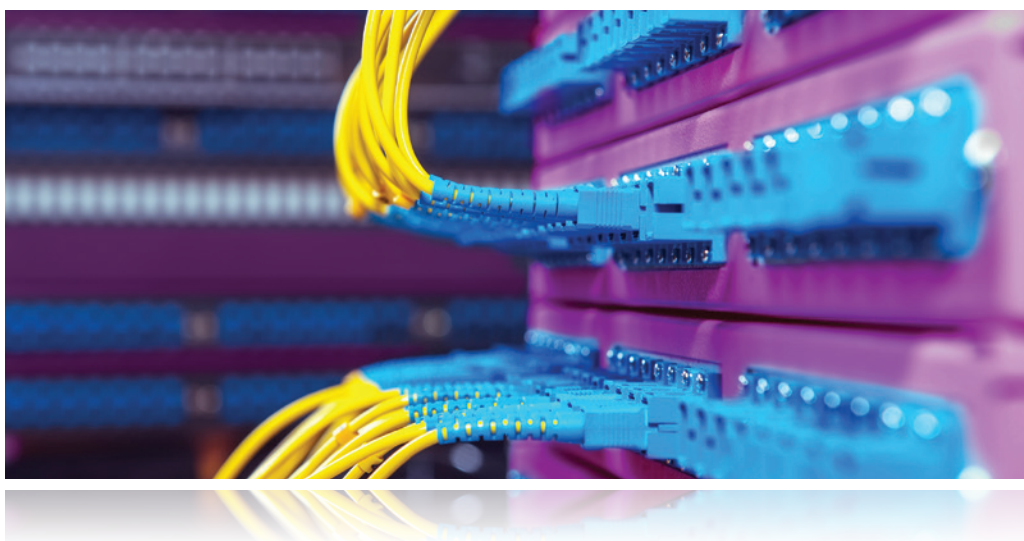
Fiber Optic Intercom Link

Lightweight, easy-to-deploy fiber connectivity solutions.

The CommLink TR6442i from Grass Valley, a Belden Brand, is a fiber optic transceiver system that carries two intercom channels seamlessly over a single strand of fiber spanning distances of more than 30 kilometers (18.6 miles). With advanced digital noise elimination circuitry, users won't know that they aren't connected by traditional copper wires.

The system works with the industry's most common 2-wire partyline intercom systems, as well as most digital matrix-style 4-wire intercom systems. All functionality of each intercom system is transported over the fiber link, including call signalling, matrix panel alphanumeric data and remote station controls. With its advanced auto-nulling hybrid technology, the system acts as a noiseless hybrid between a 4-wire matrix system and a 2-wire partyline system.
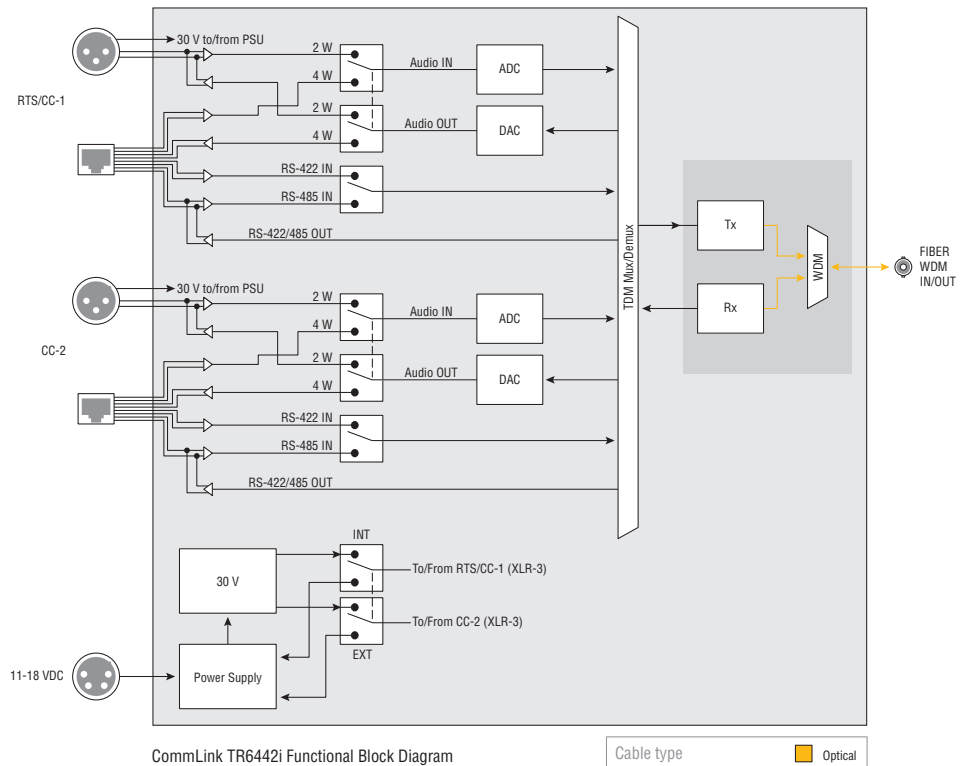
The CommLink TR6442i can be powered from the partyline system, or be powered with local 12 VDC and acts as a power supply for up to ten intercom belt packs.

CommLink TR6442i Fiber Optic Intercom Link

KEY FEATURES

- Transports two intercom channels via one strand of single-mode fiber up to 30 km (18.6 mi.)
  - Infrastructure fiber
  - TAC cable
- Compatible with most partyline and digital matrix intercom systems
  - 2-Wire partyline: Clear-Com, RTS 2-wire
- Matrix
  - Clear-Com MatrixPlus/Eclipse
  - RTS 2-wire Adam/Cronus/Zeus
- Advanced automatic digital nulling
- Internal power supply can provide power for up to 10 Clear-Com or RTS 2-wire beltpacks
- Advanced hybrid interfaces two 2-wire intercom lines to two 4-wire lines
- Uses a single common ST connector
- Immune to RF interference and ground loops
- Front panel status monitoring
- Available in three mechanical configurations
  - Rack mountable in Viper II frame
  - Viper II throwdown
- Acts as a standalone (non-fiber) dual-channel digital hybrid interface

CommLink TR6442i Functional Block Diagram

SPECIFICATIONS

Intercom
Number or intercom channels: 2

2-Wire (TW/PL)
Interface:
  Clear-Com PL: XLR3M x 2
  RTS TW: XLR3M x 1
Max level: 2 Vp-p, at 1 kHz (equiv. to 18 dBu in 4 W)*
Dyn. range: >85 dB, ref. 2 Vp-p at 1 kHz*
Freq. response: 1/-3 dB, 70 Hz to 22 kHz, ref. 2 Vp-p*
THD+N: <1% at 2 Vp-p*
I/O impedance (100 Hz to 20 kHz):
  Termination engaged (internal power): 220Ω ±10%
  Termination dis-engaged (external power): ≥10 kΩ
Nulling: Automatic DSP

4-Wire (4W) Ports
Interface:
  Clear-Com MatrixPlus/Eclipse: RJ45 x 2
  RTS Adam/Cronus/Zeus: RJ11 x 2
Maximum level (I/O, unity gain): +18 dBu
Dynamic range: >85 dB, ref. 18 dBu
Frequency response: 1/-3 dB, 35 Hz - 22 kHz, ref. 0 dBu
THD+N: <0.05% at 17 dBu at 1 kHz
Input impedance: 10 kΩ balanced
Output impedance: 30Ω balanced
Data:
  Clear-Com: RS-422,
  RTS: RS-485
Crosstalk: >85 dB

Electro-Optical
Operating wavelength, standard: 1310/1550 nm (wave division multiplexed)
Nominal optical loss budget values:
  Tx laser output power: -7 dBm
  Rx sensitivity, HD-SDI: -22 dBm
Optical budget: 15 dB optical loss
Fiber compatibility: Single-mode
Optical connector: ST

Mechanical/Environmental
Dimensions (W x H x D):
  Rack mount:
  50.8 x 127 x 254 mm (2 x 5 x 10 in.)
  Throwdown:
  50.8 x 101.6 x 254 mm (2 x 4 x 10 in.)

Weight:
  Rack mount/throwdown: 0.62 kg (1.375 lbs.)
  Power consumption:
  2W with local power: 3W at 10-18 VDC
  Powered from 2W system: 6W at 10-18 VDC
  4W system: 3W at 10-18 VDC
Temperature range: 25° to 55° C (77° to 131° F)
Humidity range: 0 to 95% RH, non-condensing
*Properly terminated (internal or external)
Note: Maximum cable length varies due to optical cable quality, dirt/dust/contamination on connectors, and the number of inline connectors.

ORDERING

Each CommLink system requires a 1310 nm unit at one end and a 1550 nm unit at the other end

VIPER II rackmount module

TR6442i-13	Intercom transceiver and 4W/2W hybrid (w/autonull), RTS and C-C, V2 rackmount, 1 SM fiber: int WDM at 1310 nm, ST conn. Reqs (M)TR64421-15
TR6442i-15	Intercom transceiver and 4W/2W hybrid (w/autonull), RTS and C-C, V2 rackmount, 1 SM fiber: int WDM at 1550 nm, ST conn. Reqs (M)TR64421-13

VIPER II throwdown module

MTR6442i-13	Intercom transceiver and 4W/2W hybrid (w/autonull), RTS and C-C, throwdown, 1 SM fiber: int WDM at 1310 nm, ST conn. Reqs (M)TR64421-15
MTR6442i-15	Intercom transceiver and 4W/2W hybrid (w/autonull), RTS and C-C, throwdown, 1 SM fiber: int WDM at 1550 nm, ST conn. Reqs (M)TR64421-13
ADAP-AC-04LC	AC power adapter for ViperII units; 120/240 VAC in; 2.5 mm circ; 4 A; 15 VDC not shown

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