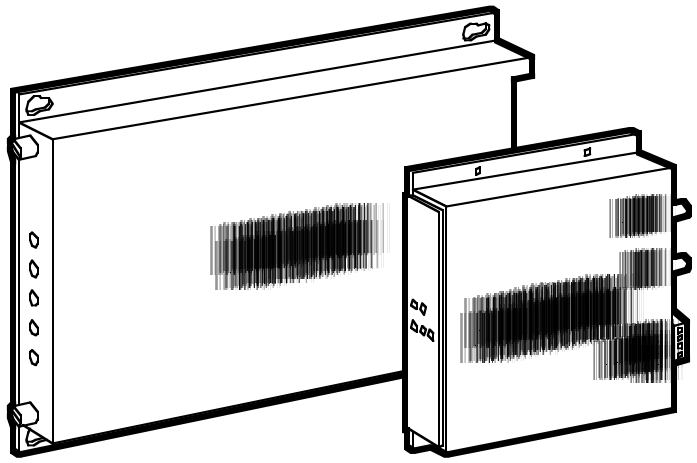
BLACK BOX®
NETWORK SERVICES

FIBRE TRANSMISSION SYSTEM



Perfect for "up-the-coax" systems, the Fibre Transmission System supports video and data signals over a multimode fibre.

Key Features

- ***Compatible with all major up-the-coax systems.***
- ***Diagnostic LEDs for video, command response, sync, and optical signals on TX and RX.***
- ***Operating distances of 3048+ m (10,000+ feet).***
- ***Built-in automatic gain control compensates for optical loss within a system.***

The Fibre Transmission System supports the transmission of video from a camera to a monitoring station and a data signal back to the camera—over one multimode fibre. A single coaxial cable at each end of the link is used to connect the appropriate video equipment to the Fibre Transmission System. The single-fibre link uses two different wavelengths (850 and 1300 nm) for two-way transmission.

The Fibre Transmission System works with all major up-the-coax formats, including American Dynamics, Baxall, Burle, Elbex (sync and control), Panasonic® (PTZ and VD2), Pelco™, Robot, Sensormatic, VCS format, Vicon™, Videoalarm™, and others. In an up-the-coax system, video signals travel in one direction and control signals travel in the other direction for full-duplex operation. In conventional coax systems, signals travel in only one direction at a time.

Here's how it works:

The control signals are transmitted during the vertical blanking period of the video signal. In addition to video and control, the Fibre Transmission System provides for the transmission of response signals from the camera station to the control station.

It also provides for transmission of embedded genlock sync if genlocking is a feature of the particular control system you're using. Genlocking is a method of synchronizing video signals for mixing. The video circuitry determines the exact moment at which a video frame begins.

The Fibre Transmission System features extensive LED diagnostics, with input/output indicators for video, command, response, genlock sync, and optical signal strength.

The Fibre Transmission System consists of a transmitter unit and a receiver unit. The transmitter comes in a10 x 10 cm (4" x 4") aluminum enclosure, and the receiver comes in a 501R aluminum enclosure. Both transmitter and receiver use a single 62.5µ fibre, with a maximum attenuation of 13 dB and a wavelength of 850/1300 nm.

Specifications

Electrical

Input Voltage—AC455A-TX-R2: 12 to 16 VAC, 12 to 14 VDC; AC456A-RX-R2: 13.5 to 16 VDC

Input Power Frequency—50 to 60 Hz

Current Requirement—TX: 300 mA; RX: 380 mA

Power Consumption—6 W

Heat Equivalent—0.3 BTU/min., 0.09 cal/min.

NOTE: The heat equivalent represents the conversion of all input power to heat. The actual heat generated will be less.

Video Signal

Video Direction—TX→RX

Number of Video Channels—One

Standards Supported—Monochrome: EIA and CCIR; Color: NTSC, PAL, SECAM

Video Input Signal—1.0 V p-p nominal composite video

Input Impedance—75 Ω

Video Output Signal—1.0 V p-p nominal composite video, unity gain, ±2%

Output Impedance—75 Ω

Output Gain—Unity

Signal-to-Noise Ratio—>54 dB at maximum optical attenuation

Video Bandwidth—10 Hz to 10 MHz

Video Resolution—800 TV lines

Differential Phase—<3°

Differential Gain—<3%

Tilt—0°

Input Coupling—Capacitative

Output Coupling—Sync tip clamped

Video Interconnection

Recommended Maximum Distance—Video Equipment to TX: <30.5 m (100 ft.); RX to Video Equipment: <30.5 m (100 ft.)

Recommended Cable Type—RG59 PVC (CL2) Coax Cable (part number ETN59-BNC)

Video Termination—The last video component in the video line must be terminated with 75 Ω.

Control Data Signal

Data Directions—Control: RX→TX; Response: TX→RX

Data Formats—All major up-the-coax formats, including American Dynamics, Baxall, Burle, Elbex (sync and control), Panasonic (PTZ and VD2), Pelco, Robot, Sensormatic, VCS format, Vicon, Videoalarm, and others

Detection Area—In even fields, the control signal is imposed on lines 8 through 19. In odd fields, the control signal is imposed on lines 9 through 20.

Pulse Amplitude—50 mV to 2 V

Genlock Sync Signal

Sync Direction—RX→TX

Detection Area—Can be imposed on all lines outside the control area

Sync Amplitude—Up to 6 V

Optical

Wavelength—850 and/or 1300 nm

Optical Mode—Multimode

Optical Budget—13 dB minimum

Operating Distance at 850 nm—Operating distance is approximate, and will be affected by the type and number of splices in the fibre and by the exact type of fibre used. Maximum: 3048 m (10,000 ft.)

Emitter Type—LED

Fibre Type—62.5 µ

Modulation Type—Frequency modulation

Gain Control—Fully automatic (AGC)

Transmitter Launch Power—> -17 dBm (1300 nm)

Transmitter Sensitivity—< -27 dBm (850 nm)

Receiver Sensitivity—< -26 dBm (1300 nm)

Receiver Launch Power—> -14 dBm (850 nm)

Agency Compliance

Emissions—FCC Part 15; ICES-003 (Canada); AS/NZS 3548 (Australia/NZ); CE EN55022; CE EN50082-1, including EN61000-4-2 ESD, EN61000-4-3 Radiated Immunity, EN61000-4-4 Electrical Fast, Transient Burst (EFT) Immunity, EN61000-4-5 Power Surge Immunity, EN61000-4-6 Conducted Disturbances Immunity, EN61000-4-11 Voltage Dips, Short Interruptions and Voltage Variations

Immunity—ENV50204 Radiated, Pulsed Magnetic Field Immunity

Product Safety—No standards required, since the Fibre Transmission System is DC-powered by SELV (Safety Extra-Low Voltage)

Controls

Alarm Disable—Removable jumper on receiver cards

LED Indicators

Video (bicolor)—Shows presence of good video signal

Level/Loss™ (bicolor)—Shows presence of good optical signal

COMMAND—Shows activity on PTZ control channel

RESPONSE—Shows activity on response channel

SYNC—Shows activity on genlock channel

Connectors

Signal Input—Optical: ST type; Video: BNC

Signal Output—Optical: ST type; Video: BNC

Power Input—Standalone units: 3-pin detachable screw terminal connector; Rack units: Direct rack connection

Environmental

Temperature—Operating: 0 to 50°C (32 to 122°F); Storage: -40 to +85°C (-40 to +185°F)

Mechanical

Transmitter Module—10 x 10 cm (4 x 4) enclosure

Receiver Module—501R

Construction—Aluminum enclosure

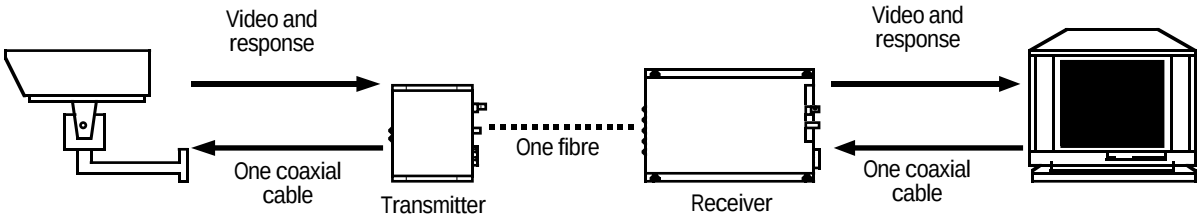
Finish—Black semigloss paint

Mounting Method—(4) No. 6 (3-mm) screws

Size—AC455A-TX-R2: 3.1H x 11.7W x 11.9D cm (1.2"H x 4.6"W x 4.7"D), including connectors; AC456A-RX-R2: 3H x 16W x 24.9D cm (1.2"H x 6.3"W x 9.8"D), including connectors

Weight—AC455A-TX-R2: 0.3 kg (0.7 lb.); AC456A-RX-R2: 0.7 kg (1.6 lb.)

Typical Application



Why Buy From Black Box? Exceptional Value. Exceptional Tech Support.

Recognise any of these situations?

- You wait more than 30 minutes to get through to a vendor's tech support.
- The so-called "tech" can't help you or gives you the wrong answer.
- You don't have a purchase order number and the tech refuses to help you.

According to a survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.

Ordering Information

ITEM	CODE
Fibre Transmission System	
Transmitter	AC455A-TX-R2
Receiver	AC456A-RX-R2
Remember to order cable…	
RG59 PVC (CL2) Coax Cable	ETN59-BNC