

# NITEK®

## **VB31PT**

Video Balun Transceiver for Twisted Pair

up to 500 feet (152 meters) with Passive Transceivers

up to 3,000 feet (914 meters) with Active Receivers



### **Description**

Video balun transceiver with pigtail coax and male BNC for twisted pair operation with other balun transceivers or active receivers.

The VB31PT video balun transceiver is a video transmission device that provides a low cost means of sending live video over unshielded twisted pair, point-to-point wiring for distances of up to 500 feet (152 meters) with other passive balun transceivers, up to 1,500 feet (457 meters) with TR515 single channel and model 51 series hubs, and up to 3,000 feet (914 meters) with TR560 and model 56 series hubs. The VB31PT is compatible with all of the "up-the-coax" control systems. A basic system uses (2) video balun transceivers, one at each end of a twisted pair of wires. These units are intended for use over existing in-house telephone wiring, Category 5 wiring or other twisted pair cable runs to provide a convenient, cost-effective alternative to coax. The VB31PT is designed to provide superior immunity from noise and interference even when running next to line power! The VB31PT also provides a unique mounting tab and strain relief.

### **Features**

- Quality video over ordinary twisted pair cable
- Immunity to noise and interference
- Passive devices - do not require power
- Video & P/T/Z over a single pair (with "up-the-coax" systems)
- Mini-coax pigtail for in-camera or dome mounting
- Weather resistant design
- Easier to install than coax
- Compatible with all twisted pair equipped cameras, enclosures and domes

### **Applications**

- Intra-building CCTV installations  
(instead of coaxial cable)
- Structured cabling (Category 5) environments
- To eliminate requirement for Plenum Coax
- Multi-camera applications through conduit (more cameras through a smaller diameter)

## Transceiver Unit

Size	0.9"H x 1.0"W x 1.75"D (not including coax)
Power Requirements	NONE REQUIRED
Input	1 vpp composite video Monochrome or Color
Output	Balanced low voltage current loop

## System (2 transceivers required)

Video Format	RS170, NTSC, PAL, SECAM, CCIR (Color or B/W)
Video Input	1 Vpp composite video Monochrome or Color
Operating Frequency	DC to 10 MHz
Common Mode Rejection	>60 dB typ.
Wire Spec	26 to 12 AWG unshielded twisted pair (UTP)
DC Loop Resistance	51 Ohms/1,000 feet (304 meters) (max)
Nominal Capacitance Impedence	17pF/ft. 100 Ohms +/- 20%
UTP Category	2 or better
Temperature Range	-10 degrees C to +85 degrees C
Humidity Range	0 to 98%, non-condensing
Twisted Pair Connection	Screw terminals

## SYSTEM COMPONENTS

Two VB31PT devices or one VB31PT in combination with any of the other Nitek transceiver or active receiver models are required for transmission over a single UTP.

## Wire and Cable Recommendations

The VB31PT is recommended for use with **unshielded twisted pair** (UTP) wiring. The systems will operate over wire gauges from 26 AWG through 12 AWG. Category 2, 3, 4 or 5 cable may be used. Individually shielded pairs should be avoided, as they drastically reduce the operating range of the systems. Multi-pair cable with an overall shield is acceptable. Video can be operated in the same communication cable coexistent with telephone, computer, control signals, power voltages and other video signals. While video may be routed through telephone punchdown block terminals, any bridge-taps, also called T-taps and any resistive, capacitive or inductive devices MUST BE removed from the pair. For more specific information regarding wire types, gauges and proper installation techniques, please call 800-528-4343 for technical assistance. More information is also available on the CCTV System Design Guide Sheet.

Ordering Information	
PART	DESCRIPTION
VB31PT	9" Pigtail with Male BNC Connector; up to 500 feet (152 meters)
<i>VB31PT works with the following Nitek equipment</i>	
VB37M	BNC Male Video Balun; up to 750 feet (228 meters)
VB37F	BNC Female Video Balun; up to 750 feet (228 meters)
VB39M	BNC Male Video Balun w/surge suppression; up to 750 feet (228 meters)
VB39F	BNC Female Video Balun w/surge suppression; up to 750 feet (228 meters)
TR515	Active Receiver w/surge suppression; up to 1,500 feet (457 meters)
TR560	Active Receiver w/surge suppression; up to 3,000 feet (914 meters)
VB41x4	4 Balun Card w/surge suppression for Rack; up to 750 feet (228 meters)
TR515x4	Active Receiver w/surge suppression for Rack; up to 1,500 feet (457 meters)
TR560x4	Active Receiver w/surge suppression for Rack; up to 3,000 feet (914 meters)
VH439	4 Port UTP Video Balun Mini-Hub w/surge suppression; up to 750 feet (228 meters)
VH839	8 Port UTP Video Balun Hub w/surge suppression; up to 750 feet (228 meters)
VH1639	16 Port UTP Video Balun Hub w/surge suppression; up to 750 feet (228 meters)
VH3239	32 Port UTP Video Balun Hub w/surge suppression; up to 750 feet (228 meters)
VH451	4 Port UTP Video Balun Mini-Hub w/surge suppression; up to 1,500 feet (457 meters)
VH851	8 Port Active UTP Receiver Hub w/surge suppression; up to 1,500 feet (457 meters)
VH1651	16 Port Active UTP Receiver Hub w/surge suppression; up to 1,500 feet (457 meters)
VH3251	32 Port Active UTP Receiver Hub w/surge suppression; up to 1,500 feet (457 meters)
VH456	4 Port UTP Video Balun Mini-Hub w/surge suppression; up to 3,000 feet (914 meters)
VH856	8 Port Active UTP Receiver Hub w/surge suppression; up to 3,000 feet (914 meters)
VH1656	16 Port Active UTP Receiver Hub w/surge suppression; up to 3,000 feet (914 meters)
VH3256	32 Port Active UTP Receiver Hub w/surge suppression; up to 3,000 feet (914 meters)