

PROJECT NUMBER \_\_\_\_\_

PROJECT NAME \_\_\_\_\_

DATE \_\_\_\_\_

PROJECT LOCATION \_\_\_\_\_

**TECHNICAL SPECIFICATIONS**

**SECTION 28 23 00 - VIDEO SURVEILLANCE**

**SECTION 28 23 23 - VIDEO SURVEILLANCE SYSTEMS INFRASTRUCTURE**

**TYPE VB31AT VIDEO BALUN COMBINER FOR TWISTED PAIR**

**PART 2 – PRODUCTS**

**2.1 GENERAL**

- 2.1.1 All equipment to be supplied under this specification shall be new and the current model of a standard product of an OEM of record. An OEM of record shall be defined as a company whose main occupation is the manufacture for sale of the equipment supplied and which:
  - A. Maintains a factory production line for the item submitted.
  - B. Maintains a stock of replacement parts for the item submitted..
  - C. Maintains engineering drawings, specifications, and operating manuals for the items submitted.
  - D. Has published and distributed descriptive literature and equipment specifications on the items of equipment submitted.
- 2.1.2 Specifications of equipment as set forth herein are salient and minimum requirements, unless otherwise stated and shall not be construed as limiting the overall quality, quantity or performance characteristics of items furnished.
- 2.1.3 Systems and components shall have been thoroughly tested and proven in actual use.
- 2.1.4 All systems and components shall be provided with the availability of a toll free (U.S. and Canada) technical support number from the manufacturer. The number shall provide technical assistance for either the dealer/installer or the end user at no charge

**2.2 SPECIFICATIONS**

- 2.2.1 The Unshielded Twisted Pair Video balun combiner shall be a NITEK Model VB31AT or approved equivalent, and shall provide a means for transmitting baseband analog video and power signals per paragraph 2.2.2. The VB31AT shall via a single four pair 24 gauge Category 5e or greater unshielded twisted pair cable, transmit video and power for distances of up to 327 feet (100 meters) in length.
- 2.2.2 The VB31AT shall be used in combination with another video combiner or with any of NITEK's line of designated video, power, and data links solutions. The VB31AT shall have a RJ45 jack for interface with the 24 gauge Category 5e or greater cable, a 9" mini coax "pig tail" with a male BNC connector shall provide a means for connection to the analog camera and pathway for video transmission, and two (2) wire leads for accessing and transmitting 12-24 VDC/VAC power circuits for the camera.

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**TYPE VB31AT VIDEO BALUN COMBINER FOR TWISTED PAIR**

**PART 2 – PRODUCTS (Continued)**

- 2.2.3 The NITEK VB31AT shall be capable of transmitting and receiving baseband type monochrome or color video signals over 4 separate unshielded twisted pair (UTP) telephone pairs, Category 5e or better, 24 gauge or heavier up to a maximum cable length of 1,000 feet (305 meters).
- 2.2.4 The VB31AT shall have a maximum distance for transmitting and receiving video shall be 750 feet (228 meters) when the output of the Unshielded Twisted Pair Receiver is coupled to a Digital Video Recorder (DVR) input.
- 2.2.5 The VB31AT shall have a maximum distance for transmitting and receiving power shall be 750 feet (228 meters) when using 24 VAC power. When using 12 VDC power shall require pre-install cable distance calculating.
- 2.2.6 The transceiver device shall not require power to operate as specified.
- 2.2.7 The VB31AT shall act as a combiner in that it shall be used as a connecting/transition point for four circuits to be provided via an RJ45 jack for connection to a 24 gauge Category 5e or greater unshielded twisted four pair cable. The RJ45 shall accommodate one twisted pair to be used for video transmission to and from the transceiver device and two twisted pairs shall be used to provide power supply voltage to the camera. The wiring of this connector shall be in accordance with the EIA/TIA 568B standard for structured cabling systems as illustrated in paragraph 2.2.12.
- 2.2.8 The VB43ATF video balun combiner shall have built-in transient protection.
- 2.2.9 The VB43ATF transceiver used as a transmitting device shall be designed to accept a baseband video signal from a 75 ohm impedance source and the transceiver used as a receiving device shall deliver a baseband video signal capable of driving a 75 ohm impedance load

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**PART 2 – PRODUCTS (Continued)**

2.2.10 RJ45 Modular Connector Wiring to be coded TIA/EIA 568B per the following key:

Pin 1	-	Video 2 +
Pin 2	-	Video 2 –
Pin 3	-	24V Com (1)
Pin 4	-	NA
Pin 5	-	NA
Pin 6	-	24V Line (1)
Pin 7	-	24V Com (2)
Pin 8	-	24V Line (2)

2.2.11 The VB31AT shall support bi-directional signal transmission, i.e.; video from the video source to the receiving equipment and control from the receiving end to the video source equipment over a single unshielded twistedpair (UTP) using equipment that provides such bi-directional operation during the vertical interval. This operation is also referred to as “up-the-coax” control.

2.2.12 The VB31AT transceiver device shall be capable of driving an active (powered) video signal from a companion NITEK UTP video receiver models (or approved equivalent) operating at a distance of up to 3,000 feet (1,000 meters) over cable types specified in paragraph 2.2.1. The combination of the transceiver device and the active transmitter shall provide a minimum of 500 lines of video resolution.

2.2.13 The VB31AT transceiver devices shall operate within specifications without causing interference or interfering with any other base band video, communication, data and/or other low-voltage signals operating in multi-twisted pair UTP cables as specified in paragraph 2.2.1

2.2.14 The VB31AT device shall be covered by a Limited Lifetime Warranty.

**2.3 PERFORMANCE SPECIFICATIONS**

2.3.1 The VB31AT Video Balun Combiner shall meet or exceed the following performance specifications:

- A. The transceiver device shall be capable of driving a color video signal of NTSC standard 525 lines or PAL standard 625 lines.
- B. Video Format compatibility: RS170, NTSC, PAL, SECAM, CCIR (Color or Monochrome).
- C. Input: 0.6 - 1.6 Vpp composite color or black & white video signal into 75 Ohms.
- D. Output: Balanced low voltage current loop
- E. Operating frequency range: DC to 10 MHz.
- F. Common mode rejection to be > 60 dB.
- G. Voltage requirements: No Power Supply is required.
- H. Power consumption: None
- I. Electronics to be enclosed in UL approved fire retardant compound.
- J. The dimension are 23 H x 25 W x 51 D.
- K. Common mode rejection of >60 dB.
- L. Temperature of -10°C to +85°C/ 14°F to 185°F

