
TECHNICAL SPECIFICATIONS
SECURITY SYSTEM
DIVISION 16 - ELECTRICAL
SECTION 16770 - CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM

PART 2 – PRODUCTS

2.01 GENERAL

- A. All equipment and materials used shall be standard components that are regularly manufactured and utilized in the manufacturer's system.
- B. All systems and components shall have been thoroughly tested and proven in actual use.
- C. All systems and components shall be provided with the availability of a (U.S. and Canada) technical support number from the manufacturer. The number shall provide technical assistance at no charge for the life of the product.

2.02 NV-ET1804 TBus 4-Port PoE+ Transmitter for Coax, UTP or STP

- A. The TBus 4-Port PoE+ Transmitter shall have four Ethernet ports, each capable of communicating with 10/100 BaseT Ethernet devices, per IEEE 802.3.
- B. The TBus Transmitter shall be able to power up to four PoE IP cameras or other PDs (Powered Devices), per IEEE 803.3af.
- C. The TBus Transmitter shall, subject to power availability, be able to power PoE+ IP cameras or other PoE+ PDs, per IEEE 802.3at.
- D. The TBus Transmitter shall, subject to power availability, be able to power a PoE IP camera or other PD that draws up to 50 watts.
- E. For RG-11 cable, TBus aggregate data speeds up to 150 Mbps shall be supported at distances up to 300 feet (100 m); 135 Mbps for 1,000 feet (304 m); 140 Mbps for 2,500 feet (762 m); 75 Mbps for 5,000 feet (1,500 m); and 60 Mbps for 8,000 feet (2,500 m).
- F. For RG-59/U cable, TBus aggregate data speeds up to 130 Mbps shall be supported at distances up to 300 feet (100 m); 100 Mbps for 1,000 feet (304 m); 75 Mbps for 2,500 feet (762 m); 20 Mbps for 5,000 feet (1,500 m); and 10 Mbps for 8,000 feet (2,500 m).
- G. For Cat5 cable, TBus aggregate data speeds up to 105 Mbps shall be supported at distances up to 300 feet (100 m); 55 Mbps for 1,000 feet (304 m); and 15 Mbps for 2,500 feet (762 m).
- H. The TBus Transmitter shall be used with any of the following model devices: NV-ET1801, NV-ER1804, NV-ER1808*i* or NV-ER1816*i*.
- I. One TBus receiver at the network end shall support multiple TBus Transmitters at the device end.
- J. The TBus Transmitter shall have a Blue "Power-On" LED that flashes when "Joining".
- K. The TBus Transmitter shall have a green "Link" LED that is active when connected to, and communicating with, another TBus transceiver. The Link LED shall blink with data activity.

- L. The TBus Transmitter shall have a “Quality” LED that shall be green under good Link conditions, amber under fair Link conditions, red under poor Link conditions, and off when there is no Link.
- M. The TBus Transmitter shall have a green LED for each Ethernet port that flashes with data activity.
- N. The TBus Transmitter shall have a green LED for each Ethernet port that reports that its PoE PD is receiving its power from the Transmitter.
- O. The TBus Transmitter’s Ethernet interfaces shall be RJ45 10/100 Base T, supporting auto-negotiation and auto MDI/MDIX cross-over.
- P. The TBus end-to-end latency shall be $\leq 3\text{ms}$.
- Q. The TBus building wiring (Link) shall have a BNC and an RJ45 connector for connection to Coax, UTP, 18/2 or STP. Wire impedance shall be 25 to 100 Ohms.
- R. TBus data shall be protected using 128 bit AES encryption.
- S. TBus Link transmission technology shall be IEEE 1901.
- T. The TBus Transmitter shall have built-in transient protection for $5 \times 20\mu\text{S}$ 3,000A 6,000V; and ESD protection for 200pF 20KV.
- U. The TBus Transmitter shall receive 56VDC Class 2 (SELV) power from the TBus Receiver.
- V. The TBus Transmitter shall be capable of receiving optional supplemental local 56VDC Class 2 (SELV) power using the model NV-PS56-60W.
- W. The TBus Transmitter shall have a power consumption of ≤ 3 watts at 10 to 56VDC.
- X. The TBus Transmitter shall have an operating and storage temperature of -40°F to 185°F (-40°C to $+70^{\circ}\text{C}$), and humidity of 20 to 85%, non-condensing.
- Y. The TBus Transmitter shall have a weight of 1.20 lbs (0.54Kg).
- Z. The TBus Transmitter shall have dimensions, excluding connectors, of 6.00 in (152mm) wide x 1.39 in (35mm) high x 4.40 in (112mm) deep.
- AA. The TBus Transmitter shall be UL and cUL listed, CE and FCC compliant.
- BB. The TBus Transmitter shall be RoHS compliant.
- CC. The TBus Transmitter shall be provided with a limited lifetime warranty.
- DD. The TBus Transmitter shall be the NVT NV-ET1804 4-Port PoE+ Transmitter.