



**Description** **Features**

The NVT Model NV-ER1804 TBus Ethernet over Coax/UTP Receiver is a compact bus-architected receiver hub that has four TBus ports, each capable of supporting multiple TBus transmitters and their subsequent 10/100BaseT Ethernet and PoE+ powered devices.

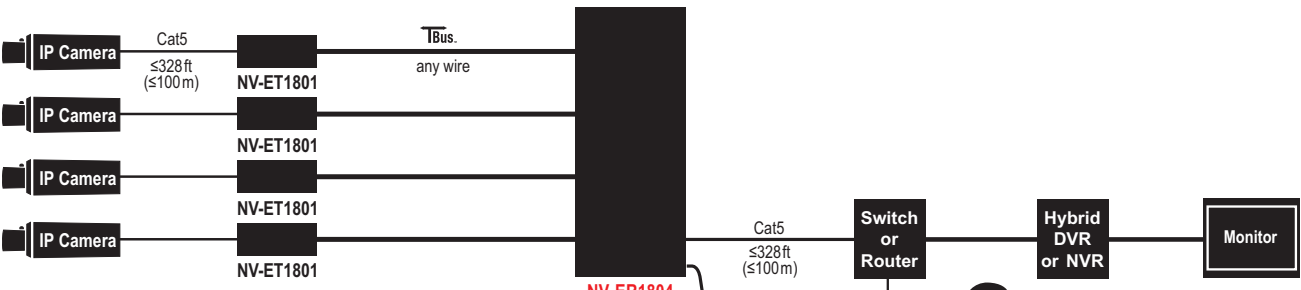
The TBus transmission medium can be coax, 2-Wire/UTP, or Shielded twisted-Pair. Data rates up to 150 Mbps are achievable, making these devices the ideal choice in new or legacy installations where existing cable is re-deployed as part of an upgrade to IP cameras. 56 VDC is provided by a local power supply. These transmitters are extremely simple to use, with no IP or MAC addressing required. Status LEDs indicate power and link connectivity/quality/activity for RJ45 and TBus ports.

The NV-ER1804 is backed by NVT's award winning customer support, limited lifetime warranty, and advance replacement.

\*Distance and number of devices supported may be lower due to power supply capacity and wire voltage-drop. See wire distance chart on page 4. Aggregate TBus bandwidth is dynamically allocated (shared based on traffic), and decreases with wire distance. Multicast requires an IGMP Querier, within a network switch. High bandwidth streaming devices (>15Mbps) that employ unusually "chatty" protocols (TCP/IP, TFTP, etc.) are not recommended. Use RTP/UDP instead.

- Transmit 10/100 BaseT Ethernet up to 8,000ft over RG-59/U, 2,000ft over 2-Wire/UTP, or 1,300ft over Shielded Twisted Pair\*
- The TBus architecture allows multipoint operation in any star or daisy-chained topology, with any combination of wire types and up to 16 remote transmitters/IP cameras
- Transparently supports all networking protocols (UDP, TCP/IP, HTTP, Multicast, etc.) using advanced 128-bit AES encryption
- 10/100/1000 uplink Ethernet connectivity
- Easy configuration, no PC required
- 56 VDC is distributed over the TBus to all connected equipment. PoE, PoE+, or High Power PoE cameras (or other PoE devices), up to 50 Watts\* are supported
- Built-in transient protection; Industrial temperature range
- Limited lifetime warranty

**Typical Application**



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## RJ45 ETHERNET INTERFACES (4 each)

Connectivity: 10/100/1000 BaseT IEEE 802.3ab auto-negotiation, auto MDI / MDX crossover

Protection: Industrial transient protection  
Thermistor current protection

Wire type: Cat5 or better

Distance: up to 328 feet (100m)

## TBus LINK INTERFACE

Connectivity: BNC or RJ45

Wire type: Coax, single- or multi-pair UTP, 18/2, or STP wire

Impedance: 25 to 100 Ω

Topology: Bus architecture supports star, daisy-chain, or an combination. One control-room Receiver may support multiple remote TBus Transmitters.

Data throughput: 150 Mbps total network bandwidth\* with dynamic bandwidth allocation

Latency: 3 ms

Transmission technology: IEEE 1901

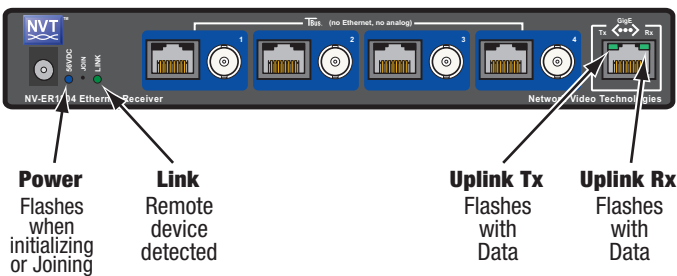
Wire distance: Up to 8,000 feet, 1.5 miles (2.5km)\*

Encryption: 128-bit AES, through one-button joining

**\*IMPORTANT NOTE:**  
Data rate, distance, and number of devices may be lower due to wire voltage-drop, power supply capacity, or signal attenuation. See page 4.

**⚠️ ⚠️ WARNING:**  
For safety, never use more than two power supplies within a TBus channel. Never use more than one 60 watt remote power supply on each TBus channel.

## LED STATUS INDICATORS



## MECHANICAL / ENVIRONMENTAL

Body Dimensions: 8.43in (214mm) wide  
1.39in (35mm) high  
4.40in (112mm) deep  
excluding connectors

Product weight: 1.64lb (0.74kg)  
Packaged weight: 1.86lb (0.84kg)

Operating / storage temperature: -40°F to 185°F (-40°C to +85°C)  
20 to 85% relative humidity  
non-condensing

Power consumption: ≤ 3W

Generated heat: 10 BTU/hour

Transient immunity: 5 x 20μS 3,000A, 6,000V  
ESD 20KV, 200pF

## POWER SUPPLY

The NV-ER1804 is a receiver class 2 power supply, may be purchased. These supplies are external inline, with an IEC380-C14 power inlet and a 6ft (1.18m) line cord. Input voltage is 100~240VAC 50/60Hz. A molded P1J 5.5mm barrel connector provides a class 2 (SELV) regulated output.

Model NV-PS56-60W: 56V 60W  
4.90in (124mm) long  
2.00in (5 mm) wide  
1.2 in (32mm) high, 0.67lbs (300g)

Model NV-PS56-90W: 56V 90W  
5.77in (147mm) long  
2.36in (60mm) wide  
1.27in (3 mm) high, 0.9 lb (430g)

Operating / storage temperature: -40°F to +185°F (-40°C to +85°C)  
20 to 5% relative humidity  
non-condensing

Transient Immunity: 5x20μS 3000A, 6000V  
ESD 20KV, 200pF

Use only the power cord provided with the unit or equivalent UL approved type SPT-2, SVT, or SJT 18/3 AWG 100~240 VAC, 1 Amp 60°C max 15ft (4.5m) long. One end with IEC380-C13 appliance coupler and the other end with NEMA 1015P or equivalent for your country.

## REGULATORY

UL Listed to IEC/UL 60950-1  
Complies with FCC part 15A limits

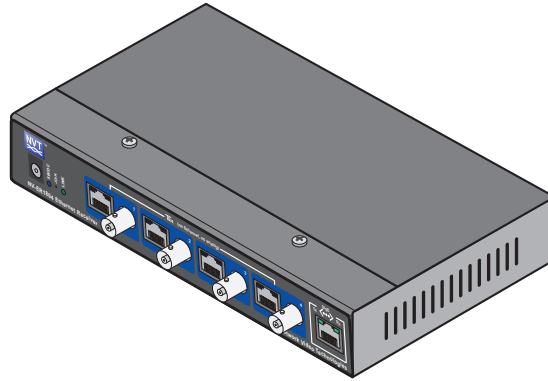


## WARRANTY

Limited Lifetime

Specifications subject to change without notice.

NV-ER1804: Four port receiver



NV-PS56-60W: 56VDC power supply, 60 watts with IEC line cord



NV-PS56-90W: 56VDC power supply, 90 watts with IEC line cord



NV-BNCT: BNC "T" adaptor



NV-EC4BNC: 1:4 BNC splitter adaptor



NV-BNCA: BNC to 2-Wire Adaptor



NV-RJ45A: RJ45 to Screw Terminal Adaptor



NV-PC4PR: RJ45 Patch Cord, 4-pair 3' (1m)



The distance capability of wire is dependant on its ability to deliver DC power, and separately, to deliver high-frequency data signals.

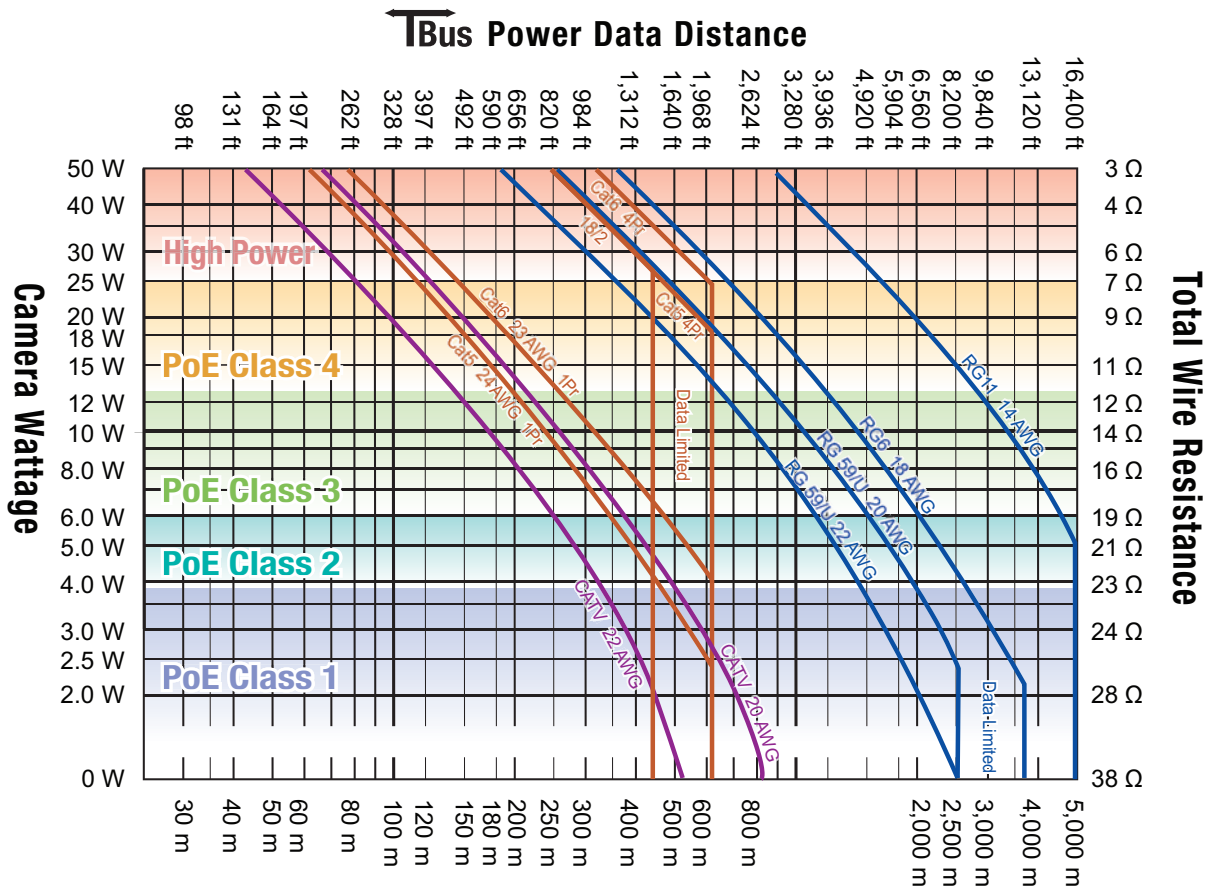
The graph below shows maximum power delivery when using a 56V power supply. If you are locally powering your camera (or other remote device), then this graph does not apply.

**A Distance Calculator can be found at [www.nvt.com](http://www.nvt.com).**

PoE devices require a minimum of 43V to operate. With a 56V supply, we have up to 13V of allowable voltage drop on the wire.

The voltage will dip in proportion to the remote (camera) load. The graph below shows what PoE power distances are supported for various loads and wire types.

- Start with the camera wattage at the left. Sometimes IP cameras are listed as to their PoE Class rather than wattage.
- Now read over to the right until you find your kind of wire. Then look up (feet) or down (meters) to find your maximum distance.
- If your wire is not among the examples, simply measure its Total resistance and find the value on the right side of the Graph. The maximum supported wattage is on the left.
- There are a wide variety of wire qualities, from copper-plated steel at the low end (CATV wire) to high performance low-loss pure copper.



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