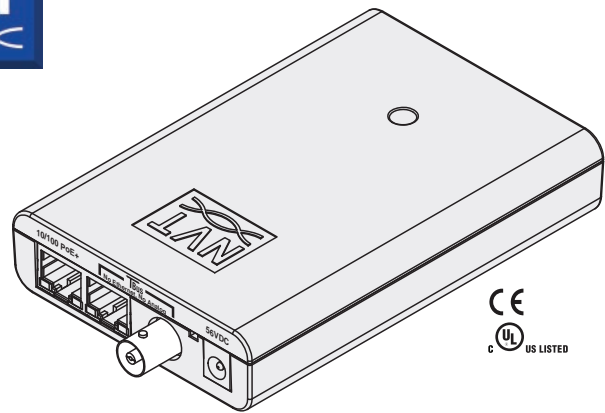




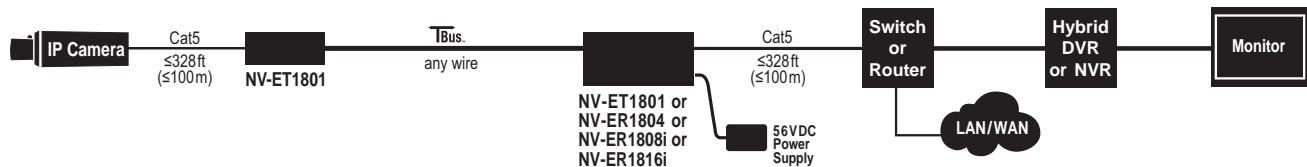
# TBus®

## Single Port PoE+ Transmitter

### Model NV-ET1801



#### Application Example:



#### Features:

- 100 BaseT transmission; Network speeds up to 150 Mbps\*; Up to 8,000ft (2,500m)\*
- Powers a PoE, PoE+, or High Power PoE camera (or other PoE device), up to 50 watts\*
- Use with another NV-ET1801 or another TBus Receiver
- One TBus receiver at the network-end can support multiple remote Transmitters/IP cameras
- 56 VDC is distributed over the TBus to all connected equipment
- Easy configuration, no PC required
- Transparently supports all networking protocols (UDP, TCP/IP, HTTP, Multicast\*, etc.)
- 128-bit AES encrypted transmission; Built-in transient protection
- Limited lifetime warranty

The NVT Model NV-ET1801 TBus Single Port PoE+ Transmitter is a compact media converter that allows 10/100 BaseT Ethernet and PoE+ power to be transmitted using virtually any kind of cable. These devices are often used in legacy installations where existing cable is re-deployed as part of an upgrade to IP cameras. 56 VDC class 2 power is delivered to one transceiver, which distributes it to multiple\* remote transmitters, and their PoE, PoE+, or High Power PoE cameras\*.

These transceivers are extremely simple to use, with no IP or MAC addressing required. Status LEDs indicate power, Ethernet/PoE, and TBus connectivity/activity/quality. They are backed by NVT's award winning customer support and limited lifetime warranty.

\* Distance and number of devices supported may be lower due to power supply capacity and wire voltage-drop. See Wire Distance Charts on page 4. Aggregate TBus bandwidth is dynamically allocated (shared based on traffic), and decreases with wire distance. See Wire Distance Chart on page 5. Multicast requires an IGMP Querier, either in a network switch, or within the NV-ER1808i or NV-ER1816i Receiver Hub. High bandwidth streaming devices (>15Mbps) that employ unusually "chatty" protocols (TCP/IP, TFTP, etc.) are not recommended. Use RTP/UDP instead.

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 (+1) 650.462.8100 • +44 (0) 208 977-6614  
 nvt.com • info@nvt.com



# Single Port PoE+ Transmitter Model NV-ET1801

## Technical Specifications

### RJ45 ETHERNET INTERFACE

Connectivity:	10/100/1000 BaseT IEEE 802.3ab auto-negotiation, auto MDI / MDX crossover
PoE Power:	This Power Sourcing Equipment (PSE) detects and supports Powered Devices (PDs) that are compatible with IEEE 802.3af or 802.3at, or PDs that draw up to 50 watts. For maximum power distance, 56VDC appears on all eight RJ45 pins*.
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 $\Omega$
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 (2.5 Km)*
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 pages 4 & 5.



#### 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.

#### REGULATORY

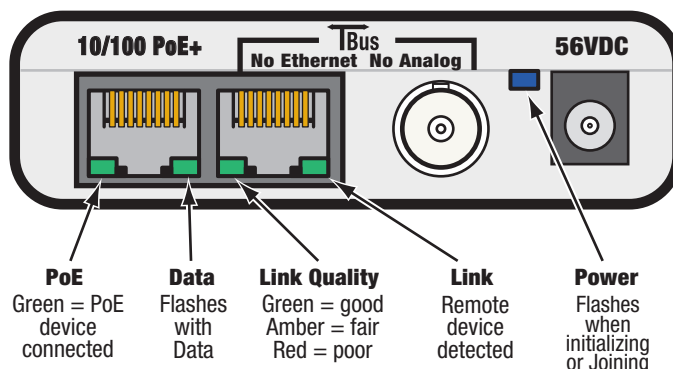
UL Listed to IEC/UL 60950-1  
Complies with FCC part 15A limits



#### WARRANTY

Limited Lifetime

Specifications subject to change without notice.



### LED STATUS INDICATORS

#### MECHANICAL / ENVIRONMENTAL

Body Dimensions:	3.23 in (82 mm) wide 0.93 in (24 mm) high 4.8 in (122 mm) deep excluding connectors
Shipping weight:	0.35 lb (0.16 Kg)
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 20 $\mu$ S 3,000A, 6,000V ESD 20KV, 200pF

#### POWER SUPPLY

Power is usually supplied by the TBus Receiver. For optional supplemental local power, an additional class 2 power supply may be purchased. These supplies are external inline, with an IEC380-C14 power inlet and a 6 ft (1.18 m) 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 4.90 in (124 mm) long 2.00 in (51 mm) wide 1.25 in (32 mm) high, 0.67 lbs (300 g)
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Model NV-PS56-90W:	56V 90W 5.77 in (147 mm) long 2.36 in (60 mm) wide 1.27 in (32 mm) high, 0.94 lb (430 g)
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Operating / storage temperature:	-40°F to +185°F (-40°C to +85°C) 20 to 5% relative humidity non-condensing
Transient Immunity:	5x20 $\mu$ S 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 15 ft

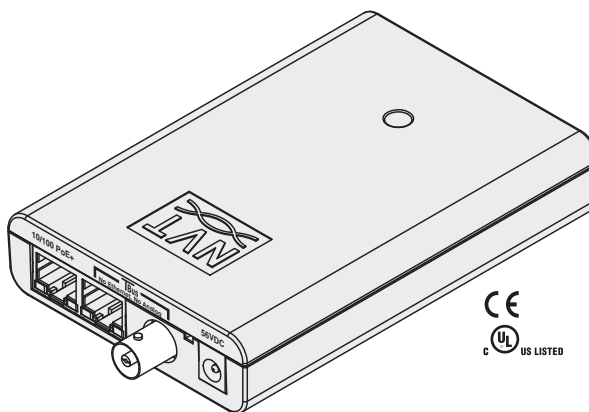
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# TBus® Single Port PoE+ Transmitter Model NV-ET1801

## Product and Accessories

NV-ET1801: Single port transceiver only



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



NV-PS56-90W: 56VDC power supply, 90 watts  
with IEC line cord  
**Do not use with NV-ER1808i or NV-ER1816i**



NV-BNCT: BNC "T" adaptor



NV-EC4BNC: 1:4 BNC splitter adaptor



NV-BNCA: Adaptador de terminal BNC Tornillo



NV-RJ45A: Adaptador de terminal RJ45 Screw



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



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# TBus® Single Port PoE+ Transmitter Model NV-ET1801

## Wire Type and Power Distance

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

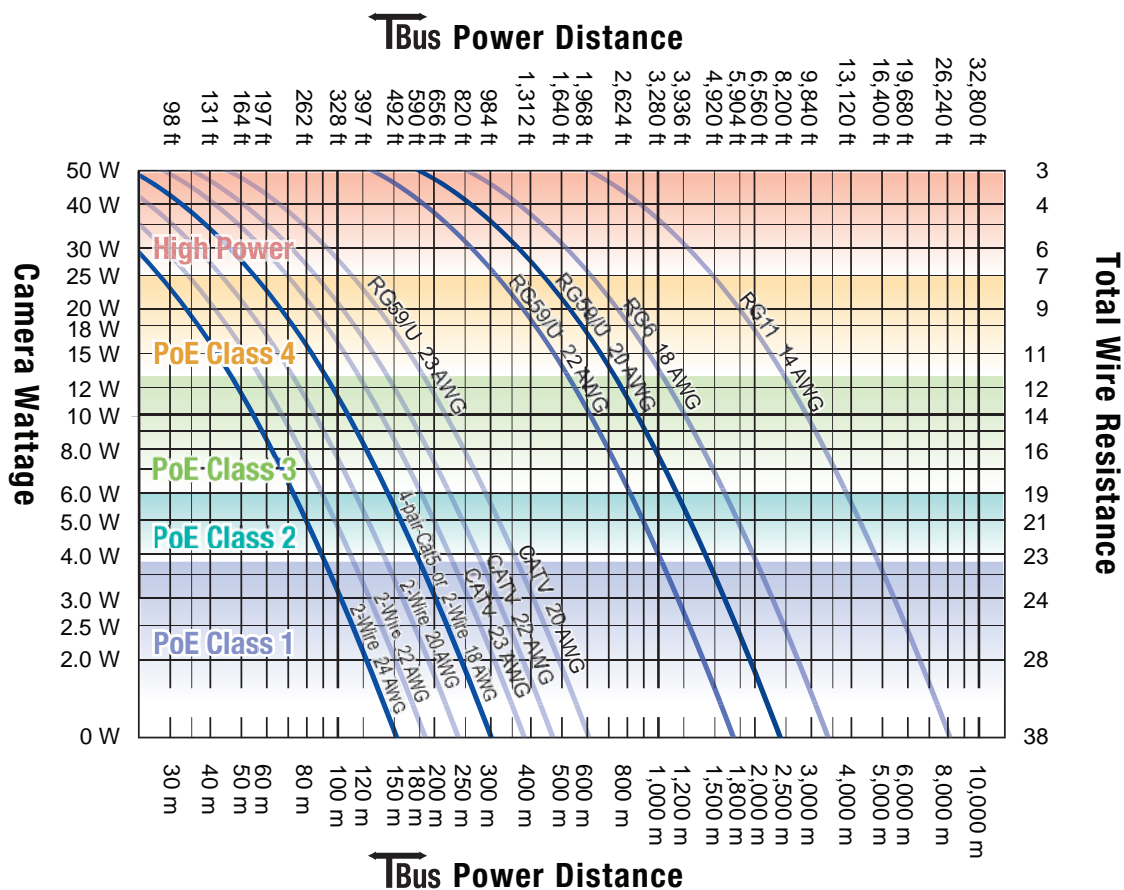
The graph below shows maximum power delivery when using a 56V power supply. If you are locally powering your camera (or other remote device), then this graph does not apply. The graph on the next page shows the maximum data delivery rate.

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.



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# TBus®

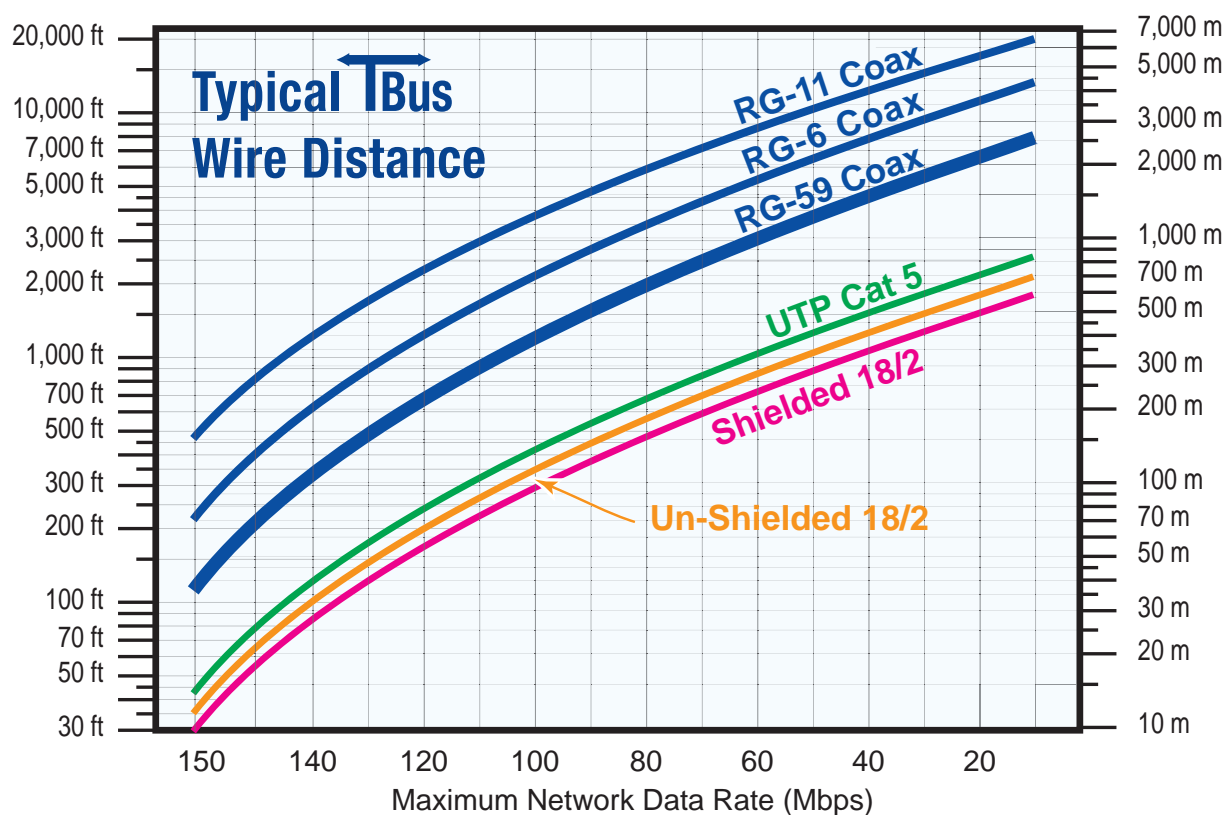
## Single Port PoE+ Transmitter Model NV-ET1801

### Wire Type and Data Distance

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.

The graph below will help you to determine your data throughput as a function of wire type and distance.

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



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