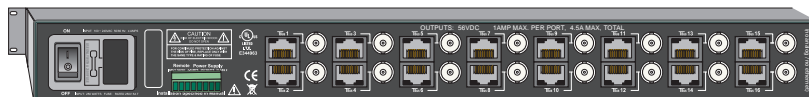


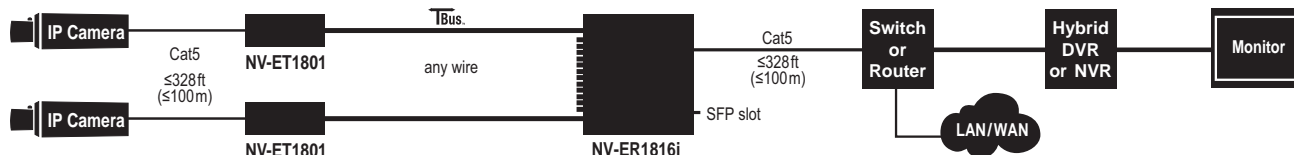


TBus®

Sixteen Port PoE+ Receiver Hub Model NV-ER1816i



Application Example:



Features:

- 100 BaseT transmission; Network speeds up to 150 Mbps*; Up to 8,000ft (2,500m)*
- Powers PoE, PoE+, or High Power PoE cameras (or other PoE devices), up to 50 watts*
- Dual 1000BaseT uplink ports (RJ45 & SFP)
- Use with NV-ET1801 or NV-ET1804 TBus Transmitters
- One TBus port 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; Browser based monitoring & control available
- Transparently supports all networking protocols (UDP, TCP/IP, HTTP, Multicast*, etc.)
- 128-bit AES encrypted transmission; Built-in transient protection

The NVT Model NV-ER1816i TBus Sixteen Port PoE+ Receiver Hub is a 1U 19" rack-mountable bus-architected ethernet switch, that together with remote TBus transmitters, is capable of supporting up to 64 10/100 BaseT 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.

An internal 250 watt 56 VDC power supply can be optionally augmented by an external 250 watt auxiliary power supply, supporting redundancy and/or higher power applications.

The NV-ER1816i is backed by NVT's award winning customer support, limited lifetime warranty, and advance replacement. No IP or MAC addressing configuration is required, yet is available for browser-based monitoring and control. This provides exceptional yet simple configuration and diagnostics for the installer or remote monitoring facility. Status LEDs indicate power, Ethernet/PoE, and TBus connectivity/activity.

* 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 in the 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.

Network Video Technologies

(+1) 650.462.8100 • +44 (0) 208 977-6614

nvt.com • info@nvt.com



Sixteen Port PoE+ Receiver Hub Model NV-ER1816i

Technical Specifications

ETHERNET (Uplink) INTERFACES

SFP Port:	Gigabit Ethernet
RJ45 Port:	10/100/1000 BaseT IEEE 802.3ab auto-negotiation, auto MDI / MDX crossover
Protection:	Industrial transient protection
Wire type:	Cat5 or better
Distance:	up to 328 feet (100m)

TBus LINK INTERFACE

Connectivity:	Sixteen ports, each equipped with a BNC and RJ45
Power Source:	Each port delivers class 2 (SELV) power 56VDC at up to 1 amp, to power remote NVT transmitters and their PoE devices.
Wire type:	Coax, single- or multi-pair UTP, 18/2, or STP wire
Impedance:	25 to 100
Topology:	Bus architecture supports star, daisy-chain, or any 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
Wire distance:	Up to 8,000 feet, 1.5 miles (2.5 Km)*
Transmission technology:	IEEE 1901
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.

ALARM OUTPUTS

Main: Rear screw terminals 5 & 6 open on fault Auxiliary: Rear screw terminals 7 & 8 open on fault 60V 100mA 16 1,000V isolation

REGULATORY

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

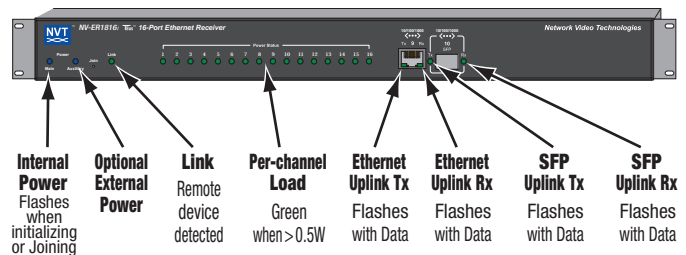


WARRANTY

Limited Lifetime

Specifications subject to change without notice.

LED STATUS INDICATORS



MECHANICAL / ENVIRONMENTAL

Body Dimensions:	17 in (432 mm) wide 1.73 in (44 mm) high 10 in (254 mm) deep excluding connectors and rack ears
Shipping weight:	10.37 lbs (4.70 Kg)
Operating / storage temperature:	-40°F to 185°F (-40°C to +85°C) 20 to 85% relative humidity non-condensing
Generated heat:	
Under full 220W load, hub alone	250 BTU/hour
Under full 220W load, including remote transceivers & cameras	1,100 BTU/hour
Under full 470W load, including remote transceivers & cameras (470 W load requires auxiliary NV-PS56-250W power supply)	2,200 BTU/hour
Transient immunity:	5 x 20µS 3,000A, 6,000V ESD 20KV, 200pF

POWER SUPPLY

The NV-ER1808i contains a 250 watt 56VDC power supply that operates off 100 to 240 VAC, 50/60 Hz. Current draw can be up to 4.5 amps. The NV-ER1808i consumes up to 30 watts, leaving 220 watts for the eight TBus ports.

Fuse rating:

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 (4.5 m) long. One end with IEC380-C13 appliance coupler and the other end with NEMA 1015P or equivalent for your country.

An optional external 250 watt power supply may be added for high load applications, or for redundancy, bringing the total power to 500 watts. The external power supply connections use an 8-conductor pluggable Phoenixstyle connector suitable for up to 16AWG (1.3 mm) conductors. Only one external 250 watt power supply may be used with each NV-ER1808i. For multi-hub environments, up to three power supplies are available in a shared 1U enclosure:

Single External Power Supply Model NV-PS56-250W:	56V 250W
Dual External Power Supply Model NV-PS56-250W-2	Dual 56V 250W
Triple External Power Supply Model NV-PS56-250W-3	Triple 56V 250W



Sixteen Port PoE+ Receiver Hub Model NV-ER1816i

Browser-Based Monitor and Control Tools

The NV-ER1816i contains an http server allowing secure communication with a web browser on the network.

This allows for:

- Control & monitoring functions
- Joining function
- Password write access (in conjunction with the Joining pushbutton)
- Reading of per-channel and overall current draw
- Power-cycle reset of any channel
- Download of firmware upgrades
- Remote diagnostics

Accessories

NV-BNCT: BNC "T" adaptor



NV-EC4BNC: 1:4 BNC splitter adaptor



NV-BNCA: BNC Screw terminal adaptor



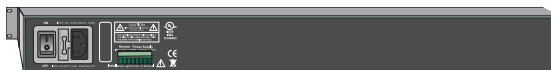
NV-RJ45A: RJ45 Screw terminal adaptor



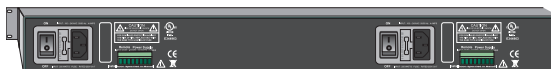
NV-PC4PR: RJ45 Patch Cord, 4-pair 3' (1m)



NV-PS56-250W Auxiliary 56V 250W Power Supply



NV-PS56-250W-2 Dual Auxiliary 56V 250W Power Supply



NV-PS56-250W-3 Triple Auxiliary 56V 250W Power Supply



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

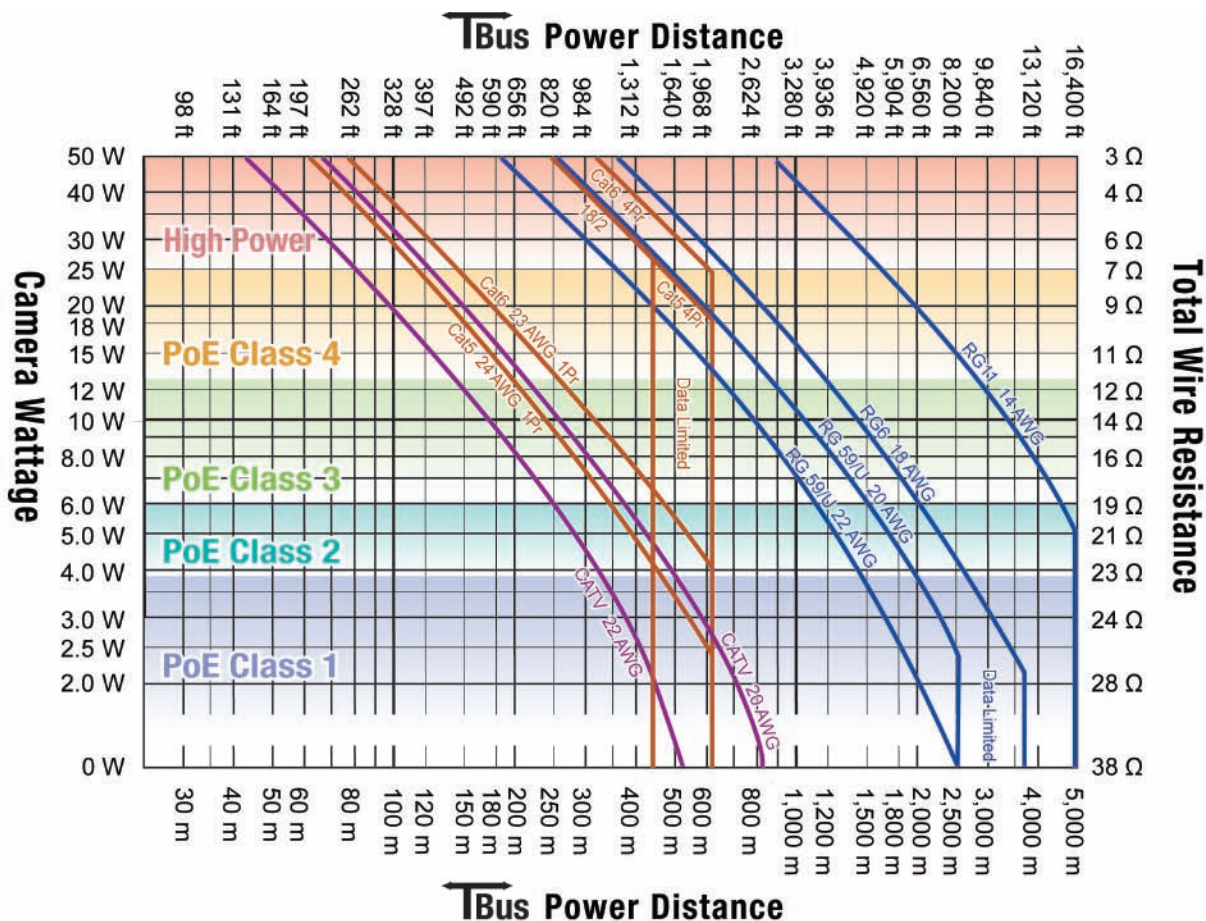


The distance capability of wire is dependant on its ability to deliver DC power, and separately, to deliver high-frequency data signals.

A Distance Calculator can be found at www.nvt.com.

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.



Page 4 of 5

TBus®

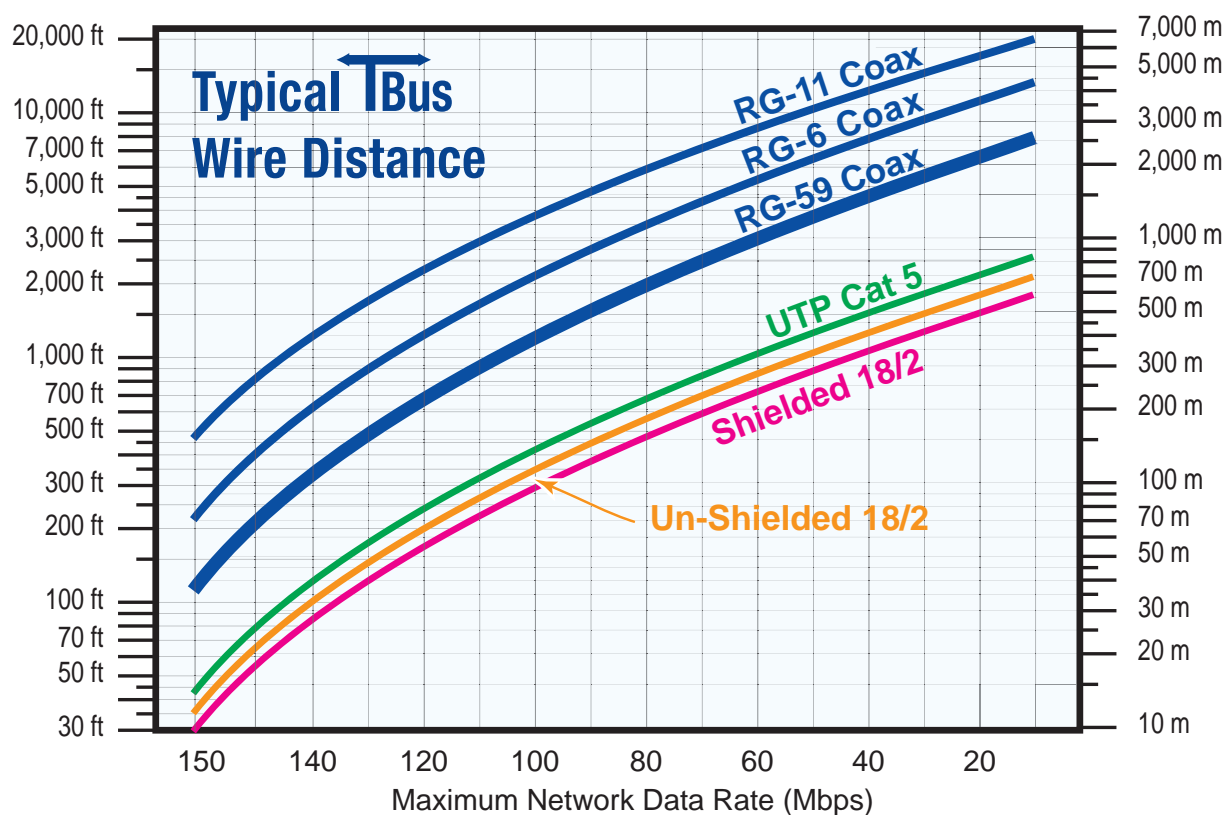
Sixteen Port PoE+ Receiver Hub Model NV-ER1816i

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.



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