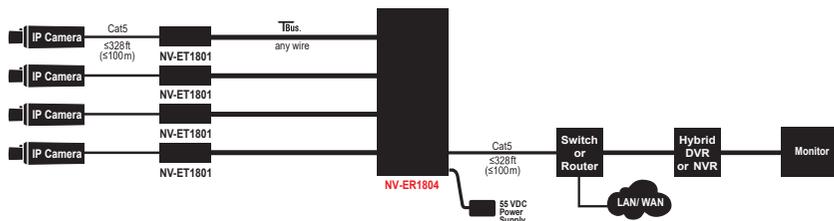




TBus® Four Port Receiver

The NVT Phybridge 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. 55 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 Phybridge's award winning customer support, limited lifetime warranty, and advance replacement.

Application Example:



Features

- 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
- 55 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

NV-ER1804

Advantages

- 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*
- 10/100/1000 uplink Ethernet connectivity
- Easy configuration, no PC required
- Built-in transient protection; Industrial temperature range
- Limited lifetime warranty

* 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. High bandwidth streaming devices (>15Mbps) that employ unusually "chatty" protocols (TCP/IP, TFTP, etc.) are not recommended. Use RTP/UDP instead.



ER-1804 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 100Ω
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	3mS
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: Distance will often be shorter due to power supply capacity and wire voltage-drop. See Maximum Per-Camera Wire Distance Chart on Page 4.

WARNING: For safety, never use more than two power supplies. Never exceed 120 watts.

LED Status Indicators	
Power	Blue "Power On"
BNC/2-wire Interface	Green "Link"
RJ45 Interface	Green "Link"

Regulatory	
	UL Listed to IEC/UL 60950-1 Complies with FCC part 15A limits
Warranty	
Limited Lifetime	

Mechanical/Environmental	
Body Dimensions	8.43in (214mm) wide 1.39in (35mm) high 4.40in (122mm) 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% RH non-condensing
Power Consumption	≤ 3W
Generated Heat	10 BTU/hour
Transient Immunity	5x20μS 3000A, 6000V 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 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-PS55-60W	55V 60W 5.2 in (132 mm) long x 2.3 in (58 mm) wide x 1.2 in (30 mm) high 0.68 lb (0.31 Kg) shipping weight
Model NV-PS55-110W	55V 110W 5.9 in (150 mm) long x 2.3 in (58 mm) wide x 1.4 in (36 mm) high 0.90 lb (0.41 Kg) shipping weight
Operating/Storage Temperature	-40°F to +185°F (-40°C to +85°C) 20 to 5% relative humidity non-condensing
Transient Immunity	5 x 20μS 3,000A, 6,000V 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 (4.5 m) long. One end with IEC380-C13 appliance coupler and the other end with NEMA 1015P or equivalent for your country.

Power Output	This Power Sourcing Equipment (PSE) supports Powered Devices (PDs) that are compatible with IEEE 802.3af/at or PDs that draw up to 50 watts*. For maximum power/distance, 55 VDC appears on all eight RJ45 pins, and are current-protected and transient-protected.
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Specifications subject to change without notice.

NVT PHYBRIDGE
NV-ER1804
 DATA SHEET

NV-ER1804 Product & Accessories	
NV-ER1804: Four port receiver	
NV-PS55-60W: 55VDC power supply, 60 watts with IEC line cord	
NV-PS55-110W: 55VDC power supply, 110 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)	

NV-ER1804 Power Data Distance Chart

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 55V power supply. If you are locally powering your camera (or other remote device), then this graph does not apply.

PoE devices require a minimum of 43V to operate. With a 55V 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. The graph below will help you determine your data throughput as a function of wire type and distance.

