

NEW!



Model NV-EC1701U Eo2™ Ethernet over 2-Wire Transceiver with PoE, PoE+, or High Power PoE



Features:

- Transmit 10/100 BaseT Full Duplex Ethernet up to 1,000ft (305m)* over 4-pair cat5; 750ft (228m) over 18/2 (or similar 2-wire cable); 500ft (150m) over Shielded Twisted-Pair
- 56VDC is distributed over 2-wire cable to all connected IP devices Powers PoE entry stations (or other PoE or PoE+ devices), up to 50 watts*
- One NVT Eo2™ transceiver at the network-end can support multiple* remote Eo2™ transceivers and connected devices
- Up to four Eo2™ transceivers can be rack mounted on an NV-RMEC16U Eo2™ Rack Mount Tray Kit, connecting up to 16 entry stations or other devices
- Easy configuration, no PC required
- Transparently supports all networking protocols (UDP, TCP/IP, HTTP, Multicast with IGMP, etc.)
- Advanced 128-bit AES encrypted transmission and PoE+ power technology
- Built-in transient protection; Industrial temperature range
- Available in 1-4 device Eo2™ System Kits
- Limited lifetime warranty

The NVT Model NV-EC1701U Eo2™ Ethernet over 2-wire Transceiver is a compact media converter that allows 10/100 BaseT Ethernet and PoE or PoE+ power to be transmitted using 18/2 or similar. These devices are typically used in legacy installations where existing 18/2 is re-used as part of an upgrade to IP devices. 56VDC class 2 power is delivered to one transceiver, which distributes it to multiple* remote transceivers, and their PoE or PoE+ devices*.

These transceivers are extremely simple to use, with no IP or MAC addressing required. Status LEDs indicate power and link connectivity/activity for RJ45 and 2-wire ports. The NV-EC1701U is 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 Distance Charts on page 6.

Network Video Technologies

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Technical Specifications

RJ45 ETHERNET INTERFACE

Connectivity:	RJ45, auto-crossover
Wire type:	4-pair Cat5 or better
Distance:	up to 328ft (100m)
Speed:	10/100 Base T, half/full duplex, auto-negotiation auto MDI/MDIX cross-over
Latency:	3mS
Data throughput:	93Mbps $\pm 10\%$ useable bandwidth per network Example: Four megapixel cameras, all sharing one 2-wire network, each sending 20 Mbps video stream(s).
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, 56 VDC appears
on all eight RJ45 pins, and are current protected
and transient-protected.

POWER CONSUMPTION

Consumption per transceiver:	3.0 W @ 10 to 56 VDC
Total system consumption:	= total consumption of transceivers + total consumption of PDs (IP cameras) + total power dissipated in the wire

BUILDING WIRING INTERFACE

Connectivity:	UTP, STP, 18/2, or similar. One control room NV-EC1701U transceiver may support multiple NV-EC1701U transceivers are supported
Impedance:	25 to 100 Ω
Distance:	See page 6
Transmission technology:	OFDM, 128-bit AES encryption

*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 6. **For fault /safety protection, never use more than
two power supplies within a network system.**

LED STATUS INDICATORS

Power:	Blue "Power On"
BNC 2-wire Interface:	Green "Link"
RJ45 Interface:	Green "Link"


MECHANICAL / ENVIRONMENTAL

Transceiver dimensions:	5.67 in (144mm) long 1.3 in (33mm) high 1.5 in (38mm) wide
Transceiver weight:	5.1oz (145g)
Operating and storage temperature:	-40°F to 185°F (-40°C to +85°C) 20 to 85% RH non-condensing
Transient Immunity:	5x20 μ S 3000A, 6000V ESD 20KV, 200pF

POWER SUPPLY

Power supplies are external inline, with an IEC380-C14 power inlet
and 6ft (1.8m) line-cord. Input voltage is 100 ~240VAC 50-60Hz.
A molded P1J 5.5mm barrel connector provides Class 2 (SELV)
regulated output with one of these three ratings:

Use only the power cord provided with the
unit or equivalent UL approved type SPT-2,
SVT, or SJT, 18/3 AWG 100~240VAC, 1A
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.

 + 56VDC 60W
+ 56VDC 90W

60W power supply body dimensions:	4.90 in (125mm) long 1.25 in (32mm) high 2.00 in (50mm) wide
60W power supply weight:	10.6oz (300g)
90W power supply body dimensions:	5.70 in (145mm) long 1.25 in (32mm) high 2.36 in (60mm) wide
90W power supply weight:	1 lb (450g)
Power supply operating temperature:	-22°F to 122°F (-30°C to +50°C) 20 to 85% RH non-condensing
Power supply storage temperature:	-40°F to 185°F (-40°C to +85°C) 0 to 95% RH non-condensing
Transient Immunity:	5x20 μ S 3000A, 6000V ESD 20KV, 200pF
Power cord weight:	5.5oz (156g)

REGULATORY



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

Specifications subject to change without notice.

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Product and Accessories

NV-EC1701U: Single Eo2™
transceiver only,
no power supply



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



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



NV-DPSC4: Detachable Power Supply Cord Splitter 1:4 2ft



NV-RMEC16U: Rack mounting chassis, 19" x 1U
holds up to 4 NV-EC1701U transceivers
plus power supplies. Includes NV-DPSC4
Power Cord Splitter (NV-EC1701U and
NV-PS56-60W not included)



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Product Kits

Single Entry Station Eo2™ Transmission System

- NV-EC1701U-KIT1: 2 NV-EC1701U Transceivers
1 NV-PS56-60W Power Supply
with IEC line cord
2 NV-PC4PR patch-cord



Dual Entry Station Eo2™ Transmission System

- NV-EC1701U-KIT2: 3 NV-EC1701U Transceivers
1 NV-PS56-60W Power Supply
with IEC line cord
3 NV-PC4PR patch-cord



Triple Entry Station Eo2™ Transmission System

- NV-EC1701U-KIT3: 4 NV-EC1701U Transceivers
1 NV-PS56-60W Power Supply
with IEC line cord
4 NV-PC4PR patch-cord



Quadruple Entry Station Eo2™ Transmission System

- NV-EC1701U-KIT4: 5 NV-EC1701U Transceivers
1 NV-PS56-60W Power Supply
with IEC line cord
5 NV-PC4PR patch-cord



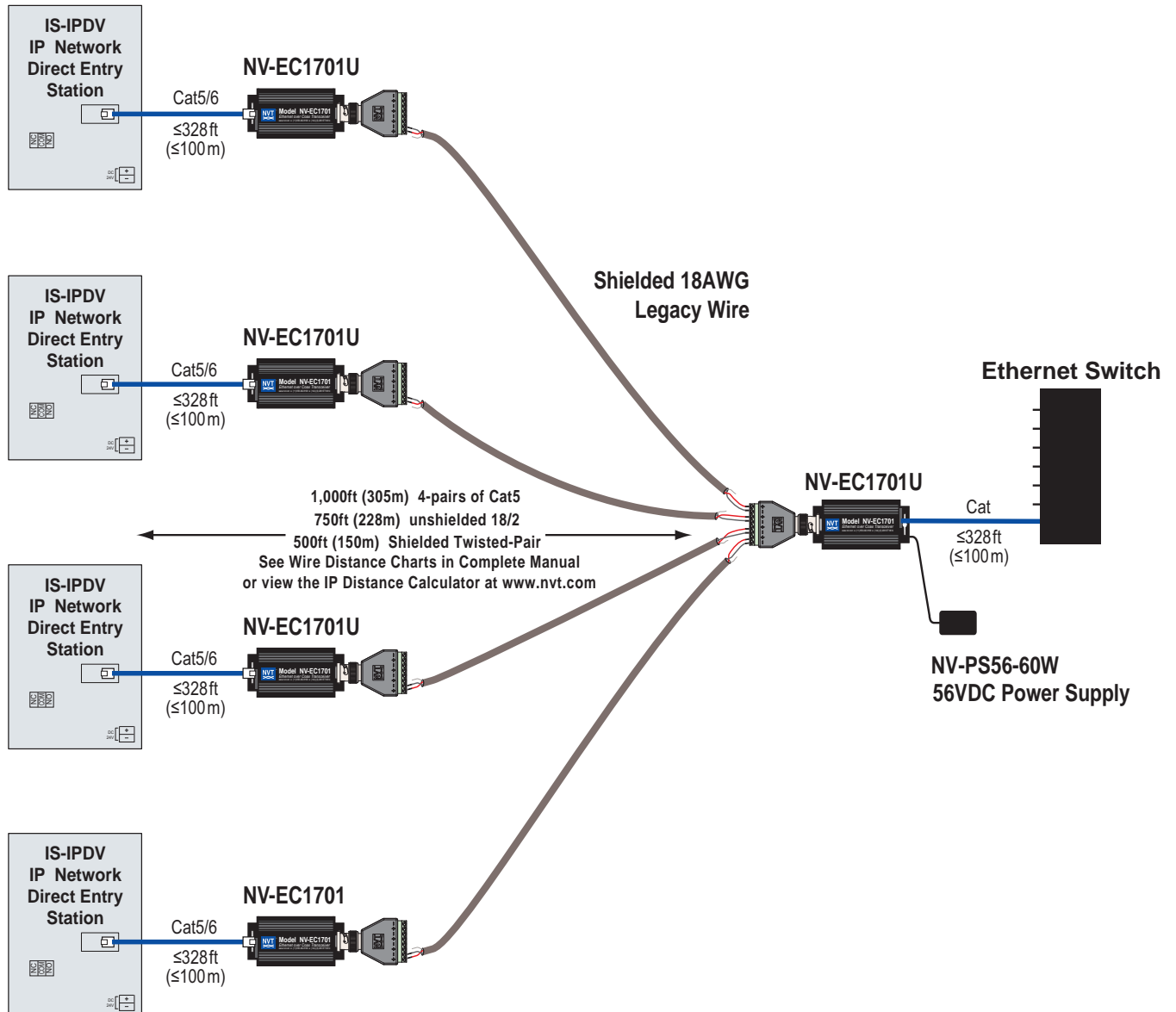
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Application Drawing





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Wire Type and Power Distance Capacity

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

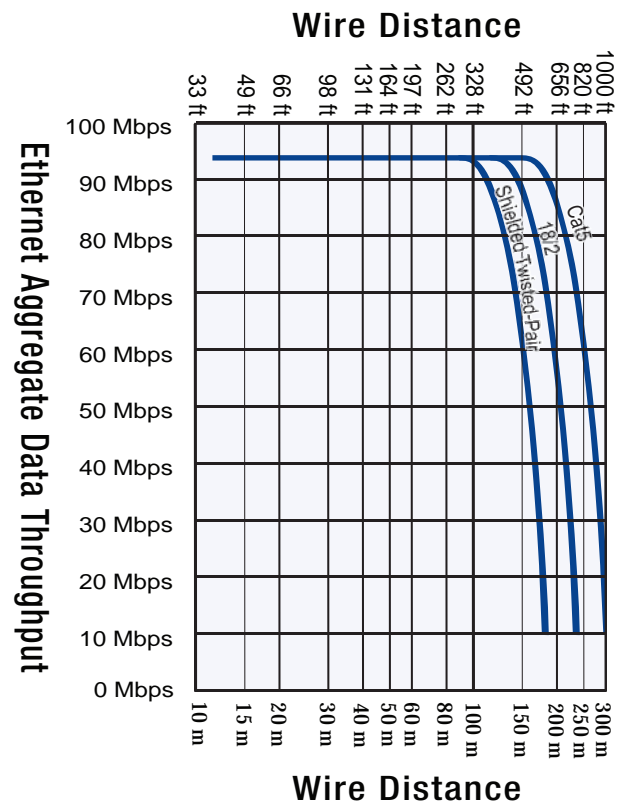
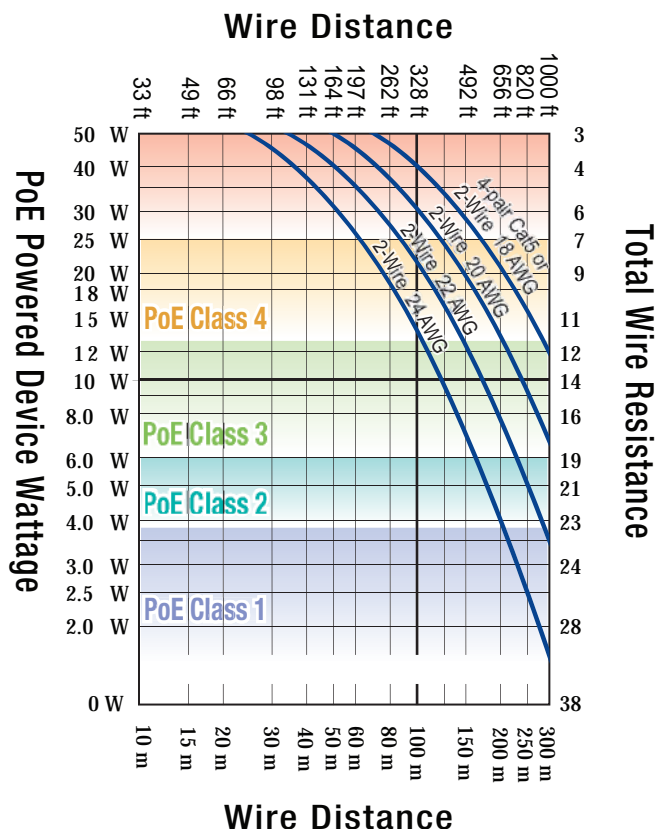
The graph below shows maximum power delivery when using a 56V power supply. If you are not delivering power to your camera (or other remote device), then this graph does not apply. The right graph below shows the maximum data delivery rate.

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

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

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

- Start with the Powered Device (camera) wattage at the left. Sometimes PoE devices are listed as to their PoE Class rather than wattage. If this is the case, use the colored classes instead.
- Now read over to the right until you find your kind of wire. Then look up (feet) or down (meters) to find your maximum wire distance.
- If your wire is not among the examples, simply measure its total resistance and find that value on the right side of the graph. The maximum supported wattage is on the left.



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