NVT PHYBRIDGE

NVT Phybridge enables our customers to transform their existing infrastructure and migrate to IP with confidence. NVT Phybridge products offer technologically advanced features including power over long reach Ethernet over single pair or multi pair UTP and COAX, robust power and power management, PowerWISE power sharing and quick and easy migration to IP end points and IoT. Complete switch solutions include PoLRE, CLEER and FLEX products. Complete adapter solutions include PhyLink, EC-LINK, EC-04, FLEX-Base, FLEX-Link, FLEX-Link-C and FLEX4 media converters and cable extenders.

For additional information, contact:

> NVT Phybridge, Inc.
> 3457 Superior Court, Unit 3
> Oakville, ON, L6L 0C4
> Phone: +1 905 901 3633
> Web: www.nvtphybridge.com
> E-mail: support@phybridge.com

POWER OVER LONG REACH ETHERNET ADAPTER

DIVISION 27 – COMMUNICATIONS

27 20 00   **Data Communications**

27 21 00   **Data Communications Network Equipment**

27 21 29   **Switches & Hubs**

Notes to Specifier:

1. Where several alternative parameters or specifications exist, or where, the specifier has the option of inserting text, such choices are presented in **<bold text>**.
2. Explanatory notes and comments are presented in coloured text.

POWER OVER LONG REACH ETHERNET ADAPTER

PART 1 GENERAL

1.01   SUMMARY

    A. Section includes an 1-port 10Mbps Ethernet-over-CAT3 UTP adapter with power pass-through capability.

    B. Product – The Phylink (Part code: NV-PL-PA011-6 – pack of 6) Adapter delivers Ethernet and Power over CAT3 UTP cable with multiple times the reach of traditional data switches.

    C. Related Requirements

        (1) 27 10 00 Structured Cabling

        (2) 27 16 00 Communications Connecting Cords, Device, and Adapters

        (3) 27 16 16 Communications Media Converters, Adapters, and Transceivers

        (4) 27 30 00 Voice Communications

        (5) 27 31 23 IP Voice Switch

1.02   REFERENCES

    A. Abbreviations

        (1) CLEER – Coax Leveraged Ethernet Extended Reach

        (2) DVR – Digital Video Recorder

        (3) GbE – Gigabit Ethernet

        (4) GBIC – GigaBit Interface Converter

        (5) GUI – Graphical User Interface

        (6) IoT – Internet of Things

        (7) IP – Internet Protocol

        (8) LAN – Local Area Network

        (9) LLDP – Link Layer Discovery Protocol

        (10) Mbps – Megabits per second

        (11) NTP – Network Time Protocol

        (12) NVR – Network Video Recorder

        (13) PoE – Power over Ethernet

        (14) PoLRE – Power over Long Reach Ethernet

        (15) SFP – Small Form-factor Pluggable

        (16) SNMP – Simple Network Management Protocol

        (17) STP – Spanning Tree Protocol

        (18) VLAN – Virtual LAN

    B. Reference Standards

        (1) Network

            (a) IEEE – 802.3 Ethernet Standards

        (2) EMC

            (a) Emissions

                (i)   FCC-47 CFR Part 15 Class B

                (ii) ICES-003

                (iii) EN 55032:2012

            (b) Immunity

     (i) EN 55024:2010

   (3) Safety

     (a) UL 60950-1 2nd Ed 2014-10-14

     (b) CSA C22.2 No. 60950-1-07 2nd Ed 2014-10

     (c) IEC 60950-1:2005 + A1 + A2

     (d) EN 60950-1:2006 + A11 + A12 + A1 + A2

     (e) AS/NZS 60950-1:2011

1.03 SUBMITTALS

  A. Product data

   (1) Data sheets

   (2) Installation and operation manuals

   (3) DoC (declaration of conformity)

   (4) Warranty documentation

1.04 QUALIFICATIONS

  A. Manufacturer shall have a minimum of five years' experience in producing Ethernet switch equipment.

  B. Installers shall be trained and authorized by the Manufacturer to install, integrate, test and commission the system.

1.05 DELIVERY, STORAGE AND HANDLING

  A. Deliver the switch in the manufacturer's original, unopened, undamaged container with identification labels intact.

  B. Store the switch in a temperature environment of -40°C to 85°C (-104°F to 185°F), protected from mechanical and environmental conditions as designated by the manufacturer.

1.06 WARRANTY AND SUPPORT

  A. Manufacturer shall provide a limited 5 year warranty for the product to be free of defects in material and workmanship.

END OF SECTION

PoLRE Phylink   Power over Long Reach Ethernet

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PART 2 PRODUCTS

2.01   EQUIPMENT

A.   Manufacturer: NVT Phybridge, Inc.

3457 Superior Court, Unit 3

Oakville, ON, Canada L6L 0C4

Phone: +1 905 901-3633

Web: www.nvtphybridge.com

E-mail: support@nvtphybridge.com

B.   Models NV-PL-PA011-6 (pack of 6)

C.   Alternates: None

2.02   GENERAL DESCRIPTION

A.   The Power over Long Reach Ethernet Phylink Adapter shall provide Ethernet and PoE over single pair UTP cable with up to five times the reach of traditional data switches.

B.   The Phylink Adapter shall possess the following characteristics:

(1)   capable of delivering up to 15W of PoE to 1 IP end-point

(2)   pairs with an NV-PL-024, NV-PL-048 or NV-PL-08 to operate as a layer 2 unmanaged network switch

(3)   converts conventional Ethernet to a signal that can be carried by a single pair UTP cable

(4)   uses previously installed UTP cable to connect IP network end-points such as IP cameras, IP phones, network switches, DVR/NVRs, PCs, and printers

2.03   INTERFACES

A.   Ethernet (Downlink)

(1)   One Ethernet RJ45 connector. This connection support a standard Ethernet cable: patch or crossover Cat5e/Cat6.

(2)   The RJ45 shall support 10 BaseT full or half duplex and auto-negotiation of the transmission rate.

B.   CAT3 UTP

(1)   The Phylink Adapter shall have one (1) RJ11 socket. It supports CAT3 UTP cable with a characteristic impedance of 100 ohms.

(2)   Maximum cable distances are specified as: 365m (1200ft) for CAT3 UTP, 24 AWG

(3)   The maximum data through-put shall be 20Mbps (total up plus down) and shall auto adapt to the cable conditions. This will support 10Mbps communication in both directions.

(4)   There shall be no signal degradation from 0m to the maximum supported distances.

2.04   INDICATORS

A.   Ethernet Downlink

(1)   The Ethernet downlink RJ45 port shall have two LEDs to indicate network connection status: Link status to PoLRE switch (left - green) and Link status to IP end-point (right – green).

(2)   The Link status to PoLRE switch LED indicates the following: Off – no connection, On – link good, Blinking – data transmission.

(3) The Link status to IP end-point LED indicates the following: Off – no connection, On – link good, Blinking – data transmission.

2.05   PoE

A. The PoLRE shall provide up to 15 watts of power over the CAT3 UTP connection to each end-point device.

B. The end-point devices must be IEEE 802.3af compliant.

2.06   ELECTRICAL

A. Power
   (1) Sources
      (a) The Phylink Adapter can only accept power from an NV-PL-08, NV-PL-024 or NV-PL-048. The power provided is 48-56VDC up to 15W.
   (2) Power consumption
      (a) 0.9W (not including PoE end-points)
   (3) Power injection (PoE)
      (a) -54VDC, 15W – end-point devices must be IEEE 802.3af compliant

B. Connectors
   (1) Ethernet
      (a) RJ45 (1) – Ethernet downlink port
      (b) RJ11 (1) – Ethernet + power connection port

2.07   MECHANICAL AND ENVIRONMENTAL

A. Housing material: Plastic
B. Mounting   None
C. Dimensions (H x W x D):   0.71in. x 1.1in. x 2.56in. (18mm x 28mm x 65mm)
D. Weight: 22g
E. Thermal: Air cooled
F. Temperature
   (1) Operating: 0°C to 40°C (32°F to 104°F)
   (2) Storage: -40°C to 85°C (-40°F to 185°F)
G. Humidity: 10 – 95%, non-condensing @ 35°C
H. MTBF (Mean Time Between Failure):   81 Years (709,560 Hours)

END OF SECTION

PART 3 EXECUTION

3.01 INSTALLERS
  A. Contractor personnel

3.02 PREPARATION
  A. The network design and configuration shall be verified for compatibility and performance with the camera(s)
  B. Network configuration shall be tested and qualified by the Contractor prior to camera installation.

3.03 INSTALLATION
  A. Before permanent installation of the system, the system shall be factory tested in conditions simulating the final installed environment
  (1) A report indicating successful test results shall be produced.

3.04 STORAGE
  A. The product shall be stored in an environment where temperature and humidity are in the range specified by the Manufacturer.

END OF SECTION