Pathport® DMX Management System
Specification – 'C' Series Nodes
December 2008

1.0 General
1.1 Provide dual-port DMX nodes to permit DMX512 data to be encoded, routed and decoded over an Ethernet network.
1.2 Each node shall incorporate two 5-pin XLR type connectors. Output ports shall utilize female connectors and input ports shall utilize male connectors.
1.3 Each node shall also incorporate one RJ-45 type female jack for the Ethernet port.
1.4 Nodes shall incorporate a backlit graphical LCD display for identification (soft-labeling) and status reporting. Labeling shall be user configurable.

2.0 DMX Ports
2.1 DMX ports shall comply with the requirements of the USITT DMX512-A standard.
2.2 DMX ports shall be fully electrically isolated from the network infrastructure and Ethernet power.
2.3 DMX ports shall be capable of being user-configured as inputs or outputs, regardless of the connector style.
2.4 DMX ports shall be capable of withstanding fault voltages of up to 250VAC without damage.
2.5 DMX output ports shall support ANSI RDM (Remote Device Management)1.20.

3.0 Processor
3.1 Each node shall have sufficient processing power to manage up to 128 DMX universes.
3.2 Maximum delay time from input to output shall not be greater than one packet time (approximately 30 mSec.).
3.3 The DMX update rate shall be user-selectable between rates of 31Hz, 36Hz, 40Hz, and 44Hz (maximum). Update rate shall be selectable on a port-by-port basis.

4.0 Mechanical
4.1 The node faceplate shall be constructed of durable cast aluminum. Products utilizing a plastic faceplate do not meet the durability requirements for the application.
4.2 Nodes shall be of pleasing appearance, suitable for high-visibility architectural locations.
4.3 No fasteners shall be visible on the node faceplate.
4.4 Flush-mount nodes shall fit in a standard 2-gang masonry type deep back box.
4.5 Surface-mount and portable nodes shall be installed in a matching back box supplied by the node manufacturer.
4.6 Nodes and surface mount backboxes shall be provided in matte black finish.

5.0 Power
5.1 Power for the nodes shall be provided over the Cat5 cable, complying with IEEE 802.3af Power-over-Ethernet (POE). Systems requiring the installation of additional wiring for power shall not be acceptable.
5.2 The node electronics shall be electrically isolated from the power supplied over the Cat5 cable.
5.3 Power may be provided from IEEE 802.3af compliant network switches, or by using conventional switches together with mid-span insertion power supplies.
5.4 Auxiliary DC power connection (18-60VDC, 4watts) shall be provided as an alternative to POE.

6.0 Configuration
6.1 Nodes on the same network shall be remotely configurable from a computer connected to the network.
6.2 Node identification (naming) and all other configuration shall be accomplished using a computer. The node manufacturer shall provide the configuration software for this function free of charge. The software shall run on Windows, Macintosh or Linux operating systems.

7.0 DMX Routing
7.1 It shall be possible for the user to route complete DMX universes from any input port to any DMX output port at any node. It shall be possible to route universes to any number of nodes. Routing shall be assigned using the configuration software.

7.2 It shall further be possible to route individual DMX channels (or ranges of channels) from any input port to any output port.

7.3 It shall be possible to merge whole universes or individual DMX channels.

7.4 It shall be possible to prioritize input universes or individual channels.

7.5 The computer shall only be required for configuration and signal routing assignment, and shall not be required for the normal operation of the system.

7.6 All relevant routing information shall be stored in non-volatile memory at each node. The system shall recover from a power outage without requiring a computer to be online.

8.0 Network
8.1 Communications physical layer shall comply with the IEEE 802.3 10BASE-T Ethernet specification.

8.2 All network cabling shall be Cat5, Cat5e or Cat6 conforming to TIA-568A/B, and shall be installed and certified by a qualified network installer.

8.3 Data transport shall utilize the TCP/IP suite of protocols to transfer the DMX data.

8.4 Nodes shall support industry standard ANSI 1.31 Streaming ACN.

8.5 Nodes shall also support ETCNet2 (DMX output only), ETCNet3, Pathport Protocol, ArtNet, and Strand ShowNet.

8.6 Nodes shall be capable of accepting data from any or all of the above named protocols simultaneously.

9.0 System Requirements
9.1 Provide the quantity and type of nodes and back boxes required, as indicated on the drawings and schedules. Nodes and software shall be as manufactured by Pathway Connectivity.

9.2 Provide Ethernet switches and power supplies as shown on the drawings and schedules.

9.3 Provide a current generation computer with a Windows, Macintosh or Linux operating system, a monitor and a 10/100 Ethernet card.

10.0 Compliance
10.1 The Pathport C-series nodes shall be ETL-listed as conforming low-voltage devices.

10.2 The Pathport C-series nodes shall be compliant with the RoHS directive.

10.3 The Pathport C-series nodes shall conform to all FCC and CE requirements.