PRG NODE PLUS

USER MANUAL

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PRG Node Plus User Manual

Version as of: October 19, 2011

PRG part number: 02.9801.0301 D

Production Resource Group
Dallas Office
8617 Ambassador Row, Suite 120
Dallas, Texas 75247
www.prg.com

IMPORTANT INFORMATION

Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:

 CAUTION advising of potential damage to product.

 WARNING advising of potential injury or death to persons.

WARNING: INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK

1) This equipment is designed for dry locations only. Exposure to rain or moisture may damage the equipment and/ or cause injury to persons.

2) Disconnect power before servicing.

3) Servicing to be performed by qualified PRG personnel only.

WARNING: RF INTERFERENCE

1) This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.

Revision History

This manual has been revised as follows:

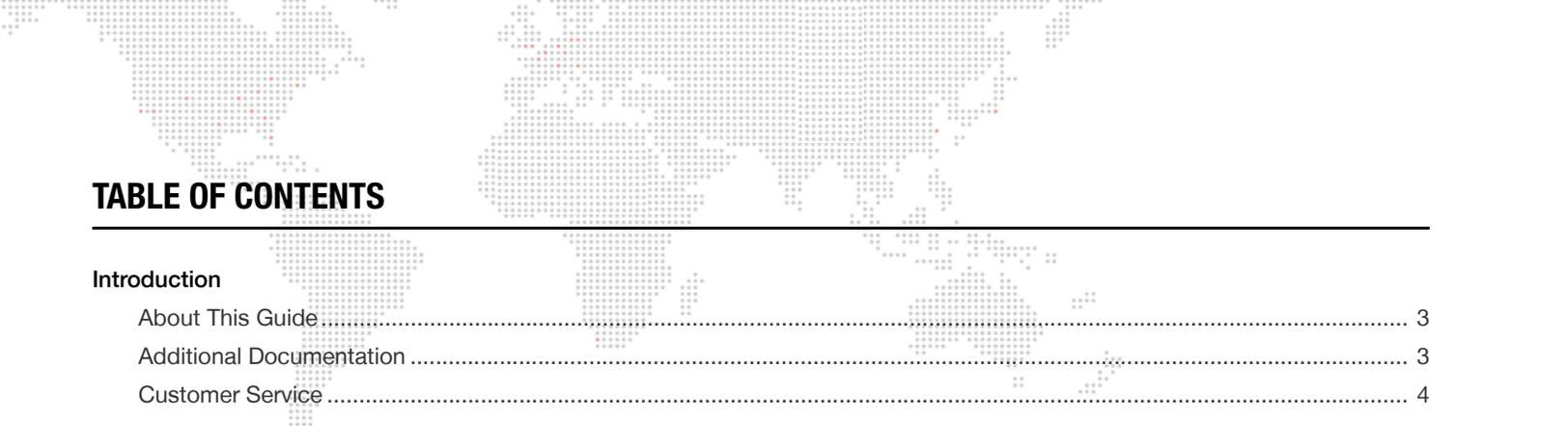| Version	Release Date	Notes
BASIC	April 16, 2007	Initial Release
A	April 30, 2007	Miscellaneous revisions and corrections.
B	June 11, 2007	Added Series 400 system configuration details.
C	November 15, 2010	Updated book format. (No changes to technical information.)
D	October 19, 2011	Changed product name from "Virtuoso Node Plus" to "PRG Node Plus." Added Vx76 system details. Updated and expanded Art-Net (Series 400) system details. Added Stand-Alone Software Loader instructions.

TABLE OF CONTENTS

INTRODUCTION

About This Guide

This guide provides necessary information regarding product safety, installation, and operation for the following PRG equipment:

+ PRG Node Plus (20.9801.0300)

Familiarizing yourself with this information will help you get the most out of your PRG product.

> ⚡ **WARNING:** It is important to read ALL accompanying safety and installation instructions to avoid damage to the product and potential injury to yourself or others.

Additional Documentation

For more information regarding the use of Node Plus units in PRG systems, refer to the following PRG manuals:

+ V676™ / V476™ Control Console User Manual (02.9814.0001.xx)
+ Virtuoso® Series Control Console User Manual (02.9651.0001.xx)
+ PRG Series 400® Power and Data Distribution System User Manual (02.9680.0001.xx)
+ PRG Lighting Systems Networking Guide (02.3004.1000.0)

For extended service information, refer to the following PRG manual:

+ PRG Node Plus Service Manual (02.9801.0310)

For more information regarding DMX512 systems, refer to the DMX512/1990 & AMX 192 Standards publication available from United States Institute for Theatre Technology, Inc. (USITT).

USITT
6443 Ridings Road
Syracuse, NY 13206-1111 USA
1-800-93USITT
www.usitt.org

For more information regarding Art-Net protocol, refer to the specification for Art-Net II Ethernet Communication Standard available from Artistic Licence Ltd.

Artistic Licence (UK) Ltd (Registered Office)
24 Forward Drive, Christchurch Avenue,
Harrow, Middlesex, HA3 8NT, United Kingdom
+44 (0)20 88 63 45 15 (phone)
+44 (0)20 84 26 05 51 (fax)
www.artisticlicence.com

For additional documentation, please visit our support tech center at: www.prg.com/support

Customer Service

For technical assistance, contact the PRG International Service Center or contact your nearest PRG office. Contact information for all PRG office locations can be found on our website at: www.prg.com/about-us/locations/

PRG Dallas (International Service)

8617 Ambassador Row, Suite 120

Dallas, Texas 75247 USA

Phone: 214.630.1963

Fax: 214.630.5867

Service Fax: 214.638.2125

Service Email: orders@prg.com

For additional resources and documentation, please visit our website at: www.prg.com

DESCRIPTION

Overview

The PRG Node Plus provides a powerful and convenient interface between Vx76, Virtuoso, or Art-Net compatible control consoles, pixel mapping from media servers, and subsequent control equipment which require either Art-Net or DMX512 control signals. The unit accepts high level commands in either Vx76, Virtuoso, or Art-Net protocol and converts the data into six universes of DMX512.
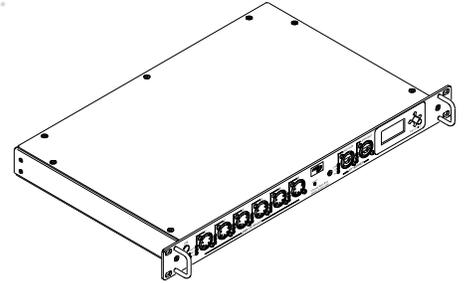
Features:

+ Accepts Vx76, Virtuoso, and Art-Net control protocols.
+ Compatible with 10Base-T or 100Base-TX standard signals.
+ Automatic detection and mode configuration according to input signal type when used with either a Vx76 or Virtuoso control console.
+ Can be used as an Art-Net-to-DMX translator device when loaded with Series 400 software.
+ One Ethernet (Art-Net) output port supporting up to six DMX512 universes.
+ Six DMX512 serial output ports supporting one DMX512 universe each.
+ LEDs indicating Link, TX data, and RX data status for all Ethernet ports.
+ LEDs indicating DMX Tx, RDM Tx, and RDM Rx data status for all DMX ports.
+ Display support for configuration of the address, configuration of Art-Net outputs in Series 400 Mode, real-time monitoring of DMX512 data on each output, display of network error information, and display of current software version.
+ Neutrik® PowerCon® connector for input AC supply.
+ Front panel DC power status LED.
+ Standard 1U 19" rack mount chassis.

Modes:

The PRG Node Plus unit operates in one of three modes: Vx76, Virtuoso, or Series 400.

+ In Vx76 Mode, the unit will accept Vx76 protocol and generate both Art-Net and DMX512 outputs.
+ In Virtuoso Mode, the unit will accept Virtuoso protocol and generate both Art-Net and DMX512 outputs.
+ In Art-Net (Series 400) Mode, the unit will accept Art-Net protocol and convert it to DMX512.

Included Items

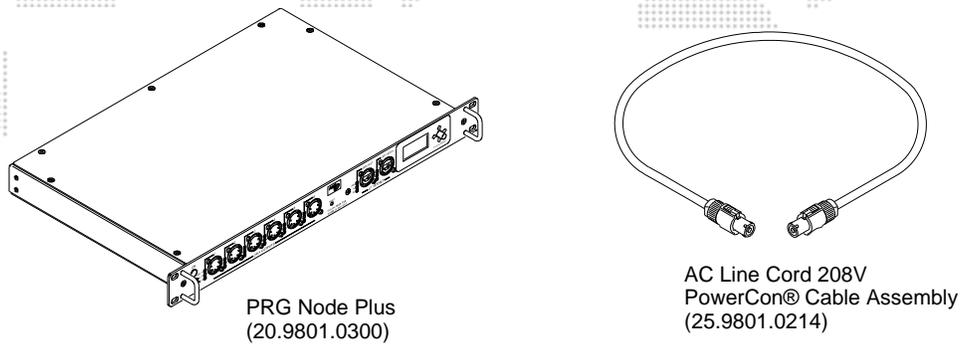The following illustration shows all items included with the PRG Node Plus unit.

PRG Node Plus
(20.9801.0300)

AC Line Cord 208V
PowerCon® Cable Assembly
(25.9801.0214)

Figure 1: Included Items

Controls and Indicators

The PRG Node Plus contains the following components:

RJ-45 Ethernet Connector
(Vx76, Virtuoso, or Art-Net Input)

DMX512 Output
Ports (6)

Menu Display and
Software Control

DC Power
Input LED

RJ-45 Ethernet Connector
(Art-Net Output)

ON

DMX Tx
RDM Tx
RDM Rx

RESET

DMX OUTPUTS

Virtuoso Node Plus
MODEL 20-9801-0300

DMX OUT   VIRTUOSO

LINK
Tx
Rx

ETHERNET

Push to Select

FRONT PANEL

DMX Tx, RDM Tx and
RDM Rx Status LEDs
(for each DMX port)

Reset Button

Link, Tx Data, and Rx
Data Status LEDs
(for each Ethernet port)

REAR PANEL

Neutrik Connector -
Allows connection of AC Line Cord
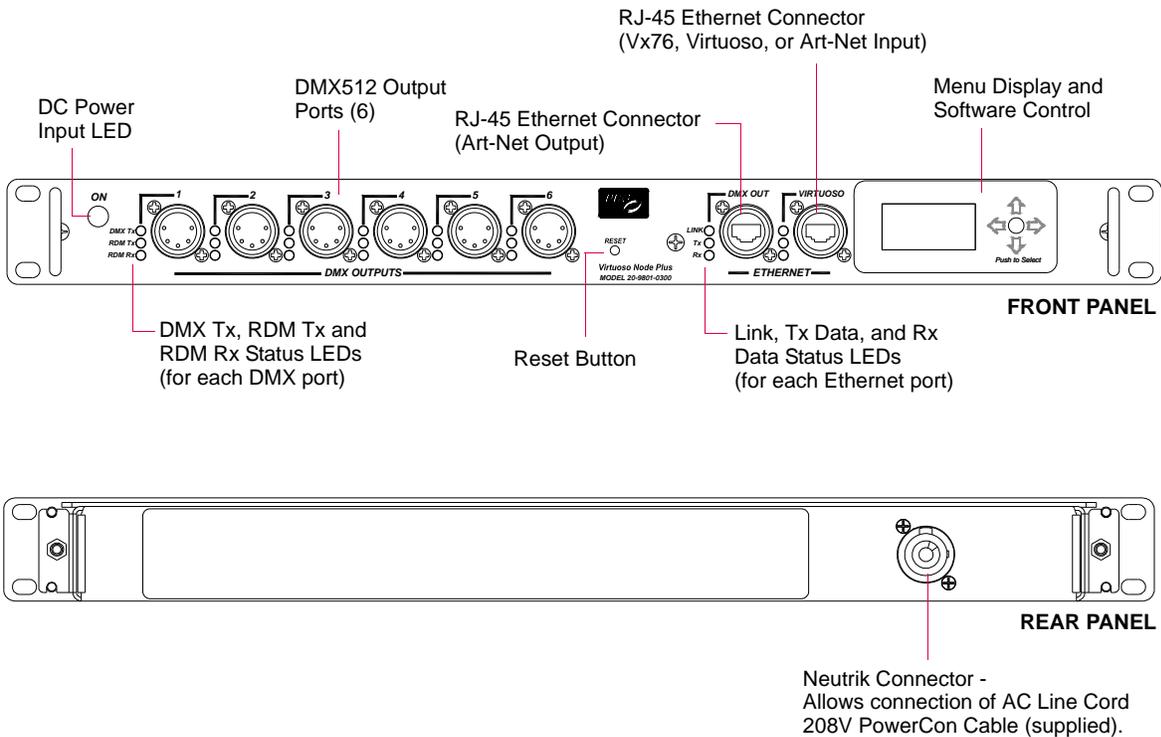208V PowerCon Cable (supplied).

Figure 2: Controls and Indicators

INSTALLATION

System Options

Vx76

In the Vx76 configuration, one or two Vx76 control consoles may be connected to one or more PRG Node Plus units.

Guidelines:

+   When connecting two Vx76 consoles and multiple PRG Node Plus units, a 100Mb Ethernet switch or hub *must* be used. Standard CAT5e Ethernet cables should be used in this configuration. Refer to the illustration below.

+   The **Vx76 Mode** of operation is used in this configuration. Refer to
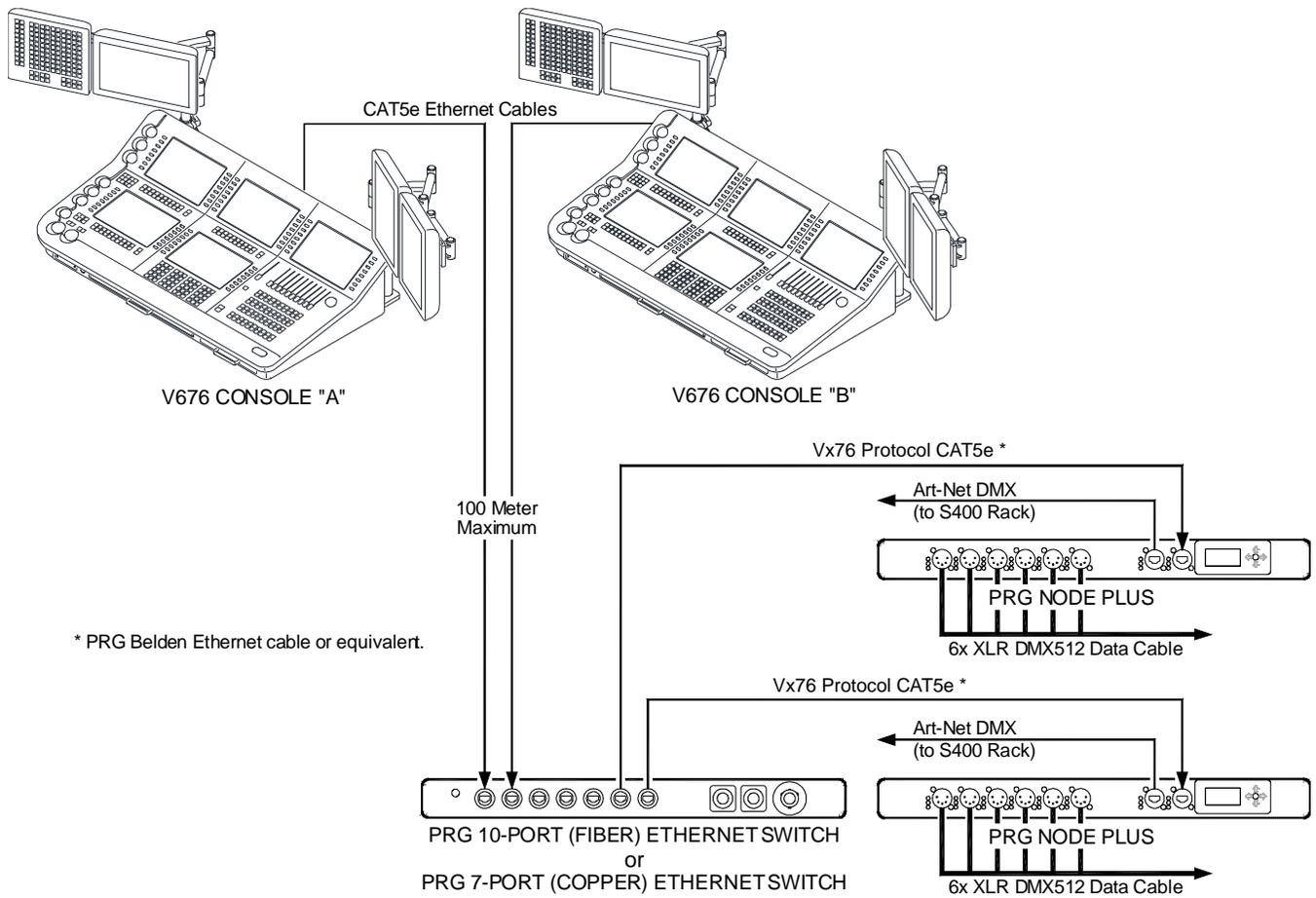

Figure 3: Vx76 Configuration Example

Virtuoso Standard Ethernet

In the Virtuoso Standard Ethernet configuration, one or two Virtuoso control consoles may be connected to one or more PRG Node Plus units.

Guidelines:

+ When connecting one Virtuoso console and one PRG Node Plus unit, an Ethernet Crossover cable (25.9651.0566) *must* be used instead of an Ethernet switch or hub.

+ When connecting two Virtuoso consoles and multiple PRG Node Plus units, a 100Mb Ethernet switch or hub *must* be used. Standard CAT5e Ethernet cables should be used in this configuration. Refer to the illustration below.

+ The **Virtuoso Mode** of operation is used in this configuration. Refer to "Virtuoso Mode" on page 17.

+ The PRG Node Plus unit can only be used with Virtuoso consoles running software version 5.6 or greater.
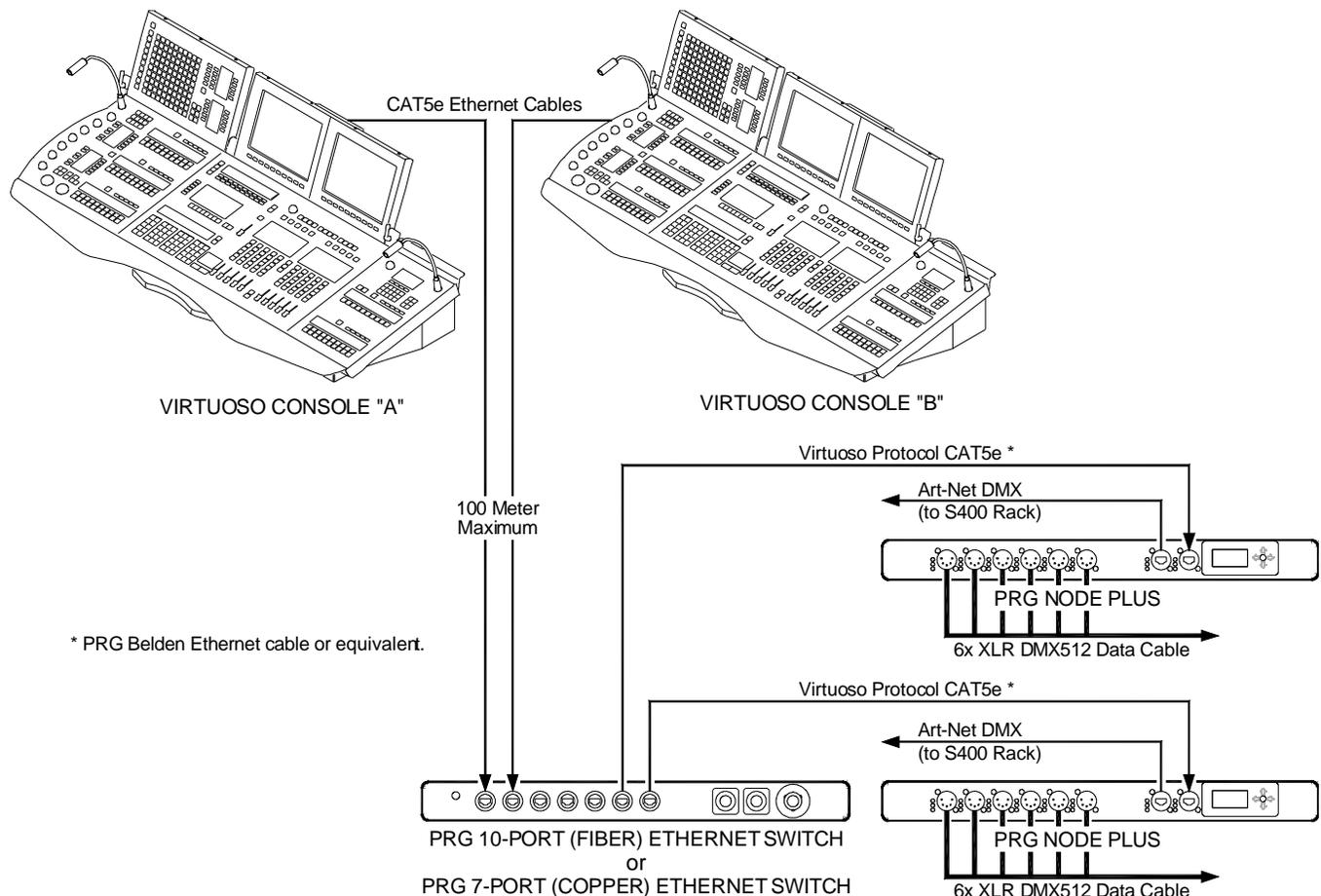
Figure 4: Virtuoso Standard Ethernet Configuration Example

Virtuoso NIF

In the Virtuoso NIF configuration, one or two Virtuoso control consoles may be connected to one or more PRG Node Plus units through a NIF.

Guidelines:

+ When connecting one Virtuoso console/NIF and one PRG Node Plus unit, an Ethernet Crossover cable (25.9651.0566) *must* be used instead of an Ethernet switch or hub.

+ When connecting two Virtuoso consoles/NIFs and up to three PRG Node Plus units, a 100Mb Ethernet switch or hub *must* be used. Standard CAT5e Ethernet cables should be used in this configuration. Refer to the illustration below.

+ The **Virtuoso Mode** of operation is used in this configuration. Refer to "Virtuoso Mode" on page 17.

+ The PRG Node Plus unit can only be used with Virtuoso consoles running software version 5.6 or greater.

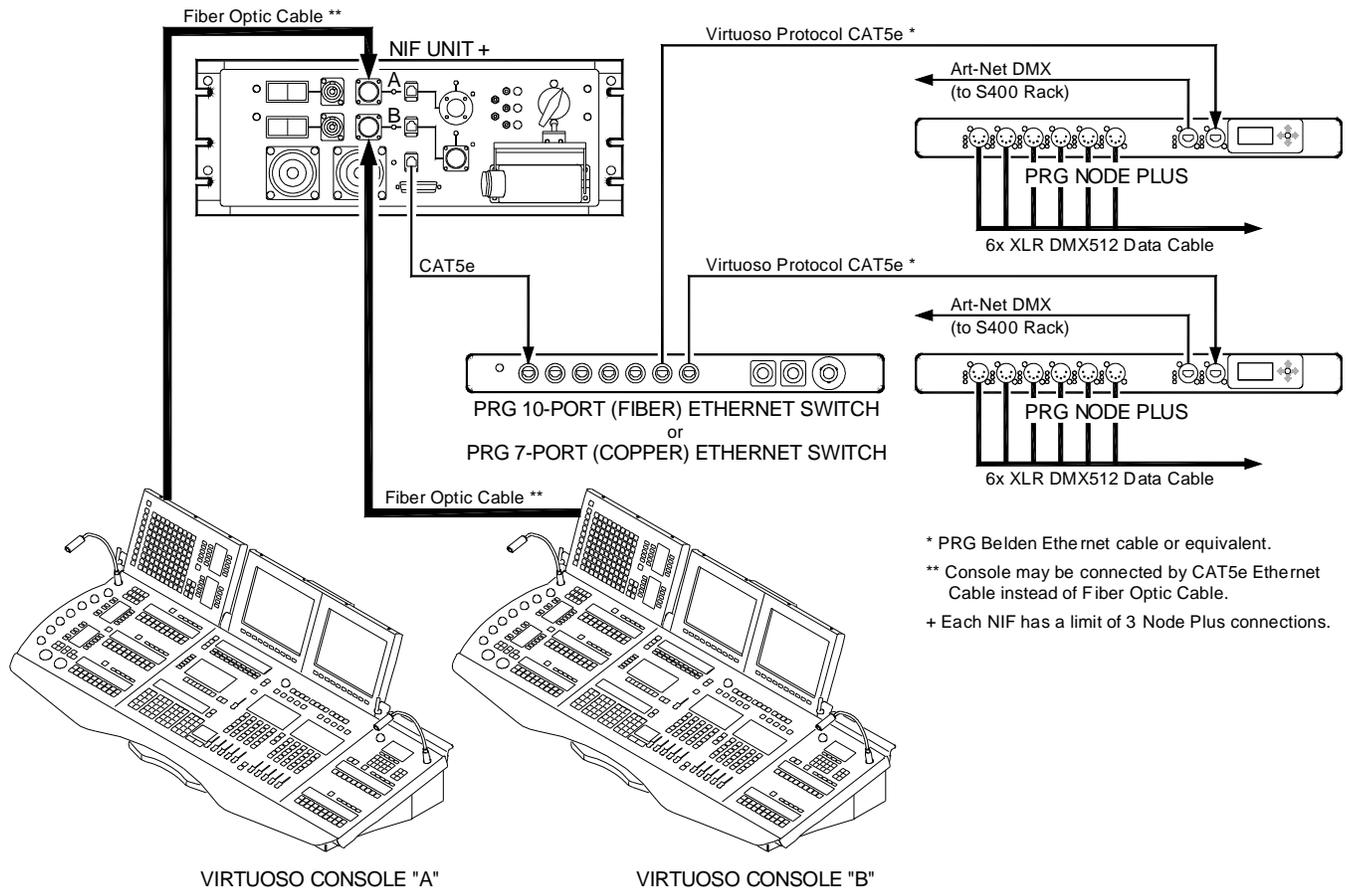* PRG Belden Ethernet cable or equivalent.

** Console may be connected by CAT5e Ethernet Cable instead of Fiber Optic Cable.

+ Each NIF has a limit of 3 Node Plus connections.

Figure 5: Virtuoso NIF Configuration Example

Art-Net (Series 400)

In the Art-Net (Series 400) configuration, an Art-Net compatible control console may be connected to one or more PRG Node Plus units.

Guidelines:

+ When connecting an Art-Net compatible console and multiple PRG Node Plus units, a 100Mb Ethernet switch or hub *must* be used. Standard CAT5e Ethernet cables should be used in this configuration. Refer to the illustration below.

+ The **Series 400 Mode** of operation should be used in this configuration. Refer to "Art-Net (Series 400) Mode" on page 18.

+ When using a Node in this way, there are some important considerations that should be observed during setup and operation. Refer to "Configuration" on page 11.

+ When using a Node as an Art-Net-to-DMX device, note that the Art-Net output does not pass data; it only mirrors the DMX outputs. It is not possible to place the Art-Net output on the same network as the Art-Net input.
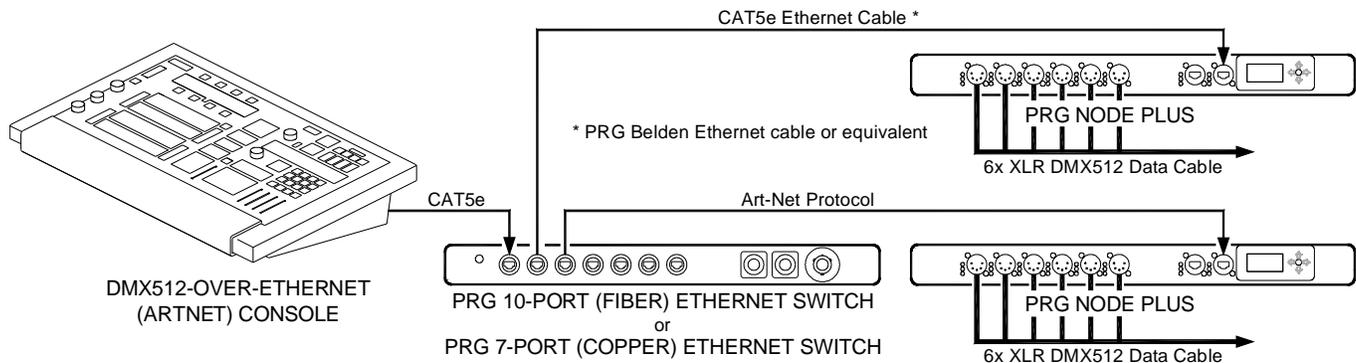
CAT5e Ethernet Cable *

* PRG Belden Ethernet cable or equivalent

PRG NODE PLUS

6x XLR DMX512 Data Cable

DMX512-OVER-ETHERNET
(ARTNET) CONSOLE

CAT5e

Art-Net Protocol

PRG 10-PORT (FIBER) ETHERNET SWITCH
or
PRG 7-PORT (COPPER) ETHERNET SWITCH

PRG NODE PLUS

6x XLR DMX512 Data Cable

Figure 6: Art-Net (Series 400) Configuration Example

AC Input

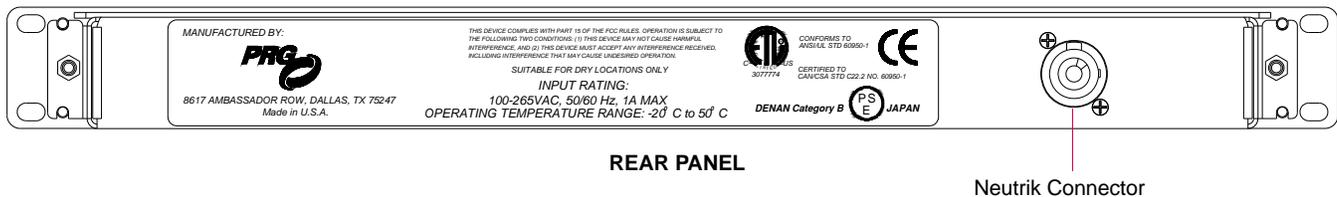Connect the AC Line Cord power cable assembly to the rear panel Neutrik® PowerCon® connector.

MANUFACTURED BY:

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

SUITABLE FOR DRY LOCATIONS ONLY

INPUT RATING:

8617 AMBASSADOR ROW, DALLAS, TX 75247
Made in U.S.A.

100-265VAC, 50/60 Hz, 1A MAX
OPERATING TEMPERATURE RANGE: -20°C to 50°C

CONFORMS TO
ANSI/UL STD 60950-1

CERTIFIED TO
CAN/CSA STD C22.2 NO. 60950-1

DENAN Category B

PS E

JAPAN

3077774

REAR PANEL

Neutrik Connector

Figure 7: Connecting AC Input Cable

Power Up Procedure

To power up the Node Plus unit and set its address:

Step   1.   Once the AC input cable is connected and power is applied, the unit will receive power. (It does not have a power on/off switch.)

Step   2.   Using Menu Display controls, set Node Plus thumbwheel starting address (refer to "Operation" on page 14). Ensure that addresses are unique among all Nodes in system.

CONFIGURATION

Software Initialization

The Node Plus requires different software to run in each type of system/mode configuration. For the Node Plus, the currently loaded software is shown at the top of the main menu screen. It will indicate either "Virtuoso Node", "Vx76 Node", or "Series 400 Node" as shown in the example below.

The Virtuoso and Vx76 consoles will automatically update the Node software when it is connected to the system. However, when used with Art-Net, the Node software must be loaded with Series 400 software.

The Series 400 software should always be loaded in the shop. This can be accomplished by one of three methods:
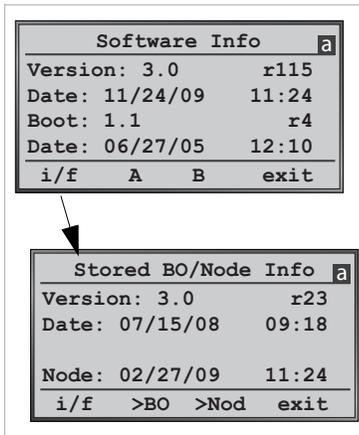
+ Series 400 Menu Loader (Breaker Module). Refer to the Series 400 System User manual for instructions.

+ S400 Tools Application (S400Loader). Refer to the Series 400 Tools User manual for instructions.

+ Stand-Alone Loader (VirtuosoLoader). Refer to "Stand-Alone Software Loader" on page 19.
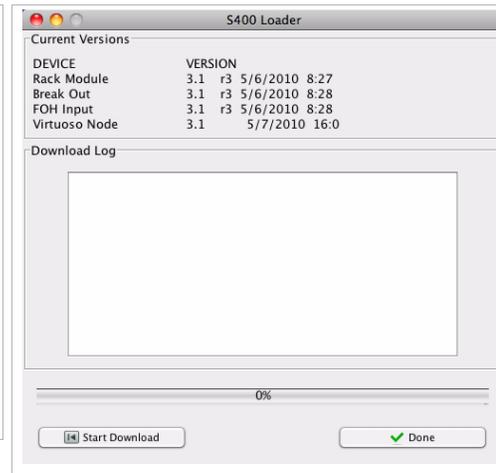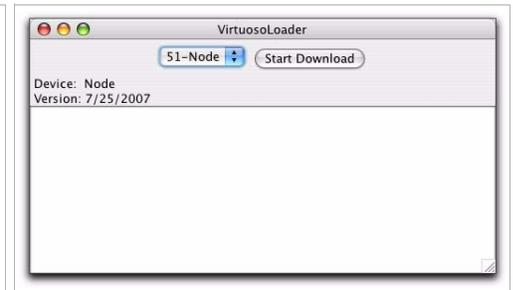
Current Software Type

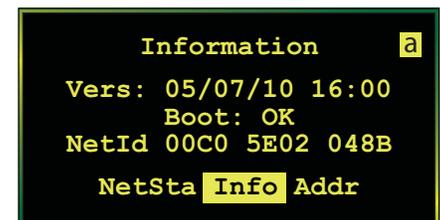NODE PLUS MENU DISPLAY

S400 MENU LOADER   S400 TOOLS LOADER   STAND-ALONE LOADER

CAUTION! Since the Virtuoso and Vx76 systems will update the Node software automatically, be careful not to connect a Series 400 loaded Node to a console network or else the Series 400 software will be replaced!

The Series 400 software version that is currently loaded in the Node Plus can be checked at any time by accessing the "Information" screen in the menu display. An example Information screen is shown at the right:

NODE PLUS MENU DISPLAY

Working Around Performance Limitations

The embedded processor in the Node has limitations with its buffering and communication processing, and often cannot keep up with modern computers that send data packets very close together.

In a Virtuoso or Vx76 system, the Node is doing all the calculations to generate DMX512 for the control channels patched to it. In cases where large numbers of fixtures generating intensity-based traffic - such as LEDs - are patched to the Node, the processing limitations will become evident during fast effects across many channels. A typical symptom would be effects not keeping up or continuing to run after being stopped on the console.

In an Art-Net system, the Node is receiving network DMX512 packets and outputting the information on the DMX ports. The limitation here is in the Node's limited available network packet buffering. If the network packets for consecutive Art-Net universes are spaced less than about 100 microseconds apart, the Node may drop some of the packets since they are being sent faster than the Node can receive and process them. A typical symptom would appear as temporary freezes in the DMX outputs. (Note that this is generally not a problem when the universes are input to the network by multiple sources.)

Suggestions:

+ Virtuoso/V676 Control Systems - The maximum number of control channels patched to a given Node should not exceed 250 where there are a large number of LED fixtures patched to the Node.

+ Art-Net Systems - Configure the Art-Net source to increase the time between consecutive network packets, or to interleave/alternate the universes in a different order. Most of the fast Art-Net devices allow adjustment of their Art-Net output timing, so this can help to resolve any problems.

+ Spread out the universes mapped to a single Node, since the Node can discard unneeded universes more quickly than processing mapped universes. For example, it is better to map every third universe to a Node instead of a string of six consecutive universes.

+ As a general rule, limit the maximum number of universes a Node must process to four (4).

   Note: If merging is enabled, the Node must listen to two universes (or more) per output, so the number of output universes may need to be reduced to one or two with a high-speed Art-Net source. (Refer to "Merge Options" on page 18.)

CAUTION! Since there can be quite a bit of variation in Art-Net controllers, it is always a good idea to test the controller with all networking gear and Art-Net devices prior to a show situation!

Vx76/Virtuoso Console Setup

When using a PRG Node Plus with a PRG Vx76 or Virtuoso console, the Node can be set up using the console's DMX Setup window.

Step 1. At console, patch DMX fixtures and assign a DMX universe.

Step 2. At **Setup** menu, select **DMX Setup**. (DMX Setup window will open.)

Step 3. Select desired DMX universe.

Step 4. Enter Node thumbwheel address in "Thumb" field and select Node output (1-6) in pop-up menu.

Step 5. Click **Set** button to assign universe to selected Node output.

Step 6. If patching sequential Nodes and outputs, pressing the [Return] button on the keyboard will auto increment the patch. If not sequential, repeat Steps 3 through 5.

DMX Universe (A-ZZ)
Must be assigned to a DMX Host (Node, etc.)

DMX512 channel assignments for selected universe

Orange highlights show DMX channel range for selected fixtures

Node Address

DMX Output of Node

Enable/Disable Patch Editing

Set Button -
Press to enter current settings
and advance to the next line

Troubleshooting

Symptom	Indication	Remedy
Node Plus online, but no control.	Appears in console configuration window, but channels are not online.	Incorrect patch: verify Node Plus address and that universes are set to 'Node' not 'Con' in DMX Setup window.

OPERATION

Using the Menu Display

The PRG Node Plus includes a display menu for configuring the unit and checking system status. The menu system can be navigated using the joystick controller, which can be moved left, right, up, and down, and pushed in. In general, left and right movements navigate the top level menus at the bottom of the display. Pushing in the joystick enables editing for the current screen. Pushing in while editing, saves changes and exits.
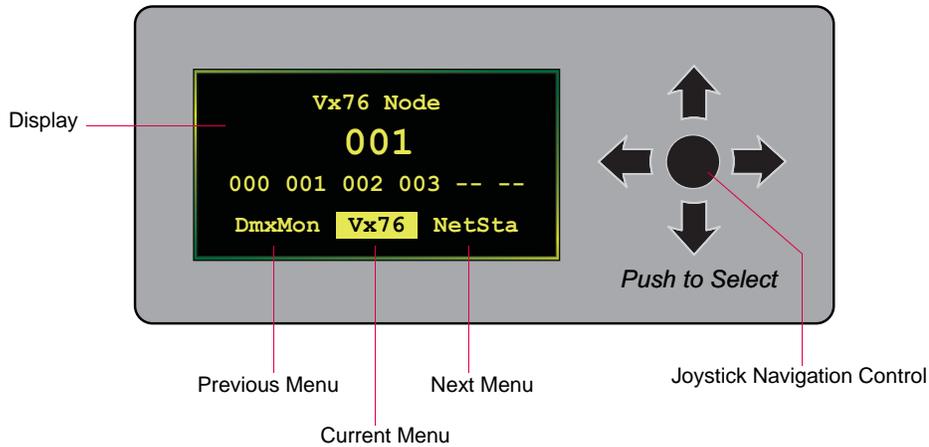

Figure 8: Menu Display and Joystick

Reset

In the event a software reset is necessary, the Reset button may be pressed. The Reset button is recessed into the front panel as shown.
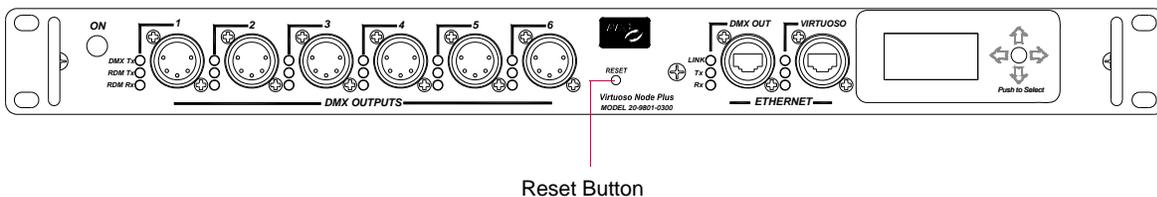

Figure 9: Reset Button Location

Operating Modes Overview

The PRG Node Plus unit operates in one of three modes: Vx76, Virtuoso, or Art-Net (Series 400). The mode will depend on the system setup.

+ **Vx76 Mode** - In this mode, the unit will accept Vx76 protocol and generate *both* Art-Net and DMX512 outputs.

Vx76
Protocol ⟹ **PRG NODE PLUS
[Vx76 Mode]** ⟹ Art-Net and DMX512

+ **Virtuoso Mode** - In this mode, the unit will accept Virtuoso protocol and generate *both* Art-Net and DMX512 outputs.

Virtuoso
Protocol ⟹ **PRG NODE PLUS
[Virtuoso Mode]** ⟹ Art-Net and DMX512

+ **Art-Net (Series 400) Mode** - In this mode, the unit will accept Art-Net protocol and convert it to DMX512. (When used with the Series 400 rack, the Node will follow the selected A, B, or C system.)
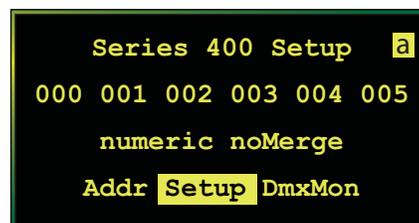

Art-Net
Protocol ⟹ **PRG NODE PLUS
[Art-Net Series 400 Mode]** ⟹ DMX512
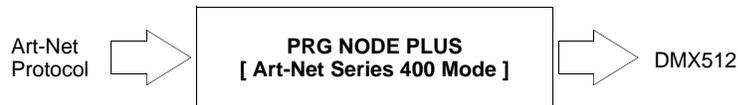
⚠️ **Important Note Regarding the Series 400 Setup Screen in Vx76 and Virtuoso Modes**

When operating in either the Vx76 or Virtuoso mode, a legacy "Series 400 Setup" screen is still available in the menu. This is an obsolete screen and should no longer be used for Series 400 (Art-Net) setup. The new "Series 400 Setup" screen is available when the Node has been loaded with Series 400 software, and should be used to setup the Art-Net system as detailed in "Art-Net (Series 400) Mode" on page 18.

```
    Series 400 Setup

000 001 002 003 004 005

       numeric

  Info  Ser400  DmxMon
```
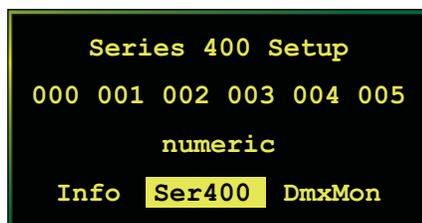
OBSOLETE "SERIES 400 SETUP" MENU
- Available in Vx76 and Virtuoso Modes -
DO NOT USE!

```
    Series 400 Setup   a

000 001 002 003 004 005

    numeric noMerge

  Addr  Setup  DmxMon
```

NEW "SERIES 400 SETUP" MENU
- Available in Series 400 Mode -
USE FOR ART-NET SETUP

Vx76 Mode

When the Node Plus is connected to a Vx76 series console, the menu system will provide "Vx76" screens which can be used to set up and monitor the Vx76 system.

Vx76 Node Screen

The Vx76 Node screen displays the thumbwheel address and mapped DMX512 universes (as patched from the console). In the sample image at the right, this unit has been set to thumbwheel 001, and Vx76 universes A-D have been patched to outputs 000 through 003 of this Node.

To edit the thumbwheel address, press the joystick. The first digit will be highlighted. Use up/down to change the digit, left/right to move to another digit, and press down to save and exit.

```
        Vx76 Node
          001
000 001 002 003 -- --
 DmxMon   Vx76   NetSta
```

Network Stats

The Network Stats screen displays transmit and receive statistics since power-up.

This screen is not editable.

```
       Network Stats
 TX #  467      fail   0
 T/O   0        HwEr   0
 Mem   0         Apn   0
 RX #  1262     HwER   0
 Flag  0        Cksm   0
 Buf   0         Msg   0
   Vx76   NetSta   Info
```

TX #: successful transmits

T/O: transmit time-outs

Mem: transmit memory errors

RX #: successful receives

Flag: receive invalid flag error

Buf: receive buffer shortage

fail: transmit failures

HwEr: transmit hardware errors

Apn: transmit buffer errors

HwEr: receive hardware errors

Cksm: receive checksum error

Msg: receive message item shortage

Information

The Information screen displays software version date/time, verification of valid Boot module, and programmed Network ID.

This screen is not editable.

```
       Information
 Vers: 10/06/11 00:48
       Boot: OK
 NetId 00C0 5E02 04AC
   NetSta  Info  Ser400
```

DMX Monitor

The DMX Monitor screen displays the data for each active universe.

Press the joystick to cycle through all six ports. This screen is not editable.

```
   DMX Port 1 (000)
001: 000 127 255 127 255
006: 000 000 000 000 000
011: 000 000 000 000 000
016: 000 000 000 000 000
   Ser400   DmxMon   Vx76
```

Series 400

The Series 400 screen is an obsolete menu item and should no longer be used for Series 400 (Art-Net) setup. The new "Series 400 Setup" screen is available when the Node has been loaded with Series 400 software, and should be used to setup the Art-Net system as detailed in

```
    Series 400 Setup
 000 001 002 003 004 005
        numeric
   Info   Ser400   DmxMon
```

OBSOLETE MENU

Virtuoso Mode

When the Node Plus is connected to a Virtuoso series console, the menu system will provide "Virtuoso" screens which can be used to set up and monitor the Virtuoso system.

Note: The PRG Node Plus unit can only be used with Virtuoso consoles running software version 5.6 or greater.

Virtuoso Node Screen

The Virtuoso Node screen displays the thumbwheel address and mapped DMX512 universes (as patched from the console). In the sample image at the right, this unit has been set to thumbwheel 001, and Virtuoso universes A-D have been patched to outputs 000 through 003 of this Node.

To edit the thumbwheel address, press the joystick. The first digit will be highlighted. Use up/down to change the digit, left/right to move to another digit, and press down to save and exit.

```
     Virtuoso Node
          001
000 001 002 003 -- --

DmxMon  Virt   NetSta
```

Network Stats

The Network Stats screen displays transmit and receive statistics since power-up.

This screen is not editable.

```
     Network Stats
 TX #  467     fail   0
 T/O    0      HwEr   0
 Mem    0       Apn   0
 RX #  1262    HwER   0
 Flag   0      Cksm   0
 Buf    0       Msg   0
   Virt  NetSta  Info
```

TX #: successful transmits	fail: transmit failures
T/O: transmit time-outs	HwEr: transmit hardware errors
Mem: transmit memory errors	Apn: transmit buffer errors
RX #: successful receives	HwEr: receive hardware errors
Flag: receive invalid flag error	Cksm: receive checksum error
Buf: receive buffer shortage	Msg: receive message item shortage

Information

The Information screen displays software version date/time, verification of valid Boot module, and programmed Network ID.

This screen is not editable.

```
     Information
 Vers: 02/22/07 12:36
      Boot: OK
 NetId 00C0 5E02 03EC

  NetSta Info Ser400
```

DMX Monitor

The DMX Monitor screen displays the data for each active universe.

Press the joystick to cycle through all six ports. This screen is not editable.

```
    DMX Port 1 (000)
001: 000 127 255 127 255
006: 000 000 000 000 000
011: 000 000 000 000 000
016: 000 000 000 000 000
  Ser400  DmxMon   Virt
```

Series 400

The Series 400 screen is an obsolete menu item and should no longer be used for Series 400 (Art-Net) setup. The new "Series 400 Setup" screen is available when the Node has been loaded with Series 400 software, and should be used to setup the Art-Net system as detailed in "Art-Net (Series 400) Mode" on page 18.

```
    Series 400 Setup

000 001 002 003 004 005

        numeric

   Info  Ser400  DmxMon
```
OBSOLETE MENU

Art-Net (Series 400) Mode

When the Node Plus has been loaded with Series 400 software, the menu system will provide "Series 400" screens which can be used to set up and monitor the Art-Net system.

Setup

The "Series 400 Setup" screen is used to configure the Art-Net universes, display options, and merge setting.

+ **Universes** - Specify the Art-Net universes (A-N) to be received and translated (such as 000, 001, 002, 003, etc.).

+ **Display** - Specify whether the universes should be displayed as numeric, alpha, or hex.

+ **Merge** - Specify a merge setting (2-Way, 3-Way, 4-Way) or "no merge." *See below for details.*

Status

The Address, DMX Monitor, and Network Stat screens provide status feedback for the Art-Net system. These screens are not editable.

+ **Address Screen** - Shows the current system source (*a*, *b*, or *c*), active universes, and thumbwheel address. (The thumbwheel address is for ID purposes only).

+ **DMX Monitor Screen** - Shows the data for each active universe. Press the menu toggle switch to cycle through all six ports.

+ **Network Stats Screen** - Shows transmit and receive statistics since power-up.

TX #: successful transmits	fail: transmit failures
T/O: transmit time-outs	HwEr: transmit hardware errors
Mem: transmit memory errors	Apn: transmit buffer errors
RX #: successful receives	HwEr: receive hardware errors
Flag: receive invalid flag error	Cksm: receive checksum error
Buf: receive buffer shortage	Msg: receive message item shortage

Information

The Information screen displays software version date/time, verification of valid Boot module, and programmed Network ID.

This screen is not editable.

Merge Options

The merge options available on the "Series 400 Setup" screen allow merging of data for multiple universes assigned to the same number. For example, if two inputs are set to 001a and 2-way merge is enabled, then the resulting output for outputs set to universe 001 would be the highest value for each channel between the two inputs (HTP). If three inputs are active at 001, the outputs would be disabled.

Options are as follows:

+ noMerge: no universe merging.
  (This is the default setting: noMerge = 1.)

+ 2-Way: allows up to 2 universe inputs per universe.

+ 3-Way: allows up to 3 universe inputs per universe.

+ 4-Way: allows up to 4 universe inputs per universe.

```
          Series 400 Setup   a
     000 001 002 003 004 005
            numeric noMerge
        Addr  Setup  DmxMon
```

```
          Series 400 Node    a
               001
        000 001 002 003 -- --
          Info   Addr   Setup
```

```
          DMX Port 1 (000)   a
     001: 000 127 255 127 255
     006: 000 000 000 000 000
     011: 000 000 000 000 000
     016: 000 000 000 000 000
        Setup  DmxMon  NetSta
```

```
           Network Stats     a
      TX #  467       fail   0
      T/O   0         HwEr   0
      Mem   0          Apn   0
      RX #  1262      HwER   0
      Flag  0         Cksm   0
      Buf   0          Msg   0
        DmxMon  NetSta  Info
```

```
           Information       a
      Vers: 05/07/10 16:00
            Boot: OK
      NetId 00C0 5E02 048B
         NetSta  Info  Addr
```

When used with the Series 400 rack, the Node will follow the selected A, B, or C system. The current system source is displayed in the top corner of each S400 menu screen. System "a" is the default system source for Art-Net configurations.

STAND-ALONE SOFTWARE LOADER

Overview

The Virtuoso and Vx76 consoles will automatically update the Node software when it is connected to the system. However, the stand-alone loader application (VirtuosoLoader) may be used in place of the console to update the Node. (The application works the same as the console's update software feature in the Version Info window.)

When used with Art-Net, the Node software must be loaded with Series 400 software. This can be done using the VirtuosoLoader.

The VirtuosoLoader application will update the connected devices according to the software update *.bin module(s) contained within its folder. For example, the "Node.srec.bin" module as shown below:

VirtuosoLoader Application Folder

VirtuosoLoader Application   Module
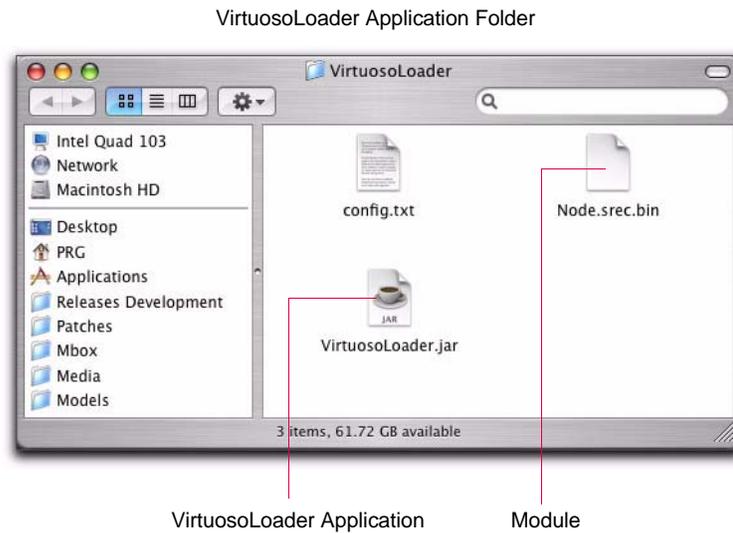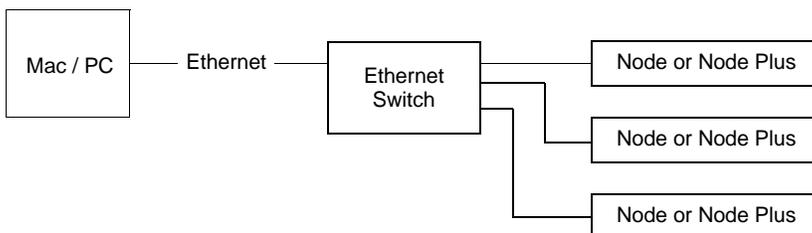
Using the VirtuosoLoader Application

The VirtuosoLoader application will run on any Windows® or Macintosh® computer. However, it may be necessary to install Java Runtime if the jar file does not run on your computer. It is available from www.java.com.

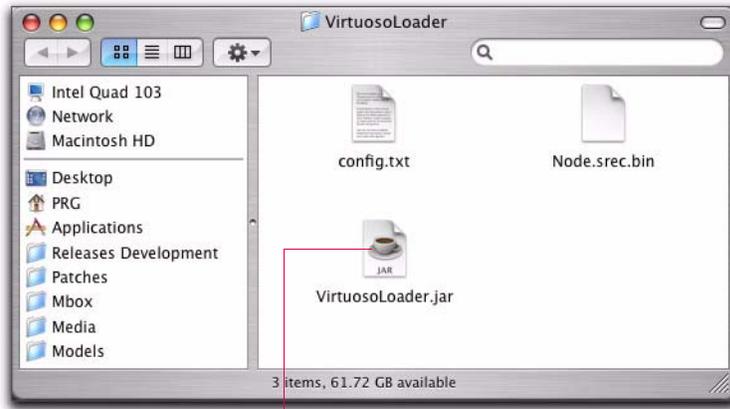Step   1. Connect computer to devices using one of the following methods:

SINGLE DEVICE

MULTIPLE DEVICES

Step   2. Download or copy the VirtuosoLoader application folder to your computer.

Step   3. Open VirtuosoLoader folder and double-click "VirtuosoLoader.jar" file. (This is a stand-alone Java application.)
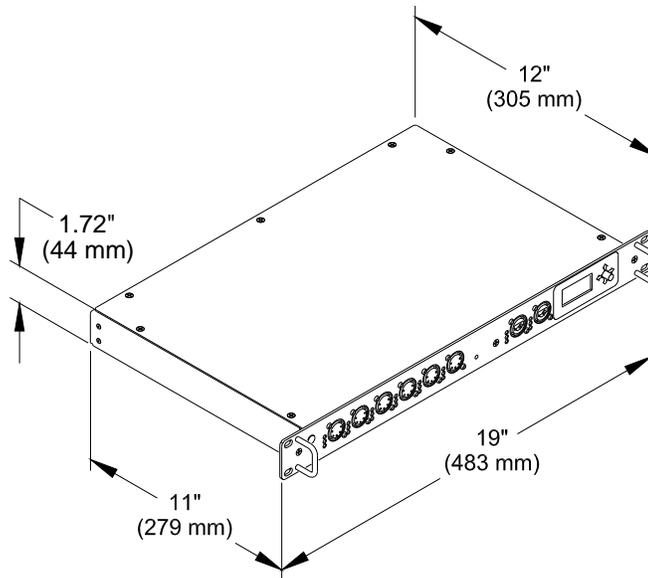

VirtuosoLoader Application

Step   4. Click **Start Download** button. The module will update all connected devices.

Click to start download

Device & Version
Information
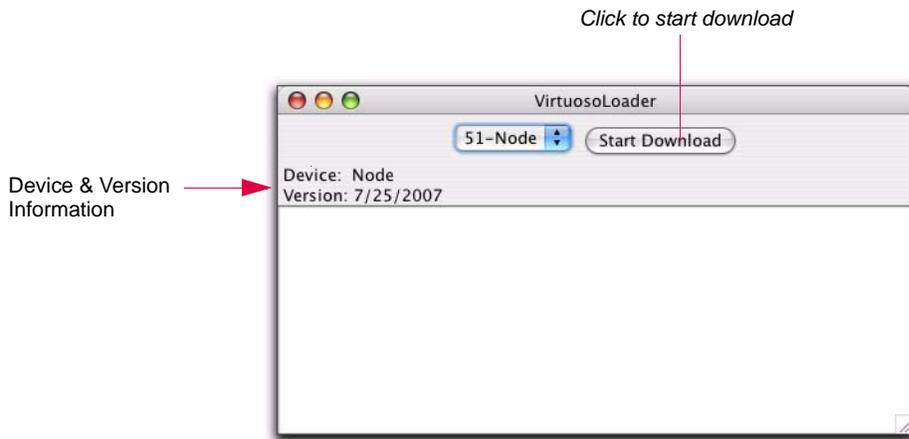
SPECIFICATIONS

Technical Specifications

POWER REQUIREMENT: 90 to 264 VAC, 47 to 63 Hz
Draws less than 60 watts continuously.

COOLING: Convection.

OPERATING TEMP: -20°C to 50°C (-4°F to 122°F).

INPUT: One control signal input which is fed from a console providing either Virtuoso or DMX-over-Ethernet (Art-Net) protocol.

OUTPUT: One Art-Net output carrying up to six DMX512 universes.
Six (non-isolated) standard DMX512 serial outputs, each carrying one DMX512 universe. (Both output protocols are simultaneously active in Virtuoso mode.)

COMM INDICATORS: Input and output status LEDs indicating DMX Tx, RDM Tx and RDM Rx data (DMX ports), and Link, Tx data and Rx data (Ethernet ports).

POWER INDICATOR: Green LED indicating that DC power has been applied.

CONTROL: Built-in Menu Display with joystick and button controls.

HOUSING: Standard 1U 19" rack mount chassis.

WEIGHT: 4.5 lbs (2.04 kg)

COMPLIANCE: ETL and CSA Standards in CE and DENAN category B, Circle PSE.

Notes

PRG Node Plus User Manual

Version as of: October 19, 2011

PRG part number: 02.9801.0301 D

PRG

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