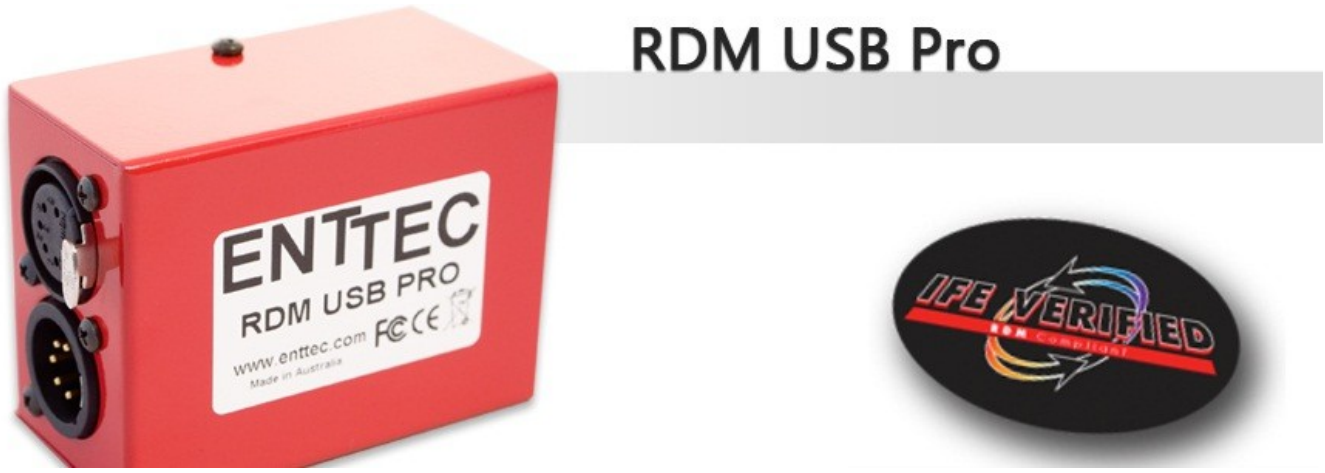
for more information visit:
www.enttec.com/rdm

ENTTEC RDM USB PRO

(PN 70530)



Box Contents

- RDM USB PRO (pn: 70530)
- USB Cable (Part No. 79110)
- This user manual
- CD including RDM Controller (pn:79106)

Features

- Full 512 DMX channel universe of input or output
- Fully compliant with USITT DMX512-A
- RDM enabled (ANSI E1.20 compliant)
- Fully compatible with ENTTEC RDM Controller and RDM Sniffer applications. (Windows only)
- Adjustable Frame Rates and empty frames to accommodate non-standard equipment
- USB 2.0 Support on Windows PC and Mac OSX
- 1500 V full isolation (data & power lines to protect your computer from surges)
- Drivers for Windows, OSX and Linux (drivers released and maintained by FTDI)
- Output refresh rate configurable from 1 to 40 Fps (Frames per second)
- Compatible with various open-source and professional lighting control programs (DMX)

Safety

- Do not expose the RDM USB PRO to rain or moisture, doing this will void the warranty
- Do not remove the cover, there are no serviceable parts inside
- This unit is intended for indoor use only
- Wherever possible, use with a DMX Splitter for safety and better reliability with DMX cables.

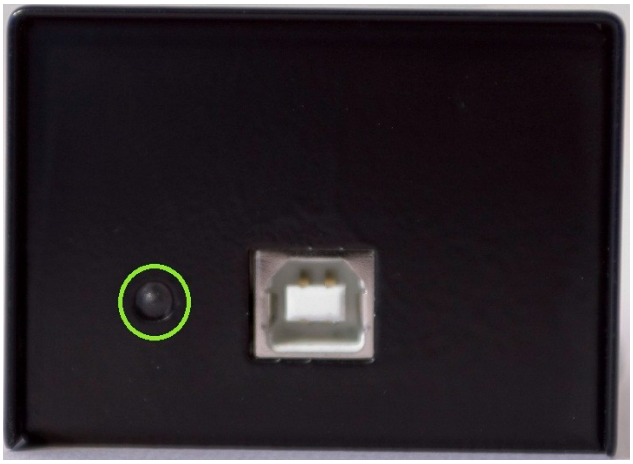
Basic Setup

- Install and configure the Driver software on your Windows™, Linux™or Mac™ computer.

  Methods can vary between Operating systems, but the end result is the same: once installed correctly, the drivers will allow software to communicate with the RDM USB PRO.
- Connect the RDM USB PRO to your computer (usb) and the DMX512 control network (DMX cable).
- Load the RDM software of your choice onto the computer. RDM USB PRO is shipped to be ready to use with RDM Sniffer.
- For changing firmware on the RDM USB PRO, install and run PRO-Manager.

LED Status

The RDM USB PRO comes with a green LED indicator located on the left of the usb port. It behaves as following:



1. **Blinks once** on usb connection: signifies that the RDM USB PRO is powered on and ready. After blinking once, it will remain off, until DMX/RDM is sent or received.
2. **Blinks continuously**: signifies DMX/RDM is being sent or received by the RDM USB PRO.
3. **Stays on always (no blinking)**: signifies error mode, RDM USB PRO needs to be restored
4. **Stays off always**: normal mode, waiting for software to instruct it to perform DMX operation

DMX Connector pin out

5pin DMX OUT/ DMX IN:

- Pin 1: Ground
- Pin 2: Data -
- Pin 3: Data +
- Pin 4: NC
- Pin 5: NC

Any suitable 3 to 5pin DMX adaptor can be used to connect to 3pin DMX cables or fixtures. Please note the pinout, before connecting to any non-standard DMX connector.

Install Drivers

RDM USB PRO is supported by FTDI drivers for the following Operating Systems:

- Windows 8, Windows7, Windows XP, Windows Server 2003, Windows Vista, Windows Server 2008, Windows Server 2008 R2. (32 bit and 64 bit versions)
- Mac OS X (Mac OS X 10.4 or later)
- Linux - Raspberry Pi also supported

To proceed, you need the driver setup file, which is available from :

- the CD which came in the package, or
- download PRO-Manager (includes the driver setup) from the ENTTEC website: enttec.com/dmxubspro
- for latest drivers and OS support, please visit ftdi website: ftdichip.com/Drivers/D2XX.htm

Setting up on Windows

Execute the setup file and let the drivers install on your Windows machine. If using PRO-Manager setup, click Yes when prompted to install FTDI Drivers

Click on Extract, and follow the setup procedure by clicking Next. It will go through the drivers install process and copy the needed files.
Once done it will show the completion screen, highlighting that the drivers have been installed correctly

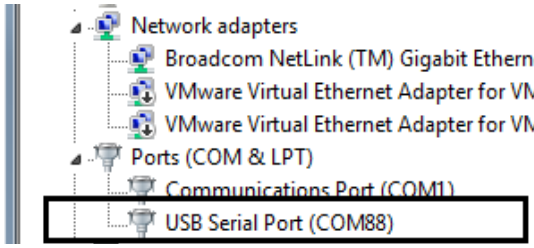
In most cases the USB port you plug the RDM USB PRO into will automatically fall into an acceptable range with respect to the other elements of your computer's communications ports, but if you are having problems or conflicts between the ports, here is what you can do to change the COM port.

Before making any changes. it is advisable to keep a record of which serial port has been used in each attempt to configure the hardware and drivers. That way you will be able to retrace your steps should you decide to go back and try something again but with different settings elsewhere.

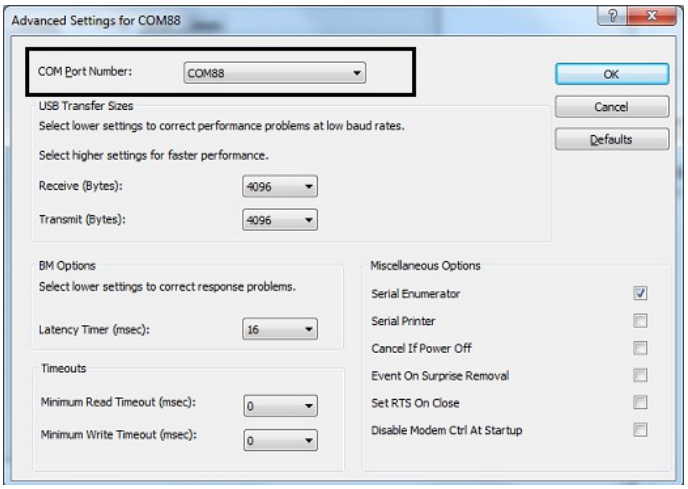
Device Manager

Open Device Manager on your Windows machine. (*Control Panel → Device Manager*)

Expand the "*Ports*" section, and identify the RDM USB PRO, which usually is "*USB Serial Port*"



Right click on it and select *Properties*. Under "*Port Settings*", click on "*Advanced*", and you can then change the COM Port No. under this screen:



Setting up on Mac

Download and install PRO-MANAGER on your Mac (OSX 10.6 onwards). The "D2XX" drivers are copied by PRO-MANAGER and made ready for use.

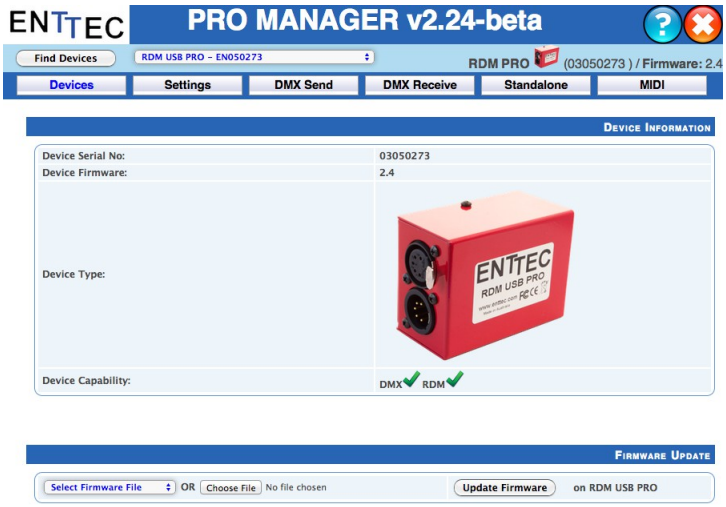
In some cases, there might be a conflict with other drivers on your Mac, to resolve such conflicts you will need to disable "Serial drivers" on your Mac.

Follow detailed instructions on how to do this, using FAQ/Support links on the ENTTEC RDM USB PRO web-page: www.enttec.com/dmxubspro

PRO-MANAGER

ENTTEC provides a free cross-platform app to configure, test and update RDM USB PRO. The App is available for Windows on the CD or you can download the latest version for Windows or Mac from the ENTTEC website www.enttec.com/pro-manager

- Use this App to test your RDM USB PRO, change default parameters (Refresh rates, Break Time), test DMX Send and Receive.
- This App is merely a troubleshooting tool and not Lighting Control software
- PRO-Manager runs inside a browser window, and it opens up the page by default, however you can also use this address in your browser http://localhost:55555/

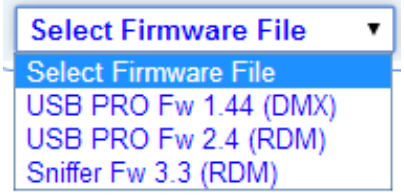


From the PRO-Manager Home page, you can click the button (Find Devices) to search for USB-PRO's connected to your computer. Once it finds it, please select it from the selection box to talk to it.

Firmware Update

The following steps will guide you on how to update the firmware:

- Firmware 3.3 is for RDM Sniffer only (default)
- Firmware 2.4 is for RDM Controller only
- Firmware 1.44 is for DMX apps only

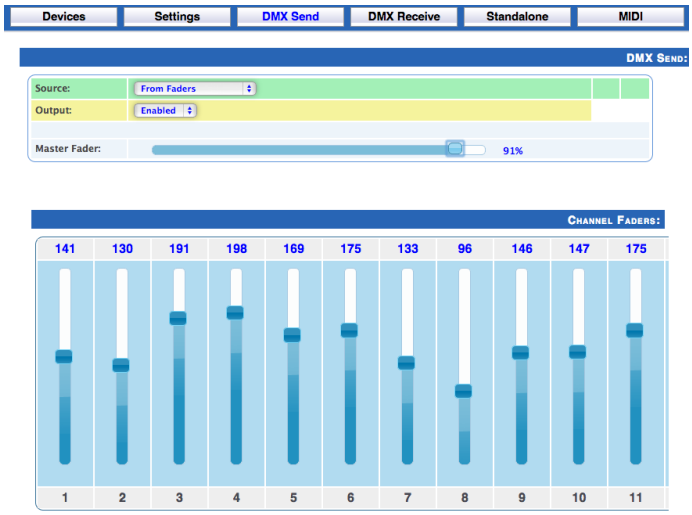


From the home page of PRO-Manager, select the firmware from the drop-down "Select firmware File" and Click on "Update firmware"

Once Finished, the page will automatically refresh, and device information will be updated to reflect the updated firmware.
Firmware 3.3 is needed, if RDM USB PRO is to be used with RDM Sniffer Application.
Firmware 2.4 is needed, if RDM USB PRO is to be used with RDM Controller Application.

DMX Send Test

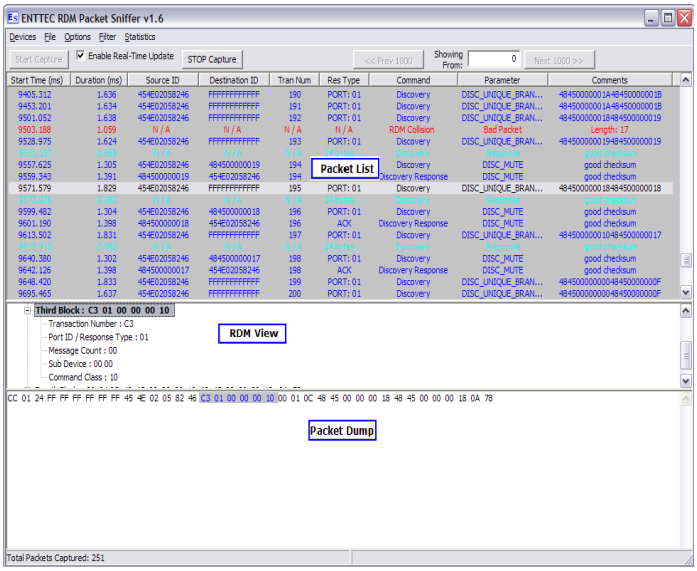
PRO-Manager can also be used to send preset DMX patterns or test selected DMX channels by sending DMX through the RDM USB PRO.
Select the "DMX Send" page from the top-menu and from DMX Send page, select "Faders" and drag the needed Channel faders to test the DMX output.



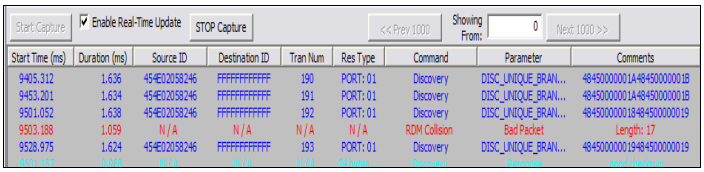
With your fixtures connected to the DMX output of the M USB PRO, you will see the desired effect for the value of the channel you change. For example, a fixture setup with intensity on Ch10, and R,G,B on Ch 4,5,6 - when you change the values on these channels you will see the effect on your fixtures.
This can be used to test that your RDM USB PRO is working as expected.
After testing, you must close PRO-Manager, and then open any lighting control software to use RDM USB PRO.

RDM Sniffer

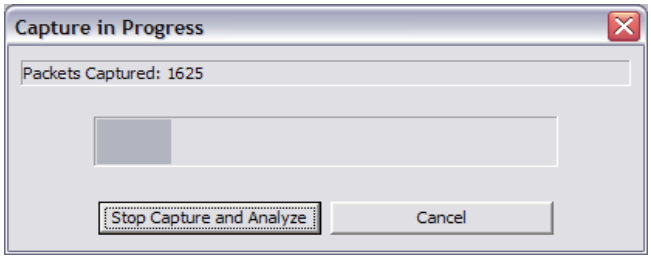
ENTTEC RDM Sniffer captures packets and displays them with an extensive layout to easily decode RDM Layout of the captured packet. A detailed view lists each byte captured along-with individual time-stamp. With Timing checks enabled it can allow the user to determine whether a certain device complies to ANSI E1.20.



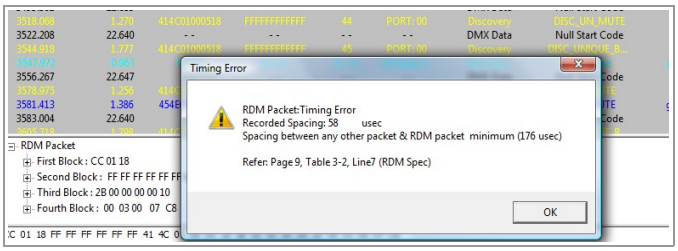
ENTTEC Sniffer is designed to be used primarily for the capture and analysis of RDM/DMX packets. The entire process is divided into two stages:-
a) Capture of Data, and
b) Analysis of capture data into meaningful form.



Press *Start Capture* button while *Enable Real Time Update* is selected, to perform both the tasks at the same time. The packet list screen will be updated as and when new packets are captured. If Real Time Update consumes too much resources, it is recommended to not use it. Alternatively a progress bar shows the packets being captured, and *Stop Capture* button allows analysis.



Any packet that does not conform to the Timing as per ANSI E1.20 (RDM) and DMX 512/1990 is highlighted in Yellow. Double Clicking the packet displays the error message with reference to ANSI E1.20 (Pg & table) to lookup for RDM Timing.



Sniffer color codes for captured packets:

- RDM Packet (blue)
- RDM Discovery Response (cyan)
- RDM Collision (red)
- DMX Packet (black)
- Timing error (yellow)

RDM Controller

ENTTEC RDM Controller makes it easy and fast to communicate with compatible (ANSI E1.20) devices which act as responders over the line. The responders are connected via DMX to the USB PRO. RDM Controller connects to this USB PRO and performs RDM functions.

The interface is divided into four tabs:

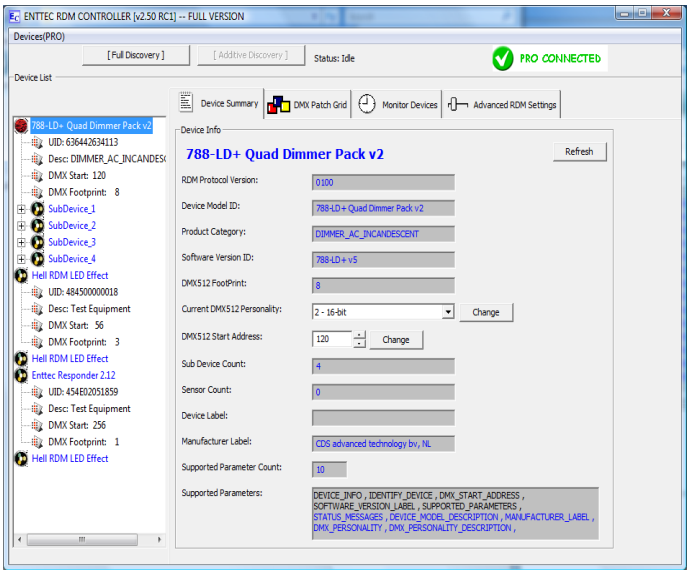
- *Device Summary*: Useful information reported by the device
- *DMX Patch Grid*: DMX Patching via drag & drop
- *Device Monitor*: Sensor information & Status Messages
- *Advanced RDM Settings*: RDM Get & Set for all supported Parameters (incl. Manufacturer PIDs)

First connect a RDM USB PRO to the PC using an available USB Port. Then open the Controller Application and click on Devices menu and all the connected PROS shall be listed under this menu. Click on the selected device to allow the Controller to connect to the RDM USB PRO.

RDM Controller: Device Summary

Once connected, you can click RDM Discovery to find all connected RDM Responders on-line. On activating "Discovery", the status changes to "Discovery in Progress".

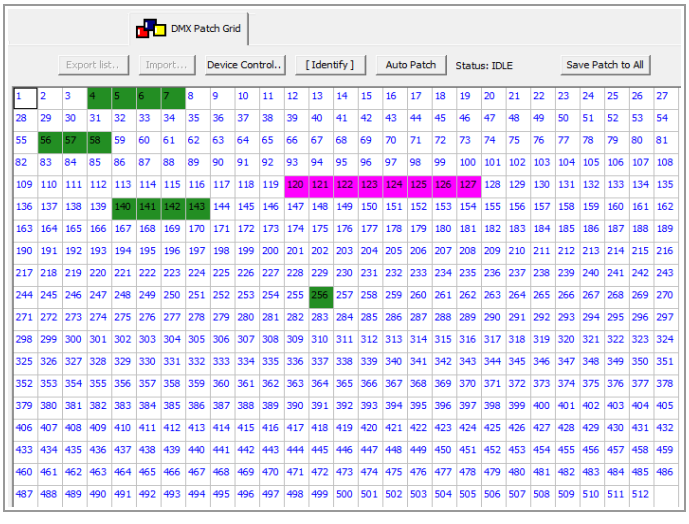
Since RDM discovery could take up to a few seconds depending upon the number of RDM responders on the network, it can be canceled by the "Cancel" button if needed.



RDM Controller: DMX Patch

The DMX Patch Grid panel contains a grid displaying all possible output addresses (also referred to commonly as "DMX Channels"). This allows user to patch devices and see the results graphically. There are also several buttons assist in the patching operation and to allow on-the-fly control of the dimmers or attributes of a multi-channel fixture.

The Drag & Drop technique is available in this window, and is considered the easiest way to configure the selected device to output on the chosen DMX Channel (or to "address" it.) If you're already familiar with "drag and drop" just drop the selected device onto the Channel you want its DMX Start Address to be.



The channels patched are shown in the following colors:

115 Patched to a device on the list. (DARK GREEN)

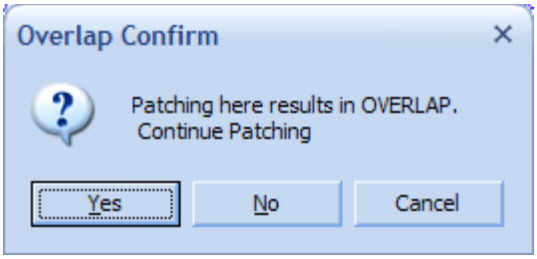
84 Vacant Cell / Not Patched yet (WHITE)

118 Overlapped with 2 or more devices (RED)

279 Patched to the currently Selected Device (LIGHT GREEN)

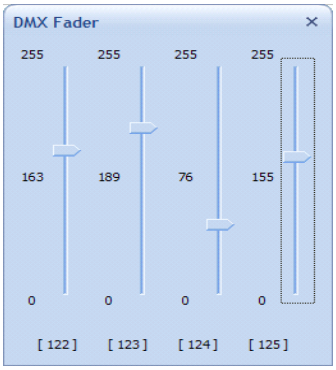
4 Overlapped And Patched to the currently Selected Device (PINK)

Auto Patch will patch all the devices shown on the list, to a series of channels starting with DMX 1. The devices will be patched consecutively based on the Sort order of their Manufacturer Label.



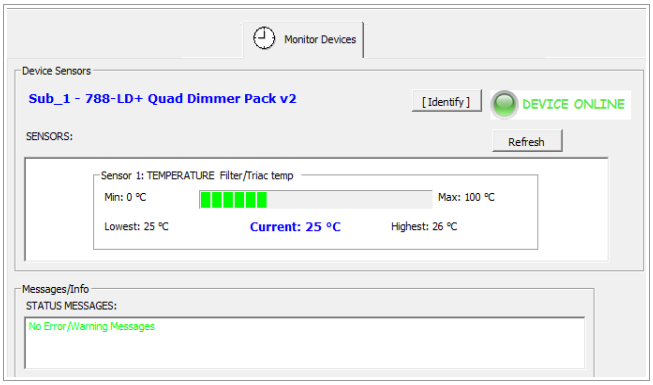
To save the changes made, click on the "Save Patch to All" button. Once all the devices have learned their new configurations and responded that they are ready, a prompt will appear showing the status. If anything prevented the successful patching of the entire list, a warning message will appear instead, saying "Not all devices were patched".

Identify: This button toggles on/off, and when activated it forces the device to exhibit a distinctive behaviour designed by its manufacturer to help you locate it in your rig.



Device Control: This will open a DMX Fader control for the selected device. Changing the fader values will send live DMX level information over the network.

RDM Controller: Monitor Devices



This window displays all sensors reported by the device selected in Device List to the left. The Sensor display area is scrollable if there are multiple values to scan. The following information for each sensor displayed (if available):

- Sensor No.
- Sensor Name
- Min. Defined Value (with units)
- Max. Define Value (with units)
- Lowest reported Value (with units)
- Current reported Value (with units)
- Highest reported Value (with units)

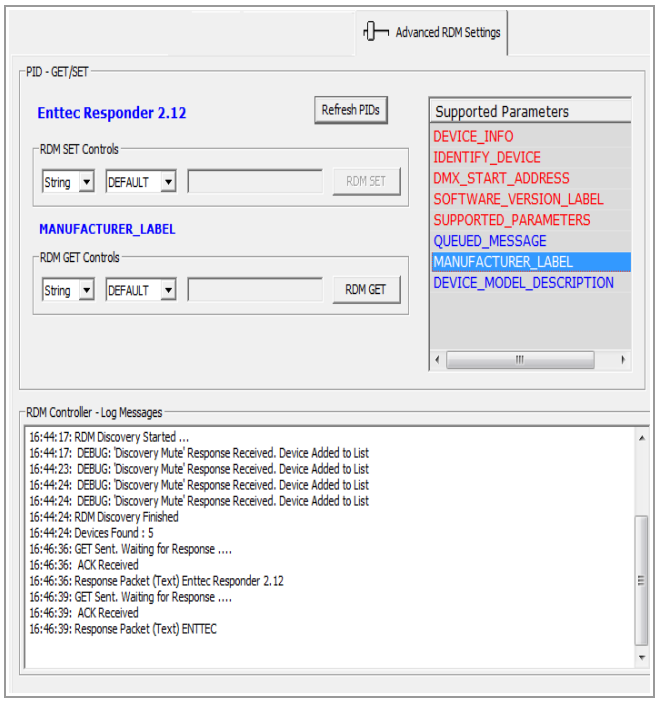
Any Warning, Error or Advisory Status Messages reported by the device are listed under "Status Messages". Critical messages are displayed in red. These messages are updated by manual refreshing only.

The following information might be displayed, if supported by the device:

- DEVICE_HOURS
- LAMP_HOURS
  LAMP_STRIKES

- LAMP_STATE
- DEVICE_POWER_CYCLE

RDM Controller: Advanced RDM



This panel allows GET/SET functions for all supported Parameters as reported by the device. Since not all PIDs allow both GET and SET, and since they may or may not have data to send, the relevant controls for each device are pre-selected based on the ANSI E1.20 specification.

Once a different device is selected, the list of PIDs that can be GET or SET will change accordingly.

There is also a log window which logs all relevant RDM messages that are sent or received by the RDM Controller. The log can be used to check for appropriately formed response by the responder.

Specifications

Due to continuous improvements and innovations of all ENTTEC products, specifications and features are subject to change without notice.

Item	Value
Power Requirements	300mA supplied by USB
Weight	0.66 lbs / 0.3 Kg
Shipped weight	0.88 lbs / 0.4 Kg
Length	3.03" / 77mm
Width	2.27" / 57.5mm
Height	1.58" / 40mm
Op Environment	0°-50°C
Connectors	1x 5-Pin Male XLR for DMX input 1x 5-Pin Female XLR for DMX output 1x USB B Male connector

Ordering Information

RDM USB PRO and related products can be ordered from our website or through your ENTTEC dealer using the following part numbers.

Part Number	Description
70530	RDM USB PRO
70029	5-pin to 3-pin DMX Adapter
79122	5-pin DMX Terminator
79126	0.5m 5-pin DMX Cable
79133	2m 5-pin DMX Cable

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