



*Conforms to RDM Standard ANSI E1.20 -2006*

## **Software Manual**

[www.enttec.com/rdm](http://www.enttec.com/rdm)

Version 2.5

01/11/2007

## Controller Features

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- Acts as a true RDM Controller, using USB PRO as hardware
- Discovers all RDM enabled responders on the line.
- Allows control over each responder individually
- Send RDM Get/Set to the selected responder
- Displays Responder Device Information Summary
- Supports multiple sub-devices for each responder found.
- Allows RDM Get/Set messages to be sent in various Formats
- DMX Patching, DMX fading, and other Controls for RDM enabled responders.
- Sensors, Status Messages displayed in easier to read user-interface
- Device List allows Drag & Drop DMX Patching as well as Auto Patch

## Description

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This documentation covers all the features and usage instructions for ENTTEC Controller Tool. It is recommended that you read the entire manual before using the Controller to control RDM based responders in your setup.

ENTTEC RDM Controller is fully ANSI E1.20 Compliant, and relies on the RDM Protocol stack developed by ENTTEC. The Controller Graphical User Interface makes it easy and fast to communicate with compatible (ANSI E1.20) devices which act as responders over the line.

The GUI is divided into four functional areas, namely:

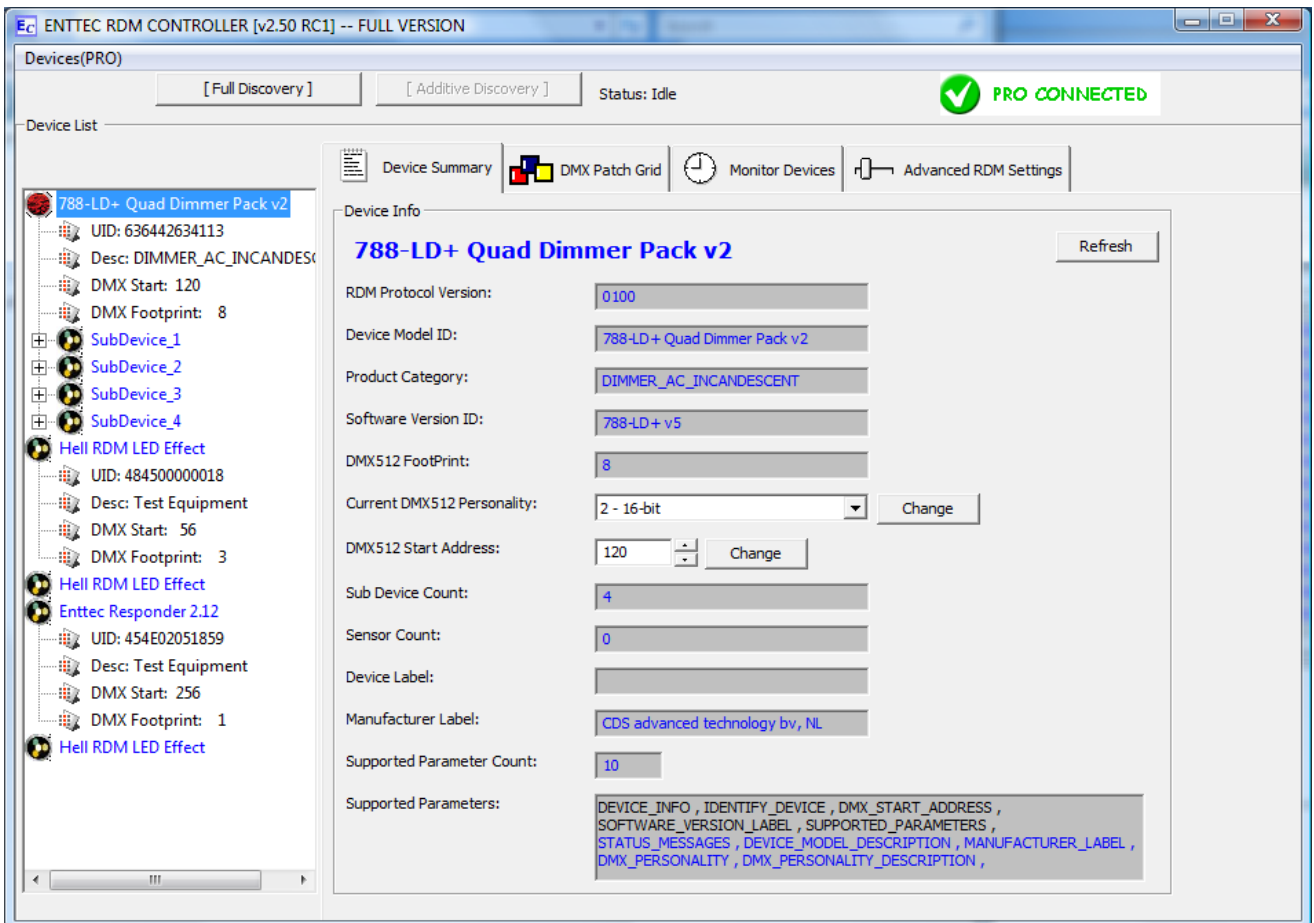
*Device Summary:* Useful information reported by the device

*DMX Patch Grid:* DMX Patching via drag & drop

*Device Monitor:* Sensor information & Status Messages

*Advanced RDM Settings:* RDM Get & Set for all supported Parameters

## Introduction to ENTTEC Controller



### Tab-based windows



*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

## Connection: PRO Hardware

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To operate ENTTEC RDM Controller a DMX USB PRO or a RDM USB PRO is required. Both devices must have Firmware v2.xx to run the RDM Controller.

Controller will work in **Full Version** with all features available only in the following setup:-

- 1) Using RDM USB PRO with Firmware v2.XX  
OR
- 2) Using DMX USB PRO with ENTTEC Dongle

For more information please look in **Troubleshooting** section .

For Demonstration/ evaluation of the software ENTTEC Controller can also be used with a DMX USB PRO with limited functionalities (no Dongle required). The **Lite version** only allows Discovery and access to the **Device Information** Tab.

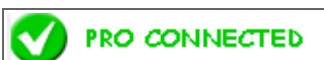
After connecting a RDM USB PRO to the PC using an available USB Port, open the Controller Application and click on **Devices** menu and all the connected PROS shall be listed under this menu. Click on the selected device to allow the Controller to connect to the PRO.

### **PRO Status**

Following graphics are used to highlight the current state of any PRO connected with the Controller:-



Initial State.



Selected PRO successfully connected



Wrong Firmware on PRO  
(2.xx is correct)



A previously connected PRO is not connected anymore

If the connection is not made correctly an error window will pop-up which could mean an I/O Error. In that case, try selecting the device again from the **Device** menu, and if it again shows an error, close the Controller tool, reconnect the PRO to the PC, and restart Controller and try to connect again.

## RDM Discovery

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ENTTEC Controller is designed to be used primarily for controlling Responders on the DMX network. A requisite step for RDM Controller is to find any such devices on the network. The "Discovery" button does this.



On activating "Discovery", the status changes to "Discovery in Progress". Since 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.



On completion of discovery, the Device List is updated with the Device UID of the responders that have been found.

### **Full Discovery**

A full Discovery, clears the existing Device List, Un-Mutes all the responders connected to the Controller, and then goes through the RDM Discovery process. Upon completion all devices found are added to the Device List, along-with any sub-devices.

Recommended for finding all Devices in your set-up. It may take a while, depending on the number of responders, but it will always find all compatible RDM responders.

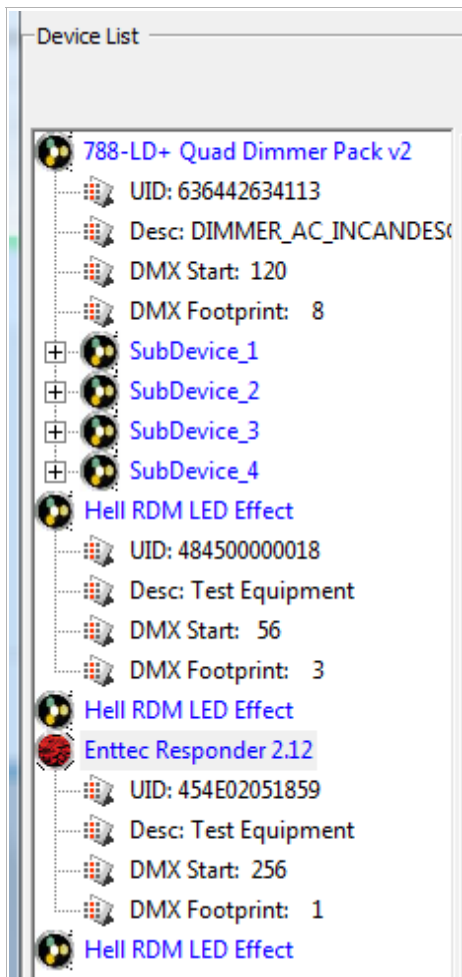
### **Add. Discovery**

Add. (Additive) Discovery, does not clear the existing Device List, it just goes through the RDM Discovery process. Upon completion any additional devices found are added to the Device List, along-with any sub-devices.

Recommended if any new responders are added to a current set-up and you want to quickly find the newly added responders in your set-up.

Note: Since "Add. Discovery" doesn't Un-mute the responders before doing discovery, it will only find the responders which are already un-muted.

## RDM Device List



Lists each device found via discovery with the following attributes:-

*Device Name* (DEVICE\_MODEL\_DESCRIPTION)

*UID*: Unique Device ID

*Desc*: Device Model ID

*DMX Start Address*

*DMX Footprint*

And all the sub-devices reported by any device are shown under that device with its own attributes.

Double Clicking on each device will toggle hide/show attributes for it. By default only the first device's attributes are shown.

The Device List is also useful in accomplishing drag & drop patching in the DMX patch Grid only in the Full Version

## Device Summary

Device Summary

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Device Info
Refresh

### 788-LD+ Quad Dimmer Pack v2

RDM Protocol Version:	0100
Device Model ID:	788-LD+ Quad Dimmer Pack v2
Product Category:	DIMMER_AC_INCANDESCENT
Software Version ID:	788-LD+ v5
DMX512 FootPrint:	8
Current DMX512 Personality:	<div style="border: 1px solid #ccc; padding: 2px; flex-grow: 1;">2 - 16-bit</div> <div style="margin-left: 5px;">▼</div> <div style="margin-left: 5px;">Change</div>
DMX512 Start Address:	<div style="border: 1px solid #ccc; padding: 2px; text-align: center; width: 40px;">120</div> <div style="margin-left: 5px;">▲▼</div> <div style="margin-left: 5px;">Change</div>
Sub Device Count:	4
Sensor Count:	0
Device Label:	
Manufacturer Label:	CDS advanced technology bv, NL
Supported Parameter Count:	10
Supported Parameters:	DEVICE_INFO , IDENTIFY_DEVICE , DMX_START_ADDRESS , SOFTWARE_VERSION_LABEL , SUPPORTED_PARAMETERS , STATUS_MESSAGES , DEVICE_MODEL_DESCRIPTION , MANUFACTURER_LABEL , DMX_PERSONALITY , DMX_PERSONALITY_DESCRIPTION ,

It Includes all the major information form the DEVICE\_INFO response, and gives the user the ability to change DMX Start Address and DMX Personality. It also shows the RDM Parameters supported by the device, with the default/required Parameters (as per ANSI E1.20) shown in black.

Once the device information is loaded on the panel for one particular device, the controller application's information about that device must be refreshed manually to keep it up-to-date, especially where conditions at the device may be subject to change.

## DMX Patch Grid (Full Version)

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 Start Address to be.

DMX Patch Grid																																
Export list..							Import...							Device Control..							[ Identify ]			Auto Patch			Status: IDLE			Save Patch to All		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27						
28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81						
82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108						
109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135						
136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162						
163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189						
190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216						
217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243						
244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270						
271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297						
298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324						
325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351						
352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378						
379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405						
406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432						
433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459						
460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486						
487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512							

- If you're not as familiar with it, here's a refresher. This procedure requires three steps.
- 1) place the mouse over the fixture you wish to patch in the list at the left.
  - 2) press the left mouse button down and hold it while moving the mouse to the chosen square on the right side
  - 3) release the mouse over the square corresponding with the number to which you wish it patched.



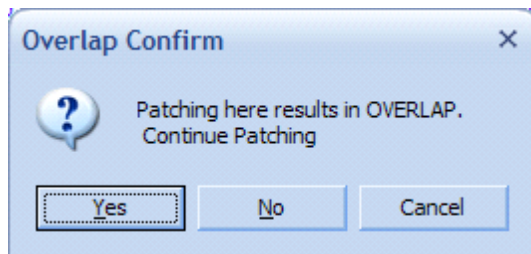
**DMX CHANNELS GRID**

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)

**Patching Channels to a device**

When patching your devices, if you select (by dropping) a channel which is already patched, you will be prompted by a message window that an **Overlap** may occur. Decide whether you wish to proceed anyhow or choose another location.



**Auto Patch**

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

**Save Patch to All**

Using the Manual Patch and Auto Patch functions of the program will display your new choices in the grid, but those changes will not be communicated to the devices until you issue a command to do so.

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".



**Export List**

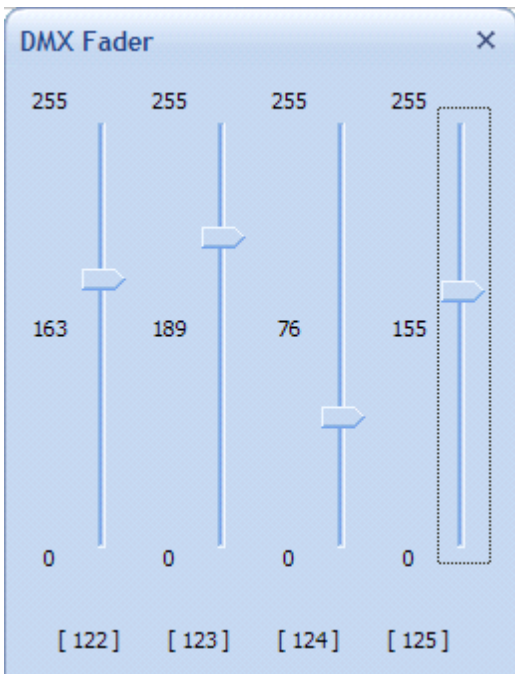
This command exports the Device List in a csv format. The fields included are: Device UID; Device Label; Manufacturer Label; and DMX Start Address. This csv file can then be loaded into other programs such as Microsoft Excel or for formatting and printing.

**[ Identify ]**

Identify: This button toggles on/off, and when activated it forces the device to exhibit a distinctive behavior designed by its manufacturer to help you locate it in your rig. To explore this more deeply, what really happens is that it sends RDM IDENTIFY\_DEVICE message (SET =1) to the selected device. To disable the Identify feature for that device (SET=0), just click the Identify button again to release it.

**Import List**

This button imports from a comma delimited (csv) file, a device list having the following format :  
 Device UID, DMX Start Address, .....  
 Using this feature will update the devices in the device List with a new Start Address for any of them that match the UID in the import List.



**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.

## Monitor Devices (Full Version)

The screenshot shows the 'Monitor Devices' window. At the top, there is a clock icon and the text 'Monitor Devices'. Below this, the 'Device Sensors' section displays the device name 'Sub\_1 - 788-LD+ Quad Dimmer Pack v2' in blue. To the right of the device name are an '[ Identify ]' button and a green circular indicator with the text 'DEVICE ONLINE'. Below the device name, the 'SENSORS:' label is followed by a 'Refresh' button. The main sensor display area shows 'Sensor 1: TEMPERATURE Filter/Triac temp'. It includes a horizontal bar with five green segments, indicating the current value. The bar is labeled with 'Min: 0 °C' on the left and 'Max: 100 °C' on the right. Below the bar, the text 'Lowest: 25 °C' is on the left, 'Current: 25 °C' is in the center, and 'Highest: 26 °C' is on the right. At the bottom of the window, the 'Messages/Info' section is titled 'STATUS MESSAGES:' and contains the text 'No Error/Warning Messages' in green.

### **Sensors**

This section of the Monitor Devices Tab 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 program shows the following information for each sensor displayed:

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)

### **Status Messages**

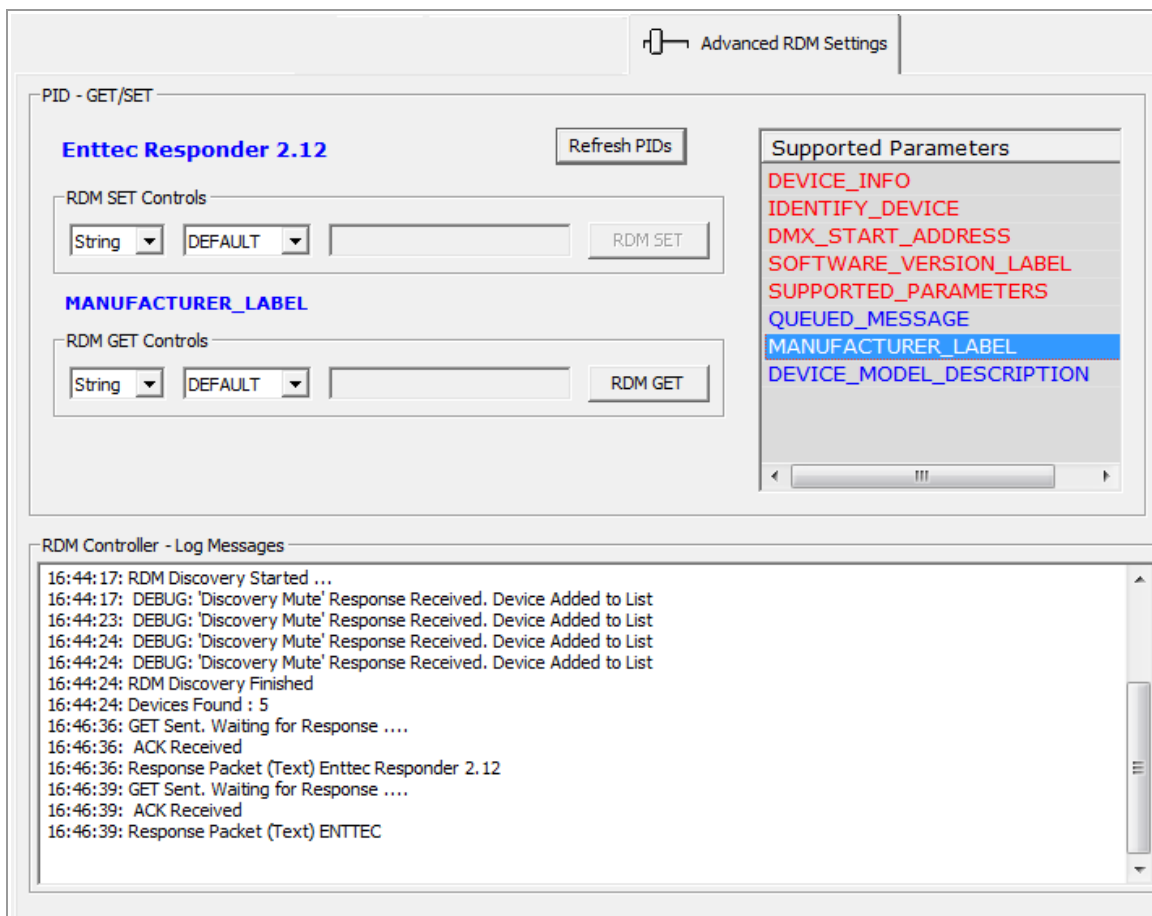
Any *Warning*, *Error* or *Advisory* Status Messages reported by the device are listed in this area. Critical messages are displayed in red. Currently these messages are updated by manual refreshing, but in future version auto-refresh options will be made available for convenience.

**Other Information**

There may or may not be other useful information displayed, depending on whether the device supports the following Parameter Ids:-

- DEVICE\_HOURS
- LAMP\_HOURS
- LAMP\_STRIKES
- LAMP\_STATE
- DEVICE\_POWER\_CYCLE

**Advanced RDM (Full Version)**



The final panel of the Controller program is the **Advanced RDM** features. Here there is the opportunity to perform 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.

**RDM GET/SET Controls**

Data-Type Selection :- String,Byte,Short,Long,Array

Data-Format Selection:- Default,HEX

Data Field

Get/Set Button: Sends the request to responder.

**RDM Log Messages**

The Log Window displays the ongoing RDM Communication and the response received in either Text / Hex format.

## Troubleshooting

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**Full Version**

The RDM ENTTEC Controller can only be operated in full-version by either of the two methods:-



(a) using DMX USB PRO and the ENTTEC Key Dongle. The dongle must be connected to the PC at all times, and before starting discovery



(b) using RDM USB PRO with firmware v2.xx

**Missing RDM Responses**

Please ensure that the responder(s) talking to the Controller are ANSI E1.20 compliant, and respond within the allowed time. ENTTEC RDM Sniffer ([www.enttec.com/rdm](http://www.enttec.com/rdm)) can be used to determine whether the RDM Communication is taking place as it should.

**DMX USB PRO problems**

Ensure you are using the correct Firmware 2.xx with Controller.

For more info visit ([www.enttec.com/dmxusbpro](http://www.enttec.com/dmxusbpro))

**PRO - Driver problems**

If Windows XP/2K crashes or becomes unresponsive, reporting a USB Driver issue, following is the workaround outlined here :- <http://support.microsoft.com/kb/283063>

A **quickfix** for the above is to disable the "**serial enumerator**" for the device:-

You can find it under

Device Manager -> Com ports -> Select PRO (properties) -> Port Settings -> Advanced  
Look for "serial enumerator"

Disable it and the problem should go away

**Other Problems**

If you are having problems with Discovery, or any other issues please feel free to ask our support team. (<http://www.enttec.com/support-center>)

## Appendix A: Definitions (as per ANSI E1.20)

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**Acknowledge:** a response to a request that indicates if the request was successful, and if not, why the request failed.

**Controller:** in any segment of an RDM communication system, only one device is free to initiate data transmissions. This device is termed a Controller.

**Discovery:** the process of finding RDM devices in an RDM communication system.

**Device:** a piece of electrical or electronic equipment attached to an RDM communication system capable of transmitting, receiving and/or passing RDM messages.

**Parameter/ PID:** a device attribute about which requests are sent and responses are made.

**Root Device:** the top level device in a piece of equipment containing, either physically or logically, sub-devices. An example of a root device is the top level rack controller in a dimmer rack.

**Sub-device:** a device contained, either physically or logically, in another device. Individual sub-devices do not have UID's, but are referred to by using the root device's UID. A dimmer that is part of a dimmer rack is an example of a sub-device.

**Unique ID (UID):** a number used to uniquely identify a device.

