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Continued from June 2008 CTI Newsletter

## RDM: What It Is, How It Works, and How You Will Use It.

By Martin Chisnall

### What on earth is RDM?

It's possible you've never heard of it, or maybe you have heard of it, but aren't too sure what it is. RDM stands for Remote Device Management. It is a new 'extension' to DMX, that ubiquitous system we all use to connect our lighting consoles to our dimmers, moving lights and other varied lighting (and sometimes not-so lighting) equipment.

Since the inception of DMX back in 1986, and through a couple of later revisions, it has always been a 'one way' control system. Data only ever flows in one direction, from the lighting controller outwards to whatever it may be connected to. And the controller has no idea what it is connected to, or even if what it thinks it's connected to is working, switched on, or even there at all!

RDM changes all that. For the first time, equipment can answer back!

An RDM enabled moving light, for example, can tell you many useful things about its operation: The DMX address it is set to, the operating mode it is in, whether its pan or tilt is inverted, and how many hours since the bulb was last changed, all without ever having to get out the ladder. RDM enabled fog machines can tell you how much fluid they have left in them, RDM enabled battery operated equipment can tell you how much charge is left in the battery and your RDM enabled dry ice machine can tell you if its water is hot enough yet. All this from the comfort of your control position.

But RDM can do more than that. It isn't limited to just reporting back, it can change things as well. As its name suggests, it can remotely manage your device. So if your fixture is set to the wrong DMX address, you can change it. If your widget is in the wrong mode, you can change it, and if your moving light pans left when all the others pan right, you can change it.

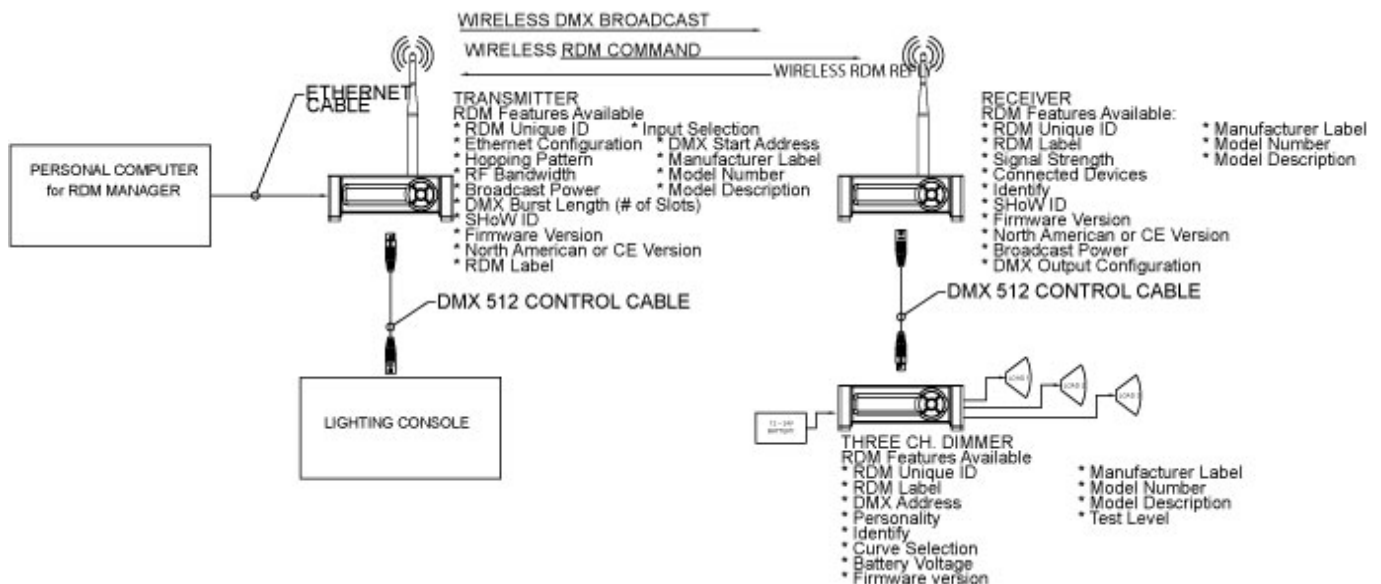
RDM allows you to assign friendly names to fixtures. No more looking up DMX numbers in pages of hook-up paper work. That moving wash light behind the door can finally be called 'door back light', and the scroller at the end of Electrics 2 can shrug off its former title of DMX2.435, and rejoice in its new name, #2 SL Pipe End Scroller.

### So how does it work, and what do you need?

The really clever bit is that RDM has been designed to work over your existing DMX network. It interleaves its messages with the regular DMX signal, over the same wires. There is no need to change your cable, but because the RDM messages now go in two directions, any in-line DMX processing you have will need to be changed for new RDM hardware. This will most commonly mean that DMX splitters and buffers will need to be upgraded for RDM ready devices.

You will also need some kind of RDM controller. Presently these are devices that plug in to the DMX line and talk the RDM language. They put the messages on to the DMX line, and listen for any replies, and display the results via an attached computer. In the future it is probable that lighting consoles and other lighting controllers will become available with RDM controllers built in. And then of course, you need some RDM ready equipment to connect to.

The RDM standard was officially released in 2006, but to this date, take up has been relatively slow. This is probably for a number of reasons, not least of which is that there are few RDM enabled products currently available. But this is slowly changing, initially led by the smaller 'niche' lighting control companies, but it may not be long before the big players start to add RDM to their existing product range. One available RDM application is City Theatrical's own SHoW DMX wireless DMX system. Here are some of the things it can do via RDM:



Additionally, take up in the major hire companies will involve some significant investment in new equipment. This may be hard to justify when their existing equipment stock works perfectly well, and perhaps we will only see RDM equipment becoming available for hire when it is bought to replace equipment which has reached the end of its life.

Everybody uses equipment in different ways, and some of the features RDM can offer may be of little apparent use to some people, whilst to others they may be the ideal solution to a long standing problem.

Take, for example, the ability to remotely set DMX addresses via RDM. For a production electrician fitting up a West End or Broadway show this may not seem incredibly useful. After all, all your moving lights have been prepped to within an inch of their lives in the shop, custom gobo and colour loads have been installed, and all the units pre-addressed and double checked. But consider a small lighting company doing a one night stand, loading in that afternoon for a show that night. A random selection of equipment has turned up, none of it pre-addressed, and the electrician is late to hook up the power. It's all got to go up in the air ASAP. In this situation, the ability to set DMX addresses via RDM could be a life saver.

RDM also has the ability to read and report operating statistics and error conditions from any enabled equipment that supports it. This opens up the possibility of remotely monitoring the condition of your lighting rig and getting notice of failed equipment, or even advanced notice of things that may be cause for concern. For example, a moving light that reports a very high bulkhead temperature may be suffering from a failed fan or clogged filter, or a scroller that reports a high motor current may have a jammed scroll.

#### **What does the future hold?**

In the future it may be possible to remotely monitor a lighting rig over the internet, enabling off site hire and production companies to know the health of the rig, and if something fails, what spare parts to turn up with to effect a speedy and efficient repair.

But in the future, RDM may lead to the development of a host of new devices that don't even exist at the moment. Devices that, in themselves, provide no visual effect on stage, but will exist purely because they can talk back and tell you something useful about your production, over the existing DMX cabling.

For example, how about a three phase power meter which clamps on to your incoming mains supply to your dimmer racks, and can report the line voltage and power consumption back to the lighting operator using RDM. No more guessing how much further you can push those fuses! Or for an outdoor event, an anemometer mounted on top of your FOH lighting tower feeding back wind speed to the lighting operator without the need to run a dedicated cable.

The possibilities are huge, and I suspect RDM will find applications that we cannot even imagine at the moment.

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