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Continued from September 2009 CTI Newsletter

What's New In RDM? A Conversation With Peter Willis

When we attended the PLASA show in London in early September we stopped by the PLASA Plugfest to see what was new in the RDM world. CTI's SHoW DMX, the world's first wireless DMX with RDM, was represented by our Transmitter, Receiver, and Dimmer. What was striking though, was the amount of new and sophisticated RDM equipment that has suddenly appeared on the scene. Most notably, two lighting consoles with RDM built in, one from ETC and one from Zero 88. This finally gives users a "front end" for the growing amount of RDM equipment being produced.

We thought it would be a good time to get an update on RDM so we asked one of the leaders in the field, **Peter Willis** of Howard Eaton Lighting Ltd. a few questions about the state of the technology.

CTI: Please briefly describe what RDM is.

Peter Willis: Remote Device Management (RDM) is a means of interrogating and adjusting the settings of lighting equipment remotely using the DMX512 link. Usually, this implies a connection via the DMX cable network, but there are some exciting options being developed that even allow the discovery of RDM-enabled products at the far end of wireless DMX systems.

Technically, RDM is an extension to the DMX512 protocol that allows bi-directional communication on the original DMX data pair. It allows RDM-enabled devices to co-exist with compliant DMX products within the same infrastructure.

CTI: Can you update us on the general state of the RDM world? What has happened recently?

Peter Willis: The number of manufacturers acknowledging the benefits of RDM is growing rapidly, and as their new product developments come on the market, we are seeing a whole catalogue of products that are truly RDM-enabled and not, as previously claimed, just “RDM ready.”

We have recently seen RDM integrated into entry-level lighting desks to make remote patching and configuring of dimmers and fixtures faster and easier. The dream that a fixture can tell the lighting desk how many slots of DMX512 data it needs, and which slot controls pan or tilt or focus etc., is now a reality.

CTI: What is causing the upsurge in RDM related manufacturing activity?

Peter Willis: The adoption of DMX control in the architectural lighting market has been a key influence. The multi-drop (or daisy-chain) nature of the electrical standard behind DMX512 (EIA485), as distinct from the star cabling configuration of Ethernet, is often preferred in these installations.

As products are installed in hard to get to locations, and are often “set and forget,” RDM allows manufacturers to save cost on user interfaces (even those annoying DIP switches cost money) and actually provide the installer or commissioning engineer an easier way of setting things up.

CTI: How might the growing use of RDM affect the average technician or designer?

Peter Willis: The unofficial slogan of the RDM ‘design team’ – the group of us who got together under the umbrella of the ESTA Technical Standards Program and created the standard – has always been simply, “Is it going to be faster than climbing up the ladder?” The whole idea of RDM is to allow the technical team faster, more reliable ways of doing things. Sure, you may still have to get out the ladder to change a blown lamp, or replace some broken mechanical part, but RDM allows you to undertake a lot of the housekeeping tasks, like resolving duplicated DMX addresses, changing fixture personalities, checking lamp life and so on, quickly and safely from the ground.

CTI: What do you see happening in RDM gear over the next two or three years?

PW: There have been several important product launches of lighting control consoles with inherent support for RDM in the past few months, and I’m sure there are more in the pipeline.

Work is underway to establish more RDM commands that are specifically dimmer related and we anticipate that this will encourage more dimmer manufacturers to come on board.

CTI: Will all DMX lighting gear eventually be RDM enabled?

Peter Willis: Not all lighting desks will necessarily be RDM enabled, but I expect the majority of "responders" – moving lights, dimmers, scrollers, LED drivers and LED light sources will be. Now that there is a wider range of RDM controllers available, product designers can reduce their dependency on address switches or complex user interfaces for each new product. The use of DIP switches to set DMX addresses is fiddly and prone to misinterpretation, and LCD interfaces still cost money, and are either too dark or too bright when up in the rig!

CTI: What are the barriers to the widespread adoption of RDM?

Peter Willis: Ignorance. Believe it or not, there are still people in our industry who don’t really understand DMX systems, or who somehow believe that Ethernet is going to suit everything. RDM was specifically designed to allow the use of existing DMX cables – both the ones in the wall of your venue, and those that you will find supplied by your rental houses. One point to note about widespread RDM usage is that DMX splitters may have to be updated to accommodate bi-directional RDM data.

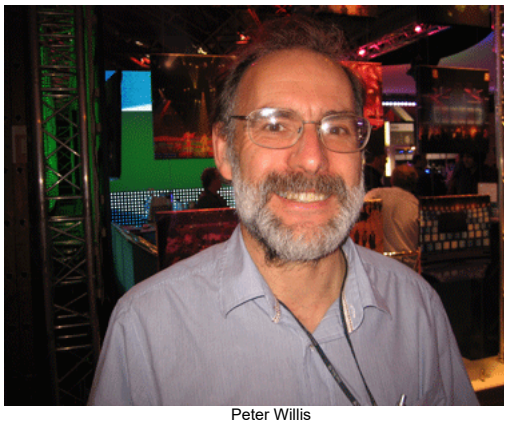
CTI: How do you answer those who say that DMX is dead and everything will use Ethernet Protocols?

Peter Willis: Ethernet and EIA485 cabling systems actually complement each other - the use of Ethernet for bulk data transfer makes perfect sense point to point, but not if you have to connect to ten, twenty or thirty devices along a lighting pipe. And for cable connections, Ethernet is generally limited in terms of distance, and RJ45 connectors are not all that robust. DMX512-A still has a lot to offer, and there is a big installed base. RDM allows you to build on that.

CTI: By the way, how did you become an RDM expert?

Peter Willis: Hands-on experience! And a passion for the industry in which I’ve been lucky enough to work in around the world. I was part of the team that wrote the RDM standard (and helped in the revisions of the DMX512 standard), and have been active in promoting it ever since. In my job for Howard Eaton Lighting, we create custom gadgets and special effects for many of the big commercial musicals, and are forever fitting DMX-controlled devices in inaccessible locations, or hidden away under the stage. I’ve been involved in far too many installations where we didn’t have RDM enabled devices, and lost so much time trying to fix silly errors in configuration and addressing.

For the past few years I’ve coordinated demonstration areas at PLASA and LDI to encourage the promotion of RDM amongst manufacturers and users. I’ve also worked with a number of companies to provide training for their design teams, and have undertaken RDM product or design reviews.



Peter Willis

The PLASA Interoperability Pavilion, known as the "Plugfest."

ETC's RDM enabled EOS console, with City Theatrical's SHoW DMX Transmitter at the left.

More RDM gear: CTI SHoW DMX Receiver, Howard Eaton RDM Candles, CTI SHoW DMX Dimmer.

I've been in the entertainment lighting industry all my life, and had my electronic gadgetry used in venues and shows all around the world. We've been using RDM for many years without the customer knowing or caring – for them it just worked!

About Peter Willis:

Peter Willis is currently Development Director for Howard Eaton Lighting Ltd. a UK based company specialising in the custom development and fabrication of theatrical effects and electrics for West End and Broadway Musicals.

Originally from Australia , he has worked on lighting control, dimmer, special effects and data distribution projects both "Down Under" and in the UK , Europe, Russia and North America .

He has been instrumental in the creation of many unusual DMX controlled lighting effects for visitors centres and commercial theatre, in often harsh conditions, and worked for many years on the development of the Galaxy range of lighting consoles for Strand Lighting in the UK. Before joining Howard Eaton, Peter designed the Andera Entertainment Technology range of DMX data distribution products, pioneering the concept of distributed buffering and improved system topologies. He was also instrumental in the design of SoftCUE – one of the first programmable Stage Management cuelight systems. Howard Eaton projects include integrated Wireless Dimming systems and numerous LED and other gadget designs for theatrical applications.

With a degree in Electronics and Communications Engineering from RMIT (Melbourne , Australia), Peter is an active participant in the ESTA Control Protocols Working Group (CPWG), and as a task group member, an advocate of Remote Device Management over DMX networks (RDM).

When not involved in the 'big' scheme of things, he continues to light local events for a small village in Sussex, England, where mains power (or lack of it) is more important than DMX, and wire-less means you have left the most important cables at the last job.

Peter Kirkup of Zero 88 demonstrating.

Peter Willis and White Light's Roger Hennigan