



RDM – REMOTE DEVICE MANAGEMENT

INFORMATION
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INTRODUCTION

Over the last twenty years, DMX512 has established itself as the international standard protocol for controlling lighting equipment. Though the protocol generally works well, it is limited by the fact that it only works in one direction, sending information from the control console to the dimmers, moving lights or other devices, and by the fact that can only be used to send level information.

RDM is an extension to DMX designed to improve on that by allowing bi-directional communication between console and controlled devices, and allowing RDM-compliant devices to be configured remotely - so that, for example, you could set the address or change the mode of a device from the console, rather than having to climb a ladder to make the change at the light itself.

RDM stands for Remote Device Management, and is officially known as ANSI-ESTA E.120 Entertainment Technology - Remote Device Management over USITT DMX512. The standard was developed by the ESTA Technical Standards Program in the USA.

USES

The intention of RDM is to allow a lighting console to find, identify and control a remote lighting device without needing to physically gain access to the device – so, if a light was rigged with the wrong DMX address set on it, you could theoretically set the right address from the ground. RDM also allows equipment to talk back to the controller – a moving light could tell you whether its lamps was struck, a scroller could alert you if its motor failed or its scroll ripped.

Examples already in use include systems that address small LED fixtures that do not have any physical controls, systems that automatically address large arrays of LED fixtures, and systems that automatically collect information on how often a colour scroller has changed colour - when the scroll ultimately breaks the system will record this information, so it can predict and warn when the replacement scroll approaches the end of its life.

To make RDM control possible, every RDM device has a unique identification code built in to it. An RDM controller - which may be a lighting console, or an external RDM control device such as Wybron's Infotrace or Artistic Licence's JumpStart - will first use a 'discovery' process to find all of the devices connected to it. Once the controller knows what's out there, the user can choose to set a DMX address, control or interrogate the devices.

OPERATION

RDM is designed to operate alongside conventional DMX512 equipment. Information is transmitted from the console to the lighting devices using alternative 'start codes' - identifiers as to what the transmitted information is - so as not to interfere with existing 'lighting level' DMX data. Information is transmitted back to the console using the same cables as information transmitted from console to devices, which means that RDM will function using any existing DMX cable, including 3-pin XLR cables which are in common use despite not actually meeting the DMX512 standard.

The biggest limitation for using RDM in existing lighting systems is that RDM will NOT operate through standard, non-RDM DMX splitters or opto-isolators since they have no provision for handling data being sent back from the lights; new RDM-compatible splitters are now available.

Other issues arise from the speed of the discovery process – which can be leisurely for large rigs – and the fact that it is not yet 'bedded in' as a standard, leading to occasional incompatibilities between products. RDM devices can generally have their RDM functionality disabled, which can ensure full compatibility with non-compliant or older equipment in a show-critical environment.

If you require further information about RDM, please contact White Light
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