ENTTEC

RDS SPLITTERS

(PN 70037 OR 70036)

Box Contents

- RDS4 (70037) or RDS8 (70036)
- This user manual
- Rack mount ears (79105) – only with RDS8

Features

- RDS4: 1 DMX input and 4 DMX outputs. All connectors are XLR 5-Pin.
- RDS8: 1 DMX input and 8 DMX outputs. All connectors are XLR 5-Pin.
- Normal mode: splitter actively repeats RDM traffic bidirectionally while level information goes from controller to DMX devices as usual
- Filter Mode: Single button-press allows all RDM traffic to be filtered out, for legacy devices which might flicker if they see RDM messages on the line
- Bypass Mode: Another button bypasses intelligent RDM functionality completely to work as a traditional DMX splitter would
- Fully compliant with USITT DMX512-A
- RDM enabled - ANSI E1.20 compliant
- Internal auto-ranging power supply
- 1500 V full isolation

Safety

- Do not expose the unit 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 certified DMX cables for better reliability.

Basic Setup

The RDS4 and the RDS8 are hubs/splitters which are built with Remote Device Management data in mind. They can be used as the backbone for creating a bidirectional DMX512-A control network where a controller that is RDM-enabled, and a number of DMX512-A fixtures or dimmers (with or without the RDM technology) can communicate with each other.

The RDS4 and RDS8 comply with the newest industry standard DMX512-A and RDM protocols (American National Standard E1.20-2006) and will work seamlessly with other devices that comply with those standards as well.

Installation of an RDS device is as simple as plugging in the mains power and connecting your controller to the male input and your fixtures or dimmers to the females. If you wish to make or break connections while the device is powered on, there is nothing wrong with this from the RDS device's point of view. (Some manufacturers of fixtures may specify otherwise but the normal procedure would be that sequence of plugging shouldn't matter.)
The RDS4 and RDS8 have an auto switching power supply so that the mains can be anything from 96 to 240 volts @50-60

Hz AC. Connection to power turns the unit on. There is no power switch to be toggled.

The DMX Out sockets allow you to connect the devices you are controlling to the RDS splitter. Please consult standard DMX512A wiring practice (based on RS485 serial protocol if that is more familiar to you) for advice on how to arrange a DMX512A network.

The DMX In socket is for making a connection to your controller or to other RDS devices that are between the controller and the RDS device being installed.

The RDS4 and the RDS8 are constructed with state of the art isolation placed next to the inputs and all the outputs. That means you have 1500V worth of protection against harmful surges and transient spikes from output to output, as well as between any of the branches and the controller plugged to the input.

As there is no power switch, when the RDS4 or RDS8 is plugged in, it should be powered on. You can confirm this by noticing that when first connecting it, the SYSTEM OK LED status indicator light should come on and then blink regularly.

LED Status

The RDS come with 4 led lights, that indicate operational status:

- **SYSTEM OK**: LED flashes twice per second (2Hz) when unit is healthy and not bypassed.

- **DMX**: LED flashes at 8Hz each time a DMX packet is received, and not bypassed

- **RDM**: LED flashes at 8Hz each time a RDM packet is received and neither bypassed nor filtered.

- **BYPASS**: Lights up in a constant fashion when Bypass mode is enabled.

BYPASS Button

This button allows the splitter to work in a mode which is called "Bypass" because all RDM functionality is disabled. The microprocessor which handles such tasks is not in use, and you can think of the bypassed splitter as working the same way as any typical non-RDM splitter would.

RDM Filter Button

This button chooses between a normal operation of the splitter, which is to facilitate the passing of RDM messages in both directions, and a filtration mode.
That means any legacy fixtures which respond poorly to the presence of RDM signals can be protected from them, eliminating flicker or any other unwelcome behaviour.

Using the RDS4 or RDS8

There are 3 modes the RDS can be used in. Normal, Filtered, or Bypassed.

Normal Mode

	Button	Position
Normal Mode	**BYPASS**	**IN**
	RDM Filter	**IN**

When the RDM Filter Button is pressed in (and the unit is not in Bypass mode), that signifies Normal operation. In Normal mode of operation, messages containing RDM information will be passed bidirectionally between controller and RDM responder devices connected to the outputs. Each time this happens the RDM LED will blink.

Because the normal mode is engaged when the button is pressed in, it is safe from accidentally being disengaged by a casual press.
You have to really try to change the button's position to put it into Filtered mode, which reflects what we believe will be the less common way to use the device in real world applications.

Filtered Mode

	Button	Position
Filtered Mode	**BYPASS**	**IN**
	RDM Filter	**OUT**

When the RDM Filter Button is not depressed (it will stick out relative to the front panel more) then your RDS device is in the Filtered Mode. The RDM LED does not blink when in this mode because no messages will be passed.

When to use Filtered Mode?

There will be times when legacy equipment of an unusual type is used, which is intolerant of RDM messages, and flickering or other irregular behaviour may occur. The Filtered mode is designed to correct this problem, by forwarding the DMX instructions with the RDM messages stripped out.
Helpful Tip: Use a wiring scheme that makes the most of this feature, by placing all the legacy fixtures which are RDM-phobic on one RDS splitter if possible.

BYPASS Mode

	Button	Position
BYPASS Mode	**BYPASS**	**OUT**
	RDM Filter	**IN**

When you select BYPASS, regardless of the position of the RDM Filter button, the internal microprocessor is completely bypassed. The Input signal is simply copied to each of the Output connectors, regardless of what the Input signal is (ie – if RDM signals are present on the input, then RDM will be passed through to the output). However as the processor is not in use in Bypass mode, no RDM signals will be passed back from the fixtures to the controller.

The BYPASS LED will light up to indicate that you're in this state, but none of the other LEDs (System OK, DMX etc) will be illuminated, as the processor is no longer monitoring the status of the signal being received. The outputs are still fully electrically isolated from each other and from the input.

Prevention of Accidental Use

To prevent BYPASS Mode being accidentally engaged, the BYPASS switch is designed to be OFF when depressed, or sitting flush with the outer case of the RDS splitter. To enter BYPASS Mode, the user must press and release the button, so it protrudes from case. The BYPASS LED will illuminate immediately.

When to use the Bypass Mode?

In Bypass Mode the RDS provides fully isolated outputs that are replicated from the input signal, so it is suitable for use with completely non-RDM networks (ie – both console and fixtures running standard DMX-512 only) or even non-DMX protocols, such as the High End, Martin or NSI protocols in use in some older equipment.

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.

Using Splitter in DMX setup

RDS Splitters allow you to daisy-chain your fixtures to conform to DMX practices. Up to 32 devices may be connected in a daisy-chain, with a terminator on the last device.

Using a RDS Splitter can extend both cable distance (as

the signal is regenerated and re-transmitted) and the number of devices (up to 32 per branch).

Please note: DMX can only travel up to 100 meters before the signal weakens. Using a splitter will allow you to extend your DMX setup and make it more reliable.

It is important to follow these DMX specifications as per USITT DMX512-A to ensure full compatibility between DMX/RDM fixtures and RDS Splitters that allows for optimum use of these Splitters.

RDS4 Specifications

Item	Value
Power Requirements	85 - 264V AC
Input Frequency	47 - 63Hz
Weight	0.75Kg / 1.65 lbs
Shipped weight	1.45Kg / 9.92 lbs
Length	300mm / 11.82"
Width	115mm / 4.53"
Height	44.45mm / 1.75"
Op Environment	0° -> 50°
Connectors	1 * IEC Mains Connector 1 * 5-Pin Male XLR for DMX input. 4 * 5-Pin Female XLR for DMX Output

RDS8 Specifications

Item	Value
Power Requirements	90-260V AC
Input Frequency	50/60Hz
Weight	1.8Kg / 3.96 lbs
Shipped weight	2.6Kg / 9.22 lbs
Length	432mm / 17"
Width	115mm / 4.53"
Height	44.45mm / 1.75"
Op Environment	0° -> 50°
Connectors	1 * IEC Mains Connector 1 * 5-Pin Male XLR for DMX input. 8 * 5-Pin Female XLR for DMX Output

Ordering Information

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

Part Number	Description
70037	RDS4
70036	RDS8
70029	5-pin to 3-pin DMX Adapter
79122	5-pin DMX Terminator
79126	0.5m 5-pin DMX Cable
79133	2.0m 5-pin DMX Cable
79135	5.0m 5-pin DMX Cable
79135	10.0m 5-pin DMX Cable

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