



User Guide

DMX TESTER



Warranty

Leviton Manufacturing Co Inc. warrants this control console to be free of material and workmanship defects for a period of two years after system acceptance or 26 months after shipment, whichever comes first. This Warranty is limited to repair or replacement of defective equipment returned Freight Pre-Paid to Leviton Lighting Management Systems Division at PO Box 2210, Tualatin, Oregon 97062, USA. User shall call 1-800-959-6004 and request a return authorization number to mark on the outside of the returning carton, to assure that the returned material will be properly received at Leviton. All equipment shipped back to Leviton must be carefully and properly packed to avoid shipping damage. Replacements or repaired equipment will be returned to sender freight prepaid, F.O.B. factory. Leviton is not responsible for removing or replacing equipment on the job site, and will not honor charges for such work. Leviton will not be responsible for any loss of use time or subsequent damages should any of the equipment fail during the warranty period, but agrees only to repair or replace defective equipment returned to its plant in Tualatin, Oregon. This Warranty is void on any product that has been improperly installed, overloaded, short circuited, abused, or altered in any manner. Neither the seller nor Leviton shall be liable for any injury, loss or damage, direct or consequential arising out of the use of or inability to use the equipment. This Warranty does not cover lamps, ballasts, and other equipment which is supplied or warranted directly to the user by their manufacturer. Leviton makes no warranty as to the Fitness for Purpose or other implied Warranties.

Notice

Although the information contained within this user guide is believed to be accurate at the time of printing, it is not guaranteed to be without fault and is subject to change without notice. Future software releases may change the features or operation of this product. For current information contact:

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Table of Contents

Chapter 1 Introduction	1
About the DMX Tester	2
Features.....	2
Specifications	2
Warnings !	2
Front / Rear Panel Diagrams.....	3
Using this Guide	4
Text Conventions.....	4
Terminology Definitions.....	4
Contacting Technical Support	4
Chapter 2 Operation	5
Getting Started.....	6
Power On	6
Internal Battery Operation.....	6
Low Power Indication.....	6
Sleep Mode	6
LCD DMX Display	6
LCD Backlight	6
DMX OUT	7
DMX Send Frequencies.....	7
DMX OUT1: Setting Channel(s) at Same Level	7
Clearing DMX OUT1 Levels	8
DMX OUT2: Setting Channels at Different Levels....	8
Clearing DMX OUT2 Levels	9
Auto Fade	9
DMX IN	10
Receiving DMX IN	10
Clearing DMX IN Levels	10
DMX Cable Test.....	11
Scope Output.....	11

Chapter 1 Introduction

This chapter is intended to orient you to the DMXSM-TS1 and user guide.

The following sections are covered:

- About the Tester
 - Features
 - Specifications
 - Warnings
 - Front / Back Panel Diagrams
- Using this Guide
 - Text Conventions
 - Terminology Definitions
- Contacting Technical Support

About the DMX Tester

Thank You for purchasing the Leviton DMXSM-TS1 DMX Tester. With the DMXSM-TS1, you can troubleshoot various DMX problems, including a variety of data and cable tests. To optimize the performance of this product, please read this user guide carefully to familiarize yourself with the basic operations of the unit.

Features

- Light and Portable
- DMX IN/OUT: Receives and Sends up to 512 DMX channels
- LCD readout in Decimal, Percent or Hex
- Rechargeable battery
- LCD background light
- Sleep mode to extend battery life

Specifications

- Power supply: DC 12V / 1A
- Control signal: DMX 512
- DMX Connectors: XLR 5-pin Male / Female, Scope
- Weight: 750g (1.65Lb)
- Dimensions: 133L x 100W x 50H mm (5.24L x 3.94W x 1.97H inches)

Warnings !

! Do not expose unit to rain or moisture, or damage may occur.

! There are no user serviceable parts inside. Do not attempt any repairs yourself, as doing so will void the warranty. Please contact Leviton Technical Support if the unit is not functioning properly.

! If the unit has been stored in a cold environment (below 40°F), do not turn the power on until it warms up or else damage may occur. Avoid situations that could cause condensation to occur inside the unit.

! Make sure that the mains power outlet matches the required voltage for your unit.

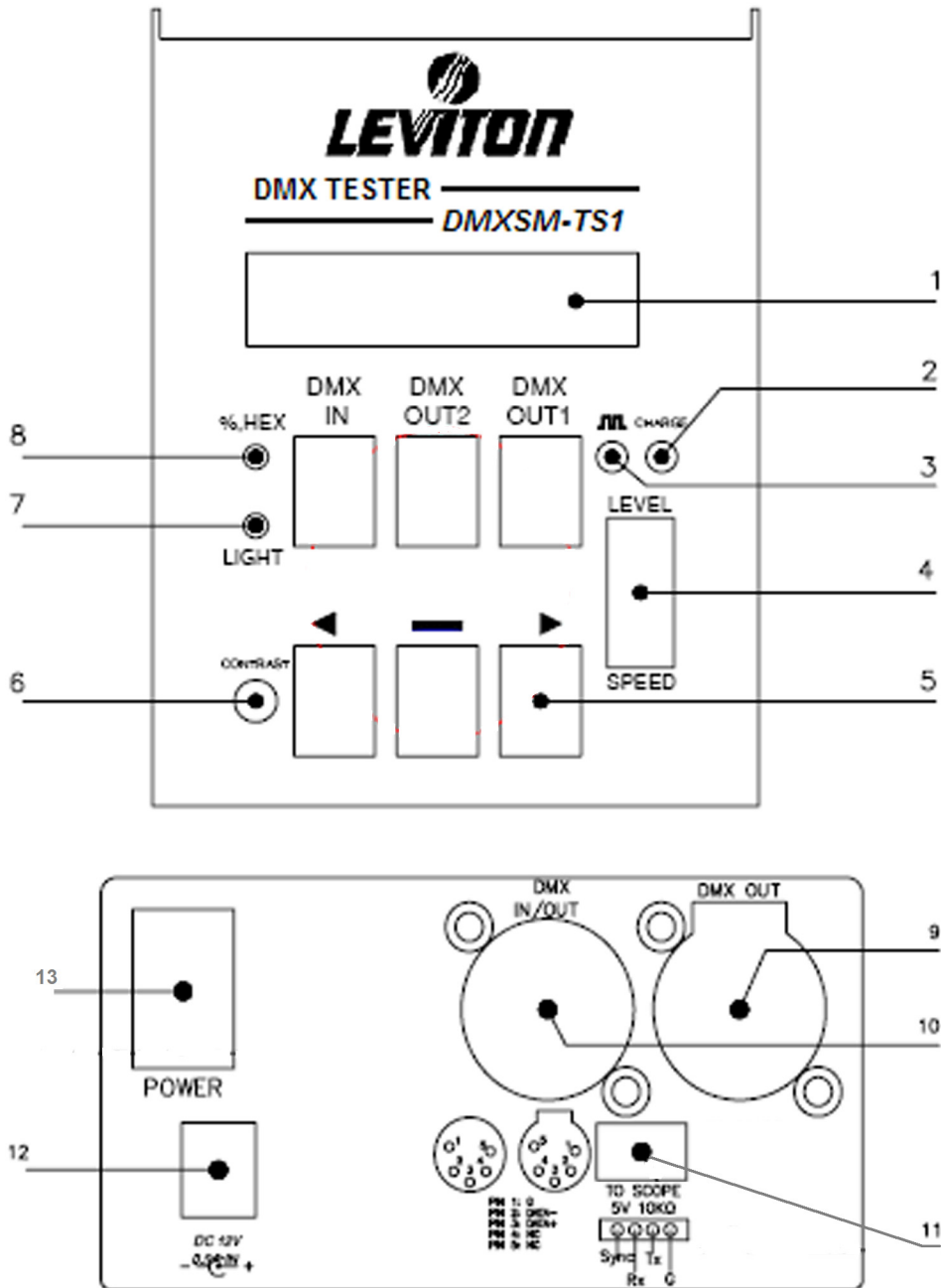
! Do not operate this unit if the power cord is frayed or broken.

! Do not remove the ground prong from the power cord. The ground prong is used to reduce the risk of electrical shock and fire in case of an internal short.

! Do not operate this unit if it becomes damaged in any way.

! Never operate this unit with its cover removed.

Front / Back Panel Diagrams



1	LCD Display	8	Hex / Decimal / Percent Button
2	Battery Charge Indicator	9	DMX Signal Output: XLR 5 PIN
3	External Power Indicator	10	DMX Signal Input / Output: XLR 5 PIN
4	Level / Speed Wheel	11	Scope Signal Connector
5	Function Keys	12	Power Supply Input DC 12V/1A
6	LCD Display Contrast Button	13	Power Switch
7	LCD Background Light Button		

Using this Guide

Text Conventions

Key control names are shown in **Bolded Letters** and appear inside brackets [].

For example:

The DMX IN key appears as:

[DMX IN]

Terminology Definitions

Channels: Channels are the most basic unit of control and are used for setting lights to various intensity levels. A channel is represented by a single fader or bump button on a control console.

Scene: A Scene is a recorded lighting look that is comprised of individual channel levels.

DMX 512: There are different types of dimmer control signals, also known *as dimmer protocols*. The current standard for dimmer protocols is known as DMX 512.

Contacting Technical Support

If you cannot find answers in the user guide, please contact Technical Support at www.lms.leviton.com and we will be glad to answer your questions. You may also call us during regular business hours at 1-800-959-6004. Please have the console model number and serial number available when you call.

Contact Information

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Chapter 2 Operation

The following sections are covered in this chapter:

- Getting Started
 - Power On
 - Internal Battery Operation
 - Low Power Indication
 - Sleep Mode
 - LCD DMX Display
 - LCD Backlight
- DMX OUT
 - DMX Send Frequencies
 - DMX OUT1: Setting Channel(s) at Same Level
 - Clearing DMX OUT1 Levels
 - DMX OUT2: Setting Channels at Different Levels
 - Clearing DMX OUT2 Levels
 - Auto Fade
- DMX IN
 - Receiving DMX IN
 - Clearing DMX IN Levels
- DMX Cable Test
- Scope Output

Getting Started

Power On

1. Plug the AC adapter into a 120V AC mains outlet.
2. Plug the DC power connector into the DC power jack located on the rear of the unit.
3. Plug the DMX signal cable(s) into the DMX IN or OUT connectors on the rear of the unit.
4. Turn Power Switch On.

Internal Battery Operation

The unit uses four 1.5V AA size rechargeable NiMH batteries to operate without the AC adaptor. This allows for up to three hours usage (100 hours standby time). Make sure to leave the unit plugged in for at least five hours in order to fully charge the internal batteries.

NOTE

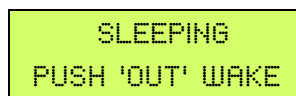
If you need to operate the tester under battery power and do not have time to charge it, four standard 1.5 V alkaline batteries may be used. It is very important to note that the AC adaptor must not be connected while alkaline batteries are installed or damage to the unit and/or AC adaptor could result. To change the batteries, remove the four screws on the back of the tester, then remove the rear cover and replace the batteries.

Low Power Indication

If the internal batteries are running low, the first line of the LCD will switch between a "Batter Low" warning and whatever function the tester is currently in. To conserve power, the unit will enter a "Sleep Mode" after one minute. To wake the unit up, press the **[DMX OUT1]** key.

Sleep Mode

The tester will enter a power saving "Sleep Mode" if it's not used for five minutes (or one minute, if the batteries are running low. See *Low Power Indication* section above). The LCD will display the following screen:



The image shows a rectangular LCD display with a black background and white text. The text is arranged in two lines: "SLEEPING" on the top line and "PUSH 'OUT' WAKE" on the bottom line.

1. To wake the unit up and allow for normal operation, press the **[DMX OUT1]** key.
2. To turn off the sleep mode, press and hold the **[LIGHT]** key while turning the power on.

LCD DMX Display

The tester allows for the display of DMX IN / OUT levels in either Percent, Decimal or Hexadecimal units. Pressing the **[% ,HEX]** key will cycle through the three options.

LCD Backlight

To conserve power, the LCD backlight will automatically turn off after 10 seconds. Press the **[LIGHT]** button to turn back on.

DMX OUT

DMX Send Frequencies

Two DMX send frequencies are available when generating DMX from the tester: 20 times per second (20/s) and 40 times per second (40/s). 20/s is the default setting. 40/s can be used to test devices at a faster rate should that rate be required for your application. To change to 40/s, see Note following each procedure.

DMX OUT1: Setting Channel(s) at Same Level

The **[DMX OUT1]** function is used to send a single channel or range of consecutive channels at the *same* DMX level. Please see the following examples.

To set the level of a *single channel*, follow the procedure below.

Procedure:

1. Turn Power On or, if already on, press **[DMX OUT1]** until following screen appears:

```
DMX OUT 20/S
CH001 ----- 0%
```

2. Press the **[◀] [▶]** keys to select channel:

```
DMX OUT 20/S
CH002 ----- 0%
```

3. Adjust the **[Level Wheel]** to set DMX level:

```
DMX OUT 20/S
CH002 ----- 80%
```

Notes:

To scroll, press and hold the **[◀] [▶]** keys.

Ch's 2 level is output at 80%.

NOTE

To send 40/s DMX OUT, press **[DMX OUT1]** in Step 1 above until "DMX OUT 40/s" appears.

To set a *range of channels* at the same level, use the **[-]** key. For example, to set channels 2 thru 24 at 80%, follow below.

Procedure:

1. Turn Power On or, if already on, press **[DMX OUT1]** until following screen appears:

```
DMX OUT 20/S
CH001 ----- 0%
```

2. Press the **[◀] [▶]** keys to select initial channel:

```
DMX OUT 20/S
CH002 ----- 0%
```

(continued on next page)

Notes:

3. Press **[-] [▶]** to select end channel:

Press and hold the **[▶]** key to scroll.

```
DMX OUT 20/S
CH002 -024-= 0%
```

4. Adjust the **[Level Wheel]** to set DMX levels:

Ch's 2 thru 24 levels are output at 80%.

```
DMX OUT 20/S
CH002 -024-= 80%
```

NOTE

To send 40/s DMX OUT, press **[DMX OUT1]** in Step 1 above until "DMX OUT 40/s" appears.

Clearing DMX OUT1 Levels

To clear the level(s) of DMX OUT1, Press **[DMX OUT2]**, then press **[DMX OUT1]**.

DMX OUT2: Setting Channels at Different Levels

The **[DMX OUT2]** function is used to set channels at *different* DMX levels. The LCD always shows the levels of four consecutive channels at a time, with the initial channel displayed first.

For example, to set channels 1 @ 80%, 2 @ 50%, and 5 @ 100%(FL), follow the procedure below.

Procedure:

Notes:

1. Press **[DMX OUT2]**, the LCD displays:

Ch 1 is the initial channel.

```
OUT LEVEL 20/S %
C001:00,00,00,00
```

2. Adjust the **[Level Wheel]** to set Ch 1's DMX level to 80%:

```
OUT LEVEL 20/S %
C001:80,00,00,00
```

3. Press **[▶]** once to move to Ch 2, then use the **[Level Wheel]** set Ch 2's level to 50%:

```
OUT LEVEL 20/S %
C001:80,50,00,00
```

4. Press **[▶]** three times to move to Ch 5, then use the **[Level Wheel]** set level at 100%(FL):

Note that Ch 2 is now the initial channel.

```
OUT LEVEL 20/S %
C002:50,00,00,FL
```

NOTE

To send 40/s DMX OUT, press **[DMX OUT1]** in Step 1 above until "OUT LEVEL 40/s" appears.

Clearing DMX OUT2 Levels

To clear all levels while in DMX OUT2 mode, press and hold the **[DMX OUT2]** key for two seconds.

Auto Fade

The Auto Fade function allows a single channel or range of successive channels to automatically fade from 0 to 100% and back in a continuous fashion.

Autofading one channel is a useful function to use when a specific lamp or dimmer needs to be quickly identified. Additional channels can be stepped through by use of the **[◀] [▶]** keys.

Autofading successive channels operates in a similar way as autofading one channel, except that when the selected channel fades to zero, the next channel in the range will fade up and down. The sequence will continue as such until the end channel is reached and then start again. This is useful for performing an automated channel check.

To Autofade *one* channel, follow the example below.

Procedure:

1. Press **[DMX OUT1]** until following screen appears:

```
AUTO FADE 20/S  
CH001 -----> 0%
```

2. Press **[◀] [▶]** to select autofade channel:

```
AUTO FADE 20/S  
CH002 ----->100%
```

3. Adjust the **[Speed Wheel]** to set autofade speed as required.

Notes:

DMX level automatically ramping from 0 to 100% and back.

To Autofade a *range of successive channels*, follow below.

Procedure:

1. Press **[DMX OUT1]** until following screen appears:

```
AUTO FADE 20/S  
CH001 -----> 0%
```

2. Press **[◀] [▶]** to select initial autofade channel:

```
AUTO FADE 20/S  
CH002 ----->100%
```

3. Press **[-] [▶]** to select autofade end channel:

```
AUTO FADE 20/S  
CH002 -012-> 40%
```

4. Adjust the **[Speed Wheel]** to set autofade speed as required.

Notes:

DMX levels of Ch's 2 thru 12 successively ramping from 0 to 100% and back.

NOTE

To send 40/s DMX OUT, press **[DMX OUT1]** in Step 1 above until "AUTO FADE 40/s" appears.

DMX IN

The DMX IN function is used to verify incoming DMX data levels and allows the user to diagnose the source of problems from DMX lighting consoles and other DMX sending devices.

Receiving DMX IN

To receive DMX IN data, plug your DMX source into the DMX IN/OUT connector and follow the example below.

Procedure:

1. Press **[DMX IN]** until following screen appears:

```
DMXIN 00H-16/S %  
C001:00.FL,00,00
```

2. Press the **[◀] [▶]** keys to select initial channel:

```
DMXIN 00H-16/S %  
C002:FL,00,00,00
```

Notes:

In this example, Ch 1 is the initial channel and Ch 2 is receiving a DMX level of 100%.

To scroll channels, press and hold the **[◀] [▶]** keys. Note that the incoming data is being sent at a frequency of 16/s.

Clearing DMX IN Levels

Procedure:

1. To clear DMX IN levels, first remove the DMX IN XLR then press **[DMX IN]**:

```
DMXIN 00H-00/S %  
C001:00,00,00,00
```

Notes:

NOTE

The DMX IN/OUT connector functions as a dual purpose port. Once a DMX IN data signal is plugged in and detected, it will be automatically be configured as a DMX IN port.

DMX Cable Test

The DMXSM-TS1 can also function as a DMX cable tester. See the following procedure.

Procedure:

1. Plug the male and female ends of the data cable into the DMX OUT and DMX IN/OUT ports respectively.
2. Adjust the **[Level Wheel]**

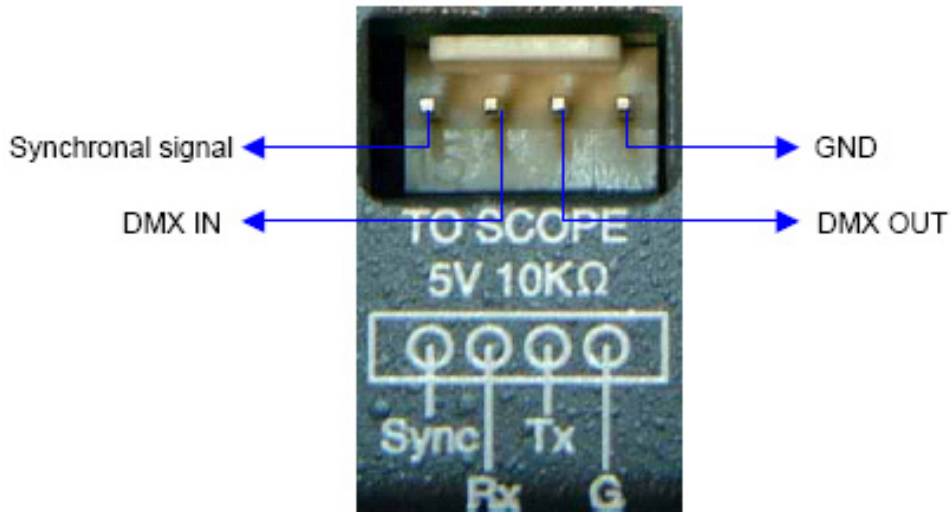
Notes:

```
C001:22.00.00.00  
CH001 -----= 22%
```

3. If no DMX signal is received, or the DMX IN level is different from the DMX OUT level, it means that signal cable is abnormal.

Scope Output

For further analysis of the DMX signal, the tester can be connected to a scope. Please see the following picture for proper pin connection.





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