Quick Start Guide

LECTROSONICS®

DSR4

Four Channel Digital Slot Receiver

DSR4-A1B1, DSR4-B1C1, DSR4-941, DSR4-961

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Purchase Date:

This guide is intended to assist with initial setup and operation of your Lectrosonics product.

For a detailed user manual, download the most current version at: **www.lectrosonics.com**

30 August 2023

IMPORTANT WARNING

The DSR4 is a high current receiver that should not be used in a slot-mount camera without double checking available current from the camera. Many, if not most, slot mount cameras are designed for lower current receivers and are current limited/fuse protected. The DSR4 draws up to 700mA at 7VDC. DO NOT drop it in the camera to "see what happens." Consult with your camera manufacturer FIRST before attempting to use this receiver in-slot.

The DSR4 is intended for use in slot devices which can supply enough current safely and without damage to fuses or poly-fused circuits.

Lectrosonics will not be responsible for damages that may result from using this receiver in a slot mount that cannot supply adequate current.

Technical Description

The DSR4 digital 4-channel receiver is a versatile slot receiver, equally appropriate for bag use, as well as reality TV and run and gun applications. Extremely high Third Order Intercept (IP3) performance of +15 dBm, 24-bit/48 kHz audio performance, and AES-256 CTR mode encryption ensure that professionals in all audio disciplines have the tools needed to get the job done, even in extremely tough environments.

Compatibility Modes

The DSR4 receiver was designed to operate with Lectrosonics digital transmitters from the D2, DCH and M2 series. The receiver is also backward compatible with Digital Hybrid Wireless® transmitters including those with NA Hybrid, NU Hybrid, JA HYBRID and EU Hybrid modes.

Encryption

The DSR4 receiver features AES 256-bit, CTR mode encryption, with 4 different key policies available.

Diversity Options

The DSR4 offers two diversity options: for 4-channel operation, each channel combines signals from both antennas in or out of phase, depending on field strength at each antenna and which combination yields the best results. For 2-channel operation, receivers can be paired for Vector Diversity operation. The Vector subsystem smoothly and continuously combines RF signals from both channels, with differing phase angles in order to obtain maximum energy. The four receivers in the DSR4 can be use separately or combined in pairs.

RF Frequency Tracking Front-End

In addition to the extremely high IP3 capability of the receiver, to significantly reduce unwanted interference and intermodulation problems, the DSR4 has a frequency selective front-end section that tracks and tunes to the desired signal frequency and rejects unwanted interfering signals. The low noise, high current RF amplifier was designed with feedback regulation for stability and precise gain in order to handle stronger RF signals without output overload. This produces a robust front-end that is as selective as fixed single frequency designs and is suitable for use in close proximity to other receivers and transmitters commonly used in field production bag systems.

Smart Noise Reduction (SmartNR™)

The DSR4 has been meticulously designed using the best available low noise components and techniques. Nonetheless, the wide dynamic range of digital and Hybrid transmission technology, combined with flat

response to 20 kHz, makes it possible to hear the -120 dBV noise floor in the transmitter's mic preamp, or the (usually) greater noise from the lav microphone itself. In order to reduce this noise and thus increase the effective dynamic range of the system, the DSR4 is equipped with a selectable Smart Noise Reduction algorithm, which removes hiss without sacrificing high frequency response.

The Smart Noise Reduction algorithm has three modes - **OFF/NORMAL/FULL -** selectable from a user setup screen. When switched **OFF** (the default setting for digital compat modes) no noise reduction is performed and complete transparency is preserved. All signals presented to the transmitter's front end, including any faint microphone hiss, will be faithfully reproduced at the receiver. When switched to **NORMAL**, (the factory default setting for Hybrid modes) enough noise reduction is applied to remove most of the hiss from the mic preamp and some of the hiss from lavaliere microphones. The noise reduction benefit is dramatic in this position, yet the degree of transparency maintained is exceptional. When switched to **FULL**, enough noise reduction is applied to remove most of the hiss from nearly any signal source of reasonable quality, assuming levels are set properly at the transmitter. This additional noise reduction comes at the cost of some transparency for low-level room noise, yet the algorithm remains undetectable under most circumstances.

Audio Output Level

A setup screen is provided for adjusting the audio output level in 1 dB increments from -50 to +7 dBu using the front panel **MENU/SEL**, **UP**, and **DOWN** buttons.

Test Tone

To assist in matching the audio levels of equipment connected to the DSR4, a 1 kHz audio test tone, adjustable from -50 to +7 dBu in 1 dB increments, is available at the outputs. If using AES3 outputs, the level is fixed and cannot be adjusted.

Power Supply

The DSR4 is operated from an external DC power source (DCR15/4AU recommended).The receiver has a built-in Poly-Fuse for protection. This fuse automatically resets if the power supply is disconnected for about 15 sec. The power section also has protection circuits that prevent damage to the receiver if a positive ground power source is applied.

Power Off

When the Front Panel Power/Back button is pressed for several seconds, the audio output is instantly muted (squelched) and the message "POWERING OFF..." is displayed briefly before the receiver switches off.

DSR4 Front Panel Controls

MENU/SEL Button

The **MENU** button accesses the available menus and selects the desired setting.

PWR/BACK Button

The **PWR/BACK** button is used to turn the receiver on and off. When browsing menus and making changes to settings, press **PWR/BACK** to return to previous menu.

Up/Down Arrow Buttons

The **UP/DOWN** buttons are used to scroll or input the various options within each menu selection.

Antenna Port (2)

TA5M Connector

Routes analog audio Channels 3 and 4 or AES3 audio channels 1-4 to the top of the unit.

IR (infrared) Port

(just under the front panel)

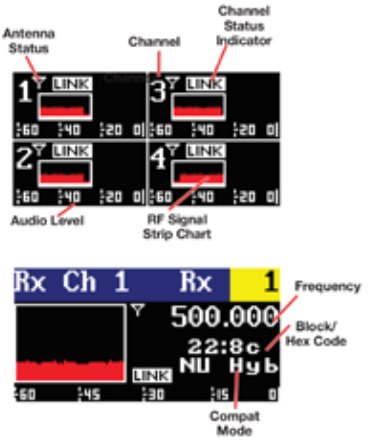
Settings can be transferred between transmitter and receiver or receiver and receiver.

USB Port

(just under the front panel)

The microB USB port can be used to connect the DSR4 to the Lectrosonics Wireless Designer software and to perform firmware updates.

Main Window Display



The Main Window displays information concerning the RF levels at each antenna per channel, audio modulation levels, the condition of the Pilot Tone (Hybrid) or Link (digital), and power conditions for both the receiver and the associated transmitters. It is also the access portal to menu selections for setting up the receiver and searching for clear frequency channels. The **PWR/BACK** button will cycle between the Home screen, showing all four channels and the channel detail screens. Use the **UP** and **DOWN** arrows to go between individual channels in the Channel Detail view.

- **Antenna Icons**: Status of the diversity system.
- **RF Signal Strength Strip Charts**: RF signal strength indicators.
- **Channel Status Indicator**: Pilot tone, link and encryption system status.

Navigating the Menus

From the Main Window, press **MENU/SEL** to enter the menu, then navigate with the **UP** and **DOWN** arrows to highlight the desired setup item. Press **MENU/SEL** to enter the setup screen for that item. Refer to the Menu Map on the following pages.

IR Reflector Purpose & Installation

Some users, especally those who plan to use the DSR4 in a rack or closely-packed bag, may find syncing difficult due to the close spacing near the IR window. For these users, we include an IR Reflector (P/N 27372) and Adhesive Strip (P/N 27373). Once in place, this reflector allows IR sync to happen from the front of the control panel.

Materials Needed:

- IR Reflector and adhesive strip
- Tweezers /needle nose pliers
- Alcohol pad or alcohol and a cotton swab

Instructions:

1) Holding the reflector with tweezers (or pliers), swab the reflector with the alcohol pad or alcohol on a cotton swab. Lay reflector with the flat side, as shown. The flat side is where adhesive will be placed. The oil from your fingers will hamper adhesion, which is why it is important not to touch the reflector.

2) Swab the area just below and directly on either side of the IR window on the DSR with the alcohol pad. This is where the reflector will be placed.

3) Carefully remove the paper backing from the adhesive strip. Using your tweezers/pliers, place it sticky side up on a flat surface. Pick up the reflector and lay it on top of the adhesive strip. Press the center and end tabs into the adhesive with your tweezers.

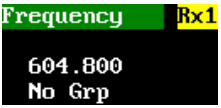
4) Slowly and carefully remove the reflector from the adhesive strip using your tweezers. It will leave the adhesive from the strip behind. Do not be concerned with the "coverage," as the reflector only needs enough adhesive to stick to the DSR4.

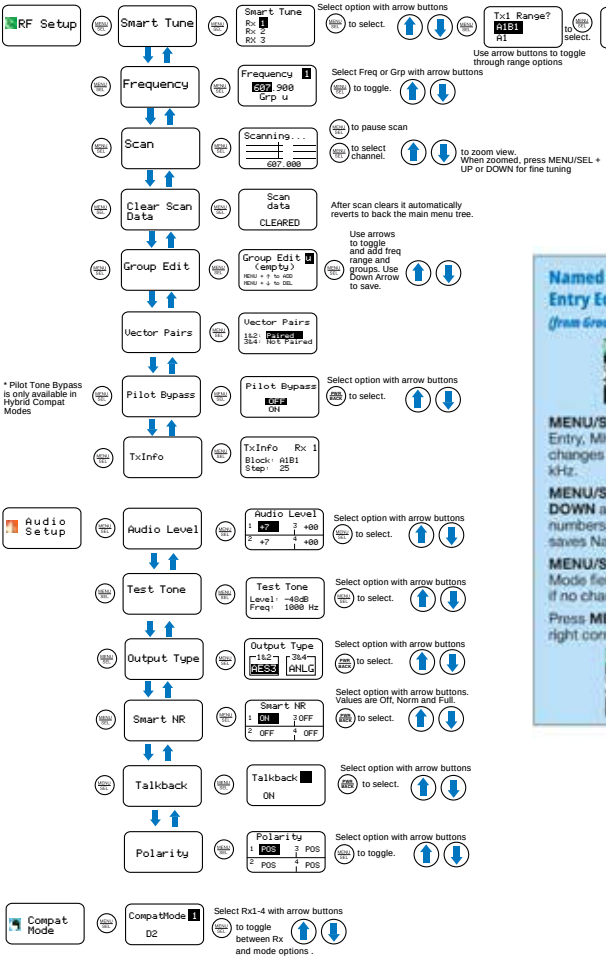
5) Lay the DSR4 on a flat surface with adhesive facing up, and, using your tweezers, align the bottom edge of the reflector with the bottom of the "IR PORT" engraving. Press firmly with fingers to adhere the reflector to the DSR4. The bond is strong but can be removed if needed. You will need another adhesive strip to re-adhere (*see Accessory pages for re-order information*).

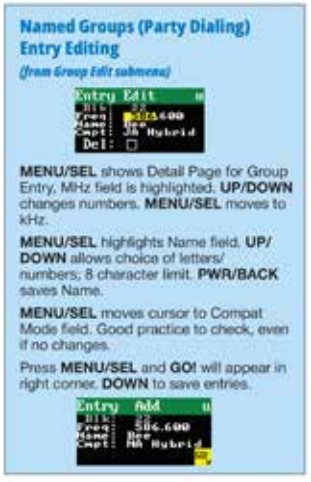
DSR4 LCD Menu Map

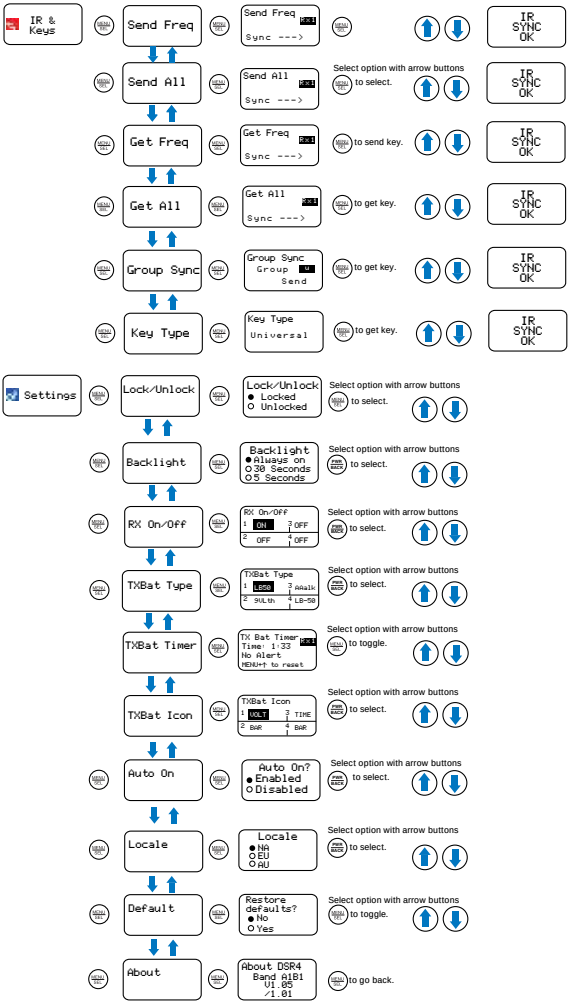
The menus presented on the LCD are arranged in a straightforward manner, with those that are likely to be used more often located at the top of the tree.

You'll notice that the menu headers are now in color, with symbols indicative of the menu section.








IR & Keys
Send Freq
Send Freq
Sync ---->
Send All
Send All
Sync ---->
Get Freq
Get Freq
Sync ---->
Get All
Get All
Sync ---->
Group Sync
Group Sync
Group 01
Send
Key Type
Key Type
Universal
IR SYNC OK
Select option with arrow buttons
to select.
to send key.
to get key.
Settings
Lock/Unlock
Lock/Unlock
Locked
Unlocked
Backlight
Backlight
Always on
30 Seconds
5 Seconds
RX On/Off
RX On/Off
1 ON
3 OFF
2 OFF
4 OFF
TXBat Type
TXBat Type
1 LEDS
3 Analk
2 9VLth
4 LB-58
TXBat Timer
TX Bat Timer
Time: 1:33
No Alert
MENU+↑ to reset
to toggle.
TXBat Icon
TXBat Icon
1 VOLT
3 TIME
2 BAR
4 BAR
Auto On
Auto On?
Enabled
Disabled
Locale
Locale
NA
EU
AU
Default
Restore defaults?
No
Yes
About
About DSR4
Band A1B1
U1.05
/1.01
to go back.

Supplied Parts and Accessories

AMJ19
Swivelling Whip Antenna with Standard SMA Connector, Block 19. Ships with A1B1 units only.

AMJ22
Swivelling Whip Antenna with Standard SMA Connector, Block 22. Ships with A1B1 and B1C1 units.

AMJ25
Antenna with swiveling SMA connector. Shipped with B1C1 units only.

AMJ944
Antenna with swiveling SMA connector. Shipped with 941 units only.

AMJ961
Antenna with swiveling SMA connector. Shipped with 961 units only.

Optional Parts and Accessories

21770
Male SMA to Female BNC Adapter.

21926
MicroB USB cable for firmware updates.

27372
IR Reflector. To be used with 27373.

27373
Adhesive strip to be used with IR Reflector.

28979
Replacement screws (4) for 36016 DSR4 mounting bezel kit.

ACOAXTX
Antenna, Coaxial, SMA Plug; Specify Block.

DCR15/4AU
Power Supply, 4ADC 100-240V In, 15VDC Regulated Output.

DSR4BATTSLEDBOTTOM
A “battery sled” that positions the battery on the bottom of the receiver for mounting on the bottom of the camera with the LCD and rear panel nomenclature oriented correctly. Two TA5 audio connectors and one DC coaxial connector.

DSR4BATTSLEDTOP
A “battery sled” that positions the battery on top of the receiver for mounting on the top of the camera with the LCD and rear panel nomenclature oriented correctly. Two TA5 audio connectors and one DC coaxial connector.

DSR4DB25
DSR4 Superslot adapter connector plate for Sound Devices SL-2. This includes the adapter plate only with the two mounting screws plus one extra screw.

DSR4EXT

Adapter kit for DSR4 receiver, two TA5 audio output jacks, locking power connector, includes 6' power cord. Has spare mounting screws in dummy holes in adapter.

DSR4EXTUSB Adapter

This kit includes an output and power panel with two TA5 male balanced output pairs, and a locking Hirose-4 DC power jack. A USB-C jack allows for connection of the DSR4 to Wireless Designer for monitoring, channel setup, scanning, and frequency coordination. Firmware updates must be done with the USB Micro B connector on the top panel of the unit. ***Power cord not incl.; order PS200A or use equivalent.***

DSR4OCTOSPACER

DSR4 mounting bezel kit with 4 screws for Octopack and Quadpack, no connector included.

WARNING: Do not use Hirose 4 DC connector on the Octopack when mounting DSR4 receivers.

DSR4SUPER

DB-25 bottom plate adapter for DSR4 receivers used in SuperSlot docks. This includes: The end plate adapter, blue bezel (PN 27315-1), gasket and hardware set.

MCTA5TA3F2

Audio cable for portable digital receivers, TA5F to two TA3F connectors, 18" cable. For two analog balanced receiver outputs, or two AES digital pairs (four audio channels), into mixer or recorder inputs.

MCTA5TPT2

Audio cable for portable digital receivers, TA5F to two stripped and tinned wires, 18" cable. For two analog balanced receiver outputs, or two AES digital pairs (four audio channels).

MCSR/5PXLR2

Audio cable for SR-type receivers, rotatable right-angle TA5 to two 3-pin male XLRs. 20" cable.

PS200A

Power Cable, 15 in., Hirose4 to LZR

PS2200A

Power Cable, 15 in., Hirose4 to Dual LZR

SNA600A Omni Dipole Antenna

Versatile Antenna, 100 MHz Bandwidth tunable from 550 to 800 MHz. Includes mounting screws and bracket. Requires SMA to BNC Adapter.

LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from an authorized dealer. This warranty does not cover equipment which has been abused or damaged by careless handling or shipping. This warranty does not apply to used or demonstrator equipment.

Should any defect develop, Lectrosonics, Inc. will, at our option, repair or replace any defective parts without charge for either parts or labor. If Lectrosonics, Inc. cannot correct the defect in your equipment, it will be replaced at no charge with a similar new item. Lectrosonics, Inc. will pay for the cost of returning your equipment to you.

This warranty applies only to items returned to Lectrosonics, Inc. or an authorized dealer, shipping costs prepaid, within one year from the date of purchase.

This Limited Warranty is governed by the laws of the State of New Mexico. It states the entire liablility of Lectrosonics Inc. and the entire remedy of the purchaser for any breach of warranty as outlined above. NEITHER LECTROSONICS, INC. NOR ANYONE INVOLVED IN THE PRODUCTION OR DELIVERY OF THE EQUIPMENT SHALL BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL, OR INCIDENTAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THIS EQUIPMENT EVEN IF LECTROSONICS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE LIABILITY OF LECTROSONICS, INC. EXCEED THE PURCHASE PRICE OF ANY DEFECTIVE EQUIPMENT.

This warranty gives you specific legal rights. You may have additional legal rights which vary from state to state.

LECTROSONICS®

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581 Laser Road NE • Rio Rancho, NM 87124 USA • www.lectrosonics.com
(505) 892-4501 • (800) 821-1121 • fax (505) 892-6243 • sales@lectrosonics.com