DSR

TECHNICAL DATA

Two Channel Digital Slot Receiver

DSR-A1B1, DSR-B1C1

- **Two independent channels, compact design**
- **Vector diversity with 2 RF front ends per channel for superior performance**
- **Latest generation of SR Series: Compatible with extensive existing ecosystem**
- **Compatible with D2, HDM, Duet and DCHX Digital modes and all Hybrid modes**
- **24 bit/48 kHz digital for flawless audio**
- **AES 256-bit, CTR mode encryption, with 4 different key policies available**
- **Analog and AES3 digital audio outputs**
- **External DC powering options and USB input for firmware updates and data transfer**

The DSR digital receiver provides the highest level of RF and audio performance available with a versatile feature set in a compact design for camera mounted applications. Settings can be made from the front panel, making the unit ideal for use in camera hop configurations, in bags and on sound carts. An RF spectrum analyzer and SmartTune are built into the receiver to alleviate interference problems in an increasingly congested RF spectrum.

The mechanical design of the receivers fits into the SuperSlot ecosystem and combines field-proven features developed over many years of experience in motion picture and television production. To decrease weight, the DSR provides a two channel receiver in one unit powered by external DC. The receivers are also equipped with an IR port for data transfer between units. The machined aluminum housing and panels are surfaced with a hard-anodized finish with laser etched markings to withstand the rigors of field production.

The RF gain stages in the front end use a newly developed design to provide low noise RF amplification, excellent sensitivity and extremely low susceptibility to intermodulation and de-sensitization.

Vector Diversity

An ideal diversity system constructively combines all the energy available at both antennas. Traditional “true diversity” or “ratio diversity” methods use two complete receivers and blend the audio. This works well for FM and Digital Hybrid systems, but falls short of the ideal for today’s all-digital modes. The DSR’s Diversity subsystem smoothly and continuously combine RF signals from two receiver front ends per channel, with differing phase angles in order to obtain maximum energy. Not only does this method deliver clean, artifact-free performance in all modes, it is actually able to take two signals compromised by multipath interference and reassemble them into a usable signal.

Compatibility

The DSR offers compatibility with the D-Squared and Duet digital transmitters, including the DBu, DHu, DPr, DBSM, DCHT, and M2T, and backward compatibility with any Digital Hybrid Wireless® transmitters including the SM and SMWB series, WM, HM Series, MM400 Series, HH Series, LT, LMb, UM400 Series, and SSM.

SmartNR™

With a noise floor at -120 dBV and a frequency response to 20 kHz, high frequency noise in the source audio is more apparent than in conventional wireless systems. The SmartNR algorithm has three modes. When OFF, no noise reduction is performed. When NORMAL is selected, enough noise reduction is applied to remove most of the hiss from the mic preamp and some of the hiss from lavalier microphones. When FULL is selected, enough noise reduction is applied to remove most of the hiss from nearly any signal source of reasonable quality, assuming levels are set correctly at the transmitter.

LECTROSONICS®
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Specifications and Features

Operating Frequencies (MHz):

Model A1B1: 470.100 - 614.375
Model B1C1: 537.600 - 691.175

NOTE: It's the user's responsibility to select the approved frequencies for the region where the transmitter is operating.

Frequency Selection Steps:	25 kHz
Frequency Stability:	±0.001 %
Front end bandwidth:	±5.5 MHz, @ -3 dB
Sensitivity:	20 dB Sinad: 0.9 uV(-108 dBm), A weighted 60 dB Quieting: 1.12 uV (-105 dBm), A weighted
AM rejection:	>60 dB, 2 uV to 1 Volt
Modulation acceptance:	85 kHz
Spurious rejection:	85 dB
Third order intercept:	+11 dBm
Diversity method:	Vector diversity
Antenna inputs:	50 Ohm; SMA female connectors
Audio output connectors:	• Interchangeable D connector adapters or camera slot interfaces • Dual TA3 male (mini XLR) balanced output adapter • Battery sled adapters with TA3 male outputs.

Audio Performance (overall system):

Frequency Response:	25 Hz to 20 kHz (+0/-3 dB)
THD:	0.2% (typical)

SNR at receiver output (dB):

SmartNR	No Limiting	w/Limiting
OFF	103.5	108.0
NORMAL	107.0	111.5
FULL	108.5	113.0

Note: The dual envelope "soft" limiter provides exceptionally good handling of transients using variable attack and release time constants. Once activated, the limiter compresses 30+ dB of transmitter input range into 4.5 dB of receiver output range, thus reducing the measured figure for SNR without limiting by 4.5 dB.

Input Dynamic Range:	125 dB (with full Tx limiting)
Overall Latency (time delay):	1.4 ms with digital source, <2.9 ms with Hybrid TX
Audio Test Tone:	1 KHz, -50 to +7 dBu, <1%THD
Controls:	
Front Panel:	• Color LCD display • Menu/Sel, Pwr/Back, Up/Down Arrow Buttons • USB Port • IR Port
Rear Panel:	• Proprietary connector for audio/power accessory panels.

External Power:	Minimum 7 Volts to maximum 18 VDC 3.25 W; Max 400 mA at 7 VDC
Operating Temp. Range:	-20 to 50°C; -5 to 122°F
Weight:	164 grams (5.8 oz.) w/o audio adapter
Dimensions:	3.375" wide x 1.23" high x 4.50" deep 85.7 wide x 31 high x 114 deep mm

Specifications subject to change without notice

FCC Notice

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by Lectrosonics, Inc. could void the user's authority to operate it.

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