

SMWB/E01 Series

TECHNICAL DATA

Miniature Wideband Transmitters



- Selectable output power to maximize battery life or operating range
- Ultra-lightweight, corrosion resistant housing
- Water resistant seals for use in damp environments
- LCD interface with lockout option
- Programmable compatibility modes for use with a wide variety of different receivers
- Servo Bias input circuitry
- IR (infrared) port for fast setup
- Covers 3 standard frequency blocks
- Update firmware in the field via Micro SD card reader

To meet the demand for both extended operating range and extended battery life, the “R/E01” series SM transmitters offer selectable output power from 10, 25 and 50 mW. With higher power output, the operating range is improved at the expense of battery life. When range is not an issue, the power can be reduced to extend the battery life.

The SMWB/E01 transmitters offer a *hands free* setup and adjustment using audible tones. The transmitters can be put to sleep to conserve battery power during setup while the transmitters are buried deep inside costumes, then awakened for normal operation when the production begins. Other features include frequency and audio level adjustment and control lockout.

The DSP-based design works with all Digital Hybrid receivers, and is backward compatible for use IFB receivers and some other brands of analog wireless receivers. (Companion receivers are covered in separate manuals.)

The input section features the unique servo bias input circuitry with a standard TA5M type jack for use with electret lavalier mics, dynamic mics, or line level signals. A DSP-controlled analog audio limiter is employed ahead of the first mic preamp to protect the entire audio chain from overload. The limiter has a range of more than 30 dB for excellent overload protection and a dual release envelope that makes the limiter acoustically transparent while maintaining low distortion. The limiter recovers quickly from brief transients, with no distortion.

A water resistant control panel with LCD, membrane switches and multi-color LEDs make input gain adjustments, frequency and compatibility mode selection quick and accurate. The battery compartment accepts lithium AA batteries.

The SMWB/E01 housing is machined from solid aluminum blocks to provide an extremely lightweight and rugged package. A special non-corrosive finish resists salt water exposure and perspiration in extreme environments.



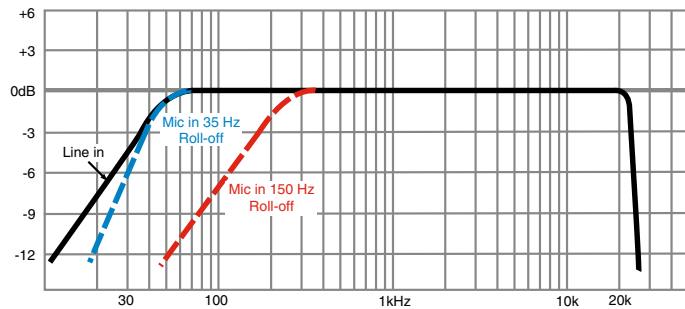
Rio Rancho, NM, USA
www.lectrosonics.com

High Power Output and Long Battery Life

Variable power provides the choice of maximum power output for extended operating range and interference suppression, or lower power output for extended battery life when operating in less demanding RF conditions.

Adjustable Low Frequency Roll-off

The low frequency roll-off can be set for 3 dB down points at 35, 50, 70, 100, 120 or 150 Hz to control subsonic and very low frequency audio content.



DSP Compatibility

The DSP offers compatibility modes to allow backward compatibility with all Lectrosonics IFB systems and analog receivers from some other manufacturers in addition to its native Digital Hybrid operating mode.

Input Limiter

A DSP-controlled analog audio limiter is employed before the analog-to-digital converter. The limiter has a range of more than 30 dB for excellent overload protection. A dual release envelope makes the limiter acoustically transparent while maintaining low distortion. The limiter recovers quickly from brief transients, so that its action is hidden from the listener, but recovers slowly from sustained high levels, to keep audio distortion low and preserve short term dynamic changes.

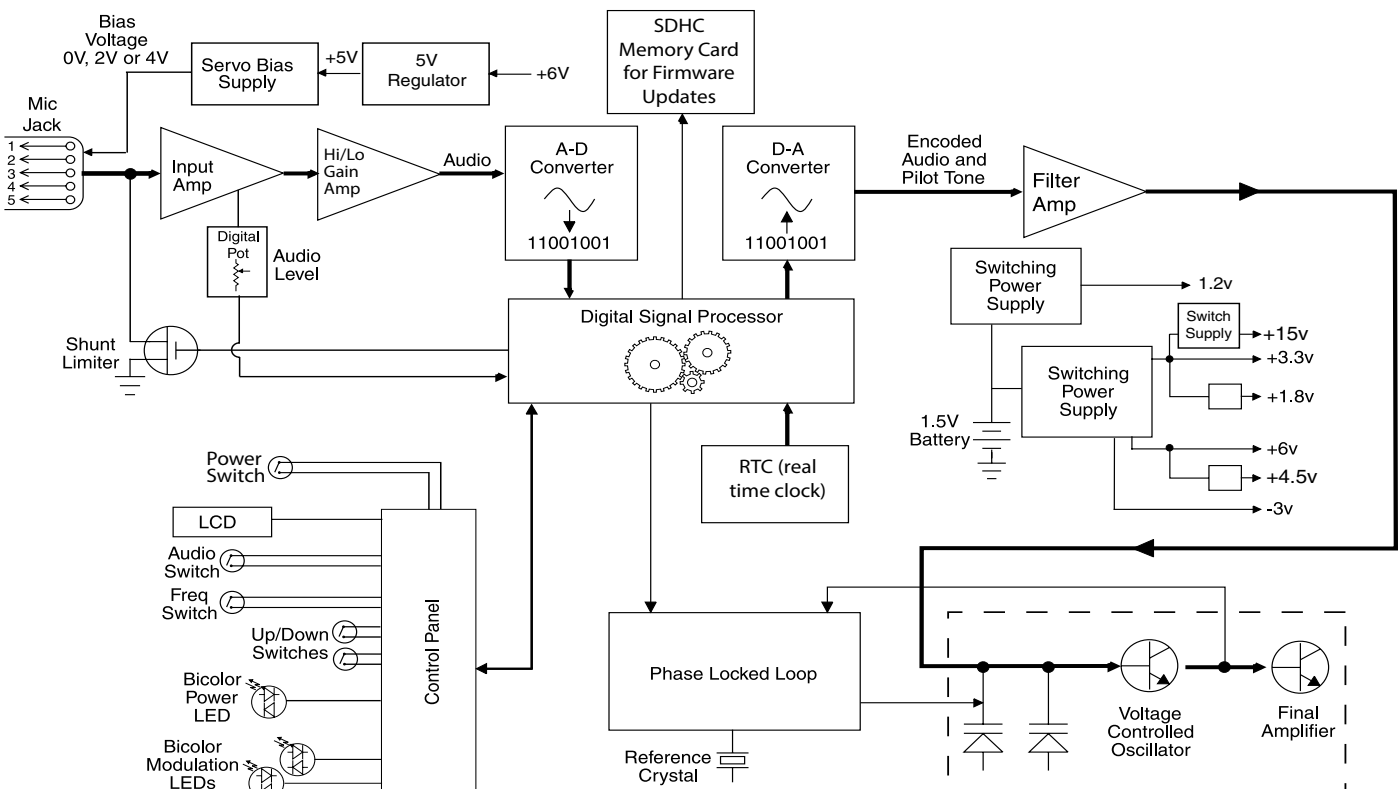
The bicolor LEDs indicate limiter activity accurately to assist in setting the input gain for optimal signal to noise ratio and dynamic range.

GORE-TEX® Vent

In special circumstances it is possible for moisture to be pulled into the housing when a unit is moved from a warm, damp operating environment, turned off and stored in a cool place. As the warm air inside the unit cools a vacuum is created, pulling air in past the exterior of the housing, bringing moisture with it. A special vent in the battery door prevents a vacuum from being created by allowing air to pass but blocking the passage of water.

Future Proofed with Easy Field Updates

The SMWB Series feature a new built-in Micro SD Card reader to facilitate firmware updates without the need for special cabling or software. Simply download the latest firmware from the Lectrosonics website, copy the update to the SD card then insert into the transmitter to update.



Frequency Tuning Range

RF-intense multichannel and mobile venues must have a broad selection of frequencies available to alleviate interference problems, especially with the emergence of DTV telecasts. 3072 frequencies are selectable in 25 or 100 kHz steps across the 76.8 MHz tuning range of each frequency band.

Specifications Transmitter

Operating frequencies:

Band A1: 470.100 - 537.575

Band B1: 537.600 - 614.375

Band B2: 563.200 - 639.975

Band C1: 614.400 - 691.175

Channel Spacing:

Selectable; 25 or 100 kHz

Frequency selection:

Control panel mounted membrane switches

RF Power output:

Switchable; 10, 25 or 50 mW

Compatibility Modes

Digital Hybrid Wireless™ (HYB), Mode 3, IFB

Pilot tone:

25 to 32 kHz; 3.5 kHz deviation (in HYB Mode)

Frequency stability:

± 0.002%

Spurious radiation:

Complies with ETSI EN 300 422-1

Equivalent input noise:

-125 dBV, A-weighted

Input level:

If set for dynamic mic:

0.5 mV to 50 mV before limiting.
Greater than 1 V with limiting.

If set for electret lavalier mic:

1.7 uA to 170 uA before limiting.
Greater than 5000 uA (5 mA) with limiting.

Line level input:

17 mV to 1.7 V before limiting.
Greater than 50 V with limiting.

Input impedance:

Dynamic mic:

300 Ohms

Electret lavalier:

Input is virtual ground with servo adjusted constant current bias

Line level:

2.7 k Ohms

Input limiter:

Soft limiter, 30 dB range

Bias voltages:

Fixed 5 V at up to 5 mA
Selectable 2 V or 4 V servo bias for any electret lavalier.

Gain control range:

40 dB; panel mounted membrane switches

Modulation indicators:

Dual bicolor LEDs indicate modulation of -20, -10, 0, +10 dB referenced to full modulation.

Controls:

Control panel with LCD and four membrane switches.

Low frequency roll-off:

Adjustable from 35 to 150 Hz.

Audio Frequency Response:

35 Hz to 20 kHz, +/-1 dB (The low frequency roll-off is adjustable - see graph on page 2)

Signal to Noise Ratio (dB):

(overall system, Digital Hybrid mode)

(Note: the dual envelope "soft" limiter provides exceptionally

good handling of transients

using variable attack and release

time constants. The gradual onset of limiting in the design begins below full modulation, which reduces the measured figure for SNR without limiting by 4.5 dB)

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

Total Harmonic Distortion:

0.2% typical (400 Series mode)



The battery door rotates to open and close on the transmitters. A knurled knob is tightened to maintain pressure on the battery contacts.



Audio Input Jack:

Switchcraft 5-pin locking (TA5F)

Antenna:

Flexible, unbreakable steel cable.

Batteries:

1.5 Volt AA lithium

		Lithium
Battery Life:	50 mW (2 AA):	14.5 hrs

Weight:

SMWB/E01: 2.7 oz.. (75.9 grams) with lithium battery

SMDWB/E01: 3.7 oz.. (105 grams) with lithium batteries

Overall Dimensions:

SMWB/E01: 2.3 x 1.8 x 0.64 inches (not including microphone)
58 x 46 x 16 mm (not including microphone)

SMDWB/E01: 2.3 x 2.4 x 0.64 inches (not including microphone)
58 x 60 x 16 mm (not including microphone)

Emission Designator: 180KF3E

Recorder

Recording

Storage media:

microSDHC memory card*

File format:

.wav files (BWF - Broadcast Wave File)

A/D converter:

24-bit (with additional 8 bits for wav format compatibility)

Sampling rate:

44.1 kHz

Recording mode/Bit rate:

HD mono mode; 24 bit - 132 kbytes/s

Input

Type:

Analog mic/line level compatible; servo bias preamp for 2V and 4V lavalier microphones

Input level:

- Dynamic mic: 0.5 mV to 50 mV
- Electret mic: Nominal 2 mV to 300 mV
- Line level: 17 mV to 1.7 V

Input connector:

TA5M 5-pin male

Audio Performance

Frequency response:

20 Hz to 20 kHz; +0.5/-1.5 dB

Dynamic range:

110 dB (A), before limiting

Distortion:

< 0.035%

Operating temperature range

Celsius:

-20 to 50

Fahrenheit:

-5 to 122

Specifications subject to change without notice.



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