

# SMWB/E07 Series

TECHNICAL DATA

## Miniature Wideband Transmitters



SMWB/E07

SMDWB/E07

The transmitters provide 3072 frequencies selectable in 25 or 100 kHz steps across more than 75 MHz of tuning range in each band.

To meet the demand for both extended operating range and extended battery life, the transmitters offer selectable output power at 25, 50 and 100 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 transmitters will tune across three standard blocks to make it easy to find clear operating frequencies.

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 special vent in the battery door prevents a vacuum from being created inside the transmitter when it is moved from a warm, damp environment and stored in a cool place. The vent allows air to pass as the pressure equalizes, but blocks the passage of moisture.

- Selectable output power to maximize battery life or operating range
- Tune across 3 standard frequency blocks
- Servo Bias input circuitry
- Wide range input limiter
- Ultra-lightweight, corrosion resistant housing
- Water resistant seals for use in damp environments
- Programmable compatibility modes for use with a variety of different receivers
- IR (infrared) port for fast setup
- Update firmware via microSDHC memory card reader

The SMWB/E07 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.

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/E07 housing is machined from solid aluminum billets to provide an extremely lightweight and rugged package. A special non-corrosive finish resists salt water exposure and perspiration in extreme environments. The battery doors are O-ring sealed and rotate to open and close. The microSDHC memory card port is located under the battery door.

The DSP-based design works with all Digital Hybrid receivers and Lectrosonics IFB receivers, plus a special mode for another brand of wireless.



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# Specifications

## Transmitter

<b>Operating frequencies:</b>	Band A1: 470.100 - 537.575 Band B1: 537.600 - 607.975
<b>Channel Spacing:</b>	Selectable; 25 or 100 kHz
<b>RF Power output:</b>	Switchable; 25, 50 or 100 mW
<b>Compatibility Modes:</b>	Digital Hybrid Wireless® (NU Hbr), Mode 3, IFB
<b>Pilot tone (Digital Hybrid Mode):</b>	25 to 32 kHz; 5 kHz deviation
<b>Frequency stability:</b>	± 0.002%
<b>Spurious radiation:</b>	Compliant with RSS 210 Annex G
<b>Equivalent input noise:</b>	-125 dBV, A-weighted
<b>Input level:</b>	
<b>If set for dynamic mic:</b>	0.5 mV to 50 mV before limiting; Greater than 1 V with limiting
<b>If set for electret lavaliere mic:</b>	1.7 uA to 170 uA before limiting Greater than 5000 uA (5 mA) with limiting
<b>Line level input:</b>	17 mV to 1.7 V before limiting Greater than 50 V with limiting
<b>Input impedance:</b>	
<b>Dynamic mic:</b>	300 Ohms
<b>Electret lavaliere:</b>	Input is virtual ground with servo adjusted constant current bias
<b>Line level:</b>	2.7 k ohms
<b>Input limiter:</b>	Soft limiter, 30 dB range
<b>Bias voltages:</b>	Fixed 5 V at up to 5 mA; selectable 2 V or 4 V servo bias for any electret lavaliere
<b>Gain control range:</b>	44 dB; panel mounted membrane switches
<b>Modulation indicators:</b>	Dual bicolor LEDs indicate modulation -20, -10, 0, +10 dB referenced to full modulation
<b>Controls:</b>	Control panel w/ LCD and 4 membrane switches
<b>Low frequency roll-off:</b>	Adjustable from 35 to 150 Hz
<b>Audio Frequency Response:</b>	35 Hz to 20 kHz, +/-1 dB

### Signal to Noise Ratio (dB): (overall system, NU HBr 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

<b>Total Harmonic Distortion:</b>	0.2% typical (400 Series mode)
<b>Audio Input Jack:</b>	Switchcraft 5-pin locking (TA5F)
<b>Antenna:</b>	Flexible, unbreakable steel cable.
<b>Battery:</b>	AA lithium, disposable
<b>Battery Life w/ Lithium AA:</b>	

SMWB 50 mW (1 AA):	7.25 hrs
SMWB 100 mW (1 AA):	5.5 hrs
SMDWB 50 mW (2 AA):	14.5 hrs
SMDWB 100 mW (2 AA):	14 hrs

<b>Weight (w/ lithium batteries):</b>	SMWB: 2.7 oz.. (75.9 grams) SMDWB: 3.7 oz.. (105 grams)
<b>Overall Dimensions: (without microphone)</b>	SMWB: 2.3 x 1.8 x 0.64 inches; 58 x 46 x 16 mm SMDWB: 2.3 x 2.4 x 0.64 inches; 58 x 60 x 16 mm
<b>Emission Designator:</b>	180KF3E

## Recorder

<b>Storage media:</b>	microSDHC memory card
<b>File format:</b>	.wav files (BWF)
<b>A/D converter:</b>	24-bit
<b>Sampling rate:</b>	44.1 kHz
<b>Recording modes/Bit rate:</b>	
HD mono mode:	24 bit - 144 kbytes/s 32 bit - 192 kbytes/s
Split gain mode:	24 bit - 288 kbytes/s 32 bit - 384 kbytes/s
<b>Input:</b>	
Type:	Analog mic/line level compatible; servo bias preamp for 2V and 4V lavaliere 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
<b>Audio Performance:</b>	
Frequency response:	20 Hz to 20 kHz; +0.5/-1.5 dB
Dynamic range:	110 dB (A), before limiting
Distortion:	< 0.035%
<b>Operating temperature range:</b>	
Celsius:	-20 to 50
Fahrenheit:	-5 to 122



\*microSDHC Logo is a trademark of SD-3C, LLC

**Specifications subject to change without notice.**

