

### Miniature Wideband Transmitters



**SMWB**

**SMDWB**

To meet the demand for both extended operating range and extended battery life, the “WB” series SM transmitters offer selectable output power of 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, a lower power level can be used to extend the battery life.

The transmitters offer **hands free** setup and adjustment using audible tones. They can be put to sleep to conserve battery power during setup while buried inside costuming, then awakened for normal operation when the production begins. Other features include input gain adjustment in 1 dB increments over a 44 dB range and adjustable low frequency audio roll-off for 3 dB down points at 35, 50, 70, 100, 120 or 150 Hz to control sub-sonic and very low frequency audio content.

The DSP-based design works with all Digital Hybrid receivers, and is backward compatible for use with Lectrosonics 200 and 100 Series, IFB receivers and some analog receivers from other manufacturers in addition to its native Digital Hybrid Wireless® operating mode.

The input section features the unique Lectrosonics 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 of brief transients and longer duration peaks.

- 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
- Alternate use as recorder on internal microSDHC memory card

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 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.

#### Alternate Recording Function

Instead of transmitting, the transmitters may also be used as a stand alone recorder. The industry standard .wav (BWF) file format is compatible with essentially any audio or video editing software.

**NOTE:** The transmitting and recording functions cannot be done simultaneously. Users must choose to transmit or record.



## 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 broad tuning range of each frequency band.



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

## Specifications

### Transmitter

#### Operating frequencies:

Band A1: 470.100 - 537.575  
 Band B1: 537.600 - 614.375 (608.000 to 614.000 excluded)  
 Band C1: 614.400 - 691.175\*

\*Not available in USA and Canada

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

<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), 200 Series, 100 Series, Mode 3, Mode 6, IFB												
<b>Pilot tone (Digital Hybrid Mode):</b>	25 to 32 kHz; 5 kHz deviation												
<b>Frequency stability:</b>	± 0.002%												
<b>Deviation:</b>	± 75 kHz max. (Digital Hybrid Mode)												
<b>Spurious radiation:</b>	Compliant with ETSI EN 300 422-1												
<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 lavalier 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 lavalier:</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 lavalier												
<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												
<b>Signal to Noise Ratio (dB): (overall system, 400 Series mode)</b>	<table border="1"> <thead> <tr> <th>SmartNR</th> <th>No Limiting</th> <th>w/Limiting</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>103.5</td> <td>108.0</td> </tr> <tr> <td>NORMAL</td> <td>107.0</td> <td>111.5</td> </tr> <tr> <td>FULL</td> <td>108.5</td> <td>113.0</td> </tr> </tbody> </table>	SmartNR	No Limiting	w/Limiting	OFF	103.5	108.0	NORMAL	107.0	111.5	FULL	108.5	113.0
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(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)



<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):	5.8 hrs
SMWB 100 mW (1 AA):	.4hrs
SMDWB 50 mW (2 AA):	11.6 hrs
SMDWB 100 mW (2 AA):	11.2 hrs

<b>Weight (w/ lithium batteries):</b>	SMWB: 3.2 oz. (90.72 grams) SMDWB: 4.0 oz. (113.40 grams)
<b>Overall Dimensions: (without microphone)</b>	SMWB: 2.366 x 1.954 x 0.642 inches; 60.096 x 49.632 x 16.307 mm SMDWB: 2.366 x 2.475 x 0.642 inches; 60.096 x 62.865 x 16.307 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>	
<b>Type:</b>	Analog mic/line level compatible; servo bias preamp for 2V and 4V lavalier microphones
<b>Input level:</b>	• Dynamic mic: 0.5 mV to 50 mV • Electret mic: Nominal 2 mV to 300 mV • Line level: 17 mV to 1.7 V
<b>Input connector:</b>	TA5M 5-pin male
<b>Audio Performance</b>	
<b>Frequency response:</b>	20 Hz to 20 kHz; +0.5/-1.5 dB
<b>Dynamic range:</b>	110 dB (A), before limiting
<b>Distortion:</b>	< 0.035%
<b>Operating temperature range</b>	
<b>Celsius:</b>	-20 to 50
<b>Fahrenheit:</b>	-5 to 122

**Specifications subject to change without notice.**

