

### Wireless Microphone Transmitters and Recorders

**SMWB, SMDWB, SMWB/E01, SMDWB/E01, SMWB/E06, SMDWB/E06, SMWB/E07-941, SMDWB/E07-941 SMWB/X, SMDWB/X**



**SMWB**

**SMDWB**

The SMWB and SMDWB 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 subsonic and very low frequency audio content. The transmitters also offer selectable output power of 25, 50 and 100 mW (10, 25 or 50 mW for E01).

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.

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 AA batteries (lithium recommended).

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.

- Selectable output power to maximize 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
- Update firmware in the field via Micro SD card reader
- Alternate use as recorder on internal microSDHC memory card

### 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. Frequencies are selectable in 25 or 100 kHz steps across the broad tuning range of each frequency band.

### 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 used simultaneously. Users must choose to transmit or record.

# Specifications

## Transmitter

### Operating frequencies:

|                            |                              |
|----------------------------|------------------------------|
| <b>SMWB/SMDWB:</b>         | <b>SMWB/SMDWB/EO1:</b>       |
| Band A1: 470.100 - 537.575 | Band A1: 470.100 - 537.575   |
| Band B1: 537.600 - 607.950 | Band B1: 537.600 - 614.375   |
|                            | Band B2: 563.200 - 639.975   |
| <b>SMWB/SMDWB/X:</b>       | Band C1: 614.400 - 691.175   |
| Band A1: 470.100 - 537.575 | Band 961: 961.100 - 1014.900 |
| Band B1: 537.600 - 614.375 |                              |
| Band C1: 614.400 - 691.175 | <b>SMWB/SMDWB/EO7-941:</b>   |
|                            | 941.525 - 951.975MHz         |
| <b>SMWB/SMDWB/E06:</b>     | 953.025 - 956.225MHz         |
| Band B1: 537.600 - 614.375 | 956.475 - 959.825MHz         |
| Band C1: 614.400 - 691.175 |                              |

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

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|--|--|
| <b>Channel Spacing:</b>                  | Selectable; 25 or 100 kHz  |
| <b>RF Power output:</b>                  | SMWB/SMDWB, /X: Switchable; 25, 50 or 100 mW<br>/E01: Switchable; 10, 25 or 50 mW<br>/E06: 50 or 100 mW EIRP   |
| <b>Compatibility Modes:</b>              | SMWB/SMDWB: Nu Hybrid, Mode 3, IFB<br>/E01: Digital Hybrid Wireless® (EU Hybr), Mode 3, IFB<br>/E06: /X: Digital Hybrid Wireless® (EU Hybr), 100 Series, 200 Series, Mode 3, Mode 6, Mode 7, IFB<br>/X: Digital Hybrid Wireless® (NU Hbr), 200 Series, 100 Series, Mode 3, Mode 6, IFB |
| <b>Pilot tone:</b>                       | 25 to 32 kHz   |
| <b>Frequency stability:</b>              | ± 0.002%   |
| <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<br>Greater than 1 V with limiting  |
| <b>If set for electret lavalier mic:</b> | 1.7 uA to 170 uA before limiting<br>Greater than 5000 uA (5 mA) with limiting  |
| <b>Line level input:</b>                 | 17 mV to 1.7 V before limiting<br>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<br>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<br>-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, 400 Series mode)

| 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. 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, disposable, Lithium recommended<br>+1.5VDC |

### Battery Life w/ AA:

|               |          |
|---------------|----------|
| SMWB (1 AA):  | 4.4hrs   |
| SMDWB (2 AA): | 11.2 hrs |

|                              |  |
|------------------------------|--|
| <b>Weight w/ battery(s):</b> | SMWB: 3.2 oz. (90.719 grams)<br>SMDWB: 4.8 oz. (136.078 grams) |
|------------------------------|--|

|   |   |
|---|---|
| <b>Overall Dimensions:<br/>(without microphone)</b> | SMWB: 2.366 x 1.954 x 0.642 inches;<br>60.096 x 49.632 x 16.307 mm<br>SMDWB: 2.366 x 2.475 x 0.642 inches;<br>60.096 x 62.865 x 16.307 mm |
|---|---|

|                             |  |
|-----------------------------|--|
| <b>Emission Designator:</b> | SMWB/SMDWB/E01, E06 and E07-941:<br>110KF3E<br>SMWB/SMDWB/X: 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>Input Type:</b>                 | Analog mic/line level compatible;<br>servo bias preamp for 2V and 4V lavalier microphones                |
| <b>Input level:</b>                | • Dynamic mic: 0.5 mV to 50 mV<br>• Electret mic: Nominal 2 mV to 300 mV<br>• 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 40  |
| <b>Fahrenheit:</b>                 | -5 to 104  |

**Specifications subject to change without notice.**

## Available Recording Time

Using a microSDHC memory card, the approximate recording times are as follows. The actual time may vary slightly from the values listed in the tables.

(HD mono mode)

| Size | Hrs:Min |
|------|---------|
| 8GB  | 11:12   |
| 16GB | 23:00   |
| 32GB | 46:07   |

  
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