

# Digital Hybrid Wireless® Miniature Transmitter

- Tunable across three standard frequency blocks (76.8 MHz)
- Digital Hybrid Wireless® audio for compandor-free digital quality
- Selectable 25 or 50 mW RF power
- Compatibility modes for use with analog receivers
- 25 or 100 kHz tuning steps for up to 3072 selectable frequencies
- Wide range input gain control in 1 dB steps
- Audio coupled remote control

The SSM is ideal in theatrical or any other production where concealment in costuming is required. In spite of its tiny size, the transmitter offers an extensive feature set and performance on par with all of the Digital Hybrid Wireless\* models.

Frequencies are selectable in 100 kHz or 25 kHz steps across a maximum tuning range of 76.7 MHz. This yields a total of 3072 available frequencies across three standard frequency blocks. The tuning range varies in some blocks to meet applicable frequency allocations.

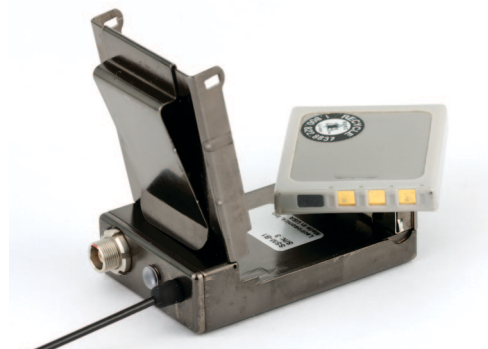
Power is provided by a rechargeable Lithium-ion battery. The formed stainless steel battery door latches closed securely, and cannot be jarred open accidentally.

The servo bias input accepts mic or line level signals with a wide range of gain adjustment in 1 dB steps. Accurate LED indications on the keypad allow precise gain adjustments to be made for the maximum signal to noise ratio and minimum distortion. The limiter in the preamp can cleanly handle signal peaks over 30 dB above full modulation, allowing the input gain to be set high enough to achieve the maximum signal to noise ratio, yet provide protection against input overload.

Compatibility with earlier analog Lectrosonics receivers, Lectrosonics IFB receivers and some receivers from other manufacturers is provided by DSP emulation modes selected in the LCD menu.

The housing is constructed of machined aluminum, finished with an ultra hard, black electroless nickel finish called **ebENi**.

*This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.*



Power is provided by a rechargeable lithium-ion battery

Digital Hybrid Wireless® is a patented design that combines 24-bit digital audio with an analog FM radio link to provide outstanding audio quality and the extended operating range of the finest analog wireless systems.

The design overcomes channel noise in a dramatically different way, digitally encoding the audio in the transmitter and decoding it in the receiver, yet still sending the encoded information via an analog FM wireless link.

This proprietary algorithm is not a digital implementation of an analog compandor. Instead, it is a technique which can be accomplished only in the digital domain, even though the audio inputs and outputs are analog signals.

\*US Patent 7,225,135

The audio input jack is a LEMO 00 Series 3-pin connector, common in theatrical production. A threaded collar adds additional ruggedness. An IR (infrared) port next to the antenna allows transfer of frequency and compatibility mode settings from IR enable receivers.



The membrane switch panel and LCD enable access to all adjustments and settings. The menu structure is easy to navigate. Battery status is indicated by a bi-color LED that is green with a fresh battery, then turns to red as the battery runs down, and finally starts blinking red when there are only a few minutes of runtime remaining.



The battery cover is made of stainless steel for durability, and to preserve the thin wall thickness needed for a miniature design. The cover is hinged to the housing to simplify handling during battery changes. The belt clip slides over the end of the cover and is retained by tabs on the cover that nest into holes on the clip.



Secure latches on the battery cover prevent accidental opening, yet are easy to operate. A USB port also on the bottom panel makes firmware updates quick and easy.



## Specifications

### Operating Frequencies:

Block A1: 470.100 - 537.575  
Block B1: 537.600 - 614.375  
Block C1: 614.400 - 691.175  
Block D1: 691.200 - 767.975 (export only)

### Frequency Selection Steps:

Selectable; 100 kHz or 25 kHz

### RF Power output:

Selectable; 25 or 50 mW

### Pilot tone:

25 to 32 kHz; 5 kHz deviation  
(Digital Hybrid mode)

### Frequency Stability:

± 0.002%

### Deviation:

± 75 kHz max. (Digital Hybrid mode)

### Spurious radiation:

60 dB below carrier

### Equivalent input noise:

-120 dBV (A-weighted)

### Input level:

Nominal 2 mV to 300 mV, before limiting  
Greater than 1V maximum, with limiting.

### Input impedance:

- Mic: 300 or 4.5 k ohm; selectable
- Line: greater than 100 k ohm

### Input limiter:

DSP controlled, dual envelope "soft" limiter  
with greater than 30 dB range

### Gain control range:

44 dB; digital control

### Modulation indicators:

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

### Audio Performance (Digital Hybrid mode)

#### Frequency Response:

70 Hz to 20 kHz (+/-1dB)

#### Low frequency roll-off:

-12 dB/octave; 70 Hz

#### THD:

0.2% (typical)

#### SNR at receiver output:

	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

### Controls:

Side panel membrane switches with LCD  
interface for power on/off and all setup and  
configuration controls

### Audio Input Jack:

LEMO 00 Series 3-pin

### Antenna:

Galvanized steel, flexible wire

### Battery:

Lithium-ion 3.7 V 800 mAh DLF40 battery pack

### Battery Life:

4 hours per charge

### Weight:

2.3 ounces (65.2 grams) including lithium battery pack

### Dimensions (housing):

2.3 x 1.5 x .56 in. (58.4 x 38 x 14.2 mm)

### Emission Designator:

180KF3E

