

Digital Hybrid Wireless® Micro Transmitter

SSM, SSM-941, SSM/E01, SSM/E01-B2, SSM/E02, SSM/06, SSM/X



- Tunable across a variety of frequency blocks
- Digital Hybrid Wireless® audio for compandor-free digital quality
- Selectable 10, 25 or 50 mW RF power (varies per model; see specifications)
- 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



Power is provided by a rechargeable Li-ion battery pack. Spring contacts inside the compartment keep the batteries from rattling and provide reliable electrical contacts. The stainless steel battery door latches securely and cannot be jarred open accidentally.

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.

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**.



SSMCVR
Silicone Cover Accessory

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*

WARNING: Moisture, including talent's sweat, will damage the transmitter. Wrap the SSM in a plastic baggie or other protection to avoid damage, or see SSMCVR (right).

The audio input jack is a LEMO 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.

Specifications

Operating Frequencies:

SSM:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 607.950
SSM/E01:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 614.375 Band B2: 563.200 - 639.975 Block 606: 606.000 - 631.500 Band C1: 614.400 - 691.175
SSM/E01-B2:	Band B2: 563.200 - 639.975
SSM/E02:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 614.375 Band B2: 563.200 - 639.975 Band C1: 614.400 - 691.175 Band C2: 640.000 - 716.700
SSM/E06:	Band B1: 537.600 - 614.375 Band C1: 614.400 - 691.175
SSM/X:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 607.950 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.

Frequency Selection

Steps: Selectable; 100 kHz or 25 kHz

RF Power output:

SSM/E01/E01-B2/X:
Selectable; 25 or 50 mW
SSM/E02: 10 mW
SSM/E06: 50 or 100 mW EIRP

Compatibility Modes:

US: Nu Hybrid, Mode 3, IFB
E01: Digital Hybrid, Mode 3, IFB
E01-B2: Digital Hybrid, Mode 3, IFB
E02: Digital Hybrid, Mode 3, IFB
E06: 100 Series, 200 Series, Mode 3, Digital Hybrid, IFB, Mode 6, Mode 7
SSM/X: 100 Series, 200 Series, Mode 3, Digital Hybrid, IFB, Mode 6, Mode 7

Pilot tone:

25 to 32 kHz; 3.5 kHz deviation (Nu Hybrid mode); ± 50 kHz max. (Digital Hybrid mode)



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. Also on the bottom panel, a USB port makes firmware updates quick and easy.

Frequency Stability: $\pm 0.002\%$

Operating temp. range: Celsius: -20° - 40°
Fahrenheit: -5° - 104°

Spurious radiation: SSM: Compliant with ETSI EN 300 422-1 v1.4.2
SSM-941/E01/E02/E06/X: 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 and Nu Hybrid)

Frequency Response: 70 Hz to 20 kHz (± 1 dB)

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
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	NORMAL	107.0	111.5

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 3.6 V 1000 mAh LB50 battery pack

Battery Life: 6 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: SSM: 110KF3E
SSM/E01/E01-B2/E02/E06/X: 180KF3E



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