

# Digital Hybrid Wireless® UHF Belt Pack Transmitter



- Covers three standard frequency bands
- Digital Hybrid Wireless for compandor-free audio
- 50 mW RF power
- Compatibility modes for use with analog receivers
- 25 or 100 kHz tuning steps for up to 3072 selectable frequencies
- Integrated multi-function switch for mute or talkback modes
- Wide range input gain control in 1 dB steps

The Lmb transmitter can be configured to operate as a “one touch” device with a single power on/off switch on the top panel, or with full access to all operational parameters using the side panel membrane switches and LCD interface. The top panel switch can also be configured to provide a mute or talkback function.

This versatility makes the transmitter at home in a wide variety of applications from video production to theater, stage and house of worship.

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 bands.

The tuning range varies in other bands to meet applicable frequency allocations.

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 top panel and a bar graph indicator on the LCD 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.

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 an aluminum extrusion with machined aluminum top and control panels, finished with an ultra hard, black electroless nickel finish called **ebENi**.



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

Power is provided by two AA batteries in series. Battery polarity is indicated by a label inside the compartment. The machined aluminum battery door latches closed securely, and cannot be jarred open accidentally.

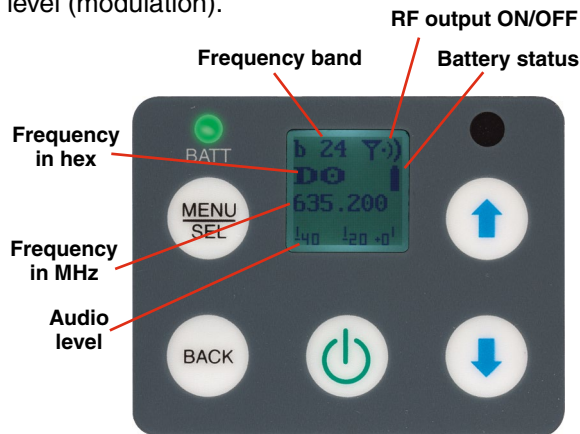


Spring contacts inside the compartment and nickel plated contacts on the door keep the batteries from rattling and provide reliable electrical contacts. The unit is protected from reverse battery polarity electrically, and by the insulated contact plate in the battery door.



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 is about 30 minutes of runtime remaining.

The Main Window displays the current settings, including frequency, battery status, RF output status and audio level (modulation).



## Specifications

Operating Frequencies:  
 Band A1: 470.100 - 537.575  
 Band B1: 537.600 - 614.375  
 Band C1: 614.400 - 691.175

Frequency Selection Steps: Selectable; 100 kHz or 25 kHz  
 RF Power output: 50 mW

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

Frequency Stability:  $\pm 0.002\%$

Deviation:  $\pm 75$  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: 2k 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
- LCD bar graph

Audio Performance (Digital Hybrid mode)

Frequency Response: 90 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:
 

- Top panel slide switch; programmable as **power**, **mute**, **talkback** or **no** (off) function
- Side panel membrane switches with LCD interface for power on/off and all setup and configuration controls

Audio Input Jack: Switchcraft 5-pin locking (TA5F)

Antenna: Galvanized steel, flexible wire

Battery: Two AA; alkaline, lithium, NiMH rechargeable

Battery Life:
 

- Alkaline: 4.5 hours
- Duracell Quantum: 7 hours
- Eneloop 2400 mAh NiMH: 8 hours

Weight: 5 ounces (141 grams), including lithium AA batteries and wire belt clip

Dimensions: 3.2 x 2.4 x .8 in. (81 x 61 x 20 mm)

Emission Designator: 180KF3E

