

# Handheld Transmitter

**HHa, HHa-941, HHa/E01, HHa/E02, HHa/E06, HHa/E07, HHa/E07-941, HHa/X**



- 25 or 100 kHz tuning steps
- Digital Hybrid Wireless® Technology
- Standard thread-on capsules
- Membrane switch and LCD interface
- AA battery power
- Selectable RF power at 10, 25 50 and 100 mW (varies per model - see specifications)
- Talkback feature
- IR (Infrared) Port for fast setup
- USB Port for Firmware Updates

The HHa Digital Hybrid Wireless handheld transmitter represents an elegant solution for a variety of wireless microphone applications including live performance, broadcast, AV rental and houses of worship. The HHa incorporates many advanced features to provide high-quality speech and vocal reinforcement. Along with providing peerless audio quality with wide frequency response and dynamic range in Nu Hybrid mode, the technology used in the HHa includes compatibility modes for Lectrosonics Mode 3 and IFB receivers, as well as certain non-Lectrosonics analog receivers.

### Interchangeable Capsules

Lectrosonics offers the HHC cardioid condenser capsule.\* Thread-on capsules from other manufacturers using a 1.25" opening and 28 thread pitch can also be used, including those from manufacturers such as EV, Shure®, Heil Sound™, Earthworks®, Telefunken® and others.\*

### Digital Hybrid Wireless®

Digital Hybrid Wireless® is a revolutionary design that combines digital audio with an analog FM radio link to provide both outstanding audio quality and exemplary, noise-free RF performance. Using a patented algorithm to encode 24-bit digital audio information in the transmitter into an analog format, the encoded signal is then transmitted over an analog FM wireless link. At the receiver, the signal is then decoded to restore the original digital audio. This process eliminates compandor artifacts and produces an audio frequency response flat to 20 kHz. (US Patent 7,225,135)



\* Capsule sold separately.

\* Shure, Earthworks and Telefunken are registered trademarks of their respective companies and have no association with Lectrosonics. Heil Sound is a trademark of Heil Sound Ltd.



### Selectable RF Transmission Power

The HHa transmitter allows the user to select from among two power settings depending on the needs of the situation. The lower RF power setting uses slightly less current, thus battery life is enhanced. The higher power setting provides greater range and resistance to dropouts. Selecting the RF power is accomplished using the control menu.

### IR Sync

The HHa is equipped with an IR port for use with receivers. Settings, such as frequency stored in the receiver can be sent to the transmitter via the IR port.



### Mute and Talkback Functions

The button on the back of transmitter below the head can be used to actuate an audio mute condition. This button can also be disabled using the control panel inside the battery compartment. An alternative function that can be actuated by this button is a talkback function. In this state, the transmitter sends a signal to the Venue receiver when the button is pushed - the receiver then switches the audio to a second output which can be routed differently.

This function can be used for talkback, cueing or other purposes depending on the application.

***This functionality requires a Venue receiver with firmware version 5.2 or later.***

# Specifications

#### Operating Frequencies:

HHa:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 607.950
HHa-941:	941.525 - 951.975 MHz 952.875 - 956.225 MHz 956.475 - 959.825 MHz
HHa/E01:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 614.375 Band 606: 606.000 - 631.500 Band C1: 614.400 - 691.175
HHa/E02:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 614.375 Band C1: 614.400 - 691.175
HHa/E06:	Band B1: 537.600 - 614.375 Band C1: 614.400 - 691.175
HHa/E07:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 614.375
HHa/E07-941:	941.525 - 951.975 953.025 - 956.225 956.475 - 959.825
HHa/X:	Band A1: 470.100 - 537.575 Band B1: 537.600 - 614.375 Band 606: 606.000 - 631.500 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**

#### Compatibility Modes:

HHa:	Nu Hybrid, IFB, Mode 3
HHa-941, HHa/E07-941:	Nu Hybrid, IFB
HHa/E01:	Nu Hybrid, IFB, Mode 3
HHa/E02:	Digital Hybrid Wireless®, IFB, Mode 3, Mode 6
HHa/E06:	Hybrid, IFB, Mode 3
HHa/E07:	Hybrid, IFB, Mode 3
HHa/X:	Hybrid, Mode 3, 200 Mode, 100 Mode, Mode 7, Mode 6, IFB Mode

#### RF Power output:

HHa:	Selectable 50 or 100 mW
HHa-941:	Selectable 50 or 100 mW
HHa/E01:	Selectable 25 or 50 mW
HHa/E02:	10 mW
HHa/E06:	Selectable 50 or 100 mW, EIRP
HHa/E07:	Selectable 25 or 50 mW
HHa/E07-941:	Selectable 50 or 100 mW
HHa/X:	Selectable 50 or 100 mW

#### Pilot tone:

25 to 32 kHz

#### Frequency stability:

± 0.002%

#### Spurious radiation:

Compliant with ETSI EN 300 422-1

#### Operating temperature range:

-20° C to +50° C

#### Input compressor:

Dual envelope compressor, >30 dB range

#### Gain control range:

45 dB; semi-log menu-driven control; 1 dB steps

#### Modulation indicators:

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

#### Frequency response

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

#### Low frequency roll-off:

-3 dB @35, 50 and 70 Hz; selectable; 12 dB/octave (varies slightly with selection)

**System dynamic range:**

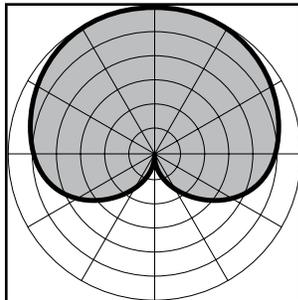
SmartNR	no limiting	w/limiting
OFF	103.5	108.0
NORMAL	107.0	111.5
FULL	108.5	113.0

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:**

- External:** Programmable mute/talkback button
- Internal control panel:** Power, Side Button Setup, MENU/SEL, BACK and Up/Down arrow buttons for menu item
- Battery:** 2x AA with polarity protection and battery ejector
- Battery life:** At 100mW: 5.5 hours (Duracell Ultra alkaline) (The HH transmits battery status to Lectrosonics Digital Hybrid Wireless® receivers.)
- Capsule Interface:** 1.25" opening and 28 thread pitch  
Power available: 5V, 25 mA max  
Input impedance: 1000 Ohms
- Weight:** 12.1 oz. (343.029 grams) with batteries and HHC capsule
- Dimensions:** 9.5" long x 1.97" diameter at largest point  
241.3 long x 50.038 mm diameter at largest point
- Emission Designator:**
  - A1: 39K7F3E
  - B1: 57K9F3E
  - /X, -941: 180KF3E
  - /E07-941: 110KF3E

**HHC capsule cardioid pickup pattern**



*Specifications subject to change without notice.*



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