TOA SCOUT® SERIES WIRELESS MICROPHONE SYSTEMS combine cutting edge wireless technology with user benefits such as fast setup, simple operation, and reliable performance. The systems are frequency-agile with sixteen user-selectable channels in the uncrowded UHF band (692 - 722 MHz) with simultaneous operation of up to sixteen systems.

The WT-4810 True Diversity Receiver has two built-in antennas and two squelch types, noise and carrier, to ensure quiet, interference-free operation. A convenient Mix-In jack allows the connection of the audio output of a second WT-4810 or other source. Handheld transmitters include the WM-4210 Dynamic for vocals and the WM-4220 Condenser for speech. Bodypack transmitters include the WM-4310 Lapel, WM-4310A Aerobics/Fitness Headset and the WM-4310H Speech Headset. All transmitters offer ten hours of operation from one nine volt battery with low battery indication. The bodypack transmitters also have a recessed on/off switch to prevent accidental shut-off and a rotatable bodypack clip for versatile mounting.

Scout® Series wireless systems are FCC and UL listed and are backed by a two year warranty.
## Specifications

**Model No.** WT-4810  
**Frequency Range** 692 - 722 MHz  
**Selectable Channels** 16  
**Receiving System** Double super-heterodyne  
**Diversity Method** TOA space diversity  
**S/N Ratio** Greater than 104 dB (A-weighted)  
**Harmonic Distortion** Less than 1%  
**Frequency Response** 100 Hz - 12 kHz, ±3 dB  
**Receiving Sensitivity** Greater than 80 dB, S/N ratio (20 dBµV input, 40 kHz deviation)  
**Squelch System** Noise and Carrier  
**Squelch Sensitivity** 18 - 40 dBµV variable  
**Audio Outputs**  
- Connectors: XLR-3-31 (male), balanced (Pin #2 Hot)  
- 1/4" phone jack, unbalanced  
- Level: MIC -60 dBV (1 mV), LINE -20 dBV (100 mV)  
- Output Impedance: 600 Ω  
*MIC/LINE Switch affects both outputs.*  
**Mix Input**  
- Connector: 1/4" phone jack (unbalanced)  
- Level: -20 dBV (100 mV)  
- Input Impedance: 10 kΩ  
**Antennas** Two 1/4 wave rod antennas (fixed-mount)  
**Indicators** LED: ANT A/B, AF PEAK (3 dB below clipping)  
**Controls** Channel Select, RF Check, Squelch, Volume  
**Power Requirement** AC mains (using supplied AC-DC adapter)  
**Power Consumption** 130 mA (12 VDC)  
**Operating Temperature** +14°F to +122°F (-10°C to +50°C)  
**Finish** Resin, black  
**Dimensions** (W x H x D) 9.45" x 1.38" x 4.33" (240 mm x 35 mm x 110 mm)  
**Weight** 2.32 lbs. (1.05 kg)  
**Accessories**  
1. AC-DC adapter (120 VAC, 60 Hz)  
2. Frequency-adjust screw driver

### WT-4810 True Diversity Receiver
- 16 Channel Frequency-Agile  
- True Diversity Reception  
- Two Built-in Antennas  
- Two Squelch Types (Carrier, Noise)  
- Adjustable Squelch Control  
- Output Volume Control  
- Outputs: Balanced XLR-M and Unbalanced 1/4" Phone Jack  
- Mic/Line Switch  
- Mix-In Jack  
- Antenna A/B, Peak and Power LEDs  
- Also Compatible With Password® Series Transmitters, WM-4200 and WM-4300 (64 Channel Frequency-Agile)

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**DIMENSIONAL DRAWING**

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**WT-4810**
**WM-4210 Vocal Handheld Microphone**
- 16 Channel Frequency-Agile
- Optimized for Vocals/Singing
- Dynamic Mic Element
- Unidirectional, Cardioid Pattern
- Low Handling Noise
- Ten Hours Continuous Operation from One Nine Volt Battery
- Low Battery Indication
- Mic Clip and Carrying Pouch Included
- Also Compatible with Password® Series WT-4800 Diversity Receiver (64 Channel Frequency-Agile)

**WM-4310 Lapel Microphone with Bodypack**
- 16 Channel Frequency-Agile
- Hands-free Operation
- Electret Condensor Mic Element
- Unidirectional, Cardioid Pattern
- Adjustable Input Sensitivity
- 10 Hours Continuous Operation from One Nine Volt Battery
- Low Battery Indication
- Recessed On/Off Switch
- Screw-on Locking Connector
- Rotating Lapel and Bodypack Clips
- Mic Clip and Carrying Pouch Included
- Also Compatible with Password® Series WT-4800 Diversity Receiver (64 Channel Frequency-Agile)

**WM-4310A Headset Microphone with Bodypack for Aerobics/Fitness**
- 16 Channel Frequency-Agile
- Comfortable and Lightweight Hands-free Operation
- Moisture-resistant Electret Condensor Mic Element
- Unidirectional, Cardioid Pattern
- Flexible Positioning
- Detachable Foam Windscreen
- Adjustable Input Sensitivity
- Ten Hours Continuous Operation from One Nine Volt Battery
- Low Battery Indication
- Recessed On/Off Switch
- Screw-on Locking Connector
- Rotating Bodypack Clip
- Detachable Sweatband and Moisture-Resistant Waist Pouch Included
- Also Compatible with Password® Series WT-4800 Diversity Receiver (64 Channel Frequency-Agile)

**WM-4220 Speech Handheld Microphone**
- 16 Channel Frequency-Agile
- Optimized for Speech
- Electret Condenser Mic Element
- Unidirectional, Cardioid Pattern
- Low Handling Noise
- Ten Hours Continuous Operation from One Nine Volt Battery
- Low Battery Indication
- Mic Clip and Carrying Pouch Included
- Also Compatible with Password® Series WT-4800 Diversity Receiver (64 Channel Frequency-Agile)

**WM-4310H Headset Microphone with Bodypack**
- 16 Channel Frequency-Agile
- Comfortable and Lightweight Hands-free Operation
- Electret Condenser Mic Element
- Unidirectional, Cardioid Pattern
- Flexible Positioning
- Detachable Foam Windscreen
- Adjustable Input Sensitivity
- Ten Hours Continuous Operation from One Nine Volt Battery
- Low Battery Indication
- Recessed On/Off Switch
- Screw-on Locking Connector
- Rotating Bodypack Clip
- Carrying Pouch Included
- Also Compatible with Password® Series WT-4800 Diversity Receiver (64 Channel Frequency-Agile)
## Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>WM-4210</th>
<th>WM-4220</th>
<th>WM-4310</th>
<th>WM-4310H</th>
<th>WM-4310A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Handheld Microphone (Vocal)</td>
<td>Handheld Microphone (Speech)</td>
<td>Lapel Microphone w/ Bodypack</td>
<td>Headset Microphone (Speech) w/ Bodypack</td>
<td>Headset Microphone (Aerobics) w/ Bodypack</td>
</tr>
<tr>
<td><strong>Microphone Element</strong></td>
<td>Dynamic, cardioid</td>
<td>Electret condenser, cardioid</td>
<td>Electret condenser, cardioid</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maximum Input Level</strong></td>
<td>130 dB SPL</td>
<td>125 dB SPL</td>
<td>120 dB SPL</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transmission Method</strong></td>
<td>Frequency Modulation (F3E)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Frequency Range</strong></td>
<td>692 - 722 MHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Selectable Channels</strong></td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RF Carrier Power</strong></td>
<td>Less than 50 mW</td>
<td></td>
<td></td>
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<tr>
<td><strong>Maximum Deviation</strong></td>
<td>±40 kHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transmission Distance</strong></td>
<td>394 ft. (120 m)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Modulation System</strong></td>
<td>PLL Synthesizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tone Frequency</strong></td>
<td>32.768 kHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td>9 V (6LR61) x 1, minimum 10 hours operation (alkaline type)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Indicator</strong></td>
<td>Power LED - flashes to indicate low battery level (&lt; 6 VDC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Antenna</strong></td>
<td>Internal</td>
<td>1/4 wave helical-type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Controls</strong></td>
<td>Power On/Off (recessed), Channel Select</td>
<td>Power On/Off (recessed), Channel Select, Sensitivity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Connector</strong></td>
<td>—</td>
<td>0.14” (3.5 mm) dia. plug</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cable Length</strong></td>
<td>—</td>
<td>4.78 ft. (1.45 m)</td>
<td></td>
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<tr>
<td><strong>Operating Temperature</strong></td>
<td>+14° F to +122° F (-10° C to +50° C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Finish</strong></td>
<td>Resin, dark gray</td>
<td></td>
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<tr>
<td><strong>Dimensions</strong></td>
<td>1.97”dia. x 9.26” (50 mm x 235.2 mm)</td>
<td>1.77” dia. x 9.26” (45 mm x 235.2 mm)</td>
<td>2.44”W x 5.59” H x 1.26” D (62 mm x 142 mm x 32 mm)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Weight (with battery)</strong></td>
<td>0.60 lbs. (270 g)</td>
<td>0.55 lbs. (250 g)</td>
<td>0.33 lbs. (150 g)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td>(1) Stand adapter</td>
<td>(1) Frequency-adjust screw driver</td>
<td>(1) Lapel clip</td>
<td>(1) Storage case</td>
<td>(1) Frequency-adjust screw driver</td>
</tr>
<tr>
<td></td>
<td>(1) Storage case</td>
<td></td>
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</tbody>
</table>

### Polar Patterns

<table>
<thead>
<tr>
<th>WM-4210</th>
<th>WM-4220</th>
<th>WM-4310</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Polar Pattern WM-4210" /></td>
<td><img src="image2" alt="Polar Pattern WM-4220" /></td>
<td><img src="image3" alt="Polar Pattern WM-4310" /></td>
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</tbody>
</table>
**Scout® Frequencies**

<table>
<thead>
<tr>
<th>Wireless Channel</th>
<th>Frequency (MHz)</th>
<th>US UHF TV Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>692.125</td>
<td>51</td>
</tr>
<tr>
<td>1</td>
<td>692.475</td>
<td>51</td>
</tr>
<tr>
<td>2</td>
<td>692.925</td>
<td>51</td>
</tr>
<tr>
<td>3</td>
<td>693.475</td>
<td>51</td>
</tr>
<tr>
<td>4</td>
<td>694.125</td>
<td>51</td>
</tr>
<tr>
<td>5</td>
<td>695.025</td>
<td>51</td>
</tr>
<tr>
<td>6</td>
<td>696.475</td>
<td>51</td>
</tr>
<tr>
<td>7</td>
<td>698.225</td>
<td>52</td>
</tr>
<tr>
<td>8</td>
<td>700.125</td>
<td>52</td>
</tr>
<tr>
<td>9</td>
<td>702.775</td>
<td>52</td>
</tr>
<tr>
<td>A</td>
<td>703.875</td>
<td>52</td>
</tr>
<tr>
<td>B</td>
<td>706.625</td>
<td>53</td>
</tr>
<tr>
<td>C</td>
<td>709.725</td>
<td>53</td>
</tr>
<tr>
<td>D</td>
<td>713.925</td>
<td>54</td>
</tr>
<tr>
<td>E</td>
<td>716.125</td>
<td>55</td>
</tr>
<tr>
<td>F</td>
<td>720.975</td>
<td>55</td>
</tr>
</tbody>
</table>

**Note:**
Scout® wireless systems operate in the UHF frequency band of 692 - 722 MHz, the same as US TV Channels 51 to 55. Interference may occur from existing TV channels within this band, depending on proximity to the TV transmitter tower. If all of the above TV Channels are active in your area, please contact TOA to arrange for an alternative custom range of frequencies (additional charge).
**Wireless Microphone System**

The wireless microphone system shall be of professional quality with an operating frequency range from 692 to 722 MHz with 16 selectable channels and simultaneous operation of up to sixteen systems. The transmission method shall be frequency modulation (F3E) using a PLL-based modulation system. RF carrier power shall be no greater than 50 mW. Transmission distance as measured in free field shall be 394 ft. (120 m). The system shall be FCC and UL listed with a two year manufacturer’s warranty.

**Wireless Receiver**

The wireless receiver shall have 16 selectable channels. The receiving method shall be double super-heterodyne using antenna switching diversity. Specifications shall include a S/N ratio of greater than 104 dB (A-weighted), harmonic distortion of less than 1% and frequency response of 100 Hz - 12 kHz, ±3 dB. The receiving sensitivity shall be greater than 80 dB with 20 dBµV input and 40 kHz deviation. Squelch types shall be carrier and noise with a variable squelch sensitivity of 18 - 40 dBµV. The unit shall have two fixed-mount antennas. The main audio outputs shall be balanced type with XLR-M jack, and unbalanced type with 1/4” phone jack, both with an output impedance of 600 ohms and switchable sensitivity between MIC (-60 dBV / 1 mV) and LINE (-20 dBV / 100 mV). A Mix Input, unbalanced type with 1/4” phone jack with an input impedance of 10 kohms and sensitivity of -20 dBV/100 mV shall allow the connection of the output of a second receiver or other audio source to be mixed with the main receiver output signal. Front panel LED’s shall include AF PEAK that lights at 3 dB below clipping and ANT A/B. Front panel controls shall include Check, Squelch and Volume. The wireless receiver shall be powered from the AC mains using a supplied AC-DC adapter with a power consumption of 250 mA (12 VDC). The unit shall operate within a temperature range of +14° F to +122° F (-10° C to +50° C). Unit construction shall be black resin with dimensions of 9.45” W x 1.38” H x 4.33” D (240 mm x 35 mm x 110 mm) and weight of 2.32 lbs. (1.05 kg). Included accessories shall be an external AC-DC adapter (120 VAC, 60 Hz) and frequency-adjust screw driver.

**Wireless Microphone Transmitters**

The handheld wireless microphone receiver shall have a cardioid pattern and be dynamic type capable of a maximum input level of 130 dB SPL or electret condenser type capable of a maximum input level of 125 dB SPL. The lapel microphone with bodypack shall be electret condenser type with a cardioid pattern and be capable of a maximum input level of 120 dB SPL. The headset (speech) microphone with bodypack shall be electret condenser type with a cardioid pattern and be capable of a maximum input level of 120 dB SPL. The diversity wireless receiver shall be the TOA WT-4810. The wireless handheld dynamic microphone shall be the TOA WM-4210. The wireless hand-held condenser microphone shall be the TOA WM-4220. The wireless lapel microphone with bodypack shall be the TOA WM-4310. The wireless aerobics headset microphone with bodypack shall be the TOA WM-4310A. The wireless headband microphone with bodypack shall be the TOA WM-4310H.