

# SCOUT® SERIES UHF WIRELESS MICROPHONE SYSTEMS



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.



## HIGHLIGHTS

### Applications

- A/V Rentals
- Bingo Halls
- Boardrooms
- Community Centers
- Fitness Clubs
- Hotels
- Houses of Worship
- Presenters
- Restaurants
- Schools
- Theatres

### Features

- Professional Portable Wireless Microphone Systems
- Frequency-Agile — Sixteen Channels
- UHF Band (692 - 722 MHz)
- Up to Sixteen Simultaneous Systems
- True Diversity Reception
- Handheld, Lapel and Headset Microphone Systems
- Ten Hours Continuous Transmitter Operation from One Nine Volt Battery
- FCC & UL Listed
- Two Year Warranty

## SCOUT® SYSTEMS

**Scout-HV** Handheld Mic (Vocal) and Receiver

**Scout-HS** Handheld Mic (Speech) and Receiver

**Scout-L** Lapel Mic and Bodypack, and Receiver

**Scout-AH** Aerobics Headset Mic and Bodypack, and Receiver

**Scout-SH** Speech Headset Mic and Bodypack, and Receiver

**Scout-HVL** Handheld (Vocal)/Lapel Combo., and One Receiver\*

**Scout-HSL** Handheld (Speech)/Lapel Combo., and One Receiver\*

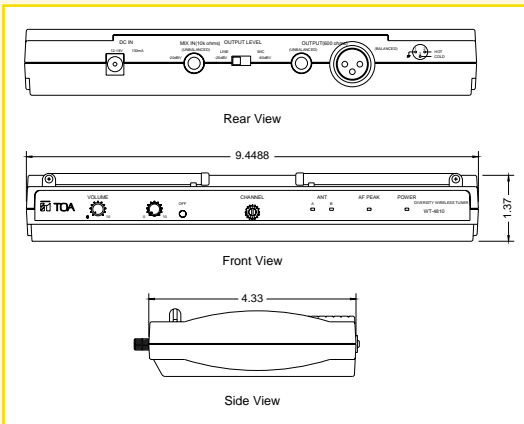
\* Each receiver supports one transmitter at a time.



## 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)

### DIMENSIONAL DRAWING



WT-4810

<b>Model No.</b>	WT-4810
<b>Frequency Range</b>	692 - 722 MHz
<b>Selectable Channels</b>	16
<b>Receiving System</b>	Double super-heterodyne
<b>Diversity Method</b>	TOA space diversity
<b>S/N Ratio</b>	Greater than 104 dB (A-weighted)
<b>Harmonic Distortion</b>	Less than 1%
<b>Frequency Response</b>	100 Hz - 12 kHz, $\pm 3$ dB
<b>Receiving Sensitivity</b>	Greater than 80 dB, S/N ratio (20 dB $\mu$ V input, 40 kHz deviation)
<b>Squelch System</b>	Noise and Carrier
<b>Squelch Sensitivity</b>	18 - 40 dB $\mu$ V variable
<b>Audio Outputs</b>	<ul style="list-style-type: none"> <li>■ Connectors: XLR-3-31 (male), balanced (Pin #2 Hot) 1/4" phone jack, unbalanced</li> <li>■ Level: MIC: -60 dBV (1 mV) LINE: -20 dBV (100 mV)</li> <li>■ Output Impedance: 600 <math>\Omega</math></li> </ul> *MIC/LINE Switch affects both outputs.
<b>Mix Input</b>	<ul style="list-style-type: none"> <li>■ Connector: 1/4" phone jack (unbalanced)</li> <li>■ Level: -20 dBV (100 mV)</li> <li>■ Input Impedance: 10 k<math>\Omega</math></li> </ul>
<b>Antennas</b>	Two 1/4 wave rod antennas (fixed-mount)
<b>Indicators</b>	LED: ANT A/B, AF PEAK (3 dB below clipping)
<b>Controls</b>	Channel Select, RF Check, Squelch, Volume
<b>Power Requirement</b>	AC mains (using supplied AC-DC adapter)
<b>Power Consumption</b>	130 mA (12 VDC)
<b>Operating Temperature</b>	+14° F to +122° F (-10° C to +50° C)
<b>Finish</b>	Resin, black
<b>Dimensions (W x H x D)</b>	9.45" x 1.38" x 4.33" (240 mm x 35 mm x 110 mm)
<b>Weight</b>	2.32 lbs. (1.05 kg)
<b>Accessories</b>	(1) AC-DC adapter (120 VAC, 60 Hz) (1) Frequency-adjust screw driver



## 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-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-4310 LAPEL MICROPHONE WITH BODYPACK

- 16 Channel Frequency-Agile
- Hands-free Operation
- Electret Condenser 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 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
- Detachable Sweatband and Moisture-Resistant Waist 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)

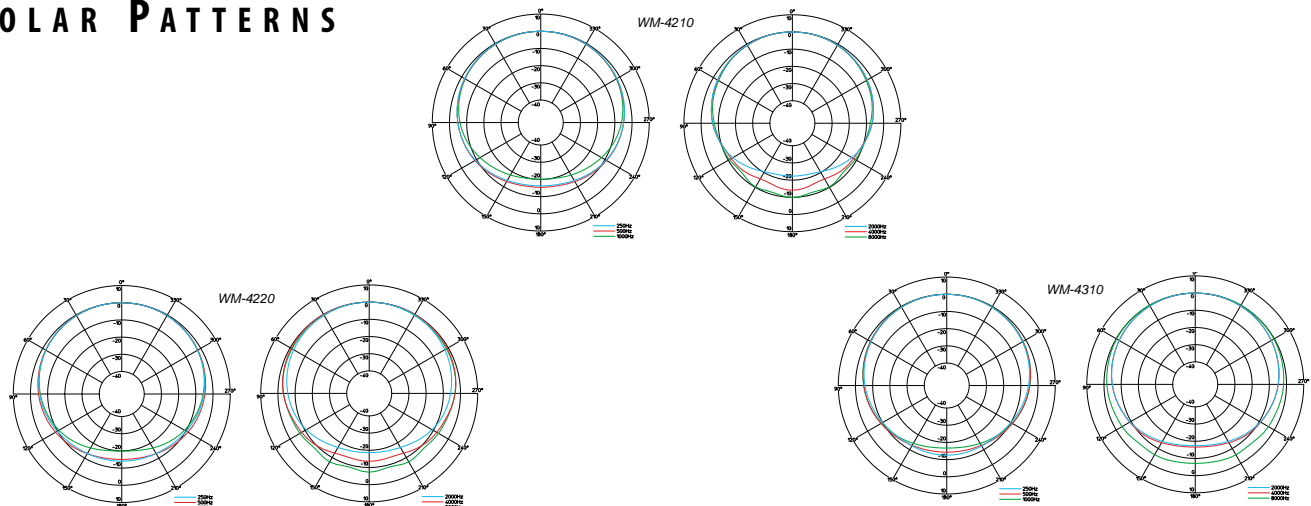
# SPECIFICATIONS

SCOUT® SERIES



Model No.	WM-4210	WM-4220	WM-4310	WM-4310H	WM-4310A
<b>Description</b>	Handheld Microphone (Vocal)	Handheld Microphone (Speech)	Lapel Microphone w/ Bodypack	Headset Microphone (Speech) w/ Bodypack	Headset Microphone (Aerobics) w/ Bodypack
<b>Microphone Element</b>	Dynamic, cardioid	Electret condenser, cardioid	Electret condenser, cardioid		
<b>Maximum Input Level</b>	130 dB SPL	125 dB SPL	120 dB SPL		
<b>Transmission Method</b>	Frequency Modulation (F3E)				
<b>Frequency Range</b>	692 - 722 MHz				
<b>Selectable Channels</b>	16				
<b>RF Carrier Power</b>	Less than 50 mW				
<b>Maximum Deviation</b>	±40 kHz				
<b>Transmission Distance</b> (free field, with WT-4800)	394 ft. (120 m)				
<b>Modulation System</b>	PLL Synthesizer				
<b>Tone Frequency</b>	32.768 kHz				
<b>Battery</b>	9 V (6LR61) x 1, minimum 10 hours operation (alkaline type)				
<b>Indicator</b>	Power LED - flashes to indicate low battery level (< 6 VDC)				
<b>Antenna</b>	Internal		1/4 wave helical-type		
<b>Controls</b>	Power On/Off (recessed), Channel Select		Power On/Off (recessed), Channel Select, Sensitivity		
<b>Connector</b>	—		0.14" (3.5 mm) dia. plug		
<b>Cable Length</b>	—		4.78 ft. (1.45 m)		
<b>Operating Temperature</b>	+14° F to +122° F (-10° C to +50° C)				
<b>Finish</b>	Resin, dark gray				
<b>Dimensions</b>	1.97" dia. x 9.26" (50 mm x 235.2 mm)	1.77" dia. x 9.26" (45 mm x 235.2 mm)	2.44" W x 5.59" H x 1.26" D (62 mm x 142 mm x 32 mm)		
<b>Weight</b> (with battery)	0.60 lbs. (270 g)	0.55 lbs. (250 g)	0.33 lbs. (150 g)		
<b>Accessories</b>	(1) Stand adapter (1) Storage case (1) Frequency-adjust screw driver		(1) Lapel clip (1) Storage case	(1) Frequency-adjust screw driver	(1) Moisture-proof waist pouch (1) Frequency-adjust screw driver

## POLAR PATTERNS

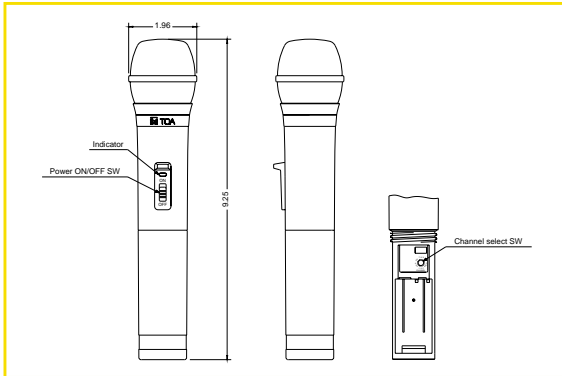


# SPECIFICATIONS

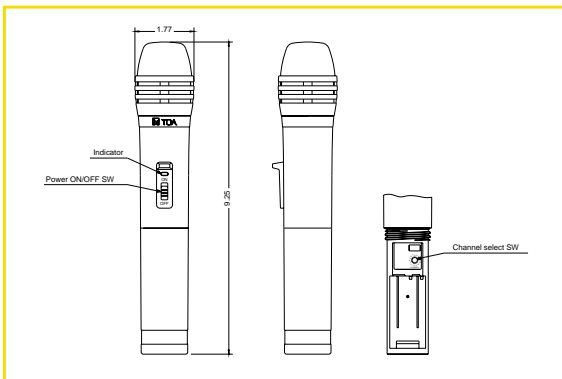
SCOUT® SERIES



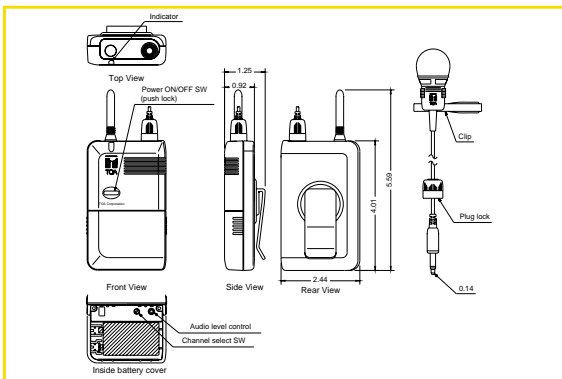
## DIMENSIONAL DRAWINGS



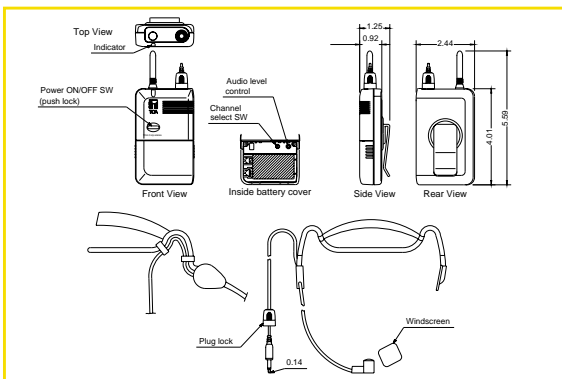
WM-4210



WM-4220



WM-4310



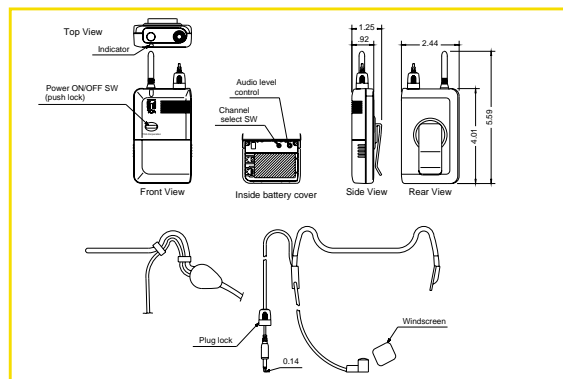
WM-4310A

## SCOUT® FREQUENCIES

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

### 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).



WM-4310H

## 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,  $\pm 3$  dB. The receiving sensitivity shall be greater than 80 dB with 20 dB $\mu$ V input and 40 kHz deviation. Squelch types shall be carrier and noise with a variable squelch sensitivity of 18 - 40 dB $\mu$ V. 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 transmitter 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 SPL 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 SPL of 120 dB SPL. The headset (aerobics) microphone with bodypack shall be electret condenser type with a cardioid pattern and be capable of a maximum input level SPL of 120 dB SPL.

The transmission method shall be frequency modulation (F3E) with a PLL-based modulation system operating in the frequency range of 692 - 722 MHz with 16 selectable channels. The RF carrier power shall be no greater than 50 mW with maximum deviation of  $\pm 40$  kHz and a tone key frequency of 32.768 kHz. The unit shall operate for a minimum of 10 hours using a 9 V (6LR61), alkaline type battery. A power LED shall glow continuously to indicate normal operation and flash to indicate low battery level (< 6 VDC). The transmitter shall utilize a 1/4 wave helical antenna. Transmitter controls shall include Power On/Off, Channel Select and Input Sensitivity Adjust (bodypack). The bodypack shall include a 0.14" (3.5 mm) dia. input jack and a

rotatable attachment clip. The transmitters shall operate within a temperature range of +14° F to +122° F (10° C to +50° C). The transmitters shall be constructed of black resin. Dimensions shall be 1.97" dia. x 9.26" (50 mm x 235.2 mm) for the dynamic handheld, 1.77" dia. x 9.26" (45 mm x 235.2 mm) for the condenser handheld and 2.44" W x 5.59" H x 1.26" D (62 mm x 142 mm x 32 mm) for the lapel and headset bodypack. The lapel microphone cable length shall be 4.76 ft. (1.45 m). The weight (with battery) shall be 0.60 lbs. (270 g) for the dynamic handheld, 0.55 lbs. (250 g) for the condenser handheld and 0.33 lbs. (150 g) for the bodypack. Included accessories shall be a frequency-adjust screw driver and storage case, stand adapter (handheld) and rotatable lapelclip (lapel/bodypack). The aerobics headset shall also include a sweatband and moisture-proof waist pouch.

The diversity wireless receiver shall be the TOA WT-4810.

The wireless handheld dynamic microphone shall be the TOA WM-4210.

The wireless handheld 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 headset microphone with bodypack shall be the TOA WM-4310H.