

UHF WIRELESS MICROPHONE SYSTEM



DESCRIPTION

Setting ever higher standards in integrated wireless microphone systems with its 5000 Series wireless microphone systems, TOA provides a full range of wireless microphones optimized for both general and specific applications, all optimally compatible with accompanying tuner units and ancillary equipment.

With their even greater selection of microphone units, increased coverage area and cost-effectiveness, TOA 5000 Series wireless microphone systems offer completely reliable long-term operation in demanding heavy-use environments. This extends wireless microphone applications beyond the everyday, and extends coverage to applications such as aerobics classes and presentations or demonstrations where the microphone user is in constant motion.

Wireless Microphone Units

TOA's new line of wireless microphones comprises handheld vocal models WM-4200, WM-4210, the speech-use WM-4220, and the slim single-battery WM-5220, as well as lavalier model WM-5320, the WM-5320H headset model and the WM-5320A with a dedicated headset for aerobics and other active applications.

Tuner Units

All TOA 5000 Series UHF wireless microphone tuners utilize Phase Locked Loop (PLL) synthesis to deliver exceptional performance along with stability and reliability, minimizing oscillation frequency variations caused by ambient temperature variations. In addition, constant high-quality area coverage is ensured by incorporating TOA 250mA true diversity or 200mA/130mA space diversity circuitry, a usable frequencies scanning channel search function, a double super-heterodyne receiving system, and a squelch function for carrier, noise and tone. The tuner units comprise the WT-5800 and WT-5805 rack-mounted units, and the WT-5810 twin rod antenna portable unit. The WT-5800 and WT-5805 provides 64 (4×16) channel banks of circuit frequencies, and the WT-5810 16 selectable frequencies.

FEATURES

Wireless Microphone Units

- Up to **16 microphones** can be used in the same area without any interference problems.
- A **wide operating range** allows microphones to be used up to a maximum of 120 meters distance from the tuner units.
- **Extended battery life:** over 10 hours of continuous use at average temperatures.
- **Single battery operation** for reduced size and weight.

Tuner Units

- TOA's proprietary **true diversity and space diversity technologies and algorithms** provide constant area coverage. Overall performance and reliability are also enhanced through TOA's simpler and more effective circuitry compared to conventional diversity tuners.
- **Tone squelch function** automatically mutes output when the incoming signal strength goes below a settable signal strength level to prevent annoying noise.
- **Microphone sensitivity control** allows adjusting the input level to suit the user's voice level and to prevent overloading or distortion.
- **Auto mixing input function** makes it possible to connect one unit's AF input to the AF output of another unit.
- **Usable frequencies scanning channel check function** that are free.
- **Compressor circuitry works** to minimize ambient noise.

Ancillary Equipment

- **WD-4800 Power/Antenna Distributor**
 - 2 antenna inputs and 4 distributed outputs (when 2 antennas are set up in a large room).
 - Supplies power to the antenna.
- **YW-4500 UHF Wireless Antenna**
 - Power supplied by tuner unit (WT-5800, WT-5805) through coaxial cable
 - Built-in RF signal booster



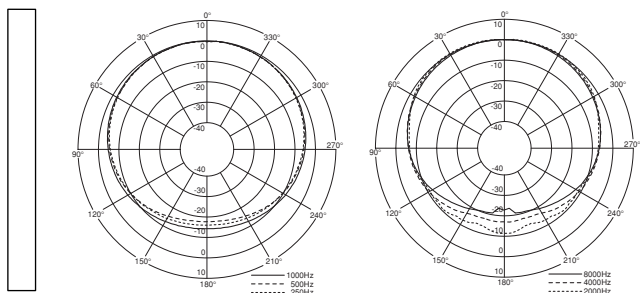
WM-5220

Hand-held (Vocal) Microphone

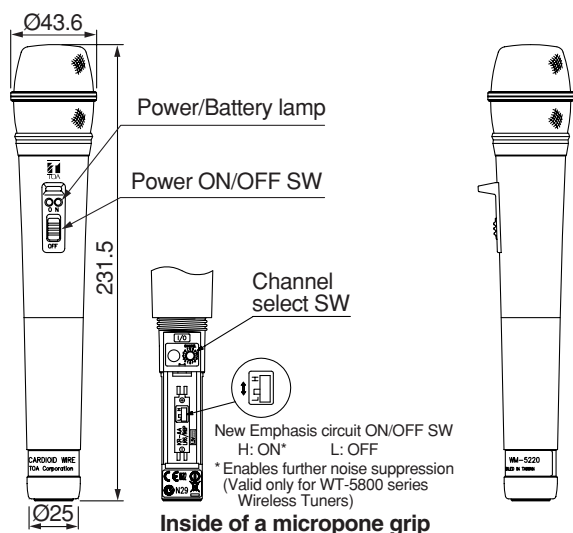


- Operating range: 3m – 120m
- Electret condenser cardioid microphone element
- 16 selectable channel frequencies
- Maximum input level: 126 dB SPL
- ON/OFF switch prevents the microphone from rolling
- Single AA battery operation for more compact and lightweight body
- Low-battery indicator
- Built-in antenna

Polar Response



APPEARANCE AND DIMENSIONAL DIAGRAMS



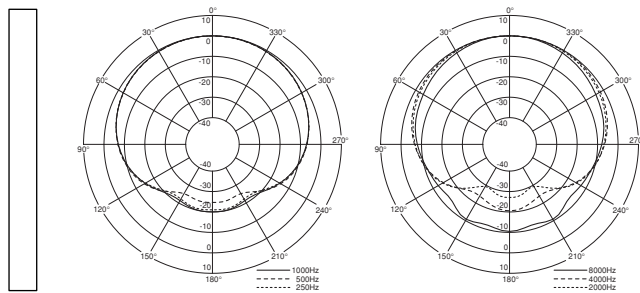
WM-4200

Hand-held (Vocal) Microphone

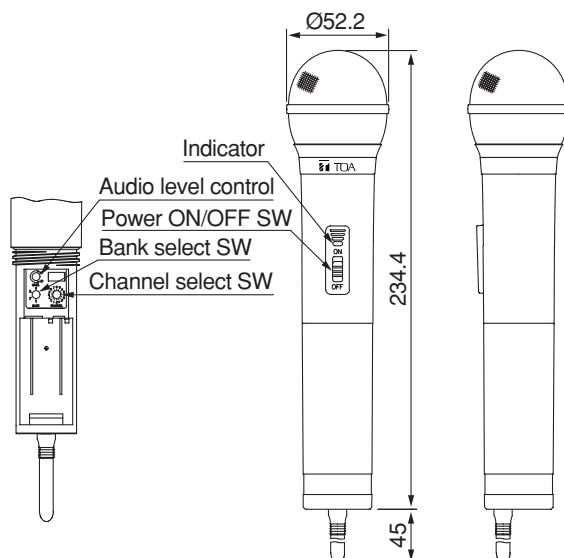


- Operating range: 3m – 150m
- Dynamic cardioid microphone element designed for vocal use
- Four 16-channel banks of circuit frequencies
- Input sensitivity control included
- Maximum input level: 145 dB SPL
- Dynamic range: over 110 dB
- Rubber coating minimizes handling noise
- ON/OFF switch designed to prevent accidental activation
- LED low battery indicator

Polar Response



APPEARANCE AND DIMENSIONAL DIAGRAMS



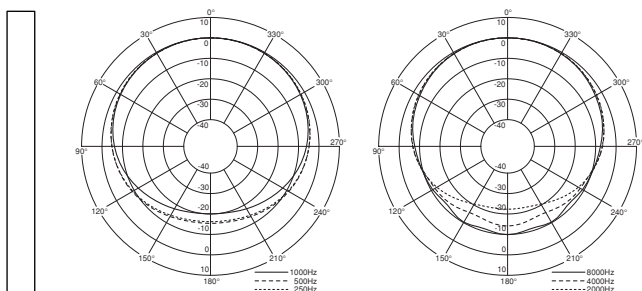
WM-4210

Hand-held (Vocal) Microphone

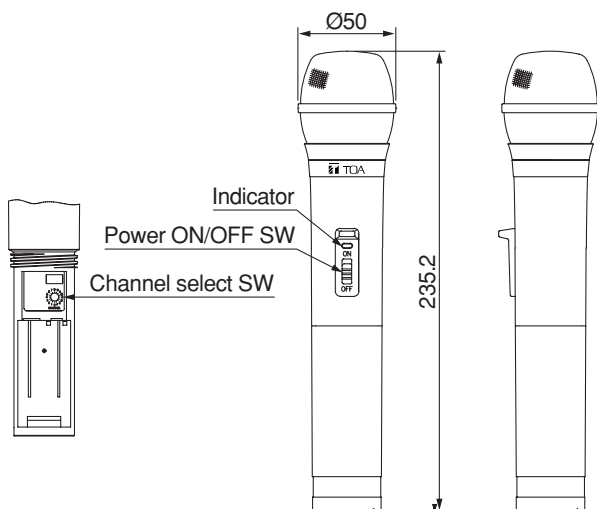


- Operating range: 3m – 120m
- Dynamic cardioid microphone element designed for vocal use
- 16 selectable channel frequencies
- Maximum input level: 130 dB SPL
- Dynamic range: over 110dB
- ON/OFF switch also keeps mic from rolling when put down
- Flashing LED low battery indicator

Polar Response



APPEARANCE AND DIMENSIONAL DIAGRAMS



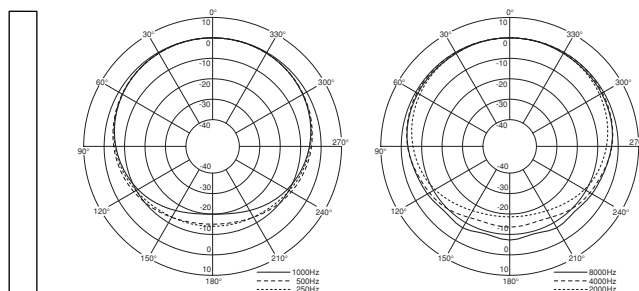
WM-4220

Hand-held (Speech) Microphone

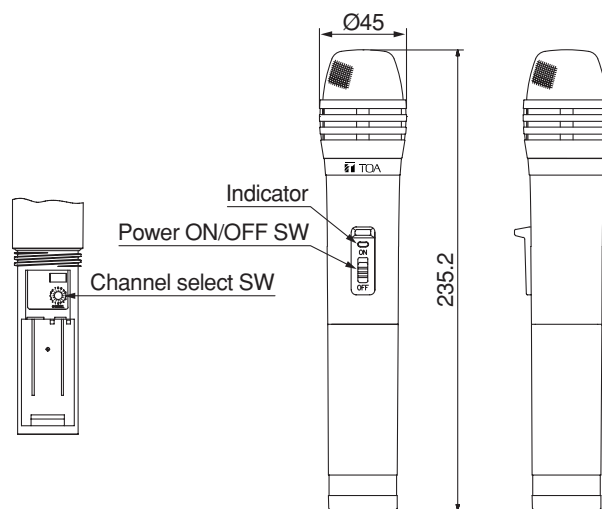


- Operating range: 3m – 120m
- Electret condenser cardioid microphone element for speech use
- 16 selectable channel frequencies
- Maximum input level: 125 dB SPL
- Dynamic range: over 100dB
- ON/OFF switch also keeps mic from rolling when put down
- Flashing LED low battery indicator

Polar Response



APPEARANCE AND DIMENSIONAL DIAGRAMS



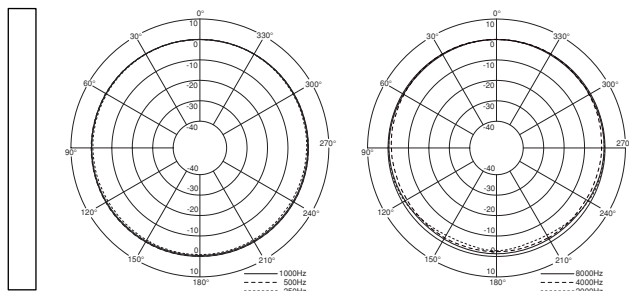
WM-5320

Lavalier Microphone

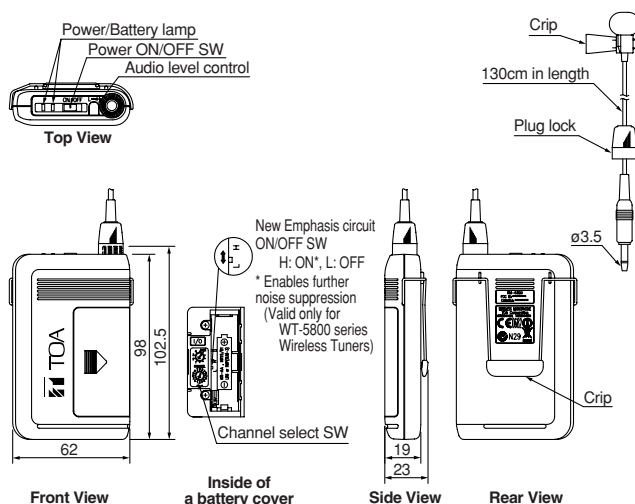


- Operating range: 3m – 120m
- Omnidirectional electret condenser microphone element
- Four 16-channel banks of circuit frequencies
- Maximum input level: 110 dB SPL
- Built-in circuitry minimizes ambient noise effects
- Single AA battery operation for more compact and lightweight body
- Low-battery indicator
- Connector for 3.5 mini-plugs
- Built-in antenna
- Neck strap is provided

Polar Response



APPEARANCE AND DIMENSIONAL DIAGRAMS



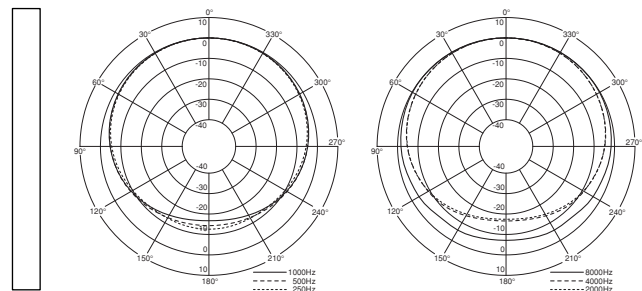
WM-5320H

Speech Headset Microphone

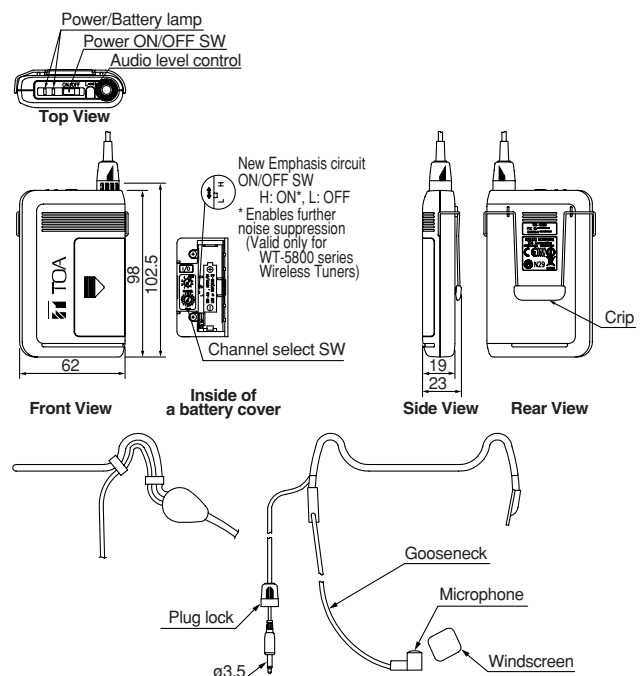


- Operating range: 3m – 120m
- Electret condenser cardioid microphone element
- Four 16-channel banks of circuit frequencies
- Maximum input level: 120 dB SPL
- Built-in circuitry minimizes ambient noise effects
- Single AA battery operation for more compact and lightweight body
- Low-battery indicator
- Connector for 3.5 mini-plugs
- Secure and comfortably fitting headset
- Built-in antenna

Polar Response



APPEARANCE AND DIMENSIONAL DIAGRAMS



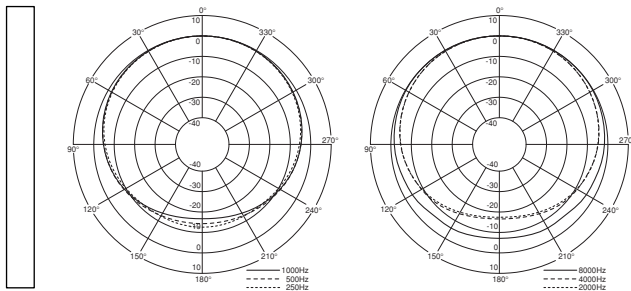
WM-5320A

Aerobics Headset Microphone

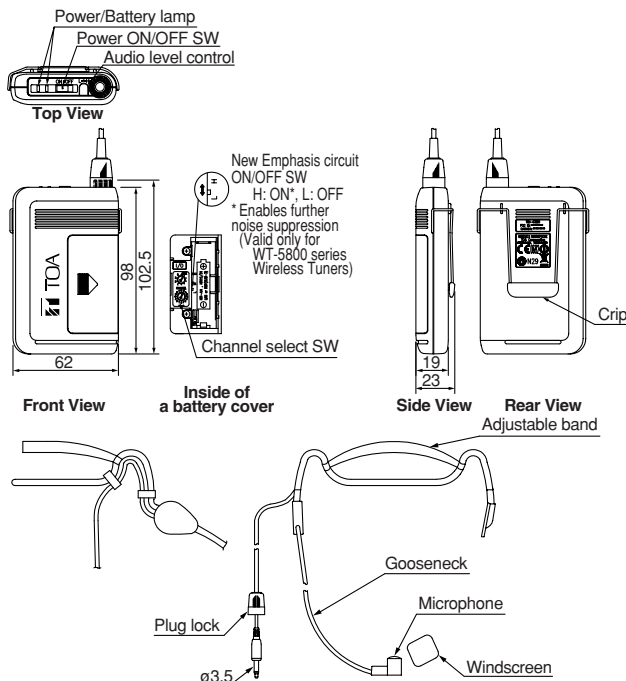


- Operating range: 3m – 120m
- Electret condenser cardioid microphone element
- Four 16-channel banks of circuit frequencies
- Maximum input level: 120 dB SPL
- Built-in circuitry minimizes ambient noise effects
- Single AA battery operation for more compact and lightweight body
- Low-battery indicator
- Connector for 3.5 mini-plugs
- Built-in antenna
- Extra-secure and comfortably-fitting headset
- Sweat-resistant headset microphone
- Securely-fitting belt with pouch

Polar Response



APPEARANCE AND DIMENSIONAL DIAGRAMS



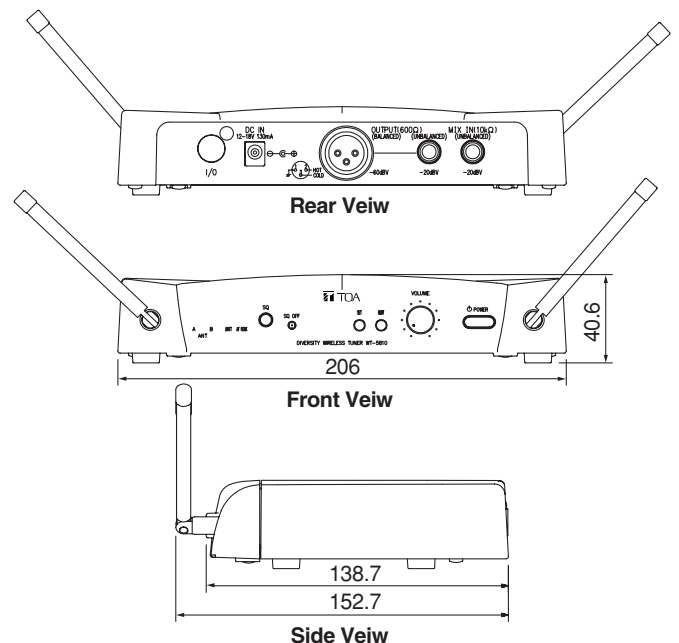
WT-5810

Wireless Portable Tuner



- Phased Lock Loop (PLL) synthesis operation
- 16 selectable channel frequencies
- TOA space diversity technology
- Double super-heterodyne receiving system
- Auto mixing input function
- Squelch function (carrier, noise, tone)
- Usable frequencies scanning channel search function
- Compact portable design
- Microphone sensitivity adjustment function
- Compander circuitry for minimizing ambient noise
- Rod antenna × 2
- Balanced output (XLR connector) and phone jack output
- Low-battery indicator

APPEARANCE AND DIMENSIONAL DIAGRAMS



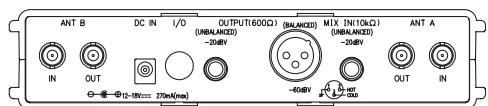
WT-5800

Wireless Tuner

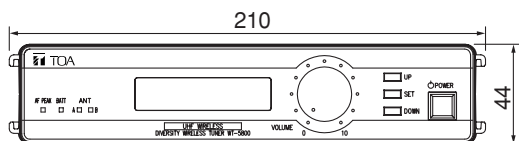


- Phased Lock Loop (PLL) synthesis operation
- Four 16-channel banks of circuit frequencies
- True diversity technology
- Double super-heterodyne receiving system
- Two-line LCD display
- Auto mixing input function
- Squelch function (carrier, noise, tone)
- Usable frequencies scanning channel search function
- Compact half-rack size body
- Microphone sensitivity adjustment function
- Compander circuitry for minimizing ambient noise
- Antenna distribution output
- Low-battery indicator

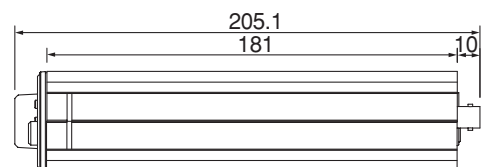
APPEARANCE AND DIMENSIONAL DIAGRAMS



Rear View



Front View



Side View

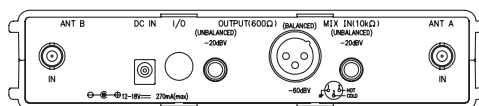
WT-5805

Wireless Tuner

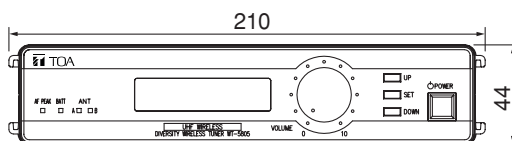


- Phased Lock Loop (PLL) synthesis operation
- Four 16-channel banks of circuit frequencies
- TOA space diversity technology
- Double super-heterodyne receiving system
- Two-line LCD display
- Auto mixing input function
- Squelch function (carrier, noise, tone)
- Usable frequencies scanning channel search function
- Compact half-rack size body
- Microphone sensitivity adjustment function
- Compander circuitry for minimizing ambient noise
- Low-battery indicator

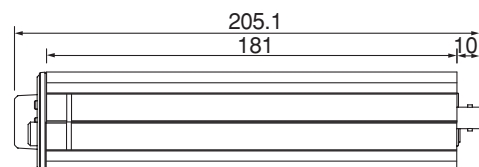
APPEARANCE AND DIMENSIONAL DIAGRAMS



Rear View



Front View



Side View

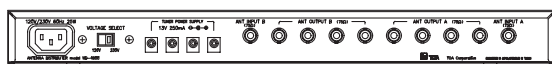
WD-4800

Power/Antenna Distributor

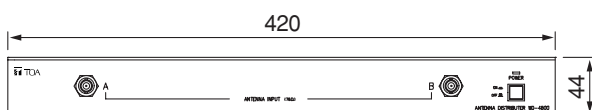


- 2 antenna inputs and 4 distributed outputs
- 2 inputs per antenna which are mixed for output (when 2 antennas are set up in a large room)
- Supplies power to the antenna
- Compact 19" rack-mount design

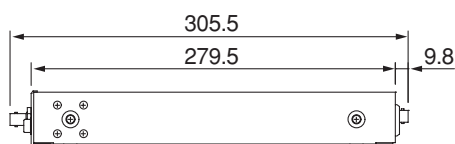
APPEARANCE AND DIMENSIONAL DIAGRAMS



Rear View



Front View



Side View

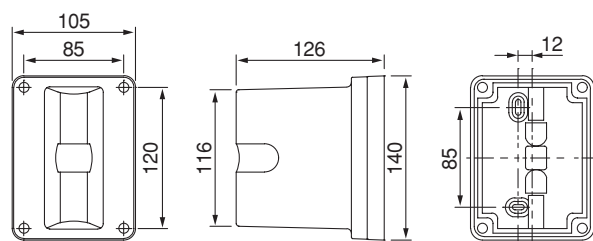
Antenna/ Rack Mounting Brackets

YW-4500 Wireless Antenna



- UHF wireless dipole indoor antenna
- Wall mounted (WT-5800, WT-5805, WD-4800)
- Power supplied by tuner unit (WT-5800, WT-5805, WD-4800) through coaxial cable
- Built-in RF signal booster
- Attenuation switch helps minimize noise and any interference

APPEARANCE AND DIMENSIONAL DIAGRAMS

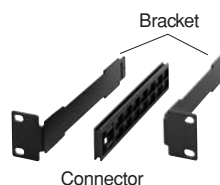


MB-WT3 Rack Mount Bracket Kit



- Two type brackets.
- For rack-mounting one WT-5800/WT-5805 unit.

MB-WT4 Rack Mount Bracket Kit



- Bracket (x2) with connector.
- For rack-mounting two WT-5800/WT-5805 units.

MB-15B Rack Mounting Bracket



- For rack-mounting one WD-4800 unit.

SPECIFICATIONS

Model No.	WM-5220 UHF Hand-held (Vocal) Wireless Microphone	WM-4200 UHF Hand-held (Vocal) Wireless Microphone	WM-4210 UHF Hand-held (Vocal) Wireless Microphone	WM-4220 UHF Hand-held (Vocal) Wireless Microphone
Microphone Element	Electret condenser unit: Cardioid		Dynamic microphone unit: Cardioid	
Frequency Range	692 ~865 MHz, UHF* ¹		692~865 MHz, UHF* ¹	
Channel Selectable	16 CH	64 Selectable frequencies (international may vary)		16 CH
RF Carrier Power	Under 50 mW			
Tone Frequency	32.768 kHz			
Modulation System	PLL synthesizer			
Maximum Input Level	126 dB SPL	145 dB SPL	130 dB SPL	125 dB SPL
Maximum Deviation	±40 kHz			
Battery	LR6 (AA)	6LR61 (9V × 1)		
Battery Life	Over 10 hours (alkaline)	10 hours (alkaline)		
Indicator	Power/Battery lamps	Power/Battery indicator (common use)		
Antenna	Built-in type	1/4λ herical antenna	Built-in type	
Operating Temperature	-10°C to +50°C			
Finish	Resin, rubber coating	Resin, coating (change other's)		
Dimensions	ø43.6 × 231.5 mm	ø52.2 × 279.4 mm	ø50 × 235.2 mm	ø45 × 235.2 mm
Weight	180 g (with battery)	300 g (with battery)	250 g (with battery)	250 g (with battery)
Accessory	Stand adapter × 1, Screw driver × 1, Storage case × 1			

Model No.	WM-5320 UHF Lavalier Wireless Microphone		WM-5320H UHF Headset Wireless Microphone	WM-5320A UHF Headset (Aerobics) Wireless Microphone
Transmitter unit				
Frequency Range	692 –865 MHz, UHF* ¹			
Channel Selectable	64 frequencies (international may vary)			
RF Carrier Power	Under 50 mW			
Tone Frequency	32.768 kHz			
Modulation System	PLL synthesizer			
Maximum Input Level	110 dB SPL	120 dB SPL		
Battery	LR6 (AA)			
Battery Life	10 hours (alkaline)			
Indicator	Power/Battery lamps			
Antenna	Built-in type			
Operating Temperature	–10°C to +50°C			
Finish	Resin, coating			
Dimensions	62 (W) × 102.5 (H) × 23 (D) mm			
Weight	110 g (with battery)	130 g (with battery)		
Accessory	Screw driver × 1, Storage case × 1, Neck strap × 1	Screw driver × 1, Neck strap × 1		Waist pouch × 1, Screw driver × 1
Microphone unit				
Microphone	Electret condenser microphone, omni-directional pattern	Electret condenser microphone, cardioid		
Power Requirement	DC (supplied from lavalier pack)			
Cable Length	1.3 m	1.4 m		
Connector	ø3.5 plug (EIAJ RC701)			

Model No.	WT-5800 UHF Wireless Tuner	WT-5805 UHF Wireless Tuner	WT-5810 UHF Wireless Potable Tuner
Power Requirement	AC mains (supplied AC-DC adapter must be used)		
Power Consumption	250 mA (12 V DC)	200 mA (12 V DC)	130 mA (12 V DC)
Receiving Frequency	692–865 MHz, UHF* ¹		
Channel Selectable	64 Selectable frequencies		16CH
Receiving System	Double Super-heterodyne		
Diversity System	True diversity	Space diversity	
Mixing Output	MIC: –60 dB* ² , 600Ω, balanced, XLR-3-31 type connector LINE: –20 dB* ² , 600Ω, unbalanced, phone jack		
Mixing Input	–20 dB* ² , 10 kΩ, unbalanced, phone jack		
Antenna	—		Rod antenna
Antenna Input	75 Ω, BNC (phantom powering for antenna) 9 V DC, 30 mA (max.)		—
Antenna Output	75Ω, BNC (Gain 0dB)	—	—
Receiving Sensitivity	Over 90 dB, S/N ratio (20 dBμV input, 40 kHz deviation)		
Squelch Sensitivity	18–40 dBμV variable		
Squelch System	Using together of noise SQ, carrier SQ and tone SQ		
Tone Frequency	32.768 kHz		
Indicator	Audio (6 step), RF (6 step), ANT A/B, Audio (peak), battery alarm		ANT A/B, Audio (peak), battery alarm
Channel Check	Usable frequencies scanning		
S/N Ratio	Over 110dB (A-weight, unbalanced output)		Over 104dB (A-weight, unbalanced output)
Harmonic Distortion	Under 1% (typical)		
Frequency Response	100 – 15,000 Hz, ±3 dB		
Operating Temperature	–10°C to +50°C		
Finish	Resin, black		
Dimensions	210(W) × 44(H) × 205.1(D) mm		206(W) × 40.6(H) × 152.7(D) mm
Weight	700 g		590 g
Accessory	AC-DC adapter × 1		AC-DC adapter × 1
Option	Mounting bracket kit: MB-WT3 (for rack mounting one WT-5800 or WT-5805 unit) MB-WT4 (for rack mounting two WT-5800 or WT-5805 units)		—

*¹Frequency range may vary by area.

*²0dB = 1 V

Model No.	WD-4800 Power/Antenna Distributor
Power Requirement	AC mains
Power Consumption	25W
Frequency Range	VHF/UHF
Antenna Input	2 input (front × 1, rear × 1), 75 Ω, BNC (phantom powering for antenna)
Antenna Output	4 output, 75 Ω, BNC
DC Power Supply	4 output, (each output: 13V DC/250mA)
Indicator	Power
Operating Temperature	-10°C to +50°C
Finish	Steel, coating
Dimensions	420(W) × 44(H) × 305.5(D) mm
Weight	3.5 kg
Accessory	DC cable × 4
Option	Rack mounting bracket: MB-15B

Model No.	YW-4500 UHF Wireless Antenna
Power Requirement	7~12 V DC (supplied from amplifier or tuner)
Current Consumption	Under 24 mA
Receiving Frequency	680~880 MHz, UHF
Dipole Ratio Relative Gain	More than 8 dB (780 MHz)
V.S.W.R	Less than 3.0
Output Impedance	75 Ω
Mounting Hole Pitch	83.5 mm (dimensions for wiring box)
Operating Temperature	-10°C to +50°C
Finish	AES resin, off-white
Dimensions	105(W) × 140(H) × 126(D)mm
Weight	270 g
Accessory	M3.5 screw for wiring box × 2, Tapping screw (M4) for wooden wall × 2, RG-6/U or RG-11/U sleeve × 1

TOA Corporation

URL : <http://www.toa.jp/>

Specifications are subject to change without notice.
Printed in Japan (0606) 833-61-780-40 u

