

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-5270, WM-4200, WM-4210, the speech-use WM-4220, and the slim single-battery WM-5220, as well as lavalier model WM-5320, WM-4300, 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, WT-5805 and WT-4820 (2-channel tuner) 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

- There are different **dynamic and electret condenser microphones**.
- 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 antenna 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** for constant area coverage.
- **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.
- **Indication** of microphone's battery status
- A **channel check function** simplifies channel setting operations on wireless microphones used on multiple channels simultaneously.
- **Compressor circuitry works** to minimize ambient noise.

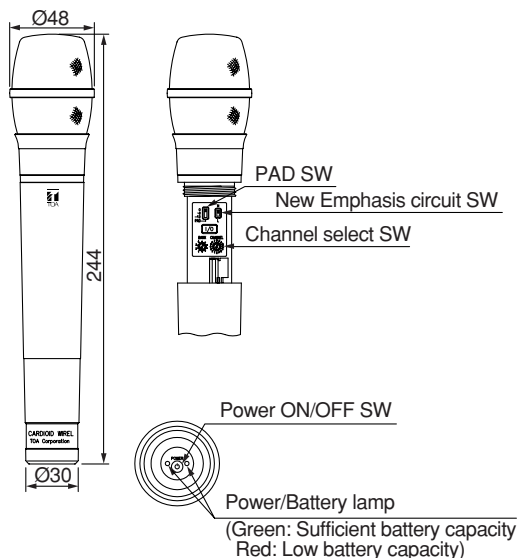
Ancillary Equipment

- **Using WD-4800**, a system allowing simultaneous use of up to 16 separate channels can be confirmed.



WM-5270_{-E/F}

Handheld (Vocal) Microphone



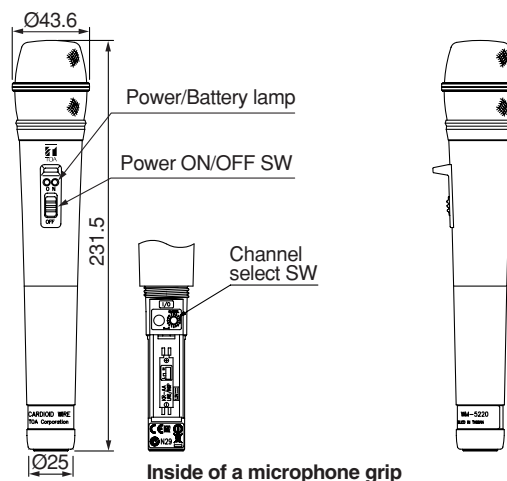
- Operating range: 3m – 120m
- Dynamic cardioid microphone element designed for vocal use
- Four 16-channel banks of circuit frequencies
- Maximum input level: 142 dB SPL (Can be set from 130dB to 142dB by Pad switch)
- Dynamic range: over 95 dB
- Single AA battery operation for more compact and lightweight body
- Low-battery indicator (Sufficient power/Green, Low battery/Dimming green, Empty/Red)
- Built-in antenna

Microphone Element	Dynamic microphone unit: Cardioid
Frequency Range	636–666 MHz -F Band or 668-698 MHz -E Band, UHF*
Channel Selectable	64 Selectable frequencies (international may vary)
RF Carrier Power	Under 50 mW
Tone Frequency	32.768 kHz
Oscillator	PLL synthesizer
Maximum Input Level	142 dB SPL
Maximum Deviation	± 40 kHz
Battery	LR6 (AA)
Battery Life	Over 10 hours (alkaline)
Indicator	Power/Battery indicator
Antenna	Built-in type
Operating Temperature	-10°C to $+50^{\circ}\text{C}$
Finish	Dark gray
Dimensions	$\varnothing 48 \times 244$ mm
Weight	340 g (with battery)
Accessory	Stand adapter $\times 1$, Screw driver $\times 1$, Storage case $\times 1$, Rolling stopper $\times 1$

*1 Frequency range may vary by area.

WM-5220_{-E/F}

Handheld (Speech) Microphone



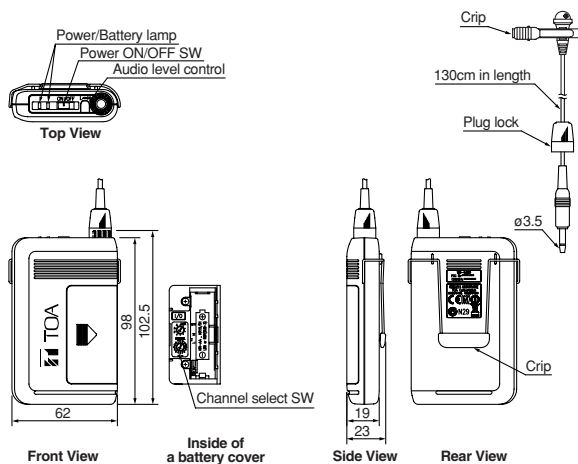
- Operating range: 3m – 120m
- Electret condenser cardioid microphone element
- 16 selectable channel frequencies
- Maximum input level: 126 dB SPL
- ON/OFF switch prevents the microphone from rolling
- Single AA battery operation for more compact and lightweight body
- Low-battery indicator (Sufficient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

Microphone Element	Electret condenser unit: Cardioid
Frequency Range	636–666 MHz -F Band or 668-698 MHz -E Band, UHF*
Channel Selectable	16 CH
RF Carrier Power	Under 50 mW
Tone Frequency	32.768 kHz
Oscillator	PLL synthesizer
Maximum Input Level	126 dB SPL
Maximum Deviation	± 40 kHz
Battery	LR6 (AA)
Battery Life	Over 10 hours (alkaline)
Indicator	Power/Battery indicator
Antenna	Built-in type
Operating Temperature	-10°C to $+50^{\circ}\text{C}$
Finish	Resin, rubber coating
Dimensions	$\varnothing 43.6 \times 231.5$ mm
Weight	180 g (with battery)
Accessory	Stand adapter $\times 1$, Screw driver $\times 1$, Storage case $\times 1$

*1 Frequency range may vary by area.

WM-5320-E/-F

Lavalier Microphone



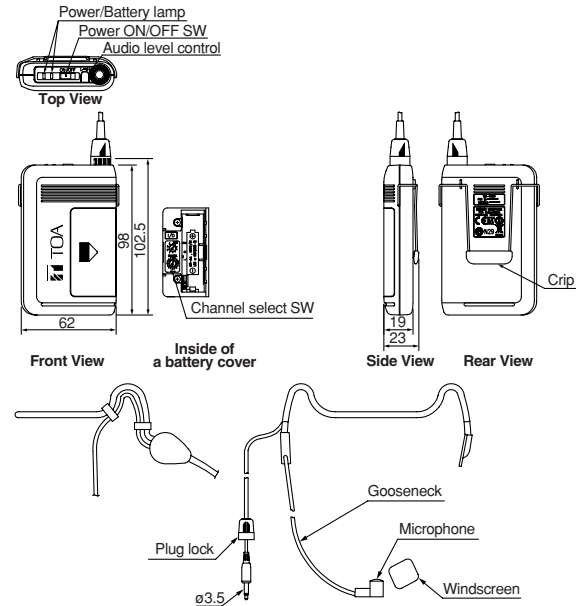
- Operating range: 3m – 120m
- Omnidirectional electret condenser microphone element
- Four 16-channel banks of circuit frequencies
- Maximum input level: 110 dB SPL
- Built-in circuitry minimizes ambient noise effects
- Single AA battery operation for more compact and lightweight body
- Low-battery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

Transmitter unit	
Frequency Range	636–666 MHz -F Band or 668-698 MHz -E Band, UHF*
Channel Selectable	64 frequencies (international may vary)
RF Carrier Power	Under 50 mW
Tone Frequency	32.768 kHz
Oscillator	PLL synthesizer
Maximum Input Level	110 dB SPL
Battery	LR6 (AA)
Battery Life	Over 10 hours (alkaline)
Indicator	Power/Battery indicator
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)
Accessory	Screw driver × 1, Storage case × 1, Neck strap × 1
Microphone unit	
Microphone	Electret condenser microphone, omni-directional pattern
Power Requirement	DC (supplied from lavalier pack)
Cable Length	1.3 m
Connector	ø3.5 plug (EIAJ RC701)

*1 Frequency range may vary by area.

WM-5320H-E/-F

Speech Headset Microphone



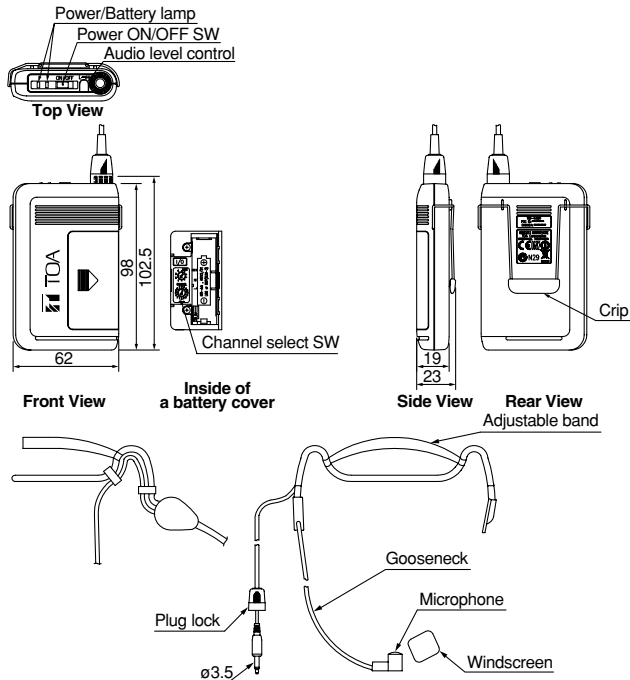
- Operating range: 3m – 120m
- Electret condenser cardioid microphone element
- Four 16-channel banks of circuit frequencies
- Maximum input level: 120 dB SPL
- Built-in circuitry minimizes ambient noise effects
- Single AA battery operation for more compact and lightweight body
- Low-battery indicator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

Transmitter unit	
Frequency Range	636–666 MHz -F Band or 668-698 MHz -E Band, UHF*
Channel Selectable	64 frequencies (international may vary)
RF Carrier Power	Under 50 mW
Tone Frequency	32.768 kHz
Oscillator	PLL synthesizer
Maximum Input Level	120 dB SPL
Battery	LR6 (AA)
Battery Life	Over 10 hours (alkaline)
Indicator	Power/Battery indicator
Antenna	Built-in type
Operating Temperature	-10°C to +50°C
Finish	Resin, coating
Dimensions	62 (W) × 102.5 (H) × 23 (D) mm
Weight	130 g (with battery)
Accessory	Screw driver × 1, Neck strap × 1
Microphone unit	
Microphone	Electret condenser microphone, cardioid
Power Requirement	DC (supplied from lavalier pack)
Cable Length	1.4 m
Connector	ø3.5 plug (EIAJ RC701)

*1 Frequency range may vary by area.

WM-5320A-E/F

Aerobics Headset Microphone



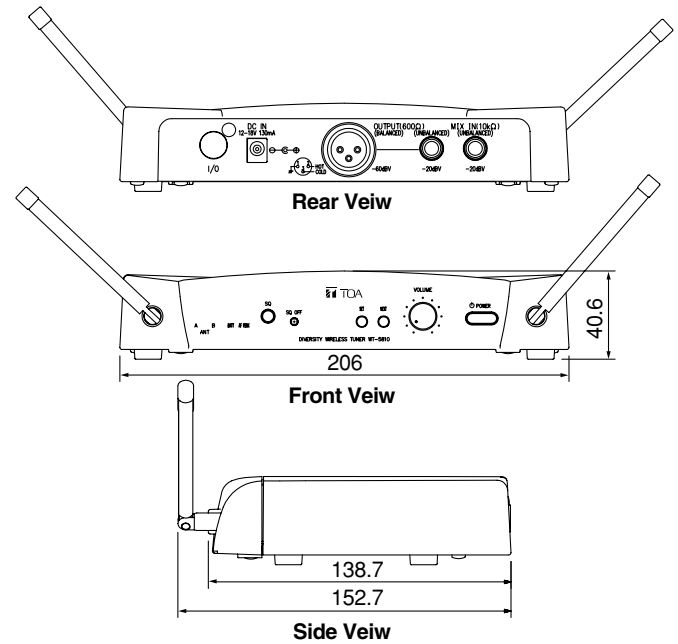
- Operating range: 3m – 120m
- Electret condenser cardioid microphone element
- Four 16-channel banks of circuit frequencies
- Maximum input level: 120 dB SPL
- Built-in circuitry minimizes ambient noise effects
- Single AA battery operation for more compact and lightweight body
- Low-battery indicator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

Transmitter unit	
Frequency Range	636–666 MHz -F Band or 668-698 MHz -E Band, UHF*1
Channel Selectable	64 frequencies (international may vary)
RF Carrier Power	Under 50 mW
Tone Frequency	32.768 kHz
Oscillator	PLL synthesizer
Maximum Input Level	120 dB SPL
Battery	LR6 (AA)
Battery Life	Over 10 hours (alkaline)
Indicator	Power/Battery indicator
Antenna	Built-in type
Operating Temperature	-10°C to +50°C
Finish	Resin, coating
Dimensions	62 (W) × 102.5 (H) × 23 (D) mm
Weight	130 g (with battery)
Accessory	Waist pouch × 1, Screw driver × 1
Microphone unit	
Microphone	Electret condenser microphone, cardioid
Power Requirement	DC (supplied from lavalier pack)
Cable Length	1.4 m
Connector	ø3.5 plug (EIAJ RC701)

*1 Frequency range may vary by area.

WT-5810-E/F

Wireless Portable Tuner



- Phase Locked 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 and vacant channel search function
- Compact portable design
- Compander circuitry for minimizing ambient noise
- Rod antenna × 2
- Balanced output (XLR connector) and phone jack output
- Low-battery indicator (wireless microphone's battery voltage becomes low)

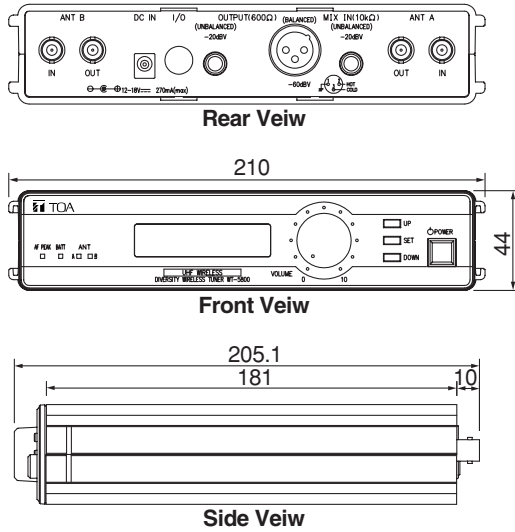
Power Requirement	AC mains (supplied AC-DC adapter must be used)
Power Consumption	130 mA (12 V DC)
Receiving Frequency	636–666 MHz -F Band or 668-698 MHz -E Band, UHF*1
Channel Selectable	16 CH
Receiving System	Double Super-heterodyne
Diversity System	Space diversity
Mixing Output	MIC: -60 dB*2, 600Ω, 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
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	ANT A/B, Audio (peak), battery alarm
Channel Check	Usable frequencies scanning
S/N Ratio	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	206(W) × 40.6(H) × 152.7(D) mm
Weight	590 g
Accessory	AC-DC adapter × 1

*1 Frequency range may vary by area.

*2 0dB = 1 V

WT-5800-E/F

Wireless Tuner



- Phase Locked 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 and vacant channel search function
- Compact half-rack size body
- 6 points audio level meter for microphone sensitivity adjustment
- Compander circuitry for minimizing ambient noise
- Antenna distribution output
- Whip antenna × 2
- Low-battery indicator (wireless microphone's battery voltage becomes low)

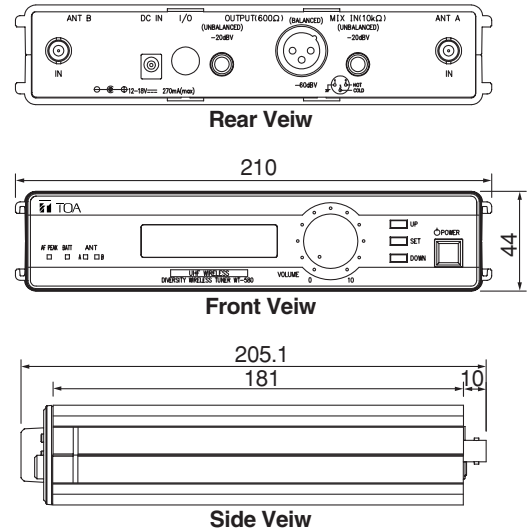
Power Requirement	AC mains (supplied AC-DC adapter must be used)
Power Consumption	250 mA (12 V DC)
Receiving Frequency	636–666 MHz -F Band or 668-698 MHz -E Band, UHF*1
Channel Selectable	64 Selectable frequencies
Receiving System	Double Super-heterodyne
Diversity System	True diversity
Mixing Output	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 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
Channel Check	Usable frequencies scanning
S/N Ratio	Over 110dB (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
Weight	700 g
Accessory	AC-DC adapter × 1
Option	Rack mounting Kit: MB-WT3, MB-WT4

*1 Frequency range may vary by area.

*2 0dB = 1 V

WT-5805-E/F

Wireless Tuner



- Phase Locked 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 and vacant channel search function
- Compact half-rack size body
- 6 points audio level meter for microphone sensitivity adjustment
- Compander circuitry for minimizing ambient noise
- Whip antenna × 2
- Low-battery indicator (wireless microphone's battery voltage becomes low)

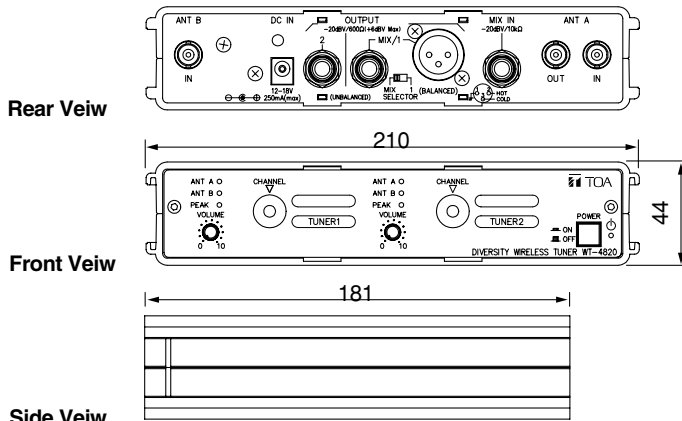
Power Requirement	AC mains (supplied AC-DC adapter must be used)
Power Consumption	250 mA (12 V DC)
Receiving Frequency	636–666 MHz -F Band or 668-698 MHz -E Band, UHF*1
Channel Selectable	64 Selectable frequencies
Receiving System	Double Super-heterodyne
Diversity System	Space diversity
Mixing Output	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 Input	75 Ω, BNC (phantom powering for antenna) 9 V DC, 30 mA (max.)
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
Channel Check	Usable frequencies scanning
S/N Ratio	Over 110dB (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
Weight	700 g
Accessory	AC-DC adapter × 1
Option	Rack mounting Kit: MB-WT3, MB-WT4

*1 Frequency range may vary by area.

*2 0dB = 1 V

WT-4820

2-Channel Wireless Tuner



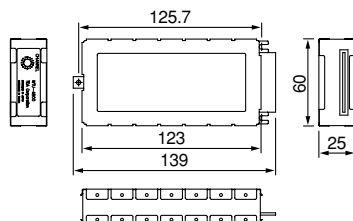
- 16 selectable channel frequencies
- Antenna cascade output function (parallel connection possible for linking two WT-4820 units)
- TOA space diversity technology
- Auto mixing input function
- Tuner unit connections accessible from the front (even if rack mounted, the front panel is easily opened)
- Mix output/tuner 1 output (selectable), tuner 2 has 2 outputs
- Whip antenna x 2
- Compact 19" rack-mount design
- External antenna input

Power Requirement	12 – 18 V DC
Power Consumption	250 mA (12 V DC when operating with two tuner modules)
Receiving Frequency	636 - 666 MHz -F Band or 668 - 698 MHz -E Band, UHF*1
Channel Selectable	16 CH
Mixing Input	-20 dB*2, 10 kΩ, unbalanced, phone jack
Antenna Input	75 Ω, BNC (phantom powering for antenna) 9 V DC, 30 mA (max.)
Antenna Output	75 Ω, BNC (Gain 0dB)
Indicator	ANT A/B, Audio (peak), Power
Audio Output	Usable frequencies scanning
S/N Ratio	Over 102dB (A-weight, unbalanced output)
Harmonic Distortion	Under 1%
Frequency Response	50 – 18,000 Hz, ±3 dB
Operating Temperature	-10°C to +50°C
Finish	Resin, black
Dimensions	210(W) × 44(H) × 181(D) mm
Weight	770 g (without tuner module)
Accessory	Rod antenna × 2, Rubber foot × 4
Option	Rack mounting Kit: MB-WT3, MB-WT4

*1 Frequency range may vary by area.
*2 0dB = 1 V

WTU-4800-E/F

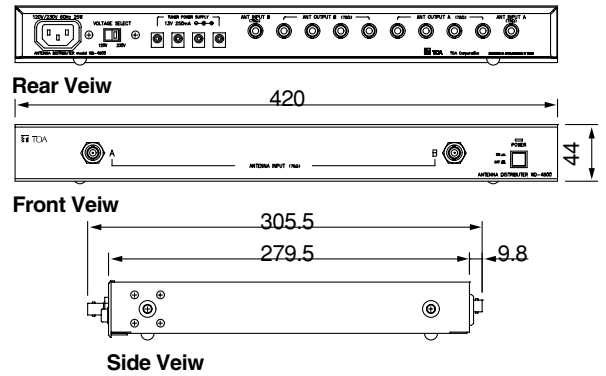
UHF Wireless Tuner Unit



- PLL synthesis double superheterodyne diversity tuner module
- Designed for use with UHF wireless equipment
- Squelch function mutes output to reduce noise
- Includes compander noise reduction to cut ambient RF noise
- Compact dimensions

WD-4800

Power/Antenna Distributor

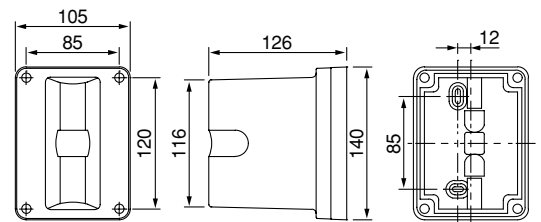


- 2 antenna inputs and 4 distributed outputs
- 2 inputs per antenna which are mixed for output (when 2 antennas are set up in a large room)
- Supplies power to the antenna
- Compact 19" rack-mount design

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

YW-4500

Wireless Antenna



- UHF wireless dipole indoor antenna
- Wall mounted (WT-5800, WT-5805, WT-4820, WD-4800)
- Power supplied by tuner unit (WT-5800, WT-5805, WT-4820, WD-4800) through coaxial cable
- Built-in RF signal booster
- Attenuation switch helps minimize noise and any interference.

Power Requirement	7-12 V DC (supplied from amplifier or tuner)
Current Consumption	Under 24 mA
Receiving Frequency	630-880 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

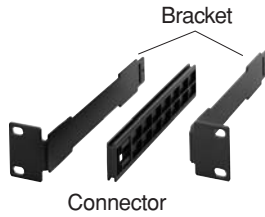
Optional Rack Mounting Bracket

MB-WT3 Rack Mount Bracket Kit



- For rack-mounting one WT-5800/WT-5805/WT-4820 unit.

MB-WT4 Rack Mount Bracket Kit



- For rack-mounting two WT-5800/WT-5805/WT-4820 units.

MB-15B Rack Mount Bracket

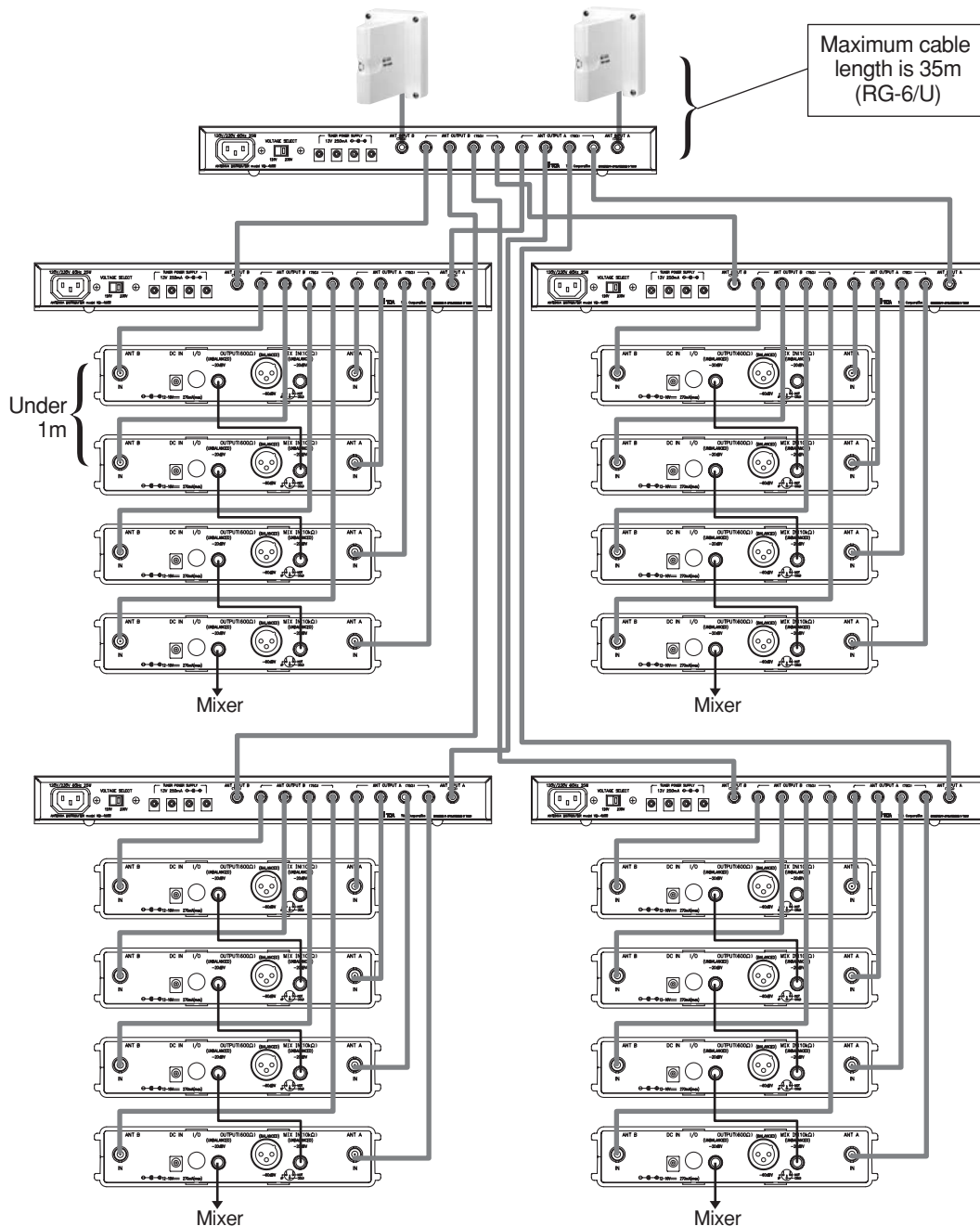


- For rack-mounting one WD-4800 unit.

Maximum Configuration

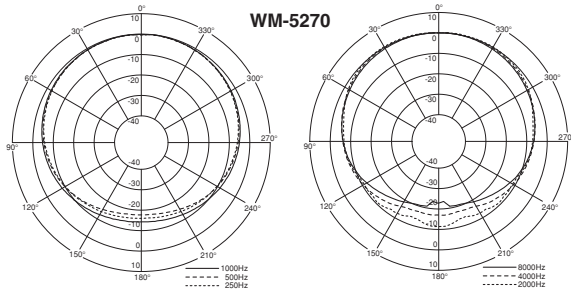
Simultaneous use of WT-5805 + WD-4800

- Using the WD-4800, a system allowing simultaneous use of up to 16 separate channels can be configured.



Polar Response

Vocal microphones



Speech microphones

