



INFRARED WIRELESS CLASSROOM SYSTEM



Enrich Your Students' Learning Experience with Remarkably Clear, Easily Audible Classroom Communication.

TOA's educational microphone system offers wireless interference-free infrared voice transmission that b

TOA innovative all-in-one solution —

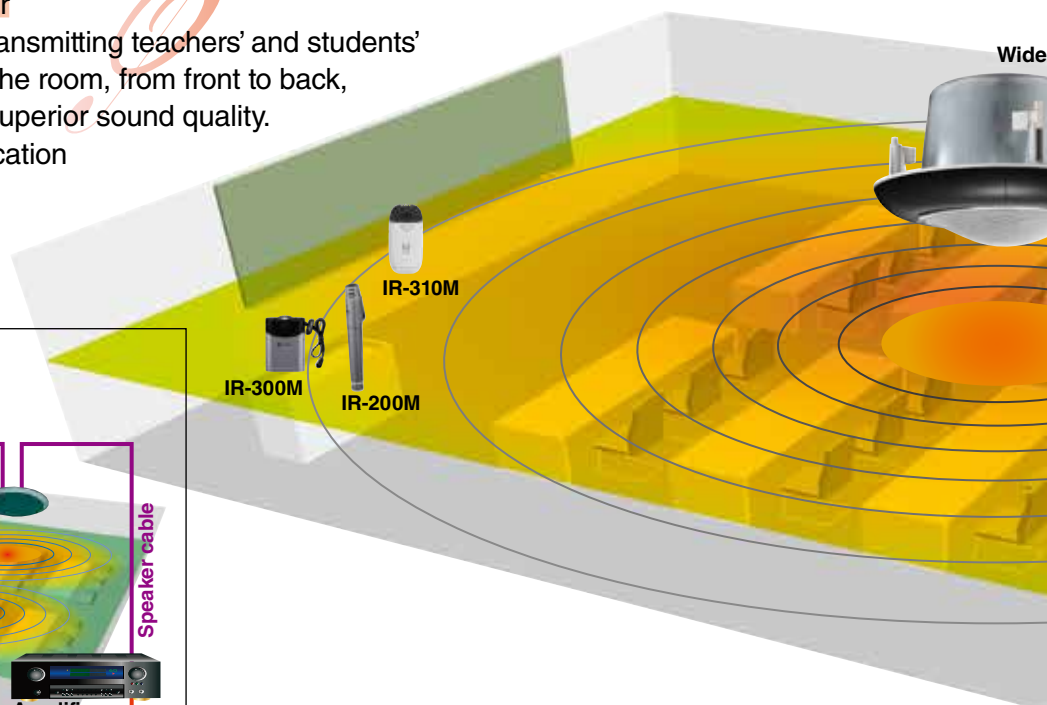
- Uniform classroom-wide sound quality with single wide-dispersion speaker
- Minimized system components (tuner, 2 microphones and integrated speaker)
- Quick, easy installation requiring just one CAT-5 cable.
- Selection of three TOA lightweight, low-fatigue IR wireless microphones
- System expandable with optional interface unit for external device control and paging operations



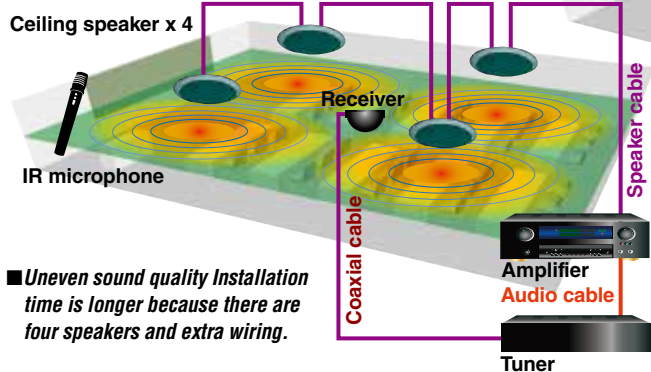
Assembled specifically for classroom use, TOA's new Infrared Wireless Classroom System includes a ceiling-mounted wide-dispersion speaker (with integrated receiver and amplifier), an easily accessed desktop tuner and a pair of lightweight IR wireless microphones, one each for the teacher and students.

The system is tailored to classroom size, moreover, thus avoiding unnecessary equipment installation. The wide-dispersion speaker provides ample 30 ft x 30 ft coverage, transmitting teachers' and students' normal speaking voices to everyone in the room, from front to back, with equal clarity and TOA's renowned superior sound quality. The resulting easy interactive communication stimulates students and improves their understanding of the course content.

TOA IR C
Sim



Conventional Complex and troublesome



- Uniform sound quality throughout the classroom through one speaker
Quick and easy installation using one CAT-5 cable.

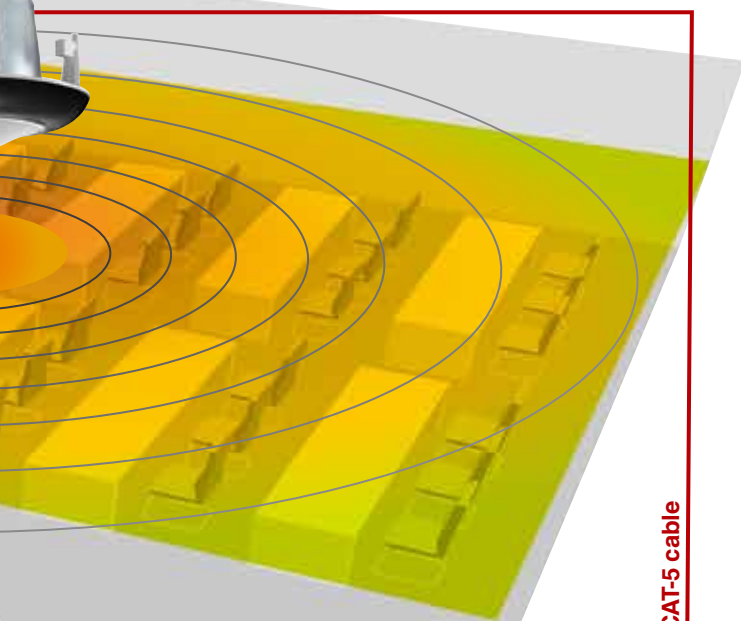
**...s convenience and clear,
...rings classrooms to life.**

simple and easy



Classroom System
simple and easy

Amplifier
+
Receiver
+
wide-dispersion ceiling speaker
IR-802SP



IR-802T (Built-in Preamp)

IR-820SP Infrared Wireless Speaker



- Built-in infrared receiver and 20W digital amplifier
- Unique wide-dispersion acoustic structure employing innovative TOA technology to achieve uniform output over a wide radius
- Bass-reflex speaker system achieving a wide frequency range and high power-handling capability
- Easy installation with quick, optimally positioned ceiling mounting

IR-802T Infrared Wireless Tuner



- 3 AUX inputs for PC, TV/DVD player and MP3 audio player
- Output muting by 25 V line signal from telephone paging
- Equalizer control knobs for low-, mid- and high-frequency outputs
- Mixing output terminal for ALD (Assistive Listening Device)
- Frequency response optimized to reduce acoustic feedback in 30 ft x 30 ft classrooms

IR-310M Infrared Wireless Microphone (for Teacher/Student)



- Usable as hands-free or hand-held microphone
- Lightweight body with unobtrusive styling
- 8-hour operation with single AA battery
- Function button for use in paging or external device control via IR-801AF
- Microphone sensitivity adjustable to suit application
- Sturdy clothing clip to prevent wobbling or rotation during hands-free use

IR-310BC Battery Charger (for IR-310M)



- Dedicated battery charger for IR-310M
- Anti-overcharging design

IR-200BT-2 Ni-MH Batteries



- Ni-MH AA rechargeable batteries for Infrared Wireless Microphones.

Optional External Microphones (for IR-310M/300M)



YP-M101 Tie-clip Microphone



YP-M301 Headset Microphone

IR-801AF Audio Interface Unit

- Interface unit enabling paging and control of external devices with IR-310M's function button
- Installation between IR-820SP and IR-802T with CAT-5 cable

IR-300M Infrared Wireless Microphone (for Teacher)



- Easy-to-wear, neck-suspension design permitting immediate use
- 2-level adjustable infrared light emission intensity
- Lightweight body can be worn for long periods of time without causing fatigue (0.29 lb with 2 alkaline batteries)
- Usable as transmitter for external microphone
- Antibacterial treatment

IR-200M Infrared Wireless Microphone (for Student)



- Designed for stable voice transmission, with 2 infrared emitters positioned on the body to avoid accidental interference by a hand holding the microphone
- 2-level adjustable infrared light emission intensity
- Lightweight body keeps hands from tiring, even during long hours of use (0.37 lb with 2 alkaline batteries).
- Antibacterial treatment

IR-200BC Battery Charger (for IR-200M/300M)



- Rapid-charging function permitting simultaneous charging of 2 infrared microphones within 3 hours (max.)

SPECIFICATIONS

IR-820SP Infrared Wireless Speaker	
Power Source	24 V DC (supplied from IR-802T)
Power Consumption	4.4 W (based on UL standard)
Rated Output	20 W
Frequency Response	100 Hz – 20 kHz (-10 dB) at installation in 1/2 free sound field (Measured by installing the unit in the center of a ceiling.)
Amplification System	Class D
Distortion	5% or less (rated output, A-weighted)
Speaker Component	12 cm (4.72") cone-type
Infrared Wireless Receiver	
Wavelength	870 nm
Carrier Frequency	Channel A (for teacher) : 3.100 MHz Channel B (for students) : 3.350 MHz
Reception Angle	360 (Horizontal)
Connection Terminal	RJ-45
LED Indicator	Power (green) x 1
Mounting Hole	ø11.81"
Usage Cable	CAT-5 UTP
Operating Temperature	14 °F to 122°F
Operating Humidity	90% RH or less (no condensation)
Finish	Enclosure : Steel plate, plating Baffle : Fire-resistant ABS resin (resin material grade: UL-94 V-0), white Punched net : Steel plate, white Filter section : Polycarbonate, optical cut filter
Dimensions	ø12.6" x 8.07" (D)
Weight	7.5 lb
Accessories	Safety wire x 1, Ceiling reinforcement ring x 1, Paper pattern x 1
Option	Tile bar bridge: HY-TB1

*0db = 1V

IR-802T Infrared Wireless Tuner	
Power Source	120 V AC, 50/60 Hz (supplied AC adapter must be used)
Power Consumption	8 W (based on UL standards) Max. 40.8 W (rated output of IR-820SP)
Receiving Frequency	Teacher (Channel A): 3.100 MHz Student (Channel B) : 3.350 MHz
Receiver Sensitivity	50 dB or more, Signal-to-noise ratio (40 dBV input, 1 kHz modulation, 4.8 kHz deviation)
S/N Ratio	Tuner: 60 dB or more (60 dBV input, 1 kHz modulation, 4.8 kHz deviation, A-weighted, Equalization: Centered) AUX: 75 dB or more (A-weighted, Equalization: Centered)
Tone Squelch Frequency	32.768 kHz
Input	AUX PC: line, -10 dB*, 10 k, unbalanced, stereo mini jack (internal mixing) AUX DVD/TV: line, -10 dB*, 10 k, unbalanced, 2P RCA jack (internal mixing) AUX MP3: line, -10 dB*, 10 k, unbalanced, stereo mini jack (internal mixing) Mute: 25 V line signals of telephone paging from a school intercom system)
Output	ALD (Assistive Listening Device): line, -10 dB*, 10 k, unbalanced, monaural mini jack Speaker: RJ45 (dedicated terminal for IR-820SP connection)
Equalization	High: 10 dB at 10 kHz/Mid: 10 dB at 1.3 kHz/Low: 10 dB at 100 Hz
Mute Function	Muted by 25 V line signals
LED Indicator	Power (green) x 1, Infrared reception (yellow) x 2, Mute (red) x 1
Operating Temperature	14 °F to 122°F
Operating Humidity	90%RH or less (no condensation)
Finish	Panel: Aluminum, black/Case: Steel plate, black
Dimensions	8.27" (W) x 1.81" (H) x 12.28" (D)
Weight	3.97 lb
Accessories	AC adapter(DC cord length:5.91 ft) x 1, AC power cord (6.56 ft) x 1 Volume control cover x 6, Removable terminal plug (2 pins) x 1
Option	Half-width blank panel: MB-15B-BK

*0db = 1V

	IR-310M Infrared Wireless Microphone	IR-300M Infrared Wireless Microphone	IR-200M Infrared Wireless Microphone
Batteries	One piece of IR-200BT-2 rechargeable battery for the infrared wireless microphone (option)	IR-200BT-2 rechargeable batteries for the infrared wireless microphone (option) or AA alkaline dry cell batteries (2 pieces)	
Current Consumption	typ.250 mA (1.2 V)	typ.250 mA (2.4 V, Power selector switch: N)/typ.340 mA (2.4 V, Power selector switch: H)	
Infrared Emitter	870 nm (AM: Brightness modulation)		
Wavelength	Channel A: 3.100 MHz/Channel B: 3.350 MHz		
Carrier Frequency	Approx. 65 ft (Power selector switch: H; In an unobstructed space) Approx. 50 ft (Power selector switch: N; In an unobstructed space)		
Transmission Distance	50 ft (In an unobstructed space)	Adjustment range: -9 dB to 0dB (factory-preset: 0 dB)	
Input Sensitivity Adjustment	Adjustment range: 2 levels (High, Low)	Adjustment range: -9 dB to 0dB (factory-preset: 0 dB)	
Microphone Unit	Unidirectional electret condenser microphone		
Frequency Response	100 Hz – 12 kHz		
Preemphasis	300 µs		
Input	External microphone input (ø3.5 monaural mini jack)		
Battery Operation Time	Approx. 8 hours (one piece of IR-200BT-2)	Approx. 8 hours (IR-200BT-2, Power selector switch: N) Approx. 6 hours (Alkaline batteries, Power selector switch: N)	
Operating Temperature	32°F to 104°F		
Operating Humidity	30% to 85% RH		
Finish	Control Section: ABS resin, white/ Filter Section: Polycarbonate, optical cut filter	Control Section: ABS resin, metallic gray, 50% gloss, paint/ Filter Section: Polycarbonate, optical cut filter	
Dimensions	2.17" (W) x 4.33" (H) x 0.87" (D)	2.52" (W) x 3.59" (H) x 1.07" (D)	ø1.46" x 9.52"
Weight	0.22 lb (with battery and strap)	0.29 lb (with batteries and strap)	0.37 lb (with batteries)
Accessories	Neck strap x 1	Screw driver (for setting) x 1, Color label (6 colors) x 1	

IR-801AF Audio Interface Unit	
Power Source	DC 24 V (supplied from IR-802T)
Infrared Frequency Channel	Channel A: 3.100MHz
Contact Output	Relay contact output, contact capacity: 30 V DC/2 - 500 mA, removable terminal block
Audio Output	-10dB, Electrical balanced, removable terminal block
Operating Temperature	32°F to 104°F
Operating Humidity	Less than 90% RH
Finish	Control section: ABS resin, Black
Dimensions	8.27" (W) x 2.73" (H) x 7.13" (D)
Weight	1.32 lb
Accessories	Removable terminal block x 2

	IR-310BC Battery Charger	IR-200BC Battery Charger
Power Source	AC mains 50/60 Hz (supplied by the accessory AC adapter)	
Current Consumption	Max. 2 A	
Charging Time	Max. 3 hours	
Number of Wireless Microphones Charged Simultaneously	1 piece	2 pieces*
Operating Temperature	32°F to 104°F	
Operating Humidity	30% to 85% RH	
Finish	Control section: PPE resin, white	Case: ABS resin, metallic gray, 50% gloss, paint, Microphone receptacle section : PPE resin, black
Dimensions	2.99" (W) x 2.97" (H) x 2.36" (D)	9.37" (W) x 4.31" (H) x 3.86" (D)
Weight	0.24 lb	1.41 lb (unit only, including mounting adapter)
Accessories	AC adapter x 1, Power cord (6.56 ft) x 1	AC adapter (DC cord length: 5.91 ft) x 1, Power cord (6.56 ft) x 1, Mounting adapter (preinstalled) x 2

* Use of the mounting adapter allows one the IR-200M and one IR-300M to be charged in combination.



Human Society with
Sound & Communication

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Specifications are subject to change without notice.
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