

# TAIDEN®

## Digital Infrared Wireless Classroom Audio and Control System



*Excellent solutions for education*

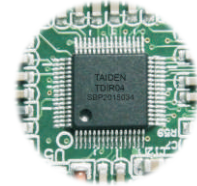
# Digital Infrared Wireless Classroom Audio and Control System

## General

TAIDEN, the global top-ranking manufacturer of conference systems, introduced in 2001 the world's first infrared simultaneous interpretation system that is insusceptible to interferences from HF-driven lighting. Later in 2008 it developed a digital infrared processing chip, based on which it built the digital infrared wireless conference system.

In 2015, TAIDEN introduced its worldwide pioneering digital infrared technology to the field of multimedia teaching and released the world's first digital infrared wireless classroom audio system. The system provides an ideal audio solution for teaching environment owing to its various advanced features such as great immunity to interferences, reliable privacy assurance, convenient management and excellent audio clarity.

Now TAIDEN marches further on its journey of innovation and invented the world's first digital infrared wireless classroom audio and control system by integrating its very mature digital infrared technology with intelligent central control technology. Aside from the advantages of digital infrared classroom audio system, the full-fledged system also boasts easy switch between In Class and Class Over modes, central control of all multimedia equipment, quick system installation and great performance owing to a wisely pre-positioned IR receiver. Its compactness and comprehensive functionality makes it a better and all-inclusive solution for classrooms.



TAIDEN TDIR04  
Digital Infrared Processing Chip



TES-5640MMC

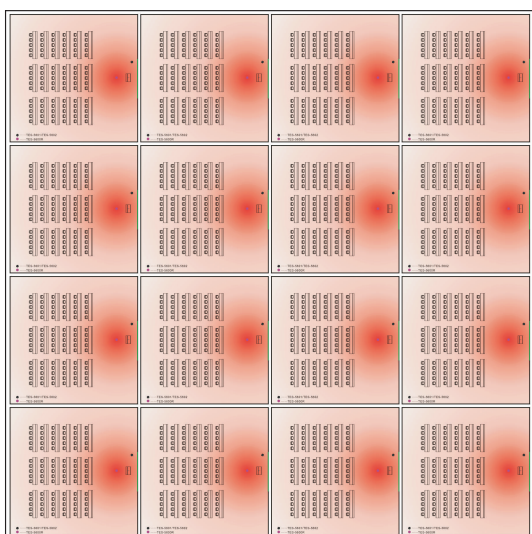


## Excellent Audio Clarity

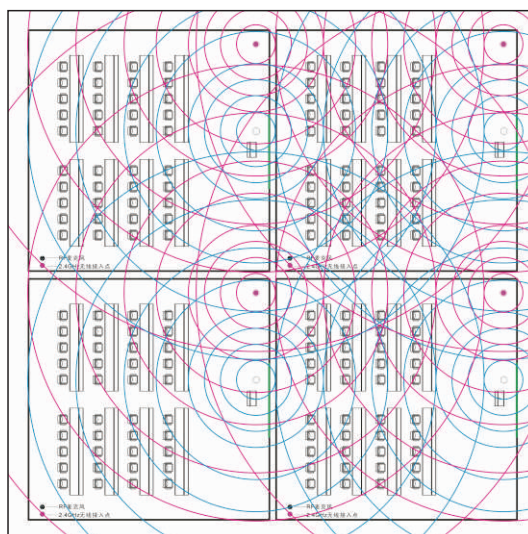
- Crystal-clear audio everywhere within an operating range of 20 meters
  - ◆ Frequency Response: 50 Hz ~ 20 kHz
  - ◆ THD: <0.06%
  - ◆ SNR: >85 dBA
- Better audio acoustics protects lecturers from hoarse voice
- Clearer audio facilitates learning efficiency by helping students stay focused

## Immunity to Interferences

- No crosstalk and interference between classrooms even when their systems are used at the same time
- Free from radio interferences and electromagnetic radiation
- Insusceptible to interferences from HF-driven lighting and works perfectly in sunlight



Zero interferences  
between classrooms using IR systems



Interferences generated  
between classrooms using RF systems

## Convenient Operation & Management

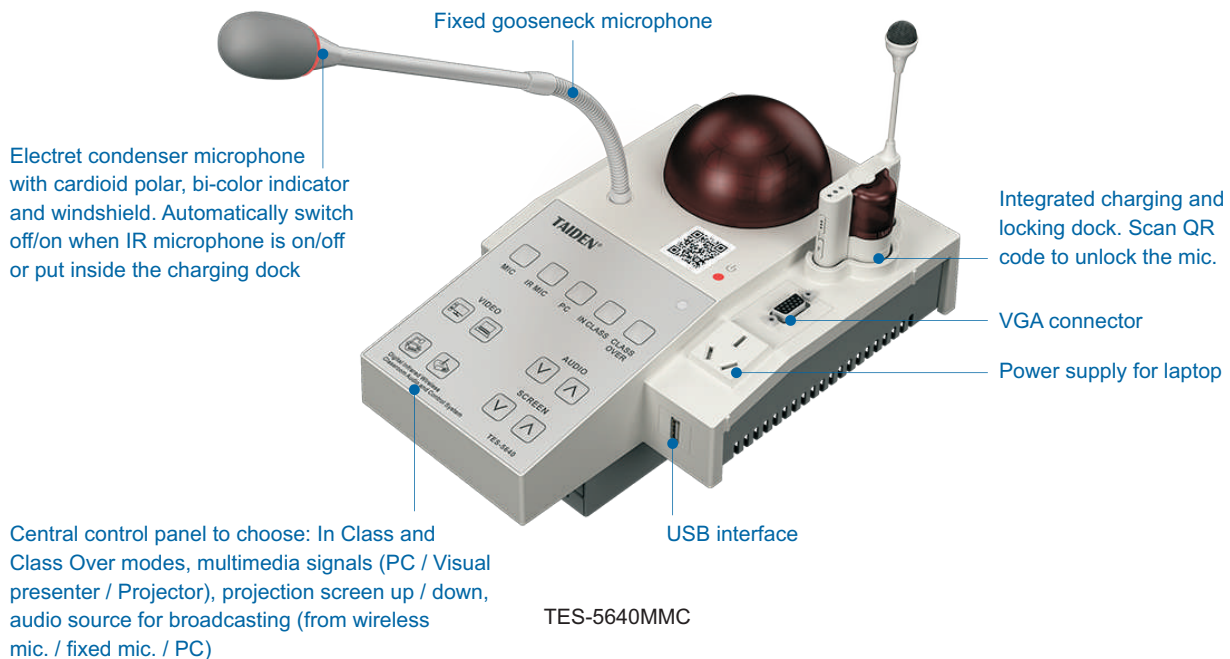
- Digital infrared microphones can be used in different classrooms without channel matching. Simply switch on and talk
- Integrated charging dock to park the mic. when it is not in use
- Electronic lock built in the dock to secure the mic.  
Authorized users can scan QR code to talk

## No Electromagnetic Radiation

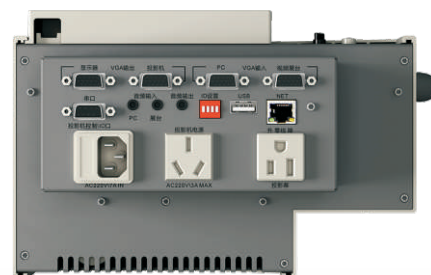
- Zero radio transmission
- Unaffected by radio frequency licensing



# TES-5640M Digital Infrared Wireless Classroom Audio and Control System Combo Unit (integrated charging and locking dock)



Central control interfaces: connect and control all the multimedia equipment in a classroom including projector, electronic white board, visual presenter, PC and lights.



Interfaces for Central Control (TES-5640 only)



TES-5640MC



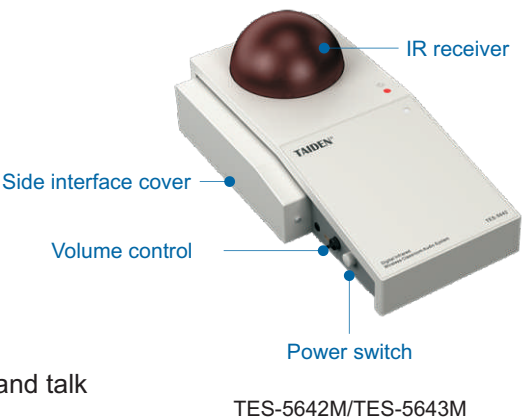
TES-5641MC



TES-5642M/TES-5643M

Features

- World pioneering digital infrared wireless classroom audio and control system
- Original dirATC—digital infrared audio transmission and control technologies
- All-in-one solution with IR main unit, IR receiver and central control system
- Centralized control and management of all equipment on campus (TES-5640 only)
- 1 Line Out, 2 Line In
- Excellent audio quality owing to digital infrared audio processing
  - ◆ Frequency Response: 50 Hz - 20 kHz
  - ◆ SNR: > 85 dBA
  - ◆ THD: < 0.06%
- Pre-positioned IR receiver offers a simple and fast installation
- Dedicated side cover over interfaces ensures neatness and safety
- Supports 2 wireless microphones at most
- Embedded charging station for wireless microphone
- Integrated charging and locking dock allows authorized users to scan and talk
- Built-in amplifier supports 2 speakers
  - ◆ Max. output power: 30 W × 2 (8 Ohm)
  - ◆ Actual output power: 23 W × 2 (8 Ohm)
- Power adapter: 24 V DC, 2.7 A (TES-5640/TES-5641)  
24 V DC, 1.5 A (TES-5642/TES-5643)



Model No.	Supporting wireless mic.	Fixed mic.	Central control	TES-5603 charging station	Electronic lock	Dimensions (w×d×h, mm) (excl. microphone, incl. side cover)
TES-5640MMC	2	●	●	●	●	168×250×148 (flush-mount)
TES-5640MC	2		●	●	●	
TES-5641MMC	2	●		●	●	168×250×92 (desktop)
TES-5641MC	2			●	●	
TES-5642MM	2	●				126×250×92 (desktop)
TES-5642M	2					
TES-5643M	1					



TES-5640MMC

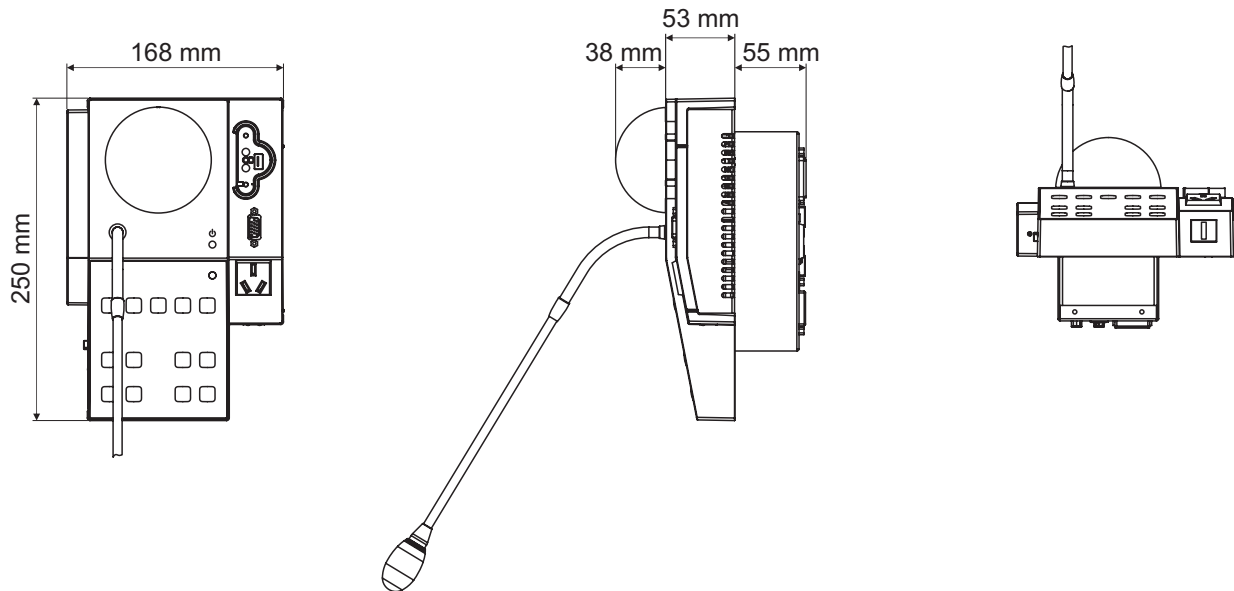


TES-5641MMC

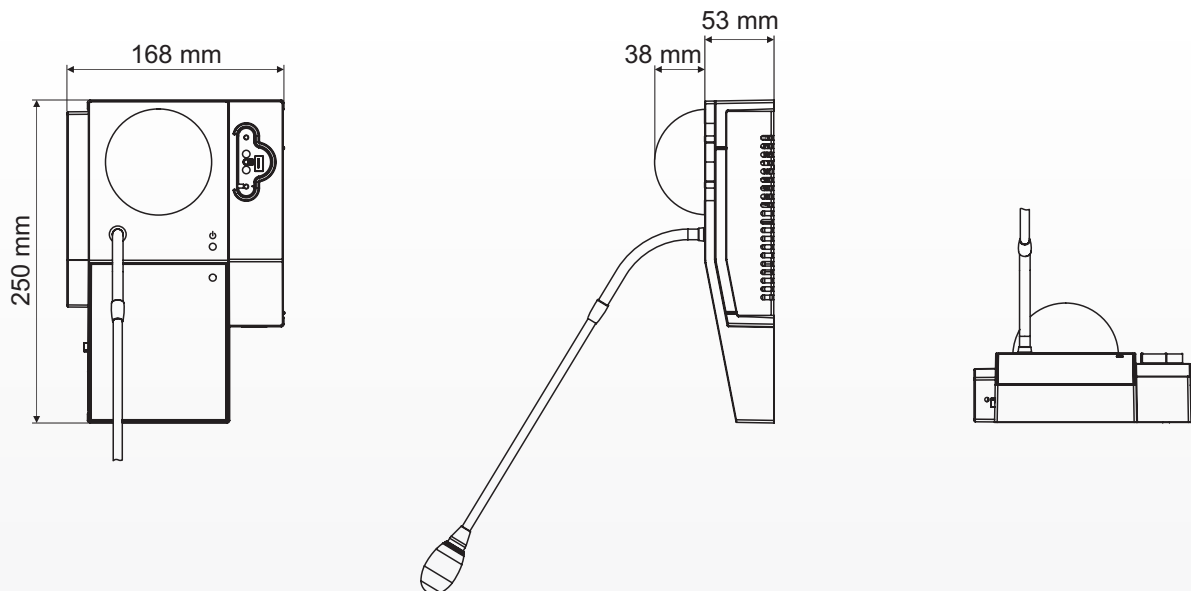


TES-5642MM

## TES-5640M Digital Infrared Wireless Classroom Audio and Control System Combo Unit (integrated charging and locking dock)

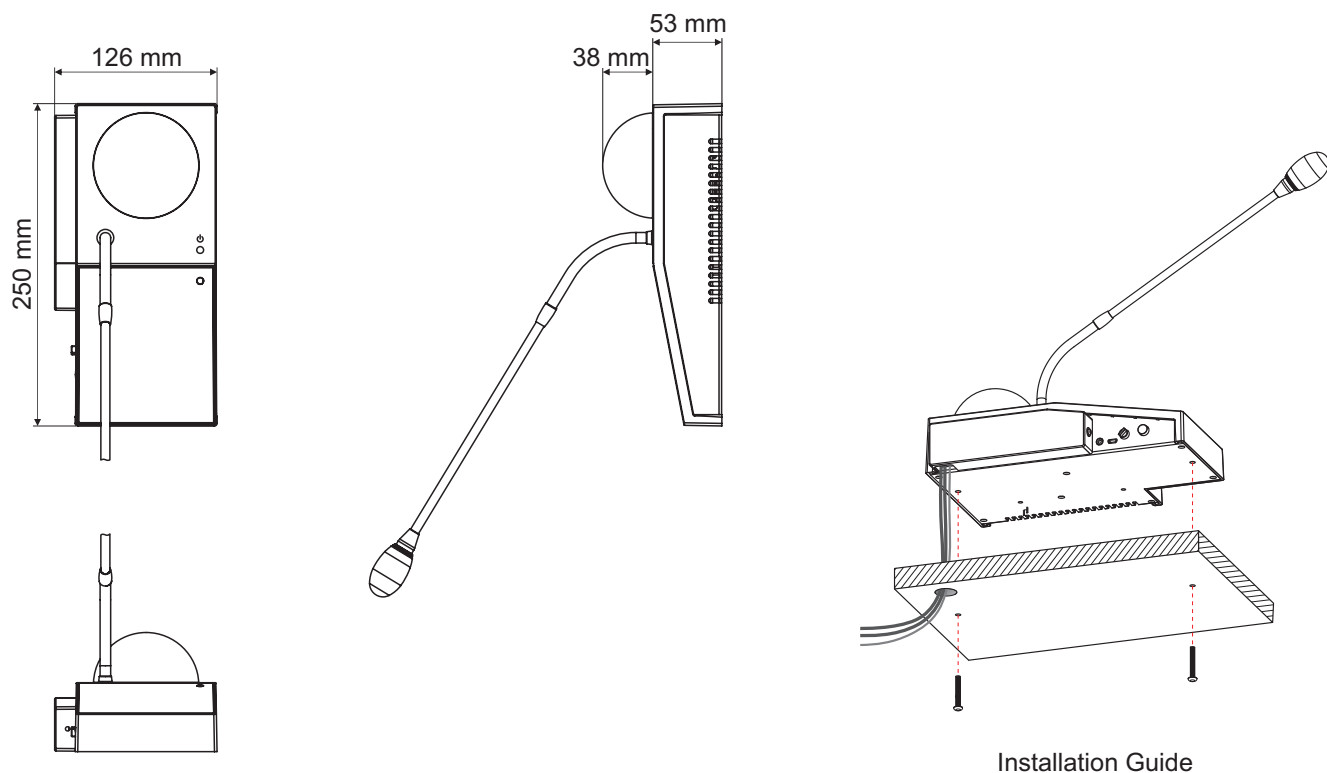


## TES-5641M Digital Infrared Wireless Classroom Audio System Combo Unit (integrated charging and locking dock)





## TES-5642/5643M Digital Infrared Wireless Classroom Audio System Combo Unit



### Technical Specifications

Power supply		24 V DC, 2.7 A
Max. output power to speakers		2×30 W (8 Ω)
Actual output power to speakers		2×23 W (8 Ω)
SNR		>85 dB (A)
Dynamic range		>90 dB
Frequency response		50 Hz – 20 kHz
THD		<0.06%
IR receiver	Wavelength	870 nm
	Modulation	DQPSK
	Carrier frequency	1 – 8 MHz
	Communication range	horizontal: 360°, vertical: 150°
IR radiation range		Line-of-sight distance: 25 m, effective distance: about 12 m ( affected by reflection conditions)

# TES-5603 Digital Infrared Wireless Microphone (pendant type)

Remote control source indicator:

OWN: PPT mode/Own microphone volume indicator

OTR: Other microphone volume indicator

LINE: MIC./LINE IN volume indicator



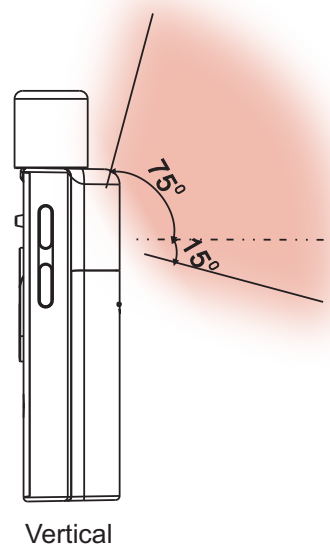
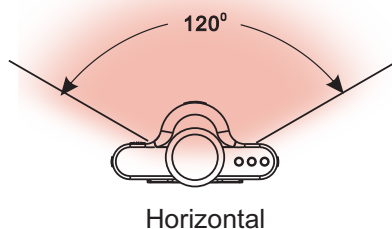
## Features

- World pioneering digital infrared wireless classroom audio system
- Original dirATC—digital infrared audio transmission and control technologies
- Insusceptible to interferences from HF-driven lighting and works perfectly in sunlight
- Remote volume control of different signals (OWN/OTR/LINE IN) with LED source indicator
- Independent volume adjustment and muting of the current audio source without impact on others
- Superior extendability, supporting audio input (Ø 3.5 mm AUDIO IN) from devices such as MP3 and mobile phone
- Remote control of PPT slides using with TES-5600MAU/P or TES-5600MBU/P main unit
- Supports audio input from external microphones like headworn microphone
- Free selection from different frequency bands
- Emission angle: vertical: 0°-90°, horizontal: 120°
- IR transmitter shuts off automatically when there is no audio input for a pre-defined period of time
- Excellent audio quality owing to digital infrared audio processing and transmitting technologies
  - ♦ Frequency response: 50 Hz - 20 kHz
  - ♦ SNR: >85 dBA
  - ♦ THD: < 0.06%
- Sleek and light-weight design, fatigue-free even for long-time wearing
- Charge with USB charger or charging station
- Supports rechargeable Lithium battery and AA alkaline cell, when microphone is continuously on, the operation duration time is 5 hours (TES-5603), 10 hours (TES-5603A/B)
- Automatic recognition of battery type and low battery alarm
- Power adapter: DC 5 V, 2 A
- Dimensions: 102 × 52 × 33 mm (TES-5603(B)), 163 × 52 × 33 mm (TES-5603A)
- Weight: 60 g (excl. battery)
  - 38 g (lithium battery TES-5600BAT)
  - 21 g (lithium battery TES-5603BAT)

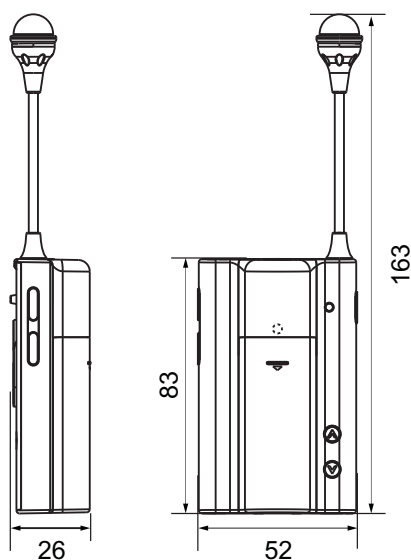


**Emission angle:**  
Horizontal: 90°  
Vertical: 120°

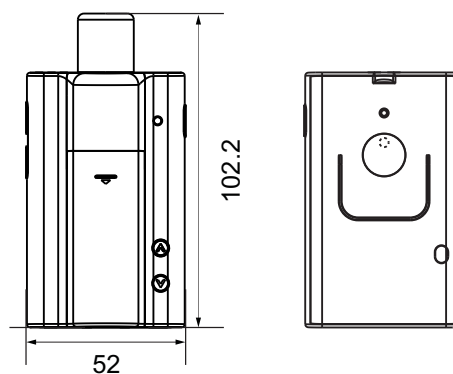
**Emission range:**  
Linear transmitting distance: over 25 m  
Actual radiation range: over 12 m



**Dimensions:**



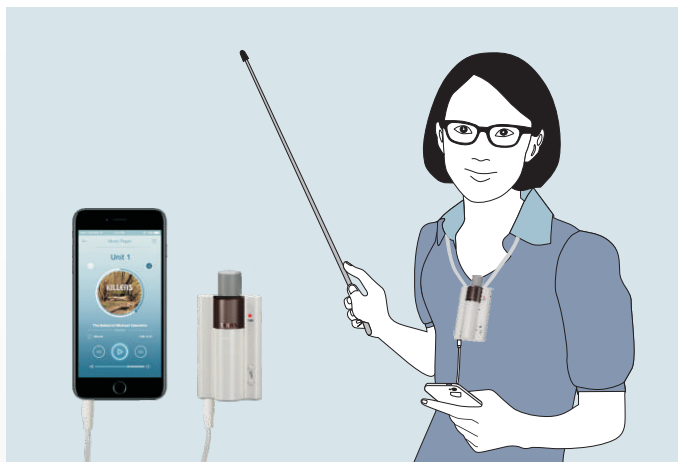
TES-5603A



TES-5603 (B)



TES-5600CS Charging Station



Microphones are equipped with Ø 3.5 mm auxiliary audio input for devices like MP3 and mobile phone, which enables flexible and high quality audio extension.

# TES-5602A Digital Infrared Wireless Microphone (handheld type)



## Features

- World pioneering digital infrared wireless classroom audio system
- Original dirATC—digital infrared audio transmission and control technologies
- Insusceptible to interferences from HF-driven lighting and works perfectly in sunlight
- Superior extendability, supporting audio input (Ø 3.5 mm AUDIO IN) from devices such as MP3 and mobile phones
- Free sensitivity setting and selection from different frequency bands
- Mute function
- Easy setting and operation on such a sleek microphone
- Excellent audio quality owing to digital infrared audio processing and transmitting technologies
  - ◆ Frequency response: 50 Hz - 20 kHz
  - ◆ SNR: > 85 dBA
  - ◆ THD: < 0.06%
- Emission angle: vertical: 0°-90°, horizontal: 360°
- Continuous operation duration: 6 hours (rechargeable lithium battery provided)
- Low battery alarm, charge with USB charger or charging station
- Power adapter: DC 5 V, 2 A
- Dimensions: Ø 40 × 225 mm
- Weight: 146 g (excl. battery)  
182 g (incl. battery)

## Gravity Sensing

- Gravity sensor is equipped to detect the spatial location of the handheld microphone, enabling intellectual control of infrared emission angle. This ensures efficient coverage and prolongs the battery runtime.
- When the handheld microphone is detected being placed horizontally (no AUDIO IN input) for a preset period of time, it will shut down automatically.



IR radiation range:

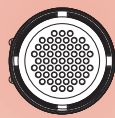
Line-of-sight distance: 25 m

Effective distance: 12 m

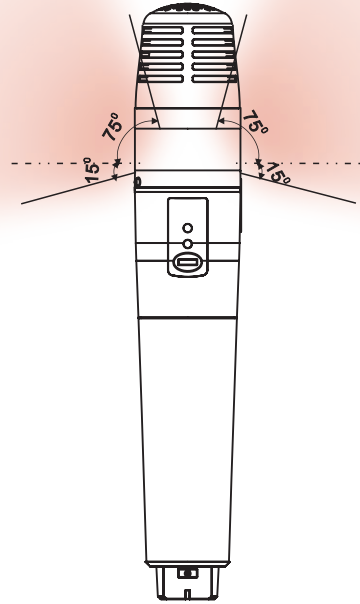
Emission angle:

Vertical: 90°

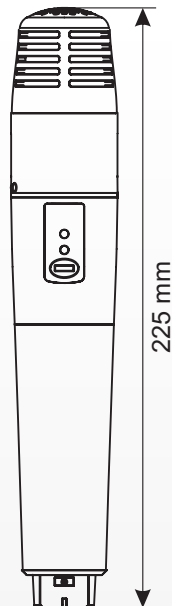
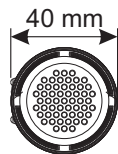
Horizontal: 360°



Horizontal



Vertical

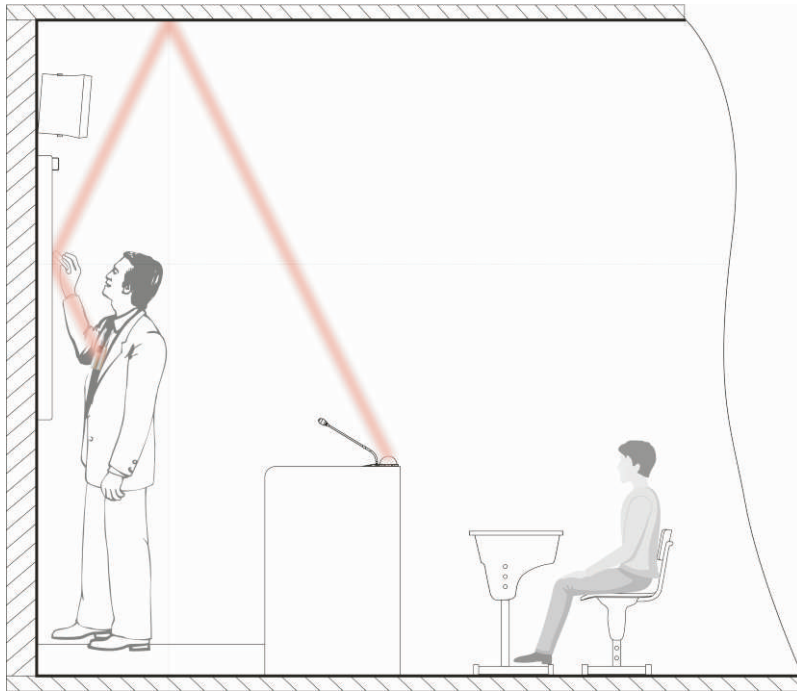


Ø 3.5 mm auxiliary audio input for devices like MP3 and mobile phone, enabling flexible and high quality audio extension

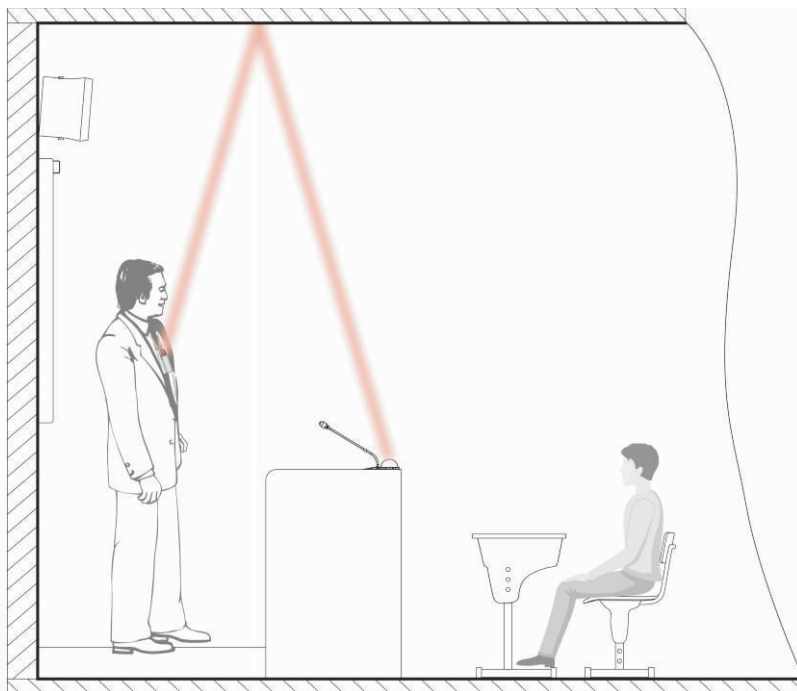


TES-5600ZJ1  
Microphone Stand

## IR Transmission Illustration (facing blackboard)



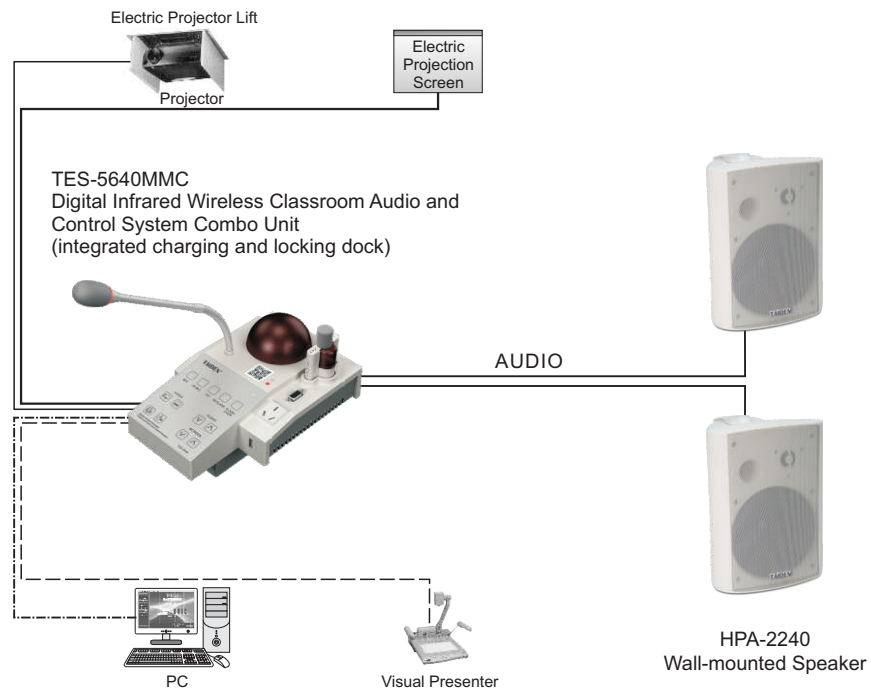
## IR Transmission Illustration (facing students)



Note: The system delivers the greatest performances in rooms with ceiling height lower than 5 m and room size less than 80 m<sup>2</sup>. For bigger rooms, it is suggested using the system no further than 60 m<sup>2</sup> from the podium.

## TES-5640

### Digital Infrared Wireless Classroom Audio and Control System



TES-5602A  
Digital Infrared Wireless  
Microphone (handheld type)



TES-5603  
Digital Infrared Wireless  
Microphone (pendant type)



## Accessories

		
<p><b>TES-ADP5V Power Adapter</b></p> <ul style="list-style-type: none"> <li>● Power Supply: 100 V - 240 V, 50 Hz / 60 Hz</li> <li>● Output: 5 V DC, 2.0 A</li> <li>● Approvals: UL, CE, VDE</li> <li>● Cable: 1 m</li> <li>● Dimensions (w×d×h, mm): 43 × 39 × 27</li> <li>● Weight: 50 g</li> <li>● Color: white</li> </ul>	<p><b>TES-5600CS Charging Station</b></p> <ul style="list-style-type: none"> <li>● Input Power: 5 V DC, 2.0 A</li> <li>● Charges one TES-5602A and one TES-5603 series at one time</li> <li>● Dimensions (w×d×h, mm): 106 × 112 × 82</li> <li>● Weight: 0.3 kg</li> <li>● Color: charcoal gray</li> </ul>	<p><b>TES-5600CHG Charging Station</b></p> <ul style="list-style-type: none"> <li>● Input Power: 5 V DC, 2.0 A</li> <li>● Charges two TES-5600BAT at one time</li> <li>● LED Indicators: power and battery charge</li> <li>● Dimensions (w×d×h, mm): 73 × 47 × 27</li> <li>● Weight: 35 g</li> <li>● Color: white</li> </ul>
		
<p><b>TES-5603BAT Rechargeable Lithium Battery</b></p> <ul style="list-style-type: none"> <li>● Nominal Voltage: 3.7 V</li> <li>● Nominal Capacity: 700 mAh</li> <li>● For TES-5603 wireless microphone</li> <li>● Dimensions (mm): Ø15 × 51</li> <li>● Weight: 21 g</li> <li>● Color: blue</li> </ul>	<p><b>TES-5600BAT Rechargeable Lithium Battery</b></p> <ul style="list-style-type: none"> <li>● Nominal Voltage: 3.7 V</li> <li>● Nominal Capacity: 1600 mAh</li> <li>● For TES-5602 series and TES-5603A/B wireless microphones</li> <li>● Dimensions (mm): Ø18 × 55</li> <li>● Weight: 38 g</li> <li>● Color: blue</li> </ul>	<p><b>TES-ADP24VL Power Adapter</b></p> <ul style="list-style-type: none"> <li>● Power Supply: 100 V - 240 V, 50 Hz / 60 Hz</li> <li>● Output: 24 V DC, 2.7 A</li> <li>● Approvals: UL, CE, VDE</li> <li>● Cable: 3 m</li> <li>● Dimensions (w×d×h, mm): 115 × 50 × 32</li> <li>● Weight: 0.4 kg</li> <li>● Color: black</li> </ul>
		
<p><b>TES-5602CHG/09 Charging Station</b></p> <ul style="list-style-type: none"> <li>● For TES-5602A wireless microphone</li> <li>● Charges 9 TES-5602A wireless microphones at one time</li> <li>● Input Power: 5V DC, 6 A</li> <li>● Dimensions (w×d×h, mm): 233 × 175 × 60</li> </ul>	<p><b>TES-5603CHG/09 Charging Station</b></p> <ul style="list-style-type: none"> <li>● For TES-5603 series wireless microphone</li> <li>● Charges 9 TES-5603 series wireless microphones at one time</li> <li>● Input Power: 5V DC, 6 A</li> <li>● Dimensions (w×d×h, mm): 233 × 175 × 47</li> </ul>	<p><b>TES-ADP5V6A Power Adapter</b></p> <ul style="list-style-type: none"> <li>● Power Supply: 100 V - 240 V, 50 Hz / 60 Hz</li> <li>● Output: 5 V DC, 6 A</li> <li>● Approvals: UL, CE, VDE</li> <li>● Cable: 2.8 m</li> <li>● Dimensions (w×d×h, mm): 121 × 52 × 33</li> <li>● Weight: 0.4 kg</li> <li>● Color: black</li> </ul>



		
<p><b>HPA-2220 Wall Mounted Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 85 Hz - 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Nominal Output: 20 W</li> <li>● Sensitivity: 89 dB</li> <li>● Installation: vertically or horizontally wall-mounted</li> <li>● Dimensions (w×d×h, mm): 170 × 150 × 215</li> <li>● Weight: 2.1 kg</li> </ul>	<p><b>HPA-2230 Wall Mounted Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 75 Hz - 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Nominal Output: 30 W</li> <li>● Sensitivity: 89 dB</li> <li>● Installation: vertically or horizontally wall-mounted</li> <li>● Dimensions (w×d×h, mm): 182 × 162 × 242</li> <li>● Weight: 2.4 kg</li> </ul>	<p><b>HPA-2240 Wall Mounted Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 65 Hz - 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Constant Input Voltage: 70-100 V (HPA-2240A)</li> <li>● Nominal Output: 40 W</li> <li>● Sensitivity: 90 dB</li> <li>● Installation: vertically or horizontally wall-mounted</li> <li>● Dimensions (w×d×h, mm): 215 × 190 × 290</li> <li>● Weight: 3.4 kg</li> </ul>
		
<p><b>HPA-2280 Wall Mounted Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 60 Hz - 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Nominal Output: 80 W</li> <li>● Sensitivity: 90 dB</li> <li>● Installation: vertically or horizontally wall-mounted</li> <li>● Dimensions (w×d×h, mm): 215 × 210 × 345</li> <li>● Weight: 4.9 kg</li> </ul>	<p><b>HPA-22100 Wall Mounted Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 40 Hz - 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Nominal Output: 100 W</li> <li>● Sensitivity: 90 dB</li> <li>● Installation: vertically or horizontally wall-mounted</li> <li>● Dimensions (w×d×h, mm): 280 × 270 × 455</li> <li>● Weight: 7.7 kg</li> </ul>	<p><b>HPA-2360 Wall Mounted Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 80 Hz ~ 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Nominal Output: 60 W</li> <li>● Sensitivity: 89 dB</li> <li>● Installation: vertically or horizontally wall-mounted</li> <li>● Dimensions (w×d×h, mm): 290 × 123 × 215</li> <li>● Weight: 2.8 kg</li> </ul>
		
<p><b>HPA-2140 Ceiling Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 75 Hz - 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Nominal Output: 40 W</li> <li>● Sensitivity: 90 dB</li> <li>● Installation: ceiling-mounted</li> <li>● Hole size: Ø198 ~ 208 (mm)</li> <li>● Dimensions: Ø230 ~ 128 (mm)</li> <li>● Weight: 1.7 kg</li> </ul>	<p><b>HPA-2160 Ceiling Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 60 Hz - 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Nominal Output: 60 W</li> <li>● Sensitivity: 89 dB</li> <li>● Installation: ceiling-mounted</li> <li>● Hole size: Ø222 (mm)</li> <li>● Dimensions: Ø252 ~ 215 (mm)</li> <li>● Weight: 5 kg</li> </ul>	<p><b>HPA-21240 Ceiling Speaker</b></p> <ul style="list-style-type: none"> <li>● Frequency Response: 45 Hz - 20 kHz</li> <li>● Constant Input Impedance: 8 Ω</li> <li>● Nominal Output: 240 W</li> <li>● Sensitivity: 92 dB</li> <li>● Installation: ceiling-mounted</li> <li>● Hole size: Ø330 (mm)</li> <li>● Dimensions: Ø360 ~ 330 (mm)</li> <li>● Weight: 7.5 kg</li> </ul>

## TES-5641 Digital Infrared Wireless Classroom Audio System

TES-5641MMC  
Digital Infrared Wireless Classroom Audio System Combo Unit  
(integrated charging and locking dock)



AUDIO



HPA-2240  
Wall-mounted Speaker

TES-5602A  
Digital Infrared Wireless  
Microphone (handheld type)



TES-5603B  
Digital Infrared Wireless  
Microphone (pendant type)



ISO9001: 2008  
Certificated by ANAB  
Certificate No.: FM 85884



CE certified  
(including EMC and Safety)



FCC certified

**RoHS**

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2011/65/EU of the  
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