# TE Air e5M Handheld Ultrasound System

## Performance Specifications

### System Overview

The TE Air is a wireless handheld ultrasound system. The wireless transducer is paired with App on mobile devices via Wi-Fi

**Applications**

- Cardiac
- Abdominal
- Thoracic/pleural
- Gynecology
- Obstetrics
- Vascular
- Urology
- Small organ
- Musculoskeletal
- Nerve

**Imaging Modes**

- B-Mode
- M-Mode
- Color Doppler Imaging
- Power Doppler Imaging
- Pulsed Wave Doppler
- TDI (Tissue Doppler Imaging)

**Standard Features**

- B-Mode
- M-Mode
- Color Doppler Imaging
- Power Doppler Imaging
- Pulsed Wave Doppler
- iClear™ (Speckle Suppression Imaging)
- iTouch+ (Auto Image Optimization Plus)
- Smart Bladder (Automated Bladder Volume)
- VA Grid (Vascular Access Grid)
- Smart Calc (Auto Diameter and Area - Measurement)
- iWorks (Workflow Protocol)
- iScanHelper (Embedded Tutorial Function)
- iNeedle (Needle Visualization Enhancement)

**Optional Features**

Air Capsule

| | |
|---|---|
| Input voltage: | 5V DC |
| Input current: | 3 A |
| Output voltage: | 5V DC |
| Output current: | 3 A |
| Battery: | 3.6 V, 3000 mAh |
| Charging Cycle: | about 2.5 times for a transducer |
| Wired charging: | Type-C charging cable, charging time 4 hours |
| Wireless charging: | wireless charging dock, charging time 8 hours |

**Language support**

| | |
|---|---|
| Software: | English and Chinese |
| User manual: | German, Spanish, French, Italian, Portuguese, Polish, Danish, Russian, Dutch, Turkish |

### Transducer Specifications

**Power Supply**

| | |
|---|---|
| Input voltage: | 5 V or 9 V |
| Input current: | 3 A Max |
| Adaptor: | |
| Output interface: | USB Type A |
| Output voltage: | 5 V DC |
| Output current: | 3 A |

**Built-in Battery**

| | |
|---|---|
| Lithium-Ion battery: | 3.85 V, 1650 mAh |
| Supports fast charging by adaptor and Air Capsule, charging time from 0% to 90%: | 35 mins |
| Fast charging environment | |
| Ambient temperature: | 10~26° C |
| The transducer is in a state of temperature equilibrium, usually shut down for > 1 hour | |
| The transducer or Air Capsule is in an open desktop environment, without cover, without surrounding heat sources, and without direct sunlight | |
| Wired charging: | Type-C charging cable |
| Wireless charging: | Air Capsule |
| Battery power supply duration: | no less than 90 min in B mode when the battery is fully charged |
| Continuous scanning duration for battery power supply: | Provides 90-120 minutes of B-mode scanning with mixed use on a fully charged battery |

**Operating Environment**

| | |
|---|---|
| Ambient temperature: | 0-35 °C |
| Relative humidity: | 20%-85% (no condensation) |
| Atmospheric pressure: | 700 hPa-1060 hPa |

**Storage & Transportation Environment**

| | |
|---|---|
| Ambient temperature: | -20 – 45° C |
| Relative humidity: | 20% – 85% (no condensation) |
| Atmospheric pressure: | 700 hPa – 1060 hPa |

**Dimensions and Weight**

Dimensions:

70×33×170 mm (e5M)

Weight:

229±3 g (e5M)

**Dustproof and waterproof**

IP68 rated

**Programmable button**

User-defined functions

### User Interface

**Comments**

- Supports text input and arrow
- Support freehand marking
- Covers various applications
- User defined

**Body mark**

- 251 body marks for versatile application

**Numbers of exam mode presets**

- 23 system exam modes

**Screen information***

- Acoustic power
- Imaging parameters

* Not all items are listed in this part.
For detail information, please refer to the user manual

### Imaging Parameters

**Overview**

- Up to 8-beamforming

**B-mode**

| | |
|---|---|
| A.Power | |
| TGC: | 6 sliders |
| Depth: | 30 Levels |
| Gain: | 0-100, 1/step |
| Image Quality | |
| Dyn Ra.: | 30-240 |
| iClear: | On/Off |
| L/R Flip: | Right, Left |
| TIS/TIC/TIB | |
| iTouch: | On/Off |
| iTouch+: | On/Off (only for e5M) |
| Zoom | |
| VA Grid | |



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# TE Air e5M Handheld Ultrasound System

## Performance Specifications

### Imaging Parameters (continued)

**M-mode**

- A.Power
- Gain: 0-100, 1/step
- Depth: the same as B mode
- Image Quality: the same as B mode
- Speed: 20, 25, 35 ,50 ,75 ,145 mm/s
- Dyn Ra.: 30-240

**Color Doppler Imaging**

- A.Power
- Max velocity: 146 cm/s
- Gain: 0-100, 2/step
- Scale
- ROI Width: random adjustable
- ROI Height: random adjustable
- Image Quality: 3 levels
- iTouch: On/Off
- iTouch+: On/Off (only for e5M)
- Steer
- Q-Steer

**Power Doppler Imaging**

- A.Power
- Gain: 0-100, 2/step
- Scale: 30 levels
- ROI Width: random adjustable
- ROI Height: random adjustable
- Image Quality: 3 levels
- iTouch: On/Off
- iTouch+: On/Off (only for e5M)
- Steer
- Q-Steer

**PW-Mode**

- A.Power
- PW velocity:
  - max. 1265.20 cm/s
  - min. 1.0 cm/s
- Gain: 0-100, 2/step
- Baseline: random adjustable
- Scale: 30 levels
- Image Quality: 3 levels
- Speed: 20, 25, 35, 50, 75, 145 mm/s
- SV: 0.5-20 mm, random adjustable
- Dyn Ra.: 24-72, 2/step
- Angle: random adjustable
- iTouch: On/Off
- iTouch+: On/Off (only for e5M)
- Auto Calc:
  - Auto Calc Cycle: 1-4, 1/step
  - Auto Calc Parameter
  - Trace Sensitivity: -3-3, 1/step
  - Trace Smooth: -2-2, 1/step
  - Trace area: Above, Below, All

**iNeedle**

- Needle visualization enhancement
- Needle Dir.: Left, Right
- Only for e5M

**VA Grid**

- Vascular Access Grid
- Only for e5M

**iWorks**

- Auto workflow protocol
- Templates are user configurable
- Functions: select view, delete view
- iWorks setup mode: B/Dual/ B+Color/ B+PW/ B+Color+PW/ B B+Color/ B+M
- iWorks setup protocols and views: select existing library

**iScanHelper**

- Tutorial function as a guidance to show basic scanning skill with graphic of probe position, schematic of anatomy and example clinical image

### Cine Review and Raw Data Processing

**Cine review**

- Available in all modes
- Playback available
- Maximum cine memory up to 125 frames
- Freeze and real-time storage are available and length is pre-settable: 2~5 s

**Post processing**

- B-mode:
  - Dyn Ra.
  - iClear
  - L/R Flip
  - Zoom
- M-mode:
  - Speed
  - Dyn Ra.
- PW:
  - Baseline
  - Speed
  - Dyn Ra.
  - Angle

### Measurement

**Adult Cardiac**

- B-mode
  - Distance
  - Area
  - AutoEF
  - LVOT Diam
  - Simpson
- Color/Power mode
  - Distance
  - Area
- PW
  - Vel
  - HR
  - Time
  - VTI
  - MV E Vel
  - MV A Vel
  - LVOT VTI
- M-mode
  - Distance
  - HR
  - Time
  - Slope
  - LVIDd
  - LVIDs
  - IVC

**EM FAST**

- B-mode
  - Distance
  - Area
  - Volume
- Color/Power mode
  - Distance
  - Area
- PW mode
  - PS/ED
  - Vel
  - HR
  - Time
- M-mode
  - HR

**Lung**

- B-mode
  - Distance
- Color/Power mode
  - Distance
  - Area
- PW mode
  - PS/ED
  - Vel
  - HR
  - Time
- M-mode
  - Distance

**Abdomen**

- B-mode
  - Distance
  - Area
  - Volume
  - Angle
  - Volume Flow
- Color/Power mode
  - Distance
  - Area



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# TE Air e5M Handheld Ultrasound System

## Performance Specifications

### Cine Review and Raw Data Processing (continued)

- PW mode
  - PS/ED
  - Vel
  - Time
  - Volume Flow
- M-mode
  - Distance
  - IVC

**Abdomen Diff**

- B-mode
  - Distance
  - Area
  - Volume
  - Angle
  - Volume Flow
- Color/Power mode
  - Distance
  - Area
- PW mode
  - PS/ED
  - Vel
  - Time
  - Volume Flow
- M-mode
  - Distance
  - IVC

**EM AAA**

- B-mode
  - Distance
  - Area
  - Volume
  - Stenosis (D)
  - Stenosis (A)
  - Volume Flow
- Color/Power mode
  - Distance
  - Area
- PW mode
  - PS/ED
  - Vel
  - Time
  - Volume Flow
- M-mode
  - Distance

**Bladder**

- B-mode
  - Distance
  - Volume
  - Smart Bladder
- Color/Power mode
  - Distance
  - Area

PW mode

- PS/ED
- Vel
- Time
- M-mode
- Distance

**GYN**

- B-mode
  - Distance
  - Area
  - Volume
  - Volume Flow
- Color/Power mode
  - Distance
  - Area
- PW mode
  - PS/ED
  - Vel
  - Time
  - Volume Flow
- M-mode
  - Distance

**OB**

- B-mode
  - Distance
  - Area
  - Volume
  - Volume Flow
  - BPD
  - HC
  - AC
  - FL
  - AFI
- Color/Power mode
  - Distance
  - Area
- PW mode
  - PS/ED
  - HR
  - Vel
  - Time
  - Volume Flow
  - Umb A
- M-mode
  - Distance
  - HR
  - Time

**Vascular**

- B-mode
  - Distance
  - Area
  - Stenosis (D)
  - Stenosis (A)
  - Volume Flow
- Color/Power mode
  - Distance
  - Area

PW mode

- PS/ED
- HR
- Vel
- Time
- Volume Flow
- M-mode
- Distance

### Exam Storage and Management

**Exam Management**

- Direct digital storage of single frame and cine 2D, color and Doppler
- Exam management
- iStation™ workstation dedicated for patient exam management
- Patient exam query/retrieve
- Support review of current and past exam
- Export images as JPG format; export cine as MP4 format
- Support data encryption and transmission encryption

### Connectivity

**Ethernet Network Connection**

- Wireless connection

**DICOM 3.0**

- DICOM basic
  - Store
- Media Exchange
- DICOM Worklist

**Q-path**

**Tricefy**

You can use the ultrasound system to send data (exam images and report) to the Tricefy

**Shared folder**

After preset, you can send data (exam images and worksheet) to the specified PC folder

### Transducers

**e5M**

| | |
|---|---|
| Application: | |
| Linear: | Small Organ, Vascular, Musculo-skeletal, Nerve; |
| Convex: | Abdominal, Gynecology, Obstetrics, Cardiac, Urology, Thoracic/Pleural, Small Organ, Vascular, Musculo-skeletal, Nerve |
| Bandwidth: | 2.0-9.0 MHz |
| Number of Elements: | 128 |
| Field of View (max): | |
| Linear: | 180° |
| Convex: | 70° |
| Extended FOV: | |
| Linear: | 180° |
| Convex: | 70° |
| Depth: | 2-38 cm |
| Physical Footprint: | 66.3 mm x 29.8 mm |
| Footprint: | 44.2 mm x 11.5 mm |
| Depth: | 1.5-40.0 cm |



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# TE Air e5M Handheld Ultrasound System

## Performance Specifications

### Transducers (continued)

B-mode Frequencies:
- Linear: 2.0~5.2, 4.0~7.4, 5.0~8.2 MHz
- Convex: 2.0~3.6, 2.2~3.8, 3.0~5.0 MHz

Harmonic Frequencies:
- Linear: 6.0, 7.0, 8.0 MHz
- Convex: 4.4, 4.43, 4.43b MHz

Color Frequencies:
- Linear: 4.0, 4.4, 5.0 MHz
- Convex: 2.5, 2.8, 3.3 MHz
- TDI: 3.3, 4.0 MHz

PW Frequencies:
- Linear: 4.0, 4.4, 5.0 MHz
- Convex: 2.5, 2.8, 3.3 MH
- TDI: 3.3, 4.0 Mz

Biopsy Guide: not available

### Safety and Conformance

**Quality Standards**
- ISO 9001
- ISO 13485

**Design Standards**
- EN 60601-1 and IEC 60601-1
- EN 60601-1-2 and IEC 60601-1-2
- EN 60601-1-6 and IEC 60601-1-6
- EN 60601-2-37 and IEC60601-2-37
- EN 62304 and IEC 62304
- EN 62366 and IEC 62366
- EN ISO 17664 and ISO 17664

### Operating Environment

**iPhone**
- Processor: Apple A10 processor or newer
- Operating System: iOS 13 or above
- Capacity: 128 GB or larger
- Running memory: 2 GB or larger
- Display size: 4.7 inches (Diagonal) or larger
- Display resolution: 1334 × 750 or higher
- Display brightness: 400 nit

**iPad**
- Processor: Apple A12 processor or newer
- Operating System: iOS 14 or above
- Capacity: 64 GB or larger
- Running memory: 3 GB or larger
- Display size: 7.9 inches (Diagonal) or larger
- Display resolution: 2048 × 1536 or higher
- Display brightness: 500 nit

**Android Phone**
- Processor: Qualcomm Snapdragon 855
- Operating System: Android 10 or above
- Capacity: 256 GB or larger
- Running memory: 8 GB or larger
- Display size: 6.41 inches (Diagonal) or larger
- Display resolution: 2340 × 1080 or higher
- Display brightness: 400 nit

**Android Tablet**
- Processor: Qualcomm Snapdragon 855
- Operating System: Android 10 or above
- Capacity: 256 GB or larger
- Running memory: 6 GB or larger
- Display size: 10.5 inches (Diagonal) or larger
- Display resolution: 2560 × 1600 or higher
- Display brightness: 200 nit

### Compatible Devices

**Apple iPad**
- 2020 iPad 8th
- 2021 iPad 9th
- 2022 iPad 10th
- 2019 iPad Air 3th
- 2020 iPad Air 4th
- 2022 iPad Air 5th
- 2019 iPad mini 5th
- 2021 iPad mini 6th
- 2018 iPad Pro 3th
- 2020 iPad Pro 4th
- 2021 iPad Pro 5th
- 2022 iPad Pro 6th
- 2018 iPad Pro 1th
- 2020 iPad Pro 2th
- 2021 iPad Pro 3th
- 2022 iPad Pro 4th

**Apple iPhone**
- 2016 iPhone 7
- 2016 iPhone 7 Plus
- 2017 iPhone 8
- 2017 iPhone 8 Plus
- 2017 iPhone X
- 2018 iPhone XS
- 2018 iPhone XS Max
- 2018 iPhone XR
- 2019 iPhone 11
- 2019 iPhone 11 Pro
- 2019 iPhone 11 Pro Max
- 2020 iPhone 12
- 2020 iPhone 12 Mini
- 2020 iPhone 12 Pro
- 2020 iPhone 12 Pro Max
- 2021 iPhone 13
- 2021 iPhone 13 Mini
- 2021 iPhone 13 Pro
- 2021 iPhone 13 Pro Max
- 2022 iPhone 14
- 2022 iPhone 14 Plus
- 2022 iPhone 14 Pro
- 2022 iPhone 14 Pro Max
- 2023 iPhone 15
- 2023 iPhone 15 Plus
- 2023 iPhone 15 Pro
- 2023 iPhone 15 Pro Max
- 2020 iPhone SE2
- 2022 iPhone SE3

**Android Pad**
- Samsung Galaxy Tab S7
- Samsung Galaxy Tab S7+
- Samsung Galaxy Tab S7 FE(LTE)
- Samsung Galaxy Tab S8(5G)

**Android Phone**
- Samsung Galaxy Note20
- Samsung Galaxy

**NOTICE**

Not all features or specifications described in this document may be available in all transducers and/or modes. Mindray reserves the right to make changes in specifications and features shown herein, or iscontinue the product at any time without notice or obligation. Contact Mindray Representative for the most current information



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