

TE Air

Color Doppler Ultrasound System

Datasheet

1 System Overview

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

1.1 Application

- Cardiac
- Abdomen
- Thoracic/pleural
- Gynecology
- Obstetrics
- Pediatric
- Vascular
- Urology
- Cephalic

1.2 Transducer types

Phased array transducer

1.3 Imaging modes

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

1.4 Standard features

- B-Mode
- M-Mode
- Color Doppler Imaging
- Power Doppler Imaging
- Pulsed Wave Doppler
- iClear™ (Speckle Suppression Imaging)
- iTouch™ (Auto Image Optimization)
- Smart Bladder

1.5 Optional features

- TDI
- Extended Connection
- Air Capsule
 - Input voltage: 5V DC
 - Input current: 3A
 - Output voltage: 5V DC
 - Output current: 3A
 - Battery: 3.6V, 3000mAh
 - 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
- Wireless Charging Dock Model: CP61 HUAWEI

Input voltage: 5V-10V

Input current: 4A Max

1.6 Language support

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

2 Transducer Specification

2.1 Power Supply

- Input voltage: 5V or 9V
- Input current: 3Amax
- Adaptor:
 - Output interface: USB TypeA
 - Output voltage: 5V DC
 - Output current: $\geq 3A$

2.2 Built-in Battery

- Lithium-Ion battery: 3.85V, 1650mAh
- Support 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 charging case
- Total working time of no less than 90 minutes with fully charged battery in B mode

2.3 Operating Environment

- Ambient temperature: 0-35 °C

- Relative humidity: 20%-85% (no condensation)
 - Atmospheric pressure: 700hPa-1060hPa
- 2.4 Storage & Transportation Environment
- Ambient temperature: -20-45 °C
 - Relative humidity: 20%-85% (no condensation)
 - Atmospheric pressure: 700hPa-1060hPa
- 2.5 Dimensions and Weight
- Dimensions: 46.5×33×170 mm
 - Weight: 198±3g
- 2.6 Dustproof and waterproof
- IP68 rated
- 2.7 Programmable button
- User-defined functions
- 3 Operating Environment
- 3.1 iOS Platform
- Processor: Apple A10 processor or newer
 - Operating System: iOS 13 or newer
 - Recommended iPhone model: iPhone 7 or newer
 - Storage space: 2 GB or larger
 - Display size: 4.7 inches (Diagonal) or larger
 - Display resolution: 1334 × 750 or higher
 - Display brightness: 400 nit
- 3.2 Android Platform (CE only)
- Processor: Qualcomm Cellulon 855
 - Operating System: Android 9 or above
 - Recommended model:
 - Phone: Samsung Galaxy S21 (Intl.), Samsung Galaxy Note 20, Huawei P50 pro, Xiaomi MIX4
 - Pad: Samsung S7+, Samsung S7 FE, Samsung S8
 - Storage space: 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
- 4 User Interface
- 4.1 Comments
- Supports text input and arrow

- Support freehand marking
 - Covers various applications
 - User defined
- 4.2 Body mark
- 80 body marks for versatile application
- 4.3 Numbers of exam mode presets
- 12 system exam modes
- 4.4 Screen information*
- Acoustic power
 - Imaging parameters

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

5 Imaging Parameters

- 5.1 Overview
- Up to 8-beamforming
- 5.2 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
 - Zoom
- 5.3 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, 145mm/s
 - Dyn Ra.: 30-240
- 5.4 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

- 5.5 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
- 5.6 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: 0.5-20mm, random adjustable
 - Dyn Ra.: 24-72, 2/step
 - Angle: random adjustable
 - iTouch: On/Off
- 5.7 Tissue Velocity/Energy Imaging (included in TDI option)
 - A.Power
 - Gain: 0-100, 2/step
 - Scale: 22 levels
 - ROI Width: random adjustable
 - ROI Height: random adjustable
 - Image Quality: 2 levels
- 5.8 Tissue Velocity Doppler (included in TDI option)
 - A.Power
 - Gain: 0-100, 2/step
 - Baseline: random adjustable
 - Scale
 - SVD: random adjustable
 - Image Quality: 2 levels
 - Speed: 20, 25, 35, 50, 75, 145mm/s
 - SV: the same as PW
 - Dyn Ra.: 24-72, 2/step
 - iTouch: On/off
- 5.9 Smart Bladder
Automatically detect and calculate bladder

volume

- 6 Cine Review and Post Processing
 - 6.1 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: 2~5s
 - 6.2 Post processing
 - B-mode:
 - Dyn Ra.
 - iClear
 - L/R Flip
 - Zoom
 - M-mode:
 - Speed
 - Dyn Ra.
 - PW:
 - Baseline
 - Speed
 - Dyn Ra.
 - Angle
- 7 Measurement
 - 7.1 General
 - Distance
 - Ellipse
 - Depth
 - Angle
 - Double Dist
 - Volume
 - Velocity
 - Time
 - Slope
 - Heart Rate (HR)
 - PS/ED
 - Simpson
- 8 Exam Storage and Management
 - 8.1 Exam storage
 - Direct digital storage of single frame and cine 2D, color and Doppler.
 - 8.2 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

9 Connectivity

9.1 Ethernet Network Connection

- Wireless connection

9.2 DICOM 3.0

- DICOM basic
 - Store
 - Media Exchange
- DICOM Worklist

9.3 Q-path

9.4 Remote Help (CE Only)

Remote Help: Mindray's collaboration solution for remote assistance, training, quality control, case discussion.

- Integrate Mico+ into the App, sharing real-time ultrasound and synchronize ultrasound images, audio and video to the terminal device (mobile phone/computer/tablet)
- Support sharing original ultrasound images to Mico+

10 Transducers

10.1 Phased array

- i3P
 - Application: Cardiac, Abdomen, Thoracic/Pleural, Gynecology, Obstetrics, Pediatric, Vascular, Urology, Cephalic
 - Bandwidth: 2.0-4.0MHz
 - Number of Elements: 64
 - Field of View (max): 90°
 - Depth: 2-38cm
 - Physical Footprint: 44.7mm × 31.2mm
 - Footprint: 24.2mm × 15.6mm
 - B-mode Frequencies: 2.0, 2.5, 4.0 MHz
 - Harmonic Frequencies: 2.6, 3.0, 3.0, 3.3,

3.3MHz

- Color Frequencies: 2, 2.3, 2.5 MHz; TDI: 2.5, 3.3MHz
- PW Frequencies: 2, 2.3, 2.5 MHz; TDI: 2.5, 3.3MHz
- Biopsy Guide: not available

11 Safety and Conformance

11.1 Quality standards

- ISO 9001
- ISO 13485

11.2 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

11.3 CE declaration

The system is fully in conformance with the Council Directive 2014/53/EU concerning Medical Devices. The number adjacent to the CE marking (0123) is the code of the EU-notified body that certified meeting the requirements of Annex II excluding (4). of the Directive.

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 discontinue the product at any time without notice or obligation. Contact Mindray Representative for the most current information.

