



IRON BOW™
HEALTHCARE
SOLUTIONS

**EXPANDING THE
BOUNDARIES OF
HEALTHCARE**

MEDiC™

Mobile Exam Device Case User Guide

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Introduction

The Mobile Exam Device Case (MEDiC) telehealth consultation system from Iron Bow Healthcare Solutions equips Emergency Medical Services (EMS), first responders and others with the essential tools to conduct a telehealth consultation with specialists located remotely at a clinic, hospital or other medical facility.

The MEDiC is built for portability and durability and consists of a tablet PC with built-in camera for videoconferencing, a speakerphone for improved audio quality, a handheld digital HD scope system with separate lens attachments for otoscopy, dermatology, general viewing and an electronic stethoscope, all housed in a customized hard case.

The case has an integrated power supply, cable management system and a portable keyboard.



Figure 1. MEDiC general view

You may purchase extended support for the MEDiC, which is offered through the Iron Bow Client Service Center, a U.S.-based, ISO 9001 service facility providing support 24x7x365 days a year. Extended support includes optionally available product maintenance, service desk management, incident and problem management, asset and configuration management, reporting, proactive monitoring, as well as preventative and patch management. In addition, Iron Bow can optionally provide cloud video service for your MEDiC and your overall telehealth solution.

System Description

The primary components of the MEDiC include:

- A tablet PC, which fulfills the function of a videoconferencing endpoint with built-in Wi-Fi connectivity and full HD camera
- An external speakerphone for high quality audio
- Integrated power supply
- Cable management system/connecting hub for all the medical and non-medical peripherals

The following medical devices are integrated in the MEDiC platform:

- Handheld digital HD scope system with medical attachments (Horus Scope)
- Electronic stethoscope

For ease of use, an antimicrobial USB keyboard with built-in touchpad is also included with the system.

The MEDiC components are housed in a customized, hard case.

The MEDiC uses a Windows-based tablet PC, therefore, Windows-based medical and videoconferencing applications currently used in the health and telehealth industry can be installed and used on this platform.

System Layout

The top section of the case houses an integrated tablet PC.

- 1 Built-in HD camera
- 2 Touch-screen tablet PC



Figure 2. Top section view with tablet PC

The base section of the case houses the power supply, connecting cables, speakerphone and medical devices. The power supply and connecting cables are locked in a protective enclosure on which the speakerphone is mounted. Included in the storage area of the case is a portable keyboard and a storage pouch for the electronic stethoscope and tablet accessories.

- 1 Power supply and connecting hub under protective cover
- 2 Speakerphone
- 3 Storage pouch



Figure 3. Base section view (1)

A removable cover protects the Horus Scope and lens attachments during transport and can double as a work surface.

- 1 Removable cover/ work surface
- 2 USB keyboard with touchpad



Figure 4. Base section view (2)

The Horus Scope, lens attachments and other medical cables and accessories are stored in a layer of custom-cut polyethylene foam behind the removable cover.

- 1 Power cable and USB extension for keyboard
- 2 Lens attachments
- 3 Horus Scope
- 4 Ear specula
- 5 USB adapter for stethoscope



Figure 5. Base section view (3)

Connections

A hub located in the protective enclosure connects all peripherals to the tablet PC. Two USB ports are accessible to the user.

- 1 USB port for keyboard or other medical device
- 2 USB cable for Horus Scope (integrated)
- 3 USB port for stethoscope Bluetooth adapter



Figure 6. Peripheral connectivity

Power

A power inlet located on the outside of the case is used to charge the system when not in use or as necessary when the unit is being used near a wall power outlet.



Figure 7. Power inlet

Medical Devices

Horus Scope Handheld Digital HD Scope System

The handheld digital HD Scope System supplied with the MEDiC is a *JEDMED Horus Scope*. The Horus Scope is used to capture and transmit images and video to a remote consulting clinician through the tablet PC.

Included with the MEDiC are the following camera attachments:

- Dermoscope (surface) lens attachment for viewing magnified images of the skin with built-in polarization technology to reduce skin reflection
- Otoscope lens attachment for viewing images of the tympanic membrane and auditory canal. An insufflator bulb is included for pneumotoscopy.
- General viewing lens attachment for a wider-angle view examination of body areas

All lens attachments have built-in LEDs that provide illumination of the consulted area.

- 1 Dermoscope lens attachment
- 2 Otoscope lens attachment
- 3 Insufflator bulb (attaches to otoscope lens)
- 4 General viewing lens attachment



Figure 8. Horus Scope

Horus Scope Connectivity

The Horus Scope is connected to the tablet PC via the integrated hub. This connection is used for data transfer and charging. The integrated connecting cable allows the camera to remain connected to the tablet PC even when not in use, and to charge while the tablet is powered on. If needed, the Horus Scope can be disconnected from the USB cable from the end nearest the Horus Scope.

Electronic Stethoscope

The electronic stethoscope supplied with the MEDiC system is a *3M Littmann 3200T*. The stethoscope transmits patient auscultation information (sound and visual waveform) to a consulting clinician through the TeleSteth cloud-based application.

Stethoscope Connectivity

The Littmann 3200T stethoscope connects wirelessly to the tablet PC via Bluetooth. A Bluetooth adapter is connected to one of the USB ports of the integrated hub. The placement of the adapter in the MEDiC system allows it to remain connected to the tablet PC even when not in use and allows for automatic Bluetooth connectivity when the tablet is powered on.



Figure 9. Always-connected Bluetooth adapter for stethoscope

Getting Started

Powering On System

Reach behind the tablet PC on the left side by the **Power Switch** arrow. Slide down and release the power switch. The tablet PC will start up.



Once the tablet PC is on, the connected peripherals receive power as well. The speakerphone and the stethoscope Bluetooth adapter automatically turn on and the LEDs of both devices are lit.

Logging in for the First Time

Log in to the tablet PC with the following default credentials:

Username: admin

Password: admin

Configuring Wi-Fi Access

After the tablet PC start-up procedure is complete, click or tap the Wi-Fi icon in the lower-right corner of the screen to launch the Wi-Fi configuration window. Enter the Wi-Fi security key to join the desired Wi-Fi network. Once the tablet PC is connected to the network the MEDiC system is ready for use.

Using the Horus Scope

Powering On the Horus Scope

Press and hold the power button at the top of the unit for two seconds. The Horus Scope will start up. Start-up takes about 20 seconds.

Front view



Top view



Once the start-up procedure is complete the Horus Scope screen will display the live video feed captured by the lens currently attached to the unit.

Switching Between the Live View and Image View

Press the **OK** button on the unit to capture images.

Press the  button to return to live view.



Changing Lens Attachments

To remove optical lens attachment from the Horus Scope control unit:

1. Hold the camera in one hand and rotate optical lens counter-clockwise with the other hand until the lens detaches.
2. Gently pull to detach lens.

To add optical lens attachment to the Horus Scope control unit:

1. Hold the camera in one hand and the lens in the other hand
2. Align the ● marks on the optical lens and the camera body
3. Push the lens and the camera together
4. Rotate optical lens clockwise until secure

For more details regarding the Horus Scope features, menu options, operation and care instructions please consult the *JEDMED Horus Scope User's Manual*, available on the CD-ROM included with the MEDiC.

Using the Stethoscope

Establishing Bluetooth Connectivity

1. Verify the Bluetooth adapter is on by checking if the LED of the adapter is lit
2. Lift the Bluetooth adapter antenna from a horizontal position to a vertical position to improve reception

Powering On Stethoscope

Press and release power button. The LCD light will activate indicating the stethoscope is on.



Using the TeleSteth Application

1. Open a browser session on the tablet PC and go to the 3M Hosted TeleSteth System URL: www.littmann.com/telemedicine/launch
2. Log in to the TeleSteth system with your username and password.

Note: The user name and password are provided to you by Iron Bow shortly after your MEDiC purchase. If you do not have this information, please email Iron Bow Client Service Center (CSC@ironbow.com).

3. Pair and connect the electronic stethoscope.

NOTE: The stethoscope needs to be paired only when you connect the stethoscope for the first time.

For more details regarding the Littmann 3200T features, menu options, operation and care instructions please consult the 3M *Littmann Stethoscope 3200 User Guide*, included with the MEDiC.

For more information on using the TeleSteth application please consult the *3M Littmann TeleSteth System Quick Start Guide*, included with the MEDiC.

Using the Speakerphone

The speakerphone integrated in the MEDiC system is used to improve the audio quality during video conferencing calls, delivering full-duplex audio with echo cancellation and noise suppression.

Powering On Speakerphone

The speakerphone is always connected to the tablet PC. The speakerphone turns on automatically when the tablet PC is turned on, and turns off automatically when the tablet PC is turned off.

Performing Basic Operations

The speakerphone has the following controls: Mute (center), Volume Up (right) and Volume Down (left).

Calls are initiated and terminated from the videoconferencing software installed on the tablet PC.

- 1 USB cable (power and voice transmission)
- 2 Volume Down
- 3 Mute
- 4 Volume Up
- 5 External headset 3.5 mm jack input (not visible in picture)
- 6 Loudspeaker
- 7 Microphone



Figure 10. Speakerphone

To mute the microphone, press the Mute button. When the microphone is muted, the LED light will blink. To unmute microphone, press the mute button again.

Control the volume by pressing the Volume Up and Volume Down buttons. To mute the speaker, press the Volume Down button until no sound is heard from the speaker.

You can connect a headset to the 3.5 mm jack external speaker input located on the connector panel at the top of the unit. Once a headset is connected to the 3.5 mm jack input the internal speaker will be muted and the sound will be heard only through the headset.

Using the USB Keyboard

The USB keyboard supplied with the MEDiC system has 86 keys and a built-in touchpad. The keyboard is waterproof, washable and offers antimicrobial protection.

Connecting Keyboard

1. Remove gray protective cover (1) from the end of the keyboard-integrated USB cable.
2. Attach USB cable extension (2) to the keyboard-integrated USB cable.
3. Connect the USB extension cable to the USB port (3) located above the speakerphone on the protective cover.



Once the keyboard is connected and the tablet is on the keyboard is ready for use.

Specifications

Tablet PC	
Operating System	Windows 10 Professional
Processor	Intel® Core™ i5-4302Y with Intel HD Graphics 4200 1.6 GHz, 3 MB cache, 2 cores
Memory	8 GB 1600 MHz DDR3L SDRAM
Internal Storage	256 GB SSD
Display	12.5" diagonal FHD IPS eDP slim LED-backlit touch screen (1920 x 1080)
Wireless	Intel Dual Band Wireless-AC 7260AN 802.11a/b/g/n/ac (2x2) Wi-Fi and Bluetooth® 4.0 Combo
Camera	2 MP 1080p Full HD webcam
Security Management	Trusted Platform Module (TPM) with File Sanitizer
Software Included	Antivirus software
JEDMED Horus Scope Handheld Digital HD Scope System	
Resolution	1920x1080p HD
Light Source	Light Emitting Diode (LED)
Display	3.5 full color LCD
Image Format	JPEG (still) and H.264 (video)
Media Card	Micro SD 2GB (included)
Operating Time	3 hours
Weight	12 oz.
Focusing Range	5 mm to 30 mm
3M Littmann 3200T Electronic Stethoscope	
Wireless	Stethoscope: Bluetooth® USB Adapter: USB and Bluetooth®
EMC Compliance	FCC Part 15
RF emissions CISPR 11	Group 2, Class B
Speakerphone	
Connectivity	USB cable to Tablet PC via hub (integrated) 3.5 mm connection for headset
Power	USB power from Tablet PC via hub (LED will illuminate)
Audio	Speech processing and echo suppression at 16 kHz sampling rate 100% Full Duplex with no attenuation

	<p>Acoustic Echo Cancellation >40 dB conforms to ITU-T G.167</p> <p>Noise Cancellation >10 dB</p> <p>Bandwidth for speech processing 20-7500 kHz, maintains Tablet PC soundcard bandwidth</p>
Accessories Included	
	<p>Integrated custom foam insert for device/accessory storage</p> <p>Mini all-in-one silicone 86 key layout keyboard with built-in touchpad pointing device, waterproof, washable, antimicrobial protection</p> <p>External AC power inlet with integrated cover for charging</p> <p>3' AC Power Cord</p> <p>Shoulder strap</p> <p>Accessories/Stethoscope Case</p>
Expansion Slots	
	<p>1 x USB 3.0 for keyboard or alternative use</p> <p>1 x USB 3.0 dedicated for 3M Littmann 3200T stethoscope Bluetooth® receiver</p> <p>1 x USB 3.0 (integrated) for JEDMED Horus Scope</p> <p>1 x USB 3.0 (integrated) for audio speakerphone</p>
Case	
Body	Injection Molded HPX high performance resin
Environmental	<p>Watertight</p> <p>Temperature range -20° F - 140° F (-29° C - 60° F)</p>
Certifications	MIL-STD-810F / ATA 300 / FED-STD-101C
Color	Yellow
Battery	
	<p>4-cell, long life 29.3 WHr Li-ion polymer</p> <p>Standby runtime: Up to 10 hours</p> <p>Fully loaded runtime: 1.5 hours</p>
Dimensions	
(L x W x D)	16.20" x 12.70" x 6.60" (41.1 x 32.3 x 16.8 cm)
Weight	
(Fully loaded)	14.2 lbs.



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