



**IRON BOW™**  
HEALTHCARE  
SOLUTIONS

**EXPANDING THE  
BOUNDARIES OF  
HEALTHCARE**

# **MEDiC™**

## **Mobile Exam Device Case User Guide**

**Document Version 3.3**

**MEDiC-H-B02**

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# Introduction

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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 Microsoft Surface Pro 6 tablet PC with built-in camera for videoconferencing, a noise cancelling speakerphone for improved audio quality, a handheld digital HD Horus Scope system with an included general purpose lens. Additional lens attachments for otoscopy and dermatology are available, and the case has been designed to securely house them in the foam cutout.

Also included in the standard case is 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

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The primary components of the MEDiC include:

- A Microsoft Surface Pro 6 tablet PC, which fulfills the function of a videoconferencing endpoint with built-in Wi-Fi connectivity and full HD camera
- An antimicrobial USB keyboard with built-in touchpad.
- 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 (Horus Scope) with a general lens for medical examinations.

The following medical devices are available as options from Iron Bow.

- Otoscope and Dermoscope lenses for the Horus Scope.
- Electronic stethoscope

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.

- Built-in HD camera
- 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 cable, stethoscope and other accessories.

1. Power supply and connecting hub under protective cover
2. Speakerphone
3. Storage pouch (shown with optional stethoscope)



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. Cables & accessories
2. Lens attachments (optional)
3. Horus Scope
4. Ear specula (optional)
5. USB Bluetooth 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

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## 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.

Recommended lenses to use with the MEDiC are the:

- General viewing lens attachment for a wider-angle view examination of body areas (included with basic MEDiC)
- Dermoscope (surface) lens attachment for viewing magnified images of the skin with built-in polarization technology to reduce skin reflection (optional p/n ACC-DERM-A01)
- Otoscope lens attachment for viewing images of the tympanic membrane and auditory canal. An insufflator bulb is included for pneumotoscopy (optional p/n ACC-OTO-A01)

All lens attachments have built-in LEDs that provide illumination of the consulted area. The foam has cutouts to securely and safely hold these lenses.

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



Figure 8 - Horus Scope Storage

## 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 MEDiC supports electronic stethoscopes with several methods of connectivity.

- USB connection – use the exposed USB connection (also used for the keyboard)
- 3.5 mm Audio connection – via Audio Technica ATR2USB with the exposed USB port
- Bluetooth Connection – via Perani UD100-G03 connected to the dedicated USB port

### Stethoscope Connectivity

#### 3.5mm Audio Connection

Locate the Audio Technica ATR2USB adapter included with the MEDiC. Connect the USB end to the exposed USB port on the inner, lower base of the unit. Connect the stethoscope 3.5 mm connection to the other end of the adapter.



Figure 9 - 3.5 mm audio adapter

#### Bluetooth Connection

Locate the Perani UD100-G03 and the extension antenna included in the MEDiC. Remove the short antenna attached to the UD-100 and attach the long antenna to the in its place until snug. Do not overtighten. Install the antenna assembly into the USB port as shown. 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..

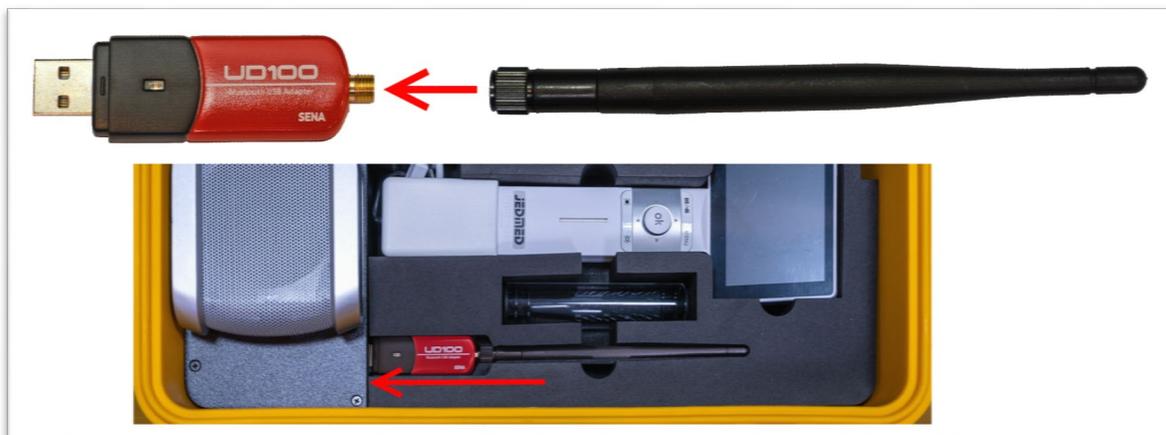


Figure 10 - Bluetooth Adapter

# Getting Started

## Powering On System

Reach on top of the tablet PC on the left side by the **Power Switch** label. Press and hold the button on the tablet. 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.



Figure 11 - Power on the Tablet

## 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.

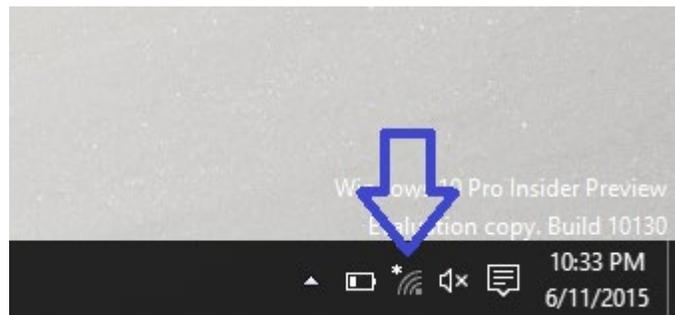


Figure 12 - Wi-Fi icon in Windows

# Using the Horus Scope

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## 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.



Figure 13 - Horus Scope Front View



Figure 14 - Horus Scope 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.



Figure 15 - Horus Scope Controls

## 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

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## 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

# Using the Speakerphone

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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 16. 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

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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.

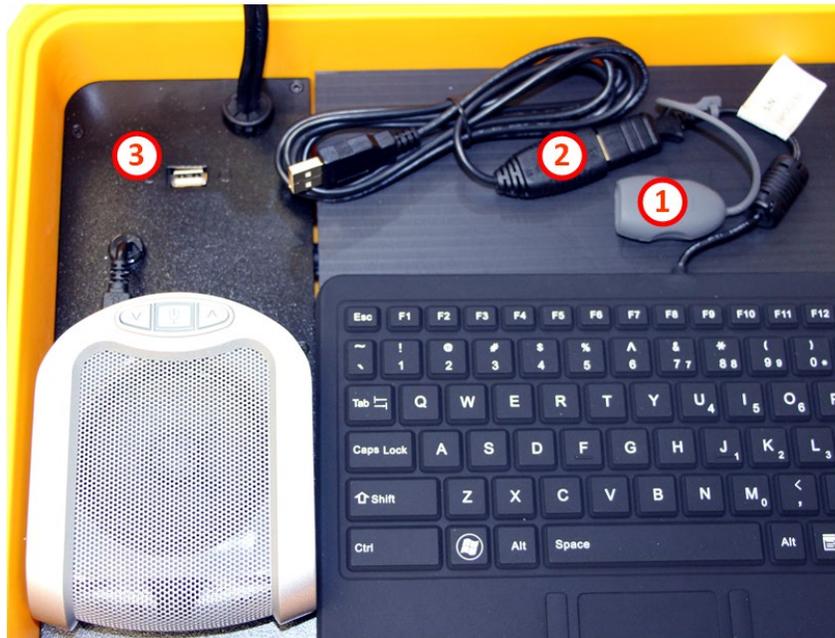


Figure 17 - Connecting Keyboard

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

# Specifications

<b>Tablet PC</b>	
<b>Make and Model</b>	Microsoft Surface Pro 6 Tablet
<b>Operating System</b>	Windows 10 Professional
<b>Processor</b>	Intel i5 processor
<b>Memory</b>	8 GB
<b>Internal Storage</b>	256 GB SSD
<b>Display</b>	12.3" diagonal touch screen (2736 x 1824), Aspect ratio 3:2
<b>Wireless</b>	Wi-Fi: 802.11a/b/g/n/ac compatible Bluetooth® 4.1 technology
<b>Camera</b>	5.0MP front-facing camera with 1080p HD video
<b>Software Included</b>	McAfee EP Antivirus software
<b>JEDMED Horus Scope Handheld Digital HD Scope System</b>	
<b>Resolution</b>	1920x1080p HD
<b>Included Lens</b>	General Purpose Lens (other lenses available)
<b>Light Source</b>	Light Emitting Diode (LED)
<b>Display</b>	3.5 full color LCD
<b>Image Format</b>	JPEG (still) and H.264 (video)
<b>Media Card</b>	Micro SD 2GB (included)
<b>Operating Time</b>	3 hours
<b>Weight</b>	12 oz.
<b>Focusing Range</b>	5 mm to 30 mm
<b>Speakerphone</b>	
<b>Connectivity</b>	USB cable to Tablet PC via hub (integrated) 3.5 mm connection (for use with a headset instead of integrated speakers)
<b>Power</b>	USB power from Tablet PC via hub (LED will illuminate)
<b>Audio</b>	100% Full Duplex with no attenuation Acoustic Echo Cancellation >40 dB conforms to ITU-T G.167 Line echo cancellation Noise Cancellation >10 dB Low Delay (10msec) Speech processing and echo suppression at 16 kHz sampling rate Bandwidth for speech processing 20-7500 kHz Integrated loudspeaker with volume controls Mute button (with LED Mute indicator) Speech processing and echo suppression at 16 KHz sampling rate

<b>Accessories Included</b>	
	Audio Technica ATR2USB USB to 3.5mm headphone jack Perani UD100-G03 USB Bluetooth adapter Plastic separator for isolating accessories/foam and keypad Mini all-in-one silicone 86 key layout keyboard with built-in touchpad pointing device, waterproof, washable, antimicrobial protection 3' AC Power Cord Shoulder strap Accessories/Stethoscope Case Horus Scope User Guide, CD ROM
<b>Expansion Slots</b>	
	1 x USB 2.0 for keyboard or accessory use 1 x USB 2.0 dedicated to Bluetooth® receiver 1 x USB 2.0 (integrated) for JEDMED Horus Scope 1 x USB 2.0 (integrated) for audio speakerphone
<b>Case</b>	
<b>Body</b>	Injection Molded HPX high performance resin
<b>Environmental</b>	Watertight Temperature range -20° F - 140° F (-29° C - 60° F)
<b>Certifications</b>	MIL-STD-810F / ATA 300 / FED-STD-101C
<b>Color</b>	Yellow
<b>Inputs</b>	AC power inlet with integrated cover for charging
<b>Battery</b>	
	45 Wh (7.57 V x 5940 mAh); ~up to 13.5 hours of local video playback
<b>Dimensions</b>	
(L x W x D)	16.20" x 12.70" x 6.60" (41.1 x 32.3 x 16.8 cm)
<b>Weight</b>	
Basic Unit	13.5 lbs. (with Horus Scope, General Lens, no stethoscope)

# Appendix A – Stethoscopes

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Electronic stethoscopes with either a 3.5mm output jack or a Bluetooth connection will work with the MEDiC, however all manufacturers products have not been tested for full compatibility. Recommended stethoscopes are listed below. Contact Iron Bow sales for compatibility with other stethoscopes not listed here.

## Littman 3200 Stethoscope (p/n ACC-LITTSCOPE-A01)

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



Figure 18 - Littman Scope

## Using the TeleSteth Application (ACC-LITTSCOPE SOFT-A01)

The Littman 3200 works as a stand-alone stethoscope, however there is software available to view the stethoscope output on the MEDiC tablet and share audio and visual results with a provider on the other end of a teleconference.

1. Open a browser session on the tablet PC and go to the 3M Hosted TeleSteth System URL: [www.littmann.com/telemedicine/launch](http://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 stethoscope purchase. If you do not have this information, please email Iron Bow Client Service Center (CSC@ironbow.com).

1. 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*, provided with the stethoscope.

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



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