



**MODEL:**  
**ICECARE-07**

**7" Mobile Field Assistant with TI Sitara™ AM3715 CPU, Touchscreen, Android 4.1.2 OS, HSUPA/GPRS/GSM, Bluetooth, Wi-Fi, GPS, RFID Reader, 1D/2D Barcode Scanner, 2-megapixel and 5-megapixel Cameras, RoHS Compliant**

## **User Manual**

# Revision

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Date	Version	Changes
10 April, 2014	1.12	Updated part number of the vehicle mounting kit
28 March, 2014	1.11	Updated optional items Added 3.9 Using the Docking Cradle (Optional)
7 November, 2013	1.10	Updated for R11 version
17 May, 2013	1.01	Updated for Android 4.1.2 OS
24 January, 2013	1.00	Initial release

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Chapter

1

# Introduction

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## 1.1 Overview



**Figure 1-1: ICECARE-07**

The ICECARE-07 is an industrial tablet PC with a 7 inch touchscreen. Featuring the TI Sitara™ AM3715 CPU and Android 4.1.2 OS, this tablet PC is targeted for field service applications, such as tracking and locating mobile field workers, capturing, accessing and updating information in real time.

The ICECARE-07 is integrated with a selection of wireless communication technologies, including Wi-Fi, Bluetooth and 3.75G. In addition, the built-in GPS antenna provides access to Location-Based Services, tracking and navigation applications. With the 5-megapixel rear camera, RFID reader and 1D laser/2D imager scan engine, the ICECARE-07 brings users advanced data collection methods.

An optional 2-megapixel front camera functions as a web camera that allows field workers to communicate face-to-face with the staffs in the office and other parties while on the move. To better fulfill the needs of extensive operation time, the ICECARE-07 is equipped with two hot-swappable battery packs that provide 11.1V 1880mAh capacity.



## ICECARE-07 Mobile Field Assistant

### 1.2 Model Variations

Model	Scanner	GPS	RFID	3.75G
ICECARE-07-E/U-R11	1D/2D	Yes	Yes	Yes
ICECARE-07-1D-R11	1D	No	No	No

**Table 1-1: Model Variations**

### 1.3 Features

Some of the ICECARE-07 features include:

- 7" TFT LCD with projected capacitive touchscreen
- TI Sitara™ AM3715 CPU
- Android 4.1.2 OS
- 1D/2D barcode scanner and RFID reader
- 5-megapixel CMOS rear camera and optional 2-megapixel CMOS front camera
- Bluetooth, Wi-Fi and 3.75G wireless communication technologies
- Built-in GPS with internal antenna
- Two hot-swappable 11.1V 1880mAh Li-ion batteries
- IP 64 protection
- RoHS compliant

## 1.4 Front Panel

The front panel of the ICECARE-07 has a 7" TFT LCD with projected capacitive touchscreen. The front panel also contains an optional 2-megapixel camera, a microphone and LED indicators.



Figure 1-2: Front Panel

### 1.4.1 LED Indicators

The LED indicators on the front panel show the status of Bluetooth, Wi-Fi and HSUPA/GPRS/GSM.

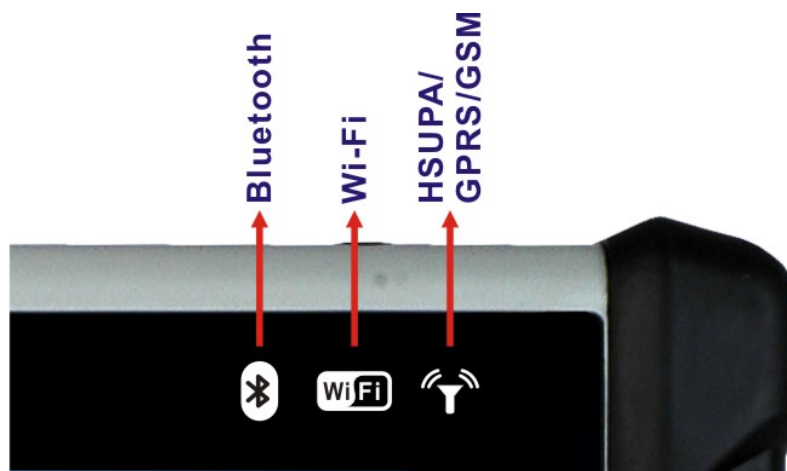


Figure 1-3: LED Indicators

## ICECARE-07 Mobile Field Assistant

### 1.5 Rear Panel

The rear panel consists of a 5-megapixel camera, barcode scanner, metal stand, two battery packs and battery charging indicators.

#### 5-Megapixel CMOS Camera

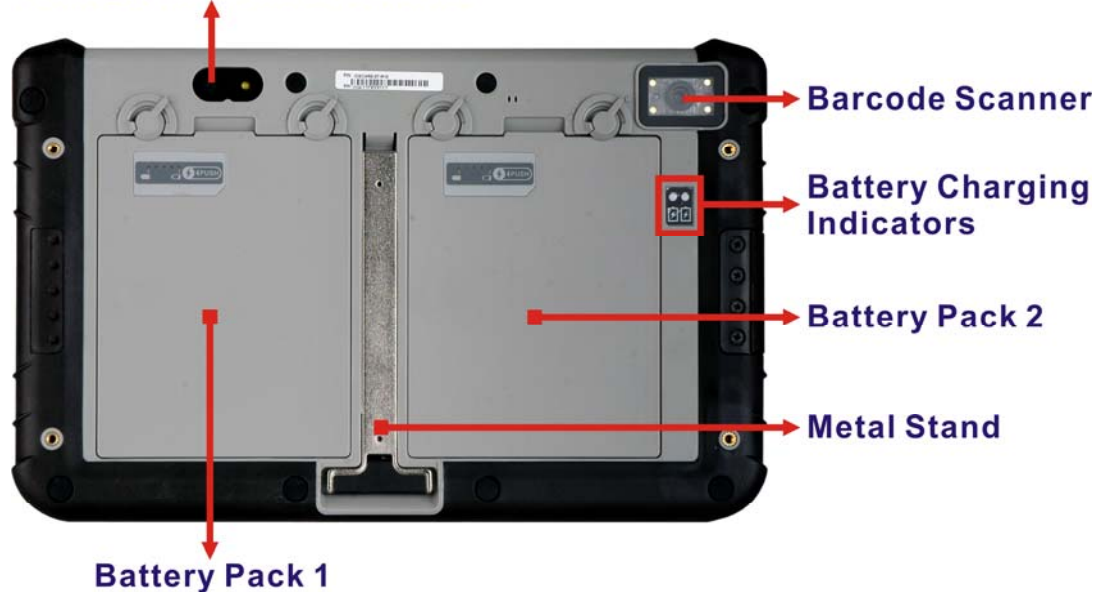


Figure 1-4: Rear Panel



#### CAUTION:

DO NOT shine the light from the barcode scanner in eyes.

### 1.6 Side Panels

The side panels contain the I/O interfaces as shown in **Figure 1-5**.



Figure 1-5: Side Panels

### 1.7 Top Panel

The top panel contains a RFID reader and power button with LED indication.

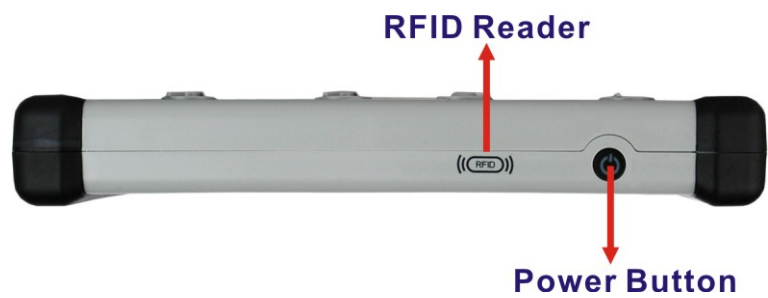


Figure 1-6: Top Panel

## ICECARE-07 Mobile Field Assistant

### 1.8 Bottom Panel

The bottom panel has a speaker and docking connector to connect with the optional expansion items.



Figure 1-7: Bottom Panel

### 1.9 Technical Specifications

The ICECARE-07 technical specifications are listed in the table below.

Display	
LCD	7" TFT LCD
Brightness (cd/m <sup>2</sup> )	500
Max. Resolution	1024 (H) x 600 (V)
Viewing Angle	75/75/70/75 Deg.
Touchscreen	Projected capacitive touch
System	
CPU	TI Sitara™ AM3715, 1 GHz
OS	Android 4.1.2
Memory	4.0 GB eMMC Flash + 512 MB SDRAM
Storage	One SD card slot
Communication	
Wireless LAN	802.11a/b/g/n
Bluetooth	Bluetooth 4.0



<b>3.75G</b>	WCDMA/HSDPA/HSUPA/EDGE/GPRS/GSM (ICECARE-07-E/U-R11 only)
<b>GPS</b>	GPS with internal antenna (ICECARE-07-E/U-R11 only)
<b>NFC</b>	13.56 MHz, compliant with ISO/IEC 14443A/B and 15693 (ICECARE-07-E/U-R11 only)
<b>Data Collection</b>	
<b>Barcode Scanner</b>	1D laser scan engine 2D imager scan engine (ICECARE-07-E/U-R11 only)
<b>Camera (Rear)</b>	5-megapixel CMOS camera with LED flashlight
<b>Camera (Front)</b>	2-megapixel CMOS camera (optional)
<b>Indicators and Buttons</b>	
<b>LED Indicators</b>	Two battery charging status/capacity LEDs Bluetooth LED Wi-Fi LED GSM/GPRS/HSUPA LED (ICECARE-07-E/U-R11 only)
<b>Buttons and Keys</b>	Power button with LED indication Reset key
<b>I/O Interface</b>	
<b>Audio</b>	1 x Headset jack 1 x Speaker (1.5 W) 1 x Digital microphone
<b>Expansions</b>	1 x USB 2.0 host 1 x Mini USB 2.0 client
<b>Power Connector</b>	1 x DC jack
<b>Docking (Supports Wall Mount)</b>	1 x 10/100 Mbps Ethernet LAN 1 x Full function RS-232 1 x USB 2.0 host 1 x DC jack

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Power	
Power Adapter	40 W, 19 V 2.1 A
Battery	Dual 11.1 V 1880mAh Li-ion battery
Environment	
Operating Temperature	-10°C ~ 40°C
Storage Temperature	-10°C ~ 60°C
Humidity	5% ~ 95% (non-condensing)
Drop Survival	1.2 m
Environment Protection	IP 64
Certification	CE/FCC
Physical Characteristics	
Dimensions (LxWxH)	248 mm x 152.7 mm x 36.2 mm
Weight	1150 g (for ICECARE-07-E/U-R11) 1087 g (for ICECARE-07-1D-R11)

Table 1-2: Technical Specifications

1.10 Dimensions

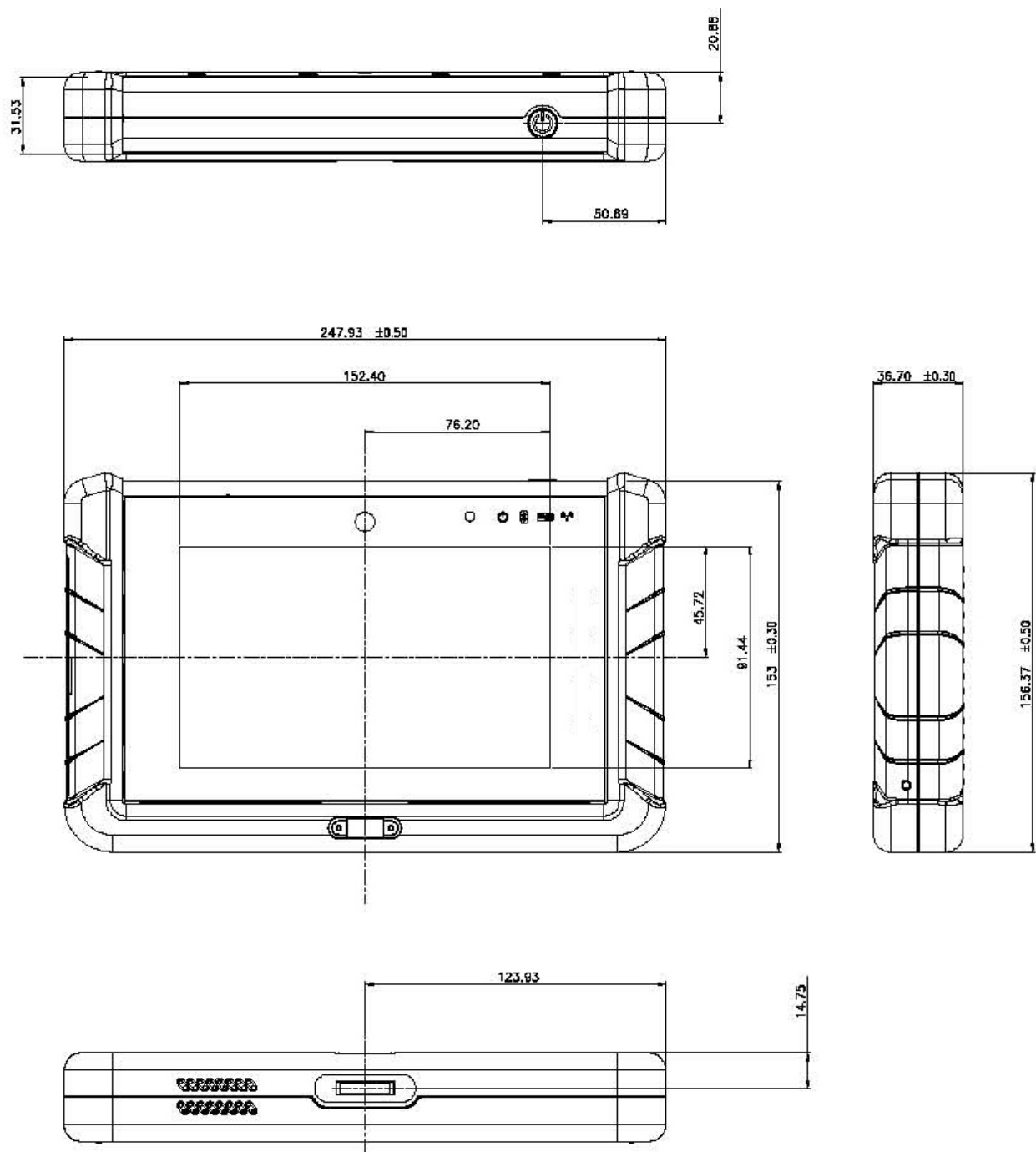


Figure 1-8: Dimensions (units in mm)

Chapter

2

# Unpacking

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To unpack the ICECARE-07, follow the steps below:



### **WARNING!**

Only remove the protective plastic cover stuck to the front screen after installation. The plastic layer protects the monitor surface during installation process.

**Step 1:** Carefully cut the tape sealing the box. Only cut deep enough to break the tape.

**Step 2:** Open the box.

**Step 3:** Lift the ICECARE-07 out of the box.

**Step 4:** Remove both polystyrene ends, one from each side.

**Step 5:** Pull the plastic cover off the ICECARE-07.








**Step 6:** Make sure all the components listed in the packing list are present.

The ICECARE-07 is shipped with the following components. If any of these items are missing or damaged, contact the distributor or sales representative immediately.

Quantity	Item	Image
1	ICECARE-07	
2	Battery pack (P/N: 31603-000016-RS)	
1	Power adapter (P/N: 63040-290040-000-RS)	




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Quantity	Item	Image
1	Headset (P/N: 30900-000003-RS)	
1	USB Type A to Mini-B cable (P/N: 32001-000300-200-RS)	
1	Sling (P/N: 46035-000400-RS)	
1	Rubber shape module (P/N: 47005-003900-00-RS)	
4	Pan head machine screw (P/N: 44402-030031-RS)	
2	Buckle (P/N: 45013-001958-00-RS)	
1	Utility CD	

**Table 2-1: Packing List**

These optional items are also available.

Item	Image
Docking cradle (P/N: ICECARE-07-CR01-R10)	




Item	Image
RS-232 cable (P/N: 32005-003200-100-RS)	
Cigarette lighter power cable (P/N: 63072-290040-000-RS)	
Vehicle mounting kit (P/N: ICECARE-07-MK01-R10)	

Table 2-2: Optional Items

Chapter

3

# Installation

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### 3.1 Anti-static Precautions

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**WARNING:**

Failure to take ESD precautions during the maintenance of the ICECARE-07 may result in permanent damage to the ICECARE-07 and severe injury to the user.

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Electrostatic discharge (ESD) can cause serious damage to electronic components, including the ICECARE-07. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the ICECARE-07 is accessed internally, or any other electrical component is handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband:*** - Wearing a simple anti-static wristband can help to prevent ESD from damaging the board.
- ***Self-grounding:*** - Before handling the board touch any grounded conducting material. During the time the board is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad:*** - When configuring the ICECARE-07, place it on an anti-static pad. This reduces the possibility of ESD damaging the ICECARE-07.
- ***Only handle the edges of the PCB:*** - When handling the PCB, hold the PCB by the edges.

### 3.2 Installation Precautions

When installing the ICECARE-07, please follow the precautions listed below:

- **Power turned off:** When installing the ICECARE-07, make sure the power is off. Failing to turn off the power may cause severe injury to the body and/or damage to the system.
- **Certified Engineers:** Only certified engineers should install and modify onboard functionalities.

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- **Anti-static Discharge:** If a user open the rear panel of the ICECARE-07, to configure the jumpers or plug in added peripheral devices, ground themselves first and wear an anti-static wristband.

### 3.3 Battery Pack Installation

This section covers the installation of the battery packs.

**Step 1:** Make sure the battery locks are in unlock position.



**Figure 3-1: Release the Battery Locks**

**Step 2:** Install a battery pack as shown in **Figure 3-2**.





Figure 3-2: Battery Pack Installation

**Step 3:** Lock the battery pack by rotating the battery locks to the lock position.



Figure 3-3: Lock the Battery Pack

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**Step 4:** Follow **Step 1 ~ Step 3** to install the second battery pack.

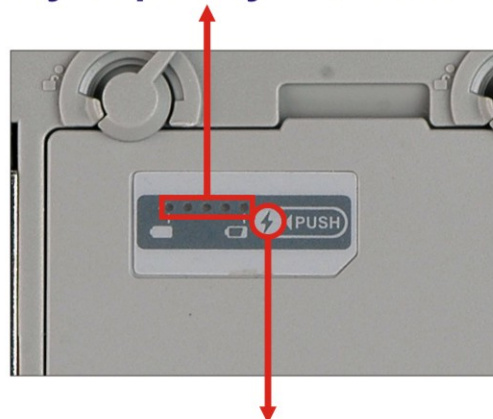
**Step 5:** To charge the battery packs, connect the ICECARE-07 with a power source through the supplied power adapter. When the batteries are being charged, the battery charging indicators light up (**Figure 3-4**).



**Figure 3-4: Battery Charging Indicators**

**Step 6:** To view the battery capacity, press the battery capacity button on the battery (**Figure 3-5**).

### Battery capacity indicators



**Press to view the battery capacity**

**Figure 3-5: Battery Capacity Indicators**

**NOTE:**

The two batteries are hot swappable which means the user can replace the battery with a fully charged battery without turning off the system.

### 3.4 SIM Card Installation (Optional)

To be able to use the 3.75G network connection, a SIM card must be installed in the ICECARE-07. Follow the steps below to install a SIM card.

**Step 1:** Remove the battery pack 1 on the rear panel of the ICECARE-07.

**Step 2:** Locate the SIM card slot and insert a SIM card into it (**Figure 3-6**).



**Figure 3-6: SIM Card Installation**

### 3.5 SD Card Installation

This section covers the installation of an SD card.

**Step 1:** Locate the SD card slot on the side panel of the ICECARE-07.

**Step 2:** Install the SD card in the slot.

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Figure 3-7: SD Card Installation

### 3.6 Carrying Strap Kit Installation

The carrying strap kit allows securely and effortlessly carrying the ICECARE-07. Follow the steps below to install the carrying strap kit.

- Step 1:** Attach the rubber shape module onto the rear panel of the ICECARE-07 (Figure 3-8).
- Step 2:** Secure the rubber shape module to the ICECARE-07 with two of the supplied pan head machine screws (Figure 3-8).





**Figure 3-8: Securing the Rubber Shape Module**

- Step 3:** Attach one of the supplied buckles onto the rubber shape module, aligning with the screw hole. Then, insert a pan head machine screw to the ICECARE-07 and fasten it (**Figure 3-9**).
- Step 4:** Repeat previous step to secure another buckle.



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Figure 3-9: Securing the Buckles

**Step 5:** Clip the supplied sling to the ICECARE-07 (Figure 3-10).

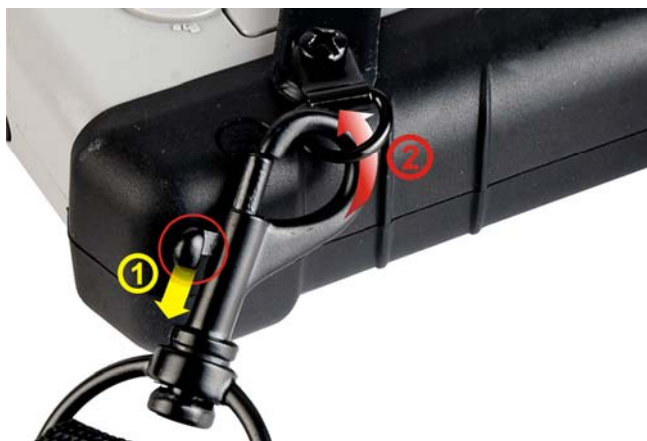


Figure 3-10: Clipping the Sling to the ICECARE-07

### 3.7 Mounting the ICECARE-07 (Optional)

The ICECARE-07 vehicle mounting kit can be purchased separately. To mount the ICECARE-07 using the optional vehicle mounting kit, please follow the steps below.

**Step 1:** Attach and secure the suction cup to the folding stand (**Figure 3-11**).

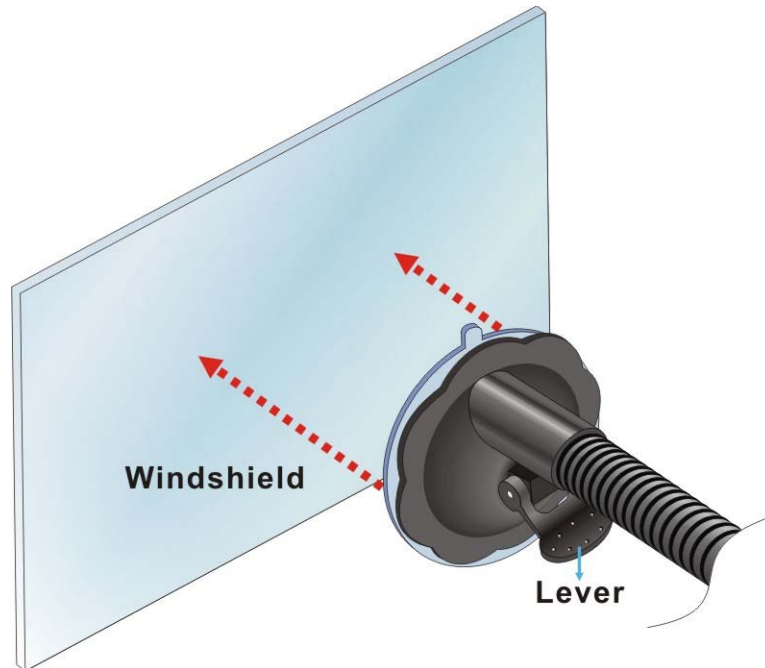


**Figure 3-11: Securing the Suction Cup to the Folding Stand**

**Step 2:** Select a suitable place on the windshield to mount the ICECARE-07, then clean and dry it.

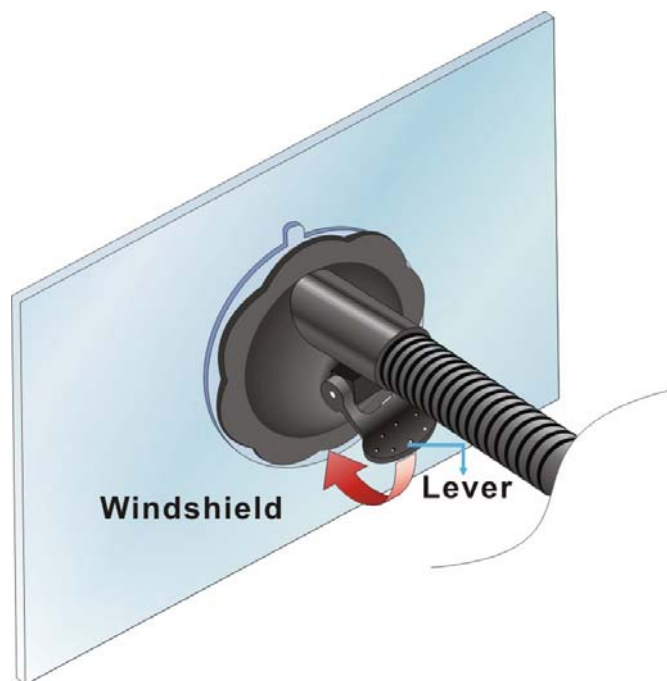
**Step 3:** Attach the suction cup to the windshield (**Figure 3-12**). Make sure the lever on the suction cup is against the windshield.

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**Figure 3-12: Attaching the Suction Cup to the Windshield**

**Step 4:** Press the suction cup and flip the lever toward the windshield to secure the vehicle mounting kit (**Figure 3-13**).



**Figure 3-13: Securing the Vehicle Mounting Kit to the Windshield**

**Step 5:** Place the ICECARE-07 onto the folding stand. Adjust the folding stand until the ICECARE-07 is secured in place (**Figure 3-14**).



**Figure 3-14: Securing the ICECARE-07 to the Vehicle Mounting Kit**

## **3.8 I/O Connectors**

The I/O connectors on the side panel are protected by a rubber cover. Open the rubber cover before connecting any peripheral devices to the ICECARE-07.

### **3.8.1 Power Input Connection**

The DC jack on the side panel enables the ICECARE-07 to be connected to the supplied power adapter or optional cigarette lighter power cable.

#### **3.8.1.1 Using the Supplied Power Adapter**

**Step 1:** Connect the power adapter to the ICECARE-07.

**Step 2:** Pick the power plug that suits the user's territory, and secure it to the power adapter (**Figure 3-15**).



## ICECARE-07 Mobile Field Assistant



Figure 3-15: Connecting the Power Plug

**Step 3:** Plug the power adapter to a power source.

### 3.8.1.2 Using the Optional Cigarette Lighter Power Cable

**Step 1:** Connect the optional cigarette lighter power cable to the ICECARE-07.

**Step 2:** Connect the other end of the cable to the cigarette lighter connector in a vehicle.



Figure 3-16: Connecting to the Vehicle Power



### 3.8.2 Headset Jack

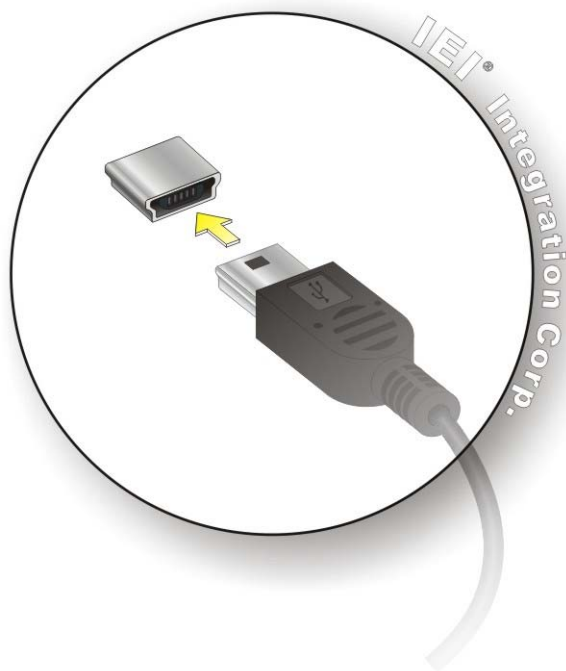
The headset jack on the side panel enables the ICECARE-07 to be connected to the supplied headset.

### 3.8.3 Mini USB Client Connector

The ICECARE-07 is equipped with a Mini USB client connector that allows connection to a computer. To connect the ICECARE-07 to a computer, please follow the instructions below.

**Step 1:** Locate the Mini USB client connector. The location of the Mini USB client connector is shown in **Figure 1-5**.

**Step 2:** Connect the Mini USB plug of the supplied USB Type A to Mini-B cable to the Mini USB connector on the ICECARE-07 (**Figure 3-17**).



**Figure 3-17: Mini USB Connection**

**Step 3:** Connect the other of the cable to the USB connector of a computer.

## ICECARE-07 Mobile Field Assistant

**Step 4:** When the ICECARE-07 is connected to a computer, the screen in **Figure 3-18** should be displayed on the ICECARE-07. Tap **Turn on USB storage** to allow the connected computer to recognize the ICECARE-07 and assign it a drive letter. Then the user can transfer files between them.

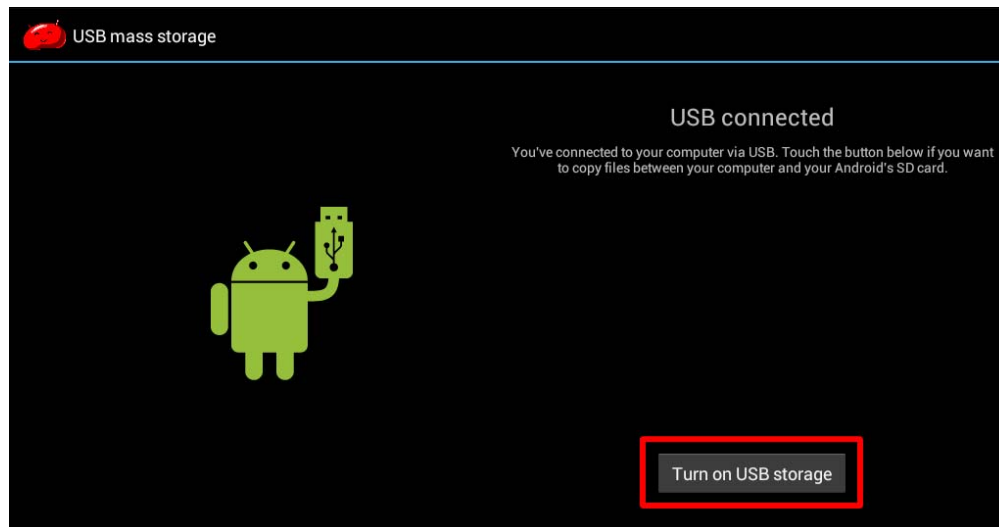


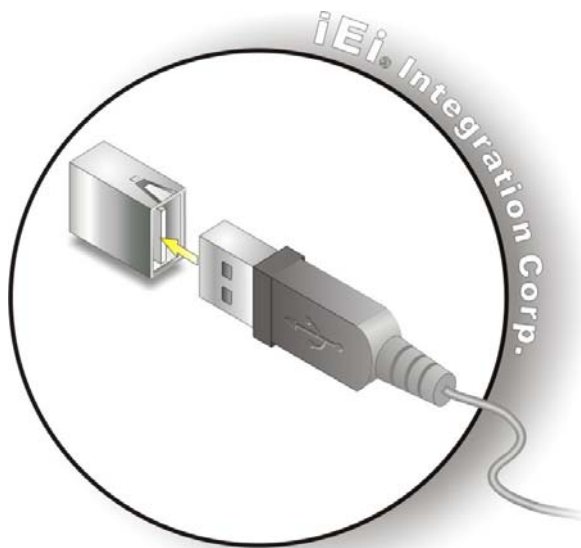
Figure 3-18: USB Mass Storage Screen

### 3.8.4 USB Device Connection

There is a USB 2.0 host connector located on the side panel of the ICECARE-07. To connect a USB 2.0 or USB 1.1 device, please follow the instructions below.

**Step 1: Locate the USB host connector.** The location of the USB host connector is shown in **Figure 1-5**.

**Step 2: Align the connectors.** Align the USB device connector with the connector on the ICECARE-07. See figure below.



**Figure 3-19: USB Device Connection**

**Step 3:** **Insert the device connector.** Once aligned, gently insert the USB device connector into the on-board connector.

### **3.9 Using the Docking Cradle (Optional)**

The docking cradle allows to charge the battery packs of the ICECARE-07 and extends its capabilities, including an RS-232 serial port, a USB host connector and a 10/100 Mbps Ethernet connector.

#### **3.9.1 Installing the ICECARE-07 to the Docking Cradle**

To install the ICECARE-07 to the docking cradle, simply place the ICECARE-07 to the docking cradle (**Figure 3-20**).

## ICECARE-07 Mobile Field Assistant



Figure 3-20: Placing the ICECARE-07 to the Docking Cradle

### 3.9.2 Docking Cradle I/O Connectors

The I/O connectors on the rear of the docking cradle are shown in **Figure 3-21**.

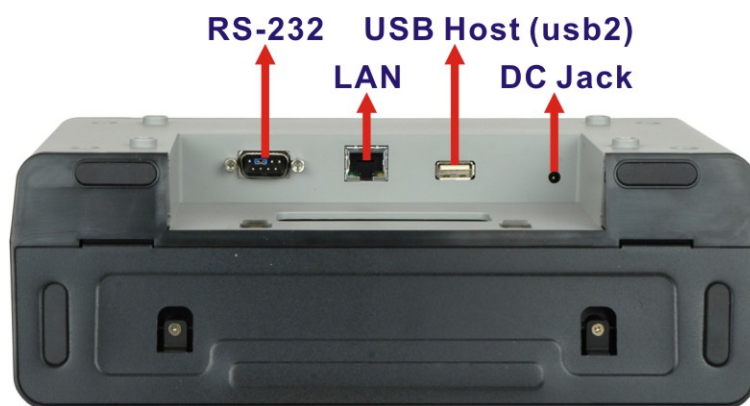


Figure 3-21: Docking Cradle I/O Connectors



### 3.9.2.1 DC Jack

The DC jack enables the docking cradle to be connected to the supplied power adapter.

### 3.9.2.2 LAN Connector

The RJ-45 connector enables connection to an external network. To connect a LAN cable with an RJ-45 connector, please follow the instructions below.

**Step 1:** **Align the connectors.** Align the RJ-45 connector on the LAN cable with the RJ-45 connector on the docking cradle. See **Figure 3-22**.

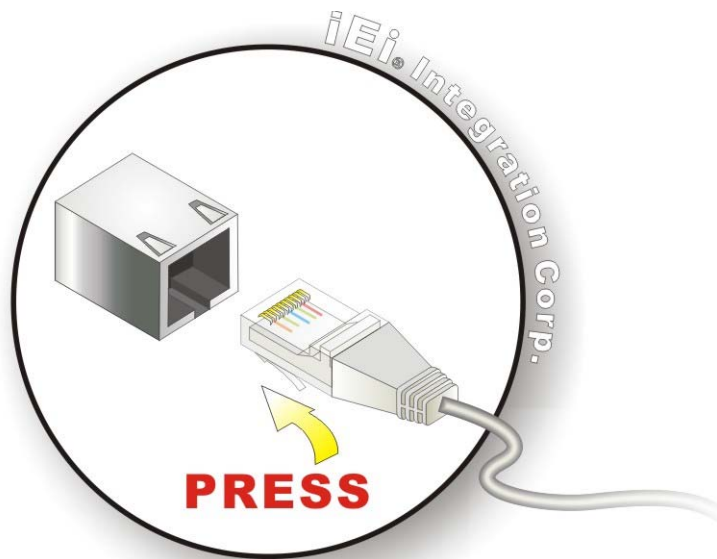


Figure 3-22: LAN Connection

**Step 2:** **Insert the LAN cable RJ-45 connector.** Once aligned, gently insert the LAN cable RJ-45 connector into the on-board RJ-45 connector.

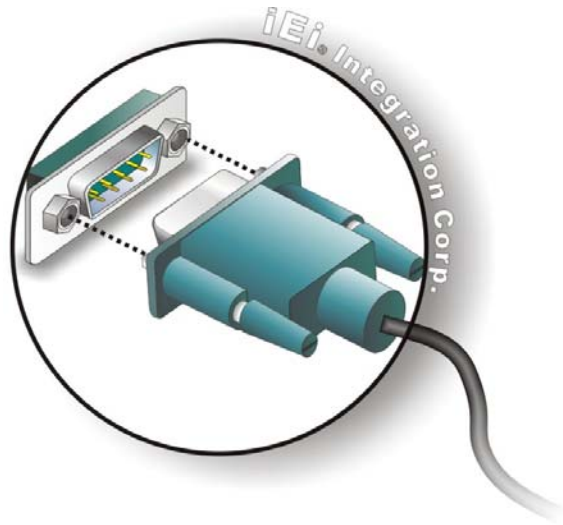
### 3.9.2.3 RS-232 Serial Port

The ICECARE-07 docking cradle has a male DB-9 connector that provides connection to an RS-232 serial device. Follow the steps below to connect a serial device to the ICECARE-07.



## ICECARE-07 Mobile Field Assistant

**Step 1:** **Insert the serial connector.** Insert the DB-9 connector of a serial device into the DB-9 connector of the docking cradle. See **Figure 3-23**.



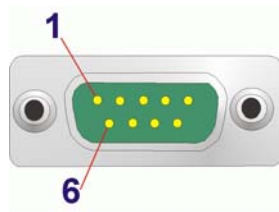
**Figure 3-23: Serial Device Connector**

**Step 2:** **Secure the connector.** Secure the serial device connector to the external interface by tightening the two retention screws on either side of the connector.

The RS-232 serial port pinouts are shown in the following table.

Pin	Description	Pin	Description
1	DCD	6	DSR
2	RX	7	RTS
3	TX	8	CTS
4	DTR	9	RI
5	GND		

**Table 3-1: RS-232 Serial Port Pinouts**



**Figure 3-24: Serial Port Pinouts**

### 3.9.2.4 USB Host Connector

The USB host connector of the docking cradle provides an extra connection to a USB 2.0 or USB 1.1 device. Follow the steps below to connect a USB device to the ICECARE-07.

**Step 1: Align the connectors.** Align the USB device connector with the USB host connector on the docking cradle.

**Step 2: Insert the device connector.** Once aligned, gently insert the USB device connector into the USB host connector.

## 3.10 Using the Metal Stand

The metal stand located on the rear panel is designed to support and stabilize the ICECARE-07 on the work surface.



**Figure 3-25: Metal Stand**

Chapter

4

# Using the ICECARE-07

---

## 4.1 Powering On/Off

To power on/off the ICECARE-07, please follow the steps below:

- **Powering On:** Press the power button for 1~1.5 seconds. The blue LED on the button lights up and the start-up screen should display.
- **Powering Off:** Press and hold the power button for about six seconds. The blue LED on the button turns off.



Figure 4-1: Power Button



### NOTE:

When the ICECARE-07 is powered on, press the power button once to suspend the ICECARE-07 or to resume from the suspend mode.



## ICECARE-07 Mobile Field Assistant

### 4.2 Home Screen

The ICECARE-07 has multiple home screens, allowing users to customize the screen with widgets, apps, folders and shortcuts. Swipe left or right to switch between home screens.



Figure 4-2: Multiple Home Screens

To add shortcuts and widgets on the home screen, simply long press an app/widget icon in the Launcher. When it vibrates, drag app/widget to the home screen.

The items on the home screen can be moved and deleted. Long press an item on the home screen. When it vibrates, drag it where you want. To trash the item on the desktop, drag it to the delete icon. Release the icon when it turns red.











Figure 4-3: Move and Trash Item on Home Screen



### 4.3 Function Buttons

The ICECARE-07 has several function buttons on the home screen, the Launcher and the application pages. The function buttons are shown and described in **Table 4-1**.

Buttons	Description
	Tap to return to the home screen.
	Tap to return to the previous screen.
	Tap to show an overview of the active and recently opened applications.
	Tap to bring up a function menu. Each application contains different function menu.
	Tap to search on the Internet.
	Tap to open an Internet browser to access a web page.
	Tap to access to the Launcher where all applications are listed.
	Tap to open the Contacts page.

**Table 4-1: Function Buttons**

## ICECARE-07 Mobile Field Assistant

### 4.4 Settings

The Settings menu allows configuration to the ICECARE-07, such as Wi-Fi, volume, display brightness, etc. To enter the Settings menu, tap **Settings** on the application page.

#### 4.4.1 WIRELESS & NETWORKS



Figure 4-4: Wireless and Networks Settings

In the WIRELESS & NETWORKS field, the user can turn on/off the Wi-Fi and Bluetooth functions, and configure the network settings.

- **Wi-Fi:**  
Allows the user to turn on or off the Wi-Fi function. When the Wi-Fi function is turned on, tap this item to manage the access points.
- **Bluetooth:**  
Allows the user to turn on or off the Bluetooth function. When the Bluetooth function is turned on, tap this item to manage the Bluetooth connections.
- **Ethernet proxy settings:**  
Configures the Ethernet proxy settings.

#### 4.4.1.1 More Settings

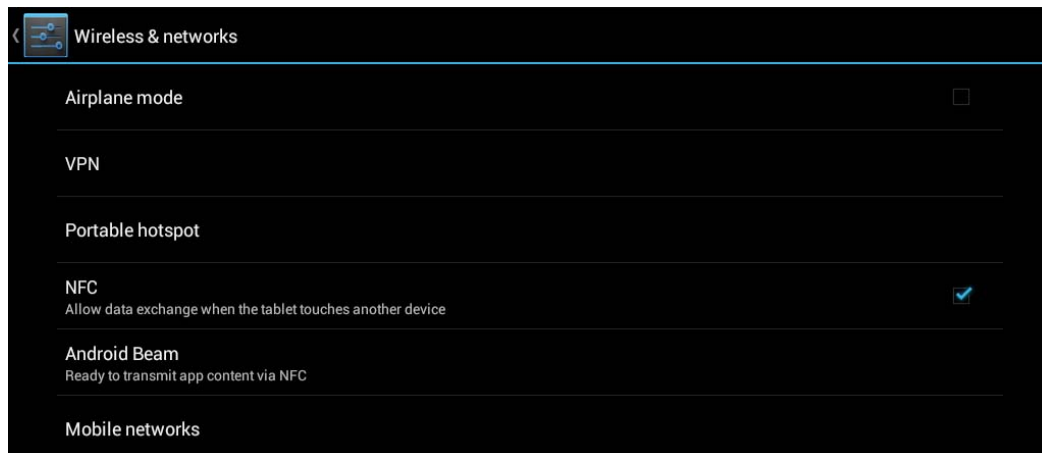


Figure 4-5: More Settings Menu

After tapping **More...** in the WIRELESS & NETWORKS field, the user can configure the following network settings.

- **Airplane mode:**  
Turns on or off the airplane mode.
- **VPN:**  
Sets up and manages Virtual Private Networks (VPNs).
- **Portable hotspot:**  
Allows the user to set this device as a portable Wi-Fi hotspot and configure the hotspot settings.
- **NFC:**  
Turns on or off the NFC function.
- **Android Beam:**  
This item is available only when the NFC function is turned on. Enabling this feature allows the user to beam app content to another NFC-capable device.
- **Mobile networks:**  
Configures the mobile network settings.

## ICECARE-07 Mobile Field Assistant

## 4.4.2 Sound

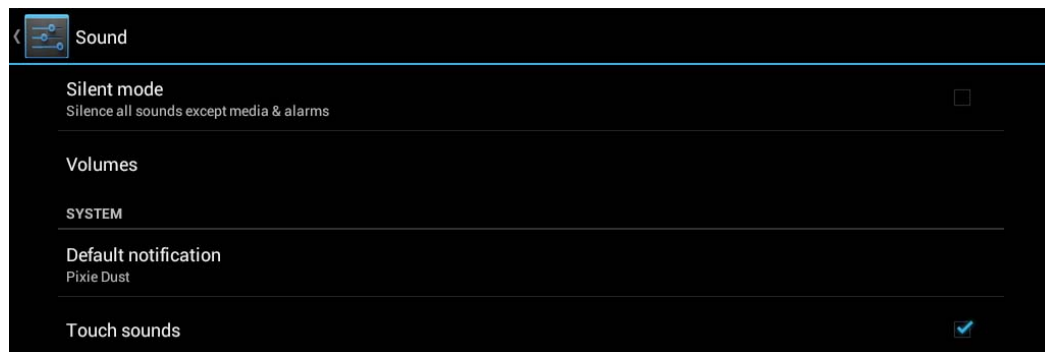


Figure 4-6: Sound Menu

Use the Sound menu to configure the following items.

- **Silent mode:**  
Turns on or off the silent mode.
- **Volumes:**  
Adjusts the volume of alarms, notifications, music, video, games and other media.
- **Default notification:**  
Sets up the notification ringtone.
- **Touch sounds:**  
Enables to play sounds when making screen selection.

## 4.4.3 Display



Figure 4-7: Display Menu

Use the Display menu to configure the following items.

- **Brightness:**  
Adjusts the screen brightness.
- **Wallpaper:**  
Sets up the wallpaper.
- **Sleep:**  
Sets up the time of inactivity after which the screen turns to sleep mode.
- **Font size:**  
Sets up the font size.

#### 4.4.4 Storage

The Storage menu displays the status of the internal storage and the inserted SD card, and allows users to manage the data stored in them.

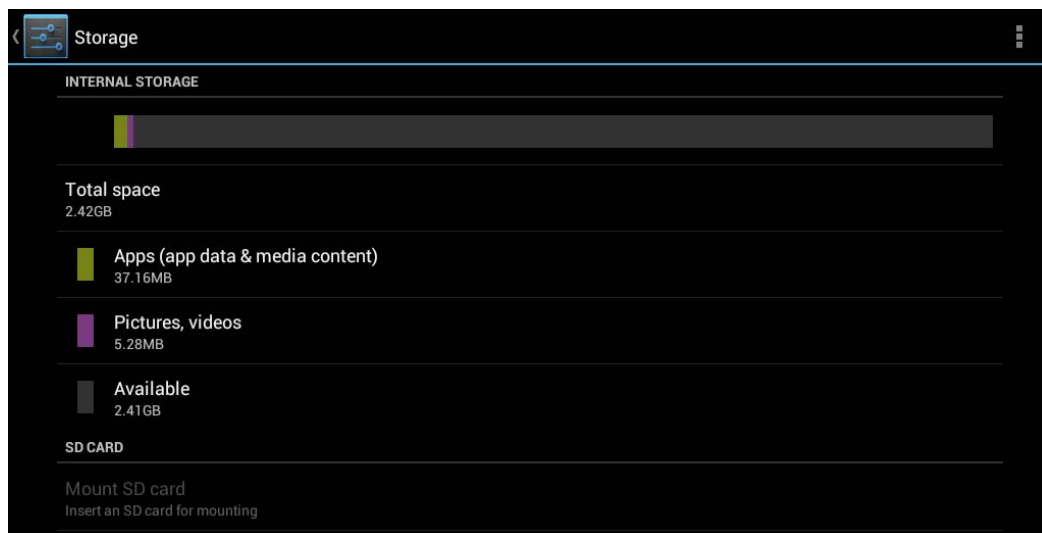


Figure 4-8: Storage Menu



## ICECARE-07 Mobile Field Assistant

### 4.4.5 Apps

The Apps menu displays the applications installed in the device, and allows users to manage them.

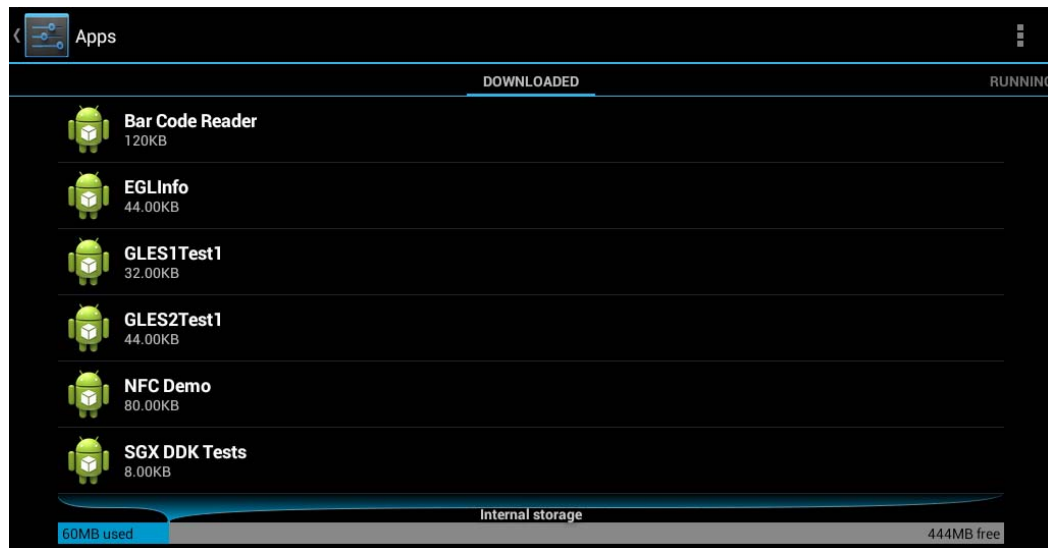


Figure 4-9: Apps Menu

### 4.4.6 Location Access

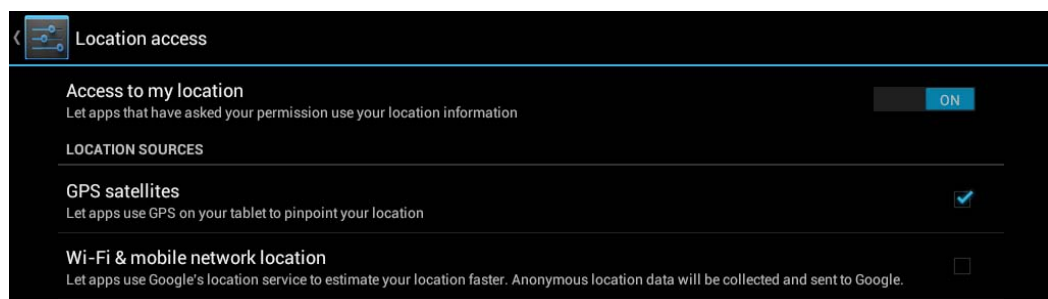


Figure 4-10: Location Access Menu

Use the Location access menu to configure the following items.

- **Access to my location:**  
Turns on to let the apps obtain the user's location information.
- **GPS satellites:**  
This item is available only when the **Access to my location** item is enabled.

Enabling this item allows the apps to use the GPS in the device to pinpoint the user's location.

- **Wi-Fi & mobile network location:**

This item is available only when the **Access to my location** item is enabled.

Enabling this item allows the apps to use Google's location service to estimate the user's location.

#### 4.4.7 Security

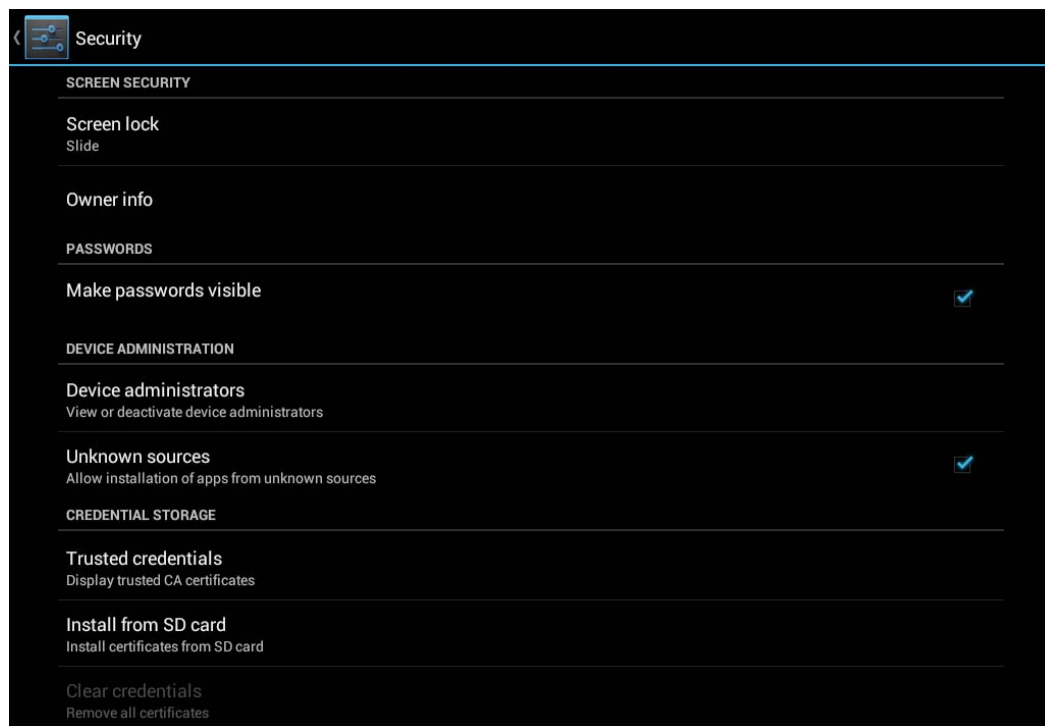


Figure 4-11: Security Menu

Use the Security menu to configure the following items.

- **Screen lock:**  
Sets up the way to unlock the screen.
- **Owner info:**  
Enables to show the information of the device owner on the lock screen.
- **Make passwords visible:**  
Enables to show password when typing.

## ICECARE-07 Mobile Field Assistant

- **Device administrators:**  
Views or deactivates the device administrators.
- **Unknown sources:**  
Enables to allow installation of applications from unknown sources.
- **Trusted credentials:**  
Taps to display the CA certificates.
- **Install from SD card:**  
Taps to install certificates from the SD card.

### 4.4.8 Language & Input

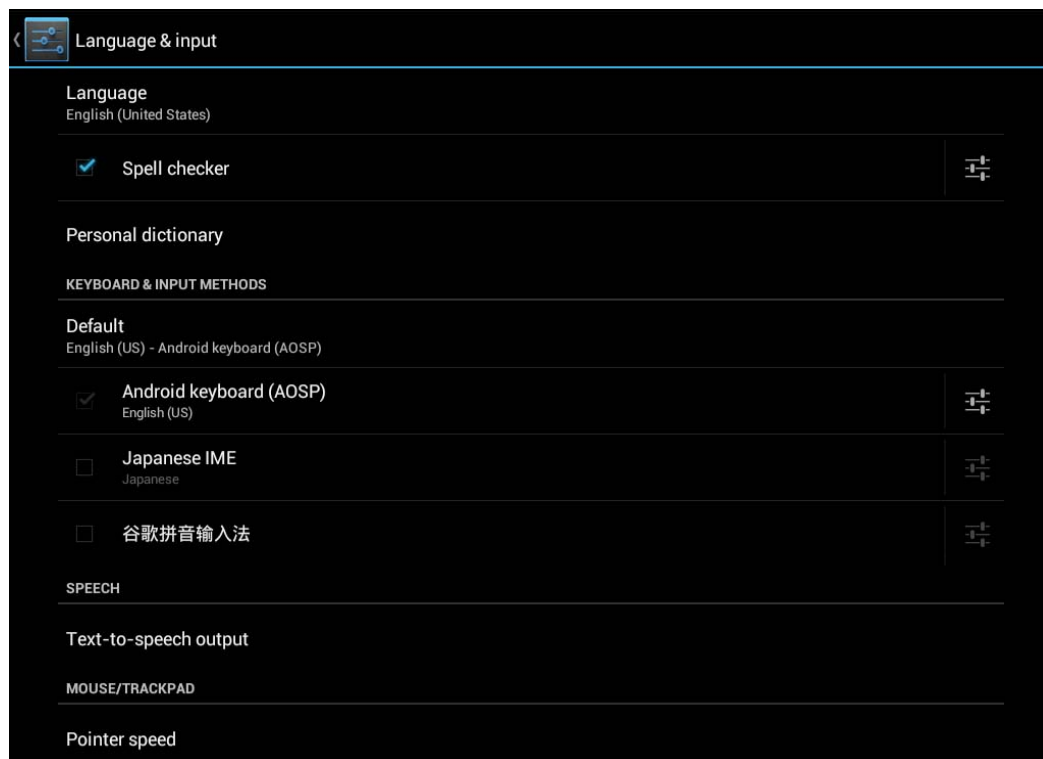


Figure 4-12: Language & Input Menu

Use the Language & input menu to configure the following items.

- **Language:**  
Sets up the language for ICECARE-07.

- **Spell checker:**  
Allows the user to enable the spell checking function and configure its settings.
- **Personal dictionary:**  
Configures the user dictionary.
- **KEYBOARD & INPUT METHODS:**  
Allows the user to set up the onscreen keyboard.
- **Text-to-speech output:**  
Configures the text-to-speech settings.
- **Pointer speed:**  
Sets up the pointer speed.

#### 4.4.9 Backup & Reset

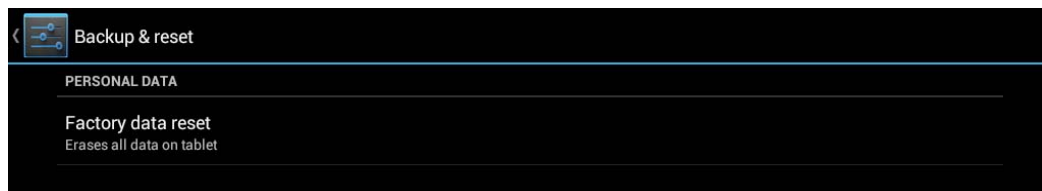


Figure 4-13: Backup & Reset Menu

Use the Back & reset menu to configure the following items.

- **Factory data reset:**  
Erases all data from the internal storage of the ICECARE-07.

## ICECARE-07 Mobile Field Assistant

### 4.4.10 Add account

Tap **Add account** to start setting up an e-mail or corporate account.

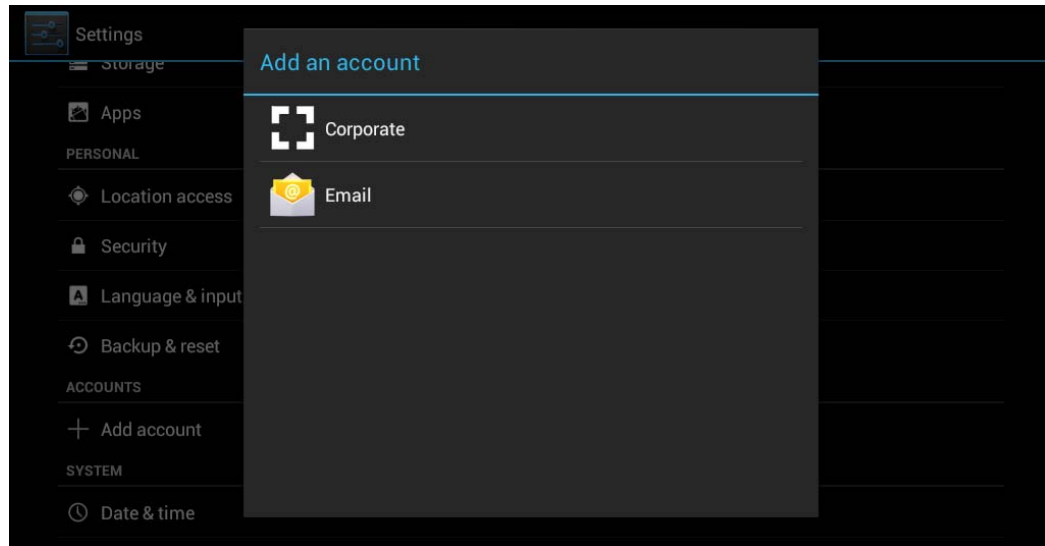


Figure 4-14: Add Account Menu

### 4.4.11 Date & Time



Figure 4-15: Date & Time Menu

Use the Date & time menu to configure the following items.



- **Automatic date & time:**  
Turns on to use the network-provided time.
- **Automatic time zone:**  
Turns on to use the network-provided time zone.
- **Set date:**  
Sets up the date.
- **Set time:**  
Sets up the time.
- **Select time zone:**  
Sets up the time zone.
- **Use 24-hour format:**  
Turns on to use the 24-hour format.
- **Choose date format:**  
Sets up the date format.

#### 4.4.12 Accessibility

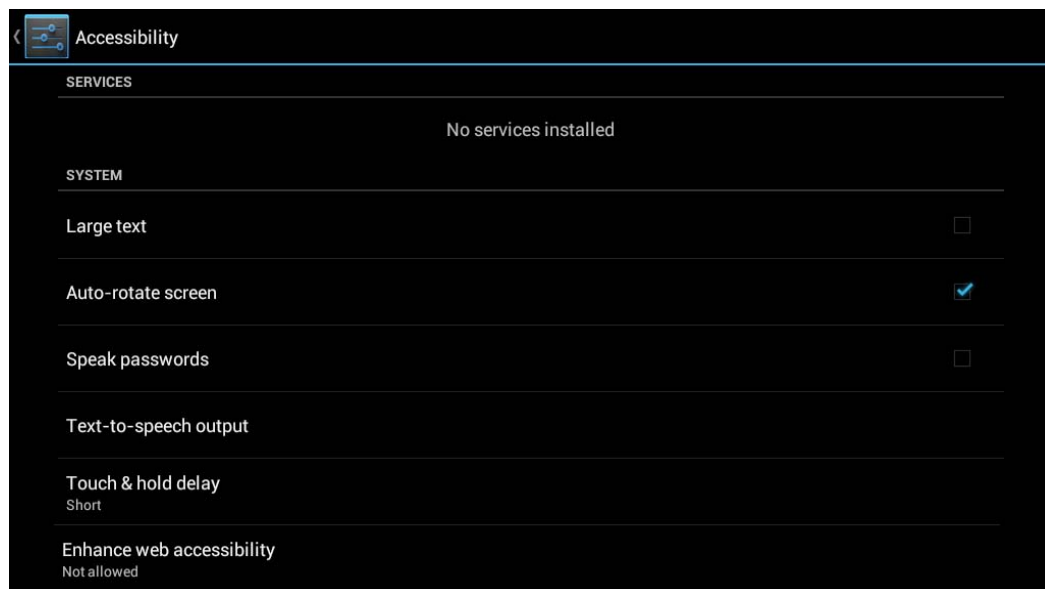


Figure 4-16: Accessibility Menu

Use the Accessibility menu to configure the following items.

- **Large text:**  
Turns on to use large text.

## ICECARE-07 Mobile Field Assistant

- **Auto-rotate screen:**  
Turns on or off the auto-rotate function of the screen.
- **Speak passwords:**  
Turns on or off the speak password function.
- **Text-to-speech output:**  
Configures the text-to-speech settings.
- **Touch & hold delay:**  
Configures the touch & hold delay settings.
- **Enhance web accessibility:**  
Turns on to allow apps to install scripts from Google that make their web content more accessible.

### 4.4.13 Developer Options

The Developer options menu contains several settings for development use only which may cause the device and the applications on it to break or misbehave. Be cautious prior changing these settings. The items in this menu can be configured only when the **Developer options** is enabled (Figure 4-17).

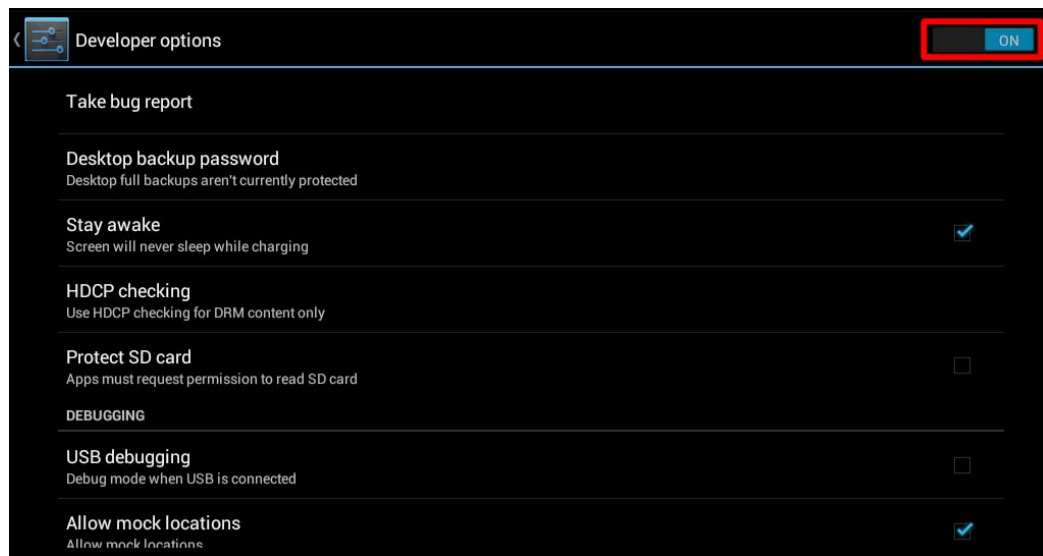


Figure 4-17: Developer Options Menu

#### 4.4.14 About Tablet

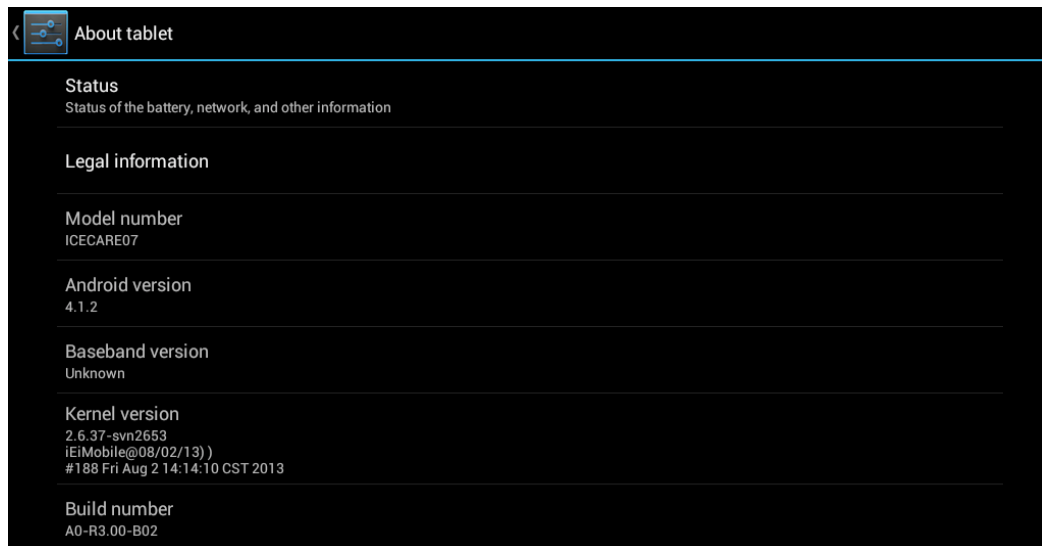


Figure 4-18: About Tablet Menu

Use the About tablet menu to display the following items.

- **Status:**  
Taps to display the status of batteries, network, signal, etc.
- **Legal information:**  
Taps to display the legal information.
- **Model number:**  
Displays the model number.
- **Android version:**  
Displays the Android version.
- **Baseband version:**  
Displays the baseband version.
- **Kernel version:**  
Displays the kernal version.
- **Build number:**  
Displays the device build number.

## 4.5 File Manager

The ICECARE-07 provides a file management tool that allows users to manage files in the internal storage and external storage devices. Tap **OI File Manager** on the application page to launch it.

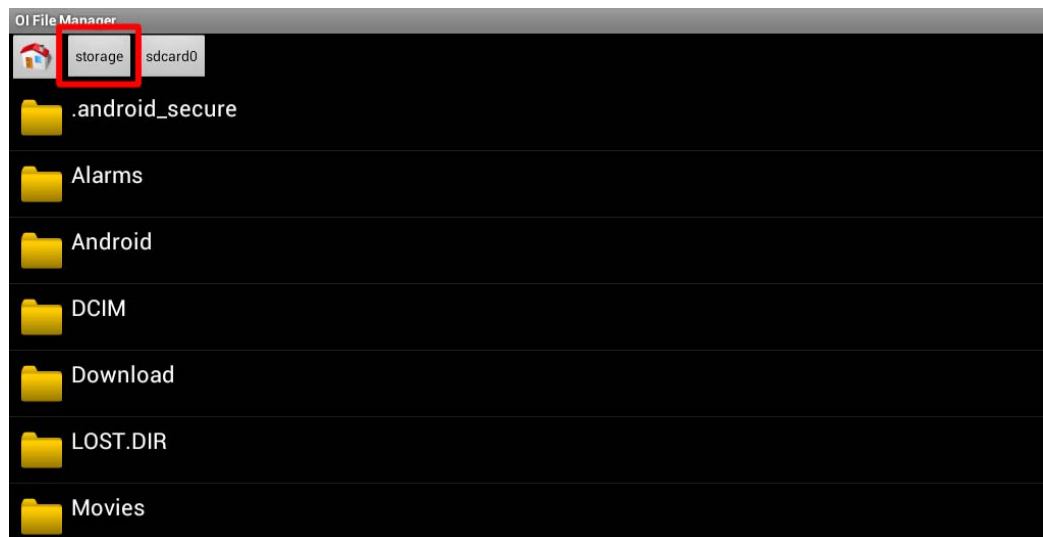
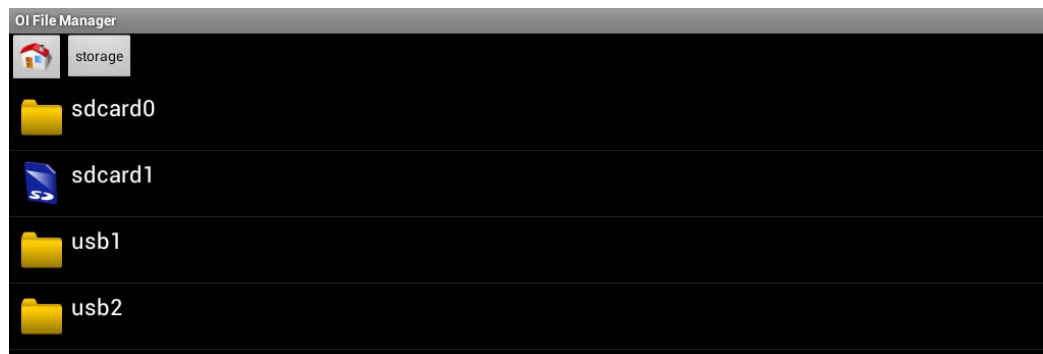


Figure 4-19: OI File Manager

Tap **storage** (Figure 4-19) to view all the possible storage devices listed below.

- **sdcard0**: Internal storage of the ICECARE-07
- **sdcard1**: SD card connected to the ICECARE-07
- **usb1**: USB storage device connected to the USB host connector on the side panel. Refer to **Figure 1-5** for the connector location.
- **usb2**: USB storage device connected to the USB host port on the optional docking cradle. Refer to **Figure 3-21** for the connector location.

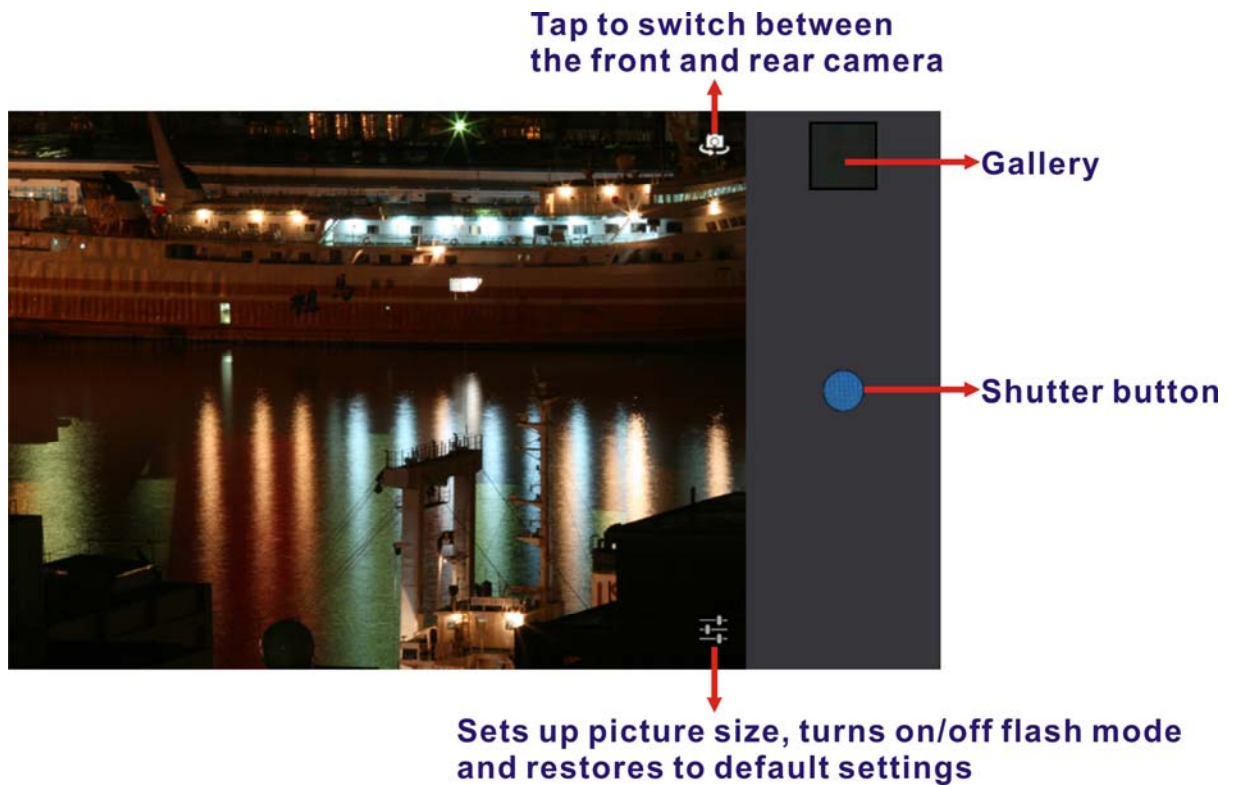


**Figure 4-20: Possible Storage Devices**

Tap a storage device to display its contents if available.

## 4.6 Camera

The ICECARE-07 equips with a 5-megapixel rear camera and optional 2-megapixel front camera. Tap **Camera** on the application page to launch it.



**Figure 4-21: Camera Application**



## ICECARE-07 Mobile Field Assistant

**NOTE:**

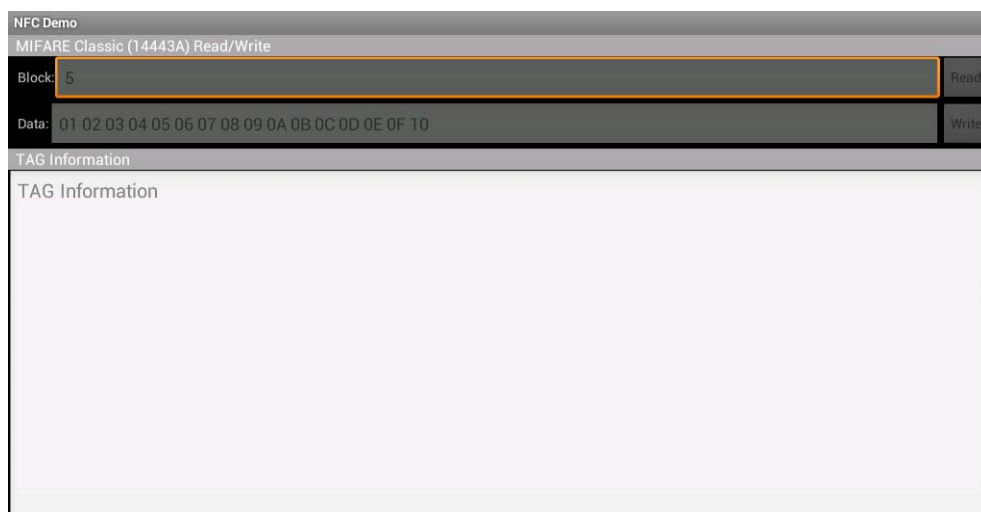
The flash mode is not available when using the front camera.

## 4.7 RFID Reader

There is a RFID reader on the top panel (**Figure 1-6**). To use the RFID reader, follow the steps below.

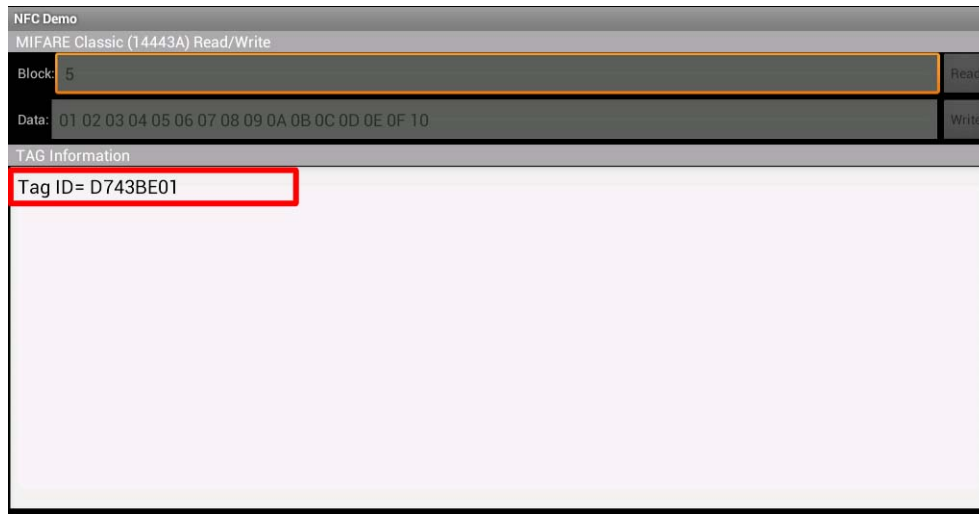
**Step 1:** Go to **Settings > More...**, and tap **NFC** to turn on the RFID function.

**Step 2:** On the application page, tap **NFC Demo** to open the RFID application.



**Figure 4-22: RFID Application**

**Step 3:** Use the RFID reader to read a RFID card, then the card number will be shown in the TAG Information column (**Figure 4-23**).



**Figure 4-23: Tag Information**

## 4.8 Barcode Scanner

There is a barcode scanner on the rear panel (**Figure 1-4**). Tap **Bar Code Reader** on the application page to launch it.



**Figure 4-24: Barcode Reader Application**

## ICECARE-07 Mobile Field Assistant

- **Trigger times:**  
Enter the number of trigger times once the **Start** button is tapped.
- **Stop automatically:**  
Enable to stop scanning automatically when the set number of trigger times is complete.
- **Start/Stop:**  
Tap to start/stop scanning.
- **Clear:**  
Tap to erase all barcode information on the screen.
- **Scan:**  
Tap to scan a barcode.



### NOTE:

The rear camera can be used as a barcode scanner. Visit the Google Play to get an appropriate application.

---

## 4.9 GPS

The ICECARE-07 is preinstalled with a GPS evaluation application which can evaluate the GPS receiver performance, and visualize the location data and GPS status. To launch the application, tap **u-center** on the application page.

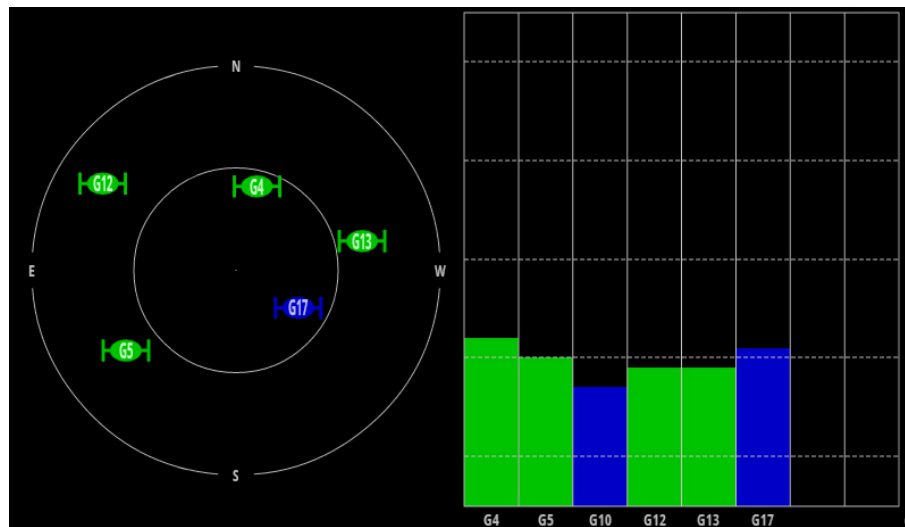
The application includes five screens that display the below information:

- Satellite location and signal strength
- Main satellite information in cockpit view
- Current location in world map view
- NMEA messages from the GPS receiver
- Basic information from each satellite

Slide your finger on the ICECARE-07 screen to switch between the five screens.

### 4.9.1 Satellite Location and Signal Strength

This screen allows users to check the number of satellite currently acquired and their relative signal strength. The user can double-tap either diagram to zoom them to full screen view.



**Figure 4-25: Satellite Location and Signal Strength**

The satellite color coding is listed below.

Satellite Color	Description
Green	Satellite used in navigation
Blue	Satellite signal available, not available for use in navigation
Cyan	Satellite signal available, available for use in navigation
Red	Satellite signal not available

**Table 4-2: Satellite Color Coding**

## ICECARE-07 Mobile Field Assistant

### 4.9.2 Main Satellite Information in Cockpit View

This screen displays a summary of the main satellite and sensor data information in a cockpit-like interface.

The user can double-tap either diagram to zoom them to full screen view.

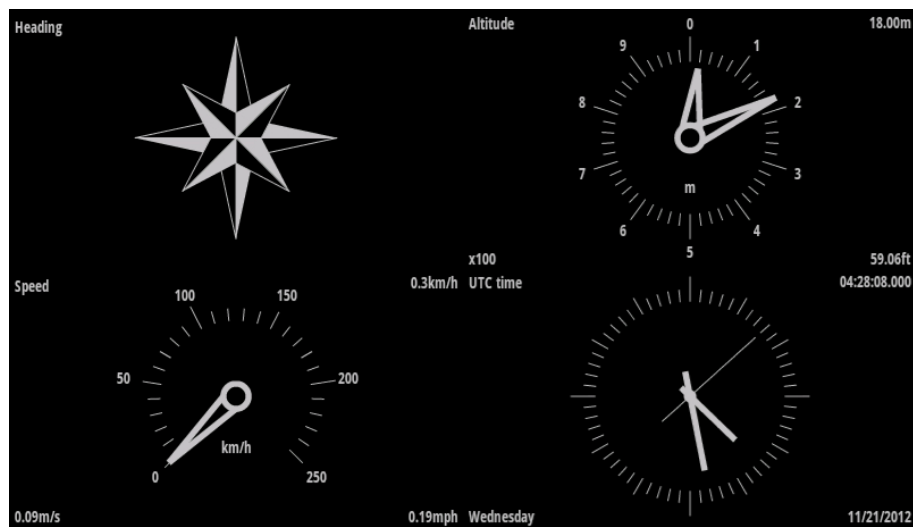


Figure 4-26: Main Satellite Information in Cockpit View

### 4.9.3 Current Location in World Map View

This screen displays a comprehensive world map with current location shown by the green crosshairs. Besides, the latitude and longitude coordinates of the current location are shown in three different formats:

- Degrees/minutes/seconds
- Degrees/minutes
- Degrees (with fractions in decimal)

The information of the measurement accuracy (in meters) is displayed on the bottom of the screen.



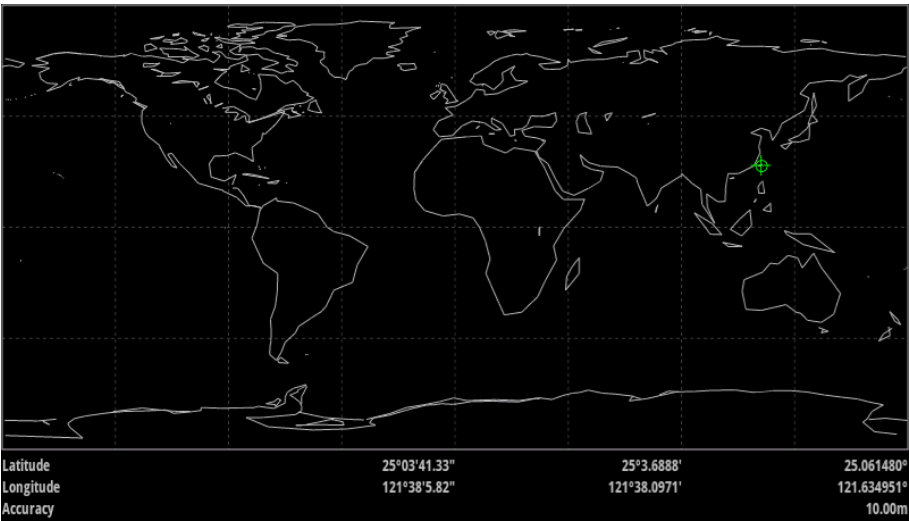


Figure 4-27: Current Location in World Map View

4.9.4 NMEA Messages from the GPS Receiver

This screen displays the NMEA messages from the GPS receiver.

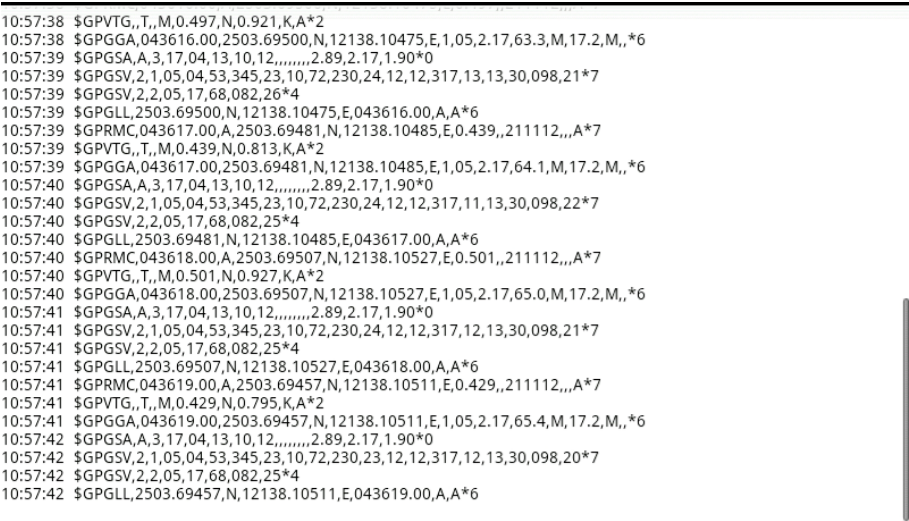


Figure 4-28: NMEA Messages

## ICECARE-07 Mobile Field Assistant


### 4.9.5 Basic Information from Each Satellite

This screen displays the basic information from each satellite.

```
latitude=25.061566°
longitude=121.635054°
altitude=83.20m
accuracy=10.00m
speed=0.2m/s
maxsvs=255
ttff=0.100s
prn=4, cno=24.0dBHz, az=345°, el=53°, Uea
prn=10, cno=25.0dBHz, az=230°, el=72°, Uea
prn=12, cno=16.0dBHz, az=317°, el=12°, Uea
prn=13, cno=21.0dBHz, az=98°, el=30°, Uea
prn=17, cno=26.0dBHz, az=82°, el=68°, Uea
onGpsStatusChanged
status=4-GPS_EVENT_SATELLITE_STATUS
time=11/21/2012 04:36:34.000
latitude=25.061564°
longitude=121.635053°
altitude=83.20m
accuracy=10.00m
speed=0.1m/s
maxsvs=255
ttff=0.100s
prn=4, cno=24.0dBHz, az=345°, el=53°, Uea
prn=10, cno=25.0dBHz, az=230°, el=72°, Uea
prn=12, cno=17.0dBHz, az=317°, el=12°, Uea
prn=13, cno=21.0dBHz, az=98°, el=30°, Uea
prn=17, cno=25.0dBHz, az=82°, el=68°, Uea
```

Figure 4-29: Basic Information from Each Satellite

### 4.9.6 Preferences Menu

The Preferences menu allows the users to customize the GPS application settings. To enter the Preferences menu, tap the  (Menu) button on the bottom right corner when the application is activated, and then tap **Preferences**.

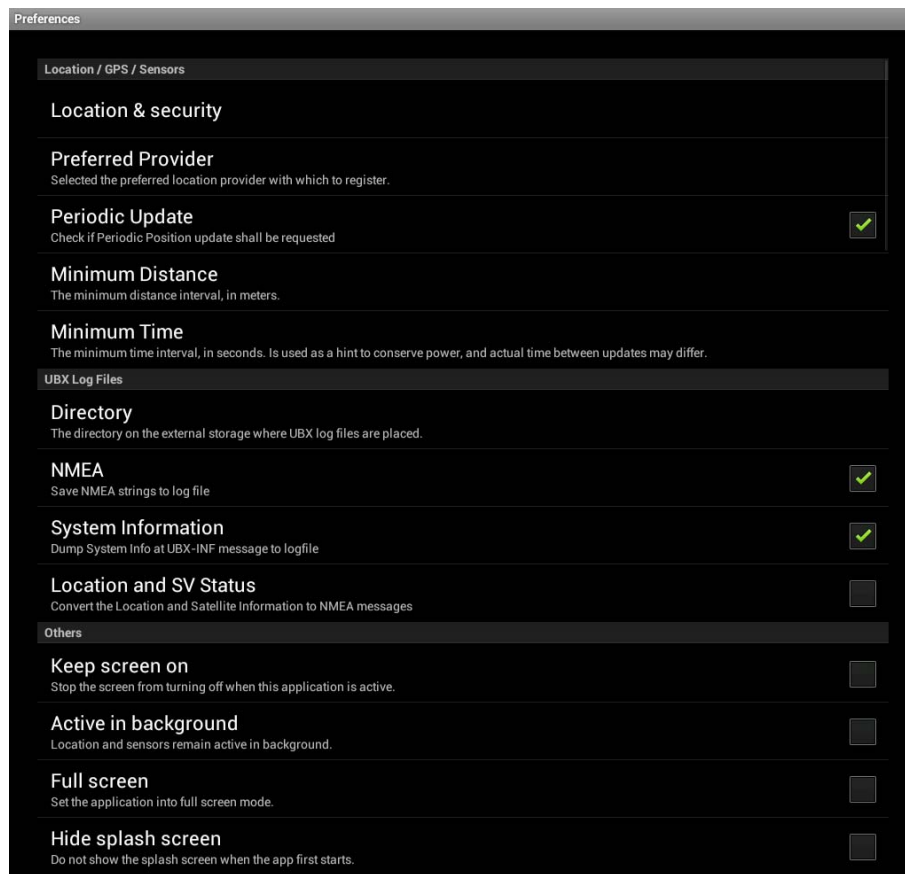


Figure 4-30: Preferences Menu

Use the Preferences menu to configure the following items.

- **Location & security:**  
Refer to **Section 4.4.4** for details.
- **Preferred Provider:**  
Sets to **GPS** to correctly use of this application.
- **Periodic Update:**  
Turns on to request the periodic location update.
- **Minimum Distance:**  
Sets up the minimum distance interval expressed in meters.
- **Minimum Time:**  
Sets up the minimum time interval expressed in seconds.
- **Directory:**  
Sets up the directory on the external storage for storing the UBS log files.

## ICECARE-07 Mobile Field Assistant

- **NMEA:**  
Turns on to save NMEA strings to log file.
- **System Information:**  
Turns on to dump the system information at UBX-INF messages to log file.
- **Location and SV Status:**  
Turns on to convert the location and satellite information to NMEA messages.
- **Keep screen on:**  
Turns on to prevent the ICECARE-07 screen from turning off while the application is running.
- **Active in background:**  
Turns on to let the location and sensors remain in background.
- **Full screen:**  
Turns on to set the application into full screen mode.
- **Hide splash screen:**  
Turns on to hide the splash screen when the application starts up.

**Chapter**

**5**

# **System Maintenance**

---



## ICECARE-07 Mobile Field Assistant

### 5.1 System Maintenance Introduction

If the components of the ICECARE-07 fail, they must be replaced. Please contact the system reseller or vendor to purchase the replacement parts.

### 5.2 Motherboard Replacement

A user cannot replace a motherboard. If the motherboard fails, it must be shipped back to IEI to be replaced. Please contact the system vendor, reseller or an IEI sales person directly.

### 5.3 Back Cover Removal



#### **WARNING:**

Before removing the back cover, make sure that the system power is turned off and all power to the system has been disconnected. Failing to do so may cause severe damage to the ICECARE-07 and injury to the user.

---

To access the ICECARE-07 internal components, the back cover must be removed. To remove the back cover, please follow the steps below.

**Step 1:** Rotate the battery locks to FREE position, and then remove the battery packs (Figure 5-1).



**Figure 5-1: ICECARE-07 Battery Packs and Battery Locks**

**Step 2:** Remove the rubber pads, and then unfasten all the retention screws on the back cover (**Figure 5-2**).



**Figure 5-2: ICECARE-07 Back Cover Retention Screw Locations**

**Step 3:** Lift the cover up to remove.

Chapter

6

# Interface Connectors

---

## 6.1 Peripheral Interface Connectors

The ICECARE-07 motherboard comes with a number of peripheral interface connectors. The connector locations are shown in **Figure 6-1** and **Figure 6-2**. The Pin 1 locations of the on-board connectors are also indicated in the diagrams. The connector pinouts for these connectors are listed in the following sections.

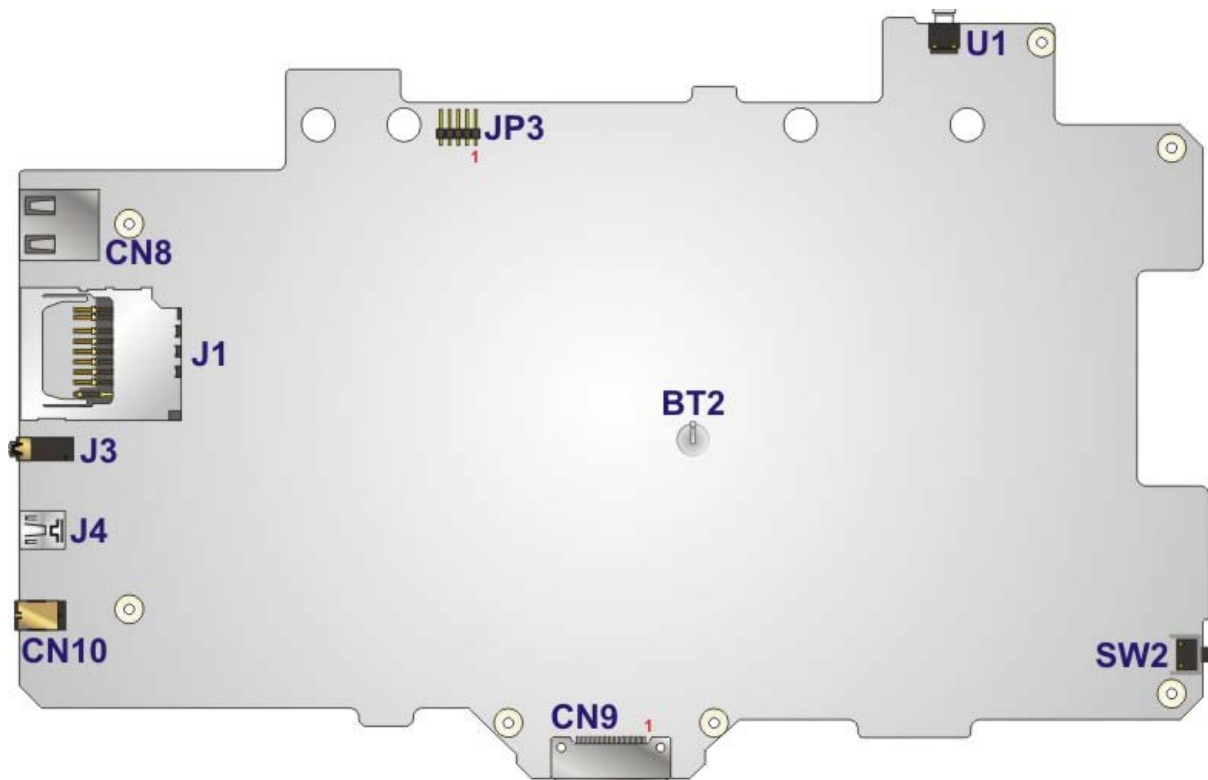


Figure 6-1: Main Board Layout Diagram (Front Side)

## ICECARE-07 Mobile Field Assistant

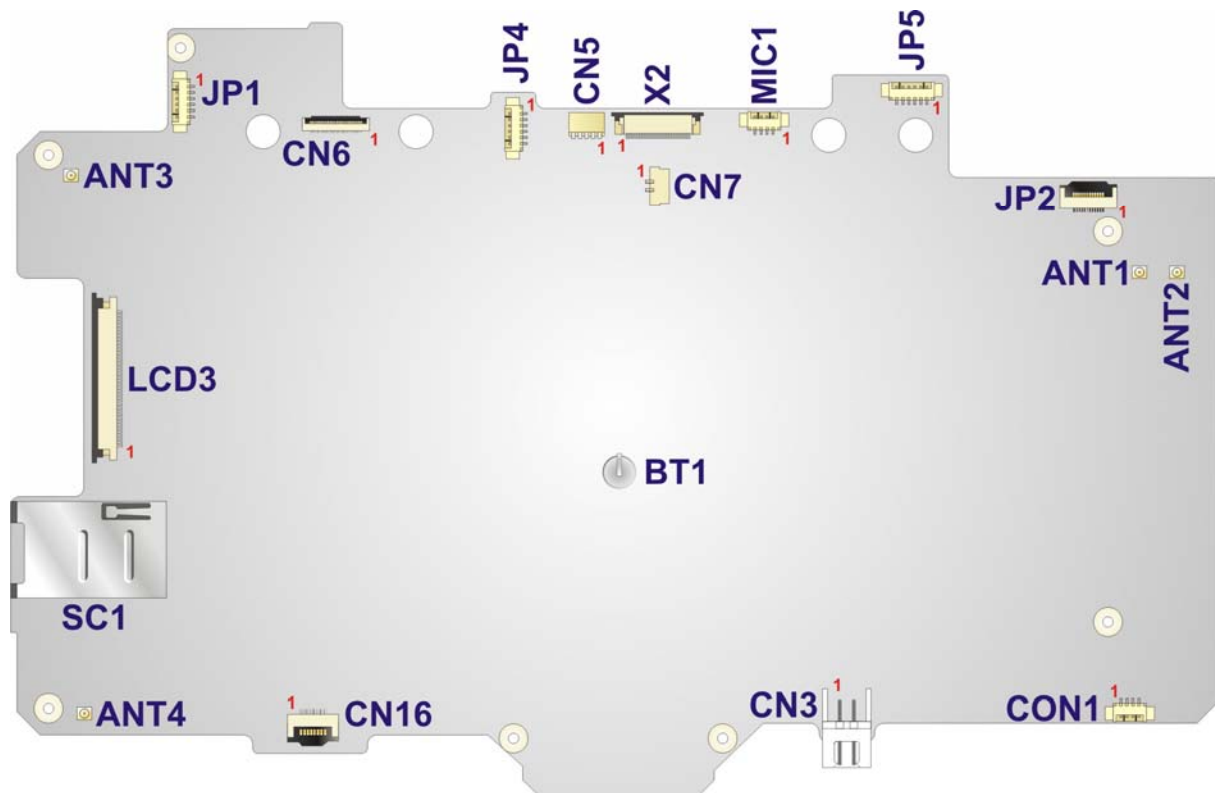


Figure 6-2: Main Board Layout Diagram (Solder Side)

## 6.2 Internal Peripheral Connectors

Internal peripheral connectors are found on the motherboard and are only accessible when the motherboard is outside of the chassis. The table below shows a list of the peripheral interface connectors on the ICECARE-07 motherboard. Pinouts of these connectors can be found in the following sections.

Connector	Type	Label
3.75G antenna connector	Antenna connector	ANT4
Barcode scanner connector	12-pin wafer	JP2
Battery connectors	6-pin wafer	JP4, JP5
Camera CPLD programmable connector	6-pin wafer	JP1



Connector	Type	Label
Debug message connector	4-pin wafer	CON1
Digital microphone connector	4-pin wafer	MIC1
Flashlight connector	5-pin wafer	CN5
Front camera connector	24-pin wafer	X2
GPS antenna connector	Antenna connector	ANT3
Panel connector	40-pin wafer	LCD3
Rear camera connector	24-pin wafer	CN6
RFID antenna connector	2-pin wafer	CN7
SIM card connector	SIM card connector	SC1
Speaker connector	2-pin wafer	CN3
Touchscreen connector	8-pin wafer	CN16
Wi-Fi antenna connectors	Antenna connector	ANT1, ANT2

**Table 6-1: Peripheral Interface Connectors**

### 6.2.1 Barcode Scanner Connector (JP2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	TRIG	7	RTS
2	WAKE	8	RXD
3	DLED	9	TXD
4	BEEPER	10	GND
5	PWRDWN	11	VBATT
6	CTS	12	VCC

**Table 6-2: Barcode Scanner Connector (JP2) Pinouts**

## ICECARE-07 Mobile Field Assistant

**6.2.2 Battery Connectors (JP4, JP5)**

PIN NO.	DESCRIPTION
1	GND
2	SMB_CLK
3	SMB_DATA
4	TH
5	BATTERY_V
6	BATTERY_V

**Table 6-3: Battery Connectors (JP4, JP5) Pinouts****6.2.3 Camera CPLD Programmable Connector (JP1)**

PIN NO.	DESCRIPTION
1	VCC
2	Camera_CPLD_TCK
3	Camera_CPLD_TMS
4	Camera_CPLD_TDI
5	Camera_CPLD_TDO
6	GND

**Table 6-4: Camera CPLD Programmable Connector (JP1) Pinouts****6.2.4 Debug Message Connector (CON1)**

PIN NO.	DESCRIPTION
1	GND
2	RXD
3	TXD
4	GND

**Table 6-5: Debug Message Connector (CON1) Pinouts**

6.2.5 Digital Microphone Connector (MIC1)

PIN NO.	DESCRIPTION
1	DMIC_CLK
2	DMIC_DAT
3	VDD
4	GND

Table 6-6: Digital Microphone Connector (MIC1) Pinouts

6.2.6 Flashlight Connector (CN5)

PIN NO.	DESCRIPTION
1	FLASH_LED_P
2	FLASH_LED_P
3	GND
4	FLASH_LED_N
5	FLASH_LED_N

Table 6-7: Flashlight Connector (CN5) Pinouts

6.2.7 Front Camera Connector (X2)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NC	13	MCLK
2	GND	14	D8
3	IIC SDA	15	GND
4	2V8	16	D7
5	IIC SCLK	17	PCLK
6	RST	18	D6
7	VSYN	19	D2
8	VCM PD	20	D5
9	HSYN	21	D3
10	1V8	22	D4

## ICECARE-07 Mobile Field Assistant

11	1V8	23	D1
12	D9	24	D0

**Table 6-8: Front Camera Connector (X2) Pinouts**

### 6.2.8 Panel Connector (LCD3)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC_LCD_COM	21	C_TXOUT3+
2	VCC_LCD	22	GND
3	VCC_LCD	23	NC
4	NC	24	NC
5	LCD_RST	25	GND
6	LCD_STBY	26	NC
7	GND	27	LCD_DIMO
8	C_TXOUT0-	28	LCD_SELB
9	C_TXOUT0+	29	VCC_LCD_AVDD
10	GND	30	GND
11	C_TXOUT1-	31	VLED-
12	C_TXOUT1+	32	VLED-
13	GND	33	LCD_LR
14	C_TXOUT2-	34	LCD_UD
15	C_TXOUT2+	35	LCD_VGL
16	GND	36	LCD_CABC_EN1
17	C_TXCLK-	37	LCD_CABC_EN2
18	C_TXCLK+	38	LCD_VGH
19	GND	39	VLED+
20	C_TXOUT3-	40	VLED+

**Table 6-9: Panel Connector (LCD3) Pinouts**

6.2.9 Rear Camera Connector (CN6)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	2.8V	13	D3
2	2.8V	14	D4
3	1.5V	15	D5
4	MCLK	16	D6
5	VCM_PD	17	D7
6	SCLK	18	D8
7	SDATA	19	D9
8	PCLK	20	GND
9	VSYNC	21	NC
10	HSYNC	22	NC
11	RST	23	2.8V
12	D2	24	GND

Table 6-10: Rear Camera Connector (CN6) Pinouts

6.2.10 RFID Antenna Connector (CN7)

PIN NO.	DESCRIPTION
1	TX1
2	TX2

Table 6-11: RFID Antenna Connector (CN7) Pinouts

6.2.11 SIM Card Connector (SC1)

PIN NO.	DESCRIPTION
C1	VCC
C2	RST
C3	CLK
C5	GND
C6	VCC
C7	DATA

Table 6-12: SIM Card Connector (SC1) Pinouts



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## 6.2.12 Speaker Connector (CN3)

PIN NO.	DESCRIPTION
1	SPK_N
2	SPK_P

Table 6-13: Speaker Connector (CN3) Pinouts

## 6.2.13 Touchscreen Connector (CN16)

PIN NO.	DESCRIPTION
1	VCC
2	GND
3	DM4
4	DP4
5	NC
6	NC
7	NC
8	NC

Table 6-14: Touchscreen Connector (CN16) Pinouts

## 6.3 External Interface Panel Connectors

The table below lists the external interface panel connectors on the ICECARE-07 motherboard. Pinouts of these connectors can be found in the following sections.

Connector	Type	Label
Docking connector	16-pin connector	CN9
Headset jack	Headset jack	J3
Mini USB client connector	Mini USB port	J4
Power connector	DC jack	CN10
SD card slot	SD card slot	J1
USB host connector	USB 2.0 port	CN8

Table 6-15: External Interface Panel Connectors

6.3.1 `Docking Connector (CN9)

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	Client power	9	DCD
2	Test point	10	DSR
3	Test point	11	RXD
4	EXT_VIN	12	RTS
5	GND	13	TXD
6	DP3	14	CTS
7	DM3	15	DTR
8	HOST_PWR	16	RI

Table 6-16: Docking Connector (CN9) Pinouts

6.3.2 Headset Jack (J3)

PIN NO.	DESCRIPTION
1	GND
2	HP_OL
3	HP_OR
4	NC
5	EARPHONE_DETECT
6	MIC_P

Table 6-17: Headset Jack (J3) Pinouts

6.3.3 Mini USB Client Connector (J4)

PIN NO.	DESCRIPTION
1	VCC
2	DM
3	DP
4	ID
5	GND

Table 6-18: Mini USB Client Connector (J4) Pinouts

**ICECARE-07 Mobile Field Assistant****6.3.4 Power Connector (CN7)**

PIN NO.	DESCRIPTION
1	+19V
2	GND

**Table 6-19: Power Connector (CN7) Pinouts****6.3.5 SD Card Slot (J1)**

PIN NO.	DESCRIPTION
1	DATA3
2	CMD
3	GND
4	VCC
5	CLK
6	GND
7	DATA0
8	DATA1
9	DATA2
10	Card detect
11	GND
12	Wire protection

**Table 6-20: SD Card Slot (J1) Pinouts****6.3.6 USB Host Connector (CN8)**

PIN NO.	DESCRIPTION
1	GND
2	DP2
3	DM2
4	VUSB2

**Table 6-21: USB Host Connector (CN8) Pinouts**

**Appendix**

**A**

# **Safety Precautions**

---

**WARNING:**

The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the ICECARE-07.

## A.1 Safety Precautions

Please follow the safety precautions outlined in the sections that follow:

### A.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- ***Follow the electrostatic precautions*** outlined below whenever the ICECARE-07 is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the ICECARE-07 is being installed, moved or modified.
- ***Do not apply voltage levels that exceed the specified voltage range.*** Doing so may cause fire and/or an electrical shock.
- ***Electric shocks can occur*** if the ICECARE-07 chassis is opened when the ICECARE-07 is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the ICECARE-07.
- ***If considerable amounts of dust, water, or fluids enter the ICECARE-07,*** turn off the power supply immediately, unplug the power cord, and contact the ICECARE-07 vendor.
- **DO NOT:**
  - Drop the ICECARE-07 against a hard surface.
  - Strike or exert excessive force onto the LCD panel.
  - Touch any of the LCD panels with a sharp object
  - In a site where the ambient temperature exceeds the rated temperature



### A.1.2 Anti-static Precautions

**WARNING:**

Failure to take ESD precautions during the installation of the ICECARE-07 may result in permanent damage to the ICECARE-07 and severe injury to the user.

---

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the ICECARE-07. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the ICECARE-07 is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband:*** Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding:*** Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad:*** When configuring or working with an electrical component, place it on an anti-static pad. This reduces the possibility of ESD damage.
- ***Only handle the edges of the electrical component:*** When handling the electrical component, hold the electrical component by its edges.

## ICECARE-07 Mobile Field Assistant

### A.1.3 Product Disposal

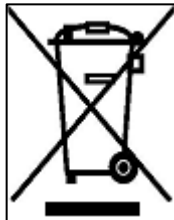


#### CAUTION:

Risk of explosion if battery is replaced by an incorrect type. Only certified engineers should replace the on-board battery.

Dispose of used batteries according to instructions and local regulations.

- Outside the European Union - If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.
- Within the European Union:



EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords.

When you need to dispose of your display products, please follow the guidance of your local authority, or ask the shop where you purchased the product. The mark on electrical and electronic products only applies to the current European Union Member States.

Please follow the national guidelines for electrical and electronic product disposal.

## A.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the ICECARE-07, please follow the guidelines below.

### A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the ICECARE-07, please read the details below.

- Except for the LCD panel, never spray or squirt liquids directly onto any other components. To clean the LCD panel, gently wipe it with a piece of soft dry cloth or a slightly moistened cloth.
- The interior of the ICECARE-07 does not require cleaning. Keep fluids away from the ICECARE-07 interior.
- Be cautious of all small removable components when vacuuming the ICECARE-07.
- Turn the ICECARE-07 off before cleaning the ICECARE-07.
- Never drop any objects or liquids through the openings of the ICECARE-07.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the ICECARE-07.
- Avoid eating, drinking and smoking within vicinity of the ICECARE-07.

### A.2.2 Cleaning Tools

Some components in the ICECARE-07 may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the ICECARE-07.

- **Cloth** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the ICECARE-07.
- **Water or rubbing alcohol** – A cloth moistened with water or rubbing alcohol can be used to clean the ICECARE-07.
- **Using solvents** – The use of solvents is not recommended when cleaning the ICECARE-07 as they may damage the plastic parts.
- **Vacuum cleaner** – Using a vacuum specifically designed for computers is one of the best methods of cleaning the ICECARE-07. Dust and dirt can restrict the airflow in the ICECARE-07 and cause its circuitry to corrode.
- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- **Foam swabs** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Appendix

**B**

# Hazardous Materials Disclosure

---

## **B.1 Hazardous Materials Disclosure Table for IPB Products Certified as RoHS Compliant Under 2002/95/EC Without Mercury**

The details provided in this appendix are to ensure that the product is compliant with the Peoples Republic of China (China) RoHS standards. The table below acknowledges the presences of small quantities of certain materials in the product, and is applicable to China RoHS only.

A label will be placed on each product to indicate the estimated “Environmentally Friendly Use Period” (EFUP). This is an estimate of the number of years that these substances would “not leak out or undergo abrupt change.” This product may contain replaceable sub-assemblies/components which have a shorter EFUP such as batteries and lamps. These components will be separately marked.

Please refer to the table on the next page.



## ICECARE-07 Mobile Field Assistant

Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (CR(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	O	O	O	O	O	O
Display	O	O	O	O	O	O
Printed Circuit Board	O	O	O	O	O	O
Metal Fasteners	O	O	O	O	O	O
Cable Assembly	O	O	O	O	O	O
Fan Assembly	O	O	O	O	O	O
Power Supply Assemblies	O	O	O	O	O	O
Battery	O	O	O	O	O	O
<p>O: This toxic or hazardous substance is contained in all of the homogeneous materials for the part is below the limit requirement in SJ/T11363-2006</p> <p>X: This toxic or hazardous substance is contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006</p>						

此附件旨在确保本产品符合中国 RoHS 标准。以下表格标示此产品中某有毒物质的含量符合中国 RoHS 标准规定的限量要求。

本产品上会附有“环境友好使用期限”的标签，此期限是估算这些物质“不会有泄漏或突变”的年限。本产品可能包含有较短的环境友好使用期限的可替换元件，像是电池或灯管，这些元件将会单独标示出来。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CR(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
壳体	O	O	O	O	O	O
显示	O	O	O	O	O	O
印刷电路板	O	O	O	O	O	O
金属螺帽	O	O	O	O	O	O
电缆组装	O	O	O	O	O	O
风扇组装	O	O	O	O	O	O
电力供应组装	O	O	O	O	O	O
电池	O	O	O	O	O	O
<p>O: 表示该有毒有害物质在该部件所有物质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。</p>						