IEI Technology Corp.

MODEL:

uSmart3400

User Manual

Rev. 1.01 – 22 October, 2013

RoHS Lead Free

Revision

Date	Version	Changes
17 September, 2013	**1.00**	**Initial release**

Copyright

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Chapter

1

Introduction

1.1 Overview

Figure 1-1: uSmart3400 Portable Computer

The uSmart3400 portable computer provides all the features of a PC. The uSmart3400 provides wireless networking for integration into company/facility networks. The major external device connections include USB 2.0 and serial port connectors. Storage options include a 2.5" hard drive, allowing for flexibility in choosing solid state drives or traditional hard drives. 2 HDMI outputs on the leftside allows the uSmart3400 to connect to a second/third screen for duplicating the screen contents or extending the user interface.

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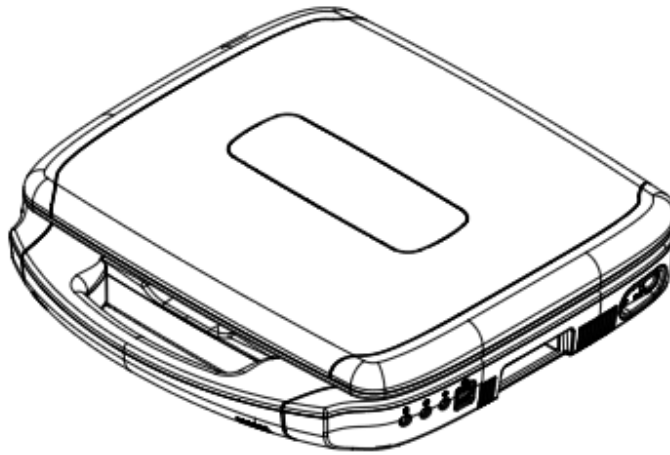
1.2 Dimensions

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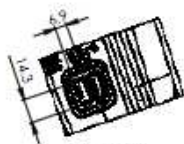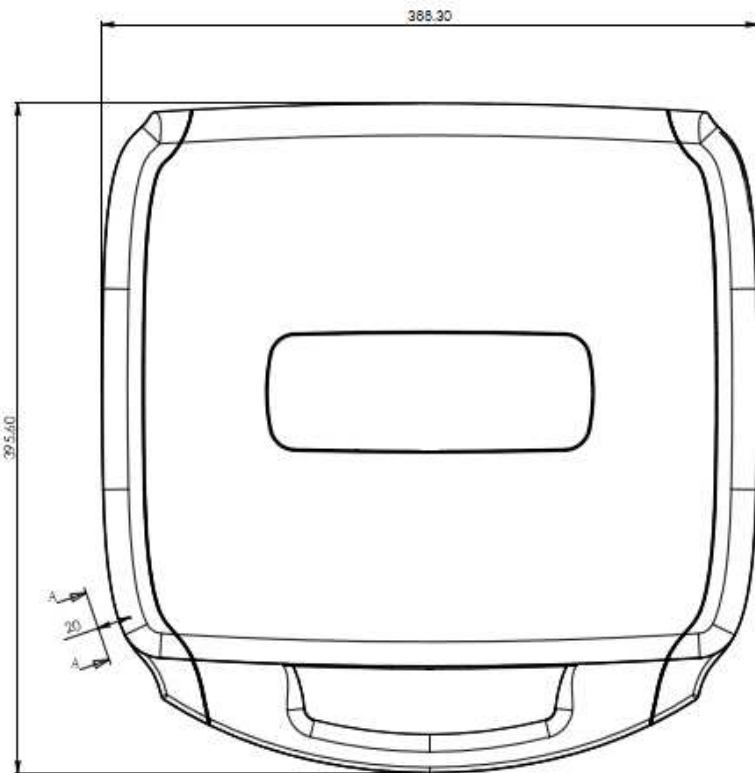
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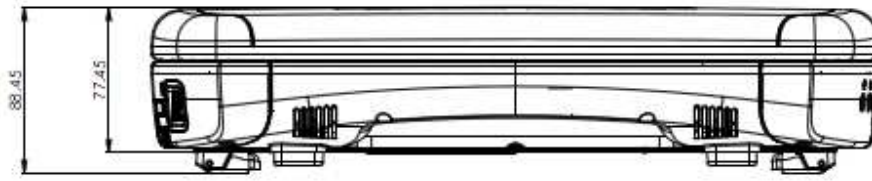
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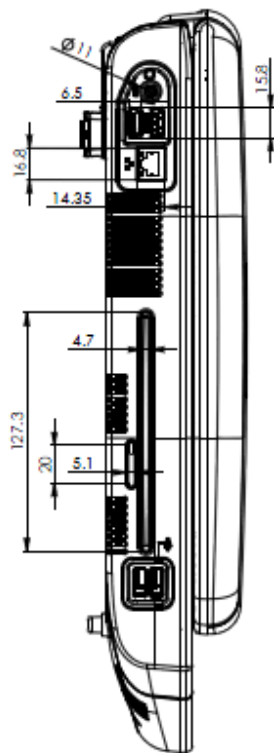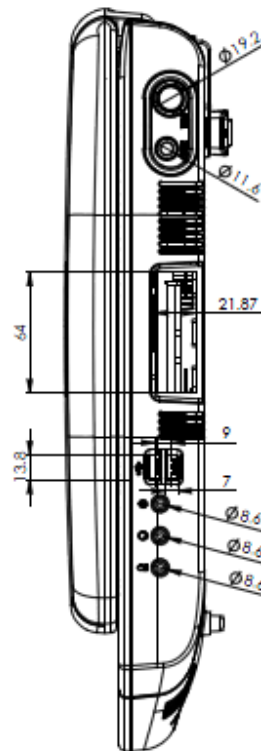
{LEFT}   {RIGHT}

uSmart3400 **Dimensions (mm)**

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1.3 Specifications

The technical specifications for the uSmart3400 system are listed in below table.

Model Name		uSmart3400
MB	SBC Model	TRN-HM65-MB
	CPU	2nd Generation Intel® Core™i7-3555LE processor
	Chipset	Intel HM65
	RAM	2 x 4G DDR3 1333 SO-DIMM (Support ECC)
Display	LCD Size	15"
	Max Resolution	1024x768
	Brightness (cd/m2)	minimum of 300 nits
	Contrast Ratio	500:1
	LCD Color	16.2M
	Pixel Pitch (mm)	0.297(H) x 0.297(V)
	Viewing Angle (H-V)	170(H)/ 170(V)
I/O Port		1x Power DC-JACK Connector
		1x RJ-45 Connector For LAN
		4x USB2.0 port
		2 x HDMI connector
		1xExt Power Switch connector
		1xLine in Jack connector
		1x Line out Jack connector
LED	Sleep LED	Blue
	Charging LED	Bi-color, blue or amber. It is amber when charging, and blue when fully charged and the power adapter is connected.
Storage		1 x 2.5" 1T HDD
Main Module	DVD	1 x Slot-in DVD, 8x SuperDrive DVD +/- R DL/DVD +/- RW, CD- RW
	WiFi	1 x Wireless LAN 802.11/b/g/n module by internal Mini PCIe interface
	Speaker	2 x stereo speakers + 1 x sub-woofer (internal speaker)
	Console	1 x Keyboard/Trackball Console
	Camera module	Up to UXGA resolution (1600X1200) to take still image, support VGA (640x480) resolution up to 30fps at YUY2 mode

Physical	Construction Material	PC+ABS
	Dimension (WxHxD)	388.3*395.6*88.45 (mm)
	Weight	6.8kg
	Magnetic Latch	a. Magnet size：30mm x 8mm x 6mm. b. Q'ty : 8pcs (B part*4, C part *4) c. Open/Close Force : 2.0kgf ~ 2.5kgf.
Environment	Operation Temperature	0~35℃
	Storage Temperature	0~60℃
Power	Battery	SANYO UR18650FK, 11.1V, 5400mah, 3S2P=59.94WH
	Power Supply	Power adapter: medical grade AC/DC adapter, Output: 19 VDC
OS		Windows 7 32bit
Others	Logo Flip-down feet	Terason, illuminated logo

Chapter

2

Unpacking

2.1 Unpacking

To unpack the Portable Computer, follow the steps below:

WARNING!

The front side LCD screen has a protective plastic cover stuck to the screen. Only remove the plastic cover after the panel PC has been properly installed. This ensures the screen is protected during the installation process.

Step 1: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.

Step 2: Open the external (second) box.

Step 3: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.

Step 4: Lift the monitor out of the boxes.

Step 5: Remove both polystyrene ends, one from each side.

Step 6: Pull the plastic cover off the portable computer.

Step 7: Make sure all the components listed in the packing list are present.

2.2 Packing List

The u Smart3400 is shipped with the following components:

Quantity	Item	Remark
1	U Smart3400	
1	EKG Cable (P/N: TRN-32025-003200-100-C-RS)	
1	Power Adapter (P/N: TRN-63040-010120-020-RS)	

Packing List

If any of the above items are missing or damaged, contact the distributor or sales representative immediately.

Chapter

3

Installation

3.1 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the maintenance may result in permanent damage to the system and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the u Smart3400. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the u Smart3400 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 u Smart3400, place it on an antic-static pad. This reduces the possibility of ESD damaging the uSmart3400.
- *Only handle the edges of the PCB*: - When handling the PCB, hold the PCB by the edges.

3.2 Installation Precautions

When installing the portable computer, please follow the precautions listed below:

- Power turned off: When installing the portable computer, 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.

▪ **Anti-static Discharge: If a user open the portable computer to configure the jumpers or plug in added peripheral devices, ground themselves first and wear and anti-static wristband.**

3.3 Preinstalled Components

The following components are all preinstalled.

- ▪ **Motherboard**
- ▪ **DDR3 memory module**
- ▪ **TFT LCD**
- ▪ **System cooling fans**
- ▪ **CPU**
- ▪ **HDD**
- ▪ **Wi-Fi module**
- ▪ **Optical disk drive**

3.4 Removing the Back Cover

Remove all the retention screws on the back cover. Lift the cover up to remove.

3.5 Removing the Console

Remove all the retention screws on the chassis base. Lift the console up to remove.

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Chapter

4

System Maintenance

4.1 System Maintenance Introduction

The following system components may require maintenance.

- Motherboard
- SO-DIMM module
- Wifi module
- Cooling fans
- HDD

If these components fail, they must be replaced. Please contact the system reseller or vendor to purchase replacement parts. Replacement instructions for the above listed components are described below.

4.2 Motherboard Replacement

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

4.3 Back Cover Removal

⚠️ **WARNING!**

Before removing the back cover, make sure all power to the system has been disconnected. Failing to do so may cause severe damage to the uSMART3400 and injury to the user.

To access the HDD and install ECG, ultrasound module, the back cover must be removed. To remove the back cover, please refer to Section 4 for removal instructions.

4.4 Console Removal

WARNING!

Before removing the console, make sure all power to the system has been disconnected. Failing to do so may cause severe damage to the uSMART3400 and injury to the user.

WARNING!

Please take antistatic precautions when working with the internal components. The interior of the uSMART3400 contains very sensitive electronic components. These components are easily damaged by electrostatic discharge (ESD). Before working with the internal components, make sure all anti-static precautions described earlier have been observed.

To access the portable computer internal components, the console must be removed. To remove the console, please refer to Section 錯誤! 找不到參照來源。 **for console removal instructions.**

4.5 SO-DIMM Replacement

Please read the warnings at the beginning of the previous section before attempting to access any uSMART3400 internal components.

To install/replace the SO-DIMM modules, please follow the steps below.

Step 1: Remove the Console (Section 錯誤! 找不到參照來源。**).**

Step 2: Locate the SO-DIMM module on the motherboard.

Step 3: Release the SO-DIMM module by pulling both the spring retainer clips outward from the socket.

Step 4: Grasp the SO-DIMM module by the edges and carefully pull it out of the socket.

Step 5: Install the new SO-DIMM module by pushing it into the socket at an angle (Figure 4-1).

Step 6: Gently push the rear of the SO-DIMM module down (Figure 4-1). The spring retainer clips clip into place and secure the SO-DIMM module in the socket.
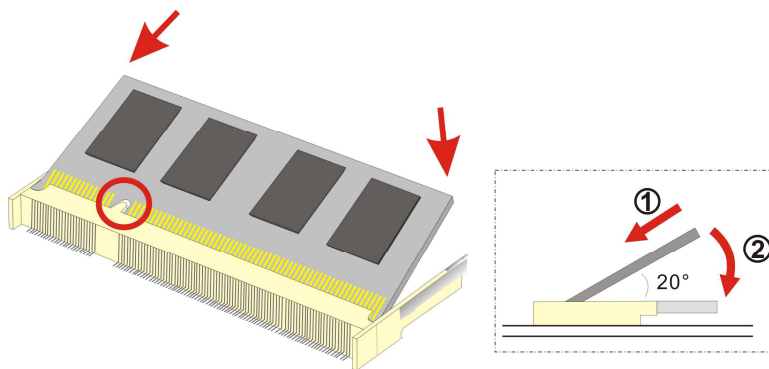

Figure 4-1: SO-DIMM Module Installation

Step 7: Push the new DIMM module until it engages and the white plastic end clips

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Chapter

5

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 system.

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 EP series is opened.
- *Make sure the power is turned off and the power cord is disconnected* whenever the EP series 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 chassis is opened when the system is running.
- *Do not drop or insert any objects* into the ventilation openings of the portable computer
- *If considerable amounts of dust, water, or fluids enter the portable computer*, turn off the power supply immediately, unplug the power cord, and contact the system vendor.
- **DO NOT:**
  - Drop the portable computer 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

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A.1.2 Anti-static Precautions

WARNING:

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

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the uSMART3400. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the uSMART3400 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 antic-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.

A.1.3 Product Disposal

⚠ **CAUTION:**

Risk of explosion if battery is replaced by and 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:**
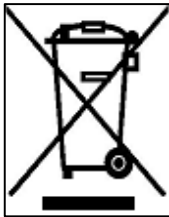
EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need 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 uSMART3400, please follow the guidelines below.

A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the uSMART3400, 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 uSMART3400 does not require cleaning. Keep fluids away from the EP series interior.
- Be cautious of all small removable components when vacuuming the uSMART3400.
- Turn the uSMART3400 off before cleaning it.
- Never drop any objects or liquids through the openings of the uSMART3400.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the uSMART3400.
- Avoid eating, drinking and smoking within vicinity of the uSMART3400.

A.2.2 Cleaning Tools

Some components in the uSMART3400 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 uSMART3400.

- *Cloth* – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the uSMART3400.
- *Water or rubbing alcohol* – A cloth moistened with water or rubbing alcohol can be used to clean uSMART3400.
- *Using solvents* – The use of solvents is not recommended when cleaning the uSMART3400 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 uSMART3400. Dust and dirt can restrict the airflow in the uSMART3400 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.

A.2.3 Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

  -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all WiFi product marketed in US must fixed to US operation channels only.

Chapter

6

Hazardous Materials Disclosure

B.1 Hazardous Material 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.

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	X	O	O	O	O	X
Display	X	O	O	O	O	X
Printed Circuit Board	X	O	O	O	O	X
Metal Fasteners	X	O	O	O	O	O
Cable Assembly	X	O	O	O	O	X
Fan Assembly	X	O	O	O	O	X
Power Supply Assemblies	X	O	O	O	O	X
Battery	O	O	O	O	O	O
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 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						