JAO TECH

Obie Smart Terminal™

User Manual

Revision 1.0

May 21, 2010

JAOtech Ltd

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Introduction

Copyright

Disclaimer

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Life Support Policy

JAOtech Ltd's PRODUCTS ARE NOT FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE PRIOR WRITTEN APPROVAL OF JAOtech Ltd.
As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into body, or (b) support or sustain life and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Acknowledgements

FCC Interference Statement of Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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 instruction, 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 or more 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.

Notice:

(1) An unshielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used.

(2) Use only shielded cables to connect I/O devices to this equipment.

(3) Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

JAOtech Customer Services

Each and every JAOtech product is built to the most exacting specifications to ensure reliable performance in the harsh and demanding conditions typical of industrial environments. Whether your new Obie Smart Terminal™ is destined for the laboratory or the factory floor, you can be assured that your product will provide the reliability and ease of operation for which the name JAOtech has come to be known.

Your satisfaction is our primary concern. Here is a guide to JAOtech's customer services. To ensure you get the full benefit of our services, please follow the instructions below carefully.

Technical Support

We want you to get the maximum performance from your products. So if you run into technical difficulties, we are here to help. For the most frequently asked questions, you can easily find answers in your product documentation. These answers are normally a lot more detailed than the ones we can give over the phone. So please consult the user's manual first.

If you still cannot find the answer, gather all the information or questions that apply to your problem and with the product close at hand, call your local JAOtech office, or e-mail us. We are ready to give you the support you need to get the most from your products. In fact, most problems reported are minor and are able to be easily solved over the phone.

Product Warranty

JAOtech Ltd warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorised by JAOtech, or which have been subject to misuse, abuse, accident or improper installation. JAOtech assumes no liability under the terms of this warranty as a consequence of such events. Because of JAOtech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If any of JAOtech's products is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time, and freight. Please consult your local JAOtech office or distributor for more details. If you think you have a defective product, follow these steps:

1. Visit the JAOtech website at **www.jaotech.com** where you can find the latest information about the product.

2. Contact your distributor, sales representative, or JAOtech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:

    - Product name and serial number
    - Description of your peripheral attachments
    - Description of your software (operating system, version, application software, etc.)
    - A complete description of the problem
    - The exact wording of any error messages

Note: This equipment is a source of electromagnetic waves. Before use please, make sure that there are no EMI sensitive devices nearby which may malfunction.

Warning

1. *Input voltage rated 100-240 VAC, 50-60 Hz, 4-2 A (AC Mode)*
2. *Use a 3 V @ 195 mA lithium battery (Model No.CR2032 for Atom)*
3. *Packing: please carry the unit with both hands, handle with care*
4. *Our European representative:*
5. *Maintenance: to properly maintain and clean the surfaces, use only approved products or clean with dry applicator*

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Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. The smart terminals should be cleaned regularly according to usage. Normal computer monitor cleaning methods and wipes can be used for this purpose. In environments where specific chemicals or cleaning agents are required to be used, please contact JAOtech for a list of approved chemicals that can be used for cleaning.
12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over voltage.
13. Never pour any liquid into an opening. This may cause fire or electrical shock.
14. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
15. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.
16. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20˚C (-4˚F) OR ABOVE 60˚C (140˚F). THIS MAY DAMAGE THE EQUIPMENT.**
17. If your computer is losing time or the BIOS configuration resets to defaults, the battery has no power.

    Caution: Do not replace battery yourself. Please contact a qualified technician or your supplier of the Obie Smart Terminal™. The Obie Smart Terminal™ is

provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacture. Discard used batteries according to the manufacturer's instructions

18. **IMPROPER INSTALLATION OF VESA MOUNTING CAN RESULT IN SERIOUS PERSONAL INJURY!** VESA mount installation should be carried out by a professional technician. Please contact the service technician or your retailer if you need this service.
19. CLASSIFICATION: Supply Class I adapter equipment of IXPO classification continuous Operation Not AP or APG category.
20. Disconnect device: Rear power supply power connection.
21. Follow national requirements when disposing of the unit.
22. Maintenance: to properly maintain and clean the surfaces, use only the approved products or clean with a dry applicator.
23. This equipment shall not be used in life support systems.
24. Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment.) Furthermore all configurations shall comply with the system standard IEC 60601-1-1. Everybody who connects additional equipment to the signal input output, configures a medical system, and is therefore responsible that the system complies with the requirements of the system standard IEC 60601-1-1. The unit is for exclusive interconnection with IEC 60601-1 certified equipment in the patient environment and IEC 60XXX certified equipment outside of the patient environment. If in doubt, consult the technical services department or your local representative.
25. The user is not to touch SIP/SOPs and the patient at the same time.
26. The sound pressure level at the operator's position according to IEC704-1:1982 is no more than 70dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. JAOtech disclaims all responsibility for the accuracy of any statements contained herein.

MEDICAL EQUIPMENT
WITH RESPECT TO ELECTRIC SHOCK
FIRE AND MECHANICAL HAZARDS ONLY
IN ACCORDANCE WITH UL-60601-1 AND
CAN/CSA C22.2 No.601.1

TYPE B APPLIED PART: Applied part complying with the specified requirements of UL-60601-1 and CAN/CSA C22.2 No. 601.1 to provide protection against electric shock, particularly regarding allowable leakage current

Non-ionizing radiation

Packing List

Before installing your Obie Smart Terminal™, ensure that the following materials have been received:

- Obie Smart Terminal™
- User's manual
- Accessories for Obie Smart Terminal™
- Power cord (1.8 m) - USA, European, UK types.
- Drivers and Utilities

Warning: To prevent electric shock, Do Not remove cover. No user serviceable parts inside, refer servicing to qualified personnel.

CHAPTER

1
General Information

This chapter gives an overview of the Obie Smart Terminal™, sections include:

- Introduction
- Specifications
- Cleaning/Disinfecting
- LCD Specifications
- Dimensions

1.1 Introduction

The Obie is a multimedia Intel® Celeron ULV/Core Duo/Atom processor-based computer that is designed to serve as a Point of Care terminal (POC) and Point of Information (POI) applications within Healthcare. It is a PC-based system with 17" color TFT LCD display, Gigabit Ethernet, multi-COM port and USB 2.0 interfaces and High Definition Audio codec.

The Obie Smart Terminal™ is as compact and user-friendly as a notebook computer. This simple, complete and highly integrated multimedia system lets system integrators easily build the Obie Smart Terminal™ into their applications.

Common industrial applications will include factory automation systems, precision machinery, and production process control. It is also suitable for many non-industrial applications, including interactive kiosk systems, entertainment management, and car park automation. The Obie Smart Terminal™ is a reliable, cost-effective solution to application processing requirements.

1.2 Specifications

1.2.1 General

Display Screen

Type	17" SXGA TFT (1280 x 1024 resolution)
Colour Depth	16.2 M
Response Time	8ms
Dot Size	0.264 x 0.264
Viewing Angle	140/130° Up/Down
Luminance	400 cd/m² Typ
Contrast Ratio	500:1 Typ
LCD MTBF	50,000 Hrs Typ

Touch screen

Touch Screen	Resistive 5-Wire
Operational Temperature	Resistive 5-Wire
Software Driver	Linux/Windows
Durability (touches in a lifetime)	35 million finger touches/10 million pen touches
Light transmission	82%
Touch controller	Internal USB

Environment

Temperature	0 ~ 40°C
Relative Humidity	10 ~ 40°C / 20 ~ 90% RH
Storage Temperature	-40°C ~ 60°C / 20
Storage Relative Humidity	10 ~ 80% RH
Atmospheric Pressure Range	500 to 1060hPa
Shock	30G, Half Sine, 11msec
Vibration	5 ~ 500Hz 1G acceleration non operating
Power MTBF	100,000 hrs
Altitudes	Operational: 6,000 ft; shipping:40,000 ft
Certification	CE, FCC, CUL 60950-1
	CUL 60601-1,EN 60601-1 (April 2010)

Peripherals and Device Interfaces

Headphone Socket	2 x 3.5mm jack socket in connector recess
Phone Handset	RJ11 socket
RJ11 socket	Mounted on phone cradle
User Controls	Front membrane buttons and user configurable GPIO buttons on the underside

USB Ports	2 x USB2.0 sockets in connector recess, 2 x on rear I/O
Peripherals	Multifunction connector with USB, serial, audio and power
Visual Call Indication	Call indication visible from LED array on top of display module
Reset Switch	Internal push button in connector recess
Power Switch	Internal push button in connector recess
Display Inverter	Power enable and brightness control

Computing platform

CPU	Intel ® Celeron ULV/Core Duo/Atom based Processor
Northbridge	Intel ® 945GME/945GSE chipset
Southbridge	Intel ® I/O controller hub 7 mobile (ICH7M)
I/O Companion	Winbond W83627EHG or similar
System Memory	200-pin DDRII 667/533/400 SODIMM socket
3D Graphics	Intel ® 945GME/945GSE integrated extreme graphics controller or AMD M72 GPU
Video Memory	Intel DVMT 3.0 Supports up to 224MB shared video memory
Audio	Realtek ALC888 High Definition Audio Codec
Storage	1 x 2.5" SATA disk connector with power, 1 x SATA data connector, compact flash socket
Serial Ports	6 x RS232
USB	4 x External, 1 x internal A-type socket, 5 x internal headers (3 x internal for Intel 945GSE model), 1 x external multi-signal connector
GPIO	Keypad, hook sensor, buzzer, indicator lights, audio input/output controls, internal headers
Thermal Protection	Internal sensors generates interrupt
Watchdog	Programmable up to 255 seconds
LAN	Marvell 88E8053 or Intel 82574L (945GSE only)
Power Input	19V DC, 3A

Audio

Amplifier	1.2W RMS headphone output per channel
	Bass boost 20dB at 50Hz
	2 off 6 Watt peak RMS integral speakers
	Software speaker / headphone mute
	Independent control of all audio channels via internal mixer
Call Buzzer	Incoming telephone call indication
	Software mute
	Piezo ringer

Telephone Sub System

Dialing	On screen by software
Call Indicator	Software controlled piezo ringer and call indicator lights

Peripheral Devices

Hard drive	Toshiba 40Gb HDD
Compact Flash	Slave on secondary IDE port

Operating System

Primary	Linux, Windows

Mechanical Specifications

Materials	GE141R+ Anti bacteria and PC+ABS GE6600 + Anti bacteria
Mounting	Rear fixture to articulated arm VESA mount 75mm
IP Rating	IP65 Front Face, IP54 Rear
Dimensions	387 x 370 x 75 (mm) (Without handset)
Weight	6.75 kg
Power Consumption	50 watts
Cooling	Fanless design, rear heat sink and heat pipe dissipating 60W.

1.2.2 Handset Specifications

Handset

Keypad	None, keypad mapped on display
Cable Type	Retractable handset coiled cable
Interface	RJ11 connection

Audio Sub system

Amplifier	Integrated on motherboard
Disability Features	Inductive loop pickup for hearing aids
	Adjustable volume Via software

Mechanical Specifications

Mounting	Hook and holster located on side of terminal
IP Rating	IP58
Dimensions	52 w x 64 d x 205 h (mm)
Weight	400g

1.2.3 Optional Additional Features

Camera	1.3 Megapixel camera module
Smart Card Reader	Mounted on underside of terminal
Magnetic stripe card reader	3-track MSR module can be integrated on the terminal as an option.
Wireless connectivity	Bluetooth and WiFi capability for connecting peripherals or to a wireless network

1.3 Cleaning

During normal use of the Obie may become soiled and should, therefore be cleaned regularly. Agents: Green tinctured soap and Enzymatic detergents steps:

1. Wipe the Obie with a clean cloth that has been moistened in the cleaning solution.
2. Prepare agent per manufacturer's instructions or hospital protocol.
3. Wipe thoroughly with a clean cloth

Cautions:

Do not immerse or rinse the Obie and its peripherals if you accidentally spill liquid on the device, disconnect the unit from the power source.

Contact your Biomed regarding the continued safety of the unit before placing it back in operation. Do not spray cleaning agent on the chassis.

Do not use disinfectants that contain phenol. Do not autoclave or clean the Obie Smart Terminal™ or its peripherals with strong aromatic, chlorinated, ketone, ether, or Esther solvents, sharp tools or abrasives. Never immerse electrical connectors in water or other liquids.

1.4 Dimensions

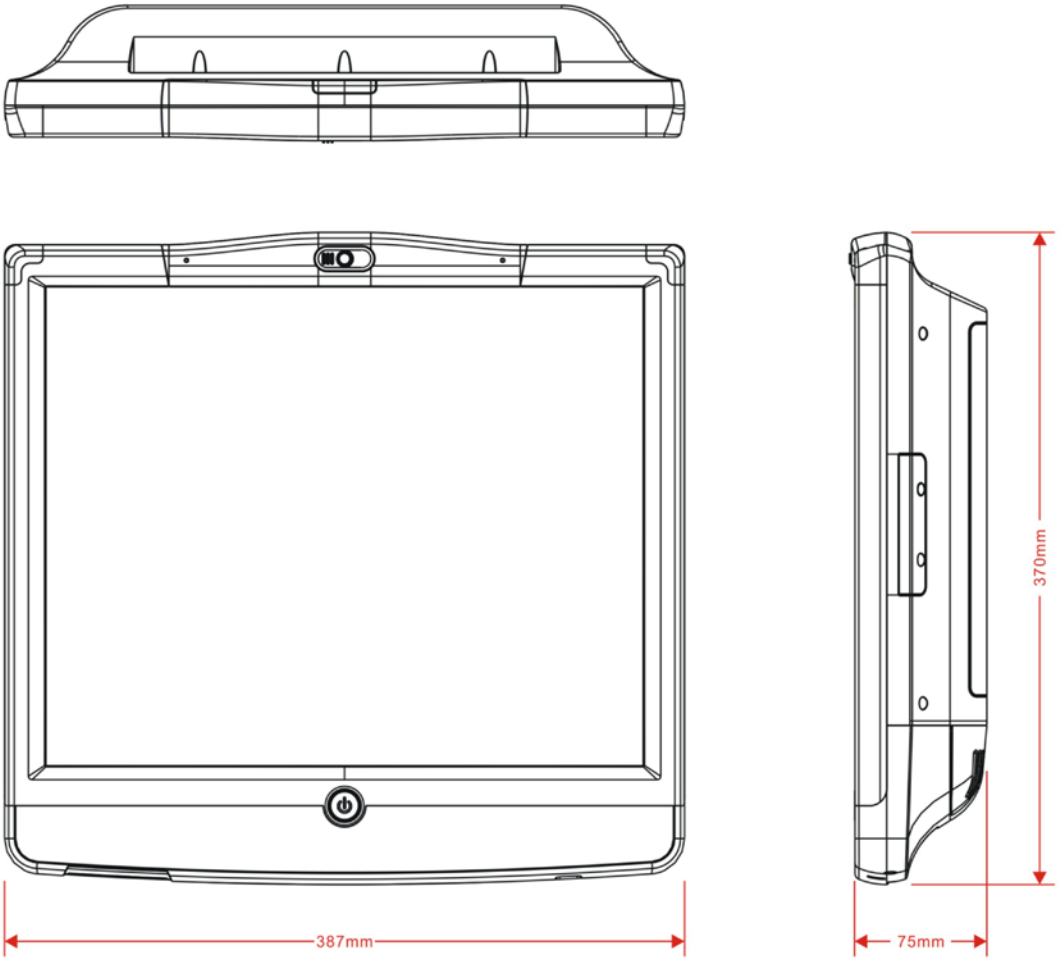


Figure 1.1: Dimensions of the Obie Smart Terminal™

CHAPTER

2

System Setup

This chapter gives hardware and system software installation information. Sections include:

- A Quick Tour of the Obie Smart Terminal™
- Installation Procedures
- Running the BIOS Setup Program
- Installing System Software
- Installing the Drivers

2.1 A Quick Tour of the Obie

Before you start to set up the Obie, take a moment to become familiar with the locations and purposes of the controls, drives, connections and ports, which are illustrated in the figures below.

When you place the Obie upright on the desktop, its front panel appears as shown in Figure 2.1.

Figure 2.1: Front View of the Obie Smart Terminal™

1. A Power Button
2. A Membrane Switch, which contains functions of Volume Up and Down, Backward, Forward, Stop, Play/Pause, and Chanel Up and Down.

When you look at the left side of the Obie, you will see the Handset fitted to one of the Obie's docking ports.

Figure 2.2: Left side view of the Obie Smart Terminal™

When you turn the Obie Smart Terminal™ around and look at its rear cover, you will find the two removable access doors located left and right of the terminal. The right-hand cover will reveal access to the system DDR memory, and the left-hand cover will reveal the HDD and the mini PCI slots, as shown in Figure 2.3.

Figure 2.3: Rear view of the Obie Smart Terminal™

There are two I/O areas in the Obie Smart Terminal™; one is at the back and the other one is at the bottom. Figure 2.4 indicates the various ports of these two areas.

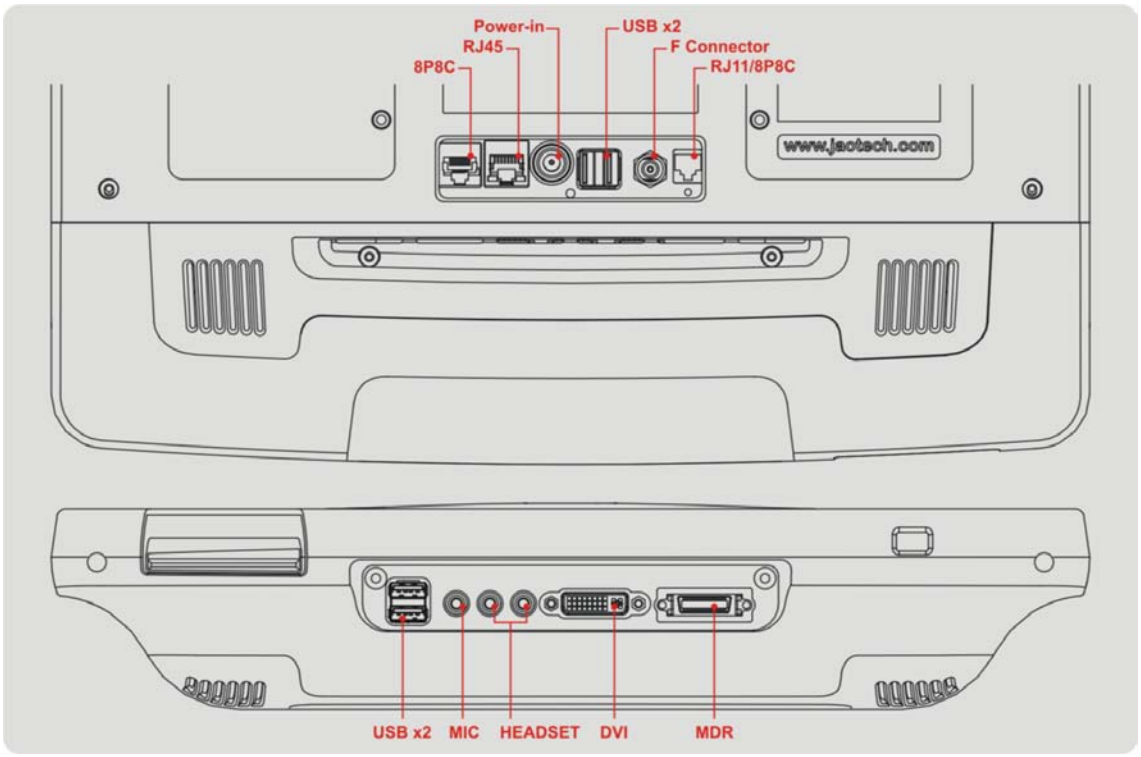


Figure 2.4: I/O Ports of the Obie Smart Terminal™

Back I/O area

1. RJ11/8P8C+Fin Connector (for optional PSTN module or a service call button);
2. Coaxial TV Antenna/Cable Connector (optional);
3. USB Connector (2x);
4. Power Connector;
5. RJ 45 Shielded Gigabit Ethernet Connector;
6. 8P8C+Fin Nurse Call Connector.

Bottom I/O area

1. 26-Way MDR Connector (for optional remote control or a nurse call device);
2. DVI-I Connector;
3. Headset Jack (2x);
4. Microphone Jack;
5. USB Connector (2x).

2.2 Installation Procedures

2.2.1 Connecting the power cord

Be sure to always handle the power cords by holding the plug ends only. Follow these steps:

1. Connect the female end of the power supply DIN cable to the DC inlet of the Obie Smart Terminal™. (See Figure 2.4)
2. Connect the 3-pin male plug of the power supply to an electrical outlet.

Figure 2.4: Connecting the power cord

2.2.2 Connecting USB keyboard and mouse

Connect the mouse and keyboard to the USB ports located on the bottom cover of the Obie Smart Terminal™. (See Figure 2.5)

Figure 2.5: Connecting the mouse and keyboard

2.2.3 Switching on the power

Switch on the Obie Smart Terminal™ via the power switch on the front cover. (See Figure 2.6)

Figure 2.6: Switching on the power

2.3 Running the BIOS Setup Program

Your Obie is likely to have been properly set up and configured by your dealer prior to delivery. If you still find it necessary to use the BIOS (Basic Input-Output System) setup program to change system configuration information please contact your JAOtech supplier for support, or email JAOtech at: techsupport@jaotech.com.

The settings you specify with the setup program are recorded in a special area of memory called CMOS RAM. This memory is backed up by a battery so that it will not be erased when you turn off or reset the system. Whenever you turn on the power, the system reads the settings stored in CMOS RAM and compares them to the equipment check conducted during the power on self-test (POST). If an error occurs, an error message will be displayed on screen, and you will be prompted to run the setup program.

2.4 Installing System Software

Recent releases of operating systems from major vendors include setup programs which load automatically and guide you through hard disk preparation and operating system installation. The guidelines below will help you determine the steps necessary to install your operating system on the Obie Smart Terminal™. If required, insert your operating system's installation or setup diskette into a portable optical drive and plug into one of the Obie USB ports.

Note: Some distributors and system integrators may have already pre-installed system software prior to shipment of your panel PC.

If you are presented with the opening screen of a setup or installation program, follow the instructions on screen. The setup program will guide you through preparation of your hard drive, and installation of the operating system.

2.5 Installing the Drivers

After installing your system software, you will be able to set up the Ethernet, SXGA, audio, and Touch Screen functions. All the drivers are stored in a CD-ROM disc entitled Obie drivers and updates can be located on JAOtech's website: *www.jaotech.com*

Note: The drivers and utilities used for the Obie Smart Terminal™ are subject to change without notice. If in doubt, check JAOtech's website or contact our application engineers for the latest information regarding drivers and utilities.

CHAPTER

3

Graphic chipset Setup

This chapter gives details of graphics chipset setup.
Sections include:

- Introduction
- Installation of Graphic Driver
- Further information

3.1 Introduction

The Obie has an onboard VGA interface. The specifications and features are described as follows:

3.1.1 Chipset

The Obie uses Mobile Intel® 945GME/945GSE chipset for its graphic controller which enables excellent graphics performance and low power consumption.

3.1.2 Display memory

Intel DVMT 3.0 Supports up to 224MB shared video memory.

3.1.3 LVDS transmitter

The Obie uses a Chrontel CH7308/7307 or AMD M72 (optional, 945GME only) for driving its LCD panel. The controller supports 18-bit/24-bit single or dual channel LCD panels.

3.1.4 Display types

CRT/DVI+LVDS or CRT+LVDS (945GSE only) simultaneous display with single, clone or extended display configuration.

3.2 Installation for Windows

For windows installations, please refer to your installation instructions and install via a portable optical drive connected through one of the Obie USB ports.

3.3 Further information

For further information about the Obie Smart Terminal™, including driver updates, troubleshooting guides and FAQs, please visit the following Web resources.

JAOtech websites: *www.jaotech.com*

CHAPTER

4

Audio Interface

This chapter gives details of audio interface setup.
Sections include:

- Introduction
- Installation of Audio Driver
- Further information

4.1 Introduction

The Obie onboard audio interface is a high-performance 7.1+2 Channel High Definition Audio Codec providing ten DAC channels that simultaneously support 7.1 sound playback, plus 2 channels of independent stereo sound output (multiple streaming). The codec integrates two stereo ADCs that can support a stereo microphone, and feature Acoustic Echo Cancellation (AEC), Beam Forming (BF), and Noise Suppression (NS) technology.

4.2 Installation of Audio Driver

Before installing the audio driver, please take note of the procedures detailed below. You must know which operating system you are using in your Obie, and then refer to the corresponding installation flow chart. Just follow the steps in the flow chart. You can quickly and successfully complete the installation, even though you are not familiar with instructions for Windows.

Important: The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which appear on your screen.

4.2.1 Installation for Windows 2000/XP

1. Click the 'Start' button in the task bar, click 'Run' and then select 'infinst_autol.exe' from the drive directory 'D:\Audio\' where the driver files are stored. The Install dialog will appear.
2. Click 'Next' to continue.
3. When the 'Setup Complete' message appears click 'Finish' to restart your computer.

4.3 Further information

For further information about the Audio interface installation in your Obie including driver updates, troubleshooting guides and FAQs please visit the following web resources.

JAOtech website: *www.jaotech.com*

CHAPTER

5

Touch Screen Interface

This chapter gives details of touch screen interface setup.
Sections include:

- Introduction
- Installation of Touch Screen Drivers
- Further Information

5.1 Introduction

5.1.1 General Information

The Obie optional touch screen incorporates advanced second-generation 5-wire resistive technology. They allow 85% light transmission. The resistive touch screens have an antiglare surface. All models provide greatly enhanced visual resolution. They also have new improved scratch-resistant features. The touch screen is manufactured from UL-recognized components. When properly installed, the touch screen's ball impact resistance meets the UL 1950 standard. Its fire resistance meets the UL-746C, 19 mm (0.75") flame test standard. Systems incorporating the touch screen, controllers, and cables have been approved to FCC Class A and Class B standards.

5.1.2 General specifications

Please refer to Chapter 1, Section 1.2 of this manual.

5.1.3 Environmental specifications

- Temperature:
  - Operating temperature -0 ~ 40°C
  - Storage temperature -20 ~ 60°C

- Relative humidity:
  - Operating 90 RH at 35°C
  - Storage 90 RH at 35°C for 240 hours, non-condensing

- Chemical resistance:
  The active area of the touch screen is resistant to the following chemicals when exposed for a period of one hour at a temperature of 21°C (71°F):

  - Acetone
  - Methylene chloride
  - Methyl ethyl ketone
  - Isopropyl alcohol
  - Hexane
  - Ammonia-based glass cleaners
  - Turpentine
  - Mineral spirits
  - Foods and beverages

5.2 Installation of Touch Screen Drivers

To facilitate installation of the touch screen driver, you should read the instructions in this section carefully before you attempt installation.

5.2.1 Installation for Windows XP

Click the 'Start' button in the task bar, click 'Run' and then select the Obie Touch Screen driver from the driver disk. The Install dialog will appear.

Important: The following windows illustrations are examples only. You must follow the flow chart instructions and pay attention to the instructions which appear on your screen.

5.3 Further Information

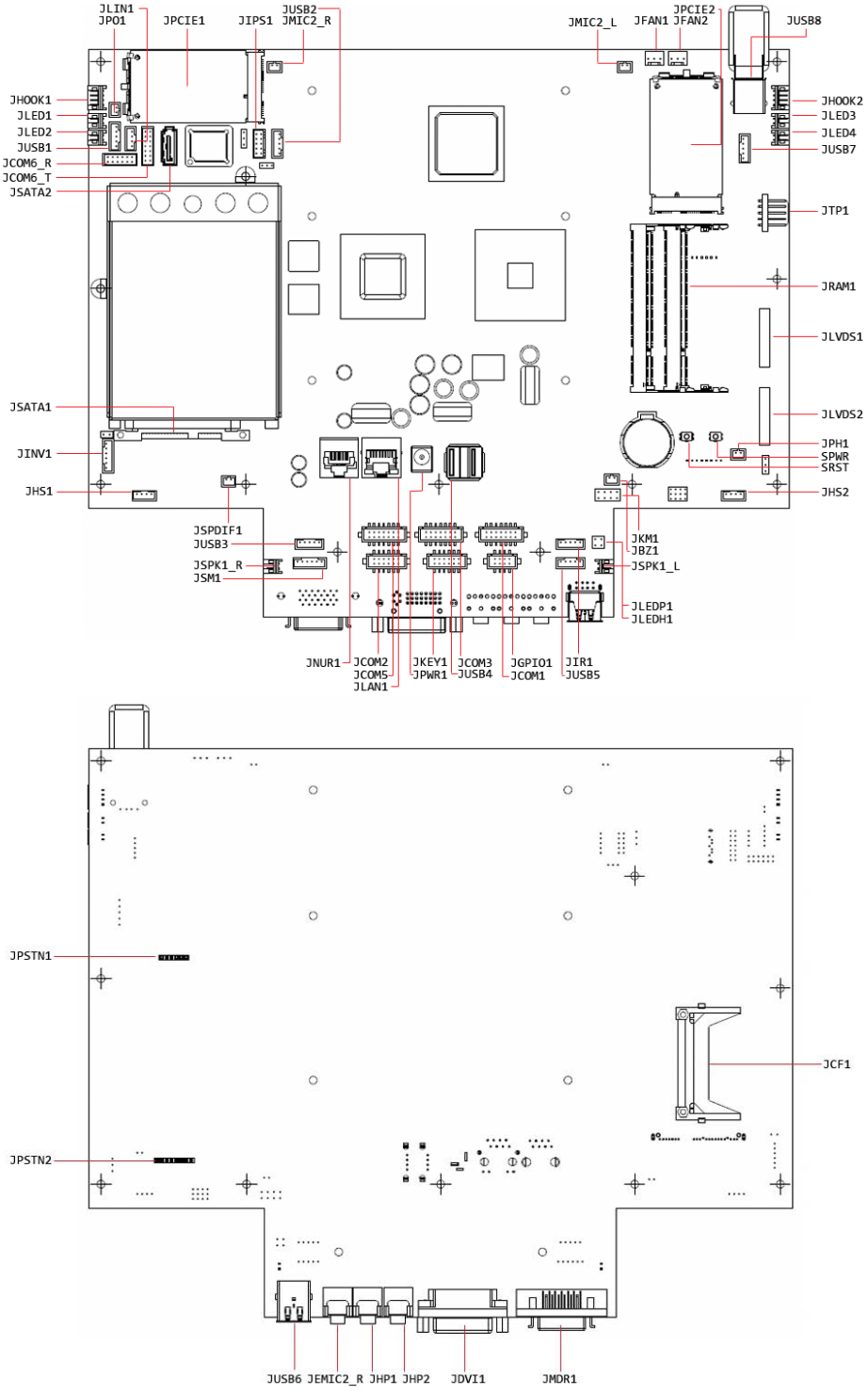
For further information about the touch screen installation in your Obie Smart Terminal™, including driver updates, troubleshooting guides and FAQs, please visit the following Web resources.

JAOtech website: *www.jaotech.com*

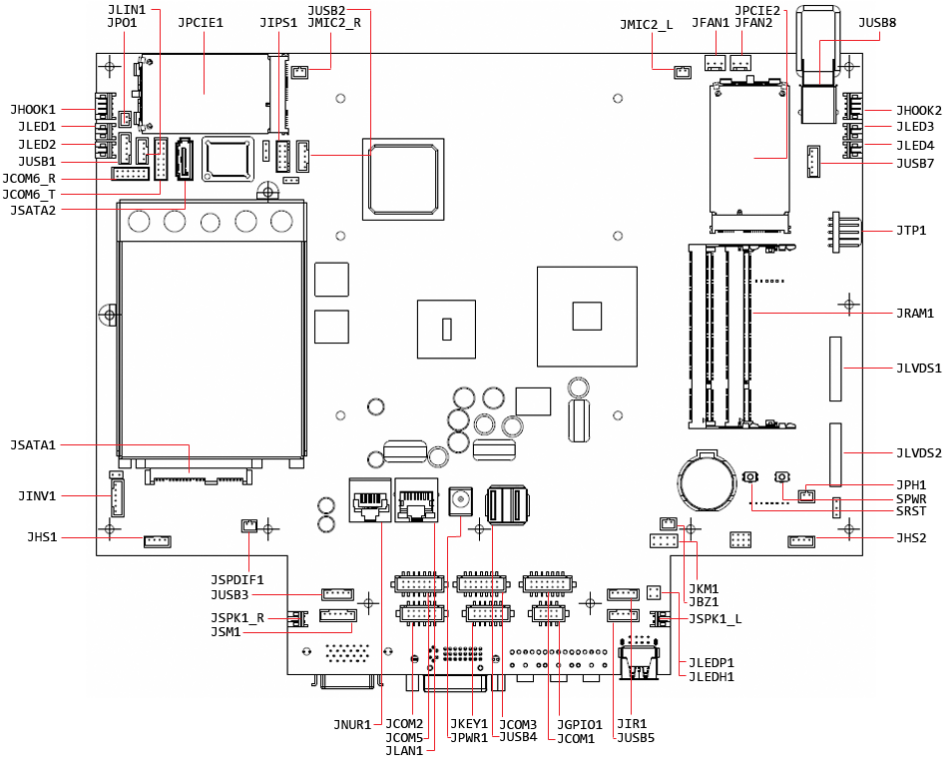
APPENDIX

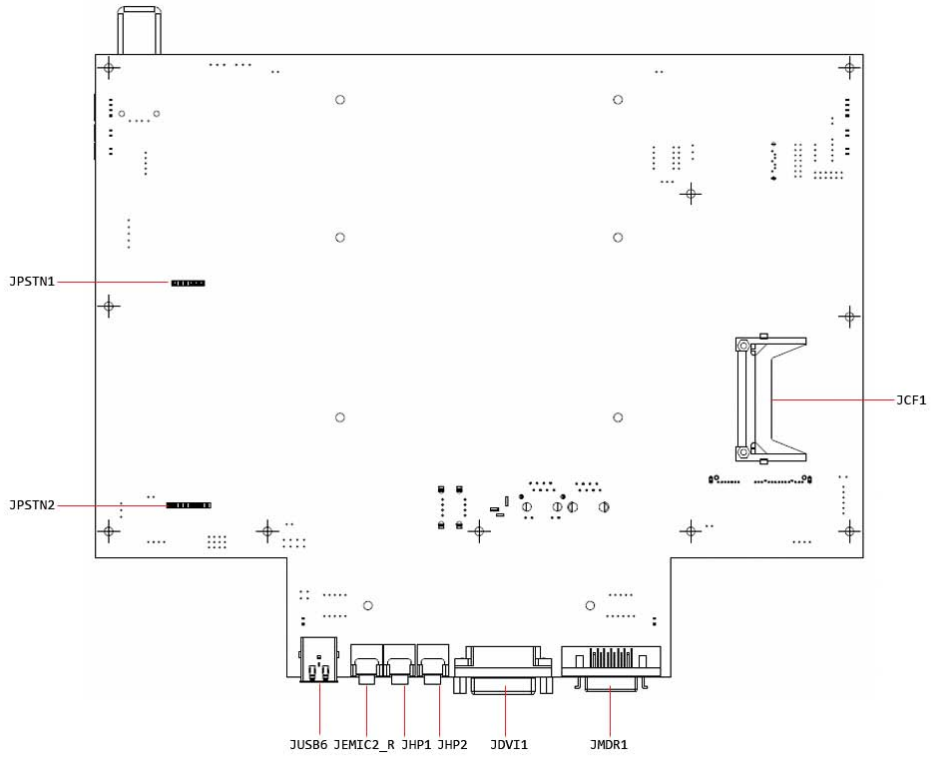
A
Motherboard Layout

A.1 Core Duo/Celeron with 945GME

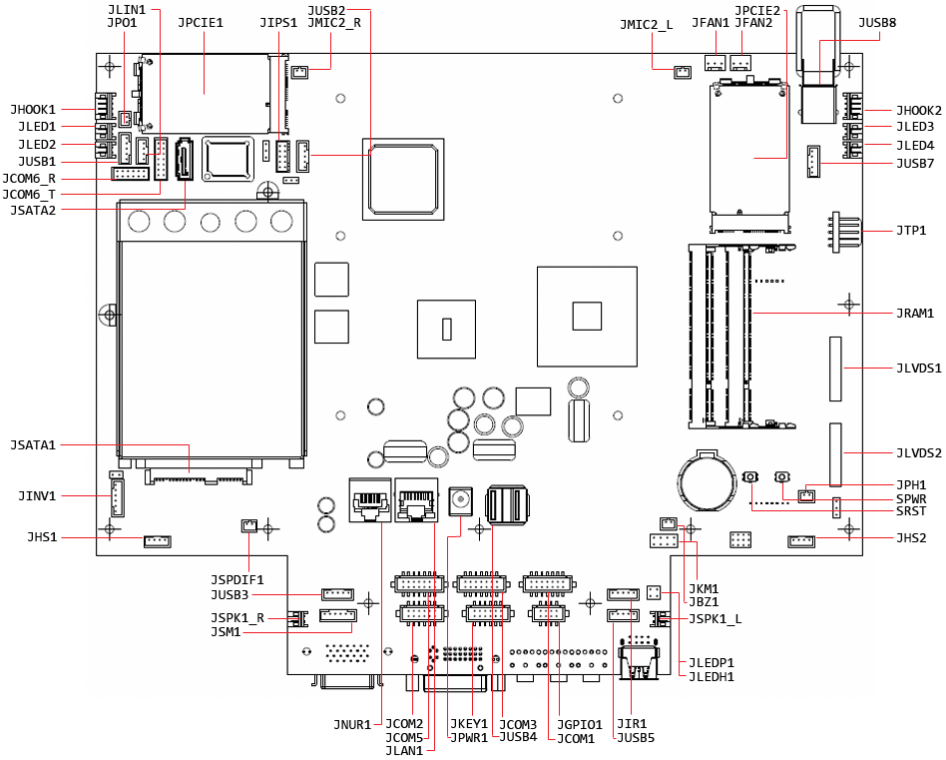


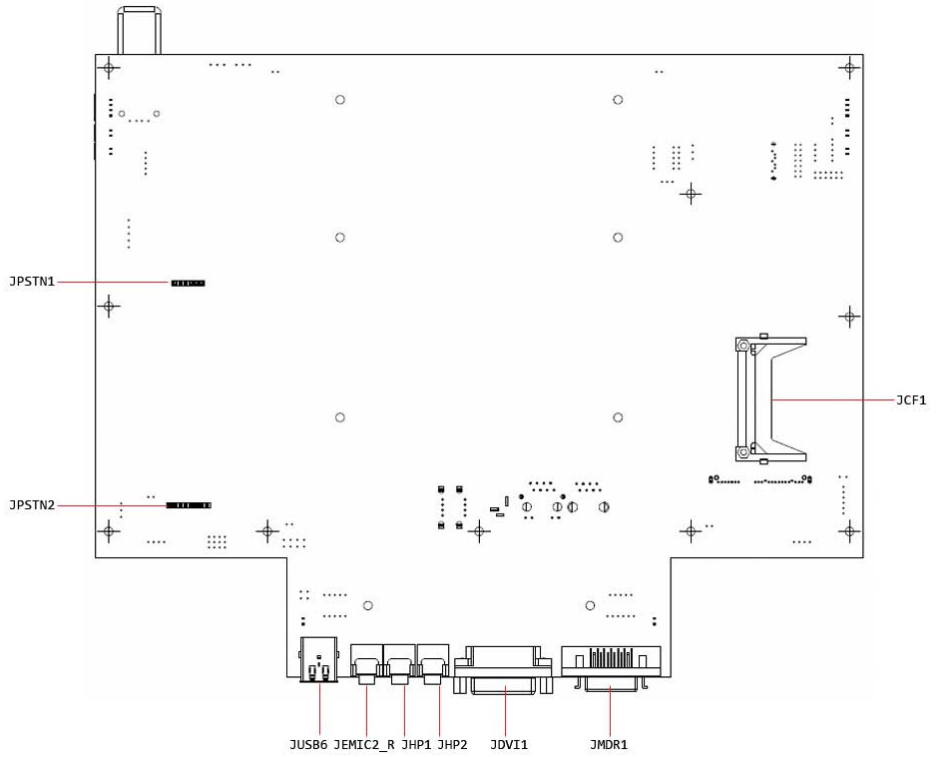
A.2 Atom with Intel 945GME





A.3 Atom with Intel 945GSE





APPENDIX

B
Jumper Setting and Connectors

B.1 Jumper Setting

LVDS Voltage Selector (JLVDSVx)

Pin	1-2	2-3
Voltage	5V	3.3V (default)

AT/ATX Power Mode Selector (JATx)

Pin	1-2	2-3
Mode	AT	ATX

CMOS Clear Jumper (JCMOSx)

Pin	1-2	2-3
Mode	Protected (default)	Clear

Handset 2 Mode Selector

Pin	1-5, 2-6, 3-7, 4-8	5-9, 6-10, 7-11, 8-12
Mode	VOIP	PSTN

Compact Flash Master/Slave Selector (JCFMx)

Pin	Close	Open
Mode	Master	Slave

B.2 Connectors

USB Headers (JUSBx)
5-pin JST PH series connector, 2.0mm pitch.

Pin	Signal
1	VCC
2	D-
3	D+
4	GND
5	SHIELD

SATA Disk Connectors (JSATAx)
1 x 2.5" SATA disk connector with power, 1 x SATA data connector.

Compact Flash Socket (JCFx)

Ethernet Connector (JLANx)
Shielded RJ-45 connector

Power Input Connector (JPWRx)
19V DC power input jack

Serial Port Headers (JCOMx)
12 and 14 pin Hirose DF11 series connector, 2.0mm pitch.

	Signal	Purpose
COM1	TTL	PSTN module
COM2	RS-232	IR/Serial Port
COM3	TTL	Barcode Scanner, etc.
COM4	RS-232	Remote Control, etc.
COM5	TTL	Synaptics Touch Module.
COM6	RS-232/TTL	MSR, etc.

RS-232 header			
Pin	Signal	Pin	Signal
11	+5V	12	+3.3V
9	RI	10	GND
7	RTS	8	CTS
5	GND	6	DSR
3	TxD	4	DTR
1	DCD	2	RxD

TTL (+5V)			
Pin	Signal	Pin	Signal
13	NC	14	NC
11	+5V	12	+3.3V
9	RI	10	GND
7	RTS	8	CTS
5	GND	6	DSR
3	TxD	4	DTR
1	DCD	2	RxD

COM3 Only (+5V)			
Pin	Signal	Pin	Signal
13	NC	14	NC
11	+5V	12	+3.3V
9	RI	10	BAR_SCAN
7	RTS	8	CTS
5	GND	6	DSR
3	TxD	4	DTR
1	DCD	2	RxD

LVDS LCD Connector (JLVDSx)

20-pin JAE FI-SE20P-HF connector

Pin	Signal
1	VDD
2	VDD
3	GND
4	GND
5	TX0-
6	TX0+
7	GND
8	TX1-
9	TX1+
10	GND
11	TX2-
12	TX2+
13	GND
14	TXCLK-
15	TXCLK+
16	GND
17	TX3-
18	TX3+
19	GND
20	GND

LCD Inverter Connector (JINVx)

6-pin JST PH series connector, 2.0mmpitch

Pin	Signal
1	+12V
2	GND
3	ENBKL
4	VR
5	5V
6	PWM

Note: Analog brightness control (VR) ranges between 0V (Max brightness) and 5V (Min brightness).

Front Panel Buttons Connector (JKEYx)

12-pin Hirose DF11 connector, 2.00mm pitch

Pin	Signal	Pin	Signal
11	NC	12	KEY_DET
9	KEY_VOL-	10	GND
7	KEY_PHONE	8	KEY_VOL+
5	KEY_POWER	6	KEY_TV
3	KEY_MENU	4	KEY_INFO
1	KEY_CH+	2	KEY_CH-

GPIO Connector (JGPIOx)

8-pin Hirose DF11 connector, 2.0mm pitch.

Pin	Signal	Pin	Signal
7	GPI4	8	GND
5	GPI3	6	NC
3	GPI2	4	GPO2
1	GPI1	2	GPO1

DVI Connector (JDVIx)

Standard DVI-I connector

Remote Control Connector (JMDRx)

26-pin MDR connector with multiple signals

Pin	Signal	Pin	Signal
1	USBVCC	14	USBD-
2	USBD+	15	USBGND
3	RxD	16	TxD
4	RI	17	GND
5	DTR	18	DSR
6	NURSE1	19	NURSE2
7	NURSE3	20	NURSE4
8	NURSE5	21	NURSE6
9	NURSE7	22	NURSE8
10	MIC_IN+	23	PH_OUT
11	PHONE_GND	24	MIC_IN-
12	REM_HANDSET_HOOK	25	+5V
13	REM_HANDSET_GPI1	26	REM_HANDSET_GPO1

System Power and Reset Buttons (SRST, SPWR)

Two internal tact switches

Analog Phone Module Connector (JPSTNx)

6 x 1 and 8 x 1 wafer, 2.0mm pitch

JPSTN 1	
Pin	Signal
1	DC+3.3V
2	PSTN_TX
3	PSTN_RX
4	ON_HOOK
5	RING_DET
6	GND

JPSTN 2	
Pin	Signal
1	PSTN_TIP
2	PSTN_RING
3	NC
4	NC
5	AN_GND
6	SPK_OUT
7	MIC_P
8	MIC_N

Telephone Line Connector (JPHx)

2-pin JST PH series connector, 2.0mm pitch.

Pin	Signal
1	PSTN_RING
2	PSTN_TIP

Nurse Call Connector (JNURx)

8P8C connector, unshielded.

Pin	Signal
1	NURSE1
2	NURSE2
3	NURSE3
4	NURSE4
5	NURSE5
6	NURSE6
7	NURSE7
8	NURSE8

LED Connectors (JLEDx)

2-pin JST PH connector, 2.0mm pitch.

Pin	Signal
1	+5V
2	LED

Handset Hook Sensor Connectors (JHOOKx)

4-pin JST PH series connector, 2.0mm pitch.

Pin	Signal
1	+5V
2	GND
3	GND
4	ON_HOOK

Handset Connectors (JHSx)

4-pin JST PH series connector, 2.0mm pitch.

Left Connector	
Pin	**Signal**
1	MIC_IN+
2	PH_OUT
3	PHONE_GND
4	MIC_IN-

Right Connector		
Pin	**Signal (VOIP)**	**Signal (PSTN)**
1	MIC_IN+	MIC_P
2	PH_OUT	SPK_OUT
3	PHONE_GND	AN_GND
4	MIC_IN-	MIC_N

Auxiliary Power Connector (JPOx)

2-pin JST PH series connector, 2.0mm pitch.

Pin	Signal
1	+12V
2	GND

IR Connector (JIRx)

5-pin JST PH series connector, 2.0mm pitch.

Pin	Signal
1	+5V
2	IRRX
3	GND
4	IRTX
5	CIRRX

Keyboard and PS/2 Mouse Connector (JKMx)

5P*2(W/O-Pin8) 2.54mm 180D(M) Pin Header

Signal	Pin	Pin	Signal
KDAT	1	2	KCLK
GND	3	4	+5V
MDAT	5	6	MCLK
NC	7	X	Null

Power and Hard Disk Activity LED Connectors (JLEDPx - power, JLEDHx - hard disk)

2x2 pin header with 2.54mm pitch

Pin	Signal
1	PWR-
2	PWR+
3	HDD-
4	HDD+

Touch Panel Connector (JTPx)

Mini Base/Dip 90D 5-pin 1-side

Pin	Signal
1	UL
2	UR
3	Probe
4	LR
5	LL

Signal	Signal Description
UR, UL	5-wire touch panel signal of upper right/left side
PROBE	5-wire touch panel signal of centre
LR, LL	5-wire touch panel signal of bottom right/left side

System Fan and CPU Fan Connectors (JFANx)

3 x 1 wafer, 2.54mm pitch

Pin	Signal
1	GND
2	+12V
3	TAC

Line In Connector (JLINx)

4-pin JST PH series connector, 2.0mm pitch

Pin	Signal
1	LINE_IN R
2	AUD_GND
3	AUD_GND
4	LINE_IN L

Buzzer Connector (JBZx)

2-pin JST PH series connector, 2.0mm pitch

Pin	Signal
1	BUZZER-
2	BUZZER+

I^2C/SMBus based Slave Device Connector from the Southbridge (JSMx)

6-pin JST PH series connector, 2.0mm pitch

Pin	Signal
1	SDA (I^2C Data)
2	SCL (I^2C Clock)
3	ATTN
4	5V
5	3.3V
6	GND

PCI Express Mini Card Slots (JPCIEx)

Sonitor IPS analog front end connector (JIPSx)

10-pin Hirose DF11 connector, 2.0mm pitch

Pin	Signal	Pin	Signal
9	IPS_ENABLE	10	NC
7	MIC2_R_OUT	8	IPS_DET
5	AGND	6	MIC2_L_OUT
3	MIC2_L_IN	4	MIC2_R_IN
1	+5V	2	GND

Internal Microphones Connector (JMIC2_L & JMIC2_R)

2-pin JST PH series connector, 2.0mm pitch.

Left Channel	
Pin	**Signal**
1	MIC2_L
2	AGND

Right Channel	
Pin	**Signal**
1	MIC2_R
2	AGND

Internal Stereo Speaker Connectors (JSPK1_L & JSPK1_R)

2-pin JST PH series connector, 2.0mm pitch.

Left Channel	
Pin	**Signal**
1	SPK_OUT_L-
2	SPK_OUT_L+

Right Channel	
Pin	**Signal**
1	SPK_OUT_R-
2	SPK_OUT_R+

Headphone and Microphone Connectors (JHPx & JEMIC2_R)

3.5mm audio jacks with jack-sensing capability.

Connector	Function	Jack Color
JHP1	Headphone Output	Green
JHP2	Headphone Output	Green
JEMIC2_R	Microphone Input	Red

SPDIF Connector (JSPDIFx)

2-pin JST PH series connector, 2.0mm pitch.

Pin	Signal
1	SPDIF
2	DGND

APPENDIX

C
Hardware Installation

This appendix describes hardware installation.
Sections include:

- Overview of Hardware Installation and Upgrading
- Disassembling the Panel PC
- Installing the 2.5" Hard disk drive (HDD)
- Installing the Central Processing Unit (CPU)

C.1 Overview of Hardware Installation and Upgrading

The Obie Smart Terminal™ consists of a PC-based computer that is housed in a plastic rear panel and a metal shielding case. Your HDD, DDR2 DRAM, power supply, CPU, and so on are all readily accessible by removing the rear panel and shielding case. Any maintenance or hardware upgrades can be easily completed after removing the rear panels and shielding case.

Note: The color LCD display installed in the Obie Smart Terminal™ is high quality and reliable. However, it may contain a few defective pixels which do not always illuminate. With current technology, it is impossible to completely eliminate defective pixels. JAOtech is actively working to improve this technology.

Warning: Do not remove the plastic rear cover until you have verified that no power is flowing within the panel PC. Power must be switched off and the power cord must be unplugged. Every time you service the panel PC, you should be aware of this.

C.2 Disassembling the Obie Smart Terminal™

The following is the standard procedure for disassembling the Obie Smart Terminal™ to upgrade your system. All procedures are illustrated in Figure C.1.

Figure C.1: Disassembling the plastic rear cover of the Obie
Unscrew the screws that secure the plastic rear cover, and then remove the covers

C.3 Installing the 2.5" Hard Disk Drive (HDD)

You can attach one enhanced Integrated Device Electronics (IDE) hard disk drive to the Obie Smart Terminal™ which uses a PCI local-bus interface. The following are instructions for installation:

1. Detach the HDD bracket by unscrewing the 2 screws on the top of the HDD bracket.
2. Place the HDD inside the HDD bracket and tighten 2 screws from both sides of the HDD bracket.
3. The HDD cable (1 x 44-pin to 1 x 44-pin) is located on the mainboard. Connect the HDD cable to the Obie on board connector. Make sure that the HDD is the correct way around and that Pin 1 on the HDD and connector (CN6), correspond.

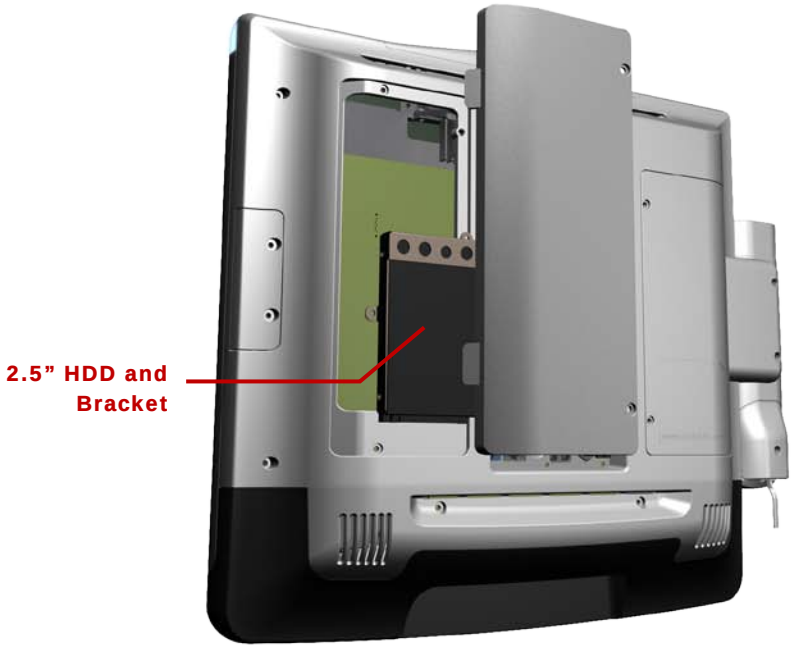


Figure C.2: Installing the primary 2.5" HDD

C.4 Installing the Central Processing Unit (CPU)

The Obie Smart Terminal’s central processing unit (CPU) cannot be upgraded.

Warning: The CPU may be damaged if operated without a heatsink and a fan.

Caution: Always disconnect the power cord from your panel PC when you are working on it. Do not make connections while the power is on as sensitive electronic components can be damaged by the sudden rush of power. Only experienced electronics personnel should open the panel PC.

APPENDIX

D

VESA Mounting

This appendix describes VESA mounting.

The Obie also provides standard VESA mounting to help system integrators conveniently integrate the terminal into their system. It is recommended that customers use mounting brackets provided by JAOtech to prevent the unreliable fixing of Obie Smart Terminal™.

VESA mount installation should be carried out by a professional technician. Please contact the service technician or your retailer if you need this service. Installation instructions follow:

1. The wall-mounting attachment is comprised of two parts: one back bracket, and one mounting bracket. (See Figure D.1)

2. First attach the back bracket to the rear cover of the Obie, securing it in place with four of the Phillips-head screws provided.

3. Attach the mounting bracket to the wall or another flat surface. The back bracket slides vertically from the top into the mounting bracket. It can be secured to the mounting bracket by screwing four of the Phillips-head screws provided through the corresponding holes at the tops of the mounting bracket.

Warning: Be sure to secure the screws of the mounting bracket tightly. Injuries could result if the Obie is not properly secured to the mounting bracket.

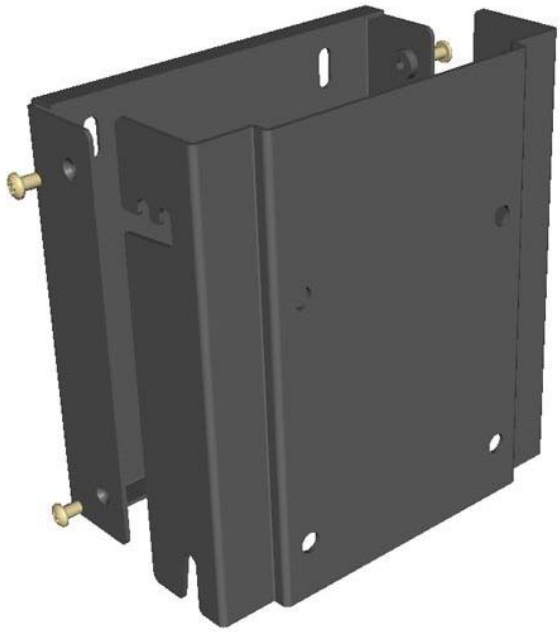


Figure D.1: Obie wall bracket

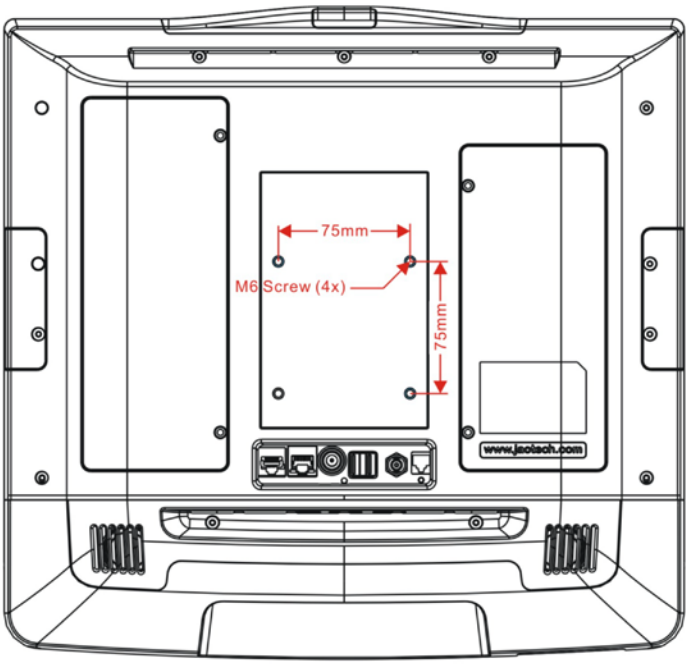


Figure D.2: VESA mounting dimension diagram (75 x 75 mm)

Further Information

If you require any more information regarding this product or any others in the JAOtech range then please visit our website at *www.jaotech.com*, email us at *sales@jaotech.com*, or contact our UK sales team using the numbers below:

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