



Visionscape® I-PAK® SE2

Product Information

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Visionscape I-PAK SE2 Product Info

Introduction

This document contains safety information for your protection and the protection of your equipment, order numbers, mechanical and electrical information, and technical data for the I-PAK SE2 enclosure.

IMPORTANT: The diagrams in this document may contain a different version number than this release but the functionality remains the same.

FIGURE 1-1. Visionscape® I-PAK® SE2



Getting Help

This manual provides basic information on the I-PAK SE2 hardware and installation. For more detailed information, refer to the manuals included on the I-PAK USB drive.

Safety

WARNING!

In the event of a device fault, interrupt the power supply immediately. Inform the customer service personnel responsible. Malfunctions can occur when the operator controls or power cable are damaged or when liquids or foreign objects penetrate the device.

CAUTION:

Following the results of a risk analysis, additional protection equipment on the machine or the system is necessary to avoid endangering persons. With this, especially the programming, configuration and wiring of the inserted I/O modules have to be executed, in accordance with the necessary risk analysis identified safety performance (SIL, PL or Cat.). The intended use of the device has to be ensured. The proper use of the device has to be verified with a function test on the system. With this programming, configuration and wiring errors can be identified. The test results have to be documented and, if necessary, inserted into the relevant inputs.

UPS

CAUTION: To reduce the risk of fire, connect only to a circuit provided with a 20 Amp maximum branch circuit overcurrent protection in accordance with the National Electrical Code ANSI/NFPA. Equipment must be connected to a grounded outlet. The equipment must be connected to a socket outlet that is in close proximity to the unit and is easily accessible.

CAUTION! De-Energizing Safety

- If the equipment has an internal energy source (the battery), the output may be energized when the unit is not connected to an AC power outlet.
- To de-energize pluggable equipment: first press the Off button for more than one second to switch the equipment off. Next disconnect the equipment from the AC power outlet. Finally, disconnect the battery.
- To de-energize permanently wired equipment: set the power switch to standby. Next, set the AC circuit breaker to standby. Then, disconnect the batteries (including any expansion units). Finally, disconnect the AC power from the building power supply.
- Pluggable equipment includes a protective earth conductor which carries the leakage current from the load devices (computer equipment). Total leakage current must not exceed 3.5 mA.
- Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly effect its safety or effectiveness is not recommended.

WARNING! Battery Safety

- This equipment contains potentially hazardous voltages. Do not attempt to disassemble the unit. The only exception is for equipment containing batteries. Battery replacement using the procedures below is permissible. Except for the battery, the unit contains no user serviceable parts. Repairs are performed only by factory trained service personnel.
- Batteries must be recycled. Deliver the battery to an appropriate recycling facility or ship it to the supplier in the new battery's packing material. See the new battery instructions for more information.

CAUTION:

Do not dispose of batteries in a fire. The batteries may explode.

Do not open or mutilate batteries. They contain an electrolyte which is toxic and harmful to the skin and eyes.

To avoid personal injury due to energy hazard, remove wrist watches and jewelry such as rings when replacing the batteries. Use tools with insulated handles.

Replace batteries with the same number and type of batteries as originally installed in the equipment.

Floorstand

WARNING!

You must securely fasten the floorstand to the floor at all times.

Electrical Connection

WARNING!

Disconnect the device from the mains before every intervention.

Do not touch the power lines or data transmission lines during electrical storms, and do not connect any cables.

Input AC power to the I-PAK enclosure, or the UPS (if installed) must be provided through an external electrical disconnect switch.

When a UPS is installed, AC power will still be present inside the I-PAK enclosure when the external electrical disconnect switch is turned off.

System Expansions

Only install system expansion devices designed for this device. If you install other expansions, you may damage the system or violate the safety requirements and regulations for radio frequency interference suppression. Contact your technical support team or where you purchased your PC to find out which system expansion devices may safely be installed.

If you install or exchange system expansions and damage your device, the warranty becomes void.

High Frequency Radiation

CAUTION: Unintentional Operating Situations

High frequency radiation, e.g., from cell phones, can cause unintentional operating situations under some circumstances.

Handling and Disposal of Lithium Batteries

WARNING!

Danger of Explosion and the Release of Harmful Substances!

Do not throw lithium batteries into fire, do not solder onto the cell body, do not open, do not short circuit, do not reverse pole, do not heat above 100 °C, dispose of according to regulations, and protect from direct sunlight, moisture and condensation.

Replace lithium batteries with the same brand or a brand recommended by the manufacturer.

Dispose of used lithium batteries as hazardous waste, individually, in accordance with the local regulations.

WARNING!

Unauthorized opening of and improper repairs to the device may result in substantial damage to equipment or endanger the user.

Contents of Shipment

Overview of the Parts

The I-PAK SE2 (stainless enclosure) unit contains:

- IP65 stainless steel enclosure
 - 19" ELO Resistive Touchscreen
 - Intel C2D, 2.2 GHz, 2 MBC Processor
 - 2GB RAM
 - Windows XP Pro SP3
- Integrated Visionscape PCI 0740 Framegrabber board
- Integrated Combination I/O board
- Cable(s) as required for selected framegrabber option
- Stainless Steel Resistive Touch Mouse Pad Assembly (includes mounting bracket)
- Latest Visionscape I-PAK software and documentation

Recommended Accessories

- Uninterruptible Power Supply (UPS) kit includes:
 - 120V or 230V UPS
 - Power cables (I-PAK, Input Power)
 - Serial Communications Cable
- Floorstand or Shelf Mount

Note: Shelf mount or floorstand is required in order to mount the touchpad assembly directly to the system enclosure.

Part Numbers and Product Descriptions

TABLE 1-1. Order Numbers and Product Descriptions

Part Number	Short Description	Full Description
GMV-IP74-0SE2	I-PAK SE2, 0740, PC	I-PAK SE2 Machine Vision System with Industrial PC in Stainless Steel Enclosure and Visionscape I-PAK; includes Visionscape I-PAK User Software according to FDA Standard CFR21 Part 11, Panel PC, 0740 Board, Stainless Steel Enclosure, Internal Power Cable, Camera Adapter Cable, I/O Board Connection Kit, External I/O Board, Touchpad
GMV-IP74-0SK0	I-PAK SK, 0740, Board and S/W Kit	I-PAK SK, Visionscape I-PAK; includes Visionscape I-PAK User Software according to FDA Standard CFR21 Part 11, Visionscape 0740 PCI Board plus software, 0740 PCI Framegrabber with Analog Interface & Visionscape Software License, includes PCI Board, Internal Power Cables, Connection Kit for External I/O Boards, Camera Cable Adapter

Accessories

TABLE 1-2. Accessories

Part Number	Short Description	Full Description
98-000229-01	I-PAK SE2 Shelf Mount System	Stainless Steel Feet for Shelf Mounting I-PAK SE2; set of two
98-000255	I-PAK SE2 Accessory DVD Drive Kit	Optional DVD Drive Kit; mounts internally
98-000256	I-PAK SE2 Replacement Touchpad	Optional replacement or spare touchpad for I-PAK SE2
98-200431	I-PAK SE2 Tilt and Swivel Floor Stand	Stainless Steel Column, I-PAK SE2 Tilt and Swivel Floor Stand for Floor Mounting I-PAK SE2
98-209181	UPS 120VAC, US, with cables	Uninterruptible Power Supply (UPS) Module, 110V AC, Connector for USA; To Connect to I-PAK; includes: UPS 110V AC, Power Cable With Connector for USA, Power Cable & Serial Communication Cable to I-PAK
98-209191	UPS 230VAC, EU universal, with cables	Uninterruptible Power Supply (UPS) Module, 230V AC, Universal Connector; To Connect to I-PAK; includes: UPS 230V AC, Power Cable With Connector for Germany, France, Spain, Netherlands, Belgium, Sweden, Austria, Finland; Power Cable 220VAC 3M UK Plug to UPS Power Cable & Serial Communication Cable to I-PAK
98-VS01-0CX0	Analog Camera A33A VGA Progressive Scan	Standard resolution (VGA) compact analog camera
98-VS31-0CX0	Analog Camera A152A SXGA	1.3 megapixel (SXGA) resolution analog camera
98-VS0X-1XC0	Hi-Res Cam Video and Power Cable	Camera cable, 10, 25, or 50 feet, for 98-VS01-0CX0 and 98-VS31-0CX0

Setting Up the I-PAK SE2

Opening the Unit

In order to connect AC power, camera cable(s), field I/O wiring, and install mounting options, open the front of the unit by loosening the two Allen head screws with a 5/32" Allen wrench.

FIGURE 2-1. Allen Head Screws at Front of Unit



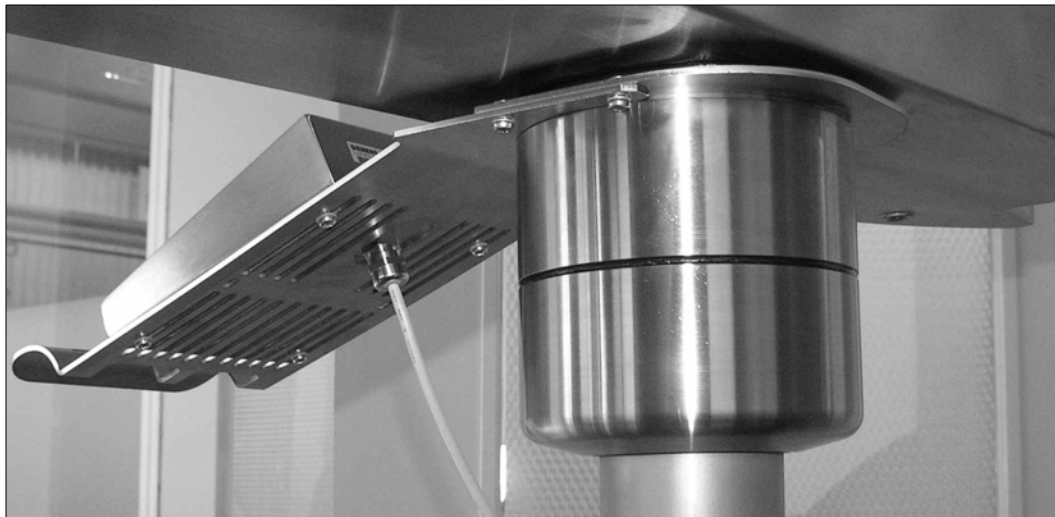
Mounting the Enclosure to the Stainless Steel Floorstand (IP65)

WARNING!

YOU MUST SECURELY FASTEN THE STAINLESS STEEL FLOORSTAND TO THE FLOOR AT ALL TIMES.

With the front open, mount the enclosure to the coupling. Make sure the gaskets are in the correct place.

FIGURE 2–2. Mounting Enclosure to Stainless Steel Floorstand (IP65) w/Touchpad Attached



Attaching the Optional Shelf Mount

WARNING!
YOU MUST SECURELY FASTEN THE SHELF MOUNT TO THE SHELF OR TABLE AT ALL TIMES.

FIGURE 2-3. Shelf Mount



CAUTION! UNLESS UNIT IS BOLTED DOWN TO A RUGGED SURFACE, UNIT WILL BE UNSTABLE IF DOOR IS OPEN.

STEP 1: REMOVE THE (4) 1/4-20 SCREWS, THE NEOPRENE BACKED WASHERS AND THE 1/4-20 LOCKNUTS FROM THE BOTTOM OF UNIT.

STEP 2: ATTACH THE STAINLESS STEEL MOUNTING FEET ONTO THE ENCLOSURE AS SHOWN. SECURE WITH THE (4) 1/4-20 SCREWS PROVIDED WITH THE KIT THROUGH THE FOOT AND ENCLOSURE HOLES, AND ADD THE NEOPRENE BACKED WASHERS AND THE 1/4-20 LOCKNUTS INSIDE THE UNIT.

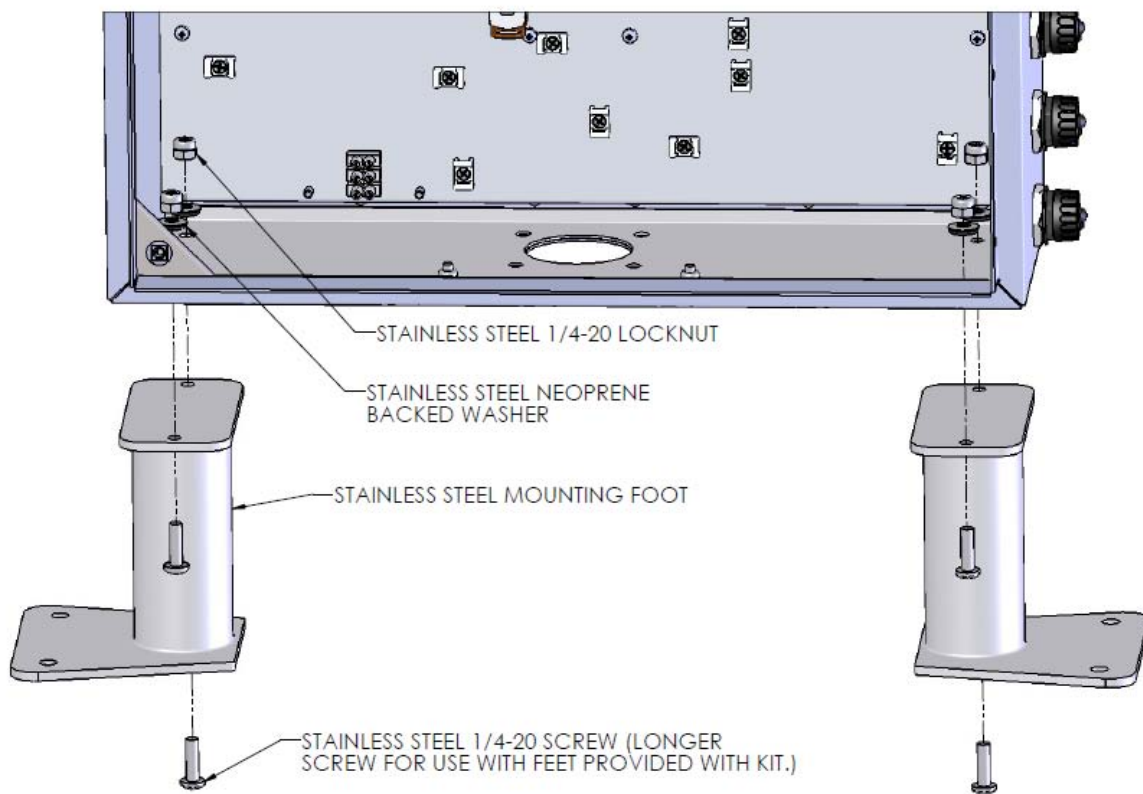
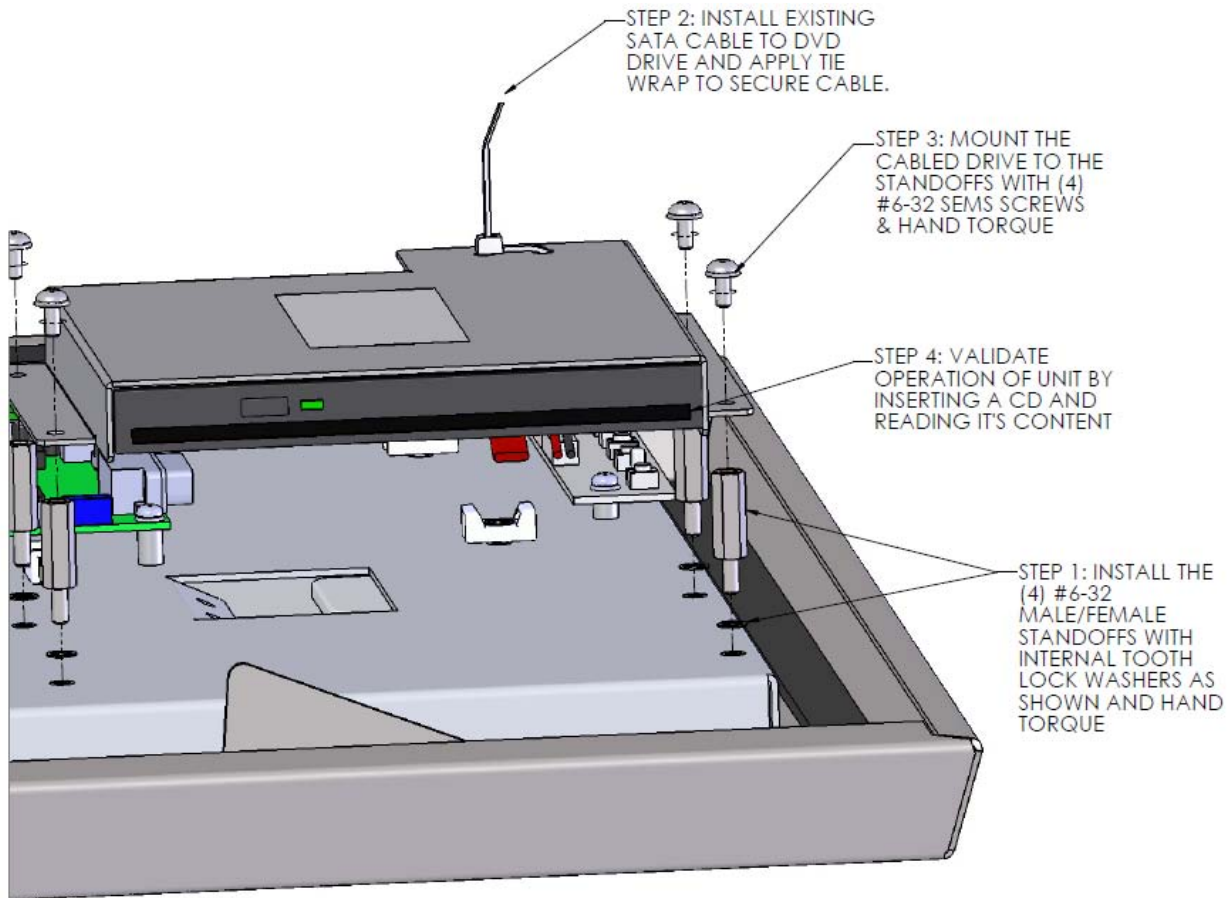


FIGURE 2-4. Enclosure with Shelf Mount Option Installed



Installing the Optional DVD Drive



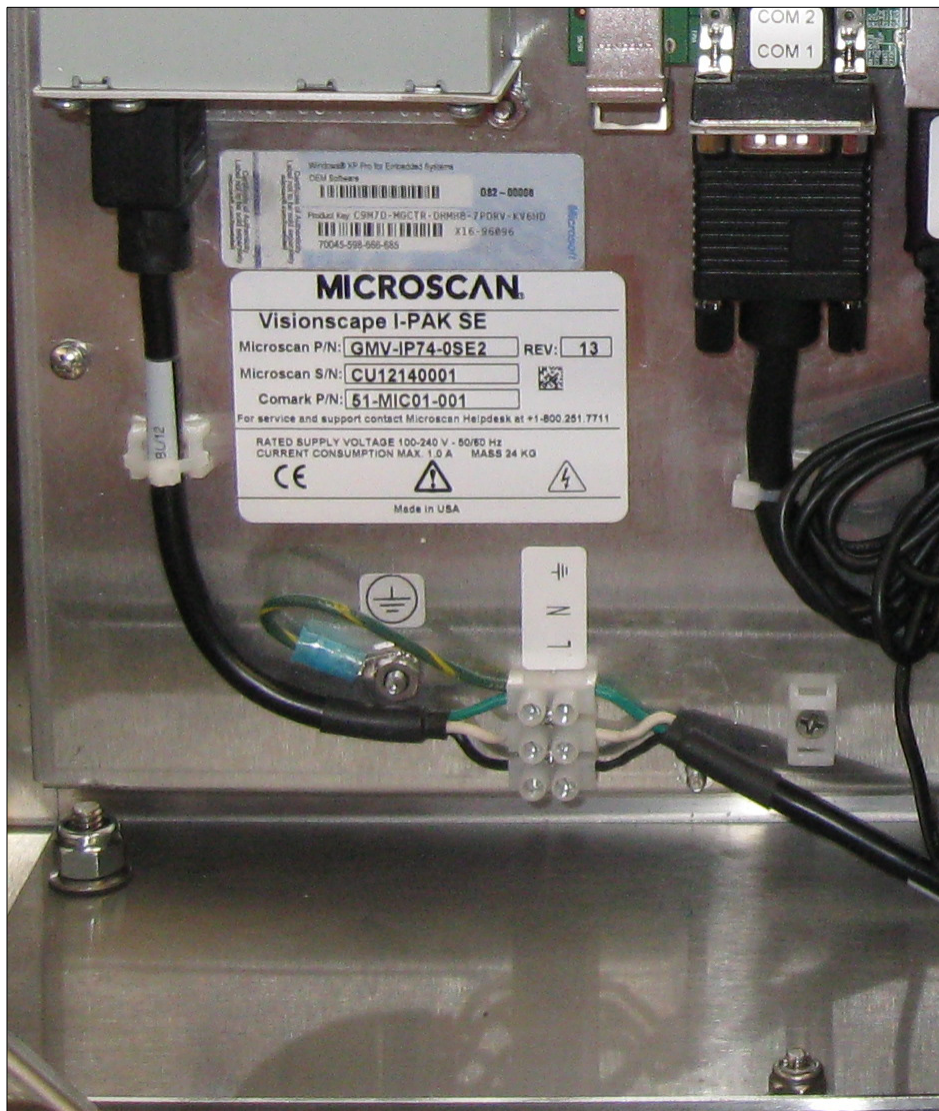
Electrical Wiring

Depending on mounting configuration, wiring for I/O, camera and AC power must be done after mounting the I-PAK SE2 to floorstand or shelf mount.

Note: The coupling must be installed first.

Wire AC power in accordance with Figure 2-5.

FIGURE 2-5. AC Power Wiring



Protective Earth Ground

The I-PAK SE2 chassis is pre-wired to ground on the terminal strip.

Cabling Overview

STEP 1: INSTALL THE TIE WRAPS IN LOCATIONS SHOWN (WITH LARGE OPEN LOOPS.)

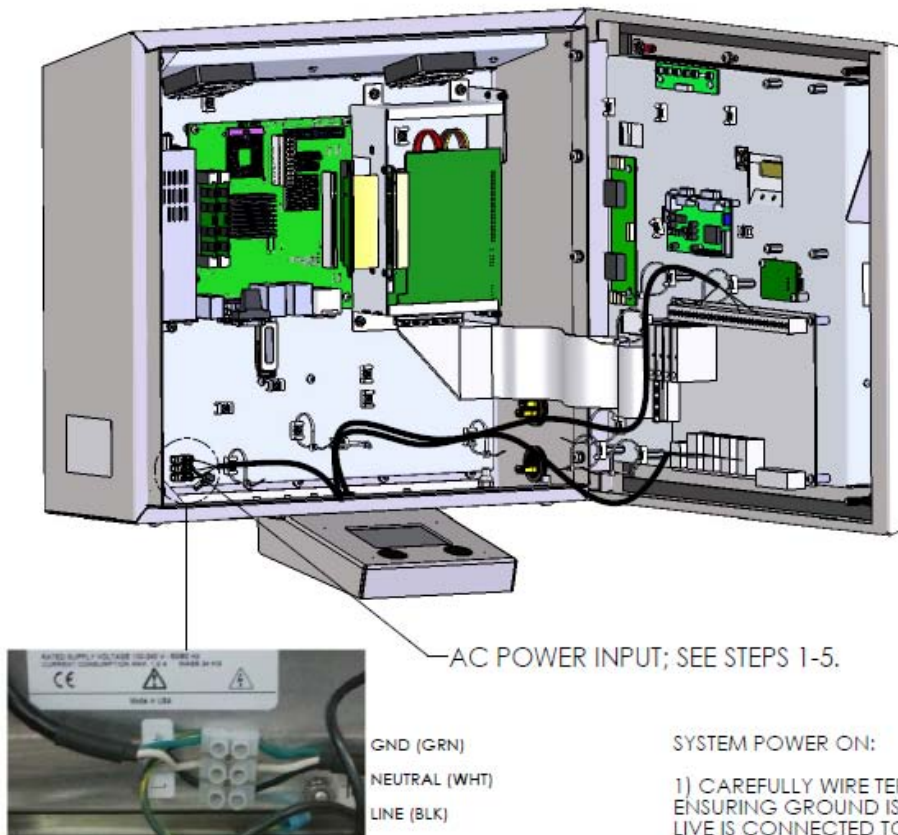
STEP 2: ROUTE FIELD WIRING THROUGH LOOPS TO DEFINED LOCATIONS PER SCHEMATIC/WIRING DIAGRAM.

STEP 3: DRESS WIRE BUNDLES EVERY 4"-6" WITH TIE WRAPS LOOSELY INSTALLED.

STEP 4: TEST SYSTEM FOR CORRECT OPERATION.

STEP 5: TIGHTEN ALL TIEWRAPs AND CHECK DOOR FOR CLOSURE.

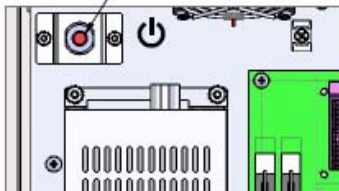
NOTE: DO NOT STORE EXCESSIVE CAMERA CABLES INSIDE THE UNIT.



AC POWER INPUT; SEE STEPS 1-5.

GND (GRN)
NEUTRAL (WHT)
LINE (BLK)

LOCATION OF RED RESET BUTTON



SYSTEM POWER ON:

1) CAREFULLY WIRE TERMINAL BLOCK AS SHOWN, ENSURING GROUND IS CONNECTED TO GROUND; LIVE IS CONNECTED TO LIVE; NEUTRAL IS CONNECTED TO NEUTRAL.

2) PLUG POWER CORD INTO OUTLET; SYSTEM WILL AUTOMATICALLY BOOT UP & RUN IPAK.

NOTE: RED POWER BUTTON MAY ALSO BE USED TO INITIATE SYSTEM BOOT ONCE POWER CORD IS PLUGGED INTO OUTLET.

SYSTEM SHUT DOWN:

- 1) FROM START MENU, SELECT "TURN OFF COMPUTER."
- 2) SELECT "TURN OFF." -SYSTEM WILL THEN SHUT DOWN. PRESSING RED POWER BUTTON WILL ALSO INITIATE SYSTEM POWER DOWN.
- 3) UNPLUG POWER CORD FROM OUTLET.

UPS

FIGURE 2-6. UPS (230V Unit Shown)

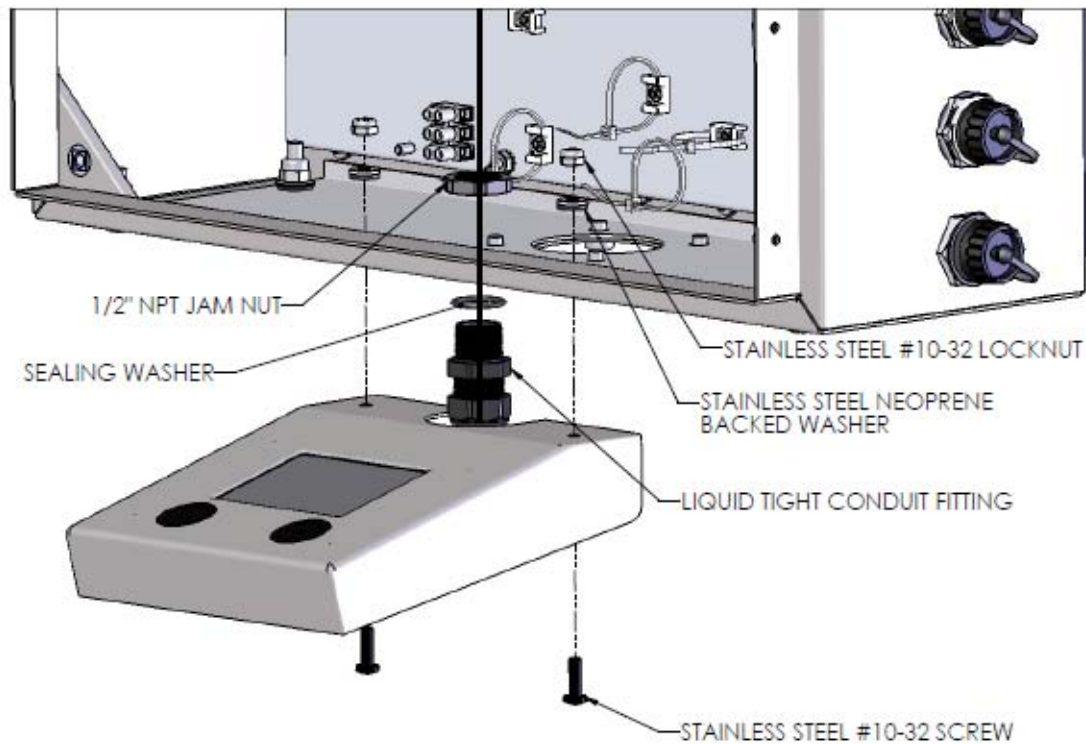


Connecting UPS

To connect and configure the UPS, see Appendix C of the Visionscape® I-PAK User Manual (included on the I-PAK USB drive). The UPS option kit includes all the necessary cables to connect the UPS to the I-PAK SE2 and input power.

For more details, please read the wiring information that comes with the UPS.

Installing the Touchpad

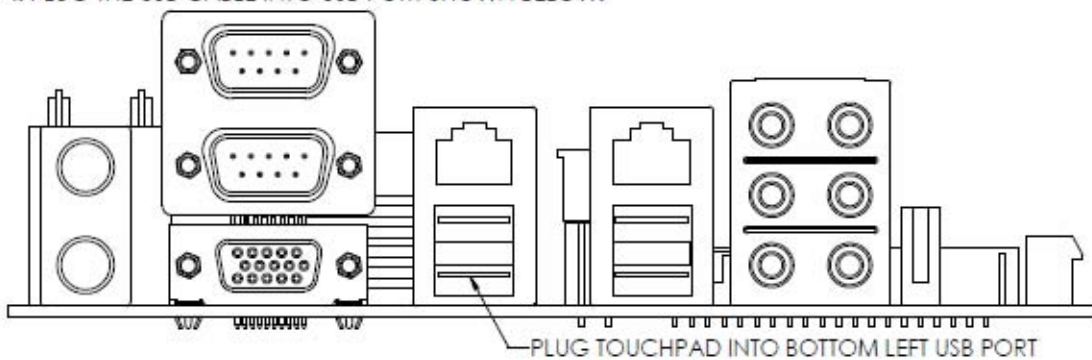


STEP 1: REMOVE THE (2) #10-32 SCREWS, THE NEOPRENE BACKED WASHERS AND THE #10-32 LOCKNUTS FROM THE CENTER OF UNIT.

STEP 2: INSTALL CONDUIT FITTING AND ORING ON BOTTOM OF UNIT. TIGHTEN THE 1/2" NPT JAM NUT INSIDE THE ENCLOSURE WITH A WRENCH.

STEP 3: INSTALL THE (2) #10-32 SCREWS THROUGH THE TOUCHPAD FRAME HOLES, AND ADD THE NEOPRENE BACKED WASHERS AND THE #10-32 LOCKNUTS INSIDE THE UNIT.

STEP 4: PLUG THE USB CABLE INTO USB PORT SHOWN BELOW.



APPENDIX A Specifications

TABLE 1-1. Specifications

Display	
Size	19" LCD
Resolution	1280 x 1024
Luminance	300 NIT
Contrast Ratio	800:1
Viewing Angle	170 Left/Right, 160 Up/Down
Controller	VGA Prompt
Backlight Inverter	Prompt
OSD	Mounted on back of door
Dimming Control	Yes; OSD set
Touch Screen	Resistive TS, ELO controller, USB
CPU	
Processor	Intel, C2D, 2.2 GHz, 2 MBC
CPU Speed	2.2 GHz
FSB	677/800/1066 MHz
Form Factor	Mini-ITX
Dimensions	6.7" x 6.7"
Memory Type	DDR2-667/800
Memory Size	(2) 1GB DDR2-667, PC2-5300 (total 2GB)
Serial Ports	3 on-board header
USB	Eight (three connected externally)
Parallel	One (no external connection)
Video	VGA and two LVDS (internal connections)
LAN	Two 10/100/1,000
Audio	ALC888 CODEC Audio (no external connection)
Keyboard/Mouse	PS/2 Keyboard, PS-2 Mouse (no external connection)
ISA Slots	None
AGP Slot	None
PCI Slots	One 32-Bit
PCI Express Slots	One X16, One Mini PCIe

TABLE 1-1. Specifications

Peripherals		
FDD	None	
CD/DVD	Optional SATA	
HDD	160GB SATA	
CF	None	
Keyboard	None	
Trackpad	USB Type A	
Other	None	
Power		
Voltage	115/220 Volts 50/60 Hz	
Current	0.9/0.45 Amps	
Power Consumption	100 Watts	
Environmental		
Enclosure Rating	N4X/IP65	
Operating Temp.	0 to 40° C	
Storage Temp.	-20 to 60° C	
Vibration	Operational	
Shock	Shipping	
EMC Emissions	Yes - FCC	
EMC Immunity	Yes	
Approvals	N/A	
General		
Dimensions	19.6 x 16.9 x 7.1 in.	
Weight	53 lb.	
Material	SS	
Color	N/A	
Finish	Grained vertically (320 grit)	
Mounting	Tilt, Swivel; Bracket	
MTBF	30k hrs.	
MTTR	20 mins.	
Verification Test Requirements		
Temperature	High Operational	40° C
	Low Operational	0° C
	High Non-Operational	60° C
	Low Non-Operational	-20° C
Vibration	Operational	(Full sweep) 50 - 500 Hz 0.5 G
	Non-Operational	N/A

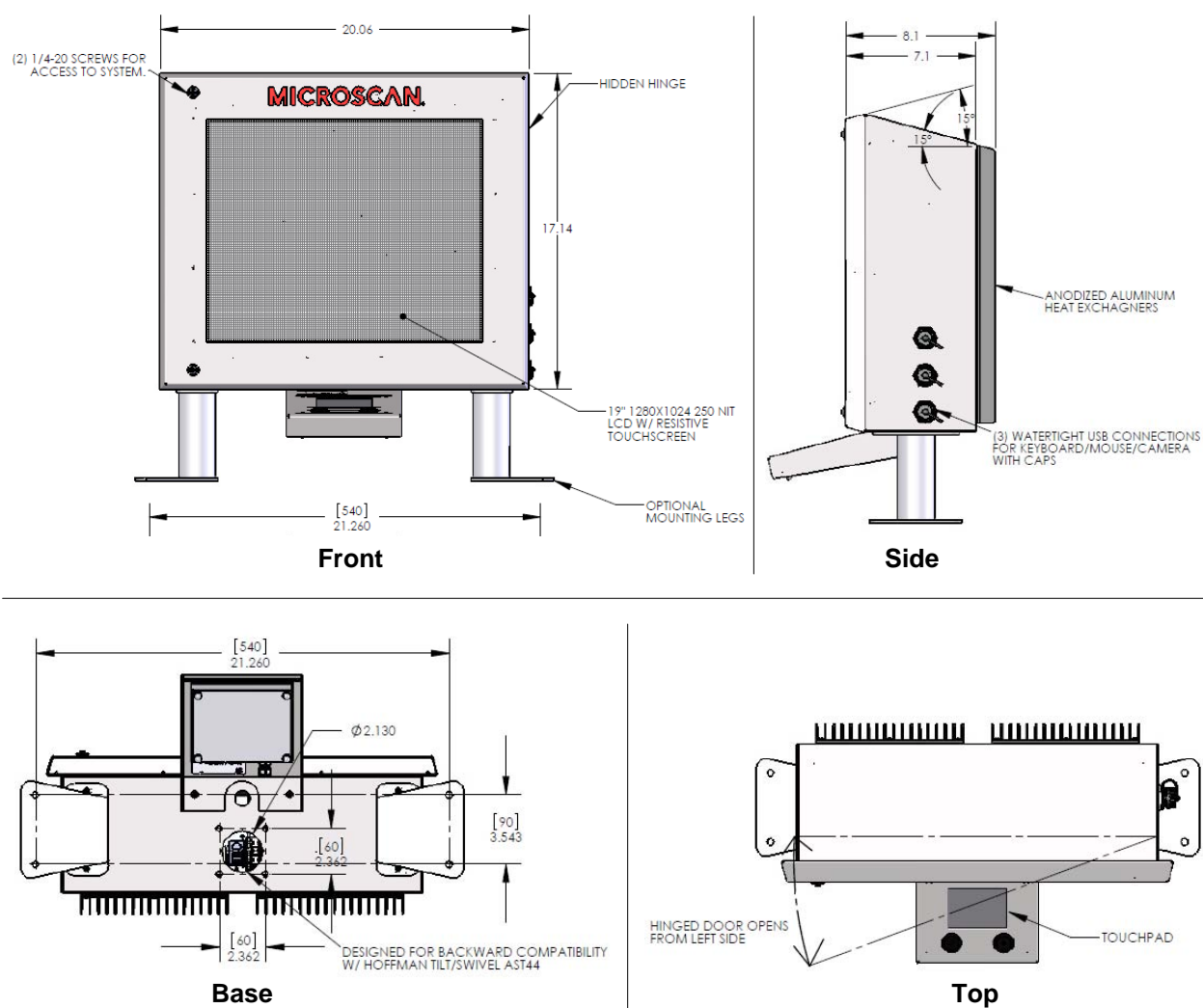
TABLE 1-1. Specifications

Shock	Operational	N/A
	Non-Operational	Package drop test from 30" on 12 sides
CE 61000-6-2	Conducted Emissions (EN55022 Class A)	
	Radiated Emissions (EN55022 Class A)	
	Conducted Immunity (61000-4-6)	
	Radiated Immunity (61000-4-3)	
	ESD (61000-4-2)	
	Power Dips and Intrap. (61000-4-11)	
	Surge (61000-4-5)	
	EFT (61000-4-4)	
	Mains Harmonics (61000-3-2)	
	Mains Flicker (61000-3-3)	
Safety	EN 60950	
Manufacturing Test Requirements		
BIT Test / Burn-In	Network logging	
Mem Test		
Prime 95		

APPENDIX B Mechanical Design

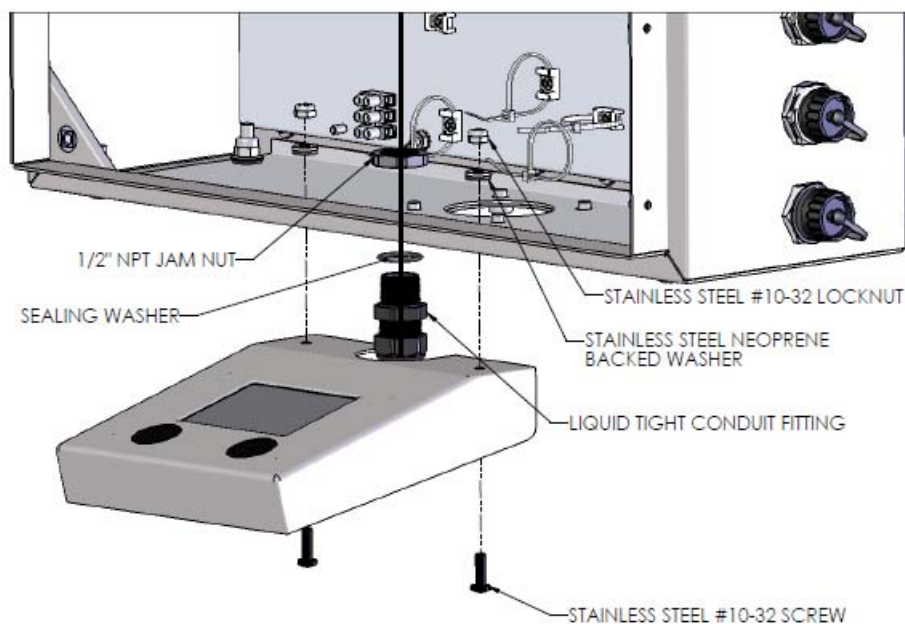
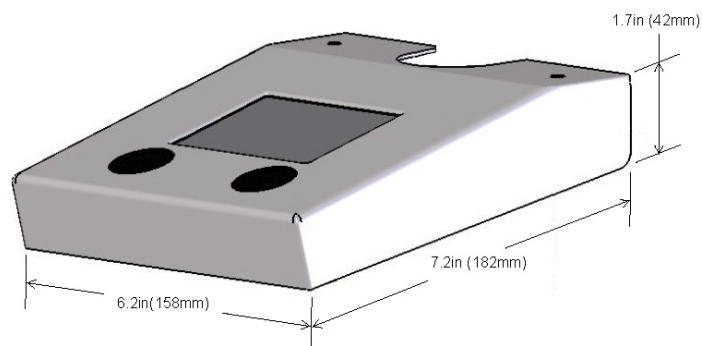
Enclosure

FIGURE 2-1. Stainless Enclosure



Touchpad

FIGURE 2-2. Touchpad

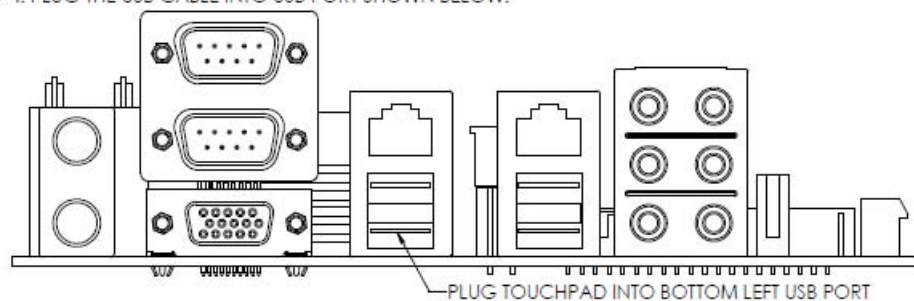


STEP 1: REMOVE THE (2) #10-32 SCREWS, THE NEOPRENE BACKED WASHERS AND THE #10-32 LOCKNUTS FROM THE CENTER OF UNIT.

STEP 2: INSTALL CONDUIT FITTING AND ORING ON BOTTOM OF UNIT. TIGHTEN THE 1/2" NPT JAM NUT INSIDE THE ENCLOSURE WITH A WRENCH.

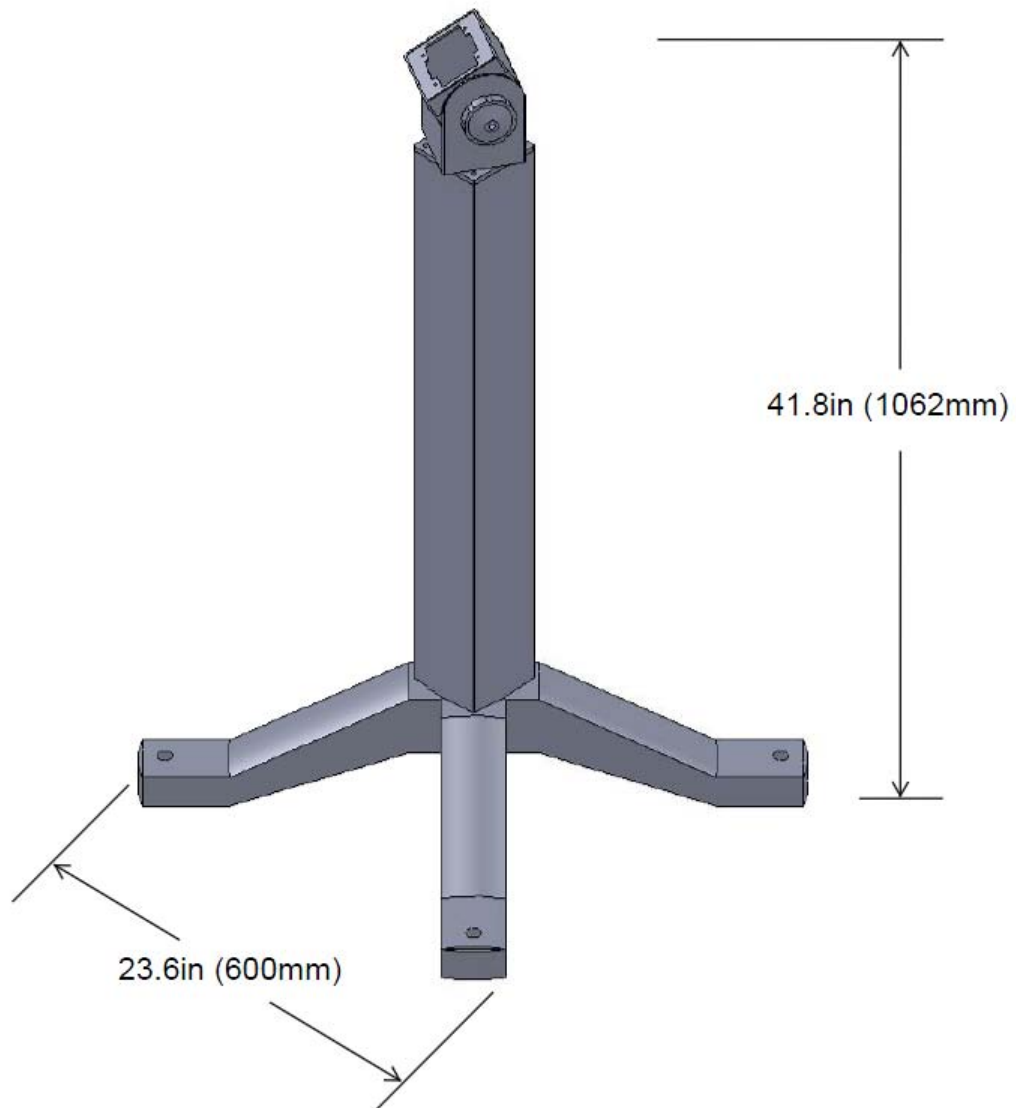
STEP 3: INSTALL THE (2) #10-32 SCREWS THROUGH THE TOUCHPAD FRAME HOLES, AND ADD THE NEOPRENE BACKED WASHERS AND THE #10-32 LOCKNUTS INSIDE THE UNIT.

STEP 4: PLUG THE USB CABLE INTO USB PORT SHOWN BELOW.



Floorstand

FIGURE 2-3. Floorstand



APPENDIX C — **Approvals**

CE

The Visionscape I-PAK SE2 has been tested for compliance with CE (Conformité Européenne) standards and guidelines, and has been found to conform to applicable CE Standards, specifically the EMC requirements EN61326:1997/A1:1998/A2:2001/A3:2003, EN61000-6-4:2001, EN61000-6-2:2001 for Class A products, Class A Radiated Emissions, and Class A conducted Emissions. And the Low Voltage and Safety requirements EN60950-1:2006.

The Visionscape I-PAK SE2 has been tested by independent electromagnetic compatibility and safety testing laboratories in accordance with the applicable specifications and instructions.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense. Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

