

# EMP 350W User Reference Manual

Revision 1.0 (080722)



## Chassis Specification of EMP 350W

<b>Chassis</b>	External Chassis	Aluminum/Aluminum Extrusion
	Internal Chassis	Aluminum alloy frame
	Form Factor	Passive Backplane
<b>Display</b>	LCD	17" WXGA+ (WUXGA Optional)
	Resolution	1440 x 900 (1920x1200 Optional)
	Color	256k colors
<b>Integrated Peripherals</b>	Speaker	2x
	Amplified Board	2x 2 Watt
	Cooling Fan	1x 80mm
<b>Drive Bay</b>	3.5" Drive Bay	1x
	3.5" HDD Internal	1x (Shock Mounted)
	5.25" Drive Bay	N/A
	Slim DVD	1x
<b>Expansion Slot</b>	Available Slot	10x Slot
<b>Input Peripheral</b>	Keyboard	105-Key Cherry Switch Keyboard
	Pointing Device	Integrated TouchPad

## Environmental Specification EMP 350W

<b>Environmental Specification</b>	Operating Temp	0° C - 50° C
	Relative Humidity	20-80% (non-condensing)
	Shock	10G operating, all axes
	Vibration	1.25G @ 10-100Hz operating, all axes
	Compliance	CE & FCC

<b>Power</b>	Power supply	400W, 1U, 110VAC ~ 220VAC
<b>Dimensions</b>	H	310mm
	W	440mm
	D	225mm
<b>Weight</b>	Net weight	27LB (System Weight)
<b>Transport Case</b>	Carrying Case	Padded carrying bag with wheels

## 1.0 Introduction

### Portable Case

The EMP 350W is a robust lunchbox computer built using heavy duty metal to provide tough, go-anywhere unit ideally suitable for test and measurement applications. Every EMP 350W comes equipped with high resolution LCD displays, vast amount of external ports and easy access to its expansion ports for immediate system upgrade or maintenance. Functional practicality combined with the simple and polished design, the EMP 350W with its extra-rugged construction to sustain bumps and impacted blows is the most cost-effective, durable and efficient portable solution for your needs.

### Instant Setup

Setting up is no hassle. EMP 350W enables you to be up-and-running in seconds without complicated setup. Our all-in-one design has integrated keyboard, mouse, and display into a total package for your convenience.

### LCD Display Information

The EMP 350W has built-in high resolution LCD screens. With our engineering advancement, LCD is integrated seamlessly into the chassis with protective glass.

The EMP 350W is integrated with high brightness, high contrast and fast response LCD screens with optional ultra high resolution display.

### Processor Information

The EMP 350W chassis is designed to accommodate variety of passive backplane and single host board. With performance, system responsiveness, and efficiency, there is no slowing down for multiple computing intensive programs and processing. The available choice of processor board can be customized by your selection.

### Drive Configuration

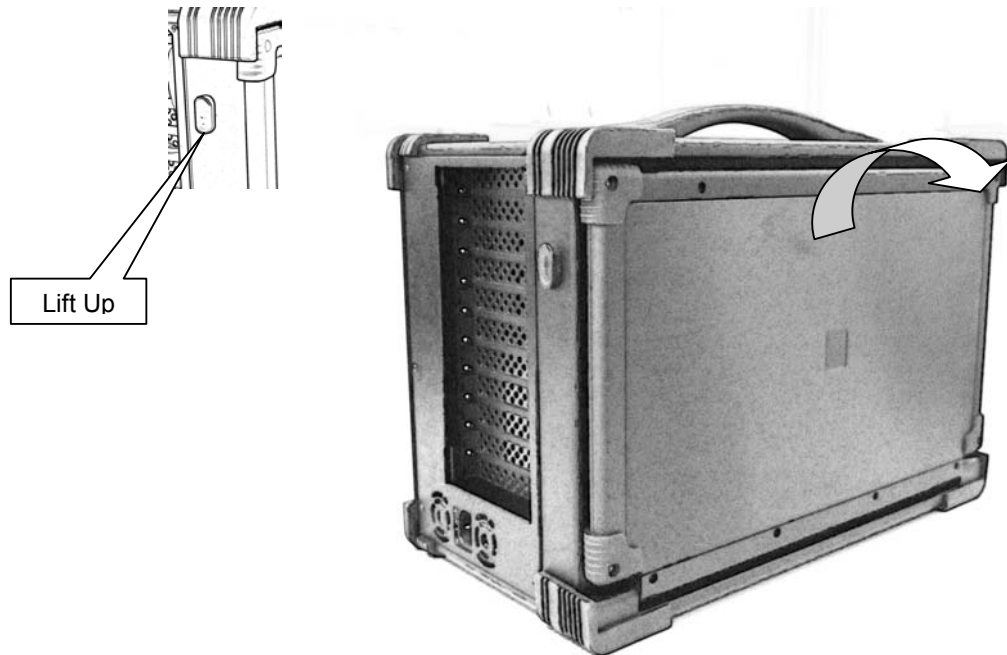
The EMP 350W is available with slot loading DVD-RW for both single and dual layer writing capability on reading. It has 1 open 3.5" drive bay and an internal 3.5" SATA drive tray that can be expanded further depending on your needs. Whether is speed or capacity requirement that you needs, the flexibility of setting up multiple drive capacity can help greatly where storage space is at premium.

### Slot Configuration

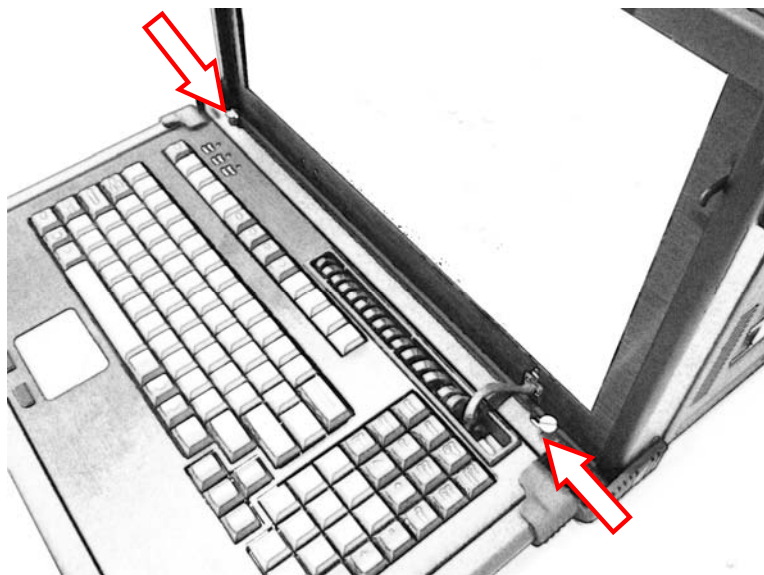
The EMP 350W has 10 available open slots that can be configure with backplane to mate with the add-in cards of your choice. Whether is specific high speed data acquisition board or power source board, it will meet your most demanding needs.

## 2.0 Operation

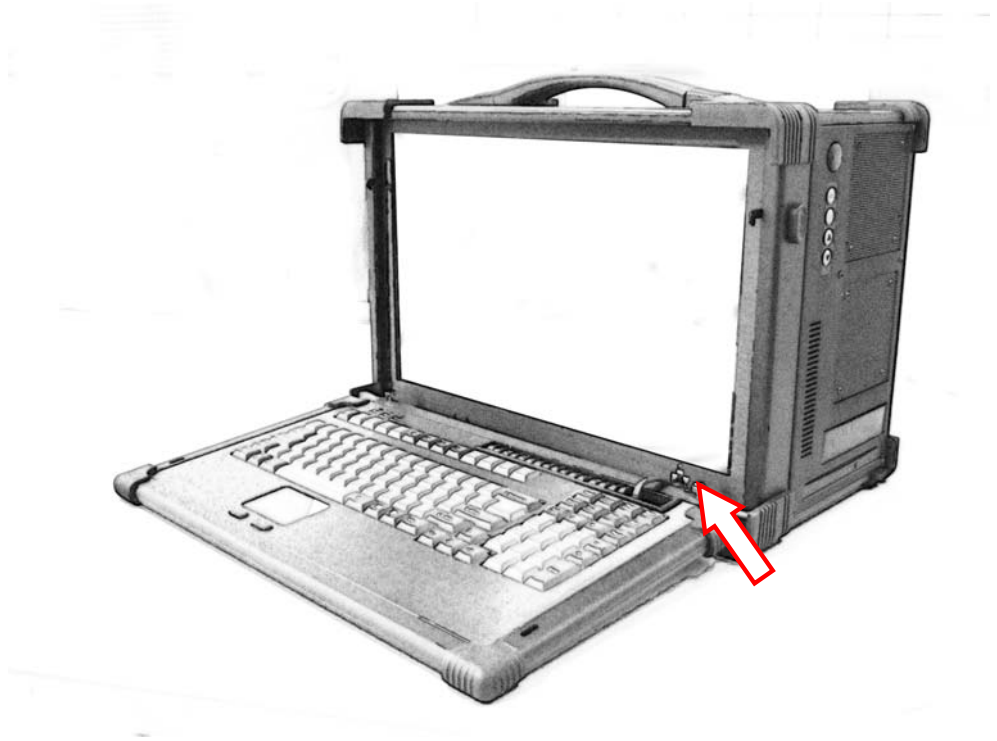
2.1 Releasing Keyboard from main unit by pushing up the 2 tap located on both side of the chassis to release the locking mechanism, and then pull out the keyboard.



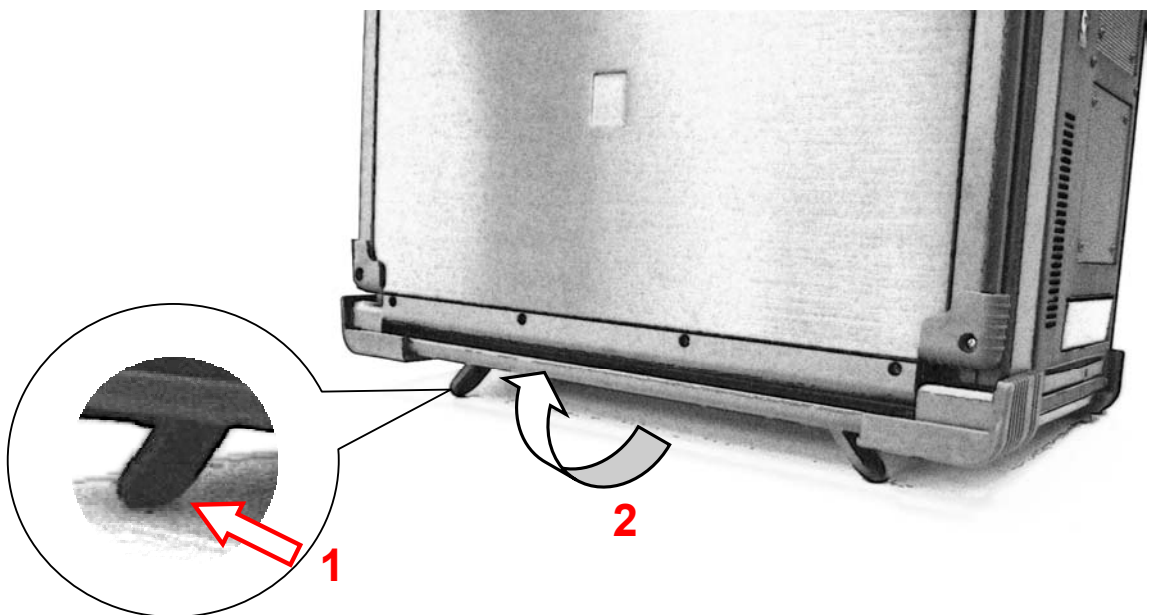
2.2 You have the option of leaving the keyboard attached to the chassis or they can be release independently from the chassis by pushing the two levers inward to release the lock.



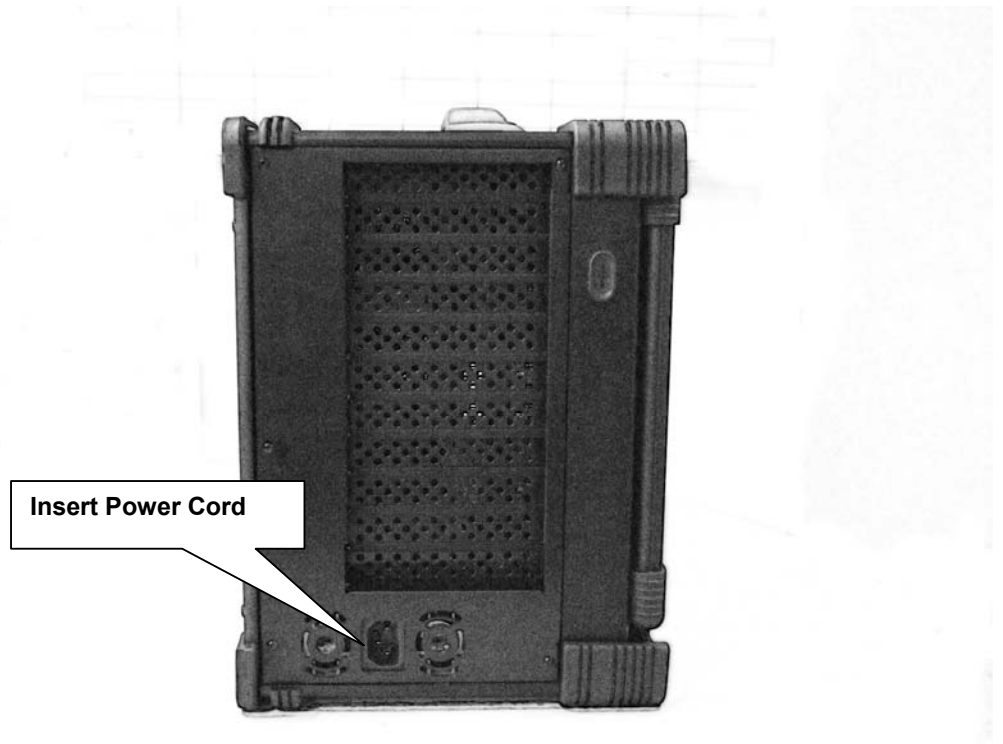
2.3 Connect the keyboard/touchpad cable to the front bottom right corner of the chassis. Make sure the pin direction is correct when inserting. \*\*Keyboard can be close back without disconnecting this plug.



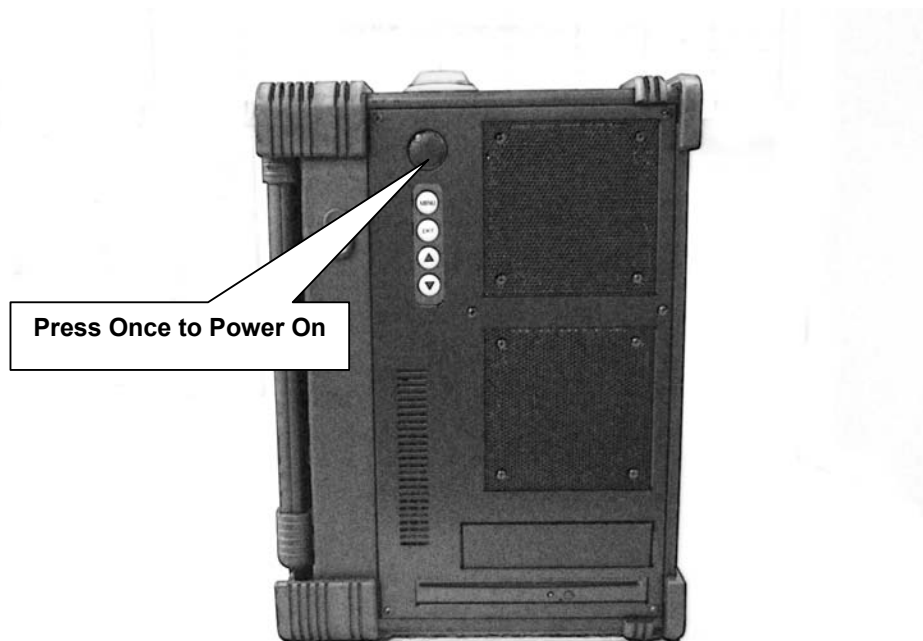
2.4 You can flip the 2 feet located underneath the chassis outward to help create an angle for the chassis for viewing comfort. Locate the feet and flip outward until click.



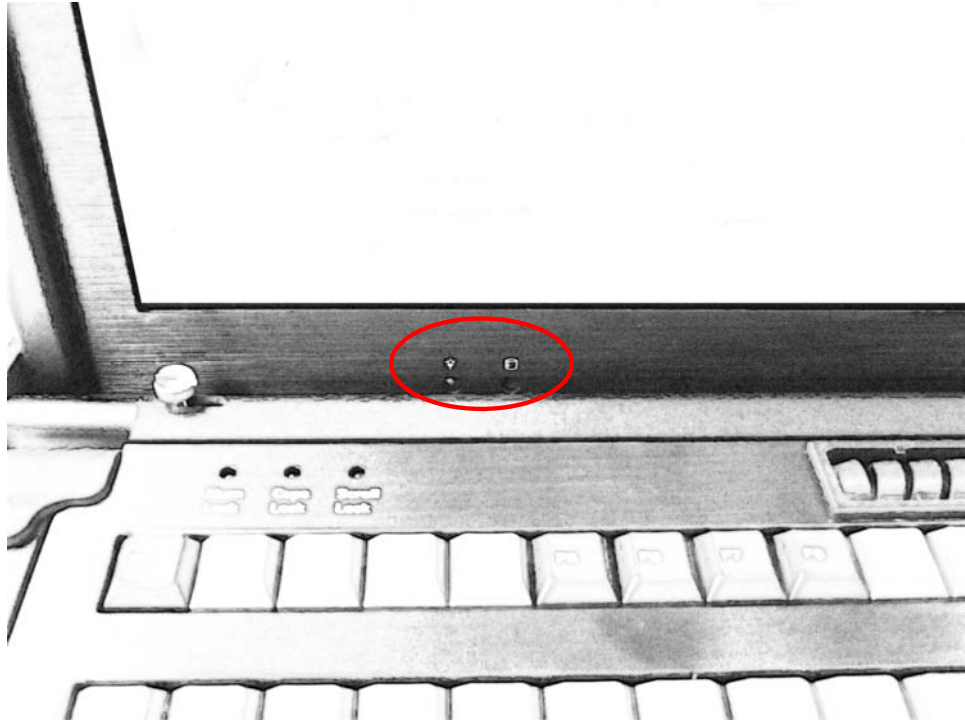
2.5 Connect the power cable outlet into the power supply unit in the main chassis on the left.



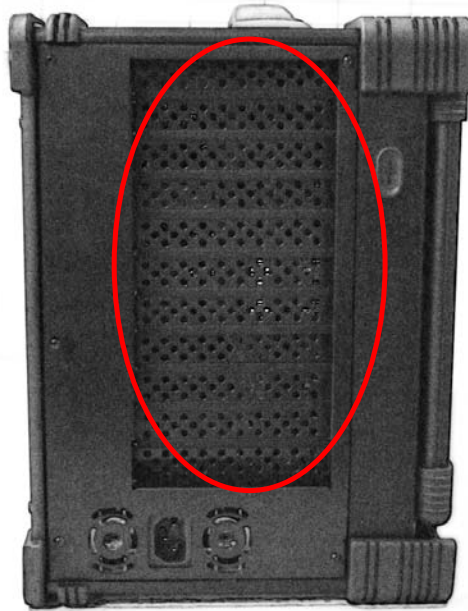
2.6 Press the round power button located on the top right of the chassis to power up the unit.



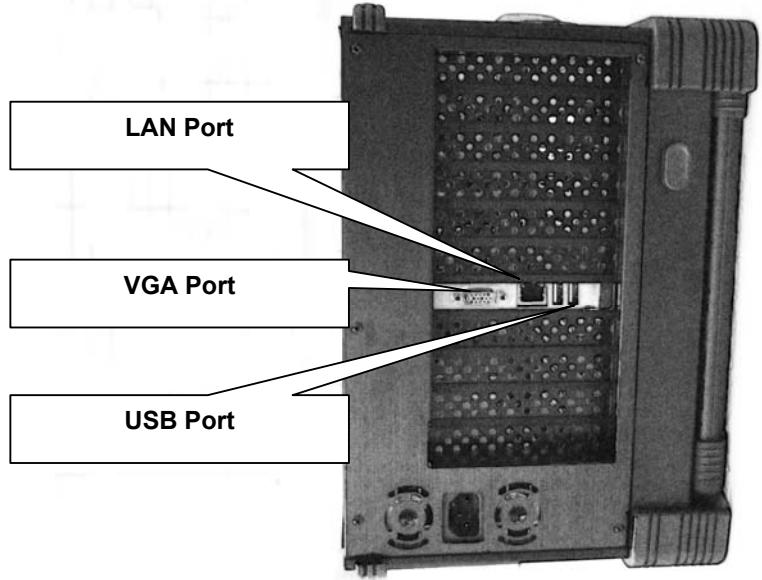
2.7 Bottom left corner of chassis will have indicator lights for Power and HDD activity.



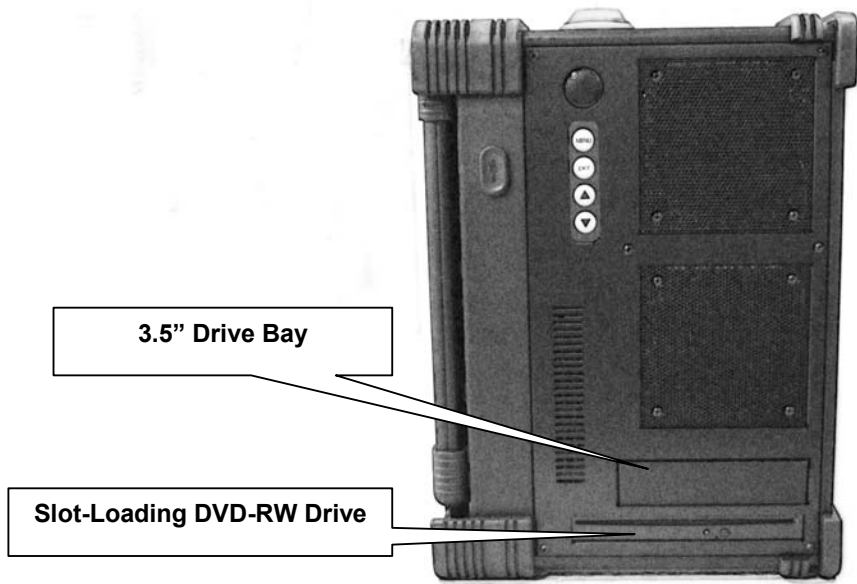
2.8 Access the available expansion slots on the left side of the chassis.



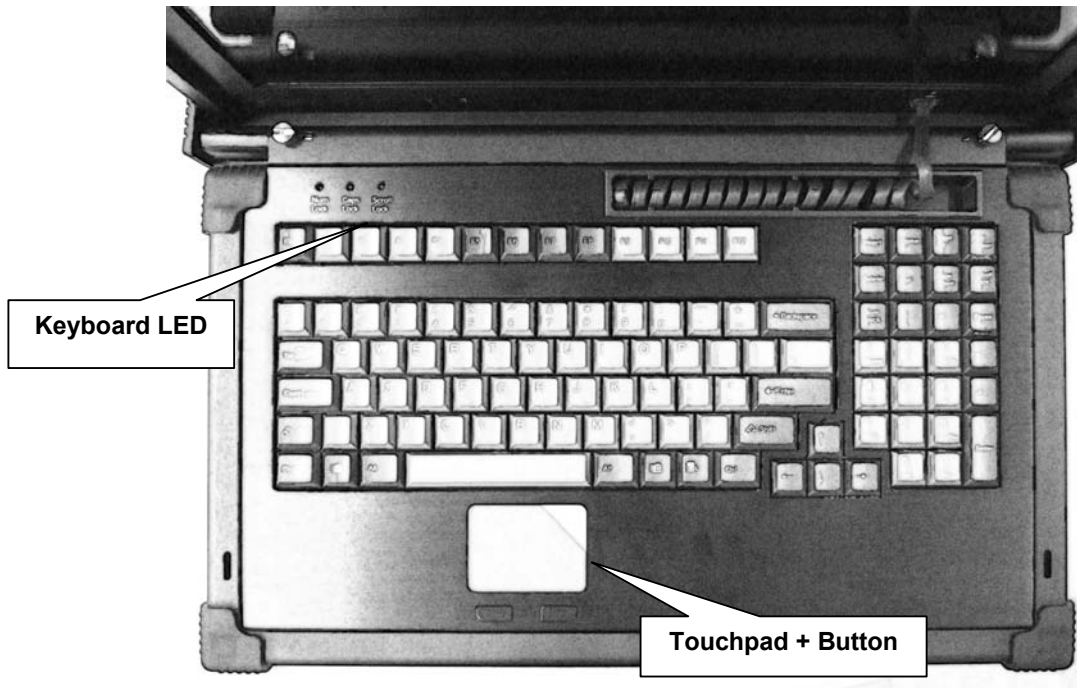
2.9 Access the system board I/O panel on the left side below the expansion slots of the chassis when a single host board is installed.



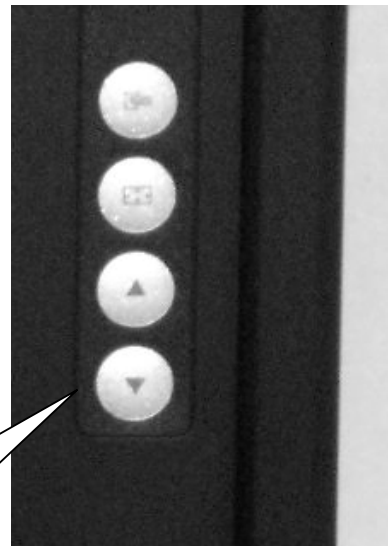
2.10 Access the optical drive and 3.5" drive bay on the lower right side of the chassis. The 3.5" tray can mount internal HDD or other devices.



2.11 Full function keyboard and touchpad surface act as input for the system.



2.12 There are four buttons located on the right side of the LCD. Adjust LCD OSD to match the display to your video board via the OSD button located on right side of the LCD panel. Press the MENU button to bring the on screen menu out and then follow instructions. Press the UP/DOWN button to scroll through the menu and press the SELECT button to enter the selected item. And UP/DOWN button to adjust value as necessary.

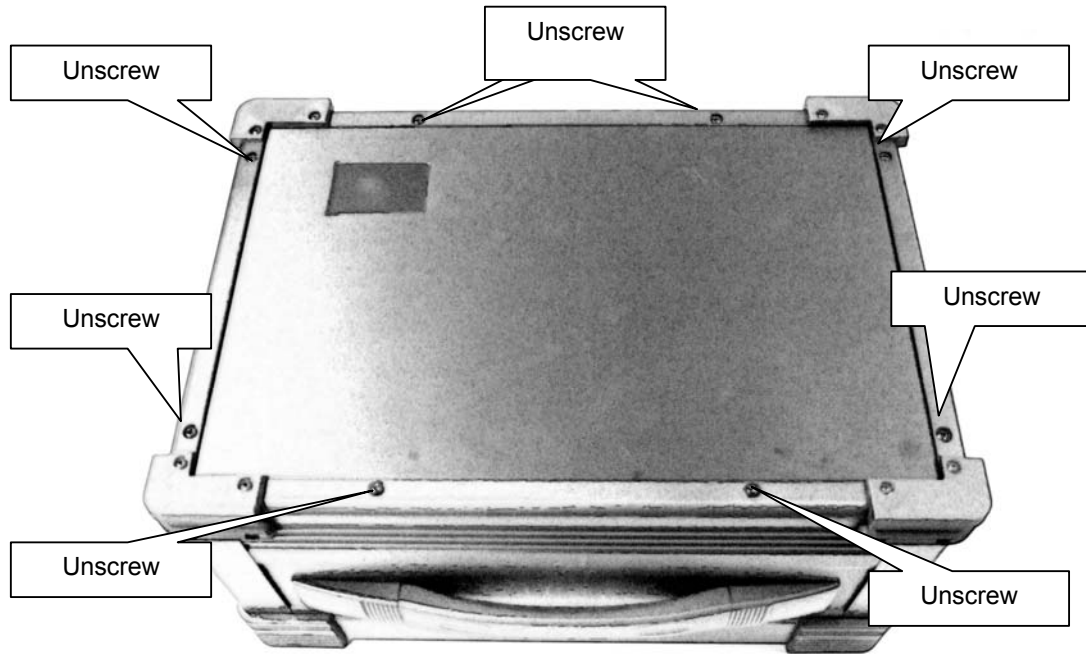


OSD Buttons:  
**MENU**  
**SELECT**  
**UP**  
**DOWN**

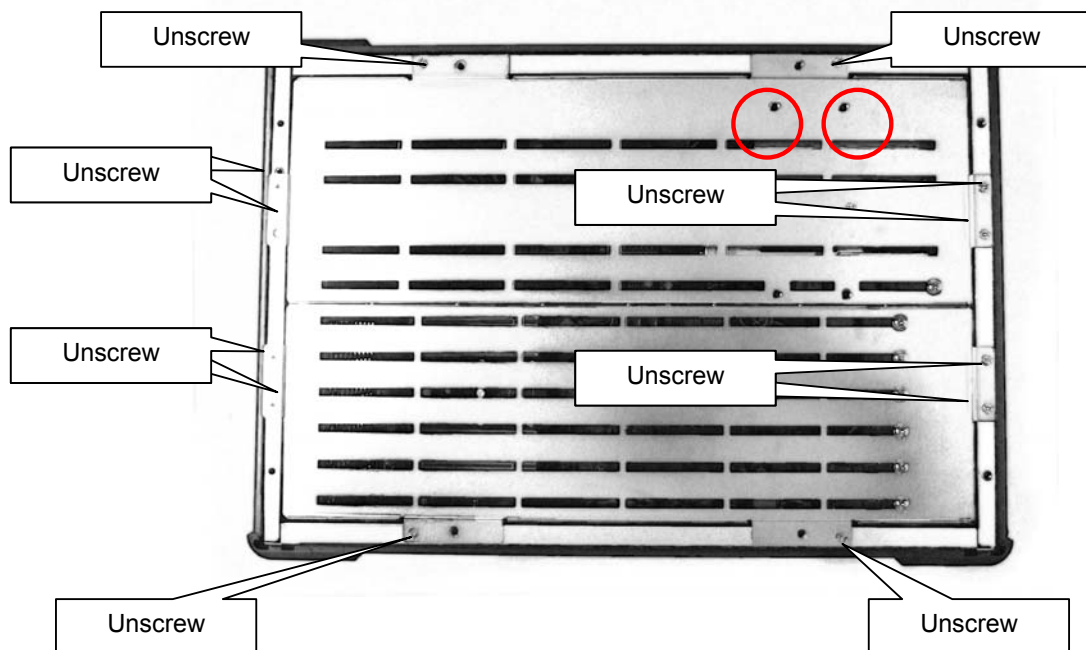
### 3.0 Internal Hardware Access

**\*\*Be sure power cable is not connected to the system before proceeding**

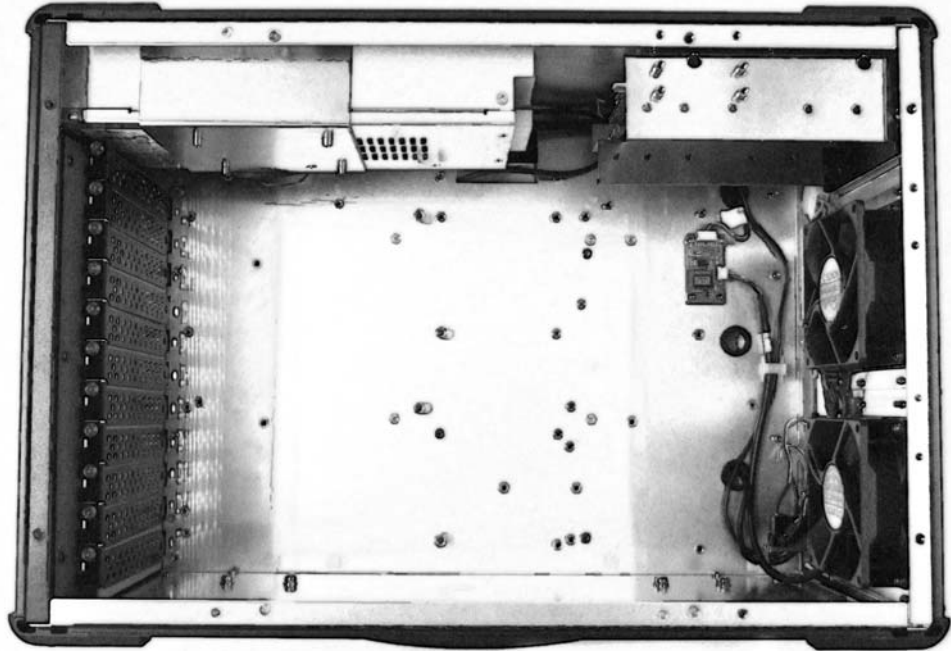
3.1 Unscrew the back cover screw (x8) to release it from the chassis.



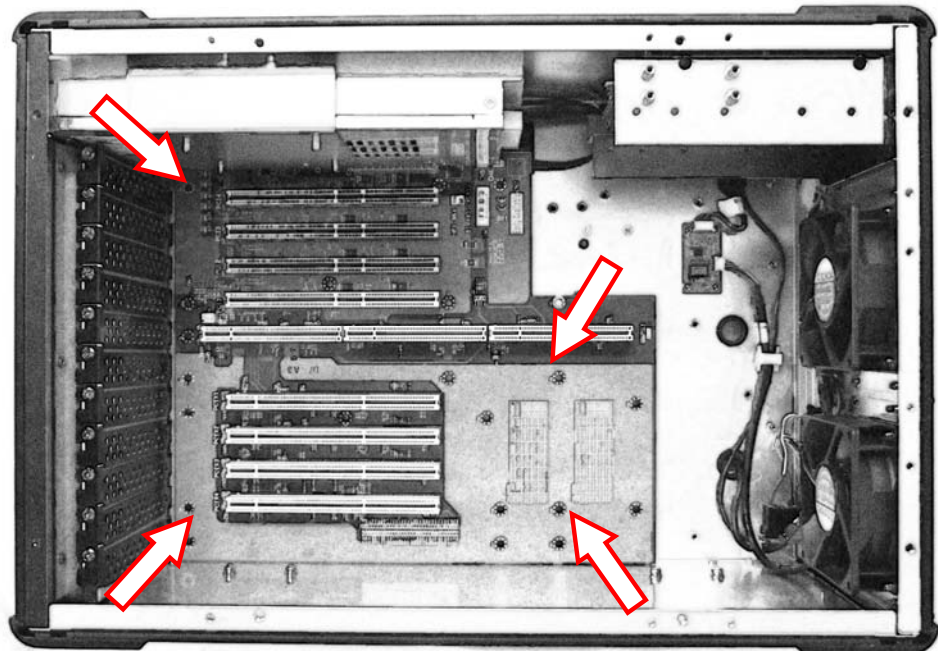
3.2 Unscrew the back slot holder cover by removing the screws indicated in the picture for accessing the internal system chassis and components. **\*\*Plate cover can be individually removed for as needed.**



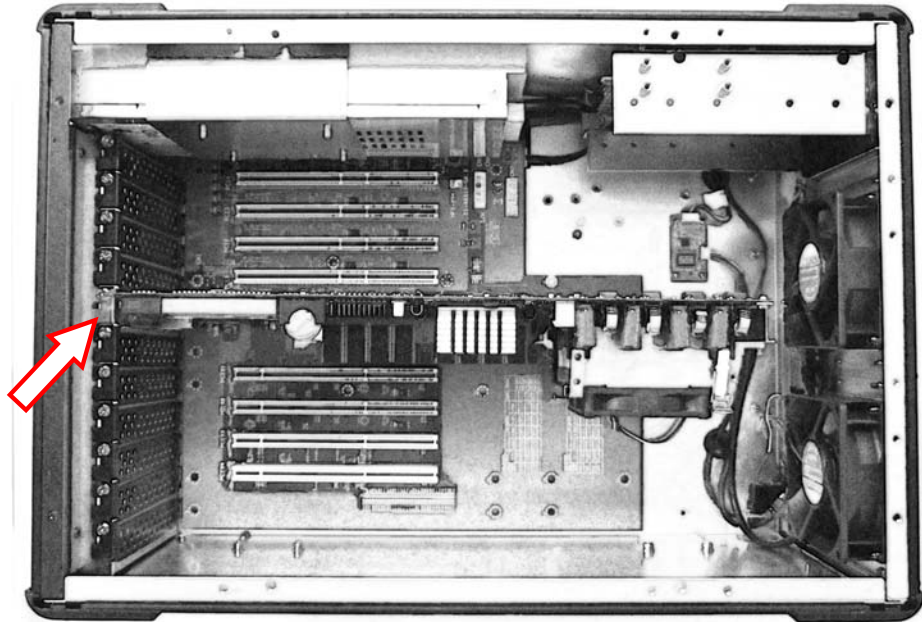
3.3 Once the cover is removed, you can access the internal mounting for passive back plane and all the necessary connectors.



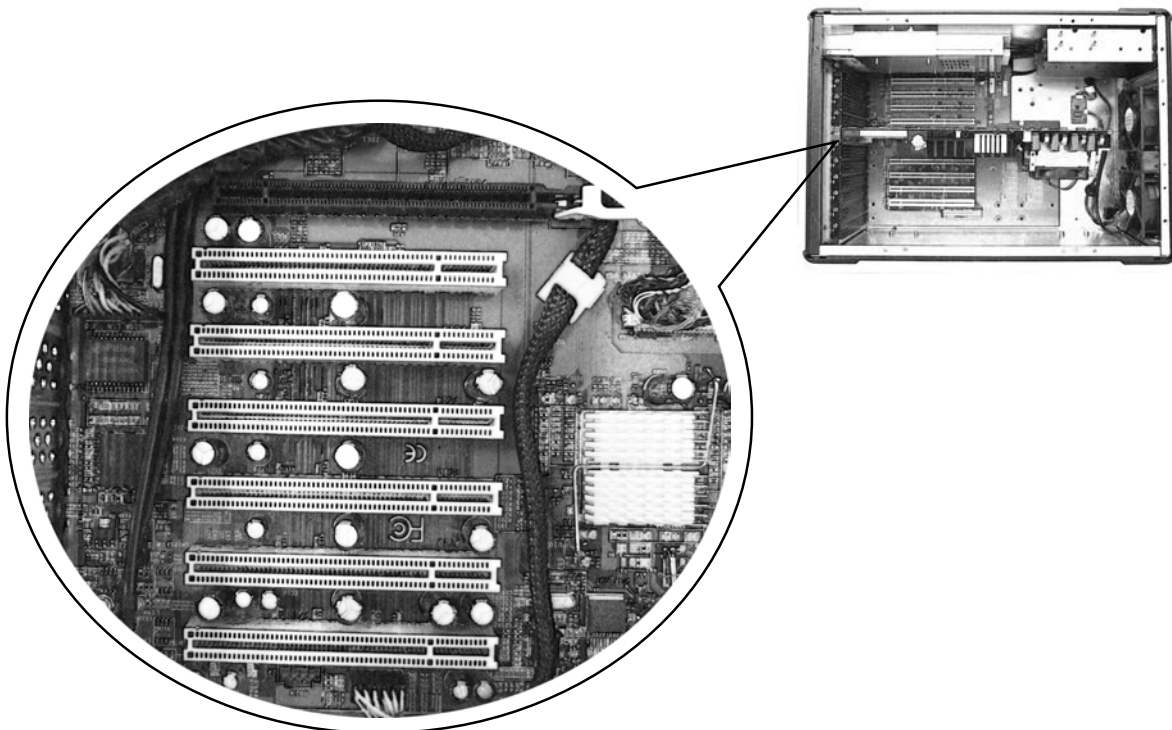
3.4 Install your mounting stand-off mount according to your backplane and then insert and secure the backplane to the chassis.



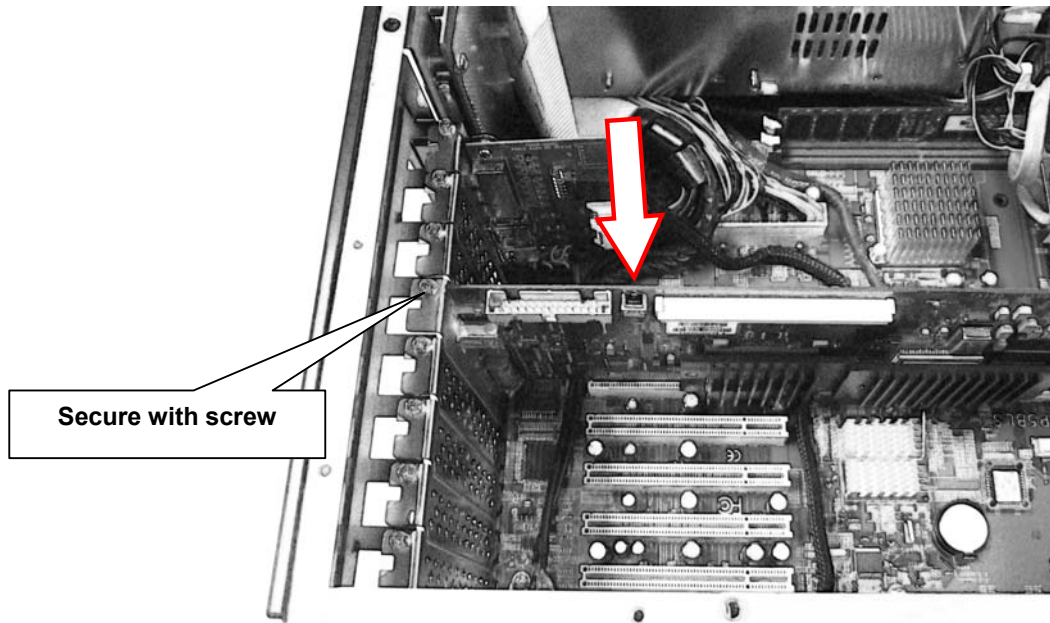
- 3.5 Install your single host board into the passive back plane proper slot and secure it. Connect all the necessary power cable to the backplane and single host board.



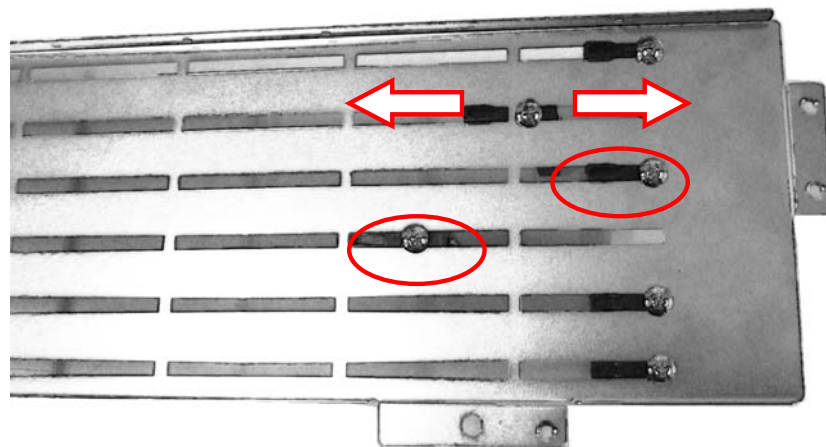
- 3.6 Install your add-in card as necessary based on the available connection interface.



3.7 Secure the add-in card into the chassis and make sure it is inserted completely and tight.



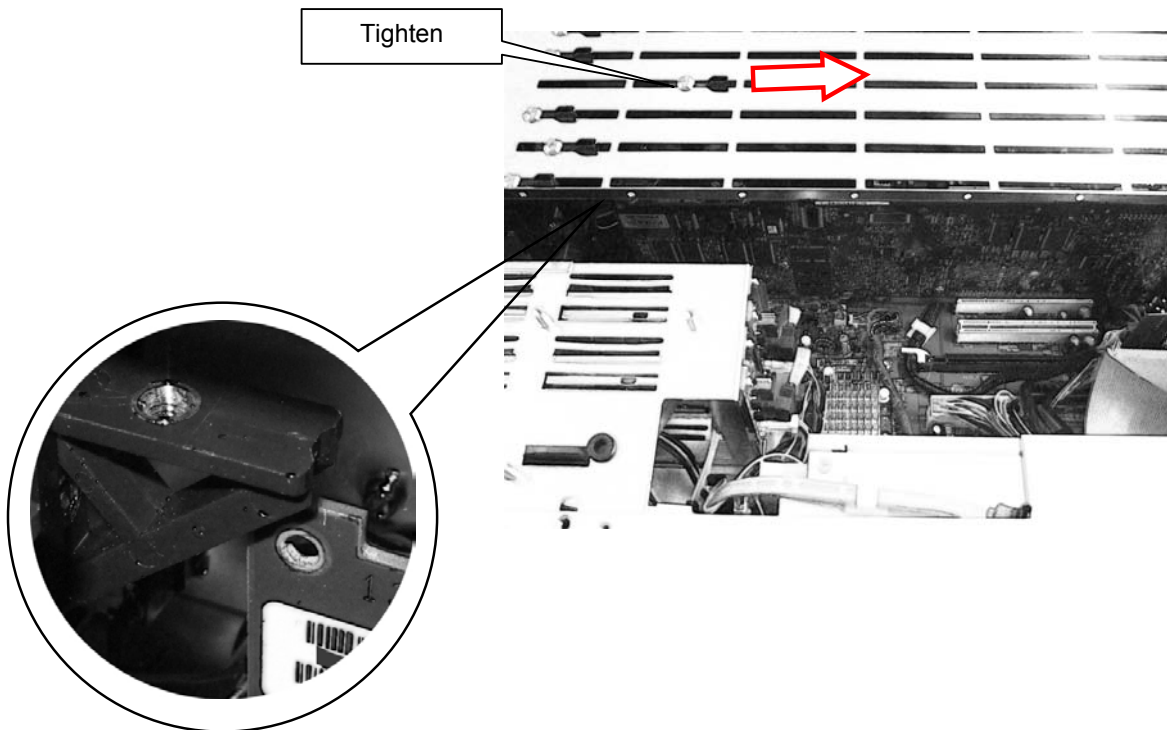
3.8 Adjust the card triangular holder into the appropriate length slot on the cover by removing and tightening at new location. You can loosen and slide the guide to adjust further.



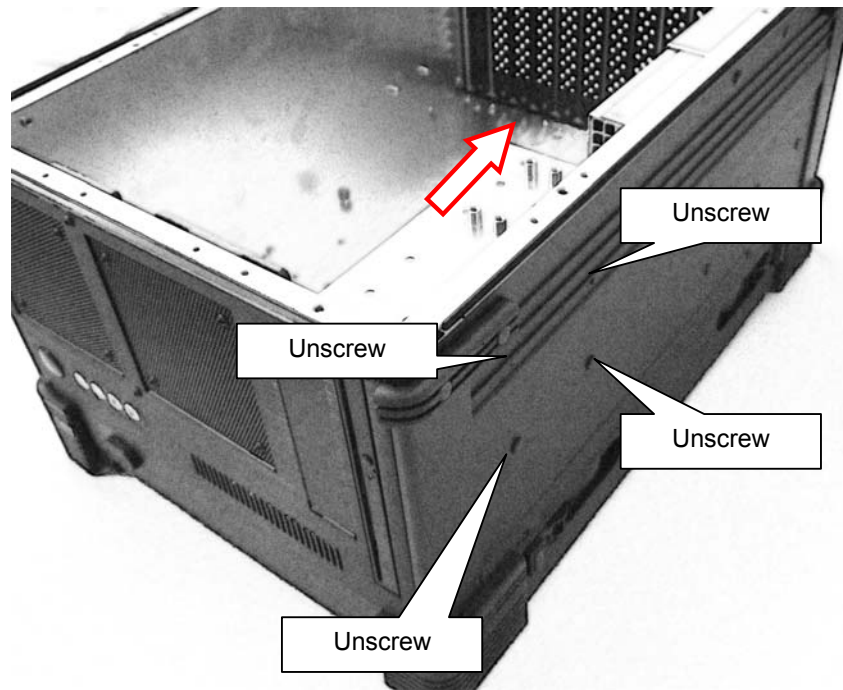
- 3.9 You can also adjust height of the triangular holder height and angle by removing the screw and lowering to the next available height opening or removing it and sliding it back in the other direction and securing at a different angle for greater compatibility.



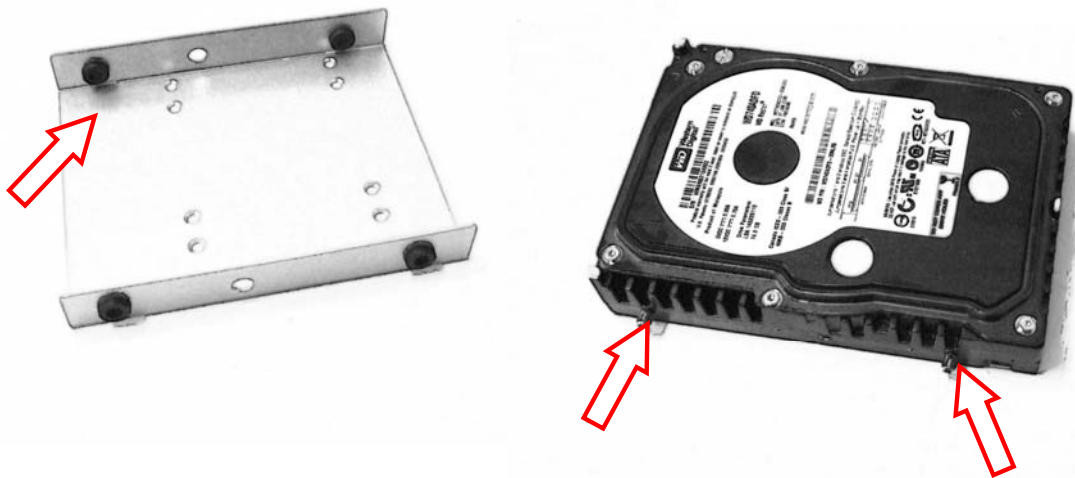
- 3.10 Fix back the card slot holder cover and slide the triangular holder to contact the add-in card securely and tighten the screw to provide support vertically and laterally.



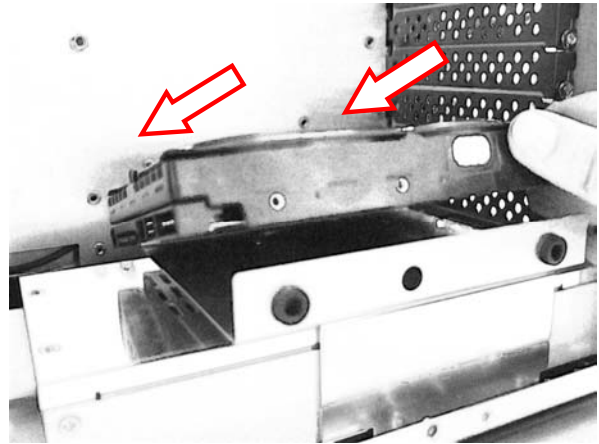
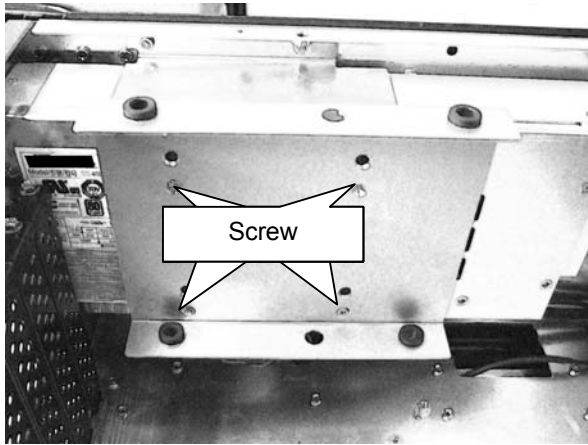
3.11 You can install your 3.5" device and slim DVD-ROM by removing the drive cage when you unscrew the bottom 4 screws. Then you can pull out the entire cage for assembly.



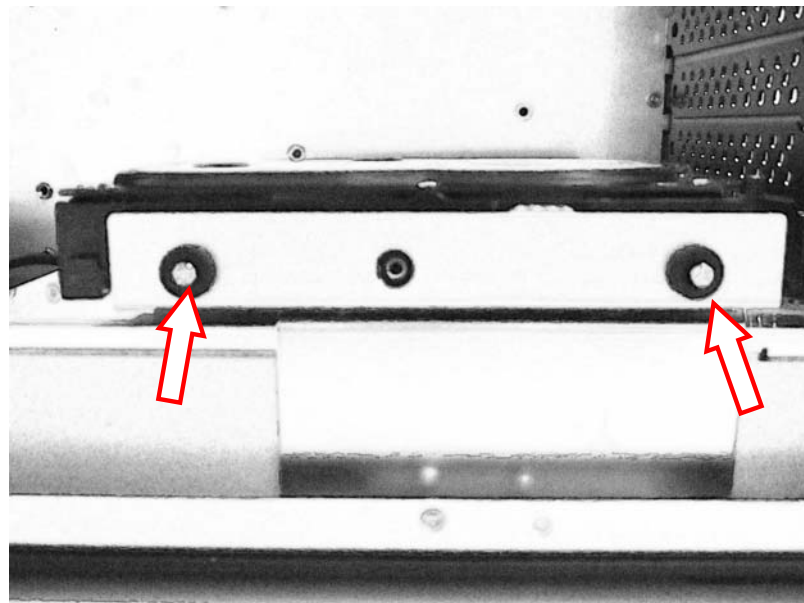
3.12 Optional internal hard drive mounting can be installed by using the detachable drive tray. First install the corner shock absorbing rubber holder onto the tray. Second fix the round screw post onto 1 side of the HDD as shown.



3.13 Next fix the mounting tray onto the top of internal power supply mounting post with 4 screws. Then slide in the side of HDD with the post into the inner most rubber holder first.



3.14 Then push down the HDD down until it is flat and makes sure the HDD mounting holes are visible thru the rubber holder opening, then install the round screw post into the outer side.



## 4.0 Software Installation

You can use the built-in DVD-RW drive to load additional applications software into the system. Available medium from USB or download can also be possible. The system is pre-loaded with Windows operating system, additional multiple O/S can be added or replaced.

**DOS Boot up:** DOS boot up requires you to have a version of the DOS installed on hard disk drive or floppy. Depending on the execution sequence you have set in the batch file, you will usually get a DOS prompt after loading.

**Window Boot up:** Windows boot up requires you to have Windows installed in the hard disk drive. During Windows boot up, you will see a sequence of access to your hard disk drive which will eventually take you into a graphical user interface environment.

**Other O/S description:** Many other operating systems are available in the market, such as Linux, Windows, Solaris and DOS. These operating systems will behave differently and you should react accordingly.

## 5.0 Maintenance

### 5.1 Handling of EMP:

You should always make sure the keyboard assembly is properly closed onto the EMP before transporting it. This will ensure you do not lose the keyboard as well as protecting the LCD screen. You may transport the portable in its carrying case, or you can carry the EMP on its handle located on top of the machine. The handle is located securely to the strongest part of the machine, and distributes the load of the EMP evenly as to allow easy carriage and proper balance.

### 5.2 Handling of Cable:

All cable should be treated with care. Do not over extend any cable and this could result in breakage internally in the cable. It is essential that cable with its plug be handled in the proper manner without force.

### 5.3 Handling of LCD:

Do not use any abrasive material to scratch the LCD screen, as they can leave marks on the surface. Do not apply any pressure to the surface of the LCD screen either with objects or hands; this will ensure that the screen do not suffer from internal damage or cracks.

### 5.4 Handling of Power:

Always make sure the power cord is in top condition before using them with the EMP. Make sure your power source is reliable and of proper standard. The EMP power supply is capable of handling 100-240V and 50-60Hz. Do not use the EMP on an already overloaded circuit.

### 5.5 Handling of K/B:

The keyboard is essential in that it helps protect the LCD during transportation. You should always watch for spill liquid or small objects from entering the keyboard. And the touch pad surface should be kept dry and clean for proper usage.

### 5.6 Cleaning LCD:

1. Do not use cleaner that contain alcohol.
2. Do not use cloths that could be abrasive to the surface of the LCD.
3. Always gently wipe the LCD surface when cleaning.

### 5.7 Cleaning K/B:

1. Do not spill any liquid on to the keyboard.
2. Do not drop particle into the spacing between keys.
3. Using a compress air cleaner, you can remove the dust built-up within.

### 5.8 Cleaning Fan Filter (if exist):

1. Remove the filter from its housing.
2. Use a compress air cleaner to blow off the dust from the filter.
3. If necessary, you can wash the filter material, but do remember to dry it first.

## 6.0 Problem Solving

### 6.1 Installation problem:

1. Normally problem with a fail start up is due to installation problem.
2. Double check all the peripheral cards or items you have added to the EMP.
3. Are all the items seated properly?
4. Are all the cables connected back to its original or correct position?
5. Are the items you have added compatible?
6. Before you check for these, turn the computer off and unplug the power cord.
7. Check for 1 thru 5 and then re-power up the computer.
8. Remove all items that were added and re-try system power up.
9. If the system starts now, try inserting 1 new item in at a time and try powering up.
10. Repeat this step until you get the desired result.

### 6.2 BIOS Beep Code:

The BIOS beep code indicates error in system initialization. The BIOS of the system board will associate with video and memory error. Please check your video card is properly seated and your memory is installed properly.

### 6.3 System Fails to power up:

1. Check you power connection first.
2. Check the main power switch is in the ON positions (I) \*If cold switch is on model.
3. Press the power button located on the machine.

### 6.4 No display (LCD):

1. Check all the proper power up procedure has been taken.
2. Hook up an external CRT to the VGA port, to check if video is present.
3. If video is present on external CRT, check the internal LCD cable connection.
4. Or check your VGA setting using a CRT to make sure LCD video is enabled.
5. If there is no video on external, check your system to make sure everything is seated properly.
6. If everything is seated properly and still no video, call us for further assistance.

### 6.5 External CRT no display:

1. Check to see if you have internal LCD video.
2. Check if your CRT is functioning properly.
3. Check your VGA setting to make sure external video is enabled.

### 6.6 Keyboard fails:

1. Make sure the keyboard plug is inserted completely into the portable.
2. Make sure you do not have another keyboard connected to the side I/O PS/2 port.

### 6.7 TOUCHPAD fails:

1. Make sure the keyboard plug is inserted completely into the portable.
2. If you have an external PS/2 mouse hook up on the side I/O PS/2 port, the touch pad will not function simultaneously.
3. If your operating system requires and does not load the mouse driver automatically, make sure you have the proper mouse driver loaded.

### 6.8 DVD-ROM fails:

1. Make sure the CD/DVD is readable.
2. If DVD-ROM fails to be recognized during POST, check internal cable fit.

## 7.0 Standard System Accessory Kits

Package Content		Description	Qty
1	User's Manual	User's Reference Guide	1
2	Driver CD	Driver CD for driver support for reinstallation purpose	1
3	ESD Bag	ESD Bag for additional packaging	1
4	110 Power Cord 220 Power Cord (Option)	110 Power Cord 220 Power Cord (Option)	1
5	Screw Pack	Screw Pack (stabilizer)	1
6	Stabilizer Supports Pack	Additional clip for card holder to secure add-in card	1
7	Hardware Pack (system)	Additional cabling for internal interconnect	1
8	EMP350W	Main system unit chassis	1
9	Carrying Bag	Tow bag with wheel	1

## 8.0 System Configuration Options

### Configuration 1

<b>Chassis</b>	External Chassis	Aluminum alloy with rubber corners
	Internal Chassis	Aluminum alloy frame
<b>System</b>	Chipset	Intel 875P
	Form Factor	SHB + PBP PICMG 1.2
<b>Display</b>	LCD	1x 17" WXGA+ (WUXGA Optional)
	Resolution	1440 x 900 (1920x1200 Optional)
	Color	256K colors
<b>Processor</b>	Processor	1x Intel Pentium IV Processor 3.0 GHz Processor
	Cache	1MB L2 Cache
<b>Memory</b>	RAM	2GB DDR 800Mhz (4GB Max)
<b>Integrated Peripherals</b>	Hard Drive	1x 250GB SATA 7200RPM 3.5"
	Optical Drive	8x IDE DVD-RW Slim Slot-loading DVD burner
	FDD/Cardreader	N/A
<b>Redundancy</b>	RAID (Internal)	N/A
<b>Graphic Controller</b>	Chipset	ATI Rage XL (for WUXGA, a PCI-e video board is required)
	Memory	8MB
<b>Drive Bay</b>	3.5" Internal Mount	1x (Used)
	3.5" Drive Bay	1x
	Slim DVD-RW	1x (Used)
<b>Expansion Slot</b>	PCI-X	4x
	PCI	4x
<b>Audio Controller</b>	Chipset	5.1 Channel High Definition Audio
<b>Communication</b>	LAN	2x Intel 82547GI Gigabit LAN
<b>Input Peripheral</b>	Keyboard	105-Key Cherry Keyboard
	TouchPad	Integrated TouchPad
<b>Integrated interface</b>	USB	2x internal USB ports, USB 2.0 compliant 2x external USB ports, USB 2.0 compliant
	SATA	2x internal SATA 1.5Gb/s
	Serial Port	4x Fast UART Serial Port (2x internal)
	FDD	1x FDD connector
	VGA Port	1x VGA (Used)
<b>Software</b>	OS	Windows XP SP2 (Optional)

### Environmental Specification EMP 350W-A System

<b>Environmental Specification</b>	Operating Temp	0° C - 50° C
	Relative Humidity	20-80% (non-condensing)
	Shock	15G operating, all axes
	Vibration	1.25G @ 10-100Hz operating, all axes
	Compliance	CE & FCC

<b>Power</b>	Power supply	400W, 1U, 110VAC ~ 220VAC
<b>Dimensions</b>	H	310mm
	W	440mm
	D	225mm
<b>Weight</b>	Net weight	27LB (System Weight)
<b>Transport Case</b>	Carrying Case	Padded carrying bag with wheels