

Tenuis 200 User Reference Manual

Revision 1.0 (090430)



System Specification of Tenuis 200

Chassis	External Chassis	ABS Plastic with Aluminum Alloy
	Internal Chassis	Aluminum alloy frame
System	Chipset	Intel 945GME
Display	LCD	15" XGA TFT Panel
	Resolution	1024 x 768
	Color	262K colors
Processor	Processor	Intel Core 2 Duo T7400 2.16GHz Dual Core Processor
	Cache	4MB L2 Cache
Memory	RAM	2GB DDR2 667Mhz
Integrated Peripherals	Hard Drive	1x 100GB 2.5"
	Optical Drive	8x IDE DVD-RW Slim Slot-loading DVD burner
	FDD/Cardreader	N/A
Redundancy	RAID (Internal)	N/A
Graphic Controller	Chipset	Intel GMA950
	Memory	Upto 224MB Shared
Drive Bay	2.5" Internal Mount	1x (Used)
	2.5" Drive Bay	2x (Removable SATA) *SAS compatible, SAS controller not Included
	Slim DVD-RW	1x (Used)
Expansion Slot	PCI-X	3x PCI-X 133/100/100MHz (Option A)
	PCI-E	3x PCI-E x8 (Option B)
Audio Controller	Chipset	7.1 Channel High Definition Audio
Communication	LAN	1x Marvell 10/100/1000 LAN 1x Intel 10/100 LAN
	Keyboard	104-Key Keyboard
Input Peripheral	TouchPad	Integrated TouchPad
	Keyboard	104-Key Keyboard
Integrated interface	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	2x Fast UART Serial Port (1x internal)
	FDD	1x FDD connector
	VGA Port	1x VGA
Software	OS	Windows XP SP3 (Optional)

Environmental Specification Tenuis 200

Environmental Specification	Operating Temp	0° C to 50° C (Optional -20° C to 50° C)
	Non-Operating Temp	-40° C to 70° C
	Relative Humidity	20-80% (non-condensing)
	Shock (all axis)	10g 11ms operating/ 30g 11ms non-operating
	Vibration (all axis)	0.4g @ 10-500Hz operating 1.12g @ 10-500Hz non-operating
	Compliance	CE & FCC

Power	Power supply	200W, 110VAC ~ 220VAC 60Hz
Dimensions	H	277.5mm (296mm with Handle)
	W	416mm
	D	156.5mm
Weight	Net weight	21LB (System Weight)
Transport Case	Carrying Case	Padded carrying bag with wheels

1.0 Introduction

Portable Case

The Tenuis 200 is a robust lunchbox computer built using a combination of plastic and aluminum to provide tough, go-anywhere unit ideally suitable for test and measurement applications. Every Tenuis 200 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 Tenuis 200 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. Tenuis 200 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 Tenuis 200 has built-in high resolution LCD screens. With our engineering advancement, LCD is integrated seamlessly into the chassis with protective glass. The Tenuis 200 is integrated with high brightness, high contrast and fast response LCD screens with optional ultra high resolution display.

Processor Information

The Tenuis 200 system is available with ultra efficient Intel Core 2 Duo Mobile Dual Core Processor. With revolutionary performance, ultra system responsiveness, and energy-efficiency, there is no slowing down for multiple computing intensive programs and processing. The available onboard integrated graphic provide the precise and intensive graphic for desktop and available slots can be used to install dedicated video card for further image processing with exception speed and accuracy.

Drive Configuration

The Tenuis 200 is preinstalled with slot loading DVD-RW for both single and dual layer writing capability on reading. It has 2 removable 2.5" open drive bay that can be expanded further depending on your needs. Also available inside is an internal 2.5" HDD mounting. Whether is speed or capacity requirement that you needs, the flexibility of setting up with the drive configurations is available by your choosing.

Slot Configuration (A/B)

The Tenuis 200 special design allows the portable to be configured to different BUS interface to meet your needs. The Option A is configured with 3x PCI-X slots, operating at 133/100/100 MHz (133/133MHz if only 2 cards are used). And the Option B is configured with 3x PCI-e and all operate at 8 Lanes (electronically and mechanically) Both configuration offers industrial and commercial latest interface bus that are found only in servers or specialized board level system. We were able to incorporate these into a portable chassis to meet the demanding use of field computing.

2.0 Operation

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



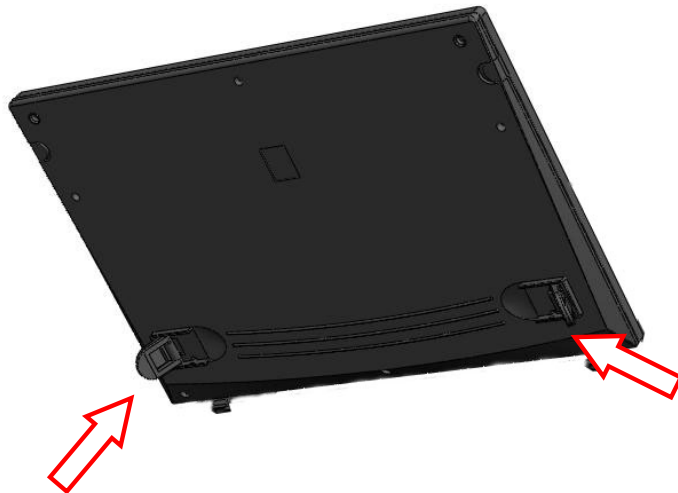
2.2 You have the option of leaving the keyboard attached to the chassis or they can be release independently from the chassis by pulling the outward in an angle.



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.



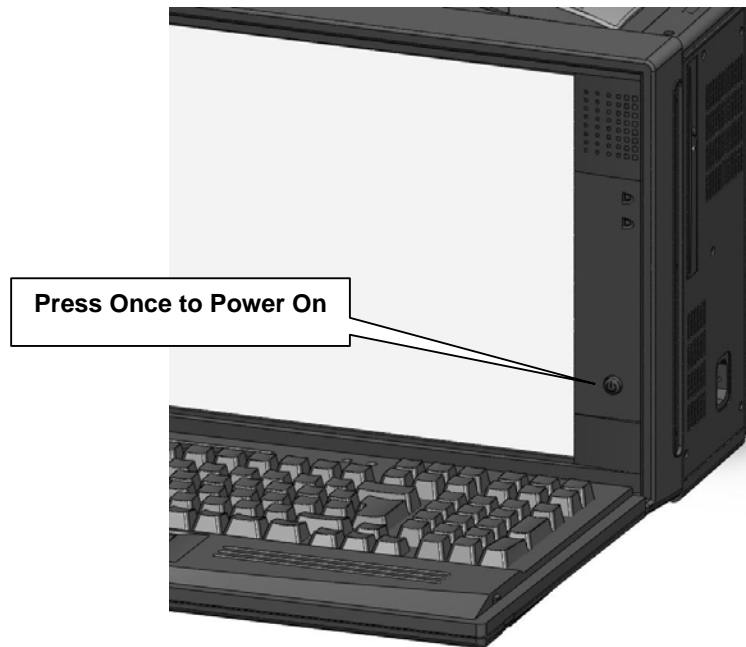
2.4 You can flip the 2 feet located underneath the keyboard outward to help create an angle for the keyboard if you detach the keyboard from chassis.



2.5 Connect the power cable outlet into the power supply unit in the main chassis on the right. The power supply can support both 110V and 220V power source.



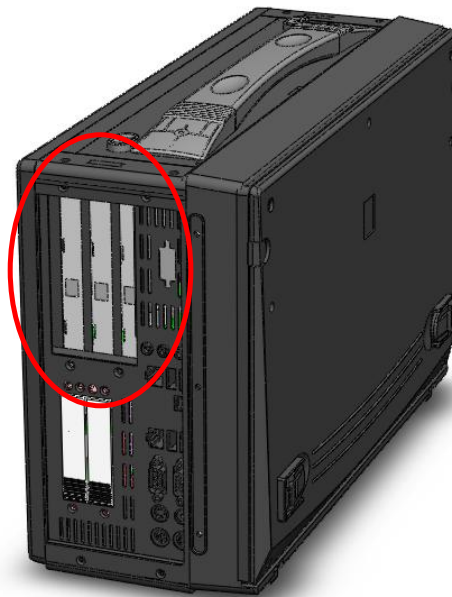
2.6 Press the round power button located on the front of the chassis to power up the unit.



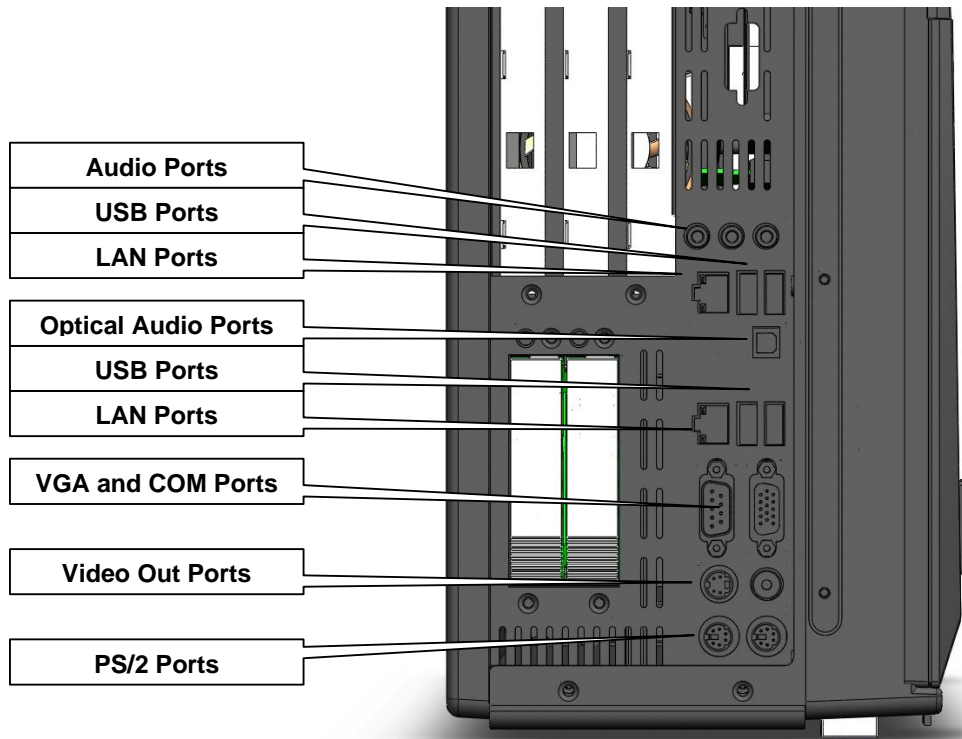
2.7 Front right side will have 2 indicator lights for Power (Green) and HDD activity (Red).



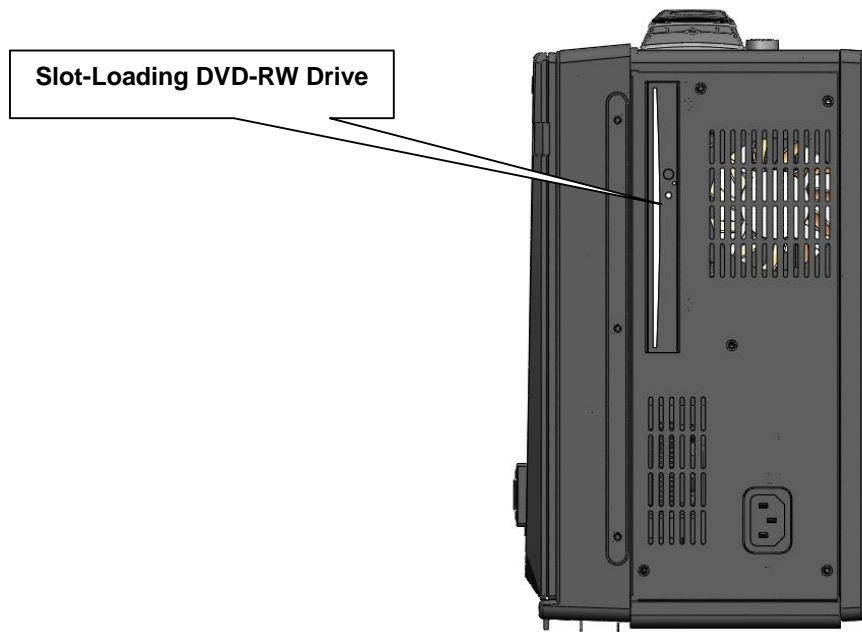
2.8 Access the available expansion slots on the upper left side of the chassis.



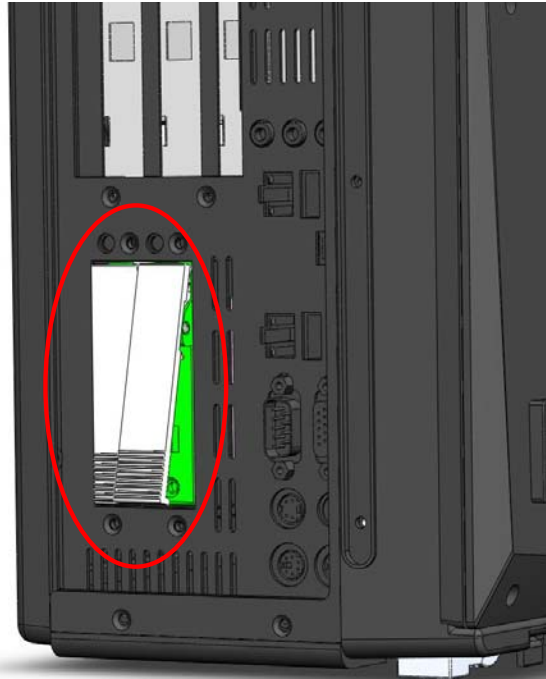
2.9 Access the system I/O ports the lower left portion of the chassis. Available ports are Audio, USB, COM, PS/2, 10/100 and 10/100/1000 LAN and VGA. (Keyboard and Audio have connection internally pre-connected)



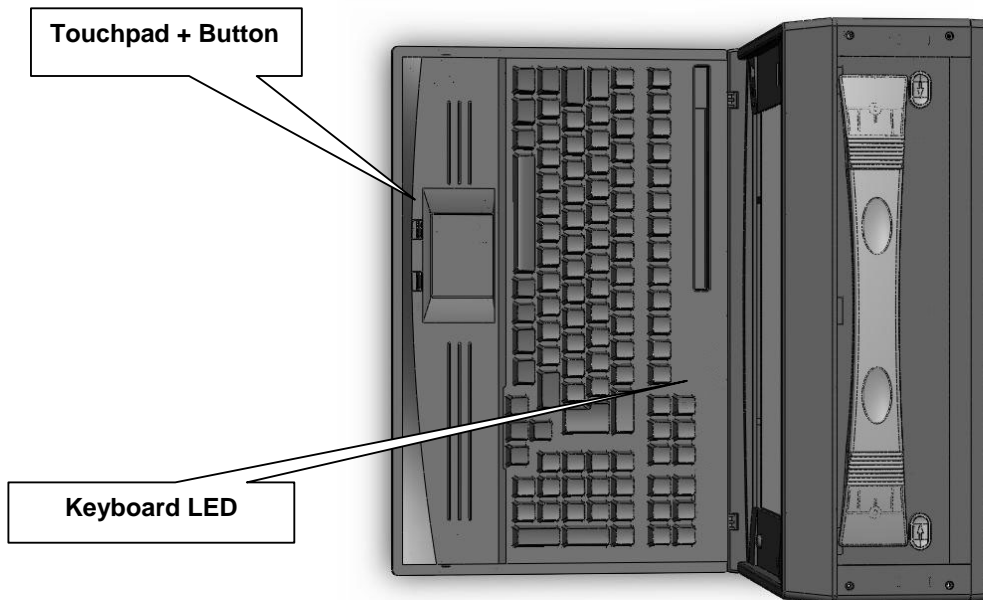
2.10 Access the slim DVD-RW optical drive on the right side of the chassis.



2.11 Access the 2x removable SATA drive bay on the left side of the chassis. Release each by pushing the tab and release the latch and pull out. **Drive bay backplane is compatible with SAS interface, SAS controller not included



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



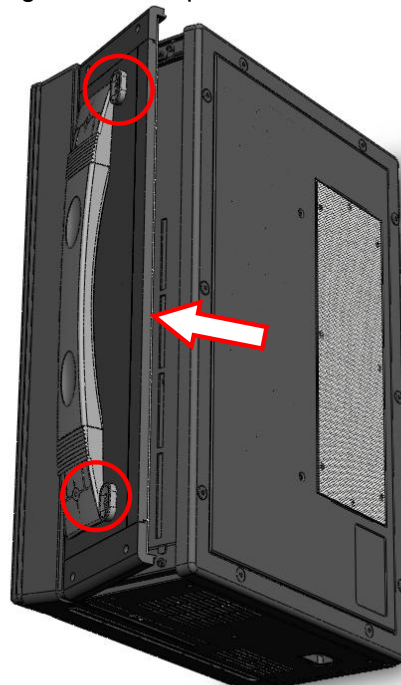
3.0 Internal Hardware Access

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

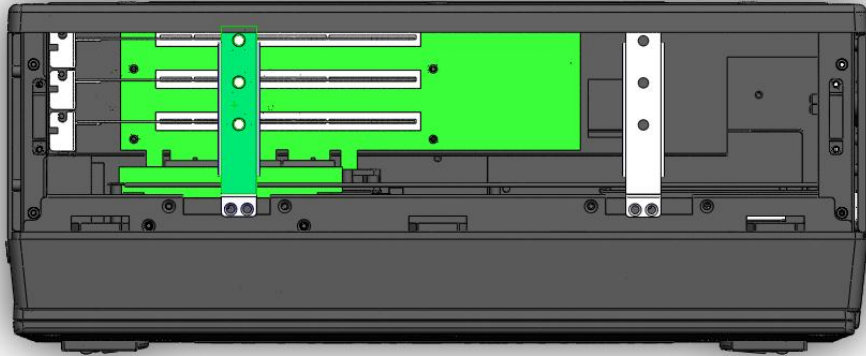
3.1 Unscrew the top 4 corners thumb screw to release the top chassis cover.



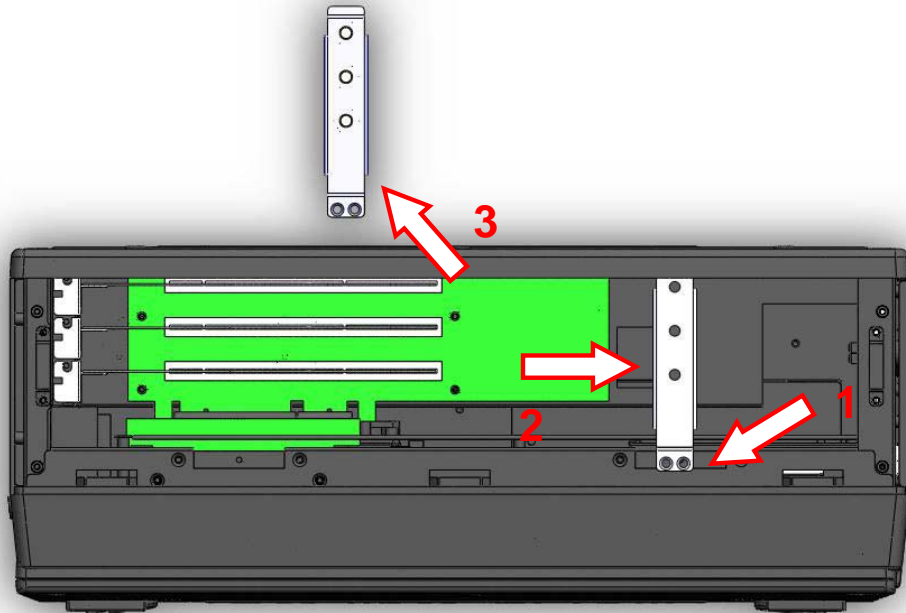
3.2 Push the 2 latches located on each side of the top chassis cover inward. And lift the cover upward with the rear tilting at a slight angle to remove the top cover ****The 2 latches are safety mechanism against user forgetting to tighten the 4x post screws, but we recommend that all 4 post screws be tighten for carrying.**



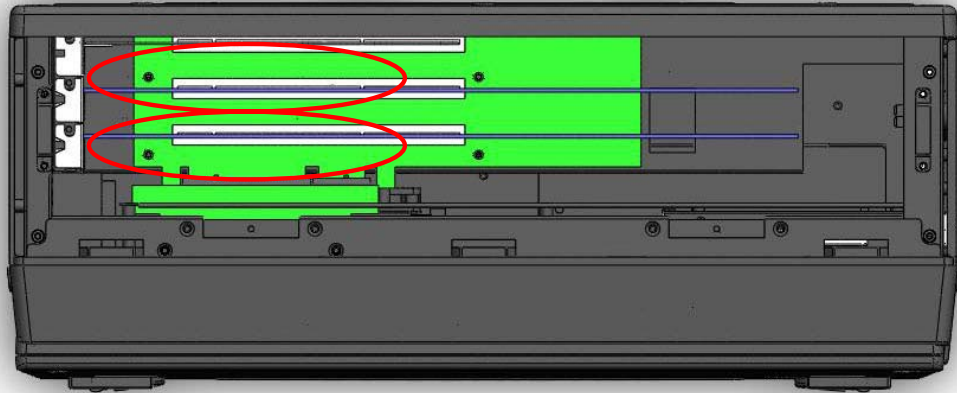
- 3.3 Once the cover is removed, you can access the internal slots (3x PCI-X for Option A OR 3x PCI-E x8 for Option B). *Bus speed per slot is indicated on board



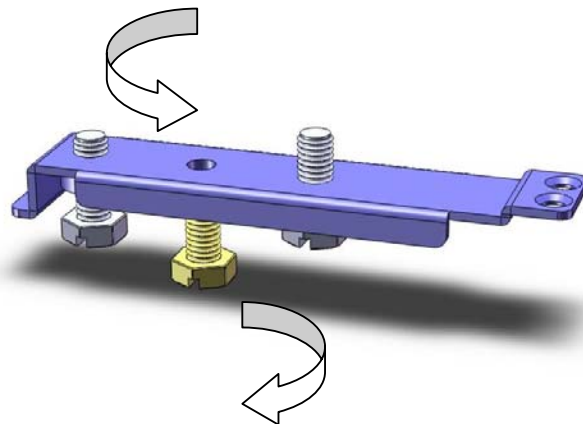
- 3.4 There are 2 card stabilizer bracket installed on the top frame for securing the add-in card. You must remove each of them first by: 1st by removing the 2x screws holding each of them. 2nd by sliding the bracket toward the right (fan side). 3rd by lifting the bracket upward to remove. **The rear mounting has 2 possible location for card length purpose



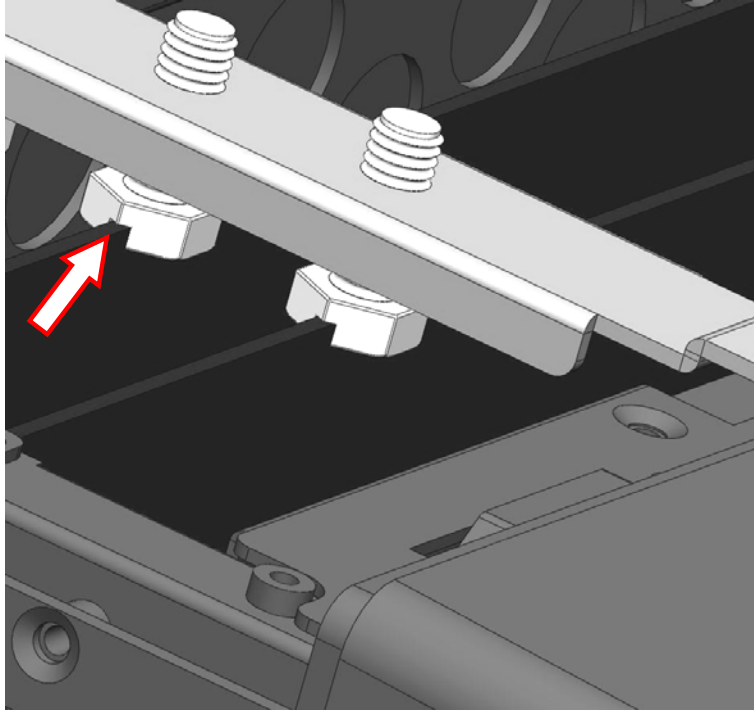
- 3.5 Install your add-in card into the appropriate slot matching the correct bus and secure the end with a screw. *3 bus slots available with 3 opening on chassis for additional mounting.
**Option A Shown with PCI-X add-in cards



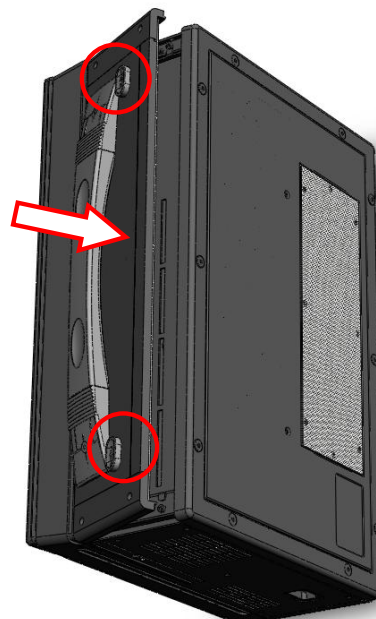
- 3.6 To secure the card with the card stabilizer bracket. 1st utilize the round plastic retainer and adjust the height to match the add-in cards' height by lengthening or shortening accordingly (turning it clockwise or counter clockwise).



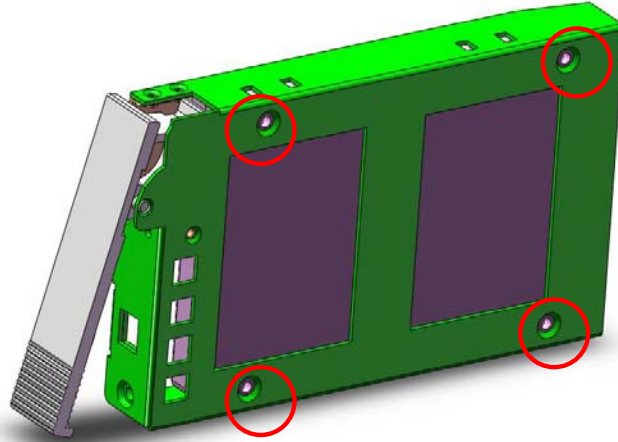
- 3.7 Reinstall the bracket back the same way reverse of the removal procedure. Match the slit opening of the round plastic retainer to the add-in cards' PCB to grab onto securely. For the excess length on the plastic retainer, you can cut off until it is flushed with the top of the card stabilizer bracket.



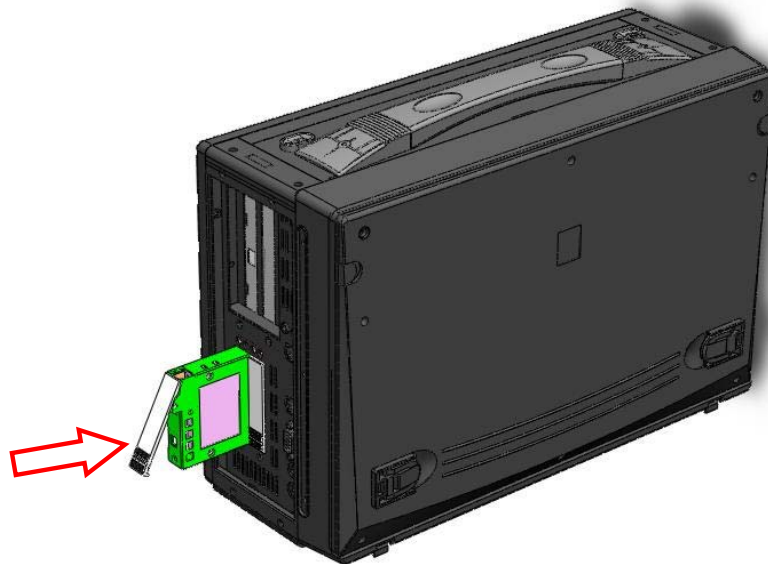
- 3.8 Reinstall the top chassis cover back by matching the 3 edge connector toward the front of the chassis at angle and push down while pushing 2x latches inward. It will snap into place, and secure it completely by tightening the 4x side screws.



- 3.9 To mount additional drives onto the removable 2.5" SATA drives cage. Remove the drives cage from the chassis as instructed with the pushing of individual tab. Mount drives and install 4 screws to secure.



- 3.10 Next insert the 2.5" SATA drives onto the removable kit and secure it with the correct screws to fix the drives onto cage. Reinsert the drives back into the chassis in the same orientation.



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. As in the Tenuis, a copy of the Windows XP is optionally pre-installed in the machine.

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 Tenuis:

You should always make sure the keyboard assembly is properly closed onto the Tenuis 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 Tenuis 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 Tenuis 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 Tenuis. Make sure your power source is reliable and of proper standard. The Tenuis power supply is capable of handling 100-240V and 50-60Hz. Do not use the Tenuis 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 on model):

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 Tenuis.
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 available.
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 SKD 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	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	Tennis 200 System (A or B)	Main system unit chassis	1
9	Carrying Bag	Tow bag with wheel	1