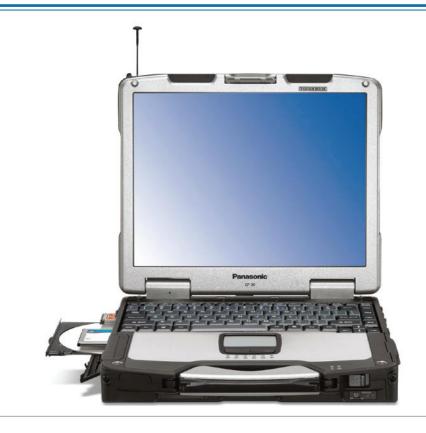# HOWARD™
TECHNOLOGY SOLUTIONS

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Howard Technology Solutions recommends Windows Vista™ Business

Powerful, Rugged and Wireless

■ *Full Magnesium Alloy Case with Handle*

■ *Moisture- and Dust-resistant Design*

■ *Shock-mounted, Removable Hard Drive*

■ *Wide Area Wireless and GPS Capable*

■ *Intel® Centrino® Duo Mobile Technology*

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Howard Technology Solutions recommends Windows Vista™ Business

SOFTWARE
- Genuine Windows® XP Professional SP2*
- Setup, Diagnostics, DMI Viewer, Online Reference Manual, Adobe® Acrobat® Reader

CPU
- Intel® Core™ Duo Processor L2400
  – 2MB L2 cache
  – Processor speed 1.66GHz
  – 667MHz FSB

DURABILITY FEATURES
- Designed using MIL-STD-810F test procedures
- Full magnesium alloy case with handle
- Moisture- and dust-resistant LCD, keyboard and touchpad
- Sealed port and connector covers
- Shock-mounted, removable hard drive in stainless steel case
- Rugged, dust-resistant hinges
- Vibration- and drop-shock-resistant
- Pre-installed replaceable screen film for touchscreen protection

STORAGE & MEMORY
- 80GB hard drive
- 512MB SDRAM (DDR2) standard, expandable to 4096MB

DISPLAY
- With 80GB hard drive: 13.3" 1024 x 768 (XGA) transmissive, daylight-readable TFT active matrix color LCD with touchscreen or without touchscreen
- External video support up to 1280 x 1024 at 16 million colors (24-bit color depth)
- Intel® Mobile 945GM graphic controller DVMT up to 128MB
- 1000 nit (touchscreen models), 500 nit LCD brightness (non-touchscreen models)

AUDIO
- Sigmatel™ STAC9751T AC-97 v.2.1 Compliant Audio Codec
- Integrated front-facing speaker
- Convenient keyboard volume and mute controls

EXPANSION SLOTS
- PC card type II x 1
- Secure Digital (SD) card
- Express card/54 x 1

MULTIMEDIA POCKET
- Will accept optional Combo or Multi Drive, or 2nd Battery

KEYBOARD & INPUT
- 87-key with dedicated Windows® key
- Pressure-sensitive touchpad with vertical scrolling support
- Touchscreen LCD (only with touchscreen version)

INTERFACE

• External video	MiniD-sub 15-pin
• Headphones/speaker	Mini-jack stereo
• Microphone/line in	Mini-jack
• Port replicator	80-pin (reinforced)
• Serial	D-sub 9-pin
• Ext. antenna conn.	50 Ohm Coaxial
• USB 2.0 (x 3)	4-pin
• IEEE 1394a (Firewire)	4-pin
• 10/100/1000 Ethernet	RJ-45
• 56K Modem	RJ-11

WIRELESS
- Bluetooth® v.2.0 + EDR
- Intel® PRO/Wireless 3945ABG LAN connection 802.11a/b/g
- Security
  – Authentication: LEAP, WPA, 802.1x, EAP-TLS, EAP-FAST, PEAP
  – Encryption: CKIP, TKIP, 128-bit and 64-bit WEP, Hardware AES
- Slide on/off switch

POWER SUPPLY
- Lithium ion battery pack (10.65V, 8.55Ah) with overcharge protection
- Battery operation: 7.9 hours****
- Battery charging time: 5 hours off, 8 hours on****
- AC Adapter: AC 100V-240V 50/60Hz, Auto sensing/switching worldwide power supply
- Pop-up, on-screen battery status reporting

POWER MANAGEMENT
- Hibernation, Standby, ACPI BIOS

SECURITY FEATURES
- Password Security: Supervisor, User, Hard-disk Lock
- Cable lock slot
- Trusted platform module (TPM) security chip v.1.2
- Computrace® theft protection agent in BIOS*****

WARRANTY
- 3-year limited warranty, parts and labor

DIMENSIONS & WEIGHT
- 2.8"(H) x 11.9"(W) x 11.3"(D)
- 8.4 lbs.

- ■ *Full Magnesium Alloy Case with Handle*
- ■ *Moisture- and Dust-resistant Design*
- ■ *Shock-mounted, Removable Hard Drive*
- ■ *Wide Area Wireless and GPS Capable*
- ■ *Intel® Centrino® Duo Mobile Technology*

INTEGRATED OPTIONS****
- Wide Area Wireless Solutions
  – EVDO
  – HSDPA
- Global positioning system (GPS) receiver
- Backlit keyboard – sealed rubber or plastic emissive
- SmartCard reader
- Fingerprint scanner

ACCESSORIES****

• AC Adapter (3-pin)	CF-AA1653AM
• MIL-461 Compliant AC Adapter	CF-AA1653ASM
• Battery Charger	CF-VCBTB1U
• Combo Drive (DVD-ROM**/CD-RW***)	CF-VDR301U
• DVD Multi Drive (DVD-RAM/DVD-RW/CD-RW***)	CF-VDM301U
• ComFolio Universal Carrying Case (large capacity)	COMUNIV-P
• ComFolio Universal Jr. Carrying Case	COMUNIVJR-P
• Desktop Port Replicator	CF-VEB272A2W
• External USB Floppy Drive	CF-VFDU03W
• Lithium Ion Battery Pack	CF-VZSU46U
• Lithium Ion Battery Pack for Multimedia Pocket	CF-VZSU1430U
• Memory Cards	
– 512MB	CF-WMBA5512C
– 1GB	CF-WMBA501G
– 2GB	CF-WMBA502G
• Touchscreen Large Stylus with Tether Hole	CF-VNP004U
• Vehicle-mount Port Replicator (USB 2.0)	CF-WEB2732
• Vehicle-mount Port Replicator with Integrated Dual High-gain Antenna Pass-through (USB 2.0)	CF-WEB2912
• Vehicle-mount Port Replicator with Integrated High-gain Antenna Pass-through (USB 2.0)	CF-WEB2732CBL
• 13.3" LCD Protector Film	CF-VPF03U

*Windows Vista™ upgrade available for additional cost.
**Decoder software is required for DVD movie play (included).
***CD authoring software is required to write CD-RW (included).
****Battery performance features such as charge time and life span can vary according to the conditions under which the computer and battery are used. Battery operation and recharge times will vary based on many factors, including screen brightness, applications, features, power management, battery conditioning and other customer preferences. Battery testing results from MobileMark 2005.
*****Requires software and activation to enable theft protection.
******Accessories and Integrated Options may vary depending on your notebook configuration.

Please consult your reseller or Panasonic representative before purchasing.

(intel) Centrino Duo

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