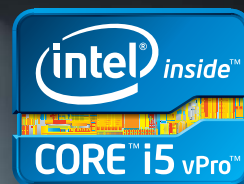


Panasonic recommends Windows 8 Pro.

Panasonic



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FULLY RUGGEDIZED MOBILE PCs

CF-31 Performance Model

Offering the ultimate balance of screen, performance and rugged reliability, the CF-31 is the flagship of the Toughbook range.



Mobile Computing Platform / CPU	Intel® Core™ i5-3360M vPro™ processor (2.8GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Operating System	Windows® 7 Professional
Memory & Storage	4GB DDR3L SDRAM (max. 8GB) 500GB (SATA)
Display	13.1" sunlight-viewable XGA Active Matrix (TFT) colour LCD (up to 1,200cd/m²) with circular polarizer; concealed mode Graphic Chip: AMD Radeon™ HD 7750M, 512MB
Camera	
Expansion Slots	PC Card: x1 Type I or Type II, Allowable current 3.3V, 400mA, 5V: 400mA ExpressCard: x1, ExpressCard/34 or ExpressCard/54 SD/SDXC Memory Card: x1 RAM Module: x1 DDR3L 200-pin SO-DIMM (1.5V, DDR3 SDRAM, PC3-10600 Compliant)
Optical Drive	Multi Media Pocket: Will accept optional Multi Drive
Interfaces	Serial (16550A compatible): D-sub, 9-pin External display (VGA port): Mini D-sub, 15-pin HDMI: x1 Headphone: Mini-jack, 3.5 DIA Microphone: Mini-jack, 3.5 DIA, stereo DC Input: Jack USB: 2.0 x3, 4-pin; 3.0 x1, 9-pin Modem: RJ-11 (Optional, project based) LAN: RJ-45 (2nd LAN optional, project based) Firewire (IEEE1394a): x1, 4-pin (Optional, project based) External Antenna: x1 (Dedicated 50 ohms coaxial connector) Port Replicator: 80-pin
Connectivity	Bluetooth™: Version 4.0 + EDR Class 1 Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant; slide on/off switch LAN: IEEE 802.3 10 Base-T, IEEE 802.3u 100 Base-TX, IEEE 802.3ab 1000 Base-T (2nd LAN Project based) Modem Data (optional): 56 kbps (V.92); Fax: 14.4 kbps
Power	AC Adaptor: Input: 100–240V AC, 50Hz/60Hz; Output: 15.6V DC, 7.05A Battery: Lithium-Ion (10.65V, Typical 8550mAh / Minimum 8100mAh) Battery Life: Approx. 12 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²)
Security Features	TPM (TCG V1.2 compliant), Integrated hardware security lock slot, Password security (supervisor password, user password, HDD lock)
Dimensions (W x H x D) & Weight (Approx.)	302mm x 73.5mm x 292mm / 11.9" x 2.9" x 11.5" (excluding protrusions) 3.72kg / 8.2lb
Options for Integration	GPS, Fingerprint Reader, Smart Card Reader, 3G Mobile Broadband (HSPA+, up to 21Mbps)
Ruggedization	Water resistance test: IEC529 (JIS C0920) IP-X5⁴, MIL-STD 810G 506.5– I & III⁴ Dust resistance test: IEC529 (JIS C0920) IP-6X⁴, MIL-STD 810G 510.5– I & II⁴ Gravity drop resistance test: MIL-STD 810G 516.6 IV⁴ (180cm drop) Vibration resistance test: MIL-STD 810G 514.6– I & II⁴

CF-31 Standard Model

Whether working in adverse weather, wet conditions, underground or where space restrictions would usually hamper productivity, the CF-31 ensures that mobile workers perform to their optimum, at all times.



Mobile Computing Platform / CPU	Intel® Core™ i5-3320M vPro™ processor (2.6GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Operating System	Windows® 7 Professional
Memory & Storage	4GB DDR3L SDRAM (max. 8GB) 500GB (SATA)
Display	LCD 13.1" sunlight-viewable XGA Active Matrix (TFT) colour LCD (up to 1,200cd/m²) with circular polarizer; concealed mode Graphic Chip: Intel® HD Graphics 4000, UMA (Windows® 7 64bit max 1696MB, 32bit max 1428MB)
Camera	
Expansion Slots	PC Card: x1 Type I or x1 Type II, Allowable current 3.3V, 400mA, 5V: 400mA ExpressCard: x1, ExpressCard/34 or ExpressCard/54 SD/SDXC Memory Card: x1 RAM Module: x1 DDR3L 200-pin SO-DIMM (1.5V, DDR3 SDRAM, PC3-10600 Compliant)
Optical Drive	Multi Media Pocket: Will accept optional Multi Drive
Interfaces	Serial (16550A compatible): D-sub, 9-pin External display (VGA port): Mini D-sub, 15-pin HDMI: x1 Headphone: Mini-jack, 3.5 DIA Microphone: Mini-jack, 3.5 DIA, stereo DC Input: Jack USB: 2.0 x3, 4-pin; 3.0 x1, 9-pin Modem: RJ-11 (Optional, project based) LAN: RJ-45 (2nd LAN optional, project based) Firewire (IEEE1394a): x1, 4-pin (Optional, project based) External Antenna: x1 (Dedicated 50 ohms coaxial connector) Port Replicator: 80-pin
Connectivity	Bluetooth™ Version 4.0 + EDR Class 1 Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant; slide on/off switch LAN: IEEE 802.3 10 Base-T, IEEE 802.3u 100 Base-TX, IEEE 802.3ab 1000 Base-T (2nd LAN Project Based) Modem Data (optional): 56 kbps (V.92); Fax: 14.4 kbps
Power	AC Adaptor: Input: 100–240V AC, 50Hz/60Hz; Output: 15.6V DC, 7.05.0A Battery: Lithium-Ion (10.65V, Typical 8550mAh / Minimum 8100mAh) Battery Life: Approx. 14.5 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²)
Security Features	TPM (TCG V1.2 compliant), Integrated hardware security lock slot, Password security (supervisor password, user password, HDD lock)
Dimensions (W x H x D) & Weight (Approx.)	302mm x 73.5mm x 292mm / 11.9" x 2.9" x 11.5" (excluding protrusions) 3.72kg / 8.2lb
Options for Integration	GPS, Fingerprint Reader, Smart Card Reader, 3G Mobile Broadband (HSPA+, up to 21Mbps)
Ruggedization	Water resistance test: IEC529 (JIS C0920) IP-X5⁴, MIL-STD 810G 506.5– I & III⁴ Dust resistance test: IEC529 (JIS C0920) IP-6X⁴, MIL-STD 810G 510.5– I & II⁴ Gravity drop resistance test: MIL-STD 810G 516.6 IV⁴ (180cm drop) Vibration resistance test: MIL-STD 810G 514.6– I & II⁴

CF-19

The market-leading, rotating screen, convertible notebook, which sets the benchmark in ruggedness.



Mobile Computing Platform / CPU	Intel® Core™ i5-3320M vPro™ processor (2.6GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Operating System	Windows® 7 Professional
Memory & Storage	4GB, DDR3L SDRAM (max. 8GB) 500GB HDD (SATA, easy accessible, shock resistant – withstands 180cm ⁴ drop)
Display	10.1" sunlight-viewable transfective plus XGA Active Matrix (TFT) colour LCD with circular polarizer (up to 500cd/m ² transmissive and 6,500cd/m ² reflective brightness, depending on light conditions); Concealed Mode; Ambient light sensor for advanced power management; Graphic Chip: Intel® HD Graphics 4000, UMA (Windows® 7 64bit max 1696MB, 32bit max 1557MB)
Camera	Rear (optional): 3MP, dual LED light, still picture
Expansion Slots	PC Card: x1 Type II (3.3V: 400mA, 5V: 400mA) ExpressCard: x1, ExpressCard/34 or ExpressCard/54 SD/SDXC Memory Card: x1 RAM Module: x1 DDR3L 200-pin SO-DIMM (1.5V, DDR3 SDRAM, PC3-10600 Compliant)
Optical Drive	
Interfaces	Serial (16550A compatible): D-sub, 9-pin External display (VGA port): Mini D-sub, 15-pin Headphone: Mini-jack, 3.5 DIA, stereo Microphone: Mini-jack, 3.5 DIA, stereo DC Input: Jack USB: 2.0 x1, 4-pin; 3.0 x1, 9-pin Modem: RJ-11 LAN: RJ-45 Firewire (IEEE1394a): x1, 4-pin External Antenna: x2 (Dedicated 50 ohms coaxial connector) Port Replicator: 100-pin
Connectivity	Bluetooth™: Version 4.0 + EDR Class 1 Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant; slide on/off switch LAN: 1000BASE-T/100BASE-TX/10Base-T Modem Data: 56 kbps (V.92); Fax: 14.4 kbps / voice not compatible
Power	AC Adaptor: Input: 100–240V AC, 50Hz/60Hz; Output: 16V DC, 5A Battery: Lithium-Ion (10.65V, Typical 5.7Ah / Minimum 5.4Ah) Battery Life: Approx. 10 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m ²)
Security Features	TPM (TCG V1.2 compliant), Integrated hardware security lock slot, Password security (supervisor password, user password, HDD Lock)
Dimensions (W x H x D) & Weight (Approx.)	271mm x 49mm x 216mm / 10.7" x 1.93" x 8.5" (excluding protrusions) 2.3kg / 5.0lb (including battery)
Options for Integration	GPS, Fingerprint Reader, Smart Card Reader, 3G Mobile Broadband (HSPA+, up to 21Mbps), Solid State Disk
Ruggedization	Water resistance test: IEC529 (JIS C0920) IPX5 ⁴ , MIL-STD 810G 506.5, III ⁴ Dust resistance test: IEC529 (JIS C0920) IP6X ⁴ , MIL-STD 810G 510.5, Level ⁴ Gravity drop resistance test: MIL-STD 810G 516.6, (180cm drop) ⁴ Vibration resistance test: MIL-STD 810G 514.6, category 20 & 24 ⁴

CF-D1

The fully rugged diagnostic tablet.



Intel® Core™ i5-2520M processor (2.5GHz, 3MB Intel® Smart Cache, Intel® 6 series Express chipset QM67)
Windows® 7 Professional
4GB DDR3 SDRAM (max. 8GB) 320GB (SATA)
13.3" Active Matrix (TFT) colour LCD 1366 x 768 pixels (HD) with Touchscreen Up to 400cd/m ² transmissive brightness Optional Outdoor Display: 1.000cd/m ² transmissive brightness with circular polarizer
Front (optional): 1.3MP, video Rear (optional): 3MP, still picture
PC Card: x1, Type I or II, Allowable current 3.3V: 400 mA, 5V: 400 mA ExpressCard: x1, ExpressCard /34 or /54 SD/SDXC Memory Card: x1 RAM Module: x1 DDR3 200-pin SO-DIMM (1.5V, DDR3 SDRAM, PC3-10600 Compliant)
Serial: D-sub, 9-pin VGA: Mini D-sub, 15-pin optional ⁵ (eliminates serial) Headphone: Mini-jack, 3.5 DIA, stereo Microphone: Mini-jack, 3.5 DIA, stereo DC Input: Jack USB: 2.0 x 3, 4-pin, 4th USB 2.0 optional ⁵ (Modular Bay Port) Rugged USB: 2.0 x1, 4-pin optional ⁵ (Modular Bay Port) LAN: RJ-45, 2nd LAN optional ⁵ (Modular Bay Port) Fingerprint Reader: x1 optional ⁵ (Modular Bay Port) Industry Cradle: x1
Bluetooth™: Version 2.1 + EDR Class 2 Wireless LAN: Intel® Centrino® Advanced-N 6205 802.11 a/b/g/n compliant LAN: IEEE 802.3 10Base-T / IEEE 802.3u 100BASE-TX / IEEE 802.3ab 1000BASE-T (2nd LAN 100MBit optional ⁵)
AC Adaptor: Input: 100–240V AC, 50Hz/60Hz; Output: 15.6V DC, 7.05A Battery: Lithium-Ion (10.8V, 6.2Ah) Battery Life: Approx. 9 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m ²)
Password security (supervisor password, user password, hard disc lock), Kensington Lock, Fingerprint Reader (optional), Smartcard Reader (optional)
349mm x 46mm x 244mm / 13.7" x 1.8" x 9.6" 2.25kg / 4.96lb
3G Mobile Broadband (Ericsson F5521gw, up to 21Mbps DL), GPS
Water resistance test: IPX5 ¹ Dust resistance test: IP6X ¹ Gravity drop resistance test: 90cm drop ⁵

SEMI AND BUSINESS RUGGEDIZED MOBILE PCs

CF-H2 Field

The Toughbook CF-H2 is a unique tool. Unique in its ability to transform the way mobile professionals work – wherever and whenever that might be.



Mobile Computing Platform / CPU	Intel® Core™ i5-3427U vPro™ processor (1.8GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Operating System	Windows® 7 Professional
Memory & Storage	4GB DDR3L SDRAM (max. 8GB) 320GB (SATA) or 128GB (SSD) (Contact Smartcard Reader Model)
Display	10.1" sunlight-viewable transfective plus XGA Active Matrix (TFT) colour LCD with circular polarizer (up to 500cd/m² transmissive and 6.500cd/m² reflective brightness, depending on light conditions) and ambient light sensor Graphic Chip: Intel® HD Graphics 4000, UMA (Windows® 7 64bit max 1696MB, 32bit max 1547MB)
Camera	Rear (optional): 3MP, autofocus with LED light
Expansion Slots	
Interfaces	Serial (RS232C): x1 LAN: x1 (depends on model) USB: 3.0 x1, 9-pin (2nd USB 2.0, 4-pin depends on model, eliminates LAN) Docking Connector: x1 Cradle I/O DC Input: x1
Connectivity	Bluetooth™: Version 4.0 + EDR Class 1 Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant LAN: IEEE 802.3 10 Base-T, IEEE 802.3u 100 Base-TX, IEEE 802.3ab 1000 Base-T
Power	AC Adaptor: Input: 100–240V AC, 50Hz/60Hz, Output: 16V DC, 3.75A Battery Pack: Lithium-Ion (7.2V, 3400mAh) x2 packs hot swappable Battery Life: Approx. 7 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²)
Security Features	TPM (TCG V1.2 compliant)
Dimensions (W x H x D) & Weight (Approx.)	274mm × 268mm × 58mm / 10.8" × 10.6" × 2.3" 1.58kg / 3.5lb (including hand strap)
Options for Integration	Barcode Reader, 3G Mobile Broadband (HSPA+, 21Mbps DL), Combined Contactless Smart Card (ISO 14443 Type A/B) and RFID (ISO 15693), Contact Smartcard Reader, GPS, Fingerprint Reader
Ruggedization	Water resistance test: IEC529 (JIS C0920) IPX5⁴, MIL-STD 810G 506.5, I & III⁴ Dust resistance test: IEC529 (JIS C0920) IP6X⁴, MIL-STD 810G 510.5, I & II⁴ Gravity drop resistance test: MIL-STD 810G 516.6, IV (180cm drop)⁴ Vibration resistance test: MIL-STD 810G 514.6, category 24⁴

CF-H2 Healthcare

A fully rugged healthcare tablet. Easy to clean/disinfect (meets Hospital Safety Certifications⁶), waterproof and able to withstand drops, it can be used for anything from reading patient notes to accessing medical databases.



Mobile Computing Platform / CPU	Intel® Core™ i5-3427U vPro™ processor (1.8GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Operating System	Windows® 7 Professional
Memory & Storage	4GB DDR3L SDRAM (max. 8GB) 320GB HDD (SATA) or 128GB SSD (Contact Smartcard Reader Model)
Display	10.1" sunlight-viewable transfective plus XGA Active Matrix (TFT) colour LCD with up to 500cd/m² transmissive and 6,500cd/m² transfective brightness, depending on light conditions Graphic Chip: Intel® HD Graphics 4000, UMA (Windows® 7 64bit max 1696MB, 32bit max 1547MB)
Camera	Rear (optional): 3MP, autofocus with LED light
Expansion Slots	
Interfaces	Serial (RS232C): x1 LAN: x1 (depends on model) USB: 3.0 x1, 9-pin (2nd USB 2.0, 4-pin depends on model, eliminates LAN) Docking Connector: x1 Cradle I/O DC Input: x1
Connectivity	Bluetooth™: Version 4.0 + EDR Class 1, Continua certified Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant LAN: IEEE 802.3 10 Base-T, IEEE 802.3u 100 Base-TX, IEEE 802.3ab 1000 Base-T
Power	AC Adaptor: Input: 100–240V AC, 50Hz/60Hz, Output: 16V DC, 3.75A Battery Pack: Lithium-Ion (7.2V, 3400 mAh) x2 packs hot swappable Battery Life: Approx. 7 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²)
Security Features	TPM (TCG V1.2 compliant)
Dimensions (W x H x D) & Weight (Approx.)	274mm x 268mm x 58mm / 10.8" x 10.6" x 2.3" 1.58kg / 3.5lb (including hand strap)
Options for Integration	Barcode Reader, 3G Mobile Broadband (HSPA+, 21Mbps DL), Combined Contactless Smart Card (ISO 14443 Type A/B) and RFID (ISO 15693), Contact Smartcard Reader, GPS, Fingerprint Reader
Ruggedization	Water resistance test: IEC529 (JIS C0920) IPX5⁴, MIL-STD 810G 506.5, I & III⁴ Dust resistance test: IEC529 (JIS C0920) IP6X⁴, MIL-STD 810G 510.5, I & II⁴

CF-53 Touchscreen Model

A powerful mobile machine that combines the high performance of a desktop with the durability and reliability of a rugged notebook.



CF-53 Standard Model

The ideal all-round notebook when you're on the move or in the office.



Mobile Computing Platform / CPU	Intel® Core™ i5-3320M vPro™ processor (2.6GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Operating System	Windows® 7 Professional
Memory & Storage	4GB DDR3L SDRAM (max. 8GB) 500GB (SATA)
Display	14" Active Matrix (TFT) colour LCD, 1366 x 768 pixels (HD) with sunlight viewable resistive Touchscreen (up to 1,000cd/m²) Graphic Chip: Intel® HD 4000 Graphics, UMA (Windows® 7 64bit max 1696MB, 32bit max 1428MB)
Camera	Front (optional): 1.3MP, digital microphone
Expansion Slots	PC Card: x1, Type I or Type II; Allowable current 3.3V: 400mA, 5V: 400mA ExpressCard: x1, ExpressCard/34 or ExpressCard/54 SD/SDXC Memory Card: x1 RAM Module: x2, DDR3L 200-pin SO-DIMM (1.5V, DDR3 SDRAM, PC3-10600 Compliant), one slot occupied
Optical Drive	DVD Super Multi Drive
Interfaces	Serial (16550A compatible): D-sub, 9-pin External Display (VGA port): Mini D-sub, 15-pin HDMI: x1 Headphone: Mini-jack, 3.5 DIA, stereo Microphone: Mini-jack, 3.5 DIA, stereo DC Input: Jack USB: 2.0 x2, 4-pin; 3.0 x2, 9-pin Firewire (IEEE1394a): x1, 4-pin (Project based) Modem: RJ-11 (Project based) LAN: RJ-45 (2nd LAN Project based) Port replicator: 100-pin
Connectivity	Bluetooth™: 4.0 + EDR Class 1 Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant; slide on/off switch LAN: IEEE 802.3 10Base-T / IEEE 802.3u 100BASE-TX / IEEE 802.3ab 1000BASE-T (2nd LAN Project based) Modem Data: 56 kbps (V.92) Fax: 14.4 kbps
Power	AC Adaptor: Input: 100–240V, 50Hz/60Hz; Output: 15.6V, 7.05A Battery: Lithium-Ion (10.8V, Typical 6750mAh / Minimum 6300mAh) Battery Life: Approx. 11 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²) Power Management: Standby function, ACPI BIOS
Security Features	TPM (TCG V1.2 compliant), Password security (supervisor password, user password, hard disc lock), Integrated hardware security lock slot
Dimensions (W x H x D) & Weight	341mm x 48-55mm x 281mm / 13.6" x 1.9-2.2" x 11.2" (including carrying handle) 2.95kg / 6.50lb (including carrying handle)
Options for Integration	Fingerprint Reader, Smart Card Reader, 3G Mobile Broadband (HSPA+, up to 21Mbps), dedicated GPS, RFID
Ruggedization	Withstands drops from a height of 76cm¹ Water resistant touchpad, keyboard MIL-STD 810G (Vibration, altitude, drop, shock, temperature & humidity)

Intel® Core™ i5-3320M vPro™ processor (2.6GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Windows® 7 Professional
4GB DDR3L SDRAM (max. 8GB) 500GB (SATA)
14" Active Matrix (TFT) colour LCD 1366 x 768 pixels (HD) Graphic Chip: Intel® HD 4000 Graphics, UMA (Windows® 7 64bit max 1696MB, 32bit max 1428MB)
Front (optional): 1.3MP, digital microphone
PC Card: x1, Type I or Type II, Allowable Current: 3.3V: 400mA, 5V: 400mA² ExpressCard: x1, ExpressCard/34 or ExpressCard/54² SD/SDXC Memory Card: x1 RAM Module: x2, DDR3L 200-pin SO-DIMM (1.5V, DDR3 SDRAM, PC3-10600 Compliant), one slot occupied
DVD Super Multi Drive
Serial (16550A compatible): D-sub, 9-pin External Display (VGA port): Mini D-sub, 15-pin HDMI: x1 Headphone: Mini-jack, 3.5 DIA, stereo Microphone: Mini-jack, 3.5 DIA, stereo DC Input: Jack USB: 2.0 x2, 4-pin; 3.0 x2, 9-pin Firewire (IEEE1394a): x1, 4-pin (Project based) Modem: RJ-11 (Project based) LAN: RJ-45 (2nd LAN Project based) Port replicator: 100-pin
Bluetooth™: 4.0 + EDR Class 1 Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant; slide on/off switch LAN: IEEE 802.3 10Base-T / IEEE 802.3u 100BASE-TX / IEEE 802.3ab 1000BASE-T (2nd LAN Project based) Modem Data: 56 kbps (V.92) Fax: 14.4 kbps
AC Adaptor: Input: 100–240V, 50Hz/60Hz; Output: 15.6V, 7.05A Battery: Lithium-Ion (10.8V, Typical 6750 mAh / Minimum 6300 mAh) Battery Life: Approx. 11 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²) Power Management: Standby function, ACPI BIOS
TPM (TCG V1.2 compliant), Password security (supervisor password, user password, hard disc lock), Integrated hardware security lock slot
341mm x 48-55mm x 281mm / 13.6" x 1.9-2.2" x 11.2" (including carrying handle) 2.65 kg / 5.84 lb (including carrying handle)
Fingerprint Reader, Smart Card Reader, 3G Mobile Broadband (HSPA+, up to 21Mbps), dedicated GPS, RFID
Withstands drops from a height of 76cm¹ Water resistant touchpad, keyboard MIL-STD 810G (Vibration, altitude, drop, shock, temperature & humidity)

CF-U1

As the world’s first ruggedized ultra-mobile PC, the Toughbook CF-U1 combines maximum functionality and connectivity in a compact size, with extreme durability.



Mobile Computing Platform / CPU	Intel® Atom™ processor Z530 embedded (1.6GHz, 512KB L2 cache, 533MHz FSB)
Operating System	Windows® 7 Professional
Memory & Storage	2GB DDR2 SDRAM 64GB (SSD)
Display	5.6" sunlight-viewable transfective plus WSVGA, 1024 x 600 pixels, Active Matrix (TFT) colour LCD with circular polarizer (up to 380cd/m² transmissive and 6,380cd/m² transfective brightness, depending on light conditions) and Circulumin™ technology
Camera	Rear (optional): 3MP, dual LED light, still picture
Expansion Slots	SDHC Memory Card: x1
Interfaces	Microphone: Mini-jack, 3.5 DIA, stereo Headphone: Mini-jack, 3.5 DIA, stereo USB: 2.0 x1, 4-pin Expansion Connector: x1 Cradle I/O DC Input: x1
Connectivity	Bluetooth™: Version 2.1 + EDR Wireless LAN: Atheros 802.11 a/b/g/n
Power	AC Adaptor: Input: 100–240V AC, 50Hz/60Hz, Output: 16V DC, 3.75A Battery Pack: Lithium-Ion (7.2V, 2900mAh) x2 packs hot swappable Battery Life: Approx. 9 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²)
Security Features	TPM (TCG V1.2 compliant), Integrated hardware security lock slot, Password security (supervisor password, user password, HDD lock)
Dimensions (W x H x D) & Weight (Approx.)	184mm x 151mm x 57mm / 7.24" x 5.94" x 2.24" (including hand strap) 1.06kg / 2.34lb (including hand strap)
Options for Integration	3G Mobile Broadband (HSPA, 21Mbps), Bar Code Reader, GPS, Fingerprint Reader
Ruggedization	Water resistance test: IEC529 (JIS C0920) IPX5 ⁴ , MIL-STD 810G 506.5, III ⁴ Dust resistance test: IEC529 (JIS C0920) IP6X ⁴ , MIL-STD 810G 510.5 Level ⁴ Gravity drop resistance test: MIL-STD 810G 516.6 (180cm drop) ⁴ Vibration resistance test: MIL-STD 810G 514.6, category 20 & 24

FZ-A1

The 10.1" Android™-powered Toughpad FZ-A1 is ideal for highly mobile outdoor workers in challenging conditions.



Marvell® 1.2GHz dual-core processor
Android™ 4.0
1GB 16GB Flash
10.1" Active Matrix (TFT) colour LCD 1024x768 (XGA), up to 500cd/m² brightness with ambient light sensor, anti-glare/reflection film, capacitive multi touchscreen and digitizer
Front: 2MP, fixed focus Rear: 5MP, auto focus with LED flash
Micro SDHC: x1 (up to 32GB)
Docking Connector: x1 Micro USB: 2.0 x1 Micro HDMI: x1 SIM card: x1 (3G model only) Audio: x1 DC Input: x1
Bluetooth™: Version 2.1 + EDR Wireless LAN: IEEE802.11 a/b/g/n 3G : Ericsson F5521gw HSPA+, up to 21MBps (optional) GPS: Satellite GPS
AC Adaptor: Input: 100–240V AC, 50Hz/60Hz, Output: 12V DC, 2A Battery: Lithium-Ion (33.9Wh) Serviceable Battery Life: Approx. 10 hours
Dedicated security processor core SoC compliant with FIPS 140-2 Level 2, Marvell® Trusted Boot, Marvell® hardware assisted storage encryption, AuthenTec® Mobile Security, McAfee Mobile Security (trial version)
226.3mm x 17mm x 212mm / 10.5" x 0.67" x 8.35" 993g / 2.19lb (without pen)
Water resistance test: IPX5 ¹ Dust resistance test: IP6X ¹ Gravity drop resistance test: 120cm (unit power off) ¹ Temperature (operating) -10 °C to 50 °C (14 °F to 122 °F) ¹

FZ-G1

The first fully rugged Windows 8 tablet to feature IPS α screen technology, the 10.1" FZ-G1 combines lightweight design, business expansion ports and durability for the ultimate in field-based computing.



Mobile Computing Platform / CPU	Intel $\circ$ Core TM i5-3437U vPro TM processor (1.9GHz, 3MB Intel $\circ$ Smart Cache, Intel $\circ$ 7 series Express chipset QM77)
Operating System	Windows 8 Pro
Memory & Storage	4GB DDR3L SDRAM (max. 8GB) 128GB (SATA)
Display	10.1" Active Matrix (TFT) IPS pro next colour LCD, 1920 x 1200 pixels, WUXGA (up to 800cd/m 2) 10 finger Capacitive touch screen + Digitizer
Camera	Front: 720p Rear (optional): 3MP, still picture
Expansion Slots	Micro SD/SDXC Memory Card: x1 optional (configuration port)
Interfaces	Serial (16550A compatible): D-sub, 9-pin optional (configuration port) HDMI: x1 Headset: x1 DC Input: Jack USB 2.0: x1, 4-pin optional (configuration port) USB 3.0: x1, 9-pin LAN: RJ-45 optional (configuration port) Port Replicator: 24-pin External Antenna connector: optional
Connectivity	Bluetooth TM : Version 4.0 + EDR Class 1 Wireless LAN: Intel $\circ$ Centrino $\circ$ Advanced-N 6235 802.11 a/b/g/n compliant LAN: IEEE 802.3 10 Base-T, IEEE 802.3u 100 Base-TX, IEEE 802.3ab 1000 Base-T optional
Power	AC Adaptor: Input: 100–240V AC, 50Hz/60Hz; Output: 16V DC, 4.06A Battery: Lithium-Ion (10.8V, 4400mAh), user replaceable Battery Life: Approx. 8 hours (Windows $\circ$ 7, Mobile Mark TM 2007, LCD brightness: 60cd/m 2)
Security Features	TPM (TCG V1.2 compliant), Integrated hardware security lock slot, Password security (supervisor password, user password, HDD lock)
Dimensions (W x H x D) & Weight	270mm x 19mm x 188mm / 10.6" x 0.75" x 7.4" 1.1kg / 2.43lb
Options for Integration	GPS, Mobile Broadband (HSPA+, up to 14.4Mbps)
Ruggedization	Water resistance test: IEC529 (JIS C0920) IPX5 4 , MIL-STD 810G 506.5, III 4 Dust resistance test: IEC529 (JIS C0920) IP6X 4 , MIL-STD 810G 510.5, Level 4 Gravity drop resistance test: MIL-STD 810G 516.6, (180cm drop) 4 Vibration resistance test: MIL-STD 810G 514.6, category 20 & 24 4

JT-B1

Lightweight, one-handed operation, fully rugged Android 4.0 tablet with 7" outdoor display – enables field workforces to work anywhere, efficiently and securely.



	Texas Instruments $\circ$ OMAP TM 4460, 1.5GHz Dual Core Processor
	Android TM 4.0
	1GB 16GB Flash
	7" Active Matrix (TFT) colour LCD, 1024 x 600 pixels, up to 500cd/m 2 brightness with ambient light sensor, anti-glare/reflection film, 4 finger Capacitive touch screen
	Front: 1.3MP, fixed focus Rear: 13MP, auto focus with LED flash
	Micro SDHC: x1 (up to 32GB)
	Docking Connector: x1 Micro USB: 2.0 x1 SIM card: x1 (3G model only) Headset: x1 DC Input: x1 NFC: ISO/IEC21481 Type A/B, Felica
	Bluetooth TM : Version 4.0 + EDR Wireless LAN: IEEE802.11 a/b/g/n GPS: Satellite GPS
	AC Adaptor: Input: 100–240V AC, 50Hz/60Hz, Output: 12V DC, 2A Battery: Lithium-Ion (5.720mAh), user replaceable Battery Life: Approx. 8 hours
	221mm x 17.8mm x 130mm / 8.7" x 0.7" x 5.1" 545g / 1.2lb
	Mobile Broadband (HSPA+, up to 14.4Mbps)
	Water resistance test: IEC529 (JIS C0920) IPX5 4 , MIL-STD 810G 506.5, III 4 Dust resistance test: IEC529 (JIS C0920) IP6X 4 , MIL-STD 810G 510.5, Level 4 Gravity drop resistance test: MIL-STD 810G 516.6, (180cm drop) 4 Vibration resistance test: MIL-STD 810G 514.6, category 20 & 24 4

SEMI AND BUSINESS RUGGEDIZED MOBILE PCs

CF-C2

Combining ground-breaking ergonomics, semi rugged design and outstanding performance, the Toughbook CF-C2 redefines the way mobile professionals operate, allowing them to be more productive than ever before.



Mobile Computing Platform / CPU	Intel® Core™ i5-3427U vPro™ processor (1.8GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Operating System	Windows 8 Pro
Memory & Storage	4GB DDR3L SDRAM (max. 8GB) 500GB (SATA)
Display	12.5" Active Matrix (TFT) IPS colour LCD, 1366 x 768 pixels, HD (up to 500cd/m²) 5 finger Capacitive touch screen + Digitizer
Camera	Front: 720p Rear (optional): 3MP, still picture
Expansion Slots	ExpressCard: x1, ExpressCard/34 optional SD/SDXC Memory Card: x1 RAM Module: x1, DDR3L SDRAM, 204-pin SO-DIMM (1.5V, SO-DIMM, PC3-10600 Compliant)
Interfaces	Serial (16550A compatible): D-sub, 9-pin optional External Display (VGA port): Mini D-sub, 15-pin HDMI: x1 Headphone: Mini-jack, 3.5 DIA, stereo Microphone: Mini-jack, 3.5 DIA, stereo DC Input: Jack USB: 2.0 x1, 4-pin; 3.0 x2, 9-pin NFC: x1 optional Modem: RJ-11 optional LAN: RJ-45 Port Replicator: 100-pin
Connectivity	Bluetooth™: Version 4.0 + EDR Class 1 Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant; slide on/off switch LAN: IEEE 802.3 10 Base-T, IEEE 802.3u 100 Base-TX, IEEE 802.3ab 1000 Base-T
Power	AC Adaptor: Input: 100-240V AC, 50Hz/60Hz; Output: 15.6V DC, 7.05A Battery: Lithium-Ion (10.8V, Typical 6800mAh / Minimum 6400mAh) Battery Life: Approx. 11 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²)
Security Features	TPM (TCG V1.2 compliant), Integrated hardware security lock slot, Password security (supervisor password, user password, HDD lock)
Dimensions (W x H x D) & Weight	299mm x 25mm x 217.3mm / 11.8" x 1.0" x 8.6" (including handstrap) 1.81kg / 3.99lb
Options for Integration	Full size smart card reader, half size smart card reader, rear camera (3MP), 3G Mobile Broadband (HSPA+, up to 14.4Mbps), Modem
Ruggedization	Withstands drops from a height of 76cm (bottom) ³ Spill resistant touchpad, keyboard Fanless design

CF-AX2

The world's lightest* business rugged, convertible Ultrabook™ inspired by Intel.



Mobile Computing Platform / CPU	Intel® Core™ i5-3427U vPro™ processor (1.8GHz, 3MB Intel® Smart Cache, Intel® 7 series Express chipset QM77)
Operating System	Windows 8 Pro
Memory & Storage	4GB DDR3L SDRAM 128GB (SATA)
Display	11.6" Active Matrix (TFT) colour LCD, 1366 x 768 pixels, HD 10 finger Capacitive touch screen
Camera	Front: 720p
Expansion Slots	SD/SDXC Memory Card: x1
Interfaces	External Display (VGA port): Mini D-sub, 15-pin HDMI: x1 Headphone: Mini-jack, 3.5 DIA, stereo Microphone: Mini-jack, 3.5 DIA, stereo DC Input: Jack USB: 3.0 x2, 9-pin LAN: RJ-45
Connectivity	Bluetooth™: Version 4.0 + EDR Class 1 Wireless LAN: Intel® Centrino® Advanced-N 6235 802.11 a/b/g/n compliant LAN: IEEE 802.3 10 Base-T, IEEE 802.3u 100 Base-TX, IEEE 802.3ab 1000 Base-T
Power	AC Adaptor: Input: 100-240V AC, 50Hz/60Hz; Output: 16V DC, 5.0A Battery: Main: Lithium-Ion (7.2V, Typical 4400mAh / Minimum 4100mAh); Internal: Lithium-Ion (7.2V, Typical 2200mAh / Minimum 2050mAh) Battery Life: Approx. 8 hours (Windows® 7, Mobile Mark™ 2007, LCD brightness: 60cd/m²)
Security Features	TPM (TCG V1.2 compliant), Integrated hardware security lock slot, Password security (supervisor password, user password, HDD lock)
Dimensions (W x H x D) & Weight	288mm x 18mm x 194mm / 11.34" x 0.71" x 7.64" 1.15kg / 2.535lb
Options for Integration	Smart Card Reader, 3G Mobile Broadband (HSPA+, up to 14.4Mbps)
Ruggedization	Passes a 76 cm free-fall test ⁴ and a 100-kgf pressurised vibration test ⁵

As an ENERGY STAR® Partner, Panasonic Corporation has determined that this product meets the ENERGY STAR® guidelines for energy efficiency. Active Matrix colour display conforms to industry standards. Some displays may contain isolated illuminated or dark pixels as an artefact of the manufacturing process (effective pixels: minimum 99.998%). RAM capacity calculated as follows: 1MB = 1,048,576 bytes. HDD capacity calculated as follows: 1GB = 1,000,000,000 bytes. Toughbook is a brand name and registered trademark of Panasonic Corporation. Google, the Google logo, YouTube and Android are trademarks of Google Inc. Acrobat® is a registered trademark of Adobe® Systems Incorporated. Intel, the Intel logo, Intel Core, Intel vPro, Core Inside and vPro Inside are trademarks of Intel Corporation in the U.S. and other countries. Microsoft® and Windows® are registered trademarks of Microsoft® Corporation of the United States and/or other countries. All other brand names shown are the registered trademarks of the relevant companies. All rights reserved. All working conditions, times and figures quoted are optimum or ideal levels and may differ as a result of individual and local circumstances. Technical specifications are subject to change without notice. *Among 11.6" hybrid PC, as of 12th December 2012.

¹ Tested in Panasonic Factory. ² Config. A: 1x PC Card Type I or II + 1x ExpressCard; Config. B: 2x PC Card Type I or II, no ExpressCard. ³ The shock resistance, pressure resistance, and splashproof functions are not a guarantee against damage or malfunction.

⁴ Tested by an independent third-party lab following IEC 60529, sections 13.4, 13.6.2, 14.2.5, 14.3. ⁵ Project based. Only one interface can be selected. ⁶ Safety Certifications list available at www.toughbook.eu.

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21065-MAY2013-EN-V1