Panasonic
ideas for life

Panasonic recommends Windows.

TOUGHBOOK CF-19

Rugged, Convertible mobile PC
that withstands shocks, spills, and dust

IP65 Compliance

- **Water Resistance**
  IPx5 test: Waterjetted from all directions with 12.5 r/min. water flow.
- **Dust Resistance**
  IP6x test: No ingress of dust when vacuum was artificially created inside PC.

Toughness testing on the Web http://panasonic.net/avc/toughbook/proof/

OS	Windows 7 Professional
CPU	Intel® Core™ i5-3320M Processor (Up to 3.3 GHz)
Color TFT LCD	10.1" XGA Touch Panel
HDD	500 GB*2
RAM	4 GB*1 (8 GB*1 Max)

Functions as a usual mobile PC in the office.

Functions as a tablet PC with the monitor screen flipped over.

Highly sensitive touch panel allows operation even if you are wearing gloves.

High-brightness transflective LCD (up to 6,500 nit)*3 for easy viewing under direct sunlight.

Operates with the standard battery for approx. 10 hours.*5

Built-in security chip (TPM)*6 for data protection.

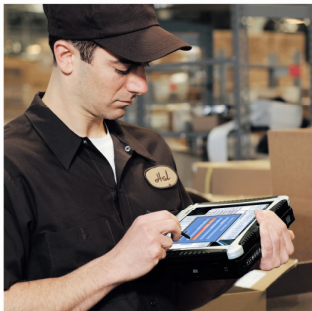Full magnesium alloy case with Hand Strap ensured by a 90-cm (36-in) free-fall test.*4

The screen turns 180° Ruggedized, 2D hinge locks automatically after rotation.

Various options can be built-in*7
- GPS, WWAN, Fingerprint reader, Camera.

*1 1 MB = 1,048,576 bytes/1 GB = 1,073,741,824 bytes. *2 The HDD is 1 GB (1,000,000,000 bytes) in capacity. The actual capacity may be less than displayed, depending on the OS and application software. *3 Average luminance in the middle of the screen at the time of shipping. This may change depending on the environment and length of use. *4 Test conducted in non-operating condition. The shock resistance, vibration resistance, dust-proof, and splash-proof functions are not a guarantee against damage or malfunction. *5 Measured at LCD brightness: 60 cd/m². Varies depending on the usage conditions, or when an external device is attached. *6 Available for some countries' model. Need to set-up TPM Professional Package. Refer to the Installation Manual of "TrustedPlatform Module (TPM)". *7 For details, contact your Panasonic sales representative.
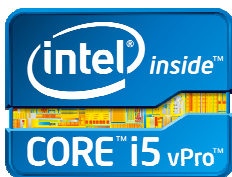
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Model No.	CF-191HAAXDY
OS[1][20]	Windows 7 Professional 32-bit or
	Windows 7 Professional 64-bit
CPU	Intel® Core™ i5-3320M Processor (3 MB[2] cache, up to 3.3 GHz) with Intel® Turbo Boost Technology
Chipset	Mobile Intel® QM77 Express Chip set
Memory[2][3]	4GB (8GB Max.)[4]
Video Memory[2][5]	<Only for model with 32bit> UMA 1416 MB[6] / 1544 MB[12] Max. (When Memory is either 4 GB or 8 GB)
	<Only for model with 64bit> UMA 1696 MB Max. (When Memory is either 4 GB or 8 GB)
Hard Disk Drive[7]	500 GB
	Approx. 10 GB is used as a partition with HDD recovery tools. (User cannot use this partition)
	Approx. 300 MB is used as a partition with recovery tools. (Users cannot use this partition.)
Display Method	10.1" XGA type (TFT) Touch Panel
Internal LCD[8]	65,536/16,777, 216 colors (800 x 600 dots/1024 x 768 dots)
External Display[9]	65,536/16,777, 216 colors (800 x 600 dots/1024 x 768 dots/1280 x 768 dots/1280 x 1024 dots)
Wireless LAN	IEEE802.11a/b/g/n compliant[10]
Bluetooth™	Version 4.0
LAN	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T
Modem	Data: 56 kbps (V.92) FAX: 14.4 kbps
Sound	WAVE and MIDI playback, Intel® High Definition Audio subsystem support, Monaural speaker
Security Chip	TPM (TCG V1.2 compliant)[11]

Card Slots		
	PC Card Slot	x 1, Type I or Type II, Allowable current 3.3 V: 400mA, 5V: 400mA
	ExpressCard[6]	x 1, ExpressCard/34 or ExpressCard/54
	Smart Card[12]	x 1
	SD Memory Card[13]	x 1

RAM Module Slot	DDR3L SDRAM, 204-pin, 1.35 V, SO-DIMM, PC3L-10600 Compliant[4]
Interface	USB Ports (USB 2.0 x 1, 3.0 x 1)[14] / Serial Port (Dsub 9-pin male) / Modem Port (RJ-11) / LAN port (RJ-45) / External Display Port VGA (Mini Dsub15-pin female) / Expansion Bus Connector (Dedicated 100-pin female) / External Antenna Connector (Dedicated 50 Ω coaxial connector) x 2 / IEEE 1394a Interface Connector (4-pin x 1) / Microphone Jack (Miniature jack, 3.5 DIA, Stereo) / Headphone Jack (Miniature jack, 3.5 DIA, Impedance 32 Ω, Output Power 4 mW x 2)
Keyboard / Pointing Device	82 or 83 keys / Touch Pad / Touchscreen [Anti-Reflection, Stylus (included) touch capable]
Power Supply	AC adaptor or Battery pack
AC Adaptor[15]	Input: 100 V to 240 V AC, 50 Hz/60 Hz, Output: 15.6 V DC, 7.05 A
Battery Pack	Li-ion 10.65 V, 5.7 Ah (typ.), 5.4 Ah (min.)
Operating Time[16]	Approx. 10 hours
Charging Time[17]	Approx. 3.5 hours
Clock Battery	Coin type lithium battery 3.0 V
Power Consumption[18]	Approx. 30 W[19] / Approx. 90 W (maximum when recharging in the ON state)
Physical Dimensions (W x D x H) (excluding the hand strap / shoulder strap)	271 mm x 49 mm x 216 mm {10.7" x 1.93" x 8.5"}
Weight	Approx. 2.30 kg {Approx. 5.06 lb.}

Operating Environment		
	Temperature	Temperature: -10 ℃ to 50 ℃ (IEC60068-2-1, 2)[20]
	Humidity	Humidity: 30 % to 80 % RH (No condensation)
Storage Environment	Temperature	Temperature: -20 ℃ to 60 ℃
	Humidity	Humidity: 30 % to 90 % RH (No condensation)

Pre-installed Software[21]	Adobe Reader, PC Information Viewer, Wireless Switch Utility, Hotkey Settings, Battery Recalibration Utility, Hand Writing Utility, Display Rotation Tool, Infineon TPM Professional Package[22], Wireless Connection Disable Utility[22], Dashboard for Panasonic PC, Aptio Setup Utility, PC-Diagnostic Utility, Recovery Disc Creation Utility, Power Plan Extension Utility, Quick Boot Manager, Hard Disk Data Erase Utility[23], GPS Viewer[24], Software Keyboard, Table button Manager, Camera Utility[25], System Inferface Manager

*1 Operations of this computer are not guaranteed except for the pre-installed OS and the OS which is installed by using the Product Recovery DVD-ROM provided by Panasonic. *2 1 MB = 1,048,576 bytes/1GB = 1,073,741,824bytes. *3 You can physically expand the memory up to 8192 MB, but the total amount of usable memory available will be less depending on the actual system configuration.*4 <Only for model with camera> The memory cannot be increased.*5 A segment of the main memory is allotted automatically depending on the computer's operating status. The size of the Video Memory cannot be set by the user. *6 Only for model with Express Card slot *7 1 GB = 1,000,000,000 bytes. Your operating system or some application software will report as fewer GB. *8 A 16,777,216 color display is achieved by using the dithering function. *9 Maximum resolution depends on the specifications of the external display. Display may be impossible using some connected external displays. *10 It does not correspond to IEEE802.11a+b+g+n standards. Actual speeds may differ. *11 Only for model with TPM. For information of TPM, refer to the Installation Manual of "Trusted Platform Module (TPM)". *12 Only for model with Smart Card slot *13 SD Memory Cards that support high-speed transfer rates can be used. Windows ReadyBoost function is also supported. Operation has been tested and confirmed using Panasonic SD Memory Cards and SDHC Memory Card with a capacity up to 32GB, and Panasonic SDXC Memory Card with a capacity of up to 64GB. Operation on other SD equipment is not guaranteed. *14 Does not guarantee operation of all USB-compatible peripherals. *15 The AC adaptor is compatible with power sources up to 240V AC adaptor. *16 Measured at LCD brightness: 60 cd/m². Varies depending on the usage conditions, or when an external device is attached. *17 Varies depending on the usage conditions.*18 Approx. 0.9 W when the battery pack is fully charged (or not being charged) and the computer is OFF. Even when the AC adaptor is not connected to the computer, power is consumed (Max. 0.3W) simply by having the AC adaptor plugged into an AC outlet.*19 Rated power consumption 23-E-1.*20 Do not expose the skin to this product when using the product in a hot or cold environment. Product functions and product life may vary in such condition, check the Operation Instructions for further details.*21 When reinstalling Windows using the data of the recovery area on the hard disk, you can select the OS to be installed (either Windows 7 (32-bit) or Windows 7 (64-bit)). An OS that has been installed at the time of purchase or an OS that has been installed using the hard disk recovery function or the recovery disc can be supported.*22 You need to install to use the feature. *23 Perform on the recovery partition. (If this software cannot be performed on the recovery partition, perform from the recovery disc). *24 Only for model with GPS. *25 Only for model with Camera.

Image and specifications are subject to change without prior notice.

TOUGH1301.19MK6

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