



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Solicitation

NUMBER
7713003

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
ALAN CUMMINGS 304-558-2402

VENDOR

RFQ COPY

ROADSCANNERS OY
 URHEILUKATU 5-7
 FI-06100 ROVANIEMI FINLAND

SHIP TO

DIVISION OF HIGHWAYS
 MATERIALS, CONTROL, SOILS,
 & TESTING
 190 DRY BRANCH DRIVE
 CHARLESTON, WV
 25306 304-558-8984

DATE PRINTED
09/24/2012

BID OPENING DATE:

10/10/2012

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		490-92	59 410	59 410
THERMAL IMAGING SYSTEM						
<p>THE WEST VIRGINIA STATE PURCHASING DIVISION FOR THE AGENCY, THE WEST VIRGINIA DIVISION OF HIGHWAYS, IS SOLICITING BIDS TO PROVIDE THE AGENCY WITH THE ONE TIME PURCHASE OF A THERMAL IMAGING SYSTEM PER THE ATTACHED SPECIFICATIONS.</p>						
***** THIS IS THE END OF RFQ 7713003 ***** TOTAL:						59 410 USD



RECEIVED

2012 OCT 12 AM 11:34

WV PURCHASING DIVISION

SIGNATURE	TELEPHONE	DATE
<i>[Signature]</i>	+352 207 815 6600	2012/10/5
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Managing Director		


WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

CERTIFICATION AND SIGNATURE PAGE

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.



Roadscanners Oy
(Company)

 Mr. Timo Saarenketo, Managing Director
(Authorized Signature)


Mr. Timo Saarenketo, Managing director
(Representative Name, Title)

+358 207 815 660 +358 207 815 662
(Phone Number) (Fax Number)

2012 / 10 / 5
(Date)

Exhibit A

Cost Sheet
RFQ#: 7713003

Item Number	Quantity	Unit of Measure	Description	Make/Model	"Or Equal" Part Number & Description	Unit Price	Total
1	1	ea	Thermal Imaging System	Roadscanner RTD-pkg, or equal			\$ 59 410 -
2	1	ea	Computer System	See section 3.1.1.4			\$ 4 975 -
Grand Total							64 385 USD



STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

ROADSCANNERS

Vendor's Name: Roadscanners Oy

Authorized Signature: [Signature] Date: 2012/10/5

Country Finland Timo Saarenketo, Managing Director

State of town of Rovaniemi, to-wit:

Taken, subscribed, and sworn to before me this ___ day of _____, 20__.

My Commission expires _____, 20__.

AFFIX SEAL HERE

NOTARY PUBLIC _____

QUOTATION

State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Rovaniemi
 5th October 2012

Roadscanners RDTD-package

Roadscanners is pleased to offer you following RDTD-package (Road Doctor™ Thermal Diagnostics package):

1) Road Doctor™ Thermal Diagnostics (RDTD) package

RDCL	CamLink Boxes	1	piece
	Transit and storage suitcase	1	piece
	Mounting Kit for Thule system	1	piece
	FireWire camera 1024x768	1	piece
	Microphone	1	piece
	High quality GPS (accuracy +/- 5m)	0	piece
	DMI (Eltrip) without installation	1	piece
	Laptop computer for data collection	0	piece
	Compatibility KIT (Matching: GPR-Eltrip)	1	piece
	Road Doctor CamLink 6.0 software	1	piece
	Road Doctor PRO 2.5 software	1	piece
RDTD	FLIR A325 SC: Uncooled thermal camera with 320x240 resolution and 50mK thermal sensitivity and with a wide angle lens with 90° Field of View (FoV), Infradex	1	piece
	Special lens for Camlink box passing IR wave	1	piece
	Plastic case for camera	1	piece
	RDTD modules for Road Doctor and CamLink	1	piece
TOTAL PRICE		59 410 USD	

All the cables for data transfer and the electricity supply are included in the package.

2) Laptop computer for data collection

Item:	Panasonic Toughbook CF-19
Number items:	1
Price / license / year:	4 975 USD

Delivery and payment terms

- System will be delivered within 60 days after receiving the purchase order.
- Delivery costs (FOB Destination).
- All customs clearance duties and eventual taxes (VAT) in client's country are responsibility of the client.
- The customs tariff number of RDTD System is: 8521 9000

Minimum Requirements for Hardware for Road Doctor® software:

- Computer with 1500 MHz Pentium IV or equivalent CPU
- Free memory capacity of 20 GB on hard disk and 1024 MB of RAM memory.
Operating system: Windows 7, Windows VISTA, Windows XP or Windows NT 2000.

Payment terms

- All prices are given excluding freight, taxes (VAT 0%) and customs duties.
- Invoicing with delivery, 30 days net.

We will be pleased to give further details and information.

Sincerely,



Timo Saarenketo
 Managing Director, Roadscanners Oy
 timo.saarenketo@roadscanners.com
 Tel. +358 50 543 0021 (mobile)

An Innovative Complete Package for Road Surveys

CL

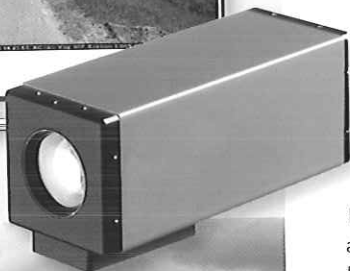
PACKAGE

RDD

Road Doctor™

RDCL

Road Doctor™



The Road Doctor™ CamLink -package (RDCL-package), a plug and play survey system for capturing multiple videos or still photos linked with GPS coordinates and other survey data, is an excellent product of Roadscanners' research and development activities. The package includes all of the hardware components and software needed for data collection, analysis and reporting.

The Road Doctor™ CamLink system includes a high quality GPS device, industrial video cameras designed for high speed video capture and a sturdy laptop. All instruments can be mounted quickly on the vehicle roof in a rugged plastic box that protects the equipment from dust and rain. The user can select GPS and/or wheel mounted encoder (DMI) as a positioning system. Roadscanners and Eltrip have developed a Compatibility KIT for combining the positioning system. More information: Compatibility KIT

Road Doctor™ CamLink is well suited for making different kinds of road inventories. With the system, it is possible to define up to ten parameters for classification while capturing videos. Logged parameters can be continuous (like Drainage, Cracks, Patching) or point-like (Culvert, traffic signs). All of the ten parameters can have up to four classes.

Roadscanners has designed a system that can handle the challenging conditions and environments that we and our clients face all over the planet. Outside of Finland, this system is being used in Sweden, USA, Slovenia, Azerbaijan and South-Africa.

Compatibility KIT

If the user wants to collect Road Doctor™ CamLink data (Video, GPS, Inventory, Laser scanners, IR camera) and GPR data simultaneously, there is a necessity for a combined positioning system instead of two separate systems. To combine the positioning information from Road Doctor™ CamLink and GPR, Roadscanners Oy has developed a tool called the Eltrip GPR compatibility Kit. It enables the user to use a GPR encoder as a source for the Eltrip DMI instead of the vehicle's internal speed pulse. The Eltrip GPR Compatibility kit is essentially a "splitter box" which utilizes the GPR encoder signal as an input and forwards it to the GPR device without any modifications. In addition, it "steals" the GPR encoder pulse for the Eltrip DMI. Utilizing the GPR Encoder pulse, the accuracy of the Eltrip DMI is 10cm. Whereas with the vehicle's internal pulse, the accuracy of the Eltrip DMI is generally 1m.

An Innovative Complete Package for Road Surveys

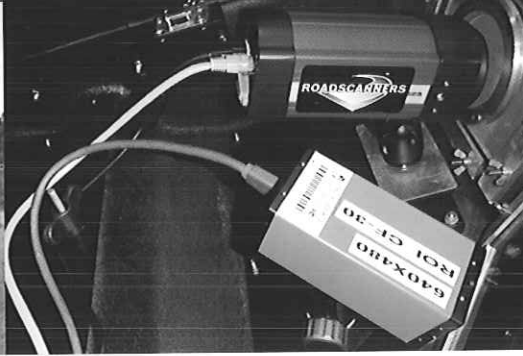
TD

PACKAGE

RDD
Road Doctor
Designer

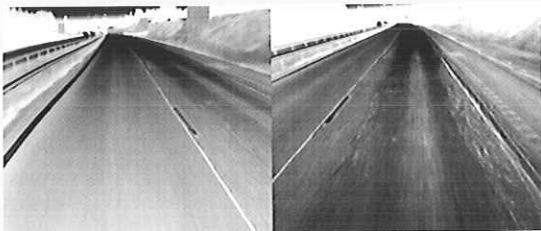
RDCL
Road Doctor
CamLink

+
TD
Thermal
Diagnostics



The high resolution, interchangeable optics and GigE connectivity make the A615 the perfect thermal imaging camera for the Road Doctor system.

Roadscanners has developed a new plug and play system for thermodynamic investigations of traffic infrastructure. The system includes all of the items included in the Road Doctor™ CamLink system and in addition to a sophisticated thermal camera based data collection and analysis package.



Good quality pavement (figure on left) provides a very homogenous thermal image while the thermal image to the right shows signs of cracks and water ingress in the asphalt.

Thermal cameras have been used in traffic infrastructure surveys for several decades but recently their quality has increased greatly that interest in this technology has started to grow. A thermal camera survey is also a non-destructive survey method closely related to Ground Penetrating Radar physics. Currently, new high precision thermal cameras can measure small changes in surface temperatures, even at the range of 0,05oC from a moving vehicle. Since the results from thermal camera measurements significantly affected by solar radiation it is recommended that data be collected well after sunset.



Thermal images taken in late spring are extremely valuable for road repair teams, because they show the location of the thawing ice in the underlying road structure.

The Road Doctor™ Thermal Diagnostics -package is an excellent tool for many kinds of research and development projects related to temperature measurements and how temperature is related to other measurements. The combination of thermal imaging data with the data from the other sensors is of vital importance. It is only when all this data is put together that you get an accurate view of the road conditions.

FLIR A325sc

Affordable and Flexible Solutions for Real-Time Thermal Analysis

The A325sc is designed from the ground up to deliver the accurate thermographic imaging and repeatable temperature measurement necessary in research and science applications. Each thermal image is built from over 76,000 individual picture elements that are sampled by the camera's on-board electronics and firmware. A325sc features include:

Uncooled Microbolometer Detector – *Maintenance-free and provides excellent longwave imaging performance.*

Optics and Focus – *Standard built-in 25° lens with optional 6°, 15°, 45°, and 90° lenses available to achieve other fields of view; manual and auto focus standard.*

Microscopy and Close-up Measurement – *Optional 100 µm, 50 µm, and 25 µm optics and stands are available for small target imaging and measurement.*

Ideal Plug-and-Play System – *Integrates with GigE Vision and GenICam protocols. The camera can be fully controlled from the PC, allowing real time, full frame video collection.*

Versatile/Compact – *Rugged and lightweight with straightforward 3-sided mounting feature that permits quick installation and easy movement for new application requirements.*

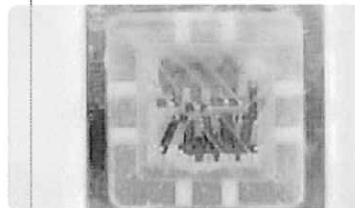
Fast Data Transfer – *RJ-45 Gigabit Ethernet connection supplies a 14-bit 320 x 240 images at rates as high as 60 Hz.*

Tailored to Your Application – *FLIR Systems offers a complete line of accessories including optics, enclosures, data systems, and software tools to suit the most demanding applications.*

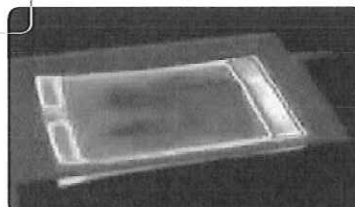
Included Recording & Analysis Software – *Remotely control the A325sc, record thermal snapshots and movies, measure temperature from over 76,000 spots, create temperature verses time plots, and more with the included FLIR ExaminIR software.*



Vascular study



Electronic component



Package seal

Imaging Specifications

Detector	A325sc
Detector Type	Uncooled Microbolometer
Spectral Range	7.5 – 13.0 μm
Resolution	320 x 240
Detector Pitch	25 μm
NETD	<50 mK
Electronics / Imaging	
Time Constant	<12 ms
Frame Rate	60 Hz
Dynamic Range	14-bit
Digital Data Streaming	Gigabit Ethernet (60 Hz)
Command & Control	Gigabit Ethernet
Measurement	
Standard Temperature Range	-20°C to 120°C (-4°F to 248°F) 0°C to 350°C (32°F to 662°F)
Optional Temperature Range	Up to 2,000°C (3,632°F)
Accuracy	$\pm 2^\circ\text{C}$ or $\pm 2\%$ of Reading
Optics	
Camera f/#	f/1.3
Integrated Lens	18 mm (25°)
Available Lenses	76 mm (6°), 30 mm (15°), 10 mm (45°), 4 mm (90°)
Close-up Lenses / Microscopes	Close-up 25 μm , 50 μm , 100 μm
Focus	Automatic or Manual (Motorized)
Image Presentation	
Digital Data	Via PC Using ExaminIR Software
General	
Operating Temperature Range	-15°C to 50°C (5°F to 122°F)
Storage Temperature Range	-40°C to 70°C (-40°F to 158°F)
Encapsulation	IP 40 (IEC 60529)
Bump / Vibration	25 g (IEC 60068-2-29) / 2 g (IEC 60068-2-6)
Power	12/24 VDC, 24 W Absolute Max.
Weight w/Lens	0.7 kg (1.54 lb)
Size (L x W x H) w/Lens	170 x 70 x 70 mm (6.7 x 2.8 x 2.8 in)
Mounting	1/4"-20 (on three sides), 2 x M4 (on three sides)

Back Panel



- ① Power Connector, Screw Terminal 2-pole: 10–30 VDC, <10 W.
- ② Gigabit Ethernet Port, 1000 MB, RJ-45 Connector: Control and image streaming.
- ③ Digital I/O Connector, Screw Terminal 6-pole: Digital Out: 2 outputs, opto-isolated, 10–30 V supply, 100 mA. Digital In: 2 inputs, opto-isolated, 10–30 V.

SC300 Packages

A325sc ExaminIR Recording & Analysis Package: A325sc, Integrated 18 mm (25°) Lens, Standard Temperature Calibration, ExaminIR Software

A325sc ExaminIR Max Recording & Analysis Package: A325sc, Integrated 18 mm (25°) Lens, Standard Temperature Calibration, ExaminIR Max Software

*Ask your FLIR representative about additional packages



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PH: +1 866.477.3687

CANADA

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920 Sheldon Ct.
Burlington, ON L7L 5L6
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PH: +1 800.613.0507

MEXICO/LATIN AMERICA

FLIR Systems Brasil
Av. Antonio Bardella
320 - B. Boa Vista- Cep:
18085-852 - Sorocaba – SP - Brazil
PH: +55 15 3238 8070

www.flir.com
NASDAQ: FLIR

FireWire CCD Color Zoom Camera

- Motorized zoom f=5 to 45 mm
- 1/3 " Sony CCD, progressive scan
- 1024x768 pixel
- Up to 30 images/s

General Behavior

Video formats @ Frame rate	1024x768 UYVY @ 15, 7.5, 3.75 fps 1024x768 BY8 @ 30, 15, 7.5, 3.75 fps
Sensitivity	0.15 lx
Dynamic range	8 bit
Interface (optical)	
IR cut filter	yes
Type	progressive scan
Format	1/3 "
Resolution	H: 1024, V: 768
Pixel size	H: 4.65 μ m, V: 4.65 μ m
Focal Length (wide)	5 mm
F-Stop (wide)	1.6
MOD (wide)	25 cm
Focal Length (tele)	45 mm
F-Stop (tele)	3.7
MOD (tele)	35 cm
Focus	auto/man
Iris	auto/man
Interface (electrical)	
Supply voltage	8 to 30 VDC
Current consumption	approx 400 mA at 12 VDC
Interface (mechanical)	
Dimensions	H: 50.6 mm, W: 50.6 mm, L: 114 mm
Mass	420 g
Adjustments (man)	
Shutter	1/10000 to 30 s
Gain	0 to 36 dB
Offset	0 to 511
Saturation	0 to 200 %
White balance	-2 dB to +6 dB
Adjustments (auto)	
Shutter	1/10000 to 30 s
Gain	0 to 36 dB
Offset	0 to 511
White balance	-2 dB to +6 dB
Environmental	
Max. temperature (operation)	-5 °C to 45 °C
Max. temperature (storage)	-20 °C to 60 °C
Max. humidity (operation)	20 % to 80 % non-condensing
Max. humidity (storage)	20 % to 95 % non-condensing

Windows®. Life without Walls™.
Panasonic recommends Windows 7.

Panasonic
ideas for life



TOUGHBOOK CF-19. THE RUGGED CONVERTIBLE TOUGHBOOK.

Featuring a revolutionary LCD screen that transforms from a high-performance notebook to a fully portable tablet PC, the CF-19 convertible tablet PC is reliable, durable and lightweight at just 2.3kg. The optimised display technology with low reflection allows for perfect visibility even in direct sunlight environments (up to 1000cd/m2).

The LCD itself is protected by a durable scratch-resistant magnesium alloy case, mounted to the base cabinet with a reinforced 180 degree rotatable hinge. Data is secured on the hard disk drive - enclosed in a shock-absorbing damper that sits inside an aluminium case. A double waterproof structure ensures a tight, durable seal that complies with IP65* water and dust-proofing standards and a special HDD-heater counters any adverse temperatures. These striking features ensure that you can rely on the CF-19, even in extreme conditions.

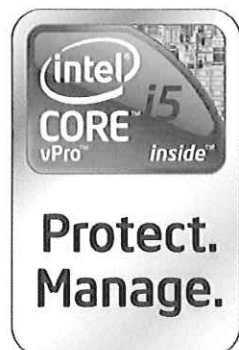
The Intel® Core™ i5 with vPro™ technology and Intel® Core™ i5 Duo processor delivers high performance and efficient energy consumption. Embedded WLAN and optional 3G Mobile Broadband capabilities enable wireless data transfer for business communication. The high-power battery allows for a running time of up to 9 hours.

- Intel® Core™ i5-540UM vPro™ processor
- Genuine Windows® 7 Professional
- Vibration and shock resistant (MIL-STD 810G)*
- Water and dust resistant (IP65, MIL-STD 810G)*
- Lightweight at just 2.3kg
- Extremely bright 10.4" LCD with Dual Touch or Touchscreen (up to 1000cd/m2)
- Long battery life of up to 9 hours
- Firewire (IEEE1394a), USB 2.0 and serial port
- Bluetooth™ and WLAN integrated
- 3G Broadband optional (UMTS/HSPA with Gobi-Chip)

* Tested by an independent third party lab following IEC 60529, sections 13.4, 13.6.2, 14.2.5, 14.3

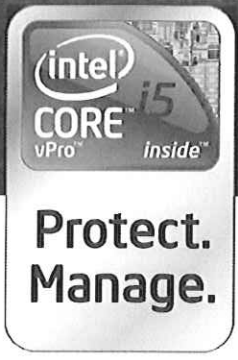
TOUGHBOOK When it's worth doing better.

www.toughbook.co.uk



Windows®. Life without Walls™. Panasonic recommends Windows 7.

MOBILE BUSINESS EXCELLENCE



Mobile Computing Platform	- Intel® Core™ i5-540UM vPro™ processor (1.2GHz, 3MB Intel® Smart Cache) - Intel® 5 series Express chipset DM57 - Intel® Centrino® Advanced-N 6200 AGN WLAN
OS	Genuine Windows® 7 Professional
RAM	2 GB, DDR3 SDRAM (max. 4 GB)
Graphic Chip	Intel® HD Graphics, UMA (Windows 7 max. 763 MB, Windows XP max. 1024 MB)
Storage	160GB HDD (SATA, easy accessible, shock resistant - withstands 180cm* drop)
LCD	10.4" sunlight-viewable XGA Active Matrix (TFT) colour LCD with up to 1000cd/m2 - Touchscreen model or - Dual Touch model (Touchscreen and Digitizer) 1024 x 768 pixels (XGA); 16 million colours; Concealed Mode
Cabinet	Full magnesium alloy with handstrap
Bluetooth™	Version 2.1 + EDR
WLAN	Intel® Centrino® Advanced-N 6200 AGN WLAN
LAN	1000BASE-T/100BASE-TX/10Base-T
Modem	Data : 56 kbps V.92; FAX : 14.4 kbps / voice not compatible
Sound	Intel® High-Definition audio compliant Monaural speaker (integrated in display cabinet)
Input Devices	Touchscreen or Dual Touch LCD, Touchpad and Keyboard
Indicators	9 LEDs (Power, Battery, HDD, Caps Lock, Scroll Lock, Num Lock, SD Card, WWAN, Wireless Data Transfer)
Interfaces	Serial (16550A compatible) Dsub, 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 In Jack USB 2.0 2x 4-pin Modem RJ-11 LAN RJ-45 Firewire (IEEE1394a): 1x 4-pin External Antenna: 2x (Dedicated 50 ohms coaxial connector) Port Replicator: 100-pin
Expansion Slots	PC Card: 1x Type II (3.3V: 400mA, 5V: 400mA) Express Card: 1x ExpressCard/34 or ExpressCard/54 SD/SOHC Memory Card: 1x Optional RAM Module: 1x DDR3 200-pin SO-DIMM (1.8 V, DDR3 SDRAM, PC3-4400 Compliant)
Power	AC Adapter: Input: 100 - 240V AC, 50Hz/60Hz; Output: 16V DC, 3.75A Battery: Li-ion 11.1V, 5.6Ah(typ) 5.3Ah(min) Battery Life: Approx. 9 hours (Mobile Mark™ 2007, 60cd/m², Windows 7® Touchscreen Model) Charging Time: Power off: approx. 3.5 hours; Power on: approx. 3.5 hours Power Consumption: Approx. 60W (maximum when recharging)
Power Management	Standby function, Hibernation function, ACPI BIOS
Software	Adobe Reader, PC Information Viewer, Loupe Utility, Intel® PROSet/Wireless Software, Bluetooth™ Stack for Windows® by TOSHIBA, Wireless Switch Utility, Hotkey Settings, Battery Recalibration Utility, Panasonic Hand Writing, Display Rotation Tool, Infineon TPM Professional Package, Power Saving Utility, Wireless Connection Disable Utility, Concealed Mode Utility Setup Utility, Hard Disk Data Erase Utility, PC-Diagnostic Utility
Security Features	TPM (Trusted Platform Module, TCG V1.2 compliant), Integrated hardware security lock slot, Password security (supervisor password, user password, HDD Lock)
Dimensions (WxHxD)	271mm x 49mm x 216mm / 10.7" x 1.93" x 8.5" (excluding protrusions)
Weight	Approx. 2.3kg / 5.07lb (including battery)
Integrated Options	GPS, Fingerprint Reader, Smart Card Reader, 3G Mobile Broadband (HSPA, up to 7.2Mbps), Solid State Disk, 2MP camera with dual LED Light (project driven)
Accessories	AC adapter: CF-AA1633AE, CF-AA1633AG, CF-AA1633AT Battery charger: CF-VCB182W Battery pack: CF-VZSU48U Car-Charger: CF-AAV1601AW (Type A, 60W, 12V/24V), CF-LIND0024FD (EIAJ & Type A both 60W, 12-32V) Car-Mount: CF-WEB191B Port-Replicator: CF-VEB181AU RAM modules: CF-WMBA902G (2GB)
Testing Standards	Water resistance test: IEC529 (JIS C0920) IPX5*, MIL-STD 810G 506.5, III* Dust resistance test: IEC529 (JIS C0920) IP6X*, MIL-STD 810G 510.5, Level* Gravity drop resistance test: MIL-STD 810G 516.6, (180cm* drop) Vibration resistance test: MIL-STD 810G 514.6, category 20 % 24*

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 99.999%). 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. 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. * Tested by an independent third-party lab following IEC 60529, sections 13.4, 13.6.2, 14.2.5, 14.3 Panasonic Marketing Europe GmbH, Panasonic Computer Products Europe Headquarters, Magener Strasse 43, 65203 Wiesbaden (Germany).

Panasonic
ideas for life