



The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at wvOASIS.gov. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at WVPurchasing.gov with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.


Header 1

List View

General Information | Contact | Default Values | Discount | Document Information | Clarification Request

Procurement Folder: 785921

Procurement Type: Central Purchase Order

Vendor ID: VC0000098899 


Legal Name: POMEROY TECHNOLOGIES LLC

Alias/DBA:

Total Bid: \$156,660.00

Response Date: 10/22/2020 

Response Time: 13:19

Responded By User ID: AMassman2 

First Name: Allison

Last Name: Massman

Email: allison.massman@pome

SO Doc Code: CRFQ

SO Dept: 0803

SO Doc ID: DOT2100000036

Published Date: 10/9/20

Close Date: 10/22/20

Close Time: 13:30

Status: Closed

Solicitation Description: 63210030 70 Dell 5424 Ruggedized laptops or equivalent

Total of Header Attachments: 1

Total of All Attachments: 1



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

**State of West Virginia
 Solicitation Response**

Proc Folder: 785921
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Solicitation Closes	Solicitation Response	Version
2020-10-22 13:30	SR 0803 ESR10222000000003163	1

VENDOR
 VC0000098899
 POMEROY TECHNOLOGIES LLC

Solicitation Number: CRFQ 0803 DOT2100000036
Total Bid: 156660
Response Date: 2020-10-22
Response Time: 13:19:32
Comments:

FOR INFORMATION CONTACT THE BUYER
 John W Estep
 (304) 558-7839
 john.w.estep@wv.gov

Vendor Signature X **FEIN#** **DATE**

All offers subject to all terms and conditions contained in this solicitation

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Ruggedized Dell Latitude 5424 laptop or equivalent	70.00000	EA	2238.000000	156660.00

Comm Code	Manufacturer	Specification	Model #
43210000			

Commodity Line Comments: Alternate spec - Panasonic. Please see attached spec sheet

Extended Description:

Ruggedized Dell Latitude 5424 laptop or equivalent

Panasonic

NOT ALL RUGGED IS CREATED EQUAL

EXECUTIVE SUMMARY: TOUGHBOOK 55 14”
SEMI-RUGGED LAPTOP – PREPARED FOR
MISSION READINESS

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**TRUE TO
YOUR WORK**

PREPARED FOR MISSION READINESS

Given the heightened risks for law enforcement, fire and EMS personnel to be exposed to the COVID-19 virus, it is paramount to provide our emergency first responders with mobile computer devices that have been factory tested and certified to be compatible with common forms of germicidal wipes which are listed by the U.S. Centers of Disease Control and Prevention as effective to kill germs on surfaces and further lower the risk of spreading infection.

Risk of infection is an ongoing concern for military safety infection protocols. The Panasonic Toughbook 55 laptop is one of the only semi-rugged mobile computing platforms that is designed to reduce the risk of cross contamination with the full four-sided magnesium alloy case and magnesium alloy pull-out handle. It is critical that the front-line personnel keep their equipment and gear clean and sanitized to reduce or eliminate the spread of bacteria and germs. The same rule also applies to a computer or tablet, as these devices are also in routine contact with users' hands and can potentially become contaminated.

Therefore, to adequately prepare for mission readiness, Panasonic highly recommends that federal, state and local government agencies adopt the cleaning and disinfecting protocols of electronic equipment as outlined by the CDC - <https://www.cdc.gov/coronavirus/2019-ncov/community/organizations/cleaning-disinfection.html>

- a) For electronics such as tablets, touch screens, keyboards, remote controls, and ATM machines, remove visible contamination if present.
- b) Follow the manufacturer's instructions for all cleaning and disinfection products.
- c) Consider use of wipeable covers for electronics.
- d) If no manufacturer guidance is available, consider the use of alcohol-based wipes or sprays containing at least 70% alcohol to disinfect touch screens. Dry surfaces thoroughly to avoid pooling of liquids.

We can't overstate the importance of disinfecting and sanitization of the human-touch point areas including the outer casing, touchscreen display, touchpad, buttons, palm rest, port covers, battery packs and carrying handles for any mobile device your organization in accordance with the CDC's updated recommendations for EPA-registered disinfectants ([List N](#) entitled Products with Emerging Viral Pathogens and Human Coronavirus claims for use against SARS-CoV-2 online at https://www.epa.gov/sites/production/files/2020-03/documents/sars-cov-2-list_03-03-2020.pdf)

The Toughbook 55 semi-rugged laptop is uniquely constructed with full four-sided magnesium alloy case and magnesium alloy pull-out handle and most importantly, Panasonic is one of the only rugged mobile computing manufacturers that has proactively conducted rigorous factory testing on Toughbook laptops and computers for compatibility with common forms of healthcare disinfectant wipes to reduce the risk of exposure to emerging viral pathogens, such as:



Sanitizing a Toughbook is quick and easy, especially compared to other device types. Wiping a Toughbook computer off or sterilizing it with soap or other liquid won't harm the system, so cleanup is easy. Front line personnel can still be thorough but will not have to wait hours for their Toughbook computer to be completely clean again.

DISINFECTING WIPES APPLICATION AND TESTING PROCEDURE

The Panasonic Toughbook 55 laptop is one of the only semi-rugged mobile computing platforms in the world that has been rigorously tested to see how many times it could be disinfected. The test procedure was to wipe each area on the device with the liquid solution with a pressure of 1 kg/cm² for 10,000 times.

Wipe Test: Wipe human-touch area (ex. Keyboard, touchpad, buttons, display) by a $\Phi 8$ object with disinfectant liquid by pressure 1kgf/cm² until number of wipes becomes 10,000.

Test Area



A. Palm Rest
B. Touchpad

C. Buttons
D. Key Top



E. LCD Display
F. Front Cover
G. Antenna Cover



H. Rear Cover



J. CN Cover
K. Bottom Cover

L. Config Area Cover

	① Cool Wipe	② Spray-Clean Plus Disinfectant Thermal Cloth	③ Total Solutions Disinfectant Wipes	④ Wash Detergent Wipe	⑤ Alcohol Prep Pads	⑥ Cover To Wipe
A. Palm Rest						
	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion	Trace water (12/04)
B. Touchpad						
	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion
C. Battery Pack						
	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion
D. Key Top (Full)						
	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion	Partial Corrosion
E. LCD Display						
	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion
F. Front Cover (Top)						
	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion	Partial Corrosion
G. Keyboard Cover (Top)						
	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion
H. New Cover (Top)						
	Partial Corrosion	Partial Corrosion	Partial Corrosion	No corrosion	Partial Corrosion	Partial Corrosion
I. LCD Cover (Back)						
	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion	No corrosion
J. Bottom Cover (Back)						
	Trace water (12/04)	No corrosion	Trace water (12/04)	Trace water (12/04)	Trace water (12/04)	Prevention gel transfer off
K. Bottom Cover (Back)						
	Trace water (12/04)	Trace water (12/04)	No corrosion	No corrosion	Trace water (12/04)	Partial Corrosion



Wrap Test: Put cloth with disinfectant liquid on some part of the unit, wrap tightly to not let liquid evaporate and keep unit under 140°F for 72 hours.

Test Area



A. Palm Rest
B. Touchpad
C. Buttons
D. Key Top
E. Battery Pack
F. Handle



G. LCD Display
H. Front Cover
J. Antenna Cover



K. Rear Cover



L. CN Cover
M. User Upgrade Pocket Cover
N. Bottom Cover
P. Config Area Cover



Mode	Detect Sensitivity
Pen	High (About 2mm conductive)
Pen / Touch	High (About 2-10mm conductive)
Touch	Medium (About 5-10mm conductive)
Touch(Glove)	High (About 2-10mm Conductive)



COMPETITIVE DIFFERENTIATORS & UNIQUE DESIGN ADVANTAGES

MODULAR DESIGN – FIELD UPGRADEABLE

With its innovative modular expansion packs - I/O, optical drives, authentication readers, and even discrete graphic expansion packs that are user-upgradeable, the Toughbook 55 laptop offers incident commanders and operations personnel more efficiently support rapid deployment and ad-hoc field upgrades.

The memory (RAM), storage (SSD) and even the keyboard are user-upgradeable. The storage drive has a quick-release latch for easy and fast removal. In addition, there are three other expansion areas that can accommodate dedicated graphics, optical drives, authentication readers as well as additional I/O, batteries and a second storage drive. The expansion areas are the 3 modular areas on the Toughbook 55 laptop. The expansion packs (or xPAK's for short) are the accessories that fit into one of the three expansion areas. Panasonic designed the xPAK's to be easily inserted and removed. Most have a quick-release lever for easy insertion/removal. The xPAK's for the Rear Expansion Area and the AMD Dedicated Graphics require just a screwdriver and a handful of screws but was designed to also be very simple and straightforward and user-upgradeable. The xPAK's were also designed so they could be locked down by simply inserting a screw if an IT department wants to. And the Toughbook 55 laptop also features quick-release removable SSD drive and removable batteries for easy detaching.



Left Side Expansion Area Options:



Front Expansion Area – Options:



Rear Expansion Area – Options:



And from a cost control perspective, Panasonic's unique modular design enables the County to buy now and update the Toughbook 55 laptop at any time. This unparalleled customization optimizes the Sheriff's Office ability to help futureproof, simplify ordering, shorten lead times and decrease downtime.

UNPRECEDENTED BATTERY LIFE

The Toughbook 55 comes with one battery standard (on the left side) which provides up to 20 hours MobileMark 2014. An optional second battery (on the right side) doubles battery life to an amazing 40 hours MobileMark 2014, which is better than any Toughbook device ever sold. With the second battery, the Toughbook 55 allows the batteries to be hot-swapped. Both batteries are identical and the same SKU #, which can go in either the left or right battery

slot. And the new Toughbook Smart Battery Technology helps to extend the useful life of the battery while offering class-leading battery safety.

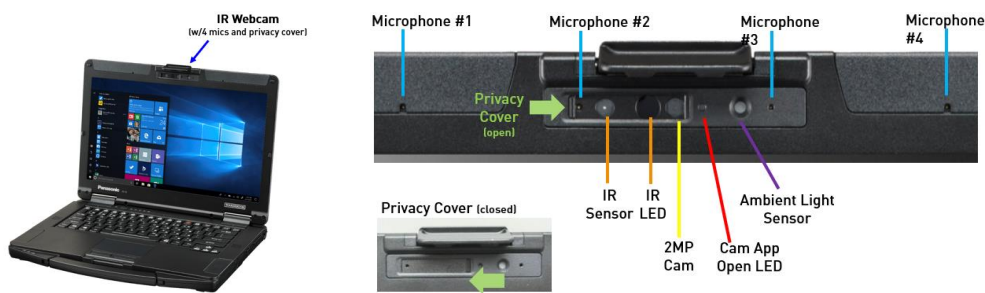
TOUGHBOOK 55
Standard
1 battery **19h**

DGS Device
Standard
1 battery **8.9h**

- Measurement condition
- Mobile Mark 2014
 - Brightness: 150 cd/m² {nit.}

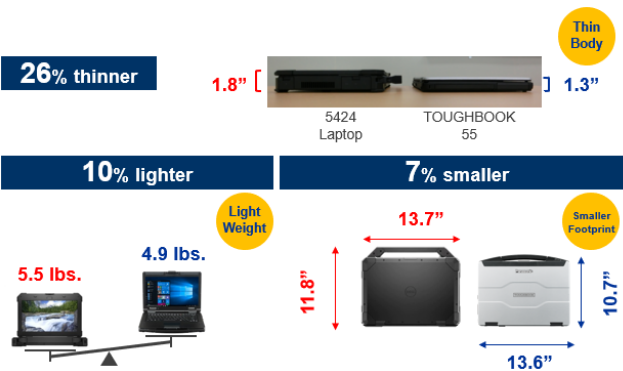
INFRARED WEBCAM WITH TETRA-ARRAY MICROPHONE

The Toughbook 55 is the only rugged laptop with 4 microphones – all of the microphones help to improve the accuracy of the speech recognition so it can offer class leading accuracy whether in quiet room or noisy environment. The Toughbook 55 is the first laptop with tetra-array microphones for unmatched speech recognition accuracy. Compared to the previous Toughbook 54, the Toughbook 55 offers up to 3x the accuracy in noisy environments thanks to the tetra-array microphones. The combination of an infrared (IR) webcam on Toughbook 55 and Windows Hello will enable the Sheriff’s Office to use 3D facial recognition or fingerprint scanning (on units equipped with an optional fingerprint reader) for multi-factor user authentication. The new infrared webcam supports facial recognition using Windows Hello and now has a privacy cover for peace of mind.



THINNER AND LIGHTER / SMALLER IN-CABIN FOOTPRINT

The Toughbook 55 is the thinnest and lightest in its class and offers a smaller in-cabin footprint that provides less interference around airbag zones for better vehicle occupant safety and reduces arm fatigue when being carried or used in the field.



SUPERIOR BUILT-IN DUAL SPEAKERS

The Toughbook 55 laptop has crisp and loud 92db speakers so users can hear the Toughbook 55 sound clarity even in loud environments. This is critical given that rugged users need to work on their laptops in all types of situations.

For instance, the level of noise on a busy highway can be around 85db. And inside of a police vehicle with the sirens on, can range from 85db to the lower 90's depending on speed and if the windows are down or up



KEYBOARD ENHANCEMENTS

The Toughbook 55 laptop is the first TOUGHBOOK device with a color-selectable backlit keyboard. In addition, the keyboard is 3x brighter, has larger backspace/return/right shift/space bar keys, new airplane mode and disable touchpad Fn keys, doubled the number of user-definable keys, backlit keyboard icons for easier night viewing and a seamless touchpad that is also now 25% larger. The Toughbook 55 laptop has a color-selectable backlit keyboard letting users select from two preset colors as well as define their own custom colors.

Improved Fn Keys:

54: F7, F10
 55: Esc, F7, F10

2x User-definable Keys (+A3,A4):

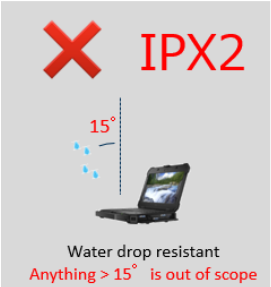

55: 1, 2, 3, 4

Fn+A3 – toggles on/off night mode
 Fn+A4 – toggles keyboard backlight color

- Choose your color in the dashboard -- 4 presets (white, red, green blue)
- Or create your own custom color
- Fn+A4 – toggles between 2 colors (default red / white)

IP53 CERTIFIED FOR DUST/WATER RESISTANCE

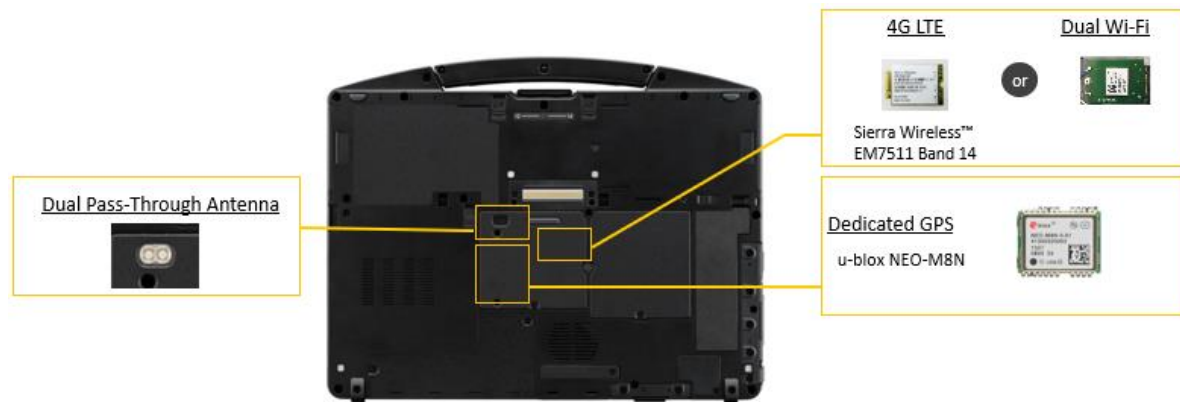
The Toughbook 55 is IP53 certified to provide extra water protection in contrast to our competitor's models that are only IP51 or IP52 rated.

5424 Laptop	TOUGHBOOK 55	IP5X Dust Resistance Test (IEC60529)								
		<table border="1"> <tr> <td>Dust</td> <td>Less than 75 µm</td> </tr> <tr> <td>Duration</td> <td>8 hours</td> </tr> </table>	Dust	Less than 75 µm	Duration	8 hours				
Dust	Less than 75 µm									
Duration	8 hours									
		<table border="1"> <thead> <tr> <th colspan="2">IPX3 Water Resistance Test (IEC60529)</th> </tr> </thead> <tbody> <tr> <td>Water Flow</td> <td>1.12 l / min</td> </tr> <tr> <td>Waterjet Direction</td> <td>Water falling as a spray at any angle up to 80° from the vertical axis</td> </tr> <tr> <td>Duration</td> <td>10 min</td> </tr> </tbody> </table> <p>IP53 is still not suitable for use in rain</p>	IPX3 Water Resistance Test (IEC60529)		Water Flow	1.12 l / min	Waterjet Direction	Water falling as a spray at any angle up to 80° from the vertical axis	Duration	10 min
IPX3 Water Resistance Test (IEC60529)										
Water Flow	1.12 l / min									
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Duration	10 min									

FIRSTNET READY / ADVANCED WIRELESS TECHNOLOGY



For interoperability, the Toughbook 55 offers an optional EM7511 modem that is FirstNet Ready and supports Band 14 mobile broadband for sending and receiving voice, data, video, images, and text messages, so emergency responders can use their mobile devices to access the near real-time data and the apps they need to improve situational awareness on the front lines, coordinate better with each other and work more efficiently and effectively.



Panasonic has also included Bluetooth 5.0 to deliver faster data exchange and to communicate over longer distances and the Toughbook 55 supports WLAN with an Intel Dual Band Wireless AC-9560 chip as well as Dual Pass-Through Antenna. And to provide the County with the most precise location of emergency first responders, the Toughbook 55 offers optional 4G LTE-Advanced multi carrier mobile broadband with satellite GPS (WWAN GPS) and optional Dedicated GPS (dGPS). Understanding the difference between 4G LTE WWAN GPS & Dedicated GPS. They both support:

- COM port access
- Windows Location Sensor
- Protocol (NMEA-0183)
- Datum(WGS-84)

But there are subtle differences between speed and accuracy. Overall, dedicated GPS (dGPS) can provide fast cold start fix location, a little bit better accuracy, more channels of GPS available as well as more satellite from different systems. By using Panasonic's optional dedicated built-in GPS (u-blox NEO-M8N chipset), the Toughbook 55 laptop can provide the most precise GPS data streams for real-time mapping application for CAD, Mobile Automatic Vehicle Location (AVL) and pin-point emergency first responder location when it is detached from the in-vehicle docking station.

Panasonic



Panasonic recommends Windows.

TOUGHBOOK 55

- Innovative modular design and user-removable expansion packs offer unparalleled customization
- Unprecedented battery life — up to 40 hours MobileMark 2014 with optional 2nd battery
- MIL-STD-810H and IP53 certified magnesium alloy design with built-in handle
- Backwards compatibility with the previous generation of vehicle and desktop docks
- State of the art technology including infrared webcam with tetra-array microphones and privacy cover
- Optional FirstNet Ready™ EM7511 Band 14 mobile broadband

MIL-STD-810H

IP53

3-FOOT
DROP RATING

P.180
BY BROADCOM

THE WORLD'S LIGHTEST AND THINNEST SEMI-RUGGED LAPTOP IN ITS CLASS.

The Panasonic TOUGHBOOK® 55 breaks new ground offering unrivaled flexibility in even the most demanding and unpredictable environments with its innovative modular expansion packs. I/O, optical drives, authentication readers, and even discrete graphic expansion packs are user-upgradeable. Backwards compatibility with the previous generation of docks protects customers' investments while saving time and resources. Built with state of the art technology, the TOUGHBOOK 55 offers the latest Intel® 8th Gen vPro™ quad-core processors, up to 64GB of RAM, up to 2TB of storage, all-day battery life, 4 microphones provide unparalleled speech recognition accuracy, color-selectable backlit keyboard, crisp and powerful 92db speakers, faster and more secure Wi-Fi, and a 25% larger touchpad.

1.800.662.3537
na.panasonic.com/us/TOUGHBOOK55

TOUGHBOOK®

mk1

TOUGHBOOK 55

SOFTWARE

- Windows® 10 Pro 64-bit
- Panasonic Utilities (including Dashboard), Recovery Partition
- Enterprise ready driver packages including CAB files and one-click driver bundles

DURABILITY

- MIL-STD-810H certified (3' drop, shock, vibration, sand, dust, altitude, freeze/thaw, high/low temperature, high temperature tactical, temperature shock, humidity)¹
- IP53 certified¹
- ASTM D4169-16 certified¹
- Spill-resistant keyboard
- Magnesium alloy case with handle
- Storage drive heater
- Caged storage drive
- User-removable quick-release battery and storage drive
- User-removable modular expansion packs, RAM and keyboard²

OPERATING SYSTEM

- CPU
 - Intel® Core™ i5-8365U vPro™ processor
 - 1.6GHz with Turbo Boost up to 4.1GHz, 6MB cache
 - Intel® Core™ i7-8665U vPro™ processor
 - 1.9GHz with Turbo Boost up to 4.8GHz, 8MB cache
- Graphics
 - Intel® UHD Graphics 620
 - Optional AMD Radeon™ Pro WX 4150 (expansion pack)³
- Memory (RAM) - 2 slots user-upgradeable
 - 8GB up to 64GB total (DDR4-2133MT/s)^{4,5}
- Main Storage Drive caged with heater (quick-release)
 - 512GB or 1TB M.2 SSD^{4,5}
 - Optional OPAL encrypted SSD
 - Optional 2nd Storage Drive caged with heater (quick-release)
 - 512GB or 1TB M.2 SSD^{4,5}

DISPLAY

- Display Size and Resolution
 - 14.0" HD 1366 x 768
 - 14.0" FHD 1000 nit touch 10-pt. capacitive 1920 x 1080⁶
- IPS with direct bonding
- Anti-reflective (AR) and anti-glare (AG) screen treatments
- External monitor support through HDMI, USB-C and optional VGA
- Concealed Mode (configurable)
- Day/Night Mode (configurable)

AUDIO

- Integrated dual speakers (up to 92db)
- Intel® High Definition Audio compliant
- Keyboard volume and mute controls

CAMERAS

- 1080p webcam with privacy cover and tetra-array microphones (4 mics)
- Infrared with Windows Hello support

KEYBOARD & INPUT

- Touch FHD model: Stylus pen, stylus holder and cleaning cloth
- Touch FHD model: Supports glove mode
- User-removable 87-key US keyboard²
 - 4 user-definable keys (A1-A4)
 - Color-selectable emissive backlit keyboard with 4 adjustable levels
- 5 backlit keyboard icons (Caps lock, Num Lock, Scroll Lock, Storage Drive, SD Card)
- Electrostatic touchpad with multi touch

OPTICAL DRIVE

- Optional Blu-ray Drive (expansion pack)³
- Optional DVD Drive (expansion pack)³

INTERFACE

- Docking Connector 24-pin
- USB-A: 3.1 Gen 1 (x2), optional 3rd USB-A⁴ Type A (including one 1.5A port)
- USB-C: 3.1 Gen 1 with optional Power Delivery Type C
- Optional Rugged Fischer® USB (Core Series)⁴ 5-pin
- MicroSDXC UHS-I
- HDMI 2.0
- Optional VGA⁴ D-sub 15-pin
- 1 Gbps Ethernet (optional 2nd LAN)⁴ RJ-45
- Audio In/Out 3.5mm Mini-jack stereo
- Optional Serial (True)⁴ D-sub 9-pin
- Nano-SIM 4FF

WIRELESS

- Opt. 4G LTE EM7511 Band 14 multi carrier mobile broadband with satellite GPS
 - Certified with AT&T, FirstNet™, Verizon and P.180
- Optional dedicated GPS (u-blox NEO-M8N)
- Optional dual high-gain antenna pass-through
- Intel® Wireless-AC 9560 Wi-Fi 802.11a/b/g/n/ac
 - Up to 1.7 Gbps and up to 256-bit AES encryption
- Bluetooth® v5.0 (Class 1)
- Airplane mode Fn key

POWER

- Li-Ion battery pack:
 - 10.8V, typical 6500 mAh, min. 6300 mAh
- Battery operation⁷:
 - HD model: 20 hours (40 hours with opt. 2nd battery)⁸
 - Touch FHD model: 19 hours (38 hours with opt. 2nd battery)⁸
- Hot swap with optional 2nd battery⁸
- Battery charging time: 3 hours (each battery)⁷
- TOUGHBOOK Smart Battery Technology
- AC Adapter: AC 100V-240V worldwide power, auto sensing/switching

SECURITY FEATURES

- TPM v2.0
- NIST BIOS compliant
- Intel vPro™ including Intel® Hardware Shield
- Persistence® technology by Absolute embedded in BIOS⁹
- Kensington cable lock slot
- Optional locking screws for SSD and expansion packs
- Optional touch fingerprint reader (expansion pack)³
- Optional insertable SmartCard CAC readers - up to 2 (expansion packs)^{3,9}
- Optional contactless SmartCard CAC reader (expansion pack)³
 - 13.56MHz (ISO 14443 A/B compliant)

1.800.662.3537

na.panasonic.com/us/TOUGHBOOK55

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WARRANTY

- 3-year limited warranty, parts and labor

DIMENSIONS & WEIGHT

- 10.7" (L) x 13.6" (W) x 1.3" (H)
- 4.6 lbs. (HD model), 4.9 lbs. (Touch FHD model)

INTEGRATED OPTIONS¹⁰

- 4G LTE Band 14 EM7511 multi carrier mobile broadband with satellite GPS
- Optional dedicated GPS
- Dual antenna pass-through
- Rear Expansion Area:** VGA+Serial+USB-A or VGA+Serial+Rugged Fischer USB or VGA+Serial+LAN
- Front Expansion Area:** 2nd Battery or Fingerprint Reader or Contactless SmartCard CAC or Insertable SmartCard CAC
- TOUGHBOOK Universal Bay Expansion Area:** Insertable SmartCard CAC Reader or DVD Drive or Blu-ray Drive or AMD Dedicated Graphics or 2nd SSD Drive

SELECT ACCESSORIES¹⁰

- AC Adapter 100W (3-prong) CF-AA57 13A2M
- Battery Pack FZ-V2SU1HU
- 4-Bay Battery Charger FZ-VCB551M
- LIND Car Charger 120W CF-LNDDC120
- LIND Solar Charge System PASC1580-4464
- ToughMate ComUniversal Carrying Case TBCCOMUNV-P
- ToughMate Backpack TBCCBK-P
- Memory Cards (RAM)
 - 8GB DDR4 FZ-BAZ1908
 - 16GB DDR4 FZ-BAZ1916
- Desktop Dock CF-VEB541AU
- Vehicle Docks (dual pass-through)
 - Gamber-Johnson with LIND power supply 7170-0251-P
 - Havis with LIND power supply CF-H-PAN-422-2-P
- AntennaPlus Dual LTE & GPS Antenna Kit
 - Threaded Black Mount AP-PAN-CCGPD-Q-BL
 - Threaded White Mount AP-PAN-CCGPD-Q-WH
- Stylus Pen (for Touch models) FZ-VNPF51U
- Tether FZ-VNT005U
- 14.0" Screen Protector CF-VPF29U
- Screws Set (set of 9 locking/replacement) FZ-VSW551U
- Rear Expansion Area
 - VGA + Serial + USB-A xPAK FZ-VCN551W
 - VGA + Serial + LAN xPAK FZ-VCN552W
 - VGA + Serial + Rugged Fischer USB xPAK FZ-VCN553W
- Front Expansion Area
 - Fingerprint Reader xPAK FZ-VFP551W
 - Contactless SmartCard Reader xPAK FZ-VNF551W
 - Insertable SmartCard xPAK FZ-VSC551W
- TOUGHBOOK Universal Bay Expansion Area
 - Insertable SmartCard xPAK FZ-VSC552W
 - Blu-ray Drive xPAK FZ-VBD551W
 - DVD Drive PAK FZ-VDM551W
 - AMD Dedicated Graphics xPAK FZ-VGT551W
 - 512GB SSD 2nd Drive xPAK FZ-VSD5515W
 - 1TB SSD 2nd Drive xPAK FZ-VSD5511W
 - 512GB SSD Main Drive FZ-VSDR5551W
 - 1TB SSD Main Drive FZ-VSDR5551W

Please consult your reseller or Panasonic representative before purchasing.

¹ Tested by national independent third party lab following MIL-STD-810H Method 516.8 Procedure IV for transit drop test and IEC 60529 Sections 13.4, 13.6.2, 14.2.5 and 14.3 for IP53.

² Keyboard is user-replaceable, but once removed, the old keyboard must be discarded.

³ Insertable SmartCard CAC Reader, DVD Drive, Blu-ray Drive, AMD Dedicated Graphics and 2nd SSD Drive in TOUGHBOOK Universal Bay area are mutually exclusive.

⁴ 1GB = 1,000,000,000 bytes. Total usable memory will be less depending upon actual system configuration.

⁵ 64GB RAM, 256GB SSD and/or FHD 1000 nit non-touch are available but requires special order. Please contact a Panasonic representative for details.

⁶ VGA+Serial+USB-A or VGA+Serial+Rugged Fischer USB or VGA+Serial+LAN in Rear Expansion Area are mutually exclusive.

⁷ 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 2014 at 15h nit and using no cellular/mobile broadband.

⁸ 2nd Battery or Fingerprint Reader or Contactless SmartCard CAC or Insertable SmartCard CAC in Front Expansion area are mutually exclusive.

⁹ Requires software and activation to enable theft protection.

¹⁰ Accessories and Integrated Options may vary depending on your notebook configuration. Visit Panasonic website for more accessories and details.



TOUGHBOOK®



Mode	Detect Sensitivity
Pen	High (About 2mm conductive)
Pen / Touch	High (About 2-10mm conductive)
Touch	Medium (About 5-10mm conductive)
Touch(Glove)	High (About 2-10mm Conductive)



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