TUFF
PANEL PC

8.0", 10.4", 15.6" Tablet PC

Sizes	**Customisable**	**Vibration & Shock**	**IP65**	**Transient Protection**	**Sunlight Readable**	**-40º ~ +75º C**	**Capacitive Touch**

TUFF Panel PC by Motium is a range of fanless, fixed mount tablet PCs and boasts features including water and dust resistance (IP65), high-performance processing and optional quad-core processing power.

Motium's TUFF Panel PC is designed for long-term, reliable operation in the harshest environments.

Key Features

Sunlight Readable Capacitive Touch Display
Motium's sunlight readable display uses ultra-efficient, high-brightness LED backlighting combined with capacitive touch technology*.

Extensive I/O Connector Options
With four switchable analogue or digital I/O connector options, choose from USB, RS-232, RS-485, CAN, Ethernet, and more.

Designed for Rugged Environments
A wide voltage input range with transient and surge protection to ISO7637. UPS battery backup ensures power in harsh environments.

Diverse Wireless Connectivity
Including Wi-Fi, GPS, Bluetooth, Cellular 3G/4G and Wireless LAN, with other Mini PCIe–compliant cards available on request.

Customisable Connectors
Choose from standard QuickConnect Interface connectors or customise your pin-out to consolidate wired interfaces.

Multiple Sizes
Available in 8-inch, 10.4-inch and 15.6-inch screen sizes.

Customised Solutions
Designing and manufacturing our own technology means we can tailor our products to your specific needs. From white label customisation through to custom hardware and beyond, contact us for a truly bespoke TUFF solution.

Ongoing Support
We create strong, long-lasting partnerships with our customers. We offer comprehensive and ongoing support and guidance for effective installation and efficient use of all products.

Contact Us
For product enquiries or further information about the entire TUFF product range, contact us at **sales@motium.com**.

Key Markets

Mining	**Waste Management**	**Emergency Services**	**Transportation**
Industrial Automation	**Defence**	**Marine**	**Construction**

MOTIUM
YOUR RUGGED TECHNOLOGY PARTNER

p: +61 8 9355 3000
w: **motium.com**

TUFF Panel PC

8.0", 10.4", 15.6" Tablet PC

MOTIUM

SPECIFICATIONS

DISPLAY

Viewable Area	8.0-inch: 4:3 (20.32cm) diagonal. 10.4-inch: 4:3 (26.416cm) diagonal. 15.6-inch: 16:9 (39.624cm) diagonal.
Native Resolution	8.0-inch: 800 x 600. 10.4-inch: 1024 x 768. 15.6-inch: 1920 x 1080.
Brightness	1,500 nits typical. (1 nit = 1 Cd/m2.) Supports a configurable automatic backlight using an inbuilt light sensor.
Viewing Angle	8.0-inch H: 140° typ, V: 120° typ. 10.4-inch H: 176° typ, V: 176° typ. 15.6-inch H: 160° typ, V: 160° typ.
Touch	10-point projected capacitive on 1.8mm glass with anti-glare surface coating. Optional anti-glare, anti-reflection and anti-fingerprint surface coating available. *Not available on MPP-1520. Not available for certain MPP-820 configurations. 5-wire resistive on 1.8mm glass available in place. Supplied with surface protection film fitted.

PC

Processor	Intel® Atom™ X E3950 Quad-Core 2.00Ghz. Intel® Atom™ E E3845 Quad-Core 1.91Ghz. Intel® Atom™ E E3825 Dual-Core 1.33Ghz.
Instruction Set	64-bit.
Memory	8GB DDR3L RAM with E3950 CPU. 4GB DDR3L RAM with E3845 CPU. 2GB DDR3L RAM with E3825 CPU.
System Chipset	Intel® Apollo Lake E3900 Series. Intel® Bay Trail E3800 Series.
BIOS	AMI Aptio UEFI. Multi Stage Watchdog.
Operating System	Windows 10, Windows 10 IoT Enterprise, Windows 7 Embedded Standard. Linux and Android Available.

MASS STORAGE AND MEDIA

SSD	32GB to 1TB.
External Device	USB Optical Drive: CD-ROM, DVD, Blu-Ray, USB Floppy Drive, USB Flash Drive.
Boot Source	Internal SSD. Internal MicroSD. External USB flash drive. External USB floppy drive. External optical drive.

VIDEO AND AUDIO

Video	Intel® Graphics Core with 2D and 3D hardware accelerator. Support for high-performance hardware MPEG-2 decoding, WMV9 (VC-1) and H2.264 (AVC) support, Blu-ray support @ 40MB/s, hardware motion compensation.
Sound	High-Definition audio interface with dual integrated stereo speakers.

WIRELESS CONNECTIVITY

GPS	92-channel u-blox M9 engine GPS L1 C/A, QZSS L1 C/A/S, GLONASS L10F BeiDou B1I, Galileo E1B/C SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGAN. External SMA connector with Active Antenna support for enhanced GPS reception.
Bluetooth	Optional Class 2 Bluetooth V2.0 support with suitable Wi-Fi combo card.
Cellular	Optional 3G/4G/LTE Cellular Data Module. Nano SIM and external SMA antenna support.

Wireless LAN	Optional IEE 802.11 AC/a/b/g/n module with dual external SMA antennas.
Other	Other Mini PCIe compliant cards can be fitted at time of manufacture.

INTERFACES

COM	Three RS-232 ports available with *QC2* cable.
USB	Three full-function USB 2.0 ports. One USB 2.0 port available with *QC4* cable. Two USB 2.0 ports available on enclosure body.
LAN	One 10/100 LAN port available with *QC4* cable.
I/O	Four independent configurable analogue or digital inputs/outputs available with *QC4* cable.
CAN	Two CAN Bus2.0b with J1939 protocol support with *QC3* cable. Two optional 24v DC internally fused inputs to power CAN sensors (12W shared). Other CAN Bus protocols available.
Composite Video Input	One optional Composite Video Capture with PAL/NTSC support with *QC1* cable. Four or eight Composite Video Capture with PAL/NTSC support with *QC3* cable.
Function Keys	Power on/off, backlight brightness up/down, volume up/down. Function keys can be disabled or reassigned in software. Custom labelling of buttons available. Minimum order quantities may apply.

PHYSICAL CHARACTERISTICS

Mounting	75mm VESA mount. 100mm VESA mount (15.6-inch only).
Dimensions	8.0-inch: 220mm x 193mm x 55mm. 10.4-inch: 262mm x 229mm x 55mm. 15.6-inch: 405mm x 252mm x 60mm.
Weight	8.0-inch: Up to 1.6kg. 10.4-inch: Up to 1.9kg. 15.6-inch: Up to 3.9kg.
Shipping	8.0-inch: Up to 1.75kg. 10.4-inch: Up to 2.1kg. 15.6-inch: Up to 4.2kg.
Environmental	Operating: -40°C to +75°C. Storage: -40°C to +85°C. 10% to 90% RH, non-condensing.
Certification	RCM, CE, FCC. Other certifications available upon request.
Protection	IP65 front and rear.

POWER

Power Supply	Input voltage range 8 VDC to 39 VDC.
Power Consumption	33w max. 20w nominal.
Accessory Control	Accessory input for power on/off control through *QC1* breakout cable.
UPS	Internal 7.2Wh Uninterruptible Power Supply (UPS) providing up to 30 minutes of run time.
Transient Protection	Load dump and other transients specified in ISO-7637 for 12v and 24v vehicles.

SUPPORT

Warrenty	24-month warranty from date of dispatch from Motium. Additional 12- and 36-month warranties available.

ORDERING OPTIONS

The TUFF Panel PC is available in standard models and can also be customised with a variety of options. White label branding options are also available. Minimum order quantities may apply.

QuickConnect (QC) cable assemblies must be ordered separately. Standard and custom options are available.

Contact Motium for order codes. Specifications subject to change without notice.