



# Juno T41

## Rugged Handheld Computer



The flexible, fully-rugged Trimble® Juno® T41 is available in a wide variety of configurations. Build the handheld computer you need: Google Android™ or Microsoft® Windows® operating systems, Barcode Imager, Ultra-High Frequency RFID, Smartphone or GPS collector (or combinations). Every Juno T41 is a reliable small workhorse computer designed to last for years in any environment.

### KEY FEATURES & MODELS

#### Juno T41 C, X: Basic Model with Smartphone option

4.3" WVGA Sunlight-readable, full color, Corning® Gorilla® Glass Display

Fully Rugged design with IP68; Mil-ST-810G

Choice of Operating Systems: Windows Embedded Handheld (WEHH) 6.5 or Android 4.1

Processor: 800 MHz or 1GHz TI OMAP 3

RAM: 512 MB

Multi-touch User Interface with capacitive stylus compatibility

8 MP camera with dual LED flash and geo-tagging/ Audio/Video

SBAS Capable GPS Receiver (WAAS & EGNOS): 2 to 4 meter (6-13 ft) Real-time accuracy, 1 to 3 meter (3-10 ft) Code Postprocessed

Bluetooth and Wi-Fi 802.11 b/g/n; CCX certified

Accelerometer and Electronic Compass

Full-Day Battery Life

3.75G cellular data, text & voice optional

Camera Barcode Scanning Application

Software Development Kit to customize workflow

#### Juno T41 S: 1D/2D Barcode Imager

White light illumination and red LED-based aimer for ease of use

High-motion tolerance for quick scanning responsiveness

Omni-directional reading capabilities for real world use conditions

Rapid Scanning Capability for high read rates no matter the angle or orientation

Access to other valuable tools such as:

- Multicode reading

- Data editing

- Image capture

- Illumination, aiming, presentation modes

#### Juno T41 R: Ultra-High Frequency RFID

Rapid-Read, high-accuracy performance on multiple tags with multiple orientations, even in crowded conditions

Read-Range: 3.5m+ (12+ ft) for 5 cm<sup>2</sup> (2") UHF tags in unobstructed space

Integrated passive tags antenna with the ability to transmit up to +30 dBm (1 Watt) power for demanding applications

Configurable performance settings and use-case parameters in the pre-loaded Trimble SearchLight application

Supports EPCglobal Gen 2 (ISO 18000-6C) protocol

Automatically configured and ready for use around the world:

- FCC Certified (North America): 902-928 MHz bands

- ETSI Certified (EU): 865.6-867.6 MHz bands

- ACMA Certified (AU/NZ): 920-926 MHz bands

Easy-to Use Software Development Kit (SDK) and Application Programming Interfaces (APIs) to customize all settings including read range, power consumption and other features

#### Juno T41 G: Real-Time Enhanced GPS: Accuracy 1-2 Meters in Real Time

Reliable Performance in Reduced Signal Environments<sup>1</sup>

Real-time GPS accuracy of 1-2 meters (3-6ft) with SBAS<sup>2</sup>

Dramatic positioning performance improvement with GPS Accuracy Algorithm Enabled<sup>2</sup>

Small, portable & ergonomic form-factor

#### Juno T41 M (Military Grade)

Same Rugged hardware specification as C model

No Camera

No Wireless features

Ideal for cabled data collection needs

Android is a trademark of Google Inc.

Windows is a trademark of Microsoft, Inc



# Juno T41 *Rugged Handheld Computer*



## EMPOWERING THE MOBILE WORKER

The Juno T41 rugged handheld computer is designed to be long-lasting, from the battery to the processor, and to work through mishaps that would sideline lesser products. The Juno T41 handheld is built to MIL-STD- 810G standards and all are IP68 rated to survive hostile conditions in the field: it can withstand driving rain and liquid immersion, corrosive environments, dust, shock, drops, vibration, prolonged UV exposure and extreme temperatures and altitudes.

All Juno T41 handhelds come in your choice of either Windows Embedded Handheld (WEHH) v 6.5 or Android 4.1 operating systems.<sup>3</sup>

The Juno T41 features up to a 1 GHz processor, 512 MB of RAM and up to 32 GB of storage. The 4.3" high resolution Corning® Gorilla® Glass panel capacitive touchscreen is sunlight-readable and beautifully clear color images for outdoor use. Multi-touch support allows complex selections and controlled zoom to optimize the user experience with maps and detailed information. A capacitive stylus is available as an optional accessory.

Physical connection to other electronic devices is supported via the Juno T41 handheld's custom connector that provides easy connectivity to a USB device, a 9-pin Serial device or a battery charger.

## MODEL OPTIONS – BUILD YOUR IDEAL JUNO T41

### BASIC AND SMARTPHONE: THE "C", "M" AND "X" CONFIGURATIONS

Tough, powerful and packed with features that take it far beyond "basic," the Juno T41 X model is designed to replace BYOD smartphones with SMS text and 3.75 generation cellular data transfer capabilities on GSM networks worldwide. Choose from either the 800 MHz or 1 GHz processor and 512 MB RAM will run your software fast and reliably. Both models support 8MP integrated camera for high resolution image capture. Ideal for data collection and asset maintenance and management. A special M series Military edition based off the T41 C is available for all extreme needs.

### 1D/2D BARCODE IMAGER: THE "S" CONFIGURATION

TrimbleScan Technology gives your solution an edge by reading an array of traditional barcodes as well as 1D and 2D matrix symbology codes, captures signatures and images. All of these features are customizable using the Trimble "Scan Agent" application. Enterprises can also use the T41 Software Development Kit (SDK) to optimize for specific customer needs.

Omni-directional reading capabilities along with high motion tolerance allows rapid, accurate barcode imaging no matter what the angle or orientation the unit is to the barcodes. Read as many as 200 barcodes per second with 100% accuracy.

### ULTRA-HIGH FREQUENCY SUPPORT: THE "R" CONFIGURATION

The Juno T41 R integrates the Trimble ThingMagic Mercury6e-Micro (M6e-Micro) RFID reader into its small, compact form factor. Using EPCglobal Gen 2 RFID technology, the T41 R rapidly reads tags at different frequencies almost simultaneously, for accurate reads in real world conditions.

The Juno T41 R can read a single square 5 cm<sup>2</sup> (2 square inch) UHF RFID tag up to and more than 3.5 meters (12+ feet) away from the unit in unobstructed space. In more challenging environments with higher levels of interference, it reads 5 cm<sup>2</sup> tags consistently between 1-2 meters (3-6 ft). The application reports the tagged asset in order of signal strength. The 4.3" sunlight readable display is the largest touchscreen of any RFID reader in its class, and its GPS capability adds additional value for outdoor workers.

Offering the best read-range inside a compact, integrated form factor, the Juno T41 R will keep reading tags down to low battery levels, enabling workers to read tags for longer than competitor products. It also comes with a best-in-class 32 GB of flash memory.

The Juno T41 R is location aware, ready for use in different regions around the world. The FCC Certified and ACMA Certified T41 R supports the 902 to 928 MHz and 920 to 926 MHz frequency bands, respectively, and is ready for use in the United States, Canada, Australia and New Zealand. The ETSI Certified T41 R uses the 865.6 to 867.6 MHz range and is ready to use in European RFID frequencies.

In short, there is no more powerful and compact RFID reader currently on the market today... and nothing as rugged.

**REAL-TIME ENHANCED GPS ACCURACY: THE “G” CONFIGURATION**

Pair enhanced GPS with any other Juno T41 technology including the basic handheld computer, RFID, smartphone, or 1D/2D Imager to get extra value out of your existing workflows. The T41 G provides dramatic improvements in performance compared to other Juno T41 models without the Enhanced GPS, allowing data collection in real-time at 1-2 meter (3-6ft) accuracy, while gathering Raw Data Output for post-processing applications.

The Juno T41 G supports the GPS L1 band, along with offering reliable performance in reduced signal environments. Mobile workers who have to move from place to place to collect GPS data on far-flung assets won't have to waste time waiting for a warm-up: the Juno T41 G boasts an average cold start of less than 33 seconds, and an Assisted-GPS start of less than 3 seconds. Enhanced accuracies supported by Trimble VRS, SBAS (WAAS, EGNOS & MSAS) or RTCM messages.

Assets are everywhere now... use the Juno T41 to map accurately and reliably no matter where your workers have to go.

**BUILT FOR WORK IN THE REAL WORLD**

Your business isn't limited to inside the four walls. No matter your industry, if your people spend work hours outdoors, a rugged handheld is a cost-effective piece of equipment. Integrate the Juno T41 with the right set of features and functionality into your organization and take your applications to the next level.

**MODEL CONFIGURATIONS BY FORM FACTOR:**

The images below depict the available physical form factors of the Trimble Juno T41 computers.



Models in this form factor:	Models in this form factor:	Models in this form factor:
Juno T41 C	Juno T41 CG	Juno T41 CS
Juno T41 X	Juno T41 XG	Juno T41 XS
Juno T41 M (military)		Juno T41 XGS
		Juno T41 CR
		Juno T41 XR
		Juno T41 XGR



<sup>1</sup>Requires SBAS and T41 GPS Accuracy Algorithm. May vary due to atmospheric conditions, multipath, obstructions signal geometry and number of satellites tracked. The GPS Accuracy Algorithm is a Carrier Smoothing Algorithm. Testing done in Open Sky & Light Cover.

<sup>2</sup>AAS available in North America only; EGNOS available in Europe only; MSAS available in Japan only.

<sup>3</sup>The Juno T41 Android models come without Google Mobile Services, for greater security by preventing third party location tracking and data collection.

# Juno T41 Rugged Handheld Computer

## TECHNICAL INFORMATION

### S, G, R FEATURES

#### 1D/2D Barcode Imager

- White light illumination and red LED-based aimer for ease of use
- High-motion tolerance to deliver quick imaging responsiveness
- Omni-directional reading capabilities for real world use conditions
- Rapid Scanning Capability for high read rates no matter what the bar code angle or orientation is in relation to the unit
  - 1D supported symbologies:
    - EAN/UPC, GS1 Databar (limited expanded & omnidirectional), Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved/Matrix/Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, postal codes (Australian Post, BPO, Canada Post, Dutch Post, Japan Post, PostNet, Sweden Post)
  - 2D supported symbologies:
    - Data Matrix, PDF417, Micro PDF 417, Codablock, Maxicode, Quick Response Code (QR Code), Aztec
- Access to other valuable tools such as:
  - Multicode reading
  - data editing
  - image capture
  - scanning barcodes on mobile phone screens
  - illumination, aiming, presentation modes

#### Real-Time Enhanced GPS

- 1-2 meter (3-6ft) Real-time accuracy with no post-processing or subscription fees required
- Trimble Positioning Services VRS (ntrip) Capable.
- Supports GPS L1 band
- Raw Data Output available for post-processing applications
- Average cold start < 33 seconds; Average Warm Start < 3 seconds
- Reliable performance in reduced signal environments

#### Ultra-High Frequency RFID

- Integrated ThingMagic M6e-Micro module
- Integrated orientation insensitive antenna for fast and accurate tag reads
- Power transmission up to +30 dBm (1 Watt) power
- Choice of 865-868 MHz or 902-928 MHz
- Nominal read range up to 3.5+ meters (Europe) (12+ feet, North America)<sup>1</sup>
- Supports EPCglobal Gen 2 (ISO 18000-6C) protocol

### C, X AND ALL OTHER MODEL FEATURES

- Processor: 800 MHz or 1 GHz, Texas Instruments DM3730
- RAM: 512 MB
- Flash Storage: 8 or 32 GB
- 4.3" WVGA Sunlight-readable 4.3" Gorilla Glass TFT capacitive screen with a WVGA (800 x400) color display
- Light sensor to auto-adjust display brightness
- Capacitive multi-touch interface
- Integrated 3.75G cellular data, text and voice capability
- 8 megapixel camera with geo-tagging and dual LED flash
- Bluetooth® 2.1 with Enhanced Data Rate
- Wi-Fi (802.11 b/g/n) CCX certified
- GPS Receiver (WAAS & EGNOS): 2 to 4 meter (6-13 ft) Realtime accuracy, 1 to 3 meter (3-10 ft) Code Postprocessed
- MCX port for optional External GPS Antenna
- Electronic Compass
- Accelerometer

- Robust Custom Port with USB 2.0 Full Speed Protocol
- Conversion Cables available for 9-pin Serial or USB host
- MicroSD memory card slot (supports SDHC up to 32 GB)
- Integrated speaker and microphone
- 3.5 mm Headset Jack with Audio Capability
- M series military specs available on request

### OPERATING SYSTEMS

- Windows Embedded Handheld 6.5
  - Language Support: Chinese (Simplified), English, French, German, Italian, Japanese, Korean, Portuguese, Russian or Spanish
- Android 4.1

### Windows Embedded Handheld 6.5 Standard Software:

- Trimble SatViewer (GPS interface application)
- Trimble CellStart (WWAN configuration application)
- Microsoft® Office Mobile® 2010 (Word Mobile, Excel Mobile, PowerPoint Mobile, Outlook Mobile)
- Internet Explorer Mobile 6
- Microsoft My Phone with SMS Text Messaging
- Camera control application
- 1D/2D Barcode reader camera application
- Flashlight mode control application
- Calculator
- Calendar
- Microsoft Pictures & Videos
- Windows Media Player
- Windows Live Messenger
- Microsoft Task Manager & Notes
- Adobe Reader LE 2.5

### Android 4.1 "Jelly Bean" Standard Software:

- With language support (All Android default languages)
- App Launcher: Trimble Outdoors Navigator
- Download other 3rd party applications from Google Play
- Email and People (Contacts)
- Phone & SMS Text Messaging
- 1D/2D Barcode reader camera application
- Picture & Video Gallery
- Multimedia Player
- Web Browser
- Flashlight mode control application

### Application Developer Support

- Software Developer Kit with documentation for WEHH 6.5
- Software Developer Kit with documentation for Android 4.1

### STANDARD ACCESSORIES

- International AC Charging Kit
- T41 USB Cable
- Wrist Strap
- Ultra Clear Screen Protectors (qty 2) Kit
- SIM/SD Card Tool
- Quick Start Guide

### ENVIRONMENTAL SPECIFICATIONS

- **Water:** Water: Survives immersion at 2m (6.6 ft) for 1 hour IEC-60529 IP-X8 Survives driving rain and water spray
- **Dust:** Protected against dust, IEC-60529 IP-6X, dust chamber with under-pressure
- **Drops:** Survived multiple drops of 1.2m(4ft), MIL-STD-810G, Method 516.6, Procedure IV, Transit Drop

- **Operating Temperature:** -30 °C to 60 °C (-22 °F to 140 °F), MILSTD- 810G, Method 502.5, Procedure I, II, III (Low Temp Operating -30 °C); Method 501.5, Procedure I & II (High Temp Operating 60 °C)
- **Storage Temperature:** -40 °C to 70 °C (-40 °F to 158 °F), MILSTD-810G, Method 502.5, Procedure I, II, III (Low Temp Storage -40 °C); Method 501.5, Procedure I & II (High Temp Storage 70 °C)
- **Temperature Shock:** Cycles between -30 °C and 60 °C (-22 °F and 144 °F), MIL-STD-810G, Method 503.5, Procedure I-C
- **Humidity:** 90% relative humidity with temperatures between -30 °C and 60 °C (-22 °F and 144 °F), MIL-STD- 810G, Method 507.5, Procedure II

**Altitude:** 4,572 m (15,000 ft) at 23 °C (73 °F) to 12,192 m (40,000 ft) at -30 °C (-22 °F), MIL-STD-810G, Method 500.5, Procedure I, II & III

**Vibration:** General minimum integrity and loose cargo tests, MIL-STD-810G, Method 514.6, Procedure I & II, Category 5

**Solar Exposure:** Survives prolonged UVB exposure, MIL-STD-810G, Method 505.5, Procedure II

**Chemical Exposure:** Resistant to mild alkaline and acid cleaning solutions, fuel hydrocarbons, alcohols and common vehicle and factory machine lubricants

### PHYSICAL

- Size (C,X,M) ..... 15.5 cm x 8.2 cm x 2.5 cm (6.1 in x 3.2 in x .9 in)
- Size (G) ..... 20.98 cm x 8.14 cm x 3.19 cm (8.26 in x 3.2 in x 1.26 in)
- Size (S,R) ..... 20.98 cm x 8.14 cm x 3.19 cm (8.26 in x 3.2 in x 1.26 in)
- Weight (C,X,M) ..... 4 kg (13.5 oz), including battery
- Weight (S,R,G) ..... 5kg (14.0 oz) including battery
- Color ..... Black with Yellow or Black with Gray

### ELECTRICAL

- **Processor:** 800 MHz or 1GHz TI OMAP 3
- **Memory:** 512 MB RAM
- **Storage:** 8/32 GB non-volatile Flash Storage
- **Expansion:** microSD card slot, SIM Card Slot
- **Display:** 4.3" (10.9cm), 800 x 480 pixel, WVGA TFT
- **Battery Capacity:** 3300 mAh, 3.7 V (@0.2C), 12.2 Wh, Up to 4 hours battery life on single charge, up to 8 hours with extended battery pack
- **I/O:** 3.5mm audio jack, MCX GPS antenna port and a custom port that supports USB 2.0 Host, USB Client, 15 VDC power and Serial connections
- **GPS:** SBAS Capable GPS Receiver (WAAS & EGNOS): 2 to 4 meter (6-13 ft) Real-time accuracy, 1-3 meter (3-10 ft) Code Postprocessed
- **Radios:** Bluetooth 2.1 +EDR; Wi-Fi 802.11 (b/g/n @ 2.4Ghz)
- **WWAN radios:** UMTS / HSPA+, GSM / GPRS/ EDGE, UMTS
  - **Bands (WCDMA/FDD):** 800, 850, 1900
  - **GSM Bands:** 850, 900, 1800, 1900 MHz

### CERTIFICATIONS

- FCC, CE, R&TTE, IC (Canada), A-tick, C-tick, GCF compliant, RoHS compliant, Section 508 compliant, PTCRB, SAR, AT&T network compatible, Wi-Fi Alliance certified, CCX, USB 2.0 Full Speed, MIL-STD-810G, IP68, MIL-STD-461E.

<sup>1</sup>The RFID read range can vary according to the type of tag and reading environment.

Specifications may be changed without notice.



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