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Juno Series Handhelds: FAQ for Customers

This FAQ covers the Juno[®] SB, Juno SC, and Juno SD handhelds only. It does not apply to the earlier Juno ST handheld.

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General Questions

What are the Juno series handhelds?

The Juno series is a range of durable, lightweight GPS handhelds integrating an array of powerful features. Providing photo capture, a high yield GPS receiver, and integrated cellular modem and voice call capability options, the Juno series handhelds are the perfect solution to increase the productivity of your entire workforce.

There are three models of Juno series handhelds:

- The Juno SB handheld has a high-sensitivity GPS receiver with 2 to 5 meter positioning accuracy in real time (SBAS) or 1 to 3 meter postprocessed, Bluetooth[®] wireless technology and Wireless LAN technology, a built-in 3 Megapixel digital camera, a MicroSD/SDHC storage slot, and is powered by the Windows Mobile[®] 6.1 Classic operating system.
- The Juno SC handheld has all of the capabilities of the Juno SB, plus a 3.5G broadband cellular modem for wireless data communications.
- The Juno SD handheld adds voice call and SMS capability to the capabilities of the Juno SC handheld and is powered by the Windows Mobile 6.1 Professional operating system.

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Trimble Navigation Limited, 10355 Westmoor Drive, Suite #100, Westminster, CO 80021, USA

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What are the key features of the Juno series handhelds?

All Juno models offer the following features:

- *Integrated digital camera* with 3 megapixels, autofocus, and selectable resolution and image compression.
- *High-yield GPS capability* with integrated SBAS (WAAS/EGNOS/MSAS) support, for 2 to 5 meter accuracy in real time or 1 to 3 meter accuracy after postprocessing.
- *Bluetooth and Wireless LAN connectivity options*: Use the built-in Wireless LAN connectivity to access your organization's secure network and get the most up-to-date information. Use the built-in Bluetooth wireless technology to connect the handheld to a variety of Bluetooth-enabled devices.
- *128 MB onboard storage plus a MicroSD slot for removable cards*: Enables you to take all the background data you need into the field. The maximum capacity for MicroSD/SDHC is currently 16 GB.
- *Windows Mobile version 6.1 operating system*: The Windows Mobile 6.1 operating system includes familiar Microsoft® software, giving you all the tools you need for a seamless exchange of data between the field and the office.
- *Design for the field*: The receiver is durable and comes with an all-day battery, so it can work as hard as you do, wherever you work.

See the [Cellular Modem](#) section of this FAQ for details of the Juno SC handheld's wireless data capabilities and the Juno SD handheld's voice call and SMS capabilities.

How do the Juno series handhelds differ from a consumer PDA with GPS?

The Juno series handhelds are designed for all-day use in the field. To that end, they are durable, with no exposed slots or ports to collect dirt. The optional protective OtterBox case can also be used to provide further protection against drop, dust, and light rain. Unlike most consumer PDAs, where GPS performance is a secondary consideration, the Juno series handhelds have been carefully tuned to maximize GPS and SBAS performance. Finally, most consumer PDAs are designed for occasional use only; their batteries cannot sustain continuous use for a full day's fieldwork. In contrast, the Juno series handhelds have a high-capacity (2600 mAh) battery allowing for all-day operation.

Are the Juno series handhelds ruggedized?

The Juno series handhelds have an IP4X rating and have been designed for durability through:

- *Drop testing*: The device is dropped from 76 cm (2.5 ft) on all six sides then tested for operability.
- *Tumble testing*: The device is tumbled 50 rotations (100 drops) at a height of 50 cm (1.64 ft) then tested for operability.
- *Coverings for all openings*: All ports and openings on the handheld have covers—including headset jack, external GPS antenna connector, USB port, power connector, and memory and SIM card slots.

An OtterBox case, which offers further protection is available as an optional accessory for the Juno series handhelds. This is a sleek, custom designed case, and ensures that all surfaces of the device are covered, yet the ports, keypad, buttons and camera are all still accessible. The OtterBox Defender Series case for Juno series offers three layers of protection:

- A thermal formed protective clear membrane that protects the screen against scratching.
- A hi-impact polycarbonate shell.
- A silicone skin to absorb bump and shock.

Note: The Juno SD headset or optional Bluetooth headset must be used when making voice calls on a Juno SD handheld protected by the OtterBox Defender case.

How are the Juno series handhelds charged and powered?

The Juno series handhelds are powered by a high-capacity (2600 mAh) LiIon battery. This battery can be charged (in the unit) using either the supplied AC adapter or the optional vehicle power adapter. The Juno series handhelds will not charge when connected to a computer using a USB cable (USB is incapable of providing the necessary power to charge the higher-capacity battery).

When you open the battery door, the Juno series handhelds power down completely. To turn the unit on after replacing the battery door, hold down the power key for four seconds. This total-power-off cycle ensures correct management of the SIM card (if fitted).

What can I do to prolong battery life?

The major drains on battery life are the backlight, the GPS receiver, the cellular module (Juno SC and SD handhelds only) and the Bluetooth and WLAN radios. If you rarely or never use one or more of these features, turning them off will significantly increase battery life.

Is there an extended warranty for the Juno series handhelds?

The Trimble standard hardware warranty period is 12 months. Trimble also offers a 12 month extended hardware warranty for the Juno series. While the Juno series handhelds are durable, they are not waterproof or fully rugged. You may wish to purchase the protective OtterBox case if you are working in environments where the handheld may be occasionally exposed to light rain, dust, and so on.

Software Questions

What software applications can I run on a Juno series handheld?

The Juno series handhelds are powered by the Windows Mobile 6.1 operating system. A wide range of application software is compatible with this operating system, including many GPS navigation and data collection applications. See www.microsoft.com/windowsmobile/catalog/cataloghome.aspx for more details.

Juno series handhelds can be purchased with a selection of field software, including:

- Trimble TerraSync™ software (www.trimble.com/terrasync.shtml)
- ESRI ArcPad software, with the Trimble GPSCorrect™ extension (www.trimble.com/gpscorrect.shtml)

What are the features and benefits of the Windows Mobile 6.1 operating system?

Windows Mobile is Microsoft's premier operating system for mobile devices. With a familiar Microsoft user interface, it includes a wide range of standard software applications that work seamlessly with your desktop operating system. The Windows Mobile operating system supports a host of communication options so you can be mobile and still have access to your enterprise data, email, and the Internet. The Juno SC and SB handhelds are powered by the Windows Mobile 6.1 Classic operating system, and the Juno SD handheld is powered by the Windows Mobile 6.1 Professional operating system. The Windows Mobile 6.1 operating system allows you to choose from the most comprehensive range of software available to meet your field requirements. In addition, the operating system features new security enhancements for more robust use when connected to a network, and persistent storage so your data is protected from unexpected power loss.

Will software applications developed for earlier Windows Mobile versions run on the Windows Mobile 6.1 operating system?

Most applications developed for Windows Mobile version 5.0 or later will run under the Windows Mobile 6.1 operating system. Applications which interface to the cellular modem should be tested for compatibility. Applications designed specifically for deployment on the Windows Mobile powered Smartphone platform should be implemented on the Juno SD model (as they may presume voice call capability), although they may also run on the Juno SB or Juno SC handheld.

Can I change the language used by the Windows Mobile 6.1 operating system?

The first time you turn on your Juno series handheld, you must select the language used by the Windows Mobile 6.1 operating system. You can choose from English, Chinese (Simplified), French, German, Italian, Japanese, Korean, Portuguese (Brazilian), Russian and Spanish.

You can only select the language once. Once you choose a language, the device will configure itself to your selection, and you will not be able to change the language used on the handheld without reinstalling the operating system (and all application software).

What versions of Trimble software support the Juno series handhelds?

The Juno series achieves optimal GPS results when used with the following field software applications:

- TerraSync software, version 4.10 or later
- Trimble GPSCorrect extension for ESRI ArcPad software, version 3.10 or later
- Applications developed with GPS Pathfinder® Tools Software Development Kit (SDK), version 2.32 or later

Do the Juno series handhelds run ArcGIS Mobile software?

Yes. With default installation settings, the ArcGIS Mobile software will auto-detect the GPS port on a Juno series handheld. If the ArcGIS Mobile software does not automatically connect to GPS on a Juno series handheld, you can manually (re)configure it by setting the Serial Port to *COM4 – GPS* and the Baud Rate to *BaudRate4800*.

GPS Questions

What GPS technology is in the Juno series handhelds?

The Juno series handhelds contain an integrated SiRFStar III GPS receiver. The firmware has been customized for Trimble to ensure the best possible performance in the field for data collection, and full compatibility with Trimble field and office software.

What GPS software can I run on the Juno series handhelds?

A wide range of application software is compatible with the Windows Mobile 6.1 operating system, including many GPS navigation and data collection applications. To access the internal GPS receiver of the Juno series handhelds, an application must support one or more of:

- the SiRF binary protocol,
- the NMEA-0183 ASCII protocol, or
- the Windows Mobile GPS API.

Applications wishing to use the SiRF or NMEA protocols should be configured to communicate with the GPS receiver on COM4. Unless reconfigured (or whenever the unit is hard reset or reset to factory defaults), this port will emit NMEA GPS data at 4800 baud.

How do I ensure the best GPS performance with Juno series handhelds?

The Juno series handhelds have a tuned GPS patch antenna located at the top of the device. For optimal GPS reception, hold the handheld at or close to vertical. If you lay the handheld down, it may suffer reduced accuracy.

When collecting point data with a Juno series handheld, Trimble recommends that you remain stationary at the point for at least 10 seconds before beginning to log GPS positions. This allows the GPS receiver's internal algorithms to stabilize, and ensures the best possible point feature accuracy.

How does the Juno series perform in harsh GPS conditions?

The GPS receiver in the Juno series handhelds is optimized for difficult GPS environments, ensuring that you will have a GPS position in even the toughest locations. However you should be aware that in environments where GPS signals may reflect off objects such as buildings, vehicles or trees, the positional accuracy will significantly degrade. The DGPS accuracy specification of the Juno series handhelds applies in open environments with few obstacles to block or reflect GPS signals.

Can I use postprocessed differential corrections with the Juno series?

Provided your field software stores raw GPS measurements (for example, the TerraSync software, the Trimble GPSCorrect extension, or an application created with the Trimble GPS Pathfinder Tools SDK), you can differentially correct this data back in the office.

In addition to having the appropriate field software, you also require at least one license to the Trimble GPS Pathfinder Office software or the Trimble GPS Analyst™ extension for ESRI ArcGIS Desktop software, to actually perform the postprocessing of your GPS data.

Juno series handhelds do not output GPS carrier data, so it is not possible to use carrier postprocessing techniques. However, Trimble DeltaPhase™ postprocessing technology enhances the code postprocessing accuracy achievable with the Juno series handhelds, enabling accuracy in the 1 to 3 meter range after postprocessing. Trimble DeltaPhase postprocessing technology was introduced in the GPS Pathfinder Office software version 4.20 and the Trimble GPS Analyst extension version 2.20.

Can I use accuracy-based logging with a Juno series handheld?

If your field software supports accuracy-based logging (for example the TerraSync software), you can specify an accuracy threshold for either real-time or postprocessed accuracy. Only positions with accuracy estimates better than the specified threshold will be logged. Be aware, however, that accuracy thresholds for SiRF-based receivers have a higher degree of uncertainty. For this reason, accuracy estimates will be no lower than 2 meters, even though the receiver will achieve accuracy in the 1 to 3 meter range after postprocessing. You should therefore ensure that your accuracy-based logging threshold is not set lower than 2 meters.

What real-time correction options are available with the Juno series handhelds?

The Juno series handhelds support all three available SBAS correction services (WAAS in North America, EGNOS in Europe, and MSAS in Japan). In open GPS environments, the Juno series handhelds typically achieve 2 to 5 m accuracy using SBAS.

Can I connect a Juno series handheld to a higher accuracy GPS receiver?

Yes. Supported receivers include the GPS Pathfinder ProXT™ receiver, the GPS Pathfinder ProXH™ receiver, and the GPS Pathfinder ProXRT receiver. The connection is supported using Bluetooth wireless technology.

Can I use corrections from a Trimble VRS network over the Internet with the Juno SC and Juno SD handhelds?

The Juno SC and Juno SD handhelds can be used to receive corrections from a Trimble VRS™ network through the internal cellular modem, and then transmit these over Bluetooth to an external GPS receiver such as the GPS Pathfinder ProXRT. However, corrections from a VRS network can not be applied to the internal GPS receiver of a Juno series handheld.

Can I use an external GPS antenna with the Juno series handheld?

Yes. The optional external GPS antenna (part number 62960-00) may be convenient when using a Juno series handheld in a vehicle, particularly if that vehicle's windshield has a GPS-resistant UV coating.

Can Juno series handhelds be upgraded to include cellular modem or voice call capability?

No. Customers who anticipate requiring cellular modem support in the future should purchase a Juno SC or Juno SD handheld. Customers who may require voice call capability should purchase a Juno SD handheld.



What ships standard in the box?





Juno series handhelds include the following standard parts and accessories:





What optional accessories are available with the Juno series handheld?



The following optional accessories are available for purchase:

Part number	Description	Picture
70934-00	Vehicle power adapter	
66454-01	OtterBox Defender Series case with belt clip	

Part number	Description	Picture
66455-00	Vehicle mount for windshield or dashboard	
70948-00	Anti-glare screen protectors (2-pack)	
70956-00	Clear screen protectors (2-pack)	
62960-00	External GPS antenna	

The following standard accessories can also be purchased separately as spare or replacement parts:

Part number	Description	Picture
66450-00	Juno series 2600 mAh battery	
66451-00	Juno series stylus (2-pack)	

Part number	Description	Picture
70926-00	AC adapter	
66456-00	Handsfree headset	

Cellular Modem Questions (Juno SC and Juno SD Only)

Caution: Use of the cellular modem and/or voice call capability will incur charges which may be fixed (per month) or may be based on the data bandwidth you use. Charges when roaming outside your home network (for example, abroad) are significantly higher than those incurred when on your home network. Please check with your carrier for full details of usage charges, both on their own network and when roaming.

What can I use the Juno SC and Juno SD handheld's cellular modem connectivity for?

The Juno SC and Juno SD handheld's internal 3.5G broadband cellular modem allows you to connect to the Internet or directly to an IP address, using a supported 2.5G, 3G or 3.5G cellular network. The most common application is to connect to your organization's network remotely, to access enterprise data, maps, and other information.

Other potential applications include:

- Accessing private or publically available Internet sites and services, such as WMS (Web Map Servers) for background maps in the field.
- Tracking each Juno SC and Juno SD handheld by sending GPS positions periodically to a central location.
- Dynamic work order allocation across a dispersed field workforce.

- Instantly reporting on field conditions in time-critical situations, such as natural disaster management and utility outages.
- Sending and receiving email in the field.
- Receiving real-time corrections from VRS networks for use with a GPS Pathfinder ProXRT receiver for high accuracy GIS data collection.

Can I use the Juno SC and Juno SD handheld as a dial-up modem to access the Internet?

No. There is no need to use the old-fashioned dial-up modem approach to get connected. Simply configure the cellular modem to connect directly to the (cellular) network, in the same way that you would configure the WLAN radio to connect to a Wi-Fi network. Once connected to the network, you are already “online”.

Can I make phone calls with the Juno series handhelds?

Yes, the Juno SD handheld supports voice calls. The Juno SC handheld does not support this functionality.

It is possible to use the Juno SC handheld’s cellular modem to place or receive VOIP (Voice Over Internet Protocol) calls. Use a cabled or wireless (Bluetooth) headset to listen and talk during a call.

Caution: VOIP calls consume a high amount of network bandwidth and will rarely be cost-effective when compared to regular cellular voice calls.

Can I send and receive text messages with the Juno series handhelds?

Yes, the Juno SD handheld supports text messaging.

The Juno SC handheld does not support text messaging, however you can use IP-based messaging software such as Windows Live™ Messenger or Google Messaging.

Will using the voice call capability degrade the accuracy of my GPS data?

No, the voice call capability will not degrade the accuracy of your GPS data. Trimble suggests however that you pause/stop GPS logging or close the feature before taking a call to avoid moving the GPS antenna while capturing a feature.

The screen goes blank when I receive or make a voice call. Is that normal?

Yes, the Juno SD handheld temporarily disables the screen and goes blank when a phone call is made or received. This prevents you from accidentally operating the touch screen when you are on a call. To use the touch screen while on a call, press one of the softkeys (above the *Windows* and *OK* keys) on the handheld. The Juno SD handheld touch screen is not disabled when used in hands-free mode or when you are using a headset.

What happens to my Internet connection when I take or make a voice call? Is software still able to send and receive data?

The Juno SD handheld can still send and receive data when the cellular connection is in 3G mode. In GSM mode, packet data connections are put on hold while you are on a voice call.

What's the impact of voice calls on battery life?

The Juno SD handheld standby time is approximately 104 hours with the cellular voice-call functionality enabled, and 136 hours with this functionality disabled.

The Juno SD handheld talk time is approximately eight hours in GSM mode, and three hours in WCDMA mode.

Can I use a Bluetooth headset for voice calls?

Yes, the Juno SD handheld is compatible with Bluetooth headsets.

Other Wireless Questions

Do the Juno series handhelds have a flight mode for use in an aircraft?

The Juno series handhelds do not have an explicit “flight mode”. The Wireless Manager application can be used to turn off the WLAN and Bluetooth radios.

For the Juno SC and SD handhelds you must additionally turn off the cellular module. For the Juno SC handheld, use the Modem Control application. For the Juno SD handheld, use the Wireless Manager application.

Alternatively, to perform a full power down of the device, press and hold the Power button for five seconds.

What can I use the Juno series' wireless LAN capabilities for?

The Juno series handhelds have an integrated wireless Local Area Network (LAN) radio, compliant with IEEE 802.11 b/g, that you can use to receive data anywhere within the range of a wireless LAN access point. Wireless LAN is often referred to as Wi-Fi. There are many publicly available Wi-Fi access points (also known as “hotspots”). To locate nearby access points, use Internet sites such as www.jiwire.com. Using the Wi-Fi radio in a Juno series handheld does not impact GPS performance, but battery power is consumed faster when there is an active connection to an access point.

What can I use the Juno series handhelds' Bluetooth capabilities for?

The Juno series handhelds have an integrated Bluetooth radio that you can use to establish cable-free connections to other Bluetooth devices within a range of 10 meters. Using a Bluetooth wireless connection, you can communicate with Bluetooth-enabled devices such as laser rangefinders, wireless headsets, or barcode scanners.

Using the Bluetooth radio in a Juno series handheld does not impact GPS performance, but battery power is consumed faster when there is an active connection to another Bluetooth-enabled device.

Camera Questions

What are the functions of the Juno series' integrated digital camera?

The Juno series handhelds feature a 3 megapixel digital camera. This camera can be used to take still photographs with a maximum resolution of 2048x1536 pixels. Still photos are stored in the JPEG format which is widely readable on all types of computer. Photos can be previewed on the Juno series handheld, using the Windows Mobile Pictures & Videos application.

Video clips are recorded at a resolution of 320x240 pixels, and are stored in .WMV format, which can be viewed (in Pictures & Videos) on the Juno series handheld, and also on most computers using an application such as Windows Media Player.

Does the integrated camera have a flash (“strobe”)?

No, there is no flash capability. In low light situations, you can adjust the exposure level (to +1EV or +2EV) to improve subject visibility.

What is the zoom range of the integrated camera?

The integrated camera has a maximum digital zoom of 1.6x, however the degree of zoom cannot exceed the highest supported resolution. Each level of zoom above 1.0x (that is, 1.2x to 1.6x) is available only at the next lower level of resolution. For example, 1.6x (3rd level) zoom is available only at 320x240 (3rd level) resolution.

Can I use the camera as a barcode reader?

Some proprietary business applications allow you to use the digital camera as a barcode scanner, but this capability is not currently available as a stand-alone application. For companies wishing to implement this capability in their application, SDK packages exist.

Can I take portrait oriented pictures?

The Juno series handhelds do not have an orientation sensor to distinguish portrait from landscape photos. You will need to rotate any pictures which have portrait orientation once they have been downloaded to your computer or network.

Can I link pictures to GIS features that I am capturing?

Yes. You can use the TerraSync software to control the taking of still photographs. Any photographs initiated from within the TerraSync software are automatically associated with the current GIS feature and are moved to the folder in which your TerraSync data is stored. This file association is preserved during data download and export using the GPS Pathfinder Office software.

Are the pictures time-, date-, and position-stamped?

If you use the camera button to take a picture, it will be time- and date-stamped using the Juno series handheld's internal clock. Pictures taken using this method do not have an associated GPS position.

However if you take a picture using the TerraSync software, not only is the picture time- and date-stamped, but the TerraSync software also writes the current GPS position to the picture's EXIF header.

This means the picture can always be identified in space and time, even if it is subsequently separated from the GIS data you were collecting at the time the picture was taken.

Where can I get more information?

Go to www.trimble.com or contact your [local Trimble Distributor](#).