

Power Accessories

The following accessories can be ordered for your Omnii:

Description	Model Number
AC Wall Adaptor	ST1050 or ST1050-AR
Vehicle Power Outlet Adaptor	ST3113
Snap Module – Charger Only	ST4000
Snap Module – USB Host/Client plus Charger	ST4001
Snap Module – DE9M powered serial plus Charger	ST4005

Snap Modules

- ✓ **NOTE** The Snap Modules are shipped with their own quick start guide (Omnii Snap Modules Quick Start Guide, PN 8000220). The guide should be reviewed for additional information and updates.

Snap Modules are mobile power chargers for the Omnii. They are compatible with the AC wall adaptor (Model ST1050 or ST1050-AR) and the Vehicle Power Outlet Adaptor (Model ST3113).

Three types of Snap Modules are available:

- **Model ST4000** (Charger only variant): powers and charges the hand-held.
- **Model ST4001** (USB variant): powers and charges the hand-held. It provides communications via USB 1.1/2.0 Host and USB 2.0 Client connectors and provides a DC IN port. When attached to the Omnii, it allows ActiveSync or Windows Mobile Device Center connectivity with your PC, and the use of a USB device such as a USB memory key or supported peripheral.
- **Model ST4005** (Serial variant): provides a powered DE9M serial connector. It powers and charges the Omnii, and provides serial communications to tethered devices. The DE9M connector is capable of speeds up to 115,200 bps. Pin 9 is reserved for 5V power out and is defaulted to **off**. To enable power to this port, in your Omnii desktop, go to *Control Panel>Scanners*, which opens the *Scanner Settings* menus. In the *Ports* menu, select **on** for the *Power* parameter under the COM6 port.

Figure 4-5 Snap Module Ports

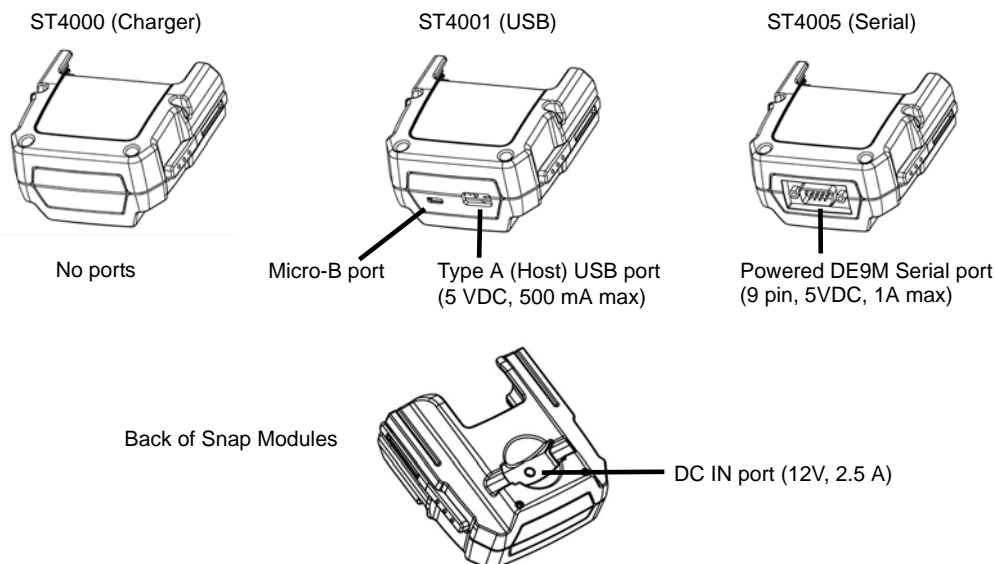
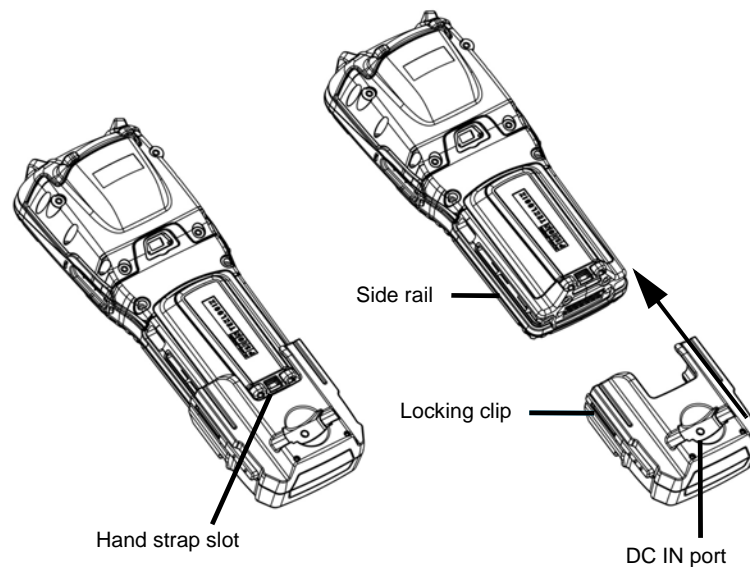


Figure 4-6 Snap Module Installation



To attach the Snap Module charger to the Omnii:

- Make sure that the charger connector and the Omnii docking connector are free of dust or any other debris before connecting them.
- A slot in the side rail on each side of the hand-held accommodates the locking clips of the charger. To attach the charger, align it with the base of the hand-held and gently slide up until the locking clips snap into place (Refer to [Figure 4-6 Snap Module Installation on page 4-6](#)).
- To remove the charger, press down on the base of the clip arms to release them from the Omnii side rails and slide the adaptor off.
- Connect the charger to an AC or DC power source using the appropriate regional plug or cable. Then connect the charger DC plug into the Snap Module DC jack. You can also attach an ST4001 or ST4005 Snap Module to the Omnii and use the Omnii battery to power USB or serial peripherals, for enhanced mobility.



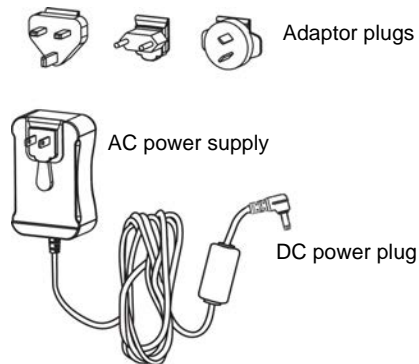
NOTE If you are using a hand strap, there is no need to remove it before installing the Snap Module, since the Omnii hand strap slot will still be accessible.

AC Wall Adaptor - Models ST1050 and ST1050-AR

The AC wall adaptor available for your docking station or Snap Module allows you to operate your hand-held using AC power while charging the battery inserted in the unit.

The ST1050 is shipped with adaptor plugs suitable for use in the following regions: United Kingdom, Australia, Europe and North America.

- Choose the adaptor plug that is suitable for use in your country. Slide the adaptor plug into the Universal AC power supply, snapping it into place. These two pieces, coupled together, are referred to as an AC wall adaptor.
- Insert the DC plug into the docking station or Snap Module jack.
- Plug the pronged end into an AC outlet.

Figure 4-7 ST1050 AC Wall Adaptor and plugs

The ST1050-AR wall adapter is kitted with an AC plug that is suitable for use in Argentina.

Vehicle Power Outlet Adaptor - Model ST3113

The Vehicle Power Outlet Adaptor allows you to power your hand-held and recharge your battery using power drawn from your vehicle's automotive power outlet when used in conjunction with a Snap Module.

Figure 4-8 ST3113 Vehicle Power Outlet Adaptor

- Attach a Snap Module to the base of the hand-held. Refer to [Snap Modules on page 4-5](#) if you require further details.
- Insert the DC power plug on the Vehicle Power Outlet Adaptor into the DC IN port on the Snap Module.
- Insert the Vehicle Power Outlet Adaptor plug into automotive power outlet in your vehicle.



NOTE Battery charging continues whether the hand-held is switched on or off.

Chargers and Docking Stations: General Information

Important Charger Safety Instructions



IMPORTANT Before charging a battery with a desktop docking station, it is critical that you review the safety guidelines in the Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191) and the Omnii Hand-Held Accessories Regulatory & Warranty Guide (PN 8000205).

Charging the Battery

The Omnii Hand-Held Computer operates with lithium-ion battery pack Model ST3003. Preparing the unit for operation requires that the battery pack be charged and installed in the hand-held.

Batteries shipped from the factory are charged to approximately 40% of capacity. Lithium-ion battery packs must be fully charged before use. These batteries can be charged with a variety of chargers and docking stations. Currently the following are available:

- The Snap Module is a mobile adaptor for the Omnii. Three models are available — see [Snap Modules on page 4-5](#).
- The AC Wall Adaptor operates as an AC power source and also charges the battery installed in the unit — see [AC Wall Adaptor - Models ST1050 and ST1050-AR on page 4-6](#).
- The Vehicle Power Outlet Adaptor powers the Omnii and recharges the battery using power drawn from your vehicle's automotive power outlet — see [Vehicle Power Outlet Adaptor - Model ST3113 on page 4-7](#).
- The Desktop Docking Stations operate as both chargers and docking stations. Operating as a charger, both the battery installed in the Omnii and a spare battery can be charged. Priority is given to charging the hand-held's battery. See [Desktop Docking Stations - Models ST4002 and ST4003 on page 4-9](#).

Normally it takes 3 to 4 hours to charge a battery. The Omnii intelligent charging system protects the battery from over-charging by terminating the charge process when the battery is at maximum capacity.

% Charge Completed	During Sleep Mode	While Operating
100%	4 hrs.	8 hrs.
75%	2 hrs.	6 hrs.



IMPORTANT To avoid damaging the battery, chargers will not begin the charge process until the battery temperature is between 0°C to 40°C (32°F to 104°F).

Installation — Chargers and Docking Stations

When installing a charger or docking station, consider the following guidelines.

- Keep chargers and docking stations away from excessive dirt, dust, water and other liquids, and contaminants.
- Chargers will not charge batteries outside an ambient temperature range of 0°C to 40°C (32°F to 104°F). It is recommended that the charger or docking station be operated at room temperature — between 18°C and 25°C (64°F to 77°F) for maximum performance.

After unpacking your unit:

- Visually inspect the charger for possible damage.
- Install the IEC power cord (if applicable) and apply power.

Operator Controls

The Omnii docking stations and chargers have no operator controls.

Power Consumption Considerations

Check to ensure the mains circuit supplying chargers and/or docking stations is adequate for the load, especially if several chargers and docking stations are being powered from the same circuit.

Desktop Docking Stations - Models ST4002 and ST4003



Specialized versions of the desktop docking station are available for Argentina and Korea. For Argentina, model number ST4002-AR is packaged with a wall adaptor and a suitable, regional AR plug. For Korea, model number ST4002-KR is packaged with a wall adaptor and a KR plug.



IMPORTANT The desktop docking station is shipped with its own quick start guide (ST4002 and ST4003 Desktop Docking Stations Quick Start Guide, PN 8000203). It is critical that it be reviewed for additional information and updates.

The Omnii can be inserted into two desktop docking stations which are designed to charge the battery installed in the hand-held along with a spare battery pack: Models ST4002 and ST4003.



IMPORTANT These docking stations can only be used to charge Motorola approved lithium-ion batteries.

The ST4002 and ST4003 desktop docking stations feature:

- Fast charging of the internal battery.
- Fast charging of the spare battery pack.
- A Host USB port to connect peripherals such as a printer, keyboard, etc.
- A Client USB port to connect the docking station to a PC.



NOTE The ST4002 desktop dock can be upgraded to include the DE9M and RJ45 interfaces by using the ST4100 Xmod (Expansion Module).

The ST4003 desktop docking station additionally provides:

- A DE9M serial port (unpowered) and an RJ45 10Base-T Ethernet interface. Both these interfaces are compatible with the USB to Ethernet/serial drivers included in the Omnii (see [Figure 4-10 Back of ST4003 Desktop Docking Station](#) on page 4-10).

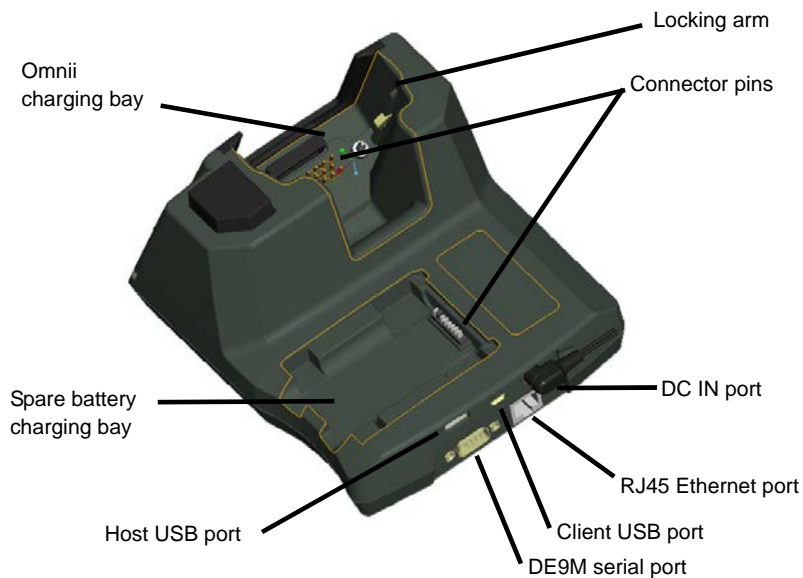
Figure 4-9 Desktop Docking Station - Models ST4002 and ST4003



The desktop docking station storage temperature is -30°C to +60°C (-22°F to 140°F). Operating temperature and humidity are: 5 - 95% non-condensing and 0°C to 40°C (32°F to 104°F).

The desktop docking station uses careful charge algorithms designed to maximize battery life while ensuring the shortest possible charge time. See [Battery Details on page 2-1](#) for more information regarding battery capacity, charge times and battery life. See [Charging the Spare Battery on page 4-11](#) for spare battery charge information.

Figure 4-10 Back of ST4003 Desktop Docking Station



Charging a Battery Installed in the Omnii

- Insert the DC power cable to the DC IN port on the desktop docking station. Plug the pronged end of the cable into an AC outlet.
- Slide the hand-held into the docking station, making certain that the hand-held is securely seated on the docking station connector pins and engages the locking arms of the docking station. When the Omnii is switched on, a message is displayed briefly on the screen indicating that the unit is properly installed in the station and the docking station icon is displayed in the taskbar.

The LED on the Omnii lights up indicating that the unit has external power and battery charging will begin. It is safe to leave the unit in the desktop docking station while it is not in use — the battery will not be overcharged.

Indicators

The front-mounted LED on the desktop docking station indicates the spare battery charge status. The LED on the Omnii is active even when the hand-held is inserted in a docking station (and in suspend mode) so that the charge status of the battery can be detected easily.

Charge LED Behaviour	Function
OFF	No battery detected
Solid Green	Battery charging complete
Flashing Green	Charge in progress
Flashing Yellow	Battery is not charging due to out-of-temperature conditions
Solid Red	Battery is not charging due to out-of-temperature conditions

Operation

Charging the Omnii Battery

The desktop docking station supplies DC power to enable the Omnii internal fast charger.

When installed in the dock, the Omnii battery charge LED will illuminate to indicate the unit has external power and can charge the internal battery. The Omnii charge indication follows the same convention as the charger's spare battery indicator ([Figure 4-9 Desktop Docking Station - Models ST4002 and ST4003 on page 4-10](#)).



NOTE Battery charging continues whether the Omnii is switched on or off.

Charging the Spare Battery



IMPORTANT Do not store spare batteries in a charger for more than 72 hours. Doing so may damage the battery or reduce its charge capacity.

- Install the battery in the battery charging bay (rear slot of the desktop docking station). Place the battery contacts down to mate with the connector, and pivot the battery into place in the battery charging bay.
- The desktop docking station spare battery LED lights up immediately. During charge the LED will be flashing green.
- When the battery has finished charging, the LED turns solid green.
- The charge stops when the battery is fully charged and the LED remains green.

A full charge will take 3 to 4 hours for a 5000 mAh battery. This may take up to 8 hours if the hand-held is also docked and charging.

Cleaning the Desktop Docking Station



IMPORTANT Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.

- Use only mild detergent or soapy water on a slightly damp cloth to clean the desktop docking station. Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The plastic case is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.

Troubleshooting

The indicators, applications, and drivers required to use and monitor the desktop docking station as a dock (as opposed to a charger) are installed on the Omnii — no applications are present on the docking station itself.

Docking station does not seem to power on.

- When first connected to the DC power supply, the charger LED should flash a sequence of red, yellow, and green.
- If not, the charger is defective and requires service.

The Omnii charge indicator LED stays off.

When the Omnii is docked into a powered desktop docking station and the Omnii charge indicator LED stays off, there could be a problem with the hand-held or with the docking station. Use a hand-held with a properly functioning charge indicator to isolate the problem.



NOTE The desktop docking station charge LED only shows the status of the spare battery.

The Omnii charge indicator LED is red.

If the Omnii charge indicator is red when the hand-held is docked:

- Remove the Omnii and disconnect the adaptor DC power cable.
- Wait at least 20 seconds, and then plug the cable in again.
- If the Omnii indicator still shows a fault, the hand-held requires service.

Spare battery LED is red with a battery installed.

- Try inserting a battery that is known to be working with another charger.
- If the charge slot LED continues to show red with the known working battery, the charger is defective and requires service.
- Your Motorola battery and desktop docking station are carefully designed for safety and capacity performance. If the battery or charger are not Motorola approved products, or the safety mechanism is faulty, the spare charge slot LED or the Omnii LED will display red.

Spare battery LED does not turn on when a battery is installed.

- Inspect the charge slot contacts for damage (are they bent, flattened, twisted or broken?).
- Reinstall the battery and check that it is fully seated in the slot.
- Try inserting a battery that you know to be working into the charger slot.

- Disconnect and reconnect the DC adaptor, and check that the spare battery LED indicator flashes at power-up.
- If the charge slot fails to charge the known working battery, it is defective and requires service.

Quad Docking Station – Model No. ST4004



IMPORTANT The quad docking station is shipped with its own quick start guide — Omnii ST4004 Quad Docking Station Quick Start Guide (PN 8000222). It is critical that it be reviewed for additional information and updates.



IMPORTANT When ordering a charger, you must also order an IEC-320/IEC-60320 C13 power cord separately.

Figure 4-11 Front view

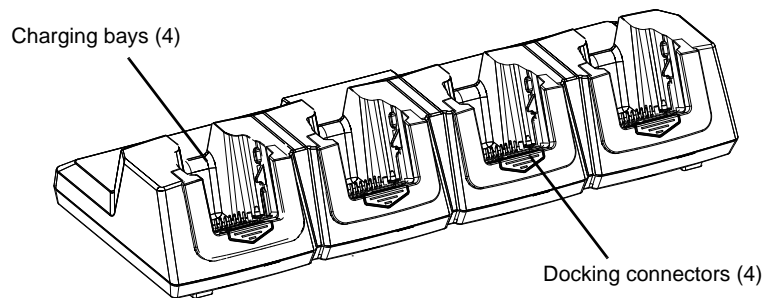
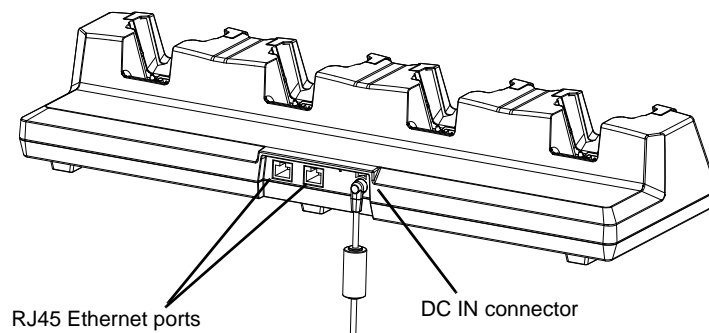


Figure 4-12 Rear view



The ST4004 Quad Docking Station is designed to accept up to four Omnii hand-held computers. The docking station powers the units and their internal battery charger. The docking station also connects up to four of the hand-held computers to a 10/100 Base-T Ethernet network and allows for Ethernet data transfer. An additional Ethernet interface is available for connecting more docking stations downstream, up to 4 on the same network.

Operator Controls

The ST4004 has no operator controls or power switch.

Indicators

The quad docking station is equipped with Ethernet activity and link LEDs (see [Figure 4-14 Ethernet network connection](#) on page 4-15).

Quad Docking Station Operation

Charging the Omnii Battery

- Insert the DC power plug into the ST4004 rear DC IN connector (see [Figure 4-14 Ethernet network connection](#) on page 4-15).



IMPORTANT Use IEC-320 C13 power cords approved by Motorola, with the ground pin connected to a proper earth-grounded receptacle. Check with a qualified electrician if you are uncertain of your receptacle grounding.

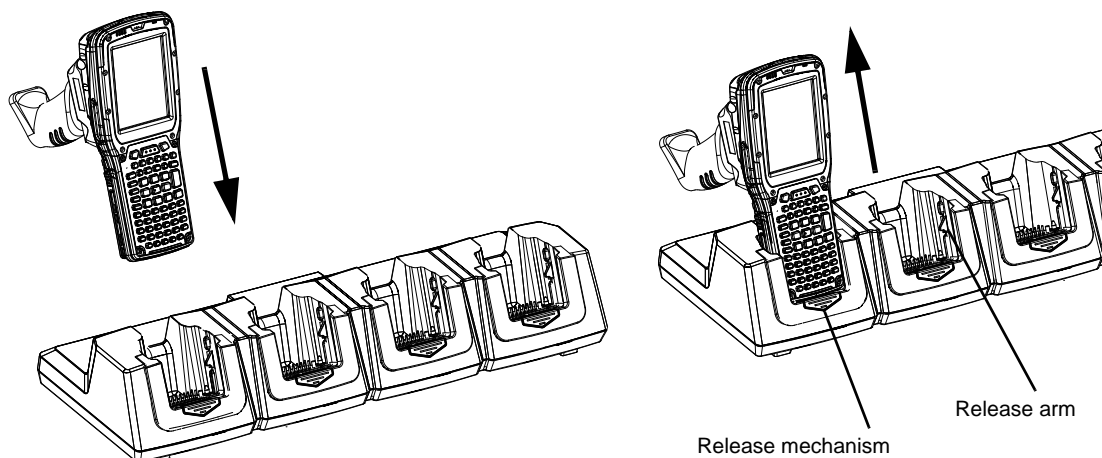
The ST4004 supplies DC power to enable the Omnii internal fast charger. Normally, a full charge of the battery will take from 3 to 4 hours.

- Insert up to four Omnii computers into the docking station charging bays, pressing down gently but firmly to seat them securely.
- During the charge, the Omnii LED slow flashes green.
- When the battery finishes charging, the LED turns solid green.
- To remove the Omnii, push down on the release mechanism on the front face of the docking bay. The hand-held will detach from the docking bay release arms and can be pulled up and out.



NOTE Battery charging continues whether the Omnii is switched on or off.

Figure 4-13 Insertion and removal of Omnii computers



Installation

Place the charger in an area that is free from excessive dirt, dust, water and other liquids, and contaminants. The ambient temperature must be in the range 0° C and 40° C (32° F to 104° F). The docking station will not charge batteries outside of this temperature range. For maximum performance, it is recommended that the charger be operated at room temperature — a temperature range between 18°C to 25°C (64°F to 77°F).

Connecting to the Ethernet Network

Network Access

The Omnii automatically detects insertion into the docking station and loads the appropriate drivers to communicate with the network. To connect more docking stations downstream (up to 4 on the same network), use the Ethernet cable supplied with your quad docking station as the daisy chain cable (see [Figure 4-15 Daisy chain configuration](#) on page 4-15).

Figure 4-14 Ethernet network connection

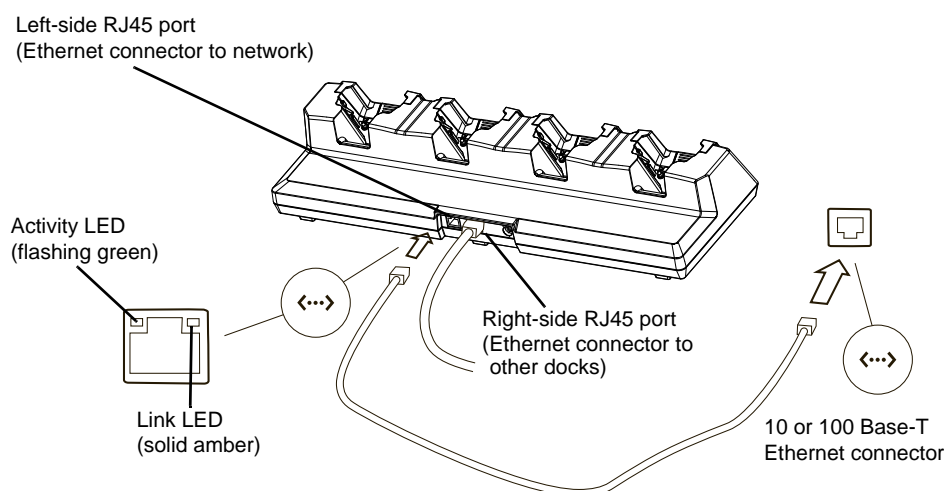
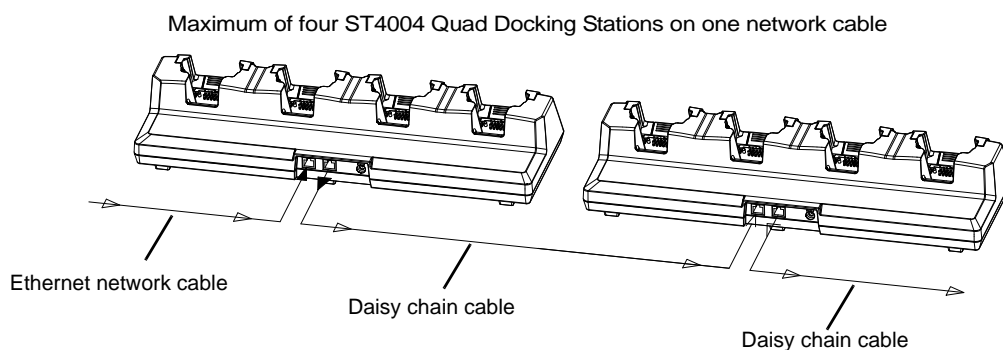


Figure 4-15 Daisy chain configuration



Cleaning the ST4004



IMPORTANT Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.

Use only mild detergent or soapy water on a slightly damp cloth to clean the ST4004. Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The plastic case is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.

Troubleshooting

The Omnii Charge Indicator LED Stays Off

When the Omnii is docked in a powered ST4004 and the hand-held's charge indicator LED stays off, there may be a problem with the Omnii or with the docking station. Make sure a battery is installed in the Omnii, otherwise use an Omnii with a properly functioning charge indicator to isolate the problem.

Power LED Does Not Light Up

- Remove all Omnii units, and unplug the docking station.
- Connect another device to the mains outlet to ensure there is power.
- Remove the IEC mains power cable from the charger, and check it for damage.
- Reconnect the mains cable in the charger and mains outlet.

The Omnii Charge LED Flashes Yellow

A flashing yellow Omnii charge LED (the left-most LED on the hand-held) indicates that the battery is not within the allowable charging temperature range – 0° C and 40° C (32° F to 104° F). Allow the battery to come to an acceptable range before reinserting the Omnii in the docking station.

The Omnii Charge Indicator LED is Red

If the Omnii charge indicator is red when the Omnii is in any of the four bays, the quad dock cannot read the battery, is in charging timeout, or it is not a Motorola battery.

- Remove the computers and disconnect the adaptor DC power cable.
- Wait at least 20 seconds, and then plug the cable in again.
- If the Omnii indicator still shows a fault, the Omnii requires service.

Powered Adaptor LED Stays Off

- Check the AC cable. Replace with the same type if the cable is suspect.
- If the adaptor LED stays OFF, the adaptor is defective and requires service.

Vehicle Cradles - Models ST1000 and ST1002



IMPORTANT The vehicle cradles are shipped with their own quick start guide — Omnii Vehicle Cradles Quick Start Guide (PN 8000221). It is critical that it be reviewed for additional information and updates.

The Omnii vehicle cradles are highly ruggedized, single station docks. Although they provide quick insertion and removal, the cradles hold the Omnii securely even when operated in high vibration environments (such as vehicles not equipped with suspensions).

The Omnii vehicle cradle is available in two models:

- Model ST1000 - Unpowered cradle.
- Model ST1002 - Powered cradle with communications port. A DE9M serial port (powered) and two USB Host interfaces.

Figure 4-16 Front and back of ST1002 with Omnii



Motorola also supplies a range of standard mounts for the hand-held vehicle cradles, and the Omnii vehicle cradles are compatible with all of them.

Vehicle Cradle Mounting Recommendations



WARNING! Before mounting a vehicle cradle in a vehicle, there are a number of operator safety issues that require careful attention. An improperly mounted cradle may result in one or more of the following: operator injury, operator visibility obstruction, operator distraction and/or poor ease of egress for the operator. Motorola strongly recommends that you seek professional mounting advice from the vehicle manufacturer.

Ensure that you read the **ST1002 Vehicle Cradle Installation Instructions** document (PN 1020305), enclosed with the ST1002, for important safety information on connecting fuses.

Cable routing within a vehicle cab also requires careful consideration, especially for devices with loose cables. If you are unable to obtain suitable advice, contact Motorola for assistance. Note also that for better protection, the equipment should be mounted inside the vehicle roll cage.

Pedestal mounts are recommended for all fixed mount locations because they offer optimal operator access. In addition, for safety reasons, only pedestal mounts with fully locking joints should be used in vehicles. Always adjust the pedestal for the optimum viewing angle, and securely tighten the hex and wing screws.

The most effective way to mount the vehicle cradle is to use brackets with the MT3324 (short arm) or MT3325 (standard arm) kit. The ST1002 requires either the MT3326 or MT3327 bracket; the ST1000 requires the MT3328 bracket.



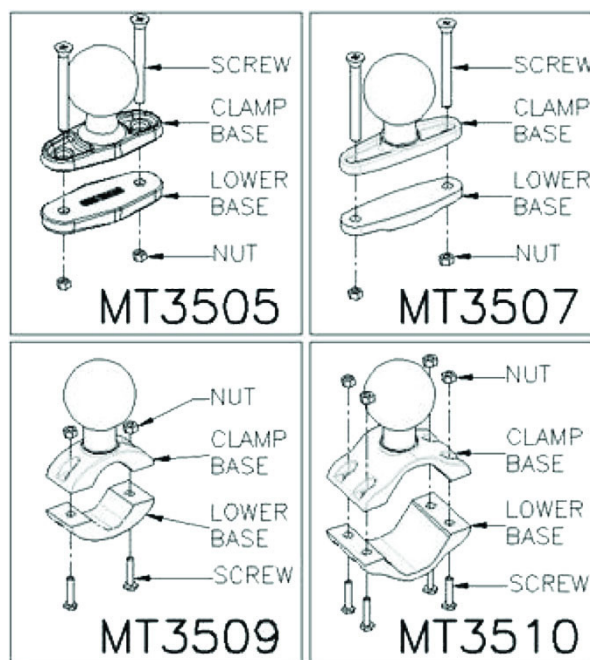
IMPORTANT It is strongly recommended that all forklift mounting solutions use clamp bases rather than plate bases that require penetrating through the vehicle for installation.

A **clamp base** is required to secure the vehicle cradle/arm assembly to the vehicle. Choose from one of the following clamp base sizes:

- MT3505
- MT3507

Model	Rail Width
MT3505	Clamp base (for 4" or 12" RAM arm), 2" max. width
MT3507	Clamp base (for 4" or 12" RAM arm), 3" max. width
MT3509	Rail base (for 4" or 12" RAM arm), 1-1/4" to 1-7/8"
MT3510	Rail base (for 4" or 12" RAM arm), 2" to 2 1/2"

Figure 4-17 Clamp and Rail Bases (Torque to 26 in-lbs)

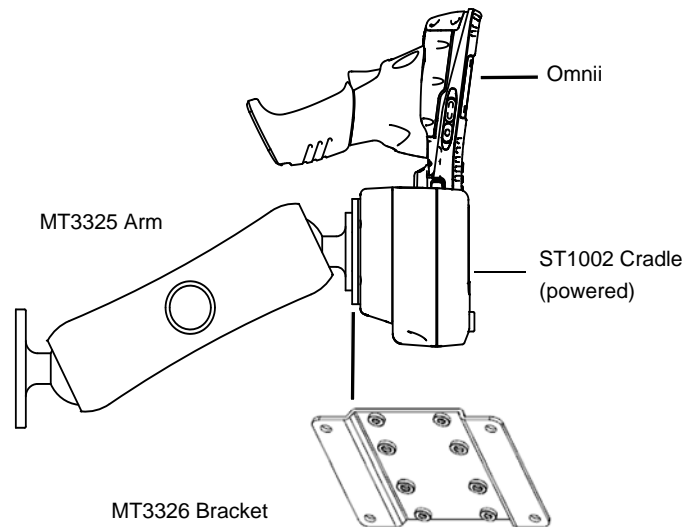


IMPORTANT

Plate bases are not recommended for forklift mounting solutions. If a plate rather than a clamp base is used, you will need to penetrate into the structure of the vehicle, a process requiring additional hardware. The following plate bases are available:

- VESA Plate – MT3501
- Circular Plate – MT3502

Figure 4-18 MT3325 Standard Arm Kit with Omnii Vehicle Cradle Clamp and Rail Bases (Torque to 26 in-lbs)



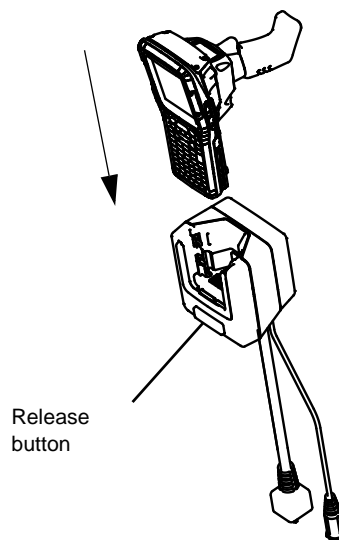
To accommodate the service loop of the connector cable, leave a 4" clearance at the bottom of the cradle. Leave a 7" (minimum) clearance at the top of the cradle to allow easy removal of the hand-held. Refer to the detailed assembly instructions that are packaged with the cradle when selecting a mounting location (*Omnii Vehicle Cradles Quick Start Guide PN 8000221*).

Insertion and Removal of Omnii

If your Omnii is equipped with a cover, or the ST6025 Double Loop Hand strap, these accessories need to be removed before installing the unit in a vehicle cradle. There is no need to remove other hand straps or pistol grips from the unit.

- Slide the Omnii into the cradle, and press firmly downward until it locks into place. On a vehicle, it's a good idea to pull up on the Omnii to be certain that it is secure.
- To remove the Omnii, press the release button on the front of the cradle until it releases.

Figure 4-19 Inserting Omnii into the vehicle cradle



Maintaining the Vehicle Cradle

Two latches in the cradle hold the Omnii firmly in place. Although these latches are designed for at least 100,000 insertion and removal cycles, they will wear over time and will no longer lock the Omnii securely in the cradle. For replacement parts and instructions contact Motorola. Partial disassembly is required.

ST1002 Powered Cradle Installation

The ST1002 cradle is designed to allow the Omnii to be powered by a vehicle battery. The battery installed in the Omnii is also recharged by the vehicle battery. This option accepts DC power sources over the range 11.5V to 30V. Voltages above that require the use of the preregulator (Model No. PS1350).

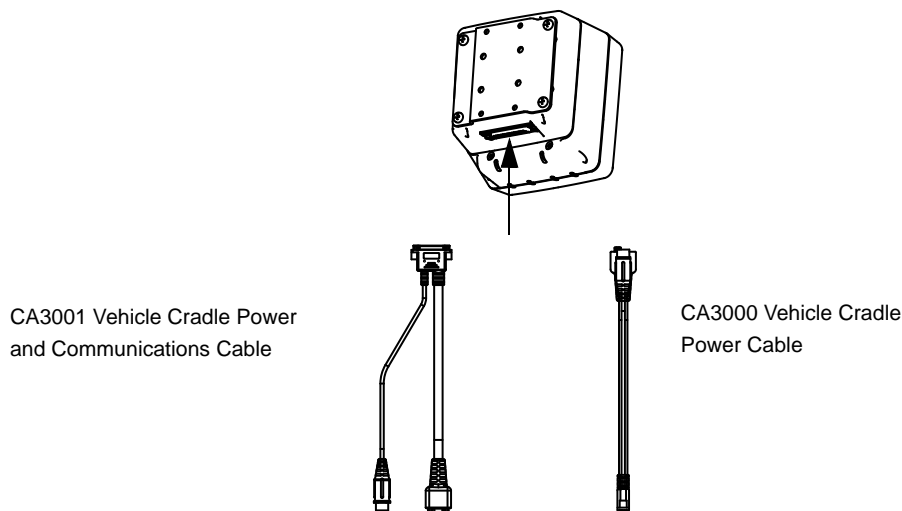


WARNING! Applying a voltage greater than that specified, or reversing polarity, may result in permanent damage to the cradle power option and will void the product warranty.

Operating an Omnii XT15f Arctic unit in operating temperatures from -30°C to +50°C, requires the use of the power preregulator Model No. PS1370.

The ST1002 Vehicle Cradle has a 44-pin connector that allows connection with either the CA3001 Vehicle Cradle Power and Communications Cable (DE9M serial port, 2 USB Host interfaces, and power cable) or the power-only CA3000 Vehicle Cradle Power Cable. For connector pinouts and a cable connections diagram, see [Cable Connectors for Vehicle Cradle Model ST1002 on page A-3](#).

Figure 4-20 Connecting to vehicle power



For a diagram of a power with communications setup, see [Figure 4-21 Connecting ST1002 to vehicle power and communications in a typical setup](#) on page 4-22.

The Omnii charging LED (see [Battery Charge Status LED on page 2-9](#)) indicates that external power is available, and it also indicates the charging status of the internal battery.

Wiring Guidelines

Before installing the cables between the cradle and other devices, consider the following:

- Ensure that drilling holes will not damage the vehicle or its wiring.
- Protect cable runs from pinching, overheating and physical damage.
- Use grommets to protect cables that pass through metal.

- Use plastic straps and tie-downs to secure cables and connectors in their desired location, away from areas where they may get snagged or pulled.
- Keep cables away from heat sources, grease, battery acid and other potential hazards.
- Keep cables away from control pedals and other moving parts that may damage the cables or interfere with the operation of the vehicle.

Installation in High Voltage Vehicles



WARNING! Voltages exceeding 30VDC are considered hazardous. Installation of powered cradles in vehicles that operate above 30VDC require special consideration, as listed below.

Due to the hazardous voltages present on these vehicles, it is necessary to ensure that the powered cradle power supply cable connector is not accessible to the vehicle operator, and does not get exposed to water or other liquids. **Exposing an accessible power connector to water or other liquids could create a hazardous situation resulting in serious injury or death.** Avoiding this hazard can be accomplished in the following way.

- Use the PS1350 pre-regulator or, for freezer applications (-30°C), the PS1370 pre-regulator.
- Ensure the power connector is wrapped securely with a waterproof electrical tape and installed in a dry location on the vehicle, away from the vehicle operator's reach (perhaps under a vehicle dash or in a sealed housing).
- Cover the power connector with a waterproof heat shrink material (see [Extreme Wet Environments on page 4-21](#) for additional details).

All other installation requirements outlined in this document should also be followed for High Voltage vehicles to insure safe installation and operation of the powered cradle.

Extreme Wet Environments

For extreme wet environments, or environments where it is difficult to restrict vehicle operator access to the power connector, Motorola offers a waterproof heat shrink kit (PN 1030022). The kit contains 3 pieces of waterproof, high shrink ratio heat shrink tubing which can be used to encapsulate the entire connector assembly. If using this kit, please ensure that you order sufficient material to cover installation and service, remembering that heat shrink is one-time use, and must be replaced if it is removed from the connector for any reason.

Wiring Vehicle Power and Communications to the Cradle

An optional 1.8 meter (6 foot) extension power cable (PN 13985-301 with motion detect or 13985-302) is available for your powered vehicle cradle. This cable should be wired to a filtered, fused (maximum 4A) accessory supply on the vehicle. The power cradle draws no more than 4A (less if the accessory supply is greater than 12V). Any additional wiring, connectors or disconnects used should be rated for at least 10A. Installation of the 19440-XXX fuse assembly using a 4A 250V fuse installed is mandatory, except when using a CA3002 vehicle power cable. The 13985-XXX cables are not used with the CA3002. The 4A fuse is already included in the CA3002 vehicle connector assembly.



NOTE When connecting PN 13985-301 (Screen Blanking version), ensure that the screen blanking wires (clearly labelled) and the power wires (red/black leads) are reliably secured away from each other, or are separated with reliably secured certified insulation. A minimum 2.8mm distance, or 0.4mm distance through insulation, is required for the separation.

The red lead of the power cable attaches to the positive vehicle supply. The black lead connects to the negative supply — this should be connected to a proper terminal block and not to the vehicle body.

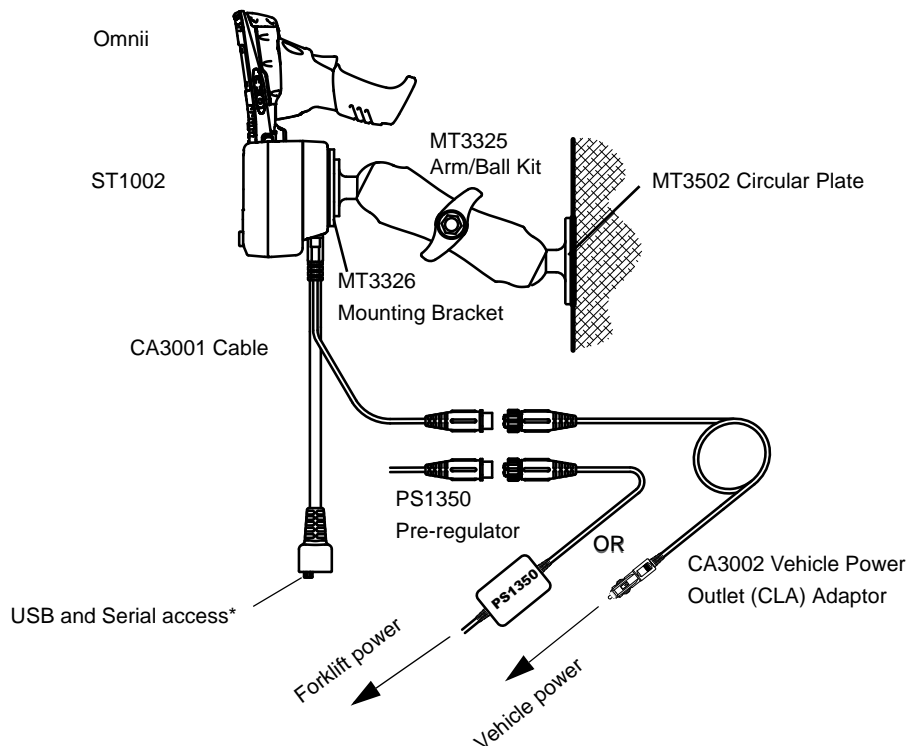
You may have the option of connecting power before or after the key switch. It is preferable to wire the power cradle after the key switch — that is, it cannot be turned on without the key on. However, if the operator switches the key off repeatedly for long periods during a shift, it may make more sense to wire the cradle before the switch.

Keep in mind that the Omnii will continue to operate with or without vehicle power as long as its battery has sufficient charge. If an unfused power source must be used, a fuse assembly (PN 19440-300) must be added to the extension power cable (the fuse and instructions are supplied with the cable). Use only a 4A fast blow UL approved fuse in the fuse assembly (PN 9016622).



WARNING! 11.5–30 Vdc input only, suitable for road vehicles. A pre-regulator is required for use on forklifts. For such installations Motorola recommends using the PS1350 (15-90 VDC) pre-regulator or, for freezer applications, the PS1370 pre-regulator.

Figure 4-21 Connecting ST1002 to vehicle power and communications in a typical setup



* Note: The serial port is 5 VDC, 1 A maximum power out and is defaulted to off.

To enable power to this port, in your Omnii desktop, go to Control Panel>Scanners, which opens



NOTE For the CA3002 Vehicle Power Outlet (CLA) Adaptor, replace with same fuse type and rating.

Battery Charger (6-Slot) - Model ST3006

The ST3006 is designed to charge up to six Omnia lithium-ion batteries at one time.

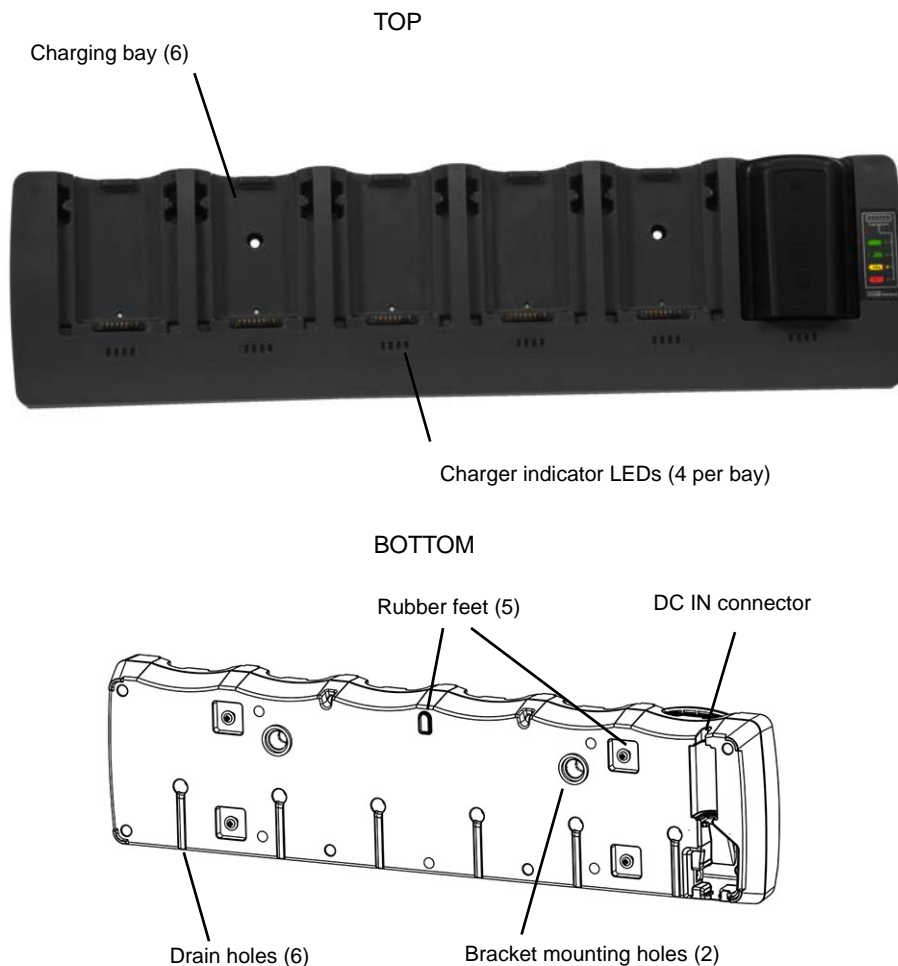


IMPORTANT The battery charger is shipped with its own quick start guide — ST3006 6-Slot Battery Charger Quick Start Guide (PN 8000204). It is critical that it be reviewed for additional information and updates.



IMPORTANT When ordering a charger, you must also order an IEC-320/IEC-60320 C13 power cord separately.

Figure 4-22 ST3006 Battery Charger



Installation

The charger can be wall mounted using the wall mount kit (MT2031) or it can be operated on a flat surface. Install the charger in an area that is free from excessive dirt, dust and contaminants. The ambient temperature must be in the range 5°C to 39°C (41°F to 102°F). The charger will not charge batteries outside of this temper-

ature range. For maximum performance, it is recommended that the charger be operated at room temperature — a temperature range between 18°C to 25°C (64°F to 77°F).

The charger can consume up to 6 A at 120 VAC, 3A at 240 VAC. Check to ensure the mains circuit supplying the charger is adequate for this loading (especially if several chargers are being powered from the same circuit). After unpacking the unit:

- Visually check the charger for damage.
- Install the IEC power cord and apply power.



IMPORTANT Use IEC-320 C13 power cords approved by Motorola, with the ground pin connected to a proper earth-grounded receptacle. Check with a qualified electrician if you are uncertain of your receptacle grounding.

All charge indicators flash momentarily at power up to indicate that the charger is ready for operation.

If you choose to wall mount the charger, detailed installation instructions are included in the *Omnii 6-Slot Battery Charger ST3006 Quick Start Guide (PN 8000204)* included with the charger kit. Be sure to locate the charger in an area where there is no risk of injury to persons walking in the vicinity.

Operator Controls

The gang charger does not have operator controls or a power switch. There is no dedicated indicator light to show that the charger is powered, but the charge slot LEDs will light up briefly when first applying power.

Charge Indicators

Each battery charge slot is equipped with four LEDs to indicate the charge status of the battery. When the Omnii batteries are inserted in the charger, the colour and behaviour of the LEDs associated with the charging bays in use indicate the status of the charge.

Charge LED Behaviour	Function
OFF	No battery detected.
Solid Green	Battery charging complete. Each LED represents 25% battery capacity.
Flashing Green	Charge in progress. Each LED represents 25% battery capacity.
Flashing Yellow	Battery is not charging due to out-of-temperature conditions.
Solid Red	Unable to read battery, charging timeout, or non Motorola battery.

Charging Batteries

- Install the battery with the battery contacts facing the charger. Slide the battery between the guide rails until it lightly latches in place.

The 4-LED bar for the battery bay shows 25% charger per LED. A flashing green LED shows charging is under way. The LED directly below the slot in which a battery is inserted lights up immediately. If the battery temperature is outside 0°C to 40°C (32°F to 104°F), the LED flashes yellow until the temperature is acceptable. A fully discharged battery will normally take 4.5 hours to charge. At full capacity, it turns solid green.

When the battery is fully charged, the charger stops applying power; the battery cannot be overcharged if left in the charger slot.

Troubleshooting

Improper Battery Storage

Storing batteries in the gang charger for extended periods (more than a week or two) is not recommended. Lithium-ion batteries lose capacity if they are maintained at full charge for long periods of time. See the battery handling recommendations in [The Battery on page 1-4](#).

Power Self-test LEDs Don't Light Up

The charge slot LEDs will light up briefly when first applying power indicating the self-test mode. When applying power to the unit, all the LEDs will light up. Yellow will show up in the 25% LED for each bay; green for other LEDs. Then bay #1 will blink a binary representation of the firmware version (V09 = 1001). If the self-test is not evident:

- Remove all batteries, and unplug the charger.
- Connect another device to the mains outlet to ensure there is power.
- Remove the IEC mains power cable from the charger, and check it for damage.
- Reconnect the mains cable in the charger and mains outlet.

Indicator Does Not Light When Battery Installed

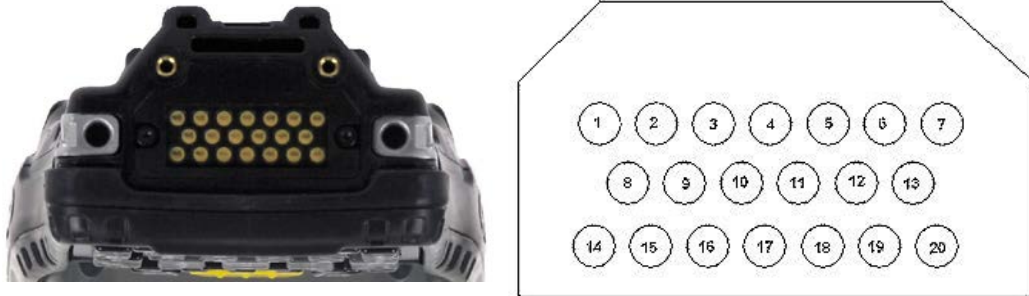
- Remove the battery, and clean the contacts on the battery and the charge slot.
- Reinstall the battery, and check that it is fully seated in the slot.
- Inspect the charge slot contacts for damage (are they bent, flattened, twisted or broken).
- Try inserting a battery that you know to be working in the charger slot.
- Reconnect the mains power cable, and check that the slot indicator flashes at power up.

Draft #4 for review

APPENDIX A PORT PINOUTS

Omnii Docking Connector

The docking interface on the base of the Omnii is custom-designed to dock with a device via an array of spring-mounted pins.



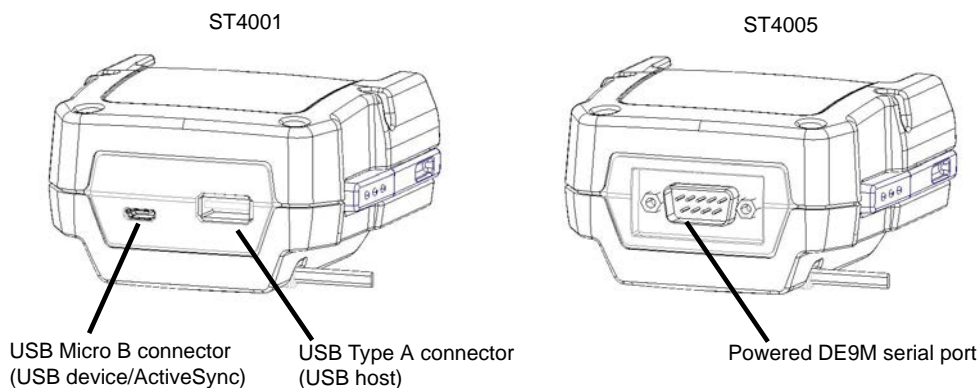
The following are the pin assignments of the interface.

Pin #	Signal	Pin #	Signal
1	GROUND	11	USB_OTG_P
2	DC_IN	12	USB_OTG_M
3	DOCK_LOW_PWR	13	CHARGE_IN
4	GROUND	14	GROUND
5	USB_OTG_VBUS	15	DC_IN
6	CHARGE_IN	16	UART_RX
7	GROUND	17	GROUND
8	DC_IN	18	UART_TX

Pin #	Signal	Pin #	Signal
9	USBH_P	19	CHARGE_DATA
10	USBH_M	20	GROUND

Snap Modules Connectors

- **Model ST4000** (Charger only variant): power and charge.
- **Model ST4001** (USB Host/Client variant): power, charge, communications via USB 1.1/2.0 Host and USB 2.0 Client connectors, DC IN port.
- **Model ST4005** (DE9M Serial variant): powered DE9M serial connector, power, charge, serial communications. Pin 9 is reserved for 5V 1A max power out and is defaulted to **off**.

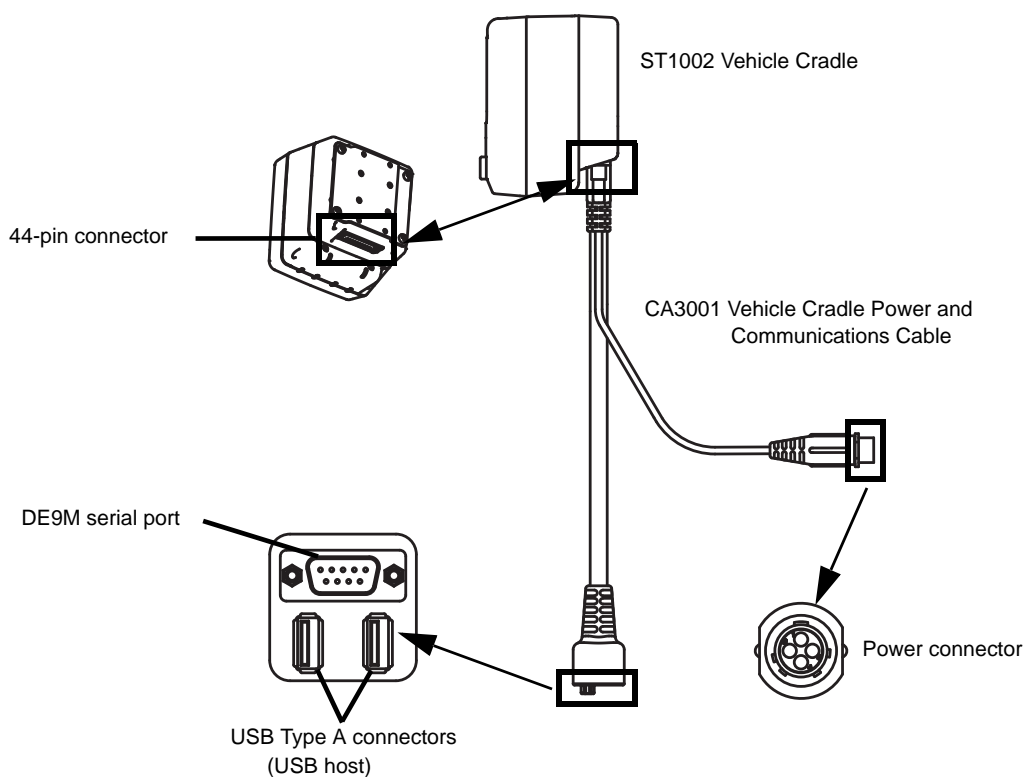


The following are the pin assignments of the interfaces.

ST4001				ST4005	
USB Micro B Connector		USB Type A Connector		DE9M Serial Connector	
Pin #	Signal	Pin #	Signal	Pin #	Signal
1	VBus	1	VBus	1	DCD
2	D-	2	D-	2	RXD
3	D+	3	D+	3	TXD
4	ID	4	GROUND	4	DTR
5	GROUND	5	SHIELD	5	GROUND
		6	SHIELD	6	DSR
				7	RTS
				8	CTS
				9	5Vdc 1A power out

Cable Connectors for Vehicle Cradle Model ST1002

- The ST1002 Vehicle Cradle has a 44-pin connector that allows connection with either the CA3001 Vehicle Cradle Power and Communications Cable (DE9M serial port, 2 USB Host interfaces, and power cable) or the power-only CA3000 Vehicle Cradle Power Cable. For installation details, see [ST1002 Powered Cradle Installation on page 4-20](#).



The following are the pin assignments of the interfaces.

DE9M Serial		USB Type A		Power	
Pin #	Signal	Pin #	Signal	Pin #	Signal
1	DCD	1	VBus	1	VIN (11.5 to 30Vdc)
2	RXD	2	D-	2	GND (not chassis ground)
3	TXD	3	D+	3	MOTION DETECT
4	DTR	4	DGROUN D	4	MOTION DETECT RETURN (not ground)
5	GROUND				
6	DSR				
7	RTS				

DE9M Serial		USB Type A		Power	
Pin #	Signal	Pin #	Signal	Pin #	Signal
8	CTS				
9	5Vdc 1A power out				

Omnii Battery Contacts

Figure A-1 Battery Contact Pinout



Pin #	Signal Name	Description
1	BATT+	Positive lead of battery.
-		Plastic Rip - provides mechanical polarity.
2	BATT+	Positive lead of battery.
3	BATT-CLK	SMBus data clock.
4	BATT-ID	Connected to GND in the battery.
5	BATT-DATA	SMBus bi-directional data line.
6	GND	Negative lead of battery.
7	GND	Negative lead of battery.

APPENDIX B IMAGER & CAMERA SETTINGS

Introduction

The *Imagers* applet is used to create, modify, delete, and activate imager settings. The principal uses of the application are to decode barcodes and to capture images. This imager services application is used for cameras and imagers to configure linear (1D), stacked linear, matrix (true 2D) and postal barcodes. A *Demonstration Application* is provided to demonstrate how the imager works. Refer to [Demo on page 2-21](#) for details.

Required Applets

In order to configure imaging, the *Manage Triggers* applet must be present in the Control Panel, along with the *Imagers* applet.



NOTE The *Imagers* icon is only displayed when the appropriate imager is installed in your Omnii. If there is an imager installed but this icon is not present, additional software (ICS) may need to be installed.

To enable a newly-installed imager, press and hold down the **[FN]** key and the **[Enter/Power]** key simultaneously for a minimum of three seconds.

Presets

There are two methods that can be used to configure an imager using the *Imagers* applet:

- Use a predefined preset.
- Create a custom preset based on a predefined preset.



IMPORTANT It is strongly recommended that a predefined preset is used whenever possible. Each predefined preset contains a coherent group of settings that are known to work together in the intended environment. In almost all situations, at least one of the predefined presets results in a satisfactory outcome.

A *preset* is a group of exposure and image correction settings. Each preset configures the imager for a specific purpose such as barcode decoding or image capture.

Presets also allow easier and faster configuration of the imager after power-on or resume from suspend.

The predefined presets are generic and satisfy most user requirements. A custom preset can be created for a specific user application, such as: include only specified barcodes, read only a specified number of barcodes or for reading unusual media.

Every preset belongs to a preset type. The following preset types are available:

- Imaging for photo capture.
- Imaging for barcode decoding.
- Symbology selection.

At any time, only one preset of each type can be designated as the user-selected *active* preset.

Predefined Presets

Predefined presets are built into the imaging software and cannot be changed. The predefined presets allow you to use the imager to perform specified tasks without having to understand and set numerous variables. In almost all cases these predefined presets are sufficient.

Barcode Predefined Presets (Barcoding Menu)

These presets encompass the majority of the most popular barcodes and their subtypes. The *barcode decoding symbology* predefined presets define which barcodes can be decoded. The *barcode decoding camera* predefined presets determine how the barcode images are captured.

Barcode Decoding Symbology Predefined Presets

The following presets select groups of similar barcodes for decoding.



NOTE It is recommended that the default preset be used whenever possible.

My Default

This preset uses the *Symbology Settings* menu to define the preset. For details about the *Symbology Settings* menu, refer to [Barcoding Menu – Configuring Symbologies on page B-12](#).

Factory Default

This preset enables the decoding of frequently used barcodes.

All

This preset enables the decoding of all barcodes that the imager can decode.

Linear

This preset enables the decoding of all the 1D symbologies that the imager can decode.

Linear and PDF417

This preset enables the decoding of all the 1D and PDF symbologies that the imager can decode.

Matrix

This preset enables the decoding of all 2D symbologies that the imager can decode.

Postal

This preset enables the decoding of all the postal symbologies that the imager can decode.

Barcode Decoding Camera Predefined Presets

The following presets enable successful barcode image capture in almost all conditions.

✓ **NOTE** It is recommended that the default preset be used whenever possible.

Default

This preset works in a wide range of conditions. It is optimized for a normal office lighting (about 300 Lux).

Low Light

This preset is designed for very dark conditions such as inside a warehouse where the lights are kept low, or inside an unlit truck. This preset increases either the exposure time or the gain.

Low Power

This preset minimizes the use of the flash so as to conserve the battery power on the hand-held.

Glossy Surface

This preset minimizes the use of the flash so as to reduce reflection. This preset is used to read barcodes that are behind glass, or inside the plastic window of an envelope.

Image Capture Predefined Presets (Imaging Menu)

The following presets enable successful image capture in almost all conditions.

✓ **NOTE** It is recommended that the default preset be used whenever possible.

Default

This preset works in a wide range of conditions. It is optimized for a normal office lighting (about 300 Lux).

Motion

This preset uses a shorter exposure time so as to freeze motion.

Low Light Near

This preset is designed for dark conditions, it uses a longer exposure time and includes the flash.

Using the Imagers Applet

Configuring the Image Capture Presets (Imaging Menu)

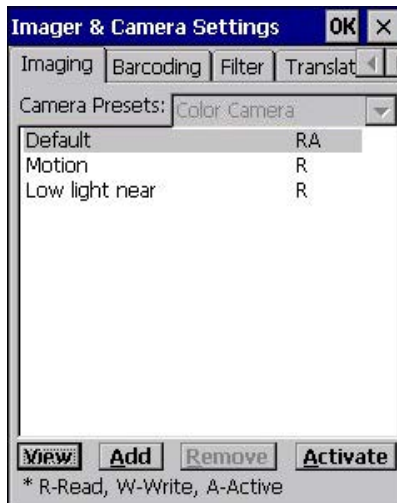
To configure the image capture presets, open the dialog box as follows:

- Tap on **Start>Settings>Control Panel**.
- Tap on the **Imagers** icon, and if it's not already selected, tap on the **Imaging** tab.



The following screen is displayed.

Figure B-1 *Imaging Menu*



This window lists all the presets, both predefined and custom. Presets are identified as follows:

- Predefined presets are marked as *R read-only*.
- Custom presets are marked as *RW read and write*.
- One preset — either predefined or custom — is marked as *A active*.

Selecting a Camera

To select a camera:

- Tap on the **Camera Presets** drop-down menu to view the camera options.
- Choose a **camera** — specifically, *Front Imager* which is located at the top of the unit.

Setting the Active Preset

An active preset has an *A* to the right. To set an active preset:

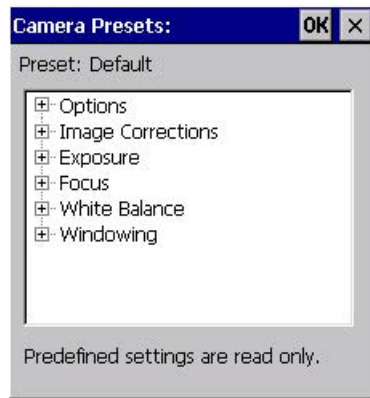
- Highlight the preset, and tap on the **Activate** button.

Viewing a Preset

To view the parameter settings in a preset:

- Highlight a preset, and double-tap on the **View** button.

The associated preset window is displayed.



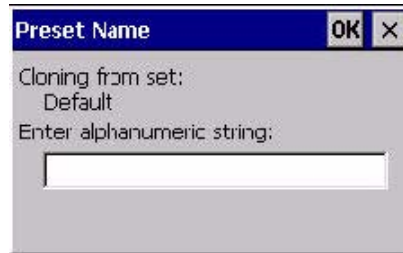
- Tap on the + sign to expand the lists so that you can view the parameter settings.

Creating a Custom Preset

A new custom preset is created by modifying a preset — either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the **Add** button.

A screen like the sample below is displayed.



- Type the **name** of the new preset in the dialog box.
- Tap on **OK** to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

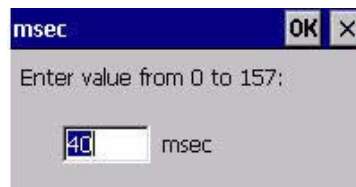
Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

- Highlight the custom preset, and double-tap on the **Edit** button.



- Tap on the + symbols to expand the lists so that you can view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a *range* of values:
 - Highlight the parameter, and then press the **[SPACE]** key or double-click on the parameter.
 - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.



- Type a value in the field provided.
- For a parameter that toggles between two values such as *on* or *off* and *enabled* or *disabled*:
 - Highlight the parameter and then press the **[SPACE]** key, or double-click on the parameter. Either method toggles between the two available values.
- When you've completed your edits, tap on **OK**.

The parameter list is displayed; the new value for the changed parameter is shown.

- Tap on **OK** to exit to the preset list and save the changes.

Removing a Custom Preset

- Highlight the custom preset you want to delete, and tap on the **Remove** button.

A window is displayed warning you that you are about to remove a preset.

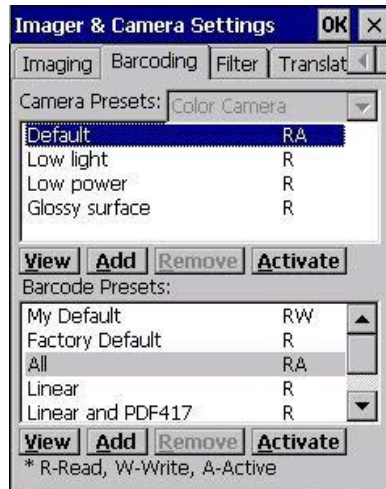
- Tap on **Yes** to remove the preset or **No** to cancel the operation.

Configuring the Barcode Decoding Camera Presets (Barcoding Menu)

To configure the barcode decoding camera presets:

- Tap on **Start>Settings>Control Panel>Imagers**.
- Tap on the **Barcoding** tab.

Figure B-2 Camera Presets



NOTE The top portion of the window displays the barcode decoding camera presets.

This window lists all the presets, both predefined and the custom. Presets are identified as follows:

- Predefined presets are marked as read-only. For a description, review [Predefined Presets on page B-2](#).
- Predefined presets are marked as *R read-only*.
- Custom presets are marked as *RW read and write*.
- One preset — either predefined or custom — is marked as *A active*.

Selecting a Camera

To select a camera:

- Tap on the **Camera Presets** drop-down menu to view the camera options.
- Choose a **camera** — specifically, *Front Imager* which is located at the top of the unit.

Setting the Active Preset

An active preset has an *A* to the right; in [Figure B-3 Viewing Barcode Decoding Symbologies on page B-10](#), the active preset is *Default*. To set an active preset:

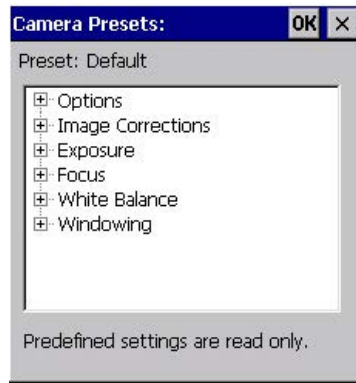
- Highlight the preset, and tap on the **Activate** button.

Viewing a Preset

To view the parameter settings in a preset:

- Highlight a preset, and double-tap on the **View** button.

The associated preset window is displayed.



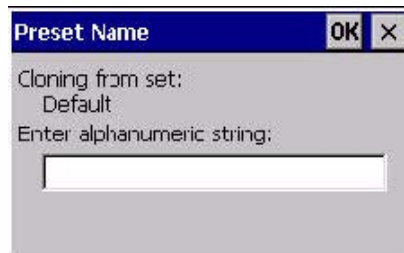
- Tap on the + sign to expand one of the lists so that you can view the parameter settings.

Creating a Custom Preset

A new custom preset is created by modifying a preset — either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the **Add** button.

A screen like the sample following is displayed.



- Type the **name** of the new preset in the dialog box.
- Tap on **OK** to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

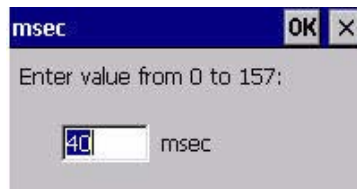
Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

- Highlight the custom preset, and double-tap on the **Edit** button.



- Tap on the + symbols to expand the lists and view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a *range* of values:
 - Highlight the parameter, and then press the **[SPACE]** key or double-click the parameter.
 - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.



- Type a value in the field provided.
- For a parameter that toggles between two values such as *on* or *off* and *enabled* or *disabled*:
 - Highlight the parameter and then press the **[SPACE]** key, or double-click on the parameter. Either method toggles between the two available values.
- When you've completed your edits, tap on **OK**.

The parameter list is displayed; the new value for the changed parameter is shown.

- Tap on **OK** to exit to the preset list and save the changes.

Removing a Custom Preset

- Highlight the custom preset you want to delete, and tap on the **Remove** button.

A window is displayed warning you that you are about to remove a preset.

- Tap on **Yes** to remove the preset or **No** to cancel the operation.

Configuring the Barcode Decoding Symbologies (Barcoding Menu)

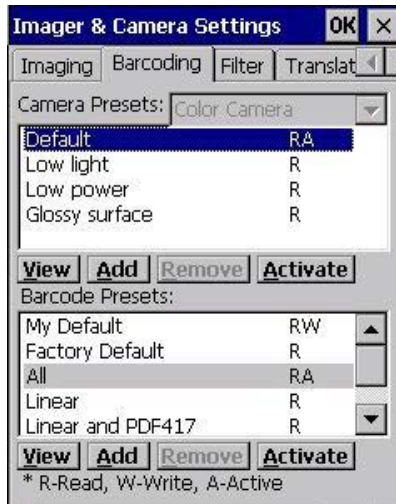
To configure the barcode decoding camera presets:

- Tap on **Start>Settings>Control Panel>Imagers**.



- Tap on the **Barcoding** tab.

Figure B-3 Viewing Barcode Decoding Symbologies



NOTE The bottom portion of the window displays the barcode decoding barcode presets.

Setting the Active Preset

An active preset has an *A* to the right; in [Figure B-3 Viewing Barcode Decoding Symbologies](#) on page B-10, the active preset is *Default*. To set an active preset:

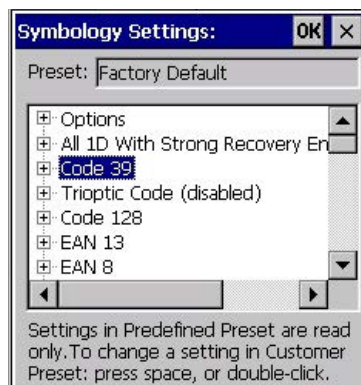
- Highlight the preset, and tap on the **Activate** button.

Viewing a Preset

To view the parameter settings in a preset:

- Highlight a preset, and double-tap on the **View** button.

The associated preset window is displayed.



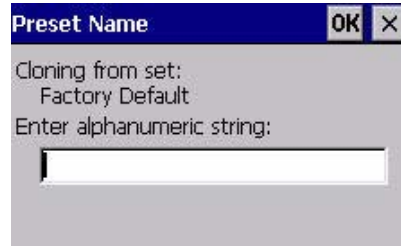
- Tap on the + sign to expand one of the lists so that you can view the parameter settings.

Creating a Custom Preset

A new custom preset is created by modifying a preset — either a predefined preset or an existing custom preset. To create a custom preset:

- Highlight a preset, and tap on the **Add** button.

A screen like the sample following is displayed.



- Type the **name** of the new preset in the dialog box.
- Tap on **OK** to save your changes.

The preset list is displayed; the new custom preset appears at the end of the list. It is marked as read and write.

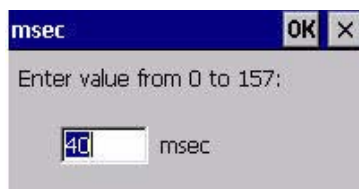
Modifying a Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value:

- Highlight the custom preset, and double-tap on the **Edit** button.



- Tap on the + symbols to expand the lists and view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a *range* of values:
 - Highlight the parameter, and then press the **[SPACE]** key or double-click the parameter.
 - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.



- Type a value in the field provided.
- For a parameter that toggles between two values such as *on* or *off* and *enabled* or *disabled*:
 - Highlight the parameter and then press the **[SPACE]** key, or double-click on the parameter. Either method toggles between the two available values.
- When you've completed your edits, tap on **OK**.

The parameter list is displayed; the new value for the changed parameter is shown.

- Tap on **OK** to exit to the preset list and save the changes.

Removing a Custom Preset

- Highlight the custom preset you want to delete, and tap on the **Remove** button.

A window is displayed warning you that you are about to remove a preset.

- Tap on **Yes** to remove the preset or **No** to cancel the operation.

Barcoding Menu – Configuring Symbologies

To view the *Symbology Settings* options:

- Tap on the **Barcoding** tab, highlight **All** and then double-tap the **View** button.

To edit a default preset, you must first *activate* it:

- Tap on **My Default**, and tap on the **Activate** button – an *A* appears to the right of *My Default*.

Once the preset is activated, you can enable or disable the barcodes the imager will read.

- Highlight **My Default** in the *Barcoding* tab.
- Double-tap on the **Edit** button.

None of the other barcode decoding predefined presets are changed.

Symbology Settings

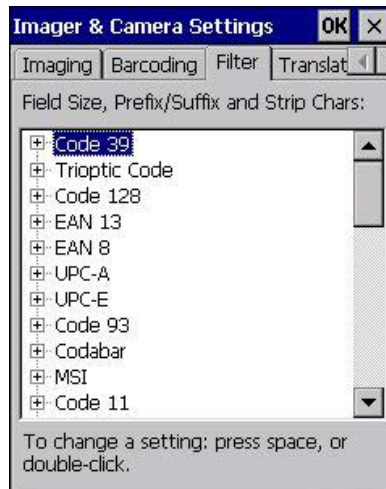


NOTE For descriptions of the barcode symbologies, review [Barcode Symbologies on page B-16](#).

Filter Menu – Manipulating Barcode Data

To configure rules for manipulating barcode data:

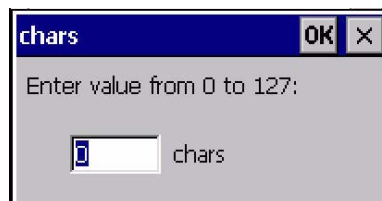
- Tap on **Start>Settings>Control Panel**.
- Tap on the **Imagers** icon, and then tap on the **Filter** tab.



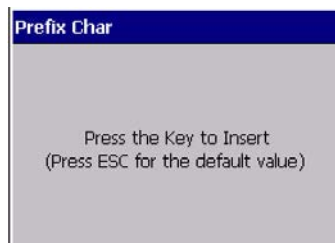
Modifying a Barcode Setting

The rules for manipulating data from selected barcode symbologies can be modified. To change the settings for a symbology:

- Tap on the + symbols to expand the lists and view the parameter settings.
- Scroll through the parameter list until you reach the parameter that you want to change.
- For a parameter that can take a *range* of values:
 - Highlight the parameter, and then press the **[SPACE]** key or double-click the parameter.
 - An associated dialog box containing the valid range of values for the parameter and the current setting like the sample screen following is displayed.



- Type a value in the field provided.
- For a parameter that takes a single character:
 - Highlight the parameter and then press the **[SPACE]** key, or double-click the parameter. The following screen is displayed:

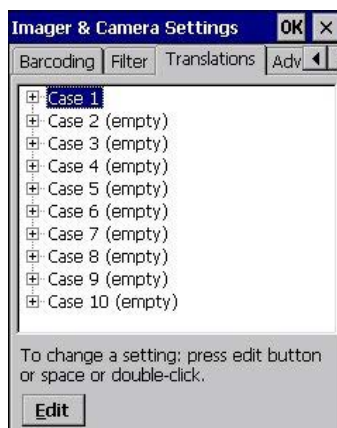


- When you've completed your edits, tap on **OK**.

Translation Menu – Configuring Rules

Translation rules enable the automatic processing of barcode data. Up to 10 cases can be defined, each consisting of up to 10 sequential rules.

- ✓ **NOTE** Changes made to the translations configuration using the Scanner Control Panel program are synchronized with changes made here. Changes made in either place affect both translation tables.
- Tap on **Start>Settings>Control Panel**.
 - Tap on the **Imagers** icon, and then tap on the **Translations** tab.



For instructions on adding, editing, and removing translation rules, refer to [Translations on page 3-54](#).

Advanced Menu

File Locations for Captured Images

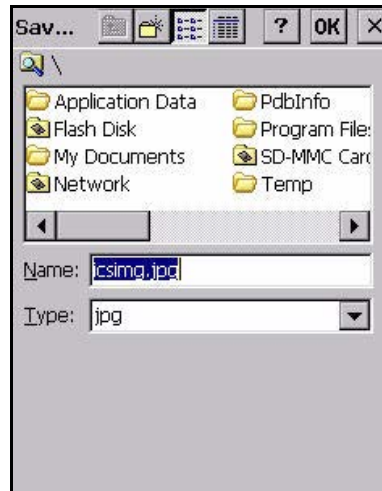
To configure the location for saved images, open the dialog box as follows:

- Tap on **Start>Settings>Control Panel**.
- Tap on the **Imagers** icon, and then tap on the **Advanced** tab.



To define the location where imager files will be stored:

- Tap on the **File Location** button.



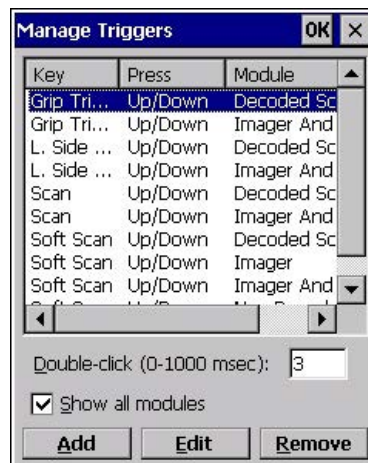
- Type the file **Name**, choose the **Folder** and file **Type**.
- Choose the **Location** in which your files will be saved.
- When you have completed all the changes, tap on the **Save** button.

Configuring Triggers

Viewing the Trigger Configuration

The trigger on the Omnii is configured using the *Manage Triggers* applet. The *Imagers* applet provides a shortcut to the *Manage Triggers* applet.

- In the *Advanced* tab, tap on the **Trigger Control** button.
- To view all the triggers and the hardware devices that are configured to use them, tap in the check box next to **Show all modules**.



Adding, Editing and Removing Triggers

For instruction about adding, editing and removing triggers, refer to [Manage Triggers on page 3-36](#).

Barcode Symbolologies

There are two sets of barcode symbolologies, one for *Imager* and one for *Color Camera*. To display the barcodes available:

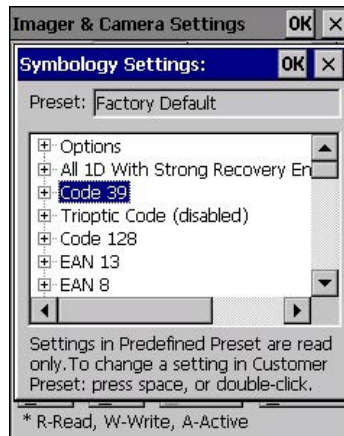
- In the *Imager & Camera Settings* screen, go to the **Barcoding** tab.
- In the *Camera Presets*: drop-down menu at the top of the *Imager & Camera Settings* screen, choose **Imager** or **Color Camera** depending on which set of barcodes you want to work with.



- Go to the **Barcode Presets**.



- Tap on an **Barcode Preset** to display the barcode symbolologies.



Imager Barcode Symbologies

The barcode symbologies for the *Imager* are listed in this section.

Imager Barcode Symbologies

All 1D With Strong Recovery
Enabled

Code 39

Code 128

EAN 13

EAN 8

UPC-E

UPC-A

UPC/EAN Sharing Settings

Code 93 (disabled)

MSI Plessey (disabled)

Code 11 (disabled)

Interleaved 2 of 5 (disabled)

Matrix 2 of 5 (disabled)

Discrete 2 f 5 (disabled)

Telepen (disabled)

Gs1 DataBar (disabled)

TLC-39 (disabled)

2D PDF-417

2D micro PDF-417

CodaBlock F (disabled)

CodaBlock A (disabled)

Imager Barcode Symbologies

2D Data Matrix

2D QR Code

2D Maxicode (disabled)

2D Aztec (disabled)

Postal: PlanNET (disabled)

Postal: PostNET (disabled)

Postal: China (disabled)

Postal: Japanese (disabled)

Postal: Kix (disabled)

Postal: Royal (disabled)

Gs1

Color Camera Barcode Symbologies

The barcode symbologies for the *Color Camera* are listed in this section.

Color Camera Barcode Symbologies

All 1D With Strong Recovery Enabled

Code 39

Code 128

EAN 13

EAN 8

UPC-E

UPC-A

Code 93 (disabled)

Codabar

Interleaved 2 of 5 (disabled)

Gs1 DataBar (disabled)

Gs1 Composite

2D PDF-417

2D micro PDF-417

2D Data Matrix

2D QR Code

2D Maxicode (disabled)

2D Aztec (disabled)

Postal: PlanNET (disabled)

Postal: PostNET (disabled)

Color Camera Barcode Symbologies

Postal: Australia (disabled)

Postal: Canadian (disabled)

Postal: Japanese (disabled)

Postal: Kix (disabled)

Postal: Korean (disabled)

Postal: Royal (disabled)

Draft #4 for review

APPENDIX C SCANNER SETTINGS

Barcode Settings

The *Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor barcode scanner configurations and choose the barcodes your scanner will recognize.



The parameters are preset with the default settings of the decoded scanner installed in the unit. For a listing of available scanners and their specifications, please refer to [Appendix E: Omnia Specifications](#).

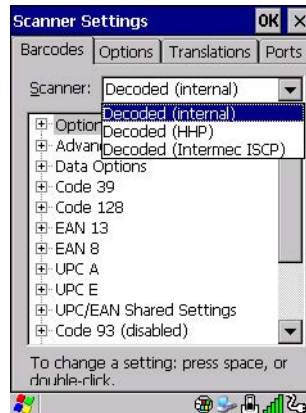


IMPORTANT To enable a newly-installed scanner, press and hold down the [FN] key and the [Power] key simultaneously for a minimum of three seconds.

For information on configuring the Options, Translations, and Ports settings, see [Scanners on page 3-50](#).

Scanner Options

The drop-down menu to the right of the *Scanner* option allows you to choose configurations for one of the following scanner types, depending on what is installed in/on your hand-held: *Decoded (internal)*, *Decoded (HHP)*, *Decoded (Intermec ISCP)*, and *Non-decoded Scanners*.



The symbologies listed change to reflect the scanner you choose and the barcodes it supports. Always defer to your barcode scanner programming manual when in doubt about the availability or settings for any parameter.

- ✓ **NOTE** Your Omnii comes preconfigured from the factory for internal scanner types. The type of scanner installed can be determined from the **System** icon in the Control Panel, under the System Properties tab.

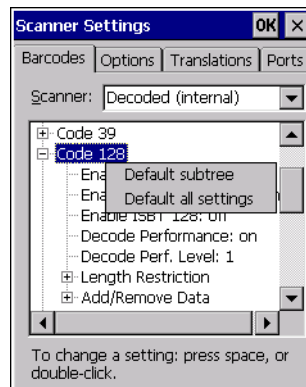
- ⚠ **IMPORTANT** To improve the decode speed and performance, enable (set to on) only those codes that are required by the application.

Keep in mind that some barcode types are only available when an internal imaging scanner is installed. All internal scanners can be configured using these dialog boxes.

Restoring Default Settings

If you want to restore the factory defaults after making changes, the defaults can be applied to a selected parameter, sub-tree of parameters, or all scanner parameters.

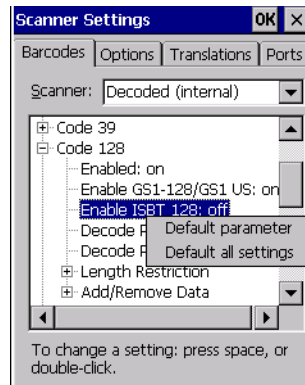
- Press and hold on a symbology (e.g., Code 128) to display a pop up a menu.



- Choose **Default subtree** to reset only the parameters in the symbology you selected, or choose **Default all settings** to reset all scanner parameters to default settings.

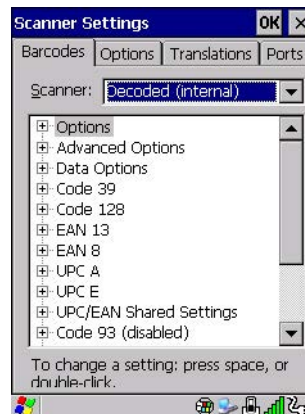
To reset a single parameter to its default setting:

- Press and hold on the parameter you want to reset.



- Choose **Default parameter** to reset the parameter to the default setting.

Decoded (Internal) Scanners



- Tap on the **Scanner** drop-down menu, and choose **Decoded (internal)**.

Options



NOTE Some options are available only for specific scanners. Refer to the option names in this section for scanner model identification.

Dot Time (msec)

The value selected for Dot Time (msec) determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of *0 msec*, *200 msec* or *400 msec*. A value of **0** (zero) disables the target dot.

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between *5* and *99*. The value is measured in tenths of seconds.

Decoded (Internal) Advanced Options

Scan Mode

You can set the method of scanning by setting this parameter to *Scan beam only*, *Aim with Scan: 1 trigger pull*, *Aim with Scan: 2 trigger pulls*, *Aim with Scan on trigger release*, and *Continuous Scan Mode*. Default is *Scan beam only*.

Aim Duration

This parameter determines the total time the aiming pattern appears before the scanner laser begins sweeping. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from 0 to 30 (0 to 3 sec.). A value of **0** (zero) disables the aiming-dot.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when you quickly trigger on/off.

Power Mode

This parameter is a power-saving option. Tapping on it displays a screen listing two power mode options: *Continuous Power* and *Low Power*.

In *Continuous Power* mode, the scanner is always on, waiting for a trigger pull or serial communication.

In *Low Power* mode, the scanner is in a suspend state, drawing minimal power until a trigger pull or serial communication wakes it. Keep in mind that while this option is more suitable for battery powered applications, there will be a slight delay while the scanner powers up to scan a barcode.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a barcode is scanned — a successful decode restores normal flashing.

This is only used if the unit's *Trigger Mode* has been changed to *Continuous On*. If the unit is used in a fixed mount this parameter might be used, but not if the unit is used as a hand-held.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec.*, *1 min.*, *2 min.* or *3 min.*

✓ **NOTE** This parameter is only used if the Trigger Mode has been set to Continuous On and the Omnii is mounted in a fixed position; otherwise, *Low Power Timeout* is not used.

Parameter Scanning

Setting this parameter to **on** enables decoding of parameter barcodes.

Linear Security Level

This parameter allows you to select the security level appropriate for your barcode quality. There are four levels of decode security for linear code types (e.g., Code 39, Interleaved 2 of 5). Higher security levels should be selected for decreasing levels of barcode quality. As security levels increase, the scanner decode speed decreases.

Double-tapping on this parameter displays a dialog box in which you can enter a value from **1** to **4**.

Linear security level 1 specifies that the following code types must be successfully read twice before being decoded:

Code Type	Length
Codabar	All
MSI Plessey	4 or less
D 5 of 5	8 or less
I 2 of 5	8 or less

Linear security level 2 specifies that all types of codes must be successfully read twice before being decoded.

Linear security level 3 specifies that code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Code Type	Length
MSI Plessey	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

Linear security level 4 requires that all code types be successfully read three times before being decoded.

Bi-Direction Redundancy



NOTE This parameter is only valid if a “Linear Security Level” is enabled.

When this parameter is enabled, a barcode must be successfully scanned in both directions (forward and reverse) before being decoded.

Decoded (Internal) Data Options

Transmit Code ID Char

A code ID character identifies the scanned barcode type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a transmit code: *None*, *AIM* or *Symbol*.

Scan Data Format

This parameter allows you to change the scan data transmission format.

Double-tapping on **Scan Data Format** displays the following options from which you can choose a data format: *data (as-is)*, *data [S1]*, *data [S2]*, *data [S1][S2]*, *[P] data*, *[P] data [S1]*, *[P] data [S2]* and *[P] data [S1][S2]*.

Prefix [P], Suffix [S1] and Suffix [S2]

A prefix and/or one or two suffixes may be appended to scan data for use in data editing. When you double-tap on these parameters, dialog boxes are displayed in which you can enter a value from **0** to **255**.

Delete Char Set ECIs

Setting this parameter to **on** enables the scanner to delete any escape sequences representing Character Set ECIs (Extended Channel Interpretations [also known as GLIs]) from its buffer before transmission.

When this parameter is enabled, the scanner transmits data from PDF417 and MicroPDF417 barcodes containing Character Set ECIs, even when the ECI Protocol is disabled.

ECI Decoder

Setting this parameter to **on** enables the scanner to interpret any Extended Channel Interpretations (ECIs) supported by the scanner. This parameter has no effect on symbols that were not encoded using ECIs.

If this parameter is set to **off** and a symbol that was encoded using an ECI escape is scanned, the scanner transmits the ECI escape followed by the uninterpreted data.

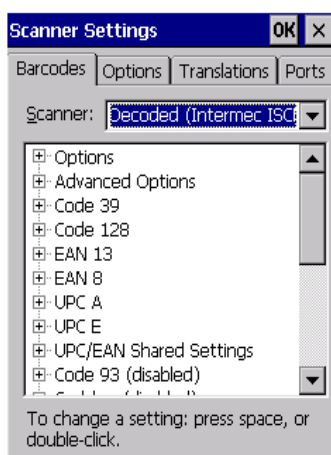
The barcode symbologies for the scanner are listed in table following table.

Decoded (Internal) Barcode Symbologies	
Code 39	UPC/EAN Shared Settings
Trioptic Code (disabled)	Code 93 (disabled)
Code 128	Codabar (disabled)
EAN 13	MSI Plessey (disabled)
EAN 8	Interleaved 2 of 5 (disabled)
UPC-A	Discrete 2 f 5 (disabled)
UPC-E	Gs1 DataBar (disabled)

Decoded (HHP)

To configure imagers, please see [Appendix B: Imager & Camera Settings](#).

Decoded (Intermec ISCP)



- Tap on the **Scanner** drop-down menu, and choose **Decoded (Intermec ISCP)**.

Decoded (ISCP) Options

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between **1** and **10** seconds.

Decoded (ISCP) Advanced Options

Continuous Scan Mode

Setting this parameter to **on** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when you quickly trigger on/off.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a barcode is scanned — a successful decode restores normal flashing.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec*, *1 min*, *2 min*, or *3 min*.



NOTE This parameter is only used if the Trigger Mode has been set to **Continuous On** and the unit is mounted in a fixed position; otherwise, *Low Power Timeout* is not used.

Parameter Scanning

Setting this parameter to **Enabled** allows decoding of parameter barcodes.

Same Read Validate

The data is only transmitted after repeated reads give the same result. The value assigned at this parameter determines the number of reads required, from *0* to *10* times.

Same Read Timeout

Prevents the same barcode from being read more than once. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

Diff Read Timeout

Prevents unwanted reading of other barcodes on the same label. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

Add AIM ID Prefix

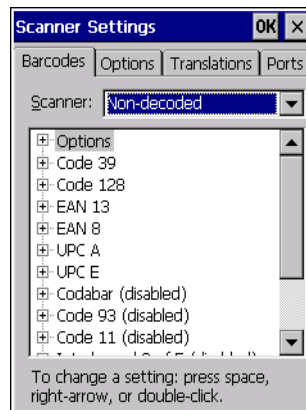
The *AIM ID* (Association for Automatic Identification and Mobility) is an international barcode identifier. When this parameter is enabled, the *AIM ID* is inserted at the beginning of the decoded barcode.

The barcode symbologies for the scanner are listed in the following table.

Decoded (Intermec ISCP) Barcode Symbologies	
Code 39	TLC-39 (disabled)
Code 128	2D PDF-417
EAN 13	2D micro PDF-417
EAN 8	Discrete 2 of 5 (disabled)
UPC-A	Telepen (disabled)
UPC-E	Gs1 DataBar (disabled)
UPC/EAN Shared Settings	Composite
Code 93 (disabled)	TLC-39 (disabled)
Codabar (disabled)	PDF-417
MSI Plessey (disabled)	micro PDF-417 (disabled)
Code 11 (disabled)	CodaBlock F (disabled)
Interleaved 2 of 5 (disabled)	CodaBlock A (disabled)
Matrix 2 of 5 (disabled)	

Non-Decoded Scanners

Figure C-1 Non-Decoded Scanner Options



- Tap on the **Scanner** drop-down menu, and choose *Non-decoded*.

All the available barcode symbologies for this type of scanner can be selected in this tab.

A plus sign (+) to the left of the menu item indicates that a sub-menu of parameters is attached.

- Tap on the + sign to display the sub-menu.
- To change a parameter value, double-tap on the parameter. If you need to type a value, a dialog box is displayed in which you can type a new value. If you need to change a *yes* or *no* value, double-tapping on the parameter toggles between *yes* and *no*.

If you're using the keyboard:

- Highlight the barcode you want to work with, and press the [RIGHT] arrow key to display the sub-menu.
- Use the [UP] and [DOWN] arrow keys to highlight a parameter.
- To change a parameter value, press [SPACE] or the [RIGHT] arrow key. If a field requires text entry, a text box is displayed in which you can enter the appropriate value.

Options

- Tap on the + sign next to *Options* to display these parameters.

Dot Time (msec)

The value selected for "Dot Time (msec)" determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from 0 to 3000. A value of 0(zero) disables the target dot.

Short Code

When enabled, this parameter allows scanning of short 1 2 of 5 barcodes (2 characters). When disabled, these short barcodes are rejected.

Enabling "Short Code" may reduce the robustness of the decoding since the hand-held must decode more potential barcodes; it is therefore not recommended for general-purpose barcodes with 4 or more characters.

Verify

The value entered for this parameter determines the number of correct additional decodes required after the initial decode, prior to a barcode being accepted. Higher values significantly increase the time it takes to decode a barcode but also improve the reliability of the decoded barcode.

Security

This parameter controls the tolerance for decoding edge-to-edge barcodes (Code 93, Code 128, UPC/EAN). Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the barcode. The default value of 30 is generally a good compromise setting.

The barcode symbologies for the scanner are listed in the following table.

Non-Decoded Barcode Symbologies	
Code 39	Code 93 (disabled)
Code 128	Code 11 (disabled)
EAN 13	Interleaved 2 of 5 (disabled)
EAN 8	MSI Plessey (disabled)
UPC-A	Discrete 2 of 5 (disabled)
UPC-E	IATA 2 of 5 (disabled)
Codabar (disabled)	

Draft #4 for review

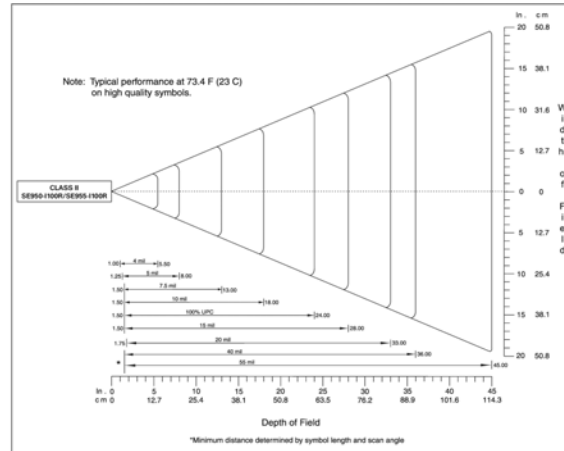
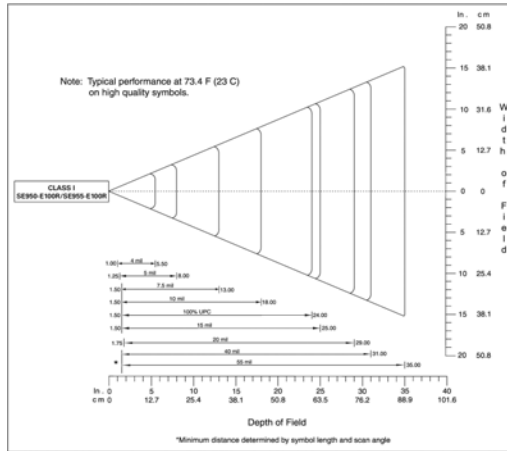
APPENDIX D INTERNAL IMAGER & SCANNER SPECIFICATIONS

This appendix lists specifications for the following internal scanners. For a current list of model numbers and descriptions for the Omnia scanner pod and back cover kits, please contact your representative or go to http://www.motorolasolutions.com/US-EN/Product+Lines/Psion/?WT.mc_id=psion_us_p_handheld

SE955 Scanner

Parameter	SE955
Configuration	Decoded
Scan Rate	104 (± 12) scans/sec (bidirectional)
Scan Angle	$47^{\circ} \pm 3^{\circ}$ default / $35^{\circ} \pm 3^{\circ}$ reduced
Voltage	3.0-3.6 V $\pm 10\%$; 5 V $\pm 10\%$
Ambient Light:	10,000 ft. candles
Laser Safety	IEC 60825
Electrical Safety	UL 60950, EN/IEC 60950
EMI/RFI	FCC Part 15 Class B, EN 55024/CISPR 22, AS 3548, VCCI
Environmental	RoHS Compliant

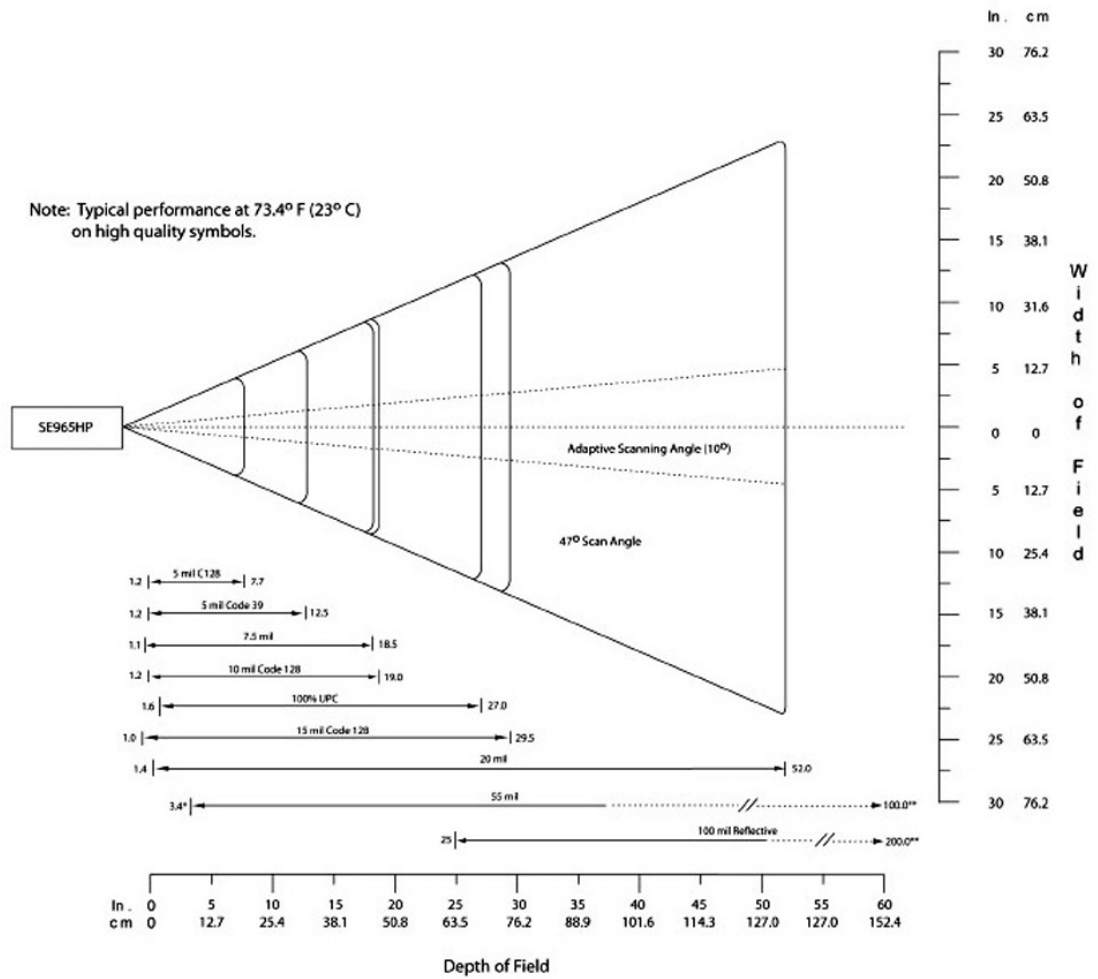
SE955 Decode Zones



SE965 Scanner

Parameter	SE965
Dimensions	0.46 in. H x 0.85 in. W x 0.61 in. D 11.75 mm H x 21.6 mm W x 15.5 mm D
Weight	0.27 oz./7.6 g
Configuration	Decoded
Interface	SSI Control over TTL Serial on a 12-pin ZIF connector
Scan Angle	Wide (default): 47° (typical) Medium: 35° (typical) Narrow: 10° (typical) Note: The SE965 scan engine does not require margin on either side of the barcode to decode. The 47° scan line provides identical scanning performance to older scan engines with a scan line of 53°.
Skew Tolerance	± 40° from normal
Pitch Tolerance	± 65° from normal
Roll Tolerance	± 35° from vertical
Specular Dead Zone	± 8°
Optical Resolution	0.005 in. minimum element width
Scan Repetition Rate	104 (± 12) scans/sec (bidirectional)
Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm
Ambient Lighting Tolerance	Tolerant to typical artificial indoor and natural outdoor (direct sunlight) lighting conditions. Fluorescent, Incandescent, Mercury Vapor, Sodium Vapor, LED ⁵ . 450 Ft Candles (4,844 Lux) Sunlight 8000 Ft Candles (86,111 Lux)
Operating Temperature	-22° F to 140° F/ -30° C to 60° C
Storage Temperature	-40° F to 158° F/ -40° C to 70° C

SE965 Decode Zones

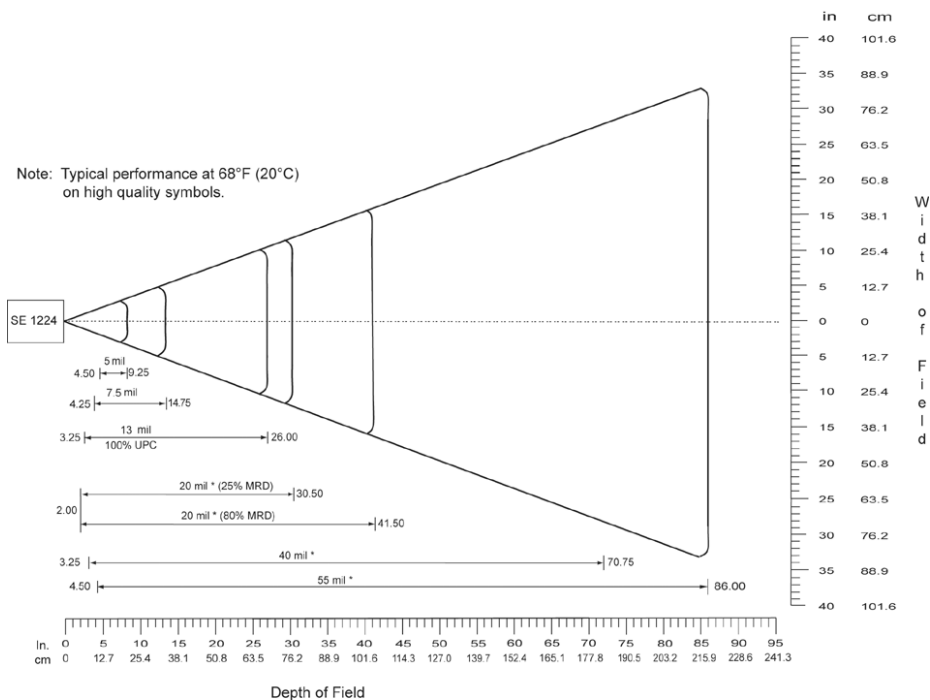


*Minimum distance determined by symbol length and scan angle
 **Distances achieved using adaptive scanning mode.

SE1224HP - High Performance Scanner

Parameter	SE1224HP
Type	Laser Class 2
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (± 5) scans/sec (bi-directional)
Scan Angle/Field of View	42° (typical), 30° (narrow)
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm.
Symbologies	UPC/EAN, Code 128, UCC/EAN 128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light	Artificial: 450 ft. candles (4844 Lux). Sunlight: 8000 ft. candles (86112 Lux).
Laser Output Power (peak)	1.35 mW

SE1224HP Decode Zones

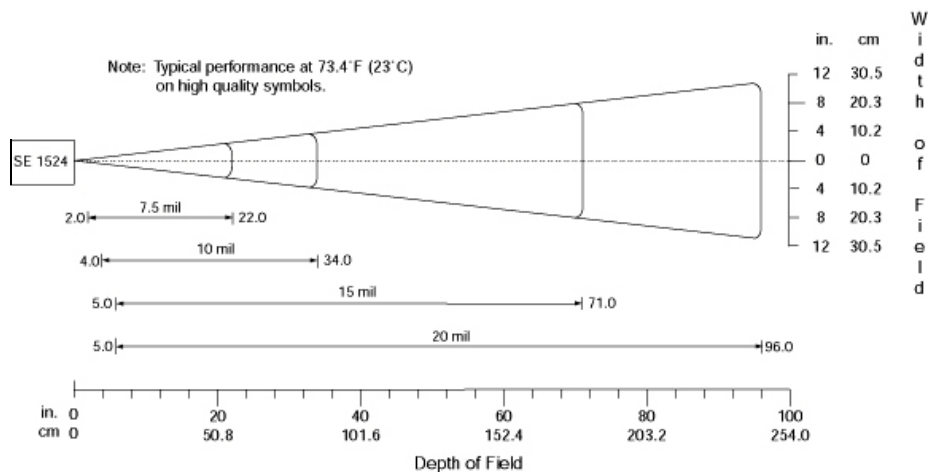


SE1524ER – Extended Range Scanner

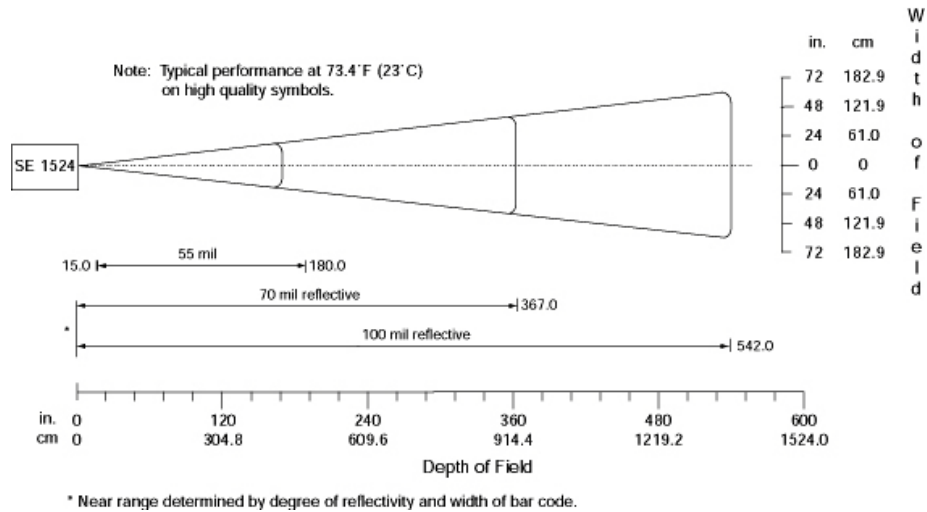
Parameter	Specification
Type	Laser Class 2
Light Source	Visible Laser Diode 650 nm
Scan Rate	35 (±5) scans/sec (bi-directional).
Scan Angle/Field of View	13.5° ±0.7°
Scan Patterns	Linear
Minimum Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm.
Symbologies	UPC/EAN, Code 128, UCC.EAN128, RSS, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI.
Programmable Parameters	Laser On Time, Aim Duration, Power Mode, Trigger Mode, Bi-directional Redundancy, Symbology types/lengths, Data formatting.
Ambient Light	Artificial: 450 ft. candles (4,844 Lux) Sunlight: 4,000 ft. candles (86,112 Lux).
Laser Output Power (peak)	1.26 mW

SE1524ER Decode Zones

SE1524ER Decode Zone A (Short Range, Small Codes)



SE1524ER Decode Zone B (Long Range, Large Codes)



EV15 Imager

Parameter	Specification
Light Source	617 nm highly visible LED
Scan Angle	40°
Minimum Print Contrast	Minimum 25%
Minimum X. Dimension	0.1 mm (4 mils)
Reading Distance	Up to 90 cm (35 in)
Symbologies	UPC (E&A), EAN, RSS, 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, PDF417, Micro PDF417
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux

EV15 Imager Decode Zone

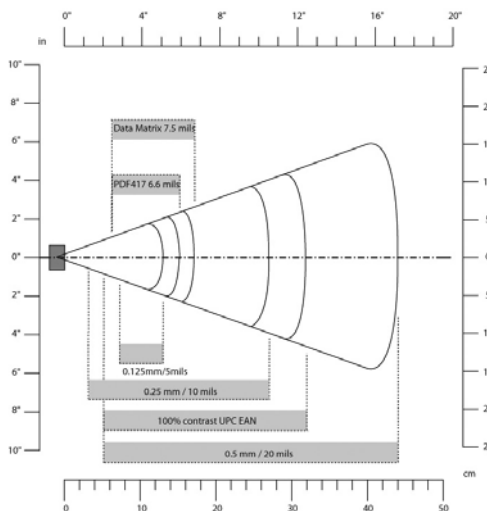
0 Lux to 100,000 Lux		
Mil Size	Minimum Range	Maximum Range
	Inches	Inches
5	2.5	7
10	3	14
UPC	2	14.5
20	2.5	22
40	3	35.5
High quality symbols in normal room light.		

EA11 Decoded 2D Imager

Parameter	Specification
Scan Rate	2D mode: 56 images/s auto adaptive
Linear Emulation Mode	200 scans/s auto adaptive
Scan Angle	38.9° (horizontal), 25.4° (vertical)
Optical Resolution	752 (H) x 480 (V) pixels, 256 gray levels
Print Contrast	down to 25%
Versions	Standard range
Symbologies - 1D	EAN/UPC, GS1 Databar (limited expanded & omni-directional), RSS, 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)
Symbologies - 2D	Data Matrix, PDF417, Micro PDF 417, Codablock Maxicode, QR, Aztec GS1 composite codes
Voltage (optics)	3.3V -5% / +10% (typical values)
Operating Current	170mA - 310mA (lighting condition dependent)
Power Saving Mode	2mA
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux
Regulatory Approvals	UL, VDE certified, RoHS compliant

EA11 Typical Reading Distances

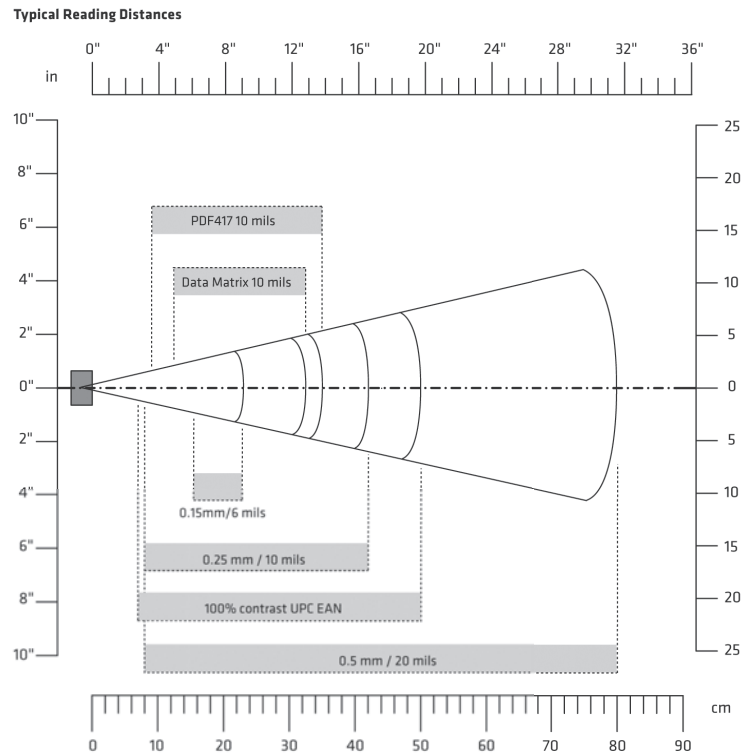
EA11 Standard Optics



EA20X Imager

Parameter	Specification
Light Source	617nm highly visible LED, 650nm laser framing/aiming
Scan Rate	2D mode: 60 images/s auto adaptive
Linear Emulation Mode	200 scans/s auto adaptive
Scan Angle	26.0° (horizontal), 16.8° (vertical)
Framing Angles	25.0° (horizontal), 16.0° (vertical)
Optical Resolution	752 (H) x 480 (V) pixels, 256 gray levels
Print Contrast	down to 30% on 1D, 35% on 2D
Minimum Resolution	1D symbologies 0.15 mm (6 mil), Stacked (PDF417) 0.17 (6.6 mil) and 2D matrix 0.18 (7mil)
Symbologies - 1D	EAN/UPC, GS1 Databar (limited expanded & omni-directional), RSS, 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)
Symbologies - 2D	Data Matrix, PDF417, Micro PDF 417, Codablock Maxicode, QR, Aztec GS1 composite codes
Voltage	3.3V± 5%
Operating Current	410mA @ 3.3V scanning with power save
Power Saving Mode	7mA
Ambient Light	From 0 to 100,000 lux
Regulatory Approvals	UL, cUL, VDE certified, RoHS compliant, Class 2 Laser

EA20X Typical Reading Distances



HHP 5080SR Imager/Decoder

Parameter	Specification
Focal Point - SR	7 inches (17.8 cm) from lens plate
Image Sensor	752 x 480 CMOS sensor
Motion Tolerance	4 inches per second
Rotational Sensitivity	360°
Viewing Angle	±40°
Ambient Light	Total darkness to 100,000 lux (full sunlight)
Illumination LEDs	626 nm ± 30 nm
Aiming	LEDs: 526 nm ± 30 nm Laser: 650 nm ± 10 nm
Input Voltage - Imager	3.3 VDC ± 5% (23°C)
Input Voltage - HHP 5080	3.0 VDC to 5.5 VDC (23°C)

Parameter	Specification
Current Draw - Imager	Max. Operating Current: 100 mA; Standby Current: 100 μ A
Current Draw - HHP 5080	Average Current (Interlaced Mode): 510 mA; Standby Current: 120 μ A; Peak: 600 mA
Symbologies: 2 Dimensional	PDF417, MicroPDF417, MaxiCode, Data Matrix, QR Code, Aztec, Aztec Mesa, Code 49, UCC Composite
Linear	Code 39, Code 128, Codabar, UPC, EAN, Interleaved 2 of 5, Reduced Space Symbology, Code 93, Codablock
Postal	Postnet (US), Planet Code, BPO 4 State, Canadian Post, Japanese Post, KIX (Netherlands) Post

HHP 5080SR Working Range

Data is characterized at 23°C (73.4°F) and 0 lux ambient light.

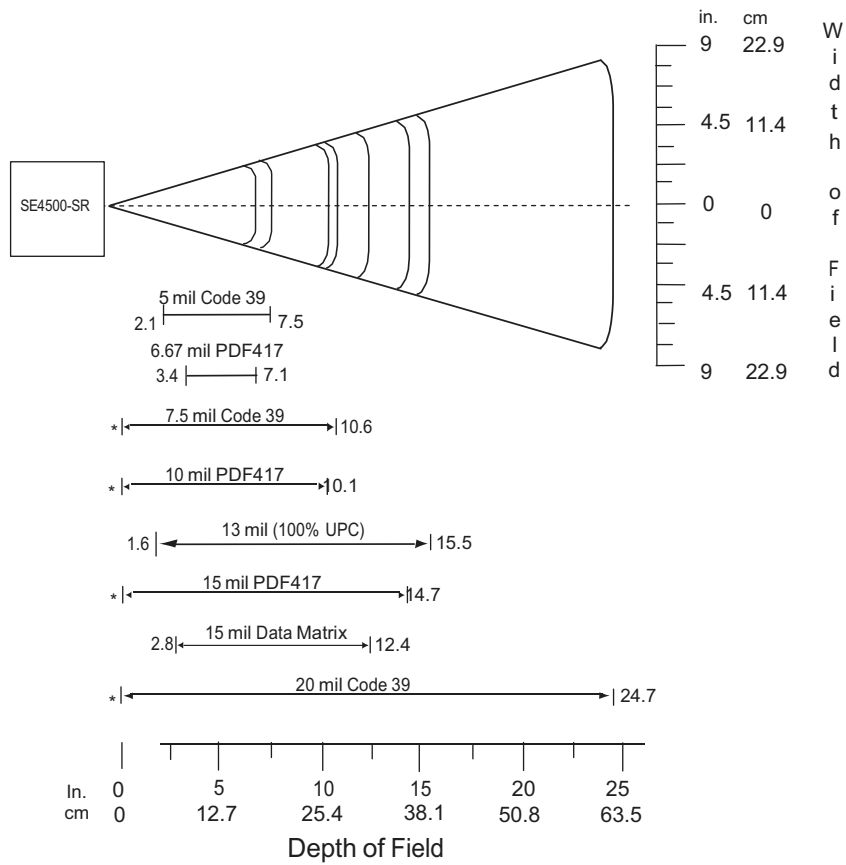
Symbology	Size (mil)	Near	Far
Linear	8.3 (.020cm)	3.5 in. (8.9cm)	7.6 in. (19.3cm)
PDF417	10 (.025cm)	3.1 in. (7.9cm)	9 in. (22.9cm)
UPC	13 (.033cm)	2.1 in. (5.3cm)	13.2 in. (33.5cm)
Data Matrix	15 (.038cm)	2.3 in. (5.8cm)	10.2 in. (25.9cm)
QR	15 (.038cm)	3.1 in. (7.9cm)	8.8 in. (22.4cm)
MaxiCode	35 (.089cm)	2.0 in. (5.1cm)	13.0 in. (33cm)

SE4500SR – Standard Range Imager

Parameter	Specification
Power Requirements - Input Voltage	3.3 V \pm 0.3 V at 23° C
Operating Mode Supply Currents (3.3VDC at 23° C):	
Low Power	500 μ A
Idle	18 mA
Image Acquisition	80 mA
Illumination Enabled	200 mA
Maximum Operating Current	250 mA (aiming on during exposure, illumination enabled)
Maximum Sensor Power Supply Noise* (at 23° C)	100 mVp-p (3.3 V, 10 Hz - 100 kHz) for decoding 30 mVp-p (3.3 V, 10 Hz - 100 kHz) for image capture
Optical Resolution	5.0 mil (Code 39), 6.7 mil (PDF417)
Specular Dead Zone:	
Illumination On	Up to 20° depending on target distance and substrate glossiness
Illumination Off	None
Skew Tolerance	\pm 60°
Pitch Angle	\pm 60°

Parameter	Specification
Roll	360°
Ambient Light Immunity (Sunlight)	9000 ft. candles (96,900 lux)
Imaging Sensor:	
Image Resolution	752 H x 480 V pixels (Wide VGA)
Grey Scale	256 levels (8 bits per pixel)
Field of View (FOV)	SE4500-SR: 39.6° horizontal, 25.7° vertical
Focusing Distance from Front of Engine (SR)	8 in. / 20.3 cm
Aiming Element:	
Visible Laser Diode (VLD)	655 ± 10 nm
Central Dot Optical Power	0.6 mW (typical)
Pattern Angle	40° horizontal, 30° vertical
Illumination System:	
LEDs	625 ± 5 nm (dominant wavelength)
Pattern Angle	60° x 40° at 80% center intensity
Shock	2000 G ± 5% applied via any mounting surface at -30° and 55° C for a period of 0.85 ± 0.05 msec 2500 G ± 5% applied via any mounting surface at 23° C for a period of 0.85 ± 0.05 msec
Vibration	Unpowered SE4500 withstands a random vibration along each of the X, Y, and Z axes for a period of one hour per axis (6 G rms), defined as follows: 20 to 80 Hz Ramp up at 0.04 G ² /Hz at 3 dB/octave 80 to 350 Hz 0.04 G ² /Hz 350 Hz to 2 kHz Ramp down at 0.04 G ² /Hz at 3 dB/octave
ESD	± 2 kV @ connector
Laser Safety Class	CDRH / IEC Class 2
LED Class	IEC Class 1M
Maximum Engine Dimensions	11.8 mm H x 21.50 mm W x 16.3 mm D 0.46 in. H x 0.85 in. W x 0.64 in. D
Weight	8.0 grams (0.28 oz)
Electrical Interface	21 pin 0.3 mm pitch ZIF connector

SE4500SR Decode Zone



SE4600LR – Long Range Imager

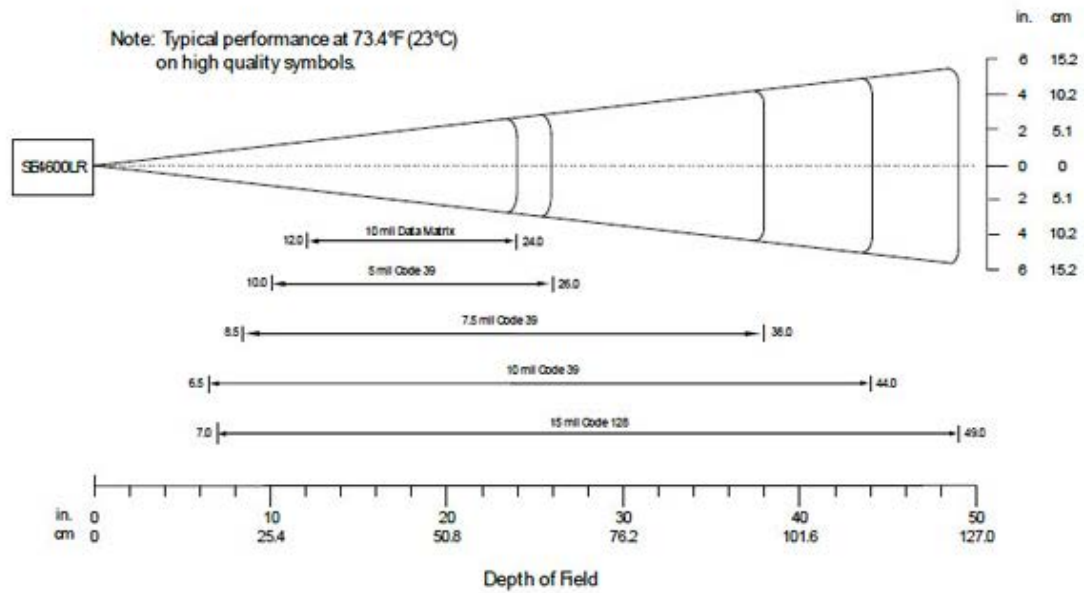
Parameter	Specification
Input Voltages	
VCC	3.3 V ±10%, 75 mA max
VCC_INTFC	1.8 V ±10% or 3.3 V ±10%, 30 mA max
VCC_ILLUM	3.0 V - 8.4 V, 800 mA
VCC_SENSOR	3.3 V ±10%, 70 mA max

VCC=VCC_SENSOR=VCC_INTFC =3.3 V VCC_ILLUM=5.0 V

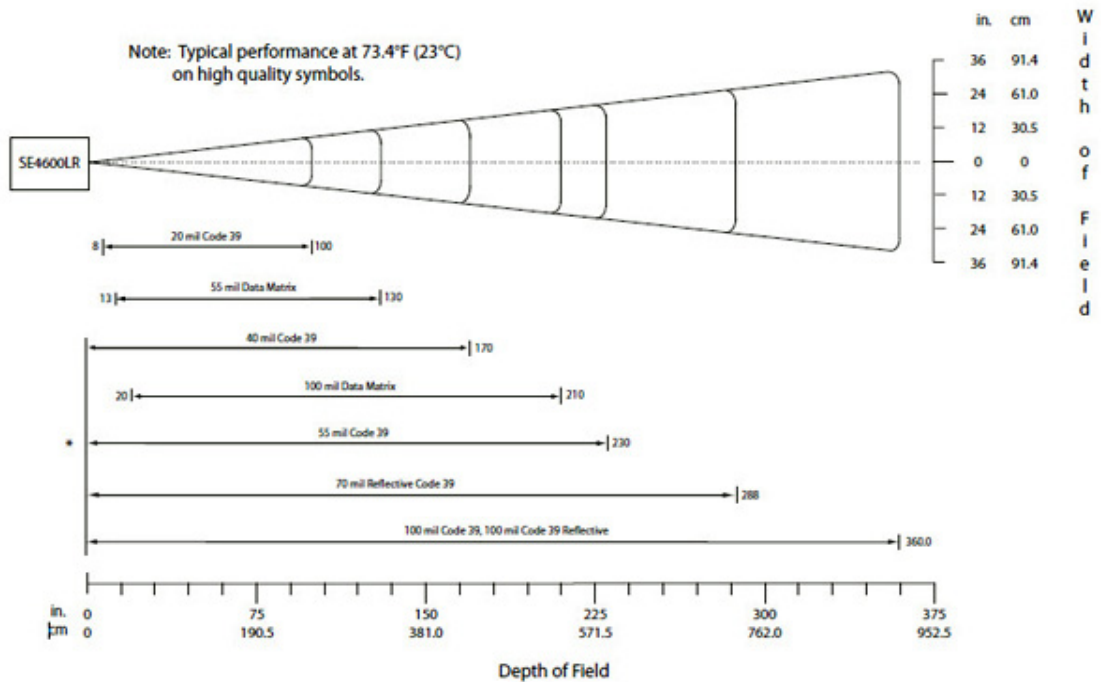
Parameter	Specification
Operating Mode Supply Currents (Average)	Low Power 750 μ A
Low Power	750 μ A
Idle	20 mA
Aim enabled, no illumination or image acquisition	70 mA
Image Acquisition	80 mA
Illumination Enabled	550 mA
Illumination and Aim Enabled	600 mA
Maximum Sensor Power Supply Noise* (VCC_SENSOR)	40 mV p-p (10 Hz - 50 KHz) and 100 mV p-p (50KHz - 100 KHz) for bar code decoding 30 mV p-p (10 Hz - 100 KHz) for image capture
Optical Resolution	Near sensor: 5 mil (Code 39), 10 mil (Data Matrix) Far sensor: 15 mil (Code 39), 35 mil (Data Matrix)
Specular Dead Zone:	
Illumination On	Up to 20° depending on target distance and substrate glossiness
Illumination Off	None
Skew Tolerance	$\pm 60^\circ$
Pitch Angle	$\pm 60^\circ$
Roll	360°
Ambient Light Immunity (Sunlight)	9000 ft. candles (96,900 lux)
Imaging Sensor:	
Image Resolution	752 H x 480 V pixels (wide VGA)
Grey Scale	256 levels (8 bits per pixel)
Field of View (FOV)	SE4600LR Far System: 11.6° horizontal, 7.4° vertical SE4600LR Near System: 13° horizontal, 8.3° vertical
Aiming Element:	
Visible Laser Diode (VLD)	655 ± 5 nm (dominant wavelength)
Aiming Dot Optical Power	0.6 mW (typical)
Illumination System:	
LEDs	625 ± 5 nm (dominant wavelength)
Pattern Angle	16° horizontal x 11.5° vertical
Shock	2000 G $\pm 5\%$ in the direction of any of the six principal axes applied via the mounting surface at -20° and 55° C for a period of 0.85 \pm 0.1 msec 2500 G $\pm 5\%$ in the direction of any of the six principal axes applied via the mounting surface at 23° C for a period of 0.70 \pm 0.07 msec

Parameter	Specification
Vibration	Unpowered SE4600LR withstands a random vibration along each of the X, Y, and Z axes for a period of one hour per axis (6 G rms), defined as follows: 20 to 80 Hz Ramp up at 0.04 G ² /Hz at 3 dB/octave 80 to 350 Hz 0.04 G ² /Hz 350 Hz to 2 kHz Ramp down at 0.04 G ² /Hz at 3 dB/octave
ESD	± 2 kV @ connector
Laser Safety Class	CDRH / IEC Class 2
LED Class	IEC Class
Temperature:	
Operating	-20° to 55° C (-4° to 131° F)
Storage	-40° to 70° C (-40° to 158°F) (-30° C (22° F) for Omnii XT15f Arctic variant)
Humidity:	
Operating)	95% RH, non-condensing at 55° C
Storage	85% RH, non-condensing at 70° C
Maximum Engine Dimensions	38.23 mm W x 19.34 mm H x 27.00 mm D 1.51 in. W x 0.76 in. H x 1.06 in. D
Weight	45 - 52 grams (1.59 - 1.83 oz)
Electrical Interface	27 pin 0.3 mm pitch ZIF connector
NOTE: Environmental and/or tolerance parameters are not cumulative. A thermal analysis is recommended if the application is subject to an extreme temperature environment.	

SE4600LR Decode Zones



Notes:
 Bar code width = 10.9 in. @ 49 in. depth of field.
 Total readable bar code width is 2x the width appearing at the top or bottom of the Width of Field scale.



* Near range determined by degree of reflectivity and width of bar code.

Notes:
 Bar code width = 72.8 in. @ 360 in. depth of field.
 Total readable bar code width is 2x the width appearing at the top or bottom of the Width of Field scale.

Draft #4 for review

APPENDIX E OMNII SPECIFICATIONS

The Omnii Hand-Held Computer (Model 7545)

- ✓ **NOTE** For Omnii freezer unit hardware specifications, please go to [Appendix F: Omnii XT15f Freezer Variants](#).
- ✓ **NOTE** Performance specifications are nominal and subject to change without notice.

Hardware

Physical Dimensions

- Width: At display: 100 mm (3.94 in)
At docking connector: 45 mm (1.77 in)
- Depth: At display: 44 mm (1.73 in)
At docking connector: 45 mm (1.77 in)
At grip area: 31 mm (1.22 in)
- Weight: Basic unit with battery: 610g (1.34 lb)
With battery, high visibility display, camera, Push-To-Talk speaker, EV15 1D imager: 636g (1.40 lb)

Processor and Memory

- Texas Instruments® Sitara AM37xx, ARM Processor 800 MHz (OMAP3® compatible)
- RAM: 512 MB
- Flash ROM: 1 GB

Operating System

- Microsoft Windows® Embedded CE 6.0

User Interface

- Colour/Touch Display: 9.4 cm (3.7 in) diagonal.

VGA (640 x 480) Transflective.

High Visibility option: superior sunlight visibility with 165 cd/m2 brightness.

Extreme Duty option: withstands 1.25 Joule impact, superior low temperature operation (to -20° C/-4° F), with 160 cd/m2 brightness. Better abrasion resistance.

- Keyboards: High reliability keypad ultra-white backlight.

Large selection of both alpha and numeric formats. See:

http://www.motorolasolutions.com/US-EN/Product+Lines/Psion/?WT.mc_id=psion_us_p_handheld

for a list of available configurations.

- Indicators and Controls: Four multi-colour LEDs indicate the status of the battery, application, radio, and scanner.

- Side Buttons: Volume, Scan, Enter, Vertical Scroll.

- Voice, Audio & Feedback: High volume beeper: 95 dBA.

Integrated Microphone and speaker.

Optional Push-to-Talk speaker.

Walkie-talkie style Push-to-Talk – VoIP over Wi-Fi or WWAN.

Vibration feedback.

Power Management

- Battery Pack: 5000 mAh high capacity Lithium-ion (for battery specifications, see [Lithium-ion Smart Battery 5000 mAh \(ST3003\) on page E-3](#)).

Expansion Ports

- MicroSD slot for Flash expansion (up to 32 GB).
- Multiple Internal Multi-Function Expansion Interfaces with:
 - TTL serial
 - USB host
 - GPIO

Camera (optional)

- Colour.
- 3 Megapixel.
- Autofocus.
- 4x digital zoom.
- Dual LED flash.
- Video capable.

Enhanced Features

- 3 axis accelerometer.
- GPS.
- Compass.

Environmental

- Operating Temperature: -20°C to +50°C (-4°F to +122°F)
- Storage Temperature: -40°C to +60°C (-40°F to +140°F)
- Humidity: 5% to 95% RH non-condensing.
- ESD: +/- 8 kV contact, +/- 15 kV air discharge.
- Omni RT15 Drop Durability:
1.5 m (5 ft.), 26 drops to polished concrete (powered on, with accessories); multiple 1.8 m (6 ft.) drops to polished concrete.

Rain And Dust Resistance:

IEC 60529, classification IP65.

- Omni XT15 Drop Durability:
1.7 m (5.6 ft.), 26 drops to polished concrete (powered on, with accessories); multiple 2.0 m (6.5 ft.) drops to polished concrete.

Rain And Dust Resistance:

IEC 60529, classification IP67.

Regulatory Approvals

- Worldwide Safety, EMC, RF, Laser approvals
- CE Mark
- E Mark (vehicle cradles)
- RoHS compliant
- WEEE compliant
- REACH compliant

Lithium-ion Smart Battery 5000 mAh (ST3003)

For safety instructions, please see “Lithium-ion Battery Safety Precautions” in the *Omni Hand-Held Computer Regulatory & Warranty Guide (PN 8000191)*.

Parameter	Specification
Model Number	ST3003
Chemistry	lithium-ion (Li-Ion)
Capacity	5000 mAh nominal at 1000 mA discharge 20°C to 3.0 V (min)
Voltage	3.7 V nominal (2.75 V min. to 4.2 V max.)
Cell Configuration	1 S2P (2 parallel connected cells)
Max. Charge Voltage	4.2 V +/- 1%
Recommended Charge Termination Timeout	5.0 hr - charging must stop.

Parameter	Specification
Charge Temperature	0°C to +40°C (32°F to +104°F)
Discharge Temperature	-20°C to +50°C (-4°F to +122°F)
Storage Temperature	-20°C to +50°C (-4°F to +122°F). Storage at elevated temperatures not recommended. 25°C (77°F) — recommended storage temperature.
Cycle Life	300 cycles minimum with no degradation below 70% of nominal capacity based on 0.5C charge / 0.5C discharge rates (to 3.0 V) @ 23°C (73.4°F).

Wireless Radios

Cinterion MC75i GSM/GPRS/EDGE Radio

Parameter	Specification
Manufacturer	Cinterion, Model MC75i
Form Factor	Quad-Band GSM 850/900/1800/1900 MHz EDGE (E-GPRS) multi-slot class 12 GPRS multi-slot class 12 GSM release 99
Output Power	Class 4 (2 W) for EGSM850 Class 4 (2 W) for EGSM900 Class 1 (1 W) for GSM1800 Class 1 (1 W) for GSM1900
Control via AT Commands	Hayes, 3GPP TS 27.007 and 27.005
Supply Voltage Range	3.2 to 4.3 V
EDGE Data Transmission	EDGE class 12: max 236.8 kbps (downlink) Mobile station class B Modulation and coding scheme MCS 1-9
GPRS Data Transmission	GPRS class 12 Mobile station class B PBCCH support Coding schemes CS 1-4
CSD Data Transmission	Up to 14.4 kbps, V.110 Non-transparent mode
SMS	Point-to-point MO and MT Text and PDU mode

Parameter	Specification
Voice	Triple-rate codec for HR, FR, and EFR Adaptive multi-rate AMR Basic hands-free operation Echo cancellation Noise reduction
Interfaces	Hirose U.FL-R-SMT 50 ohm antenna connector Antenna solder pad Molex 80-pin board-to-board connector: Power supply Audio: 2x analog, 1x digital Serial interface (ITU-T V.24 protocol) SIM card interface 3 V, 1.8 V

Cinterion PH8-P GSM/GPRS/EDGE/UMTS/HSPA+ Radio

Parameter	Specifications
General	
Frequency bands	GSM/GPRS/EDGE: Quad band, 850/900/1800/1900MHz UMTS/HSPA+: Five band, 800/850/900/1900/2100MHz
GSM class	Small MS
Output power (according to Release 99)	Class 4 (+33dBm \pm 2dB) for EGSM850 Class 4 (+33dBm \pm 2dB) for EGSM900 Class 1 (+30dBm \pm 2dB) for GSM1800 Class 1 (+30dBm \pm 2dB) for GSM1900 Class E2 (+27dBm \pm 3dB) for GSM 850 8-PSK Class E2 (+27dBm \pm 3dB) for GSM 900 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1800 8-PSK Class E2 (+26dBm +3 /-4dB) for GSM 1900 8-PSK Class 3 (+24dBm +1/-3dB) for UMTS 2100, WCDMA FDD Bd I Class 3 (+24dBm +1/-3dB) for UMTS 1900,WCDMA FDD Bd II Class 3 (+24dBm +1/-3dB) for UMTS 900, WCDMA FDD Bd VIII Class 3 (+24dBm +1/-3dB) for UMTS 850, WCDMA FDD Bd V Class 3 (+24dBm +1/-3dB) for UMTS 800, WCDMA FDD Bd VI
HSPA features	
3GPP Release 6, 7	DL 14.4Mbps, UL 5.7Mbps UE CAT. [1-6], 11, 12 supported Compressed mode (CM) supported according to 3GPP TS25.212

Draft #4 for review

E - 6 Omnii Hand-Held Computer with Windows CE 6.0 User Guide

Parameter	Specifications
UMTS features	
3GPP Release 4	PS data rate - 384 kbps DL / 384 kbps UL CS data rate - 64 kbps DL / 64 kbps UL
GSM/GPRS/EGPRS features	
Data transfer	<p>GPRS:</p> <ul style="list-style-type: none"> • Multislot Class 10 • Full PBCCH support • Mobile Station Class B • Coding Scheme 1 - 4 <p>EGPRS:</p> <ul style="list-style-type: none"> • Multislot Class 10 • EDGE E2 power class for 8 PSK • Downlink coding schemes - CS 1-4, MCS 1-9 • Uplink coding schemes - CS 1-4, MCS 1-9 • SRB loopback and test mode B • 8-bit, 11-bit RACH • PBCCH support • 1 phase/2 phase access procedures • Link adaptation and IR • NACC, extended UL TBF • Mobile Station Class B <p>CSD:</p> <ul style="list-style-type: none"> • V.110, RLP, non-transparent • 14.4kbps • USSD
SMS	Point-to-point MT and MO
GPS features	
Protocol	NMEA
Modes	Assisted GPS (control plane AGPS, E911)
General	Power saving modes GPS tracking in parallel to 2G/3G diversity operation
Software	
AT commands	Hayes, 3GPP TS 27.007 and 27.005, and proprietary Cinterion Wireless Modules commands
SIM Application Toolkit	SAT Release 99

Parameter	Specifications
Audio	Audio speech codecs GSM: AMR, EFR, FR, HR 3GPP: AMR Speakerphone operation, echo cancellation, noise suppression
Interfaces	
Antenna	50Ohms. Main GSM/UMTS antenna, UMTS diversity antenna, GPS antenna (active/passive)
USB	USB 2.0 High Speed (480Mbit/s) device interface
UICC interface	Supported chip cards: UICC/SIM/USIM 3V, 1.8V
Special features	
Phonebook	SIM and phone
Antenna	SAIC (Single Antenna Interference Cancellation) / DARP (Downlink Advanced Receiver Performance) RX diversity type 3i

Model RA2070 802.11a/b/g/n Radio

Parameter	Sub-parameter	Specification
Manufacturer		Model RA2070 (Murata, LBEH1Z9PFC)
Form Factor		Embedded surface mount module, 11.4 x 9.4 mm * This is a combo module containing both Wi-Fi 802.11a/b/g/n and <i>Bluetooth</i> V2.1+EDR radio
Antenna Port	802.11b/g/n	U.FL jack. Non-diversity. Multiplexed between 802.11b/g/n (2.4GHz) and <i>Bluetooth</i> radio
	802.11a/n	U.FL jack. Non-diversity.
Antenna Type	802.11b/g/n	PCB substrate patch antenna. Covers 2400-2484 MHz @ <2.5:1 VSWR
	802.11a/n	PCB substrate patch antenna. Covers 5150-5860 MHz @ <2.5:1 VSWR
Antenna Gain	802.11b/g/n	1.9 dBi
	802.11a/n	1.9 dBi
Transmit Power	802.11b	+18 dBm typical, +19.5 dBm max
	802.11g	+13 dBm typical, +14.5 dBm max
	802.11a	+12 dBm typical, +13.5 dBm max
	802.11n (2.4 GHz)	+12 dBm typical, +13.5 dBm max
	802.11n (5 GHz)	+12 dBm typical, +13.5 dBm max
Frequency Range	802.11b/g/n	2400-2483.5 MHz
	802.11a/n	5150-5350 MHz, 5480-5720 MHz and 5725-5845 MHz

Parameter	Sub-parameter	Specification
Channels	802.11b/g/n	1 to 13. Up to 13 channels (depending on country). Only 3 channels are non-overlapping.
	802.11a/n	36, 40, 44, 48, 52, 56, 60, 64 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140 149, 153, 157, 161, 165 Up to 24 channels (depending on country). All channels are non-overlapping.
RX Sensitivity	802.11b	-78 dBm @ 11 Mbps
	802.11g	-67 dBm @ 54 Mbps
	802.11a	-67 dBm @ 54 Mbps
	802.11n (2.4 GHz)	-66 dBm @ 65 Mbps
	802.11n (5 GHz)	-66 dBm @ 65 Mbps
Data Rates	802.11b	1, 2, 5.5, 11 Mbps
	802.11a/g	6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11n	6.5, 13, 19.5, 26, 39, 52, 58.5, 65 Mbps
EVM	802.11b	32% max
	802.11g	-26 dB max
	802.11a	-26 dB max
	802.11n (2.4 GHz)	-29 dB max
	802.11n (5 GHz)	-29 dB max
Bluetooth Coexistence		TI Wilink6 proprietary WiFi-BT co-existent scheme.

Bluetooth Radio

Parameter	Specification
Manufacturer	Murata, Model LBEH1Z9PFC
Form Factor	Embedded surface mount module, 11.4 x 9.4 mm * This is a combo module containing both Wi-Fi 802.11a/b/g/n and <i>Bluetooth</i> V2.1+EDR radio
Antenna Port	U.FL jack (shared with Wi-Fi 802.11b/g/n radio)
Antenna Type	PCB substrate patch antenna. Covers 2400-2484 MHz @ <2.5:1 VSWR
Antenna Gain	1.9 dBi
Transmit Power	5 dBm typical, 6 dBm max
Frequency Range	2.400-2.4835 GHz
Channels	79
RX Sensitivity	-90 dBm typical, -70 dBm max

Parameter	Specification
Data Rates	V1.2=732.2 kbps and 57.6 kbps asymmetric, 433.9 kbps symmetric V2.0=2 & 3 Mbps
802.11 Coexistence	TI Wilink6 proprietary WiFi-BT co-existent scheme.

RA1202 Narrowband Radio

General Specifications	
Radio Type	Half-duplex data only
Dimensions	Radio Module: 64 x 53 x 17 mm
Weight	Radio module: 58 grams max
FCC Compliance and Approval	FCC CFR47 Part 90 and Part 15, Industry Canada RSS-119
ETSI Compliance and Approvals	ETSI EN 300-113
Frequency	UHF Band I and II (403-435MHz, 435-470 MHz)
Power	3.2V-4.2V, 2.1A typ. during transmit
RF Antenna Interface	U.FL connector 50 ohms
RX Sensitivity	-90 dBm typical, -70 dBm max
Power and Data Interface	54-Pin Samtec ASP-176298-02
Transmitter	
Frequencies	403-435 MHz (non-Canada), 435-470 MHz
Channel Spacing	25 kHz, (non-US) 20 kHz (non-US and Canada), 12.5 kHz
Frequency Stability	+/- 1 ppm at all operating temperatures
Power Output	Low: 0.5W (non-US and Canada), High: 1W
Conducted / Radiated Emissions	Comply with EN 55022 Class B, FCC Part 15B Class B
Adjacent Channel Power	< -60 dBc
Digital Protocol	Psion proprietary protocol
Transmitter Intermodulation Attenuation	> 40 dB
Transmitter Attack Time	Less than 25 ms
Transmitter Release Time	Less than 20 ms
Receiver	
Frequencies	403-435 MHz (non-Canada), 435-470 MHz
Channel Spacing	25 kHz (non-US), 20 kHz (non-US), 12.5 kHz
Frequency Stability	+/- 1 ppm at operating temperatures
Digital Sensitivity	1% BER: -110 dBm
Intermodulation Response Rejection	-42 dBm
Adjacent Channel Selectivity	70 dB @ 20 and 25 kHz 60 dB @ 12.5 kHz
Spurious Rejection	> 73 dB
Conducted Spurious Emissions (ETSI)	- 57 dBm in standby

Co-channel Rejection 1	2 - 0 dB for 12.5 kHz @ 4800 and 9600 bps 8 - 0 dB for 20-25 kHz @ 9600 bps 12 - 0 dB for 20-25 kHz @ 19200 bps
Backwards Compatibility	
Tx/Rx Switching Time	Tx/Rx switching time less than 8 ms
Modulation	Meets Psion proprietary modulation: 2FSK: 4800 bits/s 2FSK: 9600 bits/s 4FSK: 9600 bits/s 4FSK: 19200 bits/s
Environmental Specifications	
Operating Temperature	-30. C / +70. C
Storage Temperature	-40. C / +60. C
Thermal Shock	Per MIL-STD-810G -30C to +50C in freezer compliant host
Humidity	5% to 96% R.H. (non-condensing) in compliant host
ESD	+/- 8 kV contact, +/- 15 kV air in compliant host
Environmental Compliance	REACH, WEEE, RoHS 2, China RoHS

APPENDIX F OMNII XT15F FREEZER VARIANTS

The Omnii XT15f Hand-Held Computer (Model 7545XT)

✓ **NOTE** Performance specifications are nominal and subject to change without notice.

The Omnii XT15f is a modular, industrial hand-held computer suitable for cold chain and extreme weather environments. These units are equipped with heating hardware to prevent condensation from developing on or inside the Omnii.

Two variants are available – the Chiller and the Arctic. The Chiller model is condensing-resistant, and the Arctic model is condensing-free. This variant is equipped with a heated scanner window and a standard 5000 mAh battery (model number ST3003). An optional freezer battery - model number ST3002 - (not used with narrowband radio configuration) can be ordered for the Chiller variant. The Omnii Arctic freezer variant is equipped with an optically bonded heated display module, providing a condensation-free unit. It is only available with an ST3002 freezer battery (not used with narrowband radio configuration).

✓ **NOTE** The Omnii Hand-Held Computer is a body worn device, and to maintain compliance with the FCC RF exposure guidelines, use a Motorola approved carrying case. Use of non-approved accessories may violate FCC RF exposure guidelines.

Model Variants

- Omnii XT15f Arctic Hand-Held Computer (extremely rugged, condensing-free) - Model 7545XT. This model features a multi-core heater control logic board that dynamically heats the scan window and LCD display.
- Omnii XT15f Chiller Hand-Held Computer (extremely rugged, condensing-resistant) - Model 7545XT. This model features a single core heater control logic board dynamically heats the scan window.

Figure F-1 Omnii XT15f Freezer Variants



Hardware Specifications

Physical Dimensions

- Length: 226 mm (8.89 in)
- Width: At display: 98 mm (3.86 in)
- Depth: At display: 82 mm (3.2 in)
At grip area: 31 mm (1.22 in)
- Weight: 34 g (1.8 lb) with SE965HP laser, ST3002 battery (not used with narrowband radio configuration), and pistol grip

Barcode Scanner Options



NOTE Both Arctic and Freezer variants include a heated scan window for Frost Free Scanning (FFS).

- SE965HP 1D standard range laser
- SE1524-ER 1D extended range laser
- SE4600LR 2D Long Range Imager

Display

- 3.7" VGA (640 x 480) Transflective Color/Touch Display

Chiller Variant:

- Extreme Duty, designed for rugged environments with improved impact resistance (1.25 Joule impact), better abrasion resistance, superior low temperature operation (to -20°C / -4°F), with 160 cd/m2 brightness.

Arctic Variant:

- Extreme Duty is designed for rugged environments with improved impact resistance (1.25 Joule impact), better abrasion resistance, superior low temperature operation (to -30°C / -22°F), with 160 cd/m2 brightness.
- The optically bonded display module prevents the build-up of condensation/fogging in-between the display and the touchscreen.
- The display heater is responsible for maintaining a acceptable refresh rate in extreme cold environments.

Keyboard

- Both variants include specially designed keyboards that resist freezing due to ice build-up in condensing environments.
- 58-key full alphanumeric with 6 single-push Function keys.
- 34-key numeric with 12 single-push Function keys.

Power Management

- Chiller Battery Pack: 5000 mAh high capacity Lithium-ion. For battery specifications, see [Lithium-ion Smart Battery 5000 mAh \(ST3003\) for Omnia Chiller Model on page F-5](#).
Optional 5300mAh high capacity smart freezer battery.
- Arctic Battery Pack: 5300 mAh high-capacity Lithium-ion smart freezer battery designed for improved performance in low temperature application. For specifications, see [Lithium-ion Smart Battery 5300 mAh \(ST3002\) for Omnia Arctic Model on page F-6](#).



WARNING! Powered cradles are designed to allow the Omnia to be powered by a vehicle battery. The battery installed in the Omnia is also recharged by the vehicle battery. This option accepts DC power sources over the range 11.5V to 30V.

For Omnia XT15f Chiller units, voltages above that require the use of the power pre-regulator Model No. PS1350. However, Omnia XT15f Arctic units operating in temperatures from -30°C to +50°C, require the use of the power preregulator Model No. PS1370.

For detailed information, see [ST1002 Powered Cradle Installation on page 4-20](#).

Environmental**Chiller Variant:**

- Operating Temperature: -20°C to +50°C (-4°F to +122°F)
- Storage Temperature: -40°C to +60°C (-40°F to +140°F)
- Humidity: 5% to 95% non-condensing (condensation-resistant)
- Rain/Dust: IP65, IP67, IEC 60759
- Drop Rating: Multiple 2 m (6.5 ft) drops to polished concrete
- ESD: +/- 8 kV contact, +/- 15 kV air discharge.

Arctic Variant:

- Operating Temperature: -30°C to +50°C (-22°F to +122°F)

F - 4 Omnii Hand-Held Computer with Windows CE 6.0 User Guide

- Storage Temperature: -40°C to +60°C (-40°F to +140°F)
- Humidity: Condensing (condensation-free using internal heaters)
- Rain/Dust: IP65, IP67, IEC 60759
- Drop Rating: Multiple 2 m (6.5 ft) drops to polished concrete
- ESD: +/- 8 kV contact, +/- 15 kV air discharge.

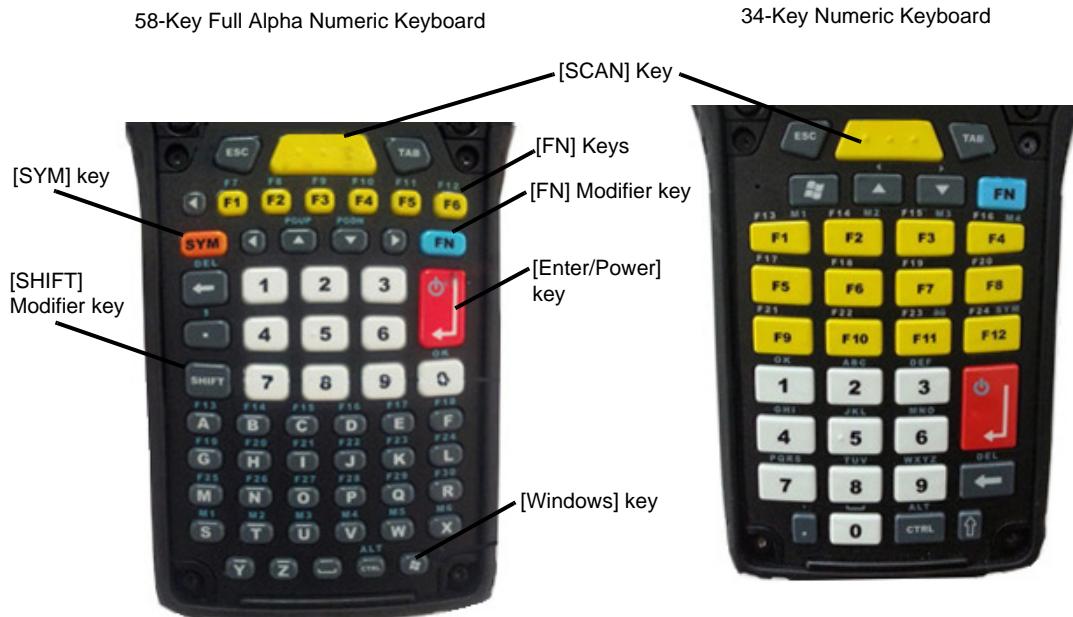
Regulatory Approvals

- Worldwide Safety, EMC, RF, Laser approvals
- CE Mark
- E Mark (vehicle cradles)
- RoHS compliant
- WEEE compliant
- REACH compliant

The Freezer Keyboards

Two keyboard layouts are available for the Chiller and Arctic hand-held units. Both variants include specially designed keyboards that resist freezing due to ice build-up in condensing environments.

Figure F-2 Freezer Keyboard Layouts



Lithium-ion Smart Battery 5000 mAh (ST3003) for Omni Chiller Model

The Omni Chiller model is shipped with the standard ST3003 Lithium-ion Smart Battery. The ST3002 Arctic Battery (not used with narrowband radio configuration) is available as an option. For more information about this battery, see [Lithium-ion Smart Battery 5300 mAh \(ST3002\) for Omni Arctic Model on page F-6](#).

For safety instructions, please see “*Lithium-ion Battery Safety Precautions*” in the *Omni Hand-Held Computer Regulatory & Warranty Guide (PN 8000191)*.

Parameter	Specification
Model Number	ST3003
Chemistry	Lithium-ion (Li-Ion)
Capacity	5000 mAh nominal at 1000 mA discharge 20°C to 3.0 V (min)
Voltage	3.7 V nominal (2.75 V min. to 4.2 V max.)
Cell Configuration	1 S2P (2 parallel connected cells)
Max. Charge Voltage	4.2 V +/- 1%
Recommended Charge Termination Timeout	5.0 hr - charging must stop.
Charge Temperature	0°C to +40°C (32°F to +104°F)
Discharge Temperature	-20°C to +50°C (-4°F to +122°F)
Storage Temperature	-20°C to +50°C (-4°F to +122°F). Storage at elevated temperatures not recommended. 25°C (77°F) — recommended storage temperature.
Cycle Life	300 cycles minimum with no degradation below 70% of nominal capacity based on 0.5C charge / 0.5C discharge rates (to 3.0 V) @ 23°C (73.4°F).

Lithium-ion Smart Battery 5300 mAh (ST3002) for Omnii Arctic Model

The Omnii Arctic model is shipped with the ST3002 Lithium-ion Smart Battery (not used with narrowband radio configuration). For safety instructions, please see "Lithium-ion Battery Safety Precautions" in the *Omnii Hand-Held Computer Regulatory & Warranty Guide (PN 8000191)*.

Parameter	Specification
Model Number	ST3002 (not used with narrowband radio configuration)
Chemistry	Lithium-ion (Li-Ion)
Capacity	5300 mAh nominal at 1000 mA. Discharge @ 20°C to 2.75 V (min)
Voltage	3.6 V nominal (2.75 V min. to 4.2 V max.)
Cell Configuration	1 S2P (2 parallel connected cells)
Max. Charge Voltage	4.2 V +/- 1%
Recommended Charge Termination Timeout	5.0 hr - charging must stop.
Charge Temperature	0°C to +40°C (32°F to +104°F)
Discharge Temperature	-30°C to +50°C (-22°F to +122°F)
Storage Temperature	-20°C to +50°C (-4°F to +122°F). Storage at elevated temperatures not recommended. 25°C (77°F) — recommended storage temperature.
Cycle Life	300 cycles minimum with no degradation below 70% of nominal capacity based on 2.5A - 4.20V charge / 2.5A - 2.75V discharge rates @ 25°C (77°F).

Figure F-3 ST3002 Battery and Safety Label (not used with narrowband radio configuration)



Quick Defrost Application

The Omnii XT15f is a freezer capable hand-held computer that has integrated heaters that are designed to improve the functionality and operation of the hand-held device in extreme cold environments. The Arctic variant has two heaters; one for the display, and one for the scan window. The Chiller variant has only one heater, which is located on the scan window. The *Quick Defrost* application is the nerve center of the heater-related information. The *Settings* tab allows the user to configure the suspend time of the heating system, as well as the scan window power setting. The *Heater Info* tab provides instantaneous heater information for each individual heater and the overall heating system. For environmental specifications for this computer, see [Hardware Specifications on page F-2](#).

To ensure proper operation of the hand-held device in a freezer environment, the surface temperature is managed by the heating system to prevent the formation of external/internal condensation on critical modules. The heating system consists of two heating elements; one for the display and one for the scan window.

Quick Defrost Settings

The individual heaters for the computer modules can be monitored, and the duration of time for them to remain on during Suspend mode can be configured.

- In the *Control Panel*, choose the **Quick Defrost** icon.

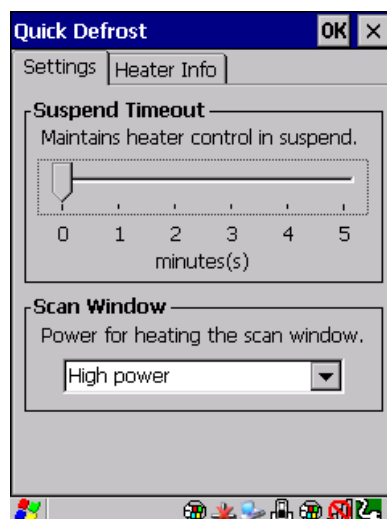


Settings

The Quick Defrost application opens in the *Settings* tab.

Suspend Threshold

- The *Suspend Threshold* option allows you to maintain heat for a limited time when the computer enters Suspend mode. Once the threshold is reached, the heater will stay off while the computer is in suspend.
- To set the time, slide the trackbar to the desired time and click **OK**. Values range from 0 to 5 minutes.



- ✓ **NOTE** A longer suspend threshold will reduce your overall battery shift life.

Scan Window

The *Scan Window* option allows you set the level of power for the periphery scan window heater. There are two pull down options:

High power (default): This heating profile has been designed for users that are in and out of the freezer frequently (with a freezer dwell time of less than 20min). This heating profile keeps a constant positive temperature on the scan window — eliminating any formation of external / internal condensation from frequent transitions. Please note that this heating algorithm provides additional power at the expense of the battery shift life.

Low power: This heating profile has been designed for users that will be spending long durations in the freezer environment. It is a less aggressive algorithm, compared to the high power mode, that maximizes battery shift life. It addresses the formation of internal condensation to keep the scan window clear of condensation.

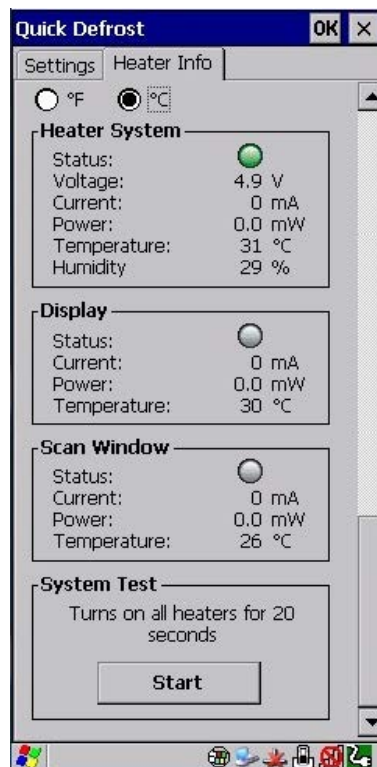
These two scan window power modes can be adjusted on the fly to give the user the needed flexibility for optimal performance.

Heater Info

- In the *Quick Defrost* dialog box, open the **Heater Info** tab. This dialog box allows you to monitor the status of each heater and test the entire system.

Temperature Selection

You have the option of setting the display temperatures to Celsius or Fahrenheit.



Heater System

This section displays information on the heater system.

Status

The LED state for this parameter indicates whether the communication with the Quick Defrost hardware is successful (green) or unsuccessful (red).

Voltage

This indicates the voltage applied to the heater system.

Current

This shows the total average current used by the heating system.

Power

This represents the total power used by the heating system.

Temperature

This shows the temperature measured inside the unit.

Humidity

This shows the humidity measured inside the unit.

Display and Scan Window Heaters





This section displays information on the individual heaters.



NOTE If the scanner/imager is not connected, the scan window heater will be disabled (greyed out).

Status

These status indicators report the heating mode for each individual heater.

	Blue indicates the heating element is operating in full power mode.
	Green indicates the heating element is operating in sustaining mode.
	Grey indicates the heating element is off.
	Red indicates a hardware failure with the heater.

Current

This indicates the average current drawn at the moment for the individual heater.

Power

This indicates the power used at the moment for each individual heater.

Temperature

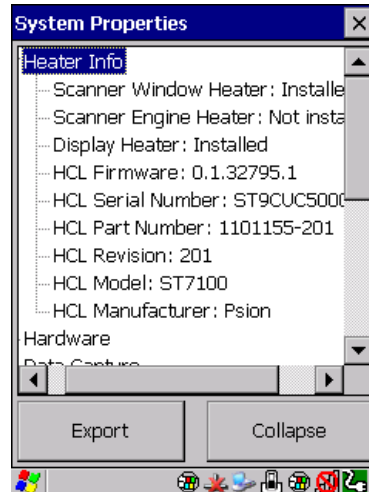
Shows the temperature measured near the heating element.

System Test

The system test feature allows you to test the functionality of all available heaters (for approximately 20 seconds) to make sure that the heating system — heaters and control board — are working properly.

System Properties

In *Control Panel*>*System Properties*, the computer's heater software and hardware components are listed under *Heater Info*. The information includes their identification, version or part numbers, and whether they have been installed.



APPENDIX G WIRELESS WIDE AREA NETWORK (WWAN) SETTINGS

Wireless WAN

The Omnii is available with one of the following Wireless WAN (WWAN) radio options: the Cinterion MC75i EDGE and the Cinterion PH8-P HSPA+. An Omnii Hand-Held Computer equipped with a GSM/GPRS radio has wide area networking capabilities. With either of these radios and a SIM card, you can wirelessly transfer data, and you use the Omnii voice option to place phone calls.

Taskbar Icons

Wireless WAN icons in the taskbar indicate the status of your wide area network connection. Note that these icons are only visible when the relative radio is installed in the computer, and the interface is enabled.

The following taskbar icons are used:

- G - GSM/GPRS
- E - GSM/EDGE
- 3G - UMTS 3G
- U - UMTS/HSPA+



User interaction is required (e.g. the user is required to enter a PIN).



A non-recoverable (fatal) error has occurred.



The modem status is unknown or the modem is not connected to any network (the signal strength is 0%).



The modem has found a network, and the signal strength is between 1% and 20%.



The modem has found a network, and the signal strength is between 21% and 40%.



The modem has found a network, and the signal strength is between 41% and 60%.



The modem has found a network, and the signal strength is between 61% and 80%.



The modem has found a network, and the signal strength is between 81% and 100%.

Once the modem detects that a packet data service is available, a letter is added to the signal strength icon indicating the kind of packet data service. Keep in mind that the signal strength icon is displayed without a letter if packet data service is not available, or if it is available but not yet initialized.

For example:



The modem has found a network, the signal strength is between 41% and 60%, and GSM/GPRS packet service is available.

The signal strength icon is replaced by a connection indicator icon when a packet data connection is started:



A GPRS packet data connection is active.

In addition to the signal strength or connection indicator a second icon may be shown.



A new SMS (Short Message Service) message has arrived.



The dialer icon is displayed when the Voice option is available (SIM card and GPRS radio are installed). When you have an active call, this icon flashes yellow, and then green.

Establishing a Packet Data Connection

To display the main *Wireless WAN dialog box*:

- Double-tap on the **Wireless WAN** icon in the taskbar.

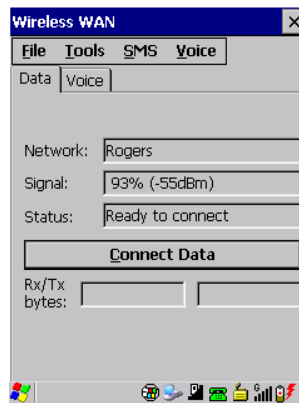
If the icon is not visible in the taskbar, the radio interface has been shut down or the modem has been removed:

- In the *Control Panel*, choose the **Wireless WAN** icon.



The main *Wireless WAN dialog box* is displayed.

Figure G-1 Establishing a Connection



- ✓ **NOTE** If you are prompted to enter a PIN, refer to [Entering a PIN Number on page G-4](#) for details.

When “Ready to connect” is displayed in the *Status* field, the *Connect Data* button is enabled.

- Tap on the **Connect Data** button.

The progress of the connection is tracked in the *Status* field.

- Connecting.
- PPP link to modem active.
- Authenticating user.
- User authenticated.
- Connected.

- ✓ **NOTE** Keep in mind that these states may be displayed fairly quickly if the progress of the connection is rapid.

When the connection state reaches *PPP link to modem active*, the taskbar icon changes to indicate an active connection. The *Connect Data* button changes to *Disconnect*.

Disconnecting From a Network

To disconnect from the network:

- Tap the stylus on the **Disconnect** button, and then on **OK**.

When the computer’s network connection is severed, the *Status* field displays “Ready to connect”.

The signal strength is displayed in the main Wireless WAN screen, even while a connection is active. The *Rx bytes* and *Tx bytes* fields estimate the amount of data transmitted and received, respectively.

Shutting Down the Wireless WAN User Interface

While it is not usual to shut down the GSM/GPRS user interface, you can accomplish this by tapping on the **File** menu and choosing the **Exit** command at the bottom of the main *Wireless WAN* dialog box.

- ✓ **NOTE** Once you’ve shut down the user interface, you can only enable the radio by opening the Control Panel and tapping on the Wireless WAN icon to display the Wireless WAN dialog box.

Advanced Information

In most cases, when a GSM/GPRS radio and SIM are installed in your computer, setup is automatic. Follow the steps outlined under the heading [Establishing a Packet Data Connection on page G-2](#) to make a connection. The information in this section is for advanced setup purposes.

Entering a PIN Number

If a PIN is required, a PIN entry dialog box is displayed.

- Type your PIN, and press **[Enter]**.



NOTE If you exceed the number of allowable attempts, a PUK entry window is brought to the foreground. You'll need to enter a new PIN number.

Once the correct PIN or PUK is entered or if none was required, the modem is instructed to perform a GSM network registration followed by a GPRS attach. The main *Wireless WAN* dialog box reflects the progress of the initialization.

- Searching for modem.
- Initializing modem.
- SIM is ready.
- Searching for network.
- Registered on network.
- Searching for GPRS.
- Ready to connect.

If the modem loses the connection to the GSM network, the following states are repeated: *Searching for network*, *Registered on network*, *Searching for packet data*, and *Ready to connect*.

Error States

The following temporary error states (i.e., these states may disappear without interaction) may be displayed:

- Emergency calls only.
The modem has found a network but is not allowed to register (e.g. no roaming agreement between networks). The modem keeps searching for another network.
- No network found.
A network is not currently available. The modem continues searching for a network.
- Packet data not available.
The current network does not support a packet data service.
- Packet data not allowed.
The modem is not allowed to use the packet data service on the current network (e.g. no GPRS roaming agreement between network; a roaming agreement for voice may still be in place). It is also possible that you do not have a subscription for GPRS at all.

The remaining error states are permanent:

- SIM is missing.
The SIM card is missing. After the SIM has been inserted a warm boot may be required.
- SIM failure.

The SIM card is permanently disabled (e.g. because the wrong PUK has been entered too many times). A new SIM is needed.

- Modem failure.

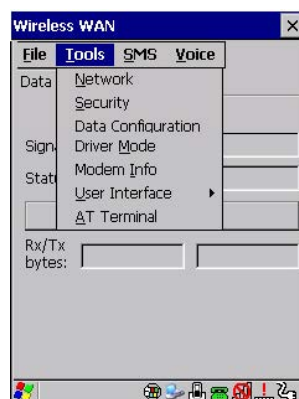
The modem did not respond to commands as expected. If a warm boot does not clear this condition, the modem may need to be replaced.

- NDIS error.

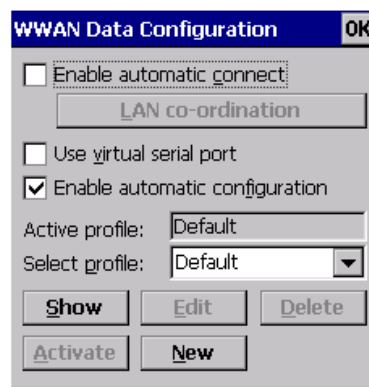
An internal software error has occurred. If a warm boot does not clear this condition, Motorola technical support may need to investigate further.

Tools Menu

The *Tools* menu in the main *Wireless WAN* dialog box offers some additional, advanced setup features.



WWAN Data Configuration



Enable Automatic Connect

If the *Enable automatic connect* check box is checked (unchecked by default), the Wireless WAN user interface will attempt to establish a GPRS connection whenever GPRS is available (e.g. after resume from suspend without further user interaction).

To activate the automatic connection mode:

- Tap on the **OK** button.

While automatic connection mode is enabled, the *Connect Data* button in the main *Wireless LAN* dialog box changes to *Disable Auto*. To close the currently active connection (if any) and disable the automatic connection mode:

- Tap on **Disable Auto**.



IMPORTANT Automatic connection mode should not be used if applications other than the Wireless WAN user interface (e.g. Connection Manager) are expected to open and close connections.

If the automatic connection mode is enabled and another application closes the GPRS connection, the WWAN user interface will immediately try to re-establish the connection.

Use Virtual Serial Port

If *Use virtual serial port* is enabled, packet data connections are established through the virtual serial port of the WWAN driver rather than through the WWAN driver directly. This check box should *only* be checked if certain third-party VPN (Virtual Private Network) clients are used that do not work correctly otherwise. The default setting is **disabled** (unchecked).



NOTE The connection setup takes longer through the virtual serial port.

Enable Automatic Configuration

In most cases, *the data connection is configured automatically and no user interaction is required*. This is true even if multiple SIM cards from different operators are used with the same device. The connection parameters are adjusted automatically when a new SIM card is detected (this may require a warm boot). The connection parameters are retrieved from a database.

Manual configuration should be necessary only if:

- One or more parameters in the database are incorrect or a new operator is not yet in the database. (The database should be corrected for subsequent software releases.)
- An operator has assigned individual GPRS user names and passwords.
- A very large site has its own APN. Such connections always have to be configured manually.
- A customer has subscribed for a static IP address. By definition this must be configured manually.
- An operator may use a different APN for certain groups of customers. Since the automatic configuration can configure only one APN per operator such connections have to be configured manually.

Profiles

In the following section, all the parameters that need to be configured for a connection (such as APN, user name, password, DNS server addresses etc.) are referred to as a *profile*. Every profile is identified by an arbitrary, unique name. The profile named *Default* is special in that it is always present and can neither be edited nor deleted. The *Default* profile uses parameters from a built-in database. The home network (the network that issued the SIM) is used for the database look-up. While there can be many configured profiles, only one profile can be active at any time.

If connection profiles are configured manually, the *Enable automatic configuration* check box should normally be unchecked.

In one particular use case, manually configured profiles may be combined with automatic configuration. If multiple SIM cards are used with the same device, each SIM card being from a different operator and some or all of them requiring a manually set up profile, automatic configuration may be used to automatically pick the correct manually configured profile for each SIM card. For this to work, each profile must be configured while the corresponding SIM card is inserted in the device and initialized (i.e. the status is at least *Searching for network*).

The *Select profile*: drop-down list in the data configuration profile selects to which profile a subsequent action applies. A profile named *Default* is always present and contains the current parameters from the database. The following actions are available:

Show

The parameters for the selected profile are displayed when you tap the stylus on this button. For the *Default* profile, the publicly known password is shown — otherwise, the password is hidden.

Edit

The parameters of the selected profile can be edited when you choose the *Edit* button. Keep in mind that you cannot edit the *Default* profile.

Delete

The selected profile is deleted. You cannot delete the *Default* profile.

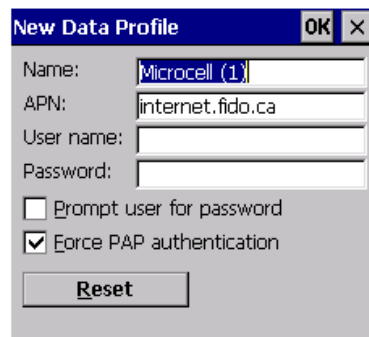
Activate

When this button is chosen, the selected profile becomes the active profile. Activation is possible only if the *Enable automatic configuration*: check box is unchecked.

New

Tapping on the *New* button allows you to create a new profile.

Figure G-2 *Creating a New Profile*



The screenshot shows a dialog box titled "New Data Profile" with standard window controls (OK, X). The dialog contains the following fields and options:

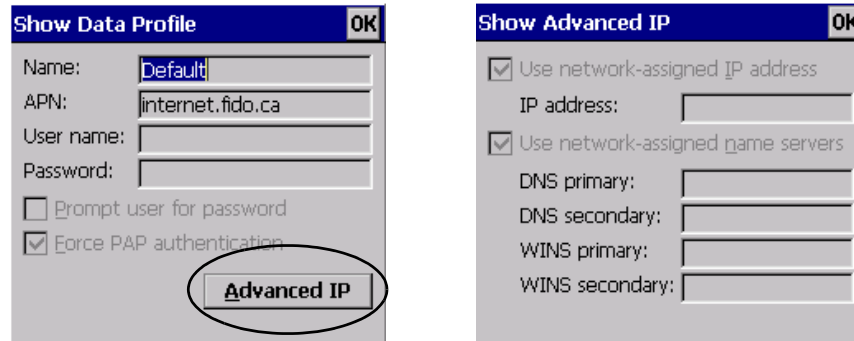
- Name: Microcell (1)
- APN: internet.fido.ca
- User name: (empty)
- Password: (empty)
- Prompt user for password
- Force PAP authentication
- Reset button

The name of the newly created profile must be different from all existing profiles. Also, the name cannot be *Default*. When the *New Data Profile* dialog box is opened, a proposal for a unique name is filled in the corresponding entry field. If a manually configured profile has a secret password and unauthorized access to the device is a concern even after the SIM PIN has been entered, the password should not be entered in the *New Data Profile* dialog box and the *Prompt user for password* check box should be checked instead. In this case, you will be prompted for the password each time a connection is initiated (the *Connect Data* button in the main *Wireless WAN* dialog box is selected).

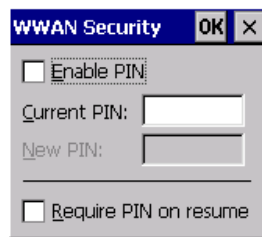
By default the connection uses PAP (Password Authentication Protocol), a simple authentication protocol used to authenticate a user to a remote access server or Internet Service Provider. However, if your ISP does not support PAP, tapping in the box to the left of *Force PAP authentication* disables PAP and directs the connection to use CHAP (Challenge Handshake Authentication Protocol) instead.

Reset

The *Reset* button in the *New Profile* and *Edit Profile* dialog boxes resets all entry fields to the values they had when the dialog box was opened.

Advanced IP**Figure G-3** Assigning IP Information

The *Advanced IP* button in the *Show Profile* and *Edit Profile* dialog boxes opens another dialog box that allows you to configure a static IP address as well providing DNS and WINS fields so that you can specify DNS and WINS resolvers.

Security Configuration

The *Security Configuration* dialog box is accessed through the *Tools* menu. The *Security Configuration* dialog box allows you to enable, disable and change the PIN. You will need the current PIN to make any of these changes. The PIN must be enabled in order to be changed. (If the PIN is disabled, the *New PIN* entry field is greyed out.)



NOTE Keep in mind that some network operators do not allow the SIM PIN to be disabled. A new PIN must consist of 4 to 8 numeric digits.

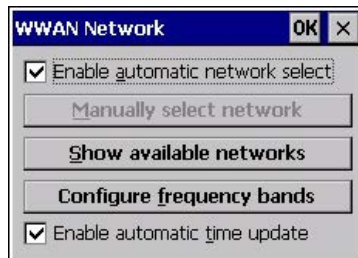
The *Require PIN on resume* check box is independent of the aforementioned settings. By default, this check box is unchecked. While this option remains unchecked, any PIN entered on startup or through the *Security Configuration* dialog box and submitted successfully to the modem is stored in memory for as long as the device is not rebooted. This stored PIN is then used without further user interaction whenever the modem requires a PIN (such as resume after suspend or modem removal). The stored PIN is also automatically entered in the *Current PIN* text box whenever the *Security Configuration* dialog box is called up.

If unauthorized access to the device is a concern, the *Require PIN on resume* check box should be checked. In this case, the PIN is not stored; whenever a PIN is required, you will be prompted to enter an appropriate value.

Network Configuration

In the main Wireless WAN window:

- Tap on the **Tools** menu, and choose **Network**.



Enable Automatic Network Select

By default the GSM radio modem automatically chooses from the available and allowed networks (allowed networks are the home network and all other networks with which the home network has a roaming agreement). You may find there are some situations in which you want to override this default behaviour. For example, you may want to disable roaming if you find yourself in a border area where the home network is not available but a foreign roaming partner is available. Abroad, you may find that an available network does not have GPRS roaming agreements. In this case, you'll need to manually select the network which you know to support GPRS roaming.

Automatic network selection is enabled or disabled by checking or unchecking *Enable automatic network select* in the *Network* dialog box. When automatic network selection is disabled, you must select a network manually.

Show Available Networks

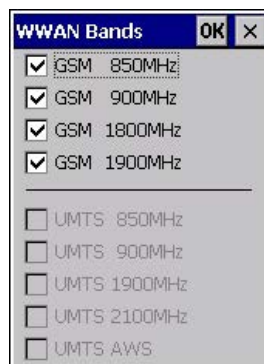
Available networks can also be viewed without changing any settings. Scanning for available networks is a lengthy operation — a progress bar is shown while the scan is active. For every network that is found, the network name, country, status and numeric network identifier (MCC/MNC, Mobile Country Code followed by the Mobile Network Code) is displayed.



NOTE Your home network operator will need to let you know which other networks have roaming agreements. Even when a network is listed with an *Available* status, it does not necessarily follow that it can be used or that the roaming agreement covers GPRS.

A status of *Forbidden* indicates that the network cannot be used. If you choose a network that is not covered by a roaming agreement, the status in the main WWAN dialog box changes to *Emergency calls only*, *No network found*, *GPRS not available* or *GPRS not allowed*.

Configure Frequency Bands



The network selection can be modified by enabling or disabling GSM and UMTS frequency bands.



IMPORTANT Care must be taken when disabling bands — the wrong band will prevent the modem from registering with the network (that is, not even emergency calls are possible if a mistake is made).

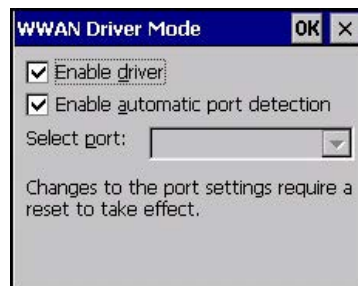
By default all bands supported by the installed WWAN modem are enabled. All bands that are not supported by the installed modem are greyed-out. While some modems (e.g. Cinterion PH8-P) allow all possible combinations of supported bands to be selected, others do not (e.g. Cinterion MC75i). A warning is displayed if an unsupported band combination is chosen.

By enabling only bands in use on a given network, the network search time (e.g. after losing the network due to a coverage gap) is improved. Through the band configuration it is possible to force the modem into GSM-only or UMTS-only mode. As an example, this is useful if a legacy application needs to use a dial-up connection and the network supports dial-up connections only on GSM but not on UMTS (as is the case with many European networks).

Enable Automatic Time Update

If this feature is enabled, it allows the system time and time zone to be updated with information received from the WWAN network. This feature is network-dependent. If the WWAN network supports NITZ (“Network Information and Time Zone”), then it can send the current time, time zone, or both to the terminal.

Driver Mode Configuration



By default, the Wireless WAN driver is enabled (the *Enable driver* check box is checked). If the *Enable driver* check box is not checked, the driver is shut down as soon as the *OK* button in the *Driver Mode* dialog box is chosen.

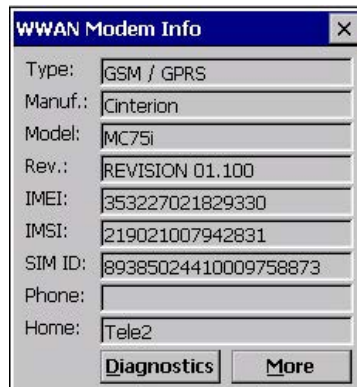
If, on the other hand, the Wireless WAN driver is not running and the *Enable driver* check box is checked, the Wireless WAN driver is started as soon the *Driver Mode* dialog box is closed using the *OK* button.



NOTE When the driver is not running, no network status or signal strength can be displayed.

Since all currently supported GSM modems are automatically detected, the *Enable automatic port detection* check box should always be checked. If this check box is not checked, a serial port can be selected manually. This experimental feature allows the driver to be used with an internal GSM modem that was not recognized by the automatic detection or an external GSM modem connected to a serial port of the computer through USB or through *Bluetooth*. An external modem connected to a serial port must support 115.2 kbit/s, 8bit, no parity and hardware flow control.

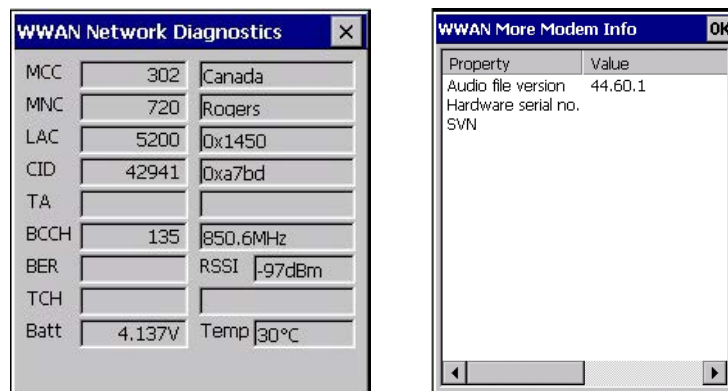
Modem Information



The fields in this dialog box cannot be edited, they only display information about the computer's modem. If the network operator has not programmed a user's phone number into his SIM, the *Phone*: field remains empty. If the main menu shows an error status, at least partial modem information may be available.

Diagnostics and More

The *Diagnostics* screen may be useful when diagnosing network problems. The information presented here is not needed for normal operation. The *More* button shows you some additional detail about your modem.

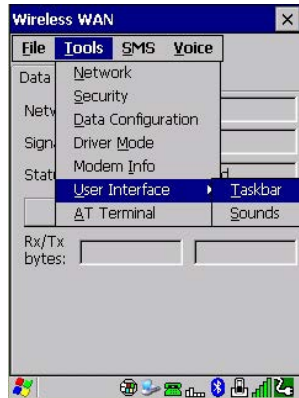


The following Diagnostics values are displayed:

- MCC Mobile Country Code (decimal value and, if available, decoded country name)
- MNC Mobile Network Code (decimal value and, if available, decoded network name)
- LAC Location Area Code (decimal and hexadecimal value)
- CID Cell Identifier (decimal and hexadecimal value)
- TA Timing Advance (decimal value and converted distance to base station in meters)
- BCCH Broadcast Control Channel (ARFCN or UARFCN value and converted frequency in MHz)
- BER Bit Error Rate
- RSSI Received Signal Strength Indication
- TCH Traffic Channel (ARFCN value and converted frequency in MHz)
- Batt Battery voltage as measured by the WWAN modem
- Temp WWAN modem Temperature

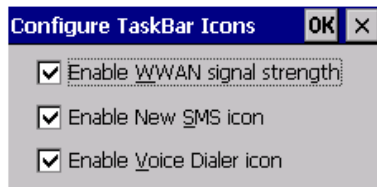
Note that *TA*, *BER*, and *TCH* are available only in GSM mode and only while there is an active connection (e.g. a voice call). If the status in the main window shows *No network found* or *Searching for network*, then typically only *Batt* and *Temp* are available. For the status *Emergency calls only*, *MCC*, *MNC*, *LAC*, *CID*, and *BCCH* may be available. For the GSM 1800 MHz and GSM 1900 MHz bands it may not be possible to convert the ARFCN for BCCH and TCH to a frequency because the channel numbers overlap. This can be overcome by enabling only the GSM bands used by a particular network (i.e. either GSM 1800MHz or GSM 1900 MHz is disabled). If the network uses frequency hopping during GSM voice calls, then *hopping* is displayed in the TCH field.

User Interface



Taskbar

Choosing *Taskbar* displays a dialog box in which you can determine which Wireless WAN icons will be displayed in the taskbar.

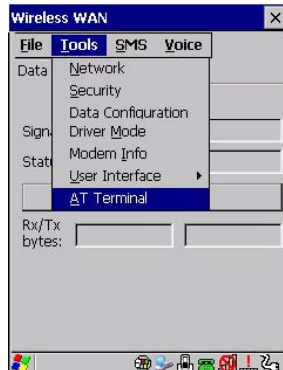


Sounds

Tapping on the *Sounds* option displays a dialog box in which you can customize which sounds your Omnii will emit and when these sounds will be played.



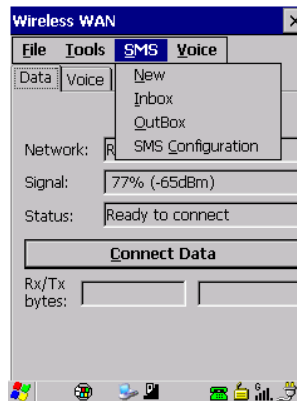
AT Terminal



The AT Terminal window allows AT commands to be entered and sent to the modem. In some situations (e.g. during approval testing) it may be required to enter AT commands. This feature should only be used if one has a good understanding of the AT command set of the installed WWAN modem.

SMS Menu

SMS (Short Message Service) functions are accessed through the SMS menu. For modems that support a SIM card, the SIM initialization typically takes longer than the network initialization, resulting in a noticeable delay before the SMS functions become available.



New

Tapping on the *New* button opens a dialog for sending a new SMS message. The recipient's phone number (to be entered in the *To:* field) can consist of the digits 0 through 9, as well as the * and # characters, optionally preceded by one + character, indicating an international number (i.e. the country code follows immediately after the + character).

By checking the *Store message in Outbox* field a new message can be stored in the Outbox before being sent. If no storage space is available, or the modem does not support the storage of outgoing messages, then this check box is disabled.

Inbox

Tapping on the *Inbox* button opens the list of received messages. Reading 50 messages, for example, from the SIM can take about 30 seconds. By default the list of messages is sorted with the most recently received message first. The list can be sorted by any other column by clicking on the corresponding column heading. Clicking the same column heading twice reverses the sort order. Tapping on any letter or digit moves the highlight to the next message whose address begins with that letter or number.

- ✓ **NOTE** The date and time formats can be changed through the Region and Language menu in Control Panel. For a new date or time format to take effect the Inbox has to be closed and re-opened.

The *Open* button opens the selected message in a new window such that the entire message can be read including the original formatting (line breaks are replaced by spaces in the Inbox message list). Pressing the **Reply** button opens the new message dialog as described above, except the destination phone number is filled in already.

Outbox

Tapping on the *Outbox* button opens the list of sent messages. Otherwise the *Outbox* behaves exactly as the Inbox described above. The date and time when a message was sent is not available for GSM modems.

SMS Configuration

Tapping on the *SMS Configuration* button opens the SMS configuration dialog. The SMS Centre address follows the same rules as the recipient's phone number in the New message dialog. The message validity period parameter is sent to the SMS Centre with each message sent subsequently and instructs the SMS Centre on how long it should attempt to deliver the message to the recipient (the SMS Centre may impose an upper limit on the validity period regardless of the setting).

- ✓ **NOTE** Only certain discrete validity period values can be sent and thus the validity period is rounded to the nearest allowed value. The next time the SMS configuration dialog is opened the rounded value is shown.

The user interface tries to keep the SMS storage location available for a new incoming message if the Delete oldest message when full check box is checked. In this case, when a new message arrives and the SMS storage becomes full, the oldest received message is deleted. If any string is entered as the *Message Suppression Prefix*, then messages beginning with that string will not be shown in either the Inbox or Outbox. In this way messages intended for another application running on the same device can be hidden from the user, as long as those messages begin with the string configured here.

Voice

The *Voice* tab is described in detail under [Voice – Using the WWAN Phone Dialer on page 3-70](#).

Power Mode

The power mode of the modem is controlled through the *Power* menu in the *Control Panel* (not through the Wireless WAN user interface). See [WWAN Power Mode on page 3-43](#).

APPENDIX H WIRELESS ZERO CONFIG SETTINGS

Wireless Information

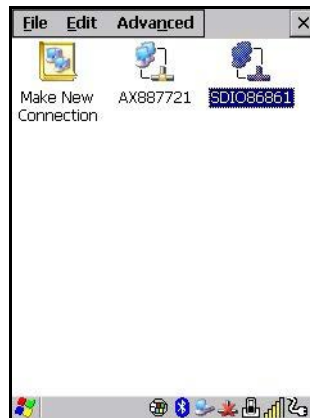
Wireless Zero Config, the Windows native supplicant, can be used to configure the radio. To ensure that *Wireless Zero Config* is activated, refer to [Wi-Fi Config: Advanced on page 3-84](#).

- Tap on **Start>Settings>Network and Dial-up Connections**.



- Choose the **radio icon** representing the radio you want to set up — in the sample screen in [Figure H-1 802.11 Wireless LAN Settings Window on page H-2](#), this is labelled as *SDIO86861*

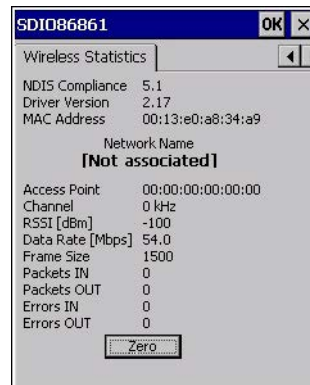
Figure H-1 802.11 Wireless LAN Settings Window



Wireless Statistics

When you choose the **Wireless LAN** icon, an **802.11 Wireless LAN Settings** window is displayed. This tab lists your radio statistics. Choosing the **Zero** button resets the statistics of the last four items — Packets IN, Packets OUT, IN errors and OUT errors.

Figure H-2 Wireless Statistics

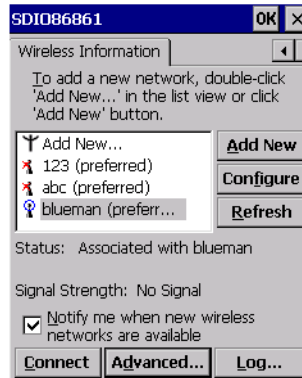


Wireless Information

This tab displays existing networks to which you can connect, and it allows you to add a new network or modify the settings for an existing network.

- **Configure** button: To change the settings in an existing network, highlight the network you want to modify, and tap on the Configure button to display the Wireless Properties dialog box.
- **Connect** button: To force connection to a specific, existing network, highlight the network to which you want the Omnii to connect, and tap on the **Connect** button.

Figure H-3 Wireless Information

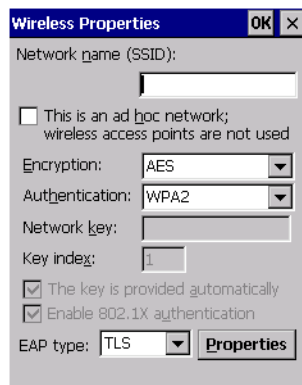


This tab lists available networks — any access points that are broadcasting an SSID, and it lists preferred networks — networks that you have configured. Since access points are generally secure, they will most likely not be listed here. By default, the Omnii attempts to connect to preferred networks. This behaviour can be changed by enabling *Automatically connect to non-preferred networks* in the *Advanced* dialog box (see [Figure H-6 Advanced Wireless Settings on page H-5](#)).

- To add a new configuration, tap on the **Add New** button. A blank *Wireless Properties* dialog box is displayed.

Wireless Properties

Figure H-4 Wireless Properties



- Type the appropriate SSID (Service Set Identifier) in the **Network name (SSID):** dialog box. The *Network name* field can contain a maximum of 32 characters. The name assigned here is listed as a preferred network.



IMPORTANT Keep in mind that the Omnii will only communicate with access points that are configured with the same SSID.

- **Ad Hoc And Infrastructure:** If you are using an *Infrastructure* network — one in which the hand-helds must pass data through an access point — leave the check box next to *This is an ad hoc network* blank. If you are using an *Ad Hoc* network — a network in which the hand-helds pass data directly to other Ad Hoc devices without an access point — add a checkmark in the check box next to *This is an ad hoc network* to enable Ad Hoc.
- **Encryption:** *WEP* (Wired-Equivalent Privacy) encryption prevents others from accidentally accessing your network. If you are not using encryption, you can choose *Disabled* from the drop-down encryption menu. Otherwise, leave this field as is.

AES (Advanced Encryption Standard) is a standard for protecting data through encryption. AES supports key sizes of 128 bits, 192 bits and 256 bits and will serve as a replacement for the Data Encryption Standard (DES), which has a key size of 56 bits. In addition to the increased security that comes with larger key sizes, the AES algorithm is a symmetrical block cipher that can encrypt (encipher) and decrypt (decipher) information.

- **Authentication:** 802.11 supports several subtypes of network authentication services: *Open*, *Shared*, *WPA*, and *WPA-PSK*. Under *Open* authentication, any wireless station can request authentication. The station that needs to authenticate with another wireless station sends an authentication management frame that contains the identity of the sending station. The receiving station then sends back a frame that indicates whether it recognizes the identity of the sending station.

Under *Shared* authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11 wireless network communications channel.

Under *WPA* and *WPA-PSK* authentication, the use of 802.1x authentication is required. For wireless networks *without* a Remote Authentication Dial-In User Service (RADIUS) infrastructure, WPA supports the use of a preshared key. For wireless networks *with* a RADIUS infrastructure, Extensible Authentication Protocol (EAP) and RADIUS is supported.

- **Network Key:** This text box is used to specify a 5 or 13 ASCII character sequence or an equivalent 10 or 26 Hexadecimal digit sequence that matches the active WEP key on the access point.

To assign a *Network key*, highlight **The key is provided automatically**, and *uncheck* the check box to disable this option.

Figure H-5 Network Key and Key Index



- **Key Index:** This field is used to identify the WEP key.

Enter a value from **1** to **4**.

- **Enable 802.1x authentication:** *802.1X* is the IEEE standard that offers additional security for local area networks. It provides authentication for user devices attached to an Ethernet network, whether wired or wireless. A security protocol packet such as TLS or MD5 encapsulated in an *EAP* is used in conjunction with the 802.1X standard to authenticate users at the MAC layer. Available EAPs are listed in the drop-down menu next to the *EAP* option.

To activate 802.1X, highlight **802.1x authentication**, and check the check box.

- **EAP Type (Extensible Authentication Protocol):** This drop-down menu lists the EAP types available on your system. The items in this drop-down menu will vary depending on your network setup. Keep in mind also that some authentication protocols require that you select a Certificate. By selecting the *Properties* button, you will be able to select a *Certificate*. [Compass on page 3-17](#) provides a website that outlines how to create certificates for your network.

- **Saving and exiting the radio setup:** Once you've completed the configuration, press **[Enter]**, or tap on **OK**.

The connection you created will be listed in the *Wireless Information* tab as a preferred network. The radio will search for the SSID and compare the WEP and authentication information you specified. If there is a match between the hand-held settings and the access point settings, the hand-held will communicate on the network through the access point.

Assigning An IP Address

If your network is not using a DHCP server, you will need to assign an IP address. Refer to [IP Address on page 3-82](#) for details about assigning an IP address.

Name Server

Refer to [Name Server on page 3-83](#) for details about this option.

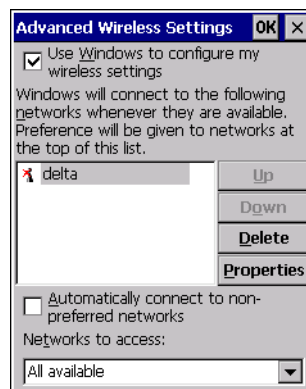
Advanced Features

To display the *Advanced Wireless Settings* dialog box:

- Tap on the **Advanced** button in the *Wireless Information* tab. (Refer to [Figure H-3 Wireless Information](#).)

This window lists the available preferred networks.

Figure H-6 *Advanced Wireless Settings*



Rearranging Preferred Networks

The Omnii attempts to connect with the networks listed in this dialog box in sequence, beginning at the top of the list. If you need to rearrange this list of networks — move networks up and down in the list:

- Tap in the *Networks List*, and highlight the **network** that you want to move up or down in the list.
- To move the highlighted item in the list upward or downward, tap on the **Up** or **Down** button.

Deleting A Preferred Network

To delete a network from this list:

- In the *preferred networks* list, highlight the **network** you want to remove.
- Tap on the **Delete** button.

Changing Network Properties

To change the properties of an existing preferred network:

- Highlight the **network** that you want to modify.
- Tap on the **Properties** button.
- Make any necessary changes in the *Wireless Properties* dialog box, and press **[Enter]** to save the changes.

APPENDIX I OMNII XT15NI NON-INCENDIVE SAFETY GUIDELINES

Omnii XT15ni (non-incendive) Important Safety & Regulatory Information

The Omnii XT15ni (non-incendive) Hand-Held Computer has been qualified by UL LLC to the requirements of the USA and Canada for use in Class I, Division 2-Groups A, B, C and D T6 environments.

The users of this product are cautioned to use accessories and peripherals approved by Motorola. The use of accessories other than those recommended, or changes to this product that are not approved by Motorola, may void the compliance of this product and may result in the loss of the user's authority to operate the equipment.



WARNING! This mark indicates that the user should read all included documentation before use.



WARNING! Ce marquage indique que l'utilisateur doit, avant l'utilisation, lire toute la documentation incluse.



WARNING! Explosion Hazard-Substitution of components may impair suitability for Class I, Division 2 locations.



WARNING! This unit has **NO OPERATOR REPLACEABLE PARTS** other than the battery pack. Disassembly/assembly of the Omnii XT15ni must be performed by trained Motorola service personnel at a Motorola service depot. No unauthorized substitution of parts is allowed for the Omnii XT15ni hand-held.



Use **ONLY** the Motorola Model ST3003-NI battery pack in the Omnii XT15ni. No substitutions are permitted without authorization from Motorola personnel.



DO NOT CHARGE OR CHANGE BATTERIES in an area that is known to be hazardous. Replace batteries in an area known to be non-hazardous.



EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE LAMPS, FUSES OR PLUG-IN MODULES (AS APPLICABLE) UNLESS POWER HAS BEEN DISCONNECTED OR THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS.



EXPLOSION HAZARD. DO NOT DISCONNECT WHILE THE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS.



WARNING! Exposure to some chemicals may degrade the sealing properties of materials used in the following devices: battery packs, housings, LCDs, touchscreens, keypads.

Replacement of modules, housings, keypads, LCDs or touchscreens, end-caps, pods or external connectors must only be performed at an authorized Motorola service centre.



The battery pack used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (+212°F) or incinerate. Dispose of used battery packs promptly. Keep away from children.



WARNING! The following additional warnings and cautions must be observed for the safety of the operator and others in potentially hazardous locations:

The Omnii XT15ni must only be used when the ambient temperature is between -20°C and +50°C (-4°F and +122°F).

The Omnii XT15ni may NOT be connected to any of its available accessories while in potentially hazardous locations. This includes anything that uses the communications docking connector, headset, or microphone jacks. All allowed connections must be made while outside of the potentially hazardous location.

The use of Compact Flash, Secure Digital, and SIM Cards in the Omnii XT15ni while in potentially hazardous locations is permitted as long as these cards are not removed or changed while in the hazardous location.

Any connector cover removed while in ordinary locations must be reinstalled before entering a potentially hazardous location.

Omnii XT15ni Battery Information

The Omnii XT15ni hand-held operates with a specially adapted battery, model number ST3003-NI.



WARNING! The battery pack used in this device may ignite, create a chemical burn hazard, explode, or release toxic materials if mistreated. Do not incinerate, disassemble, or heat above 100°C (212°F). Charge ONLY with Motorola Model ST3003-NI. Do not short circuit; may cause burns. Keep away from children.

Use ONLY Motorola battery pack Model ST3003-NI. Risk of fire or explosion if incorrect battery pack is used. Promptly dispose of used battery pack according to the instructions.



WARNING!

Le bloc-plies utilisé dans cet appareil peut prendre feu, constituer un risque de brûlure chimique, exploser ou dégager des substances toxiques s'il est manipulé de façon inappropriée. Ne pas jeter au feu, démonter ou chauffer à plus de 100°C (212°F). Ne charger qu'avec les dispositifs Motorola ST3003-NI. Ne pas court-circuiter; cela pourrait causer des brûlures. Garder hors de la portée des enfants.

N'utiliser que le modèle de bloc-plies Motorola ST3003-NI. L'utilisation d'un mauvais bloc-plies pourrait constituer un risque d'incendie ou d'explosion. Mettre rapidement au rebut tout bloc-plies usé, conformément aux instructions.

Draft #4 for review

APPENDIX J NARROWBAND RADIO CONFIGURATION

Narrowband Radio Setup



IMPORTANT Narrowband configuration has the keyboard microphone and audio receiver disabled to disable headset mode. Only external Bluetooth audio is enabled with narrowband configuration.



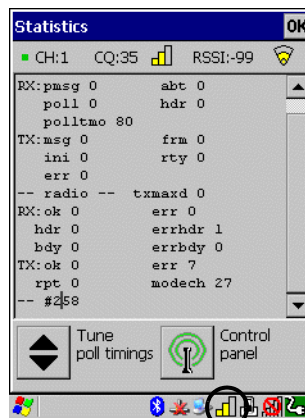
IMPORTANT For Narrowband radios, always attach the antenna, following the instructions on the package, **before** inserting the battery.

Only when the antenna is installed:

- Remove the battery cover, insert the battery, and replace the battery cover.

To display the Narrowband screens and the *Control Panel*:

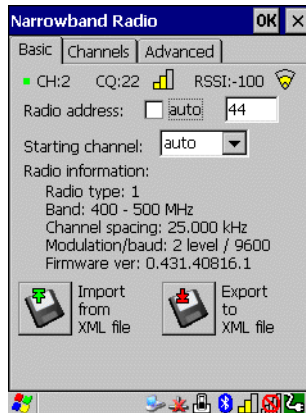
- Click on the **Narrowband icon** in the taskbar.



Keep in mind that the *Narrowband* icon is only visible when a Narrowband radio is installed in the unit.

- Click on the **Control Panel icon** in the bottom-right corner of the *Statistics* screen to display the additional Narrowband screens.

Basic Tab



CH (Channel)

CH displays the current channel. This value may change when a channel is out of range. *Active* channels are assigned in the *Channels* tab (see [Channels Tab on page J-3](#)).

CQ (Channel Quality)

This option displays the channel quality. CQ (Channel Quality) can be affected by the *Channel switch speed* set in the *Channels* tab.

RSSI (Received Signal Strength Indicator)

RSSI is an indication of the power level being received by the antenna. The higher the RSSI number, the stronger the signal.

Radio Address

If *auto* radio address is enabled, the hand-held requests an automatically assigned radio address. When *auto* is selected, the next field in which a radio address can be entered manually, is not available.

The field to the right of *auto* is used to assign a radio address *manually*. Manually assigned radio addresses must be predetermined by the system administrator before this field is completed. A unique value from 1 to 3840 must be assigned for each unit to identify each hand-held over the radio link. Initially, this field is set to 0 to prevent radio communication.

Starting Channel

This parameter determines the initial operating radio channel of the hand-held. When the unit is first powered on and channel selection is set to *auto* (refer to [Radio Address on page J-2](#)), a starting channel is automatically chosen. Otherwise, a channel from one to twenty can be chosen from the drop-down menu. Keep in mind that only the channels that have been enabled are listed here.

Radio Information

This information is read from the radio installed in the unit and is not editable.

Import from XML File and Export to XML File

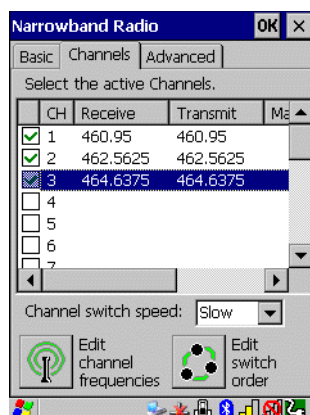
Import from XML file allows you to use a configuration that has already been created to set up your unit.

Export to XML can be used to clone a radio setup so that configuration need only be completed once and can then be copied to an unlimited number of devices.

- Configure the device once.
- Choose **Export to XML file** to export the configuration to an XML file – it will be named *NBRadio_Settings.xml* automatically in the *My Device* folder.
- **Copy** the file to your PC or a USB key, and rename it to *NBRadio_AutoLoadSettings.xml*.
- On a new unit, copy this file to the root directory (the *My Device* folder).
- Warm reset the unit.

The XML file will be auto-loaded onto the device (and deleted). The device is ready for use.

Channels Tab



This tab lists the channel frequency pairs. Channels can be enabled or disabled here. Refer to [Edit Channel Frequencies on page J-4](#) to learn how to add or edit frequencies.



WARNING! Do not add frequencies that are not applicable to your license.

Channel Switch Speed

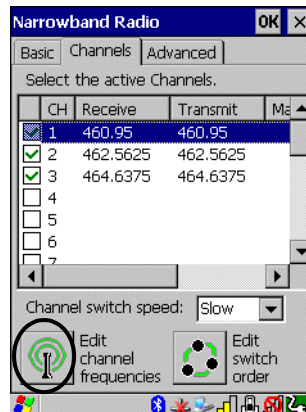
This parameter changes the threshold the hand-held uses to determine when communication quality with a base station is unacceptable. When this threshold is exceeded, the unit starts channel searching for a new base station.

Setting this parameter to *Slow* means a higher threshold – the hand-held is more tolerant of poor communication quality. When the channel quality of the hand-held radio drops below the percentage assigned in the *Advanced* tab under *Low CQ* (see [Low CQ \(Channel Quality\) on page J-7](#)), the unit monitors the channel quality for 15 time-out periods before searching for a new channel. If *Channel Switch Speed* is set to *Fast*, the current channel is only monitored for up to 2 time-out periods before channel switching begins.

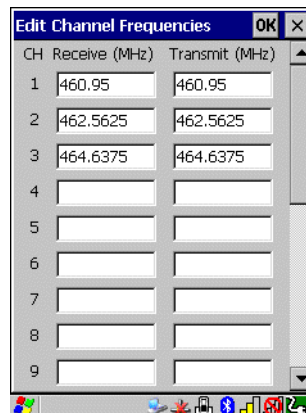


IMPORTANT *Fast* switch speed is most effective where coverage areas are largely overlapping. If the coverage areas barely overlap, have dead spots, or if the hand-held frequently operates on the fringe of coverage, this parameter should be set to **Slow**.

Edit Channel Frequencies

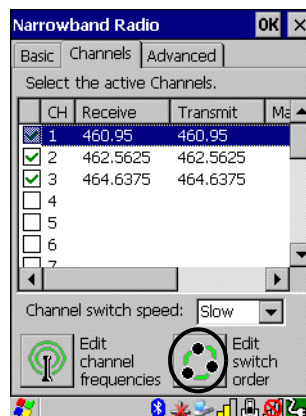


- Click on the **Edit channel frequencies** button in the bottom-left corner of the tab to display the *Edit* dialog box.



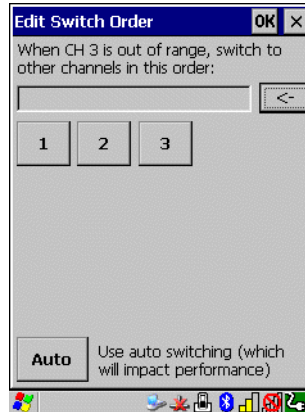
- In the appropriate channel field, type the **Receive** and **Transmit** frequency for the channel, and click **OK**. You can either edit an existing frequency if required or assign new frequencies for a new channel, keeping in mind that you can only use frequency pairs assigned to your license.

Edit Switch Order



When a channel is out of range, the *Edit switch order* screen allows you to indicate the order in which channels will switch. Edit switch order (the button) is rarely used. It is used when the order of channel switching needs to be tightly controlled. It is not recommended that *Edit switch order* be used without a clear understanding of how to order the channel sequences for optimum performance.

- Highlight the channel you want to edit in the *Channel* tab **before** clicking on the *Edit switch order* button.
- Next, tap on the **Edit switch order** button in the lower-right corner of the *Channel* tab to configure channel switching order.



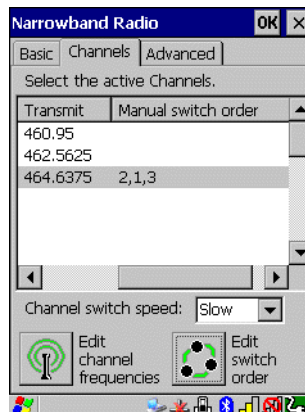
- Tap on the channel numbers in the order you want them to switch – in the sample screen for example, you can click on channels 1, 2 and 3 in the order you want the channels to switch.
- Click on **OK**.



IMPORTANT Clicking on *Auto* clears the manually selected channel order.

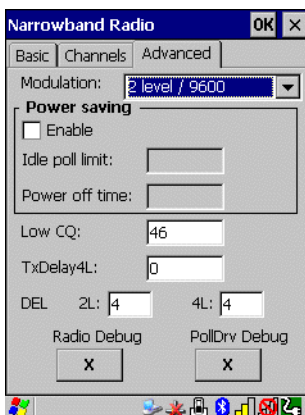
The manually ordered channels are listed in the *Manual switch order* column in the *Channels* tab.

- Scroll to the right to display the manually ordered channels.



If communication quality falls below the channel quality percentage specified in the *Advanced* tab under *Low CQ* (see [Low CQ \(Channel Quality\) on page J-7](#)), only the channels entered in the *Manual switch order* are considered for channel switching. The channel search is carried out in the order in which the channels were selected.

Advanced Tab

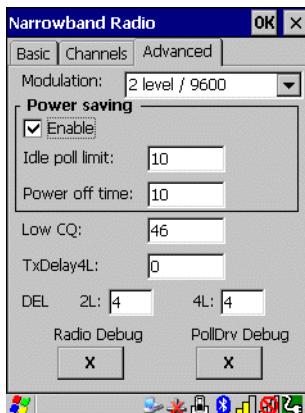


Modulation

The drop-down *Modulation* menu allows you to choose a modulation/ baud rate. The modulation/ baud rate regulates the rate at which data is sent and how the data will be encoded. The value assigned to this parameter must be identical to the corresponding parameter in the base station. Modulation is limited by the radio capabilities and the site license. Refer to [Tune Poll Settings on page J-7](#) for additional details about choosing an option and assigning poll timing parameters.

Power Saving

When *Power Saving* is enabled, the *Idle poll limit* and *Power off time* parameter values can be adjusted.



Idle Poll Limit

This parameter determines how many transmit opportunities – base station polls with available response windows – must be consecutively skipped before the Omnii places the radio into power-down mode for power saving. The allowable range for this parameter is from 1 to 200. The default value is 10. Lower values cause the vehicle-mount to enter power saving mode quickly, extending battery life but reducing Omnii responsiveness. Higher values increase responsiveness but decrease battery life

Power Off Time

This parameter determines the amount of time (in seconds) the hand-held radio stays in power-down mode when a power down period has been initiated. *Power Off Time* is only used when the *Enable Power Saving* parameter is enabled.

Low CQ (Channel Quality)

This parameter is used to set the percent below which channel quality is deemed to be low.

TXDely4L, DEL: 2L and DEL: 4L

The values assigned to these parameter allow for optimized polling. The table below represent the best values depending on your radio type.

Digital Radio Settings	TRX73xx/RA1001/TRX7370 Legacy System	RA1001/RA1202/TRX7370 Modern System
#: of DELs – 2-level	10	4
#: of DELs – 4-level:	6	4
TXDelay - 4-level	11	0

Radio Debug

This parameter should never be tested without direction from authorized personnel.

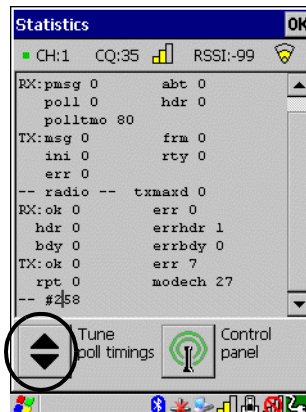
PollDrv Debug

This parameter should never be tested without direction from authorized personnel.

Tune Poll Settings

The poll timing parameters assigned here are dependent on the value assigned to the Modulation/Baud Rate parameter (see [Modulation on page J-6](#)).

- Tap on the **Tune Poll Timings** button in the bottom-left corner of the *Statistics* screen to display the options.



The table following lists the appropriate values for each parameter.

Modulation/ Baud Rate	Sync Delay	Window Delay	Poll Timeout
4 Level / 19200	15	23	22
4 Level / 9600	27	27	25
2 Level / 9600	21	20	22
2 Level / 4800	25	28	37



IMPORTANT These parameters should not be changed without a clear understanding of radio protocol timing.

Statistics Screen

- Tap on the **Narrowband** radio icon in the taskbar to display the *Statistics* screen.

These statistics are updated every second while the dialog box is displayed.

The following table provides a brief description of these protocol and radio statistics.

Protocol Statistics	Description
Rx: psmg:	Number of received polls with attached message
Rx: abt:	Number of received radio link aborts
Rx: poll:	Number of received polls
Rx: hdr	Number of received headers
Rx: polltmo	Number of poll timeouts
Tx: msg:	Number of transmitted messages, complete application messages
Tx: frm	Number of transmitted frames
Tx: ini	Number of transmitted radio link initialization messages
Tx: rty	Number of transmitted retries
Tx: err	Number of transmitted errors

Radio Statistics	Description
Txmaxd	Maximum delay in transmitted messages
Tx: err	Number of transmit errors
Rx: err	Received errors
Tx: ok	Messages successfully transmitted
Modtech	Number of complete mode changes
Rx: hdr	Received poll headers without CRC error
Rx: bdy	Received poll body without CRC error
Rx: errhdr	Received poll header with CRC error or non-basestation message
Rx: errbdy	Received poll body with CRC error

INDEX

Numerics

- 1D internal scanner 2-14, 2-15
- 2D imager 2-16
- 34-key freezer keyboard F-4
- 36-key keyboard
 - alpha keys, accessing 2-7
 - uppercase letters, creating 2-7
- 58-key freezer keyboard F-4
- 7545 freezer models See Omnii XT15f F-1
- 7545 Model See Omnii E-1
- 802.11a/b/g/n radio E-7
 - configuring 3-76–3-85

A

- accessories
 - carrying case 4-4
 - desktop docking stations 4-9
 - Ethernet cable 4-15
 - hand strap 4-2, 4-3
 - holster, hard shell 4-4
 - pistol grip 4-1
 - quad docking station 4-13
 - vehicle cradle 4-16
- Active Remote Configuration (A.R.C.) 3-85
- AC Wall adaptor 4-6
- Administrator Password (Kiosk settings) 3-45
- AGPS (Assisted Global Positioning System) 3-25
- Aim Duration C-4
- aiming dot, duration of C-3, C-9
- ALT Key 2-4
- appearance (display colour scheme) 3-20
- appending to barcodes
 - characters 3-53
- App Launch Keys 3-6
- approvals, Omnii (including scanner) E-3

- arrow keys
 - moving the cursor 2-4
- AT Terminal, WWAN G-13
- audio indicators
 - adjusting volume 2-12
 - description of beep conditions 2-12
- AutoRestore 3-67

B

- background, choosing for Desktop 3-48
- background image (display scheme) 3-19
- backlight
 - display 3-20
 - intensity 2-8
- Backspace (DEL Key) 2-4
- backup Profile (Total Recall)
 - AutoRestore 3-67
 - Clone to USB 3-67
 - creating 3-64
 - Restore 3-67
 - restoring 3-66
 - Upload to A.R.C. 3-67
 - viewing 3-66
- backups, managing profiles 3-66
- Bad Scan Vibrates 3-54
- barcode
 - appending to 3-53
 - decodes required C-9
 - decoding edge-to-edge C-9
 - Decoding symbology predefined presets B-2
 - displaying type of barcode 3-53
 - parameters 3-51, C-1
 - Security C-9
 - Translation tab 3-54
- barcode reader
 - integrated scanner, operation of 2-13

- bar code symbologies
 - color camera B-17, B-18
 - imager..... B-17
 - battery..... 2-1–2-2
 - Advanced dialog box 3-42
 - Battery Health dialog box 3-43
 - Built-in Devices dialog box 3-42
 - capacity dialog box..... 3-40
 - charger safety instructions 4-7
 - charging 1-4, 2-2, 4-7
 - charging with desktop docking station 4-11
 - contact pinout A-4
 - estimated battery backup time..... 3-41
 - installing 1-5
 - power saving suspend dialog box..... 3-40
 - replacing..... 1-4
 - specifications..... E-3
 - specifications, Arctic ST3002..... F-6
 - ST3006 6-slot battery charger..... 4-23–4-25
 - Suspend Threshold dialog box 3-41
 - swap time 2-1
 - taskbar icon 2-11
 - Baud, port replicator 3-57
 - beeper
 - adjusting volume 2-12
 - description of beep conditions..... 2-12
 - Bi-Direction Redundancy C-5
 - Bluetooth* radio
 - devices, pairing 3-10
 - GPRS setup..... 3-14
 - ISM band 3-7
 - radio configuration 3-7–3-17
 - setup 3-7
 - specifications..... E-8
 - Boot to BooSt 1-7
 - Bright For (backlight) 3-20
- C**
- cable diagrams A-1
 - calibrating touchscreen..... 2-8, 3-62
 - Call Lists..... 3-72
 - Call Management..... 3-72
 - camera
 - specifications..... E-2
 - camera settings 3-26
 - case, carrying 4-4
 - Certificates..... 3-17
 - chargers 4-7
 - desktop docking station..... 4-9
 - indicators 4-11
 - installing at a site 4-8
 - operation..... 4-11
 - operator controls..... 4-8
 - safety instructions..... 4-7
 - Snap Modules 4-5
 - ST4004 operator controls..... 4-14
 - ST4004 quad docking station 4-13
 - troubleshooting 4-16
 - Cinterion
 - MC75i GSM/GPRS/EDGE radio specifications... E-4
 - PH8-P GSM/GPRS/EDGE/UMTS/HSPA+ radio specifications E-5
 - clean start 1-6
 - Click Data (scanner double-click) 3-53
 - Click Time (scanner double-click)..... 3-53
 - clone (Total Recall) 3-65
 - Clone to USB 3-67
 - Codepage 3-54
 - Command Prompt 2-21
 - communication
 - Ethernet connection (quad docking station) 4-15
 - Compass 3-17
 - computer hardware properties 3-63
 - conference calls, creating 3-73
 - Continuous Scan Mode..... C-7
 - Control Panel
 - accessing 3-2
 - App Launch Keys icon..... 3-6
 - applications list 3-3
 - Display Properties 3-19
 - keyboard properties 3-28
 - power management properties 3-40
 - Predefined presets B-2
 - Quick Defrost..... F-7
 - stylus properties 3-62
 - Control Panel Settings (Kiosk settings)..... 3-48
 - Country Options (Wi-Fi Config)..... 3-84
 - cradle *See also* vehicle cradle 4-16
 - CTRL Key 2-4
 - Custom preset..... B-1
 - cycle tasks..... 2-22
- D**
- Data Bits, port replicator..... 3-57
 - decoded (internal) scanner parameters..... C-3
 - decoded Intermec (ISCP) parameters C-6
 - decoded scanners..... C-8
 - decoding barcodes
 - decodes required..... C-9
 - Security C-9
 - DEL (Backspace) Key..... 2-4
 - Delete Char Set ECIs..... C-5
 - Demo
 - Scanner..... 2-21
 - Signature 2-21
 - Sound 2-21

Desktop background, choosing 3-48
 desktop connection, remote 3-50
 desktop docking station *See docking station, desktop* . 4-9
 desktop shell appearance 2-25
 desktop themes 3-47
 diagnostics, WWAN network G-11
 dialer (phone), using 1-8, 3-70
 dialing, phone number 1-8, 3-70, 3-71
 Diff Read Timeout C-7
 Dim For (backlight) 3-21
 dismantling partitions 3-60
 display
 appearance (colour scheme) 3-20
 background (image) 3-19
 backlight 3-20
 backlight, adjusting 2-8
 Display Properties 3-19
 Display Properties 3-19
 docking device icons 2-12
 docking station 4-7–4-8
 desktop 4-9–4-13
 cleaning 4-12
 indicators 4-11
 operation 4-11
 operator controls 4-8
 troubleshooting 4-12
 installation at site 4-8
 ST4004, quad
 operator controls 4-13, 4-14
 uploading data using 3-18
 docking stations
 quad docking station (ST4004) 4-13
 Dot Time C-3, C-9
 double-click
 appending characters to a decoded barcode . . . 3-53
 scanner trigger 3-53
 Double-Click, Manage Triggers menu 3-37
 Double-Tap (stylus settings) 3-62
 Dr. Debug 3-21
 heater control log 3-22
 Driver Mode configuration, WWAN G-10

E

EA11 2D Imager specifications D-7
 EA20X scanner specifications D-8
 ECI Decoder C-6
 Error Reporting 3-23
 ESC Key 2-4
 Ethernet, connecting with docking station 4-15
 EV15 1D imager scanner specifications D-6

F

formatting
 entire memory card 3-59
 partitions 3-61
 freezer keyboards F-4
 freezer models, Quick Defrost F-7
 FTP Server, Registry Editor 3-69
 Function Keys
 36-key keyboard 2-6
 59-key keyboard 2-6

G

gang charger 4-23–4-25
 Glossy surface, Predefined preset B-3
 Good Scan Beep 3-53
 Good Scan Vibrates 3-54
 GPRS (*Bluetooth*) 3-14
 GPS Settings (built-in profiles) 3-23
 Group, preset B-1
 GSM/EDGE G-1
 GSM/GPRS G-1–G-14
 GSM/GPRS/EDGE radio specifications E-5

H

hand strap 4-2
 hand strap, installing 4-3
 Hard Reset 1-7
 hard reset 1-6
 headsets, pairing (*Bluetooth*) 3-10
 heater components, System Properties F-10
 heater control
 Dr. Debug log 3-22
 Heater Info (Heater Settings) F-8
 Heater Settings
 Heater Info F-8
 HHP 5080 imager specifications D-9
 holster, hard shell 4-4

I

I 2 of 5 Short Code C-9
 Identifier, Default preset group (imaging software) . . . B-2
 imager
 EV15 specifications D-6
 HHP 5080 specifications D-9
 SE4600LR F-12
 two dimensional (2D) imager 2-16
 Imager & Camera settings 3-26
 Imagers applet B-1
 Import/Export to File (Kiosk settings) 3-49
 indicators

- 802.11 radio signal quality 2-11
 - battery 2-11
 - docking devices 2-12
 - LED functions 2-9
 - modifier keys 2-11
 - onscreen 2-10
 - scanner message 2-14, 2-15, 2-16
 - task bar 2-19
 - WWAN radio signal quality 2-11
 - Ingenuity (Kiosk Shell), settings 3-47
 - input panel (Control Panel) 3-3
 - installation
 - hand strap 4-3
 - pistol grip 4-1
 - Snap Modules 4-5
 - vehicle cradle 4-16
 - integrated scanner option 2-13
 - Intensity (7035 backlighting) 3-20, 3-29
 - Internet Explorer 2-21
 - IPv6 3-69
 - ISM band, *Bluetooth* radio 3-7
- K**
- keyboard
 - 36-key keyboard 2-7
 - alpha keys, 36-key keyboard 2-7
 - backlight 3-29
 - key repeat 3-28, 3-29
 - One Shot Mode 3-30
 - onscreen, Microsoft SIP 3-27
 - Properties 3-28
 - keyboard keys 2-2
 - ALT 2-4
 - arrow keys 2-4
 - Backspace 2-4
 - CTRL 2-4
 - DEL 2-4
 - ESC 2-4
 - function keys, accessing 2-6
 - macro keys 2-6, 3-31
 - modifiers 2-4
 - navigating using the keyboard 2-17
 - SCAN 2-4
 - SHIFT 2-3, 2-4
 - SPACE 2-4
 - Tab 2-4
 - keyboard keys, freezer F-4
 - Key Repeat tab 3-29
 - Kiosk menus 3-44
 - Kiosk settings
 - Administrator Password 3-45
 - Control Panel Settings 3-48
 - Import/Export to File 3-49
 - Restrictions 3-48
 - Shell Settings 3-46
 - Kiosk Shell 2-25
- L**
- Laser On Time C-3, C-6
 - LED
 - charge 2-9
 - functions 2-9
 - scan 2-10
 - troubleshooting quad dock ST4004 4-16
 - Linear
 - Predefined preset B-2
 - Linear and PDF
 - Predefined preset B-2
 - Linear Security Level C-4
 - Lithium-ion batteries
 - installing 1-5
 - removing 1-5
 - Lock Sequence 3-35
 - Low light
 - Predefined preset B-3
 - Low light near
 - Predefined preset B-3
 - Low power
 - Predefined preset B-3
 - Low Power Timeout C-4, C-7
- M**
- Macro keys
 - 36-key keyboard 2-6
 - 59-key keyboard 2-6
 - accessing 2-6
 - executing a macro 3-32
 - Macros menu, accessing 3-31
 - recording and saving 3-31
 - maintenance 2-27
 - Manage Triggers 3-36
 - Matrix
 - Predefined preset B-2
 - MC75i GSM/GPRS/EDGE radio specifications E-4
 - memory card
 - creating partitions 3-59
 - formatting entire 3-59
 - formatting partition 3-61
 - messages
 - Scan Indicator 3-53
 - scanner warning message 3-53
 - Scan Result 3-53
 - microphone adjustments 3-75
 - microphone gain adjustment 3-38
 - microSD Card, inserting 2-12

- Microsoft® ActiveSync® 3-18
 - Microsoft Soft Input Panel (SIP) 3-27
 - Minimum Cancel Time C-4, C-7
 - Mobile Device Center (Windows), setting up 3-19
 - Model RA2070 radio E-7
 - modem information, WWAN G-11
 - modem using VPN clients G-6
 - modifier keys 2-4
 - locking 2-5
 - One Shot Mode 3-30
 - unlocking 2-5
 - Motion, Predefined preset B-3
 - mounting partitions 3-61
 - Multiple Beep Tones 3-53
- N**
- Narrowband
 - statistics screen J-8
 - Narrowband radio setup J-1
 - network connection, monitoring 3-85
 - non-incendive Omnii XT15ni I-1
- O**
- Omnii
 - approvals E-3
 - model numbers xiii, F-1
 - specifications E-1
 - Omnii RT15 specifications E-1
 - Omnii XT15f
 - specifications F-1
 - Omnii XT15f, freezer model F-7
 - Omnii XT15ni (non-incendive) hand-held I-1
 - Omnii XT15 specifications E-1
 - On & Off button 1-5
 - one dimensional internal scanner 2-14, 2-15
 - One Shot Mode 3-30
 - ON For 3-30
 - onscreen keyboard, Soft Input Panel (SIP) 3-3, 3-27
 - Open TekTerm application 3-39
 - operating system properties 3-63
 - orientation, screen 3-58
- P**
- pairing *Bluetooth* devices 3-10
 - Parameter Scanning C-4, C-7
 - Parity, port replicator 3-57
 - partitions
 - creating 3-59
 - deleting 3-61
 - dismounting 3-60
 - formatting 3-61
 - management 3-60
 - mounting 3-61
 - PDF and linear
 - Predefined preset B-2
 - PH8-P GSM/GPRS/EDGE/UMTS/HSPA+ radio specifications E-5
 - phone
 - Services, setting up 3-74
 - Voicemail, setting up 3-74
 - phone, dialing 1-8, 3-70
 - Phonebook 3-73
 - phone number, dialing 1-8, 3-70, 3-71
 - picker cradle, installing cable 4-20
 - pinouts A-1
 - pistol grip, installing 4-1
 - pocket PC compatibility 3-39
 - port pinouts A-1
 - Port Replicator settings (COM5 and COM6)
 - Baud 3-57
 - Data Bits 3-57
 - Parity 3-57
 - Port B (COM6), Power 3-57
 - Stop Bits 3-57
 - Trigger On Sequence 3-58
 - ports
 - parameters 3-56
 - Postal
 - Predefined preset B-3
 - Power
 - Button 2-3
 - Properties 3-40
 - Source 3-40
 - to Port B (COM6) 3-57
 - Power Management Properties
 - Advanced 3-42
 - battery capacity 3-40
 - Battery Health 3-43
 - Built-in Devices 3-42
 - suspend, power saving 3-40
 - Suspend Threshold 3-41
 - Power Mode Decoded (Internal) Scanner C-4
 - Predefined preset B-1
 - All B-2
 - Glossy surface B-3
 - imaging software B-2
 - Linear B-2
 - Linear and PDF B-2
 - Low light B-3
 - Low light near B-3
 - Low power B-3
 - Matrix B-2
 - Motion B-3
 - Postal B-3
 - Prefix C-5

Preset (imaging software)	
Custom	B-1
Group	B-1
Predefined	B-1
Preset Group, Default identifier (imaging software)	B-2
Profile	
restoring backup	3-66
viewing backup	3-66
Programs	
Command Prompt	2-21
Internet Explorer	2-21
Remote Desktop Connection	2-21
Windows Explorer	2-21
protective case	4-4
punctuation marks, accessing (SHIFT Key)	2-3, 2-4

Q

Quick Defrost	F-7
Quick Defrost (heater settings)	F-7
Quick Defrost Settings	
Quick Defrost	F-7

R

radio	
802.11 signal quality	2-11
Bluetooth	3-7–3-17
specifications	
802.11a/b/g/n	E-7
Bluetooth	E-8
Cinterion PH8-P GSM/GPRS/EDGE/UMTS/ HSPA+ radio	E-5
MC75i GSM/GPRS/EDGE	E-4
WWAN signal quality	2-11
recalibrating touchscreen	2-8, 3-62
Registry Editor	3-68
Advanced Interface and Network	3-69
Remote Desktop Connection	2-21, 3-50
Repeat	
Delay (between key repeats)	3-29
menu (key repeat settings)	3-29
Rate (of key repeats)	3-29
resetting Omnii	
Boot to BooSt	1-7
clean start	1-6
Hard Reset	1-7
hard reset	1-6
warm reset	1-6
Restore Now	3-67
Restrictions (Kiosk settings)	3-48
Run (Start Menu)	2-24

S

safety instructions	
battery charger	4-7
scanner	2-13
safety warning, scanner	2-13
Same Read Timeout	C-7
Same Read Validate	C-7
Scan Data Format	C-5
Scan Indicator	3-53
SCAN Key	2-4
Scan Log File	3-54
Scan Mode	C-4
scanner	
Aim Duration	C-4
aiming (target) dot duration	C-3, C-9
aiming dot duration	C-4
appending data	3-53
Bad Scan Vibrates	3-54
barcode, appending data to	3-53
Bi-Direction Redundancy	C-5
Click Data (appending data)	3-53
Click Time (double-click)	3-53
Codepage	3-54
Continuous Scan Mode	C-7
decoded	C-8
decoded (internal)	C-3
decoded Intermec (ISCP)	C-6
Delete Char Set ECIs	C-5
Dot Time	C-3
double-click	3-53
EA11 2D Imager specifications	D-7
ECI Decoder	C-6
Good Scan Beep	3-53
Good Scan Vibrates	3-54
Laser On Time	C-3, C-6
Linear Security Level	C-4
Low Power Timeout	C-4, C-7
Minimum Cancel Time	C-4, C-7
Multiple Beep Tones	3-53
one dimensional (1D) internal scanner	2-14, 2-15
Parameter Scanning	C-4, C-7
ports parameters	3-56
Prefix	C-5
safety warnings	2-13
Scan Data Format	C-5
scan failure, codepage	3-54
Scan Indicator	3-53
Scan Log File	3-54
Scan Mode	C-4
Scan Result Time	3-53
SE 1224HP specifications	D-4
SE 1524 ER specifications	D-5
SE955 specifications	D-1

- SE965 specifications D-2
- Security C-9
- Short Code C-9
- Soft Scan Timeout 3-54
- specifications, internal D-1
- Suffix C-5
- target dot duration C-3, C-9
- techniques (scanning) 2-14
- Transmit Code 1D Char C-5
- troubleshooting tips 2-15
- Verify C-9
- warning message 3-53
- scanning
 - 1D internal 2-14, 2-15
 - appending characters 3-53
 - safety instructions 2-13
 - symbologies 3-51, C-1
 - Translations tab 3-54
- Scan Result 3-53
- Scan Result Time 3-53
- screen
 - stylus, using to navigate 2-17
 - touch pen, using 2-17
 - Windows Embedded CE, navigating 2-17
- Screen Rotation 3-58
- SE 1224HP specifications D-4
- SE 1524 ER specifications D-5
- SE955 specifications D-1
- SE965 specifications D-2
- Security C-9
- See Symbol* 2-5
- Services 3-74
- Set for AutoRestore 3-67
- Settings
 - Control Panel 2-23
 - Network and Dial-up connections 2-23
 - Run 2-23
 - Taskbar and Start Menu 2-23
- Shell Settings (Kiosk settings) 3-46
- SHIFT Key 2-3, 2-4
- Short Code C-9
- Shutdown
 - Suspend 2-24
- Shutdown (Start Menu) 2-24
- signal quality, 802.11 2-11
- signal quality, WWAN 2-11
- SIM card, inserting 2-12
- SIP (Soft Input Panel) 3-27
- SMS menu, WWAN G-13
- Snap Modules
 - pinouts A-2
 - ST4000 (power only) 4-5
 - ST4001 (USB Host/Client) 4-5, A-2
 - ST4005 (USB DE9M) 4-5, A-2
- SNTP, Registry Editor 3-70
- Soft Input Panel
 - Control Panel 3-3
 - Microsoft SIP 3-27
- Soft Scan Timeout 3-54
- sound settings 3-75
- SPACE Key 2-4
- specifications
 - camera E-2
 - EA20X scanner D-8
 - EV15 1D imager D-6
 - HHP 5080 imager D-9
 - Omnii Hand-Held Computer E-1
 - Omnii XT15f specifications F-1
 - scanner, internal D-1
 - Symbol SE4500 imager D-10
 - Symbol SE4600 imager F-12
- ST3002 Arctic battery specifications F-6
- ST4000 Snap Module 4-5
- ST4001 Snap Module 4-5, A-2
- ST4004 quad docking station 4-13
 - cleaning 4-15
 - Ethernet 4-15
 - troubleshooting 4-16
- ST4005 Snap Module 4-5, A-2
- Start Menu 2-20
 - cycle tasks 2-22
 - programs 2-21
 - Run 2-24
 - Settings 2-23
 - Shutdown 2-24
 - system tray 2-22
 - task manager 2-22
- Statistics screen J-8
- Stop Bits, port replicator 3-57
- stylus (touch pen), using 2-17
- Stylus Properties 3-62
 - Double-tap (stylus sensitivity) 3-62
- Suffix C-5
- Surface
 - Glossy B-3
- Suspend (Shutdown menu) 2-24
- Suspend Timeout 3-41
- swap time (for battery) 2-1
 - 2-5
- symbologies, barcode 3-51, C-1
 - displaying type of barcode 3-53
- Symbol SE4500 imager specifications D-10
- Symbol SE4600 imager specifications F-12
- Symbol Soft Input Panel (figure) 2-5
- System Properties 3-63
- System Properties, heater components F-10
- system tray 2-22

T

- Tab Key 2-4
- target dot, duration of C-3, C-9
- taskbar
 - onscreen indicators
 - 802.11 radio signal quality 2-11
 - AC power 2-11
 - battery 2-11
 - docking devices 2-12
 - modifier keys 2-11
 - WWAN radio signal quality 2-11
 - using 2-19
- task manager 2-22
- TCP/IP, configuring 3-82–3-83
- TCP IP, configuring 3-82–??
- themes, desktop 3-47
- Total Recall
 - AutoRestore Profile 3-67
 - backup, creating 3-64
 - backup Profile, restoring 3-66
 - clone, creating 3-65
 - Clone to USB 3-67
 - managing profiles 3-66
 - Restore Profile 3-67
 - Upload to A.R.C. 3-67
 - view Profile 3-66
- touch pen, using 2-17
- touchscreen
 - recalibration 2-8, 3-62
 - stylus, using 2-17
 - touch pen, using 2-17
- Translations parameters (barcodes) 3-54
- Transmit Code 1D Char. C-5
- trigger, double-click 3-53
- trigger mappings 3-36
- Trigger On Sequence, port replicator 3-58
- Trigger-Press Type, Manage Triggers menu 3-38
- triggers, configuring 3-36
- troubleshooting
 - ST40004 4-16
- troubleshooting tips (scanning) 2-15

U

- UMTS/HSPA+ radio specifications E-5
- Upload to A.R.C. 3-67
- Use Virtual Serial Port G-6

V

- vehicle cradle 4-16
 - powered pinouts A-3
- Verify C-9

Voice

- Call Lists 3-72
- Call Management 3-72
- conference calls 3-73
- dialing a number 3-71
- Phonebook 3-73
- phone dialer 1-8, 3-70
- phone options 1-8, 3-70
- Services 3-74
- voicemail, setting up 3-74
- Volume & Sounds Properties 3-75

W

- warm reset 1-6
- warnings 3-53
- Wi-Fi Config. 3-76, 3-76–3-81
 - Advanced tab
 - Country options 3-84
 - Configure tab 3-77
 - Status tab 3-77
 - Wireless Zero Config 3-84
- WiFiConnect A.R.C. 3-85
- Windows® Start Menu *See* Start Menu 2-20
- Windows 7 3-18
- Windows Embedded CE, navigating in 2-17
- Windows Explorer 2-21
- Windows Mobile Device Center, setting up 3-19
- Windows Vista® 3-18
- Wireless WAN G-1–G-14
 - AT Terminal G-13
 - Drive Mode configuration G-10
 - modem information G-11
 - network diagnostics G-11
 - SMS Menu G-13
 - Use Virtual Serial Port G-6
 - Voice G-14
- Wireless Zero Config 3-84, H-1–H-6

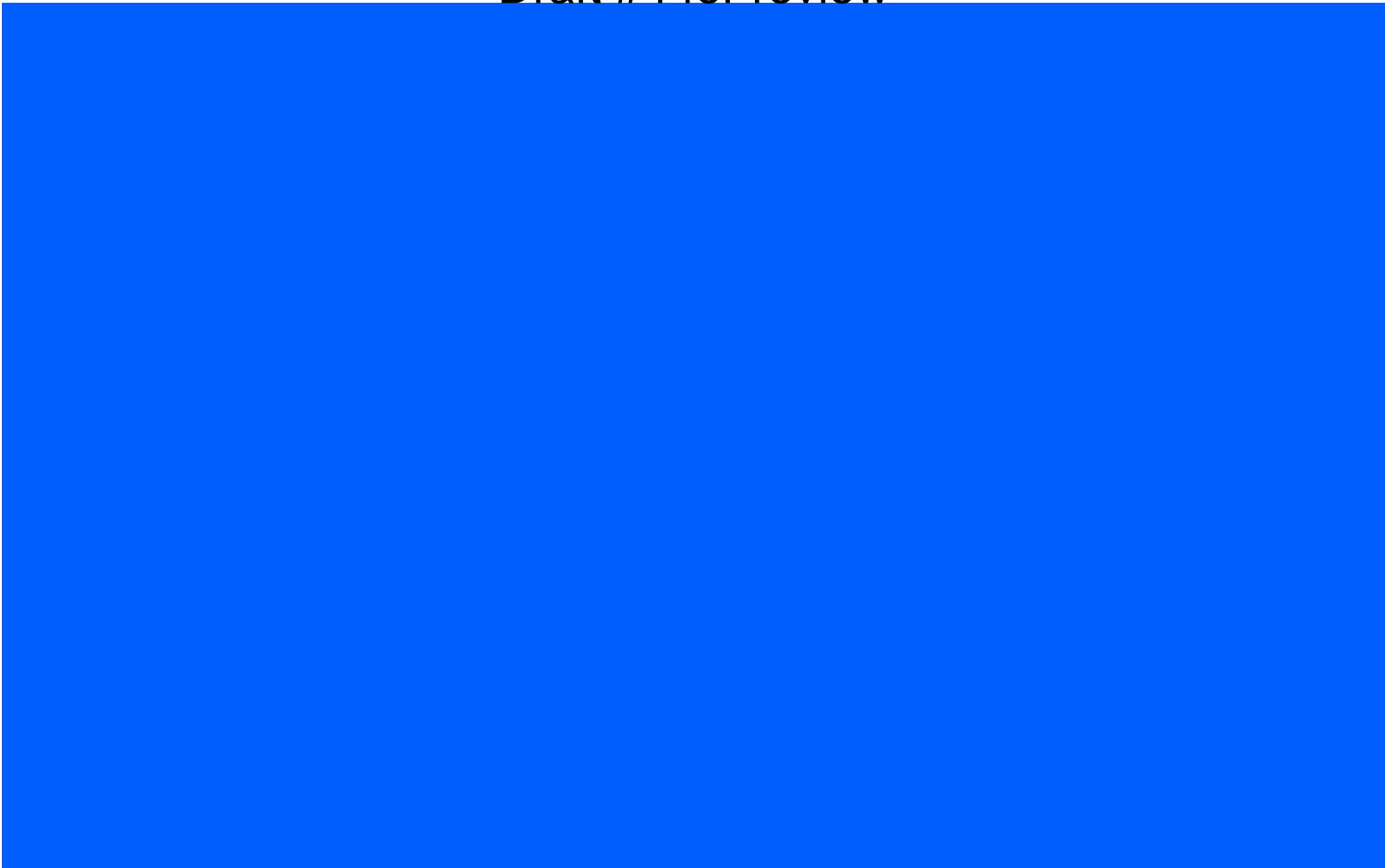
X

- XT15ni (non-incendive) hand-held I-1

Z

- Zero Config, Wireless 3-84

Draft #4 for review



All other trademarks are the property of their respective owners.

© 2014 All Rights Reserved.

