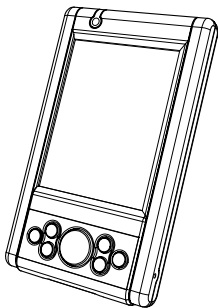


OLYMPUS[®]

Quick Reference Guide

R1000 Series



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Introduction

Thank you for your purchase of R1000 terminal. This guide describes how to set up and use the terminal. The term R1000 refers to the entire batch.

Model Configuration

This handy terminal has a following lineup.

- R1000-xx10-yyy: This is a basic handy terminal of the series with color display and Bluetooth radio function.
- R1000-xx00-yyy: This is a batch-type handy terminal with color display.

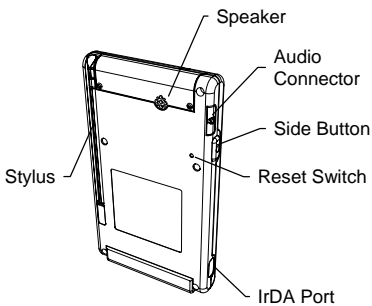
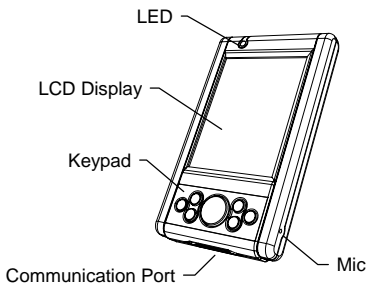
Note: “xx” shows memory configuration and “yy” shows software configuration.

Accessories

Each R1000 operates on a 1500 mAh Lithium Polymer built-in battery. The following are the accessories included together with your purchase:

- AC Adapter
- Cable Sync and Charger
- Stylus

Parts of the R1000 Series



Getting Started

Before you can use your R1000, perform these basic setup procedures:

- Charge the battery
- Start the R1000

Charging the Battery

Before using your R1000 for the first time, charge the built-in Lithium-Polymer battery for about 3 hours using the Cable Sync and Charger with AC Adapter attached. Follow these same procedures to recharge the battery.

When the battery is fully used up, charge within 72 hours to prevent any data loss.

- Connect the AC Adapter to the Cable Sync and Charger.
- Insert the Cable Sync and Charger to the Communication Port found at the bottom of the R1000.
- Plug the AC Adapter into a wall outlet and turn on a wall outlet, if applicable.
- The Terminal Status LED turns GREEN to indicate charging.
- The LED will turn RED after the battery is fully charged. This will take approximately 3 hours.

Starting the R1000

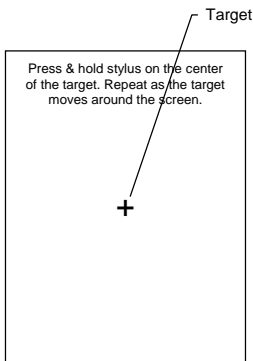
Press the Power Button to turn the R1000 on or standby. **In the case where the Power button is pressed for the first time after hard reset,** the terminal initializes its unique Flash File system, the booting splash screen will be displayed for about 10 seconds.

Aligning the Screen

Remove the Stylus from its storage silo on the back of the R1000. To align your R1000, the cursor on the touch screen needs to be aligned with the tip of your Stylus.

Windows CE Model:

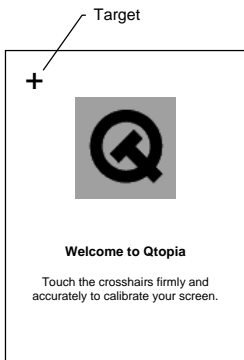
- Tap and hold the center of each target that appears on the screen with the tip of the Stylus.
- Tap anywhere on the screen to finish to the setting.



Windows CE alignment screen

Linux Model:

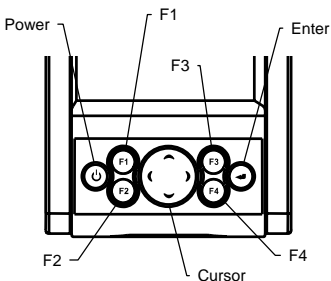
- When the Welcome screen appears, tap anywhere on the screen to continue to the align screen.
- Tap the center of each target that appears on the screen with the tip of the Stylus.
- Follow the on-screen instructions, which allow you to set the language, your city and time zone.



Linux alignment screen

Note: The process will repeat if it detects an inaccuracy. These screens also appear every time you perform a hard reset.

Using the Keypad and Side Button



Windows CE Model:

Key	Action
Power	Press Power to either set the PDA to standby or ON mode.
F1	Press F1 to start Word Pad.
F2	Press F2 to start Internet Explorer.
F3	Press F3 to start Media Player.
F4	Press F4 to display Inbox.
Enter	Press Enter after entering data or a command.
Cursor	Press cursor keys to move the cursor left, right, up and down on the screen.
Side	Press Side Button to launch

Button	Bluetooth application.
--------	------------------------

Linux Model:

Key	Action
Power	Press Power to either set the PDA to standby or ON mode.
F1	Press F1 to start Media Player.
F2	Press F2 to display the Launcher Screen.
F3	Press F3 to display Calendar.
F4	Press F4 to display Contacts.
Enter	Press Enter after entering data or a command.
Cursor	Press cursor keys to move the cursor left, right, up and down on the screen.
Side Button	Press Side Button to start Voice Recorder.

Using the Stylus

The Stylus selects items and enters information. The Stylus functions as a mouse.

Windows CE Model:

- Tap: Touch the screen once with the Stylus to select an item or option.
- Double-Tap: Touch the screen twice with the Stylus to open an item.
- Drag: Hold the Stylus on the screen and drag across the screen to select text and messages. Drag in a list to select multiple items.
- Tap-and-Hold: Tap and hold the Stylus on an item to see the available actions.

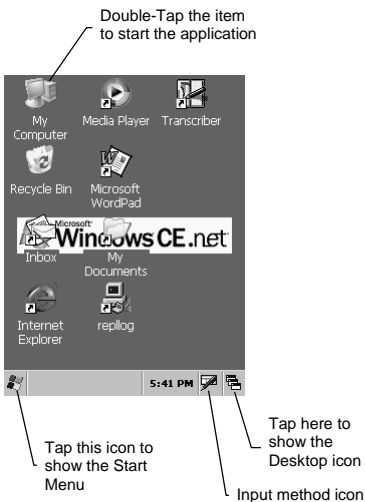
Linux Model:

- Tap: Touch the screen once with the Stylus to open an item and select an option.
- Tap-and-Hold: Tap and hold the Stylus on an item to see the Properties.

Initiating the Screen

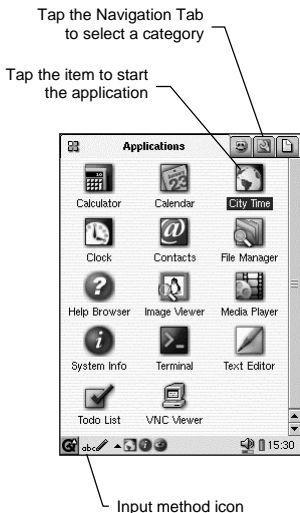
Windows CE Model:

When you turn on your terminal, the Desktop screen appears. You can also display it by tapping the Desktop icon at the lower right of the screen. On the Desktop screen, you can see the programs. You can start the programs by tapping on the Start Menu.



Linux Model:

When you turn on your terminal, the Launcher screen appears. You can also display it by pressing F1 key. On the Launcher screen, you can see the following programs.



Input Methods

Windows CE Model:

Tap the Input method icon to pop up and hide the Software Keyboard.

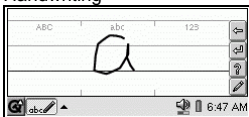
Keyboard



Linux Model:

By default, the Handwriting input method icon appears at the bottom left of screen. Tap the triangle to the right of the input method icon to pop up a list of input methods, e.g. Handwriting, Pickboard, Keyboard and Unicode. Tap the input method you prefer. The icon will change to reflect your choice. Tapping the input method icon alternately pops-up the input area and hides the input area.

Handwriting



Pickboard



Keyboard



Unicode



Turn on and off the Backlights

Press and hold the Power Key to turn on and off the backlight for both the LCD Display and the Keypad.

To turn off the backlights, press and hold the Power Key. This will activate the Keypad backlight to turn off first followed by the Display backlight.

To turn on the backlights again when both LCD Display and Keypad backlights are in the off-mode, press and hold the Power Key.

Using the Headset

To use the Headset, plug the Headset Jack into the audio connector on the side of the terminal.

Resetting Your R1000 Terminal

If your R1000 terminal stops responding to input, reset it.

Performing a Soft Reset

Push the Reset Switch with a Stylus gently to perform a soft reset. A soft reset restarts your R1000 terminal and saves all stored records and entries.

Caution: Files that remain open during a soft reset may not be stored / saved. DO NOT perform a soft reset if the terminal is suspended. Press the Power Button to wake the terminal; if the terminal does not turn on, perform soft reset.

Note: In case password setting is applied to Windows CE model, press F2 and Enter button simultaneously to show the Software Keyboard.

Performing a Hard Reset

A hard reset restarts your R1000 terminal, but erases all stored records and entries.

Note: You can restore any data previously synchronized with your computer during the next ActiveSync operation.

To perform a hard reset on the terminal:

- While holding the Power Button, gently push the Reset Switch with a Stylus.
- Hold for about 5 seconds.
- As the terminal reboots, the booting splash screen displays for about 10 seconds.

- Realign the screen.

Note: With a hard reset, Formats, Preferences, and other settings are restored to their factory default settings.

Host Communications

The R1000 series terminal can communicate with a host PC through its communication port using the Cable Sync and Charger.

Refer to www.olympus-ost.com for software download.

Using the Cable Sync and Charger

To communicate through the Cable Sync and Charger:

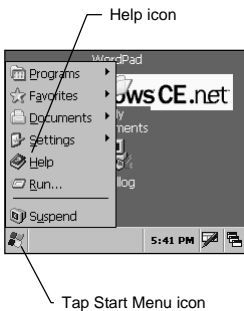
- Ensure all connections between the Cable Sync and Charger and the host computer are secure.
- Power on the host computer and the terminal.
- Plug the Cable Sync and Charger to the Serial Port on the terminal.
- Begin host communications as specified by your application.

Using Online Help

The online help is installed as a default. You can get more information about both operating systems from there.

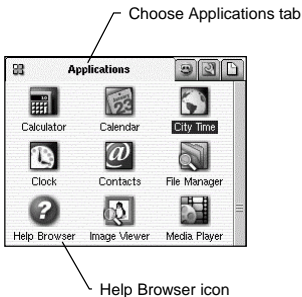
Windows CE Model:

To use online help, show Start Menu icon and tap Help icon.



Linux Model:

To use online help, select Applications tab at the top of the screen and tap Help Browser icon.



Maintaining the R1000

To maintain your R1000 in good working condition:

- Do not scratch the screen. Use the supplied Stylus or plastic-tipped pens intended for use with a touch-sensitive screen. Never use a pen or pencil or other sharp object on the screen.
- Although your R1000 is water and dust resistant, do not expose it to rain or moisture for an extended period of time. Treat your R1000 as you would for a pocket calculator or other electronic instrument.
- The touch-sensitive screen of your R1000 contains glass. Do not drop your R1000 or subject it to a strong impact.
- Protect your R1000 from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep away from heat sources.
- Do not store or use your R1000 in any location that is extremely dusty, damp or wet.
- If the surface of the R1000 screen becomes soiled, clean it with a soft cloth moistened with a diluted window-cleansing solution.

Troubleshooting

Problem	Cause	Solution
R1000 does not turn on.	Lithium-Polymer battery not charged.	Charge the Lithium-Polymer Battery in the R1000.
	System crash.	Perform a hard reset.
Rechargeable Lithium-Polymer battery did not charge.	Loose connections.	Check the connection on your R1000 and wall outlet.
	Battery failed.	Perform a hard reset.
Cannot see characters on display.	R1000 not powered on.	Press the Power Button.
Fail to communicate using IrDA.	Distance from the other device is more than 1 meter.	Bring the terminal closer to the device and attempt communication again.
	Obstruction interfered with communication.	Check the path to ensure no objects obstruct the way.
	Devices too close together.	Place at least 1 inch apart.

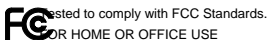
	Inappropriate room lighting.	Adjust room lighting or move to a different location.
Problem	Cause	Solution
During data communication, no data was transmitted, or transmitted data was incomplete.	Cable Sync and Charger unplugged from terminal or from host computer during communication.	Ensure connections and re-transmit.
	Incorrect cable configuration.	See your System Administrator.
	Communication software was incorrectly installed or configured.	Download setup program from www.olympus-ost.com and perform setup again.
No sound is audible.	Volume setting is low or turned off.	Check the System Volume slider in the Sounds & Reminders properties dialog box to make sure the volume is not turned down.

R1000 turns off itself.	R1000 is inactive.	Your R1000 turns off after a period of inactive interaction. This period can be set from 1 to 5 minutes, in 1-minute interval. Check the Power dialog box and change the setting if you need a longer delay before the automatic shut off feature activates.
Problem	Cause	Solution
R1000 does not recognize my handwriting.	Character strokes written incorrectly with the stylus.	Refer to the Block Recognizer.
Tapping the screen buttons or icons does not activate the corresponding feature.	LCD screen does not be aligned correctly.	Align the screen. Choose Align Screen from System tab.
A message appears stating that your R1000 terminal memory is full	Too many files stored on the terminal.	Delete unused memos and records. You can save these records on your computer.
	Memory allocation too low.	Adjust memory allocation.

	Too many applications installed on terminal.	If you have installed additional applications on your R1000, remove them to recover memory.
When receiving beamed data, an out of memory message appears.	Not enough free memory available for receiving data.	Your R1000 terminal requires at least twice the memory available as the data you are receiving.

Regulatory and Warning Information

Radio Frequency Interface Requirements



Note: This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If the equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following 2 conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

Radio Frequency Interference Requirements - Canada

This device complies with RSS210 of Industry & Science Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

The term "IC" before the radio certification only signifies that Industry Canada technical specifications were met.

Bluetooth Regulatory Information

FHSS Descriptions

1. Output Power and Channel Separation of a Bluetooth Device in the Different Operating Modes

The different operating modes (data-mode, acquisition-mode) of a Bluetooth device don't influence the output power and the channel spacing. There is only one transmitter, which is driven by identical input parameters concerning these two parameters. Only a different hopping sequence will be used. For this reason, the RF parameters in one op-mode are sufficient.

2. Frequency Range of a Bluetooth Device

The maximum frequency of the device is 2402MHz - 2480 MHz. This is according the Bluetooth Core Specification V 1.1.

3. Co-Ordination of the Hopping Sequence in Data Mode to Avoid Simultaneous Occupancy by Multiple Transmitters

Bluetooth units, which want to communicate with other units, must be organized in a structure called piconet. This piconet consist of maximum 8 Bluetooth units. One unit is the master the other seven are the slaves. The master co-ordinates frequency occupation in this piconet for all units. As the master hop sequence is derived from it's BD address which is unique for every Bluetooth device, additional masters intending to establish new piconets will always use different hop sequences.

4. Example of a Hopping Sequence in Data Mode: Example of a 79 hopping sequence in data mode:

40, 21, 44, 23, 42, 53, 46, 55, 48, 33, 52, 35, 50, 65, 54, 67, 56, 37, 60, 39, 58, 69, 62, 71, 64, 25, 68, 27, 66, 57, 70, 59, 72, 29, 76, 31, 74, 61, 78, 63, 01, 41, 05, 43, 03, 73, 07, 75, 09, 45, 13, 47, 11, 77, 15, 00, 64, 49, 66, 53, 68, 02, 70, 06, 01, 51, 03, 55, 05, 04

5. Equally Average Use of Frequencies in Data Mode and Short Transmissions

The generation of the hopping sequence in connection mode depends essentially on two input values:

1. LAP/UAP of the master of the connection
2. Internal master clock

The LAP (lower address part) is the 24 LSB's of the 48 BD-ADDRESS. The BD ADDRESS is an unambiguous number of every Bluetooth unit. The UAP (upper address part) are the 24 MSB's of the 48 BD-ADDRESS. The internal clock of a Bluetooth unit is derived from a free running clock, which is never adjusted and is never turned off. For synchronization with other units, only the offsets are used. It has no relation to the time of the day. Its resolution is at least half the RX/TX slot length of 312.5µs. The clock has a cycle of about one day (23h30). In most case it is implemented as a 28-bit

counter. For the deriving of the hopping sequence the entire LAP (24 bits), 4 LSB's (4 bits) (Input 1) and the 27 MSB's of the clock (Input 2) are used. With this input values different mathematical procedures (permutations, additions, XOR-operations) are performed to generate the sequence. This will be done at the beginning of every new transmission.

Regarding short transmissions, the Bluetooth system has the following behavior:

The first connection between the two devices is established, a hopping sequence is generated. For transmitting the wanted data, the complete hopping sequence is not used and the connection ends. The second connection will be established. A new hopping sequence is generated. Due to the fact that the Bluetooth clock has a different value, because the period between the two transmission is longer (and it cannot be shorter) than the minimum resolution of the clock (312.5 μ s). The hopping sequence will always differ from the first one.

6. Receiver Input Bandwidth, Synchronization and Repeated Single or Multiple Packets

The input bandwidth of the receiver is 1 MHz. In every connection, one Bluetooth device is the master and the other one is the slave. The master determines the hopping sequence (see section 5). The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection (e.g. single or multi-slot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing is according to the packet type of the connection. Also, the slave of the connection uses these settings. Repeating of a packet has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means, a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.

7. Dwell Time in Data Mode

The dwell time of 0.3797s within a 30 seconds period in data mode is independent from the packet type (packet length). The calculation for a 30 seconds period is as follows:

Dwell time = time slot length * hop rate / number of hopping channels
*30s

Example for a DH1 packet (with a maximum length of one time slot)
Dwell time = 625 μ s * 1600 1/s / 79 * 30s = 0.3797s (in a 30s period)

For multi-slot packet the hopping is reduced according to the length of the packet.

Example for a DH5 packet (with a maximum length of five time slots)

Dwell time = 5 * 625 μ s * 1600 * 1/5 * 1/s / 79 * 30s = 0.3797s (in a 30s period)

This is according to the Bluetooth Core Specification V 1.1 for all Bluetooth devices. Therefore, all Bluetooth devices comply with the FCC dwell time requirement in the data mode. This was checked during the Bluetooth Qualification tests. The Dwell time in hybrid mode is approximately 2.6ms (in a 12.8s period).

8. Channel Separation in Hybrid Mode

The nominal channel spacing of the Bluetooth system is 1 MHz independent of the operating mode. The maximum "initial carrier frequency tolerance" which is allowed for Bluetooth is center = 75 kHz.

This was checked during the Bluetooth Qualification tests (Test Case: TRM/CA/07-E) for three frequencies (2402MHz, 2441MHz, 2480 MHz).

9. Derivation and Examples for a Hopping Sequence in Hybrid Mode

For the generation of the inquiry and page hop sequences the same procedures as described for the data mode are used (see section 5), but this time with different input vectors:

- For the inquiry hop sequence, a predefined fixed address is always used. This results in the same 32 frequencies used by all devices doing an inquiry but every time with a different start frequency and phase in this sequence.
- For the page hop sequence, the device address of the paged unit is used as the input vector. This results in the use of a subset of 32 frequencies, which is specific for that initial state of the connection establishment between the two units. A page to different devices would result in a different subset of 32 frequencies.

So it is ensured that also in hybrid mode, the frequency is used equally on average.

Example of a hopping sequence in inquiry mode:

48, 50, 09, 13, 52, 54, 41, 45, 56, 58, 11, 15, 60, 62, 43, 47, 00, 02, 64, 68, 04, 06, 17, 21, 08, 10, 66, 70, 12, 14, 19, 23

Example of a hopping sequence in paging mode:

08, 57, 68, 70, 51, 02, 42, 40, 04, 61, 44, 46, 63, 14, 50, 48, 16, 65, 52, 54, 67, 18, 58, 56, 20, 53, 60, 62, 55, 06, 66, 64

10. Receiver Input Bandwidth and Synchronization in Hybrid Mode

The receiver input bandwidth is the same as in the data mode (1 MHz). When two Bluetooth devices establish contact for the first time, one device sends an inquiry access code and the other device is scanning for this inquiry access code. If two devices have been connected previously and want to start a new transmission, a similar procedure takes place. The only difference is, instead of the inquiry

access code, a special access code, derived from the BD-ADDRESS of the paged device will be, will be sent by the master of this connection. Due to the fact that both units have been connected before (in the inquiry procedure) the paging unit has timing and frequency information about the page scan of the paged unit. For this reason the time to establish the connection is reduced.

11. Spread Rate | Data Rate of the Direct Sequence Signal

The spread rate / data rate in inquiry and paging mode can be defined via the access code. The access code is the only criterion for the system to check if there is a valid transmission or not. If you regard the presence of a valid access code as one bit of information, and compare it with the length of the access code of 68 bits, the spread rate / data rate will be 68/1.

12. Spurious Emission in Hybrid Mode

The dwell in hybrid mode is shorter than in data mode. For this reason the spurious emissions average level in data mode is worst case. The spurious emissions peak level is the same for both modes.

Battery Caution

Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same type recommended by the manufacturer. Discard used batteries according to the manufacturer's instruction.

Service Information

Refer to www.olympus-ost.com to get more information

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