Sendero's Holux Getting Started Guide

By Sendero Group

See the Holux User's Guide for details about receiver specifications.

Holux Package

a. The first layer of the Holux box contains the battery wrapped in plastic on the left and the receiver on the right. If the battery is not on the left, then it is inside the receiver.
b. The body of the box contains the receiver soft case, a car power adapter and the AC charger. Sometimes the charger is in two pieces, sometimes one piece. If separate, the cable can also be used to connect the receiver to a computer USB port or to the mPower as a temporary source of power should the battery run out. It is necessary for the mPower to be turned on in order to supply power to the receiver via the USB port.
c. On the bottom of the box beneath the inner carton, you will find a print Holux manual, warranty card and CD with computer connectivity software not relevant for connection to the BrailleNote.

Holux Description

Situate the receiver with the rubber feet on the table and the three vertical ridges near the bottom edge closest to you. Those ridges are the status lights, orange, blue and green/red.

The on/off slide switch is on the left edge toward the bottom. Up is On, down is Off.

On the bottom edge facing you, is a rectangular slot for the power/interface cable. The connector slides in only one way. You may be able to feel that the edge of the plug, which is supposed to face up, is slightly narrower than the lower edge. The sleeve of the connector is also smoother on the top than the bottom. This is a friction fit connection.

Installing the Battery:

Place the receiver on a flat surface so that the USB port is facing you and the switch is on the right side. Feel along the back of the receiver near the top and you will find a little rubber strip going from left to right. Just below the strip you will feel an embossed arrow pointing towards the rubber strip. Grab the sides of the receiver with one hand and with the other hand lightly press down and then slide away from you while still firmly holding the receiver with your other hand.
The battery cover will slide off in the direction that the arrow is pointing.
Once the compartment is open, the battery contacts are in the right corner nearest you. Remove the plastic from the battery. You will notice a seam in the center that runs the entire length of the battery. This seam faces down when placed in the receiver. If you feel both ends of the battery you will notice that one end is smooth across the edge and on the other end the corners look like they are cut off. Place the battery into the receiver with the seam facing down and the cut off edge towards the charging port. Slide the

battery down the length of the receiver. Press down on the top of the battery and you will hear a click when it snaps into place.
How to Remove the battery:
With the battery cover off and the receivers' USB port facing you as described above, feel along the top edge of the receiver. On either corner there is enough room for you to press your finger against the battery and lift it out.
Replacing the battery cover:
Feel the battery cover. Along the edge you will notice a small plastic tab protruding out. Place the battery cover on the receiver so the tab is pointing in the same direction as the USB port. Slide the battery cover in the same direction until it snaps closed.

put the receiver in the soft case.

Important Points about the Holux Receiver

The receiver uses the highest sensitivity MTK GPS chip set and is WAAS/EGNOS enabled. WAAS can increase accuracy to 10 feet. The BrailleNote GPS indicates when the WAAS satellite is engaged.

Because of higher satellite sensitivity, the Holux may pick up signals even inside buildings although the heading information may not be consistent.

The receiver may work fine inside a pocket or purse, however, a clear view of the sky is always recommended for best results.

The battery life should be over 20 hours and it takes about 2 hours to fully charge. Coincidentally, the battery is the same type as the battery used in many Nokia phones such as the 6620 and 6682. The Holux battery is 3.7 volts and 1000 MAH.

The Sendero Holux case offers two methods for attachment. It has a slide-on clip as well as Velcro wings which can be looped around the shoulder strap for extra security.

The strap and case:

The receiver is best situated on top of the shoulder. Clip it to the sliding shoulder pad on either the PK or mPower straps. A custom shoulder strap is provided for the PK. You can remove a portion of the PK strap to convert it into a PK handle by disconnecting the buckles located a couple inches from each end of the strap and reconnecting the shorter portions as a long handle. Once you have the receiver case firmly clipped into the shoulder pad, wrap the Velcro wings around the strap. When you are using the receiver, situate the unit on top of your shoulder so it faces up.

Configuring the BrailleNote PK or mPower for a Bluetooth GPS receiver with KS7 or higher

Summary of connection sequence:

* Options plus C then B gets you to the Bluetooth Menu. (BrailleNote Options followed by C for Connectivity and B for Bluetooth)
* Select the receiver and Activate Active sync.

Installing the Sendero GPS software:
See the GPS ReadMe or BrailleNote manual for details on installing the Sendero GPS software. If you purchased your BrailleNote and GPS together, the software is probably already installed and the receiver activated.

Holux Connection Details:

1. Charge the Holux for 2 hours and then turn it on with the on/off switch on the left edge. Up is On. See the receiver layout description below.
2. From the BrailleNote Main Menu, Press SPACE with O on the Braille keyboard or FUNCTION with O on the QWERTY keyboard for Options, C for the Connectivity Menu, and B for Bluetooth, Y for Yes (Bluetooth On), and Y for Search for Bluetooth devices. Beeps will indicate searching.
3. Press Enter on the Holux selection. Space through the list of services and press Enter on ActiveSync. Select Yes for Pairing. Make sure all other ActiveSync connections are closed before trying to use the GPS Bluetooth.
4. Enter 0000 for the authentication code when asked and press enter. Use a number sign before the zeros for Grade 1 or 2 Braille. If it doesn't pair, repeat this step.
5. Space through the list until you see ActiveSync and press Enter and A to Activate. Make sure you see “ActiveSync Active.” If you don’t see the word, “Active”, repeat the steps to activate ActiveSync. If it still won't activate, turn the receiver off and on and turn the BrailleNote Bluetooth off and on.
6. Go to the BrailleNote Main menu, wait 10 seconds and then select the GPS Navigation application. There is a pause followed by an announcement of the GPS Menu. If you hear Bluetooth not detected, go back to the main menu, wait a bit and try again. Otherwise, return to the Connectivity Menu and check to see that ActiveSync is indeed Active.
7. Press N for Navigation. Once you are in the program, press O for GPS Options, G for GPS receivers and B for Bluetooth. Press enter on the Holux M1000 or other receiver you wish to use. If you received a new BrailleNote and GPS from Sendero, the receiver should already be paired and ready to go and these latter steps are not necessary.

Pairing with the Bluetooth Receiver

It is best to be familiar with Bluetooth pairing as the GPS receiver may become unpaired for several reasons like resetting or perhaps when pairing with other Bluetooth devices. It is not hard to pair once you become familiar with the drill.

** If you open the GPS application without first turning on the Holux, you will receive an error message indicating you should turn it on and/or reactivate the Bluetooth connection in the BrailleNote Options menu. Unless you have reset the BrailleNote, you

should return to the Main Menu, turn on the Holux and load GPS again. If you turn the BrailleNote off while in the midst of the GPS application, you will have to turn it back on, go to the Main Menu and launch the GPS application. If all the Connectivity settings are correct, try waiting 10 or 15 seconds at the Main Menu before loading the GPS application.,

The Holux may stay in contact with the BrailleNote 30 or 40 feet away. If the Holux and BrailleNote get too far apart and the connection is lost, it will usually be necessary to go to the Main Menu and reload the GPS again after the units are within range of each other.

If you connect the BrailleNote to another Bluetooth device like a cell phone, you may first have to deactivate the Holux or reset the BrailleNote. It would then be necessary when you want to run the Holux GPS again to reactivate the PK or mPower for the ActiveSync GPS connection.

When you reset, the Bluetooth connection must be reestablished as follows:

1. From the Main Menu, press Space O for Options, C for Connectivity Menu and B for Bluetooth and Y for Yes to Turn Bluetooth on if it isn't already. Say No to Searching for devices and space through the list until you see Holux GPS and press Enter.
2. Space through the list and press Enter on ActiveSync.
3. You will get the message, "remove pairing with Holux GPS and ActiveSync status." You will need to activate ActiveSync, press Reset and then A to activate the Holux. Make sure it says ActiveSync Active.
4. Return to the Main Menu, wait 10 seconds and open the GPS application.

Note: If you have to do a hard reset, it will be necessary to search for devices and pair again with the Holux receiver.

For Technical Support on the BrailleNote and GPS, contact the dealer from whom you purchased your product. Sendero Group direct customers call 1-530-757-6800. HumanWare customers call 1-800-722-3393.

HOLUX M-1000 Bluetooth GPS Receiver User’s Manual

Bluetooth GPS Receiver
M-1000

User’s Guide

March 2007

Holux Technology, Inc.

1F, No. 30, R&D Rd. II, HsinChu City 300, Science-based Industrial Park, Taiwan
TEL: 03-6687000 FAX: 03-6687111
Website: www.holux.com

Table of Contents

---

1. Overview

The HOLUX M-1000 Bluetooth GPS Receiver is a total solution GPS receiver with Bluetooth, UART interface and built-in rechargeable battery for high sensitivity to tracking signal. M-1000 design is based on Media Tek Inc.(MTK) GPS solution-MT3318 low power Architecture.

M-1000 is a dual-function GPS receiver. Not only transmit satellite information through the PDA or Notebook by Bluetooth interfaces but also is a G-Mouse GPS receiver through a HOLUX designed data cable (Optional cable, see chapter 6) to deliver satellite signal to the device without Bluetooth interface.

M-1000 meets the requirement of field application, such as car navigation, mapping, agriculture surveying and security use under clear view of sky. M-1000 contacts to other device through Bluetooth interface, and built-in rechargeable Li-ion battery to save satellite information such as the status of satellite signal, the previous available location, date and time.

With the advanced technology, M-1000 can track up to 32 satellites simultaneously, re-acquires satellite signals in 0.1 microsecond and updates position data per second.

2. Packing List

Thank you for purchasing the M-1000 Bluetooth GPS Receiver. Before you start, make sure that the following items are included in your package. If any of these items are missing, please contact your original local HOLUX dealer or distributor.

* M-1000 Bluetooth GPS receiver
* Battery
* Car Cigarette adapter
* User guide and Driver CD

* M-1000 Quick Guide
* Warranty card

Optional

* Travel power supply

* HOLUX USB data cable

3. Main features

* Built in MTK MT3318 Low power consumption GPS chipset.
* 32 parallel satellite-tracking channels for fast acquisition and reacquisition.
* Superior sensitivity up to -159 dBm.
* Built-in WAAS/EGNOS Demodulator without any additional hardware.
* Compatible with Bluetooth Serial Port Profile (SPP) completely.
* Low power consumption. Built-in rechargeable and changeable Lithium-ion battery, the working time can last 23 hours maximum.
* Provide expand terminal contact to other system without Bluetooth device.
* Support NMEA0183 V 3.01 data protocol
* 3 color-LEDs indicate to show the status of device.
* FLASH based program memory. New software revisions upgradeable through serial interface.
* Small, sleek, and lightweight design easily fits in your hand.
.. Over-Temperature protection
* Enhanced algorithms -SnapLock and SnapStart provide superior navigation, performance in urban, canyon and foliage environments.
* For Car navigation, Marine navigation, Fleet management, AVL, Personal navigation, Tracking System, and Mapping device application.

4.Technical Specifications

4.1. Basic Specification

Chipset:MTK MT3318 chipset.

Channels: 32 parallel satellite-tracking channels.

Frequency: 1575.42 MHz

Receiver: L1, C/A code.

4.2. Acquisition Time (refer to MTK chip specification)

Reacquisition: 0.1 second.

Cold start: < 36 seconds.

Warm start:< 33 seconds .

Hot start: < 1 second

4.3. Receiver Accuracy

Normal: < 3 meters CEP without SA.

Enable EGNOS or WAAS:
Position: < 2.2 meters, horizontal 95% of time
< 5 meters, Vertical 95% of time

Velocity: within 0.1 meters / second

Time: 0.1 microsecond synchronized GPS time

4.4. Use Limitation

Altitude: < 18,000 meters (60,000 feet)

Velocity: :< 515 meters/ second (1000Knots)

Acceleration: 4 G.

Jerk: 20 meters / second3, max

4.5. Power Supply

External Voltage: 5V DC +/-5%

Batteries:
Main Power: Built-in rechargeable Lithium-ion for system power.

Working voltage: 40~50mA (Normal mode).
35mA (Power Saving).

Auto Power Saving mode.

Circuit protection on M-1000 when over-temperature condition 50 degrees Celsius occurs.

4.6. Output and Interface

I. Output protocol
Baud Rate: 38400 bps
Data bit: 8
Parity: No
Stop bit: 1

II. Format. NMEA0183 V3.01: GPGGA (1time/1 sec), GPGSA (1 time/5 sec.), GPGSV (1time /5 sec.), GPRMC (1time /1 sec.), GPVTG (1 time/1 sec), (GLL, or MTK NMEA Command for optional).

III. Datum: WGS84.

Input/ Output Interface:

I. Compatible Bluetooth Serial Port Profile (SPP), Version1.2 and class 2(up to 10 meter range).

II. In/Out Port. GPS signal (Out)/Command(In) with CMOS Level - Mini USB Type B Connector and Cable option:
(a) GR230-A2 (USB data cable)

4.7. Physical
Size: 65 × 43 × 17.6 mm
Weight: < 53 g
Operating Temperature:-10 degrees Celsius to + 60 degrees Celsius (under the un-charging condition);

Charging Temperature: 0 degrees Celsius to + 45 degrees Celsius

Storage Temperature:-20 degrees Celsius to + 60 degrees Celsius

Operating humidity: 5% to 95% No condensing

4.8. Other Functions

Bluetooth frequency: 2.4 ~2.48GHz

Bluetooth Input Sensitivity: -85dBm

Low sensitivity of receiving satellite signal : -159 dBm

LED Functions: Indicate Bluetooth status, GPS status, Battery Status and Battery charging status

5. Getting Started

5.1 Hardware Description:

Layout of Holux M-1000: Orient the receiver so that the power switch is along the left side and Mini USB socket is along bottom edge. Battery compartment is on the bottom. Three LEDs are on the top face of reciever in a U shape, from left to right - LED 1: GPS Status - Orange light, LED 2: Bluetooth Status - Blue light, LED 3: Battery Status - Red or Green light.

5.2 Charging the Battery

To charge the battery, plug the power cable into the Mini USB socket. The first time you charge the battery of the M-1000, be sure you fully charge it. When the battery is fully charged, the Battery status LED will turn off.

The Battery Status LED can be red, green or off. If it is red, that indicates the battery is low. If it is green, that indicates the battery is charging. If it is off, that indicates that either the battery charge is full or not charging.

5.3 Turn the power on.

When you have the receiver oriented so that the power switch is on the left and the Mini USB socket is on the bottom, you push the switch up to turn on and down to turn off.

When you turn on the M-1000, both the Bluetooth and the GPS Status LEDs will light up.

The Bluetooth Status LED will indicate that the receiver is Searching for a Bluetooth device. While it is connecting to the Bluetooth device or in Standby mode, the Bluetooth LED (blue light) will blink once per second. While it transferring data and connected, the Blue LED will blink once per 3 seconds.

The GPS Status LED will indicate whether or not the receiver is tracking satellites. If the GPS Status LED (orange light) is blinking, that indicates that the receiver is tracking satellites and has a position fix. If the GPS Status LED is steadily on, that indicates that the receiver is searching for satellites.

5.4 LED status Summary:

Using the layout from above, where the LEDs are in a U shape, from left to right - LED 1: GPS Status - Orange light, LED 2: Bluetooth Status - Blue light, LED 3: Battery Status - Red or Green light.

1. GPS LED (orange light):
Blinking = Position fix.
Solid = Acquiring Satellites.

2. Bluetooth LED (blue light):
Blinking once per second = Searching for Bluetooth devices or Standby mode.
Blinking once per 3 seconds = Transferring data and connected.

3. Battery LED (red, green, or N/A light):
Red light on = battery needs charging.
Green light on = battery is charging.
No light on = battery is full or not charging.

5.5 Power Jack & Data Port details:

Jack type: Mating face of 5 pin Mini USB Type B female.

Table 1 : Pin Definitions

Table layout:
Pin #, Pin Name, Signal and description
Pin 1, GND, Signal ground, Battery charging ground.
Pin 2, NC, none
Pin 3, TXD, Transmit Data. From organizer to peripheral.(Voltage Level is 3.3V ~ 5.0V).
Pin 4, RXD, Receive Data. Form peripheral to organizer.(Voltage level is 3.3V ~ 5.0V).
Pin 5, VCHARG, Positive terminal of DC adaptor that powers the internal charging circuit of Li-Ion battery. The approved power supply is 5.0V +/- 5%@800mA.

6. Warranty

The M-1000 is warranted to be free from defects in material and functions for a period of one year from the date of purchase. Any failure of this product within this period under normal conditions will be replaced at no charge to the customers.

M-1000 has built Li-battery inside, please avoid closing to high temperature environment or sun shine directly for a long time.

7. Troubleshooting

1. No GPS output but GPS timer is counting.

Reason 1: Weak or no GPS signal at the place of M-1000

Solution 1: Test under open sky at a fix location.

Reason 2: The ephemeris and almanac data

in GPS memory is no longer valid
after no use for a long time.

Solution 2: Remove the Battery for 3 seconds and re-insert, then power on to test again.

2. Execute fail

Reason: Bluetooth function unstable.

Solution: Power On/Off M-1000.
Re-Start PDA or PC.

3. Can not find M-1000

Reason: Poor Bluetooth connection.

Solution: Re-Start PDA or PC.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a 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 instructions, may cause harmful interference to radio
communications. However, there is no guarantee that interference will not occur in a particular installation. If this 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 of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. 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 equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure compliance requirements, please avoid direct contact to the transmitting antenna during transmitting.