

# INSTRUCTION MANUAL

## SynScan® GPS

### PACKAGE INCLUDES:



1. **A SynScan® GPS mouse**  
(GT-320FW(3.0)) with a MINI-DIN connector at one end of 1.5-meter cable.



2. **A 50-cm adapter cable:**  
Used for connecting between SynScan® GPS mouse and SynScan™ hand control. One end of the cable is a MINI-DIN(F) connector, and the other is a RJ-12, 6-pin connector.

### Notes:

- Only SynScan® firmware version 3.32 or later is able to connect to the GPS (GT-302FW(3.0)) module. Regarding the SynScan® firmware update procedure, please read the SynScan® Instruction Manual.
- Regarding SynScan® GPS mouse previous version (GT-320FW (2.0) or prior) please refer to the instruction in the content of the provided CD.

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# INTRODUCTIONS FOR USE

1. If the firmware version of your SynScan® hand controller is earlier than version 3.32, you should update the firmware to version 3.32 or later. Regarding the SynScan™ firmware update procedure, please read the SynScan® Instruction Manual.
2. If the firmware version of the SynScan® hand controller is version 3.32 or later, your hand controller is ready to be connected to SynScan® GPS mouse.

First connect the adapter cable to SynScan® GPS mouse. (Fig. 1)



Fig. 1

3. Plug the RJ-12 connector on the end of the adapter cable into the RJ-12 socket of the SynScan™ hand controller as shown in Fig.2.



Fig. 2

## 4. Connect DC power (12V):

- a) If the hand controller is connected to the mount (Fig 4), plug the 12V DC power source into the mount and press the mount's power switch on (Fig. 5)
- b) If the hand controller is not connected to the mount, plug the 12V DC power source directly into the hand controller. (Fig. 6)



Fig. 3



Fig. 4



Fig. 5



Fig. 6

5. After you power on the hand controller, you will see "Initializing..." displayed on the LCD for 2 seconds, then the hand control will find the GPS receiver module is connected and after press ENTER, the hand control will prompt to enter the time zone and daylight saving.
6. After setting time zone and daylight saving, the LCD of the hand control will display blinking text "GPS Fixing..." The first time you connect the SynScan® GPS mouse to the hand controller, it will take at least 50 seconds to fix on the GPS signal. It may take longer, depending on the weather and environment. If it is the first time to use the GPS mouse or it has been more than a week since last time connecting the GPS mouse, the time to fix current coordinates will take more than 3 minutes.

7. After SynScan® GPS mouse has fixed on the GPS signal, the hand controller will display the version number if the hand controller is connected to the mount, or the LCD will display “No link to M.C.” and “Stand-alone mode”, if the hand controller is not connected to the mount..
8. Press ESC, and the hand controller will function as normal. If the GPS signal is fixed successfully, the hand controller will skip the location, date, and time entry. The date, time, and location will be automatically updated from the SynScan® GPS mouse.
9. In the SynScan® hand controller menu, there is a submenu “GPS” under Utility menu. In this GPS menu, you can read the GPS information. To reach this menu, press the UTILITY key, then press the scroll keys until “GPS” appears on the LCD screen. Press ENTER, and the hand control will acquire GPS information within 2 seconds, assuming the SynScan® GPS mouse successfully fixes on the GPS signal.
10. When the SynScan® GPS mouse fixes, “GPS information:” will display on the first line of the LCD. You can press the scroll keys to check the GPS information as it follows in sequence listed in Fig. 7 on the next page.

**The letters a) to m) on Fig.7 show the display sequence of the GPS Information when you press the scroll keys.**

- a) Shows the latitude of the current site.
- b) Shows the longitude of the current site.
- c) Shows the current date.
- d) Shows the current universal time (UT)
- e) Shows the current local time (LT)
- f) Shows the time zone, which is retrieved from the user-entered data.
- g) Shows the current local sidereal time (LST).
- h) Shows the altitude of the current site in meters.
- i) Shows the received GPS signal quality.

There are 4 levels of GPS signal quality, which are “No fix”, “2D”, “3D” and “3D+DGPS”. The most accurate signal quality is “3D+DGPS”, “3D” is the second best signal quality, and “2D” is the lowest useable signal quality. “No fix” means the GPS is currently attempting to fix on a signal, or cannot acquire the signal.

- j) Shows the number of GPS satellites which are in the visible sight of the Syn-Scan(tm) GPS mouse.
- k) Shows the number of GPS satellites which are currently fixed upon by the Syn-Scan(tm) GPS mouse.
- l) Shows the magnetic variation (in degrees) of the current observing site.

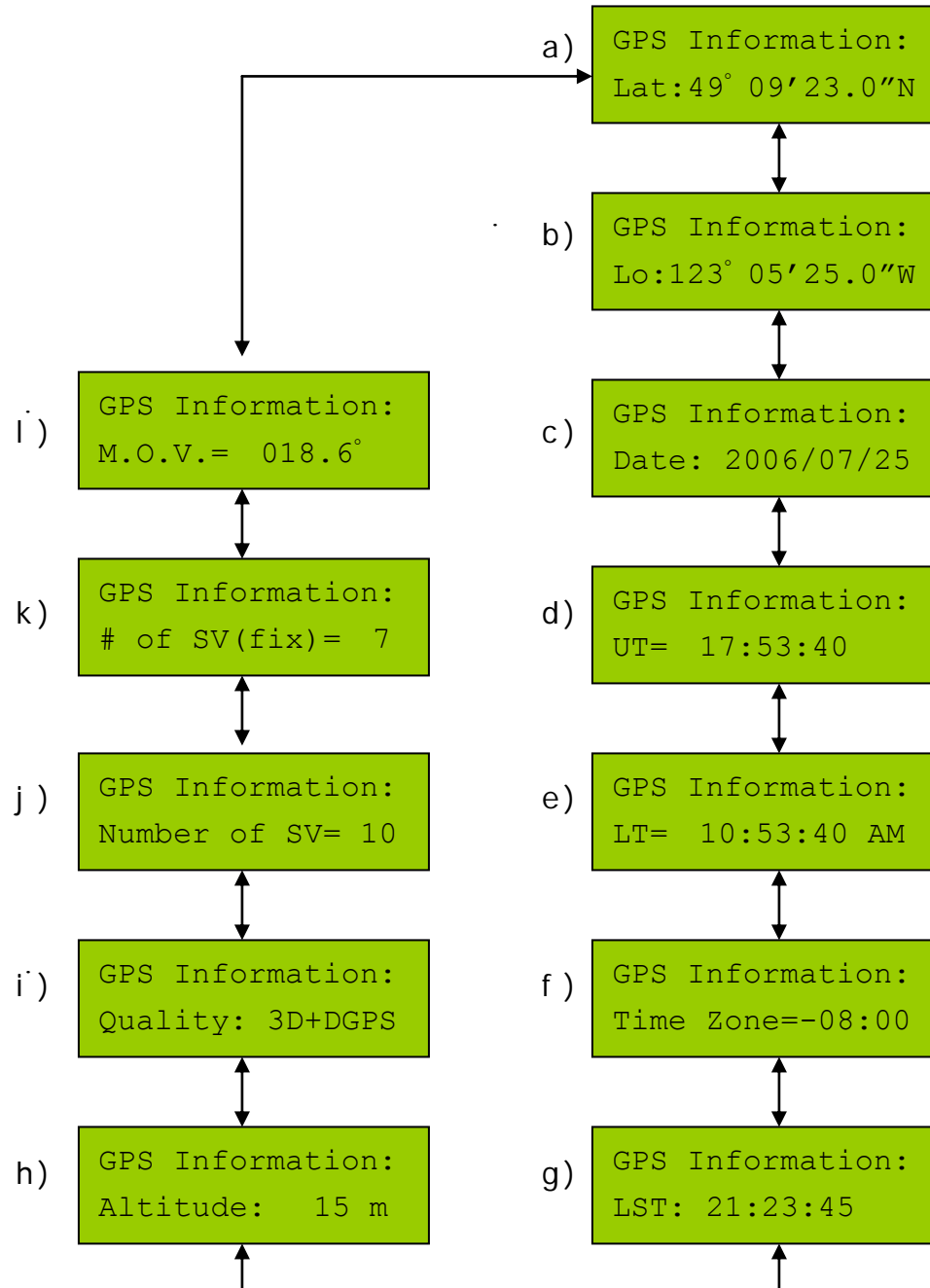


Fig. 7

11. To leave the "GPS Information" submenu press ESC. The other functions and operations of the hand controller are unchanged, and are the same as described in the Syn-Scan® Instruction Manual.