

## TOPCON STATIC SURVEY NOTES

Most commonly the receiver will be pre-configured with the desired survey parameters and will start a survey automatically upon power-up (plug 'n' play mode). If this applies to you, skip the 'Configuration' section of this documentation and go directly to 'Operation'.

### CONFIGURATION

The Topcon GB-1000 GPS receiver may be configured either through the front panel display, by applying a configuration script, or through the program PC-CDU (not described here).

1. Configuration from the Topcon GB-1000 receiver front panel  
(The procedure for configuring a rapid static survey is analogous)

Set up the GPS antenna; level antenna and align to true north  
Connect the antenna cable to the receiver  
Verify the internal batteries are in the receiver  
Connect the external power to the receiver  
Press the green power button to turn on the receiver

If you will be programming the receiver entirely through the front panel (not using a script) *and* you suspect the receiver might have been programmed previously with a configuration script, then you should reset the receiver settings. This is done with a NVRAM reset. After resetting the NVRAM, you need to conduct satellite reception for about 25 minutes to acquire almanac data, which is also lost during the reset. To reset the NVRAM:

Turn on the receiver  
From the main menu, scroll down to 'NVRAM Reset'  
Press enter (ENT)  
Press F2 (yes) to reset  
When the reset is complete you will be taken back to the main menu

Select 'Static'

If the screen reads 'Already Opened Close?' and you want to start a new survey, press F2 (yes). This is a signal that a configuration file has been applied to the receiver. Perform a NVRAM reset as described above.

Enter a station name (NAME) and the antenna height (HEIGHT) by highlighting each option and pressing F1 to edit

Press F4 (next)

Verify your sampling rate (INTVL), e.g. 15 or 30 seconds, and the antenna type (ANTENNA).

The Topcon antenna is 'PG-A1'. Press F1 (chg) to make changes, scroll through options using F2 (-) and F3 (+), and press F4 (set) to make your selection.

Press F4 (next)

Verify the antenna height measuring method (METHOD), e.g. ARP (for vertical height) or Slant, and the elevation mask angle (EL. MASK), e.g. 10 degrees

Press F4 (strt) to start the survey

Press F2 (yes) to confirm start of survey and to log data to internal memory, or F4 (log) to log to external memory

Data logging has now begun

During the survey, you can use the F# keys to view survey statistics, positioning coordinates, hardware options, etc.

When the survey is finished, press F4 (p) and F3 (end) to stop observation

Press F2 (yes) to confirm end of survey

2. Configuration from a script  
Change the IP settings of the receiver through the front panel

From the main menu, go to 'Port Setting', 'Ethernet', and 'IP Setting'  
 Verify that the IP address (ADD) is 192.168.001.002  
 Verify that the subnet mask (MASK) is 255.255.255.000  
 To change these settings, select F1 (edit), type in the correct IP address and subnet mask, and hit F4 (set) when you're finished  
 Press F4 (next) and verify that the gateway (GW) is 192.168.001.001  
 Press ESC (escape) to return to the Ethernet menu  
 Go to 'Telnet' and press F4 (next)  
 Verify the password (PWD) is 'TOPCON'  
 Press the menu key to return to the main menu  
 Power cycle the receiver by holding down the green power button until the beeping stops.  
 Turn the receiver back on.  
 Connect the GPS receiver to a computer with an Ethernet cable  
 Change the IP settings on the computer such that it is on the same network as the receiver  
 On a PC, go to Start → Settings → Network Connections  
 Right-click on Local Area Connection and select 'Properties'  
 In the window, scroll down to Internet Protocol (TCP/IP), highlight it, and click 'Properties'  
 Go to the 'Alternate Configuration' tab  
 Select 'User Configured' and type the following  
 IP Address: 192.168.1.3  
 Subnet Mask: 255.255.255.0  
 Click 'OK', then 'Close'. The network settings on your laptop are now configured to communicate with the receiver.  
 Open the configuration script  
 Edit the data file name (the last 4 characters of the following line)  
`%apre%set, /par/cmd/create/pre/a,XXXX`  
 Edit the sampling rate, e.g. 30 sec (1 day = 86400 seconds)  
`%rpe% set, /par/log/rot/sc/period,86400`  
 Edit the elevation mask, e.g. 0 deg or 10 deg (the last digits of the following lines)  
`%elml% set, /par/lock/elm,0`  
`%elmf% set, /par/out/elm/cur/file/a,0`  
 Leave the script document open  
 Open a command prompt (Start → Programs → Accessories), type:  
`telnet 192.168.1.2 8002`  
 Hit enter for the login; for the password, type 'TOPCON'  
 Copy and paste the configuration script into the window (right-click the mouse)  
 Type 'Ctrl+] ' to log off of the receiver  
 Type 'quit' to exit telnet  
 You may now disconnect the receiver from the computer. When the receiver is next powered up and connected to a GPS antenna, the survey will start automatically.

## OPERATION

1. Set up the GPS antenna; level antenna and align to true north  
 Connect the antenna cable to the Topcon GB-1000 GPS receiver  
 Verify the internal batteries are in the receiver  
 Connect the external power to the receiver  
 If the receiver does not power up automatically, press the green power button to turn it on  
 If the receiver has been pre-configured, a survey will start automatically.
2. To confirm that a survey is running  
 From the main menu, go to 'File Information'. Highlight 'Internal Memory' and press enter (ENT) to review the data files. The filename will consist of the 4-character system name, followed by the date, e.g. XXXXMMDD. Press 'Stat' (F1) to review the file size. On the

current file, the file size should increment if you exit the 'File Information' menu and then return to the 'Stat' page. This is your indication that the receiver is actively logging data. The first file may be named XXXX0101; this is only because the receiver wasn't connected to the antenna and doesn't know what day it is yet. You can wait several minutes, then power cycle the receiver; the new file generated will be named properly. In the menu system, the Escape button (ESC) will always allow you to step up one level.

3. To view the approximate latitude/longitude  
From the main menu, go to 'Positioning Status'.
4. Satellites  
The number of satellites being tracked is displayed in the upper right corner of the screen. The left number indicates GPS satellites, the right number, GLONASS. For more information on the satellites, from the main menu, go to 'Satellite Status'. You can select either a list or skyplot of the satellites being tracked.
5. Screen saver mode  
The receiver should be kept in screen saver mode when it is not being serviced. To get out of screen saver mode, hold the F1 and F4 keys simultaneously until the display is restored. To return to screen saver mode, press the green power button once. The screen will go blank but the receiver is still turned on. You can verify this by pressing the escape (ESC) button; it will beep if the receiver is on.
6. To stop a survey  
Turn off the receiver by holding the green power button *until the beeping stops*.  
If a configuration file was applied to the receiver, then upon power-up the survey will start again with the same parameters, and a new data file will be generated.  
If the survey was configured from the front panel, then the survey will not start automatically upon power up. You will need to start a new survey manually.

Note: The LCD screen on the Topcon receiver will occasionally fail when exposed to high heat. In this case, the survey will continue uninterrupted, but you will not have access to the menu system (the screen will be blank). When the survey is finished, turn off the receiver as usual by holding the green power button until the beeping stops.

See separate instructions for Data Downloading