



# Topcon Receiver Utility (TRU)

---

## Release Notes

**Version 3.0.2**

**October 2015**

©Copyright Topcon Positioning Systems, Inc. 2015.

All contents in this manual are copyrighted by Topcon. All rights reserved. The information contained herein may not be used, accessed, copied, stored, displayed, sold, modified, published, or distributed, or otherwise reproduced without express written consent from Topcon.

## Table of Contents

<b>VERSION 3.0.2</b> .....	<b>3</b>
FEATURES AND CHANGES .....	3
<b>VERSION 3.0.1</b> .....	<b>4</b>
FEATURES AND CHANGES .....	4
<b>VERSION 2.9</b> .....	<b>6</b>
FEATURES AND CHANGES .....	6
<b>VERSION 2.8</b> .....	<b>8</b>
FEATURES AND CHANGES .....	8
<b>VERSION 2.7</b> .....	<b>9</b>
FEATURES AND CHANGES .....	9
<b>VERSION 2.6</b> .....	<b>10</b>
FEATURES AND CHANGES .....	10
<b>VERSION 2.5</b> .....	<b>11</b>
FEATURES AND CHANGES .....	11
<b>VERSION 2.4</b> .....	<b>12</b>
FEATURES AND CHANGES .....	12
<b>VERSION 2.3</b> .....	<b>13</b>
FEATURES AND CHANGES .....	13
<b>VERSION 2.2</b> .....	<b>14</b>
FEATURES AND CHANGES .....	14
<b>VERSION 2.1</b> .....	<b>15</b>
FEATURES AND CHANGES .....	15
<b>VERSION 2.0</b> .....	<b>16</b>
FEATURES AND CHANGES .....	16

## Version 3.0.2

(Release build number #r1541.207576 build date: Oct 5, 2015)

### *Features and Changes*

- Installer improvements for Mobile and XP devices.
- New DION HD2 mode setting<sup>1</sup>
- Support for the new Sokkia GNR5 receiver.

---

<sup>1</sup> Setting is available for receivers that support HD2 mode that are using GNSS Firmware 4.7 or later.

## Version 3.0.1

(Release build number # 1515.204988 build date: Aug 3, 2015)<sup>2</sup>

### Features and Changes

- Redesigned installation for both PC and mobile platforms<sup>3</sup>
- Enhanced online help installed with TRU software.<sup>4</sup>
- Support for Topcon new reference station receiver “NET-G5” with
  - Configuration for onboard RINEX conversion
  - Extended data logging to support 8 concurrent sessions
  - Additional storage location options for file download
- Support for new GX-55 controller
- Support for Panasonic Toughpads
- Redesigned Receiver Setting page:
  - Tracking & Positioning dialog now contains all Antenna, Observation, Positioning, RTK, and Auto Seed settings
  - Satellite dialog now contains all settings for enabling/disabling constellations, signals, frequencies, and SV options
  - Network dialog now contains all settings related to Ethernet, WLAN, TCP, FTP<sup>5</sup>
  - Redesigned dialog for receiver ports with user friendly names for ports
- Improved Options dialog presentation
- User friendly firmware loading wizard
  - Includes new support for loading MC controller board FW for MC-R3<sup>6</sup>
- Sky plot improvements:
  - Ability to turn on and off constellations
  - Ability to turn on and off display of orbits
  - New missing planning mode
- Network settings updates:
  - DHCP settings now available
  - New FTP Server credential and FTP Client configuration support
- Additional signals and frequencies supported in tracking configuration and status display for:
  - QZSS L1C, L5 and SAIF signals.<sup>3</sup>
  - Galileo E5 a/b, E5 AltBOC, and E6 signals.<sup>3</sup>
- New clock and oscillation offsets display in status dialog

---

<sup>2</sup> Version 3.0 had limited release for early users of Net-G5. All v3.0 features are available in v3.0.1.

<sup>3</sup> Windows Mobile 5.X devices are not supported.

<sup>4</sup> TRU's improved online help is accessible through the '?' icon in the top right corner of the screen when the application is launched. Online help fully replaces the TRU operator's manual which is no longer published.

<sup>5</sup> Availability of settings is dependent on capabilities of receiver, purchased options, and installed receiver firmware.

<sup>6</sup> Connection to MC-R3 controller board is made using Serial Port COM1 and Power On Capture Mode

## Topcon Receiver Utility 3.0.2

- Ability to start generation of new log files at user specified intervals
- Previous connection history now stored with the ability to select and use previous connection from list
- New LongLink configuration settings and quality measurement display (HiPer SR only)
- Ability to upload radio firmware via XMODEM protocol
- Support for different receive and transmit frequencies (Topcon SRL-35 only)
- Addition of solution status for mmGPS
- Fix for reconnecting to RE-S1 modem after disconnection.
- Improved port selection for receivers behind NAT (Network Address Translations)

## Version 2.9

(Release build number # 915.28128, build date: February 24, 2014)

### Features and Changes

- Support for cellular model of HiPer SR receiver
  - New SIM Management in Receiver Managing Mode
  - Support for HSPA+ cellular modem
  - Option to set static and dynamic data collection modes when FW 4.2 or higher is loaded (*applicable to both basic and cellular models*)
- Ability to enable/disable tracking of BeiDou signals<sup>7</sup>
- Introduction of New Status | Heading page in Receiver Managing mode that displays receiver's current heading and inclination.
- Support for VISOR and HD2 functionalities in Receiver Managing mode<sup>8</sup>
  - VISOR settings available in Receiver Settings | Positioning dialog:
    - Enable/disable VISOR and select initialization type
    - Set VISOR baseline length and enable Distmode
  - Advanced VISOR settings in Receiver Settings | Positioning | VISOR dialog:
    - Set initial heading and inclination
    - Set shifts for heading and inclination
    - Enable/disable Dlock, adaptive smoothing, and use of heading only
  - HD2 settings in Receiver Settings | Positioning dialog
    - Ability to enable/disable HD2 rover
    - Options to enable/disable HD2 Distmode
    - Ability to enable smoothing mode and set value.
  - Secondary GNSS antenna setting in Receiver Settings | Tracking | Antenna dialog
  - Reset VISOR option under Tools dialog
- Support for New predefined RTCM3 MSM and HD2 message sets.
- Enhanced user interface
  - Keyboard support for menus on mobile controllers
  - Updated color schema in Tracking dialog

---

<sup>7</sup> Some Topcon receivers are capable of supporting signals for BeiDou satellites; full support of these new constellation(s) and associated signals will be made available on these receivers via an FW/OAF upgrade.

<sup>8</sup> Available for OEM-1 boards only

## Topcon Receiver Utility 3.0.2

- Improved support for radio modems
  - SRL-35 high-power external radio:
    - Added factory reset functionality
    - Support for TrimTalk protocol
    - Ability to configure 25W model to transmit at 5W
  - Satel modems installed in Topcon receivers:
    - Support for TrimTalk protocol
- USB Host feature supported
- Fixed issues opening Bluetooth configuration dialog when connected to FC-336 via cable

## Version 2.8

(Release build number # 786.27815, build date: September 20, 2013)

### *Features and Changes*

- Support for new Topcon high power external radio, SRL-35 has been added
- Creating/editing/uploading channel tables (using .MCF file) has been implemented for the SRL-35<sup>9</sup>
- Implementation of new consolidated application mode named “Frequency Editing” to create/edit radio configuration files (DCF and MCF)<sup>10</sup>
- Support for MC-2.5 receiver has been added in Modem Managing Mode

---

<sup>9</sup> Creating/editing .mcf file is only supported in dealer/advanced mode of TRU 2.8. Be aware that dealer/advanced mode is **only** accessible to Topcon distributors; It is mandatory for the dealer to load a valid MCF configuration before shipping the SRL-35 product to you or to supply a valid MCF configuration file to its customer.

<sup>10</sup> MCF file for SRL-35 is similar to DCF (Dealer Configuration File) for Digital UHF II radio.



## Version 2.7

(Release build number # 707.27517, build date: April 23, 2013)

### *Features and Changes*

- Support for new (v2.0) digital UHF radio firmware. Digital UHF radio firmware v2.0 is available for both, Digital UHF I and Digital UHF II modems<sup>11,12</sup>
- Support to broadcast call sign for Digital UHF I and Digital UHF II radio with new Digital UHF radio firmware v2.0
- Implementation of new consolidated application mode named "Firmware Loader" to allow firmware uploading on receiver, power and radio boards
- Display of battery charge level (expressed in percent) for HiPer SR receiver
- Support for "PDL FST" protocol for SATEL modems
- User interface improvements to display information on missing receiver options and more details for receiver options
- Addition of "Sleep" and "Power Off" functionalities for receivers in Tools dialog
- Support for Allegro MX controller

---

<sup>11</sup> **Important Note for users with Digital UHF I modem:**

**Before you upgrade your system integrated with Digital UHF I modem**, contact your local distributor to understand if digital UHF radio FW v2.0 is available for free. In case your digital UHF I equipped system does not qualify for free FW 2.0 upgrade, TRU will ask for a security code in order to enable FW v2.0 on your system. Fail to enter correct security code will result into non-functional modem; to make digital UHF I modem functional, you will either need to enter correct security code for FW v2.0 or will need to revert back to older FW (v1.6) available for digital UHF I radio

<sup>12</sup> FW v2.0 is available for free (i.e.no security code required) for Digital UHF II modems.

## Version 2.6

(Release build number # 562.26936, build date: Dec 19, 2012)

### Features and Changes

- Support for new Topcon HiPer V receiver
- Additional Base mode functionality:
  - Ability to review temperature of GNSS board
  - Base receiver settings and start base functionality
- New Positioning dialog Advanced RTK settings
  - VRS mode
  - IF baseline length
  - Residual weighting
- Tracking dialog enhancements
  - New Quartz Lock Loop option to minimize vibration-induced impact in dynamic application.<sup>13</sup>
  - Ability to enable L2C tracking
  - Ability to view tracked Galileo IOV satellites<sup>14</sup>
  - Moved satellite tracking pages from Positioning to Tracking dialog
- User interface improvements
  - Custom Keyboard
  - Custom File Dialog for Controllers
  - Changed name of “Modems” to “Modem Driver” in Receiver Managing mode
  - Display modem profile file version in addition to modem driver versions.
- Tools dialog updates:
  - Reset Receiver: Power cycles the receiver.
  - Factory Reset: Resets all parameters, ephemeris, almanacs, etc. Does not reset file system.
  - Reset Parameters: Resets all parameters. Does not reset file system, almanac, ephemeris, etc.
  - Reset RTK: Resets RTK engine.
- Improved modem support
  - TrimTalk enabled for Digital UHF II modems
  - Support for additional commands for SATELLINE-3AS modem

---

<sup>13</sup> Available for Net-G3A, GR-5, SGR-1, HiPer II, HiPer SR, GRS-1 receivers, and B110, OEM-1, GMSX OEM boards.

<sup>14</sup> Some Topcon receivers are capable of supporting planned signals for Galileo. Advanced support will be incorporated into these receivers and TRU when this constellation has matured and is ready for commercial use.

## Topcon Receiver Utility 3.0.2

- Fixed issues with setting auto seed points incorrectly and improved speed in routine.

## Version 2.5

(Release build number # 289.26741, build date: Aug 09, 2012)

### *Features and Changes*

- Support for new Topcon GNSS Receiver – The HiPer® SR.
- Support Topcon Tesla device and Telsa RTK receiver solution.
- Support for Ethernet connections and port configuration over Ethernet.
- Added modem support for Topcon Machine Control and Agriculture receivers.
- Support for SATELLINE®-EASy Pro 35W radio.
- Added support for latest firmware (v3.44n) available for SATELLINE-3AS modem.
- Added ability to change band selection for multiband GSM modem.
- Updates in Port configuration to add NTRIP, Ethernet and Bluetooth (for HiPer SR) ports for configuration.
- Added new NMEA Output mode option under port configuration.
- Supported ability to log data to a file from current terminal.
- Ability to select constellation and/or individual SVs for tracking.
- VGA resolution is supported now on controllers with VGA screen.
- Support for new icons for better user experience.
- Removed support for Topcon GMS2 and GMS2 Pro platforms. Version v2.4 was the last release to support GMS-2 and GMS-2 Pro devices.

## Version 2.4

### *Features and Changes*

- Internal radio and cell modem detection in the Receiver Managing mode.
- Cell modem drivers uploading.
- Internal modem detection has been accelerated.
- Receiver detection has been accelerated.
- Support of PDL GMSK for Satel SATELLINE-3AS modems with firmware 3.44n or later.
- Support of Motorola series cell modules installed on radio modems.
- Support of internal radio modems (Digital UHF, Digital UHF II, FH915+, Satel SATELLINE-3AS) for MCR3 (EG3 and U112 boards).
- Support for modem profiles (.TPL files).

## Version 2.3

### *Features and Changes*

- Motorola C24 (Verizon) modem support has been added for HiPer II, GR-5 and MC-R3 receivers
- MEID Number display has been added for CDMA cellular modules (Motorola C24, Wavecom Q24, Wavecom Q26 Elite modems) installed on various Topcon receivers. You need MEID # to for data activation from Verizon\*<sup>15</sup>
- Support for USB connection to Topcon receivers through PC Build has been added. Make sure to download and install latest USB drivers on your computer before trying to establish USB connections
- Topcon external radio TRL-35 support has been added
- CCX Creator for TRL-35 has been added in dealer and engineering modes
- Advanced minter options (FN key mode, Initial data collection dynamic code, Data recording auto-start) support has been added
- Uploading controller board firmware to the MC-R3 receiver has been added
- This version allows file recording at 20 Hz or more update rate
- Tracking of QZSS and L5 signals has been added
- Motorola G24 cell modem in the ArWest radio modem has been supported
- Added display support for FCS channels
- GNSS/Modem/Power board firmware can be uploaded from command line
- Added support for predefined sets of messages (output mode) for Serial/USB/TCP ports
- Added possibility to set up DION mode solutions
- Support for dealer configuration (DCF) file has been added in engineering mode

---

<sup>15</sup> TRU 2.3 application is required to provide you MEID # for the C24 (Verizon) CDMA module installed on the device

## Version 2.2

### *Features and Changes*

- Added support for GNSS firmware v3.5
  - Variable Fixed and Variable Float solution types are supported
  - DION solution types is supported
  - New Options are available:
    - Update rate (VDIF)
    - 3D-MC2 Support (DYNA)
    - USB Host (USBA)
    - Web Interface (\_WEB)
    - Radar Functionality (RADR)
    - Hiper AG Mode (HPAG)
    - DION Mode (POSM)
    - GPS L5 Tracking (G\_L5)
    - Vertical Accuracy Level (VVAL)
    - Horizontal Accuracy Level (HVAL)
    - Dual Antenna Tracking (DANT)
    - Heading Determination (HEAD)
  - Advanced modem communication (Engineering Mode):
    - Added an ability TRU should allow to show the current version of the active scripts/profiles
    - Added an ability to upload profiles with scripts to GNSS FW
- Added support for Topcon GNSS receiver GR-5
- BINEX messages have been added to the Receiver Message List
- Added the ability to reset the receiver to factory default settings
- Added a single report that includes the OAF and Info reports. Added a toggle to the Info report that says "Include OAF Report"
- Topcon Q2 Modem is supported (Only in Dealer mode)
- Motorola C24 modem is supported
- Added an ability to save all the receiver settings to file
- Added an ability to activate CDMA modems (Verizon)
- Modem HC-28J support added

## Version 2.1

### *Features and Changes*

- Modem parameters of FH-915+/Digital UHF/Satel are being shown according to the current mode (User/Dealer/Engineering).
- Added dependencies in GUI between different modem parameters.
- Added support of the internal GSM/CDMA modems in GRX1.
- Added ability to activate CDMA modems (Sprint) in GRX1.
- Added support of WM 6.5.3.
- Added support for SATELLINE-3AS-OEM11 Radio Board.
- Frequency table can be changed for the Satel modem.
- Added ability to downgrade the application registration to base level.
- All Digital UHF modem settings can be stored in CCX file (only in dealer mode).
- File Explorer now supports unformatted or locked memory cards.
- Added auto-detection mode for external modems.
- Added the descriptions of the logging messages for PC version.
- Auto-detection mode now works with Vario Guide modem.

## Version 2.0

### *Features and Changes*

- Customized dialog for the FREEWAVE modem
- Show the Error when select auto antenna at GRS-1
- Support new Satel FW 3.34
- Add support of Digital UHF CCX files
- Configure - Receiver Serial Ports now supported.
- Configure - Receiver Slots now supported.
- Configure - Internal Receiver Bluetooth
- Configure - Modems now supported.
- Configure - Power now supported.
- Added the ability to Send GRIL Commands
- Add File Manager functions
- Add an ability to activate CDMA modem in GRS-1 for Sprint operator
- Added more Tracking Options.
- Real-Time Logging
- Signal quality indicator for GRS-1
- Serialization for Dealer and Engineering modes.