

Topcon GB-1000 - Receiver Board Firmware 3.2 Release Notes

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User visible changes in the firmware version 3.2 since version 3.1 p3

Highlights.

For G3-based boards only (GR-3, Net-G3):

- N.1 GPS L2C and GLONASS L2 C/A observables are available.
- N.2 Support of common loop for L2 has been implemented.
- N.3 Improved tracking of P-code L2 GLONASS signal has been added.
- N.4 "Coarse" RAIM has been re-designed.
- N.5 Logic for computing elevation/azimuth of satellites by means of using almanac data has been tuned.
- N.6 Geoidal heights are available for output (NMEA-0183 GGA contains this information).
- N.7 Computing coordinates expressed in local datum has been supported.
- N.8 Output of NMEA GRS and GSA messages has been corrected.
- N.9 Internal logic for maintaining the correspondance between GLONASS slot and frequency channel numbers has been improved.
- N.10 Conventions for file names have been changed in Net-G3 receivers.
- N.11 LAT1/LON1/LAT2/LON2 options have been taken into the account.

For all boards (including GR-3 and Net-G3):

- A.1 "AutoSeed" functionality (averaging of multiple base positions) has been supported.
- A.2 Tracking of GLONASS' zero frequency channel number has been implemented.
- A.3 Support for mmGPS functionality (transmitter ID managing and bridging) has been added.
- A.4 Elimination of frequency offset for EGGDT and Net-G3 boards in case of setting the parameter "/par/frq/input" to "off" has been corrected.
- A.5 The problem that could manifest itself by means of inability to resume the computing of RTK solution, if a pause on the order of tens of minutes in RTK data link occurred, has been resolved.
- A.6 The support of decoding of NMEA-0183 XDR message has been implemented. The contents of XDR message is available for output via TPS message [XD].
- A.7 New options have been added: SEED, _IMU, OMSV, TPBN, TPPM, TPVC, _L2C,
- A.8 Antenna database has been updated. New types of antenna have been added to existing ones. New version antenna database is 2.1.1 (NGS: 07/06/08 231 antennas).
- A.9 Logic for outputting GGA string via NTRIP/PPP protocols has been improved.
- A.10 More robust checking of SV IDs in incoming RTK/DGNSS data has been implemented.
- A.11 The method for turning on Extended Information Mode has been changed.
- A.12 New commands for choosing internal/external antennae have been

implemented.

- A.13 Parameters for enabling/disabling sources of RTK/DGNSS data have been supported.
- A.14 GPS satellites having zero clock parameters in almanac data can be tracked without problems in all types of the boards.
- A.15 The support of GSM connection was added for receivers that work with FH/UHF Topcon, Satel and Arwest modems.
- A.16 The possibility to obtain differential data through IP address and corresponding port has been added.
- A.17 The size of "/par/ppp/gprs/pdp/apn" parameter was extended to 64 bytes (string[0..64]) instead of 32 as before.
- A.18 CMR numbers was changed for antenna types listed below:
CMR=229 correspond now to "TPSGR3" antenna (was "TPSGR_3").
CMR=234 correspond now to "TPS_MC.A5" antenna (was "TPSMG_A5").
CMR=230 correspond now to "TPSCR.G3 NONE" (was "TPSCR_G3").
- A.19 For supporting the onboard Wavecom modems, PPP timeout for TPS UHF/FH internal modem was changed from 5 to 10 seconds.
- A.20 New PPP parameters have been added: mtu, ping, idle for better CDMA support.
- A.21 The support of new GLONASS datum PZ-90.02 has been implemented.
- A.22 The command init/setup/ has been made working properly for not G3-based boards.
- A.23 SBAS processing has been improved (corresponding changes have been added to the troposphere model).
- A.24 The parameter for switching between PZ-90 and PZ-90.02 dynamic constants has been implemented. This parameter is required to maintain compatibility with previous versions of firmware.
- A.25 Datum ID "P90" corresponds to PZ-90.02 datum now. Previous PZ-90 datum has got "P90-I" designation.
- A.26 Support of Satel and ArWest modems has been tuned.
- A.27 Problems connected with using jps/max and jps/min messages sets in RTK mode have been resolved. This problem might affect performances when working with combined GPS+GLONASS constellation.
- A.28 Internal logic that deals with procesing new GLONASS satellites has been modified.
- A.29 Support of mmGPS functionality in EG3 boards has been tuned and modified.

0. Compatibility Notes.

- 0.1 Starting at the version 3.2, new method for turning the Extended Information Mode on/off has been supported. It is required to push FN button three times over the period of three seconds to enable/disable this mode.
- 0.2 It is not recommended using the parameter "/par/lock/pcode". Use the parameters "/par/lock/gps/pcode" and "/par/lock/glo/pcode" instead.
- 0.3 Argument of the parameter "/par/lock/gps/l2c" has been changed. Now it contains two arguments for turning on/off tracking of CL and CM signals separately from each other.
- 0.4 File name conventions for AFRM mode have been changed for Net-G3 receivers: files created at hour boarders have the following names:
XXXXa, XXXXa001, XXXXa002... for interval 00:00:00-00:59:59;
XXXXb, XXXXb001, XXXXb002... for interval 01:00:00-01:59:59 etc.

- 0.5 TPS message [EN] has been outdated. Use [E3] instead.
- 0.6 Parameters "/par/ant/inp" and "/par/ant/curinp" are obsolete. Use the parameters "/par/ant/rcv/inp" and "/par/ant/rcv/curinp" instead.
- 0.7 The default value of the parameter "/par/lock/notvis" is set to "on" for G3-based boards (it is a read only parameter for these boards).
- 0.8 The range of arguments in parameters for locking/using GLONASS satellites have been changed (parameters "/par/lock/glo/fcn/N" and "/par/pos/glo/fcn/N"): now N is in the range of -7 - +13 (previous range was +1 - +24).
- 0.9 The change in GLONASS datum leads to incompatibility when working with previous versions of the firmware provided RTCM Message Types 20/21/31/32/34 are in use. In other words, the problem arises when working in code differential mode or in RTK mode (if Message Types 20/21 are used). It is recommended to upload both the base and the rover receiver with the same version 3.2. When working with Message Types 20/21, it is required, also, to change the parameter "/par/pos/datum/glo/dyn" to maintain compatibility with previous versions.

1. Messages.

1.1 Observables for GPS L2C and GLONASS L2 C/A signals (for G3-based boards only).

1.1.1 [R3] Full GPS L2C / GLONASS L2 C/A Pseudoranges

Contains full GPS L2C / GLONASS L2 C/A pseudoranges for all the satellites specified in the latest [S] message.

```
struct PR_L2C {
    f8 prange[nSats]; // Pseudorange [s]
    + u1 cs; // Checksum
};
```

1.1.2 [3R] Relative GPS L2C / GLONASS L2 C/A Pseudoranges

Contains relative GPS L2C / GLONASS L2 C/A pseudoranges for all the satellites specified in the latest [S] message. Relative GPS L2C / GLONASS L2 C/A pseudorange is defined as difference between full GPS L2C / GLONASS L2 C/A pseudorange and full C/A L1 pseudorange.

```
struct DPR_L2C {
    f4 prangeDelta[nSats]; // PR GPS L2C / GLONASS L2 C/A - PR CA/L1 [s]
    + u1 cs; // Checksum
};
```

1.1.3 [P3] Full GPS L2C / GLONASS L2 C/A Carrier Phases

Contains the full GPS L2C / GLONASS L2 C/A carrier phases for all the satellites specified in the latest [S] message.

```
struct PhaseL2C {
    f8 phase[nSats]; // GPS L2C / GLONASS L2 C/A carrier phase [cycles]
    + u1 cs; // Checksum
};
```

1.1.4 [3P] GPS L2C / GLONASS L2 C/A Carrier Phases Computed Relative to [RC] Pseudoranges

Contains the differences between the full GPS L2C / GLONASS L2 C/A carrier phases and the corresponding [RC] pseudoranges for all the satellites specified in the latest [S] message.

True GPS L2C / GLONASS L2 C/A carrier phase [cycles] =
 ((carrier phase from [3P]) +(pseudorange from [RC])[s])* L2_freq [Hz],
 where L2_freq = nominal L2 carrier frequency (i.e. 1.22760 GHz)

Default: int

Description: Set/query receiver antenna input mode:

int - use internal antenna for receiver;
ext - use external antenna for receiver;
auto - automatic mode;

2.2 mmGPS (NBEAM) parameters.

Name: /par/pos/pd/nbeam/id

Access: rw

Type: enumerated

Values: 1 | 2 | 3 | 4 | any | auto

Default: auto

Description: Selection of ID of the transmitter the sensor must work with. The best one from rms point of view will be selected if the value is set to 'any'. In this case the receiver will try to switch the best one. If you choose 'auto' PZS itself will try to find ID from present in view according its own rules. Anytime it is possible to change 'any' to 'auto' to acquire signal again if there is any problem with signal availability.

Do not forget properly set serial port used by PZS with help of command /par/pos/pd/nbeam/port !

Name: /par/pos/pd/nbeam/any

Access: rw

Type: enumerated

Values: permanent | auto | arrange

Default: permanent

Description: In case of id==any this command instructs receiver what to do in cases:

- disappearing laser signal because of e.g. shading;
- unsuccessful switching to the best transmitter;

Value 'permanent' instructs receiver try to continue acquiring signal up to success. 'auto' instructs PZS to try to find ID from present in view according its own rules. 'arrange' instructs receiver to arrange all enabled IDs according rms and to try consecutively catch one from available

Name: /par/pos/pd/nbeam/wait

Access: rw

Type: list {float t1, float t2}

Values: {0.099...60, 0.099...60}

Default: {4.,60.}

Description: t1 defines time interval in seconds how long it is necessary to waiting for choosed signal acquiring in cases of disappearing signal and unsuccessful switching for values any==auto or any==arrange. t2 defines how long it is necessary to work with found signal. After t2 passing away the receiver will try to acquire the best ID again.

Name: /par/pos/pd/nbeam/bridging

Access: rw

Type: boolean

Values: on | off

Default: off

Description: Setting this parameter to 'on' instructs receiver to bridge (to compensate jump) mmGPS height estimation at ID changing. If you choose 'on' be sure there is not considerable changing of height during laser signal absence

Name: /par/pos/pd/nbeam/type

Access: rw

Type: enumerated

Values: const | dissap

Default: const

Description: This parameter defines type of bridging. Value 'const' means the compensation is distributed uniformly (constantly) over all zone where you works with current ID. This type is recommended only for case compact site (non-stretched) and when height installation / initialization error of transmitter is dominant source of error. Value 'dissap' means a jump is instantaneously compensated but then height estimation is slowly returning back to original level (compensation is

dissapearing). Dissapearing process has linear behaviour and distributed over zone with radius equal to double distance between receiver and transmitter in moment of ID changing. This type allow to avoid accumulation of error as $\sqrt{N} \cdot \sigma$ where N- is total number of used transmitter along path; σ - standard deviation of error of single transmitter. With help of this technique it is possible to provide standard deviation of just σ between design (project) profile and measured by mmGPS. This technique is recommended for stretched site (e.g. road work) when number N is large enough ($N > 10$) and when dominant error is either:

- horizontal installation/initialization error of transmitter
- thermal variation of self leveling mechanism of transmitter (wrong level calibration)
- strong beam refraction at long distances
- strong beam nonlinearity at long distances
- any other effect with non constant yield over distance

2.3 Parameters of tracking loops for GPS L2C / GLONASS L2 C/A signals (for G3-based boards only)

Name: /par/raw/l2pll/order
Access: rw
Type: int
Values: [1 | 2]
Default: 1
Description: This parameter specifies the order of GPS L2C and GLONASS L2 C/A phase lock loop (PLL).

Name: /par/raw/l2pll/band
Access: rw
Type: float
Values: [0.000001 | 50.]
Default: 2.5
Description: This parameter sets the bandwidth of GPS L2C and GLONASS L2 C/A PLL.

Name: /par/raw/l2dll/order
Access: rw
Type: int
Values: [1 | 2]
Default: 1
Description: This parameter defines the order of the receiver's GPS L2C and GLONASS L2 C/A delay lock loop (DLL).

Name: /par/raw/l2dll/band
Access: rw
Type: float
Values: [0.000001 | 10.]
Default: 0.4
Description: This parameter sets the bandwidth of the receiver's GPS L2C and GLONASS L2 C/A DLL.

2.4 Tracking of GPS/GLONASS L1/L2 P-codes

Name: /par/lock/gps/pcode,{P1,P2}
Access: rw
Type: bool
Values: [on | off]
Default: off,off
Description: This parameter turns on/off GPS P1/P2 signals tracking. Valid combinations are {on,on} or {off,off} only.

Name: /par/lock/glo/pcode,{P1,P2}
Access: rw
Type: bool
Values: [on,on | off,off]
Default: off,off
Description: This parameter turns on/off GLONASS P1/P2 signals tracking. Valid combinations are {on,on} or {off,off} only.

2.5 Tracking of GPS L2C / GLONASS L2 C/A signals

Name: /par/lock/gps/l2c,{CL,CM}
Access: rw

Type: bool
Values: [on,on | off,off]
Default: off,off
Description: This parameter turns on/off GPS CL and CM signals tracking.
Valid combinations are {on,on} or {off,off} only.

Name: /par/lock/glo/l2c
Access: rw
Type: bool
Values: [on | off]
Default: off
Description: This parameter turns on/off GLONASS L2 C/A signal tracking.

2.6 Parameters related to AutoSeed functionality

2.6.1 Commands for working with current point.

2.6.1.1 Name of current point.

Name: /par/ref/avg/list/curpnt/name
Access: rw
Type: string[0..19]
Values:
Default: "UNUSED"
Description: Set/print the name of the current point

2.6.1.2 Identifier of the current point.

Name: /par/ref/avg/list/curpnt/id
Access: rw
Type: integer
Values: 0..4095
Default: 0
Description: print/set identifier of the current point

2.6.1.3 L1 PC coordinates of the current point.

Name: /par/ref/avg/list/curpnt/pos/[xyz | geo]
Access: rw
Type: [{datum,lat,lon,alt} | {datum,x,y,z}]
Values: see GRIL, please
Default: [{W84,0,0,0} | {W84,6378137,0,0}]
Description: print/set L1 PC coordinates of the current point. Datum must be "W84".

2.6.1.4 ARP coordinates of the current point.

Name: /par/ref/avg/list/curpnt/arp/[xyz | geo]
Access: rw
Type: [{datum,lat,lon,alt} | {datum,x,y,z}]
Values: see GRIL, please
Default: [{W84,0,0,0} | {W84,6378137,0,0}]
Description: print/set ARP coordinates of the current point. Datum must be "W84".

2.6.1.5 Fill curpnt fields automatically (all, only position, only name, only identifier, information from concrete point from the list). Date and time will be written automatically upon finishing the point to list addition.

Name: /par/ref/avg/list/curpnt/fill
Access: w
Type: enum
Values: [all, pos, name, id, [0..99]]
Default:
Description: set (all fields, only position, only name, only identifier, information from concrete point from the list) for fill curpnt fields automatically. Date and time will be written automatically upon finishing the point to list addition

2.6.2 Commands for working with the list of points.

2.6.2.1 Print parameters of the given point from the list

2.6.2.1.1 Print the name of the point

2.6.2.1.1 Print the name of the point

Name: /par/ref/avg/list/pnts/[00..99]/name
Access: r
Type: string[0..19]
Values:
Default: "UNUSED"
Description: print the name of the point

2.6.2.1.2 Print L1PC coordinates of the point

Name: /par/ref/avg/list/pnts/[00..99]/pos/[xyz | geo]
Access: r
Type: [{datum,lat,lon,alt} | {datum,x,y,z}]
Values:
Default:
Description: print L1PC coordinates of the point

2.6.2.1.3 Print ARP coordinates of the point

Name: /par/ref/avg/list/pnts/[00..99]/arp/[xyz | geo]
Access: r
Type: [{datum,lat,lon,alt} | {datum,x,y,z}]
Values:
Default:
Description: print ARP coordinates of the point

2.6.2.1.4 Print date of the point

Name: /par/ref/avg/list/pnts/[00..99]/date
Access: r
Type: string
Values:
Default:
Description: print date of the point

2.6.2.1.5 Print index of the point

Name: /par/ref/avg/list/pnts/[00..99]/index
Access: r
Type: integer
Values: [0..99]
Default:
Description: print index of the point

2.6.2.1.6 Print id of the point

Name: /par/ref/avg/list/pnts/[00..99]/id
Access: r
Type: integer
Values: [0..4095]
Default:
Description: print id of the point

2.6.2.1.7 Print "auto" flag that indicates that the point was created automatically

Name: /par/ref/avg/list/pnts/[00..99]/auto
Access: r
Type: boolean
Values:
Default:
Description: print "auto" flag that indicates that the point was created automatically

2.6.2.1.8 Print "protect" flag that indicates that the point is protected from deleting

Name: /par/ref/avg/list/pnts/[00..99]/protect
Access: r
Type: boolean
Values:
Default:

Description: print "protect" flag that indicates that the point is protected from deleting

2.6.2.1.9 Print distance from current point to given point

Name: /par/ref/avg/list/pnts/[00..99]/dist

Access: r

Type: f8

Values:

Default:

Description: print distance from current point to given point (in meters)

2.6.2.2 Print parameters of the [used | auto | manual | all] points from the list

Name: /par/ref/avg/list/pnts/[used|auto|manual|all]

Access: r

Type: {index, date, name, pos={xyz, geo}, arp={xyz, geo}, id, auto, protect}

Values:

Default:

Description: print list of the points

2.6.2.3 Print total number of the points having the given flag

Name: /par/ref/avg/list/pnts/count/[used | auto | manual | free | protect]

Access: r

Type: int

Values: [0..100]

Default:

Description: print total number of the points having the given flag

2.6.2.4 Add current point to list

Name: /par/ref/avg/list/pnts/add

Access: w

Type: integer

Values: [-1..99]

Default:

Description: add current point to list. "-1": index will be assigned automatically, [0..99]: index specified by user.

2.6.2.5 Delete one point (or all points) from list

Name: /par/ref/avg/list/pnts/del

Access: w

Type: integer

Values: [-1..99]

Default:

Description: [0..99]: Delete one point from list. "-1": delete all points.

2.6.2.6 Sort out the list of the points in accordance with specified criterion.

Name: /par/ref/avg/list/pnts/sort

Access: w

Type: enum

Values: [date | near | protect | name]

Default:

Description: Use set comand for sort out the list of the points in accordance with specified criterion (near - the nearest points with respect to curpnt).

2.6.2.7 Set the flag "protect" that prevents the given point from deleting.

Name: /par/ref/avg/list/pnts/[00..99]/option/protect

Access: w

Type: bool

Values: [on | off]

Default:

Description: set the flag "protect" that prevents the given point from deleting

2.7 Enable/disable work of RTK engine.

Name: /par/pos/pd/engine

Access: rw

Type: bool

Values: [on | off]

Default: on

Description: This parameter was added in order to avoid interference with other engines that can produce RTK-level solution.

2.8 Enable/disable the use of RTK data for carrier phase differential mode from given source.

Name: /par/pos/pd/src/ext

Access: w

Type: bool

Values: [on | off]

Default: on

Description: This parameter allows the receiver to use RTK data obtained from an external source (such as a base station, for example) for computing RTK-level solution.

Name: /par/pos/pd/src/hp

Access: rw

Type: bool

Values: [on | off]

Default: on

Description: This parameter allows the receiver to use RTK data obtained from HP service for computing RTK-level solution.

Name: /par/pos/pd/src/

Access: w

Type: bool

Values: [on | off]

Default: on

Description: It is a method to enable/disable the use of any RTK data (parameters /par/pos/pd/src/ext and /par/pos/pd/src/hp will be set to specified value).

2.9 Enable/disable the use of DGNSS data for carrier phase differential mode from given source.

Name: /par/pos/cd/src/ext

Access: rw

Type: bool

Values: [on | off]

Default: on

Description: This parameter allows the receiver to use DGNSS data obtained from an external source (such as a base station, for example) for computing DGNSS solution.

Name: /par/pos/cd/src/sbas

Access: rw

Type: bool

Values: [on | off]

Default: on

Description: This parameter allows the receiver to use DGNSS data obtained from SBAS satellites for computing DGNSS solution.

Name: /par/pos/cd/src/vbs

Access: w

Type: bool

Values: [on | off]

Default: on

Description: This parameter allows the receiver to use DGNSS data obtained from VBS service for computing DGNSS solution.

Name: /par/pos/cd/src/

Access: w

Type: bool

Values: [on | off]

Default: on

Description: It is a method to enable/disable the use of any DGNSS data (parameters /par/pos/cd/src/ext, /par/pos/pd/src/sbas and /par/pos/pd/src/vbs) will be set to specified value).

2.10 Parameters for GSM data support

Name: /par/modem/N/model

Access: rw

Type: enumerated

Values: generic | tps | satel | arwest

Default: generic

Description: This parameter sets the correct modem model type on port N for later use as master or slave to provide correction data transfer from the base to the rover

Name: /par/modem/debug

Access: rw

Type: enumerated

Values: on | off

Default: off

Description: This parameter sets the debug mode for data transfer over GSM.

2.11 Parameters for obtaining data via TCP/IP connection

Name: /par/mobile

Access: r

Type: list {mode, service, state, ip, rover, base, data, debug, error}

Description: The list of MOBILE parameters.

Name: /par/mobile/mode

Access: rw

Type: enumerated

Values: on | off

Default: off

Description: MOBILE mode parameter to turn on/off MOBILE procedure.

Name: /par/mobile/service

Access: rw

Type: enumerated

Values: rover | base | ip

Default: ip

Description: MOBILE service parameter to select procedure type

Name: /par/mobile/state

Access: r

Type: enumerated

Values: off | available | unavailable | terminated | data | terminal

Default: off

Description: MOBILE state parameter

Name: /par/mobile/ip

Access: r

Type: list { addr, port, gga, user, passwd }

Description: The list of IP parameters.

Name: /par/mobile/ip/addr

Access: rw

Type: string[15]

Values: Any valid IP address

Default: "0.0.0.0"

Description: IP address of the data stream

Name: /par/mobile/ip/port

Access: rw

Type: integer

Values: [0..65535]

Default: 0

Description: Port of the data stream

Name: /par/mobile/ip/user

Access: rw

Type: string[0..32]

Default: ""

Default:

Description: the user-ID for future use

Name: /par/mobile/ip/passwd

Access: rw

Type: string[0..32]

Default: ""

Description: the password for future use

Name: /par/mobile/ip/gga

Access: rw

Type: integer

Values: [0..86400]

Default: 0

Description: Period in seconds to send NMEA GGA message to the data source. If 0 then GGA message will not send.

Name: /par/mobile/rover

Access: r

Type: list { base, port, passwd }

Description: The list of ROVER parameters.

Name: /par/mobile/rover/base

Access: rw

Type: string[15]

Values: Any valid IP address

Default: "0.0.0.0"

Description: IP address of the base to connect

Name: /par/mobile/rover/port

Access: rw

Type: integer

Values: [0..65535]

Default: 0

Description: Port of the base to connect

Name: /par/mobile/rover/passwd

Access: rw

Type: string[0..32]

Default: ""

Description: the password for the base to connect

Name: /par/mobile/base

Access: r

Type: list { addr, port, passwd }

Description: The list of ROVER parameters.

Name: /par/mobile/base/addr

Access: r

Type: string[15]

Values: IP address of the receiver, obtained after PPP connection was established

Default: "0.0.0.0"

Description: IP address of the base

Name: /par/mobile/base/port

Access: r

Type: integer

Values: [0..65535]

Default: 0

Description: Port of the base

Name: /par/mobile/base/passwd

Access: r

Type: string[0..32]

Default: ""

Description: the password for the base

Name: /par/mobile/data

Access: r

Type: list { port, imode }

Description: The list of MOBILE data parameters.

Example:

Name: /par/mobile/data/port
Access: rw
Type: enumerated
Values: any input port name
Default: /dev/ser/d
Description: MOBILE data port. The data received from the data stream will be passed to the appropriate decoder as if they were received from the specified port. The 'imode' of the specified port should be set by the user (using /par/[port]/imode parameter) to match the data format of the mountpoint.

Name: /par/mobile/data/imode
Access: r
Type: enumerated
Values: refer to the /par/[port]/imode description
Default: refer to the /par/[port]/imode description
Description: current input mode of the receiver input port that is selected as MOBILE data port.

Name: /par/mobile/error
Access: r
Type: string[0..64]
Default: "No errors"
Description: Human readable description of the failure reason if any.

Name: /par/mobile/debug
Access: rw
Type: enumerated
Values: on | off
Default: off
Description: This parameter sets the debug mode for MOBILE.

2.12 Parameters for locking/using GLONASS satellites

Name: /par/lock/glo/frq/N
Access: rw
Type: bool
Values: on | off
Default: on
Description: enables/disables tracking of given GLONASS satellite with frequency channel number equal to N (-7...13).

Name: /par/pos/glo/frq/N
Access: rw
Type: bool
Values: on | off
Default: on
Description: enables/disables the use of given GLONASS satellite with frequency channel number equal to N (-7...13) for positioning.

2.13 Parameters for PPP connection

Name: /par/ppp/mtu
Access: rw
Type: integer
Values: [1000..1500]
Default: 1500
Description: MTU value to change the default PPP settings during server negotiations

Name: /par/ppp/ping
Access: rw
Type: integer
Values: [0..300]
Default: 10
Description: Number of echo packets send to server to check if line is dead, before disconnect. For CDMA usually set to 0. Depends on the CDMA provider settings

Name: /par/ppp/idle

Access: rw
Type: integer
Values: [0..7200]
Default: 0

Description: The interval in seconds if ping is set to 0 to define line dead if no data received from the server. Mostly used for CDMA

2.14 Switching between dynamic constants that are used in the definition of PZ-90 and PZ-90.02 datum

Name: /par/pos/datum/glo/dyn
Access: rw
Type: enumerated
Values: P90 | P90-I
Default: P90

Description: PZ-90 and PZ-90.02 datum use different dynamic constants. In order to maintain compatibility with previous versions of the firmware, this parameter needs to be changed when working with RTCM Message Types 20/21.

Posted by: [Freddy Blume](#) - Thu, Jan 17, 2008 at 11:14 AM. This article has been viewed 17984 times.

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