

TWIG Configuration Guide

Publication number: YZ6501-13-EN

For TUP93EU devices:

- TWIG SOSCard

For TUP92EU devices:

- TWIG Protector Pro Ex
- TWIG Protector Ex
- TWIG Protector Pro
- TWIG Protector
- TWIG Protector EasyS

For TUP91EU devices:

- TWIG Embody

For TUP90EU devices:

- TWIG Protector Pro 3G and 2G
- TWIG Protector 3G
- TWIG Protector Easy S and P 3G
- TWIG Sure

Compatible with:

- TWIG Configurator
- TWIG FirmwareLoader

For TUP93EU devices:

- TWIG SOSCard

For RG310 devices:

- TWIG Bracer

For TUP92EU devices:

- TWIG Protector Pro Ex
- TWIG Protector Ex
- TWIG Protector Pro
- TWIG Protector
- TWIG Protector EasyS

For TUP91EU devices:

- TWIG Embody

Compatible with:

- TWIG Point Remote Configurator

Due to functional differences between TWIG device models, versions and releases, all settings described in this document are not applicable to all devices. Generally only those settings applicable to the specific device being configured are displayed for selection by the TWIG Configurator application or TWIG Point Remote Configurator.

TWIG over-the-air protocols are generally backwards compatible from TGP81EU to TCP90EU to TUP90EU to TUP91EU to TUP92EU. For details please refer to TWIG Integrator Kit (TWIG MPTP Specification and TWIG GPRS Protocol Specification).

Twig Com Ltd has a general policy of backwards compatibility to protect customer system investments. Twig Com Ltd however reserves the right to change its products, specifications and documentation without prior notice.

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1. Installing TWIG Configurator

Download the TWIG Configurator application setup file (TWIG_Configurator_setup.exe) from www.twigcom.com, and save it in your computer. The application installs by executing the .exe file.

Caution!

- Use the latest TWIG Configurator and TWIG FirmwareLoader versions, matching your TWIG device type. Device type (TUP93EU, TUP92EU, TUP91EU, TUP90EU or TCP90EU) is printed in type label, on back side of device.
- Settings files saved from TWIG Configurator are NOT cross-compatible between device types TUP93EU, TUP92EU, TUP91EU, TUP90EU and TCP90EU.

System requirements: Windows 10, Windows 8, Windows 7, Windows Vista or Windows XP. USB port, TWIG USB-miniUSB cable and Charger adapter or Programming Station.

Connect TWIG device to computer with USB-miniUSB cable (ACU) attached to the charger adapter “clip” (AUG81) or programming station (AGP81). TWIG Protector Ex of device type TUP92EU must not be connected to PC or any charger with any other charging cable than FME92EU or FCE92EU.

The operating system will notify you of finding a new device, and installs drivers automatically.

Installation process may vary depending on your operating system. Installation requires workstation administrator rights. After the installation is done, you may need to restart and reconnect the device.

You can change tool language from tool File menu.

2. Connecting Device with PC

Once the TWIG Configurator software application is installed, you can establish a connection between TWIG device and your computer.

Device must be turned on and connected to computer when using the TWIG Configurator.

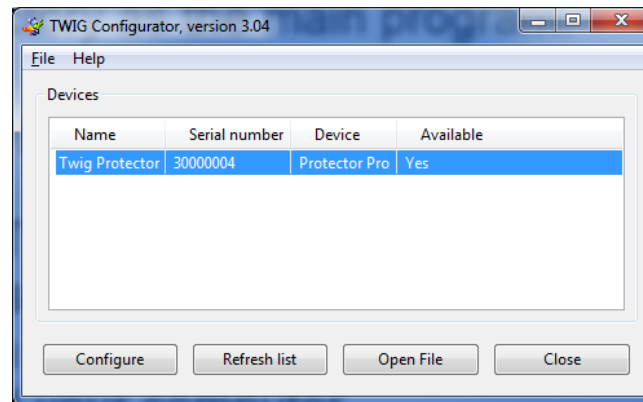
Connect TWIG device to computer with USB-miniUSB cable (ACU) attached to the charger adapter “clip” (AUG81) or programming station (AGP81). TWIG Protector Ex of device type TUP92EU must not be connected to PC or any charger with any other charging cable than FME92EU or FCE92EU.

Note!

- TWIG charging stations CTA81, CTA91 and CTA93 does not support USB connection.

Next run the TWIG Configurator application by double-clicking on the .exe –file on your computer.

Select the correct device to be configured from the list and press **Configure** –button. TWIG device connects automatically, as indicated by device information on right pane.



Press **Read from device** to get current settings from the device.

3. Device Information and Settings

The Device Info box displays details on your TWIG device, including the serial number, IMEI code as well as the device firmware versions and installed modules. If you want to copy TWIG device details to your clipboard, click details with your mouse right key.

You can access various settings groups by clicking on the setting groups in the left window.

Note that TWIG device settings are case sensitive. If there are wrong characters or other invalid values entered in a data field, those are ignored and default value is used instead.

Depending on device hardware version, firmware version and configurations, all settings may not be available. Please contact TWIG Support if in doubt.

Note! If the device has already been configured remotely from a central station (for example TWIG Point Monitor), care should be taken not to interfere with the remote settings when using TWIG Configurator.

Device Control

Reboot Device –button restarts the unit. Reboot is needed after uploading settings to device by **Write to device** –button. Use then **Read from device** –button to reload new saved settings from device back to TWIG Configurator application.

Factory Reset –button restores factory default settings.

Set Password –button gives access to managing device settings password.

Device Name: Enter device name of up to 15 characters.

Display Contrast: -slide changes device screen contrast. The value is unique to each unit and is pre-programmed in the factory.

Device Settings

Write to device –button saves the current settings from the TWIG Configurator application to device.

Note!

Use **Reboot Device** after uploading settings by **Write to device** –button, to ensure all settings take effect.

Read from device –button reads all the settings currently in the device to TWIG Configurator application. This overwrites all data field values in TWIG Configurator

4. Managing settings files

You can save device settings from TWIG Configurator to a PC file as well as read device settings files from PC to TWIG Configurator.

Caution!

Settings files saved from TWIG Configurator are **NOT cross-compatible between device types TUP93EU, TUP92EU, TUP91EU, TUP90EU and TCP90EU.**

Read from file reads settings from a .twig –file to TWIG Configurator. This overwrites all data field values in TWIG Configurator.

Save to file writes the current settings values in TWIG Configurator to a .twig –file.

5. General Settings

PIN Code

Stores 4-digit PIN code for device SIM card. Default value for TUP90EU, TUP91EU, TUP92EU and TUP93EU devices is empty.

PIN Code can be managed either by entering here the correct code, or disabling the PIN code in the SIM card.

Disable PIN by placing the SIM card in a compatible mobile phone, and by turning off the PIN query.



If PIN code is defined incorrectly, the *SIM Failure Symbol* will be displayed when device is powered on. After three failed attempts, the SIM card will be blocked. If your SIM card gets blocked, you need a PUK code (8 digits) to open it. Remove the SIM card from the TWIG device and install it into a mobile phone compatible with your SIM card. When trying to open the phone, it will prompt you for the PUK code. After entering the PUK code, key in a new PIN code. You can then install the SIM card back to your TWIG device. If you fail to key in the correct PUK code 10 times in a row, your SIM card will be permanently blocked. If this happens, contact your network operator to get a new SIM card.

Sleep Mode (Power Saving Mode)

Sleep Mode controls how the device sleeps and wakes up. This can substantially affect battery operating time.

Note that if *Sleep Mode* selection is other than *Normal* then *GPS Motion Sensitivity* and *ManDown* functions are disabled.

Normal: Device does not enter “deep sleep” at all. Device uses timers (such as *Max GPS search time*, *GPS Sleep Time*, *GPRS Reconnect Interval*) to control operation and current consumption.

Medium (Sensor): Device wakes up after *GPRS Reconnect Interval* has elapsed, or whenever it moves (detected movement is greater than *GPS Motion Sensitivity* [mG]). As long as device is awake it is controlled normally by *GPS Max Search Time*, *GPS Sleep Time* and *GPRS Reconnect Interval*. If tracking is activated, tracking update messages are sent only when device is moving and awake. Whenever movement stops (detected movement is below *GPS Motion Sensitivity* [mG]), device goes to sleep after 5 minutes.

Medium (Sensor) with LCD off: Same as Medium, but device display is off.

Heavy (Timer): Only applicable to TWIG Asset Locator. The device wakes up only to the Power ON key, or after *GPRS Reconnect interval* or active tracking interval has elapsed.

Service Center Number

Defines the SMS number where generic Mobile Originated MPTP messages such as low battery or docking & undocking notifications are sent. The

same number is also authorised to transmit remote configuration via SMS.

If GPRS is used type “GPRS” (without “”) instead of SMS number.

OSM message tone

Defines the tone mode when device receives a **Not Forced effects’ OSM (On Screen Message)** MPTPmessage.

Off: No beep

Beep: Short beep.

Continuous Beep: Beep repeated until user clear OSM message from keypad or device receives “empty” OSM message.

Automatic Answer

Disabled: All incoming calls are allowed and they are shown to user as incoming call (default).

Enabled: All incoming calls are automatically answered.

Block All Incoming Calls: Incoming calls are not received and not shown to user.

Note!

If white list is in use, its handling of calls or calls and SMS’s will override this setting.

Incoming call reject/end

Defines if user can reject/end incoming call with END key.

Allowed:

Denied:

Silent incoming / outgoing call initiation

When ON, device earphone audio is kept muted until call will be answered and line connected

Hide call numbers

When ON, phone numbers of incoming/outgoing calls are not displayed on device screen.

Low battery warning mode

Defines how the user is notified with tone and vibration of the low battery level.

- **Default:** Device beeps and vibrates until it is connected to charger.
- **Once:** Device beeps and vibrates once.
- **Never:** User is not notified of the low battery level.

Status Messages

Define if the TWIG device transmits status messages to Service Center, informing of various events.

Low Battery –message is sent when device battery level declines to limit value, selectable between **20**, **40** or **60** percent of full battery charge. Default is OFF.

Note that battery levels can vary substantially when using the device, particularly with timer functions. This may cause false or repeating Low Battery alarms.

Docked –message is sent when TWIG device is placed in charging station CTA81 (“dock”) and **Undocked** –message when device is picked up from charging station. Default for both is OFF.

Power On –message is sent when device is switched on, and **Power Off** –message when user turns off the device or it turns itself off due to low battery. Default for both is OFF.

ManDown On/Off –message is sent if user toggles ManDown function on or off. User authorisation to switch **ManDown** function on or off can be set in **ManDown** settings.

ManDown pre-alarm –message is sent when counting down of the set ManDown pre-alarm time starts.

Display Settings

Define settings for Display orientation, displaying duration, date and time

Orientation: Display orientation can be normal, upside down or automatic. Automatic orientation turns display automatically to right orientation when user turns the device.

Displaying duration: Setting defines how long time display is kept ON.

Clock: With clock settings you can define the format of the time, the date and the duration for displaying clock. With Display clock and Display date you can both set it on as well as define the format of displaying. When Display date settings are selected in ‘Easy mode’, the GSM, GNSS and Battery status will be displayed in the idle mode. Time zone can be defined permanently as offset to GMT or taken automatically from GSM network provided that network supports the function.

UI keys

Settings for UI keys specify the alternative functions/methods for the SEND/END (F1/F2) keys.

UI keys method determines how many times UI key must be pressed to perform the function.

The alternative functions for the F1 (SEND) and F2 (END) keys are:

- Primary function (call/reject call as with normal phone)
- GNSS ON/OFF
- ManDown ON/OFF
- ManDown pause (ManDown alarm will be paused for the time defined in the setting *Pause time*)
- Amber alert ON/OFF
- Assistance call/message
- Push to fix
- Power off
- Ripcord ON/OFF

The icon of the defined function is displayed above the UI key.

Haptic vibra feedback defines vibrating time when user presses UI keys.

Environment

Settings for *Environment* control **Earpiece Volume**, alarm/warning **Tone Volume**, **Light Mode** and **Vibra Mode** values for various events.

Normal, Hands Free, Alarm SOS key, Alarm TWIG Button SRD wireless alarm, Alarm ManDown function, Amber alert and Alarm ripcord events all can have separate settings on each of the controlled values.

Value for *Earpiece Volume* can be set from 1 to 5, or if value 0 is used earpiece and speaker are muted, e.g. in order to raise silent alarm.

Note!

Earpiece Volume levels 4 and 5 enable Speaker Phone level, and are too loud for normal phone use.

Value for *Tone Volume* can be set from 1 to 5, or if value 0 is used tones are not sounded at all.

F1/F2 keys can be muted, when selecting ON in *Mute key tone* setting.

Charging Station Actions

Turn Off when Placed To Charging station = ON

Device turned OFF when device placed on charging station.

Turn On When Removed From Charging station=ON

Device turned ON when device removed from charging station

6. GSM

Lost GSM Beep tone interval

Enable BEEP tones, sounded in case there is no mobile network signal, or registering to mobile network fails. Default is OFF.

Tone Interval: Time interval between BEEPs [seconds].

7. GPS/GNSS

Max GPS/GNSS Search Time

Defines for how long GPS is trying to get a refreshed position after receiving a position request. If the refreshed position is not acquired within that time, device sends position update using the previously stored last known position. Valid values for *GPS Search Time* are between 2...10 minutes. Default value is 5 minutes. If the value is low, unit may not get position at all in poor satellite conditions. If the time is set long and unit is in poor satellite conditions it may unnecessarily increase power consumption and thus decrease operating time.

Sleep time

Defines how frequently GPS is updating position while not controlled by other processes like tracking. Time interval can be set between 0...18 h :12 min : 25 sec. Default value is 3 min 20 seconds. 0 means that GPS is permanently turned ON.

Realtime Economy Mode

Defines GPS functionality so, that GPS is automatically turned ON/OFF if position acquisition is not possible. Typically when user is long times inside of a building.

Motion Sensitive

Defines if the GPS is controlled by motion sensor. If = ON, GPS is turned off to save battery whenever detected movement is lower than the defined [mG] value in Motion Sensitivity item. Note

that if this option is selected ON, you cannot use Man Down alert functions

Motion Sensitivity

Defines how much device must move to trigger GPS ON.

GPS/GNSS position validity period

Related to the setting “Easy Mode”, it specifies the time after which the GPS position is interpreted as not valid in Easy Mode.

TWIG AGNSS

Benefits of using AGNSS

It is generally recommended to use AGNSS (Assisted GNSS) to improve GNSS position availability and thus maximise chance of having current device position e.g. in case of user emergency.

GNSS system typically offers no position availability indoors, and degraded position availability when moving from indoors to outdoors (“first fix”). AGNSS may speed up first fix and improve position availability.

Note!

In order to use *TWIG AGNSS*:

- *GPRS Mode* must be ON.
- Mobile subscription must have GPRS/IP service on.
- Mobile operator *GPRS setting* must be correct. Typically it is enough to set *APN* = “internet”.

AGNSS Mode

OFF: No AGNSS is activated.

ON: Recommended for all compatible device models. Typical monthly GPRS/IP data usage: 3 MB.

Cost of using AGNSS

There is no fee for using the TWIG AGNSS.

Caution!

Each mobile operator charges for GPRS/IP data transfer according to their current rates and policies. Beware of data cost especially when roaming.

8. TWIG SOS Settings

SOS Cycle

SOS cycle is a series of emergency calls and messages triggered by pressing the SOS key or automated via e.g. ManDown alarm

SOS Key Activation Mode

Selects how the SOS key is used to activate the SOS cycle:

Disabled: The SOS key cannot be used.

Long Press

Two Presses

Activation Method Timeout

Defines for how long the SOS key needs to be pressed or within what time it needs to be pressed twice. Default is 5 seconds.

Post Emergency Mode

Enables the *Post Emergency Mode*.

During *Post Emergency Mode*, for example, GPRS/IP connection is kept on, incoming calls are blocked, and *Post Emergency Beep* is sounded to help locating the user.

Note!

In TCP90EU devices, user cannot activate another alarm until he ends *Post Alarm Mode* with RED END key.

Alarm Call Continue

Forces the emergency cycle to process all calls even if the preceding call is successful. All calls must be successfully made before stopping the emergency cycle. Default is OFF.

Power-Off Button Disabled

Blocks the user from turning off the unit with power key. Default is OFF.

SOS ACK

Enable: If enabled, *SOS ACK* acknowledgement MPTP message is expected from ARC within *SOS ACK Response Time*.

SOS ACK Response Time (Value): Defines for how long the device will wait for MPTP *acknowledgement* message from the EMG message recipient, before proceeding to next number in the *SOS Events* list.

Emergency Number Text

Defines the text for prompting user to call network emergency number, for example when no SIM card is inserted or no roaming network is available. Default text is "112".

Note!

Emergency Number Text is only displayed to user, and does not affect dialling. Call will be made to public emergency service. No position is sent.

Event Start Delay

Defines a delay used between events in SOS cycle. Depending on the network, this delay may need to be substantial since network may reject calls made in fast sequence. If there are only SMS numbers in the SOS cycle the delay can typically be shorter.

Full SOS Cycles

Defines the number of full TWIG SOS event cycles to be done. Range is 1 – 5. Default is 1.

Call Timeout

Defines the timeout to skip to next event on SOS list if no answer from B-subscriber.

Post Emergency Beep

Defines the time interval between "locate me" – beeps. Range is 0 - 250 seconds. Default is 0 which means the beep is disabled.

SOS Vibrator Enabled

Defines if device will shortly vibrate at the exact moment when Pre-Alarm ends and TWIG SOS starts, following user pressing device SOS key, or TWIG Button, or ManDown triggering alarm. Default is ON.

Note that *SOS Vibrator Enabled* only applies to this special case. Generally vibrator is controlled in *General Settings / Environments*.

Display

Defines if TWIG SOS is sent without showing actions on device screen. If disabled, only a small icon on the info line on top of screen indicates ongoing alarm. This allows discrete or hidden TWIG SOS. Default is ON.

END Key Timeout

Defines if TWIG SOS can be ended once started. 0 means it can only be ended from remote center by hanging up the call. Default is 1 second.

Rip alarm

Defines settings to use Ripcord as trigger to SOS cycle.

Enable setting turns the function on by defining the timeout.

RePlug setting allows to cancel the alarm from starting if plug is put back to its place within timeout period.

Activation Method Timeout

Defines the period how long SOS key need to be pressed before alarm cycle started.

(Protector 1...5 seconds, SOSCard, Embody and Protector Easy 2...5 seconds)

Cancellation Period

Defines the period (0..20 seconds) when the SOS cycle can still be cancelled if activated from SOS key. Default is 0 which disables the cancellation possibility.

GPS/GNSS On Time

Defines how long the GPS will be kept on in full power after the started SOS cycle.

SOS Texts

Define the text string in EMG message identifying each possible alarm trigger type:

SOS key: Alarm triggered by device alarm button. Default value is "SOS KEY".

ManDown: Alarm triggered by ManDown function. Default value is "MANDOWN ALARM".

TWIG Remote Button: Alarm triggered by TWIG Button wireless RF remote SOS button. Default value is "REMOTE".

Amber Alert: Alarm triggered by Amber alert (timer alert, condition check). Default value is "CONDITION CHECK".

Ripcord : Alarm triggered by Ripcord. Default value is "RIPCORDER ALERT".

Maximum length of text string is 60 characters (TCP90EU 15 characters). Only characters 0-9, A-Z and a-z are valid. No special characters are allowed.

SOS Events

TWIG SOS initiates an alarm sequence, controlled by a list of up to 10 configurable *SOS Events*.

SOS Event Type

Call: Phone call is made to *Phone Number*.

SMS MPTP: SMS message is sent to *Phone Number*, in MPTP format. SMS messages sent before calls. Position is based on GPS/GNSS.

SMS MPTP (GPRS/IP): When *Phone Number* is “GPRS” (without “”), alarm MPTP message is sent over GPRS/IP to *IP Server Default*, or to *IP Server EMG* (if defined separately). Position is based on GPS/GNSS

Alarm MPTP message is sent over GPRS before making *Call*. This does not delay the call more than a few seconds. If GPRS connection is not possible, call only will be made.

Because SMS transmission is in many circumstances more reliable than GPRS, it is recommended to always define *SOS Events* using at least SMS messages.

SMS Google: SMS message is sent to *Phone Number*, as a Google Maps hyperlink to which data fields are appended in brackets. Position is based on GPS/GNSS

SMS Text only: SMS message is sent to *Phone Number*, as “mini EMG” = plain language text

string, defined in *SOS Texts*. If you want to send messages from device to device use OSM in *SOS text fields*.

SMS MPTP hybrid location: SMS message is sent to *Phone Number*, in MPTP format. Position is based on hybrid location service from TWIG Point Netloc.

If SMS messages based on GPS/GNSS position are used in *SOS cycle*, it is recommended to set in the *SOS events* first the GPS/GNSS messages and TWIG Point Netloc based position SMS messages thereafter.

SMS Google hybrid location: SMS message is sent to *Phone Number*, in MPTP format as a Google Maps hyperlink to which data fields are appended in brackets. Position is based on hybrid location service from TWIG Point Netloc

If SMS messages based on GPS/GNSS position are used in *SOS cycle*, it is recommended to set in the *SOS events* first the GPS/GNSS messages and TWIG Point Netloc based position SMS messages thereafter.

SOS Event Values

Phone Number: Defines SMS/Call number, or “GPRS” (without “”).

Event Retries defines how many times a failed *SOS Event* is retried before moving to next one.

When *SOS ACK* is enabled, an MPTP ACK to a *SOS message* must be received from that Central Station within *SOS ACK Response Time*, or this *SOS Event* will fail.

Event Group: Order number of *SOS Event Group*, for implementing parallel alarm sequence branches. For linear alarm sequence, define value 1 (default) for all *SOS Events*.

Name is only for reference and not shown on screen.

Linear Alarm Sequence

SOS Events are executed one after other, in their numeric order (1 to 10). All SMS messages are sent first before the first call (if any) is being made. If several calls are defined, the calling chain is continued according to *Alarm Call Continue*.

Branched Alarm Sequence

SOS Events are branched into parallel *SOS Event Groups*, executed in their numeric order (1 to 9). Within each *SOS Event Group*, the *SOS Events* are executed in their numeric order (1 to 10).

If all *SOS Events* in any *SOS Event Group* are successfully completed, the whole alarm sequence is considered successful and ended.

If an *SOS Event Group* fails, the alarm cycle proceeds to the next *SOS Event Group*.

Alarm Call Continue

As soon as a call in the *SOS Events* –list is answered, the cycle will stop making further calls, if *Alarm Call Continue* is OFF (default).

An answering machine will also stop making further calls, despite no person has yet been reached. If *Alarm Call Continue* is ON, all calls in the *SOS Events* –list will be made, whether the prior calls are answered or not. All calls are also made, whether they belong to parallel *SOS Event Groups* or not.

TWIG Self-Test (DIN0825)

Enabled: On device power-up, initiates Self-Test for device SOS key, ManDown function, TWIG Remote Button and TWIG Beacon, and sends Self-Test report to Central Station.

Wait ACK controls Self-Test procedure:

ON: Device will not proceed from Self-Test to normal operation mode, until it receives Self-Test acknowledgement from Central Station.

OFF: Device will proceed from Self-Test to normal operation mode as soon as it has successfully completed Self-Test and sent Self-Test report to Central Station.

Power Off When Docked

Defines if unit is sending a request to power off when set to desk charging station CTA81 (“dock”). Power Off –command is sent from Central Station.

9. Assistance Numbers

Here you define the action when the numeric keys on the TWIG Protector are pressed. If you program only one number per button the action is either call or MPTP assistance (!ASS) SMS depending on which is configured.

If both numbers are defined both actions are done.

In TWIG Protector Easy and TWIG Embody only first pair of numbers is used to trigger call/SMS with the Green SEND key.

In devices where there is no function e.g. TWIG Asset Locator the fields have no value.

Programming “GPRS” (without “”) as the SMS number the !ASS message will be sent over GPRS telematics.

Note that if a key is used for some other control, e.g. to toggle ON/OFF ManDown or Amber alert, assistance call function is disabled.

Text

Defines the text string in ASS message data field.

Type

MPTP: ASS message is sent to ASS SMS *Phone Number* in MPTP format

Google: ASS message is sent to ASS SMS *Phone Number* as a Google Maps hyperlink to which data fields are appended in brackets.

Text Only: ASS message is sent to ASS SMS *Phone Number*, as plain language text string, defined in ‘*Text*’

10. White List

White List controls authorization of incoming SMS and/or voice call to perform automatic actions.

If *White List Mode* is enabled, all authorised numbers must be listed, otherwise messages and calls will be rejected.

White List Mode

Disabled: White List is not used for authorising numbers.

SMS: All incoming MPTP SMS messages are screened.

Call: All incoming calls are screened.

SMS+Call: All incoming MPTP SMS messages and calls are screened.

White List Items (1...16)

Phone: SMS or phone number to be authorised.

LOC: Authorise location request SMSs from this number.

TRG: Authorise tracking request SMSs from this number.

CALL

Voice calls from each White List number can be individually screened:

Blocked: Calls from this number are blocked.

Allowed: Calls from this number are allowed to ring.

Auto Answer: Calls from this number are automatically answered.

HF Auto Answer: Calls from this number are automatically answered in hands-free (Speaker Phone) mode.

Note that Speaker Phone –mode is very loud and its use must be carefully considered.

Note!

Automatic Answer –setting in *General Settings* is overridden by *White List* when *Call* or *SMS+Call* is selected. A mix of allowed and blocked numbers can be defined, but if list has only blocked calls it blocks all calls.

GPRS messaging is not controlled by *White List* but by *GPRS* and *Servers* –settings.

Regardless of *White List* settings the device can be reset to factory defaults by specific over-the-air

commands (SMS or GPRS) when device details are known.

11. GPRS Settings

GPRS settings can be programmed remotely from the central station over MPTP SMS messages (as TWIG Point SP does), or they can be programmed locally.

When GPRS settings have been programmed remotely, care must be taken not to interfere with remote settings when using TWIG Configurator.

This section only defines mobile operator's GPRS connection settings. *Servers* –section defines IP servers' settings.

GPRS Mode

Defines if GPRS is used or not. Default is OFF.

Note that also *User ID* must be defined in *Servers* in order to use GPRS telematics.

APN

Mobile operator's Access Point Name for GPRS communication. Define the entire APN value in the field.

Typically GSM operators allow the APN to be left empty or replaced with "internet". You can get the correct APN from your mobile operator.

GPRS User Name

If your mobile operator requires a user name for GPRS login, define the name here.

GPRS Password

If your mobile operator requires a password for GPRS log-in, define the word here.

GPRS DNS 1-2

Some GPRS networks require that primary domain name server (DNS1) is specified. Define the DNS as an IP address. Maximum length for DNS1 name is 16 characters.

In most cases this should be left blank

GPRS International Roaming Blocking

If set, GPRS connection is disabled when roaming outside home network. If not set, GPRS connection is available also during international roaming.

Default is OFF. The value is checked every time when creating GPRS connection.

Caution!

Allowing GPRS data roaming may result in very high data costs charged by your mobile operator.

Note!

Device may roam also in your own country, close to country borders.

12. IP Servers

ID

ID is a number or text string used for uniquely identifying the device by the Central Station GPRS server. Typically this is the phone number of the TWIG device. ID is not needed if GPRS is only used for AGNSS.

Service Number (Backup SMS Number)

Phone number where MPTP messages are sent as SMS, in case GPRS Mode is enabled but GPRS connection is not available.

If *Service Number* –field is empty, then the SMS backup function is disabled (default).

Some limitations may apply. For example, real-time tracking (TRR) is not possible via SMS.

Caution!

Activating *Service Number* may result in high SMS transmission costs.

GPRS Connection Mode

Defines how the GPRS connection to server is kept active:

Only Reconnect: The *Reconnect* –mode is used at all times. Device makes GPRS connection to server at *Reconnect Intervals*, and receives any pending messages from server. Messages from device to server are transmitted without delay.

Always On: GPRS connection is always on. All messages between server and device are transmitted without delay.

When In Charger: GPRS connection is *Always On* when connected to charger, else *Reconnect* –mode is used.

Note that if you define *Always On* it may prevent device from sleeping or using timer functions, increasing the power consumption significantly and thus reducing battery life.

Reconnect Interval

Controls the sending interval of MO GPRS reconnect messages in *Only reconnect*–mode. The device sends reconnect messages to server to check for server status and for any pending incoming messages. Default value is 5 minutes.

You can decrease *Reconnect Interval* value to improve MT messages latency, at the cost of increased overhead traffic.

If *Reconnect Interval* is set to **0** (zero), device makes GPRS connection only at power-up, or at sending a MO message such as EMG or tracking. Also MT messages are transferred, however MT latency is undefined unless tracking is activated.

Reconnect Interval value is also used by *Sleep Mode*, in *General Settings*.

IP Servers

The device can be defined to transfer data via GPRS / IP connection with several servers. Switch between servers in data transmission is smooth, but sometimes network can cause delays.

Server Default

This is the IP server used for all messages, if no other server is defined. This is the default server for both MO (Mobile Originated) and MT (Mobile Terminated) messages and to keep connection open. Used e.g. for device management and tracking. Other servers normally do not keep connection open and are used for MO (Mobile Originated) messages only.

Server EMG

If this emergency server is defined, all EMG messages created by any SOS process will be

sent here but other messages to *Server Default* or *Server INF*.

Caution!

If the EMG messages are sent to the same address as is the default server IP, it is recommended NOT to configure IP address for “Server EMG” to avoid unnecessary GPRS connection and data costs.

Server INF

Server INF–settings are only available for type TUP93EU, TUP92EU, TUP91EU and TUP90EU – devices.

If this info message server is defined, then mobile originated status and information messages (e.g. low battery, power on/off) are sent here but other messages to *Server Default* or *Server EMG*.

Caution!

If the INF messages are sent to the same address as is the default server IP, it is recommended NOT to configure IP address for “Server INF” to avoid unnecessary GPRS connection and data costs.

URL

Defines the URL address (only type TUP93EU, TUP92EU, TUP91EU and TUP90EU –devices), or alternatively the IP address, of this server.

Port

Defines the IP port of this server.

Protocol

Protocol –setting is only available for type TUP93EU, TUP92EU, TUP91EU and TUP90EU – devices.

Defines format of outgoing position messages to this server:

MPTP: All outgoing position messages are sent in MPTP format.

Google Maps: All outgoing position messages are sent as Google Maps hyperlink. Data fields from the end of MPTP message are in brackets in the end of hyperlink.

Security

Defines if GPRS connection is secured with SSL/TLS encryption or not.

None: Connection used is not encrypted.

SSL/TLS: Connection used is secured with SSL/TLS encryption.

Default setting is *None*.

Backup number

Phone number where MPTP messages are sent as SMS, in case GPRS Mode is enabled but this server GPRS connection is not available.

MPTP

Header Translation

Defines whether special characters (? and !) in the beginning of MPTP messages (both SMS as well GPRS) are replaced by letters or not. Replacement is necessary in some mobile phone networks when using SMS where operator uses these characters for their own purposes.

Translate header:	OFF	ON
Requests:	?	Q
Updates:	!	E

Default value is OFF.

Note that the *Header Translation* setting needs to be configured identically in the central station, whether it is a server system or a TWIG device.

Google Format

Enables a mode where all outgoing position messages are sent as Google Maps hyperlink. Data fields from the end of MPTP message are in brackets in the end of hyperlink.

Devices of device type TUP90EU and later allow message format to be selected, in *SOS Events*, separately for each SOS message receiver, e.g. one EMG message to a smartphone as Google Maps hyperlink, and another EMG message to Central Station in MPTP format.

Use fixed position source

When set ON, the position source data field value is always “gps” for MPTP messages regardless what has been the original position source.

Beacon sort & send

Defines how beacons' data is sorted and sent. Options are:

- “Two groups, send many”= as previously.
- “Send strongest” = only the strongest beacon data will be send
- “One group, send many” = beacons are sorted in one group based on the signal strength from the strongest to the weakest
- “Send strongest within search time” = only strongest beacon data within search time will be send.

Internal MPTP Commands

Allow programming macros that are executed in the device in the same way as MPTP commands sent from central station via SMS or IP/GPRS, such as tracking or position request.

Internal MPTP Commands can be run automatically on every start up, or when unit shifts from Emergency to Post Emergency mode.

Mode defines the execution condition:

OFF: This *Internal MPTP Command* is disabled.

Startup: This *Internal MPTP Command* is run automatically on every device power-up.

Post Emergency: This *Internal MPTP Command* is run automatically every time the device changes from *Emergency mode* to *Post Emergency mode*.

Phone number is the recipient of SMS based MPTP message.

Command is the actual MPTP command to be executed. Refer to TWIG Integrator Kit (*TWIG MPTP Specification*) for details.

As an example, automatic tracking can be started when Emergency cycle is passed. The use of this mode requires that *Post Emergency Mode* is set ON in *SOS Settings*.

13. ManDown Alarm

ManDown alarm is a sensor-based aid to triggering SOS cycle also when the user is incapacitated and can no longer raise alarm by pressing SOS key.

In order to minimise false alarms or missing alarms, the ManDown alarm settings need to be carefully matched with the usage scenario and

environment. The user needs to be trained on ManDown function and also on understanding its limitations.

Sensor Mode

OFF: ManDown is always off.

ON: ManDown is always on when device is turned on.

Enabled ON: ManDown is turned on when device is turned on. User can toggle mode off/on with key 4 (TWIG Protector).

Enabled OFF: ManDown is not turned on when device is turned on, but user can toggle mode on/off with key 4 (TWIG Protector).

Note that if *GPS Motion Sensitivity* is enabled, ManDown alarm cannot be used and settings are greyed out.

Normal Status Delay

Defines for how long the device needs to be back in the normal orientation/movement before normal status is restored. *Normal Status Delay* is useful to prevent cancelling TWIG SOS by accident. Range is 1 - 5 seconds. Default value is 1 second.

Alerts When

The set ManDown criteria for triggering TWIG SOS (default is *Horizontal*):

Horizontal: TWIG SOS is launched when device main axis orientation deviates from absolute upright position by more than *Tilt Angle* (in degrees). Device movement has no effect.

Vertical: TWIG SOS is launched when device beam axis orientation deviates from absolute upright position more than *Tilt Angle* (in degrees). Device movement has no effect. Typical application is wearing the device on the belt, in a horizontal carrying case.

See *Appendix A: ManDown Angles Illustrated*, for visualisation of device orientations for alert and no alert.

No Movement: TWIG SOS is launched when detected device movement (acceleration) falls below a threshold value defined by *Motion Sensitivity*. Device orientation has no effect.

Horizontal + Motion Sensitivity Enabled: TWIG SOS is launched when device main axis orientation deviates from absolute upright position more than *Tilt Angle* (in degrees), AND detected device movement (acceleration) falls below a threshold value defined by *Motion Sensitivity*.

Vertical + Motion Sensitivity Enabled: TWIG SOS is launched when device beam axis orientation deviates from absolute upright position more than *Tilt Angle* (in degrees), AND detected device movement (acceleration) falls below a threshold value defined by *Motion Sensitivity*.

Motion Sensitivity

Enable: Adds movement criteria to orientation criteria, see *Alerts When* above.

Value: The threshold amount of detected device movement (acceleration) indicates either motion activity or motion inactivity. Range is

20... 999 mG. Default value is 100 mG. (1G = 9,8 m/s²).

No Alarm Duration

When ManDown sensor detects alarm-triggering condition (*Vertical / Horizontal / No Movement*), this setting defines a waiting time during which the sensor is waiting for the normal status to be restored, before actually triggering the Pre-Alarm and finally alarm. This is useful to prevent unnecessary alarms for example in cases where the user has fallen down or sits down but is otherwise fine. Range is 1 sec...18h:12 min:14 sec. Default value is 30 seconds.

Pre-alarm Duration

Once ManDown sensor has detected an alarm-triggering condition and *No Alarm Duration* has passed, device enters Pre-Alarm period. During Pre-alarm the user is alerted by sound and vibration (according to sound and vibration settings in *Generic Settings / Environments*). When Pre-alarm period is over, and normal orientation/movement has not been restored, TWIG SOS is launched. Range is 1sec... 18 h:12 min:14 sec. Default value is 30 seconds.

Tilt Angle (ManDown Angle)

Defines the tilt angle (in degrees) the device must tilt, before its orientation is deemed to change from *Vertical* to *Horizontal*. Default value is 45 degrees.

Alert Cycle Repeat

Once: Normal orientation/movement has to be restored before SOS cycle can be launched again from sensor. (Default)

Repeating: ManDown alarm repeated and SOS cycle launched again until normal orientation/movement is restored.

Torch Flash (Only TWIG Bracer)

ON: Torch LED light flashing is enabled during the ManDown pre-alarm

OFF: Torch LED light flashing is disabled during the ManDown pre-alarm

Pause time

ManDown pause function related to the UI keys. This setting determines the time the sensor is paused when user activates *ManDown pause* time function.

Pre-alarm cancel enabled

When enabled, user can cancel ManDown pre-alarm triggered by change of orientation or no movement

Pre-alarm can be cancelled by pressing END key.

ManDown+

The TWIG personal alarm supporting ManDown+ feature alerts the ARC also in situations where the user is not moving (e.g. because of unconsciousness) but the personal alarm is not deviating enough from the absolute tilt angle (e.g. where fainting doesn't include falling and change in device orientation axis).

No Movement Duration

When ManDown criteria *Horizontal* or *Vertical* are applied (see the title *Alerts When*), it is possible to set an additional trigger *ManDown+*. The

ManDown+ setting of *No Movement Duration* defines the waiting time in seconds before the Pre-Alarm and finally alarm is triggered. ManDown+ is disabled when the *No Movement Duration* is set to 0.

ManDown++

Freefall: defines if device will trigger SOS cycle when device discovers a free fall situation. The limit is set to approximately 1 meter of free fall to trigger alert.

Impact: turns on the function to detect impact of e.g. accident or falling down. Note that if device is carried so, that it can freely move and hit e.g. body the impact alert will not properly work, but will give false alarms

14. Amber Alert

(Condition Check, Timer Alarm)

Amber alert is an effective timer-based aid to triggering TWIG SOS when facing high-risk “code yellow” scenarios, also when the user is incapacitated and can no longer raise alarm by pressing SOS key.

Interactive Amber alert can also aid triggering alarm at Alarms Receiving Centre (ARC), in scenarios where loss of mobile network coverage is anticipated and transfer of SOS from TWIG device to ARC is thus compromised.

Interactive Amber alert, when chosen, requires careful integration with the ARC system, in order to effectively manage lone worker risks.

Amber Alert Mode

OFF: Amber alert is disabled, and cannot be activated by the user (default).

INTERACTIVE: Amber alert is enabled, and have to be activated by the user with assistance of the ARC.

Main alarm timer, upon expiration of which “code yellow” turns to “code red”, is to be implemented by the ARC system. The benefit of this architecture is that alarm will be raised at ARC also in case the TWIG device loses mobile network coverage after setting Amber alert.

There is a local timer on TWIG device, set at the same time with the ARC timer and with the same expiry duration, informing user through Pre-alarm when it is time to reactivate or turn off Amber alert.

Following the Amber alert activation by user, activation request is sent to ARC *Activation Phone Number*, either as MPTP SMS or GPRS message, or as voice call. Amber alert is only started when device receives an activation confirmation (ACK) from ARC *Activation Phone Number*, after which an activation indication (IND) is sent to ARC.

Amber alert is reactivated the same way as it is started the first time.

Following Amber alert deactivation by user, deactivation request is sent to ARC *Deactivation Phone Number*, either as MPTP SMS or GPRS message, or as voice call. Amber alert is only stopped when device receives a deactivation confirmation (ACK) from ARC *Deactivation Phone Number*, after

which a deactivation indication (IND) is sent to ARC.

LOCAL:

Amber alert is enabled, and have to be activated by the user (default).

Alarm timer, upon expiration of which “code yellow” turns to “code red”, runs in the TWIG device. The same timer informs user through Pre-Alarm when it is time to reactivate or turn off Amber alert.

Following the Amber alert activation by user, activation indication is sent to ARC *Activation Phone Number*, either as MPTP SMS or GPRS message, or as voice call.

Amber alert is reactivated the same way as it is started the first time.

Following Amber alert deactivation by user, deactivation indication is sent to ARC *Deactivation Phone Number*, either as MPTP SMS or GPRS message, or as voice call.

Amber alert is started/stopped, whether device receives an activation/deactivation confirmation (ACK) from ARC or not.

ACK Needed

Apply only to TWIG Point Remote Configurator.

Phone Number Type

Defines if SMS, GPRS or voice call is used for Amber alert activation/deactivation request, and for activation/deactivation confirmation (ACK), and for activation/deactivation indication (IND).

CALL: Device makes phone call to *Activation Phone Number* or *Deactivation Phone Number*, to request (*Interactive Mode*) or indicate (*Local Mode*) Amber alert activation or deactivation.

During phone call, user can select Amber alert timer duration by pressing device button for 2 seconds: 1=30 min, 2=1h, 3=1h30min, 4=2h. Selection is transmitted to ARC as DTMF.

Activation/deactivation confirmation (ACK) and activation/deactivation indication (IND) are transferred over SMS or GPRS.

SMS: Device sends a MPTP SMS message to *Activation Phone Number* or *Deactivation Phone Number*, to request (*Interactive Mode*) or indicate (*Local Mode*) Amber alert activation or deactivation. The activation request/indication message includes Amber alert timer duration value.

Activation/deactivation confirmation (ACK) and activation/deactivation indication (IND) are transferred over SMS.

SMS (GPRS): When *Activation/Deactivation Phone Number* is "GPRS" (without ""), device sends a MPTP GPRS message to *IP Server Default*, to request (*Interactive Mode*) or Indicate (*Local Mode*) Amber alert activation / deactivation. The activation request/indication message includes Amber alert timer duration value.

Activation/deactivation confirmation (ACK) and activation/deactivation indication (IND) are transferred over GPRS.

Activation Phone Number

Defines the phone number to which the Amber alert activation SMS/Call is sent/made. If value is **GPRS**, all GPRS messages are sent to *IP Server Default*.

Deactivation Phone Number

Defines the phone number to which the Amber alert deactivation SMS/Call is sent/made. If set value is **GPRS**, all GPRS messages are sent to *IP Server Default*.

If value is left empty, Activation Phone Number is used as default.

Pre-alarm time

Defines how much before expiry of the Amber alert timer Pre-Alarm is started.

During the Pre-Alarm, user can either reset or turn off Amber alert. If the mode is *Interactive*, device must receive (re)activation / deactivation confirmation (ACK) from ARC *Deactivation Phone Number* before timer expires.

Time

Defines the time in minutes from which the timer countdown starts.

15. Short Range Devices (SRD)

TWIG device settings for operating with Short Range Devices (SRD) are discussed in this section.

SRD peripherals communicate with a SRD transceiver in the TWIG device, over a two-way 869 MHz ISM –band RF link.

Note!

There is a SRD RF transceiver unit only in those TWIG devices ordered with the SRD or SRD3 option. The SRD3 option available since May 2018 enable Wi-Fi and Bluetooth Low Energy location in addition to TWIG SRD compatibility.

With SRD or SRD3 option equipped TWIG device can operate with TWIG Remote Button category 2 SRD transceiver, TWIG Beacon locating devices, TWIG Tag identifiers and TWIG Door Sensor devices at the same time.

Note!

The SRD transceiver when activated increases TWIG device power consumption and thus decreases battery life.

The SRD transceiver is completely powered off when no TWIG Remote Button transceivers are paired with the device, and *TWIG Beacon Location Enabled* is OFF, and *TWIG Tag Enable* is OFF.

TWIG Remote Button SRD

TWIG Remote Button provides a flexible solution to trigger remote process with the TWIG device. TWIG Remote Button is only intended for use in environments of SRD receiver category 2 which is standard performance level of the SRD receiver and not for use as a social alarm ensuring reliable communication for a person in distress in a confined area to initiate a call for help.

Maximum of 5 TWIG Remote Button short range devices can be paired with one TWIG device.

Pairing and deleting TWIG Remote Button SRD

ID: Defines serial number of the TWIG Remote Button to be paired with the TWIG device.

Get ID: Click on the *Get ID* –button to activate pairing mode. Then press the TWIG Remote Button. Indicator on TWIG Remote Button unit will first light red and then turn green once paired.

To delete a TWIG Remote Button, clear the corresponding *Unit ID* and then click on **Write to Device**.

SOS cycle by TWIG Remote Button

When SOS cycle is initiated by TWIG Remote Button, the EMG message includes text field *SOS Texts / TWIG Remote Button* (default value is “SOS KEY”), followed by TWIG Remote Button *Unit* number (1 – 5).

TWIG Beacon locating device

TWIG Beacon locating devices complement AGNSS by providing a robust indoor location solution for environments such as factories, warehouses and institutions. Investment and location accuracy are scalable to suit case requirements.

TWIG Beacon Location Enabled

ON: SRD transceiver of TWIG personal alarm device is powered on, to listen to TWIG Beacon signals.

OFF: SRD transceiver of TWIG personal alarm device is not activated to listen to TWIG Beacon signals, however it may be activated to communicate with other types of TWIG SRD peripherals.

Low Battery Warning Forwarding

Defines if the low battery information received from TWIG Beacon is sent from TWIG device to Central Station.

ON: Low-battery warning message is sent when device registers new TWIG Beacon with low battery status. Low battery message is sent only once. When the device receives from same Beacon low battery cleared –message, the low battery status of that TWIG Beacon is reset.

OFF: Device forwards no low battery warnings from TWIG Beacon locating devices to Central Station.

TWIG Beacon Search Time

Defines the maximum time the Beacon signals are monitored. Range is 0...4 min : 14 sec. Default is 5 sec.

TWIG Beacon SRD Sleep Duration

Defines SRD transceiver's sleep time during which TWIG personal alarm device doesn't receive signals from beacons. If the value is set to 0, the SRD transceiver is listening to beacon transceivers continuously. Note that it effects the power consumption. Range is 0...4 min :14 sec. Default is 10 sec.

Show beacon name on display

Setting defines if beacon name is displayed on device screen when device scans available beacons.

ON: Name of the received beacon is displayed on device screen. When beacon has been scanned its name is displayed on screen with normal colour. When device starts to scan the next beacon, the displayed beacon name is displayed with negative colour until a new beacon signal is received or

device restarted. If the beacon name is not configured, the beacon ID number is displayed instead. Also BLE beacon and Wi-Fi base station names are displayed if the device is equipped with SRD3 option and scanning of BLE beacons and WiFi base stations is enabled in device.

OFF: The name of the received beacon is not displayed on device screen.

Beacon data preserve time

Specifies how long time the received TWIG Beacon data will be kept in device memory. Regardless of this setting, the beacon data will be cleared from the memory when device turned off.

TWIG Tag / TWIG Door Sensor RF identifiers

TWIG Tag / TWIG Door Sensor RF identifiers are a cost-effective solution for attendance monitoring, check-in / check-out points, logistics management and many other reporting applications.

When TWIG Tag RF identifier is swiped with compatible TWIG device, a *!INF* report message is sent to Central Station, with status code 019, text “*RFTag*”, TWIG Tag 8-digit serial ID, and time stamp.

Tag/Door Sensor Enabled

Activates the TWIG device to listen to messages sent by TWIG Tag/TWIG Door Sensor RF identifiers.

ON: SRD transceiver of TWIG personal alarm device is powered on, to listen to TWIG Tag/TWIG Door Sensor signals.

OFF: SRD transceiver of TWIG personal alarm device is not activated to listen to TWIG Tag/TWIG Door Sensor signals, however it may be activated to communicate with other types of TWIG SRD peripherals.

16. Wi-Fi and BLE locations

TWIG devices equipped with SRD3 option can be located with TWIG Point Netloc hybrid location service enabling also locating with Wi-Fi base stations and BLE beacons.

BLE beacon scan enabled

ON: Device scans all BLE beacons for hybrid location.

OFF: Device does not scan BLE beacons for hybrid location.

Wi-Fi AP scan enabled

ON: Device scans all Wi-Fi base stations for hybrid location.

OFF: Device does not scan Wi-Fi base stations for hybrid location.

Filtering by beacon name

Beacon name used for filtering is defined here.

BLE beacons can be filtered by name. When beacon name is defined, BLE beacon data is used only if text string in the BLE beacon name matches to the existing beacon name.

If name is not defined, the device uses any BLE beacon data.

17. TWIG FirmwareLoader

TWIG device software (“firmware”) is developed in-house, for best quality assurance, product innovation and customer support.

If you want to update installed base TWIG devices to latest firmware release, this can be effectively done at site by connecting the devices to a PC with TWIG FirmwareLoader application.

Installing TWIG FirmwareLoader

TWIG FirmwareLoader is compatible with all type TUP93EU, TUP92EU, TUP91EU, TUP90EU and TCP90EU device models, making firmware update easy and reducing risk from user error.

Download the latest TWIG FirmwareLoader application (.exe) from www.twigcom.com (/Software), and save it in your computer. The application is ready to be used without separate installation.

Device types TUP93EU, TUP92EU, TUP91EU, TUP90EU and TCP90EU use Windows HID interface, so separate USB driver is not needed. When a TWIG device is for the first time connected to your computer, the operating system will notify you of finding new device and typically install drivers automatically.

Caution!

Use correct TWIG Configurator and TWIG FirmwareLoader versions, matching your TWIG device type. Device type (TUP93EU, TUP92EU, TUP91EU, TUP90EU, TCP90EU, TGP81EU) is printed on type label attached on back side of the device.

System requirements: Windows 10, Windows 8, Windows 7, Windows Vista or Windows XP. USB

port, TWIG USB-miniUSB cable and C-adapter or Programming Station.

Updating Device Firmware

Connect TWIG device to your computer using cable USB to mini-USB (ACU) attached to the charger adapter “clip” (AUG81) or programming station (AGP81). **TWIG Protector Ex of device type TUP92EU must not be connected to PC or any charger with any other charging cable than FME92EU or FCE92EU.**

Note!

TWIG Charging station CTA81 does not support USB connection.

Power the device on.

Run the TWIG FirmwareLoader application by double-clicking on the .exe –file on your computer.

When application lists the device name, click on **Select**.

In the new application window, click on **Begin Update**. Version number of the new firmware is shown at top of window (e.g. CT3P.01.010.0000).

Backing Up Device Settings

TWIG FirmwareLoader preserves device settings during firmware update.

It is recommendable practice to back up known-good device settings for later reference before firmware update, using *TWIG Configurator* and **Save to File** –function.

After updating firmware and rebooting, if *TWIG Configurator* requests password and you have lost it, perform device **Factory Reset**. Then **Reboot**,

and return device settings from backup file using ***Read from File.***

Firmware Versions

In firmware version number, the first 4 characters define device type. Second and third set of numbers are version number. The last set is custom version identifier.

TUP93EU:
CT4B = TWIG SOSCard

RG310:
CT4G = TWIG Bracer

TUP92EU:
CT4P = TWIG Protector Ex 3G
CT4P = TWIG Protector Pro Ex 3G
CT4P = TWIG Protector 3G
CT4P = TWIG Protector Pro 3G
CT4P = TWIG Protector EasyS 3G

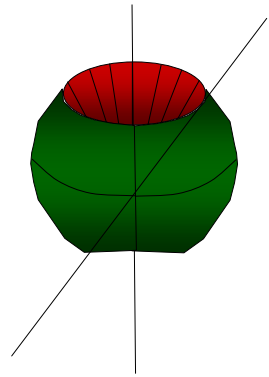
TUP91EU:
CT4W = TWIG Embody

TUP90EU:
CT3P = TWIG Protector Pro, TWIG Protector 3G
CT3E = TWIG Protector Easy 3G
CT3S = TWIG Sure

A device cannot normally be programmed with firmware type different from the one already in the device. If you have a need to do so for example for testing please contact Twig Com Support at support@twigcom.com or +358 40 510 5058.

Appendix A: ManDown Angles Illustrated

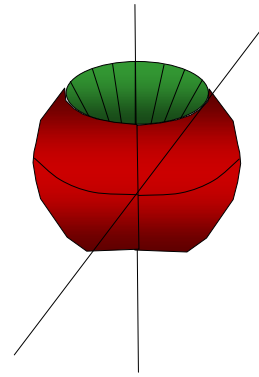
Alerts when vertical



Tilt angle e.g 45°
 Allowed orientation in green.
 Both on top and bottom. If tilted
 more than 135 degrees, again in
 allowed orientation. Alarm when
 in RED area
 NOTE, that also movement
 condition must be met



Alerts when horizontal



Tilt angle e.g 45°
 Allowed orientation in green.
 Both on top and bottom. If tilted
 more than 135 degrees, again in
 allowed orientation. Alarm when
 in RED area
 NOTE, that also movement
 condition must be met



Appendix B: Glossary

2G	GSM+GPRS mobile network	PIN	Personal Identification Number, the 4-digit passcode for SIM
3G	WCDMA mobile network	Post Emergency mode	Device state immediately following Emergency mode
ACK	Acknowledgement	RF	Radio Frequency
APN	Access Point Name, for GPRS/IP connectivity	SIM	Subscriber Identity Module, smart card storing GSM mobile subscription identity
ARC	Alarms Receiving Centre	URL	Universal Resource Locator, web hyperlink
ASS	MPTP assistance call or message	USB	Universal Serial Bus, power and data connector standard used in TWIG data and charging cables
Central Station	Central system monitoring alarm devices	TWIG Point AGPS	Assisted GPS data feed for TWIG devices
DIN0825	Deutsche Industrie Norm for lone worker systems	TWIG Point Netloc	Hybrid location service
DNS	Domain Name Server, for IP connectivity	TWIG Beacon	SRD indoor location peripherals for TWIG devices, complementing GPS/AGPS
Dock	Desk charging station, with remote indication of the device being “docked”	TWIG Remote Button	SRD Remote alarm button for TWIG devices
DTMF	Dual Tone Multiple Frequency, technique to transfer data over audio connection	TWIG personal alarm device	TWIG mobile alarm device, such as TWIG Protector
EMG	MPTP emergency call or message	ManDown	Automatic motion-sensor based alarm trigger method for TWIG devices
Emergency mode	Device state during which emergency communications with Central Station are prioritised	Amber alert	Timer-based alarm-trigger method for TWIG devices
Firmware	Device executable software	SOS cycle	Configurable alarm communication sequence of TWIG devices
GPRS	General Packet Radio System, a 2G (or “2.5G”) mobile packet switched data system	SRD	Short Range Devices, an ISM band RF link between TWIG devices and TWIG SRD peripherals
GPS	Global Positioning System	SRD3	Short Range Devices, an ISM band RF link between TWIG devices and TWIG SRD peripherals, Wi-Fi and BLE (Bluetooth Low Energy) locations
GNSS	Global Navigation Satellite System	TWIG Tag	SRD attendance monitoring peripheral for TWIG devices
GSM	Groupe Special Mobile, the European 2-4G mobile communications evolution		
IMEI	International Mobile Station Equipment Identity, unique GSM mobile device ID		
INF	MPTP information message (status message, indication message)		
IP	Internet Protocol		
Mini-USB	Power and data connector standard used in TWIG charging adapters		
MO	Mobile Originated, connection started by mobile device		
MPTP	Mobile Phone Telematics Protocol, TWIG over-the-air protocol originally released in year 2000		
MT	Mobile Terminated, connection started by server to mobile device		