

# TWIG Configuration Guide



Publication number: YZ6501-22-EN

For TLP56EU devices:

- TWIG SOSCard

For TLP54EU devices:

- TWIG Neo

For TLP53EU devices:

- TWIG Easy
- TWIG One
- TWIG One Ex

For TLP52EU devices:

- TWIG Neo

For TLP51EU devices:

- TWIG One
- TWIG One Ex

For TLP50EU devices:

- TWIG One
- TWIG One Ex

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

Compatible with:

- TWIG Configurator
- TWIG FirmwareLoader
- TWIG Point Remote Configurator

For RG310 devices:

- TWIG Bracer

For RG170 devices:

- TWIG Bracer

Compatible with:

- TWIG Point Remote Configurator

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

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 to TUP93EU to TLP50EU to TLP51EU to TLP52EU to TLP53EU to TLP54EU. 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](http://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 (TLP54EU, TLP53EU, TLP52EU, TLP51EU, TLP50EU, 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 TLP54EU, TLP53EU, TLP52EU, TLP51EU, TLP50EU, TUP93EU, TUP92EU, TUP91EU, TUP90EU and TCP90EU.

System requirements: Windows 11, Windows 10, Windows 8, Windows 7, USB port, TWIG USB-miniUSB cable and Charger adapter or Programming Station.

Connect TWIG device to computer with USB-miniUSB cable (ACU) connected to the charger adapter “clip” or programming station TWIG Ex devices of device type TLP53EU, TLP51EU, TLP50EU and 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.

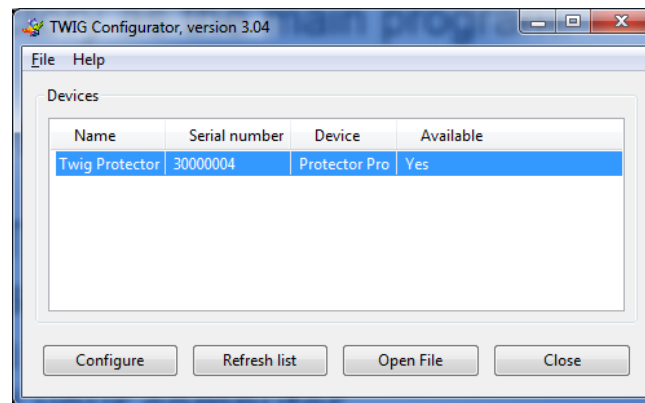
Connect TWIG device to computer with USB-miniUSB cable (ACU) connected to the charger adapter “clip” or programming station. TWIG Ex devices of device types TLP53EU, TLP51EU, TLP50EU and TUP92EU must not be connected to PC or any charger with any other charging cable than FME92EU or FCE92EU.

### Note!

- TWIG charging stations CTA81, CTA91, CTA93 and CTA50 do 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 TLP54EU, TLP53EU, TLP52EU, TLP51EU, TLP50EU, 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 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 and your device type is TUP90EU or TCP90EU type “*GPRS*” (without “”) instead of SMS number. If GPRS is used with newer devices, you can leave the field empty.

## OSM message tone

Defines the tone mode when device receives a **Not Forced effects**' OSM (**O**n **S**creen **M**essage) MPTP message.

**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, CTA50 ("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. The device clock can be synchronized with the PC clock by click the 'Synchronize time with PC clock'.

## UI keys

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

**UI keys method/UI key mode** determines how many times UI or SOS 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
- Read NFC Tag (When Tag is read, the device sends INF message with tag id)
- Mute/unmute/vibrate model toggle

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

## Activation Method Timeout

Defines how long the SOS key or UI keys need to be pressed to perform the function.

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

- **Menu key** defines the functions that are available through the menu key. Available functions are Assistance call / message, Power ON / OFF, GNSS ON / OFF, Amber alert ON / OFF, ManDown ON / OFF, Read NFC Tag, Push to fix, ManDown pause and Mute/unmute/vibrate model toggle. You can edit menu by double clicking **Menu key** text.

## 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 button tone* setting.

## Audio tuning

**Hands-free microphone gain** Defines Hands free microphone gain 1=low,2=medium and 3=high

**Loudspeaker gain** Defines loudspeaker gain. Values 1 to 5. 1=low and 5=high

## 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

For TUP92EU devices, see also TWIG Self-test

## 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].

### Mobile network mode

**2G/3G/4G automatic** Device can automatically switch between 2G/3G/4G networks

**2G/3G automatic** Device can automatically switch between 2G/3G networks

**3G only** Device uses only 3G network

**2G only** Device uses only 2G network

### VoLTE mode

**ON** Enables VoLTE calls (requires SIM subscription and network support service)

**OFF** Disables VoLTE calls.

Please note! If you change VoLTE mode setting, device needs to be rebooted twice before the new setting is validated.

## 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 during the real time tracking 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.

When device types TGP81EU, TCP90EU and TUP90EU are concerned ManDown alarm functions cannot be used if selected option is ON.

### 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

Defines if the SOS key is enabled or disabled.

**OFF:** the SOS key is disabled.

**ON:** the SOS key is enabled. Pressing the SOS key activates the SOS cycle. The pressing method can be defined in the setting *UI key mode*.

Examples for pressing method:

- Long press
- Two presses

### 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.

## Vibrator

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.

## Ripcord

Defines settings to use Ripcord as trigger to SOS cycle.

**Enabled** setting turns the function on by defining the timeout.

**RePlug cancelation enabled** setting allows to cancel the alarm from starting if plug is put back to its place within timeout period. Available only with TWIG SOSCard, TWIG Embody and TWIG Neo.

## 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 Button remote:** 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.

**Note! If event-specific SOS text is defined, it overrides the general SOS text.**

## 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.

**VoIP call:** VoIP call is made to a defined **Phone Number**. It requires available VoIP service and defined VoIP settings.

### SOS Event Values

**Phone Number:** Add here the phone number for SMS, Call, VoIP call number or text **GPRS** if message is sent via GPRS or Wi-Fi.

**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.

**SOS text** Defines event text string in EMG message. If empty, device uses text string defined in *SOS Texts*. Maximum length of text string is 20 characters. Only characters 0-9, A-Z and a-z are valid. No special characters are allowed.

### 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. In order to enable the self-test, the SIM card must be recognized by the device.

**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 CTA50EU, 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 or TWIG One are pressed. If you program only one number per button the action is either call or VoIP call or MPTP assistance (!ASS) SMS depending on which is configured.

If both numbers are defined both actions are done.

TWIG One and TWIG Neo assistance numbers can be selected also through the menu key.

In TWIG Protector Easy, TWIG Embody and TWIG Easy 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.

#### Call Type

Defines if assistance call is made via cellular or VoIP.

#### Text

Defines the text string in ASS message data field.

#### Message 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.

**Silent HF Answer** Calls from this number are automatically answered in hands-free (Speaker Phone) mode and muted.

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. Connections

### 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.

### 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.

### User Name

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

### Password

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

### 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

### 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.**

## Wi-Fi

### Wi-Fi mode

Defines if Wi-Fi is used or not. Default is OFF.

Note! Also *User ID* and Wi-Fi network must be defined in IP *Servers*.

### Wi-Fi Networks

You can define 5 different Wi-Fi networks. Define your Wi-Fi network credentials specific to wanted networks and allow your device to connect to Wi-Fi network.

By double-clicking the “Network” menu text, the device starts scanning available Wi-Fi networks and lists them. Select your wanted Wi-Fi network from the list. If the network requires a password, the configurator will ask for it when saving the network information to settings.

If the wanted Wi-Fi network is not available in the area when configuring the device, the Wi-Fi credentials can be entered manually.

**SSID** Wi-Fi network name (service set identifier)

**Password** Wi-Fi network password

**Authentication type** Wi-Fi network authentication type

## 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.

### ID

The *ID* is a unique number or text string used for 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. Special characters like #, \_, are not allowed.

### Use of forced GPRS acknowledge

If enabled, GPRS acknowledge from network is needed. Otherwise message retries sending three times. If sending is not successful, sms is used instead, if backup number is defined.

### Primary server connection

Defines the primary server connection mode of TWIG device.

**Wi-Fi** If defined and Wi-Fi network is available, the device primarily uses the Wi-Fi connection. If Wi-Fi network is not available, device uses GPRS connection instead.

**GPRS** If cellular network is available the device primarily uses the GPRS connection. If cellular network is not available, device uses Wi-Fi connection instead.

### IP Servers 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.

### **Backup SMS Number (Service Number)**

Phone number into which 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.**

### **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:*** 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 10 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*.

### **Heartbeat interval**

Controls the sending interval of MO GPRS heartbeat messages in **Always** mode. The device sends heartbeat messages to server to check

server status and any pending incoming messages. Default value is 10 minutes.

The heartbeat message is useful for verifying the device is still alive and the data connection between the device and the server is working.

### IP Servers 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.

### IP Servers INF

**Server INF** –settings are only available for type TLP54EU, TLP53EU, TLP52EU, TLP51EU, TLP50EU, 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 TLP54EU, TLP53EU, TLP52EU, TLP51EU, TLP50EU, 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 TLP54EU, TLP53EU, TLP52EU, TLP51EU, TLP50EU, 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 age from newest to oldest.
- “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*.

## VoIP Calls

### Mode

Defines if VoIP is in use or not. Default is OFF.

**OFF:** VoIP is not in use

**ON:** VoIP is in use and Outgoing/Incoming calls are possible

**Incoming calls only in emergency:** VoIP is in use. Outgoing calls are possible. Incoming call is possible only in Post emergency mode (reduces device current consumption).

### Server

**URL** defines the SIP server address.

**Port** defines the SIP server port.

**User**  
Defines SIP server credentials.

**Number** defines your device voip number

**Password** defines device voip password

**Display name** defines your device name. Remote party will see it in incoming VoIP calls.

## 12. 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/s<sup>2</sup>).

## 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.

## ManDown pause time menu

**Start time** defines the time value of the first selectable ManDown pause length.

**Time step** defines the time value between next selectable pause time steps.

**Number of menu items** defines the amount of selectable time value alternatives displayed in the ManDown pause menu.

## 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 2,5 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

## 13. 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.

## Keypad control

The enabled ‘keypad control’ of Amber alert enables the selection of phone number type with TWIG One and TWIG One Ex devices.

## 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.

## Amber Alert call number

Defines the phone number to which the device calls after the device has sent an activation request message to the activation phone number (only available with interactive mode).

## 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.

## Amber alert time selection menu

**Start time** defines the time value of the first selectable time of the Amber alert timer.

**Time step** defines the time value between the next selectable time steps of the Amber alert timer.

**Number of menu items** defines the amount of selectable time value alternatives displayed in the Amber alert timer menu.

## 14. 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 duration

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.

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

If name is not defined, the device uses any BLE/Wi-Fi beacon data.

## 16. 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 Firmware Loader

TWIG Firmware Loader is compatible with all type TLP54EU, TLP53EU, TLP52EU, TLP51EU, TLP50EU, 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](http://www.twigcom.com) (<https://www.twigcom.com/shop/product/swf-twig-firmwareloader-4796>) and save it in your computer. The application is ready to be used without separate installation.

Device types TLP54EU, TLP53EU, TLP52EU, TLP51EU, TLP50EU, 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...) 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” or programming station. TWIG Ex devices of device types TLP53EU, TLP51EU, TLP50EU and 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.

TLP56EU:  
CT5P = TWIG SOSCard

TLP54EU:  
CT5P = TWIG Neo

TLP53EU:  
CT5P = TWIG Easy  
CT5P = TWIG One  
CT5P = TWIG One Ex

TLP52EU:  
CT5P = TWIG Neo

TLP51EU:  
CT5P = TWIG One  
CT5P = TWIG One Ex

TLP50EU:  
CT5P = TWIG One  
CT5P = TWIG One Ex

TUP93EU:  
CT4B = TWIG SOSCard

RG310/RG170:  
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

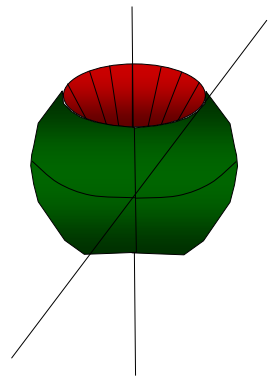
TUP91EU:  
CT4W = TWIG Embody

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](mailto:support@twigcom.com) or +358 40 510 5058.

# Appendix A: ManDown Angles Illustrated

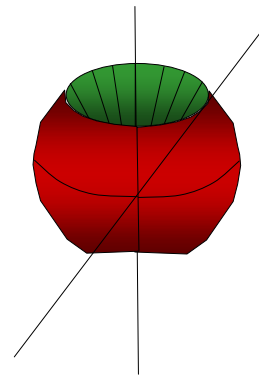
## Alerts when vertical



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