SOLO-NX EXT

COMPACT GSM DOOR ENTRY UNIT WITH 1, 2 or 4 CALL BUTTONS

USER MANUAL

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1 FOR YOUR SAFETY

SWITCH ON SAFELY

Do not switch the unit on when use of wireless phone is prohibited or when it may cause interference or danger.

INTERFERENCE

All wireless phones and units may be susceptible to interference, which could affect performance.

SWITCH OFF IN HOSPITALS

Follow any restrictions. Switch the unit off near medical equipment.

SWITCH OFF IN AIRCRAFT

Follow any restrictions. Wireless devices can cause interference in aircraft.

SWITCH OFF WHEN REFUELING

Do not use the unit at a refueling point. Do not use near fuel or chemicals.

SWITCH OFF NEAR BLASTING

Follow any restrictions. Do not use the unit where blasting is in progress.

USE SENSIBLY

Use only in the normal position as explained in the product documentation. Do not touch the antenna unnecessarily.

2 INTRODUCTION

SOLO-NX (SOLO) is a simple GSM intercom communication system designed to ensure low-cost, simple to install/use, reliable and single box solution for intercom application. It is designed for unlimited range, wire free GSM intercom, pin code access, caller ID control and Wiegand access support.

Optional SOLO-NX supports alarm detection, stay-alive messages, credit detection etc…

3 SOLO-NX FEATURES AND APPLICATIONS

Features:

⇒ Built-in 4 (2G) or 5 (3G) band GSM module

⇒ Up-to 4 intercom call button support (5 numbers each)

⇒ Caller ID numbers control (up-to 1000 caller ID numbers)

⇒ Up to 100 temporary SPIN access codes

⇒ Up to 1000 PIN access codes

⇒ 2 x input Wiegand receiver

⇒ 2 outputs (relay supported)

⇒ Programming with PC via “USB to Mini USB cable” connected to the unit

⇒ Programming by WEB server

⇒ Programming by SMS commands

Applications:

⇒ Single box, wire free intercom solution

⇒ Remote gate opener – Caller ID number recognition

⇒ Simple (Wiegand) access system

4 START UP

SOLO-NX unit accepts a standard GSM SIM cards from any network.

VERY IMPORTANT	USE A **MICRO SIM CARD** 

WARNING	DO NOT Insert or remove the SIM card while the unit is powered ON!!

IMPORTANT	Before inserting SIM card to unit make sure the PIN code is removed!!

⇒ Insert SIM card in SOLO-NX unit.

⇒ Connect power cable to SOLO-NX unit (YOU MUST POWER THE SOLO UNIT WITH THE POWER SUPPLY IF INCLUDED. Do not power with any other power supply).

⇒ Power up the unit.

⇒ Wait until LED1 (Blue) starts flashing. This is set in around 30 – 45 seconds.

⇒ SOLO-NX unit is now ready to operate.

NOTE	SOLO-NX device will “beep” in 15s interval until the device is not in normal operation.

5 LED INDICATION

Blue LED (LED1)

- Indicates the level of the GSM signal from 1 to 5 LED flashes (1 is weak signal, 5 is excellent signal)

Red LED (LED2)

- GSM module Activity

Yellow LED (LED3)

- Short flashing indicates that the GSM module is ON, but it is not yet connected on the GSM network. After connection, yellow led is flashing with short pulse (0,5s) ON and a long pulse OFF (5s).

6 CONNECTION DIAGRAM

Before connection the SOLO-NX please take a look at connection diagram.

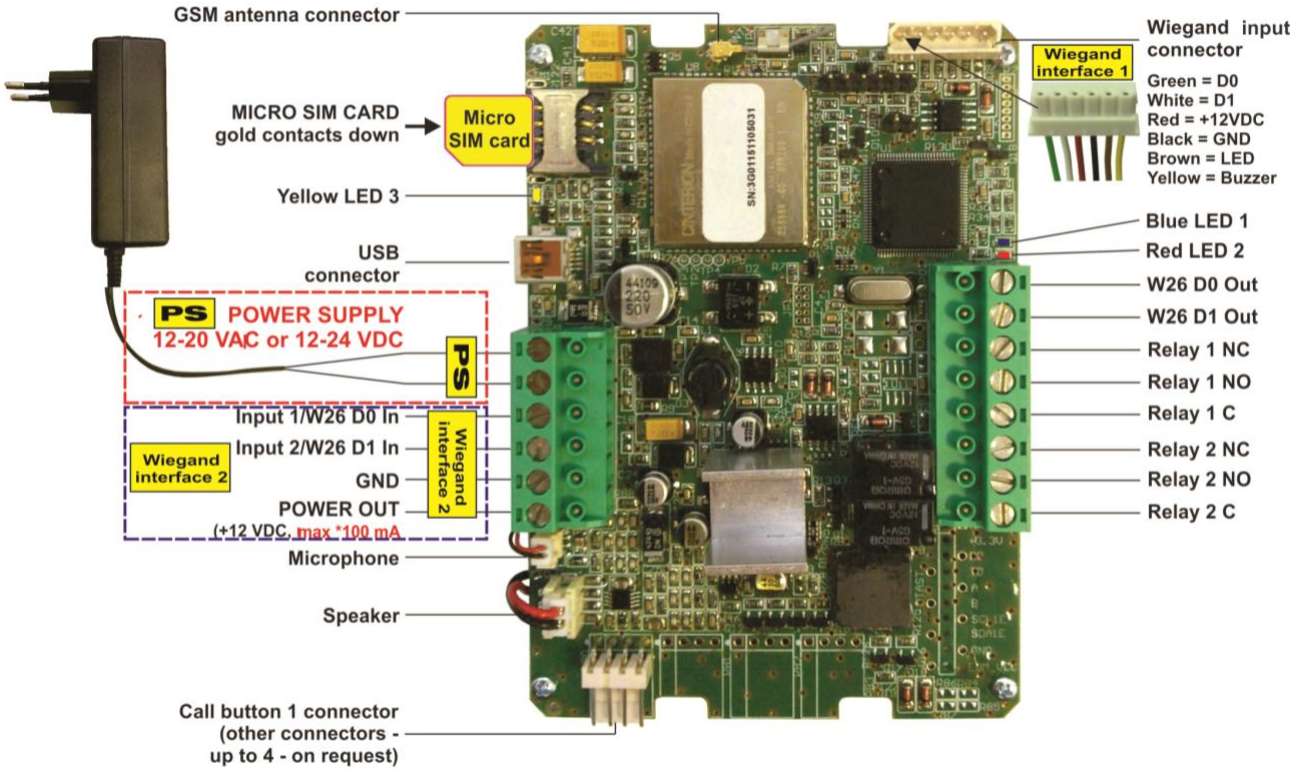

Figure 1: SOLO-NX: Connection diagram

IMPORTANT	***DO NOT USE Power out (12V AUX) for electric lock driving!*** ***Use separate power source for door electric lock!***

7 SOLO-NX UNIT MANAGEMENT

Unit supports different types of management (programming):

- ⇒ Unit can be programmed directly by USB connection, with the use of configuration software running on PC (EasySet).
- ⇒ Unit can be programmed remotely by using WEB server access.
- ⇒ Unit can be programmed remotely by SMS commands (Optional).

8 SOLO-NX FUNCTIONS WITH PROGRAMMING INSTRUCTIONS

As mentioned in previous chapters SOLO-NX unit can be programmed in various ways, this document will focus on most common programming way: WEB programming.

IMPORTANT	SIM card in the SOLO-NX unit **MUST have DATA PLAN** to be able to use WEB programming!

8.1 WEB SERVER - LOG IN

The web server can be find under the address: **http://www.easyset.eu/.**

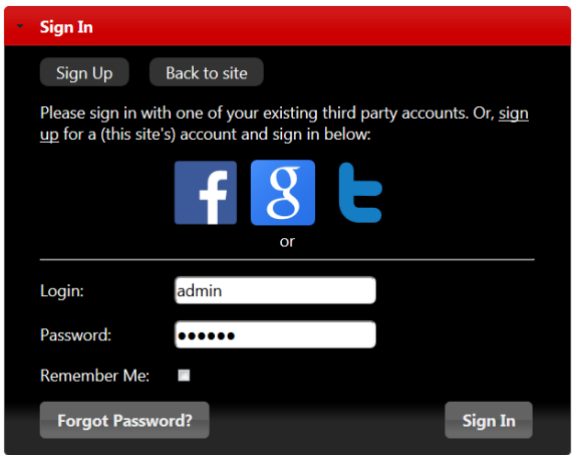

Figure 2: WEB Server-Sign In page

User must first use the Sign IN section to create working profile on the server. The profile can be created by using social login like Facebook, Google account or Twitter. The user lacks any of the social profile it can proceed to Sign UP page use standard user name and password entry.

NOTE	Server support Firefox, Google Chrome, Safari.

8.2 WEB SERVER – ADDING UNITS TO USER PROFILE

After login the user will be diverted to WEB server main window. This page is used to add/remove/search for SOLO-NX units from the user's profile.

Select "+" sign to select ADD SOLO-NX units to user's profile.

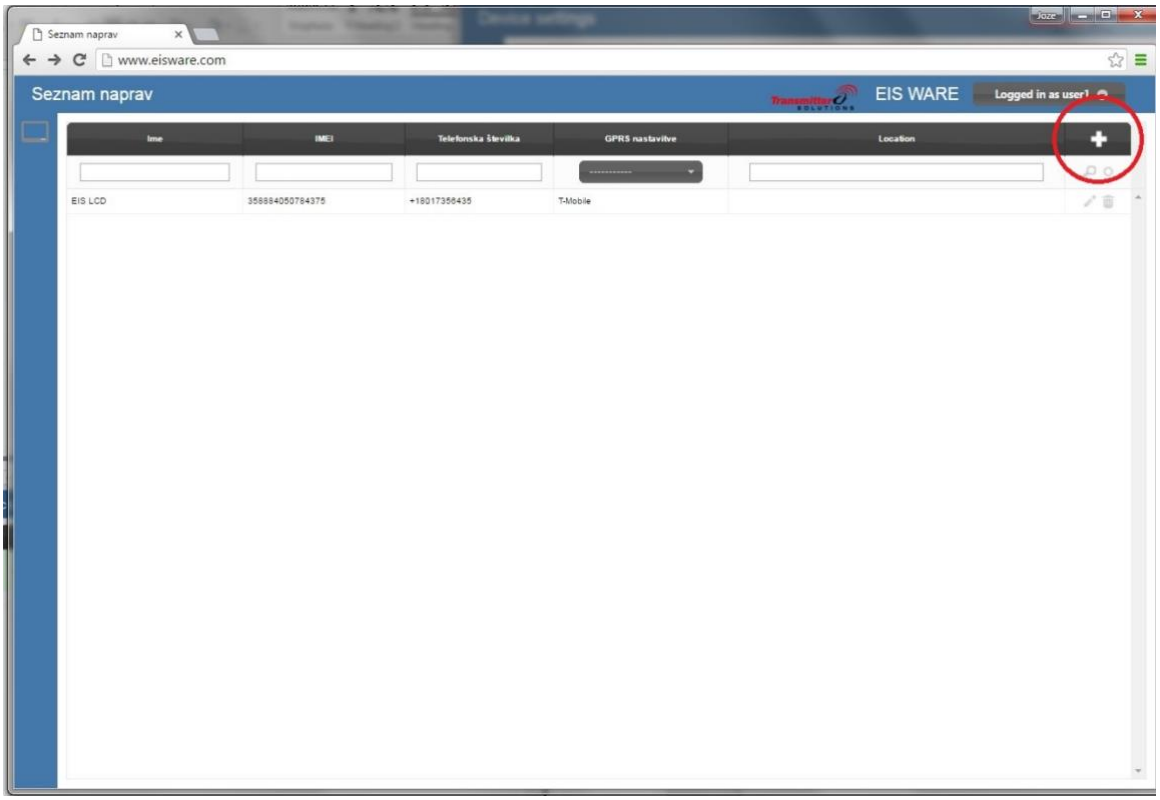

Figure 3: WEB Server-Main page select ADD mode

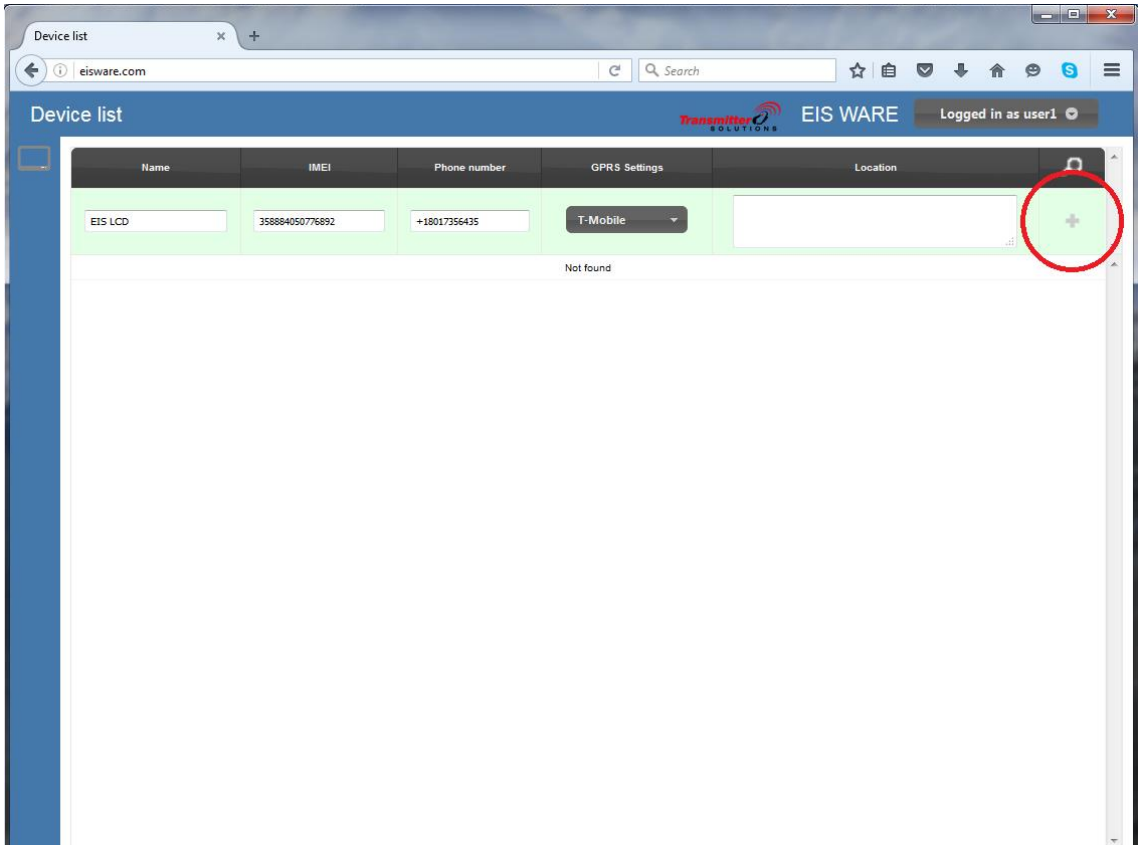

Figure 4: WEB Server-Main page adding SOLO-NX units

User than provides required data:

- **Name**: Name for the added unit - mandatory information.
- **IMEI**: Identification number of the unit, can be found in the enclosure of the unit - mandatory information. The IMEI is located on the cellular chip and also should be on the card board box of the SOLO-NX.
- **Phone Number:** The telephone number of the SIM card in the SOLO-NX unit - mandatory data.
- **GPRS settings:** Information needed to enable data connection between the server and the unit. Selectable from the drop-down menu - mandatory data.
- **Location:** Notification field, used by the user to provide extra data for its own information - optional data.

By clicking the "+" (insert sign) after filling mandatory data, the unit will be added to the user profile.

First building of the unit data-base may take a few minutes.

8.3 WEB SERVER-UNIT MANAGEMENT

After the SOLO-NX unit is added to user database, the user can change the configuration of the specific unit.

All changes made by the user are listed in the **Change Log** window. By clicking **Send to device** button ALL changes are sent to the unit. User can revert all changes made, before sending, by clicking **Revert all** or select particular entry and revert it.

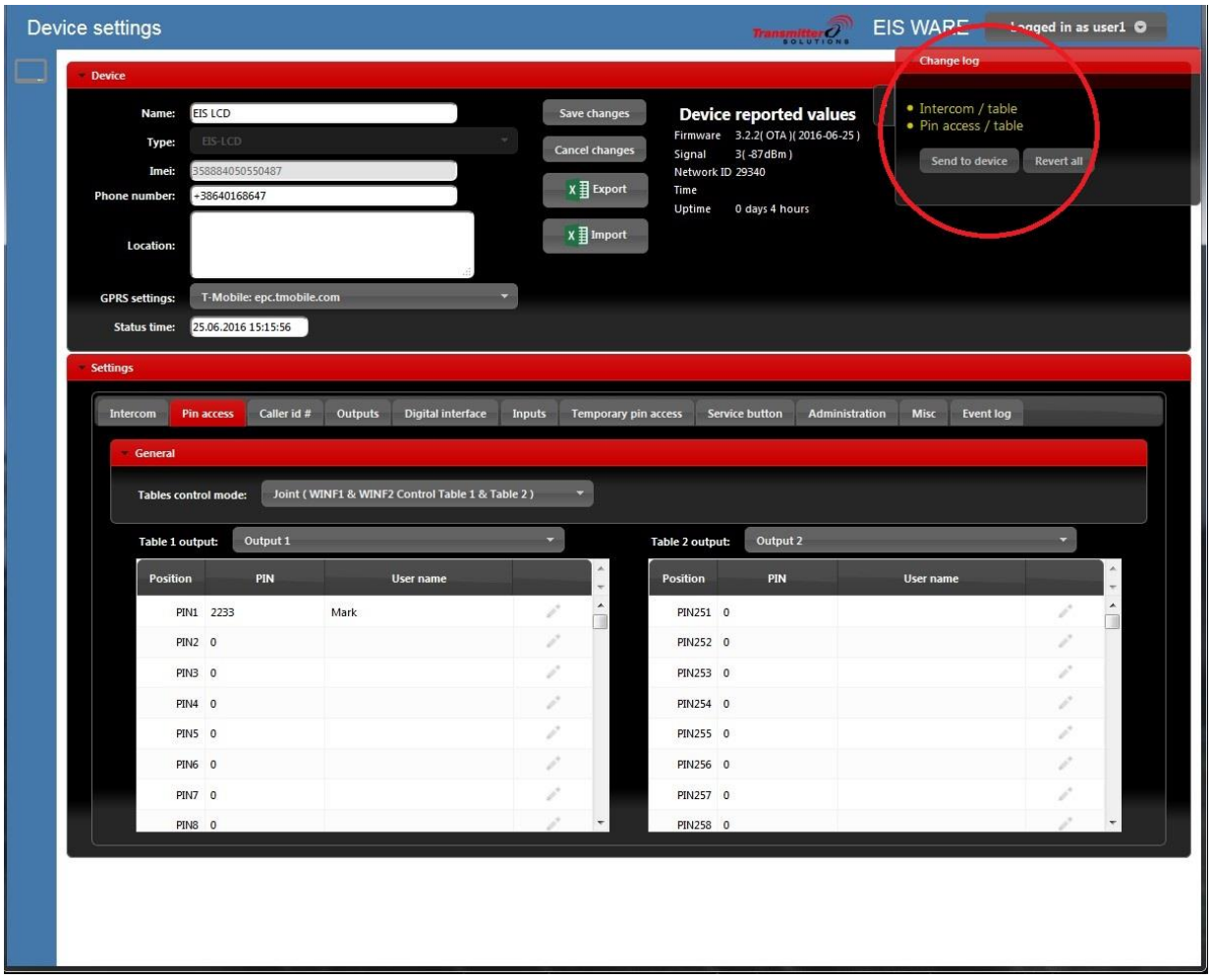

Figure 5: WEB Server-Unit management window

8.4 INTERCOM CONFIGURATION

Primary function of the SOLO-NX unit is intercom support. Selecting (calling) apartment number is achieved pressing the call button beside appropriate name plate.

This actions will start a voice call procedure from **Phone number 1** till **Phone number 5**. After the call is answered the called user has the option to trigger the output by pressing "11" for opening *Output 1 or "21"* for triggering Output 2.

If the call is answered the unit will stop dialing next numbers on the list.

Management of the intercom function is found under **Intercom** tab.

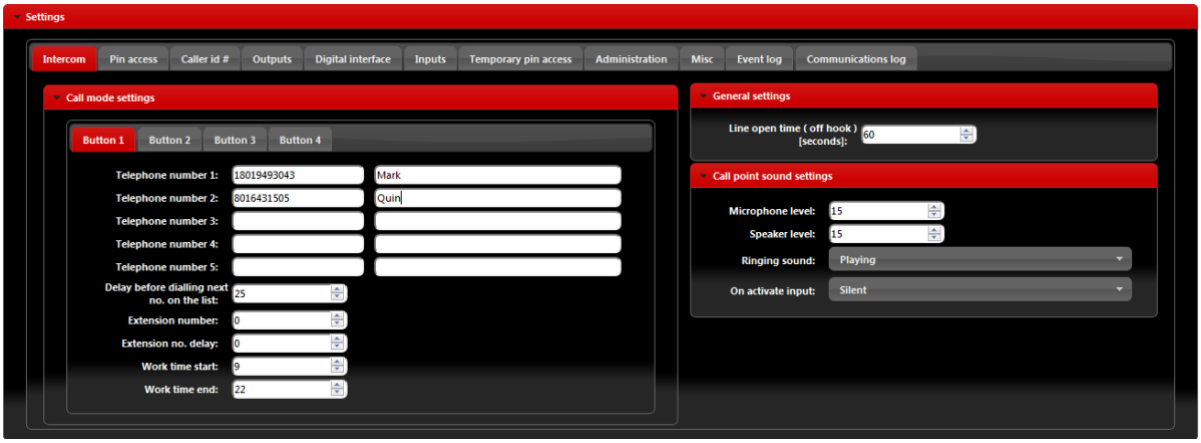

Figure 6: WEB Server-Intercom settings.

Intercom management parameters:

- **Telephone number 1…Telephone number 5:** Number that the unit will call when call button pressed.
- **Delay before dialing next no. on the list:** Time delay in second before next user on the list gets dialed if the call to the previous user is not answered.
- **Extension number:** Parameter is used to set the DTMF number in auto self-select function
- **Extension no. delay:** Parameter is used to set the delay (in sec.) for sending DTMF number in auto self-select function.
- **Work time start, Work time end:** Parameters are used to define work time schedule. Inside this limits number under position 1 to 4 will be dialed, outside this limits number under position 5 will be dialed.

Voice call setting

- **Microphone level:** Increasing the level will increase the sensitivity of the unit microphone decreasing will decrease the sensitivity.
- **Speaker level:** Increasing the level will increase the volume of the unit speaker, decreasing will decrease the level of the speaker.
- **Ringing sound:** By selecting *Playing* the unit will play the dial tone in the connection phase of the call, by selecting *Muted* the unit will not play any sound in the connection phase of the call.
- **On activate input:** By selecting *Play beep sound (buzzer)* the unit will provide audio feed back (buzzer BEEP) when the apartment entry is selected, by selected *Muted* unit will provide no audio feedback when the apartment entry is selected.

8.5 WIEGAND ACCESS

SOLO-NX unit has onboard support for 2 Wiegand output based device. With the user of external replicator more Wiegand devices can be connected to the unit.

Configuration of first Wiegand interface is found in **Digital interface** tab. First Wiegand interface can be found on board with a dedicated Wiegand connector and cables.

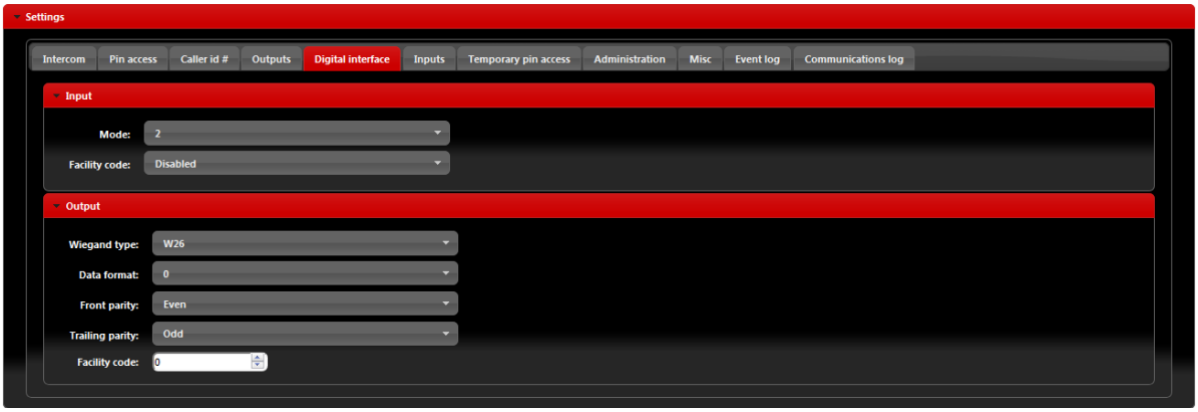

Figure 7: WEB Server-First Wiegand interface support.

- **Mode:** Select appropriate data formatting (Advise unit provider for more info if needed, mode 2 is most common setting)
- **Facility code:** User can *Enable* or *Disable* facility code field.

Second Wiegand interface is shared with alarm input lines, user must select *Wiegand* in **Input operation mode** found in the **Inputs** tab.

Additional settings for Wiegand interface input are found in **Wiegand input 2 configuration** section.

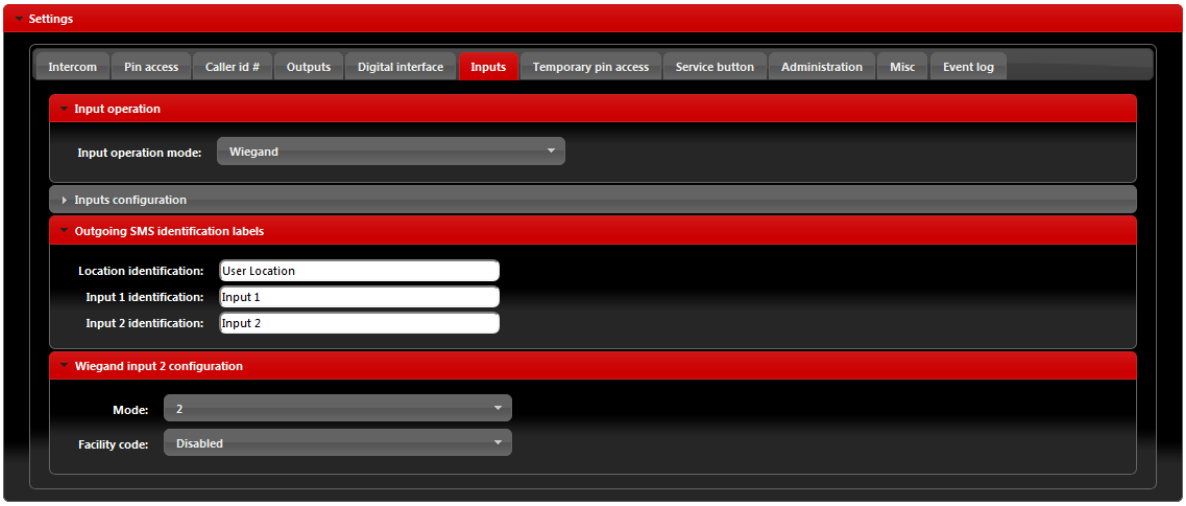

Figure 8: WEB Server-Wiegand interface support.

- **Mode:** Select appropriate data formatting (Advise unit provider for more info if needed, mode 2 is most common setting)
- **Facility code:** User can *Enable* or *Disable* facility code field.

Wiegand devices can be defined in two sections. First section is permanent pin codes and second is temporary pin codes - limited by the number of use.

NOTE	See Chapter **9. WIEGAND INPUT DATA FORMATS** for detailed explanation of different data format options.

NOTE	Unit MUST be restarted when switching between *Normal* and *Wiegand* mode in the **Input operation mode.**

Permanent use: devices are added in **Pin access** tables.

They are placed in two tables. For each table user can define which output they will trigger.

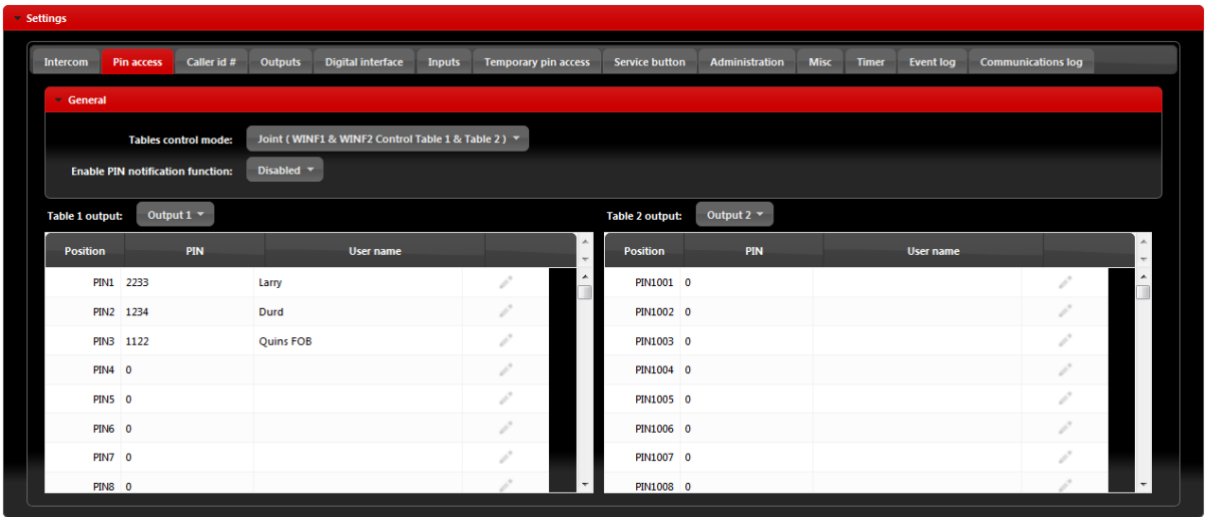

Figure 9: WEB Server-Adding Wiegand devices with permanent use.

Temporary pin codes are placed in **Temporary pin access** tab.

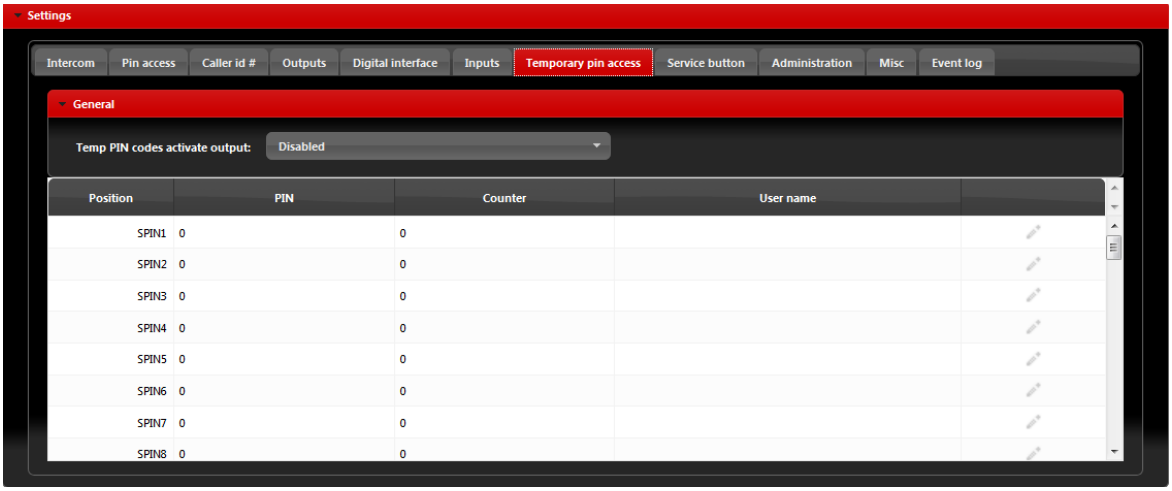

Figure 10: WEB Server-Adding Wiegand devices with temporary use.

- **Temp PIN codes activate output:** Selecting the output that will be triggered in case of correct SPIN code.

- **SPIN entry:** For each SPIN entry user need to select PIN code value, Counter value which defines how many time the PIN code will be valid and optional a User name. Counter will be decreased each time SPIN code will be used.

8.6 CALLER ID ACCESS

Caller ID access is a very simple way to control relay output defined in **Caller ID output** setting. User will by calling in the SOLO-NX unit trigger defined output.
Settings for this function are found in the **Caller id #** tab.

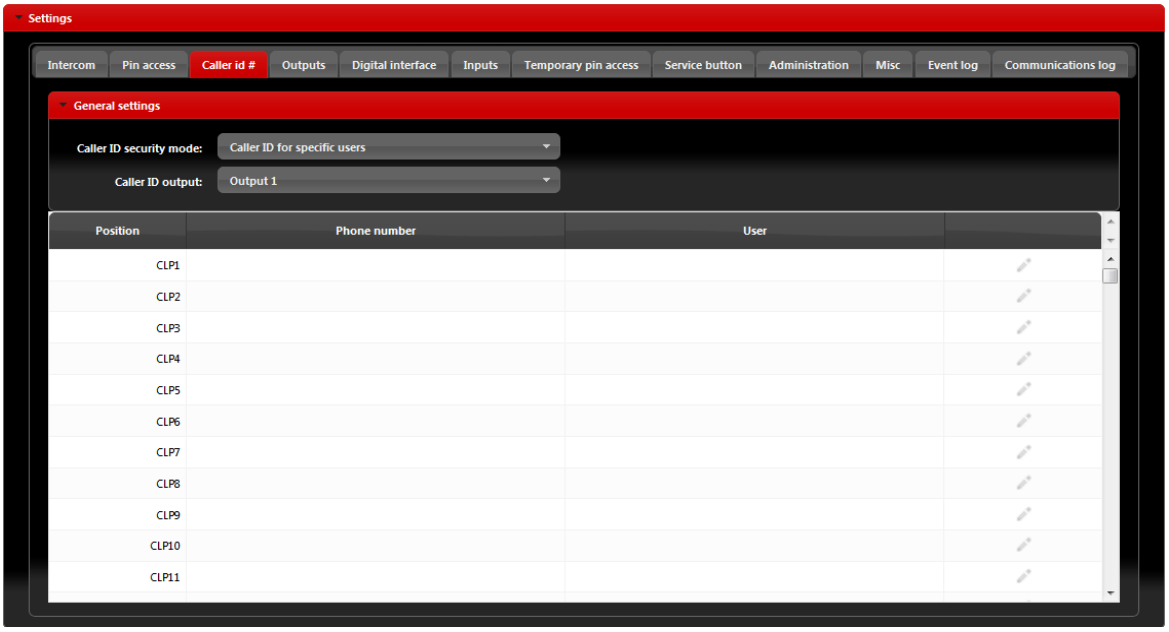

Figure 11: WEB Server-Caller ID Access

General settings:

- **Caller ID security mode:** User can select between 3 options:
  Caller ID Disabled deactivates caller ID function – all numbers are restricted
  Caller ID for specific users will limit the caller ID function only to the numbers on the list.
  Caller ID always ON will allow all user that know the number of the unit to open defined output. In last option the user doesn't need to be on the list to trigger the output
- **Caller ID output:** Selecting the output that will be triggered in Caller ID function.

NOTE	Selection *Caller ID always ON* will allow anybody with the knowledge of the unit number to trigger the output by calling the unit. Use this setting with caution.

8.7 OUTPUTS SETTINGS

The behavior on the outputs is defined in the **Output tab.**

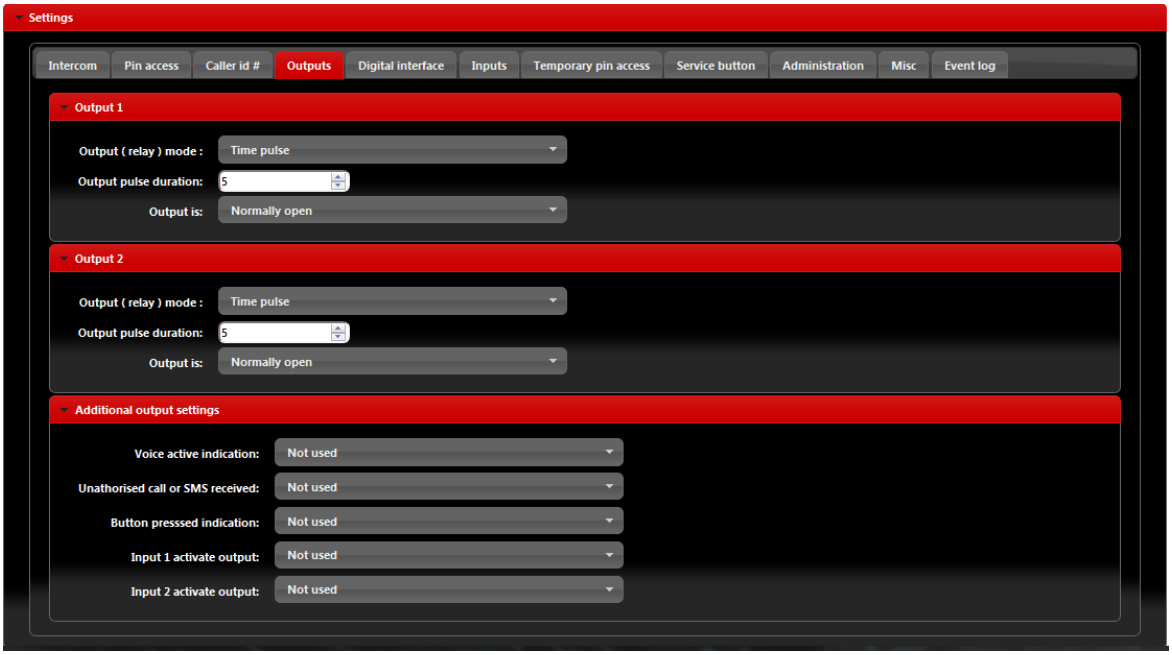

Figure 12: WEB Server-Output setting

Output 1 - Settings for output 1:

- **Output (relay) mode:** User can select between 3 options

  Disable-Output is disabled.

  Latching-Output is in latching mode. First Caller ID or PIN entry will activate the output, second Caller ID or PIN entry will deactivate the output.

  Time Pulse-Output is time pulse mode. After output is triggered it will be activated for the time defined in **Output pulse duration**, after that time output will be restored.
- **Output pulse duration:** ON time for output in case of output mode *Timer pulse.*
- **Output is:** Output can work in normal or inverted (normally close) mode.

Normally open-In idle mode output pins are in open position.

Normally closed-In idle mode output connections are closed.

Output 2 - Settings for output 2:

- **Output (relay) mode:** User can select between 3 options

  Disable-Output is disabled

  Latching-Output is in latching mode. First Caller ID or PIN entry will activate the output, second Caller ID or PIN entry will deactivate the output.

  Time Pulse-Output is time pulse mode. After output is triggered it will be activated for the time defined in **Output pulse duration**, after that time output will be restored.
- **Output pulse duration:** ON time for output in case of output mode *Timer pulse.*
- **Output is:** Output can work in normal or inverted (normally close) mode.

  Normally open-In idle mode output pins are in open position.

  Normally closed-In idle mode output connections are closed.

Additional output settings - Setting are used to link onboard actions with the outputs if needed:

- **Voice active indication:** When unit reaches voice connection (intercom call) output defined under this section gets activated.
- **Unauthorized call or SMS received:** If unauthorized call or SMS is received on the unit this event will activate output defined under this section.
- **Button pressed indication:** When intercom call button is pressed output defined under this section gets activated.
- **Input 1 activate output:** If input 1 is in alarm mode (**Input operation mode:** *Normal* mode selected) alarm input event on the input will activate output defined under this section.
- **Input 2 activate output:** If input 2 is in alarm mode (**Input operation mode:** *Normal* mode selected) alarm input event on the input will activate output defined under this section.

NOTE	Do to limitation of the outputs use additional outputs settings with care.

8.8 SOLO-NX WIEGAND OUTPUT INTEGRATION

SOLO-NX unit can be integrated into a bigger access system using a Wiegand interface. In this case number's calling the SOLO-NX unit will be transferred, over Wiegand interface, to access system.

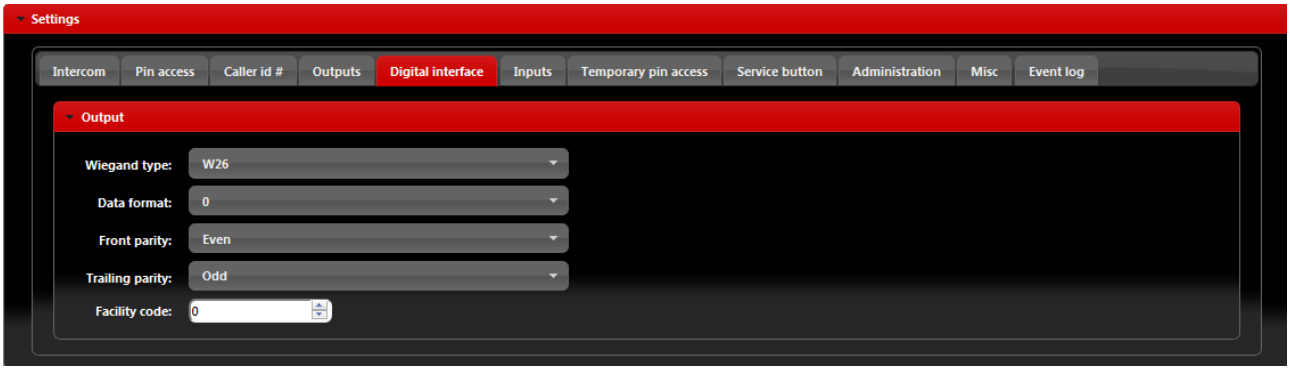

Figure 13: WEB Server-Wiegand Output settings.

Configuration of the Wiegand output interface

- **Wiegand Type:** Type of the Wiegand used (W26 is most common setting)
- **Data format:** Format of data set on the selected Wiegand type.
- **Front parity, trailing parity:** Selection of the proper parity in selected Wiegand type.
- **Facility code:** Is required, user can define facility code to Wiegand data.

8.9 TIMER-TIMED CONTROLED OUTPUT

SOLO-NX unit features 2 timers that can be used to control the ouputs on the unit. Timers can run in day or week mode depending on the selected setting. For each timer user can select which output it will control. The behavior of the outputs (Time pulse or Latching mode) is defined in the **Output** tab.

The described settings are the same for both timers.

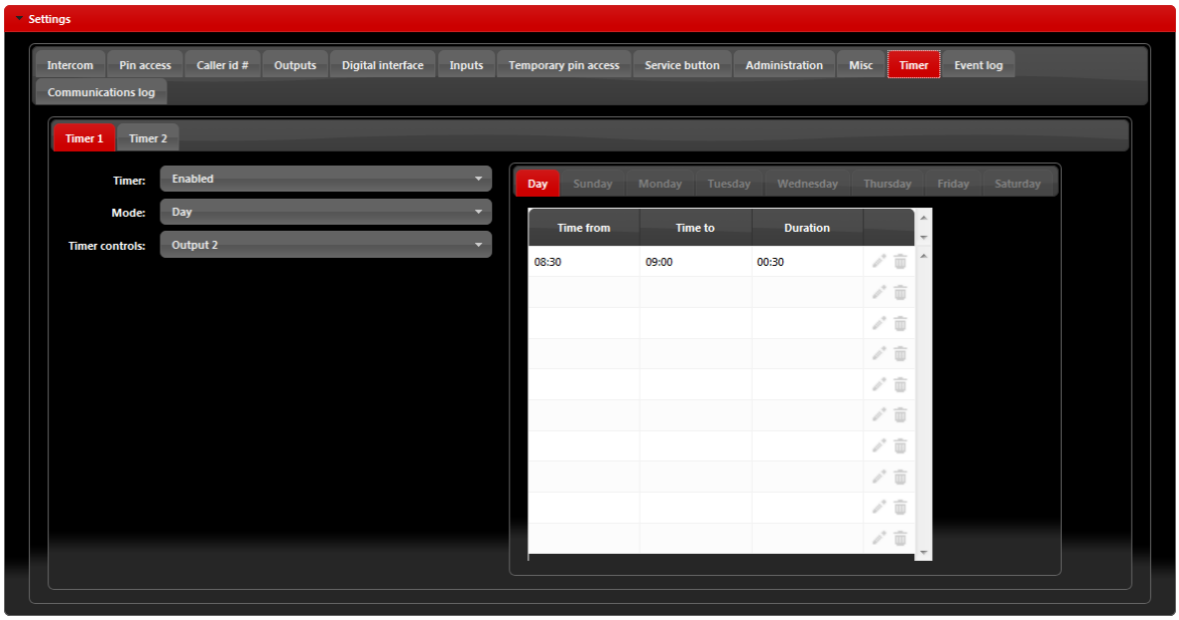

Figure 14: WEB Server-Timer setting →Day mode.

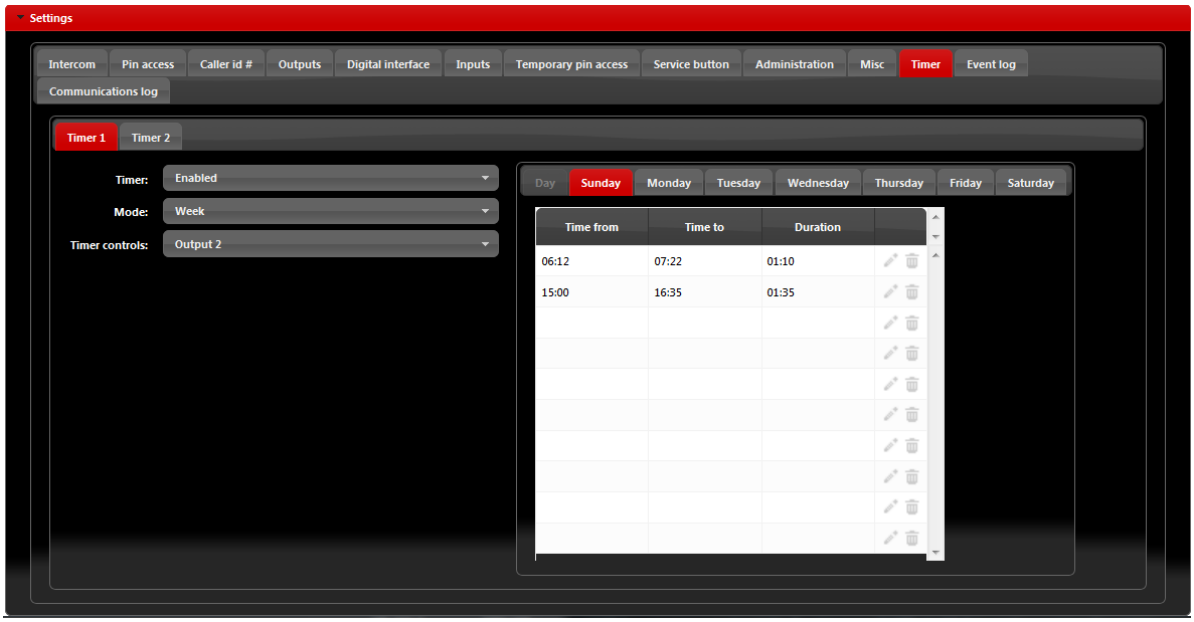

Figure 15: WEB Server-Timer setting →Week mode.

Timer settings:

- **Timer:** Parameter is used to enable and disable the timer function.
- **Mode:** User can select between day or week mode. In day mode the timer will control on the day table which is the same for all week. In week mode the user can define different setting for each day in the week.
- **Timer controls:** Output controlled by the timer function.

8.10 ADMINISTRATION

Administration tab allows user to enable advanced settings: notification of unauthorized access, periodic test messages, lock down of the unit…

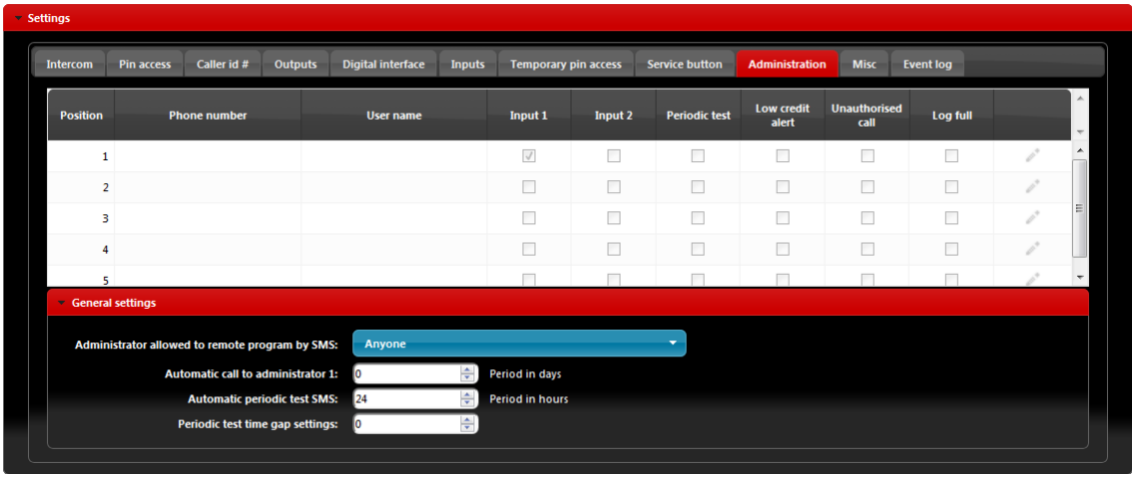

Figure 16: WEB Server-Notification numbers

- **Phone number**, **User name:** Phone number and user name of the user that will be receiving notification messages.
- **Input1, Input2:** If input lines 1 & 2 are defined in alarm mode (**Input operation mode:** *Normal* mode) and if alarm condition is meet, users with check boxes will receive alarm notification SMS.

Figure 17: WEB Server-Input alarm configuration

- **Periodic test:** User can receive periodic (keep-alive) SMS, tick the check box for the appropriate user. Timer period is defined under parameter **Automatic periodic test SMS**, it is definable in hours.
- **Low credit alert:** In case of prepaid SIM card the unit can notify the user if the credit on the SIM card is low. To enable notification SMS tick the check box in corresponding position. Note that additional input in the **Misc** tab is needed to fully enable credit checking function.

- **Unauthorized call:** In case of unauthorized call the unit can notify user. To enable notification SMS tick the check box in corresponding position.
- **Administration allowed to remote program by SMS:** By selection this option the user can "Lock down" the SOLO-NX unit, preventing any unauthorized user to change any configuration on the unit.
- **Automatic call to administrator 1:** To prevent SIM card provider to lock out the SIM card from the network, user can define a periodic call out to telephone number under position 1. Parameter is defined in days (It is not mandatory to set this parameter).

8.11 EVENT LOGING

SOLO-NX unit itself supports a 20000 log event entry. These log events can be pull up to the server by clicking **Read Log** button in the "Event Log" tab. Events are listed in the table.

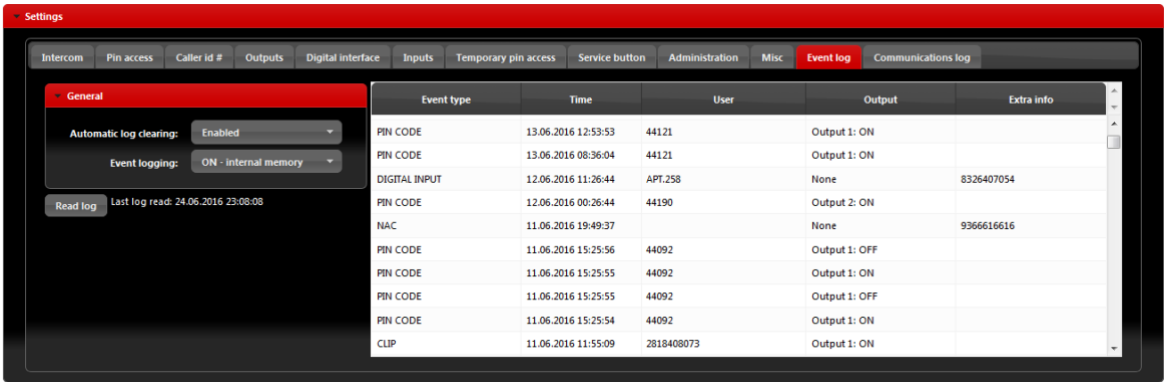

Figure 18: WEB Server-Log event

Each event is equipped with the event type, time, output if triggered and the user name of the user responsible for the event.

If user names are available (Called ID #, PIN codes, Intercom user …) user name will be shown in the user column.

NOTE	After events are read and stored to the server, the local copy on the unit gets deleted.

8.12 MISCELLANEOUS

This tab is split into 2 sections.

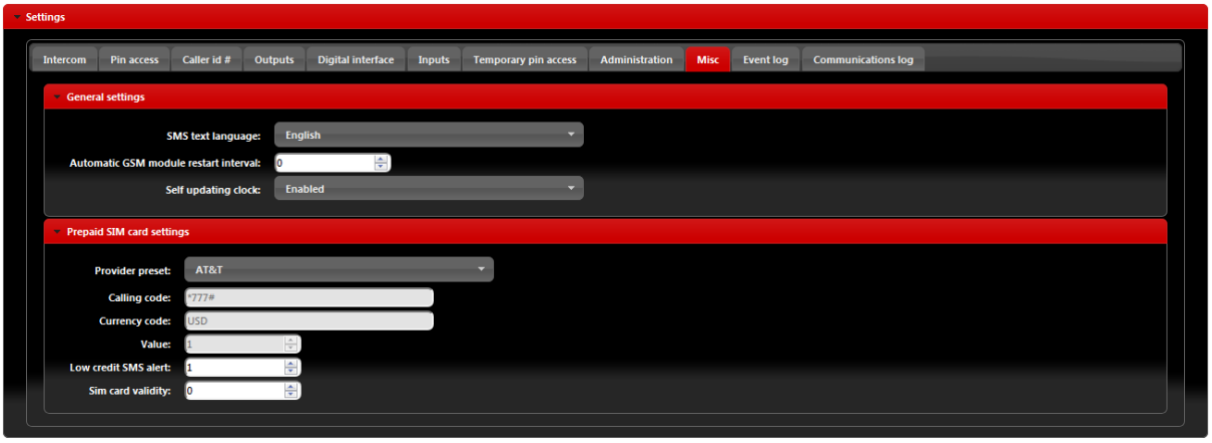

Figure 19: WEB Server-Misc

General settings can be found:

- **SMS text Language**: define the language of the SMS information send out. User can select appropriate language in drop-down menu.
- **Automatic GSM module restart interval:** User can select GSM module restart interval (hours) if needed (Not advisable to use this parameter if not advised otherwise).
- **Self-updating clock:** Parameter is used to allow unit to synchronize to real time. To have the correct time along in log event it is advisable to enable this function.

Prepaid SIM card setting is used the enable credit checking/parsing in case if prepaid SIM card is used. User can select the proper setting by selecting used SIM card provider in the drop down menu in **Provider preset.**

8.13 PIN ACCESS NOTIFICATION FUNCTION

This function is used to notify administrator when a selected pin code is being used. Notification is done by SMS send to the selected administrator numbers.

Global enabling of the notification function is done in 2. steps.

STEP 1: User has to select **Enable** option in the **Enable Pin Notificaiton function**.

STEP 2: Send the configuration to the device!!

This procedure is ONLY done 1 time when enabling this function.

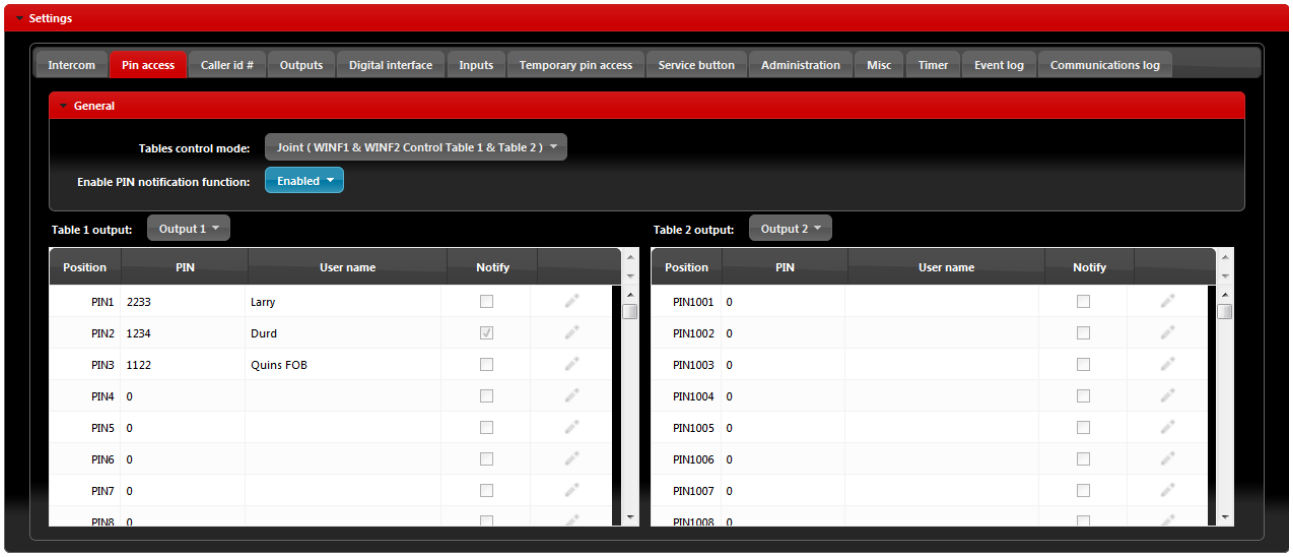

Figure 20: WEB Server-Global enabling of the notificaton function.

After the notification function is enabled, user can select which pin code will send the notification SMS. This is done by placing a tick in the check box of the pin code notify field.

The last step is selecting a number that will be reciving the notification SMS. Selecting is done in the **Administraton** tab. In the **Notify PIN** column put a tick in the check box for the appropriate phone number, multiple choices are possible.

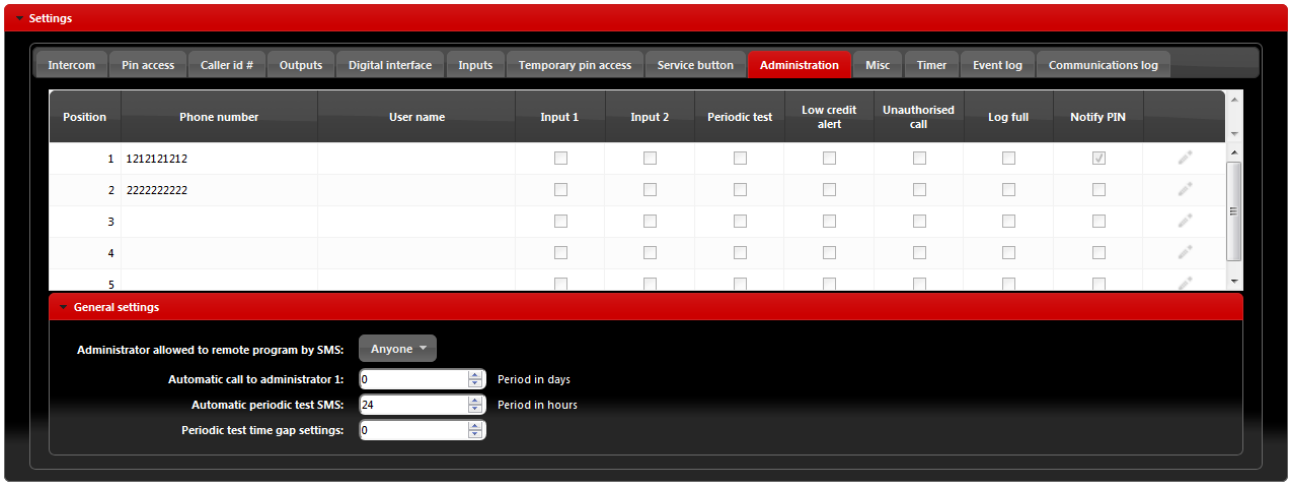

Figure 21: WEB Server-Selecting administrator numbers for notification.

9 WIEGAND INPUT DATA FORMATs

SOLO-NX supports standard Wiegand interface, it will work with Wiegand 26bit and Wiegand 30bit protocol. On each Wiegand protocol SOLO unit support 4 different data formats, they all can be selected through all possible management systems.

Selecting the appropriate data format for FIRST Wiegand interface is done by connecting the WEB server, selecting the **Digital interface** and in **Input** section selecting proper **Mode** option.

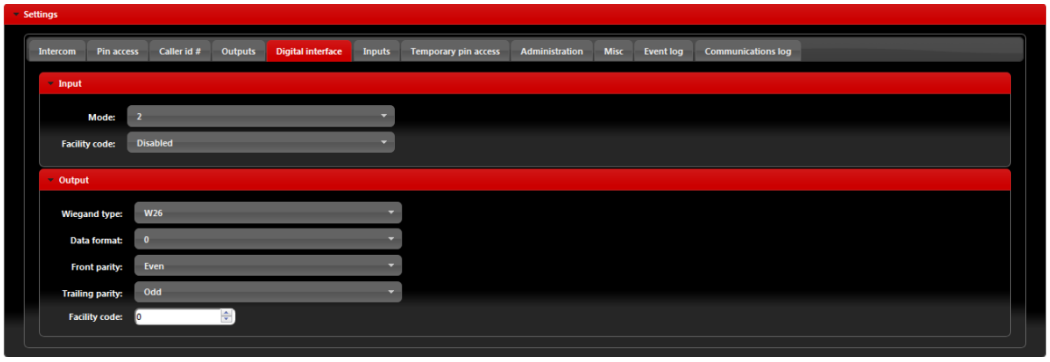

Figure 22: WEB Server-First Wiegand interface support.

Selecting the appropriate data format for SECOND Wiegand interface is done by connecting to the WEB server, selecting the **Input** tab and in **Wiegand input 2 configuration** section selecting proper **Mode** option.

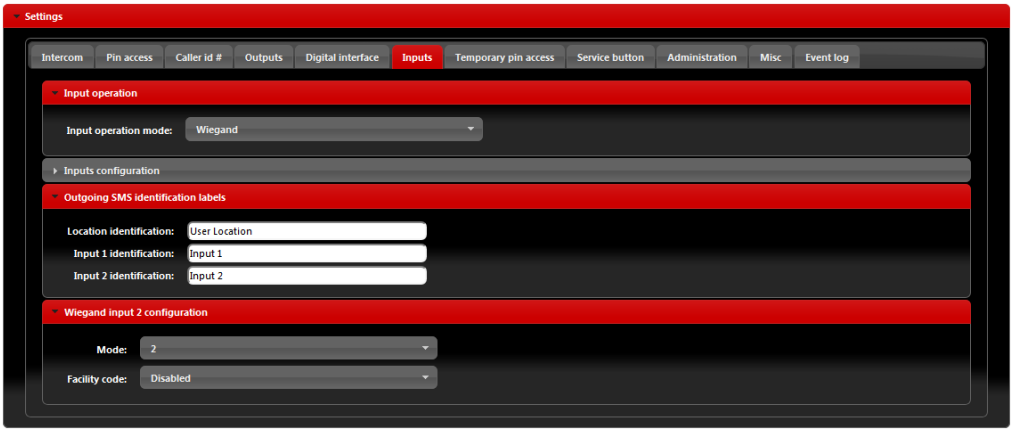

Figure 23: WEB Server-Second Wiegand interface support.

9.1 WIEGAND 26 BIT, DIFFERENT DATA FORMATS

Possible data format:

Mode 0: All 24bit of data are used a decimal representation, no option for facility code

P	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	**P**
Parity	**24Bit card number**																							**Parity**

	Limits
Card Number	0 - 16777215
Facility Number	None

Table 1: Wiegand 26: Mode 0.

Mode 1: 24bit of data is divided between facility code 8 bits and 16bits for card number

P	F	F	F	F	F	F	F	F	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	**P**
Parity	**8Bit card facility number**								**16Bit card number**															**Parity**

	Limits
Card Number	0 - 16777215
Facility Number	NOT USED

Table 2: Wiegand 26: Mode 1.

Mode 2: 24bit of data is divided between facility code 8 bits and 16bits for card number

P	F	F	F	F	F	F	F	F	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	**P**
Parity	**8Bit card facility number**								**16Bit card number**															**Parity**

	Limits
Card Number	0 - 16777215
Facility Number	0 - 255

Table 3: Wiegand 26: Mode 2.

Mode 3: Sections of 4bit data are used as decimals values for number

P	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	**P**
Parity	**Dec. 6**				**Dec. 5**				**Dec. 4**				**Dec. 3**				**Dec. 2**				**Dec. 1**				**Parity**

	Limits
Card Number	0 - 99999
Facility Number	None

Table 4: Wiegand 26: Mode 3.

9.2 WIEGAND 30 BIT, DIFFERENT DATA FORMATS

Possible data format:

Mode 0: All 30bit of data are used a decimal representation, no option for facility code

P	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	**P**
Parity	**28Bit card number**																												**Parity**

	Limits
Card Number	0 - 268435455
Facility Number	None

Table 5: Wiegand 30: Mode 0.

Mode 1: 30bit of data is divided between facility code 8 bits, 16bits for card number and 4bits of unused data.

P	0	0	0	0	F	F	F	F	F	F	F	F	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	**P**
Parity	**Not used**				**8Bit facility number**								**16Bit card number**																**Parity**

	Limits
Card Number	0 - 16777215
Facility Number	NOT USED

Table 6: Wiegand 30: Mode 1.

Mode 2: 28bit of data is divided between facility code 8 bits, 16bits for card number and 4bits of unused data.

P	0	0	0	0	F	F	F	F	F	F	F	F	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	**P**
Parity	**Not used**				**8Bit facility number**								**16Bit card number**																**Parity**

	Limits
Card Number	0 - 16777215
Facility Number	0 - 255

Table 7: Wiegand 30: Mode 2.

Mode 3: Sections of 4bit data are used as decimals values for number

P	0	0	0	0	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	**P**
Parity	**Not Used**				**Dec. 6**				**Dec. 5**				**Dec. 4**				**Dec. 3**				**Dec. 2**				**Dec. 1**				**Parity**

	Limits
Card Number	0 - 99999
Facility Number	None

Table 8: Wiegand 30: Mode 3.

10 CONTACTS

MARS COMMERCE d.o.o.
MIRKA VADNOVA 19
4000 KRANJ
SLOVENIA

TEL: 00 386 4 280 74 00
E-MAIL: info@mars-commerce.com
WEB SITE: www.mars-commerce.com

TEHNICAL SUPPORT
Tomaz HRIBAR
Email: tomaz@mars-commerce.com

SALES
Uros STARE
Email: sales@mars-commerce.com