

GSW2 PLUS

Universal GSM controller



INSTALLATION MANUAL

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1 FOR YOUR SAFETY

Read these simple guidelines. Not following them may be dangerous or illegal. Read the complete user guide for further information.

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

GSW2 is a universal remote controller based on GSM technology. It is designed as unlimited range, wire free, low cost, and highly robust remote control system. With GSW2 and the external voice module it is also possible to build an intercom application for security sensitive installations.

As all other devices from portfolio GSW2 supports alarm detection, stay-alive messages, credit checking etc...

3 FEATURES AND APPLICATIONS

Features:

- ⇒ Built-in 2 or 4 band GSM module
- ⇒ Up-to 2 buttons call support
- ⇒ Up-to 2 alarm inputs
- ⇒ 2 outputs (relay supported)
- ⇒ Up to 200 telephone numbers for CLIP support
- ⇒ Programming by USB SIM Key editor
- ⇒ Programming by USB on the GSW2
- ⇒ Programming by SMS command
- ⇒ Anti-tampering input
- ⇒ Wiegand output

Applications:

- ⇒ Secure sensitive intercom installations
- ⇒ Free of charge remote control (CLIP)
- ⇒ Simple alarm support
- ⇒ CLIP Wiegand reader

4 START UP

**VERY
IMPORTANT**

USE A MICRO SIM CARD (micro-SIM, see the picture→)
WITH MEMORY FOR UP TO 250 CONTACTS!



⇒ Insert SIM card to be used for GSW2 in your personal mobile phone.

IMPORTANT

ERASE THE PIN CODE!

- ⇒ Insert SIM card in GSW2 device. The unit must be switched OFF when you insert the SIM!
- ⇒ Connect inputs and outputs to GSW2.
- ⇒ Connect the antenna to antenna connector.
- ⇒ Connect power cable to GSW2 device
- ⇒ Connect device to source power supply voltage.
- ⇒ Wait until LED1 (green) starts flashing. This is set in around 1 minute.
- ⇒ GSW2 unit is now ready to operate.

IMPORTANT

Before sending any SMS commands to GSW2 device, device must be powered ON and in normal operation!

5 LED DISPLAY

GREEN 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)

- LED 2 is used to indicate ongoing traffic on the GSM interface.

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 ON and a long pulse OFF.

6 CLEAR ALL PROGRAMMED DATA FROM SIM

This is highly recommended when a SIM card you are going to use for the GSW2 is not new and it already has some data stored in the phone book memory.

By sending this SMS to GSW2 all programmed parameters and numbers are cleared:

;SDCLR;

After the command is received by the device all configuration parameters on the SIM card including the SMS are deleted. The procedure can take up-to 2 minutes, depends on the version of the SIM card.

The GSW2 will restart after the configuration is deleted.

NOTE

By sending this command to the GSW2 all programmed data are erased from the SIM card, including SMS!

7 CONNECTING DIAGRAM

Before connection the GSW2 please take a look at connection diagram.



PS	Power supply – 15 to 24 V AC(DC)	DIN0	Wiegand connection
PS		DIN1	
IN1	Alarm input 1	DOUT0	
IN2	Alarm input 2	DOUT1	
1C	Relay output 1 – Common	GND	Ground
1NC	Relay output 1 – Normal Close	A	RS485 A
1NO	Relay output 1 – Normal Open	B	RS485 B
2C	Relay output 2 – Common	TMP	Temperature sensor connector
2NC	Relay output 2 – Normal Close	SIM	SIM card holder
2NO	Relay output 2 – Normal Open	G	GSM Intercom – Call point connections
AUX	+12V AUX max. 500 mA in total !	B	
GND	Ground	W	
		Y	
ANT	GSM Antenna	CB1	Call Button 1 – is the same as IN1 !
USB	USB conn. for programming with PC	AUX	+12V AUX max. 500 mA in total !

Figure 1: GSW2 Connection diagram

8 PROGRAMMING GSW2

GSW2 device supports different types of programming:

- ⇒ To program GSW2 parameters put the SIM card into your personal GSM phone. Add programming parameters in **SIM Card “Phone Book”**.
- ⇒ You can program GSW2 remotely by SMS command.
- ⇒ You can program GSW2 with USB key and SIM manager.
- ⇒ You can program GSW2 directly with the use of USB connection on the device. Please contact your reseller to receive the application running on PC for management of the GSW2 and the appropriate USB drivers.

9 THE GSW2 PARAMETERS

To support versatile functionality of GSW2 different parameters are used. The parameters are divided in logical sections and are described in the following chapters.

9.1 ALARM SUPPORT

Alarm reporting is supported by group of different parameters. First section is used to define the relations needed for alarm to be triggered. The second section is used to report alarm.

9.1.1 ALARM TRIGGERING

Parameters are used to control (filter) the triggering of the alarm inputs.

9.1.1.1 IN parameters

Alarm and reset input can be triggered in 4 different ways. The status of the input can either be normal closed (N.C) or normal open (N.O.) with positive (+ 12V) or negative (GND) voltage.

Activation of the input/alarm is reported by INx values 0 to 2. If the user needs to receive information of the input/alarm restore use INx values 4 to 6. INx value 3 disables the input/alarm reporting.

- ⇒ IN = 0 – Normal Open – triggered with negative voltage (GND)
- ⇒ IN = 1 – Normal Close – breaking negative or positive voltage loop
- ⇒ IN = 2 – Normal Open – triggered with positive voltage (+ 12VCC)
- ⇒ IN = 3 – Not in use
- ⇒ IN = 4 ⇒ IN = 0 + input reset SMS
- ⇒ IN = 5 ⇒ IN = 1 + input reset SMS
- ⇒ IN = 6 ⇒ IN = 2 + input reset SMS

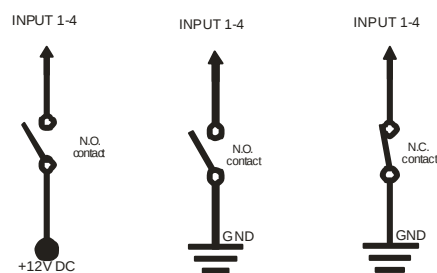


Figure 2: Input Connection diagram

9.1.1.2 ID parameters

ID parameter determines time period of the pulse length to trigger the alarm. The pulse time can be from 0,5 seconds to 9999 seconds. The default time is 0,5 seconds when the parameter value is 0. Parameter is in seconds.

9.1.1.3 DD parameters

This parameter is used to define the delay between the time that alarm input is triggered and the time that alarm is reported.

Parameter is in seconds.

9.1.1.4 Table of parameters

Name	Comment
IN1	Mode of operation for input 1
IN2	Mode of operation for input 2
ID1	Input time integration delay on input 1
ID2	Input time integration delay on input 2
DD1	Time delay for alarm reporting on input 1
DD2	Time delay for alarm reporting on input 2

Table 1: IN, ID and DD parameters

Example:

◆ Direct programming on the SIM card

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
IN1	0	Alarm activated by connecting to GND
IN2	4	Alarm activated by connecting to GND + RST SMS
ID1	10	Input 1 has to be valid for 10 second to trigger the alarm
ID2	0	Input 2 has to be valid for 0,5 second to trigger the alarm
DD1	0	Reporting of the alarm on input 1 is delayed by 0s
DD2	15	Reporting of the alarm on input 1 is delayed by 15s

Table 2: IN, ID, DD parameters example

◆ Remote programming by SMS

;IN1=0;IN2=4;ID1=10;ID2=0;DD1=0;DD2=15;

9.1.2 REMOTE REPORTING ALARM EVENTS

Parameters used to define the way to report the alarm event.

NOTE

GSW2 device send SMS messages for reporting alarm events.

9.1.2.1 TN parameters

Telephone numbers for remote alarm reporting are listed as TN parameters. Remote alarm reporting on GSW2 is done via SMS messages.

9.1.2.2 LN parameters

This parameter is used to link alarm event from inputs or any other source to the telephone numbers on TN list.

9.1.2.3 Table of parameters

Name	Comment
TN1	1 st telephone number
TN2	2 nd telephone number
TN3	3 rd telephone number
TN4	4 th telephone number
TN5	5 th telephone number
LN1	Input & telephone No. linking for 1 st alarm input (TN1 – TN5)
LN2	Input & telephone No. linking for 2 nd alarm input (TN1 – TN5)
LN3	Periodic test SMS. No. linking (TN1 – TN5)
LN4	SIM card refill. No. linking (TN1 – TN5)
LN5	NAC list. No. linking (TN1 – TN5) (see note)
LN6	Log status. No. linking (TN1 – TN5)
LN7	CLIP opening notification link (TN1 – TN5)

Table 3: Remote alarm reporting parameters

Example:

♦ **Direct programming on the SIM card**

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
TN1	042376678	1st telephone number
LN1	13	Input 1 reports alarm to TN1 & TN3
LN2	1234	Input 2 reports alarm to TN1 & TN2 & TN3 & TN4
LN5	1	NAC event sent to TN1

Table 4: Remote alarm reporting example

♦ **Remote programming by SMS**

;TN1=042376678;LN1=13;LN2=1234;LN5=1;

NOTE

When telephone number (calling or messaging GSW2) is not authorized, not acknowledge event occurs (NAC). The telephone number responsible for this event can be send to TN user for notification.

9.2 OUTPUT MANAGEMENT

GSW2 supports the possibility to report alarms from inputs and any other events locally via 2 outputs. The behavior is defined using next parameters

9.2.1 OS parameters

GSW2 device has 2 dedicated relay supported outputs. Outputs can be configured to different behavior:

- ⇒ OSx = 0 – Disabled
- ⇒ OSx = 1 – Bi-stable toggle mode
- ⇒ OSx = yyyy – Mono-stable pulse mode (duration in seconds)

Typical connection for the output:

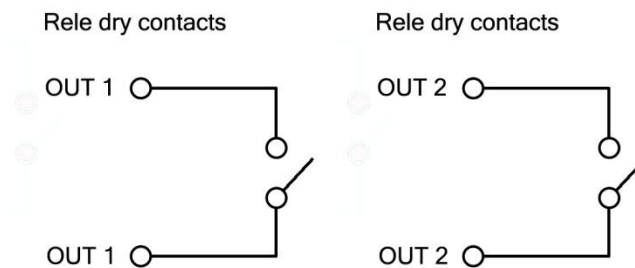


Figure 3: Output Connection diagram

9.2.2 OD parameters

OD parameter is used to link the alarm event directly to output. Direct linking can be done on input alarm events and some other internal events.

9.2.3 OP parameters

Parameters are used to invert the polarity of the outputs.

- ⇒ 0 – normal
- ⇒ 1 – inverted

9.2.4 OTS and OTE parameters

Parameters are used to define general time control on the outputs. Parameters are used to define time window for outputs to operate in case of remote control

NOTE

Time control is used in next functions:

- CLIP
- DTMF
- Input alarms (OD parameters)

9.2.5 Table of parameters

Name	Comment
OS1	Mode of operation for output 1
OS2	Mode of operation for output 2
OD1	Input 1 direct link to outputs
OD2	Input 2 direct link to outputs
OD3	GSM network problem direct link to outputs
OD4	NAC direct link to outputs
OP1	Invert control for output 1
OP2	Invert control for output 2
OTS1	Output 1 time control START
OTE1	Output 1 time control END
OTS2	Output 2 time control START
OTE2	Output 2 time control END

Table 5: Output management parameters

Example:

◆ Direct programming on the SIM card

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
OS1	1	Bi-stable toggle mode
OS2	14	Mono-stable pulse mode (14s pulse)
OD1	1	Input 1 activates output 1
OD2	2	Input 2 activates output 2
OP1	1	Output 1 inverted

Table 6: Output management parameters example

◆ Remote programming by SMS

;OS1=1;OS2=14;OD1=1;OD2=2;OP1=1;

9.3 SECURITY LEVEL - SL

SL parameter from 0 to 5 defines which telephone number stored in the phone book from TN1 – TN5 can enter into programming and remote control of the GSW2 (dialing the GSW2 phone number or sending the SMS).

NOTE

When the SL level is 0, an access to the GSW2 is possible from any phone!

IMPORTANT

Before any SL number is programmed the GSW2 can accept ALL CALLS. Remote SMS programming and remote controlling is possible from any phone!

Name / value	Comment
SL = 0	All calls and SMS are accepted
SL = 1	Only number stored under parameter TN1 has access to unit
SL = 2	Numbers stored under parameters TN1 to TN2 have access to unit
SL = 3	Numbers stored under parameters TN1 to TN3 have access to unit
SL = 4	Numbers stored under parameters TN1 to TN4 have access to unit
SL = 5	Numbers stored under parameters TN1 to TN5 have access to unit

Table 7: SL parameter

Example:

◆ **Direct programming on the SIM card**

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
SL	3	Numbers stored under parameters TN1 to TN3 have access to unit

Table 8: SL example

◆ **Remote programming by SMS**

;SL=3;

9.4 PREPAID CARD CREDIT AND VALIDITY INFORMATION

GSW2 can be used with prepaid SIM cards and its limitations. To be able to overcome this limitation of the prepaid SIM cards, GSW2 offers the possibility of automatic checking mechanism for credit and time expiration.

NOTE

GSW2 automatically sends warning SMS when the credit reaches low level defined by LCV parameter or SIM card validity is near to expiration.

NOTE

For support of different GSM providers contact support.

9.4.1 Programming prepaid card credit and validity string

To be able to support credit and time validity checking different parameters are used.

9.4.1.1 LCV and SCV parameter

LCV is used to set the limit for low credit event. If the credit on prepaid SIM cards falls below this limit SMS is send.

SCV the period of valid operating time varies with different GSM network providers. The value can be programmed from 1 to 360 days. The default value does not presume any kind of expiry warning.

For example in Slovenia SCV are 90 and in Italy 360 days

9.4.1.2 CC1, CC2 and CC3 parameters

Number used to check low credit value. They are provided from the GSM providers.

- ⇒ CC1 - This method can be used by any GSM provider that supports Unstructured Supplementary Service Data
- ⇒ CC2 - This method is dedicated to Italian TIM mobile provider
- ⇒ CC3 - This method is dedicated to Italian Vodafone mobile provider

9.4.1.3 CREF, CTIM, CVODA parameters

Parameters are used to find the credit value of the prepaid SIM card. Strings under these parameters are used to parse the replay message from the GSM provider.

- ⇒ CREF - Pars string for the replays received from CC1 number
- ⇒ CVODA - Pars string for the replays received from CC2 number
- ⇒ CTIM - Pars string for the replays received from CC3 number

9.4.1.4 Table of parameters

Name	Comment
LCV	Low credit value, bottom limit for low credit event.
SCV	Sim card validity time (in days)
CC1	Credit number for credit check universally used
CC2	Credit number for credit check dedicated for Italian TIM mobile provider
CC3	Credit number for credit check dedicated for Italian Vodafone mobile provider
CREF	String for parsing replay message from CC1 number
CVODA	String for parsing replay message from CC2 number
CTIM	String for parsing replay message from CC3 number

Table 9: Prepaid card validity parameters

Example:

◆ Direct programming on the SIM card

GSW PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
CC1	*448#	Si.mobil
CC2	4916	TIM Italy
CC3	404	Vodafone Italy
LCV	4	Low credit message will be send bellow 4

Table 10: Credit example

◆ Remote programming by SMS

;CC1=*448#;CC2=4916;CC3=404;LCV=4;

9.5 SET-UP PARAMETERS

Different parameters are used to support versatile functionality of GSW2.

9.5.1 WMOD parameter

Parameter is used to define mode of operation of the inputs (alarm or intercom mode). If the input number is not stated in the WMOD parameter then this input is in alarm mode, else it is in intercom mode.

9.5.2 HTN parameter

Hidden telephone number is a parameter used in order to conceal the telephone number of the GSW2 device. The default value is set to “1” which means that the number is displayed.

9.5.3 UDC parameter

Parameter is used to synchronise GSW2 clock to GSM network clock. User must enter here the number of the GSW2 SIM card (Telephone number of GSW2 device).

9.5.4 RAN parameter

Parameter is used to provide support for auto-answer options for GSW2 device. The number defines the numbers of rings needed for GSW2 device to answer the incoming call. The incoming number must be on the TN list for GSW2 device to answer.

9.5.5 TST parameter

A test SMS is sent periodically. GSW2 can send the test message in the interval ranging from 1 hour to 8760 hours.

Example:

To send test SMS TST value is set to 12, the numbers linked to “LN5” receive a test message every 12 hours.

9.5.6 TSTT parameter

TSTT parameter is used to define reference point for sending test message. If this parameter is set than after restart of the ZEUS4-MC first test SMS will be send out at time defined with TSTT parameter.

Parameter values are defined in hours.

Example:

To receive first test SMS at 20.00h TSTT value must be set to 20

NOTE	By setting TSTT=0 this function is disabled
-------------	---

9.5.7 MNF parameter

When it is necessary to fix the GSM network to one provider the user can use the MNF parameter. The MNF parameter switches automatic network searching to manual.

Example:

MCC/MNC code for Simobil is 29340, Mobitel is 29341, TIM is 22201, and Vodafone Italy is 22210.

More information about national MCC/MNC codes can be acquired at:

http://en.wikipedia.org/wiki/Mobile_Network_Code

9.5.8 MIC parameter

MIC parameter is used to change sound level of the microphone.

9.5.9 SPK parameter

SPK parameter is used to change sound level of the speaker.

9.5.10 MUT parameter

MUT parameter is used to mutate the speaker sound while initiating voice connection.

9.5.11 ARST parameter

ARST parameter defines periodic of auto restart time (in hours) of the GSW2 device.

9.5.12 ADF parameter

Parameter is used to define voice refresh function, to prevent blocking of SIM in some GSM networks.

NOTE

If this function is enabled GSW2 device will make voice call to TN1 number.

9.5.13 LNG parameter

LNG parameter switches between the pre-programmed languages:

- ⇒ 0 - English
- ⇒ 1 - Italian
- ⇒ 2 - Slovenian
- ⇒ 3 - Croatian
- ⇒ 4 - Dutch
- ⇒ 5 - German
- ⇒ 6 - Spanish

9.5.14 BUZ parameter

Parameter is used to control buzzer functionality on GSW2. Buzzer is used to audio support some events on GSW2.

9.5.15 REG parameter

REG parameter is used to define time out (in seconds) for how long can GSW2 drop out of registration before GSM module will be restarted.

NOTE

This is a very useful function in unstable GSM networks.

9.5.16 LED parameter

LED parameter enables you to turn indication LEDs on GSW2 ON or OFF (0 – led OFF, 1 – led ON)

9.5.17 Table of parameters

Name	Comment
WMOD	Mode of operation of inputs
UDC	Tel. number of GSW2 device
RAN	Auto answer ring number
HTN	Hidden telephone number
TST	SMS test time out
TSTT	Periodic test SMS start time
MNF	Manual GSM provider selection
MIC	Microphone volume control
SPK	Speaker volume control
ARST	Time out control for automatic system restart
ADF	Auto dial functionality (Call TN1)
LNG	Language selection
BUZ	Buzzer control
REG	Led indication control
LED	Out of registration time out.

Table 11: Set-up parameters

Example:

◆ Direct programming on the SIM card

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
WMOD	12	Both inputs are in intercom mode
HTN	0	Hidden telephone number of the gsw2 device
MNF	29340	Manual fixing of the GSM provider (Simobil)
LNG	1	Switch on Italian language
MIC	20	Microphone sound level
SPK	15	Speaker sound level
ADF	90	Make voice call every 90 days
TST	24	24 hours periodic test SMS
BUZ	0	Mute buzzer

Table 12: Set-up parameters example

◆ Remote programming by SMS

;WMOD=12;HTN=0;MFN=29340;LNG=1;MIC=20;SPK=15;ADF=90;TST=24;BUZ=0;

9.6 SMS MESSAGES EDITOR

You can write and send a short SMS message for each alarm input. The default message is English, but it is possible to change language with LNG parameter. Each message is built from 3 parts and user can write the first (User Location) and the second (alarm event) part of the message. Unit adds the third part (alarm event description) automatically. Language of the 3rd part may be changed by **LNG** parameter. The message is stored in the SIM phone book so you should add any number for correct operation.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
#	0	U	S	E	R		L	O	C	A	T	I	O	N	
#	1	I	N	P	U	T		1							
#	2	I	N	P	U	T		2							

NOTE

Message should not be longer than 14 characters! Space is also counted as one character!

9.6.1 Table of parameters

Name	Comment
#0	User location, same for all alarm messages
#1	Input 1, second part of message
#2	Input 2, second part of message

Table 13: Message parameters

Example:

◆ Direct programming on the SIM card

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
#0House	1	Location definition
#1Kitchen	1	Alarm input is from the kitchen

Table 14: Message parameters example

◆ Remote programming by SMS

;#0HOUSE=1;#1KITCHEN=1;

9.7 INTERCOM

Intercom functionality is supported by a set of parameters, used to tweak the functionality to each user needs.

NOTE

To support intercom function on particular input set WMOD parameter to appropriate value.

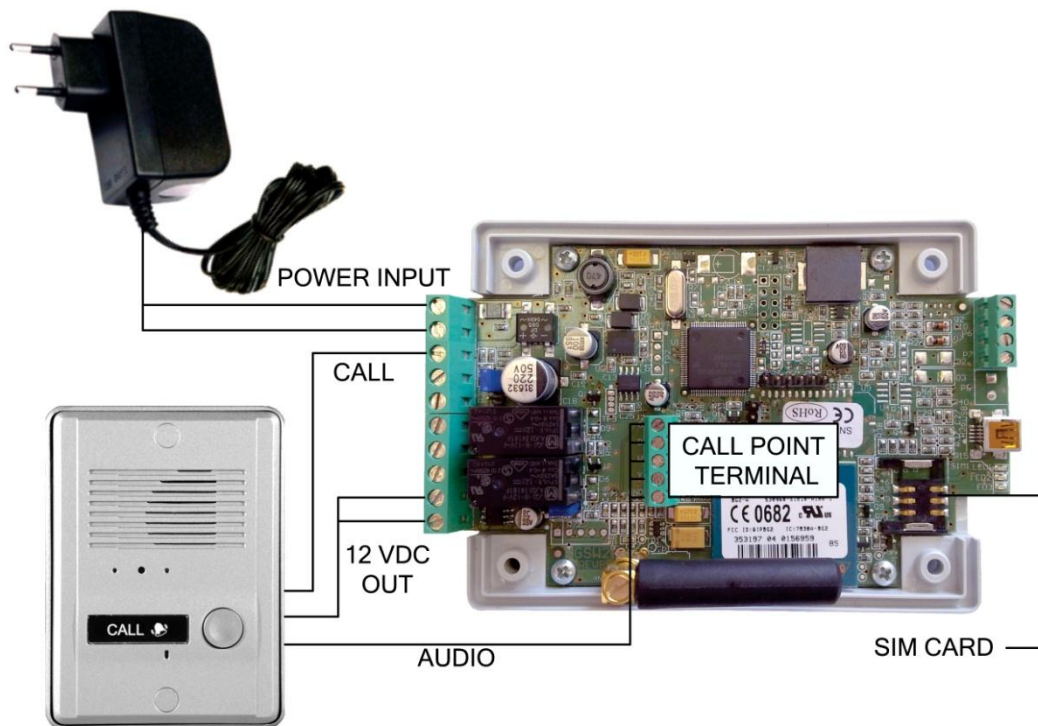


Figure 4: GSW2 Intercom connection diagram

9.7.1 ESC parameter

Parameter is used to define the input used to cancel the outgoing call from the GSW2 device.

9.7.2 LOT parameter

LOT parameter is used to define the time control for voice calls. The start of voice connection starts the LOT timer. If the voice connection is still ON when the LOT timer expires GSW2 disconnects voice connection.

9.7.3 Intercom call groups

For each button GSW2 incorporates a group of parameters. There are 2 groups of parameters.

9.7.3.1 xTN1 to xTN5 parameters

Parameters are the call numbers for intercom application.

9.7.3.2 RTNx parameter

Parameter defines the ring time time-out. RTNx timer is started when the call button is pressed. If the RTNx timer expires before the GSM voice connection is established then GSW2 device calls the next number in XTN1-XTN5 call list.

9.7.3.3 DTMF auto dial functionality

This function is used to provide a support for GSW2 device to be able select extended numbers via DTMF command.

9.7.3.4 SDNx parameter

Parameter is used to set the DTMF number in auto self select function.

9.7.3.5 SDDx parameter

Parameter is used to set the delay (in seconds) for sending DTMF number in auto self select function.

9.7.3.6 Time zone

Time zone support. When time limits are sets (TZSx and TZEx) time zone functionality is ON. When the current time is in the limits of the time zone parameters the button event calls the number from xTN1 to xTN4, else button event calls xTN5.

9.7.3.6.1 TZSx parameter

Parameter is used to configure the start time for the time zone functionality - 24h time format.

9.7.3.6.2 TZEx parameter

Parameter is used to configure the end time for the time zone functionality - 24h time format.

9.7.4 Table of parameters

Name	Comment
LOT	Time out for voice connection.
ESC	Input used as cancel button
ATN1	Button 1, Telephone number 1.
ATN2	Button 1, Telephone number 2.
ATN3	Button 1, Telephone number 3.
ATN4	Button 1, Telephone number 4.
ATN5	Button 1, Telephone number 5.
RTNA	Button 1, time out control for voice connection.
SDNA	Button 1, DTMF number to send.
SDDA	Button 1, delay for DTMF number to send.
TZSA	Button 1, time zone start period.
TZEA	Button 1, time zone end period.
BTN1	Button 2, Telephone number 1.
BTN2	Button 2, Telephone number 2.
BTN3	Button 2, Telephone number 3.
BTN4	Button 2, Telephone number 4.
BTN5	Button 2, Telephone number 5.
RTNB	Button 2, time out control for voice connection.
SDNB	Button 2, DTMF number to send.
Sddb	Button 2, delay for DTMF number to send.
TZSB	Button 2, time zone start period.
TZEB	Button 2, time zone end period.

Table 15: Intercom parameters.

Example:

◆ Direct programming on the SIM card

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
LOT	60	Voice connection stay valid for max of 60s, after this time Voice connection breaks
ESC	2	Input 2 is used as cancel button
ATN1	040713470	Button 1, Telephone number 1.
ATN2	+38643364850	Button 1, Telephone number 2.
RTNA	30	Button 1, time out control for voice connection.
TZSA	6	Time zone start at 6.00
TZEA	14	Time zone ends at 14.00
SDNA	1	DTFM number to send
SDDA	3	DTMF number is send after 3s delay

Table 16: Intercom parameters example.

◆ Remote programming by SMS

;ATN1=040713470;ATN2=+38643364850;RTNA=30;TZSA=6;TZEA=14;
;SDNA=1; SDDA=3;

9.8 CONTROLLING OUTPUTS WITH DTMF

GSW2 can control the outputs with the use of DTMF. This is very useful function in the intercom application.

To control the outputs the user must press the combination of 2 digits. First digit is used to select the output (1 to 2), the second digit is used to activate (1) or deactivate (0) the output. There is a special case when the user can select for first digit (output selection) number 0. In this case all outputs control by the same time.

Combination must be pressed in 2s interval, and must be 3s apart to be valid.

NOTE

GSW2 must be in voice connection to support DTMF output control!

Example:

DTMF combination	Description
00	Deactivate ALL outputs
01	Activate ALL outputs
11	Activate output 1
20	Deactivate output 2

Table 17: DTMF control example

9.9 CLIP

CLIP is used to provide the “free of charge” options to control the outputs.

9.9.1 CLPEN parameter

Parameter used to enable CLIP functionality.

9.9.2 CLPOU parameter

Parameter used to choose which output will be controlled by the CLIP functionality.

9.9.3 CLPI parameter

This parameter, if set, is a precondition for CLIP function to control the output. The input define by the CLPI parameter must be active for CLIP function to control the output.

9.9.4 CLPNN parameter

Parameter is used to set the starting point for notification function. Notification function is used when the user need to notify itself (TN1 to TN5 use LN7) that the CLP function was used to control the output.

9.9.5 CLPNM parameter

Parameter is used to define how the notification function operate. Notification function can send SMS with the number controlling the output or it can issue instant voice call.

- CLPNM=0 Notify the user by voice call
- CLPNM=1 Notify the user by sending SMS

9.9.6 CLP1 ... CLP200 parameter

Set of telephone number, which can control the output. The number not on CLP list is not able to control the output using clip functionality.

9.9.7 Table of parameters

Name	Comment
CLPEN	Enable CLIP functionality
CLPOU	Control output pin when CLIP event
CLPI	CLIP input activation condition
CLPNN	Notification number start
CLPNM	Notification function mode
CLP1	CLIP number 1
.	.
.	.
.	.
CLP200	CLIP number 200

Table 18: CLIP parameters

Example:

♦ **Direct programming on the SIM card**

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
CLPEN	1	Enable CLIP functionality
CLPOU	2	CLIP control output 2
CLPI	0	No input activation condition
CLP1	040414414	CLIP number 1
CLP2	042340880	CLIP number 2
CLPNN	10	Output control action from the number CLP10 to CLP200 will be reported to TNx numbers (use LN7 to define the links)
CLPNM	1	Notification is done with the SMS

Table 19: CLIP parameters example

♦ **Remote programming by SMS**

;CLPEN=1;CLPOU=2;CLPI=0;CLP1=040414414;CLP2=042340880;CLPNN=10;
;CLPNM=1;

9.10 WIEGAND INTERFACE

GSW2 device incorporates an output Wiegand interface, which is used to send CLIP number information from GSW2 device to the Wiegand receiver (Access Control Terminal).

NOTE

For configuration, and protocol support please contact support.

9.11 EVENT LOGGING

GSW2 device supports logging of specific events. GSW2 logs CLIP event and alarm input events. Log event consist of event type, time and telephone number or input number.

9.11.1 LOGN parameter

Parameter is used for defining the number of events printed out on PLOG request.

9.11.2 LOGI parameter

LOGI parameter is used to enable and define SOLO log storage.

- LOGI=0 Logging is OFF
- LOGI=1 Logging in internal memory
- LOGI=2 Logging to USB interface

9.11.3 ALC parameter

Parameter is used to control behavior when log on GSW2 is full. User can select between auto log clear or manual clear of log.

- ALC = 0 Manual log erase needed when log is full
- ALC = 1 Automatic log erase when log is full

9.11.4 Table of parameters

Name	Comment
LOGN	Number of log events for printing out
LOGI	Log interface
ALC	Automatic log clear

Table 20: LOG parameters

Example:

◆ **Direct programming on the SIM card**

GSW2 PROGRAMMING TABLE		
SIM CARD PHONE BOOK		
Name	Number	Description
LOGN	5	5 log events will be printed out on PLOG command
LOGI	1	Logging in internal memory
ALC	1	Log is auto cleared when full

Table 21: LOG parameters example.

◆ **Remote programming by SMS**

;LOGN=5;LOGI=0;ALC=1;

9.12 SPECIAL SMS COMMANDS

These commands can only be issued only over SMS message, and are used to control some special functions of GSW2 device.

9.12.1 ORC command

Command is used to control outputs directly via SMS message

9.12.2 SDCLR command

To clear all data on SIM card SDCLR command is used.

9.12.3 LCRL command

Command clears log on GSW2 device.

9.12.4 CLPCLR command

Command is used to delete all CLP numbers.

9.12.5 MRES command

Command is used to manually restart GSM module on GSW2 device.

9.12.6 SSRES command

Command is used to manually restart GSW2 device.

9.12.7 Table of parameters

Name	Comment
ORC1	Control of output 1
ORC2	Control of output 2
SDCLR	Delete all SIM content
LCRL	Delete log on GSW2 device
MRES	Manual reset of GSM module
SSRES	Manual reset of GSW2 device

Table 22: SMS commands.

Example:

◆ **Remote programming by SMS**

SMS commad	Description
;ORC1=1;	Activate output 1
;ORC2=0;	Deactivate output 2
;SDCLR;	Clear all data on SIM
;LCLR;	Delete log on GSW2 device
;MRES;	Manual reset of GSM module
;SSRES;	Manual reset of GSW2 device

Table 23: SMS commands example.

10 PRINT-OUT OF THE PARAMETERS

The user can check the settings of ALL parameters on the GSW2.

10.1 RECEIVE ALL PARAMETERS (PALL)

By sending this command to GSW2 you receive SMS messages with all parameters that are currently programmed in the unit:

;PALL;

10.2 CHECK WMOD SETTINGS (PDEWM)

By sending this command to GSW2 you receive SMS messages with setting of WMOD parameter:

;PDEWM;

10.3 CHECK SW REVISION (PSW)

By sending this command to GSW2 you receive SMS messages with current SW version running on GSW2 device:

;PSW;

10.4 CHECK SIGNAL QUALITY (PSQ)

By sending this command to GSW2 you receive SMS messages with signal quality GSW2 device is connected to network:

;PSQ;

10.5 RECEIVE TELEPHONE NUMBERS (PTN)

By sending this command to GSW2 you receive SMS message with all currently programmed telephone numbers (TN1 – TN5):

;PTN;

10.6 RECEIVE LINKS (PLN)

By sending this command to GSW2 you receive SMS message with all currently programmed links (LN1 – LN7):

;PLN;

10.7 RECEIVE INPUT PARAMETERS (PIN)

By sending this command to GSW2 you receive SMS message with all currently programmed Input parameters (IN1 – IN2):

;PIN;

10.8 RECEIVE INPUT FILTER VALUE (PID)

By sending this command to GSW2 you receive SMS message with all currently programmed Input filters (ID1 – ID2):

;PID;

10.9 RECEIVE OUTPUT FILTER VALUE (POD)

By sending this command to GSW2 you receive SMS message with all currently programmed direct output links (OD1 – OD4):

;POD;

10.10 RECEIVE DELAY BEFORE DIAL VALUE (PDD)

By sending this command to GSW2 you receive SMS message with all currently programmed Input filters (DD1 – DD4):

;PDD;

10.11 RECEIVE ACCESS TELEPHONE NUMBERS (PSL)

By sending this command to GSW2 you receive SMS message with programmed SL level:

;PSL;

10.12 RECEIVE OUTPUT PARAMETERS (POS)

By sending this command to GSW2 you receive SMS message with all currently programmed Outputs parameters (OS1 – OS2):

;POS;

10.1 RECEIVE OUTPUT PARAMETERS (POT)

By sending this command to GSW2 you receive SMS message with all currently programmed output time parameters (OTS1, OTE1, OTS2 and OTE2):

;POT;

10.2 RECEIVE ALL PROGRAMMED SMS MESSAGES (P#)

By sending this command to GSW2 you receive SMS message with all currently programmed alarm SMS messages (#0 - #2):

;P#;

10.3 RECEIVE SET UP PARAMETERS VALUE (PPA)

By sending this command to GSW2 you receive SMS message with all currently programmed Setup parameters (TST, MNF...):

;PPA;

10.4 RECEIVE CREDIT PARS PARAMETERS (PCREF)

By sending this command to GSW2 you receive SMS message with all currently programmed credit parse parameters (CREF, CVODA...):

;PCREF;

10.5 RECEIVE CREDIT CHECK TELEPHONE NUMBERS (PCN)

By sending this command to GSW2 you receive SMS message with programmed numbers for credit checking (CC1, CC2...):

;PCN;

10.6 RECEIVE ALL CLIP PARAMETERS (PCLP)

By sending this command to GSW2 you receive SMS message with all currently programmed CLIP functionality related parameters (CLPEN, CLPOU, CLPI, CLPx):

;PCPL;

NOTE

User can use ;PCPL=x,y; to limit the number of CLIP numbers to be printed.
x = start number
y = end number
Example
;PCLP=1, 30; Prints first 30 CLIP numbers

10.7 RECEIVE INTERCOM BUTTON 1 PARAMATERS (PDEA)

By sending this command to GSW2 you receive SMS message with all currently programmed button 1 group parameters (ATN1, ATN2, ATN3, ATN4, ATN5, RTNA, SDNA, SDDA, TZSA, TZE A):

;PDEA;

10.8 RECEIVE INTERCOM BUTTON 2 PARAMATERS (PDEB)

By sending this command to GSW2 you receive SMS message with all currently programmed button 2 group parameters (BTN1, BTN2, BTN3, BTN4, BTN5, RTNB, SDNB, SDDB, TZSB, TZE B):

;PDEB;

10.9 STATE OF THE CREDIT FOR THE PREPAID CARD

By sending this command to GSW2 you receive SMS message with Credit amount on your prepaid SIM card:

;PCCX;

Where X is the number of programmed prepaid card provider.

10.10 STATE OF THE OUTPUTS (PORC)

By sending this command to GSW2 you receive SMS message with current outputs state.

;PORC;

10.11 MANUAL GSM MODULE RETARD (MRES)

By sending this command to GSW2 shuts down GSM module and after a few second it switches the power of the GSM module ON again. The unit reboots all parameters from the SIM card.

;MRES;

10.12 RECEIVE STATUS OF INPUTS (INS)

By sending this command to GSW2 you receive SMS message with current input state.

;INS;

10.13 RECEIVE GSW2 LOG

By sending this command to GSW2 you receive SMS message with log on GSW2 device.

;PLOG;

10.14 RECEIVE WIEGAND PARAMETERS

By sending this command to GSW2 you receive SMS message with parameters used to configure Wiegand interface:

;PWG;

11 CHANGING PARAMETERS USING THE SMS COMMAND

All programming parameters for GSW2 can also be sent by SMS command. Each SMS command should start and stop with semicolon. If the confirmation SMS is needed, put “+” at the beginning of the command SMS.

The first SMS is SMS with telephone numbers (TN1 – TN5). If you would like to check which telephone numbers are programmed in GSW2 please use the following command:

;PTN;

Return SMS is (example):

;TN1=0;TN2=0;

If you would like to enter telephone numbers in to GSW2 you can use the following example:

;TN1=040713470;TN2=+38643364850;

If you would like to receive confirmation SMS write “+” before SMS command:

;+TN1=040713470;TN2=+38643364850;

Return SMS from GSW2 is:

;TN1=040713470;TN2=+38643364850;

NOTE

You can use the same programming procedure for all parameters.

It is also possible to change different parameters with one SMS. Consider that the SMS message should not be longer than **160 characters** (included space characters).

If you would like to change the following parameters **TN1, IN1, IN2, OS1, OS2; ID1, LN1 and CRE** and would like to receive confirmation SMS, try next example:

;+TN1=+38640713470;IN1=1;IN2=1;OS1=15;OS2=1;ID1=120;LN1=1;

Send SMS message to GSW2 telephone number and in a few seconds you receive SMS message from GSW2. The sentence of the SMS must be the same as the one you have sent to GSW2 before.

12 DEFAULT SETTINGS ON GSW2

ZEUS4-VD PROGRAMMING TABLE		
Name	Default Value	Short Description
TN1	Empty	Telephone number 1
TN2	Empty	Telephone number 2
TN3	Empty	Telephone number 3
TN4	Empty	Telephone number 4
TN5	Empty	Telephone number 5
IN1	0	Input 1 control
IN2	0	Input 2 control
OS1	5	Output 1 mode
OS2	5	Output 2 mode
OD1	0	Input 1 direct output link
OD2	0	Input 2 direct output link
OD3	0	GSM network failure direct output link
OD4	0	NAC direct output link
LN1	Empty	Input 1, link to tel. numbers
LN2	Empty	Input 2, link to tel. numbers
LN3	Empty	Periodic SMS, link to tel. numbers
LN4	Empty	SIM card validity and credits status, link to tel. numbers
LN5	Empty	NAC, link to tel. numbers
LN6	Empty	LOG status, link to tel. numbers
LN7	Empty	Notification function, link to tel. numbers
ID1	0	Input 1 delay filter on input
ID2	0	Input 2 delay filter on input
DD1	0	Input 1 delay before dialing
DD2	0	Input 2 delay before dialing
RAN	0	Auto answer ring number
SL	0	Security level
#0	“User Location”,	SMS main head text
#1	“Input1”,	SMS input 1 text
#2	“Input2”,	SMS input 2 text
CC1	Empty	Check credit Num 1
CC2	Empty	Check credit, TIM Italy
CC3	Empty	Check credit, Vodafone Italy
ESC	0	Cancel function
UDC	Empty	Tel. number of ZEUS4 device
HTN	1	Hidden telephone number
SCV	0	SIM card time validity
TST	24	Periodic test SMS timeout
MNF	0	Network connection type
MIC	15	Microphone 1 volume setting (0 - 40)
MUT	0	Mute functionality

ZEUS4-VD PROGRAMMING TABLE		
Name	Default Value	Short Description
SPK	10	Speaker volume setting (0 - 20)
LCV	4	Low credit value
LNG	0	Language selection
LOT	60	Connection time out value
LOGN	5	Number of log events for printing out
LOGI	0	Log interface
ALC	1	Automatic log clear
ADF	90	Auto dial
ARST	0	Automatic reset timeout
OP1	0	Output 1 invert
OP2	0	Output 2 invert
REG	30	Out of GSM registration
LED	1	Led indication is enabled
BUZ	1	Buzzer function
SPO	1	SIM card starting position
CREF	“EUR”	Parse text(contact support)
CTIM	“EURO”	Parse text(contact support)
CVODA	“DISPON. E.”	Parse text(contact support)
CLPEN	1	Enable CLIP functionality
CLPOU	1	Control output pin when CLIP event
CLPI	0	Clip input condition
CLPRI	0	Clip restore function
CLPRT	25	Clip restore function time out
CLPNN	0	CLIP notification start number
CLPNM	0	CLIP notification mode
CLP1	Empty	CLIP number 1
.	.	
.	.	
.	.	
CLP200	Empty	CLIP number 200
WMOD	0	Door entry mode
ATN1	Empty	Grope A, telephone number 1
ATN2	Empty	Grope A, telephone number 2
ATN3	Empty	Grope A, telephone number 3
ATN4	Empty	Grope A, telephone number 4
ATN5	Empty	Grope A, telephone number 5
RTNA	25	Ring time
SDNA	0	Self dial number
SDDA	3	Self dial delay
TZSA	0	Time zone start
TZEA	0	Time zone end
BTN1	Empty	Grope B, telephone number 1
BTN2	Empty	Grope B, telephone number 2
BTN3	Empty	Grope B, telephone number 3

ZEUS4-VD PROGRAMMING TABLE		
Name	Default Value	Short Description
BTN4	Empty	Grope B, telephone number 4
BTN5	Empty	Grope B, telephone number 5
RTNB	25	Ring time
SDNB	0	Self dial number
SDDB	3	Self dial delay
TZSB	0	Time zone start
TZEB	0	Time zone end
WOM	0	Wiegand mode of operation
WUSC	0	Wiegand special parameters

Table 24: GSW2 default settings

13 PARAMTERES PRINT-OUT COMMANDS

GSW2 PRINT TABLE	
Name	Short Description
PALL	Prints all parameters available on GSW2.
PSW	Prints SW version of GSW2.
PSQ	Prints GSM network signal quality of GSW2.
PTN	Prints TNx numbers.
PLN	Prints LNx links.
PIN	Prints INx parameters.
PID	Prints IDx parameters.
POD	Prints ODx parameters.
PDD	Prints DDx parameters
PSL	Prints SL parameter.
POS	Prints OSx parameters.
P#	Prints #x parameters.
PPA	Prints various setup parameters.
PCLP	Prints CLIP parameters.
PLOG	Prints log of the GSW2.
PCREF	Prints credit pars parameters.
PCN	Prints credit request numbers.
PCC1	Prints credit for GSW2 (universal request).
PCC2	Prints credit for GSW2. (TIM Italy).
PCC3	Prints credit for GSW2. (VODAFONE Italy).
PWG	Prints Wiegand parameters.
INS	Prints status of the inputs.
PORC	Prints (controls) the status of outputs.
PDEA	Prints intercom button 1 parameters.
PDEB	Prints intercom button 2 parameters.
PDEWM	Print the WMOD parameter

Table 25: GSW2 parameters print out commands

14 TECHNICAL SPECIFICATIONS

Description	Value
Power Supply	15 - 24V AC/DC
Current consumption - peak	2A
Current consumption - transmitting mode	250mA
Current consumption - idle mode	40mA
Quad band GSM module	850/900/1800/1900 MHz
PCB dimensions	126 × 76 mm
Unit dimensions	126 × 85 × 35 mm
Call buttons (with intercom module)	Up to 2
Built-in Antenna SMA	1
Weight	180 gr.
Alarm inputs	2
Alarm outputs (relay)	2
12V DC Power Supply input	Yes
15-24V AC/DC Power Supply input	Yes
Anti-tamper protection	optional

15 CONTACTS
