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GSM pager for vehicles **ZEUS v1**



User manual v1.0



The WEEE (Waste Electrical and Electronic Equipment) marking on this product (see left) or its documentation indicates that in the EU the product must not be disposed of together with household waste.

Safety instructions

Please read and follow these safety guidelines in order to maintain safety of operators and people around. Pager for vehicles ZEUS (further referenced as the system) contains an integrated radio transceiver operating in GSM900 and GSM1800 bands.

- Don't use the system where it can interfere with other devices and cause any potential danger.
- Don't use the system in hazardous environment.
- Don't expose the system to high humidity, chemical environment or mechanical impacts
- Don't attempt to personally repair the system



Any system repairs must be done only by qualified, safety aware personnel.



Mains power must be disconnected before any installation or tuning work starts. The system installation or maintenance must not be done during stormy conditions.



The system must be used only with approved back-up battery to avoid fire or explosion hazards. Special care must be taken connecting positive and negative battery terminals.



The device is powered by a backup battery. The device is switched off by unplugging main power supply connector and disconnecting battery connector.



Fuse F1 type - C1S 2.5A. Blown fuse cannot be replaced by the user and the replacement fuses have to be exactly the same as indicated by the manufacturer.



WARNING: in order to avoid fire or explosion hazards the system must be used only with approved back-up battery. Special care must be taken when connecting positive and negative battery terminals

Limited Liability

The buyer must agree that the system will reduce the risk of theft, burglary or other dangers but does not guarantee against such events.

"ELDES UAB" will not take any responsibility regarding personal, property or revenue loss while using the system.

"ELDES UAB" responsibility according to local laws does not exceed value of the purchased system.

"ELDES UAB" is not affiliated with GSM operators providing cellular services therefore is not responsible for the quality of cellular services.

Manufacturer Warranty

The system carries a 24-month warranty by the manufacturer "ELDES UAB". Warranty period starts from the day the system has been purchased by the end user. The warranty is valid only if the system has been used as intended, following all guidelines listed in the manual and within specified operating conditions. Receipt with purchase date must be kept as a proof.

The warranty is voided if the system has been exposed to mechanical impacts, chemicals, high humidity, fluids, corrosive and hazardous environment or other force majeure factors.

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Hereby, ELDES UAB declares that this GSM System ZEUS is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The declaration of conformity may be consulted at www.eldes.lt/ce



Package Content:

- 1. System ZEUS 1pcs
- 2. Microphone..... 1pcs
- 3. ZEUS users manual..... 1pcs
- 4. Main connector with fuse holder..... 1pcs
- 5. Back-up battery..... 1pcs

About User Manual

This document describes system ZEUS installation and operation. It is very important to read User Manual before start using the system.

A quick start guide is located in first two chapters. Chapter 3 and 4 describe additional system capabilities.

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1. General Information

1.1 Function

The system ZEUS is a micro-processor device used to remotely observe and control cars, motorbikes and other vehicles through GSM network.

Examples of system usage:

- Informing the user by an SMS message or phone call about the engagement of the car security system. Your security system detectors will always be adjusted correctly and your car will never disturb you or your neighbours unnecessarily.
- Vehicle search services through www.locator.it
- Informing the user about low battery.
- Listening to what is going on inside the car through a remote microphone
- A possibility to check over the mobile phone if you have not forgotten turning on the security system.

1.2 Operation Description

Informational system ZEUS works over GSM network. It is not an alarm system- it is an accessory to one. However, the device can be used independently, without any security system. This is described in section 1.5.

If vehicle siren, shock sensor, capacity sensor or any other sensor (depending on the installation) is triggered, ZEUS systems sends SMS message and calls the pre-programmed numbers until the call is answered or one of the two users presses rejection key or the call is terminated by mobile network operator. If you answer the call, the microphone will activate and you will be able to listen to what is happening inside the vehicle. After hanging up the phone the system gets back to the previous status. SMS message with the name of the triggered input (zone) is sent until first successful message delivery to one of the users.

If the system drops the call immediately after calling to the number of ZEUS system, vehicle alarm system is turned off. In such a case you can check if you did not forget to turn vehicle alarm system. If the security system is turned on, after four or five call signals ZEUS will answer the call activating the microphone. You will be able to listen to what is happening inside the vehicle.

When vehicle battery is low, the system will send SMS message informing that the battery is getting low. This message is sent when vehicle battery voltage is 11 volts for 40 seconds and longer.

If an unknown number tries calling the system or if the system receives SMS message with a wrong password, the system ignores this.

To find out the place of your vehicle you have to order the service in the website www.locator.it prior inserting SIM card in system port.

If, during the theft, vehicle battery is disconnected from the car, the system ZEUS is powered by a backup battery and the user receives SMS message notifying about this. A fully charged 0.6Ah backup battery keeps the system operating for up to 10 hours.

USEFUL INFORMATION

To increase system reliability, it is recommended not to use prepaid SIM cards. The system would fail to send any messages upon depletion of prepaid account. Also it is recommended to disable call forwarding and voice mail.

USEFUL INFORMATION

It is worth to choose the same GSM cellular provider as most users use assuring fast and reliable SMS message delivery and phone call connection.

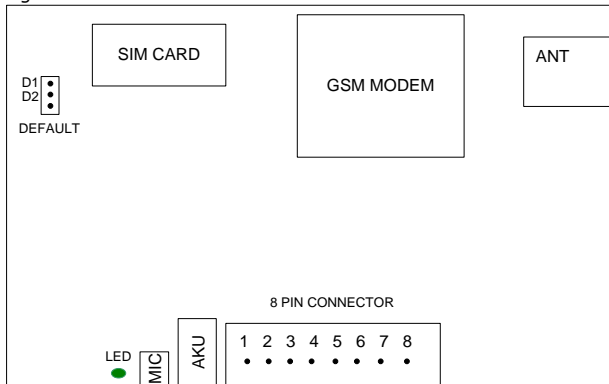
1.3 Technical Specifications

Electrical and mechanical specifications

Supply voltage	10-24V DC
Current during call	not more than 250mA
Current used in standby mode	not more than 40mA
GSM modem frequency	900/1800Mhz
Number of "high" level (positive) inputs	1
Number of "low" level (negative)	2
Arming with "low" level (negative)	1 input
Arming with "high" level (positive)	1 input
Dimensions	114x78x32mm
Operating temperature range	-20...+55°C (-30...+55°C with limitations)
Back-up Battery type	Lead acid, 8V, 0.4-1.3Ah;
Main fuse	3A

1.4 Connector Functionality

Fig. No1



Short explanation of the main units

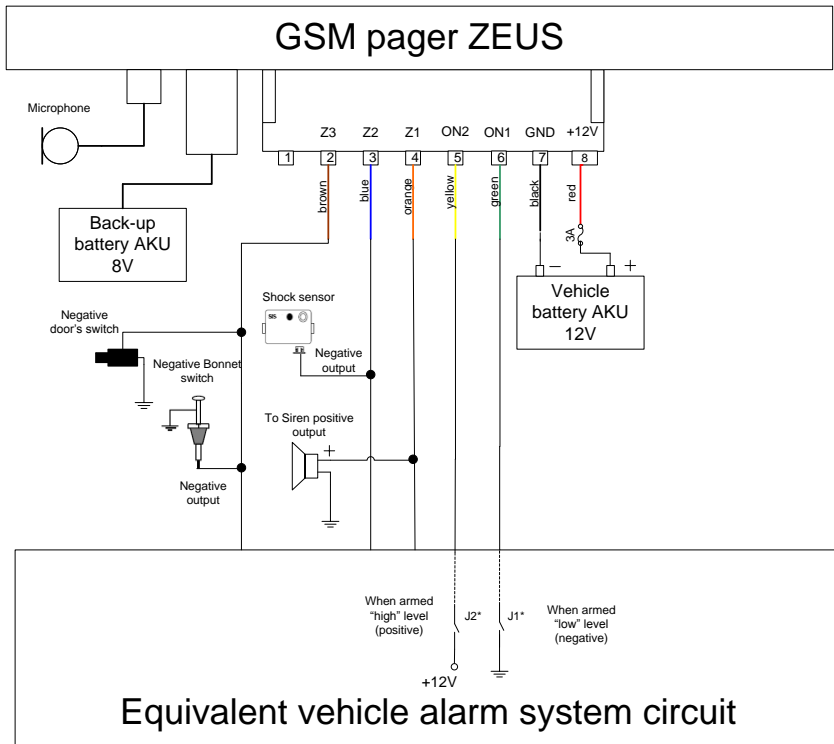
GSM MODEM	GSM network 900/1800MHz modem
SIM CARD	SIM card
LED	Light-emitting diodes indicator
DEFAULT	Connectors (D1 and D2) for restoring default settings
MIC	Microphone input
ANT	GSM antenna
8 pin connector	Main 8pin connector
AKU	Back-up battery connector

Main connector pin-out

No.	Labeling	Explanation	Wire color
1	n.c.	Not connected	
2	Z3	"low" level input Z3	Brown
3	Z2	"low" level input Z2	Blue
4	Z1	"low" level input Z1	Orange
5	ON2	Arming with "high" level (positive)	Yellow
6	ON1	Arming with "low" level (negative)	Green
7	GND	negative supply (earth) pin	Black
8	+12V	Positive power supply input (+12...24V)	Red

1.5 Connection Circuit

Fig. No2.



ON1 and ON2 inputs are equivalent; they only differ in input levels. It is sufficient connecting only one of them. Most often they are connected to system output that is connected to the relay blocking a particular circuit in car installation when the alarm is armed. If the system ZEUS is installed independent from security system or if there is no alarm system in the vehicle, connect ON1 to the hidden switch J1, the other pin of which is connected to the vehicle body (ground). Also, you can connect ON2 to the hidden switch J2, the other pin of which is connected to +12V.

"Low" level (negative) input Z2 and Z3 are most often connected to the doors, bonnet switch or shock, microwave or ultrasound sensor output which, when triggered, produce low level.

"High" level (positive) input Z1 is most often connected to siren wire, if the latter is commuted via plus, or to the ignition connector.

1.6 System Installation



Main vehicle battery must be disconnected before any installation or tuning work starts.



Do not install the system to spinning or moving parts of the vehicle. The device and its backup battery can be installed only inside the vehicle to the units that do not heat up or heat up very gently. When wiring the leads from the vehicle engine compartment to the interior use rubber insulators. Twist the wires and swirl them using insulating tape.

1. Remove device cover and insert SIM card in the slot. SIM card pin request has to be deactivated prior inserting it in the device (PIN code request can be turned off inserting SIM card in a mobile phone and choosing the appropriate command). The card must be clean of old SMS messages.
2. Connect the circuit according to Fig. No2. 4 wires are sufficient for a minimal installation:
 - 1) +12V;
 - 2) GND
 - 3) Alarm system siren wire can be connected to any of the zones Z1-Z3, depending on whether security system commutates "high" or "low" level to the siren.
 - 4) The commutated output of the installed alarm system (most often it is used to connect starter/ignition blocking relay) is connected to security arming wire ON2 or ON1, depending on whether the alarm system commutates "high" or "low" level.

If the vehicle does not have security system installed, or if you want to use ZEUS as an additional system operating independently, connect any of the hidden switches J1 or J2 to ON1/ON2.

3. Insert microphone pin in the slot. Please note the the position of the connector key. The key must be on top.
4. Place device cover and screw its bolts.
5. Connect backup battery and vehicle battery.
6. The system has to start in less than a minute. LED indicator should blink every five seconds informing about the connection to GSM network. If the indicator is blinking very frequently, i. e., several times per second, it is possible that SIM card is inserted incorrectly or PIN code request is not turned off.

2. System pre-operation and essential control commands

VERY IMPORTANT!!!

Underscore symbol '_' in this manual is used to represent space. When writing SMS messages, every underscore symbol should be replaced by single space symbol. XXXX – means password. Don't leave any space at the beginning and the end of the message.

2.1 Checking SMS central number

SMS central number can be checked as long as factory default password is not changed.

SMS central number is stored in SIM card, therefore if ZEUS SIM card was previously used in a mobile phone and SMS messages were successfully sent out / received, SMS central number does not need to be changed. Usually SMS central number of the SIM card is already entered by the operator.

Call the system ZEUS from your mobile phone and wait until the system rejects the call. In approximately 30-60 seconds you will receive an SMS message: *Please change the default password.*

If you received this message, go to step 2.2. If you did not receive the message, change SMS central number.

Instead of calling the system you can send an SMS message to the system ZEUS with the following text:

TEST

If the telephone account is topped up and SMS central number is correct, you should soon receive a message: *SMS central number is correct.*

If you received this message, go to step 2.3. If you did not receive the message, change SMS central number.

New central number can be entered by sending the following SMS message:

XXXX_SMS_+370111111111

XXXX is a password. The default password is four zeros: 0000.

Ones should be replaced with SMS central number of the provider, whose SIM card is inserted in the system. If you do not know SMS central number, you can get it from the mobile network provider.

E. g. 0000_SMS_+37069899992

Message should be sent to the number of SIM card which is placed into the system. If all went correct, the system will reply with the following message:

SMS central number has been successfully changed to +370111111111

2.2 Administrator Password Change

All SMS commands start with a password, please memorize it. Manufacturer default password is four zeros 0000, **which is necessary to change!**

Manufacturer default password can be changed by sending the following SMS message to ZEUS system:

```
0000_PSW_XXXX
```

To replace your password send the following SMS message:

```
YYYY_PSW_XXXX
```

XXXX is any four digit number except four zeros.

Non-numerical characters like dots, colons, spaces are not allowed. YYYY is the old system password.

If you forgot the password, default manufacturer password can be restored, see chapter 4.1 for more details.

2.3 Administrator Numbers

The system ZEUS allows to preprogram up to five different mobile numbers which will have access to and control the system. NR1 is mandatory while others can be skipped. **All numbers must be entered starting with international country code**, e. g. national code for Lithuania is 370, UK-44. The plus sign is not necessary. Numbers without the international code are not allowed.

2.3.1 Saving or Changing Administrator Numbers

Send SMS message with the following text:

```
XXXX_NR1:370111111111_NR2:37011111111
```

Ones should be replaced with administrator numbers.

Numbers don't have to be entered in sequential order right away. E. g. use can enter first number by sending the following SMS message:

```
XXXX_NR1:37011111111
```

Numbers can be changed same way as described above. New number will overwrite old one, therefore no erasing is necessary.

2.3.2 Verification of Administrator Numbers

To inquire the system about pre-programmed administrator numbers send the following SMS message:

```
XXXX_HELPNR
```

The system will reply with all pre-programmed numbers.

2.3.3 Deletion of Administrator Numbers

To erase a second administrator number send an SMS message:

```
XXXX_NR2:DEL
```

The system will not allow erasing first number NR1. It can only be modified.

E. g. XXXX_NR2:DEL

3. Additional system capabilities

3.1 Security zones and Configuring input impulse duration

3.1.1 Zone settings. STATUS

To find out current input names and their settings send the following SMS message:

```
XXXX_STATUS
```

You will receive the answer:

e. g.: System armed/disarmed Z1:siren:ON/OFF T1:600 Z2:doors:ON/OFF T2:600 Z3:sensor:ON/OFF T3:600

ON- means that appropriate zone is activated, i. e., it will react in the case of alarm. OFF- it is deactivated.

T1, T2 and T3 is delay of a particular one in milliseconds, i. e., a period until the input starts reacting to signal change.

E. g., in this case alarm will be triggered only if the voltage (signal) is transmitted to any of the inputs for at least 600ms.

3.1.2 Renaming Zones

Manufacturer initially set the following zone and controlled output names: Z1- siren, Z2-doors, Z3-sensor.

The user is free to change any of these names. The names cannot repeat or be identical to control commands.

Zone names can be changed by sending the following SMS message:

```
XXXX_Z1:NewZoneName_Z2:NewZoneName_Z3:NewZoneName
```

The user can change all names at once, several names or only one name. Maximum input name length is 8 characters.

E.g. XXXX_Z2:BONNET

3.1.3 Enabling/disabling zones

USEFUL INFORMATION

The zones can be enabled/disabled together or separately one by one.

NOTE

Manufacturer set all the zones activated, i. e. in mode ON.

Enabling Zone

Any zone can be enabled by sending the following SMS message:

```
XXXX_Z1:ON_Z2:ON_Z3:ON
```

e.g. **XXXX_Z2:ON;**

Disabling Zone

Any zone can be disabled by sending the following SMS message:

```
XXXX_Z1:OFF_Z2:OFF_Z3:OFF
```

e.g. **XXXX_Z2:OFF;**

3.1.4 Zone Impulse Duration Configuration

The user can change impulse duration for every input (zone) IN1-IN3. The zone is triggered only if the impulse transmitted to the input is longer than the pre-set value. Factory default duration is 600ms.

This setting can be changed for every input or for all inputs at once by sending the following SMS message:

```
XXXX_T1:TT_T2:TT_T3:TT
```

where *TT* means input reaction time in milliseconds. Possible TT values are 100-30000. Measuring is every 100.

E. g., **XXXX_T3:1500** means that input IN3 will react only in the case if the impulse transmitted to it is not shorter than 1.5 seconds.

3.1.5 Delay Time Configuration of the System in Secure Mode

For the system ZEUS the manufacturer set 5 sec. delay time after arming security system. During this period the system does not react to triggered zones.

If ZEUS is used as an independent security system, the user has enough time to leave the vehicle after turning on the hidden switch.

This time setting is changed by sending the following SMS message:

`XXXX_TSEC:TT`

where *TT* means the delay in milliseconds after turning on secure mode. Possible *TT* values are 100-30000. Measuring is every 100.

E. g., `XXXX_TSEC:20000` means that after arming security system it will not react to any triggered sensor for 20 seconds.

3.2 Info on Status SMS

System ZEUS can be inquired at any time about its status, signal strength. At the same time system can be tested. If SMS response message is received, means system is functioning properly. This is also useful for users with prepaid SIM cards. It can be checked whether SIM card has enough remaining balance for sending SMS. Send SMS message:

`XXXX_INFO`

3.3 Remote Microphone listening

To be able to listen what is going on in vehicle can be done in 3 different ways:

1. When alarm has been activated, the system will ring pre-programmed numbers and user can answer the call. Remote microphone will be enabled for listening. Ring the system. If vehicle alarm system is armed, the system ZEUS will answer the call after 4-5 ring signals turning on the microphone.
2. By sending SMS message:

`XXXX_MIC`

The system will ring the sender of former SMS, and upon answering the call, user can listen to any sounds in the building. The phone call must be answered within 20 seconds otherwise the system will stop trying and return to previous state.

3.4 Blocking unknown incoming numbers

By default ESIM262 can be controlled from any of the pre-programmed numbers NR1 and NR5. But user can access the system and control parameters from any number as long as password is known.

To enable this feature, send SMS message:

`XXXX_STR:ON`

E. g. `0000_STR:ON`

To disable this feature, send SMS message:

`XXXX_STR:OFF`

3.5 Notification about Discharged Vehicle Battery

When vehicle battery is low, the system sends SMS message notifying that the battery of the vehicle is running low. This message is delivered when ius baigia išsikrauti. This message is delivered when vehicle battery voltage is 11 volts for 40 seconds and longer.

To disable this feature, send SMS message:

XXXX_M:OFF

To re-enable this feature, send SMS message:

XXXX_M:ON

4. Appendix

4.1 Restoring Default Parameters

To restore default parameters:

- disconnect both power supplies: main and back-up battery.
- short circuit (connect) connectors D1 and D2
- connect power supply for several seconds
- disconnect power supply
- disconnect connectors D1 and D2

4.2 Replacing back-up battery

Backup battery has limited number of charging-discharging cycles. In time the battery loses its capacity. Therefore in the case of theft when the main power supply of the vehicle is disconnected the system ZEUS will operate for a shorter period.

We recommend replacing the backup battery of the system ZEUS at least every 3 years. The replacement is done by disconnecting battery connector AKU and connecting the new battery.

4.3 Technical support

Indication	Possible reason
LED indicator is off or not blinking	<ul style="list-style-type: none">• no external power supply• circuit not properly connected• blown fuse• no network signal
Indicator blinking several times per second	<ul style="list-style-type: none">• SIM card is not inserted• PIN code hasn't been disabled• SIM card not active
System does not send any SMS messages	<ul style="list-style-type: none">• SIM card account depleted• incorrect SIM central number

	<ul style="list-style-type: none"> · no network signal · user number is not programmed in user list
Received SMS message "Incorrect Format"	<ul style="list-style-type: none"> · incorrect syntax · extra space symbol left in SMS message
No sound	<ul style="list-style-type: none"> · neprijungtas mikrofonas · neteisingai prijungtas mikrofonas
No sound while listening to remote microphone	<ul style="list-style-type: none"> · micropone not connected · Microphone connection incorrect

If your problem could not be fixed by the self-guide above, please contact your distributor or ELDES tech support by email support@eldes.it

More up to date information about your device and other products can be found at the manufacturer's website www.eldes.it

4.4 Shortlist of essential functions

To find out if you turned on vehicle security system	<p>Call the system ZEUS. If the call was rejected immediately or after one ring signal, the system is disarmed.</p> <p>If the call carries on and you hear more than one ring signal, the system is armed.</p>
To find out system status	Send SMS message: <i>XXXX_INFO</i>
To find out programmed user numbers	Send SMS message: <i>XXXX_HELPNR</i>
To find out zone names ant settings	Send SMS message: <i>XXXX_STATUS</i>

