integra

LTE communication module

INT-GSM LTE

Firmware version 2.05

EN

CE

int-gsm_lte_en 08/26

Satel®

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IMPORTANT

The module should be installed by qualified personnel.

Prior to installation, please read carefully this manual in order to avoid mistakes that can lead to malfunction or even damage to the equipment.

Disconnect power before making any electrical connections.

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

The name plate of the device is located on the enclosure base.

FreeRTOS is used in this device (www.freertos.org).

SATEL aims to continually improve the quality of its products, which may result in changes in their technical specifications and software. Current information about the changes being introduced is available on our website.
Please visit us:
https://support.satel.pl

Hereby, SATEL sp. z o.o. declares that the radio equipment type INT-GSM LTE is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.satel.pl/ce

Signs in this manual

Caution – information on the safety of users, devices, etc.

Note – suggestion or additional information.

Changes made to the electronics version 1.7

Terminals	Removable terminal blocks used.
RS-232 port	PIN 5 socket replaced by RJ type socket.
Address setting	Pins for module address setting replaced by DIP-switches.

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1. Introduction

This manual describes the INT-GSM LTE module and how it should be installed and configured. The module is supported by the INTEGRA / INTEGRA Plus alarm control panels with firmware version 1.19 or newer. The module can be connected directly to the control panel or to the ETHM-1 Plus module (firmware version 2.07 or newer required) which is connected to the INTEGRA / INTEGRA Plus control panel. This manual applies to the module with electronics version 1.7.

The performance of extra features such as SMS, CLIP, push or email notifications depends on external networks and third-party services – including telecommunications providers – which are beyond our control. These services may occasionally experience disruptions that affect the delivery of notifications. The proper functioning of these features may also depend on the settings of your devices. While we do our best to minimize the risk of such issues, we cannot accept responsibility for the uninterrupted and error-free operation of features that rely on third-party services, particularly telecommunications networks or from the actions of device manufacturers.

2. Features

Communication

- Built-in telephone designed for use in the 2G and 4G networks.
- Dual SIM support (nano-SIM).
- Receiving incoming messages and calls using the active SIM card.
- Possibility to select a preferred cellular network for the SIM card (2G / 4G).
- Possibility to remotely check the account balance and validity of the SIM card installed in the module.
- Possibility to define the MCC / MNC code of the operator of network into which the module is to log in.
- Advanced 192-bit key based algorithm for encryption of cellular data transmissions.

Reporting

- Reporting events to two monitoring stations via cellular network.
- Two transmission paths:
  - cellular data transmission,
  - SMS messages.
- Defining priority for transmission paths.

Messaging

- Event notifications in the form of automatically created SMS messages, based on descriptions from the control panel event log.
- Event notifications using CLIP.
- 16 telephone numbers to be notified using SMS and CLIP.
- Event notifications in the form of automatically created e-mail messages, based on descriptions from the control panel event log, provided the module is used in conjunction with the INTEGRA Plus control panel.
- 16 e-mail addresses to be notified.

- Informing users of the INTEGRA CONTROL application about events using push notifications.

Control

- Control of alarm system using:
  - SMS messages,
  - CLIP (toll-free),
  - GUARDX program (cellular data network),
  - INTEGRA CONTROL application (cellular data network).
- You can define telephones authorized to control the alarm system by SMS or CLIP.
- You can indicate the control functions available from any telephone.

INTEGRA CONTROL mobile application

- Operating the alarm system from mobile devices:
  - control of the alarm system,
  - checking the alarm system status.
- Configuring the alarm system from mobile devices.
- Communication between the INTEGRA CONTROL application and the module can be established simply and easily with the SATEL connection setup service.

Programming the alarm system

- Remote programming of the alarm system from a computer with DLOADX / INTEGRA Soft program installed (data transfer via cellular network).

Managing the alarm system

- Remote managing of the alarm system from a computer with GUARDX program installed (data transfer via cellular network).

Module firmware update

- Module firmware updated locally via the RS bus.
- Updating the firmware via cellular network using the “UpServ” update server (remote update).

Interaction with the ETHM-1 Plus Ethernet module

- Cellular network used as backup communication path for Ethernet network.
- Defining priority for different paths of event reporting (Ethernet, cellular data and SMS).
- Dual Path Reporting compliant with EN 50136.

Electronics board

- RS communication bus for connecting to the ETHM-1 Plus module and updating firmware.
- C/D communication bus for connecting to the control panel.
- RS-232 port (RJ type socket) to allow:
  - connection to the RS-232 port of the alarm control panel (required for remote programming from the DLOADX / INTEGRA Soft program and recommended for remote administration from the GUARDX program),
  - computer to be connected for the module firmware update.
- LEDs indicating the module status.
- Powering with 12 V DC (±15%).

- Removable terminal blocks.

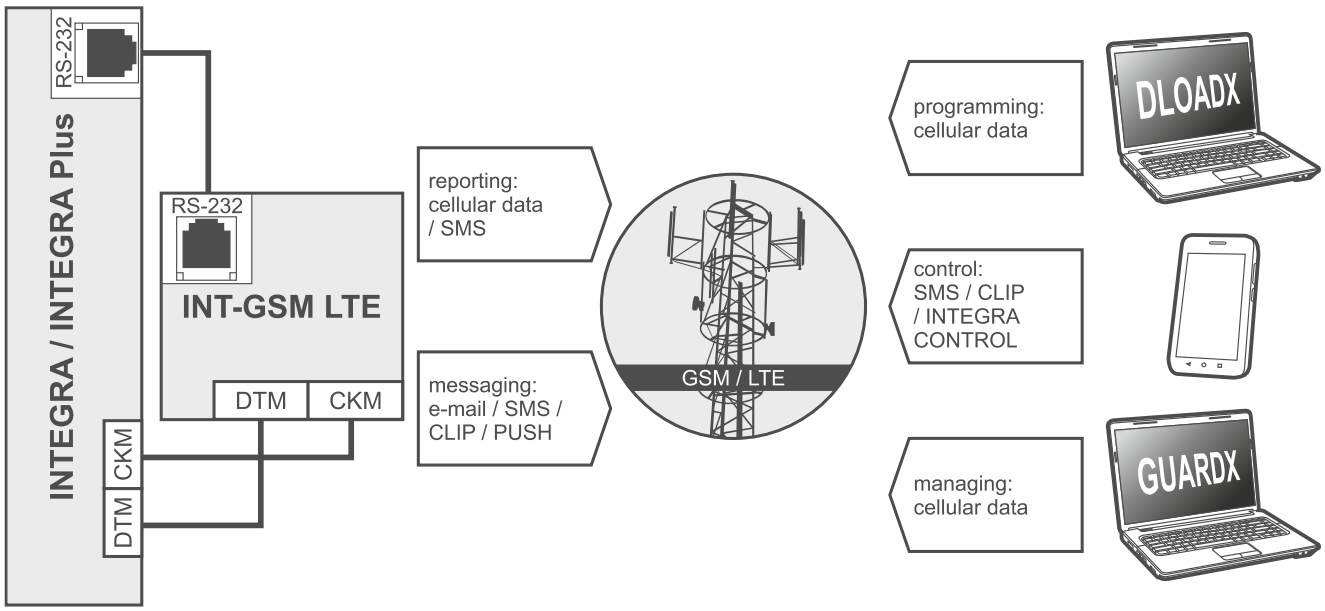


Fig. 1. Module connected to the INTEGRA / INTEGRA Plus alarm control panel.

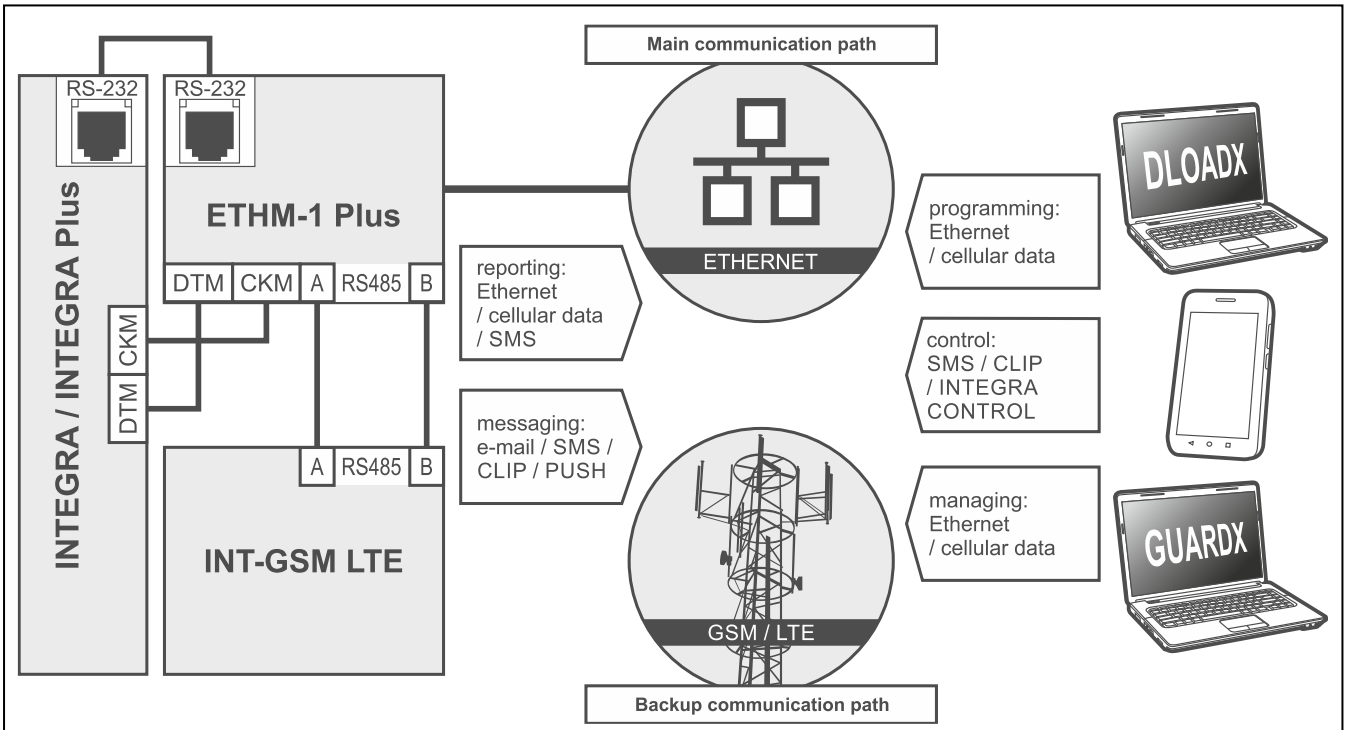


Fig. 2. Module connected to the ETHM-1 Plus Ethernet module.

3. Description of the module

3.1 Electronics board

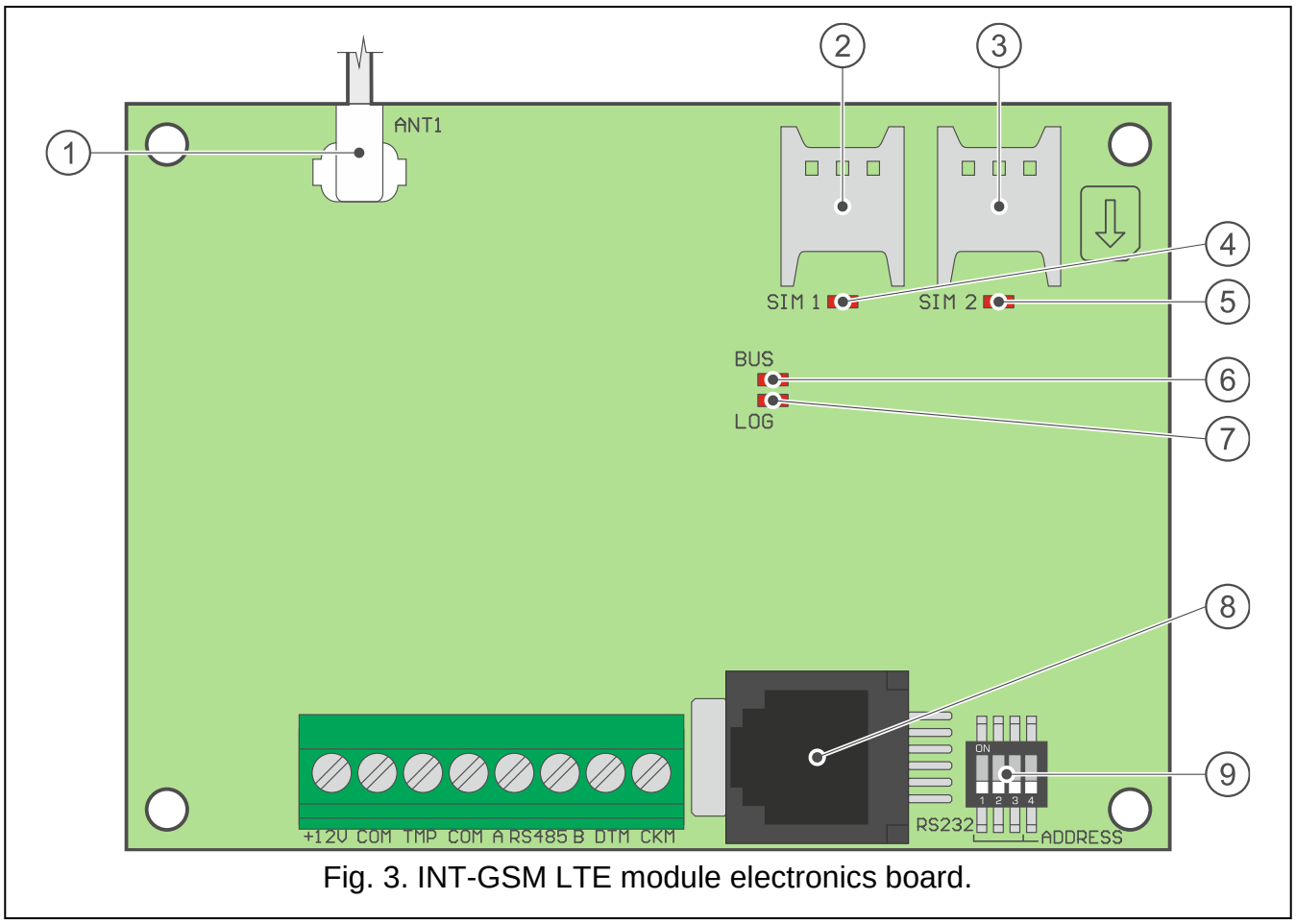


Fig. 3. INT-GSM LTE module electronics board.

1. antenna cable (the antenna is delivered with the module).
2. slot in which the first SIM card is to be installed.
3. slot in which the second SIM card is to be installed.

Inserting the SIM card into its slot before programming the card PIN code in the module is not recommended (if the card requires entering the PIN code).

4. SIM1 LED. The LED is on, when the card installed in the SIM 1 slot is active.
5. SIM2 LED. The LED is on, when the card installed in the SIM 2 slot is active.
6. BUS LED. Flashing when data exchange with the control panel is in progress.
7. LOG LED:
   ON – power OK,
   flashing – communication via the module in progress.
8. RS-232 port (RJ type socket).
9. ADDRESS DIP-switches for setting the module address (see “Setting address” p. 7).

Terminals

+12V – power input (12 V DC ±15%).

COM – common ground.

TMP – tamper input (NC). If the enclosure tamper switch is not to be connected to the input, connect the TMP terminal to the COM terminal.

A RS485 B – RS communication bus.

DTM – data (C/D communication bus).

CKM – clock (C/D communication bus).

4. Installation

Disconnect power before making any electrical connections.

It is not advisable to power up the module if the antenna is not connected.

The installation to which the module is to be connected should be provided with:

- **2-pole disconnector,**
- **short-circuit protection with a 16 A time delay circuit breaker.**

The INT-GSM LTE module should be installed indoors, in spaces with normal air humidity. When selecting the mounting location, remember that thick masonry walls, metal partitions, etc. will reduce the range of radio signal. It is not advisable to install the module in close vicinity to electrical installations, because this can result in malfunctioning of the device.

4.1 Installation in enclosure

The enclosure in which the module is to be installed shall meet the requirements for fireproof enclosures.

If the module is to be directly connected to the alarm control panel, it should be installed in the same enclosure with the control panel. This will facilitate connecting the RS-232 ports of control panel and module.

1. Secure the module electronics board in the enclosure.
2. If the module is to supervise the enclosure tamper switch, connect the tamper switch wires to the TMP and COM terminals. Otherwise, connect the TMP terminal to the module COM terminal.

4.2 Setting address

Setting the address is required if the module will be connected to the keypad bus of the alarm control panel. If the INT-GSM LTE module will be connected to the ETHM-1 Plus module, you do not have to set the address.

To set the address, use the ADDRESS DIP-switches. Table 1 shows how to set specific addresses.

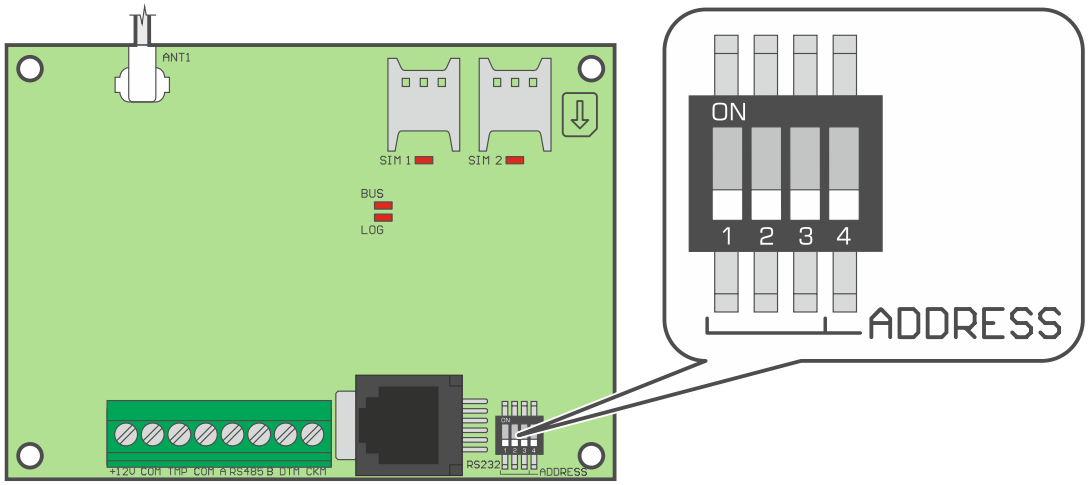


Fig. 4. DIP-switches.

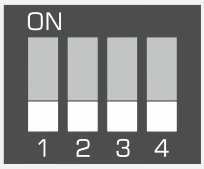
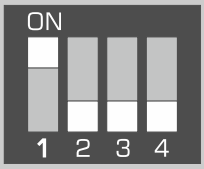
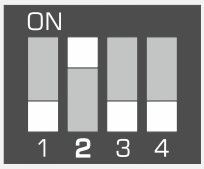
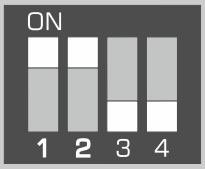
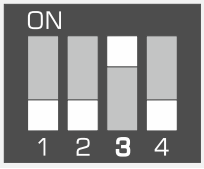
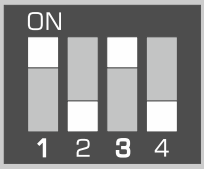
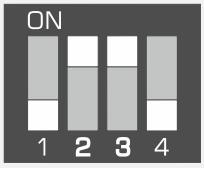
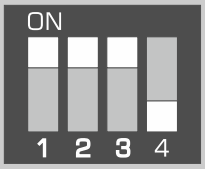
Address			
			
0	1	2	3
			
4	5	6	7

Table 1.

Set an address in the module within the range:

- from 0 to 3, if it is connected to INTEGRA 24 or INTEGRA 32 control panel,
- from 0 to 7, if it is connected to another INTEGRA or INTEGRA Plus control panel.

The address set must be different from that in the other devices connected to the keypad bus of the control panel (the control panel does not support devices with the same address).

4.3 Installation of antenna

The INT-GSM LTE module is delivered with an antenna. The antenna can be replaced with another antenna mounted on the enclosure or at some distance from it. If this is the case, you will need the IPX-SMA adapter.

Using the antenna mounted at some distance from the enclosure is recommended wherever thick masonry walls, metal partitions etc. may decrease the range of radio signal at the module installation place.

The antenna must not be installed in parallel to low-voltage electrical wires, or it can affect performance of the antenna.

4.4 Connection

The module can be connected directly to the alarm control panel or to the ETHM-1 Plus module. It is recommended that unshielded non-twisted cable to be used.

4.4.1 Connecting to the alarm control panel

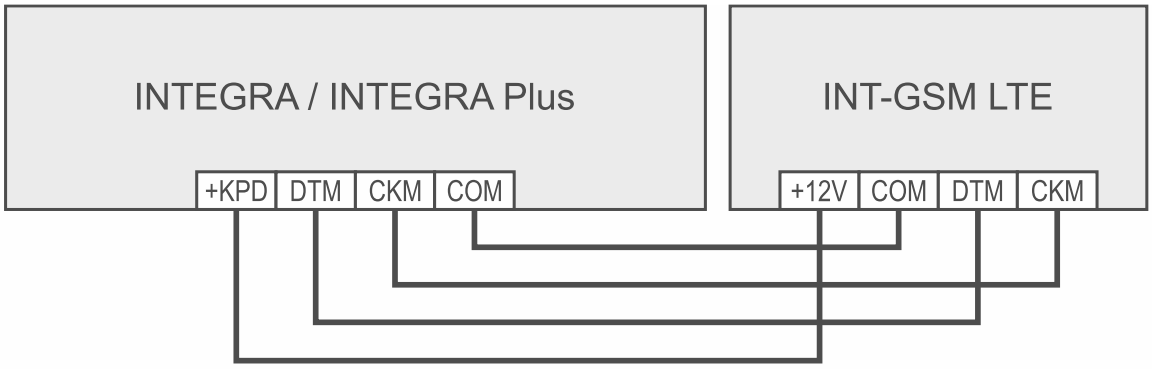


Fig. 5. The way of connecting the module with the alarm control panel.

1. Connect the +12V, COM, DTM and CKM module terminals to the control panel terminals (Fig. 5). To connect the +12V and COM terminals, use flexible conductors with a cross-section of 0.5-0.75 mm^2. If you use a twisted-pair cable to connect the DTM and CKM terminals, remember that the CKM (clock) and DTM (data) signals must not be sent through a single twisted pair of wires. The wires must be run in one cable.
2. If the control panel is to be configured via the module using the DLOADX program, connect the module RS-232 port to the control panel RS-232 port. The cable for connecting the RJ sockets is provided with the module. If the module is to be connected to a control panel with the PIN5 socket, use the SATEL RJ/PIN5-LCD cable or make your own cable as shown in Fig. 6.

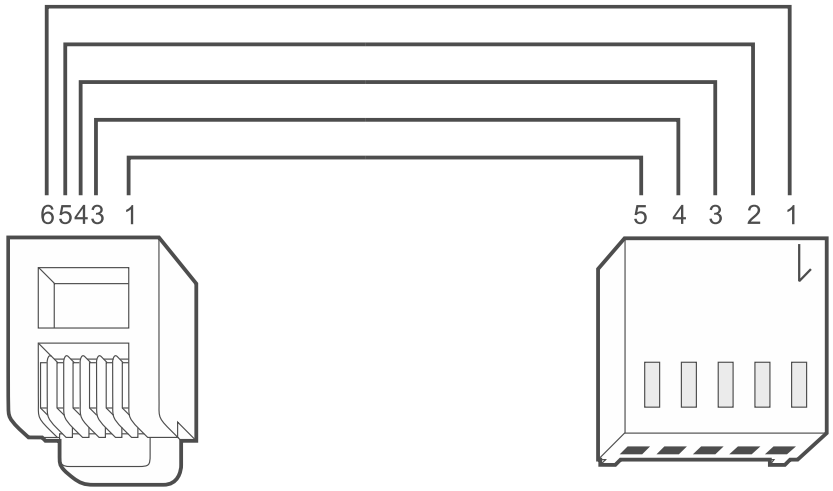


Fig. 6. Wiring diagram of the cable connecting RS-232 ports of INT-GSM LTE module and control panel with PIN5 socket.

4.4.2 Connecting to the ETHM-1 Plus module

If the module is to be used in conjunction with the ETHM-1 Plus module (firmware version 2.07 or newer required), connections between the modules and the control panel must be made as shown in Fig. 7.

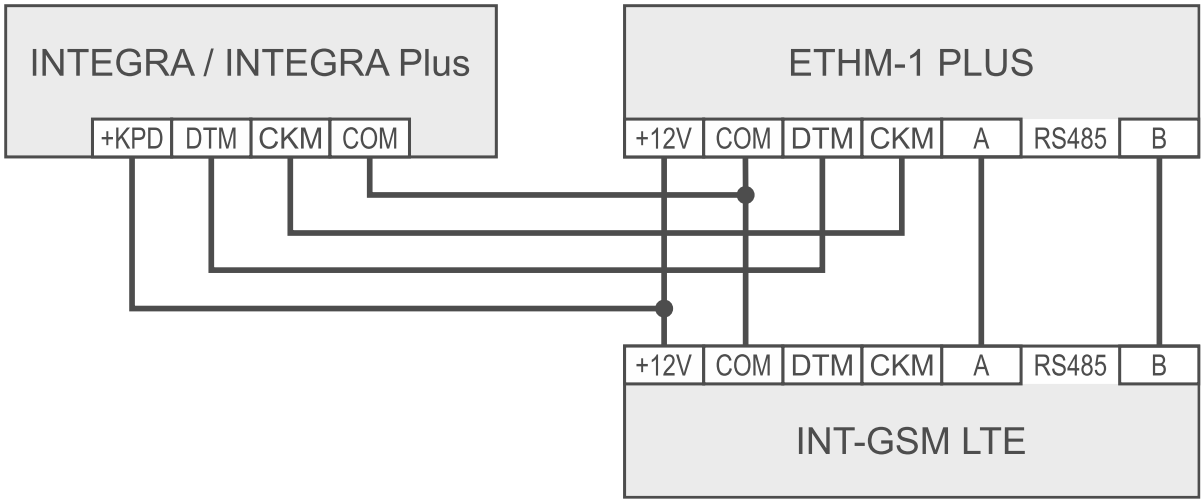


Fig. 7. The way of connecting the INT-GSM LTE module to the ETHM-1 Plus module.

4.5 Starting the module

1. Power up the alarm system.
2. Start the identification function in the control panel (see the control panel installer manual). If the module is connected to the alarm control panel, it will be identified as "INT-GSM". If the module is connected to the ETHM-1 Plus module, "ETHM+-GSM" (instead of "ETHM-1") will appear on the list of devices.
3. Configure the module (see „Programming the module settings"). If the SIM card(s) require it, program the PIN code(s) in the DLOADX / INTEGRA Soft program (see p. 15).

4.6 Installing the SIM cards

You can install up to two nano-SIM cards in the module.

1. Power down the alarm system.
2. Insert the SIM card / cards into the socket / sockets (Fig. 8).
3. Power up the alarm system. Logging the telephone into the cellular network may take a few minutes.

If the module is to send data via cellular network, it is recommended that you use SIM cards with a dedicated tariff plan for M2M (machine-to-machine) communication.

If the programmed PIN code is invalid, the module will report a trouble. Another attempt to use the PIN code will be made after 4 minutes. After the third attempt to use an invalid PIN code, the SIM card will be blocked. To unblock the SIM card, remove it and insert into a mobile phone. Then, enter the PUK code.

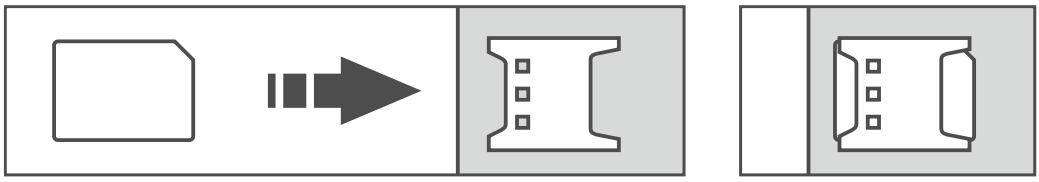


Fig. 8. Installing the nano-SIM card.

5. Programming the module settings

You can configure all of the module settings using a computer with the DLOADX or the INTEGRA Soft program installed. From the keypad, you can configure only some of the settings.

5.1 Programming from INTEGRA Soft

1. Click the “Hardware” tab.
2. Click “Keypads”.
3. Click the name of the module whose settings you want to configure.
4. Configure the module settings.
5. Click  to save changes to the control panel. For settings stored in the module (INT-GSM functions, macro commands), click the “Upload data” button.

5.2 Programming from DLOADX

Required version of the DLOADX program: 1.25.000 (or newer).

1. Click  in the main menu. The “Structure” window will be displayed.
2. Click the “Hardware” tab.
3. Click the “Keypad” branch.
4. Click the name of the module whose settings you want to configure.
5. Configure the module settings.
6. Click  in the main menu to save changes to the control panel. For settings stored in the module (INT-GSM functions, macro commands), click the “Write” button.

5.3 Programming from the keypad

1. Enter the **service code** (by default: 12345) and press * . The user menu will be displayed.
2. Press 9 WXYZ. The service menu will be displayed.
3. Start the SETTINGS function (▶STRUCTURE ▶HARDWARE ▶LCD KEYPADS ▶SETTINGS).
4. Find the module whose settings you want to configure (use the up or down arrow key) and press # .
5. Program the module settings using the available functions.

5.4 Module settings

Names of parameters and options from the DLOADX / INTEGRA Soft program are used in this manual. Shown in square brackets at the description of a parameter or option is the name presented on the display of the LCD keypad.

5.4.1 INT-GSM

This section describes settings of the INT-GSM LTE module connected directly to the alarm control panel. Description of the settings of the INT-GSM LTE module connected to the ETHM-1 Plus module you will find in the ETHM-1 Plus module manual.

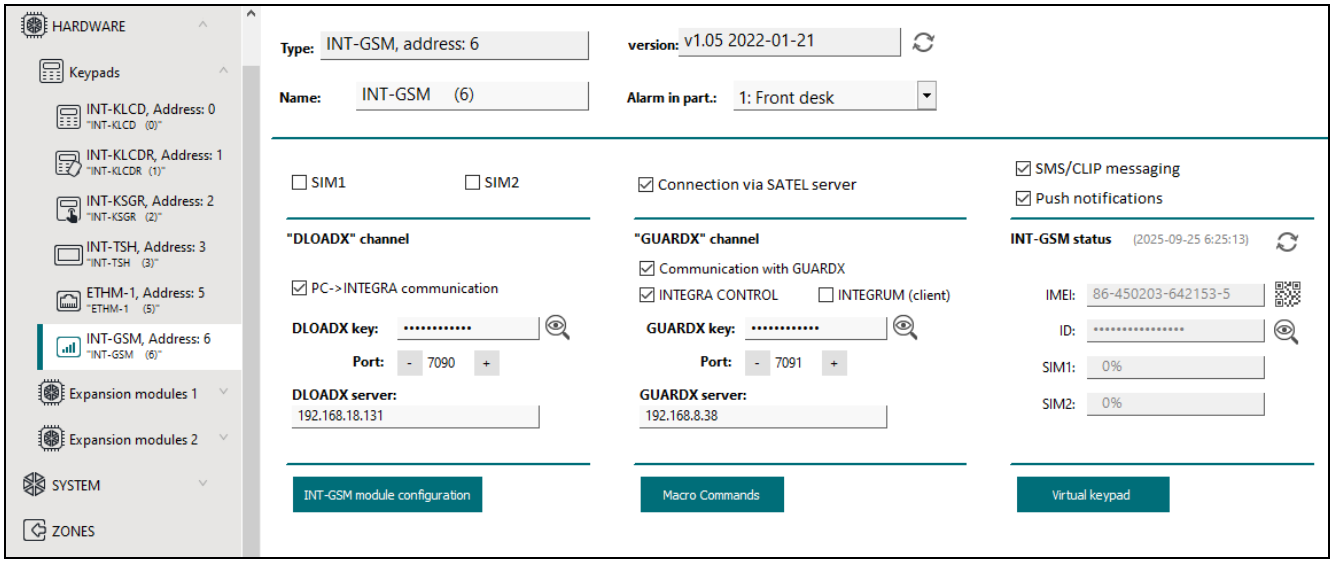


Fig. 9. INTEGRA Soft program: module settings.

Buttons (INTEGRA Soft)

INT-GSM module configuration – click to open the “INT-GSM module configuration” window.

Macro Commands – click to open the “Macro Commands” window.

Virtual keypad – click to open the “Remote keypad configuration” window.

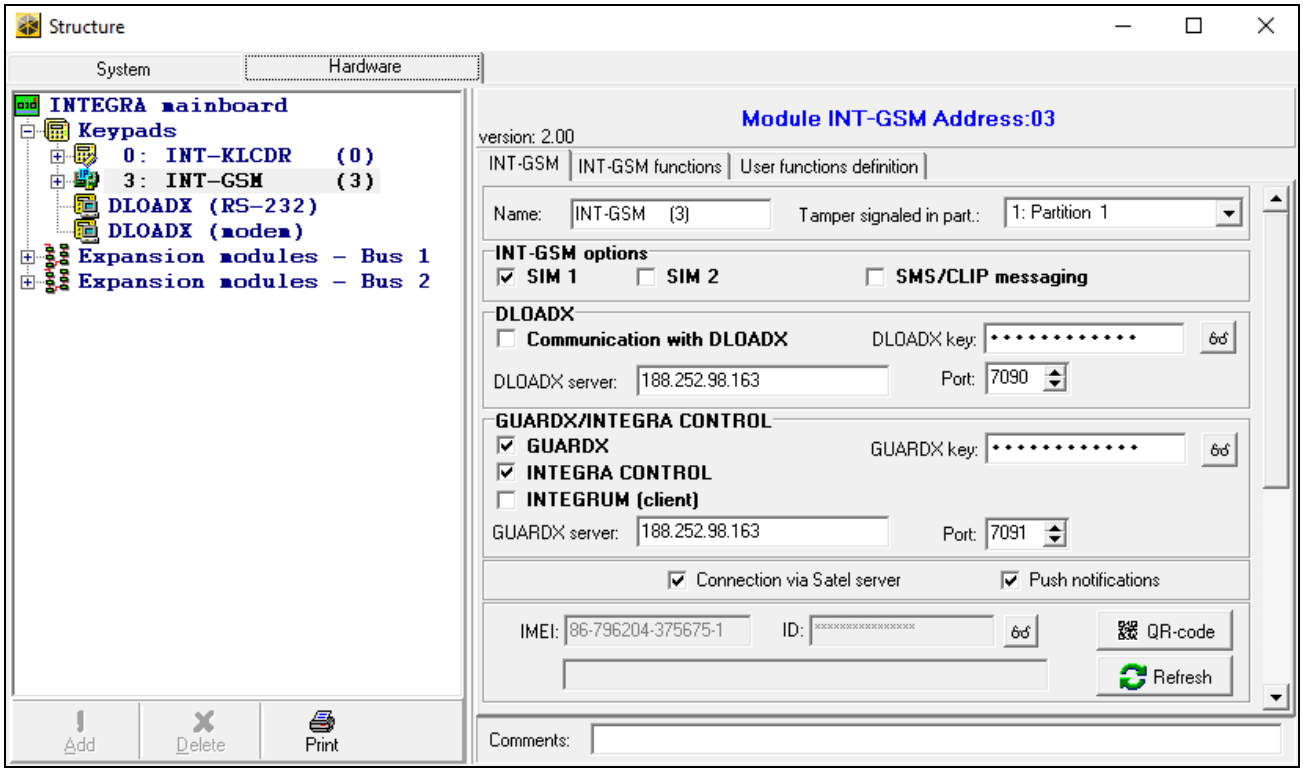


Fig. 10. DLOADX program: module settings.

Name – individual name of the device (up to 16 characters).

Alarm in part. (INTEGRA Soft) / **Tamper signaled in part.** (DLOADX) [Tamper in part.] – partition where alarm will be generated in the event of module tamper.

INT-GSM options

SIM 1 / **SIM 2** [SIM1 / SIM2] – if this option is enabled, the given SIM card is supported by the module. Disable the option, if the given card is not to be used. Disabling the option will prevent unnecessary reporting of troubles related to that card.

SMS/CLIP messaging [SMS messaging] – if this option is enabled, module can send notifications about alarm system events using SMS/CLIP.

"DLOADX" channel (INTEGRA Soft) / DLOADX (DLOADX)

PC->INTEGRA communication (INTEGRA Soft) **/ Communication with DLOADX** (DLOADX) [Connect DLOADX] – if this option is enabled, connection can be established between the DLOADX / INTEGRA Soft program and the alarm control panel via the module.

DLOADX key [Key (DLOADX)] – a string of up to 12 alphanumeric characters (digits, letters and special characters) used for data encryption during communication with the DLOADX program via module.

DLOADX server [DLOADX] – address of the computer running the DLOADX / INTEGRA Soft program. It must be a public address. You can enter either the IP address or the domain name.

In the LCD keypad, the function for programming address of the computer with DLOADX / INTEGRA Soft program is available in the user menu, "Change options" submenu (available to service and administrators).

Port [Port (DLOADX)] – number of the TCP port used for communication with the DLOADX / INTEGRA Soft program. You can enter values from 1 to 65535. The value must be different from that entered for the other ports. Default value: 7090.

"GUARDX" channel (INTEGRA Soft) / GUARDX/INTEGRA CONTROL (DLOADX)

Communication with GUARDX (INTEGRA Soft) / **GUARDX** (DLOADX) [Connect GUARDX] – if this option is enabled, connection can be established between the GUARDX program and the alarm control panel via the module. The option is not available when the "INTEGRUM (client)" option is enabled.

INTEGRA CONTROL [Connect GSM] – if this option is enabled, connection can be established between the INTEGRA CONTROL application and the alarm control panel via the module. The connection is set up by the SATEL server. The option is not available when the "INTEGRUM (client)" option is enabled.

INTEGRUM (client) [INTEGRUM] – if this option is enabled, connection can be established between the INTEGRUM system (version 2.0 or newer) and the alarm control panel via the module. When the option is enabled, the "GUARDX" and "INTEGRA CONTROL" options are not available (the module does not support the GUARDX program / INTEGRA CONTROL application).

GUARDX server [GUARDX IP] – address of the computer running the GUARDX program or INTEGRUM server. The computer with GUARDX program / INTEGRUM system server must have a public IP address. You can enter the IP address or the domain name.

In the keypad, the function for programming address of the computer with GUARDX program installed / INTEGRUM system server is available in the user menu, "Change option" submenu (available to service and administrators).

GUARDX key [Key (others)] – a string of up to 12 alphanumeric characters (digits, letters and special characters) used for data encryption during communication with:

- GUARDX program,
- INTEGRA CONTROL application,

- INTEGRUM system.

Port [Port (others)] – number of the TCP port used for communication with:

- GUARDX program,
- INTEGRA CONTROL application,
- INTEGRUM system.

You can enter values from 1 to 65535. The value must be different from that entered for the other ports. Default value: 7091.

The port cannot be used by several services at a time. The port can only be used by one service (e.g. when communication with the INTEGRUM server is ongoing, you will not be able to connect to the control panel in the GUARDX program or the INTEGRA CONTROL application).

SATEL server

Connection via Satel server [SATEL server] – if the option is enabled, the module connects to the SATEL server and the communication via the SATEL server with the control panel can be established (Connection Setup Service).

Push notifications [PUSH messages] – if this option is enabled, the INTEGRA CONTROL application can provide information about alarm system events using push notifications. The option is available if communication with SATEL server is enabled in the module.

INT-GSM status

IMEI – individual identification number of the module cellular phone.

ID – individual ID number for the purposes of communication through the SATEL server. The number is assigned automatically by the SATEL server during the first connection to the server (before the number is assigned, "F" characters are displayed). Click to see the number.

If the module is to be used in another alarm system, the hitherto used ID number must be deleted. You should do it after connecting the module to the new control panel and establishing connection with the SATEL server, using the "Change ID" function available from the keypad (▶"Service mode" ▶"Structure" ▶"Hardware" ▶"LCD keypads" ▶"Settings" ▶[module name] ▶"Change ID"). Having deleted the old ID number, the module will receive a new one. The INTEGRA CONTROL applications using the old ID number will be unable to connect to the control panel.

[Cellular network signal] – information about cellular signal level.

QR-code – click the button to open the window in which the QR code is displayed. The QR code contains information required when configuring settings of communication through the SATEL server. You can read the QR code by using a mobile device or export to the file and transmit to the users. The QR code facilitates configuring the INTEGRA CONTROL application settings.

(INTEGRA Soft) / **Refresh** (DLOADX) – click to refresh the module status information.

5.4.2 INT-GSM functions

The settings configured in the "INT-GSM module configuration" (INTEGRA Soft) / "INT-GSM functions" (DLOADX) are stored in the module. These settings are not downloaded / uploaded after clicking the buttons in the menu. Before you start editing these settings, click the "Download data" (INTEGRA Soft) / "Read" (DLOADX) button. Once you have made changes, click the "Upload data" (INTEGRA Soft) / "Write" (DLOADX) button.

Buttons

Download data (INTEGRA Soft) / **Read** (DLOADX) – click to read settings from the module.

Upload data (INTEGRA Soft) / **Write** (DLOADX) – click to write settings to the module.

Quit (DLOADX) – click to cancel reading or writing the settings.

Reset – click to delete the settings (and restore factory default settings).

Remote firmware update (INTEGRA Soft) – click to open the "Remote firmware update" window.

OK (INTEGRA Soft) – click to confirm changes and close the window.

Cancel (INTEGRA Soft) – click to cancel changes and close the window.

GSM phone

SIM 1 / SIM 2

PIN – SIM card PIN code.

If an incorrectly programmed PIN code is used, the module will report a trouble. After the third attempt to use an invalid PIN code, the SIM card will be blocked. To unblock the SIM card, remove it and insert into a mobile phone. Then, enter the PUK code.

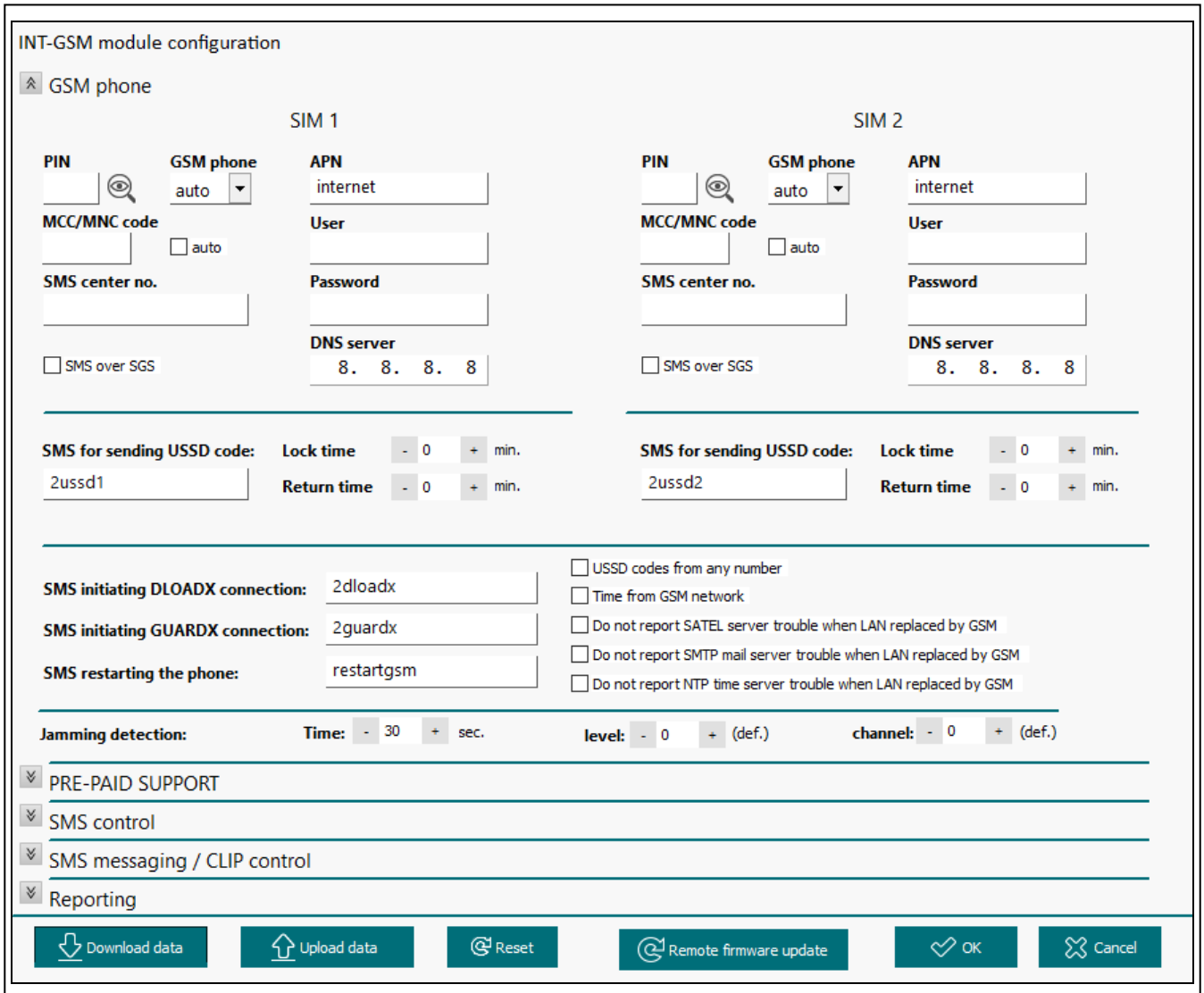


Fig. 11. INTEGRA Soft program: "GSM phone" panel in the "INT-GSM module configuration" window.

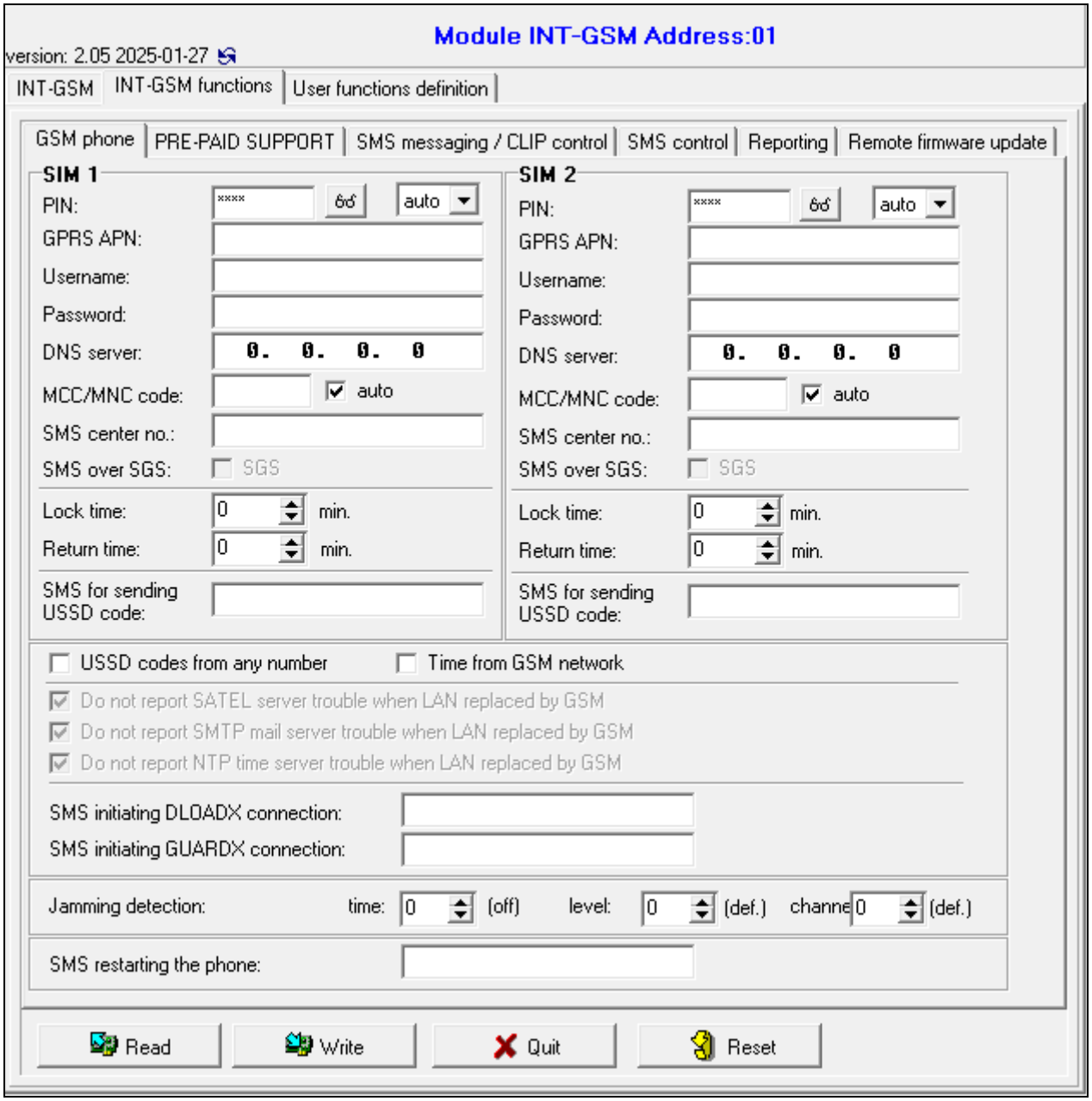


Fig. 12. DLOADX program: “GSM phone” tab.

GSM phone (INTEGRA Soft) / **[Preferred network type]** (DLOADX) – the type of network to which the SIM card is to log in:

Auto – 2G or 4G network (default setting).

2G – only 2G network.

4G – only 4G network.

APN (INTEGRA Soft) / **GPRS APN** (DLOADX) – access point name for Internet connection.

User – username for Internet connection.

Password – password for Internet connection.

DNS server – IP address of DNS server to be used by the module. If the address has been saved by the operator to the SIM card memory, you do not have to program it. Otherwise, it is recommended that you program the IP address of the DNS server. The IP address is necessary for sending data via cellular network, if the address of the device the module is to connect to (monitoring station, computer with DLOADX or GUARDX program, INTEGRUM server) is entered as a name.

You can obtain the Internet connection settings from the cellular network operator.

MCC/MNC code – codes of the operator of cellular network to which the SIM card is to log in. Enter in turn:

- MCC (Mobile Country Code) – country code,
- MNC (Mobile Network Code) – operator code.

Remember that entering invalid data may make logging into the cellular network impossible. Unless you enter the code, the module will log into the available cellular network.

auto – if this option is enabled and the module cannot log into the network of cellular operator defined using the MCC/MNC code, it will log into the available cellular network.

SMS center number – telephone number of the short message service center. It is required if the module is to send / receive SMS messages. It is usually stored in the SIM card and you do not have to program it. If the number is not stored in the SIM card, enter the number required by the SIM card operator.

SMS over SGS – if this option is enabled, the module can send / receive SMS messages in the SGS mode.

Lock time – the time during which switch-over to the other SIM card is impossible. The time is counted from the moment of switch-over to the given card. For reporting, the transmission paths programmed as subsequent ones, if they require switch-over to the other card, will be skipped during the lock time countdown. Entering the value 0 means that instant switch-over to the other SIM card is possible.

Return time – the time after which the other SIM card is to be used. Entering the value 0 means that automatic switch-over to the other SIM card will not take place.

If two SIM cards are to be used, one of them must be treated as the priority card. It is recommended that return time equal to 0 be programmed for it.

SMS for sending USSD code – control command that will be sent in the SMS message together with USSD code. The control panel will run the USSD code and send the response received from the operator to the phone number from which the SMS message with control command was sent. You can enter up to 16 alphanumeric characters (digits, letters and special characters).

The command content must be different from that of the other control commands.

*The SMS message with the USSD code must look like this: "**xxxxxx=yyyy=**", where: "xxxxxx" - control command, "yyyy" – USSD code supported by the GSM network operator.*

It is not advisable to use the advanced functions available due to the USSD service if menu is presented in response to the entered code.

The control command for sending USSD codes can be used for sending SMS messages through the control panel.

USSD codes from any number – if this option is enabled, the control command for sending the USSD codes or checking the SIM card balance (see "Check balance SMS" p. 19) can be sent from any telephone. If the option is disabled, the command can only be sent from the telephone whose number is stored in the module (see "SMS messaging / CLIP control" p. 20).

Time from GSM network – if this option is enabled, the control panel clock can be synchronized with the time of the cellular network operator.

Do not report SATEL server trouble when LAN replaced by GSM – the option is available if the INT-GSM LTE module is connected to the ETHM-1 Plus module. If this option is

enabled, loss of connection with the SATEL server via the Ethernet network will not be reported, when the connection has been successfully established via the INT-GSM LTE module (cellular data transmission).

Do not report SMTP mail server trouble when LAN replaced by GSM – the option is available if the INT-GSM LTE module is connected to the ETHM-1 Plus module. If this option is enabled, loss of connection with the SMTP server via the Ethernet network will not be reported, when the connection has been successfully established via the INT-GSM LTE module (cellular data transmission).

Do not report NTP time server trouble when LAN replaced by GSM – the option is available if the INT-GSM LTE module is connected to the ETHM-1 Plus module. If this option is enabled, loss of connection with the NTP server via the Ethernet network will not be reported, when the connection has been successfully established via the INT-GSM LTE module (cellular data transmission).

SMS

SMS initiating DLOADX connection – the control command which, if sent in the SMS message, will initiate communication between the alarm control panel and the DLOADX program via:

- INT-GSM LTE module connected to the control panel (cellular data transmission),
- ETHM-1 Plus module to which the INT-GSM LTE module is connected (Ethernet). If connection cannot be established over Ethernet, an attempt will be made to establish communication via cellular network.

You can enter up to 16 alphanumeric characters (digits, letters and special characters).

SMS initiating GUARDX connection – the control command which, if sent in the SMS message, will initiate connection between the alarm control panel and the GUARDX program via:

- INT-GSM LTE module connected to the control panel (cellular data transmission),
- ETHM-1 Plus module to which the INT-GSM LTE module is connected (Ethernet). If connection cannot be established over Ethernet, an attempt will be made to establish communication via cellular network.

You can enter up to 16 alphanumeric characters (digits, letters and special characters).

The content of control commands must vary.

The content of one control command must not be inserted into the content of another command.

You can include in the SMS message the address of computer the module is to connect to, and the number of TCP port to be used for communication. Such a message should look like this: ***xxxx=aaaa:pp=*** *("xxxx" – control command; "aaaa" – address of the computer (IP address or domain name); "pp" – port number).*

Jamming detection

time – the time during which the module must be jammed in order for the trouble condition to be triggered. If you enter 0, the module will not detect jamming.

level – the level of jamming signal that will trigger the trouble condition. If you enter 0, the default settings of the built-in phone will be used.

channel – the number of channels that must be jammed at the same time in order for the trouble condition to be triggered. If you enter 0, the default settings of the built-in phone will be used.

SMS restarting the module GSM phone

SMS restarting the phone – control command that can be sent in an SMS message to restart the module GSM phone. You can enter up to 8 alphanumeric characters (digits, letters and special characters). You can use spaces, but at least one character must be different from the space.

The command content must be different from that of the other control commands preprogrammed in the control panel.

Pre-paid support

SIM 1 / SIM 2

USSD code to check balance (INTEGRA Soft) / **USSD-check balance** (DLOADX) – the USSD code which is used to check balance of the SIM card account. If the code has been programmed, the module can check the SIM card account balance.

You can check the account balance using the LCD keypad: ▶„Tests” ▶„IP/MAC/IMEI/ID” ▶„INT-GSM” ▶„SIM (#) credit".

Minimum level – the minimum amount of funds on the SIM card account. If the amount of funds drops below the minimum level:

- trouble will be reported,
- where the SIM card account balance is checked automatically, information on the account balance will be sent as an SMS message to the telephones for SMS messaging / CLIP control, for which the “SMS>>” option is enabled (see “SMS messaging / CLIP control” p. 20).

Entering 0 will disable the checking.

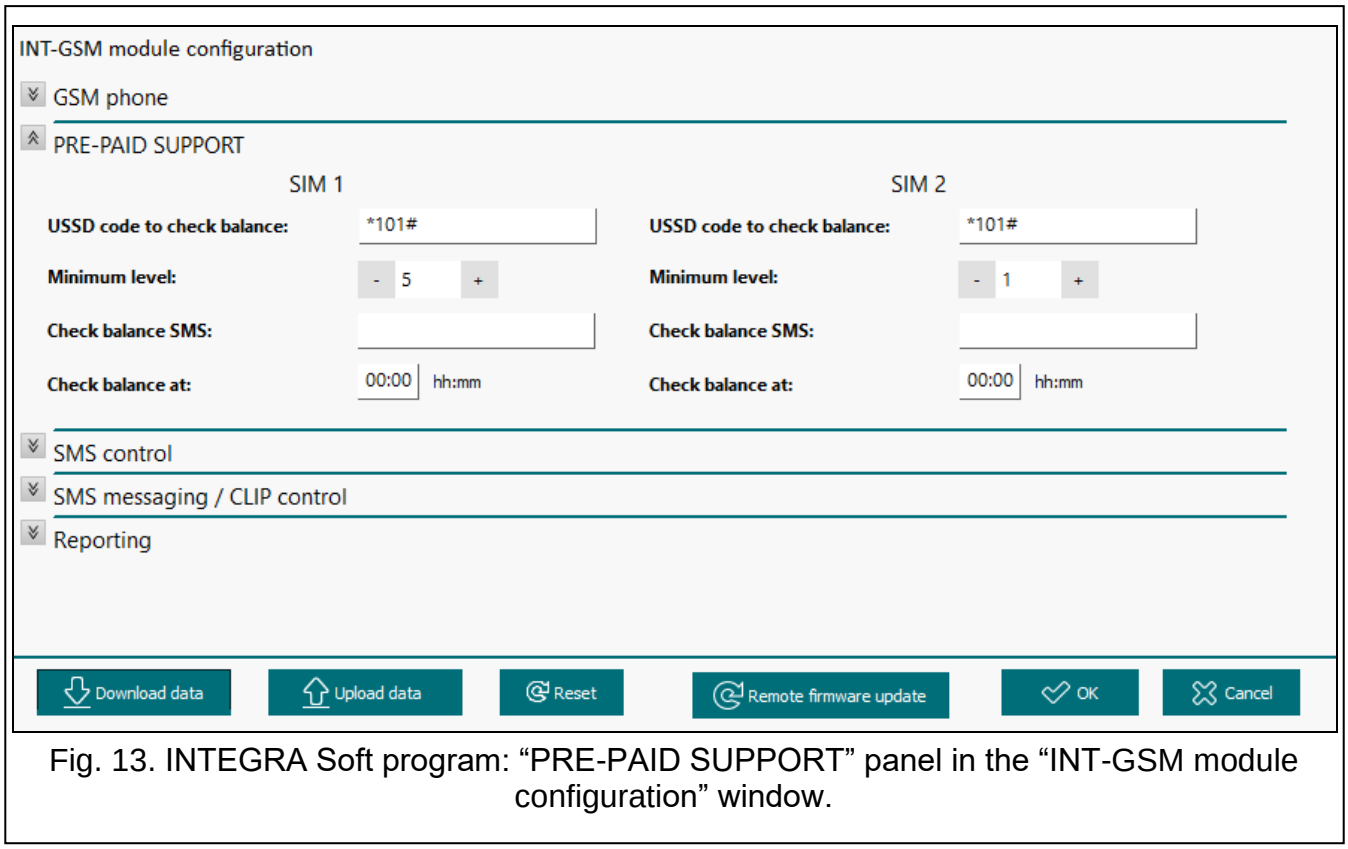


Fig. 13. INTEGRA Soft program: “PRE-PAID SUPPORT” panel in the “INT-GSM module configuration” window.

Check balance SMS – the control command which, if sent in the SMS message, will run the function of checking the SIM card balance. The module will execute the USSD code programmed in the “USSD-check balance” field and will send the reply obtained from the

operator to the telephone number from which the control command was received. You can enter up to 16 alphanumeric characters (digits, letters and special characters).

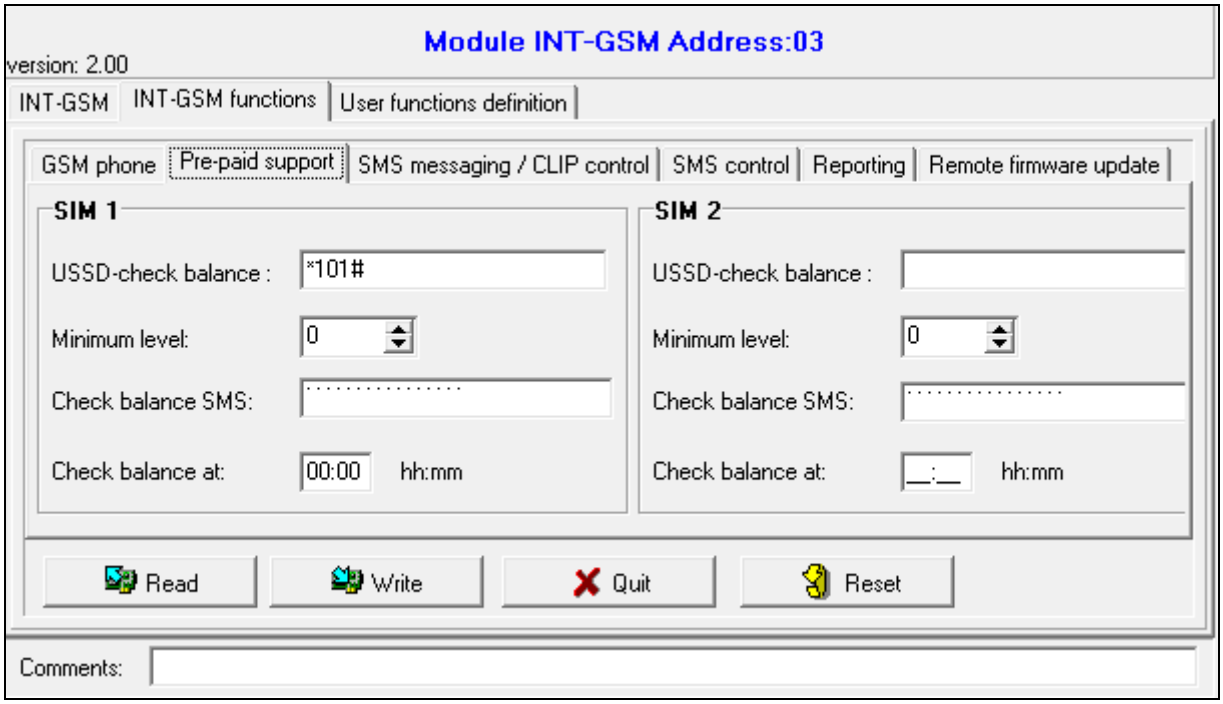


Fig. 14. DLOADX program: “Pre-paid support” tab.

If the “PUSH notifications” option is enabled in the module, notification of the balance of the SIM card account on which there are no funds to send an SMS message, but there are funds for the Internet service will be sent as a push message (INTEGRA CONTROL app must be installed on the phone).

Check balance at – the hour at which the module will check the SIM card account balance. If you enter no value, the checking will be disabled.

SMS messaging / CLIP control

You can program 16 telephone numbers for messaging purposes. The content of SMS messages is generated automatically, based on descriptions from the control panel event log. CLIP messaging means that the module will call a given telephone number when an event occurs. Any call from the module’s telephone number should be treated as an event notification.

If a user of the alarm control panel is assigned to a telephone number, the control panel can be operated from that telephone by using CLIP and SMS messages.

Additionally, you can indicate a control panel user that will be able to operate the control panel from any telephone number. It is advisable to create a control panel user with authority level suited for the SMS/CLIP control, not for everyday operation of the alarm system.

The module can send notifications of events by SMS/CLIP, if the “SMS/CLIP messaging” option is enabled in the module settings.

Limit [...] no limit (INTEGRA Soft) / **Limit [...] SMS/24h** (DLOADX) – daily limit of SMS notifications. If set to 0, notifications will be sent without limitation.

no date/time in SMS – if this option is enabled, the message will not contain information on when the event occurred.

Telephone no. – telephone number to be used for notification or control purposes.

User – user of the alarm control panel. If you define a user for the given number (including any telephone number – line Txx), it will be possible to operate the alarm control panel

from that number by using CLIP (see “CLIP control” p. 21) and SMS messages (see “SMS control” p. 23). Enter the user number or click the .. button to select a user from the list.

The download of new firmware and/or update of module firmware can be initiate by using SMS message from the telephone number for which the user has been defined (see “Remote firmware update” p. 28).

SMS messaging (INTEGRA Soft) / SMS/CLIP messaging (DLOADX)

ON – if this option is enabled, the module can notify the given telephone about events.

Partitions – define the partitions about events in which the given telephone number will be notified. Click the button to open the list of partitions. When the list opens, double-click the partition number to select it. If you define no partition, the number will not be notified about events.

Types of events (INTEGRA Soft) / **Events type** (DLOADX) – define the event types about which the given telephone number will be notified. Click twice to select the type of notification for each event type.

- **[empty field]** – no notification,
- **S** – event notification using SMS,
- **C** – event notification using CLIP,
- **S+C** – event notification using SMS and CLIP.

CLIP control

CLIP means calling without establishing connection (you must hang up on hearing the ring signal), i.e. toll-free. The module will identify the phone number of the calling party and respond accordingly.

In the lines from T1 to T16, you can program the function to be run by CLIP from the given telephone number. Additionally, you can program in the line Txx one function that can be run in the control panel by CLIP from any telephone number. In both cases, the telephone number must be assigned to the control panel user.

The telephone numbers programmed in the lines from T1 to T16 are not treated by the module as any numbers.

Function – the function to be run by CLIP. Enter the function number or click the .. button to select the function from the list. The list of available functions is defined in the “SMS control” tab (see “Function” p. 24).

Others

SMS>> – if this option is enabled, unknown SMS messages received by the module are forwarded to the phone number (e.g. information received from the cellular network operator).

CLIP conf. – if this option is enabled, the module will inform the user about events by calling the given number up to 3 times or until confirmation. In order to confirm a CLIP notification, reject the call (the notification will then be toll-free) or accept it. If this option is disabled, the call will be made only once.

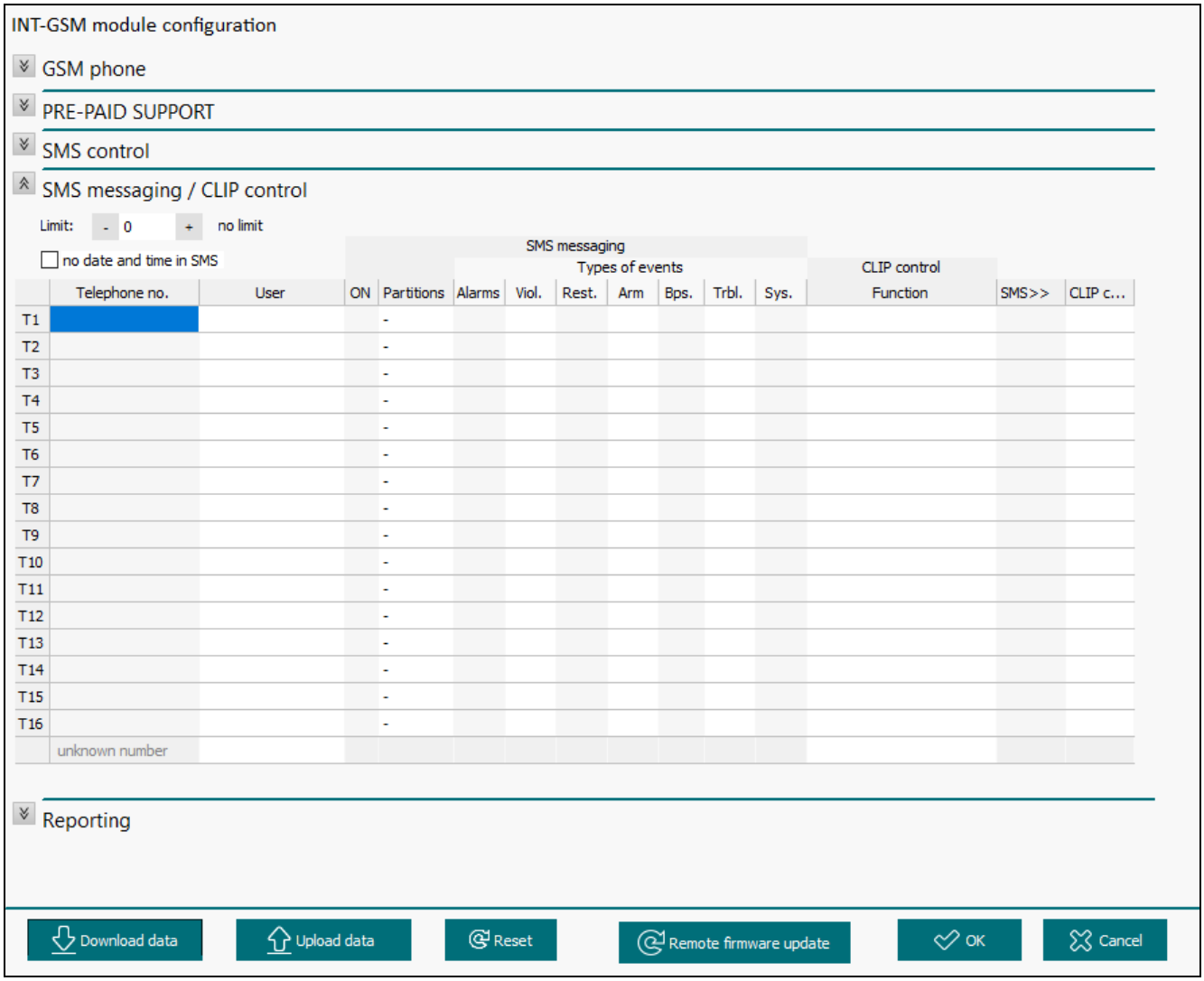


Fig. 15. INTEGRA Soft program: “SMS messaging / CLIP control” panel in the “INT-GSM module configuration” window.

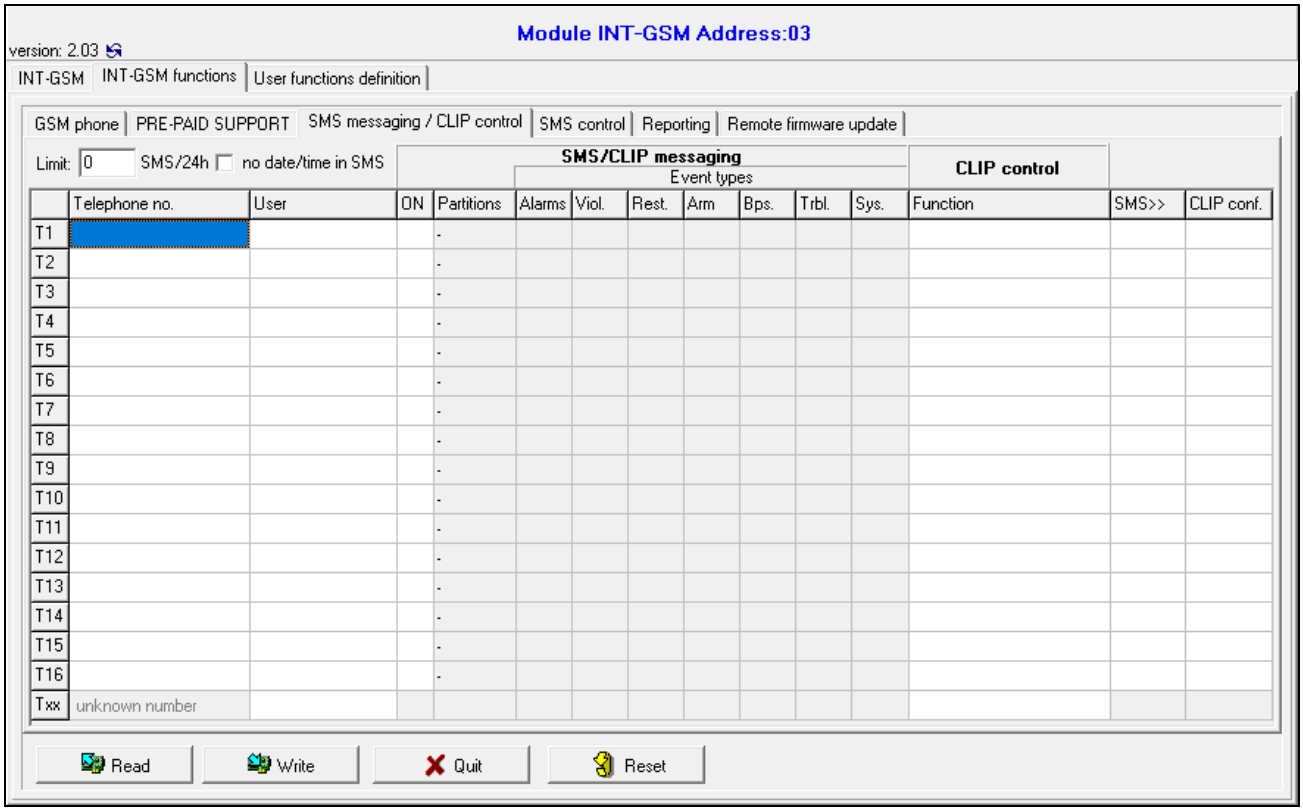


Fig. 16. DLOADX program: “SMS messaging / CLIP control” tab.

SMS control

The module enables you to control the alarm system by using SMS messages containing appropriate control commands. The SMS messages must be sent to the SIM card number. You can program 32 control commands in the module.

Control SMS – the control command which, if sent in the SMS message, will run in the control panel the function selected in the “Function” field. You can enter up to 16 alphanumeric characters (digits, letters and special characters).

The content of control commands must vary.

The content of one control command must not be inserted into the content of another command.

Several control commands may be included in one SMS message (should be separated by spaces).

The control command may be just a fragment of the SMS message. This makes it is possible to write the control command, including the comments, to the telephone memory and send the whole to the module.

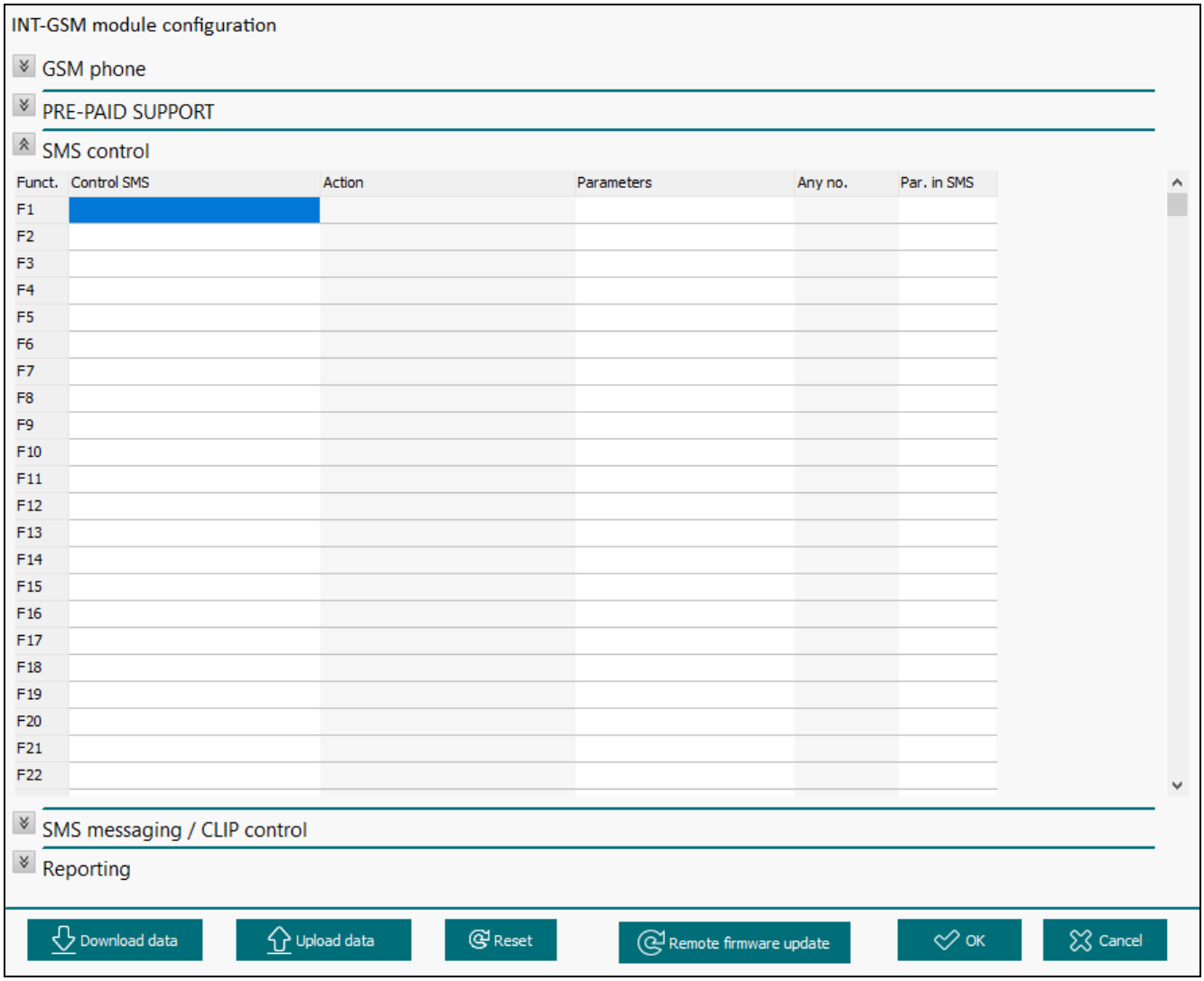


Fig. 17. INTEGRA Soft program: “SMS control” panel in the “INT-GSM module configuration” window.

Action (INTEGRA Soft) / **Function** (DLOADX) – function run by the control command received in the SMS message or by CLIP (see “CLIP control” p. 21). If you program the function without defining any control command (“Control SMS” field), the function can only be run by using CLIP. Enter the function number or click .. to select the function from the list:

1: State (text)

2: State (symb.)

3: Arm (0) – full arming.

4: Arm (1) – full arming + bypasses.

5: Arm (2) – arming without interior.

6: Arm (3) – arming without interior and without entry delay.

7: Disarm

8: Clear alarm

9: Outputs ON

10: Outputs OFF

11: Switch state

12: Bypass zones

13: Isolate zones

14: Unbypass zones

15: Trigger zone

16: Del. overdue messages

The partitions must be controlled by user code.

The zones that are to be bypassed, must not have the "Bypass disabled" option enabled.

The outputs must be the "24. MONO Switch", "25. BI Switch", "105. Shutter up", "106. Shutter down" or "Remote switch" type.

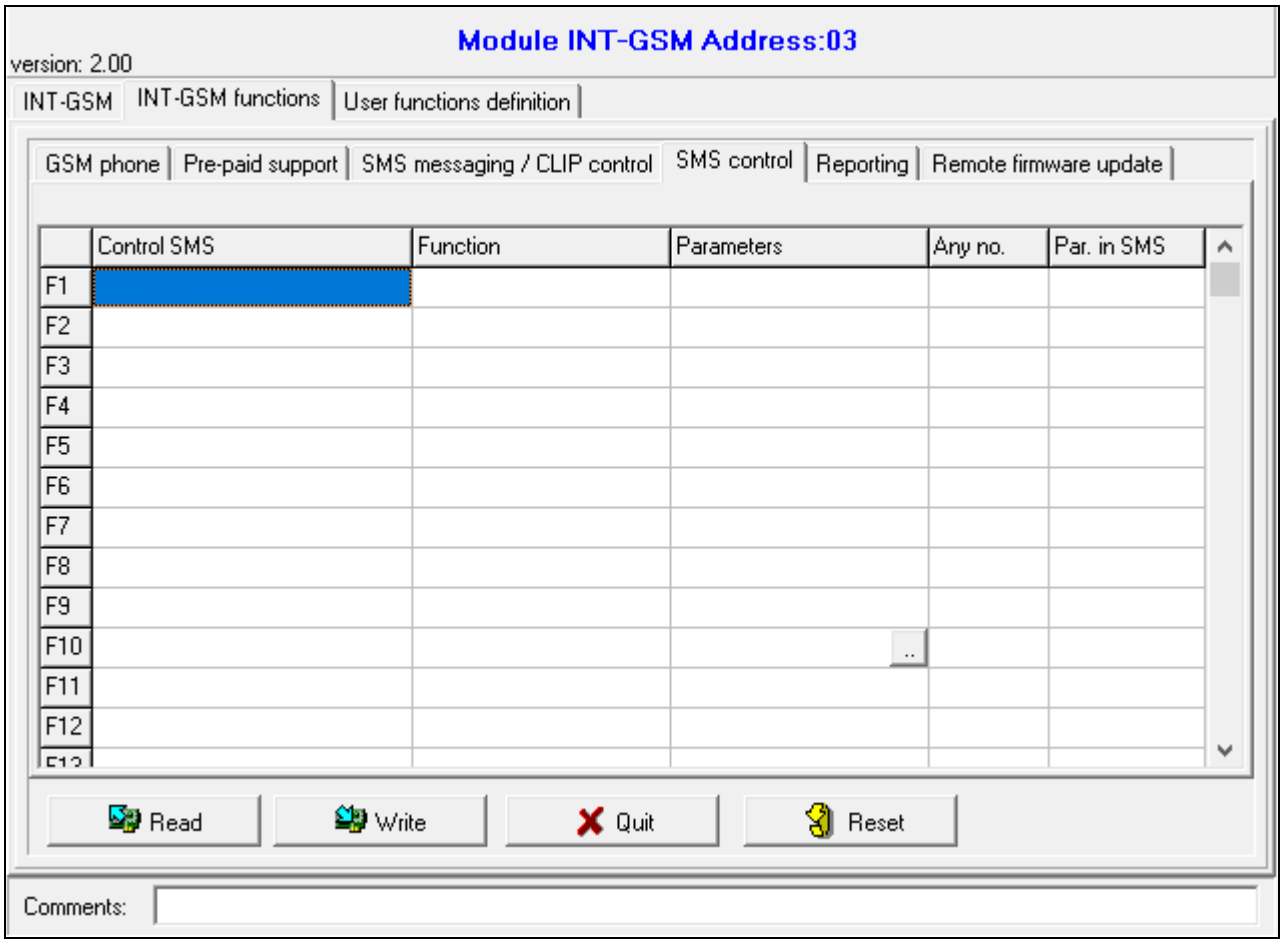


Fig. 18. DLOADX program: "SMS control" tab.

Parameters – define the parameters the given function will be run with. Click .. to open the window that allows you to edit the list of parameters. The numbers of the table fields correspond to those of partitions / outputs / zones. Double-click a field to select it (orange color) or unselect it (white color). For the function "15: Trigger zone", you can only select one zone. Once you have finished editing, click "OK".

Any no. – if this option is enabled, the given function can be run from any telephone number. The control panel can be controlled from any telephone number if the alarm control panel user has been selected for any telephone number in the "SMS messaging / CLIP control" tab (see "User" p. 20).

Par. in SMS – if this option is enabled, the given function can be run with parameters sent together with the control command in the SMS message. This makes it possible to run the function with other parameters than those programmed for it in the "Parameters" field.

If this is the case, the SMS message must look like this: "**xxxxxx=a,b,c,d=**", where: "xxxxxx" - control command, "a,b,c,d" - parameters, e.g. 1,2,3,4 (numbers of partitions / outputs / zones separated with commas). For the "15: Trigger zone" function, the control command must have the following form: "**xxxxxx=a=**", where: "xxxxxx" - control command, "a" – zone number, e.g. 1 (you can indicate only one zone).

Reporting

The module enables the alarm control panel to send event codes to the monitoring station using the following transmission paths:

- cellular data,
- SMS messages (no acknowledgement of event code receipt).

Using the INT-GSM LTE module in conjunction with the ETHM-1 Plus module makes it possible to implement the Dual Path Reporting in accordance with EN 50136. For information about how to configure the dual path reporting, please refer to the control panel programming manuals.

Station 1 / Station 2

Reporting priority (INTEGRA Soft) / Transmission priority (DLOADX)

If sending an event code to the monitoring station using one transmission path fails, the module can use another transmission path. You must specify the order of using different transmission paths by the module. A successful send of the event code to the monitoring station will terminate the procedure (except for the test transmissions).

The module will only use the transmission paths for which priority is specified (they are included in the list defining the order of using transmission paths).

If the INT-GSM LTE module is connected to the ETHM-1 Plus module, priority must also be specified for the Ethernet transmission (ETHM).

In the case of SMS reporting, the module gets no acknowledgement of receiving the event codes by the monitoring station, hence this transmission path should be used as the last one.

The switch-over from one SIM card to the other one requires time (for example, to log onto the network), so it is better to use up all the transmission paths available for one SIM card.

The switch-over from one SIM card to the other is affected by the "Lock time" and "Return time" (see "GSM phone" p. 15).

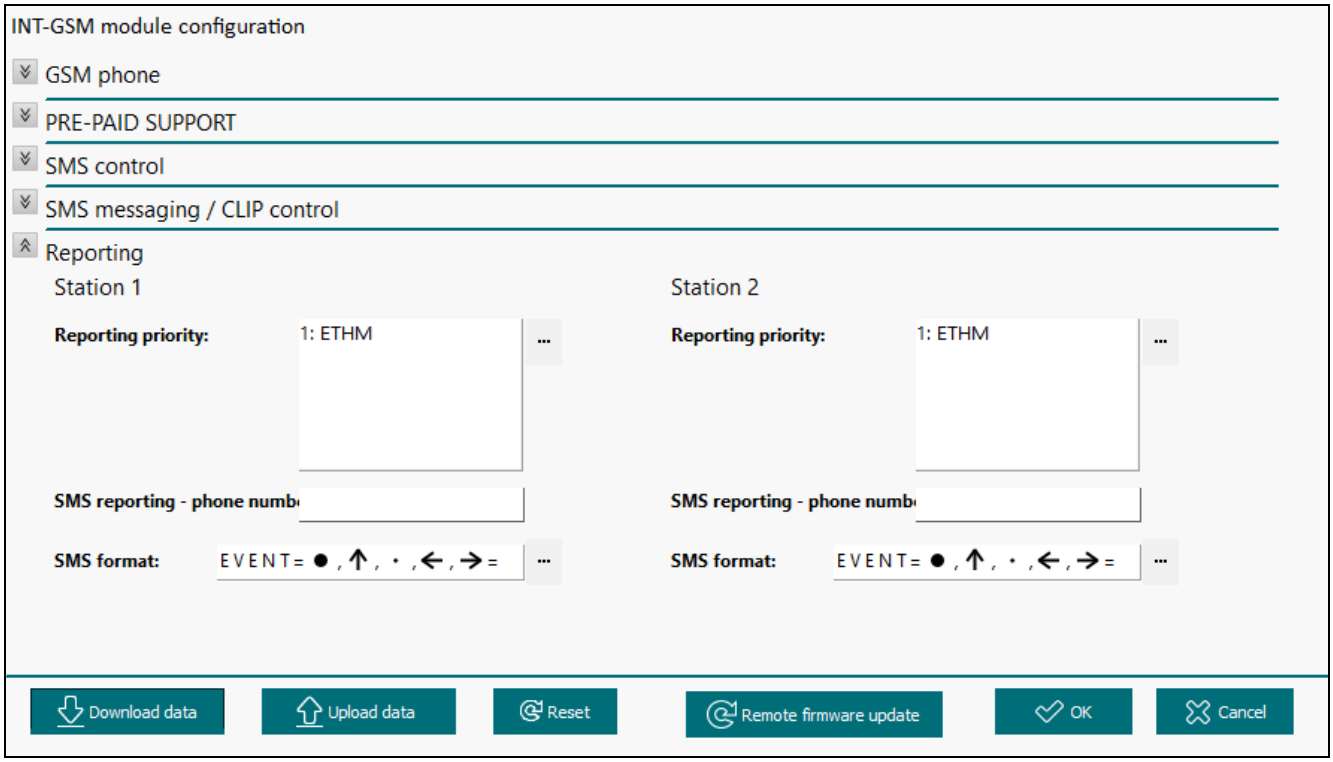


Fig. 19. INTEGRA Soft program: “Reporting” panel in the “INT-GSM module configuration” window.

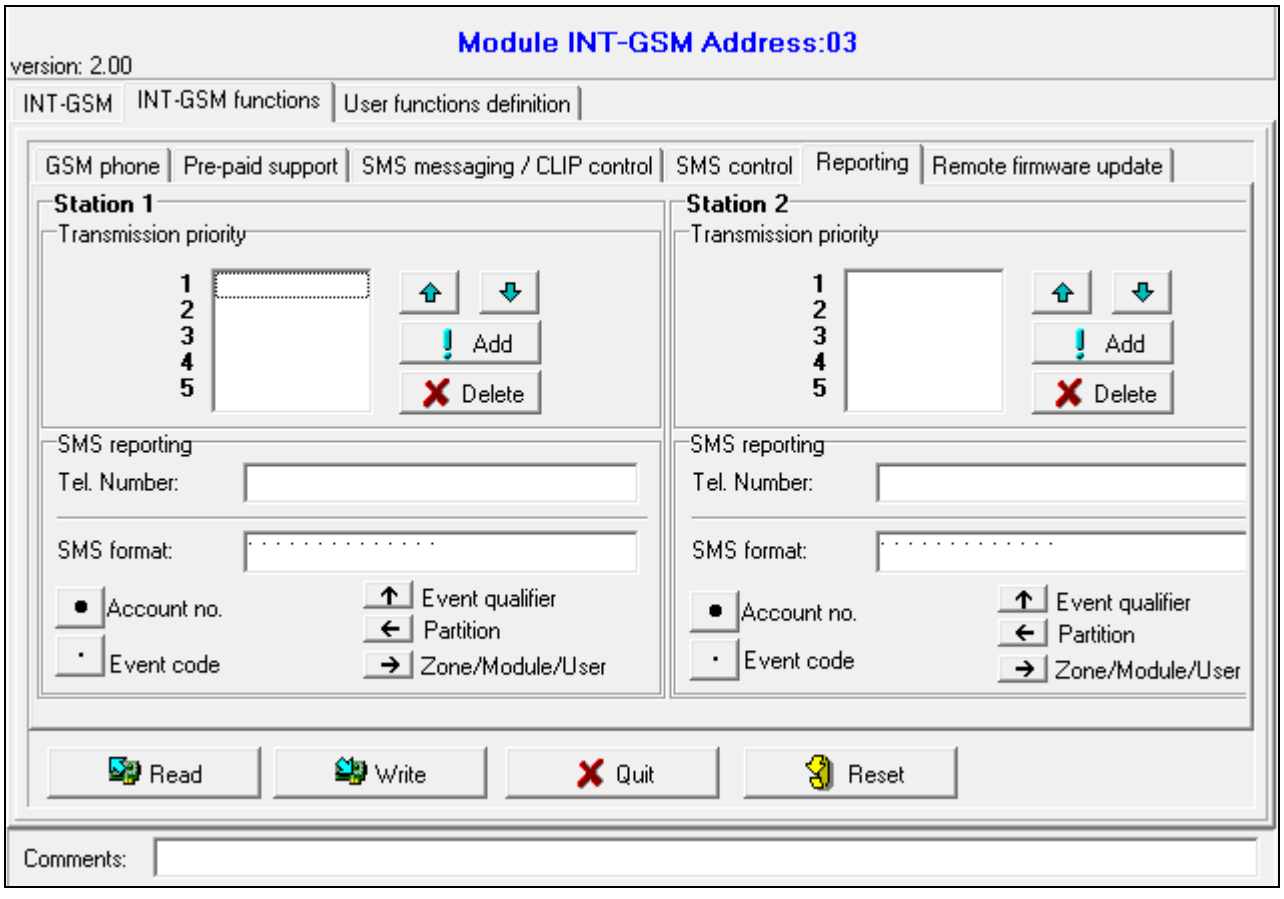


Fig. 20. DLOADX program: “Reporting” tab.

SMS reporting

phone number (INTEGRA Soft) / **Tel. Number** (DLOADX) – phone number of the monitoring station for SMS reporting.

SMS format – SMS format for SMS reporting. It must be defined as required by the monitoring station. The SMS message format, preset by default in the module, corresponds to the default settings of the STAM-2 monitoring station (firmware version 1.2.0 or newer) for the Contact ID format.

Remote firmware update

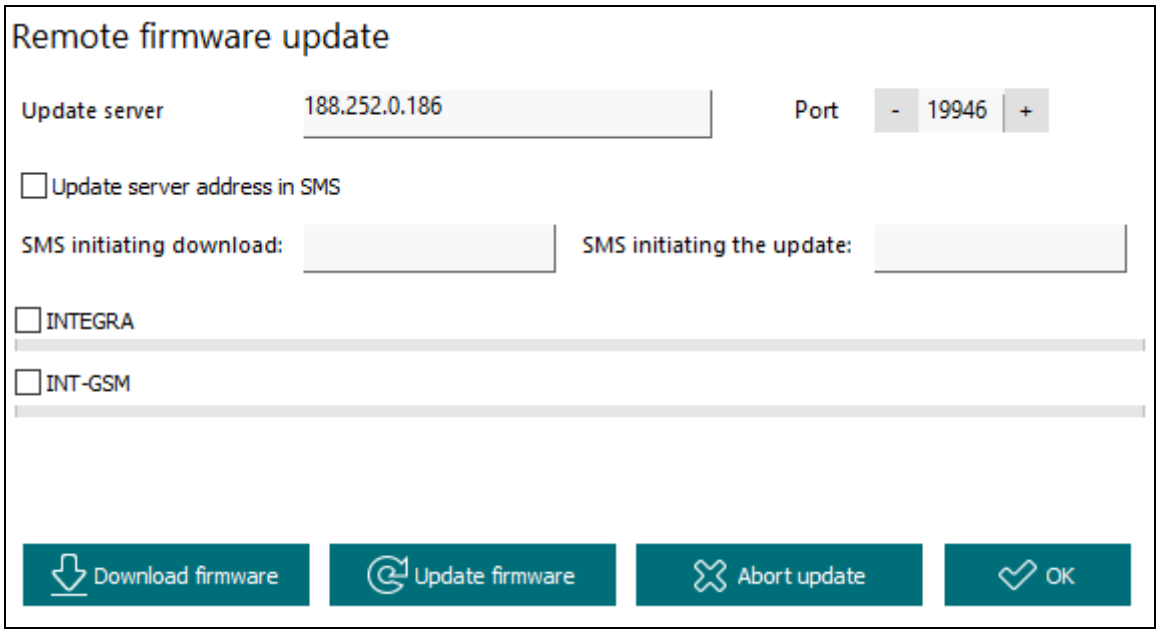


Fig. 21. INTEGRA Soft program: “Remote firmware update” window.

Remote update of the module firmware is made possible by the “UpServ” update server, which is included in the SATEL product portfolio. There are two ways to initiate the update.

- by using SMS message – only the INT-GSM LTE firmware will be updated.
- from DLOADX / INTEGRA Soft program. You can update the firmware for:
  - INT-GSM LTE module,
  - INTEGRA control panel – only if the DLOADX program and the control panel are connected via the ETHM-1 Plus or INT-GSM LTE module,
  - ETHM-1 Plus module – only if the INT-GSM LTE module is connected to the ETHM-1 Plus module (module identified as “ETHM+GSM”).

Update server – address of the “UpServ” update server. You can enter the IP address or domain name.

Port – number of the TCP port used for communication with the “UpServ” update server. You can enter values from 0 to 65535 (0=disabled).

Update server address in SMS – if this option is enabled, you can enter server address and port number in the SMS message initiating the firmware download from the update server. If this option is enabled and the message contains no address or port number, the module will use the preprogrammed settings.

SMS messages which initiate download of new firmware and/or update of module firmware can only be sent from the telephone whose number is saved in the module (see “SMS messaging / CLIP control” p. 20).

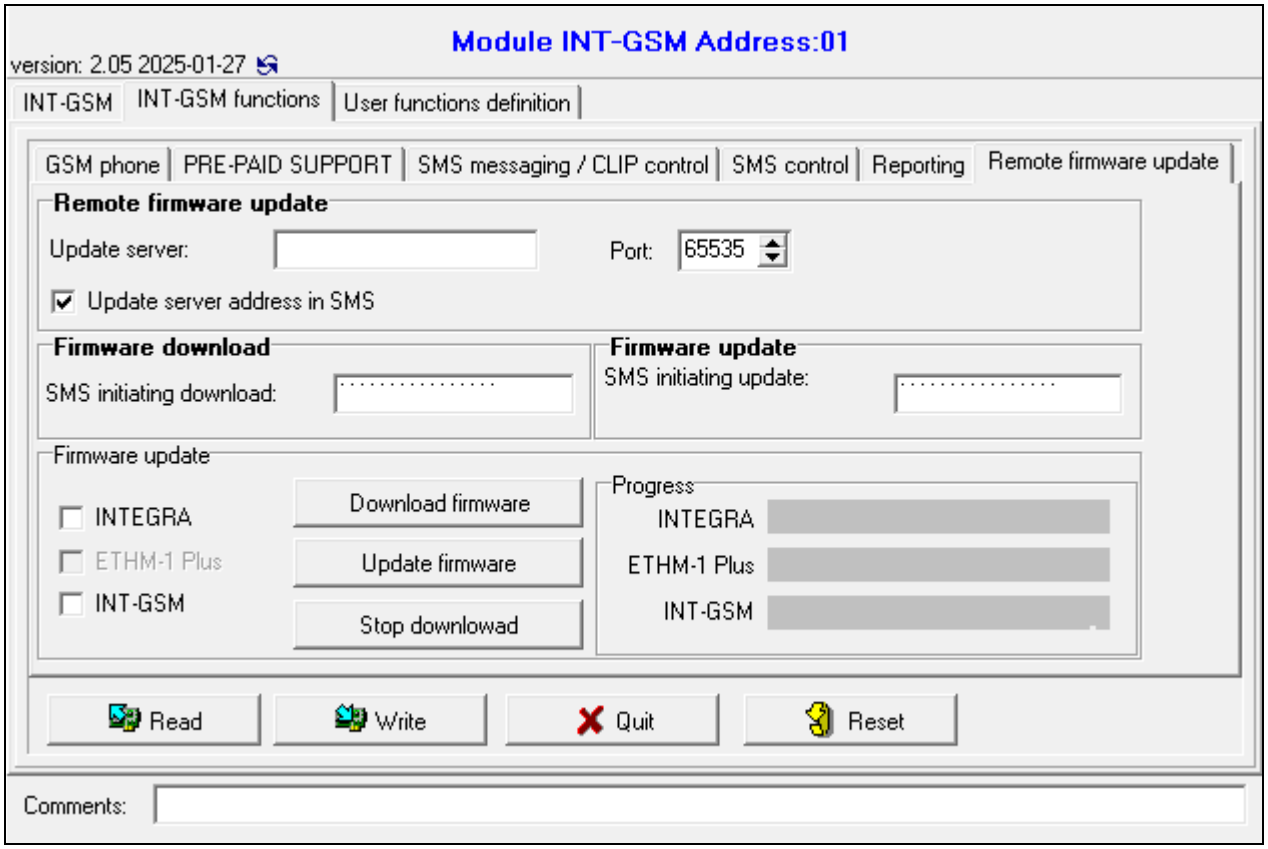


Fig. 22. DLOADX program: “Remote firmware update” tab.

Firmware download

When downloading new firmware, the module performs its normal functions.

SMS initiating download – the control command which, if sent in the SMS message, will start downloading of the new firmware from the server. You can enter up to 8 alphanumeric characters (digits, letters and special characters).

The command content must be different from that of the other control commands preprogrammed in the control panel.

If the „Update server address in SMS” option is enabled and you want the module to connect to an update server other than that indicated in the module settings, the message should look like this: ***xxxx=aaaa:pp=*** *(“xxxx” – control command; “aaaa” – server address (IP address or domain name); “pp” – port number).*

The module sends out an SMS notification on how the new firmware download has proceeded. The notification is sent to the telephone from which the SMS message initiating the firmware download was received.

If an SMS message containing the firmware download initiating command is re-sent when the new firmware downloading is in progress, the module will indicate in reply the download progress (percentage value).

Firmware update

The module does not perform its normal functions during firmware update.

Before updating the module firmware, enter the “Service mode” in the alarm control panel. Otherwise, starting the update will make the control panel report that the INT-GSM LTE module is not available.

Remote update of the INTEGRA control panel firmware is only possible when the service mode is started.

SMS initiating update – the control command which, if sent in the SMS message, will start the firmware update. You can enter up to 8 alphanumeric characters (digits, letters and special characters).

The command content must be different from that of the other control commands preprogrammed in the control panel.

The module sends out an SMS notification on how the firmware update has proceeded. The notification is sent to the telephone from which the SMS message initiating the firmware download was received.

Firmware update from DLOADX / INTEGRA Soft

INTEGRA – if this option is enabled, the INTEGRA Plus / INTEGRA control panel firmware will be updated (computer with DLOADX / INTEGRA Soft program has to be connected to the control panel via the ETHM-1 Plus or the INT-GSM LTE module).

ETHM-1 Plus – if this option is enabled, the ETHM-1 Plus module firmware will be updated (the INT-GSM LTE module has to be connected to the ETHM-1 Plus module).

INT-GSM – if this option is enabled, the INT-GSM LTE module firmware will be updated.

Buttons

Download firmware – click to download new version of firmware.

Update firmware – click to update firmware for the selected device(s) to the latest version. If you have not downloaded the firmware yourself, it will be downloaded automatically now. The update will begin after the download is complete.

Abort update (INTEGRA Soft) / **Stop download** (DLOADX) – click to stop the process of updating the firmware for the selected device(s).

OK (INTEGRA Soft) – click to close the window.

Progress – progress bars show the process of downloading the firmware.

5.4.3 User functions definition

If the INTEGRA CONTROL application is used in the mobile device, the virtual keypad allows you to quickly start user functions after entering the code and pressing an arrow key.

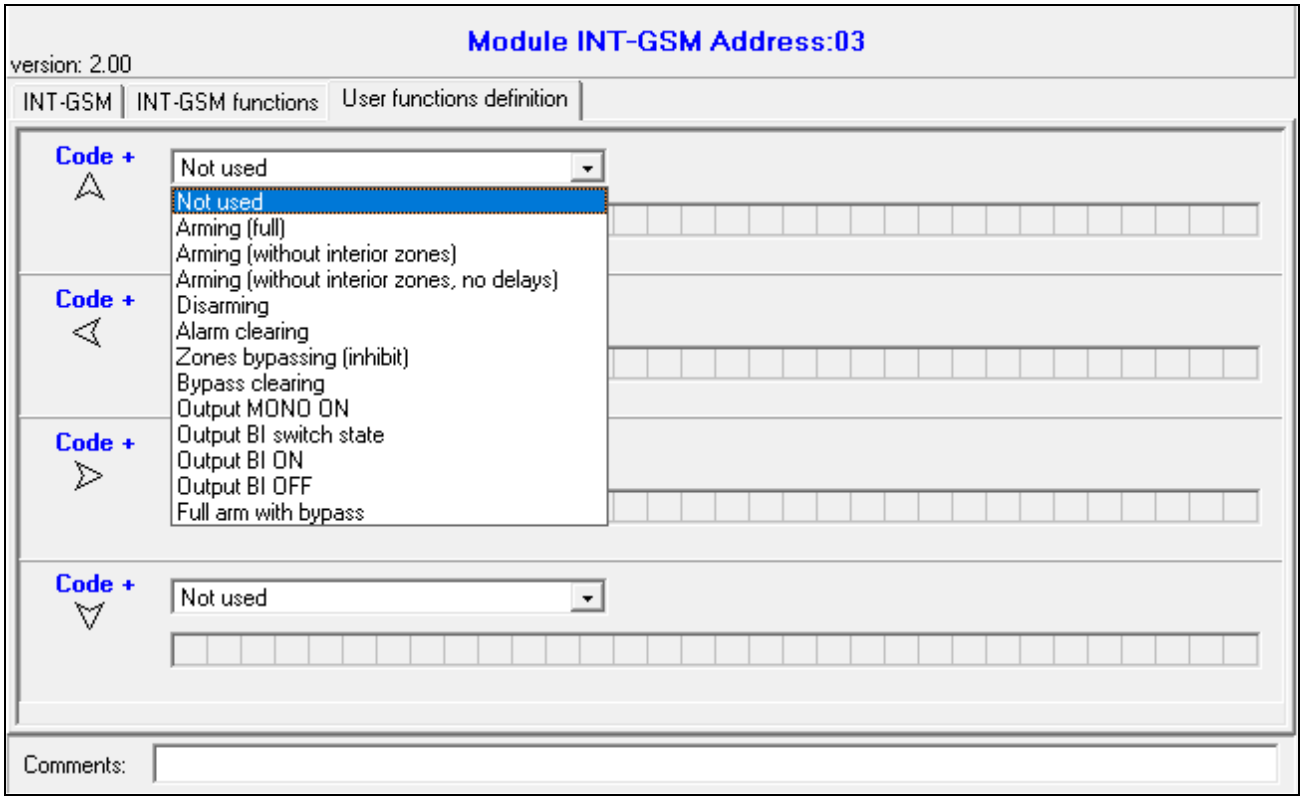


Fig. 23. DLOADX program: “User functions definition” tab.

5.4.4 Virtual keypad

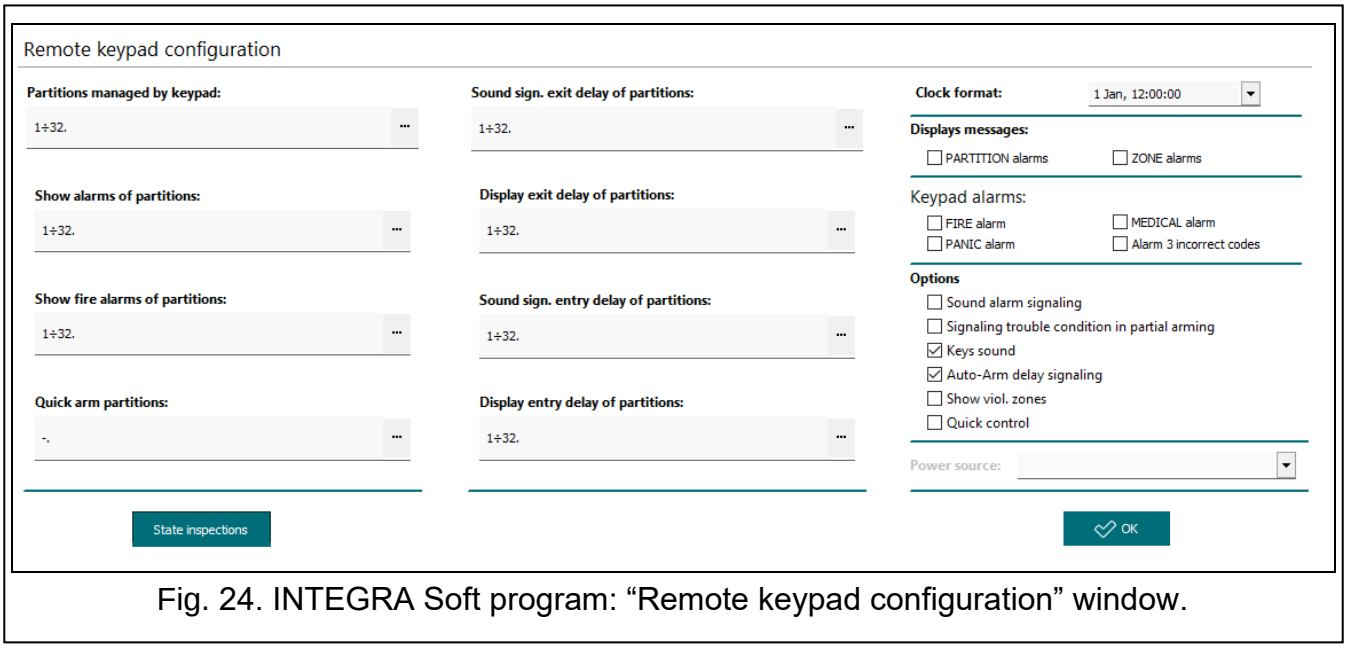


Fig. 24. INTEGRA Soft program: “Remote keypad configuration” window.

The virtual keypad allows you to operate and program the alarm system in much the same way as using a physical keypad. You can use the virtual keypad in the DLOADX / INTEGRA Soft and GUARDX programs and in the mobile device (after installation of the INTEGRA CONTROL application).

Parameters and options of the virtual keypad available in the DLOADX program can be programmed using:

- DLOADX program: “Structure” window →“Hardware” tab →“Keypads” branch →“DLOADX (RS-232)” item,

- INTEGRA Soft program: “Hardware” tab →“Keypads” tab →*[module name]*,
- LCD keypad: ▶“Service mode” ▶“Structure” ▶“Hardware” ▶“LCD keypads” ▶“Settings” ▶“DLOADX RS”.

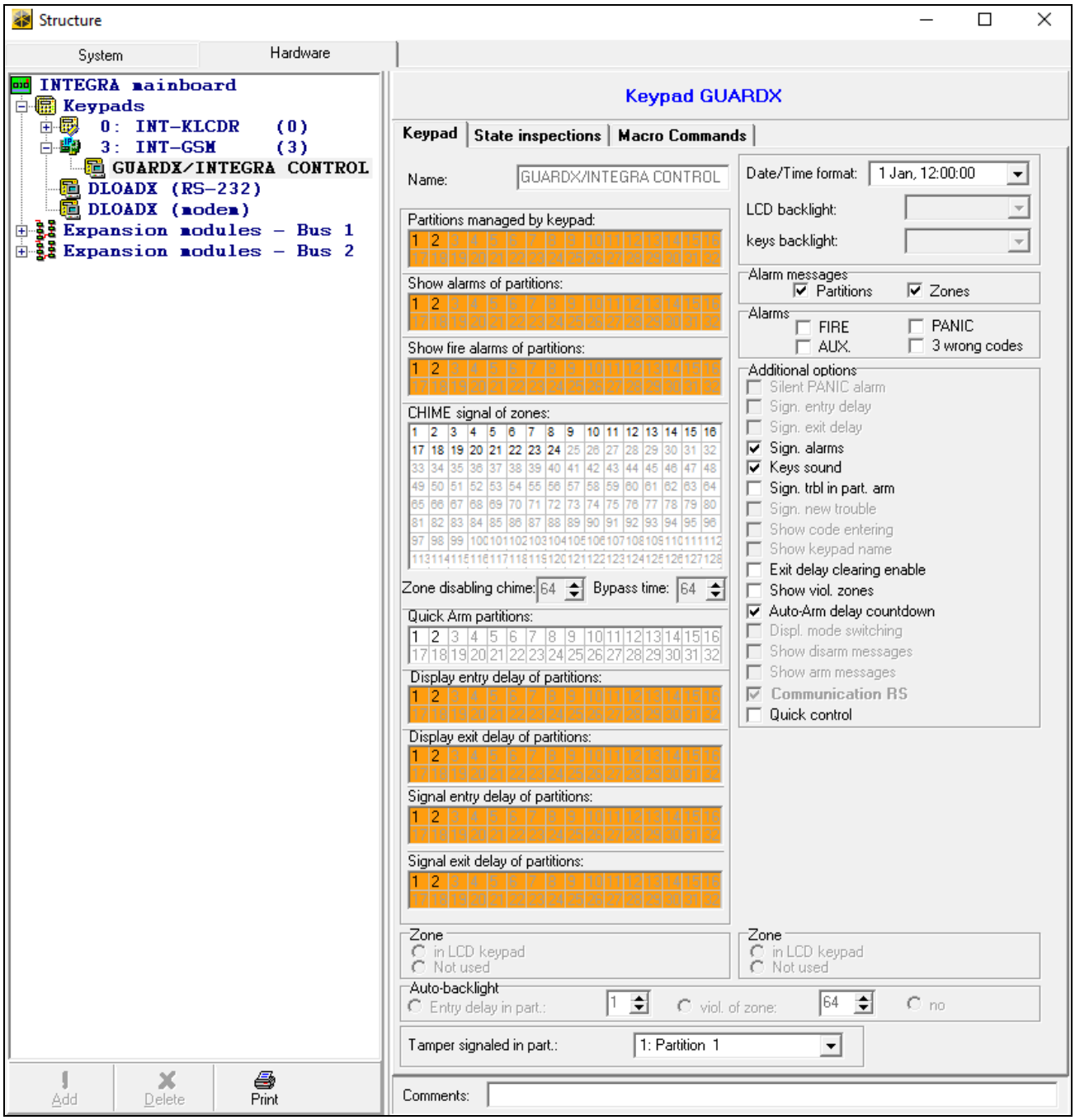


Fig. 25. DLOADX program: parameters and options of the virtual keypad available in GUARDX program or mobile device.

Settings of the virtual keypad available in the GUARDX program or mobile device can be programmed using:

- DLOADX program: “Structure” window →“Hardware” tab →“Keypads” branch →*[module name]* →“GUARDX/ INTEGRA CONTROL” item (Fig. 25),
- INTEGRA Soft program: “Hardware” tab →“Keypads” tab →*[module name]*,
- LCD keypad: ▶„Service mode” ▶„Structure” ▶„Hardware” ▶„LCD keypads” ▶„Settings” ▶„GUARDX addr. n [n = module address]”.

For description of the keypad parameters and options, please refer to the programming manual for INTEGRA / INTEGRA Plus control panel (only some of these parameters and options are available for the virtual keypad).

5.4.5 Macro commands

The INTEGRA CONTROL application allows to control the alarm system using macro commands, thus making it possible to quickly and easily run a number of different functions by tapping just a few buttons. The macro commands can be defined in:

- DLOADX program: "Structure" window →"Hardware" tab →"Keypads" branch →[module name] branch →"GUARDX/ INTEGRA CONTROL" item →"Macro Commands" tab,
- INTEGRA Soft program: "Hardware" tab →"Keypads" tab →[module name].

Defined macro commands can be automatically downloaded by the INTEGRA CONTROL application after establishing connection with the INT-GSM LTE module.

Macro commands can be loaded into the application without establishing connection with the module. The file containing macro commands can be exported, and then saved to the mobile device memory (to transfer the file, you can use a memory card or other solutions available for the given device). This method allows you to use macro commands defined for the e.g. INT-TSG keypad in the INTEGRA CONTROL application. Instead of a file with macro commands defined for the INT-GSM LTE module, you can load a file with macro commands defined for the keypad.

Macro command settings are stored in the module. These settings are not downloaded / uploaded after clicking the buttons in the menu. Before you start editing these settings, click the "Download data" (INTEGRA Soft) / "Read" (DLOADX) button. Once you have made changes, click the "Upload data" (INTEGRA Soft) / "Write" (DLOADX) button.

Buttons

Download data (INTEGRA Soft) / **Read** (DLOADX) – click to read settings from the module.

Upload data (INTEGRA Soft) / **Write** (DLOADX) – click to write settings to the module.

Quit (DLOADX) – click to cancel reading / writing the settings.

Reset (DLOADX) – click to delete the macro command settings (and restore factory settings).

OK (INTEGRA Soft) – click to confirm changes and close the window.

Cancel (INTEGRA Soft) – click to cancel changes and close the window.

Groups

The macro commands must be assigned to groups. There are 4 groups available. You can assign up to 16 macro commands to each group. The macro commands not assigned to any group will not be available in the app. The groups and the macro commands assigned to them are presented as a tree structure.

In the INTEGRA CONTROL app, each group is displayed on a separate screen.

Group name (INTEGRA Soft) / **Name** (DLOADX) – name of the macro command group (up to 16 characters in two lines, up to 8 characters in the line). Do not enter the name if it is not to be displayed.

Icon – icon of a group of macro commands. Click (INTEGRA Soft) / (DLOADX) to select an icon.

The macro command group icon is not used in the INTEGRA CONTROL app.

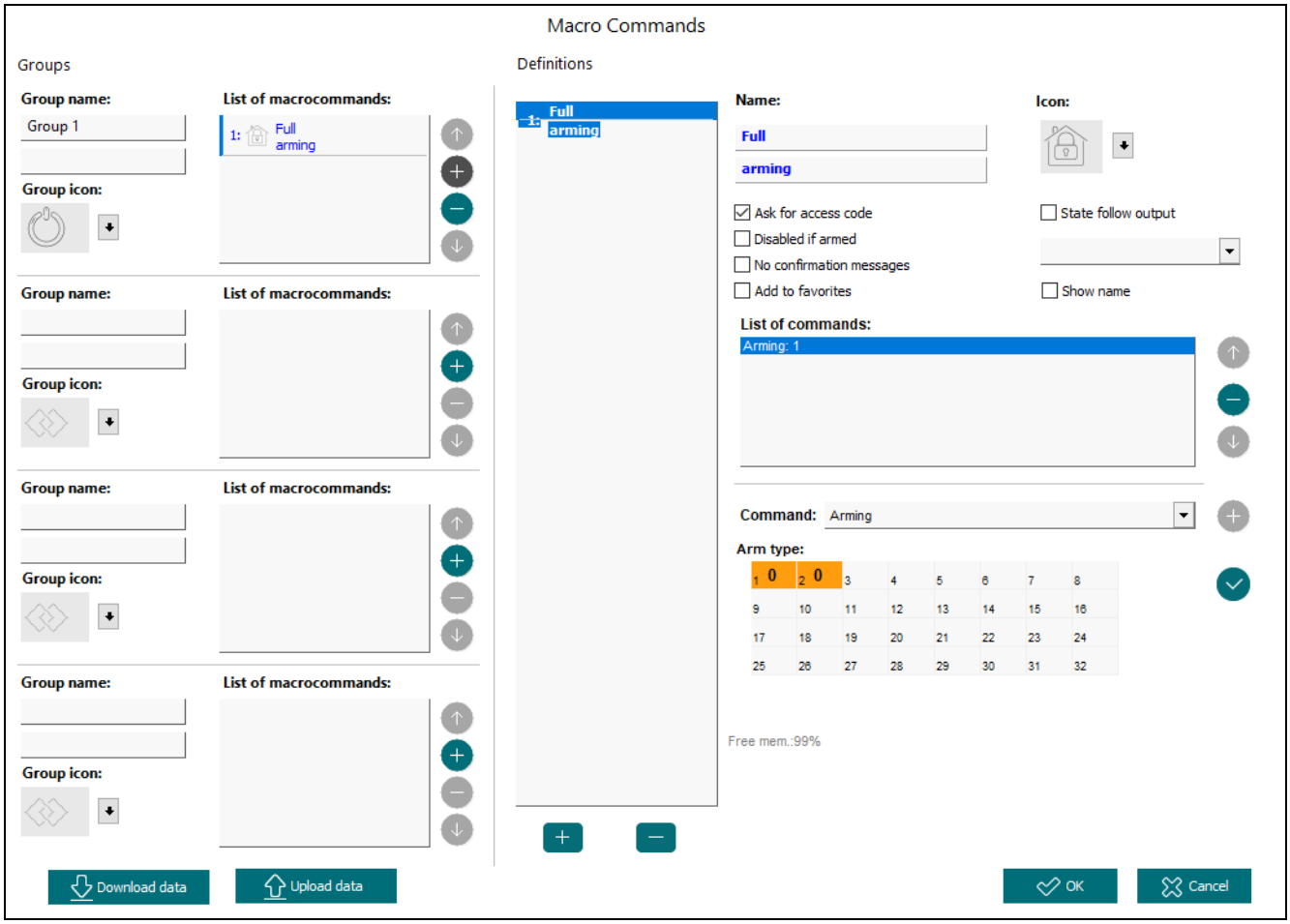


Fig. 26. INTEGRA Soft program: “Macro Commands” window.

List of macrocommands – macro commands assigned to the group.

(INTEGRA Soft) / (DLOADX) – click to move the selected macro command up.

(INTEGRA Soft) / **Add macro** (DLOADX) – click to add a new macro command to the group.

(INTEGRA Soft) / **Remove macro** (DLOADX) – click to delete a selected macro command from the group.

(INTEGRA Soft) / (DLOADX) – click to move the selected macro command down.

Export to file (DLOADX)– click to export defined macro commands to a file. The file with macro commands can be loaded into the INTEGRA CONTROL application or imported to another device that support macro commands.

Import from file (DLOADX) – click to import macro commands from a file.

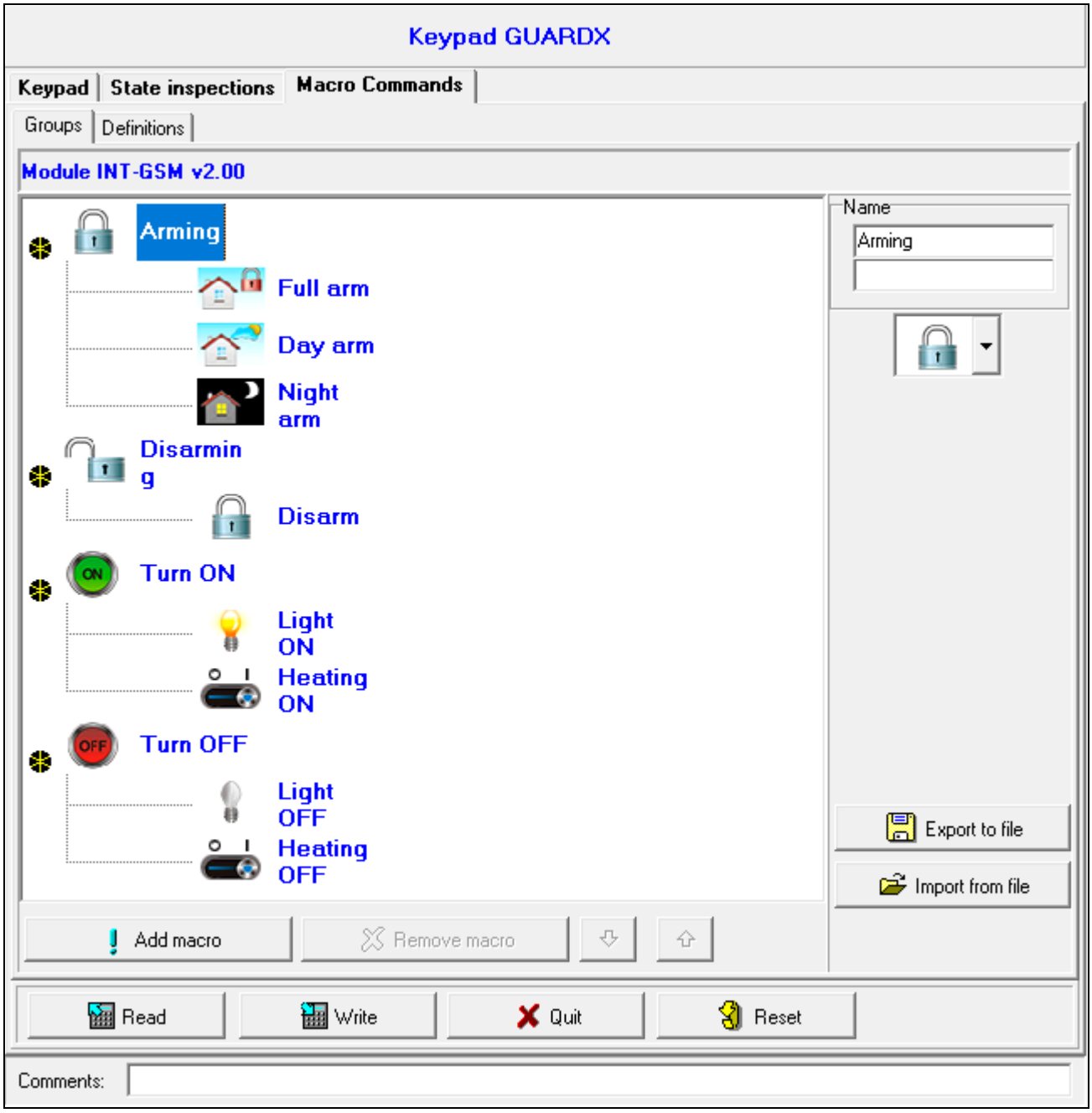


Fig. 27. DLOADX program: “Groups” tab.

Definitions

+ (INTEGRA Soft) / **New macro** (DLOADX) – click to create a new macro command.

– (INTEGRA Soft) / **Remove macro** (DLOADX) – click to delete a selected macro command.

Name – individual name of the macro command (up to 16 characters in two lines, up to 8 characters in the line).

Ask for access code (INTEGRA Soft) / **Authorization required** (DLOADX) – if this option is enabled, the macro command is executed only after the user enters the code.

Disabl. if armed – if this option is enabled, the macro command will not be available, when any of the partitions operated by the virtual keypad is armed.

Add to favorites (INTEGRA Soft) / **Autoexecute** (DLOADX) – if this option is enabled, the macro command is displayed in the INTEGRA CONTROL app on the favorite macros screen.

No confirmation messages – this option does not apply to the INTEGRA CONTROL app.

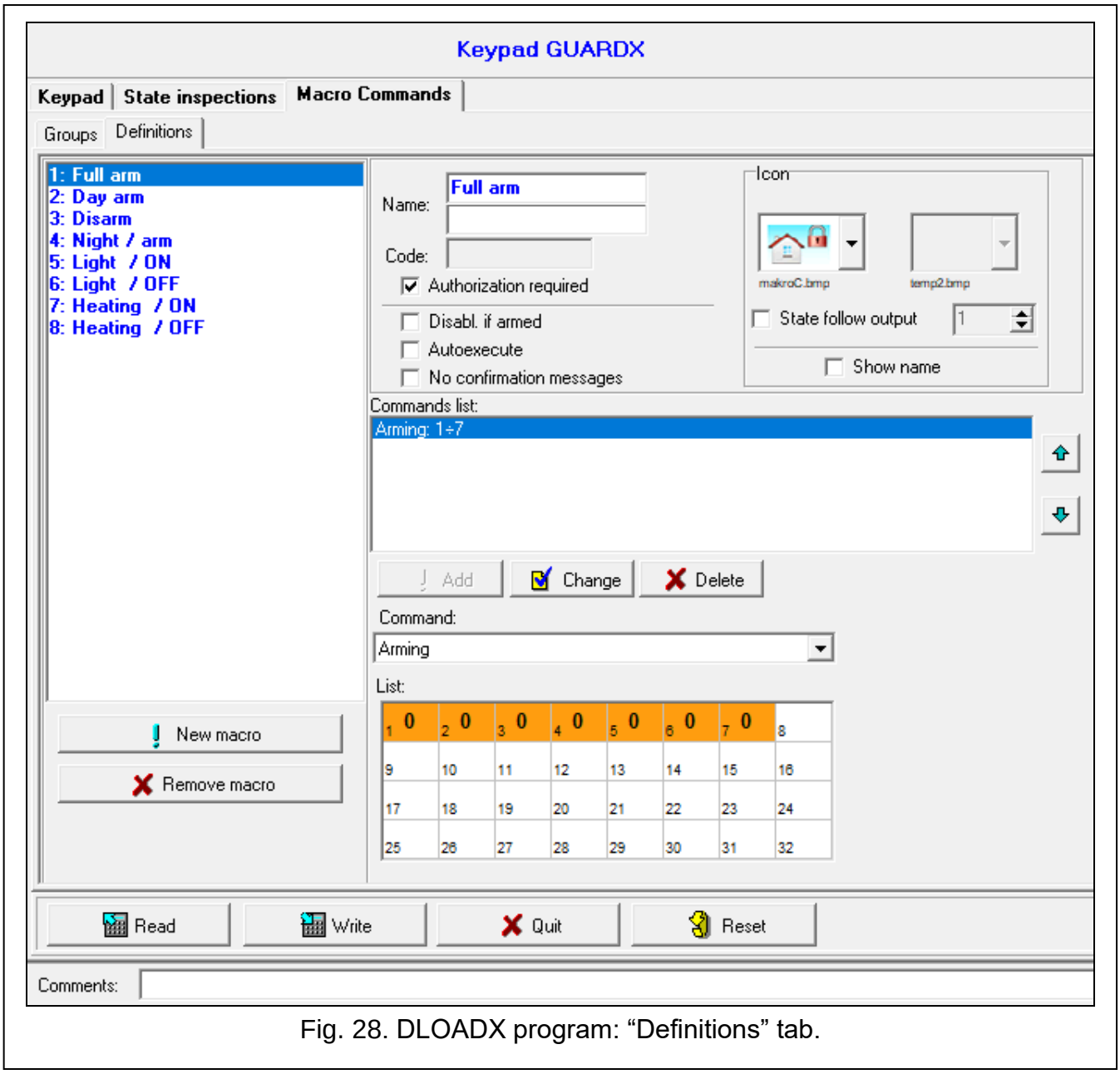


Fig. 28. DLOADX program: “Definitions” tab.

Icon

Icon – the macro command icon. Click (INTEGRA Soft) / (DLOADX) to select an icon.

Active (INTEGRA Soft) / **Out active** (DLOADX) – the macro command icon is displayed when the output is active. Click (INTEGRA Soft) / (DLOADX) to select an icon. The field is available when the *State follow output* option is enabled.

Off (INTEGRA Soft) / **Out not active** (DLOADX) – the macro command icon is displayed when the output is inactive. Click (INTEGRA Soft) / (DLOADX) to select an icon. The field is available when the *State follow output* option is enabled.

State follow output – if this option is enabled, the macro command icon changes depending on the status of the selected output. Select an output, the status of which depends on the actions taken by the control panel after running the macro command. Thus it will be possible to inform the user by means of macro command icons about, for example, the status of outputs controlled by macro commands or the status of partitions which are armed by a macro command.

Show name – if this option is enabled, the macro command name will be displayed.

Commands

List of commands (INTEGRA Soft) / **Commands list** (DLOADX) – commands assigned to the currently highlighted macro command.

(INTEGRA Soft) / (DLOADX) – click to move the selected command up.

(INTEGRA Soft) / **Delete** (DLOADX) – click to delete the selected command.

(INTEGRA Soft) / (DLOADX) – click to move the selected command down.

(INTEGRA Soft) / **Add** (DLOADX) – click to add to the command list a new one selected in the “Command” field.

(INTEGRA Soft) / **Change** (DLOADX) – click to save the changes to the command settings that were made after adding the command to the list (otherwise, the changes will not be saved).

Command – function that you can assign to the macro command. Click to drop down the list of available functions, then click the function that you want to assign to the macro command.

List – list of system elements (partitions / zones / outputs) that can be controlled by the function. The list can be in the form of a table where the fields represent the system elements that can be controlled by the function. The numbers of the fields in the table correspond to the numbers of the elements in the system. The color of the field indicates:

orange – function controls this system element,

white – function does not control this system element.

Double-click the field to change its color.

Depending on the selected function:

Arming – select the partitions to be armed and define the arming mode (successive clicks on the field). The digit inside the field indicates:

0 – fully armed,

1 – fully armed + bypasses,

2 – armed without interior,

3 – armed without interior and without entry delay.

Disarming – select the partitions to be disarmed.

Alarm clearing – select the partitions in which alarm is to be cleared.

Bypass zones – select the zones which are to be inhibited.

Unbypass zones – select the zones which are to be unbypassed.

Outputs ON – select the outputs to be activated.

Outputs OFF – select the outputs which are to be deactivated.

Change outputs state – select the outputs whose state is to be changed.

The partitions must be controlled by user code.

The zones must not have the “Bypass disabled” option enabled.

The outputs must be the "24: MONO Switch", "25: BI Switch", "105: Shutter up", "106: Shutter down" or "Remote switch" type (they do not need to be assigned to any group of outputs).

KNX telegram – the following settings are available for the function:

INT-KNX module – INT-KNX module which is to send the telegram.

Group address – the group address which will be inserted in the telegram.

Type – the telegram type.

Value – the value that will be inserted in the telegram (parameter available for some types of the telegram).

Priority – telegram priority (if two elements of the bus start transmitting simultaneously, the telegram with higher priority will be sent first).

KNX telegram (v2) – the following settings are available for the function:

Module INT-KNX – INT-KNX-2 module in which the value is to be set.

Macro Command – name of the "Virtual (macro)" type object, defined in INT-KNX-2 module.

Data type – size and meaning of the communication object data defined in INT-KNX-2 module for selected object.

Value – value to be set (if the type of data provides for sending a sequence of characters, you can enter up to 13 characters).

The "Telegram KNX" and "Telegram KNX (v2)" functions allow you to control the KNX system if the INT-KNX or the INT-KNX-2 module is connected to the control panel.

Exit delay clearing (no additional parameters to configure).

Quick arm – select the arming mode which is to be activated.

Preparing macro commands (INTEGRA Soft)

1. Click the "Download data" to read the macro command settings from the module.
2. Click . A new macro command will appear in the list.
3. Enter a name for the new macro command.
4. If the user must enter a code before running the macro command, enable the *Ask for access code* option.
5. If the macro command is to be unavailable when any of the partitions managed from the INTEGRA CONTROL app is armed (virtual keypad settings), enable the *Disabl. if armed* option.
6. If the macro command is to be available in the INTEGRA CONTROL app on the favorite macros screen, enable the *Add to favorites* option.
7. If the macro command icon is to show the output state, enable the *State follow output* option and select the output.
8. Select the icon (*State follow output* option disabled) / icons (*State follow output* option enabled) that will be used to display the macro command on the screen.
9. If the macro command name is to be displayed, enable the *Show name* option.
10. Click  in the "Command" field and select from the list the function that will be executed by the new macro command.
11. Configure the command parameters (e.g. select the partitions to be disarmed).
12. Click  next to the "Command" field. A new command will appear on the list of commands assigned to the macro command. After clicking on the command, you can change its settings (after making changes, click ).

13. Repeat steps 10-12, if you want to add additional commands to the macro command.
14. Enter the name for the group to which you want to add the macro command, if the name is to be displayed.
15. Click  next to the “List of macrocommands” field and select the macro command you want to add to the group.
16. Click the “Upload data” button to write the macro command settings to the module.

Preparing macro commands (DLOADX)

1. Click the “Read” button to read the macro command related data from the module.
2. Click the “Definitions” tab.
3. Click the “New macro” button. A new macro command will appear in the list.
4. Enter a name for the new macro command.
5. If the user must enter a code before running the macro command, enable the *Ask for access code* option.
6. If the macro command is to be unavailable when any of the partitions managed from the INTEGRA CONTROL app is armed (virtual keypad settings), enable the *Disabl. if armed* option.
7. If the macro command is to be available in the INTEGRA CONTROL app on the favorite macros screen, enable the *Autoexecute* option.
8. If the macro command icon is to show the output state, enable the *State follow output* option and select the output.
9. Select the icon (*State follow output* option disabled) / icons (*State follow output* option enabled) that will be used to display the macro command on the screen.
10. If the macro command name is to be displayed, enable the *Show name* option.
11. Click  in the *Command* field and select from the list the function that will be executed by the new macro command.
12. Configure the command parameters (e.g. select the partitions to be disarmed).
13. Click the “Add” button. A new command will appear on the list of commands assigned to the macro command. You can still modify parameters of the command after clicking on it (having made the changes, click the “Change” button).
14. Repeat steps 11-13, if you want to add additional commands to the macro command.
15. Click the “Groups” tab.
16. Click the group to which you want add a macro command.
17. Enter the name for the group, if the name is to be displayed.
18. Click the “Add macro” button and select the macro command you want to add to the group.
19. Click the “Write” button to write the macro command settings to the module.

6. Remote programming / operating of control panel via module

For information related to configuring the control panel from the DLOADX / INTEGRA Soft program, please refer to the control panel programming manuals.

6.1 GUARDX program

If the INT-GSM LTE module is connected to the ETHM-1 Plus module, communication via the INT-GSM LTE module (via cellular network) will only be used if connection via Ethernet cannot be established (see the ETHM-1 Plus module manual).

Connection between the GUARDX program and the control panel via the INT-GSM LTE module can be established using one of the following ways:

1. Initiating connection from the keypad (by the control panel). The alarm system can be managed only from specified location. This method is recommended when the alarm system owner does not want the system to be managed without its knowledge. The computer with GUARDX program must have a public IP address.
2. Initiating connection by SMS message. The computer with GUARDX program must have a public IP address.
3. Establishing connection via the SATEL server. The alarm system can be managed from any location. No public IP address is required for the computer with GUARDX program.

Connection can be established if the identifiers programmed in the control panel and the GUARDX program are identical ("INTEGRA identifier" and "GUARDX identifier").

Required settings of the INT-GSM LTE module for all methods of establishing connection:

- enabled "GUARDX" option (p. 13),
- programmed data encryption key ("GUARDX key" p. 13).

6.1.1 Configuring the GUARDX program settings

To configure the settings related to communication with the alarm system, click the "Configuration" button in the startup window of GUARDX program (Fig. 29).

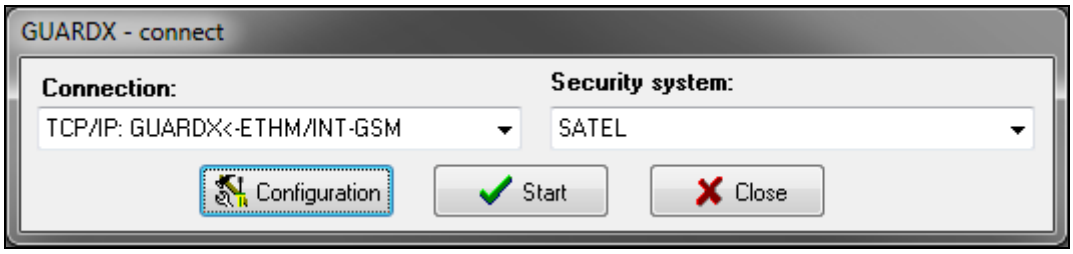


Fig. 29. GUARDX program: startup window.

"Communication Identifiers" tab

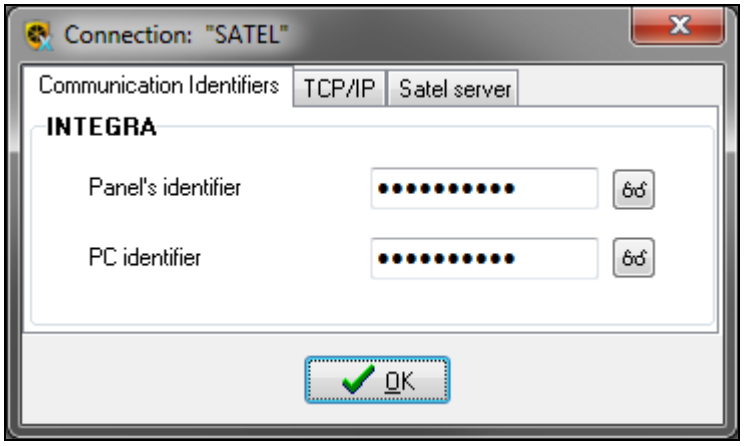


Fig. 30. GUARDX program: "Communication Identifiers" tab in "Connection" window.

Panel's identifier – identifier of the alarm control panel. It must consist of 10 characters (digits or letters from A to F).

PC identifier – identifier of the computer with GUARDX program. It must consist of 10 characters (digits or letters from A to F).

Click 👁 to show the numbers entered.

You must enter the same identifiers in the GUARDX program and in the control panel.

"TCP/IP" tab

The settings below apply to direct communication with the module.

Server port – the number of TCP port used during communication between the control panel and computer with GUARDX program.

GUARDX key – a string of up to 12 alphanumeric characters (digits, letters and special characters), used for data encryption during communication between the control panel and the computer with GUARDX program. Click 👁 to show the number entered.

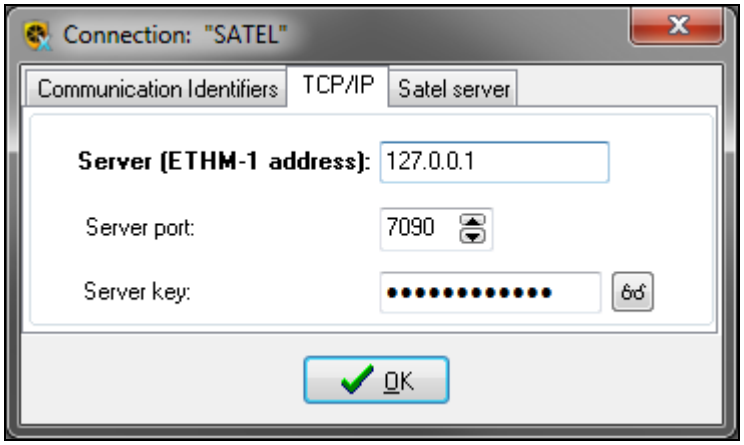


Fig. 31. GUARDX program: "TCP/IP" tab in "Connection" window.

"Satel sever" tab

The settings below apply to communication via the SATEL server.

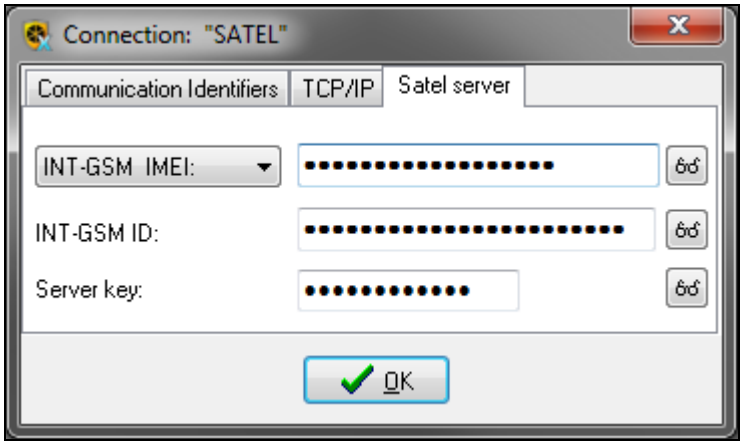


Fig. 32. GUARDX program: "Satel server" tab in "Connection" tab.

Select the "INT-GSM IMEI" variant.

INT-GSM IMEI – individual ID number of the module cellular telephone.

INT-GSM ID – individual ID number assigned to the INT-GSM LTE module by the SATEL server.

GUARDX key – a string of up to 12 alphanumeric characters (digits, letters and special characters), used for data encryption during communication between the control panel and the computer with GUARDX program.

Click 88 to show the numbers entered.

6.1.2 Initiating connection by SMS message

Required settings of the INT-GSM LTE module:

- programmed: address of computer with GUARDX program ("GUARDX server" p. 13) and number of TCP port used for communication, if it is to be different from 7091 (p. 14),
- programmed control command which will initiate connection with the GUARDX program (see "SMS initiating GUARDX connection" p. 18).

Required settings of the GUARDX program for direct communication with the module:

- programmed: number of TCP port used for communication and data encryption key ("Server key").

1. In the startup window (Fig. 29), "Connection" field, select "TCP/IP: GUARDX<-ETHM/INT-GSM" and then click the "Start" button. This will display a window with information that the program is waiting for connection.
2. Send to the INT-GSM LTE module the following SMS message:

   xxxx= ("xxxx" – the control command to initiate establishment of communication with the program) – the module will connect to the computer whose address is programmed in the module,

   xxxx=aaaa:p= ("xxxx" – the control command to initiate establishment of communication with the program; "aaaa" – address of the computer with the program; "p" – TCP port) – the module will connect to the computer whose address is in the SMS message and will use the TCP port given in the SMS.
3. In the window that will open after connection is established, enter the code of control panel administrator / user.

6.1.3 Initiating connection from the keypad (by the control panel)

Required settings of the INT-GSM LTE module:

- programmed: address of computer with GUARDX program ("GUARDX server" p. 13) and number of TCP port used for communication, if it is to be different from 7091 (p. 14).

Required settings of the GUARDX program for direct communication with the module:

- programmed: number of TCP port used for communication and data encryption key ("Server key").

1. In the startup window (Fig. 29), "Connection" field, select "TCP/IP: GUARDX<-ETHM/INT-GSM" and then click the "Start" button. This will display a window with information that the program is waiting for connection.
2. Ask the user to start the "INT-GSM →GUARDX" function ([*code*]✱ ▶"Downloading" ▶"INT-GSM →GUARDX"). The function is available to the installer, administrator and the user having the "Downloading starting" right.
3. In the window that will open after connection is established, enter the code of control panel administrator / user.

6.1.4 Establishing connection via the SATEL server

For communication via the SATEL server, the ports of 1024-65535 range are used as outgoing ports. These ports must not be blocked.

Required settings of the INT-GSM LTE module:

- enabled “Connection via Satel server” option.

Required settings of the GUARDX program for communication via the SATEL server:

- programmed: ID number assigned to the module INT-GSM LTE by the SATEL server (“INT-GSM ID”), IMEI number of the INT-GSM LTE module (“INT-GSM IMEI”) and data encryption key (“Server key”).

1. In the startup window (Fig. 29), “Connection” field, select “TCP/IP: SATEL server” and then click the “Start” button.
2. In the window that will open after connection is established, enter the code of control panel administrator / user.

6.2 INTEGRA CONTROL application

The INTEGRA / INTEGRA Plus alarm system can be operated and configured from a mobile device, if the INTEGRA CONTROL application is installed. If the IP cameras are installed in the protected premises, in the application you can watch video from these cameras.

The application can be downloaded from the internet store “Google play” (Android system devices) or “App Store” (iOS system devices). On the www.satel.pl website, you will find links to the locations from which the applications can be downloaded.

The INTEGRA CONTROL application makes it possible to establish connection via the SATEL server (Connection Setup Service).

If the INT-GSM LTE module is connected to the ETHM-1 Plus module, communication via the INT-GSM LTE module (via cellular network) will only be used if connection via Ethernet cannot be established (see the ETHM-1 Plus module manual).

Required settings of the INT-GSM LTE module:

- enabled “INTEGRA CONTROL” and “Connection via Satel server” options,
- programmed data encryption key (“GUARDX key”).

To configure settings for communication via SATEL server in the INTEGRA CONTROL app, you can use the QR code (see p. 14). If the communication settings are configured in one mobile device, you can easily copy them to another mobile device. You just need to display the QR code on the device in which the settings for communication with the given module are already configured and read it on another device.

6.2.1 Configuring the settings in INTEGRA CONTROL application (Android)

When you launch the application for the first time, the “Add control panel” screen will be displayed. It allows you to configure the settings required for establishing connection to the control panel.

1. Configure settings for communication with the INT-GSM LTE module. The settings can be configured automatically (see “Automatic configuration – QR code” p. 44) or you can enter them manually (see “Manual configuration” p. 45).
2. Enter the name for alarm system. The name helps to identify the system when the application is in use (you can define settings for multiple alarm systems).
3. If you want to watch video from IP cameras in the application, enter the addresses of cameras. If you do not want to use the application to watch video from IP cameras, skip this step. You can add new IP cameras or change the settings for cameras already added at any time while using the application.
4. Define the language of alarm control panel.
5. Define how the macro commands are to be handled. By default, the macro commands are to be imported from the module (they will be downloaded during the first connection).

If the macro commands are not to be imported or are to be imported from file, touch the screen in the “Import macros” area and change the settings. If you select import from file, you will have to indicate location of the file containing macro commands.

6. Tap ✓ to save settings.

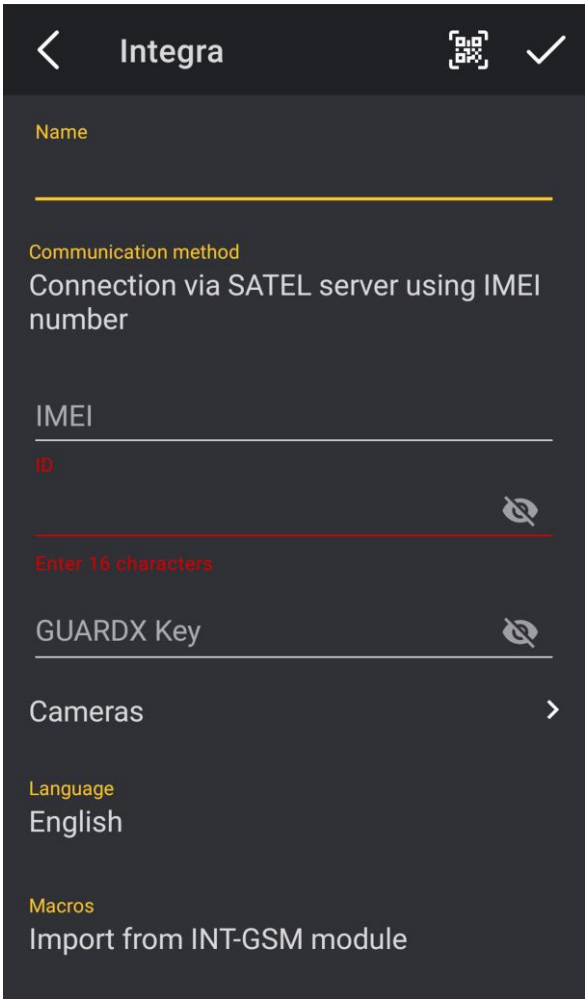


Fig. 33. INTEGRA CONTROL application (Android system): the screen for adding a control panel.

Automatic configuration – QR code

You can obtain the QR code from the installer or a user who has already entered the control panel data to the mobile application.

Scanning the QR code with a camera

1. Tap .
2. Tap “Scan QR code”.
3. Allow the application to access the camera.
4. Scan the QR code.
5. Enter the password for the QR code and tap “OK”.

Importing the QR code from a file

1. Tap .
2. Tap “Select an image”.
3. Allow the application to access files on the mobile device.

4. Select the image with QR code.
5. Enter the password for the QR code and tap “OK”.

Manual configuration

1. Tap on the screen in the “Communication way” area to select “Connection via SATEL server using IMEI number” as the way of communication.
2. Enter the IMEI number of the module.
3. Enter the ID number of the module (assigned to the module by the SATEL server).

The user can use keypad to check the IMEI and ID numbers (IP/MAC/IMEI/ID user function is available in the “Tests” submenu – see the control panel user manual).

4. Enter the data encryption key, identical to that in the module (“GUARDX key”).

6.2.2 Configuring the settings in INTEGRA CONTROL application (iOS)

When you launch the application for the first time, the “Objects” screen will be displayed.

1. Tap “New”. The screen for adding a control panel will be displayed.
2. Configure settings for communication with the INT-GSM LTE module. The settings can be configured automatically (see “Automatic configuration – QR code” p. 46) or you can enter them manually (see “Manual configuration” p. 46).
3. Enter the name for alarm system. The name helps to identify the system when the application is in use (you can define settings for multiple alarm systems).
4. Define the language of alarm control panel.
5. Define how the macro commands are to be handled. By default, the macro commands are to be imported from the module (they will be downloaded during the first connection). If the macro commands are not to be imported or are to be imported from file, tap on the screen in the “Import macros” area and change the settings.
6. If you want to watch video from IP cameras in the application, enter the addresses of cameras. If you do not want to use the application to watch video from IP cameras, skip this step. You can add new IP cameras or change the settings for cameras already added at any time while using the application.
7. Tap on “Save” to save the settings.

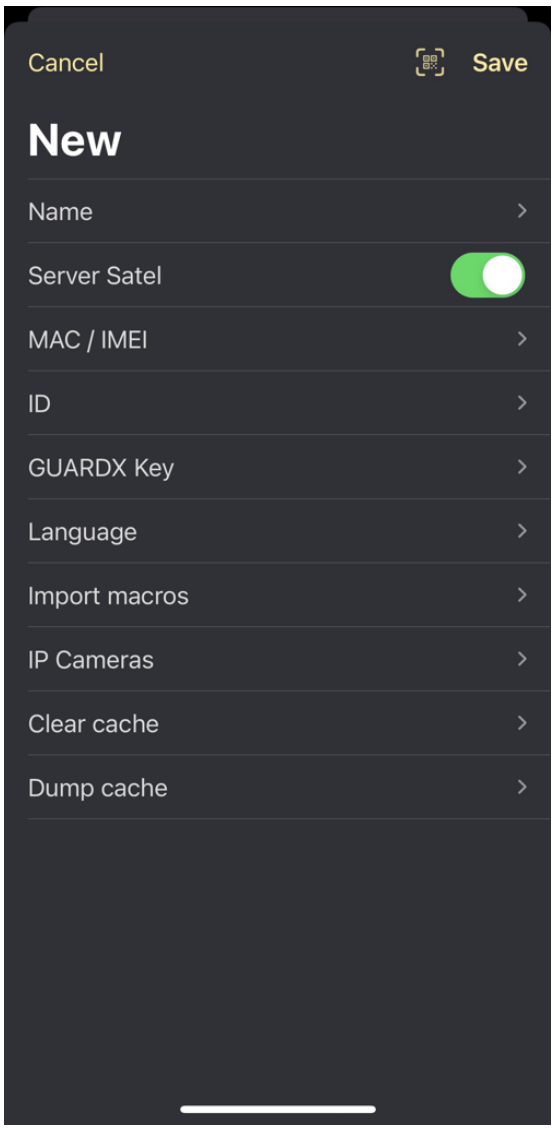


Fig. 34. INTEGRA CONTROL app (iOS system): the screen for adding a control panel.

Automatic configuration – QR code

You can obtain the QR code from the installer or a user who has already entered the control panel data to the mobile application.

1. Tap .
2. Allow the application to access the camera.
3. Scan the QR code.
4. Enter the password for the QR code and tap “OK”.

Manual configuration

1. Enable the “Server Satel” option.
2. Enter the IMEI number of the module.
3. Enter the ID number of the module (assigned to the module by the SATEL server).

The user can use keypad to check the IMEI and ID numbers (IP/MAC/IMEI/ID user function is available in the “Tests” submenu – see the control panel user manual).

4. Enter the data encryption key, identical to that in the module (“GUARDX key”).

6.2.3 Establishing the communication

Tap the name of the alarm system. After communication with the control panel is established, the application will ask you to enter the user code. After you enter the code, the “Macros” screen will be displayed (in the iOS system you can define, which screen will be displayed as the first one after the next communication is established).

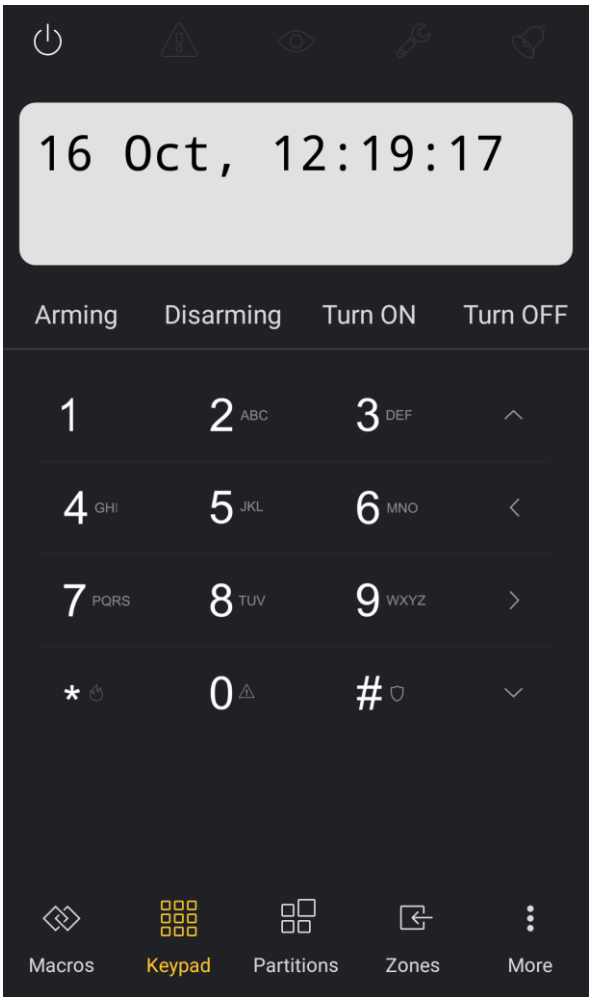


Fig. 35. INTEGRA CONTROL application (Android system): virtual keypad.

7. Local module firmware update

1. Using the RS bus, connect the module to the USB-RS485 converter (see the USB-RS485 converter manual).
2. Connect the USB-RS485 converter to the computer USB port.
3. Download the module firmware update program from the support.satel.pl website.
4. Start the downloaded program.
5. Click .
6. In the window that will be displayed, indicate the COM port to which the USB-RS485 converter is connected, then click *OK*.
7. When a prompt is displayed asking if you want to continue the firmware update, click *Yes*.
8. The module firmware will be updated.

8. Specifications

Supply voltage ..... 12 V DC ±15%
Standby current consumption .....135 mA
Maximum current consumption .....430 mA
Environmental class according to EN50130-5 II
Operating temperature range.....-10...+55°C
Maximum humidity .....93±3%
Electronics board dimensions ..... 80 x 57 mm
Weight.....53 g

9. Manual update history

Manual version	Introduced changes
10/20	• Information on the required version of INTEGRA control panel has been modified (p. 3). • Information on the required version of ETHM-1 Plus module has been modified (p. 3 and 9).
11/20	• Description of “INTEGRUM (client)” parameter has been modified (p. 13). • Description of options in “GSM phone” section has been updated (p. 17)
05/22	• Description of “GUARDX server” parameter has been modified (p. 13). • Note on the use of TCP port has been added (p. 14). • Description of jamming detection parameters has been added (p. 18). • Description of “no date/time in SMS” option has been added (p. 20). • Description of “Parameters” parameter has been modified (p. 25). • Section “INTEGRA CONTROL application” has been modified (p. 43).
06/25	• Note on using extra features such as SMS, CLIP, push or e-mail notifications has been added (p. 3). • Description of the ”Preferred network type” parameter has been updated (p. 16). • Description of the “SMS over SGS” option has been added (p. 17). • Description of the “SMS restarting the phone” control command has been added (p. 19). • Note on firmware update has been updated (p. 29).
06/26	• Information on the INTEGRA Soft program has been added. • Section “Features” has been updated (p. 3). • Section “Electronics board” has been updated (p. 6). • Section “Setting address” has been updated (p. 7). • Section “Connecting to the alarm control panel” has been updated (p. 9). • Section “Programming the module settings” has been updated (p. 11). • Section “INTEGRA CONTROL application” has been updated (p. 43). • Section “Local module firmware update” has been added (p. 47).