

GAT Communicator

Support software for the devices GAT-1 / GAT-2



Installation and Usage Instructions for the "GAT Communicator version 0.7.3"

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<u>1: Brief description of the application "GAT Communicator"</u>

The "**GAT communicator**" support software ("**GATcomm**" for short) and USB driver are installed on a computer that must have a Windows operating system (XP SP3, Vista, 7, 8, 10) and offers a friendly environment for managing the GAT device.



GATcomm can display independent windows that perform various functions. The user defines the appearance and operation parameters that are convenient for him and the application saves the settings when it closes and returns to them when it starts.

All functional parameters and automation program specific to a particular GAT application are stored as "**GAT application program**" files, which is a text files with the extension "**.gat_prog**" in UTF-8 encoding.

Some functions that can be performed by the software are:

• **Direct USB communication** with the device through messages exchanged in real time, with the ability to record all communications in a history file.

• Application program transfer to and from the connected device via USB or to remote devices via SMS.

• Device functional parameters configuration via the "Function Parameters Wizard", a tool that translates user selections into application program while working and vice versa, translating data retrieved from a device into a form understandable for the user.

• **Testing and debugging the application program** with the help of communications and I/O states simulation, real time monitoring of program variables, etc.

• Manage SMS messages to and from various devices and recipients (SMS server).

• **Upgrade the operating system** of the GAT device (firmware update) to obtain new functions, bug fixes, etc. with subsequent versions offer for free, or with specialized versions that can be created to cover special cases.

2: Installation or Upgrade of the "GAT Communicator"



The installation or upgrade of the application is done with the execution of the program "GATcommXXX_Install.exe" (XXX is the version number).

The installation process has 3 steps.

To advance the process you press the button "**Next**" and to cancel the installation you press the button "**Cancel**".

On the second step the software installation path is displayed, as suggested by the computer operating system. The user has the option to choose another path.

When updating an existing software, this path must be the same with the one of the existing installation.

On the final step, you press the "Install" button to start the files copying.

After a few seconds and if all goes well, the program will confirm the successful installation.

Click the button "Finish".

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After the installation, a new folder has been created in the Windows Applications menu. It is named "GAT Communicator" and contains shortcuts for:

- the documentation files
- the application "GATcomm"
- the USB driver installer
- the software uninstaller.



<u>3: USB driver installation for the GAT devices</u>

In order for **GATcomm** to be able to communicate with a GAT device through the USB port, the operating system needs the appropriate USB driver.

Device Driver Installation Wiza	rd
	Welcome to the Device Driver Installation Wizard!
	This wizard helps you install the software drivers that some computers devices need in order to work.
	To continue, click Next.
	< Back Next > Cancel
Device Driver Installation Wiza	rd
	Completing the Device Driver Installation Wizard
	The drivers were successfully installed on this computer.
	You can now connect your device to this computer. If your device came with instructions, please read them first.

Driver Name

To install this driver, you must open the "GAT communicator" program folder in the Windows "Start" menu and execute the program "Install_GAT_USB_driver".

After pressing the button "**Next**", the USB device driver installation will start.

After some seconds and if all goes well, the program will confirm the successful installation.

Click the button "Finish".

<u>4: First run of the "GATcomm" application</u>

EDY electronics GAT (01/17... Ready to use

Open the "GAT communicator" program folder in the Windows "Start" menu and execute the program "**GATcomm**".

Status

< Back Finish Cance





4.1: Creation of the Work Folder

The **GATcomm** application needs a "**work folder**". This folder will contain subfolders with the GAT device information files and the application examples and also is the default path to store the user-generated GAT application programs.

GATcomm_data

It is named "**GATcomm_data**" and can be in the path suggested by the system or any other path defined by the user.



On its first run after the installation, **GATcomm** will display a message that **no "Work Folder" was found** and will prompt the user to solve this issue via the dialog window "**Settings**".

Click the "**OK**" button to close this message window.

The dialog window "**Settings**" opens automatically together with the application main window.

The user must verify that the work folder path is set correctly or adjust it to his likings.

Then, with the "**Copy support folders**" checked, he must click the button "**Apply**".

e <u>V</u> iew F <u>u</u> nctions <u>H</u> elp * * main * nnect Settings Mimic Control Editor	V.Watch Lang.Help
CONNECTED REP:stST DBG:	
rning: No Work Folder set. Pl Copy default folders" (Setting	ease setup your Work Folder and check gs -> General -> Work Folder -> Apply)
fo: Session Start	Settings ×
	General Communication
	Work Folder
	Current:
	C:\Users\Niko\Documents\GATcomm_data\
	C:\Users\Niko\Documents\GATcomm_data\Browse
	<u> C</u> opy default folders
	Events Logging
	Timestamp
	None O Time O Date/Time
	Appearance
	Terminal Font Courier New, 12
	Editor Font Lucida Console, 12
	Dark Mode
	Connect Connect



The successful creation of the **work folder** is recorded in the main window:

Warning: No Work Folder set. Please setup your Work Folder and check
"Copy default folders" (Settings -> General -> Work Folder -> Apply)
Info: Session Start
Info: Default data copied to C:\Users\Niko\Documents\GATcomm data\

4.2: First connection via USB

Provide power supply to the GAT device and connect it via USB to the computer. If the USB communication driver is installed correctly, the device will be recognized without problems by Windows.

Start **GATcomm**. By pressing the "**Connect**" button, the information about connecting and communicating with the device to recall its ID details will appear in the main window. If there is a correct **work folder** set, the program will load the device's information file from there.

The main window indications are updated and the program is communicating with the device. Congratulations, you have successfully installed the "Gat Communicator" support software!

Try sending a command to the connected device:

At the bottom of the main window, there is a text input field. Whatever is inserted there, is sent to the device as a message.

Type "OA 1" and press Enter to send it.

The information "**MESSAGE OUT:**" will appear, followed by the actual message text "******* OA 1**" which is sent to the device (the ******** is the masked security code).

Immediately after, comes the information "**O.K. ANSWER**", indicating that the device has acknowledged this command.

At the same time you will see that Output 1 of the device has been activated.







5: Detailed description of GATcomm

5.1: The main window

GATcomm is a multi-window environment. The main window is the one that is always open. It provides access to all program functions and continuous monitoring of all communication events.

	🎄 GAT (Communicato	r 0.6.8								>	<	
1	<u>F</u> ile <u>V</u> iew	w F <u>u</u> nctions	s <u>H</u> elp										
	& Connect	X Settings	Mimic	Control	Editor	V.Watch	ያ Lang.Help	-2					
3	CONN	ECTED	REI	stST?	DBG	STio0	GAT-2	ver:1.0	SN:20	5C07	4		all and
5	Info: MESSA ID: GAT-2 Info: C:\USA MESSA **** (O.K. 2	Queryin <u>SE IN:</u> version Loaded ers\Niko <u>SE OUT:</u> DA 1 ANSWER	ng ID n:1.0 devic o\Docu	SN:2050 e info ments\G	:07 file ATcom	m_data\	lib\GA	T-2_	_v1_().in:	Éo	~	
6												Ŷ	

The basic sections shown in the image are the following:

1: Menu bar. All the functions that can be performed are found here, through the "File", "View", "Functions" and "Help" menus.

2: **Toolbar**. Here are buttons for the most regularly used items:

Connect: Connect / disconnect the USB communication with the GAT device.
Settings: Displays the program settings window.
Mimic: Displays the "mimic" window.
Editor: Displays the program editor window.
Lang.Help: Displays the "Language Help" window.
Control: Displays the "Control" window.
V.Watch: Displays the "Variables Watch" window.

3: **Status indicators**. A representation with three colored rectangles, showing whether the device is connected ("**Connected**") as well as a summary of the report ("**REP:xxxx**": Report flags) and emulation ("**DBG:xxxx**": Debug Flags) settings of the device.

4: **Type / Device ID.** The details of the connected device, as it declared in response to the "**ID**" query command when connecting via USB.

5: Terminal area. Here are shown all messages from the program to the user, all messages between the user (or program) and the device, and reports on device communications.

6: Message input field. Here the user can enter anything he wants to sent to the device as a message. The message is sent by pressing Enter. The field maintains a history of sent messages, which can be recalled using the up and down arrows on the keyboard.

5.2: The menus of the main window 5.2.1: File menu

Open GAT device Info file : The program automatically opens the information file for the device it connects to. It also automatically opens the last used info file on startup. The user can force the opening of a specific GAT device information file from here.

Connect with GAT device via USB : Connect / disconnect with the device via USB. This state is saved by the program.

Quit : Termination of program operation.

5.2.2: View menu

Settings : Displays the program settings window.

Mimic: Displays the "mimic" window, which displays in real time the state of the inputs/outputs, of the GSM network and the general status of the connected device.

Control: Displays the "Control" window, which has various buttons for performing tasks related to the connected device, such as uploading an application program, initializing, controlling the automation program, and more.

Editor : Displays the program editor window.

Variables Watch : Displays the "Variable Monitor" window, which shows in real-time the values of the variables used on the connected device.

Language Help : Displays the window that shows information about the GAT programming commands and their syntax.

The above windows all perform important functions, that will be covered in following detailed chapters.

<u>F</u> ile	View	F <u>u</u> nctions	<u>H</u> elp		
9	Dpen GA	T device Inf	o file	Ctrl+O	
40	Co <u>n</u> nect	with GAT de	evice via USB	Ctrl+N	t
9	Quit			Alt+F4)B

<u>F</u> ile	<u>V</u> iew	F <u>unctions</u>	<u>H</u> elp
Ş	* 9	Settings	
Conn		<u>M</u> imic	
¢		Control	
Inf	<u> (</u>	ditor	
Inf		/ariables <u>W</u> at	ch
C:\	<u>8</u> 1	anguage He	lp

5.2.3: Functions menu

<u>F</u> ile	View	F <u>u</u> nctions	<u>H</u> elp		
Ş		Conn	ected Device	>	Download Program from connected GAT
Conn	ect	Remo	te Device	>	Upload Program to connected GAT
Ç	ONNE (Gener	rate SMS files		Update Firmware of connected GAT
		Sand	CIVIC		
Inf	o: 5	Send	SIVIS		
Inf <u>F</u> ile	o: s <u>V</u> iew	Functions	Help		
Inf <u>F</u> ile	0: 8 <u>V</u> iew	F <u>u</u> nctions <u>C</u> onn	Help ected Device	>	
Inf <u>F</u> ile	o: S <u>V</u> iew ect	F <u>u</u> nctions <u>C</u> onn <u>R</u> emo	Help ected Device	>	💰 📰 👔 Download Program from remote GAT
Inf <u>F</u> ile Conn	O: S View ect	Functions Conn <u>R</u> emo	Help ected Device the Device rate SMS files	>	Image: Constraint of the second se

Connected Device : Functions related to the connected device. These are performed by communicating via the USB connection.

Download Program from connected GAT : Download the application program from the connected GAT device. The program will be transferred to the Editor, which it must not contain any unsaved text.

Upload Program to connected GAT : Upload an application program to the connected GAT device. The program must be in the Editor, saved as a file and free of errors.

Update Firmware of connected GAT : Firmware upgrade on the connected GAT device. A file selection window opens, showing the files with the extension "**.gat_hex**" located in the "**lib**" subfolder of the **work folder**. The user must select the file that corresponds to the type of device connected and press the "**Open**" button. The software transfer process takes about half a minute and then the device reboots. The device's settings and automation program are unaffected under normal circumstances, but it's best to ensure they are saved to files before the upgrade.

Remote Device : Functions related to remote device. These are performed by GSM communication between the connected device and the remote one.

Download Program from remote GAT :

A dialog box opens, allowing application program download from a remote GAT device.

The user must enter the phone number of the remote device, its security code if it is different from "0000" and choose whether to download the automation program or only the functional parameters. The process begins with the "**Start**" button, while depending on the amount of data it may take a few minutes to complete. The progress is shown in this window, as well as in the terminal of the main window.

The program will be transferred to the Editor, which must not contain any unsaved text.

	s press the	Set the data in this Dialog and = "Start" button to begin the process, or press "Close" to quit	
Tel. Number:	n Program	Security Code: 0000	

Upload Program to remote GAT :

Opens a dialog window that allows uploading an application program to a remote GAT device.

The user must enter the phone number of the remote device and its security code if it is different from "0000". The process begins with the "Start" button, while depending on the amount of data it may take a few minutes to complete the process. The progress of the process is shown in this window, as well as in the terminal of the central window.

The application program must be in the Editor, saved as a file, error-free and compatible with the remote device type.

Generate SMS files : Starts (after confirmation) the process to create "SMS files" from the GAT application program loaded in the "Editor", i.e. text files that do not contain comments or unnecessary spaces, start with the security code and do not exceed 160 characters . These files are stored in the subfolder "**SMS_OUT**" inside the **work folder** and have the name of the file loaded in the Editor with the addition of the text "**_SMSnn**", where nn is a two-digit serial number and the extension ".txt". For example, if the application program in the Editor is called "**GAT_test1.gat_prog**", and it takes three messages to transmit, the files "**GAT_test1_SMS01.txt**", "**GAT test1 SMS02.txt**" and "**GAT test1 SMS03.txt**" will be produced.

Send SMS: A dialog window opens, through which the text contained in the Editor (must be up to 160 characters long) can be sent in the form of an SMS message.

5.2.4: Help menu

Browse Help Files : Opens the folder which contains the documentation files located in the program installation folder, so that the user can easily access them.

<u>F</u> ile <u>V</u>	liew	F <u>u</u> nctions	<u>H</u> elp		
ş		*	l	<u>B</u> rowse Help File	s [
Connec	t	Settings	1	About	F1 4
00	ATATE /	THE PARTY		AND DESCRIPTION OF THE OWNER OF T	Statement of the Party of the P

About : Opens a window with information about the "GAT Communicator" program.



el. Number: Security Code: 0000	Se	curity Code:	0000	



5.3: The "Settings" window

This window has two panels, called **General** and **Communication**.

5.3.1: General settings

Work Folder: Here the user has to select during the first run of the application the path of the **work folder**.

Current : the current **work** folder path.

Choose new: The user can choose a new path by clicking on the "**Browse**" button and choosing from the folder structure that appears.

The name of the **work folder** is automatically filled in by the application and is always "GATcomm_data\".

There is no need to change the path which is suggested by the application, if there is no particular preference.

By pressing the "**Apply**" button, the **work folder** will be created.

Settings	×
General Communication	
Work Folder	
Current:	
C:\Users\Niko\Documents\GATcomm_data\	
Choose new:	
C:\Users\Niko\Documents\GATcomm_data\ Browse	е
Copy default folders	
Events Logging	_
Timestamp	
None O Time O Date/Time Save Log File	
Appearance	
Terminal Font Courier New, 12	
Editor Font Lucida Console, 12	
Dark Mode	
L - Consecutive and a	
l	
Annha Coursel Class	
Apply Cancel Close	

Copy default folders: When checked, it causes the folders with the support files to be copied from the program installation folder to the **work folder**, as soon as the "**Apply**" button is pressed. This option is also used in any case where the support files need to be updated, either because they were deleted / corrupted for some reason or because the program was upgraded.

Events Logging : Settings related to event logging.

Timestamp : Choice between None, Time and Date/Time.

Save Log File : When checked, messages displayed on the main window terminal are saved as text files in the "**LOG**" subfolder inside the **work folder**.

Appearance :

Terminal Font

Editor Font

Dark Mode : When checked, the background in the text areas is dark and the text is light. This option may need to restart the program.

5.3.2: Communication settings

In this panel, communication characteristics with the connected device are set as well as some options related to the operation of the device while it is in communication via USB with the application.

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Security Code : In this field the user may enter the four -digit security code of the connected device. **GATcomm** uses it in communicating with messages it has with the device. During the development of a GAT application program it is convenient for this code to be the default "0000".

Automatic : This option causes the security code to automatically precede each message that the user sends from the terminal.

Hidden : The security code is replaced by "****" in the terminal.

Hide O.K. Answers : This option causes to hide the original confirmation messages from the connected device and the appearance of a short "**O.K. ANSWER**" information.

Re-connect on failure : In some cases there may be a USB

Settings General Communication Security Code: 0000 Automatic Hidden Hide O.K. answer bodies Re-connect on failure: 3 times V Report flags ✓ 1: Report Incoming SMS 2: Report Incoming Telephone Calls 3: Report Outgoing SMS ✓ 4: Report Outgoing Telephone Calls Debug flags 5: Simulate Outgoing SMS 6: Simulate Outgoing Telephone Calls 7: Simulate Inputs 8: Simulate Outputs 9: Allow Outputs Control by Mimic Apply Cancel Close

communication interruption due to electric noise, poor contact or some other transient dysfunction. The program gives through this list the following options to address this problem:

None : There is no attempt to reconnect.

3 times : The program tries 3 times in succession to reconnect.

Forever : The program is constantly trying to reconnect.

The user can stop reconnecting efforts by clicking "Connect" on the tool bar.

Report flags : Report flags determine which communication reports will appear on the terminal for as long as the GAT device is connected to the program.

1: Report Incoming SMS : On each incoming SMS the device sends a report with the telephone number sent by the message as well as the message itself.

2: Report Incoming Telephone Calls : On each incoming phone call the device sends a report with the phone number that made the call.

3: Report Outgoing SMS : For each outgoing SMS that the device prepares to send, it shows a report with the recipient's telephone number, as well as the message itself.

4: Report Outgoing Telephone Calls : For each phone call that the device is preparing to make, the device sends a report with the recipient's telephone number.

Debug flags : Debug flags are used to instruct the connected GAT device to simulate some functions rather than executing them, so that the user can be facilitated in testing and debugging of the GAT application program.

5: Simulate Outgoing SMS : No SMS sendings are made from the device, only reports on the terminal.

6: Simulate Outgoing Telephone Calls : No phone calls are made from the device, only

indicators on the "mimic" window.

impose the state of the inputs through the "mimic" window.

reports on the terminal.

9: Allow Outputs Control by Mimic : The user can control the relay outputs of the device via the "mimic" window.

8: Simulate Outputs : The device stops to control its relay outputs, informing only the

7: Simulate Inputs : The device stops to check its actual analog inputs. The user can virtually

All the changes that the user does are applied only when the "Apply" button is pressed. Until that moment he can avoid the changes he made with the "Cancel" button.

The connected device operates on the basis of the above settings for as long as it communicates with **GATcomm** and for about 2 seconds after the USB communication stops. It then continues functioning normal.

5.3: The "Mimic" window

This window shows in real time the state of input / outputs. the GSM network and the general status of the connected device.

The items presented are:

1: Inputs. The frame under the name of the input (I1, I2 etc.) presents its binary state. When it is gray and without text,

the input is disabled. When it is yellow and shows the word "SET" the input is activated. However, there are also transitional states, depending on the (adjustable) reaction time of each input. Thus, when the frame is gray and shows the word "SET" the input is currently turned off and will be activated as soon as the reaction time passes. Accordingly, when the frame is yellow but empty (no "SET") the input is turned on and will turn off as soon as the reaction time is over.

On input state simulation (the "7: Simulate Inputs" flag of "Debug Flags" is active), the binary state of each input can be put by the user by clicking on this frame.

The frame below that of the binary state shows the current analog value of the input. When input state simulation is active, the analog value of each input can be set by the user by clicking on this frame. Then a window opens where the user enters the analog value.

2: Outputs. The frame under the name of

each output (**O1, O2** etc.) presents its binary condition. When it is gray and without text, the output is disabled. When it is yellow and shows the word "ON", the output is activated.

When the "8: Simulate Outputs" flag of "Debug Flags" is active, the state of each output is depicted in the window without actually change of the relay output.

When the "9: Allow Outputs Control by Mimic" flag is active, the state of each output can change by clicking on its frame.

01

02







T1

SET

1000

01

12

0

02

13

0

03



3: **GSM state**. The current state of the GSM network appears in this area. This can be:

NO SIM	: No card was detected in the device's micro-SIM slot
-/-	: Off-line
RING	: Incomming phone call
CALL	: Outgoing phone call
SEND	: Outgoing SMS

idle : On-line, idle

4: GSM signal strength bar

5: General status. The current general status of the device appears in this area. This can be:

O.K.: Everything alright, no automation program runningAP:RUNNING: Everything alright, automation program runningERROR #x: Error with code xAP ERROR #x: Automation Program Error with code x!AICAL: Problem with the factory calibration of the analog input	uts
---	-----

5.4: The "Control" window

The "Control" window has various buttons for performing tasks related to the connected device. They are divided in 3 groups:

Parameters / Program group : Transfer of application program to and from the connected device, initialization.

Download : Start (after confirmation) of the download process of the application program from the GAT device to the text editor.



All Param. : When checked, the GAT device will report all the functional parameters (and not just the changed) when the "**Download**" button is pressed.

Auto.Prog. : When checked, after the functional parameters the GAT device will also return the automation program when the "**Download**" button is pressed.

Upload : Start (after confirmation) of the upload process of the application program (located in the text editor) to the GAT device.

Reset: Restores all the programmable parameters of the device to the default settings, erases the automation program and releases non-volatile variables. This command also restores the security code to "**0000**".

Program group : Automation Program execution control.

Start : Start the Automation Program, with reset of the application variables and execution of the Prologue module.

Stop: Pause the Automation Program.

Continue : Continue the Automation Program, without resetting the application variables and without execution of the Prologue module.



Device group :

Ask Status: Sends the **"ST**" query command to the GAT device, and presents the device's answer in a dialog window.

Send SMS: If the editor contains a text up to 160 characters long, a dialog appears in which the user enters the phone number of the message recipient. When the "**OK**" button is pressed, the text will be sent immediately (execution of "SMS" command).

Editor: ex001_TN_IT_IM.gat_prog

Restart : Firmware restart of the connected GAT device.

5.5: The Editor window

This is the text processor used for the GAT application programs development.

The basic sections shown in the image are the following:

1: Menu bar. All the functions that can be performed in the editor are here, through the "File", "Edit" and "Settings" menus. File Edit Settings \bigcirc of P (B) P R Ϋ́́ New Open Save Redo Cut Copy Paste Find Replace 3.5 seconds IT 2 35 ;Input #2 reaction time: IT 3 50 ;Input #3 reaction time: 5 seconds IM 1 1 ;Input #1 event Messages go to client #1
"In.t #1 Activated" ;Activation message
"Input #1 Deactivated" ;Deactivation message 3 IM 2 2 ; Input #2 event Messages go to client #2 "Input #2 Activated" ;Activation message "Input #2 Deactivated" ;Deactivation me ;Deactivation message IM 3 9 ;Input #3 event Messages go to all clients "Input #3 Activated" ;Activation message "Input #3 Deactivated" ;Deactivation me ;Deactivation message [IM] occurs 4 times No Errors 5 FUNCTION SETUP : Input event 4 Messages 15:2/26 (369/771) Str:132 (51%) 6 7

2: **Tool bar**. Here are buttons for the most regularly used functions:

New: Create a new GAT Application Program file

Open: Open an existing GAT Application Program file

- **Save:** Save a GAT Application Program File
- **Undo:** Undo last action in text editor
- **Redo:** Restore action that was undone (undo the undo)
- **Cut**: Cut selected text to the clipboard
- **Copy:** Copy selected text to the clipboard
- Paste: Paste text on the clipboard at the position of the cursor
- Find: Find text
- **Replace:** Find and replace text

Apform: Format (beautify) of Automation Program Text

Fpwiz: Open the Functional Parameters Wizard window

3 : Text area. The text editor has syntax control with text coloring and supports comments as aid to create comprehensible programs.

4: **Program item information**. Helpful information about the text close to the cursor.

5: Error information. Information about the errors detected in the text.

6: Cursor Position / Text statistics. Elements appear in format cl: cc/tl (co/tt) where cl = cursor line, cc = cursor offset in line, tl = total number of text lines, co = cursor offset in characters, tt = total number of characters.

7: Message statistics. Number of characters in messages texts.

5.6: The text editor Menus <u>5.6.1: File menu</u>

This menu contains functions relative to GAT Application Program files handling.

New : Create a new GAT Application Program file.

Open: Open an existing GAT Application Program file.

Save : Save a GAT Application Program File.

Save As...: Save a GAT Application Program File with a new name.

Quit : Close the text editor window.

Recent Files : Opens a sub-menu for access to the 8 recent GAT Application Program files.

D

5.6.2: Edit menu

This menu contains functions relative to text editing.

Undo : Undo last change on text.

Redo : Restore action that was undone.

Copy : Copy selected text to the clipboard.

Cut : Cut selected text to the clipboard.

Paste : Paste text on the clipboard at the position of the cursor.

<u>F</u> ile	Edit	Settings	
Π		Undo	Ctrl+U
New		Redo	Ctrl+Shift+U
		Сору	Ctrl+C
		Cut	Ctrl+X
		Paste	Ctrl+V
		Find	Ctrl+F
DO		Replace	Ctrl+R
		Automation Program Format	CTRL+M
		Function Parameters Wizard	Ctrl+P

; the current	Find: DOOR	
	Replace with: WINDOW	
E O NING 1	<u>₩</u> hole <u>Qase</u> Found: 14 <u>≤</u> < 9 >>	
D 2	Replace Replace All C	lose
SING 3		

Find : Open a dialog window to find text in the editor.

Replace : Open a dialog window to find and replace text in the editor.

Apform : Format (beautify) of Automation Program Text. **Fpwiz** : Open the Functional Parameters Wizard window.

<u>F</u> ile	Edit	Settings
1	lew	Ctrl+N
<u> </u>	<u>)</u> pen	Ctrl+O
	ave	Ctrl+S
S	ave <u>A</u> s	Ctrl-Shift+S
9	Quit	Alt+F4
F	Recent	Files 🕨

5.6.3: Settings menu

This menu contains some editor operating settings.

<u>F</u> ile	Edit	Sett	ings	
	<u>e</u>	~	Syntax Check	ALT+S
New	Op	~	AutoIndent	ALT+I

Syntax Check : Enables / disables syntax checking. Syntax checking must be active when uploading the program from the editor to the GAT device, but it can be annoying if the editor is used to transfer some other text.

AutoIndent : Enables/disables automatic alignment of text on line breaks.



5.7: The "Function Parameters Wizard" window

This window is opened through the Editor and unlike most windows in the application which are "non-binding", this one binds the user who must close it before dealing with another window. This is because the text in the editor as well as other elements are not allowed to change while this window is active.

When this window is opened and the Editor contains a GAT application program, the window fields are updated by the functional parameter commands contained in the program. The user can edit the fields and transfer the changes to the application program.

The window has four panels that display the settings in structured groups.

In the field descriptions (which are in bold text), the functional parameter command used is in parentheses. For example, in the first panel the **TN** command is used for the list of telephone numbers.

Editor: E	X004_TM	I_IT_OP_AutoProg.gat_p	rog						—		×	
<u>File</u> <u>E</u> dit	Settings										22	
New Ope	n Sav	e Undo Redo	ංද් 📄 Cut Copy	Paste	↓ Find	🔊 Replace	E APform	7 ² FPwiz				
;~ Telep TN 11111111 2222222 3333333	ohone	Numbers list w #1 Administra #2 Mary	vith 8 cl	ients							^	
4444444 5555555 66666666 7777777 88888888	Clients Clients	Inputs Outputs E	rd ktras List (TN)	Add	E	Edit	Remove	e				
;~ Inpu	#	Telephone Numbe	er	Name								1
;~ 11: (1	1111111111		Administra	tor							
11 1 0	2	2222222222		Mary								÷
TT 2 0	3	3333333333		Nick								
:~ 13: 1	4	44444444		John								
IT 3 0	5	5555555555		Tom								2
	6	6666666666		Helen								
;~ Outp	7	7777777777		Caren								
[IT] occ FUNCTION	8	8888888888		Ben								
		Apply	<u>C</u> ancel							C	Close	

The user can configure the fields in all panels based on the needs of the GAT application program he is preparing. To reset the fields to the values they had when the window was opened, he can press the "**Cancel**" button. To apply the changes to the GAT program text, he must press the "**Apply**" button. To close the window, he must press the "**Close**" button.

If, after applying the changes and closing the window, he wants to restore the GAT application program to its previous state, he can press (twice) the Editor's "**Undo**" button.



5.7.1: The "Clients" panel

In the first panel there is the list of "clients" of the application, i.e. the phone numbers that the device must know (**TN** command).

Editor: E	X004_TN	N_IT_OP_AutoProg.gat_prog		- 🗆 X
<u>File Edit</u>	Settings			7/5
New Oper	n Save	e Undo Redo Cut Ca	py Paste Find Replace APform FPwiz	
;~ Telep TN 11111111 22222222 33333337	hone	Numbers list with 8 #1 Administrator #2 Mary	clients	^
4444444	GAT Fu	nction Parameters Wizard		- 🗆 🗙
5555555	Clients	Inputs Outputs Extras		
7777777	Clienca	inputs Outputs Extras		
8888888	Client	Telephone Numbers List (TN)	Add Edit Remove	
;~ Inpu	#	Telephone Number	Name	
;~ 11: (1	1111111111	Client Data	
~ T2: (2	222222222		^
IT 2 0	3	3333333333	Client #2	
- 13: 1	4	444444444	T-1 Mumbur 22222222	
IT 3 0	5	555555555	Tel. Number:	
	6	666666666	Comment: Mary	
;~ Outp	7	7777777777		
[IT] occ FUNCTION	8	8888888888	ОК	Cancel
		<u>A</u> pply <u>C</u> ano	el	Close

There are the buttons "**Add**" for adding, "**Edit**" for editing and "**Remove**" for removing a "client".

The reference to a "client" in the communication functions of the GAT device is made by its index number (1,2,3...) in this list.

The user can enter a comment along with the phone number, e.g. the name of the "client". This is eventually saved as a comment in the GAT Application Program.



5.7.2: The "Inputs" panel

The second panel contains the functional parameters related to the device inputs.

AT Fun	ction Parameters Wiza	ard								- 0
Clients	Inputs Outputs E	xtras								
#	Name OPEN ALLOWED	SMS client #	Activation SMS	Deactivation SMS	Tel. call client #	Reaction Time	Zero Offset	Full Scale 1000	Low Threshold 200	High Threshold 400
2	CLOSE ALLOWED				0	0	0	1000	200	400
3	ENABLE				0	0	0	1000	200	400
4					0	10	0	1000	200	400
5					0	10	0	1000	200	400
6					0	10	0	1000	200	400
7					0	10	0	1000	200	400
8					0	10	0	1000	200	400
leacti	ation causes Teleph	one Call (TCI) to	Client # None	~						
nput	reaction Time (IT)	(AIC) Zero Off	=0.02 seconds	Full Scale: 1000	0V:0, 10V:1	000				
Analog	g Input value Three	holds (AIT) "L	ow" if value<= 200) "High" if y	value>= 400]				
	Apply	Cancel								Close

Here is a list with one line per input, ie 4 lines for the GAT-1 device and 8 lines for the GAT-2 device.

To edit the attributes of an input, the user must select the corresponding line in the list. The fields below the list are instantly updated with the input's current settings and can be edited by the user. Changes are automatically transferred from the fields to the list.

The name field of the "**Name:**" input is optional and is used for application program clarity.

This is followed by a group of three fields, which determine whether a change in the binary state of the input will cause an SMS message to be sent to any or all "clients" (**IM** command).

The recipient field gives the options "**None**", **1..8** for a specific "client" and "**All**" for everyone in the list.

Following are the fields with the texts sent on activation and deactivation of the input. If a text field is empty, this means that the corresponding message is not sent.

Next is the field that defines whether the activation of the input will cause a telephone call to any or all "clients" (**TCI** command).

Then we have the field that adjusts the reaction time of the input (**IT** command), two fields that serve to calibrate the input (**AIC** instruction) and finally two more fields that adjust the thresholds of converting the analog value of the input to its binary state (**AIT** instruction).



5.7.3: The "Outputs" panel

The third panel contains the functional parameters related to the device outputs.

GAT Fun	nction Parameters Wiza	rd			- 0	×		
Clients	Inputs Outputs E	xtras						
#	Name	Activate SMS	Deactivate SMS	Activate with Call	Pulse Mode			
1	DOOR ACTIVE			0	0			
2	DOOR OPEN			0	0			
3	DOOR CLOSE			0	0			
4	DOOR FAULT			0	30			
Outpo Act Deact	ut Control with SMS	S command (OC) Call (TCO) from Client	# None ~					
Output Pulse mode (OP): 30 seconds								
	Apply	<u>C</u> ancel			Close			

Here is a list with one line per output, ie 2 lines for the GAT-1 device and 4 lines for the GAT-2 device.

To edit the attributes of an output, the user must select the corresponding line in the list. The fields below the list are instantly updated with the output's current settings and can be edited by the user. Changes are automatically transferred from the fields to the list.

The output name field "Name:" is optional and is used for application program clarity.

A group of two fields follows, specifying the SMS messages the device can receive to turn the output on and off (**OC** command). If a text field is empty, it means that there is no special message for that action on that particular output.

Next is the field that defines whether the output will be activated by a phone call from any or all "clients" (**TCO** command).

The last field defines whether the output is pulsed, i.e. it turns on for a certain time and then turns off (**OP** command).

5.7.4: The "Extras" panel

The fourth panel contains parameters that set communication elements and some notification functions.

GAT Function Parameters Wizard -		×
Clients Inputs Outputs Extras		
Command Confirmation Mode (CM) 1: Confirmation with SMS to Sender		~
SMS Header (HD)		
GSM status Report (GR) When signal is lost, set Output # None ~ On restore send SMS to Client # None ~	 	
Restart Report (RR) Send SMS to Client # None ~		_
Telephone Call Answer mode (TCA) Client # None ~		_
Telephone Call Duration (TCD) 15 ★ seconds		
<u>Apply</u> <u>Cancel</u>	Close	

The first field sets how the device software will respond to commands it receives via SMS (**CM** command).

The second field sets whether the SMS messages sent will have a "header" (**HD** command), i.e. a text that will precede any text sent by the GAT device.

The next 2 fields enable alert functions, which are useful for diagnosing problems.

The first of these concerns the possibility for the device to notify in case of network loss (**GR** command).

The next field is about the ability for the device to notify when it restarts (**RR** command).

The next field defines whether the device will answer any or all "clients" with a phone call when it receives a phone call from them (**TCA** command). This feature is an inexpensive way to confirm that the device is working properly (phone calls are unanswered).

The last field defines the duration of an outgoing telephone call (**TCD** command).



5.8: The "Variables Watch" window

Variab	les Watch		×	5.7
Wate	h 🗹 Active			A second
ilters:	Used in AP	Checked	system	· ····································
Check:	Sel	All	None	
* Na	me	Value		
* B1		0		
* B2	1	0		
* B3	l .	0		
* GS	т	0		
* MS	R	0		
* N1		25		
* N2	1	120		
* TC	1	0		
* TC	R	0		
* TE	1	0		
	Do	puble-click or ght click to c	n line to toggl hange present	e check ation

This window is used to monitor device Automation Program and system variables. It is useful when testing a GAT application program to help debug and confirm the operation of the program running on the connected device.

In the upper section there is the "**Active**" field. When checked, **GATcomm** updates the values of selected variables in the list at regular intervals. The refresh rate is shown by the color change of the "**Watch**" indicator.

The window only updates variables that are selected and visible in the list. Attention must be paid to the number of variables depicted. With a large number of variables, some burden on the response speed of both the **GATcomm** application and the connected GAT device can be observed.

In the second row there is a line with three more fields, that filter the variables shown in the list.

With "**Used on AP**" the variables used in the automation program can be displayed and with "**Checked**" only the "selected" variables are displayed. "**system**" displays low-level system variables and is only used in rare cases to debug the device firmware.

Right-clicking on a variable can change its representation between decimal number, hexadecimal byte, binary byte and string.

5.9: The "Language Help" window

This window acts as a quick reference manual for all the elements, i.e. the commands and symbols used in programming the GAT device.

Language Help: GA	r-2_v1_0	×
Category: FUNCT:	TON SETUP V Follow Editor	✓ OnTop
SC TN CM HD GR RR IM IT AIC AIT OC OP TCI TCO TCA TCD RTC APR RS OA OD SMS ST ID FP V	CATEGORY: FUNCTION SETUP TOKEN 'IM':Input event Messages SYNTAX: IM nl n2 s3 s4 nl: (range:18) Input # n2: (range:19) Client # to send message (9: send to all clients) s3: (0150 characters) Input Activation message s4: (0150 characters) Input Deactivation message By activating this feature for Input n1, the device sends the definee messages to the client(s) described by n2, every time a state change (with a corresponding message defined) is detected on the input. Examples: 1) To send a message to client #2 every time Input #1 is activated: IM 1 2 "Input #1 activated" "" 2) To send a message to client #2 every time Input #3 is activated on deactivated: IM 3 2 "Input #3 activated" "Input #3 deactivated"	d v v

The title of the window shows the name of the description file that is loaded.

On the first line there is a list titled "**Category:**", where the user can select the category of the displayed items.

Next to it is the "**Follow Editor**" option, which when checked causes this window to provide automatically information about the text element closest to the Editor's cursor.

On the right is the "**OnTop**" option, which when checked prevents the window from being overlapped by other windows.

Below and to the left is the list of items, filtered by the "**Category:**" selection.

The largest part of the window is occupied by the description text of the element selected on the left.

The first and second rows show the category and a brief description of the item.

The third row shows the syntax of the element.

In the case of a command or function, the possible parameters are shown. Parameters are denoted by one or two letters indicating the type, followed by a number indicating the position of the parameter. For example, **n1** means that the first parameter is a number and **n2** means that the second parameter is also a number. If the notation is enclosed in square brackets [] then the parameter is optional or conditionally present. For example, **[n2]** means the second parameter is optional.

The type and range for each parameter are explained in the comment that follows it.

Following is a detailed description of the component and one or more examples of its use.