PGA VoIP

4G MOBILE NETWORK GATEWAY EQUIPMENT FOR ELEVATORS

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GENERAL WARNINGS

GENERAL REMARKS

Pay close attention to the warnings in this section as they provide important information for safe installation, proper use, and proper maintenance of the product..

- The device must be used EXCLUSIVELY for its intended purpose, and **ANEP** cannot be held responsible for any damages resulting from improper use..
- Since the product has been designed in compliance with current standards, installation must take place within facilities that are compliant and meet the appropriate standards..
- Before performing any intervention inside or outside the product (cleaning, maintenance, etc.), disconnect the device from the power supply and the battery.
- For any repair intervention, please contact exclusively our after-sales service, SAVTEL..
- Install the product in a well-ventilated area, ensuring that the ventilation openings are never obstructed..
- Do not install the product in a potentially explosive environment..
- Ensure that the product is installed according to the prescribed instructions.
- Do not introduce objects, liquids, or dust, and do not use spray inside the product.
- The packaging materials should not be left within reach of children as they may pose potential hazards.
- To achieve better 4G GSM network reception, install the gateway as high as possible in the building, ideally in high machinery areas, or at the top of the elevator shaft.

ANEP declines all responsibility in the event of malfunction, material damage, or incident resulting from the use of a battery other than that supplied or recommended by **ANEP**.

RECOMMENDATIONS FOR USING NiMH BATTERIES :

The NiMH battery has a lifespan of between **500** and **1500** charge and discharge cycles, or **between 2 and 3 years**.
If the battery life drops by more than 20% (see code 62), it indicates that the battery is reaching the end of its lifespan.

- No overcharging.
- No deep discharge.
- Operating temperature between 10°C and 40°C.
- No long-term storage.

We recommend replacing the battery every 3 years.

CAUTION
Risk of explosion if the battery is replaced with an incorrect type.
Dispose of used batteries according to the instructions.

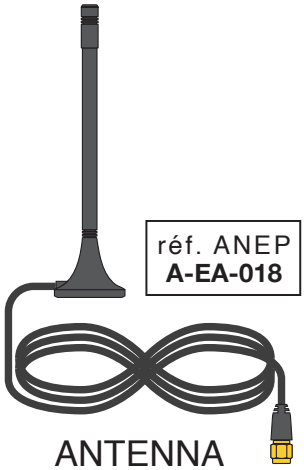
Electrical equipment must be recycled in accordance with Directive No. 2012/19/EU of 04/07/12 regarding waste electrical and electronic equipment (WEEE).

DESCRIPTION

PGA VoIP is a device that, when connected directly to a landline phone or a telealarm, allows making and receiving calls via the mobile network. A **SIM** card is required for operation.

PGA VoIP is equipped with an internal backup battery (to be connected).

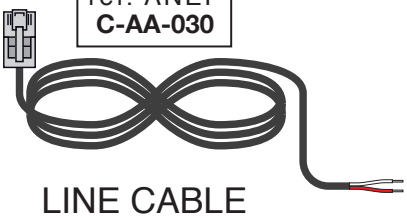
PGA VoIP
GATEWAY



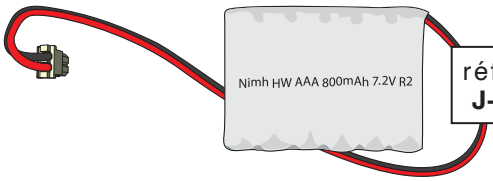
réf. ANEP
A-EA-018

ANTENNA
(2m cable)

réf. ANEP
C-AA-030

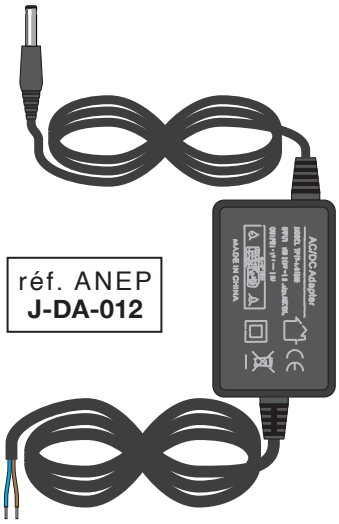


LINE CABLE
(1.5m cable)



réf. ANEP
J-CA-049

BATTERY
NiMH 7,2V 800mAh
(To be connected)

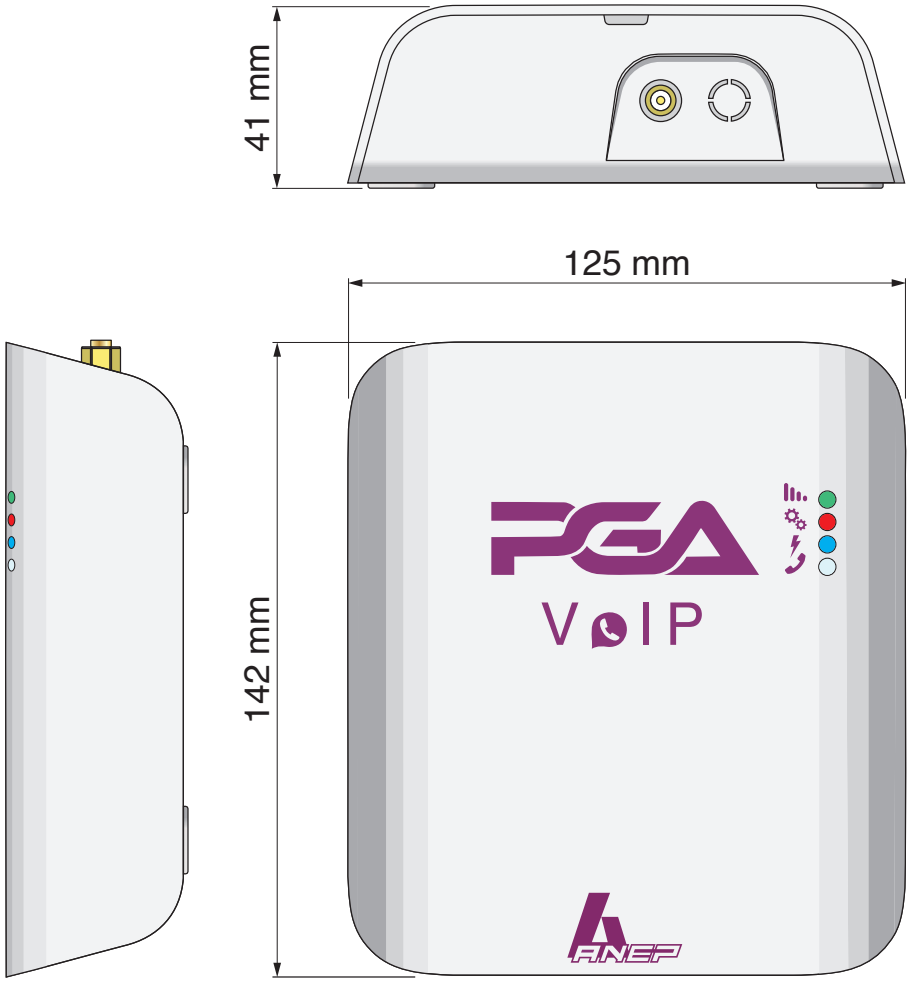


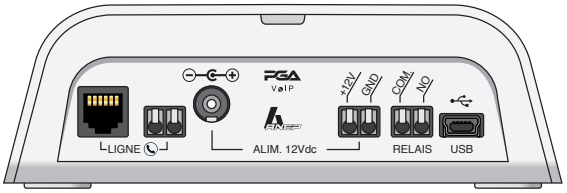
réf. ANEP
J-DA-012

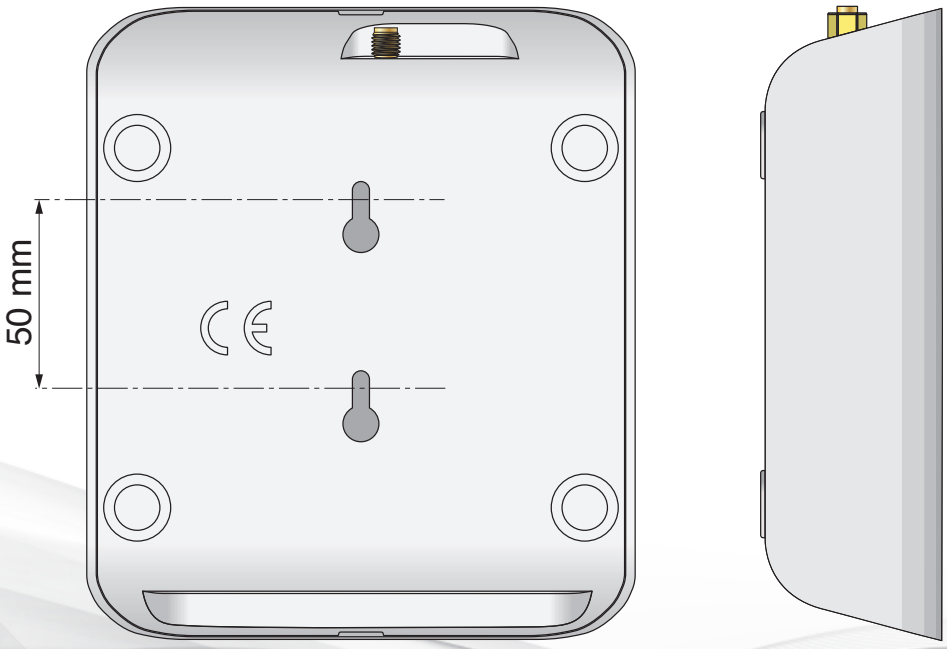
x2 Screws
x2 Dowels
(Supplied)

2-Wire Power Block

réf. ANEP
A-EA-034


41 mm
125 mm
142 mm
PGA
VoIP
ANEP


PGA
VoIP
+12V
GND
COM
NO
LIGNE
ALIM. 12Vdc
RELAIS
USB


50 mm

MAIN FEATURES

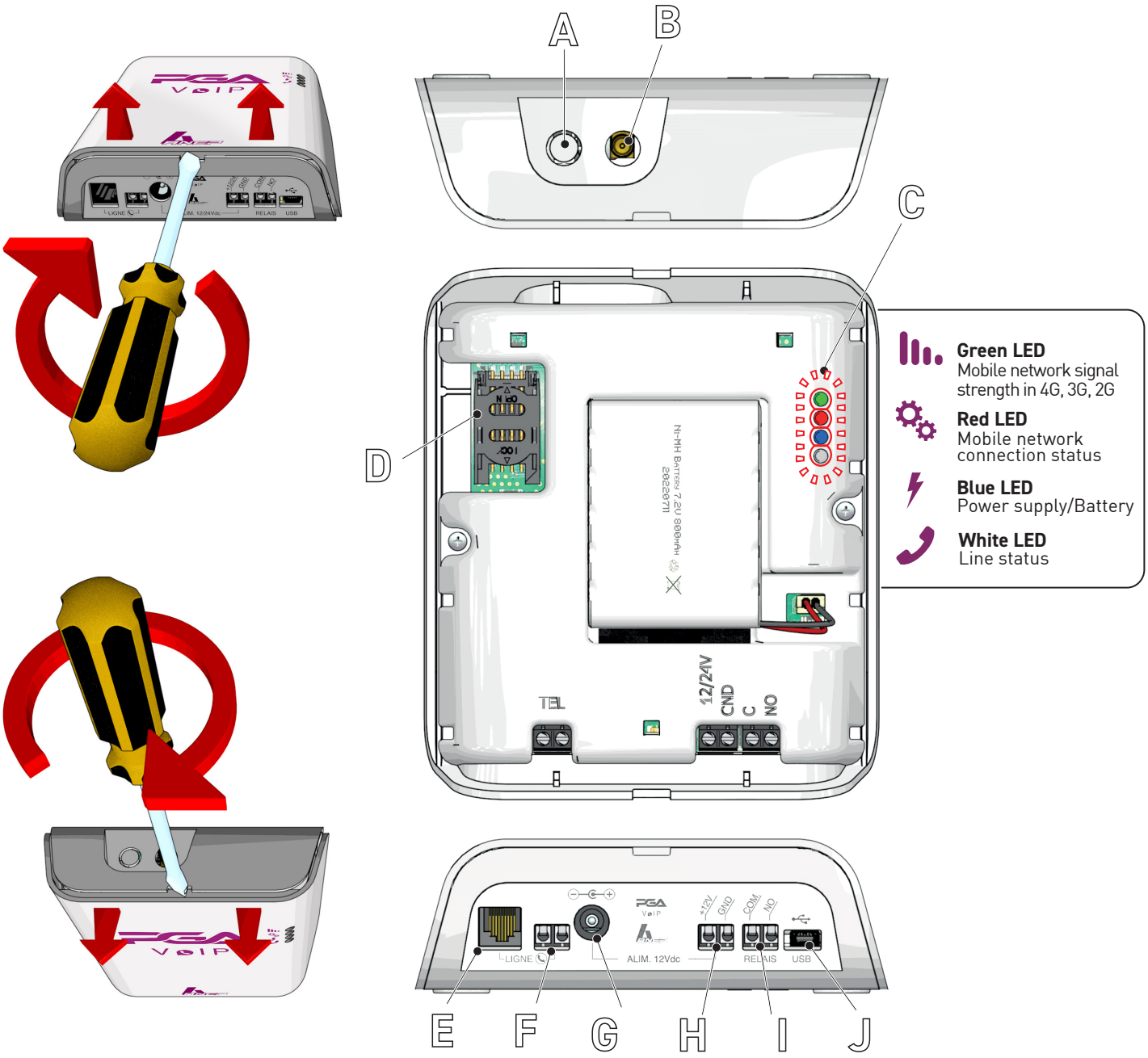
- VoLTE Call: Operator VoIP (voice channel)
- VoLTE IP Call: Operator VoIP (voice channel)
- VoIP Call: G711 Codec, Inband/Outband RFC4733
- Wi-Fi : 2.4 GHz
- Local Programming via a telephone handset or remotely via [SMS / IP]
- Roaming Service Management
- Remote Firmware Update **(with data plan) (Minimum 5 MB)**
- Battery Charge Level Monitoring
- Notifications :
  - Power and Battery Status [SMS / IP]
  - Gateway Status every 15 minutes [IP]
- Power outage under DTMF ANEP protocol
- Fallback :
  - VoLTE Mode: Connection to the 4G network, fallback to 3G/2G (SMS and voice only)
  - IP VoLTE Mode: Fallback to VoLTE mode
  - VoIP Mode: Fallback to VoLTE mode
- Signal level reading for 4G, 3G, or 2G [LOCAL / SMS / IP]
- Automatic converter for the selected number
- Transmission and reception gain adjustment [SMS / IP]
- Wi-Fi hotspot mode
- Remote reset [LOCAL / SMS / IP]
- Mode: Inband / Outband
- Dual Band module (European 4G network)
- Direct 12V DC power input
- External transformer power input 230Vac / 12V DC
- External antenna (cable L = 2m) / (antenna with 10m cable optional)
- External adapter with socket or two-wire (input 230Vac 50 Hz, output 12V DC 1A)
- Dimensions: 142 x 125 x 41 mm
- Weight: 680g (complete package)

LEDS

Green LED :	Mobile network strength in 4G, 3G, or 2G
Red LED :	Mobile network connection status
Blue LED :	Power status
White LED :	Line status

LED STATUS GUIDE, SEE PAGE 41

> Remove the cover by pressing on the upper side.



A Provision for a second antenna
B SMA connector for the antenna cable
C Green LED: 2G, 3G, 4G network reception level
Red LED: mobile network connection status
Blue LED: power status
White LED: line status
D SIM card slot (standard SIM format 2FF)
E RJ11 connector for connecting a landline handset or a telealarm device
F Terminals for connecting a landline handset or a telealarm device
G Connection for external 12V power supply
H Input for power supply via external transformer 230Vac / 12Vdc
I Relay contact output (maximum 125Vac or 60Vdc / 1A MAX.)
J Mini USB output

INSTALLATION

Installation Tips

• The **PGA VoIP** gateway must be installed in a location where the radio signal is sufficient for proper operation (machinery or other, or at the top of the shaft). If it is not possible to access the network with the 2m antenna, ANEP can optionally provide a 10m antenna (ref. A-EA-030) or a 5m extension cable (ref: A-EA-025).

• **The gateway must under no circumstances be installed on the cabin roof.**

• It is important to have enough space around the gateway to optimize maintenance interventions.

• The **PGA VoIP** gateway cannot be installed outdoors as it has not been designed with protection against weather elements (rain, humidity, etc.) that could damage it.

• Do not install the **PGA VoIP** gateway near other electronic devices (radio or TV equipment, computers, broadcast systems, etc.) or magnetic devices (credit cards, tickets, etc.) that may be subject to RF interference from the gateway. The recommended minimum distance is 2.5 meters.

• The **PGA VoIP** gateway should not be installed near medical devices. Its use may interfere with hearing aids or pacemakers.

• Ensure that the use of the gateway is permitted at the installation location. It should not normally be installed in hospitals, airplanes, etc.

INSTALLATION

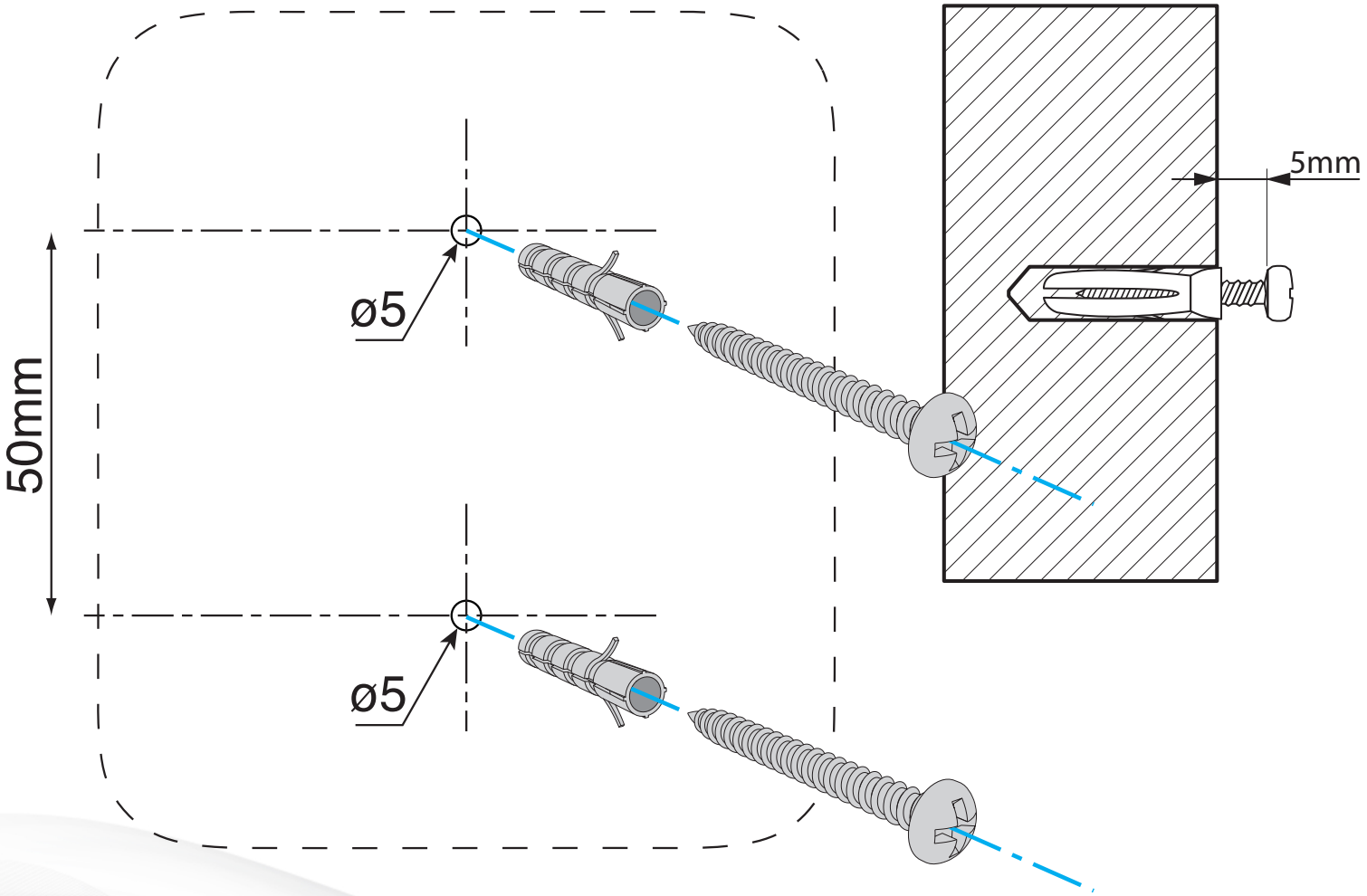
1 MOUNTING

Check the mobile network strength using the green LED network strength indicator (see section "**LED Status Guide**", page 41).

Locate an area where the GSM signal is sufficient; ANEP recommends 3 flashes of the green LED.

Note : *The network may vary depending on the mobile operator.*

- Make two holes with a diameter of 5 mm in the wall, spaced 50 mm apart.
- Insert the two wall plugs and screw the screws until they are 5 mm from the wall.
- Insert the **PGA VoIP** device through the two rear eyelets onto the two screws on the wall.



INSTALLATION

2 SIM CARD

(STANDARD 2FF FORMAT)

The use of M2M SIM cards is recommended for professional applications.

Before inserting the SIM card:

- Make sure to discharge any static electricity.
- The device should be turned off to avoid damaging it.
- If resuming the contract, reset the settings to default (code 9).

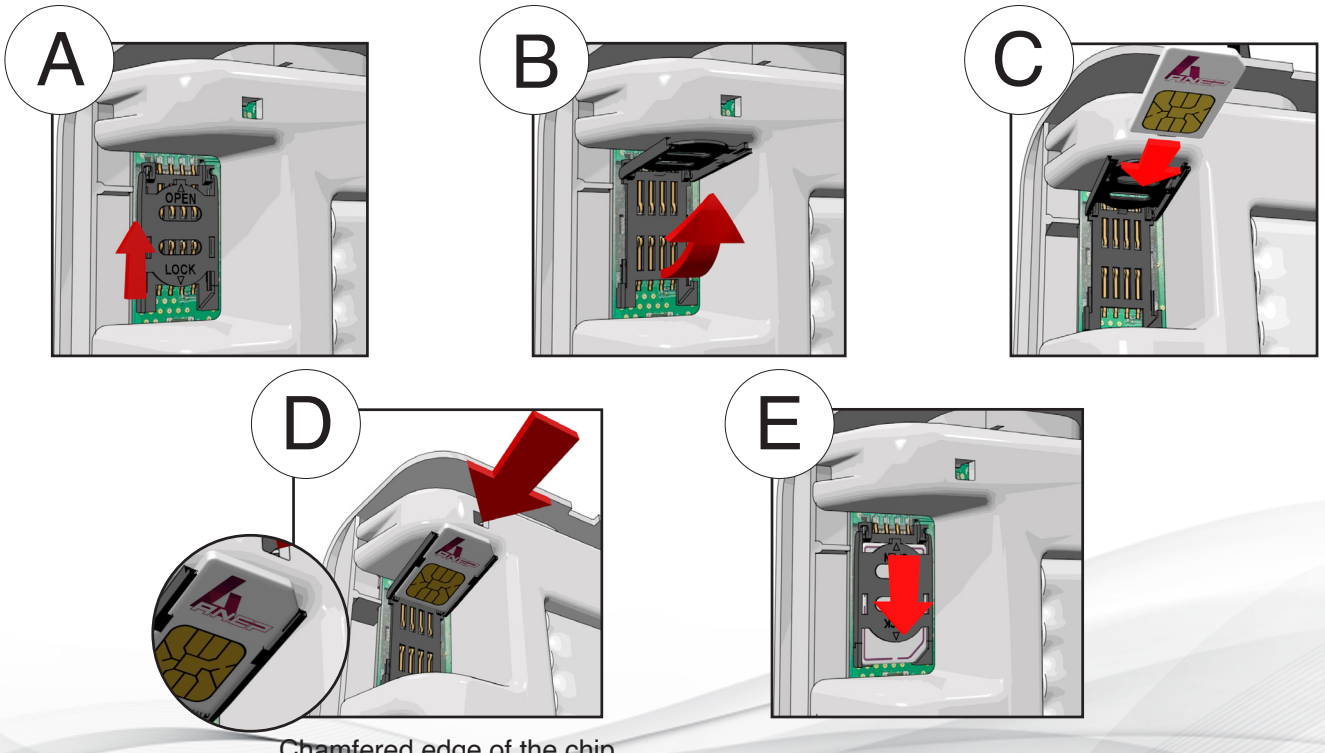
Take all necessary precautions to avoid electrostatic discharges.

WARNING

If the SIM card PIN code is ACTIVATED, please refer to page 35.

(Risk of SIM card locking)

Gently lift the front part of the SIM card slot upwards (until it is unlocked) and then lift it.	Slide the SIM card into the designated slot located on the front part	Lower the front part and push it down until it locks into place.



Chamfered edge of the chip

INSTALLATION (continued)

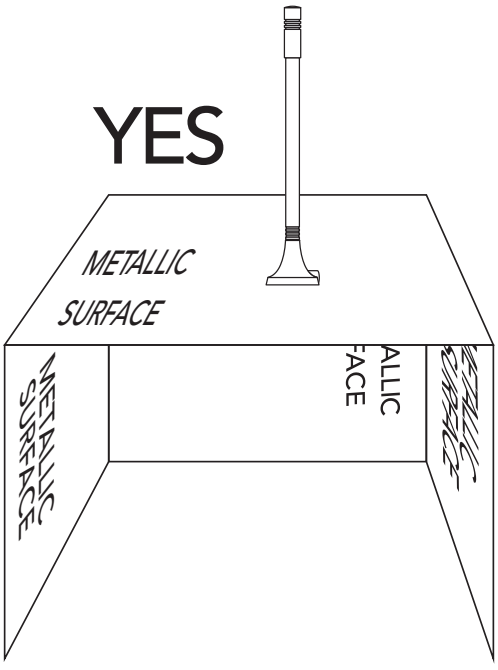
3 ANTENNA

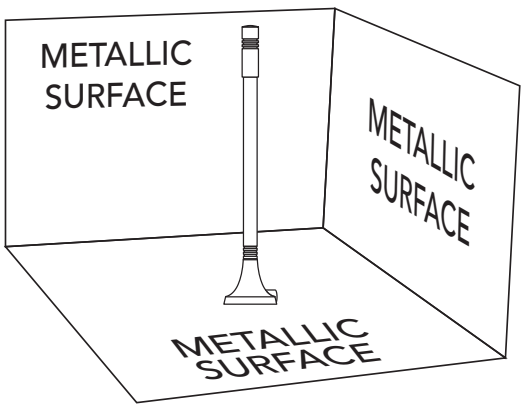
WARNING

To avoid damaging the device, NEVER power on the PGA VoIP gateway without first installing the antenna.

Screw the antenna cable (2m) provided into the SMA connector (**B** in the photo on page 9) while fully extending the cable.

To ensure proper operation of the **PGA VoIP**, place the magnetic base antenna in a location where there are no metallic structures that could block the signal.





WARNING

Do not install the product near other electrical or electronic devices that were not designed to be used with it and could cause disturbances or interference.

INSTALLATION (continued)

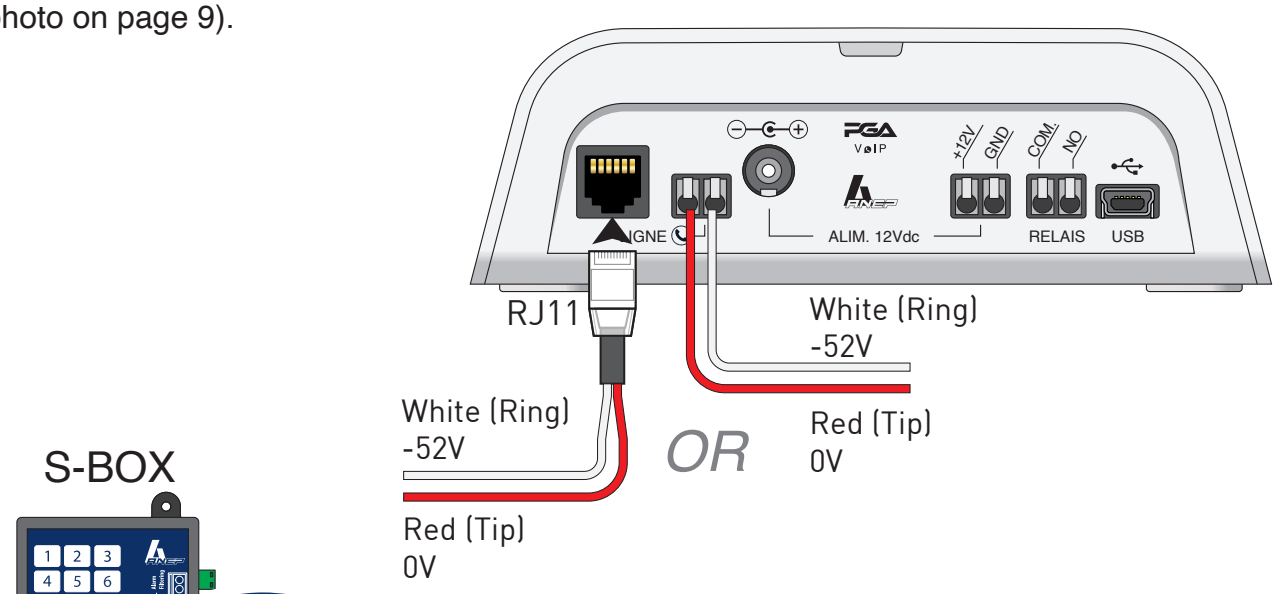
4 TELEALARM

Connect the **PGA VoIP** device to a landline phone or a telealarm via the RJ11 connector (see **E** photo on page 9).

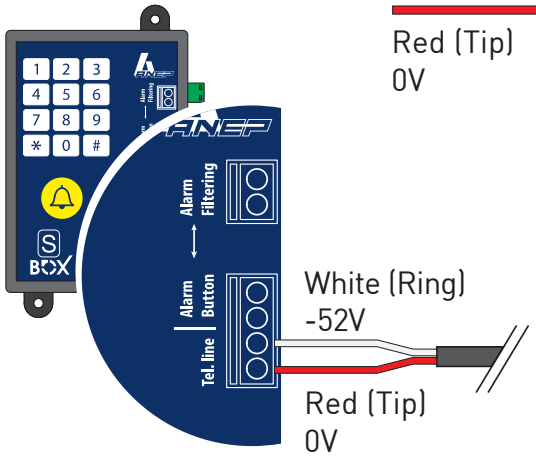
or

Connect the **PGA VoIP** device to a landline phone or a telealarm via the TEL terminal (see **F** photo on page 9).

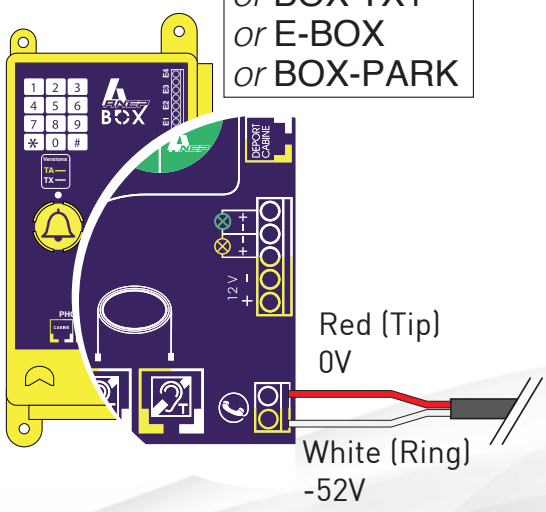
Connection diagram for the ANEP BOX range



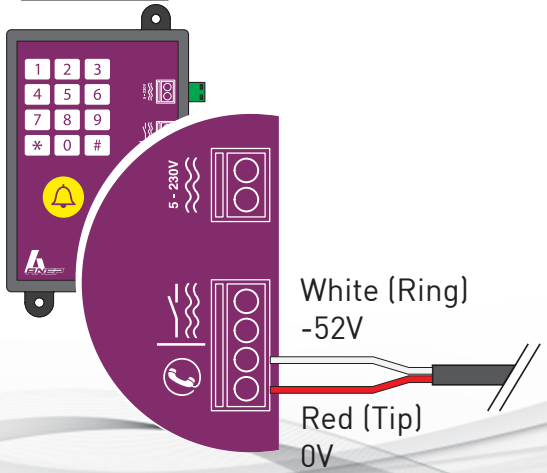
S-BOX



BOX TA
or BOX TA+
or BOX TX
or BOX TX+
or E-BOX
or BOX-PARK

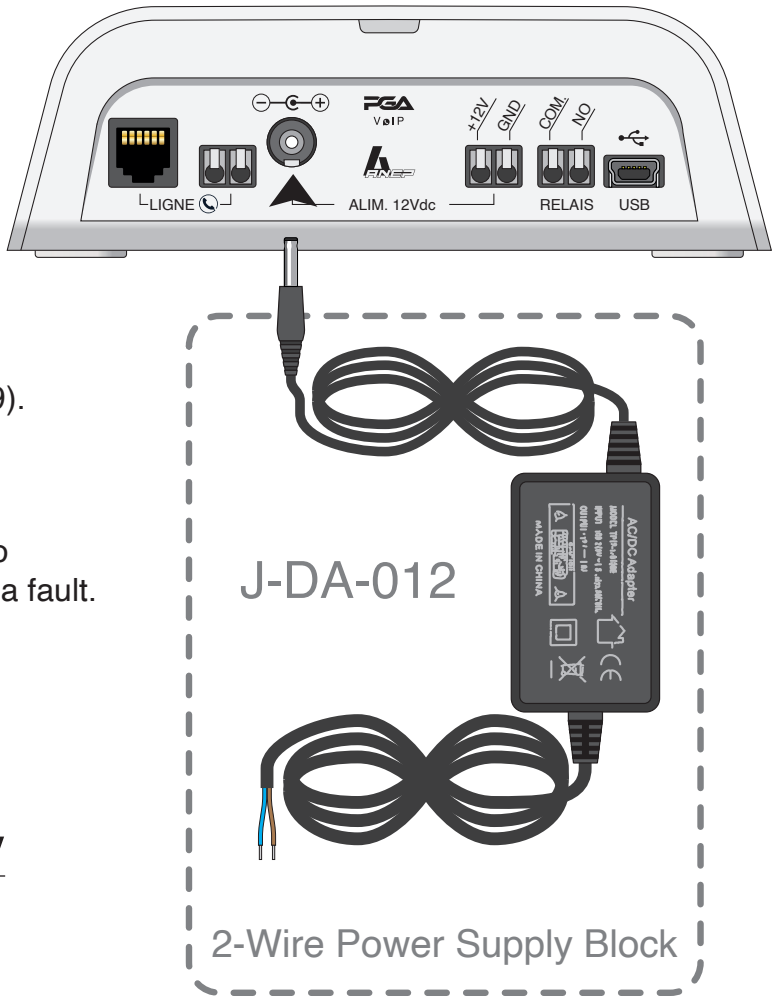


BOX-C



INSTALLATION (continued)

5 Power supply BY TRANSFORMER 230Vac / 12Vdc



Power supply via external adapter 230Vac / 12Vdc on **terminal G**

- Connect the external adapter to the designated **G** input (see photo on page 9).

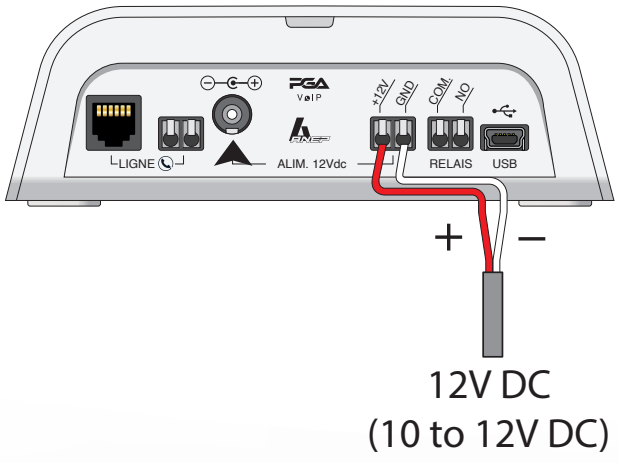
Note : It is recommended to provide appropriate electrical protection upstream of the product, in order to cut off the power supply in case of a fault.

5 OR power supply by direct 12Vdc

Power supply via direct 12Vdc / 1A **(Terminal H)** (see photo on page 9)

- Connect the power cord to terminal **H** (see photo on page 9), ensuring correct polarity.

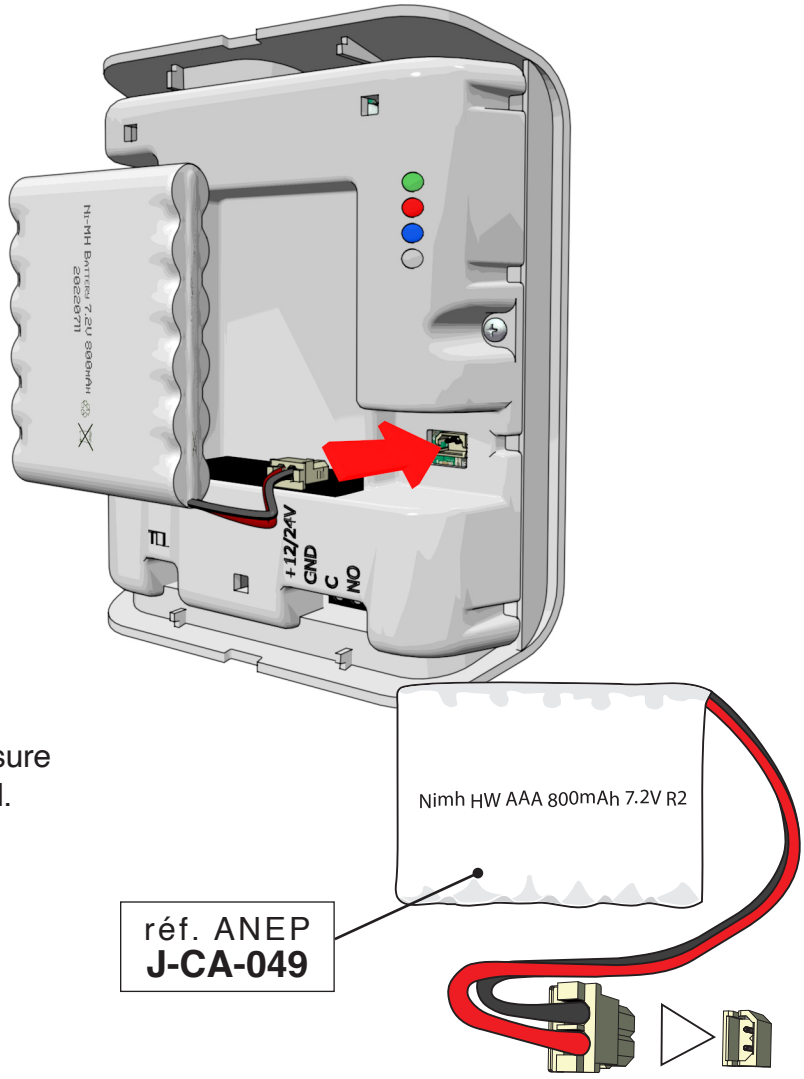
Note : The **maximum** supply voltage that can be provided is **12Vdc**.
The **minimum** supply voltage that can be provided is **10Vdc**.



INSTALLATION (continued)

6 BATTERY

• Connect the battery as shown here.



WARNING

The backup battery must be connected **after** the power supply of the **PGA VoIP**.

• Close the device cover, making sure to be careful with the power cord.

POWER ON

Power the **PGA VoIP** gateway (see page 15).

Wait at least 30 seconds to 3 minutes, or longer, for the gateway to be properly registered on the 4G, 3G, or 2G mobile network.

Make sure that the mobile network connection status LED (RED) blinks rapidly once every 3 seconds, as indicated in the **"Indicators"** chapter (see page 42).

If the red mobile network connection status LED remains on (see page 42), it means the gateway is not properly connected to the 4G, 3G, or 2G network.

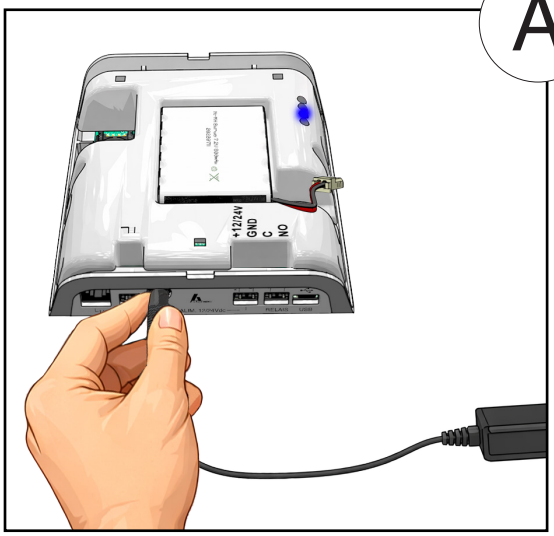
Disconnect the **PGA VoIP** and check that the SIM card is correctly inserted or not blocked by the PIN code.

Also, refer to the **"Troubleshooting"** chapter (see page 45).

INSTALLATION (continued)

7 STARTING THE PGA

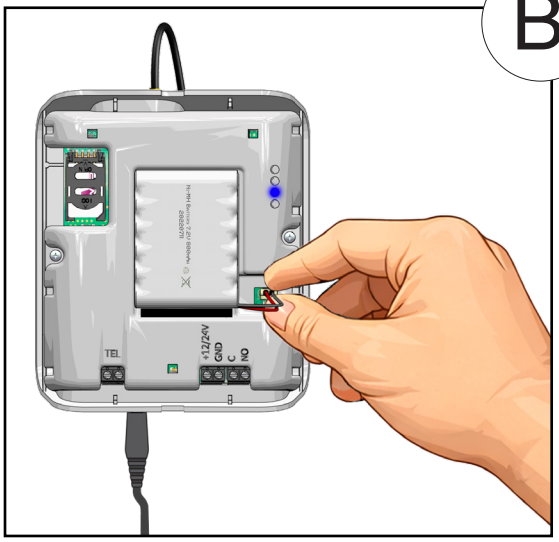
A



After connecting the antenna and inserting the SIM card, the **PGA VoIP** must first be powered from the mains.

The blue LED lights up and remains steady to indicate the presence of the mains power supply.

B



Connect the battery.

The blue LED remains steady to indicate the presence of mains power, then begins to flash to indicate that the connected battery has been detected.

C

A few minutes after the **PGA VoIP** is powered on, the green LED indicating network registration lights up.

With a VoLTE SIM card,
the green LED first remains steady, then begins to flash to indicate the received signal strength.

With a non-VoLTE SIM card,
the green LED flashes to indicate the received signal strength.

INSTALLATION (continued)

8 OPERATING MODE

The default operating mode of the **PGA** is VoLTE. However, the device can be configured to operate in VoIP mode if required.

The red LED is inactive in VoLTE configuration; it is used only to indicate VoIP mode.

The gateway automatically checks for the availability of a new software version every 24 hours.

If the subscription includes access to mobile data and the update is successfully completed, the gateway will restart.

BATTERY CALIBRATION

A) Commissioning

- Connect the main power supply.
- Connect the battery.

B) If ANEP product (Instruction 11 enabled by default)

When the battery is installed for the first time, the gateway performs a battery level learning phase.

During this phase, as long as the telephone line tone is not stable and continuous, the gateway cannot operate on battery power alone.

⚠ It is recommended to leave both the main power supply and the battery connected for at least 5 to 10 minutes minimum. If the mains power is disconnected too quickly, the gateway will shut down, indicating that the learning phase is not yet complete.

End of the learning phase

When the learning phase is complete, the tone becomes stable and continuous.
If the battery is low, the ANEP emergency telephone system will transmit the information to the Call Center.

C) If other manufacturer (Instruction 11 to be disabled)

The battery level is not monitored, and no information will be transmitted to the Call Center.

D) Verification of proper operation

- Disconnect the main power supply: the gateway automatically switches to battery operation.
- In the event of a main power failure, the gateway also automatically switches to battery operation.

PROGRAMMING OPTIONS

No programming of the **PGA** in VoIP mode is required during the initial commissioning.

Each programming command is preceded by a prefix **(AAA)**, defined according to the programming method used.

Handset --> AAA = ✱✱

SMS --> AAA = AN-PGA✱0#

IP --> AAA = conf

PROGRAMMING BY HANDSET

Allows customization of the device according to specific requirements. Programming can be done manually using a multifrequency handset equipped with a keypad.

It is necessary to lift the handset to program.

MAIN PARAMETERS :

- Roaming service configuration
- Warning SMS number
- Administrator number
- Programming password
- Battery charge level control
- Mains power loss control
- Automatic conversion of the selected number
- Receiver gain adjustment
- Transmitter gain adjustment
- Front-end call number
- Gateway identifier number

For the other parameters, refer to the "Programming Instructions" tables.

(Handset column ☑)

Note : During programming, there must not be more than 5 seconds between each digit. After 5 seconds without input, a warning tone will sound, and it will be necessary to hang up.

Note : At the end of each programming, if it is correct, a confirmation tone will sound. If it is incorrect, an error tone will sound. In all cases, the selection prompt tone will follow, allowing you to proceed with programming and make a call.

Note : It is possible to perform the programming even without a network. After the confirmation or error tone, the no-network tone will follow. You can continue programming or hang up.

The format on the handset must be as follows :

AAAN✱X#

OR :

AAA = ✱✱ --> Start of keypad programming
N --> Instruction
X --> Parameter value

Example Instruction 40, **NETWORK SIGNAL LEVEL MEASUREMENT :**
Reading --> ✱ ✱ 40#

Example Instruction 12, **OPERATION MODE :**
Writing --> ✱ ✱ 12✱X#

SMS PROGRAMMING

SMS programming can be performed from any mobile handset or other device capable of sending SMS.

If the administrator number has been configured, SMS programming is only allowed from this handset number.

A confirmation notification SMS of the programming is sent from the PGA to the number that sent the programming SMS.

ATTENTION

SMS programming may not work if the required format is not followed.

Each programming SMS must contain the password required to access the programming and the codes for the programming tasks to be performed.

The format of the SMS message must be as follows :

Writing : **AAA**✱xxx#N✱X#

Reading : **AAA**✱xxx#NR

OR :

AAA = AN-PGA	-->	Start of the programming string
XXX	-->	Password string (default XXX = 0)
N	-->	Instruction
X	-->	Parameter value
✱	-->	Separator
#	-->	Separator or end of string
R	-->	Character indicating a read operation

Example Instruction 40, **NETWORK SIGNAL LEVEL MEASUREMENT :**

Reading --> AN-PGA✱0#40R

Example Instruction 12, **OPERATION MODE :**

Reading --> AN-PGA✱0#12R

Writing --> AN-PGA✱0#12✱X#

MQTT PROGRAMMING VIA IP

MQTT programming via IP can be performed from the ANEP server or using the ANEP programming web application.

The format of the IP message must be as follows :

Writing : **AAA** N✱X#
Reading : **AAA** NR

OR :

AAA: conf --> Start of the programming string
N --> Instruction
X --> Parameter value

--> Programming code separator character or end-of-string character
R --> Character indicating a read operation

Example Instruction 40, **NETWORK SIGNAL LEVEL MEASUREMENT :**
Reading --> conf 40R

Example Instruction 12, **OPERATION MODE :**
Reading --> conf 12R
Writing --> conf 12✱X#

PROGRAMMING INSTRUCTIONS

Handset --> AAA = ✱✱
SMS --> AAA = AN-PGA✱0#
IP --> AAA = conf

*The factory-set value is indicated **in bold and blue characters.***

Code	Function	Command	Handset	SMS	MQTT IP	Format	Comment	
1	IDENTIFICATION GATEWAY TYPE	Reading	☐	☑	☑	AAA1R	Answer : AN?PGA✱0#1✱ PGA000000000 PGA02.01 PGA00-B EC200AEUHAR01A24M16_01.200.01.200 862997061224485 ATC:4G VoLTE MCC:208 MNC:20 TAC:7530 Cell:7A12504 RSRP:-8 6 RSRQ:-10 OFH #	page 36
2	FORCING PROVISIONING	Writing	☑	☑	☑	AAA2#		
4	RELAY CONTROL	Writing	☑	☑	☑	AAA4✱X#	X from 0 to 1 **0: open** 1: closed	
		Reading	☐	☑	☑	AAA4R		
6	BATTERY STATUS READOUT	Reading	☑			AAA6#	By Handset : 1 BEEP : low battery voltage 25% 2 BEEP : battery average 50% 3 BEEP : Battery good 75% 4 BEEP : Battery 100% charged	page 37
				☑	☑	AAA6R	By SMS : 1 : Battery low 25% 2 : Average battery 50% 3 : Battery good 75% 4 : Battery 100% charged	
7	REMOTE UPDATE	Writing	☐	☑	☐	AAA7#		
8	RESTART (REBOOT)	Writing	☑	☑	☑	AAA8#		page 38
9	RESET FACTORY SETTINGS	Writing	☑	☑	☑	AAA9#		
10	DELAY BEFORE DIALING THE CALL NUMBER	Writing	☑	☑	☑	AAA10✱X#	**X: 2** Delay after which the number will be dialed	
		Reading	☐	☑	☑	AAA10R		
11	BATTERY FAULT TONE	Writing	☑	☑	☑	AAA11✱X#	X from 0 to 1 0 : Disabled **1 : Enabled**	page 19
		Reading	☐	☑	☑	AAA11R		
12	HOW TO USE	Writing	☑	☑	☑	AAA12✱X#	X from 1 à 2 **1 : Tone played by network** 2 : Tone played by gateway	
		Reading	☐	☑	☑	AAA12R		
15	ITINERANCE (ROAMING) (1)	Writing	☑	☑	☑	AAA15✱X✱MCCMNC#	MCC : MCC Code MNC : MNC Code X from 0 to 2 0 : Off **1 : On** 2 : Auto fallback	page 29
		Reading	☐	☑	☑	AAA15R		
16	PERIODIC NETWORK DISCONNECTION	Writing	☑	☑	☑	AAA16✱X#	If enabled, the device disconnects/reconnects to the network (Airplane Mode / exit Airplane Mode). No disconnection will occur while a call is in progress. X from 0 to 1 **0 : Disabled** 1 : Enabled	page 31
		Reading	☐	☑	☑	AAA16R		
17	PERIODICITY OF PERIODIC NETWORK DISCONNECTION	Writing	☑	☑	☑	AAA17✱X#	The interval starts from the gateway startup, if the disconnection function is enabled. X = 1 to 240 h (240 h = 10 days) **Default value: 24 h**	
		Reading	☐	☑	☑	AAA17R		
20	TRANSMISSION GAIN SETTING (2)	Writing	☑	☑	☑	AAA20✱X#	The gain range is from 0 to 36 (expressed in dB) 0 : Very high gain **15 : Medium gain** 36 : Very low gain	page 29
		Reading	☐	☑	☑	AAA20R		
21	RECEPTION GAIN SETTING (2)	Writing	☑	☑	☑	AAA21✱X#	The gain range is from 0 to 36 (expressed in dB) 0 : Very high gain **15 : Medium gain** 36 : Very low gain	
		Reading	☐	☑	☑	AAA21R		

PROGRAMMING INSTRUCTIONS

Code	Function	Command	Handset	SMS	MQTT IP	Format	Comment	
Handset --> AAA = ✱✱ **SMS --> AAA = AN-PGA✱0#** **IP --> AAA = conf**						*The factory-set value is indicated **in bold and blue characters.***		
28	ADMIN HANDSET NUMBER (2)	Writing	☐	☑	☑	AAA28✱X...X✱X...X#	**Warning :** You must include the country code before the phone number. Ex : 33145101304	
		Deletion	☑	☑	☑	AAA28#		
		Reading	☐	☑	☑	AAA28R		
29	PASSWORD PROGRAMMING	Writing	☑	☑	☑	AAA29✱X✱Y✱Y#	**Warning :** 3 digits max Default : **0** X : Old password Y : New password	
35	SOURCE NUMBER AUTO-CONVERSION	Writing	☑	☑	☑	AAA35✱Y✱Z✱Z#	The indexes range from 1 to 10, allowing a total of 10 phone numbers. Numbers dialed by the device that are not recognized are automatically added to the table. This makes it possible to later query the table and identify new numbers. Y: Index value ranging from 1 to 10 Z: Phone number	page 30
		Deletion	☑	☑	☑	AAA35✱Y#		
		Complete erasure	☑	☑	☑	AAA35#		
		Reading	☐	☑	☑	AAA35YR		
36	DESTINATION NUMBER AUTO-CONVERSION	Writing	☑	☑	☑	AAA36✱Y✱Z✱Z#	Y: Index value from 1 to 10 Z: Phone number (destination)	
		Deletion	☑	☑	☑	AAA36✱Y#		
		Complete erasure	☑	☑	☑	AAA36#		
		Reading	☐	☑	☑	AAA36YR		
40	NETWORK SIGNAL LEVEL MEASUREMENT	Reading	☑			AAA40#	Signal Measurement: 1 : Low 2 : Medium 3 : Good 4 : Very Good	page 32
				☑	☑	AAA40R		
43	NETWORK MODE CONFIGURATION	Writing	☑	☑	☑	AAA43✱X#	Network Type Setting: **0 : Automatic** 1 : 2G 2 : 3G 3 : 4G	
		Reading	☐	☑	☑	AAA43R		
50	HANDSET NUMBER FOR NOTIFICATION	Writing	☑	☑	☑	AAA50✱X...X✱X...X#		
		Deletion	☑	☑	☑	AAA50#		
		Reading	☐	☑	☑	AAA50R		
52	HANDSET NUMBER FOR ANEP PROTOCOL	Writing	☑	☑	☑	AAA52✱X...X✱X...X#		
		Deletion	☑	☑	☑	AAA52#		
		Reading	☐	☑	☑	AAA52R		
54	ANEP PROTOCOL IDENTIFIER	Writing	☑	☑	☑	AAA54✱X...X✱X...X#	The identifier corresponds to the transmitter number of the ANEP BOX. **Format: 8-digit numeric** Example: 53104578	
		Deletion	☑	☑	☑	AAA54#		
		Reading	☐	☑	☑	AAA54R		

PROGRAMMING INSTRUCTIONS

Code	Function	Command	Handset	SMS	MQTT IP	Format	Comment	
Handset --> AAA = ✱✱ **SMS --> AAA = AN-PGA✱0#** **IP --> AAA = conf**						*The factory-set value is indicated **in bold and blue characters.***		
58	GSM VOICE DOMAIN PREFERENCE	Writing	☑	☑	☑	AAA58✱X#	X from 0 to 1 **0 : Voice** 1 : Data	
		Reading	☐	☑	☑	AAA58R		
60	BATTERY CHECK	Writing	☑	☑	☑	AAA60✱X#	X from 0 to 1 0: Enabled **1: Disabled**	
		Reading	☐	☑	☑	AAA60R		
62	BATTERY THRESHOLD	Writing	☑	☑	☑	AAA62✱X#	X from 0 to 6 0 : 4H 1 : 3H30 **2 : 3H** 3 : 2H30 4 : 2H 5 : 1H30 6 : 1H	page 33
		Reading	☐	☑	☑	AAA62R		
65	IN-BAND / OUT-OF-BAND MODE	Writing	☑	☑	☑	AAA65✱X#	X from 0 to 1 **0 : IN-BAND** 1 : OUT-OF-BAND	
		Reading	☑	☑	☑	AAA65R		
71	TELEPHONE LINE VOLTAGE	Writing	☑	☑	☑	AAA71✱X#	X from 0 to 1 0 : 36 Vdc **1 : 52 Vdc**	
		Reading	☐	☑	☑	AAA71R		
72	SIM CARD NUMBER	Writing	☑	☑	☑	AAA72✱X#		
		Deletion	☑	☑	☑	AAA72#		
		Reading	☐	☑	☑	AAA72R		
82	PERIODIC TEST CALL NUMBER	Writing	☑	☑	☑	AAA82✱X…X✱X…X#		
		Deletion	☑	☑	☑	AAA82#		
		Reading	☐	☑	☑	AAA82R		
83	PERIODIC TEST MODE	Writing	☑	☑	☑	AAA83✱X#	X from 0 to 1 0 : Voice call 1 : SMS	
		Reading	☐	☑	☑	AAA83R		
84	PERIODIC TEST INTERVAL	Writing	☑	☑	☑	AAA84✱XX#	XX from 0 to 99 1 --> 10 days 11 --> 99 hours **1 (1 day)**	
		Reading	☐	☑	☑	AAA84R		
85	PERIODIC TEST TIME	Writing	☑	☑	☑	AAA85✱HHMM#	HH: Hours, MM: Minutes **The test will occur 15 minutes after power-up**	
		Reading	☐	☑	☑	AAA85R		
87	PERIODIC TEST	Writing	☑	☑	☑	AAA87✱X#	X from 0 to 2 0: Disabled **1 : Enabled** 2 : Forced	
		Reading	☐	☑	☑	AAA87R		
90	GATEWAY TYPE IDENTIFICATION	Reading	☐	☑	☑	AAA90R	**Refer to instruction 1!**	p.36
91	MAIN POWER CHECK	Writing	☑	☑	☑	AAA91✱MMRR#	MM : Delay (in minutes) before detection of main power failure (range: 01 to 99) RR : Delay (in minutes) before detection of main power recovery (range: 01 to 99) **Default value: 0103**	page 34
		Reading	☐	☑	☑	AAA91R		

PROGRAMMING INSTRUCTIONS

Code	Function	Command	Handset	SMS	MQTT IP	Format	Comment
Handset --> AAA = ✱✱ **SMS --> AAA = AN-PGA✱0#** **IP --> AAA = conf**					*The factory-set value is indicated **in bold and blue characters.***		
92	PIN CODE SETUP	Writing	☑	☑	☑	**AAA**92✱X...X✱X....X#	
		Reading	☐	☑	☑	**AAA**92R	
93	PIN CODE ENABLE / DISABLE	Writing	☑	☑	☑	**AAA**93✱X✱YYYY#	X from 0 à 1 **0 : Disabled** 1: Enabled
		Reading	☐	☑	☑	**AAA**93R	
94	CHANGE PIN CODE (7)	Writing	☑	☑	☑	**AAA**94✱XXX✱YYY✱ZZZ#	XXX : Current PIN code YYY : New PIN code ZZZ : Confirm new PIN code
B	PROVISIONING ADDRESS	Writing	☐	☑	☑	**AAA**B✱X#	**ANEP Provisioning** X : http(s):// (Provisioning server address)
		Reading	☐	☑	☑	**AAA**BR	
T	GATEWAY TIME AND DATE RETRIEVAL	Reading	☐	☑	☑	**AAA**TR	

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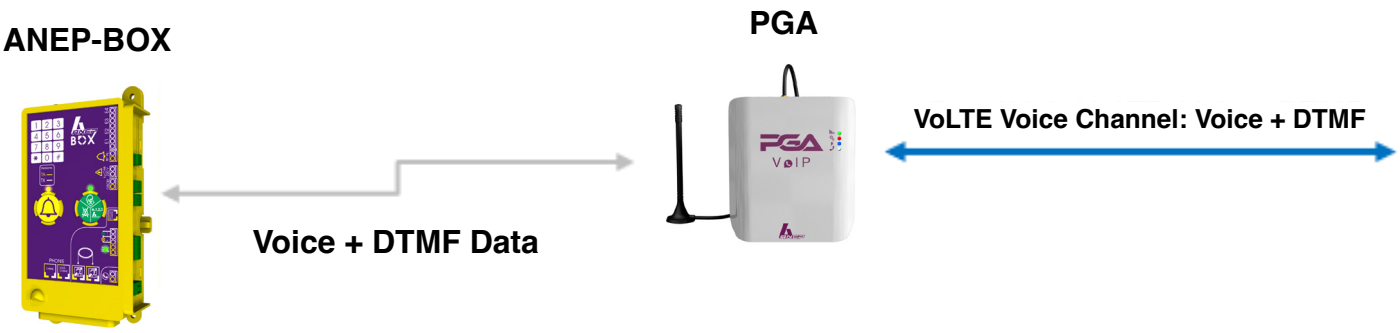
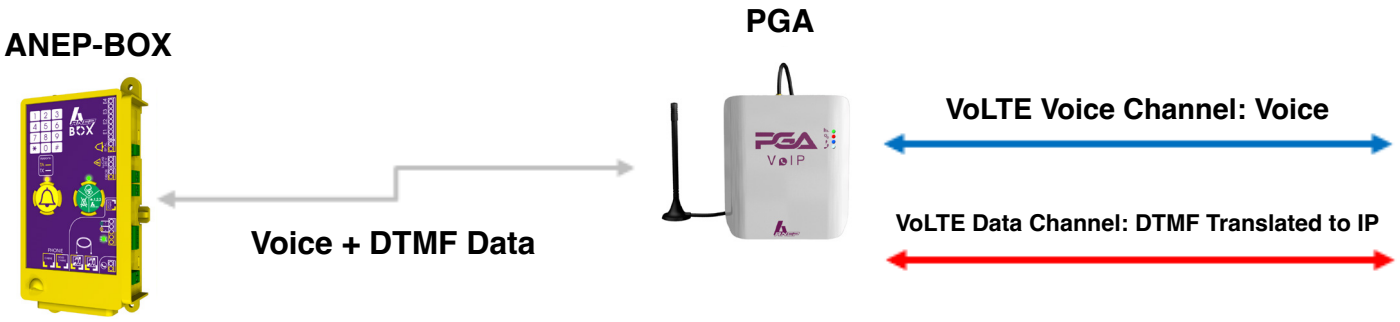
VoLTE / IP VoLTE

By default (factory settings), the gateway operates in 4G VoLTE mode with 2G/3G fallback



By enabling IP VoLTE mode, the PGA gateway converts DTMF signals for transmission over the data channel.



INSTRUCTIONS DE PROGRAMMATION IP VoLTE

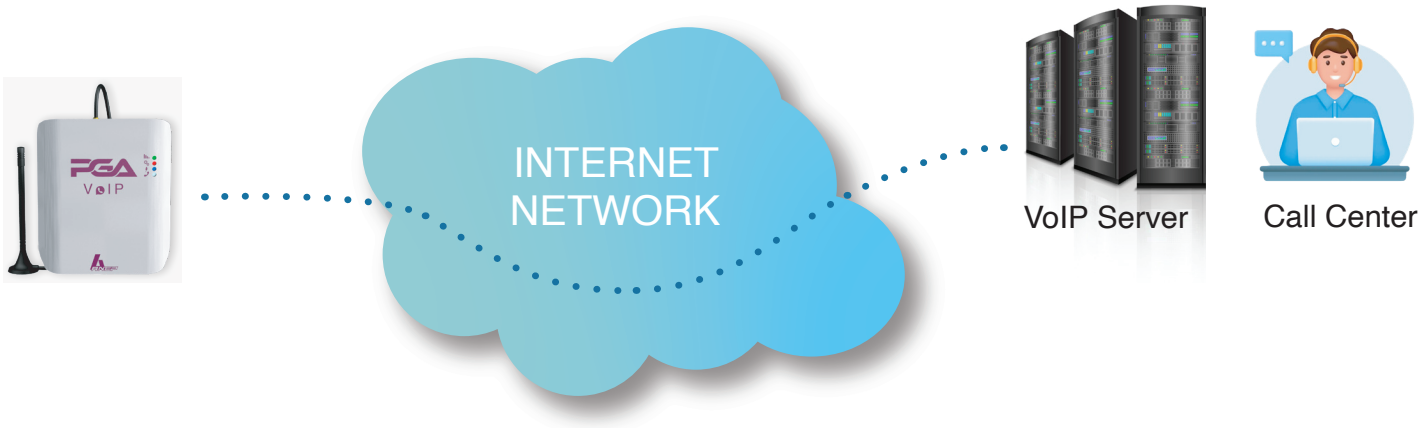
Code	Function	Command	Handset	SMS	MQTT IP	Format	Comment
Handset --> AAA = ✱✱ **SMS --> AAA = AN-PGA✱0#** **IP --> AAA = conf**						*The factory-set value is indicated **in bold and blue characters.***	
CFG	SELECTED APN	Writing	☐	☑	☑	**AAA**CFG✱apn✱ user✱pwd#	C is used for apn name F is used for user G is used for pwd ORANGE ---> AN-PGA✱0#Corange#F#G# ORANGE ---> AN-PGA✱0#Corange.m2m.spec#F#G# BOUYGUES ---> AN-PGA✱0#Cmmsbouygtel.com#F#G# BOUYGUES ---> AN-PGA✱0#Cobjcobytel#F#G# BOUYGUES ---> AN-PGA✱0#CobjcoPprive#F#G# BOUYGUES ---> AN-PGA✱0#Ca2bouygtel.com# SFR ---> AN-PGA✱0#Csl2sfr#F#G# SFR ---> AN-PGA✱0#Cm2minternet#F#G#
		Reading	☐	☑	☑	**AAA**CFGR	
57	TRANSLATION MODE	Writing	☑	☑	☑	**AAA**57✱X#	X from 0 to 2 (Note: option 2 is not functional) **0 : Transparent** 1 : P100 Emulation and data sent to MQTT broker server 2 : DTMF translation handled by the server (not functional)
		Reading	☐	☑	☑	**AAA**57R	
D	SERVER ADDRESS	Writing	☐	☑	☑	**AAA**D✱server#	**ANEP IP VoLTE Server** Server : mqtt://server
		Reading	☐	☑	☑	**AAA**DR	
E	SERVER PORT	Writing	☐	☑	☑	**AAA**E✱port#	**Communication Port: 1883**
		Reading	☐	☑	☑	**AAA**ER	
P	PASSWORD	Writing	☐	☑	☑	**AAA**P✱pwd#	pwd :
		Reading	☐	☑	☑	**AAA**PR	
U	USERNAME	Writing	☐	☑	☑	**AAA**U✱username#	username :
		Reading	☐	☑	☑	**AAA**UR	

VoIP

When connecting to the provisioning server at first power-up, this function can be activated automatically.

Otherwise, refer to the VoIP command table to activate the feature manually.

Note : The gateway switches to VoLTE fallback mode if the VoIP communication fails.



VoIP: End-to-end private IP over an Internet connection

VoIP PROGRAMMING INSTRUCTIONS

Code	Function	Command	Handset	SMS	MQTT IP	Format	Comment
Handset --> AAA = ✱✱ **SMS --> AAA = AN-PGA✱0#** **IP --> AAA = conf**						*The factory-set value is indicated **in bold and blue characters.***	
66	DTMF MODE IN VoIP	Writing	☑	☑	☑	AAA66✱X#	X from 0 to 1 **0: INBAND** 1: OUTBAND
		Reading	☐	☑	☑	AAA66R	
70	VoIP RECEIVE VOLUME	Writing	☑	☑	☑	AAA70✱X#	X from 0 to 100 **50**
		Reading	☐	☑	☑	AAA70R	
73	CALL MODE	Writing	☑	☑	☑	AAA73✱X#	XX = 0, 1, 01 ou 10 0: Modem 1: VoIP **01 = Primary transmission via Modem, fallback to VoIP** 10 = Primary transmission via VoIP, fallback to Modem
		Reading	☐	☑	☑	AAA73R	
74	CODEC	Writing	☑	☑	☑	AAA74✱X#	X from 0 to 1 0: G711U **1: G711A**
		Reading	☐	☑	☑	AAA74R	
75	TRANSPORT LAYER	Writing	☐	☑	☑	AAA75✱X#	X from 0 to 1 **0: UDP** 1: TCP
		Reading	☐	☑	☑	AAA75R	
76	USERNAME	Writing	☐	☑	☑	AAA76✱username#	username:
		Deletion	☐	☑	☑	AAA76#	
		Reading	☐	☑	☑	AAA76R	
77	PASSWORD	Writing	☐	☑	☑	AAA77✱pwd#	pwd:
		Deletion	☐	☑	☑	AAA77#	
		Reading	☐	☑	☑	AAA77R	
78	SERVER	Writing	☐	☑	☑	AAA78✱server#	**ANEP VoIP Server**
		Deletion	☐	☑	☑	AAA78#	
		Reading	☐	☑	☑	AAA78R	
79	PORT	Writing	☐	☑	☑	AAA79✱port#	**Communication Port : 5060**
		Reading	☐	☑	☑	AAA79R	
81	SIP SESSION TIMEOUT	Writing	☑	☑	☑	AAA81✱X#	**300**
		Reading	☐	☑	☑	AAA81R	

(1) ROAMING (ITINERANCE)

MCC : Mobile Country Code

208 : France

212 : Monaco

MNC : Mobile Network Code

01 : Orange

10 : SFR

20 : Bouygues

10: Monaco Telecom

Roaming is enabled by default.

To force the device to connect to a specific operator, you must provide the roaming mode, the MCC (Mobile Country Code), and the MNC (Mobile Network Code). The roaming mode can take two values:

- 0 : In this case, the device will connect only when the specified operator's network is available.
- 2 : In this case, the device will first attempt to connect to the specified operator's network, and if unavailable, will automatically switch to roaming mode.

(2) AIRPLANE MODE

CODE	CODE	
16	**17**	See programming tables via HANDSET, SMS, or IP (MQTT)

These settings allow automatic disconnection and reconnection to the network.

If the Airplane Mode function is enabled, the interval is calculated from the startup of the gateway.

WARNING

The gateway does not power off during network disconnection or reconnection.
The interval is calculated from the startup of the gateway, only if the disconnection function is enabled.

Interval

Adjustable from 1(h) to 240(h)

Default value : 24 h

(3) GAIN SETTINGS

CODE	CODE	
20	**21**	See programming tables via HANDSET, SMS, or IP (MQTT)

These settings allow you to adjust the transmit and receive gain.

WARNING

The default values are optimized for ANEP and P100 DTMF protocols.
Modify them only if absolutely necessary.

Transmission

0 **(high gain)** to 36 **(low gain)**

Default: 15

Reception

0 **(high gain)** to 36 **(low gain)**

Default: 15

(4) AUTOMATIC CONVERTER OF DIALED HANDSET NUMBER (ROUTING AND MAPPING)

CODE	CODE	
35	**36**	See programming tables via HANDSET, SMS, or IP (MQTT)

If the function is enabled, the gateway will redirect the call to a predefined number instead of calling the handset number dialed from the connected device (e.g., telealarm **BOX TA** or another telephone device).

It is possible to predefine up to 10 handset numbers to call. Each of them can be linked through programming and/or activation of the function. Each handset number can be associated, via programming, with a dialed number.

When the dialed number is not associated with any predefined handset number, the call will be routed to that same number. Additionally, it will be stored in the first available slot in the preselection table, with the same number set as both "selected" and "predefined". This allows, when sending command 35 (read selected number slots) via SMS or IP, to identify the numbers dialed by the telealarm device, and thus define the 'predefined' number using command 36.

Note : To activate the "Automatic Converter" service, preselect a handset number.

To deactivate this service, all preselected handset numbers must be deleted.

✱*EXAMPLE : Preselection Table*

Slot	Selected Handset Number (code 35)	Predefined Handset Number (code 36)
1	0123456789✱	0601020304✱
2	0123456790✱	0601020305✱
---	---	---
---	---	---
9	0123456793✱	0601020309✱
10	0123456794✱	0601020310✱

By selecting handset number 0123456789, the gateway will place a call to 0601020304.

By selecting handset number 0123456790, the gateway will place a call to 0601020305, and so on.

When a number that is not listed in the "Selected Handset Number" column is dialed, the gateway will call that same handset number and automatically add it to the first available slot in the preselection table, using the same number as both "Selected Handset Number" and "Predefined Handset Number"

Automatic Handset Number Mapping:

- Enter the number to be called into a table slot using programming code 36.
- Enter the dialed number to be associated into the same table slot using programming code 35.

An SMS containing the dialed number and the preselected number is sent to the administrator's number (if configured) whenever a new association is created..

An SMS is also sent each time a selection different from the 10 predefined entries is made.

(5) SIGNAL LEVEL MEASUREMENT

CODE	
40	See programming tables via HANDSET, SMS, or IP (MQTT)

This procedure allows you to check the signal level of 2G (GSM), 3G (UMTS), or 4G (LTE) via the handset, by SMS, or over IP (MQTT).

Via handset :

- Pick up the handset and dial : ✱✱**40#**
- Wait for the signal level to be announced.

The gateway will emit a number of short tones corresponding to the signal strength :

Tones	Quality
No tone	No signal / No network
1 tone	Low *(non functional)*
2 tones	Medium *(unstable or random)*
3 tones	Good *(recommended level)*
4 tones	High

The signal may vary; we recommend repeating code ✱✱**40#** 2 or 3 times with a few seconds between attempts to obtain a reliable reading.

Note : If the signal is low or medium, we recommend placing the gateway in a different location with better signal reception.

Note : If you receive the "No signal", tone, this means that the gateway has not been properly registred with the network operator.
We recommend trying again after a few moments.

(6) BATTERY ALERT (BATTERY CHARGE LEVEL MONITORING)

CODE	CODE	
60	**62**	See programming tables via HANDSET, SMS, or IP (MQTT)

If low battery monitoring is enabled, the **PGA VoIP** constanly checks the battery charge level.

When the charge level drops below the threshold required to guarantee 3 hours of standby autonomy, a warning message is sent to a pre-registered number.

This information is transmitted either by SMS (by default) or to a **monitoring center (DTMF)**.

See «Signaling of external power faillure or battery charge level via a **monitoring center (DTMF)**.

Transmission via SMS (default) :

The device sends an SMS when the first configured remaining autonomy threshold is reached.
An SMS is then sent at each lower threshold.
For example, if the threshold is set to 3h, the first SMS will be sent when the remaining autonomy drops below 3h.
If the battery is not recharged, the device will send an SMS at 2h30, then 2h, then 1h30, then 1h.

The internal backup batteries ensure 3 hours of standby operation and 1 hour of talk time.

(7) EXTERNAL POWER FAILURE CONTROL

CODE	
91	See programming tables via HANDSET, SMS, or IP (MQTT)

If the external power failure control is activated, the gateway continuously checks the external power supply (230Vac or 12Vdc)

If the power failure lasts longer than the predefined time interval, a notification SMS is sent with the following text message :

«Power Failure Detected»

If the external power is restored within a time interval equal to the predefined threshold, a new SMS is sent with the following text message:

***«Power Failure Resolved»*.**

(8) SIM CARD PROTECTION

CODE	CODE	CODE	
92	93	94	See programming tables via HANDSET, SMS, or IP (MQTT)

WARNING: The PIN code configured in the gateway must match the one of the SIM card, otherwise the SIM may be blocked. However, to prevent the SIM card from being blocked, the device will stop any further PIN code attempts after the first failure. This allows you to insert the SIM card into a handset and still have 2 remaining attempts to enter the correct PIN code.

At device startup, several scenarios are possible :

- SIM card not locked by a PIN code :
  - The device starts normally.
- SIM card locked by a PIN code :
  - The PIN code entered in the device is correct :
    - The device starts normally.
  - The PIN code entered in the device is incorrect :
    - All 4 LEDs turn on solid: refer to the section “Blocked SIM Card.”
  - No PIN code has been entered :
    - All 4 LEDs blink simultaneously: refer to the section “Locked SIM Card.”

Blocked SIM Card
In this situation, it is necessary to insert the SIM card into a phone in order to verify that the PIN code entered in the device is correct.
It is also possible to disable the PIN code.

Locked SIM Card
In this situation, you must enter the PIN code using command 92 :
(✱✱92✱PIN code✱PIN code#)

- If the entered PIN code is correct, the device unlocks the SIM card and starts normally. The PIN code will then be saved in the device, allowing it to automatically unlock the SIM card during the next startup.
- If the entered PIN code is incorrect, the device switches to “Blocked SIM Card” mode.

Activating the PIN Code for the First Time on an Unprotected SIM
If the SIM card is not protected by a PIN code, it is possible to activate the PIN using command 93 :
(✱✱93✱1✱PIN code#)

- If the entered PIN code is valid, it will be saved in the device, allowing automatic SIM unlocking during the next startup.
- If the entered PIN code is incorrect, the device switches to “Blocked SIM Card” mode.

Changing the PIN Code
The PIN code can only be changed when the SIM card's PIN protection is active.
To change the PIN, use command 94:
(✱✱94✱old PIN✱new PIN✱new PIN#)

(9) READING ADVANCED GATEWAY PARAMETERS

CODE

1	See programming tables via SMS and IP (MQTT) only.

This procedure allows you to check the advanced parameters of the device and the **PGA VoIP** GSM gateway.

Send the following SMS to the **PGA** : **AN-PGA✱C#1R**

or :

✱C# is the security code (by default, C = 0)

The **PGA VoIP** will send one or two SMS messages back to the number that made the request, containing the following data:

(10) READING BATTERY STATUS

CODE	
6	See programming tables via HANDSET, SMS, or IP (MQTT)

This procedure allows you to check the battery status via your handset or by SMS reply.

The gateway emits a number of short tones corresponding to the number of guaranteed standby operating hours:

Handset	Standby Hours
No tone	Battery missing or damaged
1 BEEP	Up to 1h30min
2 BEEPS	Up to 2h30min
3 BEEPS	Up to 3h
4 BEEPS	More than 3h30min

SMS, IP	Battery status
No tone	Battery missing or damaged
Battery Low	25% (1)✱
Battery Medium	50% (2)✱
Battery Good	75% (3)✱
Battery Charged	100% (4)✱

✱ *Instruction 6 p.20*

(11) REBOOT (RESTARTING THE DEVICE)

CODE	
8	See programming tables via HANDSET, SMS, or IP (MQTT)

It is possible at any time, via handset, SMS, or IP, to restart the **PGA VoIP** without cutting the power:

Handset : ✱✱8#
SMS : AN-PGA✱0#8#

Note : Restarting the PGA VoIP does not alter its programming.

(12) FACTORY RESET

It is possible to restore the factory configuration at any time using the following code:

CODE	
9	See programming tables via HANDSET, SMS, or IP (MQTT)

The command 9 (Factory Reset) restores all parameters to their default settings.

Handset : **✱✱9#**
SMS : **AN-PGA✱0#9#**

SERVICES

1 - VoLTE

Incoming calls

Allows incoming telephone calls to be answered.

When an incoming call is received, the white LED indicates the line status.

It flashes briefly 4 times every 4 seconds, as described in the chapter “Indicators” (see page 43), and the handset rings.

Pick up the handset to answer the call.

The white LED indicating the line status lights up, and communication with the caller is established.

Outgoing calls (VoLTE)

Allows a number to be dialed on the 4G VoLTE telephone network (3G / 2G fallback).

Pick up the handset; the white LED indicating the line status lights up and the dial tone is heard.

Dial the number you wish to call.

Note: If you hear a reorder tone when picking up the handset, check the 4G signal reception and ensure that the SIM card is operating correctly.

2 - Remote Update

PGA VoIP

→ Checks for updates
→ Every 24 hours
→ Downloads if necessary

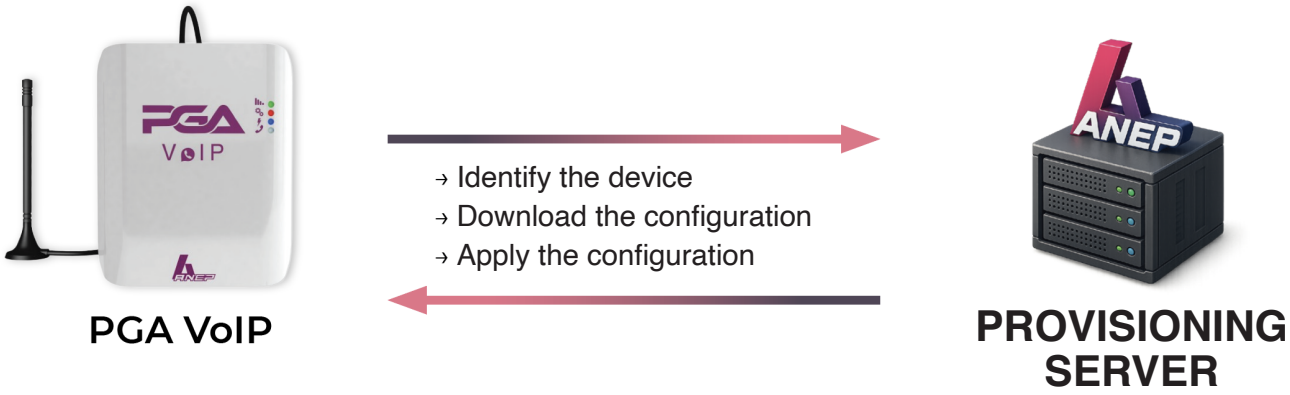
OTA SERVER

Steps

1. **Identification on the OTA server**
2. **Check for available updates**
3. **Minimum data plan of 2.5 MB**
4. **Download and installation of the update**

SERVICES

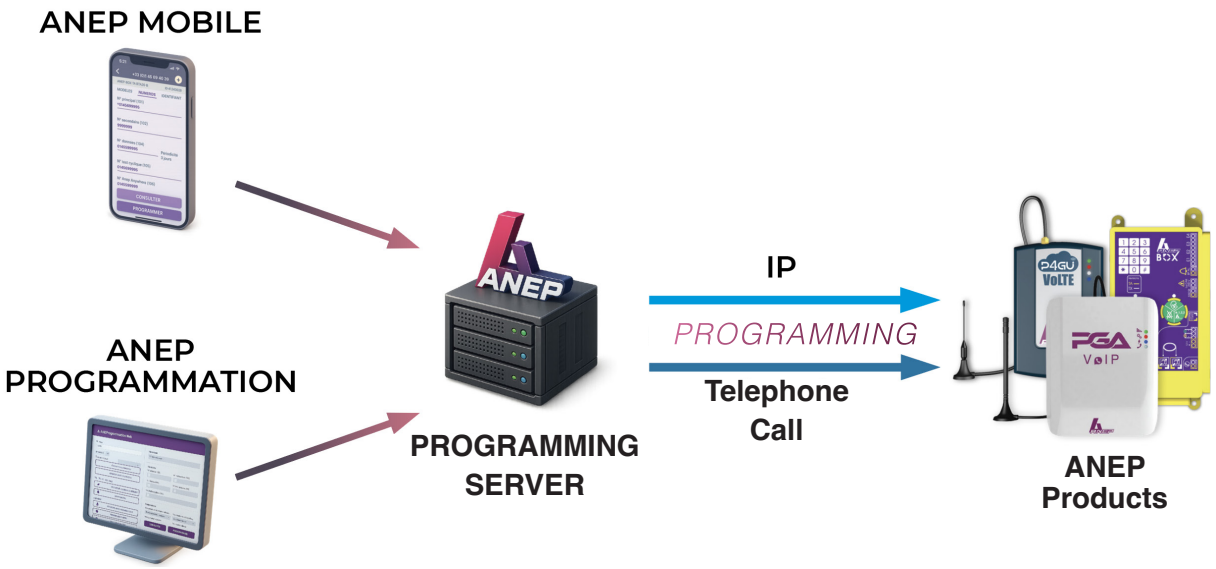
3 - Provisioning



Steps

1. Startup (Power-on / Reboot)
2. Identification on the provisioning server
3. If identified, retrieval of the customer configuration
4. Auto-configuration

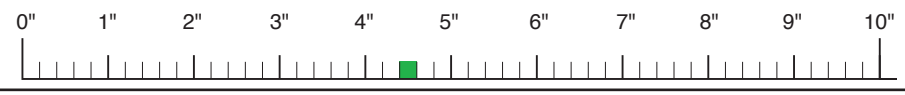
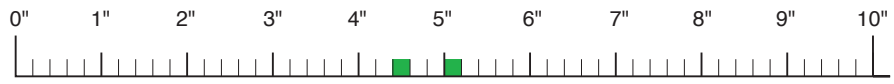
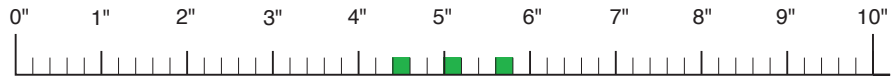
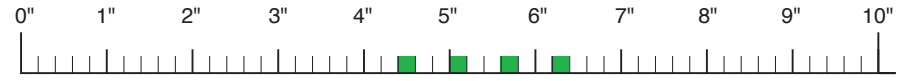
4 - Remote programming via IP or VoLTE



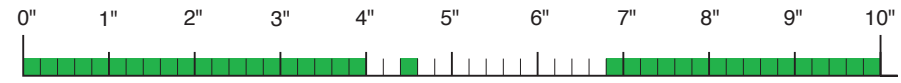
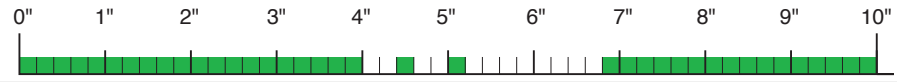
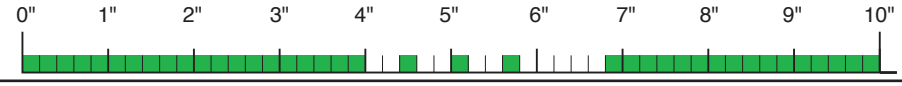
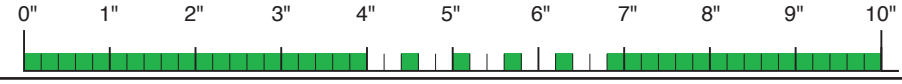
LED STATUS GUIDE

Green LED: Network Signal Strength (Blink every 200 ms)

2G, 3G, 4G (without VoLTE)

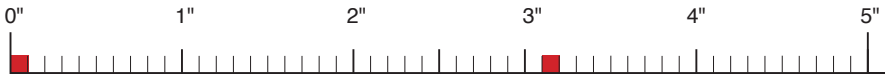
LED Status	Signal
Off	No signal
	Low
	Medium
	Good
	High

4G (with VoLTE)

LED Status	Signal
Off	No signal
	Low
	Medium
	Good
	High

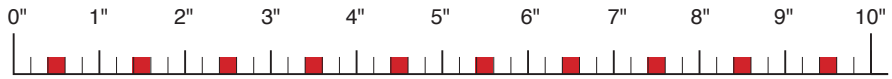
Red LED: Connected to the mobile network (Flashing every 100 ms)

PGA 02.01

LED Status	Connection
On	Disconnected from network
	Registered

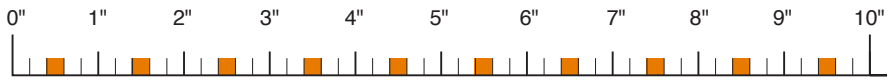
Red LED: Alarm transmission type (Flashing every 500 ms)

PGA 03.01

LED Status	Alarm transmission
Off	2G/3G/4G VoLTE
	MQTT
Steady	VoIP

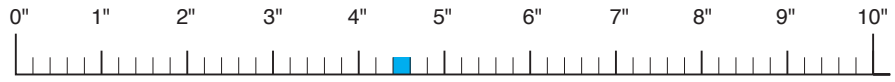
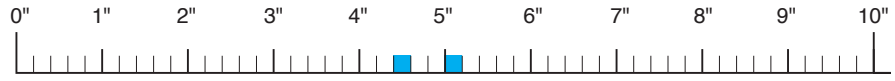
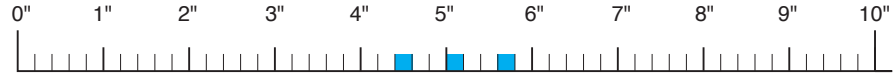
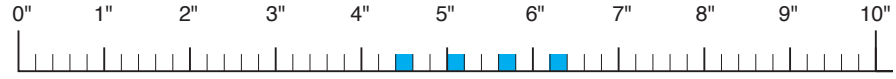
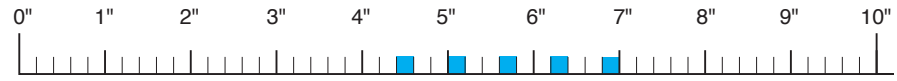
Red LED: Alarm transmission type (Flashing every 500 ms)

Coming soon

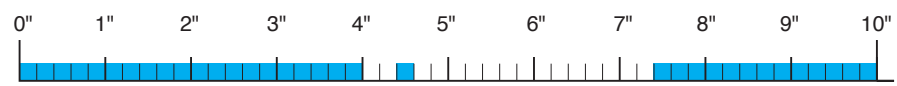
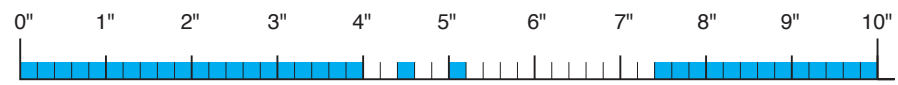
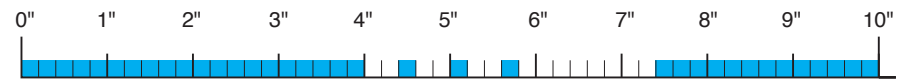
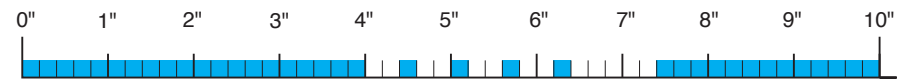
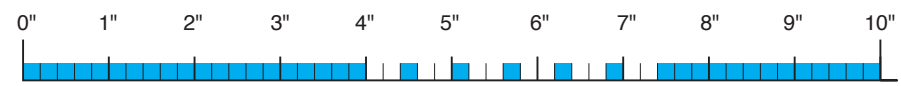
LED Status	Alarm transmission
Off	2G/3G/4G VoLTE
	MQTT
Steady	VoIP

Blue LED: Power Status

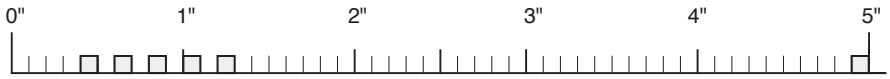
Battery unplugged (100 ms interval)

LED Status	Battery Autonomy
Off	Battery faulty
	Very low : Less than 1h
	Low : 1h to 1h59 min
	Medium : 2h to 2h59 min
	High : 3h to 3h29 min
	Maximum : More than 3h30 min

Mains Connected (200 ms step)

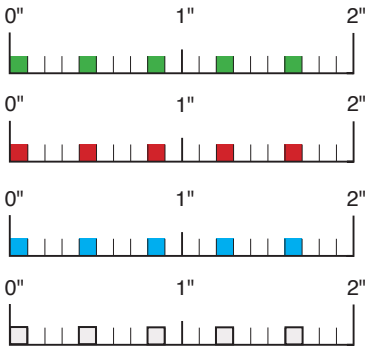
LED Status	Battery Charge
On	Battery damaged or disconnected
	Very low : Less than 1h
	Low : 1h to 1h59 min
	Medium : 2h to 2h59 min
	High : 3h to 3h29 min
	Maximum : More than 3h30 min

White LED: Line Status (Flashing every 100 ms)

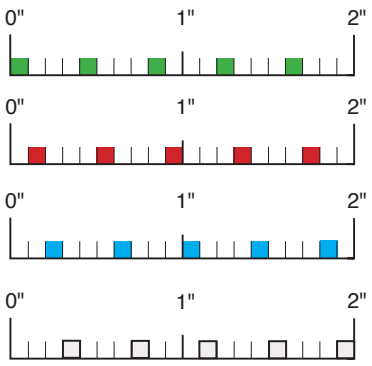
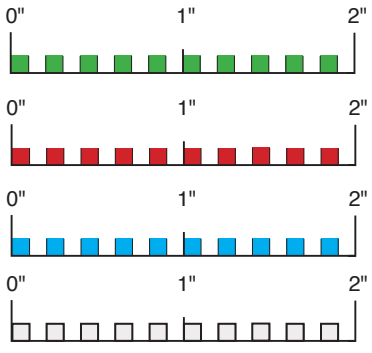
LED Status	Line Status
On	Line busy
Off	Line not picked up
	Incoming call

Special Patterns

PIN Code (Flashing every 100 ms)

LED Statuses	Description
	SIM card locked, 3 attempts remaining
ALL LEDs ON	SIM card locked, less than 3 attempts left (unlock with mobile phone)

Manual Factory Reset (Via Jumper, Flashing every 100 ms)

LED Statuses	Description
	Factory reset warning
	Waiting for jumper removal before reboot

TROUBLESHOOTING

This chapter lists the most common issues that may occur.

Before contacting technical support, please perform these simple checks.

Condition	Possible Causes	Solutions
Device does not start	- No external power - Battery not connected - SIM card improperly inserted	- Check power supply - Check battery connection - Check SIM card insertion
No signal (Green LED off)	- Antenna not connected - Poor reception - SIM card not activated	- Check antenna connection - Improve antenna placement - Contact SIM provider
No VoLTE (Green LED flashing)	- SIM card not VoLTE-compatible - Weak 4G signal	- Using a 4G VoLTE SIM card - Improve antenna placement
No VoIP (Red/Orange LED off or flashing)	- SIM card without 4G data (Min. 5MB)	- Using a 4G data SIM card (Min. 5MB)
Unable to make outgoing calls	- Line is busy - SIM card is blocked	- Try again later - Check SIM card status - Contact mobile operator
Incoming calls not received	- Device restarting or in standby - SIM not registered on the network	- Wait for restart to complete - Check signal and SIM registration
SMS not sent/received	- No network - SMS service not enabled on SIM card	- Check network connection - Contact mobile operator
Abnormal LED flashing	- SIM card locked - Incorrect PIN entered - System error	- Enter correct PIN code (command 92) - Test SIM in a mobile phone - Contact ANEP support
Frequent device restarts	- Power instability - Faulty battery - System error	- Check power supply - Replace battery - Contact ANEP support

NOTES

ANEP applies a method of continuous development, therefore, ANEP reserves the right to make changes and improvements to any product described in this document, without notice.

ANEP cannot under any circumstances be held liable for any loss of data, as well as any particular damage or incident, resulting from poor implementation or non-compliant use of the product.

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ANEP reserves the right to revise this document or withdraw it at any time without notice.

WARRANTY

This product is guaranteed for **3 years** from the date of invoicing of the product, with the exception of batteries and cells which are guaranteed for **6 months**.

However, this guarantee does not apply in the event of:

- Use that does not comply with the instructions in this manual.
- Deterioration from a cause external to the product (act of vandalism, fire, flood, storm, overvoltage...).
- Installation carried out by an unqualified installer not approved by ANEP.
- Modifications or repairs carried out by entities not approved by ANEP.
- Opening of the product by a non-ANEP approved person.

IMPORTANT

Particular care and rigor must be taken in the cabling and connection, in order to obtain the best sound results and optimal reliability of the product.
The equipment must be connected, installed and programmed according to the rules of the trade.

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