



Certificato n. 9110.ESTI

# GSM500

## User's manual

20/03/2024



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# GENERAL INSTALLATION INSTRUCTIONS

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## ***GENERAL NOTES***

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Carefully read the notes contained in this section as they provide important information on safe correct installation, use and maintenance of the product.

- The product must be **EXCLUSIVELY** used for the purpose it was designed for. Esse-ti shall not be responsible for damages arising from improper use.
- The product has been designed in compliance with the regulations in force and must be installed in systems that comply with the provisions of law.
- Always disconnect power supply before performing internal or external operations on the product (cleaning, maintenance, etc.).
- Always refer to an authorized service centre for repair.
- The device must be installed in a ventilated place, making sure that the ventilation slots are never obstructed.
- Do not install the product in environments with risk of explosion.
- Make sure that the product has been installed as required.
- Do not introduce objects, liquids or powders inside the product. Do not use sprays inside the product.
- Packing components (such as plastic bags, foam polystyrene, etc.) must be kept out of the reach of children because potentially dangerous.

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## ***MAKING THE INSTALLATION***

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Internal telephone installations must be carried out by specialised personnel.

The installation and connection of telephone terminals to the telecommunications network that do not comply with the regulations in force is not permitted.

# DESCRIPTION

## *GSM500 GD BASIC/A*

**GSM500 GD BASIC/A** is a gateway that, connected to a fixed telephone or to the PSTN input terminals of a PABX or autodialer, allows you to make and receive calls over the GSM network. For correct operation, a GSM SIM card is required.

## *GSM500 GD/A*

The **GSM500 GD/A** gateway comes with built-in backup batteries.

# Features

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- Local programming via DTMF tones
- Remote programming via SMS
- Display of caller identification
- Automatic country setting
- Clock setting
- CLIR
- Roaming setting
- SIM card expiration check
- Battery check (GD/A version)
- External power failure control (GD/A version)
- SMS notifications (SIM card expiration, low-battery, dead battery, replaced battery, external power failure/restore, GSM network restore)
- Measurement of GSM signal level
- Automatic converter of selected telephone number
- Receiver and transmitter gain adjustment
- Remote reboot function
- Remote firmware update
- GSM signal indicator LED
- Device status indicator LED
- Line status indicator LED
- Power supply status indicator LED
- Quad Band GSM module
- 2 W transmission power
- 12 Vdc power supply input
- 230 Vac external adapter input
- External antenna (cable length = 2 m)
- External adapter (230 Vac 50 Hz input; 12 Vdc 500 mA output; CE mark; only available on GD/A version)

# LED

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The gateway is equipped with 4 outer LEDs.

LEDs flashing is described at chapter “SIGNALS” (see page 32).



Green LED: GSM signal indicator LED



Red LED: Device status indicator LED



White LED: Line status indicator LED

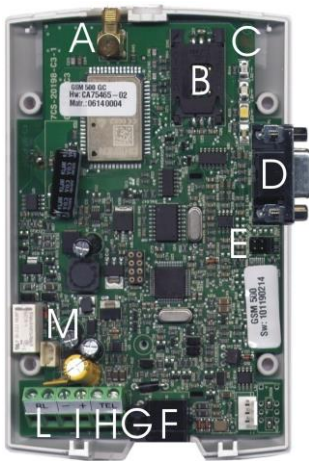


Blue LED: Power supply status indicator LED

## Hardware description

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- Remove the cover by pressing the upper side.



- A ANTENNA cable connector
- B SIM CARD housing with front panel
- C LED indicating signal strength (green), LED indicating device operation status (red), LED indicating line status (white) and LED indicating power supply status (blue)
- D Not present
- E Not present
- F Telephone line output (RJ11 connector) for telephone set connection or PABX analogue line connection
- G 230 Vac external adapter input
- H Telephone line output (terminal block) for connection of autodialer/PABX analogue line
- I 12 Vdc power supply terminal block
- L Not present
- M Backup battery connector (GD/A version only)



# INSTALLATION

## Installation recommendations

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- The gateway must be installed in a location where the radio signal allows for using the GSM system.
- It is advisable to leave plenty of space around the gateway for maintenance operations.
- Do not install the gateway outdoors, since it lacks protection devices against weather conditions that can damage the gateway (water, humidity, etc.).
- Do not install the gateway near electronic (radio or TV sets, Personal Computers, wired radio systems, etc.) or magnetic (credit cards, floppy disks, etc.) devices that could be subjected to RF interference from the module: recommended distance from the antenna is min. 2,5 m.
- Do not install the gateway near medical devices. Its operation may cause damage to hearing aids or pacemakers.
- Always make sure that the device operation is permitted in the place of installation (e.g. installation is not allowed in hospitals, airplanes, etc.).

## EU declaration of conformity

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Hereby, Esse-ti S.r.l. declares that the equipment type GSM500 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available from the following Internet address:

<https://www.esse-ti.it/en/dichiarazioni-di-conformita>

## Inserting the SIM card

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Before inserting or replacing the SIM card, always make sure that the gateway has been disconnected from the mains and that no electrostatic discharge is present in order to avoid damaging it.

Take all necessary measures to avoid electrostatic discharge.

- Shift the SIM card housing cover downward until it unblocks and lift it.
- Carefully slide the SIM card into its housing cover.
- Lower the SIM card housing cover and shift it upward until it blocks.

### **WARNING**

**The SIM card PIN must be DISABLED. If the PIN is enabled, it must be disabled through a mobile phone.**

## Inserting the antenna

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- Screw the antenna cable into the connector on the top of the module.

### **WARNING**

**NEVER connect the gateway without having previously installed the antenna. The gateway may get damaged.**

### **WARNING**

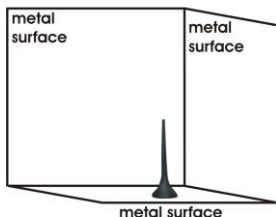
**Do not install the product near other electric or electronic devices that were not especially designed to be used with it. They could be subjected to RF interference from the module.**

- Position the antenna with magnetic base so that any metal surfaces do not block the signal.

**YES**



**NO**



## Connection to the telephone line

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- Connect the gateway to a standard telephone or to the PSTN input terminals of a PABX or autodialer via the RJ-11 connector (F in the picture at page 8).

or

- Connect the gateway to a standard telephone or to the PSTN input terminals of a PABX or autodialer using the TEL terminal (H in the picture at page 8).

## Connection to the power supply

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### *Power supply via 230 Vac external adapter*

- Connect the external adapter to the specific input (G in the picture at page 8).
- Connect the backup batteries (if present) to the dedicated input (M in the picture at page 8).
- Close the gateway cover.

or

## 12 Vdc power supply

- Connect the power supply cable to the specific terminal (I in the picture at page 8) taking care to respect the polarity.
- Connect the backup batteries (if present) to the dedicated input (M in the picture at page 8).
- Close the gateway cover, paying attention to the power supply cable.

**WARNING**  
**Backup batteries, if present, may be connected only  
after gateway has been supplied**

*Note: the max voltage to be supplied to the 12 Vdc terminal is 17 Vdc.*

*Note: the min voltage required to supply the gateway by the 12 Vdc terminal is 10 Vdc.*

*Note: a protection cut-out switch must be installed upstream to interrupt power supply in case of fault.*

## Turning the gateway on

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- Power the gateway.
- Wait 30 seconds after power-up to give time to the gateway to register correctly with the GSM network.
- Make sure the red LED (device status) flashes briefly once every 3 seconds as shown in chapter "SIGNALS" (see page 33).

If the red LED flashes quicker and stays lit for a longer time (see page 33), the gateway has not properly registered with the GSM provider:

- Disconnect the gateway and make sure the SIM card is inserted correctly and that the PIN is not locking it.
- See chapter "PROBLEM-DETECTION GUIDE" (page 35).

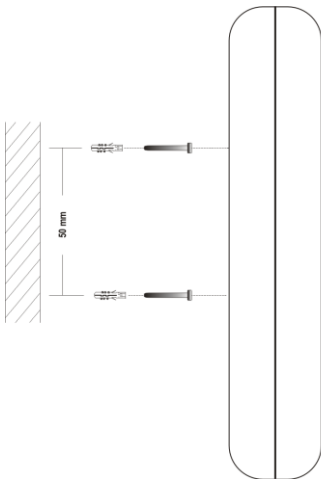
## Gateway mounting operations

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- Check the GSM signal strength through the green indicator LED (see chapter "SIGNALS", page 32) and identify an area where the signal is strong enough.

*Note: the signal strength may vary according to the telephone provider.*

- Drill two holes with 5 mm diameter on the wall at a distance of 50 mm.
- Insert the 2 wall plugs and screws down until the screws are at a 5 mm distance from the wall.
- Place the gateway onto the two screws through the two back slots.



## Absorption chart

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Power supply	10Vdc	12Vdc	13,8Vdc	10Vdc	12Vdc	13,8Vdc
	(battery not connected)			(battery connected)		
Telephone handset down	30mA	30mA	25mA	40mA	60mA	50mA
Telephone handset up	90mA	80mA	70mA	100mA	105mA	90mA
Conversation	130mA	115mA	110mA	140mA	135mA	130mA

# PROGRAMMING

Programming can be carried out locally via a multi-frequency telephone or remotely via SMS.

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## PROGRAMMING BY TELEPHONE

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- Connect a standard telephone to the gateway via the RJ-11 connector (F in the picture at page 8) or using the TEL terminals (H in the picture at page 8).
- Lift the handset and dial the desired programming code (see table "Programming by telephone").

*Note: at the end of each programming carried out correctly, you will hear a confirmation tone, while an error tone will be heard in case of error. In any case, the dialling tone will follow, after which you can proceed with the programming or make a call.*

*Note: during programming, the inter-digit dialling time must not exceed 5 seconds (see the programming "Inter-digit dialling time"). Once 5 seconds has elapsed without digits you will hear the dissuasion tone and you will have to wait the dialling tone or to hang up.*

*Note: programming can be carried out even if the signal is absent. After the confirmation or the error tones, the dissuasion tone will follow, after which you can proceed with programming or hang up.*

*Note: in the table "Programming by telephone" factory default values are highlighted in **bold**.*

## PROGRAMMING BY TELEPHONE

TELEPHONE LINE VOLTAGE (TEL terminals and RJ-11 connector)	<b>**61*X#</b>	X: option, from 0 to 1 0= 36 Vdc 1= <b>52 Vdc</b>
USE MODE	<b>**2X#</b>	X: option, from 1 to 4 1= <b>default</b> 2= mode recommended for autodialers or other devices effecting tone detection over the line 3= mode recommended to reduce echo occurring during conversation 4= mode recommended to reduce echo in case of connection with devices effecting tone detection over the line
INTER-DIGIT DIALLING TIME	<b>**8*X#</b>	X: seconds, from 1 to 9; 0=10 seconds <b>5</b> factory default
CLOCK SETTING	<b>**7*1*GGMAA*HH MM#</b>	Enabling GG: day, MM: month, AA: year; HH: hour, MM: minutes
	<b>**7*0#</b>	Disabling
	Default: clock disabled	
CLIR PERMANENT SETTING	<b>**6*X#</b>	X: option, from 0 to 2 0= <b>the sending of your number to the called user depends on the settings of the telephone operator</b> 1= your number is not sent to the called user 2= your number is sent to the called user
CLIR TEMPORARY SETTING	<b>**16#</b>	Your number is not sent for a single call
	<b>**17#</b>	Your number is sent for a single call



## PROGRAMMING BY TELEPHONE

ROAMING	<b>**5*1#</b>	Enabling
	<b>**5*0*XXX*Y#</b>	Disabling XXX: MCC of your telephone operator Y...Y: MNC of your telephone operator (when roaming is disabled, in case the gateway registers with a different provider than the programmed, it is not possible to make or receive any calls)
	Default: roaming enabled	
NOTIFICATION TELEPHONE NUMBER	<b>**40*X...X*X...X#</b>	X...X: telephone number appointed for SMS notifications of SIM card expiration, external power failure/restore, mobile network restore, low-battery, dead battery, replaced battery and for SMS reading SIM expiration and battery status
	<b>**40#</b>	Deleting
ADMINISTRATOR TELEPHONE NUMBER	<b>**18*X...X*X...X#</b>	X...X: telephone number with country code (if set, it is the only number from which programming via SMS is allowed)
	<b>**18#</b>	Deleting
PROGRAMMING PASSWORD	<b>**19*X...X*X...X #</b>	X...X: new password (max. 3 digits) <b>0</b> factory default
SIM CARD EXPIRATION CHECK <sup>(1)</sup>	<b>**53*X...X#</b>	Enabling X...X: days before SIM expiration, from 1 to 330
	<b>**53*0#</b>	Disabling
	Default: check disabled	

## PROGRAMMING BY TELEPHONE

BATTERY CHECK <sup>(2)</sup>	<b>**5X#</b>	X: option, from 0 to 1 0= check enabled 1= <b>check disabled</b>
	<b>**52*X#</b>	X: option, from 0 to 7 0= 7 h 1= 6 h e 30' 2= 6 h 3= 5 h e 30' 4= <b>4 h</b> 5= 2 h e 30' 6= 1 h e 30' 7= 1 h (minimum number of operating hours, in idle mode, guaranteed by the battery charge; below this threshold, a notification SMS is sent out)
EXTERNAL POWER FAILURE CONTROL <sup>(3)</sup>	<b>**81*X#</b>	X: minutes of external power failure/restore, from 3 to 9
	<b>**81*0#</b>	Disabling
	Default: control disabled	
TRANSMITTER GAIN ADJUSTMENT	<b>**10*X#</b>	X: value, from 1 (min.) to 7 (max.) <b>4</b> factory default (do not change them unless it is strictly necessary)
RECEIVER GAIN ADJUSTMENT	<b>**11*X#</b>	X: value, from 1 (min.) to 5 (max.) <b>1</b> factory default (do not change them unless it is strictly necessary)
VOICE CALLS CODEC SETTING	<b>**15*X#</b>	X: option, from 0 to 3 0= EFR (enhanced full rate) and HR (half rate) enabled with EFR preference 1= EFR and HR enabled with HR preference 2= <b>EFR enabled, HR disabled</b> 3= FR enabled, HR disabled

## PROGRAMMING BY TELEPHONE

COUNTRY SETTING	<b>**09*X...X#</b>	X...X: country calling code of the country where the gateway is installed
	Default: automatic country setting	
AUTOMATIC CONVERTER OF DIALED TELEPHONE NUMBER <sup>(4)</sup>	<b>**26*X...X*Y*Z...Z*Z...Z#</b>	ENTERING NUMBERS TO CALL X...X: programming password Y: table position, from 1 to 5 Z...Z: telephone number
	<b>**26*X...X*Y#</b>	DELETING NUMBER TO CALL X...X: programming password Y: table position, from 1 to 5
	<b>**26*X...X*#</b>	DELETING ALL NUMBERS TO CALL X...X: programming password
	<b>**25*X...X*Y*Z...Z*Z...Z#</b>	ENTERING DIALED NUMBERS X...X: programming password Y: table position, from 1 to 5 Z...Z: telephone number
	<b>**25*X...X*Y#</b>	DELETING DIALED NUMBER X...X: programming password Y: table position, from 1 to 5
	<b>**25*X...X*#</b>	DELETING ALL DIALED NUMBERS X...X: programming password
RESTORING DEFAULT SETTINGS	<b>**99#</b>	Restoring factory default does not modify the programming password, the gain adjustments and the settings entered for the "Automatic converter of selected telephone number"
RESET	<b>**98#</b>	Resetting the gateway does not modify its programming profile

## (1) SIM card expiration check

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If the SIM card expiration check is enabled, when the preset days have passed, a notification SMS is sent with the following text message: “*SIM expiring*”.

*Note: the days internal counter stops when the gateway is powered off and restarts at the next power on.*

## (2) Battery check

---

If the battery check is enabled, in case of power failure the gateway constantly checks the battery status. When the charge goes below the previously-programmed threshold ensuring the minimum number of operating hours in idle mode, a notification SMS is sent with the following text message: “*Low battery*”. The gateway sends out one notification SMS only. A new SMS will be sent out if the charge status rises and goes again below the previously-set threshold.

The built-in backup batteries ensure 8 operating hours in idle mode and 2 operating hours in conversation mode.

If the battery check is enabled, every 15 days the gateway controls the integrity of the battery. If the battery is found dead or damaged, a notification SMS is sent to the programmed number with the following text message: “*Dead battery*”.

If the battery check is enabled, the gateway detects the presence of the battery. If the battery is absent or in case of disconnection, a notification SMS is sent to the programmed number with the following text message: “*Dead battery*”.

When the battery is reconnected (or replaced, if found damaged), a notification SMS is sent to the programmed number with the following text message: “*Replaced battery*”.

The battery check is only available on version GD/A.

### **(3) External power failure control**

---

If the control on external power failure is enabled, the gateway constantly controls the external power supply (230 Vac or 12 Vdc). If the external power failure lasts longer than the preset time interval, a notification SMS is sent with the following text message: *“External power failure”*.

If the external power supply is restored for a time interval equal to the preset threshold a new SMS will be sent with the following text message: *“External power restored”*.

The external power failure control is only available on version GD/A.

### **(4) Automatic converter of selected telephone number**

---

If the function is enabled the gateway, instead of calling the telephone number dialed from the connected telephone (autodialer or other telephone device), forwards the call to a previously set number.

It is possible to pre-set up to 5 telephone numbers to call, each of which can be combined, through programming and / or automatic learning procedure, a dialed number.

When dialed number is not associated with any preset number, the call will be automatically forwarded to the first preset telephone number.

*Note: to enable the “Automatic converter” service, you simply need to preset one telephone number; to disable this service, all preset telephone numbers must be deleted.*

*Example:  
preset this table*

Location	Selected tel. number (code 25)	Preset tel. number (code 26)
1	3331234567	0717506065
2	3339876543	0717506066
3	0733434343	0717506067
4	0733445566	0717506068
5	0733778899	0717506069

- when selecting tel. number 3331234567, the gateway will make a call to 0717506065
- when selecting number 3339876543, the gateway will make a call to 0717506066
- etc
- when selecting any number not included in the "Selected telephone number" column, the gateway will send a call to the first telephone number included in the "Preset telephone number" column.

#### *Matching telephone numbers automatically*

- Enter the number to be called in a table location using programming code 26.
- Enter the dialed number, to be associated, in the same table location using programming code 25.

#### *Automatic learning procedure*

The auto-learning procedure allows to match automatically each preset number with the numbers dialed by the connected telephone (autodialer or other telephone device) with the gateway.

- Enter the number to be called using programming code 26.
- Dial a telephone number by the connected telephone (autodialer or other telephone device) with the gateway.

The gateway will check if the dialed number is already matched with a preset telephone number.

If so, it will send a call to the preset number.

If not, it will match the dialed number to the first available preset number and will make a call to it.

In case there are not available preset numbers, but it's still possible to make associations, the dialed number will be automatically matched with the first preset number.

In case all 5 possible associations have been effected, the call will be sent to the first preset number.

An SMS containing the dialed number and the preset number is sent out to the administrator number (if present) upon creating any new matching.

An SMS is also sent out every time a different selection from the 5 preset ones is effected.

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# PROGRAMMING VIA SMS

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Programming via SMS is possible by any mobile phone or other device supporting SMS. In case the administrator number has been previously set, programming via SMS is only allowed from such telephone number. An SMS notifying that programming has been completed will be sent back by the gateway to the same telephone number that forwarded the programming SMS.

<p style="text-align: center;"><b>WARNING</b> <b>Programming outgoing SMS from the Internet may not be successful if the requested format is not respected.</b></p>
---

---

## Message format

---

The message format is required to be as follows:

**ET-IG5\*xxx#c..c#**

Where

ET-IG5    programming string start

\*xxx#    password string (default xxx = 0)

c..c    programming string as per table below

#    separator character or end string character

<b>Programming</b>	<b>Code (x..x)</b>
Telephone line voltage	61*X
Use mode	2X
Inter-digit dialling time	8*X
Enabling clock	7*1*GGMAA*HHMM
Disabling clock	7*0
CLIR permanent setting	6*X
CLIR temporary activation	16
CLIR temporary deactivation	17

---



<b>Programming</b>	<b>Code (x..x)</b>
Enabling roaming service	5*1
Disabling roaming service	5*0*XXX...Y
Setting telephone number for notification service	40*X...X*X...X
Deleting notification number	40
Setting administrator number	18*X...X*X...X
Deleting administrator number	18
Setting programming password	19*X...X*X...X#
Enabling SIM card expiration check	53*X...X
Disabling SIM card expiration check	53*0
Battery check enabling	50
Battery check disabling	51
Low-battery check minimum value	52*X
External power failure control enabling	81*X
External power failure control disabling	81*0
Entering preset number	26*X...X*Y*Z...Z*Z...Z
Deleting preset number	26*X...X*Y
Deleting all preset numbers	26*X...X*
Reading preset numbers	26*X...X*YR
Entering dialed number	25*X...X*Y*Z...Z*Z...Z
Deleting dialed number	25*X...X*Y
Deleting all dialed numbers	25*X...X*
Reading dialed number	25*X...X*YR
Transmitter gain setting	10*X
Receiver gain setting	11*X
Voice calls codec setting	15*X
Country setting	09*X...X
Restoring default settings	99
Reset	98
Measuring the GSM signal level	30
Reading SIM card expiration	54
Reading battery status	91

For each programming refer to the “Programming by telephone” table.

*Example:*

*it is required to enable battery check and to set the telephone number for notifications.*

*Outgoing message text to GSM500:*  
*ET-IG5\*0#50#40\*X..X\*X...X#*

## **Notification message format**

---

The format of the message notifying the user or the administrator who previously sent out a programming SMS, is the same as the programming message format.

SMS notifying an accepted command:

**ET?IG5\*xxx#c..c#**

SMS notifying a rejected command:

**ET?IG5\*xxx#c..cERR#**

*Example:*

*outgoing SMS to enable battery check and to set the following incoming notification number: 3330123456.*

*Outgoing message text:*

*ET-IG5\*0#50#40\*3330123456\*3330123456#*

*Message text notifying accepted command:*

*ET?IG5\*0#50#40\*3330123456\*3330123456#*

# SERVICES

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## ***INCOMING CALLS***

---

Allows you to answer incoming calls.

Upon receiving a phone call, the LED indicating the line status (white) will blink shortly 4 times every 4 seconds as described at chapter “SIGNALS” (see page 33) and the telephone will be ringing.

- Pick up the handset to answer the call.

The LED indicating the line status (white) and the LED indicating the device status (red) will turn on and the communication with the calling party will be set up.

---

## ***OUTGOING CALLS***

---

Allows you to dial over the GSM network.

If the gateway is connected to a PABX, please refer to the switchboard's manual.

If the gateway is connected to a telephone:

- Pick up the handset.

The LED indicating the line status (white) will turn on and the dialling tone will be heard.

- Dial the telephone number to be called.

When the called party answers, the LED indicating the device status (red) will turn on.

*Note: once you have dialled the number, you can either press # to send the number immediately, or you can wait for the call to be automatically forwarded once the inter-digit dialling time has elapsed (by default 5 seconds).*

*Note: in the event you receive the dissuasion tone picking up the handset, check if the signal is present and make sure the SIM card is working correctly.*

---

## **MEASURING THE SIGNAL LEVEL**

---

This procedure allows you to check the GSM signal level through your telephone.

- Lift the handset and dial **\*\*30#**.
- Wait for the signal reading.

The gateway will send a number of short tones corresponding to the signal level:

<b>Tones</b>	<b>Quality</b>
No signal	No signal
1 Tone	Low
2 Tones	Medium
3 Tones	Good
4 Tones	High

Since the signal can be subject to variations, we recommend repeating the code **\*\*30#**, 2 or 3 times a few seconds apart, in order to have a reliable measurement.

*Note: in case of low signal, we recommend installing the gateway in a different area with a better signal.*

*Note: if you receive the “no signal” tone, it means that the gateway has not been registered correctly by the provider. We recommend trying again after a few moments, and in case of no result, make sure that the SIM card is working correctly.*

---

## ***READING SIM CARD EXPIRATION***

---

This procedure allows you to check how many days until the SIM card expiration.

- Lift the handset and dial **\*\*54#**.
- After the confirmation tone hang up.

After receiving the request, the gateway will send an SMS to the number programmed for notifications.

The outgoing message text is the following: *“Days to upload reminder: xxx”*.

The request will not be accepted (an error tone will be received) if the SIM card expiration check is disabled, if the number for notifications has not been previously entered or if the gateway is not correctly registered to the GSM network.

---

## ***READING THE BATTERY STATUS***

---

This procedure allows you to check the battery status through your telephone.

- Lift the handset and dial: **\*\*91#**.
- After the confirmation tone hang up.

After receiving the request, the gateway will send an SMS to the number programmed for notifications.

The outgoing message text is the following: *“Battery level: x”*, where x is the value corresponding to the minimum number of operating hours guaranteed by the battery in idle mode, according to the table “Programming by telephone”.

The request will not be executed if the battery check is disabled. The request will not be accepted (an error tone will be received) if the number

for notifications has not been previously entered or if the gateway is not correctly registered to the GSM network.

# SIGNALS

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## TONES

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### *Dialling*



It indicates that the gateway is ready for dialling.

### *Dissuasion*



It indicates that the gateway has not properly registered with the GSM provider or a delay in dialling or the end of conversation or an access to services not permitted.

### *Busy*



It indicates that the called party is busy.

### *Confirmation*



It indicates that the requested service or programming has been accepted.

### *Error*



It indicates that the requested programming has not been accepted.

### *Roaming*



Roaming disabled.

### *GSM signal level*



Low signal level.



Medium signal level.



Good signal level.



High signal level.



No signal.

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## **CALL SIGNALS**

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It indicates an incoming call.

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## **LED**

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### **GSM signal indicator LED (GREEN)**

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No signal.



Low signal level.



Medium signal level.



Good signal level.



High signal level.



## Status indicator LED (RED)

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Upon switch on, it indicates GSM network login in progress; if it keeps blinking, it may indicate that the gateway has not been correctly registered with the network, the SIM card is protected by the PIN code or other problems.



It indicates the gateway is correctly registered to the network.



It indicates voice connection in progress.

## Line status indicator LED (WHITE)

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It indicates that the line is in use.



It indicates that the line is not in use.



It indicates an incoming call.

## Power supply status indicator LED (BLUE)

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It indicates that the external power supply is connected.



It indicates that the power supply is disconnected and the battery guarantees more than 7-hour operation in idle state.



It indicates that the power supply is disconnected and the battery guarantees up to 7-hour operation in idle state.



It indicates that the power supply is disconnected and the battery guarantees 2-hour operation in idle state.



It indicates that the power supply is disconnected and the battery guarantees 1-hour operation in idle state.

# PROBLEM-DETECTION GUIDE

This section shows a list of solutions to the most commonly encountered problems.

Detected problem	Root cause	Solution
All LEDs are unlit	Gateway not supplied	Check power supply
The red LED blinks quickly	SIM card not present or not correctly inserted	Correctly insert the SIM card in the dedicated location
	SIM card locked by PIN code	Disable the PIN code through your mobile phone
	SIM card expired or damaged	Check the SIM card operation on your mobile phone
	SIM card not supported with GSM500 (e.g. UMTS or 4G)	Use a GSM SIM card
		Make a test with a SIM card from a different GSM provider
	Unconnected antenna or damaged connection cable	Check the antenna connection and the correct operation of the cable
	GSM signal absence	Check the signal strength by your mobile phone
	Insufficient power supply	Check the power supply
Generic SW problem	Switch off and back on the gateway	
The red LED blinks slowly, but the green LED is unlit	GSM signal level is too low to allow outgoing calls	Move the gateway and the antenna into a better position
The autodialer connected to gateway does not detect the telephone line	Telephone line voltage on TEL terminal and on RJ-11 plug is insufficient	Increase the voltage by the programming "Telephone line voltage"
The autodialer connected to gateway does not succeed in forwarding a call	The autodialer performs a tone detection over the telephone line	Set use mode 2 (or 4) by the programming "Use Mode"

During conversation echo is heard	-	Increase protection on echo-related occurrences by setting use mode 3 (or 4) by the programming "Use Mode"
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