

ecoLINE GSM II

INSTALLATION AND APPLICATION MANUAL

for module version V5.01

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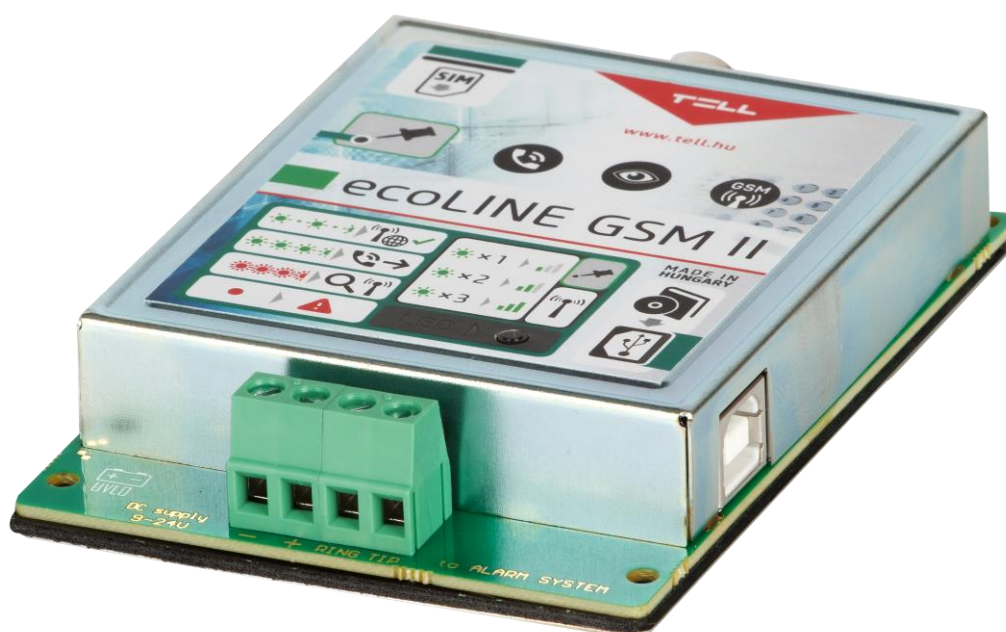


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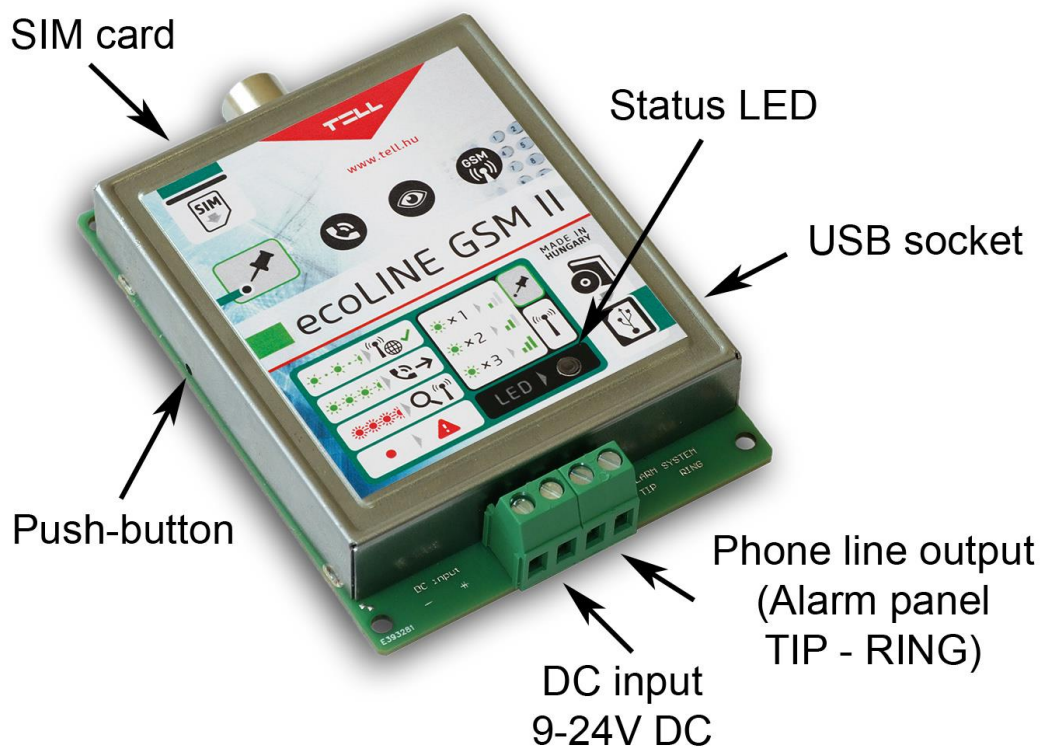
1 Application area

Adaptation to GSM network of alarm control panels which are equipped with PSTN line communicator to send reports to monitoring station using DTMF based protocols (Contact ID, Ademco Express); the module makes possible the installation of such alarm systems in places where PSTN line is not available but reporting to monitoring station is required. The module may also be used as phone line substitute, GSM line simulator, by connecting a phone handset to the module, incoming and outgoing calls can be performed through the GSM network.

2 Functions

- Adaptation to GSM network
- Forwarding of incoming SMS messages to one configurable phone number
- SMS forward limit (max. 5 messages/12 hours)
- Voice dialer support
- GSM signal strength query using the function button

3 Wiring diagram



4 Installation guide

An uninterruptible power supply with adequate power is essential for the product to operate properly. The power supply must provide a power that can serve the minimum operating voltage and the maximum power consumption of the device. The power feed must be continuous and transient-free even when there is a mains power failure, and the power feed switches to backup battery operation.

An ideal solution for the above purposes is the power supply designed and manufactured by TELL, which we expressly recommend using for our communicators.

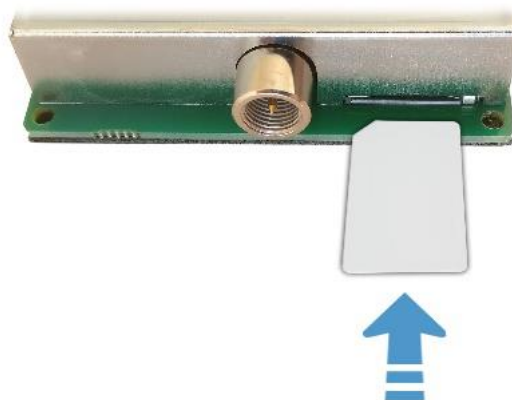
- Recommended TELL power supply for use with an alarm control panel: **TT40VA-16VAC/24VDC**, which provides power feed (16V AC) also for the alarm control panel at the same time.
- Recommended TELL power supply for other use: **TT25VA-12V5**.

4.1 Mounting

- Test the GSM signal strength with your mobile phone. It may happen that the signal strength is not sufficient in the desired mounting place. In this case the planned installation place can be changed before mounting the device.
- Do not mount the unit in places where it can be affected by strong electromagnetic disturbances (e.g., in the vicinity of electric motors, etc.).
- Do not mount the unit in wet places or places with a high degree of humidity.
- Connecting the GSM antenna: connect the GSM antenna to the FME-M socket found on the device. The antenna supplied with the device provides a good transmission under normal reception circumstances. In case of occasionally occurring signal strength problems and/or wave interference (fading), use another (directed) type of antenna, or find a more suitable place for the module.

4.2 Putting into operation

- Disable PIN code request, voicemail, and SMS notification about missed calls on the SIM card installed in the module.
- Enable the caller ID presentation service on the SIM card at the service provider.
- Install the SIM card as shown in the picture below. Push the card into the socket until you hear a click. If you want to remove the SIM card, press it again on the protruding part, and then pull out.



- Check the antenna to be connected properly to the ecoLINE module.
- Check the wires to be connected as shown in the wiring diagram.
- The device can be powered up. Make sure that the power supply is appropriate for the load of the module. The quiescent current of the module is 110mA, however it may increase up to 400mA during communication.

4.3 Status LED signals

Green flashes by 1 second, Red is not lit	GSM connection is OK, idle state
Green flashes quickly	GSM call is in progress
Red flashes quickly	Connecting to the network is in progress
Red is continuously lit	Error

4.4 Under Voltage Lock Out (UVLO) function



The product is provided with built-in automatic power disconnection (Under Voltage Lock Out) function. Depending on the product type, if the supply voltage drops below 8.4...8.2V, the module turns off automatically and it turns back on when the supply voltage is at least 11.2...11.4V.

The minimum supply voltage level required to turn the module on is 11.2...11.4V! After turned on with supply voltage higher than 11.2...11.4V, the module can operate stably even at lower supply voltage, but not lower than 8.4...8.2V.

If the module is powered from a power supply provided with a backup battery and there is no other electrical load on the battery when charging fails (e.g., in case of a power cut), while the battery discharges, the module turns off automatically at 8.4...8.2V voltage level.

Thereafter, if the battery is in good condition, it can regenerate and can reach the terminal voltage of 11.2...11.4V where the module turns back on, then the battery may discharge again below 8.4...8.2V. This may result a continuous switching on and off cycle that lasts until the battery can no longer regenerate to the 11.2...11.4V voltage level. If this phenomenon occurs, the battery is flat, and it should be replaced.

5 Technical details

5.1 Technical specification

Supply voltage:	9-24VDC
Nominal current consumption:	110mA @ 12VDC, 60mA @ 24VDC
Maximum current consumption:	400mA @ 12VDC, 200mA @ 24VDC
Operating temperature:	-20°C - +70°C
Transmission frequency:	GSM 900/1800, 850/1900 MHz
Dimensions:	100 x 70 x 19mm
Weight:	80g (packed: 100g)

5.2 Generated phone line specification

Line voltage:	48 V
Line current:	25 mA
Line impedance:	600 Ohm
Ringing voltage:	±72V (25 Hz)
Dial tone:	400 Hz

6 Settings

- **Setting the phone number for SMS forwarding function**

The module can forward the SMS messages received on the inserted SIM card to one configurable mobile phone number. To configure the phone number, connect a phone handset to the module's "TIP-RING" terminals, then pick up the receiver and dial the following:

- to set a new phone number: ***1234**phone number*#**
- to delete the phone number: ***1234*#**

After setting or deleting the phone number, the module confirms the action by a beep through the phone. When a new phone number is set, the module confirms the action by sending a test SMS to the given phone number, with the following message: „SMS-Forward settings accepted”.

Attention! The module does not forward SMS messages received from the superuser phone number!

SMS forward limit: the module is equipped with automatic limitation of outgoing SMS messages. The function allows forwarding of 5 incoming messages per 12 hours. After reaching the message limit, the module deletes all incoming messages without forwarding. The module resets the message counter 12 hours after the limit is reached, and also upon a power loss.

- **Voice dialer support**

One main feature of voice dialers is that they used to start playing the message if they detect no ringtone on the line within a certain period.

By enabling this function, the module generates a simulated tone signal until the call is received. With this, it can be avoided that the voice dialer starts to play the message before receiving the call. This function is disabled by default. To enable/disable voice dialer support, connect a phone handset to the module's "TIP-RING" terminals, then pick up the receiver and dial the following:

- to enable voice dialer support: ***0000*1#**
- to disable voice dialer support: ***0000*0#**

After entering the activation or deactivation command, the module confirms the action by a beep through the phone.

- **Configuring by SMS commands**

It is possible to configure the module by sending the appropriate command in SMS to the module's phone number from the SUPERUSER phone number. After receiving a command, the module sends a response SMS, except for the SUPERUSER registration. The SMS commands are the following:

SUPERUSER#	The module sets the sender's phone number as Superuser. The module accepts this parameter only if no Superuser has been set before! No response SMS is sent for this command!
SU=#	Deletes the current Superuser. The module accepts this command only from the previously set Superuser phone number.
SFW=phone number#	Sets the phone number where incoming SMS messages will be forwarded.
SFW=#	Deletes the phone number where incoming SMS messages are forwarded.
VDS=1#	Enable voice dialer support.
VDS=0#	Disable voice dialer support.
GMIC=X#	Adjusts the microphone volume (outgoing CID volume). Substitute X with a number between 0...15.
GSPK=X#	Adjusts the speaker volume (incoming HSK/ACK volume). Substitute X with a number between 0...100.

- **GSM signal strength query**

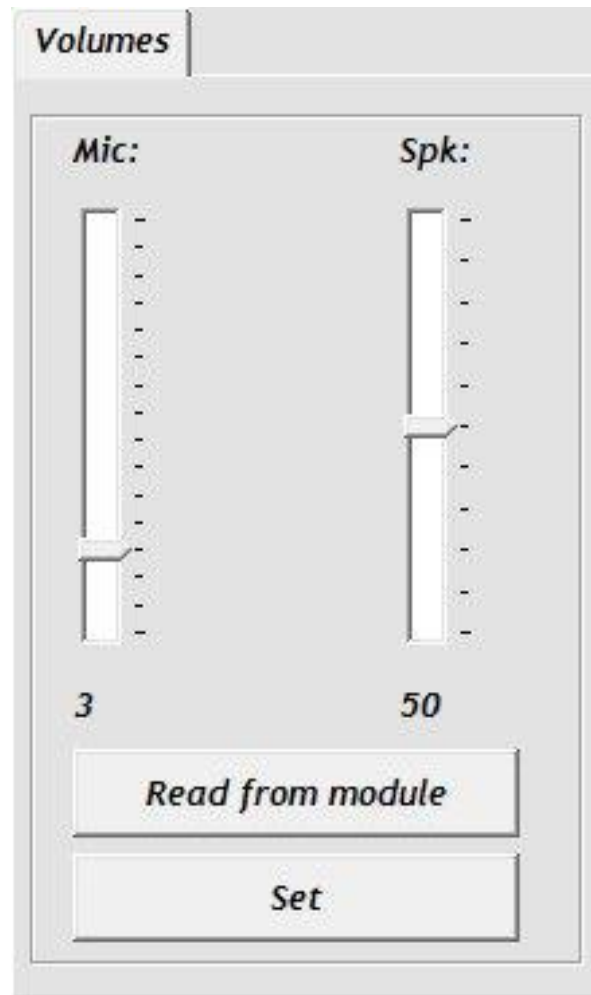
To read the current GSM signal strength, press shortly the pushbutton found on the module. After that, the number of green blinks of the LED found on the module indicates the signal level on a 3-point scale.

- **Service port**

The USB service connector found on the module serves for diagnostics and eventual firmware upgrade or in-call volume adjusting.

7 Volume adjusting application

The module's USB storage contains a volume adjusting application (Volsetter.exe), which can be used to adjust the in-call volume levels, if necessary and justified. Adjusting may be necessary if voice quality or volume problem is experienced while using the module with the given GSM service provider's SIM card. The module can be connected to a PC using a USB-A – USB-B cable.



Using the software:

- Copy the software from the module's USB storage to PC, then start it.
- Connect the module to USB. The software connects to the module automatically, and then the **"Read"** and **"Set"** buttons become available.
- Read the actual settings from the module by clicking on the **"Read from module"** button.
- **Mic** volume: microphone volume (outgoing Contact-ID).
- **Spk** volume: speaker volume (incoming HSK/ACK).
- Set the desired volume level, and then write the settings to the module by clicking on the **"Set"** button. Attention! Even a minor level change will result significant changes in the in-call volume!
- The new settings will be applied in the very next voice call after being written.

8 Updating the firmware

TELL always releases its products with the latest firmware version. However, as our products are being continuously improved, new firmware updates may occasionally be released for the products, which may include new features along with bug fixes. Therefore, it is recommended that you always upgrade your product to the latest firmware version available. All released firmware versions are available on the TELL website, including older versions.

ATTENTION! Downgrading to an earlier version is not supported! Always upgrade your product to the latest version. Otherwise, your settings could get wiped due to differences in functionality between versions, or the product may become unusable due to unsupported components. (A newer hardware may contain new components, e.g., a new flash memory, modem, etc., which are not supported by an earlier firmware.)

- **Updating via USB using the desktop update application**

- Download the latest desktop update application (that has the **.exe** extension) from the manufacturer's website. The update application includes the firmware as well, therefore the file name is the same as the firmware version number.
- Open the update application and click on the "**FIRMWARE**" button.
- The device should be powered off.
- Press and hold the button found on the side of the device under the hole using a suitable tool, connect the device to the computer via USB, and then release the button (see the picture on the right-hand side).
- Wait until the progress bar shows that the process has completed in the application.
- Use the "**Cancel**" button to close the pop-up window that shows up while loading the firmware, with a question that asks if you want to format the drive.
- You can close the update application when the progress bar shows that the process has completed.
- Power up the device and wait until the status LED on the device shows activity, and then check if the device operates properly.



9 Contents of the package

- ecoLINE GSM II module
- GSM 900MHz / 1800MHz antenna
- Plastic spacer support / snap fasteners
- Quick guide, warranty card