

# **TBOX MS-GSM-M1**

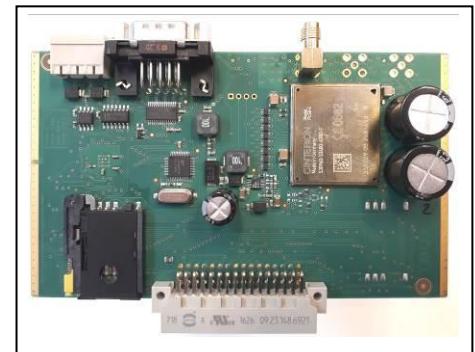
**Version 1.02**

# TBOX MS-GSM-M1

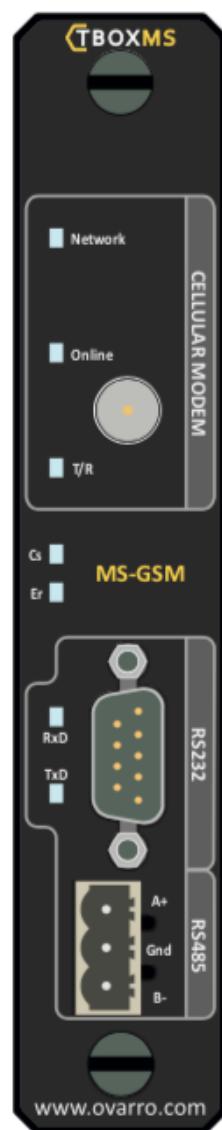
Available for MS-CPU32(-S2), not available for MS-CPU16

Requires TWinSoft 12.8 + OS 1.51 or higher

- Worldwide LTE-M/NB-IoT modem
  - Including AT&T and Verizon
- Eighteen FDD-LTE Bands
- Quad Band GSM (2G) fallback
- 3GPP Rel.14 compliant
- IP mode communication (through APN)
- Send/Receive SMS
- 1 RS232/RS485 port non isolated



## Technical Specifications



### General

Construction	Industrial grade LTE-M (Cat.M1) and NB-IoT (Cat.NB1 & Cat.NB2) with support for 2G
Consumption	On the BUS : <b>30 mA</b> On Vp : <b>Max. 4.75 W</b>
Replacement	<b>Hot insertable/removable.</b> No risk to damage hardware, but a reset is required
Test	Automatic test of the access of the card by the CPU (See LED 'CS' below)

### LTE Cat. M/NB/2G

Frequencies	<b>FDD-LTE Bands:</b> 1, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26, 27, 28, 66, 71, 85 <b>Quad-Band GSM:</b> 850, 900, 1800 and 1900 MHz
LEDs GSM (yellow)	<b>Network:</b> Flashes when the GSM is connected to the network <b>On Line:</b> Indicates that the GSM is connected to an APN <b>T/R:</b> Flash ON when GSM is transmitting
SIM card	3V and 1.8V SIM cards Standard size SIM card.
Antenna connector	Screw connector, type SMA female (Jack) on MS-GSM card

### RS232 – RS485

Mode	RS232 <b>or</b> RS485 (no simultaneous use of both modes)
Isolation	<b>No isolation.</b> Gnd is linked to earth by internal connection
RS232	<u>Signals:</u> RxD, TxD, CTS, RTS, DTR, DSR, DCD, RI <u>Connector:</u> 9 pin Sub-D (male)
RS485	<u>Cabling:</u> 2 wires (A+ and B-) for multi-points connection

Termination: no need for termination resistor (failsafe bias resistors included: pullup and pulldown resistors which assures a logical level TRUE when A and B are opened or in short circuit)

Number of slaves: 256 (if RS485 technology of slaves allows it too)

Connector: screw connector (3 x 5.08 mm)

LEDs for both ports (yellow)	Indicates reception of data
RxD	Indicates transmission of data
TxD	

## LED

Cs	<b>Card Selection (green)</b> : card corresponding to card declared in TWinSoft.
ER	<b>Error (red)</b> : card type not corresponding to the one declared in TWinSoft.

## Environment

Temperature storage	-40°C to 85°C
Temperature working (ambient)	<b>Industrial Temperature</b> : -40°C to 70°C
Humidity	15 to 95 % without condensation
Altitude	Max. 5000 m

## Dimensions

Without connector	Height x Depth x Width: <b>150 x 83 x 29 mm</b>
Weight	300 g

## Approvals

CE, UL, CSA, RED, FCC, IC, GCF, REACH, RoHS  
**USA**: AT&T, Verizon (cat M).

## Antennas

One model of antenna covers all frequencies (**700/800/850/1800/1900/2100/2500/2600 MHz**).  
Reference. **ACC-GSM-ANT-4G**



## Antenna Surge Arrestor

Connection to the arrestor:

1. Use the N-M>>N-M connector from the arrestor to connect it to the antenna (remove N-M>>FME-M from antenna if mounted).
2. Connect N-M>>FME-M adapter supplied with the antenna to the other side of the arrestor.
3. Connect the corresponding antenna cable.

