



## GSM modem for top-hat rail mounting G736-AS2



Frequency band	Dual band GSM 900 and GSM 1800
SIM interface	SIM card: 3V, drawer
Transmission standards	2,400 (V.22b / V.110), 4,800 (V.32 / V.110), 9,600 (V.32 / V.110), 14,400 (V.34 / V.110) bps
Interface speed	1,200, 2,400, 4,800, 9,600, 19,600, 38,400, 57,600 and 115,200 bps autobauding
Data formats recognized	7E1, 7O1, 8N1, 8E1, 8O1
Interface	V.24 (RS232), D-Sub 9-pole
Instruction set	Extended AT instruction set
Antenna connector	FME-m
Power supply	24 VDC +15%, -30%
Current consumption	Closed current: max. 60 mA Data mode: typically 140 mA
24V connection	Screw terminal, 2-pole
Temperature range	0-55°C
Humidity	0-95%, non-condensing
Dimensions	45x75x114 mm (WxHxL)
Weight	170 g
Standards	EN 301 511, EN 301 489-7 and EN 50360



## Meaning of LEDs

<b>LED constant</b>	>>	Status display
<b>LED flashing slowly</b>	>>	Information
<b>LED flashing quickly</b>	>>	Error display

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<b>RI</b>	Flashing slowly LED constant LED flashing quickly	<b>Call sign</b> DCD connection active DTR off
<b>AA</b>	Flashing slowly LED flashing quickly	<b>Auto reply</b> DSR off
<b>PIN</b>	Flashing slowly LED constant LED flashing quickly + FDS flashing quickly + FDS flashing slowly	<b>Modem logged on to another network</b> (roaming) Modem logged on to local network PIN or card error -> details via FDS LED SIM card blocked, EPIN deleted No SIM card detected in the card holder,
<b>FDS</b>	Flashing slowly LED constant LED flashing quickly	<b>Field intensity weak, connection possible</b> Field intensity OK Field intensity too weak; data connection not possible
<b>Tx</b>	<b>Send data</b> Data being sent to the PCD	
<b>Rx</b>	<b>Receive data</b> Data being received by the PCD	

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## Measuring field intensity and registration status

These measurements are carried out automatically after a cold start. The measurements are interrupted by the first AT instruction and the associated LED functions are reset.

### Field intensity measurement

If the FDS LED is flashing at a high frequency, a data connection is not possible. If the FDS LED is flashing at a low frequency, a data connection is possible, but because of the weak field intensity, telegram blocks may have to be repeated or the connection may be broken. These repetitions may significantly increase the response time, possibly to a few seconds. If the FDS LED is showing continuously, a problem-free data connection can be assumed.

The registration status can only be detected if the PIN number has been entered into the EEPROM with the extended instruction 'AT+EPIN'. To ensure that no AT instruction interrupts the measurement, the device can be started up without any connection via the D-SUB connector. The measurement typically takes 10-30 seconds.

### Registration status

The PIN LED showing constantly indicates that the modem is logged on to the local network, while slow flashing means that the modem has been logged on to an external network (roaming).



## Extended AT instruction "AT+EPIN="

The PIN number can be written to the internal EEPROM of the interpreter. It cannot be read out. To change the PIN number in the EEPROM, it must be deleted and then reentered. With a cold start of the modem, the system checks whether a PIN number has been entered into the EEPROM; it will then be used automatically. If the EPIN number is rejected as invalid by the SIM card, it will be deleted from the EEPROM and initialization will be cancelled. This will also be signaled via a LED. The system then has to be cold-started again. The correct EPIN number can now be entered, or it can be input directly using the AT+CPIN instruction.

### Entry of the extended PIN number:

AT+EPIN=\*NNNN; the asterisk before the PIN number is mandatory

### Deleting the extended PIN number

The EPIN is deleted in 2 steps

AT+EPIN=NNNN, 1st input; any 4-digit number

AT+EPIN=ZZZZ, 2nd input; ZZZZ must be the 10s complement of NNNN

If the 2nd input is answered with 'ERROR-IP', the process can be restarted from the 1st input. The 1st input is not deleted by a cold start. Only the digits 0-9 are allowed.

Example:        1st input:        AT+EPIN=1188  
                 2nd input:        AT+EPIN=9922

## Automatic recognition of baud rate and format

### The following baud rates are supported:

1,200, 2,400, 4,800, 9,600, 19,200, 38,400, 57,600 and 115,400 bps

### The following formats are supported:

< data bits, parity bit, stop bits > < 7,E,1 > < 7,O,1 > < 8,N,1 > < 8,E,1 > < 8,O,1 >

### Fixed baud rate

A fixed baud rate can be set with the ATFn instruction.

The default setting is 'ATF0' -> autobauding

- 0 = Autobauding (default)
- 1 = Interface 1,200 bps
- 2 = Interface 2,400 bps
- 3 = Interface 4,800 bps
- 4 = Interface 9,600 bps
- 5 = Interface 19,200 bps
- 6 = Interface 38,400 bps
- 7 = Interface 57,600 bps
- 9 = Interface 115,200 bps



## Restriction of AT instructions

Because of the automatic detection of baud rate and formats, the following instructions cannot be processed. If they are entered, the system will respond with 'OK' but will not execute the instruction

- a) AT+ICF            Serial interface character framing
- b) AT+IFC            Set flow control separately for data directions
- c) AT+ILRR          Set TE-TA local rate reporting
- d) AT+IPR            Set fixed local rate

## Note:

To guarantee uninterrupted exchange of data with a GSM line speed of 9,600, we recommend a minimum local baud rate of 19,200 bps.