GSM-BGS3-T; GSM-BGS3-TU

1. Introduction

Modem in industrial metal aluminum case which is suitable for installation into a control cabinet. Modem has two serial ports (RS232 and USB) with adjustable watchdog. The modem is equipped with a GSM module Cinterion BGS3. Modem is suitable for fast implementation in devices that require remote communication. It also includes the monitoring of communication with the master device (watchdog), both via RS232 serial port as well as the USB.

2. Package Content

1 pc GSM modem with module Cinterion BGS3
1 pc 2 pin connector 3.5 mm

3. Recommended acesories

3.1 Antenna

GSM-ANT11K	2dB, Whip jointed antenna, without cable
GSM-ANT01S	5dB, magnetic, cable 3m
GSM-ANT51S	9dB, magnetic, cable 3m
GSM-ANT07S	9.5dB (log–per), cable 10m

3.2 Power Supply

GSM-PWR12	Power supply adapter into socket 230V_{AC} / 12V_{DC}, 1A
GSM-PWR1	DIN rail mounted supply module 230VAC / 12VDC, 1.25A
GSM-75-DIN	Plastic DIN rail holder

Note: GSM-75-DIN is suitable for DIN rail mounting inside of a cabinet.

3.3 Cables

HW-11.99.6218	CANON MD9-FD9 (connected as an extension), length 1.8 m
HW-11.99.8718	USB 2.0 AB (mini USB to modem), length 1.8 m

4. Technical specification

Parameter		Symbol	MIN.	TYP.	MAX.	Unit
Power Supply (PWR)	Voltage DC		8 V_{DC} 12 V_{AC}	12 V	30 V	V_{DC}/$_{AC}$
	max. power. consumption	during phone call		1.2 W		W
	Standby	connected to GSM network, no phone call		12 V_{DC} 20 mA		V mA
POWER supply connector	2-pin removable screw terminal block, pitch 3.5 mm (PWR), type –TU additionally mini USB B					
Power supply via USB	Only GSM-BGS3-TU version		5 V_{DC} 100 mA			
Ingress Protection	IP		40			
Temperature	Strage	tSTG	-40		+85	°C
	Operating	tA	-30		+65	°C
Humidity	Operating				95	% RH
Dimensions	Width	W	54			mm
	Height	H	24			mm
	Length	L	82			mm
Weight			0.103			kg

5. Modem parameters

Parameter	Description
GSM, GPRS 10	850/900/1800/1900 MHz (GPRS 43 kbps UL, 86 kbps DL)
Antenna connector	Device - SMA (F), 50 Ohm.
Internet services	TCP/IP via AT (UDP, HTTP, FTP, SMTP, POP3)
USB 2.0	Mini USB; USB2.0, USB driver Silabs. NOTE: Autobauding is not available! USB is based on internal USB<->SERIAL convertor inside of device from modem's ASC1 port.
RS232	CANON 9F; 300 to 921600 bps fix bit rate. Autobauding is available. Factory setting is 115200 baud, 8 data bits, no parity, 1 stop bit
HW watchdog	HW Watchdog is available for both RS232 and USB. Note: Watchdog setting is available only via RS232.

6. Documentation

USB driver, a list of **AT** commands and other information, visit the www.seapraha.cz , type "GSM-BGS3-T" into the search box.
In the Name field, enter the text **sea**. In the Password box, type **siemens**.

7. Hardware

7.1 Power supply and it's indication

Supply voltage is connected to terminals PWR and must be in the range of 8-30 V_{DC} or 12-30 V_{AC}. The polarity is therefore irrelevant. The device is protected against overvoltage and has a built in refundable SMD fuse. If the external fuse is needed, use 1.25 A fuse at V_{CC} line. GSM-BGS3-TU can be powered directly from the USB connector.

LED	COLOR	Meaning
Located next to connector PWR	green	*dark* … device is not supplied, or internal power convertor is out of order *light* … device in operation state

7.2 SIM card reader and GSM state indication

SIM card reader

Insert the SIM card into the holder (cut corner first, contacts down - towards the inscription SIM). The correct insertion is indicated by mechanical click noise. Push gently and release to remove the SIM card.

Below the SIM card holder is located the LED which indicates status of GSM.

LED	COLOR	Meaning
Located bellow SIM card holder SIM	blue	Device state indication. *dark* … device failure; Device was switched of using AT command *blinking 1:1* … device starting up *1 short blink per 3 seconds* … device operational

7.3 Antenna

The antenna is connected via SMA connector. The device is fitted with SMA female. The connected antenna must have SMA male. The impedance is 50 Ω.

7.4 Connectors RS232 and mini-USB

To communicate with the modem is designed interface RS232 and USB. The device includes a female connector RS232 and mini-USB. The modem can be controlled using both interfaces, for setting up of the watchdog function is possible to use only RS232 interface.

Factory default baud rate for communication with the modem is 115200 bps, 8 data bits, no parity, 1 stop bit.

7.5 DIN rail mounting

If you need to place the device into the switchboard on DIN rail, screw the plastic holder GSM-75-DIN drilled hole in the side of the modem.

8. Warranty

General warranty period is 24 months after purchase, when eventual malfunction device will be repaired free of charge in SEA spol. s r.o. while shipping to SEA is paid by customer and SEA pays for shipping back to customer.

The warranty does not cover any damage caused by wrong use which does not comply the technical specifications and user instructions and any accidental damage (e.g. by water, lightening etc.).

SEA spol. s r.o. has NO RESPONSIBILITY for any damage, lost, costs and any other problems direct or inducted, caused by device malfunction from any reason.

In case of incompleteness or any damage in the packaging it is necessary to inform SEA spol. s r.o. immediately (within five days).

CE Declaration of conformity

in accordance with the Radio and Telecommunications Terminal Equipment Directive 1999/5/EC (R&TTE) and Directive 2011/65/EU (ROHS).

We SEA, spol. s r.o., Dolnoměcholupská 21, CZ 102 00 Praha 10, **ID**: 47117931 (**manufacturer**)
declare under our sole responsibility, that product GSM modem with serial ports RS232 a USB **type** GSM-BGS3, GSM-EGS5, GSM-EES3 **is in conformity with the following standards:**
health and safety: EN 60 950-1:2005+A1:2009 EN 60 950-1:2006+A11:2009+A1:2010+A12:2011
EMC: ETSI EN 301 489-1 ETSI EN 301 489-7 v1.3.1
radio frequency: EN 301 511 v 9.0.2

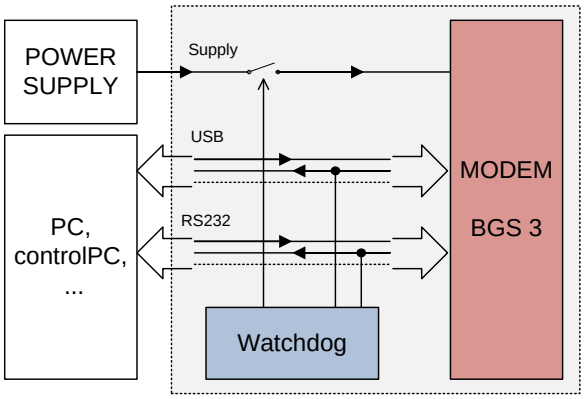
The last two digits of year in which the CE marking was affixed: 13

Place of issue: Praha **Name:** Ing. Vladimír Rosůlek
Date of issue: 25.11.2013 **Grade:** director

SEA s.r.o.

9. Watchdog setting

The device contains a built-in watchdog which checks whether the modem (line RXD on RS232 or USB). If it is no change on the line for specified time period, the modem is considered broken and is cut off from the power supply for 15 seconds. After that the modem and monitoring process starts again.



Time, which is still not considered an error of modem is configured using commands via serial interface RS232. USB port is not possible to use for Watchdog setting!

9.1 Commands

Notes

- Before each command must be a time of 1 second when there are no characters sent!
- Characters '-' and '+' in the following examples are sent. '-' … mean Data are sent to the device, '+' means data are sent by the device.
- '<# 0D>' is a placeholder for ENTER (13D, 0x0D).
- RS232 interface must be set to: 115200 baud, 8 data bits, no parity, 1 stop bit.

Command ECHO

Display current Watchdog setting

```
- GSMWDG<#0D>
+ WDG: OK 123456 D2251D v1.0
```

or

```
- GSMWDG?<#0D>
+ WDG: OK 123456 D2251D v1.0
```

Part	Description
WDG:	Watchdog respond identification
OK	Command accepted OK
123456	Actual Watchdog setting value in seconds (HEX code): 123456 HEX = 1 193 046 seconds ~ 13,8 day 000000 HEX = Watchdog function disabled (default setting) 00003C HEX = 60 seconds ~ 1 minute 000E10 HEX = 3 600 seconds ~ 1 hour 008CA0 HEX = 36 000 seconds ~ 10 hours 015180 HEX = 86 400 seconds ~ 1 day
D2251D	Device Identification
v1.0	Device version

Command SET

Watchdog setting

```
- GSMWDG 112233<#0D>
+ WDG: OK 112233 D2251D v1.0
```

The parameter '112233' means seconds (coded in HEX). See the table for command ECHO. Exactly 6 HEX numbers has to be entered, including leading zeroes.

Value '000000' disables Watchdog function = modem is never restarted by Watchdog.

Example: Disable Watchdog

```
- GSMWDG 000000<#0D>
+ WDG: OK 000000 D2251D v1.0
```

Example: set Watchdog for 1 hour

```
- GSMWDG 000E10<#0D>
+ WDG: OK 000E10 D2251D v1.0
```

Example: set Watchdog for 10 hours

```
- GSMWDG 008CA0<#0D>
+ WDG: OK 008CA0 D2251D v1.0
```

Example: set Watchdog for 1 day

```
- GSMWDG 015180<#0D>
+ WDG: OK 015180 D2251D v1.0
```

Command RESET

Immediate modem reset

```
- GSMWDG RESET<#0D>
+ WDG: OK RESET D2251D v1.0
```

10. Frequently Asked Question

10.1 Command for Watchdog setting does not respond

```
- GSMWDG 52<#0D>
+ <nothing>
```

The problem is in the assignment of the time "52". It is required to enter the exactly 6-HEX digits. The correct command is this:

```
- GSMWDG 000052<#0D>
+ WDG: OK 000052 D2251D v1.0
```