



GSM communication

Datawell - Oceanographic Instruments

GSM: a very cost effective buoy data link for near shore applications

GSM performance

"Today's second-generation GSM networks deliver high quality and secure mobile voice and data services with full roaming capabilities across the world. In less than ten years since the first GSM network was commercially launched, it became the world's leading and fastest growing mobile standard, spanning over 219 countries." (source: GSM world).

GSM is mostly used for wireless communication on land. However the coverage maps (e.g. of The Netherlands and United Kingdom, see other side) show that GSM coverage extends many kilometres out to sea. Experiments on the North Sea demonstrated reliable communication over distances more than 10 Km. This makes GSM a good data link alternative for buoys that are close to the shoreline.

Datawell GSM option

The great advantage of the GSM link is the quick and easy setup. No worries about receiving stations near the shoreline, your network provider has already arranged for that. A PC and GSM modem with a small antenna in the office or on board the ship suffice.

To save buoy energy and telephone costs compressed wave spectra are transmitted at a user selectable interval via SMS (Short Message Service a.k.a. text messages). GPS location and buoy status are also transmitted.

Use Datawell GSM receiver software "gsmBuoy" for buoy (re)configuration and collecting incoming messages. Wave spectra can be viewed with the W@ves21 software.

GSM network information

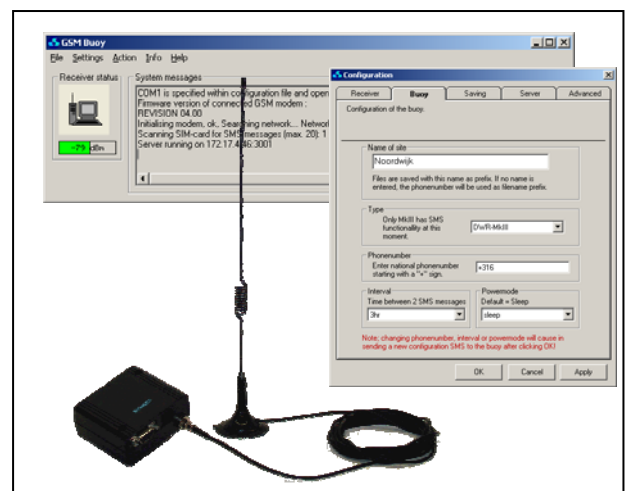
In order to determine if the GSM link is suited for your situation and to determine the proper network provider, visit the GSM world website:

www.gsmworld.com/roaming/gsminfo/index.shtml

Attention: the buoy requires a GSM network that supports the EGSM900, GSM1800 and/or GSM1900 frequency band(s).

Features of the Datawell GSM link

- Receiver: GSM module + desktop antenna + PC.
- Receiver location independent of buoy location.
- GSM network automatically tracks buoy upon buoy re-deployment or in case of (un)intended buoy drift.
- Simultaneous logging of multiple buoys.
- Get buoy data on any location (office, onboard, car).
- Reliable cost effective data transfer over GSM network infrastructure.
- Easy functionality check using your mobile phone.
- Receive latest compressed spectrum at ½-, 1-, 2- or 3-hourly intervals.
- Receiver unit may be down for several hours without any data loss due to network provider buffer.
- Optional I buoy software for transmission of full spectrum and other data. Read technical note "iBuoy for Iridium and GSM" for more information.





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Specifications

GSM modem	Frequency band	Dual-band : EGSM900, GSM1800 and GSM1900
	Output power	Class 4 (2 W) EGSM900 Class 1 (1 W) GSM1800 and GSM1900
	Power receiver unit	8 V - 30 V (battery) or power adapter (mains)
	Power buoy unit	<60 mW (continuous)
	Supported format	ARGOS 31 byte (transmission over SMS in PDU format)
	Approvals	R&TTE GCF approval
	SIM card	prepaid Mini-SIM card subscription Mini-SIM card
	Interface	RS-232 serial port for connection to PC
System requirements	Operating System	Windows 2000, XP
	CPU clock speed	300 MHz
	Memory	128 MB
	Hard disk	20 MB
	Screen size	1024 x 768
Interface	(standard) RS-232 serial port	
Availability	Buoy types suited for GSM communication	WR-SG (0.7 m and 0.9 m) DWR-MkIII (0.7 m and 0.9 m) DWR-G (0.4 m, 0.7 m and 0.9 m)

