Data Telemetry Unit (GPRS)

Valeport's GPRS data telemetry solution is supplied in our robust IP67 housing, which also contains an internal battery pack for total autonomy. Compatible with most Valeport products as well as some other third party products, these GPRS telemetry units are designed to provide data files from the instrument to third party Internet / FTP sites and data display services.

The units are supplied pre-configured with a pay as you go SIM from GO-SIM. (http://www.gosim.com/), these SIM cards provide GPRS coverage in ~80 countries (subject to coverage). While these cards may not be the most cost-effective solution in a particular country they allow a great deal of flexibility and on average in Europe, data costs are ~ £0.01 per transmission.

GSM, UHF and VHF versions are also available, providing transparent links between instrument and operating software.

Data Transmission

Band:	Quad-Band 850 / 900 / 1800 / 1900 MHz GPRS multi-slot class 10/8 GPRS mobile station class B
Approvals:	CE, FCC, ROHS, PTCRB, GCF, IC, ICASA, TA
Power output:	Compliant to GSM phase 2/2+ Class 4 (2 W @850/ 900 MHz) Class 1 (1 W @ 1800/1900MHz)
Aerial:	2dB (isotropic) stubby antenna with TNC connector as standard. Alternatives available for sites where GPRS signal strength is weaker

Operating Mode

The basic operating pattern of the device is to stay in a low power sleep mode until woken by the attached instrument, store ASCII data string transmitted by the instrument and establish a GPRS data link and post data to a defined FTP address, then return to sleep mode.

The unit can also internally buffer data from the connected instrument and upload on a user defined schedule. For example it can hold over 700 records from a TideMaster tide gauge before having to upload the data. This buffering allows for extended battery life.

The unit always requires a sufficient GPRS carrier signal to successfully transfer the data and the buffering capability provides protection from network outages.

Power Supply

The unit can be powered with an external 9-28 vDC supply or internal batteries. The external supply will be used over the internal supply. Current consumption and battery life of the unit is dependent on the frequency of data transmission and upload.

Sleep Current:	350 μA @ 12vDC / 700 μA @ 6vDC
On Current:	9 mA @12vDC / 18 mA @ 6vDC
Transmit Current:	50-250 mA @ 12vDC / 100-500 mA @ 6vDC Variable according to signal strength

The telemetry unit is fitted with 4 Alkaline D-Cell batteries to provide back-up power during long term deployments or power for short term deployments. Internal battery Capacity is 13,000mAH @ 6vDC(based on 75% efficiency).

The unit is wired by default to also supply power to the connected instrument and it can take~30-60s to transmit data dependent on network + data volume

Based on 6 min data cycles with TideMaster, transmitting data every cycle

8s @ 18mA for data capture
30s @ 500mA for data transmission
5m22s @ 700 μA sleep

Average current consumption = 44 mA @ 6 vDC
Average TideMaster consumption = 1.3 mA @ 6vDC

Lifetime of internal batteries would be ~11 days.

Based on 6 min data cycles with TideMaster, transmitting data every hour (10 cycles)

80s @ 9mA for data capture
60s @ 250mA for data transmission
57m40s @ 350 μA sleep

Average current consumption = 4.7 mA @ 6 vDC
Average Tidemaster consumption = 1.3 mA @ 6vDC

Lifetime of internal batteries would be ~90 days.

Physical

Materials:	IP67 Moulded ABS box with o-ring seals, and separate battery & electronics compartments.
Size:	260mm x 160mm x 55mm
Weight:	1kg
Connectors:	To antenna, instrument & external power supply.

Ordering

04000563	GPRS Telemetry Unit in IP67 housing for use with Valeport Tidemaster, 400 series and "mini" series products. Supplied with external dc power cable and communication lead in a foam lined transit case.

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