

# Magellan GSC 100™ Development Kit

*Two-way internet communications  
via satellite with embedded GPS*



Laptop not included.

## GSC 100 & ORBCOMM

ORBCOMM maintains a constellation of 35 low Earth-Orbit (LEO) satellites, providing access to a global telecommunications network from anywhere on earth. The Magellan GSC 100 allows you to send and receive small amounts of data, such as positions and short messages using this constellation of satellites.

## MAGELLAN DEVELOPMENT KIT

Ideal for anyone beginning an ORBCOMM/GPS module integration, this unique GSC 100 is loaded with development software that provides full serial port access, and remote polling capability, while still supporting its standard screen & keyboard features. When testing your serial interface, you can see the results by simply viewing the LCD display. This makes initial debugging much easier than using standard "black box" configurations. The Development Kit also comes with your choice of antenna configurations; a



GSC 100

high-gain, stainless steel VHF antenna for mounting on a fixed site or a VHF vehicle mount antenna for mobile applications.

## ORBCOMM SERIAL INTERFACE

The GSC 100 implements packets from the ORBCOMM's standard Serial Interface Specification. The following functions are provided:

### Transmit:

- Standard Message, up to 2000 bytes
- Store-and-Forward Message, up to 229 bytes
- Position report, 6 bytes
- User defined reports, 6 bytes

### Receive:

- Standard Message, up to 2000 bytes
- Store-and-Forward Message, up to 182 bytes
- Poll for Position (*causes GSC 100 to send its current GPS position*)
- User commands

## GPS

The GSC 100 contains a built-in GPS receiver for position determination. These positions can be transmitted either on demand or automatically at intervals pre-programmed by the user. The GPS unit supports both NMEA output and is Differential GPS (DGPS) ready.

## INTERFACES

Two bi-directional RS 232 serial ports. One for ORBCOMM communications and one for GPS (NMEA out, RTCM DGPS in).

## POWER REQUIREMENTS

The GSC 100 can operate using the internal rechargeable NiCad battery pack, an external DC power source, or external AC power adapter.

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# GSC 100™ Development Kit Specifications

## STANDARD FEATURES

- GSC 100
- Integral GPS
- Detachable VHF Transmit/Receive antenna
- Mounting bracket
- User manual
- Activation instructions
- VHF external antenna & cable<sup>1</sup>
- GPS external antenna & cable
- Computer interface cable
- AC adapter
- ORBMAIL+ Software
- Interrogator Software
- Evaluate™ GPS Software

## Choice of VHF External Antennas



High-gain fixed site VHF antenna

Actual height = 5.5 ft (1.68 m)



Vehicle mount VHF antenna

## OPTIONAL ACCESSORIES

- Any individual components of the S@tellite Communicator Development Kit
- Cigarette lighter DC power cable
- Additional NiCad battery
- Soft carrying case for GSC 100
- Vehicle mount VHF Antenna<sup>1</sup>
- Fixed site, high-gain VHF Antenna<sup>1</sup>

## GSC100 ENVIRONMENTAL AND PHYSICAL

**OPERATING TEMP.**  
-10°C TO +60°C

**STORAGE TEMP.**  
-40°C TO +75°C

### POWER CONSUMPTION

#### Internal Battery<sup>2</sup>

ORBCOMM mode: 5–6 hours  
GPS mode: 6–7 hours

#### Battery Life

300 charge-discharge cycles

#### EXTERNAL POWER

Input Voltage 10–30VDC  
Current 800mA (max. at 12V)  
Power 3W (average)

### WEIGHT

2 lbs.

### DIMENSIONS

8" x 3.5" x 1.75"

### WATER RESISTANCE

Splashproof

## INTERFACES

- 2 bi-directional RS232 serial ports

### ORBCOMM SERIAL PORT

ORBCOMM Serial Interface  
Specification E80050015, Rev. C  
Supports Protocol Mode packets

### GPS SERIAL PORT

Output: NMEA standard message format  
Input: Differential corrections, RTCM standard format, message type 1,9

## GPS PERFORMANCE

### POSITION ACCURACY

Autonomous: 15 meters rms in 2D without SA<sup>3</sup>

Differential: 5 meters

### VELOCITY

0 to 825 knots

### TIME TO FIRST FIX

Warm Start Approx. 1 min.  
Cold Start Approx. 3 min.

## ORBCOMM SPECIFICATIONS

### DATA RATE

2,400 BPS TRANSMIT  
4,800 BPS RECEIVE

### FREQUENCIES

Transmit 148.00–150.05 Mhz  
Receive 137.00–138.00 Mhz

### ADDRESSING

Internet  
X.400

### MESSAGE SIZE

Standard 2000  
Store & Forward 182 Receive  
229 Transmit

## ORDERING INFORMATION

PRODUCT	PART NUMBER
GSC 100 Development Kit	990561

<sup>1</sup>Your choice of fixed site, high-gain or vehicle mount VHF antenna is provided with the Development Kit. The other antenna can be provided for an additional charge.

<sup>2</sup>Operation on a fully charged battery.

<sup>3</sup>Autonomous Accuracy subject to degradation of 100 m under the US Department of Defense imposed Selective availability (SA).

Specifications are subject to change without notice.

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