PGM-948

Specification

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Revision history

VERSION	DATE	PAGE	REVISION DESCRIPTION
1.0	2008/5/27		RF:V120 Baseband:V624LP
1.1	2009/7/24		RF:V121 Baseband:V624LP

1. OVERVIEW

The Polstar G-Mouse PGM-948 is a high performance serial GPS receiver that is both compact and portable. With the Polstar G-Mouse PGM-948, you can now give your PDA or laptop full GPS navigational capabilities at minimal cost while enjoying performance that rivals dedicated GPS navigators. The GPS module receiver provides as many as 65 channels at a time to get extremely fast time-to-first-fix and one second navigation updates. The highly integrated digital receiver uses the Skytraq Venus6T chipset.

The TTL interface used by the G-Mouse PGM-948 permits designers to integrate it across a wide range of platforms with relative ease. It also can be used on RS232 signal level by adding extra RS232 transceiver. PGM-948 uses highly advanced GPS technology. This hardware capability combined with software intelligence makes the PGM-948 easy to be used in all kinds of navigation applications or products.

Because the program memory in module is ROM type process, so the selection of baud rate will depend on client user and be fixed before shipping.

2. PRODUCT FEATURES

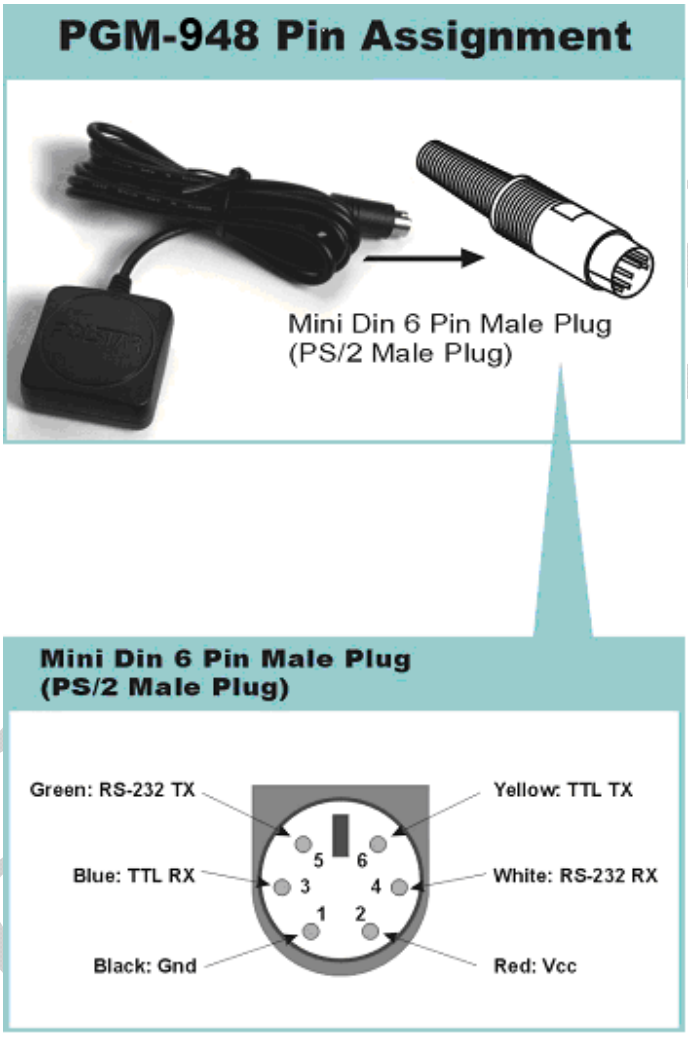
- Dimension 41 x 41 x 18 mm.
- High sensitivity Skytraq Venus 624LP(Baseband) and Venus 121(RF) chipset with tracking sensitivity -160dBm
- Fast TTFF: 2s/25s/35s (Hot/Warm/Cold start)
- 65 acquisition and 14 tracking channels
- Standard PS2 interface, providing both TTL and RS232 signal level
- Baud-rate selection:
  - 4800bps
  - 9600bps
  - 38400bps
  - 1152000bps
- Optional cables:
  - Car charger Y cable
  - USB cable
  - RS-232/Mini Din cable

3. Applications

- PDA
- Laptop
- Fleet management, AVL and Location-based services

4. Interface

4.1. PS2 interface



4.2. Optional cables

Car charger Y cable (for PDA)

USB cable
(for Laptop)

RS232/ Mini Din cable
(for Laptop)

5. Electrical specification

5.1. DC Operating Characteristics

Symbol	Parameter	Min	Typ	Max	Units
Vcc	Operation Voltage	3.0	3.3	5.5	V
V_{IH}	Input High Voltage (I/O)	2.0	–	–	V
V_{IL}	Input Low Voltage (I/O)	–	–	0.8	V
V_{OH}	Output High Voltage (I/O)	2.4	–	–	V
V_{OL}	Output Low Voltage (I/O)	–	–	0.4	V
I_L	Input Leakage Current	–	–	2	μA
Cin	Input Capacitance	–	–	3	pF

5.2. Absolute Maximum Rating

Symbol	Parameter	Min	Typ	Max	Units
$Vcc_{(max)}$	Maximum sustainable Voltage before damage		–	6.5	V
V_{IH}	Input High Voltage (I/O)	2.0	–	6.5	V

5.3. Ambient and Operating Conditions

Symbol	Parameter	Min	Typ	Max	Units
Ta	Ambient temperature	-20	–	70	°C
V_{cc_rip}	Vcc power ripple	–	50	70	mV

5.4. Power Consumption (with active antenna)

Symbol	Parameter	Min	Typ	Max	Units
Pacq	Acquisition (Vcc = 5V)	-	85	-	mA
Ptrack	Tracking (Vcc = 5V)	-	55	-	mA

6. GPS SPECIFICATIONS

Item	Descriptions
Frequency	L1, 1575.42MHz
C/A code	1.023MHz chip rate
Channel number	65 for acquisition, 14 for tracking
Accuracy	
Open sky	CEP(50%) 2.5m without SA
Sensitivity	
Acquisition/Tracking	-148/-160dBm
Reacquisition	-155 dBm
TTFF	
Hot/Warm/Cold	2/25/35 sec (typical)
Reacquisition	<1s
Dynamic	
Altitude	18,000 meters max.
Velocity	515 m/sec max.
Acceleration	4g, max
Jerk	20 meters/second^3 max.
NMEA output (NMEA-0183 protocol)	
Message types	GGA, GSA, GSV, RMC, VTG, GLL
Baud rate	4800/9600/38400/115200 bps (Factory setting before shipping)

7. Application note

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