

**Mars-700Mini TMC** is a GPS Mouse receiver build-in well-known SiRF StarIII GPS chipset and TMC module . **Mars-700Mini TMC** provides customer high position, velocity and time accuracy performances as well as high sensitivity and tracking capabilities. Customers benefit from the strength of both companies.

Thanks to the low power consumption technology, the GPS-Mouse receiver is ideal for many portable applications such as PDA, Tablet PC, smart phone etc.



## Features

- ◆ Built-in high performance SiRF Star III low power chipset.
- ◆ GNS TMC solution
- ◆ Support GNS protocol 3.0.
- ◆ Current consumption 40mA
- ◆ 20 channels parallel.
- ◆ Average Cold Start in 42 seconds.
- ◆ -159 dBm sensitivity in tracking mode
- ◆ NMEA0183 compliant protocol

## Applications

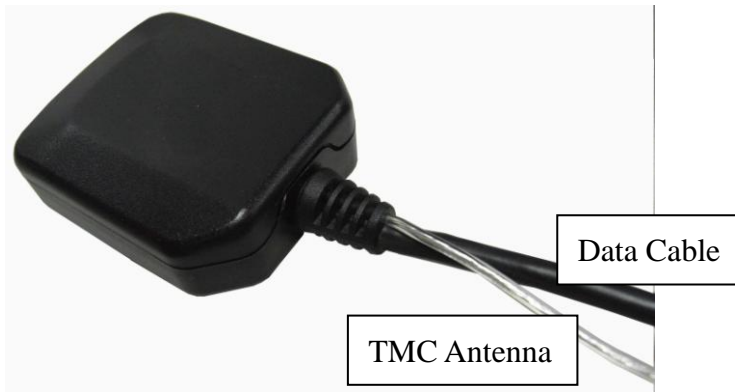
- ◆ Automotive
- ◆ Personal/Portable Navigation (PDA)
- ◆ Geographic Surveying
- ◆ Sports and Recreation
- ◆ Marine Navigation
- ◆ Fleet Management
- ◆ AVL and Location-Based Services

## Specifications

General		Accuracy	
GPS Chip	SiRF Star III LP chipset	Position	
Frequency	L1, 1575.42MHz	10 meters, 2D RMS 7 meters 2D RMS, WAAS corrected 1-5 meters, DGPS corrected	
C/A Code	1.023MHz chip rate		0.1 m/sec
Channels	20 CH	Time	1ms synchronized to GPS time
		Datum	
		WGS-84	
<b>Sensitivity</b>		<b>Dynamic Conditions</b>	
To – 159Bm Tracking, Superior Urban Canyon Performance		Altitude	<18,000 m (60,000 feet)
		Velocity	<515 m/sec (1,000 knots)
<b>Acquisition Rate</b>		Acceleration	<4g
Cold Start	42 sec, average	Motional Jerk	<20 m/sec
Warm Start	38 sec, average	<b>GPS Protocol</b>	
Hot Start	6 sec, average	Default: NMEA-0183, GGA(1), GSA(1), GSV(5), RMC(1), Band rate 38400 bps, Data bit : 8, stop bit : 1	
Reacquisition	0.1sec, average		
Accuracy	Snap start 2 sec, average		
<b>Power</b>		<b>Device Size</b>	
Operation Power	5.0 VDC+10%	41.0x36.0x15.0 mm	
Current Consumption	40mA		
<b>Environmental</b>		<b>Water Proof</b>	
Operating Temperature	- 20 °C to + 80 °C	IPX6	
Relative Humidity	5% to 95% non-condensing		

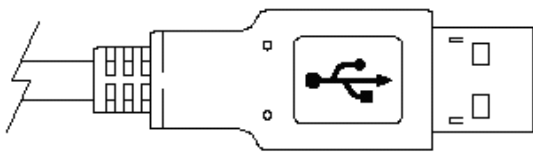
## Hardware Interface

The Mars-700Mini TMC includes an antenna in a unique style waterproof gadget. We can manufacture four kinds of connector cable to suit your demands.



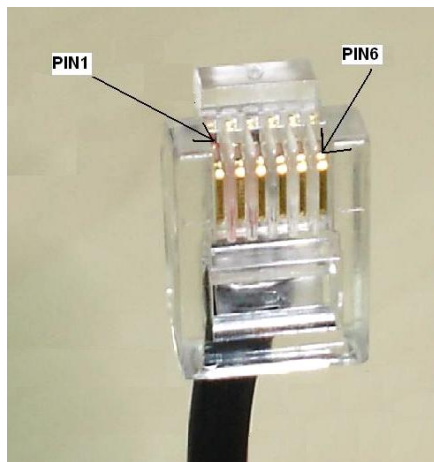


Pin Assignment of A Type USB connector (figure 2)



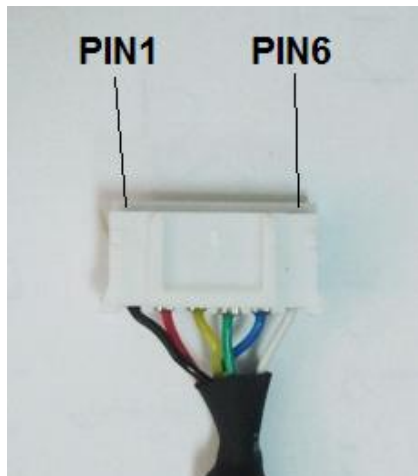
Pin	Signal
1	+5VDC
2	D-
3	D+
4	GND

● Pin Assignment of RJ11 connector



Pin	Signal
PIN1	VCC 5V
PIN2	TMC+GPS RS-232_Rx
PIN3	TMC+GPS RS-232_Tx
PIN4	GND
PIN5	N.C.
PIN6	N.C.

● Pin Assignment of PHR connector



Pin	Signal
PIN1	VCC 5V
PIN2	TMC+GPS RS-232_Rx
PIN3	TMC+GPS RS-232_Tx
PIN4	GND
PIN5	N.C.
PIN6	N.C.

## Appendix A: NMEA output message

### NMEA-0183 Output Messages

<b>NMEA Sentence</b>	<i>Description</i>
GGA (default)	Global Positioning System Fixed Data
GLL	Geographic Position - Latitude/Longitude
GSA (default)	GNSS DOP and Active Satellites
GSV (default)	GNSS Satellites in View
RMC (default)	Recommended Minimum Specific GNSS data
VTG	Course Over Ground and Ground Speed
ZDA	Time and Date

The detail information please refers to SSFXXXX series GPS module NMEA protocol reference manual.

The baud rate only supports 38400 bps. The NMEA message combines with TMC message output.