

GPS-721-MRTU

GPS Receiver Module with RS-232, RS-485, supports NEMA, DCON and Modbus/RTU protocols (Asia Only)

Features

- Support 66-channel GPS and NMEA v0183 v3.01 (Baudrate 9600 bps)
- RS-485 supports DCON protocol and Modbus RTU
- RS-232 supports NMEA v0183 v3.01 format, DCON or Modbus RTU protocol
- Built-in 1 channel DO, 1 channel PPS(1 pulse per second), 1 RS-485 port, 1 RS-232 port
- PPS: 100 ms pulse/s output for precise timekeeping and time measurement
- 10 ~ 30 VDC – (Power reverse polarity protection)
- With various system LED indicators

Introduction

The GPS-721-MRTU, a new GPS solution for Remote GPS Receiver module in ICP DAS, featuring high sensitivity, low power consumption and ultra small form factor with DCON, Modbus RTU and GPS protocols. This powerful item provides you with superior sensitivity and outstanding performance even in the harshest environment.The GPS-721-MRTU provides extra 1 channel DO and 1 channel PPS for users PPS signals can be used for precise timekeeping and time measurement. One can combine the PPS functionality with another as time synchronization source. Therefore, the GPS-721-MRTU can be a powerful GPS remote module as well as a general purpose GPS module with RS-232, RS-485 interface. It can also be applied in Automotive navigation, Personal positioning and navigation, Marine navigation, Satellite time correction and etc…

Applications

- Automotive navigation
- Marine navigation
- Personal positioning and navigation
- Precise timekeeping and time measurement
- Satellite time correction

Specifications

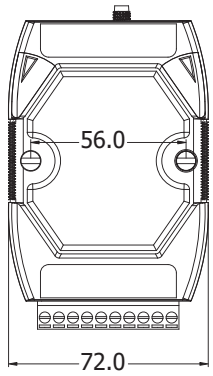
LED Indicators	
Status	1 x Power/Communication 3 x GPS
GPS/GNSS	
Acquisition Time	Cold Start (Open Sky) = 33 s (typical)
Chip	MediaTek solution
Frequency	L1 1575.42 MHz, C/A code
Max. Altitude	<18,000 m
Max. Velocity	<515 m/s
Position Accuracy	Autonomous: 2D RMS SBAS: 2.5m (depends on accuracy of correction data)
Protocol	NMEA 0183 (9600 bps, N81 Fixed)
Sensitivity	Tracking: Up to -165 dBm Cold start: Up to -148 dBm
Support Channels	66
1 PPS	Pulse per second output (Default 100 ms pulse/sec)
Digital Output	
Channels	1 (Sink)
Type	Non-isolated Open Collector
Load Voltage	+5 VDC~ +30 VDC
Load Current	100 mA
COM Ports	
Ports	1x RS-232, 1x RS-485
Baud Rate	1200 ~ 115200 bps
Data Format	N81, N82, E81, O81
Protocol	RS-232: DCON, Modbus RTU or NMEA 0183 (9600 bps, N81 fixed) RS-485: DCON or Modbus RTU
Power	
Input Range	+10 VDC ~ +30 VDC (Non-regulated)
Consumption	2.5 W
Mechanical	
Casing	Plastic
Dimensions (mm)	72 x 117 x 35 (W x L x D)
Weight	200 g

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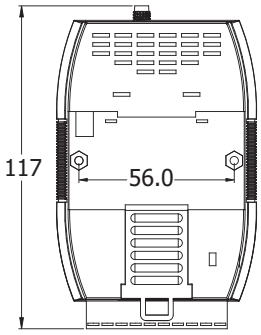
Specifications

Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-40 ~ +80°C
Humidity	5 ~ 95% RH, Non-condensing

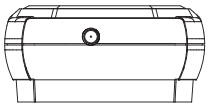
Dimensions (Units: mm)

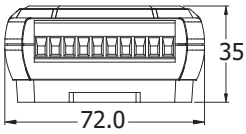


Front View

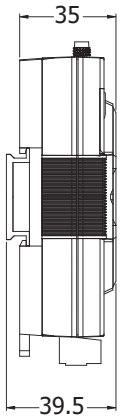


Rear View

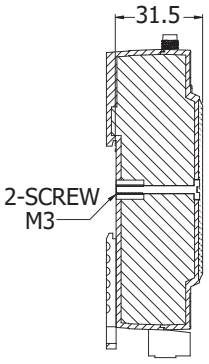

Top View



Bottom View

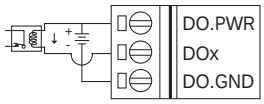
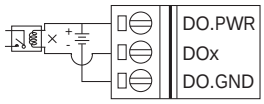
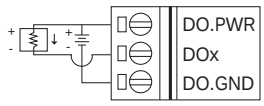
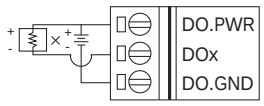


Din-Rail Mounting Bracket

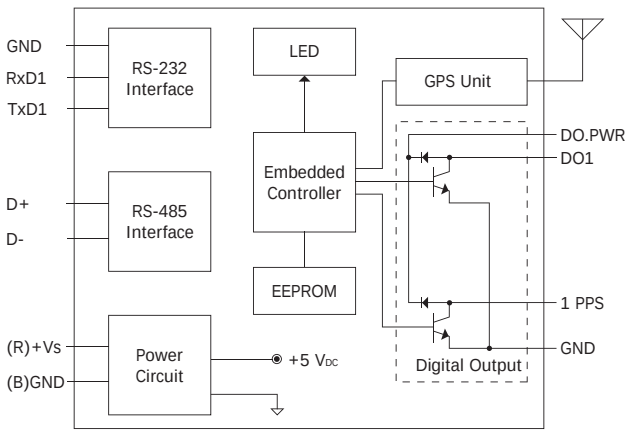


Side View

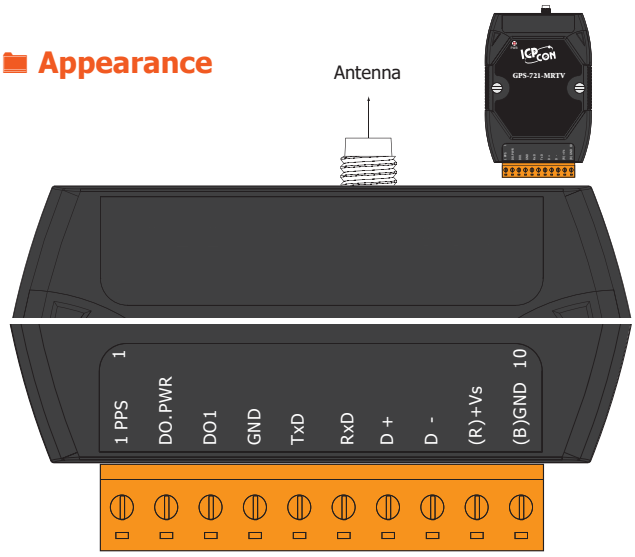
Wiring

Output Type	ON State LED ON Readback as 1	OFF State LED OFF Readback as 0
Drive Relay	Relay ON	Relay OFF
		
Resistance Load		
		

Internal I/O Structure



Appearance



Ordering Information

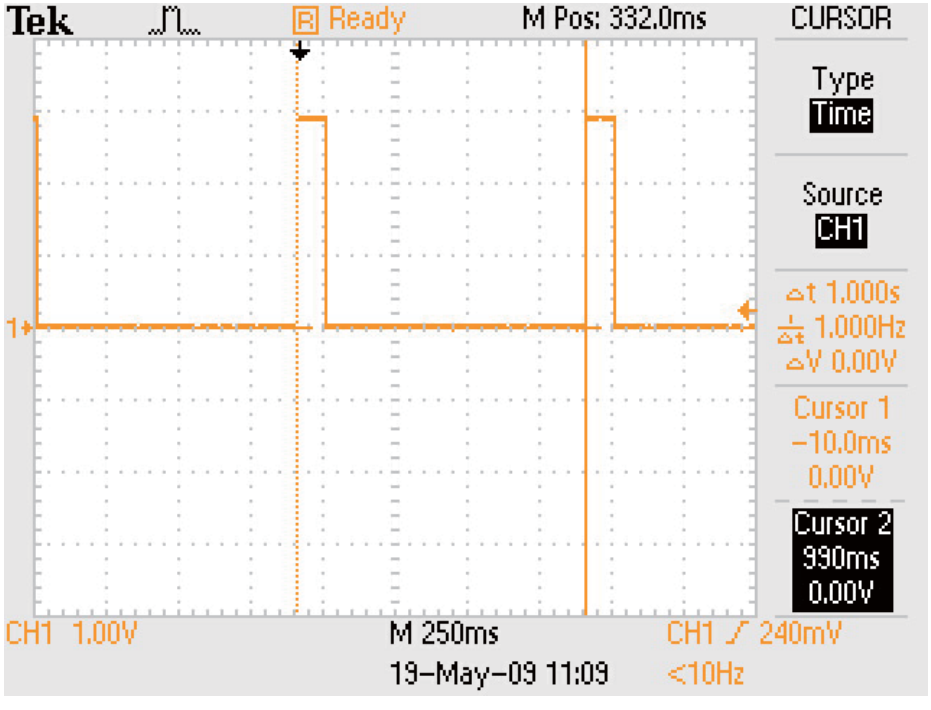
GPS-721-MRTU CR	GPS Receiver Module with RS-232, RS-485, supports NEMA, DCON and Modbus/RTU protocols. (RoHS) (Asia Only) Includes a 5 m GPS antenna (ANT-115-03)

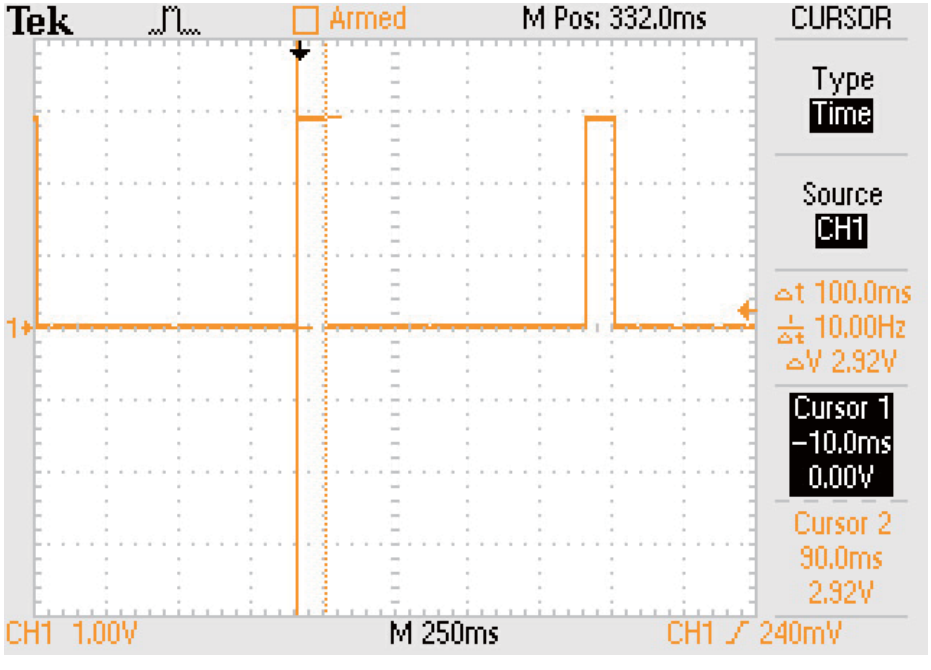
Accessories

ANT-115-03 CR	4PI81K0000001	5 m Active External GPS Antenna (SMA Plug) (RoHS)

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1 Pulse Per Second (PPS - Pulse Duration is 100 ms)





The Global Positioning System (GPS) can also be used as a time reference for radio clocks, but requires an accurate 1PPS output to be reliably used for time signals

A pulse per second (PPS) is an electrical signal that very precisely indicates the start of a second. PPS signals are output by various types of precision clock, including some models of GPS receivers. Depending on the source, properly operating PPS signals have an accuracy ranging from a few nanoseconds to a few milliseconds.

PPS signals are used for precise timekeeping and time measurement. One increasingly common use is in computer timekeeping, including the NTP protocol. Since GPS is considered a stratum-0 source, a common use for the PPS signal is to connect it to a PC using a low-latency, low-jitter wire connection and allow a program to synchronize with it: this makes the PC a stratum-1 time source. Note that because the PPS signal does not specify the time, but merely the start of a second, one must combine the PPS function with another time source that provides the full date and time in order to ascertain the time accurately and precisely.

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