



## Features

- Support 66-channel GPS
- RS-485 supports DCON protocol
- RS-232 supports NEMA v0183 v3.01 format or DCON protocol
- Built-in 1-channel DO, 1-channel PPS (1 pulse/sec), 1 RS-485, and 1 RS-232
- PPS: 100 ms pulse output/sec for precise timekeeping and time measurement
- Capable of SBAS (WAAS, EGNOS, MSAS)



## Introduction

GPS-721 module features high sensitivity, low power and ultra small form factor. This GPS module is powered by MediaTek solution, it provides you with superior sensitivity and performance even in urban canyon and dense foliage environment.

## Applications

- Satellite time correction
- Personal positioning and navigation
- Automotive navigation
- Marine navigation

## I/O Specifications

Digital Output	
Output Channel	1 (Sink)
Output Type	Non-isolated Open Collector
Output Current	100 mA
Load Voltage	+5 Vdc ~ +30 Vdc

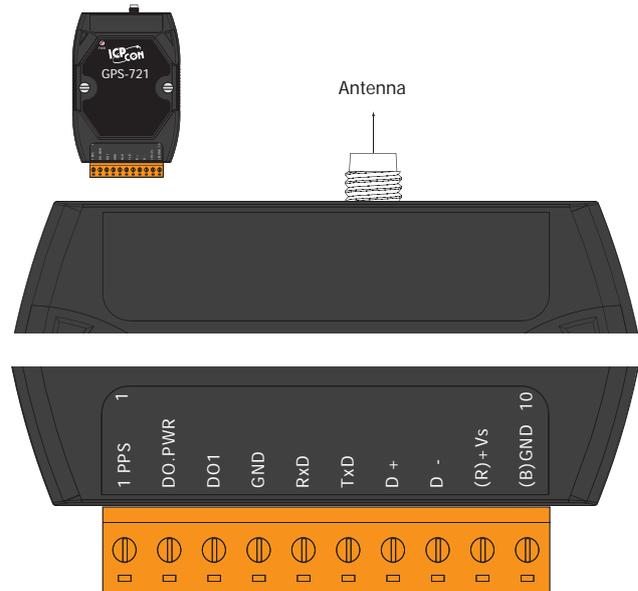
## System Specifications

Models	GPS-721	
<b>GPS Receiver</b>		
Chip	MediaTek solution	
Frequency	L1 1575.42 MHz, C/A code	
Support Channel	32	
Position Accuracy	Autonomous	(2D RMS)
	SBAS	2.5m (depends on accuracy of correction data)
Max. Altitude	<18,000 m	
Max. Velocity	<515 m/s	
Acquisition Time	Cold Start (Open Sky) = 33 s (typical)	
Sensitivity	Tracking	Up to -158 dBm
	Cold start	Up to -142 dBm
Protocol Support	NMEA 0183 version 3.01	
<b>GPS Output</b>		
1 PPS	Pulse per second output (Default 100 ms pulse/sec)	
RS-232 Interface	GPS information output	
<b>LED Indicators</b>		
Power/Communication	1 LED	
GPS	3 LEDs	
<b>Power</b>		
Protection	Power reverse polarity protection	
Frame Ground for ESD Protection	Yes	
Required Supply Voltage	+10 Vdc ~ +30 Vdc (Non-regulated)	
Power Consumption	0.8 W	
<b>Mechanical</b>		
Dimensions (W x H x D)	72 mm x 117 mm x 35 mm	
<b>Environment</b>		
Operating Temperature	-25 ~ +75°C	
Storage Temperature	-40 ~ +85°C	
Humidity	5 ~ 95% RH, Non-condensing	

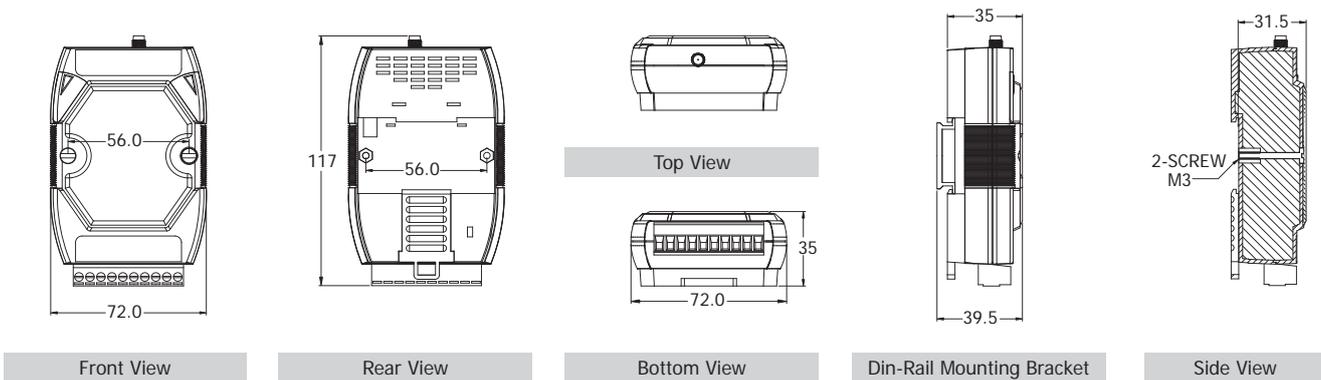
## Wiring

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

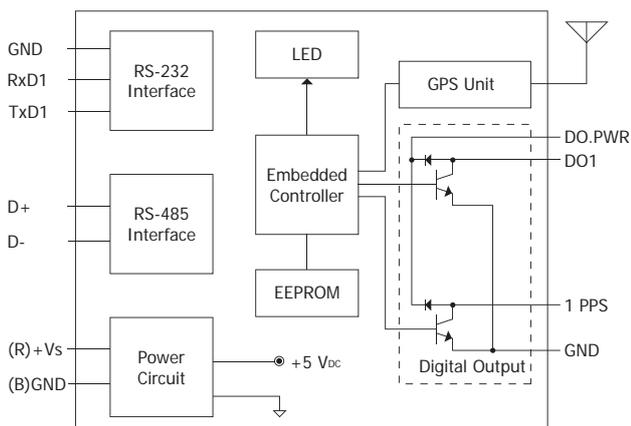
## Appearance



## Dimensions (Units: mm)



## Internal I/O Structure



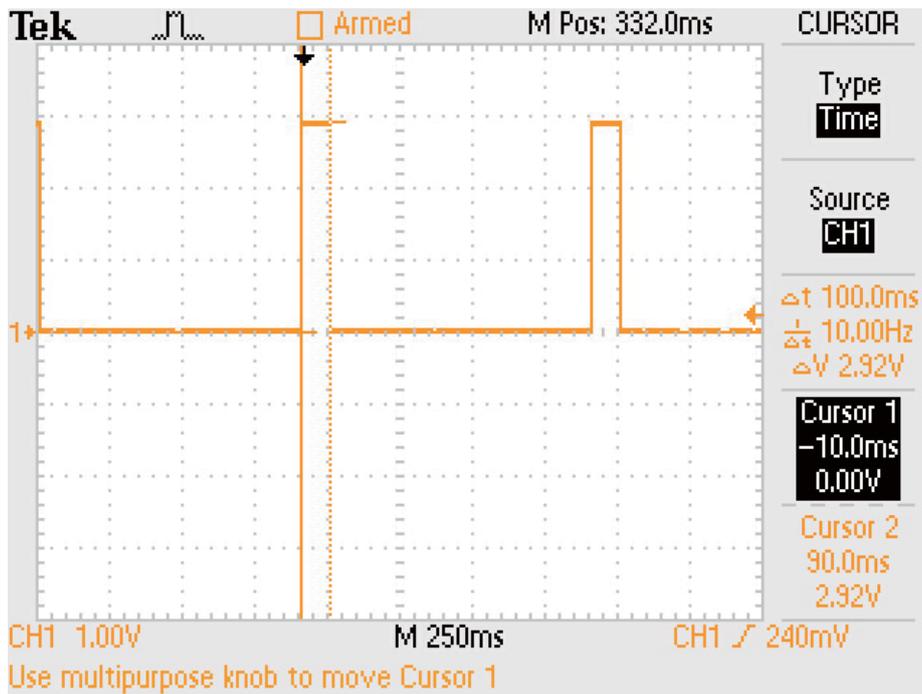
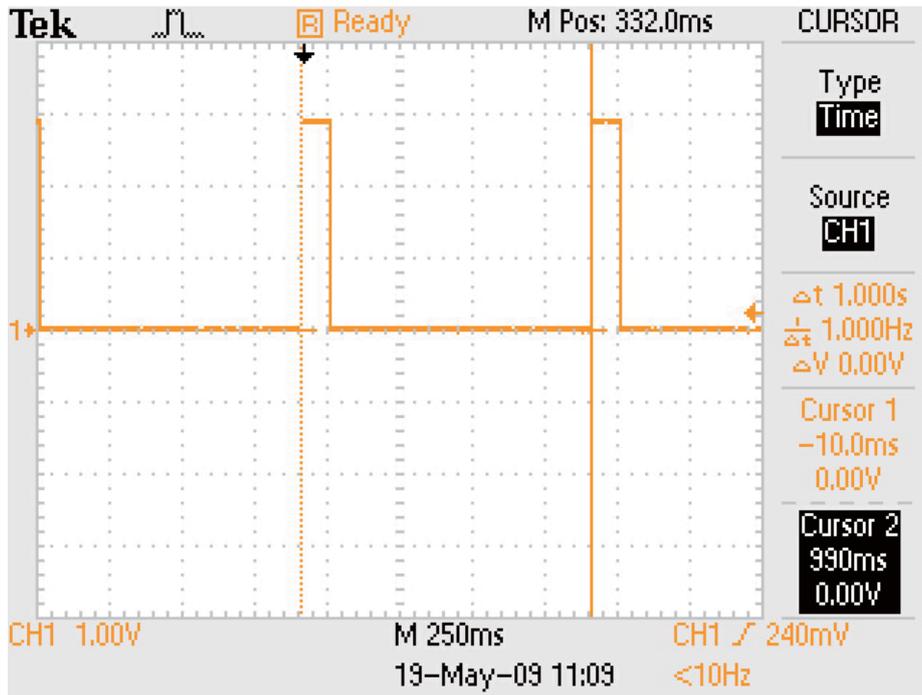
## Ordering Information

GPS-721 CR	GPS Receiver and 1 DO, 1 PPS Output Module (RoHS)
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## Accessories

ANT-115-03 CR	4P181K000001	5 m GPS Active External Antenna (SMA Plug) (RoHS)
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## 1 Pulse Per Second (Pulse duration is 100 ms/pulse)



The Global Positioning System can also be used as a time reference for radio clocks, but require 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.