S4070DR

High-Performance 65 Channel GPS Receiver with Dead-Reckoning

FEATURES

- 100% coverage
- Continuous position fix in tunnels
- Automatic sensor calibration
- 65 Channel GPS L1 C/A Code
- Perform 8 million time-frequency hypothesis testing per second
- Open sky hot start 1 sec
- Open sky cold start 29 sec
- Cold start sensitivity -148dBm
- Tracking sensitivity -161dBm
- Accuracy 2.5m CEP
- Active antenna short circuit protection
- Active antenna open/short detection
- Operating temperature -40 ~ +85ºC
- RoHS compliant

Applications

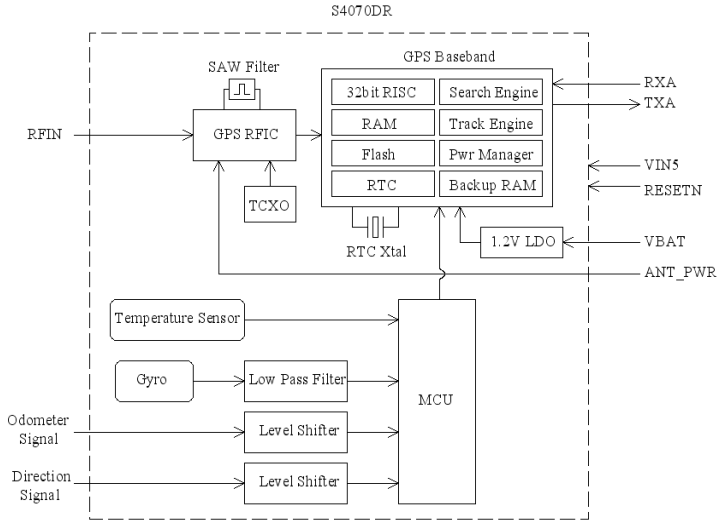
- Automotive Navigation

The S4070DR GPS Dead-Reckoning receiver module combines GPS position data, gyroscope data (measuring turning angle), and odometer data (measuring distance traveled) to formulate position solution. This enables accurate navigation solution in poor signal environment or signal blocked area such as inside tunnels. The S4070DR is ideal for applications requiring accurate continuous navigation with 100% availability.

The Extended Kalman Filter algorithm combines GPS and sensor data with weighting function dependent on GPS signal quality. In poor signal reception area and multipath environment, the position error is reduced by dead reckoning.

The S4070DR features 65 channel GPS receiver with fast time to first fix and improved -148dBm cold start sensitivity. The superior cold start sensitivity allows it to acquire, track, and get position fix autonomously in difficult weak signal environment. The receiver's -161dBm tracking sensitivity allows continuous position coverage in nearly all application environments. The high performance search engine is capable of testing 8,000,000 time-frequency hypotheses per second, offering industry-leading signal acquisition and TTFF speed.

The receiver is suitable for in vehicle car navigation system that requires high performance continuous navigation, low power, and low cost.



TECHNICAL SPECIFICATIONS

Receiver Type	L1 C/A code 65-channel Venus 6 engine
Accuracy	Position 2.5m CEP Velocity 0.1m/sec Time 60ns
Startup Time	1 second hot start < 29 second warm start 29 second cold start
Reacquisition	1s
Sensitivity	-148dBm cold start -161dBm tracking
Update Rate	1Hz
Operational Limits velocity < 515m/s	Altitude < 18,000m or
Serial Interface	3.3V LVTTL level
Protocol	NMEA-0183 V3.01 GPGGA, GPGLL, GPGSA, GPGSV, GPRMC, GPVTG[*1] 38400 baud, 8, N, 1
Datum	Default WGS-84 User definable
Input Voltage	5V DC +/-10%
Input Current	~40mA tracking
Dimension	71mm L x 41mm W
Weight:	20g
Interface Connector	20 pin male header 2.0mm pitch
Operating Temperature	-40°C ~ +85°C
Storage Temperature	-55 ~ +100°C
Humidity	5% ~ 95%

ORDERING INFORMATION

Part Number	Description
S4070DR	GPS/DR Receiver Module

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