

SATELLITE/GSM HYBRID GPS TRACKER



Features

- Firmware
 - ▶ Time/distance/angle triggered (configurable)
 - ▶ Main power lost detection or input power below or above set value detection
 - ▶ Automatic save and resend messages up to 1000 locations
 - ▶ Battery back-up in case of main battery is cut-off
 - ▶ Up to 5 roaming partners can be configured
 - ▶ FOTA (Firmware Over the Air)
 - ▶ COTA (Configuration Over the Air)
 - ▶ Send and receive data using SMS / GPRS / Satellite

Specifications

MECHANICAL & ENVIRONMENTAL CHARACTERISTICS		
Physical Characteristics		
Unit Size (L x W x H)	260 x 103 x 38 mm (±1mm) - (TBD)	
Weight	980 g (±10g)	
Housing	Aluminum case	
Waterproof Casing (IP-67)	Aluminum housing with plastic end caps (optional)	
Communication Characteristics		
Communication Method	Satellite Module	Iridium Satellite module
	GSM	Hex-band GSM network
Antenna	Satellite	External
	GPS	External (internal optional by change housing)
	GSM	External (internal optional by change housing)
Environmental Characteristics		
Operating Temperature	-20°C ~ +75°C (board temperature without SIM card and battery)	
Storage Temperature	-40°C ~ +80°C	
NOTE: Battery has individual operational and storage temperature limitations!		

General Characteristics			
GPIO	4 Input	Active LOW or Active HIGH	SOS (Active LOW)
			Ignition (Active HIGH)
			Spare (Active LOW) → Pulse Counter
			Spare (Active LOW)
	4 Output	Max 200mA, for relay switch connection (Active LOW)	Immobilizer
			Alarm
			Spare
			Spare
	2 Analog Input	10 bit (0V ~ 24V)	Example : Analog Fuel Level Sensor
			Example : Analog Temperature Sensor
3 Digital Input	(0V ~ 3.3V)	Example : I-Button	
		Example : Digital Temperature Sensor (max 5m in length)	
On Board Memory		Flash 1Mbyte (TBD)	
Motion Switch		G-Force (±2G)	
Optional Accessories	I-Button		
	Fuel Level Sensor		
	Temperature Sensor		
	DS18S20		
	2- way Audio Line (high gain, low noise)	Hands-free (Speaker + Microphone)	
Electrical Characteristics			
Input Voltage		+9 ~ +48 V dc (ISO7637)	
Battery Characteristics			
Backup Power		Li-Ion Cell Battery – 1150 mAh/3.7Volt	
Battery Temp. Limitation	Operation Temp.	-20°C ~ +60°C	
	Storage Temp.	-20°C ~ +35°C	

GPS SPECIFICATION		
General		
Receiver Type	50 Channels	
	GPS L1 frequency, C/A code	
	GALILEO Open Service L1 frequency	
Time to First Fix (TTFF)		
Cold Start (Autonomous)	29 seconds	
Warm Start (Autonomous)	29 seconds	
Hot Start (Autonomous)	< 1 second	
Aided Starts	< 1 second	
Sensitivity		
Tracking & Navigation	-160 dBm	
Reacquisition	-160 dBm	
Cold Start (Autonomous)	-144 dBm	
Max Navigation Update Rate	< 4Hz (ROM) / 2Hz Flash	
Accuracy		
Horizontal Position Accuracy	Autonomous	< 2.5m
	SBAS	< 2.0 m
Velocity Accuracy	0.1 m/s	
Heading Accuracy	0.5 degrees	
Dynamic Conditions		
Altitude	50,000m	
Acceleration	≤ 4G max	
Velocity	500 m/s	

CINTERION GSM MODULE SPECIFICATIONS		
General Features		
Frequency Bands	Quad –band : GSM 850 / 900 / 1800 / 1900 MHz	
GSM Class	Small MS	
Output Power (According to Release 99)	Class 4 (+33dBm ± 2dB) for EGSM 850	
	Class 4 (+33dBm ± 2dB) for EGSM 900	
	Class 1 (+30dBm ± 2dB) for EGSM 1800	
	Class 1 (+30dBm ± 2dB) for EGSM 1900	
	The values stated above are maximum limits. According to Release 99, the maximum output power in a multi-slot configuration may be lower. The nominal reduction of maximum output power varies with the number of uplink timeslots used and amounts to 3.0dB for 2Tx, 4.8dB for 3Tx and 6.0dB for 4Tx.	
Protocol	TCP / UDP / HTTP / FTP / SMTP / POP3	
Secure Data Transmission	HTTPS / SSL / PKI	
RoHS	All hardware components fully compliant with EU RoHS Directive	
GSM / GPRS Features		
Data Transfer	GPRS	Multi-slot Class 12
		Full PBCCH support
		Mobile Station Class B
		Coding Scheme 1-4
	CSD	V.110, RLP, non-transparent
		2.4 / 4.8 / 9.6 / 14.4 kbps
		USSD
PPP-stack for GPRS data transfer		
SMS	Point-to-point MT and MO	
	Cell broadcast	
	Text and PDU mode	
	Storage : SIM card plus 25 SMS locations in mobile equipment	
	Transmission of SMS alternatively over CSD or GPRS. Preferred mode can be user defined.	
Fax	Group 3; Class 1	