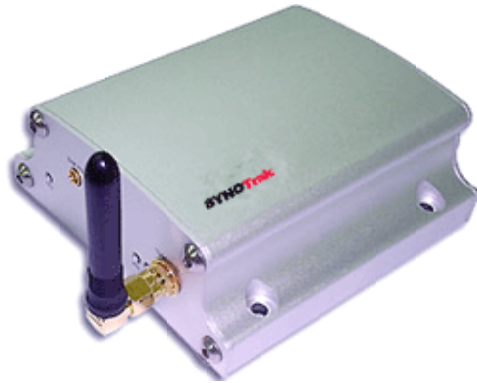


# SX-1000 GPS AVL Tracking Hardware



SIEMENS



## SYNOTrak™ Features

- ▶ Siemens Tri-band MC55/56 GSM + GPRS
- ▶ SiRF III chipset for active GPS tracking
- ▶ Compact form factor in all aluminum housing
- ▶ Support 16 GPS channels "all in view" tracking
- ▶ Full management of passwords
- ▶ Change settings on demand using SMS messaging
- ▶ Operates in adverse or urban canyon conditions
- ▶ Firmware includes built-in TCP/IP protocol and SMS
- ▶ GPRS LCP, PAP, ICPC, TCP IP and UDP protocols
- ▶ 4 digital inputs: 2 fixed 2 open
- ▶ Available with Aluminum or PVC Housing



## SX-1000 Main Applications

- ▶ GPS AVL Systems
- ▶ GPS Asset Tracking
- ▶ GPS Vehicle Tracking
- ▶ GPS Fleet Management
- ▶ GPS Tracking System
- ▶ GPS Heavy Equipment Tracking

## SYNOTrak™ SX-1000 GPS Tracking System

GPS system hardware for GPS AVL Tracking, GPS Asset Tracking and GPS Fleet Tracking and Security applications. Highly reliable with **Siemens Tri-band MC55/56 GSM + GPRS and SiRF III GPS Chipset**. Simple design and easy to integrate protocols make the SX-1000 perfect for GPS tracking applications.

## Product Specification

### Physical Characteristics

- ▶ Weight: 300 g
- ▶ Case: Aluminum or PVC
- ▶ Unit size: 95 \* 89\* 35mm (height)

### Environmental Characteristics

- ▶ Operating Temperature: -35C to +75C (board temperature)

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# SX-1000 GPS AVL Tracking Hardware

## Electrical Characteristics

- Input Voltage: + 12V
- Power Consumption: 12 Volt 200 mA (GPS On Line)
- (Transmitting)
- 0.1A (AVG); 0.13A (Peak) @12V
- Standby: 0.02A (AVG); 0.03A (Peak) @12V
- Backup Power: Nickel Metal Hydride Battery -- 1000mA
- Remote controller frequency: 434Mhz
- Logging flash memory: 1MB (extendable)
- Up to 4000 individual locations can be saved
- Interface: 2 I/Os, 1 Mini USB port, 4 LED lights for gps, gsm and error status 1 & 2
- Power input protected against wrong connection and voltage >24 Volt
- Inputs protected against high voltage

## GPS Specifications

- SiRF III GPS Chipset
- Frequency L1, 1575.42 MHz
- C/A code 1.023 MHz chip rate
- 12 channel accuracy
- Position 25 meters CEP without SA
- Velocity 0.1 meters/second, without SA
- Time 1 microsecond synchronized to GPS time
- DGPS Accuracy: Position 1 to 5 meters, typical Velocity 0.05 meters/second, typical
- Acquisition Time: Snap Start <3 sec., average Hot start <8 sec., average Warm start <38 sec., average Cold start <45 sec., average

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# SX-1000 GPS AVL Tracking Hardware

## GSM Modem Specification

- Siemens Tri-band MC55/56 GSM + GPRS
- 58.3 x 32.2 x 3 mm [TBC]
- 2 Watts EGSM radio section running under 3,6 Volts
- 1 Watt GSM1800 radio section running under 3,6 Volts
- Digital section under 2.8 Volts
- 3V SIM interface
- Real-time clock with calendar
- Echo cancellation + noise reduction
- Full GSM or GSM/GPRS software stack
- Hardware GPRS class 2 capable
- Complete shielding
- SIM card

## GPS/GSM Antenna Specification

- General architecture design 2 Stages active LNA
- Dual Filters, [BPF (dielectric) & LPF (lump element)]
- RF protection (10watt), nano-second Spark-Gap
- Dielectric patch antenna
- Low noise, low drop-out, linear regulator
- Low loss RG/174 coax cable
- Short circuit/ auto shutdown (GPS rcv load protection) performance receiving frequency
- L1 Band (1575MHz)
- Output Impedance 50 ohms
- Polarization: Right Hand Circular (RHC)
- Bandwidth 10dB MHz @ -3dB point
- VSWR 1.5 Typical @ 1575MHz
- Elev. Angle Coverage 5~90 degree

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# SX-1000 GPS AVL Tracking Hardware

- ▶ Az. Bearing Coverage 360 degree
- ▶ Filtering Dual (BPF <10 MHz B/W, LPF @ 1576 MHz)
- ▶ Stop-band @ 1585MHz)
- ▶ Over-all Gain 28dB (typical including 4dB cable loss & Filters)
- ▶ Over-all NF <1.8dB @ fo, 2dB max.
- ▶ LNA Characteristic  $K \Rightarrow 1$  Un-conditionally Stable Electrical Power Input +3Vdc to +12Vdc input, Auto Switch
- ▶ Power Consumption 5 to 11mA (max)
- ▶ Power Input Sensor Reverse Polarity Short Circuit shutdown
- ▶ Over-Current Sensor Thermal Over-current shutdown >+150degree C Physical
- ▶ Radome Color Black
- ▶ Coax Connectors BNC, SMA, SMB, TNC
- ▶ Coax Cable RG-174U double shielded 5m, Low Loss 0.7dB/m
- ▶ Environmental Operating Temperature -30 to + 85 degree C
- ▶ Storage -40 to + 90 degree C Cellular/GSM Antenna
- ▶ Architecture Design PCB patch passive
- ▶ Operating Frequency 860~960 MHz / DCS-1800/ PCS-1900
- ▶ Gain 3dBi typical
- ▶ VSWR <1.5; 1
- ▶ Connectors SMA

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