

EMTAC mini-S3 Datasheet

Chipset: SiRF Star III

General:
Frequency: L1, 1575.42 MHz
C/A: 1.023 MHz chip rate
Channels: 20 channel all-in-view tracking
DGPS Source **Default:** none
Programmable: WAAS/EGNOS
System Back Up: Built-in Li-Ion rechargeable battery

Antenna Type: Built-in

Accuracy
DPGS: 1-2 meters
Position: 1-5 meters CEP, without SA
Velocity: 0.1 meters/second, without SA
Time: 1 microsecond synchronized to GPS time

Datum: WGS-84 (or by demand)

Acquisition Rate: open sky, stationary
Reacquisition: 0.1 second, average
Cold Start: < 30 seconds, average
Warm Start: < 2 seconds, average
Hot Start: < 1 second, average

Dynamic Conditions:
Altitude: < 18,000 meters
Velocity : < 763 meters/second
Acceleration: < 4g

Interface:
Connection: Communicate with Host Platform via Bluetooth (Class 2) Serial Profile
Protocol **Default:** NMEA-0183 (v3.1.1) – GGA (1), GSA(1), GVS(5), RMC(1), VTG(1)
Programmable: Additional NMEA –VTG, GLL/SiRF Binary
Power: Built-in rechargeable battery & 5V DC input charging circuit
Operation Time **Default:** 8 hours (min.) after fully charged, in continuous mode
Programmable: >8 hours *Depends on duty cycle setting in trickle power mode

Device Size: 68 (L) x 48 (w) x 18(H) mm

Environmental:
Operating Temperature: -20° C to +60° C
Relative Humidity: 5% to 95%,non-condensing



* The specifications are subject to change without notice.

Accuracy Tests

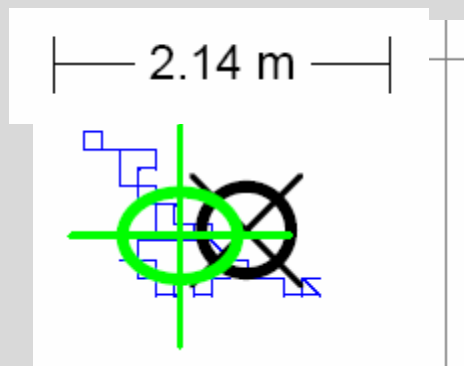
Notes:

- Performed in an open air environment unless otherwise noted
- Performed using VisualGPS
- Performed without WAAS correction unless otherwise noted
- Data collected for 20-30 minutes

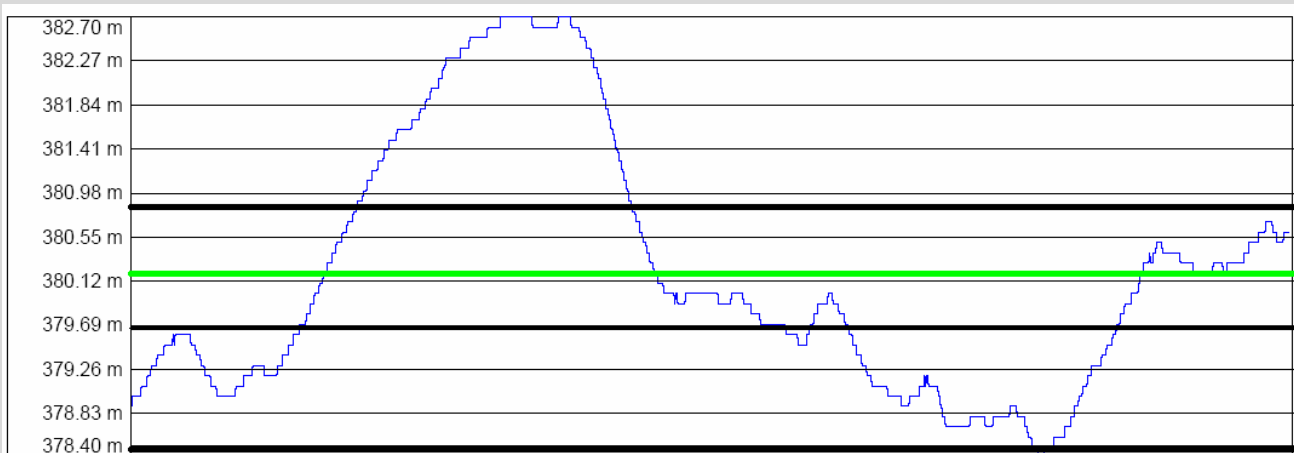
X = LSF Average
+ = Mean Average

September 26, 2006

Horizontal



Altitude

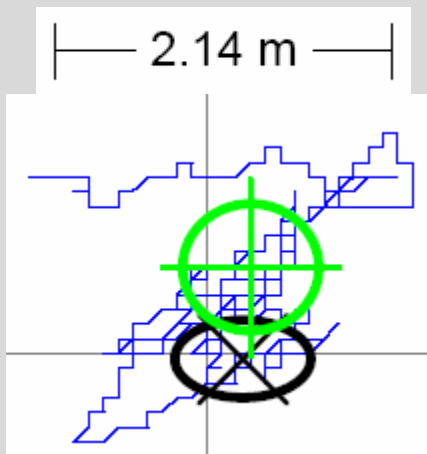


Results

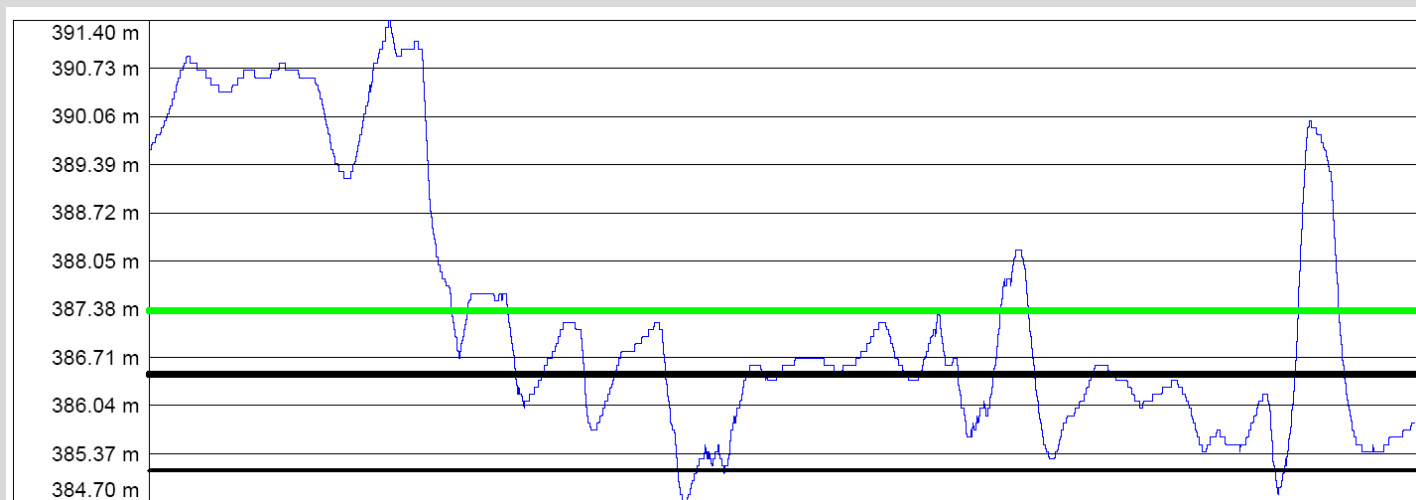
Mean Average:	Samples
Latitude:N 44° 04.5132 StdDev 0.436 m	Lat/Lon Samples:1164
Longitude:W 092° 35.4413 StdDev 0.404 m	Altitude Samples:1164
Altitude:380.19 m StdDev 1.220 m	
Least Squares Average:	Dilution of precision:
Latitude:N 44° 04.5133 StdDev 0.436 m	HDOP <= 1.0 (%100.0)
Longitude:W 092° 35.4409 StdDev 0.330 m	1.0 < HDOP <= 2.0 (%0.0)
Altitude:379.66 m StdDev 1.180 m	HDOP > 2.0 (%0.0)

October 30, 2006

Horizontal



Altitude



Results

Mean Average:

Latitude:N 44° 04.5139 StdDev 0.747 m

Longitude:W 092° 35.4381 StdDev 0.571 m

Altitude:387.36 m StdDev 1.856 m

Samples

Lat/Lon Samples:2187

Altitude Samples:2187

Least Squares Average:

Latitude:N 44° 04.5133 StdDev 0.474 m

Longitude:W 092° 35.4381 StdDev 0.577 m

Altitude:385.14 m StdDev 1.340 m

Dilution of precision:

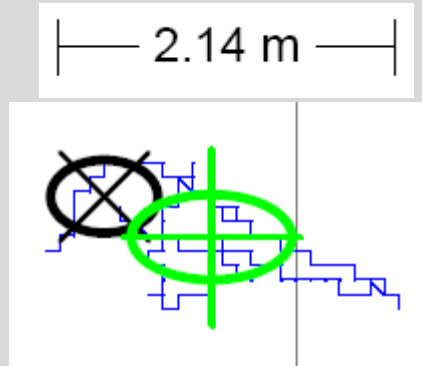
HDOP <= 1.0 (%100.0)

1.0 < HDOP <= 2.0 (%0.0)

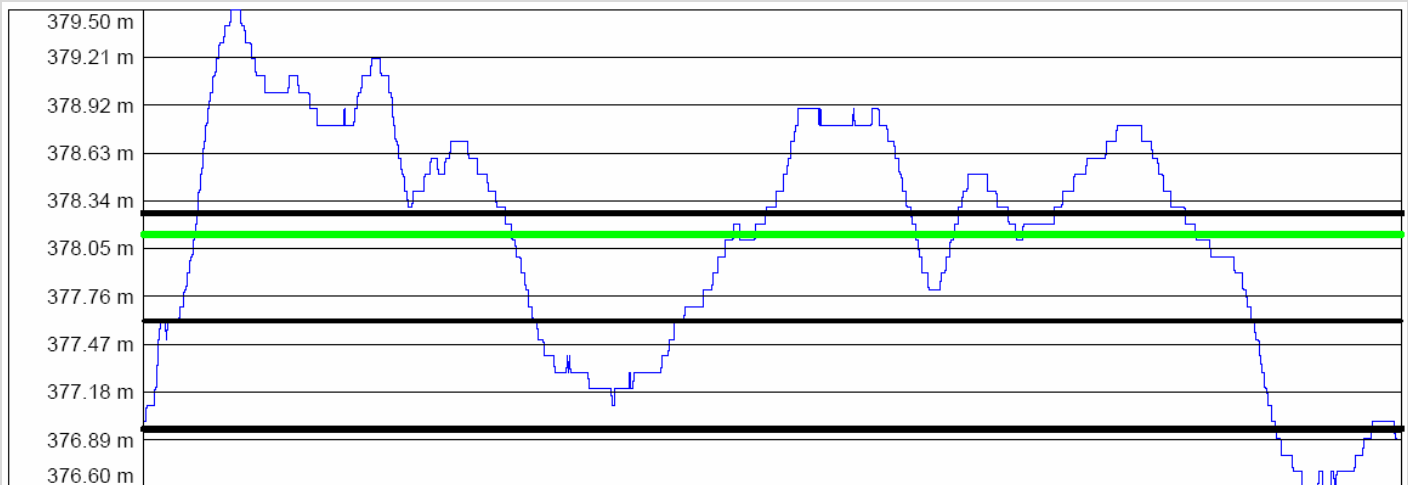
HDOP > 2.0 (%0.0)

September 26, 2006 with WAAS

Horizontal



Altitude



Results

Mean Average:

Latitude: N 44° 04.5141 StdDev 0.521 m

Longitude: W 092° 35.4405 StdDev 0.670 m

Altitude: 378.14 m StdDev 0.720 m

Samples

Lat/Lon Samples: 1205

Altitude Samples: 1205

Least Squares Average:

Latitude: N 44° 04.5144 StdDev 0.452 m

Longitude: W 092° 35.4412 StdDev 0.459 m

Altitude: 377.61 m StdDev 0.654 m

Dilution of precision:

HDOP <= 1.0 (%24.0)

1.0 < HDOP <= 2.0 (%76.0)

HDOP > 2.0 (%0.0)