SF-2050G
SF-2050M

gps products

NavCom's SF-2050G and SF-2050M modular StarFire™ receivers provide instant position information for decimeter-level position accuracy, anywhere in the world, anytime. Onboard memory, and a geodetic quality antenna enable millimeter level accuracy from post-processing.

APPLICATIONS

The rugged and reliable SF-2050 series is designed for productivity with minimal setup time. The SF-2050G is designed for backpack GIS and mapping applications while the SF-2050M is ideal for vehicle mounting to suit a wide variety of machine guidance and control applications. The primary operating mode uses the StarFire™ service, and offers decimeter level accuracy for immediate results in the field; great for navigation and relocation of existing assets. The two onboard WAAS/EGNOS channels provide free GPS corrections, which coupled with dual frequency measurements and NavCom's enhanced SBAS algorithm typically provides half-meter real-time accuracy. Simply connect your controller solution to the serial port and receive NMEA format position information, or use a NavCom Partner controller solution for additional configuration and monitoring capabilities.

BENEFITS

The SF-2050 receivers use our NCT-2100D GPS Engine, the fourth generation of the Touchstone™ ASIC family, of which more than 25,000 are in use worldwide. This incorporates our patented interference suppression and multi-path mitigation, up to 50Hz raw data rate, geodetic quality measurements, and up to 25Hz positioning.

The SF-2050 utilizes a compact tri-band antenna capable of receiving GPS and StarFire signals. This antenna provides excellent phase center stability in a small, robust, lightweight format.

Coupled with NavCom Technology's StarFire subscription service, the SF-2050 delivers 10 cm position fixes without the use of a second receiver serving as a base station. Add the RTK option to your SF-2050, and an external radio capable of receiving RTK corrections from a Base station, and now your SF-2050 is able to do RTK level surveys for unsurpassed accuracy.

FLEXIBLE INTERFACE

The SF-2050 receivers are easily configured by the provided Windows®-based utility program. For system integrators needing maximum flexibility, the receivers offer a binary user interface that allows for complete command and control of the GPS and L-Band Module, thus enabling customization of the interface and receiver operation. The sensor can receive GPS corrections in NCT (NavCom's ultra compact binary format), RTCM and CMR thus permitting optimum correction source usage with seamless position output.

FEATURES

- Fully integrated receiver in robust housing
- "All-in-view" tracking on 26 channels (12 L1/L2 GPS + 2 SBAS)
- Global decimeter level accuracy using StarFire™ corrections
- Fully automatic acquisition of StarFire broadcast corrections
- Two dedicated WAAS/EGNOS channels
- L1 & L2 full wavelength carrier phase tracking
- C/A, P1 & P2 code tracking
- 64MB internal memory for data recording
- User programmable measurement and navigation data rates
- Minimal data latency
- Superior interference suppression
- Patented multipath rejection
- Output format NMEA 0183 or NavCom binary format
- CAN bus interface (SF-2050M Only)
- 1PPS Output (SF-2050M Only)
- Event Marker (SF-2050M Only)
- TruBlu™ Wireless Connectivity, Bluetooth® compatible

UPGRADES

- Raw measurement data rates up to 50Hz
- Positioning rates up to 25Hz
- RTK positioning rates up to 25Hz (external comm-link required)
- RTK Extend™ - RTK positioning during comm. outages

Modular GPS and StarFire™ receiver provides worldwide decimeter level accuracy anywhere, anytime

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SF-2050 Series
TECHNICAL SPECS

PHYSICAL/ENVIRONMENTAL

- Size (L x W x H): .....8.18in x 5.67in x 3.06in (208mm x 144mm x 78mm)
- Weight: .....4lbs (1.81 kg)
- External Power:
  Input Voltage: .....10 VDC to 30 VDC
  Consumption: .....< 8 W
- Connectors:
  I/O: .....2 x 7 pin Lemo
  DC Power: .....4 pin Lemo
  GPS Antenna: .....TNC-F
  CAN bus + Event: .....5 pin Lemo (SF-2050M Only)
  1PPS Output: .....BNC (SF-2050M Only)
- Temperature (ambient):
  Operating: .....-40° to +55°C (-40° to +131°F)
  Storage: .....-40° to +85°C (-40° to +185°F)
- Humidity: .....95% non-condensing
- Tested in accordance with MIL-STD-810F for: low pressure, solar radiation, rain, humidity, salt fog, sand & dust, and vibration

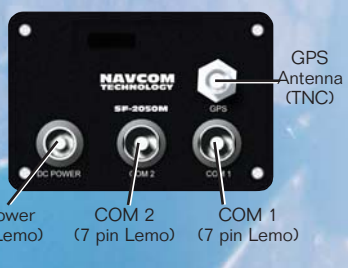
PERFORMANCE [1]

- Measurement Precision (RMS):
  Raw C/A code: .....20 cm @ 42 dB-Hz
  Raw carrier phase noise: .....L1: 0.95 mm @ 42 dB-Hz
  L2: 0.85 mm @ 42 dB-Hz
- Velocity: .....0.01 m/s
- Real-time StarFire Accuracy (RMS):
  Position (H): .....<10 cm
  Position (V): .....<15cm
- Enhanced SBAS (WAAS/EGNOS) Positioning Accuracy:
  Horizontal: 0.5m
  Vertical: 0.7m
- Code Differential GPS Positioning <200kms (RMS):
  Horizontal: .....12 cm + 2ppm
  Vertical: .....25 cm + 2ppm
- RTK Positioning <10kms (Software option) (RMS):
  Horizontal: .....1 cm + 1ppm
  Vertical: .....2 cm + 1ppm
- RTK Extend (Software option) (RMS):
  Horizontal: .....2 cm + 1ppm
  Vertical: .....4 cm + 1ppm
- User programmable output rates:
  Position Velocity Time: .....5 Hz (10Hz, 25Hz Optional)
  Raw measurement data: ..5 Hz (10Hz, 25Hz, 50Hz Optional)
- Data Latency:
  Position Velocity Time: .....< 20 ms at all rates
  Raw measurement data: .....< 20 ms at all rates
- Time-to-first-fix:
  Cold Start, Satellite Acquisition: .....< 60 seconds (typical)
  Satellite Reacquisition: ..... < 1 second
- Dynamics: (Speed & Altitude restricted by export laws)
  Acceleration: .....up to 6g
  Speed: .....< 1,000 knots (515 m/s)
  Altitude: .....< 60,000 ft (18.3km)
- 1PPS Resolution: .....12.5ns relative accuracy (SF-2050M Only)

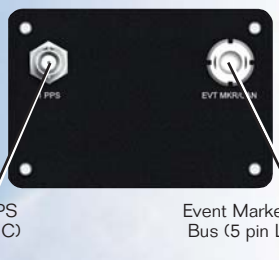
[1] *Performance dependent on location, satellite geometry, atmospheric conditions and GPS corrections.*

COMMUNICATIONS

- Messages:
  Data/Control: .....NCT Binary Messages
  NMEA: .....ALM, GGA, GLL, GSA, GST, GSV, RMC, VTG, ZDA
- Corrections: .....RTCM Code (Msg. 1, 3 & 9)
  SBAS (WAAS/EGNOS)
  StarFire™
- RTK Corrections: .....NCT Proprietary
  (Optional) RTCM (Msg. 18/19 or 20/21)
  CMR (Msg. 0, 1, 2)
  CMR+



Back Panel SF-2050M Only



Technical specifications are subject to change at NavCom's discretion.
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