



# SF-3050

- Sapphire™ GNSS Engine
  - 66 Channel GNSS Receiver
- Multi-Constellation Support
  - GPS, GLONASS, GALILEO
- Software Upgradeable Receiver
- Integrated StarFire™ with decimeter global accuracy
- Ultra RTK™ (GPS + GLONASS)



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NavCom's SF-3050 family of integrated StarFire™/RTK Extend™ Receivers provide decimeter-level position accuracy, anywhere in the world, anytime.



Powered by the new Sapphire™ Engine, the SF-3050 provides 66 channel tracking, including multi-constellation support for GPS, GLONASS and Galileo. It also provides patented interference rejection and anti-jamming capabilities.

Offering the "freedom to choose," the SF-3050 is fully upgradeable allowing users to upgrade from a single frequency receiver to multi-frequency or anything in between with just a software bundle upload, saving users the expense of purchasing a new receiver. This flexible framework makes the SF-3050 ideal for any application.

## FEATURES

- "All-in-view" parallel tracking with 66 channels
- SBAS (WAAS/EGNOS/MSAS/GAGAN) tracking
- Built-in StarFire receiver
- L1, L2, L5, G1, & G2 full wavelength carrier phase tracking
- C/A, P1, P2, L2C, L5, G1 & G2 code tracking
- Software upgradeable for Galileo signal reception (E1, E5a)
- High sensitivity / low signal level tracking
- Fast acquisition / re-acquisition
- Superior interference suppression (both in-band & out-of-band)
- Patented multipath rejection
- RTK Extend™
- StarFire Over the Air (OTA) Licensing Capable
- Minimal data latency
- Data message formats
  - NMEA-0183: ALM, GBS, GGA, GLL, GRS, GSA, GST, GSV, RMC, RRE, VTG, ZDA, NCT proprietary
  - Differential Correction: RTCM 2.3 and 3.0, SBAS, and StarFire (proprietary)
  - RTK Correction: CMR/CMR+, RTCM, NavCom Proprietary UltraRTK™
  - Receiver Control: NavCom Proprietary commands (ASCII)
- Configurable as RTK base or rover
- Programmable output rates
- Event marker input
- 1 PPS output
- Communication Ports: 2 x RS232 (1 - Changable to RS422), 1 x USB 2.0 (Host or Device), Bluetooth™ and Ethernet (10T/100T)
- 2GB Internal Data Storage



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## SPECIFICATIONS

### PERFORMANCE<sup>(1)</sup>

- Accuracy (RMS)
 

|                     | Horizontal / Vertical     |
|---------------------|---------------------------|
| RTK: <40km          | 1cm + 0.5ppm / 2cm + 1ppm |
| StarFire            | <10cm / <15cm             |
| Code DGPS: <200kms  | 45cm + 3ppm / 90cm + 3ppm |
| Velocity:           | 0.01ms                    |
| RTK Extend (<15min) | 3cm + 1ppm / 6cm + 2ppm   |
- User programmable output rates:
 

|                         |                                   |
|-------------------------|-----------------------------------|
| Position Velocity Time: | 1Hz, 5Hz, 10Hz, 25Hz, 50Hz, 100Hz |
| Raw data:               | 1Hz, 5Hz, 10Hz, 25Hz, 50Hz, 100Hz |
- Data Latency:
 

|                         |                     |
|-------------------------|---------------------|
| Position Velocity Time: | < 10ms at all rates |
| Raw measurement data:   | < 10ms at all rates |
- Time-to-first-fix:
 

|                   |                       |
|-------------------|-----------------------|
| Cold / Warm / Hot | < 60s / < 50s / < 20s |
|-------------------|-----------------------|

 (typical values measured per ION-STD 101)
- Dynamics (Speed & altitude are restricted by export laws):
 

|               |                       |
|---------------|-----------------------|
| Acceleration: | up to 6g              |
| Speed:        | < 515 m/s (1000knots) |
| Altitude:     | < 18.3 km (60,000ft)  |

### PHYSICAL/ENVIRONMENTAL

- Size (L x W x H): 164mm x 117mm x 60mm (6.47in x 4.60in x 2.37in)
- Weight: 0.5kg (1.1lbs)
- Power:
 

|        |  |
|--------|--|
| Input: | AC/DC Adapter 110/220VAC, 12VDC Nominal 0.5A (9.0V to 32VDC) |
|--------|--|
- Temperature (ambient):
 

|            |                                  |
|------------|----------------------------------|
| Operating: | -40° to +70° C (-40° to +158° 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, humidity, salt fog, shock and vibration
- Rated IP67 (dust tight/waterproof) in accordance with IEC 60529
- Tested in accordance with FCC/CE regulations for electromagnetic interference
- Connectors:

| Port           | Antenna       | COM1/LAN              | COM2/USB                   | Power               |
|----------------|---------------|-----------------------|----------------------------|---------------------|
| Connector Type | TNC (female)  | 9 pin female circular | 9 pin female circular      | 9 pin male circular |
| I/O Function   | Antenna Input | Ethernet COM1 (RS232) | USB 2.0 COM2 (RS232/RS422) | PWR Input           |

<sup>(1)</sup> Performance dependent on location, satellite geometry, atmospheric conditions and GNSS corrections.

Technical specifications subject to change at NavCom's discretion



Rear Panel of the SF-3050