

StarFire™ GNSS Receiver

SF-5050



SF-5050



- ▶ Onyx GNSS Engine - 255 Channels
- ▶ Multi-Constellation Support
- ▶ Software Upgradeable Receiver
- ▶ Integrated StarFire with 5cm Global Accuracy
- ▶ Ultra RTK (GPS + GLONASS)
- ▶ RTK Extend

NavCom's SF-5050 integrated StarFire™/RTK Extend™ Receivers provide 5cm-level position accuracy, anywhere in the world, anytime. Powered by the new Onyx GNSS Engine, the SF-5050 provides 255 channel tracking, including multi-constellation support for GPS and GLONASS. It also provides patented interference rejection and anti-jamming capabilities. Offering the "freedom to choose," the SF-5050 is fully upgradeable allowing users to upgrade from an autonomous receiver to a variety of augmentation capabilities with just a software bundle upload. This flexible framework makes the SF-5050 ideal for any application.



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FEATURES

- "All-in-view" parallel tracking with 255 channels
- SBAS (WAAS/EGNOS/MSAS/GAGAN) tracking
- Built-in 3-channel StarFire receiver and demodulator
 - GPS: L1 - CA, P1
L2 - L2CA, P2, L2CL
L5 - L5Q
 - Glonass: G1 - G1C
G2 - G2C
 - Beidou: B1 - B1I
B2 - B2I
 - Galileo: E1 - E1B
E5A - E5AQ
E5B - E5BQ
- High sensitivity / low signal level tracking
- Fast acquisition / re-acquisition
- Superior interference suppression (both in-band & out-of-band)
- Patented multipath rejection
- StarFire Over IP delivery (Optional)
- RTK Extend™
- Over-the-air StarFire™ licensing option
- Minimal data latency
- Data message formats
NMEA-0183: ALM, DTM, GBS, GFA, GGA, GLL, GNS, GRS, GSA, GST, GSV, HDT, MLA, RMC, RRE, ROT, TTM, VTG, ZDA, PNCT
NCT proprietary
 - Differential Correction: SBAS and StarFire (proprietary)
 - RTK Correction: RTCM 2.3, 3.0, and MSM, NavCom Proprietary UltraRTK™
 - Receiver Control: NavCom Proprietary commands (ASCII/binary)
- Configurable as RTK base or rover
- Programmable output rates
- Event marker input
- 1 PPS output
- Communication
 - Ports: 4 x RS232 (2 - Changeable to RS422)
2 x USB 2.0 (Device)
Ethernet (10T/100T)
- 4 to 32GB SD Card (customer supplied)

SPECIFICATIONS

(refer to User Guide for complete product specifications)

PERFORMANCE¹

Accuracy

RTK: <40km
StarFire:
RTK Extend: (<15min)
Code DGPS: (<200kms)
Velocity:
Heading⁴:

Horizontal / Vertical

+ 1 cm, +0.5ppm / + 2 cm, +1ppm (1σ)
<5cm / <10cm (1σ)
3cm + 1ppm / 6cm + 2ppm (1σ)
45cm + 3ppm / 90cm + 3ppm (RMS)
0.01ms (RMS)
0.1°

User programmable output rates:

Position Velocity Time (Hz): 1, 5, (10, 25 optional)
Raw data (Hz): 1, 5, (10, 25 optional)

Data Latency:

Position Velocity Time: < 10ms at all rates
Raw measurement data: < 10ms at all rates

Time-to-first-fix:

Cold / Warm / Hot < 65s / < 55s / < 20s
(typical values measured per ION-STD 101)

Dynamics (Speed & altitude are restricted by export laws):

Acceleration: up to 6g
Speed: < 515 m/s² (1000 knots²)
Altitude: < 18.3 km^{2,3} (60,000 ft^{2,3})

PHYSICAL/ENVIRONMENTAL

Size (L x W x H): 176.3 x 168 x 72 mm (6.94in x 6.61in x 2.83in)
Weight: 1.93kg (4.24lbs)
Power: 8 Watts
Input: 9 to 32VDC, AC/DC Adapter
110/220VAC, 1.5A autoranging
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-810G for low pressure, solar radiation, humidity, salt fog, shock, and vibration
- Tested for electrical safety in onshore and offshore environments in accordance with IEC 60945/60950
- Rated IP67 (dust tight/waterproof)
- Tested in accordance with FCC/CE regulations for electromagnetic interference

PORT	Antenna (GNSS 1/2)	COM1-LAN	COM 2/4 - USB 1/2	Power
CONNECTOR TYPE	TNC (female)	9 pin female circular	DB26 pin connector	9 pin male circular
I/O FUNCTION	Antenna Inputs	Ethernet/ COM1(RS-232)	COM 2/4 (RS232/RS422)	PWR and 1 PPS Out, Event In

¹ Performance dependent on location, satellite geometry, atmospheric conditions and GNSS corrections

² Restricted by USA export laws.

³ Supported in software.

⁴ Requires two SF-5050 units



Technical specifications subject to change at NavCom's discretion