

SC650 (S) GNSS Receiver

CORS and Monitoring



SC650 (S) TECHNICAL FEATURES

RECEIVER

Satellite signals tracked	GPS: L1C/A, L1P, L2C, L2P, L5
	GLONASS: L1, L2, L3
	BEIDOU: B1I, B2I, B3I, B1C, B2a, B2b
	GALILEO: E1, E5a, E5b, E6, ALTBOC
	QZSS: L1C/A, L2C, L5
	IRNSS: L5
Channels	SBAS
Position Rate	440+
Signal Reacquisition	100 Hz
Cold Start	< 1 s
Hot Start	< 45 s
Internal Memory	< 20 s
External Memory	32 GB storage
Multipath and interference mitigation technology	TF card supported
	Yes

POSITIONING¹

HIGH PRECISION STATIC SURVEYING	
Horizontal	2.5 mm + 1 ppm RMS
Vertical	5 mm + 1 ppm RMS
RTK (< 30 Km) ²	
Fixed RTK Horizontal	6 mm + 1 ppm RMS
Fixed RTK Vertical	10 mm + 1 ppm RMS
SBAS Accuracy ³	< 60 cm RMS

INTERNAL MODEM

Band	LTE FDD:
	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/
	B19/B20/B25/B26/B28
	LTE TDD: B38/B39/B40/B41
	UMTS: B1/B2/B4/B5/B6/B8/B19
	GSM: B2/B3/B5/B8
	Nano SIM card

INTERNAL RADIO

Type	Tx - Rx 1 W
Frequency Range	410 - 470 MHz
Channel Spacing	902.4 - 928 MHz
Channel Spacing	12.5 KHz / 25 KHz
Maximum Range ⁴	3-4 Km in urban environment
	Up to 10 Km with optimal conditions

USER INTERFACE

LEDs	GSM, Differential data, Satellites
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SYSTEM CONFIGURATION

Operating System	Linux
Processor	A7 platform

COMMUNICATION

I/O Connectors	Power input: Lemo-0 female, 2 pin
	DB9 9pin:
	➢ RS232_RXD (Port receives the data)
	➢ RS232_TXD (Port sends the data)
	➢ RS232_RTS (Request send data)
	➢ RS232_CTS (Allow send data)
Bluetooth	RJ45
	M12 (RS232, RS485, CAN, EVENT, 1pps)
	LTE TNC
	UHF/LoRa (Optional) ⁵ TNC
	GNSS external antenna TNC
Wi-Fi	BT 5.0 EDR, LE
Web UI	802.11b/g
	To upgrade the software, manage the status and settings, and download data, use a smartphone, tablet, or other internet-enabled electronic device
Reference outputs	Raw data, RTCMV2.x/V3.2/V3.3, Rinex v3.04/v2.11/etc.
Navigation outputs	NMEA 0183

NETWORKING SERVICES

NTRIP	Caster/Server/Client
Remote Management	By Stonex Software
FTP server	For data download
Email alerts	For low storage and other warning messages
NTP server	Support
Others	DDNS, VPN, SNMPD, Firewall

POWER SUPPLY

Voltage	10-28V DC wide voltage
Power consumption	2.4~3.7W

PHYSICAL SPECIFICATION

Dimensions	158 mm x 142 mm x 43 mm
Weight	570 g
Operating Temperature	-40°C to 80°C (-40°F to 176°F)
Storage Temperature	-45°C to 85°C (-49°F to 185°F)
Waterproof/Dustproof	IP68
Shock Resistance	Designed to endure to a 1.5 m drop on concrete floor with no damage
Humidity	100% non-condensing

1. Accuracy and reliability are generally subject to satellite geometry (DOPs), multipath, atmospheric conditions and obstructions. In static mode they are subject even to occupation times: the longer is the Baseline, the longer must be the occupation time.

2. Network RTK precision depends on the network's performance and is referenced to the closest physical base station.

3. It depends on the SBAS system's performance.

4. Varies with the operating environment and with electromagnetic pollution.

5. Optional, on request when ordering.

Illustrations, descriptions and technical specifications are not binding and may change

STONEX AUTHORIZED DEALER

STONEX®

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	GALILEO: E1, E5a, E5b, E6, ALTBOC
	QZSS: L1C/A, L2C, L5
	IRNSS: L5
	SBAS
PPP	B2b-PPP
Channels	1100+
Position Rate	20 Hz
Signal Reacquisition	< 1 s
Cold Start	< 60 s
Hot Start	< 10 s
Internal Memory	32 GB storage
External Memory	TF card supported
Multipath and interference mitigation technology	Yes

POSITIONING¹

HIGH PRECISION STATIC SURVEYING	
Horizontal	2.5 mm + 1 ppm RMS
Vertical	5 mm + 1 ppm RMS
RTK (< 30 Km) ²	
Fixed RTK Horizontal	8 mm + 1 ppm RMS
Fixed RTK Vertical	15 mm + 1 ppm RMS
PPP Accuracy	< 20 cm RMS
SBAS Accuracy ³	< 60 cm RMS

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	/B19/B20/B25/B26/B28
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