

spire™

GNSS Receiver



CHAPTER 5

Warnings, Licensing, and Regulations

5 Warnings, Licensing, and Regulations

5.1 Product Warnings

Follow the warnings listed below to use the Spire GNSS receiver and accessories safely.

5.1.1 Battery Warnings

⚠ WARNING! This device comes with a Lithium-ion rechargeable battery. To reduce the risk of fire or burns, do not disassemble, crush, puncture, short external contacts, or expose the battery to fire.

The Spire receiver contains no user-serviceable parts. If the unit needs service, please send it to an authorized service center. Improper battery use may result in a fire, explosion, or other hazard.

5.1.2 Charger Warnings

⚠ WARNING! To reduce the risk of personal injury, electrical shock, fire, or damage to the equipment:

- Plug the charger into an electrical outlet that is easily accessible at all times.
- Do not place anything on the charger or USB-C cable. Arrange the cable so that no one may accidentally step on or trip over it.
- When unplugging the charger from the electrical outlet, pull on the charger, not the USB-C cable.
- To optimize battery charging, use only a charger and USB-C cable with an output rating of 5 V DC and 3 A, although any charger with an output of up to 18 W will work. The charger and USB-C cable must be certified or listed by a nationally recognized testing laboratory. The charger and cable provided with the Spire meets these criteria.

5.2 Certifications and Standards

5.2.1 FCC Interference Statement: United States

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

⚠ CAUTION: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

RF Exposure warning

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard

operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels.

The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of <https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm> after searching on FCC ID: VSFSP1.

5.2.2 ISED Compliance: Canada

This device complies with ISED's licence-exempt RSSs.

Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

1. le dispositif ne doit pas produire de brouillage préjudiciable, et
2. ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Radio Frequency (RF) Exposure Information

The radiated output power of the Wireless Device is below the Innovation, Science and Economic Development Canada (ISED) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.

This device has been evaluated for and shown compliant with the ISED Specific Absorption Rate (SAR) limits when operated in portable exposure conditions. (Antennas are greater than 0 mm from a person's body).

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie rayonnée de l'appareil sans fil est inférieure aux limites d'exposition aux radiofréquences d'Innovation, Sciences et Développement économique Canada (ISDE). L'Appareil sans fil doit être utilisé de telle manière que le potentiel de contact humain pendant le fonctionnement normal soit minimisé.

Cet appareil a été évalué et démontré conforme aux limites de débit d'absorption spécifique (SAR) ISDE lorsqu'il est utilisé dans des conditions d'exposition portables. (Les antennes sont à plus de 0 mm du corps d'une personne).

5.2.3 European Union

CE Marking



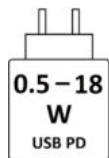
Products bearing the CE marking comply with EU Directive 2014/53/EU.

CE compliance of this device is valid only if powered with/by a CE-marked charger provided by the manufacturer.

Declaration of Conformity

The Declaration of Conformity for CE Marking is available at: <http://www.junipersys.com/doc>.

USB Type-C Charge



The power delivered by the charger must be between min 0.5 Watts required by the radio equipment, and max 18 Watts in order to achieve the maximum charging speed.

spire™

GNSS Receiver



CHAPTER 6

Warranty and Repair Information

6 Warranty and Repair Information

6.1 Limited Product Warranty

6.1.1 Two Year Warranty

Juniper Systems, Inc. ("JS") warrants that the Spire GNSS receiver shall be free from defects in materials and workmanship, under normal intended use, for a period of 24 months from the date of shipment.

6.1.2 Ninety Day Warranty

JS warrants that the following items shall be free from defects in materials and workmanship, under normal intended use, for a period of ninety (90) days from the date of shipment:

- User documentation
- Accessories

6.1.3 Warranty Exclusions

This warranty shall not apply in the following conditions:

- i The product has been set up improperly or has been improperly installed or calibrated.
- ii The product is operated in a manner that is not in accordance with the user documentation.
- iii The product is used for a purpose other than for which it was designed.
- iv The product has been used in environmental conditions outside of those specified for the product.
- v The product has been subject to any modification, alteration, or change by or on behalf of customer (except and unless modified, changed or altered by JS or under direct supervision of JS).
- vi The defect or malfunction results from misuse or accident.
- vii The serial number on the product has been tampered with or removed.

viii The product has been opened or tampered with in any way.

This warranty is exclusive, and JS will not assume and hereby expressly disclaims any further warranties, whether express or implied, including, without limitation, any warranty as to merchantability, fitness for a particular purpose, non-infringement or any warranties arising from the course of performance, dealing, or usage of trade. JS specifically makes no warranties as to the suitability of its products for any particular application. JS makes no warranties regarding the following:

- Its products will meet your requirements or will work in combination with any hardware or applications software products provided by third parties.
- The operation of its products will be uninterrupted or error-free.
- All defects in the product will be corrected.

JS shall not be responsible for software, firmware, information, or memory data contained in, stored on, or integrated with any products returned to JS for repair, whether under warranty or not.

6.1.4 Remedy

In the event a defect in materials or workmanship is discovered and reported to JS within the specified warranty period, JS will, at its option, repair the defect or replace the defective part or product. Replacement products may be new or reconditioned. JS warrants any replaced or repaired product for a period of ninety (90) days from the date of return shipment or through the end of the original warranty period, whichever is longer.

6.1.5 Limitation of Liability

To the fullest extent allowed by law, the obligation of JS shall be limited to the repair or replacement of the product. JS shall in no event be liable for special, incidental, or consequential, indirect, special or punitive damages of any kind, or for loss of revenue or profits, loss of business, loss of information or data, or other financial loss arising out of or in connection with the sale, installation, maintenance, use, performance, failure, or

interruption of any product. Any responsibility and/or liability of JS shall, in connection with a warranted product, be limited in the maximum amount to the original purchase price.

6.1.6 Governing Law

This warranty is governed by the laws of Utah, U.S.A. and excludes the United Nations Convention on Contracts for the International Sale of Goods. The courts of Utah shall have exclusive personal jurisdiction in case of any disputes arising out of or in connection with this warranty.

6.1.7 Warranty Repairs and Service

Warranty information for the Spire GNSS receiver is located on our website at www.junipersys.com/support/my-product. You can check warranty status, and view warranty terms and conditions.

To obtain warranty repair, paid upgrade, or service on the Spire GNSS receiver, submit a repair order on our website at www.junipersys.com/support/my-product or contact an authorized repair center within the applicable warranty period. Products returned for repair or service without proper authorization may acquire an additional handling fee and/or delay in the repair. The customer is responsible to prepay all shipping costs when sending equipment to a repair center. The repair center will return the repaired equipment by the same method it was received with costs of shipping prepaid.

Services and Materials Provided Under Warranty

- Analysis of problem by service technician
- Labor and materials required to fix defective parts
- Functional analysis performed after repair
- Repair turnaround within 10 working days of receipt unless special circumstances exist
- Shipping costs to return device to customer

JS strives to provide continued full repair services for our products for five years or more from the final production date of each product model. However, in some rare cases (depending on the repair need), it may not be possible to perform a repair

due to an unforeseen discontinuation or lack of supplied parts from third-party vendors. Repair support for a product may continue beyond five years if obtaining replacement parts or tools remains economically feasible. Our policy is that we will do what is best and most beneficial for our customers and company.

6.2 Complete Care Service Plan

We offer service plan options that provide additional benefits through participating repair centers. Services include:

- Service plan coverage up to five years from the original product ship date.
- Up to a 50% discount on all charged repairs.
- Expedited repairs and return shipping at no additional charge.
- Replacement of worn and/or damaged parts at no additional charge.
- Complete comprehensive coverage to protect your investment even when accidents occur.
- Loaner product option when an expedited repair is not enough.
- Priority support through a personal account specialist.

For more information about our Complete Care Service plans, go to our website at <https://junipersys.com/support/my-product>. Under Warranty, select Complete Care Options.

6.3 Repairs, Upgrades, and Evaluations

⚠ CAUTION: Do not attempt to repair the Spire GNSS Receiver yourself. This action voids the warranty. There are no user serviceable parts inside the Spire.

Information about repairs, upgrades, and evaluations is located on our website at www.junipersys.com/support/my-product. You can locate a repair center, submit a repair order, check repair status, view terms and conditions, get shipping instructions, and view lead times.

Before returning a unit, please get permission by submitting a repair order from our website and waiting for confirmation or by contacting a repair center directly. Be prepared to provide the following information:

- Product serial number (see label on the unit)
- Your name
- Name and shipping address of company/university/agency
- Best contact method (phone, fax, email)
- Clear, highly-detailed description of the repair or upgrade
- Credit card or purchase order number and billing address (for a repair or upgrade that is not covered by the standard warranty or an extended warranty policy)

spire™

GNSS Receiver



CHAPTER 7

Specifications

7 Specifications

Specifications for the Spire GNSS receiver are subject to change without notice.

Feature	Specifications
Receiver	- Receiver type: GNSS multi-frequency - Supported constellations: - GPS: L1 C/A, L2C, L5 - GLONASS: G1, G2 - Beidou: B1I, B2C, B2a B3I - GALILEO: E1 B/C, E5a, E6 - QZSS: L1 C/A, L1 C/B (under development), L2C, L5 - NavIC: L1 (under development), L5 - SBAS: EGNOS, GAGAN, MSAS, WAAS, BDSBAS (in test phase) - Can track all major constellations and SBAS concurrently - Update rate: 1 Hz standard (up to 20 Hz)
Accuracy	- SBAS/SLAS: 0.7 m (horizontal RMS) - RTK (Fixed): 1.5 cm +1 ppm (horizontal RMS) - Autonomous: 1.2 m (horizontal RMS) - Cold start: 27 sec typical (no almanac) - Reacquisition: 2 sec
Receiver protocols	- Data I/O protocol: NMEA 0183 4.11, UBX Binary (proprietary) - Correction I/O protocol: RTCM v3.x

Feature	Specifications
Power	▪ Rechargeable Li-ion battery: 5500 mAh ▪ Run-time: 16+ hours ▪ Charging time: 6 hours ▪ Input voltage: 5 V DC @ 3 A USB ▪ Power consumption: 1 W nominal ▪ Overtime II Technology™ battery: 3.6 V 5500 mAh Li-ion
USB-C port	▪ Used data transfer and charging ▪ Data transfer supported at 115200 baud
Bluetooth	▪ Bluetooth® version 4.2 BR/EDR Class 1 2400 MHz
Storage	▪ Device storage: 512 MB flash memory
Internal antenna	▪ Internal precision quadrifilar helical antenna
Operating and storage temperatures	▪ Operating temp: -20° C to +60° C ▪ Storage temp: -30° C to +60° C
Environmental ratings and standards	▪ IP68 rating (1 m for 45 min) ▪ Water resistant and dust proof ▪ Meets or exceeds MIL-STD-810H: ▪ Method 500.6 Procedure III, High Temperature Storage ▪ Method 501.7 Procedure I, High Temperature Operation

Feature	Specifications
	▪ Method 501.7 Procedure II, Low Temperature Storage ▪ Change 1, Method 502.7 Procedure, Low Temperature Operation ▪ Method 502.7, Procedure II, Temperature Shock ▪ Method 503.7 Procedure IA, Humidity ▪ Method 507.6 Procedure II, Vibration (Sine) ▪ Method 514.8 Procedure I, Category 24, Vibration (random) ▪ Method 514.8 Procedure I, Category 9, Drop ▪ Method 516.8 Procedure IV, Pole Stab ▪ Juniper testing: ▪ Pole Stab: 8 stabs into concrete ▪ Pole drop: 8 drops from 2 m
Software	▪ Juniper Connect™ software provides configuration, communications setup, and receiver settings ▪ Available for: ▪ iPhone® and iPad® ▪ Android™ 8 and later ▪ Windows® 10/11
Standard accessories	▪ AC power supply ▪ Adapter kit (EU/UK)

Feature	Specifications
	▪ USB-C cable ▪ 5/8 x 11 to 1/4 x 20 thread adapter ▪ User manual: available in English, French, German, and Spanish
Dimensions	▪ External measurements in metric/imperial: 143 mm x 78 mm x 60 mm (5.65 in. x 3.05 in. x 2.36 in.) ▪ Weight: 320 grams (11.28 oz) ▪ Mount: 5/8-11 BIS
Compatibility	▪ Juniper Connect software provides configuration, communications setup, and receiver settings. ▪ Windows 10 and later ▪ Android 8 and later ▪ iPad and iPhone. Full list of compatible Apple™ devices: ▪ iPhone 15 Pro Max, iPhone 15 Plus, iPhone 15, iPhone 14 Pro Max, iPhone 14 Pro, iPhone 14 Plus, iPhone 14, iPhone SE (3rd generation), iPhone 13 Pro Max, iPhone 13 Pro, iPhone 13, iPhone 13 mini, iPhone 12 Pro Max, iPhone 12 Pro, iPhone 12, iPhone 12 mini, iPhone 11 Pro Max, iPhone 11 Pro, iPhone 11, iPhone XS Max, iPhone XS, iPhone XR, iPhone X, iPhone 8, iPhone 8 Plus, iPhone 7, iPhone 7 Plus, iPhone SE (2nd generation), iPhone SE, iPhone 6s Plus, iPhone 6s, iPhone 6 Plus, iPhone 6

Feature	Specifications
	▪ iPad Air 13-inch (M3), iPad Air 11-inch (M3), iPad (A16), iPad mini (A17 Pro), iPad Pro 13-inch (M4), iPad Pro 11-inch (M4), iPad Air 13-inch (M2), iPad Air 11-inch (M2), iPad Pro 12.9-inch (6th generation), iPad Pro 11-inch (4th generation), iPad (10 generation), iPad Air (5th generation), iPad (9th generation), iPad mini (6th generation), iPad Pro 12.9-inch (5th generation), iPad Pro 11-inch (3rd generation), iPad (8th generation), iPad Air (4th generation), iPad Pro 11-inch (2nd generation), iPad Pro 12.9-inch (4th generation), iPad Pro 11-inch, iPad Pro 12.9-inch (3rd generation), iPad Pro 10.5-inch, iPad Pro 12.9-inch (2nd generation), iPad Pro 9.7-inch, iPad Pro 12.9-inch (1st generation), iPad Air (3rd generation), iPad Air 2, iPad mini (5th generation), iPad mini 4, iPad (7th generation), iPad (6th generation), iPad (5th generation) ▪ iPod Touch (7th generation)
Supported countries	▪ United States ▪ Canada ▪ Australia ▪ New Zealand ▪ Japan ▪ European Union ▪ United Kingdom

Feature	Specifications
Warranties	▪ 24 months for the Spire GNSS Receiver ▪ 90 days for accessories ▪ Extended service and maintenance plans available