SR3300T Instruction Manual

Spektrum's SR3300T 3-channel DSM® receiver features integrated telemetry that is compatible using Spektrum's handheld telemetry unit (not included) or telemetry can be displayed on screen using the Spektrum telemetry-compatible transmitters. Telemetry features include voltage, temperature, rpm and laps (handheld only). The SR3300T is compatible with all Spektrum surface transmitters and operates in DSM mode.

Note: The SR3300T receiver does not include the telemetry sensors or rpm sensor mount hardware. Sensors and mount hardware are available separately:

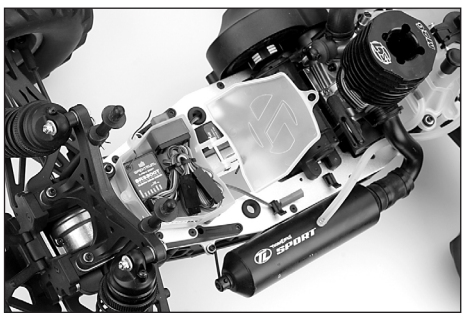
SPM1450 Head Temperature Sensor
SPM1451 Battery/Motor Temperature Sensor
SPM1452 RPM Sensor
SPM1512 Telemetry RPM Sticker Sheet
SPM1502 Sensor Mount Hardware: .12–.15
SPM1501 Sensor Mount Hardware: .21–.26
SPM1503 Sensor Mount Hardware: Electrics
SPM1410 Nitro Sensor Package(3) & Hardware
SPM1400 Electric Sensor Package(3) & Hardware

Specifications

Type: DSM
Channels: 3
Band: 2.4GHz
Dimensions (LxWxH): 1.60 x 1.06 x .58 in (41 x 27 x 15mm)
Weight: .4 oz (11 g)
Voltage Range: 3.2–9.6V
Telemetry options: Voltage, RPM, Temperature
Lap time (Only available with SPM handheld)

Receiver Connection and Installation

Electric Installation



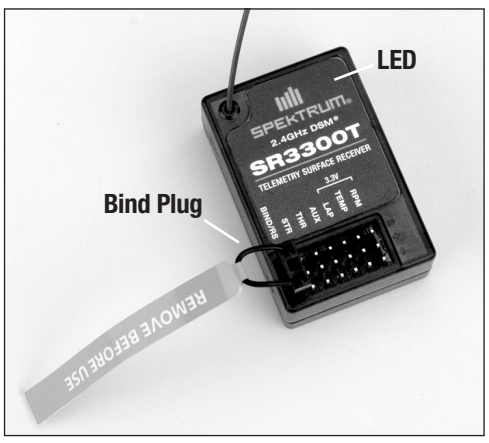
Gas installation

The antenna should be mounted up away from the vehicle and in an antenna tube if possible.

Binding Receiver to Transmitter

In order to operate, the receiver must be bound to the transmitter. Binding is the process of teaching the receiver the specific transmitter's code called GUID (Globally Unique Identifier). When a receiver is bound to a transmitter/model memory, the receiver will only respond to that specific transmitter/model memory.

Binding

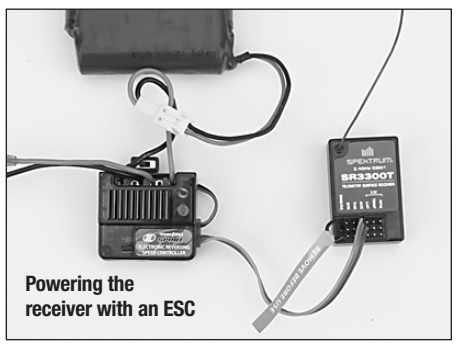


Note: The SR3300T receiver utilizes the DSM protocol and features telemetry output.

1. With the receiver off, insert the bind plug into the BIND/RS port in the receiver.
2. Power the receiver through any port that is not a 3.3V Telemetry port. If an ESC is being used, power on the ESC with the ESC lead plugged in the throttle channel port. The amber LED will flash continuously indicating that the receiver is in bind mode.

Warning: Do not power the SR3300T through the LAP, TEMP or RPM port. The receiver will be damaged!

Powering the receiver with a separate receiver pack



Powering the receiver with an ESC

3. With the steering wheel, throttle trigger and Aux channel (if applicable) in the desired preset failsafe positions, initiate the bind process with your Spektrum transmitter which will also store the failsafe positions. Please see the next section for more information about Failsafe.
4. The LED on the receiver should now be solid, indicating a successful bind has taken place.
5. Once the bind process is complete and before power is cycled on the receiver, remove the bind plug and store it in a convenient place. Failure to remove the bind plug will result in the receiver going back into bind mode.

Note: The only time it is necessary to do a rebind is if different failsafe positions are desired e.g., servo travel has been reversed after the initial bind, or if the receiver is to be bound to a different model memory.

Failsafe

Failsafe positions are also set during binding. In the unlikely event that the radio link is lost during use, the receiver will drive the servos to their preprogrammed failsafe positions (normally full brakes and straight steering). If the receiver is turned on prior to turning on the transmitter, the receiver will enter failsafe mode, driving the servos to their preset failsafe positions. When the transmitter is turned on, normal control is resumed.

Binding the Transmitter to the Handheld Telemetry Unit

In order for the receiver to communicate with the Spektrum Handheld unit (optional), the handheld unit must also be bound to the transmitter.

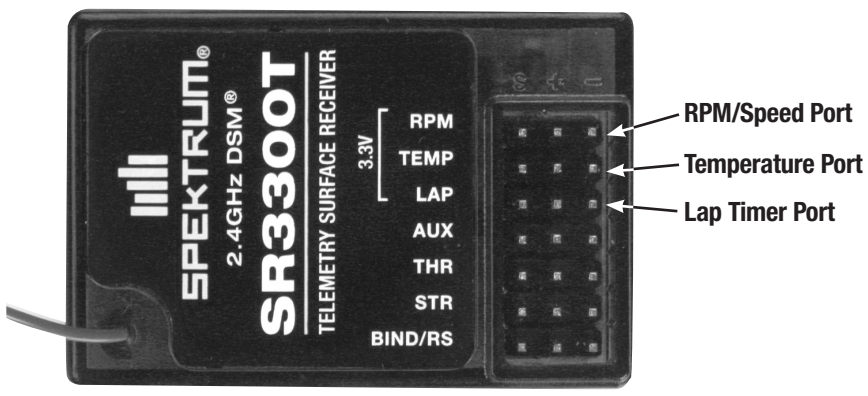
Note: When changing models it will be necessary to rebind the handheld unit to that model due to ModelMatch.

Press and hold the ▲ button while turning on the handheld unit to enter bind mode.

Binding the Handheld Unit

1. Press and hold the ▲ button while turning on the handheld unit. The LED should flash indicating the unit is in bind mode.
2. With the steering wheel, throttle trigger and Aux channel (if applicable) in the desired preset failsafe positions and the handheld unit in close proximity, initiate the bind process with the transmitter, which will also store failsafe positions. Refer to your Spektrum transmitter user guide.
3. When a successful bind is complete, the LED will go off on the handheld unit and the voltage reading will be displayed.

Installing the Telemetry Sensors in Your Vehicle



Note: The telemetry sensor ports are regulated at 3.3 volts and cannot be used to power a transponder. If using a transponder it must be plugged in the battery or one of the channel ports to operate properly.

Signal and Receiver Battery Voltage

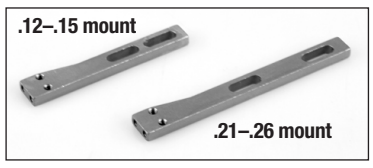
Signal strength and receiver battery voltage are built into the receiver's telemetry and no further attachment of sensors is necessary. Signal strength and receiver battery voltage will be displayed when the transmitter and receiver are both turned on.

RPM/Speed Sensor (Nitro)

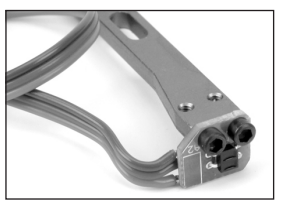
An optional infrared sensor is needed to record rpm values that can be converted by the telemetry compatible transmitter or handheld unit to actual speed in mph or km/h. The sensor emits an infrared light and a receptor records the reflection vs. the absorption of light. It is necessary to place a reflective or light absorbing decal on the flywheel to allow the sensor to record rpm.

RPM/Speed Sensor Installation (Nitro)

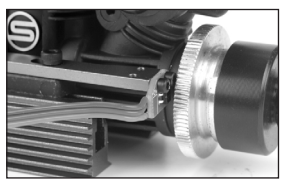
• Choose the correct nitro mount for your engine.



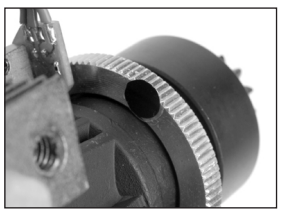
• Using the 2mm screws, attach the sensor to the mount as shown.



• Install the mount under the engine screw and adjust the sensor so it is 1/8" from the flywheel. Depending on your flywheel size, the sensor might have to be mounted in different orientations.



• If the flywheel is reflective (bare metal), place a flat black decal on the flywheel so it passes between the sensor and the flywheel when rotated. If the flywheel is non-reflective, place a reflective decal on the flywheel so that it passes between the sensor and the flywheel when rotated. We recommend applying a small amount of CA glue around the edges of the decal to ensure strong adhesion. Be sure to only glue the edges and to not cover the top of the decal.



• Plug the sensor into the RPM port in the SR3300T receiver.

RPM/Speed Sensor (Electric)
In electric cars and trucks, the rpm sensor is mounted near the spur gear and gets rpm readings directly from that gear. A conversion in the transmitter can be programmed to give speed in mph or rpm. See the Telemetry Speed Unit section on rpm and speed for more details. Because of the diverse types of electric vehicles, it may be necessary to fabricate a mount from Lexan for some types of vehicles.

RPM/Speed Sensor Installation (Electric)
- Determine the best method to mount the sensor near the spur gear. The face of the sensor must face the side of the gear. A mount can be fabricated from Lexan and taped in place using servo tape then bent to allow installation in most applications.
- Mount the rpm sensor such that the sensor is 1/8" from the side of the gear.
- If the gear is non-reflective, place a reflective decal on the gear so it passes between the sensor and the flywheel when rotated. If the gear is reflective, place a flat black decal on the gear so it passes between the sensor and the gear when rotated.
- Plug the sensor into the RPM port in the SR3300T receiver.

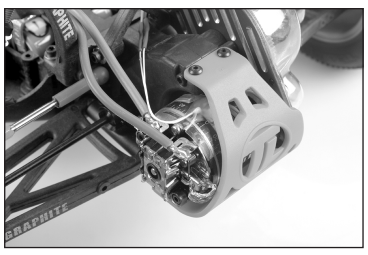
Temperature Sensor (Nitro)
An optional temperature sensor loop is needed that wraps around the head of the engine to monitor head temperature. This is useful in tuning engines and in preventing damaging over-lean runs.

Temperature Sensor Installation (Nitro)
- Install the loop as shown around the cylinder of the engine. It is best to place the sensor near the point at which the head meets the cylinder to get the most accurate consistent readings.

- Plug the temperature sensor into the port marked TEMP in the SR3300T receiver. The Telemetry screen on the DX3S should now display the room temperature.

Temperature Sensor (Electric)
An optional Thermister-type temperature sensor is needed in the electric system that can be taped to the battery or motor to monitor real-time temperature. Transparent tape can be used to attach the sensor for temperatures up to approximately 250°F. High temperature tape is needed for temperatures exceeding 250°F.

Temperature Sensor Installation (Electric)
- Tape the temperature sensor to the desired area you wish to monitor (normally the batteries or motor).



- Plug the temperature sensor into the port marked TEMP in the SR3300T receiver. The Telemetry screen on the DX3S transmitter should now display room temperature.

Tips on Using 2.4GHz Systems
Your DSM equipped 2.4GHz system is intuitive to operate, functioning nearly identically to FM systems. Following are a few common questions from customers:

1. Q: Which do I turn on first, the transmitter or the receiver?
A: It doesn't matter, although it is suggested to turn the transmitter on first. If the receiver is turned on first, all channels will be driven to the failsafe position set during binding. When the transmitter is then turned on, the transmitter scans the 2.4GHz band and acquires an open channel. Then the receiver that was previously bound to the transmitter scans the band and finds the GUID (Globally Unique Identifier code) stored during binding. The system then connects and operates normally. If the transmitter is turned on first, the transmitter scans the 2.4GHz band and acquires an open channel. When the receiver is turned on, the receiver scans the 2.4GHz band looking for the previously stored GUID. When it locates the specific GUID code and confirms uncorrupted repeatable packet information, the system connects and normal operation takes place. Typically this takes 2 to 6 seconds.

2. Q: Sometimes the system takes longer to connect and sometimes it doesn't connect at all. Why?
A: In order for the system to connect (after the receiver is bound), the receiver must receive a large number of continuous (one after the other) uninterrupted perfect packets from the transmitter. This process is purposely critical of the environment ensuring that it's safe to drive when the system does connect. If the transmitter is too close to the receiver (less than 4 feet) or if the transmitter is located near metal objects (inside or around a pit trailer, metal transmitter case, the bed of a truck, the top of a metal work bench, etc.) connection will take longer. In some cases connection will not occur as the system is receiving reflected 2.4GHz energy from itself and is interpreting this as unfriendly noise. Moving the system away from metal objects or moving the transmitter away from the receiver and powering the system up again will enable a connection to occur. This only happens during the initial connection. Once connected the system is locked, and should a loss of signal occur (failsafe), the system connects immediately (4ms) when signal is regained.

3. Q: I've heard that the DSM system is less tolerant of low voltage. Is this correct?
A: The SR3300T has an operational voltage range of 3.2 to 9.6 volts. With most systems this is not a problem as in fact most servos cease to operate at around 3.8 volts. When using multiple high-current draw servos with a single or inadequate battery/power source, heavy momentary loads can cause the voltage to dip below this 3.2-volt threshold causing the entire system (servos and receiver) to brown out. When the voltage drops below the low voltage threshold (3.2 volts), the receiver must reboot (go through the start-up process of scanning the band and finding the transmitter) and this can take several seconds.

4. Q: Sometimes my receiver loses its bind and won't connect, requiring rebinding. What happens if the bind is lost during use?
A: The receiver will never lose its bind unless it's instructed to. It's important to understand that during the binding process the receiver not only learns the GUID (code) of the transmitter but the transmitter learns and stores the type of receiver that it's bound to.

If the system fails to connect, more than likely the transmitter is near conductive material (transmitter case, truck bed, etc.) and the reflected 2.4GHz energy is preventing the system from connecting. (See #2 above)

Warranty Period

Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warranties that the Products purchased (the "Product") will be free from defects in materials and workmanship for a period of 1 year from the date of purchase by the Purchaser.

Limited Warranty

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

Damage Limits

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability.

If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this Product immediately in new and unused condition to the place of purchase.

Law: These Terms are governed by Illinois law (without regard to conflict of law principals).

Safety Precautions

This is a sophisticated hobby Product and not a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the Product or other property. This Product is not intended for use by children without direct adult supervision. The Product manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or injury.

Questions, Assistance, and Repairs

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please direct your email to productsupport@horizonhobby.com, or call 877.504.0233 toll free to speak to the Product Support department.

Inspection or Repairs

If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. A Service Repair Request is available at www.horizonhobby.com on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

Warranty Inspection and Repairs

To receive warranty service, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

Non-Warranty Repairs

Should your repair not be covered by warranty the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. Please note: non-warranty repair is only available on electronics and model engines.

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Service Center
4105 Fieldstone Road
Champaign, Illinois 61822

All other Products requiring warranty inspection or repair should be shipped to the following address:

Horizon Product Support
4105 Fieldstone Road
Champaign, Illinois 61822

Please call 877-504-0233 or e-mail us at productsupport@horizonhobby.com with any questions or concerns regarding this product or warranty.

European Union:
Electronics and engines requiring inspection or repair should be shipped to one of the following addresses:

Horizon Hobby UK
Units 1-4 Ployters Rd
Staple Tye, Harlow
Essex CM18 7NS
United Kingdom

Please call +44 (0) 1279 641 097 or sales@horizonhobby.co.uk with any questions or concerns regarding this product or warranty.

Horizon Technischer Service
Otto Hahn Str. 9a
25337 Elmshorn
Germany

Please call +49 4121 46199 66 or service@horizonhobby.de with any questions or concerns regarding this product or warranty.

FCC Information

This device complies with part 15 of the FCC rules. 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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.

The associated regulatory agencies of the following countries recognize the noted certifications for this product as authorized for sale and use:

Instructions for Disposal of WEEE by Users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

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Denmark	France	Finland
Germany	Italy	Netherlands
Spain	Sweden	UK

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