

Orion® StarSeek™ Wi-Fi Serial Interface Addendum to Instruction Manual #399

This page contains instructions for connecting your telescope's serial (RS-232) port to StarSeek Wi-Fi's serial port. To do this, you'll need a serial cable. The StarSeek Wi-Fi module comes with cables that provide the proper connectivity for all Orion motor-driven GoTo mounts. The cables work with some other telescope brands as well, but it is very possible that you will need an additional serial cable that's specific to your non-Orion scope. This is the case for Meade telescopes, for example. Different telescopes require different serial cables, and many GoTo telescopes come with one. But if yours did not, contact your telescope's manufacturer to obtain the correct serial cable for your telescope. Several suppliers that can be found on the internet also carry serial cables for other brands of computer-controlled telescopes.

If you have an Orion GoTo telescope, use the supplied cable(s) indicated in the table below for your particular model:

Telescope / Mount	Hand Controller	Wi-Fi Box
Orion Atlas EQ-G	RJ-14	RJ-14
Orion Sirius EQ-G	RJ-14	RJ-14
Orion SkyView Pro GoTo	RJ-14	RJ-14
Orion XTg / XXg GoTo Dobsonians	RJ-14	RJ-14
Orion StarSeeker	handset* **	RJ-14

One of the serial cables included with the StarSeek Wi-Fi module is a DB-9 to RJ-14 (or RJ-11) cable. This cable can be coupled to the serial cable included with many non-Orion brand telescopes to provide the connection you need to use the StarSeek Wi-Fi with your telescope.

Once you've obtained the correct serial cable for your telescope:

1. Connect your telescope serial cable to the RS-232 port on your telescope. On most telescopes, the RS-232 port is a modular ("telephone") jack. On some telescopes, the RS-232 port is located on the mount base; on others, it is located on the hand controller. See note below.
2. Connect the other (DB-9 female) end of your telescope's serial cable to the DB-9 male connector on StarSeek Wi-Fi's serial cable. Insert the other (RJ-14) end of the cable into StarSeek Wi-Fi's serial port. Make sure the connector clicks into place securely.

Figure 1 shows the connection between a Meade Autostar controller and the StarSeek Wi-Fi module.

IMPORTANT: Do not connect StarSeek Wi-Fi to the AUX port, handbox port, autoguider port, or any port on your telescope (or its hand controller) other than its RS-232 serial port. Doing so may damage StarSeek Wi-Fi and/or your telescope hardware. Make sure you know where the RS-232 serial port on your telescope is located, and only connect StarSeek Wi-Fi to that port.

For Orion and SkyWatcher telescopes, the serial port is also located on the bottom of the hand controller. For Meade LX-200 and LX-400 telescopes, the RS-232 port is located on the mount base. For Meade telescopes that use the #497



Figure 1. Connecting the Wi-Fi Module to a non-Orion GoTo controller requires a serial cable for that brand/model.

Autostar controller, like the ETX and LX-90, the serial port is located on the bottom of the Autostar. For all Celestron telescopes using the NexStar hand controller, the serial port is located on the bottom of the NexStar hand controller.

You don't need to use the mini null-modem adapter supplied with StarSeek Wi-Fi when connecting it to a telescope. The null-modem adapter is only needed when connecting StarSeek Wi-Fi to a PC serial port for firmware updates.

Making Custom Serial Cables

Connecting the StarSeek Wi-Fi Module to your computerized telescope requires a serial cable that has the correct pinout scheme. The cables we include for use with Orion telescopes also work with some other brands of telescope, but only when the pinout scheme of the telescope's serial (RS-232) port matches that of an Orion telescope.

Like the StarSeek Wi-Fi module, most telescope serial ports also use 4- or 6-wire modular jacks. Unfortunately, telescope manufacturers have not standardized on a common serial port pinout. In other words, pin 1 on the serial jack for a Meade LX-200 may carry a different serial signal than pin 1 on the serial jack for a Celestron NexStar GPS.

If your mount requires a different serial cable from those included with the Wi-Fi module, and your telescope manufacturer cannot supply a "telescope to PC" serial cable such as the one shown in the picture above, you can make a custom

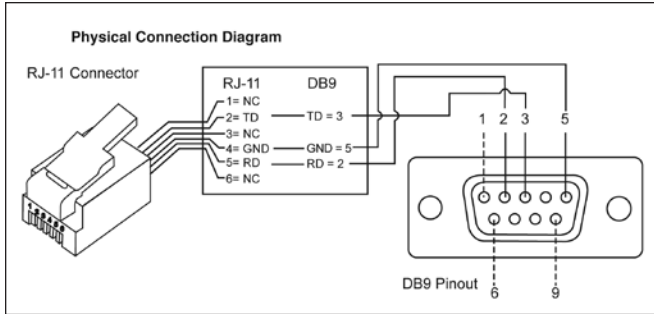


Figure 2. Pinout diagram of the RJ-11 (or RJ-14) to DB-9M serial adapter cable.

Manufacturer:	Orion	Orion	Orion	Orion
Model:	StarSeek Wi-Fi Module	StarSeek Wi-Fi Module	Sirius EQ-G, Atls EQ-G, SkyView Pro GoTo, SkyQuest XTg, XXg	StarSeeker
Connector:	6-pin RJ-11 (or RJ-14)	DB-9 Male	6-pin RJ-11	4-pin modular
	2	3	5	4
	3		4	3
	4	5	3	2
	5	2	2	1

Manufacturer:	SkyWatcher	Celestron	Meade	Meade	Losmandy	StellarCAT	Wildcard	Starmaster
Model:	SynScan	NexStar, CGE, CGEM, CPC, SLT, SE	ETX, LX-90, LX255/75	LX-200 Classic, GPS	Gemini	ServoCAT	Argo Navis	SkyTracker
Connector:	6-pin RJ-11	4-pin modular	4-pin modular	6-pin RJ-11	4-pin modular	6-pin RJ-11	6-pin RJ-11	6-pin RJ-11
	5	4	4	5	3	2	3	5
	4	3	2	3	1	4	5	3
	3	2	1	2	2	5	4	2
	2	1	3	4	4	3	2	4

serial cable yourself if you're handy with electrical things. It's really just a simple "telephone" type cable, which will connect the StarSeek Wi-Fi module's serial port directly to your telescope's serial port. If you don't want to make one yourself, perhaps you could have one made by an electronics shop that does custom cables.

In any case, you'll need the pinout diagram for your telescope's serial port. **Figure 2** shows the meaning of the pins on StarSeek Wi-Fi module's serial adapter cable.

Figure 2, combined with your telescope's serial pinout scheme, will be sufficient to construct the needed cable. The tables below and at left list the pinouts for the StarSeek Wi-Fi's DB-9M cable adapter, and for some common telescope models/brands. Note that some telescope serial ports use a 6-pin RJ-11 (or RJ-14) connector similar to the StarSeek Wi-Fi module's, while others use the smaller 4-pin modular "hand-set" connector. Check your telescope manual for details, and expect some trial and error.

Pins are numbered 1 to 6 from left to right when facing the connector with the pins down and plastic clip up, as pictured above. Note that the outermost pins (1 and 6) are not used on any 6-pin RJ-11 (or RJ-14) connector.

Please note that Orion does not provide support for building custom serial cables.



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Customer Support (800) 676-1343 • E-mail: support@telescope.com

Corporate Offices (831) 763-7000 • 89 Hangar Way, Watsonville, CA 95076

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