Using SkyFi and SkyVoyager with SkyTracker

This document provides instructions for connecting the SkyFi wireless serial adapter to a Starmaster SkyTracker telescope controller, and for connecting to the whole system from the SkyVoyager iPhone app.

These instructions were created from emails and Yahoo! Newsgroup postings by Jerry Merz (yodanator@gmail.com). Jerry wrote SkyVoyager's SkyTracker driver code, and these instructions and pictures are used with his permission.

Building a SkyFi-to-SkyTracker Serial Cable

The AUX2 port has the same configuration as the computer port (RJ11) of the Sky Commander. That is, while looking directly at the port, the pin out is (left to right):

Sky Tracker/Sky Commander com port (4 pin RJ11)

1. Black - ground
2. Red - no connection
3. Green - Transmit Data (TD)
4. Yellow - Receive Data (RD)

The SkyFi has a different RJ11 pin out (translated to 4 pin RJ11 for comparison):

1. Black - Transmit Data (TD)
2. Red - no connection
3. Green - ground
4. Yellow - Receive Data (RD)

So, your home brew cable should do the following connecting translations:

<table>
<thead>
<tr>
<th>SkyTracker pins</th>
<th>SkyFi pins</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GD</td>
<td>3. GD</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>3. TD</td>
<td>4. RD</td>
</tr>
<tr>
<td>4. RD</td>
<td>1. TD</td>
</tr>
</tbody>
</table>

Communication protocol is 9600 baud, 8 bits, 2 stop bits, no parity.

Victor McKeighan (victor@skyeng.com) highly recommends that the Sky Tracker EPROM be updated to version 4. Others have used version 3 with success. It can’t hurt to get the EPROM update, but if your system is more recent than 2005, you are probably using version 3, which should work OK.
Connecting SkyFi to SkyTracker

Here's a picture showing the setup:

Plug the SkyFi in third RJ11 port from the right as seen in the above picture - labeled AUX2/Computer. This port is next to the hand paddle port. For clarity, the picture shows the following connections from left to right:

1. Hand paddle
2. Aux2/Computer
3. Aux1
4. Sky Commander

Not shown is the 12-volt plug to the SkyFi's DC input jack from the scope's battery.
Connecting from SkyVoyager on the iPhone

Here’s a step by step setup for the iPhone, with some images captured from the iPhone:

1. After aligning your SkyCommander, turn on the SkyTracker and SkyFi. The SkyFi light will go from red to green.

2. Go to the iPhone settings and select the SkyFi network. I’ve been using the factory default settings.

3. Open SkyVoyager and go to Scope Communication settings window:
4. Set communication screen with these settings:

![Setting screen](image)

Note that the readout rate is set to 1 per sec., scope type to Sky Tracker, and mount type to Dobsonian.

The green light on the SkyFi blinks as data is moving through it. If SkyVoyager communicates with the SkyTracker (through SkyFi) at 1 second intervals, the SkyFi green light should blink at 1 second intervals. When the SkyTracker sends back data, the simple blink turns into a flutter of blinks at the 1 second interval. This could be useful in diagnosing problems.
5. From the sky view screen, select the scope button. Then select the connect button. In the above image, the scope is currently gazing at Vega - the object with a blue target.

To slew to an object, select the object with your finger. The selected object will have a white cross - Rasalhague in the image. Note that the target name becomes the selected object.