# MoFi Network - MOFI4500 Router

## Overview

This article provides a quick guidance on MoFi Network MOFI4500 Router setup and configuration to connect it to Swift Navigation GNSS receiver and obtain corrections from Skylark or a third party RTK correction service.


Fig 1. MOFI4500-4GXeLTEv2 Router

## General Information

The MoFi Network Router MOFI4500-4GXeLTEv2 does not include internal cell modem. For the Internet access it can either operate as a WiFi client and connect to a WiFi hotspot (in the cell phone for example) or work with cell modem USB dongle plugged directly to the router.

MoFi Network (http://mofinetwork.com) manufactures also other routers with built-in cell modems but they were not tested by Swift Navigation.

At Swift we use MoFi routers with Verizon USB cell modem dongles in several test setups with very good results.

The router has four Ethernet RJ45 ports.

## Hardware Setup

Recommended Piksi Multi / Duro setup is depicted in the diagram below.

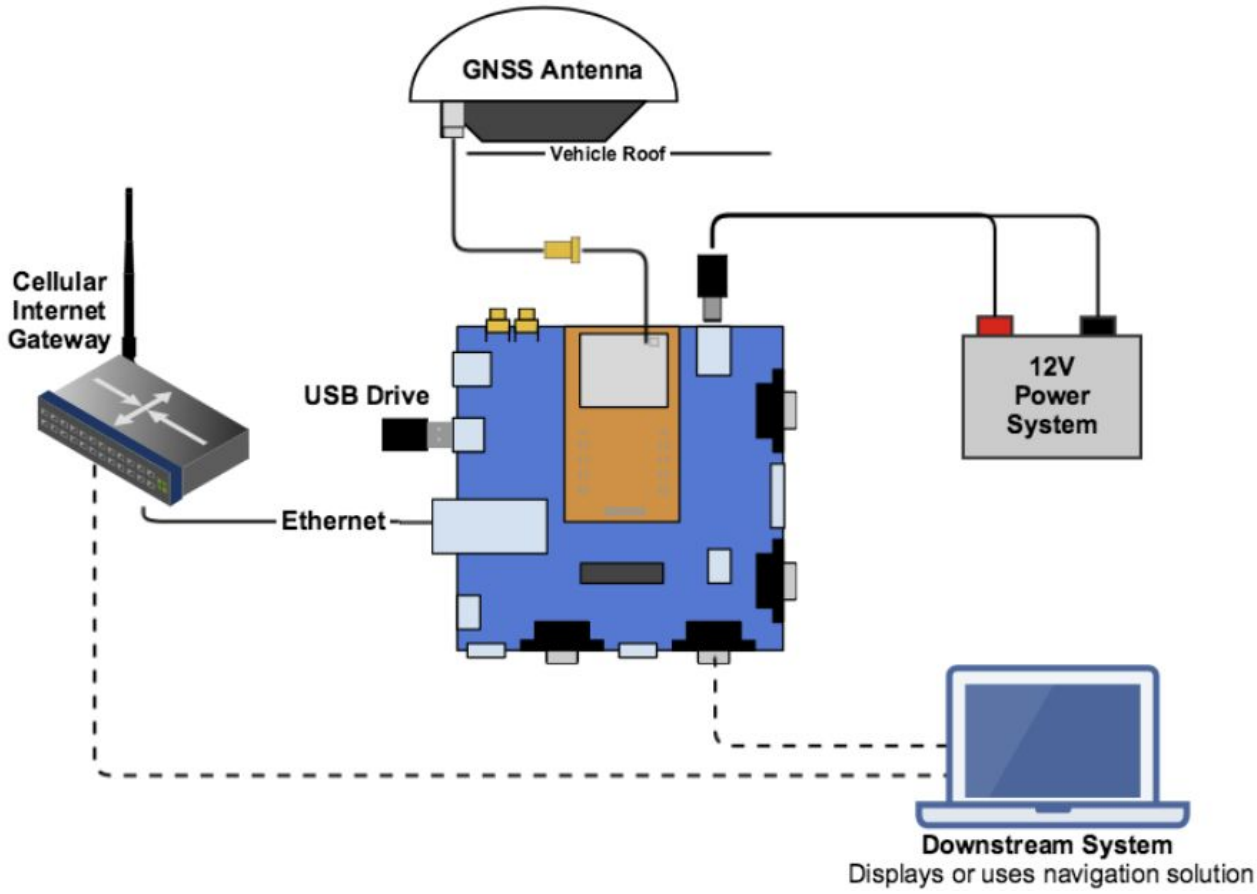



Fig 2. Hardware Setup

The MOFI4500 router can be used as a Cellular Internet Gateway and connect to Piksi Multi Evaluation Board / Duro directly.

## Piksi Multi Setup Example

Swift Navigation uses following setup to connect Piksi Multi to Internet.

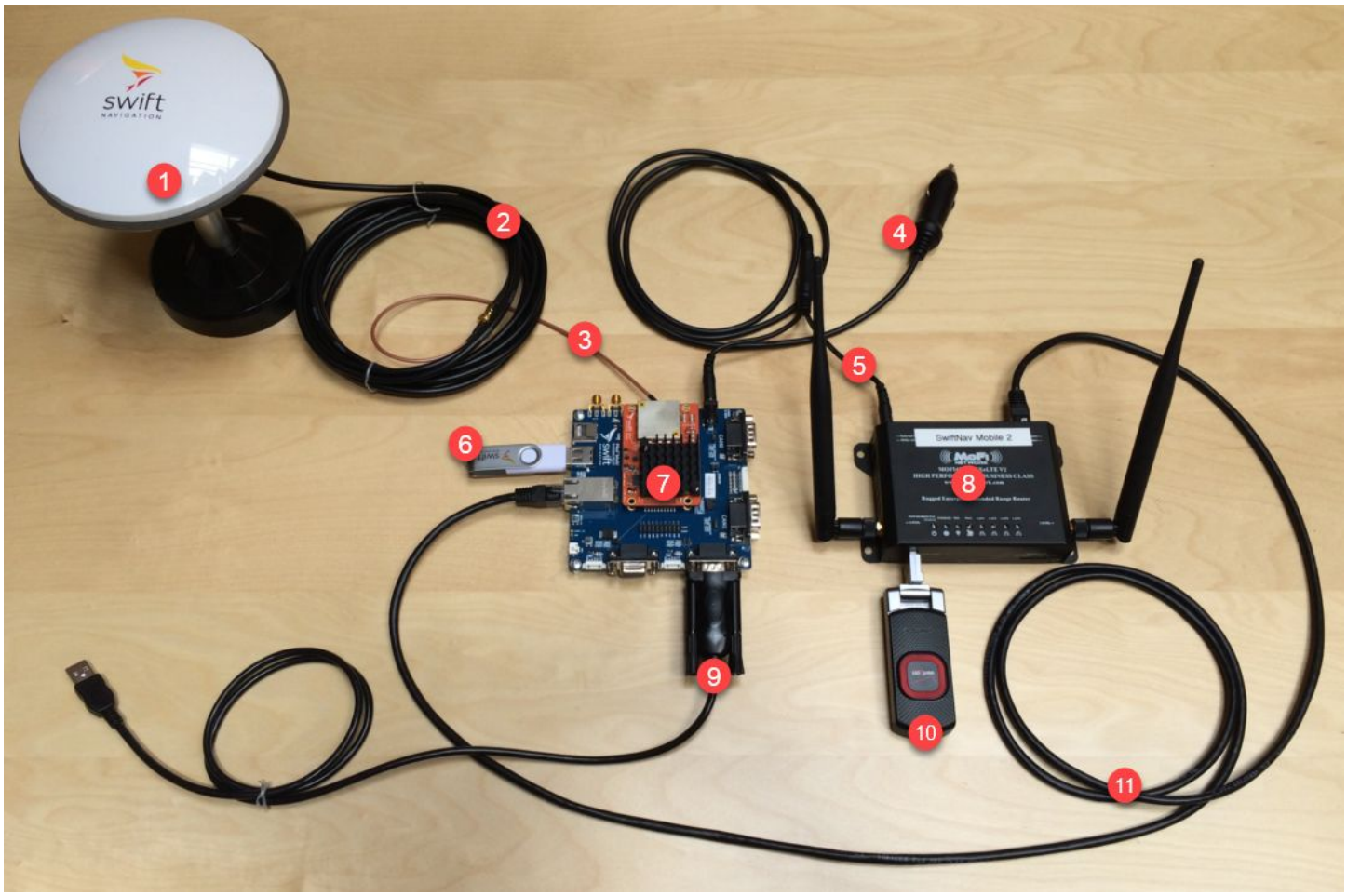



Fig 3. Piksi Multi Setup Example

Setup description:

1. GNSS antenna
2. TNC-SMA GNSS antenna cable
3. SMA-MMCX antenna cable adapter
4. 12V Barrel Jack to cigarette lighter power cable
5. 2.1mm/5.5mm Barrel Jack power cable splitter
6. USB drive for on-board data recording and firmware upgrades
7. Piksi Multi Evaluation Board with Piksi Multi GNSS receiver module
8. MoFi Network router MOFI4500-4GXELTE
9. RS-232 USB adapter for real-time control, monitoring and off-board data recording
10. Verizon 4G/LTE USB dongle (Pantech UML295 or UML290)
11. Ethernet cable

## MOFI4500 Basic Setup

1. Plug-in the activated USB cell modem dongle before power up the router.
2. MOFI4500 uses 12 V DC supply. It can be powered from the same power source as Piksi Multi / Duro.

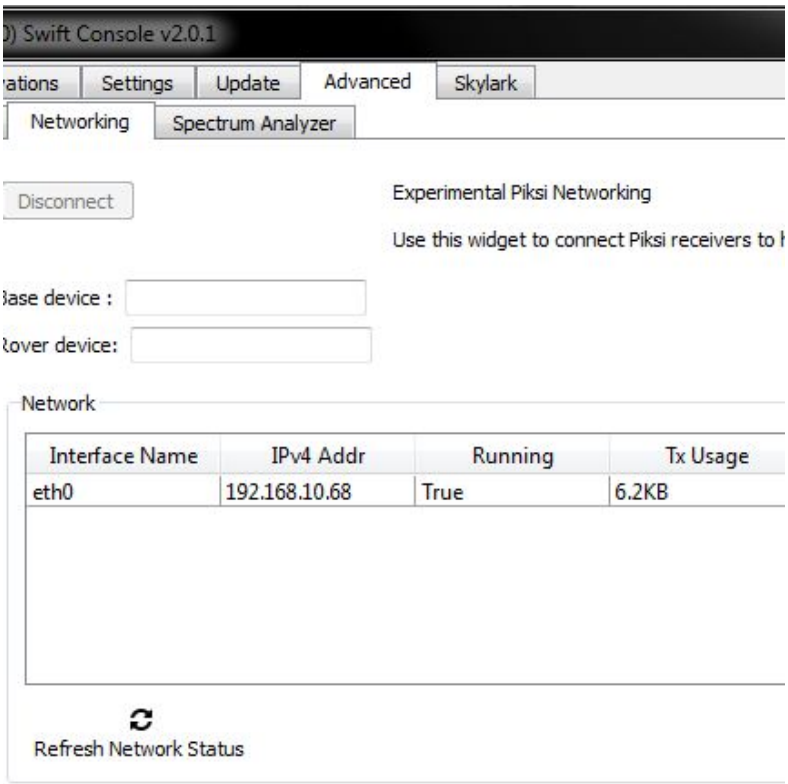
3. It takes about a minute for router to boot up.
4. As a factory default router is configured as WiFi hotspot and is accessible at 192.168.10.1.
5. With correctly activated cell modem dongle no any changes in router configuration are required. Just power system up and wait for router to boot up. The INTERNET LED on router will lit green when router has access to the Internet.

## Piksi Multi / Duro Basic Setup

1. Connect to Piksi Multi / Duro over the serial interface using Swift Console and configure Ethernet with dynamically assigned IP address:

| ethernet | |
|---|---|
| ip config mode | DHCP |
| ip address | 192.168.0.222 |
| netmask | 255.255.255.0 |
| gateway | 192.168.0.1 |

2. Connect Piksi Multi / Duro Ethernet port to the MoFi router. After a couple of seconds Piksi / Duro red LED should lit solid indicating active connection to the Internet.
3. Assigned IP address can be seen on Swift Console Advanced tab -> Networking sub-tab after pressing Refresh Network Status button:




4. Alternatively, a static IP address in range 192.168.10.2 to 192.168.10.254 can be set on Piksi Multi / Duro.
5. Once Piksi Multi / Duro has Internet access you may proceed to setup Skylark or NTRIP corrections source:
    a. Skylark
    b. NTRIP