inseego

Skyus 4G LTE

Quick Start Guide

AT&T

Preface

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Overview

The Skyus 4G LTE platform is a rugged, low-cost, self-contained modem kit. The Skyus platform simplifies the integration efforts of adding mobile connectivity in M2M solutions and accelerates time-to market for creating connected devices. In contrast to standalone radio modules, the Skyus uses a standard USB connection interface, making it readily compatible with the largest choice of host devices.

Integration of the Skyus into a Windows based system requires at a minimum two high level components, the ***driver*** and a mechanism to provide **connection management.** This document is intended to guide you through the process of connecting the hardware and setting up these two components.

Intended Audience

This document is intended for users responsible for the initial set-up of the Skyus and assumes the installer possesses a basic working knowledge of computer networking, wireless routing and network administration.

Scope

This Quick Start Guide focuses on the installation and configuration of the Skyus.

Inseego recommends initial set-up of the Skyus should be performed on a bench with a computer to gain some familiarity with the hardware and software of your system.

Environmental Specifications

The Skyus 4G LTE is designed to operate in a minimum ambient environment of -30°C or -22°F.

The Skyus 4G LTE is designed to operate in maximum ambient environment of 60°C or 140°F.

Power Consumption

The Skyus 4G LTE power consumption is specified as: 500mA at 5VDC typical, 1.2 A peak. The host must be capable of providing 1 Amp sustained.
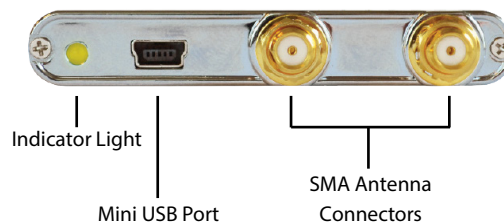

Figure 1: Skyus Top View

Indicator Light

Mini USB Port

SMA Antenna Connectors

Figure 2: Skyus Ports

LED States

State	Indicates
Off	Module is not powered.
On	Module is powered and connected, but not transmitting or receiving.
Slow Blink	Module is powered and searching for a connection.
Fast Blink	Module is transmitting or receiving

Installation Steps

- Inspect package contents and compare against packing list.
- Install Sierra Wireless Driver.
- Connect the antenna.
- Connect to computer or router.
- Verify activation.
- Install connection manager.
- Verify a connection to the internet.

Packing List: Package Contents

Item	Description
Skyus	Skyus 4G LTE Device
Cable	USB 2.0 Type A Male to Mini B Male

If, during inspection of package contents, it is determined that you are missing an item, please contact your Inseego Service Representative.
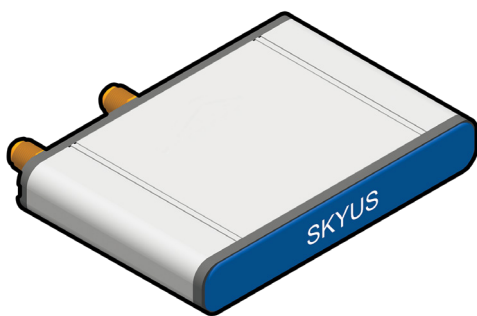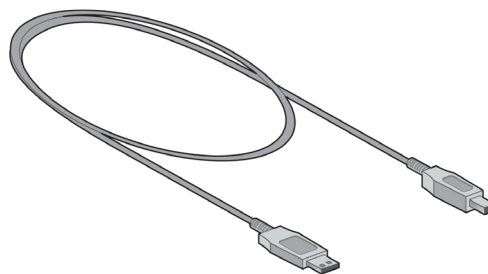
Figure 3: Package Contents: Skyus 4G LTE   *Figure 4: Package Contents: USB 2.0 Type A Male to Mini B Male*

Operating Systems

The information contained in this guide is focused on operating your device in a Windows environment. If your system is operating with a non-Windows application, please contact Inseego for guidance that is specific to your environment.

Installation of Sierra Wireless Driver

The Skyus 4G LTE utilizes an internal Sierra Wireless radio module. Drivers for Windows 7 and Windows 8 based platforms are provided in binary form by Sierra Wireless and are available for download on the Inseego website. For quick connection, download driver only package directly from Inseego. This package is available here:

www.inseego.com

Under 'Skyus 4G Drivers' click the 'Download Files' button to begin downloading the driver file for installation.

> *If you are working on the device you intend to use the Skyus with proceed with installation on the local drive.*

> *If you are working on a separate device from the one you intend to use the Skyus with, save the file to a portable media device which will be used to install the drivers on the separate device.*

Begin the installation of the Sierra Wireless drivers by clicking on the executable driver installation file.

Figure 5: Sierra Wireless Driver Installation

A successful installation initialization should show a progress bar in the dialog box and display a message just above the system tray.
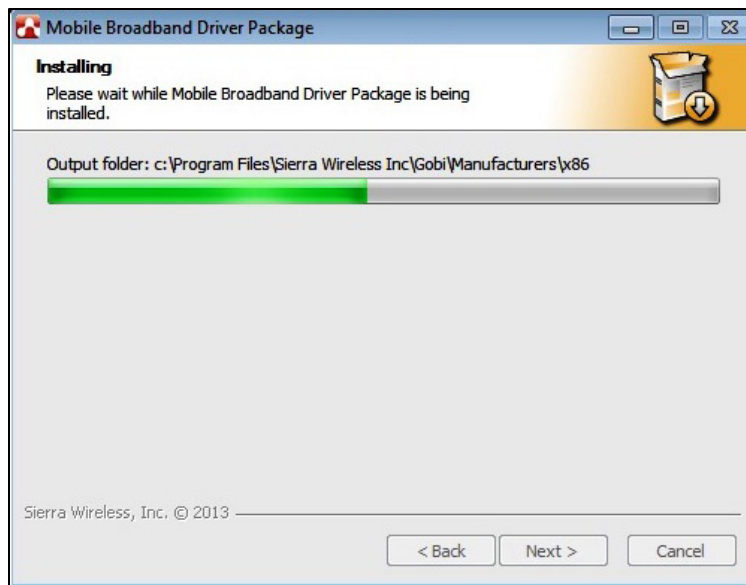
Figure 6: Sierra Wireless Driver Install Initialization
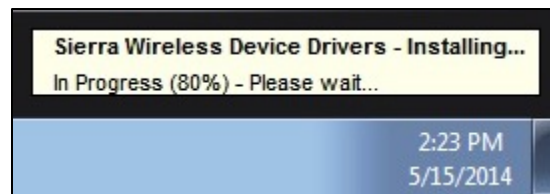

Figure 7: Sierra Wireless Installing - System Tray

Follow the necessary steps to finish the installation until the screenshot matches the image shown in Figure 8.

Figure 8: Sierra Wireless Installation Completed

Connecting the Antenna

To ensure that you are using the appropriate cellular antenna, please contact the appropriate Inseego representative to provide the proper service to your installation.

Frequency Bands:

- LTE (AWS Band 2, Band 4 & Band 17)
- HSPA+ (AWS Band 2 & Band 5)
- UMTS (850 MHz, 1900 MHz)
- GSM (Multi-Band)

Connect the cellular antenna to the device. The connection will be made to the outer-most antenna connection shown in Figure 9. The interior antenna connection is used for MIMO purposes on LTE. Best performance on LTE requires the use of two antennas.

Antenna Connection

Figure 9: 4G Antenna Connections

Connecting to Computer or Router

Connect the Type A Male side of the enclosed USB cable to your computer or alternate host device.

Connect the Mini B Male side of the enclosed USB cable to the Skyus.

Figure 10: Type A Male USB   *Figure 11: Type Mini B Male USB*

Power is provided by the USB cable. Once connected, your Skyus will power up and attempt to register to the carrier.

Activation

Your Skyus 4G LTE will typically include a SIM already inserted. Provide the IMEI and SIM IC (ICCID) from the device label to your Inseego representative or carrier representative to activate your Skyus 4G LTE device.

Your device is ready to be activated only after the cellular carrier sets up an account and provides a phone number, APN (Access Point Name), and/or IP address for your device. If you are not sure if your device has an account, contact your sales representative or Inseego technical support.

Provisioning

Once your device is activated and you connect to the cellular carrier for the first time, your device will perform Over the Air provisioning. (If required)

The Skyus 4G LTE will provision over the air automatically upon initial power up. Please connect it to a host and wait 45 minutes to allow this process time to complete prior to attempting to connect or unplugging the device.

If necessary, manual configuration of this parameteris typically done via connection manager software or alternatively the *at+cgdcont* AT command. Contact Inseego technical support for more details.

Connection Manager

Skyus 4G LTE customers using Windows operating systems have three choices for connection management.

Inseego Skyus Watcher

Inseego Skyus Watcher is designed to manage the connection to the cellular network and provides connection watchdog, connection status reporting, and logging functionality appropriate for M2M applications where 24x7 connectivity is desired.

Skyus Watcher is available after signing an End User Licensing Agreement (EULA) with Inseego. Skyus Watcher can be downloaded from the Inseego website. The Skyus Watcher installation package is available at:

www.inseego.com

For information on the installation of the Skyus Watcher application, please reference the "Skyus Watcher User Guide".

Windows Mobile Broadband

The Skyus 4G LTE is compatible with the Windows Mobile Broadband connection management functionality built into Windows 7 and Windows 8. Users can manage cellular connections in the Windows Network and Sharing Center. This form of connection management is not recommended in applications demanding 24x7 connectivity.

Sierra Wireless Skylight

Sierra Wireless provides a connection utility compatible with Skyus devices that can manage connections and display network coverage indication. For more information on Sierra Wireless Skylight go to www.sierrawireless.com or contact your Inseego sales representative.

Contacting Inseego

For help with installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided.

If you still have questions, contact us during business hours:

Monday through Friday, excluding holidays, between 8 a.m. and 5 p.m. Pacific Time.

Telephone: 800.683.4818

When contacting technical support, please have the following information on-hand:

1. Serial Number
2. Date that you received your device
3. Brief description of the problem

Online Library

For other documentation, see our online document library at:

www.inseego.com/documents

Return and Warranty

Inseego offers a standard one-year warranty on all hardware. For returns or warranty information, call our 800 number.

Further Specifications

For more specifications please see the "Skyus Technical Specifications" sheet available at www.inseego.com.

FCC Compliance

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 when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Inseego does not guarantee that interference will not occur in a particular installation.

Operation is subject to the following conditions:

    a.   This device may not cause harmful interference.
    b.   This device must accept any interference received, including interference that may cause undesired operation.

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

If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

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

Exposure to RF radiation - To comply with FCC RF exposure compliance requirements, for mobile configurations, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons. Do not collocate or operate this device in conjunction with any other antenna or transmitter.

Contains TX module FCC ID: N7N-MC7355