

User's Guide to Setting Up and Using Othernet Dreamcatcher v3.05 Running Skylark 5.8 - Revised for Reduced Bandwidth and the New European Satellite ASTRA 3B

(May 31, 2022) Best Practices from Multiple Forum Members
Compiled by Ken Barbi @kenbarbi



Introduction

This User's Guide is designed for users who purchased components from Othernet to set up their equipment using a **WiFi capable** Windows, Linux or Apple computer. It is a collection of the best advice from multiple Forum Members as to how to operate a Dreamcatcher v3.05 running Skylark 5.8 Software. We try to make it clear, but if you have questions, please post them on the Forum at <http://forums.othernet.is/>

For the latest additional information not included in this User's Guide, go to the Official Othernet Wiki Pages at <http://forums.othernet.is/t/wiki-pages-for-the-othernet-dreamcatcher/5314>

With the March 2021 Bandwidth change from 800 kHz to 200 kHz and a new European satellite (Astra 3B at 23.5 E) brought on line in the Spring of 2022, pre-programmed Americas and EU satellite detail within Skylark 5.8 is **no longer correct**. Setup requires a new installation as described in this User's Guide because the defaults in the Skylark 5.8 program have not been revised. It also is harder to achieve Frequency Lock requiring a more detailed Section III - Step 2 Fine Tuning of your receiver. Forum Members are reporting difficulty using the older Maverick Single: LO LNB, and the Universal Single LNB - Dual LO: 9750/106000 MHz. Forum members using the more frequency stabilized Bullseye Dual LO LNB are having good success. Recommend you switch to the Bullseye.

Table of Contents

Section I - Purchase, Unpack, and Assemble

- Addition equipment to purchase
- Assembly
- Software download
- Micro SD Cards
- Updating Previous Versions of Skylark
- Over the Air (OTA) Updates

Section II - Energize Dreamcatcher Setup

- Energizing for first time
- Accessing the Skylark Program
- Finding the Othernet WiFi Hotspot
- User Names
- Unique Problems Encountered After Updating Previous Versions
- Navigating the Skylark Program

Section III - Acquiring the Satellite

- Setting Up Your Satellite and LNB Type
- Verifying LNB Bias-T voltage
- Satellite Footprints
- Finding your correct look angle to the satellite

- Tips on Pointing to the Satellite
- Satellite Calculator for Othernet Beams
- Selecting the Correct Satellite and Tuning To It
- Dreamcatcher placement
- Cones and horns to improve performance
- Free-to-Air Antennas
- Inline Satellite Amplifier

Section IV - Connecting the Dreamcatcher to Your Local Router by WiFi as a Client

- The Network App
- Finding your Dreamcatcher's local IP address
- Changing Administrator and WiFi Passwords
- Rebooting and Resetting the Dreamcatcher to Factory Default
- LED indicator meanings
- WiFi repeaters
- Ethernet Dongles
- Calls (Rotating progress bars)
- Port Forwarding
- Dreamcatcher Reporting Status to Headquarters **Stealth Issues**

Section V - Additional Storage

- Micro SD Cards - Size and Format Requirements
- USB Flash Drives
- Installing and Running The Rachel Data Base and Other Programs

Section VI - Printing and Othernet Satellite Radio

- Printing
- Othernet Satellite Radio
- Use of a speaker or FM Player Transmitter
- Adjusting the Volume

Section VII - Skylark Content

- File Manager
 - VOA New Summary Audio Feed
- Messages
 - Automatic Packet Reporting System (APRS) Function in Skylark*
 - Non-APRS General Messages*
- News
- Tuner
 - Viewing Status Screen when Using Logon Guest*
- Weather
- What's New
- Wikipedia

Section VIII - Viewing Skylark Content from Your Computer

- Annex A: Power Cubes and Cables
- Annex B: Trouble Shooting
- Annex C: LNB Enhancements
- Annex D: Dreamcatcher v3.03 Unique Features

Annex E: Over the Air (OTA) Skylark OS updating
Annex F: Low Noise Block (LNB) Devices

*If you are using a Dreamcatcher v3.03 running Skylark 5.8, I have added a marker at the beginning of each affected paragraph that looks like this **Look at Annex D for v3.03 differences #?** It alerts you to look at Annex D for unique features of the Dreamcatcher v3.03. The Dreamcatcher v3.03 has a different board construction, and includes a Touch Screen.*

Note: An **internet connection is not required** for this set up except for 2 steps: 1) Downloading the Skylark OS (**Section I - Step 4**), and 2) Connecting to a Local Router as a WiFi Client (**Section IV - Step 3**).

Section I - Purchase, Unpack, and Assemble

Step 1. The Dreamcatcher v3.05 is not available for purchase, but may be available from some Forum Members.

- a. **The Dreamcatcher v3.05 Board** came with an EDUP USB WiFi dongle (Fig. 1), a F-type female to F-type female Adapter Connector, and a Universal Single LNB (Fig 2).



Dreamcatcher v3.05 Board with Shipped Components



Fig. 1 EDUP USB WiFi Dongle



Fig. 2 Universal Single LNB - Dual LO: 9750/106000 MHz

b. You **don't need** anything else. The Dreamcatcher Board has a permanent 9 inch cable with a male F-type connector at the end to connect to the LNB. You can use the F-type female to F-type female Adapter Connector to connect to a longer cable going to the LNB if you plan remote your LNB.

Step 2. Purchase the following from an electronics store:

- a. **5.1 vdc 2 Amp (or more)** Regulated USB Power cube (the voltage and current rating **is extremely important**) with a micro USB plug a one end. See Annex A for additional information.
- b. Short length (less than 4 feet) high quality USB to micro USB charging/sync cable. See Annex A.
- c. High quality fast micro SDHC or SDXC card sized between 4 and 128 GB for the Skylark program - - a micro SD larger than 16 GB is unnecessary and not required, but can be used. See Step 5 below for more information on recommended micro SD cards.
- d. If you plan to remotely connect your Dreamcatcher away from you LNB, purchase the required length of low-loss RG6 cable with F-connectors at both ends. *(Othernet performed a functional test of all Dreamcatcher Boards with Skylark, WiFi, and reception from a live signal coming through a bare LNB over ten feet of RG-6 and three feet of RG-58. Some users have successfully sited their antennas up to 500 feet away from the Dreamcatcher.*

Step 3. Assemble the equipment.

- a. Connect the F-type male LNB connector attached to the Dreamcatcher Board to the female F-type connector on the LNB. You don't need to be outside pointing to a satellite at this point. If you are using the new Bullseye LNB, connect to the green F-type connector. See Annex F for more information on LNBs.
- b. Mount the LNB on some sort of stand or tripod so it points toward the satellite when you take it outside - - see **Section III - Acquiring the Satellite** for information on how to find the satellite.
- c. Plug the WiFi Dongle into the female USB receptacle on the left side of the Dreamcatcher Board.
- d. Connect the micro USB charging/sync cable to the USB Power Plug on the lower left side

of the Dreamcatcher Board. Wait until **Section II** to energize the Dreamcatcher.

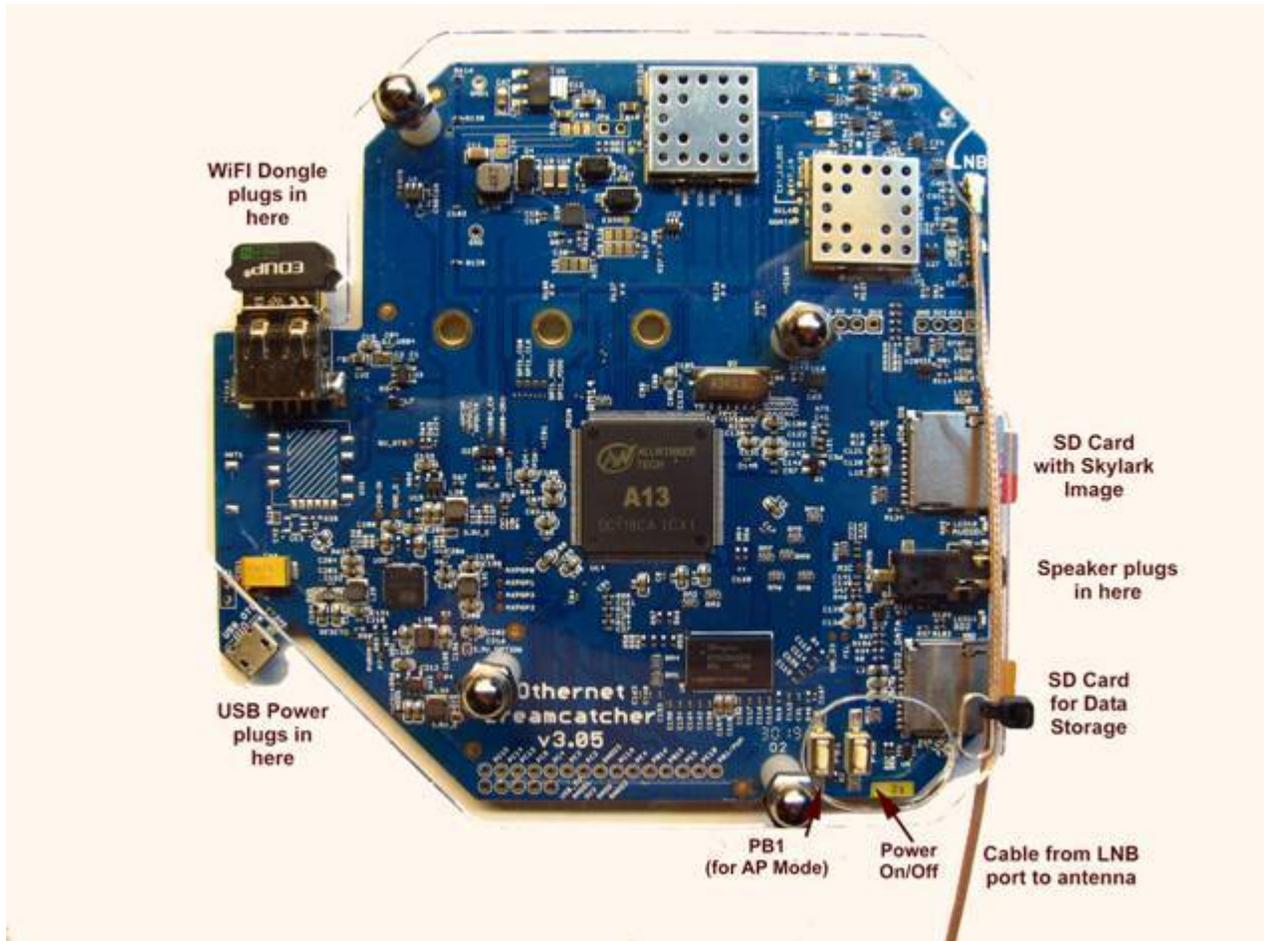


Fig. 4 Dreamcatcher v3.05 with Connections Identified **Look at Annex D for v3.03 differences #1**

Step 4. Download the latest version of Skylark 5.8 for Dreamcatcher which is located at <https://forums.othernet.is/t/software-downloads/7456> It is called *skylark-dc-2003041129.img.gz*

Unzip the .gz file to an image file with any standard ZIP File program such as 7-Zip available at: <https://www.7-zip.org/>

Step 5: Make sure you use a high quality fast micro SD card for the Skylark OS. Recommended size is 16GB since the Skylark OS automatically cleans old files, so never fills up. Don't skimp on quality here, as some users have discovered inexpensive micro SD cards don't last. Some recommended micro SD cards are: Strontium Nitro 32GB Micro SDHC Memory Card, SanDisk Ultra or Extreme, and Kingston.

When you write the Skylark image on a new micro SD card, the act of writing the image takes care of the partitioning and formatting the card correctly for Skylark. There is no need, ever, to try to partition or format the micro SD card manually, before or after writing an image. In the specific case where the micro SD card already had an older version of Skylark on it, refer to Step 8 below.

Step 6. Write the Skylark image file to a micro SD card with an image writing program such as Etcher (Fig.5) available at: <https://www.balena.io/etcher/> which is cross platform compatible or

Win32DiskImager (Fig. 6) available at: <https://win32diskimager.org/>



Fig. 5 Balena Etcher

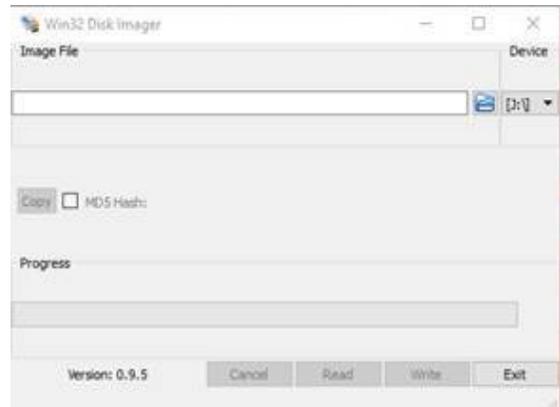


Fig. 6 Win32 Disk Imager

Step 7. Insert the micro SD card with the Dreamcatcher Skylark image into the Dreamcatcher Board's SD0_OS which is the micro SD card holder half way up on the right side of the board. If you use a computer to look at the micro SD card with its newly written image before you insert it, it will appear to have 1 formatted sector and 2 unformatted sectors.

Step 8. Updating Previous Versions of Skylark - Upgrading to Skylark 5.8 just requires a re-write of the micro SD card if the micro SD card already had an older version of Skylark on it. Writing the new image preserves the old Tuner and Network configurations; and downloaded files. The micro SD card will have 5 partitions on it from the previous install and initialization, however, only 1 will appear formatted. When you insert the micro SD card into some computers, you may get error messages for the 4 unique Skylark partitions which you should ignore, and proceed to re writing the micro SD cards as in Step 6 above.

Optional Step 9. Over the Air (OTA) Update Skylark has a feature to allow older Skylark versions to be updated by a preliminary test for OTA. The procedure is attached to this document as Annex E. *It is not being used for Skylark 5.8 but will be in the future.* Eventually, it should happen as an automatic satellite download.