GNDAPP (SMOG-P, ATL-1, SMOG-1 demod software) user manual

Hödl Emil Viktor

2019.12.25.

Contents

1 About

This document is intended to help you use the demodulation/decryption and packet upload software (gndapp) of SMOG-P, SMOG-1 and ATL-1. The application can be downloaded from here: gndapp Windows gndapp Linux

2 Installation

Does not require installation on Linux just download the binary and add execute permission. example: chmod u+x ./gndapp_linux.AppImage

On Windows install the gndapp program. When installing, make sure the installation path does not contain any non-ASCII characters.

3 First steps after installation

Scroll down to the bottom of the Settings tab and please choose the satellite, that you want to track as shown in Figure 2. Currently ATL-1 and SMOG-P are in orbit. SMOG-1 will be on orbit in 2020 summer.

If you would like the program to track the satellite azimuth and elevation, fill the latitude, longitude and altitude of your station. The NORAD ID of the satellite to be tracked must be explicitly specified in the "Satellite ID" field. ATL-1 is 44830, SMOG-P is 44832. See Figure 1

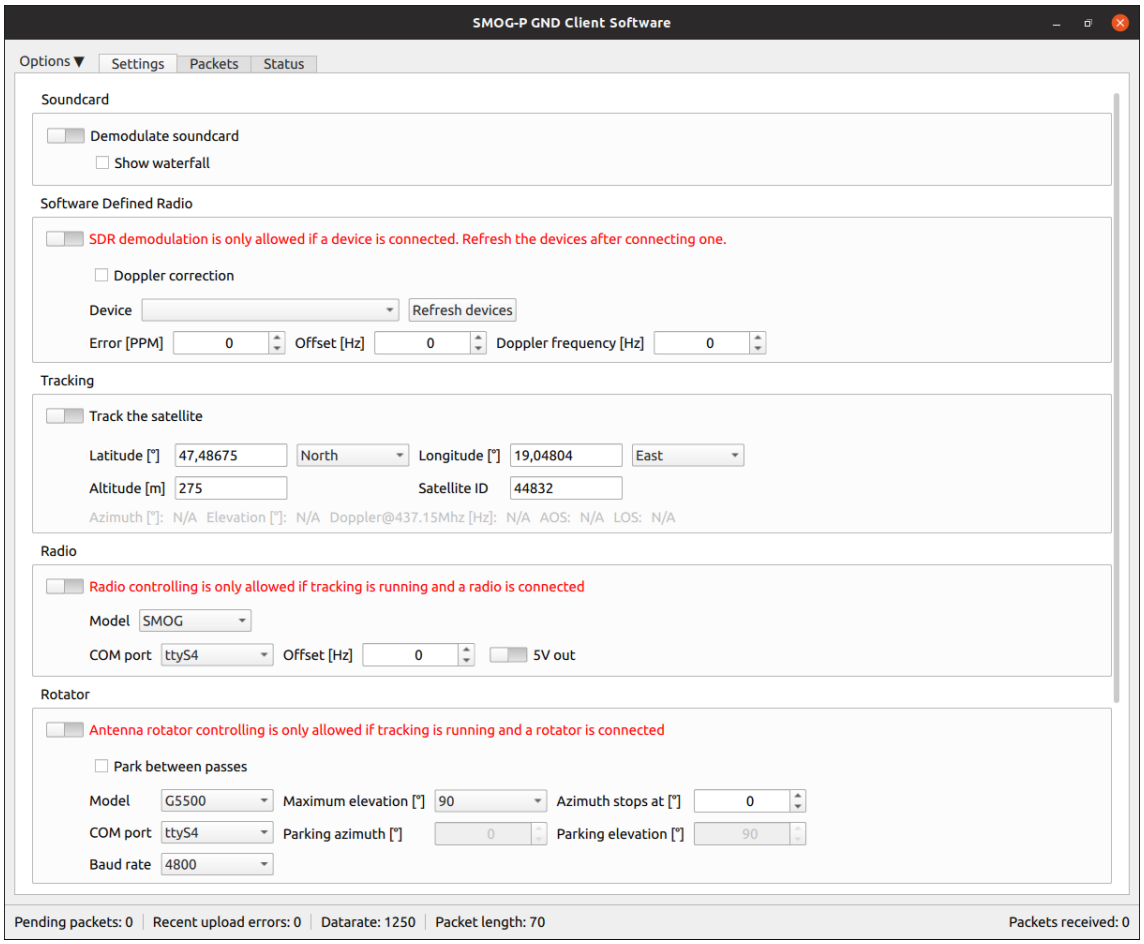

Figure 1: Satellite settings

If you would like to upload the received packets please register here: gndupload page. After the registration you can enter the user name and password in the Upload section of the Settings tab. Click on the Login button. If the login succes the username, password field and the login button will be gray as shown in Figure 2

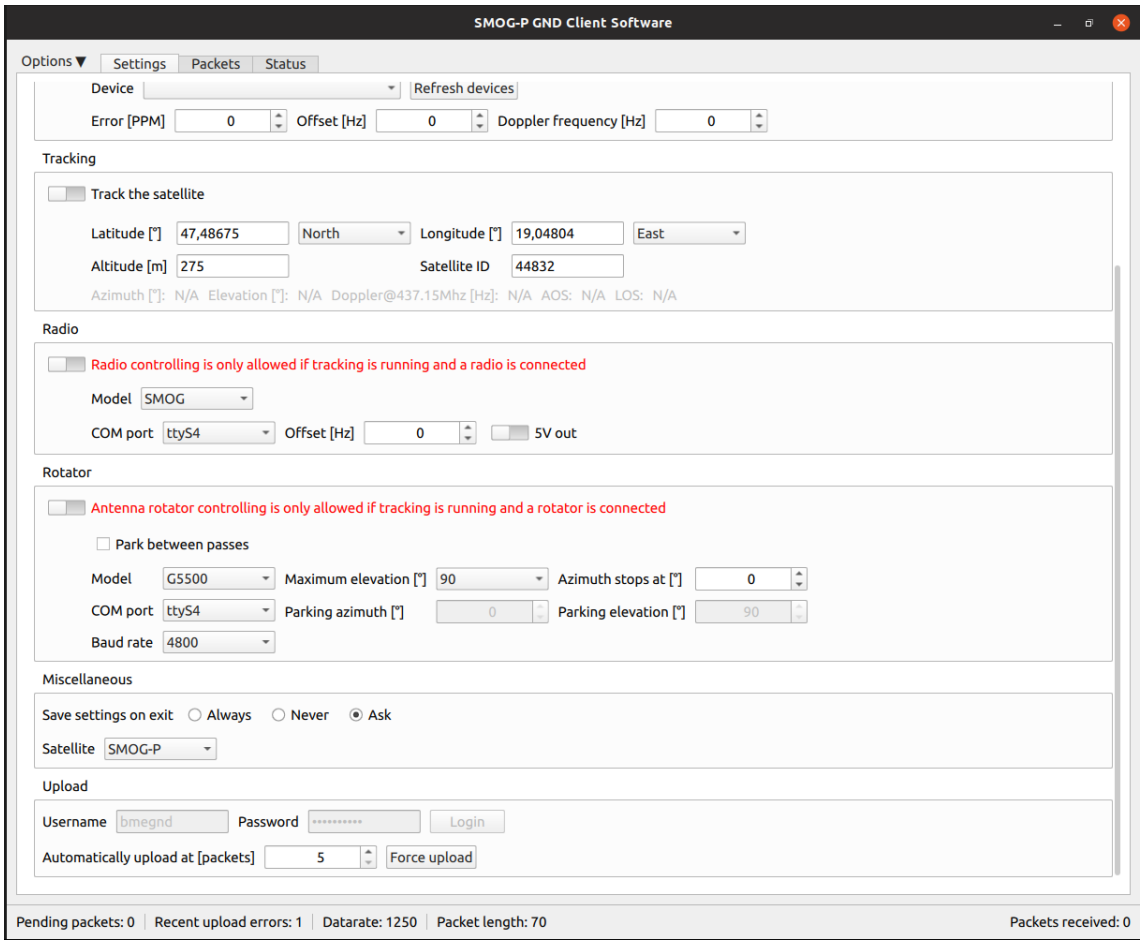

Figure 2: Login success

4 Sound card demodulation

On the settings tab check the "show waterfall" in the sound card section. You will then see a menu at the bottom of the program where you can select the sound source and you can plot the signal. Under Linux, you can select sound card input and output source. Under windows, you can only select input source. If you want to use sound card output (speaker) you must use virtual audio cable or the sound card output must be connected to the input by a jack-jack cable.

The center of the signal should be kept in the 1300-1500 Hz band as shown in Figure 3.

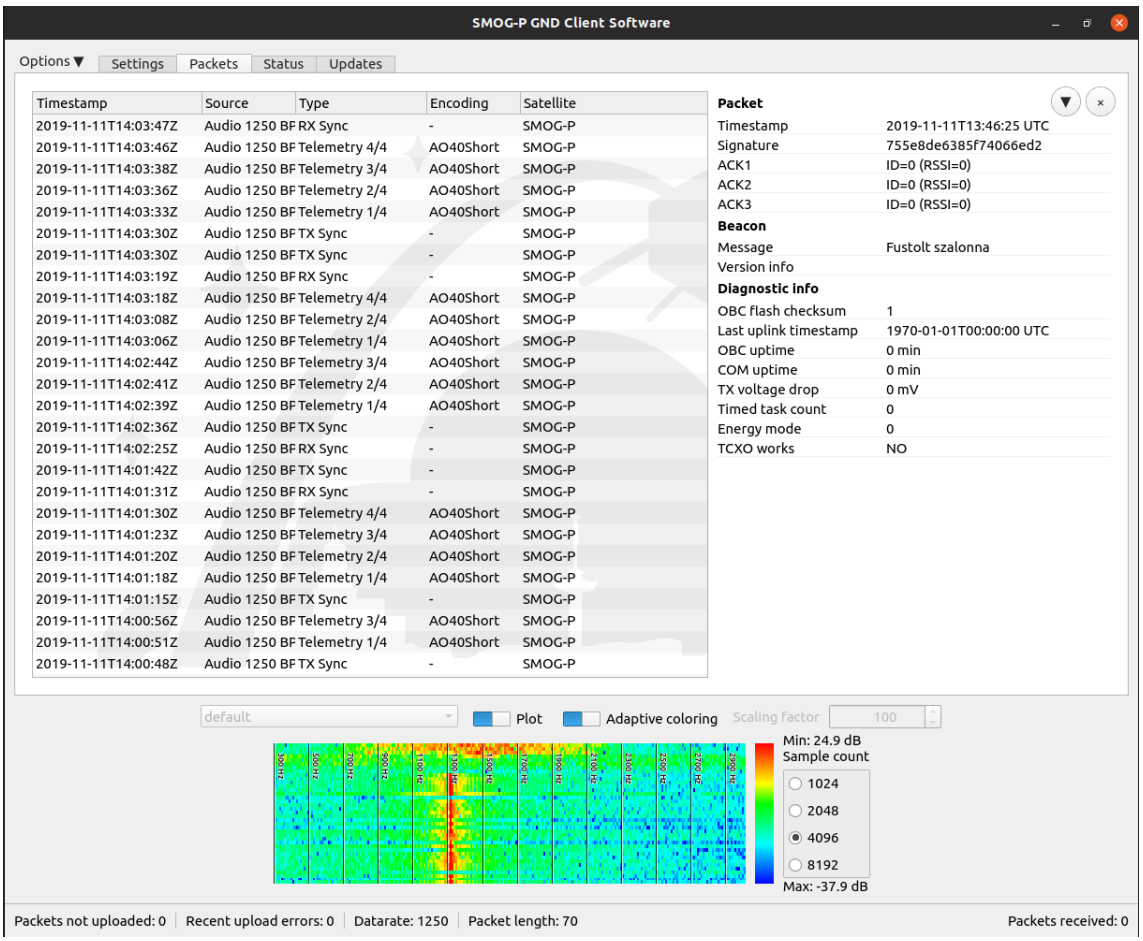

Figure 3: Signal tune

5 RTL-SDR

To run rtl-sdr stick under Windows you will need to install winusb driver. To do this, download the zadig program from zadig

6 Known bugs

The serial port handling (radio and rotator control) on Windows might be flaky.

7 Feedback

Feedback on this program is welcome at bmegnd@gnd.bme.hu. The subject should include gndapp feedback. In the case of a program error, we would ask for a more detailed description of the error and the environment used (operating system, sound card or rtl-sdr source, etc.). We will try to correct these errors as soon as possible.