SIMPULSE
TRUST YOUR RADIO LINK

Application note for SL200 integration

Introduction: This document is provided to help you with the physical integration of the SL200 in your system
It comes after the software integration and configuration.
Before reading this document please read the SL200 and Software user manuals.

For the following test please configure the Modem in the UAV/UGV with the configuration file "file_cfg_Slave.txt" provided with the software version

Perturbation Detection:

The following test will allow to detect if there's abnormal perturbation on the data-link by the systems in the UAV/UGV that will prevent the SL200 to function correctly. The test may also help you to choose the best frequency to use with your UAV/UGV to avoid perturbations.

1. Power on **only** the SL200 Modem on the UAV/UGV and connect to it with the Gui_main.
2. On Gui_main → Advanced mode select **only** one antenna in the local ena antennas buttons.
3. Run the "SCAN" button. Write down the noise values.
4. Repeat the step three for the other antennas (one at a time).
5. Power on all the systems in the UAV/UGV, and do the steps 3 and 4.
6. Compare the results (UAV/UGV systems ON / UAV/UGV systems OFF) to see if there's an abnormal noise or interference provided by a system in the UAV/UGV.

For the following tests please configure the Modem in the UAV/UGV with your configuration file.

For the two first steps please configure the Slave and the Master at a power of +10 dBm maximum.

Verification of the radio link:

1. Put the UAV/UGV (containing the Master modem) at a distance of about 50m from the Slave modem.
2. If using a GRST200, point it toward the UAV/UGV. If not , make sure there's no obstacles between the Slave and the UAV/UGV.
3. Power on **ONLY** the Slave and Master modems, all the other systems must be OFF (Satcom, camera, other radio systems, ….).

4. Connect to the Slave with the Gui-main software.
5. Check if all the Leds are green and no error message is shown.

Antenna verification:

1. Open the Advanced mode, press ANT Diag, and check the result of the output file : it must indicate “test is good” at the end of file.
   This test indicates if one of the antennas activated is not functioning or not well mounted.
2. In remote side, select only the antennas that you're using in the UAV, **one at a time,** and check if the link is still maintained every time you select an antenna.

For the following steps, please configure the Slave and the Master to the power you want to use.

Distance emulation test:

Those tests will emulate the long distance transmission in a real flight.

1. In Gui_main basic window, press Dist x 1000 to emulate a distance multiplied by 1000 and verify if the link is still maintained with no errors .
2. Turn the UAV/UGV to present all the possible faces to the Slave modem (front, right, left, rear), and execute in every position the previous step, to verify if there is one antenna at least not masked in every position. If not, the antenna positions must be reviewed.
3. Power on the UAV/UGV and all the other systems and do the steps 1 and 2.

If using the GRST200:

4. Open track window in the Gui_main basic window, change the “gps_mindist(m)” to 10 and check if the remote and locale GPS are received and press the tracking button.
5. After calibration, verify if the GRS is pointing to the UAV.

Fly test:

- Fly at a distance of 500 m and press Dist x 100 to emulate a distance multiplied x100 and verify if the link is still maintained with no errors.

If any of the steps didn't succeed, please contact Simpulse with all the possible details and test files.