

This system can then be used in **NET option** with another system and will be totally synchronized to it. **In such systems PPS has to be connected** and **Master clock** mode has to be turned ON.

Synchronization of SIRIUS/43 must be set to **External → GPS PPS**, otherwise DS-IMU2 will not output data.

Details on how to set the software are written in the next chapter, where **Master clock synchronization** has to be picked.

7.3. DS-GYRO1

DS-GYRO1 can be connected in 4 different ways, but practically there are just 3 possibilities.

- Standalone DS-GYRO1 with PPS/Master clock synchronization (used when only DS-GYRO1 is connected to the computer).
- DS-GYRO1 + several additional SIRIUS/43 – more than 1 unit or SIRIUS + triggered camera → PPS synchronization has to be used for DS-GYRO1
- DS-GYRO1 + 1 additional SIRIUS/43 can be synchronized in Master clock mode, where data coming from the gyro device and SIRIUS/43 will be synchronized

7.3.1. Standalone DS-GYRO1 with PPS synchronization

To use this synchronization mode only DS-GYRO1's USB has to be connected (over which it is powered and data is transferred). **Sync (4 pin 0B Lemo) connector must not be connected**, otherwise the unit will not send the data. Details on how to set the software are written in the next chapter, where **PPS or Master clock synchronization** has to be picked.



Image 35: Connection of DS-IMU device

DS-GYRO1 can not be used in the NET option, because devices don't have real PPS, but just generated out of an internal clocking system, to be able to synchronize one additional SIRIUS/43.

7.3.2. DS-GYRO1 with more than 1 SIRIUS/43 or with SIRIUS/43 + triggered camera in PPS synchronization mode

Synchronization mode, where there is more than 1 additional SIRIUS/43, DS-GYRO1, has to be PPS sync. Which means that only samples from DS-GYRO1 will be related to internal PPS and not complete systems, because SIRIUS/43 can have either input/output on the Sync connector. The result of such synchronization is that there might be a small delay between GYRO data and analog/camera data.

The same is valid for systems where SIRIUS/43 + triggered cameras are used, because on SYNC connectors there is a sample rate divider, which has to trigger the camera and therefore cannot be used for PPS synchronization. Therefore in such cases **SYNC connector from the GYRO must not be connected**.

Details on how to set the software are written in the next chapter, where **PPS synchronization** has to be picked.

7.3.3. DS-GYRO1 with 1x SIRIUS/43 in Master clock synchronization mode

In this configuration DS-GYRO1 is connected together with a single Dewesoft device (either 43/SIRIUS) and is providing Time + PPS signal to this system. With such usage data from DS-GYRO1 and SIRIUS/43 data will be synchronized with accuracy higher than 0.001 ms.



Image 36: Connection of DS-GYRO device

This system **can not** be used in **NET option** with another system, because the PPS signal is generated from the internal clock and not related to GPS PPS signal.

Synchronization of SIRIUS/43 **must be set to External → GPS PPS**, otherwise DS-IMU1 will not output data.

Details on how to set the software are written in the next chapter, where **Master clock synchronization** has to be picked.