We can set up a gyroscope with a terminal or with Sensonor PC programm "STIM210 EVK PC software".

Termite terminal

Can be downloaded here: https://www.compuphase.com/software_termite.htm.

When we connect the sensor for the first time, we need to set connection parameters as default: Bit-rate/Stop-bits/Parity/Termination. They can be identified by serial number using a datasheet.
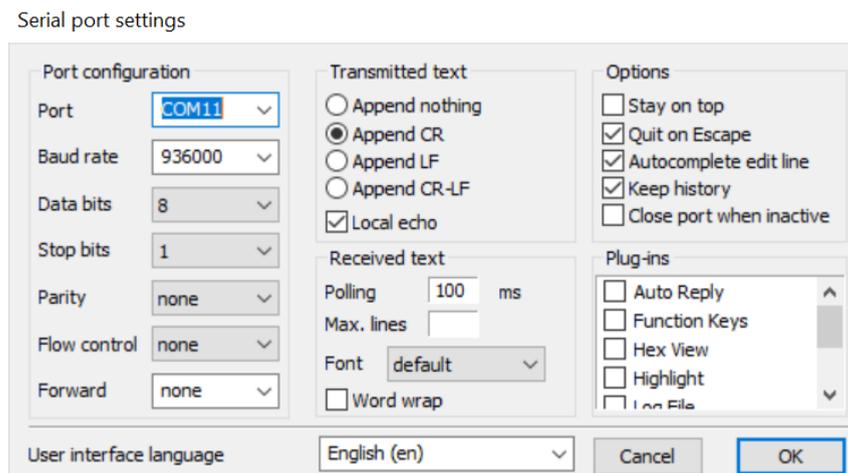
When we connect a sensor to the USB<->UART bridge, it starts transmit data continuously. We need enters Service Mode by command "SERVICEMODE<CR>", we will get:

SERIAL NUMBER = N25581820002002
PRODUCT = STIM210
PART NUMBER = 84188-1034-0121 REV H
HW CONFIG = M5673 REV 7
FW CONFIG = SWD11860 REV 9
OUTPUT UNIT = [°/sample] – INCREMENTAL ANGLE
SAMPLE RATE [samples/s] = 1000
GYRO CONFIG = XYZ
GYRO RANGE:
X-AXIS: ± 400°/s
Y-AXIS: ± 400°/s
Z-AXIS: ± 400°/s
LP FILTER -3dB FREQUENCY, X-AXIS [Hz] = 262
LP FILTER -3dB FREQUENCY, Y-AXIS [Hz] = 262
LP FILTER -3dB FREQUENCY, Z-AXIS [Hz] = 262
DATAGRAM FORMAT = STANDARD
BIT-RATE [bits/s] = 374400
DATA LENGTH = 8
STOP-BITS = 1
PARITY = EVEN
LINE TERMINATION = ON
DATAGRAM TERMINATION = NONE

We need change params to fit needed:

- **d<SP>k<CR>** Changes the datagram format in Normal Mode to rate and counter
- **t<SP>936000,1,n<CR>** Will set 936000 baudrate, number of stop-bits to 1, no parity
- **r<SP>3<CR>** Turns line termination = ON, datagram termination = <CR><LF>
- **u<SP>a<CR>** Changes the unit of the transmission in Normal Mode to angular rate [°/s]
- **f<SP>262<CR>** Changes the LP filter -3dB frequency for all axes to 262 Hz
- **m<SP>2000<CR>** Changes the sample rate in Normal Mode to 2000 samples/second
- **s<CR>** Saves system parameters to flash. This command will require an additional confirmation prior to execution. Confirmation ("Y") to be responded in upper case letter.

```
u a
u a
OUTPUT UNIT = [°/s] - ANGULAR RATE

>f 262
f 262
LP FILTER -3dB FREQUENCY,X-AXIS [Hz] = 262
LP FILTER -3dB FREQUENCY,Y-AXIS [Hz] = 262
LP FILTER -3dB FREQUENCY,Z-AXIS [Hz] = 262

>m 2000
m 2000
SAMPLE RATE [samples/s] = 2000

>s
s
SYSTEM PARAMETERS WILL BE PERMANENTLY CHANGED.CONFIRM SAVE(Y/N):Y
Y
SYSTEM PARAMETERS SUCCESSFULLY STORED IN FLASH
NUMBER OF SAVES = 2
>
```

So, after set up, we get next configuration:
ENTERING SERVICE MODE
SERIAL NUMBER = N25581204821033
PRODUCT = STIM210
PART NUMBER = 84188-0034-1101 REV D
HW CONFIG = M5673 REV 1
FW CONFIG = SWD11860 REV 7
OUTPUT UNIT = [°/s] - ANGULAR RATE
SAMPLE RATE [samples/s] = 2000
GYRO CONFIG = XYZ
GYRO RANGE:
 X-AXIS: ± 400°/s
 Y-AXIS: ± 400°/s
 Z-AXIS: ± 400°/s
LP FILTER -3dB FREQUENCY,X-AXIS [Hz] = 262
LP FILTER -3dB FREQUENCY,Y-AXIS [Hz] = 262
LP FILTER -3dB FREQUENCY,Z-AXIS [Hz] = 262
DATAGRAM FORMAT = RATE AND COUNTER
BIT-RATE [bps] = 936000
DATA LENGTH = 8
STOP-BITS = 1

PARITY = NONE
LINE TERMINATION = ON
DATAGRAM TERMINATION = <CR><LF>

STIM210 EVK PC software

We need to set up the same parameters we described above. Firstly, we need config connection parameters: device COM port number, baud rate, stop bit, parity. After new connection parameters were set, need config baud rate:

For properly sensor connection, need connect sensor in steps:

To fit axes of CAN IMU to axes of STIM210 need place they next way:

Connection diagram