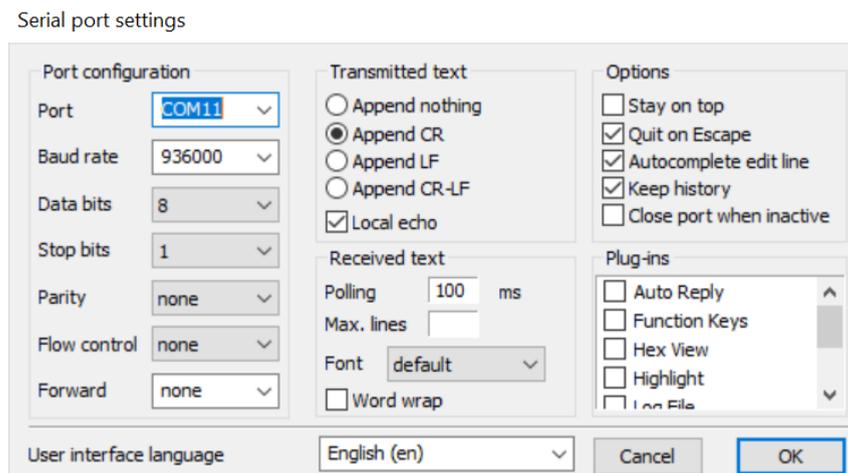


We can set up a gyroscope with a terminal or with Sensoror PC programm "STIM210 EVK PC software".

### Termite terminal

Can be downloaded here: [https://www.compuphase.com/software\\_termite.htm](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:

```
STIM210_EvalKit.INI - Notepad
File Edit Format View Help
[FLOATS]
Current limit on output of power [A] = 1
Voltage on output of power [V] = 5.100001811981201

[INTEGERS]
Interface that the power is connected with = 0
Port or address to power = 0
RS422 Bitrate [bits/s] = 936000
RS422 parity = 0
RS422 port # to device 1 = 7
RS422 port # to device 2 = 0
RS422 port # to device 3 = 0
RS422 port # to device 4 = 0
RS422 Stopbit = 1
The GPIB-card # to use = 0
Type of power-supply used = 0
What format to use for resultfiles? = 0
What priority will this program run with? = 2
```

For properly sensor connection, need connect sensor in steps:

The screenshot shows the STIM210 EVK PC Software V7.0 interface. The window title is "STIM210 EVK PC Software V7.0" and the menu bar includes "File" and "Help". The main interface has several tabs: "Normal mode", "Service mode", "Measure", "Logging", and "Parameters". The "Normal mode" tab is active. On the left side, there are buttons for "Connect to HW" (labeled with a red '1'), "Disconnect from HW", "Apply voltage" (labeled with a red '2'), and "Device" (set to 1). Below these is a "Data arriving from device 1" indicator with a green light and "CR/LF" text, and a "Serial no. device 1" input field. A red box with the text "3 - connect sensor physically" is overlaid on the bottom left. On the right side, there are buttons for "Reset device", "Request config DG" (labeled with a red '4'), "Request identity DG", "Request serial# DG", and "Request ext. sts DG". The "Response" area shows a "Configuration datagram" with the following parameters:

```
==== Configuration datagram ===== (1)
Part no rev = D
FW revision = 7
HW revision = 1
X-axis = Active
X-axis LPF = 262
Y-axis = Active
Y-axis LPF = 262
Z-axis = Active
Z-axis LPF = 262
Sampling freq = 2000
Output unit = Angular rate
Gyro range X = ±400°/s
Gyro range Y = ±400°/s
Gyro range Z = ±400°/s
Datagram frm = Rate & counter
RS422 bitrate = User defined
RS422 stopbits = 1
RS422 parity = N
Line term. = On
DG term. = On
Status byte = 20
CRC = 226 - 226 OK
```

The status bar at the bottom shows "c:\Sensor evaluation tools\STIM210 EVK\STIM210\_EvalKit.INI" and "HW connected OK".

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



### Connection diagram

