

# SensiConfigurator Getting Started



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# 1. Install SensiConfigurator for Windows

1. Download SensiConfigurator for Windows. Нужно добавить ссылку и картинку, где будет находится SensiConfigurator.

Figure 1. Download SensiConfigurator

2. If you are using an older version of Windows than Windows 10, you need to download and install the driver: <u>STM32 Virtual COM Port Driver</u>

3 Unzip the downloaded SensiConfigurator.

4 Go to the folder and run the program by clicking on the main file. after launch, the main window should appear.



Figure 2. StartSensiConfigurator



# 2. Connected to SensiLora 2.0

1. Connect the SensiLora 2.0 device to the computer using the USB Type-C port. After connecting the device, a computer port should appear in the window. Choose com-port and click the **Connect** button.



Figure 3. Connected to SensiLora 2.0

2. If the connection was successful, then we will see a message **Device Information**, where:

- Device Name Device name of the connected device;
- Firmware Version Firmware version of the connected device;
- Lora Region Lora region, which is used in the connected device;
- Battery Battery percent;
- **Port** USB Com Port;
- AppKey AES128 Root Key, used for Lora Server;
- DevEui 64-bit end-device identifier, used for Lora Server;
- JoinEui 64-bit end-device identifier, used for Lora Server;



Figure 4. Device Information

<ol> <li>Device Information</li> </ol>	×
Device Name: SensiLora 2.0 Firmware Version: 0.0.10 Lora Region: EU868 Battery: 100.0%	Sensiedge Simplify & Accelerate
AppKey: 2B7E151628AED2A6AB	F7158809CF4F3C Copy
DevEui: 333737396C307116 JoinEui: 0101010101010101	Сору
C	ЭК

3. If there is an error when connecting, then try to select another comport, press the connection again, check the USB cable, or restart the device by disconnecting the USB cable and batteries using the jump J4.

Figure 5. Connected error

SensiConfigurator			- 🗆 X
Device About		DX   LoRa 2.0	
	Connection status Error connected to device. Try reconnecting the de	imes evice or restarting the device	
		ОК	
	A Start S		
After connecting the device, select	t the port and click connect		Sensiedge Simplify & Accelerate

#### SensiEDGE Simplify & Accelerate

# 3. Choose Page

## 3.1. Description

1. After Connected will appear Choose Page, where:

Choose:

- **Config Sensors** Configuration Sensors, Calculate LoRa distance, changes LoRa Region and Period Transmit.
- Test Sensors Displaying Sensors values.
- **Data Logging** Data Logging indication values.
- Matlab Import Generate script for Matlab.

StatusBar:

- USB status status Device connect.
- **Device** name connected device.
- Firmware version Firmware version connected device.
- Region LoRa Region which uses.
- Port USB Com Port which is connected.
- Battery Battery Percent.

#### Figure 6. Choose Page

🗱 SensiC	Configurator					- 0	×
Device A	About						
		THE REAL PROPERTY OF THE PROPE	R				
	Config S	ensors	Test Sensors	Data Logging		Matlab Import	
	·		Choose				
			Status Bar				
USB Status	Connected	Device: SensiLora 2.0	Firmware version: 0.0.10	Region: EU868	Port: COM9	Battery: 100.0%	

## 3.2 About program

1. To view information about the program go to <u>About</u> (1 step) and select <u>About</u> (2 step).



#### Getting started with SensiConfigurator





#### 3.3 Device Information

1. To view information about the device go to **Device** (1 step) and select **Info** (2 step). Also, this information appears when connecting.





#### Getting started with SensiConfigurator



2. In the Information Page located:

- Device Name Device name of the connected device;
- Firmware Version Firmware version of the connected device;
- Lora Region Lora region, which is used in the connected device;
- Battery Battery percent;
- **Port** USB Com Port;
- AppKey AES128 Root Key, used for Lora Server;
- DevEui 64-bit end-device identifier, used for Lora Server;
- JoinEui 64-bit end-device identifier, used for Lora Server.

#### Figure 9. Information Device Page

0 Device Information	×
Device Name: SensiLora 2.0 Firmware Version: 0.0.10 Lora Region: EU868 Battery: 100.0%	Sensiedge Simplify & Accelerate
AppKey: 2B7E151628AED2A6AB DevEui: 333737396C307116	F7158809CF4F3C Copy Copy
	Ж

## 3.4 Battery Information

1. To view information about the device go to **Device** (1 step) and select **Battery** (2 step).







2. In Battery Information Page, located:

- Estimated time work with Battery calculate the work time of the device from the remaining percentage of the battery. The work time is affected by the parameters of the data transmission period LoRa and the power of the LoRa transmitter.
- **Battery remaining time** calculate the battery life of the device when fully charged. The operating time is affected by the parameters of the data transmission period and the power of the Lora transmitter.
- Percent Battery percent Battery.
- Battery Voltage Voltage Battery.

Figure	11.	Battery	Information	Page
--------	-----	---------	-------------	------

Battery Information				$\times$
Battery				
Estimated time work with Battery:	0d 14h 54m days	Percent Battery:	100.0	%
Battery remaining time:	0d 14h 54m days	Battery Voltage:	4.19	v
*Battery work calculations may differ from act	ual use			
Changes Battery Capacity Batte	ry capacity: 100 mA			
*Default Battery Capacity is 100 mA				
	Save Cancel			

## 3.5 Changes in Battery Capacity

1. For changes to Battery capacity click to enable <u>Changes Battery</u> <u>Capacity</u> (step 1), then changes the value to <u>Battery capacity</u> (step 2) and click to <u>Save</u> (step 3) new capacity.



Battery Information				$\times$
Battery				
Estimated time work with Battery:	0d 14h 54m day	s Percent Battery:	100.0	%
Battery remaining time:	0d 14h 54m days	s Battery Voltage:	4.19	۷
*Battery work calculations may differ from act Changes Battery Capacity	ual use ry capacity: 100 🗄	mA 2		
*Default Battery Capacity is 100 mA		<b>—</b>		
	Save 3 Can	cel		



#### 3.6 Disconnect device

1. To view information about the device go to **Device** (1 step) and select **Disconnect** (2 step).







# 4. Configuration Sensors

#### 4.1 Description

#### 1. Choose Config Sensors Page.

Figure 14.	Choose	Config Se	ensors Page
------------	--------	-----------	-------------

SensiConfigurator					- 🗆	×
Device About						
Config Sens	sors	t Sensors	Data Logging	Matla	b Import	
1						
USB Status: Connected De	evice: SensiLora 2.0	Firmware version: 0.0.10	Region: EU868	Port: COM9	Battery: 100.0%	

2. In the Config Sensors Page located:

ToolBar

- Back Back in Menu Page
- **Apply** Apply the change configuration
- **Default** Apply default configuration sensors

Notebook

- Acc, Gyro, and Mag configuration Accelerometer, gyroscope, and Magnetometer sensors
- Hum, Temp, Press, and Light configuration Humidity, Temperature, Pressure, and Light sensors
- **Transmit Period and LoRa Region** change Period Transmit data and Lora Region
- LoRa Distance calculate Lora Distance

Figure 15. Configuration Sensors Page



SensiConfigurat	tor				- 🗆 X
Device About					
🕒 Back 🗸	Apply Cefault ToolB	ar			
Acc, Gyro and Mag	9 Hum, Temp, Press and Light Tr	ransmit Period and LoRa Regi	ion LoRa Distance Note	book	
Accelerometer (l	LSM6DSO)	Gyroscope (LSM6	iDSO)	Magnetometer (LIS2MDL	_)
Enable		Enable		🗹 Enable	
- Full Scale (g)	Output Data Rate (Hz)	-Full Scale (g)	Output Data Rate (Hz)	Output Data Rate (Hz)	
@ 2g	Off	② 250dps	Off	10Hz	
○ 16g	12,5Hz	○ 500dps	12,5Hz	◯ 20Hz	
⊖4g	◯ 26Hz	1000dps	○ 26Hz	○ 50Hz	
○ 8g	◯ 52Hz	2000dps	◯ 52Hz	◯ 100Hz	
	◯ 104Hz		◯ 104Hz		
	○ 208Hz		○ 208Hz		
	○ 417Hz		○ 417Hz		
	() 833Hz		○ 833Hz		
	◯ 1667Hz		◯ 1667Hz		
	○ 3333Hz		○ 3333Hz		
	○ 6667Hz		○ 6667Hz		
USB Status: Connect	ed Device: SensiLora 2.0	Firmware versio	on: 0.0.10 Region: E	EU868 Port: COM9	Battery: 100.0%

## 4.2 Example Configuration Gyroscope Sensor

1. To change the Gyroscope configuration, select the <u>Acc, Gyro, and</u> <u>Mag</u> table (step 1), then find the parameters for the Gyroscope and select <u>on/off</u> (step 2) and the needed parameter <u>Full Scale</u> (step 3), <u>Output Data</u> <u>Rate</u> (step 4) and click to <u>Apply</u> new parameters (step 5).

Figure 16. Configuration Gyroscope Sensor

🗱 SensiConfigurat	tor				- 🗆	×
Device About						
🕞 Back 🧹	Apply 5 Default					
Acc, Gyro and Mag	9 1 n, Temp, Press and Light Transmit P	Period and LoRa Region	LoRa Distance			
Accelerometer (	LSM6DSO)	Gyroscope (LSM	6DSO)	Magnetometer (LIS2MDL	.)	
Enable		Enable 2	)	🗹 Enable		
Full Scale (g)	Output Data Rate (Hz)	Full Scale (g)	Output Data Rate (Hz)	Output Data Rate (Hz)		
@ 2g	Off	② 250dps     ③     3	O off (4)	10Hz		
◯ 16g	12,5Hz	○ 500dps	● 12,5Hz	○ 20Hz		
⊖ 4g	◯ 26Hz	1000dps	○ 26Hz	◯ 50Hz		
○ 8g	◯ 52Hz	O 2000dps	○ 52Hz	○ 100Hz		
	○ 104Hz		○ 104Hz	the	-	
	○ 208Hz		○ 208Hz	Output Data Rate - mea	surements per	
Full Scale - full	measuring range	Full Scale - full r	measuring range			
Output Data Rat	te - the number of measurements per secon	d Output Data Rat	e - the number of measurements per second			



## 4.3 Example Changes LoRa Region

1. To change LoRa Region, select Transmit Period and LoRa Region table (step 1) and select need LoRa Region (step 2).

Figure 17.	Changes L	oRa Region
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🗱 SensiConfigurator					_		$\times$
Device About							
🕞 Back 🗸 Apply	Default						
Acc, Gyro and Mag Hum, Ter	mp, Press and Light Transmit F	Period and LoRa Region 1 Distar	ce				
Period transmit			Ra Region				
Hours:			Choose LoRa Region 🌈				
0	0	23	) IN865				
Minutes:	U		EU868				
0		59	AU915				
· · ·	0		O US915				
Seconds:			C KR920				
10	10	59	) AS923				
*To something that describes	the LoRa transmit duty cycle of	1% transmit and 99% idle					
Estimated time work from	m Battery: 0d 14h 54m	days					
USB Status: Connected	Device: SensiLora 2.0	Firmware version: 0.0.10	Region: EU868	Port: COM9	Battery: 100.09	<u></u>	

2. After changing the LoRa Region, a warning will appear that you need to check the compatibility of the region with the device:

- EU866 supports EU868 and IN865 LoRa Regions
- US915 supports AU915, US915, KR920, and AS923 LoRa Regions

Figure 18. Warning changes Region





## 4.4 Example Calculate LoRa Distance

1. To calculate Distance, select the **LoRa Distance** table (step 1), then select **Units** (step 2) and enter the parameters:

- **Device Transmit Power** (step 3) when the Transmit power is increased, the range will increase, but the battery work of the device will decrease
- **Device Height** (step 4) the LoRa antenna is soldered on the device, you need to specify the distance of the device from the ground
- Gateway Sensitivity (step 5) this parameter is the sensitivity of the LoRa receiver in the Gateway, it can be found on the manufacturer's website on Gateway or in the datasheet for the Gateway. For example, Dragino LPS8 has -137 Sensitivity.
- Antenna Gateway Height you need to specify the distance of the LoRa Antenna Gateway from the ground

2. In the window, there is a range for parameters that are lower (step 7). For save parameters click to <u>Apply</u> (step 8).

2000 SensiConfigurator	_		×
Device About			
Back Apply 8 Default			
Acc, Gyro and Mag Hum, Temp, Press and Light Transmit Period and LoRa Region LoRa Distance			
Distance			
LoRa distance: 0.6357734853 kilometres 7			
Estimated distance may differ from actual.			
Device Transmit Power (Pt): 2 dbm 3			
Device Height (h1): 1.0 🛊 meters 4			
Gataway Sensitivity (Sg): -137 🚔 dbm 5			
Antenna Gateway Height (h2): 1.0 meters 6 meters		-	
Units h1 h2		1=	
O miles/feet			
Transmitter SensiLora 2.0 Tran	smitter G	Gatewa	У
Estimated time: 0d 14h 54m days		/ /	~
*If the battery is fully charged Earth	/ /		
USB Status: Connected Device: SensiLora 2.0 Firmware version: 0.0.10 Region: EU868 Port: COM9 Bat	tery: 100.0%	6	

Figure 19. Calculate LoRa Distance



# 5. Test Sensors Page

- 5.1 Overview
  - 1. Choose the Test Sensors Page.

🗱 SensiConfigurator					_		$\times$
Device About							
	WHERE THE REAL PROPERTY OF THE	C					
Config S	ensors	Test Sensors	Data Logging	1	Matlab Import		
USB Status: Connected	Device: SensiLora 2.0	Firmware version: 0.0.10	Region: EU868	Port: COM9	Battery: 100.0%	1	

Figure 20. Choose the Test Sensors Page

2 In the Test Sensors Page we see:

ToolBar:

• Back - Back to Menu Page

Mode Selection:

- Environment Pressure, Humidity, and Temperature value Sensors
- Accelerometer Accelerometer values Axes
- Gyroscope Gyroscope values Axes
- Magnetic Magnetometer values Axes
- LED State On/Off Green Led
- Light Light value







# 5.2 Example Test Light Sensor

1. In Mode selection choose <u>Light Sensor</u> (step 1) and a window with the illumination value will appear (step 2).



I SensiConfigurator Device About	-	×
Back		
Mode selection Enviroment Accelerometer Magnetic Ight Sensor 1 Light 25 [lux]		



# 6. Data Logging Page

# 6.1 Data Logging Start

#### 1. Choose the **Data Logging** Page.

Figure 23. Choose the Data Logging Page



2. For Data Logging values Sesnors, first choose need sensors (step 1). Second, choose a period to get value sensors (step 2). Third, click <u>Start</u> Logging (step 3) and the table will start populating.

Figure 24. Data Logging Page

🗱 SensiConfigurator					- 🗆	×
Device About						
🕞 Back 💾 Save 💾	Save As					
Sensors			1	Period Update	2 Settin	g Table
Accelerometer Gyroso	ope 🗌 Magnetometer 🗹 H	umidity 🗹 Pressure 🗹 Temp	erature 🗹 Light 🗌 All	50 🔹 🖲 Ms 🔿	Sec 🔿 Min 🗹 Au	utoScrol
Time Acc X axis Acc m/s2 r	Y axis Acc Z axis Gyro X axis n/s2 m/s2 rad/s	Gyro Y axis Gyro Z axis Mag rad/s rad/s	X axis Mag Y axis Mag Z axi μT μT μT	is Humidity Pressure % hPa	Temperature Light C lux	t
			Clear table	Start Logging	Stop Logging	
USB Status: Connected	Device: SensiLora 2.0	Firmware version: 0.0.10	Region: EU868	Port: COM9	Battery: 100.0%	



#### 3. To enable/disable auto scroll click on <u>AutoScroll</u>. Figure 25. AutoScroll

Device About	c O Min	1 Table
Mage       Save       Save As         Sensors       Accelerometer       Gyroscope       Magnetometer       Humidity       Pressure       Temperature       Light       All       Solution		a Table
Sensors       Period Update         Accelerometer       Gyroscope       Magnetometer       Humidity       Pressure       Temperature       Light       All       50<       ●       Ms       Sec         Time       Acc X axis       Acc Y axis       Acc Z axis       Gyro X axis       Gyro Y axis       Gyro Z axis       Mag X axis       Mag Y axis       Mag Z axis       Humidity       Pressure       Temperature         00:36:05:409       m/s2       m/s2       Gyro X axis       Gyro Y axis       Gyro Y axis       Mag X axis       Mag Y axis       Mag Z axis       Humidity       Pressure       hPa         00:36:05:472       m/s2       m/s2       c       a </th <th></th> <th>a Table</th>		a Table
Accelerometer       Gyroscope       Magnetometer       Humidity       Pressure       Temperature       Light       All       50       Ms       Sec         Time       McC X axis       Acc Y axis       McC Z axis       Gyro X axis       Gyro X axis       Gyro Y axis       Gyro Z axis       Mag X axis       Mag Y axis       Mag Z axis       Humidity       Pressure       Temperature         00:36:05:472       0       1		
Image: Line series of the s		itoScrol
00:36:05:409         42:34         971:00           00:36:05:533         42:56         971:00           00:36:05:596         42:88         971:00	emperature Light C lux	^
00:36:05:472         42.86         971.00           00:36:05:533         42.88         971.00           00:36:05:596         42.36         971.00	25.94 55	
00:36:05:5596 42:36 971:00	25.79 55	
003003390	25.01 35	
42.36 971.00	25.73 35	
00-36-05-721 4184 97100	25.73 35	
42.62 971.00	25.85 35	11
42.59 971.00	25.77 35	
00-36-05-909 42.59 971.00	25.81 35	
00:36:06:001 42.42 971.00	25.79 35	
		、 ×
·		,
Clear table Start Logging Stor	top Logging	
JSB Status: Connected Device: SensiLora 2.0 Firmware version: 0.0.10 Region: EU868 Port: COM9 B	Battery: 100.0%	

6.2 Stop and Save Data Logging

1. To stop Logging sensors click to <u>Stop Logging</u> (step 1) and then click on the icon <u>Save</u> (step 2).

Figure 26. Stop and Save Data Logging

🚟 SensiConfig	gurator											_		$\times$
Device About	t													
🕞 Back	Save	2 Save A	ls											
Sensors										Period Upd	late		Setting	Table
Accelerom	ieter 🗌 Gy	yroscope [	Magnetor	meter 🗹 H	umidity 🗹	Pressure 🗹	Temperature	e 🗹 Light		50	Ms 🔿	Sec O Min	⊠ Aut	oScrol
Time	Acc X axis m/s2	Acc Y axis m/s2	Acc Z axis m/s2	Gyro X axis rad/s	Gyro Y axis rad/s	Gyro Z axis rad/s	Mag X axis µT	Mag Y axis µT	Mag Z axis µT	Humidity %	Pressure hPa	Temperature C	Light lux	^
00.26:05:472										42.54	971.00	25.79	35	
00:36:05:533										42.88	971.00	25.77	35	
00:36:05:596										42.36	971.00	25.81	35	
00:36:05:659										42.36	971.00	25.73	35	
00:36:05:721										41.84	971.00	25.73	35	
00:36:05:783										42.62	971.00	25.85	35	
00:36:05:846										42.59	971.00	25.77	35	
00:36:05:909										42.59	971.00	25.81	35	
00:36:06:001										42.42	971.00	25.79	35	
<													>	*
								C	lear table	Start Log	gging	Stop Logging	1	
USB Status: Con	nected	Device	e: SensiLora	2.0	Firmware v	ersion: 0.0.10	R	egion: EU868		Port: COM9		Battery: 100.09	6	



2. When saving for the first time, a window will appear where you need to specify the save **Path** (step 1), **file type** (step 2), and **file name** (step 3). After clicking to <u>Save</u> (step 4).

alor	
翻 Save to file:	×
$\leftarrow \rightarrow \checkmark \uparrow \blacksquare$ > This > Local Disk (D:) $\checkmark$ 👌	
Organize 🔻 New folder	₿== ▼ (?)
This PC Name	Date modified Type
<ul> <li>3D Objects</li> <li>Desktop</li> <li>Documents</li> </ul>	2/26/2023 3:12 РМ Текст
Downloads     Music     Pictures	
Videos	>
File name: SensiDataLog.txt	~
Save as type: Text (*.txt)	~
∧ Hide Folders	Save 4 Cancel

Figure 27. Save to file

3. If the save was successful, a window will appear. Figure 28. Stop and Save Data Logging

🗱 SensiConfig	gurator													_		$\times$
Device About	t															
🕞 Back	- Save	💾 Save A	ls.													
Sensors												Period Upd	late		Setting	Table
Accelerom	ieter 🗌 Gj	yroscope [	Magneto	meter	🗹 Humid	ity 🗹 Press	ure 🗹 Tem	perature	🗹 Light			50	● Ms 〇	Sec 🔿 Min	⊿ Aut	oScrol
Time	Acc X axis m/s2	Acc Y axis m/s2	Acc Z axis m/s2	Gyro ra	Status Sa	/e				×	axis T	Humidity %	Pressure hPa	Temperature C	Light lux	^
00:30:05:409					l 👝 s	ave sucsessfu	Ι.					42.34	971.00	23.94	55	
00:36:05:472												42.50	971.00	25.79	30	
00:36:05:533												42.88	9/1.00	25.77	35	
00:36:05:596									O	< C		42.36	9/1.00	25.81	35	
00:36:05:659												42.36	9/1.00	25.73	35	
00:36:05:721												41.84	971.00	25.73	35	
00:36:05:783												42.62	971.00	25.85	35	
00:36:05:846												42.59	971.00	25.77	35	
00:36:05:909												42.59	971.00	25.81	35	
00:36:06:001												42.42	971.00	25.79	35	
									C	lear tabl	e	Start Log	gging	Stop Logging	]	
USB Status: Con	nected	Devic	e: SensiLora	2.0	Fir	mware versio	n: 0.0.10	Reg	jion: EU868		F	Port: COM9		Battery: 100.09	%	



4. To change the save path, file type, or file name. Need to click Save

<u>As</u>.

SensiConfic	nurator													×
Device About	t													
Back Sensors		💾 Save A	ls K							Period Upd	late		Setting	Table
Accelerom	ieter 🗌 Gy	/roscope [	Magnetor	meter 🗹 Hi	umidity 🗹	Pressure 🗹	Temperature	e 🗹 Light		50	● Ms 〇	Sec () Min	🗹 Aut	oScrol
Time	Acc X axis m/s2	Acc Y axis m/s2	Acc Z axis m/s2	Gyro X axis rad/s	Gyro Y axis rad/s	Gyro Z axis rad/s	Mag X axis µT	Mag Y axis µT	Mag Z axis μT	Humidity %	Pressure hPa	Temperature C	Light lux	^
00:30:00:409					-					42.34	971.00	23.94	55	
00:36:05:472										42.56	9/1.00	25.79	35	
00:36:05:533										42.88	971.00	25.77	35	
00:36:05:596										42.36	971.00	25.81	35	
00:36:05:659										42.36	971.00	25.73	35	
00:36:05:721										41.84	971.00	25.73	35	
00:36:05:783										42.62	971.00	25.85	35	
00:36:05:846										42.59	971.00	25.77	35	
00:36:05:909										42.59	971.00	25.81	35	
00:36:06:001										42.42	971.00	25.79	35	
<														
													,	
								C	lear table	Start Log	gging	Stop Logging	1	
USB Status: Con	nected	Device	e: SensiLora	2.0	Firmware v	ersion: 0.0.10	R	egion: EU868		Port: COM9		Battery: 100.09	%	

Figure 29. Save As

5. To clear the table click on the <u>Clear table</u> button. Figure 30. Clear table

🗱 SensiConfi	gurator											—		X
Device Abou	t													
📀 Back 🚦	💾 Save	💾 Save A	٩s											
Sensors										Period Upo	late		Setting	Table
Accelerom	neter 🗌 Gy	yroscope [	Magnetor	meter 🗹 Hi	umidity 🗹	Pressure 🗹	Temperature	e 🗹 Light		50	● Ms 〇	Sec 🔿 Min	Aut	oScrol
Time	Acc X axis m/s2	Acc Y axis m/s2	Acc Z axis m/s2	Gyro X axis rad/s	Gyro Y axis rad/s	Gyro Z axis rad/s	Mag X axis µT	Mag Y axis µT	Mag Z axis µT	Humidity %	Pressure hPa	Temperature C	Light lux	^
00:30:05:409										42.34	971.00	20.94	30	
00:36:05:472										42.56	971.00	25.79	35	
00:36:05:533										42.88	971.00	25.77	35	
00:36:05:596										42.36	971.00	25.81	35	
00:36:05:659										42.36	971.00	25.73	35	
00:36:05:721										41.84	971.00	25.73	35	
00:36:05:783										42.62	971.00	25.85	35	
00:36:05:846										42.59	971.00	25.77	35	
00:36:05:909										42.59	971.00	25.81	35	
00:36:06:001							•			42.42	971.00	25.79	35	
/														. ×
								<u> </u>						
								CI	lear table	Start Log	gging	Stop Logging		
JSB Status: Con	nected	Devic	e: SensiLora	2.0	Firmware v	ersion: 0.0.10	R	egion: EU868		Port: COM9		Battery: 100.09	%	



# 7. Matlab Import Page

#### 7.1 Description

1. The program generates a script for Matlab. This script collects data from the selected sensors and draws a graph with the specified number of points, then the received data can be saved and processed.

#### 7.2 Generate Script

#### 1. Choose <u>Matlab Import</u> Page.



#### Figure 31. Choose Matlab Import Page

2. First, choose need sensors (step 1). Second, choose period update receiving data from sensors (step 2). Third, select the number of points for plotting (step 3). Four, click to <u>Generate Script</u> (step 4).





I SensiConfigurator	_		×				
Device About							
Back							
1. Choose sensors:							
🗌 Accelerometer 🗌 Gyroscope 🗌 Magnetometer 🗹 Humidity 🗹 Pressure 🗹 Temperature 🗹 Light 🗌 All Sensors 🚹							
2. Choose period update between points: 0.1 🗧 Seconds 🙎							
3. Select the number of points for plotting: 2 🗧 3							
4. Generate and Save Matlab script: Generate Script							
5. Open Matlab.							
6. Go to HOME page and choose Open file (Ctrl+0). Then select the saved script.							
7. Disconnect SensiLora 2.0 from program: Disconnect							
8. Go to EDITOR page and click RUN script (F5).							
9. If the MATLAB Editor window appears, select the Add to Patch.							
10. After the specified number of points is collected, the script ends its work and a graph is drawn.							
1 Help							
USB Status: Connected Device: SensiLora 2.0 Firmware version: 0.0.10 Region: EU868 Port: COM9 Battery	: 100.0%						

3. In the window Save script, you need to enter the path (step 1), and file name (step 2). After clicking to **Save** (step 3).

Figure 33. Save Matlab script

New Sensiconingu	ann			
Device About	Save script:			×
🗲 Back	$\leftarrow \rightarrow \checkmark \uparrow$	🕳 → This → Local Disk	(D:) ✓ Č Search Local Disk	(D:)
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Accelerometer	Pictures	A Name	^ Date modified	Туре
2. Choose period	bin 📊	(1)	No items match your search.	
3. Select the nu	🕳 Local Disk 📻	(D:) (E:)		
4. Generate and	🔜 wxBuild			
5. Open Matlab.	📥 OneDrive - P	Persor		
6. Go to HOME	💻 This PC			
7. Disconnect S	Network	~ <		>
8. Go to EDITOR	File nam	ne: SensiConfigurator.m	2	~
9. If the MATLAE	Save as typ	pe: MATLAB Code files (*.m)	)	~
10. After the spe	<ul> <li>Hide Folders</li> </ul>		Save 3	Cancel



## 7.3 Open and Run Script

1. Open Matlab. Go to the <u>HOME</u> Page (step 1) and click on the <u>Open</u> icon(step 2).

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Figure 34. Matlab Program

2. Choose the saved script (step 1) and click **<u>Open</u>** (step 2).

Figure 35. Open Script

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Organize • New f	folder					•
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📃 Desktop			-			
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🥌 Local Disk (E:)	1.					
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Fil	e name:	SensiConfigurator.m		~	All MATLAB files (*.mldatx;*.:	ssc; 🖂
					Open 2 Canc	el



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6. After opening, a window will appear with the saved script (step 1), to run the script go to the **EDITOR** tab (step 2) and press **RUN** (step 3).

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Figure 36. Open Script

7. At the first start, a window **MATLAB Editor** will appear, in this window, select <u>Add to Path</u>.



8. After running the script, the status of the script execution will be displayed in the window:

- Start Data Collection start Script.
- Get Data with Device. Count = <number> received data from the device. <number> - how many points were collected.
- Finished Data Collection finished work Srcipt, disconnect Device.

Figure 38. Open Script



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Image: Big Strate S	CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. -%} 26 27 *Serial Port to which the connection will be made 28 - comport="COM9", 29 *Speed Serial Port	
lcdata_utf8.xml	Command Mindau	
▲ matlab.exe	<pre>&gt;&gt; SensiConfigurator Start Data Collection 1 Get Data with Device. Count = 1'</pre>	
Workspace	Get Data with Device. Count = 2'	
Name *     Value       Image: Comport     "COM9"       Image: Comport     10       Image: Comport     115200       Image: Comport     115200       Image: Comport     115200	Get Data with Device. Count = 4' Get Data with Device. Count = 5' Get Data with Device. Count = 6' Get Data with Device. Count = 7' Get Data with Device. Count = 8' Get Data with Device. Count = 9' Get Data with Device. Count = 10' Finished Data Collection (3) fx >>	
IIII-	UTF-8 script	Ln 32 Col 12

9. After finished work, the script, a window with graphs will appear. Figure 37. Open Script



10. In the script, you can manually change the following parameters:



#### Getting started with SensiConfigurator

- 1. **Comport** com port can be found in Device Manager.
- 2. **Period** the period of receiving data from the device. 0.2 is 200 milliseconds.
- 3. **Count** the number of points.

#### Figure 37. Open Script

Sensi	Configurator.m X +
19	FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
20	DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
21	SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
22	CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
23	OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
24	OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
25	└_ <sup>®</sup> }
26	
27	Serial Port to which the connection will be made
28 -	comport="COM9"; 1
29	%Speed Serial Port
30 -	<pre>speedComPort=115200;</pre>
31	%Period update between points
32 -	period=0.2; (2)
33	%Amount of points
34 -	count=10; <b>(3</b> )
35	
36	% Connect to Serial Port
37 -	<pre>deviceObj = serialport(comport, speedComPort, "Timeout",5);</pre>
38	
39	%Configuration Terminator
40 -	<pre>configureTerminator(deviceObj, "CR/LF");</pre>
41	
42	%Cleaning Serial buffers
43 -	flush(deviceObj);
44	
45	%Configuring a callback to receive data from a Serial port