

LoRa Converter Configuration Tool v1.0.5

Connecting the converter

The converter is connected to a computer via a USB / UART converter with the three-pin connector:



Note: When using the Prolific USB / UART converter on Windows 10, an incorrect driver is installed automatically and prevents communication with the converter. The solution is to install the correct driver, see: <u>link</u>.



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After the converter is connected to a PC configuration program displays all connected COM ports (e.g. on picture COM4).

RS485/MBUS	oRa Dev	ice info		
General Setungs	Requests	Responses LOA		
	Use LUA:	No	\sim	
	Baudrate:	9600	\sim	
	Parity:	None	\sim	
	Stop Bits:	1	\sim	
	Data Bits:	8	\sim	
	Timeout:	3000 🚖 ms		
	Retry:	3 🔹 times		

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After click on the connect button the configuration tool establishes a connection with the converter. This may take a few seconds if the converter is currently measuring data.

Once the connection is established, the current configuration is loaded and the information about converter is automatically shown on the tab **Device info**.

LoRa Converter Configuration Tool v1.0.5	
MBUS LoRa Device info	Disconnect
DEVADDR: 69:C4:AF:E5	
DEVEUI: 47:2A:C8:68:00:3D:00:2B	
NWSKEY: C4:9F:C3:CD:80:56:E7:AE:AD:EA:05:F8:CD:A8:D2:F1	
APPSKEY: CC:95:B1:3E:16:E1:03:88:AF:B7:2F:5C:26:20:2F:D5	
Update Firmware: Browse	
Status: MBUS connected	

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Buttons description

Save and load configuration from/to file



The current configuration of the converter can be saved or retrieved from a JSON file (.cfg).

```
{
     "connection": {
          "baudrate": 2400,
          "data_bits": 8,
          "parity": "Even",
          "retry": 3,
          "stop_bits": 1,
          "timeout": 3000,
"use_lua": "Yes"
    },
"device_info": {
    "APPSKEY": "CC:95:B1:3E:16:E1:03:88:AF:B7:2F:5C:26:20:2F:D5",
    "APPSKEY": "K0:0b:0F:F5".
          "DEVEUI": "47:2A:C8:68:00:3D:00:2B",
          "NWSKEY": "C4:9F:C3:CD:80:56:E7:AE:AD:EA:05:F8:CD:A8:D2:F1"
    },
"lora": {
          "ADR": 0,
          "confirmed": 1,
          "data_rate": "SF12/125KHz",
          "period": 7,
"tx_power": 20
    },
     "requests": [
          <sup>.</sup>"105B0B66้16"
     ],
     'responses": [
          [ 0, 8, 32 ]
     ]
}
```

Save and load configuration from/to device

→	Ð
---	---

The current configuration can be stored in a EEPROM memory of the converter and then retrieved.

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Description of program bookmarks

Settings for MBUS or MODBUS (RS485)

Main settings

Set up communication protocol with converter. Adjustable parameters are: baudrate, parity, stop bits, data bits, timeout, repeat count.

LoRa Converter Configuration T	ool v1.0.5	_		×
⊨ 🗎 🗗 🖯	COM4	~	Disconnect	
MBUS LoRa Device info				
General Settings Requests	Responses LUA			
Use LUA: Yes Baudrate: 24 Parity: Eve Stop Bits: 1 Data Bits: 8 Timeout: 300 Retry: 3	00 en 0 テ ms imes	> > > >		
Status: MBUS connected				

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Requirements list

A list of requirements for the converter to query the device being measured.

LoRa Converter Configuration Tool v1.0.5	_		×
늗 💾 🕞 🔶 сом4	~	Disconnect	
MBUS LoRa Device info			
General Settings Requests Responses LUA			
105B0B6616			- 1
			- 1
Remove Add line		Add	
Status: MBUS connected			

Requirements can be added manually using the button "Add Line" (which will add a new line in the list) or using the button "Add" for the request dialog.

		MBUS			
🔳 Add Re	quest Dialog	I		?	×
Start	C field	A field	Checksum	s	top
0×10	5B	FE	0x59	0	x16
			ОК	Can	icel

The dialog automatically calculates the checksum and complements start and stop bytes.

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MODBUS

Add Request	t Dialog				?	×
Slave ID	Function Code		Data Address	Num of inputs	CRC	
11	0x02: Read (Discrete Input Contacts)	•	13	25	0x4A84	
				OK	Cancel	

The dialog automatically performs the calculation of the checksum (CRC). For MODBUS, it is currently possible to select function codes 1-6 for data handling. Requirements with other functional codes need to be defined manually by writing to the request list.

Response formats

In response format list, offset and length of request line can be set.

E.g. For the first request (request line = 0), reads data length of 4 bytes with offset 0.

LoRa Converter Confi	🛛 LoRa Converter Configuration Tool v1.0.5 — 🗌 🗙					
<u>-</u> 📙 -	📂 💾 🕞 🔂 сома					
MBUS LoRa Devi	ce info					
General Settings Re	quests Responses	LUA				
Request	Offset (B)	Length (B)				
105BFE5916 -	0	4				
105B0B6616 -	6	4				
Remove		Add				
Status: MBUS connected						

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LUA interface

The Lua interface allows to upload any Lua script using the supplied API to device (<u>see ACRIOS - LUA 5.1 API documentation - rev1.pdf</u>):

🔳 LoRa Converter Configuration Tool v1.0.5 – 🗆 🗙					
Disconnect					
MBUS LoRa Device info					
General Settings Requests Responses LUA					
Scripts Interactive console					
Default					
function onWake () / buf,err,ack,wake = api.getGUIContext() / if err ~= 0 then print("Error occured on line" tostring(err)) print("Sending error code to LORA") api.loraSend(ack,20000,tostring(err)) print("Done sending TEST") else print("Sending to LORA") api.loraSend(ack,20000,buf) print("Done sending") print("No error, sent to lora") end api.wakeUnIn(0.0.wake.0)					
Status: MBUS connected					

It is possible to select sample scripts from a combo box (the Default script is selected) or load a script from a file (Load file), edit it, save it to a file (Save file) and send it to the converter (Send).

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Interactive Lua Mode (Interactive console) allows sending real time commands in LUA language to the converter which can be used for example when testing or programming a Lua script.

🔳 LoRa (💽 LoRa Converter Configuration Tool v1.0.5 - 🗌						×
			> сом	4	~	Disconnect	
MBUS	LoRa	Device info					
Genera	Settings	Requests	Respon	ses LUA			
Scripts	Intera	ctive console					
Interac	tive consol	e:		Send chunk	of code:		
				print("Hello a	gain!")		
~> print	("Hello fro	m Lua")					
~>Hello	from Lua						
~> print	("Hello aga	ain!")					
~>Hello	anaint						
	ugun.						
~~							
De	ebug OFF		Clear		Send		
Status:	LUA Int	eractive Conso	le Active				

The mode is activated with the button **Debug ON** (deactivated with **Debug OFF** or **Disconnect** buttons respectively), then it is possible to write Lua commands in the left panel (Interactive console) in real time and immediately see the results (note: does not allow text deletion) or it is possible to send chunk of code at once in the right panel and immediately see the result in the left panel.

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LoRa settings

The configurable parameters for LoRaWAN are: Confirmed / Unconfirmed messages, ADR, Data Rate, Tx Power, Period.

LoRa Converter Configuration Tool v1.0.5		_		×	
MBUS LoRa	Device info	COM4	~	Disconnect	
	Confirmed: [ADR: [Data Rate: [Tx Power: [Period: [No Disabled SF12/125KHz 14 dBm 5			
Status: MBUS con	nected				

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Information about converter

The information about the connected converter is displayed here: DEVADDR, DEVEUI, NWSKEY, APPSKEY. Here is also the option to update the converter using the **Browse** button to select a firmware file (*.fw).

LoRa Converter Configuration Tool v1.0.5	
Image: MBUS LoRa Device info	
DEVADDR: 69:C4:AF:E5	
NWSKEY: C4:9F:C3:CD:80:56:E7:AE:AD:EA:05:F8:CD:A8:D2:F1	
APPSKEY: CC:95:B1:3E:16:E1:03:88:AF:B7:2F:5C:26:20:2F:D5	
Update Firmware: Browse	
Status: MBUS connected	

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