

How to Set Up Sigfox Backend for BL-SIG-AMR1?



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Register New Device on Backend

Prerequisites (IMPORTANT):

- User account on: <https://backend.sigfox.com/>
- Credentials (ID / PAC)
- Available tokens

Add A Device Type

Go to [Sigfox device type page](#) and click on **New**.

Fill up the fields according to the following instructions:

- Name: **BL_SIG_AMR** (as desired)
- Description: **BL_SIG_AMR impulse counter** (as desired)
- Keep-alive: **0** (leave default value)
- Subscription automatic renewal: **Optional**
- Contracts: **Select unused tokens**
- Alert email: **Optional**
- Downlink mode: **DIRECT**
(For start you can disable downlink messages by settings "NONE" option. More about downlink modes [here](#))
- Downlink data in hex: **0100{time}0000** (configuration for the device and the server time synchronization. More about configuration packets you can find in BL_SIG_AMR user manual)
- Payload parsing: **Custom grammar**
- Custom configuration:

```
1 TOTALCOUNTER::uint:32:little-endian STATUS_LOW_BATT::bool:7
STATUS_REPORTING::bool:6 STATUS_MAGNET_TAMPER::bool:5
STATUS_MECHANICAL_TAMPER::bool:4
STATUS_GAS_OVERCONSUMPTION::bool:3
STATUS_COUNTER_ERROR::bool:2 STATUS_UNEXPECTED_RESET::bool:1
STATUS_XXX::bool:0 TEMP:5:int:8 PERIOD_1::uint:8
PERIOD_2::uint:8 PERIOD_3::uint:8 PERIOD_4::uint:8
PERIOD_5::uint:8 PERIOD_6::uint:8
```

(This parser configuration will make uplink messages human readable)

Screenshot with all settings:

Device type - New

Device type information

Name

Description

Keep-alive (in minutes)

Subscription automatic renewal ?

Contracts

If we fail to call one of your callbacks, an email will be sent to the address below so that you can take action to fix the problem.

Alert email

Downlink data

Downlink mode For more details on Downlink modes, please refer to [documentation](#).

Expression must either include hexadecimal encoded bytes (ex: `deadbeefcafebabe`) or the following variables: - {time} 4 bytes - {tapId} 4 bytes - {rssi} 2 bytes - {roaming} 1 byte

Downlink data in hexa ?

Payload display

Select below the most suitable parsing mode for the display of your payloads in the backend (mostly appropriate for debugging and development)

Payload parsing

Custom configuration ?

Add A Device

Go to **Device** → **New**

Fill up the fields according to the following instructions:

- Identifier: **Device ID number** (visible on the device labes)
- Name: **BL_SIG_AMR_1** (as desired)
- PAC: **Device PAC number** (received by manufacturer)
- End product certificate: **Register as prototype**
- Type: **Select token**
- Lat / Lng: **Optional**
- Subscription automatic renewal: **Optional**
- Activate: **YES**

Screenshot with all settings:

The screenshot shows the Sigfox web interface for adding a new device. The navigation bar includes 'BASE STATION', 'DEVICE' (selected), 'DEVICE TYPE', 'USER', and 'GROUP'. The main heading is 'Device - New'. The form is titled 'Device information' and contains the following fields and options:

- Identifier (hexl):** 01415F7E
- Name:** BL_SIG_AMR1_RC4_01415F7E
- PAC:** 7A375F9F461E577D
- End product certificate:** (empty field with an information icon)
- Where can I find the end product certificate?**
The device vendor should provide the end product certificate number. If not, please use the search bar below:
Search for end product name: [input] Search
- Otherwise you can contact your Sigfox distributor service desk**
If the device has not obtained an end product certificate yet, then you can register is as a prototype.
 Register as a prototype (remaining prototypes which can be registered in your group: 1000)
- Type:** BL-SIG-AMR1_RC2-RC4-TESTS (dropdown menu) Available Tokens: 2
- Lat (-90° to +90°):** 0.0
- Lng (-180° to +180°):** 0.0
- Map:** Locate on map
- Subscription automatic renewal:**
- Activable:** (with information icon)

Buttons for 'Ok' and 'Cancel' are located at the bottom of the form.

If the device registration was successful, the result under Device → Information should be similar to this.

INFORMATION

LOCATION

MESSAGES

EVENTS

STATISTICS

EVENT CONFIGURATION

Device 1415F7E - Information

Suspend Disengage sequence number Edit Transfer Delete

Name: BL_SIG_AMR1_RC4_01415F7E
Protocol: N/A
Activable state: ⓘ
Sequence number: N/A (N/A)
Trash sequence number: N/A (N/A)
Last seen: N/A
PAC: C3A976BBAF68520E
Product certificate:
Latitude: 0.000 (degrees)
Longitude: 0.000 (degrees)
Device type: BL-SIG-AMR1_RC2-RC4-TESTS
State: OK
Link Quality Indicator: ⓘ
Communication status:
Activation date: N/A
Token validity: No token
Subscription automatic renewal status: Not allowed ⚠
Subscription automatic renewal: ⓘ
Creation date: 2020-10-07 13:52:24
Created by: Matija Puškar
Last edition date: 2020-10-07 13:52:24
Last edited by: Matija Puškar

MODEM CERTIFICATE

Product Certificate Key: M_0068_5E40_01
Modem manufacturer: SIGFOX_CORP_BUILD
Modem name: SIGFOX_CORP_BUILD_MODEM
Modem version: 0
Repeater function:
Input link budget: 0 dBm
Status: On going
Starting date: N/A
Expiration date: N/A
Description: lake certificate to release credentials to build platform
Modes: Downlink, Monarch, Uplink
Radio Configurations:

RC1 Output conducted power: 14.0 dBm Balanced link budget: No	RC2 Output conducted power: 22.0 dBm Balanced link budget: No	RC3 Output conducted power: 13.0 dBm Balanced link budget: No
RC4 Output conducted power: 22.0 dBm Balanced link budget: No	RC5 Output conducted power: 13.0 dBm Balanced link budget: No	RC6 Output conducted power: 14.0 dBm Balanced link budget: No
RC7 Output conducted power: 14.0 dBm Balanced link budget: No		

Testing

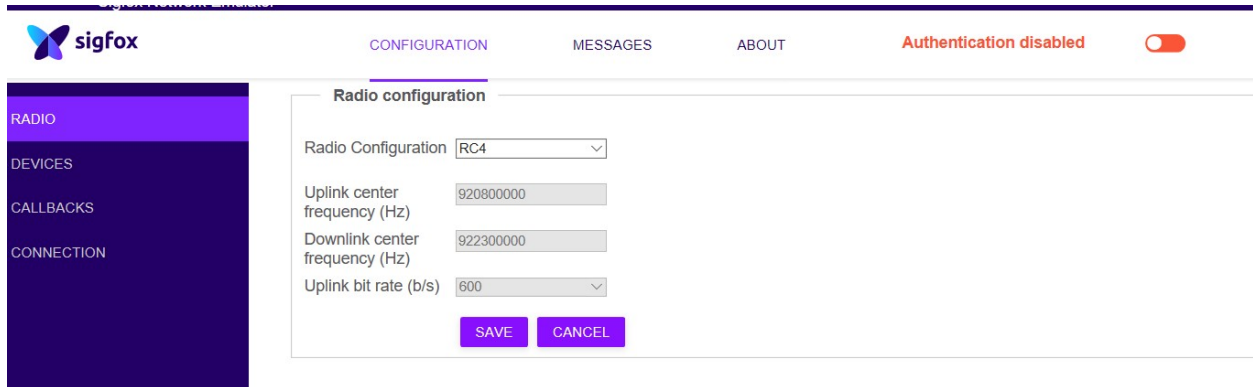
As we're in EU and we want to test RC4 we're going to use **Sigfox Micro Base station** and **Sigfox SDR dongle**. Sigfox Micro Base station is pre-configured for RC Zone 4.

Set up SDR (optional step)

Sigfox SDR Dongle is used as additional Sigfox sniffer for debugging, therefore it's **optional step**.



1. Disable **Autentification**
2. Set up **Radio configuration**

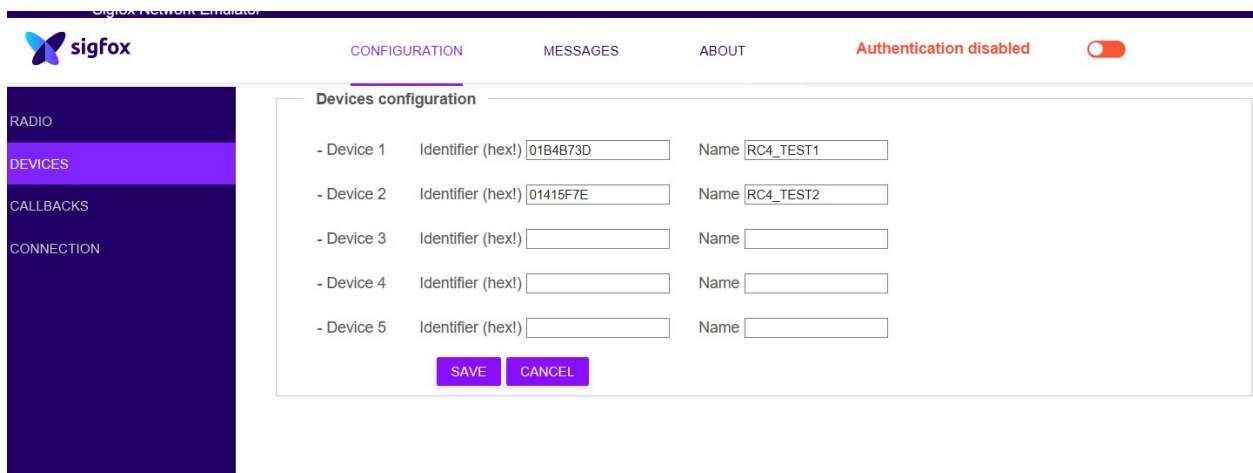


The screenshot shows the Sigfox Network Emulator interface. The top navigation bar includes 'CONFIGURATION', 'MESSAGES', and 'ABOUT'. A toggle switch for 'Authentication disabled' is turned on. The left sidebar has 'RADIO' selected. The main content area is titled 'Radio configuration' and contains the following fields:

- Radio Configuration: RC4 (dropdown)
- Uplink center frequency (Hz): 920800000 (text input)
- Downlink center frequency (Hz): 922300000 (text input)
- Uplink bit rate (b/s): 600 (dropdown)

At the bottom of the configuration area are 'SAVE' and 'CANCEL' buttons.

3. Add device **ID** and **Name**



The screenshot shows the Sigfox Network Emulator interface. The top navigation bar includes 'CONFIGURATION', 'MESSAGES', and 'ABOUT'. A toggle switch for 'Authentication disabled' is turned on. The left sidebar has 'DEVICES' selected. The main content area is titled 'Devices configuration' and contains the following table:

Device	Identifier (hex)	Name
- Device 1	01B4B73D	RC4_TEST1
- Device 2	01415F7E	RC4_TEST2
- Device 3		
- Device 4		
- Device 5		

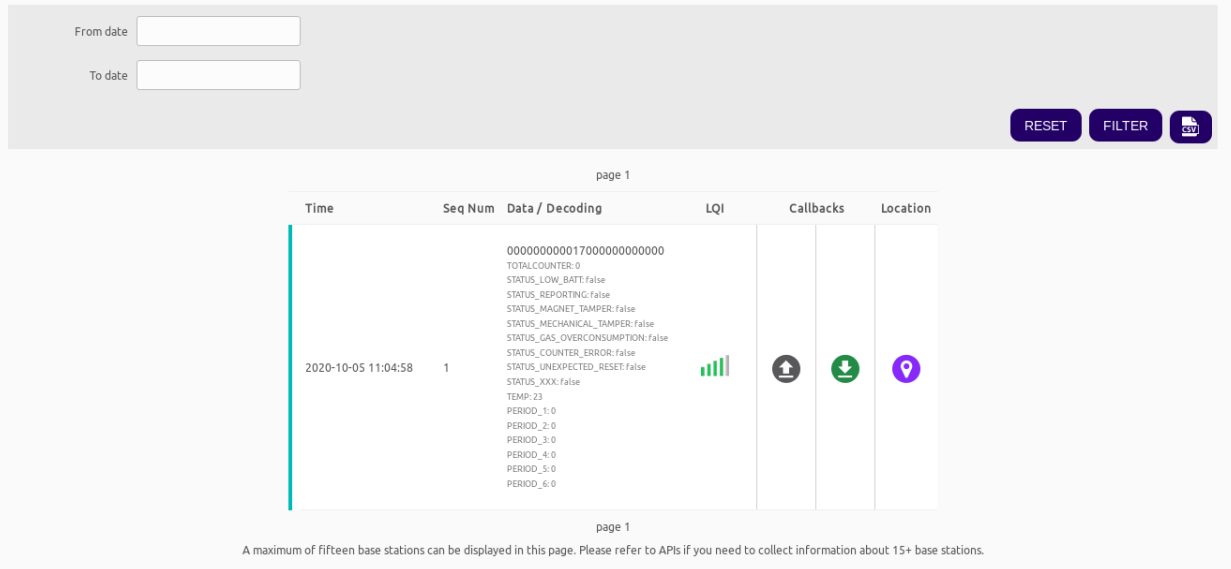
At the bottom of the configuration area are 'SAVE' and 'CANCEL' buttons.

4. Click **Save**

Test Sigfox Communication

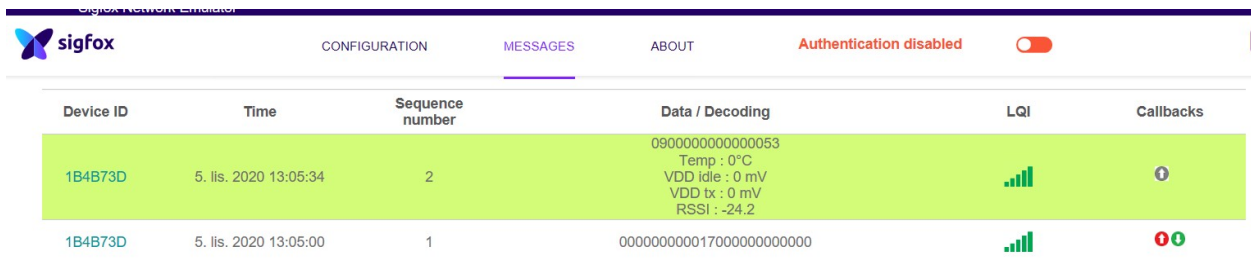
1. Activate the device with the magnet according to the user manual.
2. On the Sigfox backend under Device → Messages the first message should be visible:

Device 1B4B73D - Messages



Time	Seq Num	Data / Decoding	LQI	Callbacks	Location
2020-10-05 11:04:58	1	0000000001700000000000 TOTALCOUNTER:0 STATUS_LOW_BATT:false STATUS_REPORTING:false STATUS_MAGNET_TAMPER:false STATUS_MECHANICAL_TAMPER:false STATUS_GAS_OVERCONSUMPTION:false STATUS_COUNTER_ERROR:false STATUS_UNEXPECTED_RESET:false STATUS_XXX:false TEMP:23 PERIOD_1:0 PERIOD_2:0 PERIOD_3:0 PERIOD_4:0 PERIOD_5:0 PERIOD_6:0			

3. Also, in Sigfox Network Emulator (SDR) in **MESSAGES** section:



Device ID	Time	Sequence number	Data / Decoding	LQI	Callbacks
1B4B73D	5. lis. 2020 13:05:34	2	09000000000000053 Temp : 0°C VDD idle : 0 mV VDD tx : 0 mV RSSI : -24.2		
1B4B73D	5. lis. 2020 13:05:00	1	0000000001700000000000		