AnyNet 2G click

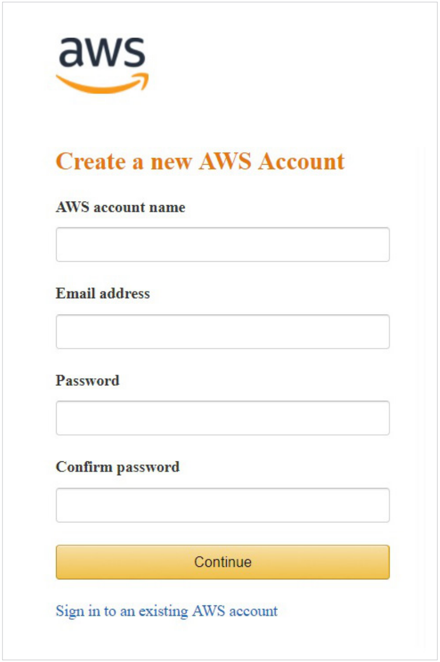
USER MANUAL

This document details which steps should be taken in order to connect AnyNet 2G click to the AWS cloud and exchange data.

1. Set up an account on AWS IoT Service

It is required to create an AWS account and an Administrator User. Please follow these instructions for creating it:

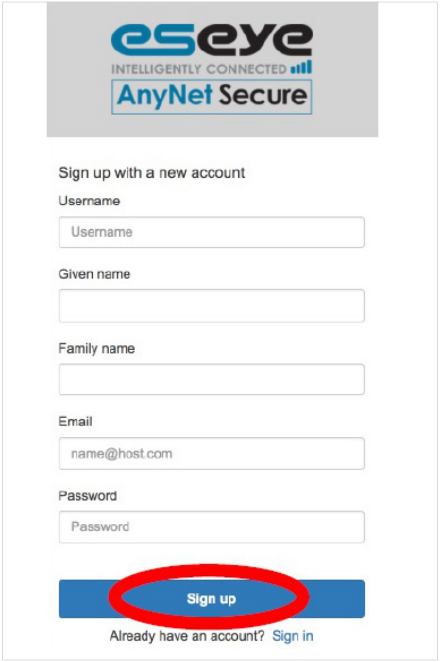
https://aws.amazon.com/premiumsupport/knowledge-center/create-and-activate-aws-account/



2. Subscribe to AnyNet Secure SAAS

After successfully creating an account you need to subscribe to a"AnyNet Secure Cellular Connectivity" on AWS Marketplace and make an account. Follow the instructions explained here:

https://eseye.zendesk.com/hc/en-us/articles/115005289086



Sign up with a new account

Username

Username

Given name

Family name

Email

name@host.com

Password

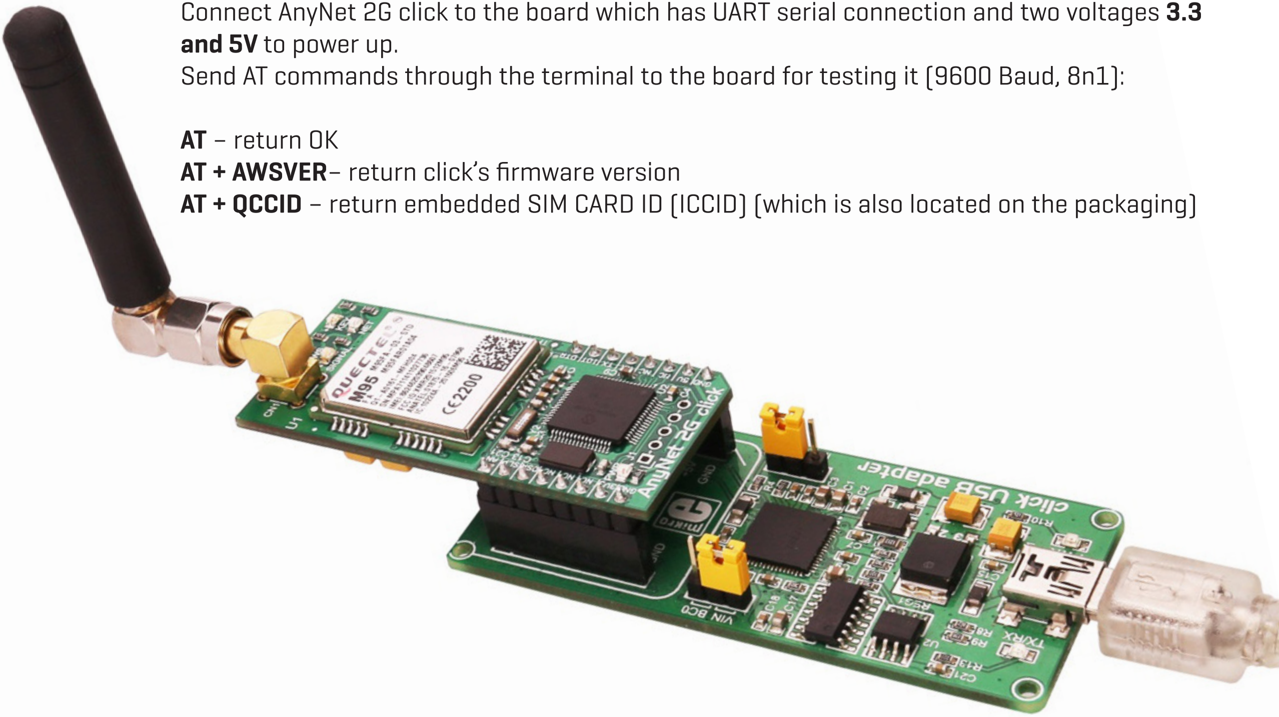
Password

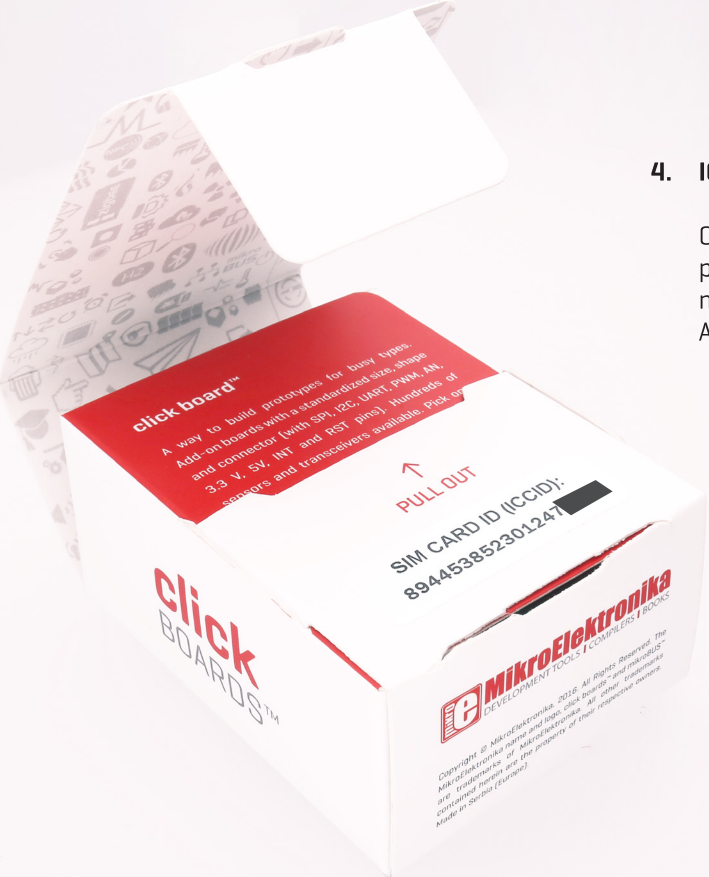
Already have an account? Sign in

3. Connect your hardware and power up the module

Connect AnyNet 2G click to the board which has UART serial connection and two voltages **3.3 and 5V** to power up.
Send AT commands through the terminal to the board for testing it (9600 Baud, 8n1):

AT – return OK
AT + AWSVER– return click's firmware version
AT + QCCID – return embedded SIM CARD ID (ICCID) (which is also located on the packaging)




click board™
A way to build prototypes for busy types.
Add-on boards with a standardized size, shape
and connector (with SPI, I2C, UART, PWM, AN,
3.3 V, 5V, INT and RST pins). Hundreds of
sensors and transceivers available. Pick on
PULL OUT
SIM CARD ID (ICCID):
8944538523012247[redacted]
click BOARDS™
MikroElektronika
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contained herein are the property of their respective owners.
Made in Serbia (Europe).

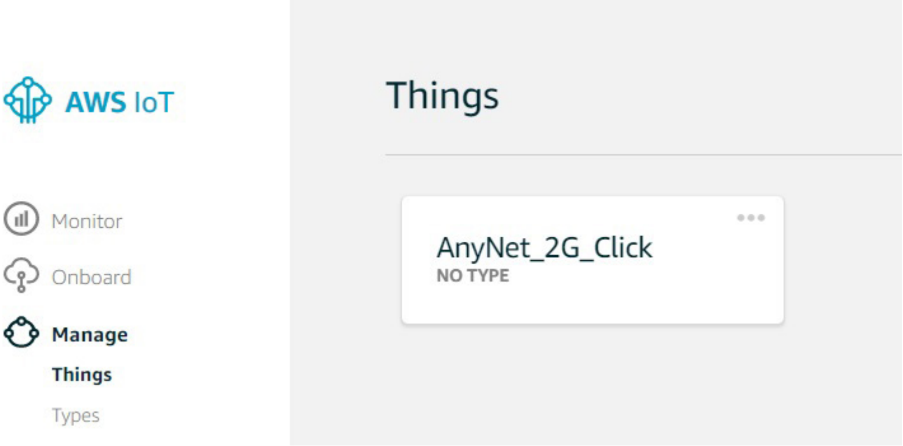
4. ICCID number label

On the inside of the AnyNet 2G click packaging you will find a unique ICCID number which you can use to make AWS ‘Thing’ device.

5. Create a ‘Thing’ on AWS IoT Console

In the AWS IoT console you need to create a “Thing” - following these instructions:

https://eseye.zendesk.com/hc/en-us/articles/115005302466



6. Activate your device and exchange Certificates

Once the Thing has been created the module will connect to the GSM network and obtain all required security material from the AWS. (This may take up to 10 minutes to complete).
Progress can be observed by watching LED’s on the board.

7. AnyNet 2G click LED description:

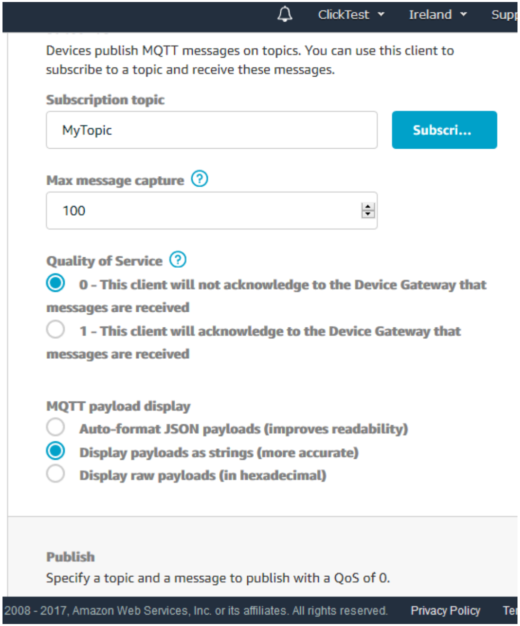
PWR (green solid) – the click board™ is powered
NET (red flashing) – The module is attempting to connect to the network and service
SIGNAL (blue solid) – The module has registered to the local GSM network
KEY (orange solid) – The AnyNet Secure SIM card has received certificates and other security material
AWS (greed solid) – The module has established an End-To-End connection into the AWS IoT platform

8. How to send Data to the AWS Cloud

Using the serial interface software commands, you will be able to send a package from your hardware and publish data on the AWS IoT Service. You may observe them on the AWS Console in TEST section.

Using the Serial Interface software, commands to publish data may now be sent. First, to observe the message in the AWS IoT Service, log in to the AWS console and Select AWS IoT

- Select TEST
- In the subscribe box type MyTopic/#
- Select 'Display Payloads as strings' in the MQTT payload display section
- Click "Subscribe to topic"



Devices publish MQTT messages on topics. You can use this client to subscribe to a topic and receive these messages.

Subscription topic

MyTopic

Max message capture

100

Quality of Service

● 0 - This client will not acknowledge to the Device Gateway that messages are received

○ 1 - This client will acknowledge to the Device Gateway that messages are received

MQTT payload display

○ Auto-format JSON payloads (improves readability)

● Display payloads as strings (more accurate)

○ Display raw payloads (in hexadecimal)

Publish

Specify a topic and a message to publish with a QoS of 0.

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Note that the display is not persistent, messages are only displayed if the window is open as the message is sent.

To send a message from the device to a topic, there are two commands required. The first opens the topic for publishing, and is needed once per session. The second tells the module the number of bytes that will be in the message to be published. In the example, a 6 character message is to be published

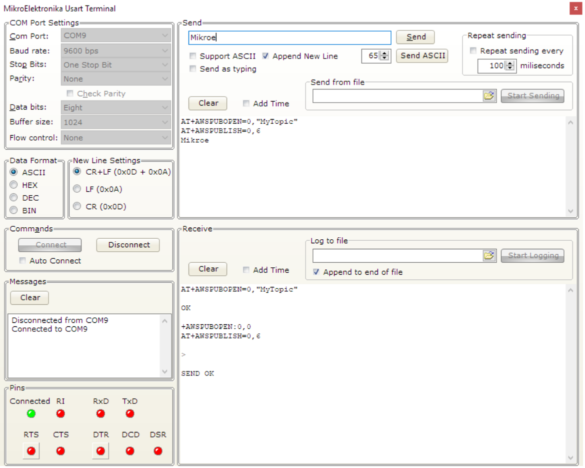
AT+AWSPUBOPEN=0,"MyTopic"

AT+AWSPUBLISH=0,6

The module will respond with a > Prompt and the 6 characters to be published should be sent e.g.

>Mikroe

The Screenshot on the right shows a terminal window after the Pub Open and Publish commands have been issued, and a 6 character message entered. The module has responded 'Send OK'



MikroElektronika Usart Terminal

COM Port Settings

Com Port:	COM9
Baud rate:	9600 bps
Stop Bits:	One Stop Bit
Parity:	None
Data bits:	Eight
Buffer size:	1024
Flow control:	None

□ Check Parity

Data Format: ● ASCII ○ HEX ○ DEC ○ BIN

New Line Settings: ● CR+LF (0x0D + 0x0A) ○ LF (0x0A) ○ CR (0x0D)

Send: Mikroe

□ Support ASCII ☑ Append New Line 65 □ Send as typing

Repeat sending: □ Repeat sending every 100 miliseconds

□ Add Time

```
AT+AWSPUBOPEN=0,"MyTopic"
AT+AWSPUBLISH=0,6
Mikroe
```

Messages

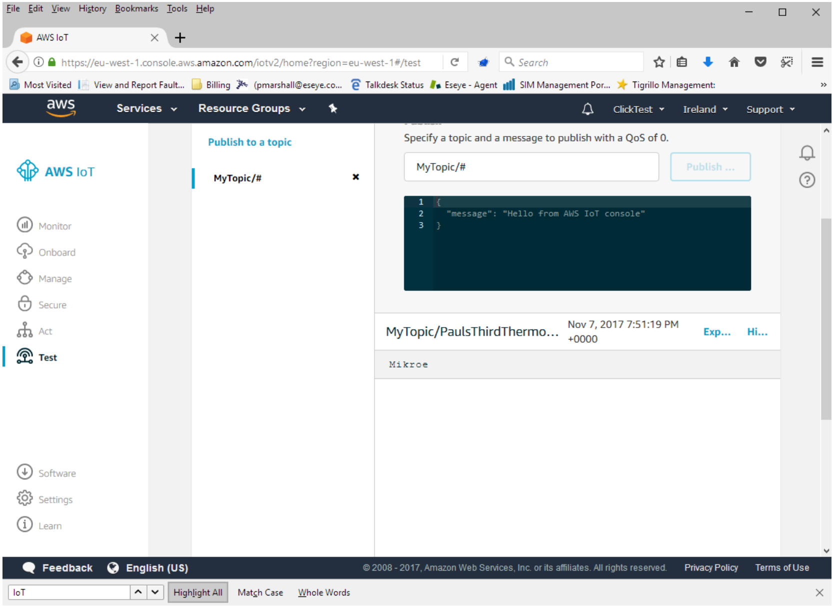
```
Disconnected from COM9
Connected to COM9
```

Receive

□ Add Time ☑ Append to end of file

```
AT+AWSPUBOPEN=0,"MyTopic"

OK

+AWSPUBOPEN:0,0
AT+AWSPUBLISH=0,6

>

SEND OK
```

The Message will appear in the AWS IoT Console



https://eu-west-1.console.aws.amazon.com/iotv2/home?region=eu-west-1#/test

Specify a topic and a message to publish with a QoS of 0.

MyTopic/#

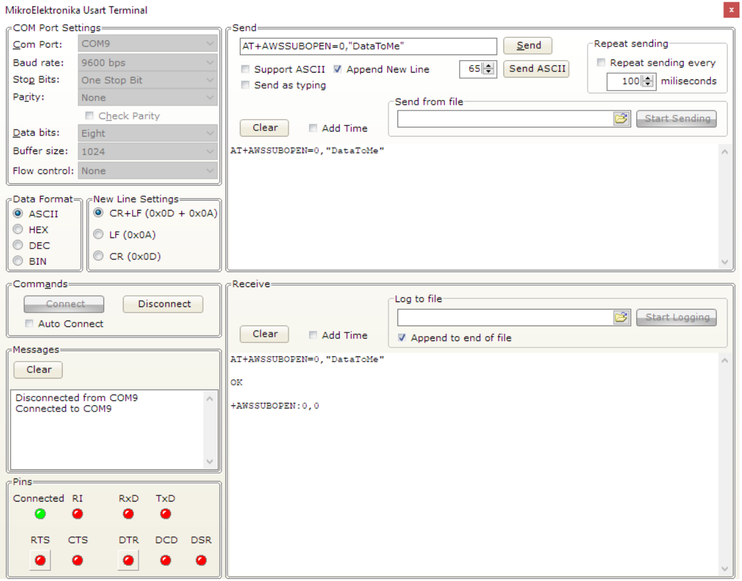
```
{
  "message": "Hello from AWS IoT console"
}
```

MyTopic/PaulsThirdThermo... Nov 7, 2017 7:51:19 PM +0000

```
Mikroe
```

9. How to receive data from the AWS Cloud

In order to receive data from the AWS you need to subscribe to the topic from your hardware using AT commands (open session, setting the number of bytes to be received) and then by Publishing Topic from the AWS Console you will send a package. To Subscribe to a topic the AT+AWSSUBOPEN command is used.



Com Port: COM9
Baud rate: 9600 bps
Stop Bits: One Stop Bit
Parity: None
□ Check Parity
Data bits: Eight
Buffer size: 1024
Flow control: None

Data Format: ● ASCII ○ HEX ○ DEC ○ BIN
New Line Settings: ● CR+LF (0x0D + 0x0A) ○ LF (0x0A) ○ CR (0x0D)

Send: AT+AWSSUBOPEN=0,"DataToMe"
□ Support ASCII ☑ Append New Line 65
□ Send as typing
□ Repeat sending every 100 miliseconds
□ Add Time
☑ Append to end of file

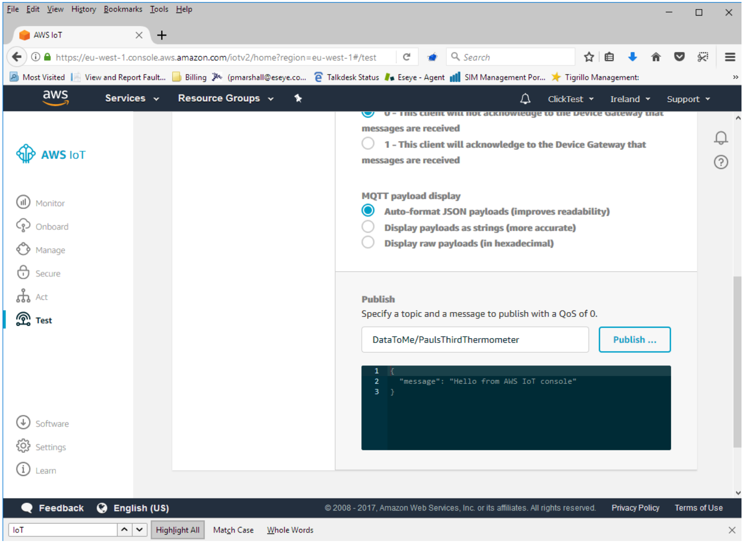
```
AT+AWSSUBOPEN=0,"DataToMe"
```

```
AT+AWSSUBOPEN=0,"DataToMe"

OK

+AWSSUBOPEN:0,0
```

Messages:

```
Disconnected from COM9
Connected to COM9
```

In the terminal window enter the command: AT+AWSSUBOPEN=0,"DataToMe"
This is shown below with the response OK and confirmation that index 0 has been subscribed to the topic.
In the AWS Console, Select AWS IoT and choose TEST
Select **"Public to a topic"** and the page will scroll to the bottom.



● 0 - This client will not acknowledge to the Device Gateway that messages are received
○ 1 - This client will acknowledge to the Device Gateway that messages are received

MQTT payload display
● Auto-format JSON payloads (improves readability)
○ Display payloads as strings (more accurate)
○ Display raw payloads (in hexadecimal)

Publish
Specify a topic and a message to publish with a QoS of 0.

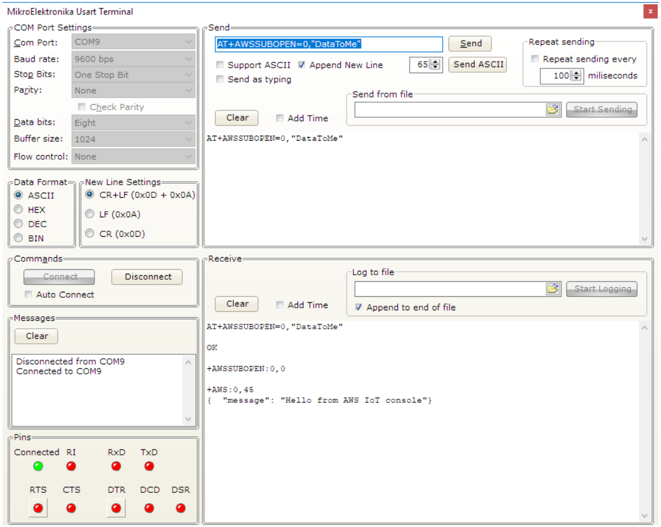
DataToMe/PaulsThirdThermometer

Publish ...

```
{
  "message": "Hello from AWS IoT console"
}
```

In the Publish... box type the topic and Thing Name in the format topic/thingname. The example shows the topic 'DataToMe' and the ThingName 'PaulsThirdThermometer'

Click **"Public to topic"**. The message may be observed appearing in the 'Receive' section of the terminal program.



MikroElektronika Usart Terminal

COM Port Settings
Com Port: COM9
Baud rate: 9600 bps
Stop Bits: One Stop Bit
Parity: None
□ Check Parity
Data bits: Eight
Buffer size: 1024
Flow control: None

Data Format: ● ASCII ○ HEX ○ DEC ○ BIN

New Line Settings: ● CR+LF (0x0D + 0x0A) ○ LF (0x0A) ○ CR (0x0D)

Send: AT+AWSSUBOPEN=0,"DataToMe"
□ Support ASCII ☑ Append New Line 65
□ Send as typing
Repeat sending: □ Repeat sending every 100 miliseconds
□ Add Time
Log to file: ☑ Append to end of file

```
AT+AWSSUBOPEN=0,"DataToMe"
```

Receive:

```
AT+AWSSUBOPEN=0,"DataToMe"

OK

+AWSSUBOPEN:0,0

+AWS:0,45
{  "message": "Hello from AWS IoT console"}
```

Messages:

```
Disconnected from COM9
Connected to COM9
```