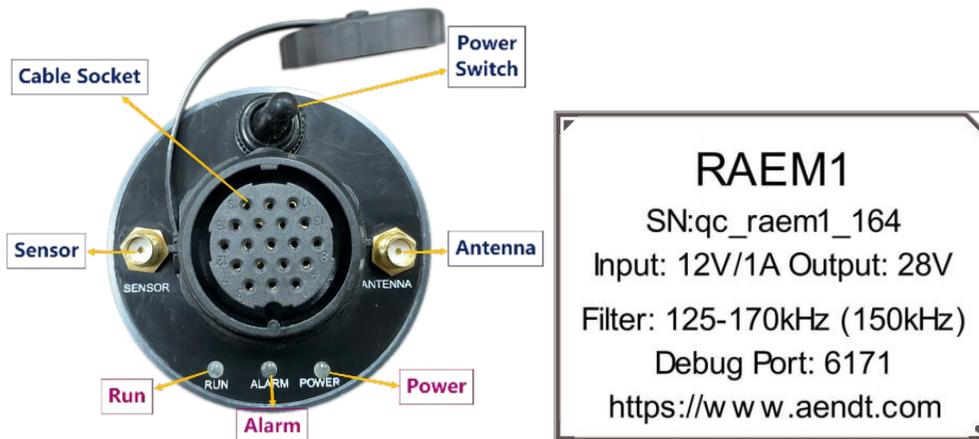


RAEM1 4G Module Quick Start Guide

1. What's included:

		
RAEM1 with magnetic base	Antenna with magnetic base	Connector with Ethernet cable and power
		
Sensor and magnetic holder	Sensor Coaxial cable	12V power adaptor

- RAEM1 Top Part Details:

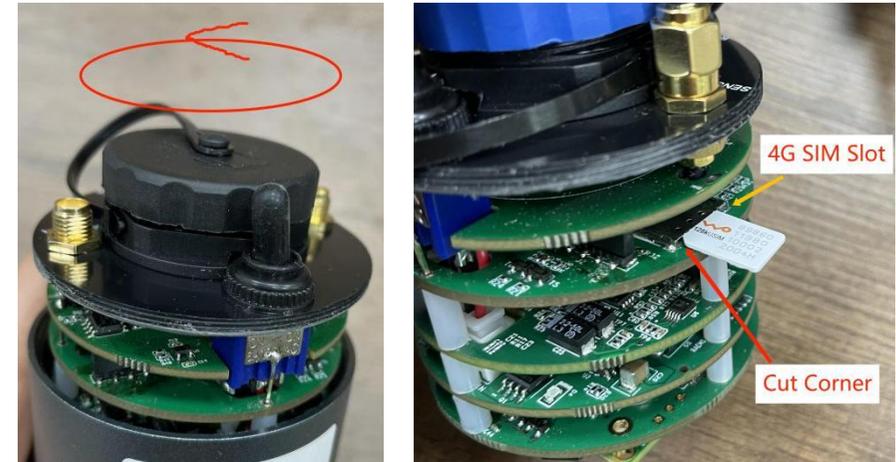


2. Setup

- 1) Before the hardware connection, please read the RAEM1 label to figure out the matching power adaptor and sensor. The sensor type is normally the integral sensor with built-in preamplifier. The preamp voltage is supplied through the "Sensor". The analog filter in RAEM1 also requires the sensor

frequency range to match. If mismatching the sensor, it may cause some damages on the sensor. So please pay attention to the label.

- 2) Insert 4G SIM card in RAEM1:
 - a. Carefully rotate the top plastic part of the RAEM1 in anti-clockwise direction so that the PCBs are exposed.



- b. Find the SIM card slot on the 2nd PCB layer from the top.
- c. Insert the 4G SIM card into the SIM card slot. Make sure the cut corner should be inside the slot and the metal interface is facing down.
- d. Push the SIM card in the slot completely. You should feel that there is a click feeling when the SIM card is well inserted.
- e. Gently and carefully rotate the PCBs back in the cylinder in clockwise direction. When rotating the part in the cylinder, be careful not to over-bend or damage the ribbon cable in between the PCB and the cylinder case. Try not to open RAEM1 cylinder many times because it might accidentally break the hardware and it will require repairing.

- 3) connect all the parts to RAEM1. Connect the power adaptor to the wall outlet.
- 4) turn on the power switch. When it starts, the "POWER" light is solid on. After a few minutes, the "RUN" light starts flashing every second to indicate the device is operating.
- 5) the device is now ready to operate and to connect.

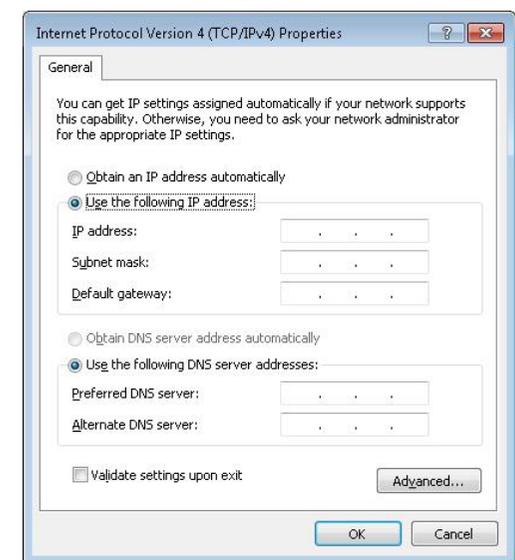
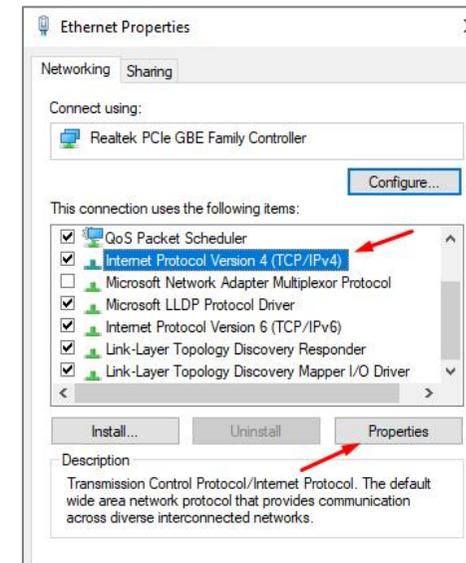
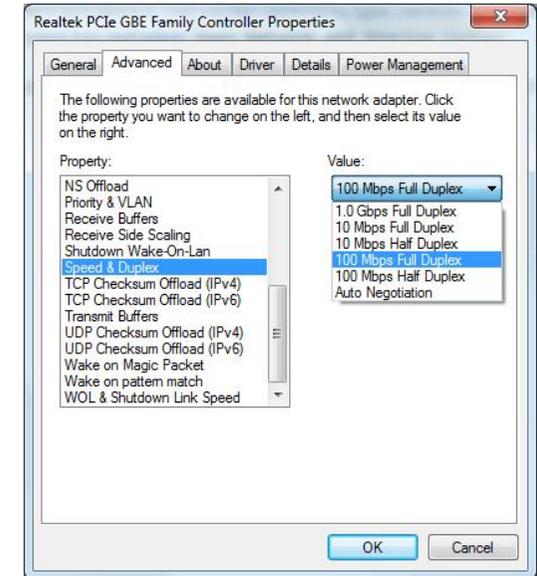
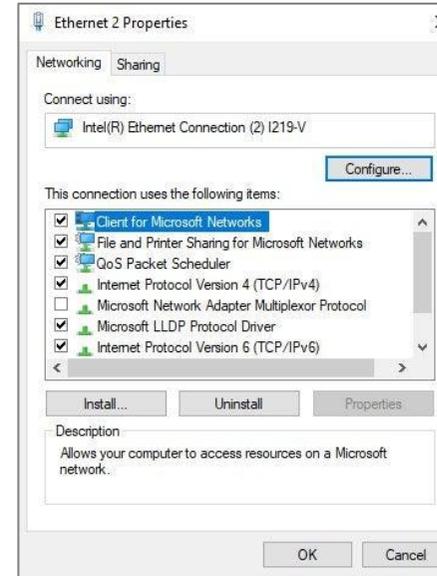


3. Configuration

3.1 Ethernet Connection

The device can connect to the RAEM1 configuration software through the Ethernet cable.

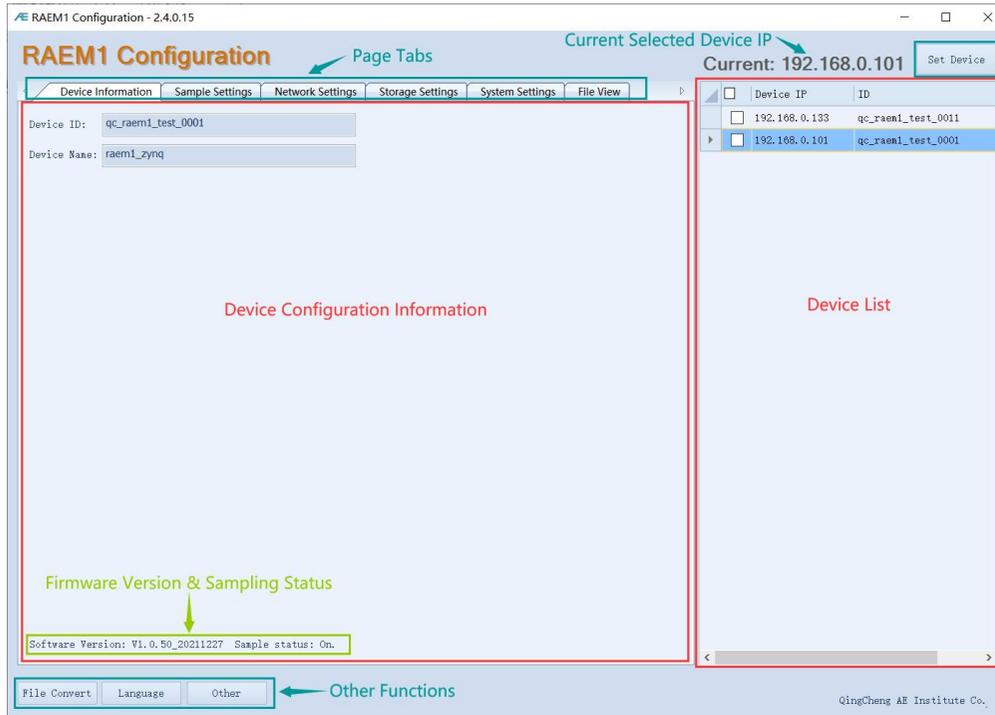
- ① Plug the Ethernet cable from the RAEM1 to a computer. If there are multiple RAEM1 to connect, connect them to a switch and then to a computer.
- ② Some computer settings need to be changed in order to connect:
 - **Ethernet Duplex Mode:** open “Control Panel” >> “Network and Internet” >> “Network Connections”. Choose the local area connection. Right click and choose “Properties” and then choose “Configure..”. In the “Advanced” Tab, choose “Speed & Duplex”. On the “Value” drop-down menu, select “**100Mbps Full Duplex**”.
 - **Configure Ethernet IPv4:** choose “Internet Protocol Version 4 (TCP/IPv4)”, and then click “Properties”. In the pop-up window, check “Use the following IP address:”. Then enter the “IP address:” as **192.168.0.XX** (XX can be any two digital numbers). “Subnet mask:” is 255.255.255.0. “Default gateway” is 192.168.0.1.
 - ③ **Before using the software, please turn off all firewall and anti-virus programs. Check the user’s manual for details.**



- ④ Start the RAEM1 Configuration software. The software has 32-bit and 64-bit versions and it runs in Windows 10 and below system. For the first time running, it might pop up a firewall warning window. It must check both the private and the public network options and then click “Allow access”.



⑤ Once the software is opened, the devices should show in the “Device List” with the IP address (192.168.0.101) and their own ID. Now you can choose a device and view or modify their configuration settings. Please see the user’s manual for more details.



3.2 Configuration Over the Cloud

RAEM1’s configurations can be viewed and modified through the cloud servers. But first make sure the 4G SIM card is inserted in and the APN (through the configuration software) is configured correctly.



◆ Qingcheng IoT Platform

It can configure the RAEM1 through the Qingcheng IoT Platform. Log in the Qingcheng IoT Platform with given account and password. Please see the user’s manual for more detail.

◆ Alibaba Cloud

You can also configured the RAEM1 remotely through Alibaba Cloud. Please see the user’s manual for more detail.

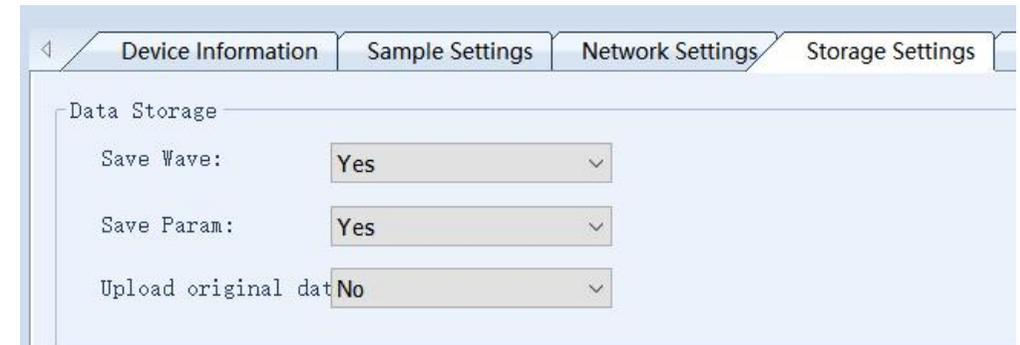
Follow the user’s manual for more details and further operations.

4. Data Access and Display

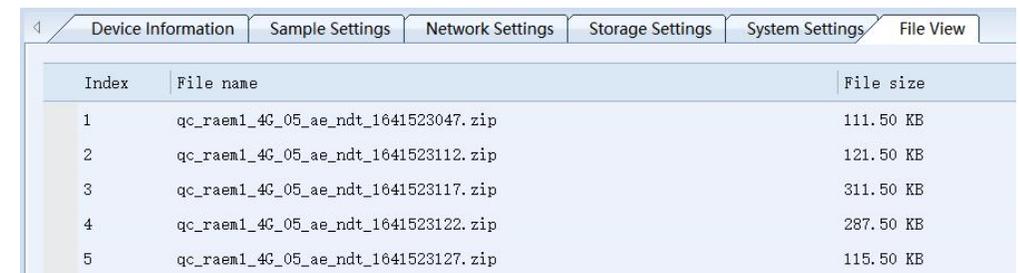
RAEM1 starts data collections since turned on. Based on the data storage settings and the set desired destination, the data can be accessed locally or over the cloud servers.

4.1 Local Access

Access the RAEM1 data packages through the RAEM1 Configuration software. Before data collections, please check the RAEM1 configurations to make sure it is configured to store data in the local memory. Under the “Storage Settings”, enable the “Save Wave” and “Save Param”.



After data collections, you can connect the RAEM1 to the configuration software and view the data files of the RAEM1 under the “File View” tab. Right click on the files to download, delete or convert formats.



4.2 Download from the Cloud

If the RAEM1 can upload data to the cloud through Wi-Fi router, it can access data from the cloud server.

◆ Qingcheng IoT Platform

All RAEM1 can upload data to the Qingcheng IoT platform. Make sure to enable “Save Wave”, “Save Param”, “Upload original data” under the “Storage Settings” in the RAEM1 Configuration software. It may take some time for the data to upload to the cloud.

Data Storage

Save Wave: Yes

Save Param: Yes

Upload original data: Yes

◆ Alibaba Cloud

RAEM1 can also upload real-time data to the Alibaba Cloud by configuring RAEM1 with the Aliyun key and secret. In Alibaba Cloud, it displays the acoustic emission parameters in real time but not for downloads.

Report data

Report interval: 3000 (ms)

Data report server: QC Aliyun Mode

Aliyun key: a1FweZJydVd Aliyun sec: 24403c45a54488bc6cb32528bcb7541

Modify

◆ AWS S3

RAEM1 can also upload data to AWS S3. Just need to set up your AWS S3 account and enter the storage tank information in the REAM1 configuration settings. Then you can see the uploaded RAEM1 data packages in the AWS S3 buckets.

AWS Parameter

AWS Enable: Enable

AWS Key: AKIAXVYJDPFQB4HU2Y7M AWS Sec: nTXmhD9TYIzQVHz6iax0tELM!

AWS region: ap-southeast-1 AWS bucket name: test-bucket-20220117

4.3 Real-time Data Analysis

RAEM1 can also display and analyze data in real-time using SWAEU3H(RAEM1) software through the Ethernet cable. Before connecting to U3H(RAEM1), make sure that “Send

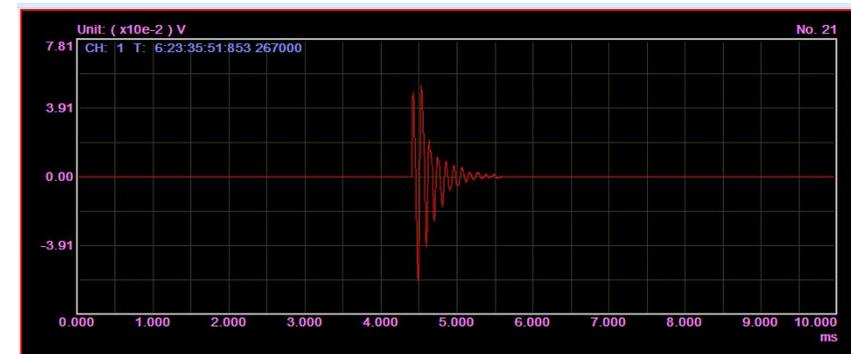
U3H”, “Send Wave” and/or “Send Param” are enabled in the configurations. Also importantly, set the “Address type” to “Use IP” and enter the target PC IP address that the RAEM1 should send to. Inside the U3H(RAEM1) “Sample Settings” enter the IP address same as the target IP address above. So it should be able to connect to the U3H and send data.

U3H Server

Send U3H: Yes Send Wave: Yes Send Param: Yes

Address type: Use IP Address: 192.168.0.157 Port: 9504

No	Arrival time(dd:hh:mm:s...)	AE cha...	Amplit...	Counts	Duration(us)	Energy(KpJ)	Rise
10	6:23:35:31:664 100000	1	95.2	23	1348	57142.525	
11	6:23:35:31:667 241000	1	60.1	35	610	27.418	
12	6:23:35:31:670 604000	1	58.9	10	239	18.840	
13	6:23:35:35:088 760000	1	95.6	19	1456	52214.099	
14	6:23:35:36:207 796000	1	94.2	36	1345	25639.810	
15	6:23:35:36:871 860000	1	95.5	18	1520	58513.934	
16	6:23:35:43:266 453000	1	95.5	27	1490	38946.721	
17	6:23:35:44:039 742032	1	95.5	35	1397	44770.026	



Please follow the user’s manual for detail setups. If you have any questions, please don’t hesitate to contact us.

- Email: sales2@ae-ndt.com
- Cell/WeChat: 19128609186
- Website: www.aendt.com