

BLUE ID QUUPPA PRODUCT LINE USER GUIDE

IDENTIFY LOCATE MEASURE



Qυυρρα

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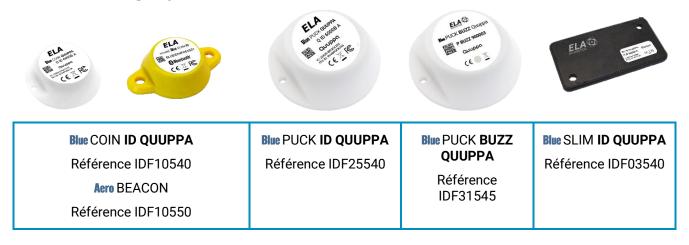
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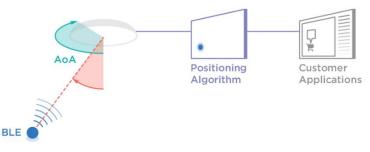
1. Products: Tags by ELA Innovation



2. General information: Quuppa technology

A. Angle of Arrival localization

Quuppa is a tag localization system with an approach based on the wireless signal's "angle of arrival" combined with advanced proprietary algorithms.





The Quuppa system leverages Bluetooth Low Energy (BLE) technology. This offers several advantages, including very long battery life, compatibility with mobile devices, and the possibility of transmitting sensor data at the same time as positioning information.



The concept underlying the Quuppa system is a combination of Bluetooth technology and the angle of arrival signal detection method, providing greater positioning accuracy than other technologies based on signal strength (RSSI).

B. Downlink commands

Unlike equipment that relies on BLE advertising frames, which include identifiers and/or data only in the uplink direction (i.e. tags towards receiver), the Quuppa system enables commands to be *sent* to tags.



C. Operation of tags with Quuppa technology

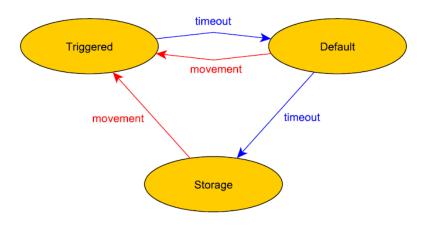
Tags with Quuppa technology are designed to react to movement while conserving energy during idle periods. The Quuppa system updates a tag's position while the tag is in motion and remembers the tag's last position when the tag is inactive.

The different tag reaction levels are described by three states:

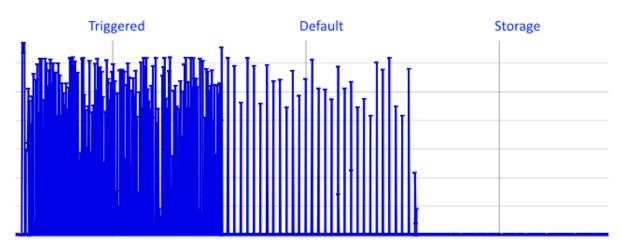
- "Triggered" state: the tag is awake and emitting regularly
- "Default" state: tag emissions are slowed down
- "Storage" state: the tag switches to standby mode and no longer emitting at all, until movement is detected

The change from one state to another takes place after a defined period. When movement is detected, the tag necessarily changes to the "Triggered" state.

This operation is defined by the Quuppa state machine:



The density of wireless activity is shown on the following graph:

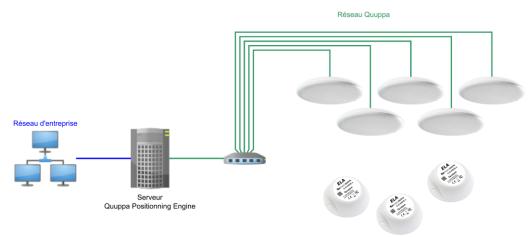




D. Quuppa network

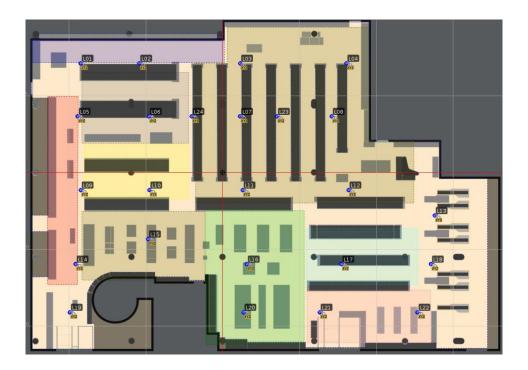
The Quuppa system requires installed infrastructure to operate. This includes:

- A physical server, running an instance of the Quuppa Positioning Engine software
- Localization antennas called "Quuppa Locators"
- A dedicated cabled network



Antennas are positioned in a mesh layout, which can be more or less spread out depending on the desired localization accuracy (i.e. only presence detection, zoning, precise location).

Infrastructure must first be installed, and then defined and configured in the Quuppa Site Planner software. More information about infrastructure and installation is provided on the Quuppa website: <u>https://quuppa.com/</u>





3. Tag configuration

Tag configuration involves two steps:

- Quuppa information configuration
- ELA information configuration

A. Quuppa configuration

Quuppa configuration enables you to configure the settings for each tag's machine state.

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Hardware

- Computer with an Ethernet network plug
- Quuppa Focusing Locator Antenna (not the same as localization antennas)
- Ethernet crossover cable, or network cables & Ethernet switch

Software

• Quuppa Site Planner

Method

In order to use a tag with Quuppa technology, the tag must be integrated in the infrastructure as defined in § 2D.

Launch the Quuppa Site Planner (QSP) software and open a previously created project. If the project was created on a different computer, you must download it via the Quuppa Customer Portal after it was submitted by the first computer.

More information about site configuration is provided on the Quuppa website: <u>https://quuppa.com/</u>

Ø	Welcome to Quuppa Site Planner
	Start new project wizard
	Open existing project
	Download project from Quuppa Customer Portal
	✓ Show this dialog at startup

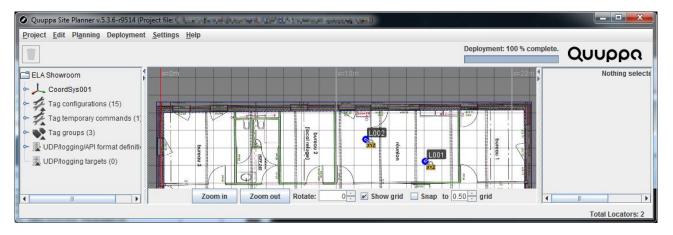




Enter the required identifiers, then click on "Retrieve project information". Choose the project and click on "Download selected project."

Download a project from Quuppa cloud server lease provide your Quuppa customer portal use	r credentials						
sername Tarren De Haudt ig Half Hould ar Looff	Password ••	•••••		2-factor auth cod	e	Retri	eve project infos
Projects in the cloud server	,						
Filter by:							
License ID	Project name	License notes	Version	Updated	Created	Simulator	QPE version
2140110-010-4834-886-9854-866-987	ELA Showroom	QUUPPA-PE-LIC	51	24.05.2019 (2 days)	17.10.2018 (221 days)	false	Any
		Download se	elected proje	ct			

The main screen of the QSP application shows a map that you will use to show tag locations. The map also shows Quuppa Locator antennas.



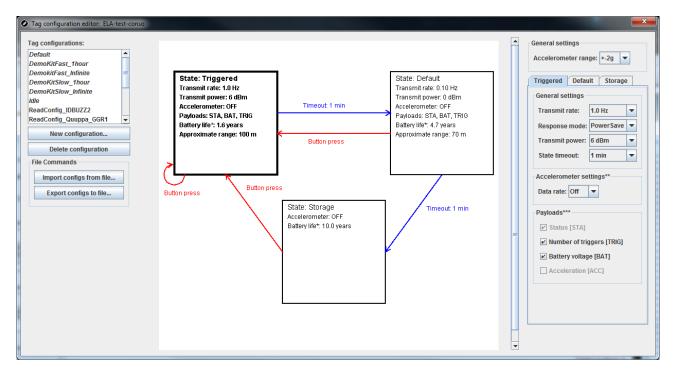
In the "Deployment / Tag Configurator Tool":

The list of known tags is shown in the window, along with those currently visible by the Quuppa Focusing Locator antenna. The "Distance" column shows the proximity of each tag with respect to the antenna, which enables you to identify the tag you want to configure.

election lag gi	roup <u>S</u> ystem <u>H</u> elp										+	
Tag ID	Tag name	Notes	Group	Color	Combined to	Device type	Config status	Tag state (age)	Last packet	Battery [V] (age)	Distance	DF
792a30bcfaf	*noname*	-	[DEFAULT]	[DEFAU	*none*	General	Done	*Triggered (25 min)	25 min	2.96 (25 min)		2402
4da22e000b3	ELA333	-	Named Tags	#cccccc	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
ld71ec2c431f	ELA_QUUPPA_2	-	Named Tags	#cccccc	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
bfd40bddb83	ELA_QUUPPA_1	-	Named Tags	#cccccc	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
c3642337db0	ELA_QUUPPA_3	-	Named Tags	#cccccc	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
445450c30c	IDBUZZ	-	Named Tags	#ff0000	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
4be8449ecbd	Quuppa1	-	Named Tags	#cccccc	*none*	General	NotStarted	Triggered (35 s)	873 ms	2.67 (1 min)		2402
4da22e0006a	ELA111	-	Named Tags	#cccccc	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
58645016429	QPL1	-	Named Tags	#ff0000	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
4da22e00052	ELA444	-	Named Tags	#cccccc	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unki
4da22e00097	ELA222	-	Named Tags	#cccccc	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
11111111111	ELA tags_0001	-	ELA tags	#cccccc	*none*	GeneralDevice	NotStarted	Unknown	Unknown	Unknown		Unki
4be844a0185	tag2	-	quuppa tags	#cccccc	*none*	General	NotStarted	Unknown	Unknown	Unknown		Unk
(•
Select by id/name Distance filter Far Near												



Quuppa state machines may be configured via the menu: "System / Tag configuration editor".



This window enables you to create Quuppa state machine configurations that will be used to set up tags.

Each state is defined by the following parameters:

- > Triggered state:
 - Transmit rate: emission recurrence, adjustable from 9Hz to 1Hz
 - *Response mode*: response speed for downlink commands, adjustable from "fast" to "PowerSave"
 - Transmit power. emission power, adjustable from -24dBm to +6dBm
 - State timeout: time after which the tag switches to the Default state, adjustable from 1 sec. to 24 hrs
 - Accelerometer settings. not used (set to Off)
- > Default state:
 - Transmit rate: emission recurrence, adjustable from 1Hz to 0.1Hz
 - *Response mode*: response speed for downlink commands, adjustable from "fast" to "PowerSave"
 - Transmit power. emission power, adjustable from -24dBm to +6dBm
 - *State timeout*. time after which the tag switches to the Storage state, adjustable from 20 seconds to infinity
 - Accelerometer settings: not used (set to Off)
- > Storage state:
 - No wireless emission in this state
 - Accelerometer settings: not used (set to Off)

In the "Tag Configurator Tool" window, the process configuring a tag with a predefined state machine is as follows:

- Place the tag on the Quuppa Focusing Locator antenna
- Select the tag to configure (the distance bar enables you to identify it in the list)
- Open the menu "Selection / Configure selected tags"
- In the window that opens, select the state machine to assign as well as the channel (BLE or proprietary)



B. ELA configuration

ELA configuration enables you to define settings other than those for the Quuppa state machine.

Hardware

- PC with available USB port and Windows 10 (recommended)
- NFC USB reader (for example: ACR122U ELA ref.: ACIOM177)

Software

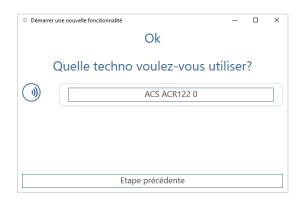
 Device Manager Software - ELA Innovation (download via Software section on our website: <u>https://elainnovation.com/downloads.html?cat=95</u>). Use version 1.3.0 or higher.

Method

- Connect the NFC reader to the PC
- Launch the Device Manager application
- Launch the NFC widget by clicking on the icon



• Click on the name of your NFC reader







• Place the tag towards the bottom of the reader, with the tag's label facing the reader



• Click on the 🛞 icon to configure the tag



• The following window opens, with available parameters:





Parameter list

This section describes the details of the parameters used to configure Quuppa tags.

Parameter	Since version	Restrictions	Default values	Description
Firmware version	1.0.0	-	ELA firmware version	Non-modifiable field
Name	1.0.0	0 to 12 characters	ELA_TAG	Tag name
Activation	1.0.0	True/False	True	Tag activation / deactivation (storage mode)
MAC address	1.0.0	12 hexadecimal characters of type: [0-9] [A-F]	Hardware address of the nRF chip	Non-modifiable field
Acc. Activation	1.0.0	True/False	True	Activation / deactivation of tag wakeup via accelerometer
Acceleration thresh.	1.0.0	4 hexadecimal characters of type: [0-9] [A-F], 0000 to 07FF (11 payload bits)	0050	Accelerometer trigger level 0000 = 0g 07FF = 8g
Long Sleep	1.0.0	True/False	True	Activation / deactivation of long sleep during Storage state

Parameter details

- > Firmware version:
 - Read-only value: provides the tag's current firmware version
- Name:
 - Tag name for internal use; unrelated to the tag name as seen by the QPE server.
- > Activation:
 - True: tag is activated and operating normally.
 - False: tag is inactive and may be stored.
- MAC address:
 - Read-only value: provides the tag's unique address; this value is used to identify the tag in the Quuppa network.
- Acc. Activation:
 - The accelerometer is used to wake up the tag when movement is detected.
 - True: accelerometer activated (default behavior).
 - False: tag no longer wakes upon movement. Attention: this setting must be associated with an infinite duration of the Quuppa "Default" state.
- Acceleration thresh.:
 - Acceleration threshold for triggering the tag; hexadecimal value.
 - Sample values: 07FF=8G (max); 0100=1G; 0030=185mG; 0000=0G (min)
- Long sleep:
 - Switching the tag to long sleep during the Storage state preserves battery life during that phase, but the tag must reboot upon movement. This setting is thus beneficial if the tag is not used frequently (less than about 30 times per day).
 - True: activates long sleep during Storage state.
 - False: deactivates long sleep during Storage state.



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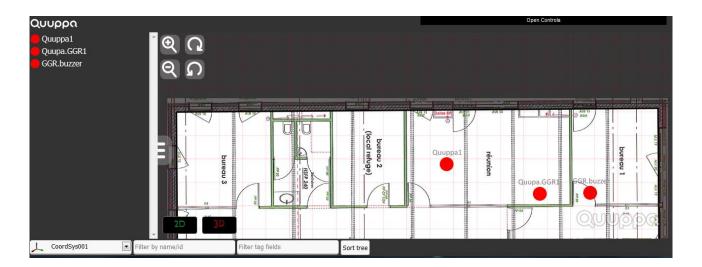
4. Viewing tool

Installed to manage Quuppa system infrastructure, the Quuppa Positioning Engine server provides a Web service that shows a graphical view of tags positions, accessible via your regular web browser application.

Enter the following address to connect to the service: http://<ip-du-serveur>:8080/qpe

QUUPPR Positioning Engine Web Console								
Map View								
QPE Status as of Thu Jun 20 13:1	6:39 CEST 2019							
Software								
License Key: i	[License Key is set] Set License Key							
License Expiration date: (i)	Fri Feb 14 17:48:00 CET 2020 (239 days) View License Details							
QPE Mode: i	Tracking, started: Fri Jun 14 09:49:11 CEST 2019 (6 days) Stop							
QPE Version: ()	v.5.4.ALPHA-r9441							
Working Directory:	/opt/quuppa/PE							
Project and License Sync Status: (i)	Ok Do File Sync							
Last Synchronized at: i	Thu Jun 20 12:51:26 CEST 2019 (25 min)							
Next Scheduled Sync Time: (i)	Thu Jun 20 13:51:26 CEST 2019 (34 min)							
Local Synced Files Valid Until: ()	Sat Jun 22 12:51:26 CEST 2019 (1 days)							
Project Name: (i)	ELA Showroom							
Project Version: i	61							
Location Based Commands: (i)	Not Configured.							
Hardware								
Locators Online: (i)	1/3 Locator Details							
Tags Online: (i)	1 Tag Details							
Locator Operation Mode: (i)	BLE (1 Locator)							
Platform Status: (i)	Memory configured:1018MB / allocated:649MB / free:367MB / used:283MB(28%), Disk free 112GB, CPU 0.8%							
Platform Data Rates: (i)	0.0 DF packets/s, 0.0 Data packets/s, UDP RX: 0.0 kB/s, UDP TX: 0.0 kB/s							

Click on the "Map view" link at the top of the page to open a visual layout indicating tag positions.





5. Downlink commands

The Quuppa system enables you to send commands to tags via the Quuppa Positioning Engine's "back channel". These commands are used to trigger actions on one or more tags, or to request information from tags.

Tags must be in either the Triggered or Default state in order to receive commands. Tags in the Storage state do not listen for incoming commands. A tag switches to Triggered state upon receiving a command.

A. HTTP command request

To send a command to a tag, an HTTP request must be sent to the QPE Web API, in the format:

http://<ip-du-serveur>:8080/qpe/sendQuuppaRequest?tag=f1a45f56c30c&requestData=
0xFF3700C003000000000000000000000000000&time=60000&humanReadable

This command targets the desired tag and sends a command to it.

Parameter list for HTTP request:

Parameter	Restrictions	Description
tag	Required parameter. Tag ID(s), separated by a comma (,) without spaces if several. Example: tag=f1a45f56c30c,fd5c29a1d531	List of tags to address.
requestData	Required parameter. Fixed part "0xFF3700", followed by 13 bytes (26 hexadecimal characters of type: [0-9] [A-F]) for the command. Example: requestData=0xFF3700C0030000000000000000000000	Command to be sent to tag(s). See details below.
time	Optional. Time in milliseconds (ms). Example: time=120000	Time during which the system attempts to contact the tag(s). Default: 60000ms
humanReadable	Optional. No value. Example: humanReadable	Format the response in a form that is easy to read.

B. Command details

The "requestData" field in the above request is constructed as follows:

- 0xFF3700: fixed part (required)
- 13 bytes (that is, 26 hexadecimal characters [0-9] [A-F]): command code + parameters (as needed) + padding with zeros (as needed)

Example:



Details for the available command codes and their parameters are provided in the table below.

	Command	Since version	1 st byte code	Parameters (subsequent bytes)	Parameter details	Description
	LED on	1.0.0	CO	n : 1 byte	n = 00 to FF (00 = infinite)	Blink LED n times. Attention: turning on the LED consumes a lot of battery power. May significantly reduce battery life.
Actions	LED off	1.0.0	C1	-	-	Stop LED
Actio	BUZZER on	1.0.0	C2	n : 1 byte	n = 00 to FF (00 = infinite)	Active the buzzer n times. Attention: using the buzzer consumes a lot of battery power. May significantly reduce battery life.
	BUZZER off	1.0.0	C3	-	-	Stops buzzer
Écriture	Set tag name	1.0.0	51	name: 12 bytes	name: 12 characters (ASCII hex. codes)	Sets the tag name
Écri	Set accelerometer threshold			thr : 2 bytes (MSB first)	thr = 0000 to 07FF (0000 = 0g, 07FF = 8g)	Sets the accelerometer threshold
	Get tag name	1.0.0	91	-	-	Request to retrieve tag name
_ecture	Get accelerometer threshold	eter 1.0.0 93 -		-	-	Request to retrieve current accelerometer threshold
	Get firmware version	1.0.0	94	-	-	Request to retrieve firmware version
Alim	Reboot to DFU	1.0.1	EO	-	-	Tag reboots in "device firmware upgrade" mode (DFU)

For each command received, the QPE server returns similar information (indicating that the server received the request, without specifying that the tag received it):



C. Details on returned information

Most commands return information or acknowledgment of reception. Returned information may be read via another HTTP request sent to the QPE Web API, of the type:

http://192.168.0.146:8080/qpe/getTagPayloadData?tag=f1445450c30c&humanReadable

This command addresses the desired tag(s) and reads the information that it (or they) returned. Returned information is in JSON format.

There may be a time delay between the first request and the tag's response. This is due to the intermittent aspect of wireless transmission and the tag's current state (Triggered or Default). Responsiveness is also impacted by the value provided for the "response mode" parameter in the Quuppa state machine.

All responses are returned in the same format. The system keeps the 16 latest responses sent by the tag. Here is an example of returned information:

```
"code": 0,
  "command": "http://192.168.0.146:8080/qpe/getTagPayloadData?tag=d7488f98981e&humanReadable&version=2",
  "message": "TagPayloadData",
  "responseTS": 1561048075598,
"status": "Ok",
  "tags": [{
    "name": null,
    "id": "d7488f98981e",
     "payloadData": [
       null,
         "data": "<mark>0xff</mark>
                                                                                                  00 0x00 0x00 0x00 0x00",
         "dataTS": 1561047996128
       }.
       null,
       null
  11.
   version": "1.0"
}
```





The data returned by the tag is in the field tags[x].payloadData[n].data. If several tags are addressed, the response includes the 16 latest payloads for each tag.

The response payload is constructed as follows:

- 0xFF 0x37 0x00: fixed part (required)
- 13 bytes (that is, 26 hexadecimal characters [0-9] [A-F]): reminder of command tag is responding to + returned value + padding with zeros (as needed)

Example:

"data"	: "	0xff	0x37	0x00	0xc0	<mark>0x4f</mark>	0x4b	0x00	0x00"										
																		→	Padding with zeros Returned value Command code Fixed part (required)

List of commands as associated responses:

	Command	Since version	1 st byte code	Returned values (subsequent bytes)	Details Returned values	Description
	LED on	1.0.0	CO	status: 2 bytes	4F4B = "OK"	Receipt acknowledgment
suc	LED off	1.0.0	C1	status: 2 bytes	4F4B = "OK"	Receipt acknowledgment
Actions	BUZZER on	1.0.0	C2	status: 2 bytes	4F4B = "OK"	Receipt acknowledgment
	BUZZER off	1.0.0	C3	status: 2 bytes	4F4B = "OK"	Receipt acknowledgment
Ire	Set tag name	1.0.0	51	status: 2 bytes	4F4B = "OK"	Receipt acknowledgment
Écriture	Set accelerometer threshold	1.0.0	53	status: 3 bytes	 4F4B = "OK" 4E4F4B = "NOK" 	If accelerometer activated Otherwise
	Get tag name	1.0.0	91	name: 12 bytes	Tag name (ASCII character string)	Tag name, hex. ASCII characters
Lecture	Get accelerometer threshold	1.0.0	93	thr : 2 bytes (MSB first)	 0000 to 07FF (0000 = 0g, 07FF = 8g) 4E4F4B = "NOK" 	If accelerometer activated: current threshold Otherwise
	Get firmware version	1.0.0	94	version: 12 bytes	"1.0.0" (ASCII character string)	Firmware version, hex. ASCII characters
Alim	Reboot to DFU	1.0.1	EO	No return		Tag reboots in "device firmware upgrade" mode (DFU)



6. Firmware versions

A. Available versions

ELA firmware version	Quuppa stack version
1.0.0	1.0 / 10.024
1.0.1	1.1 / 10.028

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B. Update via OTAP (Over the Air Programming)

Starting with ELA firmware version 1.0.1, tags support remote updates to higher firmware versions, without any physical connection or having to open the casing. Device firmware updates (DFU) are programmed using a computer running Windows, Mac OS, or Linux.

Required hardware:

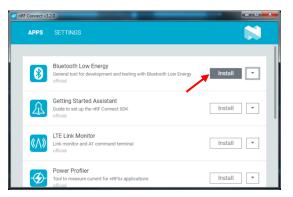
Nordic Seminconductor NRF52840 dongle connected to programming computer's USB port.



Software required on programming computer

nRF Connect software (free) must be installed. The software is available for download at this address: <u>https://www.nordicsemi.com/Software-and-tools/Development-Tools/nRF-Connect-for-desktop/Download#infotabs</u>

When you open the software, the "Bluetooth Low Energy" application must be installed and then opened:



The software proposes to update the NRF52840 dongle in order to communicate with tags. This update is required. The dongle is then detected and can be used as a communication port (COMxx).



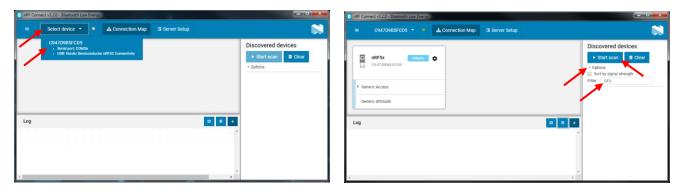
Switch tag to DFU mode

To switch the tag to Device Firmware Update mode, the tag must be rebooted in DFU using the command "Reboot to DFU" (described in § 5B). The tag is then detectable with a standard Bluetooth scanner, with the name "Quuppa_DFU".

Programming process:

Open the nRF Connect software and launch the "Bluetooth Low Energy" application.

Click on "Select device" and select the nRF dongle. Open the "Options" menu and type "DFU" in the "Filter" field. Then launch the scan by clicking on the "Start scan" button.



The tag named "Quuppa_DFU" should appear in the list of detected objects. Click on "Connect", then on the secure update symbol (padlock in a circle with arrows):

nRF Connect v3.2.0 - Bluetooth	h Low Energy		0 nRF Connect v3.2.0 - Bluetooth Low Energy	
C947D985FCD5	5 + • 🔒 Connection Map 🗉 Server Setup	2	C947D985FCD5 - A Connection Man DE Server Setur	•
NRF5x C9:47:09:85:FC:05	•	Discovered devices Start scan Clear Options Soft by signal strength Discovered devices	Device Firmware Upgrade (DFU) for device E3:09:	BC:DA:SB:91 ered devices Choose tacan Glear signal strength
Generic Access Generic Attribute	Quuppa_DFU Preview @ C	Piter: DFU Quuppa_DFU -44.55m J E3.0195.04.58.91 Connect Ø • Details I	Generic Access Generic Attribute Generic Access	Close StU
Log	8 8 ÷		Log	B F F
11:53:06.334 Conne 11:53:06.358 Conne 11:53:06.516 Conne	stated cicling to device cicling to device E3:09.BC.BA-38:91 ciclion parameters updated for device E3:09.BC.BA-58:91: interval 15ms, timeout 400 ciclion parameters updated for device E3:09.BC.BA-58:91: interval 15ms, timeout 400 device read, handle: 0x03, value (0x): 51:75:75:70:70:61:6F-44-46:55		11 1525 51 157 Scin ratend 11 525 51 157 Connecting to divice 11 5206 338 Connecting to divice EPOBICBA38 91 11 5306 316 Connection parameters updated for divice E3 09 BCBA38 91 interval 1 11 5306 499 Attribute value read, handle Dx03, value (bit) 51-75-75-70-61-57-44 40 1	

Then choose the update file provided by ELA (file in the format xxxx.dfu.zip). Click on "Start DFU" to begin the update. A progress bar shows data flow to the tag.

0 nRF Connect v320 - Bluetooth	Low Energy	the second s		nRF Connect v3.2.0 - Bluetooti	h Low Energy		
C947D9B5FCD5		Connection Man 78 Server Setun		C947D985FCD	Device Firr	nware Upgrade (DFU) for device E3:09:BC:BA:5B:91	
	Device Firm	nware Upgrade (DFU) for device E3:09:BC:BA:5B:91	ered devices		Zip file	C:\Developpements\SVN\SOFTS\Tags\QUUPPA_NRF52832 Choose	vered devices
nRF5x Okk?Dy85FCD5	Zip file Package	C:\Developpements\SVN\SOFTS\Tags\QUUPPA_NRF52832 Choose application:	t scan II Clear	ON 47 DY DS FC DS	Package info	<pre>application: bin_file: quuppe_tsg_s132_application.bin dat_file: quuppe_tsg_s132_application.dat</pre>	ort scan 12 Clear 15 by signal strength
Generic Access Generic Attribute	info	bin_file: quuppa_tag_s132_application.bin dat_file: quuppa_tag_s132_application.dat	ASEST Connect @	Generic Access Generic Atbibute	Progress	Transferring quuppa_tag_s132_application bin	DFU -H dbm - BAsil:91 Connect /
Log 11:52:55.157 Scan st 11:53:06.334 Connec 11:53:06.558 Connec	ted to device ES	Start DFU		Log 13.03.13.000 AUR 13.53.17.040 Attril 13.53.17.044 Attril	Throughput (kB/s)	123 111 00 09 08 07- 06-	
11:53:06.516 Connec	tion parameters	oraco.bx.004 applied for delice E3.09 BC.84.58.91: interval 15ms; fimeout 400 die: 0x03; value (0x): 51-75-75-70-70-61-5F-44-46-55		13:53:17.085 Attri 13:53:17.088 Attri 13:53:17.115 Attri 13:53:17.118 Attri 13:53:17.118 Attri		0.5- 0.4- 0.3- 0.2- 0.1- 0.0- kB transferred	

When update is complete, the tag reboots in Quuppa mode with the new firmware. Attention: Quuppa state settings are reinitialized (i.e. emission frequency, power, timeout). A new configuration may be sent using QSP (as described in § 3A).



7. Quick-start

In order to function, a Quuppa technology tag must be added to an existing Quuppa network (as described in § 2D).

The following steps are required when adding a tag to a Quuppa network:

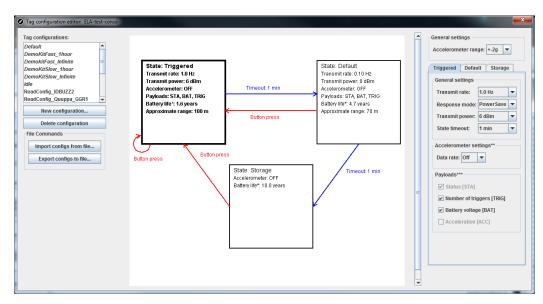
• Tag activation and configuration as necessary (as described in § 3B):

IDENTIFY LOCATE MEASURE

- Software: Device Manager
- o Set "Activation" field to "True"

🛞 Configuration du Tag 🤗							
Paramètres							
Version Firmware :	1.0.1						
Nom :	000085						
Activation :	True ~						
Adresse Mac :	FBE4A7146931						
Acc. Activation :	False *						
Seuil Accélération :	0100						
Long Sleep :	True *						

- Quuppa state settings (i.e. emission frequency, power, timeout):
 - Software: Quuppa Site Planner
 - Default settings:
 - Triggered state: 5Hz, -6dBm, 30s
 - Default state: 1Hz, -6dBm, 30s
 - Storage state
 - Modification of this setting is described in § 3A



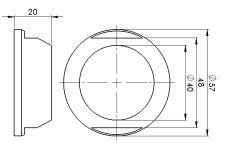


8. Hardware specifications

IDENTIFY LOCATE MEASURE

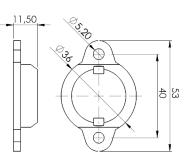
OPUCK module

0

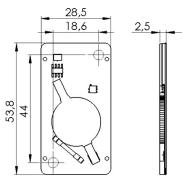


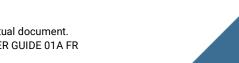
- AERO Beacon module

COIN module



SLIM module







- 9. Standards and logos
 - Quuppa technology

Qυυρρα

CE Mark

FCC Mark

FC

CE

IDENTIFY LOCATE MEASURE

IC Mark

0



- RoHS (2002/95/CE)
- RoHS
- See Section 2002/96/CE
 Section 2002/96/CE





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