Bluetooth® NLC

Qualification guide

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1. Bluetooth NLC qualification essentials

Any device using patented Bluetooth technology must be declared and listed with Bluetooth SIG. Devices implementing Bluetooth NLC Profiles must be verified for Bluetooth NLC compliance. This is done through a qualification process. A qualified Bluetooth NLC device does not need any additional Bluetooth qualifications. It also meets general Bluetooth licensing requirements, allowing the manufacturer to use the Bluetooth trademark.

1.1 Bluetooth NLC profiles

Bluetooth NLC Profiles are device profiles that sit on top of Bluetooth Mesh, each with its own set of performance parameters and supported models. Bluetooth NLC introduces six application profiles:

1. Ambient Light Sensor NLC Profile (ALS) 1.0 for an ambient light sensor.
2. Basic Lightness Controller NLC Profile (BLC) 1.0 for a luminaire with an integrated controller.
3. Basic Scene Selector NLC Profile (BSS) 1.0 for a wall switch or a wall station to select lighting scenes or turn the lights on/off, including devices that are configured to be able to act as an EnOcean adapter.
4. Dimming Control NLC Profile (DIC) 1.0 for a wall-mounted, user-adjustable device to dim the lights up/down, including devices that are configured to be able to act as an EnOcean adapter.
5. Energy Monitor NLC Profile (ENM) 1.0 for a sensor reporting energy consumption, including all devices with DALI interface.
6. Occupancy Sensor NLC Profile (OCS) 1.0 for an occupancy sensor.

These application profiles make certain existing optional features of Bluetooth Mesh mandatory. The underlying features have existed since Mesh 1.0 in 2017. The NLC Profiles make the requirements stricter, helping improve interoperability and performance.

1.2 Bluetooth NLC qualification paths

Device manufacturers can apply for Bluetooth NLC qualification independently, or they can apply for qualification based on one of the Bluetooth NLC subsystems. Bluetooth NLC subsystems are qualified solutions that can be used by suppliers as the foundation for their Bluetooth NLC products.

In the case of independent qualification, devices need to go through a rigid qualification process that includes hundreds of compliance tests. In the case of qualification based on a subsystem, suppliers can submit their products for a fast-track qualification process.

Because the Silvair firmware stack has been qualified as a Bluetooth NLC subsystem, the company's manufacturing partners can qualify their products via fast-track qualification. This allows them to get to market quicker with interoperable and Bluetooth NLC-compliant devices.
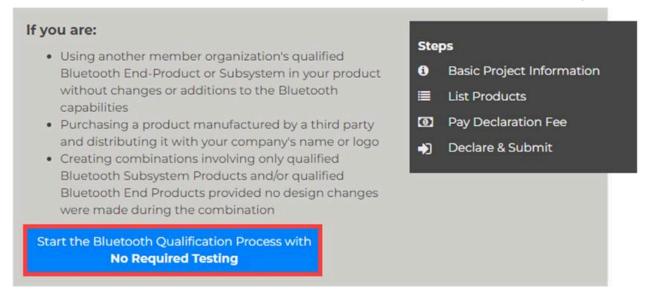
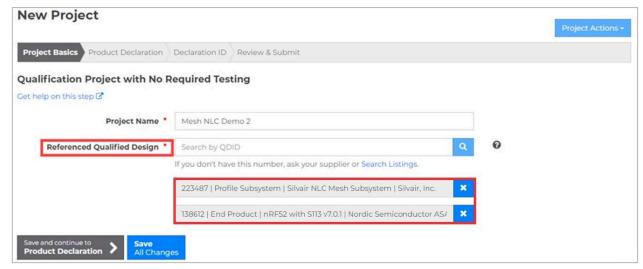# 2. Fast-track Bluetooth NLC qualification with Silvair Firmware

2.1 Prerequisites

- Prepare a list of products you want to qualify.
- Get familiar with Bluetooth NLC profiles.
- Identify the NLC profiles that correspond to your products to accurately assign these profiles during the qualification process.
- To qualify your products, use **Launch Studio** (https://launchstudio.bluetooth.com), the specialized qualification tool provided by the Bluetooth SIG.

2.2 Qualifying a product based on Silvair Firmware

1. In Launch Studio, click "Start the Bluetooth Qualification Process with No Required Testing".
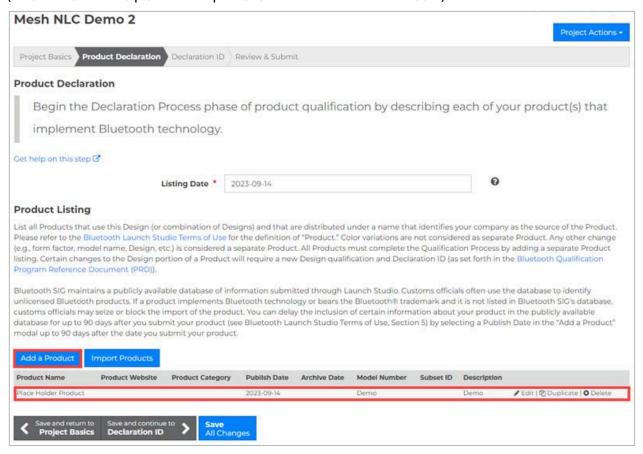

2. In "Project Basics", enter a name for your project, and add two reference designs: the Silvair's Profile Subsystem with QDID **223487** and the Nordic's End Product with QDID **138612**.
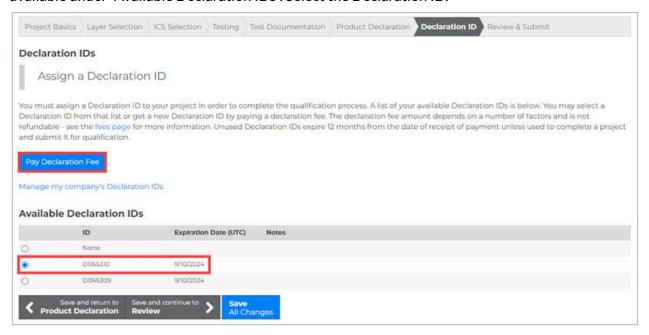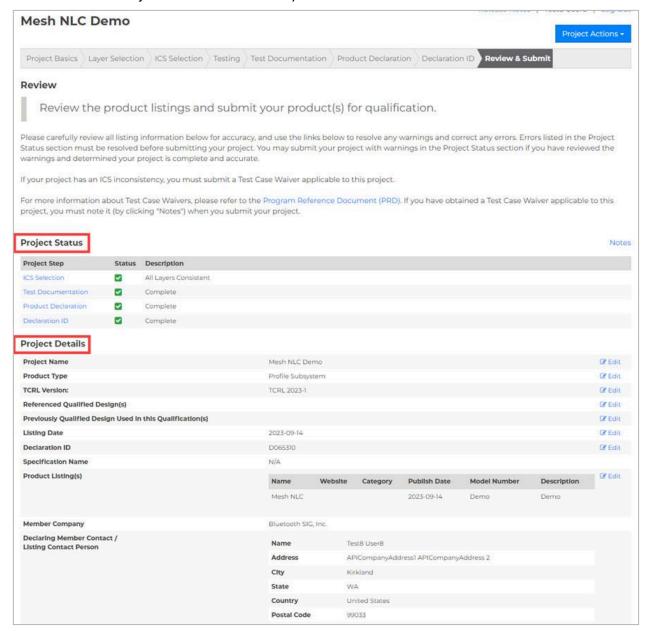
3. Go to "Product Declaration" and then click "Add a Product". Fill in all mandatory fields marked with *
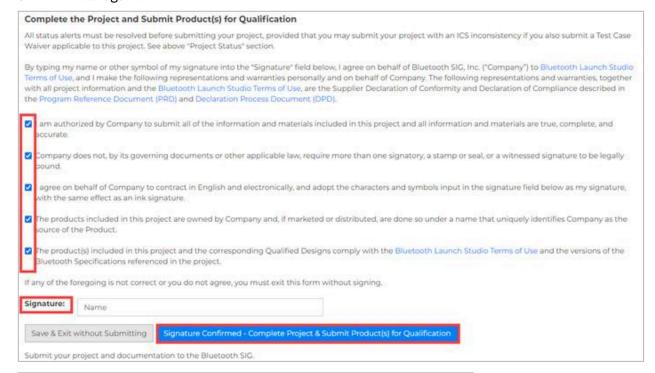   (Note: This will be a placeholder product which will be removed later).

4. After adding the product, go to "Declaration ID", and then click "Pay Declaration Fee". Fill in all mandatory
   fields in the payment popup window. After the payment has been processed, a Declaration ID will be
   available under "Available Declaration IDs". Select the Declaration ID.
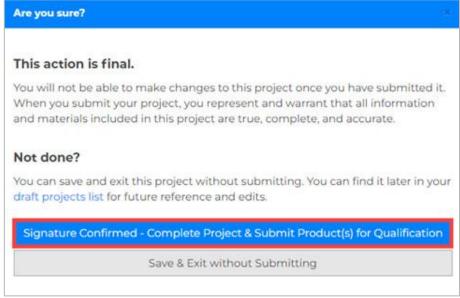
5. Go to "Review & Submit". Make sure that only green icons with white check marks appear in the "Project Status". Review "Project Details" for accuracy.
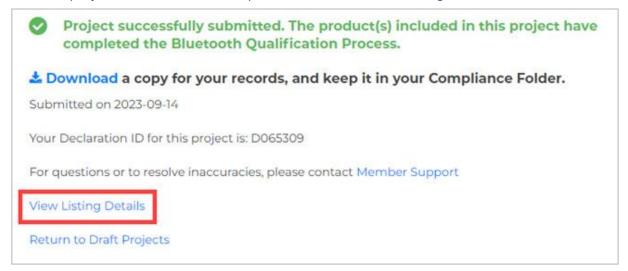
6. Scroll down and select all checkboxes, enter your name, and click "Signature Confirmed – Complete Project & Submit Product(s) for Qualification". When the confirmation window pops up, click "Signature Confirmed…" again.
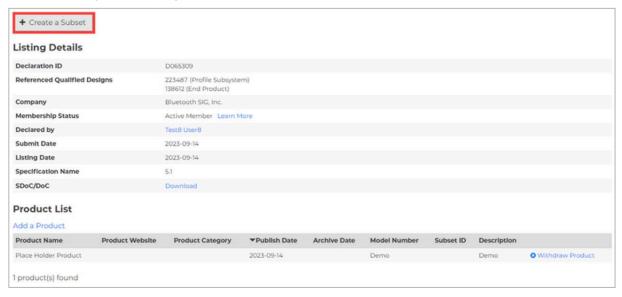
7. After the project has been successfully submitted, click "View Listing Details".

8. On the "Listing Details" page, click "Create a Subset".

9. On the "Create a Subset" popup window, enter the Subset Name. In the "Referenced QDID" field, select 223487, and click "Create a Subset". You will then be taken to Launch Studio.

10. In "Layer Selection", scroll down to "Mesh Specifications" and deselect Mesh NLC Profiles unsupported by your product.

11. Go to "ICS Selection", click the "Consistency Check", and resolve any inconsistencies.

12. Go to "Product Declaration" and click "Add a Product" to add the product that uses the subset design. In the "Product Details" popup window, fill in all mandatory fields marked with *.

13. Go to "Review & Submit". Make sure that only green icons with white check marks appear in the "Project Status". Review "Project Details" for accuracy.

14. Scroll down and select all checkboxes, enter your name, and click "Signature Confirmed – Complete Project & Submit Product(s) for Qualification". When the confirmation dialog appears, click "Signature Confirmed…" again.
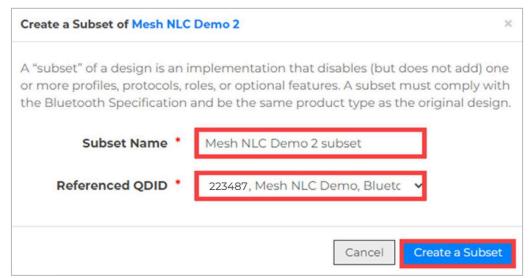
15. After the subset has been successfully submitted, click "View Listing Details".

16. On the "Listing Details" page, make sure that the product using the subset ID is listed under "Product List".

17. Remove the "Place Holder Product" from the "Product List" by clicking "Withdraw Product", and click "Submit". The request will be reviewed and processed.

Listing Details

Declaration ID	D065309
Referenced Qualified Designs	223487 (Profile Subsystem) 138612 (End Product)
Company	Bluetooth SIG, Inc.
Membership Status	Active Member Learn More
Declared by	Test8 User8
Submit Date	2023-09-14
Listing Date	2023-09-14
Specification Name	5.1
SDoC/DoC	Download

Product List

Add a Product

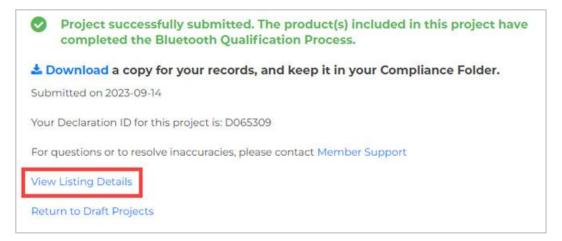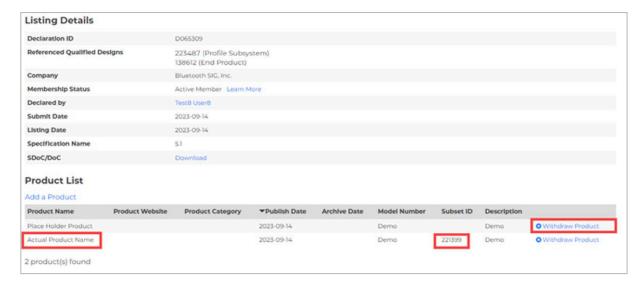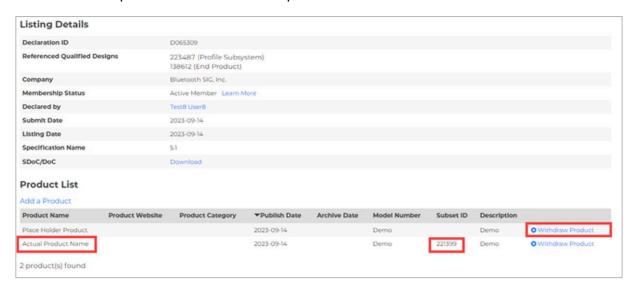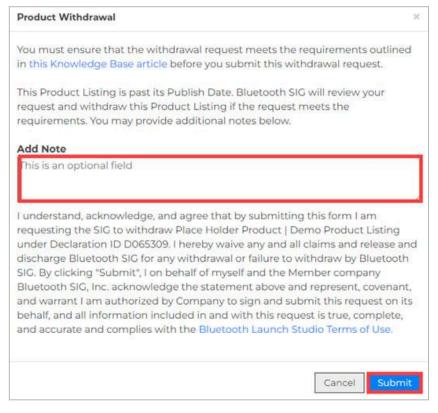| Product Name	Product Website	Product Category	▼Publish Date	Archive Date	Model Number	Subset ID	Description	
Place Holder Product			2023-09-14		Demo		Demo	⊙ Withdraw Product
Actual Product Name			2023-09-14		Demo	221399	Demo	⊙ Withdraw Product

2 product(s) found

Product Withdrawal ✕

You must ensure that the withdrawal request meets the requirements outlined in this Knowledge Base article before you submit this withdrawal request.

This Product Listing is past its Publish Date. Bluetooth SIG will review your request and withdraw this Product Listing if the request meets the requirements. You may provide additional notes below.

Add Note

This is an optional field

I understand, acknowledge, and agree that by submitting this form I am requesting the SIG to withdraw Place Holder Product | Demo Product Listing under Declaration ID D065309. I hereby waive any and all claims and release and discharge Bluetooth SIG for any withdrawal or failure to withdraw by Bluetooth SIG. By clicking "Submit", I on behalf of myself and the Member company Bluetooth SIG, Inc. acknowledge the statement above and represent, covenant, and warrant I am authorized by Company to sign and submit this request on its behalf, and all information included in and with this request is true, complete, and accurate and complies with the Bluetooth Launch Studio Terms of Use.

Cancel   Submit

3. Document revisions

Revision	Date	Editor	Changes
1.0	20 December 2023	SR, GM	Initial release.

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