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**RE: Certification Application**

Model: NINA-B400, NINA-B406, NINA-B410, NINA-B416

FCC ID:XPYNINAB4

## **Request for Part 15 Single-Modular Transmitter Approval**

To whom it may concern:

We, u-blox AG, hereby requests for a modular transmitter approval of our OEM-Bluetooth modules NINA-B400, NINA-B406, NINA-B410 and NINA-B416. The equipment is described as follows:

Brand name:	u-blox
HVIN:	NINA-B400, NINA-B406, NINA-B410 and NINA-B416
FCC ID:	XPYNINAB4

In CFR Title 47 Chapter I Subchapter A Part 15 Subpart C Section 15.212 there are eight numbered requirements that our device complies with:

### **1. The modular transmitter must have its own RF shielding**

The module has its RF-parts enclosed by a shield cover soldered onto the module ground plane.

### **2. The modular transmitter must have buffered modulation/data inputs**

The module does not have modulation inputs. The electrical interface available to the module integrator consists of Power supply, UART, SPI and I/O signals. The interface signals are internally buffered by the module System on Chip and cannot affect the modulation.

### **3. The modular transmitter must have its own power supply regulation**

The module SoC (System on Chip) has its own internal voltage regulators. In case the supply voltage fluctuates internal voltages will be kept unaffected.

### **4. The modular transmitter must comply with the antenna requirements of Section 15.203, 15.204(b) and 15.204(c)**

The RF-port of module versions NINA-B400 and NINA-B410 are available at a HIROSE U.FL coaxial connector. This connector is to be considered as unique. The module integrator is instructed to only use antennas listed in the module certification.

The module versions NINA-B406 and NINA-B416 are equipped with an integrated antenna. On this module version the RF-port is not available for external antenna connection.

### **5. The modular transmitter must be tested in a stand-alone configuration**

The module was soldered onto the evaluation board EVK-NINA-B4 and tested in a stand-alone configuration.

### **6. The modular transmitter must be labelled with its own FCC ID number**

The module is too small for the FCC ID to be readable and as a consequence not labelled with its own FCC ID. The FCC identifier is instead in accordance with 47 CFR §2.925 (f) placed in the user manual and also placed on the device packaging. Instructions are also provided in the user manual how the end-product containing the module must be labelled.

**7. The modular transmitter must comply with any specific rule or operating requirements applicable to the transmitter and the manufacturer must provide adequate instructions along with the module to explain any such requirements.**

The Bluetooth module NINA-B400, NINA-B406, NINA-B410 and NINA-B416 is compliant with all applicable FCC rules. Detailed instructions to the module integrator are presented in the User's Guide.

**8. The modular transmitter must comply with any applicable RF exposure requirements in its final configuration.**

NINA-B400, NINA-B406, NINA-B410 and NINA-B416 complies with the RF exposure limits when integrated into host devices categorized as mobile and/or fixed.

With a separation distance of 5 mm the module complies with the SAR Test Exclusion Thresholds of KDB 447498. The equation and threshold in section 4.3.1 of KDB 447498 is applied in the calculation below.

$$\frac{P [mW]}{d [mm]} \cdot \sqrt{f [GHz]} \leq 3$$

$$\frac{8 mW}{5 mm} \cdot \sqrt{2.48 GHz} = 2.5$$

Thank you for your attention in this matter.



Job Title and Dept.:

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