Registered office:
u-blox AG
Zürcherstrasse 68
8800 Thalwil
Switzerland

Phone +41 44 722 7462
Fax +41 44 722 2447

info@u-blox.com
support@u-blox.com

Attn.: Reviewing Engineer
PHOENIX TESTLAB GmbH
Product Certification
Königswinkel 10
D-32825 Blomberg

RE: Certification Application
Model: NINA-W151, NINA-W152
FCC ID: XPYNINAW15

Request for Part 15 Unlicensed Modular Transmitter Approval

To Whom It May Concern:

We, u-blox AG, hereby requests for part 15 unlicensed modular transmitter approval of our OEM-WLAN / Bluetooth module NINA-W151 and NINA-W152. The equipment is described as follows:

Brand name: u-blox
Model name: NINA-W151, NINA-W152
FCC ID: XPYNINAW15

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 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, RM-II, 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 and 15.204c
The RF-port of module NINA-W151 is available at a solder land and the antenna trace reference design guides the module integrator how to connect this solder land to a U.FL connector.

The module NINA-W152 is equipped with an integrated antenna soldered onto the module. 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-W1 and tested in a stand-alone configuration. The antenna trace reference design connecting the RF-port of NINA-W151 to a U.FL connector was implemented on the EVK-NINA-W1 evaluation board.

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 WLAN/Bluetooth module NINA-W151 and NINA-W152 is compliant with all applicable FCC rules. Detailed instructions to the module integrator are presented in the product Users Guide.

8. The modular transmitter must comply with any applicable RF exposure requirements.
The module complies with the RF exposure limits when integrated into a host device categorized as mobile and/or fixed.
The module also complies with the SAR Test Exclusion Thresholds of KDB 447498 calculated using a separation distance of 25 mm.

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

$$\frac{40\ mW}{25\ mm} \cdot \sqrt{2.467\ GHz} = 2.5$$

Thank you for your attention in this matter.

Yours Sincerely,

Olof Viklund
Senior Engineer, u-blox