



Attn: Reviewing Engineer
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

RE: Certification Application

Model: ODIN-W161

FCC ID: PVH1953

Registered office:

u-blox Malmö AB

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Request for Part 15 Limited Modular Transmitter Approval

To whom it may concern:

We, u-blox Malmö AB, hereby requests for a limited modular transmitter approval of our OEM-WLAN/Bluetooth module ODIN-W161.

Please observe that integration of the module is to be made by the grantee himself thus limited to own use only

The equipment is described as follows:

Brand name: u-blox
Model: ODIN-W161
FCC ID: PVH1953

In 47 C.F.R. §15.212 there are eight numbered requirements a single modular transmitter must meet to obtain a modular transmitter approval. Our OEM-WLAN/Bluetooth module ODIN-W161 complies with 7 (seven) of these requirements. Requirement number 4 is not fulfilled.

1. The modular transmitter must have its own RF shielding

The module ODIN-W161 has its RF-parts covered by a shield box that is soldered on to the module ground plane.

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

The module ODIN-W161 does not have modulation inputs.

The electrical connection consists of power supply, UART, SDIO, SPI and digital-I/O.

The interface signals (UART, SDIO, SPI and digital-I/O) are internally buffered by the module SoC (System on Chip) and cannot affect the modulation.

Detailed instruction on how to connect these interface signals are given in the product Users Guide.

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

The WLAN/Bluetooth -module ODIN-W161 has its own voltage regulators. In case the supply voltage changes, the internal voltages will be kept unchanged.

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

The module ODIN-W161 does not comply with this requirement as it has neither an own antenna nor a unique antenna connector mounted on the module.

The RF port is available via a solder land and the reference design connects its antenna port to this solder land.

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

The ODIN-W161 was tested on a reference design in a stand-alone configuration.

locate, communicate, accelerate

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

The module ODIN-W161 is marked with its own FCC ID number. The FCC ID number is printed on a label that is affixed on the shield cover.

For systems using the module where the original FCC ID marking not will be visible when the module is installed instructions will be provided to the OEM integrator how the end product must be label.

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 ODIN-W161 is compliant with all applicable FCC rules. Detail instructions are given in the product Users Guide.

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

The RF Module complies with the RF exposure limits when integrated into host devices categorized as mobile and/or fixed

Refer to documents:

- Calculation rf-exposure F145298E1.pdf
- Calculation rf-exposure F145298E2.pdf
- Calculation rf-exposure F145298E3.pdf
- Calculation rf-exposure F145298E4.pdf
- Calculation rf-exposure F145298E5.pdf

Thank you for your attention in this matter.



Mats Andersson
CTO u-blox Malmö AB

Job Title and Dept.: