



January 24, 2022

Federal Communications Commission
Equipment Authorization Branch
7435 Oakland Mills Road
Columbia, MD 21046

Gentlemen:

Synapse Wireless Inc. respectfully requests Part 15 unlicensed modular transmitter approval of the Synapse Wireless Inc. SM520UF1 product. In accordance with the Part 15.212(a)(1) and IC RSS-GEN7.1.1, here is the response to the items listed for the SM520UF1 product.

Item 1: The SM520UF1 module has a metal RF shield that is soldered to the ground plane on all side, enclosing all electronics, and prevents coupling of the RF circuitry with the host board electronics in which the SM520UF1 is plugged into in order to comply with this item.

Item 2: All input data to the SM520UF1 is buffered in the microcontroller located on the SM520UF1. Firmware in the microcontroller then controls the flow of this data to the transmitter for RF communications to prevent excessive data rates or over-modulations to comply with this item.

Item 3: The SM520UF1 transmitter is the Silicon Labs EFR32MG12 series of IEEE 802.15.4 transceiver modems. This modem has internal power supply regulation to comply with Item 3.

Item 4: The SM520UF1 has support for an external antenna thru a Reverse Polarity SMA style unique antenna coupler which is mounted on the SM520UF1 which complies with Item 4 requirements.

Item 5: The necessary SM520UF1 and support hardware was provided to the certification lab to show compliance with this item.

Item 6: The FCC ID label assigned to the SM520UF1 will be located on the top outside face of the SM520UF1. In the case that this label on the SM520UF1 is not visible after installation, the datasheet will document to the user of the SM520UF1 that the FCC ID labeling requirements must be included on an exterior label of the finished product enclosure using the SM520UF1 stating that the product contains the FCC ID label for the SM520UF1. A copy of the datasheet will be provided to the FCC to show this compliance.

Item 7: In order to show compliance to this item, a copy of the datasheet will be provided to the FCC to show that the issues of Item 7 have been properly documented.

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Item 8: The SM520UF1 will be tested to comply with any applicable RF exposure requirements. Also, in order to show compliance to aspects of this item, a copy of the datasheet will be provided to the FCC to show that the issues of Item 8 have been properly documented.

Sincerely,

A handwritten signature in black ink that reads "Russell T. Dickerson". The signature is fluid and cursive, with the first name "Russell" being more legible than the last name "Dickerson".

Russell T. Dickerson
Engineering Director