

Request for a modular approval - FCC ID: Q4W55M1073-01

The Inside Out Networks Bluetooth Class 1 Module Model: 55001073 is seeking FCC authorization as a modular transmitter. The requirements of the FCC Public notice DA00-1407 are met.

The following requirements are fulfilled:

1. The modular transmitter must have its own RF shielding

The radio portion of the module is contained in its own RF shielding. See the external photos.

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

The module has 20 buffers at 60 bytes per buffer for buffering data.

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

The IC contains its own voltage regulation. In case of changes in the supply voltage VCC (for example caused by temperature changes or other effects), the internal voltage will be stabilized. Please see the block diagram included.

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

The transmitter shall only be used with the tested integral antenna or with an antenna that has less antenna gain. The antenna will be soldered onto the module PCB itself. Please see the pictures of the EUT.

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

The EUT was tested in a stand-alone configuration. The AC power and data input/output lines were connected to the module by 15 cm cables. The module was fixed in test/programming mode during the test. See also the test report and test setup photos.

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

The EUT will be labeled with its own FCC ID number. If the module is installed inside of an end-product, the label will not be visible. In this case the OEM customer will be instructed to how to apply the exterior 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 EUT is compliant with all applicable FCC rules. Detail instructions are given in the Users Guide.

8. The modular transmitter must comply with any applicable RF exposure requirements.

The maximum measured power output is 12.16 dBm (16.44 mW), the maximum antenna gain is 4 dBi = numeric gain 2.512. The maximum permissible exposure is defined in 47 CFR 1.1310 as 1 mW/cm².

The distance from the EUT's transmitting antenna where the exposure level reaches the maximum permitted level is calculated using the general equation:

$$S = P \cdot G / 4\pi R^2$$

$S_{\max} = 1\text{mW/cm}^2$, $P = 16.44\text{ mW}$, $G =$ linear power gain relative to the isotropic radiator = 2.512 (numeric gain), $R =$ distance in cm

Solving for R , the 1mW/cm² limit is reached in a distance of 1.8 cm to the transmitting antenna.

The module has to be integrated in a way that the minimum distance of 1.8 cm is ensured.