1 FCC §15.203 – Antenna Requirements

1.1 Applicable Standard

According to FCC §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to FCC §15.247 (b)(4), if transmitting antennas of directional gain greater than 6 dBi are used the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

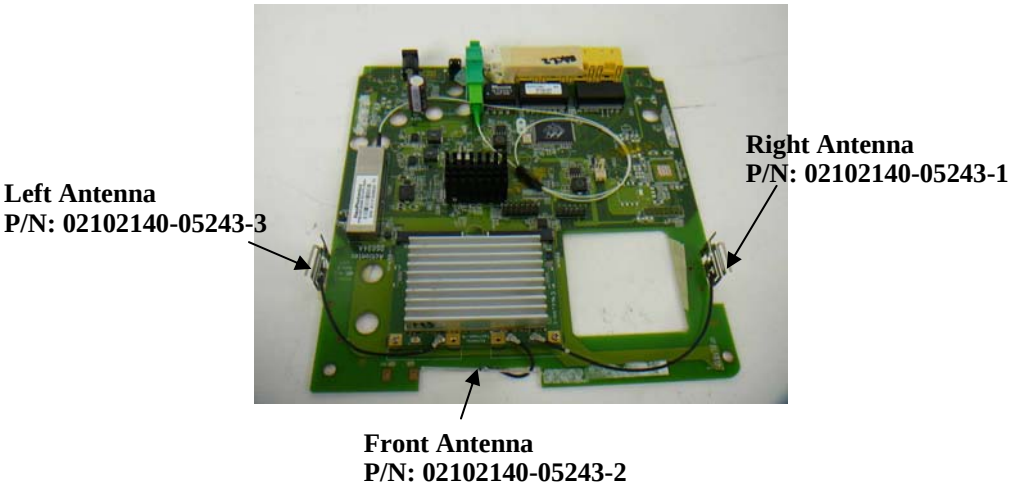
1.2 Antenna List

The antenna used on the device has a unique connector – U.F.L – and the antenna gain is less then 6dBi, therefore the antenna used fulfilled the antenna requirement above.

EUT has two configurations, one with three Galtronics antennas, one with three Airgain antennas, since Galtronics antennas has higher gain with the same type, therefore only Galtronics antenna was tested with the unit during radiated emissions.

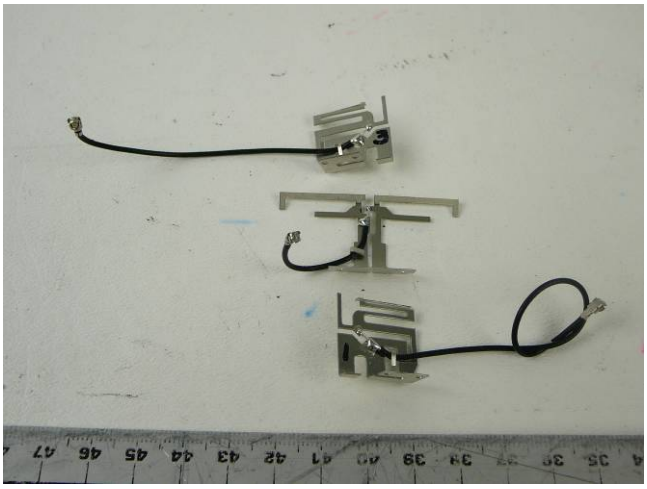
Manufacture/Antenna Model	Antenna Product Number/ Antenna Model	Antenna Gain (dBi)
Galtronics	02102140-05243-1	3.5 (at 2.4GHz) 4.21 (at 5GHz)
Galtronics	02102140-05243-2	5.59 (at 2.4GHz) 4.82 (at 5GHz)
Galtronics	02102140-05243-3	3.5 (at 2.4GHz) 4.21 (at 5GHz)
Airgain	M2450DLCB	3.5 (at 2.4 GHz) 4.0 (at 5 GHz)
Airgain	N2420DS	3.1 (at 2.44 GHz) 3.2 (at 5.2 GHz)

Please refer to the below pictures for detail:

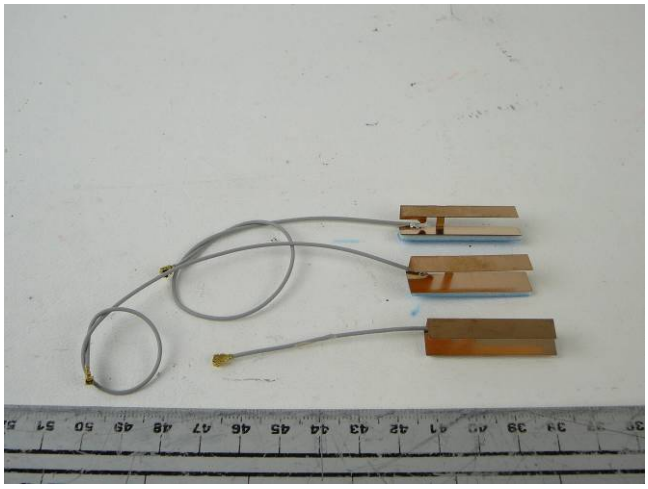


Testing configuration with Galtronics Antennas

Tested Galtronics Antennas



Airgain M2450DLCB Antennas



Airgain N2420DS Antenna