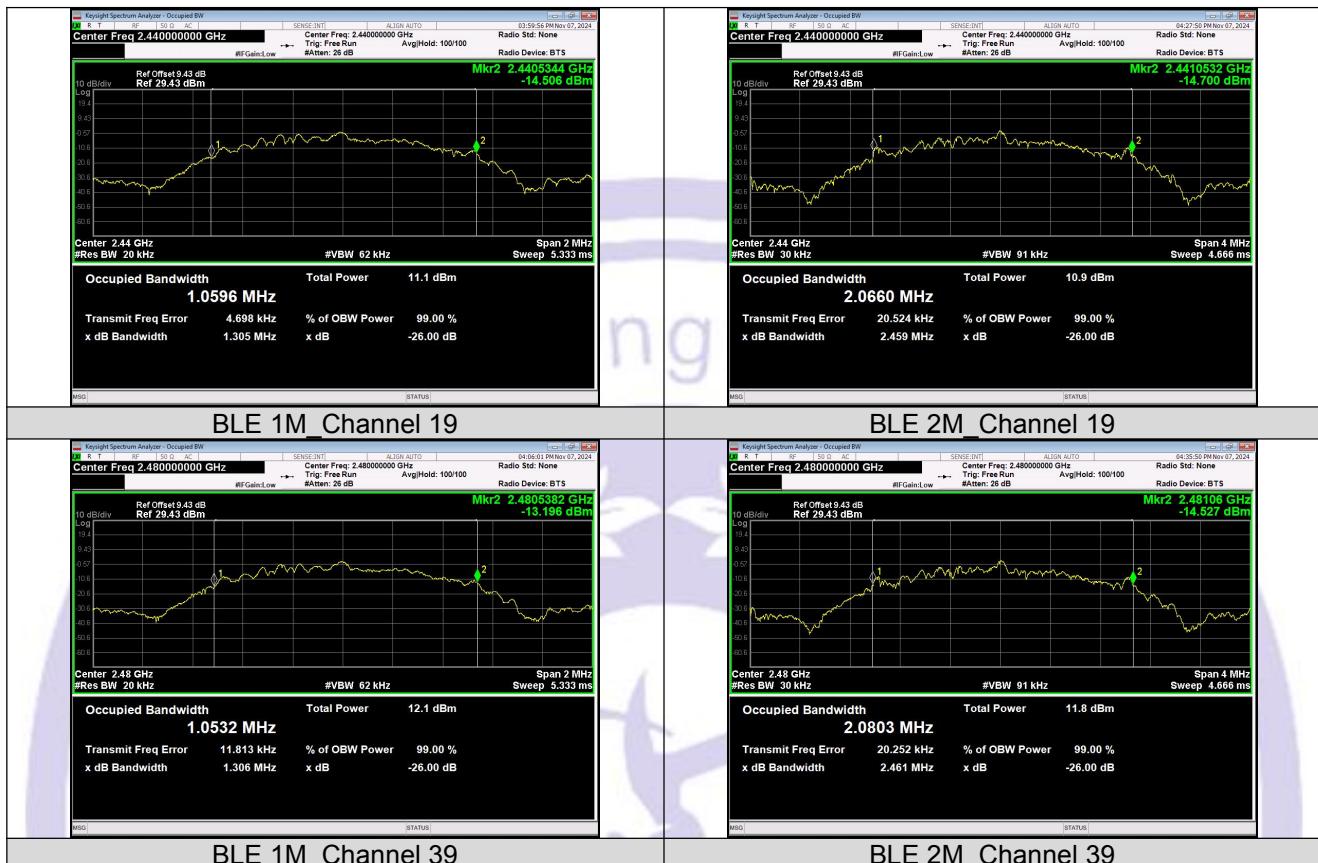


99% Bandwidth





9 Maximum Peak Output Power

Test Requirement : FCC CFR47 Part 15 Section 15.247 (b)(3)&RSS-247 5.4(b)

Test Method : ANSI C63.10:2013 and RSS-Gen

Test Limit : Regulation 15.247 (b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.

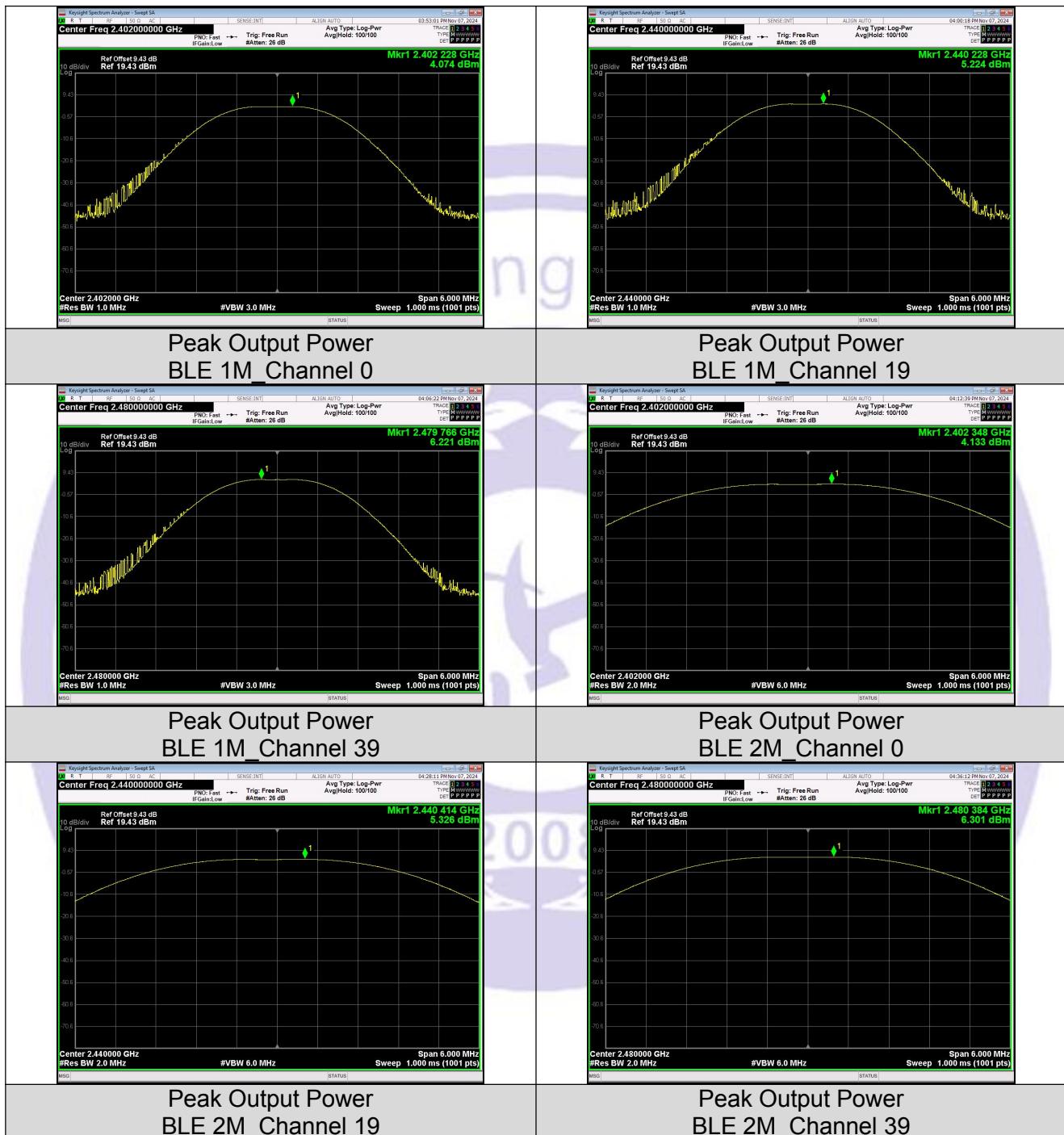
9.1 Test Procedure

1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Measure the conducted output power and record the results in the test report.

9.2 Test Result

Mode	Channel	Peak Output Power (dBm)	Peak Output Power (mW)	Max. Avg. Power (dBm)	Limit (dBm)	Result
BLE 1M	0	4.074	2.56	None	≤30	PASS
	19	5.224	3.33	None	≤30	PASS
	39	6.221	4.19	None	≤30	PASS
BLE 2M	0	4.133	2.59	None	≤30	PASS
	19	5.326	3.41	None	≤30	PASS
	39	6.301	4.27	None	≤30	PASS

Mode	Channel	Peak Output Power (dBm)	Peak Power Limit (dBm)	ISED EIRP (dBm)	ISED EIRP Limit (dBm)	Max. Avg. Power (dBm)	Result
BLE 1M	0	4.074	≤30	6.224	≤36.02	None	PASS
	19	5.224	≤30	7.374	≤36.02	None	PASS
	39	6.221	≤30	8.371	≤36.02	None	PASS
BLE 2M	0	4.133	≤30	6.283	≤36.02	None	PASS
	19	5.326	≤30	7.476	≤36.02	None	PASS
	39	6.301	≤30	8.451	≤36.02	None	PASS



10 Power Spectral density

Test Requirement : FCC CFR47 Part 15 Section 15.247 (e)&RSS-247 [5.2(b)]

Test Method : ANSI C63.10:2013 and RSS-Gen

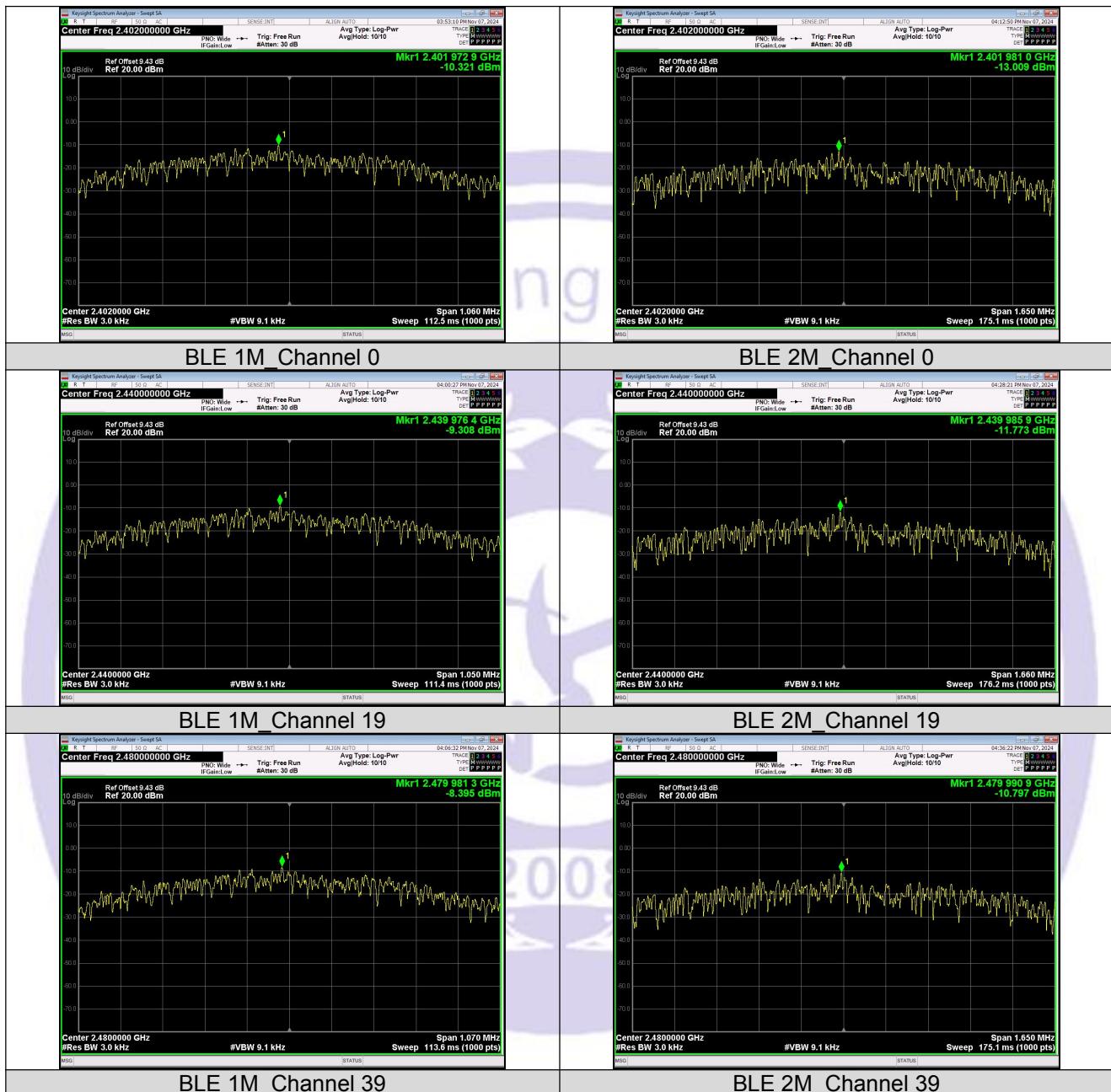
Test Limit : Regulation 15.247(f) The power spectral density conducted from the intentional radiator to the antenna due to the digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

10.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 3kHz. VBW = 9.1kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.
3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

10.2 Test Result

Mode	Channel number	Channel frequency (MHz)	Measurement level (dBm)	Required Limit (dBm/3kHz)	Pass/Fail
			PSD/3kHz		
LE	00	2402	-10.321	8	PASS
	19	2440	-9.308	8	PASS
	39	2480	-8.395	8	PASS
2LE	00	2402	-13.009	8	PASS
	19	2440	-11.773	8	PASS
	39	2480	-10.797	8	PASS



11 Antenna Application

11.1 Antenna Requirement

Test Standard	FCC Part15 Section 15.203 /247(c) & RSS-Gen 6.8
Requirement	<p>1) 15.203 requirement: 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, 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.</p> <p>2) 15.247(c) (1)(i) requirement: Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.</p> <p>3) RSS-Gen 6.8 The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list. For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below). When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.</p>

11.2 Result

The antenna is External Antenna which detachable antenna, and the best case gain of the antenna is 2.15dBi. It complies with the standard requirement.

12 Test Setup

Please see the attachment for details.



13 EUT Photos

Please see the attachment for details.

