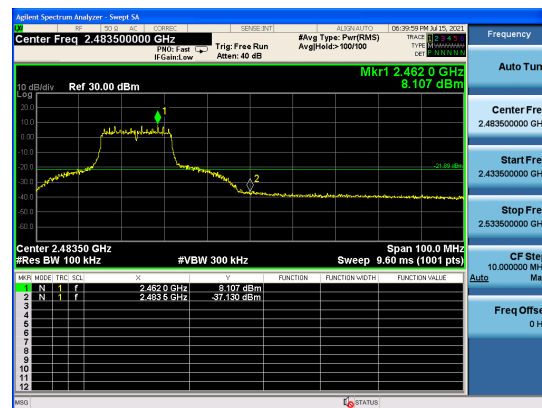
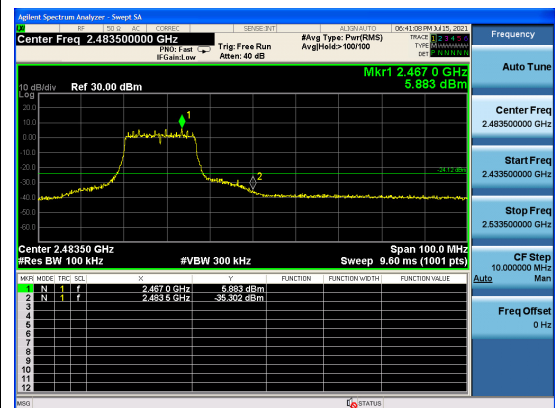




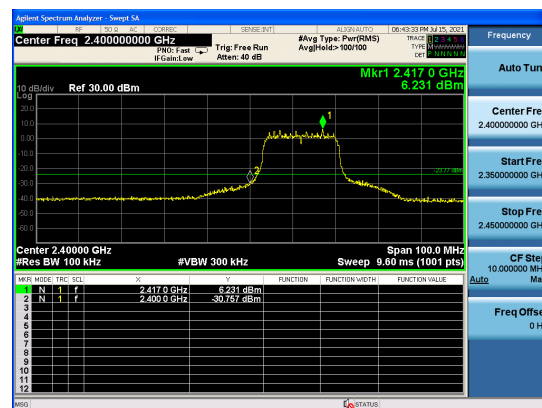
802.11g, Channel No.: 10



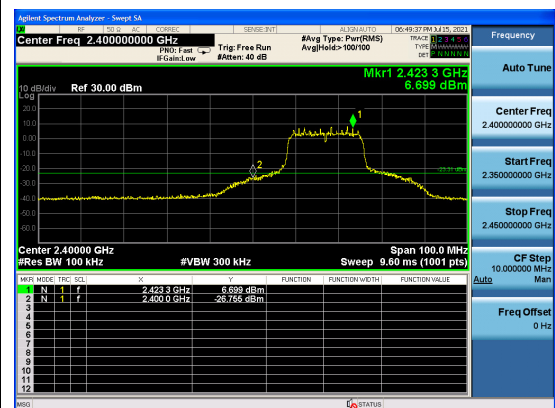
802.11g, Channel No.: 11



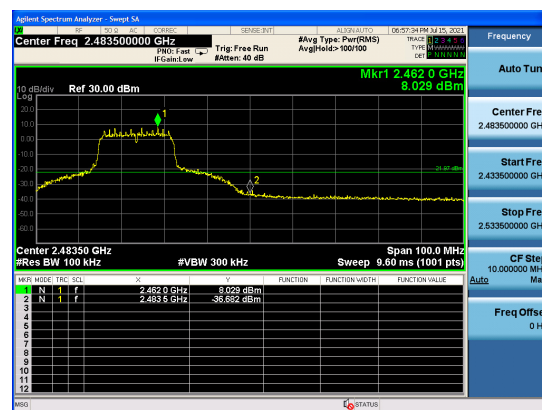
802.11n(HT20), Channel No.: 1



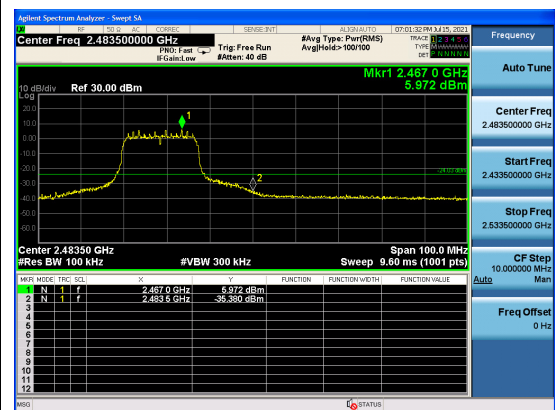
802.11n(HT20), Channel No.: 2



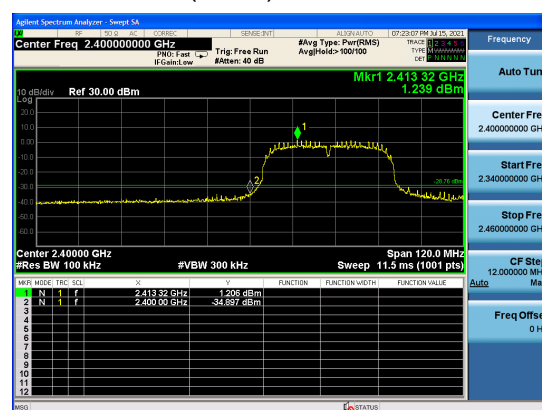
802.11n(HT20), Channel No.: 10



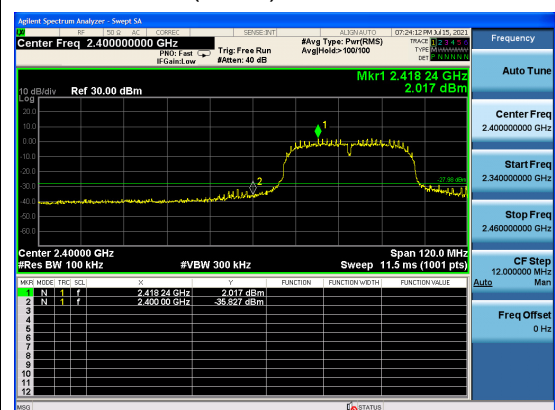
802.11n(HT20), Channel No.: 11



802.11n(HT40), Channel No.: 3

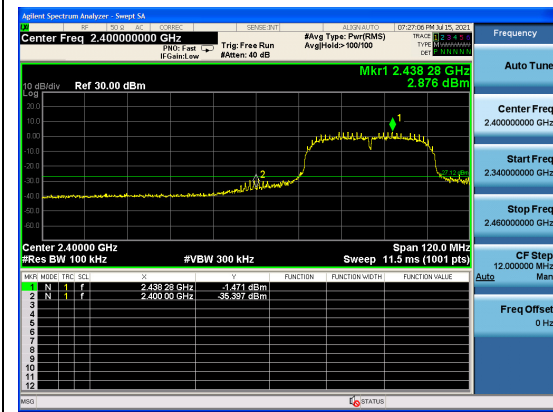


802.11n(HT40), Channel No.: 4





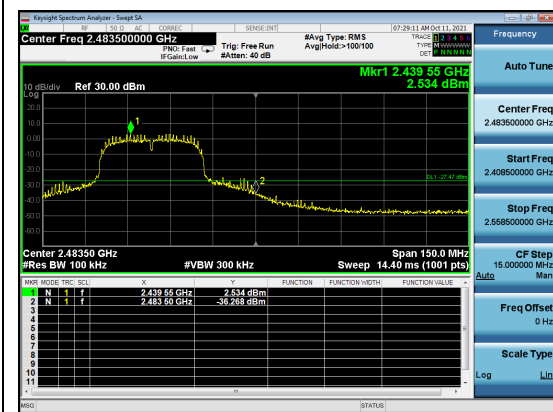
802.11n(HT40), Channel No.: 5



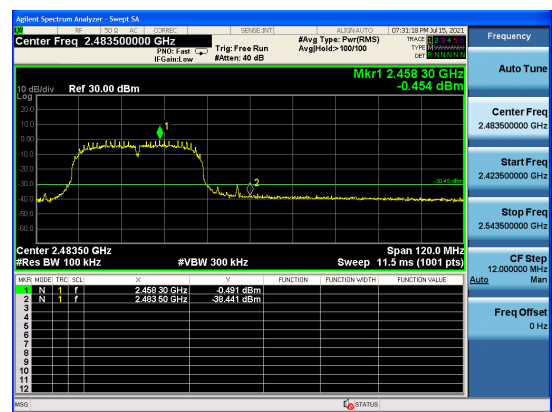
802.11n(HT40), Channel No.: 7



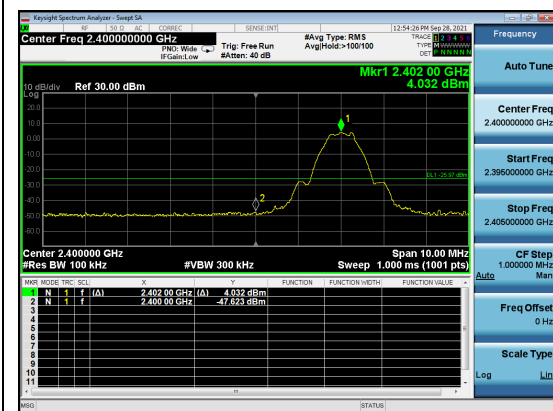
802.11n(HT40), Channel No.: 8



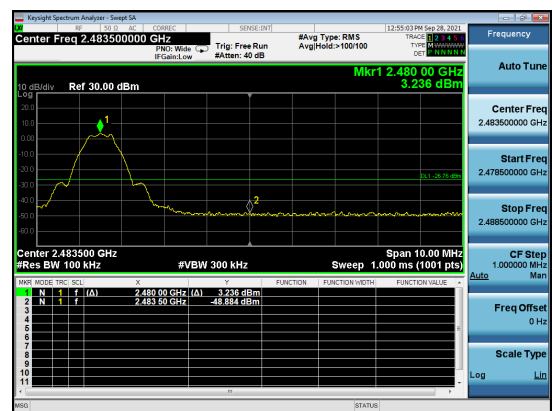
802.11n(HT40), Channel No.: 9



Bluetooth LE, Channel No.: 0



Bluetooth LE, Channel No.: 39



5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

During the process of the testing, The EUT was connected to Spectrum Analyzer with a known loss.

The EUT is max power transmission with proper modulation.

Method AVGPSD-1 was used for this test.

- Set instrument center frequency to DTS channel center frequency
- Set span to at least 1.5 times the OBW
- Set RBW to: $3\text{kHz} \leq \text{RBW} \leq 100\text{kHz}$
- Set VBW $\geq [3 \times \text{RBW}]$
- Detector=power averaging(rms) or sample detector(when rms not available)
- Ensure that the number of measurement points in the sweep $2[2 \times \text{span}/\text{RBW}]$
- Sweep time auto couple
- Employ trace averaging(rms) mode over a minimum of 100 traces
- Use the peak marker function to determine the maximum amplitude level.
- If the measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat(note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced)

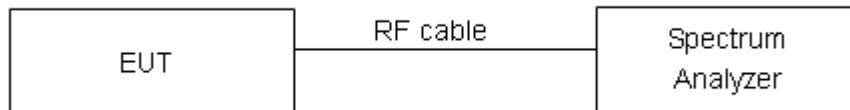
Method AVGPSD-2 was used for this test.

- Measure the duty cycle(D)of the transmitter output signal as described in 11.6
- Set instrument center frequency to DTS channel center frequency
- Set span to at least 1.5 times the OBW
- Set RBW to: $3\text{kHz} \leq \text{RBW} \leq 100\text{Kh}$
- Set VBW $\geq [3 \times \text{RBW}]$
- Detector= power averaging(rms) or sample detector (when rms not available)
- Ensure that the number of measurement points in the sweep $2[2 \times \text{span}/\text{RBW}]$
- Sweep time =auto couple
- Do not use sweep triggering; allow sweep to "free run"
- Employ trace averaging(rms) mode over a minimum of 100 traces
- Use the peak marker function to determine the maximum amplitude level
- Add $[10 \log(1/ D)]$, where D is the duty cycle measured in step a), to the measured PSD to

compute the average PSD during the actual transmission time

m) If measured value exceeds requirement specified by regulatory agency then reduce RBW (but no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span to meet the minimum measurement point requirement as the RBW is reduced)

Test setup



Limits

Rule Part 15.247(e) specifies that "For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. "

Limits	$\leq 8 \text{ dBm} / 3\text{kHz}$
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Measurement Uncertainty

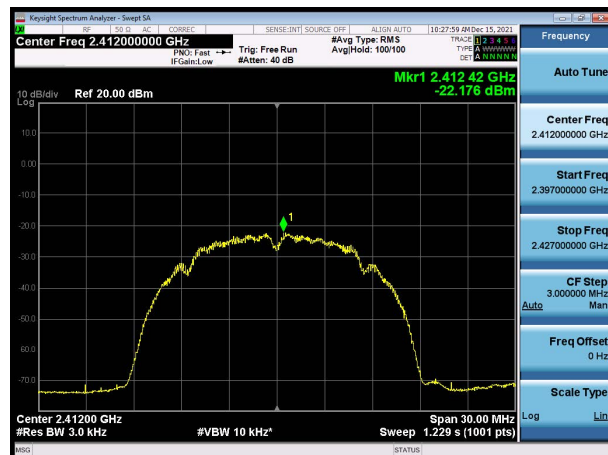
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.75\text{dB}$.

**Test Results:**

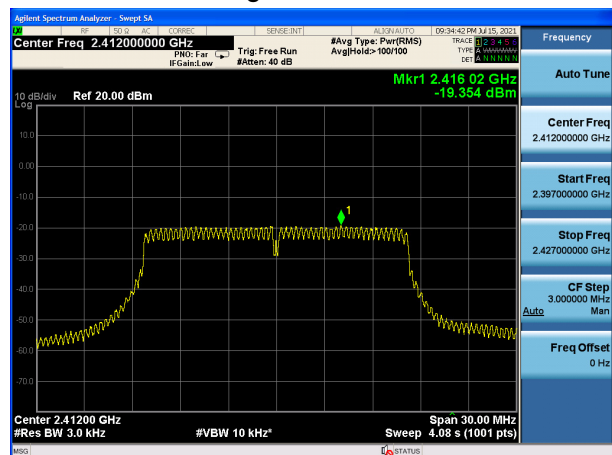
Test Mode	Channel Number	Read Value (dBm / 3kHz)	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
802.11b	2412	-22.18	-22.18	8	PASS
	2417	-14.09	-14.09	8	PASS
	2432	-14.26	-14.26	8	PASS
	2437	-20.30	-20.30	8	PASS
	2442	-14.25	-14.25	8	PASS
	2457	-14.54	-14.54	8	PASS
	2462	-20.45	-20.45	8	PASS
802.11g	2412	-19.35	-19.35	8	PASS
	2417	-18.23	-18.23	8	PASS
	2437	-18.17	-18.17	8	PASS
	2457	-18.25	-18.25	8	PASS
	2462	-20.06	-20.06	8	PASS
802.11n HT20	2412	-19.55	-19.55	8	PASS
	2417	-18.13	-18.13	8	PASS
	2437	-18.01	-18.01	8	PASS
	2457	-17.90	-17.90	8	PASS
	2462	-19.79	-19.79	8	PASS
802.11n HT40	2422	-23.78	-23.61	8	PASS
	2427	-22.91	-22.74	8	PASS
	2432	-21.94	-21.77	8	PASS
	2437	-21.17	-21.00	8	PASS
	2442	-21.26	-21.09	8	PASS
	2447	-22.11	-21.94	8	PASS
	2452	-25.34	-25.17	8	PASS
Bluetooth (Low Energy)	2402	-16.94	-16.15	8	PASS
	2440	-17.79	-17.00	8	PASS
	2480	-18.01	-17.21	8	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					



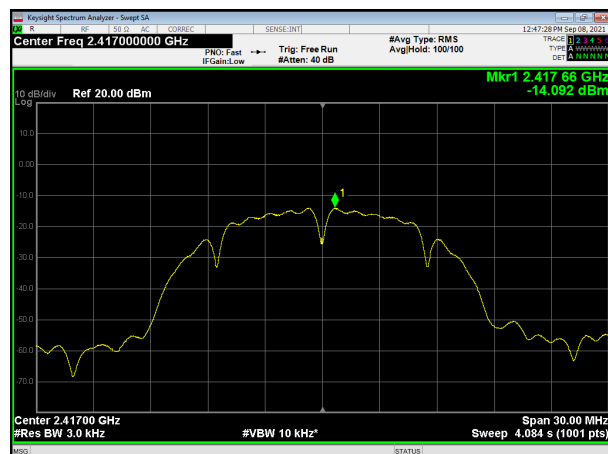
802.11b, Channel No.: 1



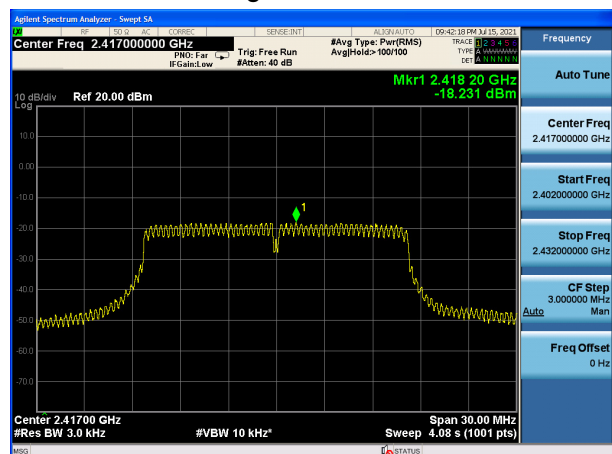
802.11g, Channel No.: 1



802.11b, Channel No.: 2



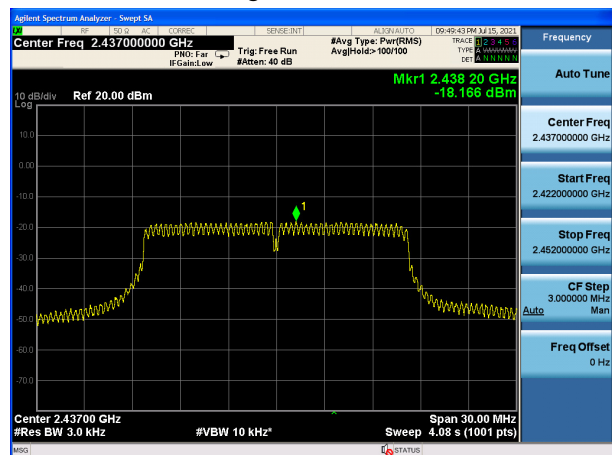
802.11g, Channel No.: 2



802.11b, Channel No.: 5

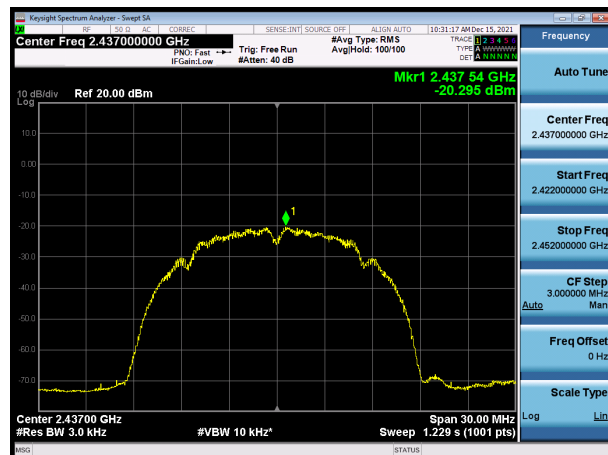


802.11g, Channel No.: 6

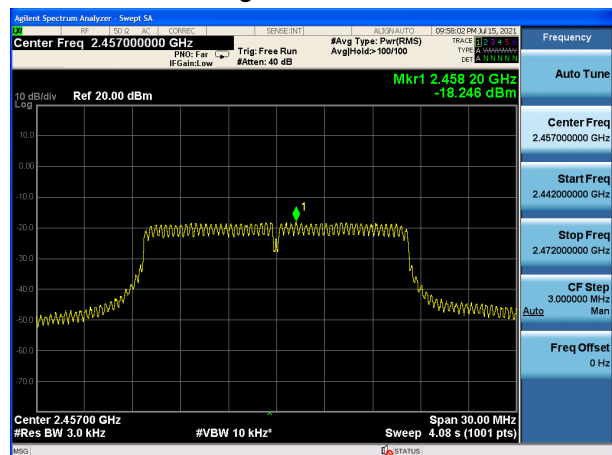




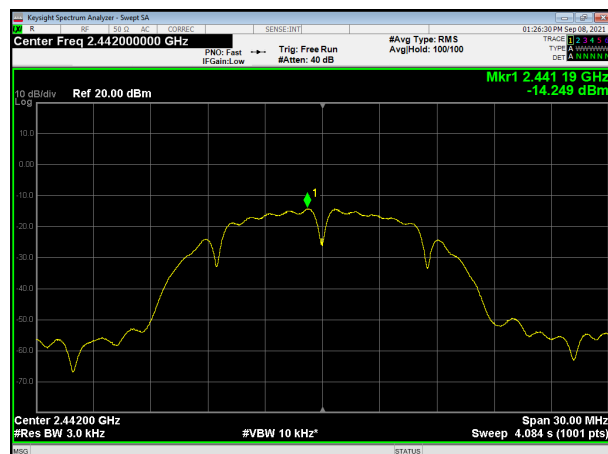
802.11b, Channel No.: 6



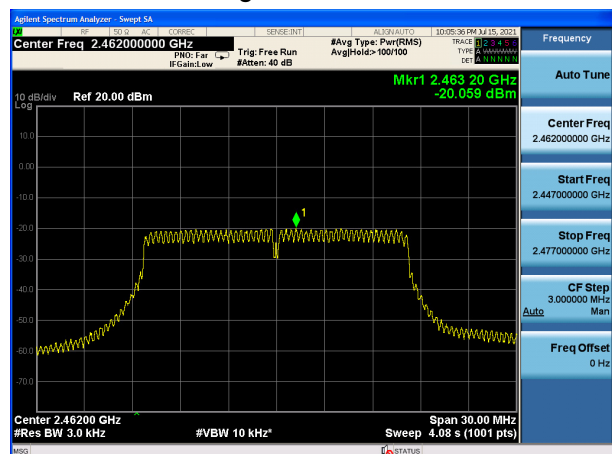
802.11g, Channel No.: 10



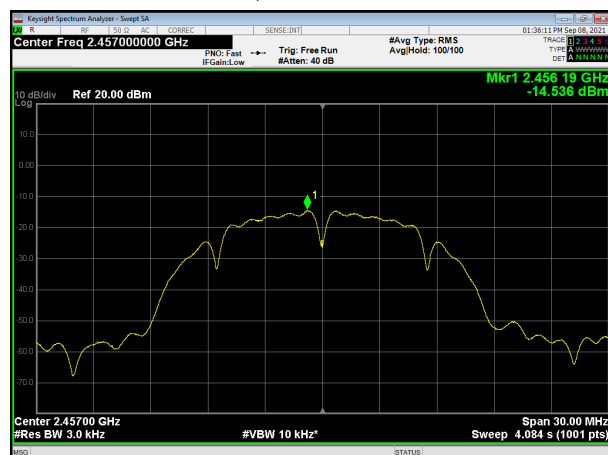
802.11b, Channel No.: 7



802.11g, Channel No.: 11



802.11b, Channel No.: 10



802.11b, Channel No.: 11

