

Test data, continued

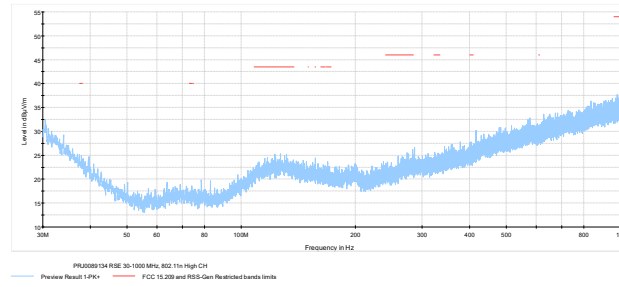


Figure 7.6-52: Radiated spurious emissions on high channel, 802.11n, 30 – 1000 MHz

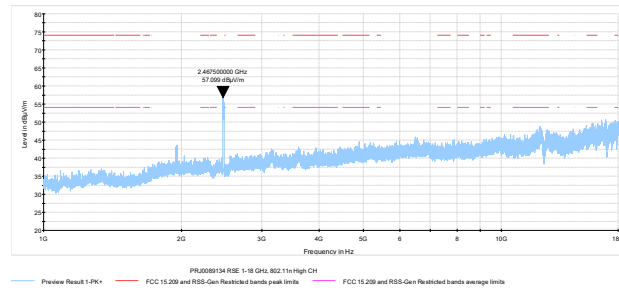


Figure 7.6-53: Radiated spurious emissions on high channel, 802.11n, 1 – 18 GHz

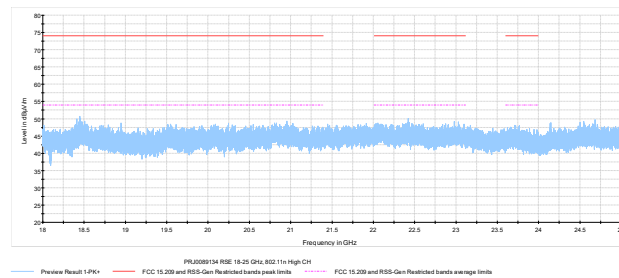


Figure 7.6-54: Radiated spurious emissions on high channel, 802.11n, 18 – 25 GHz

7.7 Power spectral density for digitally modulated devices

7.7.1 References, definitions and limits

FCC §15.247:

- (e) 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. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
- (f) For the purposes of this section, hybrid systems are those that employ a combination of both frequency hopping and digital modulation techniques. The frequency hopping operation of the hybrid system, with the direct sequence or digital modulation operation turned-off, shall have an average time of occupancy on any frequency not to exceed 0.4 seconds within a time period in seconds equal to the number of hopping frequencies employed multiplied by 0.4. 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.

RSS-247, Clause 5.2:

DTSs include systems that employ digital modulation techniques resulting in spectral characteristics similar to direct sequence systems. The following applies to the bands 902-928 MHz and 2400-2483.5 MHz:

- b. The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 5.4(d), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

RSS-247, Clause 5.3:

Hybrid systems employ a combination of both frequency hopping and digital transmission techniques and shall comply with the following:

- b. With the frequency hopping turned off, the digital transmission operation shall comply with the power spectral density requirements for digital modulation systems set out in of section 5.2(b) or section 6.2.4 for hybrid devices operating in the band 5725–5850 MHz.

7.7.2 Test summary

Verdict	Pass		
Test date	November 14, 2025	Temperature	23 °C
Tested by	Alvin Liu	Air pressure	980 mbar
Test location	Cambridge	Relative humidity	30 %

7.7.3 Observations, settings and special notes

Power spectral density test was performed as per KDB 558074, section 8.4 with reference to ANSI C63.10 subclause 11.10.

The test was conducted using the PKPSD (Peak Power Spectral Density) method. Transmit power was measured with an RMS detector; however, peak PSD represents more stringent conditions, so RMS PSD testing was not performed.

Spectrum analyser settings:

Resolution bandwidth:	3 kHz
Video bandwidth:	$\geq 3 \times \text{RBW}$
Frequency span:	1.5 times the DTS BW
Detector mode:	Peak
Trace mode:	Maxhold

7.7.4 Test data

Table 7.7-1: PSD results (antenna port measurement)

Modulation	Frequency, MHz	PSD, dBm/3 kHz	PSD limit, dBm/3 kHz	Margin, dB
802.11b	2412	-6.9	8.0	14.9
	2442	-6.7	8.0	14.7
	2467	-7.0	8.0	15.0
802.11g	2412	-9.6	8.0	17.6
	2442	-9.5	8.0	17.5
	2467	-9.3	8.0	17.3
802.11n_20MHz	2412	-9.4	8.0	17.4
	2442	-9.5	8.0	17.5
	2467	-9.5	8.0	17.5

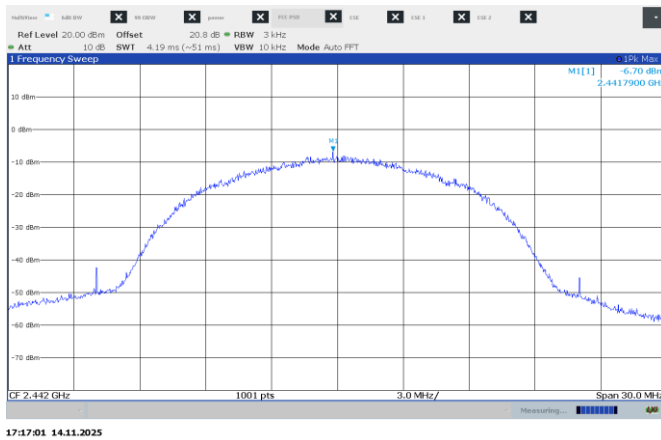


Figure 7.7-1: PSD sample plot on 802.11b

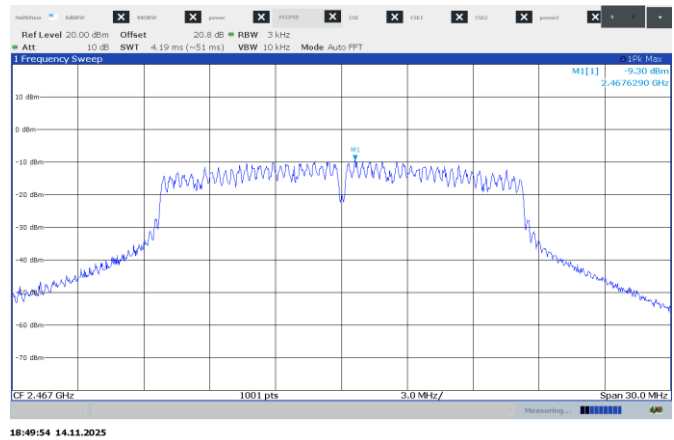


Figure 7.7-2: PSD sample plot on 802.11g

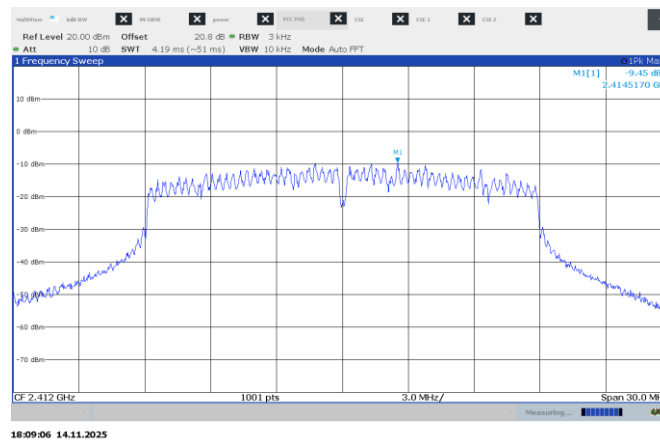
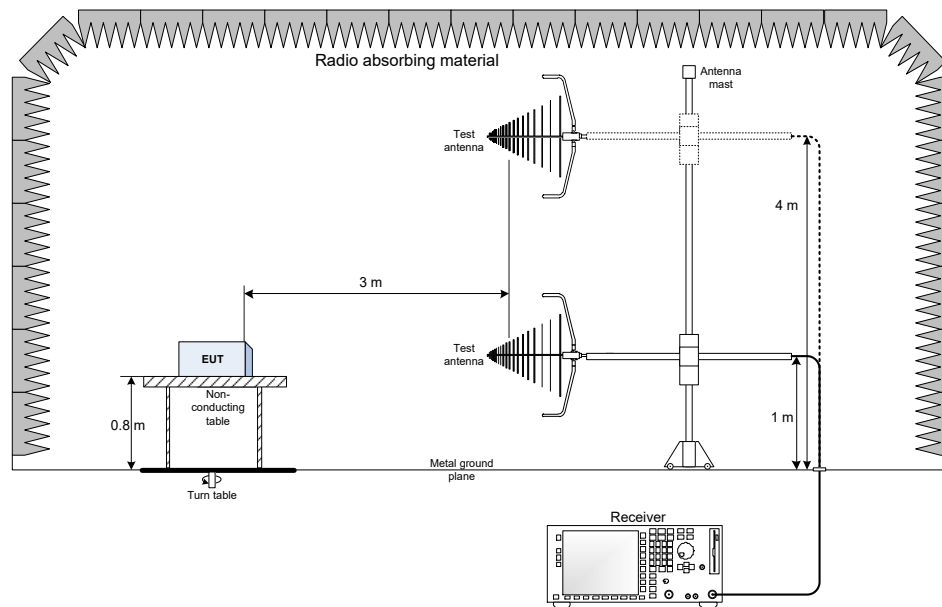


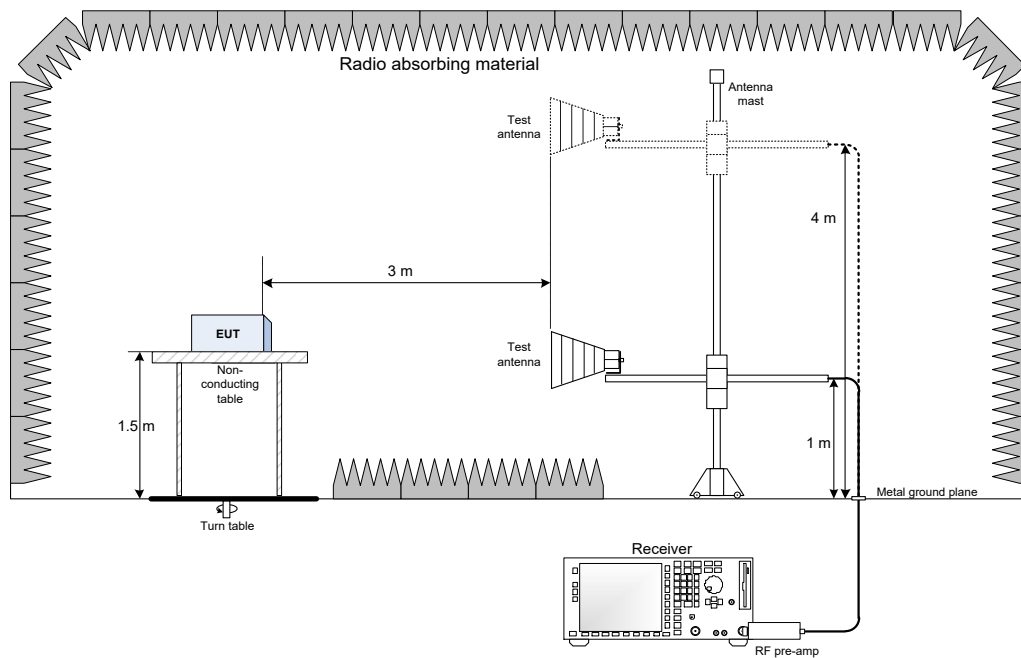
Figure 7.7-3: PSD sample plot on 802.11n

Section 8 Test setup diagrams

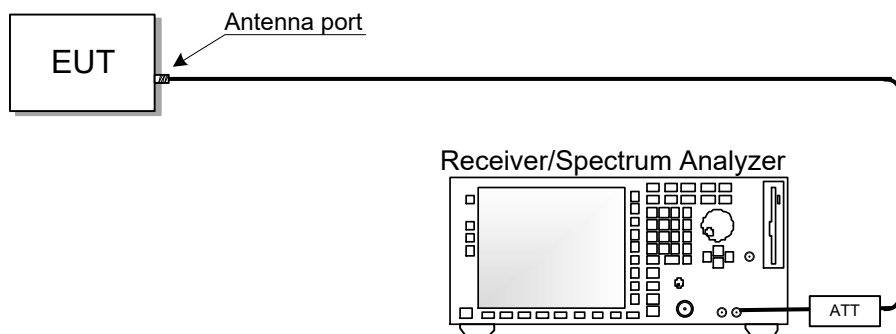
8.1 Radiated emissions set-up for frequencies below 1 GHz



8.2 Radiated emissions set-up for frequencies above 1 GHz



8.3 Antenna port set-up



End of the test report