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5.2.4 Conducted Spurious Emissions

RESULT:

PASS

Date of testing: 2021-01-22

Ambient temperature: 22°C

Relative humidity: 39%

Atmospheric pressure: 1014hPa

Requirements:

FCC 15.247(d)

In any 100kHz bandwidth outside the frequency band in which the intentional radiator is operating, the RF power shall be at least 20dB below that of the maximum in-band 100kHz emission.

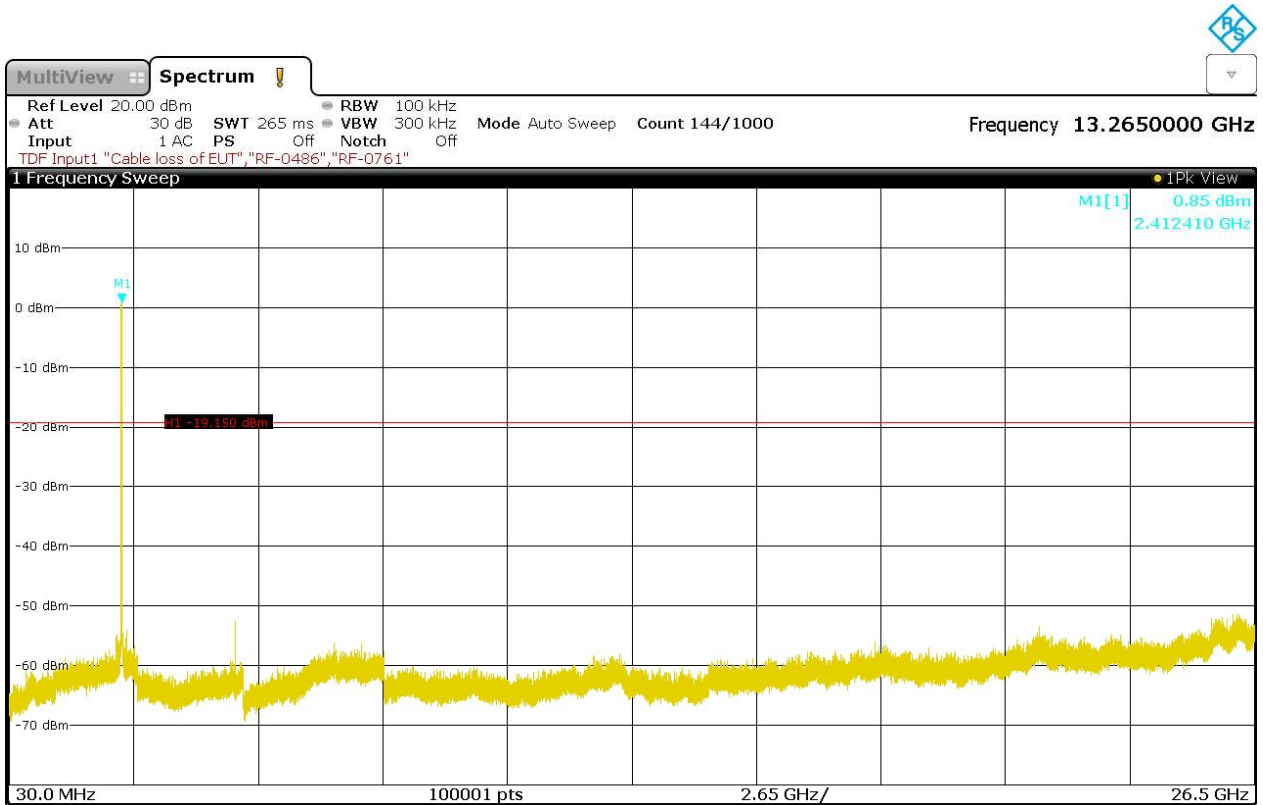
Test procedure:

KDB Publication No. 558074 D01.

The conducted spurious emissions were measured at the antenna port with a spectrum analyzer using a peak detector. The resolution bandwidth was set to 100kHz and the video bandwidth to 300kHz. Measurements were performed from 30MHz to 25GHz (10th harmonics).

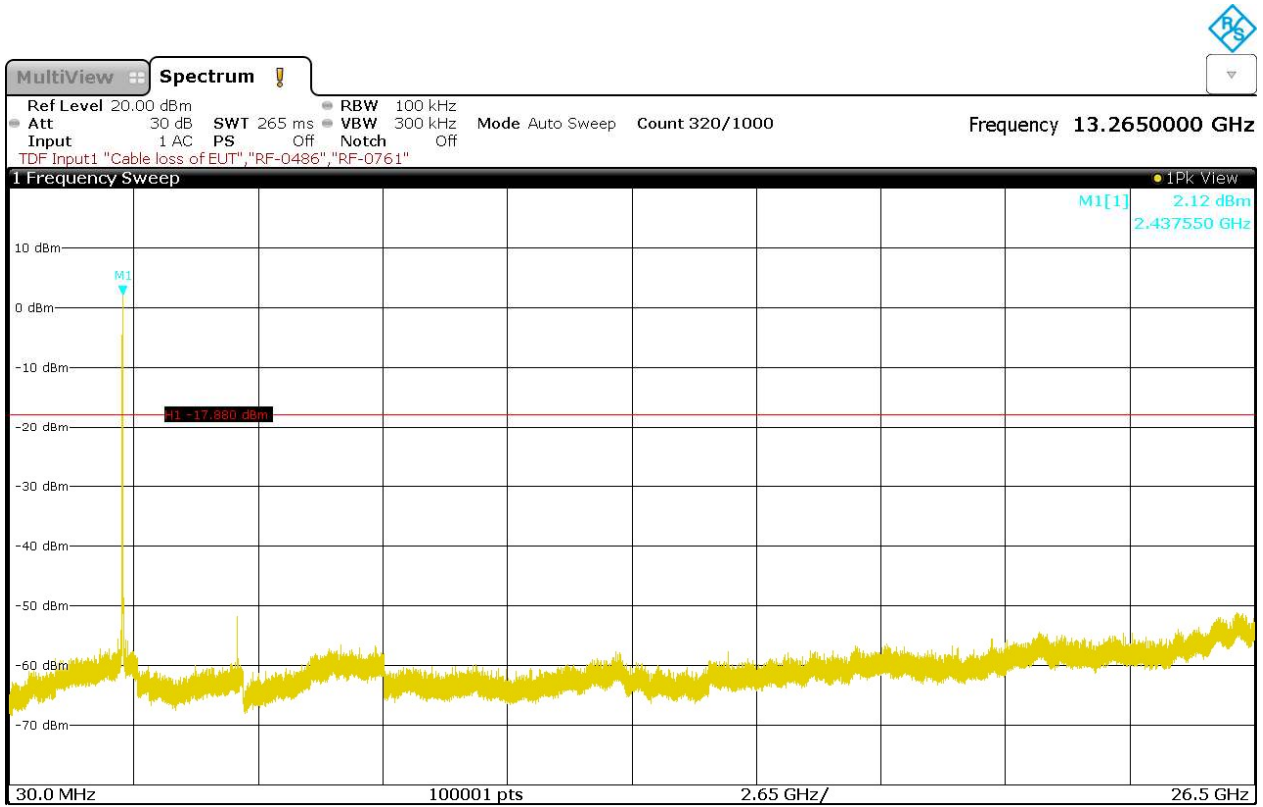
The readings of the measurements take into account the loss generated by all the involved cables.

Figure 21: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11b, Mode A (2412MHz)



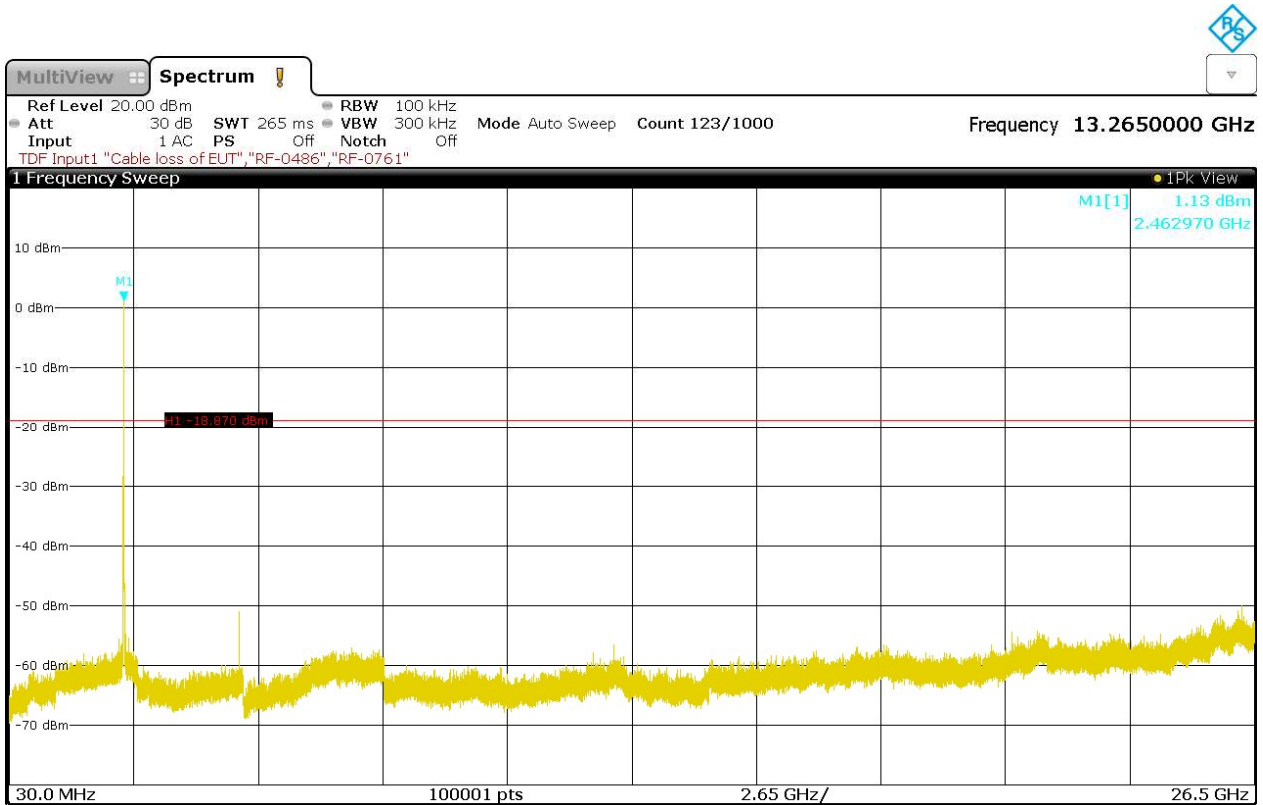
14:13:01 22.01.2021

Figure 22: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11b, Mode B (2437MHz)



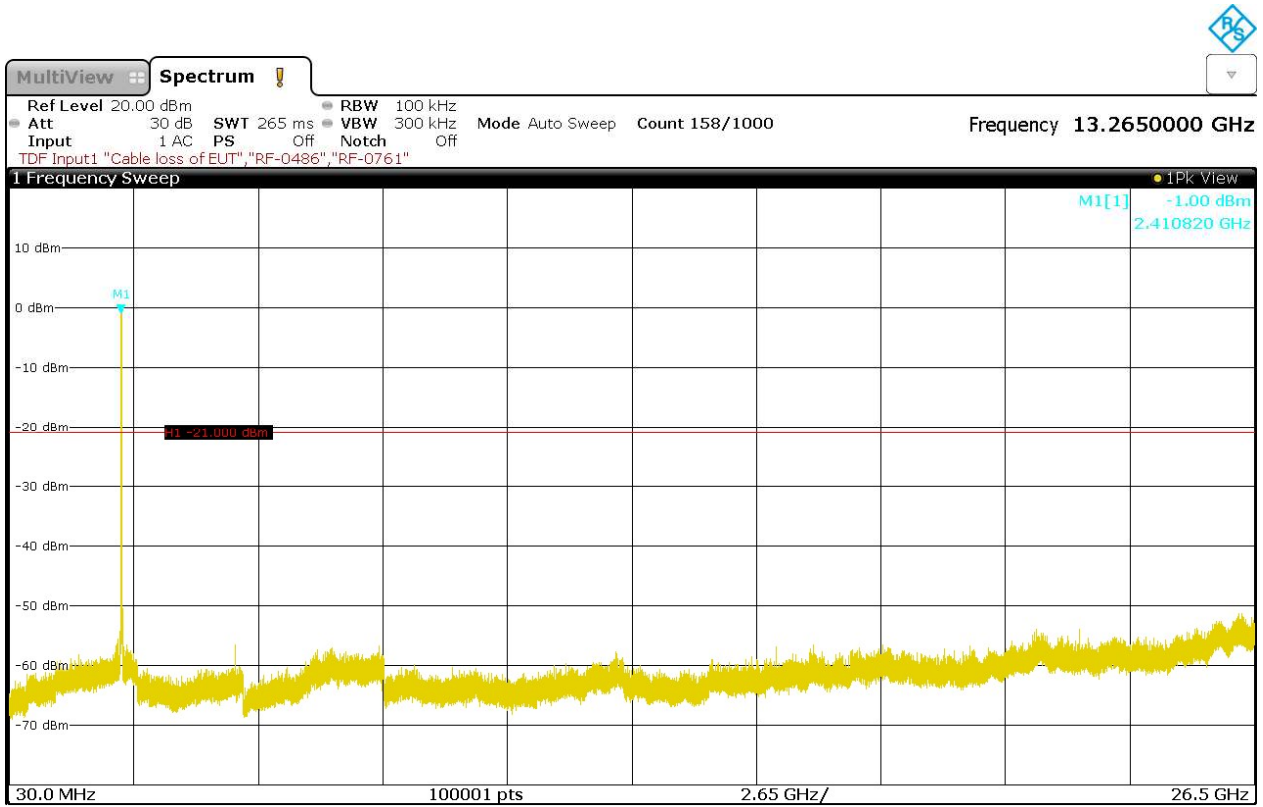
14:10:38 22.01.2021

Figure 23: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11b, Mode C (2462MHz)



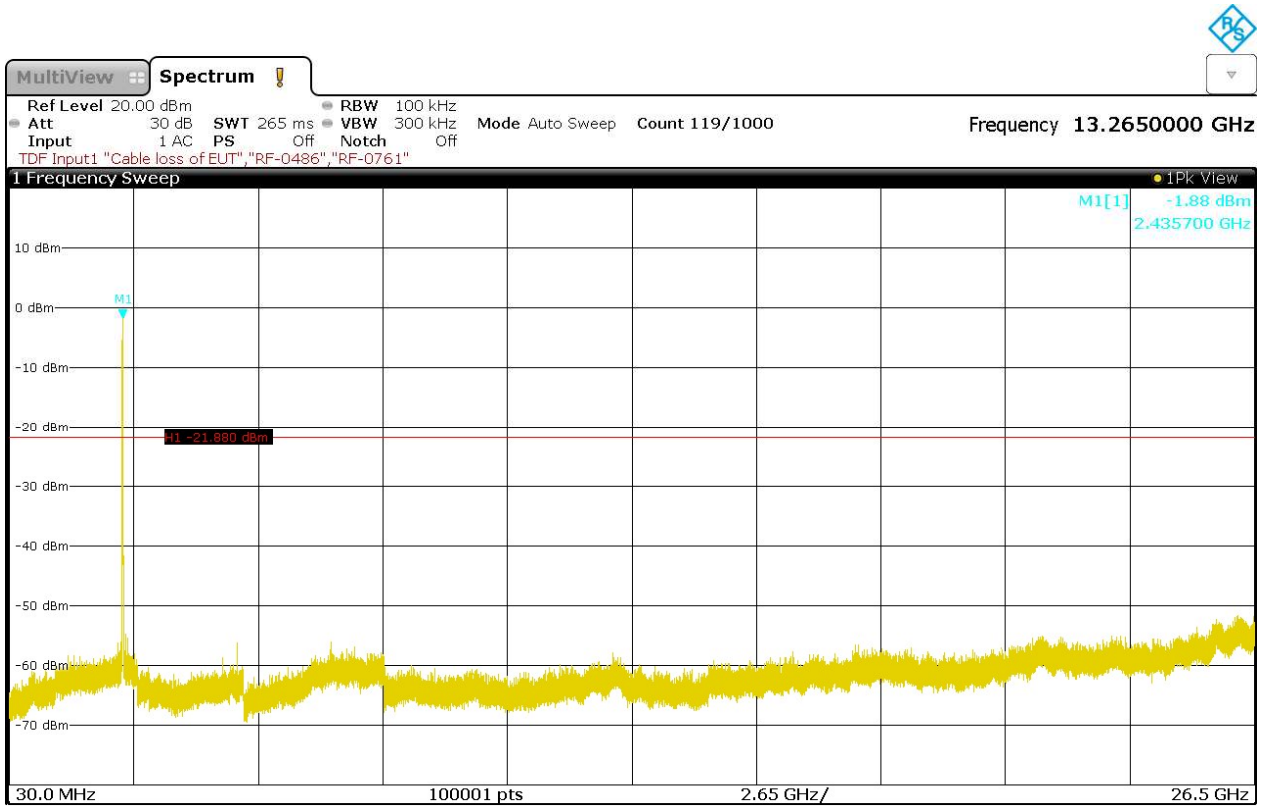
14:15:29 22.01.2021

Figure 24: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11g, Mode A (2412MHz)



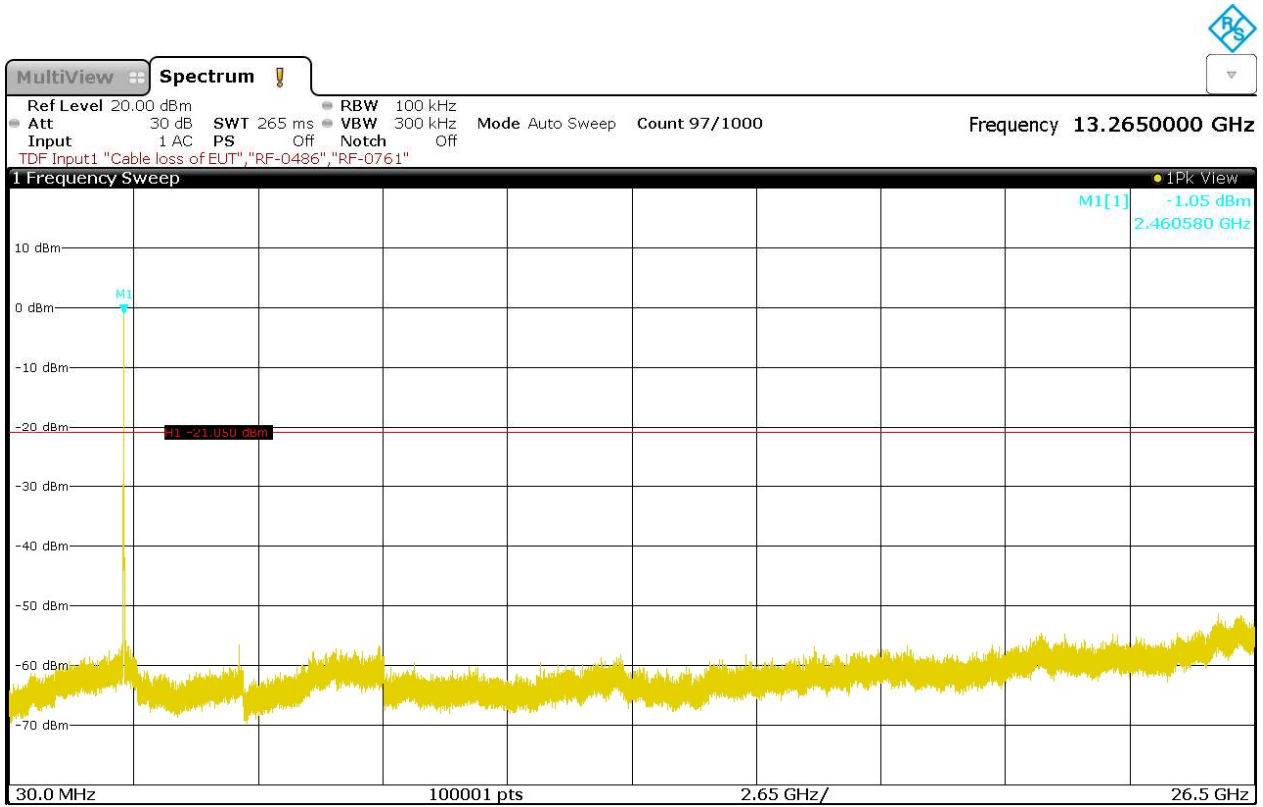
14:17:44 22.01.2021

Figure 25: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11g, Mode B (2437MHz)



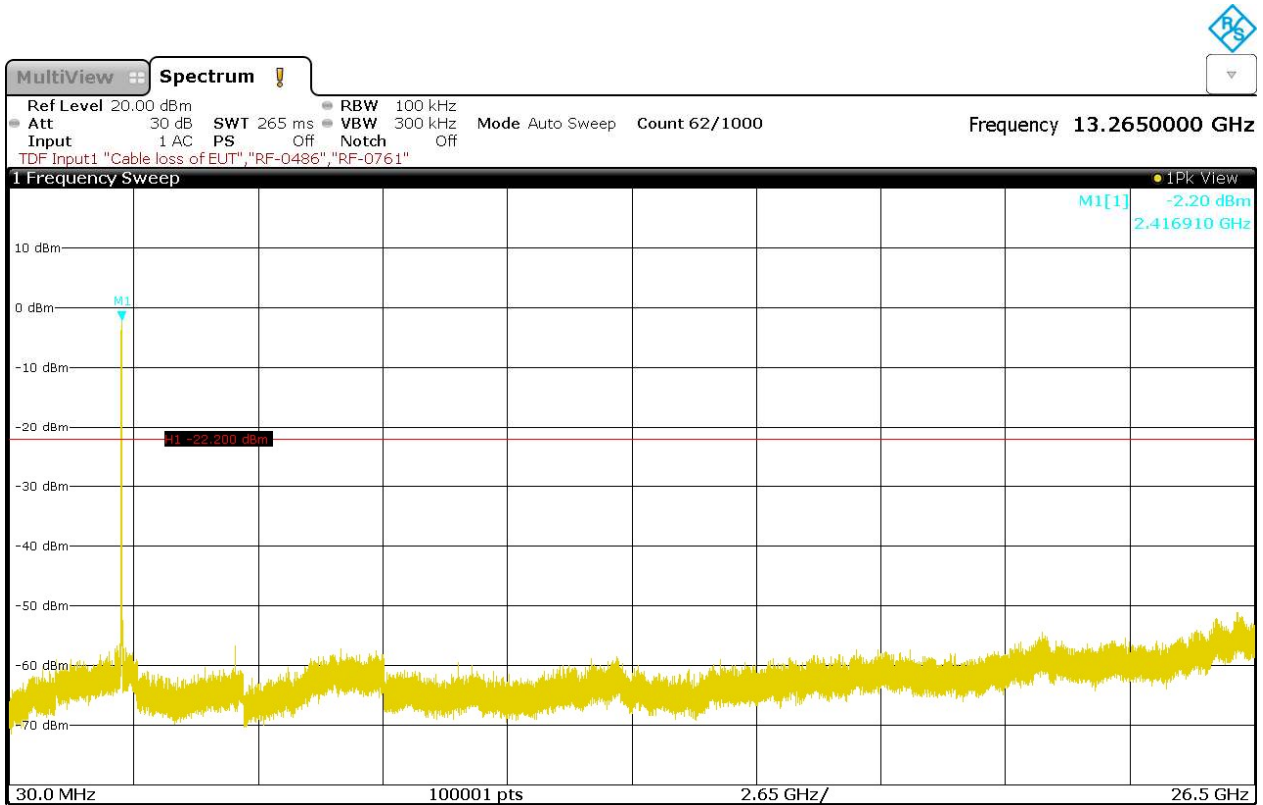
14:19:26 22.01.2021

Figure 26: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11g, Mode C (2462MHz)



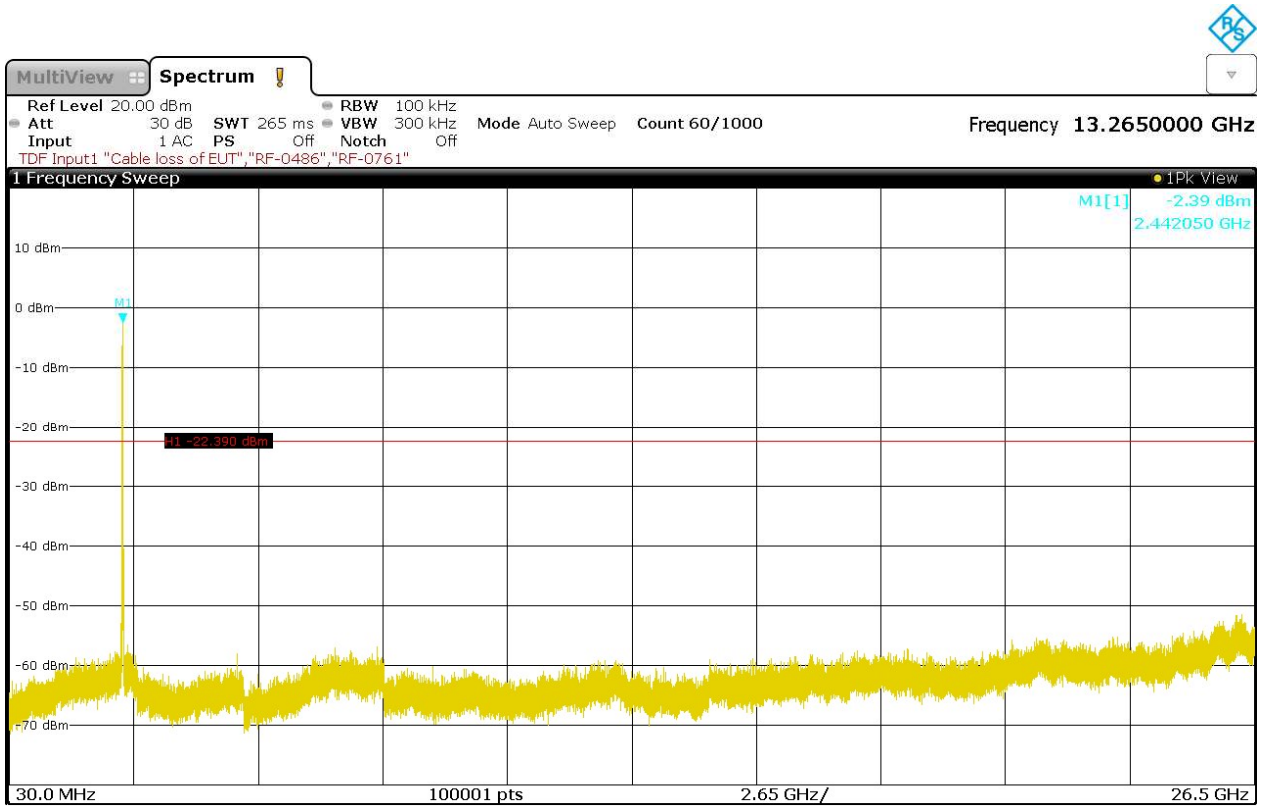
14:21:01 22.01.2021

Figure 27: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11n (20HT), Mode A (2412MHz)



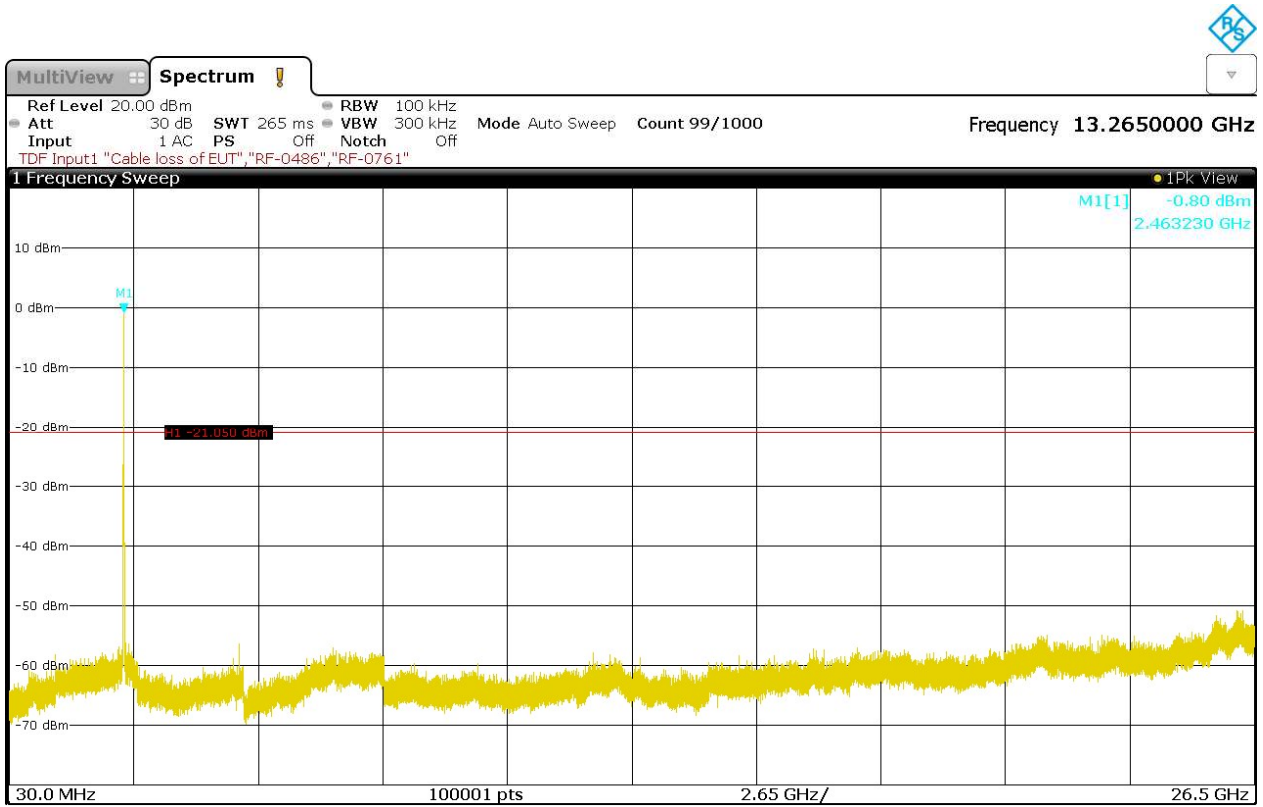
14:25:18 22.01.2021

Figure 28: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11n (20HT), Mode B (2437MHz)



14:23:59 22.01.2021

Figure 29: Conducted Spurious Emissions, 30MHz - 25GHz, 802.11n (20HT), Mode C (2462MHz)



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5.2.5 Peak Power Spectral Density

RESULT:

PASS

Date of testing: 2021-01-22

Ambient temperature: 22°C

Relative humidity: 39%

Atmospheric pressure: 1014hPa

Requirements:

FCC 15.247(e)

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

Test procedure:

KDB Publication No. 558074 D01.

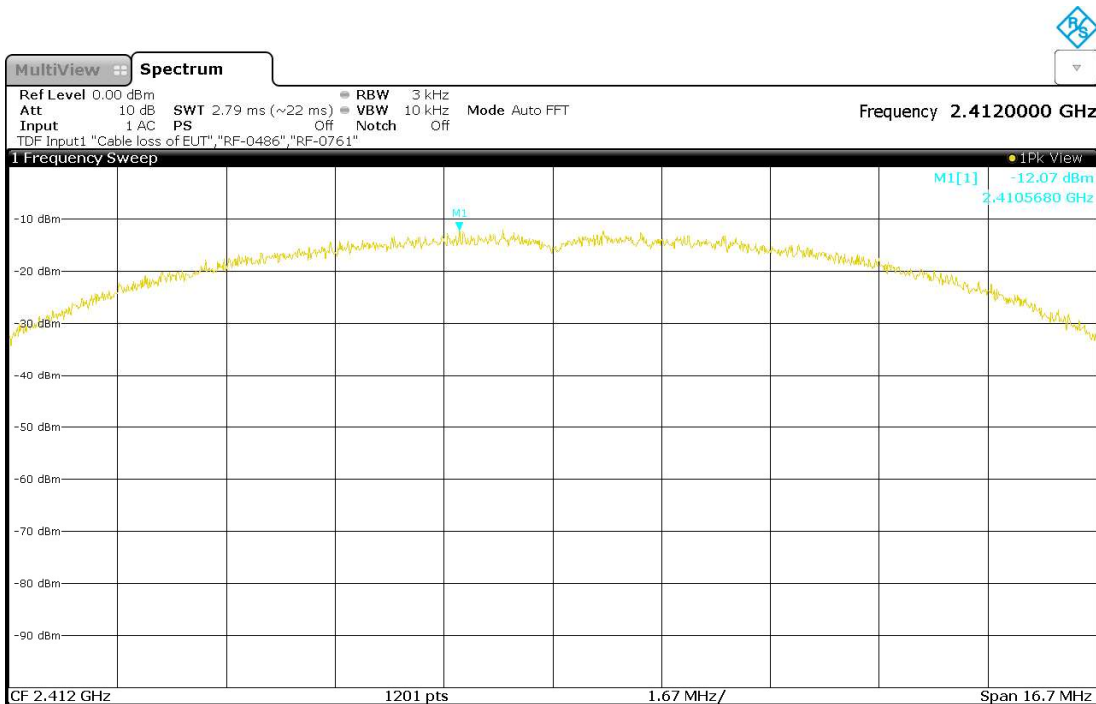
The peak power spectral density was measured at the antenna port with a spectrum analyzer using a peak detector with a resolution bandwidth of 3kHz and a video bandwidth of 10kHz.

The readings of the measurements take into account the loss generated by all the involved cables.

Table 24: Peak Power Spectral Density, 802.11b

Operating Frequency [MHz]	Max PSD Frequency [MHz]	Max PSD [dBm]	Limit [dBm]	Margin [dB]
2412	2410.568	-12.07	8	20.07
2437	2436.235	-12.11	8	20.11
2462	2460.568	-12.45	8	20.45

Figure 30: Power Spectral Density, 802.11b, Mode A (2412MHz)



10:49:49 22.01.2021

Figure 31: Power Spectral Density, 802.11b, Mode B (2437MHz)

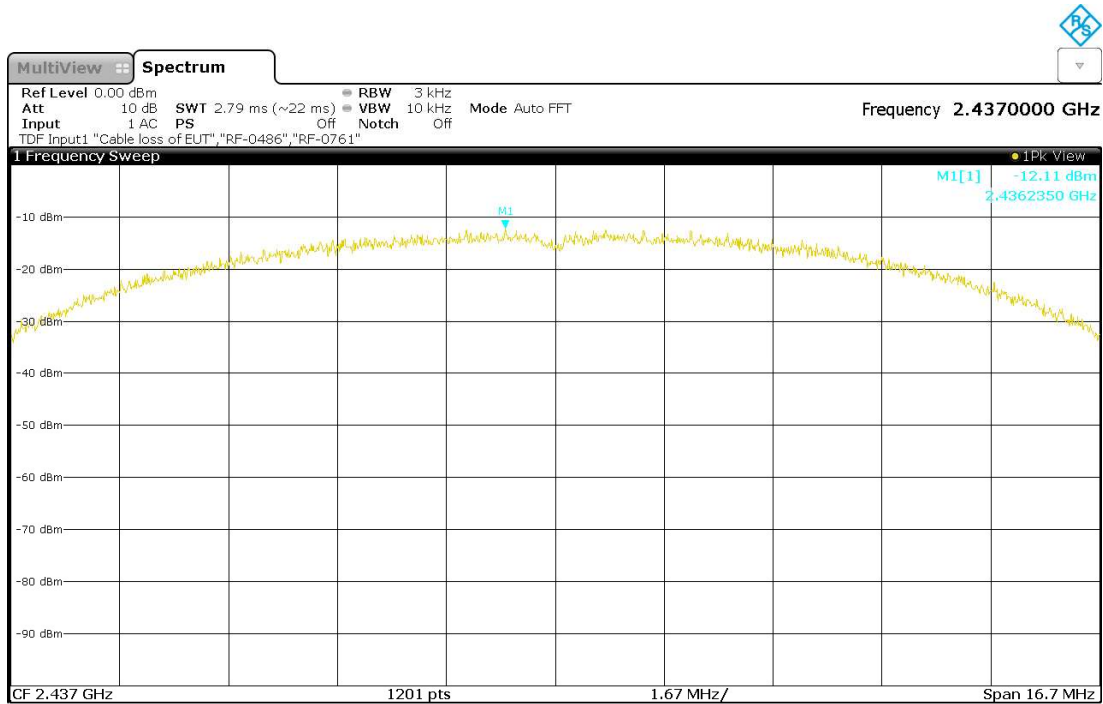


Figure 32: Power Spectral Density, 802.11b, Mode C (2462MHz)

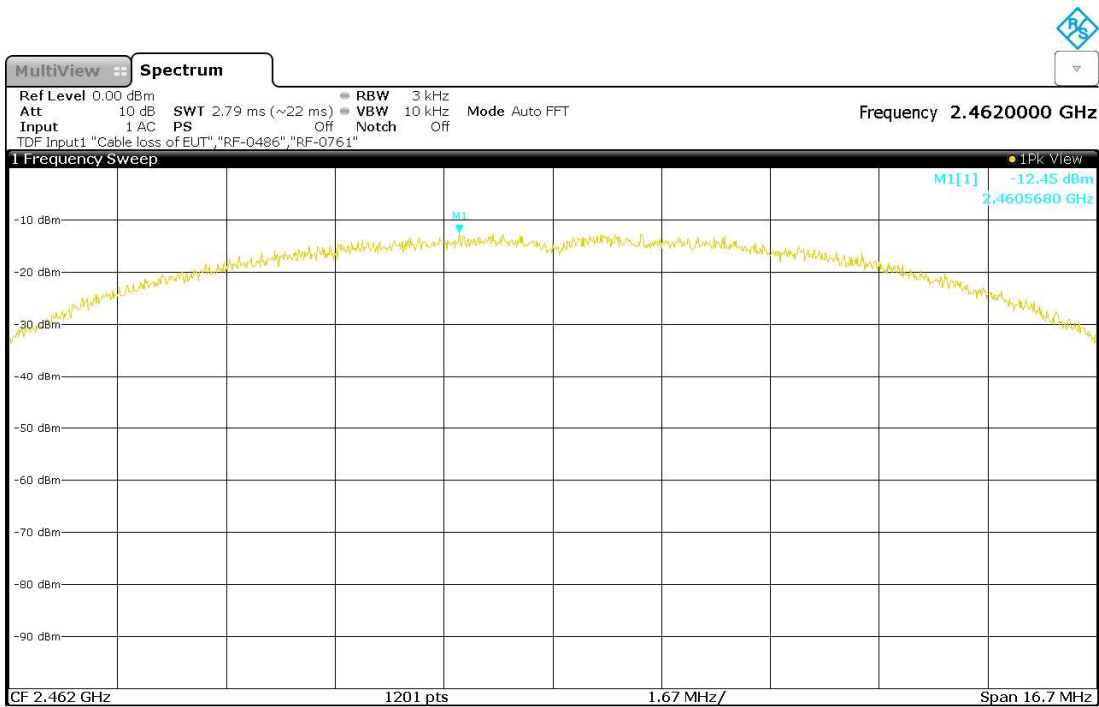
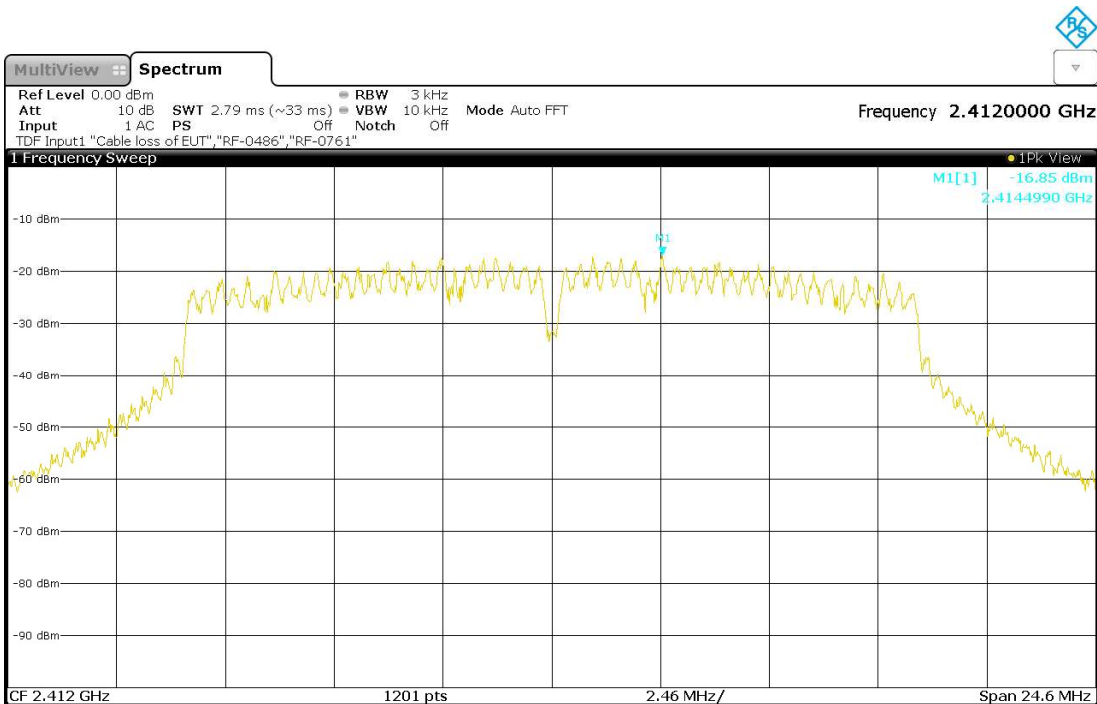


Table 25: Peak Power Spectral Density, 802.11g

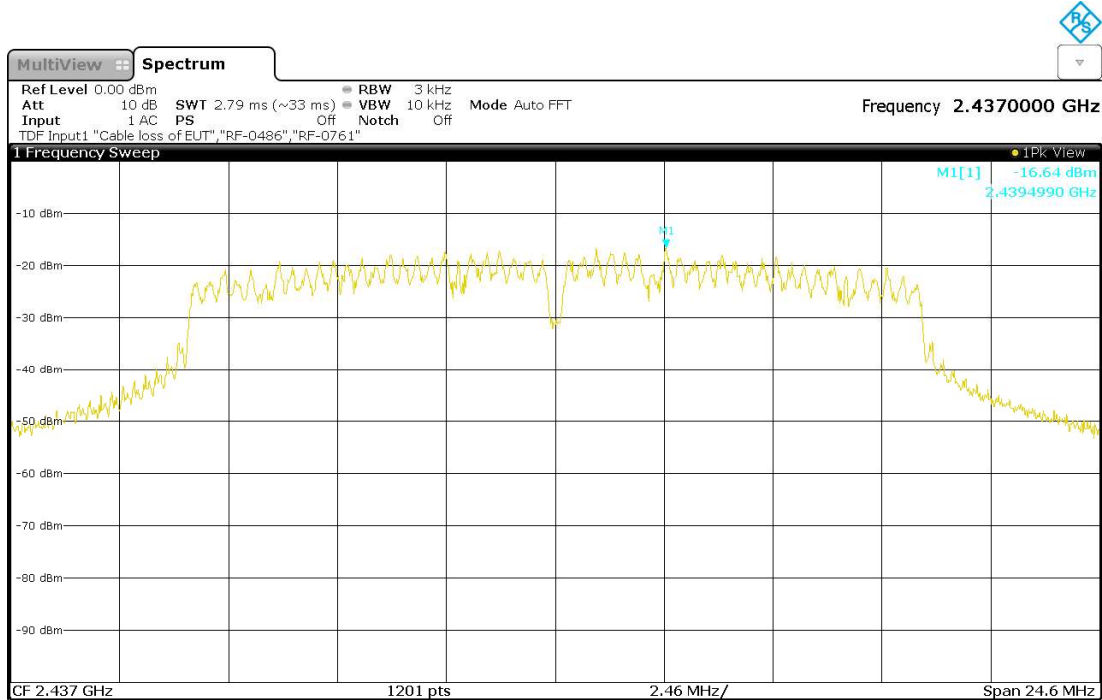
Operating Frequency [MHz]	Max PSD Frequency [MHz]	Max PSD [dBm]	Limit [dBm]	Margin [dB]
2412	2414.499	-16.85	8	24.85
2437	2439.499	-16.64	8	24.64
2462	2460.710	-16.70	8	24.70

Figure 33: Power Spectral Density, 802.11g, Mode A (2412MHz)



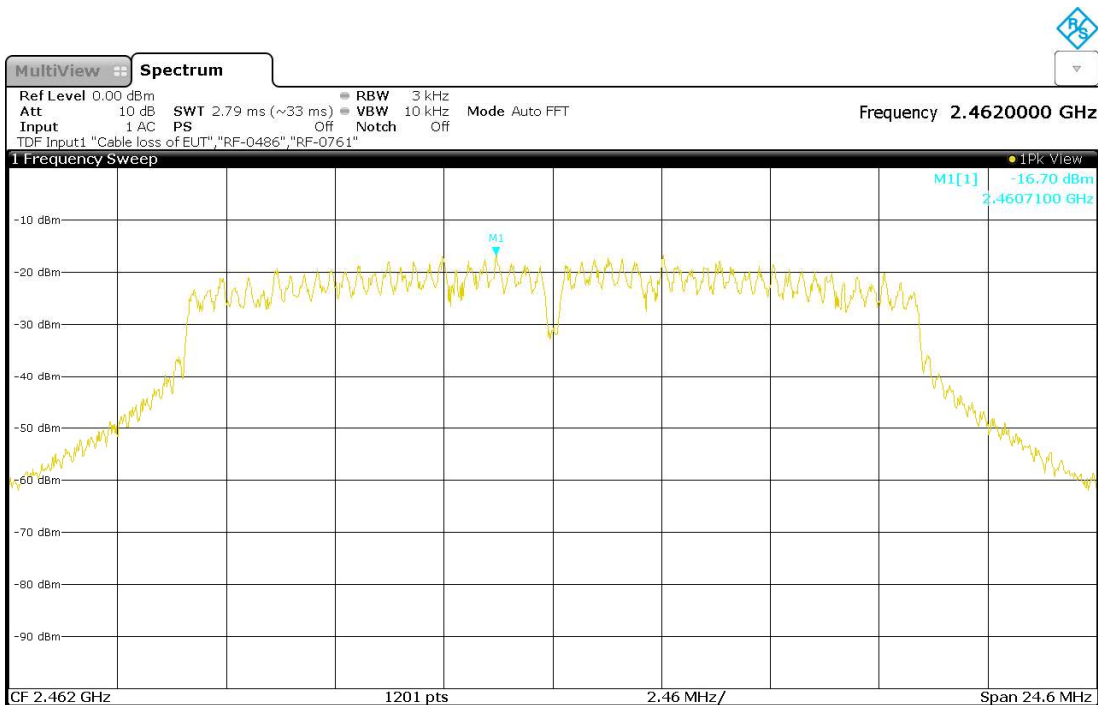
10:38:24 22.01.2021

Figure 34: Power Spectral Density, 802.11g, Mode B (2437MHz)



10:40:47 22.01.2021

Figure 35: Power Spectral Density, 802.11g, Mode C (2462MHz)

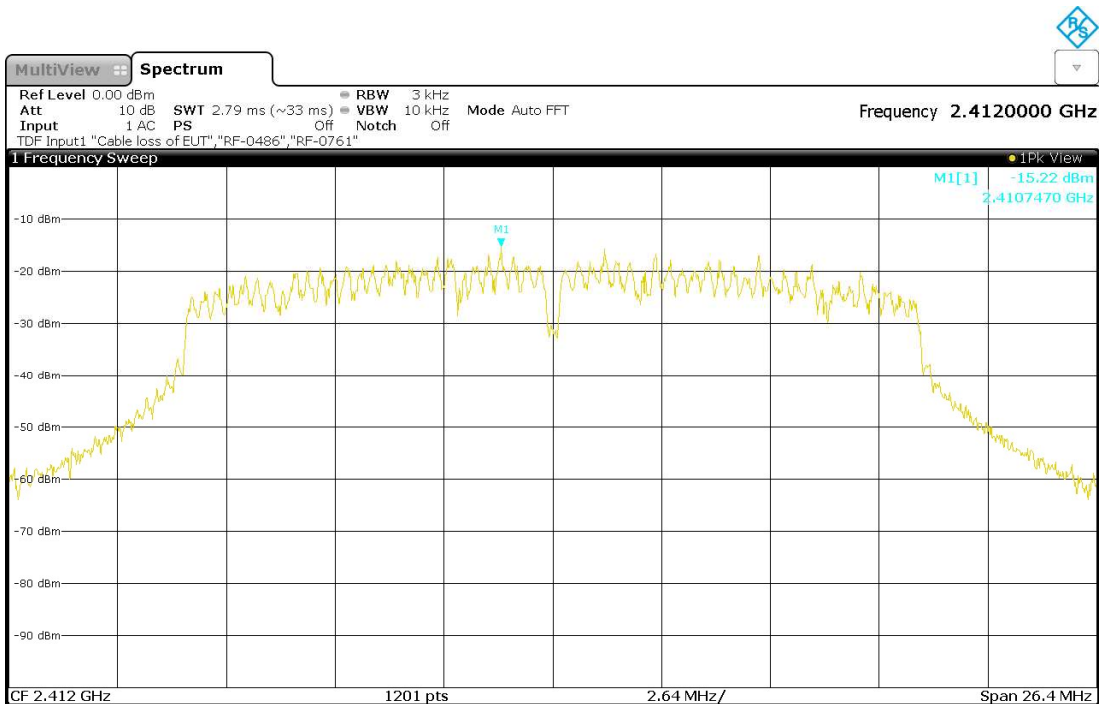


10:42:36 22.01.2021

Table 26: Peak Power Spectral Density, 802.11n (20HT)

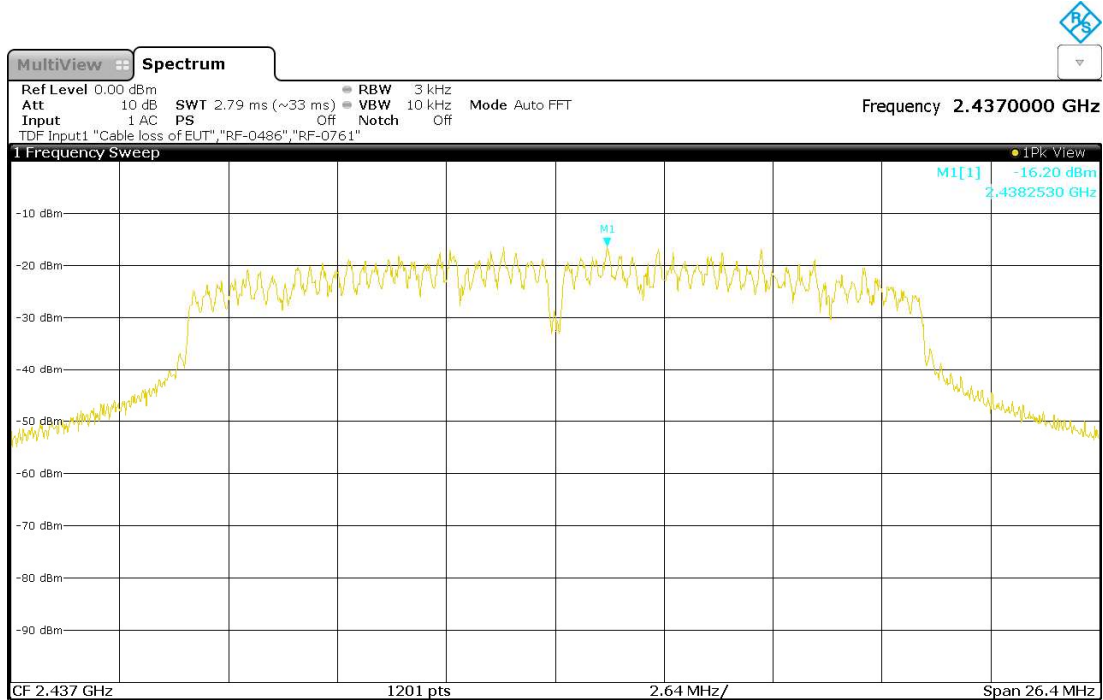
Operating Frequency [MHz]	Max PSD Frequency [MHz]	Max PSD [dBm]	Limit [dBm]	Margin [dB]
2412	2410.747	-15.22	8	23.22
2437	2438.253	-16.20	8	24.20
2462	2460.747	-16.07	8	24.07

Figure 36: Power Spectral Density, 802.11n (20HT), Mode A (2412MHz)



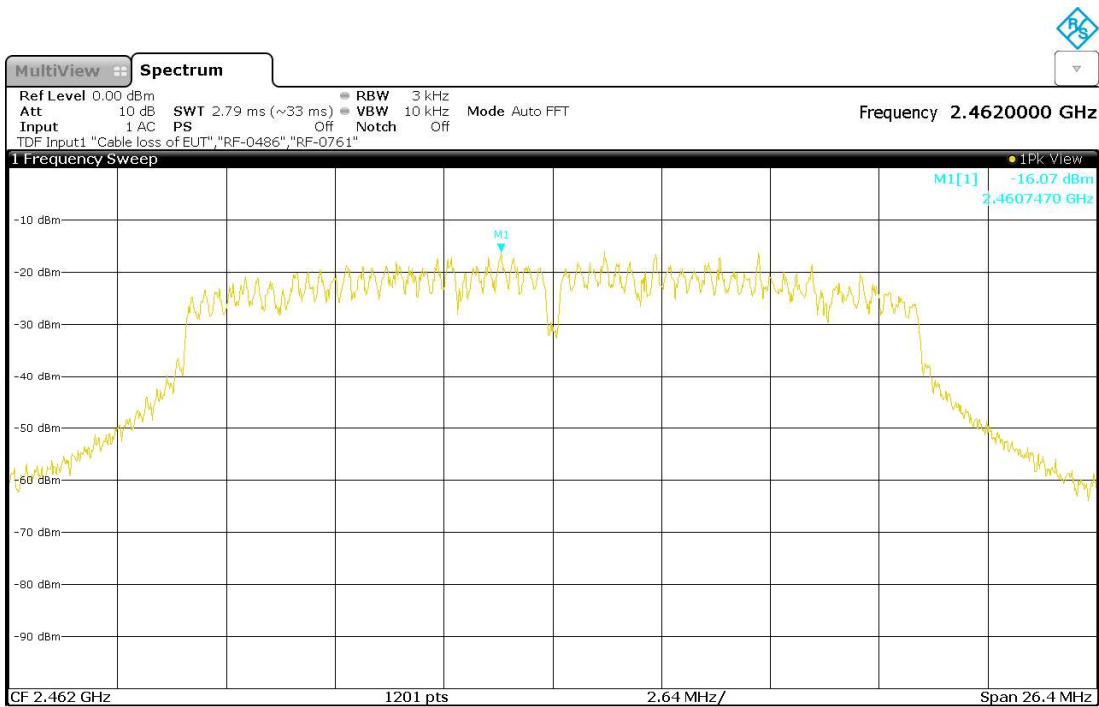
10:36:21 22.01.2021

Figure 37: Power Spectral Density, 802.11n (20HT), Mode B (2437MHz)



10:34:13 22.01.2021

Figure 38: Power Spectral Density, 802.11n (20HT), Mode C (2462MHz)



10:31:26 22.01.2021

5.2.6 Duty Cycle

RESULT:

PERFORMED

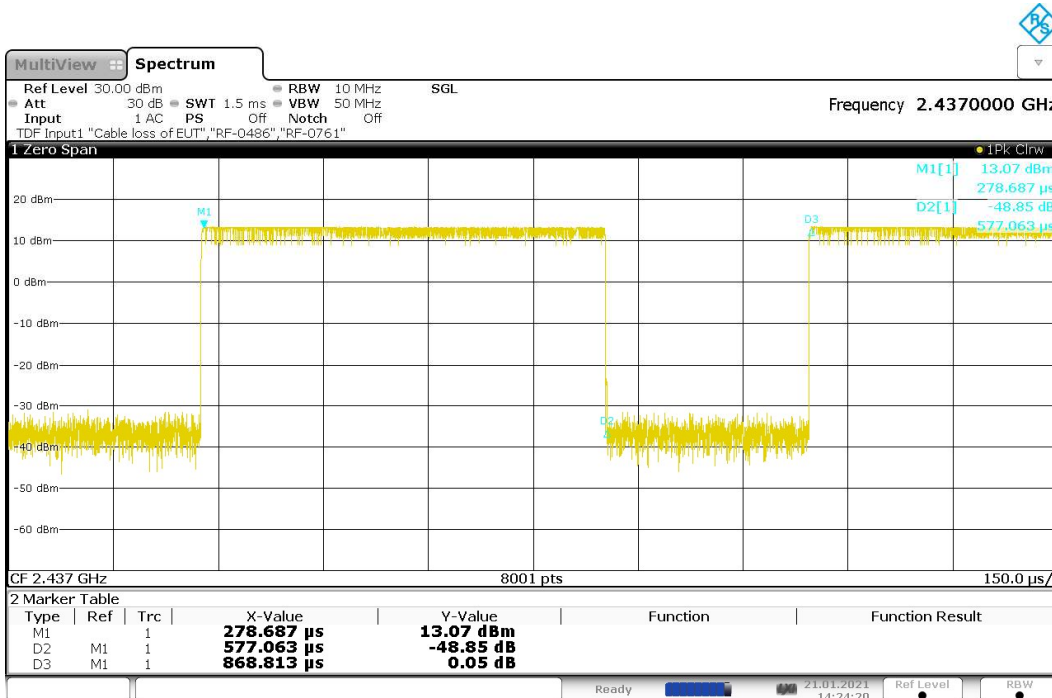
Date of testing: 2021-01-21, 2021-01-22, 2021-01-24

Ambient temperature: 22, 22, 21°C
Relative humidity: 31, 39, 43%
Atmospheric pressure: 1019, 1014, 1017hPa

Table 27: 6dB Bandwidth, 802.11b

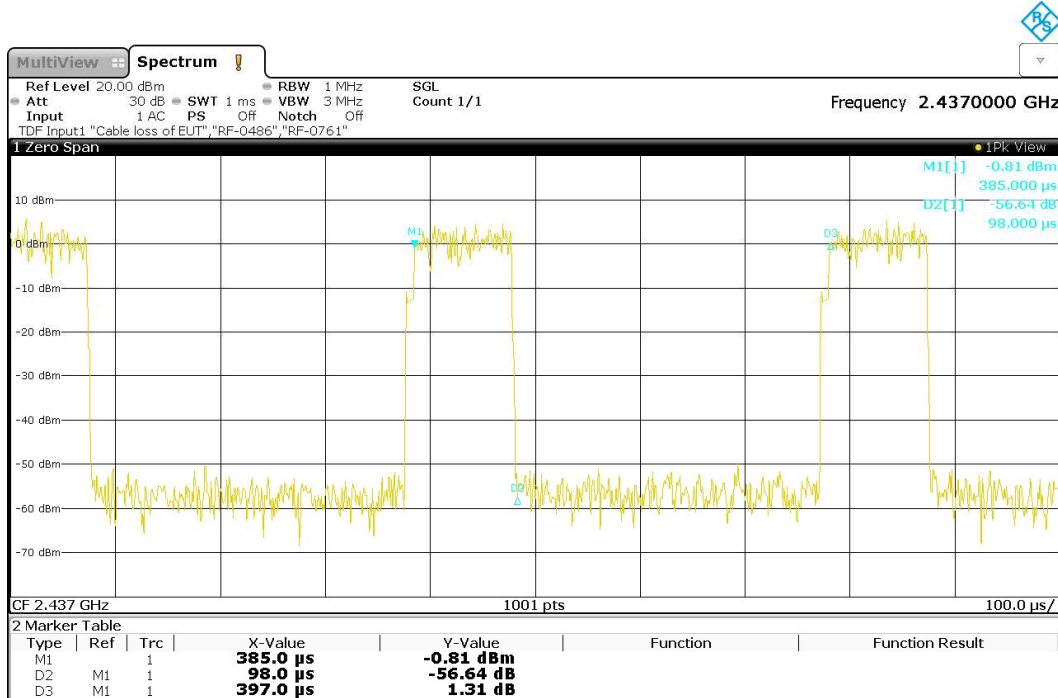
Radio	Data Rate	On-Time [us]	Period [us]	Duty Cycle
802.11b	11Mbps	577.1	868.8	66.4%
802.11g	54Mbps	98.0	397.0	24.7%
802.11n (20HT)	MCS7	104.0	400.0	26.0%

Figure 39: Duty Cycle, 802.11b, Mode B (2437MHz)



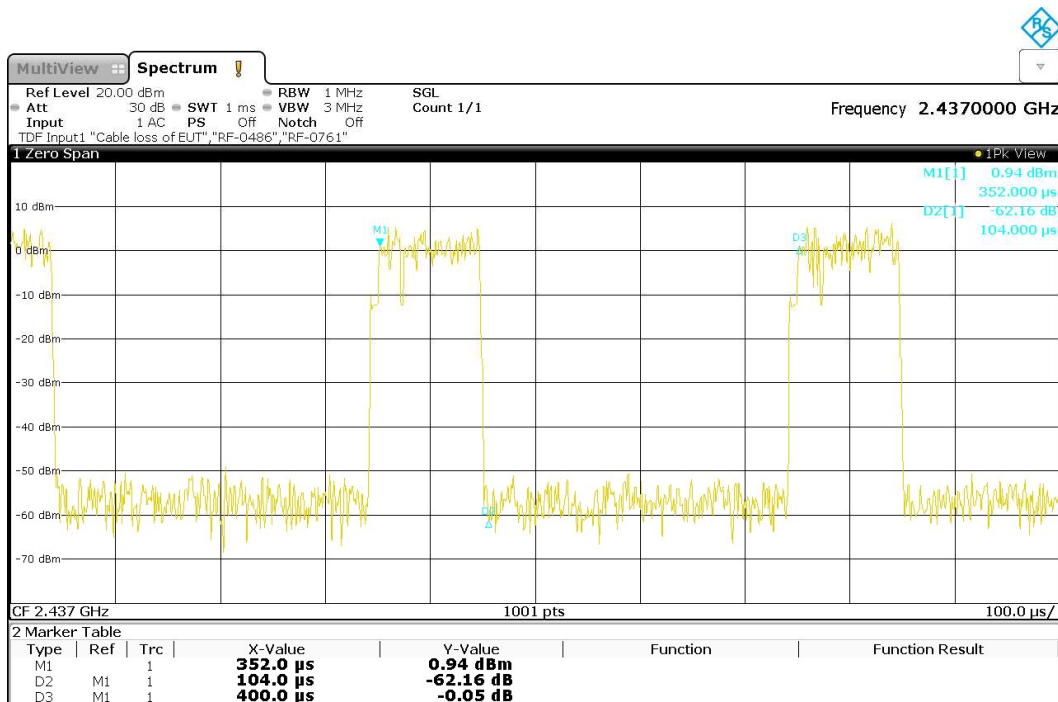
14:24:21 21.01.2021

Figure 40: Duty Cycle, 802.11g, Mode B (2437MHz)



10:29:46 24.01.2021

Figure 41: Duty Cycle, 802.11n (20HT), Mode B (2437MHz)



10:44:34 24.01.2021

5.3 Radiated Measurements

5.3.1 Radiated Spurious Emissions of Transmitter

RESULT:

PASS

Date of testing: 2021-01-13, 2021-01-18

Ambient temperature: 22, 22°C

Relative humidity: 49, 37%

Atmospheric pressure: 1010, 1013hPa

Frequency range: 9kHz - 25GHz

Measurement distance: 3m

Kind of test site: Semi Anechoic Chamber

Requirements:

FCC 15.205, FCC 15.209, FCC 15.247(d).

Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a) must comply with the radiated emission limits specified in FCC 15.209(a).

Radiated emissions which fall outside the operation frequency band and outside restricted bands shall either meet the limit specified in FCC 15.209(a) or be attenuated at least 20dB below the power level in the 100kHz bandwidth within the band that contains the highest level of the desired power (the less severe limit applies).

Test procedure:

KDB Publication No. 558074 D01, ANSI C63.10 §6.3, 6.4, 6.5, 6.6, 6.10.

The EUT was placed on a nonconductive turntable. The table height was 0.8m for measurements below 1GHz and 1.5m for measurements above 1GHz. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling were varied in order to ensure that maximum emission amplitudes were attained.

The spectrum was examined from 9kHz to the 10th harmonic of the highest fundamental transmitter frequency (25GHz). Final radiated emission measurements were made at 3m distance.

At each frequency where a spurious emission was found, the EUT was rotated 360° in order to determine the emission's maximum level. For frequencies above 30MHz, the antenna was raised and lowered from 1 to 4m and measurements were taken using both horizontal and vertical antenna polarizations.

For emissions between 30MHz and 1GHz, measurements were performed with a test receiver operating in the CISPR quasi-peak detection mode with a 6dB bandwidth set to

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120kHz. For emissions above 1GHz, measurements were performed with a spectrum analyzer using Peak and Average detector.

Absorbers have been placed on the floor between the EUT and the measuring antenna for testing above 1GHz.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Emissions other than those mentioned are small or not detectable.

Measurement was performed at 802.11g mode A from 9kHz to 30MHz and from 30MHz to 1GHz.

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Table 28: Radiated Emissions, Quasi Peak Data, 9kHz - 30MHz, 802.11g, Mode A (2412MHz)

Freq. [MHz]	Antenna Orientation	Reading QP [dBµV]	Factor [dB(1/m)]	Level QP [dBµV/m]	Limit [dBµV/m]	Margin QP [dB]	Height [cm]	Angle [°]
1.137	V	20.2	19.8	40.0	66.5	26.5	100	272

Note: Level QP = Reading QP + Factor

Table 29: Radiated Emissions, Quasi Peak Data, 30MHz - 1GHz, Horizontal and Vertical Antenna Orientations, 802.11g, Mode A (2412MHz)

Freq. [MHz]	Antenna Orientation	Reading QP [dBµV]	Factor [dB(1/m)]	Level QP [dBµV/m]	Limit [dBµV/m]	Margin QP [dB]	Height [cm]	Angle [°]
39.064	V	39.8	-22.2	17.6	40.0	22.4	101	109
70.729	V	39.6	-23.3	16.3	40.0	23.7	101	179
122.484	V	40.4	-22.9	17.5	43.5	26.0	100	10
253.135	H	38.0	-21.5	16.5	46.0	29.5	138	308
353.350	H	40.7	-17.9	22.8	46.0	23.2	110	359
505.617	V	39.9	-14.1	25.8	46.0	20.2	100	82
540.793	V	39.0	-12.9	26.1	46.0	19.9	121	18
540.797	H	42.1	-12.8	29.3	46.0	16.7	100	136
702.994	V	42.9	-10.6	32.3	46.0	13.7	100	148
702.999	H	43.8	-10.9	32.9	46.0	13.1	127	317

Note: Level QP = Reading QP + Factor

Table 30: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11b, Mode A (2412MHz)

Freq. [MHz]	Antenna Orientation	Reading PK [dBµV]	Factor [dB(1/m)]	Level PK [dBµV/m]	Limit [dBµV/m]	Margin PK [dB]	Height [cm]	Angle [°]
2308.413	V	59.5	-14.1	45.4	74.0	28.6	113	345
2308.904	H	61.0	-14.1	46.9	74.0	27.1	144	303
2514.671	H	62.7	-14.6	48.1	74.0	25.9	233	293
2515.447	V	60.6	-14.6	46.0	74.0	28.0	215	15
4823.923	H	58.1	-8.4	49.7	74.0	24.3	159	25
4824.107	V	55.7	-8.4	47.3	74.0	26.7	162	300
7361.040	V	52.0	-0.4	51.6	74.0	22.4	174	329
7361.297	H	51.8	-0.4	51.4	74.0	22.6	104	230
9647.999	V	55.3	-7.9	47.4	74.0	26.6	196	207
9648.010	H	55.6	-7.9	47.7	74.0	26.3	206	97
19296.000	H	50.8	-11.4	39.4	74.0	34.6	156	106
24120.000	H	53.1	-11.7	41.4	74.0	32.6	199	106

Note: Level PK = Reading PK + Factor

Table 31: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11b, Mode A (2412MHz)

Freq. [MHz]	Antenna Orientation	Reading AV [dBµV]	Factor [dB(1/m)]	Level AV [dBµV/m]	Limit [dBµV/m]	Margin AV [dB]	Height [cm]	Angle [°]
2308.413	V	46.5	-14.1	32.4	54.0	21.6	113	345
2308.904	H	48.8	-14.1	34.7	54.0	19.3	144	303
2514.671	H	50.5	-14.6	35.9	54.0	18.1	233	293
2515.447	V	48.1	-14.6	33.5	54.0	20.5	215	15
4823.923	H	49.7	-8.4	41.3	54.0	12.7	159	25
4824.107	V	46.7	-8.4	38.3	54.0	15.7	162	300
7361.040	V	38.6	-0.4	38.2	54.0	15.8	174	329
7361.297	H	38.6	-0.4	38.2	54.0	15.8	104	230
9647.999	V	47.1	-7.9	39.2	54.0	14.8	196	207
9648.010	H	47.7	-7.9	39.8	54.0	14.2	206	97
19296.000	H	37.3	-11.4	25.9	54.0	28.1	156	106
24120.000	H	40.1	-11.7	28.4	54.0	25.6	199	106

Note: Level AV = Reading AV + Factor

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Table 32: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11b, Mode B (2437MHz)

Freq. [MHz]	Antenna Orientation	Reading PK [dBµV]	Factor [dB(1/m)]	Level PK [dBµV/m]	Limit [dBµV/m]	Margin PK [dB]	Height [cm]	Angle [°]
2334.399	V	59.7	-14.1	45.6	74.0	28.4	156	346
2334.838	H	61.3	-14.1	47.2	74.0	26.8	126	301
2539.302	V	58.3	-14.5	43.8	74.0	30.2	135	11
2542.069	H	61.1	-14.5	46.6	74.0	27.4	135	297
4873.915	V	53.7	-8.5	45.2	74.0	28.8	144	299
4874.000	H	55.3	-8.5	46.8	74.0	27.2	200	22
7311.079	V	52.6	-0.3	52.3	74.0	21.7	181	359
7312.171	H	52.6	-0.3	52.3	74.0	21.7	181	86
9747.994	H	55.0	-7.2	47.8	74.0	26.2	152	99
9747.997	V	54.7	-7.2	47.5	74.0	26.5	108	206
19496.010	H	49.3	-11.2	38.1	74.0	35.9	139	102

Note: Level PK = Reading PK + Factor

Table 33: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11b, Mode B (2437MHz)

Freq. [MHz]	Antenna Orientation	Reading AV [dBµV]	Factor [dB(1/m)]	Level AV [dBµV/m]	Limit [dBµV/m]	Margin AV [dB]	Height [cm]	Angle [°]
2334.399	V	47.2	-14.1	33.1	54.0	20.9	156	346
2334.838	H	49.0	-14.1	34.9	54.0	19.1	126	301
2539.302	V	45.7	-14.5	31.2	54.0	22.8	135	11
2542.069	H	48.7	-14.5	34.2	54.0	19.8	135	297
4873.915	V	42.2	-8.5	33.7	54.0	20.3	144	299
4874.000	H	43.8	-8.5	35.3	54.0	18.7	200	22
7311.079	V	38.7	-0.3	38.4	54.0	15.6	181	359
7312.171	H	38.7	-0.3	38.4	54.0	15.6	181	86
9747.994	H	47.3	-7.2	40.1	54.0	13.9	152	99
9747.997	V	46.1	-7.2	38.9	54.0	15.1	108	206
19496.010	H	36.6	-11.2	25.4	54.0	28.6	139	102

Note: Level AV = Reading AV + Factor

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Table 34: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11b, Mode C (2462MHz)

Freq. [MHz]	Antenna Orientation	Reading PK [dBµV]	Factor [dB(1/m)]	Level PK [dBµV/m]	Limit [dBµV/m]	Margin PK [dB]	Height [cm]	Angle [°]
2358.584	V	59.8	-14.1	45.7	74.0	28.3	191	349
2358.736	H	62.3	-14.1	48.2	74.0	25.8	126	301
2565.644	H	60.8	-14.4	46.4	74.0	27.6	156	302
2565.778	V	58.0	-14.4	43.6	74.0	30.4	281	243
4924.103	V	54.4	-8.4	46.0	74.0	28.0	131	296
4924.210	H	55.2	-8.4	46.8	74.0	27.2	187	302
7386.512	H	52.4	-0.5	51.9	74.0	22.1	262	178
7386.917	V	51.8	-0.5	51.3	74.0	22.7	248	163
9847.976	H	56.0	-7.0	49.0	74.0	25.0	131	153
9848.005	V	56.5	-7.0	49.5	74.0	24.5	156	206
19696.020	H	50.4	-11.1	39.3	74.0	34.7	139	160

Note: Level PK = Reading PK + Factor

Table 35: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11b, Mode C (2462MHz)

Freq. [MHz]	Antenna Orientation	Reading AV [dBµV]	Factor [dB(1/m)]	Level AV [dBµV/m]	Limit [dBµV/m]	Margin AV [dB]	Height [cm]	Angle [°]
2358.584	V	47.0	-14.1	32.9	54.0	21.1	191	349
2358.736	H	50.3	-14.1	36.2	54.0	17.8	126	301
2565.644	H	48.2	-14.4	33.8	54.0	20.2	156	302
2565.778	V	44.6	-14.4	30.2	54.0	23.8	281	243
4924.103	V	43.7	-8.4	35.3	54.0	18.7	131	296
4924.210	H	43.9	-8.4	35.5	54.0	18.5	187	302
7386.512	H	38.8	-0.5	38.3	54.0	15.7	262	178
7386.917	V	38.8	-0.5	38.3	54.0	15.7	248	163
9847.976	H	48.5	-7.0	41.5	54.0	12.5	131	153
9848.005	V	50.0	-7.0	43.0	54.0	11.0	156	206
19696.020	H	37.2	-11.1	26.1	54.0	27.9	139	160

Note: Level AV = Reading AV + Factor

Table 36: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11n (20HT), Mode A (2412MHz)

Freq. [MHz]	Antenna Orientation	Reading PK [dBµV]	Factor [dB(1/m)]	Level PK [dBµV/m]	Limit [dBµV/m]	Margin PK [dB]	Height [cm]	Angle [°]
2304.203	H	59.1	-15.1	44.0	74.0	30.0	297	305
2308.798	V	60.2	-15.1	45.1	74.0	28.9	144	339
2589.828	H	56.8	-15.4	41.4	74.0	32.6	144	166
2589.931	V	57.3	-15.4	41.9	74.0	32.1	135	18
4823.785	H	56.8	-9.3	47.5	74.0	26.5	181	24
4824.269	V	54.9	-9.3	45.6	74.0	28.4	163	302
7234.691	H	52.6	-3.5	49.1	74.0	24.9	244	217
7235.734	V	52.7	-3.5	49.2	74.0	24.8	122	68
9647.997	H	56.1	-7.9	48.2	74.0	25.8	144	92
9648.013	V	55.3	-7.9	47.4	74.0	26.6	100	218
19296.570	H	51.9	-11.4	40.5	74.0	33.5	200	135

Note: Level PK = Reading PK + Factor

Table 37: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11n (20HT), Mode A (2412MHz)

Freq. [MHz]	Antenna Orientation	Reading AV [dBµV]	Factor [dB(1/m)]	Level AV [dBµV/m]	Limit [dBµV/m]	Margin AV [dB]	Height [cm]	Angle [°]
2304.203	H	43.7	-15.1	28.6	54.0	25.4	297	305
2308.798	V	43.8	-15.1	28.7	54.0	25.3	144	339
2589.828	H	48.3	-15.4	32.9	54.0	21.1	144	166
2589.931	V	49.0	-15.4	33.6	54.0	20.4	135	18
4823.785	H	48.4	-9.3	39.1	54.0	14.9	181	24
4824.269	V	45.4	-9.3	36.1	54.0	17.9	163	302
7234.691	H	38.8	-3.5	35.3	54.0	18.7	244	217
7235.734	V	38.8	-3.5	35.3	54.0	18.7	122	68
9647.997	H	45.9	-7.9	38.0	54.0	16.0	144	92
9648.013	V	44.7	-7.9	36.8	54.0	17.2	100	218
19296.570	H	38.5	-11.4	27.1	54.0	26.9	200	135

Note: Level AV = Reading AV + Factor

Table 38: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11n (20HT), Mode B (2437MHz)

Freq. [MHz]	Antenna Orientation	Reading PK [dBµV]	Factor [dB(1/m)]	Level PK [dBµV/m]	Limit [dBµV/m]	Margin PK [dB]	Height [cm]	Angle [°]
2331.774	H	61.2	-15.3	45.9	74.0	28.1	251	312
2334.854	V	59.8	-15.3	44.5	74.0	29.5	140	6
2536.632	V	58.5	-15.1	43.4	74.0	30.6	187	340
2539.118	H	60.9	-15.1	45.8	74.0	28.2	234	304
4874.000	H	56.0	-9.6	46.4	74.0	27.6	192	51
4874.020	V	55.1	-9.6	45.5	74.0	28.5	174	302
7385.678	H	51.3	-3.2	48.1	74.0	25.9	100	187
7386.091	V	52.0	-3.2	48.8	74.0	25.2	284	250
9747.982	H	56.0	-7.2	48.8	74.0	25.2	122	153
9748.003	V	54.6	-7.2	47.4	74.0	26.6	108	206
19496.810	H	51.5	-11.2	40.3	74.0	33.7	104	94

Note: Level PK = Reading PK + Factor

Table 39: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11n (20HT), Mode B (2437MHz)

Freq. [MHz]	Antenna Orientation	Reading AV [dBµV]	Factor [dB(1/m)]	Level AV [dBµV/m]	Limit [dBµV/m]	Margin AV [dB]	Height [cm]	Angle [°]
2331.774	H	45.1	-15.3	29.8	54.0	24.2	251	312
2334.854	V	43.9	-15.3	28.6	54.0	25.4	140	6
2536.632	V	43.3	-15.1	28.2	54.0	25.8	187	340
2539.118	H	45.1	-15.1	30.0	54.0	24.0	234	304
4874.000	H	45.8	-9.6	36.2	54.0	17.8	192	51
4874.020	V	44.5	-9.6	34.9	54.0	19.1	174	302
7385.678	H	38.4	-3.2	35.2	54.0	18.8	100	187
7386.091	V	38.6	-3.2	35.4	54.0	18.6	284	250
9747.982	H	46.8	-7.2	39.6	54.0	14.4	122	153
9748.003	V	44.6	-7.2	37.4	54.0	16.6	108	206
19496.810	H	37.5	-11.2	26.3	54.0	27.7	104	94

Note: Level AV = Reading AV + Factor

Table 40: Radiated Emissions, Peak Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11n (20HT), Mode C (2462MHz)

Freq. [MHz]	Antenna Orientation	Reading PK [dBµV]	Factor [dB(1/m)]	Level PK [dBµV/m]	Limit [dBµV/m]	Margin PK [dB]	Height [cm]	Angle [°]
2356.509	V	59.9	-15.3	44.6	74.0	29.4	223	8
2360.119	H	62.0	-15.4	46.6	74.0	27.4	209	309
2564.413	V	57.8	-15.3	42.5	74.0	31.5	288	331
2564.939	H	61.2	-15.3	45.9	74.0	28.1	180	288
4923.760	H	55.8	-9.5	46.3	74.0	27.7	177	17
4924.079	V	55.4	-9.5	45.9	74.0	28.1	156	307
7383.997	H	52.4	-3.2	49.2	74.0	24.8	237	218
7388.524	V	51.5	-3.2	48.3	74.0	25.7	100	7
9847.995	V	56.6	-7.0	49.6	74.0	24.4	156	206
9847.999	H	55.6	-7.0	48.6	74.0	25.4	131	153
19695.170	H	51.0	-11.1	39.9	74.0	34.1	100	359

Note: Level PK = Reading PK + Factor

Table 41: Radiated Emissions, Average Data, 1 - 25GHz, Horizontal and Vertical Antenna Orientations, 802.11n (20HT), Mode C (2462MHz)

Freq. [MHz]	Antenna Orientation	Reading AV [dBµV]	Factor [dB(1/m)]	Level AV [dBµV/m]	Limit [dBµV/m]	Margin AV [dB]	Height [cm]	Angle [°]
2356.509	V	44.1	-15.3	28.8	54.0	25.2	223	8
2360.119	H	45.6	-15.4	30.2	54.0	23.8	209	309
2564.413	V	42.7	-15.3	27.4	54.0	26.6	288	331
2564.939	H	45.1	-15.3	29.8	54.0	24.2	180	288
4923.760	H	46.0	-9.5	36.5	54.0	17.5	177	17
4924.079	V	45.9	-9.5	36.4	54.0	17.6	156	307
7383.997	H	38.5	-3.2	35.3	54.0	18.7	237	218
7388.524	V	38.6	-3.2	35.4	54.0	18.6	100	7
9847.995	V	48.1	-7.0	41.1	54.0	12.9	156	206
9847.999	H	46.3	-7.0	39.3	54.0	14.7	131	153
19695.170	H	37.2	-11.1	26.1	54.0	27.9	100	359

Note: Level AV = Reading AV + Factor

Table 42: Radiated Emissions at Band Edge, Horizontal and Vertical Antenna Orientations, 802.11b, Modes A (2412MHz) and C (2462MHz)

Operating Frequency [MHz]	Fundamental Level [dBµV/m]	Band Edge Limit [dBµV/m]	Band Edge Frequency [MHz]	Band Edge Level [dBµV/m]	Margin [dB]
2412	98.66	78.66	2400	44.82	33.84
2462	100.45	80.45	2483.5	41.44	39.01

Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values. Radiated measurement was performed with the conditions where the highest level was found for the fundamental emission.

Figure 42: Radiated Emissions at Band Edge, Spectral Diagram, 802.11b, Mode A (2412MHz)

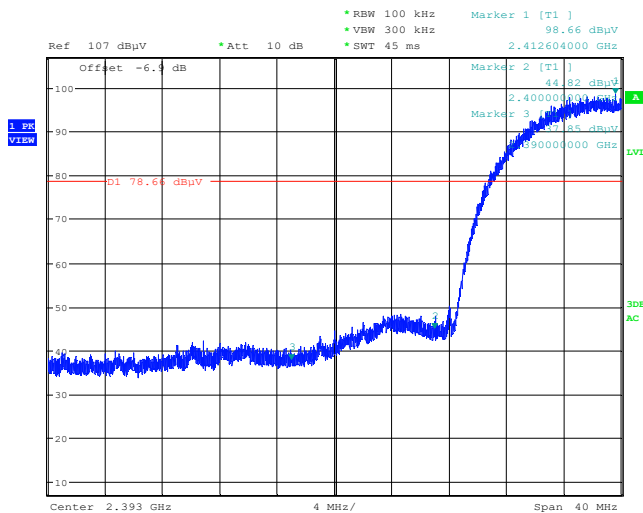


Figure 43: Radiated Emissions at Band Edge, Spectral Diagram, 802.11b, Mode C (2462MHz)

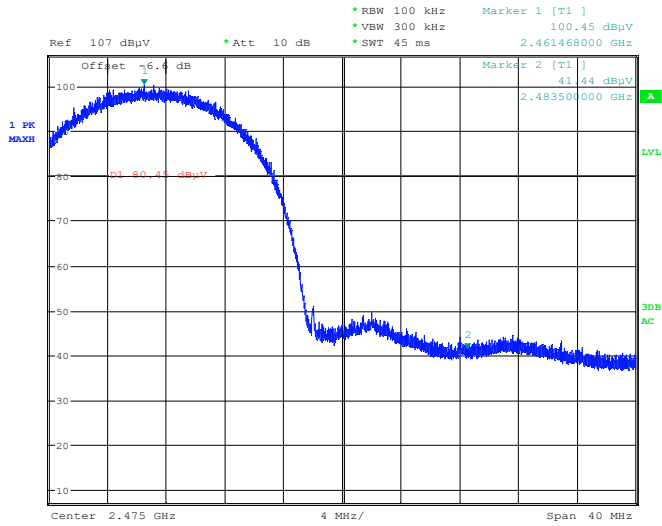
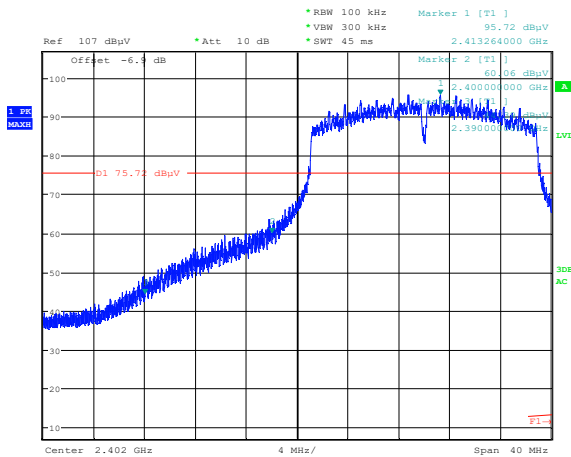


Table 43: Radiated Emissions at Band Edge, Horizontal and Vertical Antenna Orientations, 802.11n (20HT), Modes A (2412MHz) and C (2462MHz)

Operating Frequency [MHz]	Fundamental Level [dB μ V/m]	Band Edge Limit [dB μ V/m]	Band Edge Frequency [MHz]	Band Edge Level [dB μ V/m]	Margin [dB]
2412	95.72	75.72	2400	60.06	15.66
2462	96.36	76.36	2483.5	45.55	30.81

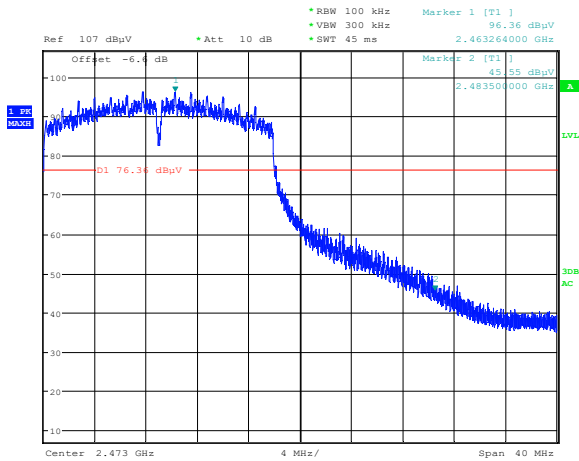
Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values. Radiated measurement was performed with the conditions where the highest level was found for the fundamental emission.

Figure 44: Radiated Emissions at Band Edge, Spectral Diagram, 802.11n (20HT), Mode A (2412MHz)



Band Edge 11n-20 2412MHz
 Date: 2.JAN.2003 06:00:04

Figure 45: Radiated Emissions at Band Edge, Spectral Diagram, 802.11n (20HT), Mode C (2462MHz)



Band Edge 11n-20 2462MHz
Date: 2.JAN.2003 05:48:47

5.4 AC Power Line Conducted Measurements

5.4.1 AC Power Line Conducted Emission of Transmitter

RESULT:

N/A

Requirements:

FCC 15.207

The AC power line conducted emission on any frequency within the band 150kHz to 30MHz shall not exceed the limits specified in FCC 15.207.

Test procedure:

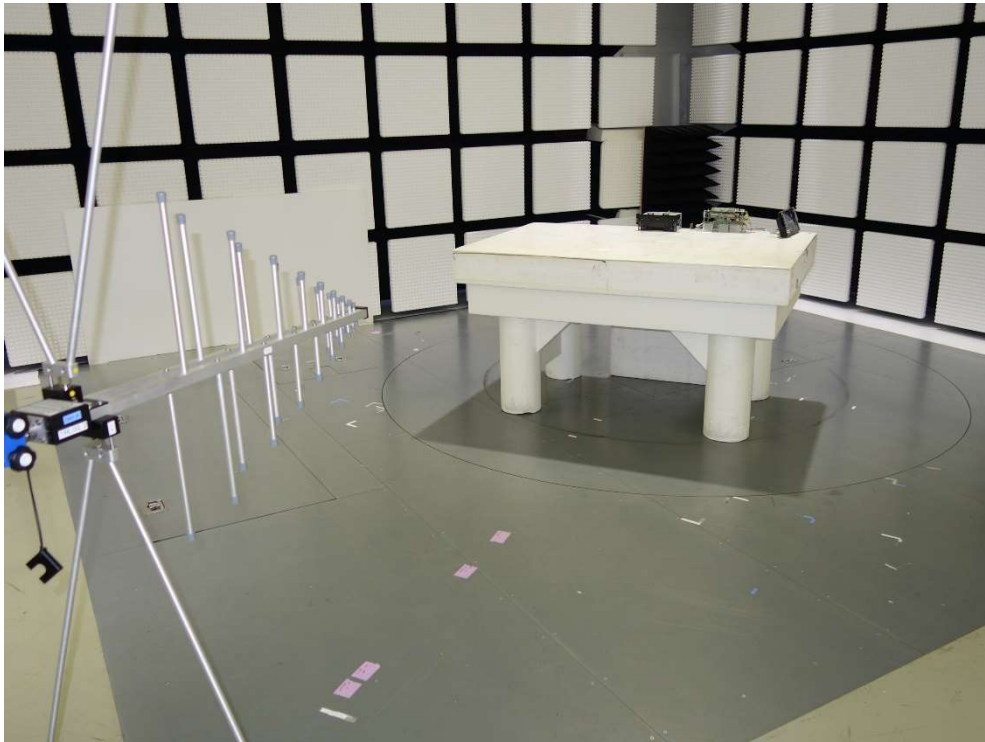
ANSI C63.10 §6.2

Note:

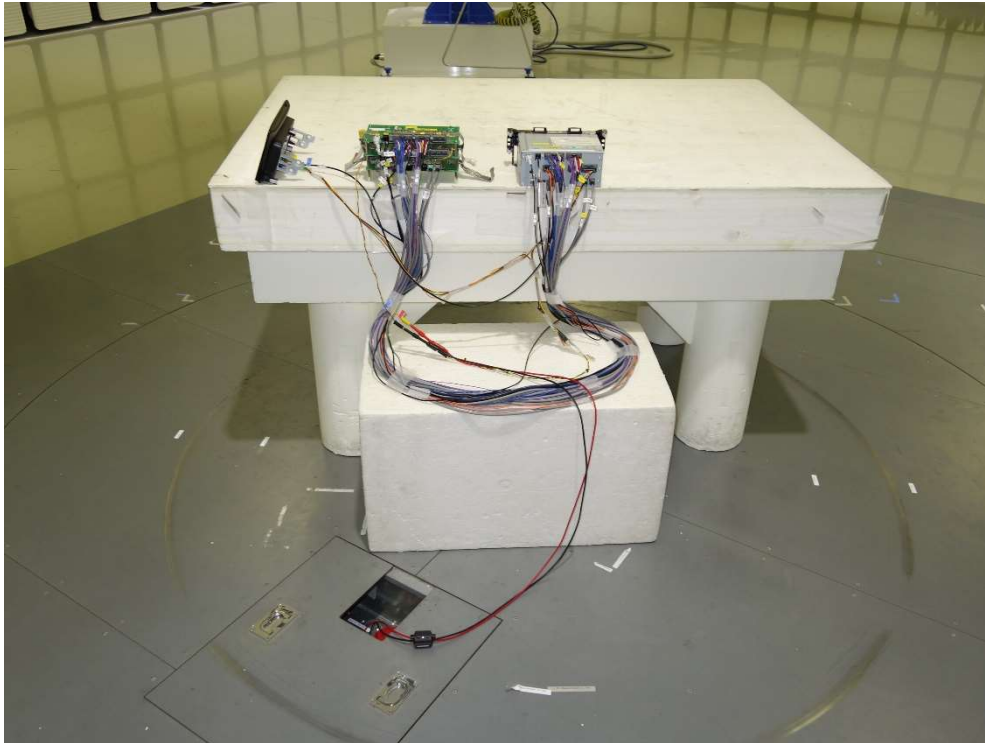
Not applicable since the EUT is not the device that is designed to be connected to the public utility (AC) power line.

7. Photographs of the Test Setup

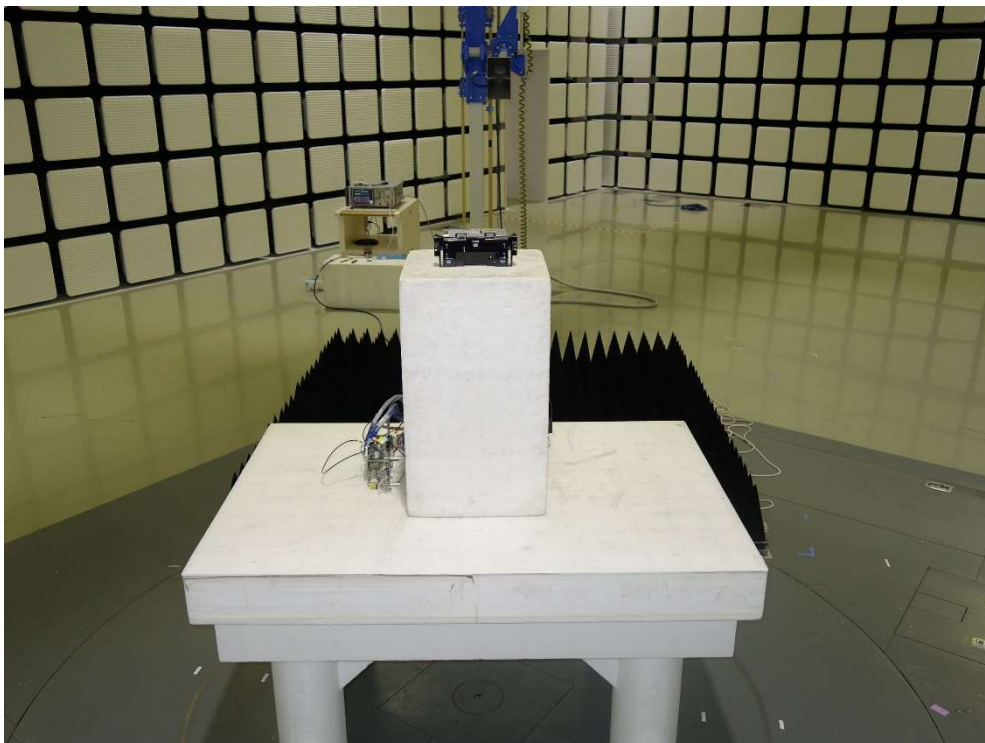
Photograph 1: Set-up for Radiated Emission of Transmitter at MHz Range, Front View



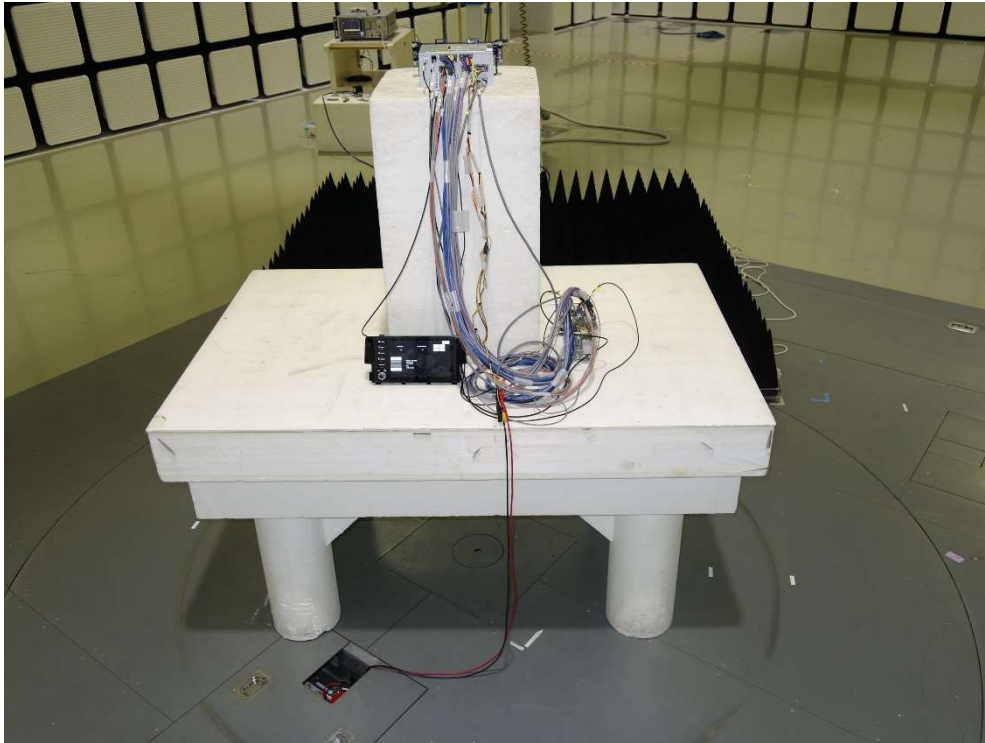
Photograph 2: Set-up for Radiated Emission of Transmitter at MHz Range, Rear View



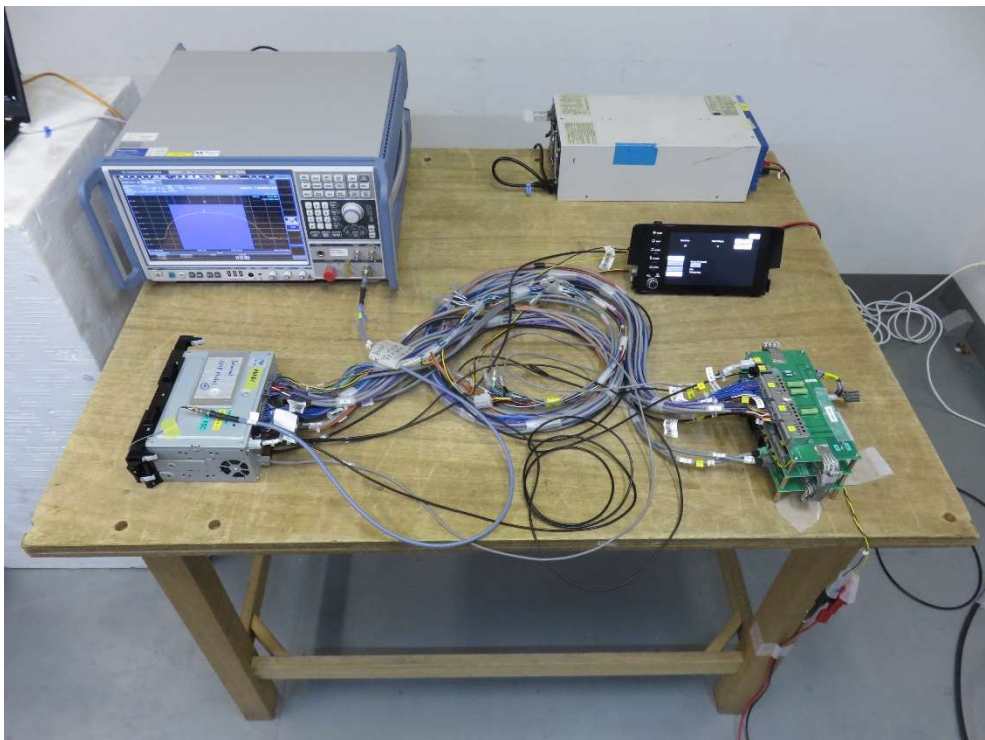
Photograph 3: Set-up for Radiated Emission of Transmitter at GHz Range, Front View



Photograph 4: Set-up for Radiated Emission of Transmitter at GHz Range, Rear View



Photograph 5: Set-up for Antenna Port Connected Test



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– End of test report –