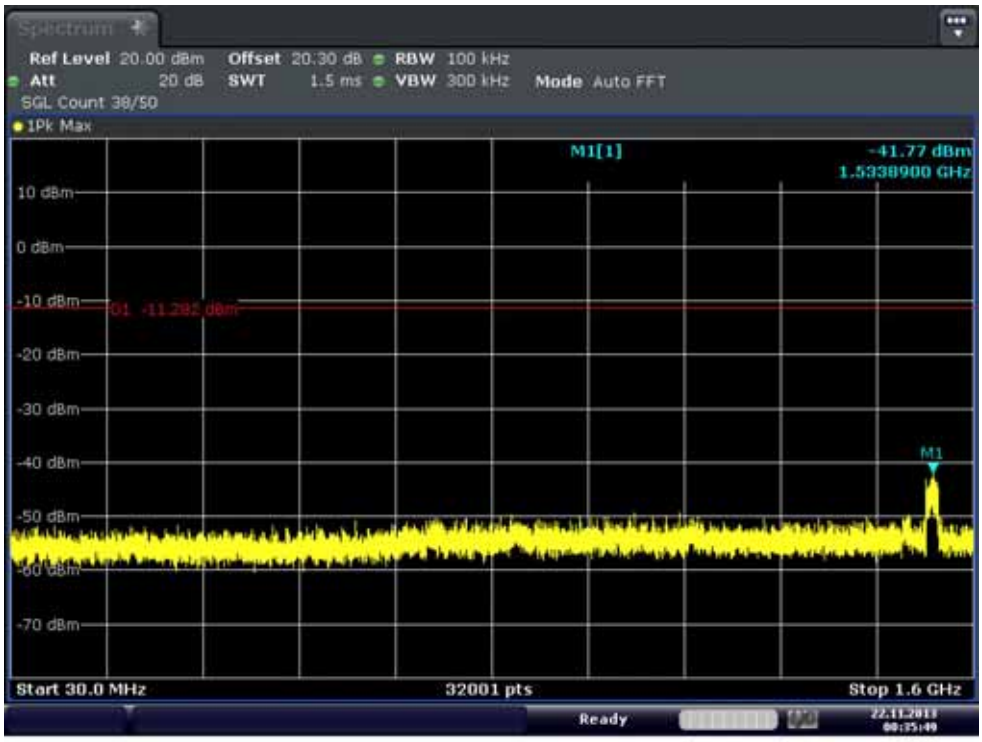
5 GHz Band

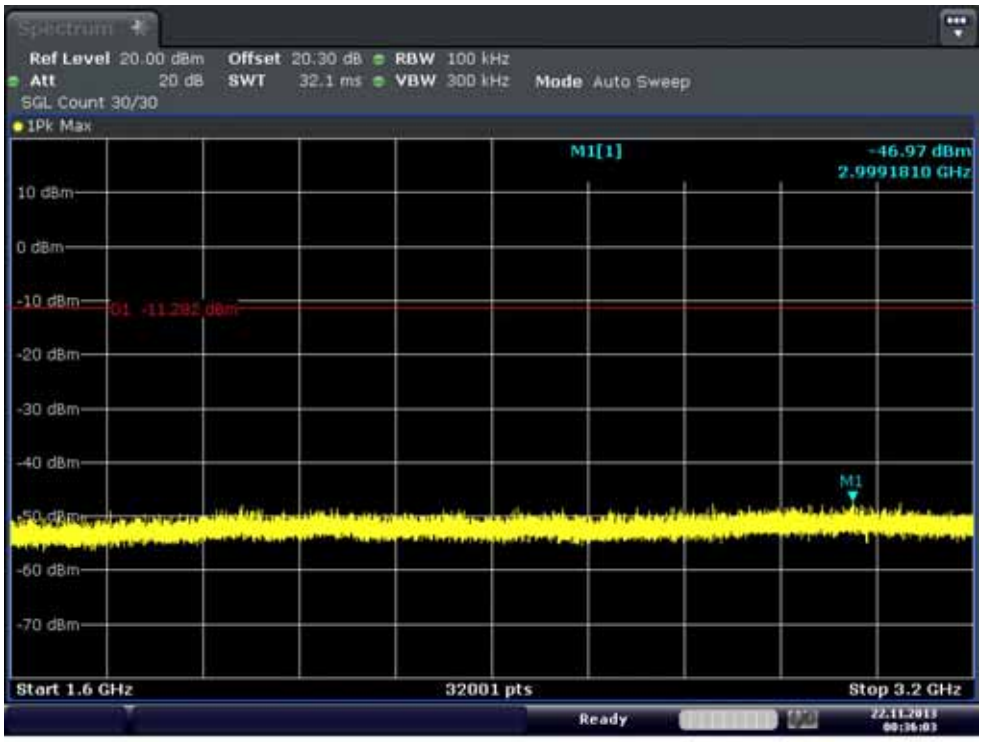
30 MHz ~ 1.6 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



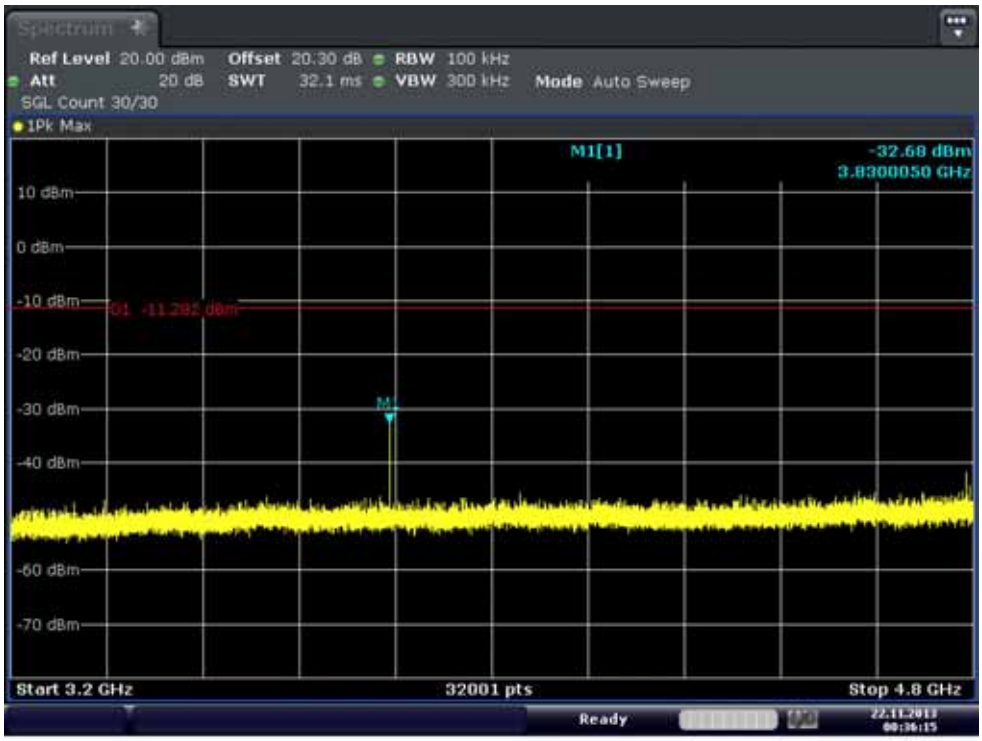
1.6 GHz ~ 3.2 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



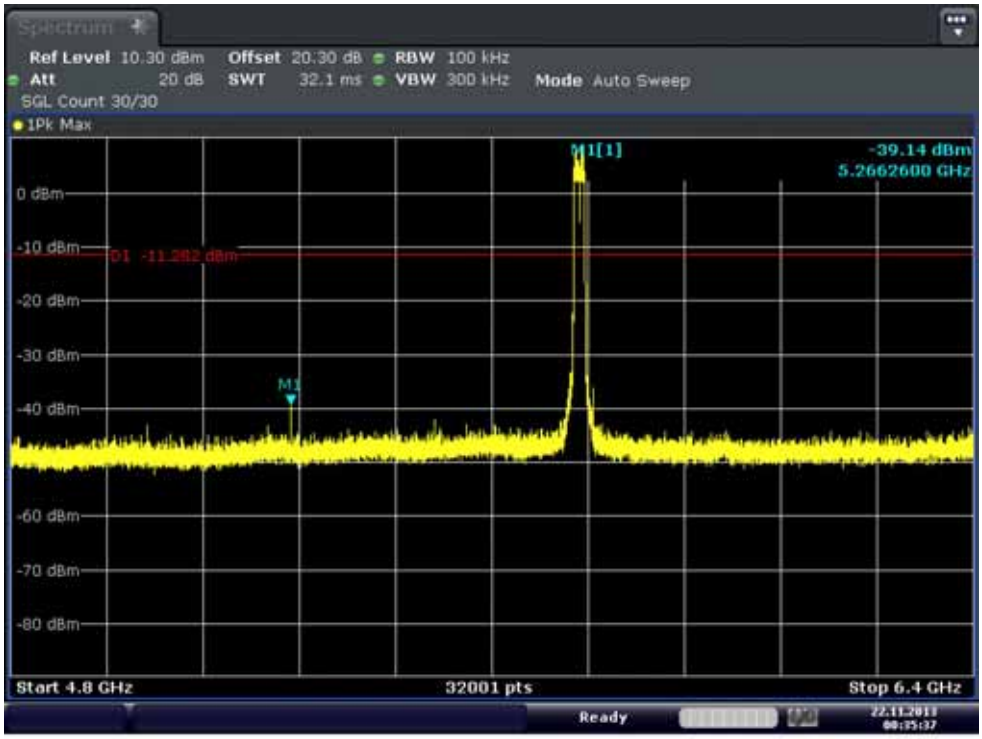
3.2 GHz ~ 4.8 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



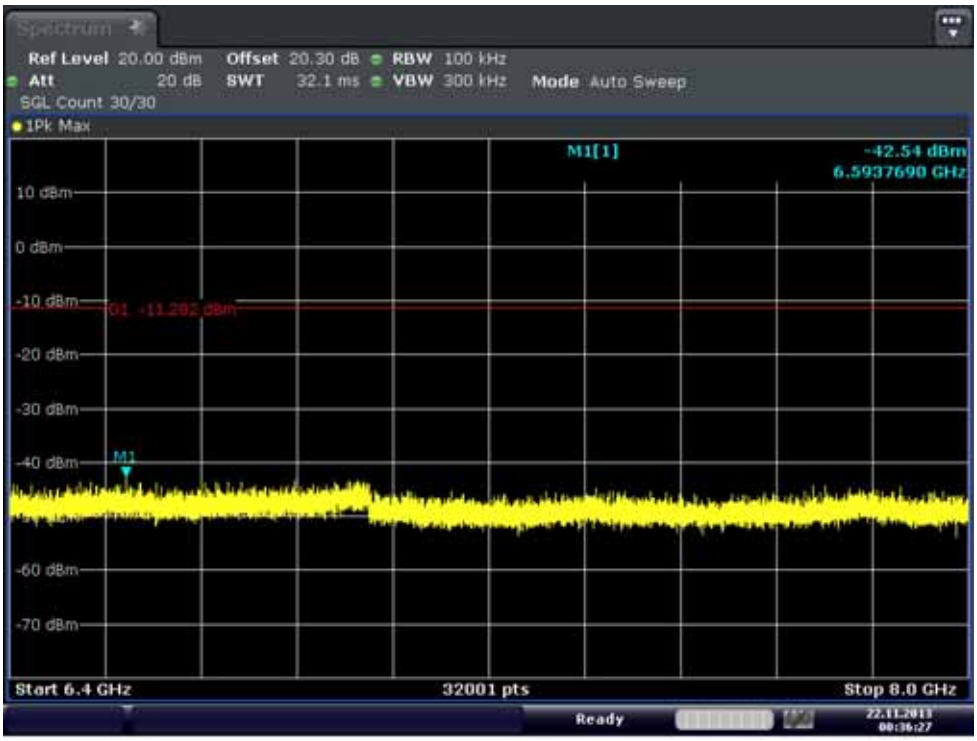
4.8 GHz ~ 6.4 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



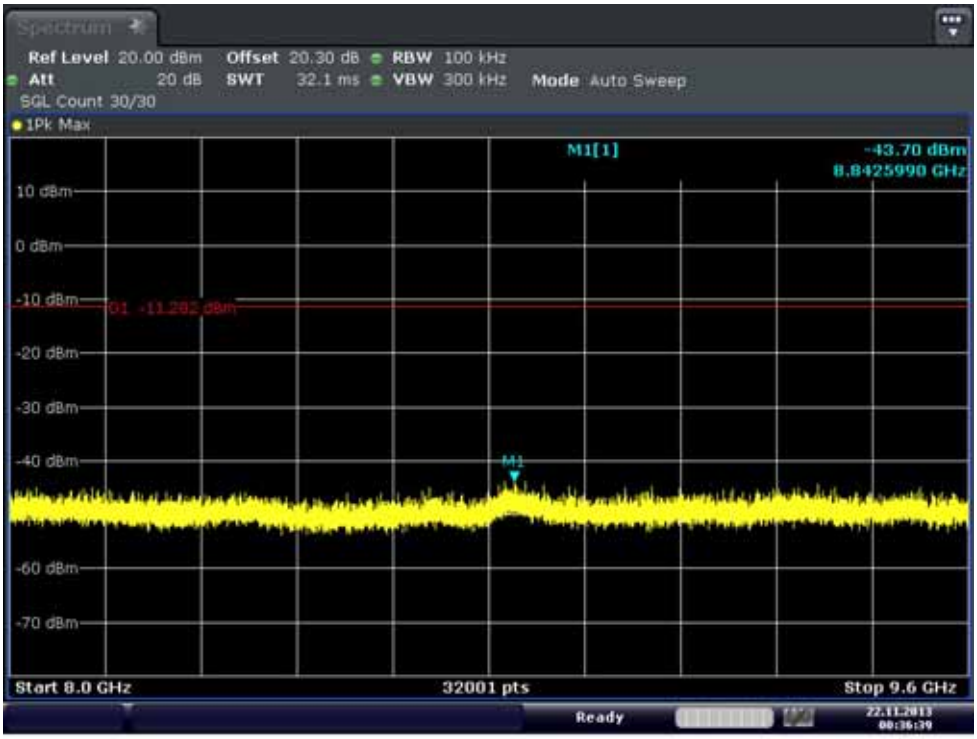
6.4 GHz ~ 8 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



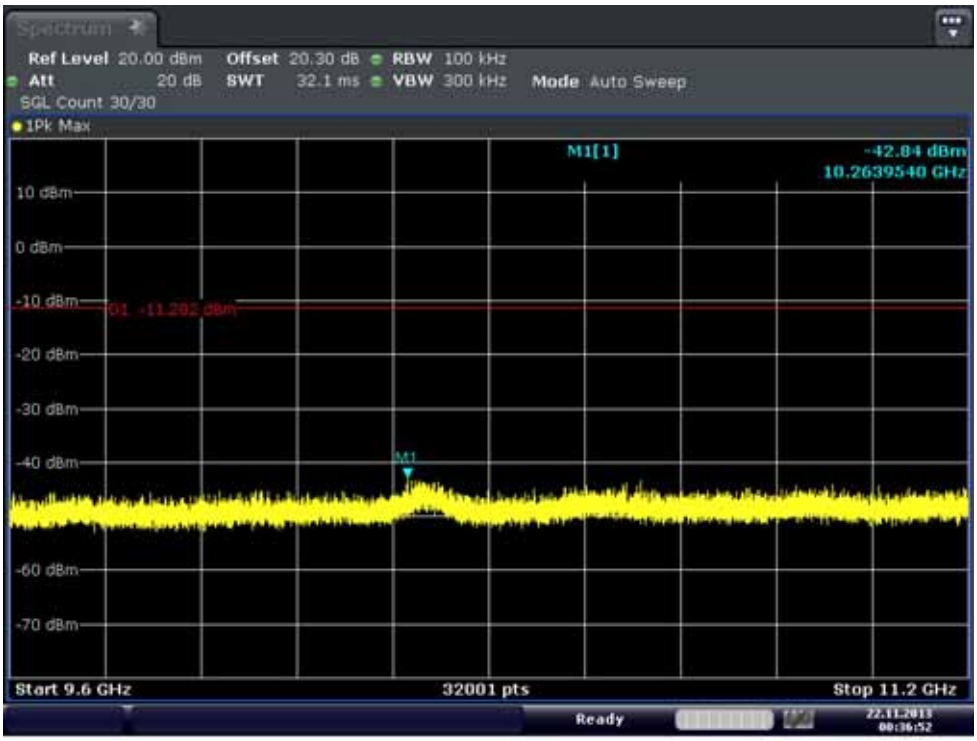
8 GHz ~ 9.6 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



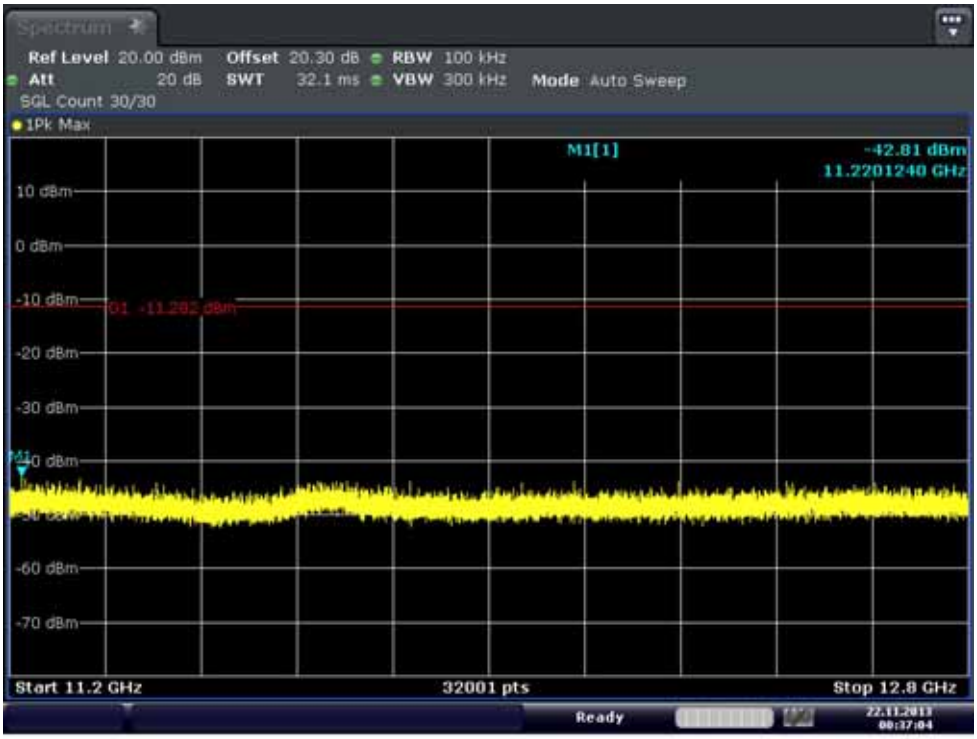
9.6 GHz ~ 11.2 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



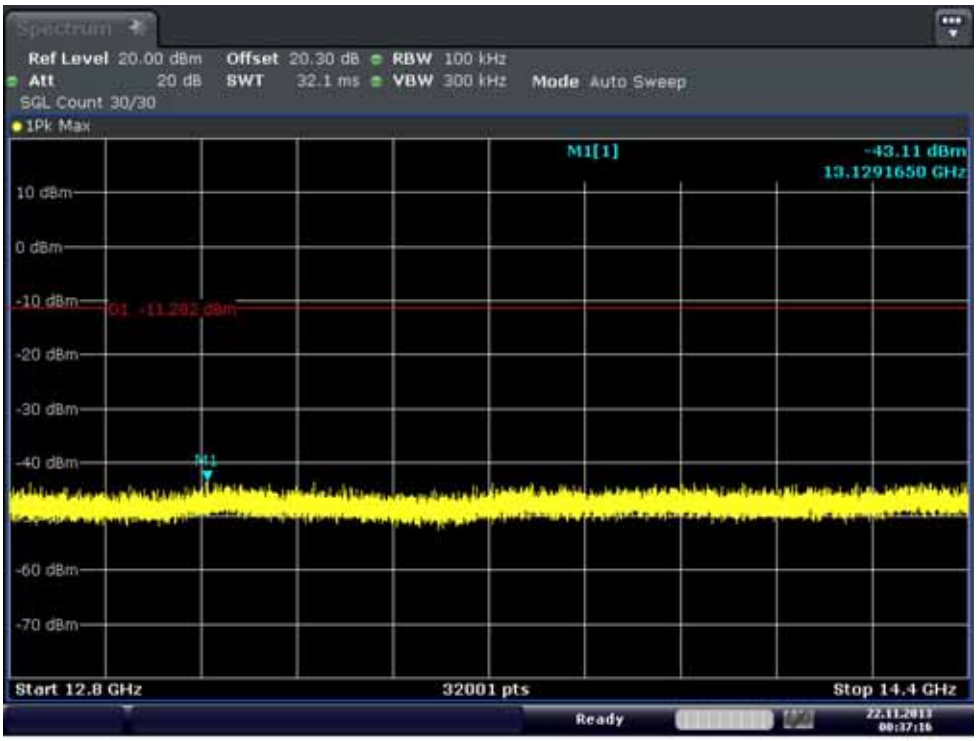
11.2 GHz ~ 12.8 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



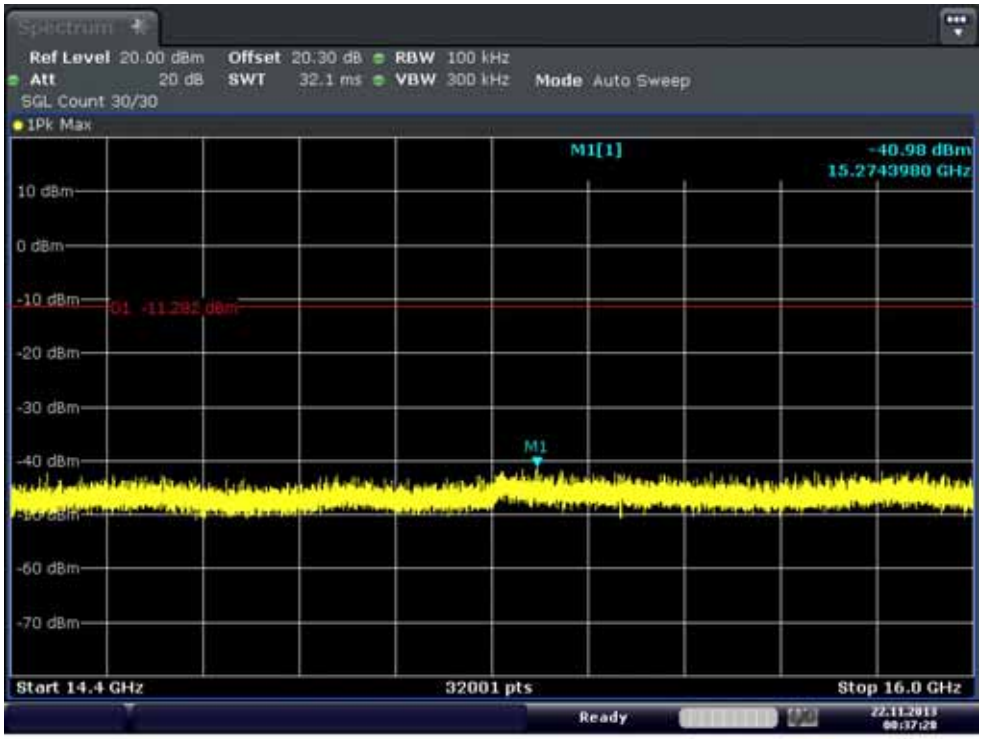
12.8 GHz ~ 14.4 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



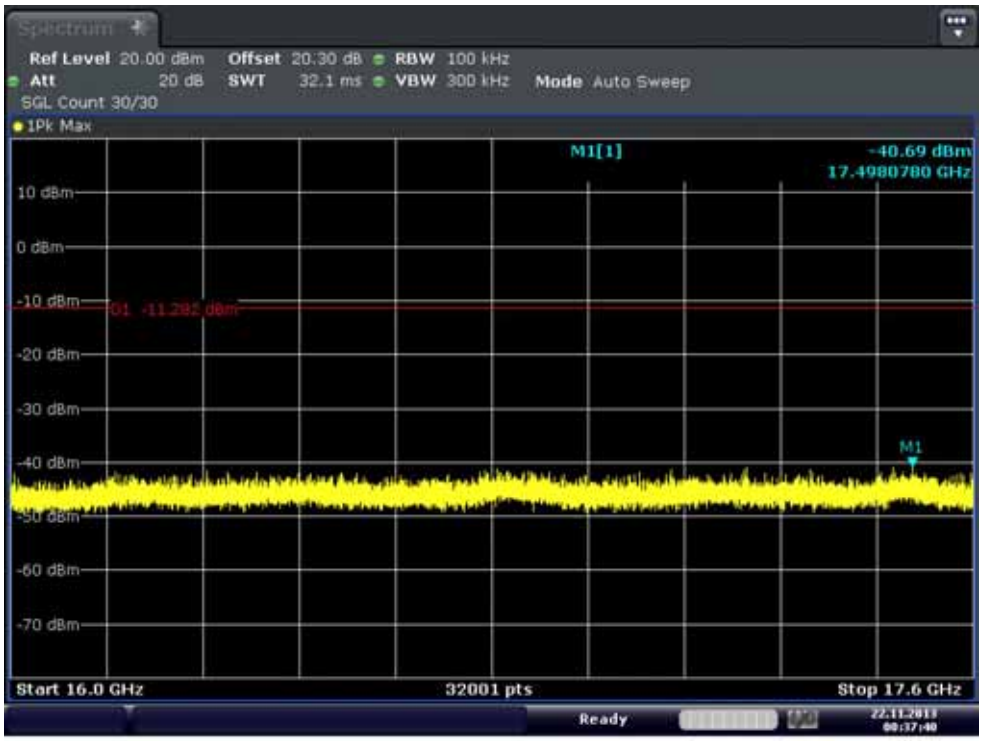
14.4 GHz ~ 16 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



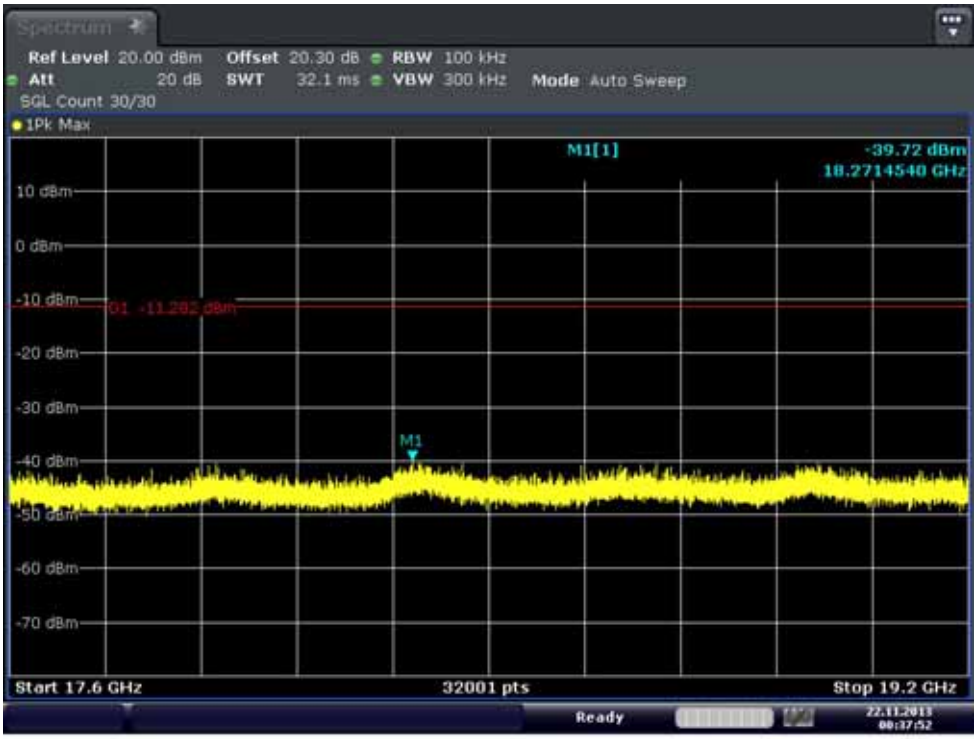
16 GHz ~ 17.6 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



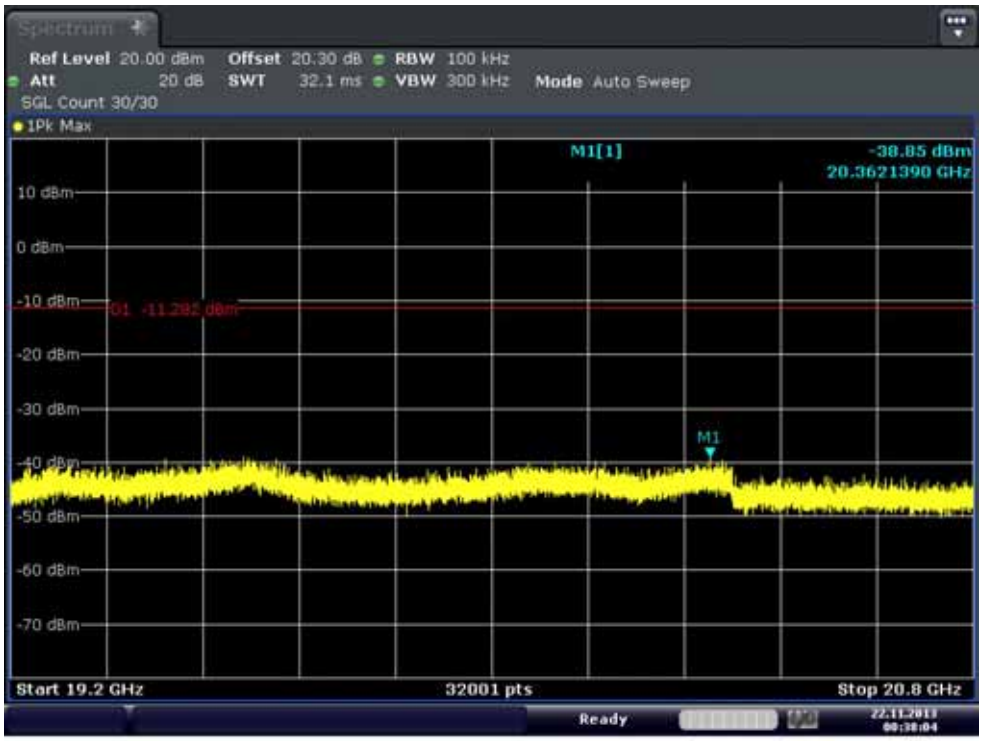
17.6 GHz ~ 19.2 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



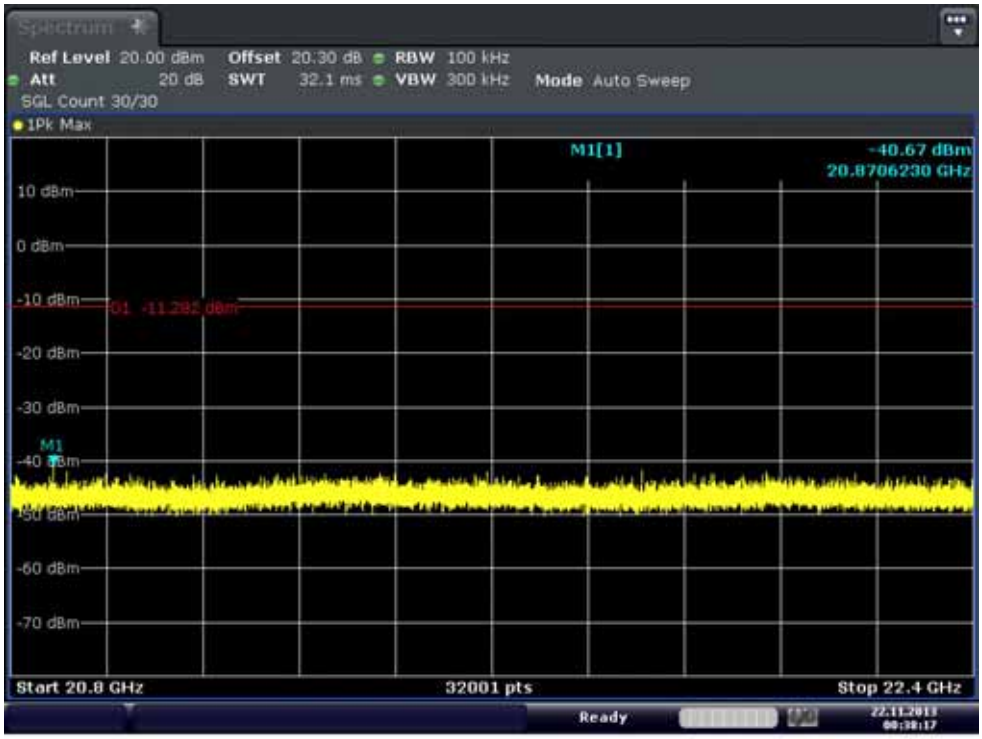
19.2 GHz ~ 20.8 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



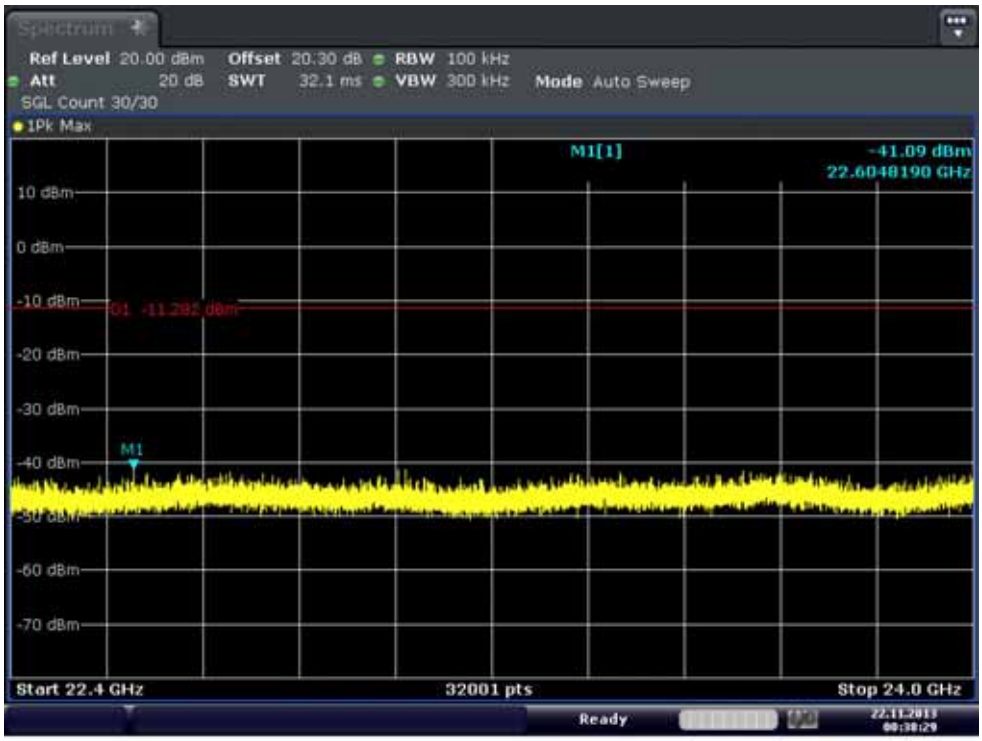
20.8 GHz ~ 22.4 GHz

Conducted Surious Emission (802.11n-CH149) _20 MHz BW



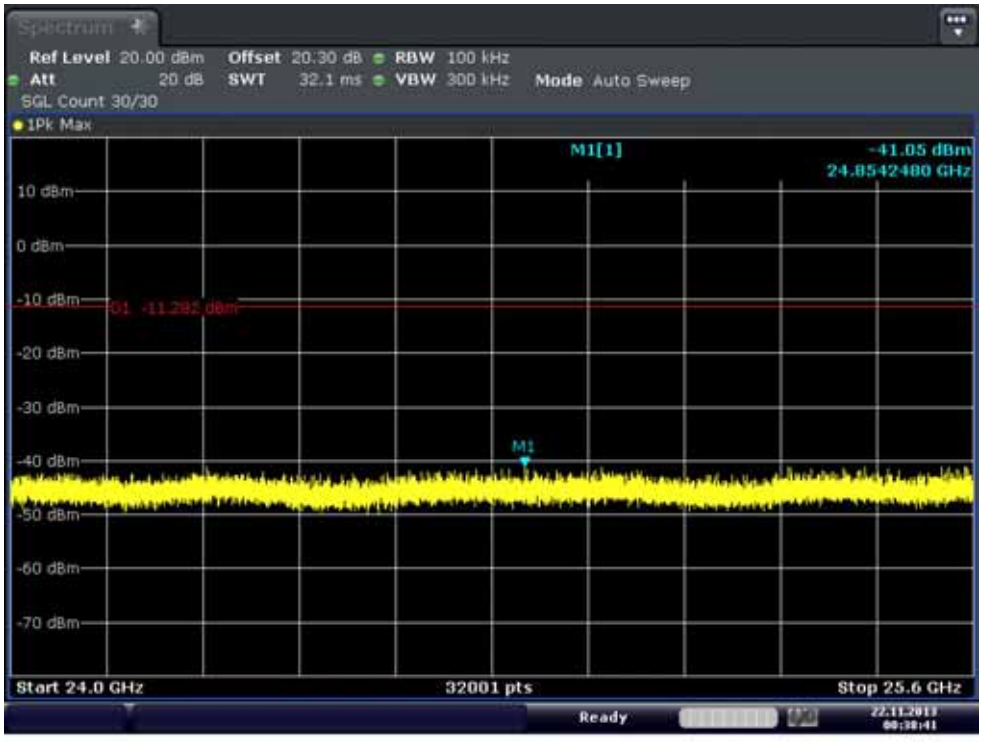
22.4 GHz ~ 24 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



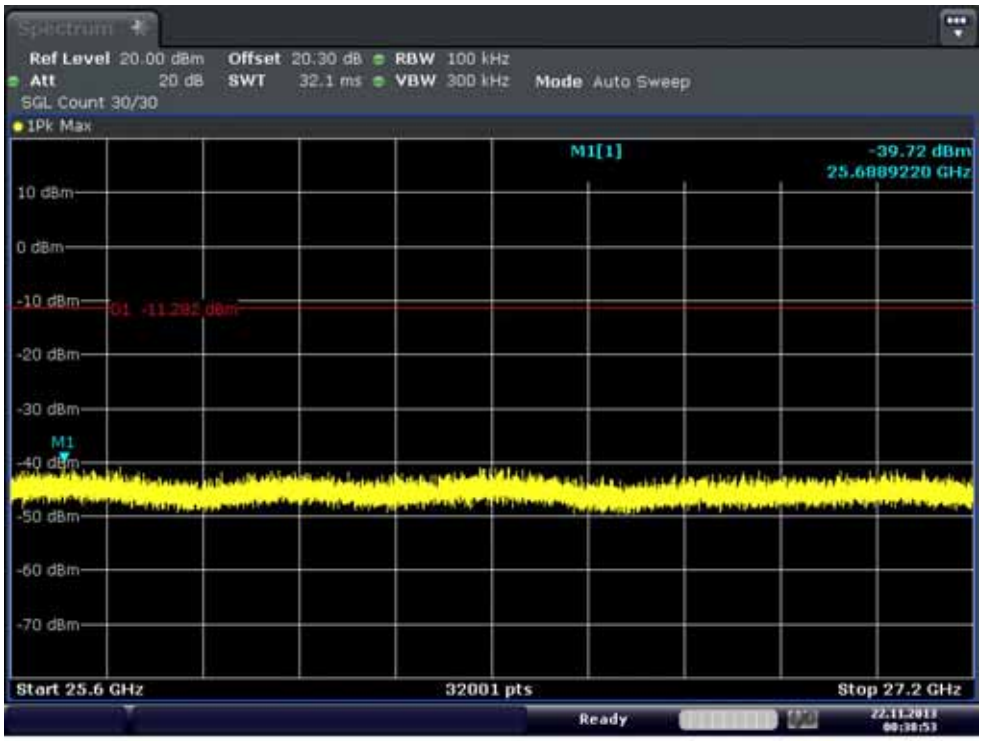
24 GHz ~ 25.6 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



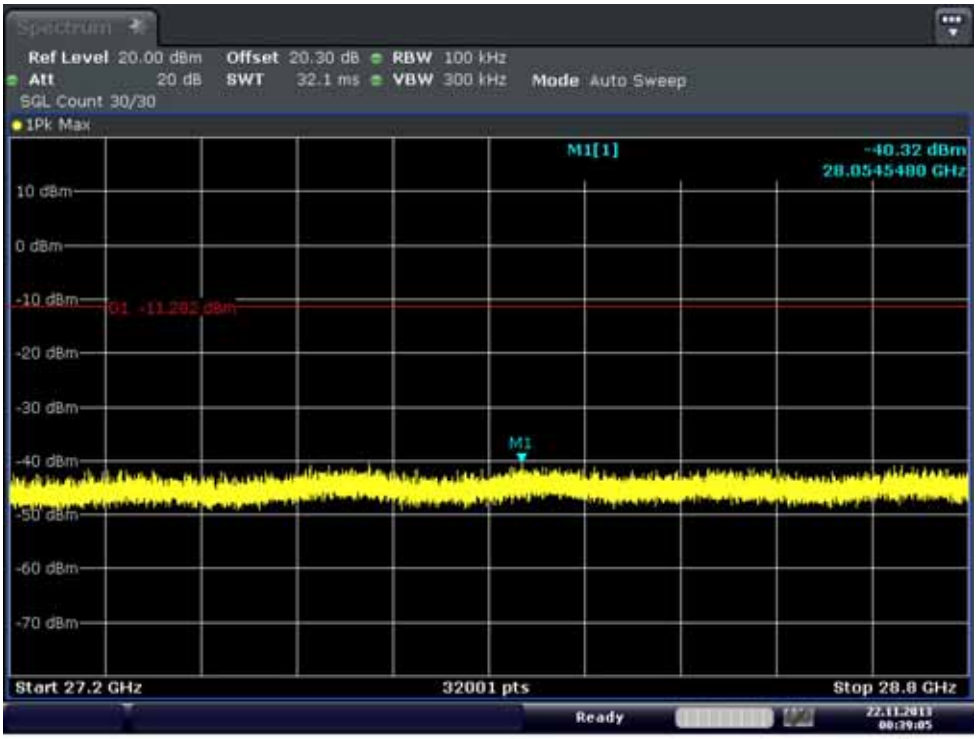
25.6 GHz ~ 27.2 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



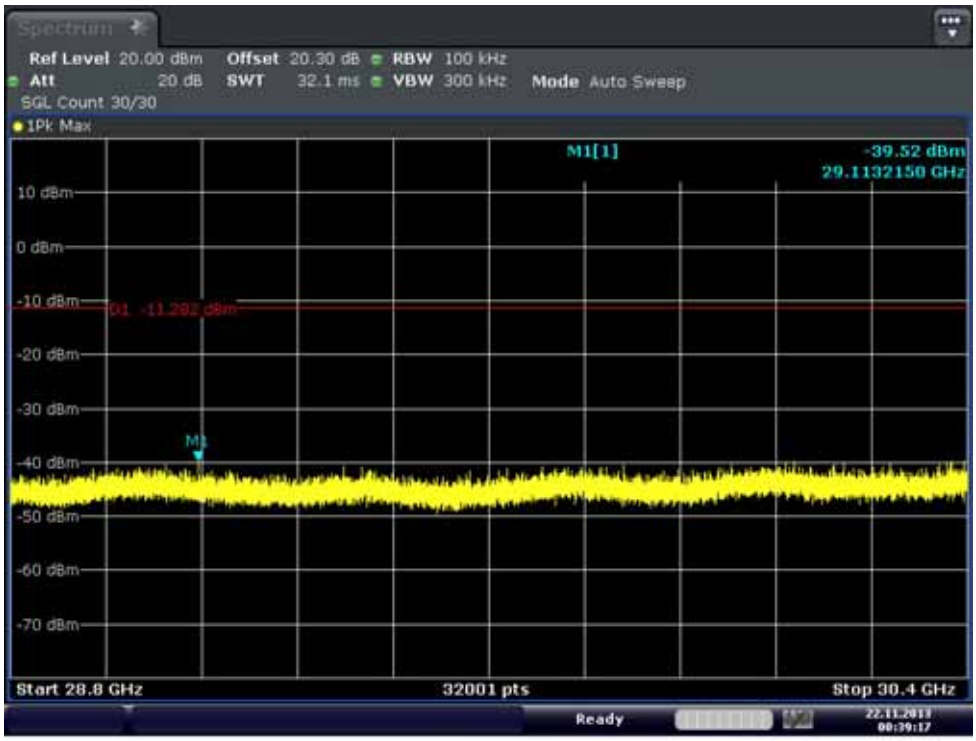
27.2 GHz ~ 28.8 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



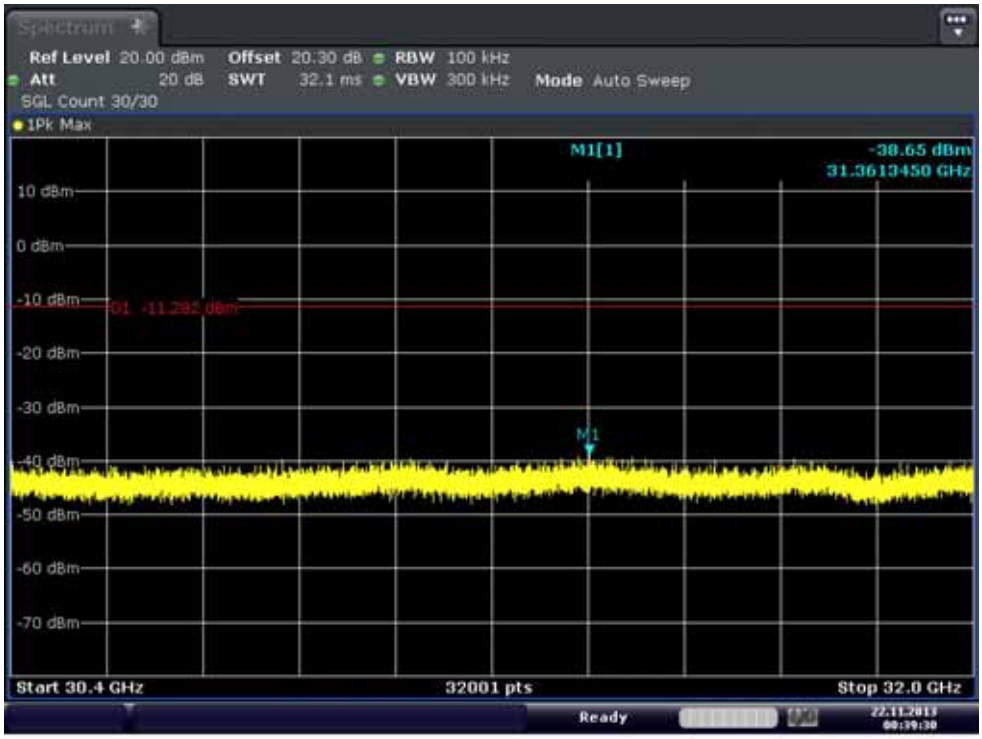
28.8 GHz ~ 30.4 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



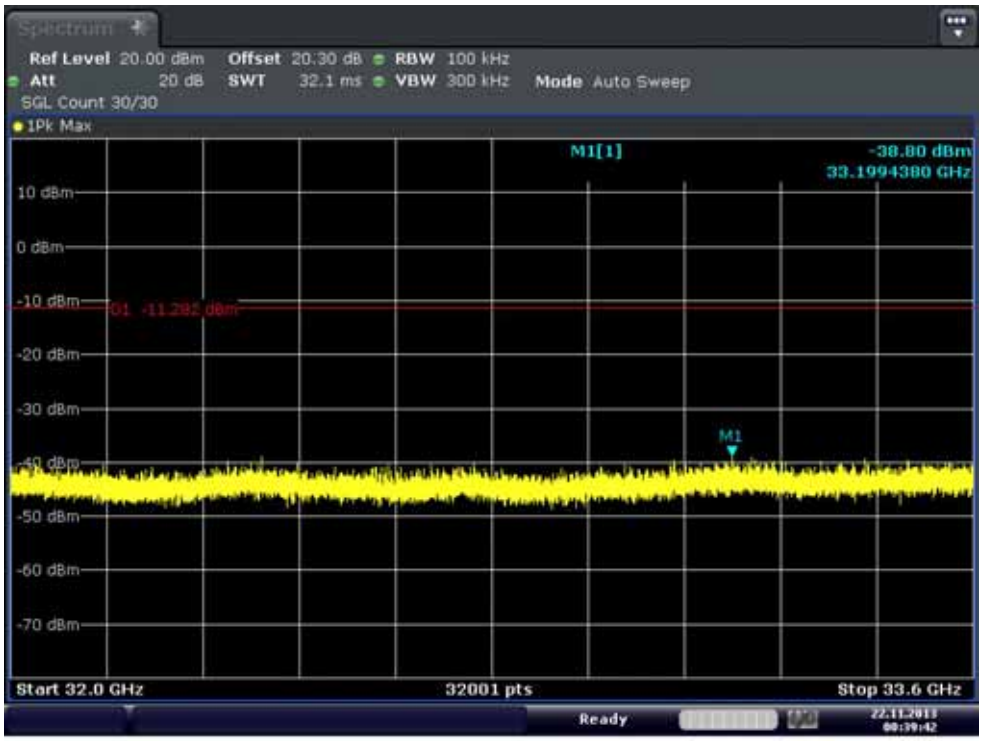
30.4 GHz ~ 32 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



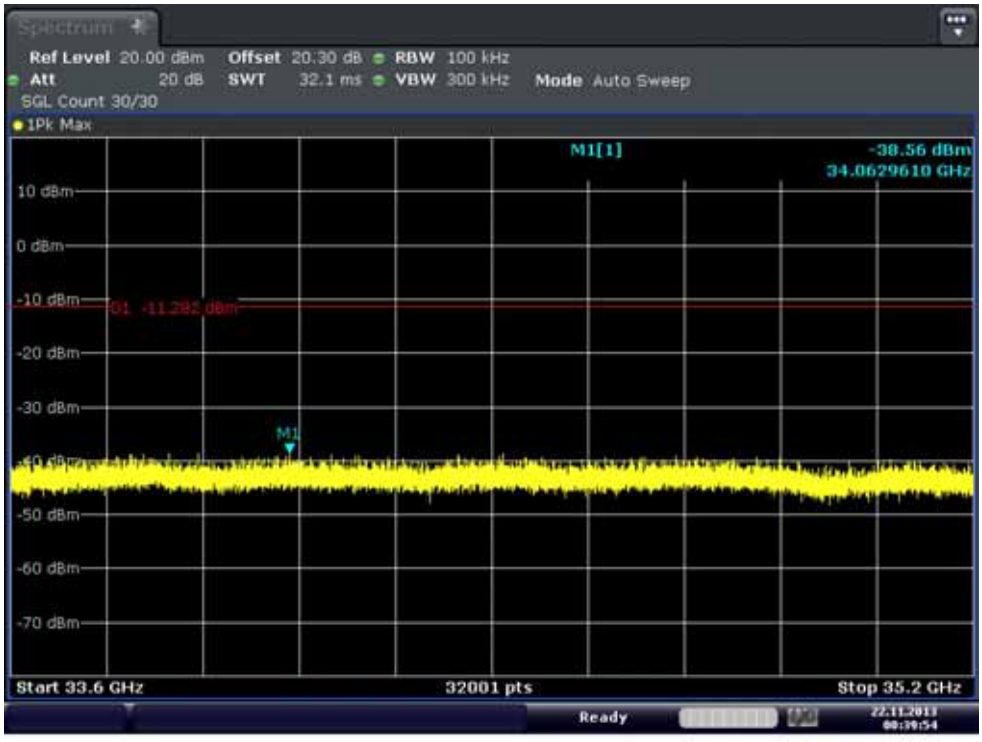
32 GHz ~ 33.6 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



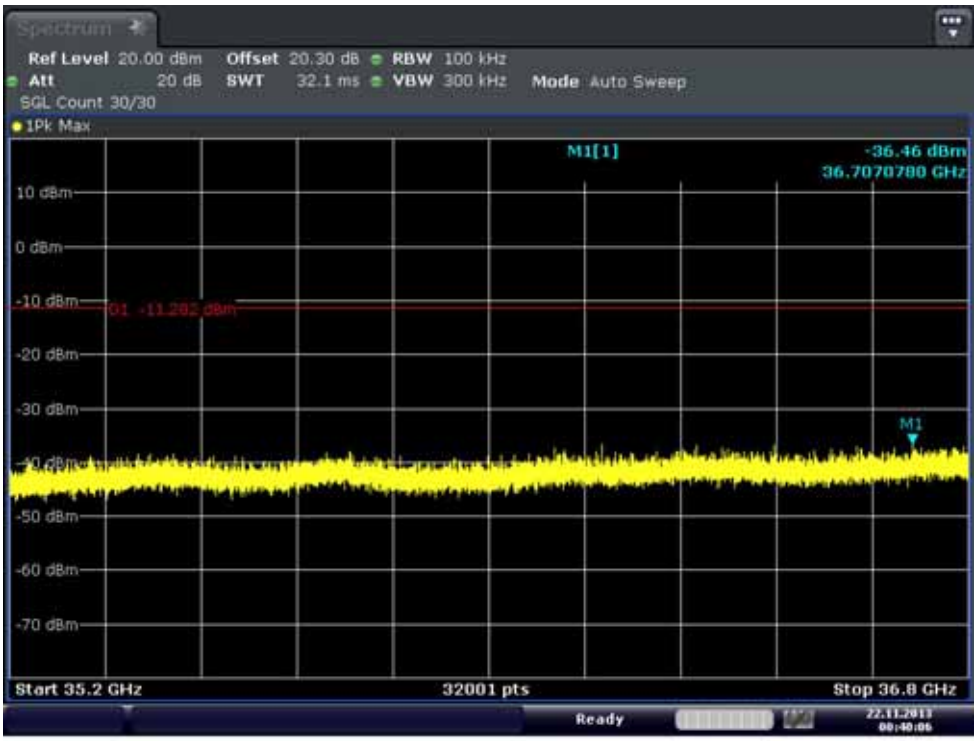
33.6 GHz ~ 35.2 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



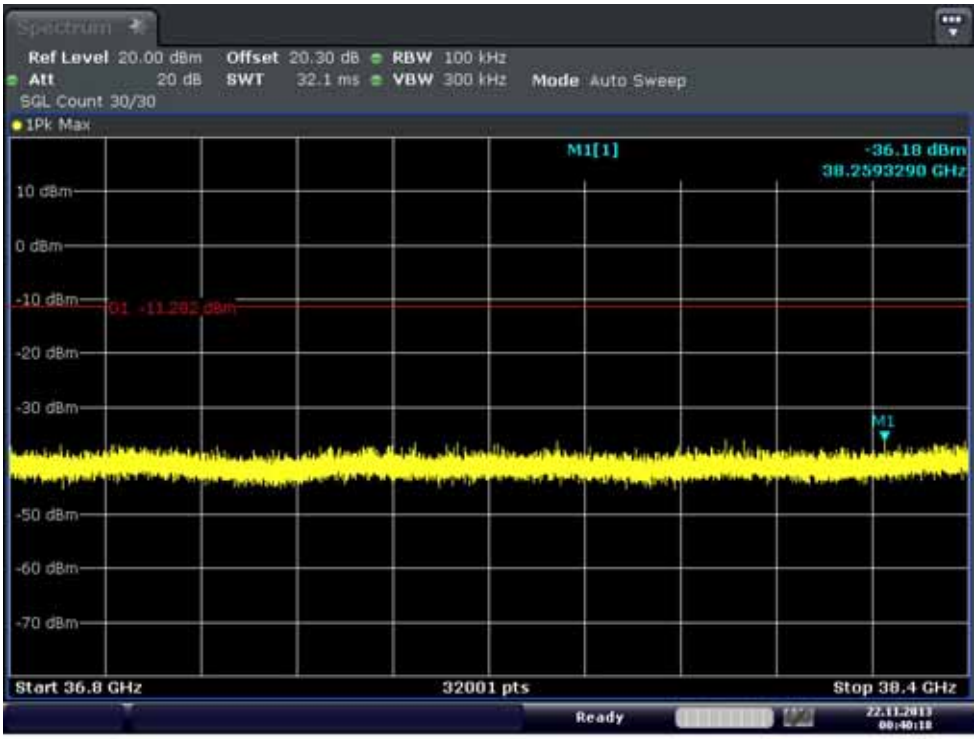
35.2 GHz ~ 36.8 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



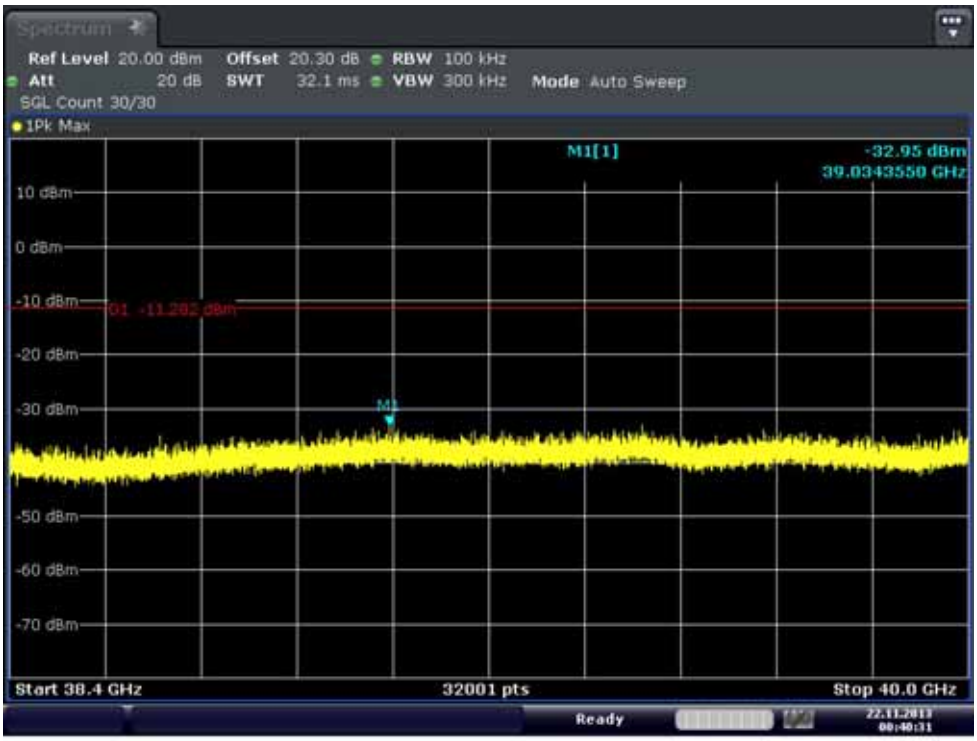
36.8 GHz ~ 38.4 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



38.4 GHz ~ 40 GHz

Conducted Spurious Emission (802.11n-CH149) _20 MHz BW



8.6 RADIATED MEASUREMENT.

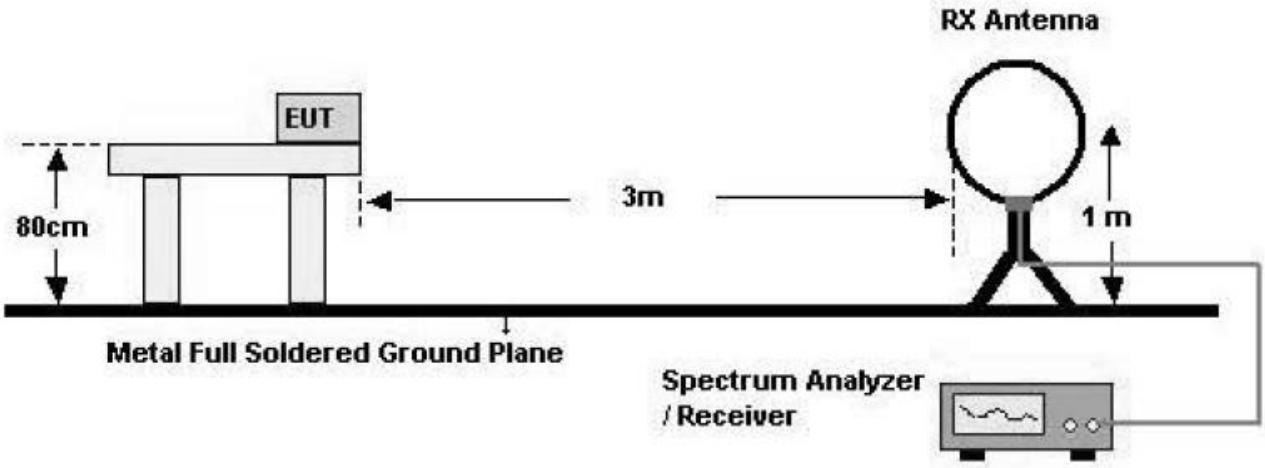
8.6.1 RADIATED SPURIOUS EMISSIONS.

Test Requirements and limit, §15.205, §15.209

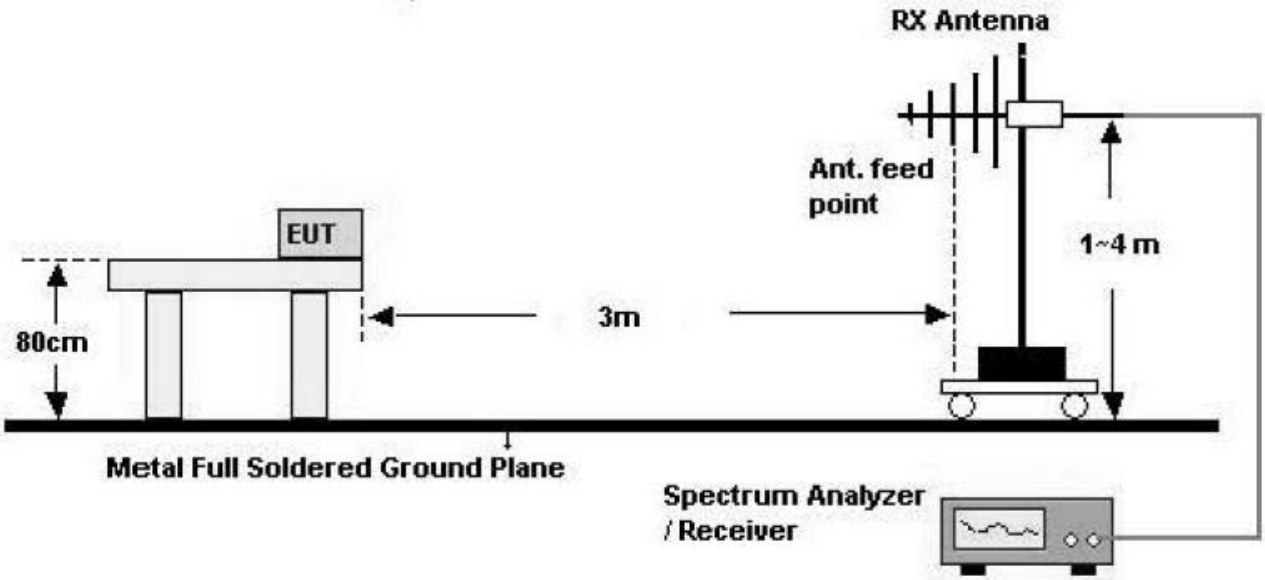
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

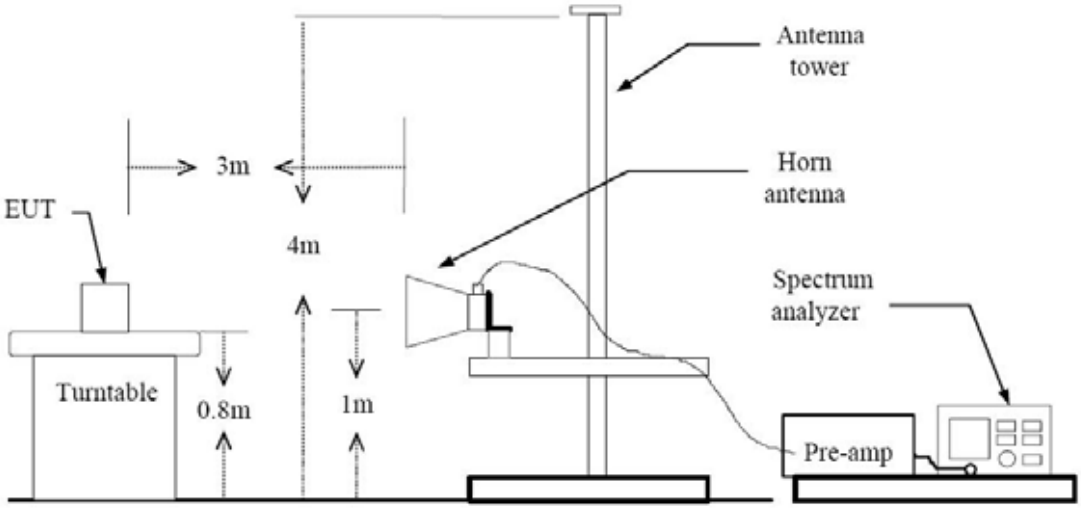
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE USED

ANSI C63.4(2003)

Method 12.2.4 in KDB 558074, issued 04/09/2013 (Peak)

Method 12.2.5.1 in KDB 558074, issued 04/09/2013(Average Case 1)

Method 12.2.5.3 in KDB 558074, issued 04/09/2013(Average Case 2)

Spectrum Setting

- Peak

Peak emission levels are measured by setting the instrument as follows:

RBW = cf. Table 1.

VBW ≥ 3 x RBW.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweeps to continue until the trace stabilizes.

(Note that the required measurement time may be longer for low duty cycle applications).

Table 1 —RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
> 1000 MHz	1 MHz

- Average

Case 1

If the EUT can be configured or modified to transmit continuously (duty cycle ≥ 98 percent then the average emission levels shall be measured using the following method (with EUT transmitting continuously).

RBW = 1 MHz (unless otherwise specified).

VBW ≥3 x RBW.

Detector = RMS, if span/(# of points in sweep) ≤ (RBW/2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.

Averaging type = power (i.e., RMS).

1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.

Sweep time = auto.

Perform a trace average of at least 100 traces.

Case 2

If continuous transmission of the EUT (i.e., duty cycle ≥ 98 percent) cannot be achieved and the duty cycle is not constant (i.e., duty cycle variations exceed ± 2 percent), then the following procedure shall be used:

Set RBW = 1 MHz.

Set VBW ≥ 1/T.

Video bandwidth mode or display mode

1) The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to RMS and setting the Average-VBW Type to Power (RMS).
2) As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to “Voltage” regardless of the display mode.

Detector = Peak.

Sweep time = auto.

Trace mode = max hold.

Allow max hold to run for at least 50 times (1/duty cycle) traces.

Note :

1. We used the case 1 for 802.11b mode and the case 2 for802.11a/g/n_20/n_40/ac_20/ac_40/ac_80 to perform the average filed strength measurements for RSE and radiated band edge test.
2. The actual setting value of VBW for 802.11a/g/n_20/n_40/ac_20/ac_40/ac_80.

Mode	Worst Data rate (Mbps)	T_{on} (ms)	T_{total} (ms)	Duty Cycle (%)	VBW(1/T) (Hz)	The actual setting value of VBW (Hz)
a	6	2.060	2.165	95.15	485	1000
g	6	2.060	2.165	95.15	485	1000
n_20	6.5	1.925	2.030	94.83	519	1000
n_40	13.5	0.942	1.044	90.23	1062	3000
2.4 GHz band ac_20	6.5	1.925	2.030	94.83	519	1000
5.8 GHz band ac_20	6.5	1.925	2.030	94.83	519	1000
ac_40	13.5	0.950	1.052	90.30	1053	3000
ac_80	29.3	0.458	0.560	81.79	2183	3000

TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dBμV/m	dBm /m	dBm	(H/V)	dBμV/m	dBμV/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 9 kHz to the 30MHz.
2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
4. Limit line = specific Limits (dBuV) + Distance extrapolation factor
5. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

TEST RESULTS

Below 1 GHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dBμV/m	dBm /m	dBm	(H/V)	dBμV/m	dBμV/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 30 MHz to the 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Above 1 GHz

Operation Mode:	802.11 b
Transfer Rate:	1 Mbps
Operating Frequency	2412
Channel No.	01 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4824	52.68	-4.25	V	48.43	73.98	25.55	PK
4824	40.87	-4.25	V	36.62	53.98	17.36	AV
7236	51.99	5.21	V	57.20	73.98	16.78	PK
7236	39.69	5.21	V	44.90	53.98	9.08	AV
4824	52.10	-4.25	H	47.85	73.98	26.13	PK
4824	40.68	-4.25	H	36.43	53.98	17.55	AV
7236	52.02	5.21	H	57.23	73.98	16.75	PK
7236	39.77	5.21	H	44.98	53.98	9.00	AV

Operation Mode:	802.11 b
Transfer Rate:	1 Mbps
Operating Frequency	2437
Channel No.	06 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4874	51.87	-3.93	V	47.94	73.98	26.04	PK
4874	40.23	-3.93	V	36.30	53.98	17.68	AV
7311	52.58	4.97	V	57.55	73.98	16.43	PK
7311	41.12	4.97	V	46.09	53.98	7.89	AV
4874	51.77	-3.93	H	47.84	73.98	26.14	PK
4874	40.25	-3.93	H	36.32	53.98	17.66	AV
7311	52.07	4.97	H	57.04	73.98	16.94	PK
7311	41.04	4.97	H	46.01	53.98	7.97	AV

Band :	2.4 GHz
Operation Mode:	802.11 b
Transfer Rate:	1 Mbps
Operating Frequency	2462
Channel No.	11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4924	51.68	-3.75	V	47.93	73.98	26.05	PK
4924	39.87	-3.75	V	36.12	53.98	17.86	AV
7386	52.87	5.60	V	58.47	73.98	15.51	PK
7386	40.78	5.60	V	46.38	53.98	7.60	AV
4924	51.19	-3.75	H	47.44	73.98	26.54	PK
4924	39.78	-3.75	H	36.03	53.98	17.95	AV
7386	52.96	5.60	H	58.56	73.98	15.42	PK
7386	40.96	5.60	H	46.56	53.98	7.42	AV

Notes:

11. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11b mode and all data rate. Worst data rate is the lowest data of each mode.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	2.4 GHz
Operation Mode:	802.11 g
Transfer Rate:	6 Mbps
Operating Frequency	2412
Channel No.	01 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4824	52.87	-4.25	V	48.62	73.98	25.36	PK
4824	40.86	-4.25	V	36.61	53.98	17.37	AV
7236	51.58	5.21	V	56.79	73.98	17.19	PK
7236	38.87	5.21	V	44.08	53.98	9.90	AV
4824	52.87	-4.25	H	48.62	73.98	25.36	PK
4824	40.76	-4.25	H	36.51	53.98	17.47	AV
7236	52.97	5.21	H	58.18	73.98	15.80	PK
7236	39.87	5.21	H	45.08	53.98	8.90	AV

Band :	2.4 GHz
Operation Mode:	802.11 g
Transfer Rate:	6 Mbps
Operating Frequency	2437
Channel No.	06 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4874	51.99	-3.93	V	48.06	73.98	25.92	PK
4874	40.67	-3.93	V	36.74	53.98	17.24	AV
7311	52.47	4.97	V	57.44	73.98	16.54	PK
7311	41.27	4.97	V	46.24	53.98	7.74	AV
4874	51.87	-3.93	H	47.94	73.98	26.04	PK
4874	40.45	-3.93	H	36.52	53.98	17.46	AV
7311	52.48	4.97	H	57.45	73.98	16.53	PK
7311	41.37	4.97	H	46.34	53.98	7.64	AV

Band :	2.4 GHz
Operation Mode:	802.11 g
Transfer Rate:	6 Mbps
Operating Frequency	2462
Channel No.	11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4924	51.58	-3.75	V	47.83	73.98	26.15	PK
4924	39.28	-3.75	V	35.53	53.98	18.45	AV
7386	52.48	5.60	V	58.08	73.98	15.90	PK
7386	40.37	5.60	V	45.97	53.98	8.01	AV
4924	51.37	-3.75	H	47.62	73.98	26.36	PK
4924	39.23	-3.75	H	35.48	53.98	18.50	AV
7386	52.69	5.60	H	58.29	73.98	15.69	PK
7386	40.37	5.60	H	45.97	53.98	8.01	AV

Notes:

11. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11g mode and all data rate. Worst data rate is the lowest data of each mode.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	2.4 GHz
Operation Mode:	802.11 n
Transfer Rate:	6.5 Mbps
Operating Frequency	2412
Channel No.	01 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4824	52.38	-4.25	V	48.13	73.98	25.85	PK
4824	40.28	-4.25	V	36.03	53.98	17.95	AV
7236	51.28	5.21	V	56.49	73.98	17.49	PK
7236	38.78	5.21	V	43.99	53.98	9.99	AV
4824	52.57	-4.25	H	48.32	73.98	25.66	PK
4824	40.26	-4.25	H	36.01	53.98	17.97	AV
7236	52.92	5.21	H	58.13	73.98	15.85	PK
7236	39.27	5.21	H	44.48	53.98	9.50	AV

Band :	2.4 GHz
Operation Mode:	802.11 n
Transfer Rate:	6.5 Mbps
Operating Frequency	2437
Channel No.	06 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4874	51.78	-3.93	V	47.85	73.98	26.13	PK
4874	40.68	-3.93	V	36.75	53.98	17.23	AV
7311	52.69	4.97	V	57.66	73.98	16.32	PK
7311	41.29	4.97	V	46.26	53.98	7.72	AV
4874	51.28	-3.93	H	47.35	73.98	26.63	PK
4874	40.28	-3.93	H	36.35	53.98	17.63	AV
7311	52.57	4.97	H	57.54	73.98	16.44	PK
7311	41.23	4.97	H	46.20	53.98	7.78	AV

Band :	2.4 GHz
Operation Mode:	802.11 n
Transfer Rate:	6.5 Mbps
Operating Frequency	2462
Channel No.	11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4924	51.68	-3.75	V	47.93	73.98	26.05	PK
4924	39.48	-3.75	V	35.73	53.98	18.25	AV
7386	52.62	5.60	V	58.22	73.98	15.76	PK
7386	40.11	5.60	V	45.71	53.98	8.27	AV
4924	51.37	-3.75	H	47.62	73.98	26.36	PK
4924	39.67	-3.75	H	35.92	53.98	18.06	AV
7386	52.78	5.60	H	58.38	73.98	15.60	PK
7386	40.58	5.60	H	46.18	53.98	7.80	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11n mode and all data rate. Worst data rate is the lowest data of each mode.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	2.4 GHz
Operation Mode:	802.11ac
Transfer Rate:	6.5 Mbps
Operating Frequency	2412
Channel No.	01 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4824	52.41	-4.25	V	48.16	73.98	25.82	PK
4824	40.58	-4.25	V	36.33	53.98	17.65	AV
7236	51.37	5.21	V	56.58	73.98	17.40	PK
7236	38.11	5.21	V	43.32	53.98	10.66	AV
4824	52.47	-4.25	H	48.22	73.98	25.76	PK
4824	40.78	-4.25	H	36.53	53.98	17.45	AV
7236	52.48	5.21	H	57.69	73.98	16.29	PK
7236	39.57	5.21	H	44.78	53.98	9.20	AV

Band :	2.4 GHz
Operation Mode:	802.11ac
Transfer Rate:	6.5 Mbps
Operating Frequency	2437
Channel No.	06 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4874	51.28	-3.93	V	47.35	73.98	26.63	PK
4874	40.58	-3.93	V	36.65	53.98	17.33	AV
7311	52.47	4.97	V	57.44	73.98	16.54	PK
7311	41.28	4.97	V	46.25	53.98	7.73	AV
4874	51.29	-3.93	H	47.36	73.98	26.62	PK
4874	40.38	-3.93	H	36.45	53.98	17.53	AV
7311	52.48	4.97	H	57.45	73.98	16.53	PK
7311	41.28	4.97	H	46.25	53.98	7.73	AV

Band :	2.4 GHz
Operation Mode:	802.11ac
Transfer Rate:	6.5 Mbps
Operating Frequency	2462
Channel No.	11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
4924	51.28	-3.75	V	47.53	73.98	26.45	PK
4924	39.57	-3.75	V	35.82	53.98	18.16	AV
7386	52.37	5.60	V	57.97	73.98	16.01	PK
7386	40.56	5.60	V	46.16	53.98	7.82	AV
4924	51.28	-3.75	H	47.53	73.98	26.45	PK
4924	39.87	-3.75	H	36.12	53.98	17.86	AV
7386	52.47	5.60	H	58.07	73.98	15.91	PK
7386	40.78	5.60	H	46.38	53.98	7.60	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11ac mode and all data rate. Worst data rate is the lowest data of each mode.
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	5.8 GHz
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11490	39.25	11.22	V	50.47	73.98	23.51	PK
11490	25.69	11.22	V	36.91	53.98	17.07	AV
11490	39.28	11.22	H	50.50	73.98	23.48	PK
11490	25.71	11.22	H	36.93	53.98	17.05	AV

Band :	5.8 GHz
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11570	38.96	11.71	V	50.67	73.98	23.31	PK
11570	25.34	11.71	V	37.05	53.98	16.93	AV
11570	38.98	11.71	H	50.69	73.98	23.29	PK
11570	25.35	11.71	H	37.06	53.98	16.92	AV

Band :	5.8 GHz
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11650	38.49	11.34	V	49.83	73.98	24.15	PK
11650	25.00	11.34	V	36.34	53.98	17.64	AV
11650	38.51	11.34	H	49.85	73.98	24.13	PK
11650	25.01	11.34	H	36.35	53.98	17.63	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11a mode and all data rate. Worst data rate is the lowest data of each mode
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	5.8 GHz
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11490	39.11	11.22	V	50.33	73.98	23.65	PK
11490	25.65	11.22	V	36.87	53.98	17.11	AV
11490	39.14	11.22	H	50.36	73.98	23.62	PK
11490	25.67	11.22	H	36.89	53.98	17.09	AV

Band :	5.8 GHz
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11570	38.60	11.71	V	50.31	73.98	23.67	PK
11570	25.30	11.71	V	37.01	53.98	16.97	AV
11570	38.63	11.71	H	50.34	73.98	23.64	PK
11570	25.31	11.71	H	37.02	53.98	16.96	AV

Band :	5.8 GHz
Operation Mode:	802.11 n_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11650	38.80	11.34	V	50.14	73.98	23.84	PK
11650	24.98	11.34	V	36.32	53.98	17.66	AV
11650	38.82	11.34	H	50.16	73.98	23.82	PK
11650	24.99	11.34	H	36.33	53.98	17.65	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11n_20 MHz BW mode and all data rate. Worst data rate is the lowest data of each mode
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna

Band :	5.8 GHz
Operation Mode:	802.11 n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11510	40.25	11.53	V	51.78	73.98	22.20	PK
11510	26.05	11.53	V	37.58	53.98	16.40	AV
11510	40.27	11.53	H	51.80	73.98	22.18	PK
11510	26.07	11.53	H	37.60	53.98	16.38	AV

Band :	5.8 GHz
Operation Mode:	802.11 n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11590	39.60	11.64	V	51.24	73.98	22.74	PK
11590	25.63	11.64	V	37.27	53.98	16.71	AV
11590	39.61	11.64	H	51.25	73.98	22.73	PK
11590	25.64	11.64	H	37.28	53.98	16.70	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11n_40 MHz BW mode and all data rate. Worst data rate is the lowest data of each mode
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	5.8 GHz
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5745 MHz
Channel No.	149 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11490	39.70	11.22	V	50.92	73.98	23.06	PK
11490	26.01	11.22	V	37.23	53.98	16.75	AV
11490	39.71	11.22	H	50.93	73.98	23.05	PK
11490	26.03	11.22	H	37.25	53.98	16.73	AV

Band :	5.8 GHz
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11570	39.50	11.71	V	51.21	73.98	22.77	PK
11570	25.48	11.71	V	37.19	53.98	16.79	AV
11570	39.51	11.71	H	51.22	73.98	22.76	PK
11570	25.49	11.71	H	37.20	53.98	16.78	AV

Band :	5.8 GHz
Operation Mode:	802.11 ac_20 MHz BW
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11650	39.00	11.34	V	50.34	73.98	23.64	PK
11650	25.26	11.34	V	36.60	53.98	17.38	AV
11650	39.01	11.34	H	50.35	73.98	23.63	PK
11650	25.27	11.34	H	36.61	53.98	17.37	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11ac mode and all data rate. Worst data rate is the lowest data of each mode
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. In case of 802.11ac, we applied the limit of spurious emissions according to KDB 644545 D01 Alternative Guidance for 802.11ac v01.

Band :	5.8 GHz
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	MCS0
Operating Frequency	5755 MHz
Channel No.	151 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11510	39.85	11.53	V	51.38	73.98	22.60	PK
11510	26.05	11.53	V	37.58	53.98	16.40	AV
11510	39.89	11.53	H	51.42	73.98	22.56	PK
11510	26.08	11.53	H	37.61	53.98	16.37	AV

Band :	5.8 GHz
Operation Mode:	802.11 ac_40 MHz BW
Transfer Rate:	MCS0
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11590	40.14	11.64	V	51.78	73.98	22.20	PK
11590	25.68	11.64	V	37.32	53.98	16.66	AV
11590	40.17	11.64	H	51.81	73.98	22.17	PK
11590	25.69	11.64	H	37.33	53.98	16.65	AV

Band :	UNII 4
Operation Mode:	802.11 ac _80 MHz BW
Transfer Rate:	MCS0
Operating Frequency	5775 MHz
Channel No.	155 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL-AMP G [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11550	39.11	11.50	V	50.61	73.98	23.37	PK
11550	26.20	11.50	V	37.70	53.98	16.28	AV
11550	39.14	11.50	H	50.64	73.98	23.34	PK
11550	26.21	11.50	H	37.71	53.98	16.27	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. We have done 802.11ac mode and all data rate. Worst data rate is the lowest data of each mode
6. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna
7. In case of 802.11ac, we applied the limit of spurious emissions according to KDB 644545 D01 Alternative Guidance for 802.11ac v01.

8.6.2 RADIATED RESTRICTED BAND EDGES

Test Requirements and limit, §15.247(d) §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c)).

Band :	2.4 GHz
Operation Mode:	802.11g
Transfer Rate:	6 Mbps
Operating Frequency	2412 MHz, 2462 MHz
Channel No.	01 Ch, 11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	27.85	33.90	H	61.75	73.98	12.23	PK
2390.0	12.67	33.90	H	46.57	53.98	7.41	AV
2390.0	25.56	33.90	V	59.46	73.98	14.52	PK
2390.0	12.24	33.90	V	46.14	53.98	7.84	AV
2483.5	28.56	33.99	H	62.55	73.98	11.43	PK
2483.5	14.30	33.99	H	48.29	53.98	5.69	AV
2483.5	26.77	33.99	V	60.76	73.98	13.22	PK
2483.5	13.12	33.99	V	47.11	53.98	6.87	AV

Band :	2.4 GHz
Operation Mode:	802.11b
Transfer Rate:	1 Mbps
Operating Frequency	2412 MHz, 2462 MHz
Channel No.	01 Ch, 11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	26.05	33.90	H	59.95	73.98	14.03	PK
2390.0	13.84	33.90	H	47.74	53.98	6.24	AV
2390.0	25.44	33.90	V	59.34	73.98	14.64	PK
2390.0	13.15	33.90	V	47.05	53.98	6.93	AV
2483.5	25.86	33.99	H	59.85	73.98	14.13	PK
2483.5	15.39	33.99	H	49.38	53.98	4.60	AV
2483.5	24.67	33.99	V	58.66	73.98	15.32	PK
2483.5	13.94	33.99	V	47.93	53.98	6.05	AV

Band :	2.4 GHz
Operation Mode:	802.11n
Transfer Rate:	6.5 Mbps
Operating Frequency	2412 MHz, 2462 MHz
Channel No.	01 Ch, 11 Ch

Frequency [MHz]	Reading [dBuV/m]	AN.+CL [dBm]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	33.17	33.90	H	67.07	73.98	6.91	PK
2390.0	13.35	33.90	H	47.25	53.98	6.73	AV
2390.0	32.08	33.90	V	65.98	73.98	8.00	PK
2390.0	12.87	33.90	V	46.77	53.98	7.21	AV
2483.5	25.12	33.99	H	59.11	73.98	14.87	PK
2483.5	12.02	33.99	H	46.01	53.98	7.97	AV
2483.5	25.09	33.99	V	59.08	73.98	14.90	PK
2483.5	12.01	33.99	V	46.00	53.98	7.98	AV

Band :	2.4 GHz
Operation Mode:	802.11ac
Transfer Rate:	6.5 Mbps
Operating Frequency	2412 MHz, 2462 MHz
Channel No.	01 Ch, 11 Ch

Frequency [MHz]	Reading dBuV	AN.+CL [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
2390.0	34.44	33.90	H	68.34	73.98	5.64	PK
2390.0	12.88	33.90	H	46.78	53.98	7.20	AV
2390.0	32.78	33.90	V	66.68	73.98	7.30	PK
2390.0	12.42	33.90	V	46.32	53.98	7.66	AV
2483.5	24.91	33.99	H	58.90	73.98	15.08	PK
2483.5	12.06	33.99	H	46.05	53.98	7.93	AV
2483.5	24.55	33.99	V	58.54	73.98	15.44	PK
2483.5	12.04	33.99	V	46.03	53.98	7.95	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss
2. We have done 802.11b/g/n/ac mode and all data rate. Worst data rate is the lowest data of each mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band:	5.8 GHz
Operation Mode:	802.11ac_20 MHz
Transfer Rate:	6.5 Mbps
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp Gain [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5850	63.12	0.94	H	64.06	68.2	4.14	PK
*5850	64.25	0.94	V	65.19	68.2	3.01	PK

Band:	5.8 GHz
Operation Mode:	802.11ac_40 MHz
Transfer Rate:	13.5 Mbps
Operating Frequency	5795 MHz
Channel No.	159 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp Gain [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5850	53.40	0.94	H	54.34	68.2	13.86	PK
*5850	53.65	0.94	V	54.59	68.2	13.61	PK

Band:	5.8 GHz
Operation Mode:	802.11ac_80 MHz
Transfer Rate:	29.3 Mbps
Operating Frequency	5775 MHz
Channel No.	155 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp Gain [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
*5850	60.17	0.94	H	61.11	68.2	7.09	PK
*5850	61.31	0.94	V	62.25	68.2	5.95	PK

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss
2. We have done 802.11ac mode and all data rate. Worst data rate is the lowest data of each mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

4. In case of 5.8 GHz band 802.11ac, we applied the limit of spurious emissions according to KDB 644545 D01 Alternative Guidance for 802.11ac v01.
5. '*' is radiated band edge test frequency(not restricted band emissions).

8.7 POWERLINE CONDUCTED EMISSIONS

Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.
5. We are performed the AC Power Line Conducted Emission test for 13 Mbps, Ch.6 and 802.11n_20 MHz BW. Because 802.11n_20 MHz BW mode is worst case.

▣ RESULT PLOTS

Conducted Emissions (Line 1)

HCT

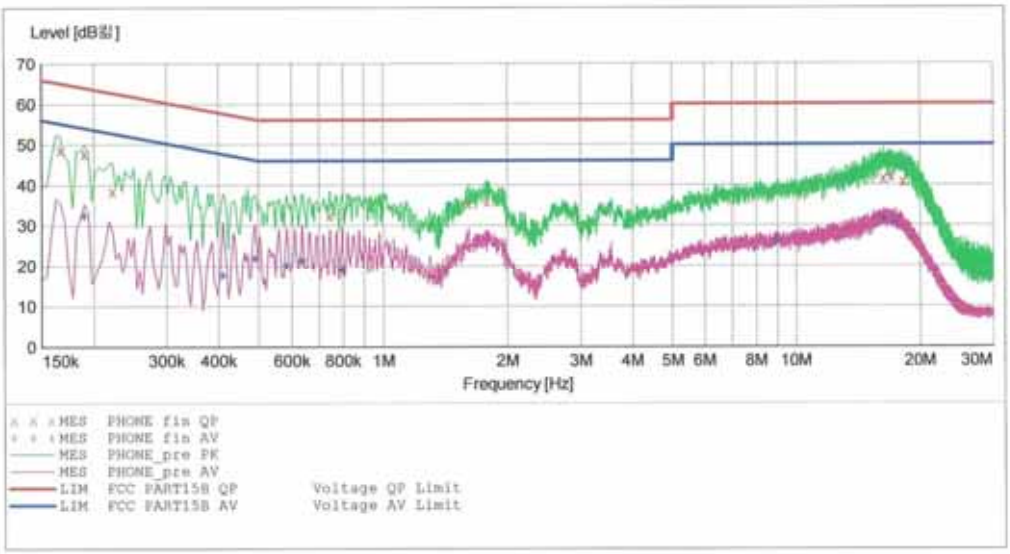
EMC

```
EUT:                    LG-D955
Manufacturer:           LG
Operating Condition:    WLAN MODE(DTS)
Test Site:              SHIELD ROOM
Operator:               JS LEE
Test Specification:     FCC PART15B
Comment:                H
Start of Test:          2013-11-16 / 10:39:40오전
```

SCAN TABLE: "FCC CLASS B(H)"

Short Description: FCC CLASS B(H)

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	500.0 kHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
500.0 kHz	5.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None
5.0 MHz	30.0 MHz	4.0 kHz	MaxPeak Average	10.0 ms	9 kHz	None



MEASUREMENT RESULT: "PHONE_fin QP"

2013-11-16 10:42오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.166001	48.70	9.8	65	16.5	---	---
0.190001	47.70	9.8	64	16.3	---	---
0.222001	38.40	9.8	63	24.4	---	---
0.744000	32.50	9.8	56	23.5	---	---
1.616000	35.40	9.9	56	20.6	---	---
1.788000	35.90	9.9	56	20.1	---	---
16.320000	41.50	10.8	60	18.5	---	---
17.004000	42.00	10.8	60	18.0	---	---
18.220000	40.80	10.9	60	19.2	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

2013-11-16 10:42오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.190001	32.40	9.8	54	21.6	---	---
0.410001	17.60	9.8	48	30.0	---	---
0.490001	21.80	9.8	46	24.4	---	---
0.584000	20.00	9.8	46	26.0	---	---
0.636000	21.20	9.8	46	24.8	---	---
0.796000	19.00	9.8	46	27.0	---	---
8.992000	26.00	10.4	50	24.0	---	---
16.288000	31.40	10.8	50	18.6	---	---
17.448000	30.60	10.8	50	19.4	---	---

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Conducted Emissions (Line 2)

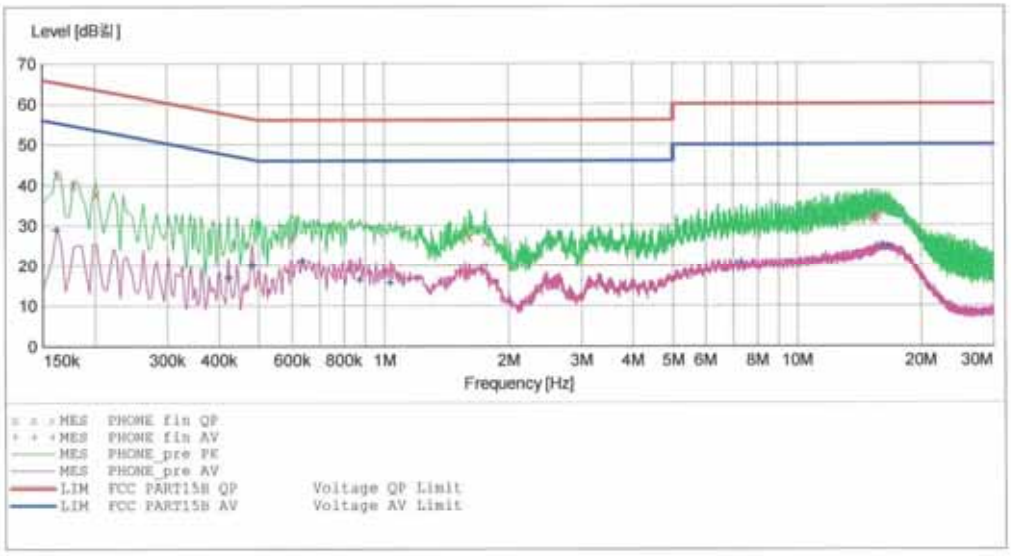
HCT

EMC

```
EUT:                    LG-D955
Manufacturer:           LG
Operating Condition:    WLAN MODE(DTS)
Test Site:              SHIELD ROOM
Operator:               JS LEE
Test Specification:     FCC PART15B
Comment:                N
Start of Test:          2013-11-16 / 10:44:26오전
```

SCAN TABLE: "FCC CLASS B(N)"

```
  Short Description:                FCC CLASS B(N)
  Start       Stop        Step      Detector  Meas.     IF       Transducer
  Frequency   Frequency   Width               Time      Bandw.
  150.0 kHz   500.0 kHz   4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
  500.0 kHz   5.0 MHz     4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
  5.0 MHz     30.0 MHz    4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
```



MEASUREMENT RESULT: "PHONE_fin QP"

2013-11-16 10:47오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.162001	42.70	10.0	65	22.7	---	---
0.178001	40.10	10.0	65	24.5	---	---
0.202001	38.00	10.0	64	25.5	---	---
0.600000	26.90	10.0	56	29.1	---	---
1.608000	27.40	10.1	56	28.6	---	---
1.756000	26.30	10.1	56	29.7	---	---
15.212000	32.20	11.0	60	27.8	---	---
15.492000	31.80	11.1	60	28.2	---	---
15.676000	32.70	11.1	60	27.3	---	---

MEASUREMENT RESULT: "PHONE_fin AV"

2013-11-16 10:47오전

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.162001	28.90	10.0	55	26.5	---	---
0.422001	16.90	10.0	47	30.5	---	---
0.482001	20.00	10.0	46	26.3	---	---
0.636000	21.20	10.0	46	24.8	---	---
0.876000	16.40	10.0	46	29.6	---	---
1.036000	15.60	10.1	46	30.4	---	---
7.312000	20.70	10.5	50	29.3	---	---
16.088000	24.80	11.1	50	25.2	---	---
16.620000	24.70	11.1	50	25.3	---	---

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9. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ENV216/ LISN	Annual	02/06/2014	100073
Schwarzbeck	VULB 9160/ TRILOG Antenna	Biennial	12/17/2014	3150
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	04/16/2014	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	04/25/2014	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	05/14/2014	MY51110063
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/10/2014	10094
MITEQ	AMF-6B-180265-35-10P / POWER AMP	Annual	04/16/2014	667624
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2014	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	07/05/2015	1151
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/08/2014	839117/011
Agilent	N1911A /Power Meter	Annual	01/22/2014	MY45100523
Agilent	N1921A /POWER SENSOR	Annual	07/11/2014	MY45241059
Wainwright Instrument	WHF3.0/18G-10EF / High Pass Filter	Annual	02/08/2014	F6
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	Annual	04/16/2014	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	Annual	04/16/2014	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	Annual	03/19/2014	1
Hewlett Packard	11636B/Power Divider	Annual	10/22/2014	11377
Agilent	87300B/Directional Coupler	Annual	12/24/2013	3116A03621
Hewlett Packard	11667B / Power Splitter	Annual	05/29/2014	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	10/29/2014	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/05/2014	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	04/24/2014	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	04/25/2014	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
CERNEX	CBLU1183540 / POWER AMP	Annual	07/24/2014	21691
Agilent	8493C / Attenuator(10 dB)	Annual	07/24/2014	76649
WEINSCHEL	2-3 / Attenuator(3 dB)	Annual	10/28/2014	BR0617