

5.2.6. Transmitter Peak Excursion**Test Summary:**

Test Engineer:	Nick Steele	Test Dates:	24 June 2013 to 11 July 2013
Test Sample IMEI:	004402451215499		

FCC Reference:	Part 15.407(a)(6)
Test Method Used:	As detailed in FCC KDB 789033 G)

Environmental Conditions:

Temperature (°C):	23 to 26
Relative Humidity (%):	35 to 39

Note(s):

1. In accordance with FCC KDB 789033 Section G)1)b), the following modes will be tested to cover all modulation types and bandwidth modes:
 - BPSK:
 - 802.11n HT20 / 6.5 Mbps / MCS0
 - 802.11n HT40 / 13.5 Mbps / MCS0
 - 802.11ac VHT80 / 29.3 Mbps / MCS0
 - QPSK:
 - 802.11n HT20 / 19.5 Mbps / MCS2
 - 802.11n HT40 / 40.5 Mbps / MCS2
 - 802.11ac VHT80 / 87.8 Mbps / MCS2
 - 16QAM:
 - 802.11n HT20 / 39 Mbps / MCS4
 - 802.11n HT40 / 81 Mbps / MCS4
 - 802.11ac VHT80 / 175.5 Mbps / MCS4
 - 64QAM:
 - 802.11n HT20 / 65 Mbps / MCS7
 - 802.11n HT40 / 135 Mbps / MCS7
 - 802.11ac VHT80 / 292.5 Mbps / MCS7

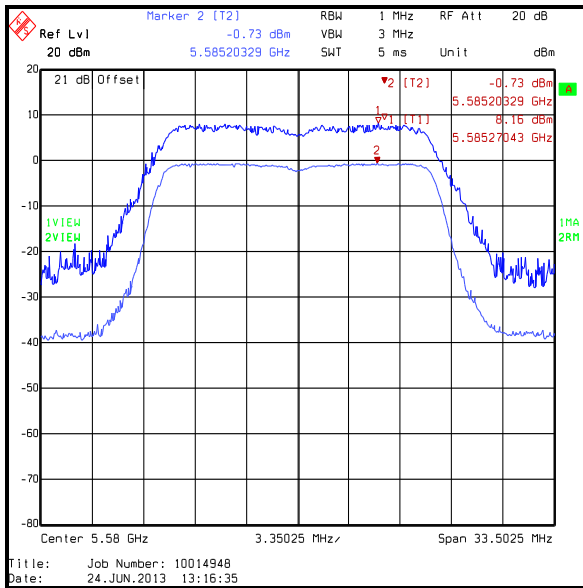
Measurements were performed in these modes on middle channels of the 5470 MHz to 5725 MHz band.

2. The peak measurement (first trace) was performed in accordance with FCC KDB 789033 G)3) using a peak detector. The second measurement (trace 2) was performed in accordance with FCC KDB 789033 F) and FCC KDB 789033 E)2)e) Method SA-2 Alternative using an RMS detector. A marker was placed at the peak of the first trace. A marker was placed of at the peak of the second trace. The difference between the two markers was calculated. For data rates that the EUT had a duty cycle <98%, the correction factor has been taken into account in order to calculate the final results. The peak excursion is the delta between the two markers and the addition of the duty cycle correction factor calculated in Section 5.2.3.

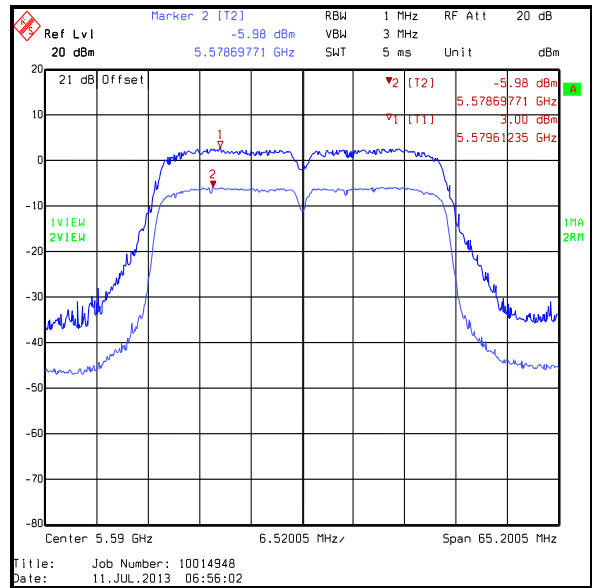
Transmitter Peak Excursion (continued)

Results: BPSK

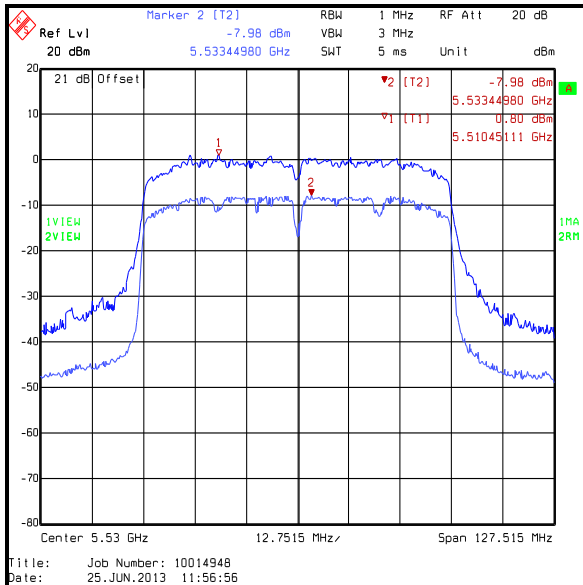
Middle Frequency (MHz)	Channel Bandwidth (MHz)	Peak Excursion (dB)	Duty cycle correction (dB)	Corrected Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
5580	20	8.9	N/A	N/A	13.0	4.1	Complied
5590	40	9.0	N/A	N/A	13.0	4.0	Complied
5530	80	8.8	0.2	8.6	13.0	4.4	Complied



20 MHz / MCS0



40 MHz / MCS0

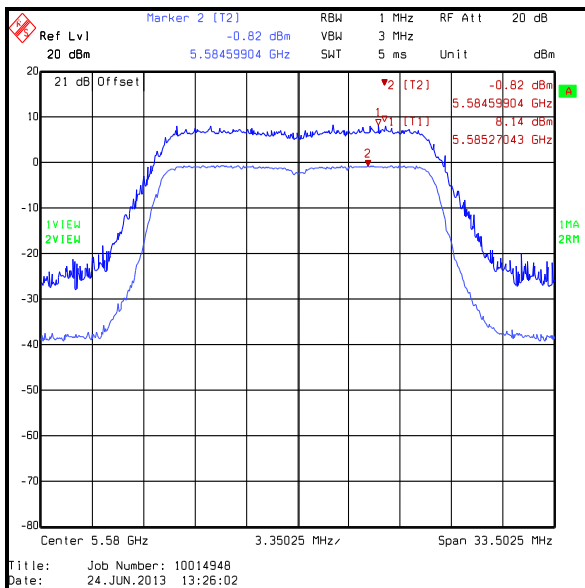


80 MHz / MCS0

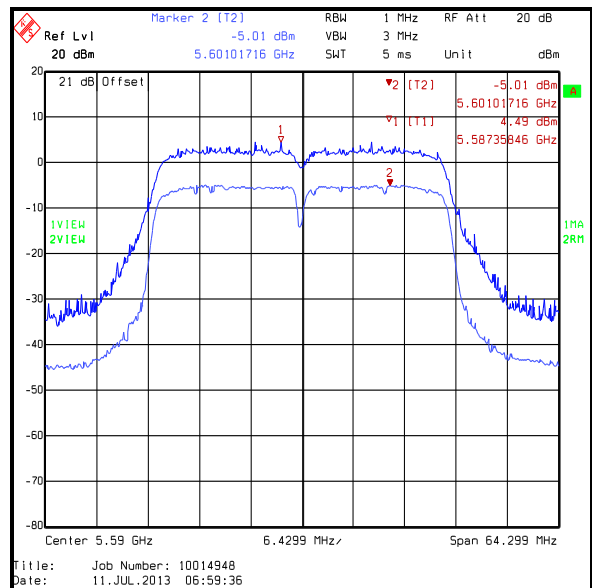
Transmitter Peak Excursion (continued)

Results: QPSK

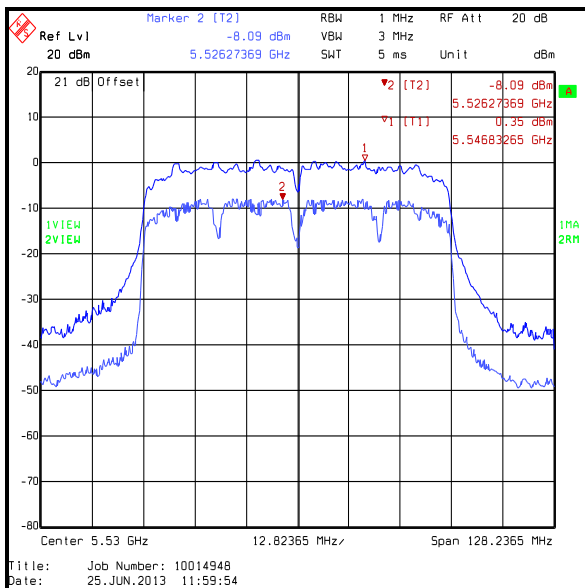
Middle Frequency (MHz)	Channel Bandwidth (MHz)	Peak Excursion (dB)	Duty cycle correction (dB)	Corrected Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
5580	20	8.9	N/A	N/A	13.0	4.1	Complied
5590	40	9.5	N/A	N/A	13.0	3.5	Complied
5530	80	8.5	0.4	8.1	13.0	4.9	Complied



20 MHz / MCS2



40 MHz / MCS2

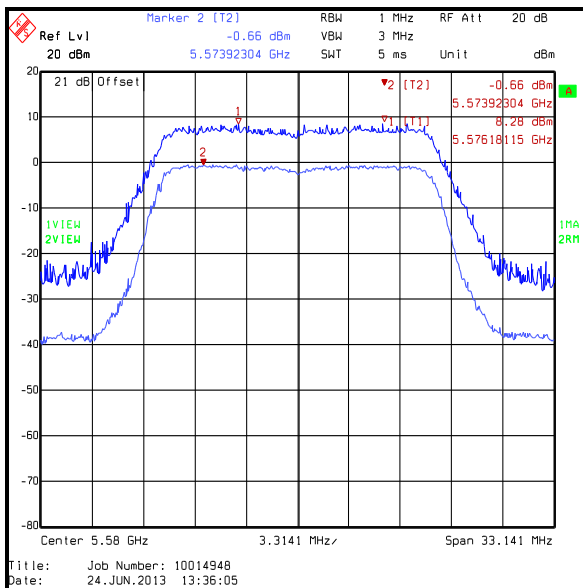


80 MHz / MCS2

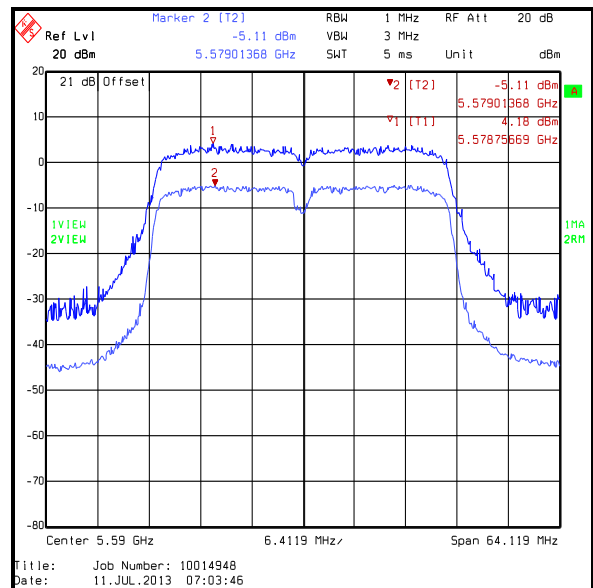
Transmitter Peak Excursion (continued)

Results: 16QAM

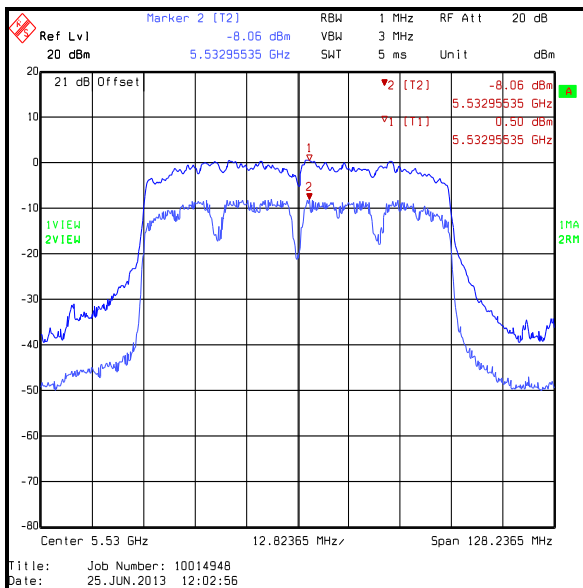
Middle Frequency (MHz)	Channel Bandwidth (MHz)	Peak Excursion (dB)	Duty cycle correction (dB)	Corrected Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
5580	20	9.0	N/A	N/A	13.0	4.0	Complied
5590	40	9.3	N/A	N/A	13.0	3.7	Complied
5530	80	8.6	0.5	8.1	13.0	4.9	Complied



20 MHz / MCS4



40 MHz / MCS4

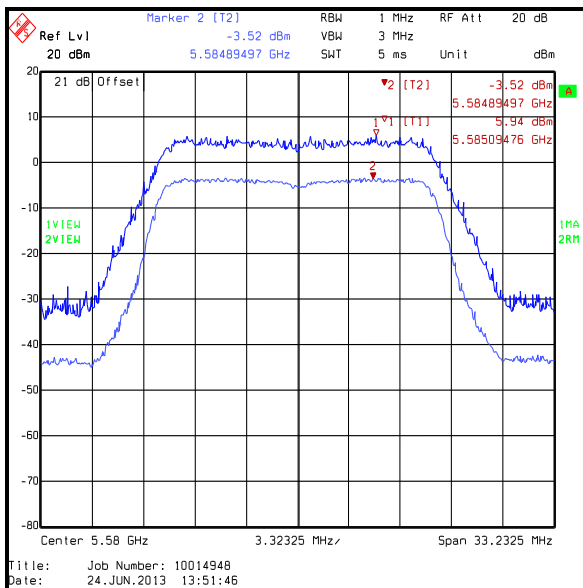


80 MHz / MCS4

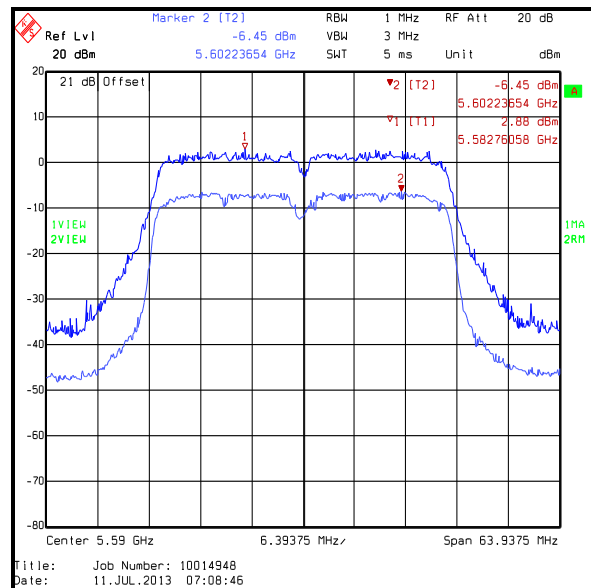
Transmitter Peak Excursion (continued)

Results: 64QAM

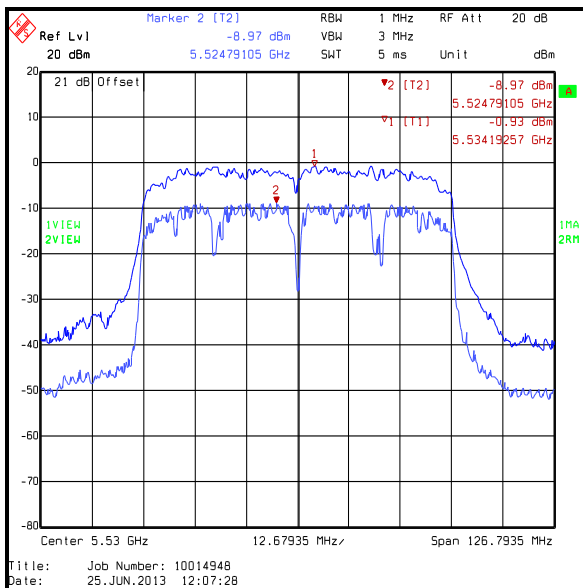
Middle Frequency (MHz)	Channel Bandwidth (MHz)	Peak Excursion (dB)	Duty cycle correction (dB)	Corrected Peak Excursion (dB)	Limit (dB)	Margin (dB)	Result
5580	20	9.4	N/A	N/A	13.0	3.6	Complied
5590	40	9.4	0.2	9.2	13.0	3.8	Complied
5530	80	9.9	0.8	9.1	13.0	3.9	Complied



20 MHz / MCS7



40 MHz / MCS7



80 MHz / MCS7

Transmitter Peak Excursion (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermometer / Hygrometer station	JM Handelspunkt	30.5015.13	None stated	24 May 2014	12
M127	Spectrum Analyser	Rohde & Schwarz	FSEB 30	842 659/016	13 Aug 2013	12
A1999	Attenuator	Huber + Suhner	6820.17.B	07101	05 Apr 2014	12
S0520	DC Power Supply	GW instek	GPC-3030	E835141	Calibrated before use	-
M1269	Multimeter	Fluke	179	90250210	30 Jul 2013	12
M199	Power Meter	Rohde & Schwarz	NRVS	827023/075	15 May 2014	12
M1267	Thermal Power Sensor	Rohde & Schwarz	NRV-Z52	100155	14 May 2014	12
M1021	Signal Generator	Rohde & Schwarz	SMP-02	833286/004	05 Feb 2014	12

5.2.7. Transmitter Out of Band Radiated Emissions**Test Summary:**

Test Engineer:	David Doyle	Test Date:	03 July 2013
Test Sample IMEI:	004402451217420		

FCC Reference:	Parts 15.407(b)(3),(6),(7) & 15.209(a)
Test Method Used:	FCC KDB 789033 H) & ANSI C63.10 Sections 6.3 and 6.5
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

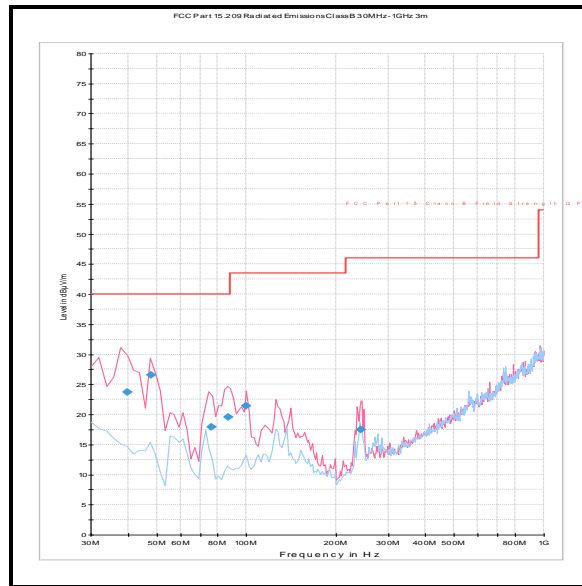
Temperature (°C):	26
Relative Humidity (%):	40

Note(s):

1. Measurements below 1 GHz were limited to the 5.47-5.725 GHz band, the EUT was transmitting with a data rate of 26 Mbps (802.11n) as it produced the highest conducted output power and was therefore deemed worst case.
2. Pre-scans with the EUT transmitting on the top channel were measured according to FCC Part 15.407(b)(3) which states for transmitters operating in the band 5.47 to 5.725 GHz: all emissions outside of the band shall not exceed -27 dBm/MHz. Part(b)(6) states unwanted emissions below 1 GHz must comply with the general field strength limits set forth in 15.209. Part(b)(7) states the provisions of 15.205 apply, e.g. restricted bands of operation.
3. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor and cable loss.
4. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.
5. The final measurements shown are within restricted bands, all other emissions were determined to be either unrestricted or greater than 20 dB below the appropriate limit.
6. Measurements below 1 GHz were performed in a semi-anechoic chamber (Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

Results: Top Channel / Field Strength

Frequency (MHz)	Antenna Polarity	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
241.986	Vertical	17.5	46.0	28.5	Complied

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)

Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying table.

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
A1834	Attenuator	Hewlett Packard	8491B	10444	27 Jan 2014	12
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	07 Feb 2014	12
G0543	Amplifier	Sonoma	310N	230801	04 Jul 2013	3
A259	Antenna	Chase	CBL6111	1513	25 Mar 2014	12
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	24 Oct 2013	12
M1622	Thermometer / Hygrometer station	JM Handelpunkt	30.5015.13	None stated	24 May 2014	12

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Test Summary:**

Test Engineer:	Andrew Edwards	Test Date:	02 July 2013
Test Sample IMEI:	004402451217420		

FCC Reference:	Part 15.407(b)(3),(7) & 15.209(a)
Test Method Used:	FCC KDB 789033 H) & ANSI C63.10 Sections 6.3 and 6.6
Frequency Range:	1 GHz to 40 GHz

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

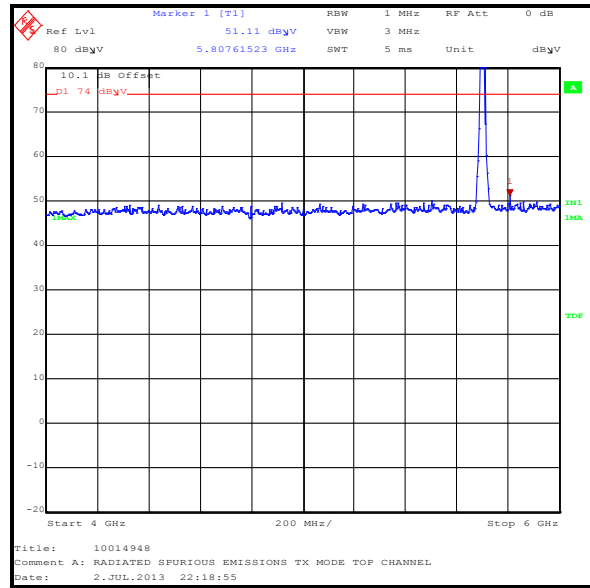
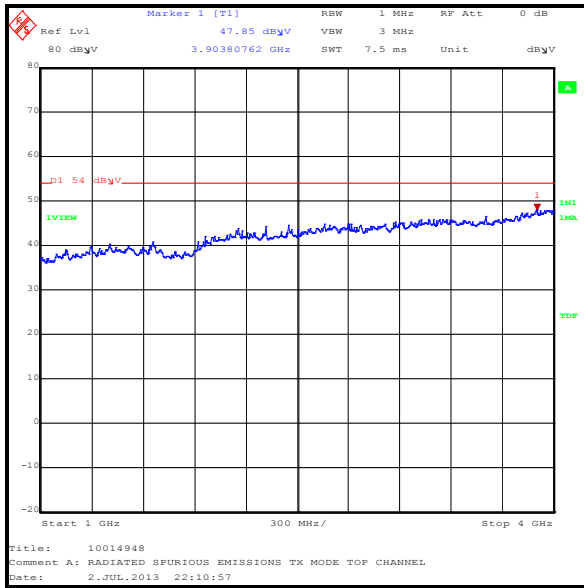
Note(s):

1. FCC Part 15.407(b)(3) states for transmitters operating in the band 5.47 to 5.725 GHz: all emissions outside of the band will not exceed -27 dBm/MHz. Part(b)(7) states the provisions of 15.205 apply e.g. restricted bands of operation.
2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded as shown in the table below. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.
3. Pre-scans were performed with the EUT transmitting on the top channel in this band. An inquiry was made to the FCC and the response was pre-scans could be performed in the band with the highest conducted output power and all final measurements should be performed on any emission seen for each band.
4. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor and cable loss.
5. The emission shown on the 4 GHz to 6 GHz plot is the EUT fundamental.
6. Measurements were performed across the two restricted bands closest to the bands of operation with the EUT transmitting on the top channel in the 5.47 to 5.725 GHz band. Plots are included in this section of the test report. Peak and average measurements were made. No emissions were observed above the noise floor of the measurements system.
7. Pre-scans above 1 GHz were performed in a fully anechoic chamber (Asset Number K0002) at a distance of 3 metres. The EUT was placed at a height of 1.5 metres above the test chamber floor in the centre of the chamber turntable. All measurement antennas were placed at a fixed height of 1.5 metres above the test chamber floor, in line with the EUT. Final measurements above 1 GHz were performed in a semi-anechoic chamber (Asset Number K0001) at a distance of 3 metres. The EUT was placed at a height of 80 cm above the reference ground plane in the centre of the chamber turntable. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.

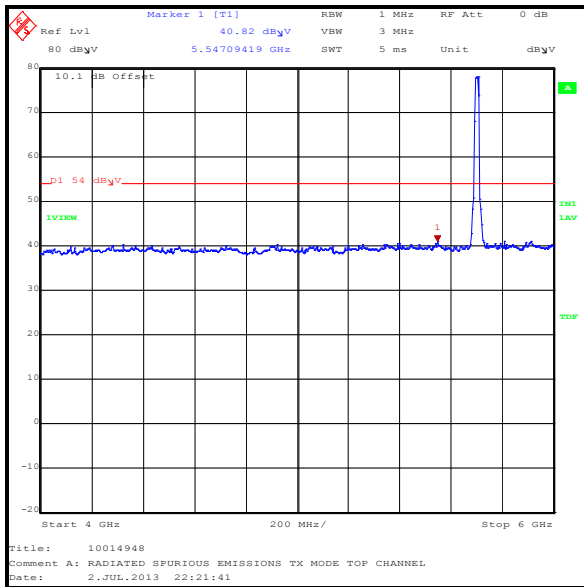
Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)

Results:

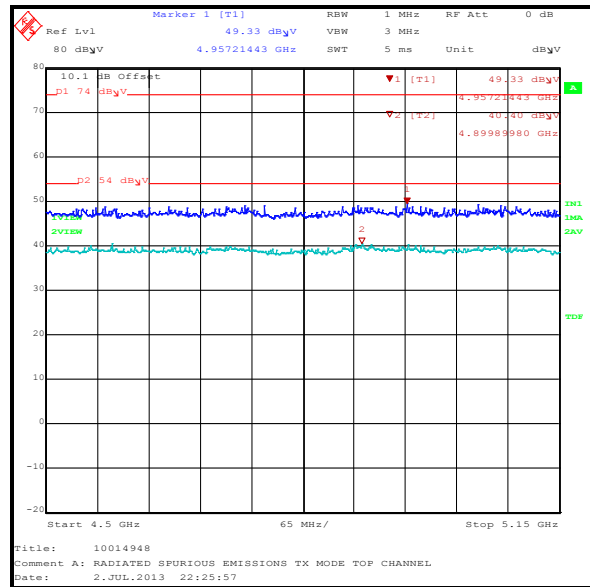
Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
39956.731	Horizontal	52.9	54.0	1.1	Complied



Peak Detector

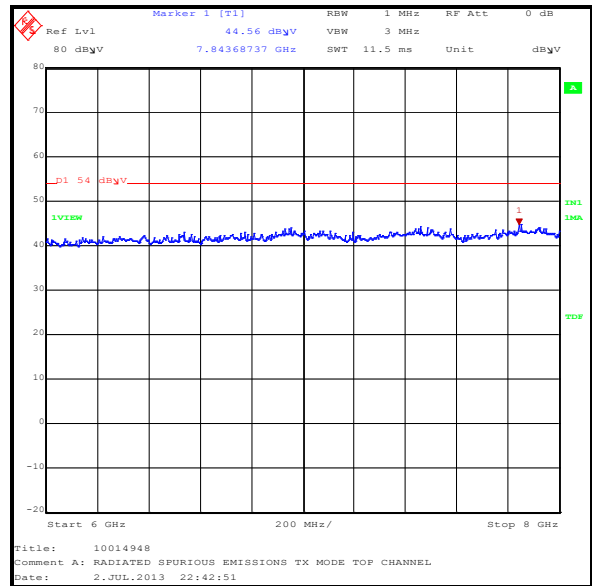
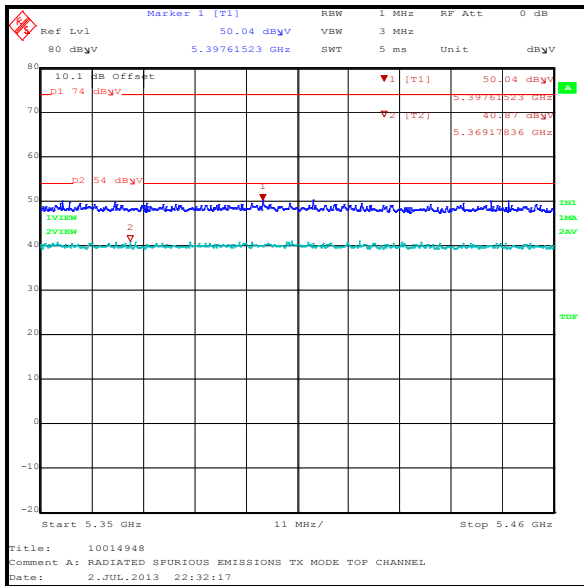


Average Detector

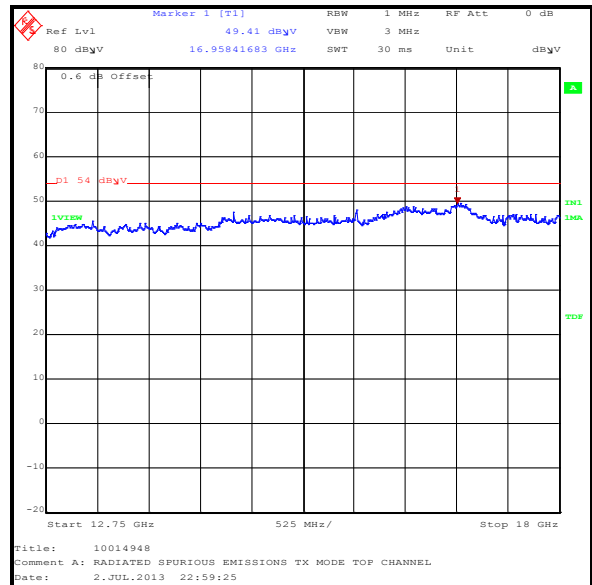
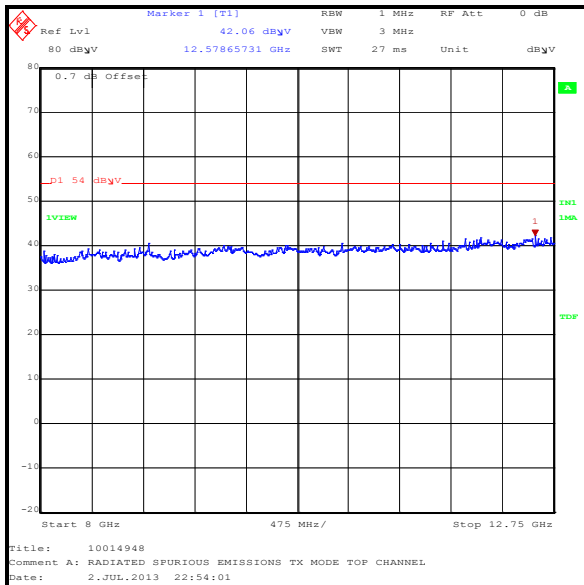


Restricted Band 4.5 GHz to 5.15 GHz

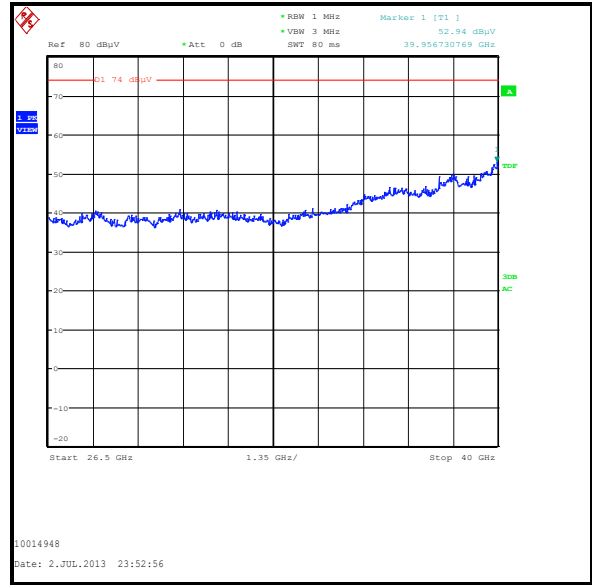
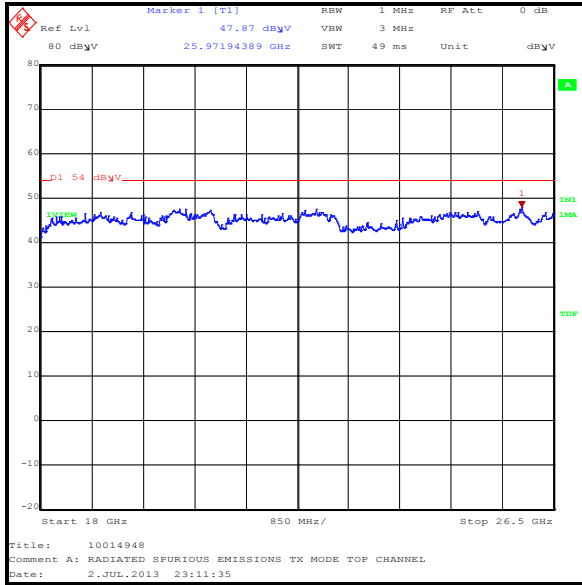
Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)



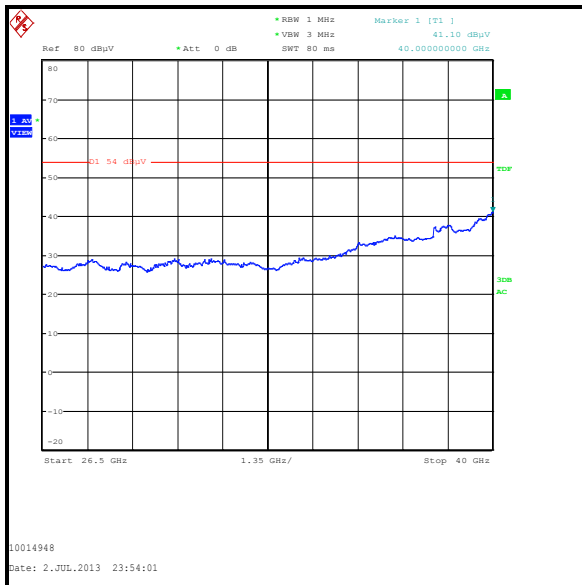
Restricted Band 5.35 GHz to 5.46 GHz



Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)



Peak Detector



Average Detector

Transmitter Out of Band Radiated Emissions (5.47-5.725 GHz band operation) (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
A253	Antenna	Flann Microwave	12240-20	128	04 Nov 2013	12
A254	Antenna	Flann Microwave	14240-20	139	04 Nov 2013	12
A255	Antenna	Flann Microwave	16240-20	519	04 Nov 2013	12
A256	Antenna	Flann Microwave	18240-20	400	04 Nov 2013	12
A436	Antenna	Flann Microwave	20240-20	330	04 Nov 2013	12
A1396	Attenuator	Huber & Suhner	6810.17.B	757987	10 May 2014	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	04 Nov 2013	12
A1785	Pre Amplifier	Farran Technology	FLNA-28-30	FTL 6483	11 Jun 2014	12
A1818	Antenna	EMCO	3115	00075692	04 Nov 2013	12
A2176	High Pass Filter	Atlan TecRF	AFH-07000	800980	10 May 2014	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	04 Nov 2013	12
M1124	Test Receiver	Rohde & Schwarz	ESIB 26	100046K	14 Aug 2013	12
M1229	Digital Multimeter	Fluke	179	87640015	26 Jun 2014	12
M1630	Test Receiver	Rohde & Schwarz	ESU 40	100233	07 Feb 2014	12
M1656	Thermometer / Hygrometer station	JM Handelspunkt	30.5015.13	Not stated	24 May 2014	12
S0357	Dual Power Supply	TTI	EL302D	249928	Calibrated before use	-

5.2.8. Transmitter Band Edge Radiated Emissions**Test Summary:**

Test Engineer:	Andrew Edwards	Test Dates:	01 July 2013 to 12 July 2013
Test Sample IMEI:	004402451217420		

FCC Reference:	Parts 15.407(b)(1), 15.407(b)(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.9.2 & FCC KDB 789033 H)

Environmental Conditions:

Temperature (°C):	25 to 26
Relative Humidity (%):	36 to 37

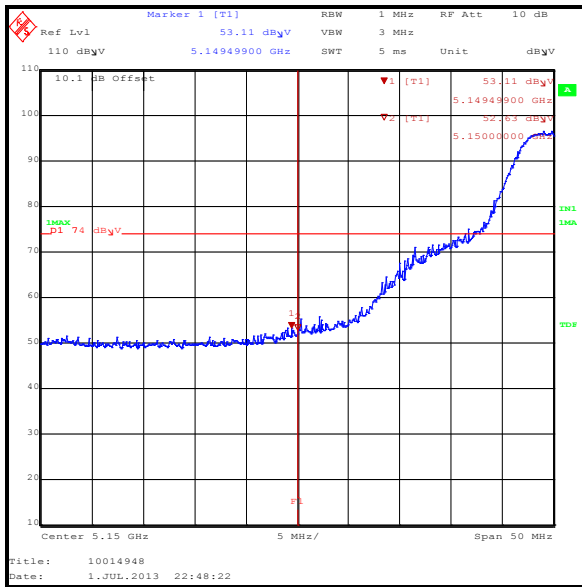
Note(s):

1. An Inquiry was made to the FCC and the response confirmed band edge measurements need only be performed in the EUT modes that produce the highest power and the widest bandwidths. The modes that produced the highest power and widest bandwidth were:
 - 802.11a – BPSK / 6 Mbps
 - 802.11n HT20 – 16QAM / 26 Mbps / MCS3 (GI=800ns) & 16QAM / 21.7 Mbps / MCS2 (GI=400ns).
 - 802.11n HT40 – QPSK / 40.5 Mbps / MCS2 (GI=800ns) & 16QAM / 60 Mbps / MCS3 (GI=400ns).
 - 802.11ac VHT20 – BPSK / 6.5 Mbps / MCS0 (GI=800ns) & BPSK / 7.2 Mbps / MCS0 (GI=400ns).
 - 802.11ac VHT40 – BPSK / 13.5 Mbps / MCS0 (GI=800ns) & QPSK / 30 Mbps / MCS1 (GI=400ns).
 - 802.11ac VHT80 – BPSK / 29.3 Mbps / MCS0 (GI=800ns) & QPSK / 65 Mbps / MCS1 (GI=400ns).
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel. Upper band edge measurements were performed with the EUT transmitting on the top channel.
3. For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also above the upper band edge at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply.
4. Field strength measurements using peak and average detectors were performed in the restricted bands below 5.15 GHz and above 5.35 GHz. Field strength and EIRP results were found to be compliant with the restricted band limits and Part 15.407 out-of-band limits.
5. In accordance with FCC KDB 789033 Section H)1)c), if the peak measurement is below the average limit, it is not necessary to perform a separate average measurement.
6. For average measurements, data rates where the EUT was transmitting at <98% duty cycle the correction factor calculated in section 5.2.3 was added to the measured result.
7. In accordance with FCC KDB 789033 Section H)6)c) Method AD (Vi), the average measurements were performed using an increased number of sweeps as calculated below:
 - 802.11a / BPSK / 6 Mbps – 100 sweeps
 - 802.11n HT20 / 16QAM / 26.5 Mbps / MCS3 / (GI=800ns) – 100 sweeps
 - 802.11n HT20 / 16QAM / 21.7 Mbps / MCS2 / (GI=400ns) – 102 sweeps
 - 802.11n HT40 / QPSK / 40.5 Mbps / MCS2 (GI=800ns) – 100 sweeps
 - 802.11n HT40 / 16QAM / 60 Mbps / MCS3 (GI=400ns) – 100 sweeps
 - 802.11ac VHT20 / BPSK / 6.5 Mbps / MCS0 (GI=800ns) – 100 sweeps
 - 802.11ac VHT20 / BPSK / 7.2 Mbps / MCS0 (GI=400ns) – 102 sweeps
 - 802.11ac VHT40 / BPSK / 13.5 Mbps / MCS0 (GI=800ns) – 100 sweeps
 - 802.11ac VHT40 / BPSK / 30 Mbps / MCS1 (GI=400ns) – 100 sweeps
 - 802.11ac VHT80 / BPSK / 29.3 Mbps / MCS0 (GI=800ns) – 102 sweeps
 - 802.11ac VHT80 / QPSK / 65 Mbps / MCS1 (GI=400ns) – 102 sweeps

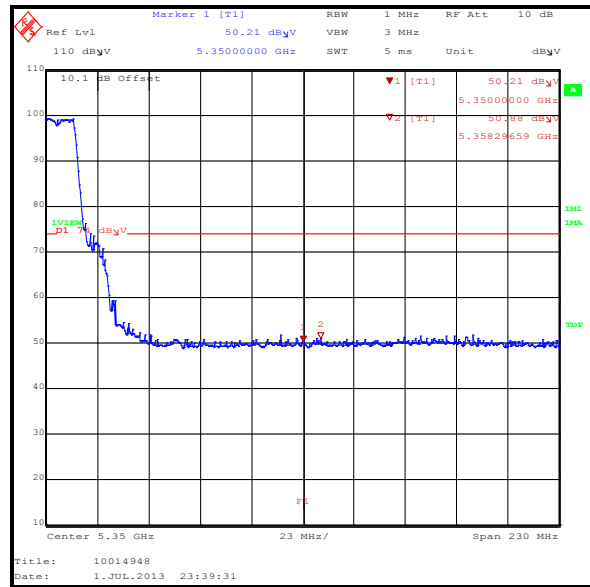
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Peak

Frequency (MHz)	Peak Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
5149.499	53.1	54.0	0.9	Complied
5150	52.6	54.0	1.4	Complied
5350	50.2	54.0	3.8	Complied
5358.297	50.9	54.0	3.1	Complied



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 20 MHz / 16QAM / 26 Mbps / MCS3 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	54.8	74.0	19.2	Complied

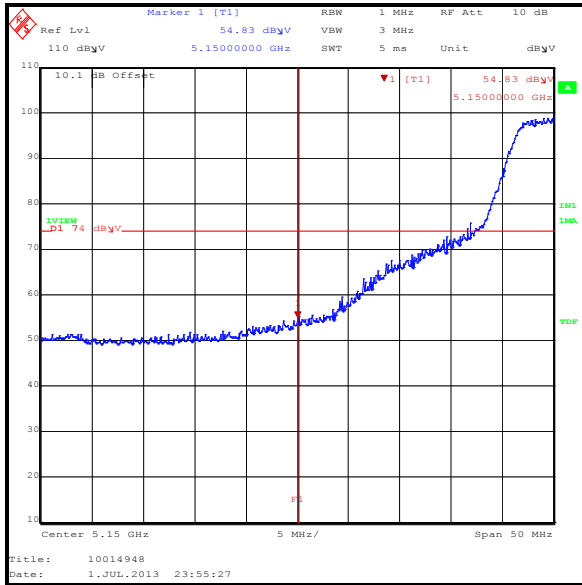
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350	49.9	54.0	4.1	Complied
5368.206	51.4	54.0	2.6	Complied

Results: 802.11n / 20 MHz / 16QAM / 26 Mbps / MCS3 / Average

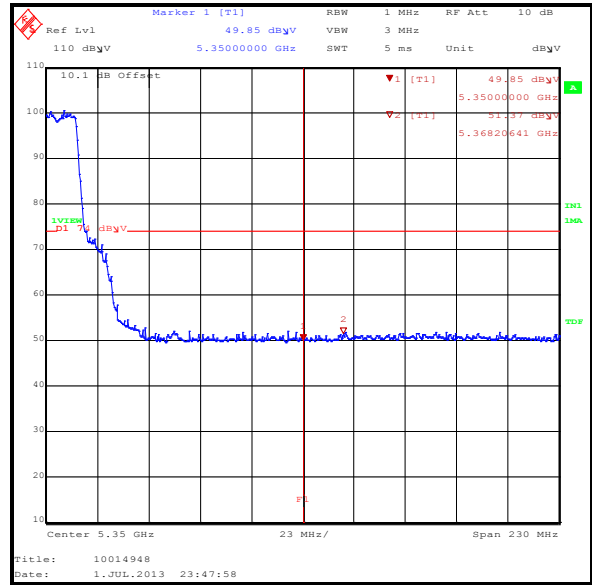
Frequency (MHz)	Level (dB μ V/m)	Duty cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	39.8	N/A	N/A	54.0	14.2	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

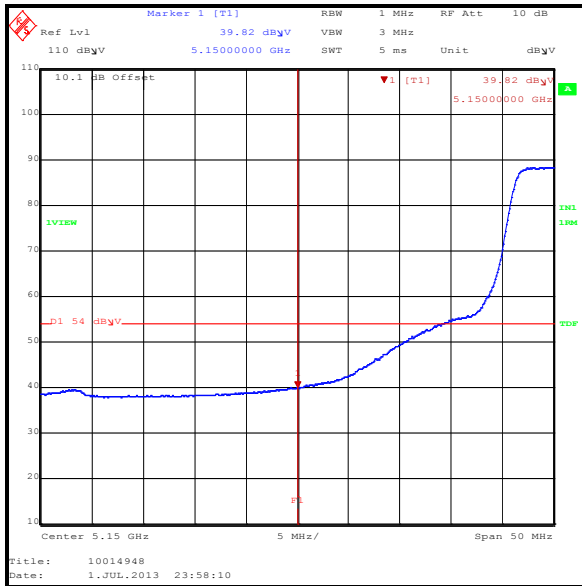
Results: 802.11n / 20 MHz / 16QAM / 26 Mbps / MCS5



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement

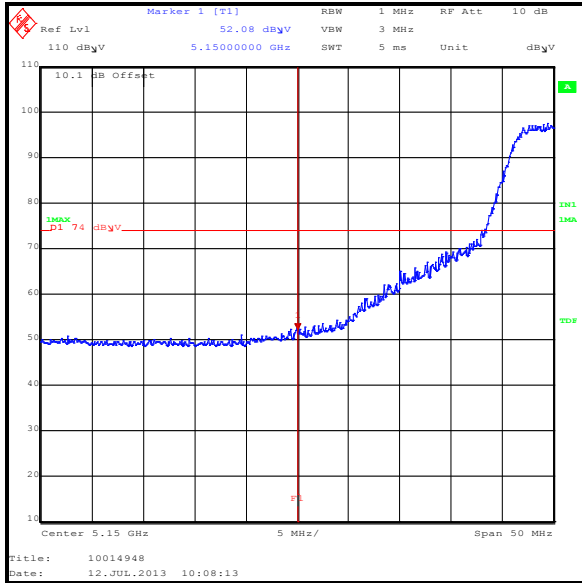


Lower Band Edge Average Measurement

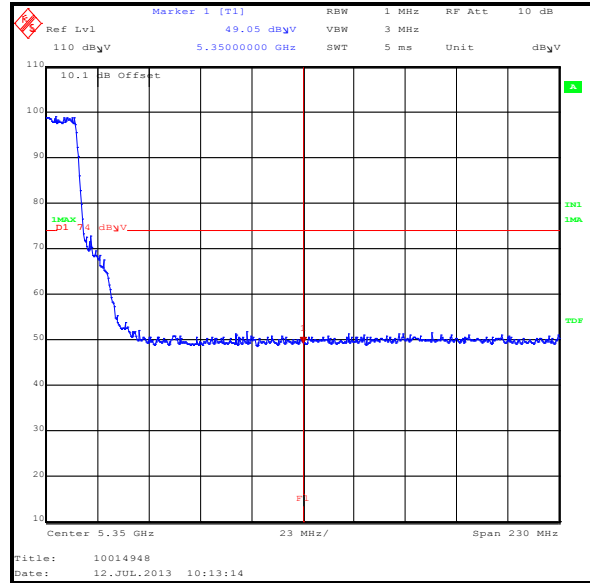
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11n / 20 MHz / 16QAM / 21.7 Mbps / MCS2 / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5150	52.1	54.0	1.9	Complied
5350	49.1	54.0	4.9	Complied



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 20 MHz / BPSK / 6.5 Mbps / MCS0 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5148.697	54.9	74.0	19.1	Complied
5150	54.7	74.0	19.3	Complied

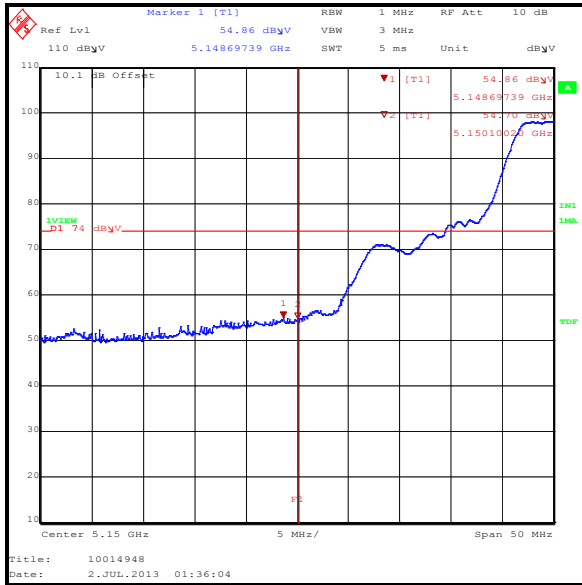
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350	50.6	54.0	3.4	Complied
5365.210	52.0	54.0	2.0	Complied

Results: 802.11ac / 20 MHz / BPSK / 6.5 Mbps / MCS0 / Average

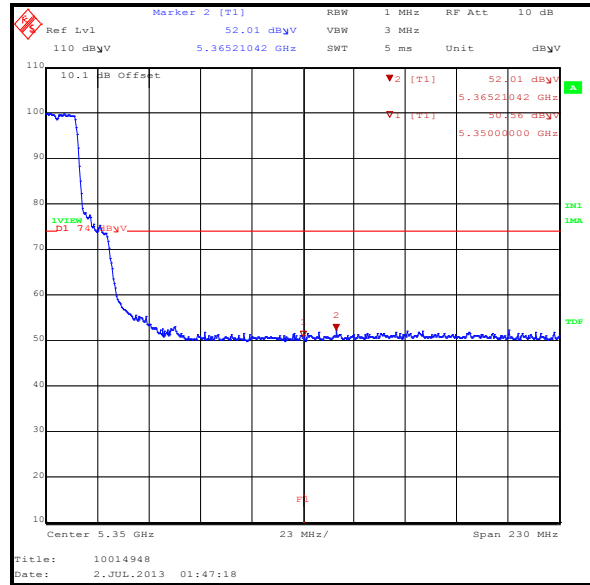
Frequency (MHz)	Level (dB μ V/m)	Duty cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	41.9	N/A	N/A	54.0	12.1	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

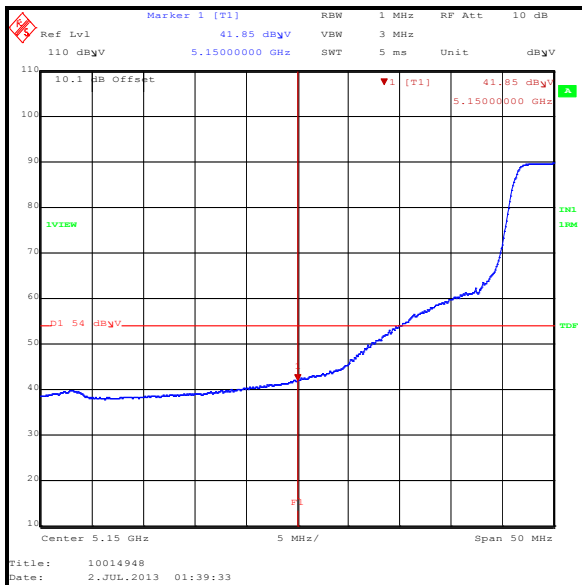
Results: 802.11ac / 20 MHz / BPSK / 6.5 Mbps / MCS0



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement

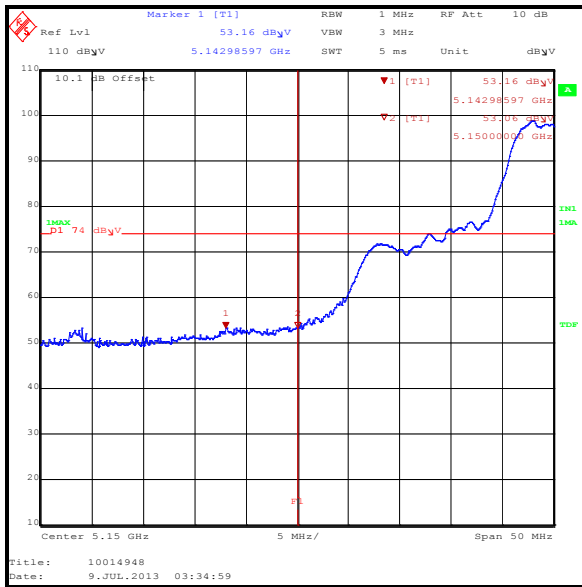


Lower Band Edge Average Measurement

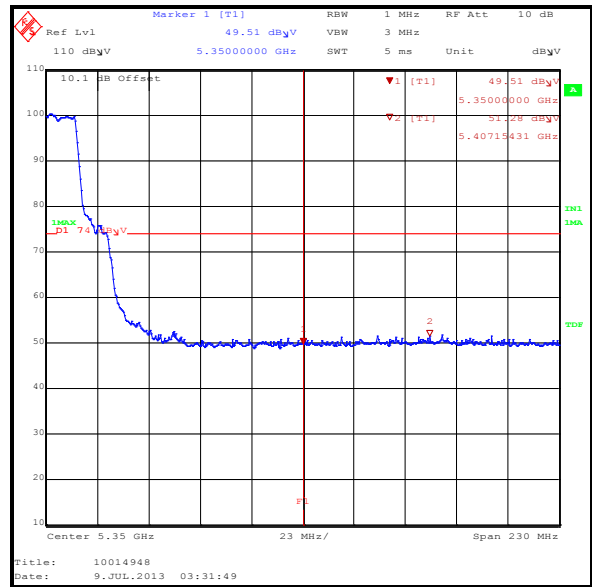
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

Results: 802.11ac / 20 MHz / BPSK / 7.2 Mbps / MCS0 / Peak

Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5142.986	53.2	54.0	0.8	Complied
5150	53.1	54.0	0.9	Complied
5350	49.5	54.0	4.5	Complied
5407.154	51.3	54.0	2.7	Complied



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 40 MHz / QPSK / 40.5 Mbps / MCS2 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5149.900	60.3	74.0	13.7	Complied
5150	56.9	74.0	17.1	Complied

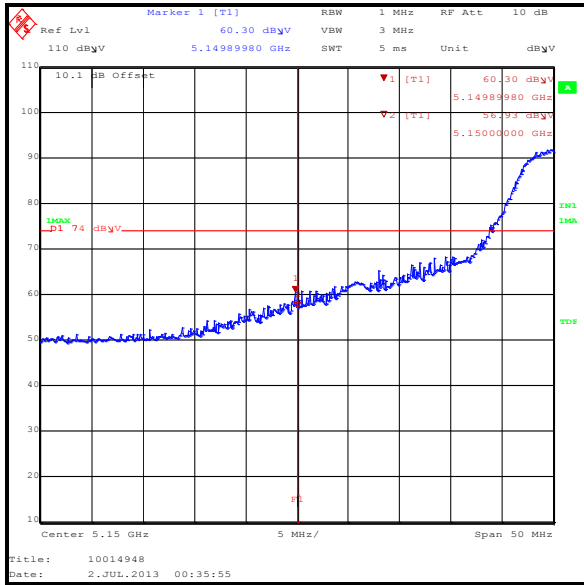
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350	50.2	54.0	3.8	Complied
5367.054	51.7	54.0	2.3	Complied

Results: 802.11n / 40 MHz / QPSK / 40.5 Mbps / MCS2 / Average

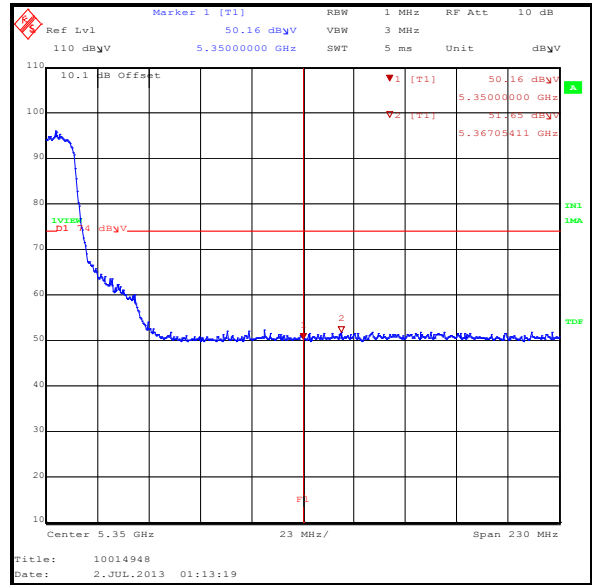
Frequency (MHz)	Level (dB μ V/m)	Duty cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	42.3	N/A	N/A	54.0	11.7	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

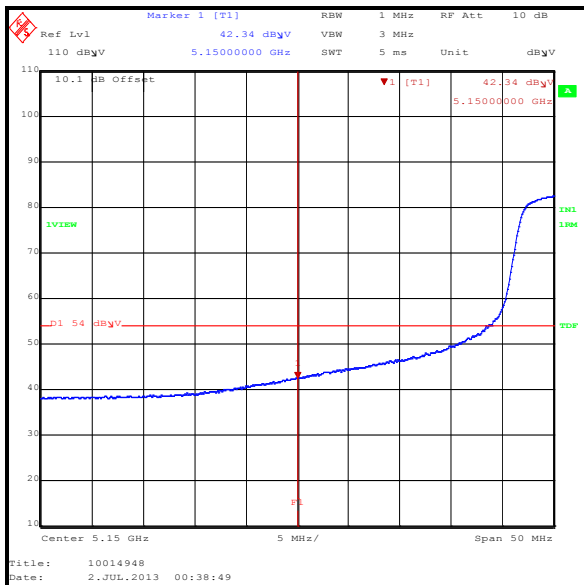
Results: 802.11n / 40 MHz / QPSK / 40.5 Mbps / MCS2



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11n / 40 MHz / 16QAM / 60 Mbps / MCS3 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	56.7	74.0	17.3	Complied

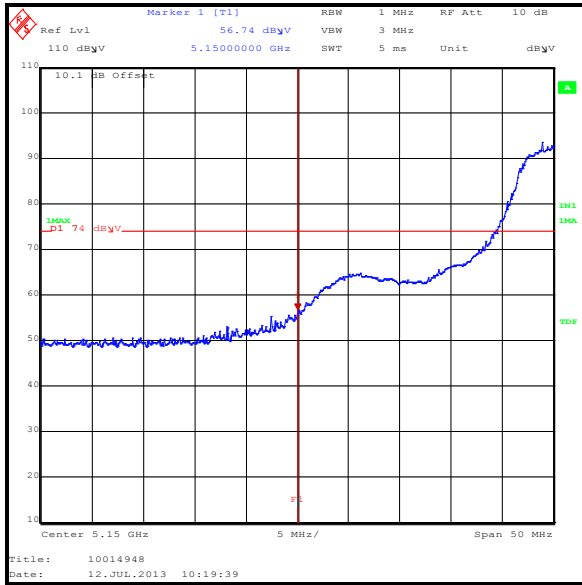
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350	49.7	54.0	4.3	Complied

Results: 802.11n / 40 MHz / 16QAM / 60 Mbps / MCS3 / Average

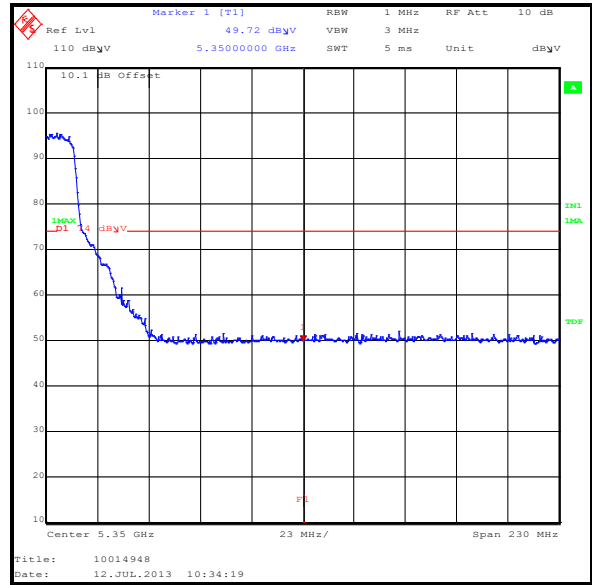
Frequency (MHz)	Level (dB μ V/m)	Duty cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5150	44.3	N/A	N/A	54.0	9.7	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

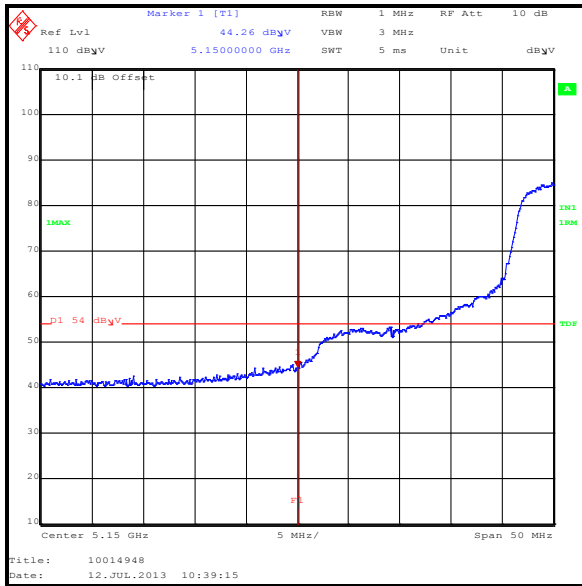
Results: 802.11n / 40 MHz / 16QAM / 60 Mbps / MCS3



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 40 MHz / BPSK / 13.5 Mbps / MCS0 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5148.196	61.3	74.0	12.7	Complied
5150	59.2	74.0	14.8	Complied

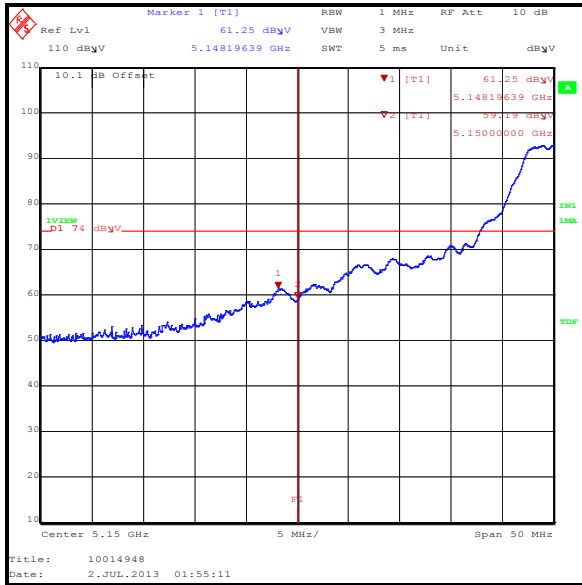
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350	50.8	54.0	3.2	Complied
5408.076	52.0	54.0	2.0	Complied

Results: 802.11ac / 40 MHz / BPSK / 13.5 Mbps / MCS0 / Average

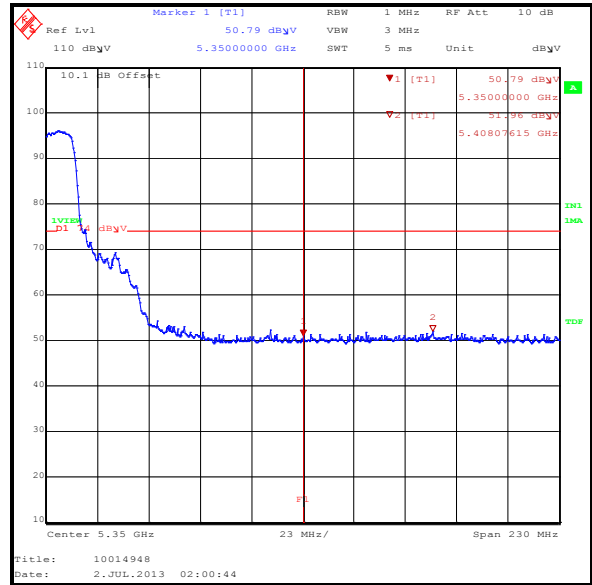
Frequency (MHz)	Level (dB μ V/m)	Duty cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5149.299	46.8	N/A	N/A	54.0	7.2	Complied
5150	46.7	N/A	N/A	54.0	7.3	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

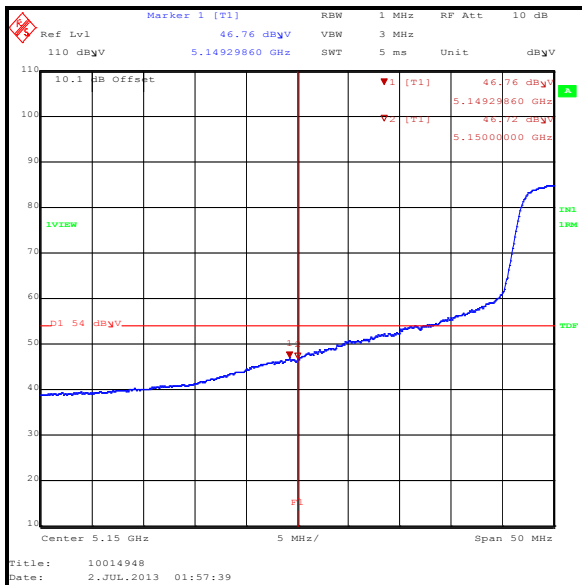
Results: 802.11ac / 40 MHz / BPSK / 13.5 Mbps / MCS0



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 40 MHz / QPSK / 30 Mbps / MCS1 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5149.800	59.9	74.0	14.1	Complied
5150	59.8	74.0	14.2	Complied

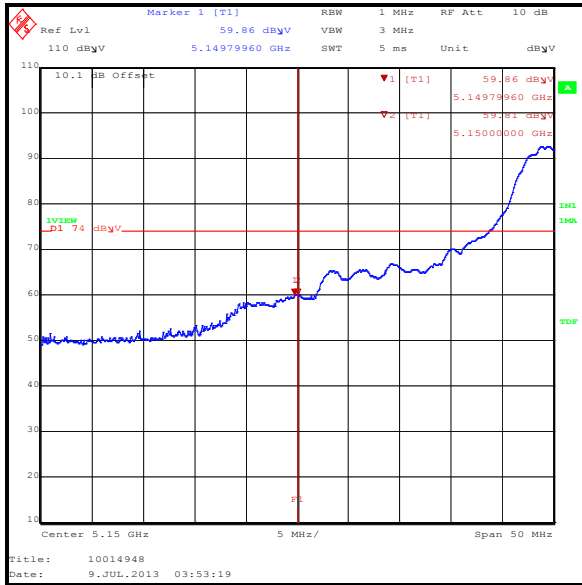
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350	49.9	54.0	4.1	Complied
5381.804	51.0	54.0	3.0	Complied

Results: 802.11ac / 40 MHz / QPSK / 30 Mbps / MCS1 / Average

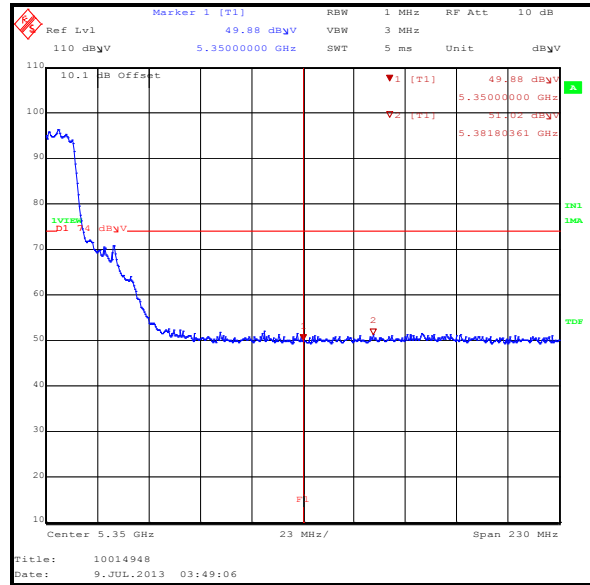
Frequency (MHz)	Level (dB μ V/m)	Duty cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5149.800	45.8	N/A	N/A	54.0	8.2	Complied
5150	45.7	N/A	N/A	54.0	8.3	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

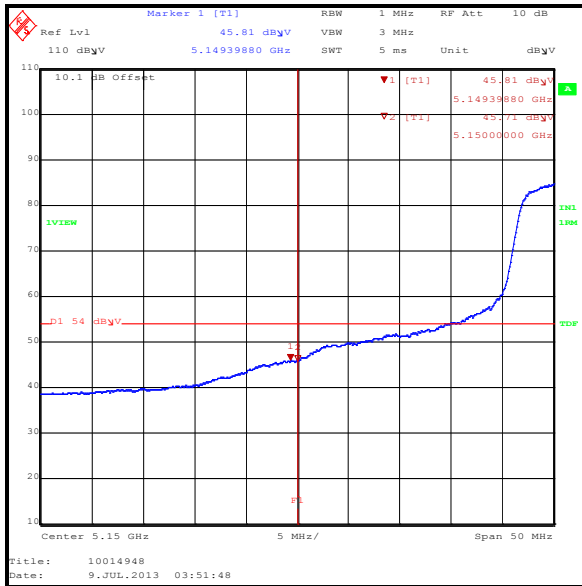
Results: 802.11ac / 40 MHz / QPSK / 30 Mbps / MCS1



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / 29.3 Mbps / MCS0 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5141.082	61.9	74.0	12.1	Complied
5150	60.5	74.0	13.5	Complied

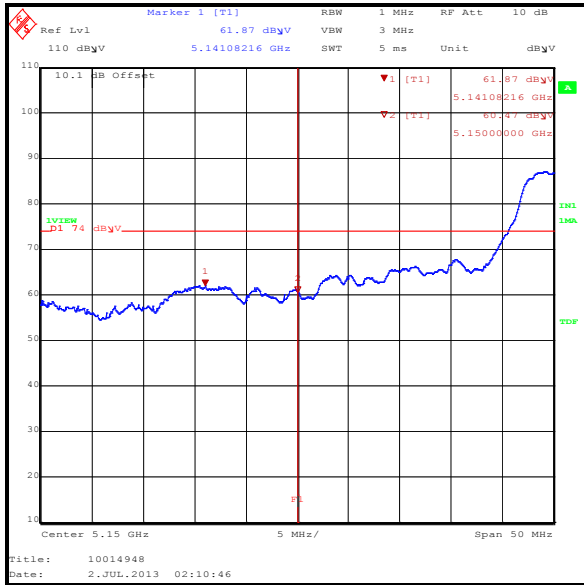
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350	50.0	54.0	4.0	Complied
5363.367	51.9	54.0	2.1	Complied

Results: 802.11ac / 80 MHz / BPSK / 29.3 Mbps / MCS0 / Average

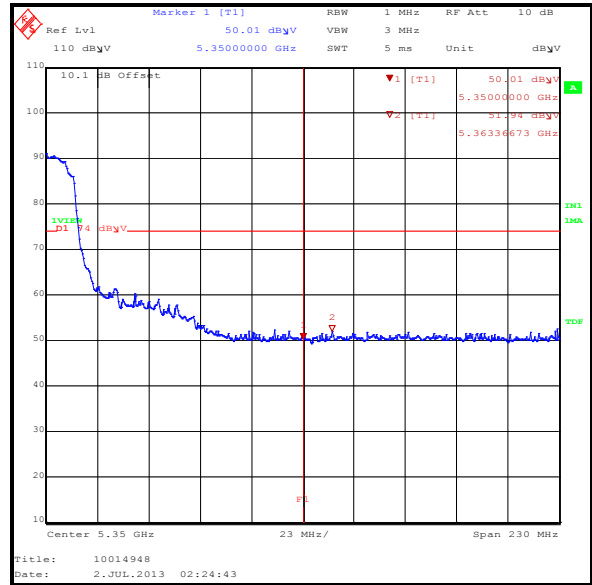
Frequency (MHz)	Level (dB μ V/m)	Duty cycle correction (dB)*	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5149.699	43.5	0.2	43.7	54.0	10.3	Complied
5150	43.2	0.2	43.4	54.0	10.6	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

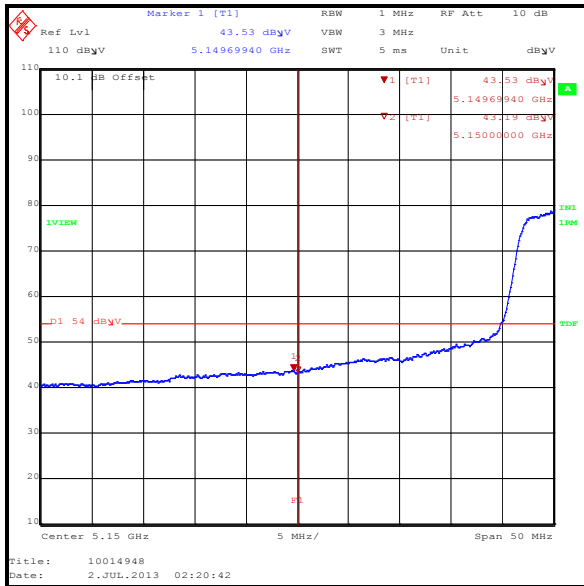
Results: 802.11ac / 80 MHz / BPSK / 29.3 Mbps / MCS0



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / QPSK / 65 Mbps / MCS1 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5145.491	58.7	74.0	15.3	Complied
5150	58.5	74.0	15.5	Complied

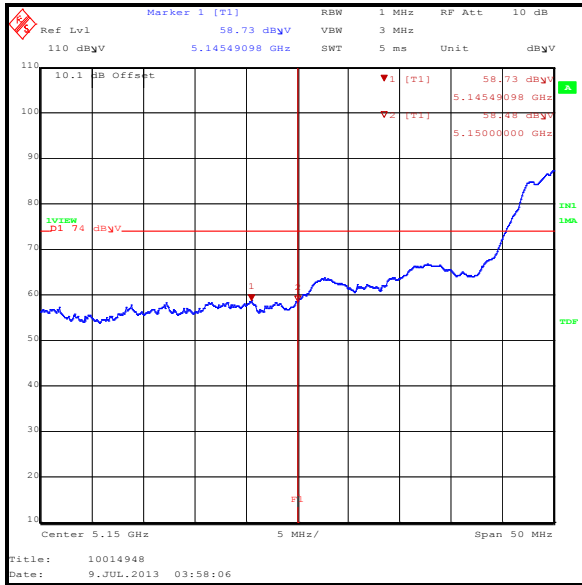
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5350	49.7	54.0	4.3	Complied
5355.531	51.3	54.0	2.7	Complied

Results: 802.11ac / 80 MHz / QPSK / 65 Mbps / MCS1 / Average

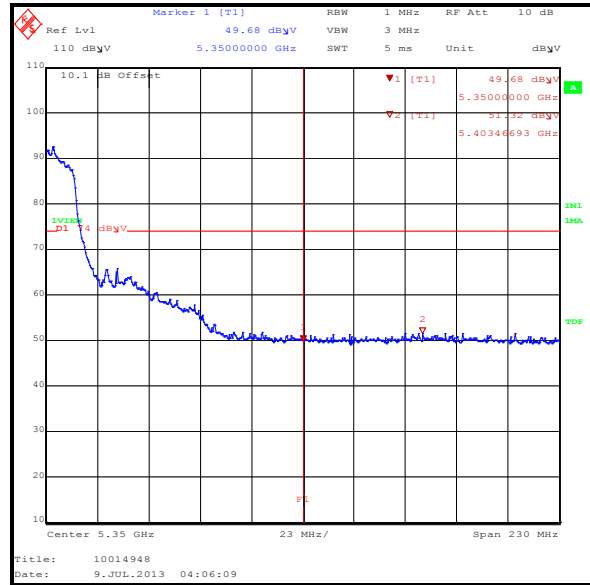
Frequency (MHz)	Level (dB μ V/m)	Duty cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5148.196	46.3	0.3	46.6	54.0	7.4	Complied
5150	45.2	0.3	45.5	54.0	7.5	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)

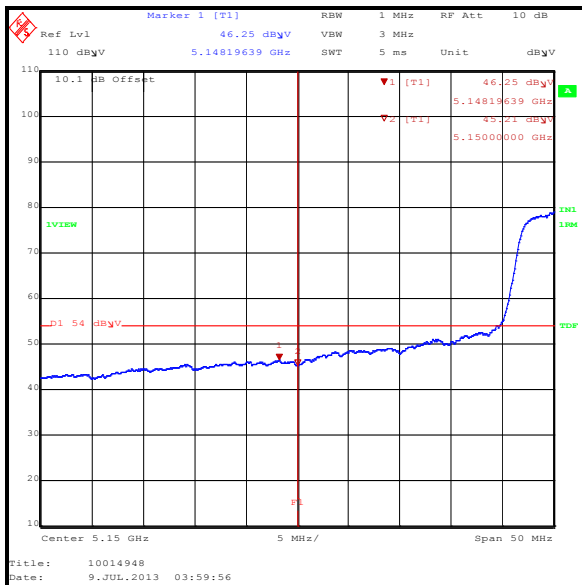
Results: 802.11ac / 80 MHz / QPSK / 65 Mbps / MCS1



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Lower Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band)**Test Summary:**

Test Engineer:	Andrew Edwards	Test Date:	02 July 2013 to 12 July 2013
Test Sample IMEI:	004402451217420		

FCC Reference:	Parts 15.407(b)(2), 15.407(b)(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.9.2 & FCC KDB 789033 H)

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	37

Note(s):

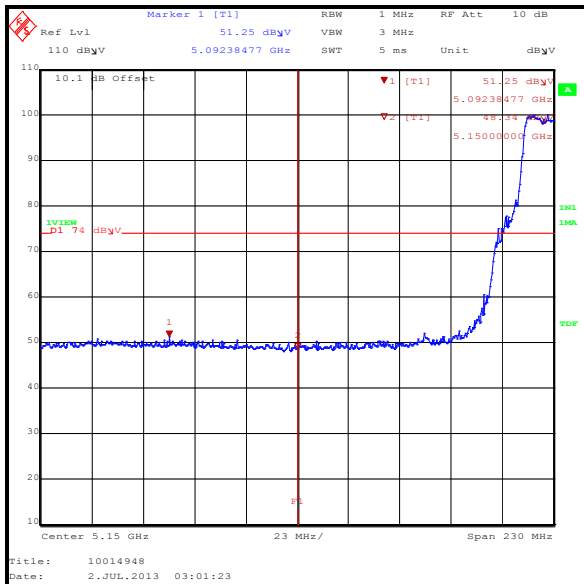
1. An Inquiry was made to the FCC and the response confirmed band edge measurements need only be performed in the EUT modes that produce the highest power and the widest bandwidths. The modes that produced the highest power and widest bandwidth were:
 - 802.11a – BPSK / 6 Mbps
 - 802.11n HT20 – 16QAM / 26 Mbps / MCS3 (GI=800ns) & 16QAM / 21.7 Mbps / MCS2 (GI=400ns).
 - 802.11n HT40 – QPSK / 40.5 Mbps / MCS2 (GI=800ns) & 16QAM / 60 Mbps / MCS3 (GI=400ns).
 - 802.11ac VHT20 – BPSK / 6.5 Mbps / MCS0 (GI=800ns) & BPSK / 7.2 Mbps / MCS0 (GI=400ns).
 - 802.11ac VHT40 – BPSK / 13.5 Mbps / MCS0 (GI=800ns) & QPSK / 30 Mbps / MCS1 (GI=400ns).
 - 802.11ac VHT80 – BPSK / 29.3 Mbps / MCS0 (GI=800ns) & QPSK / 65 Mbps / MCS1 (GI=400ns).
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel. Upper band edge measurements were performed with the EUT transmitting on the top channel.
3. For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also above the upper band edge at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply.
4. Field strength measurements using peak and average detectors were performed in the restricted bands below 5.15 GHz and above 5.35 GHz. Field strength and EIRP results were found to be compliant with the restricted band limits and Part 15.407 out-of-band limits.
5. In accordance with FCC KDB 789033 Section H)1)c), if the peak measurement is below the average limit, it is not necessary to perform a separate average measurement.
6. For average measurements, data rates where the EUT was transmitting at <98% duty cycle the correction factor calculated in section 5.2.3 was added to the measured result.
7. In accordance with FCC KDB 789033 Section H)6)c) Method AD (Vi), the average measurements were performed using an increased number of sweeps as calculated below:
 - 802.11a / BPSK / 6 Mbps – 100 sweeps
 - 802.11n HT20 / 16QAM / 26.5 Mbps / MCS3 / (GI=800ns) – 100 sweeps
 - 802.11n HT20 / 16QAM / 21.7 Mbps / MCS2 / (GI=400ns) – 102 sweeps
 - 802.11n HT40 / QPSK / 40.5 Mbps / MCS2 (GI=800ns) – 100 sweeps
 - 802.11n HT40 / 16QAM / 60 Mbps / MCS3 (GI=400ns) – 102 sweeps
 - 802.11ac VHT20 / BPSK / 6.5 Mbps / MCS0 (GI=800ns) – 100 sweeps
 - 802.11ac VHT20 / BPSK / 7.2 Mbps / MCS0 (GI=400ns) – 100 sweeps
 - 802.11ac VHT40 / BPSK / 13.5 Mbps / MCS0 (GI=800ns) – 100 sweeps
 - 802.11ac VHT40 / BPSK / 30 Mbps / MCS1 (GI=400ns) – 100 sweeps
 - 802.11ac VHT80 / BPSK / 29.3 Mbps / MCS0 (GI=800ns) – 102 sweeps
 - 802.11ac VHT80 / QPSK / 65 Mbps / MCS1 (GI=400ns) – 102 sweeps

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

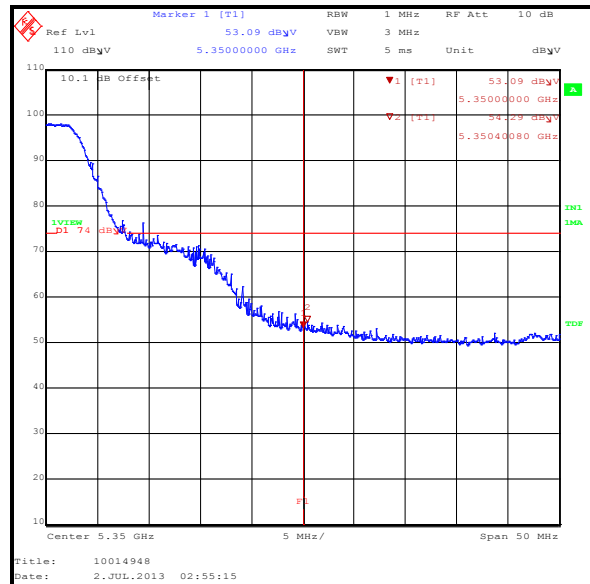
Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Peak

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5350.401	54.3	74.0	19.7	Complied

Frequency (MHz)	Peak Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
5092.385	51.3	54.0	2.1	Complied
5150	48.3	54.0	5.7	Complied
5350	53.1	54.0	0.9	Complied



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 20 MHz / 16QAM / 26 Mbps / MCS3 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	54.6	74.0	19.4	Complied
5350.902	55.6	74.0	18.4	Complied

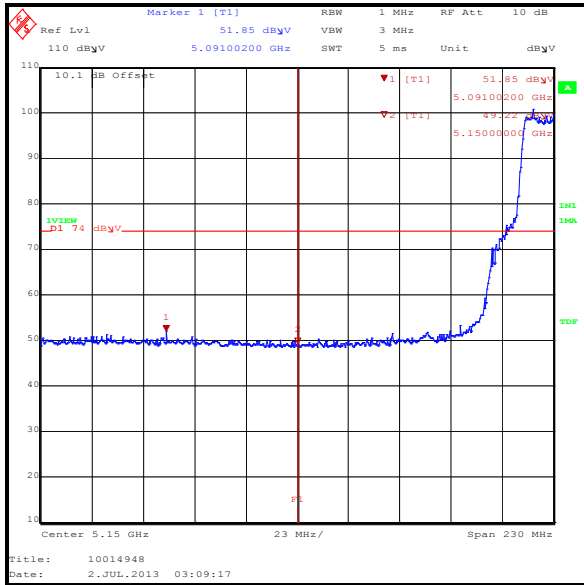
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5091.002	51.9	54.0	2.1	Complied
5150	49.2	54.0	4.8	Complied

Results: 802.11n / 20 MHz / 16QAM / 26 Mbps / MCS3 / Average

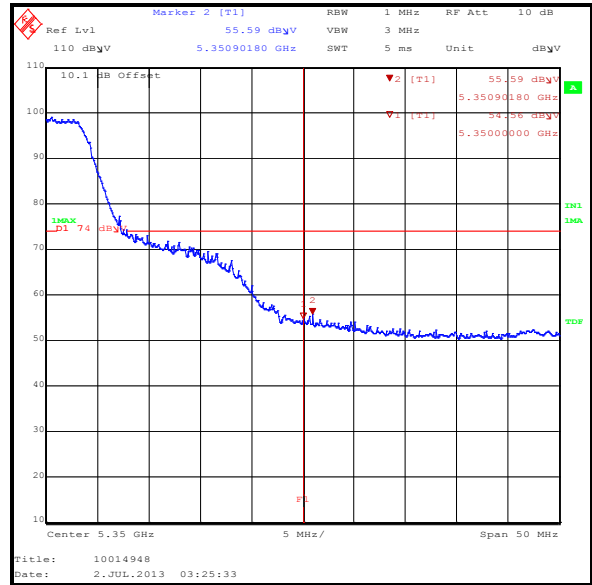
Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	40.9	N/A	N/A	54.0	13.1	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

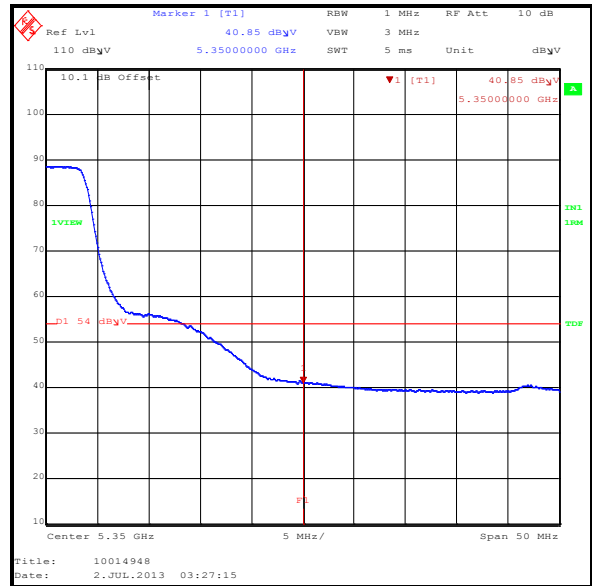
Results: 802.11n / 20 MHz / 16QAM / 26 Mbps / MCS3



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



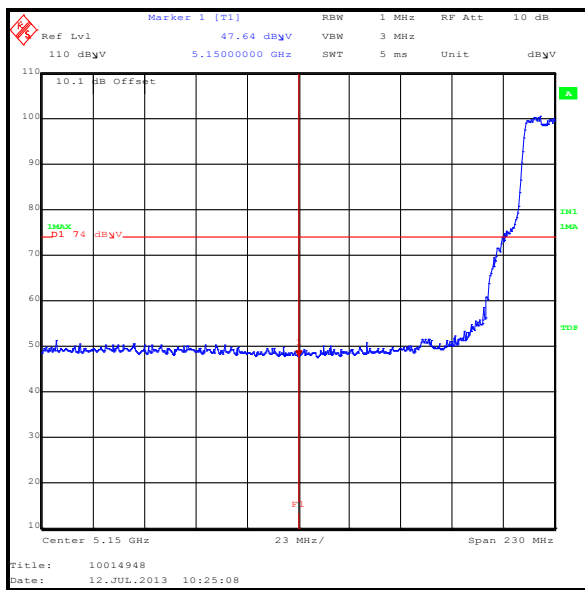
Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

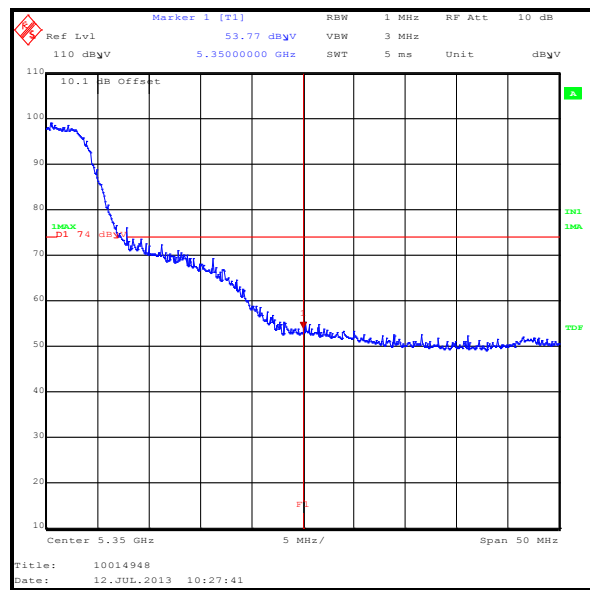
Results: 802.11n / 20 MHz / 16QAM / 21.7 Mbps / MCS2 / Peak

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350.601	54.0	74.0	20.0	Complied

Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5150	47.6	54.0	6.4	Complied
5350	53.8	54.0	0.2	Complied



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 20 MHz / BPSK / 6.5 Mbps / MCS0 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	55.6	74.0	18.4	Complied
5350.401	56.2	74.0	17.8	Complied

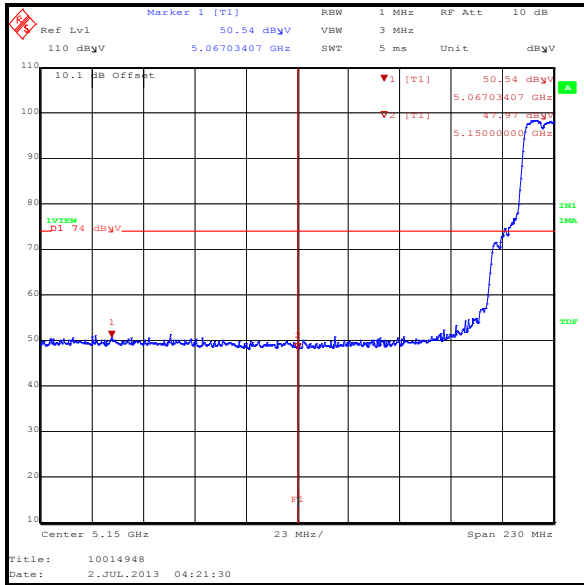
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5067.034	50.5	54.0	3.5	Complied
5150	48.0	54.0	6.0	Complied

Results: 802.11ac / 20 MHz / BPSK / 6.5 Mbps / MCS0 / Average

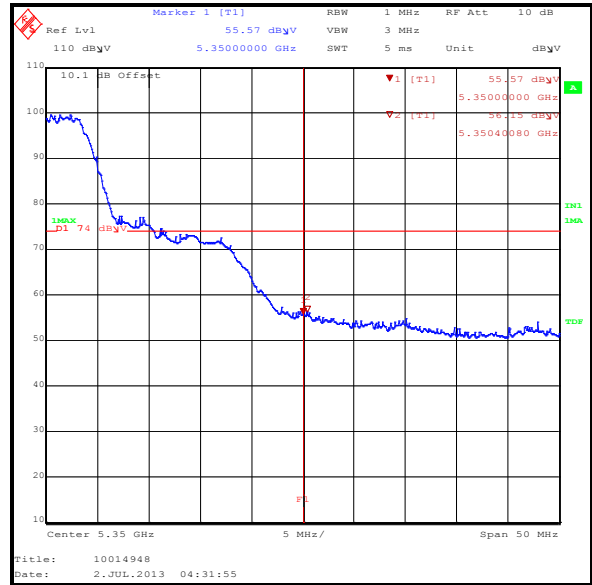
Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	42.9	N/A	N/A	54.0	11.1	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

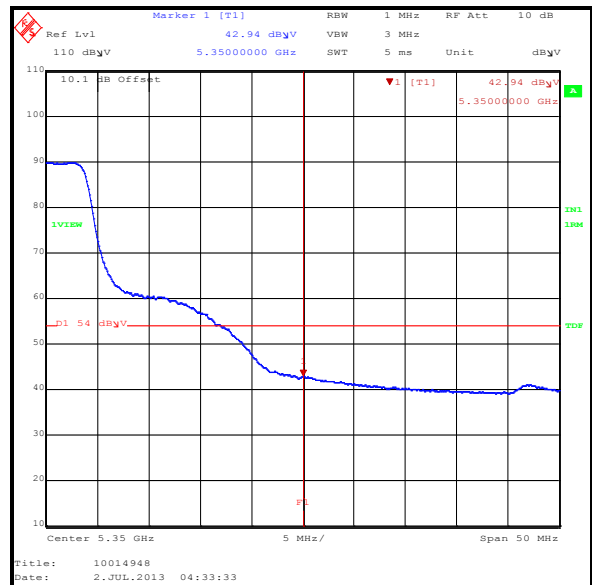
Results: 802.11ac / 20 MHz / BPSK / 6.5 Mbps / MCS0



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 20 MHz / BPSK / 7.2 Mbps / MCS0 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	55.0	74.0	19.0	Complied
5350.651	55.4	74.0	18.6	Complied

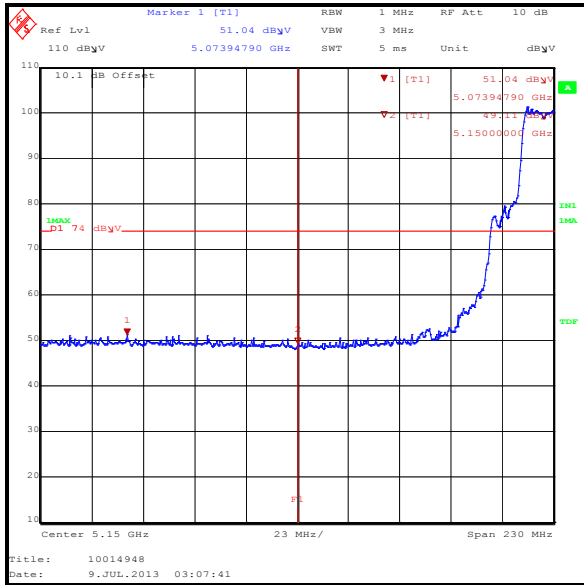
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5073.948	51.0	54.0	3.0	Complied
5150	49.1	54.0	4.9	Complied

Results: 802.11ac / 20 MHz / BPSK / 7.2 Mbps / MCS0 / Average

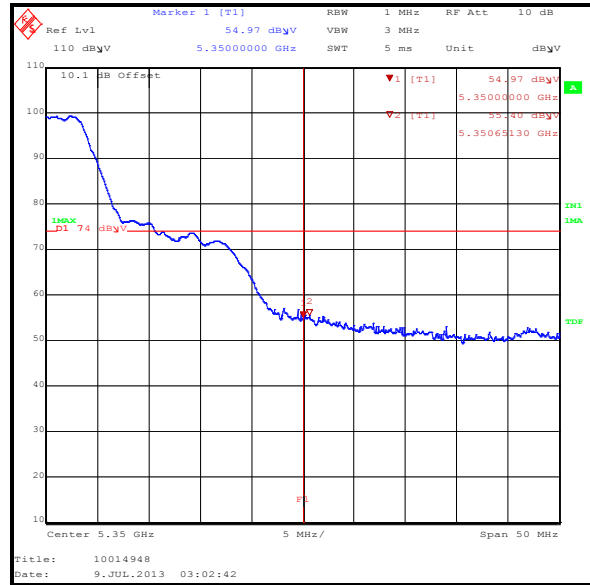
Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	42.5	N/A	N/A	54.0	11.5	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

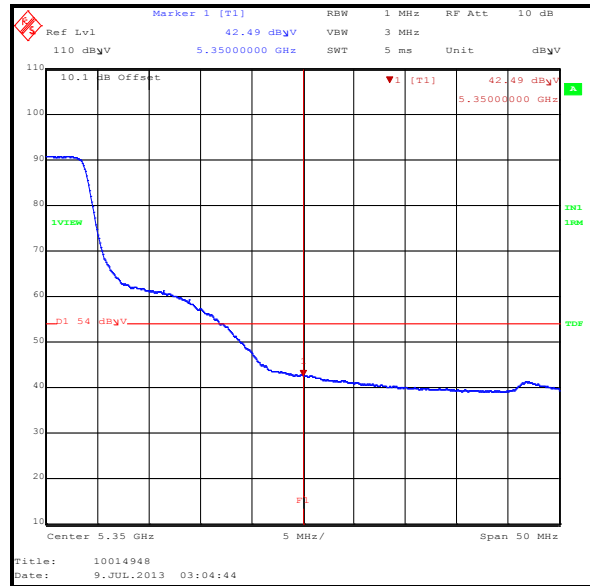
Results: 802.11ac / 20 MHz / BPSK / 7.2 Mbps / MCS0



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 40 MHz / QPSK / 40.5 Mbps / MCS2 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	56.7	74.0	17.3	Complied
5350.902	58.4	74.0	15.6	Complied

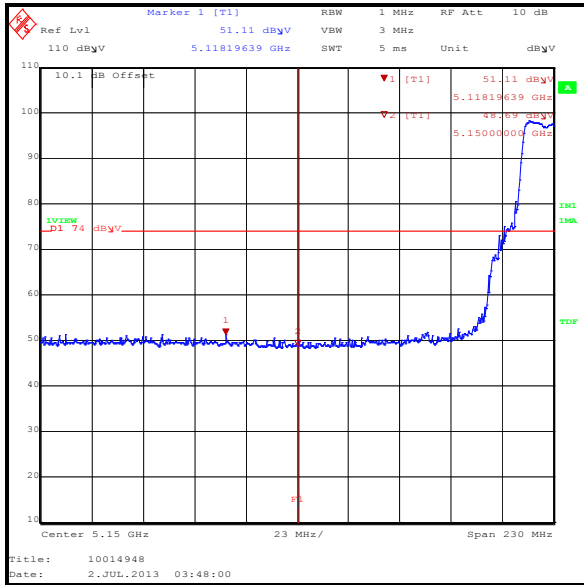
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5118.196	51.1	54.0	2.9	Complied
5150	48.7	54.0	5.3	Complied

Results: 802.11n / 40 MHz / QPSK / 40.5 Mbps / MCS2 / Average

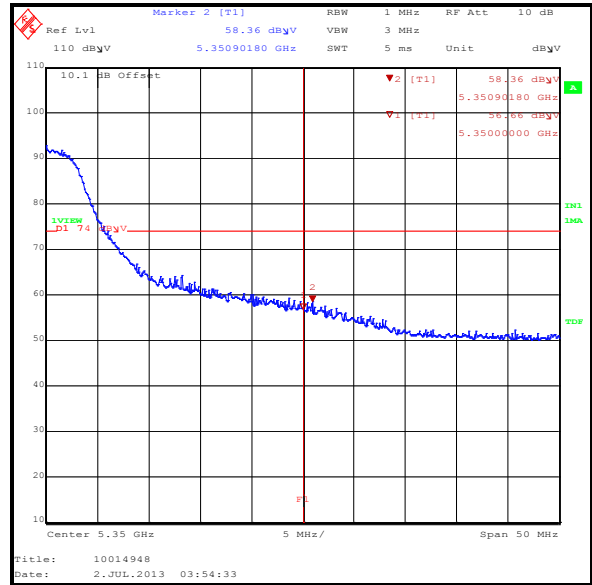
Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	43.7	N/A	N/A	54.0	10.3	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

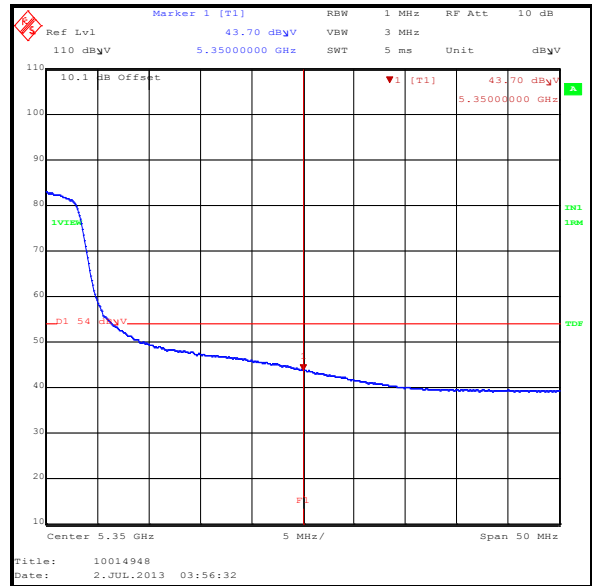
Results: 802.11n / 40 MHz / QPSK / 40.5 Mbps / MCS2



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11n / 40 MHz / 16QAM / 60 Mbps / MCS3 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	56.3	74.0	17.7	Complied

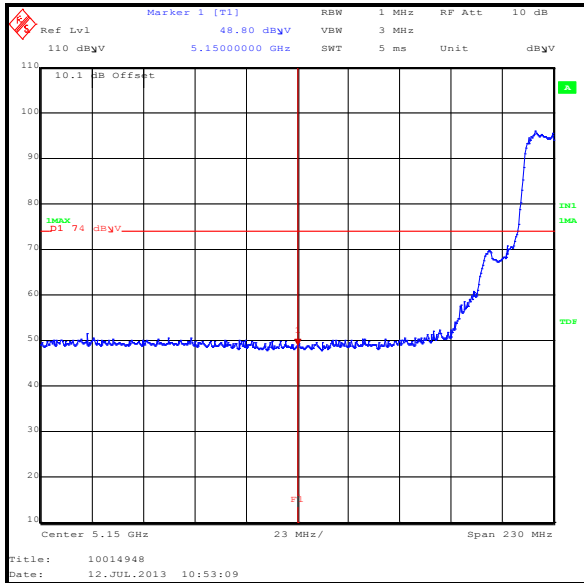
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5150	48.8	54.0	5.2	Complied

Results: 802.11n / 40 MHz / 16QAM / 60 Mbps / MCS3 / Average

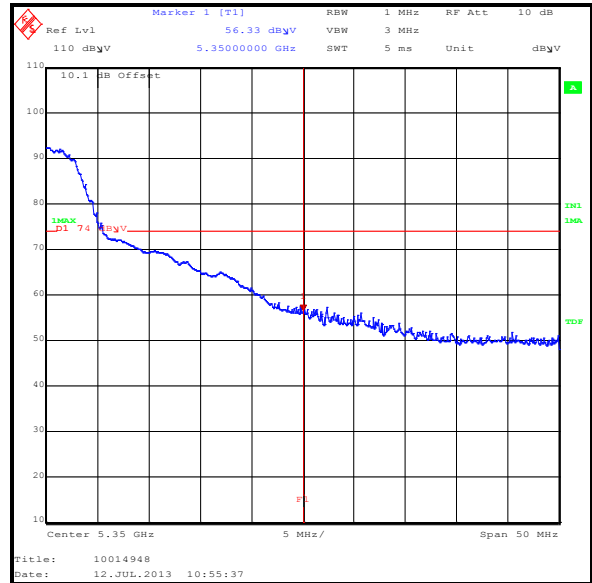
Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	47.4	N/A	N/A	54.0	6.6	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

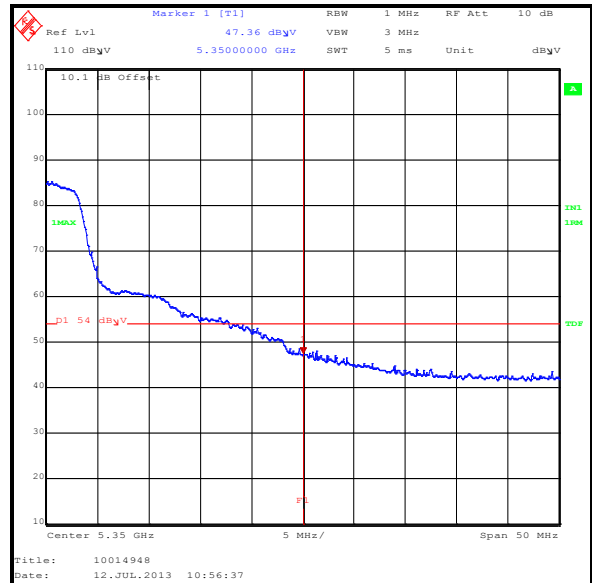
Results: 802.11n / 40 MHz / 16QAM / 60 Mbps / MCS3



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 40 MHz / BPSK / 13.5 Mbps / MCS0 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	61.6	74.0	12.4	Complied
5351.904	62.9	74.0	11.1	Complied

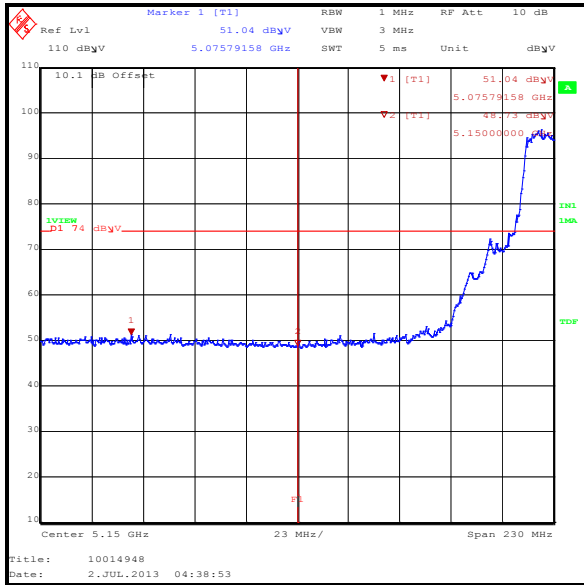
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5075.792	51.0	54.0	3.0	Complied
5150	48.7	54.0	5.3	Complied

Results: 802.11ac / 40 MHz / BPSK / 13.5 Mbps / MCS0 / Average

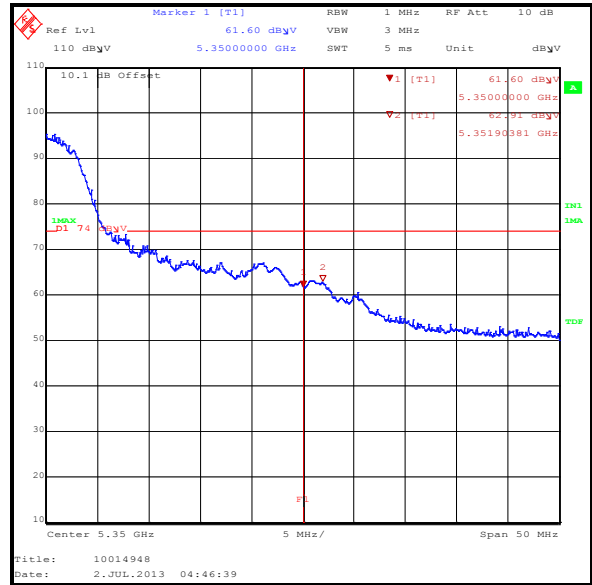
Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	48.3	N/A	N/A	54.0	5.7	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

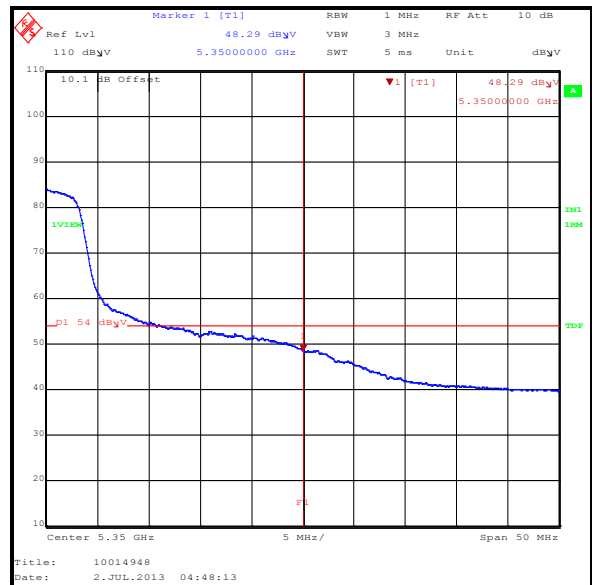
Results: 802.11ac / 40 MHz / BPSK / 13.5 Mbps / MCS0



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 40 MHz / QPSK / 30 Mbps / MCS1 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	57.6	74.0	16.4	Complied
5351.904	58.7	74.0	15.3	Complied

Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5073.948	51.4	54.0	2.6	Complied
5150	49.1	54.0	4.9	Complied

Results: 802.11ac / 40 MHz / QPSK / 30 Mbps / MCS1 / Average

Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	46.1	N/A	N/A	54.0	7.9	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / BPSK / 29.3 Mbps / MCS0 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	61.3	74.0	12.7	Complied
5354.709	64.5	74.0	9.5	Complied

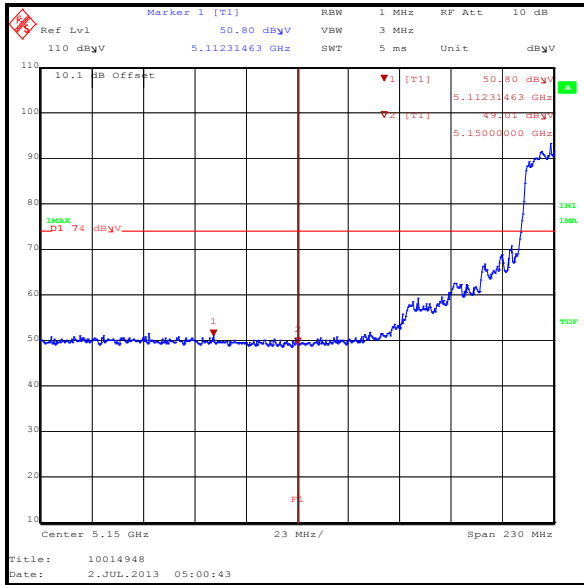
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5112.315	50.8	54.0	3.2	Complied
5150	49.0	54.0	5.0	Complied

Results: 802.11ac / 80 MHz / BPSK / 29.3 Mbps / MCS0 / Average

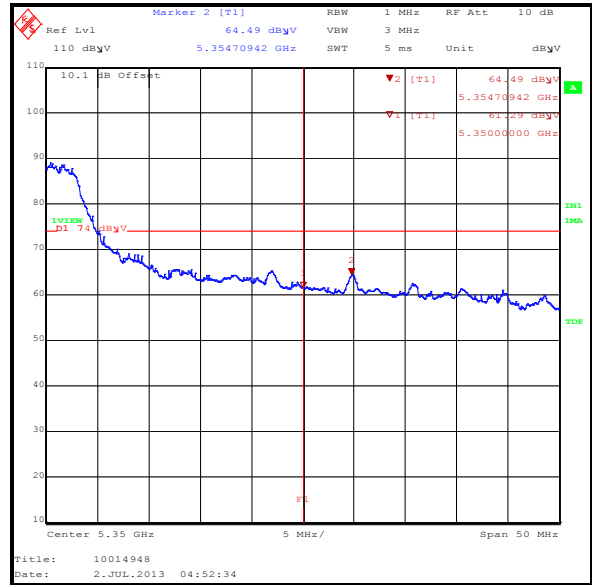
Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	48.8	0.2	50.0	54.0	4.0	Complied
5354.409	50.4	0.2	50.6	54.0	3.4	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

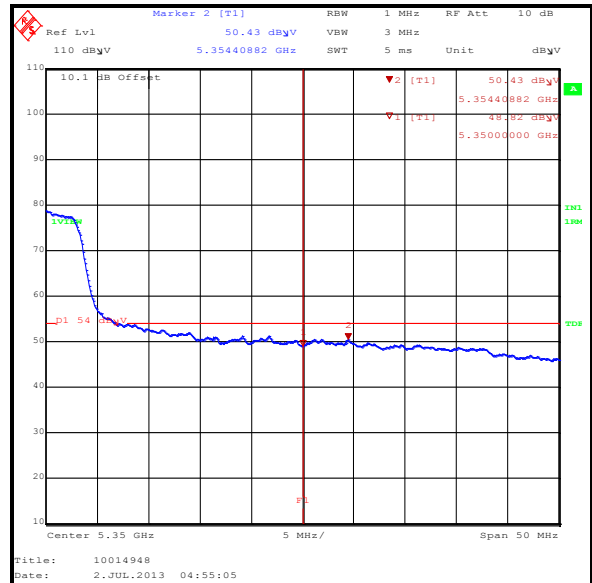
Results: 802.11ac / 80 MHz / BPSK / 29.3 Mbps / MCS0



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)**Results: 802.11ac / 80 MHz / QPSK / 65 Mbps / MCS1 / Peak**

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	60.7	74.0	13.3	Complied
5350.401	62.2	74.0	11.8	Complied

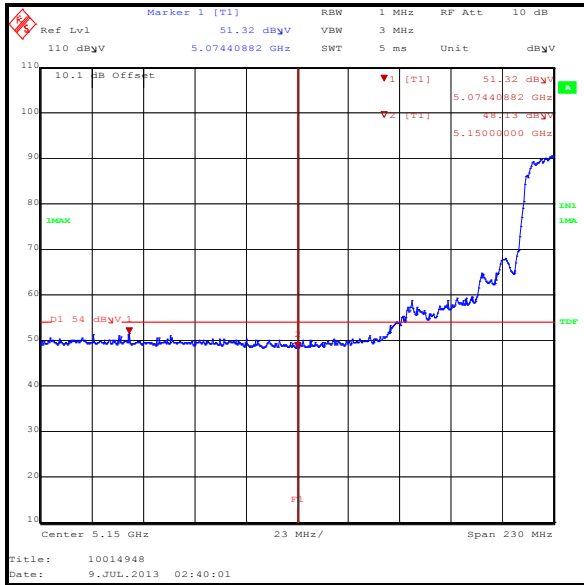
Frequency (MHz)	Peak Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5074.409	51.3	54.0	2.7	Complied
5150	48.0	54.0	6.0	Complied

Results: 802.11ac / 80 MHz / QPSK / 65 Mbps / MCS1 / Average

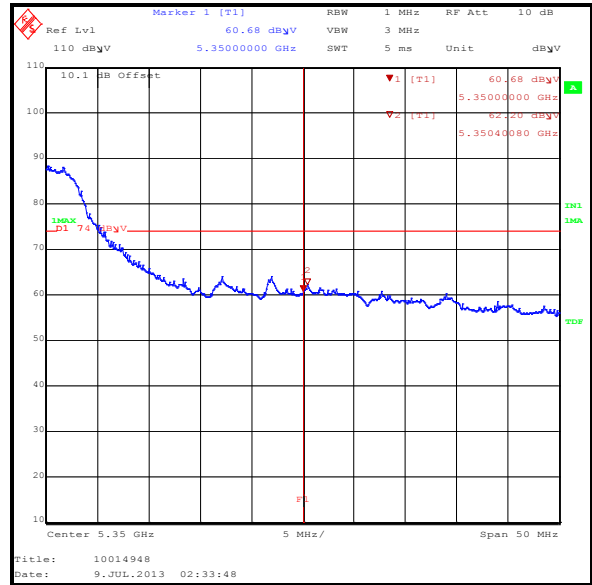
Frequency (MHz)	Level (dB μ V/m)	Duty Cycle correction (dB)	Corrected Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5350	47.6	0.3	47.9	54.0	6.1	Complied

Transmitter Band Edge Radiated Emissions (5.25-5.35 GHz band operation) (continued)

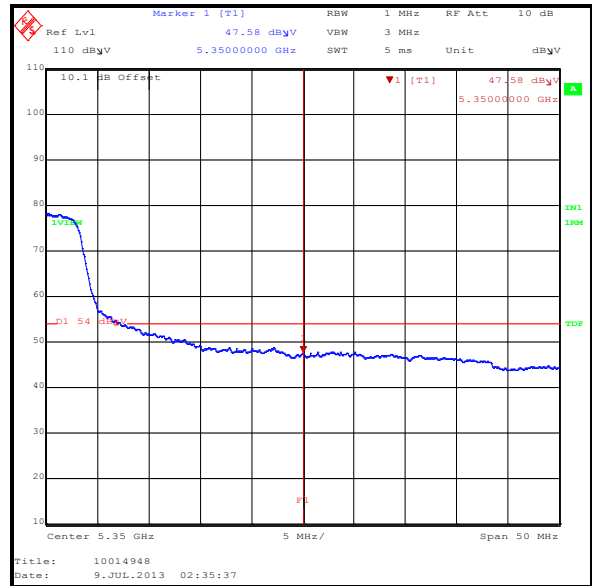
Results: 802.11ac / 80 MHz / QPSK / 65 Mbps / MCS1



Lower Band Edge Peak Measurement



Upper Band Edge Peak Measurement



Upper Band Edge Average Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band)**Test Summary:**

Test Engineer:	Andrew Edwards	Test Date:	03 July 2013 to 12 July 2013
Test Sample IMEI:	004402451217420		

FCC Reference:	Parts 15.407(b)(3), 15.407(b)(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.9.2 & FCC KDB 789033 H)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

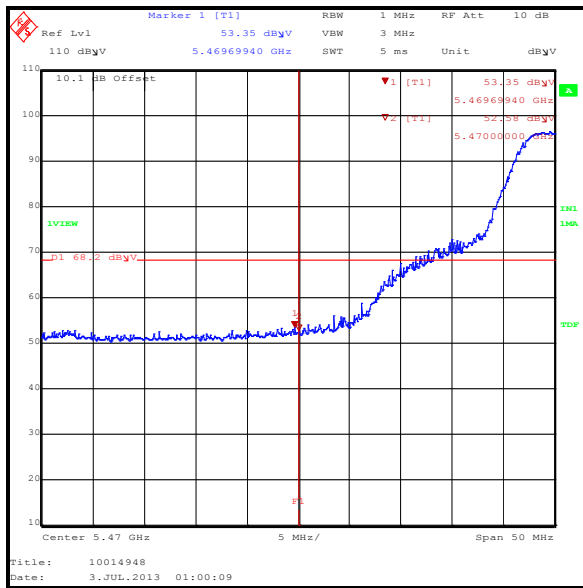
1. An Inquiry was made to the FCC and the response confirmed band edge measurements need only be performed in the EUT modes that produce the highest power and the widest bandwidths. The modes that produced the highest power and widest bandwidth were:
 - 802.11a – BPSK / 6 Mbps
 - 802.11n HT20 – 16QAM / 26 Mbps / MCS3 (GI=800ns) & 16QAM / 21.7 Mbps / MCS2 (GI=400ns).
 - 802.11n HT40 – QPSK / 40.5 Mbps / MCS2 (GI=800ns) & 16QAM / 60 Mbps / MCS3 (GI=400ns).
 - 802.11ac VHT20 – BPSK / 6.5 Mbps / MCS0 (GI=800ns) & BPSK / 7.2 Mbps / MCS0 (GI=400ns).
 - 802.11ac VHT40 – BPSK / 13.5 Mbps / MCS0 (GI=800ns) & QPSK / 30 Mbps / MCS1 (GI=400ns).
 - 802.11ac VHT80 – BPSK / 29.3 Mbps / MCS0 (GI=800ns) & QPSK / 65 Mbps / MCS1 (GI=400ns).
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel. Upper band edge measurements were performed with the EUT transmitting on the top channel.
3. For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz. However, there are restricted bands of operation below the lower band edge at 4.5-5.15 GHz and also at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply. Tests were performed in these restricted bands of operation with the EUT transmitting on the bottom and top channels within 5.47-5.725 GHz band, the results are included in the transmitter 5.47-5.725 GHz band radiated spurious emissions section of this test report.
4. For completeness, results are also shown as EIRP measured at a distance of 3 metres in dBm and also as field strength in dBµV/m. Measured field strength was converted to EIRP in accordance with FCC KDB 789033 H)2)d)(i) using a conversion factor of 95.2.

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

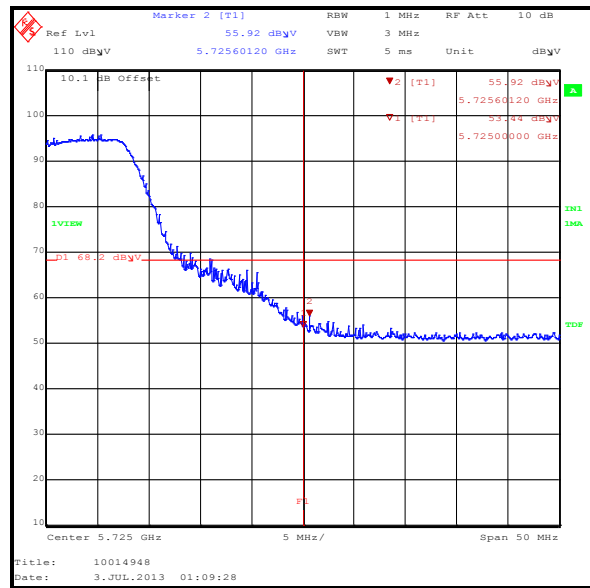
Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5469.994	-41.8	-27.0	14.8	Complied
5470	-42.6	-27.0	15.6	Complied
5725	-41.8	-27.0	14.8	Complied
5725.601	-39.3	-27.0	12.3	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5469.994	53.4	68.2	14.8	Complied
5470	52.6	68.2	15.6	Complied
5725	53.4	68.2	14.8	Complied
5725.601	55.9	68.2	12.3	Complied



Lower Band Edge Measurement



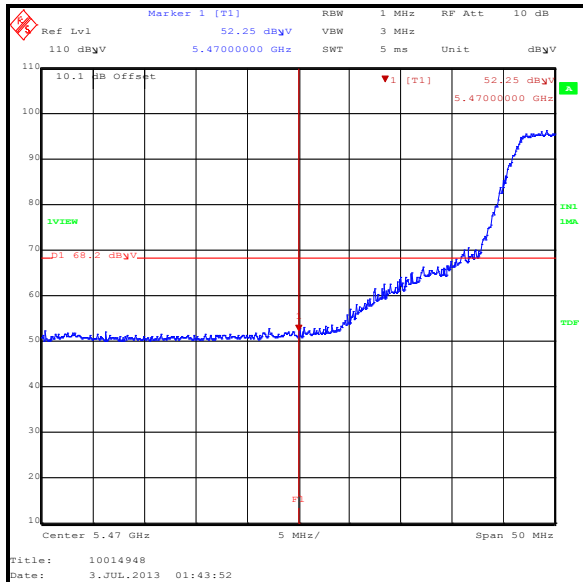
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

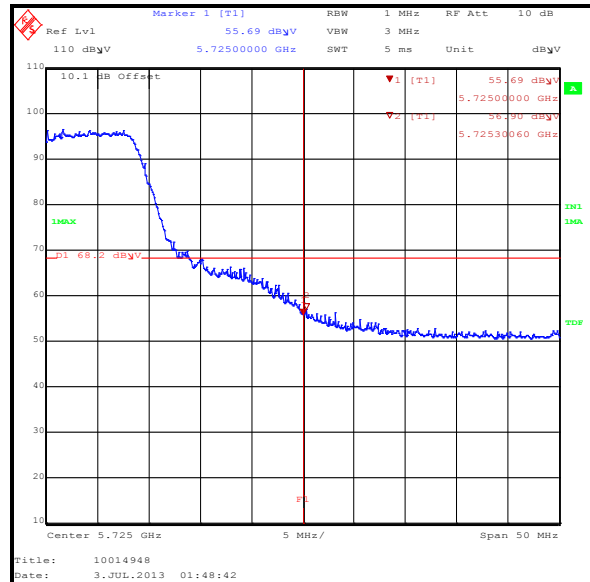
Results: 802.11n / 20 MHz / 16QAM / 26 Mbps / MCS3 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5470	-42.9	-27.0	15.9	Complied
5725	-39.5	-27.0	12.5	Complied
5725.301	-38.3	-27.0	11.3	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5470	52.3	68.2	15.9	Complied
5725	55.7	68.2	12.5	Complied
5725.301	56.9	68.2	11.3	Complied



Lower Band Edge Measurement



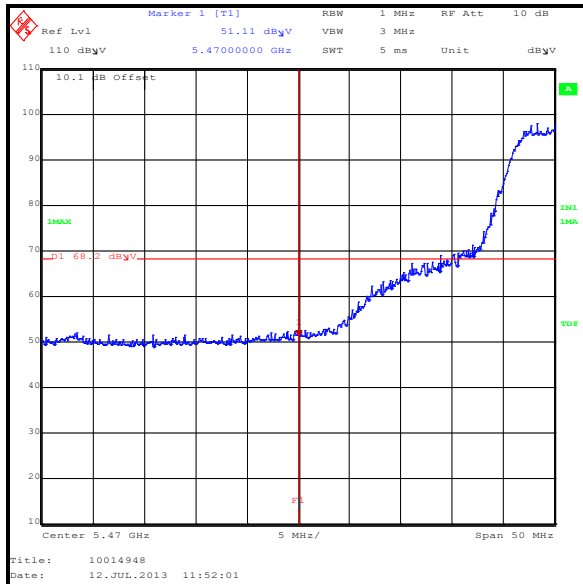
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

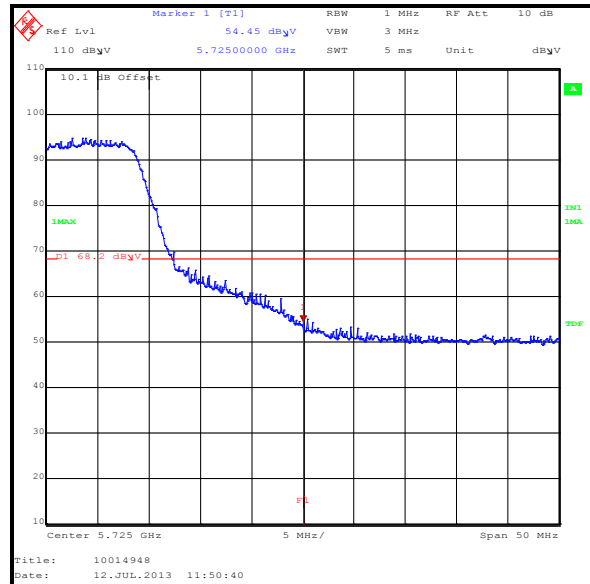
Results: 802.11n / 20 MHz / 16QAM / 21.7 Mbps / MCS2 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5470	-44.1	-27.0	17.1	Complied
5725	-40.7	-27.0	13.7	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5470	51.1	68.2	17.1	Complied
5725	54.5	68.2	13.7	Complied



Lower Band Edge Measurement



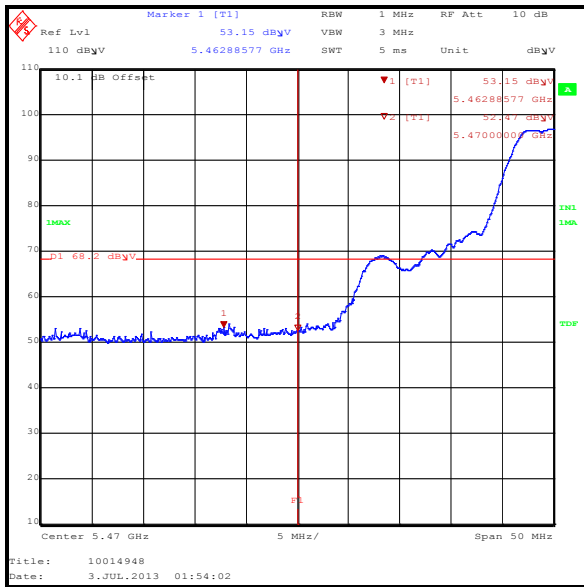
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

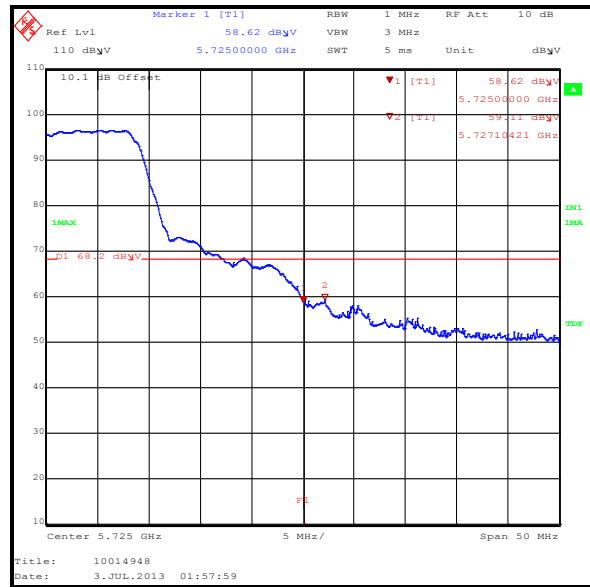
Results: 802.11ac / 20 MHz / BPSK / 6.5 Mbps / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5462.886	-42.0	-27.0	15.0	Complied
5470	-42.7	-27.0	15.7	Complied
5725	-36.6	-27.0	9.6	Complied
5727.104	-36.1	-27.0	9.1	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5462.886	53.2	68.2	15.0	Complied
5470	52.5	68.2	15.7	Complied
5725	58.6	68.2	9.6	Complied
5727.104	59.1	68.2	9.1	Complied



Lower Band Edge Measurement



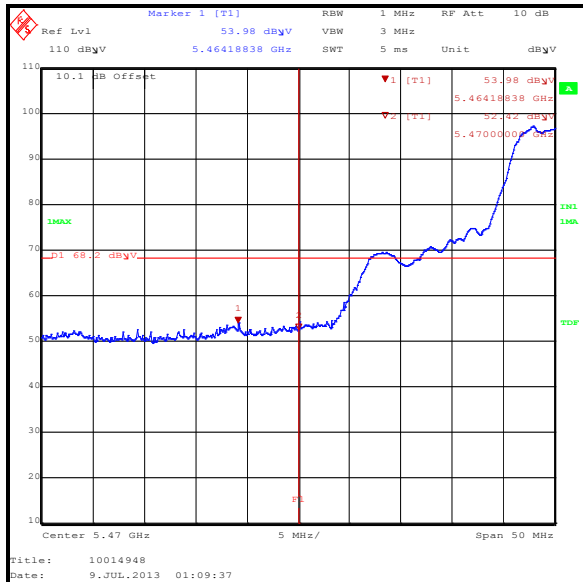
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

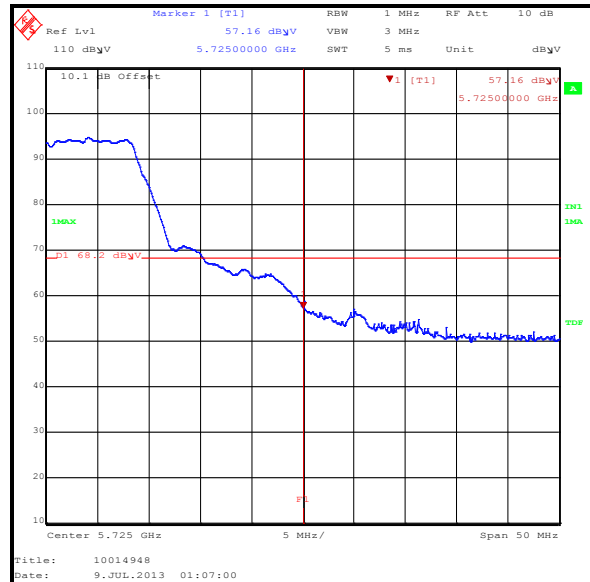
Results: 802.11ac / 20 MHz / BPSK / 7.2 Mbps / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5464.188	-41.2	-27.0	14.2	Complied
5470	-42.8	-27.0	15.8	Complied
5725	-38.0	-27.0	11.0	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5464.188	54.0	68.2	14.2	Complied
5470	52.4	68.2	15.8	Complied
5725	57.2	68.2	11.0	Complied



Lower Band Edge Measurement



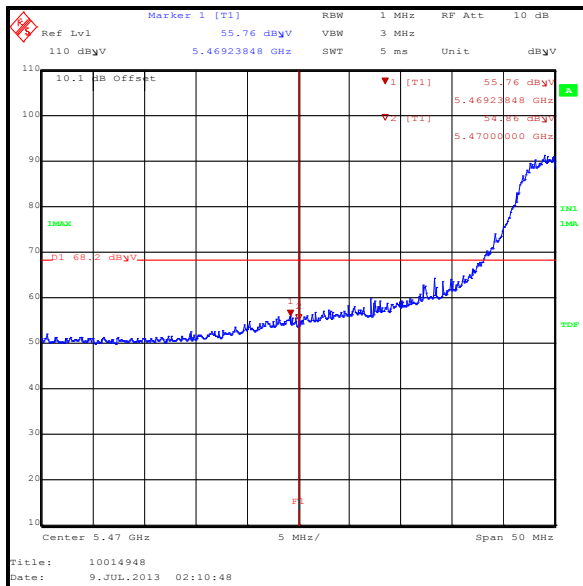
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

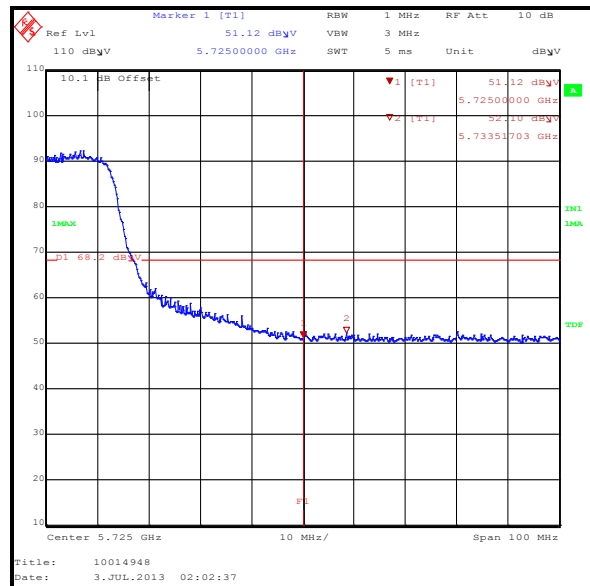
Results: 802.11n / 40 MHz / QPSK / 40.5 Mbps / MCS2 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5469.238	-39.4	-27.0	12.4	Complied
5470	-40.3	-27.0	13.3	Complied
5725	-44.1	-27.0	17.1	Complied
5733.517	-43.1	-27.0	16.1	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5469.238	55.8	68.2	12.4	Complied
5470	54.9	68.2	13.3	Complied
5725	51.1	68.2	17.1	Complied
5733.517	52.1	68.2	16.1	Complied



Lower Band Edge Measurement



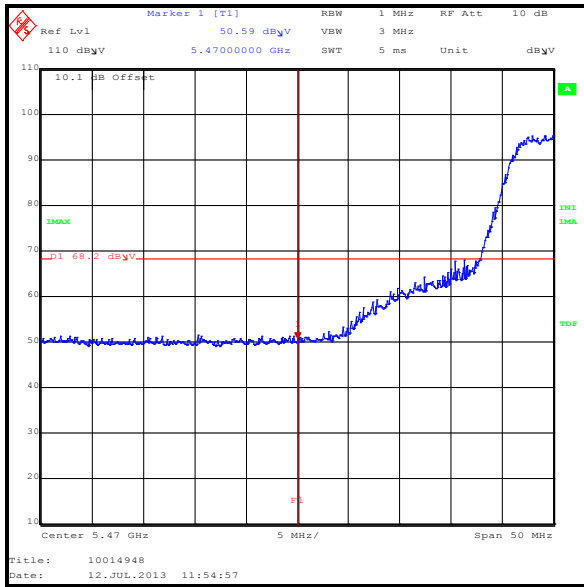
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

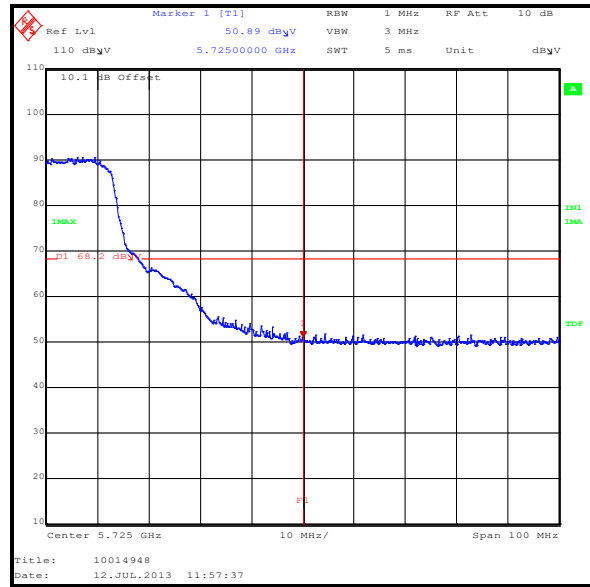
Results: 802.11n / 40 MHz / 16QAM / 60 Mbps / MCS3 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5470	-44.6	-27.0	17.6	Complied
5725	-44.3	-27.0	17.3	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5470	50.6	68.2	17.6	Complied
5725	50.9	68.2	17.3	Complied



Lower Band Edge Measurement



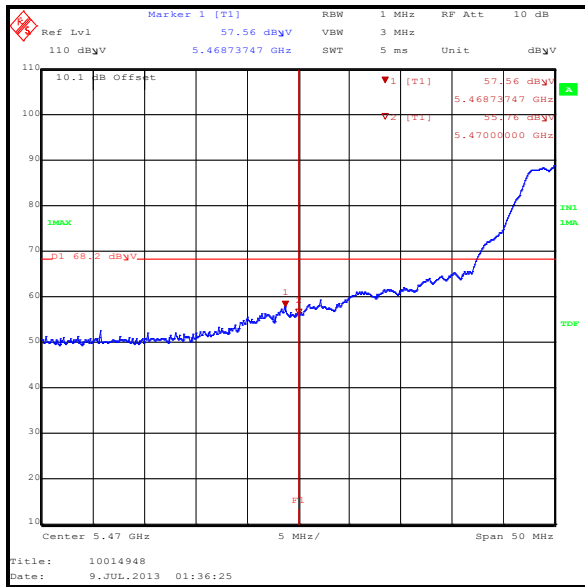
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

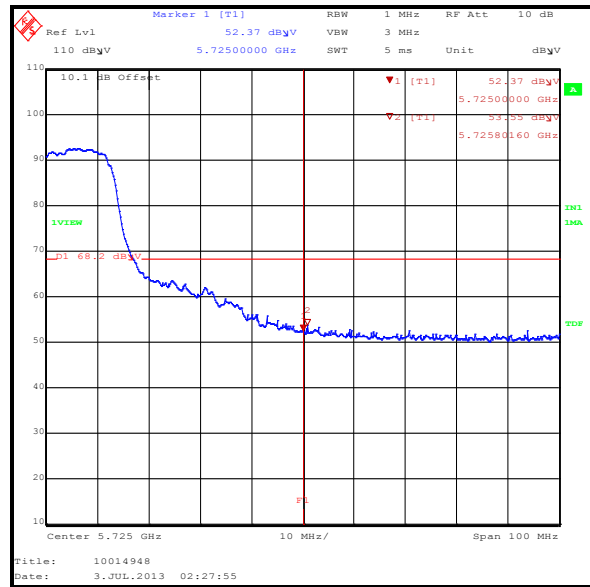
Results: 802.11ac / 40 MHz / BPSK / 13.5 Mbps / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5468.737	-37.6	-27.0	10.6	Complied
5470	-39.4	-27.0	12.4	Complied
5725	-42.8	-27.0	15.8	Complied
5725.802	-41.6	-27.0	14.6	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5468.737	57.6	68.2	10.6	Complied
5470	55.8	68.2	12.4	Complied
5725	52.4	68.2	15.8	Complied
5725.802	53.6	68.2	14.6	Complied



Lower Band Edge Measurement



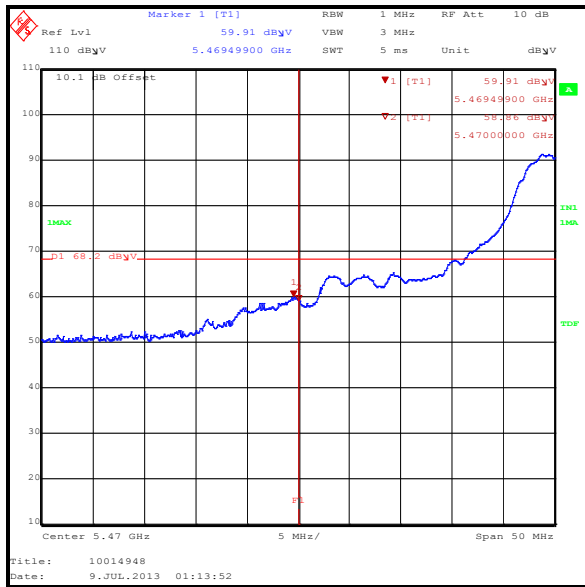
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

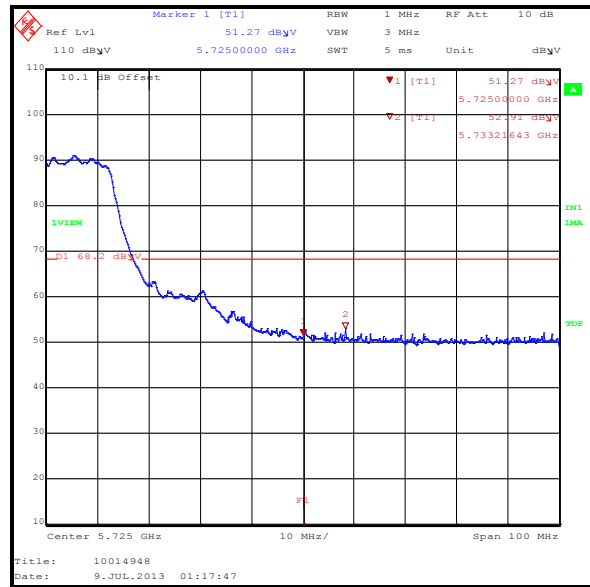
Results: 802.11ac / 40 MHz / QPSK / 30 Mbps / MCS1 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5469.499	-35.3	-27.0	8.3	Complied
5470	-36.3	-27.0	9.3	Complied
5725	-43.9	-27.0	16.9	Complied
5733.216	-42.3	-27.0	15.3	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5469.499	59.9	68.2	8.3	Complied
5470	58.9	68.2	9.3	Complied
5725	51.3	68.2	16.9	Complied
5733.216	52.9	68.2	15.3	Complied



Lower Band Edge Measurement



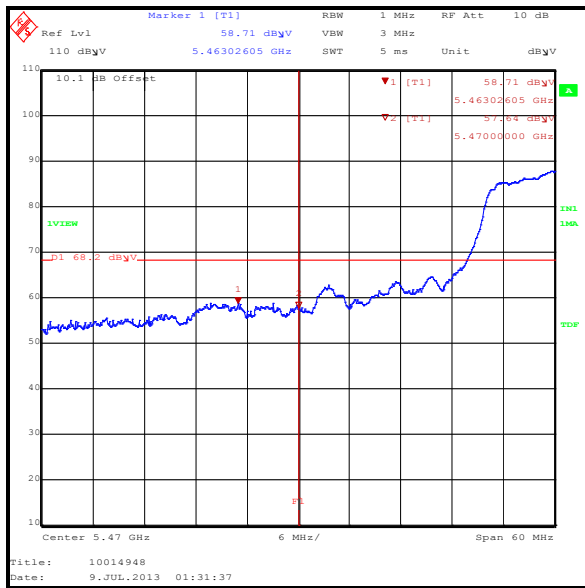
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

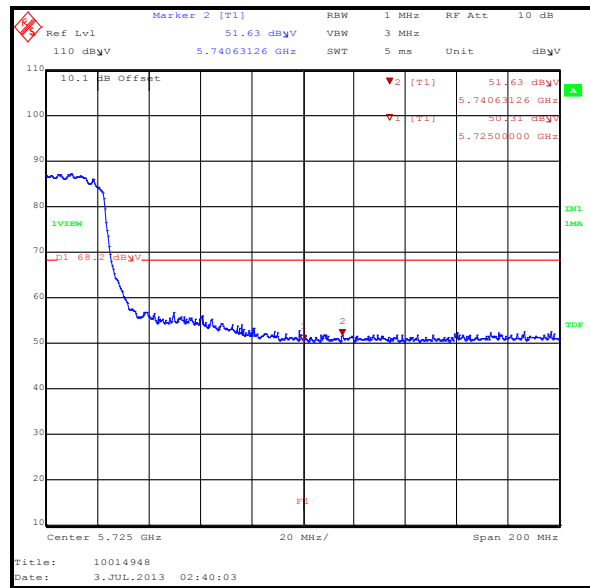
Results: 802.11ac / 80 MHz / BPSK / 29.3 Mbps / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5463.026	-36.5	-27.0	9.5	Complied
5470	-37.6	-27.0	10.6	Complied
5725	-44.9	-27.0	17.9	Complied
5740.631	-43.6	-27.0	16.6	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5463.026	58.7	68.2	9.5	Complied
5470	57.6	68.2	10.6	Complied
5725	50.3	68.2	17.9	Complied
5740.631	51.6	68.2	16.6	Complied



Lower Band Edge Measurement



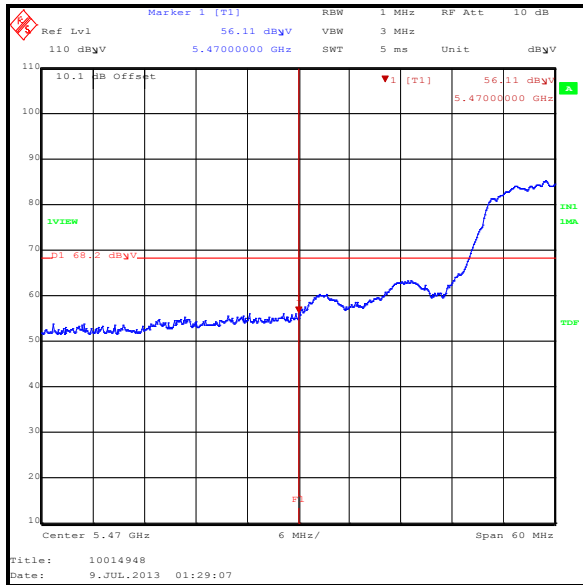
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.47-5.725 GHz band operation) (continued)

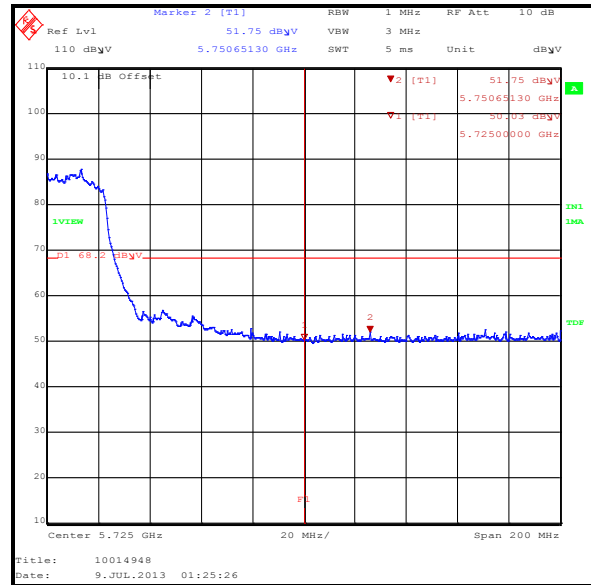
Results: 802.11ac / 80 MHz / QPSK / 65 Mbps / MCS1 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5470	-39.1	-27.0	12.1	Complied
5725	-45.2	-27.0	18.2	Complied
5750.651	-43.4	-27.0	16.4	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5470	56.1	68.2	12.1	Complied
5725	50.0	68.2	18.2	Complied
5750.651	51.8	68.2	16.4	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band)**Test Summary:**

Test Engineer:	Andrew Edwards	Test Dates:	03 July 2013 to 12 July 2013
Test Sample IMEI:	004402451217420		

FCC Reference:	Parts 15.407(b)(4), 15.407(b)(7), 15.205 & 15.209(a)
Test Method Used:	ANSI C63.10 Section 6.9.2 & FCC KDB 789033 H)

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	42

Note(s):

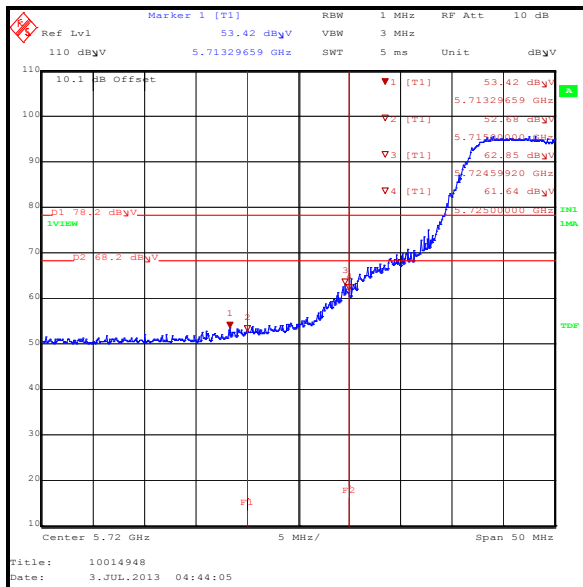
1. An Inquiry was made to the FCC and the response confirmed band edge measurements need only be performed in the EUT modes that produce the highest power and the widest bandwidths. The modes that produced the highest power and widest bandwidth were:
 - 802.11a – BPSK / 6 Mbps
 - 802.11n HT20 – 16QAM / 26 Mbps / MCS3 (GI=800ns) & 16QAM / 21.7 Mbps / MCS2 (GI=400ns).
 - 802.11n HT40 – QPSK / 40.5 Mbps / MCS2 (GI=800ns) & 16QAM / 60 Mbps / MCS3 (GI=400ns).
 - 802.11ac VHT20 – BPSK / 6.5 Mbps / MCS0 (GI=800ns) & BPSK / 7.2 Mbps / MCS0 (GI=400ns).
 - 802.11ac VHT40 – BPSK / 13.5 Mbps / MCS0 (GI=800ns) & QPSK / 30 Mbps / MCS1 (GI=400ns).
 - 802.11ac VHT80 – BPSK / 29.3 Mbps / MCS0 (GI=800ns) & QPSK / 65 Mbps / MCS1 (GI=400ns).
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel. Upper band edge measurements were performed with the EUT transmitting on the top channel.
3. The EUT is capable of transmitting on channel 165 at 5825 MHz and therefore operates under Part 15.407 in the UNII band as well as Part 15.247 in the DTS band. The out of band emission limit at the DTS upper band edge frequency of 5850 MHz is -27 dBm in accordance with FCC KDB 644545 D02 Page1, Note 1 and Section D.
4. For completeness, results are also shown as EIRP measured at a distance of 3 metres in dBm and also as field strength in dBµV/m. Measured field strength was converted to EIRP in accordance with FCC KDB 789033 H)2)d)(i) using a conversion factor of 95.2.

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

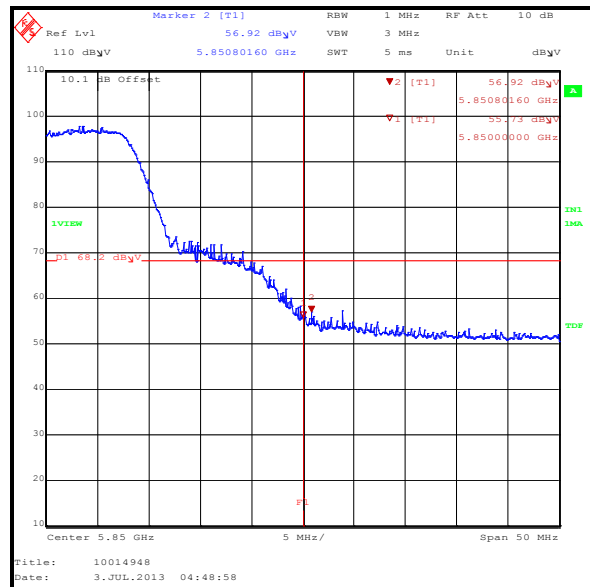
Results: 802.11a / 20 MHz / BPSK / 6 Mbps / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5713.297	-41.8	-27.0	14.8	Complied
5715	-42.5	-27.0	15.5	Complied
5724.599	-32.3	-17.0	15.3	Complied
5725	-33.6	-17.0	16.6	Complied
5850	-39.5	-27.0	12.5	Complied
5850.802	-38.3	-27.0	11.3	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5713.297	53.4	68.2	14.8	Complied
5715	52.7	68.2	15.5	Complied
5724.599	62.9	78.2	15.3	Complied
5725	61.6	78.2	16.6	Complied
5850	55.7	68.2	12.5	Complied
5850.802	56.9	68.2	11.3	Complied



Lower Band Edge Measurement



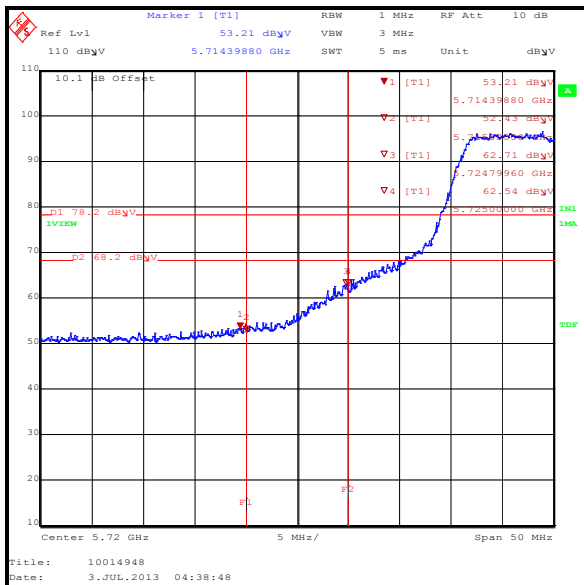
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

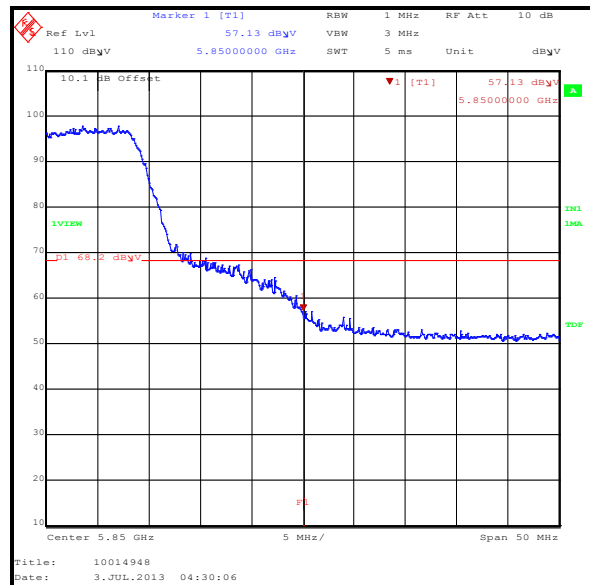
Results: 802.11n / 20 MHz / 16QAM / 26 Mbps / MCS3 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5714.399	-42.0	-27.0	15.0	Complied
5715	-42.8	-27.0	15.8	Complied
5724.780	-32.5	-17.0	15.5	Complied
5725	-32.7	-17.0	15.7	Complied
5850	-38.1	-27.0	11.1	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5714.399	53.2	68.2	15.0	Complied
5715	52.4	68.2	15.8	Complied
5724.780	62.7	78.2	15.5	Complied
5725	62.5	78.2	15.7	Complied
5850	57.1	68.2	11.1	Complied



Lower Band Edge Measurement



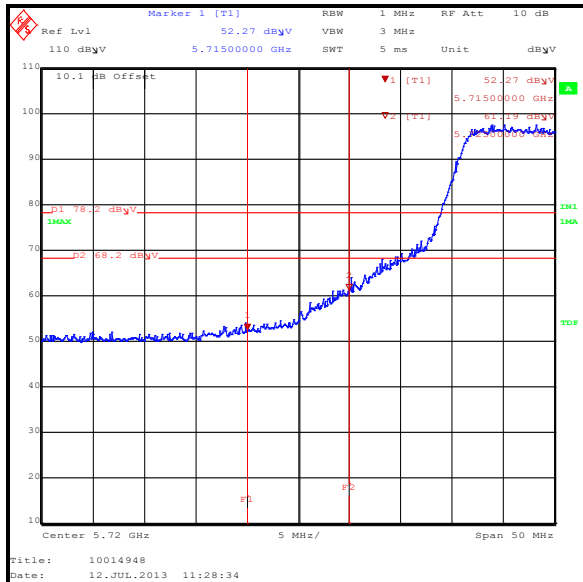
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

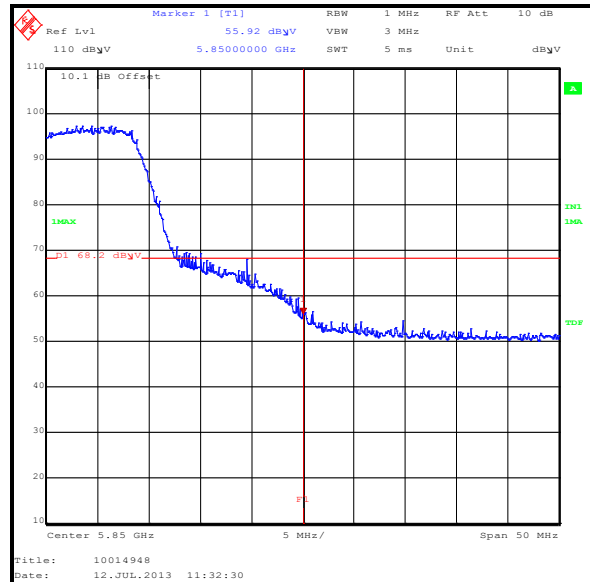
Results: 802.11n / 20 MHz / 16QAM / 21.7 Mbps / MCS2 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5715	-43.7	-27.0	15.9	Complied
5725	-32.9	-17.0	17.0	Complied
5850	-36.3	-27.0	12.3	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5715	52.3	68.2	15.9	Complied
5725	61.2	78.2	17.0	Complied
5850	55.9	68.2	12.3	Complied



Lower Band Edge Measurement



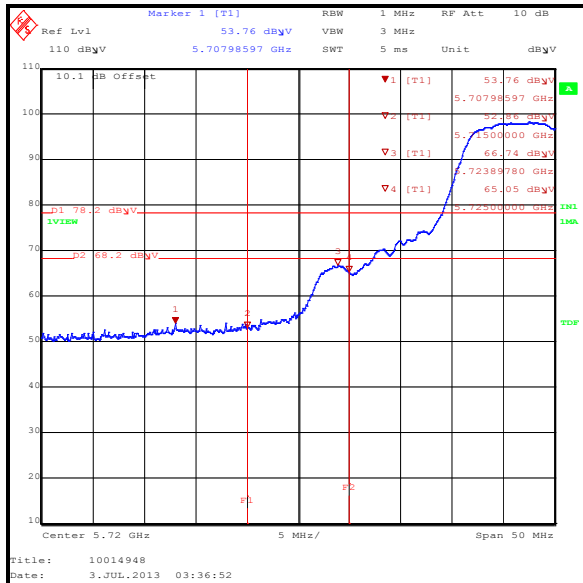
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

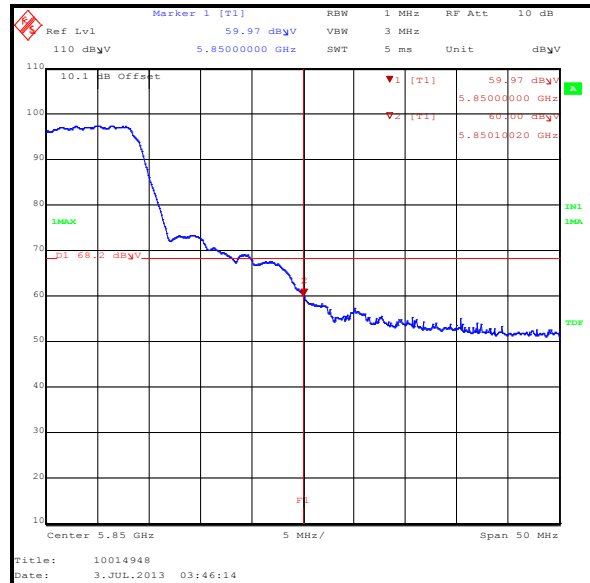
Results: 802.11ac / 20 MHz / BPSK / 6.5 Mbps / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5707.986	-41.1	-27.0	14.4	Complied
5715	-42.3	-27.0	15.3	Complied
5723.898	-28.5	-17.0	11.5	Complied
5725	-30.1	-17.0	13.1	Complied
5850	-35.2	-27.0	8.2	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5707.986	53.8	68.2	14.4	Complied
5715	52.9	68.2	15.3	Complied
5723.898	66.7	78.2	11.5	Complied
5725	65.1	78.2	13.1	Complied
5850	60.0	68.2	8.2	Complied



Lower Band Edge Measurement



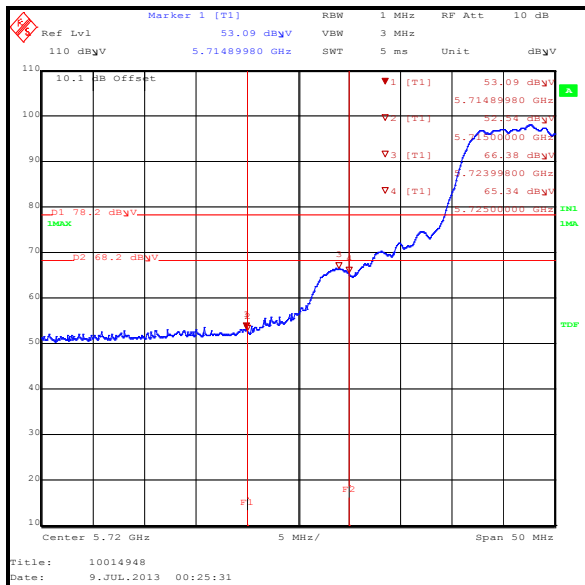
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

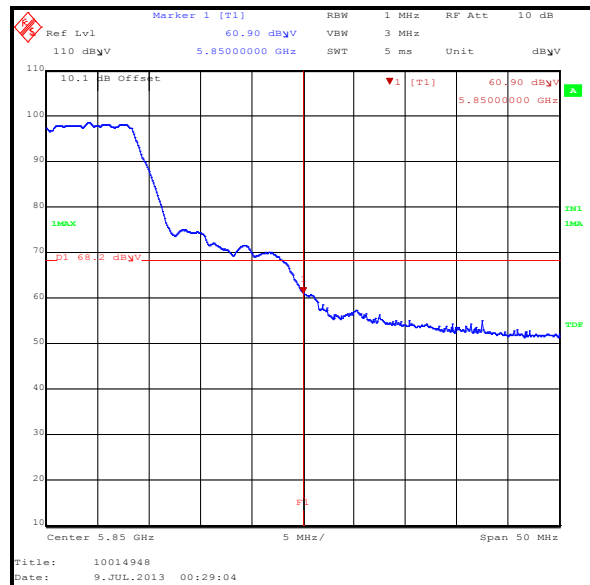
Results: 802.11ac / 20 MHz / BPSK / 7.2 Mbps / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5714.900	-42.1	-27.0	15.1	Complied
5715	-42.7	-27.0	15.7	Complied
5723.998	-28.8	-17.0	11.8	Complied
5725	-29.9	-17.0	12.9	Complied
5850	-34.3	-27.0	7.3	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5714.900	53.1	68.2	15.1	Complied
5715	52.5	68.2	15.7	Complied
5723.998	66.4	78.2	11.8	Complied
5725	65.3	78.2	12.9	Complied
5850	60.9	68.2	7.3	Complied



Lower Band Edge Measurement



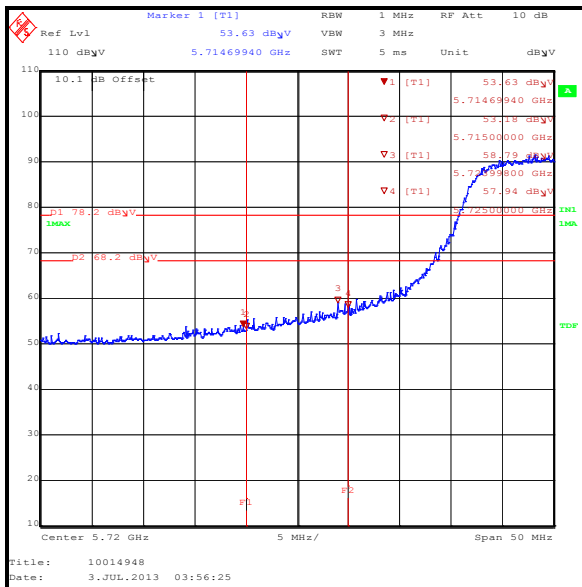
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

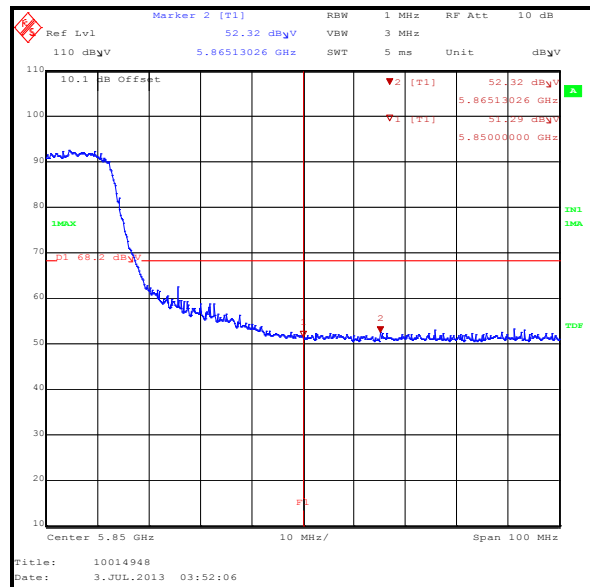
Results: 802.11n / 40 MHz / QPSK / 40.5 Mbps / MCS2 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5714.699	-41.6	-27.0	14.6	Complied
5715	-42.0	-27.0	15.0	Complied
5723.998	-36.4	-17.0	19.4	Complied
5725	-37.3	-17.0	20.3	Complied
5850	-43.9	-27.0	16.9	Complied
5865.130	-42.9	-27.0	15.9	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5714.699	53.6	68.2	14.6	Complied
5715	53.2	68.2	15.0	Complied
5723.998	58.8	78.2	19.4	Complied
5725	57.9	78.2	20.3	Complied
5850	51.3	68.2	16.9	Complied
5865.130	52.3	68.2	15.9	Complied



Lower Band Edge Measurement



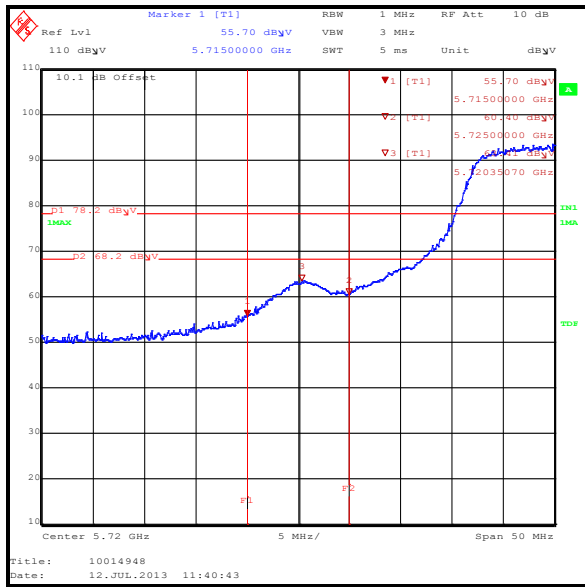
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

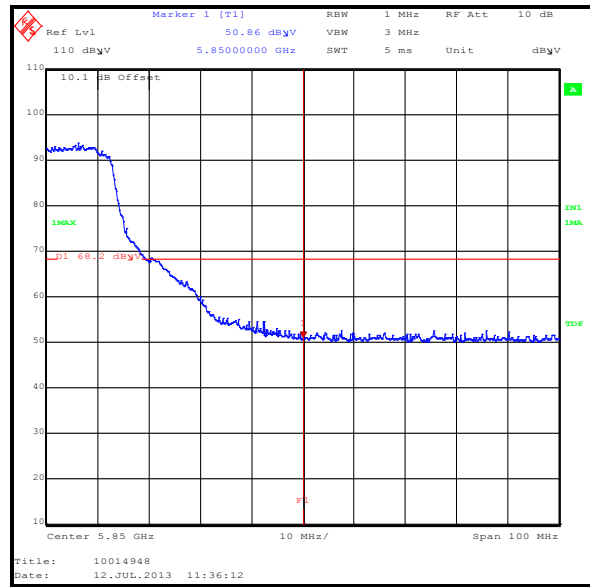
Results: 802.11n / 40 MHz / 16QAM / 60 Mbps / MCS3 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5715	-39.5	-27.0	12.5	Complied
5720.351	-31.8	-17.0	14.8	Complied
5725	-34.8	-17.0	17.8	Complied
5850	-44.3	-27.0	17.3	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5715	55.7	68.2	12.5	Complied
5720.351	63.4	78.2	14.8	Complied
5725	60.4	78.2	17.8	Complied
5850	50.9	68.2	17.3	Complied



Lower Band Edge Measurement



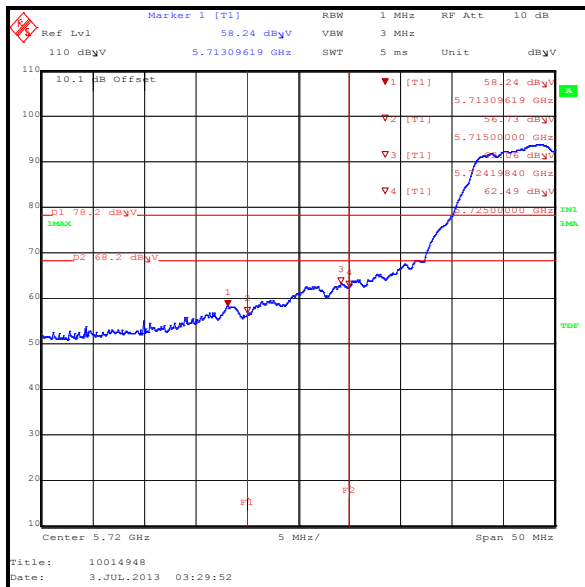
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

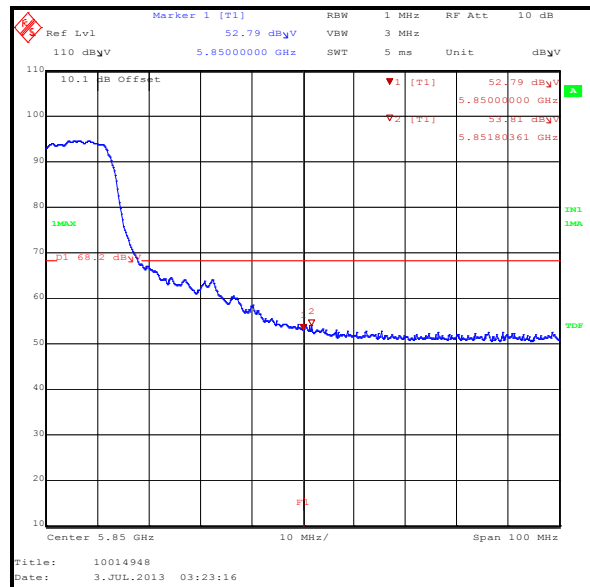
Results: 802.11ac / 40 MHz / BPSK / 13.5 Mbps / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5713.096	-37.0	-27.0	10.0	Complied
5715	-38.5	-27.0	11.5	Complied
5724.198	-32.1	-17.0	15.1	Complied
5725	-32.7	-17.0	15.7	Complied
5850	-42.4	-27.0	15.4	Complied
5851.804	-41.4	-27.0	14.4	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5713.096	58.2	68.2	10.0	Complied
5715	56.7	68.2	11.5	Complied
5724.198	63.1	78.2	15.1	Complied
5725	62.5	78.2	15.7	Complied
5850	52.8	68.2	15.4	Complied
5851.804	53.8	68.2	14.4	Complied



Lower Band Edge Measurement



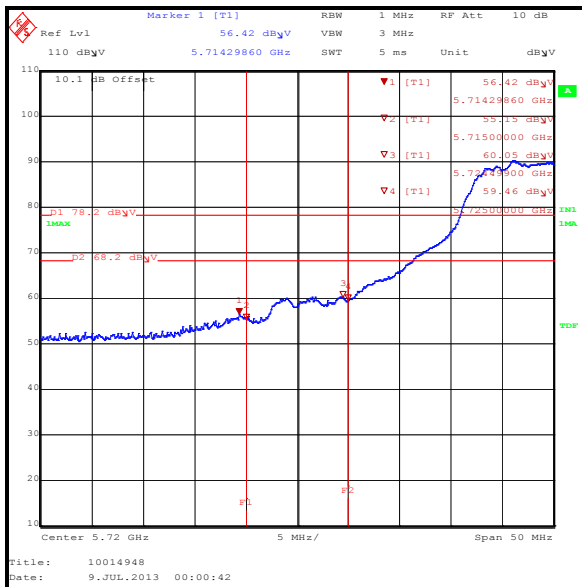
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

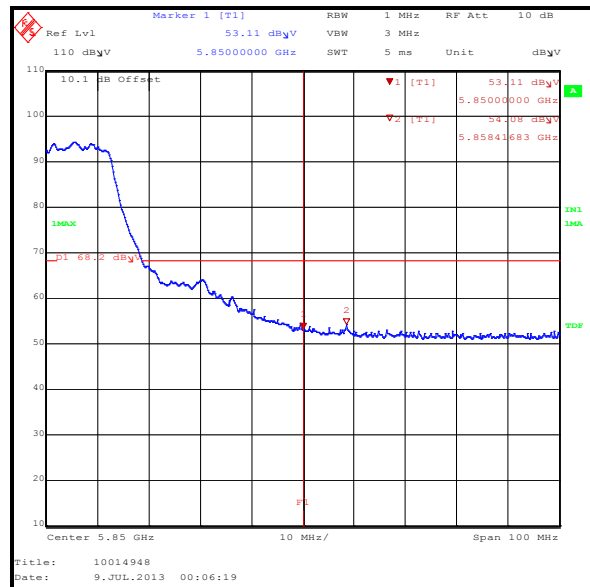
Results: 802.11ac / 40 MHz / QPSK / 30 Mbps / MCS1 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5714.299	-38.8	-27.0	11.8	Complied
5715	-40.0	-27.0	13.0	Complied
5724.499	-35.1	-17.0	18.1	Complied
5725	-35.7	-17.0	18.7	Complied
5850	-42.1	-27.0	15.1	Complied
5858.417	-41.1	-27.0	14.1	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5714.299	56.4	68.2	11.8	Complied
5715	55.2	68.2	13.0	Complied
5724.499	60.1	78.2	18.1	Complied
5725	59.5	78.2	18.7	Complied
5850	53.1	68.2	15.1	Complied
5858.417	54.1	68.2	14.1	Complied



Lower Band Edge Measurement



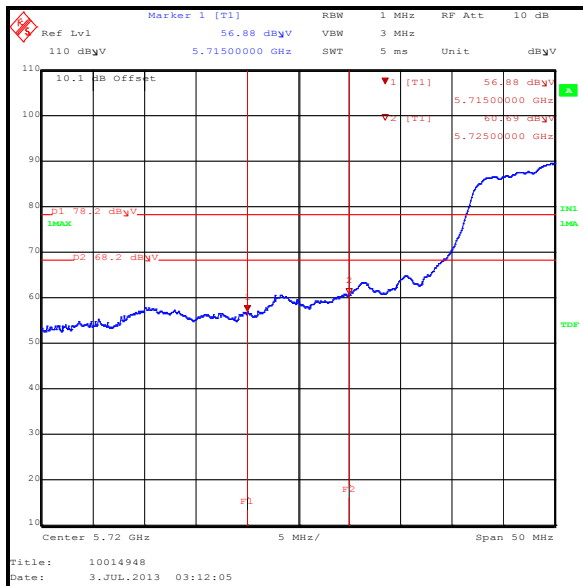
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

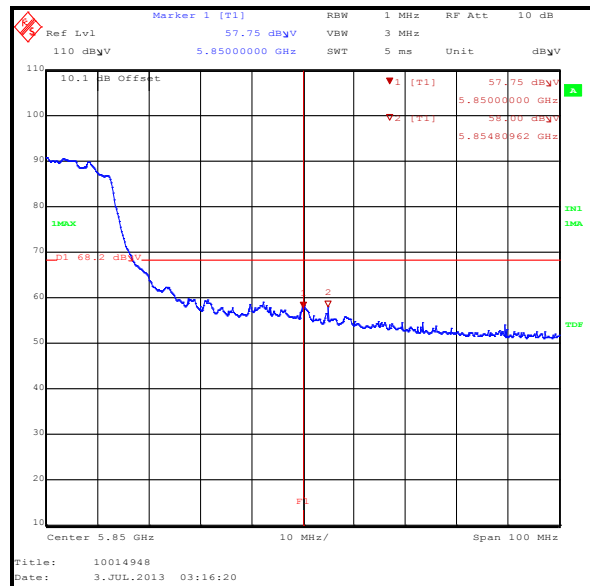
Results: 802.11ac / 80 MHz / BPSK / 29.3 Mbps / MCS0 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5715	-38.3	-27.0	11.3	Complied
5725	-34.5	-17.0	17.5	Complied
5850	-37.4	-27.0	10.4	Complied
5854.810	-37.2	-27.0	10.2	Complied

Frequency (MHz)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
5715	56.9	68.2	11.3	Complied
5725	60.7	78.2	17.5	Complied
5850	57.8	68.2	10.4	Complied
5854.810	58.0	68.2	10.2	Complied



Lower Band Edge Measurement



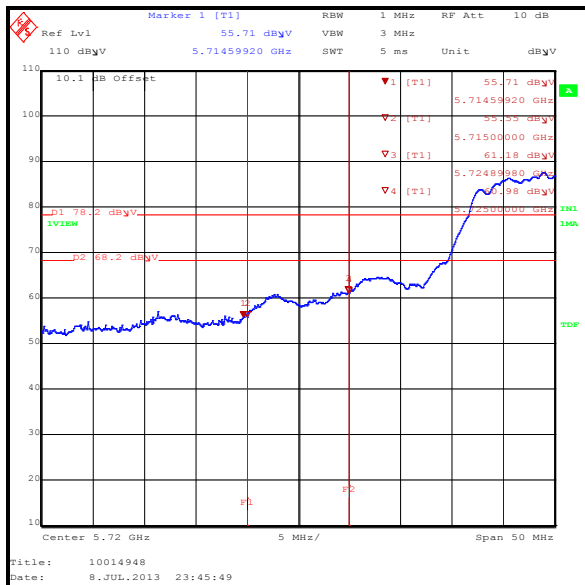
Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (5.725-5.85 GHz band operation) (continued)

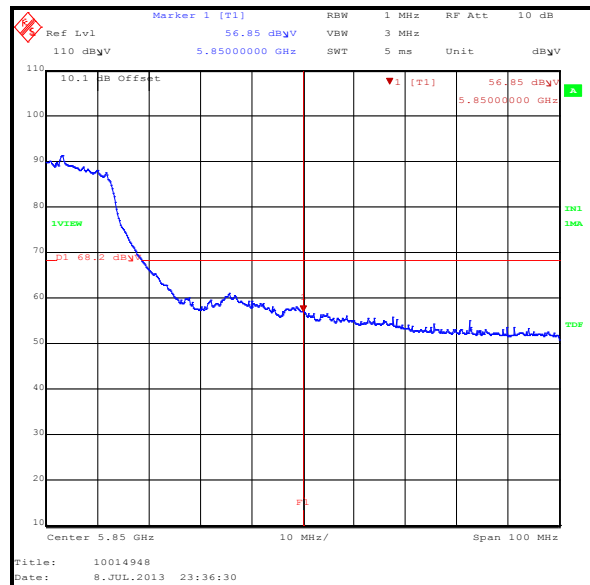
Results: 802.11ac / 80 MHz / QPSK / 65 Mbps / MCS1 / Peak

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Result
5714.599	-39.5	-27.0	12.5	Complied
5715	-39.6	-27.0	12.6	Complied
5724.800	-34.0	-17.0	17.0	Complied
5725	-34.2	-17.0	17.2	Complied
5850	-38.3	-27.0	11.3	Complied

Frequency (MHz)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
5714.599	55.7	68.2	12.5	Complied
5715	55.6	68.2	12.6	Complied
5724.900	61.2	78.2	17.0	Complied
5725	61.0	78.2	17.2	Complied
5850	56.9	68.2	11.3	Complied



Lower Band Edge Measurement



Upper Band Edge Measurement

Transmitter Band Edge Radiated Emissions (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
A253	Antenna	Flann Microwave	12240-20	128	04 Nov 2013	12
A1396	Attenuator	Huber & Suhner	6810.17.B	757987	10 May 2014	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	04 Nov 2013	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	04 Nov 2013	12
M1124	Test Receiver	Rohde & Schwarz	ESIB 26	100046K	14 Aug 2013	12
M1656	Thermometer / Hygrometer station	JM Handelspunkt	30.5015.13	Not stated	24 May 2014	12

6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±4.69 dB
Maximum Conducted Output Power	5.15 GHz to 5.725 GHz	95%	±1.13 dB
Peak Power Spectral Density	5.15 GHz to 5.725 GHz	95%	±1.13 dB
Peak Excursion	5.15 GHz to 5.725 GHz	95%	±1.13 dB
26 dB Emission Bandwidth	5.15 GHz to 5.725 GHz	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	±5.65 dB
Radiated Spurious Emissions	1 GHz to 40 GHz	95%	±2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

7. Report Revision History

Version Number	Revision Details		
	Page No(s)	Clause	Details
1.0	-	-	Initial Version
2.0	-	-	Model No. removed