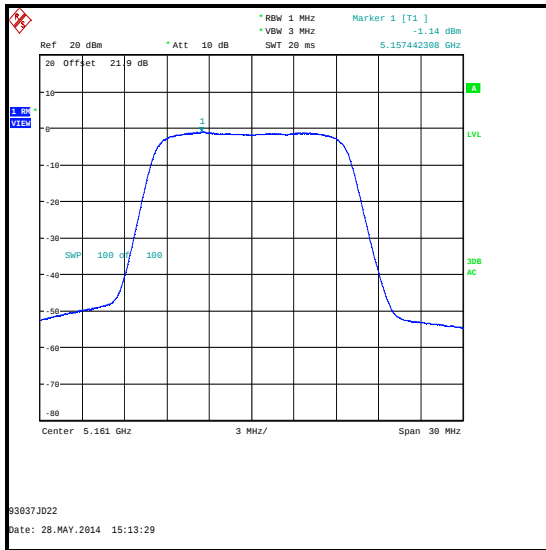
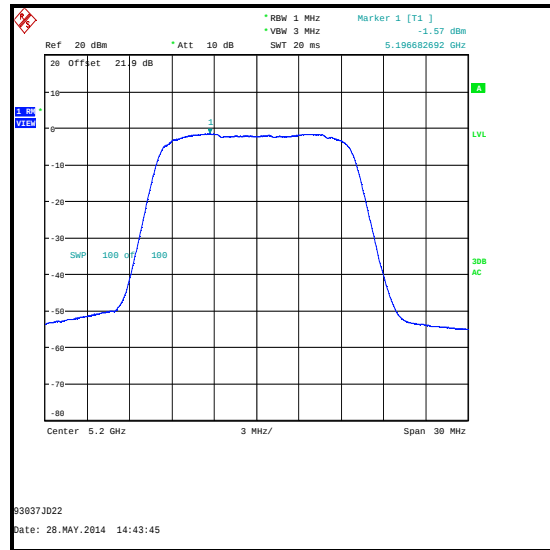
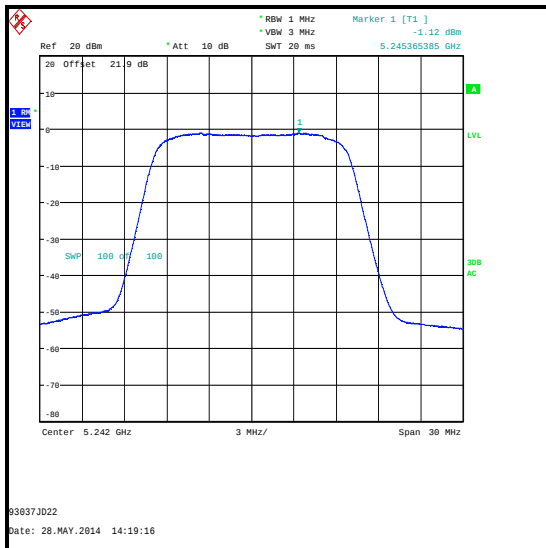
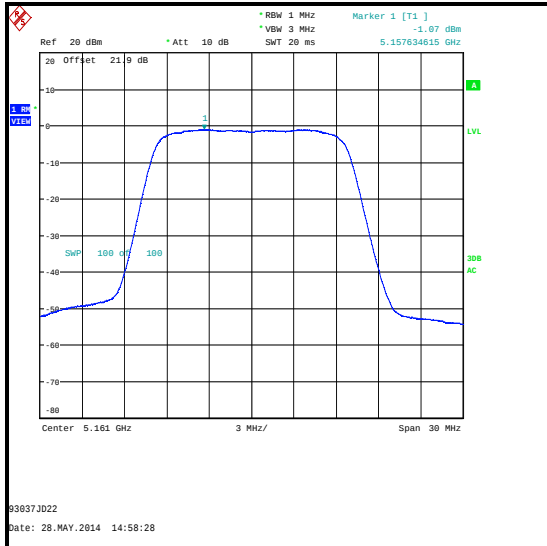
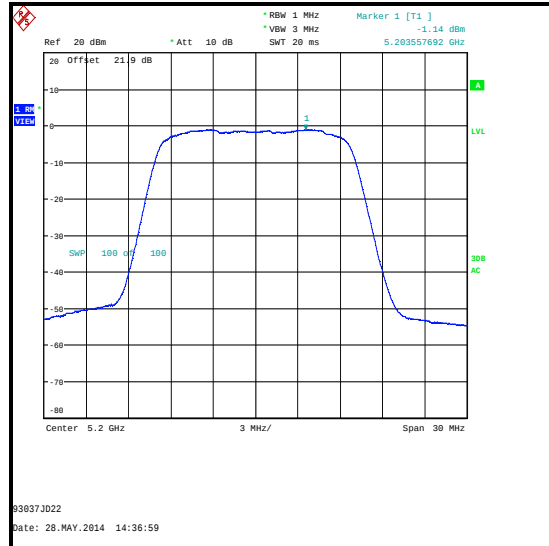
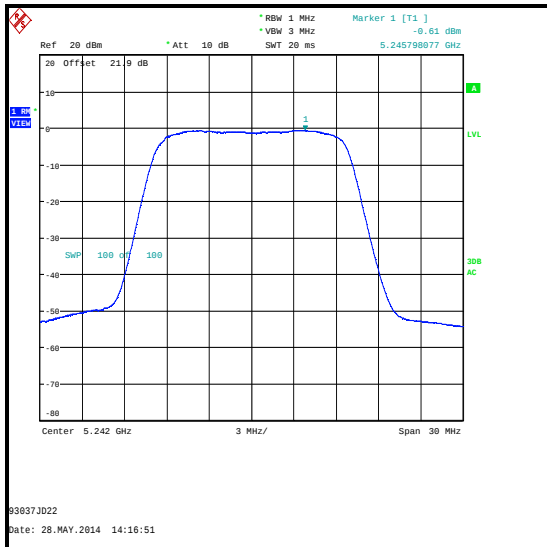


Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 15 MHz Channel / 256QAM**

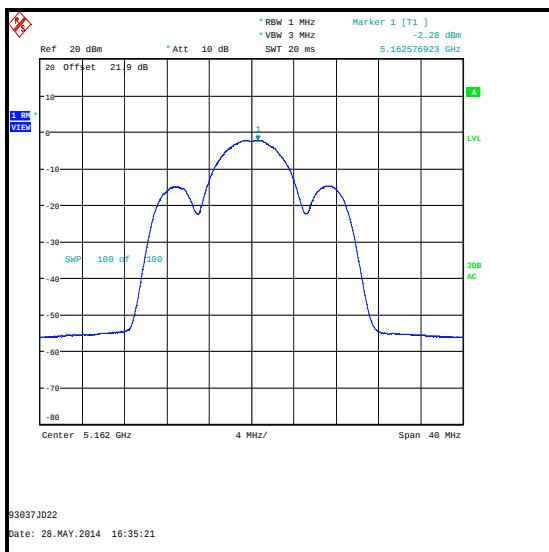
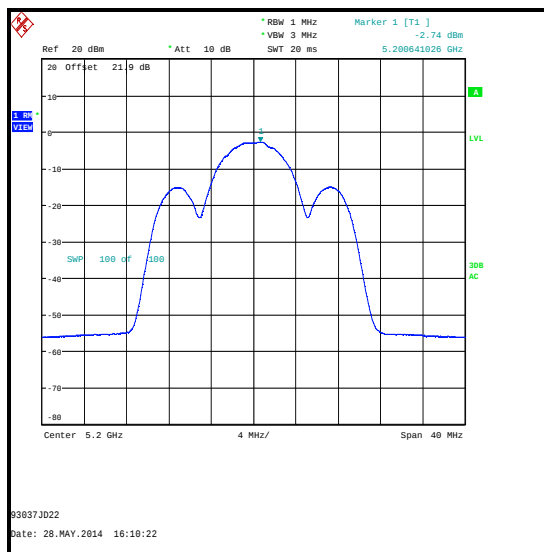
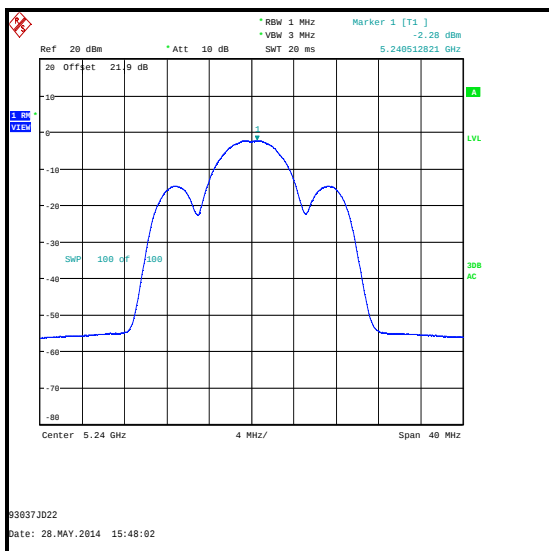
Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-1.1	-1.0	2.0	11.5	9.5	Complied
Middle	-1.5	-1.1	1.7	11.5	9.8	Complied
Top	-1.1	-0.6	2.2	11.5	9.3	Complied

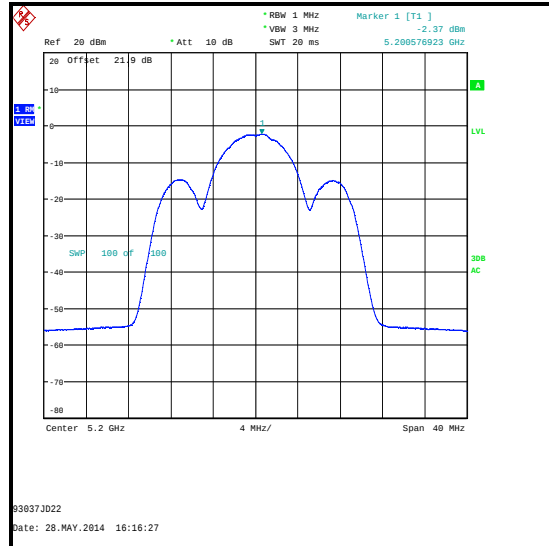
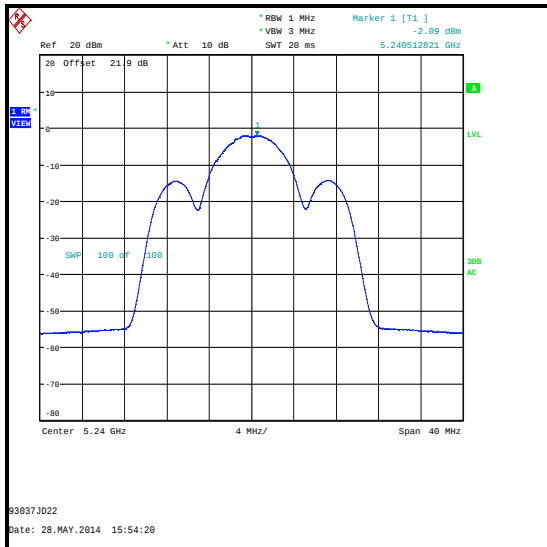
H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 15 MHz Channel / 256QAM****V Port****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 20 MHz Channel / ACQ**

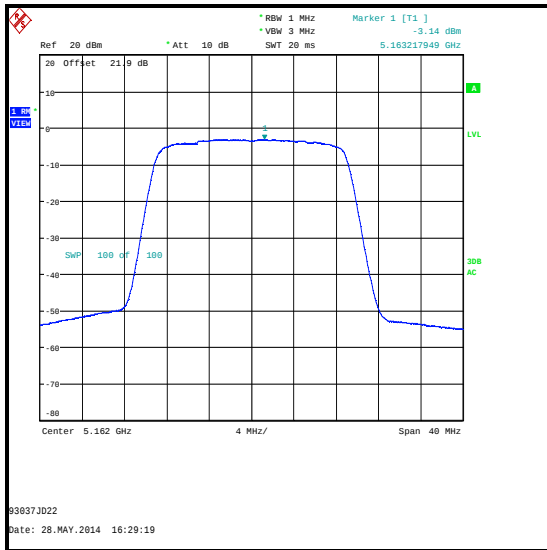
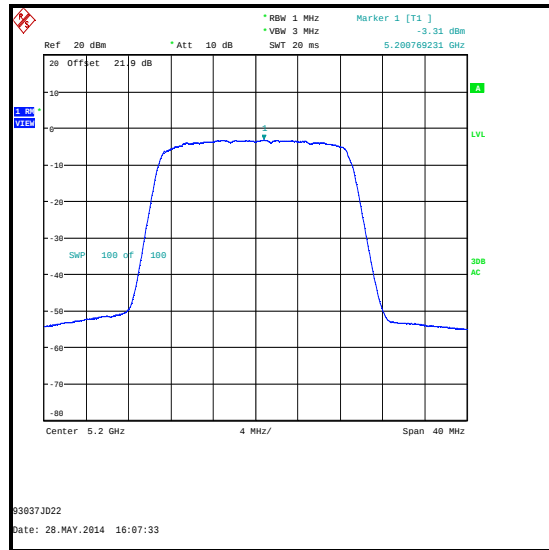
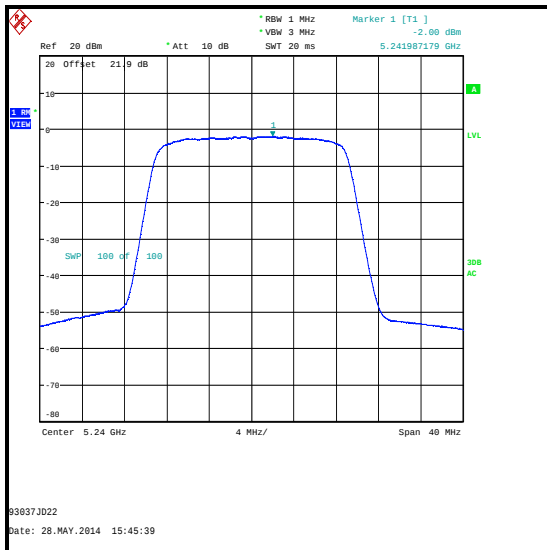
Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-2.2	-2.0	0.9	11.5	10.6	Complied
Middle	-2.7	-2.3	0.5	11.5	11.0	Complied
Top	-2.2	-2.0	0.9	11.5	10.6	Complied

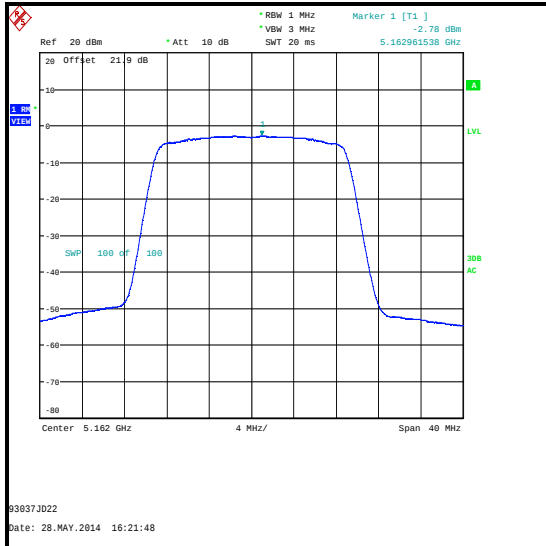
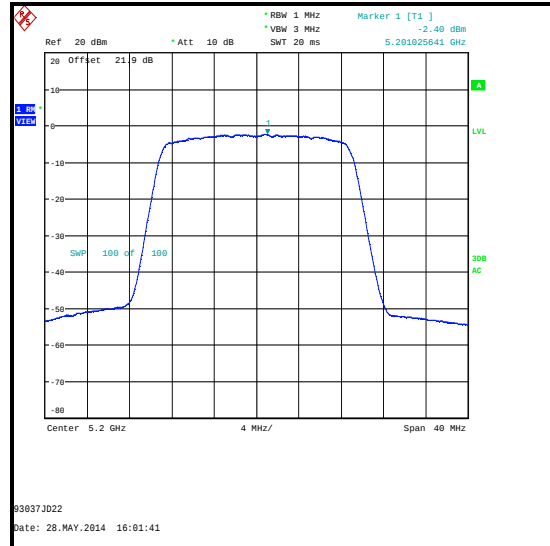
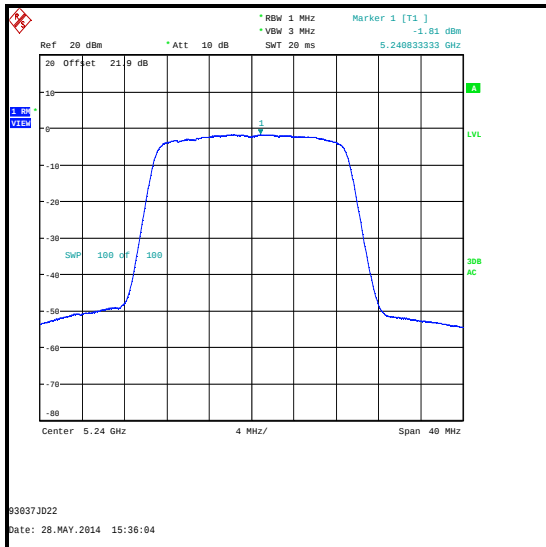
H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 20 MHz Channel / ACQ****V Port****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 20 MHz Channel / 256QAM**

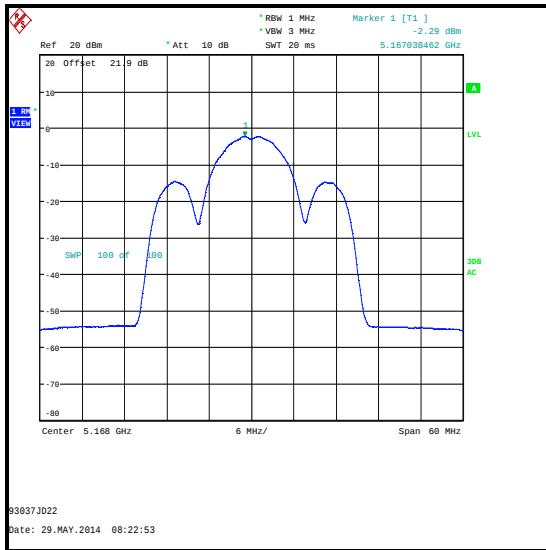
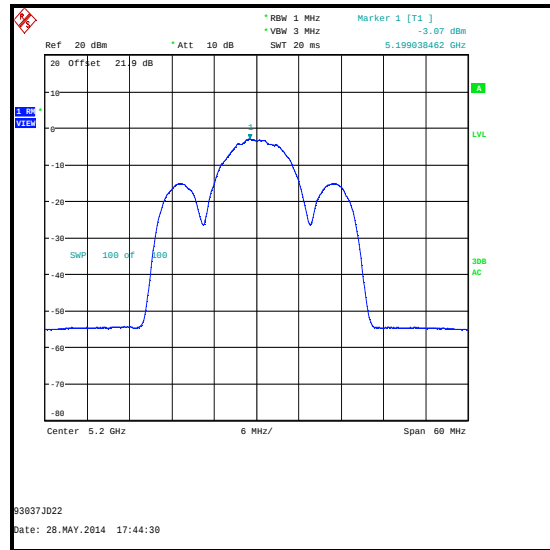
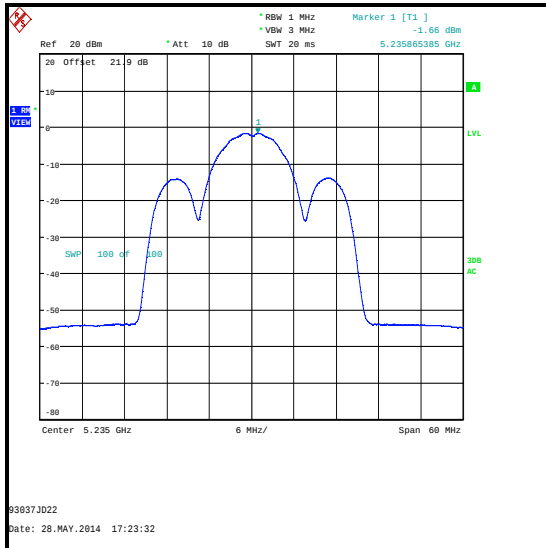
Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-3.1	-2.7	0.1	11.5	11.4	Complied
Middle	-3.3	-2.4	0.2	11.5	11.3	Complied
Top	-2.0	-1.8	1.1	11.5	10.4	Complied

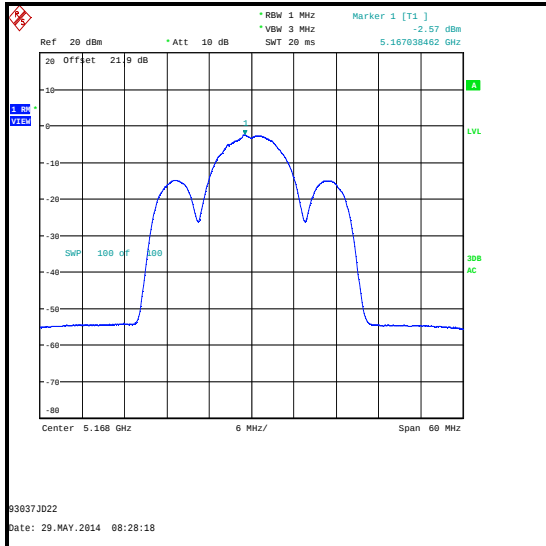
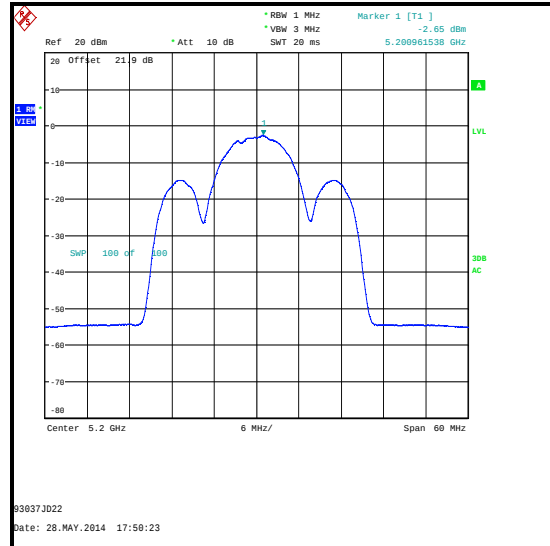
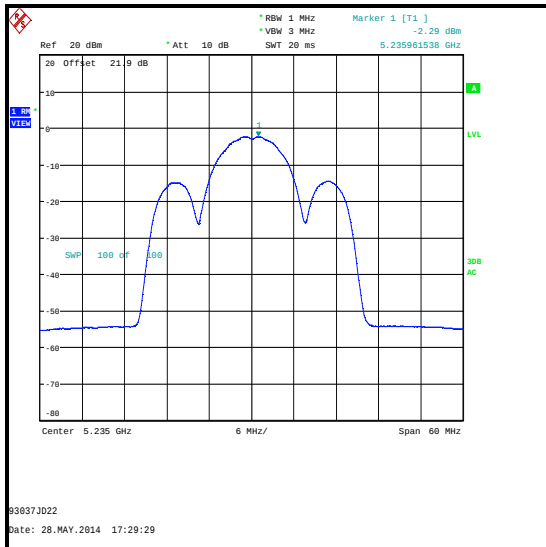
H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 20 MHz Channel / 256QAM****V Port****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 30 MHz Channel / ACQ**

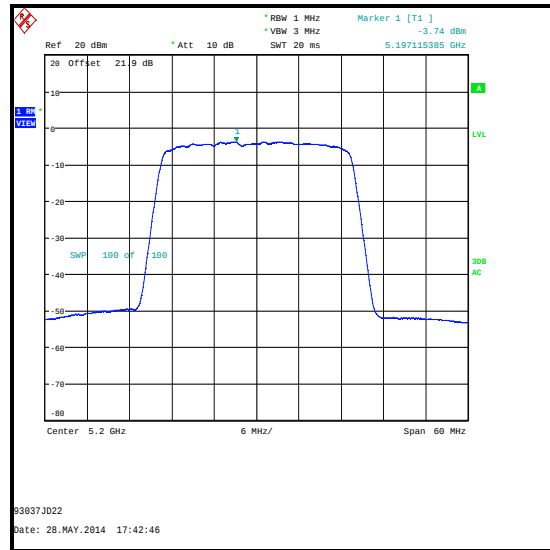
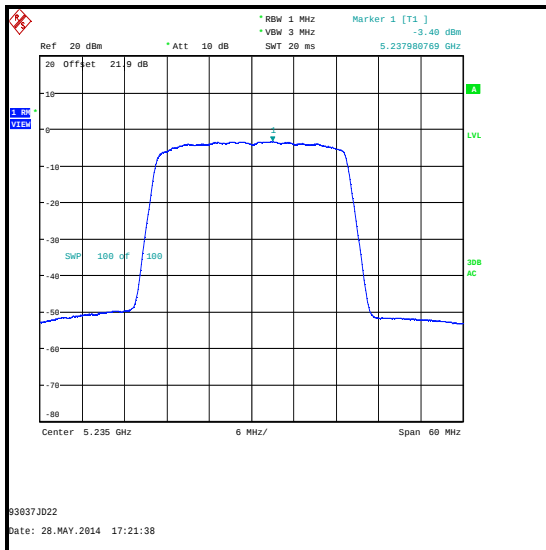
Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-2.2	-2.5	0.7	11.5	10.8	Complied
Middle	-3.0	-2.6	0.2	11.5	11.3	Complied
Top	-1.6	-2.2	1.1	11.5	10.4	Complied

H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 30 MHz Channel / ACQ****V Port****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 30 MHz Channel / 256QAM**

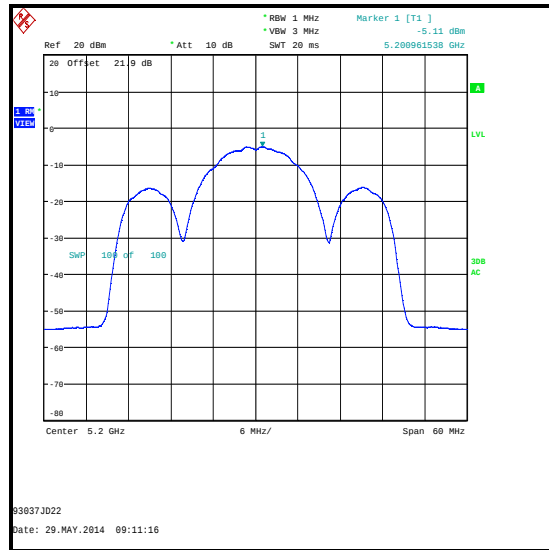
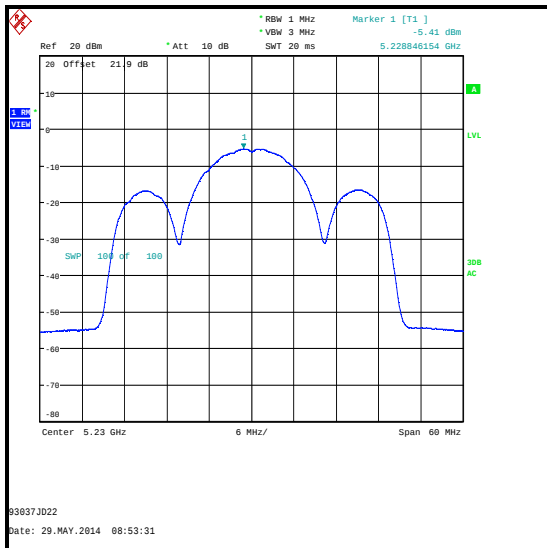
Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-3.0	-3.1	0.0	11.5	11.5	Complied
Middle	-3.7	-3.4	-0.5	11.5	12.0	Complied
Top	-3.4	-2.5	0.1	11.5	11.4	Complied

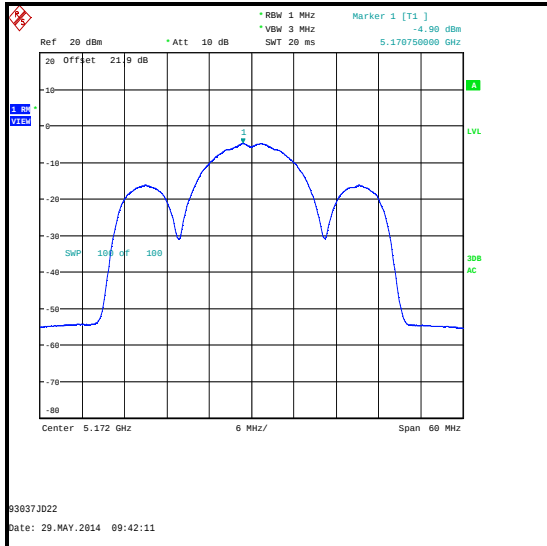
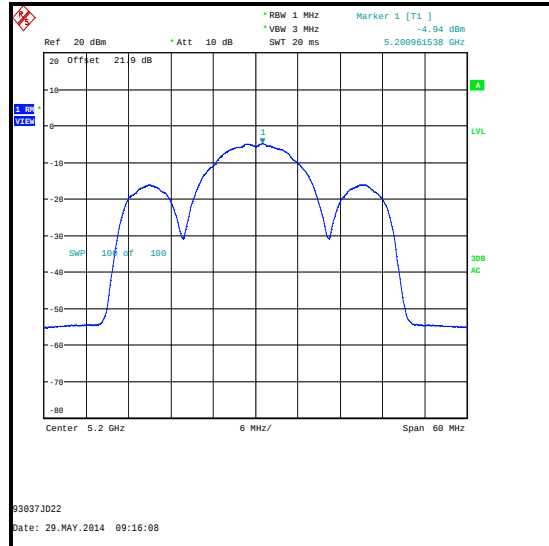
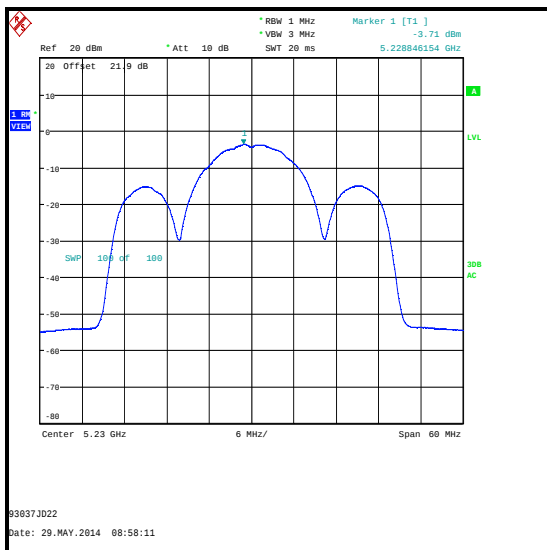
H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 30 MHz Channel / 256QAM****V Port****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 40 MHz Channel / ACQ**

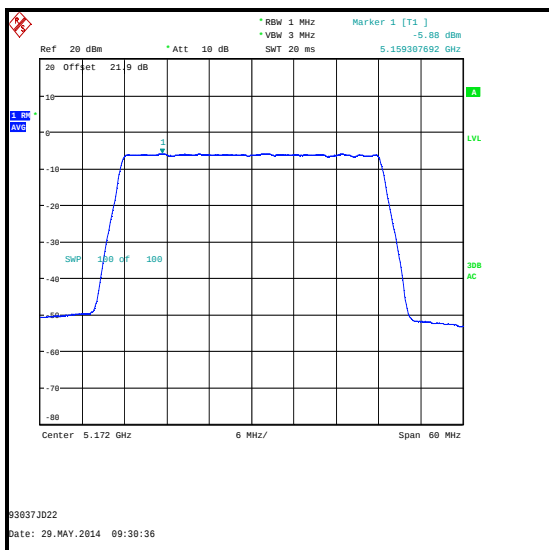
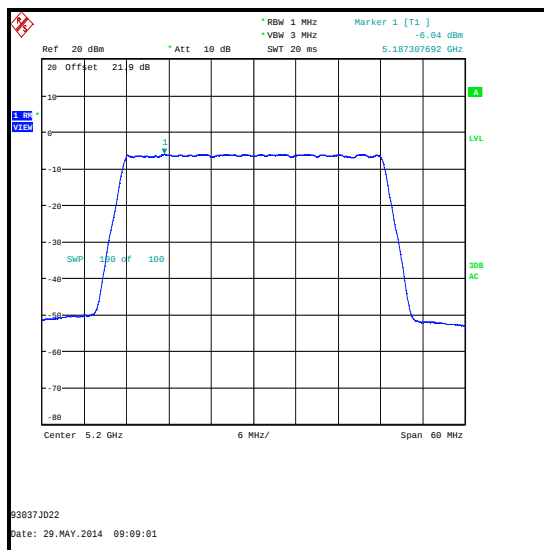
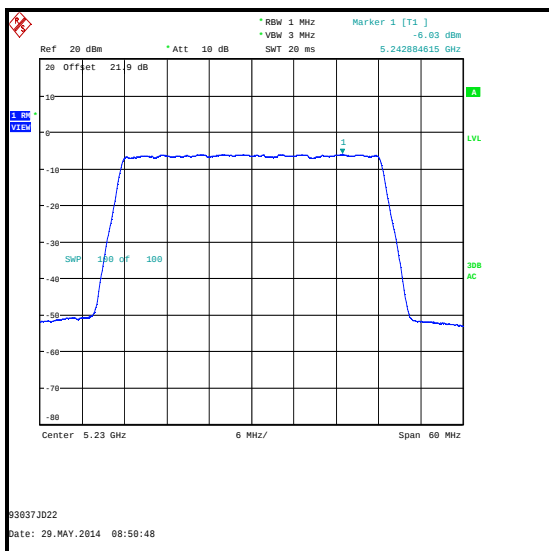
Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-5.4	-4.9	-2.1	11.5	13.6	Complied
Middle	-5.1	-4.9	-2.0	11.5	13.5	Complied
Top	-5.4	-3.7	-1.5	11.5	13.0	Complied

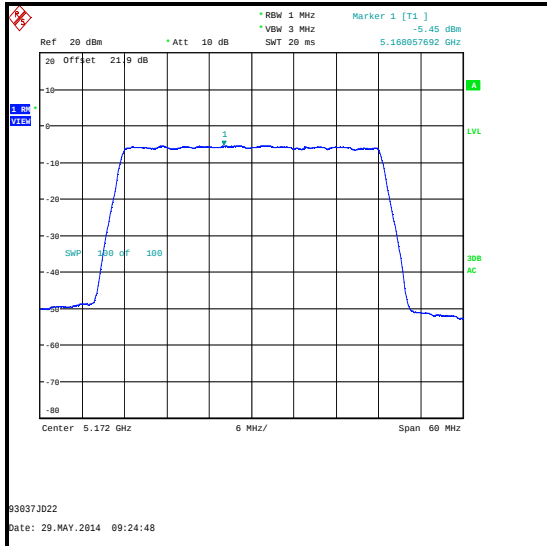
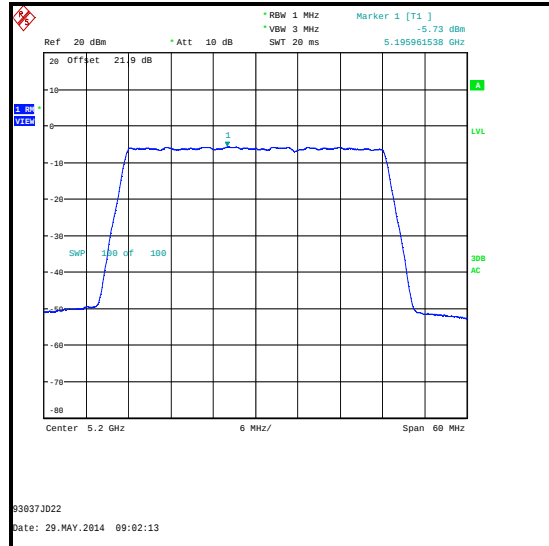
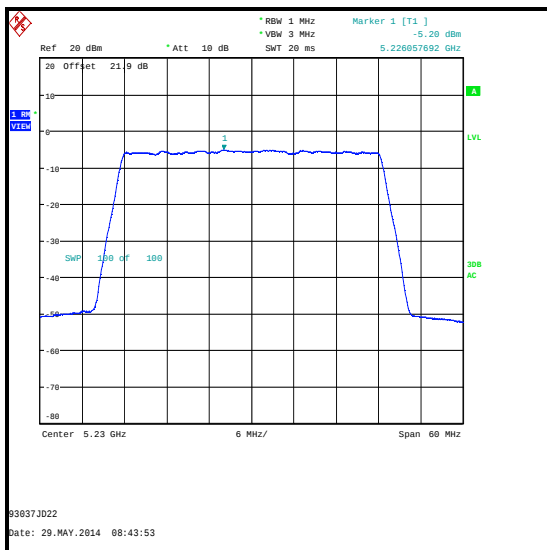
H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 40 MHz Channel / ACQ****V Port****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 40 MHz Channel / 256QAM**

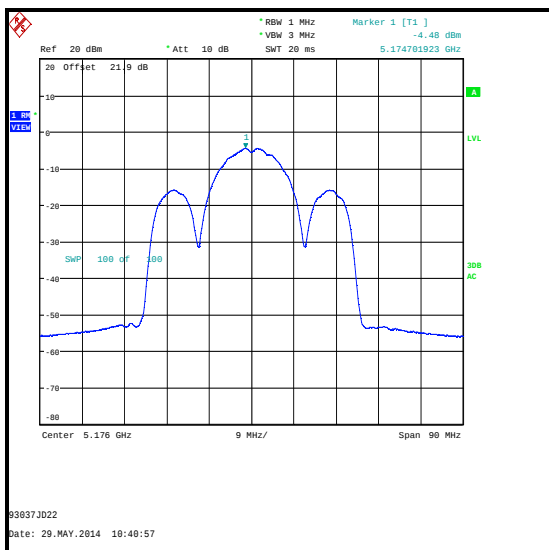
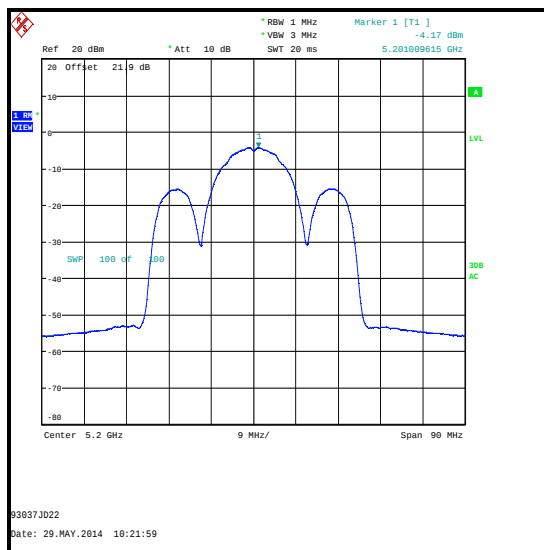
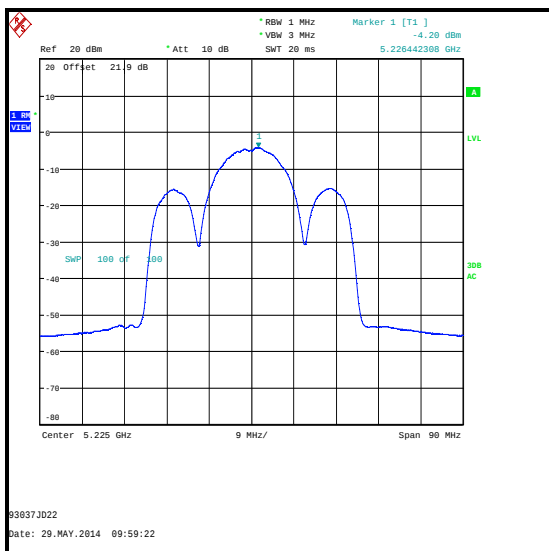
Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-5.8	-5.4	-2.6	11.5	14.1	Complied
Middle	-6.0	-5.7	-2.8	11.5	14.3	Complied
Top	-6.0	-5.2	-2.6	11.5	14.1	Complied

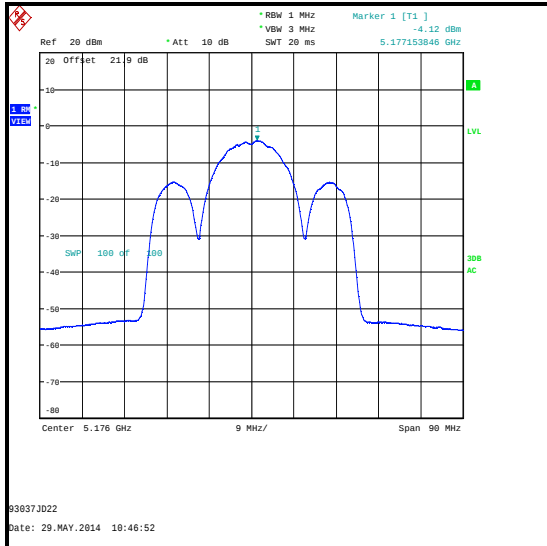
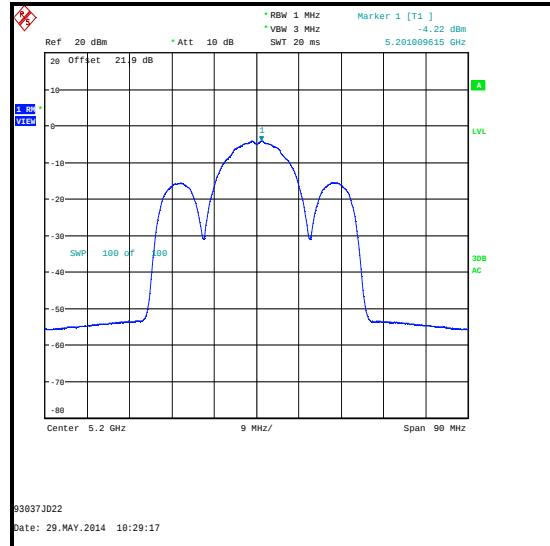
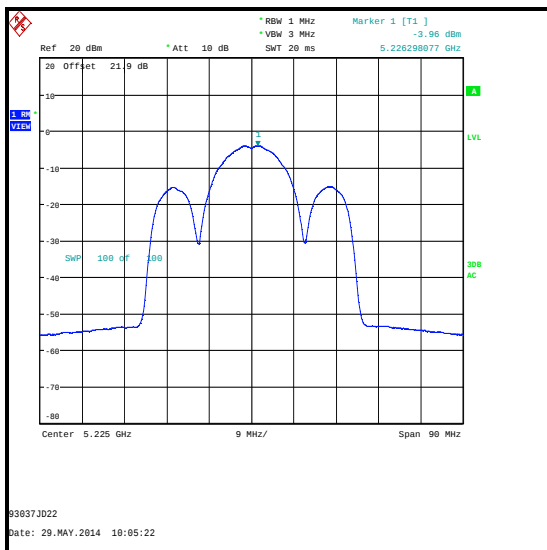
H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 40 MHz Channel / 256QAM****V Port****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 45 MHz Channel / ACQ**

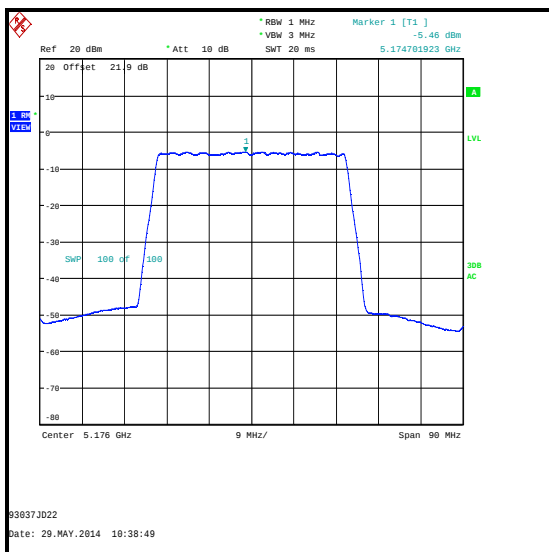
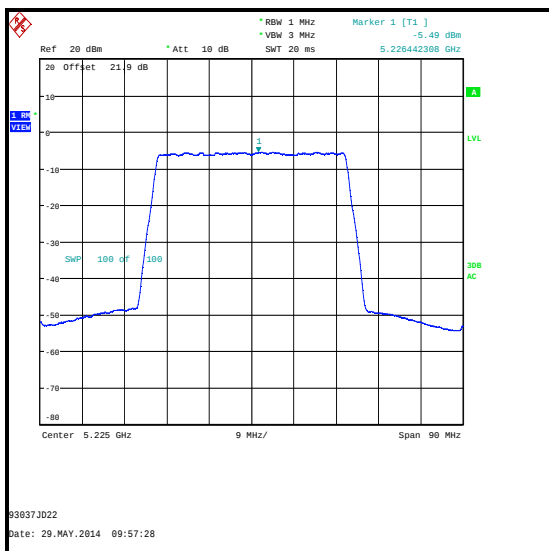
Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-4.4	-4.1	-1.3	11.5	12.8	Complied
Middle	-4.1	-4.2	-1.1	11.5	12.6	Complied
Top	-4.2	-3.9	-1.0	11.5	12.5	Complied

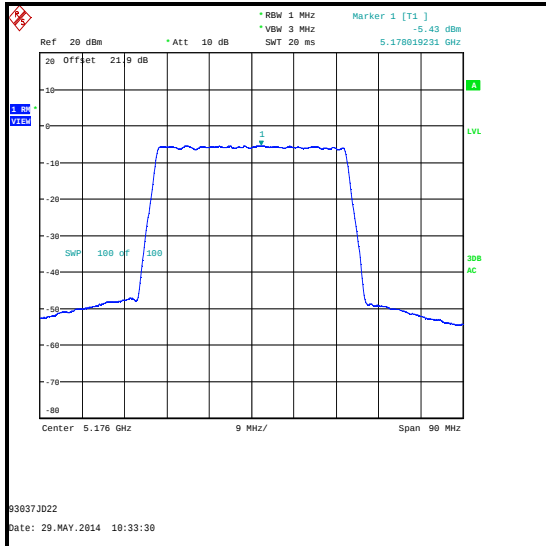
H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 45 MHz Channel / ACQ****V Port****Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 45 MHz Channel / 256QAM**

Channel	PPSD H Port (dBm/MHz)	PPSD V Port (dBm/MHz)	PPSD Power (dBm/MHz)	PPSD Power Limit (dBm/MHz)	Margin (dB)	Result
Bottom	-5.4	-5.4	-2.4	11.5	13.9	Complied
Middle	-5.5	-4.7	-2.1	11.5	13.6	Complied
Top	-5.4	-5.4	-2.4	11.5	13.9	Complied

H Port**Bottom Channel****Middle Channel****Top Channel**

Transmitter Maximum Power Spectral Density (5.15-5.25 GHz band) (continued)**Results: Omnidirectional Antenna / 45 MHz Channel / 256QAM****V Port****Bottom Channel****Middle Channel****Top Channel****Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
A2143	Attenuator	AtlanTecRF	AN18-20	081120-23	Calibrated Before Use	-
G0607	Signal Generator	Rohde & Schwarz	SMU 200A	100943	18 Jul 2016	36
M1630	Test Receiver	Rohde & Schwarz	ESU40	100233	13 Mar 2015	12
M1658	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	14 Mar 2015	12

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

Test Engineers:	Sandeep Bharat & David Doyle	Test Dates:	21 May 2014 to 23 May 2014
Test Sample Serial Numbers:	0004565000C2 (all antennas apart from plate antenna) & 0004565017A7 (plate antenna)		

FCC Reference:	Parts 15.407(b)(1);(b)(6); (b)(7) & 15.209(a)
Test Method Used:	FCC KDB 789033 II.G.4 & ANSI C63.10 Sections 6.3 & 6.5 and Notes below
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

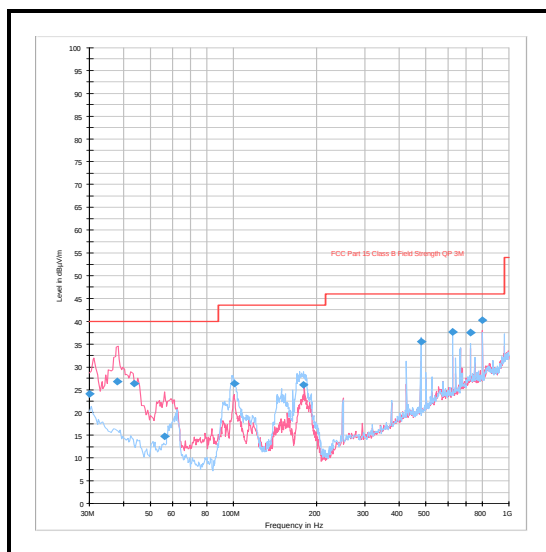
Temperature (°C):	23 to 24
Relative Humidity (%):	34 to 42

Note(s):

1. Radiated spurious emissions testing was performed with the EUT transmitting at maximum power on a 5 MHz channel with 256QAM modulation. This configuration produced the highest emission levels and was therefore deemed to be worst case. The EUT was transmitting at >99% duty cycle. The highest gain antenna of each antenna type was tested using the appropriate maximum power setting.
2. Pre-scans with the EUT transmitting on the top channel (highest configurable channel) were performed according FCC Part 15.407(b)(1) which states for transmitters operating in the band 5.15 to 5.25 GHz: all emissions outside of the band shall not exceed -27 dBm/MHz. Part 15.407(b)(6) states unwanted emissions below 1 GHz must comply with the general field strength limits set forth in 15.209. Part 15.407(b)(7) states the provisions of 15.205 apply, i.e. restricted bands of operation.
3. The final measured value, for the given emission in the field strength result tables, incorporates the calibrated antenna factor, preamplifier gain, attenuator loss 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. Measurements below 1 GHz were performed in a semi-anechoic chamber (Asset Number K0001) at a distance of 3 metres. The EUT was placed in the centre of the chamber turntable. The EUT and antenna were mounted onto a pole in a typical end-user configuration and interconnected using the RF cables supplied by the manufacturer. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
6. All emissions shown on the prescan plots were investigated. The highest emission level was compared to the applicable limit to obtain the margin. All other emissions were found to be >20 dB below the applicable limit or ambient and therefore not recorded.

Transmitter Radiated Emissions (continued)**Results: Top Channel / 256QAM / Parabolic Antenna**

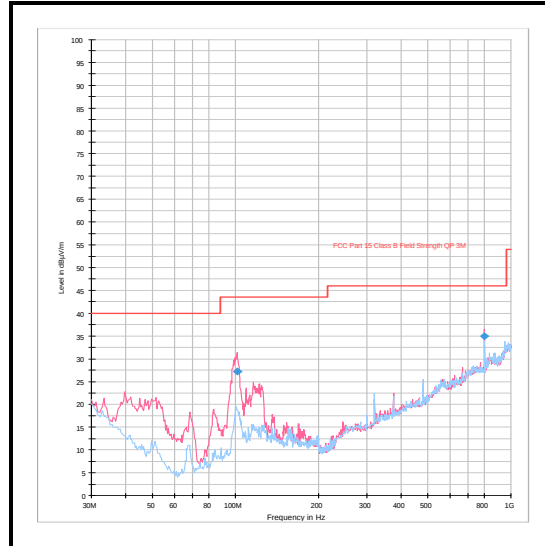
Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
37.836	Vertical	26.8	40.0	13.2	Complied
43.536	Vertical	26.4	40.0	13.6	Complied
479.999	Horizontal	35.6	46.0	10.4	Complied
624.970	Horizontal	37.6	46.0	8.4	Complied
724.982	Horizontal	37.5	46.0	8.5	Complied
800.004	Vertical	40.3	46.0	5.7	Complied



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

Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 256QAM / Plate Antenna**

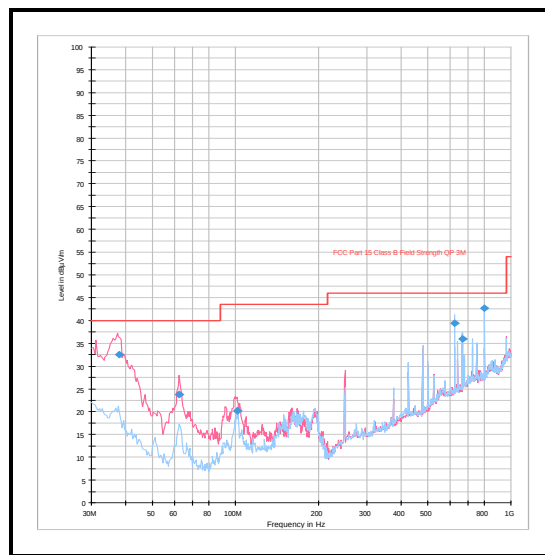
Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
101.725	Vertical	27.2	43.5	16.3	Complied
799.997	Vertical	34.9	46.0	11.1	Complied



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

Transmitter Radiated Emissions (continued)**Results: Top Channel / 256QAM / Sectorised Antenna**

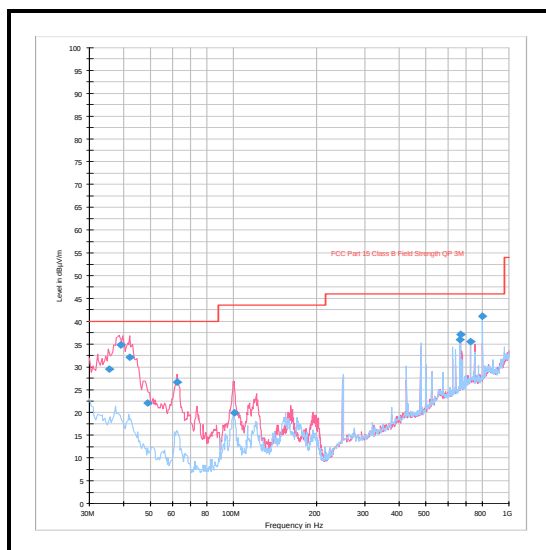
Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
37.883	Vertical	32.6	40.0	7.4	Complied
62.508	Vertical	23.8	40.0	16.2	Complied
624.981	Horizontal	39.3	46.0	6.7	Complied
666.667	Horizontal	36.0	46.0	10.0	Complied
799.997	Horizontal	42.7	46.0	3.3	Complied



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

Transmitter Radiated Emissions (continued)**Results: Top Channel / 256QAM / Omnidirectional Antenna**

Frequency (MHz)	Antenna Polarity	Quasi-Peak Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
35.376	Vertical	29.5	40.0	10.5	Complied
38.830	Vertical	34.9	40.0	5.1	Complied
664.062	Vertical	35.9	46.0	10.1	Complied
666.655	Horizontal	37.1	46.0	8.9	Complied
724.977	Vertical	35.6	46.0	10.4	Complied
799.997	Horizontal	41.1	46.0	4.9	Complied



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)
M1622	Thermohygrometer	JM Handelspunkt	30.5015.06	None stated	31 Dec 2014	12
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	26 Nov 2014	12
G0543	Amplifier	Sonoma	310N	230801	19 Aug 2014	3
M1273	Test Receiver	Rohde & Schwarz	ESIB 26	100275	15 Feb 2015	12
A490	Antenna	Chase	CBL6111A	1590	29 Apr 2015	12
A1834	Attenuator	Hewlett Packard	8491B	10444	15 Nov 2014	12
A2132	Low Pass Filter	AtlanTecRF	AFL-03000	300-192	25 Apr 2015	12

Transmitter Out of Band Radiated Emissions (continued)**Test Summary:**

Test Engineer:	Ian Watch	Test Dates:	23 May 2014 to 24 May 2014
Test Sample Serial Numbers:	0004565000C2 (all antennas apart from plate antenna) & 0004565017A7 (plate antenna)		

FCC Reference:	Parts 15.407(b)(1), 15.407(b)(7), 15.205 & 15.209(a)
Test Method Used:	FCC KDB 789033 II.G.5; II.G.6 & ANSI C63.10 Sections 6.3 & 6.6 and Notes below
Frequency Range:	1 GHz to 40 GHz

Environmental Conditions:

Temperature (°C):	21 to 25
Relative Humidity (%):	40 to 43

Note(s):

1. Radiated spurious emissions testing was performed with the EUT transmitting at maximum power on a 5 MHz channel with 256QAM modulation. This configuration produced the highest emission levels and was therefore deemed to be worst case. The EUT was transmitting at >99% duty cycle. The highest gain antenna of each antenna type was tested using the appropriate maximum power setting.
2. Pre-scans with the EUT transmitting on the top channel (highest configurable channel) were performed according to FCC Part 15.407(b)(1) which states all emissions outside of the 5.15-5.35 GHz band will not exceed -27 dBm/MHz E.I.R.P. Part 15.407(b)(7) states the provisions of 15.205 apply i.e. restricted bands of operation.
3. Appropriate RF filters and attenuators were used during pre-scans and final measurements. Insertion losses were entered on the spectrum analyser as RF levels offsets.
4. It was not always possible to maintain a constant reference level on the spectrum analyser plots due to the test setup. The reference level was set as high as the spectrum analyser allowed and was as close to the in-band measurements as possible.
5. Result plots from 4.5 GHz to 5.46 GHz for a 5 MHz channel with 256QAM are contained within the Transmitter Band Edge Radiated Emissions section of this report. Tests were performed as a field strength measurements and any emissions in non-restricted bands converted to a E.I.R.P. value in dBm in accordance with FCC KDB 789033 II(G)2d(iii) using a conversion factor of -95.2. A peak detector was used (worst case) unless otherwise stated. The measured values incorporates the calibrated antenna factor and cable loss.
6. Where spurious emissions occurred in a restricted band, the maximum field strength level was compared to peak (74 dBµV/m) and average (54 dBµV/m) limits. Where spurious emissions occurred in a non-restricted band, the maximum field strength was converted to E.I.R.P. and compared to the -27 dBm/MHz E.I.R.P. limit. The -27 dBm/MHz E.I.R.P. limit was converted to a field strength limit of 68.2 dBµV/m at 3 metres. This limit line is marked on the plots as "15407".
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 in the centre of the chamber turntable. Final measurements above 1 GHz were performed in a semi-anechoic chamber (Asset Number K0001) at a distance of 3 metres. 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 (continued)**Results: Bottom Channel / 5 MHz Channel / 256QAM / Parabolic Antenna**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
4994.712	Horizontal	58.6	74.0	15.4	Complied
5116.987	Horizontal	63.6	74.0	10.4	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
4996.955	Horizontal	47.7	54.0	6.3	Complied
5118.109	Horizontal	52.3	54.0	1.7	Complied

Results: Middle Channel / 5 MHz Channel / 256QAM / Parabolic Antenna

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5033.413	Horizontal	59.8	74.0	14.2	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5033.413	Horizontal	49.9	54.0	4.1	Complied

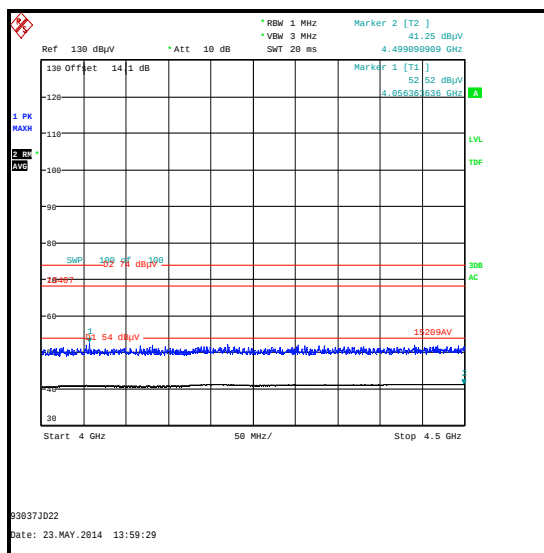
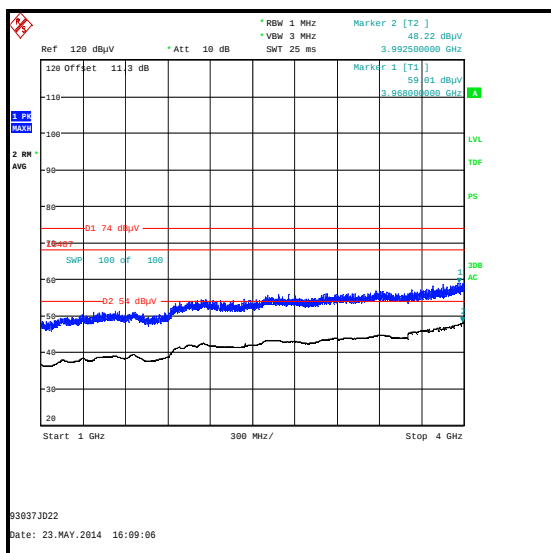
Results: Top Channel / 5 MHz Channel / 256QAM / Parabolic Antenna

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5407.083	Horizontal	62.1	74.0	11.9	Complied

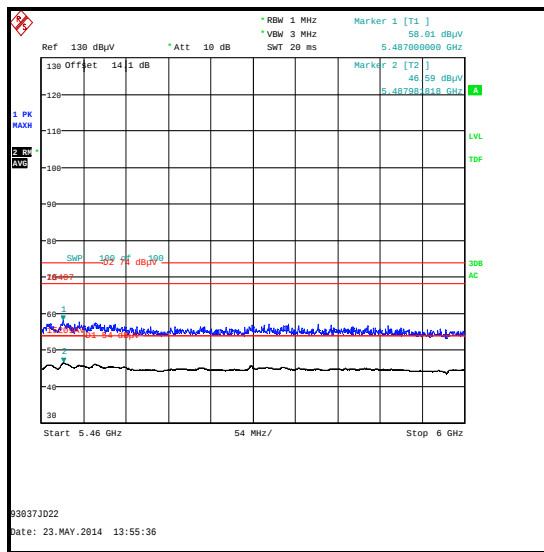
Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5407.917	Horizontal	52.4	54.0	1.6	Complied

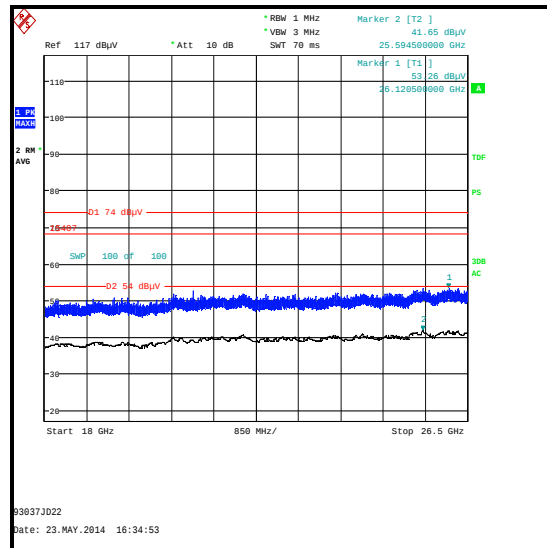
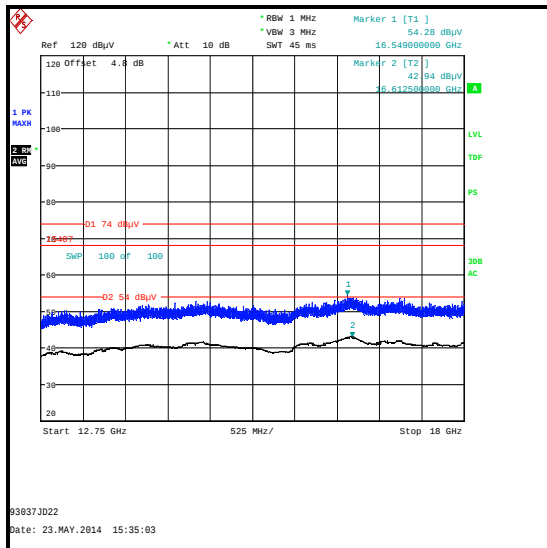
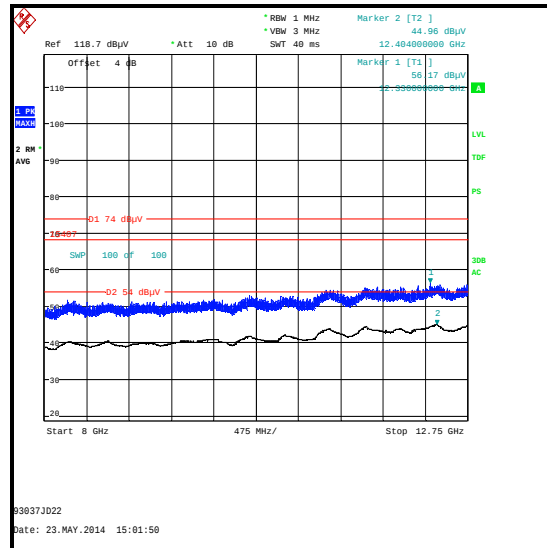
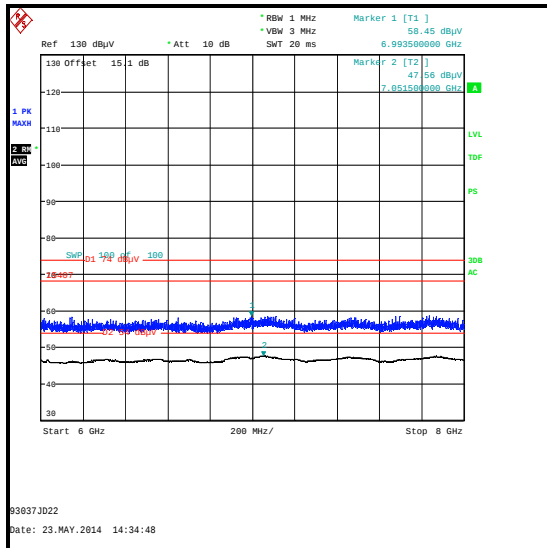
Transmitter Out of Band Radiated Emissions (continued)

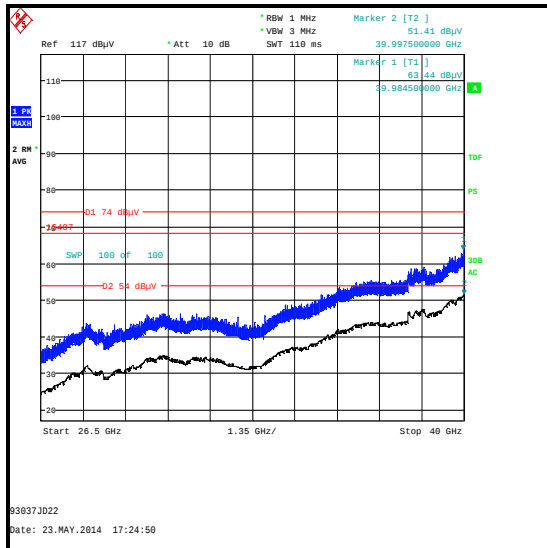
Results: Top Channel / 5 MHz Channel / 256QAM / Parabolic Antenna



Result plots from 4.5 GHz to 5.46 GHz are contained within the Transmitter Band Edge Radiated Emissions section of this report



Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Parabolic Antenna**

Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Parabolic Antenna**

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Out of Band Radiated Emissions (continued)**Results: Bottom Channel / 5 MHz Channel / 256QAM / Plate Antenna**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5116.987	Horizontal	58.5	74.0	15.5	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5116.987	Horizontal	47.7	54.0	6.3	Complied

Results: Middle Channel / 5 MHz Channel / 256QAM / Plate Antenna

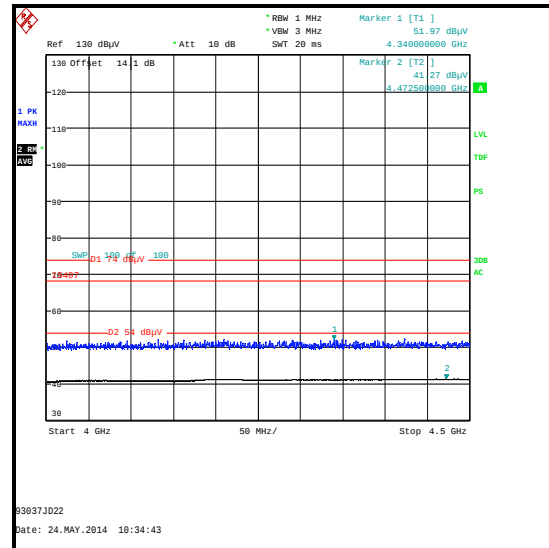
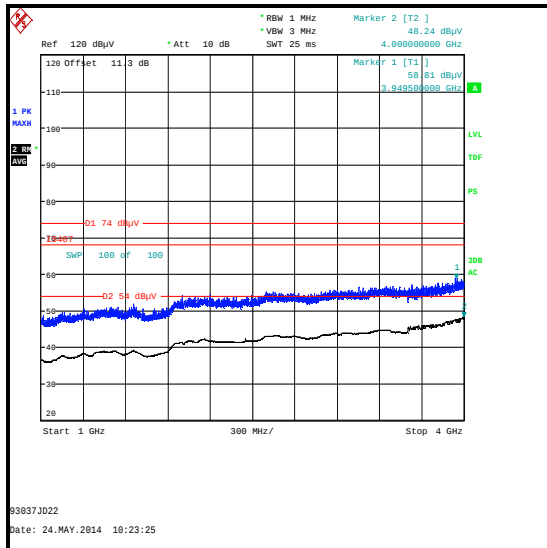
Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5041.966	Horizontal	60.7	74.0	13.3	Complied
5359.821	Horizontal	61.2	74.0	12.8	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5041.966	Horizontal	51.0	54.0	3.0	Complied
5359.917	Horizontal	51.2	54.0	2.8	Complied

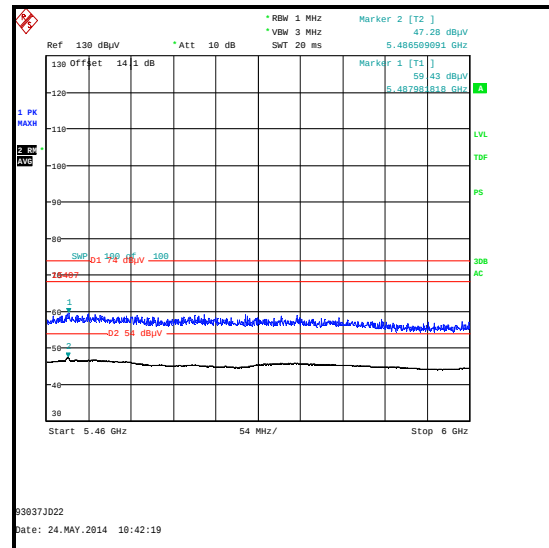
Results: Top Channel / 5 MHz Channel / 256QAM / Plate Antenna

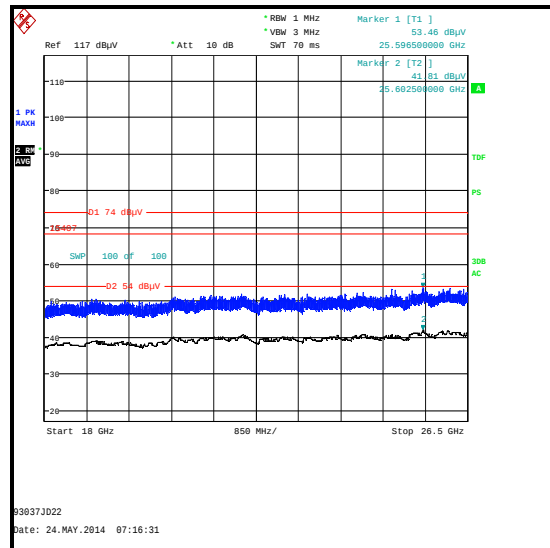
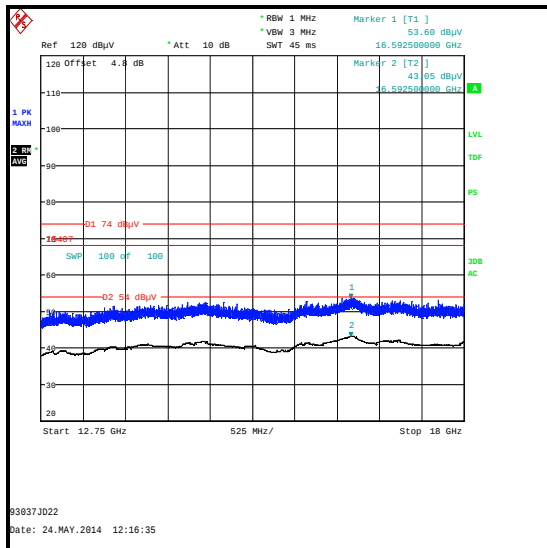
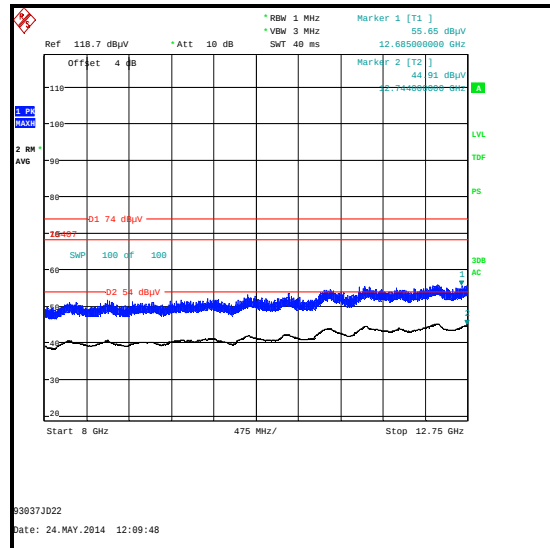
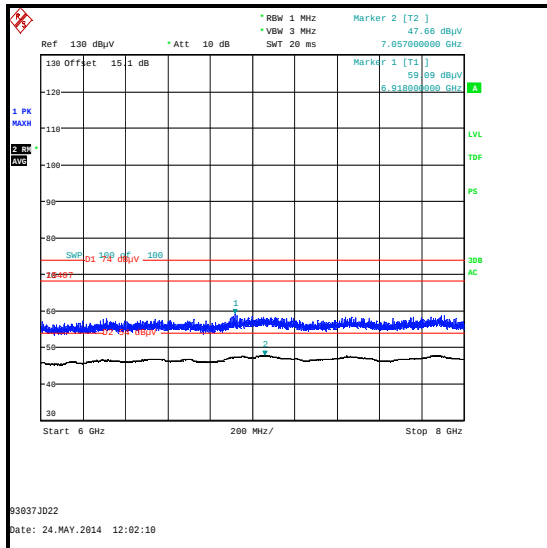
Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5407.083	Horizontal	61.2	74.0	12.8	Complied

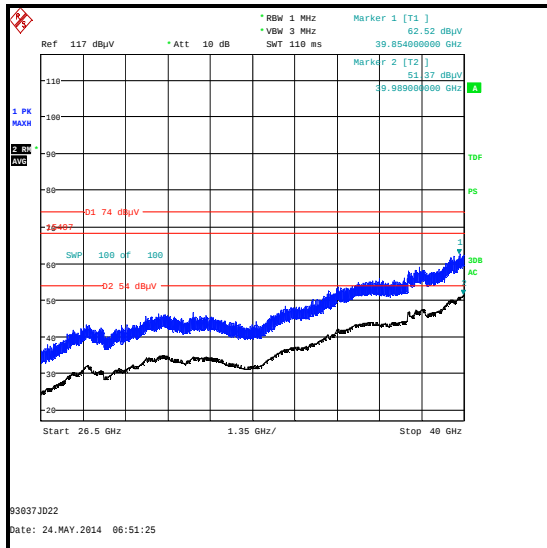
Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5407.083	Horizontal	51.2	54.0	2.8	Complied

Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Plate Antenna**

Result plots from 4.5 GHz to 5.46 GHz are contained within the Transmitter Band Edge Radiated Emissions section of this report



Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Plate Antenna**

Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Plate Antenna**

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Out of Band Radiated Emissions (continued)**Results: Bottom Channel / 5 MHz Channel / 256QAM / Sectorised Antenna**

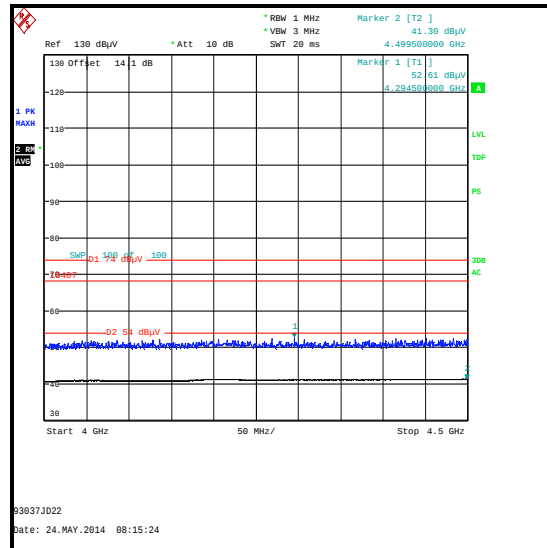
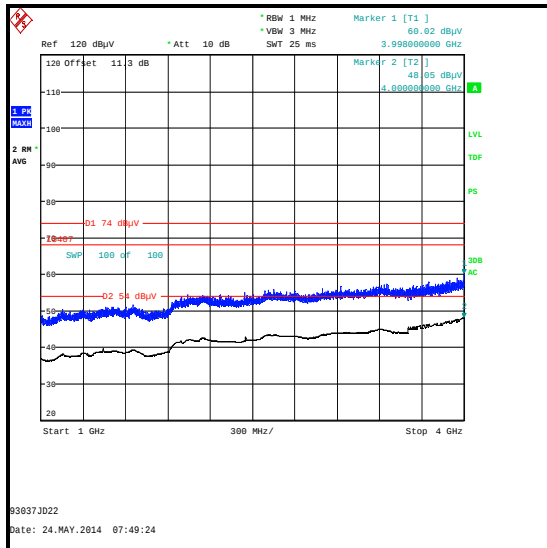
Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)	Result
4996.955	Horizontal	56.7	74.0	17.3	Complied
5116.987	Horizontal	62.5	74.0	11.5	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
4996.955	Horizontal	50.0	54.0	4.0	Complied
5116.987	Horizontal	52.3	54.0	1.7	Complied

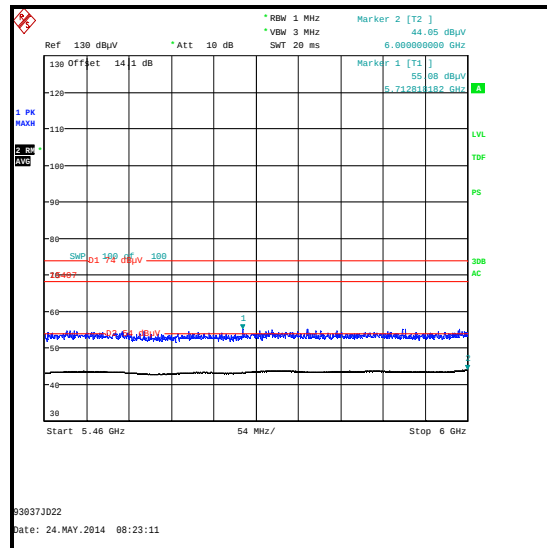
Results: Middle Channel / 5 MHz Channel / 256QAM / Sectorised Antenna

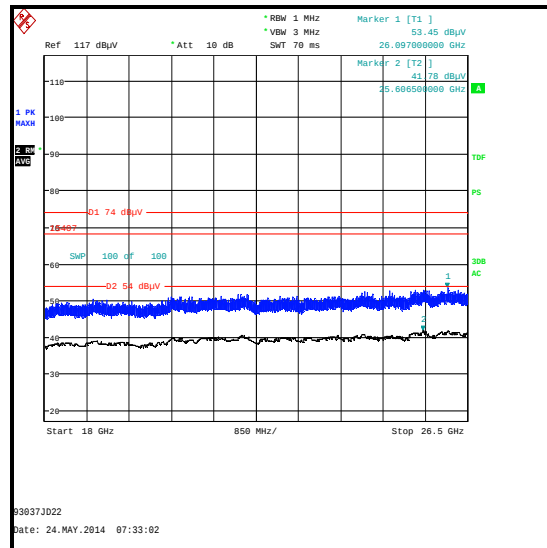
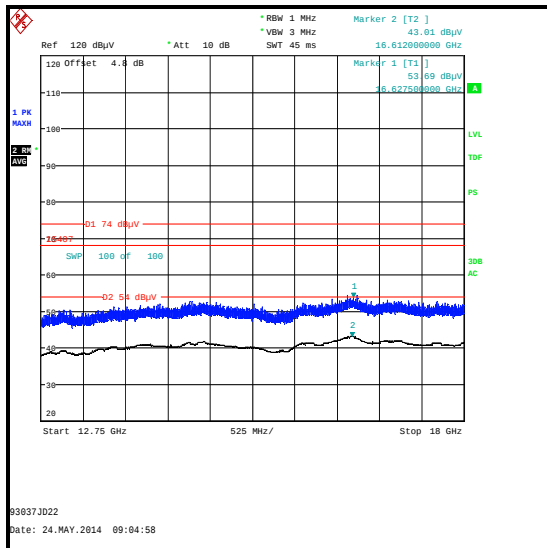
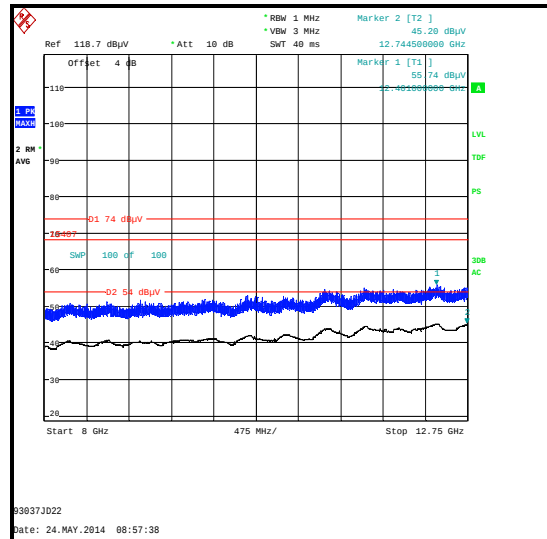
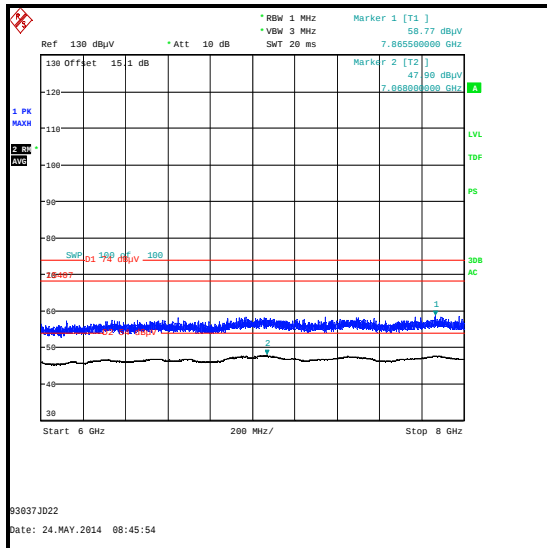
Frequency (MHz)	Antenna Polarity	Peak Level (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)	Result
5041.966	Horizontal	59.5	74.0	14.5	Complied

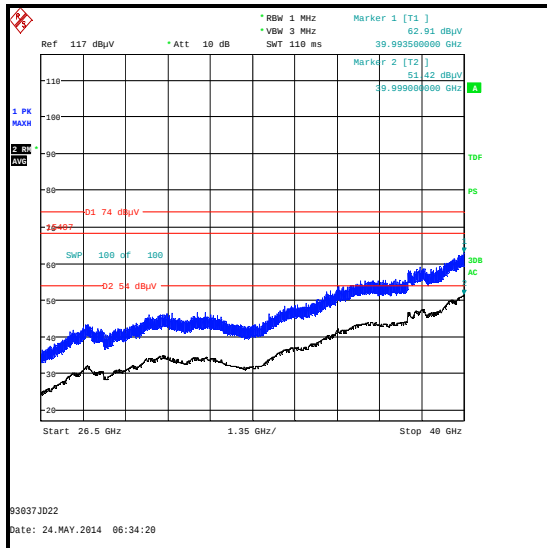
Frequency (MHz)	Antenna Polarity	Average Level (dBµV/m)	Average Limit (dBµV/m)	Margin (dB)	Result
5041.966	Horizontal	49.7	54.0	4.3	Complied

Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Sectorised Antenna**

Result plots from 4.5 GHz to 5.46 GHz are contained within the Transmitter Band Edge Radiated Emissions section of this report



Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Sectorised Antenna**

Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Sectorised Antenna**

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Out of Band Radiated Emissions (continued)**Results: Bottom Channel / 5 MHz Channel / 256QAM / Omnidirectional Antenna**

Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5116.987	Horizontal	56.2	74.0	17.8	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5116.987	Horizontal	46.7	54.0	7.3	Complied

Results: Middle Channel / 5 MHz Channel / 256QAM / Omnidirectional Antenna

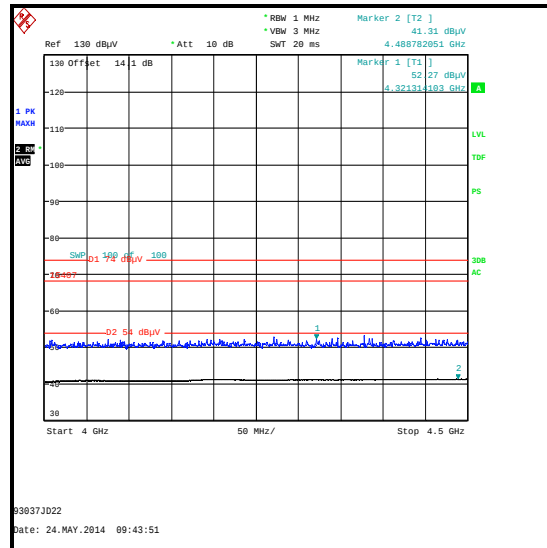
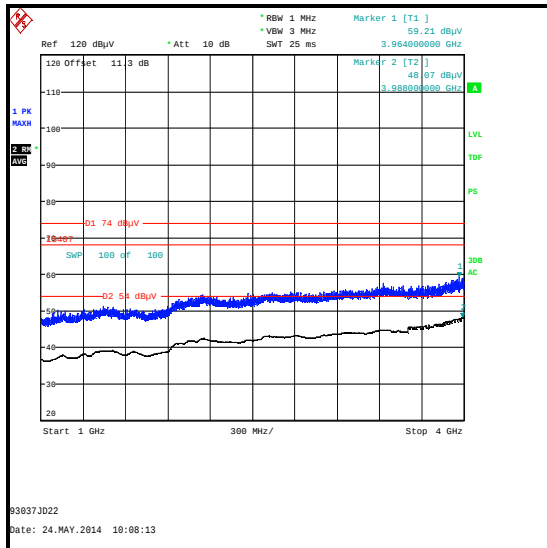
Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5040.020	Horizontal	60.9	74.0	13.1	Complied

Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5039.587	Horizontal	47.2	54.0	6.8	Complied

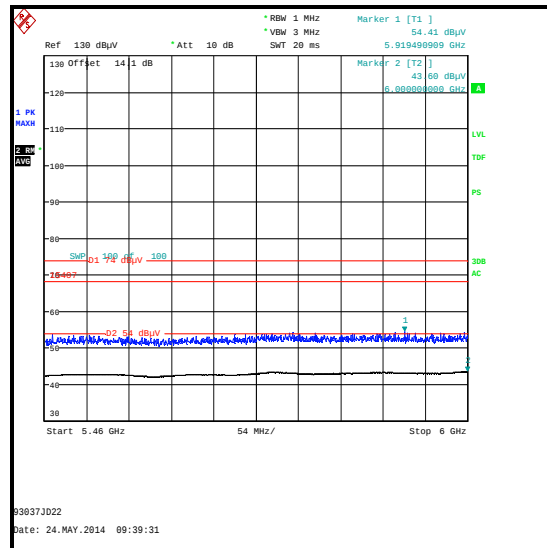
Results: Top Channel / 5 MHz Channel / 256QAM / Omnidirectional Antenna

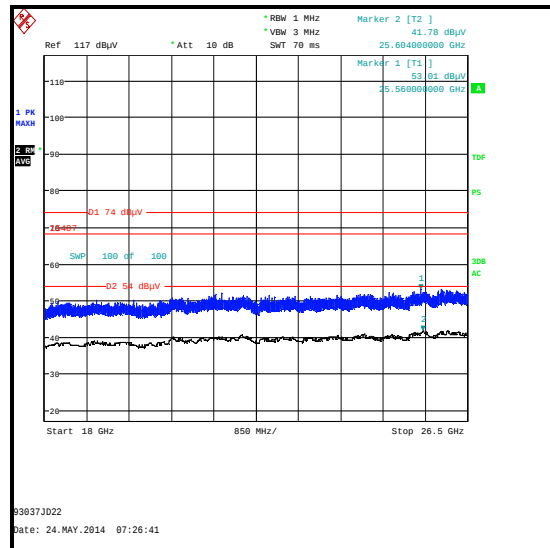
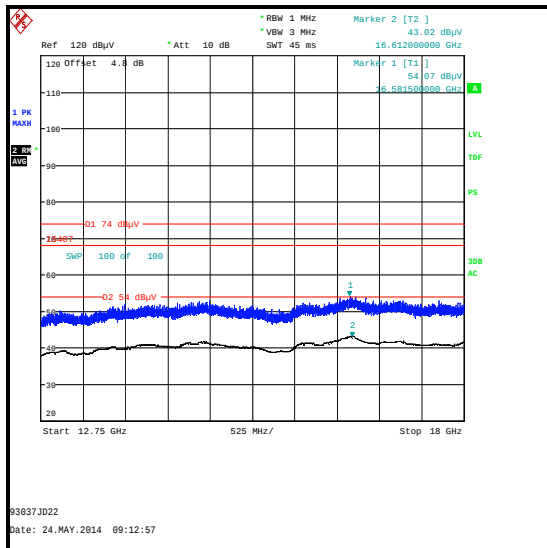
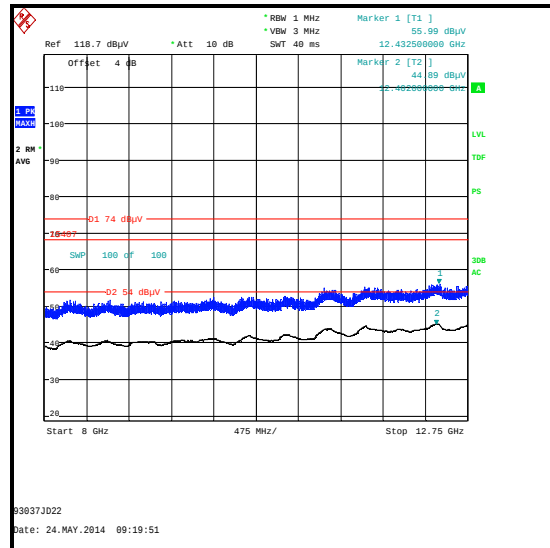
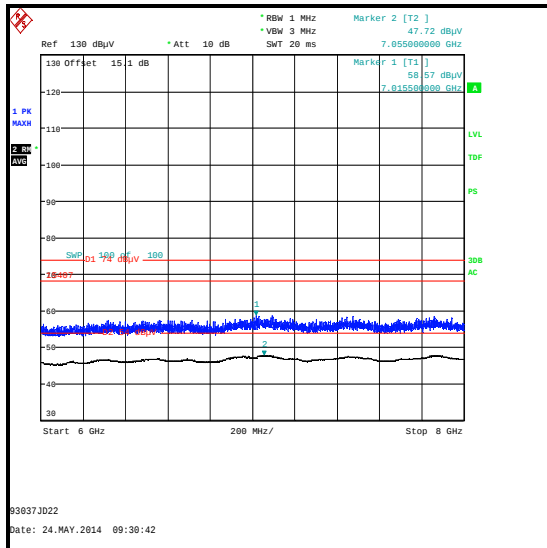
Frequency (MHz)	Antenna Polarity	Peak Level (dB μ V/m)	Peak Limit (dB μ V/m)	Margin (dB)	Result
5408.750	Horizontal	54.5	74.0	19.5	Complied

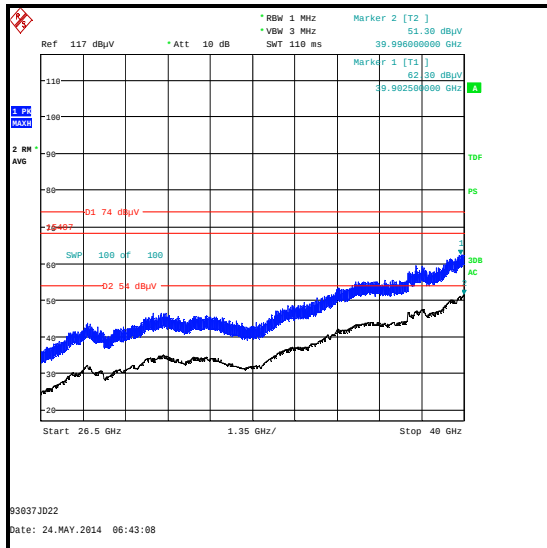
Frequency (MHz)	Antenna Polarity	Average Level (dB μ V/m)	Average Limit (dB μ V/m)	Margin (dB)	Result
5407.500	Horizontal	43.8	54.0	10.2	Complied

Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Omnidirectional Antenna**

Result plots from 4.5 GHz to 5.46 GHz are contained within the Transmitter Band Edge Radiated Emissions section of this report



Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Omnidirectional Antenna**

Transmitter Out of Band Radiated Emissions (continued)**Results: Top Channel / 5 MHz Channel / 256QAM / Omnidirectional Antenna**

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

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

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	26 Nov 2014	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	14 Nov 2014	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	18 May 2015	12
A1785	Pre Amplifier	Farran	FLNA-28-30	FTL 6483	Calibrated Before Use	-
G0607	Signal Generator	Rohde & Schwarz	SMU 200A	100943	18 Jul 2016	36
M1630	Test Receiver	Rohde & Schwarz	ESU	100233	13 Mar 2015	12
A2134	Low Pass Filter	AtlanTec RF	AFL-05000	300195	25 Apr 2015	12
A1980	High Pass Filter	AtlanTec RF	AFH-06000	09110900303	12 Apr 2015	12
A1393	Attenuator	Huber & Suhner	6820.17.B	757456	02 May 2015	12
A1867	Attenuator	Hewlett Packard	8491A	16823	Calibrated Before Use	-
A1396	Attenuator	Huber & Suhner	6806.17.B		02 May 2015	12
A1818	Antenna	EMCO	3115	00075692	14 Nov 2014	12
A253	Antenna	Flann Microwave	12240-20	128	14 Nov 2014	12
A254	Antenna	Flann Microwave	14240-20	139	14 Nov 2014	12
A255	Antenna	Flann Microwave	16240-20	519	14 Nov 2014	12
A256	Antenna	Flann Microwave	18240-20	400	14 Nov 2014	12
A436	Antenna	Flann Microwave	20249-20	330	14 Nov 2014	12
A203	Antenna	Flann Microwave	22240-20	343	19 May 2016	36
M1656	Thermohygrometer	JM Handelspunkt	30.5015.13	Not stated	14 Mar 2015	12

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

Test Engineer:	Ian Watch	Test Dates:	19 May 2014 to 22 May 2014
Test Sample Serial Number:	0004565000C2 (omnidirectional and plate antenna) & 0004565017A7 (parabolic and sectorised antenna)		

FCC Reference:	Parts 15.407(b)(1), 15.407(b)(7), 15.205 & 15.209(a)
Test Method Used:	FCC KDB 789033 II.G.5; II.G.6 & ANSI C63.10 Sections 6.3 & 6.6 and Notes below

Environmental Conditions:

Temperature (°C):	23 to 25
Relative Humidity (%):	38 to 42

Note(s):

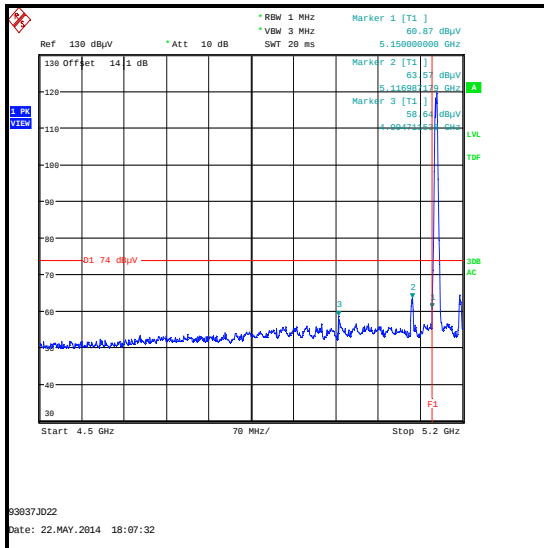
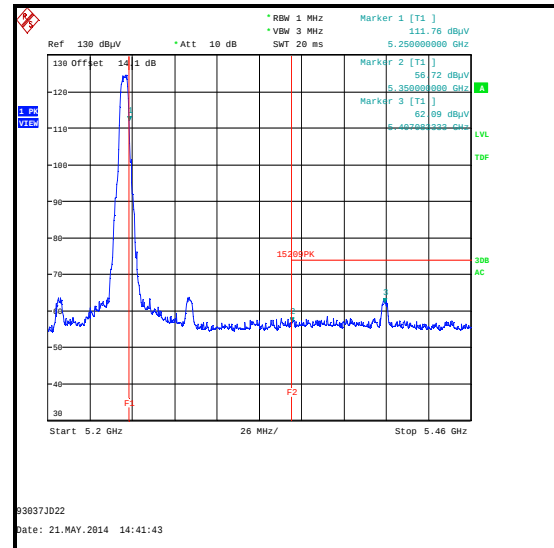
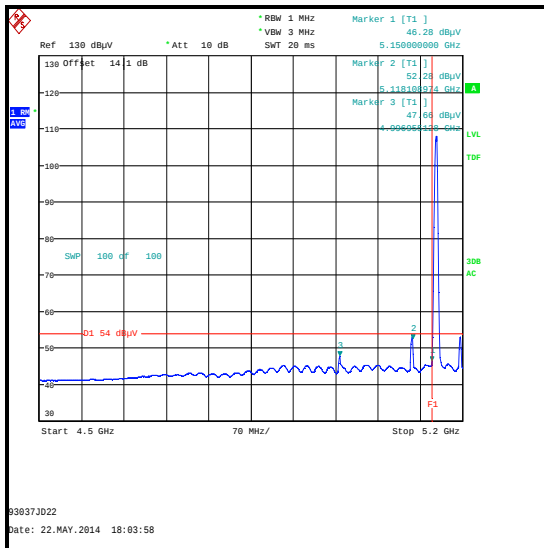
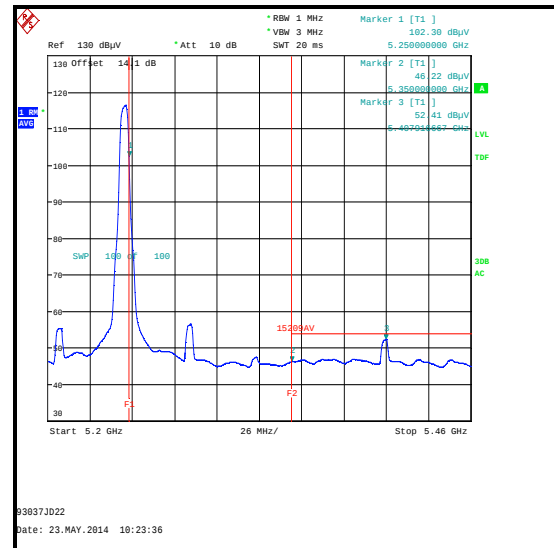
1. Band edge tests were performed as radiated measurements in the operating mode that produced the highest emission levels at band edges. All modes were initially tested and the mode that produced the highest levels was 256QAM. The EUT was transmitting with >99% duty cycle and at maximum power for bottom or top channel according to the antenna being used (refer to Section 4.2). All antennas types were tested. The EUT was connected to each antenna using the supplied RF cables.
2. Lower band edge measurements were performed with the EUT transmitting on the bottom channel at maximum power. The lower band edge plots show a lower band edge frequency line F1 at 5.15 GHz. A restricted band of operation exists from 4.5 GHz to the lower band edge at 5.15 GHz. Restricted band 74 dBµV/m peak limit and 54 dBµV/m average limits apply. A marker was placed at 5.15 GHz, the peak and average levels were recorded.
3. Upper band edge measurements were performed with the EUT transmitting on the top channel. The upper band edge plots show frequency lines F1 at 5.25 GHz and F2 at 5.35 GHz. Out-of-band spurious emissions requirements for transmitters operating in the 5.15-5.25 GHz band start at 5.35 GHz (Rule Part 15.407(b)(1)). A restricted band of operation exists from 5.35 GHz to 5.46 GHz. Restricted band 74 dBµV/m peak limit and 54 dBµV/m average limits apply. A marker was placed at 5.35 GHz, the peak and average levels were recorded.
4. For all channel bandwidths apart from 5 MHz channel widths, markers were placed on any high level emissions (when present) in the restricted bands adjacent to the band edges and these emissions were also recorded in this section. Spurious emissions in the restricted bands adjacent to the band edges for 5 MHz channel widths were found to be worst case and are recorded in the Transmitter Out of Band Radiated Emissions section of this report.
5. A software bug in the spectrum analyser screen copying application caused some average plots not to show the correct amount of trace sweeps. All average measurements were made with ≥100 sweeps.

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 5 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	60.9	74.0	13.1	Complied
5350	56.7	74.0	17.3	Complied

Results: Parabolic Antenna / 5 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	46.3	54.0	7.7	Complied
5350	46.2	54.0	7.8	Complied

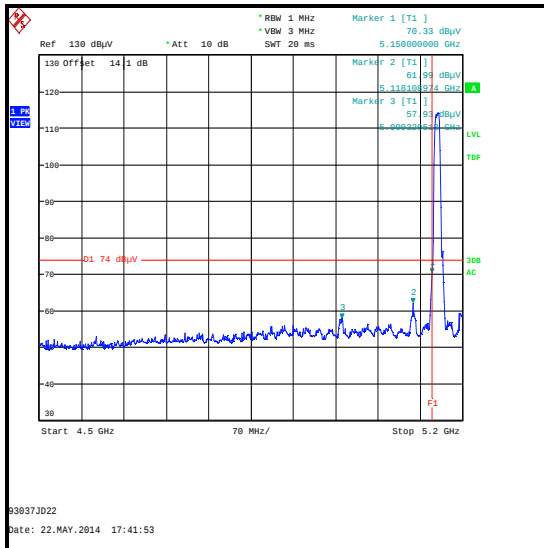
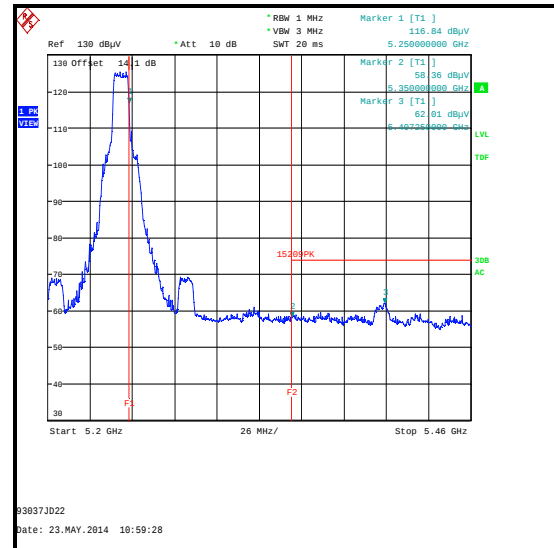
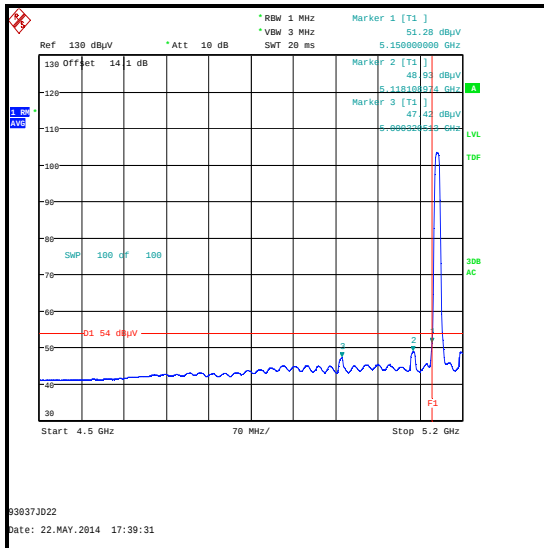
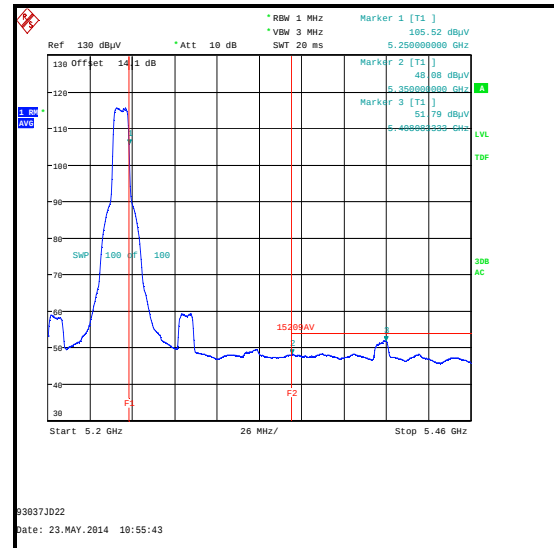
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 5 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 10 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5000.321	57.9	74.0	16.1	Complied
5118.109	62.0	74.0	12.0	Complied
5150	70.3	74.0	3.7	Complied
5350	58.4	74.0	15.6	Complied
5407.250	62.0	74.0	12.0	Complied

Results: Parabolic Antenna / 10 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5000.321	47.4	54.0	6.6	Complied
5118.109	48.9	54.0	5.1	Complied
5150	51.3	54.0	2.7	Complied
5350	48.1	54.0	5.9	Complied
5408.083	51.8	54.0	2.2	Complied

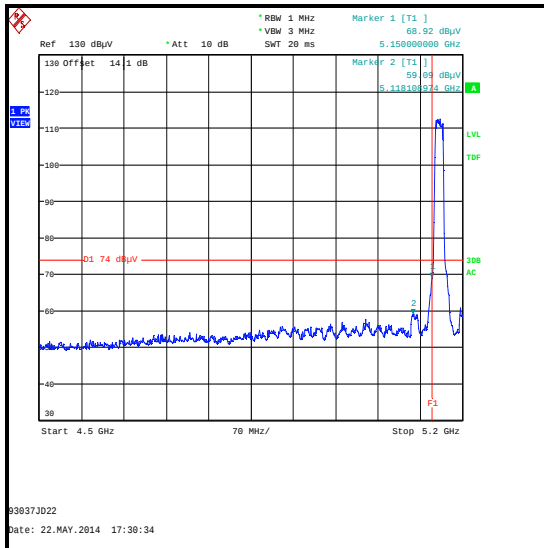
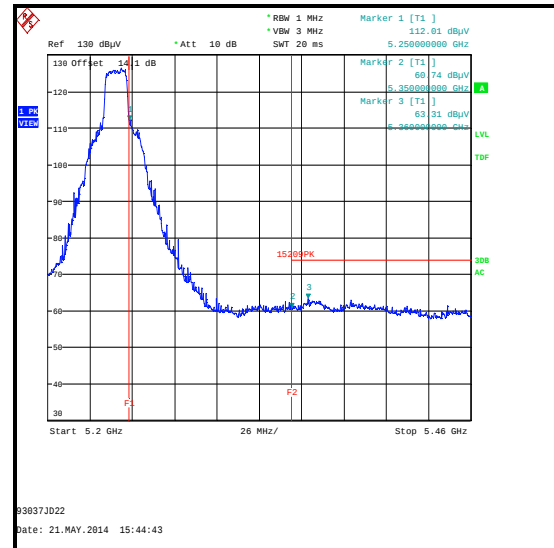
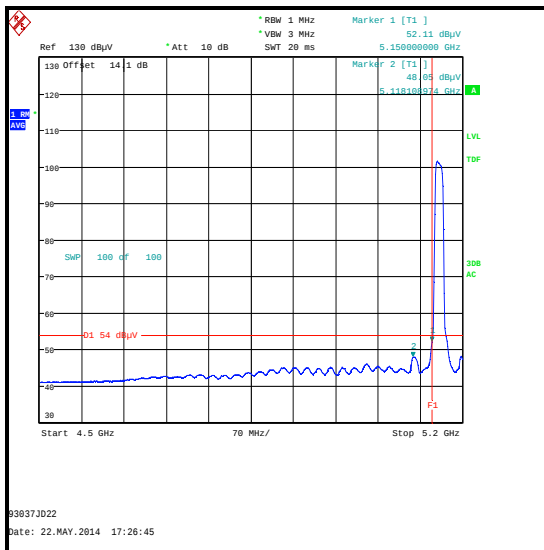
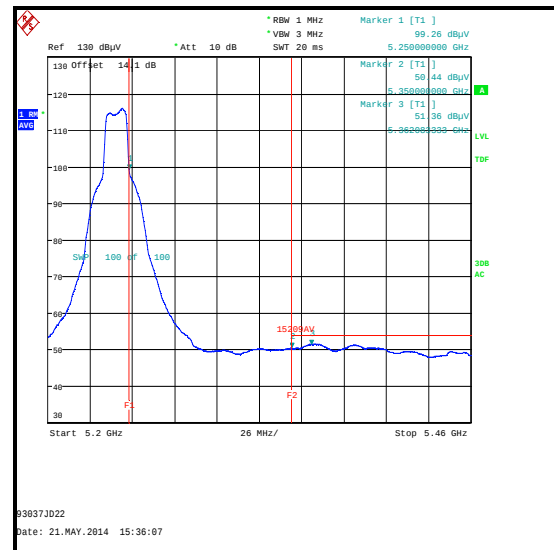
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 10 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 15 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5118.109	59.1	74.0	14.9	Complied
5150	68.9	74.0	5.1	Complied
5350	60.7	74.0	13.3	Complied
5360	63.3	74.0	10.7	Complied

Results: Parabolic Antenna / 15 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5118.109	48.1	54.0	5.9	Complied
5150	52.1	54.0	1.9	Complied
5350	50.4	54.0	3.6	Complied
5362.083	51.4	54.0	2.6	Complied

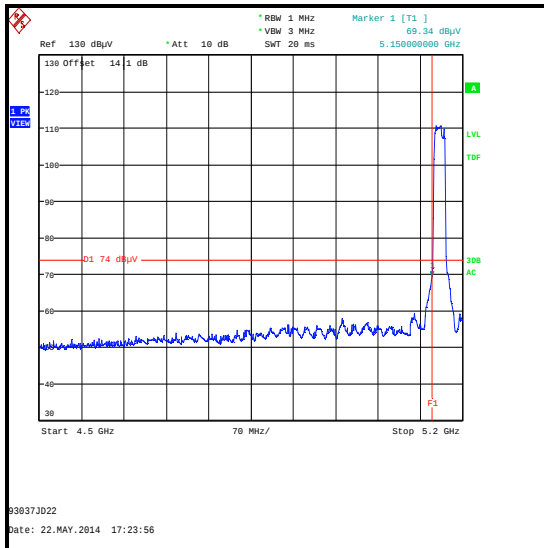
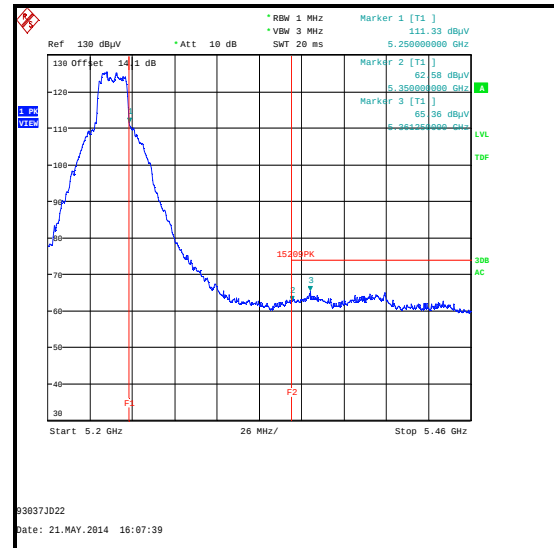
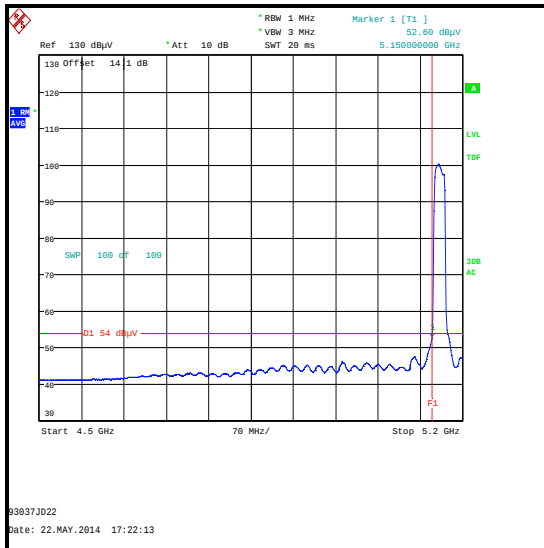
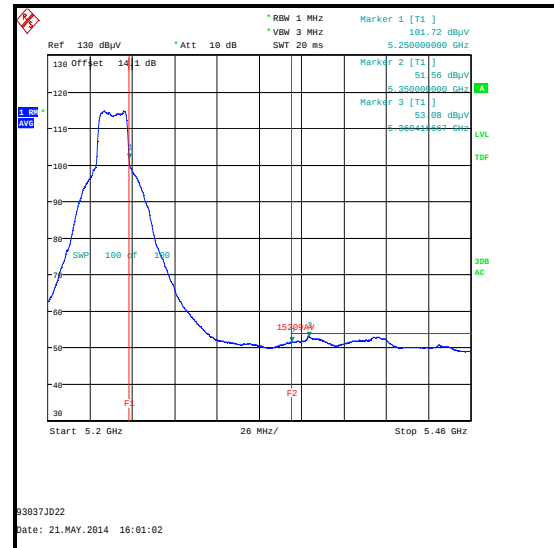
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 15 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 20 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	69.3	74.0	4.7	Complied
5350	62.6	74.0	11.4	Complied
5361.250	65.4	74.0	8.6	Complied

Results: Parabolic Antenna / 20 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.6	54.0	1.4	Complied
5350	51.6	54.0	2.4	Complied
5360.417	53.1	54.0	0.9	Complied

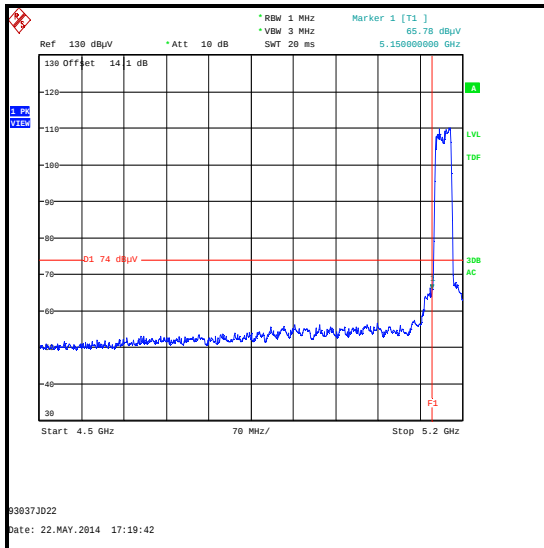
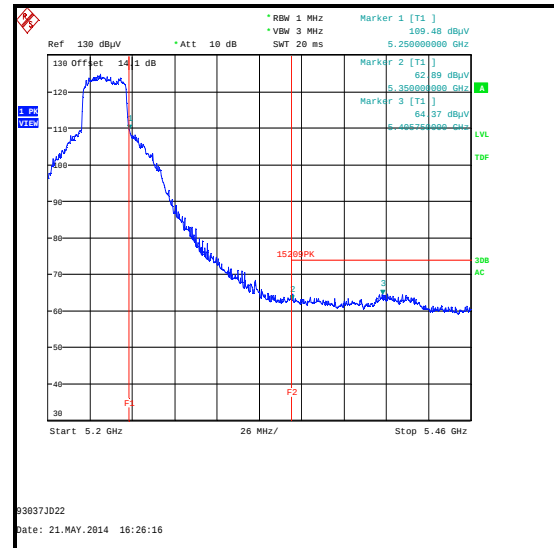
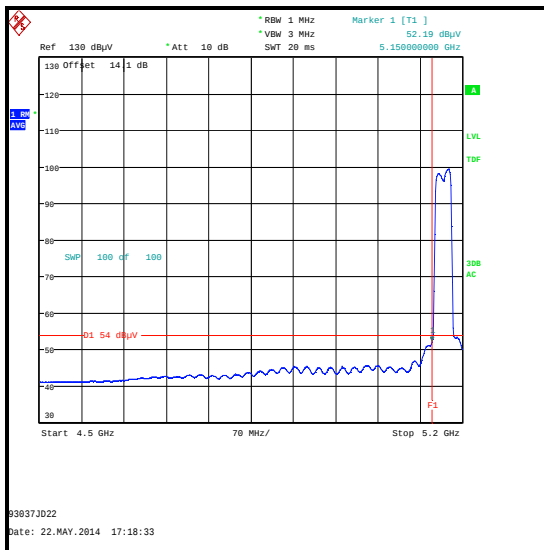
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 20 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 30 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	65.8	74.0	8.2	Complied
5350	62.9	74.0	11.1	Complied
5405.750	64.4	74.0	9.6	Complied

Results: Parabolic Antenna / 30 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.2	54.0	1.8	Complied
5350	52.7	54.0	1.3	Complied
5405.750	53.3	54.0	0.7	Complied

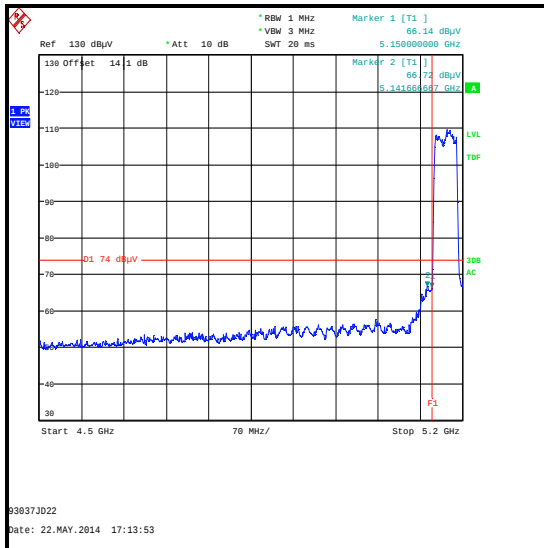
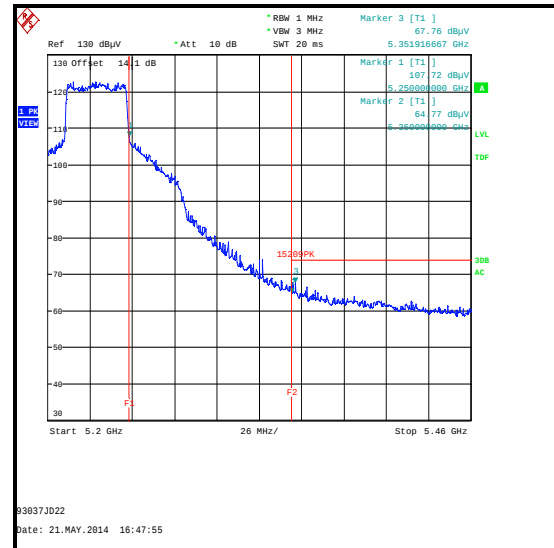
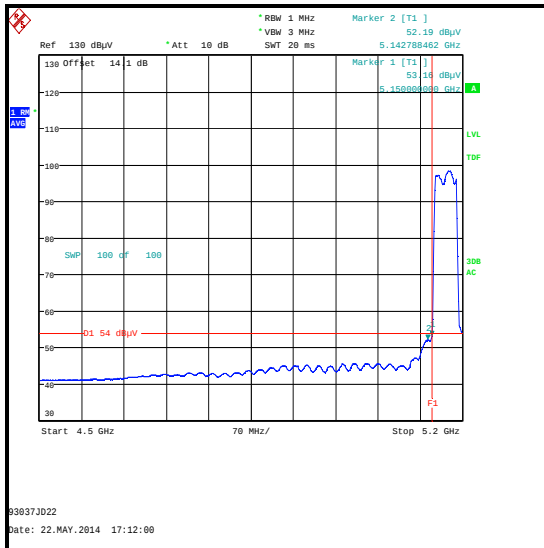
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 30 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 40 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5141.667	66.7	74.0	7.3	Complied
5150	66.1	74.0	7.9	Complied
5350	64.8	74.0	9.2	Complied
5351.917	67.8	74.0	6.2	Complied

Results: Parabolic Antenna / 40 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	53.2	54.0	0.8	Complied
5350	53.1	54.0	0.9	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 40 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Parabolic Antenna / 45 MHz Channel / 256QAM / Peak**

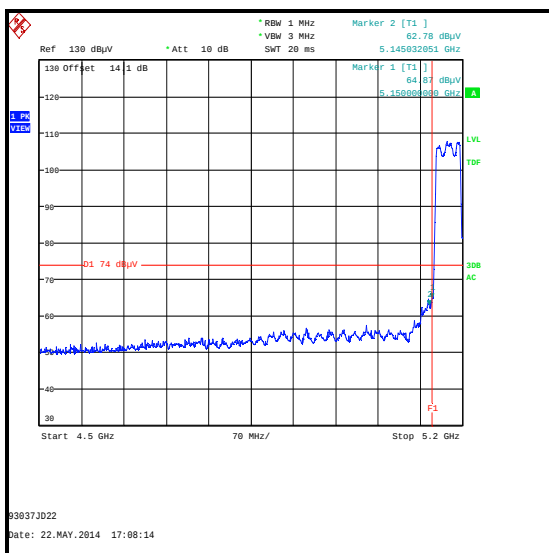
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5145.032	62.8	74.0	11.2	Complied
5150	64.9	74.0	9.1	Complied
5350	66.3	74.0	7.7	Complied

Results: Parabolic Antenna / 45 MHz Channel / 256QAM / Average

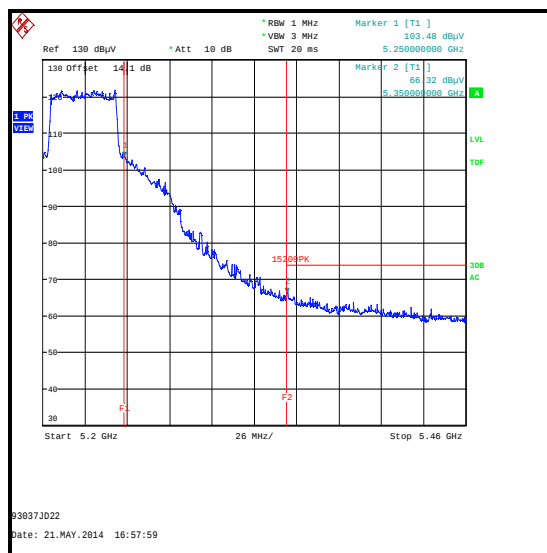
Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.4	54.0	1.6	Complied
5350	53.1	54.0	0.9	Complied

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

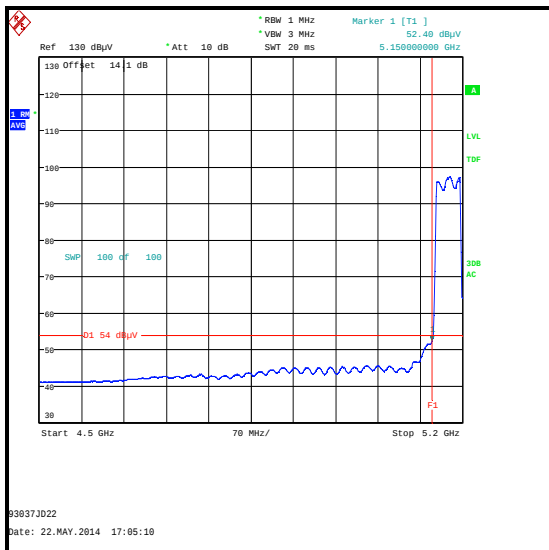
Results: Parabolic Antenna / 45 MHz Channel / 256QAM



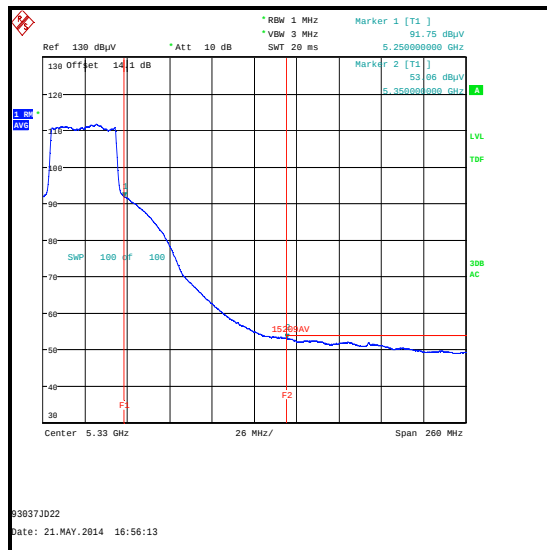
Lower Band Edge / Peak



Upper Band Edge / Peak



Lower Band Edge / Average



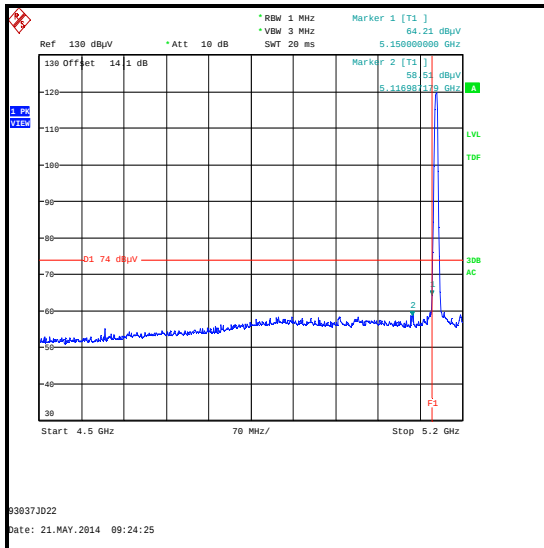
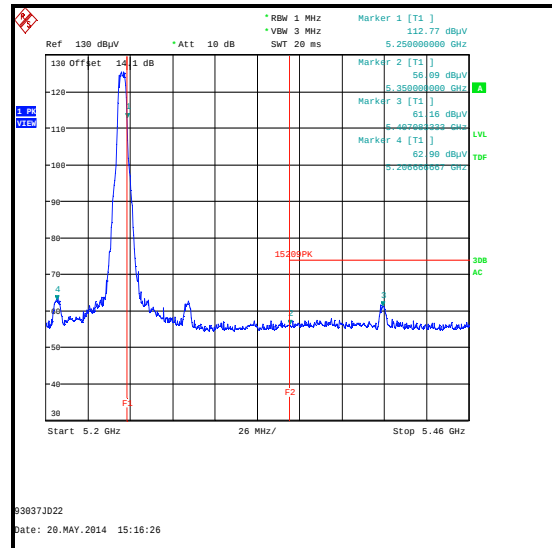
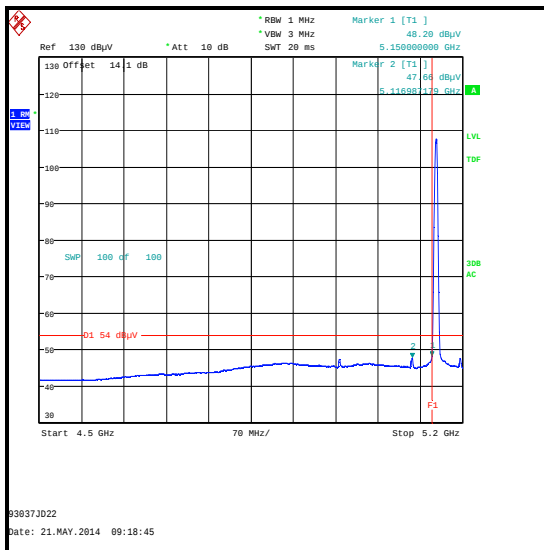
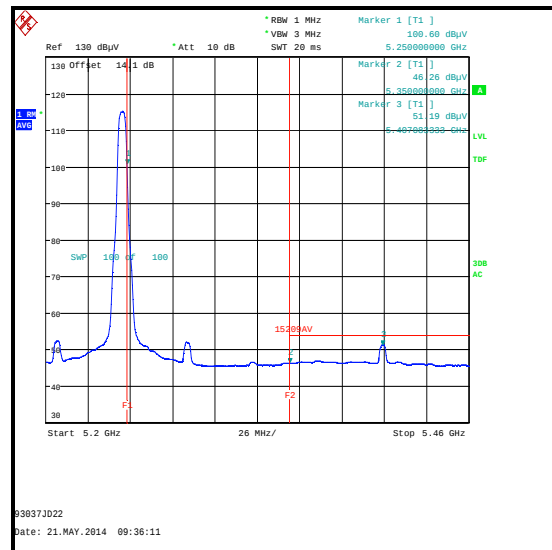
Upper Band Edge / Average

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 5 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	64.2	74.0	9.8	Complied
5350	56.1	74.0	17.9	Complied
5407.083	61.2	74.0	12.8	Complied

Results: Plate Antenna / 5 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	48.2	54.0	5.8	Complied
5350	46.3	54.0	7.7	Complied
5407.083	51.2	54.0	2.8	Complied

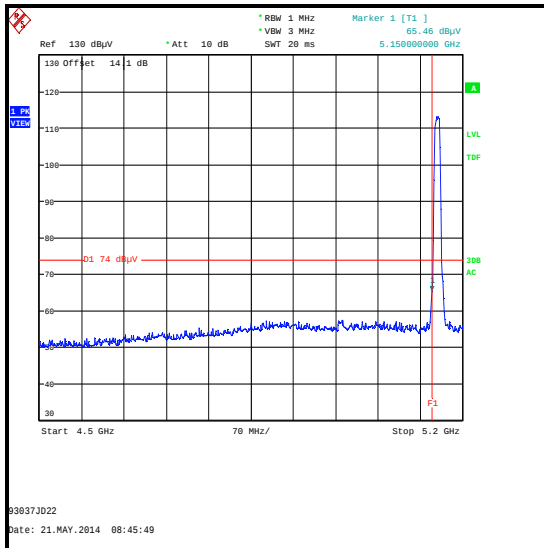
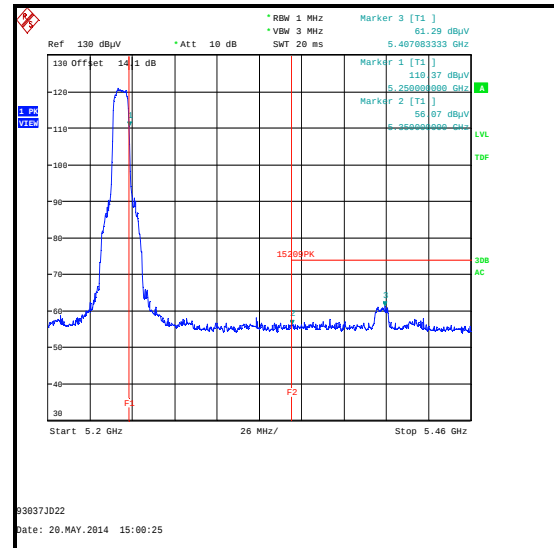
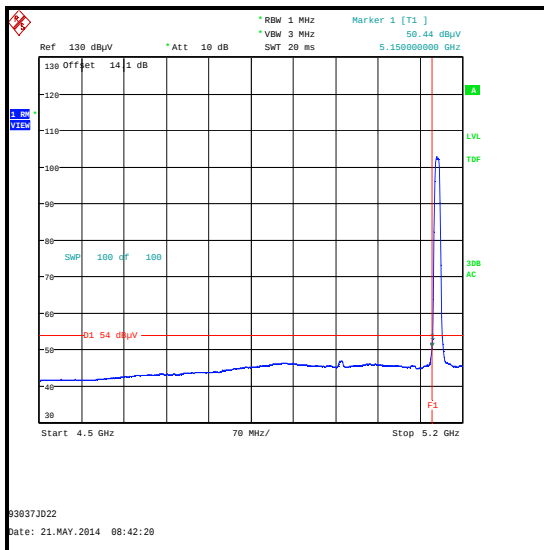
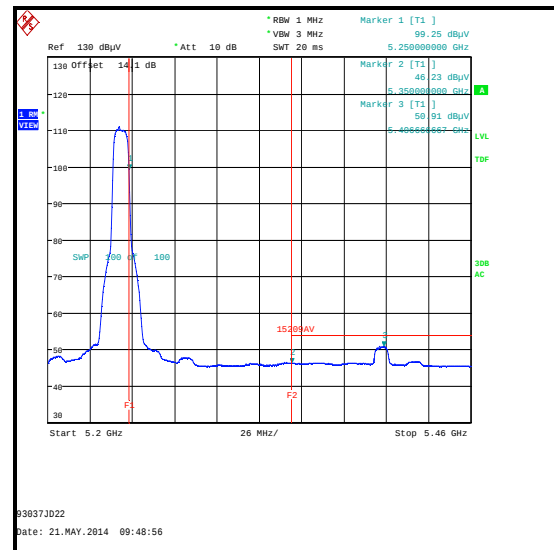
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 5 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 10 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	65.5	74.0	8.5	Complied
5350	56.1	74.0	17.9	Complied
5407.083	61.3	74.0	12.7	Complied

Results: Plate Antenna / 10 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	50.4	54.0	3.6	Complied
5350	46.2	54.0	7.8	Complied
5406.667	50.9	54.0	3.1	Complied

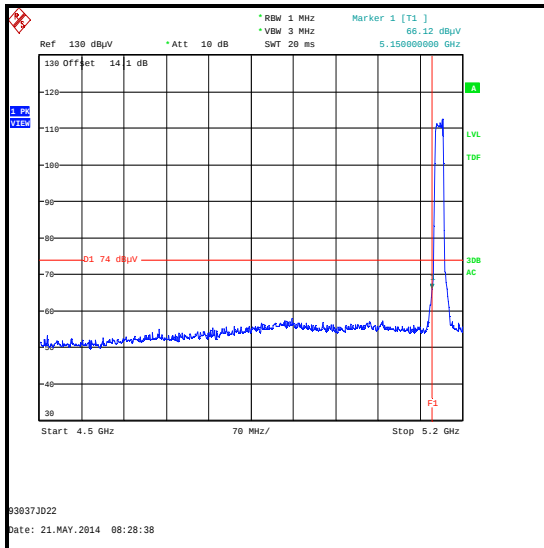
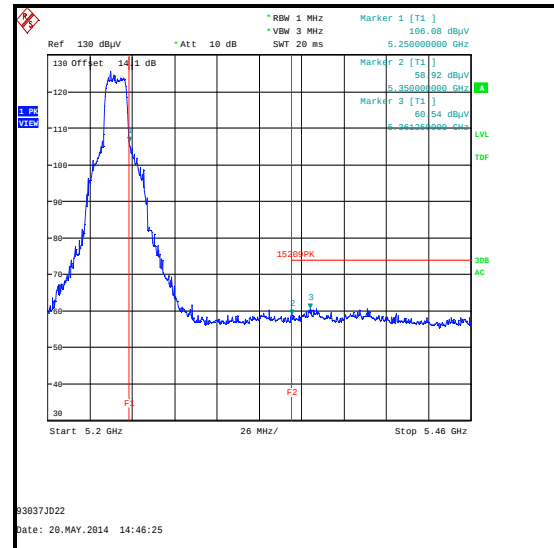
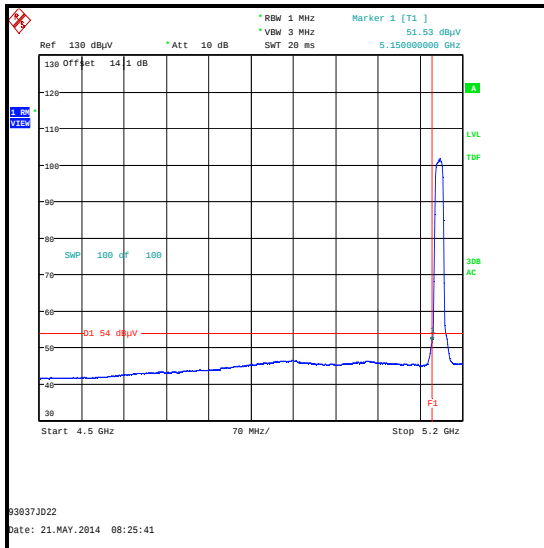
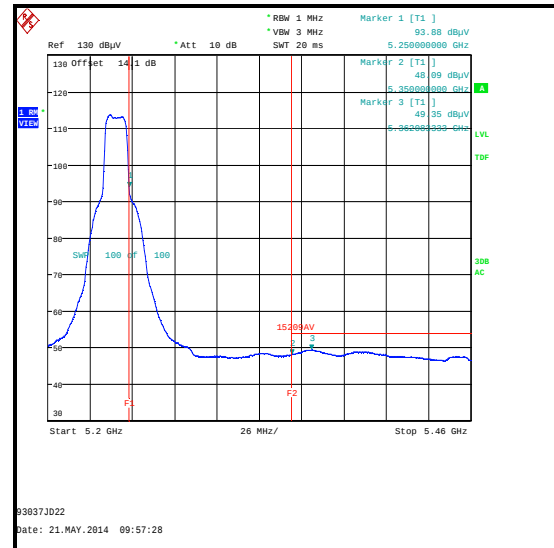
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 10 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 15 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	66.1	74.0	7.9	Complied
5350	58.9	74.0	15.1	Complied
5361.250	60.5	74.0	13.5	Complied

Results: Plate Antenna / 15 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	51.5	54.0	2.5	Complied
5350	48.1	54.0	5.9	Complied
5362.083	49.4	54.0	4.6	Complied

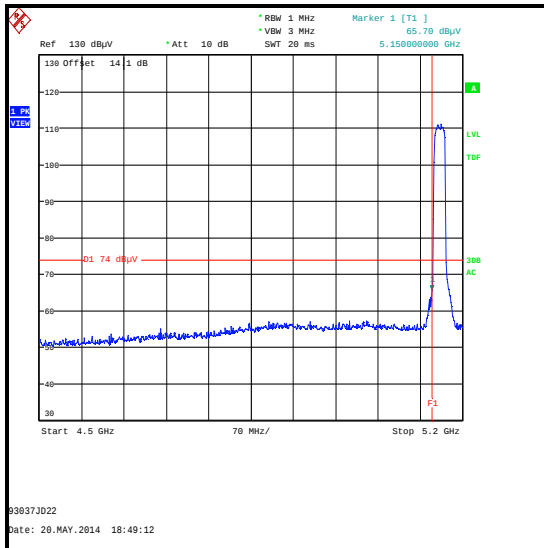
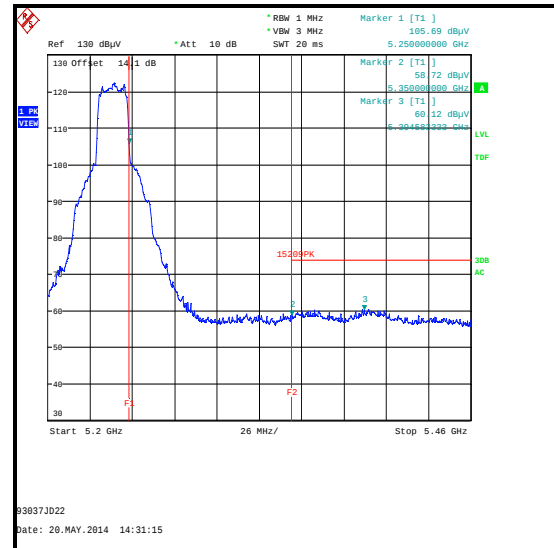
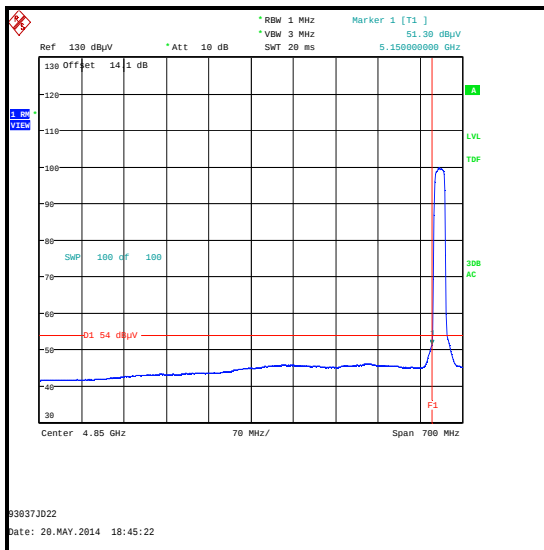
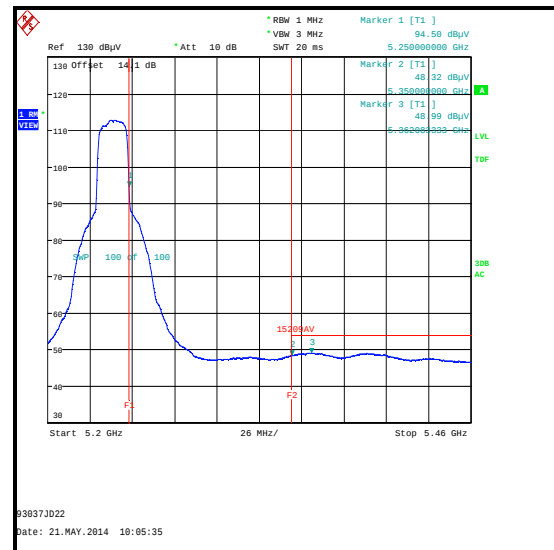
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 15 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 20 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	65.7	74.0	8.3	Complied
5350	58.7	74.0	15.3	Complied
5394.583	60.1	74.0	13.9	Complied

Results: Plate Antenna / 20 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	51.3	54.0	2.7	Complied
5350	48.3	54.0	5.7	Complied
5362.083	49.0	54.0	5.0	Complied

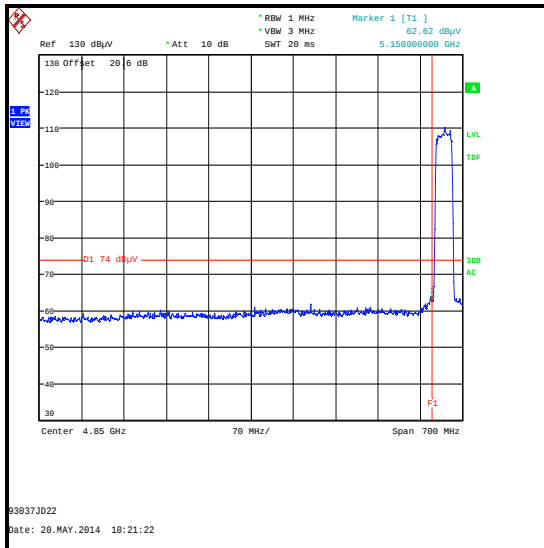
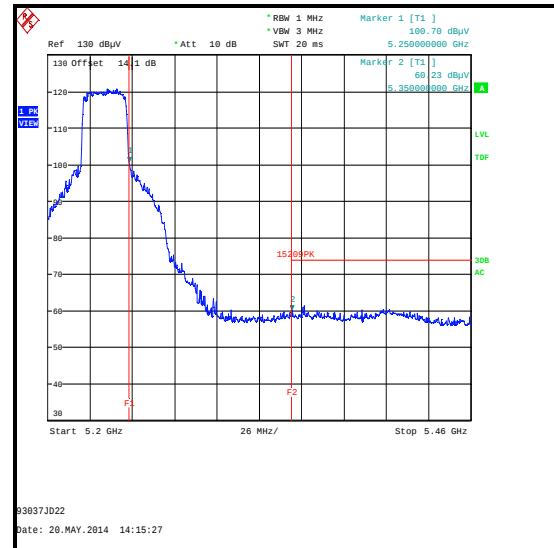
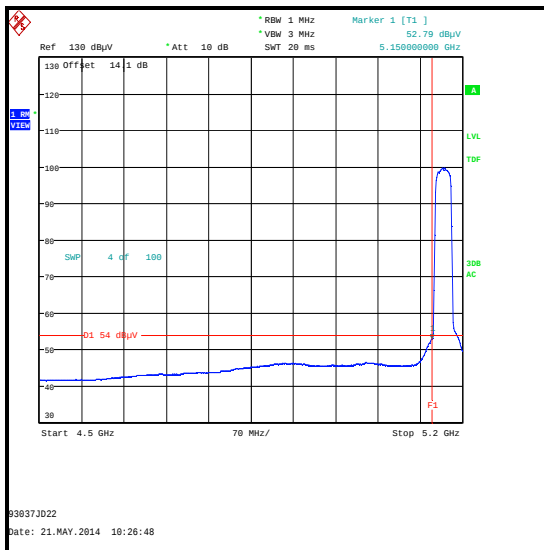
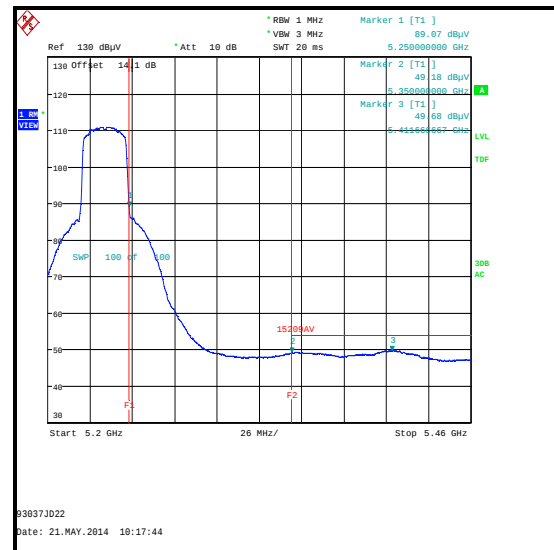
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 20 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 30 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	62.6	74.0	11.4	Complied
5350	60.2	74.0	13.8	Complied

Results: Plate Antenna / 30 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.8	54.0	1.2	Complied
5350	49.2	54.0	4.8	Complied

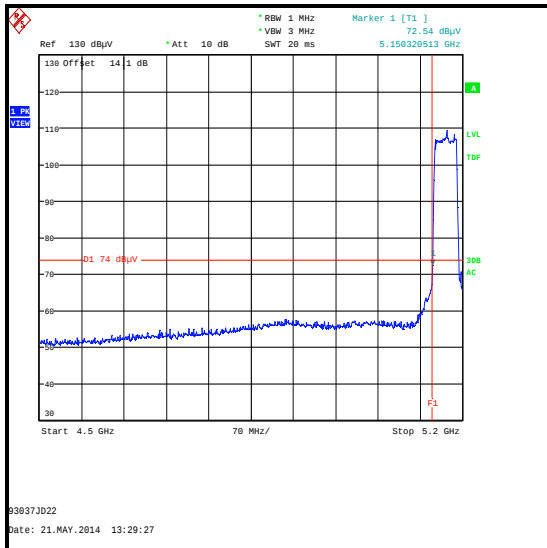
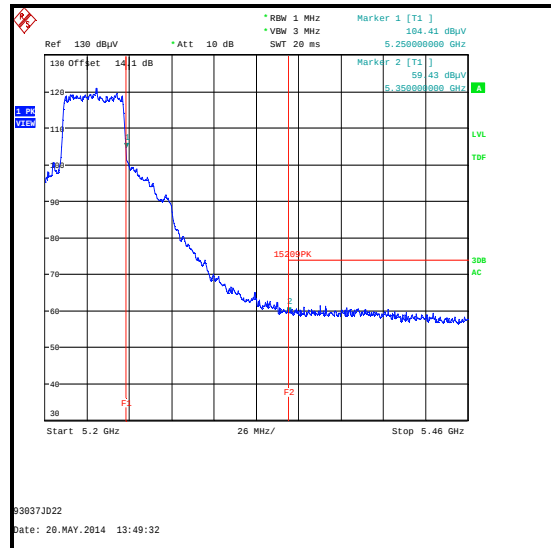
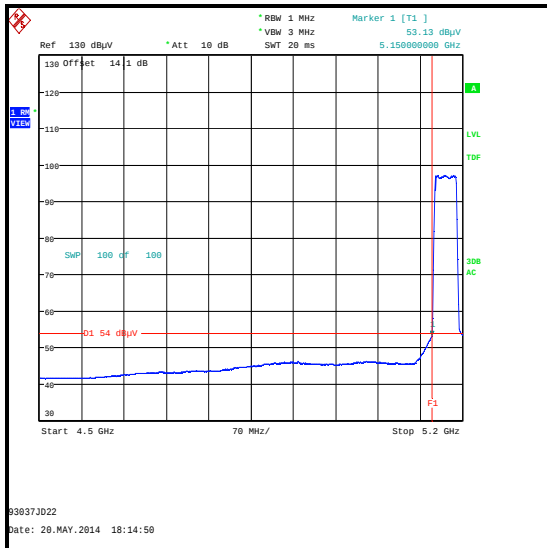
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 30 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 40 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	72.5	74.0	1.5	Complied
5350	59.4	74.0	14.6	Complied

Results: Plate Antenna / 40 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	53.1	54.0	0.9	Complied
5350	49.6	54.0	5.4	Complied

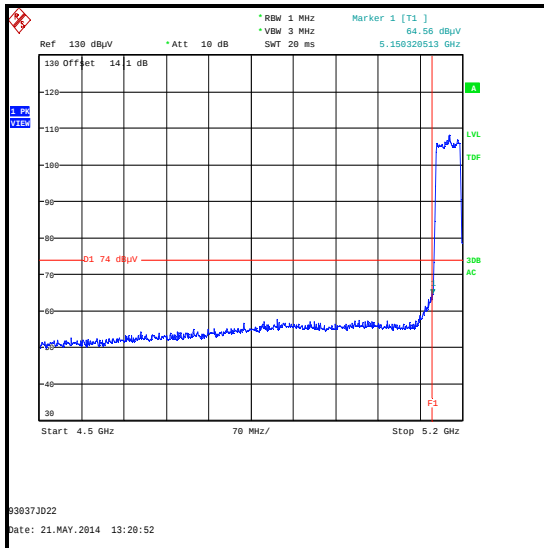
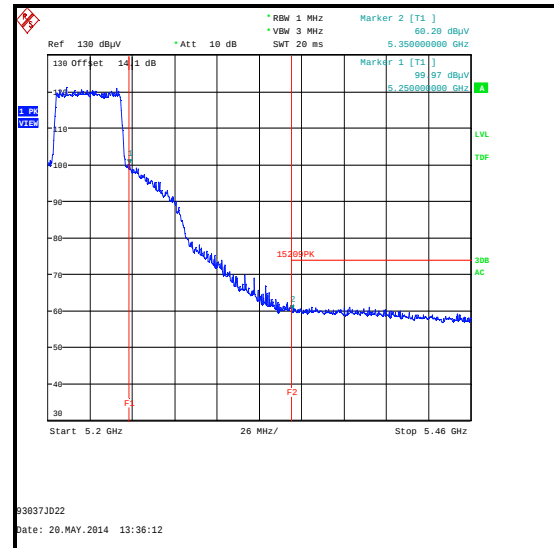
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 40 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 45 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	64.6	74.0	9.4	Complied
5350	60.2	74.0	13.8	Complied

Results: Plate Antenna / 45 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.9	54.0	1.1	Complied
5350	48.6	54.0	5.4	Complied

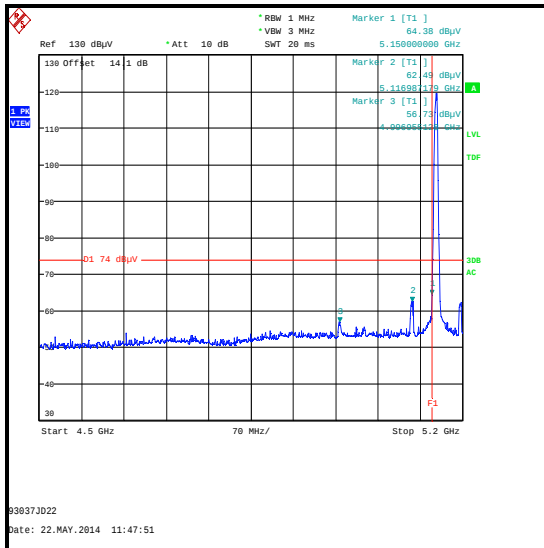
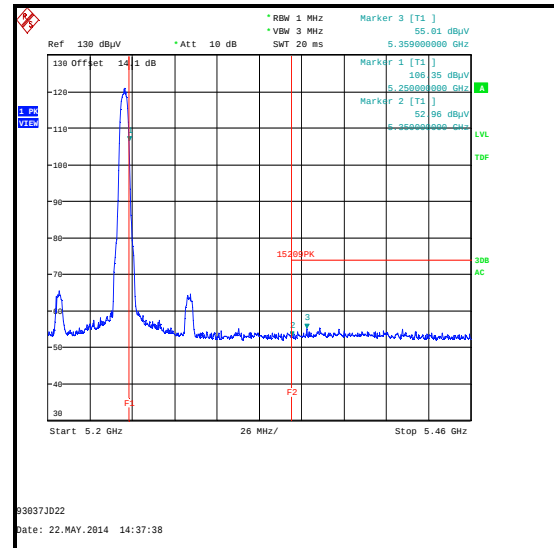
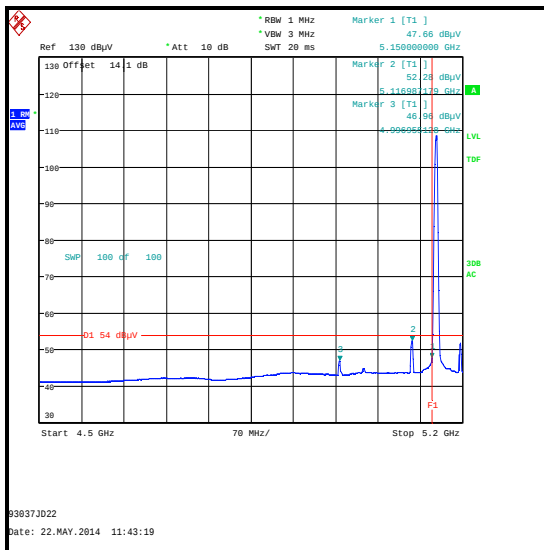
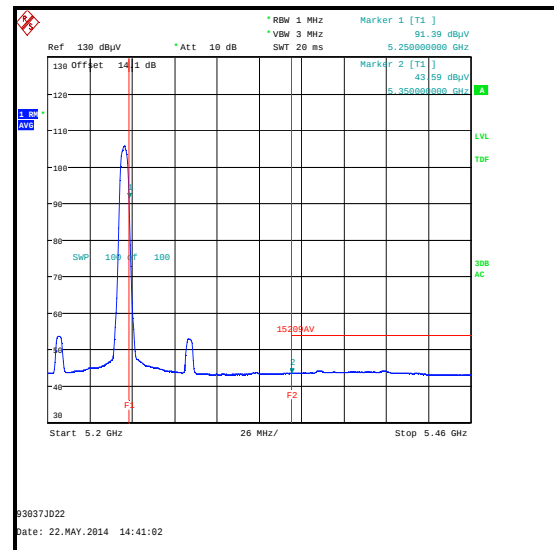
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Plate Antenna / 45 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 5 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	64.4	74.0	9.6	Complied
5350	53.0	74.0	21.0	Complied
5359	55.0	74.0	19.0	Complied

Results: Sectorised Antenna / 5 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	47.7	54.0	6.3	Complied
5350	43.6	54.0	10.4	Complied

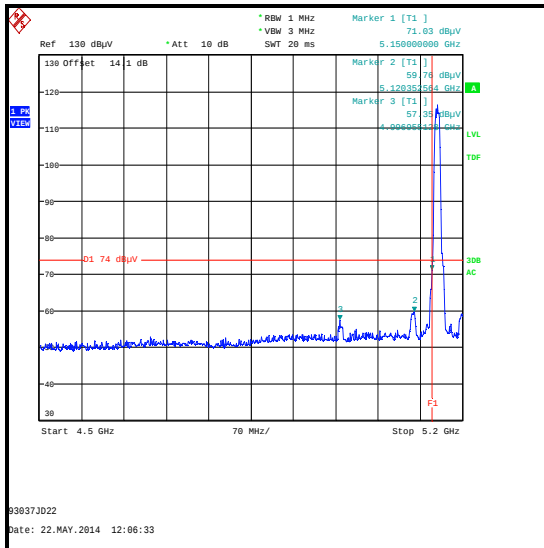
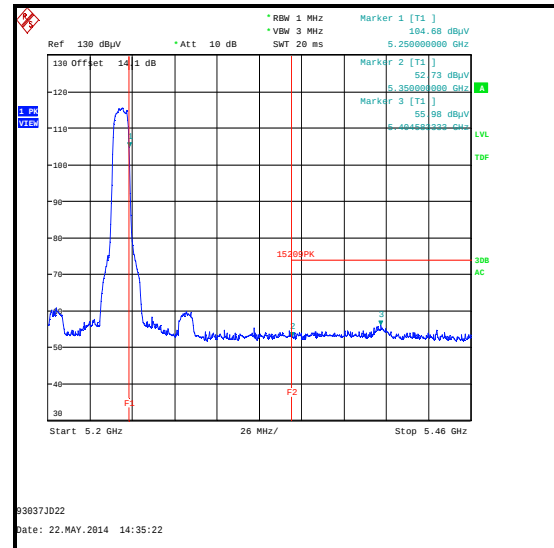
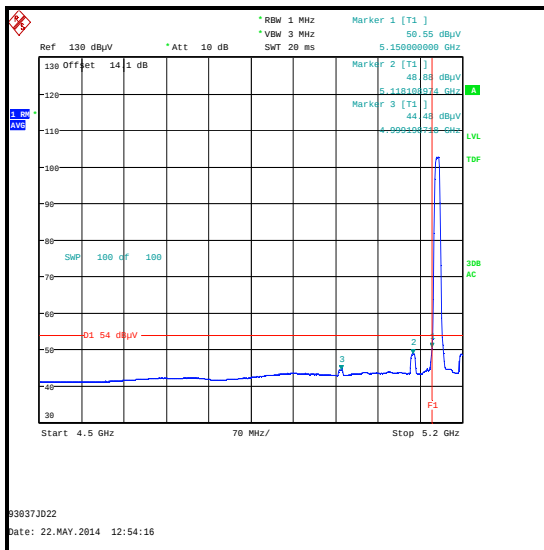
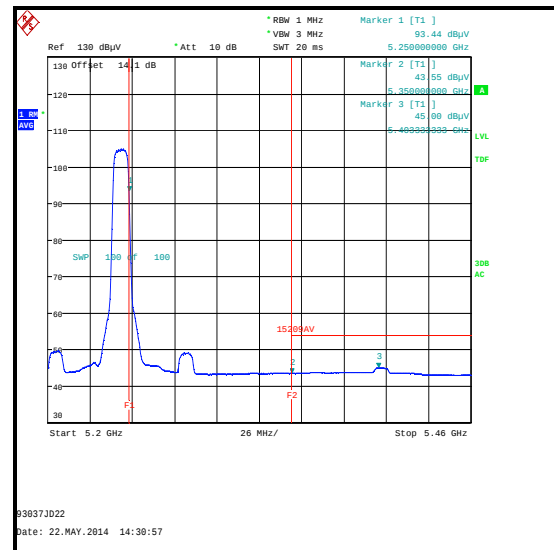
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 5 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 10 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
4996.955	57.4	74.0	16.6	Complied
5120.353	59.8	74.0	14.2	Complied
5150	71.0	74.0	3.0	Complied
5350	52.7	74.0	21.3	Complied
5404.583	56.0	74.0	18.0	Complied

Results: Sectorised Antenna / 10 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
4999.199	44.5	54.0	9.5	Complied
5118.109	48.9	54.0	5.1	Complied
5150	50.6	54.0	3.4	Complied
5350	43.6	54.0	10.4	Complied
5403.334	45.0	54.0	9.0	Complied

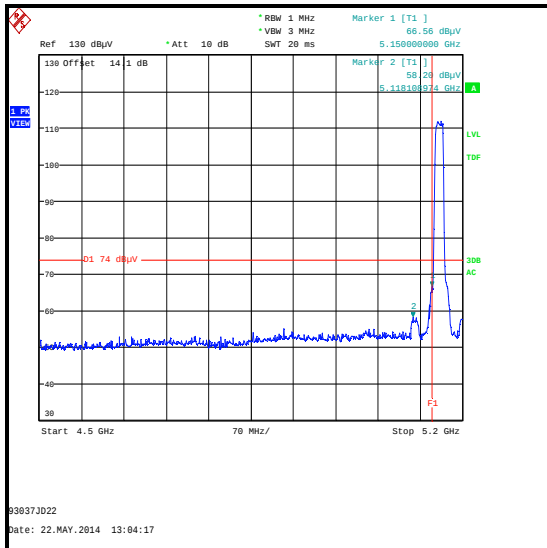
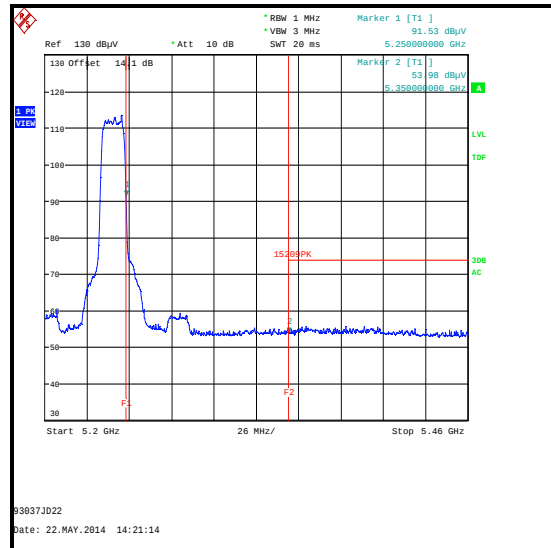
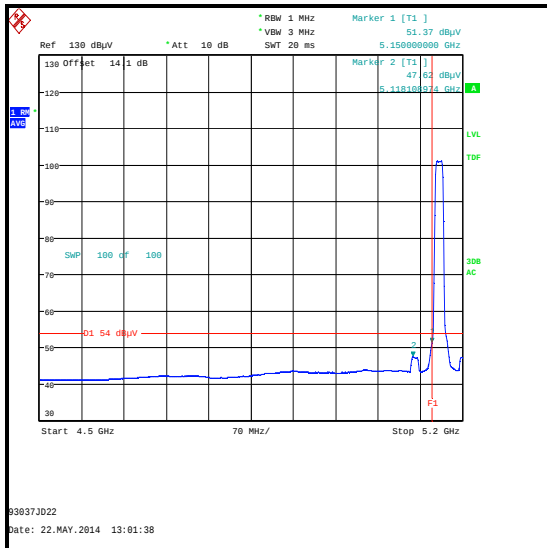
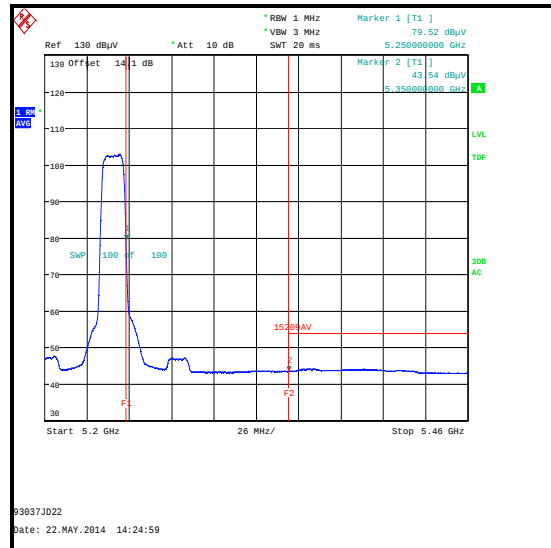
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 10 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 15 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5118.109	58.2	74.0	15.8	Complied
5150	66.6	74.0	7.4	Complied
5350	54.0	74.0	20.0	Complied

Results: Parabolic Antenna / 15 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5118.109	47.6	54.0	6.4	Complied
5150	51.4	54.0	2.6	Complied
5350	43.5	54.0	10.5	Complied

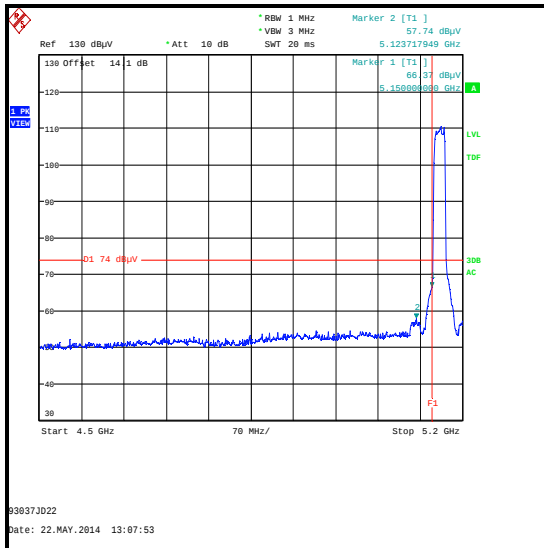
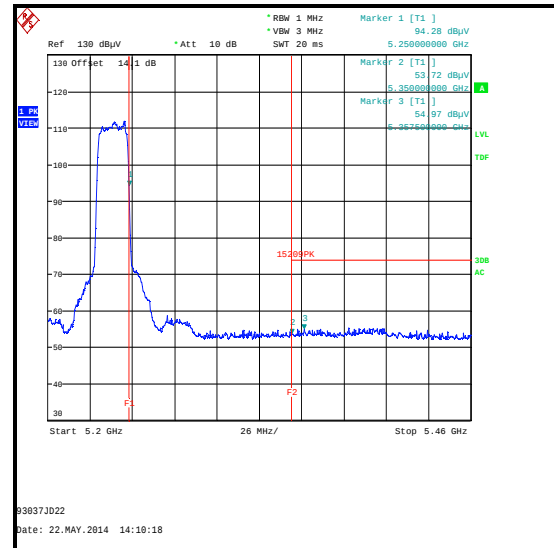
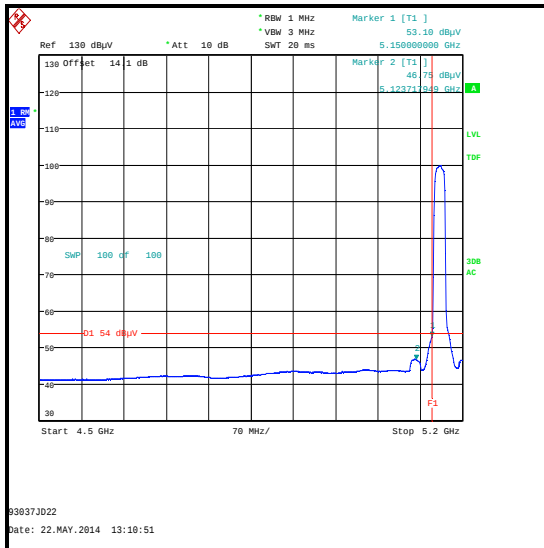
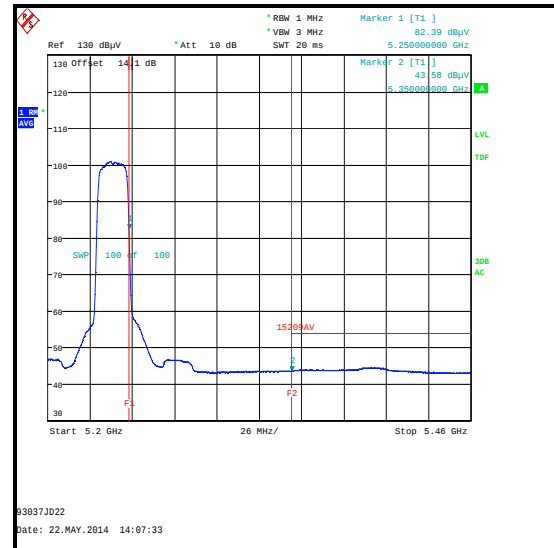
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 15 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 20 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5123.718	57.7	74.0	16.3	Complied
5150	66.4	74.0	7.6	Complied
5350	53.7	74.0	20.3	Complied
5375.500	55.0	74.0	19.0	Complied

Results: Sectorised Antenna / 20 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5123.718	46.8	54.0	7.2	Complied
5150	53.1	54.0	0.9	Complied
5350	43.6	54.0	10.4	Complied

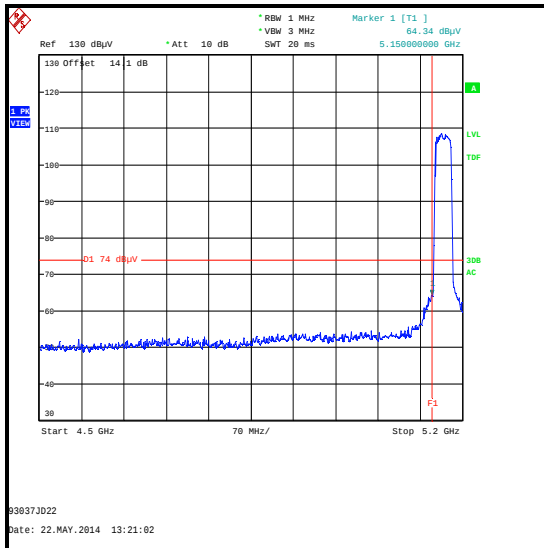
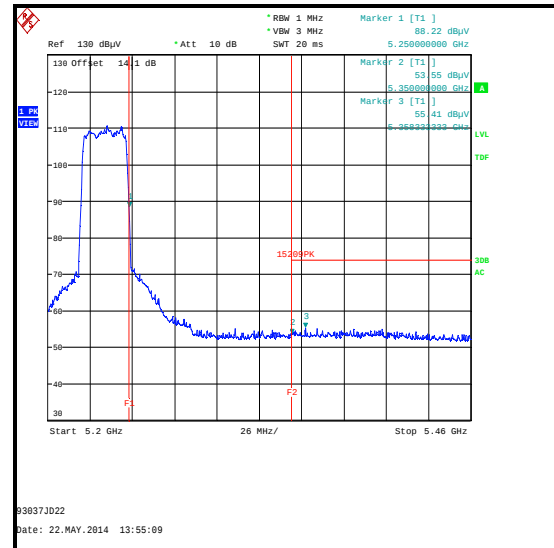
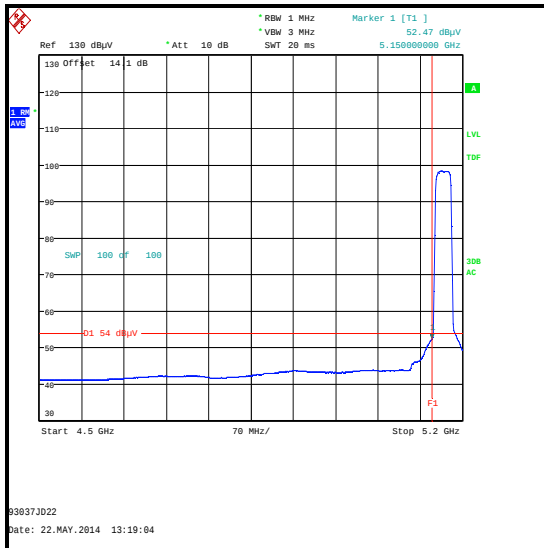
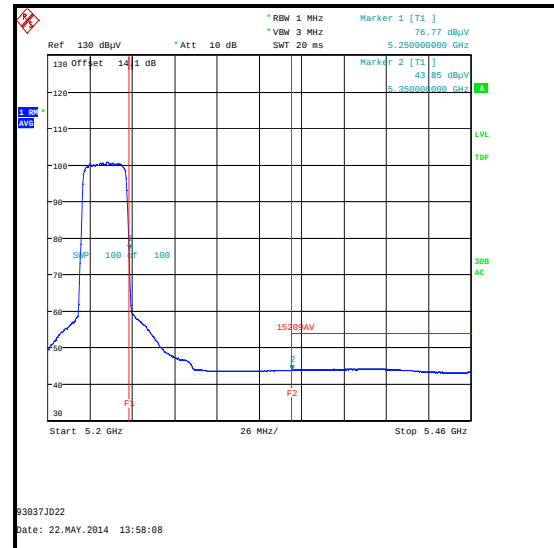
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 20 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 30 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	64.3	74.0	9.7	Complied
5350	53.6	74.0	20.4	Complied
5358.334	55.4	74.0	18.6	Complied

Results: Sectorised Antenna / 30 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.5	54.0	1.5	Complied
5350	43.9	54.0	10.1	Complied

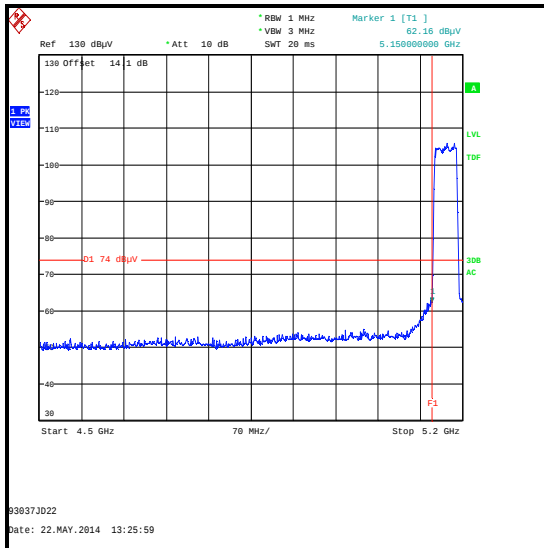
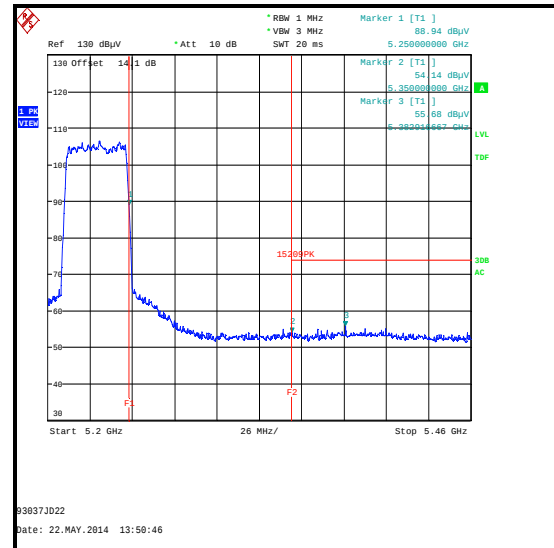
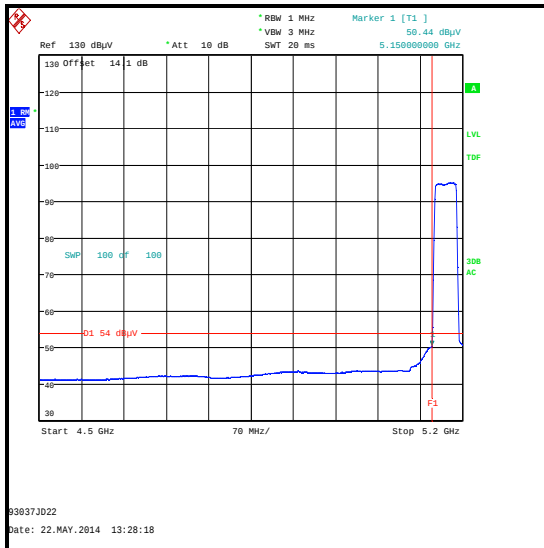
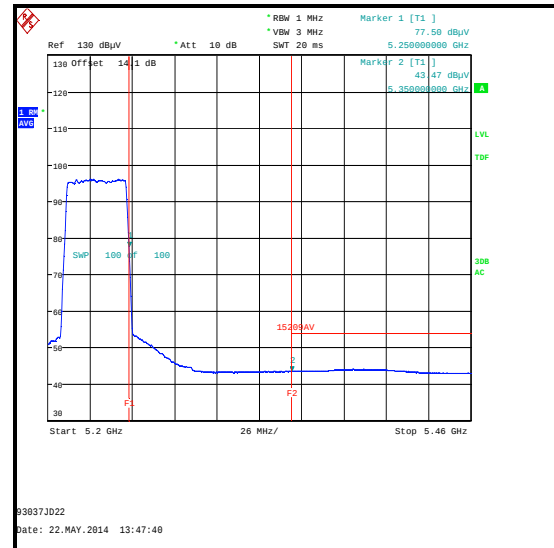
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 30 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 40 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	62.2	74.0	11.8	Complied
5350	54.1	74.0	19.9	Complied
5382.917	55.7	74.0	18.3	Complied

Results: Sectorised Antenna / 40 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	50.4	54.0	3.6	Complied
5350	43.5	54.0	10.5	Complied

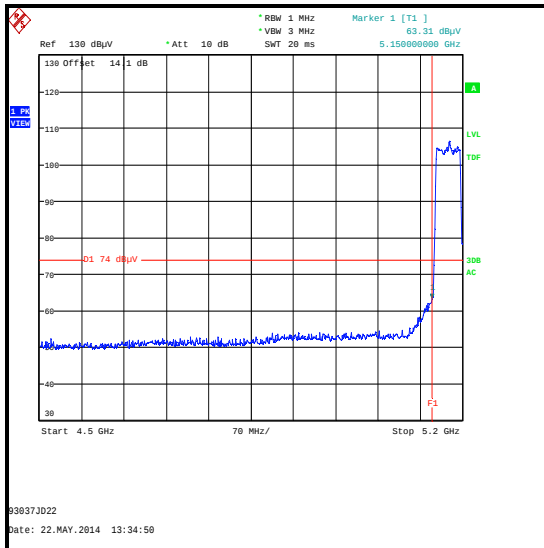
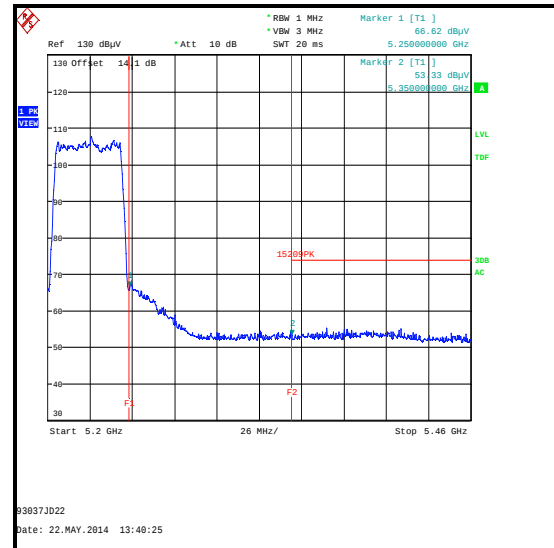
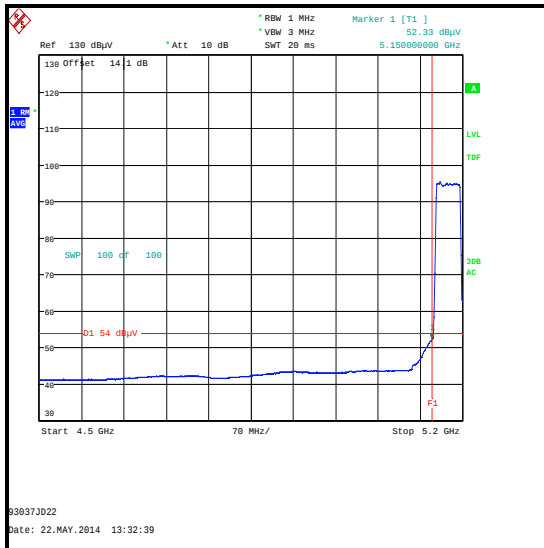
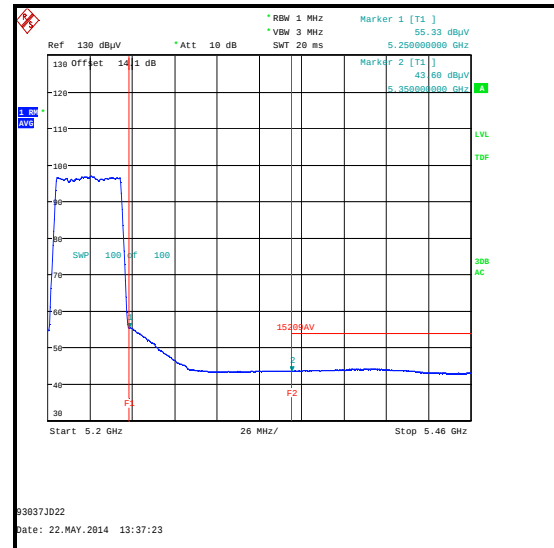
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 40 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 45 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	63.3	74.0	10.7	Complied
5350	53.3	74.0	20.7	Complied

Results: Sectorised Antenna / 45 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.3	54.0	1.7	Complied
5350	43.6	54.0	10.4	Complied

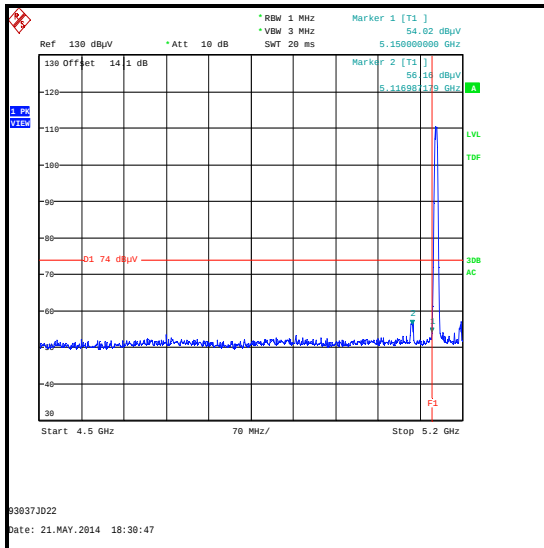
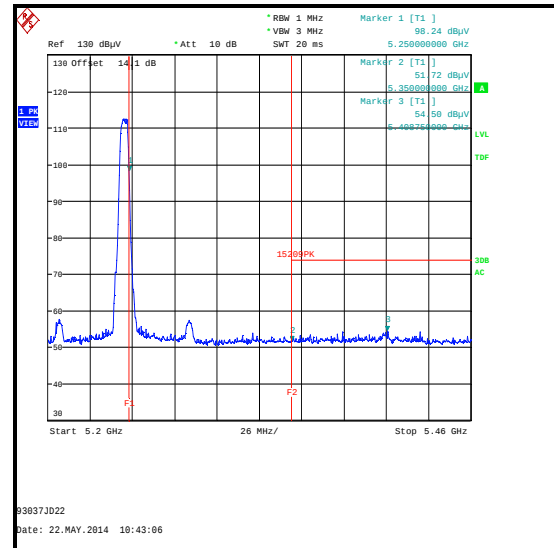
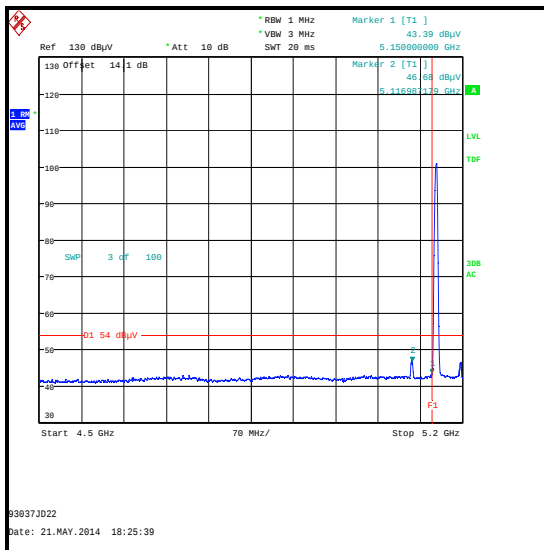
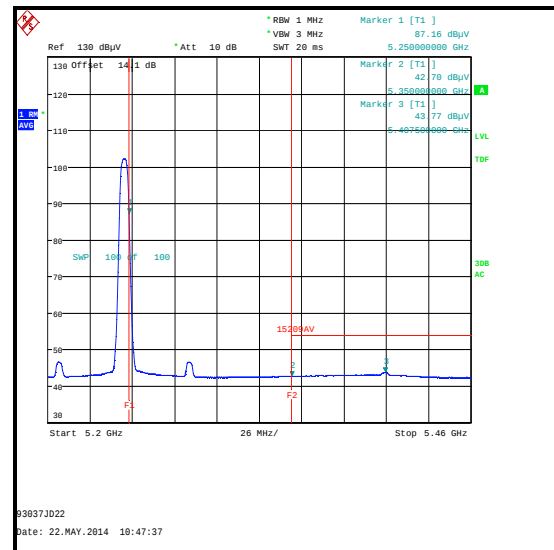
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Sectorised Antenna / 45 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 5 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	54.0	74.0	20.0	Complied
5350	51.7	74.0	22.3	Complied

Results: Omnidirectional Antenna / 5 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	43.4	54.0	10.6	Complied
5350	42.7	54.0	11.3	Complied

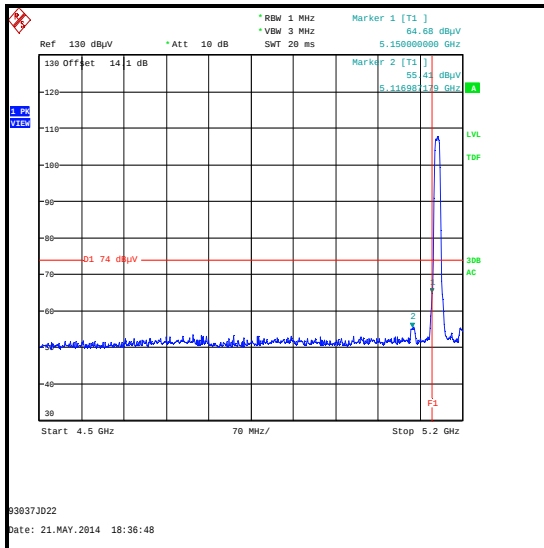
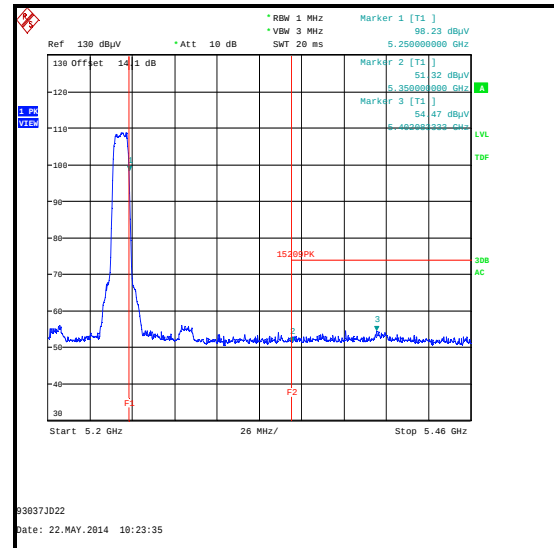
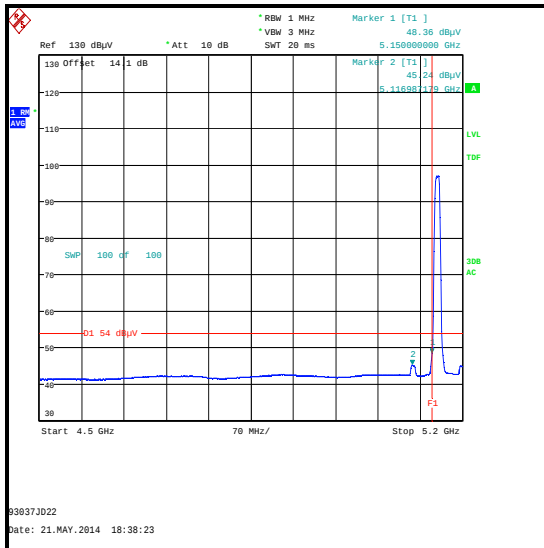
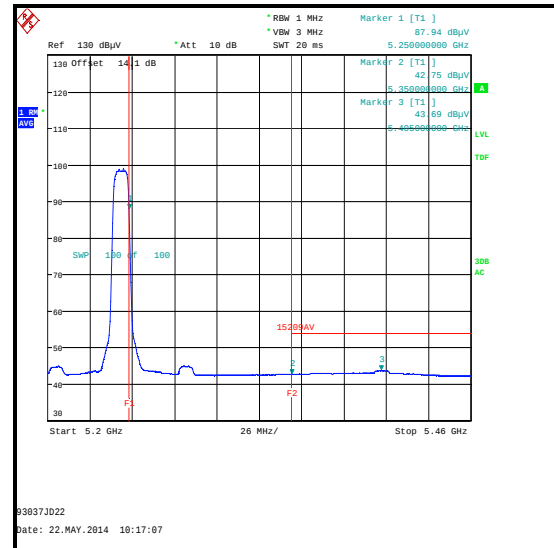
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 5 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 10 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	64.7	74.0	9.3	Complied
5350	51.3	74.0	22.7	Complied
5402.083	54.5	74.0	19.5	Complied

Results: Omnidirectional Antenna / 10 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	48.4	54.0	5.6	Complied
5350	42.8	54.0	11.2	Complied
5405	43.7	54.0	10.3	Complied

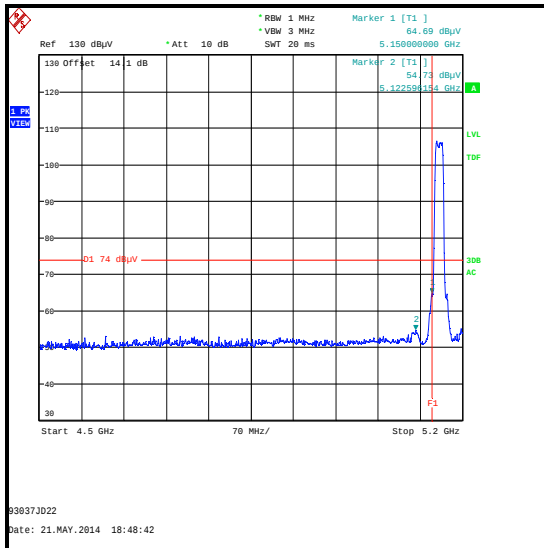
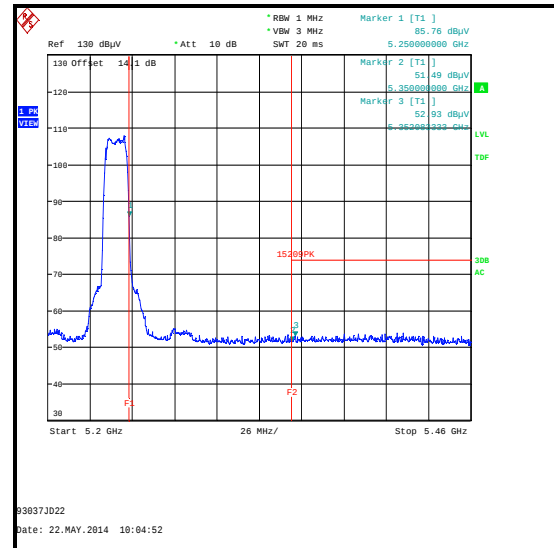
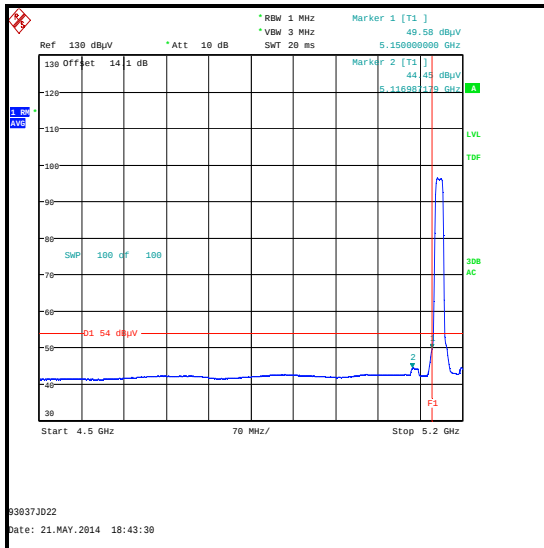
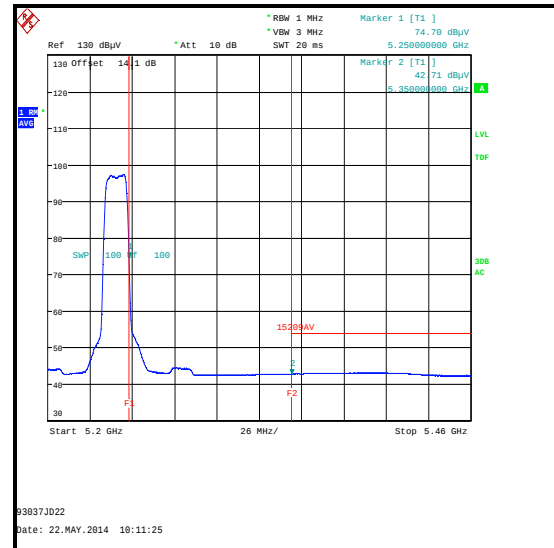
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 10 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 15 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	64.7	74.0	9.3	Complied
5350	51.5	74.0	22.5	Complied
5352.083	52.9	74.0	21.1	Complied

Results: Parabolic Antenna / 15 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	49.6	54.0	4.4	Complied
5350	42.7	54.0	11.3	Complied

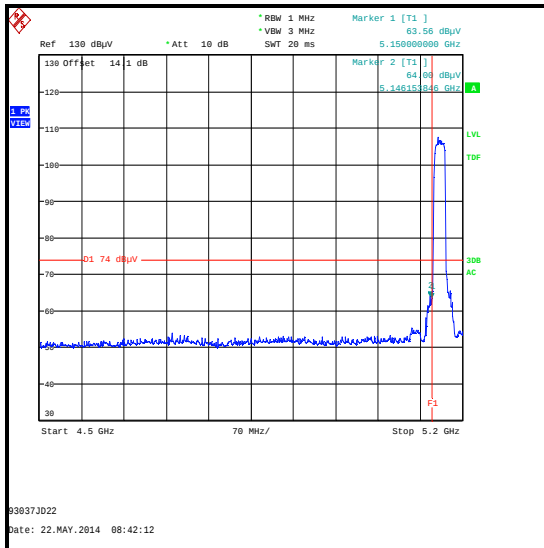
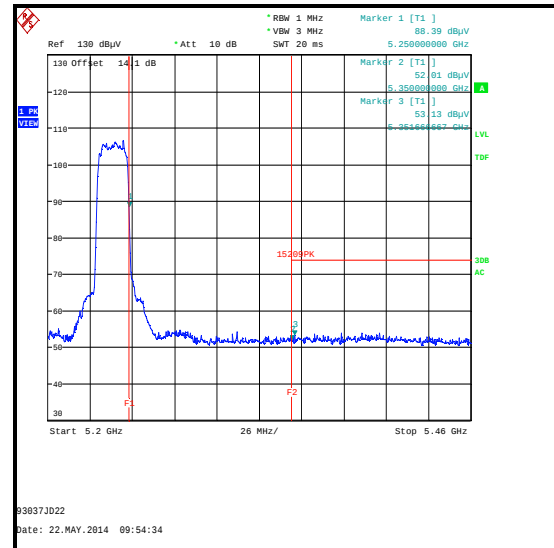
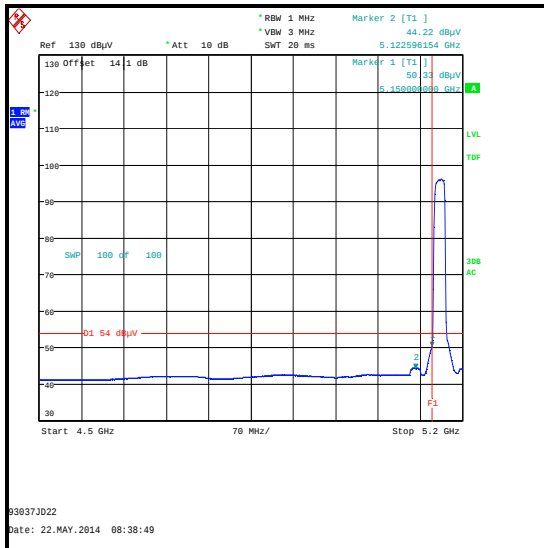
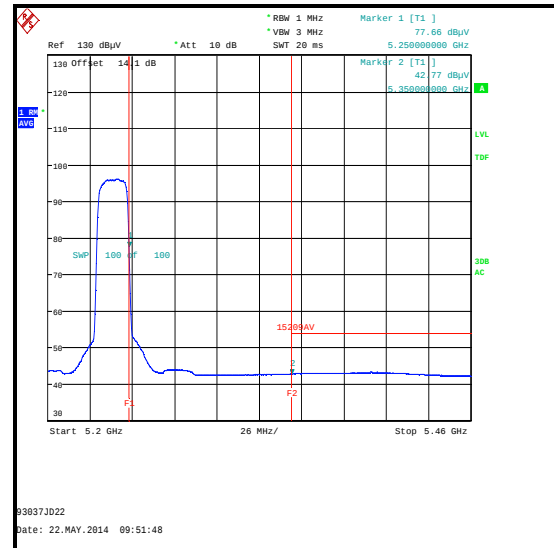
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 15 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 20 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5146.154	64.0	74.0	10.0	Complied
5150	63.6	74.0	10.4	Complied
5350	52.0	74.0	22.0	Complied
5351.667	53.1	74.0	20.9	Complied

Results: Omnidirectional Antenna / 20 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	50.3	54.0	3.7	Complied
5350	42.8	54.0	11.2	Complied

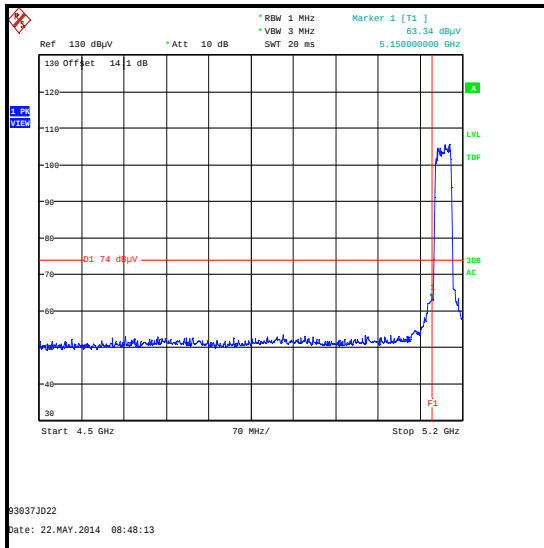
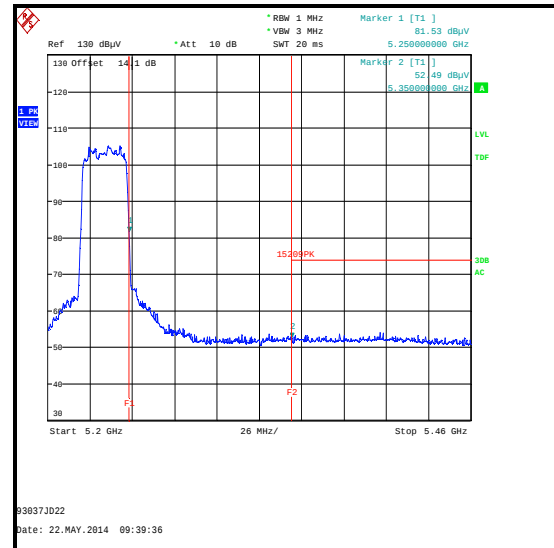
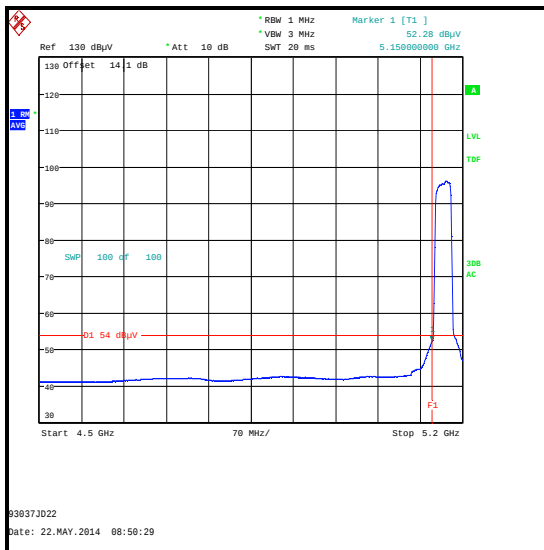
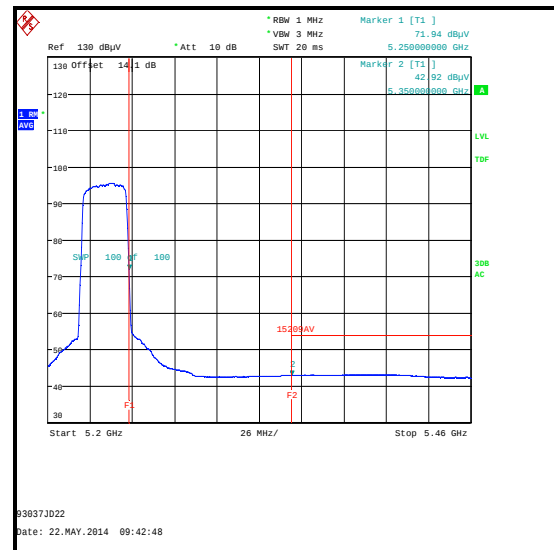
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 20 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 30 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	63.3	74.0	10.7	Complied
5350	52.5	74.0	21.5	Complied

Results: Omnidirectional Antenna / 30 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.3	54.0	1.7	Complied
5350	42.9	54.0	11.1	Complied

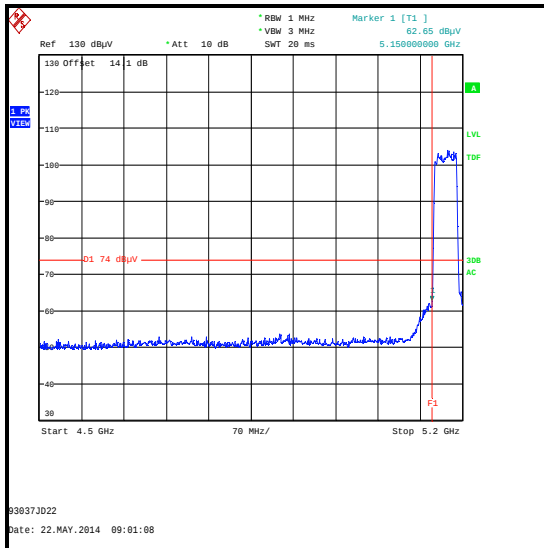
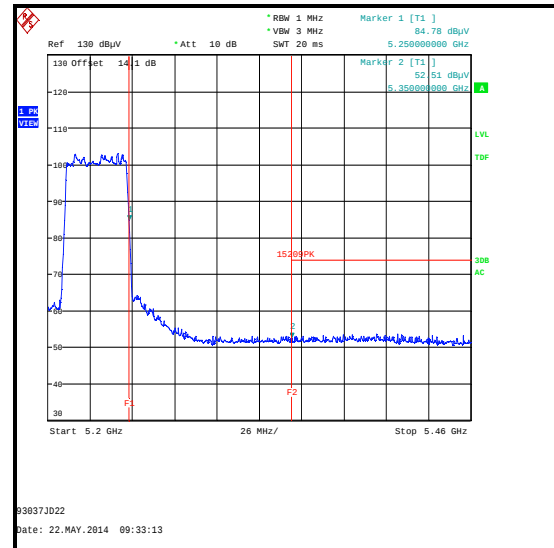
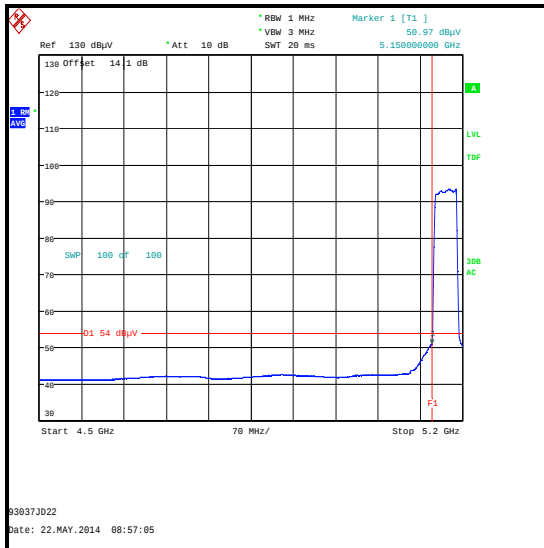
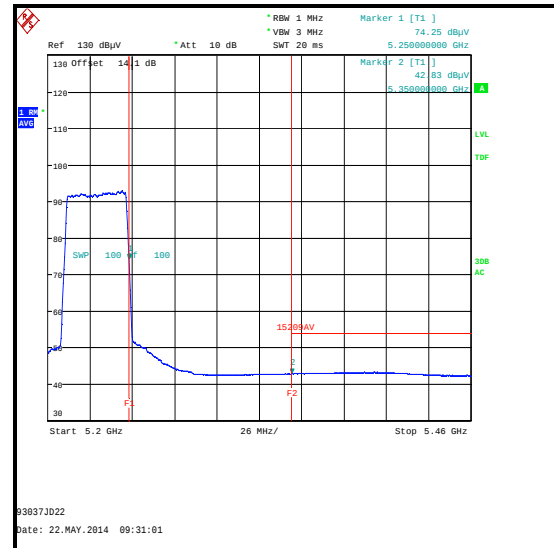
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 30 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 40 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	62.7	74.0	11.3	Complied
5350	52.5	74.0	21.5	Complied

Results: Omnidirectional Antenna / 40 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	51.0	54.0	3.0	Complied
5350	42.8	54.0	11.2	Complied

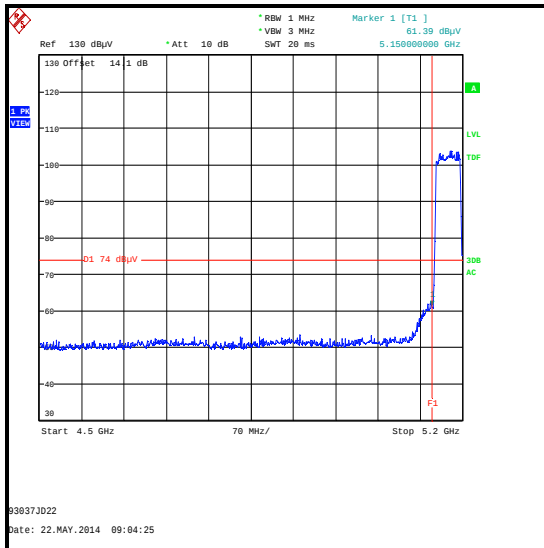
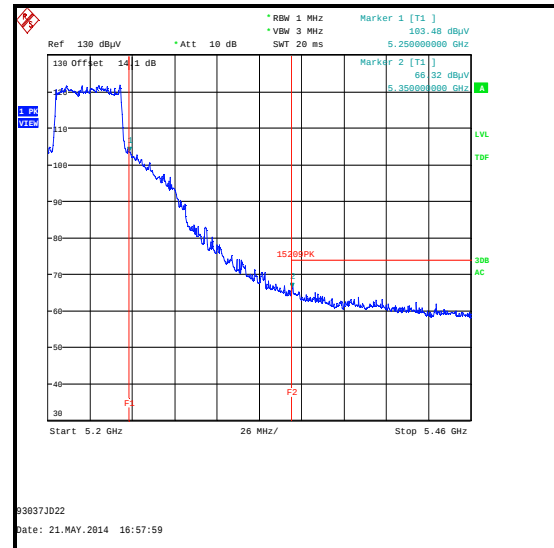
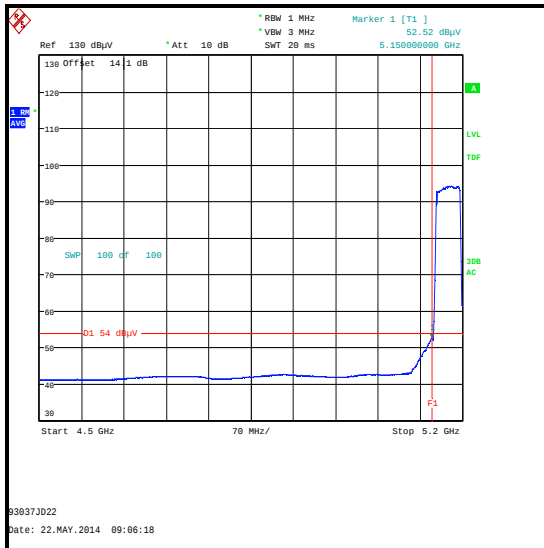
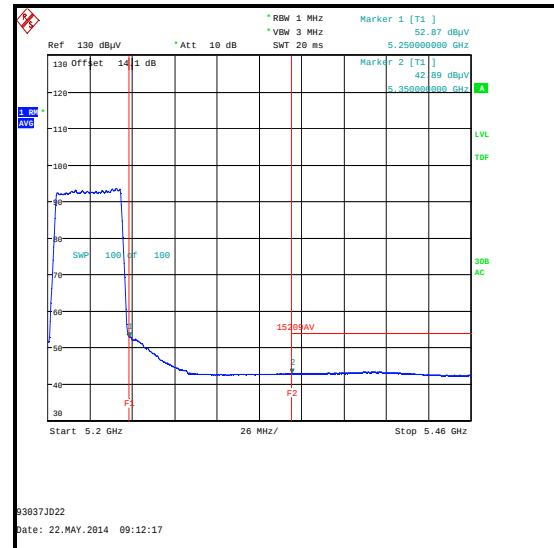
Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 40 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 45 MHz Channel / 256QAM / Peak**

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	61.4	74.0	12.6	Complied
5350	51.9	74.0	22.1	Complied
5351.667	53.4	74.0	20.6	Complied

Results: Omnidirectional Antenna / 45 MHz Channel / 256QAM / Average

Frequency (MHz)	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
5150	52.5	54.0	1.5	Complied
5350	42.9	54.0	11.1	Complied

Transmitter Band Edge Radiated Emissions (5.15-5.25 GHz band operation) (continued)**Results: Omnidirectional Antenna / 45 MHz Channel / 256QAM****Lower Band Edge / Peak****Upper Band Edge / Peak****Lower Band Edge / Average****Upper Band Edge / Average**

Transmitter Band Edge Radiated Emissions (5.15-5.25 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	14 Nov 2014	12
A1393	Attenuator	Huber & Suhner	6820.17.B	757456	20 May 2015	12
A1867	Attenuator	Hewlett Packard	8491A	16823	Calibrated before use	-
A1396	Attenuator	Huber & Suhner	6810.17.B	757987	02 May 2015	12
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	18 May 2015	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	14 Nov 2014	12
G0607	Signal Generator	Rohde & Schwarz	SMU 200A	100943	18 July 2016	36
K0001	5m RSE Chamber	Rainford EMC	N/A	N/A	26 Nov 2014	12
M1630	Test Receiver	Rohde & Schwarz	ESU 40	100233	13 Mar 2015	12
M1656	Thermohygrometer	JM Handelspunkt	30.5015.13	Not stated	14 Mar 2015	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
Conducted Output Power	5.15 GHz to 5.25 GHz	95%	±0.76 dB
Power Spectral Density	5.15 GHz to 5.25 GHz	95%	±1.13 dB
Occupied Bandwidth	5.15 GHz to 5.25 GHz	95%	±3.92 %
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	11 All	-	Removed references to 6' parabolic antenna Changed draft FCC KDB 789033 references to FCC KDB 789033 D02 General UNII Test Procedures New Rules v01, June 6 2014

--- END OF REPORT ---