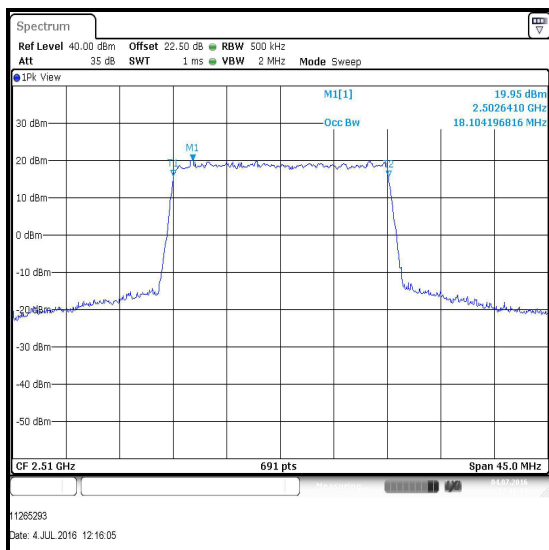
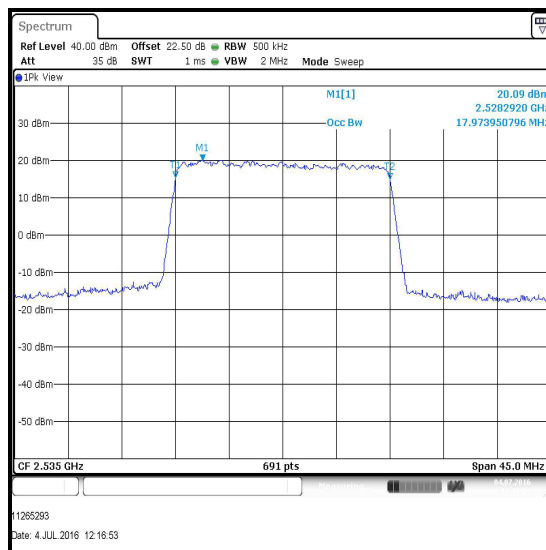
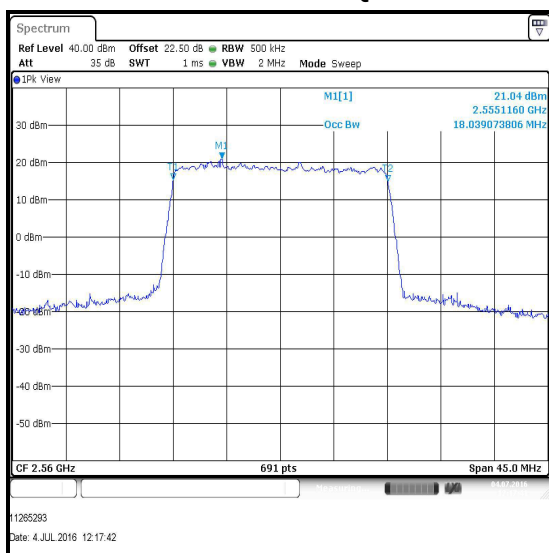


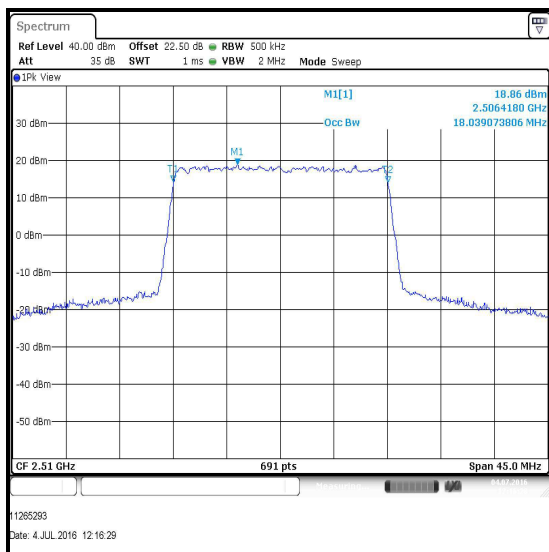
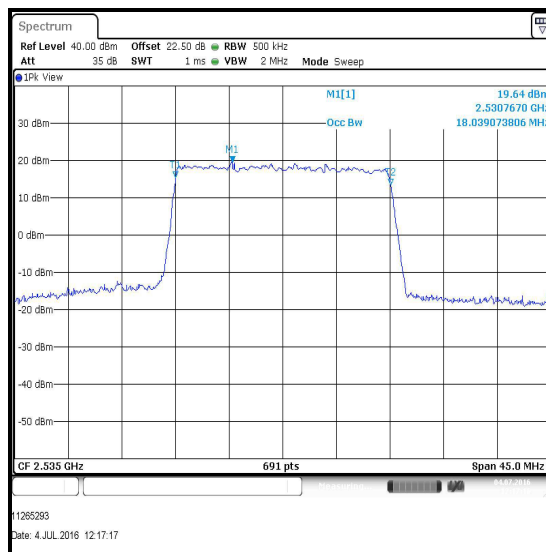
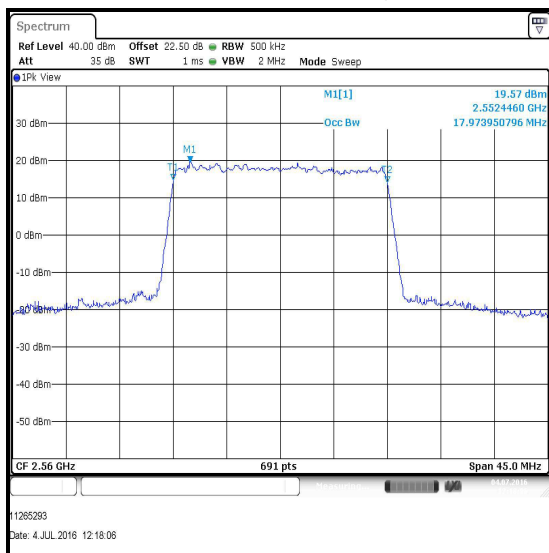
Transmitter Occupied Bandwidth (continued)**Results: 20 MHz Channel Bandwidth / QPSK**

Channel	Resource Block(s)	Resource Block Offset	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (MHz)
Bottom	100	0	500	2000	18.104
Middle	100	0	500	2000	17.974
Top	100	0	500	2000	18.039

**Bottom Channel / QPSK****Middle Channel / QPSK****Top Channel / QPSK**

Transmitter Occupied Bandwidth (continued)**Results: 20 MHz Channel Bandwidth / 16QAM**

Channel	Resource Block(s)	Resource Block Offset	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (MHz)
Bottom	100	0	500	2000	18.039
Middle	100	0	500	2000	18.039
Top	100	0	500	2000	17.974

**Bottom Channel / 16QAM****Middle Channel / 16QAM****Top Channel / 16QAM**

Transmitter Occupied Bandwidth (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2002	Thermohygrometer	Testo	608-H1	45041825	02 Apr 2017	12
M1869	Wideband Radio Comms Tester	Rohde & Schwarz	CMW500	145923	05 Apr 2017	12
M1873	Signal Analyser	Rohde & Schwarz	FSV30	103074	27 Jun 2017	12
A2845	Attenuator	Radiall	R411.806.121	24325927	Calibrated before use	-
A2844	Attenuator	Radiall	R411.803.121	23404066	Calibrated before use	-
A2504	Directional Coupler	AtlanTecRF	CDC-003060-10	13122501839	Calibrated before use	-
S0562	Power Supply	Thurlby Thandar	PL330QMD	054895	Calibrated before use	-
M1269	Multimeter	Fluke	179	90250210	13 May 2017	12
G0628	Signal Generator	Rohde & Schwarz	SMBV100A	261847	25 Jan 2017	12
M1835	Signal Analyser	Rohde & Schwarz	FSV30	103050	26 Feb 2017	12

5.2.5. Transmitter Conducted Emissions at Band Edges $\pm$ X MHz – LAT**Test Summary:**

Test Engineer:	Ben Mercer	Test Dates:	13 July 2016 and 15 July 2016
Test Sample IMEI:	358640070309241		

FCC Reference:	Parts 2.1051 & 27.53(m)(4)
Test Method Used:	KDB 971168 Section 6 referencing FCC Part 27.53 & note 3 below

Environmental Conditions:

Temperature (°C):	23 to 25
Relative Humidity (%):	43 to 52

Note(s):

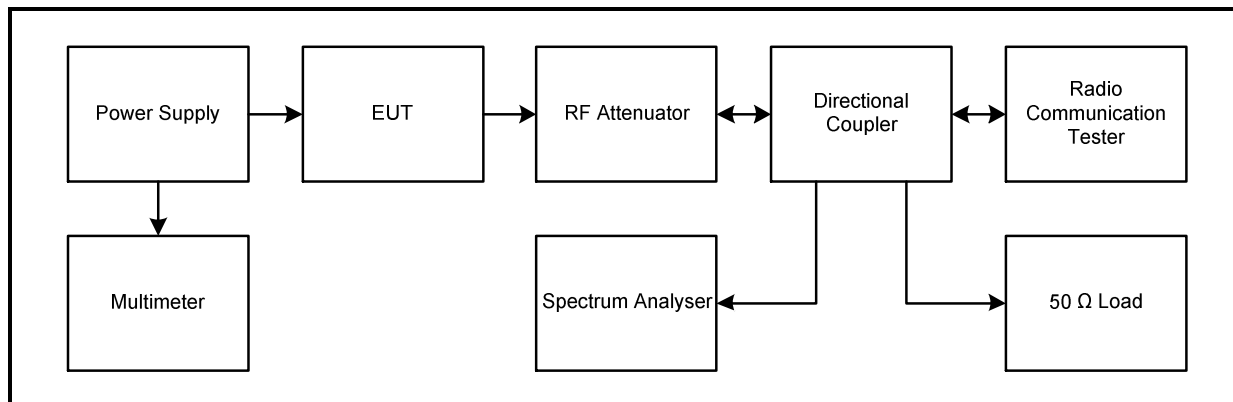
1. Measurements were performed conducted with the antenna gain included in the analyser reference level offset. The customer stated that the antenna gain is -2.6 dBi.
2. Measurements were performed with the EUT transmitting with QPSK and 16QAM modulation schemes, with resource blocks settings as detailed in section 4.3 of this report.
3. Sweep time was set to auto and an RMS detector with trace averaging of 300 sweeps was used.
4. In accordance with 27.53(m)(4), the following limits were calculated:

5 MHz Channel Bandwidth		10 MHz Channel Bandwidth	
Frequency Range (MHz)	Limit (dBm)	Frequency Range (MHz)	Limit (dBm)
30 – 2494	-25	30 – 2491.013	-25
2494 – 2496	-13	2491.013 – 2496	-13
2496 – 2500	-10	2496 – 2500	-10
2570 – 2575	-10	2570 – 2575	-10
2575 – 2576	-13	2575 – 2578.987	-13
2576 – 26000	-25	2578.987 – 26000	-25

Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Note(s):**

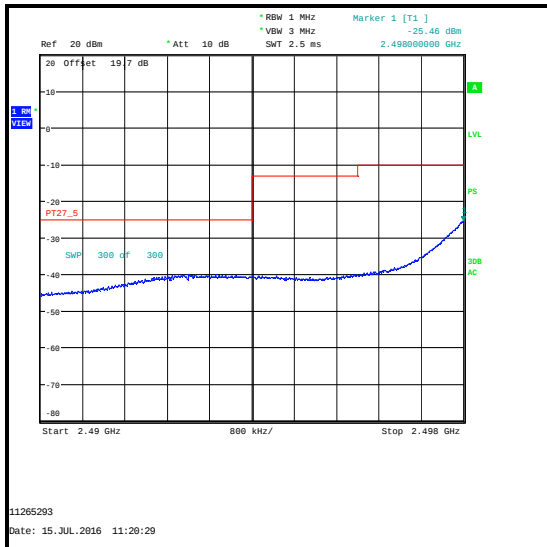
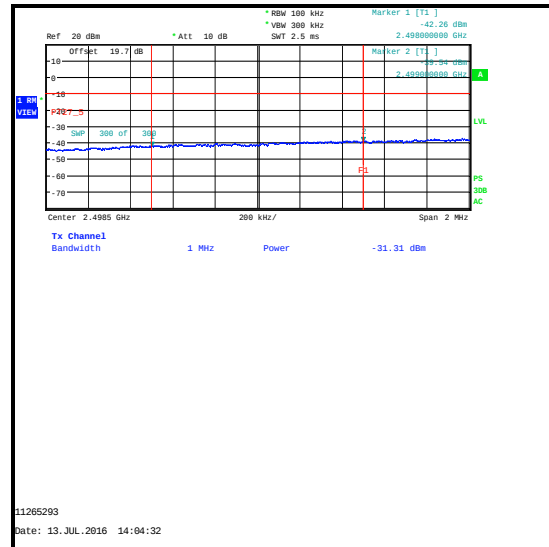
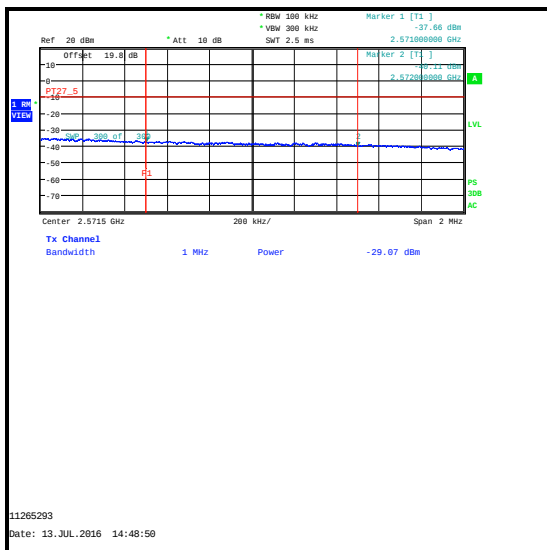
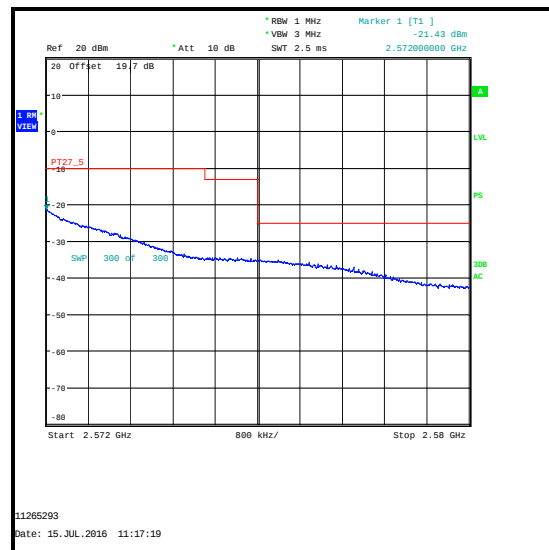
15 MHz Channel Bandwidth		20 MHz Channel Bandwidth	
Frequency Range (MHz)	Limit (dBm)	Frequency Range (MHz)	Limit (dBm)
30 – 2490.5	-25	30 – 2490.5	-25
2490.5 – 2496	-13	2490.5 – 2496	-13
2496 – 2500	-10	2496 – 2500	-10
2570 – 2575	-10	2570 – 2575	-10
2575 – 2583.480	-13	2575 – 2587.974	-13
2583.480 – 26000	-25	2587.974 – 26000	-25

- For given channel bandwidth, the minimum value of the 99% occupied bandwidth was used to calculate the above limits. The choice of the minimum occupied bandwidth, regardless of modulation schemes, gives a worst case scenario for the applicable limit lines.
- The plots of this section illustrate the conducted emissions at band edges, at frequencies below 2499 MHz and above 2571 MHz. Compliance in the frequency ranges 2499 – 2500 MHz and 2570 – 2571 MHz are shown in section 5.2.9 of this report.
- In accordance with Part 27.53(m)(6), a narrower resolution bandwidth may be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz. The channel power function of the spectrum analyser was used where necessary.
- * Integrated level (dBm)

Test setup:

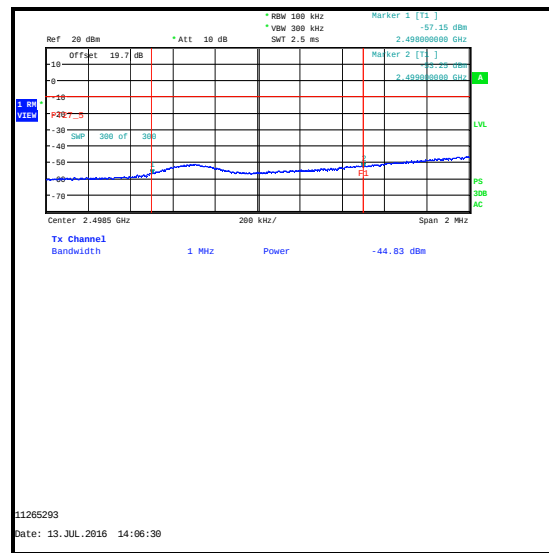
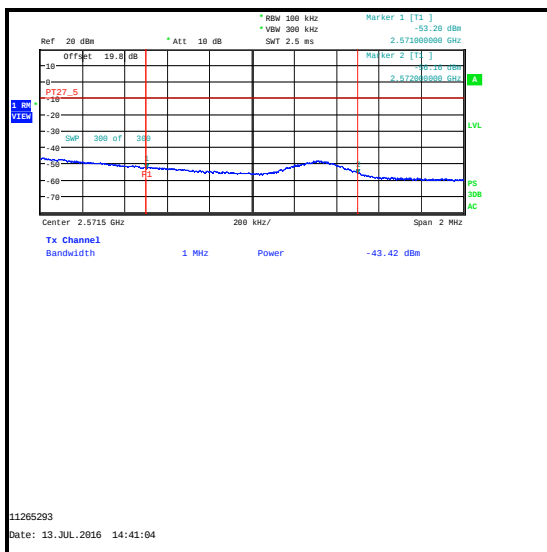
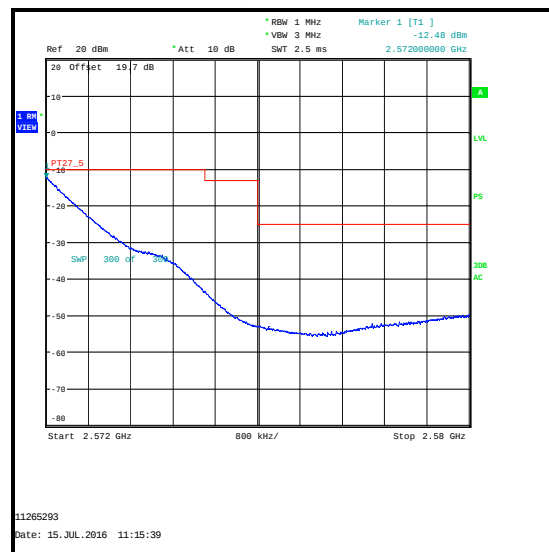
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	25	0	-25.5	-10.0	15.5	Complied
2498 to 2499	25	0	-31.3*	-10.0	21.3	Complied
2571 to 2572	25	0	-29.1*	-10.0	19.1	Complied
2572	25	0	-21.4	-10.0	11.4	Complied

**QPSK / 25 RB 0 Offset / 2490 to 2498 MHz****QPSK / 25 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 25 RB 0 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 25 RB 0 Offset / 2572 to 2580 MHz**

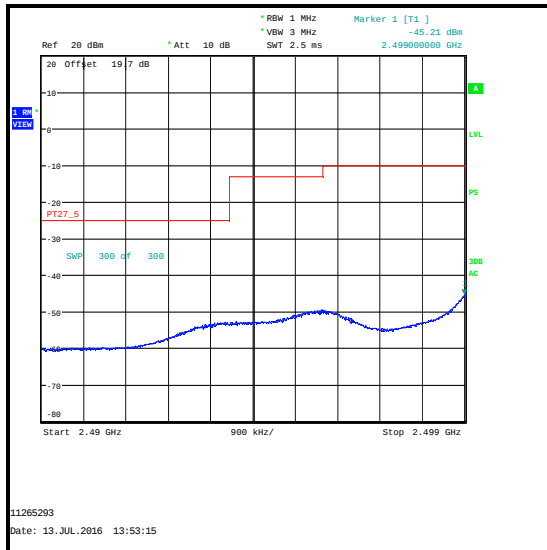
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-13.3	-10.0	3.3	Complied
2498 to 2499	1	0	-44.8*	-10.0	34.8	Complied
2571 to 2572	1	24	-43.4*	-10.0	33.4	Complied
2572	1	24	-12.5	-10.0	2.5	Complied

**QPSK / 1 RB 0 Offset / 2490 to 2498 MHz****QPSK / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 1 RB 24 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 1 RB 24 Offset / 2572 to 2580 MHz**

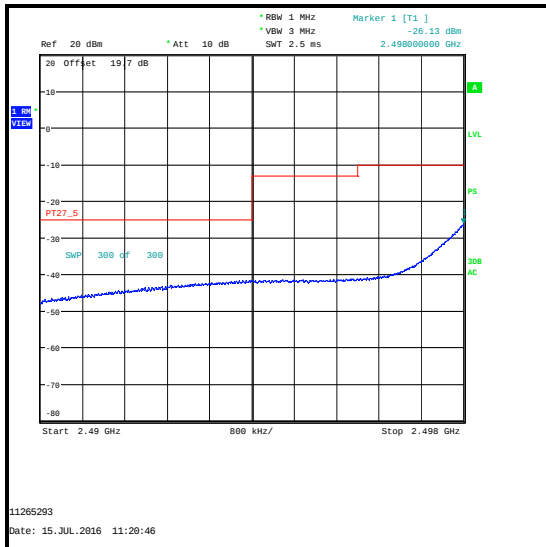
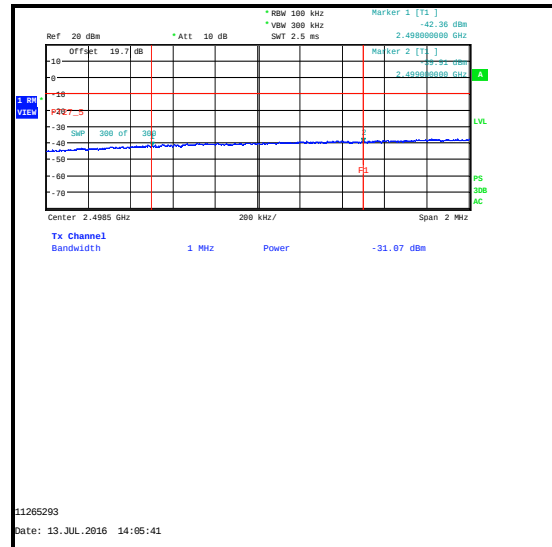
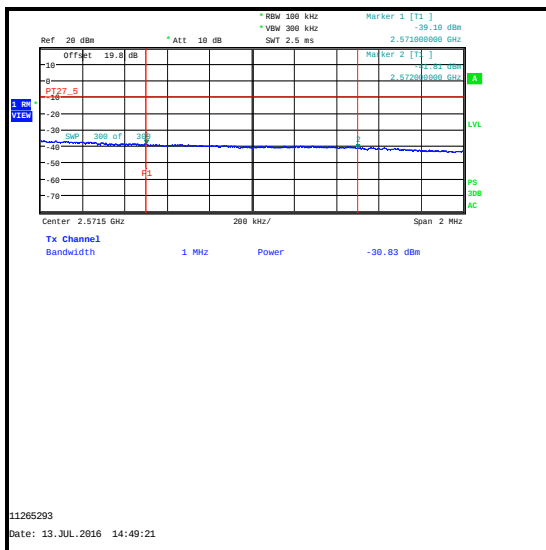
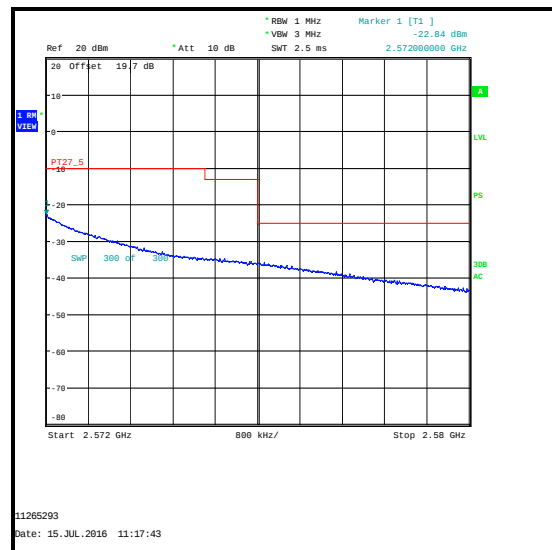
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	24	-45.2	-10.0	35.2	Complied
2571	1	0	-46.5	-10.0	36.5	Complied

**QPSK / 1 RB 24 Offset / 2490 to 2499 MHz****QPSK / 1 RB 0 Offset / 2571 to 2580 MHz**

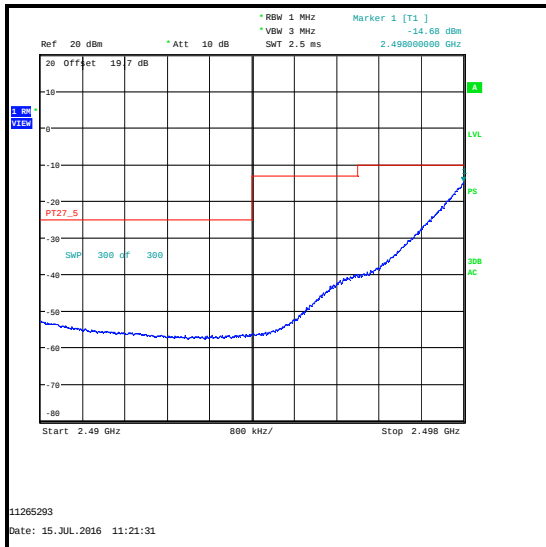
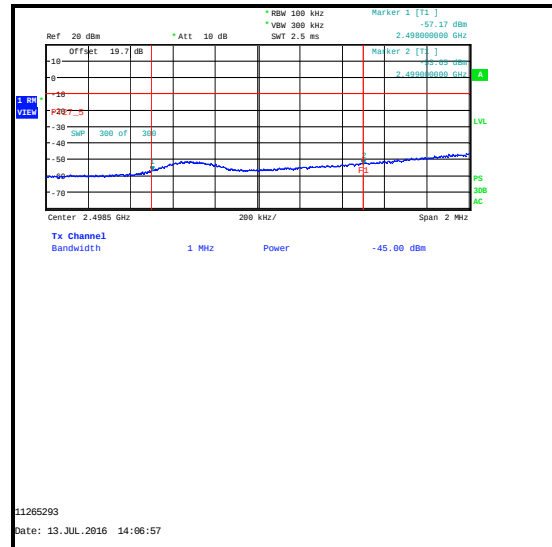
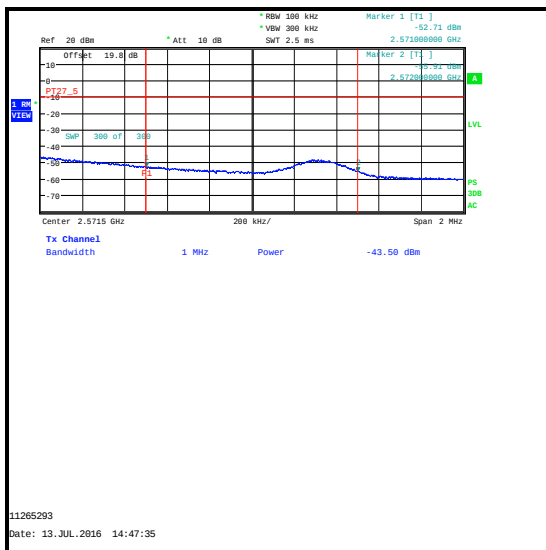
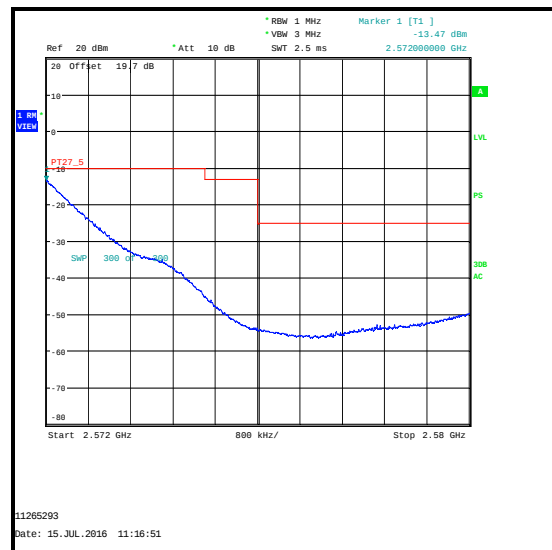
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	25	0	-26.1	-10.0	16.1	Complied
2498 to 2499	25	0	-31.1*	-10.0	21.1	Complied
2571 to 2572	25	0	-30.8*	-10.0	20.8	Complied
2572	25	0	-22.8	-10.0	12.8	Complied

**16QAM / 25 RB 0 Offset / 2490 to 2498 MHz****16QAM / 25 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 25 RB 0 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 25 RB 0 Offset / 2572 to 2580 MHz**

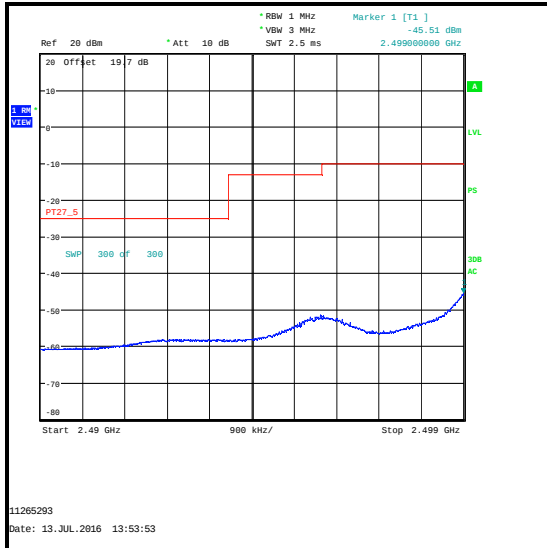
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-14.7	-10.0	4.7	Complied
2498 to 2499	1	0	-45.0*	-10.0	35.0	Complied
2571 to 2572	1	24	-43.5*	-10.0	33.5	Complied
2572	1	24	-13.5	-10.0	3.5	Complied

**16QAM / 1 RB 0 Offset / 2490 to 2498 MHz****16QAM / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 1 RB 24 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 1 RB 24 Offset / 2572 to 2580 MHz**

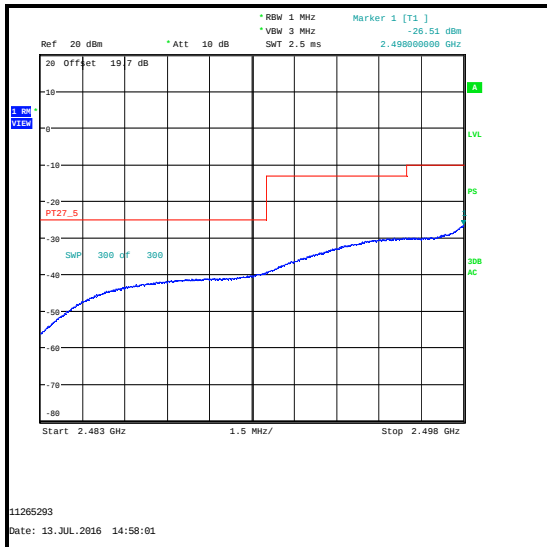
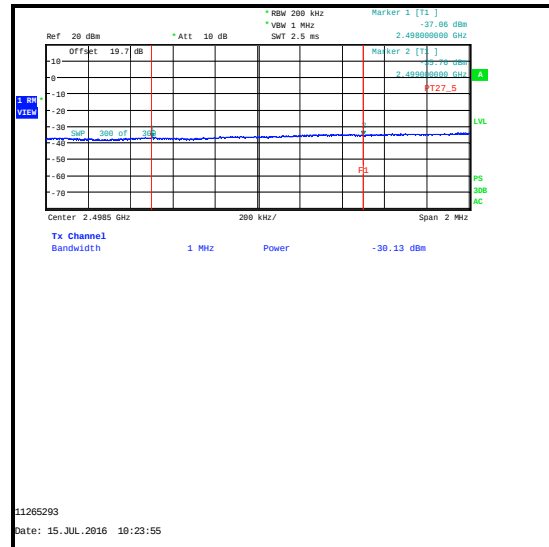
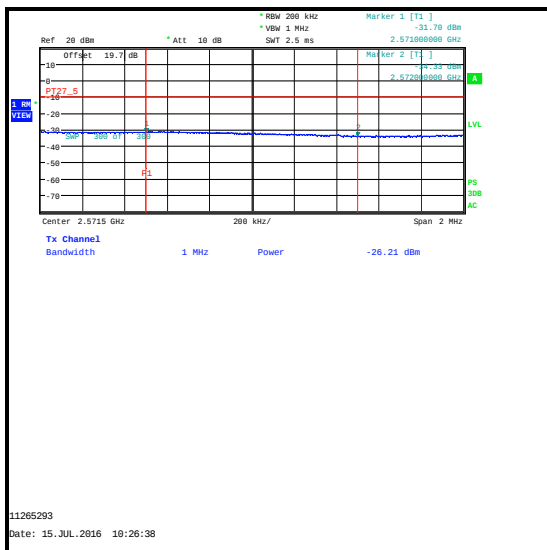
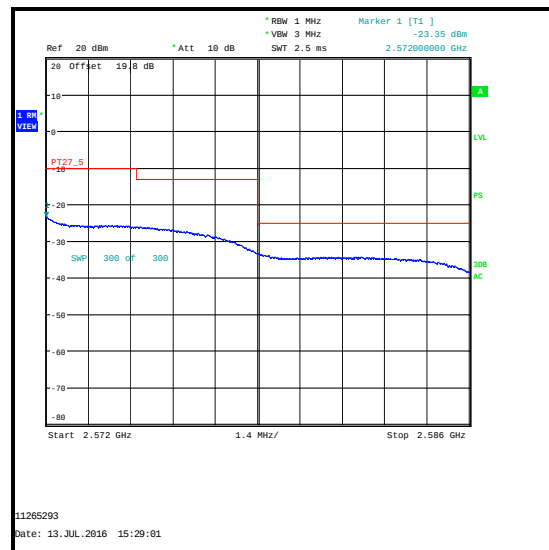
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	24	-45.5	-10.0	35.5	Complied
2571	1	0	-46.9	-10.0	36.9	Complied

**16QAM / 1 RB 24 Offset / 2490 to 2499 MHz****16QAM / 1 RB 0 Offset / 2571 to 2580 MHz**

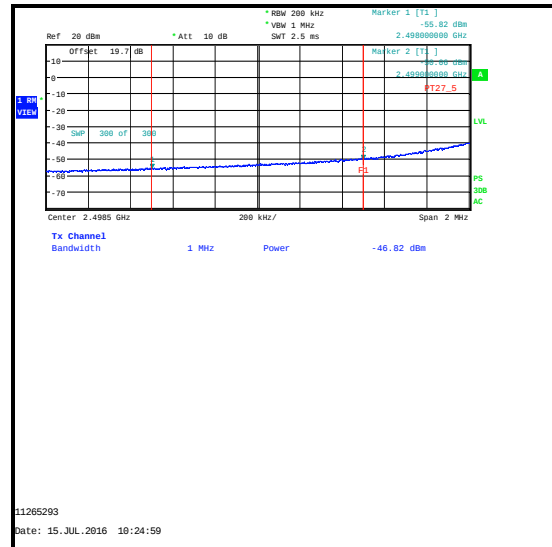
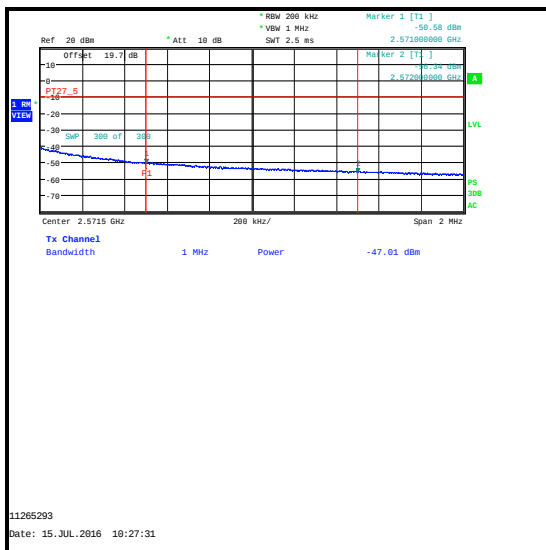
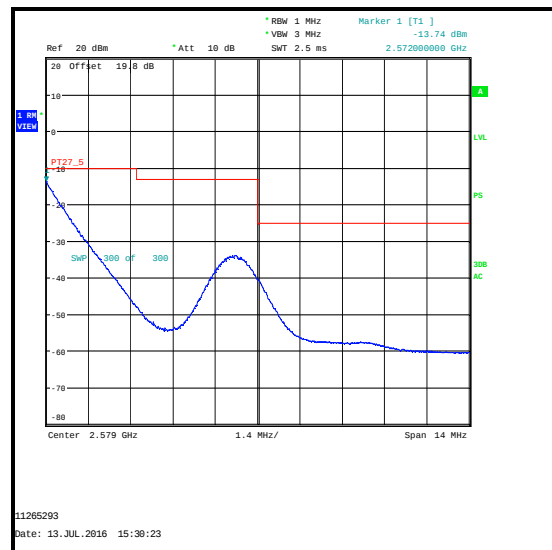
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	50	0	-26.5	-10.0	16.5	Complied
2498 to 2499	50	0	-30.1*	-10.0	20.1	Complied
2571 to 2572	50	0	-26.2*	-10.0	16.2	Complied
2572	50	0	-23.3	-10.0	13.3	Complied

**QPSK / 50 RB 0 Offset / 2483 to 2498 MHz****QPSK / 50 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 50 RB 0 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 50 RB 0 Offset / 2572 to 2586 MHz**

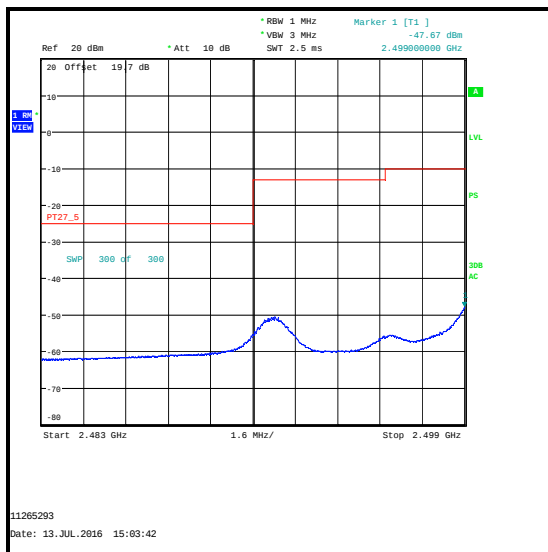
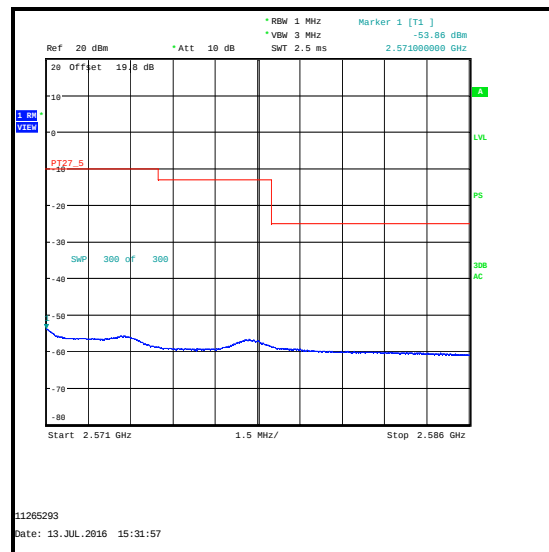
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-15.9	-10.0	5.9	Complied
2498 to 2499	1	0	-46.8*	-10.0	36.8	Complied
2571 to 2572	1	49	-47.0*	-10.0	37.0	Complied
2572	1	49	-13.7	-10.0	3.7	Complied

**QPSK / 1 RB 0 Offset / 2483 to 2498 MHz****QPSK / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 1 RB 49 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 1 RB 49 Offset / 2572 to 2586 MHz**

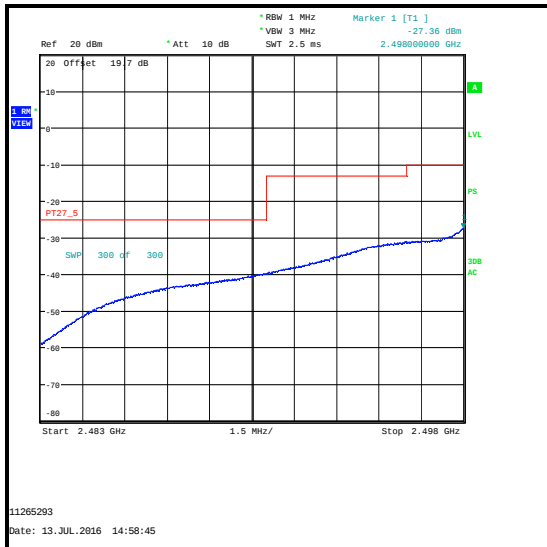
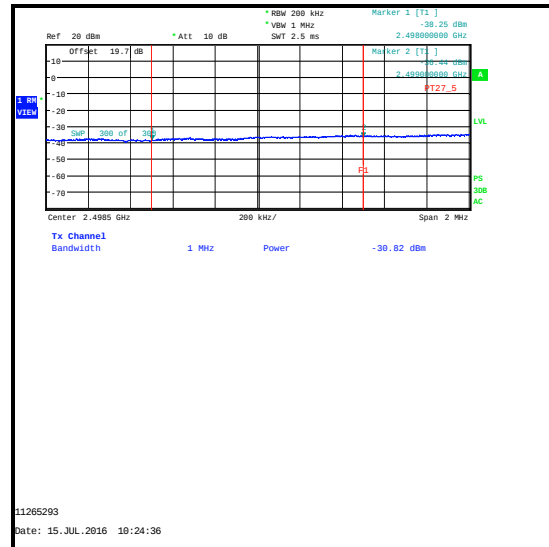
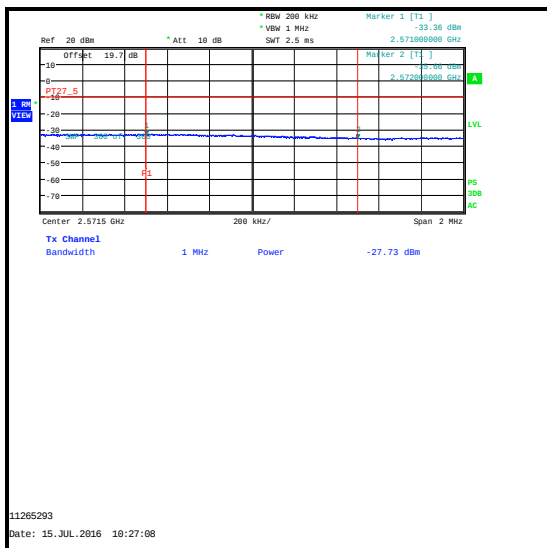
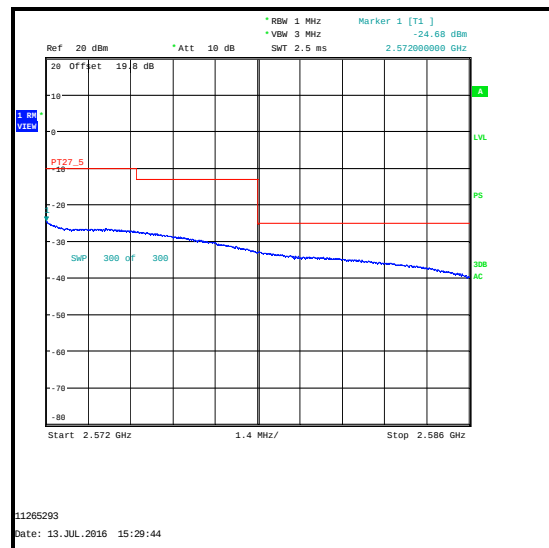
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	49	-47.7	-10.0	37.7	Complied
2571	1	0	-53.9	-10.0	43.9	Complied

**QPSK / 1 RB 49 Offset / 2483 to 2499 MHz****QPSK / 1 RB 0 Offset / 2571 to 2586 MHz**

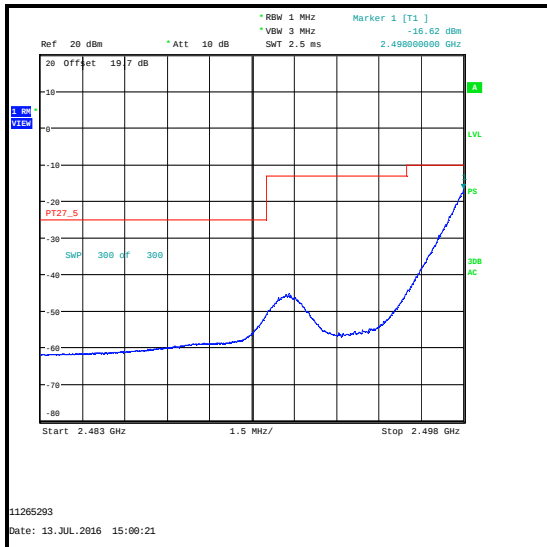
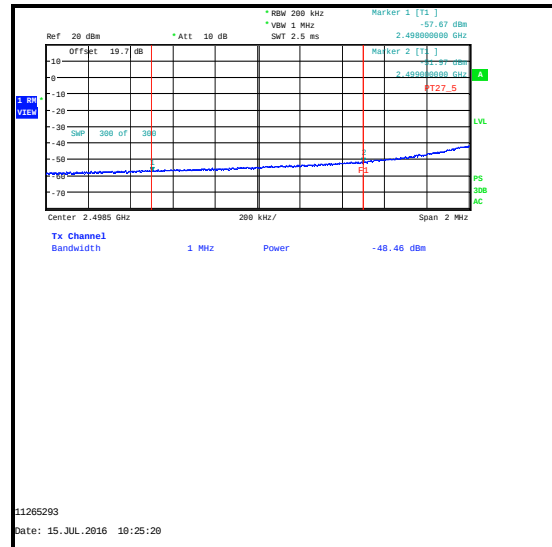
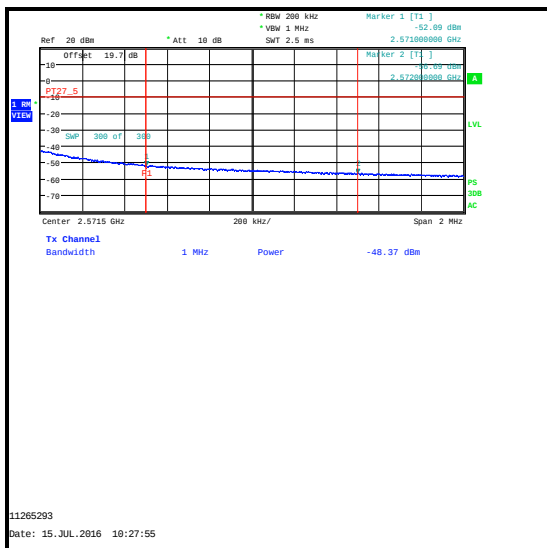
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	50	0	-27.4	-10.0	17.4	Complied
2498 to 2499	50	0	-30.8*	-10.0	20.8	Complied
2571 to 2572	50	0	-27.7*	-10.0	17.7	Complied
2572	50	0	-24.7	-10.0	14.7	Complied

**16QAM / 50 RB 0 Offset / 2483 to 2498 MHz****16QAM / 50 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 50 RB 0 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 50 RB 0 Offset / 2572 to 2586 MHz**

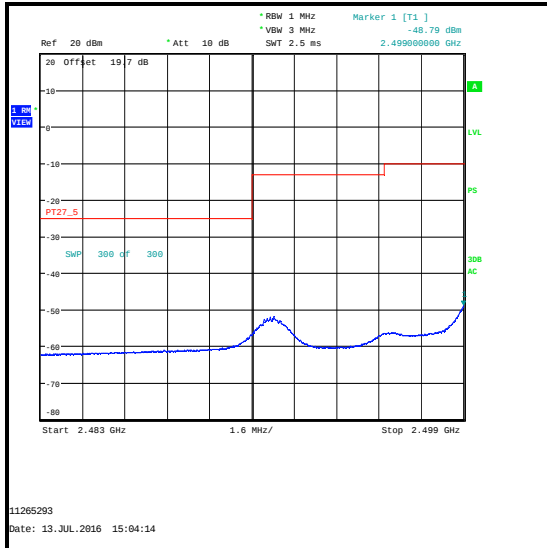
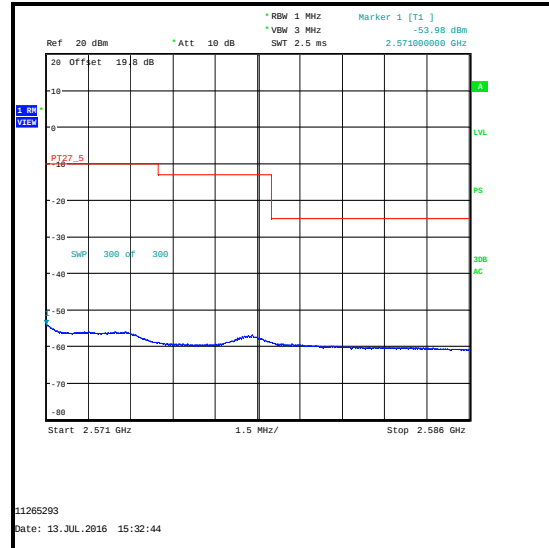
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-16.6	-10.0	6.6	Complied
2498 to 2499	1	0	-48.5*	-10.0	38.5	Complied
2571 to 2572	1	49	-52.1*	-10.0	42.1	Complied
2572	1	49	-14.6	-10.0	4.6	Complied

**16QAM / 1 RB 0 Offset / 2483 to 2498 MHz****16QAM / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 1 RB 49 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 1 RB 49 Offset / 2572 to 2586 MHz**

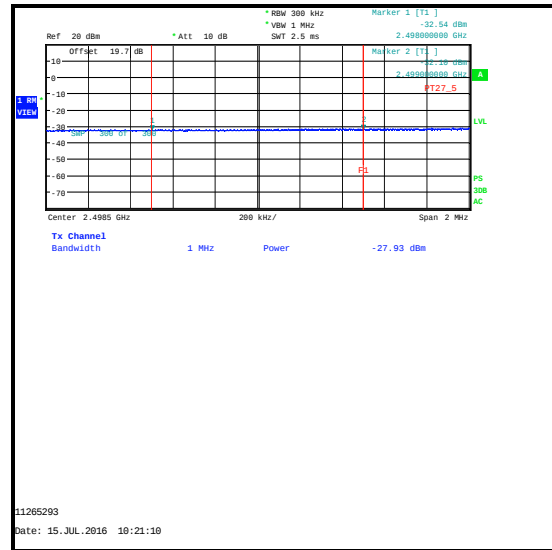
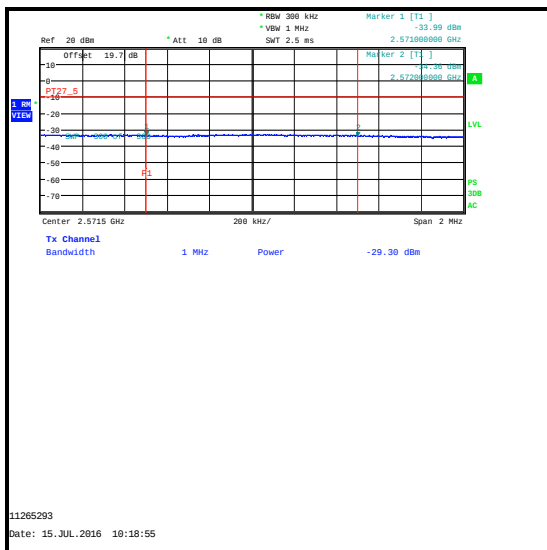
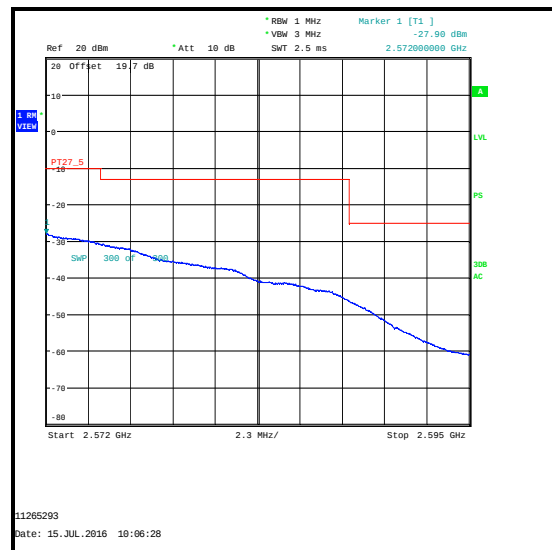
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	49	-48.8	-10.0	38.8	Complied
2571	1	0	-54.0	-10.0	44.0	Complied

**16QAM / 1 RB 49 Offset / 2483 to 2499 MHz****16QAM / 1 RB 0 Offset / 2571 to 2586 MHz**

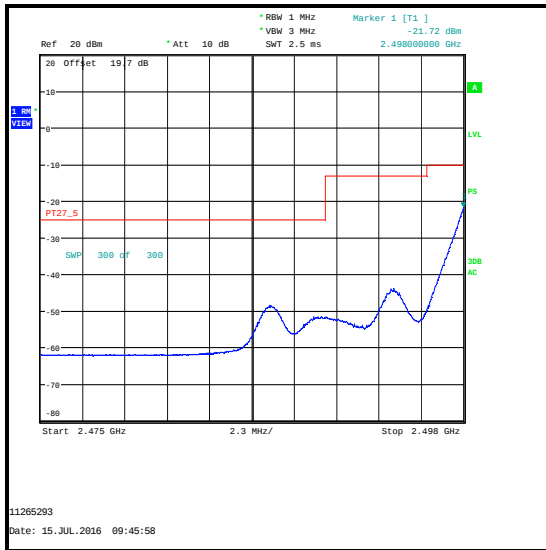
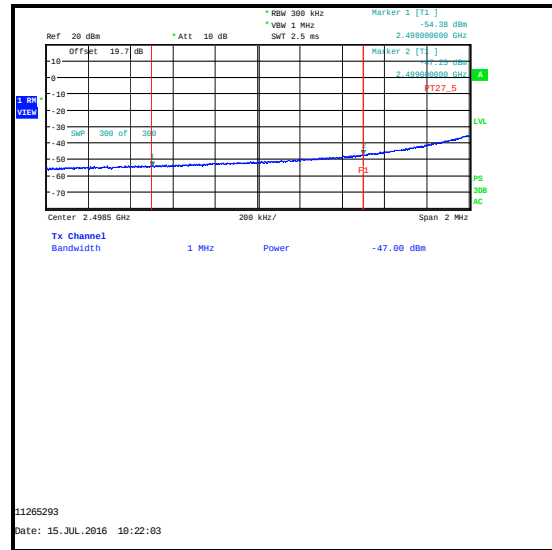
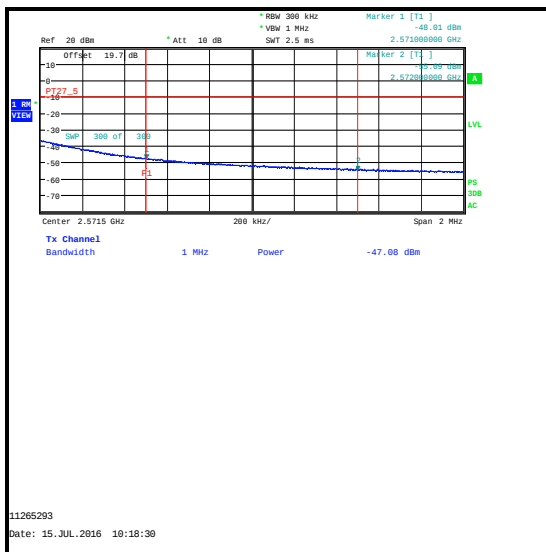
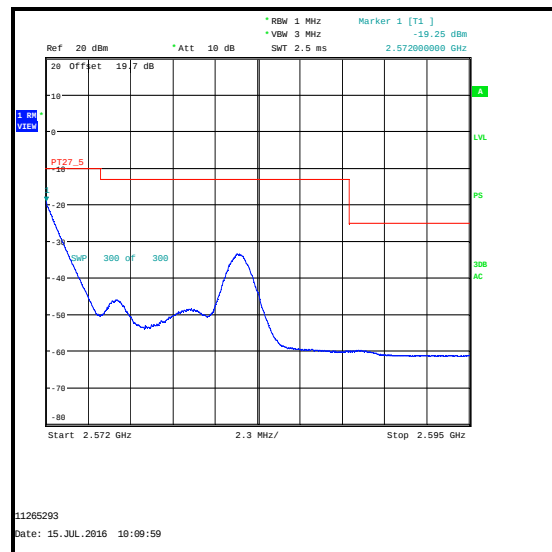
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	75	0	-26.7	-10.0	16.7	Complied
2498 to 2499	75	0	-27.9*	-10.0	17.9	Complied
2571 to 2572	75	0	-29.3*	-10.0	19.3	Complied
2572	75	0	-27.9	-10.0	17.9	Complied

**QPSK / 75 RB 0 Offset / 2475 to 2498 MHz****QPSK / 75 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 75 RB 0 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 75 RB 0 Offset / 2572 to 2595 MHz**

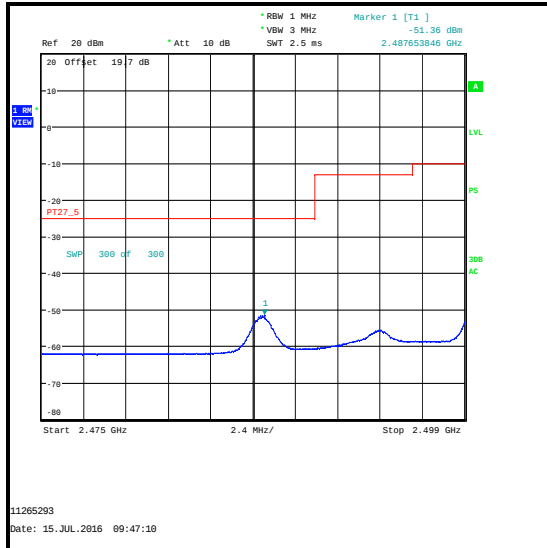
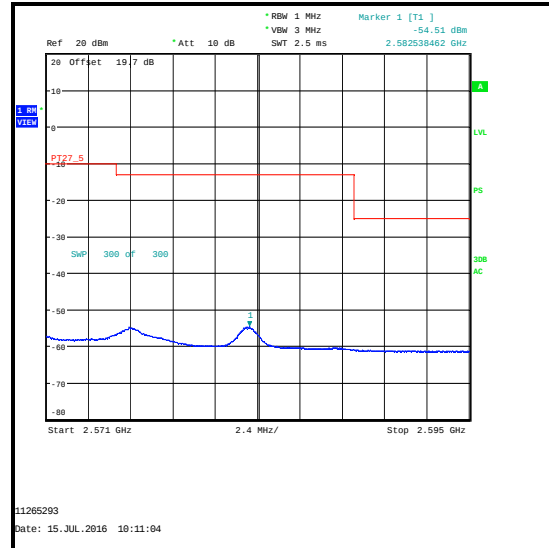
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-21.7	-10.0	11.7	Complied
2498 to 2499	1	0	-47.0*	-10.0	37.0	Complied
2571 to 2572	1	74	-47.1*	-10.0	37.1	Complied
2572	1	74	-19.2	-10.0	9.2	Complied

**QPSK / 1 RB 0 Offset / 2475 to 2498 MHz****QPSK / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 1 RB 74 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 1 RB 74 Offset / 2572 to 2595 MHz**

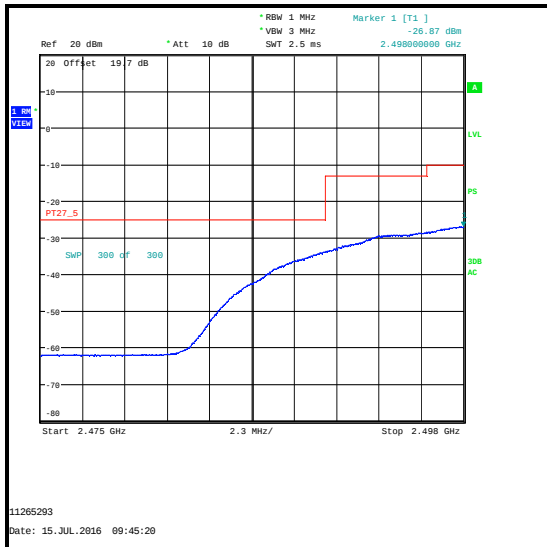
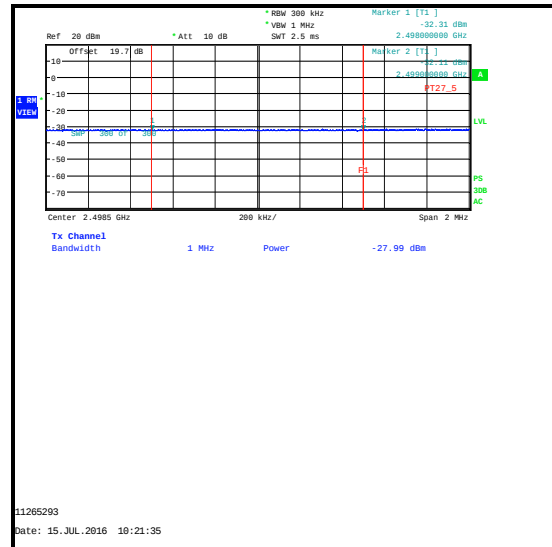
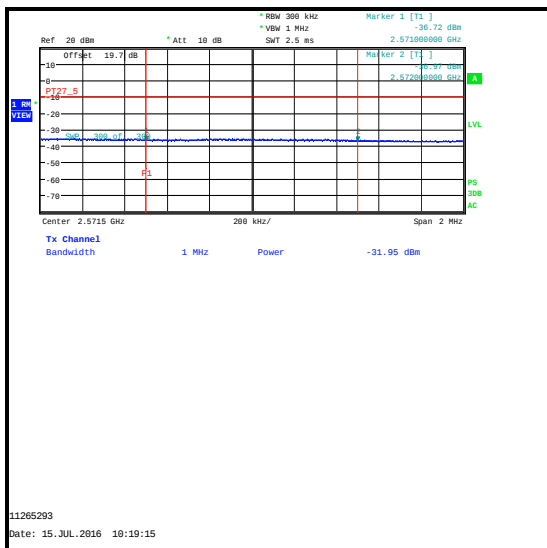
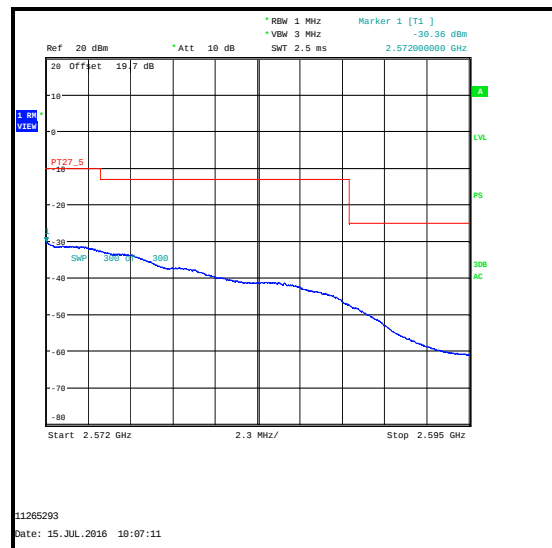
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2487.654	1	74	-51.4	-25.0	26.4	Complied
2582.538	1	0	-54.5	-13.0	41.5	Complied

**QPSK / 1 RB 74 Offset / 2475 to 2499 MHz****QPSK / 1 RB 0 Offset / 2571 to 2595 MHz**

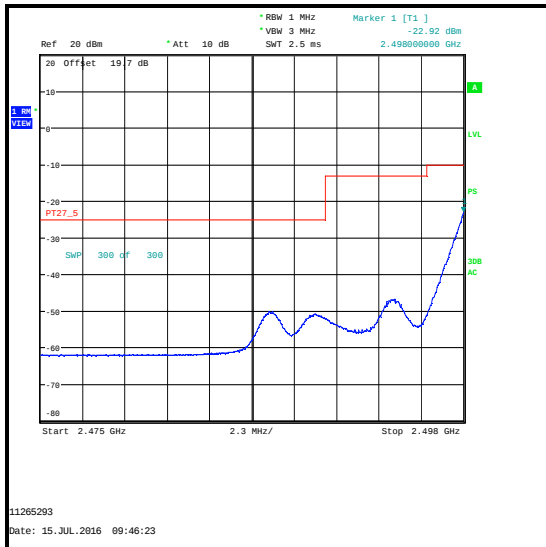
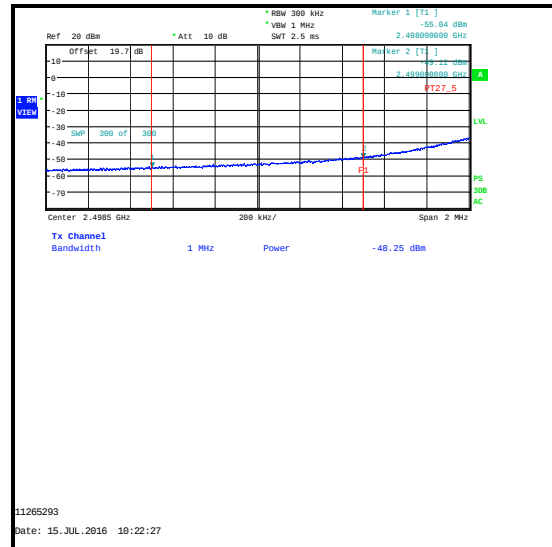
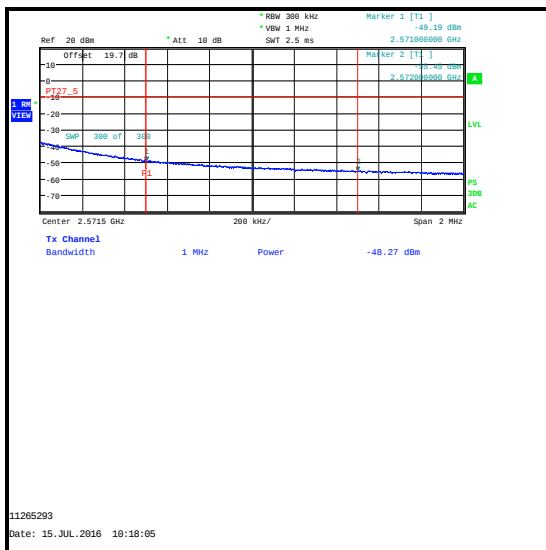
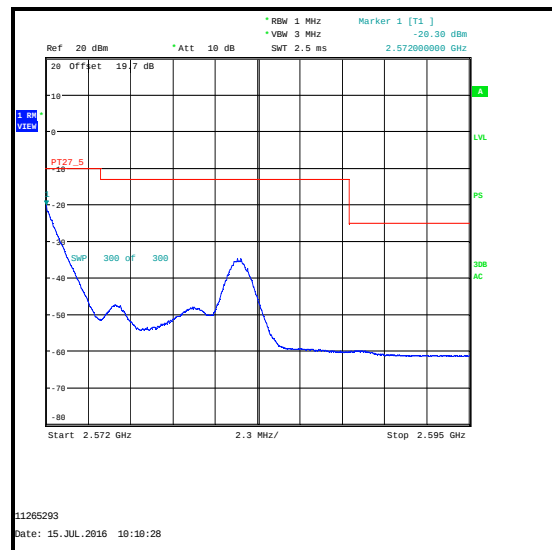
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	75	0	-26.9	-10.0	16.9	Complied
2498 to 2499	75	0	-28.0*	-10.0	18.0	Complied
2571 to 2572	75	0	-31.9*	-10.0	21.9	Complied
2572	75	0	-30.4	-10.0	20.4	Complied

**16QAM / 75 RB 0 Offset / 2475 to 2498 MHz****16QAM / 75 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 75 RB 0 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 75 RB 0 Offset / 2572 to 2595 MHz**

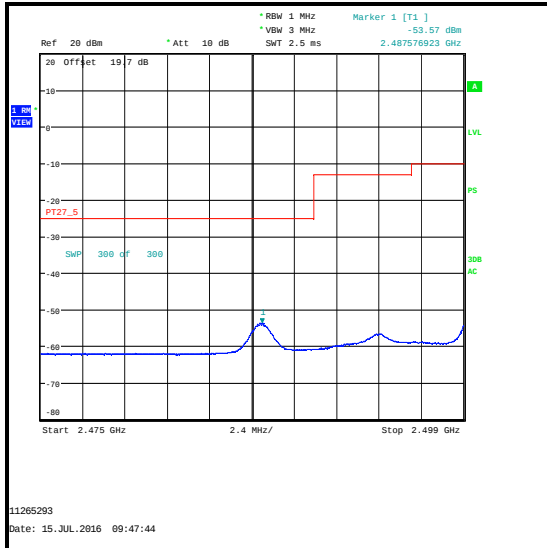
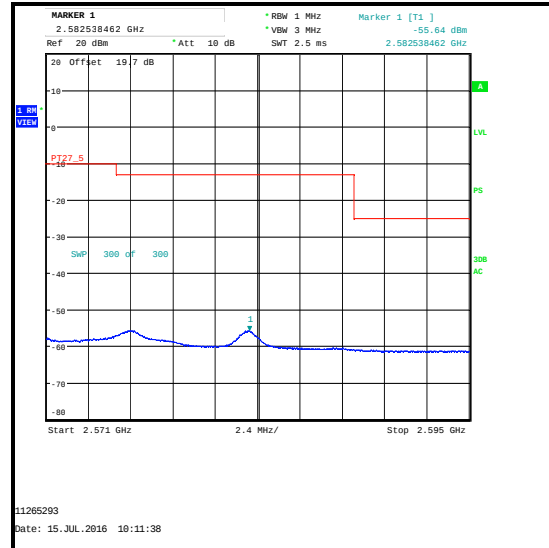
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-22.9	-10.0	12.9	Complied
2498 to 2499	1	0	-48.2*	-10.0	38.2	Complied
2571 to 2572	1	74	-48.3*	-10.0	38.3	Complied
2572	1	74	-20.3	-10.0	10.3	Complied

**16QAM / 1 RB 0 Offset / 2475 to 2498 MHz****16QAM / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 1 RB 74 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 1 RB 74 Offset / 2572 to 2595 MHz**

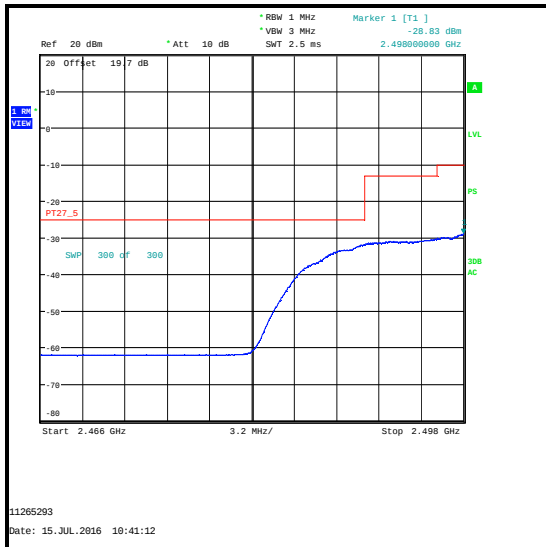
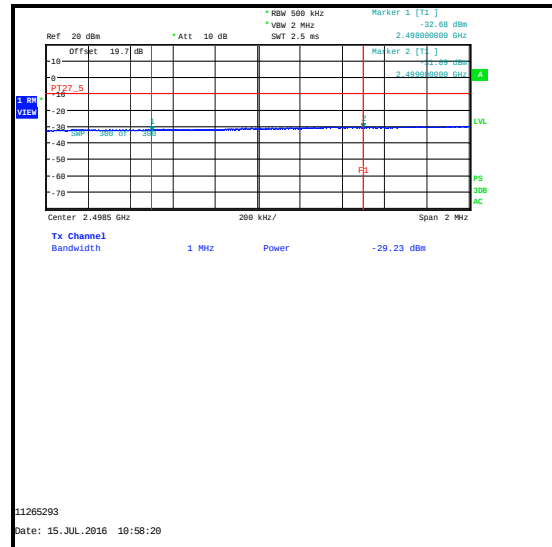
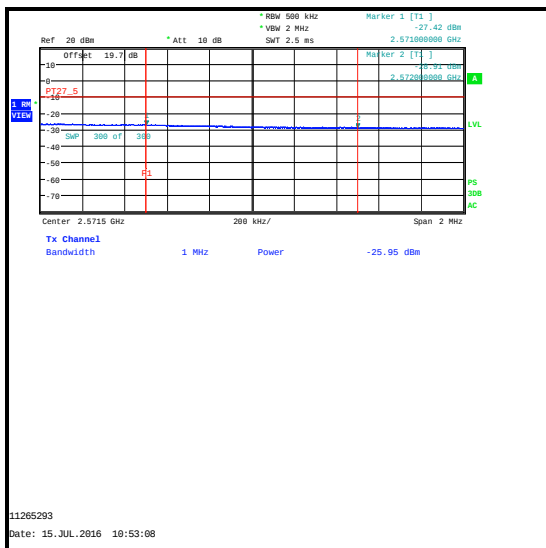
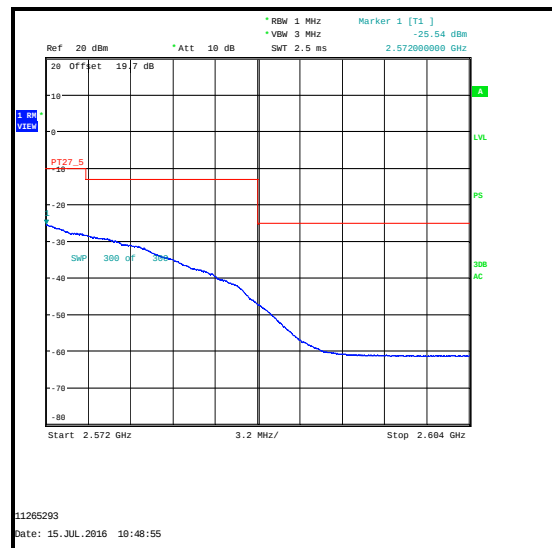
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2487.577	1	74	-53.6	-25.0	28.6	Complied
2582.538	1	0	-55.6	-13.0	42.6	Complied

**16QAM / 1 RB 74 Offset / 2475 to 2499 MHz****16QAM / 1 RB 0 Offset / 2571 to 2595 MHz**

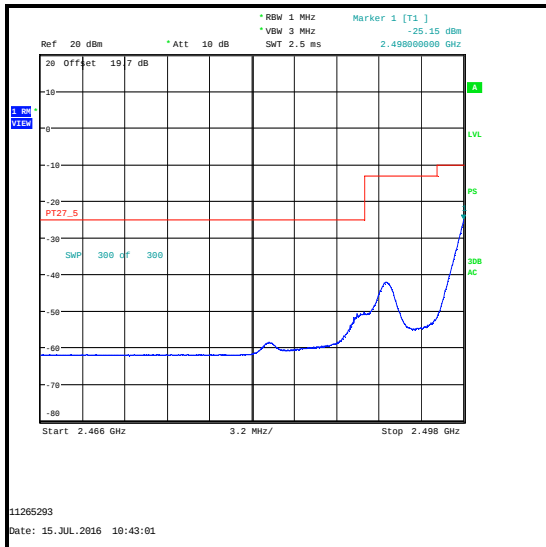
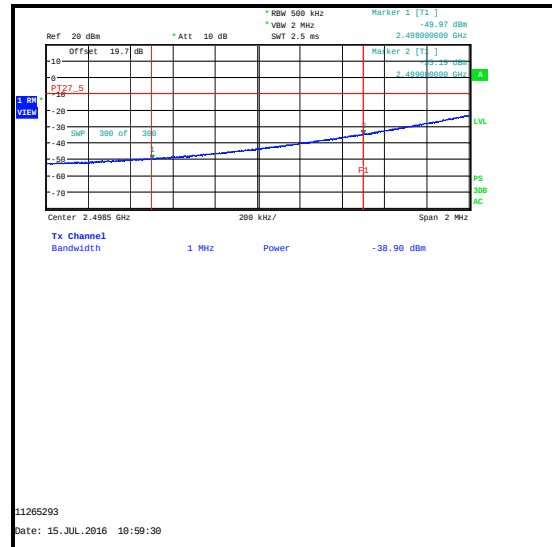
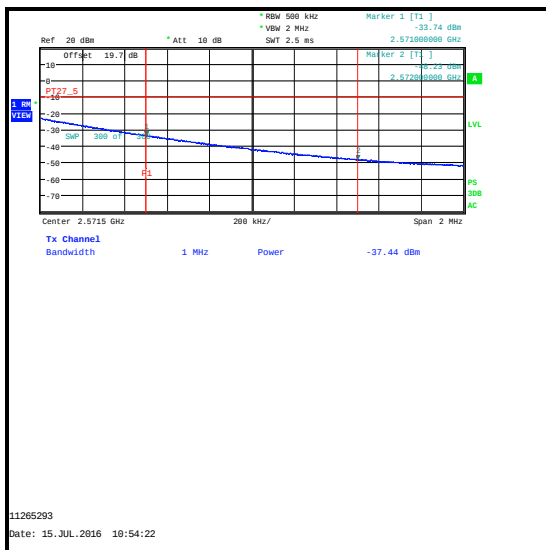
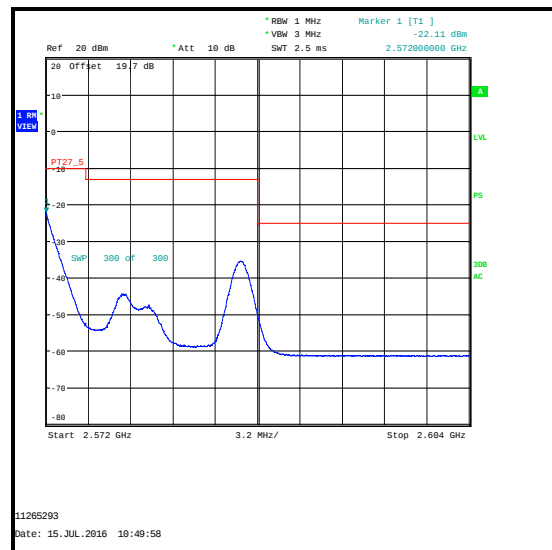
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	100	0	-28.8	-10.0	18.8	Complied
2498 to 2499	100	0	-29.2*	-10.0	19.2	Complied
2571 to 2572	100	0	-25.9*	-10.0	15.9	Complied
2572	100	0	-25.5	-10.0	15.5	Complied

**QPSK / 100 RB 0 Offset / 2466 to 2498 MHz****QPSK / 100 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 100 RB 0 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 100 RB 0 Offset / 2572 to 2604 MHz**

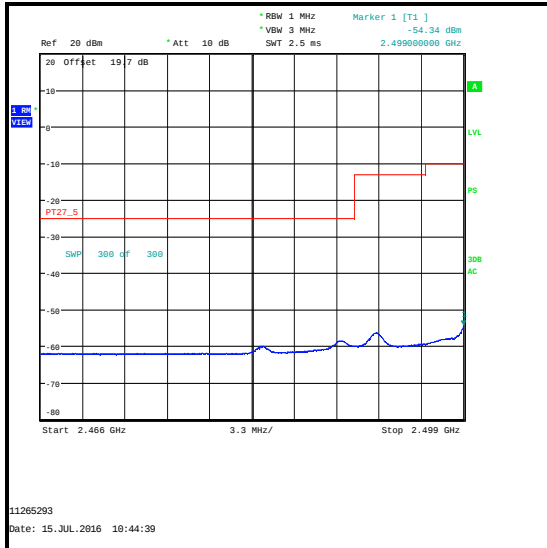
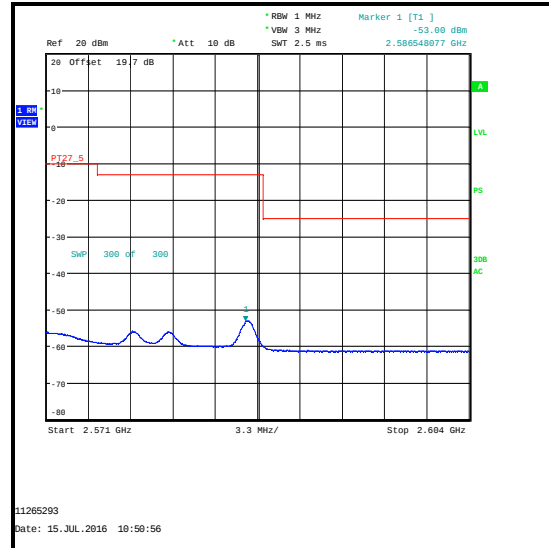
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-25.1	-10.0	15.1	Complied
2498 to 2499	1	0	-38.9*	-10.0	28.9	Complied
2571 to 2572	1	99	-37.4*	-10.0	27.4	Complied
2572	1	99	-22.1	-10.0	12.1	Complied

**QPSK / 1 RB 0 Offset / 2466 to 2498 MHz****QPSK / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 1 RB 99 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 1 RB 99 Offset / 2572 to 2604 MHz**

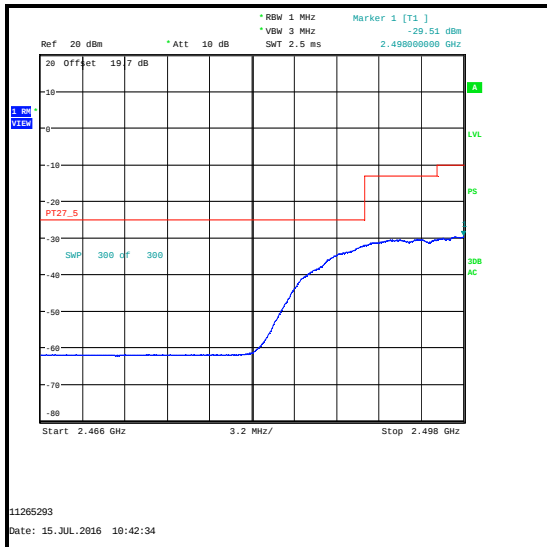
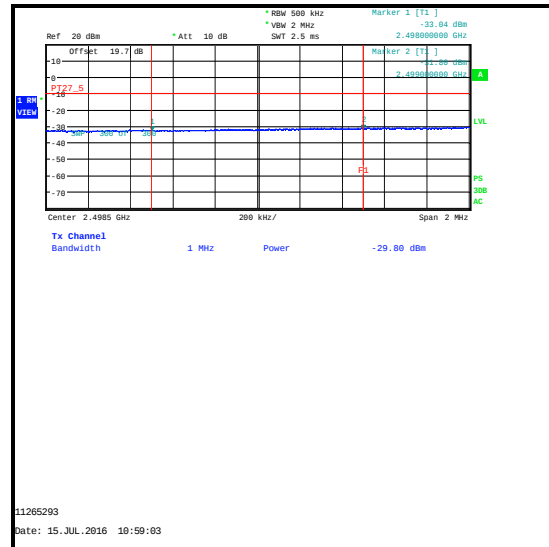
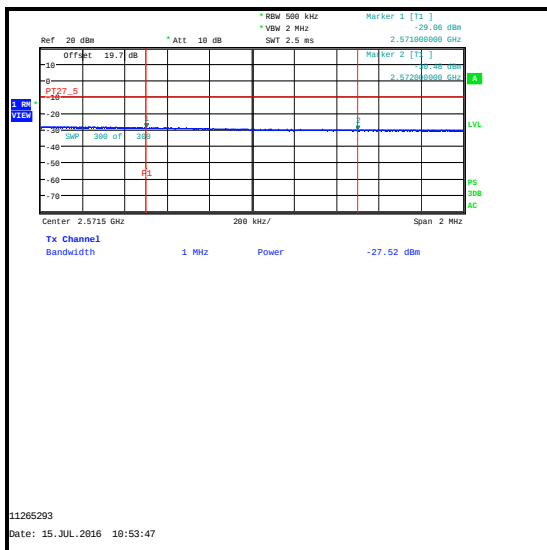
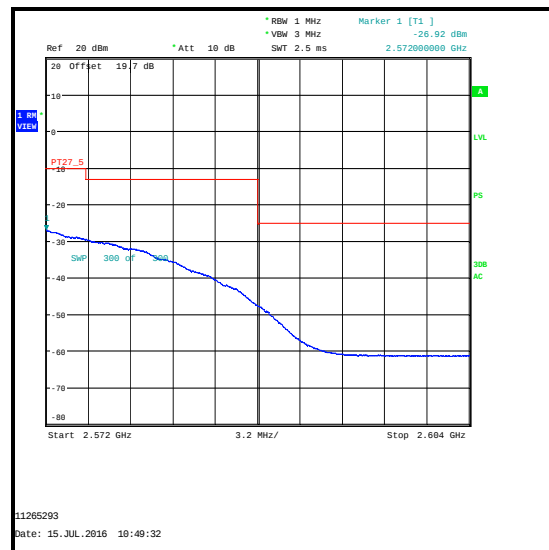
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	99	-54.3	-10.0	44.3	Complied
2586.548	1	0	-53.0	-13.0	40.0	Complied

**QPSK / 1 RB 99 Offset / 2466 to 2499 MHz****QPSK / 1 RB 0 Offset / 2571 to 2604 MHz**

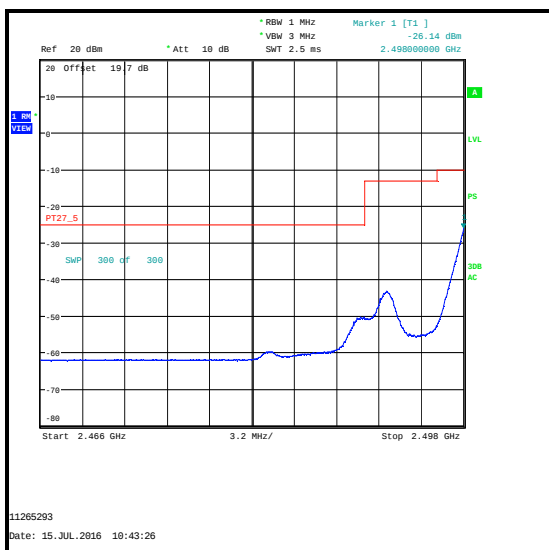
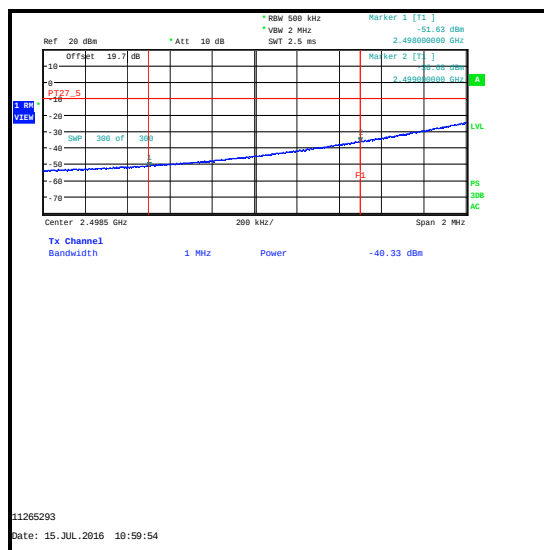
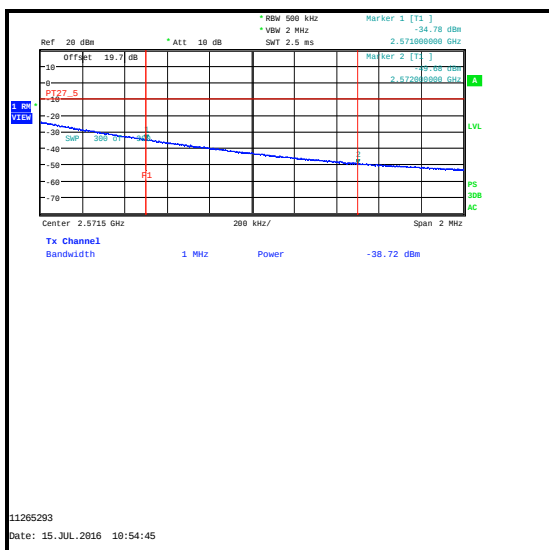
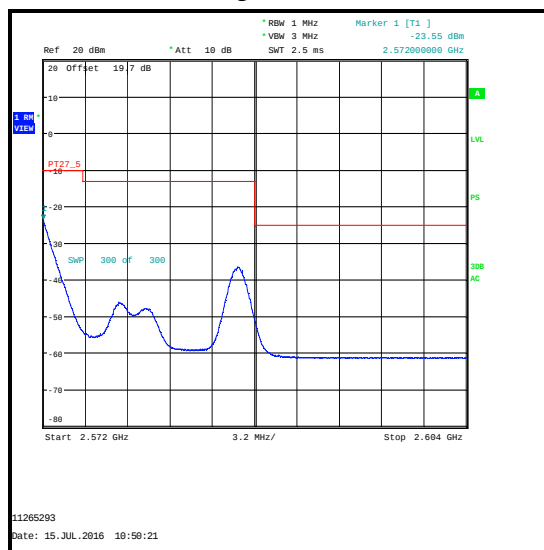
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	100	0	-29.5	-10.0	19.5	Complied
2498 to 2499	100	0	-29.8*	-10.0	19.8	Complied
2571 to 2572	100	0	-27.5*	-10.0	17.5	Complied
2572	100	0	-26.9	-10.0	16.9	Complied

**16QAM / 100 RB 0 Offset / 2466 to 2498 MHz****16QAM / 100 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 100 RB 0 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 100 RB 0 Offset / 2572 to 2604 MHz**

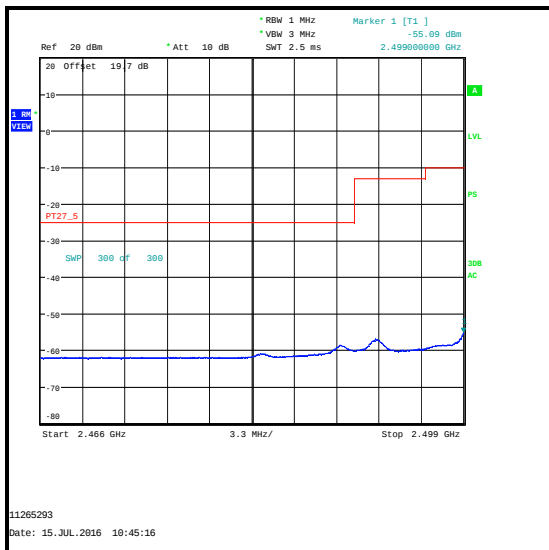
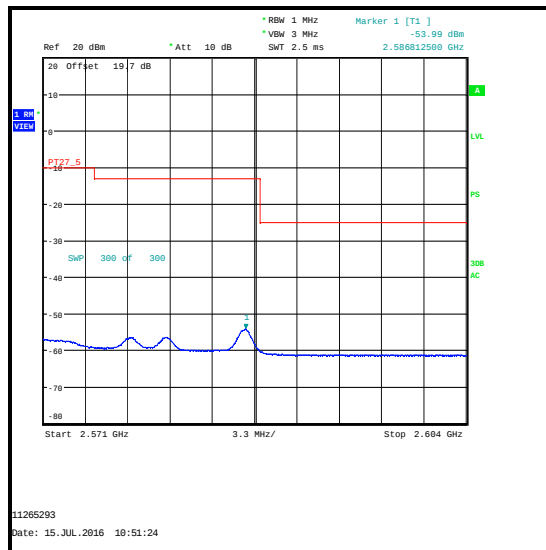
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-26.1	-10.0	16.1	Complied
2498 to 2499	1	0	-40.3*	-10.0	30.3	Complied
2571 to 2572	1	99	-38.7*	-10.0	28.7	Complied
2572	1	99	-23.5	-10.0	13.5	Complied

**16QAM / 1 RB 0 Offset / 2466 to 2498 MHz****16QAM / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 1 RB 99 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 1 RB 99 Offset / 2572 to 2604 MHz**

Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	24	-55.1	-10.0	45.1	Complied
2586.813	1	0	-54.0	-13.0	41.0	Complied

**16QAM / 1 RB 99 Offset / 2466 to 2499 MHz****16QAM / 1 RB 0 Offset / 2571 to 2604 MHz****Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2002	Thermohygrometer	Testo	608-H1	45041825	02 Apr 2017	12
M1630	Test Receiver	Rohde & Schwarz	ESU40	100233	17 Feb 2017	12
A2504	Directional Coupler	AtlanTecRF	CDC-003060-10	13122501839	Calibrated before use	-
A2507	Attenuator	AtlanTecRF	AN18-10	821846#2	Calibrated before use	-
M199	Power Meter	Rohde & Schwarz	NRVS	827023/075	11 Apr 2018	24
M1267	Thermal Power Sensor	Rohde & Schwarz	NRV-Z52	100155	15 Apr 2018	24
S0579	DC Power Supply	TTi	EX1810R	444110	Calibrated before use	-
M1269	Multimeter	Fluke	179	90250210	13 May 2017	12

5.2.6. Transmitter Conducted Emissions at Band Edges $\pm$ X MHz – UAT**Test Summary:**

Test Engineer:	Ben Mercer	Test Date:	20 July 2016
Test Sample IMEI:	358640070309241		

FCC Reference:	Parts 2.1051 & 27.53(m)(4)
Test Method Used:	KDB 971168 Section 6 referencing FCC Part 27.53 & note 3 below

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	48

Note(s):

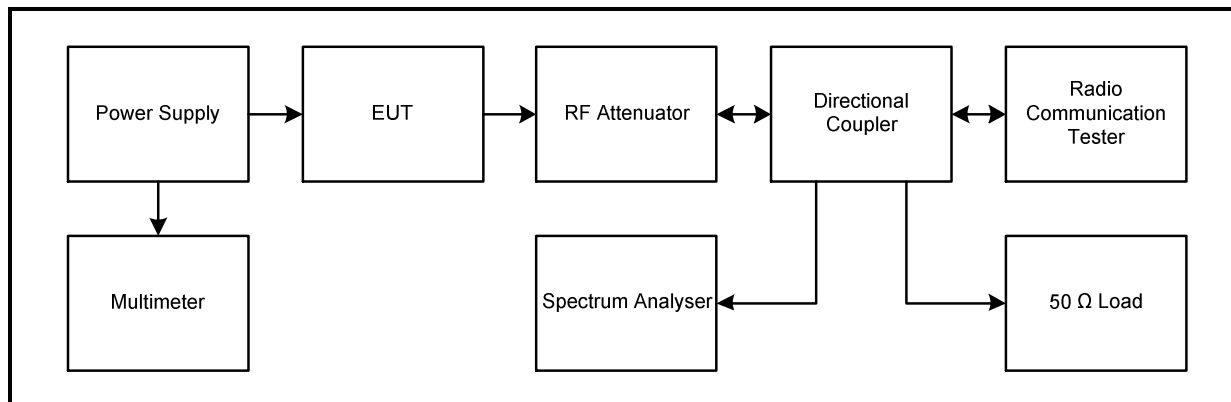
- Measurements were performed conducted with the antenna gain included in the analyser reference level offset. The customer stated that the antenna gain is 0.6 dBi.
- Measurements were performed with the EUT transmitting with QPSK and 16QAM modulation schemes, with resource blocks settings as detailed in section 4.3 of this report.
- Sweep time was set to auto and an RMS detector with trace averaging of 300 sweeps was used.
- In accordance with 27.53(m)(4), the following limits were calculated:

5 MHz Channel Bandwidth		10 MHz Channel Bandwidth	
Frequency Range (MHz)	Limit (dBm)	Frequency Range (MHz)	Limit (dBm)
30 – 2494	-25	30 – 2491.013	-25
2494 – 2496	-13	2491.013 – 2496	-13
2496 – 2500	-10	2496 – 2500	-10
2570 – 2575	-10	2570 – 2575	-10
2575 – 2576	-13	2575 – 2578.987	-13
2576 – 26000	-25	2578.987 – 26000	-25

Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Note(s):**

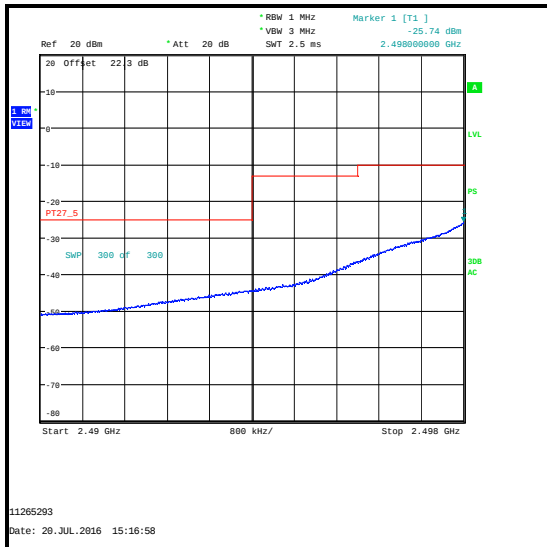
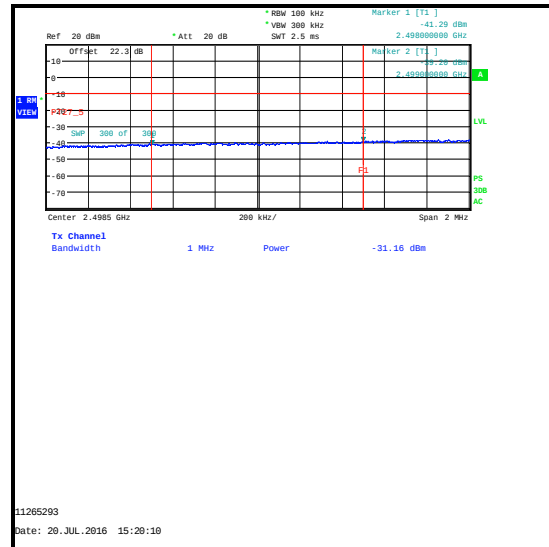
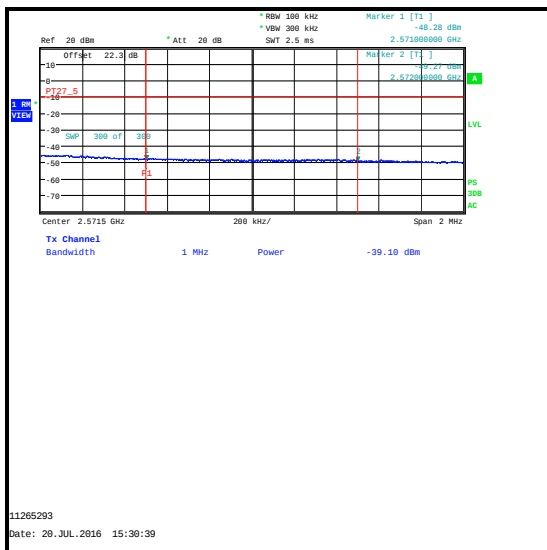
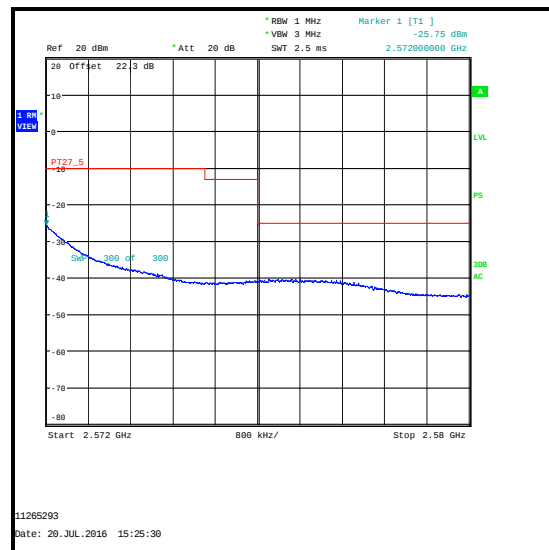
15 MHz Channel Bandwidth		20 MHz Channel Bandwidth	
Frequency Range (MHz)	Limit (dBm)	Frequency Range (MHz)	Limit (dBm)
30 – 2490.5	-25	30 – 2490.5	-25
2490.5 – 2496	-13	2490.5 – 2496	-13
2496 – 2500	-10	2496 – 2500	-10
2570 – 2575	-10	2570 – 2575	-10
2575 – 2583.480	-13	2575 – 2587.974	-13
2583.480 – 26000	-25	2587.974 – 26000	-25

- For given channel bandwidth, the minimum value of the 99% occupied bandwidth was used to calculate the above limits. The choice of the minimum occupied bandwidth, regardless of modulation schemes, gives a worst case scenario for the applicable limit lines.
- The plots of this section illustrate the conducted emissions at band edges, at frequencies below 2499 MHz and above 2571 MHz. Compliance in the frequency ranges 2499 – 2500 MHz and 2570 – 2571 MHz are shown in section 5.2.10 of this report.
- In accordance with 27.53(m)(6), a narrower resolution bandwidth is allowed to be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz. The channel power function of the spectrum analyser was used where necessary.
- * Integrated level (dBm)

Test setup:

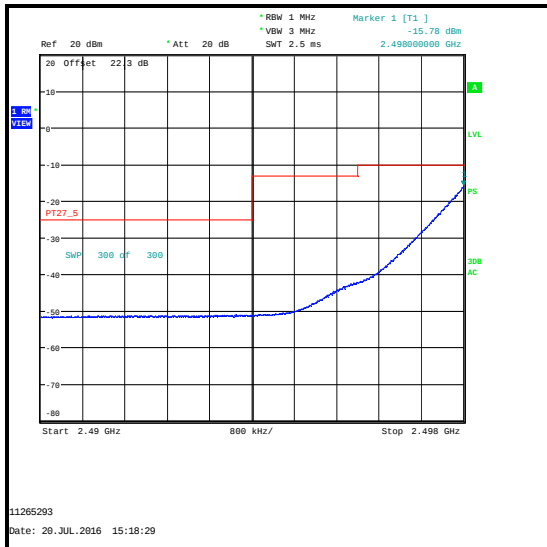
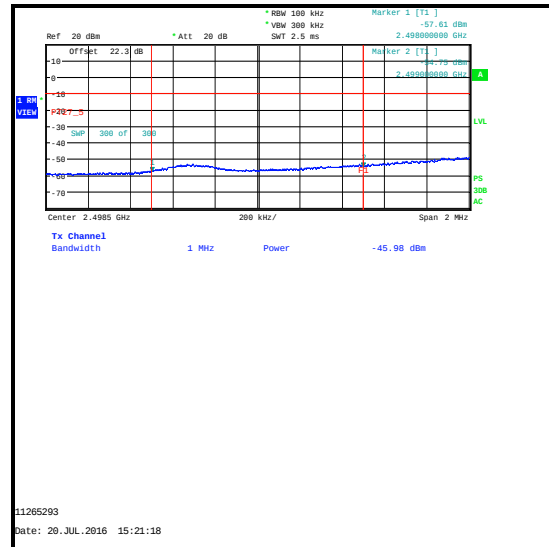
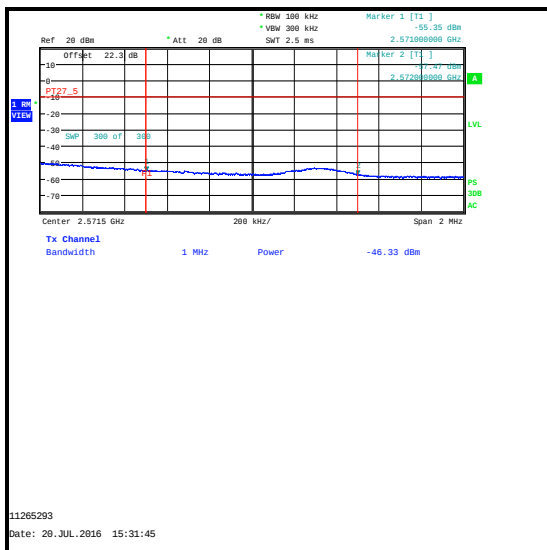
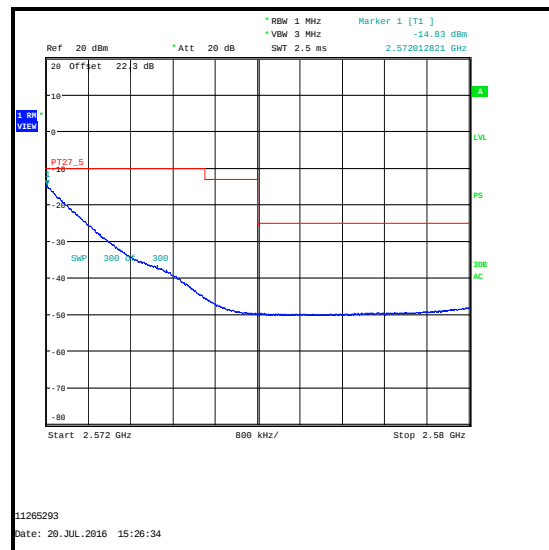
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	25	0	-25.7	-10.0	15.7	Complied
2498 to 2499	25	0	-31.2*	-10.0	21.2	Complied
2571 to 2572	25	0	-39.1*	-10.0	29.1	Complied
2572	25	0	-25.7	-10.0	15.7	Complied

**QPSK / 25 RB 0 Offset / 2490 to 2498 MHz****QPSK / 25 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 25 RB 0 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 25 RB 0 Offset / 2572 to 2580 MHz**

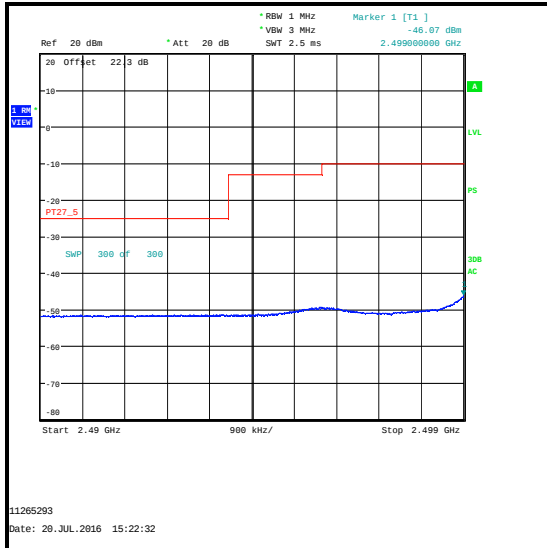
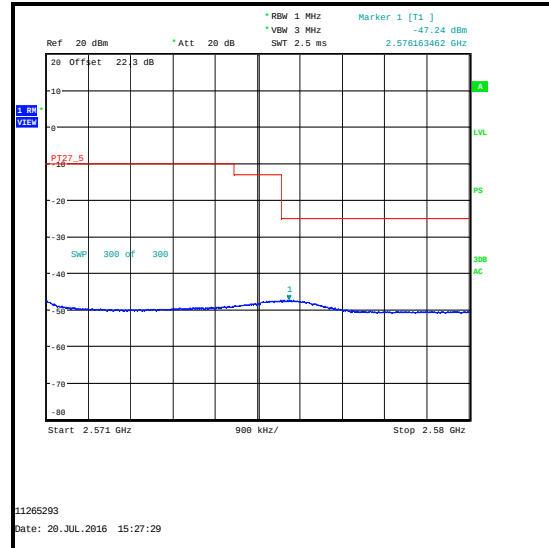
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-15.8	-10.0	5.8	Complied
2498 to 2499	1	0	-46.0*	-10.0	36.0	Complied
2571 to 2572	1	24	-46.3*	-10.0	36.3	Complied
2572.013	1	24	-14.8	-10.0	4.8	Complied

**QPSK / 1 RB 0 Offset / 2490 to 2498 MHz****QPSK / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 1 RB 24 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 1 RB 24 Offset / 2572 to 2580 MHz**

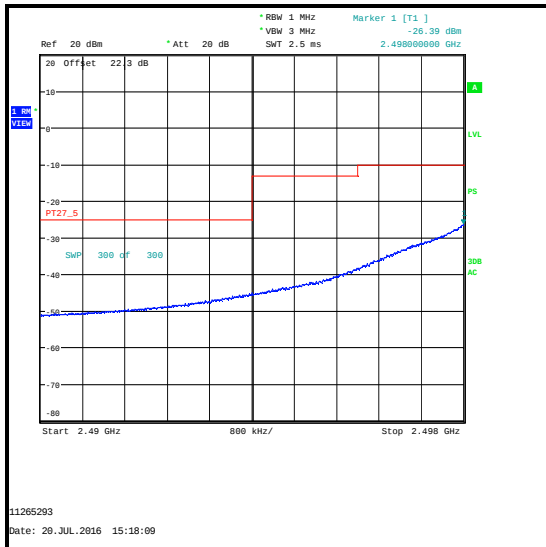
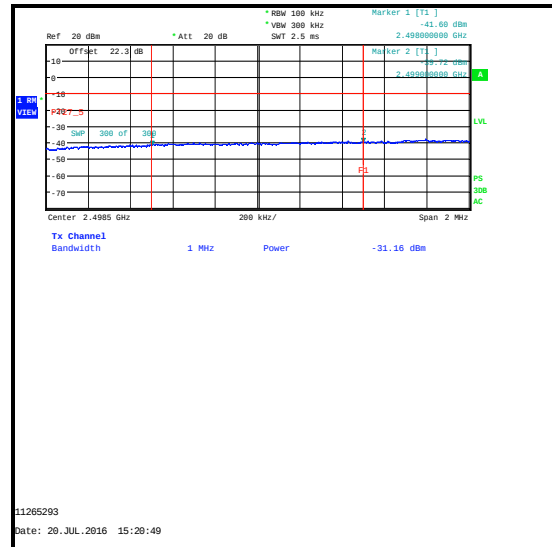
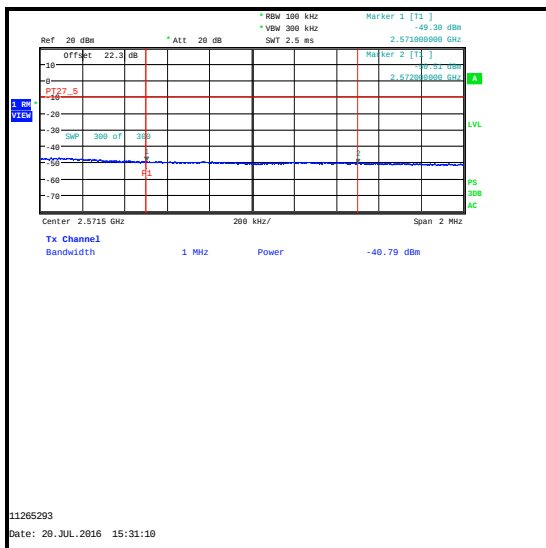
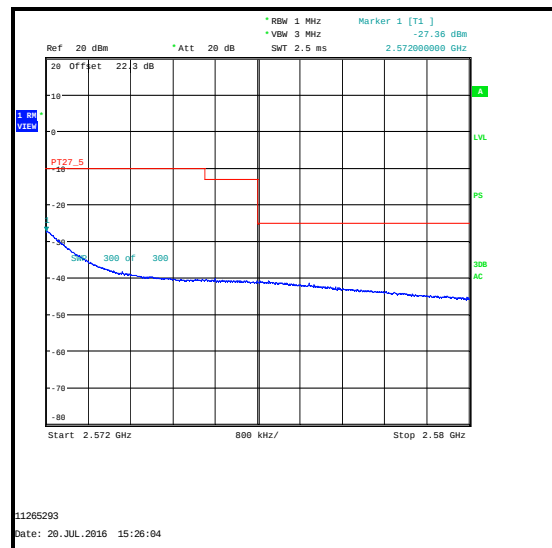
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	24	-46.1	-10.0	36.1	Complied
2576.163	1	0	-47.2	-25.0	22.2	Complied

**QPSK / 1 RB 24 Offset / 2490 to 2499 MHz****QPSK / 1 RB 0 Offset / 2571 to 2580 MHz**

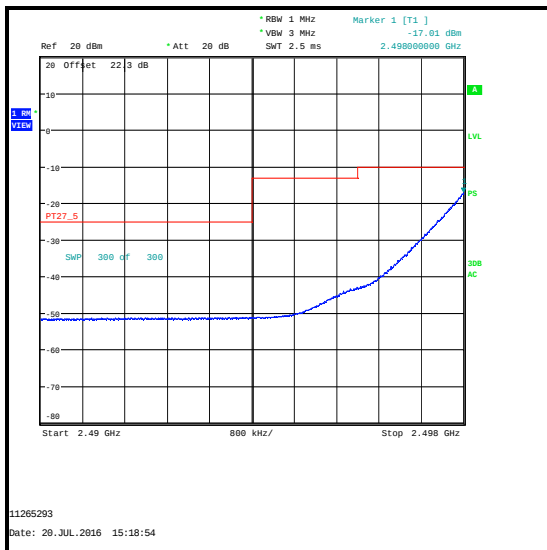
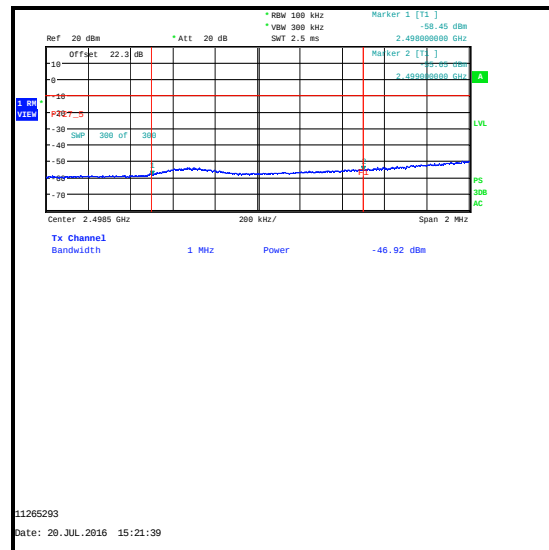
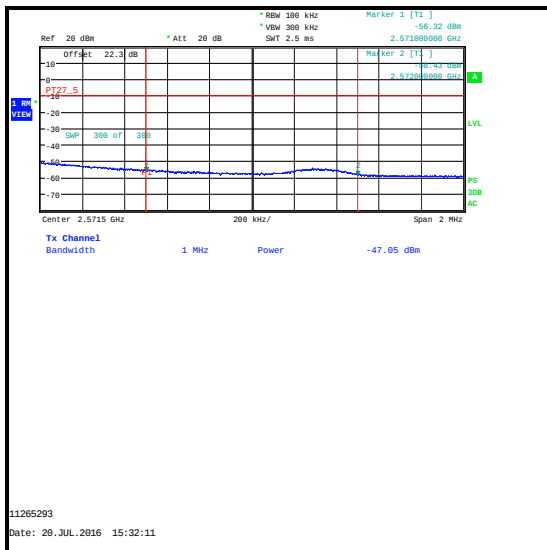
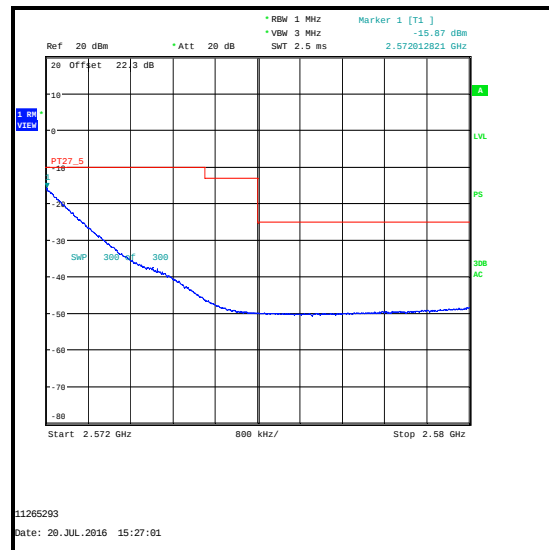
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	25	0	-26.4	-10.0	16.4	Complied
2498 to 2499	25	0	-31.2*	-10.0	21.2	Complied
2571 to 2572	25	0	-40.8*	-10.0	30.8	Complied
2572	25	0	-27.4	-10.0	17.4	Complied

**16QAM / 25 RB 0 Offset / 2490 to 2498 MHz****16QAM / 25 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 25 RB 0 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 25 RB 0 Offset / 2572 to 2580 MHz**

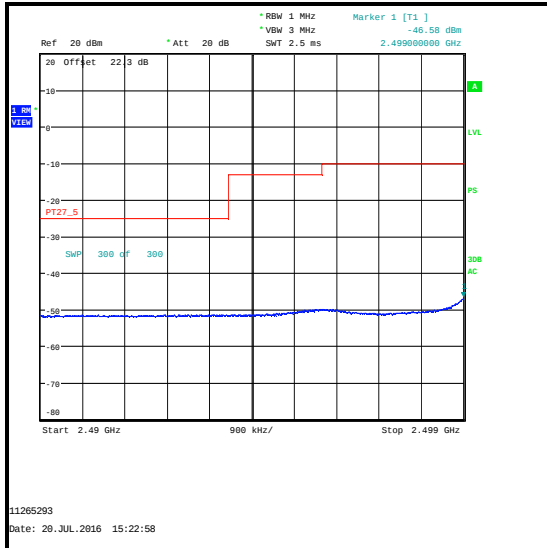
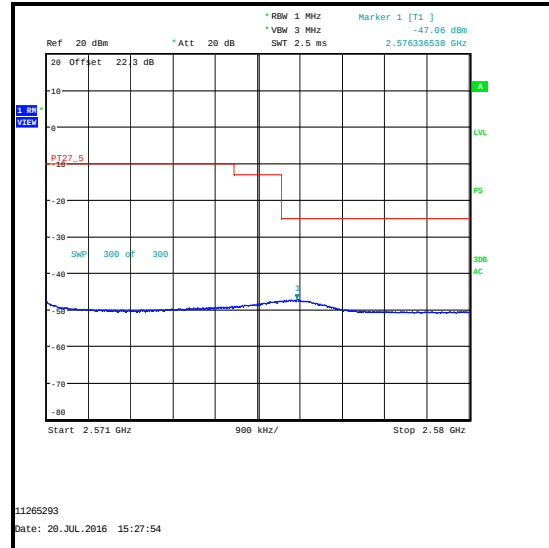
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-17.0	-10.0	7.0	Complied
2498 to 2499	1	0	-46.9*	-10.0	36.9	Complied
2571 to 2572	1	24	-47.0*	-10.0	37.0	Complied
2572.013	1	24	-15.9	-10.0	5.9	Complied

**16QAM / 1 RB 0 Offset / 2490 to 2498 MHz****16QAM / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 1 RB 24 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 1 RB 24 Offset / 2572 to 2850 MHz**

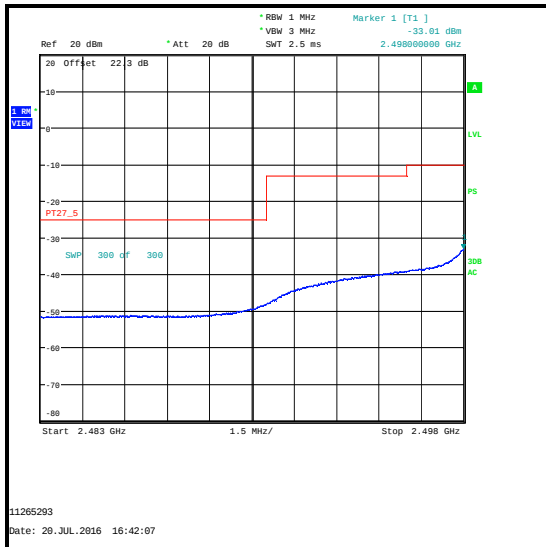
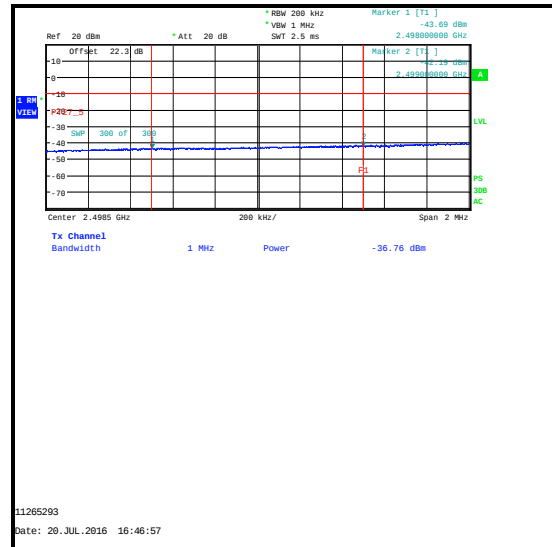
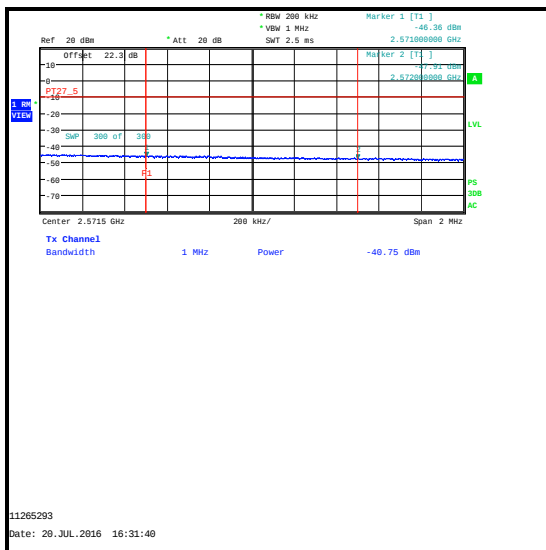
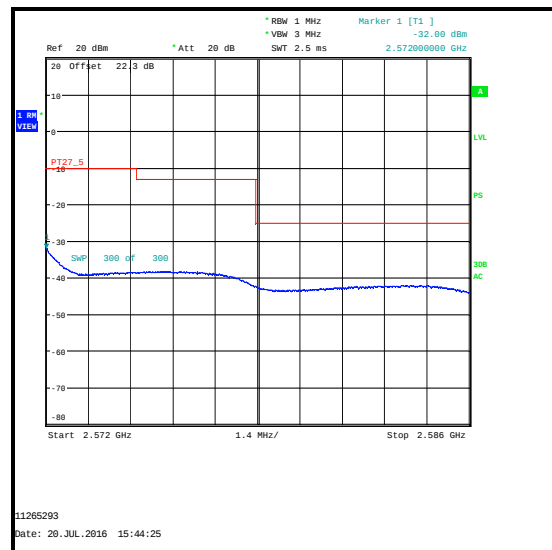
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 5 MHz Channel Bandwidth / 2490 to 2499 MHz & 2571 to 2580 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	24	-46.6	-10.0	36.6	Complied
2576.337	1	0	-47.1	-25.0	22.1	Complied

**16QAM / 1 RB 24 Offset / 2490 to 2499 MHz****16QAM / 1 RB 0 Offset / 2571 to 2580 MHz**

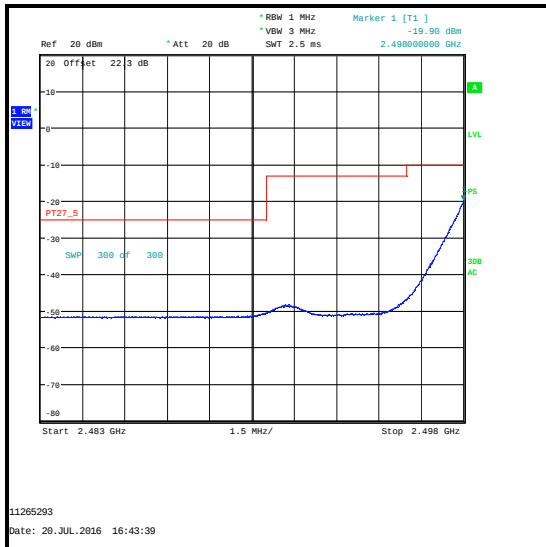
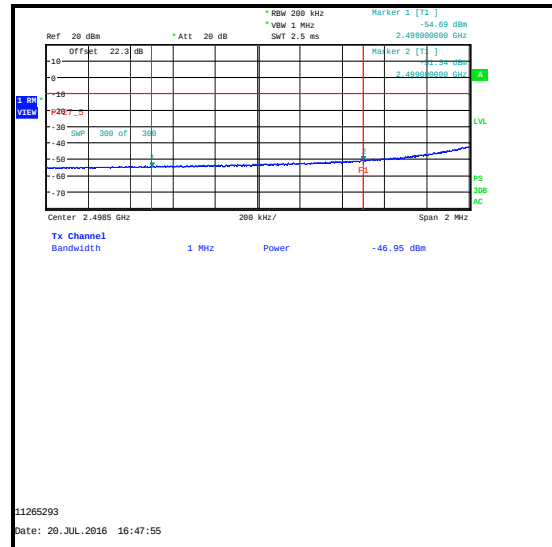
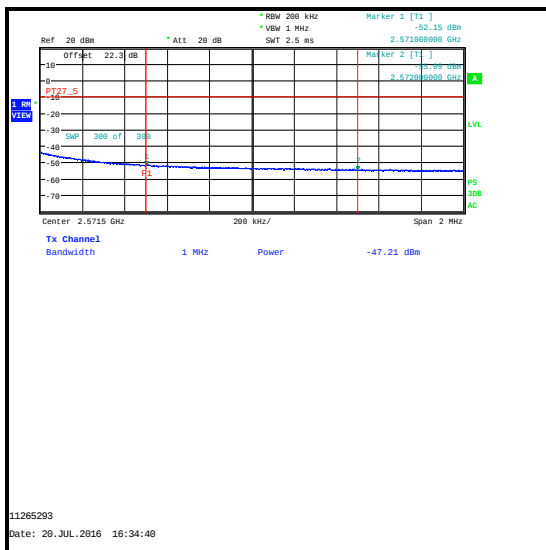
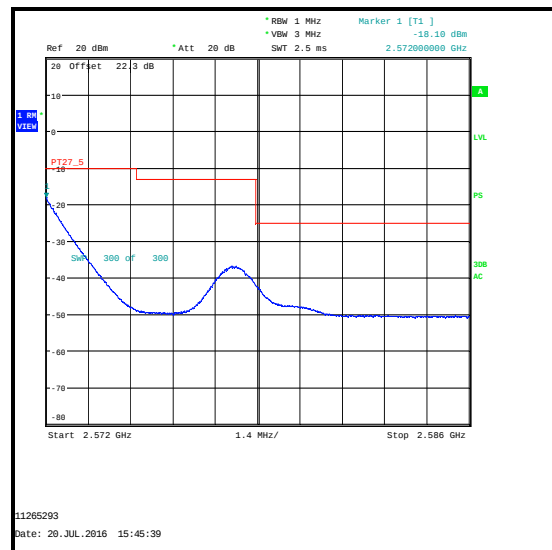
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	50	0	-33.0	-10.0	23.0	Complied
2498 to 2499	50	0	-36.8*	-10.0	26.8	Complied
2571 to 2572	50	0	-40.7*	-10.0	30.7	Complied
2572	50	0	-32.0	-10.0	22.0	Complied

**QPSK / 50 RB 0 Offset / 2483 to 2498 MHz****QPSK / 50 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 50 RB 0 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 50 RB 0 Offset / 2572 to 2586 MHz**

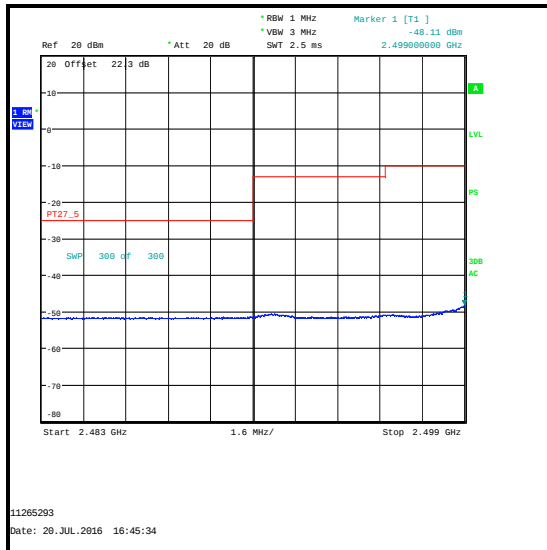
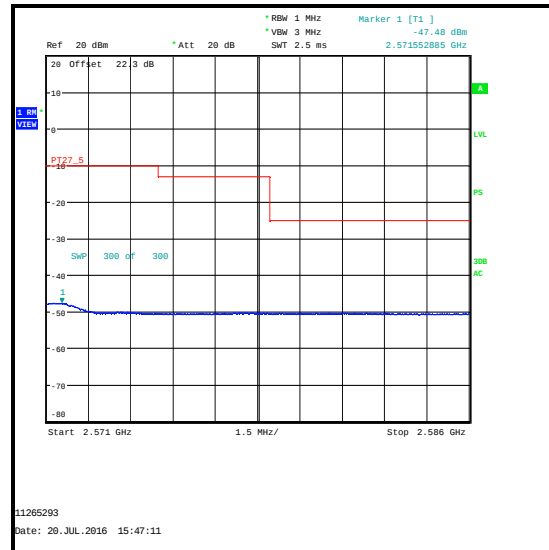
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-19.9	-10.0	9.9	Complied
2498 to 2499	1	0	-46.9*	-10.0	36.9	Complied
2571 to 2572	1	49	-47.2*	-10.0	37.2	Complied
2572	1	49	-18.1	-10.0	8.1	Complied

**QPSK / 1 RB 0 Offset / 2483 to 2498 MHz****QPSK / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 1 RB 49 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 1 RB 49 Offset / 2572 to 2586 MHz**

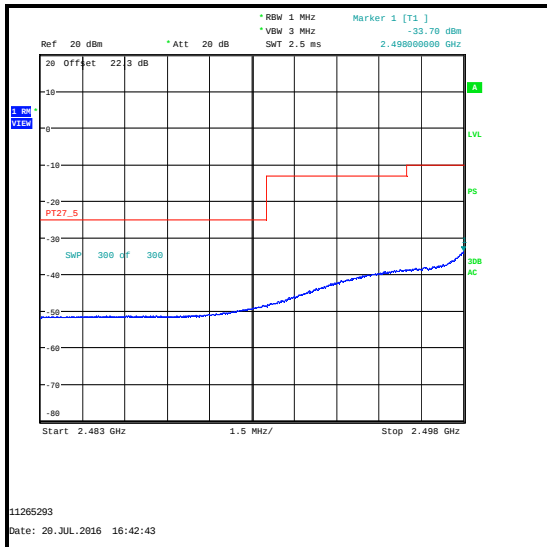
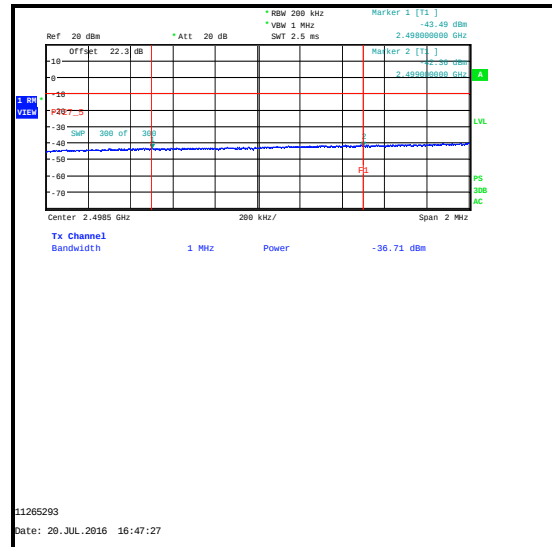
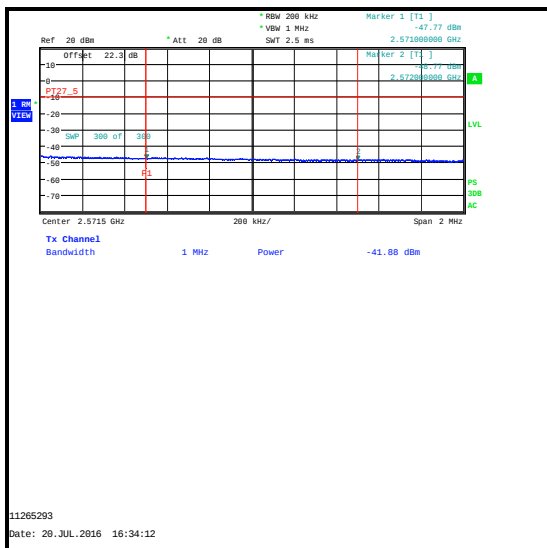
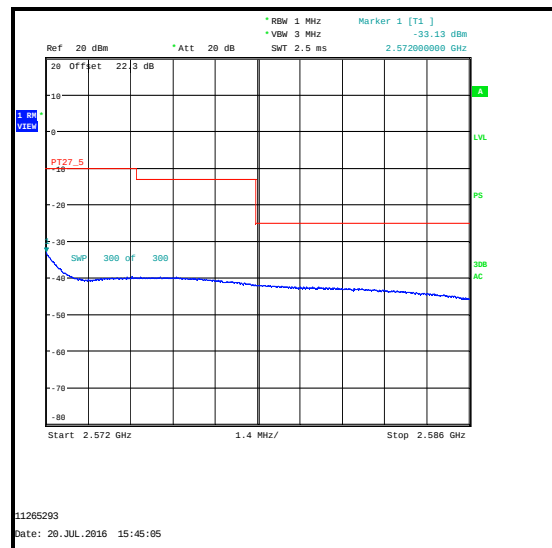
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	49	-48.1	-10.0	38.1	Complied
2571.553	1	0	-47.5	-10.0	37.5	Complied

**QPSK / 1 RB 49 Offset / 2483 to 2499 MHz****QPSK / 1 RB 0 Offset / 2571 to 2586 MHz**

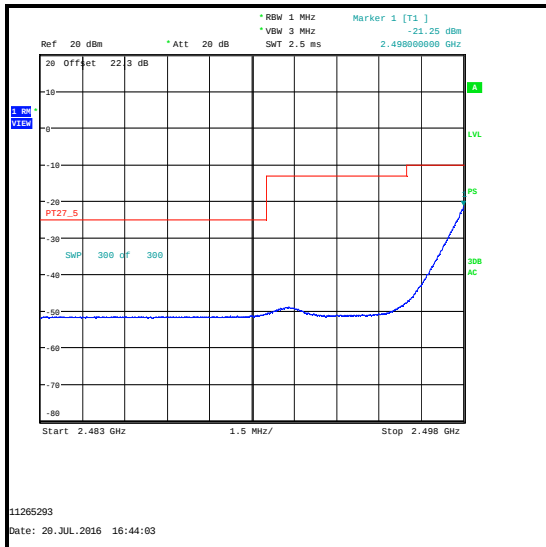
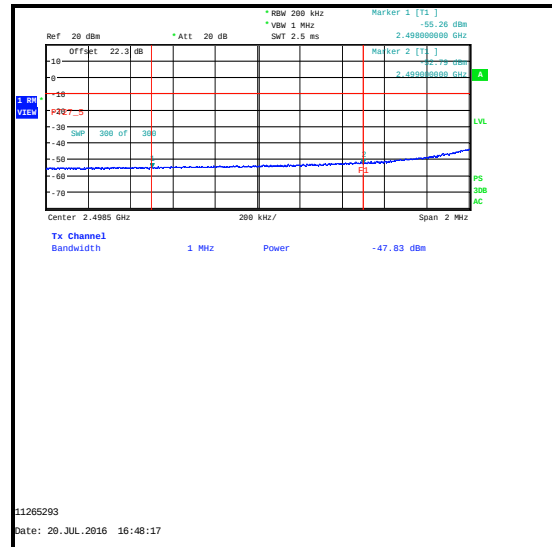
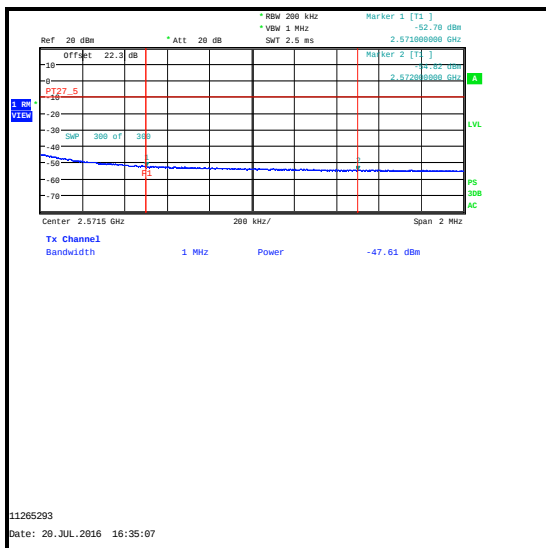
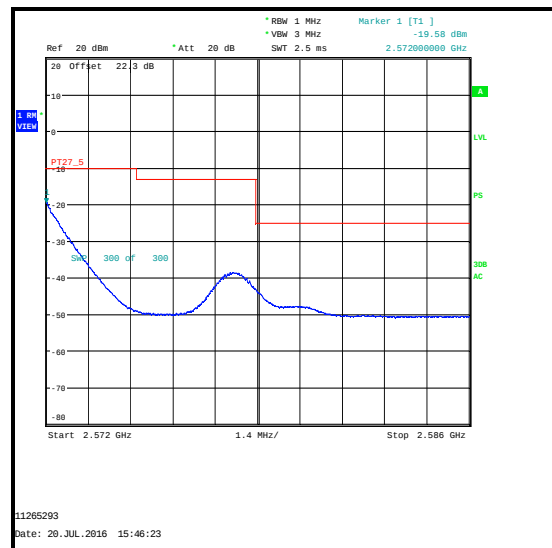
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	50	0	-33.7	-10.0	23.7	Complied
2498 to 2499	50	0	-36.7*	-10.0	26.7	Complied
2571 to 2572	50	0	-41.9*	-10.0	31.9	Complied
2572	50	0	-33.1	-10.0	23.1	Complied

**16QAM / 50 RB 0 Offset / 2483 to 2498 MHz****16QAM / 50 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 50 RB 0 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 50 RB 0 Offset / 2572 to 2586 MHz**

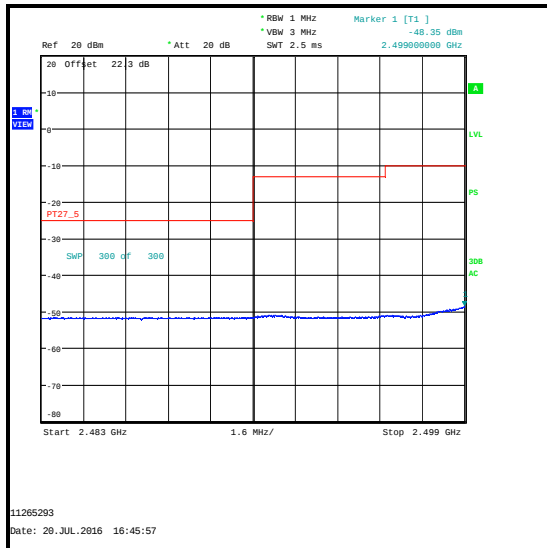
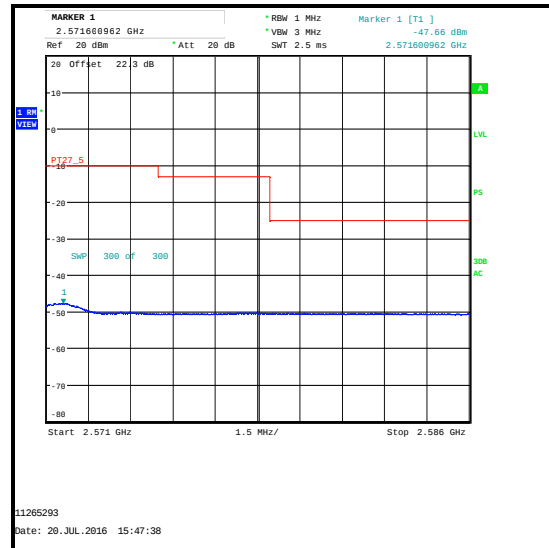
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-21.2	-10.0	11.2	Complied
2498 to 2499	1	0	-47.8*	-10.0	37.8	Complied
2571 to 2572	1	49	-47.6*	-10.0	37.6	Complied
2572	1	49	-19.6	-10.0	9.6	Complied

**16QAM / 1 RB 0 Offset / 2483 to 2498 MHz****16QAM / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 1 RB 49 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 1 RB 49 Offset / 2572 to 2586 MHz**

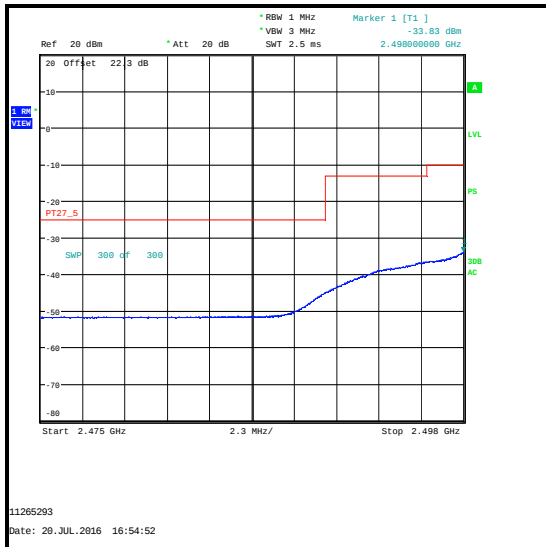
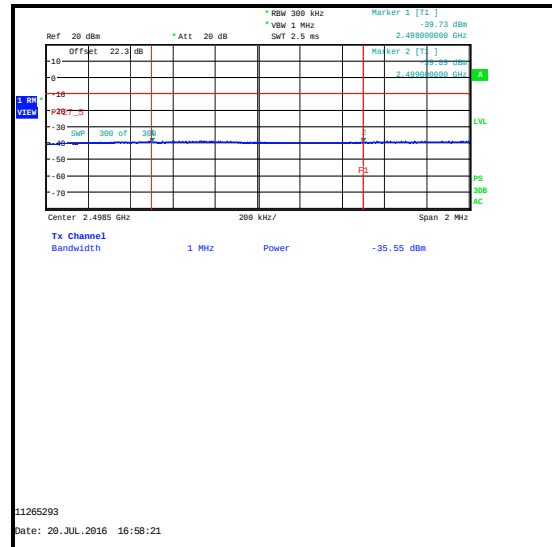
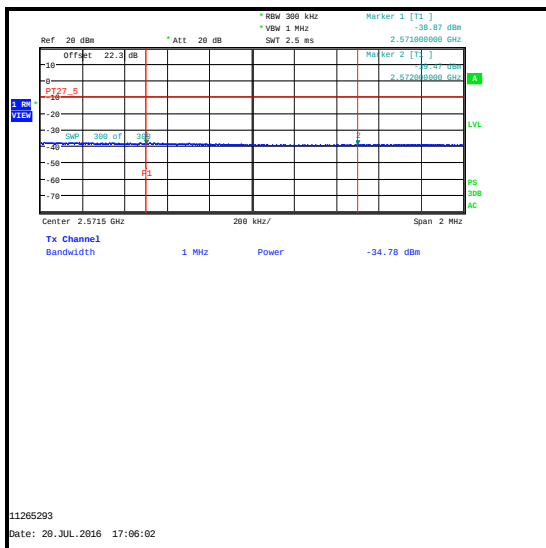
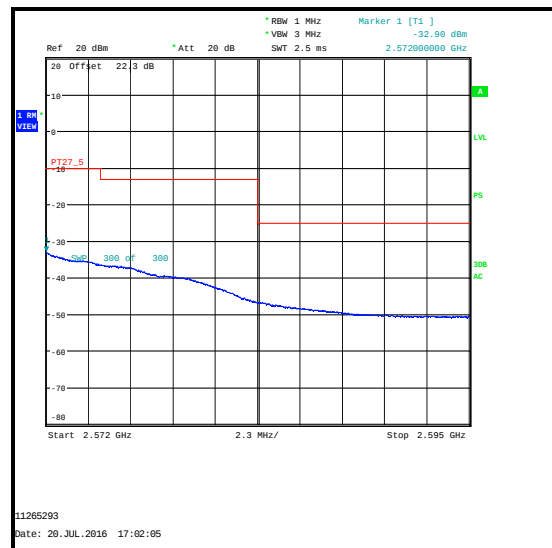
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 10 MHz Channel Bandwidth / 2483 to 2499 MHz & 2571 to 2586 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	49	-48.3	-10.0	38.3	Complied
2571.601	1	0	-47.7	-10.0	37.7	Complied

**16QAM / 1 RB 49 Offset / 2483 to 2499 MHz****16QAM / 1 RB 0 Offset / 2571 to 2586 MHz**

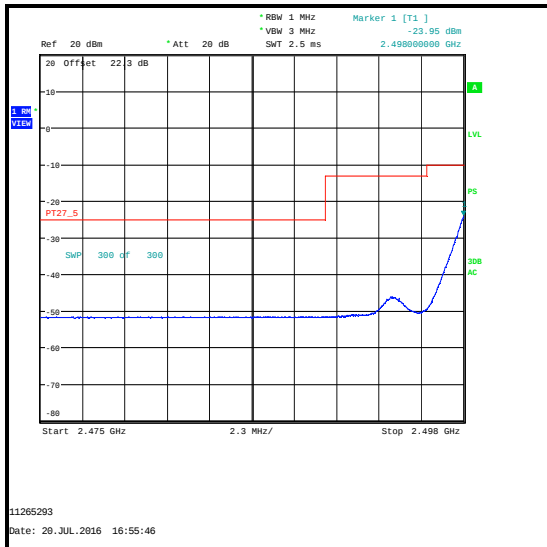
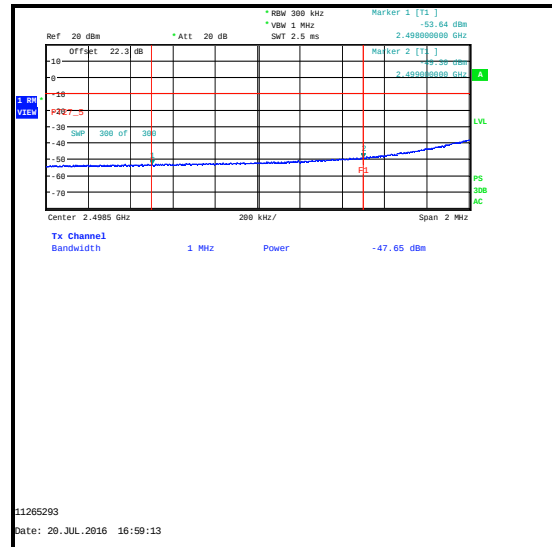
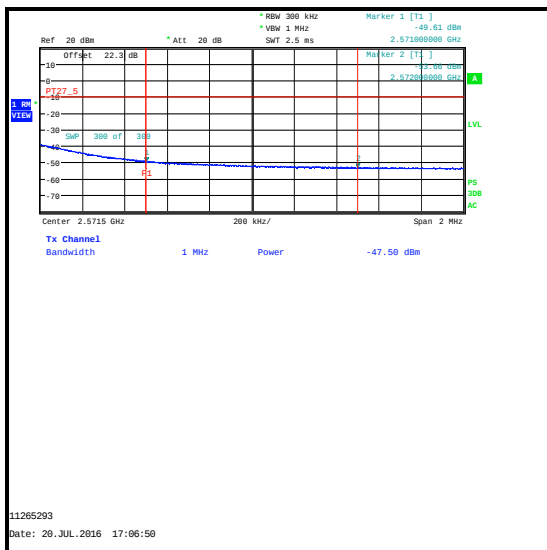
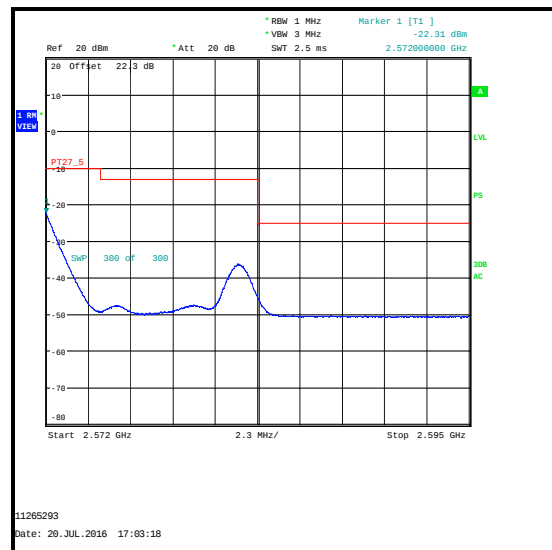
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	75	0	-33.8	-10.0	23.8	Complied
2498 to 2499	75	0	-35.5*	-10.0	25.5	Complied
2571 to 2572	75	0	-34.8*	-10.0	24.8	Complied
2572	75	0	-32.9	-10.0	22.9	Complied

**QPSK / 75 RB 0 Offset / 2475 to 2498 MHz****QPSK / 75 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 75 RB 0 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 75 RB 0 Offset / 2572 to 2595 MHz**

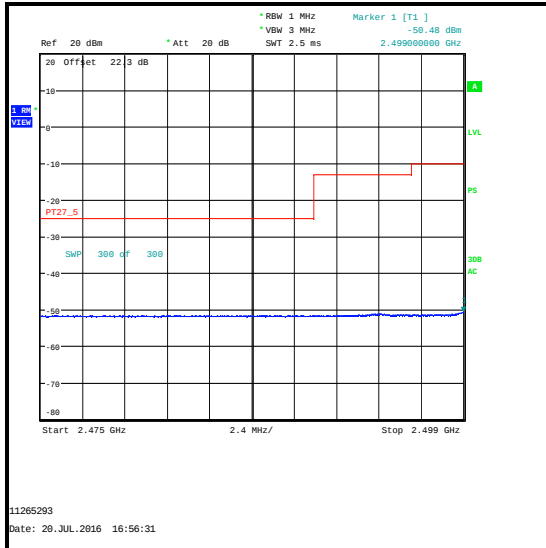
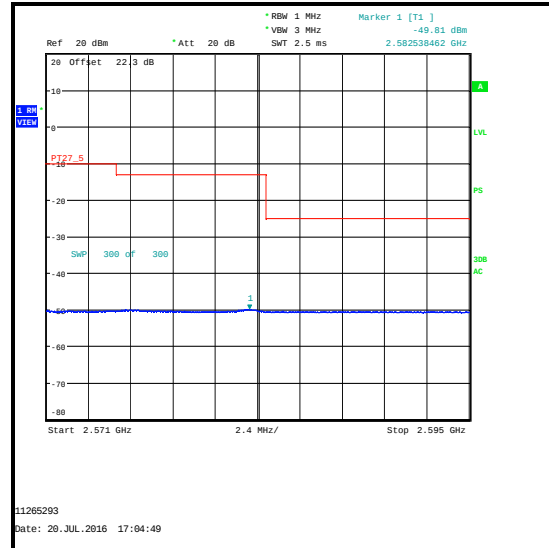
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-23.9	-10.0	13.9	Complied
2498 to 2499	1	0	-47.6*	-10.0	37.6	Complied
2571 to 2572	1	74	-47.5*	-10.0	37.5	Complied
2572	1	74	-22.3	-10.0	12.3	Complied

**QPSK / 1 RB 0 Offset / 2475 to 2498 MHz****QPSK / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 1 RB 74 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 1 RB 74 Offset / 2572 to 2595 MHz**

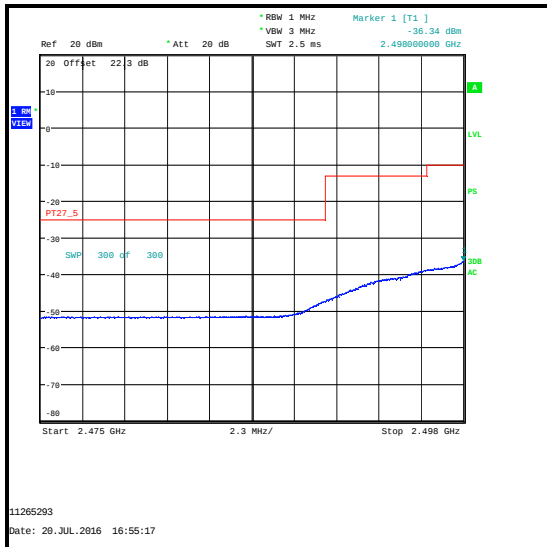
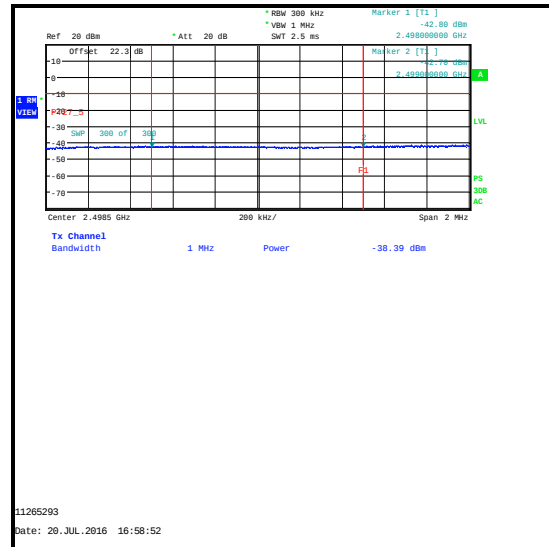
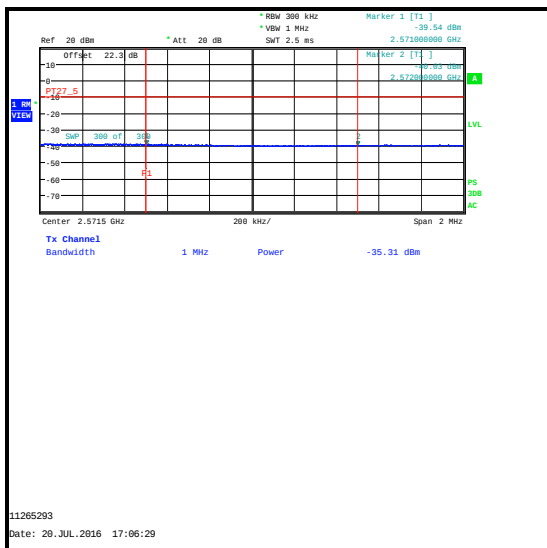
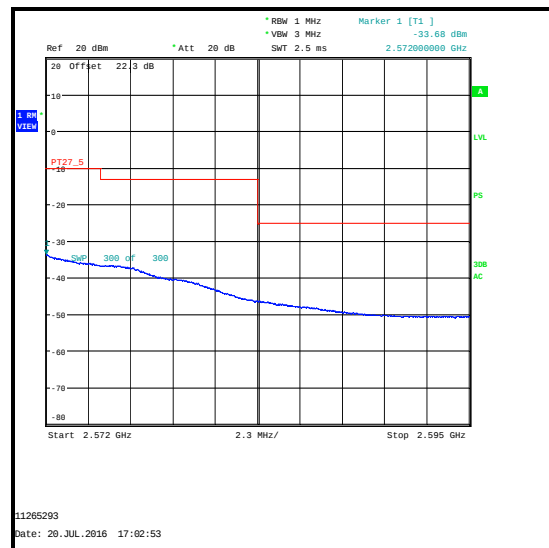
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	74	-50.5	-10.0	40.5	Complied
2582.538	1	0	-49.8	-13.0	36.8	Complied

**QPSK / 1 RB 74 Offset / 2475 to 2499 MHz****QPSK / 1 RB 0 Offset / 2571 to 2595 MHz**

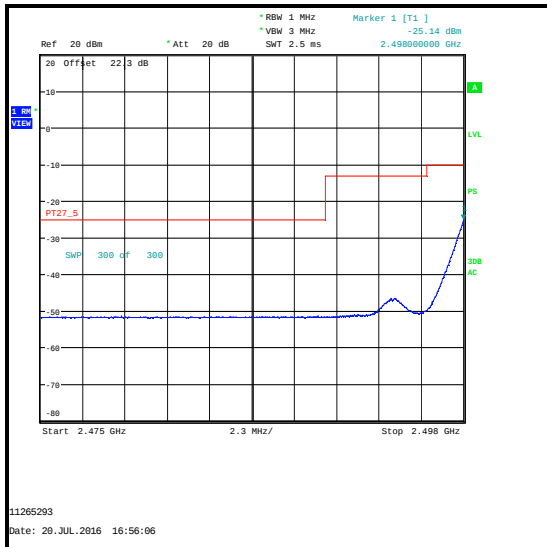
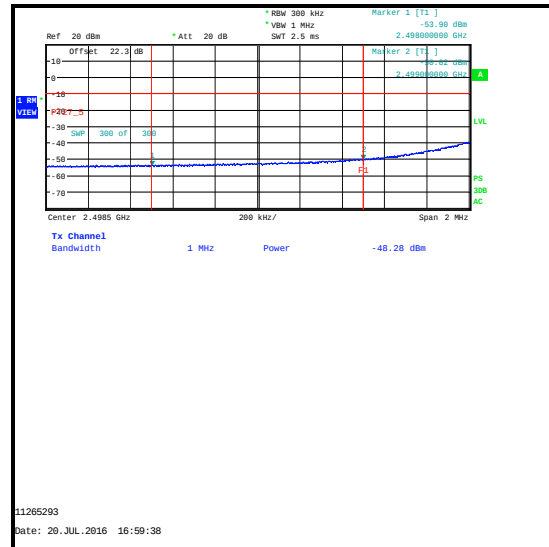
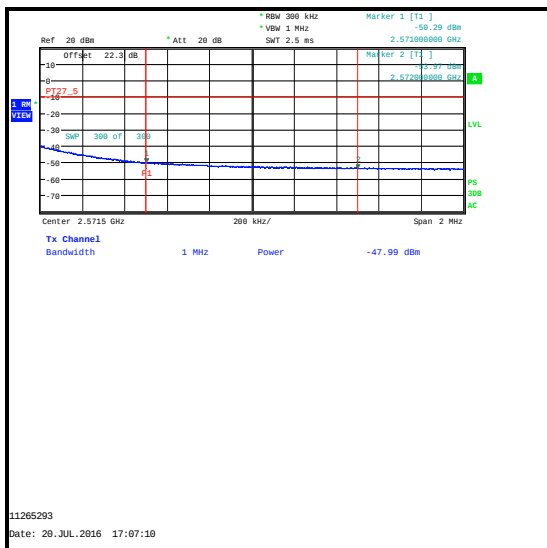
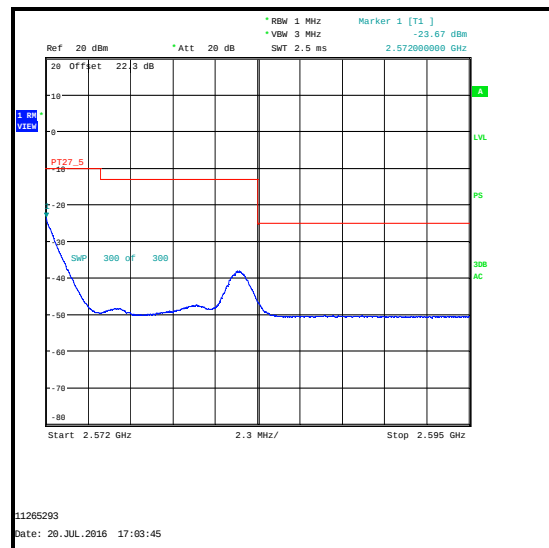
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	75	0	-36.3	-10.0	26.3	Complied
2498 to 2499	75	0	-38.4*	-10.0	28.4	Complied
2571 to 2572	75	0	-35.3*	-10.0	25.3	Complied
2572	75	0	-33.7	-10.0	23.7	Complied

**16QAM / 75 RB 0 Offset / 2475 to 2498 MHz****16QAM / 75 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 75 RB 0 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 75 RB 0 Offset / 2572 to 2595MHz**

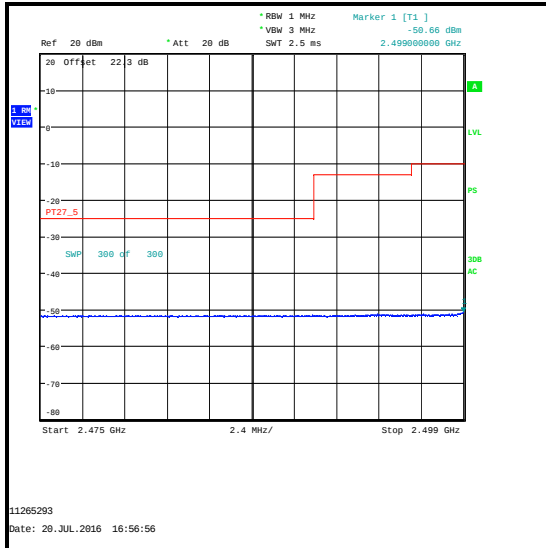
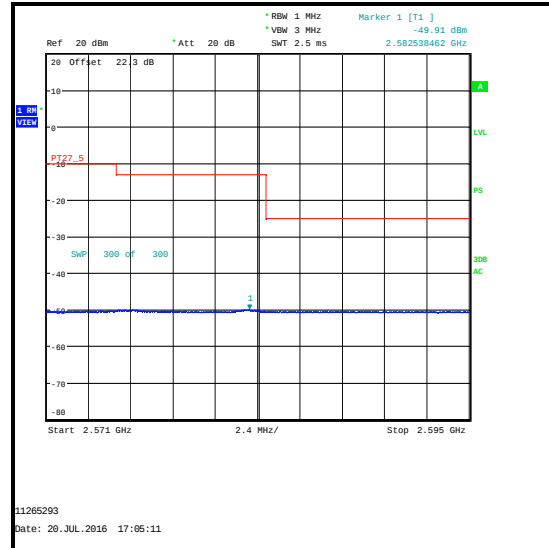
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-25.1	-10.0	15.1	Complied
2498 to 2499	1	0	-48.3*	-10.0	38.3	Complied
2571 to 2572	1	74	-48.0*	-10.0	38.0	Complied
2572	1	74	-23.7	-10.0	13.7	Complied

**16QAM / 1 RB 0 Offset / 2475 to 2498 MHz****16QAM / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 1 RB 74 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 1 RB 74 Offset / 2572 to 2595 MHz**

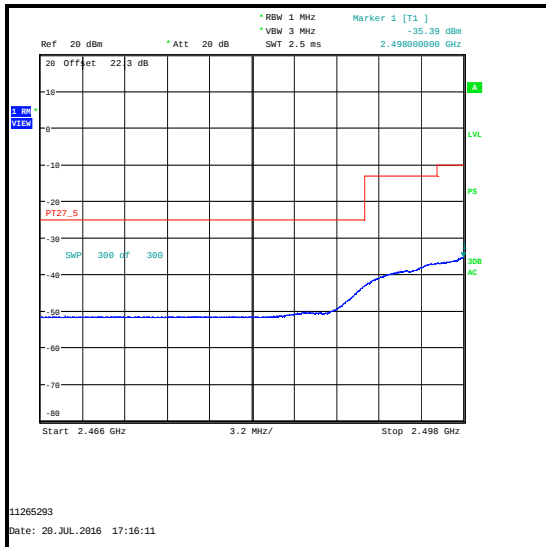
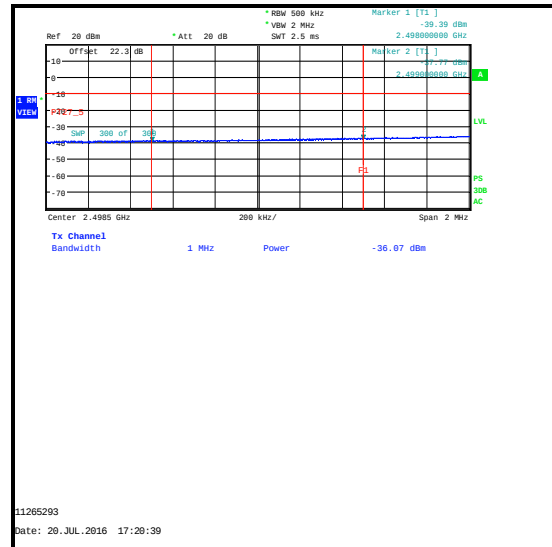
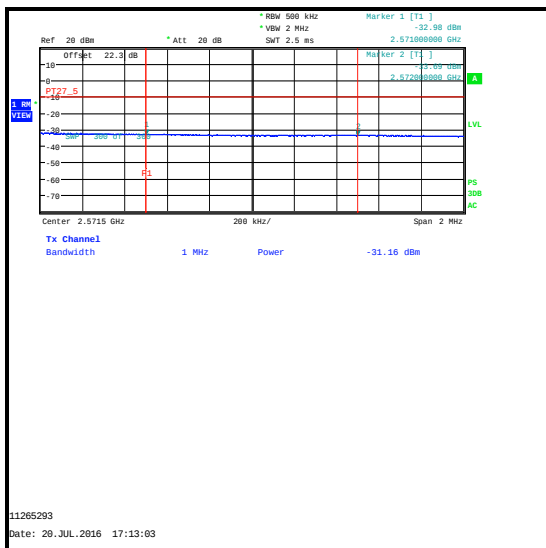
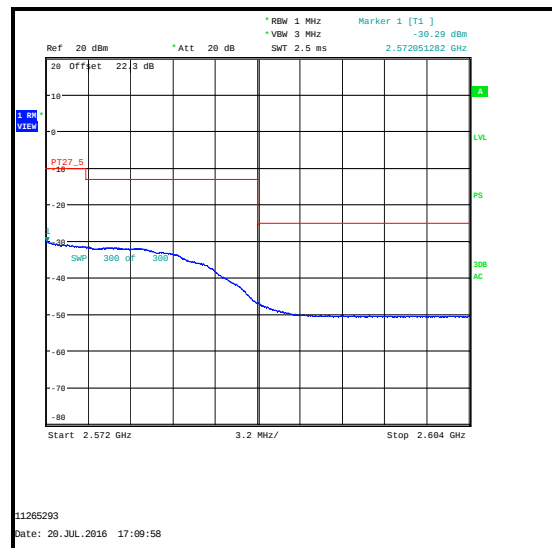
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 15 MHz Channel Bandwidth / 2475 to 2499 MHz & 2571 to 2595 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	74	-50.7	-10.0	40.7	Complied
2582.538	1	0	-49.9	-13.0	36.9	Complied

**16QAM / 1 RB 74 Offset / 2475 to 2499 MHz****16QAM / 1 RB 0 Offset / 2571 to 2595 MHz**

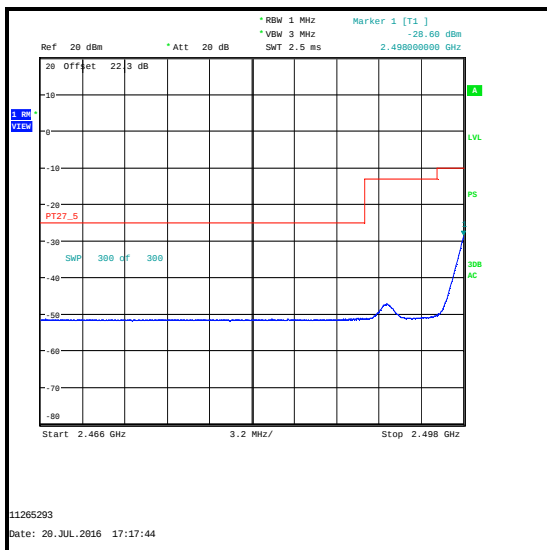
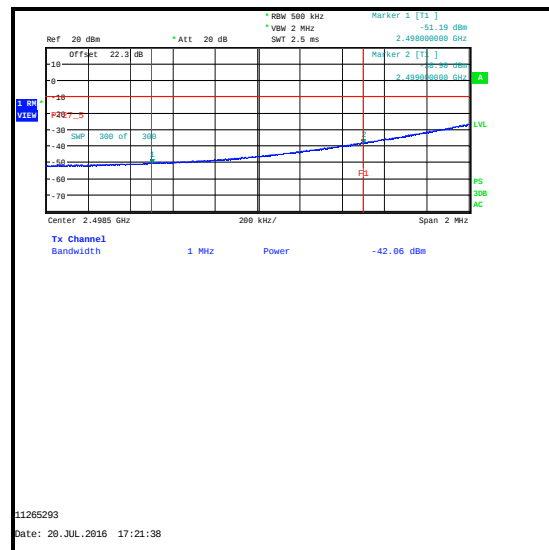
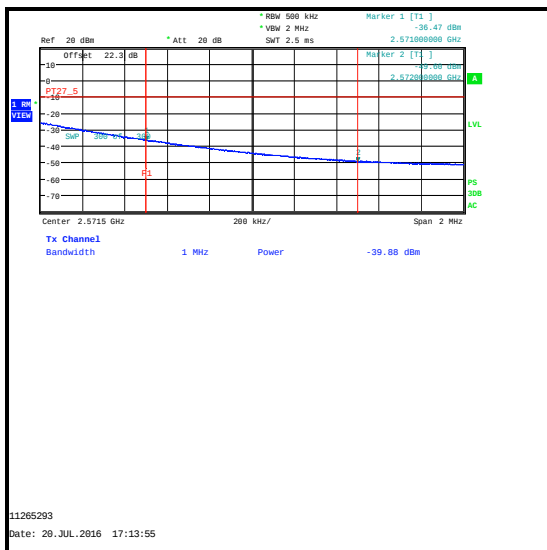
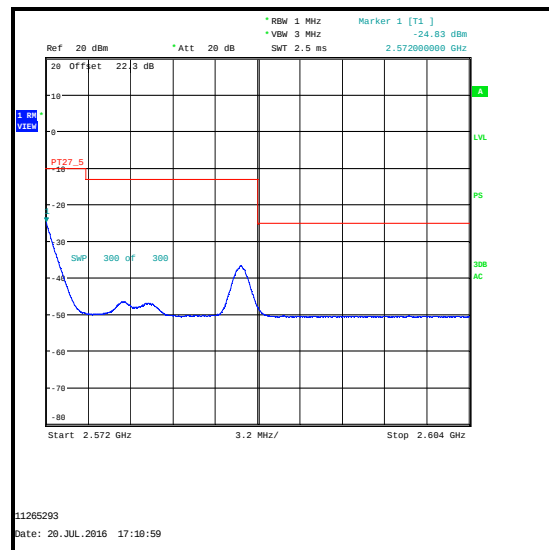
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	100	0	-35.4	-10.0	25.4	Complied
2498 to 2499	100	0	-36.1*	-10.0	26.1	Complied
2571 to 2572	100	0	-31.2*	-10.0	21.2	Complied
2572.051	100	0	-30.3	-10.0	20.3	Complied

**QPSK / 100 RB 0 Offset / 2466 to 2498 MHz****QPSK / 100 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 100 RB 0 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 100 RB 0 Offset / 2572 to 2604 MHz**

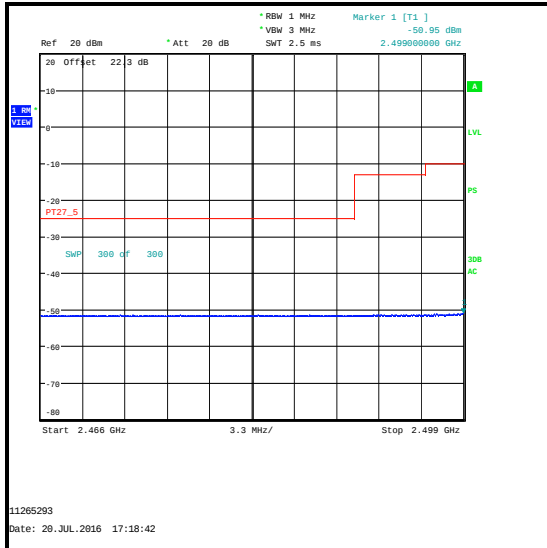
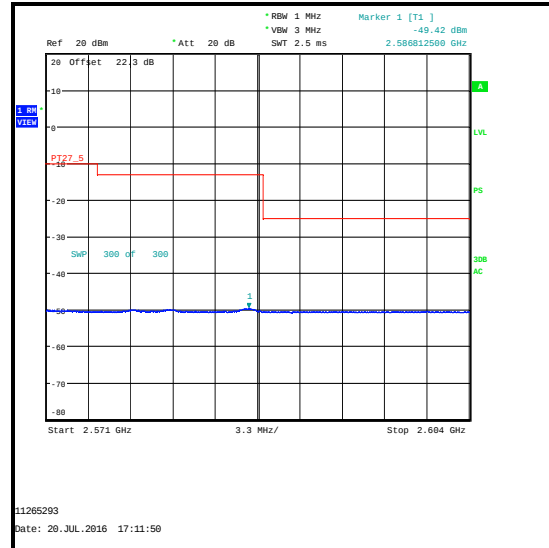
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-28.6	-10.0	18.6	Complied
2498 to 2499	1	0	-42.1*	-10.0	32.1	Complied
2571 to 2572	1	99	-39.9*	-10.0	29.9	Complied
2572	1	99	-24.8	-10.0	14.8	Complied

**QPSK / 1 RB 0 Offset / 2466 to 2498 MHz****QPSK / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****QPSK / 1 RB 99 Offset / 2571 to 2572 MHz / Integrated level****QPSK / 1 RB 99 Offset / 2572 to 2604 MHz**

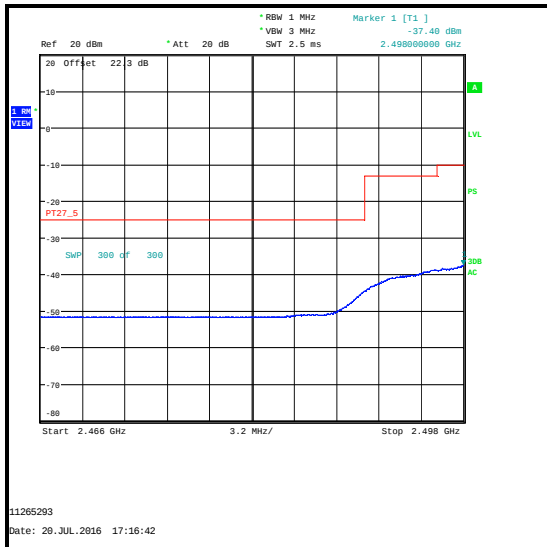
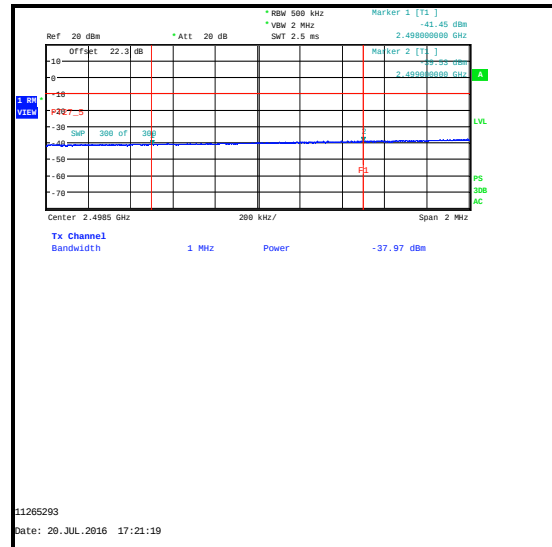
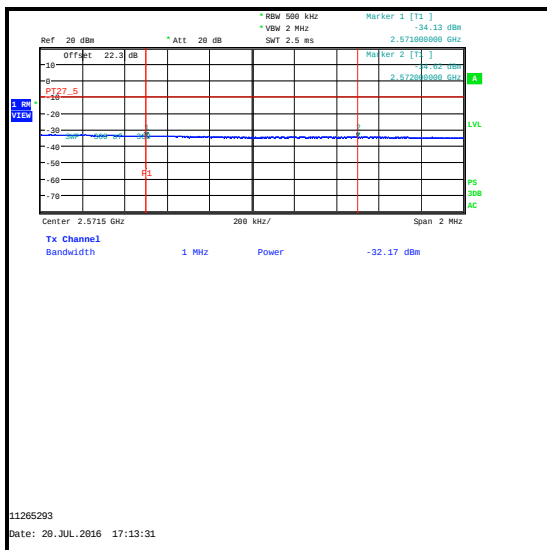
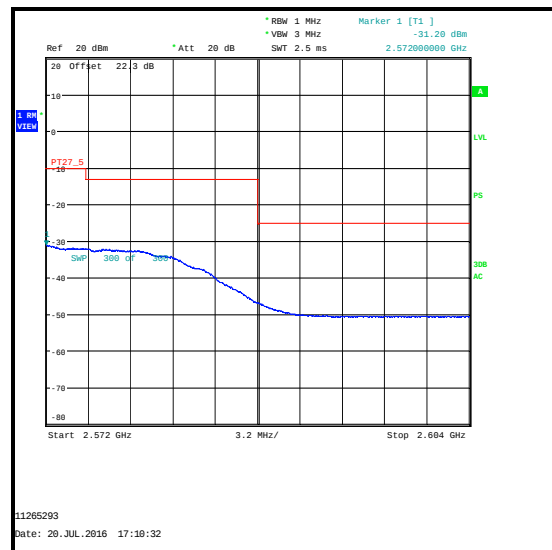
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	99	-50.9	-10.0	40.9	Complied
2586.813	1	0	-49.4	-13.0	36.4	Complied

**QPSK / 1 RB 99 Offset / 2466 to 2499 MHz****QPSK / 1 RB 0 Offset / 2571 to 2604 MHz**

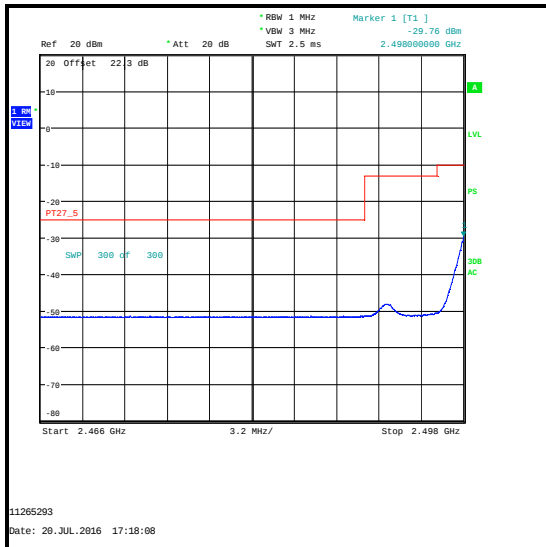
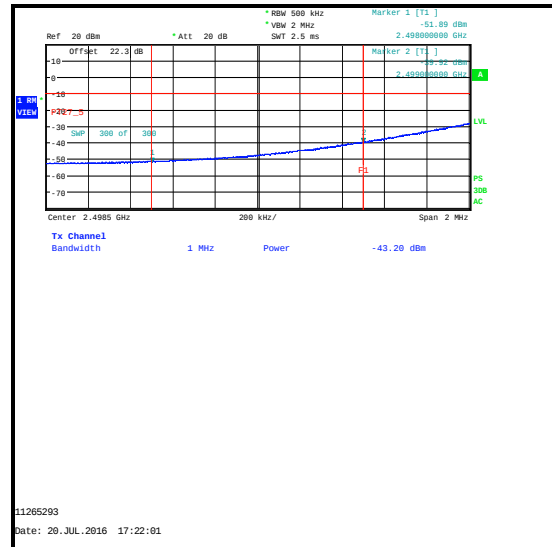
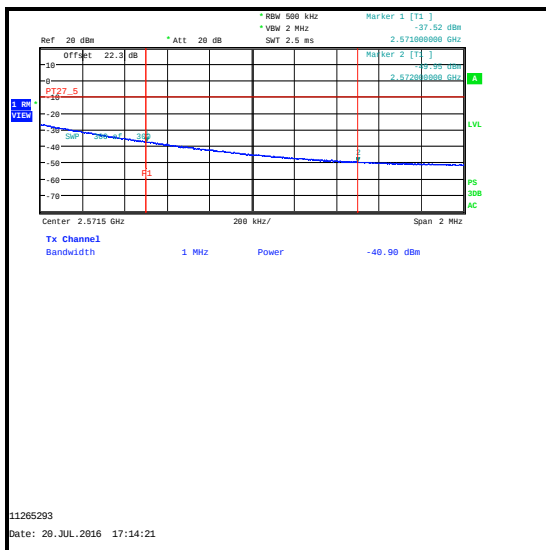
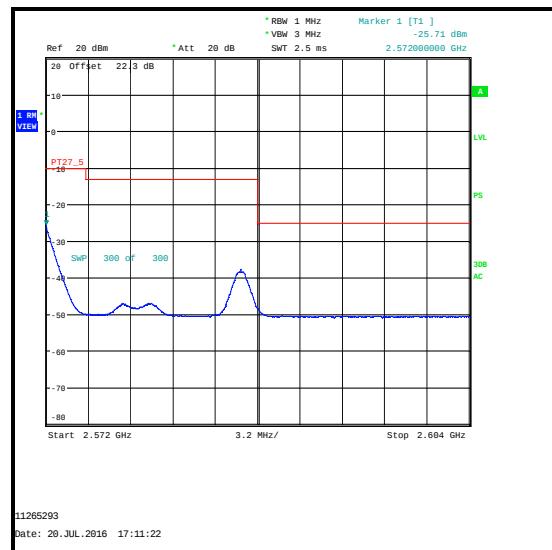
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	100	0	-37.4	-10.0	27.4	Complied
2498 to 2499	100	0	-38.0*	-10.0	28.0	Complied
2571 to 2572	100	0	-32.2*	-10.0	22.2	Complied
2572	100	0	-31.2	-10.0	21.2	Complied

**16QAM / 100 RB 0 Offset / 2466 to 2498 MHz****16QAM / 100 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 100 RB 0 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 100 RB 0 Offset / 2572 to 2604 MHz**

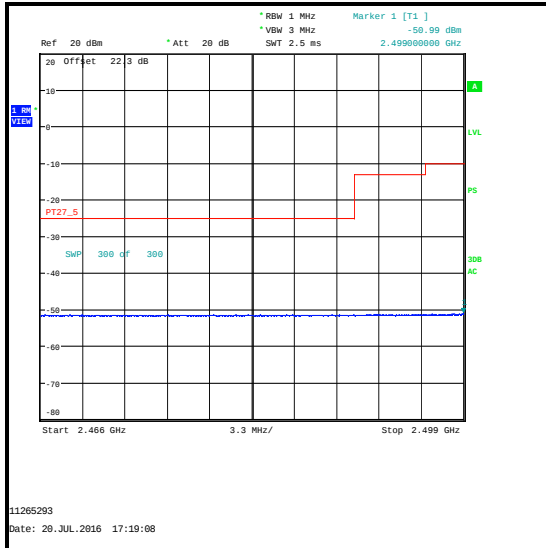
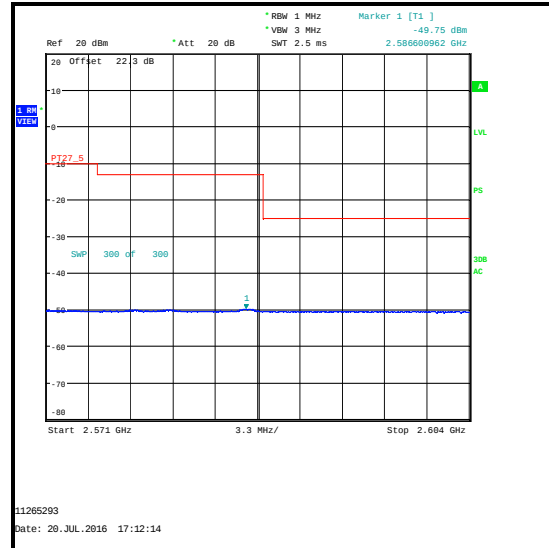
Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2498	1	0	-29.8	-10.0	19.8	Complied
2498 to 2499	1	0	-43.2*	-10.0	33.2	Complied
2571 to 2572	1	99	-40.9*	-10.0	30.9	Complied
2572	1	99	-25.7	-10.0	15.7	Complied

**16QAM / 1 RB 0 Offset / 2466 to 2498 MHz****16QAM / 1 RB 0 Offset / 2498 to 2499 MHz / Integrated level****16QAM / 1 RB 99 Offset / 2571 to 2572 MHz / Integrated level****16QAM / 1 RB 99 Offset / 2572 to 2604MHz**

Transmitter Conducted Emissions at Band Edges $\pm$ X MHz (continued)**Results: 20 MHz Channel Bandwidth / 2466 to 2499 MHz & 2571 to 2604 MHz / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499	1	24	-51.0	-10.0	41.0	Complied
2586.601	1	0	-49.7	-13.0	36.7	Complied

**16QAM / 1 RB 99 Offset / 2466 to 2499 MHz****16QAM / 1 RB 0 Offset / 2571 to 2604 MHz****Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2002	Thermohygrometer	Testo	608-H1	45041825	02 Apr 2017	12
M1630	Test Receiver	Rohde & Schwarz	ESU40	100233	17 Feb 2017	12
A2504	Directional Coupler	AtlanTecRF	CDC-003060-10	13122501839	Calibrated before use	-
A2507	Attenuator	AtlanTecRF	AN18-10	821846#2	Calibrated before use	-
M199	Power Meter	Rohde & Schwarz	NRVS	827023/075	11 Apr 2018	24
M1267	Thermal Power Sensor	Rohde & Schwarz	NRV-Z52	100155	15 Apr 2018	24
S0579	DC Power Supply	TTi	EX1810R	444110	Calibrated before use	-
M1269	Multimeter	Fluke	179	90250210	13 May 2017	12

5.2.7. Transmitter Radiated Spurious Emissions - LAT**Test Summary:**

Test Engineer:	Andrew Edwards	Test Dates:	16 July 2016 20 July 2016
Test Sample IMEI:	358640070286456		

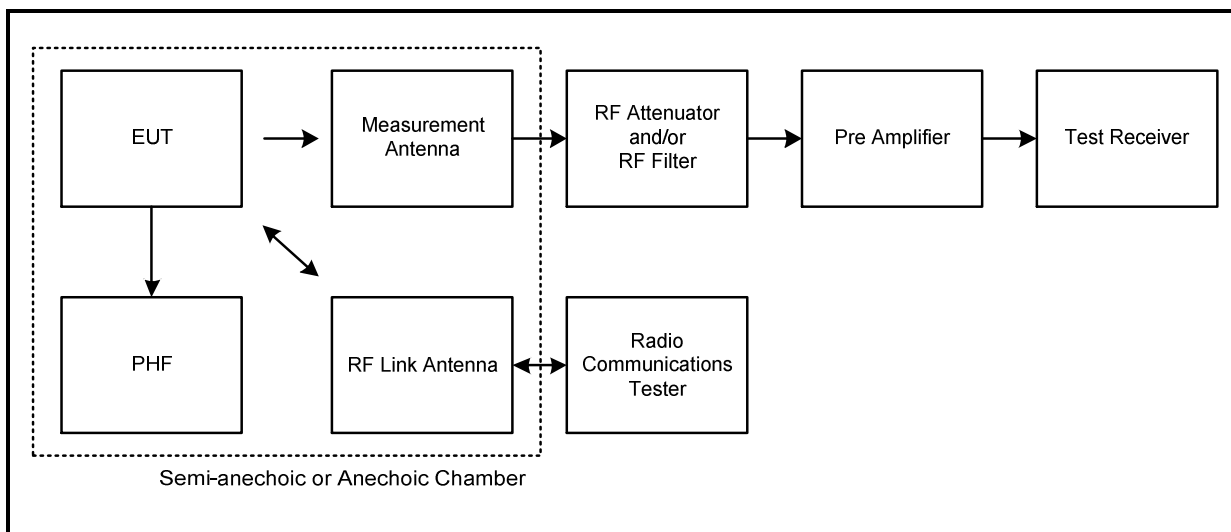
FCC Reference:	Parts 2.1053 & 27.53(m)(4)
Test Method Used:	KDB 971168 Section 6.1 referencing FCC Part 2.1053
Frequency Range:	30 MHz to 26 GHz
Configuration:	10 MHz, QPSK, 1RB, 0 Offset

Environmental Conditions:

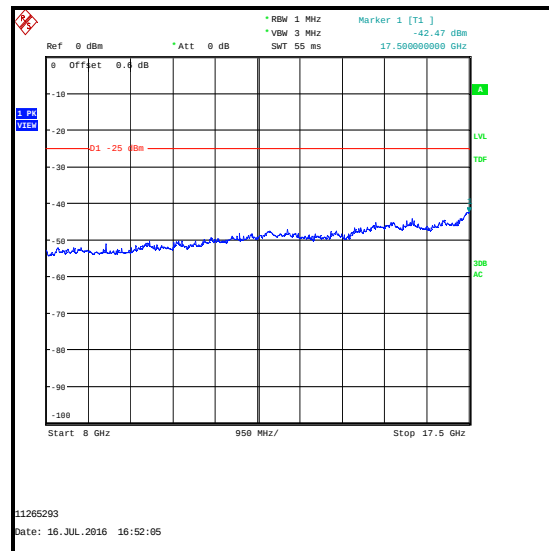
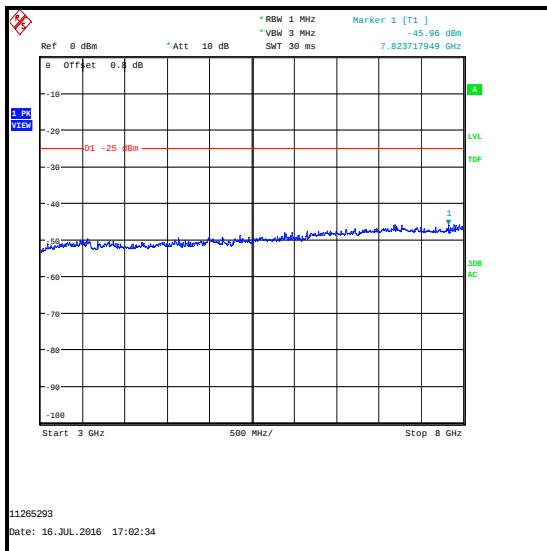
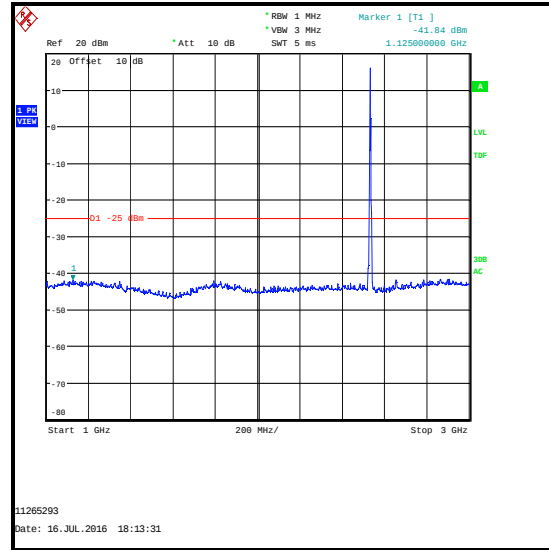
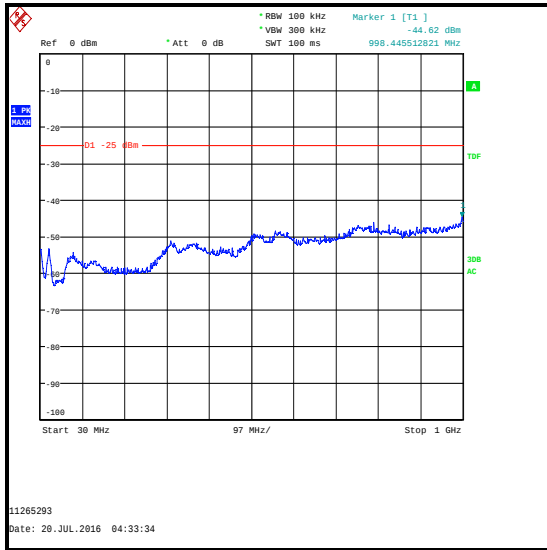
Temperature (°C):	25 to 27
Relative Humidity (%):	43 to 46

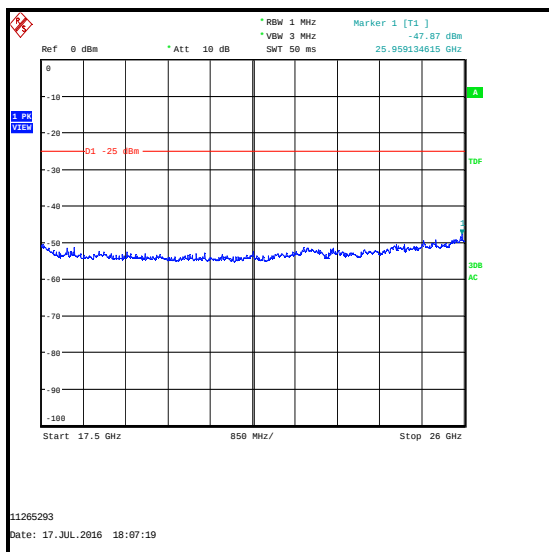
Note(s):

1. The EUT was set to transmit with a 10 MHz channel bandwidth with QPSK modulation applied and 1 resource block with 0 offset, as this was found to be the worst case modulation scheme with regards to emissions after preliminary investigations and was therefore deemed to be the worst case.
2. The emission seen on the 1 GHz to 3 GHz plot at approximately 2535 MHz is the EUT carrier.
3. No spurious emissions were detected above the measurement system noise floor therefore the highest peak noise floor reading of the measuring receiver was recorded in the table below.
4. Middle channel results are recorded in this report and are representative of bottom and top channel results which are held on the UL IT server and available for inspection on request.
5. Pre-scan measurements below 1 GHz are performed on separate plots with different transducer factors for vertical and horizontal polarisation. The pre-scan plot for 30 MHz to 1 GHz in this test report is for vertical only. All other plots are stored on the company server and are available if required.
6. Measurements below 1 GHz were performed in a semi-anechoic chamber (Asset Number K0017) 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.
7. Pre-scans above 1 GHz were performed in a semi-anechoic chamber (Asset Number K0017) 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. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
8. Radiated spurious emission testing between 150 kHz and 30 MHz was performed for support of the NFC test report. No spurious emissions were observed above the noise floor of the measurement system.

Transmitter Radiated Spurious Emissions – LAT (continued)**Test setup for radiated measurements:****Results: Middle Channel**

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
1125.000	-41.8	-25.0	16.8	Complied

Transmitter Radiated Spurious Emissions – LAT (continued)

Transmitter Radiated Spurious Emissions – LAT (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	22 Apr 2017	12
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	17 May 2017	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	21 Mar 2017	12
A2888	Antenna	Schwarzbeck	VULB 9163	9163-941	07 Apr 2017	12
A2889	Antenna	Schwarzbeck	BBHA 9120 B	BBHA 9120 B	07 Apr 2017	12
A2890	Antenna	Schwarzbeck	HWRD 750	014	06 May 2017	12
A2892	Antenna	Schwarzbeck	BBHA 9170	9170-727	07 Apr 2017	12
A2863	Pre-Amplifier	Agilent	8449B	3008A02100	07 Jan 2017	12
A2891	Pre-Amplifier	Schwarzbeck	BBV 9718	9718-306	07 Apr 2017	12
A2893	Pre-Amplifier	Schwarzbeck	BBV 9721	9721-021	07 Apr 2017	12
S0582	Power Supply	Schwarzbeck	PS9721	00005	Calibrated before use	-
M1818	Multimeter	Fluke	79 Series II	71811580	27 Apr 2017	12
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	19 May 2017	12
A2914	High Pass Filter	AtlanTecRF	AFH-03000	2155	19 May 2017	12
A2947	High Pass Filter	AtlanTecRF	AFH-07000	1601900001	01 May 2017	12

5.2.8. Transmitter Radiated Spurious Emissions - UAT**Test Summary:**

Test Engineer:	Andrew Edwards	Test Dates:	13 July 2016 to 17 July 2016
Test Sample IMEI:	358460070309175		

FCC Reference:	Parts 2.1053 & 27.53(m)(4)
Test Method Used:	KDB 971168 Section 6.1 referencing FCC Part 2.1053
Frequency Range:	30 MHz to 26 GHz
Configuration:	10 MHz, QPSK, 1RB, 0 Offset

Environmental Conditions:

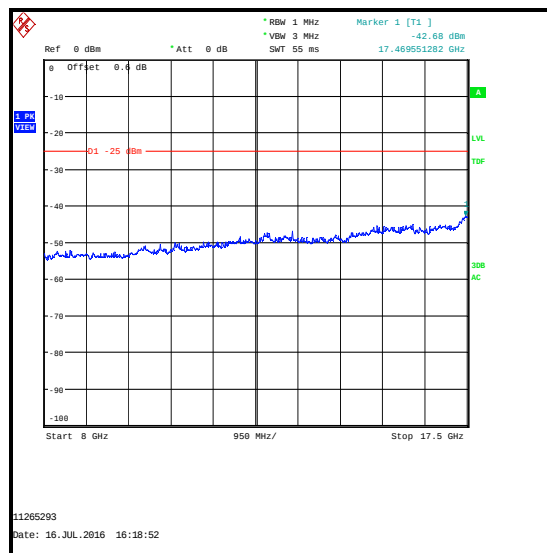
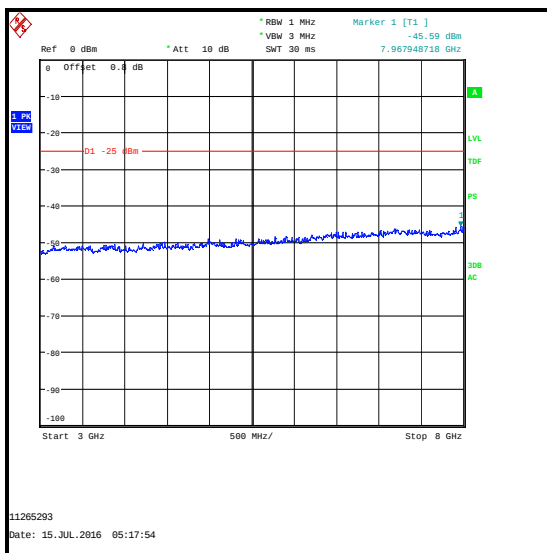
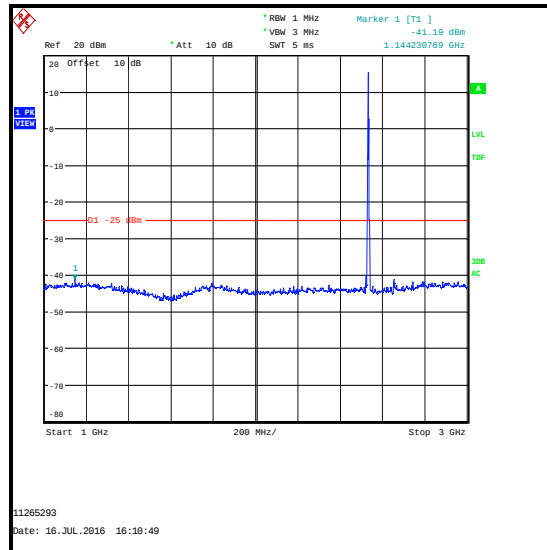
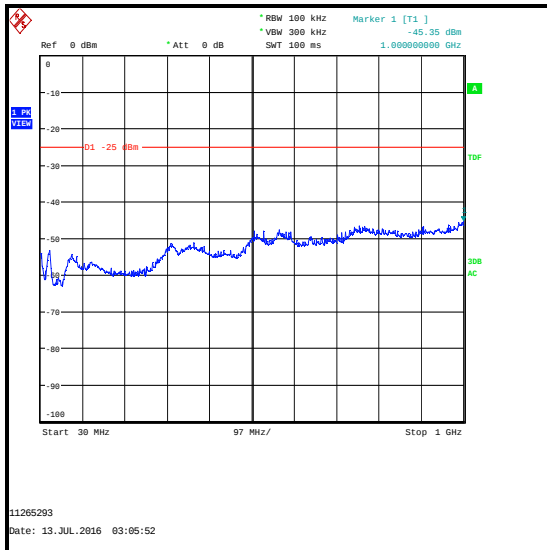
Temperature (°C):	25 to 26
Relative Humidity (%):	42 to 43

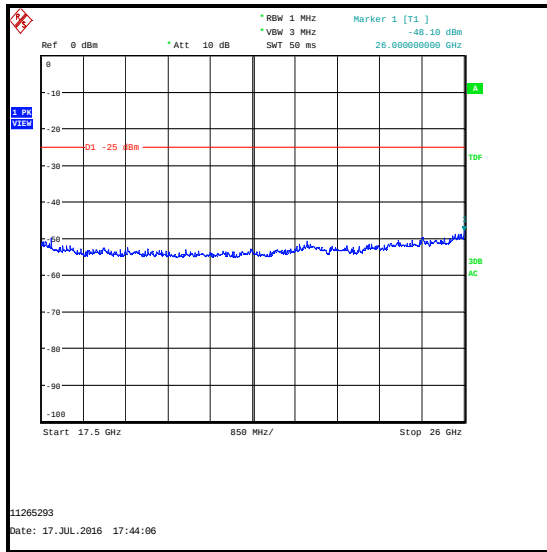
Note(s):

1. The EUT was set to transmit with a 10 MHz channel bandwidth with QPSK modulation applied and 1 resource block with 0 offset, as this was found to be the worst case modulation scheme with regards to emissions after preliminary investigations and was therefore deemed to be the worst case.
2. The emission seen on the 1 GHz to 3 GHz plot at approximately 2535 MHz is the EUT carrier.
3. No spurious emissions were detected above the measurement system noise floor therefore the highest peak noise floor reading of the measuring receiver was recorded in the table below.
4. Middle channel results are recorded in this report and are representative of bottom and top channel results which are held on the UL IT server and available for inspection on request.
5. Pre-scan measurements below 1 GHz are performed on separate plots with different transducer factors for vertical and horizontal polarisation. The pre-scan plot for 30 MHz to 1 GHz in this test report is for vertical only. All other plots are stored on the company server and are available if required.
6. Measurements below 1 GHz were performed in a semi-anechoic chamber (Asset Number K0017) 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.
7. Pre-scans above 1 GHz were performed in a semi-anechoic chamber (Asset Number K0017) 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. Maximum emission levels were determined by height searching the measurement antenna over the range 1 metre to 4 metres.
8. Radiated spurious emission testing between 150 kHz and 30 MHz was performed for support of the NFC test report. No spurious emissions were observed above the noise floor of the measurement system.

Results: Middle Channel

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
1144.231	-41.2	-25.0	16.2	Complied

Transmitter Radiated Spurious Emissions – UAT (continued)

Transmitter Radiated Spurious Emissions – UAT (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	22 Apr 2017	12
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	17 May 2017	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	21 Mar 2017	12
A2889	Antenna	Schwarzbeck	BBHA 9120 B	BBHA 9120 B	07 Apr 2017	12
A2890	Antenna	Schwarzbeck	HWRD 750	014	06 May 2017	12
A2892	Antenna	Schwarzbeck	BBHA 9170	9170-727	07 Apr 2017	12
A2863	Pre-Amplifier	Agilent	8449B	3008A02100	07 Jan 2017	12
A2891	Pre-Amplifier	Schwarzbeck	BBV 9718	9718-306	07 Apr 2017	12
A2893	Pre-Amplifier	Schwarzbeck	BBV 9721	9721-021	07 Apr 2017	12
S0582	Power Supply	Schwarzbeck	PS9721	00005	Calibrated before use	-
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	19 May 2017	12
A2914	High Pass Filter	AtlanTecRF	AFH-03000	2155	19 May 2017	12
A2947	High Pass Filter	AtlanTecRF	AFH-07000	1601900001	01 May 2017	12

5.2.9. Transmitter Radiated Emissions at Band Edges - LAT**Test Summary:**

Test Engineer:	Andrew Edwards	Test Dates:	19 July 2016 & 20 July 2016
Test Sample IMEI:	358640070286456		

FCC Reference:	Parts 2.1053 & 27.53(m)(4)
Test Method Used:	KDB 971168 Section 6.1 referencing FCC Part 27.53(m)(6)

Environmental Conditions:

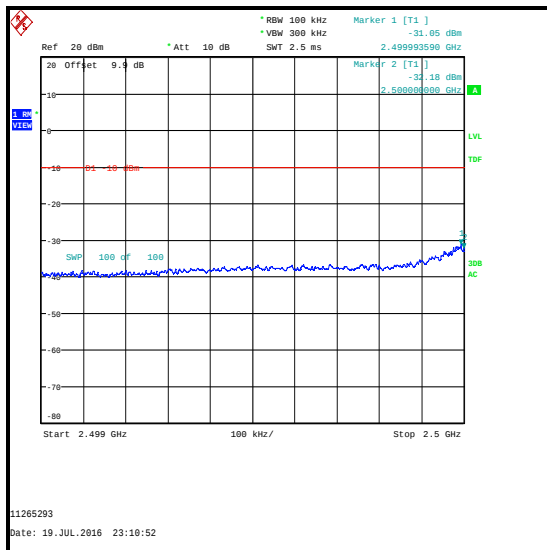
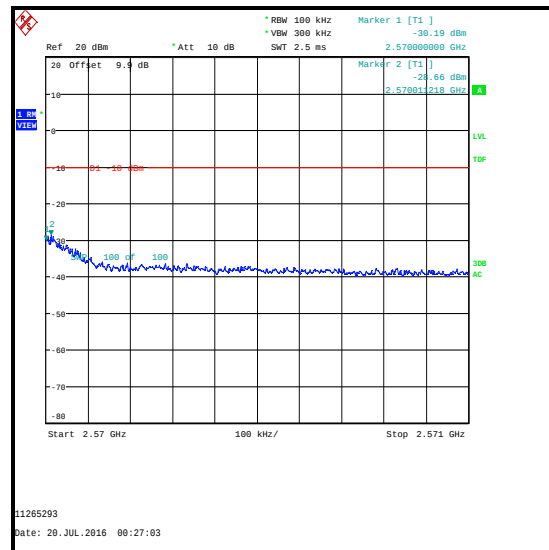
Temperature (°C):	26 to 27
Relative Humidity (%):	41

Note(s):

1. Measurements were performed with the EUT transmitting with QPSK and 16QAM modulation schemes, with resource blocks settings as detailed in section 4.3 of this report.
2. 5 MHz Channel bandwidth: In the first 1.0 MHz immediately outside and adjacent to the operating band, the test receiver resolution bandwidth was set to 100 kHz (>2% of the emission bandwidth) and video bandwidth of 300 kHz (three times the resolution bandwidth).
3. 10 MHz Channel bandwidth: In the first 1.0 MHz immediately outside and adjacent to the operating band, the test receiver resolution bandwidth was set to 200 kHz (>2% of the emission bandwidth) and video bandwidth of 1 MHz (as close to > three times the resolution bandwidth as the test receiver allowed).
4. 15 MHz Channel bandwidth: In the first 1.0 MHz immediately outside and adjacent to the operating band, the test receiver resolution bandwidth was set to 300 kHz (>2% of the emission bandwidth) and video bandwidth of 1 MHz (as close to > three times the resolution bandwidth as the test receiver allowed).
5. 20 MHz Channel bandwidth: In the first 1.0 MHz immediately outside and adjacent to the operating band, the test receiver resolution bandwidth was set to 500 kHz (>2% of the emission bandwidth) and video bandwidth of 2 MHz (as close to > three times the resolution bandwidth as the test receiver allowed).
6. In accordance with Part 27.53(m)(6), a narrower resolution bandwidth may be used, provided that the measured power is integrated over the full required measurement bandwidth. For 20 MHz Channel bandwidth, this was applied for the first 1 MHz immediately outside and adjacent to the operating band, using both available modulation schemes for the following cases: transmitting 1 resource block with 0 resource blocks offset for the lower band edge and transmitting 1 resource block with 99 resource blocks offset for the upper band edge.
7. *Integrated level (dBm).

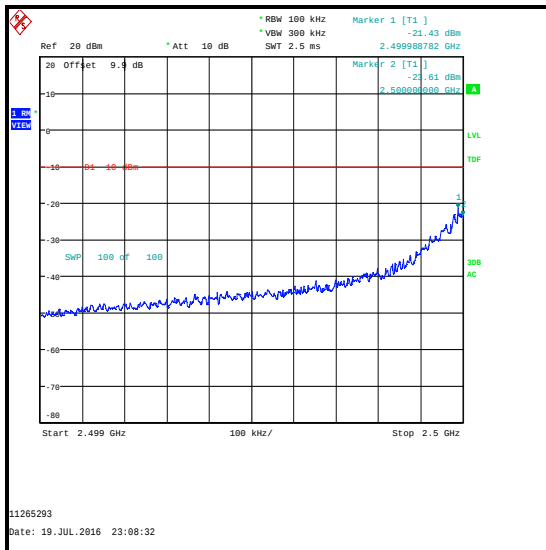
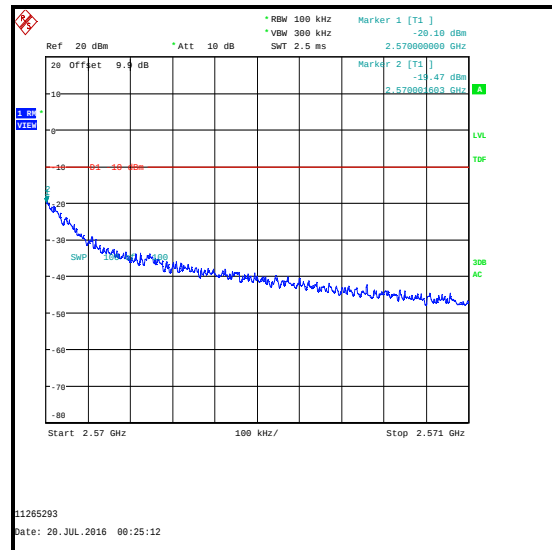
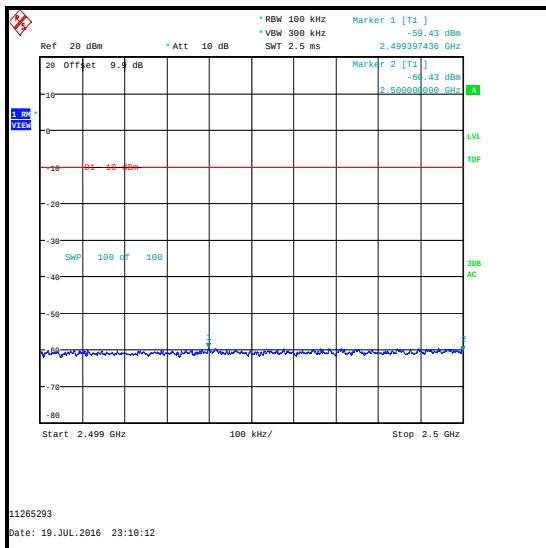
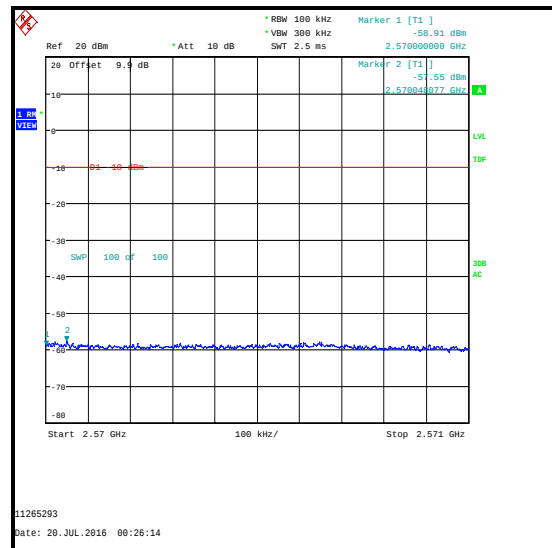
Transmitter Radiated Emissions at Band Edges (continued)**Results: 5 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.994	25	0	-31.0	-10.0	21.0	Complied
2500	25	0	-32.2	-10.0	22.2	Complied
2570	25	0	-30.2	-10.0	20.2	Complied
2570.011	25	0	-28.7	-10.0	18.7	Complied

**QPSK / Lower Band Edge****QPSK / Upper Band Edge**

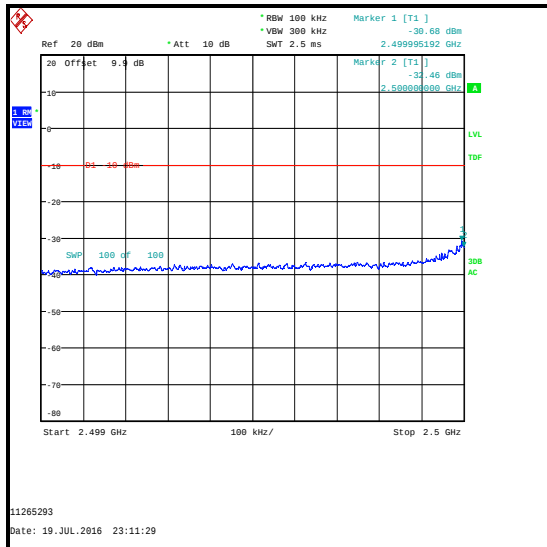
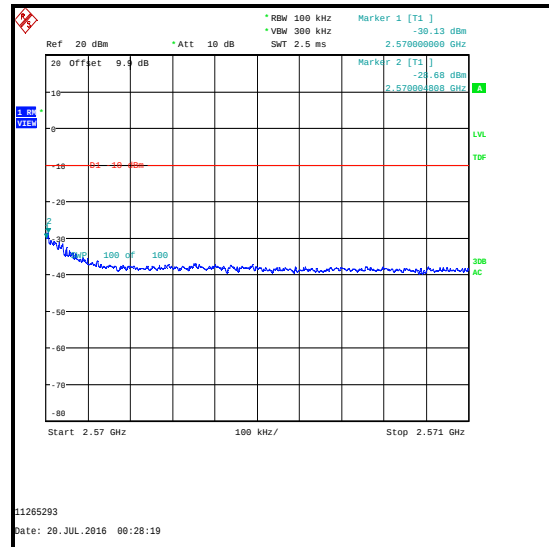
Transmitter Radiated Emissions at Band Edges (continued)**Results: 5 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.989	1	0	-21.4	-10.0	11.4	Complied
2500	1	0	-23.6	-10.0	13.6	Complied
2570	1	24	-20.1	-10.0	10.1	Complied
2570.002	1	24	-19.5	-10.0	9.5	Complied
2500	1	24	-60.4	-10.0	50.4	Complied
2570	1	0	-58.9	-10.0	48.9	Complied

**QPSK / 1 RB 0 Offset / Lower Band Edge****QPSK / 1 RB 24 Offset / Upper Band Edge****QPSK / 1 RB 24 Offset / Lower Band Edge****QPSK / 1 RB 0 Offset / Upper Band Edge**

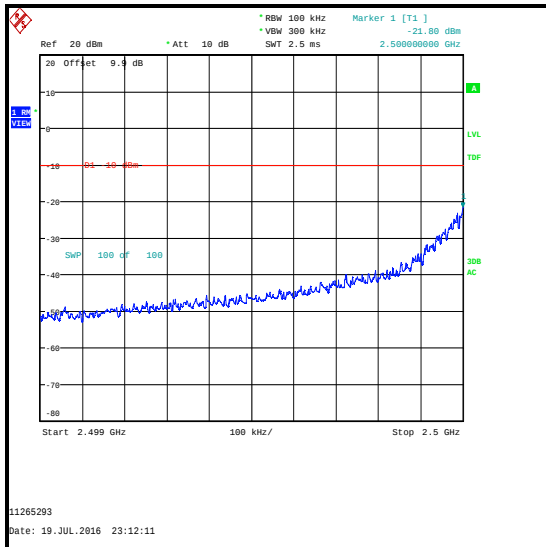
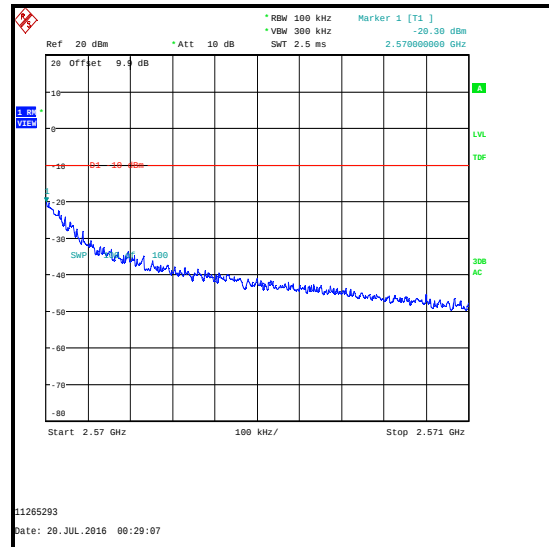
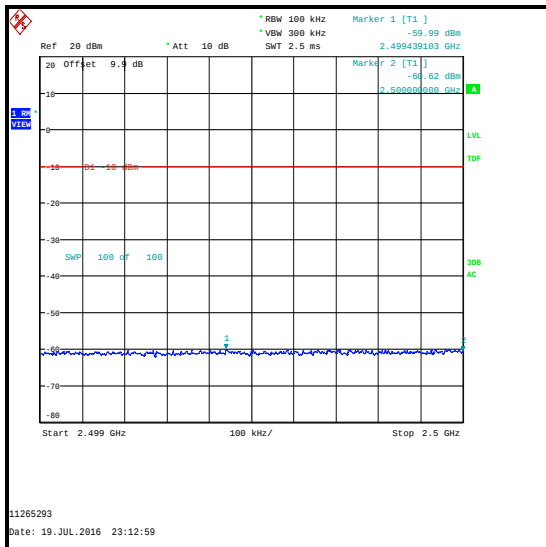
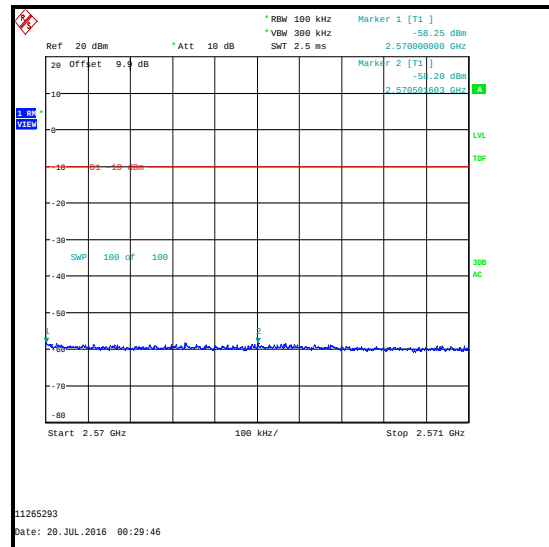
Transmitter Radiated Emissions at Band Edges (continued)**Results: 5 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.995	25	0	-30.7	-10.0	20.7	Complied
2500	25	0	-32.5	-10.0	22.5	Complied
2570	25	0	-30.1	-10.0	20.1	Complied
2570.005	25	0	-28.7	-10.0	18.7	Complied

**16QAM / Lower Band Edge****16QAM / Upper Band Edge**

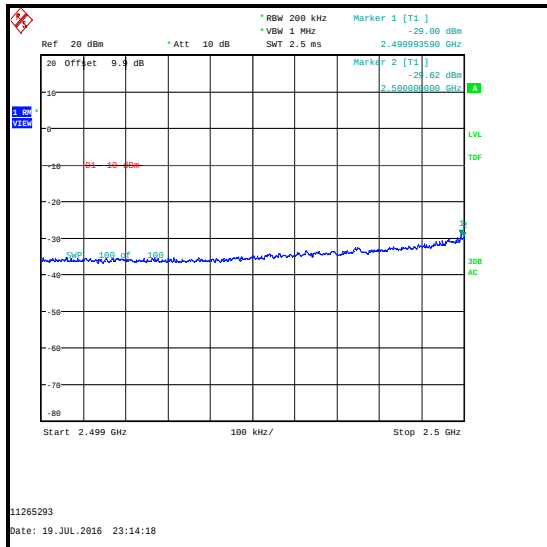
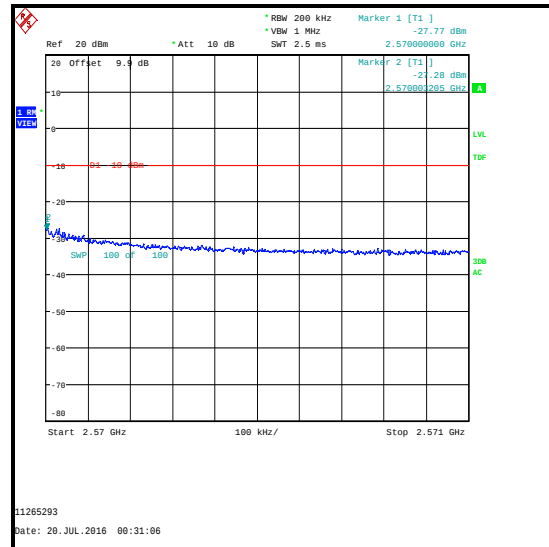
Transmitter Radiated Emissions at Band Edges (continued)**Results: 5 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	1	0	-21.8	-10.0	11.8	Complied
2570	1	24	-20.3	-10.0	10.3	Complied
2500	1	24	-60.6	-10.0	50.6	Complied
2570	1	0	-58.2	-10.0	48.2	Complied

**16QAM / 1 RB 0 Offset / Lower Band Edge****16QAM / 1 RB 24 Offset / Upper Band Edge****16QAM / 1 RB 24 Offset / Lower Band Edge****16QAM / 1 RB 0 Offset / Upper Band Edge**

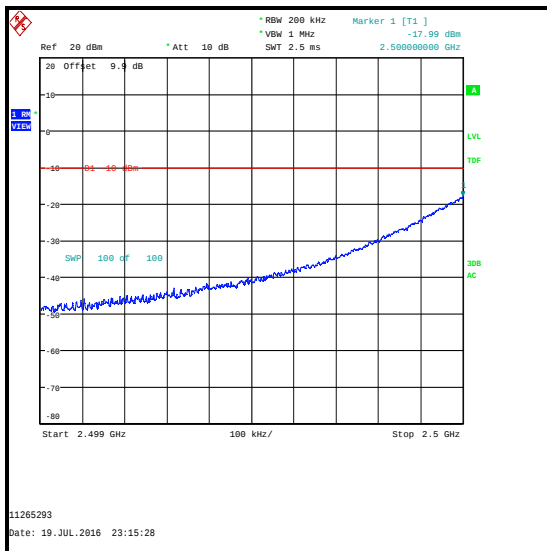
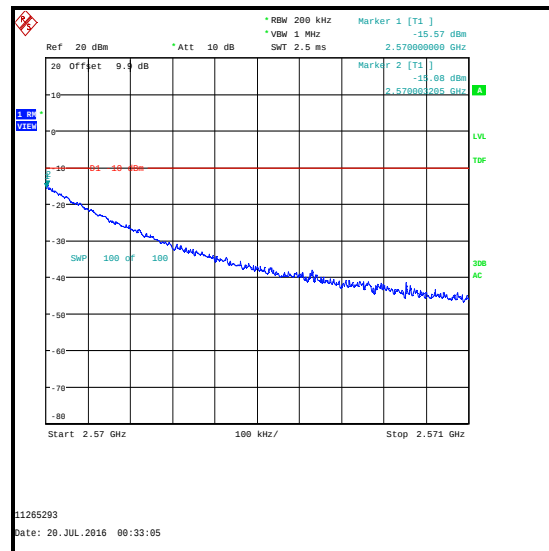
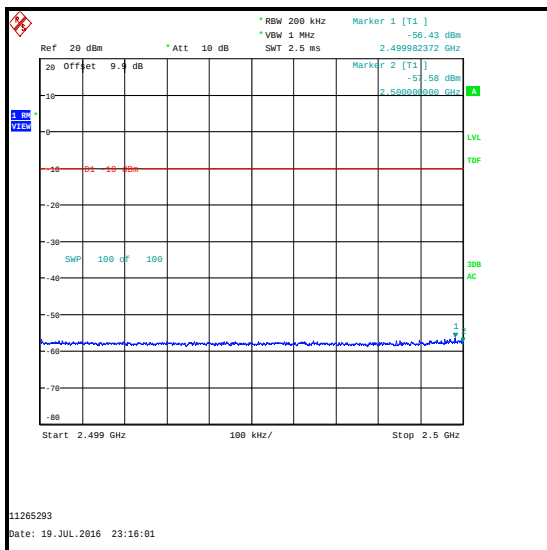
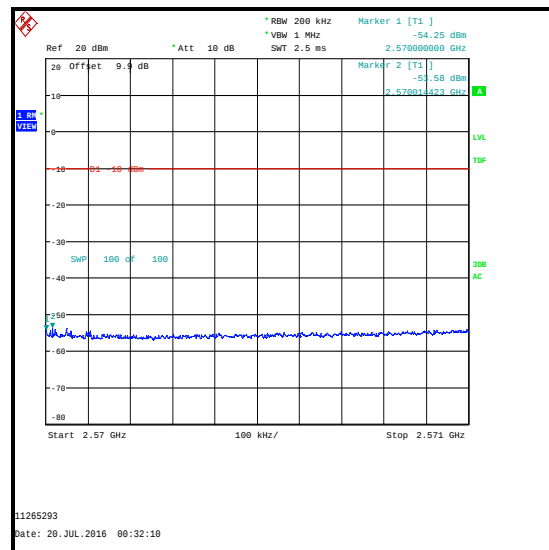
Transmitter Radiated Emissions at Band Edges (continued)**Results: 10 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.994	50	0	-29.0	-10.0	19.0	Complied
2500	50	0	-29.6	-10.0	19.6	Complied
2570	50	0	-27.8	-10.0	17.8	Complied
2570.003	50	0	-27.3	-10.0	17.3	Complied

**QPSK / Lower Band Edge****QPSK / Upper Band Edge**

Transmitter Radiated Emissions at Band Edges (continued)**Results: 10 MHz Channel Bandwidth / QPSK**

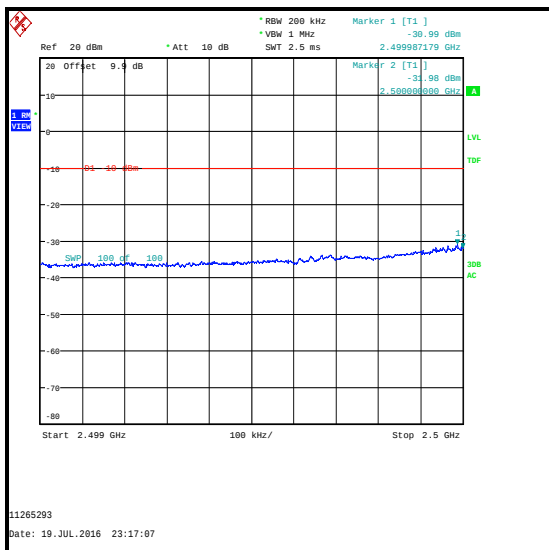
Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	1	0	-18.0	-10.0	8.0	Complied
2570	1	49	-15.6	-10.0	5.6	Complied
2570.003	1	49	-15.1	-10.0	5.1	Complied
2500	1	49	-57.6	-10.0	47.6	Complied
2570	1	0	-54.2	-10.0	44.2	Complied

**QPSK / 1 RB 0 Offset / Lower Band Edge****QPSK / 1 RB 49 Offset / Upper Band Edge****QPSK / 1 RB 49 Offset / Lower Band Edge****QPSK / 1 RB 0 Offset / Upper Band Edge**

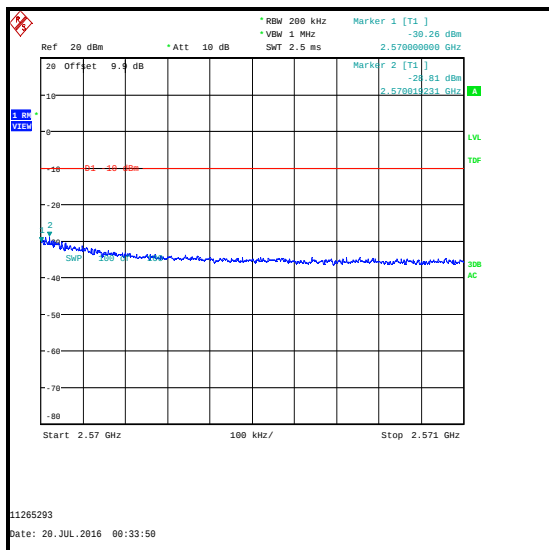
Transmitter Radiated Emissions at Band Edges (continued)

Results: 10 MHz Channel Bandwidth / 16QAM

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.987	50	0	-31.0	-10.0	21.0	Complied
2500	50	0	-32.0	-10.0	22.0	Complied
2570	50	0	-30.3	-10.0	20.3	Complied
2570.019	50	0	-28.8	-10.0	18.8	Complied



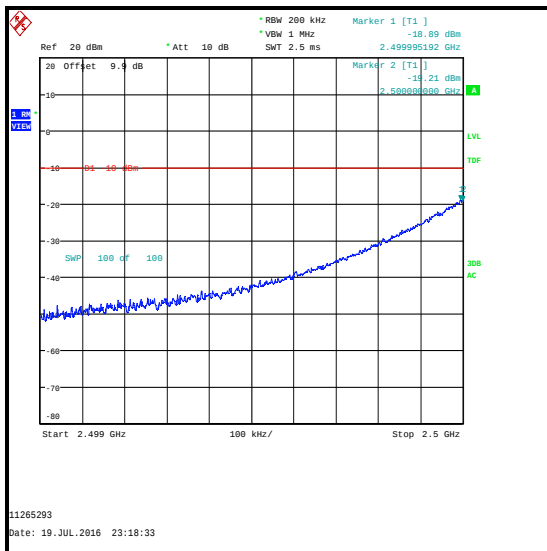
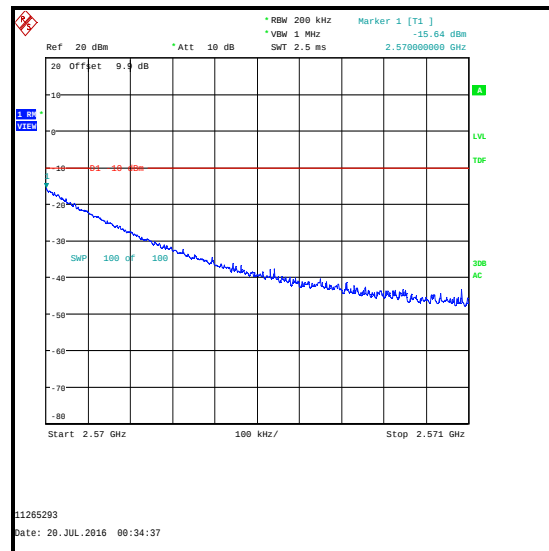
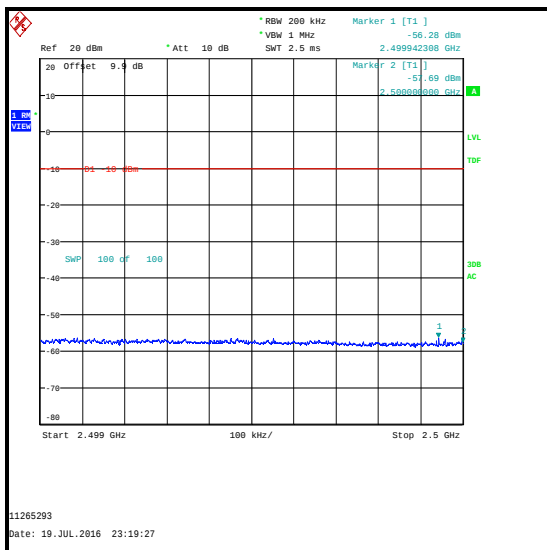
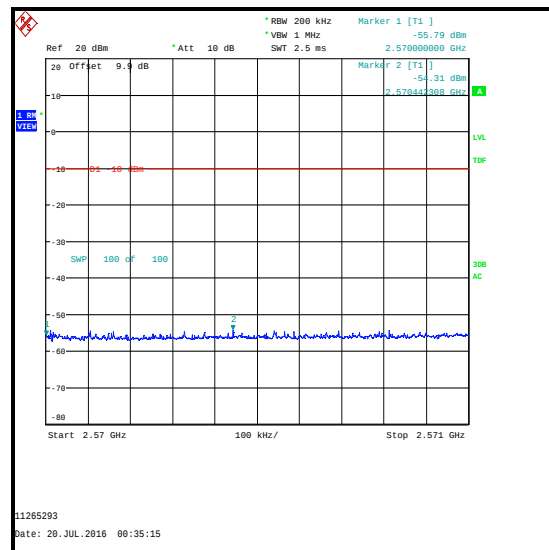
16QAM / Lower Band Edge



16QAM / Upper Band Edge

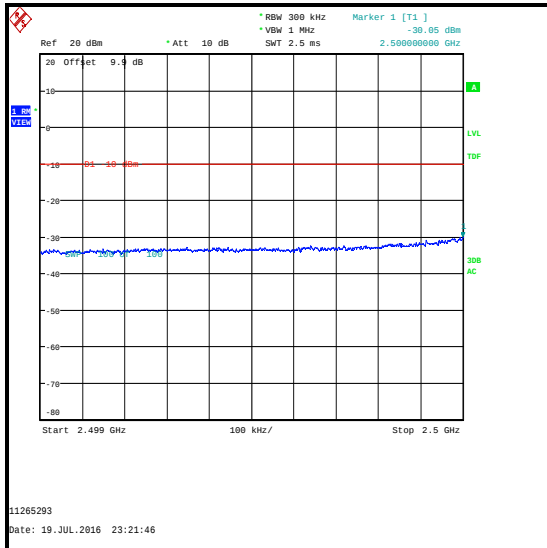
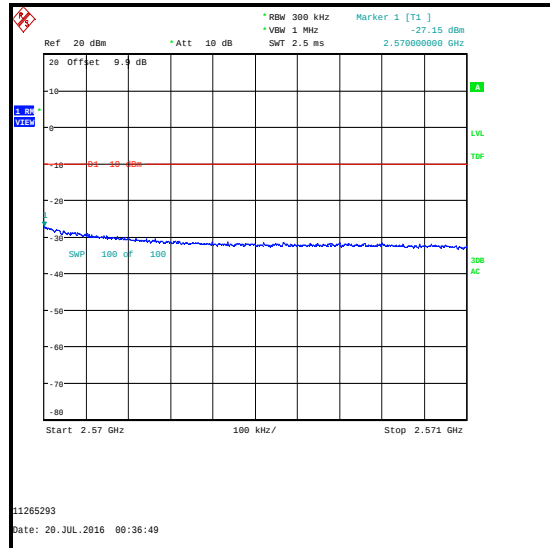
Transmitter Radiated Emissions at Band Edges (continued)**Results: 10 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.995	1	0	-18.9	-10.0	8.9	Complied
2500	1	0	-19.2	-10.0	9.2	Complied
2570	1	49	-15.6	-10.0	5.6	Complied
2500	1	49	-57.7	-10.0	47.7	Complied
2570	1	0	-55.8	-10.0	45.8	Complied

**16QAM / 1 RB 0 Offset / Lower Band Edge****16QAM / 1 RB 49 Offset / Upper Band Edge****16QAM / 1 RB 49 Offset / Lower Band Edge****16QAM / 1 RB 0 Offset / Upper Band Edge**

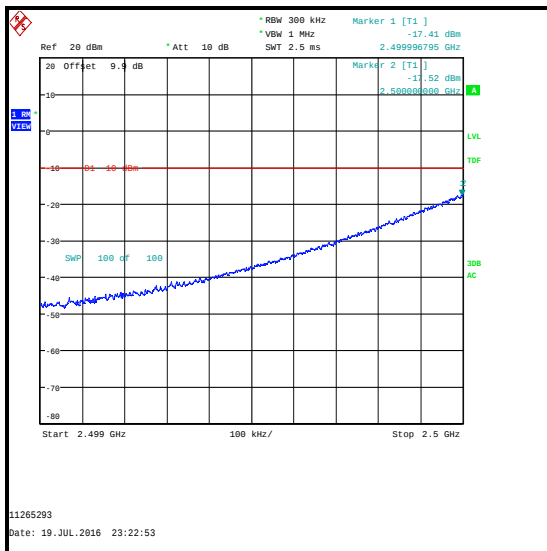
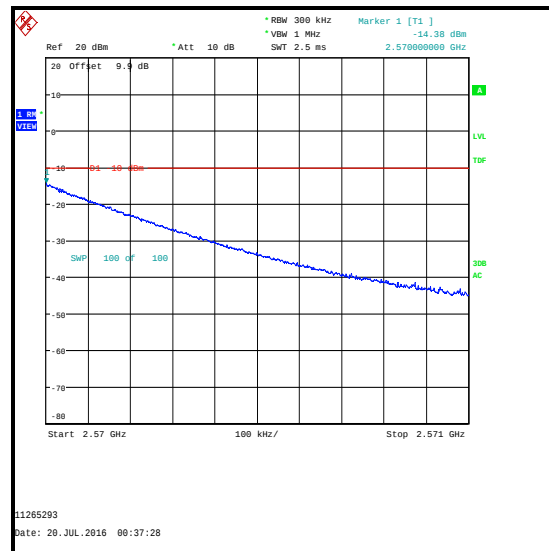
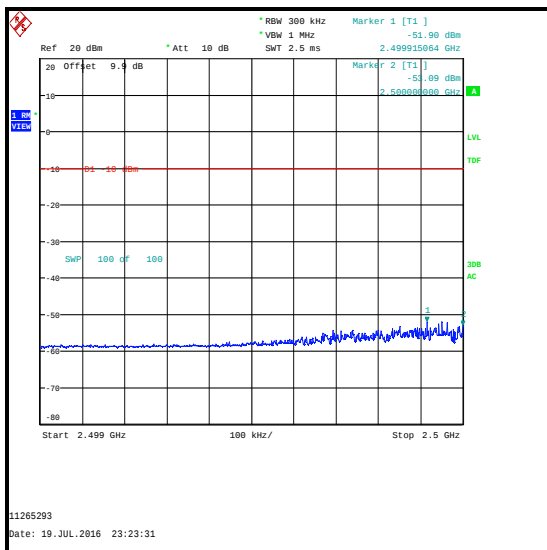
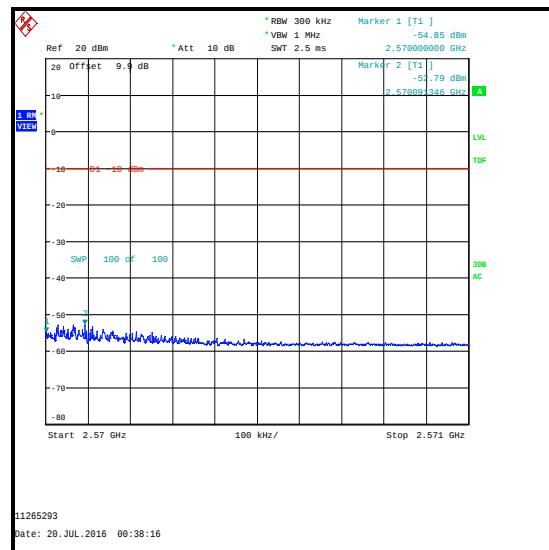
Transmitter Radiated Emissions at Band Edges (continued)**Results: 15 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	75	0	-30.0	-10.0	20.0	Complied
2570	75	0	-27.1	-10.0	17.1	Complied

**QPSK / Lower Band Edge****QPSK / Upper Band Edge**

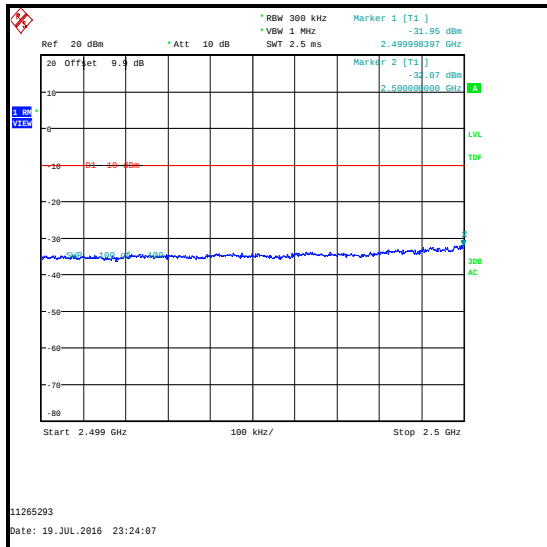
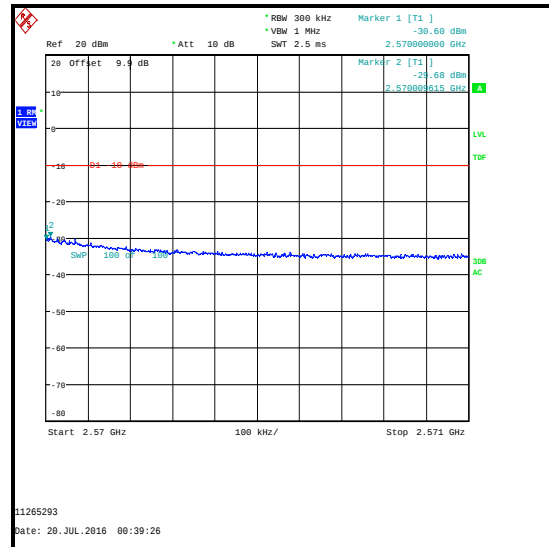
Transmitter Radiated Emissions at Band Edges (continued)**Results: 15 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.997	1	0	-17.4	-10.0	7.4	Complied
2500	1	0	-17.5	-10.0	7.5	Complied
2570	1	74	-14.4	-10.0	4.4	Complied
2500	1	74	-53.1	-10.0	43.1	Complied
2570	1	0	-54.8	-10.0	44.8	Complied

**QPSK / 1 RB 0 Offset / Lower Band Edge****QPSK / 1 RB 74 Offset / Upper Band Edge****QPSK / 1 RB 74 Offset / Lower Band Edge****QPSK / 1 RB 0 Offset / Upper Band Edge**

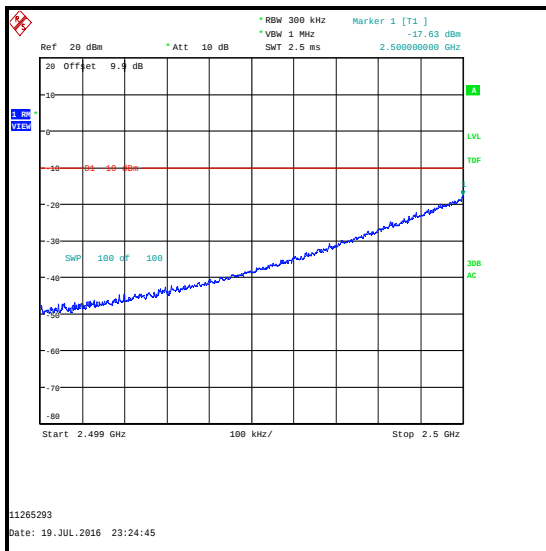
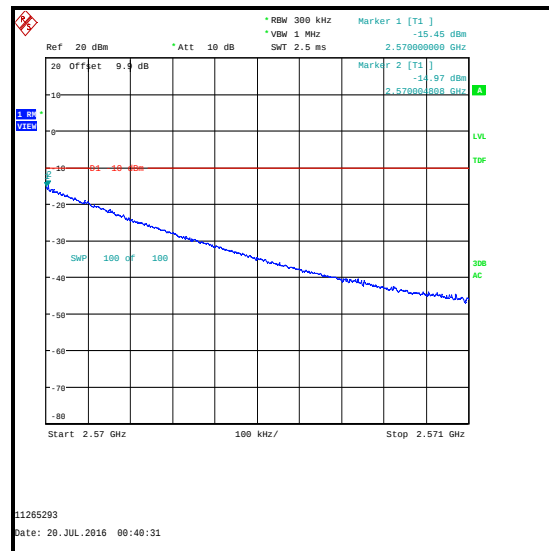
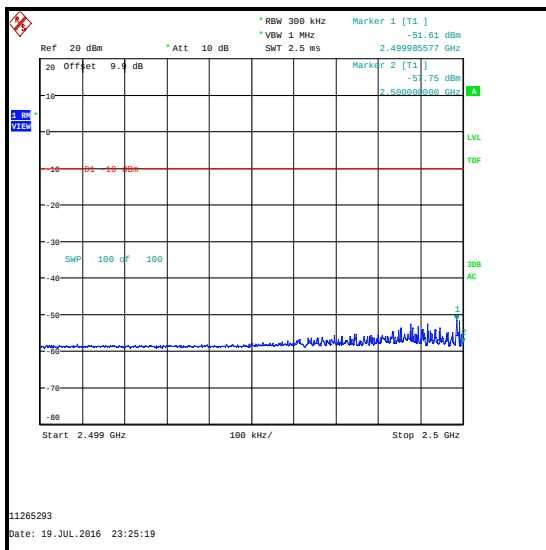
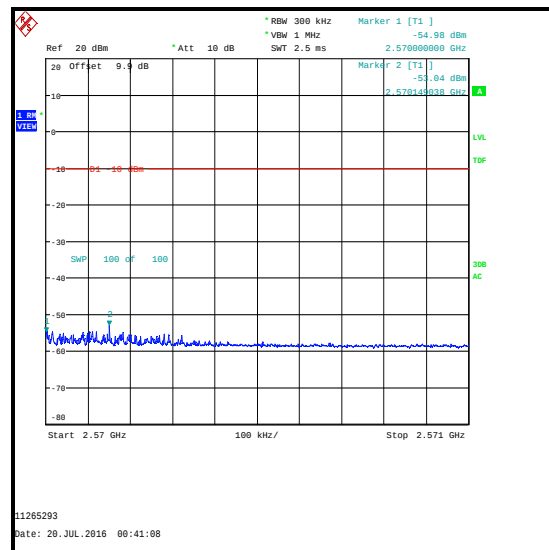
Transmitter Radiated Emissions at Band Edges (continued)**Results: 15 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.998	75	0	-31.9	-10.0	21.9	Complied
2500	75	0	-32.1	-10.0	22.1	Complied
2570	75	0	-30.6	-10.0	20.6	Complied
2570.010	75	0	-29.7	-10.0	19.7	Complied

**16QAM / Lower Band Edge****16QAM / Upper Band Edge**

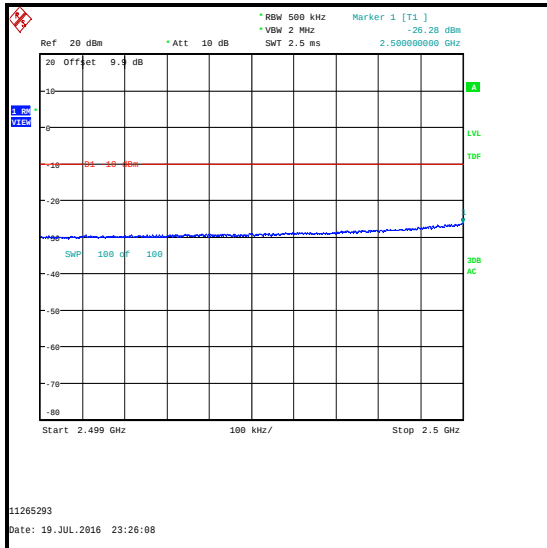
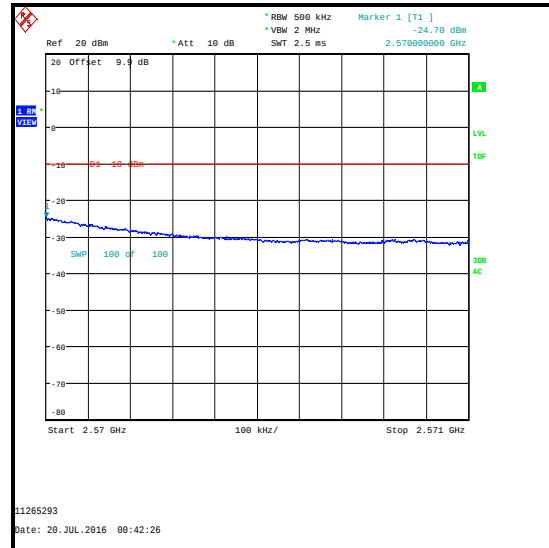
Transmitter Radiated Emissions at Band Edges (continued)**Results: 15 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	1	0	-17.6	-10.0	7.6	Complied
2570	1	74	-15.4	-10.0	5.4	Complied
2570.005	1	74	-15.0	-10.0	5.0	Complied
2500	1	74	-57.7	-10.0	47.7	Complied
2570	1	0	-55.0	-10.0	45.0	Complied

**16QAM / 1 RB 0 Offset / Lower Band Edge****16QAM / 1 RB 74 Offset / Upper Band Edge****16QAM / 1 RB 74 Offset / Lower Band Edge****16QAM / 1 RB 0 Offset / Upper Band Edge**

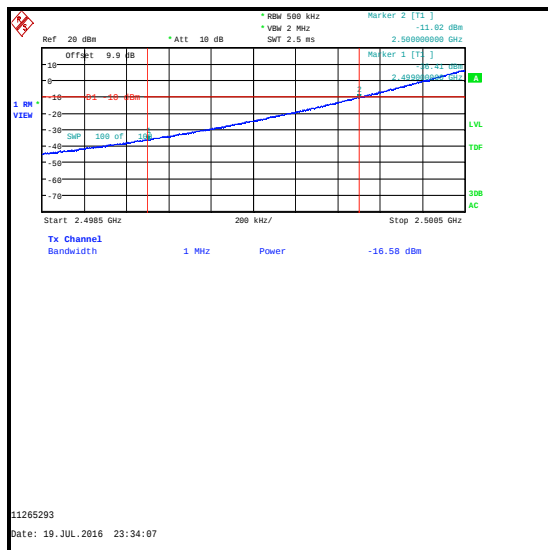
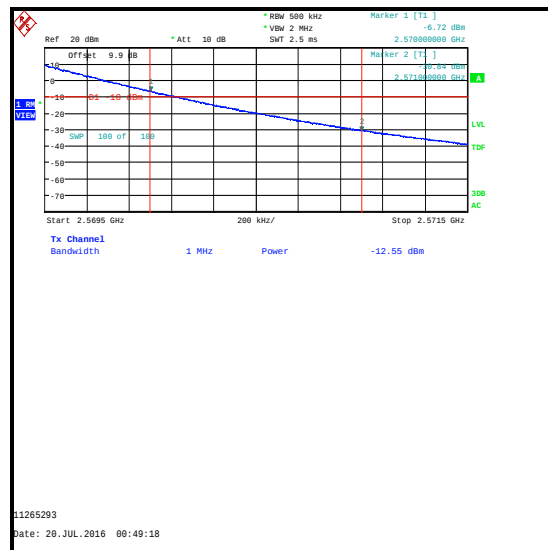
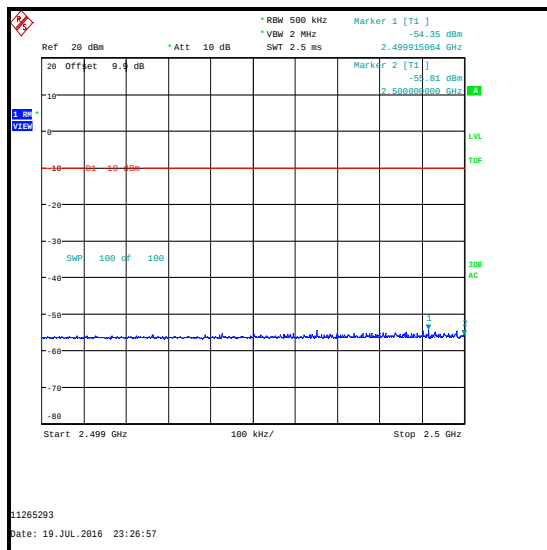
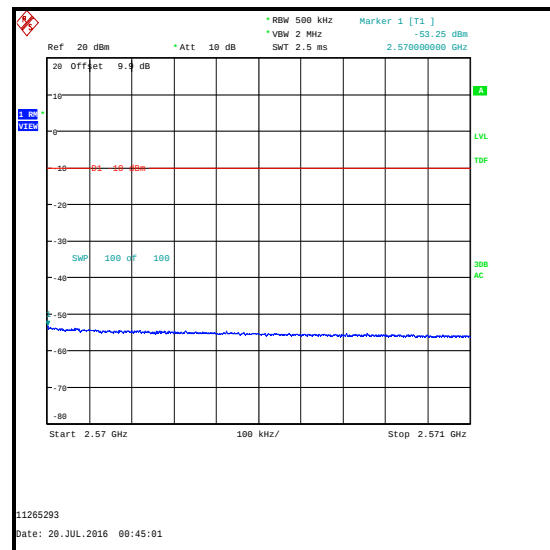
Transmitter Radiated Emissions at Band Edges (continued)**Results: 20 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	100	0	-26.3	-10.0	16.3	Complied
2570	100	0	-24.7	-10.0	14.7	Complied

**QPSK / Lower Band Edge****QPSK / Upper Band Edge**

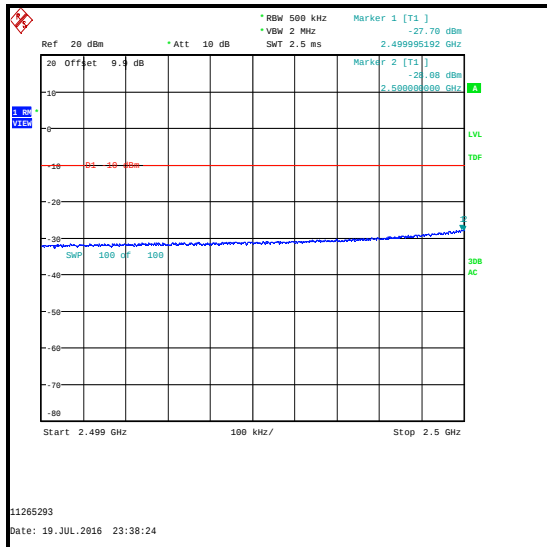
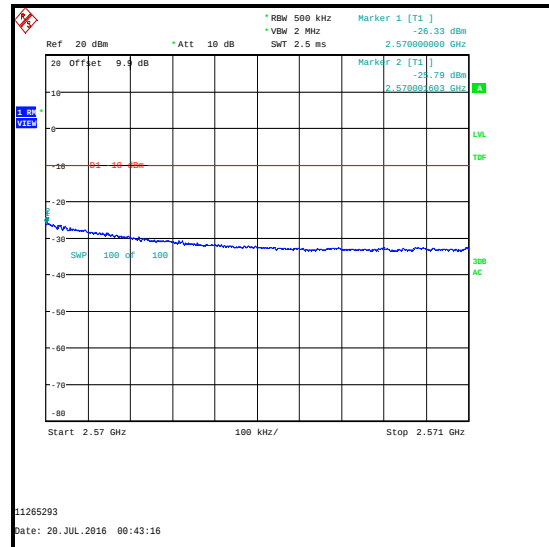
Transmitter Radiated Emissions at Band Edges (continued)**Results: 20 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499 to 2500	1	0	-16.6*	-10.0	6.6	Complied
2570 to 2571	1	99	-12.5*	-10.0	2.5	Complied
2500	1	99	-55.8	-10.0	45.8	Complied
2570	1	0	-53.2	-10.0	43.2	Complied

**QPSK / 1 RB 0 Offset / Lower Band Edge / 2499 to 2500 MHz / Integrated level****QPSK / 1 RB 99 Offset / Upper Band Edge / 2570 to 2571 MHz / Integrated level****QPSK / 1 RB 99 Offset / Upper Band Edge****QPSK / 1 RB 0 Offset / Upper Band Edge**

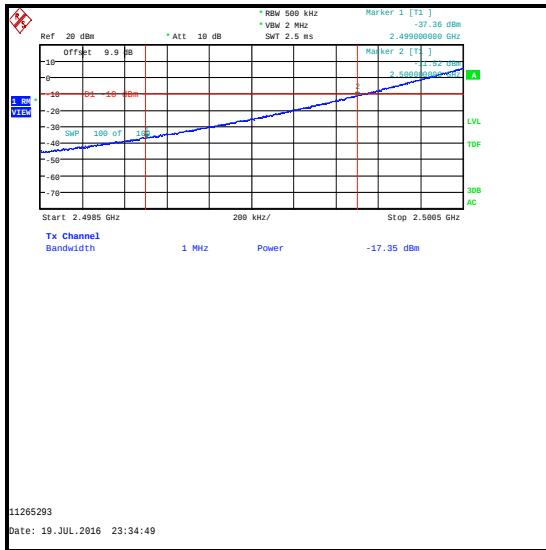
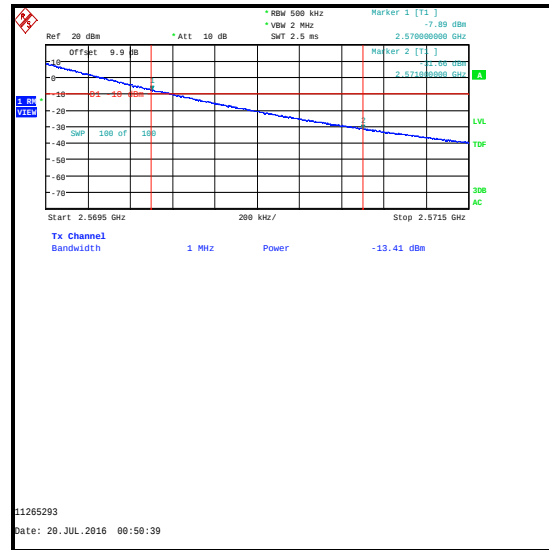
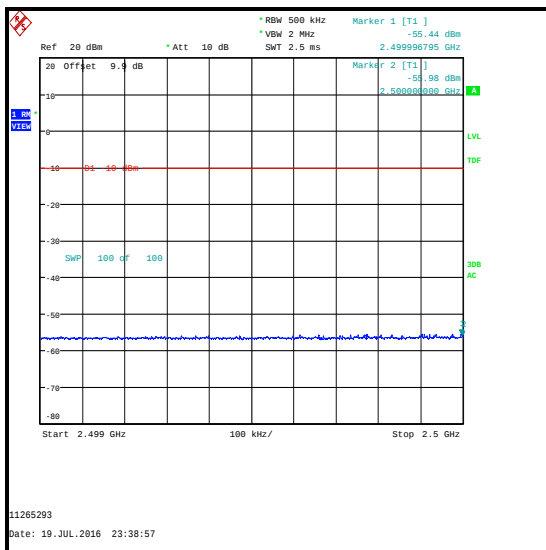
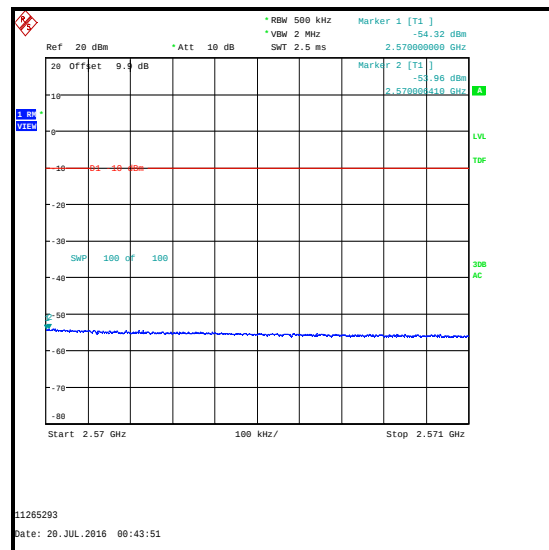
Transmitter Radiated Emissions at Band Edges (continued)**Results: 20 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.995	100	0	-27.7	-10.0	17.7	Complied
2500	100	0	-28.1	-10.0	18.1	Complied
2570	100	0	-26.3	-10.0	16.3	Complied
2570.002	100	0	-25.8	-10.0	15.8	Complied

**16QAM / Lower Band Edge****16QAM / Upper Band Edge**

Transmitter Radiated Emissions at Band Edges (continued)**Results: 20 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499 to 2500	1	0	-17.3*	-10.0	7.3	Complied
2570 to 2571	1	99	-13.4*	-10.0	3.4	Complied
2500	1	99	-56.0	-10.0	46.0	Complied
2570	1	0	-54.3	-10.0	44.3	Complied

**16QAM / 1 RB 0 Offset / Lower Band Edge / 2499 to 2500 MHz / Integrated level****16QAM / 1 RB 99 Offset / Upper Band Edge / 2570 to 2571 MHz / Integrated level****16QAM / 1 RB 99 Offset / Lower Band Edge****16QAM / 1 RB 0 Offset / Upper Band Edge**

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

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	22 Apr 2017	12
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	17 May 2017	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	21 Mar 2017	12
A2893	Pre-Amplifier	Schwarzbeck	BBV 9721	9721-021	07 Apr 2017	12
A2889	Antenna	Schwarzbeck	BBHA 9120 B	BBHA 9120 B 653	07 Apr 2017	12
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	19 May 2017	12

5.2.10. Transmitter Radiated Emissions at Band Edges - UAT**Test Summary:**

Test Engineer:	Andrew Edwards	Test Date:	19 July 2016
Test Sample IMEI:	358460070309175		

FCC Reference:	Parts 2.1053 & 27.53(m)(4)
Test Method Used:	KDB 971168 Section 6.1 referencing FCC Part 27.53(m)(6)

Environmental Conditions:

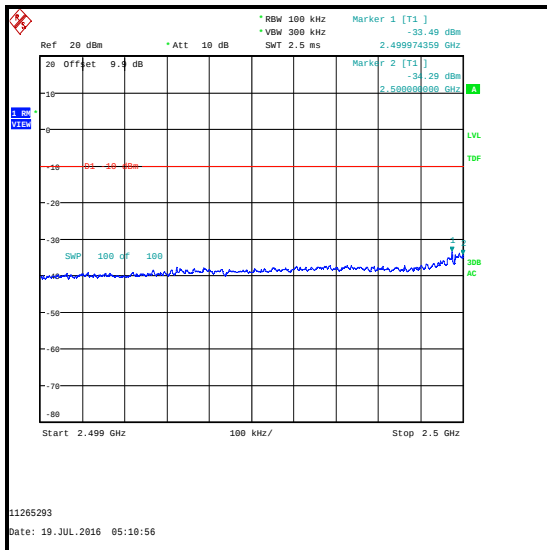
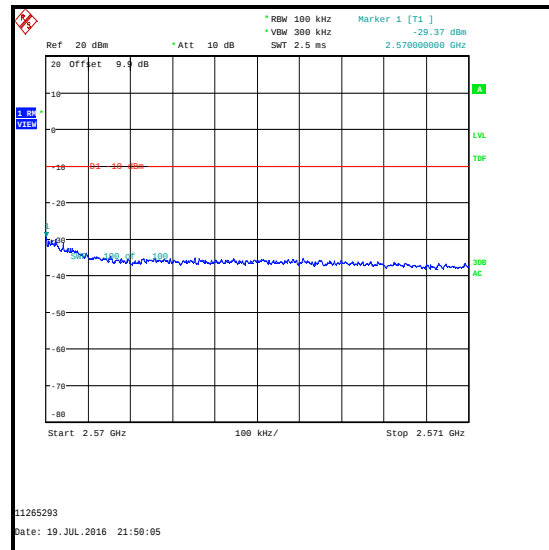
Temperature (°C):	26
Relative Humidity (%):	39

Note(s):

1. Measurements were performed with the EUT transmitting with QPSK and 16QAM modulation schemes, with resource blocks settings as detailed in section 4.3 of this report.
2. 5 MHz Channel bandwidth: In the first 1.0 MHz immediately outside and adjacent to the operating band, the test receiver resolution bandwidth was set to 100 kHz (>2% of the emission bandwidth) and video bandwidth of 300 kHz (three times the resolution bandwidth).
3. 10 MHz Channel bandwidth: In the first 1.0 MHz immediately outside and adjacent to the operating band, the test receiver resolution bandwidth was set to 200 kHz (>2% of the emission bandwidth) and video bandwidth of 1 MHz (as close to > three times the resolution bandwidth as the test receiver allowed).
4. 15 MHz Channel bandwidth: In the first 1.0 MHz immediately outside and adjacent to the operating band, the test receiver resolution bandwidth was set to 300 kHz (>2% of the emission bandwidth) and video bandwidth of 1 MHz (as close to > three times the resolution bandwidth as the test receiver allowed).
5. 20 MHz Channel bandwidth: In the first 1.0 MHz immediately outside and adjacent to the operating band, the test receiver resolution bandwidth was set to 500 kHz (>2% of the emission bandwidth) and video bandwidth of 2 MHz (as close to > three times the resolution bandwidth as the test receiver allowed).
6. In accordance with Part 27.53(m)(6), a narrower resolution bandwidth may be used, provided that the measured power is integrated over the full required measurement bandwidth. For 20 MHz Channel bandwidth, this was applied for the first 1 MHz immediately outside and adjacent to the operating band, using both available modulation schemes for the following cases: transmitting 1 resource block with 99 resource blocks offset for the upper band edge.
7. *Integrated level (dBm).

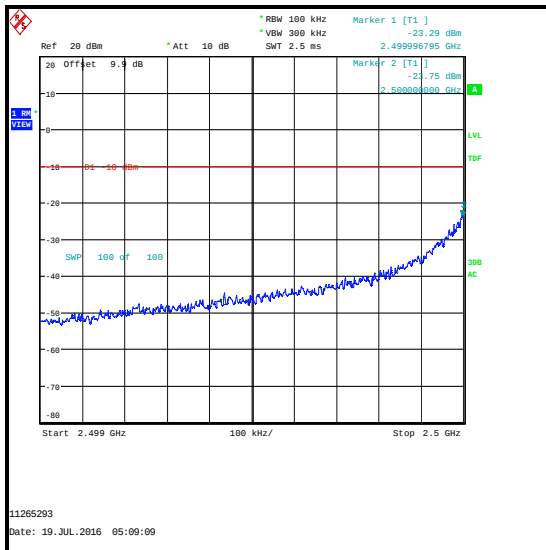
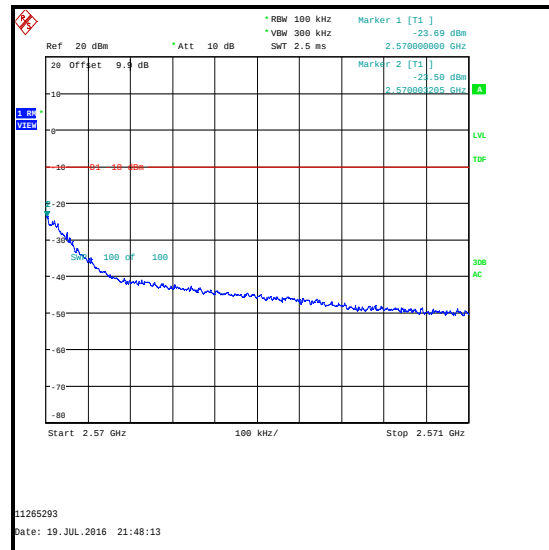
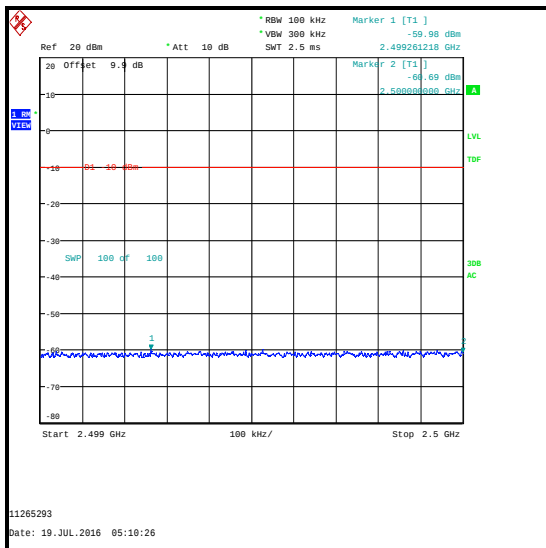
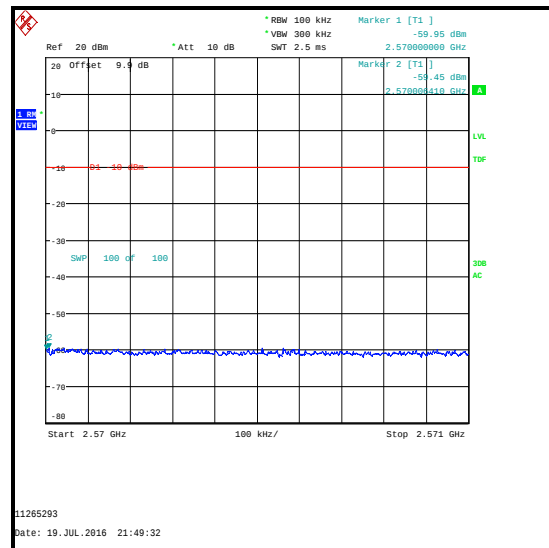
Transmitter Radiated Emissions at Band Edges (continued)**Results: 5 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.974	25	0	-33.5	-10.0	23.5	Complied
2500	25	0	-34.3	-10.0	24.3	Complied
2570	25	0	-29.4	-10.0	19.4	Complied

**QPSK / Lower Band Edge****QPSK / Upper Band Edge**

Transmitter Radiated Emissions at Band Edges (continued)**Results: 5 MHz Channel Bandwidth / QPSK**

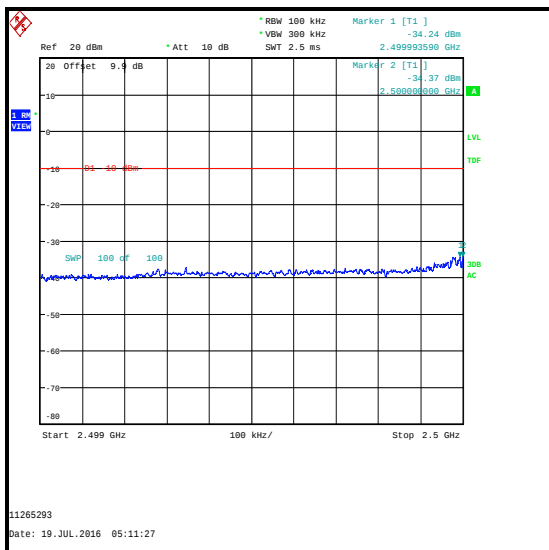
Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.997	1	0	-23.3	-10.0	13.3	Complied
2500	1	0	-23.7	-10.0	13.7	Complied
2570	1	24	-23.7	-10.0	13.7	Complied
2570.003	1	24	-23.5	-10.0	13.5	Complied
2500	1	24	-60.7	-10.0	50.7	Complied
2570	1	0	-59.9	-10.0	49.9	Complied

**QPSK / 1 RB 0 Offset / Lower Band Edge****QPSK / 1 RB 24 Offset / Upper Band Edge****QPSK / 1 RB 24 Offset / Lower Band Edge****QPSK / 1 RB 0 Offset / Upper Band Edge**

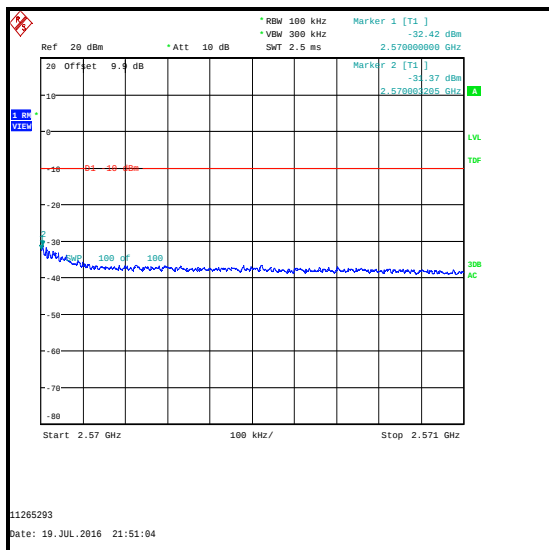
Transmitter Radiated Emissions at Band Edges (continued)

Results: 5 MHz Channel Bandwidth / 16QAM

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.994	25	0	-34.2	-10.0	24.2	Complied
2500	25	0	-34.4	-10.0	24.4	Complied
2570	25	0	-32.4	-10.0	22.4	Complied
2570.003	25	0	-31.4	-10.0	21.4	Complied



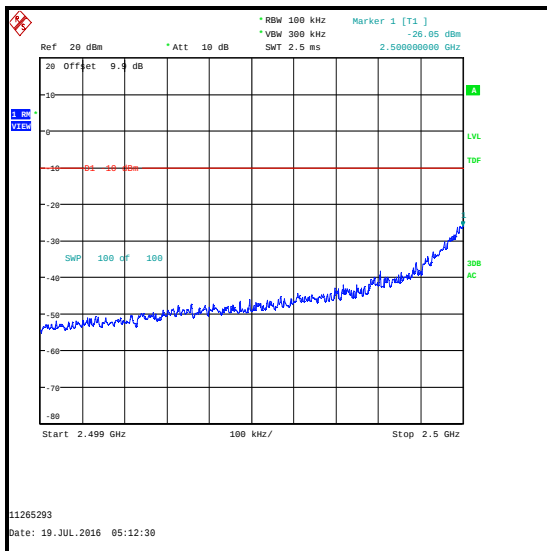
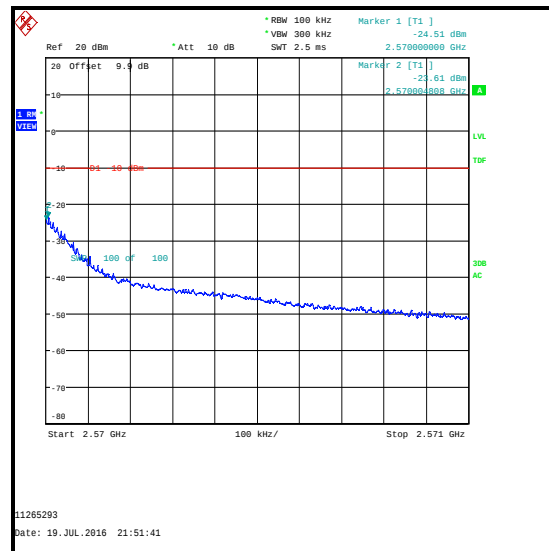
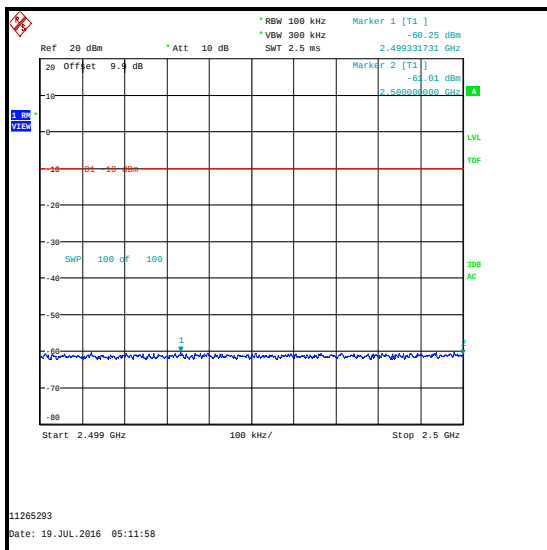
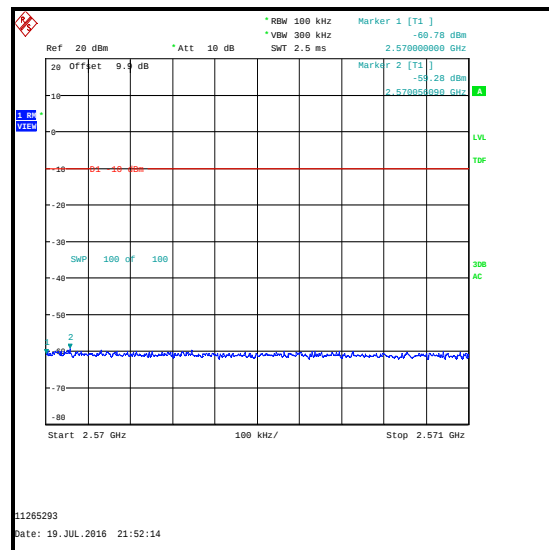
16QAM / Lower Band Edge



16QAM / Upper Band Edge

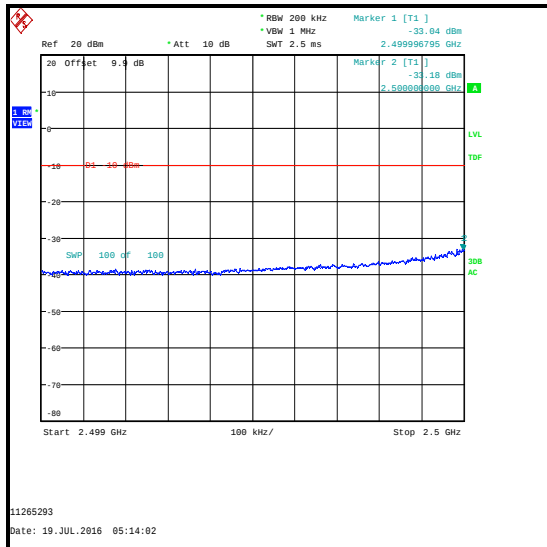
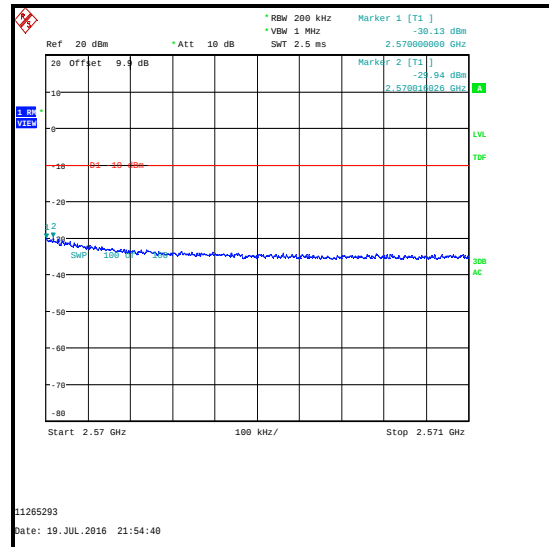
Transmitter Radiated Emissions at Band Edges (continued)**Results: 5 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	1	0	-26.0	-10.0	16.0	Complied
2570	1	24	-24.5	-10.0	14.5	Complied
2570.005	1	24	-23.6	-10.0	13.6	Complied
2500	1	24	-61.0	-10.0	51.0	Complied
2570	1	0	-60.8	-10.0	50.8	Complied

**16QAM / 1 RB 0 Offset / Lower Band Edge****16QAM / 1 RB 24 Offset / Upper Band Edge****16QAM / 1 RB 24 Offset / Lower Band Edge****16QAM / 1 RB 0 Offset / Upper Band Edge**

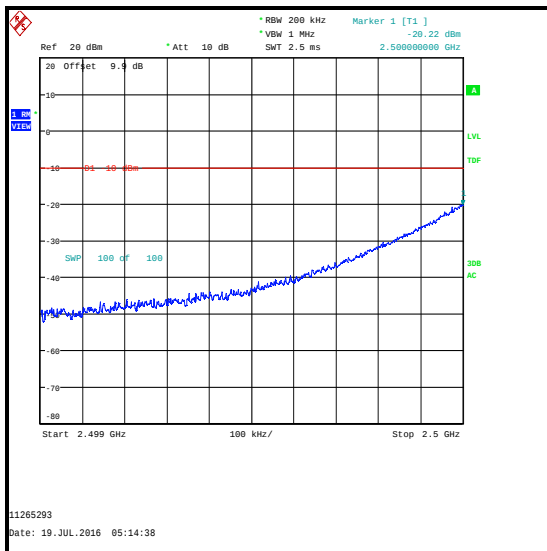
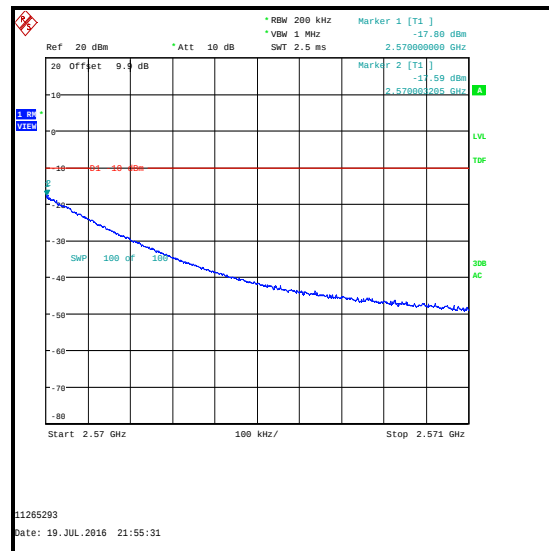
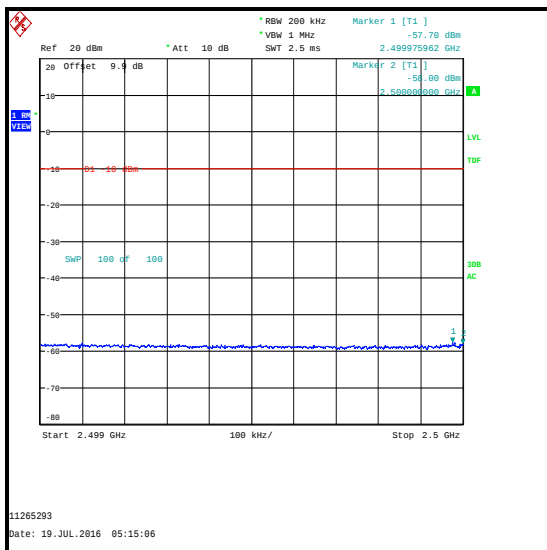
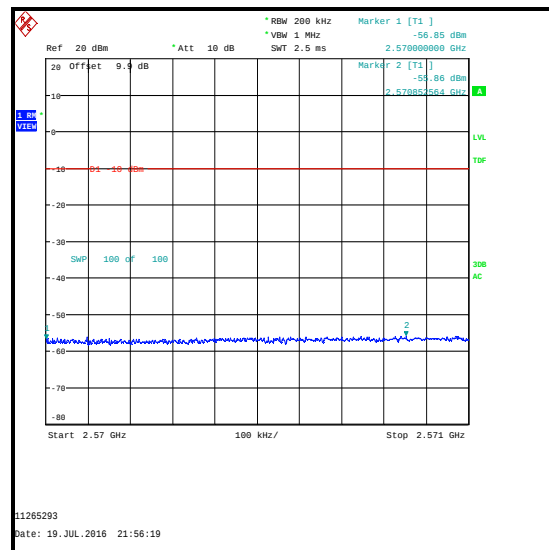
Transmitter Radiated Emissions at Band Edges (continued)**Results: 10 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.997	50	0	-33.0	-10.0	23.0	Complied
2500	50	0	-33.2	-10.0	23.2	Complied
2570	50	0	-30.1	-10.0	20.1	Complied
2570.016	50	0	-29.9	-10.0	19.9	Complied

**QPSK / Lower Band Edge****QPSK / Upper Band Edge**

Transmitter Radiated Emissions at Band Edges (continued)**Results: 10 MHz Channel Bandwidth / QPSK**

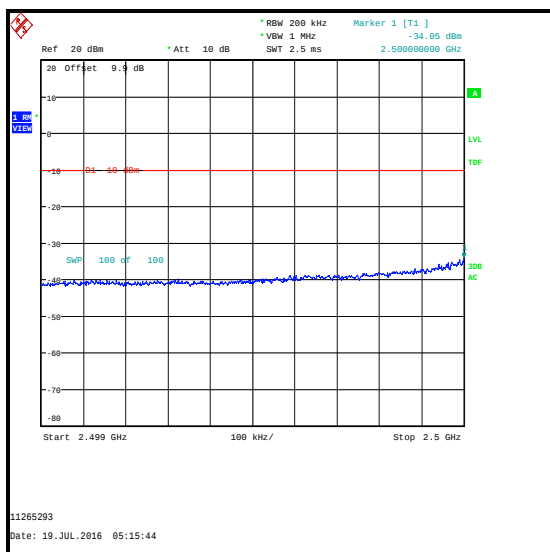
Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	1	0	-20.2	-10.0	10.2	Complied
2570	1	49	-17.8	-10.0	7.8	Complied
2570.003	1	49	-17.6	-10.0	7.6	Complied
2500	1	49	-58.0	-10.0	48.0	Complied
2570	1	0	-56.8	-10.0	46.8	Complied

**QPSK / 1 RB 0 Offset / Lower Band Edge****QPSK / 1 RB 49 Offset / Upper Band Edge****QPSK / 1 RB 49 Offset / Lower Band Edge****QPSK / 1 RB 0 Offset / Upper Band Edge**

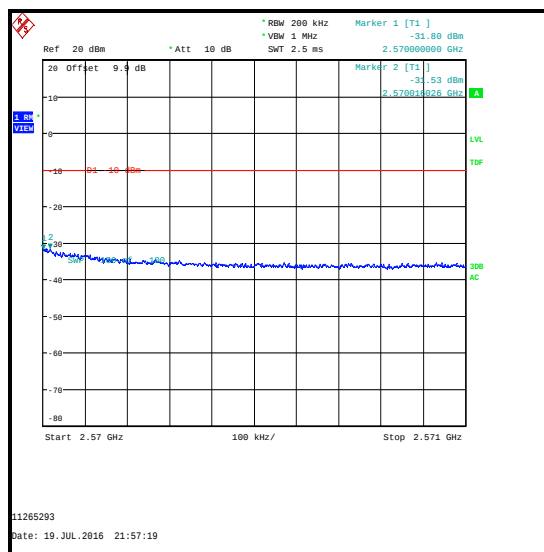
Transmitter Radiated Emissions at Band Edges (continued)

Results: 10 MHz Channel Bandwidth / 16QAM

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	50	0	-34.0	-10.0	24.0	Complied
2570	50	0	-31.8	-10.0	21.8	Complied
2570.016	50	0	-31.5	-10.0	21.5	Complied



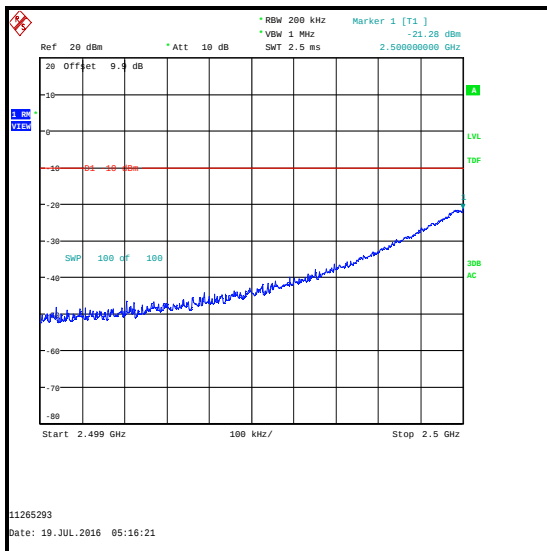
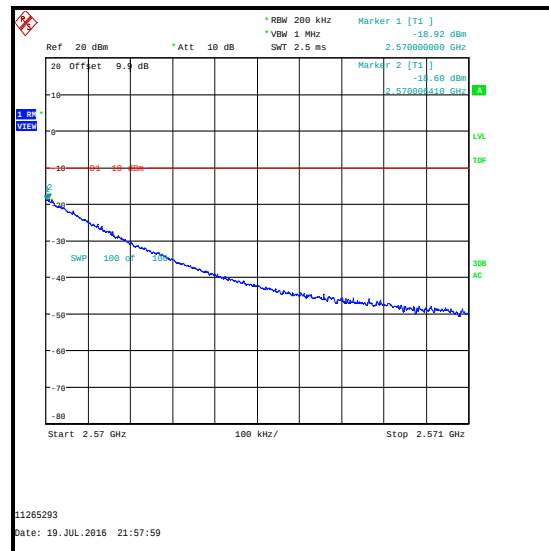
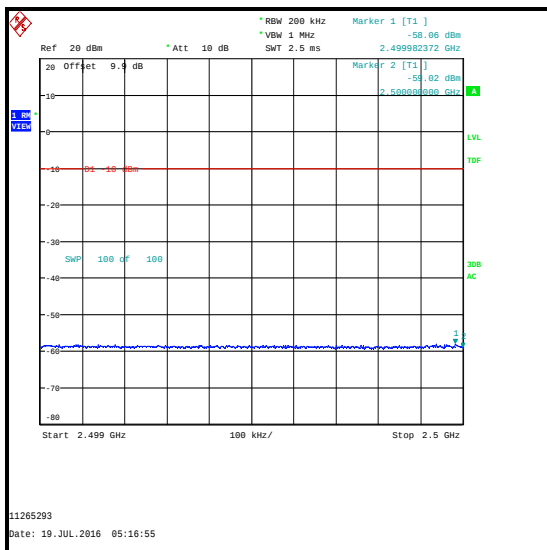
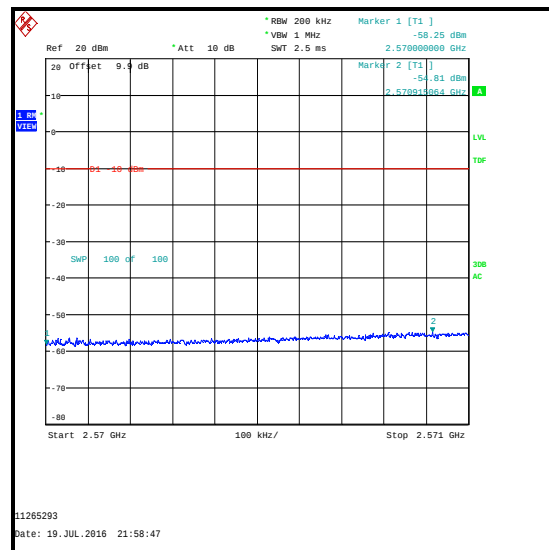
16QAM / Lower Band Edge



16QAM / Upper Band Edge

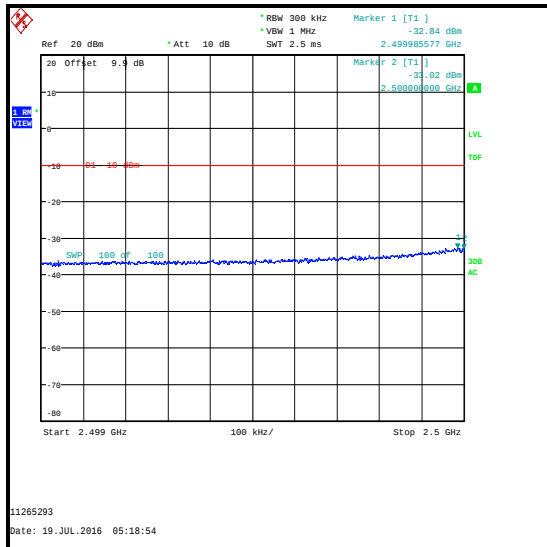
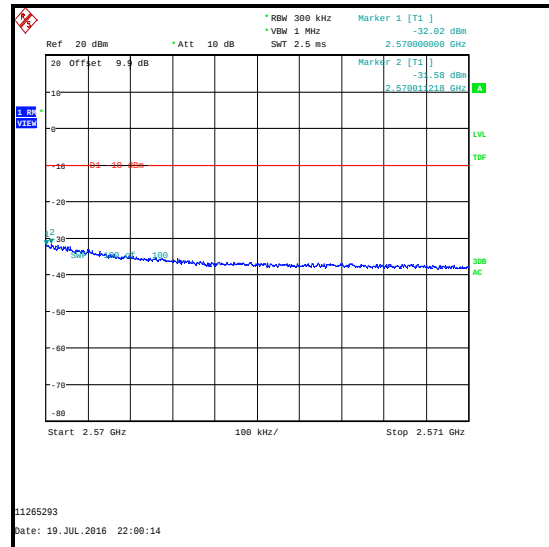
Transmitter Radiated Emissions at Band Edges (continued)**Results: 10 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2500	1	0	-21.3	-10.0	11.3	Complied
2570	1	49	-18.9	-10.0	8.9	Complied
2570.006	1	49	-18.6	-10.0	8.6	Complied
2500	1	49	-59.0	-10.0	49.0	Complied
2570	1	0	-58.2	-10.0	48.2	Complied

**16QAM / 1 RB 0 Offset / Lower Band Edge****16QAM / 1 RB 49 Offset / Upper Band Edge****16QAM / 1 RB 49 Offset / Lower Band Edge****16QAM / 1 RB 0 Offset / Upper Band Edge**

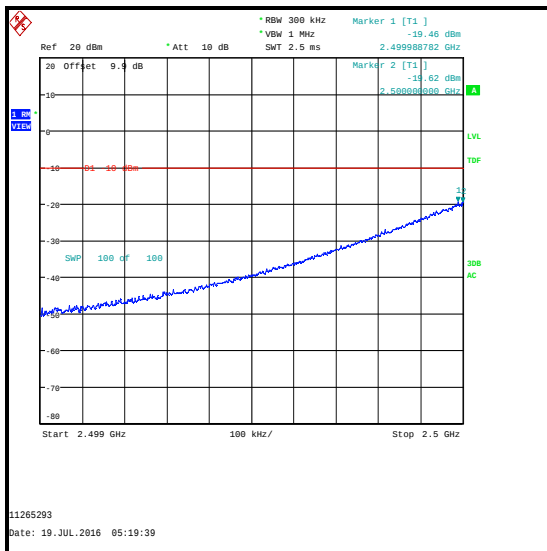
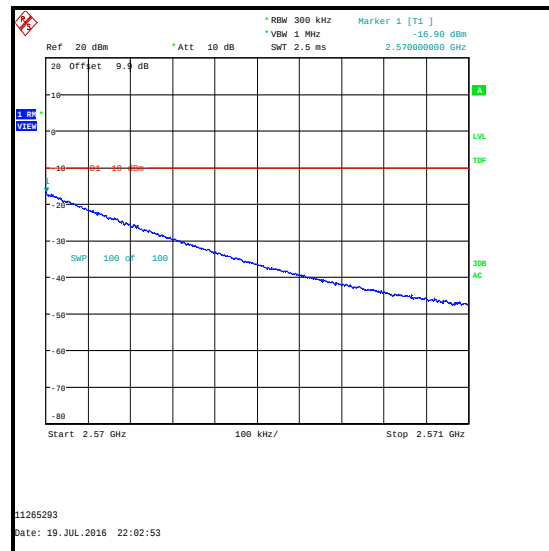
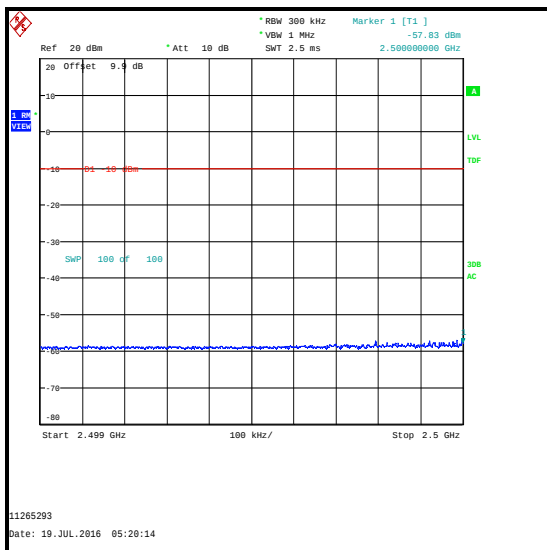
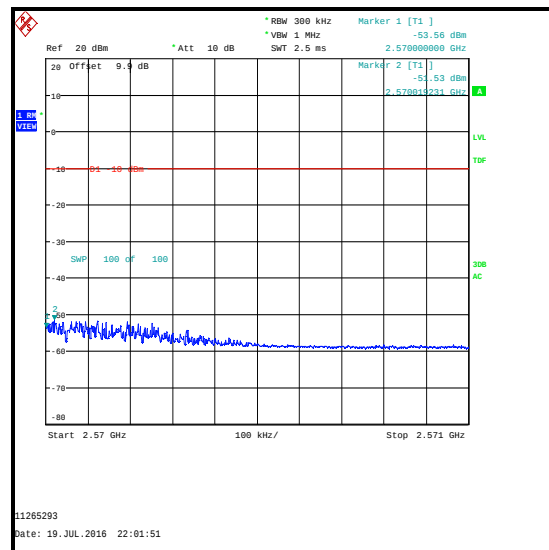
Transmitter Radiated Emissions at Band Edges (continued)**Results: 15 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.986	75	0	-32.8	-10.0	22.8	Complied
2500	75	0	-33.0	-10.0	23.0	Complied
2570	75	0	-32.0	-10.0	22.0	Complied
2570.011	75	0	-31.6	-10.0	21.6	Complied

**QPSK / Lower Band Edge****QPSK / Upper Band Edge**

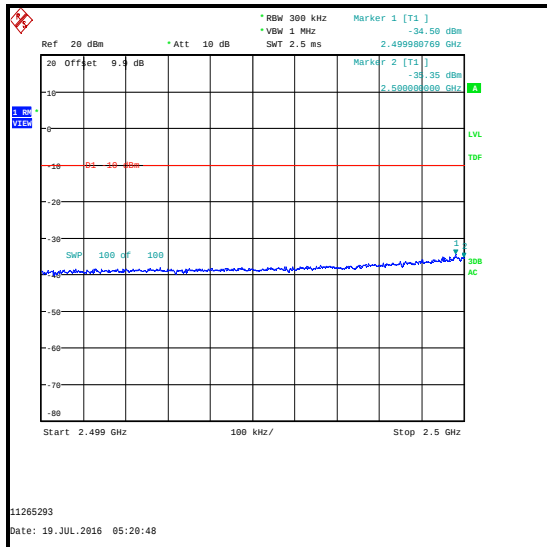
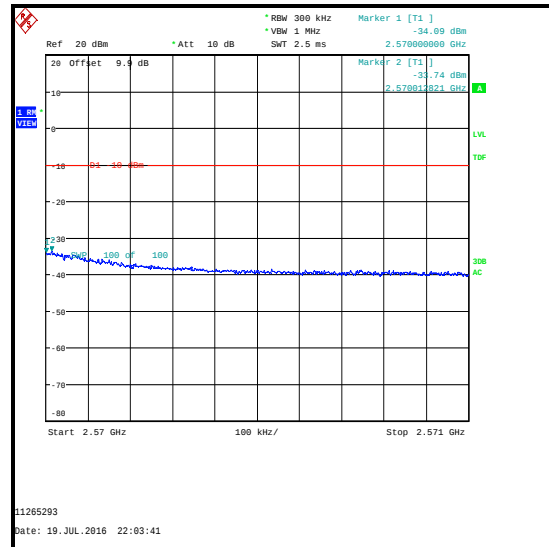
Transmitter Radiated Emissions at Band Edges (continued)**Results: 15 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.989	1	0	-19.5	-10.0	9.5	Complied
2500	1	0	-19.6	-10.0	9.6	Complied
2570	1	74	-16.9	-10.0	6.9	Complied
2500	1	74	-57.8	-10.0	47.8	Complied
2570	1	0	-53.6	-10.0	43.6	Complied

**QPSK / 1 RB 0 Offset / Lower Band Edge****QPSK / 1 RB 74 Offset / Upper Band Edge****QPSK / 1 RB 74 Offset / Lower Band Edge****QPSK / 1 RB 0 Offset / Upper Band Edge**

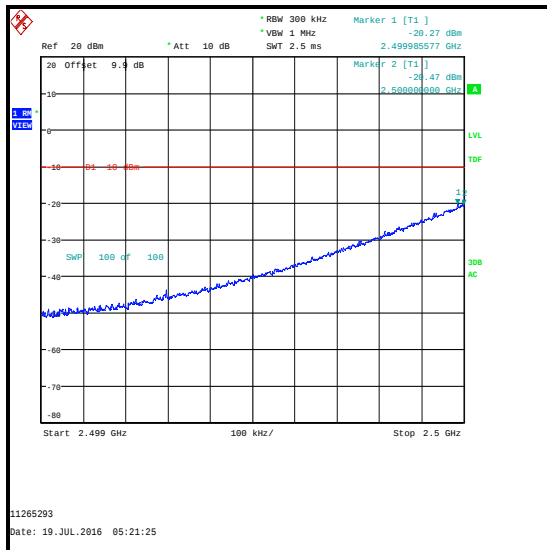
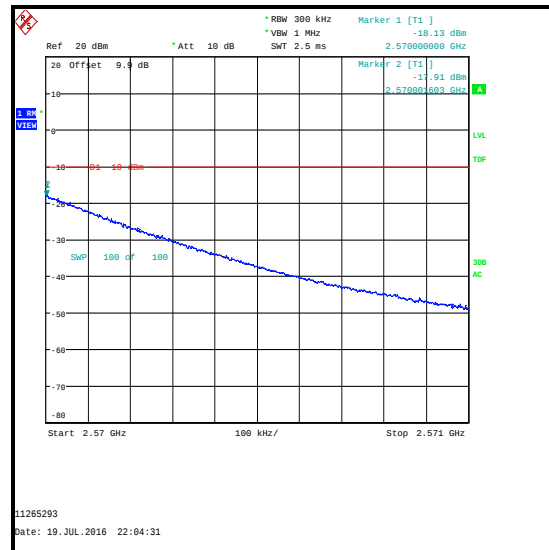
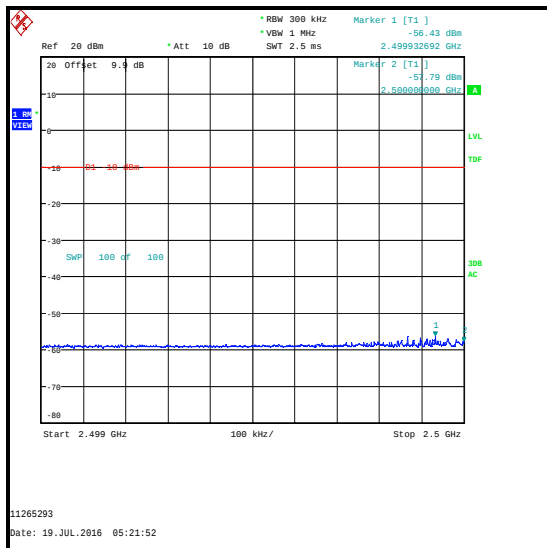
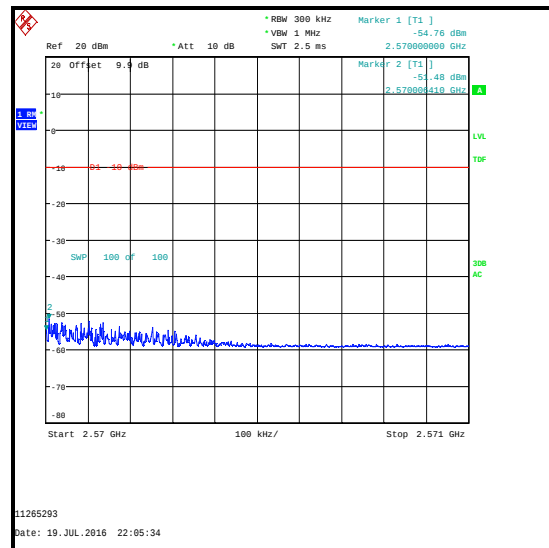
Transmitter Radiated Emissions at Band Edges (continued)**Results: 15 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.981	75	0	-34.5	-10.0	24.5	Complied
2500	75	0	-35.3	-10.0	25.3	Complied
2570	75	0	-34.1	-10.0	24.1	Complied
2570.013	75	0	-33.7	-10.0	23.7	Complied

**16QAM / Lower Band Edge****16QAM / Upper Band Edge**

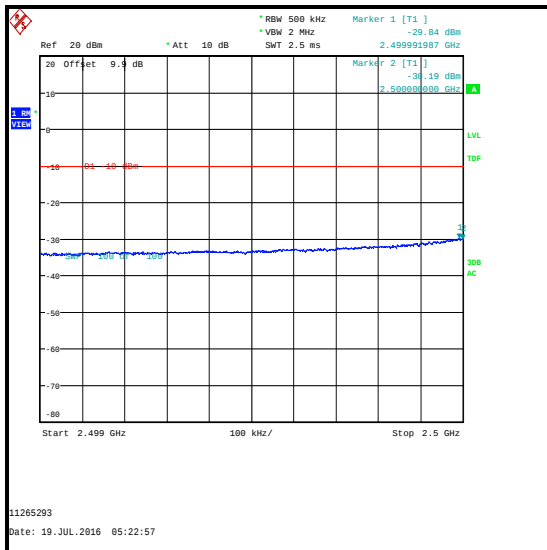
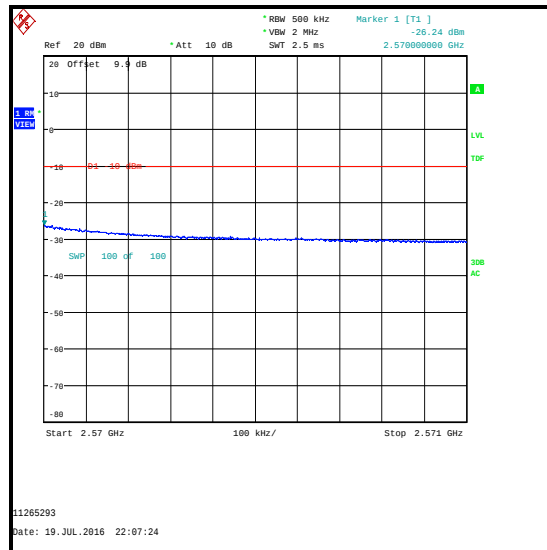
Transmitter Radiated Emissions at Band Edges (continued)**Results: 15 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.986	1	0	-20.3	-10.0	10.3	Complied
2500	1	0	-20.5	-10.0	10.5	Complied
2570	1	74	-18.1	-10.0	8.1	Complied
2570.002	1	74	-17.9	-10.0	7.9	Complied
2500	1	74	-57.8	-10.0	47.8	Complied
2570	1	0	-54.8	-10.0	44.8	Complied

**16QAM / 1 RB 0 Offset / Lower Band Edge****16QAM / 1 RB 74 Offset / Upper Band Edge****16QAM / 1 RB 74 Offset / Lower Band Edge****16QAM / 1 RB 0 Offset / Upper Band Edge**

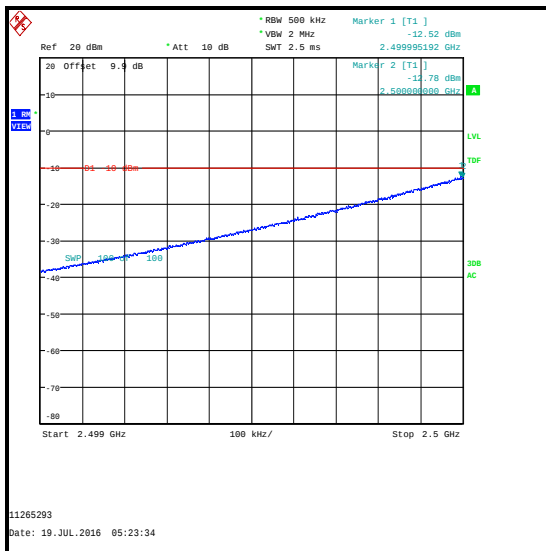
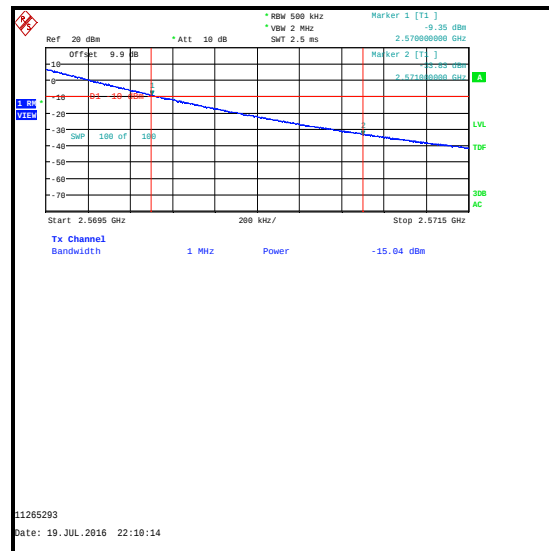
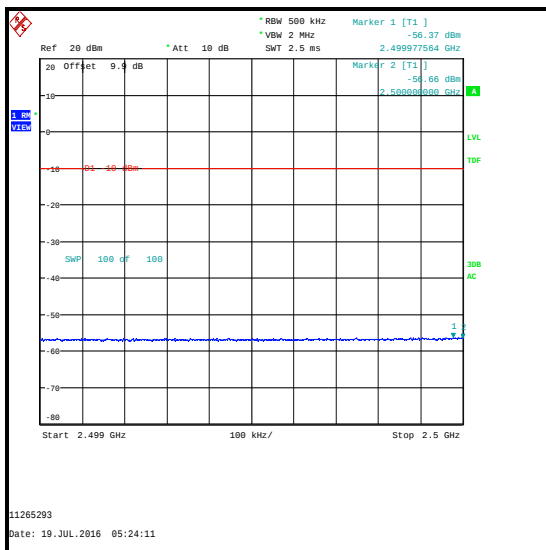
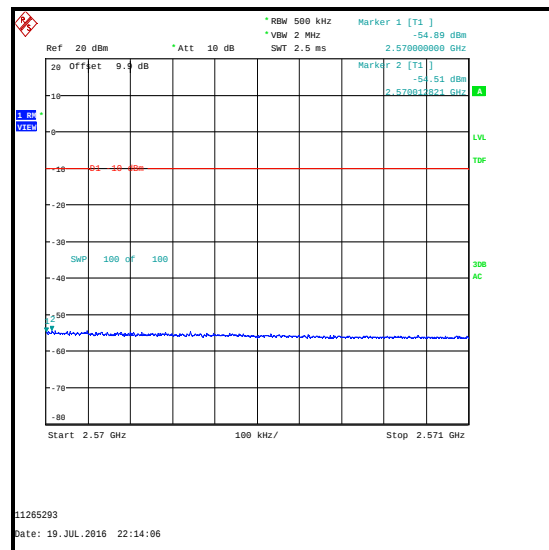
Transmitter Radiated Emissions at Band Edges (continued)**Results: 20 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.992	100	0	-29.8	-10.0	19.8	Complied
2500	100	0	-30.2	-10.0	20.2	Complied
2570	100	0	-26.2	-10.0	16.2	Complied

**QPSK / Lower Band Edge****QPSK / Upper Band Edge**

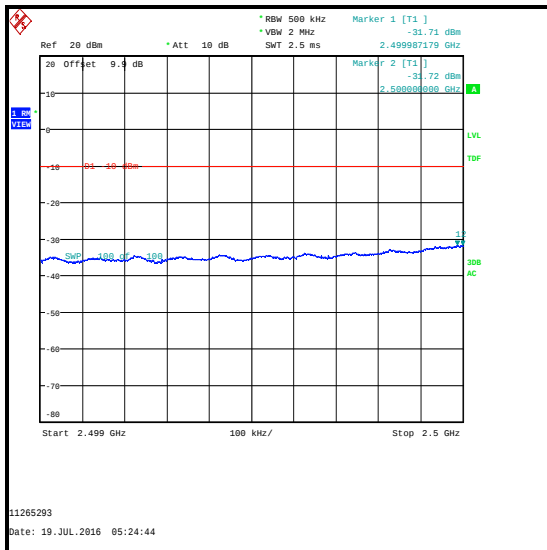
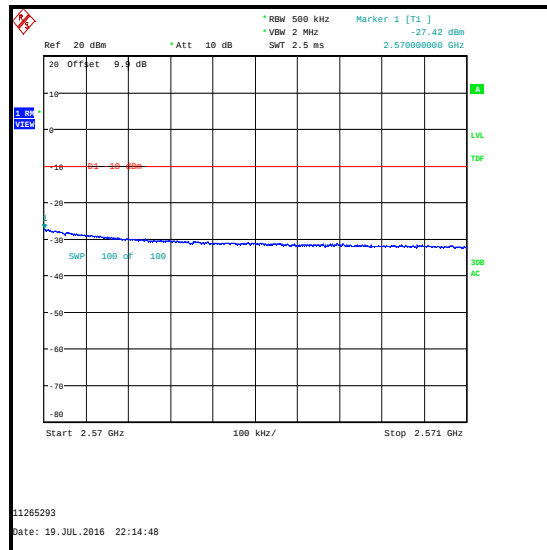
Transmitter Radiated Emissions at Band Edges (continued)**Results: 20 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.995	1	0	-12.5	-10.0	2.5	Complied
2500	1	0	-12.8	-10.0	2.8	Complied
2570 to 2571	1	99	-15.0*	-10.0	5.0	Complied
2500	1	99	-56.7	-10.0	46.7	Complied
2570	1	0	-54.9	-10.0	44.9	Complied

**QPSK / 1 RB 0 Offset / Lower Band Edge****QPSK / 1 RB 99 Offset / Upper Band Edge / 2570 to 2571 MHz / Integrated level****QPSK / 1 RB 99 Offset / Lower Band Edge****QPSK / 1 RB 99 Offset / Upper Band Edge**

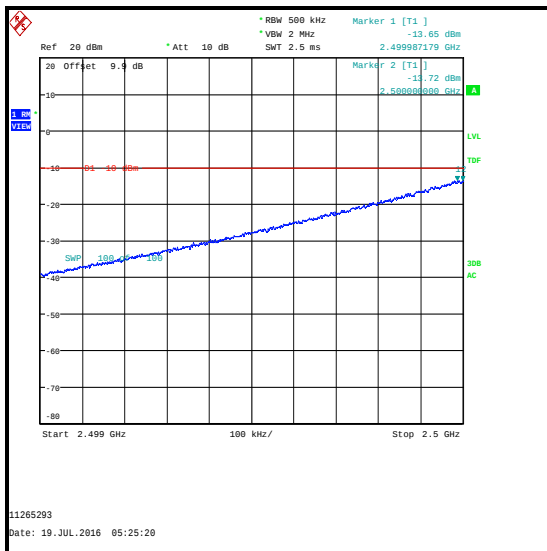
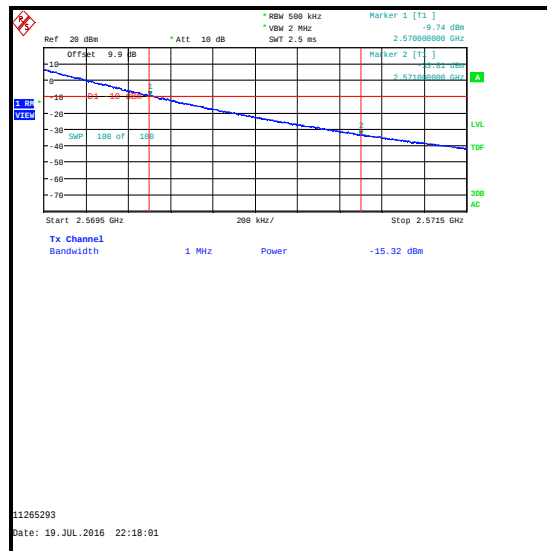
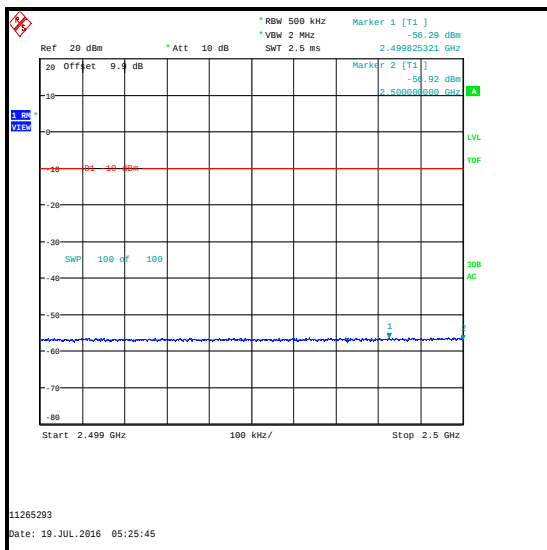
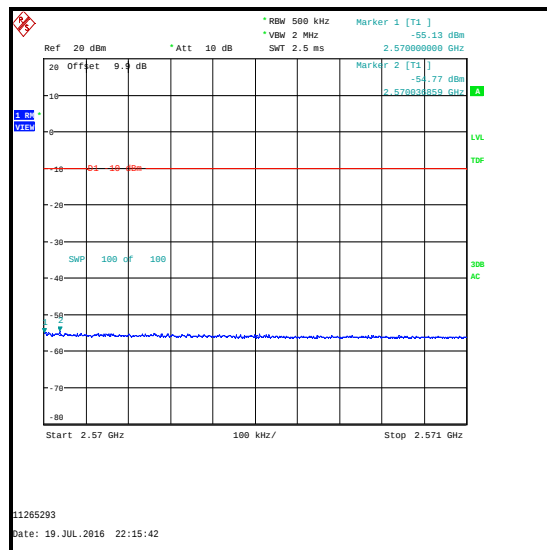
Transmitter Radiated Emissions at Band Edges (continued)**Results: 20 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.987	100	0	-31.7	-10.0	21.7	Complied
2500	100	0	-31.7	-10.0	21.7	Complied
2570	100	0	-27.4	-10.0	17.4	Complied

**16QAM / Lower Band Edge****16QAM / Upper Band Edge**

Transmitter Radiated Emissions at Band Edges (continued)**Results: 20 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
2499.987	1	0	-13.6	-10.0	3.6	Complied
2500	1	0	-13.7	-10.0	3.7	Complied
2570 to 2571	1	99	-15.3*	-10.0	5.3	Complied
2500	1	99	-56.9	-10.0	46.9	Complied
2570	1	0	-55.1	-10.0	45.1	Complied

**16QAM / 1 RB 0 Offset / Lower Band Edge****16QAM / 1 RB 99 Offset / Upper Band Edge / 2570 to 2571 MHz / Integrated level****16QAM / 1 RB 99 Offset / Lower Band Edge****16QAM / 1 RB 0 Offset / Upper Band Edge**

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

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2003	Thermohygrometer	Testo	608-H1	45046641	22 Apr 2017	12
K0017	3m RSE Chamber	Rainford EMC	N/A	N/A	17 May 2017	12
M1995	Test Receiver	Rohde & Schwarz	ESU40	100428	21 Mar 2017	12
A2893	Pre-Amplifier	Schwarzbeck	BBV 9721	9721-021	07 Apr 2017	12
A2889	Antenna	Schwarzbeck	BBHA 9120 B	BBHA 9120 B 653	07 Apr 2017	12
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	19 May 2017	12

5.2.11. Transmitter Frequency Stability (Temperature Variation)**Test Summary:**

Test Engineer:	Stefan Ho	Test Dates:	03 June 2016 & 09 June 2016
Test Sample IMEI:	358640070266615		

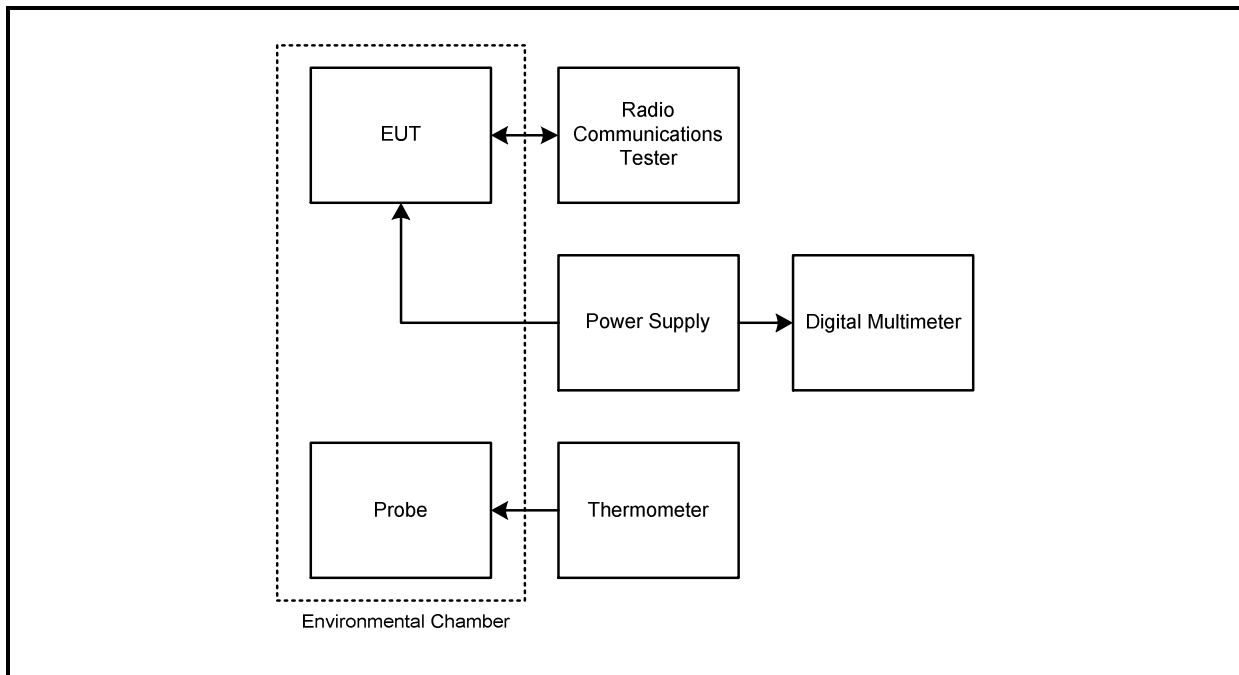
FCC Reference:	Parts 2.1055 & 27.54
Test Method Used:	KDB 971168 Section 9.0 referencing ANSI TIA-603-D-2010 Section 2.2.2 and FCC Part 2.1055

Environmental Conditions:

Ambient Temperature (°C):	23
Ambient Relative Humidity (%):	46 to 48

Note(s):

1. Flying leads were connected internally to the EUT in place of the battery. These leads extended and connected to a bench power supply at the nominal voltage of 3.8 V.
2. Frequency error was measured using a calibrated Rohde and Schwarz CMW 500 Universal Radio Communications Tester in accordance with current Rohde and Schwarz application notes. The EUT was connected by suitable RF cables to the CMW 500. A bi-directional communications link was established between the EUT and CMW 500. The frequency meter value was recorded.
3. Temperature was monitored throughout the test with a calibrated digital thermometer.

Test setup:

Transmitter Frequency Stability (Temperature Variation) (continued)**Results: Bottom Channel (2502.5 MHz)**

Temperature (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
-30	10	2502.500010	2500	2.500010	Complied
-20	9	2502.500009	2500	2.500009	Complied
-10	9	2502.500009	2500	2.500009	Complied
0	11	2502.500011	2500	2.500011	Complied
10	10	2502.500010	2500	2.500010	Complied
20	9	2502.500009	2500	2.500009	Complied
30	11	2502.500011	2500	2.500011	Complied
40	9	2502.500009	2500	2.500009	Complied
50	8	2502.500008	2500	2.500008	Complied

Results: Top Channel (2567.5 MHz)

Temperature (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
-30	9	2567.500009	2570	2.499991	Complied
-20	8	2567.499992	2570	2.500008	Complied
-10	8	2567.500008	2570	2.499992	Complied
0	9	2567.500009	2570	2.499991	Complied
10	12	2567.500012	2570	2.499988	Complied
20	7	2567.500007	2570	2.499993	Complied
30	8	2567.500008	2570	2.499992	Complied
40	11	2567.500011	2570	2.499989	Complied
50	13	2567.500013	2570	2.499987	Complied

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2002	Thermohygrometer	Testo	608-H1	45041825	02 Apr 2017	12
M1869	Wideband Radio Comms Tester	Rohde & Schwarz	CMW 500	145923	05 Apr 2017	12
M1815	Environmental Chamber	Votsch/Heraeus	VT4002	521/83083	Calibrated before use	-
M1642	Thermometer	Fluke	52II	18890119	25 Apr 2017	12
S021	DC power supply	TTI	CPX200	061034	Calibrated before use	-
M1269	Multimeter	Fluke	179	90250210	13 May 2017	12

5.2.12. Transmitter Frequency Stability (Voltage Variation)**Test Summary:**

Test Engineer:	Stefan Ho	Test Date:	02 June 2016
Test Sample IMEI:	358640070266615		

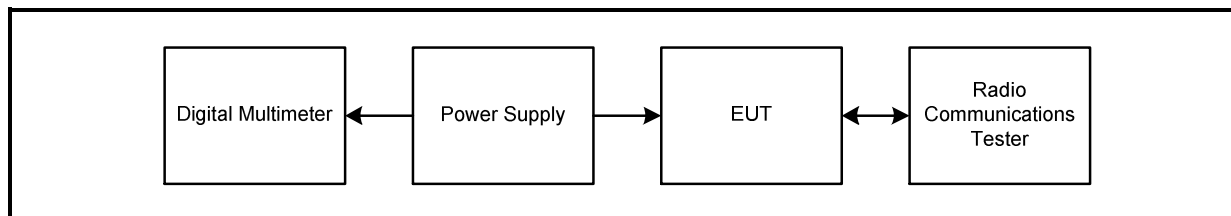
FCC Reference:	Parts 2.1055 & 27.54
Test Method Used:	KDB 971168 Section 9.0 referencing ANSI TIA-603-D-2010 Section 2.2.2 and FCC Part 2.1055

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	48

Note(s):

1. Flying leads were connected internally to the EUT in place of the battery. These leads extended and connected to a bench power supply.
2. Frequency error was measured using a calibrated Rohde and Schwarz CMW 500 Universal Radio Communications Tester in accordance with current Rohde and Schwarz application notes. The EUT was connected by suitable RF cables to the CMW 500. A bi-directional communications link was established between the EUT and CMW 500. The frequency meter value was recorded.
3. Voltage was monitored throughout the test with a calibrated digital voltmeter.

Test setup:

Transmitter Frequency Stability (Voltage Variation) (continued)**Results: Bottom Channel (2502.5 MHz)**

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
3.4	9	2502.500009	2500	2.500009	Complied
4.2	9	2502.500009	2500	2.500009	Complied

Results: Top Channel (2567.5 MHz)

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
3.4	9	2567.500009	2570	2.499991	Complied
4.2	7	2567.500007	2570	2.499993	Complied

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M2002	Thermohygrometer	Testo	608-H1	45041825	02 Apr 2017	12
M1869	Wideband Radio Comms Tester	Rohde & Schwarz	CMW 500	145923	05 Apr 2017	12
S021	DC power supply	TTI	CPX200	061034	Calibrated before use	-
M1269	Multimeter	Fluke	179	90250210	13 May 2017	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	2500 to 2570 MHz	95%	± 1.36 dB
Frequency Stability	2500 to 2570 MHz	95%	± 23 Hz
Occupied Bandwidth	2500 to 2570 MHz	95%	± 3.92 %
Conducted Spurious Emissions	2500 to 2570 MHz	95%	± 2.62 dB
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	± 2.94 dB
Radiated Spurious Emissions	1 GHz to 26 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	-	-	Updates as requested by the TCB

--- END OF REPORT ---