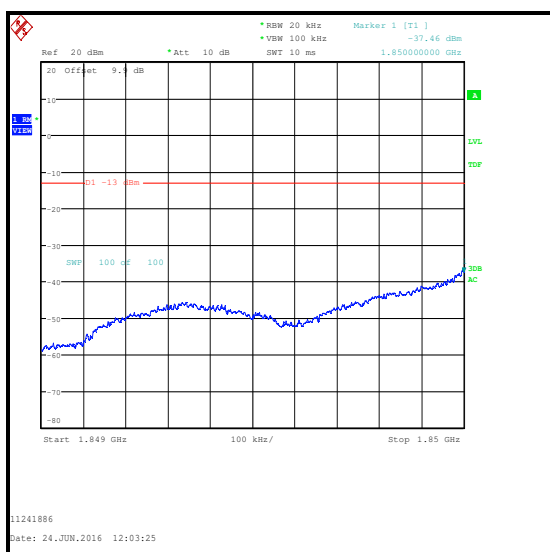
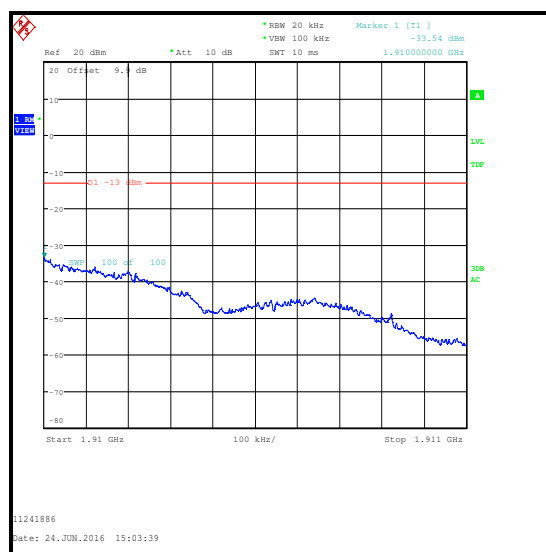
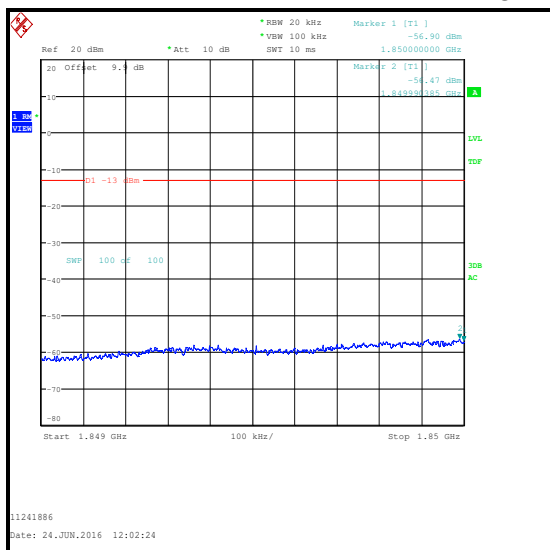
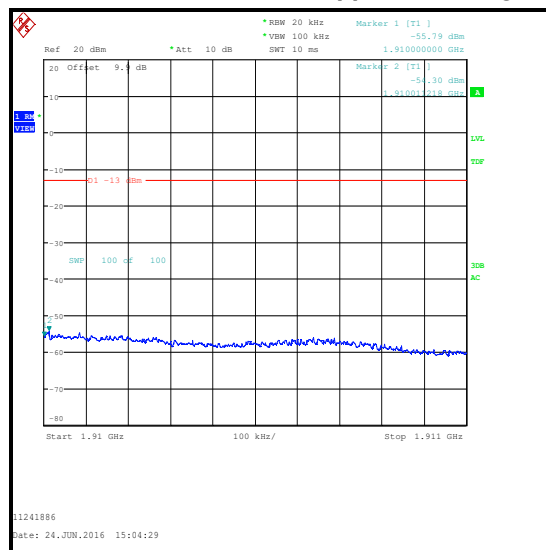


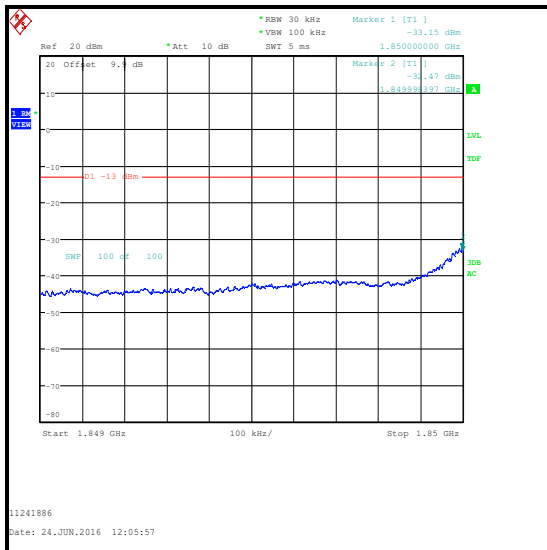
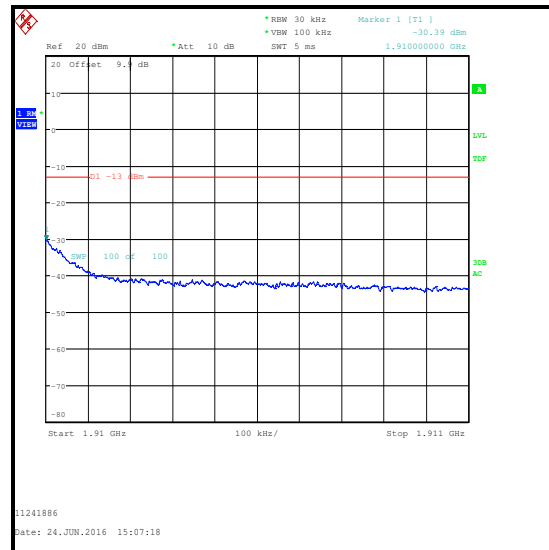
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 1.4 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-37.5	-13.0	24.5	Complied
1910	1	5	-33.5	-13.0	20.5	Complied
1850	1	5	-56.9	-13.0	43.9	Complied
1910	1	0	-55.8	-13.0	42.8	Complied

**16QAM / 1 RB 0 offset / Lower Band Edge****16QAM / 1 RB 5 offset / Upper Band Edge****16QAM / 1 RB 5 offset / Lower Band Edge****16QAM / 1 RB 0 offset / Upper Band Edge**

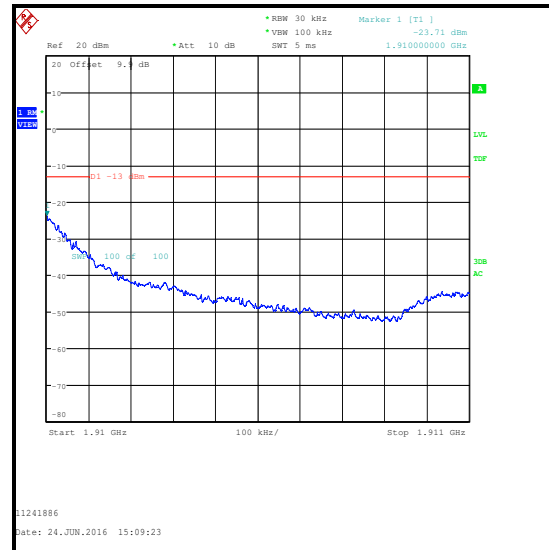
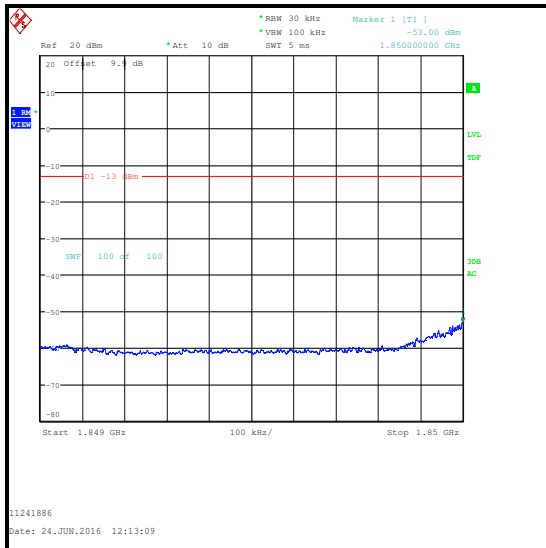
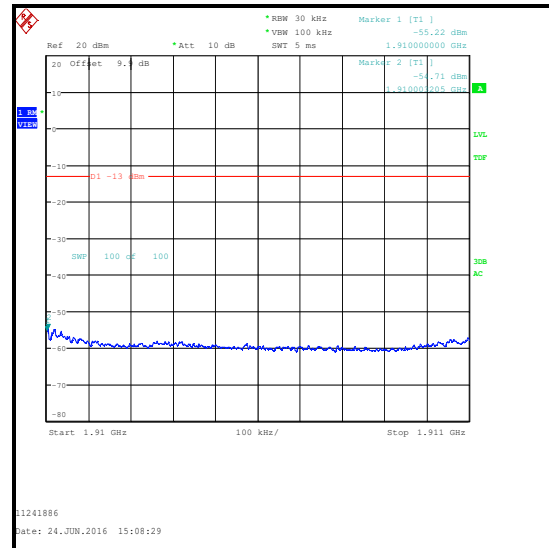
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 3 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.998	15	0	-32.5	-13.0	19.5	Complied
1850	15	0	-33.2	-13.0	20.2	Complied
1910	15	0	-30.4	-13.0	17.4	Complied

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

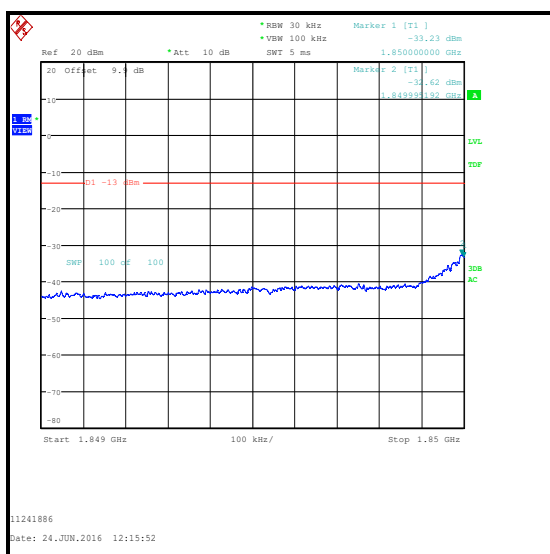
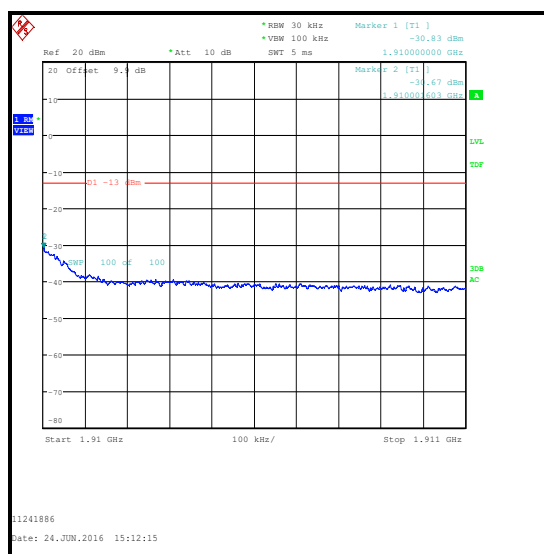
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 3 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.995	1	0	-25.1	-13.0	12.1	Complied
1850	1	0	-25.8	-13.0	12.8	Complied
1910	1	14	-23.7	-13.0	10.7	Complied
1850	1	14	-53.0	-13.0	40.0	Complied
1910	1	0	-55.2	-13.0	42.2	Complied

**QPSK / 1 RB 0 offset / Lower Band Edge****QPSK / 1 RB 14 offset / Upper Band Edge****QPSK / 1 RB 14 offset / Lower Band Edge****QPSK / 1 RB 0 offset / Upper Band Edge**

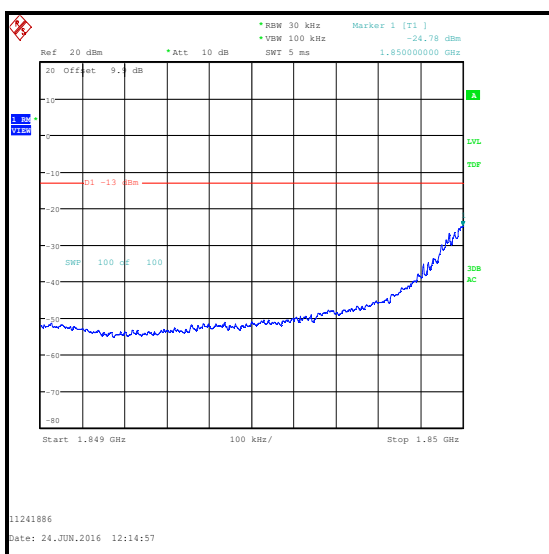
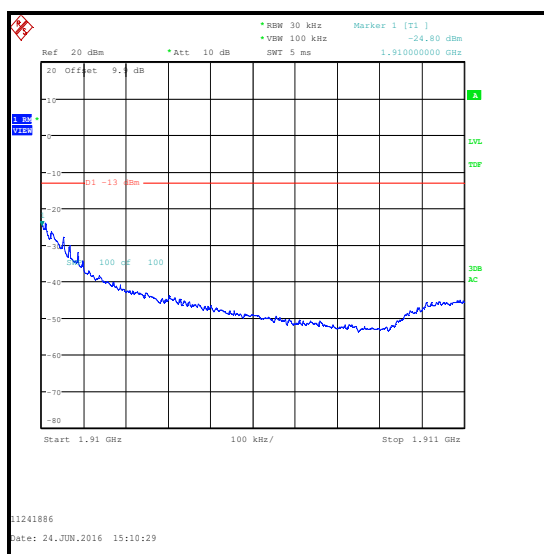
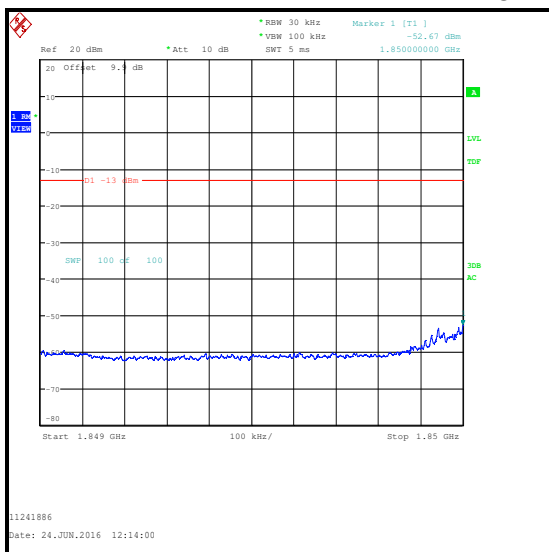
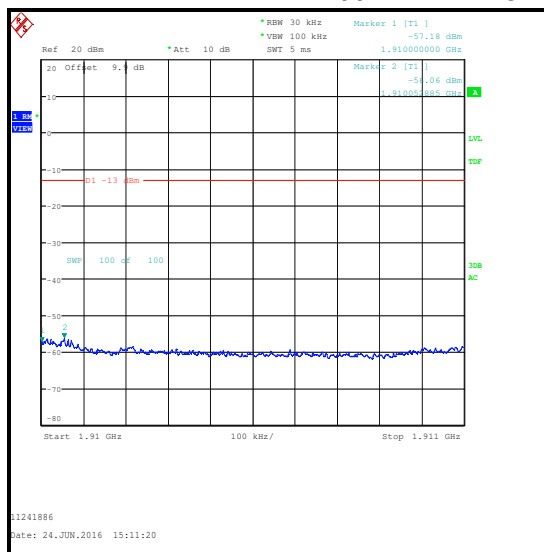
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 3 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.995	15	0	-32.6	-13.0	19.6	Complied
1850	15	0	-33.2	-13.0	20.2	Complied
1910	15	0	-30.8	-13.0	17.8	Complied
1910.002	15	0	-30.7	-13.0	17.7	Complied

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

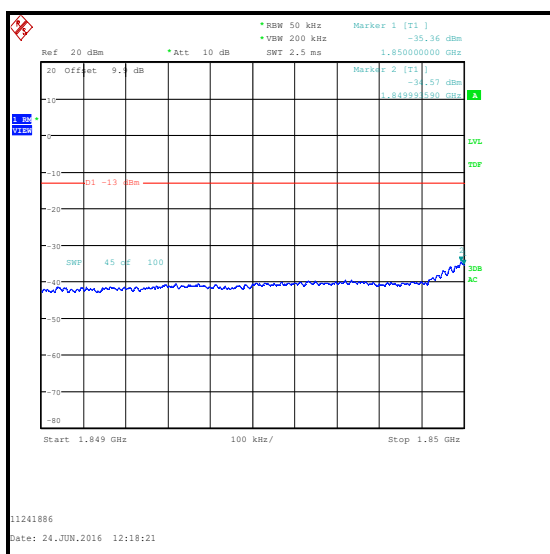
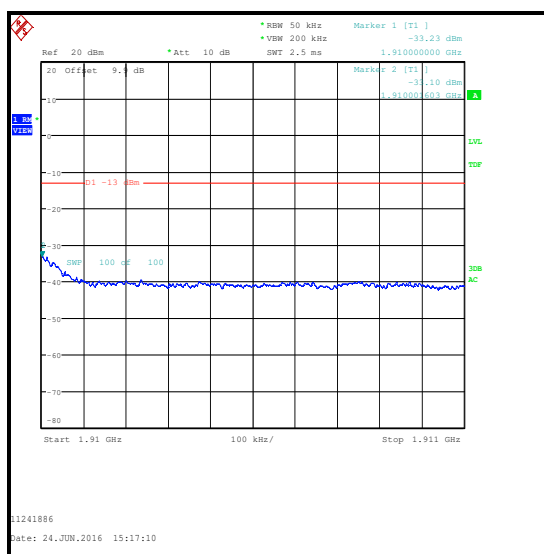
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 3 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-24.8	-13.0	11.8	Complied
1910	1	14	-24.8	-13.0	11.8	Complied
1850	1	14	-52.7	-13.0	39.7	Complied
1910	1	0	-57.2	-13.0	44.2	Complied

**16QAM / 1 RB 0 offset / Lower Band Edge****16QAM / 1 RB 14 offset / Upper Band Edge****16QAM / 1 RB 14 offset / Lower Band Edge****16QAM / 1 RB 0 offset / Upper Band Edge**

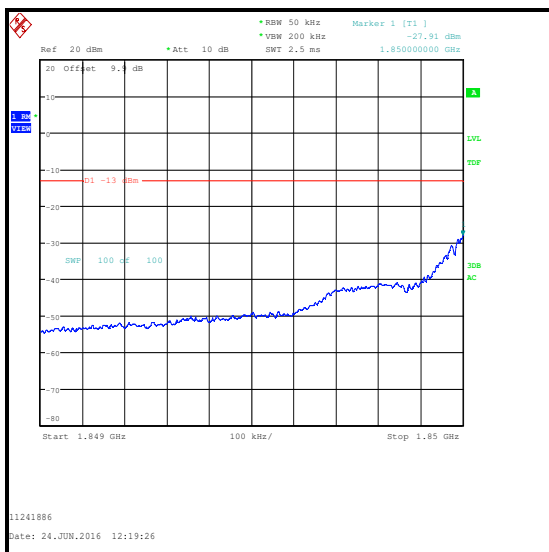
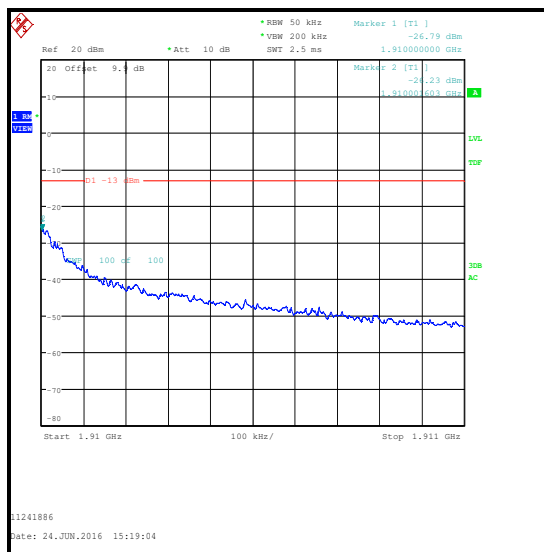
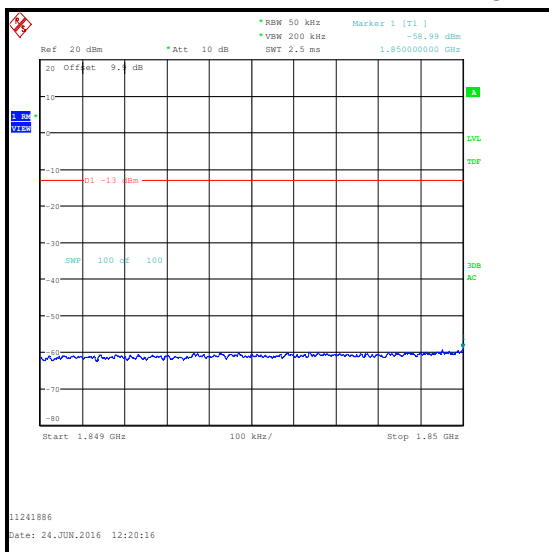
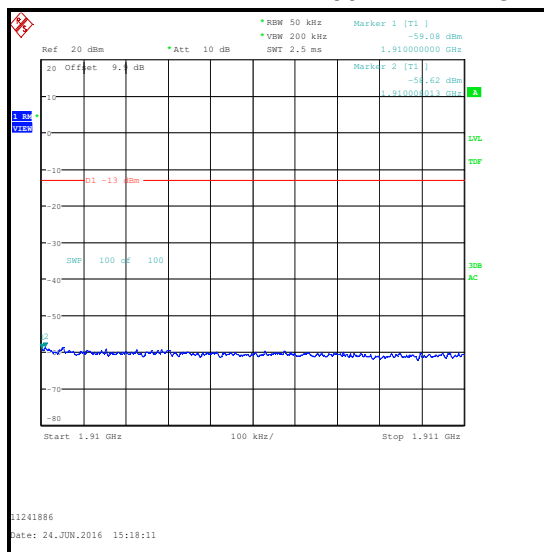
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 5 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.994	25	0	-34.6	-13.0	21.6	Complied
1850	25	0	-35.4	-13.0	22.4	Complied
1910	25	0	-33.2	-13.0	20.2	Complied
1910.002	25	0	-33.1	-13.0	20.1	Complied

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

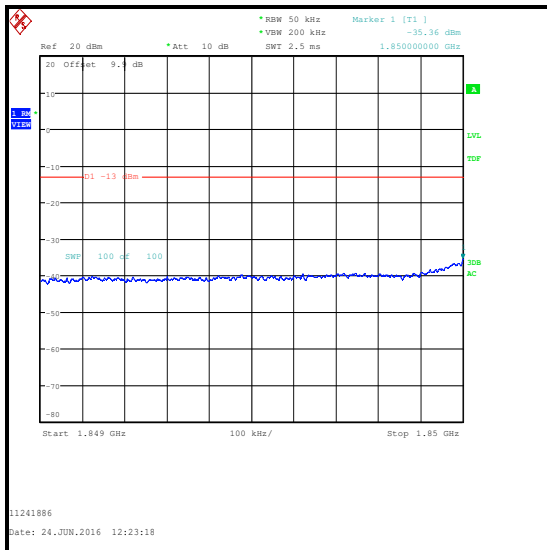
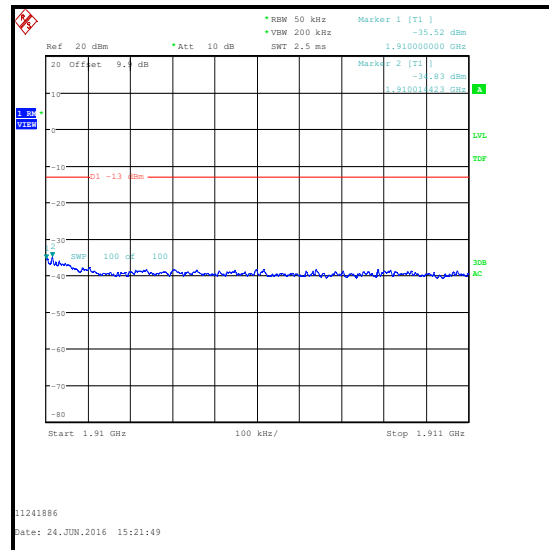
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 5 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-27.9	-13.0	14.9	Complied
1910	1	24	-26.8	-13.0	13.8	Complied
1910.002	1	24	-26.2	-13.0	13.2	Complied
1850	1	24	-59.0	-13.0	46.0	Complied
1910	1	0	-59.1	-13.0	46.1	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**

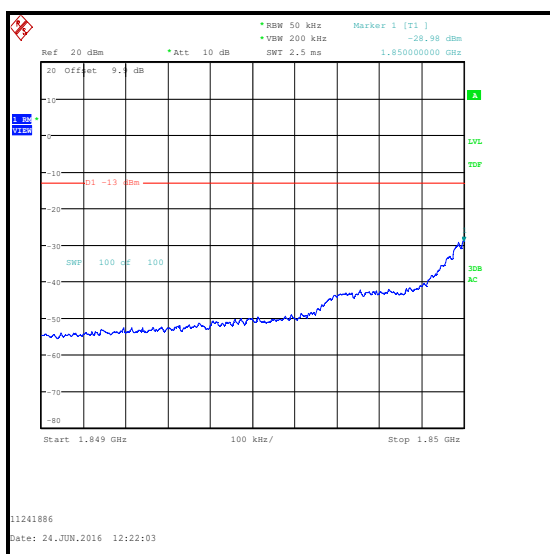
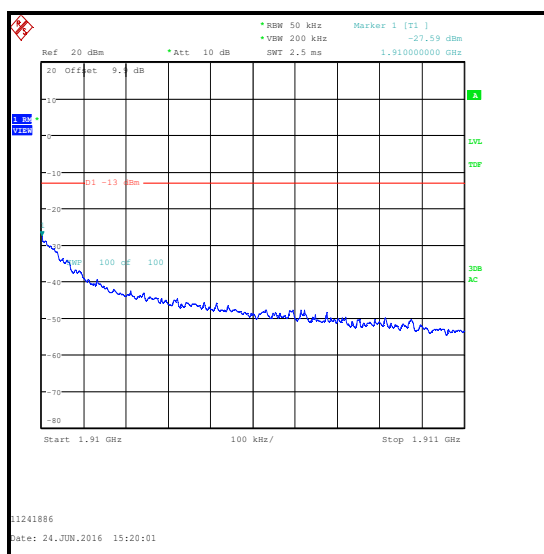
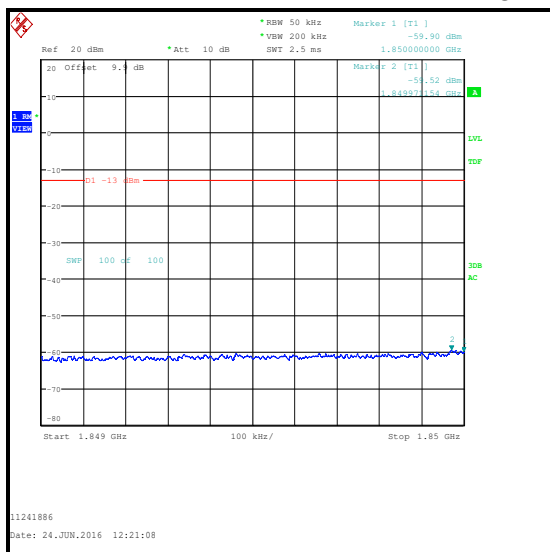
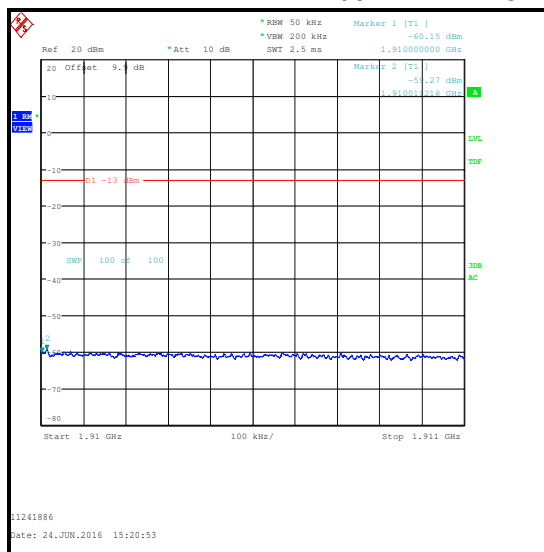
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 5 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	25	0	-35.4	-13.0	22.4	Complied
1910	25	0	-35.5	-13.0	22.5	Complied
1910.014	25	0	-34.8	-13.0	21.8	Complied

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

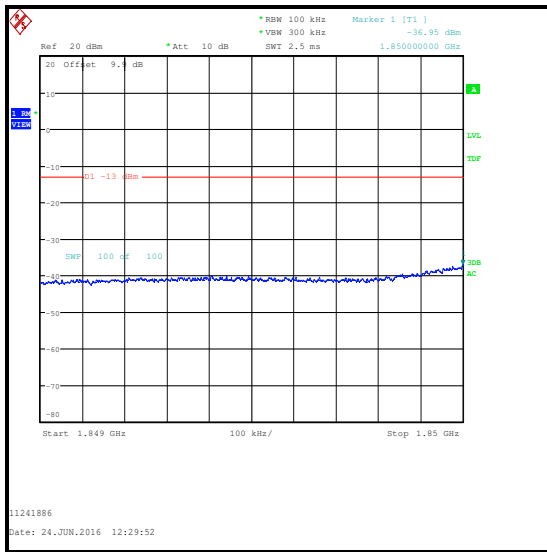
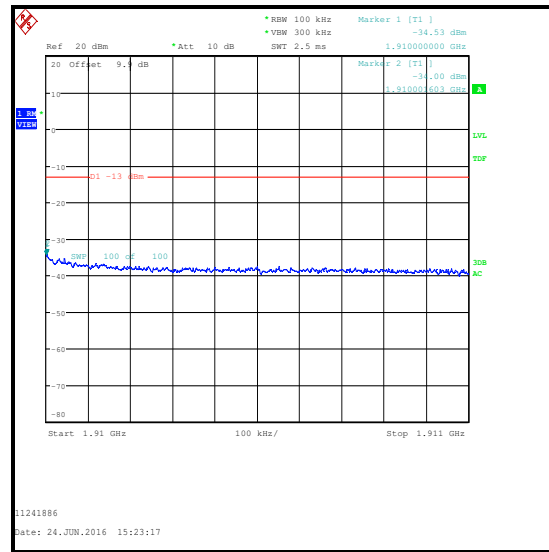
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 5 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-29.0	-13.0	16.0	Complied
1910	1	24	-27.6	-13.0	14.6	Complied
1850	1	24	-59.9	-13.0	46.9	Complied
1910	1	0	-60.2	-13.0	47.2	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**

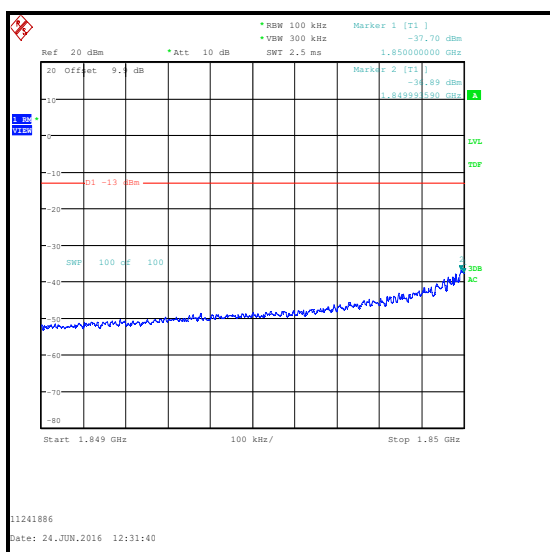
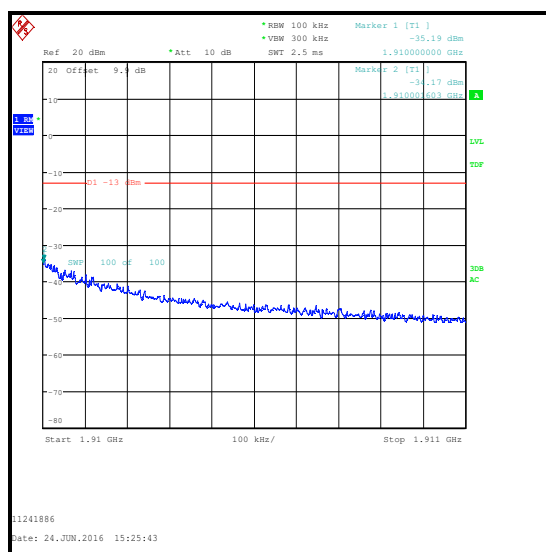
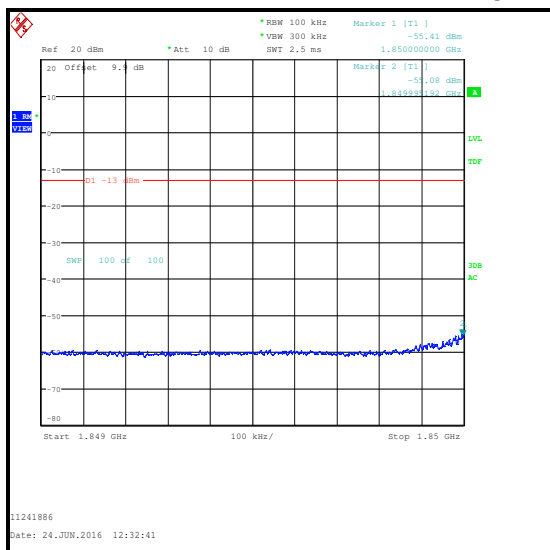
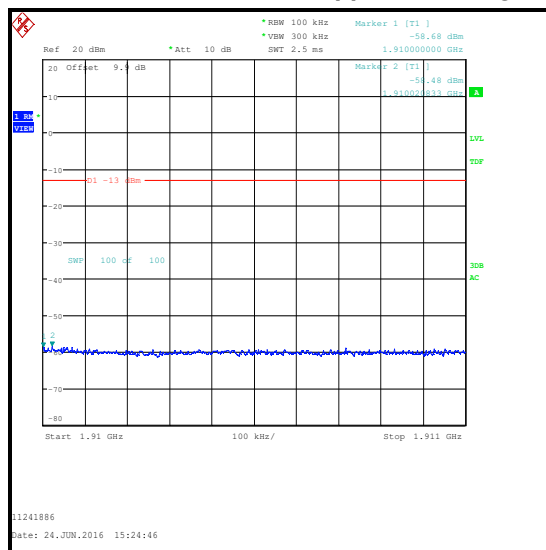
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 10 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	50	0	-37.0	-13.0	24.0	Complied
1910	50	0	-34.5	-13.0	21.5	Complied
1910.002	50	0	-34.0	-13.0	21.0	Complied

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

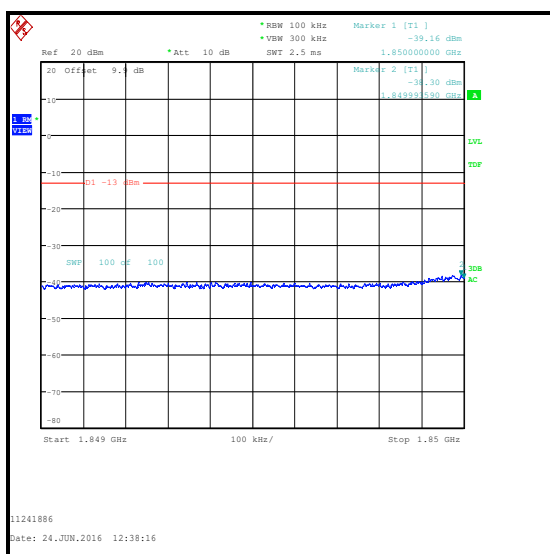
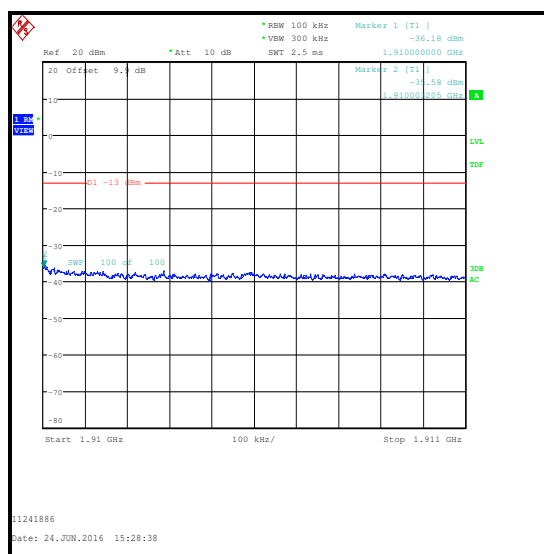
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 10 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-37.7	-13.0	24.7	Complied
1910	1	49	-35.2	-13.0	22.2	Complied
1850	1	49	-55.4	-13.0	42.4	Complied
1910	1	0	-58.7	-13.0	45.7	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) – LAT**Results: 10 MHz Channel Bandwidth / 16QAM**

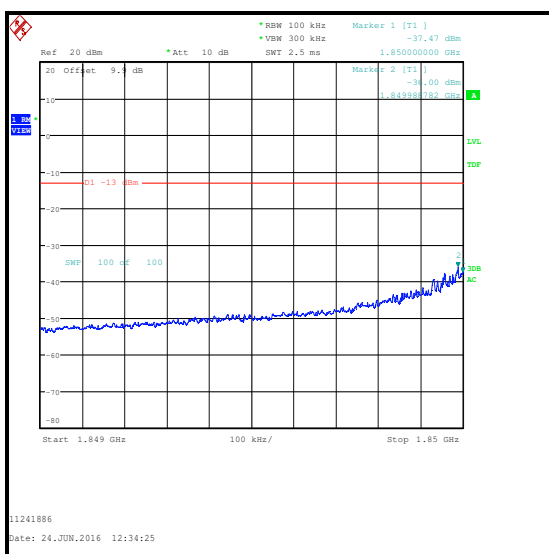
Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.994	50	0	-38.3	-13.0	25.3	Complied
1850	50	0	-39.2	-13.0	26.2	Complied
1910	50	0	-36.2	-13.0	23.2	Complied
1910.003	50	0	-35.6	-13.0	22.6	Complied

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

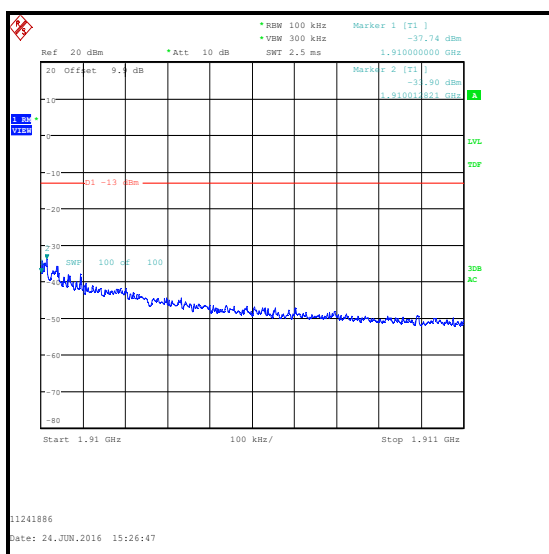
Transmitter Radiated Emissions at Band Edges (continued) – LAT

Results: 10 MHz Channel Bandwidth / 16QAM

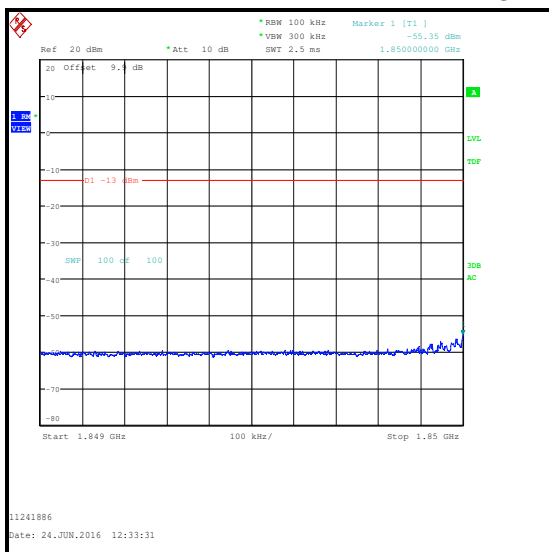
Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-37.5	-13.0	24.5	Complied
1910	1	49	-37.7	-13.0	24.7	Complied
1850	1	49	-55.4	-13.0	42.4	Complied
1910	1	0	-59.6	-13.0	46.6	Complied



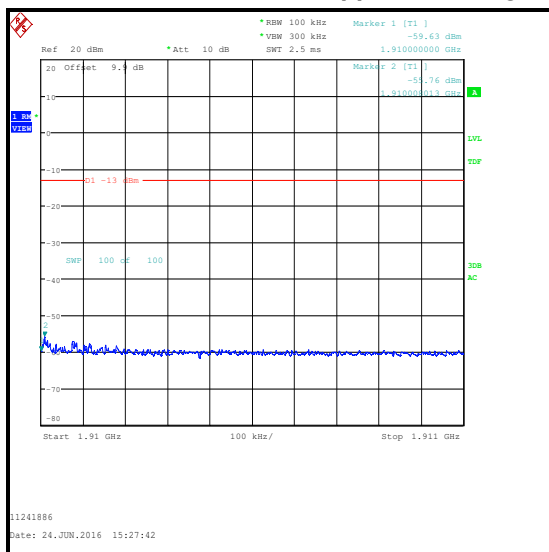
16QAM / 1 RB 0 offset / Lower Band Edge



16QAM / 1 RB 49 offset / Upper Band Edge



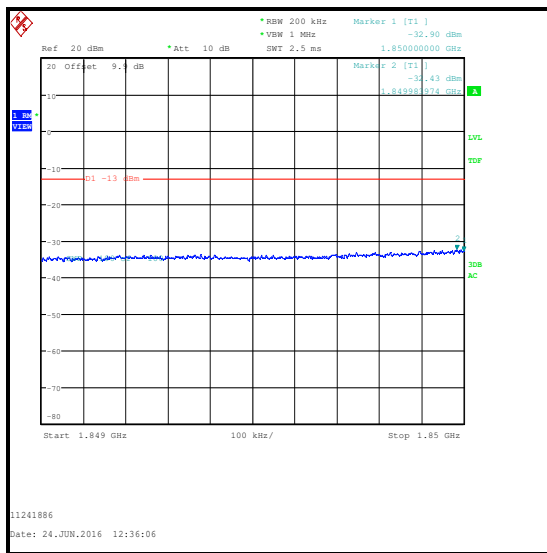
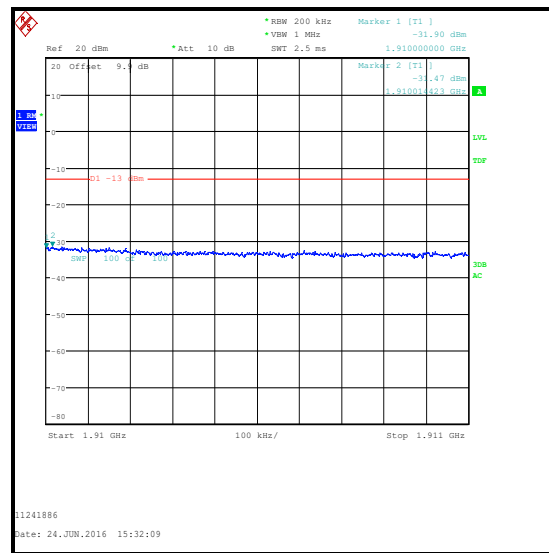
16QAM / 1 RB 49 offset / Lower Band Edge



16QAM / 1 RB 0 offset / Upper Band Edge

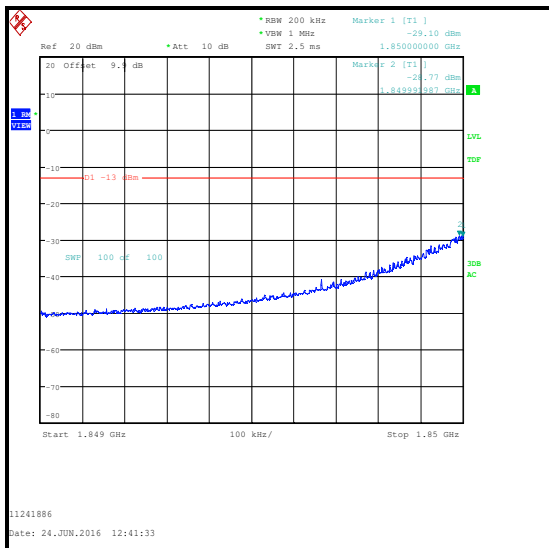
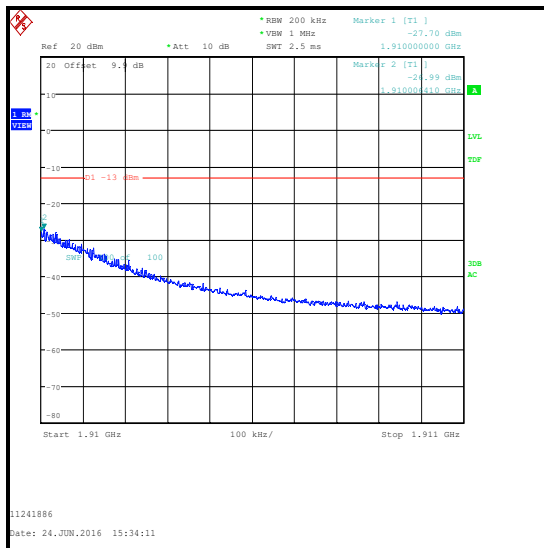
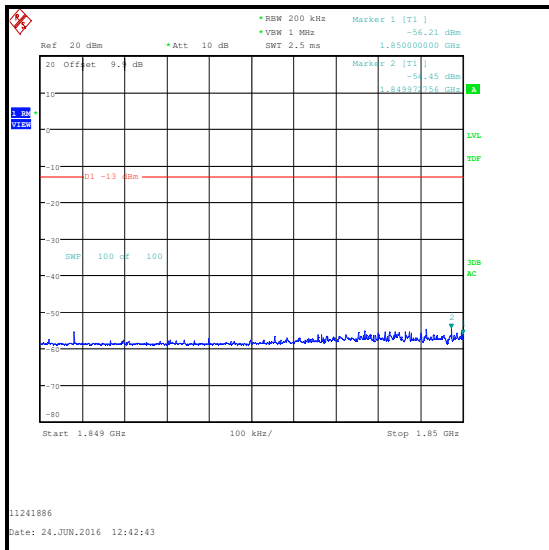
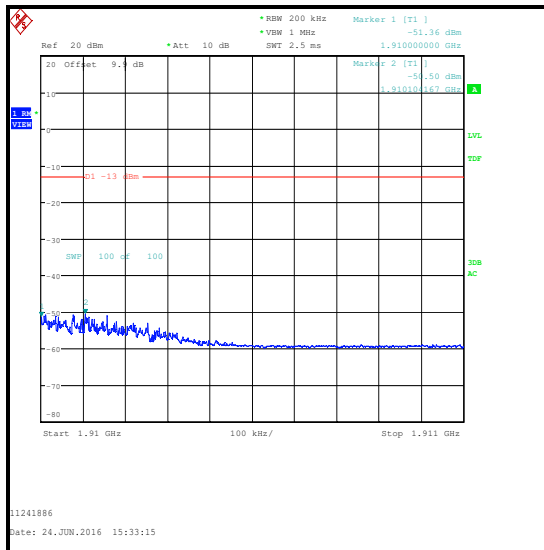
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 15 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.984	75	0	-32.4	-13.0	19.4	Complied
1850	75	0	-32.9	-13.0	19.9	Complied
1910	75	0	-31.9	-13.0	18.9	Complied
1910.014	75	0	-31.5	-13.0	18.5	Complied

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

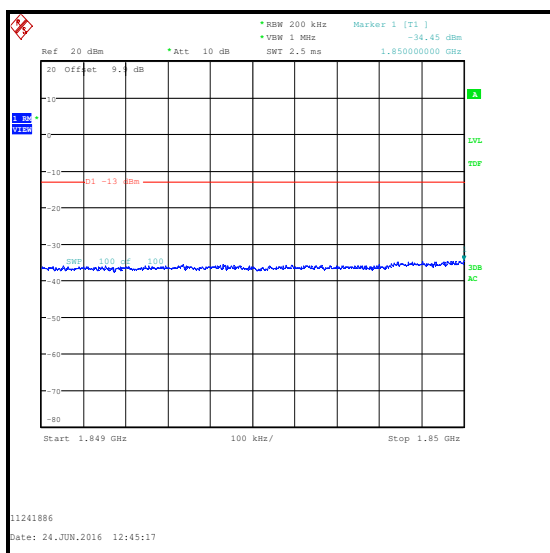
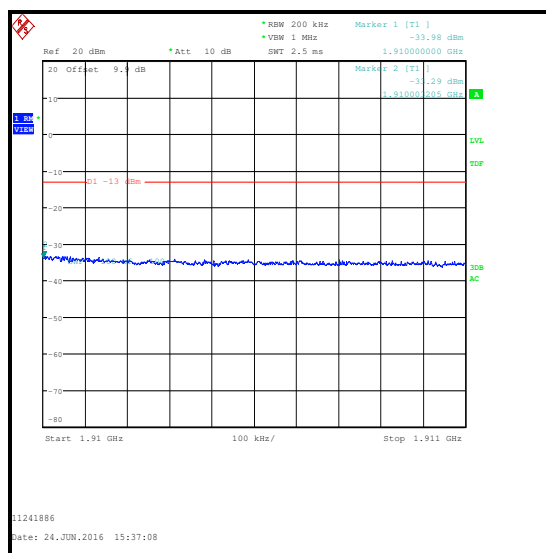
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 15 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.992	1	0	-28.8	-13.0	15.8	Complied
1850	1	0	-29.1	-13.0	16.1	Complied
1910	1	74	-27.7	-13.0	14.7	Complied
1910.006	1	74	-27.0	-13.0	14.0	Complied
1850	1	74	56.2	-13.0	43.2	Complied
1910	1	0	51.4	-13.0	38.4	Complied

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

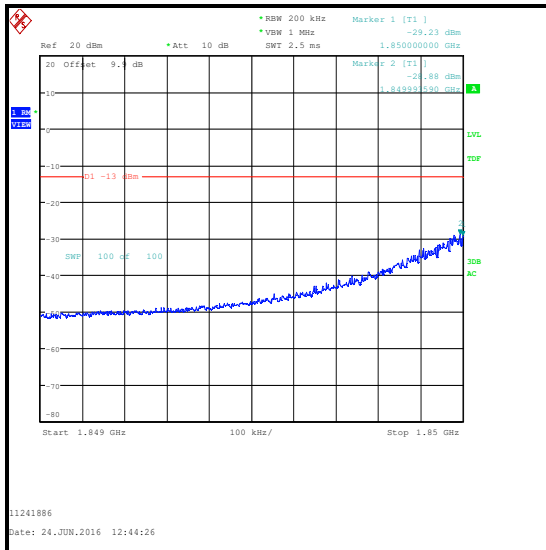
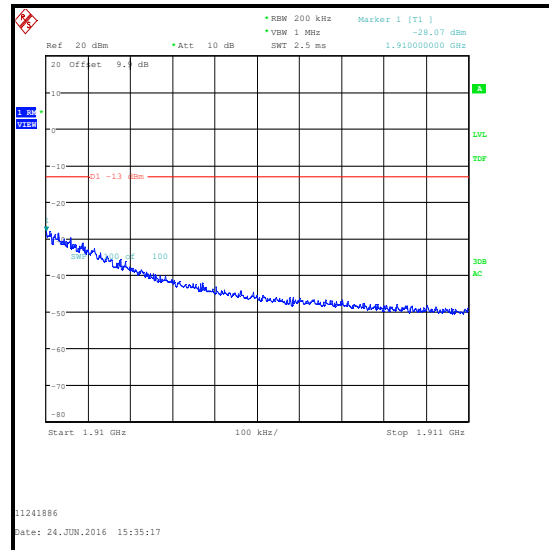
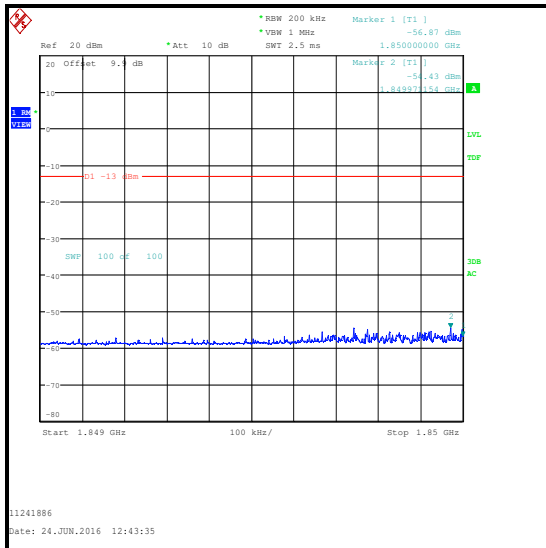
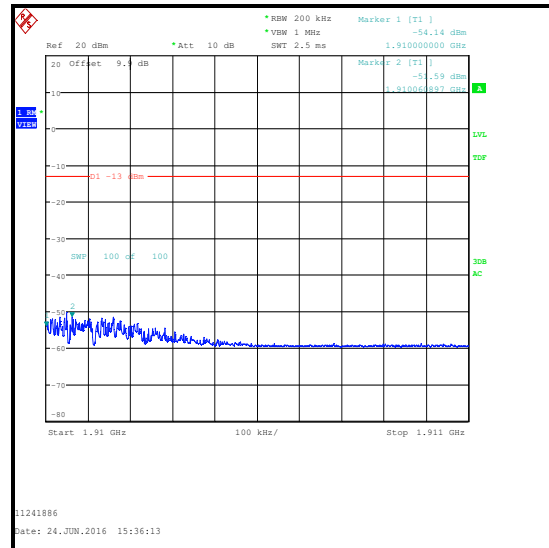
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 15 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	75	0	-34.5	-13.0	21.5	Complied
1910	75	0	-34.0	-13.0	21.0	Complied
1910.003	75	0	-33.3	-13.0	20.3	Complied

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

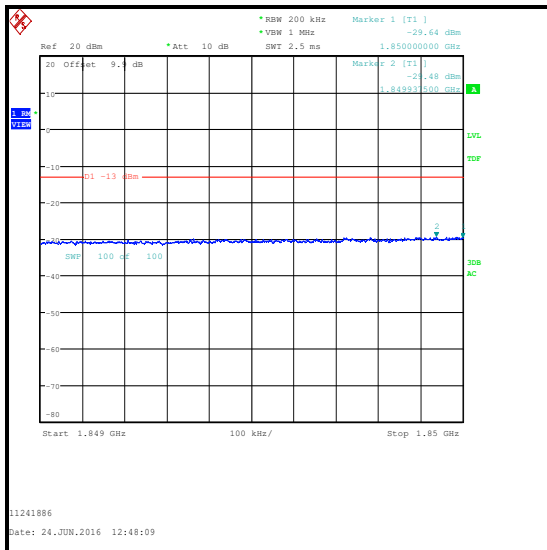
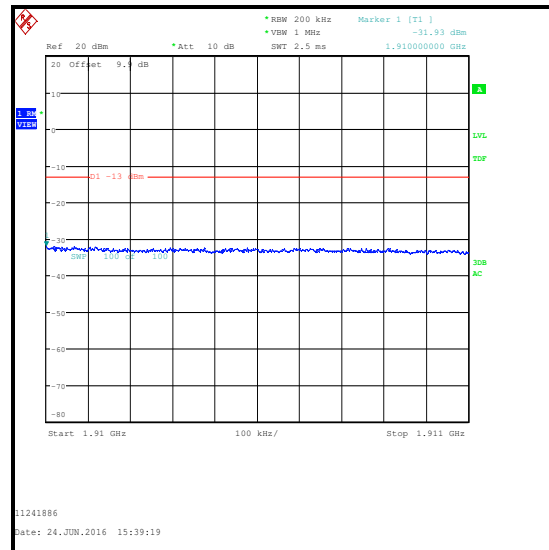
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 15 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.994	1	0	-28.9	-13.0	15.9	Complied
1850	1	0	-29.2	-13.0	16.2	Complied
1910	1	74	-28.1	-13.0	15.1	Complied
1850	1	74	-56.9	-13.0	43.9	Complied
1910	1	0	-54.1	-13.0	41.1	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**

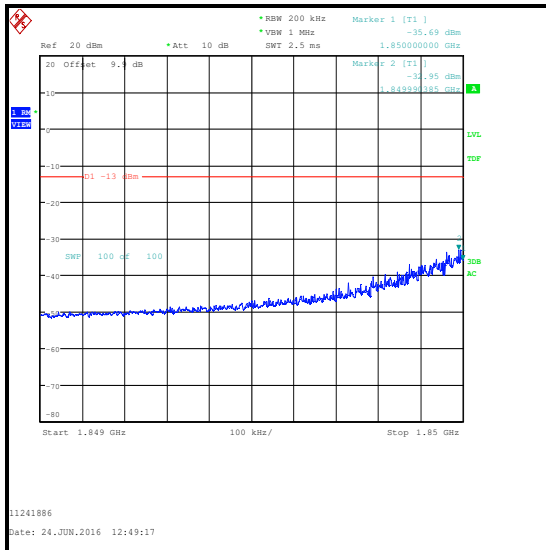
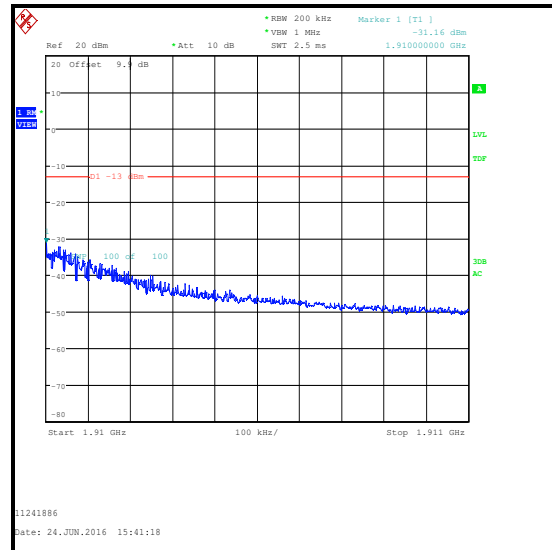
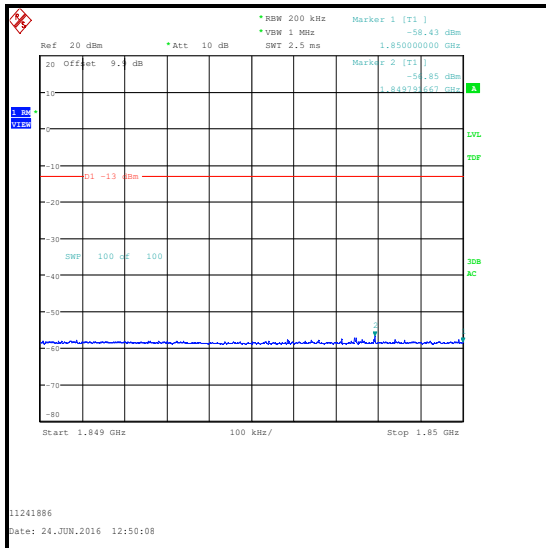
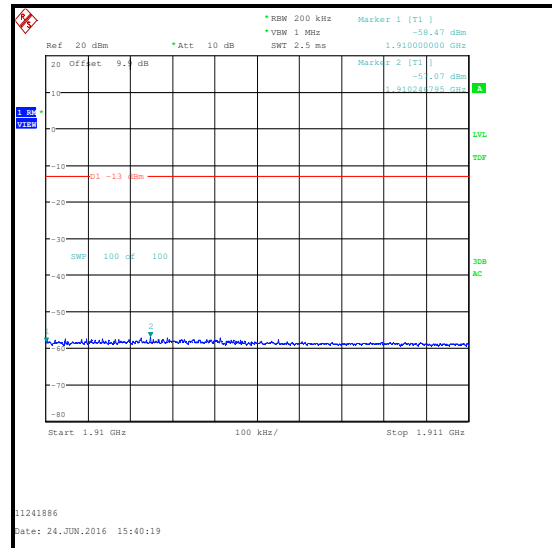
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 20 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.938	100	0	-29.5	-13.0	16.5	Complied
1850	100	0	-29.6	-13.0	16.6	Complied
1910	100	0	-31.9	-13.0	18.9	Complied

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

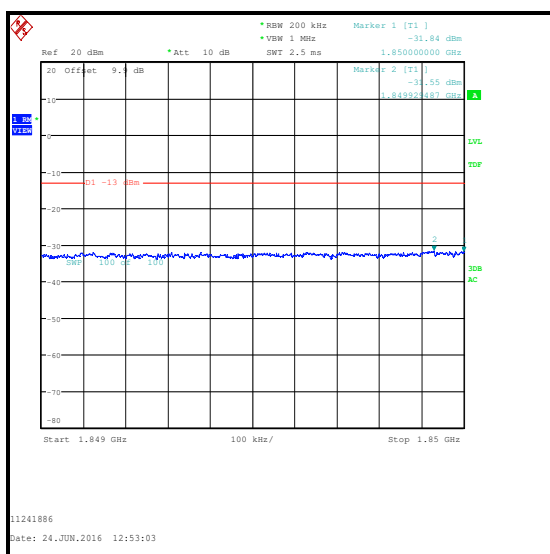
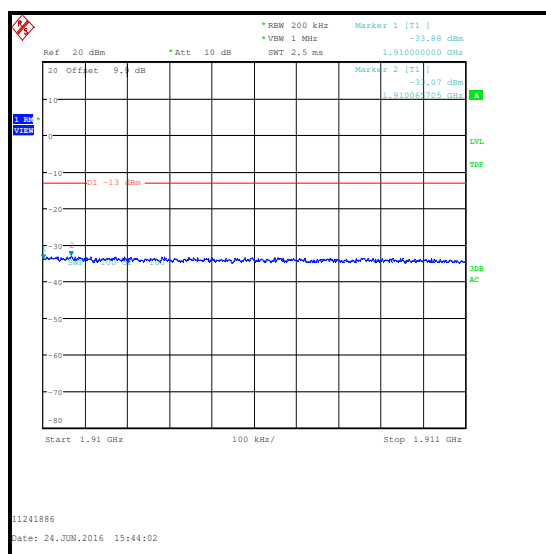
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 20 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.990	1	0	-33.0	-13.0	20.0	Complied
1850	1	0	-35.7	-13.0	22.7	Complied
1910	1	99	-31.2	-13.0	18.2	Complied
1850	1	99	-58.4	-13.0	45.4	Complied
1910	1	0	-58.5	-13.0	45.5	Complied

**QPSK / 1 RB 0 offset / Lower Band Edge****QPSK / 1 RB 99 offset / Upper Band Edge****QPSK / 1 RB 99 offset / Lower Band Edge****QPSK / 1 RB 0 offset / Upper Band Edge**

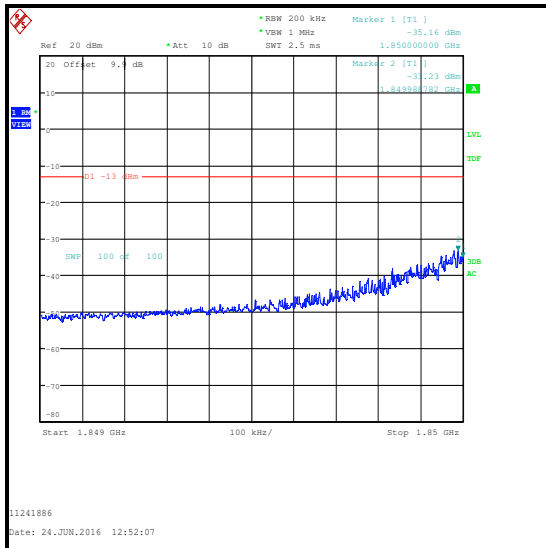
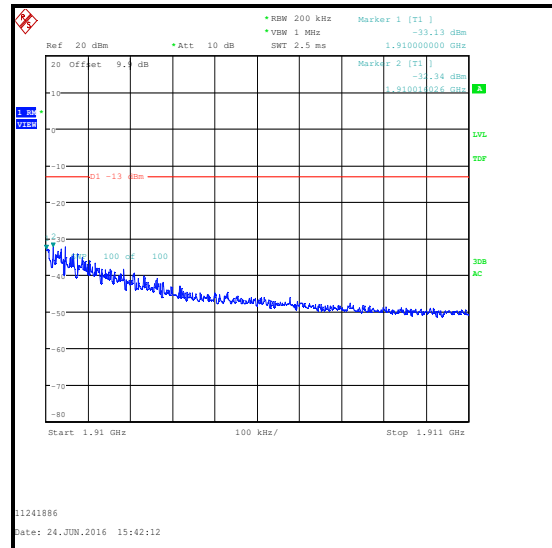
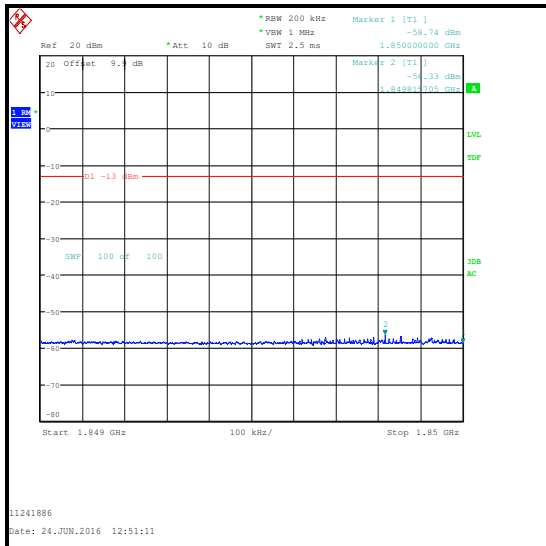
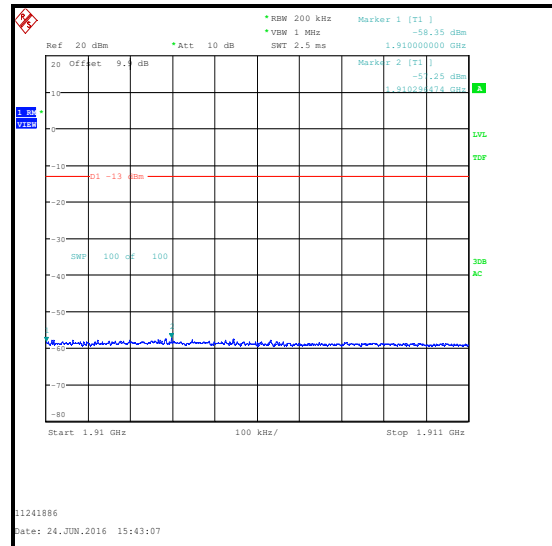
Transmitter Radiated Emissions at Band Edges (continued) – LAT**Results: 20 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.929	100	0	-31.6	-13.0	18.6	Complied
1850	100	0	-31.8	-13.0	18.8	Complied
1910	100	0	-33.9	-13.0	20.9	Complied
1910.066	100	0	-33.1	-13.0	20.1	Complied

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

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

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-35.2	-13.0	22.2	Complied
1910	1	99	-33.1	-13.0	20.1	Complied
1910.016	1	99	-32.3	-13.0	19.3	Complied
1850	1	99	-58.7	-13.0	45.7	Complied
1910	1	0	-58.4	-13.0	45.4	Complied

**16QAM / 1 RB 0 offset / Lower Band Edge****16QAM / 1 RB 99 offset / Upper Band Edge****16QAM / 1 RB 99 offset / Lower Band Edge****16QAM / 1 RB 0 offset / Upper Band Edge**

Transmitter Radiated Emissions at Band Edges (continued) – LAT**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
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	19 May 2017	12

5.2.8. Transmitter Radiated Emissions at Band Edges – UAT**Test Summary:**

Test Engineer:	David Doyle	Test Date:	24 June 2016
Test Sample IMEI:	358640070022893		

FCC Reference:	Parts 2.1053 & 24.238(a)
Test Method Used:	KDB 971168 Section 6.1 referencing FCC Part 24.238

Environmental Conditions:

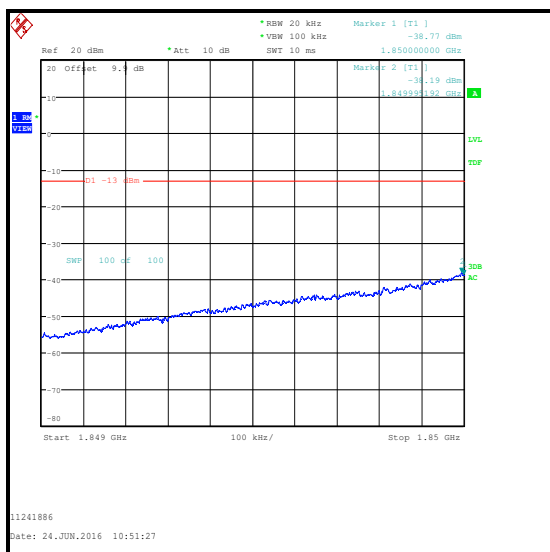
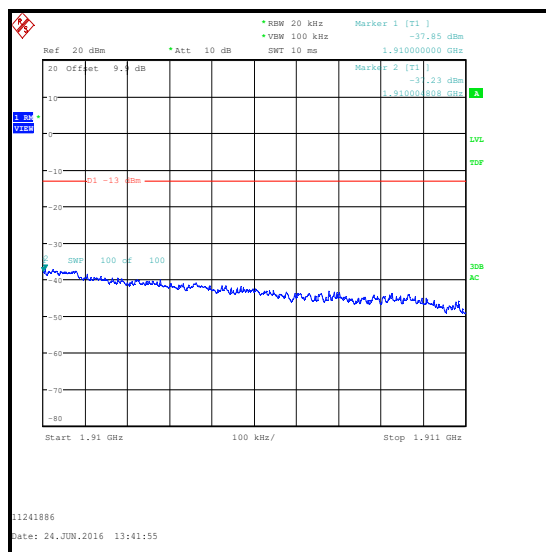
Temperature (°C):	25
Relative Humidity (%):	45

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. Measurements were performed in a fully 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. The measurement antenna was placed at a fixed height of 1.5 metres above the test chamber floor in line with the EUT.
3. 1.4 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 20 kHz (>1% of the widest 26 dB emission bandwidth) and video bandwidth 100 kHz (as close to > three times the resolution bandwidth as the test receiver allowed).
4. 3 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 30 kHz (1% of the widest 26 dB emission bandwidth) and video bandwidth 100 kHz (as close to > three times the resolution bandwidth as the test receiver allowed).
5. 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 50 kHz (1% of the widest 26 dB emission bandwidth) and video bandwidth 200 kHz (as close to > three times the resolution bandwidth as the test receiver allowed).
6. 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 100 kHz (>1% of the widest 26 dB emission bandwidth) and video bandwidth 300 kHz (three times the resolution bandwidth).
7. 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 200 kHz (1% of the widest 26 dB emission bandwidth) and video bandwidth 1 MHz (as close to > three times the resolution bandwidth as the test receiver allowed).
8. 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 200 kHz (>1% of the widest 26 dB emission bandwidth) and video bandwidth 1 MHz (three times the resolution bandwidth).

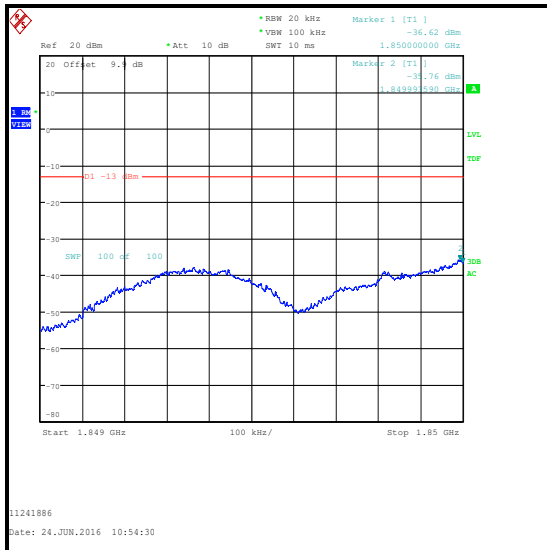
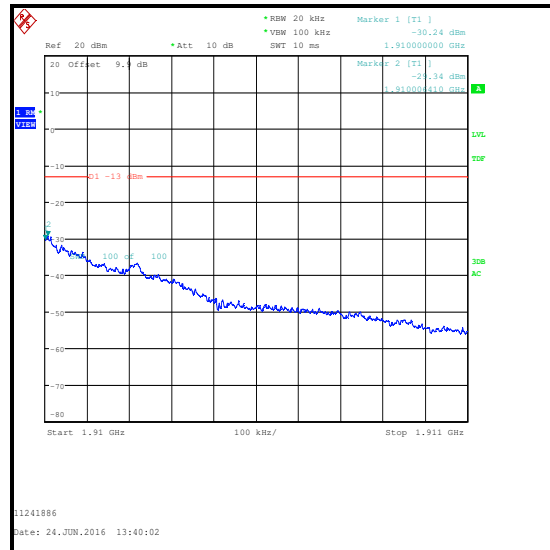
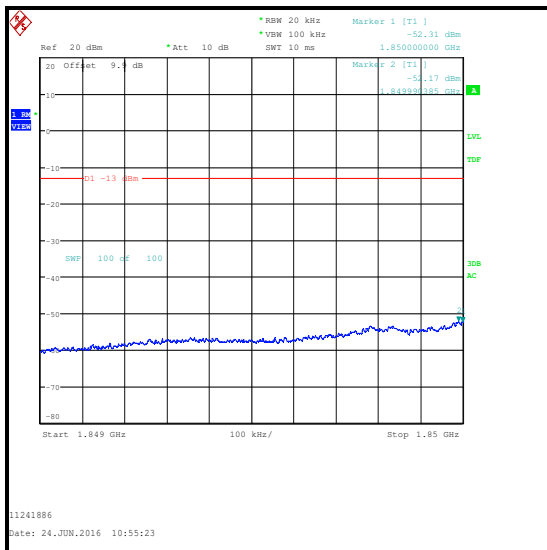
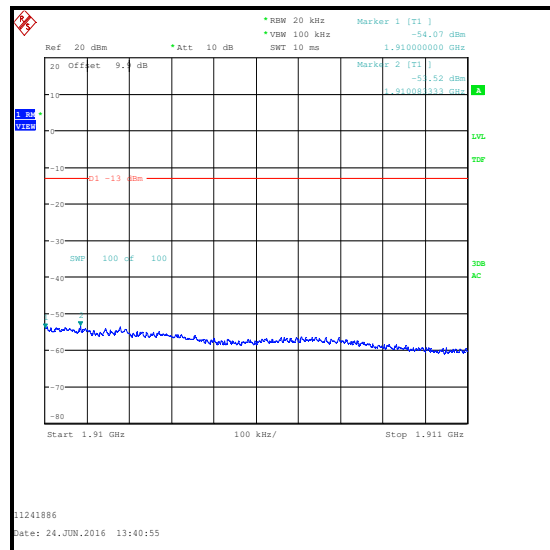
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 1.4 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.995	6	0	-38.2	-13.0	25.2	Complied
1850	6	0	-38.8	-13.0	25.8	Complied
1910	6	0	-37.9	-13.0	24.9	Complied
1910.005	6	0	-37.2	-13.0	24.2	Complied

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

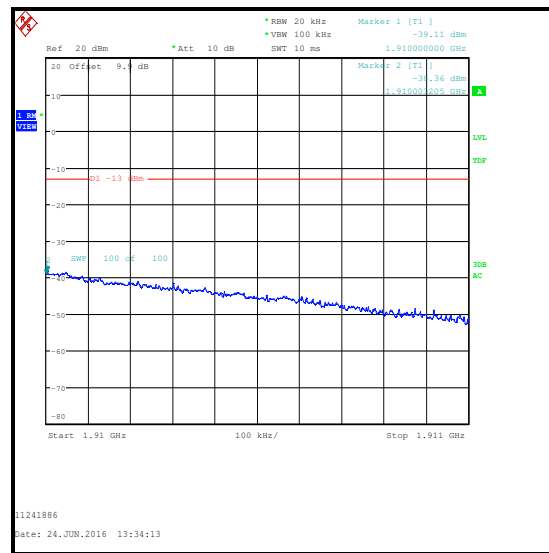
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 1.4 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-36.6	-13.0	23.6	Complied
1910	1	5	-30.2	-13.0	17.2	Complied
1910.006	1	5	-29.3	-13.0	16.3	Complied
1850	1	5	-52.3	-13.0	39.3	Complied
1910	1	0	-54.1	-13.0	41.1	Complied

**QPSK / 1 RB 0 offset / Lower Band Edge****QPSK / 1 RB 5 offset / Upper Band Edge****QPSK / 1 RB 5 offset / Lower Band Edge****QPSK / 1 RB 0 offset / Upper Band Edge**

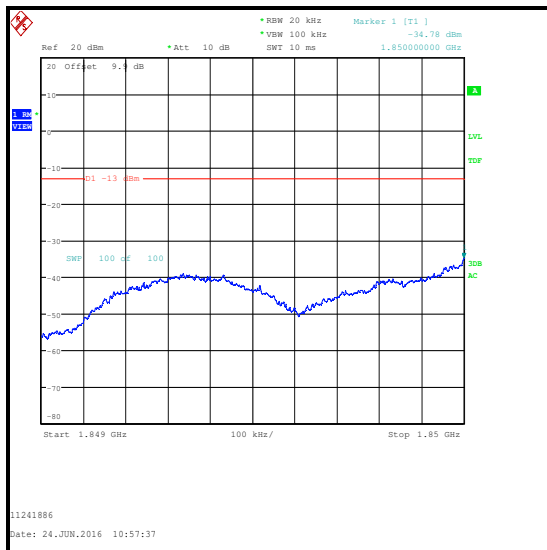
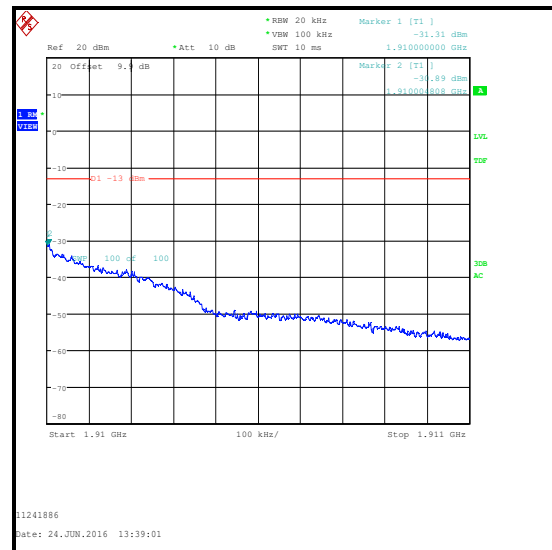
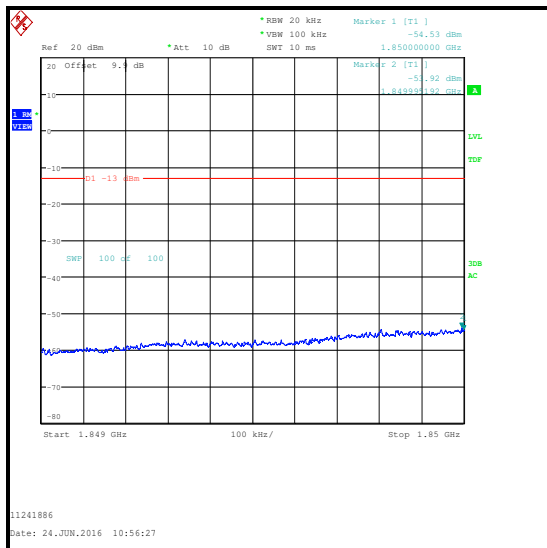
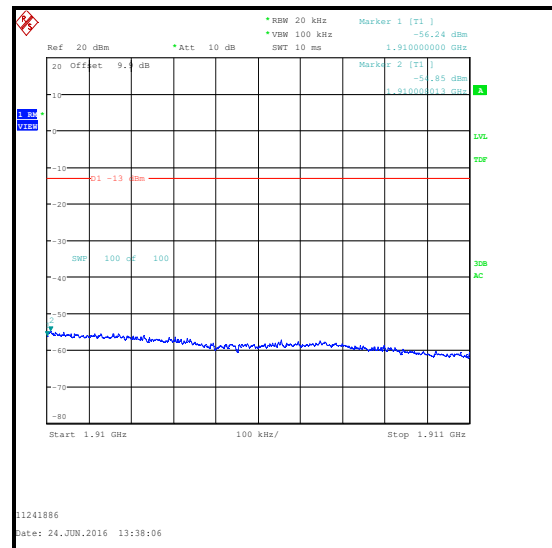
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 1.4 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.989	6	0	-39.1	-13.0	26.1	Complied
1850	6	0	-39.3	-13.0	26.3	Complied
1910	6	0	-39.1	-13.0	26.2	Complied
1910.003	6	0	-38.4	-13.0	25.4	Complied

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

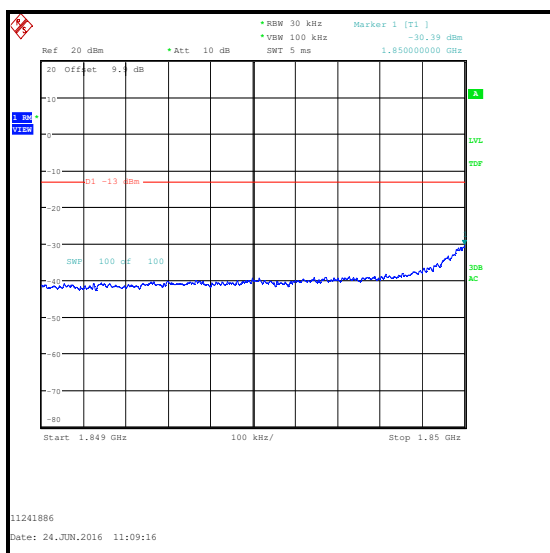
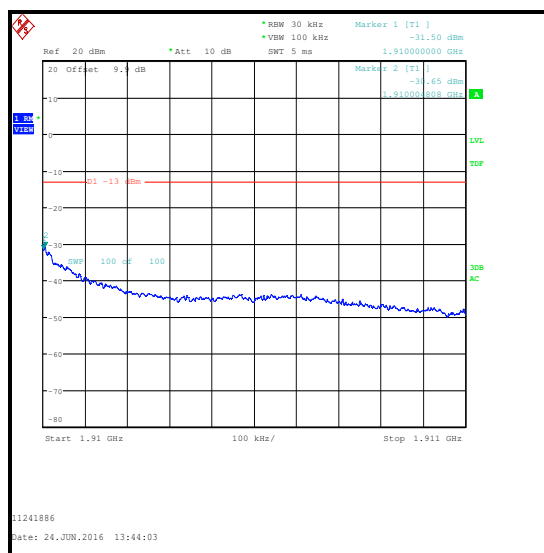
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 1.4 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-34.8	-13.0	21.8	Complied
1910	1	5	-31.3	-13.0	18.3	Complied
1910.005	1	5	-30.9	-13.0	17.9	Complied
1850	1	5	-54.5	-13.0	41.5	Complied
1910	1	0	-56.2	-13.0	43.2	Complied

**16QAM / 1 RB 0 offset / Lower Band Edge****16QAM / 1 RB 5 offset / Upper Band Edge****16QAM / 1 RB 5 offset / Lower Band Edge****16QAM / 1 RB 0 offset / Upper Band Edge**

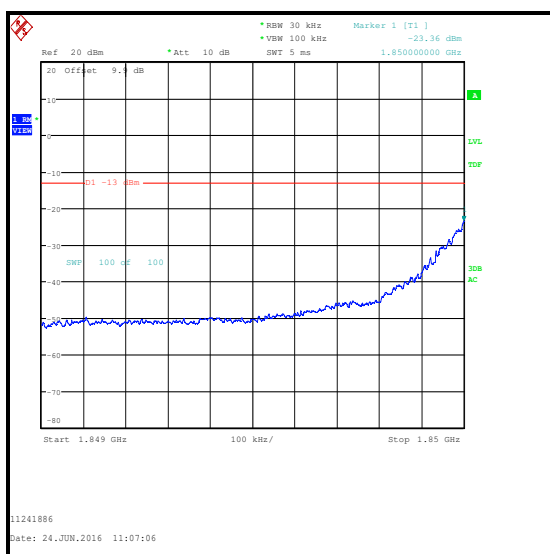
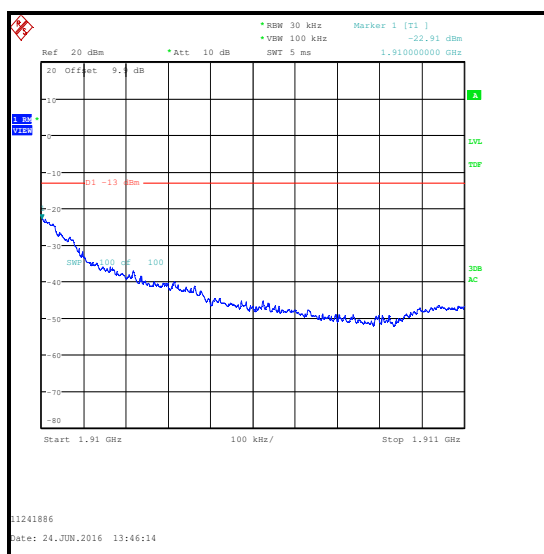
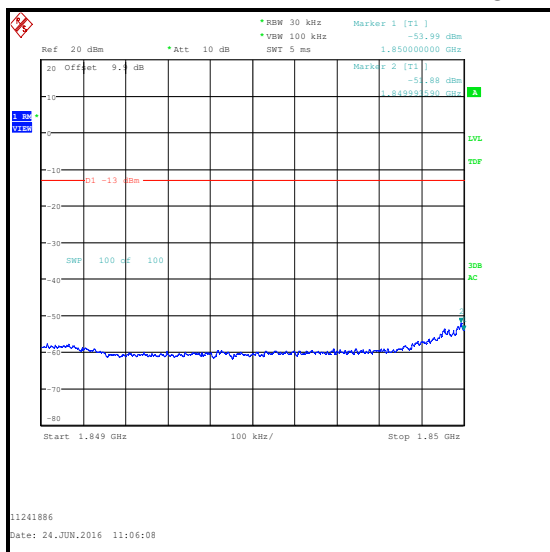
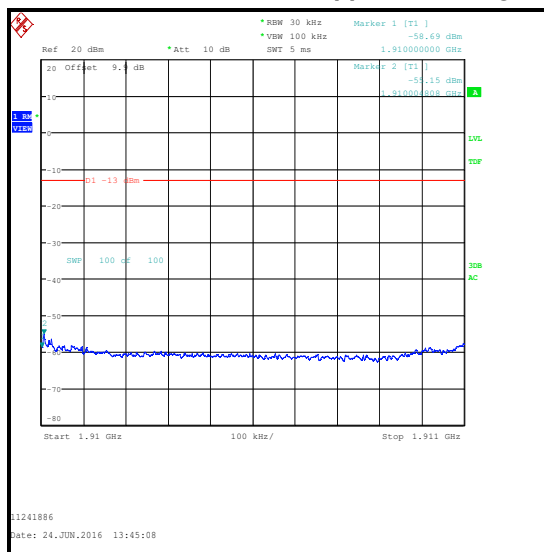
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 3 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	15	0	-30.4	-13.0	17.4	Complied
1910	15	0	-31.5	-13.0	18.5	Complied
1910.005	15	0	-30.7	-13.0	17.7	Complied

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

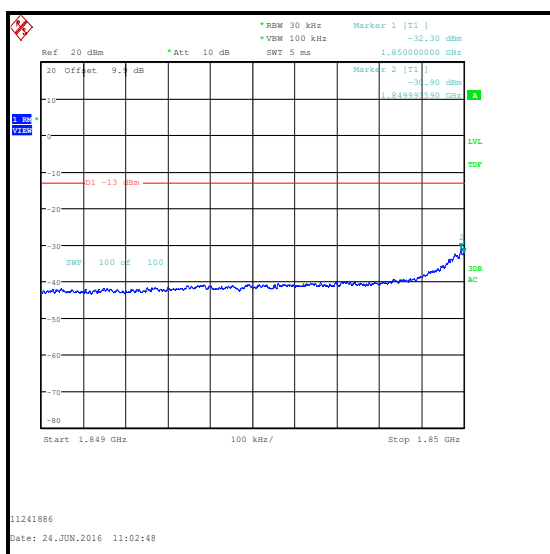
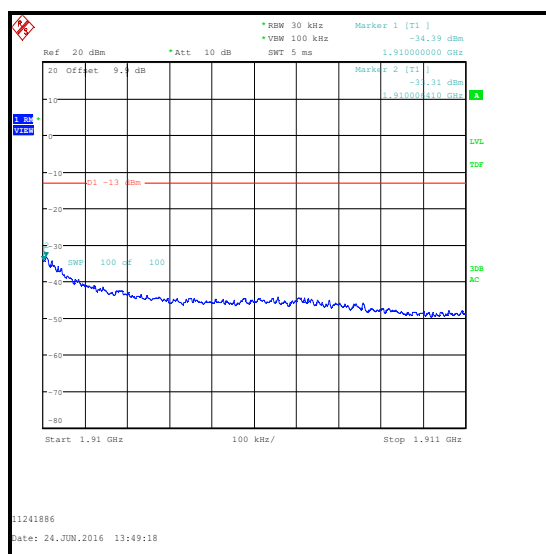
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 3 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-23.4	-13.0	10.4	Complied
1910	1	14	-22.9	-13.0	9.9	Complied
1850	1	14	-54.0	-13.0	41.0	Complied
1910	1	0	-58.7	-13.0	45.7	Complied

**QPSK / 1 RB 0 offset / Lower Band Edge****QPSK / 1 RB 14 offset / Upper Band Edge****QPSK / 1 RB 14 offset / Lower Band Edge****QPSK / 1 RB 0 offset / Upper Band Edge**

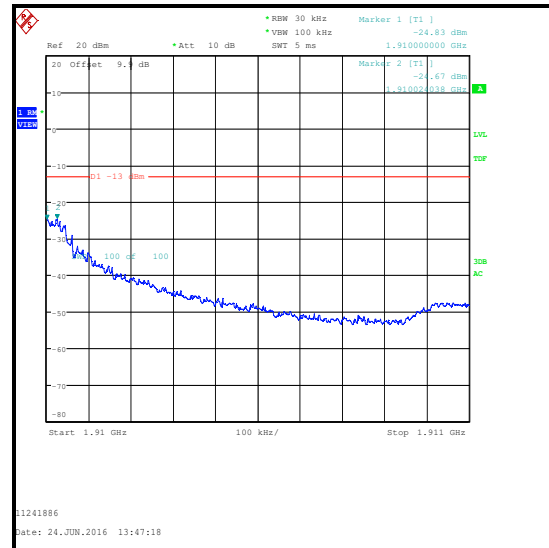
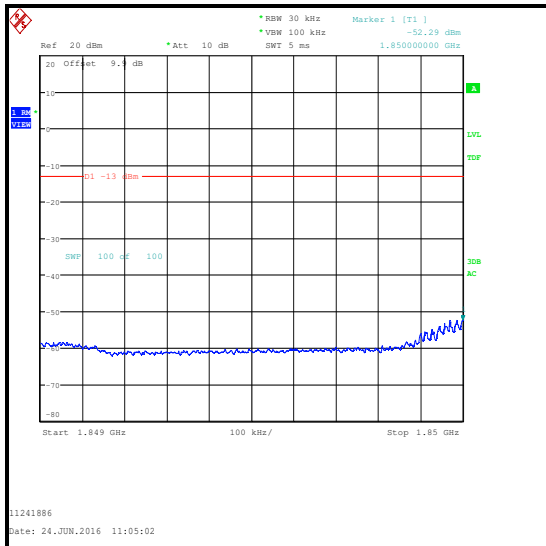
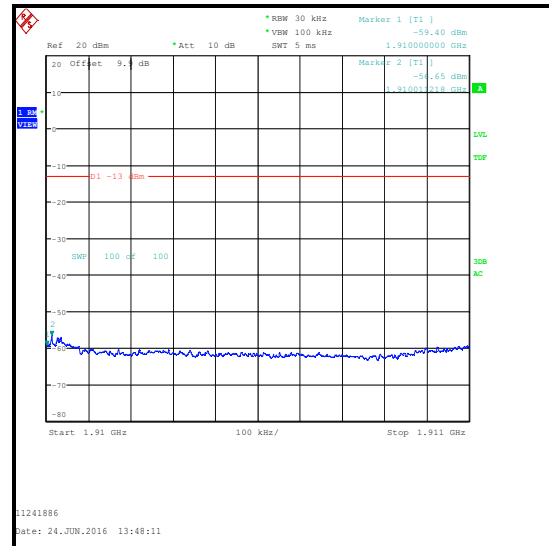
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 3 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.994	15	0	-30.9	-13.0	17.9	Complied
1850	15	0	-32.3	-13.0	19.3	Complied
1910	15	0	-34.4	-13.0	21.4	Complied
1910.006	15	0	-33.3	-13.0	20.3	Complied

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

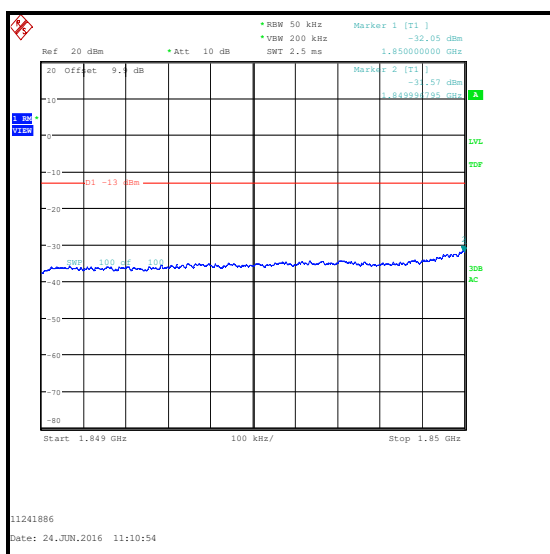
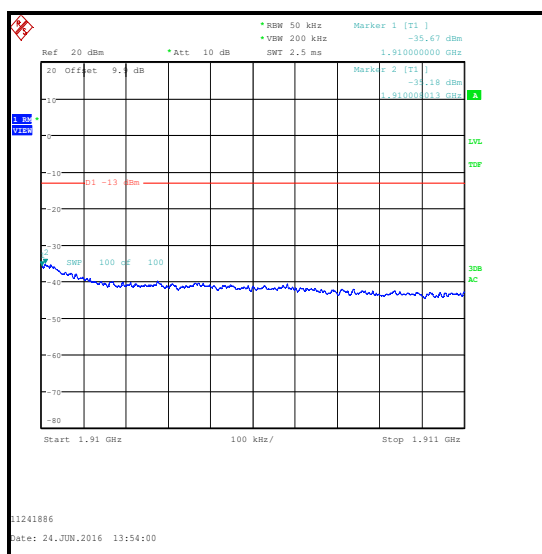
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 3 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-23.7	-13.0	10.7	Complied
1910	1	14	-24.8	-13.0	11.8	Complied
1910.024	1	14	-24.7	-13.0	11.7	Complied
1850	1	14	-52.3	-13.0	39.3	Complied
1910	1	0	-59.4	-13.0	46.4	Complied

**16QAM / 1 RB 0 offset / Lower Band Edge****16QAM / 1 RB 14 offset / Upper Band Edge****16QAM / 1 RB 14 offset / Lower Band Edge****16QAM / 1 RB 0 offset / Upper Band Edge**

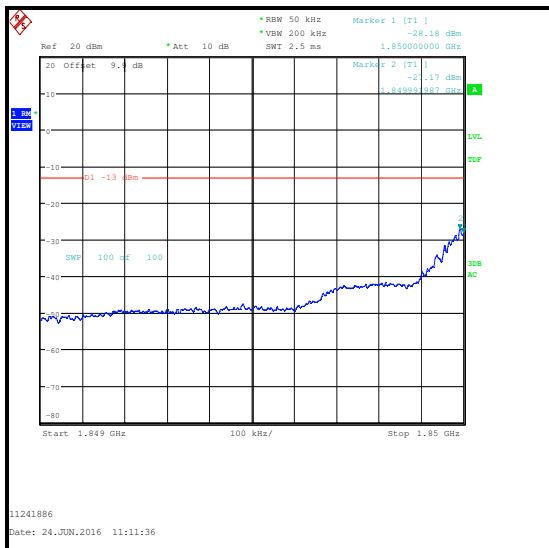
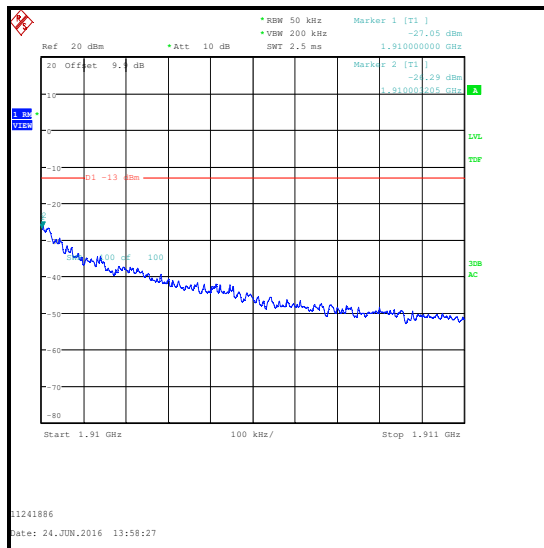
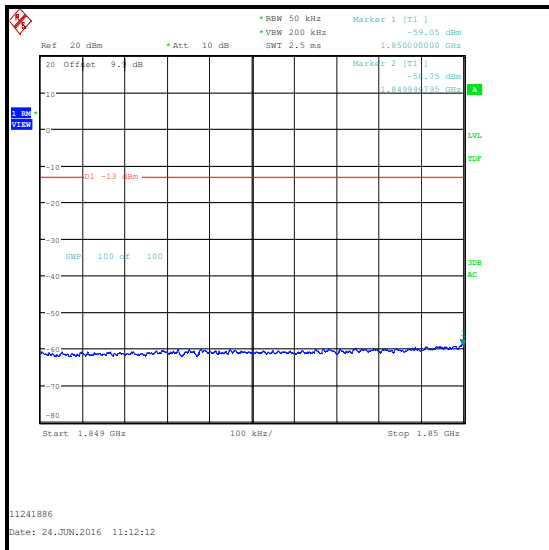
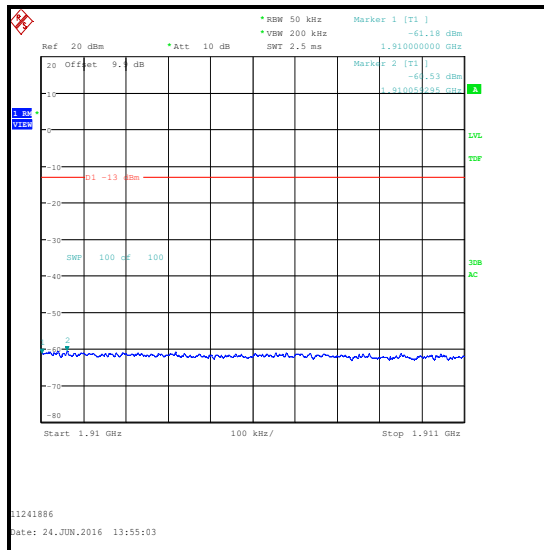
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 5 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.997	25	0	-31.6	-13.0	18.6	Complied
1850	25	0	-32.1	-13.0	19.1	Complied
1910	25	0	-35.7	-13.0	22.7	Complied
1910.008	25	0	-35.2	-13.0	22.2	Complied

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

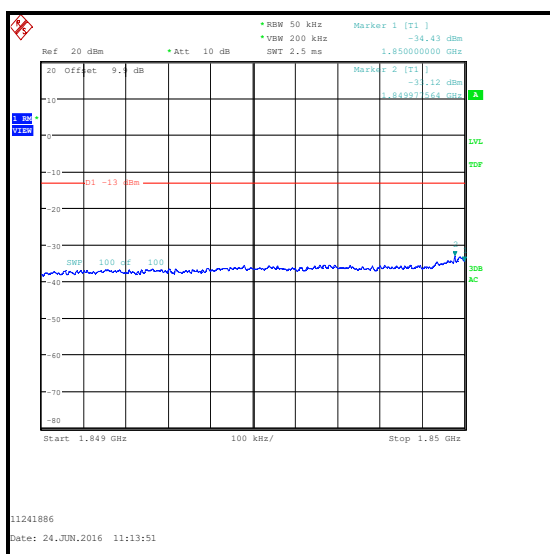
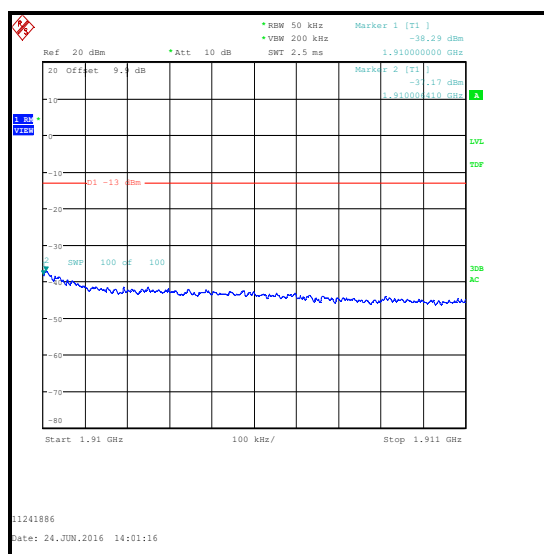
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 5 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.992	1	0	-27.2	-13.0	14.2	Complied
1850	1	0	-28.2	-13.0	15.2	Complied
1910	1	24	-27.1	-13.0	14.1	Complied
1910.003	1	24	-26.3	-13.0	13.3	Complied
1850	1	24	-59.1	-13.0	46.1	Complied
1910	1	0	-61.2	-13.0	48.2	Complied

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

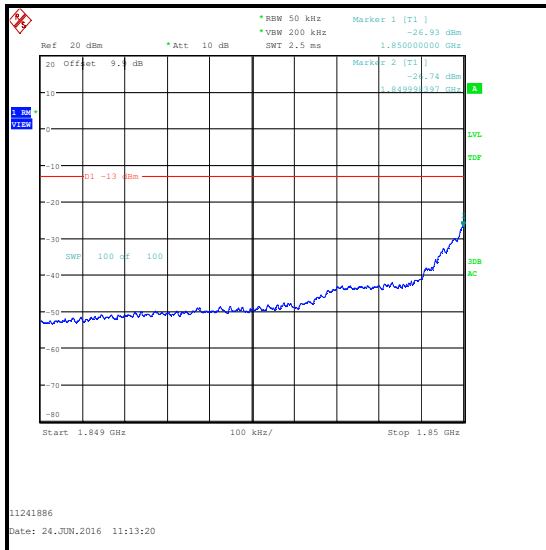
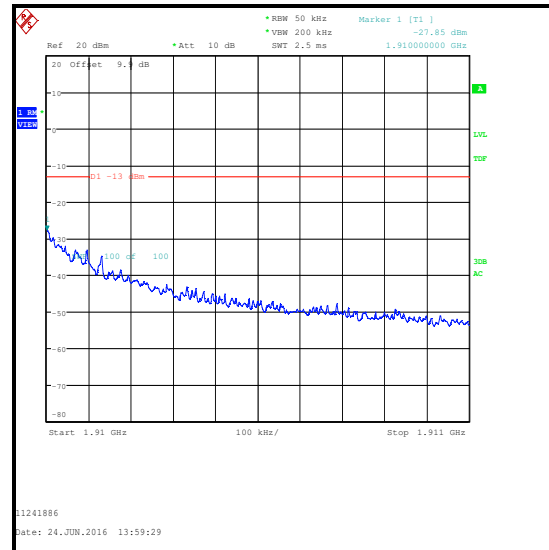
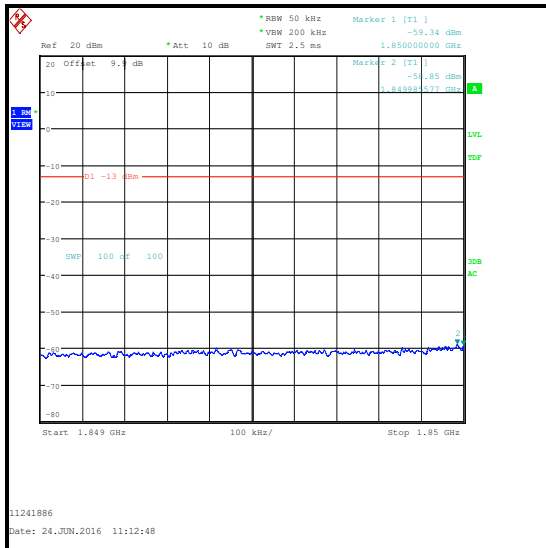
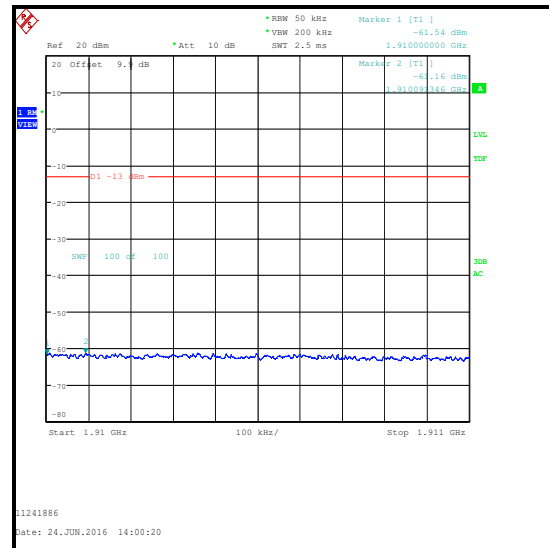
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 5 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.978	25	0	-33.1	-13.0	20.1	Complied
1850	25	0	-34.4	-13.0	21.4	Complied
1910	25	0	-38.3	-13.0	25.3	Complied
1910.006	25	0	-37.2	-13.0	24.2	Complied

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

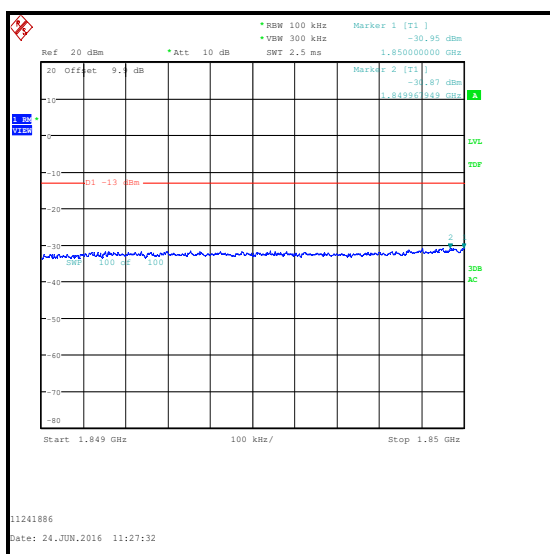
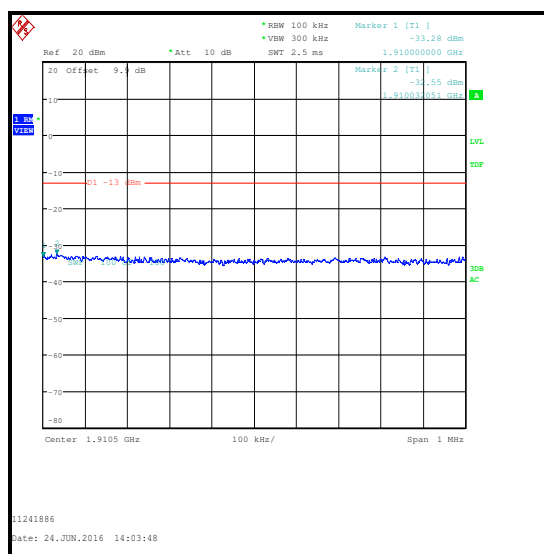
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 5 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.998	1	0	-26.7	-13.0	13.7	Complied
1850	1	0	-26.9	-13.0	13.9	Complied
1910	1	24	-27.9	-13.0	14.9	Complied
1850	1	24	-59.3	-13.0	46.3	Complied
1910	1	0	-61.5	-13.0	48.5	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**

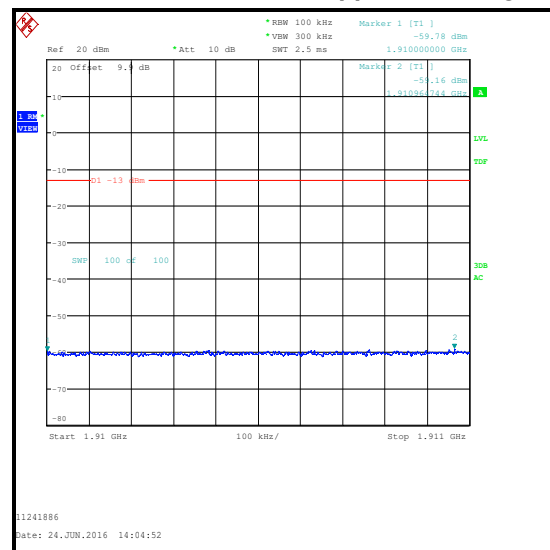
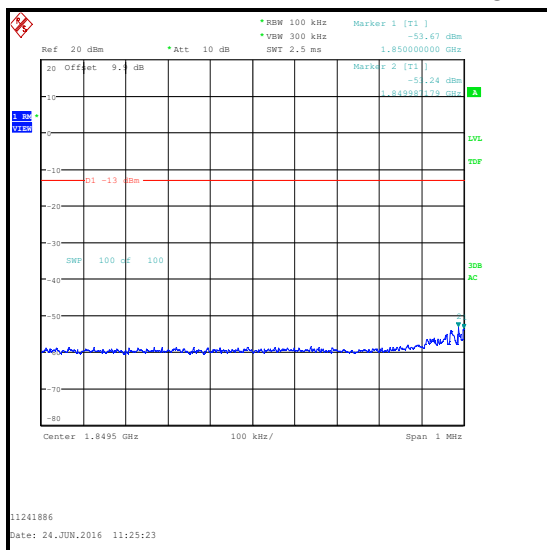
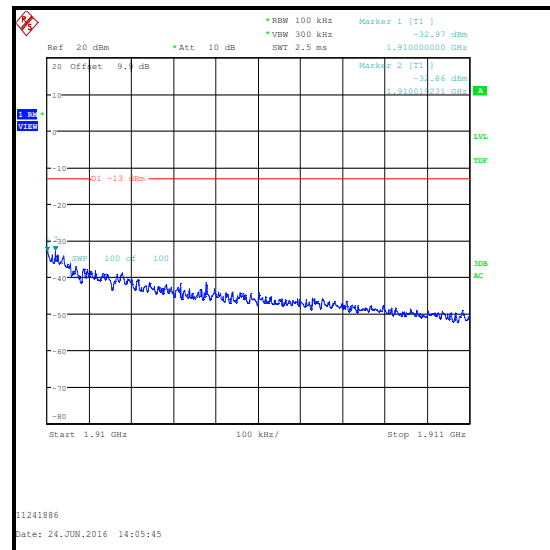
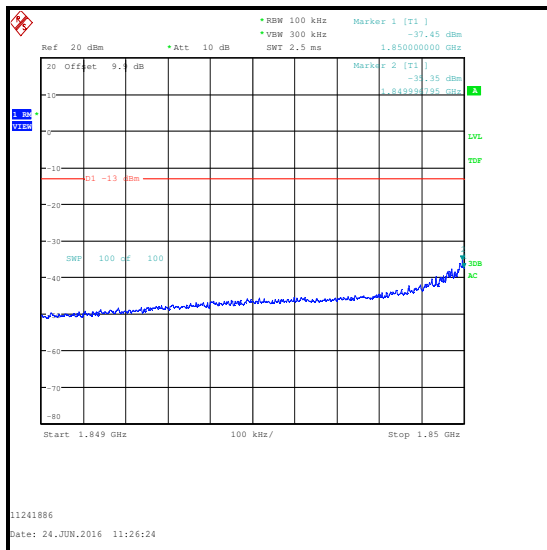
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 10 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.968	50	0	-30.9	-13.0	17.9	Complied
1850	50	0	-31.0	-13.0	18.0	Complied
1910	50	0	-33.3	-13.0	20.3	Complied
1910.032	50	0	-32.6	-13.0	19.6	Complied

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

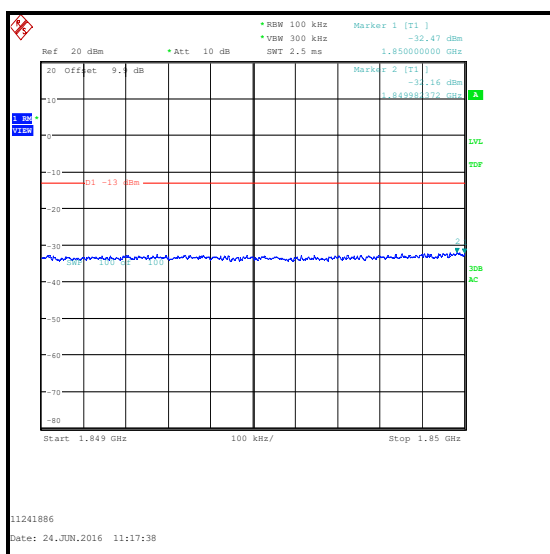
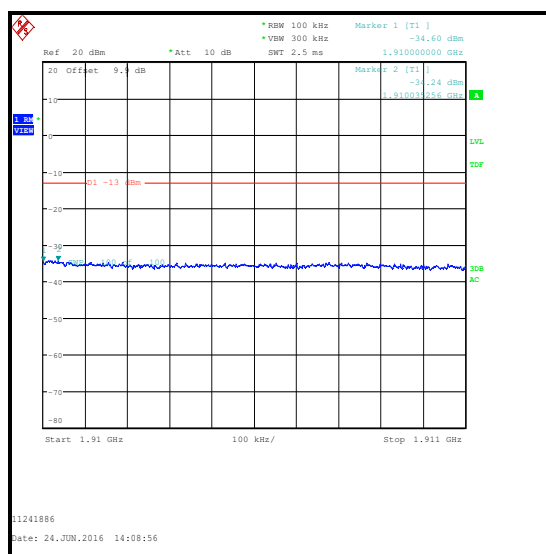
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 10 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-37.5	-13.0	24.5	Complied
1910	1	49	-33.0	-13.0	20.0	Complied
1910.019	1	49	-32.9	-13.0	19.9	Complied
1850	1	49	-53.7	-13.0	40.7	Complied
1910	1	0	-59.8	-13.0	46.8	Complied



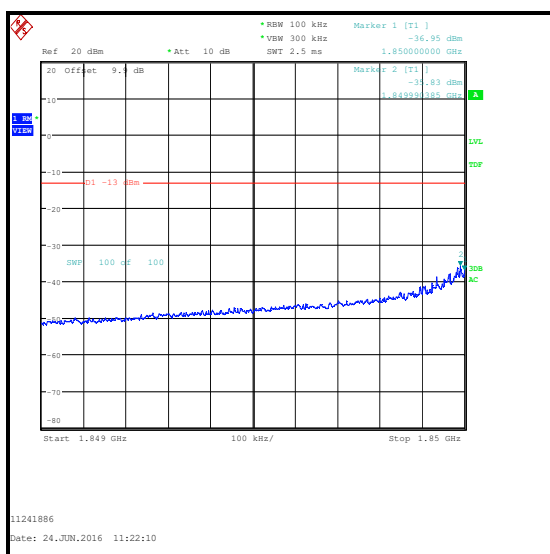
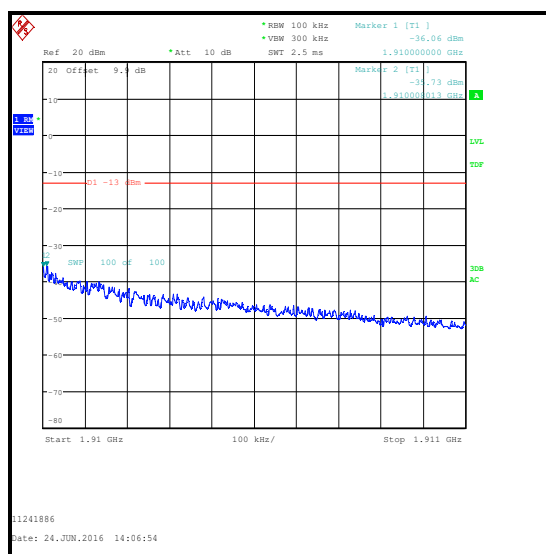
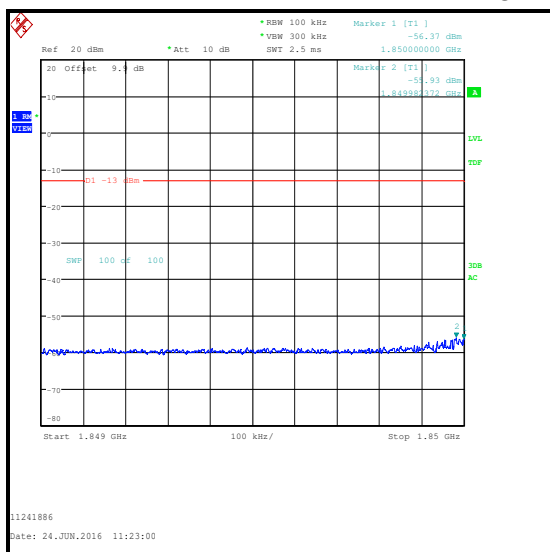
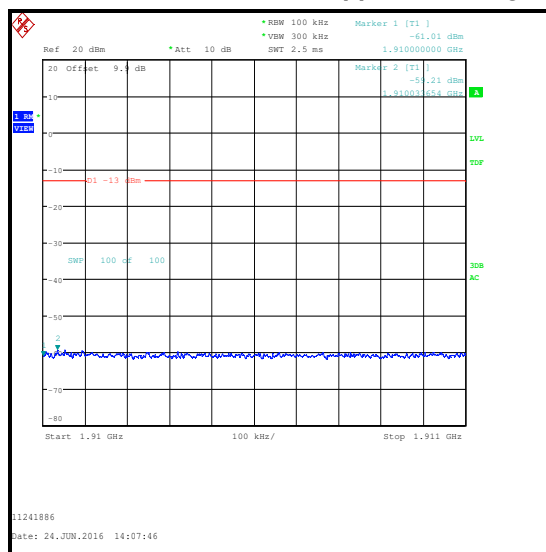
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 10 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.982	50	0	-32.2	-13.0	19.2	Complied
1850	50	0	-32.5	-13.0	19.5	Complied
1910	50	0	-34.6	-13.0	21.6	Complied
1910.035	50	0	-34.2	-13.0	21.2	Complied

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

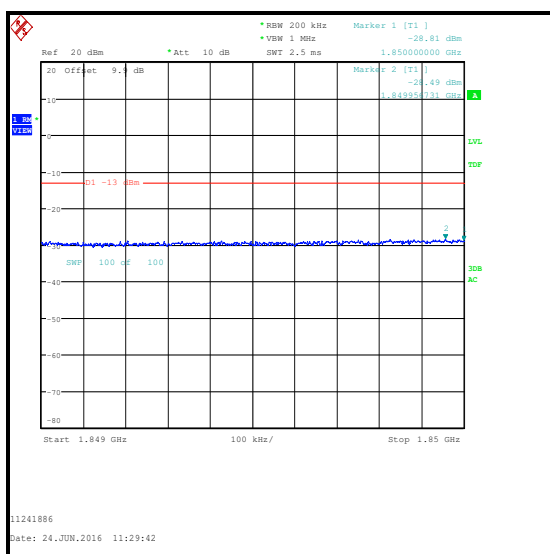
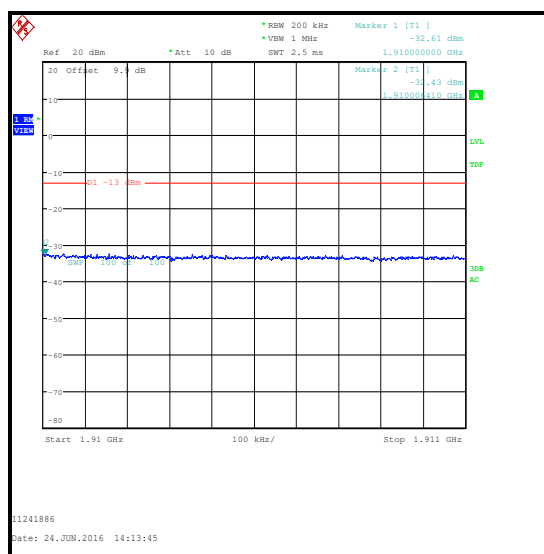
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 10 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-37.0	-13.0	24.0	Complied
1910	1	49	-36.1	-13.0	23.1	Complied
1850	1	49	-56.4	-13.0	43.4	Complied
1910	1	0	-61.0	-13.0	48.0	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**

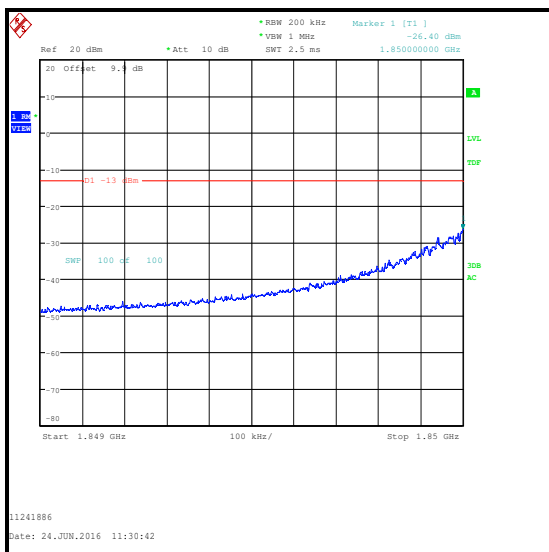
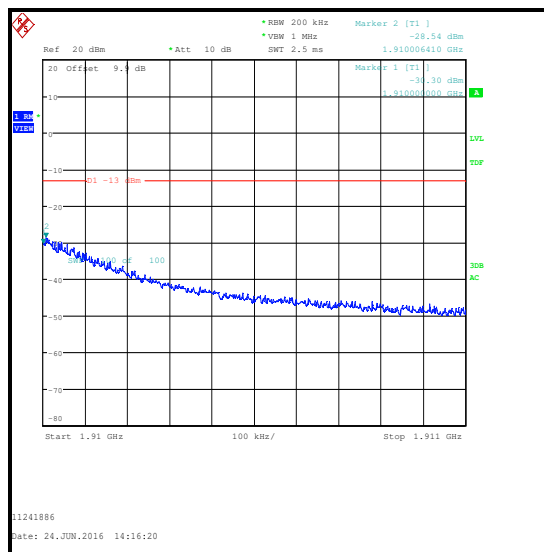
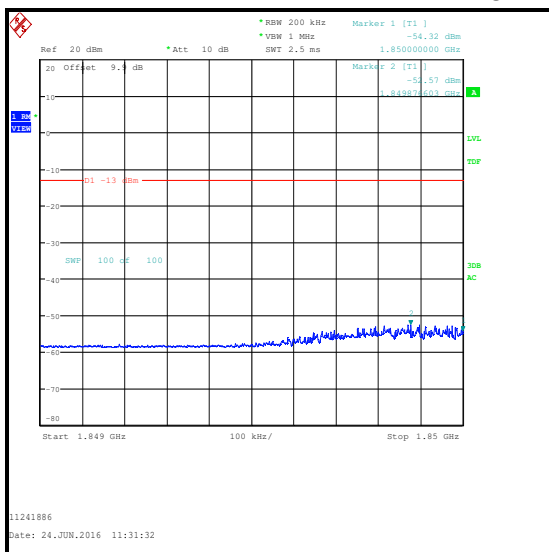
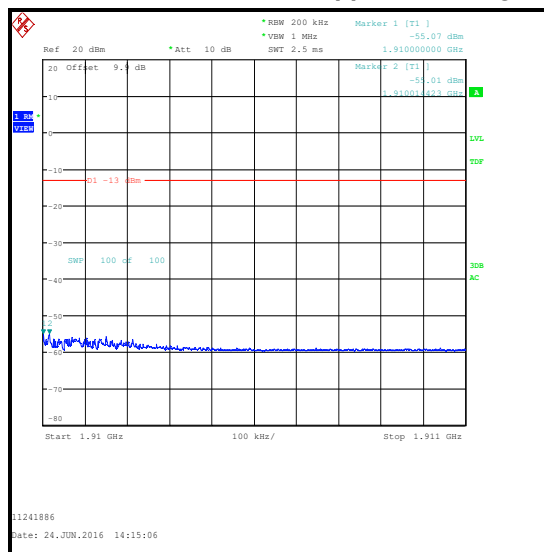
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 15 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.957	75	0	-28.5	-13.0	15.5	Complied
1850	75	0	-28.8	-13.0	15.8	Complied
1910	75	0	-32.6	-13.0	19.6	Complied
1910.006	75	0	-32.4	-13.0	19.4	Complied

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

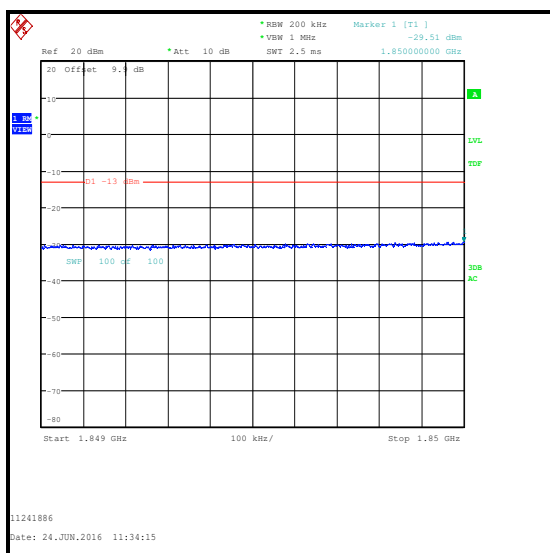
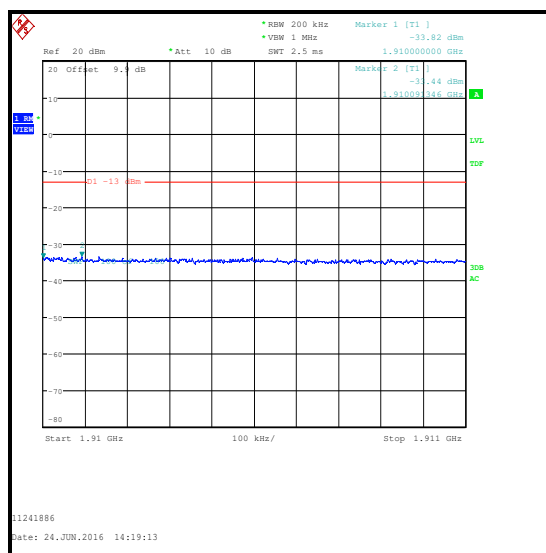
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 15 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	1	0	-26.4	-13.0	13.4	Complied
1910	1	74	-30.3	-13.0	17.3	Complied
1910.006	1	74	-28.5	-13.0	15.5	Complied
1850	1	74	-54.2	-13.0	41.2	Complied
1910	1	0	-55.1	-13.0	42.1	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**

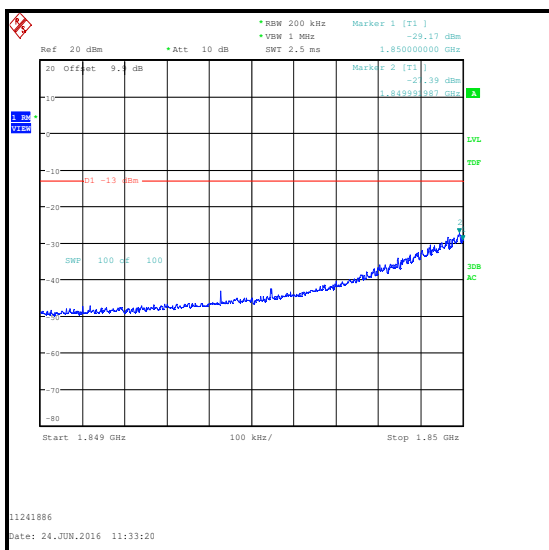
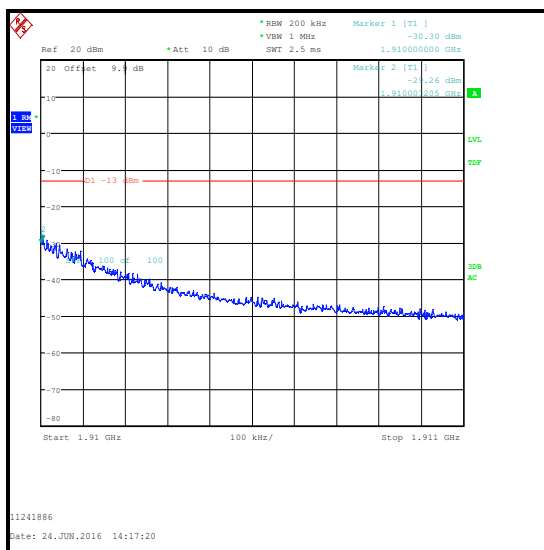
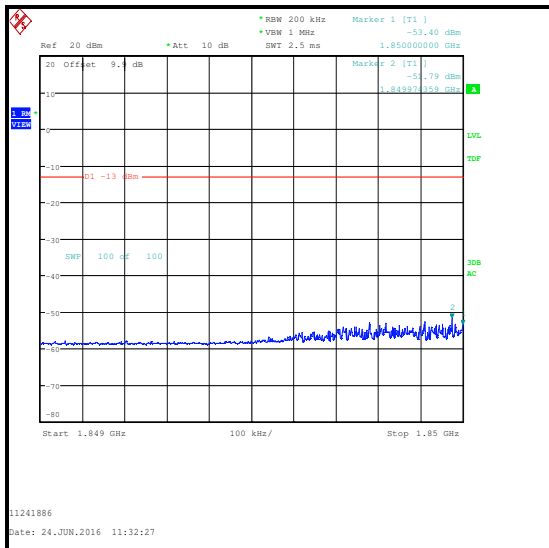
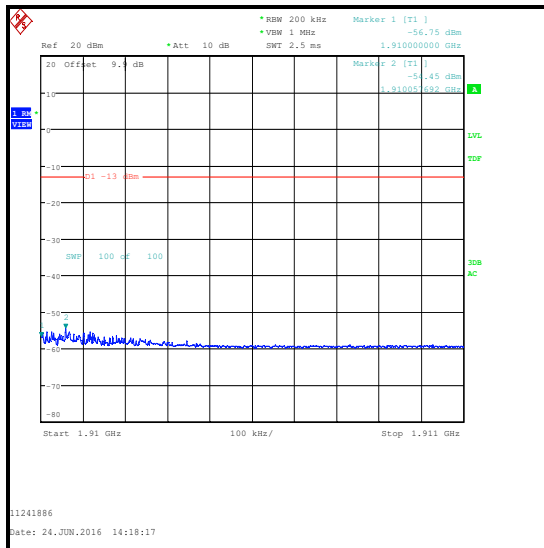
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 15 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	75	0	-29.5	-13.0	16.5	Complied
1910	75	0	-33.8	-13.0	20.8	Complied
1910.091	75	0	-33.4	-13.0	20.4	Complied

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

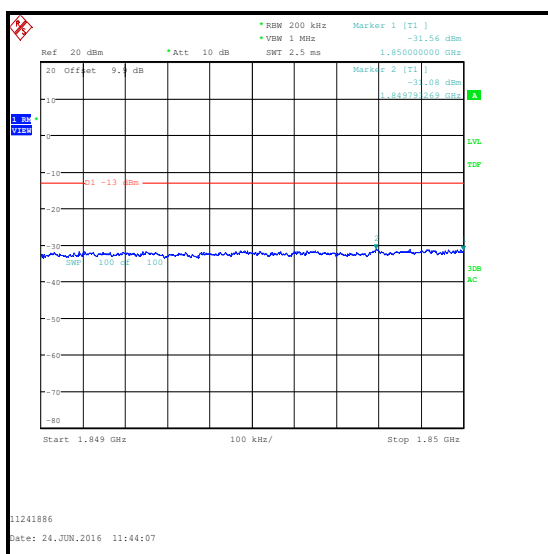
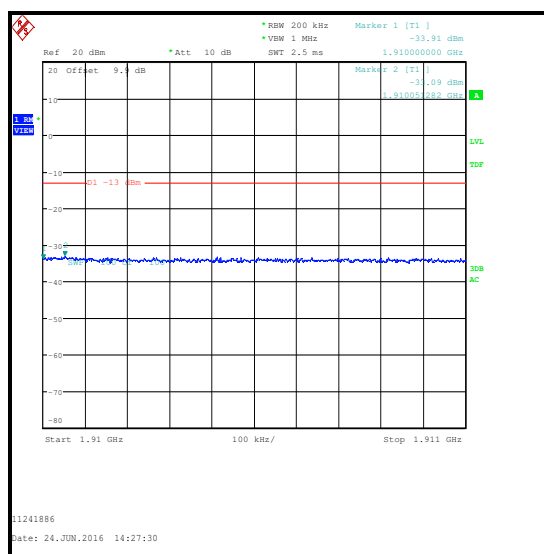
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 15 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.992	1	0	-27.4	-13.0	14.4	Complied
1850	1	0	-29.2	-13.0	16.2	Complied
1910	1	74	-30.3	-13.0	17.3	Complied
1910.003	1	74	-29.3	-13.0	16.3	Complied
1850	1	74	-53.4	-13.0	40.4	Complied
1910	1	0	-56.8	-13.0	43.8	Complied

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

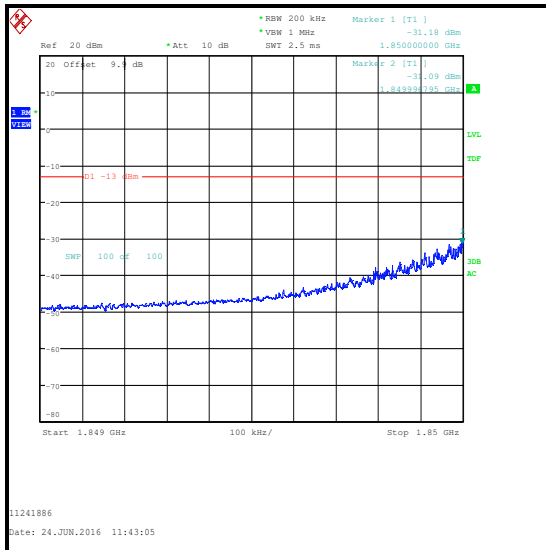
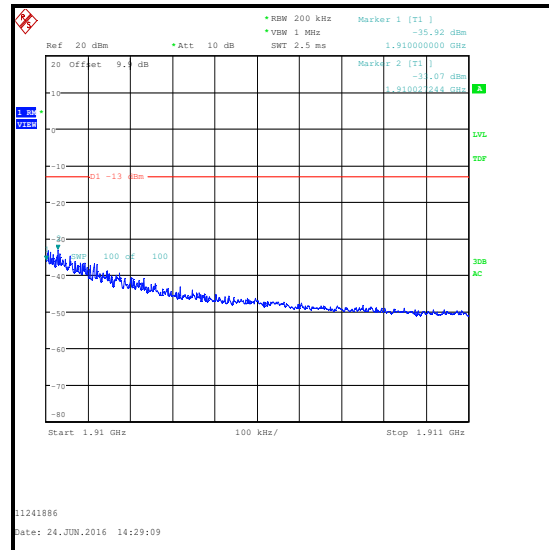
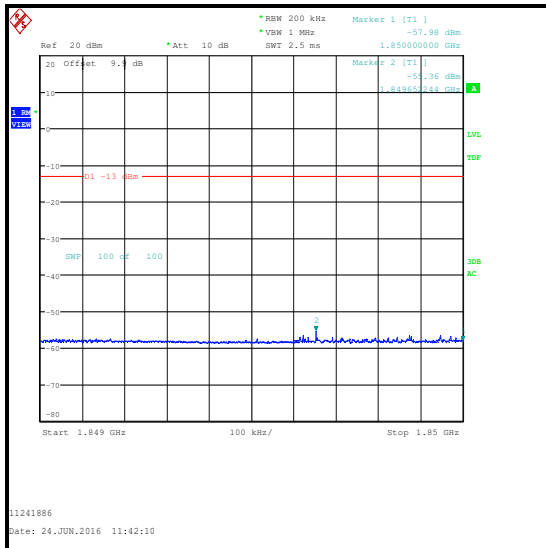
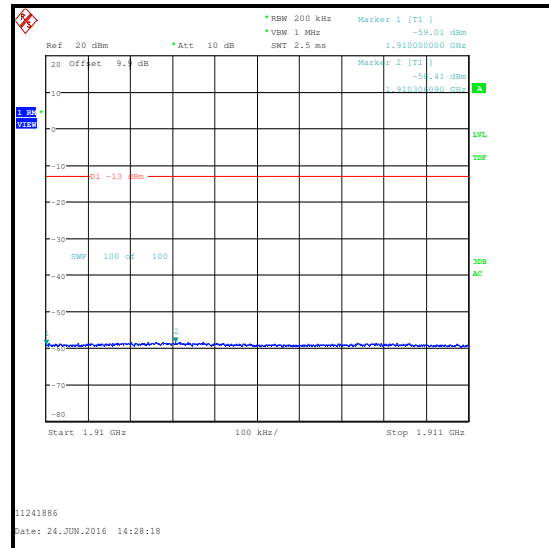
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 20 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.793	100	0	-31.1	-13.0	18.1	Complied
1850	100	0	-31.6	-13.0	18.6	Complied
1910	100	0	-33.9	-13.0	20.9	Complied
1910.051	100	0	-33.1	-13.0	20.1	Complied

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

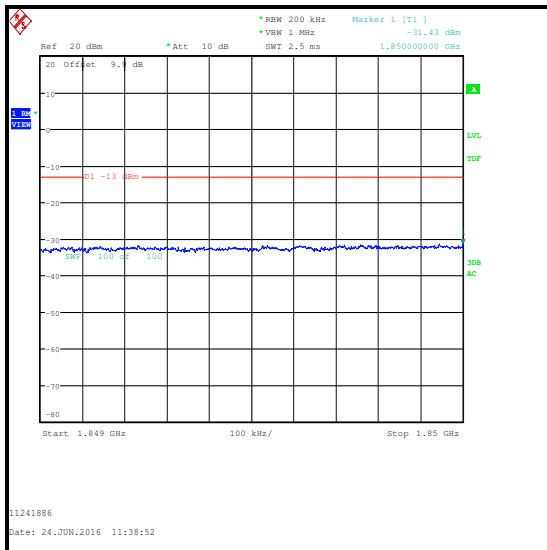
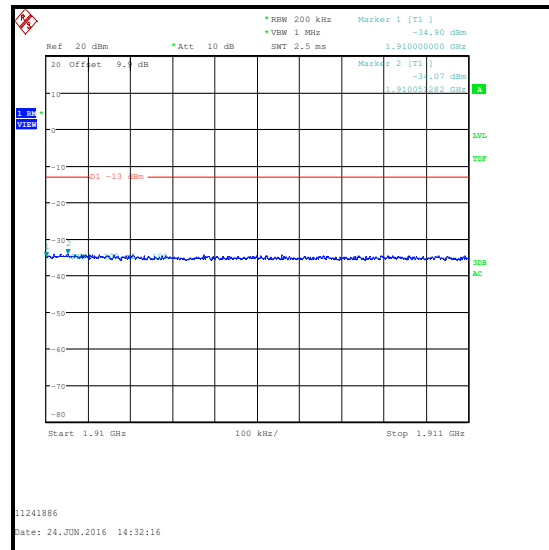
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 20 MHz Channel Bandwidth / QPSK**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.997	1	0	-31.1	-13.0	18.1	Complied
1850	1	0	-31.2	-13.0	18.2	Complied
1910	1	99	-35.9	-13.0	22.9	Complied
1850	1	99	-58.0	-13.0	45.0	Complied
1910	1	0	-59.0	-13.0	46.0	Complied

**QPSK / 1 RB 0 offset / Lower Band Edge****QPSK / 1 RB 99 offset / Upper Band Edge****QPSK / 1 RB 99 offset / Lower Band Edge****QPSK / 1 RB 0 offset / Upper Band Edge**

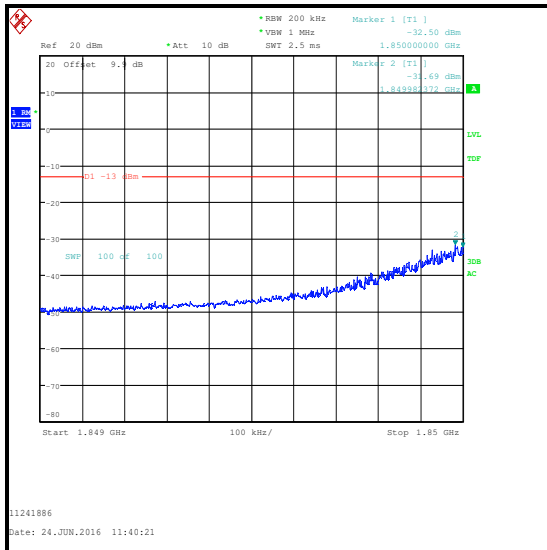
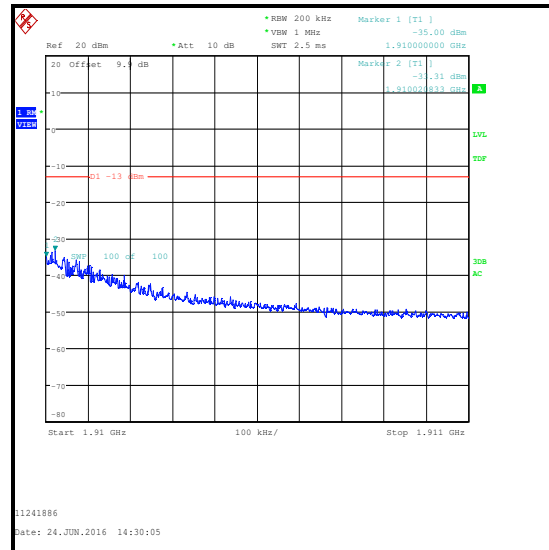
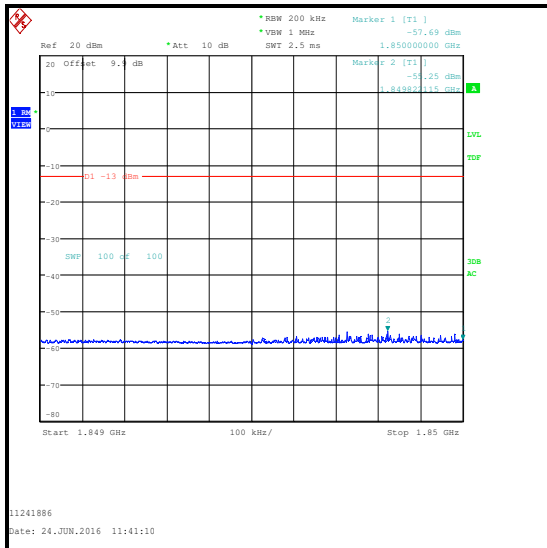
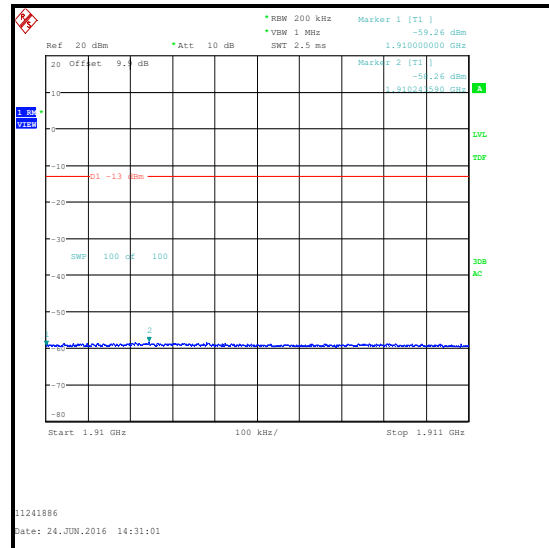
Transmitter Radiated Emissions at Band Edges (continued) – UAT**Results: 20 MHz Channel Bandwidth / 16QAM**

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	100	0	-31.4	-13.0	31.4	Complied
1910	100	0	-34.9	-13.0	21.9	Complied
1910.051	100	0	-34.1	-13.0	21.1	Complied

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

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

Frequency (MHz)	Resource Block(s)	Resource Block Offset	Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.982	1	0	-32.5	-13.0	19.5	Complied
1850	1	0	-31.7	-13.0	18.7	Complied
1910	1	99	-35.0	-13.0	22.0	Complied
1850	1	99	-57.7	-13.0	54.7	Complied
1910	1	0	-59.3	-13.0	56.3	Complied

**16QAM / 1 RB 0 offset / Lower Band Edge****16QAM / 1 RB 99 offset / Upper Band Edge****16QAM / 1 RB 99 offset / Lower Band Edge****16QAM / 1 RB 0 offset / Upper Band Edge**

Transmitter Radiated Emissions at Band Edges (continued) – UAT**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
A2916	Attenuator	AtlanTecRF	AN18W5-10	832827#1	19 May 2017	12

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

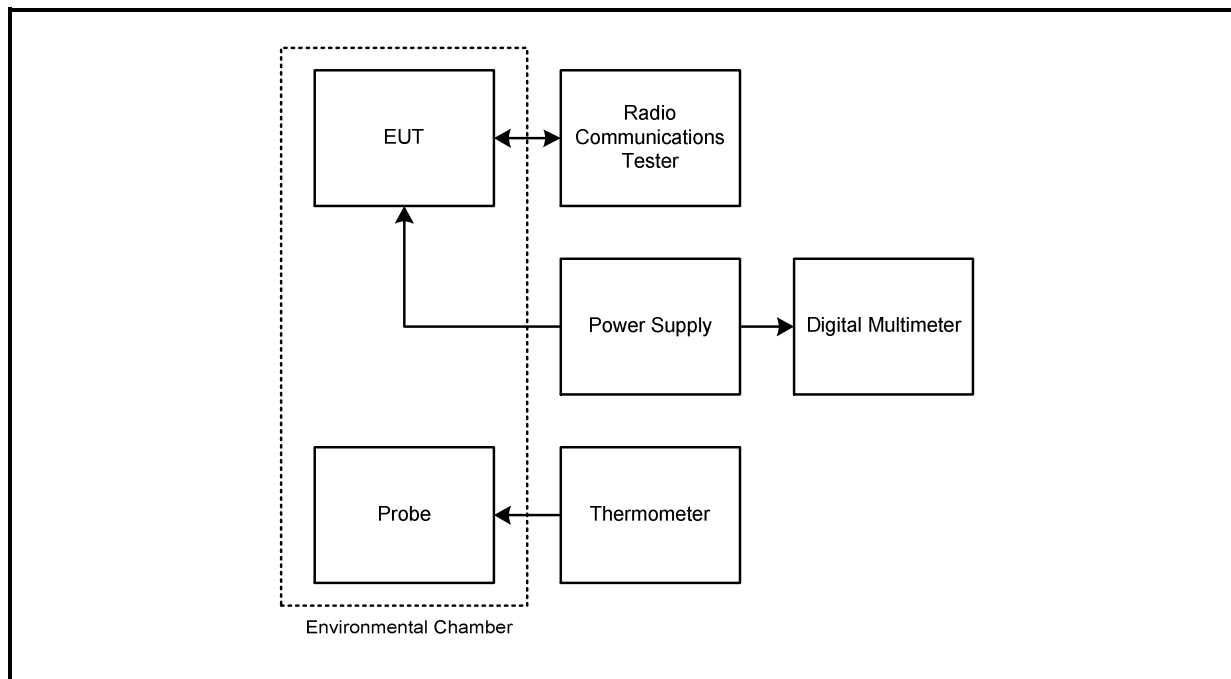
Test Engineer:	Stefan Ho	Test Date:	12 May 2016
Test Sample Serial Number:	C7CRG02QH6DH		
FCC Reference:	Parts 2.1055 & 24.235		
Test Method Used:	KDB 971168 Section 9.0 referencing ANSI/TIA-603-D-2010 Section 2.2.2 and FCC Part 2.1055		

Environmental Conditions:

Ambient Temperature (°C):	25
Ambient Relative Humidity (%):	43

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 (1850.7 MHz)**

Temperature (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
-30	9	1850.700009	1850.0	0.700009	Complied
-20	9	1850.700009	1850.0	0.700009	Complied
-10	10	1850.700010	1850.0	0.700010	Complied
0	9	1850.700009	1850.0	0.700009	Complied
10	7	1850.700007	1850.0	0.700007	Complied
20	16	1850.699984	1850.0	0.699984	Complied
30	7	1850.700007	1850.0	0.700007	Complied
40	7	1850.700007	1850.0	0.700007	Complied
50	19	1850.699981	1850.0	0.699981	Complied

Results: Top Channel (1909.3 MHz)

Temperature (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
-30	7	1909.299993	1910.0	0.700007	Complied
-20	7	1909.299993	1910.0	0.700007	Complied
-10	6	1909.299994	1910.0	0.700006	Complied
0	19	1909.299981	1910.0	0.700019	Complied
10	8	1909.299992	1910.0	0.700007	Complied
20	9	1909.299991	1910.0	0.700009	Complied
30	8	1909.299992	1910.0	0.700007	Complied
40	9	1909.299991	1910.0	0.700009	Complied
50	9	1909.299991	1910.0	0.700009	Complied

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	02 Apr 2017	12
M1869	Wideband Radio Comms Tester	Rohde & Schwarz	CMW 500	145923	05 Apr 2017	12
M1674	Environmental Chamber	Espec Corporation	SU-241	90213139	Calibrated before use	-
M1642	Thermometer	Fluke	52II	18890119	25 Apr 2017	12
S021	DC power supply	TTI	CPX200	061034	Calibrated before use	-
M122	Multimeter	Fluke	77	64910017	21 Apr 2017	12

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

Test Engineer:	Stefan Ho	Test Date:	12 May 2016
Test Sample Serial Number:	C7CRG02QH6DH		

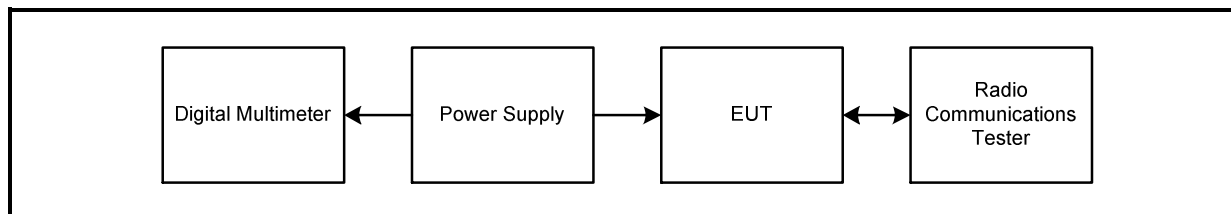
FCC Reference:	Parts 2.1055 & 24.235
Test Method Used:	KDB 971168 Section 9.0 referencing ANSI/TIA-603-D-2010 Section 2.2.2 and FCC Part 2.1055

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	43

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 (1850.7 MHz)**

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
3.5	15	1850.699985	1850.0	0.699985	Complied
4.4	9	1850.700009	1850.0	0.700009	Complied

Results: Top Channel (1909.3 MHz)

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
3.5	9	1909.299991	1910.0	0.700009	Complied
4.4	9	1909.299991	1910.0	0.700009	Complied

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	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	-
M122	Multimeter	Fluke	77	64910017	21 Apr 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	1850 to 1910 MHz	95%	± 1.36 dB
Frequency Stability	1850 to 1910 MHz	95%	± 23 Hz
Occupied Bandwidth	1850 to 1910 MHz	95%	± 3.92 %
Radiated Spurious Emissions	30 MHz to 1 GHz	95%	± 5.65 dB
Radiated Spurious Emissions	1 GHz to 20 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
3.0	-	-	Updates as requested by the TCB
4.0	-	-	Updates as requested by the TCB

--- END OF REPORT ---