### 5.2.5. Transmitter Conducted Emissions Limitations

#### **Test Summary:**

Test Engineer:	Patrick Jones	Test Dates:	07 April 2017 & 10 April 2017
Test Sample Serial Number:	BHMBH01000213		

FCC Reference:	Parts 90.543(e)(1) and 2.1051
Test Method Used:	KDB 971168 D01 Section 6.0 referencing FCC Part 90.543
Frequency Ranges:	769 MHz to 775 MHz 799 MHz to 805 MHz

#### **Environmental Conditions:**

Temperature (℃):	24 to 25
Relative Humidity (%):	31 to 35

#### Note(s):

- 1. Measurements were performed with the EUT transmitting with a 5 MHz and 10 MHz channel bandwidth, using QPSK, 16QAM and 64QAM modulation schemes.
- 2. All emissions were >20 dB below the applicable limit or below the level of the noise floor of the measuring receiver.
- 3. The emissions limit for 90.543(e)(1) is  $76 + 10\log_{10}(P) = -46.0$  dBm in a 6.25 kHz bandwidth. As it was not possible to set the resolution bandwidth on the test equipment, the bandwidth was set to 10 kHz. The limit was adjusted by  $10\log_{10}(10 \text{ kHz} / 6.25 \text{ kHz}) = 2.04 \text{ dB}$ . The limit shown in the plots for the 769 MHz to 775 MHz and 799 MHz to 805 MHz bands was set to -46 dBm + 2.04 dB = -43.96 dBm.
- 4. The measurements were performed using an RMS detector, with a video averaging trace over 100 sweeps.

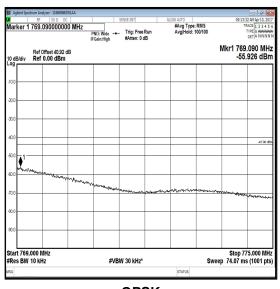
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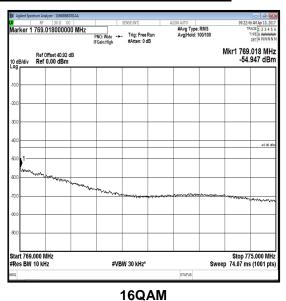
### **Transmitter Conducted Emissions Limitations (continued)**

### Results: 5 MHz Channel Bandwidth / Bottom Channel / 769 MHz to 775 MHz

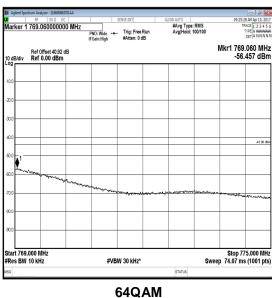
Modulation	Peak Emission Level RXTX1 (dBm)	Peak Emission Level RXTX2 (dBm)	Combined Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
QPSK	-55.93	-56.91	-53.01	-43.96	9.05	Complied
16QAM	-54.95	-60.36	-54.07	-43.96	10.11	Complied
64QAM	-56.46	-57.67	-53.98	-43.96	10.02	Complied

### Results: 5 MHz Channel Bandwidth / Bottom Channel / 769 MHz to 775 MHz / RxTx1





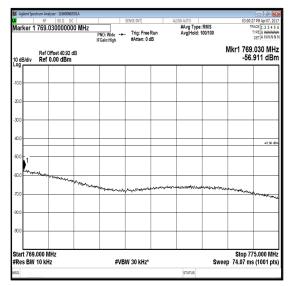
**QPSK** 

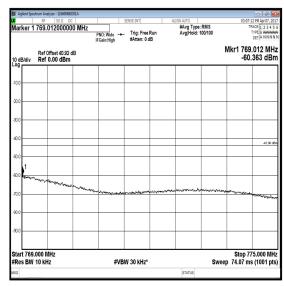


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### **Transmitter Conducted Emissions Limitations (continued)**

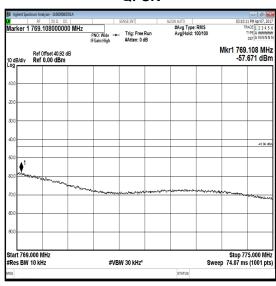
### Results: 5 MHz Channel Bandwidth / Bottom Channel / 769 MHz to 775 MHz / RxTx2





#### **QPSK**

**16QAM** 



64QAM

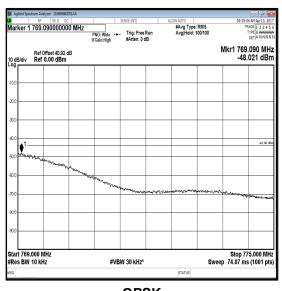
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### **Transmitter Conducted Emissions Limitations (continued)**

## Results: 5 MHz Channel Bandwidth / Top Channel / 769 MHz to 775 MHz

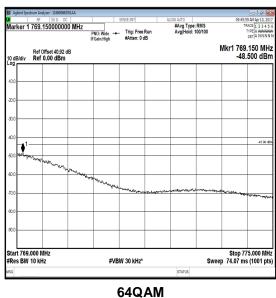
Modulation	Peak Emission Level RXTX1 (dBm)	Peak Emission Level RXTX2 (dBm)	Combined Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
QPSK	-48.02	-53.42	-46.90	-43.96	2.94	Complied
16QAM	-47.61	-50.70	-45.88	-43.96	1.92	Complied
64QAM	-48.50	-49.18	-45.82	-43.96	1.86	Complied

### Results: 5 MHz Channel Bandwidth / Top Channel / 769 MHz to 775 MHz / RxTx1





**QPSK** 

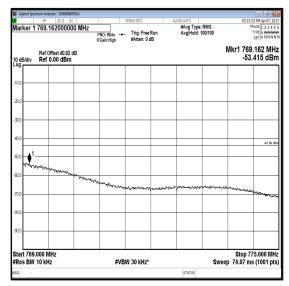


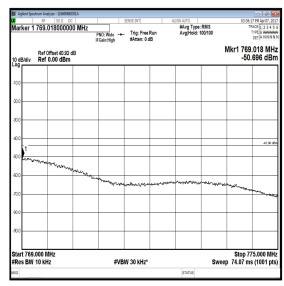
16QAM

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# **Transmitter Conducted Emissions Limitations (continued)**

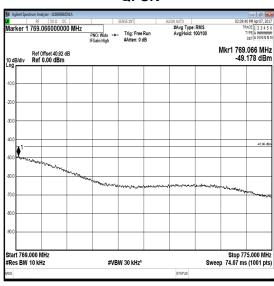
### Results: 5 MHz Channel Bandwidth / Top Channel / 769 MHz to 775 MHz / RxTx2





#### **QPSK**

**16QAM** 



64QAM

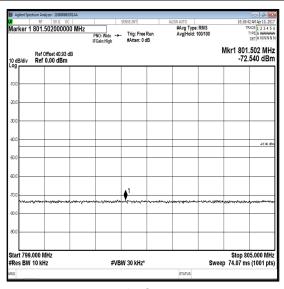
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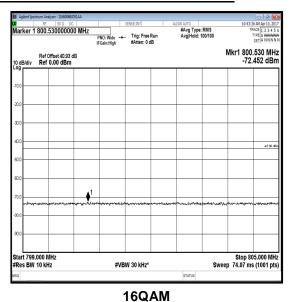
### **Transmitter Conducted Emissions Limitations (continued)**

## Results: 5 MHz Channel Bandwidth / Bottom Channel / 799 MHz to 805 MHz

Modulation	Peak Emission Level RXTX1 (dBm)	Peak Emission Level RXTX2 (dBm)	Combined Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
QPSK	-72.54	-72.43	-69.48	-43.96	25.52	Complied
16QAM	-72.45	-72.34	-69.39	-43.96	25.43	Complied
64QAM	-72.17	-72.58	-69.36	-43.96	25.40	Complied

### Results: 5 MHz Channel Bandwidth / Bottom Channel / 799 MHz to 805 MHz / RxTx1





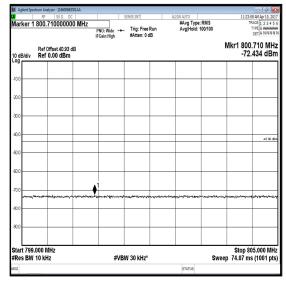
**QPSK** 

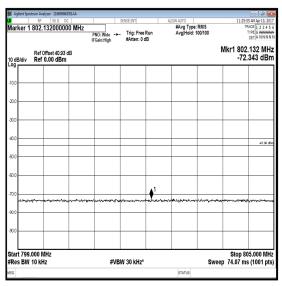
64QAM

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## **Transmitter Conducted Emissions Limitations (continued)**

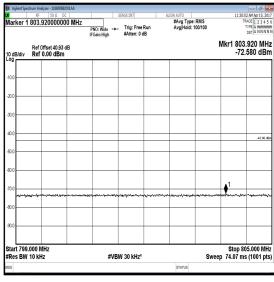
## Results: 5 MHz Channel Bandwidth / Bottom Channel / 799 MHz to 805 MHz / RxTx2





#### **QPSK**

**16QAM** 



64QAM

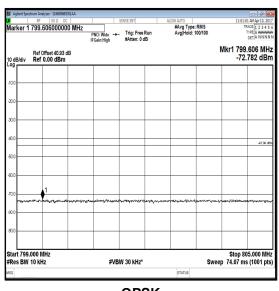
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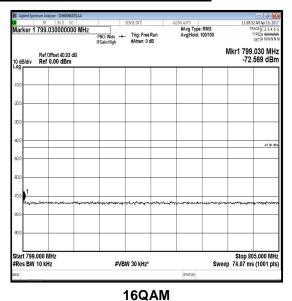
# **Transmitter Conducted Emissions Limitations (continued)**

## Results: 5 MHz Channel Bandwidth / Top Channel / 799 MHz to 805 MHz

Modulation	Peak Emission Level RXTX1 (dBm)	Peak Emission Level RXTX2 (dBm)	Combined Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
QPSK	-72.78	-72.64	-69.70	-43.96	25.74	Complied
16QAM	-72.57	-72.65	-69.60	-43.96	25.64	Complied
64QAM	-72.29	-72.70	-69.48	-43.96	25.52	Complied

### Results: 5 MHz Channel Bandwidth / Top Channel / 799 MHz to 805 MHz / RxTx1





**QPSK** 

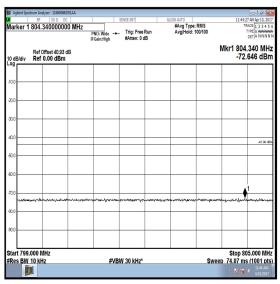
64QAM

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### **Transmitter Conducted Emissions Limitations (continued)**

### Results: 5 MHz Channel Bandwidth / Top Channel / 799 MHz to 805 MHz / RxTx2





**QPSK** 

**16QAM** 



64QAM

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