



Product Service

FCC ID:  
VBNAHCA-01

Test Report No:  
D555647736

64QAM-Modulation ANT3		
874.0	8.94	compliant
881.5	8.94	compliant
889.0	8.92	compliant
64QAM-Modulation ANT4		
874.0	8.92	compliant
881.5	8.94	compliant
889.0	8.92	compliant
256QAM-Modulation ANT1		
874.0	8.98	compliant
881.5	8.94	compliant
889.0	8.92	compliant
256QAM-Modulation ANT2		
874.0	8.94	compliant
881.5	8.94	compliant
889.0	8.92	compliant
256QAM-Modulation ANT3		
874.0	8.94	compliant
881.5	8.94	compliant
889.0	8.92	compliant
256QAM-Modulation ANT4		
874.0	8.94	compliant
881.5	8.94	compliant
889.0	8.92	compliant
Measurement Uncertainty:		±48kHz

**Table 13 Occupied Bandwidth (1 X 10 MHz Channel BW)****Config E:**

Carrier Frequency [MHz]	Occupied Bandwidth [MHz]	Result
QPSK-Modulation ANT1		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
QPSK-Modulation ANT2		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
QPSK-Modulation ANT3		



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874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
<b>QPSK-Modulation ANT4</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
<b>16QAM-Modulation ANT1</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
<b>16QAM-Modulation ANT2</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.8	compliant
<b>16QAM-Modulation ANT3</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.8	compliant
<b>16QAM-Modulation ANT4</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
<b>64QAM-Modulation ANT1</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
<b>64QAM-Modulation ANT2</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
<b>64QAM-Modulation ANT3</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
<b>64QAM-Modulation ANT4</b>		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant

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256QAM-Modulation ANT1		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
256QAM-Modulation ANT2		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
256QAM-Modulation ANT3		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
256QAM-Modulation ANT4		
874.0/ 884.0	18.84	compliant
876.5/ 886.5	18.84	compliant
879.0/ 889.0	18.84	compliant
Measurement Uncertainty:		±48kHz

**Table 14 Occupied Bandwidth (2 X 10 MHz Channel BW)****Config F:**

Carrier Frequency [MHz]	Occupied Bandwidth [MHz]	Result
OPSK-Modulation ANT1		
871.5	4.50	compliant
881.5	4.50	compliant
891.5	4.50	compliant
OPSK-Modulation ANT3		
871.5	4.50	compliant
881.5	4.50	compliant
891.5	4.50	compliant
16QAM-Modulation ANT1		
871.5	4.49	compliant
881.5	4.47	compliant
891.5	4.47	compliant
16QAM-Modulation ANT3		
871.5	4.47	compliant
881.5	4.49	compliant
891.5	4.47	compliant
64QAM-Modulation ANT1		
871.5	4.49	compliant
881.5	4.50	compliant
891.5	4.49	compliant
64QAM-Modulation ANT3		



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871.5	4.50	compliant
881.5	4.50	compliant
891.5	4.49	compliant
<b>256QAM-Modulation ANT1</b>		
871.5	4.50	compliant
881.5	4.50	compliant
891.5	4.49	compliant
<b>256QAM-Modulation ANT3</b>		
871.5	4.50	compliant
881.5	4.50	compliant
891.5	4.49	compliant
Measurement Uncertainty:		±48kHz

**Table 11 Occupied Bandwidth (5 MHz Channel BW)****Config G:**

Carrier Frequency [MHz]	Occupied Bandwidth [MHz]	Result
<b>QPSK-Modulation ANT1</b>		
871.5/876.5	9.44	compliant
879/884	9.44	compliant
886.5/891.5	9.43	compliant
<b>OPSK-Modulation ANT3</b>		
871.5/876.5	9.44	compliant
879/884	9.44	compliant
886.5/891.5	9.43	compliant
<b>16QAM-Modulation ANT1</b>		
871.5/876.5	9.41	compliant
879/884	9.41	compliant
886.5/891.5	9.39	compliant
<b>16QAM-Modulation ANT3</b>		
871.5/876.5	9.41	compliant
879/884	9.41	compliant
886.5/891.5	9.40	compliant
<b>64QAM-Modulation ANT1</b>		
871.5/876.5	9.43	compliant
879/884	9.44	compliant
886.5/891.5	9.43	compliant
<b>64QAM-Modulation ANT3</b>		
871.5/876.5	9.43	compliant
879/884	9.44	compliant
886.5/891.5	9.43	compliant
<b>256QAM-Modulation ANT1</b>		
871.5/876.5	9.43	compliant
879/884	9.44	compliant
886.5/891.5	9.43	compliant
<b>256QAM-Modulation ANT3</b>		
871.5/876.5	9.44	compliant
879/884	9.44	compliant
886.5/891.5	9.43	compliant
Measurement Uncertainty:		±48kHz



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**Table 12 Occupied Bandwidth (5+5MHz Channel BW)****Config II:**

Carrier Frequency [MHz]	Occupied Bandwidth [MHz]	Result
<b>QPSK-Modulation ANT1</b>		
871.5/876.5/881.5	14.42	compliant
876.5/881.5/886.5	14.42	compliant
881.5/886.5/891.5	14.43	compliant
<b>QPSK-Modulation ANT3</b>		
871.5/876.5/881.5	14.42	compliant
876.5/881.5/886.5	14.42	compliant
881.5/886.5/891.5	14.40	compliant
<b>16QAM-Modulation ANT1</b>		
871.5/876.5/881.5	14.37	compliant
876.5/881.5/886.5	14.37	compliant
881.5/886.5/891.5	14.37	compliant
<b>16QAM-Modulation ANT3</b>		
871.5/876.5/881.5	14.37	compliant
876.5/881.5/886.5	14.37	compliant
881.5/886.5/891.5	14.37	compliant
<b>64QAM-Modulation ANT1</b>		
871.5/876.5/881.5	14.43	compliant
876.5/881.5/886.5	14.42	compliant
881.5/886.5/891.5	14.40	compliant
<b>64QAM-Modulation ANT3</b>		
871.5/876.5/881.5	14.43	compliant
876.5/881.5/886.5	14.420	compliant
881.5/886.5/891.5	14.40	compliant
<b>256QAM-Modulation ANT1</b>		
871.5/876.5/881.5	14.42	compliant
876.5/881.5/886.5	14.42	compliant
881.5/886.5/891.5	14.40	compliant
<b>256QAM-Modulation ANT3</b>		
871.5/876.5/881.5	14.42	compliant
876.5/881.5/886.5	14.42	compliant
881.5/886.5/891.5	14.40	compliant
Measurement Uncertainty:		±48kHz

**Table 13 Occupied Bandwidth (5+5+5MHz Channel BW)****Config I:**

Carrier Frequency [MHz]	Occupied Bandwidth [MHz]	Result
<b>QPSK-Modulation ANT1</b>		
874	8.93	compliant
881.5	8.93	compliant
891	8.93	compliant
<b>QPSK-Modulation ANT3</b>		
874	8.93	compliant
881.5	8.93	compliant
891	8.93	compliant

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16QAM-Modulation ANT1		
874	8.93	compliant
881.5	8.93	compliant
891	8.92	compliant
16QAM-Modulation ANT3		
874	8.93	compliant
881.5	8.91	compliant
891	8.92	compliant
64QAM-Modulation ANT1		
874	8.93	compliant
881.5	8.93	compliant
891	8.93	compliant
64QAM-Modulation ANT3		
874	8.93	compliant
881.5	8.91	compliant
891	8.93	compliant
256QAM-Modulation ANT1		
874	8.93	compliant
881.5	8.93	compliant
891	8.93	compliant
256QAM-Modulation ANT3		
874	8.93	compliant
881.5	8.93	compliant
891	8.93	compliant
Measurement Uncertainty:		±48kHz

**Table 14 Occupied Bandwidth (10 MHz Channel BW)****Config J:**

Carrier Frequency [MHz]	Occupied Bandwidth [MHz]	Result
QPSK-Modulation ANT1		
874/884	18.86	compliant
876.5/886.5	18.86	compliant
879.5/889	18.84	compliant
QPSK-Modulation ANT3		
874/884	18.86	compliant
876.5/886.5	18.86	compliant
879.5/889	18.84	compliant
16QAM-Modulation ANT1		
874/884	18.84	compliant
876.5/886.5	18.84	compliant
879.5/889	18.84	compliant
16QAM-Modulation ANT3		
874/884	18.84	compliant
876.5/886.5	18.84	compliant
879.5/889	18.82	compliant
64QAM-Modulation ANT1		
874/884	18.86	compliant
876.5/886.5	18.86	compliant
879.5/889	18.84	compliant
64QAM-Modulation ANT3		



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874/884	18.86	compliant
876.5/886.5	18.86	compliant
879.5/889	18.84	compliant
<b>256QAM-Modulation ANT1</b>		
874/884	18.86	compliant
876.5/886.5	18.86	compliant
879.5/889	18.86	compliant
<b>256QAM-Modulation ANT3</b>		
874/884	18.86	compliant
876.5/886.5	18.86	compliant
879.5/889	18.84	compliant
Measurement Uncertainty:		±48kHz

**Table 15 Occupied Bandwidth (10+10MHz Channel BW)**

The occupied bandwidth was found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.



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#### **4.4 Test No. 4: Spurious Emissions at Antenna Terminals (§ 2.1051, § 2.1057, § 22.917)**

##### **4.4.1. Limits**

Para. No. 22.917(a,b,c). The rules in this section govern the spectral characteristics of emissions in the Public Mobile Services.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

The compliance limit was calculated in the following way:

Maximum transmitter output power [W]: P

Maximum transmitter output power [dBm]:  $30 + 10 \log_{10} P$  (conversion from W to dBm)

Attenuation required by FCC:  $43 + 10 \log_{10} P$

Compliance limit = Maximum transmitter output power - Required attenuation

$$= 30 + 10 \log_{10} P - (43 + 10 \log_{10} P) = -13 \text{ dBm}$$

For MiMo output each antenna connectors were measured individually and each individual limit line was reduced by  $10\log(4)$  in 40W (four way MiMo) configs and  $10\log(2)$  in 60W (two way MiMo) configs. Limit line was calculated to show -19.02dB and -16.01dB emission limit, according to FCC KDB 662911 D01 guidance.

##### **4.4.2. Test Procedure and Results**

The tests were carried out in accordance with § 22.917. For all frequency ranges except two (immediately below and above the carrier frequency block). Resolution bandwidth of atleast 1% of OBW or greater was employed.

In the 1MHz bands immediately outside and adjacent to the authorized frequency range or channel, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter was employed.

According to § 2.1057, all emissions including the fundamental frequency from the lowest radio frequency generated in the equipment, without going below 9kHz, up to the 10th harmonic were investigated.

The following tables summarize the worst case detected emission levels (see screenshots on page 157 for details). The external attenuation (cable loss of the set up) is already added in the results. It can be seen separately as the 'Offset' value in the screenshots.



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Measured laboratory room temperature and humidity during the tests				
Date	Temperature Min-Max:		Humidity Min-Max:	
11 Apr – 16 May 2017	25.3°C	26.9 °C	8.1 RH%	22.8 RH%

**Config A Lower band edge:**

Carrier Frequency: 871.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	869	-21.52	compliant
QPSK-Modulation ANT2			
	869	-20.45	compliant
QPSK-Modulation ANT3			
	869	-21.12	compliant
QPSK-Modulation ANT4			
	869	-20.17	compliant
16QAM-Modulation ANT1			
	869	-22.09	compliant
16QAM-Modulation ANT2			
	869	-20.34	compliant
16QAM-Modulation ANT3			
	869	-21.02	compliant
16QAM-Modulation ANT4			
	869	-20.4	compliant
64QAM-Modulation ANT1			
	869	-22.49	compliant
64QAM-Modulation ANT2			
	869	-20.69	compliant
64QAM-Modulation ANT3			
	869	-20.54	compliant
64QAM-Modulation ANT4			
	869	-20.21	compliant
256QAM-Modulation ANT1			
	869	-20.06	compliant
256QAM-Modulation ANT2			
	869	-20.34	compliant
256QAM-Modulation ANT3			
	869	-20.28	compliant

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256QAM-Modulation ANT4			
	869	-20.41	compliant
Measurement Uncertainty:			f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB

**Table 15 Spurious Emissions (Lower band edge) (5 MHz CH BW)****Config A Upper band edge:**

Carrier Frequency: 891.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	891.5	-21.32	compliant
OPSK-Modulation ANT2			
	891.5	-21.76	compliant
QPSK-Modulation ANT3			
	891.5	-22.29	compliant
QPSK-Modulation ANT4			
	891.5	-22.17	compliant
16QAM-Modulation ANT1			
	891.5	-21.16	compliant
16QAM-Modulation ANT2			
	891.5	-21.7	compliant
16QAM-Modulation ANT3			
	891.5	-23.01	compliant
16QAM-Modulation ANT4			
	891.5	-22.81	compliant
64QAM-Modulation ANT1			
	891.5	-21.42	compliant
64QAM-Modulation ANT2			
	891.5	-21.93	compliant
64QAM-Modulation ANT3			
	891.5	-22.95	compliant
64QAM-Modulation ANT4			
	891.5	-22.52	compliant



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256QAM-Modulation ANT1			
	891.5	-21.12	compliant
256QAM-Modulation ANT2			
	891.5	-21.81	compliant
256QAM-Modulation ANT3			
	891.5	-22.38	compliant
256QAM-Modulation ANT4			
	891.5	-21.98	compliant

**Table 16 Spurious Emissions (Upper band edge) (5 MHz CH BW)****Config A Spurious emissions:**

Carrier Frequency: 881.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1764	-21.02	compliant
QPSK-Modulation ANT2			
0.009 – 894000	1764	-21.8	compliant
QPSK-Modulation ANT3			
0.009 – 894000	1764	-21.36	compliant
QPSK-Modulation ANT4			
0.009 – 894000	1764	-21.37	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1764	-20.81	compliant
16QAM-Modulation ANT2			
0.009 – 894000	1764	-20.56	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1764	-21.29	compliant
16QAM-Modulation ANT4			
0.009 – 894000	1764	-21.15	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1764	-20.91	compliant
64QAM-Modulation ANT2			
0.009 – 894000	1764	-21.07	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1764	-21.35	compliant
64QAM-Modulation ANT4			

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0.009 – 894000	1764	-21.42	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1764	-21.09	compliant
256QAM-Modulation ANT2			
0.009 – 894000	1764	-21.19	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1764	-21.49	compliant
256QAM-Modulation ANT4			
0.009 – 894000	1764	-21.52	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 17 Spurious Emissions (5 MHz Channel BW)**

**Config B Lower band edge:**

Carrier Frequency: 871.5/ 876.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	869	-22.84	compliant
QPSK-Modulation ANT2			
	869	-25.68	compliant
QPSK-Modulation ANT3			
	869	-26.76	compliant
QPSK-Modulation ANT4			
	869	-25.99	compliant
16QAM-Modulation ANT1			
	869	-25.99	compliant
16QAM-Modulation ANT2			
	869	-27.28	compliant
16QAM-Modulation ANT3			
	869	-27.03	compliant
16QAM-Modulation ANT4			
	869	-26.05	compliant
64QAM-Modulation ANT1			
	869	-25.65	compliant
64QAM-Modulation ANT2			

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	869	-25.73	compliant
64QAM-Modulation ANT3			
	869	-26.32	compliant
64QAM-Modulation ANT4			
	869	-27.64	compliant
256QAM-Modulation ANT1			
	869	-25.95	compliant
256QAM-Modulation ANT2			
	869	-25.42	compliant
256QAM-Modulation ANT3			
	869	-26.99	compliant
256QAM-Modulation ANT4			
	869	-26.05	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 18 Spurious Emissions (Lower band edge) (2 X 5 MHz CH BW)****Config B Upper band edge:**

Carrier Frequency: 886.5/ 891.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	894	-29.31	compliant
QPSK-Modulation ANT2			
	894	-28.89	compliant
QPSK-Modulation ANT3			
	894	-30.97	compliant
QPSK-Modulation ANT4			
	894	-29.85	compliant
16QAM-Modulation ANT1			
	894	-28.47	compliant
16QAM-Modulation ANT2			
	894	-29.13	compliant
16QAM-Modulation ANT3			
	894	-29.2	compliant
16QAM-Modulation ANT4			

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	894	-29.78	compliant
64QAM-Modulation ANT1			
	894	-28.64	compliant
64QAM-Modulation ANT2			
	894	-28.23	compliant
64QAM-Modulation ANT3			
	894	-30.4	compliant
64QAM-Modulation ANT4			
	894	-29.73	compliant
256QAM-Modulation ANT1			
	894	-28.16	compliant
256QAM-Modulation ANT2			
	894	-29.03	compliant
256QAM-Modulation ANT3			
	894	-30.74	compliant
256QAM-Modulation ANT4			
	894	-29.54	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 19 Spurious Emissions (Upper band edge) (2 X 5 MHz CH BW)**

**Config B Spurious emissions:**

Carrier Frequency: 879/ 884 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1764	-22.8	compliant
QPSK-Modulation ANT2			
0.009 – 894000	1764	-23.14	compliant
QPSK-Modulation ANT3			
0.009 – 894000	1764	-23.05	compliant
QPSK-Modulation ANT4			
0.009 – 894000	1764	-23.06	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1764	-23.09	compliant
16QAM-Modulation ANT2			

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0.009 – 894000	1764	-22.96	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1764	-22.94	compliant
16QAM-Modulation ANT4			
0.009 – 894000	1764	-22.96	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1764	-22.86	compliant
64QAM-Modulation ANT2			
0.009 – 894000	1764	-22.86	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1764	-23.19	compliant
64QAM-Modulation ANT4			
0.009 – 894000	1764	-23.13	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1764	-22.98	compliant
256QAM-Modulation ANT2			
0.009 – 894000	1764	-22.99	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1764	-23.12	compliant
256QAM-Modulation ANT4			
0.009 – 894000	1764	-23.03	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 20 Spurious Emissions (2 X 5 MHz CH BW)****Config C Lower band edge:**

Carrier Frequency: 871.5/ 876.5/ 881.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	869	-24.79	compliant
QPSK-Modulation ANT2			
	869	-27.85	compliant
QPSK-Modulation ANT3			
	869	-28.67	compliant
QPSK-Modulation ANT4			

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	869	-28.37	compliant
16QAM-Modulation ANT1			
	869	-27.89	compliant
16QAM-Modulation ANT2			
	869	-28.14	compliant
16QAM-Modulation ANT3			
	869	-26.28	compliant
16QAM-Modulation ANT4			
	869	-25.39	compliant
64QAM-Modulation ANT1			
	869	-27.56	compliant
64QAM-Modulation ANT2			
	869	-25.44	compliant
64QAM-Modulation ANT3			
	869	-27.9	compliant
64QAM-Modulation ANT4			
	869	-28.01	compliant
256QAM-Modulation ANT1			
	869	-25.65	compliant
256QAM-Modulation ANT2			
	869	-25.86	compliant
256QAM-Modulation ANT3			
	869	-27.94	compliant
256QAM-Modulation ANT4			
	869	-24.65	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 21 Spurious Emissions (Lower band edge) (3 X 5 MHz CH BW)****Config C Upper band edge:**

Carrier Frequency: 881.5/ 886.5/ 891.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	894	-24.69	compliant
QPSK-Modulation ANT2			

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	894	-29.47	compliant
QPSK-Modulation ANT3			
	894	-24.02	compliant
QPSK-Modulation ANT4			
	894	-24.3	compliant
16QAM-Modulation ANT1			
	894	-30.08	compliant
16QAM-Modulation ANT2			
	894	-29.12	compliant
16QAM-Modulation ANT3			
	894	-30.45	compliant
16QAM-Modulation ANT4			
	894	-30.73	compliant
64QAM-Modulation ANT1			
	894	-24.3	compliant
64QAM-Modulation ANT2			
	894	-29.52	compliant
64QAM-Modulation ANT3			
	894	-30.15	compliant
64QAM-Modulation ANT4			
	894	-30.2	compliant
256QAM-Modulation ANT1			
	894	-34.23	compliant
256QAM-Modulation ANT2			
	894	-31.92	compliant
256QAM-Modulation ANT3			
	894	-26.49	compliant
256QAM-Modulation ANT4			
	894	-26.26	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 22 Spurious Emissions (Upper band edge) (3 X 5 MHz CH BW)**



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**Config C Spurious emissions:**

Carrier Frequency: 876.5/ 881.5/ 886.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1764	-22.28	compliant
QPSK-Modulation ANT2			
0.009 – 894000	1764	-23.17	compliant
QPSK-Modulation ANT3			
0.009 – 894000	1764	-24.2	compliant
QPSK-Modulation ANT4			
0.009 – 894000	1764	-22.53	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1764	-22.08	compliant
16QAM-Modulation ANT2			
0.009 – 894000	1764	-21.86	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1764	-22.08	compliant
16QAM-Modulation ANT4			
0.009 – 894000	1764	-22.46	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1764	-24.17	compliant
64QAM-Modulation ANT2			
0.009 – 894000	1764	-22.27	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1764	-22.44	compliant
64QAM-Modulation ANT4			
0.009 – 894000	1764	-22.31	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1764	-23.02	compliant
256QAM-Modulation ANT2			
0.009 – 894000	1764	-24.34	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1764	-22.45	compliant
256QAM-Modulation ANT4			
0.009 – 894000	1764	-22.35	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB,	

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3.6GHz ≤ f <8.0GHz: ±1.6dB,  
8.0GHz ≤ f: ±1.9dB

**Table 23 Spurious Emissions (3 X 5 MHz CH BW)****Config D Lower band edge:**

Carrier Frequency: 874.0 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	869	-25.04	compliant
QPSK-Modulation ANT2			
	869	-24.31	compliant
QPSK-Modulation ANT3			
	869	-25.56	compliant
QPSK-Modulation ANT4			
	869	-24.92	compliant
16QAM-Modulation ANT1			
	869	-24.71	compliant
16QAM-Modulation ANT2			
	869	-24.93	compliant
16QAM-Modulation ANT3			
	869	-25.39	compliant
16QAM-Modulation ANT4			
	869	-25.32	compliant
64QAM-Modulation ANT1			
	869	-24.46	compliant
64QAM-Modulation ANT2			
	869	-24.31	compliant
64QAM-Modulation ANT3			
	869	-25.52	compliant
64QAM-Modulation ANT4			
	869	-25.05	compliant
256QAM-Modulation ANT1			
	869	-24.76	compliant
256QAM-Modulation ANT2			
	869	-24.74	compliant
256QAM-Modulation ANT3			

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	869	-25.43	compliant
<b>256QAM-Modulation ANT4</b>			
	869	-25.18	compliant
Measurement Uncertainty:			f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f < 3.6GHz: ±1.2dB, 3.6GHz ≤ f < 8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB

**Table 24 Spurious Emissions (Lower band edge) (1 X 10 MHz CH BW)****Config D Upper band edge:**

Carrier Frequency: 889.0 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
<b>QPSK-Modulation ANT1</b>			
	894	-27.55	compliant
<b>QPSK-Modulation ANT2</b>			
	894	-27.8	compliant
<b>QPSK-Modulation ANT3</b>			
	894	-28.99	compliant
<b>QPSK-Modulation ANT4</b>			
	894	-28.29	compliant
<b>16QAM-Modulation ANT1</b>			
	894	-27.54	compliant
<b>16QAM-Modulation ANT2</b>			
	894	-28.01	compliant
<b>16QAM-Modulation ANT3</b>			
	894	-27.83	compliant
<b>16QAM-Modulation ANT4</b>			
	894	-28.91	compliant
<b>64QAM-Modulation ANT1</b>			
	894	-27.84	compliant
<b>64QAM-Modulation ANT2</b>			
	894	-27.35	compliant
<b>64QAM-Modulation ANT3</b>			
	894	-29.31	compliant
<b>64QAM-Modulation ANT4</b>			



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	894	-28.61	compliant
256QAM-Modulation ANT1			
	894	-27.84	compliant
256QAM-Modulation ANT2			
	894	-28.22	compliant
256QAM-Modulation ANT3			
	894	-28.71	compliant
256QAM-Modulation ANT4			
	894	-28.59	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 25 Spurious Emissions (Upper band edge) (1 X 10 MHz CH BW)****Config D Spurious emissions:**

Carrier Frequency: 881.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
OPSK-Modulation ANT1			
0.009 – 894000	1764	-22.73	compliant
QPSK-Modulation ANT2			
0.009 – 894000	1764	-22.59	compliant
QPSK-Modulation ANT3			
0.009 – 894000	1764	-22.96	compliant
OPSK-Modulation ANT4			
0.009 – 894000	1764	-23.09	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1764	-22.31	compliant
16QAM-Modulation ANT2			
0.009 – 894000	1764	-22.54	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1764	-22.79	compliant
16QAM-Modulation ANT4			
0.009 – 894000	1764	-23.01	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1764	-22.71	compliant
64QAM-Modulation ANT2			

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0.009 – 894000	1764	-22.61	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1764	-22.85	compliant
64QAM-Modulation ANT4			
0.009 – 894000	1764	-23.09	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1764	-22.37	compliant
256QAM-Modulation ANT2			
0.009 – 894000	1764	-22.6	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1764	-22.77	compliant
256QAM-Modulation ANT4			
0.009 – 894000	1764	-23.08	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 26 Spurious Emissions (1 X 10 MHz CH BW)****Config E Lower band edge:**

Carrier Frequency: 874.0/ 884.0 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	869	-27.57	compliant
QPSK-Modulation ANT2			
	869	-27.4	compliant
QPSK-Modulation ANT3			
	869	-27.98	compliant
QPSK-Modulation ANT4			
	869	-27.45	compliant
16QAM-Modulation ANT1			
	869	-27.38	compliant
16QAM-Modulation ANT2			
	869	-25.61	compliant
16QAM-Modulation ANT3			
	869	-28.46	compliant

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16QAM-Modulation ANT4			
	869	-27.8	compliant
64QAM-Modulation ANT1			
	869	-27.53	compliant
64QAM-Modulation ANT2			
	869	-26.97	compliant
64QAM-Modulation ANT3			
	869	-28.2	compliant
64QAM-Modulation ANT4			
	869	-27.79	compliant
256QAM-Modulation ANT1			
	869	-27.24	compliant
256QAM-Modulation ANT2			
	869	-28.97	compliant
256QAM-Modulation ANT3			
	869	-29.62	compliant
256QAM-Modulation ANT4			
	869	-29.25	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 27 Spurious Emissions (Lower band edge) (2 X 10 MHz CH BW)****Config E Upper band edge:**

Carrier Frequency: 879.0/ 889.0 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	894	-29.96	compliant
QPSK-Modulation ANT2			
	894	-30.49	compliant
QPSK-Modulation ANT3			
	894	-31.49	compliant
QPSK-Modulation ANT4			
	894	-30.96	compliant



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16QAM-Modulation ANT1			
	894	-30.06	compliant
16QAM-Modulation ANT2			
	894	-30.36	compliant
16QAM-Modulation ANT3			
	894	-31.81	compliant
16QAM-Modulation ANT4			
	894	-30.91	compliant
64QAM-Modulation ANT1			
	894	-30.03	compliant
64QAM-Modulation ANT2			
	894	-30.09	compliant
64QAM-Modulation ANT3			
	894	-31.39	compliant
64QAM-Modulation ANT4			
	894	-30.99	compliant
256QAM-Modulation ANT1			
	894	-30.96	compliant
256QAM-Modulation ANT2			
	894	-31.12	compliant
256QAM-Modulation ANT3			
	894	-32.18	compliant
256QAM-Modulation ANT4			
	894	-31.9	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 28 Spurious Emissions (Upper band edge) (2 X 10 MHz CII BW)****Config E Spurious emissions:**

Carrier Frequency: 876.5/ 886.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1764	-25.13	compliant
QPSK-Modulation ANT2			
0.009 – 894000	1764	-25.35	compliant

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QPSK-Modulation ANT3			
0.009 – 894000	1764	-24.36	compliant
QPSK-Modulation ANT4			
0.009 – 894000	1764	-25.32	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1764	-24.99	compliant
16QAM-Modulation ANT2			
0.009 – 894000	1764	-25.24	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1764	-24.29	compliant
16QAM-Modulation ANT4			
0.009 – 894000	1764	-25.41	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1764	-25.21	compliant
64QAM-Modulation ANT2			
0.009 – 894000	1764	-25.24	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1764	-24.26	compliant
64QAM-Modulation ANT4			
0.009 – 894000	1764	-25.07	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1764	-25.13	compliant
256QAM-Modulation ANT2			
0.009 – 894000	1764	-24.22	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1764	-24.37	compliant
256QAM-Modulation ANT4			
0.009 – 894000	1764	-25.33	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

Table 29 Spurious Emissions (2 X 10 MHz CH BW)

## Config F Lower band edge:

Carrier Frequency: 871.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result

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QPSK-Modulation ANT1			
	869	-21.46	compliant
QPSK-Modulation ANT3			
	869	-20.95	compliant
16QAM-Modulation ANT1			
	869	-20.85	compliant
16QAM-Modulation ANT3			
	869	-20.93	compliant
64QAM-Modulation ANT1			
	869	-21.44	compliant
64QAM-Modulation ANT3			
	869	-21.09	compliant
256QAM-Modulation ANT1			
	869	-21.94	compliant
256QAM-Modulation ANT3			
	869	-21.69	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 30 Spurious Emissions (Lower band edge) (5 MHz CH BW)****Config F Upper band edge:**

Carrier Frequency: 891.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	894	-22.05	compliant
QPSK-Modulation ANT3			
	894	-21.36	compliant
16QAM-Modulation ANT1			
	894	-21.87	compliant
16QAM-Modulation ANT3			
	894	-21.83	compliant
64QAM-Modulation ANT1			
	894	-2181	compliant
64QAM-Modulation ANT3			
	894	-22.13	compliant
256QAM-Modulation ANT1			
	894	-23.01	compliant

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256QAM-Modulation ANT3			
	894	-24.36	compliant
$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , Measurement Uncertainty: $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$			

**Table 31 Spurious Emissions (Upper band edge) (5 MHz CH BW)****Config F Spurious emissions:**

Carrier Frequency: 881.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1762.24	-23.44	compliant
QPSK-Modulation ANT'3			
0.009 – 894000	1762.24	-23.23	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1762.24	-23.27	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1762.24	-23.34	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1762.24	-23.37	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1762.24	-23.44	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1762.24	-24.16	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1762.24	-24.11	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 32 Spurious Emissions (5 MHz CHI BW)****Config G Lower band edge:**

Carrier Frequency: 871.5/876.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	868.95	-23.03	compliant
QPSK-Modulation ANT'3			



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	868.95	-22.95	compliant
16QAM-Modulation ANT1			
	868.95	-22.57	compliant
16QAM-Modulation ANT3			
	868.95	-22.54	compliant
64QAM-Modulation ANT1			
	868.95	-23.04	compliant
64QAM-Modulation ANT3			
	868.95	-22.41	compliant
256QAM-Modulation ANT1			
	868.95	-24.24	compliant
256QAM-Modulation ANT3			
	868.95	-24.29	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 33 Spurious Emissions (Lower band edge) (5+5MHz CH BW)****Config G Upper band edge:**

Carrier Frequency: 886.5/891.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	894.05	-24.95	compliant
QPSK-Modulation ANT3			
	894.05	-25.58	compliant
16QAM-Modulation ANT1			
	894.05	-25.86	compliant
16QAM-Modulation ANT3			
	894.05	-25.59	compliant
64QAM-Modulation ANT1			
	894.05	-24.75	compliant
64QAM-Modulation ANT3			
	894.05	-25.33	compliant
256QAM-Modulation ANT1			
	894.05	-25.85	compliant
256QAM-Modulation ANT3			
	894.05	-26.68	compliant

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Measurement Uncertainty:	$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$
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**Table 34 Spurious Emissions (Upper band edge) (5+5MHz CH BW)****Config G Spurious emissions:**

Carrier Frequency: 879.0/884.0 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1762.24	-25.39	compliant
QPSK-Modulation ANT3			
0.009 – 894000	1762.24	-25.23	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1762.24	-25.27	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1762.24	-25.25	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1762.24	-25.38	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1762.24	-25.21	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1762.24	-26.55	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1762.24	-26.63	compliant
Measurement Uncertainty:	$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$		

**Table 35 Spurious Emissions (5+5MHz CH BW)****Config H Lower band edge:**

Carrier Frequency: 871.5/876.5/881.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	868.95	-20.60	compliant
QPSK-Modulation ANT3			



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	868.95	-24.12	compliant
16QAM-Modulation ANT1			
	868.95	-24.41	compliant
16QAM-Modulation ANT3			
	868.95	-24.92	compliant
64QAM-Modulation ANT1			
	868.95	-24.01	compliant
64QAM-Modulation ANT3			
	868.95	-23.31	compliant
256QAM-Modulation ANT1			
	868.95	-24.73	compliant
256QAM-Modulation ANT3			
	868.95	-23.02	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 36 Spurious Emissions (Lower band edge) (5+5+5MHz CH BW)****Config H Upper band edge:**

Carrier Frequency: 881.5/886.5/891.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	894.05	-25.67	compliant
QPSK-Modulation ANT3			
	894.05	-26.09	compliant
16QAM-Modulation ANT1			
	894.05	-24.99	compliant
16QAM-Modulation ANT3			
	894.05	-26.14	compliant
64QAM-Modulation ANT1			
	894.05	-25.32	compliant
64QAM-Modulation ANT3			
	894.05	-25.31	compliant
256QAM-Modulation ANT1			
	894.05	-26.43	compliant
256QAM-Modulation ANT3			
	894.05	-26.75	compliant

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Measurement Uncertainty:	$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$
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**Table 37 Spurious Emissions (Upper band edge) (5+5+5MHz CH BW)****Config H Spurious emissions:**

Carrier Frequency: 876.5/881.5/886.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1762.24	-26.35	compliant
QPSK-Modulation ANT3			
0.009 – 894000	1762.24	-26.50	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1762.24	-26.21	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1762.24	-26.21	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1762.24	-26.64	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1762.24	-26.54	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1762.24	-27.67	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1762.24	-27.50	compliant
Measurement Uncertainty:	$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$		

**Table 38 Spurious Emissions (5+5+5MHz CH BW)**



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**Config I Lower band edge:**

Carrier Frequency: 874 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	869	-21.36	compliant
QPSK-Modulation ANT'3			
	869	-21.29	compliant
16QAM-Modulation ANT1			
	869	-21.30	compliant
16QAM-Modulation ANT3			
	869	-21.33	compliant
64QAM-Modulation ANT1			
	869	-21.17	compliant
64QAM-Modulation ANT3			
	869	-21.86	compliant
256QAM-Modulation ANT1			
	869	-22.43	compliant
256QAM-Modulation ANT3			
	869	-22.71	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 39 Spurious Emissions (Lower band edge) (10 MHz CH BW)****Config I Upper band edge:**

Carrier Frequency: 874 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	894	-21.63	compliant
QPSK-Modulation ANT'3			
	894	-22.29	compliant
16QAM-Modulation ANT1			
	894	-21.48	compliant
16QAM-Modulation ANT3			
	894	-22.58	compliant
64QAM-Modulation ANT1			
	894	-22.10	compliant
64QAM-Modulation ANT3			



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	894	-22.47	compliant
256QAM-Modulation ANT1			
	894	-23.37	compliant
256QAM-Modulation ANT3			
	894	-23.35	compliant
$f < 1.0\text{GHz}: \pm 1.1\text{dB},$ $1.0\text{GHz} \leq f < 3.6\text{GHz}: \pm 1.2\text{dB},$ Measurement Uncertainty: $3.6\text{GHz} \leq f < 8.0\text{GHz}: \pm 1.6\text{dB},$ $8.0\text{GHz} \leq f: \pm 1.9\text{dB}$			

**Table 40 Spurious Emissions (Upper band edge) (10 MHz CH BW)****Config I Spurious emissions:**

Carrier Frequency: 881.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1762.24	-25.22	compliant
QPSK-Modulation ANT3			
0.009 – 894000	1762.24	-25.10	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1762.24	-25.50	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1762.24	-25.07	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1762.24	-25.15	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1762.24	-25.14	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1762.24	-25.67	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1762.24	-25.81	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}: \pm 1.1\text{dB},$ $1.0\text{GHz} \leq f < 3.6\text{GHz}: \pm 1.2\text{dB},$ $3.6\text{GHz} \leq f < 8.0\text{GHz}: \pm 1.6\text{dB},$ $8.0\text{GHz} \leq f: \pm 1.9\text{dB}$	

**Table 41 Spurious Emissions (10 MHz CH BW)**



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**Config J Lower band edge:**

Carrier Frequency: 874/884 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	868.95	-24.85	compliant
QPSK-Modulation ANT'3			
	868.95	-24.77	compliant
16QAM-Modulation ANT1			
	868.95	-24.48	compliant
16QAM-Modulation ANT3			
	868.95	-24.34	compliant
64QAM-Modulation ANT1			
	868.95	-24.59	compliant
64QAM-Modulation ANT3			
	868.95	-24.40	compliant
256QAM-Modulation ANT1			
	868.95	-25.34	compliant
256QAM-Modulation ANT3			
	868.95	-25.71	compliant
Measurement Uncertainty:		$f < 1.0\text{GHz}$ : $\pm 1.1\text{dB}$ , $1.0\text{GHz} \leq f < 3.6\text{GHz}$ : $\pm 1.2\text{dB}$ , $3.6\text{GHz} \leq f < 8.0\text{GHz}$ : $\pm 1.6\text{dB}$ , $8.0\text{GHz} \leq f$ : $\pm 1.9\text{dB}$	

**Table 42 Spurious Emissions (Lower band edge) (10+10MHz CH BW)**
**Config J Upper band edge:**

Carrier Frequency: 879/889 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
	894.05	-26.08	compliant
QPSK-Modulation ANT'3			
	894.05	-26.03	compliant
16QAM-Modulation ANT1			
	894.05	-25.62	compliant
16QAM-Modulation ANT3			
	894.05	-26.03	compliant
64QAM-Modulation ANT1			
	894.05	-26.42	compliant
64QAM-Modulation ANT3			



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	894.05	-26.05	compliant
256QAM-Modulation ANT1			
	894.05	-26.81	compliant
256QAM-Modulation ANT3			
	894.05	-27.00	compliant
		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, Measurement Uncertainty: 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

**Table 43 Spurious Emissions (Upper band edge) (10+10MHz CH BW)****Config J Spurious emissions:**

Carrier Frequency: 876.5/886.5 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation ANT1			
0.009 – 894000	1762.24	-27.16	compliant
QPSK-Modulation ANT3			
0.009 – 894000	1762.24	-27.08	compliant
16QAM-Modulation ANT1			
0.009 – 894000	1762.24	-27.32	compliant
16QAM-Modulation ANT3			
0.009 – 894000	1762.24	-27.12	compliant
64QAM-Modulation ANT1			
0.009 – 894000	1762.24	-26.99	compliant
64QAM-Modulation ANT3			
0.009 – 894000	1762.24	-27.16	compliant
256QAM-Modulation ANT1			
0.009 – 894000	1762.24	-28.01	compliant
256QAM-Modulation ANT3			
0.009 – 894000	1762.24	-27.99	compliant
Measurement Uncertainty:		f < 1.0GHz: ±1.1dB, 1.0GHz ≤ f <3.6GHz: ±1.2dB, 3.6GHz ≤ f <8.0GHz: ±1.6dB, 8.0GHz ≤ f: ±1.9dB	

**Table 44 Spurious Emissions (10+10MHz CII BW)**

The measured conducted emission levels were found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.



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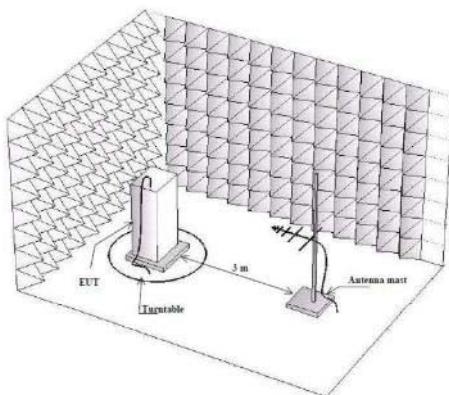
#### 4.5 Test No. 5: Field Strength of Spurious Radiation (§ 2.1053, § 2.1057, § 22.917)

##### 4.5.1. Limits

Para. No. 22.917. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

##### 4.5.2. Test Configuration

The measurements were performed in an anechoic chamber. The radiated test site complies with the site attenuation requirements listed in ANSI C63.4 2003 and is listed with the FCC.



**Figure 2 Test Configuration**

Photographs of the EUT in the anechoic chamber are shown on page 397 of this measurement report.

##### 4.5.3. Test Procedure and Results

TIA-603-D-2010, Section 2.2.6

The test was performed in a semi-anechoic shielded room. The EUT was placed on a non-conductive 0.8 m high table standing on the turntable. During the test in the frequency range 30 - 8940 MHz the distance from the EUT to the measuring antenna was 3 m. In order to find the maximum levels of the disturbance radiation the angle of the turntable, the height of the measuring antenna were varied during the tests. The test was performed with the measuring antenna being both in horizontal and vertical polarizations.

Vertical and horizontal polarizations in the frequency range 30 - 8940 MHz was first measured by using the peak detector. During the peak detector scan the turntable was rotated from 0° to 360° with 30° step with the antenna heights 1.0 m and 2.5 m.



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The limit of -13 dBm has been calculated to correspond 84.4 dB ( $\mu$ V/m). Spurious emissions closer than 20 dB to the limit was measured with average detector.

According to § 2.1057, all emissions from the lowest radio frequency generated in the equipment, without going below 9 kHz, up to the 10th harmonic were investigated.

The antenna substitution method was used to determine the equivalent radiated power at spurious frequencies. The EUT was replaced with a reference substitution antenna with a known gain referenced to an isotropic radiator  $G_{Antenna[dBi]}$ . This antenna was fed with a signal at the spurious frequency  $P_{Gen[dBm]}$ . The level of the signal was adjusted to repeat the previously measured level. The resulting

EIRP is the signal level fed to the reference antenna corrected for gain referenced to an isotropic.

The formula below was used to calculate the EIRP of the EUT.

$$P_{EIRP[dBm]} = P_{Gen[dBm]} - L_{Cable}[dB] + G_{Antenna[dBi]}$$

Worst case detected emission levels are reported in the following table (refer to spectral plots included on pages 100 for details). The antenna factor and cable loss is according to the manufacturer's specification.

Measured laboratory room temperature and humidity during the tests				
Date	Temperature Min-Max:		Humidity Min-Max:	
2 – 22. May 17	21.3 °C	23.1 °C	14.5 RH%	23.6 RH%

#### Config A, B, C, D, E, F, G, H, I, J:

Carrier Frequency: 2506.0 MHz, 2593.0 MHz and 2680.0 MHz			
Frequency Range [MHz]	Emission Frequency [MHz]	Maximum Emission Level [dBm]	Result
QPSK-Modulation TX1			
30 - 8940	6881.181	-44.6 dBm	
Measurement Uncertainty:			±5.4dB

**Table 45 Field Strength of Spurious Radiation (10 MHz Channel BW)**

The measured emission levels were found to be compliant with the manufacturer's specifications and with all requirements of the FCC rules.



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#### 4.6 Test No. 6: Frequency Stability (§ 2.1055, § 22.355)

##### 4.6.1. Purpose

Frequency stability measurements were performed to verify that the frequency deviation of the emission stays within the licensee's frequency block under extreme temperature

##### 4.6.2. Limits

Para. No. 22.355 (-30 °C to +50 °C) and supply voltage conditions according to § 2.1055.

##### 4.6.3. Test Configuration

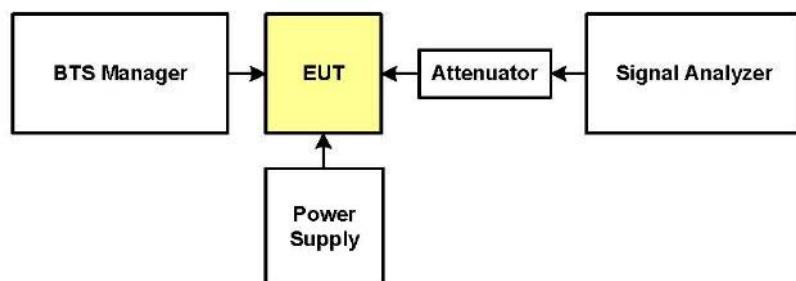


Figure 3 Test Configuration for frequency stability with voltage variation

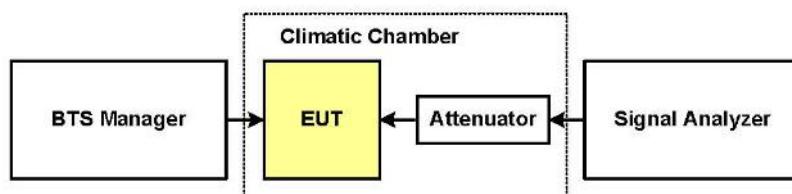


Figure 4 Test Configuration for frequency stability with temperature variation

A complete list of the measurement equipment is included on page 90 of this measurement report.