

Test Report No.10052797 001

Appendix D: Radiated Spurious Emission Data

(File: 10052797AppendixD)

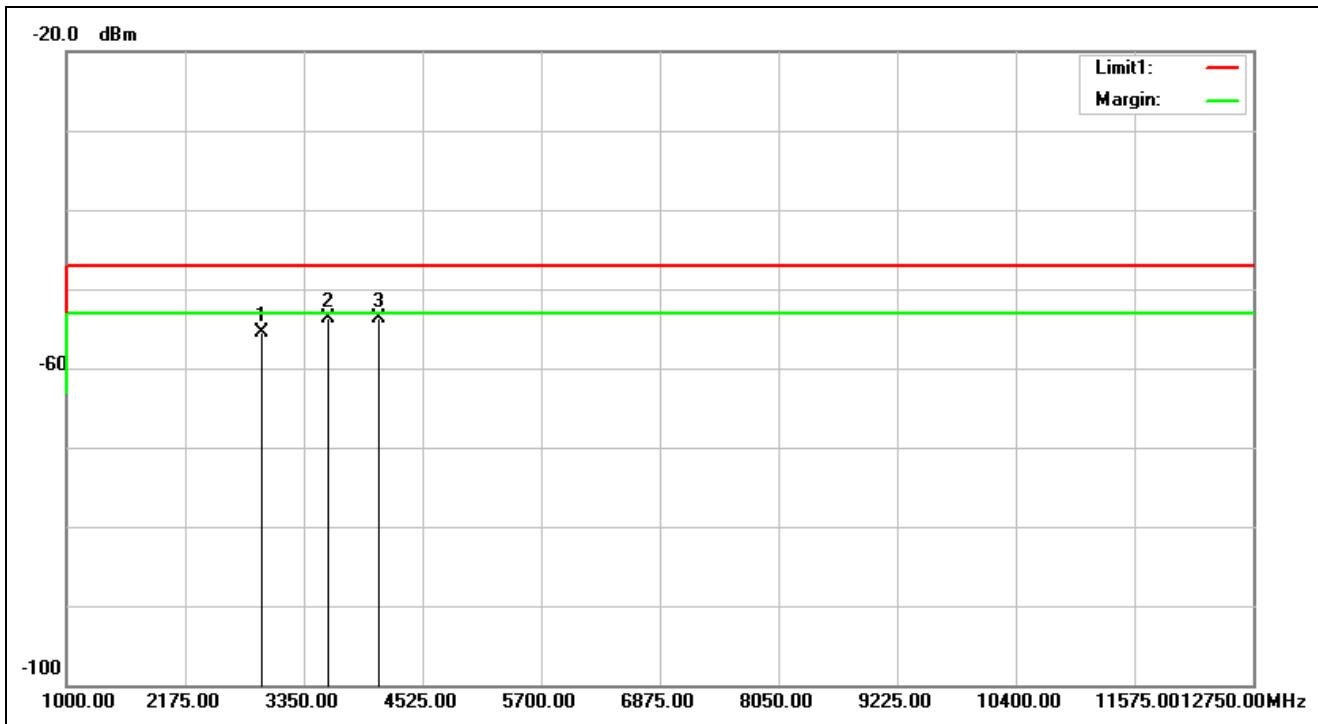
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Spurious Emissions, Receiving Mode, 1-12.75G

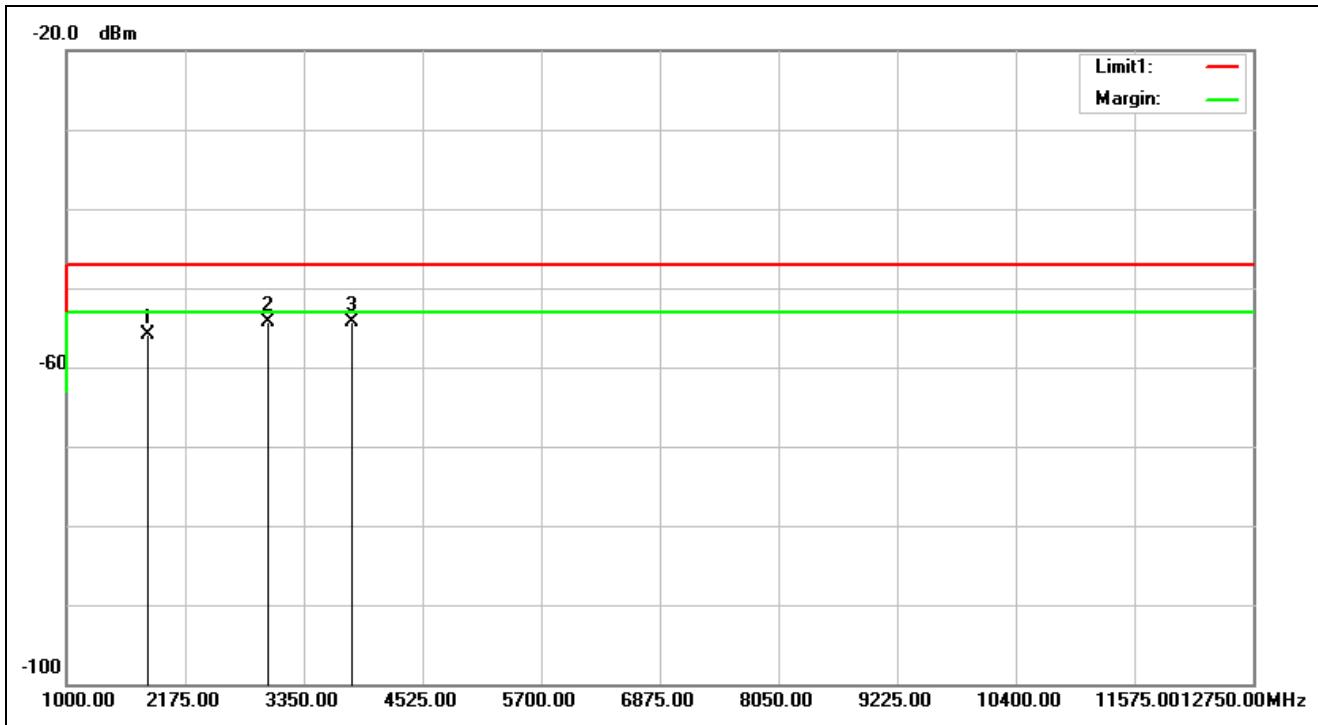


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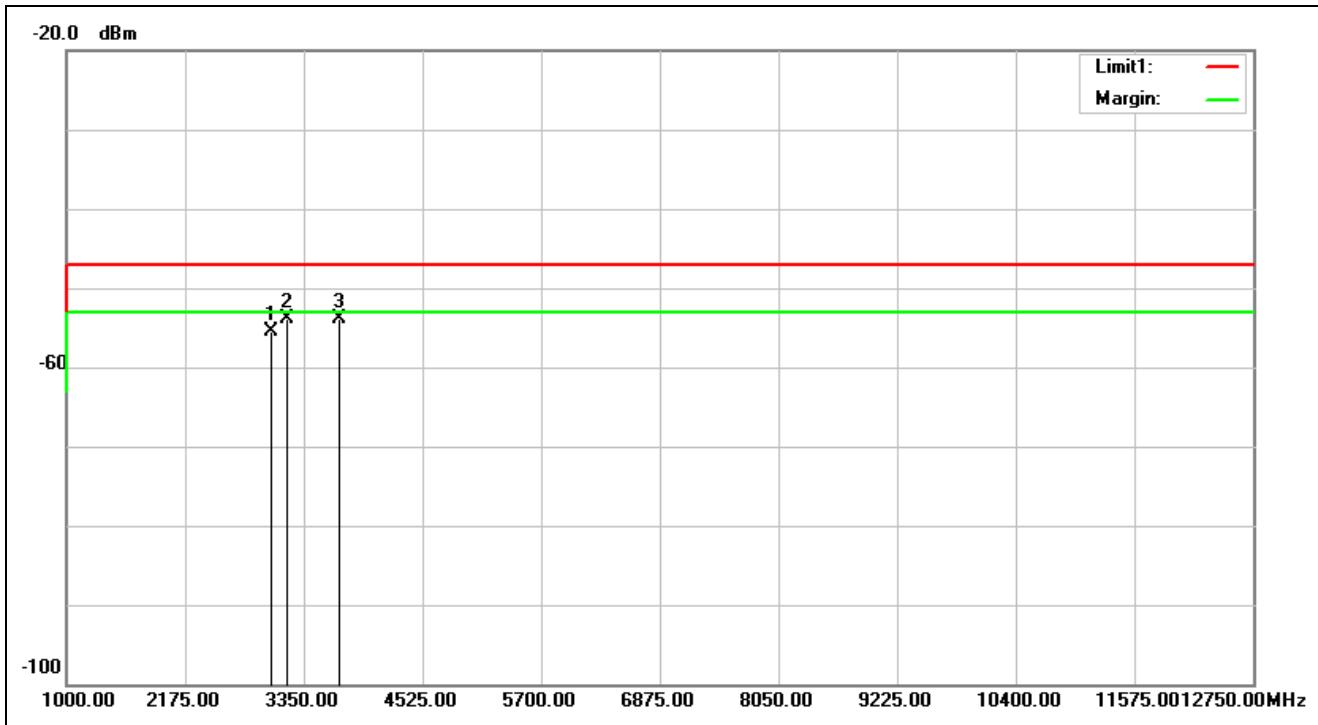
Service No.:	114039665-CE	Test Distance:	1.2m
Test Standard:	EN 300 328 1.8.1_Rx	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2015/9/4 22:17:41
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2402-RX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2927.000	-0.51	-55.07	-55.58	-47.00	-8.58	peak	100	148	
2	3585.000	1.58	-55.30	-53.72	-47.00	-6.72	peak	100	337	
3	4090.250	2.70	-56.36	-53.66	-47.00	-6.66	peak	100	1	



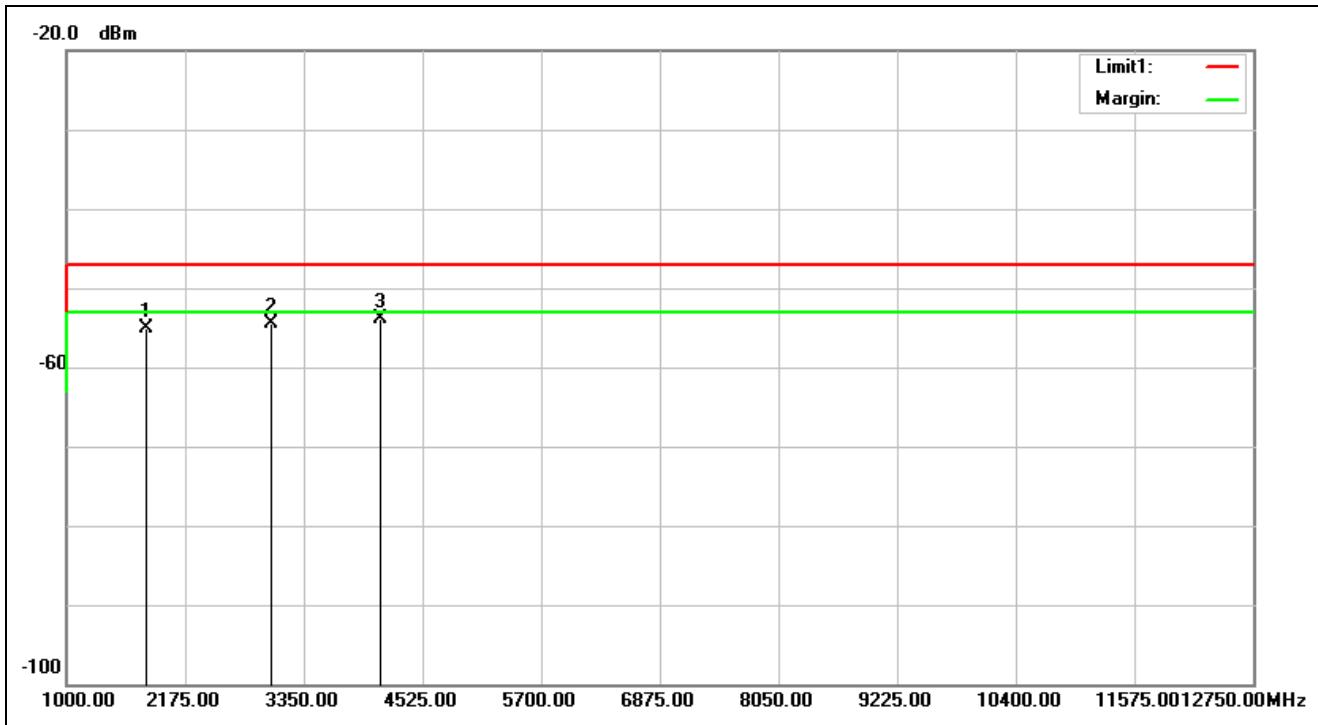
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Test Standard:	EN 300 328 1.8.1_Rx	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2015/9/4 22:18:43
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2402-RX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1799.000	-2.46	-53.36	-55.82	-47.00	-8.82	peak	100	257	
2	2997.500	0.06	-54.29	-54.23	-47.00	-7.23	peak	100	188	
3	3831.750	2.26	-56.59	-54.33	-47.00	-7.33	peak	100	324	



Service No.:	114039665-CE	Test Distance:	1.2m
Test Standard:	EN 300 328 1.8.1_Rx	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2015/9/4 22:21:11
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2480-RX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	3021.000	-0.11	-55.38	-55.49	-47.00	-8.49	peak	100	75	
2	3185.500	0.41	-54.32	-53.91	-47.00	-6.91	peak	100	212	
3	3702.500	1.79	-55.75	-53.96	-47.00	-6.96	peak	100	64	



Service No.:	114039665-CE	Test Distance:	1.2m
Test Standard:	EN 300 328 1.8.1_Rx	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2015/9/4 22:22:13
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2480-RX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1787.250	-2.47	-52.70	-55.17	-47.00	-8.17	peak	100	148	
2	3021.000	0.17	-54.66	-54.49	-47.00	-7.49	peak	100	110	
3	4102.000	2.63	-56.56	-53.93	-47.00	-6.93	peak	100	271	

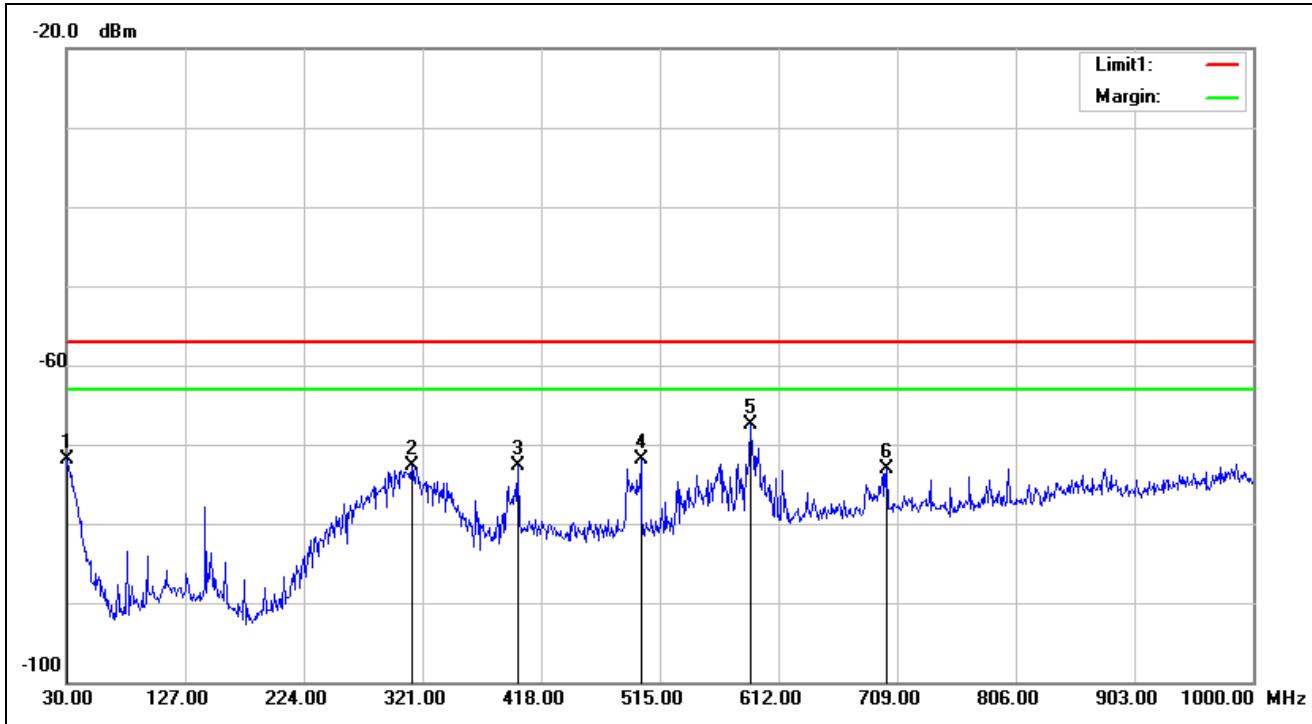
Spurious Emissions, Receiving Mode, 30M-1G



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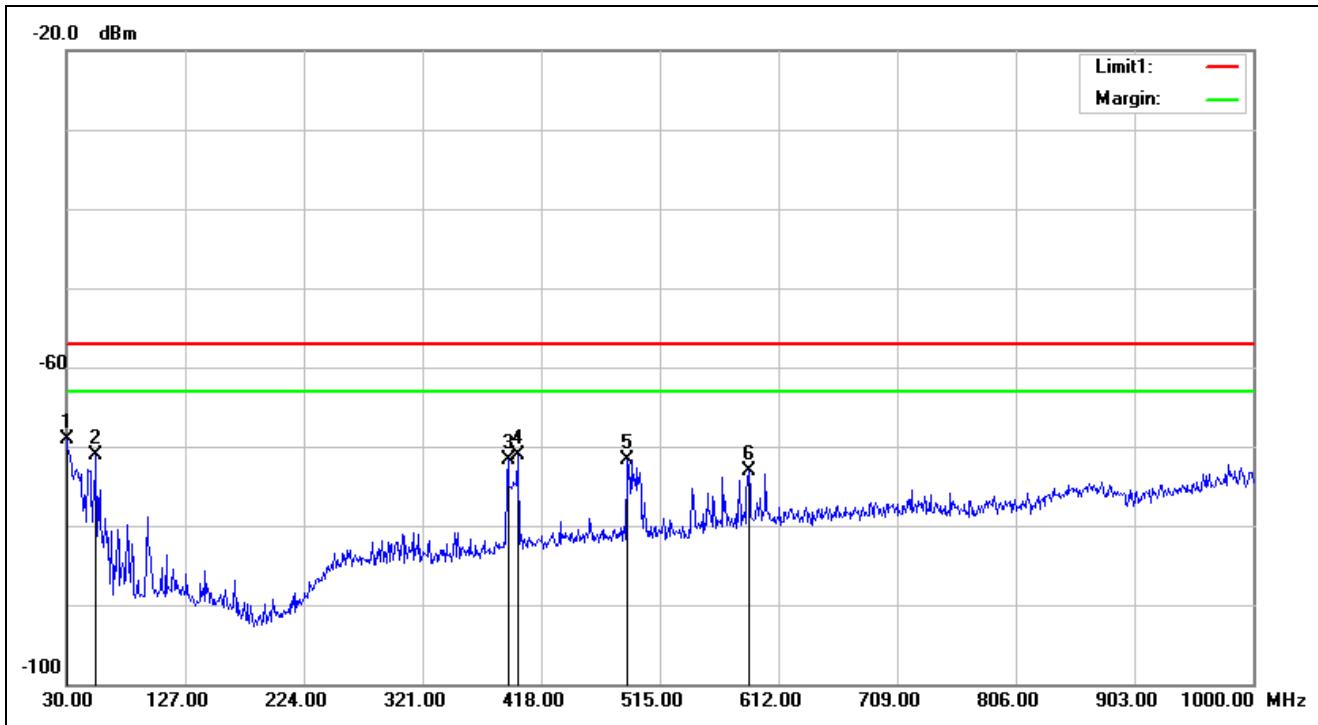
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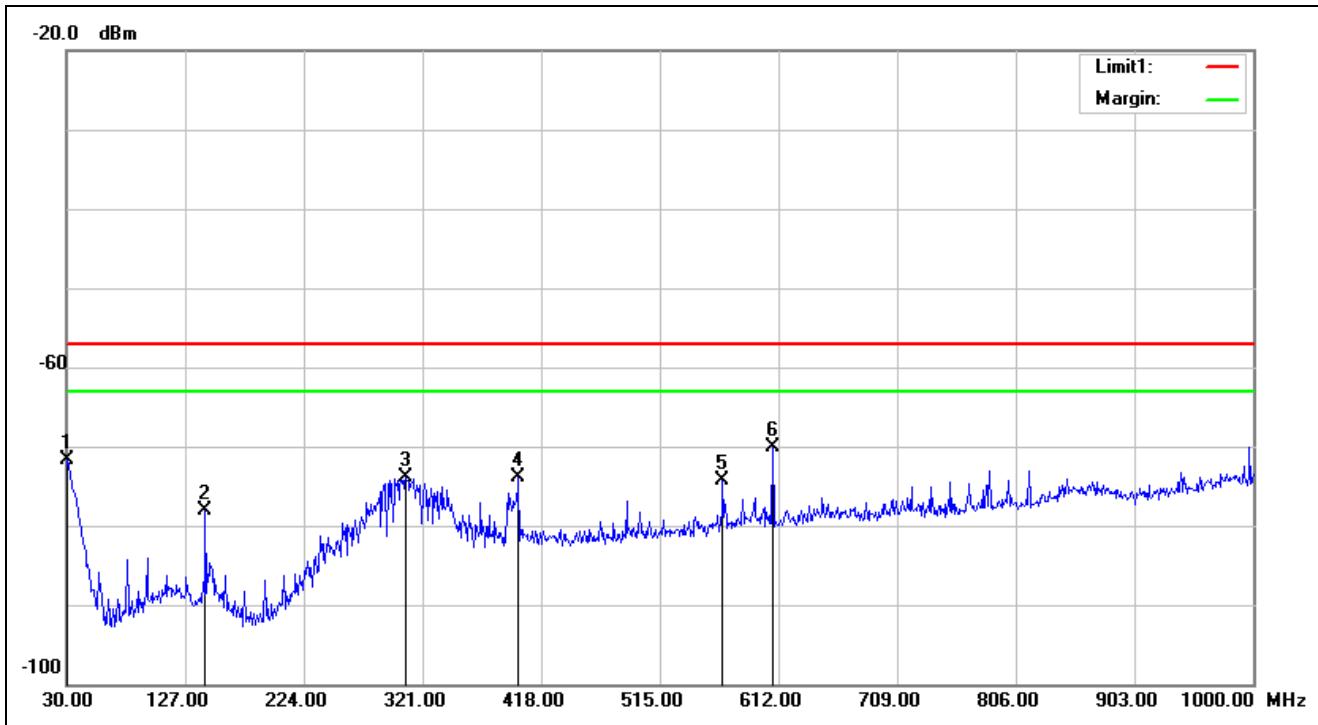
Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Rx	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2015/9/5 08:58:00
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2402-RX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	6.87	-78.81	-71.94	-57.00	-14.94	peak	100	316	
2	312.2700	-6.00	-66.71	-72.71	-57.00	-15.71	peak	100	110	
3	398.6000	-4.27	-68.52	-72.79	-57.00	-15.79	peak	100	249	
4	499.4800	-3.45	-68.39	-71.84	-57.00	-14.84	peak	100	59	
5	588.7200	-1.95	-65.53	-67.48	-57.00	-10.48	peak	100	212	
6	700.2700	-0.73	-72.34	-73.07	-57.00	-16.07	peak	100	305	



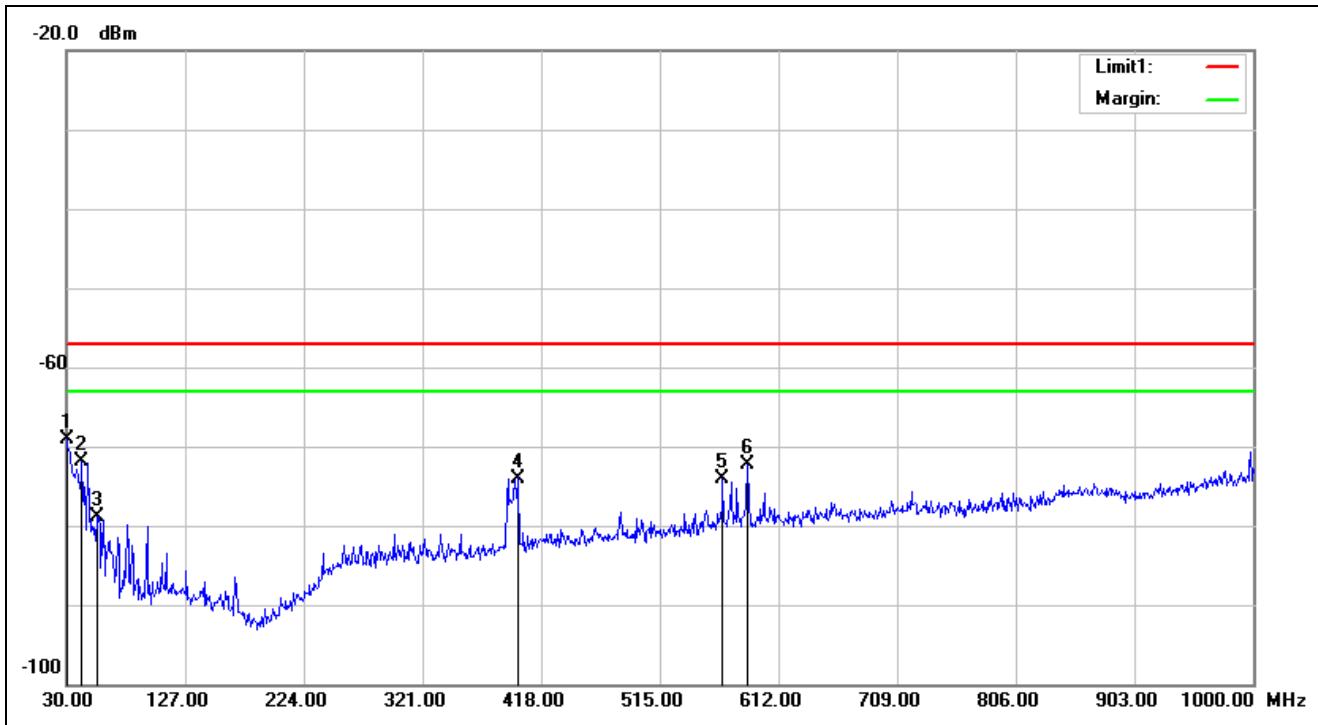
Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Rx	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2015/9/5 08:59:03
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2402-RX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	6.87	-75.93	-69.06	-57.00	-12.06	peak	100	28	
2	54.2500	-11.11	-59.94	-71.05	-57.00	-14.05	peak	100	298	
3	390.8400	-4.54	-67.17	-71.71	-57.00	-14.71	peak	100	215	
4	399.5700	-4.24	-66.80	-71.04	-57.00	-14.04	peak	100	215	
5	487.8400	-3.44	-68.30	-71.74	-57.00	-14.74	peak	100	335	
6	587.7500	-1.97	-71.15	-73.12	-57.00	-16.12	peak	100	223	



Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Rx	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2015/9/5 09:00:53
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2480-RX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	6.87	-78.64	-71.77	-57.00	-14.77	peak	100	0	
2	143.4900	-11.14	-66.95	-78.09	-57.00	-21.09	peak	100	243	
3	307.4200	-6.05	-67.81	-73.86	-57.00	-16.86	peak	100	199	
4	399.5700	-4.24	-69.67	-73.91	-57.00	-16.91	peak	100	246	
5	566.4100	-2.32	-71.89	-74.21	-57.00	-17.21	peak	100	212	
6	607.1500	-1.74	-68.41	-70.15	-57.00	-13.15	peak	100	193	



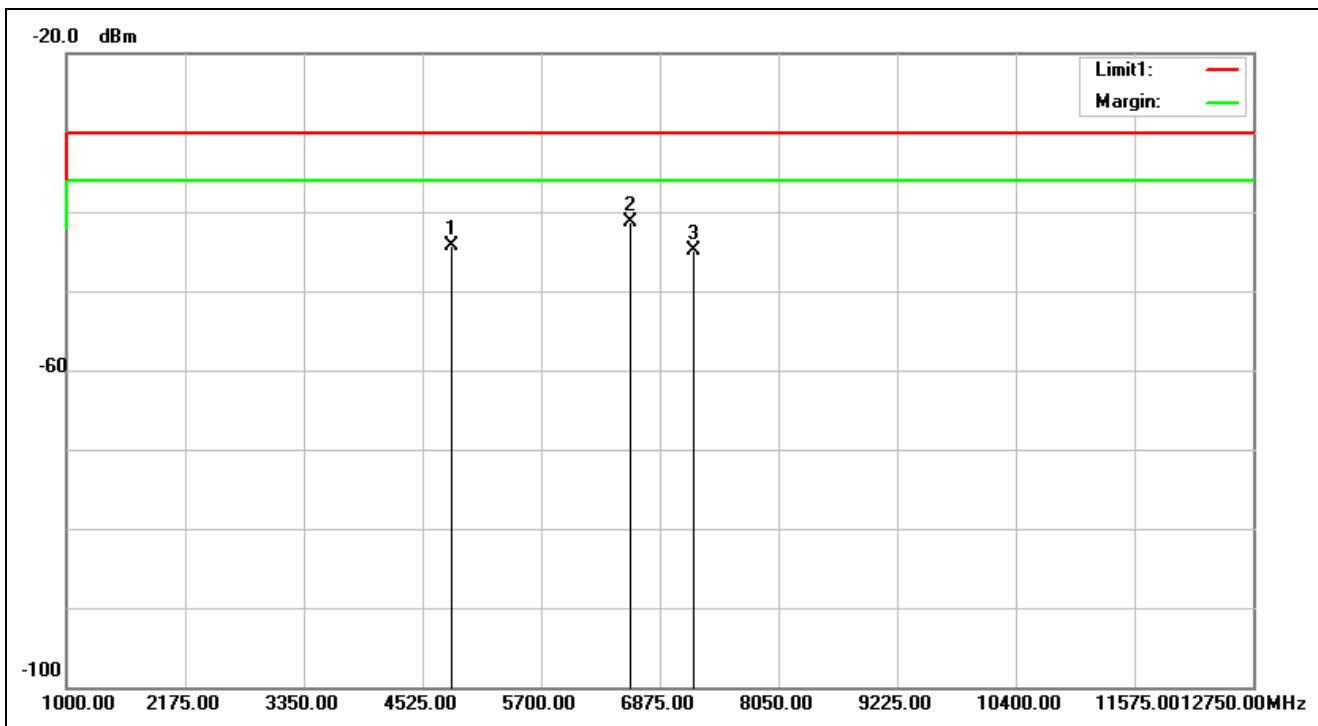
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Test Standard:	EN 300 328 1.8.1_Rx	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2015/9/5 09:01:55
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2480-RX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	6.87	-76.05	-69.18	-57.00	-12.18	peak	100	80	
2	42.6100	-2.19	-69.78	-71.97	-57.00	-14.97	peak	100	33	
3	55.2200	-11.54	-67.34	-78.88	-57.00	-21.88	peak	100	131	
4	398.6000	-4.27	-69.73	-74.00	-57.00	-17.00	peak	100	342	
5	566.4100	-2.32	-71.70	-74.02	-57.00	-17.02	peak	100	270	
6	586.7800	-1.99	-70.27	-72.26	-57.00	-15.26	peak	100	33	

Spurious Emissions, TX Mode, 1-12.75G

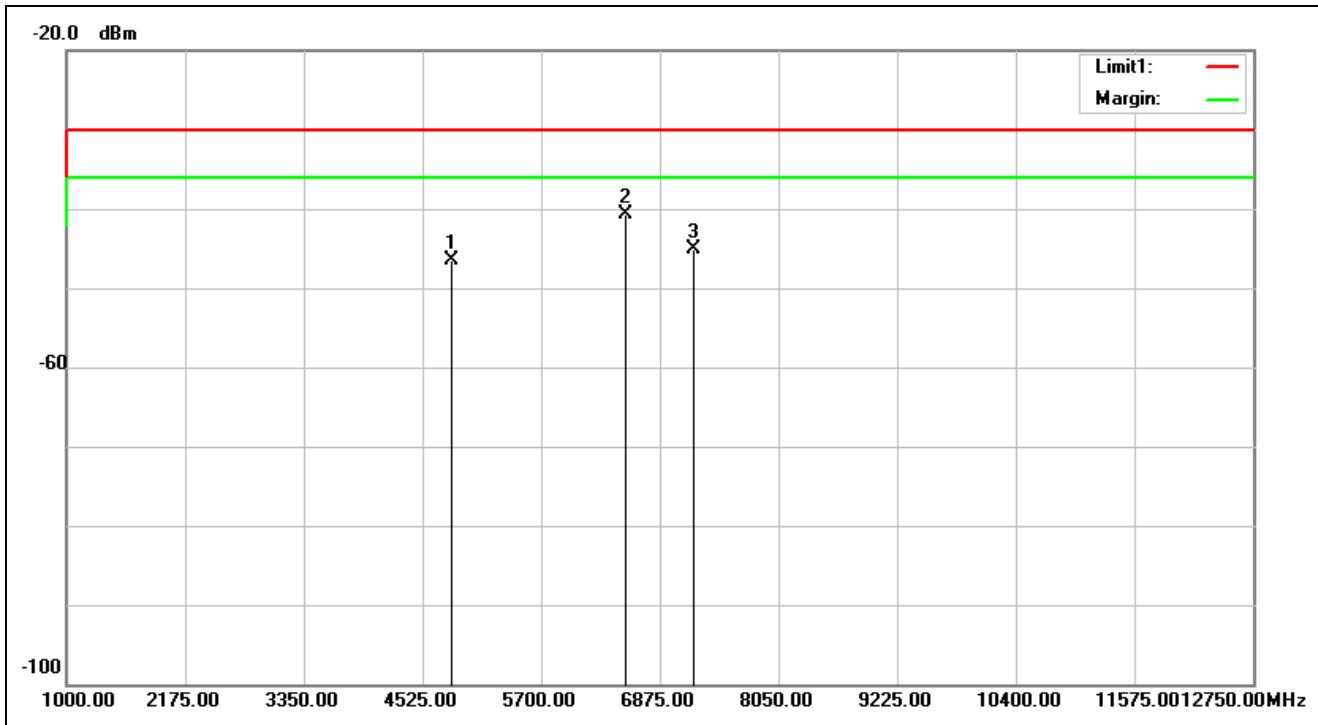


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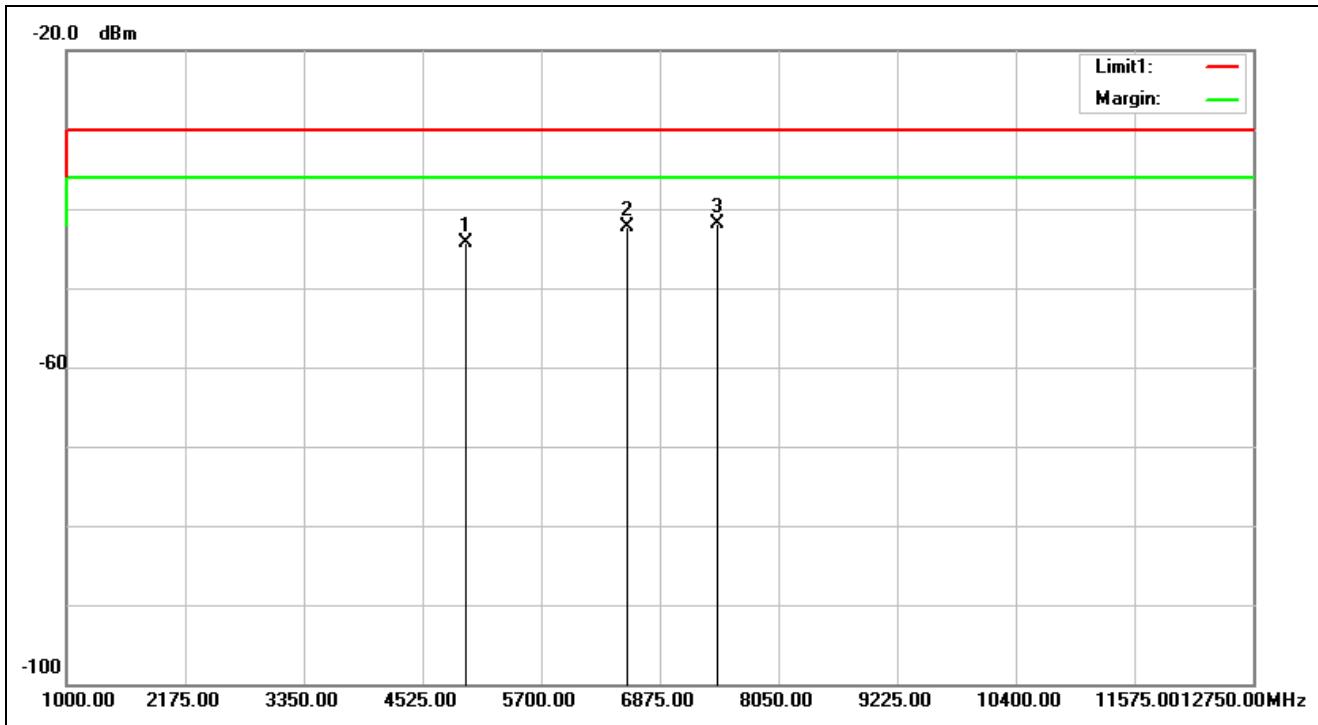
Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Tx	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2015/9/4 22:05:12
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2402-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4804.000	10.54	-54.84	-44.30	-30.00	-14.30	peak	100	240	
2	6581.250	19.97	-61.17	-41.20	-30.00	-11.20	peak	100	101	
3	7206.000	18.67	-63.49	-44.82	-30.00	-14.82	peak		0	



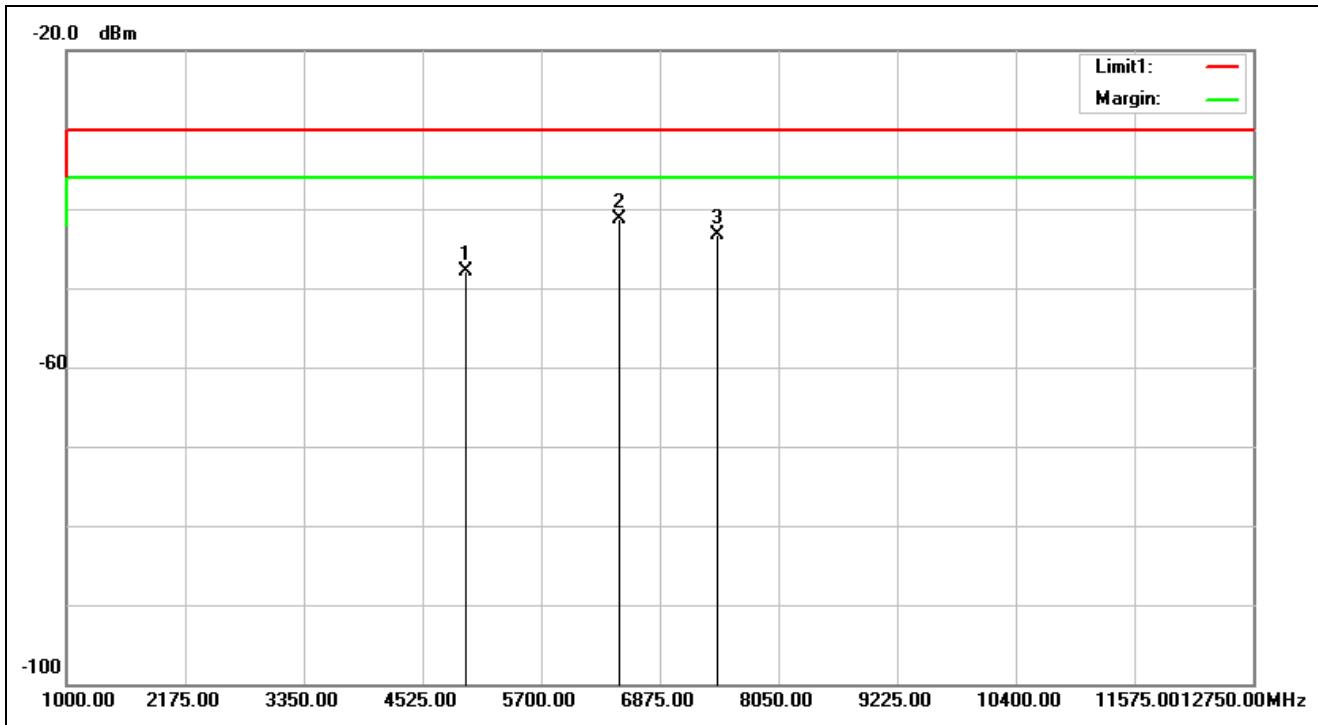
Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Tx	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2015/9/4 22:06:14
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2402-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4804.000	10.63	-57.15	-46.52	-30.00	-16.52	peak			
2	6534.250	20.42	-61.09	-40.67	-30.00	-10.67	peak	100	212	
3	7206.000	18.66	-63.74	-45.08	-30.00	-15.08	peak			



Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Tx	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2015/9/4 22:10:16
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2480-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4960.000	10.78	-55.08	-44.30	-30.00	-14.30	peak	100	123	
2	6546.000	20.14	-62.38	-42.24	-30.00	-12.24	peak	100	260	
3	7440.000	19.48	-61.34	-41.86	-30.00	-11.86	peak	100	45	



Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Tx	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2015/9/4 22:11:18
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2480-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4960.000	10.82	-58.66	-47.84	-30.00	-17.84	peak			
2	6475.500	20.41	-61.72	-41.31	-30.00	-11.31	peak	100	186	
3	7440.000	19.34	-62.57	-43.23	-30.00	-13.23	peak			

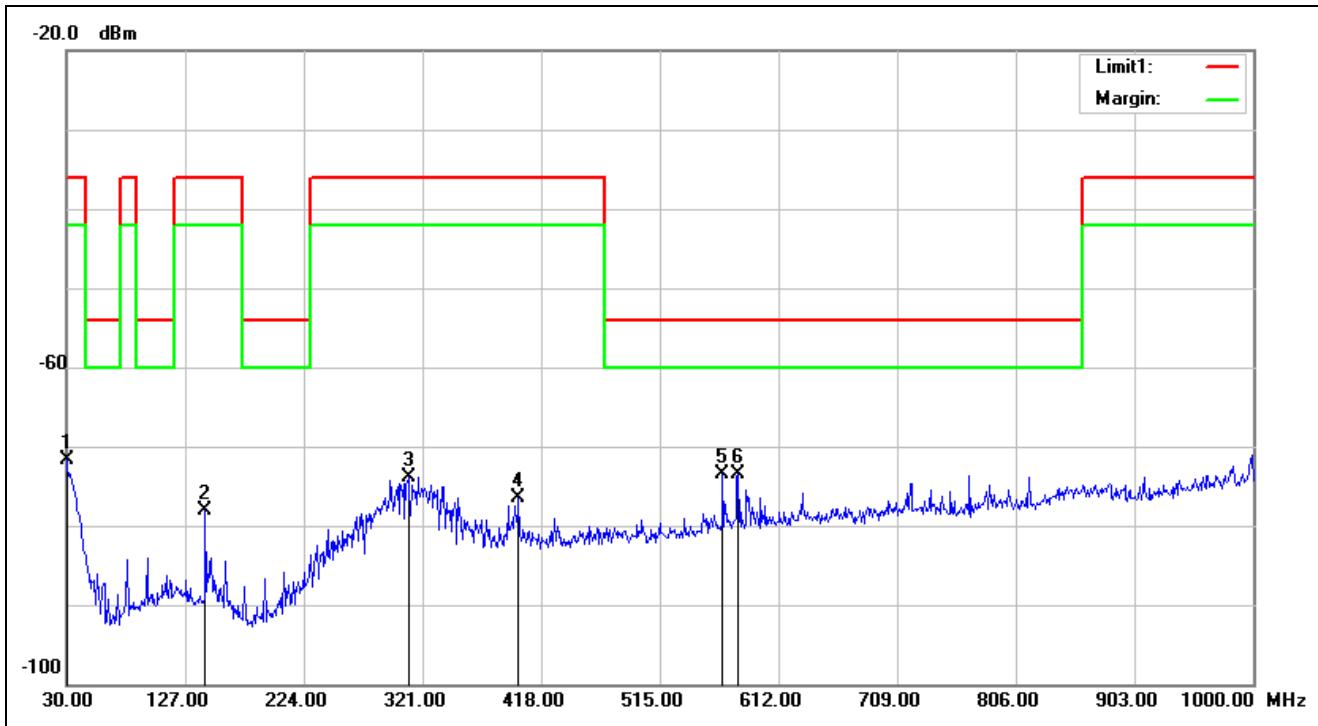
Spurious Emissions, TX Mode, 30M-1G



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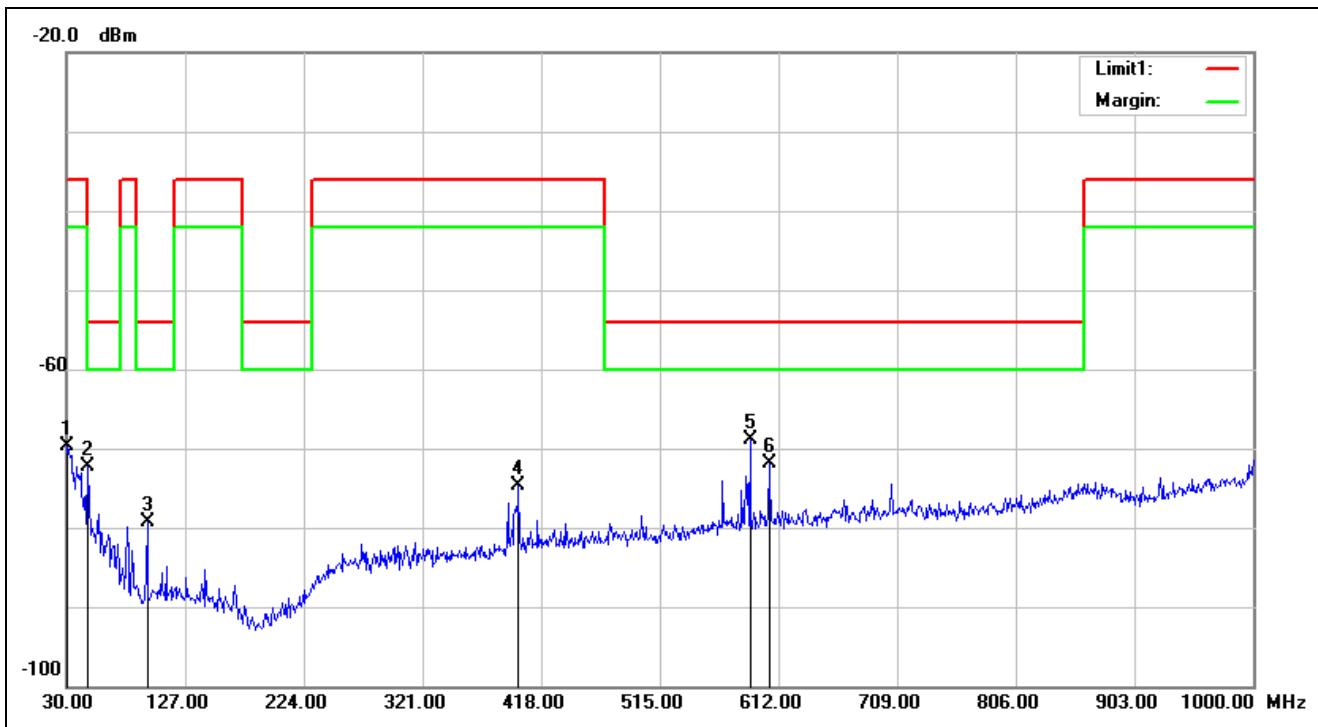
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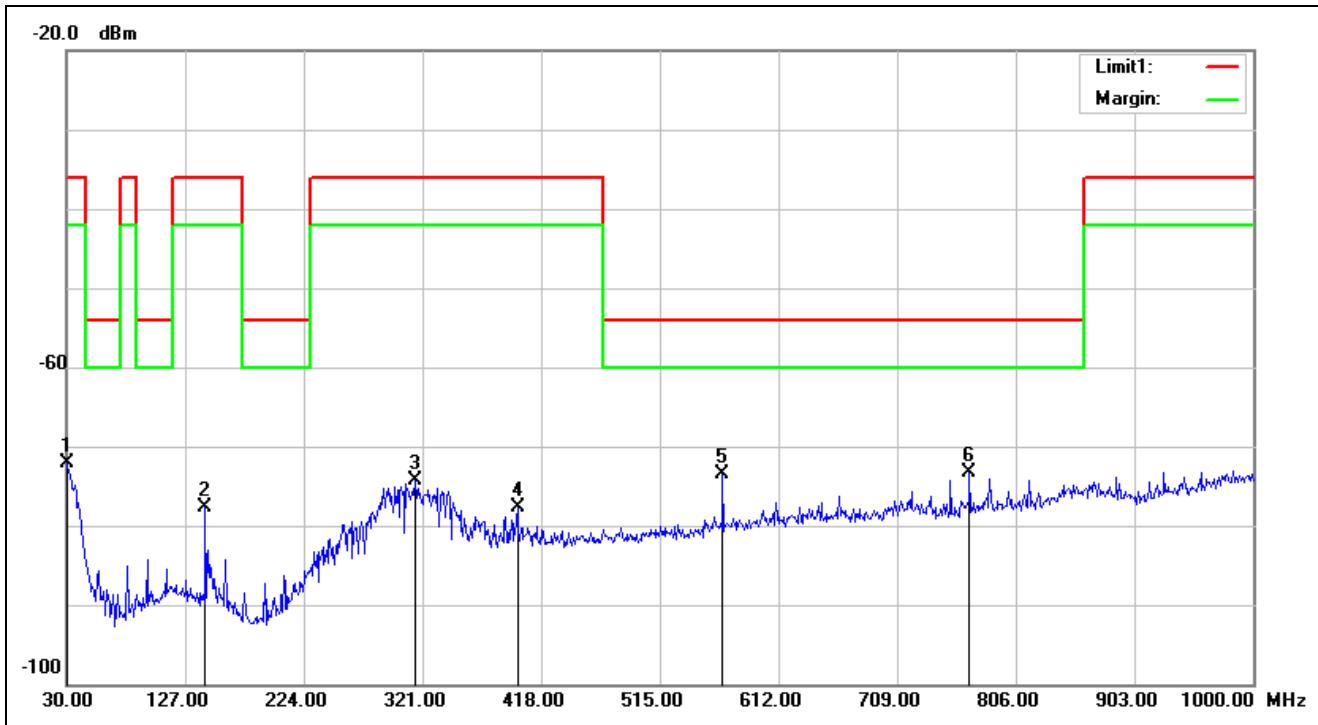
Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Tx	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2015/9/5 09:43:26
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2402-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	6.87	-78.66	-71.79	-36.00	-35.79	peak	100	207	
2	143.4900	-11.14	-67.04	-78.18	-36.00	-42.18	peak	100	165	
3	309.3600	-6.03	-67.86	-73.89	-36.00	-37.89	peak	100	198	
4	399.5700	-4.24	-72.29	-76.53	-36.00	-40.53	peak	100	332	
5	566.4100	-2.32	-71.11	-73.43	-54.00	-19.43	peak	100	226	
6	579.0200	-2.09	-71.42	-73.51	-54.00	-19.51	peak	100	210	



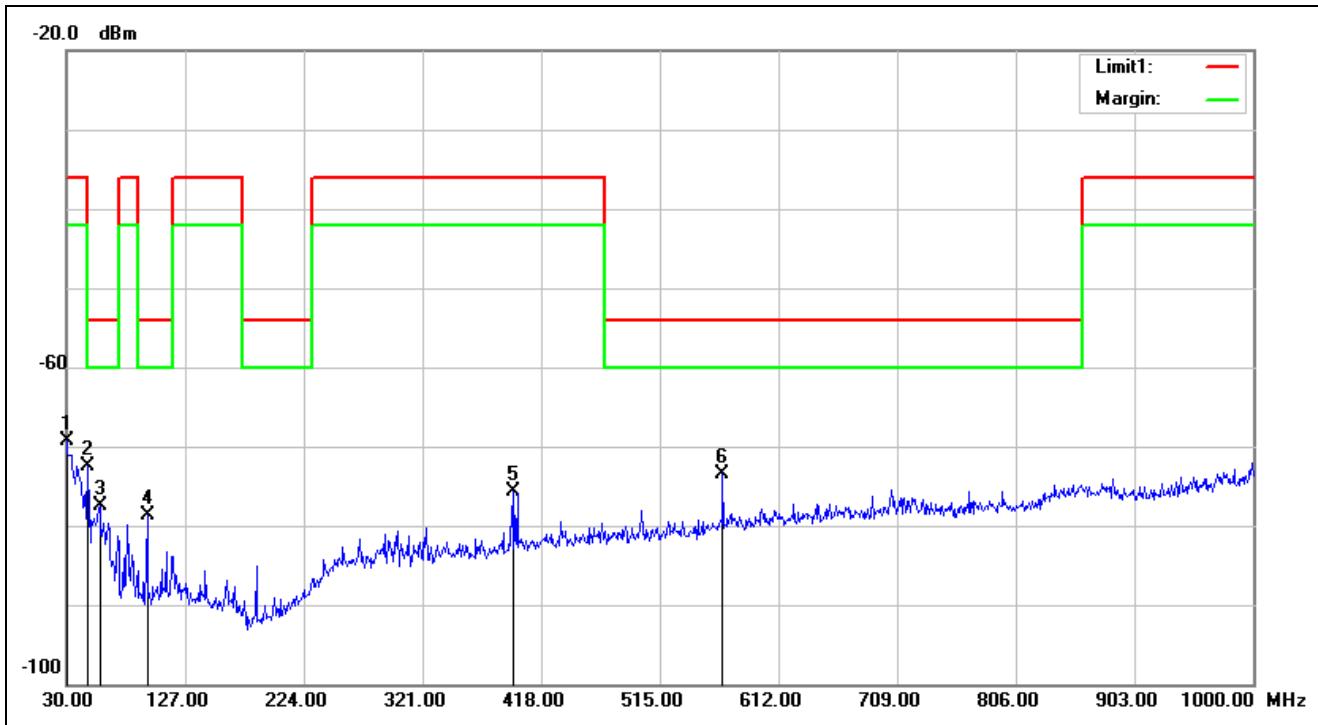
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Test Standard:	EN 300 328 1.8.1_Tx	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2015/9/5 09:44:28
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2402-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.9700	6.25	-75.94	-69.69	-36.00	-33.69	peak	100	28	
2	47.4600	-6.91	-65.31	-72.22	-54.00	-18.22	peak	100	104	
3	95.9600	-11.51	-67.85	-79.36	-54.00	-25.36	peak	100	307	
4	399.5700	-4.24	-70.37	-74.61	-36.00	-38.61	peak	100	187	
5	588.7200	-1.95	-67.00	-68.95	-54.00	-14.95	peak	100	271	
6	604.2400	-1.78	-70.20	-71.98	-54.00	-17.98	peak	100	271	



Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Tx	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2015/9/5 09:46:08
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2480-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	6.87	-78.99	-72.12	-36.00	-36.12	peak	100	221	
2	143.4900	-11.14	-66.49	-77.63	-36.00	-41.63	peak	100	213	
3	315.1800	-5.97	-68.29	-74.26	-36.00	-38.26	peak	100	115	
4	398.6000	-4.27	-73.43	-77.70	-36.00	-41.70	peak	100	246	
5	566.4100	-2.32	-71.08	-73.40	-54.00	-19.40	peak	100	190	
6	768.1700	-0.54	-72.67	-73.21	-54.00	-19.21	peak	100	307	



Service No.:	114039665-CE	Test Distance:	3m
Test Standard:	EN 300 328 1.8.1_Tx	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2015/9/5 09:47:11
Applicant:	Microchip	Test Rating:	DC 5V
Product:	Bluetooth Module	Temp.(°C)/Hum.(%):	22.6(°C)/59%
Model No.:	BM78	Test Engineer:	George Yang
Test Mode:	LE-2480-TX		
Remark:			

No.	Frequency (MHz)	Factor (dB)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	6.87	-76.07	-69.20	-36.00	-33.20	peak	100	318	
2	47.4600	-6.91	-65.64	-72.55	-54.00	-18.55	peak	100	2	
3	57.1600	-12.38	-65.21	-77.59	-54.00	-23.59	peak	100	360	
4	95.9600	-11.51	-67.22	-78.73	-54.00	-24.73	peak	100	240	
5	395.6900	-4.37	-71.28	-75.65	-36.00	-39.65	peak	100	190	
6	566.4100	-2.32	-71.27	-73.59	-54.00	-19.59	peak	100	50	