Test Report No.10050931 10052487 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 10050931 10052487AppendixD)

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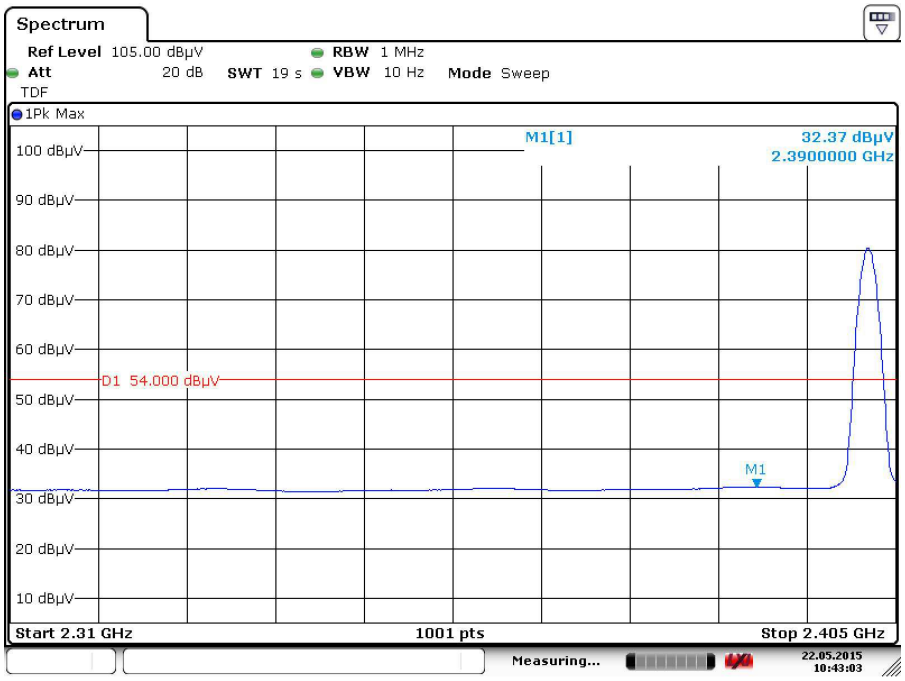
Radiated Bandedge (GFSK)

Low Channel (Hor)



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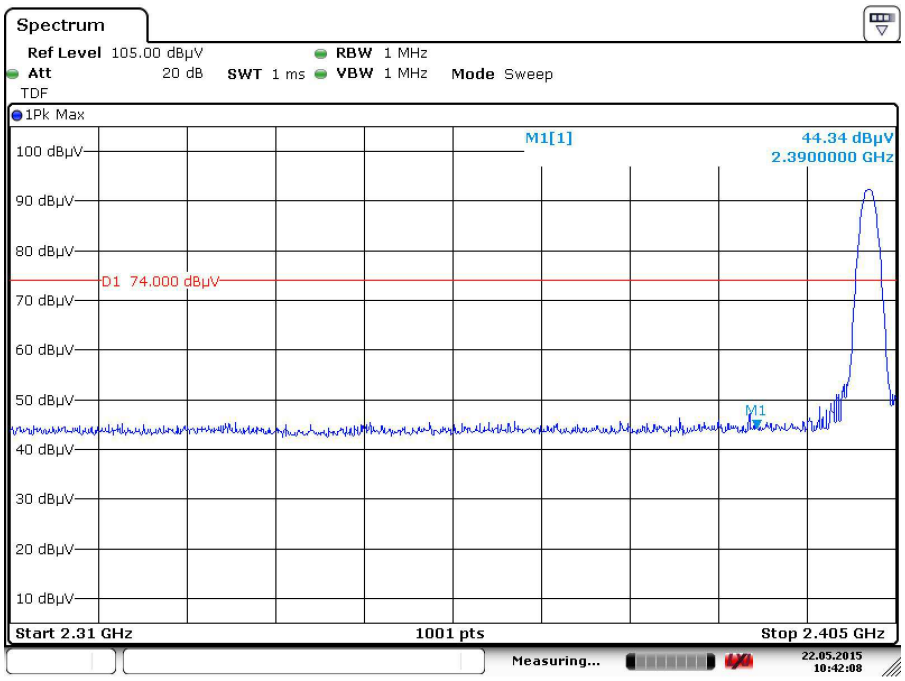

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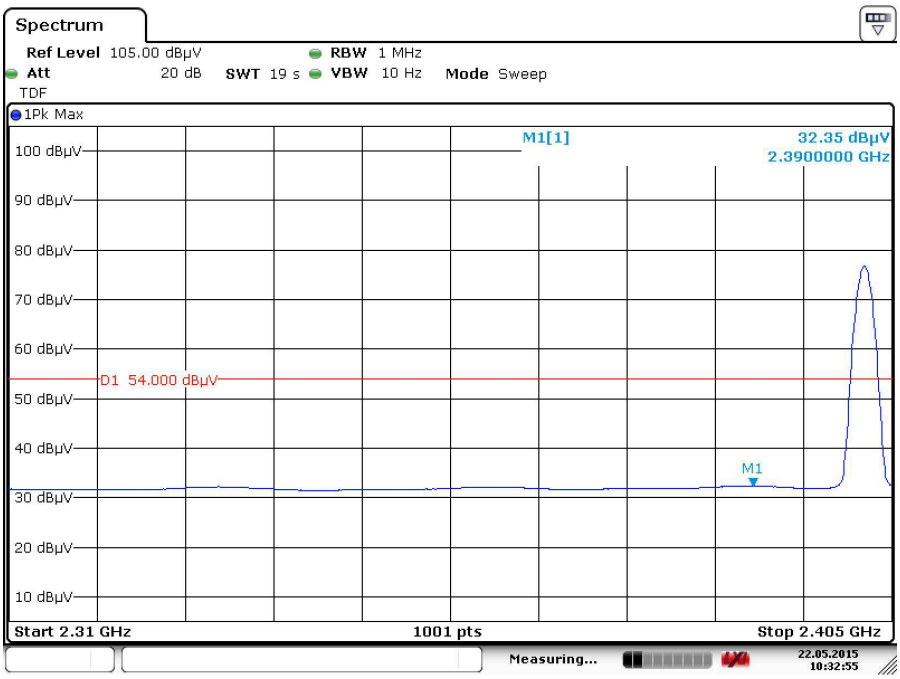
Low Channel (Ver)



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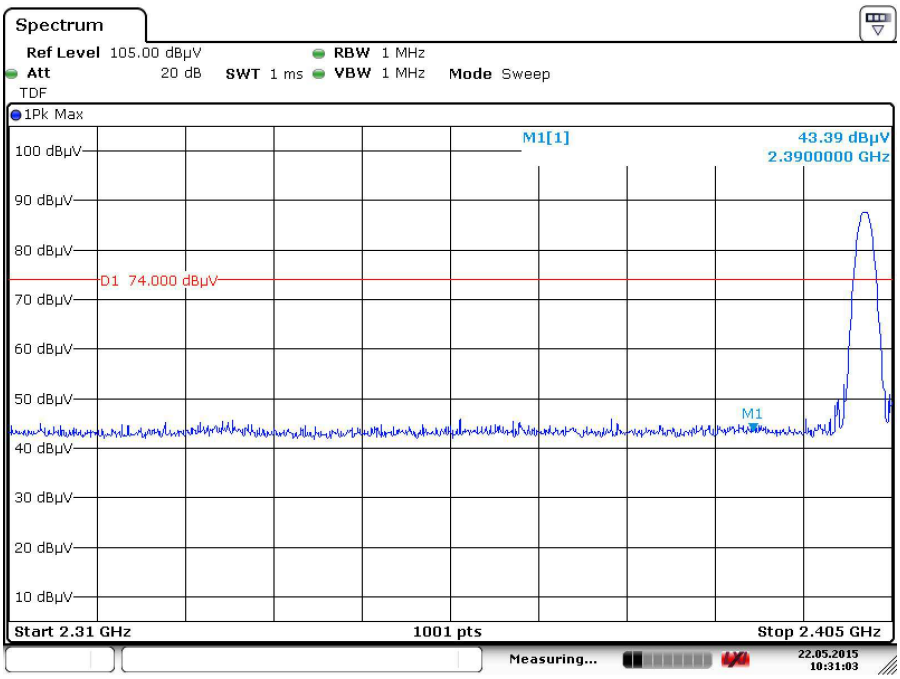

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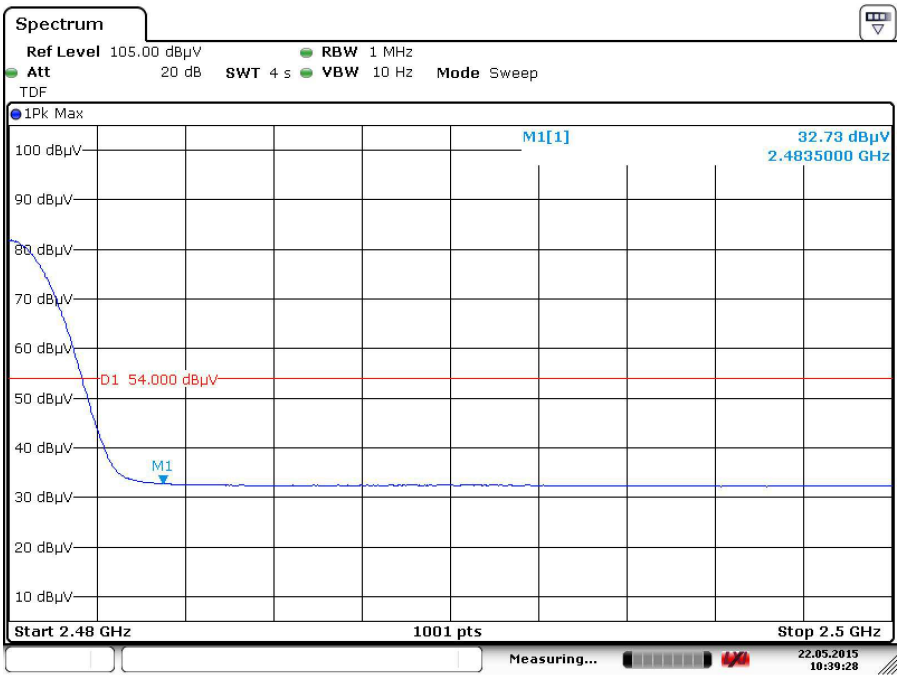
Spurious Emissions, Band Edge, 2.35-2.5G

Radiated Bandedge (GFSK)

High Channel (Hor)



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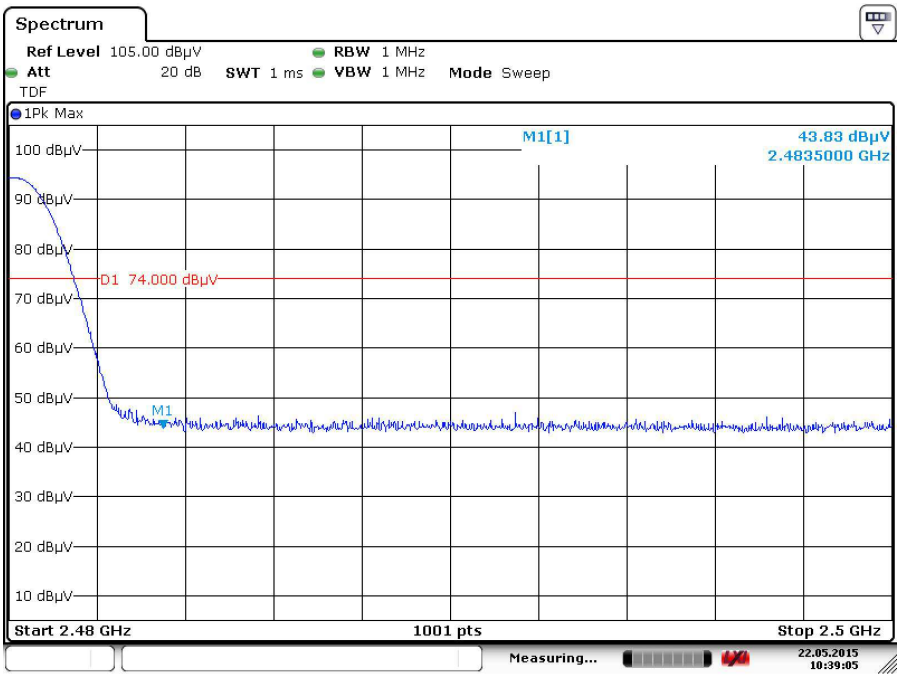

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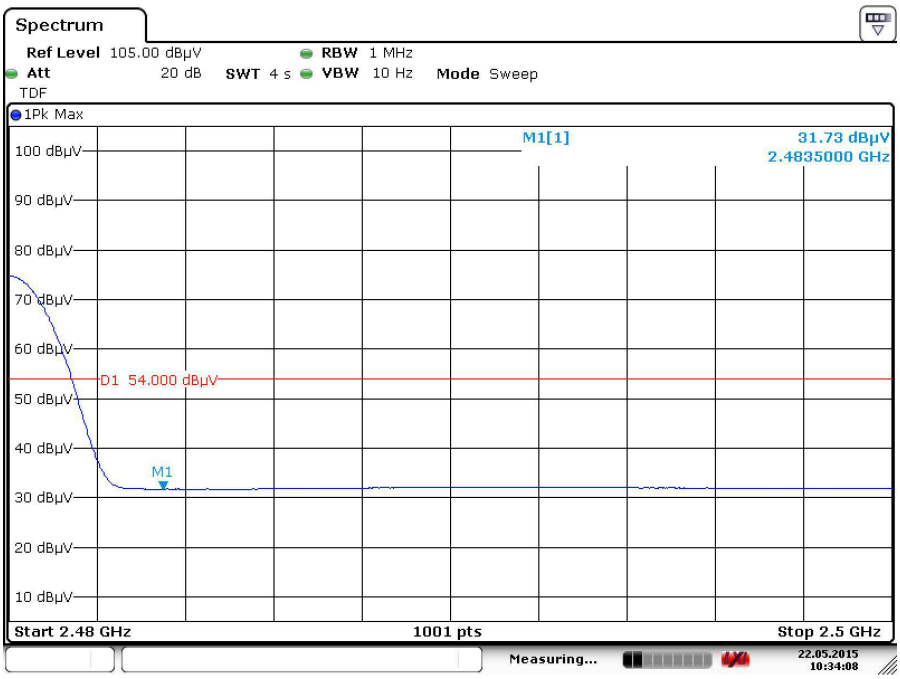
High Channel (Ver)



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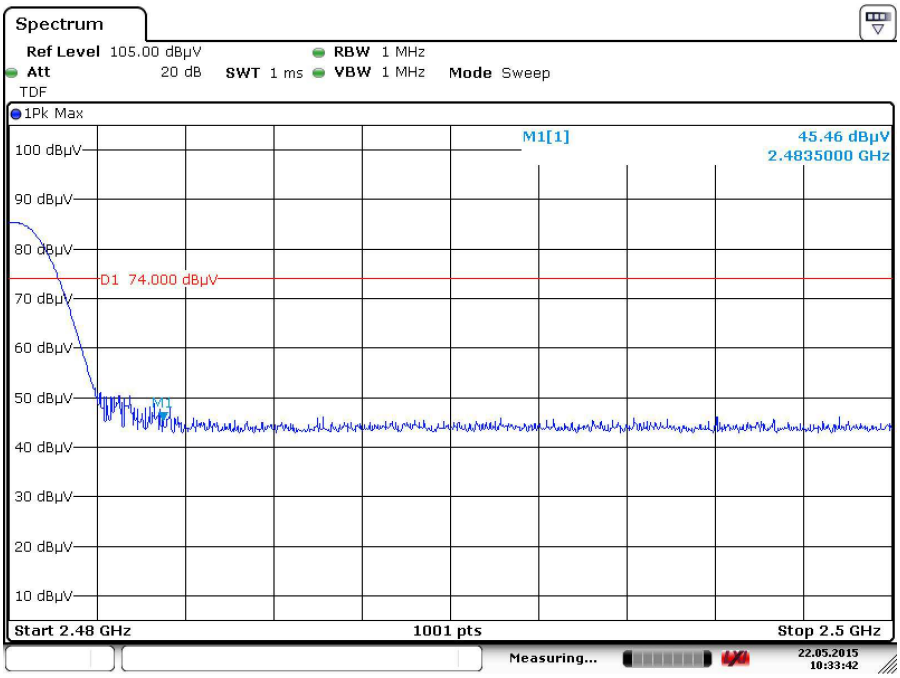

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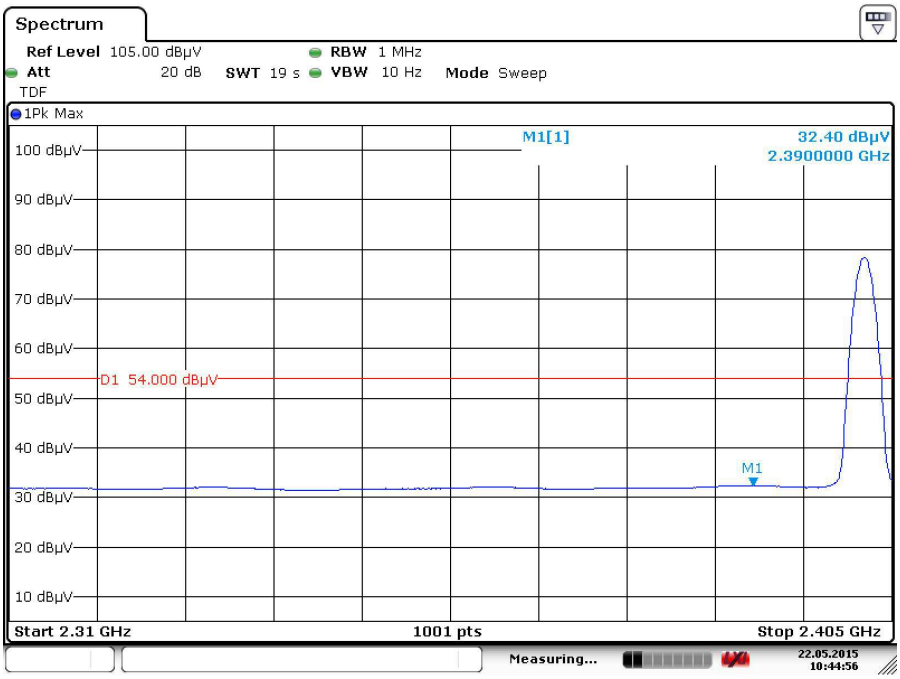
Spurious Emissions, Band Edge, 2.35-2.5G

Radiated Bandedge (8DPSK)

Low Channel (Hor)



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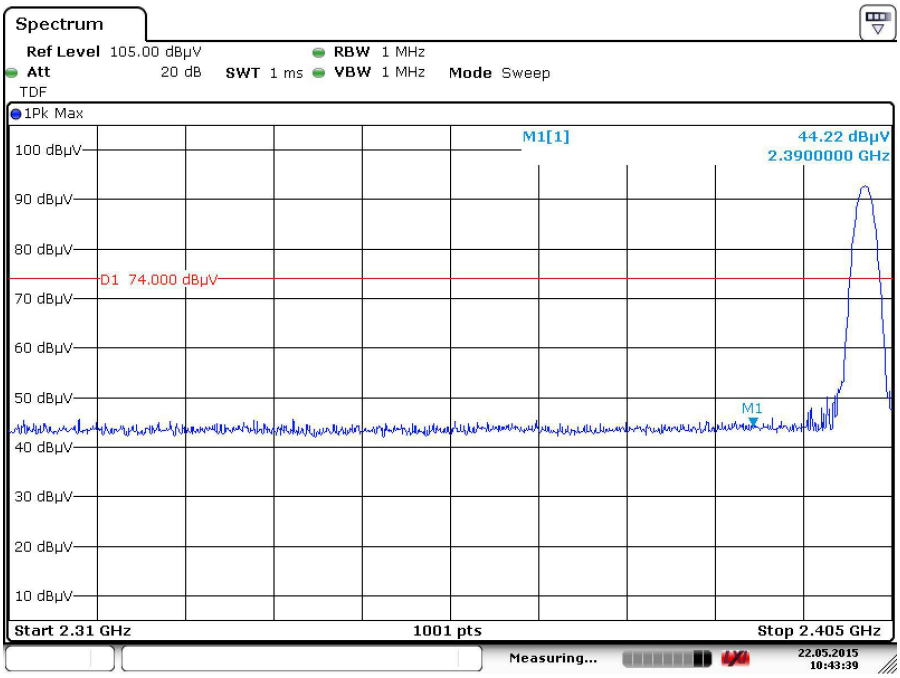

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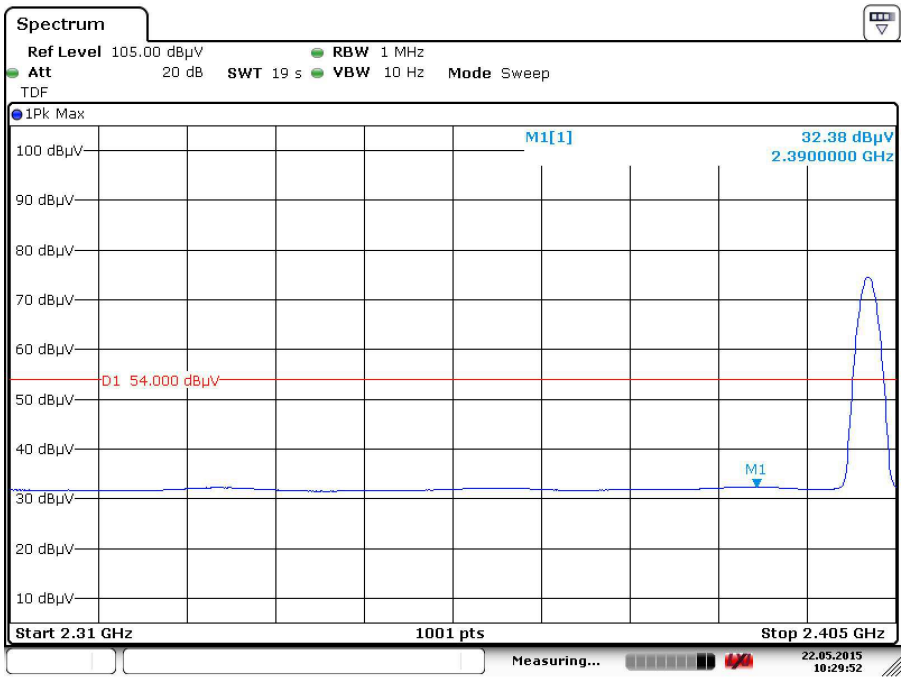
Spurious Emissions, Band Edge, 2.35-2.5G

Low Channel (Ver)



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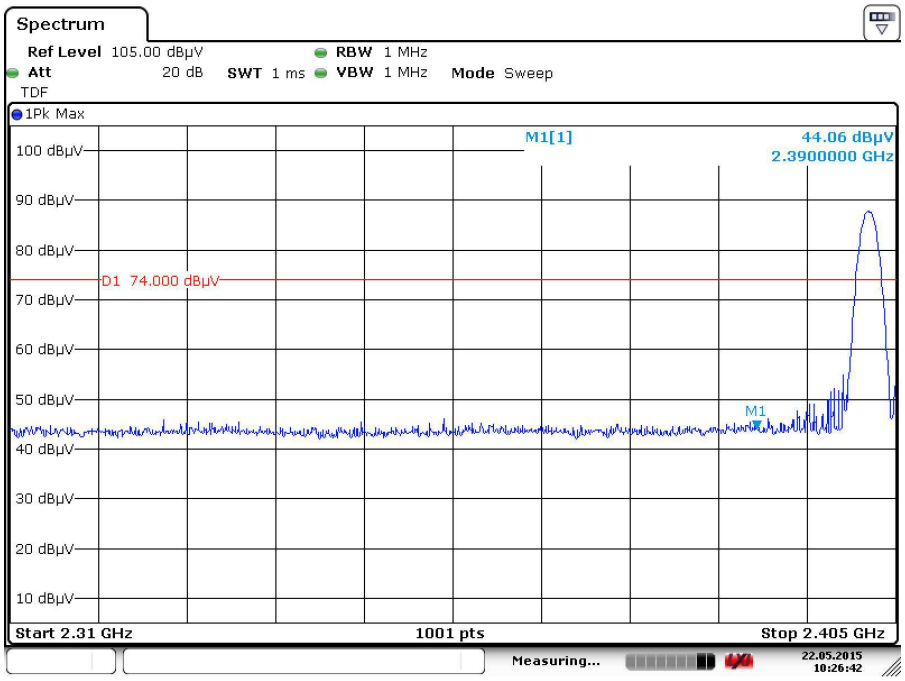

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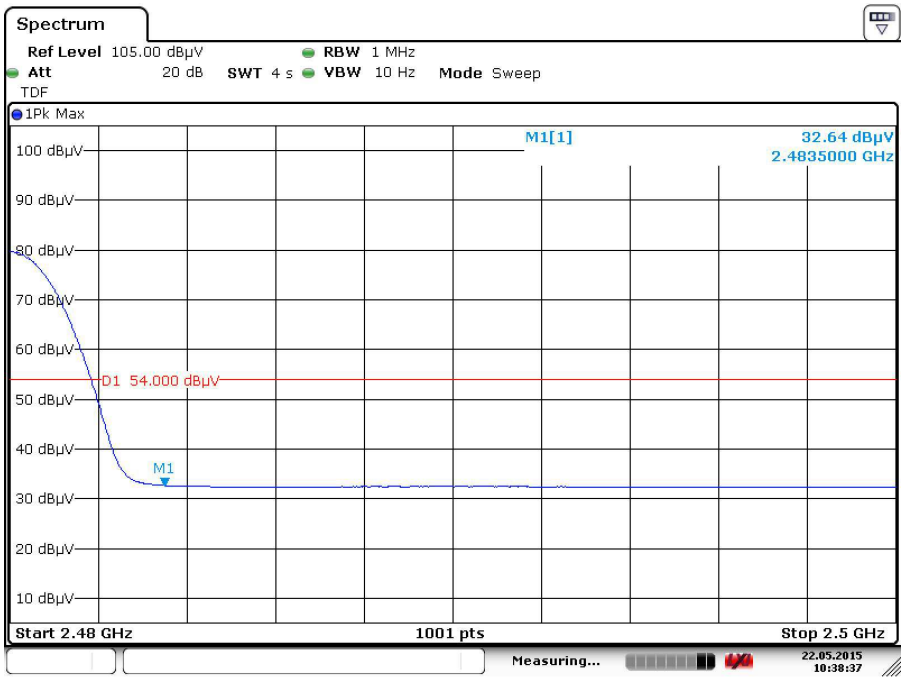
Spurious Emissions, Band Edge, 2.35-2.5G

Radiated Bandedge (8DPSK)

High Channel (Hor)



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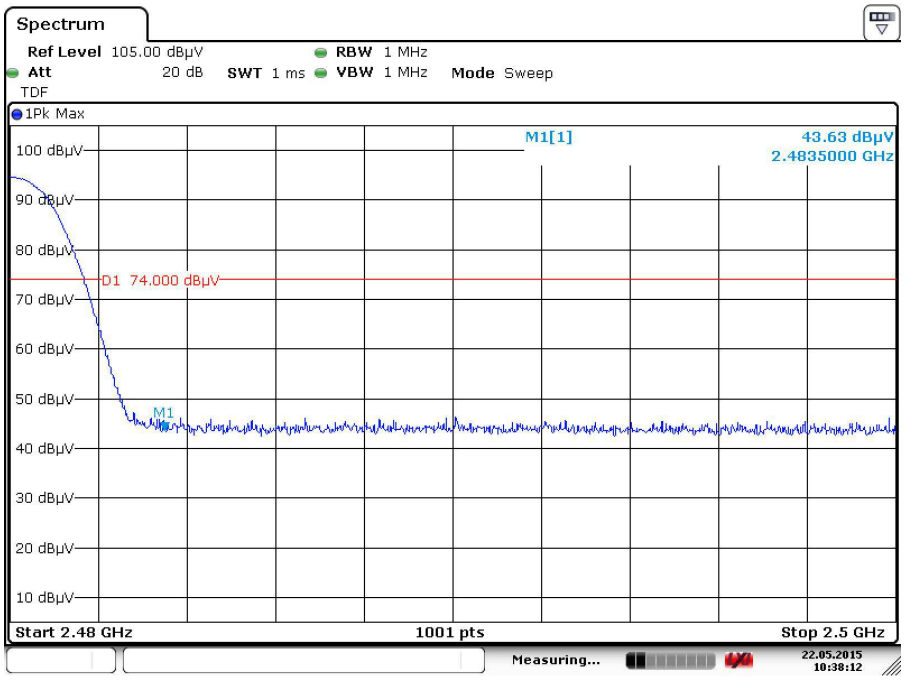

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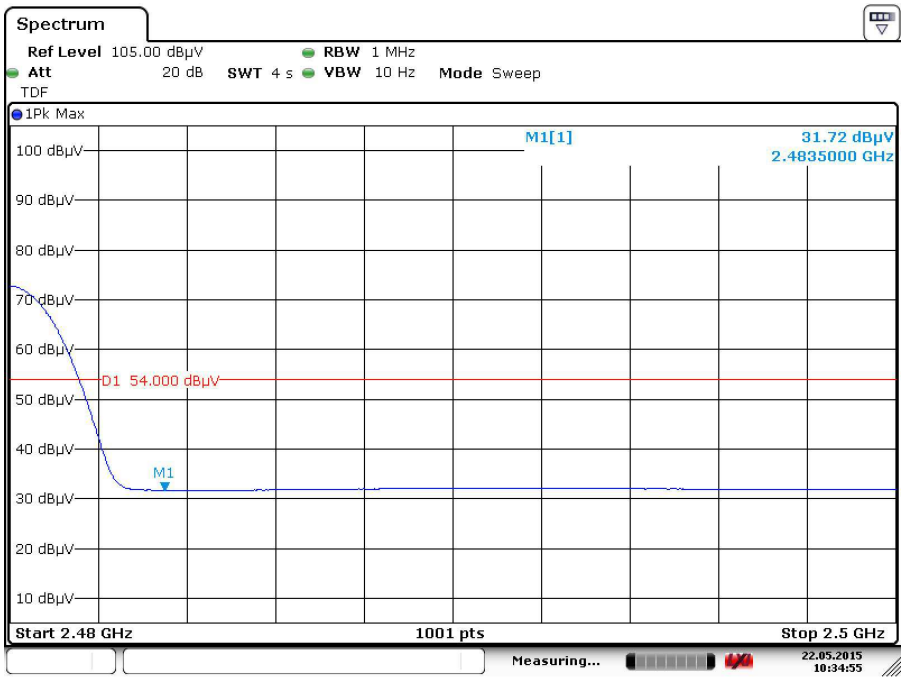
High Channel (Ver)



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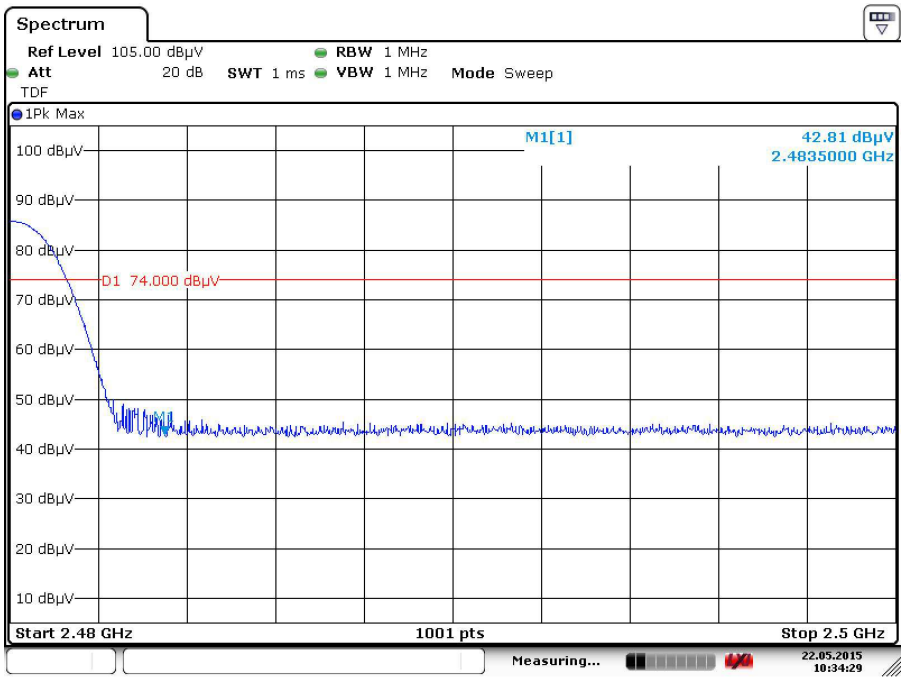

Date: 22.MAY.2015 10:34:29

Spurious Emissions, Band Edge, 2.35-2.5G

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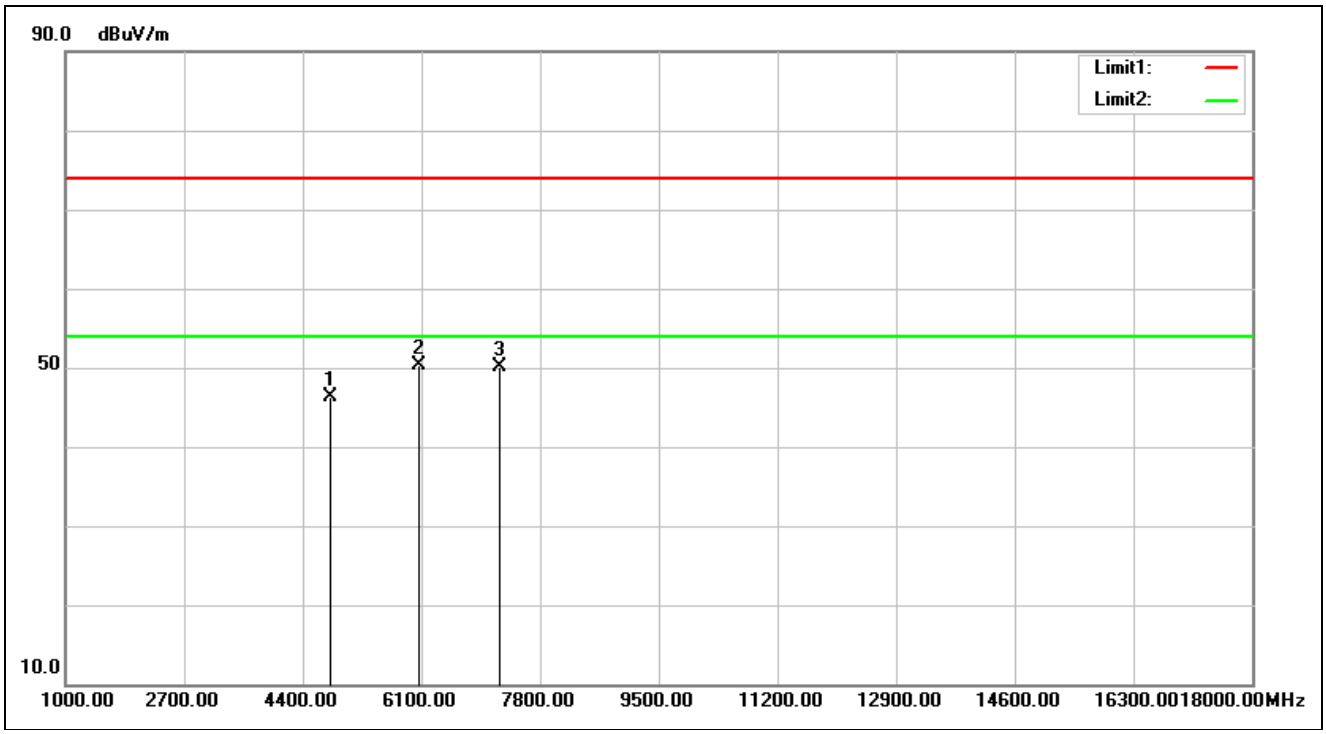

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:45:59**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2402 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4804.000	-2.35	48.73	46.38	74.00	-27.62	peak		0	
2	6066.000	4.34	46.03	50.37	74.00	-23.63	peak	100	207	
3	7206.000	5.78	44.25	50.03	74.00	-23.97	peak		0	

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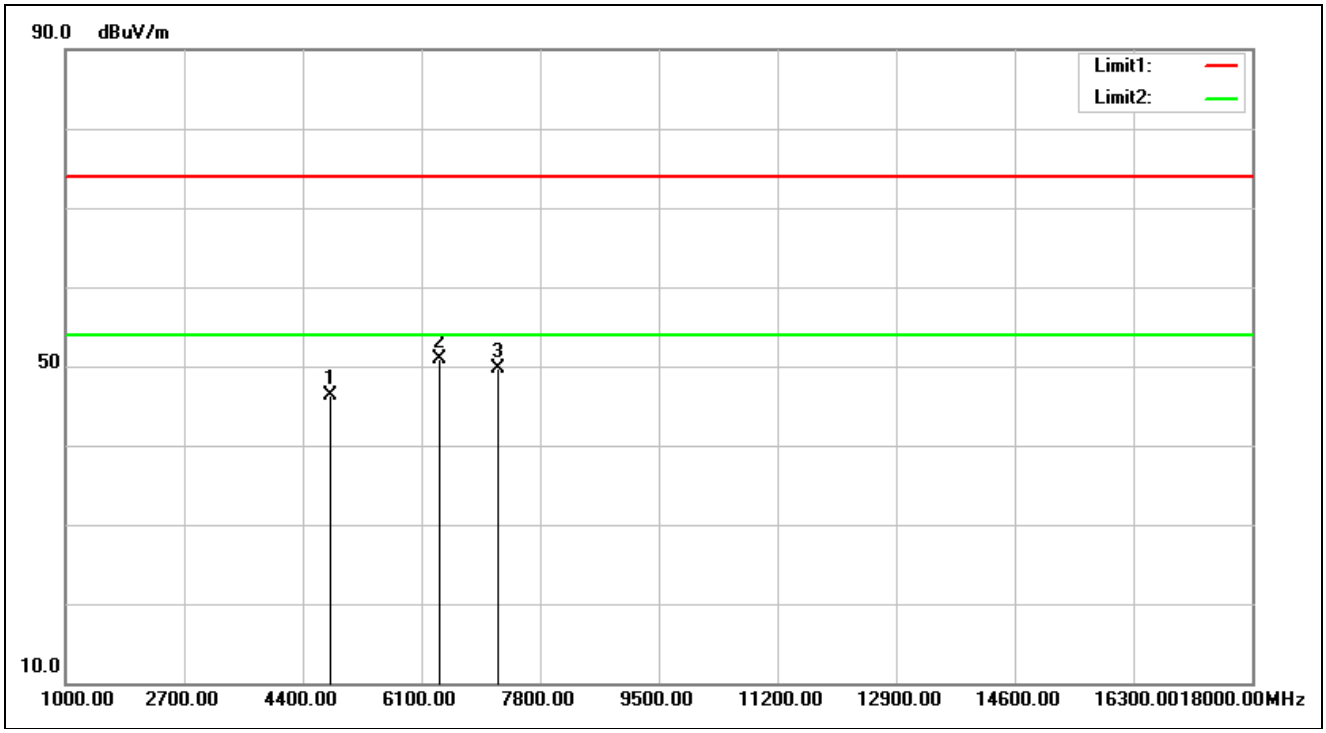

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:47:02**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2402 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4804.000	-2.35	48.73	46.38	74.00	-27.62	peak			
2	6355.000	5.47	45.44	50.91	74.00	-23.09	peak	100	175	
3	7206.000	5.78	44.01	49.79	74.00	-24.21	peak			

Spurious Emissions, TX Mode, 1-18G

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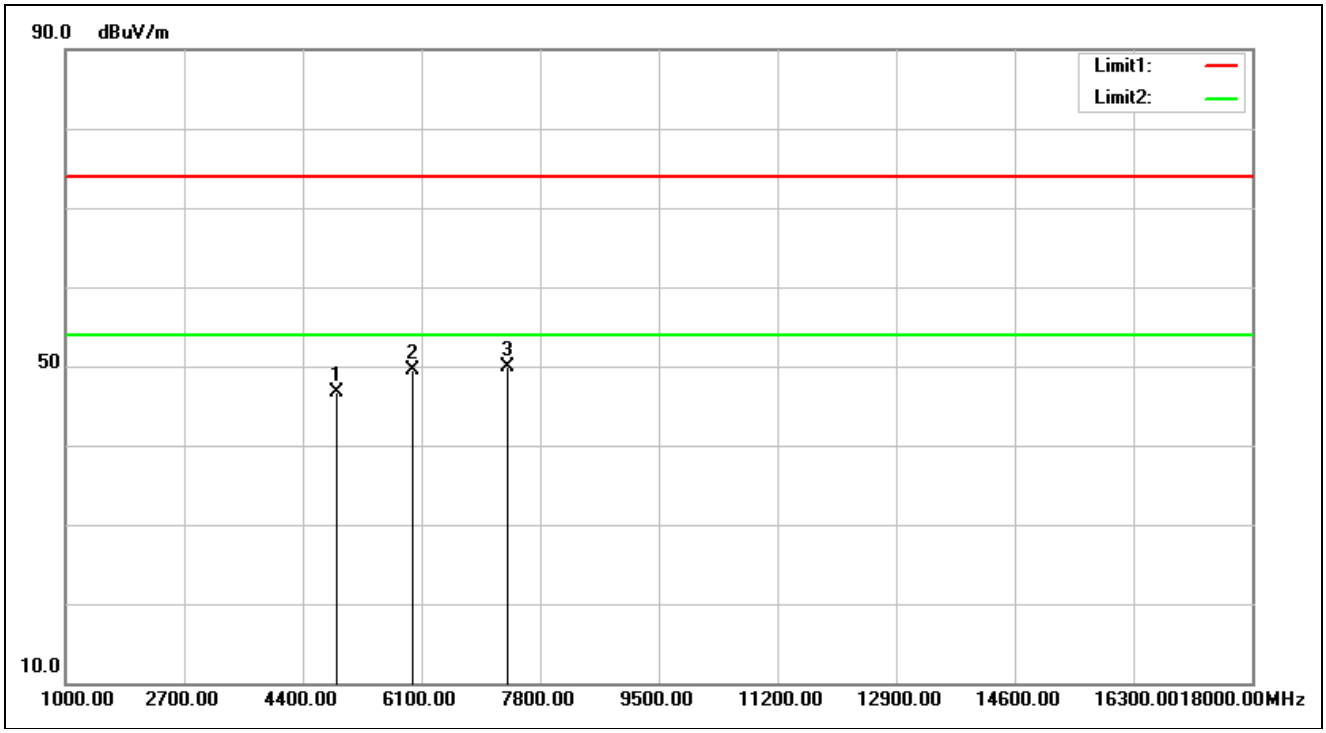

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:48:51**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4882.000	-2.16	48.87	46.71	74.00	-27.29	peak			
2	5981.000	3.95	45.61	49.56	74.00	-24.44	peak	100	221	
3	7323.000	6.13	43.76	49.89	74.00	-24.11	peak			

Spurious Emissions, TX Mode, 1-18G

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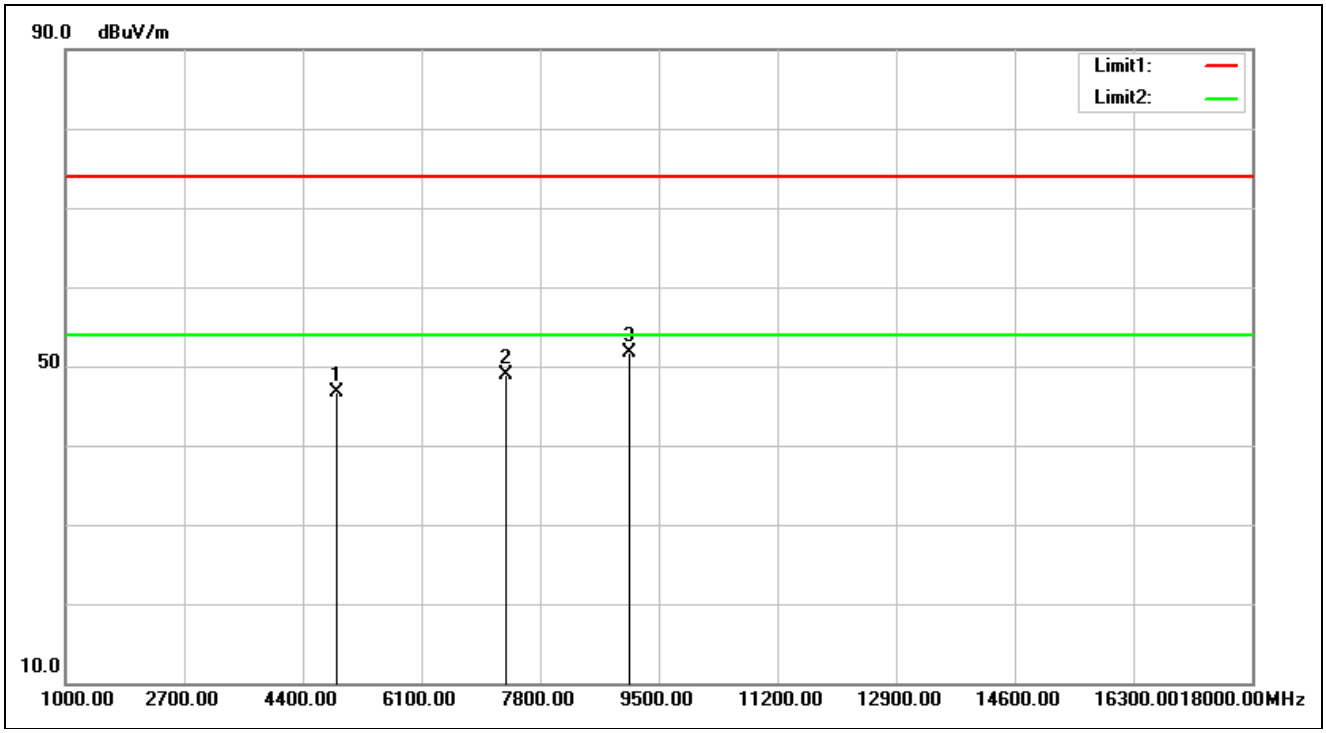

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:49:53**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4882.000	-2.16	48.77	46.61	74.00	-27.39	peak			
2	7323.000	6.13	42.78	48.91	74.00	-25.09	peak			
3	9075.000	7.29	44.46	51.75	74.00	-22.25	peak	100	0	

Spurious Emissions, TX Mode, 1-18G

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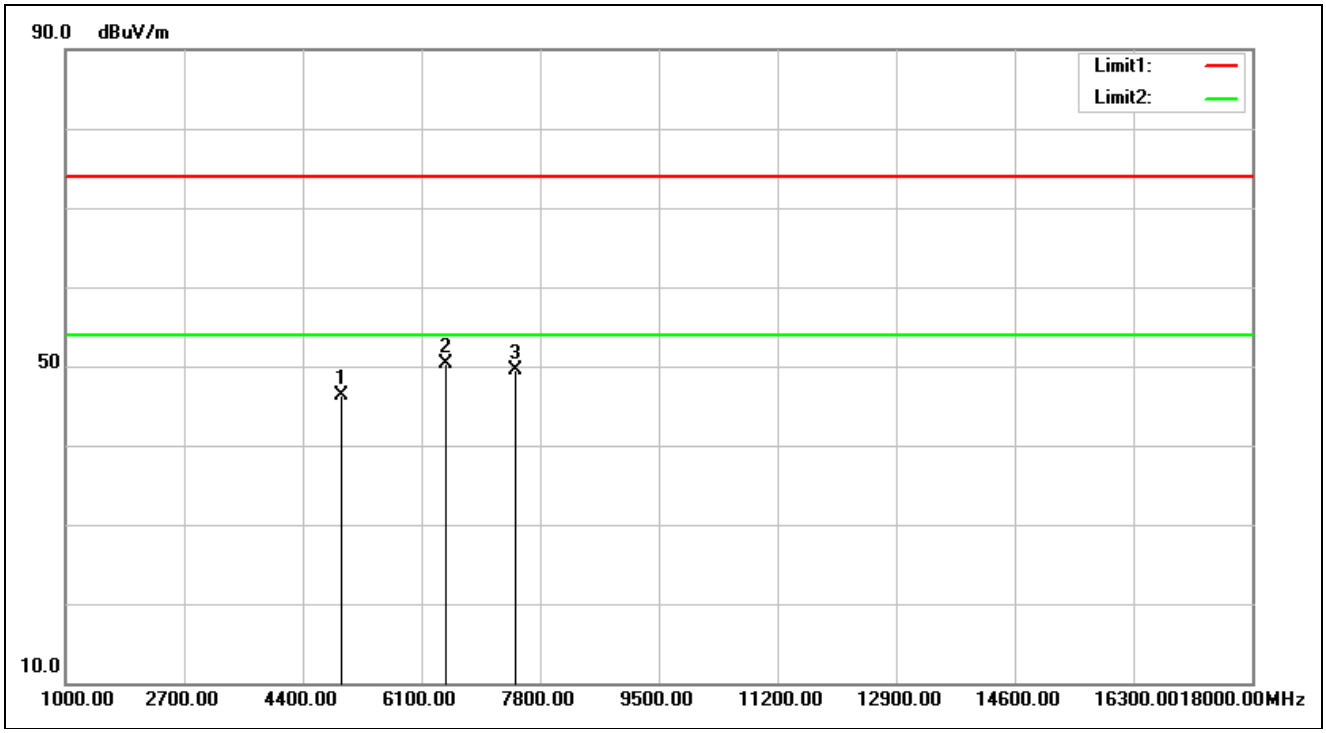

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:51:39**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4960.000	-1.97	48.36	46.39	74.00	-27.61	peak			
2	6457.000	5.87	44.53	50.40	74.00	-23.60	peak	100	230	
3	7440.000	6.47	43.03	49.50	74.00	-24.50	peak			

Spurious Emissions, TX Mode, 1-18G

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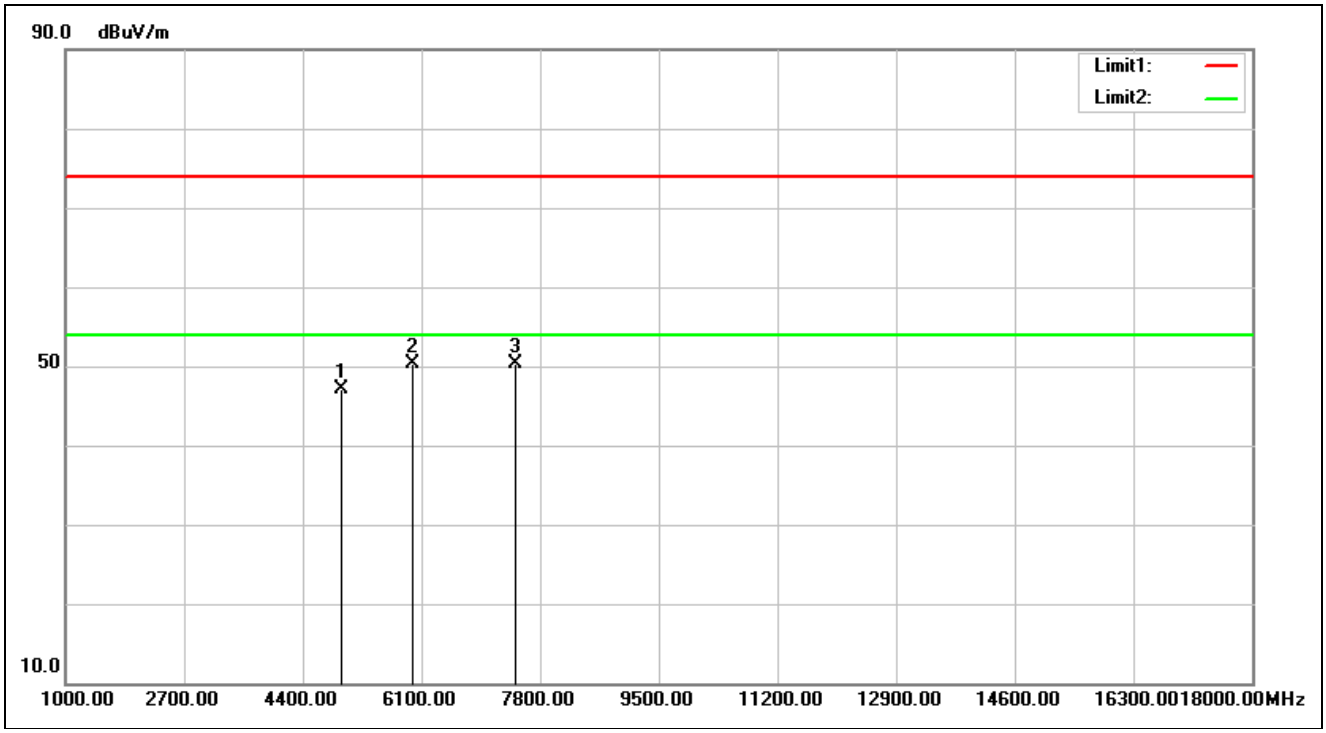

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:52:42**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4960.000	-1.97	49.09	47.12	74.00	-26.88	peak			
2	5981.000	3.95	46.37	50.32	74.00	-23.68	peak	100	153	
3	7440.000	6.47	43.86	50.33	74.00	-23.67	peak			

Spurious Emissions, TX Mode, 1-18G

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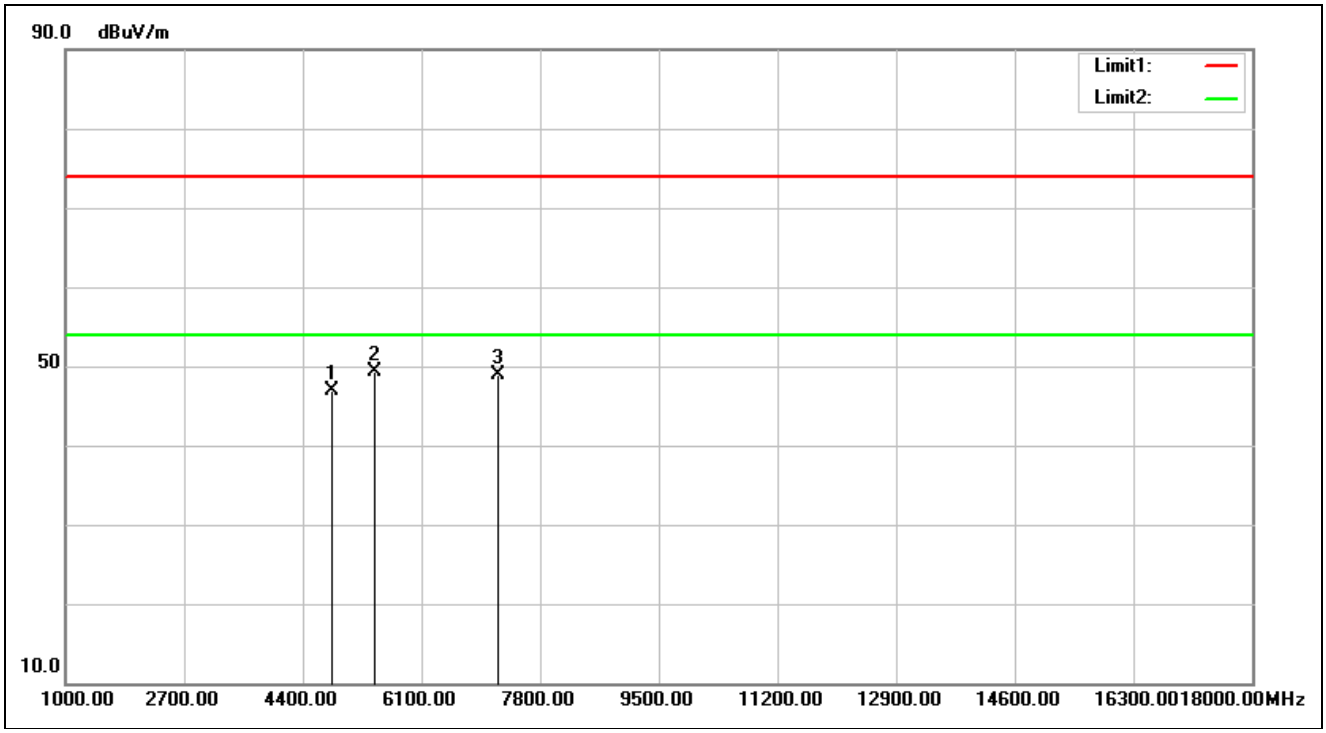

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:54:34**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2402 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4804.000	-2.35	49.20	46.85	74.00	-27.15	peak			
2	5420.000	0.39	48.83	49.22	74.00	-24.78	peak	100	282	
3	7206.000	5.78	43.04	48.82	74.00	-25.18	peak			

Spurious Emissions, TX Mode, 1-18G

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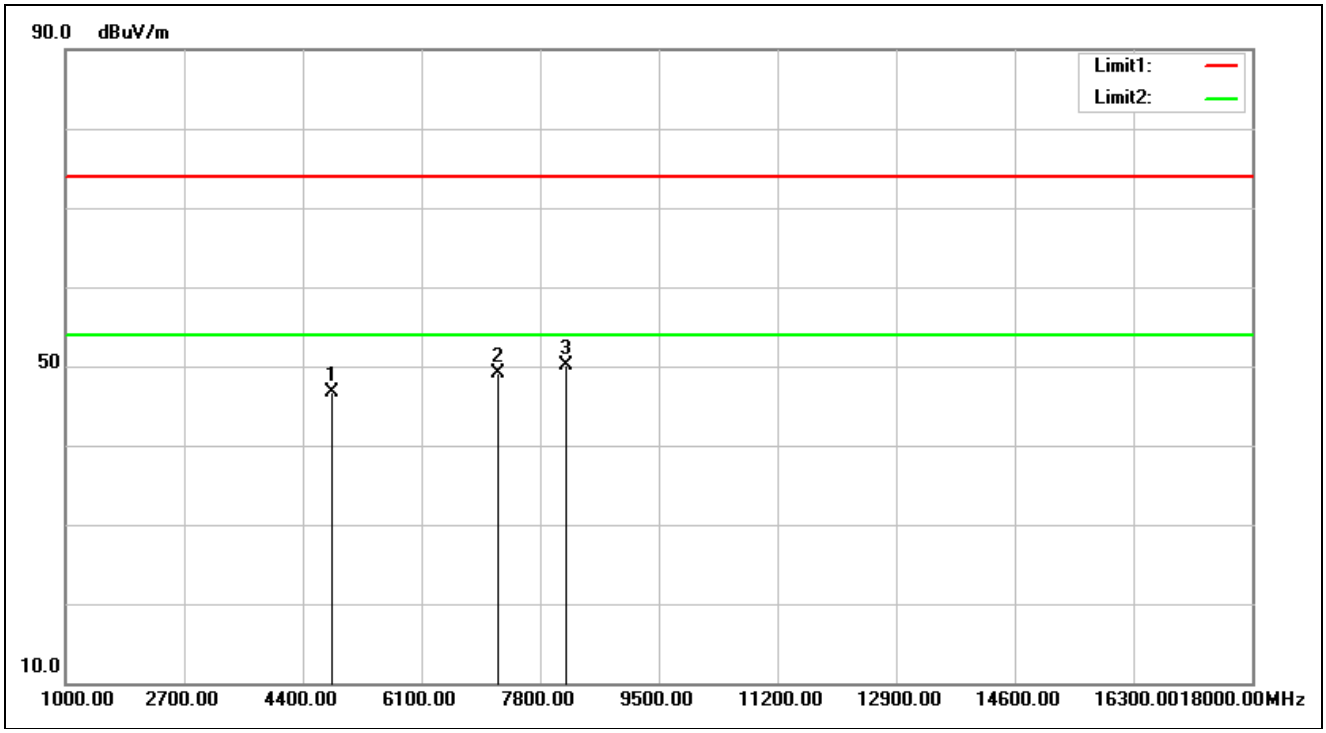

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:55:37**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2402 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4804.000	-2.35	49.03	46.68	74.00	-27.32	peak			
2	7206.000	5.78	43.34	49.12	74.00	-24.88	peak			
3	8174.000	6.62	43.56	50.18	74.00	-23.82	peak	100	145	

Spurious Emissions, TX Mode, 1-18G

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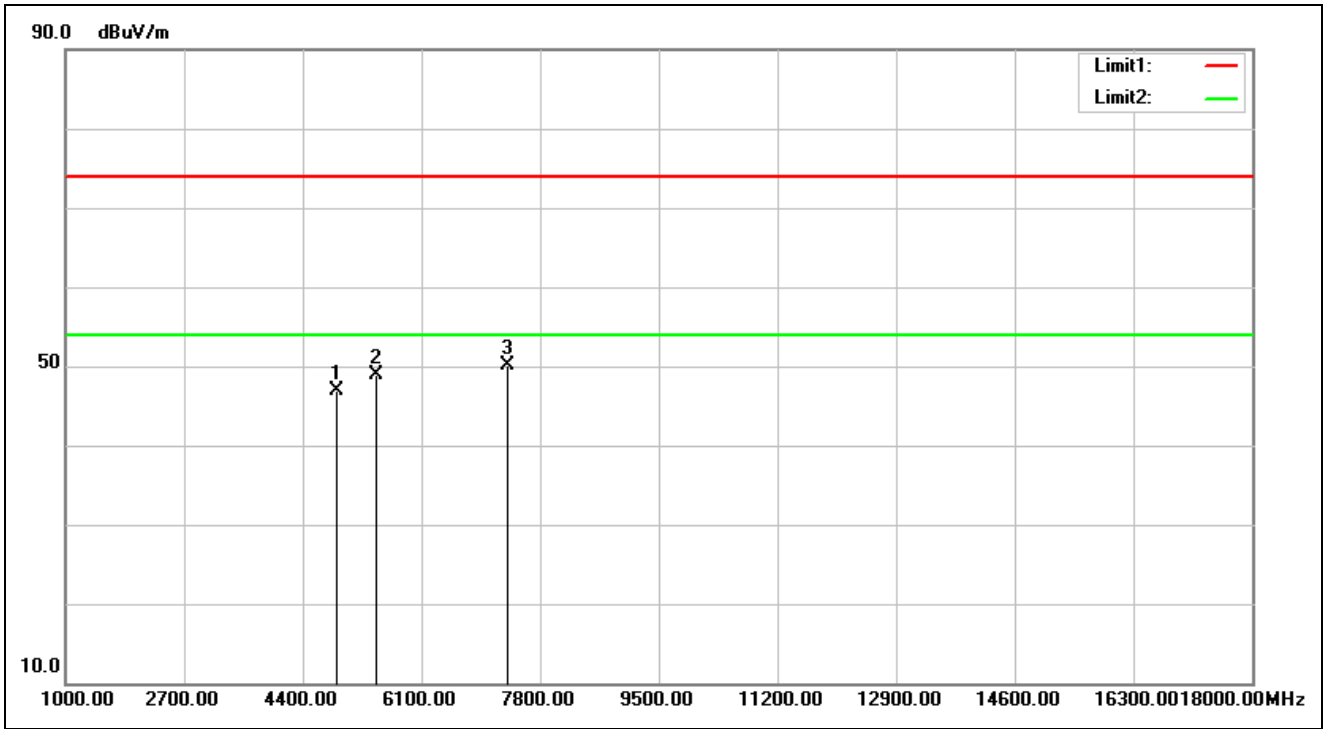

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:57:42**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (◦)	Remark
1	4882.000	-2.16	48.99	46.83	74.00	-27.17	peak			
2	5454.000	0.57	48.43	49.00	74.00	-25.00	peak	100	33	
3	7323.000	6.13	43.94	50.07	74.00	-23.93	peak			

Spurious Emissions, TX Mode, 1-18G

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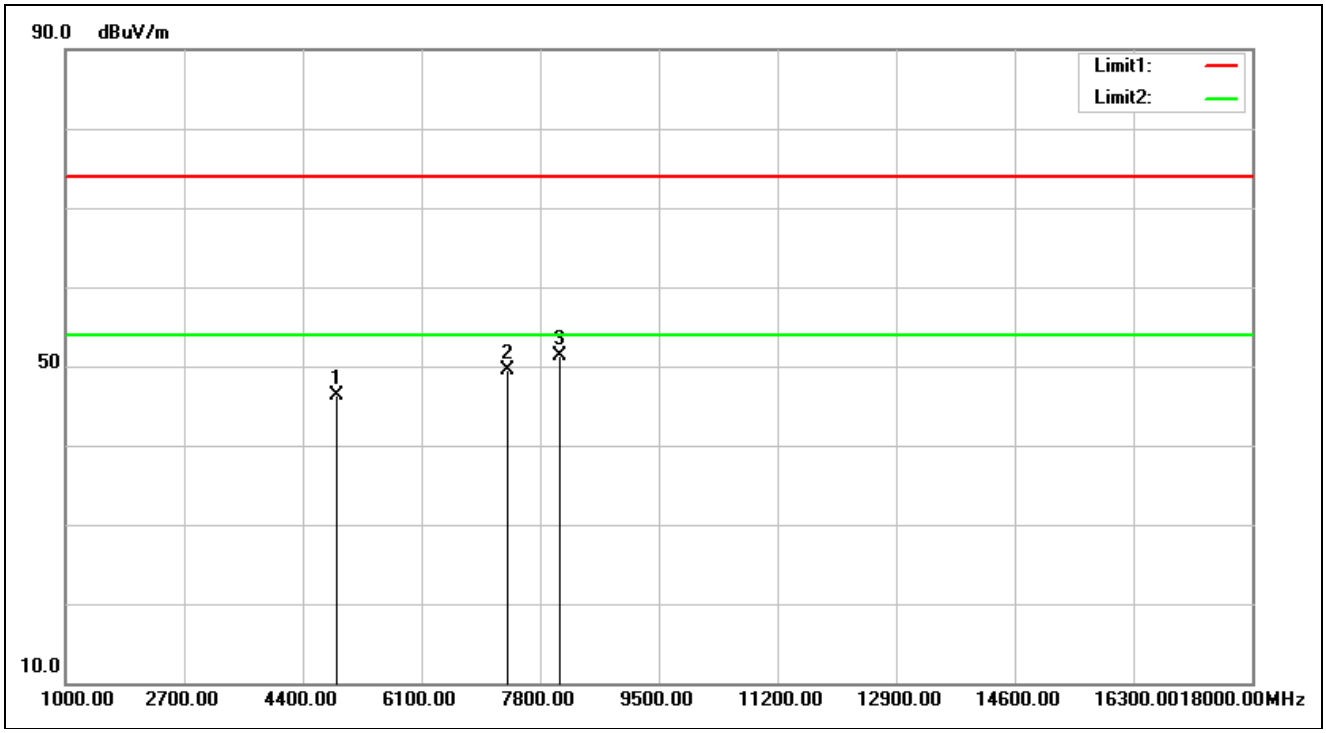

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:58:44**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4882.000	-2.16	48.41	46.25	74.00	-27.75	peak			
2	7323.000	6.13	43.34	49.47	74.00	-24.53	peak			
3	8089.000	6.59	44.74	51.33	74.00	-22.67	peak	100	161	

Spurious Emissions, TX Mode, 1-18G

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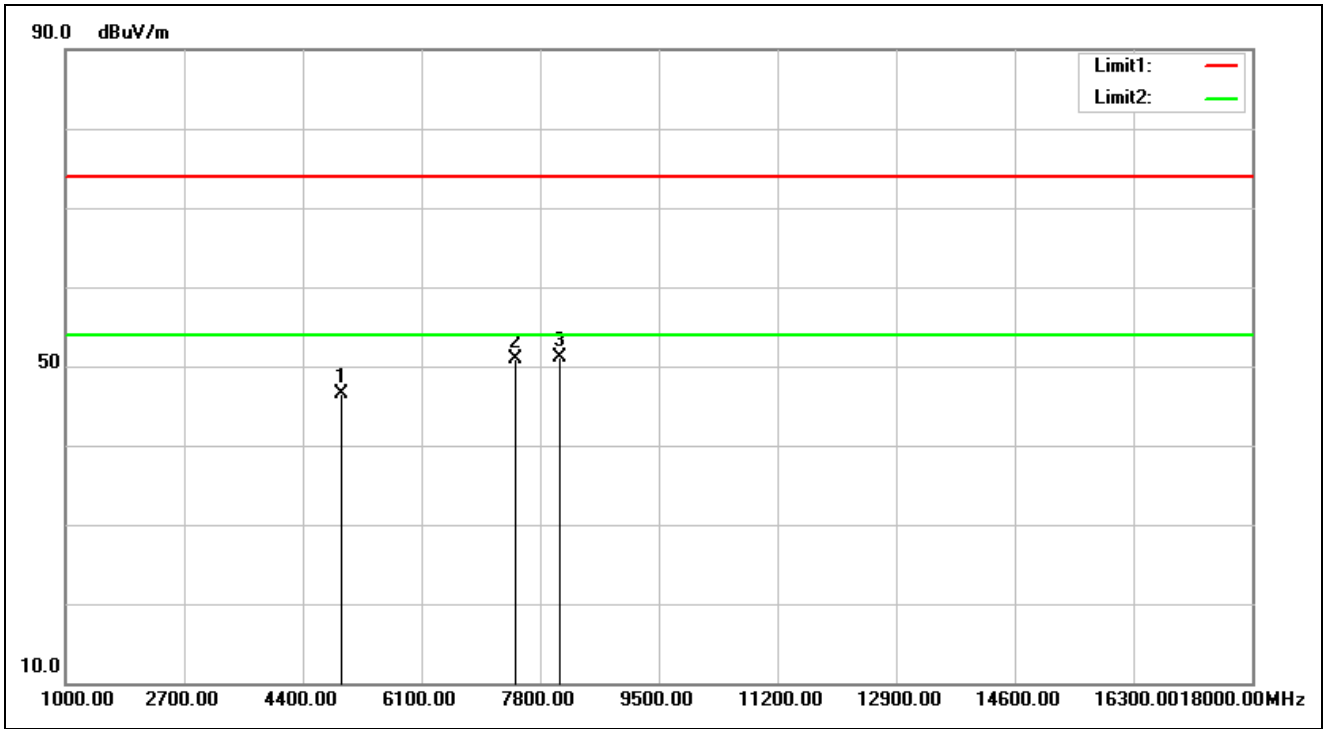

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:00:22**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4960.000	-1.97	48.42	46.45	74.00	-27.55	peak			
2	7440.000	6.47	44.50	50.97	74.00	-23.03	peak			
3	8089.000	6.59	44.44	51.03	74.00	-22.97	peak	100	82	

Spurious Emissions, TX Mode, 1-18G

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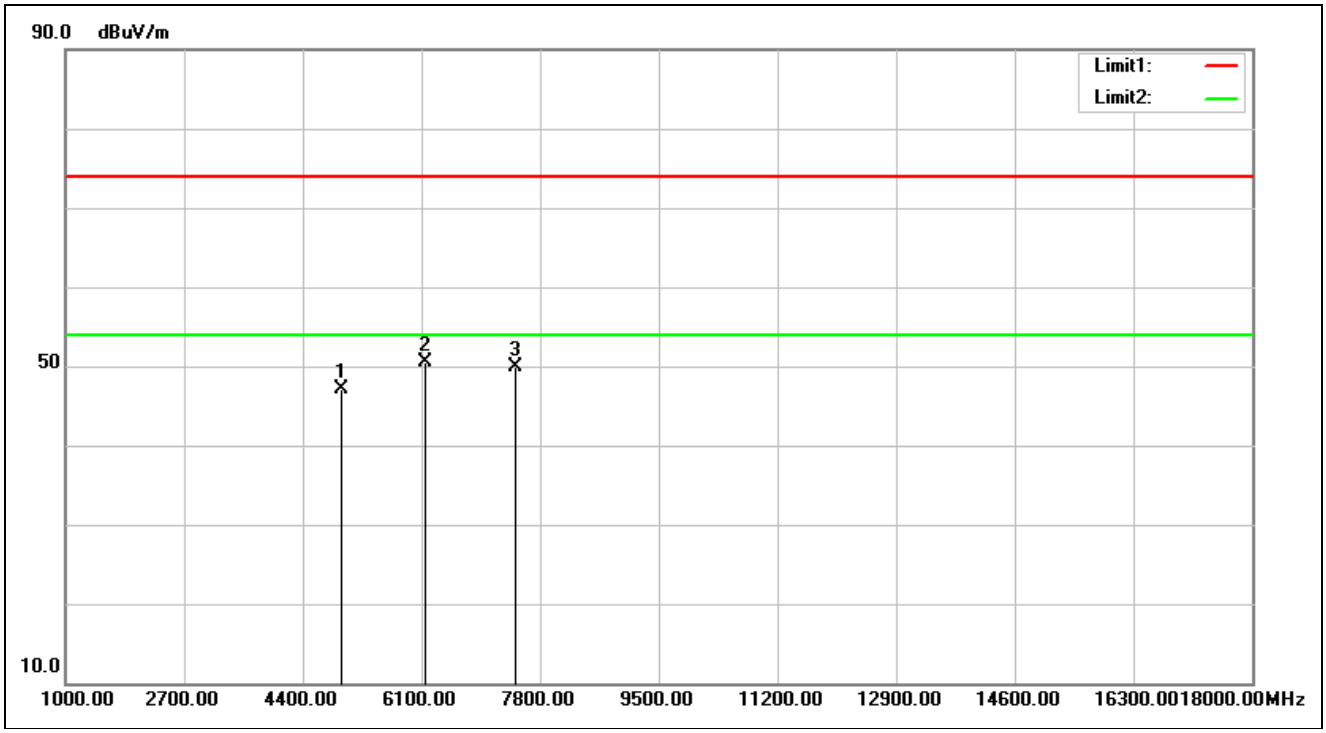

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:01:25**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (◦)	Remark
1	4960.000	-1.97	49.12	47.15	74.00	-26.85	peak			
2	6151.000	4.67	45.77	50.44	74.00	-23.56	peak	100	258	
3	7440.000	6.47	43.45	49.92	74.00	-24.08	peak			

Spurious Emissions, TX Mode, 1-18G

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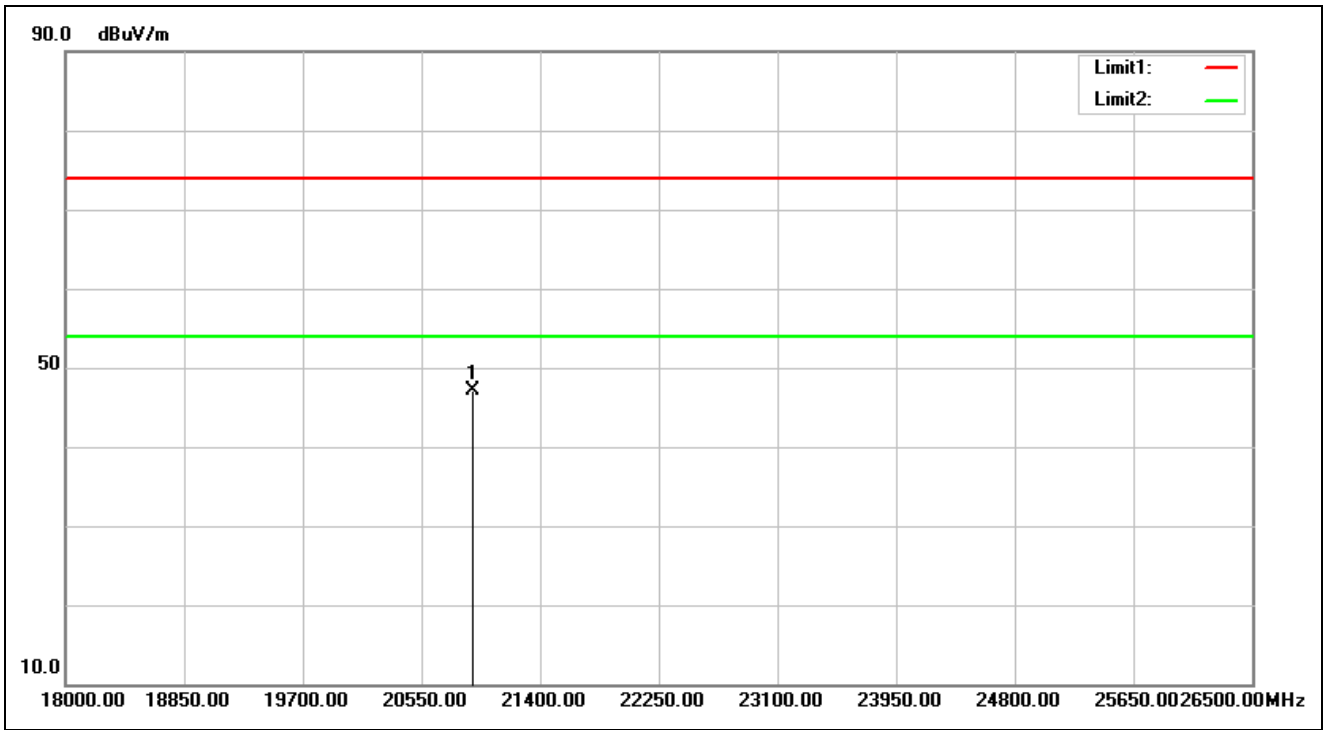

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:14:09**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2402 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20915.500	29.34	17.85	47.19	74.00	-26.81	peak		0	

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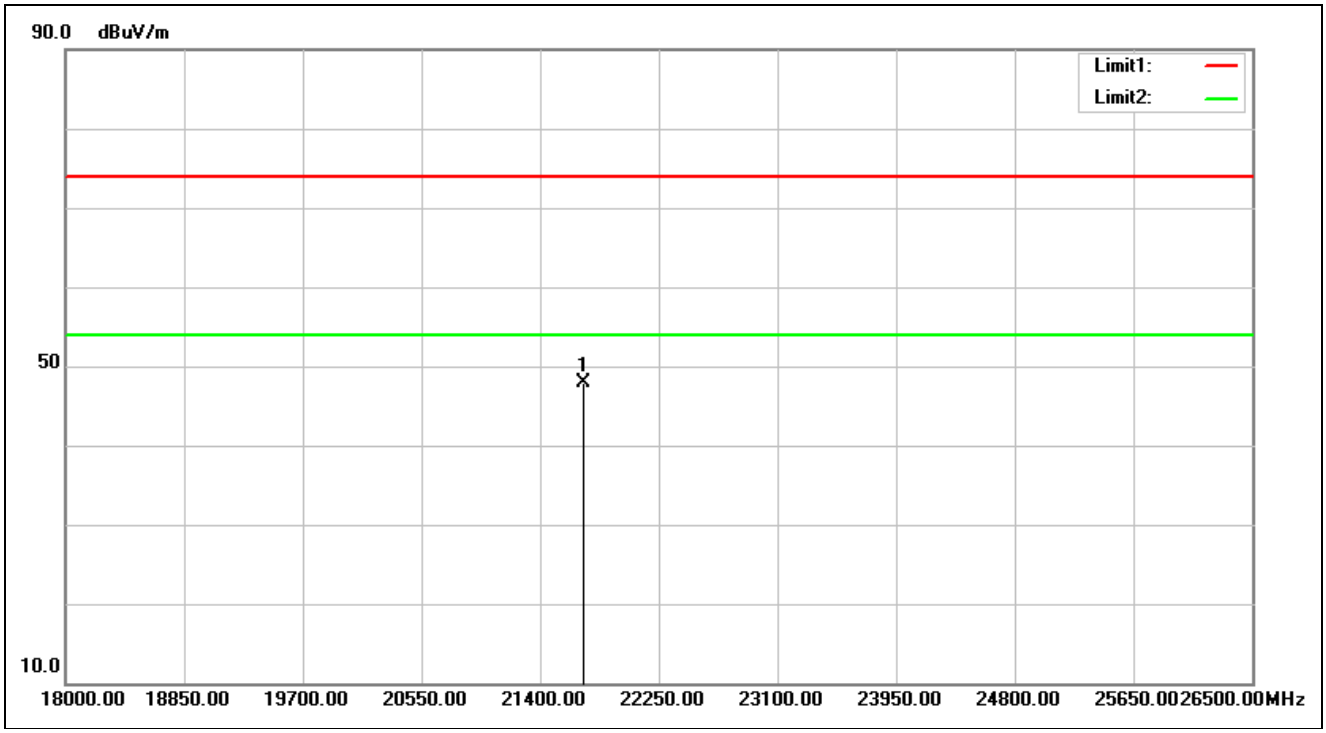

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:14:17**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2402 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	21706.000	28.71	19.13	47.84	74.00	-26.16	peak			

Spurious Emissions, TX Mode, 18-26G

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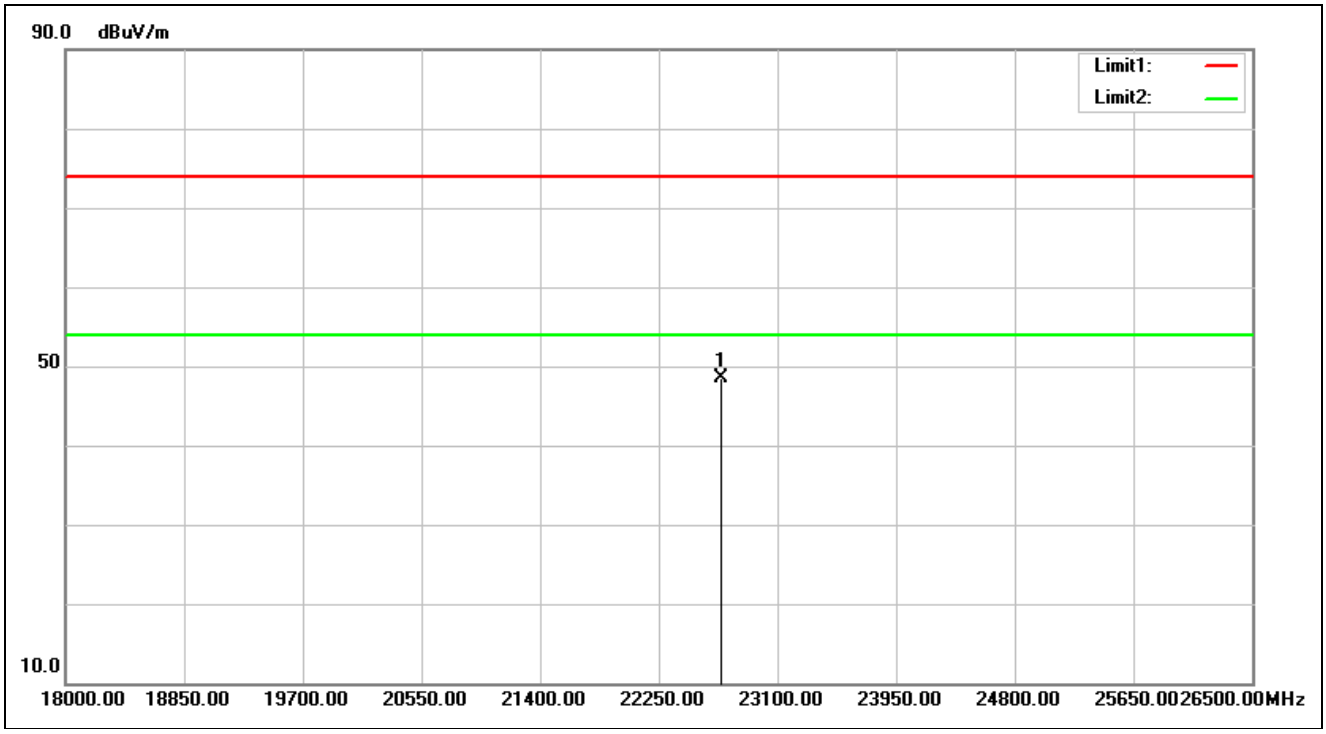

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:14:29**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	22700.500	29.52	19.07	48.59	74.00	-25.41	peak			

Spurious Emissions, TX Mode, 18-26G

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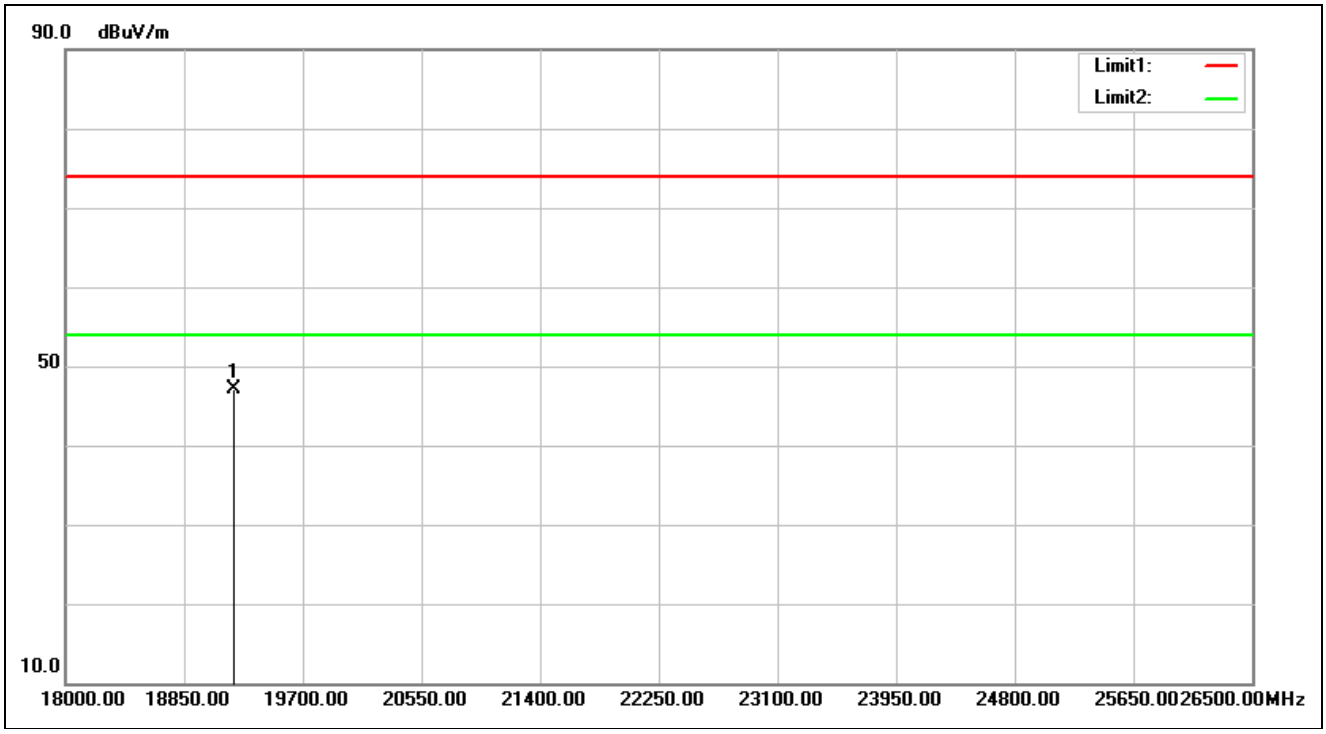

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:14:38**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	19207.000	28.91	18.24	47.15	74.00	-26.85	peak			

Spurious Emissions, TX Mode, 18-26G

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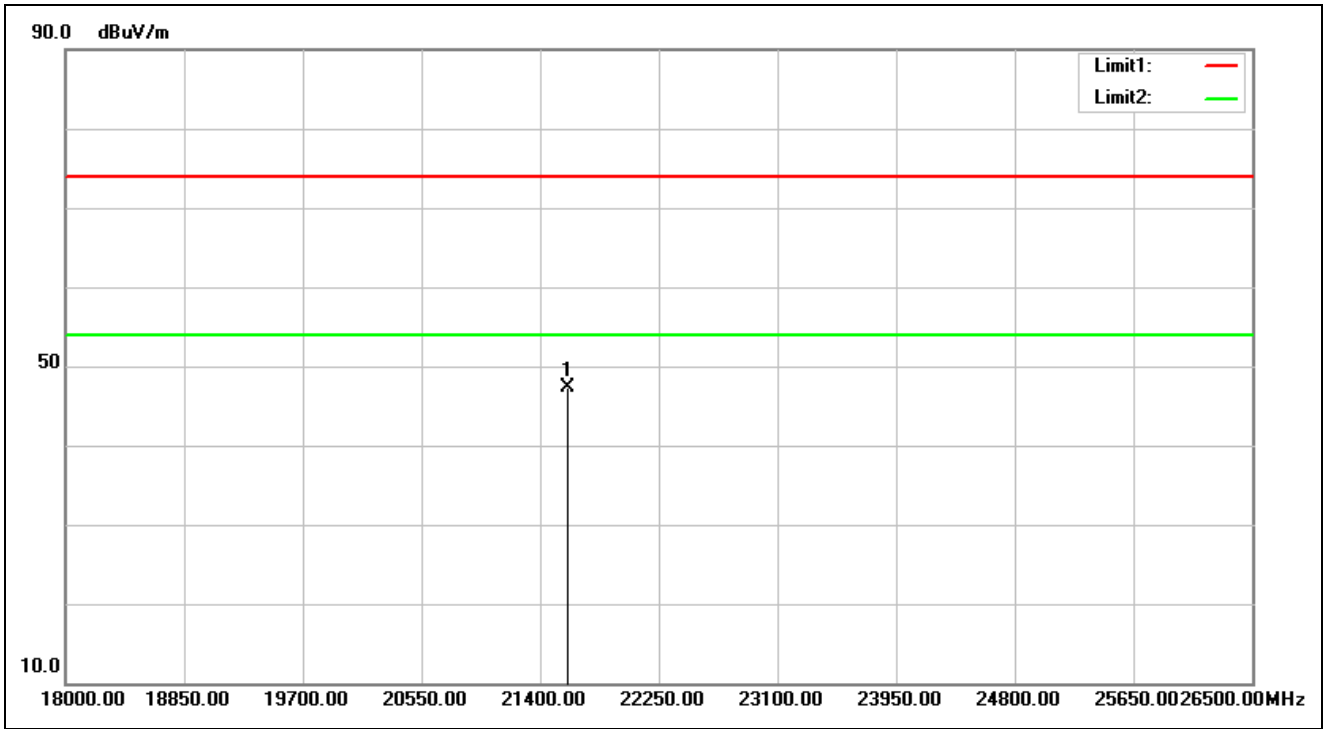

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:14:52**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	21595.500	28.82	18.54	47.36	74.00	-26.64	peak			

Spurious Emissions, TX Mode, 18-26G

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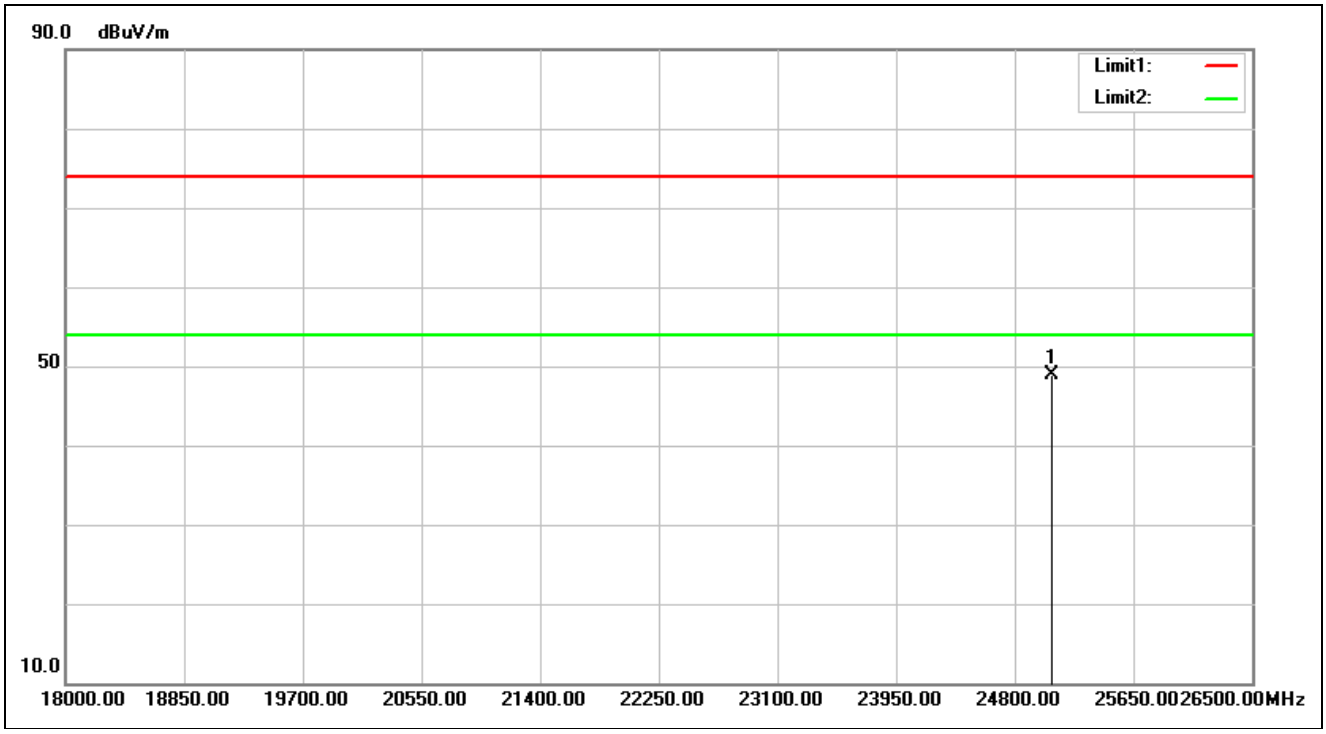

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:15:01**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	25063.500	30.77	18.16	48.93	74.00	-25.07	peak			

Spurious Emissions, TX Mode, 18-26G

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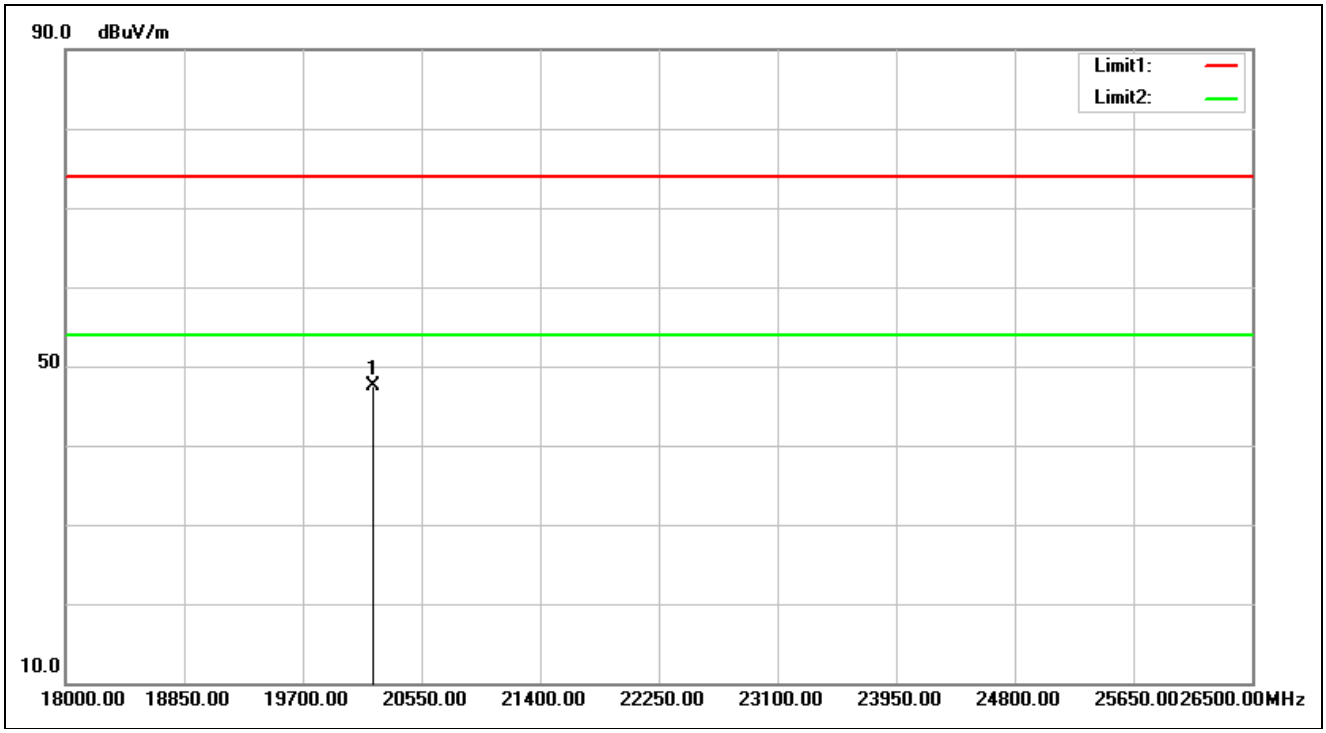

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:15:19**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2402 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20201.500	29.05	18.42	47.47	74.00	-26.53	peak			

Spurious Emissions, TX Mode, 18-26G

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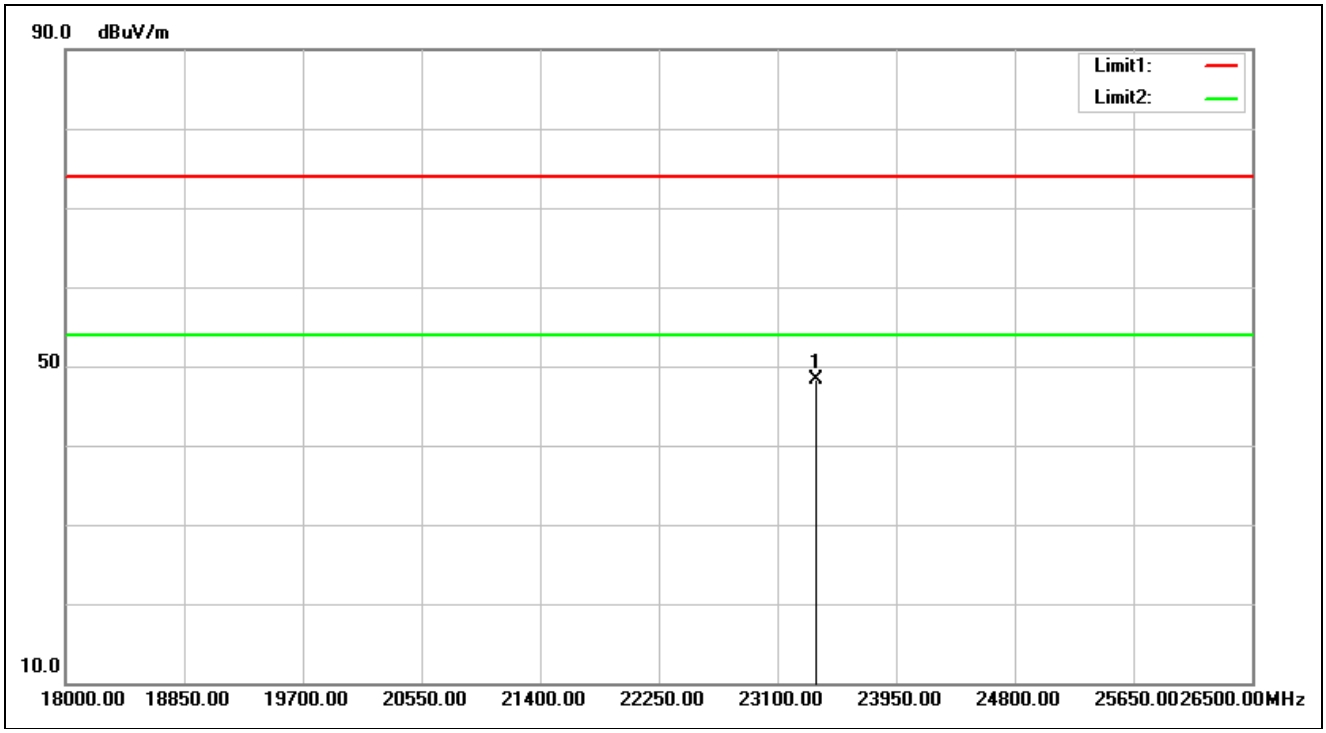

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:15:27**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2402 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	23380.500	29.52	18.79	48.31	74.00	-25.69	peak			

Spurious Emissions, TX Mode, 18-26G

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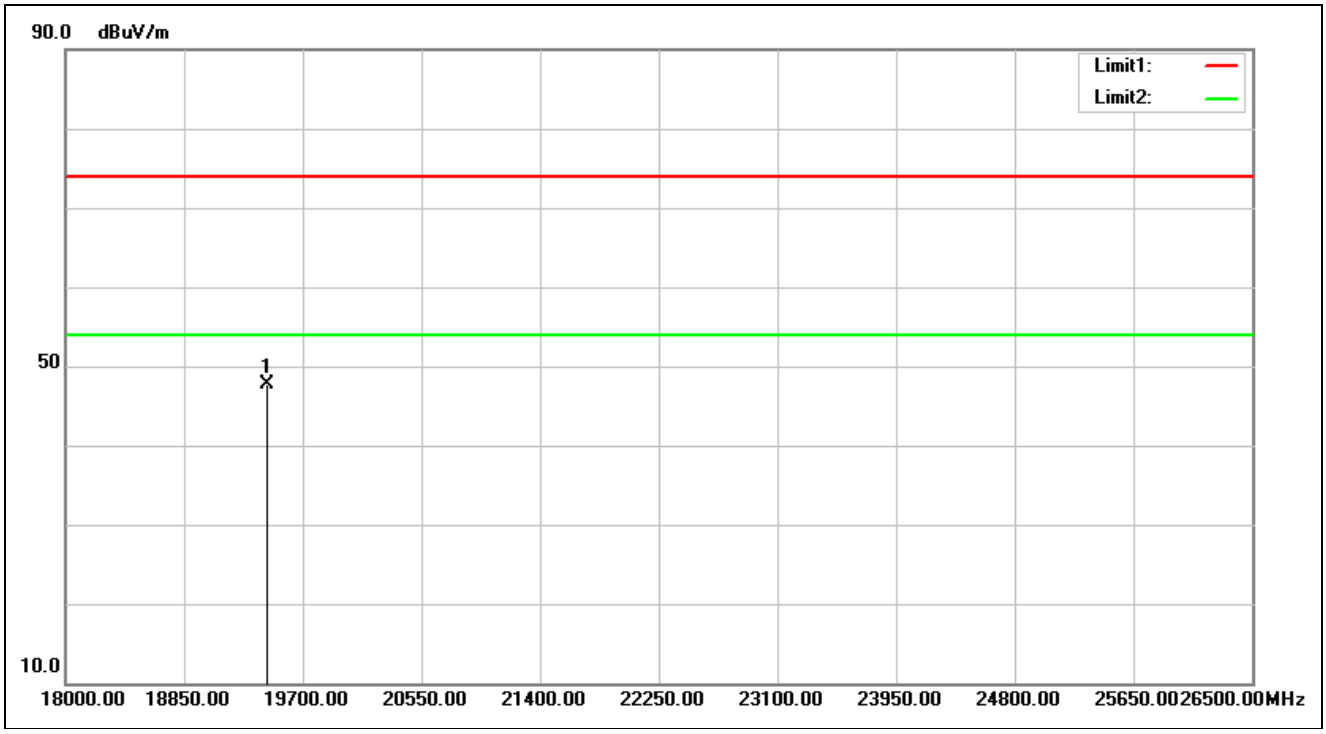

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:15:40**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	19445.000	28.95	18.77	47.72	74.00	-26.28	peak			

Spurious Emissions, TX Mode, 18-26G

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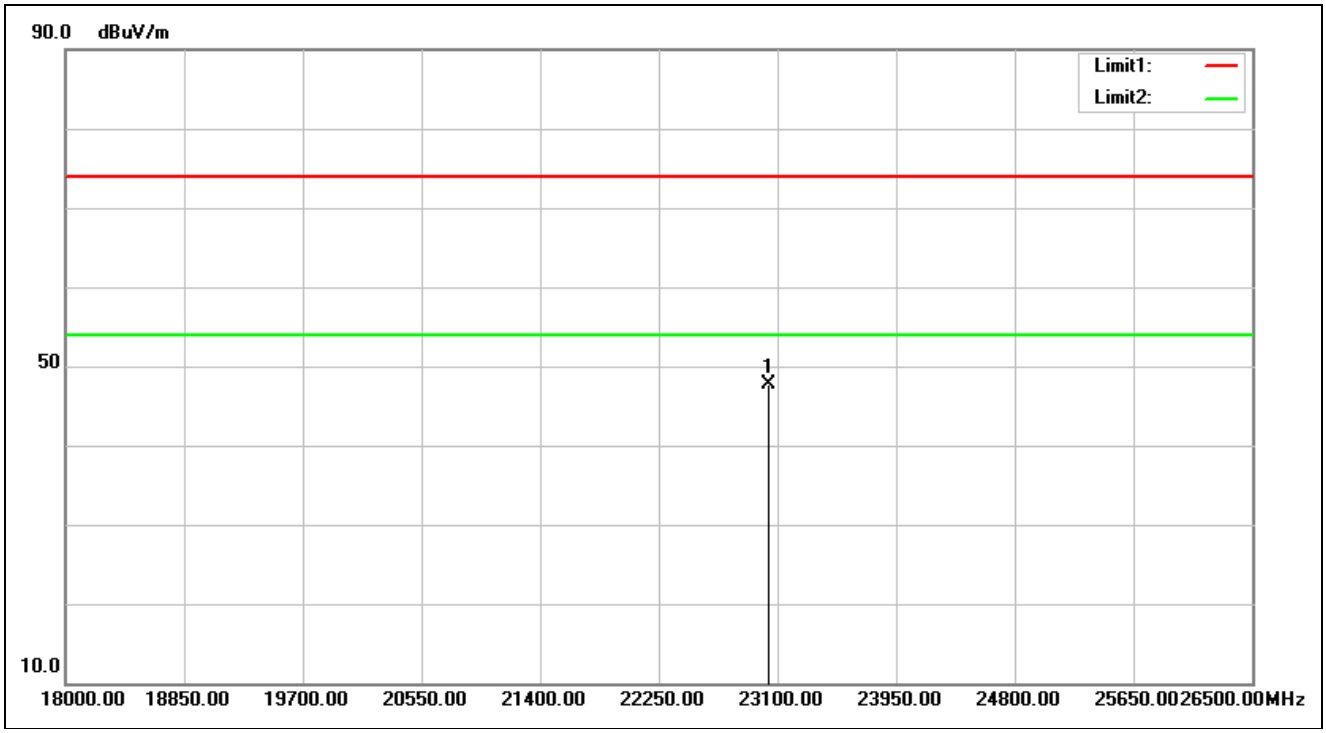

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:15:48**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	23032.000	29.88	17.84	47.72	74.00	-26.28	peak			

Spurious Emissions, TX Mode, 18-26G

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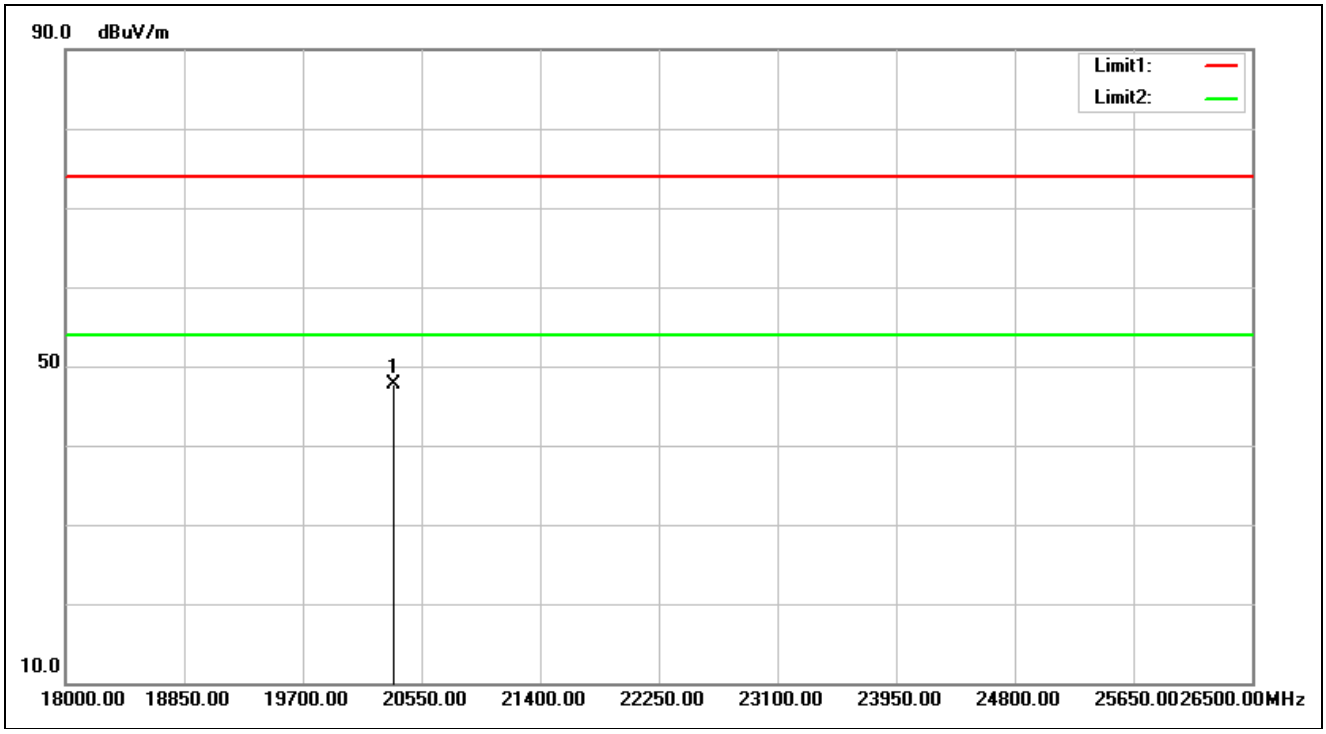

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:16:00**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20346.000	29.14	18.55	47.69	74.00	-26.31	peak			

Spurious Emissions, TX Mode, 18-26G

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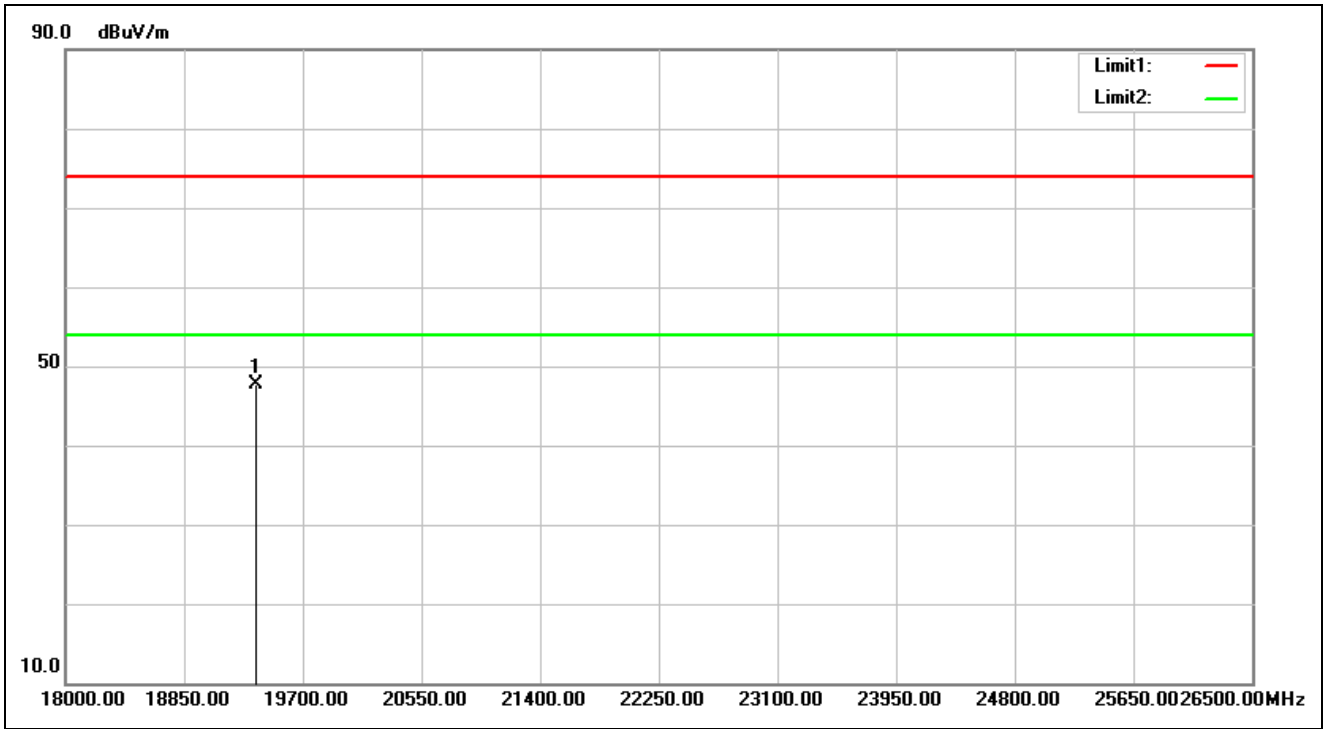

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:16:08**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	19368.500	28.93	18.81	47.74	74.00	-26.26	peak			

Spurious Emissions, TX Mode, 18-26G

Spurious Emissions, TX Mode,For IC, 1-18G

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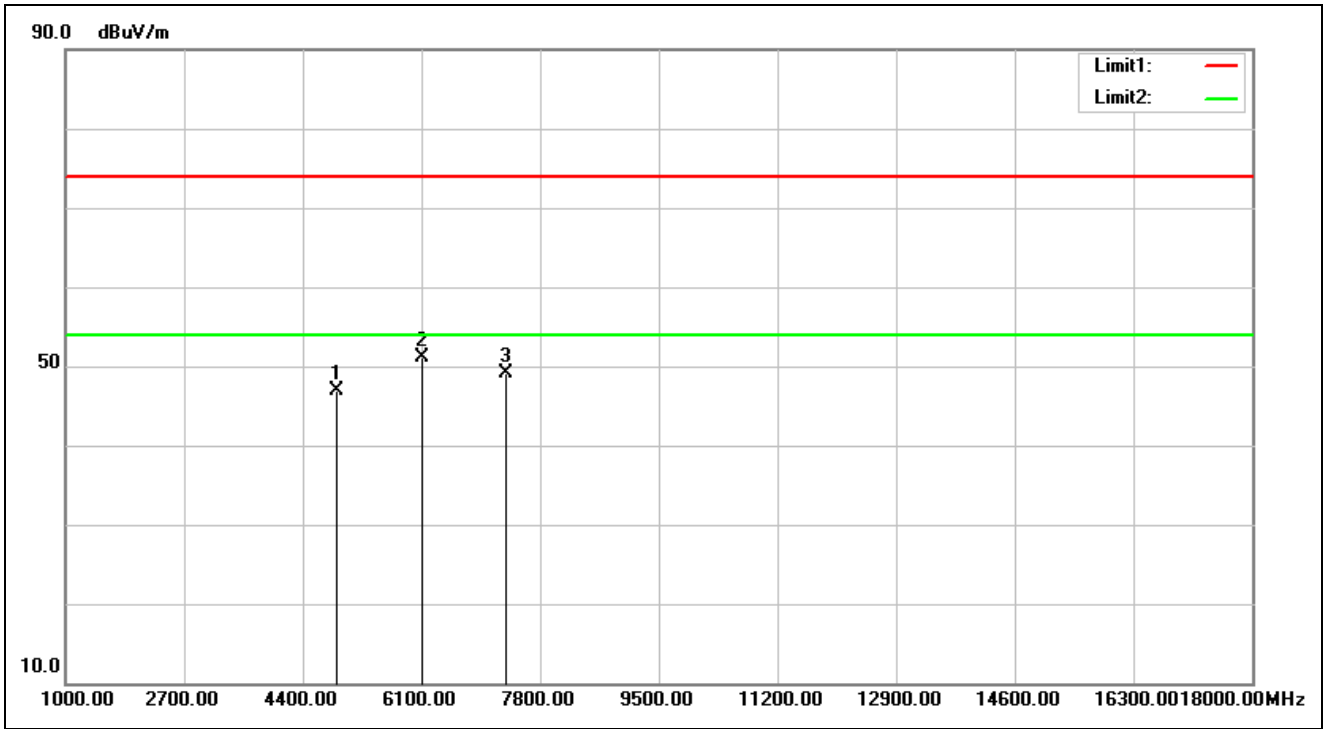

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**IC-Above 1G PEAK-H1.5m**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:25:15**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4882.000	-2.16	49.07	46.91	74.00	-27.09	peak		0	
2	6100.000	4.47	46.56	51.03	74.00	-22.97	peak	100	213	
3	7323.000	6.13	43.06	49.19	74.00	-24.81	peak		0	

Spurious Emissions, TX Mode, 18-26G

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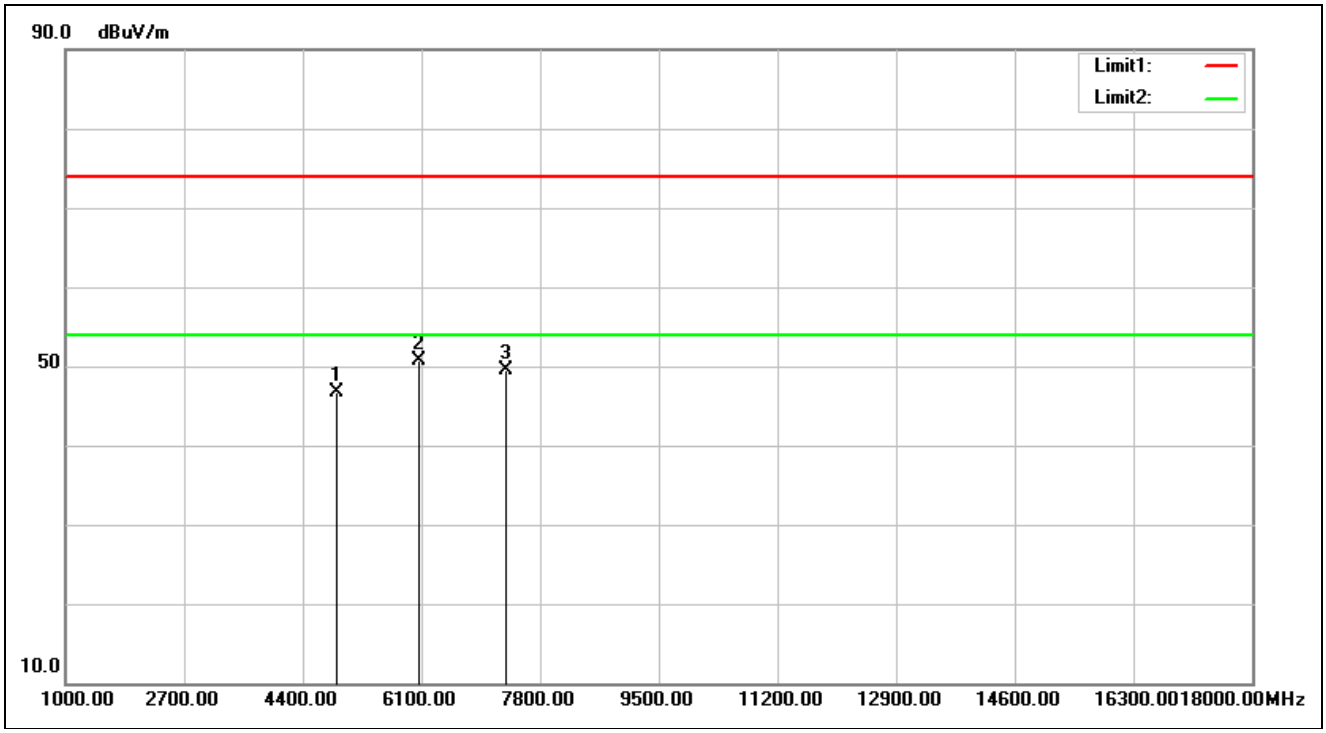

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**IC-Above 1G PEAK-H1.5m**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:26:17**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4882.000	-2.16	48.94	46.78	74.00	-27.22	peak			
2	6066.000	4.34	46.45	50.79	74.00	-23.21	peak	100	357	
3	7323.000	6.13	43.28	49.41	74.00	-24.59	peak			

Spurious Emissions, TX Mode, 18-26G

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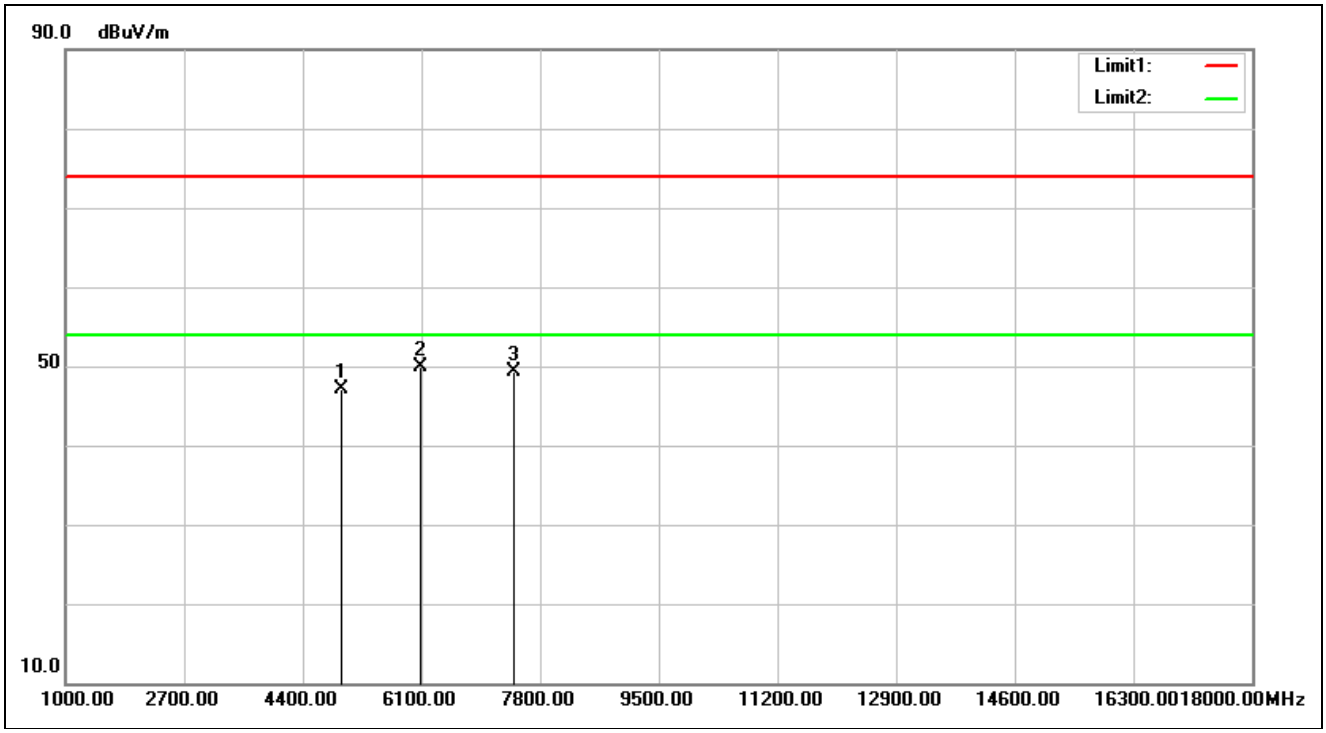

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**IC-Above 1G PEAK-H1.5m**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:40:51**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4960.000	-1.97	49.09	47.12	74.00	-26.88	peak			
2	6083.000	4.41	45.49	49.90	74.00	-24.10	peak	100	329	
3	7440.000	6.47	42.89	49.36	74.00	-24.64	peak			

Spurious Emissions, TX Mode, 18-26G

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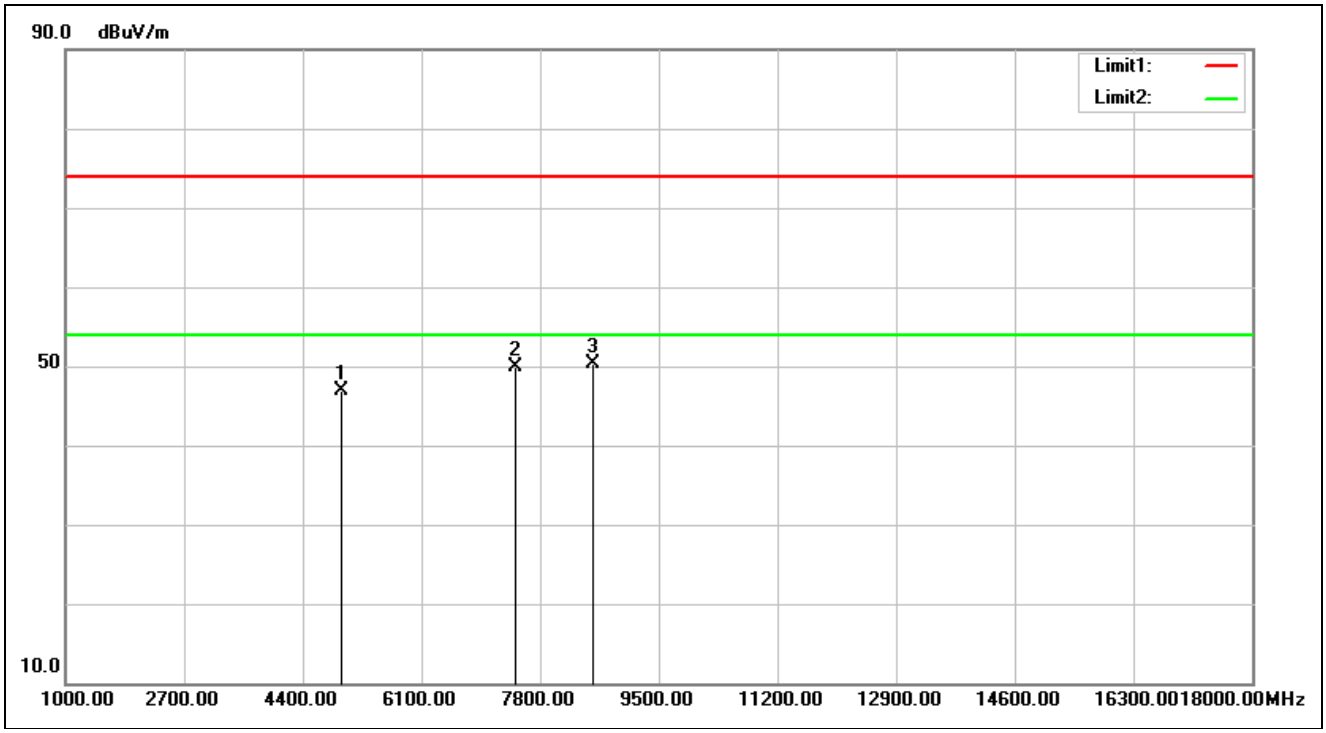

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**IC-Above 1G PEAK-H1.5m**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:41:54**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4960.000	-1.97	48.82	46.85	74.00	-27.15	peak			
2	7440.000	6.47	43.37	49.84	74.00	-24.16	peak			
3	8548.000	6.78	43.47	50.25	74.00	-23.75	peak	100	238	

Spurious Emissions, TX Mode, 18-26G

Spurious Emissions, TX Mode,For IC, 18-26.5G

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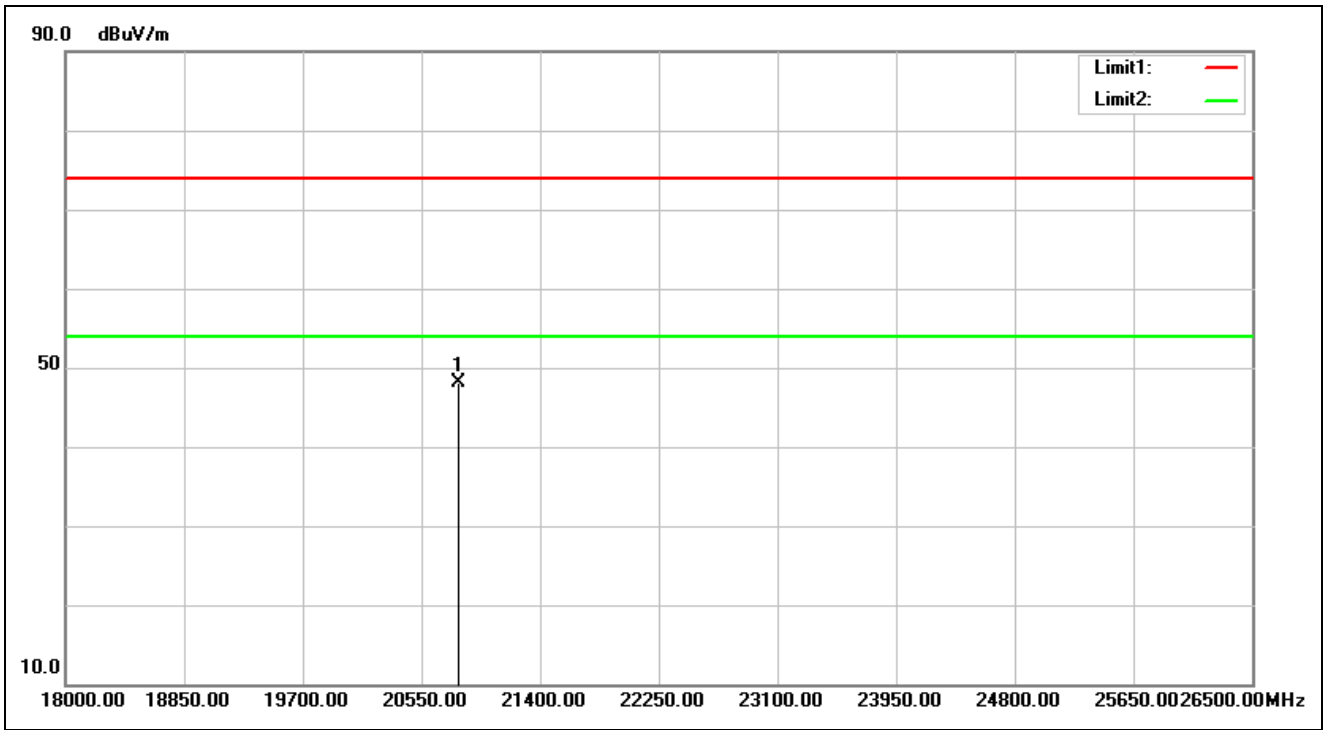

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**IC-Above 1G PEAK-H1.5m**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:10:23**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20813.500	29.31	18.79	48.10	74.00	-25.90	peak		0	

Spurious Emissions, TX Mode, 18-26G

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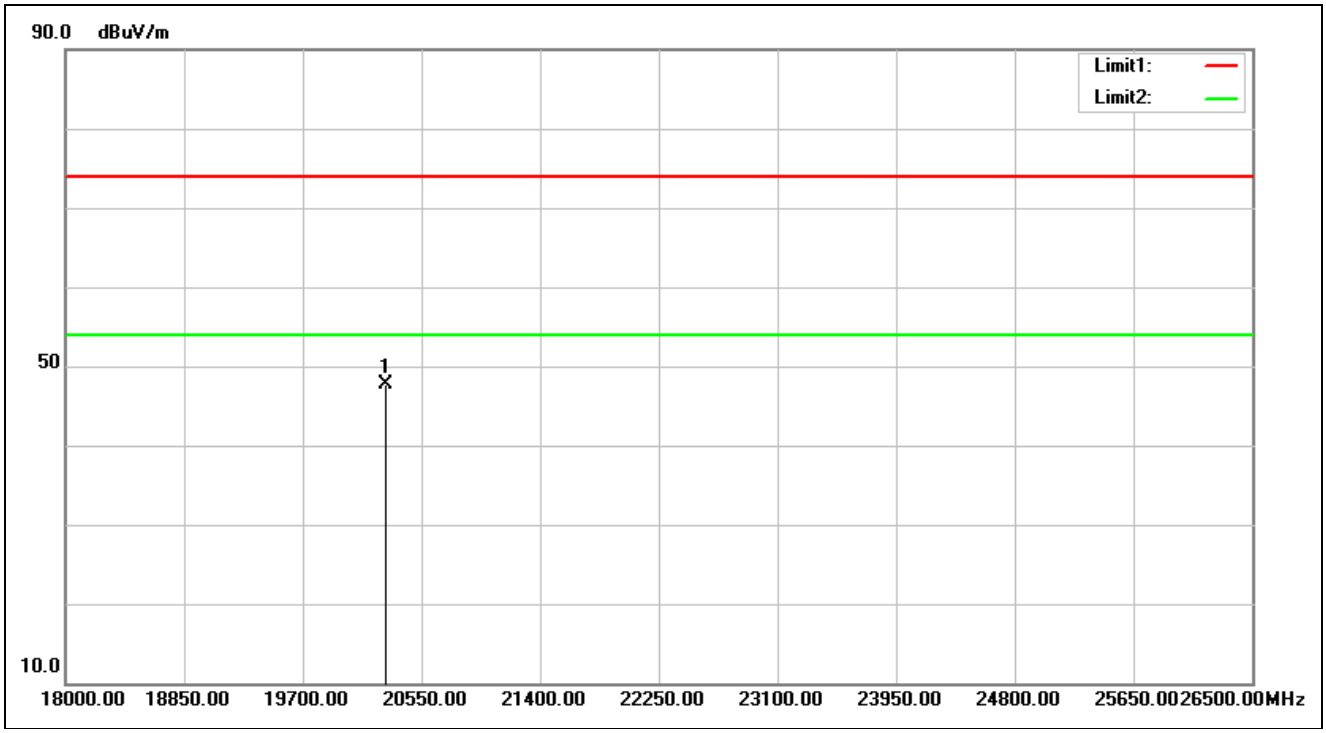

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**IC-Above 1G PEAK-H1.5m**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:10:53**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20295.000	29.11	18.64	47.75	74.00	-26.25	peak			

Spurious Emissions, TX Mode, 18-26G

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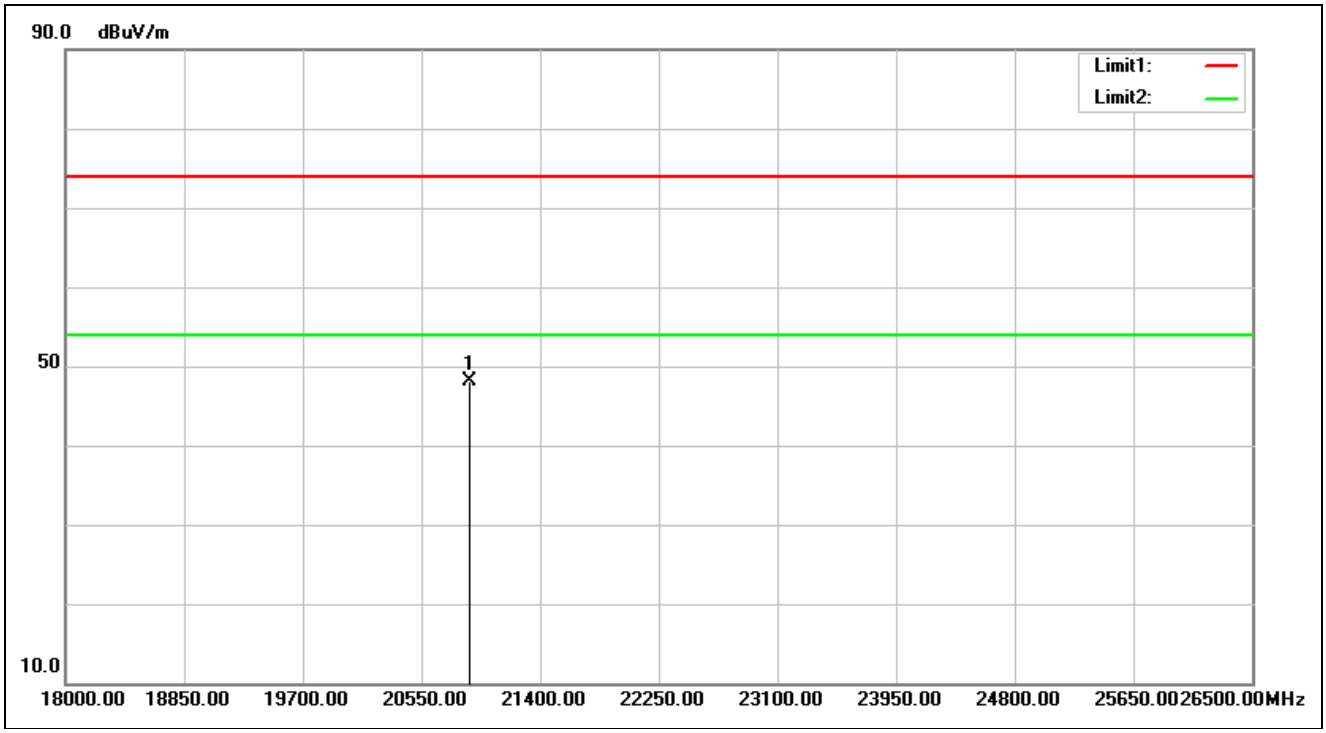

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**IC-Above 1G PEAK-H1.5m**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:12:22**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20898.500	29.33	18.81	48.14	74.00	-25.86	peak			

Spurious Emissions, TX Mode, 18-26G

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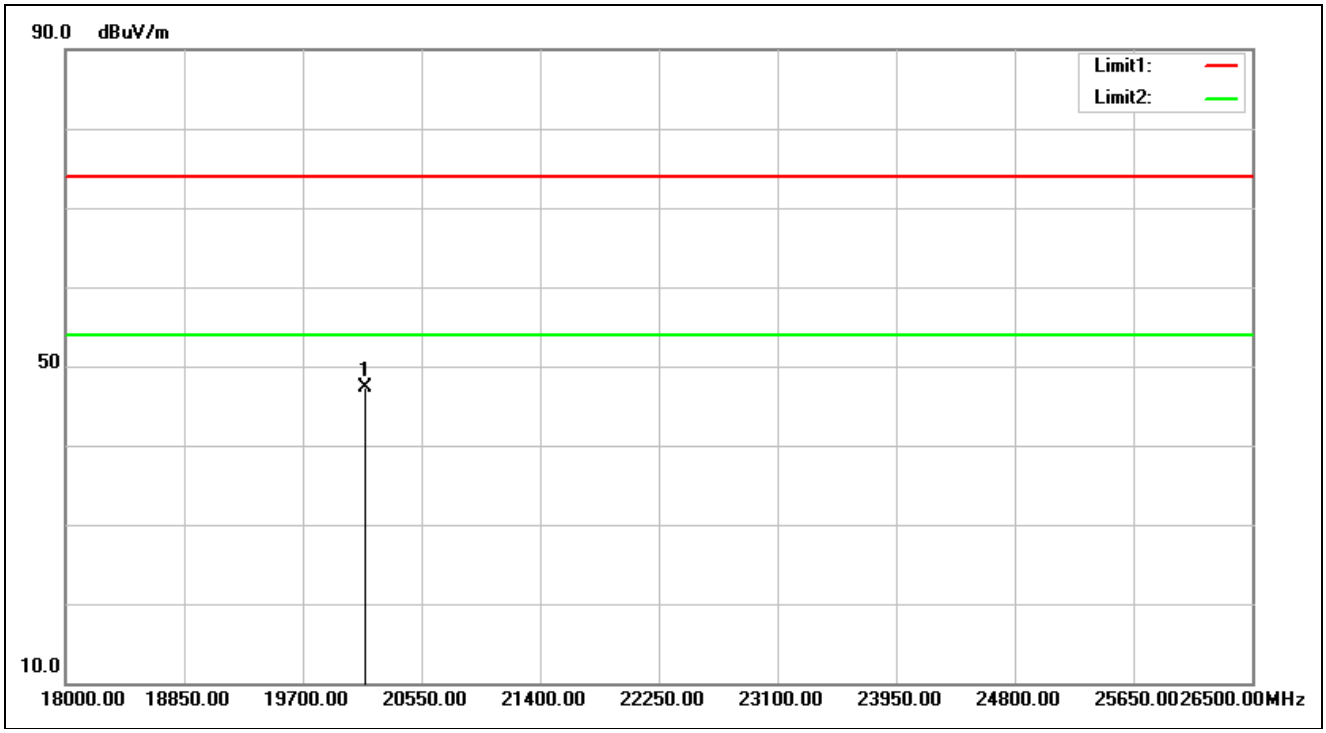

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**IC-Above 1G PEAK-H1.5m**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:12:31**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**3DH5-2480 TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20150.500	29.03	18.19	47.22	74.00	-26.78	peak			

Spurious Emissions, TX Mode, 18-26G

Spurious Emissions, TX Mode, 30M-1G

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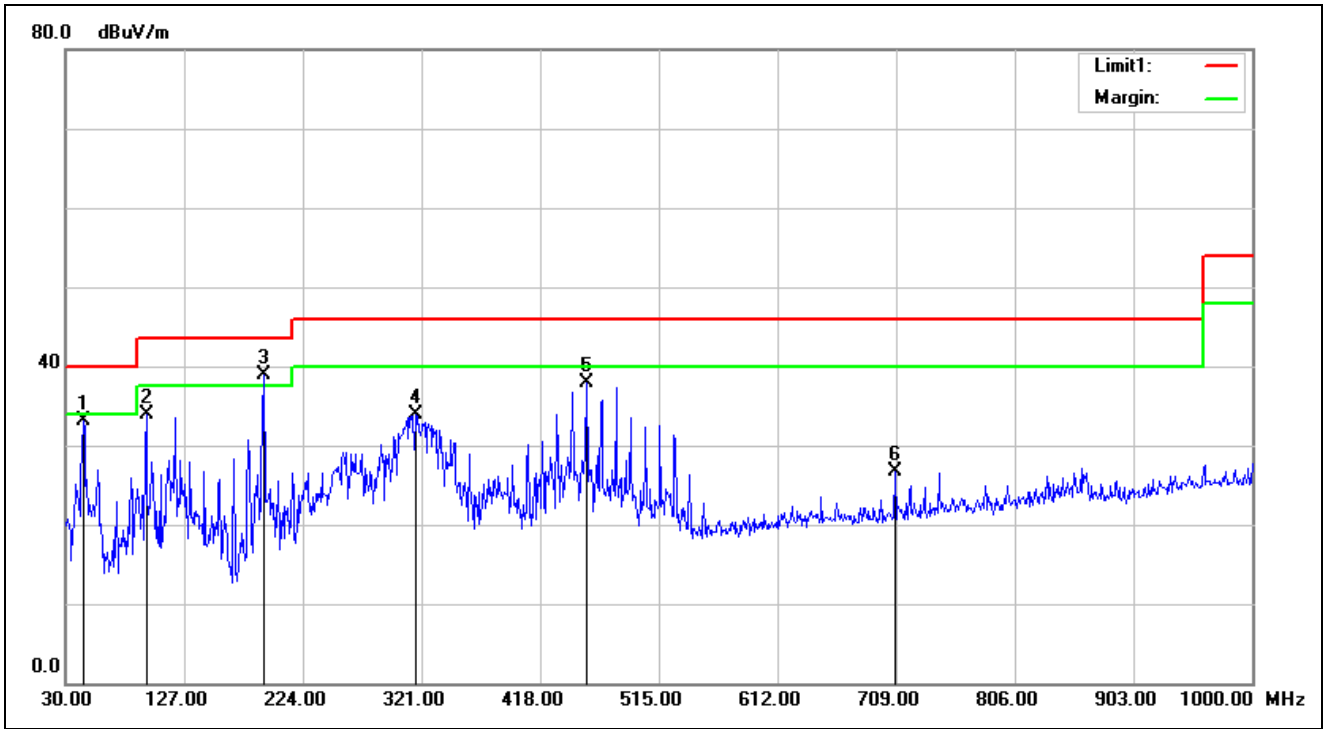

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Class B 3M Radiation**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:01:10**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	44.5500	-13.98	47.15	33.17	40.00	-6.83	QP	100	184	
2	95.9599	-15.43	49.30	33.87	43.50	-9.63	QP	100	234	
3	191.9900	-15.21	54.20	38.99	43.50	-4.51	QP	100	163	
4	316.1500	-10.14	44.03	33.89	46.00	-12.11	QP	100	133	
5	455.8300	-7.92	45.83	37.91	46.00	-8.09	QP	100	314	
6	708.0300	-4.93	31.68	26.75	46.00	-19.25	QP	100	112	

Spurious Emissions, RX Mode, 1-18G

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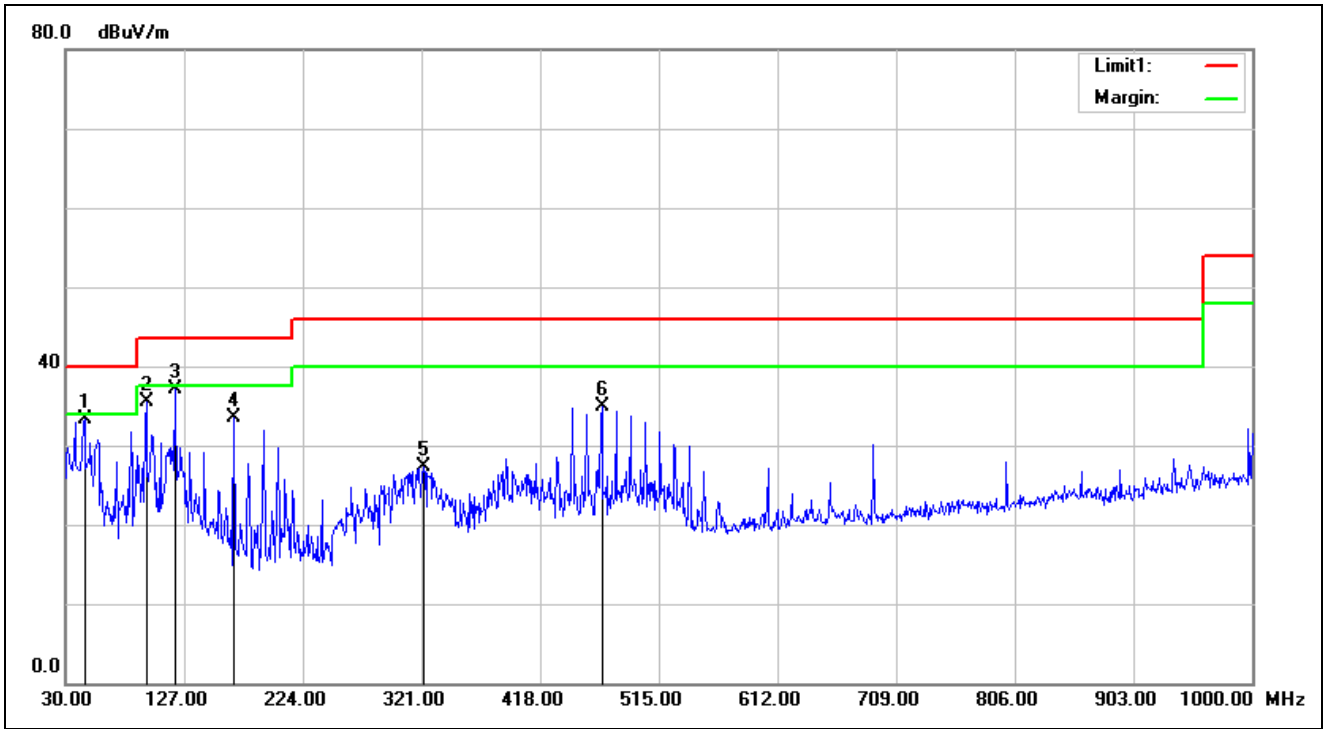

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Class B 3M Radiation**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:02:13**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**TX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	45.5200	-14.53	47.88	33.35	40.00	-6.65	QP	100	240	
2	95.9599	-15.43	50.86	35.43	43.50	-8.07	QP	100	155	
3	119.2400	-13.02	50.22	37.20	43.50	-6.30	QP	100	187	
4	167.7400	-14.55	48.03	33.48	43.50	-10.02	QP	100	301	
5	322.9400	-9.98	37.32	27.34	46.00	-18.66	QP	100	1	
6	468.4400	-7.73	42.61	34.88	46.00	-11.12	QP	100	190	

Spurious Emissions, RX Mode, 1-18G

Spurious Emissions, RX Mode, 1-18G

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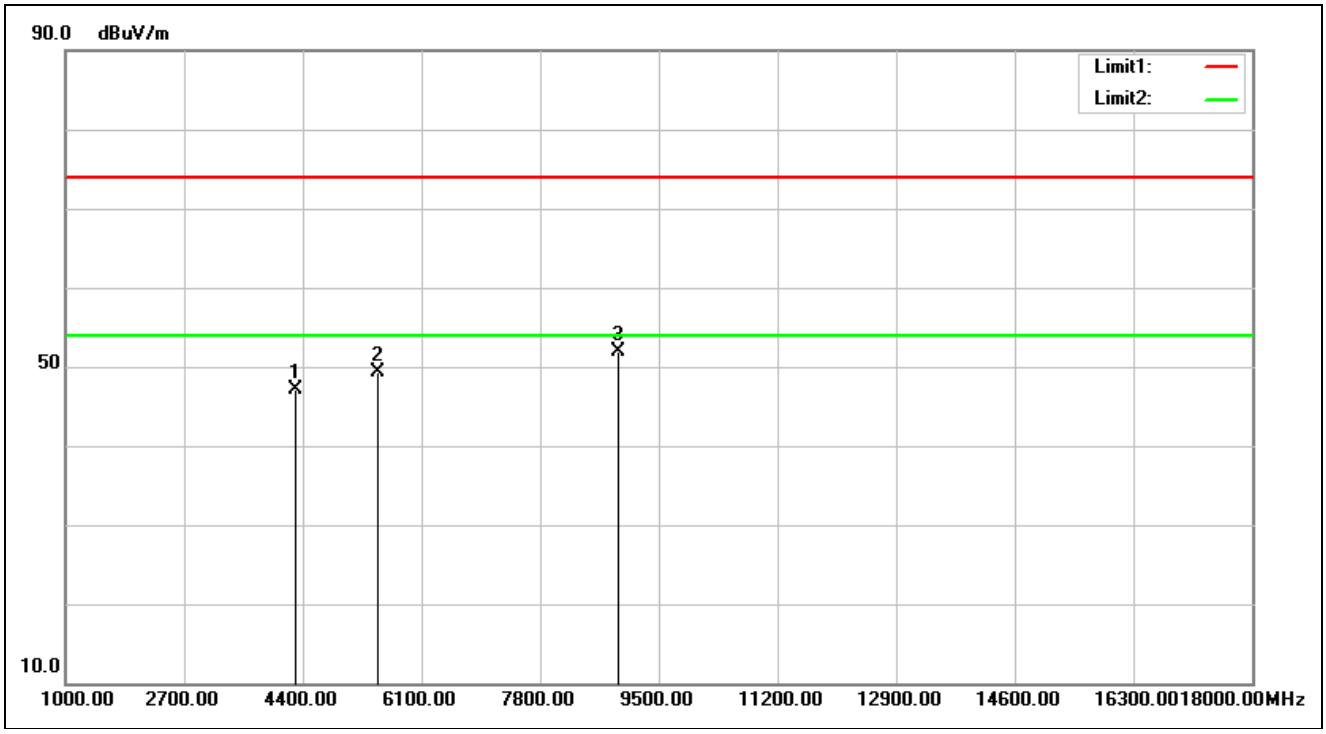

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:09:15**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2402 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4298.000	-3.89	51.07	47.18	74.00	-26.82	peak	100	89	
2	5471.000	0.66	48.69	49.35	74.00	-24.65	peak	100	180	
3	8922.000	7.25	44.57	51.82	74.00	-22.18	peak	100	265	

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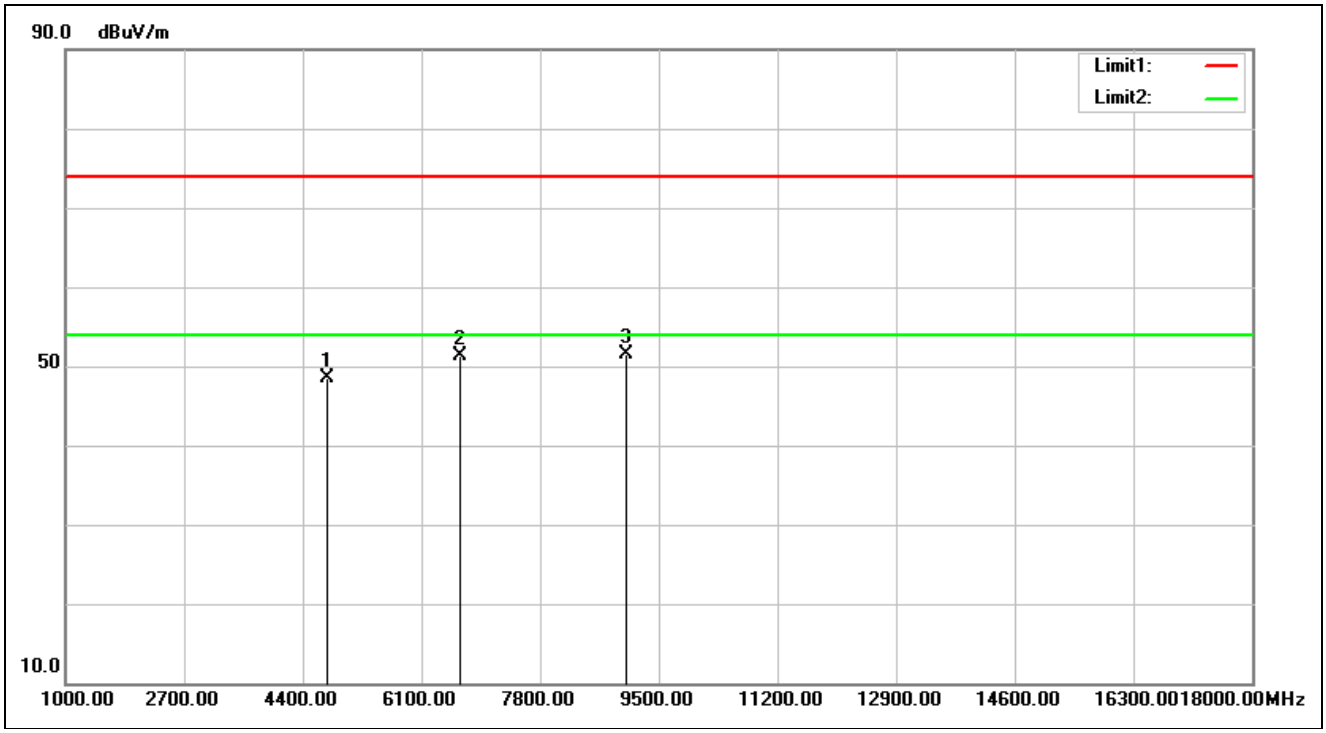

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:10:17**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2402 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4757.000	-2.46	50.98	48.52	74.00	-25.48	peak	100	318	
2	6644.000	5.79	45.55	51.34	74.00	-22.66	peak	100	188	
3	9024.000	7.32	44.10	51.42	74.00	-22.58	peak	100	183	

Spurious Emissions, RX Mode, 1-18G

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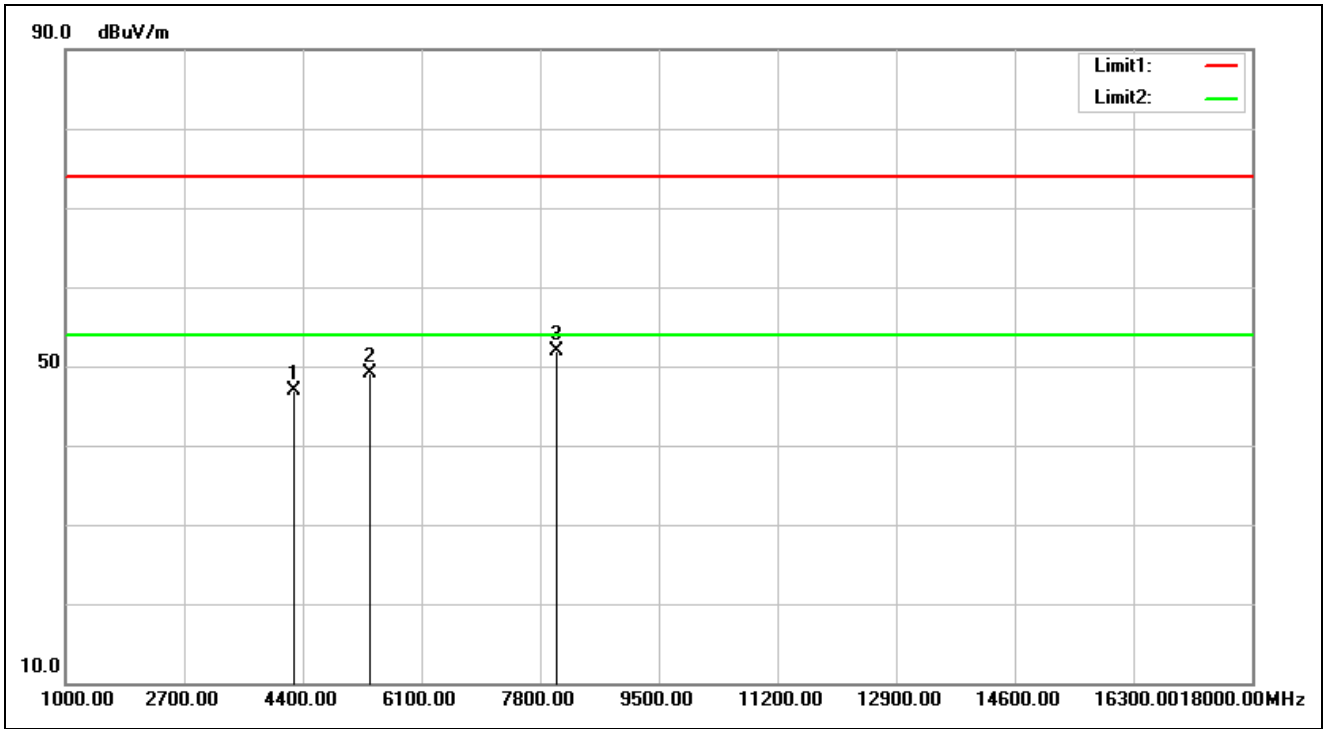

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:15:04**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (◦)	Remark
1	4281.000	-3.97	50.94	46.97	74.00	-27.03	peak	100	296	
2	5369.000	0.12	48.89	49.01	74.00	-24.99	peak	100	63	
3	8038.000	6.57	45.37	51.94	74.00	-22.06	peak	100	163	

Spurious Emissions, RX Mode, 1-18G

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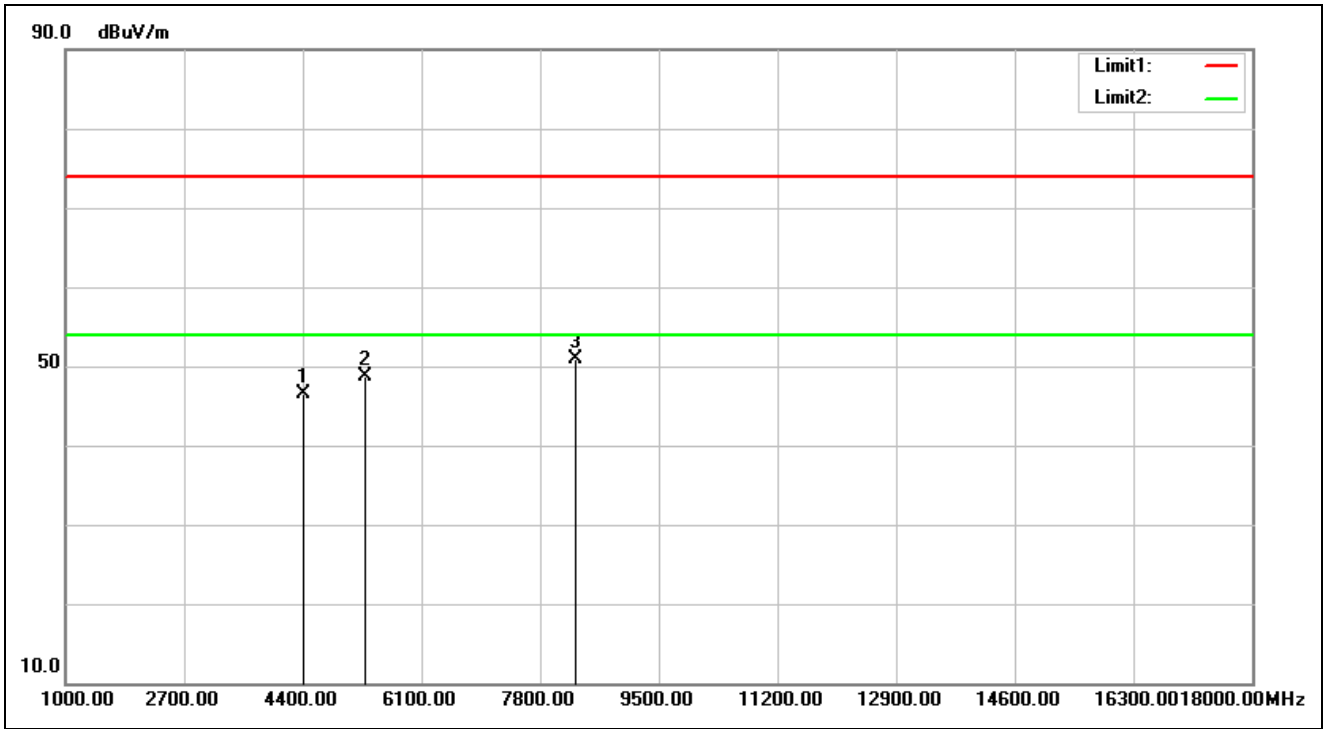

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:16:07**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (◦)	Remark
1	4400.000	-3.50	50.02	46.52	74.00	-27.48	peak	100	103	
2	5301.000	-0.24	48.97	48.73	74.00	-25.27	peak	100	244	
3	8310.000	6.65	44.29	50.94	74.00	-23.06	peak	100	73	

Spurious Emissions, RX Mode, 1-18G

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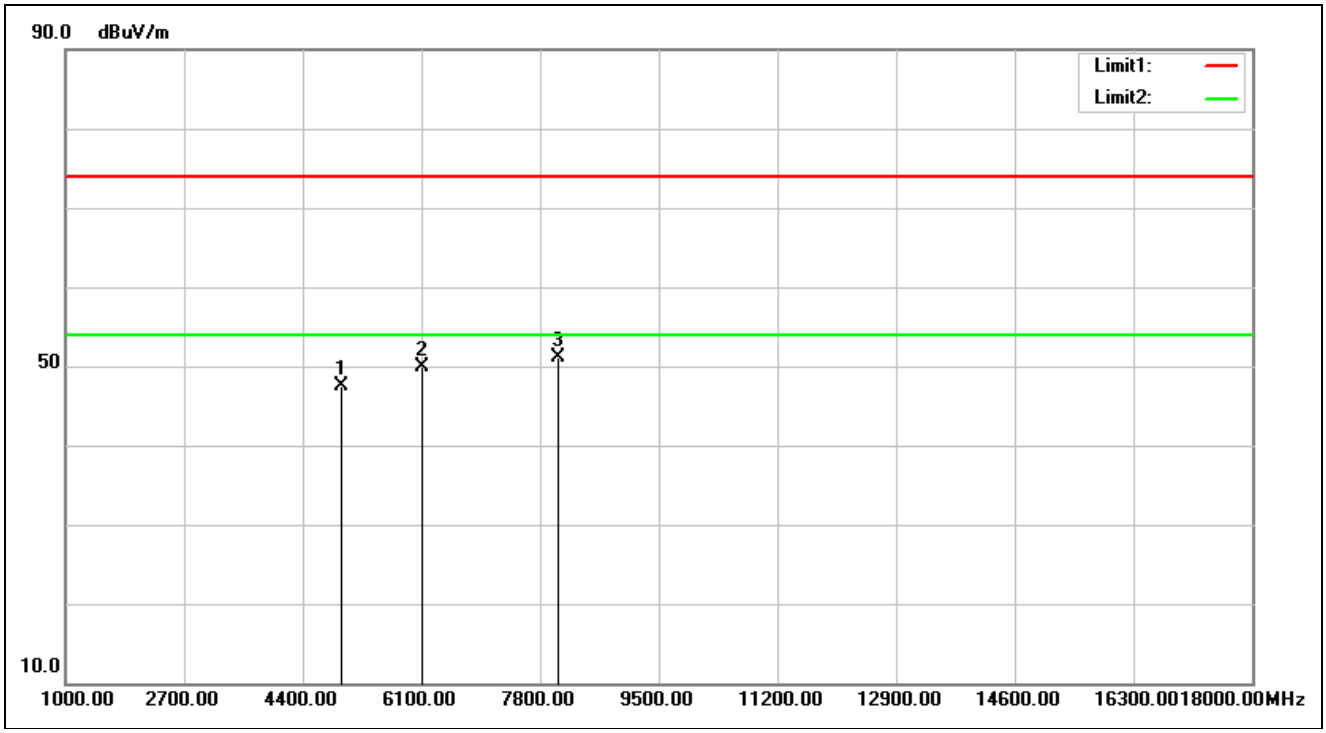

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:17:42**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2480 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	4944.000	-1.99	49.57	47.58	74.00	-26.42	peak	100	69	
2	6117.000	4.53	45.45	49.98	74.00	-24.02	peak	100	157	
3	8055.000	6.58	44.46	51.04	74.00	-22.96	peak	100	293	

Spurious Emissions, RX Mode, 1-18G

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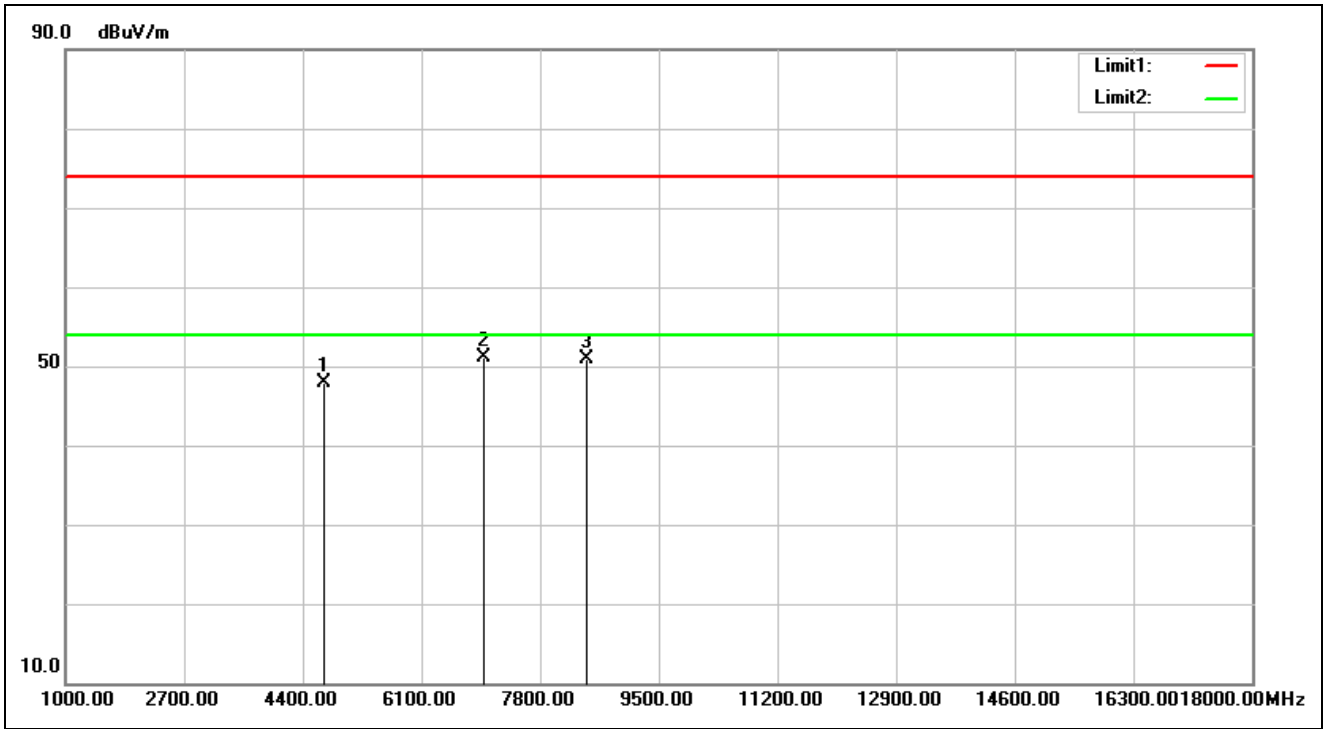

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 11:18:44**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2480 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (◦)	Remark
1	4706.000	-2.59	50.56	47.97	74.00	-26.03	peak	100	180	
2	6984.000	5.18	45.85	51.03	74.00	-22.97	peak	100	214	
3	8463.000	6.70	44.28	50.98	74.00	-23.02	peak	100	14	

Spurious Emissions, RX Mode, 1-18G

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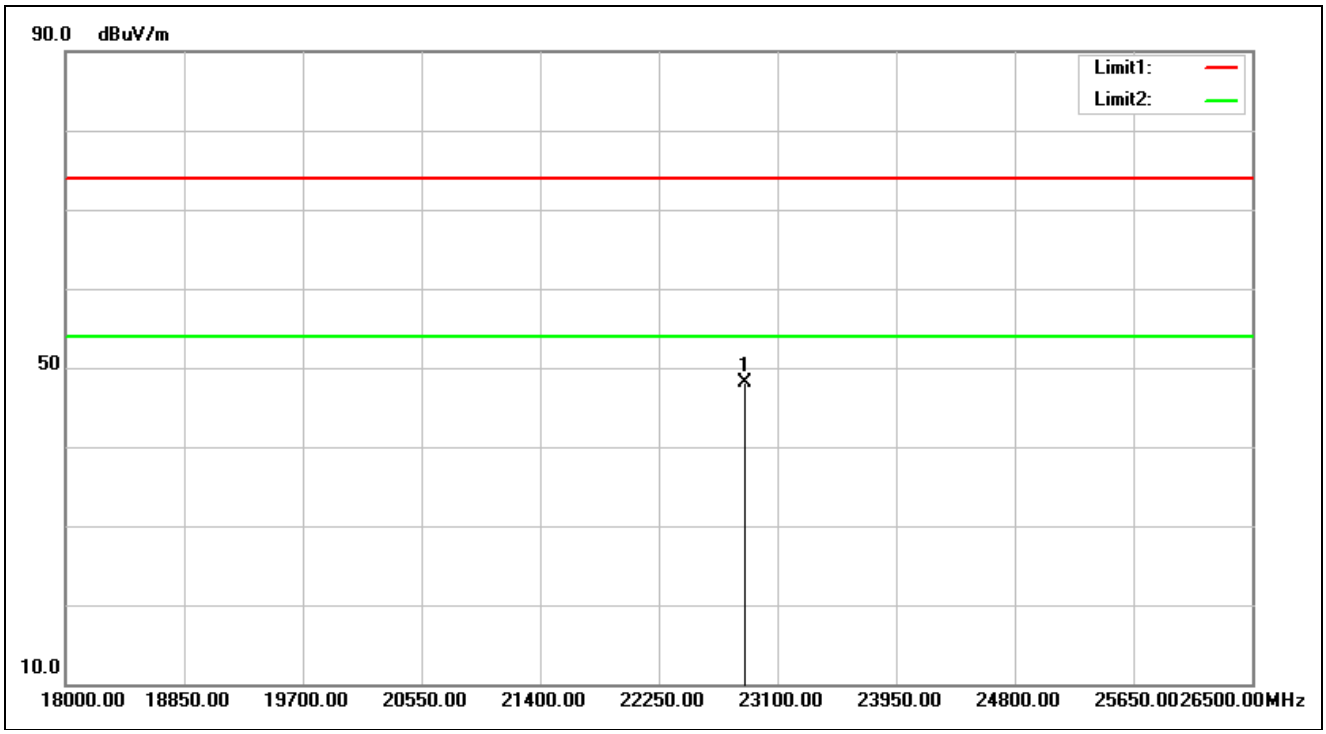
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:20:34**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2402 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	22862.000	29.72	18.43	48.15	74.00	-25.85	peak		0	

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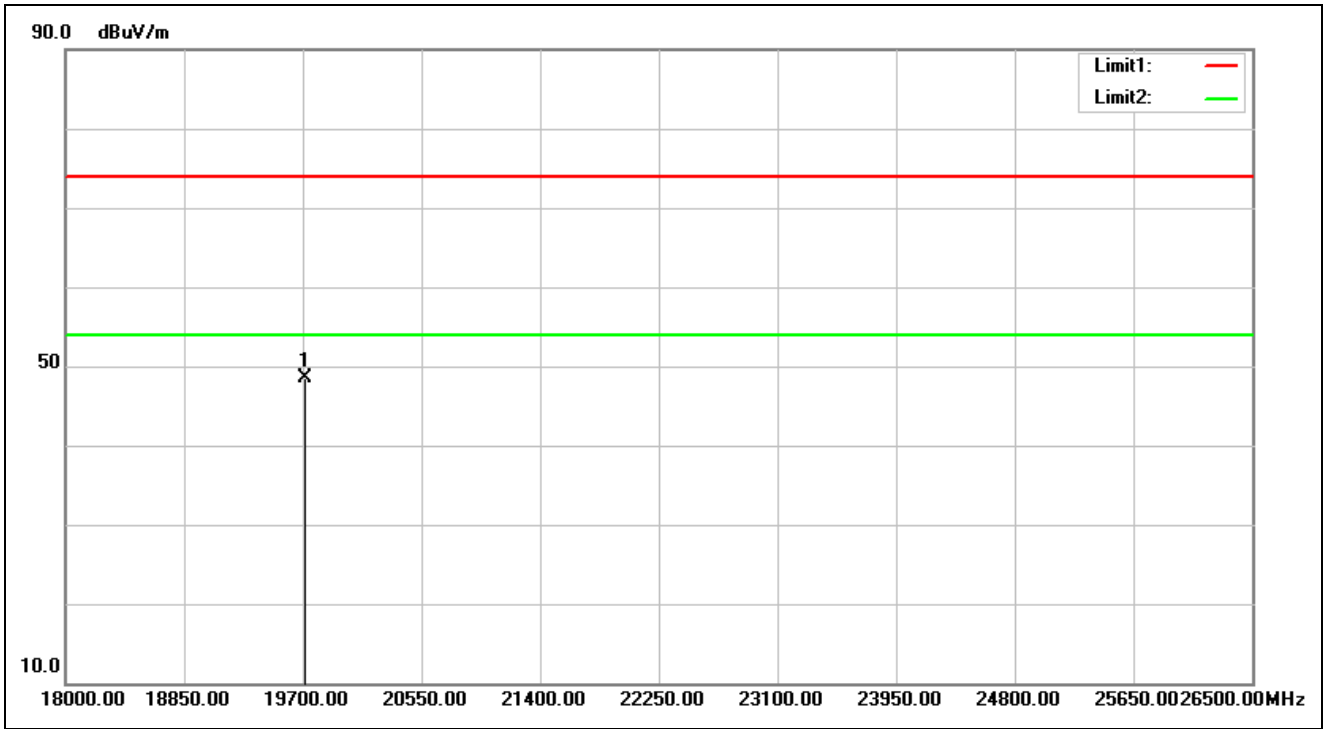

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:21:11**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2402 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	19717.000	28.94	19.63	48.57	74.00	-25.43	peak			

Spurious Emissions, RX Mode, 18-26G

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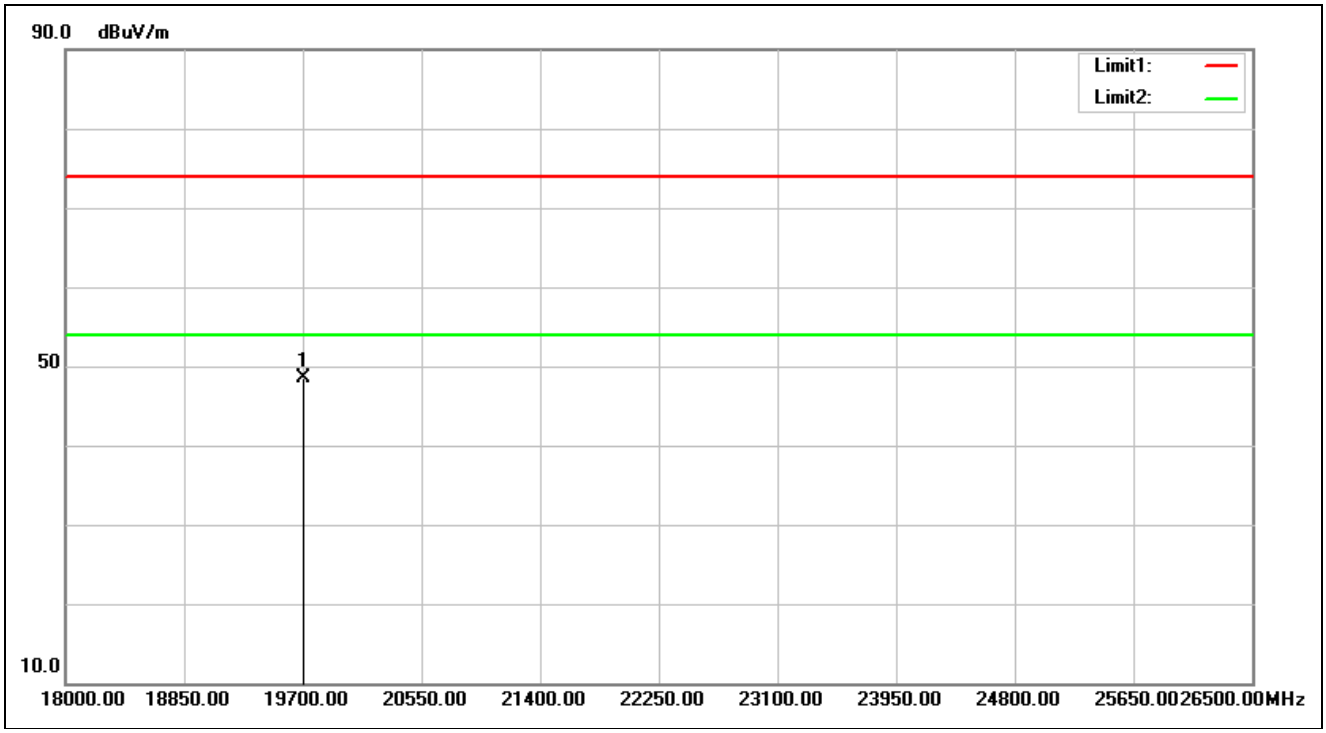

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:21:24**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	19700.000	28.95	19.59	48.54	74.00	-25.46	peak			

Spurious Emissions, RX Mode, 18-26G

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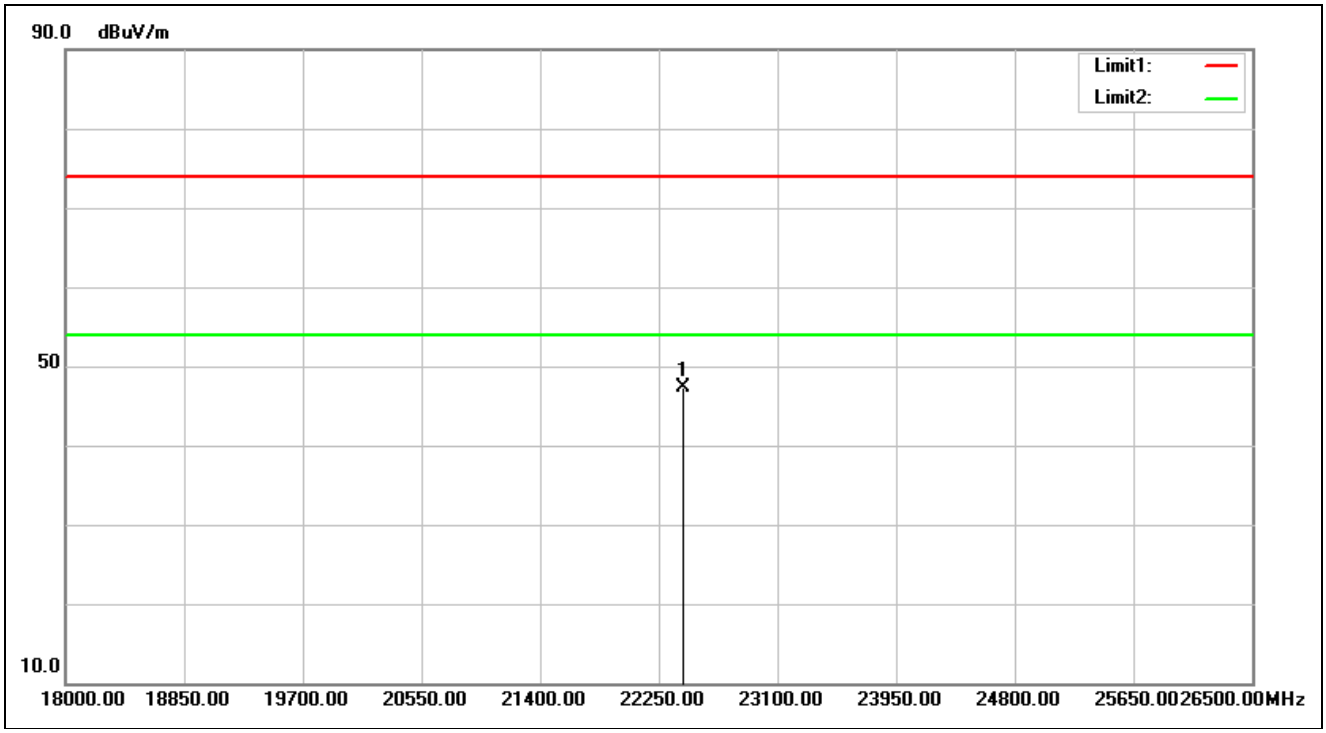

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:21:32**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2441 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	22420.000	29.10	18.20	47.30	74.00	-26.70	peak			

Spurious Emissions, RX Mode, 18-26G

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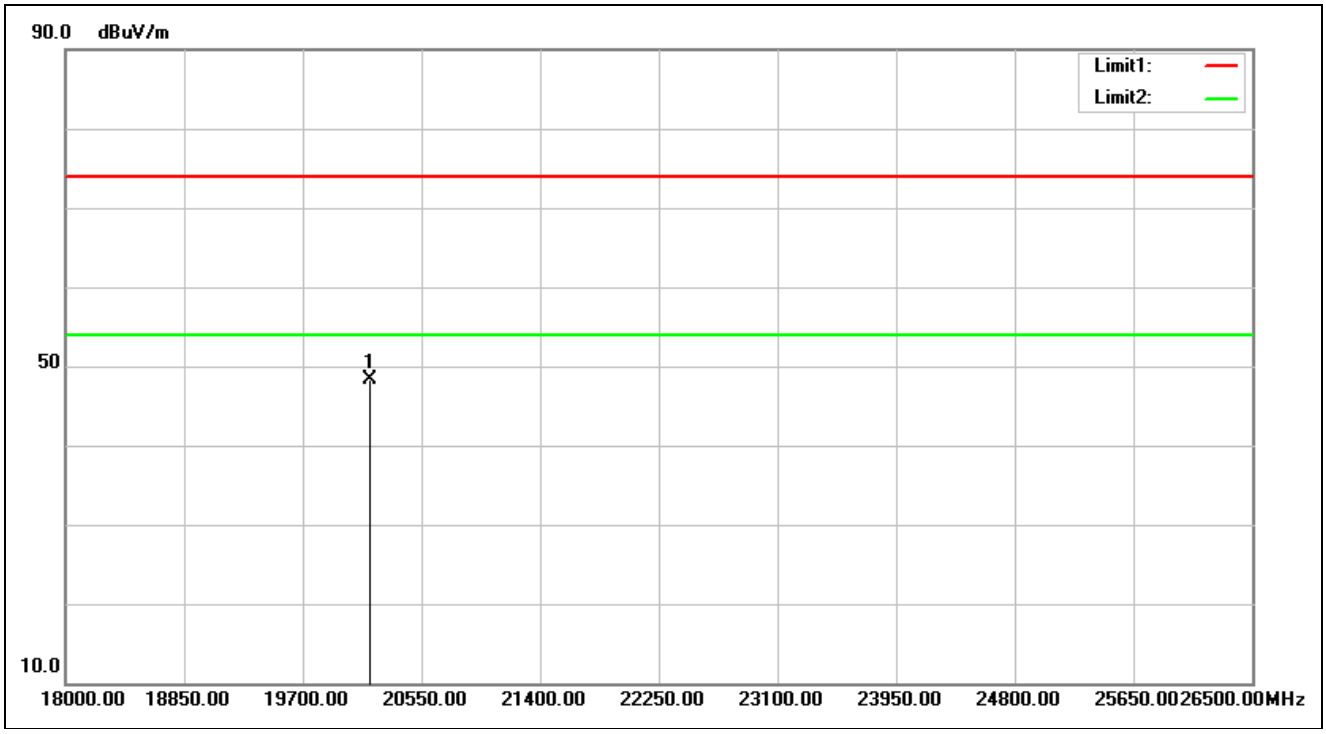

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:21:49**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2480 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20184.500	29.05	19.23	48.28	74.00	-25.72	peak			

Spurious Emissions, RX Mode, 18-26G

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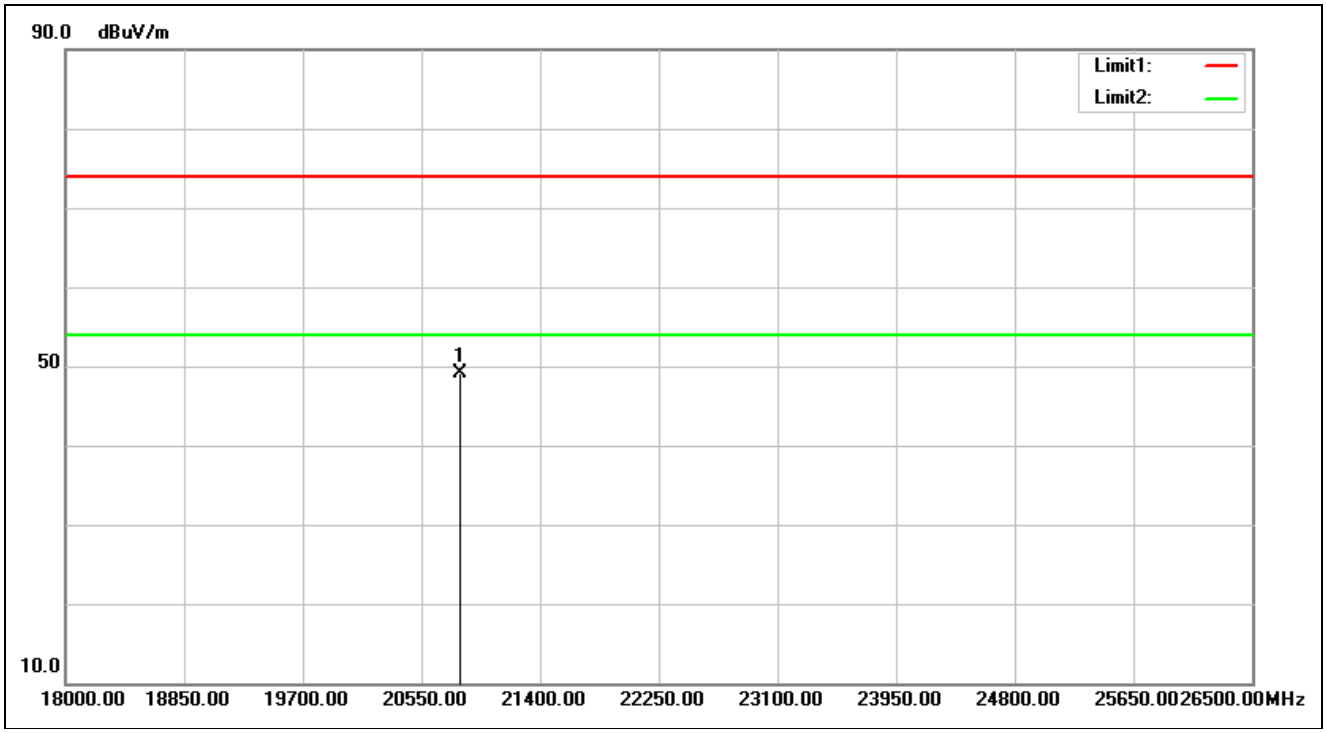

Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Above 1G PEAK**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 13:22:01**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**1DH5-2480 RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	20822.000	29.32	19.79	49.11	74.00	-24.89	peak			

Spurious Emissions, RX Mode, 18-26G

Spurious Emissions, RX Mode, 30M-1G

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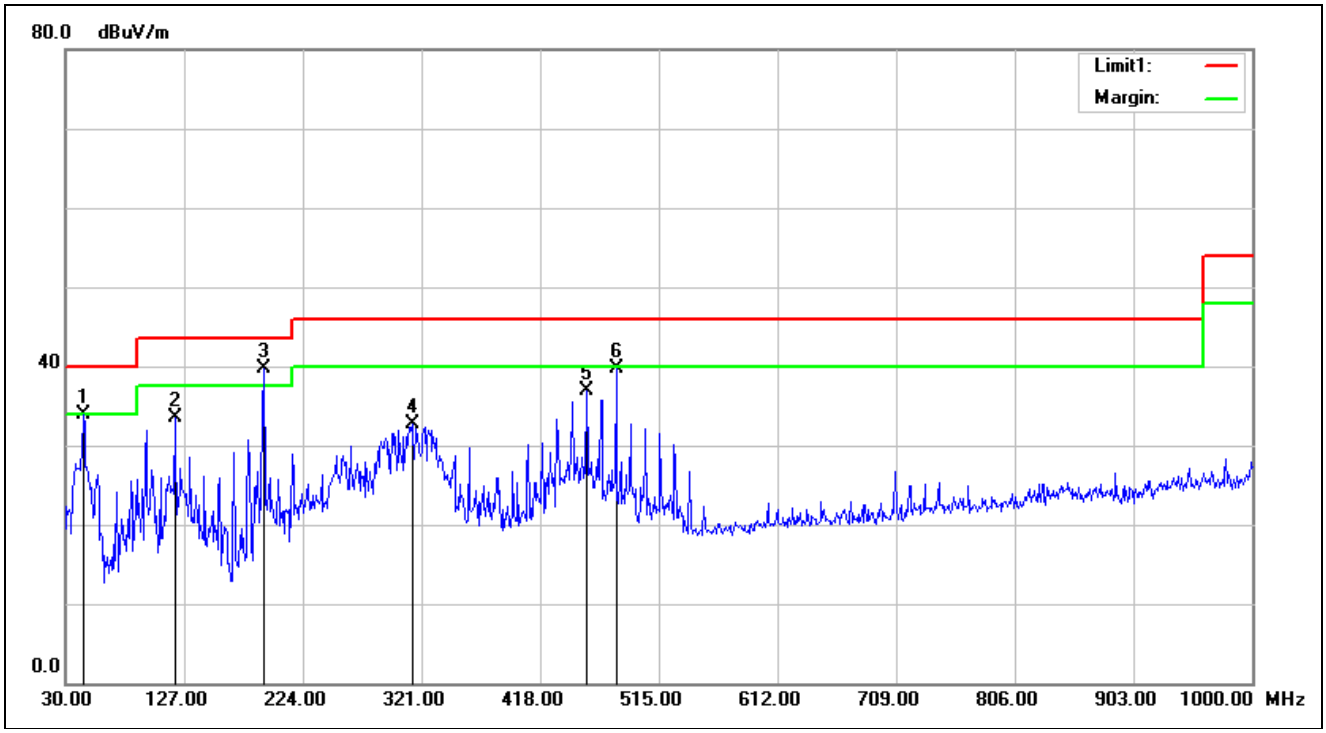
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Class B 3M Radiation**	**Ant. Polarization:**	**Horizontal**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:04:07**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	44.5500	-13.98	47.94	33.96	40.00	-6.04	QP	100	165	
2	119.2400	-13.02	46.53	33.51	43.50	-9.99	QP	100	227	
3	191.9900	-15.21	54.98	39.77	43.50	-3.73	QP	100	139	
4	313.2400	-10.19	42.85	32.66	46.00	-13.34	QP	100	235	
5	455.8300	-7.92	44.82	36.90	46.00	-9.10	QP	100	147	
6	480.0800	-7.55	47.19	39.64	46.00	-6.36	QP	100	155	

Spurious Emissions, Mains, 150kHz - 30MHz

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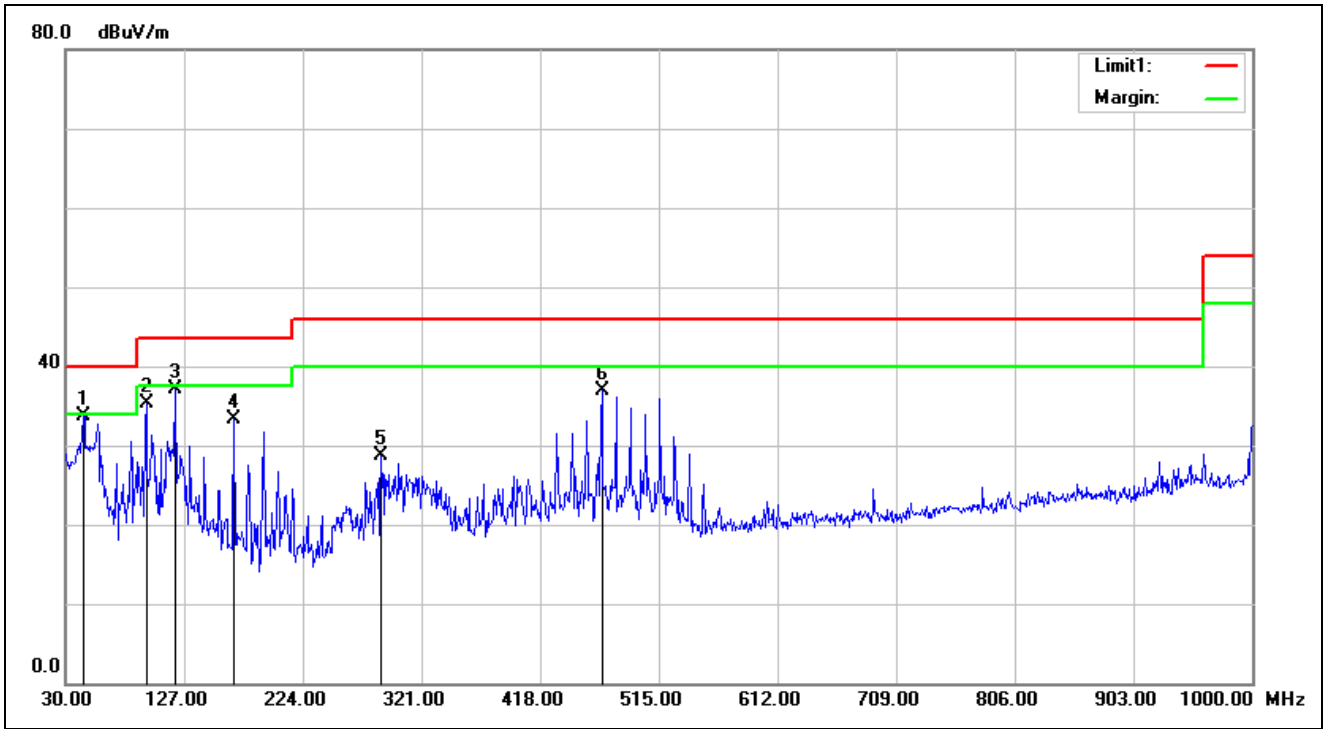


Service No.:	**114034651-NCC-1**	**Test Distance:**	**3m**
Test Standard:	**NCC Class B 3M Radiation**	**Ant. Polarization:**	**Vertical**
Test item:	**Radiation Emission**	**Test Time:**	**2015/5/22 10:05:10**
Applicant:	**Microchip**	**Test Rating:**	**DC 5V**
Product:	**Bluetooth module**	**Temp.(℃)/Hum.(%):**	**23.4(℃)/57%**
Model No.:	**BM20SPK**	**Test Engineer:**	**Hugo Chang**
Test Mode:	**RX**		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (∘)	Remark
1	44.5500	-13.98	47.72	33.74	40.00	-6.26	QP	100	270	
2	95.9600	-15.43	50.66	35.23	43.50	-8.27	QP	100	200	
3	119.2400	-13.02	50.13	37.11	43.50	-6.39	QP	100	192	
4	167.7400	-14.55	47.85	33.30	43.50	-10.20	QP	100	182	
5	288.0200	-10.73	39.38	28.65	46.00	-17.35	QP	100	270	
6	468.4400	-7.73	44.68	36.95	46.00	-9.05	QP	100	232	

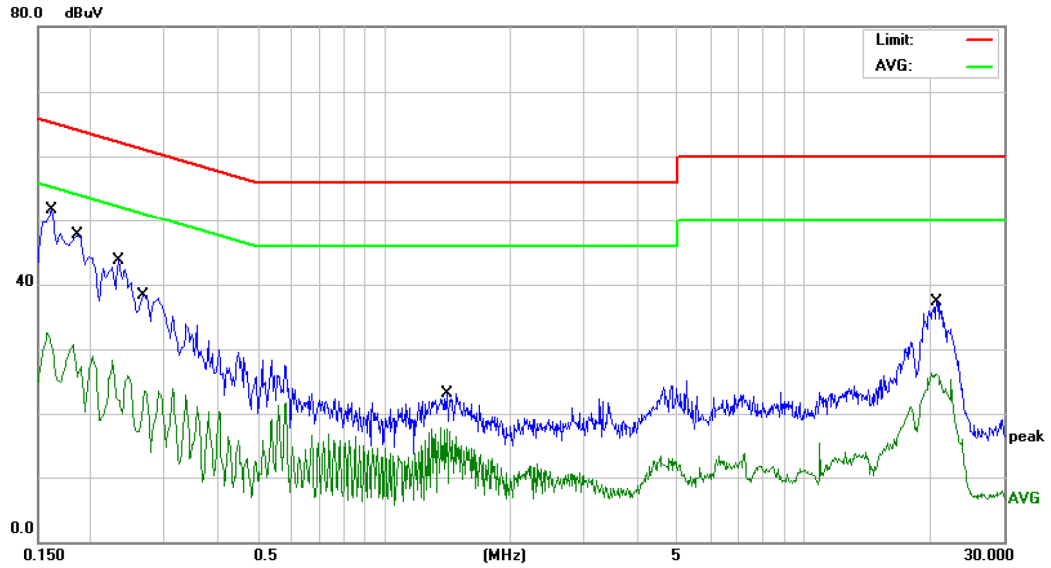
Spurious Emissions, Mains, 150kHz - 30MHz

Mains Spurious Emissions

TUV Rheinland Taiwan
11F.,No.758,Sec. 4,Bade Rd.,Songshan Dist.,Taipei 105,Taiwan
Tel:+886-2-2172-7000 Fax:+886-2-2528-0018

Site: Conduction

Test Time: 2015/5/7 08:50:32



Service No.: 114034651

Test Standard: FCC Class B Conduction(QP)

Test item: Conducted Emission

Phase: L1

Applicant: Microchip

Temp.(℃)/Hum.(%): 23.0(℃) / 58 %

Product: Bluetooth module

Power Rating: DC 5V

Model No.: BM20SPK

Test Engineer: Freeman Wang

Test Mode: (a)Normal link

Remark:

No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1620	9.65	33.11	42.76	65.36	-22.60	QP	P	
2	0.1620	9.65	18.33	27.98	55.36	-27.38	AVG	P	
3	0.1860	9.63	32.65	42.28	64.21	-21.93	QP	P	
4	0.1860	9.63	16.53	26.16	54.21	-28.05	AVG	P	
5	0.2340	9.63	28.27	37.90	62.30	-24.40	QP	P	
6	0.2340	9.63	10.83	20.46	52.30	-31.84	AVG	P	
7	0.2660	9.62	24.00	33.62	61.24	-27.62	QP	P	
8	0.2660	9.62	11.50	21.12	51.24	-30.12	AVG	P	
9	1.4140	9.63	9.92	19.55	56.00	-36.45	QP	P	
10	1.4140	9.63	7.66	17.29	46.00	-28.71	AVG	P	
11	20.7420	9.90	20.06	29.96	60.00	-30.04	QP	P	
12	20.7420	9.90	15.37	25.27	50.00	-24.73	AVG	P	

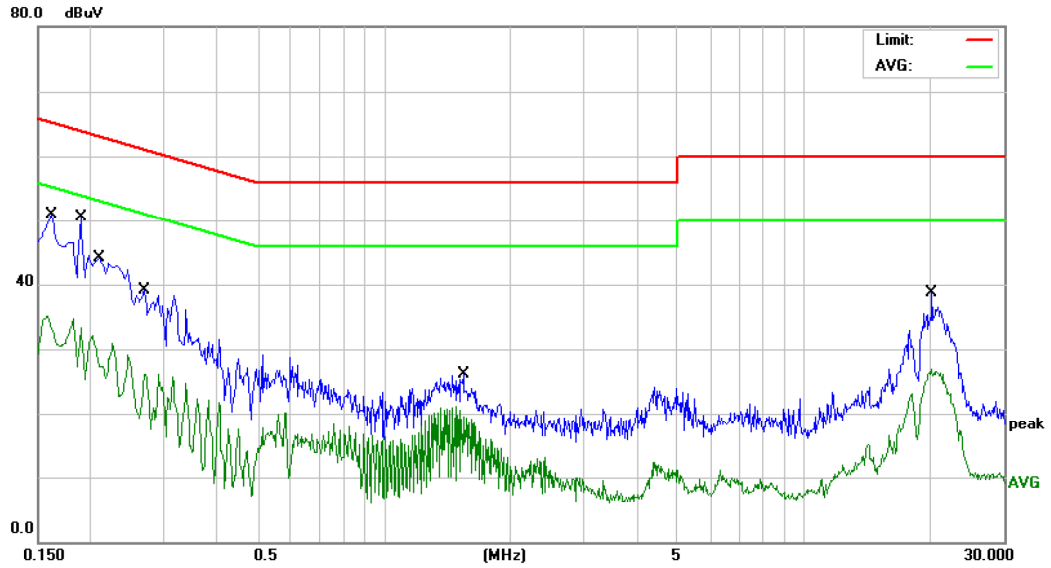
File:114034651\ #1 *Page: 1*

Spurious Emissions, Mains, 150kHz - 30MHz

TUV Rheinland Taiwan
11F.,No.758,Sec. 4,Bade Rd.,Songshan Dist.,Taipei 105,Taiwan
Tel:+886-2-2172-7000 Fax:+886-2-2528-0018

Site: Conduction

Test Time: 2015/5/7 08:52:53



Service No.: 114034651

Test Standard: FCC Class B Conduction(QP)

Test item: Conducted Emission

Phase: N

Applicant: Microchip

Temp.(℃)/Hum.(%): 23.0(℃) / 58 %

Product: Bluetooth module

Power Rating: DC 5V

Model No.: BM20SPK

Test Engineer: Freeman Wang

Test Mode: (a)Normal link

Remark:

No.	Frequency (MHz)	Factor ()	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1620	9.66	32.88	42.54	65.36	-22.82	QP	P	
2	0.1620	9.66	20.89	30.55	55.36	-24.81	AVG	P	
3	0.1900	9.65	32.16	41.81	64.03	-22.22	QP	P	
4	0.1900	9.65	15.53	25.18	54.03	-28.85	AVG	P	
5	0.2100	9.65	27.13	36.78	63.20	-26.42	QP	P	
6	0.2100	9.65	12.18	21.83	53.20	-31.37	AVG	P	
7	0.2700	9.64	26.37	36.01	61.12	-25.11	QP	P	
8	0.2700	9.64	16.70	26.34	51.12	-24.78	AVG	P	
9	1.5460	9.65	11.48	21.13	56.00	-34.87	QP	P	
10	1.5460	9.65	8.57	18.22	46.00	-27.78	AVG	P	
11	20.2660	9.96	18.46	28.42	60.00	-31.58	QP	P	
12	20.2660	9.96	14.01	23.97	50.00	-26.03	AVG	P	

File:114034651\ #2 *Page: 1*

Spurious Emissions, Mains, 150kHz - 30MHz