

Test Report No.50175101 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50175101AppendixD)

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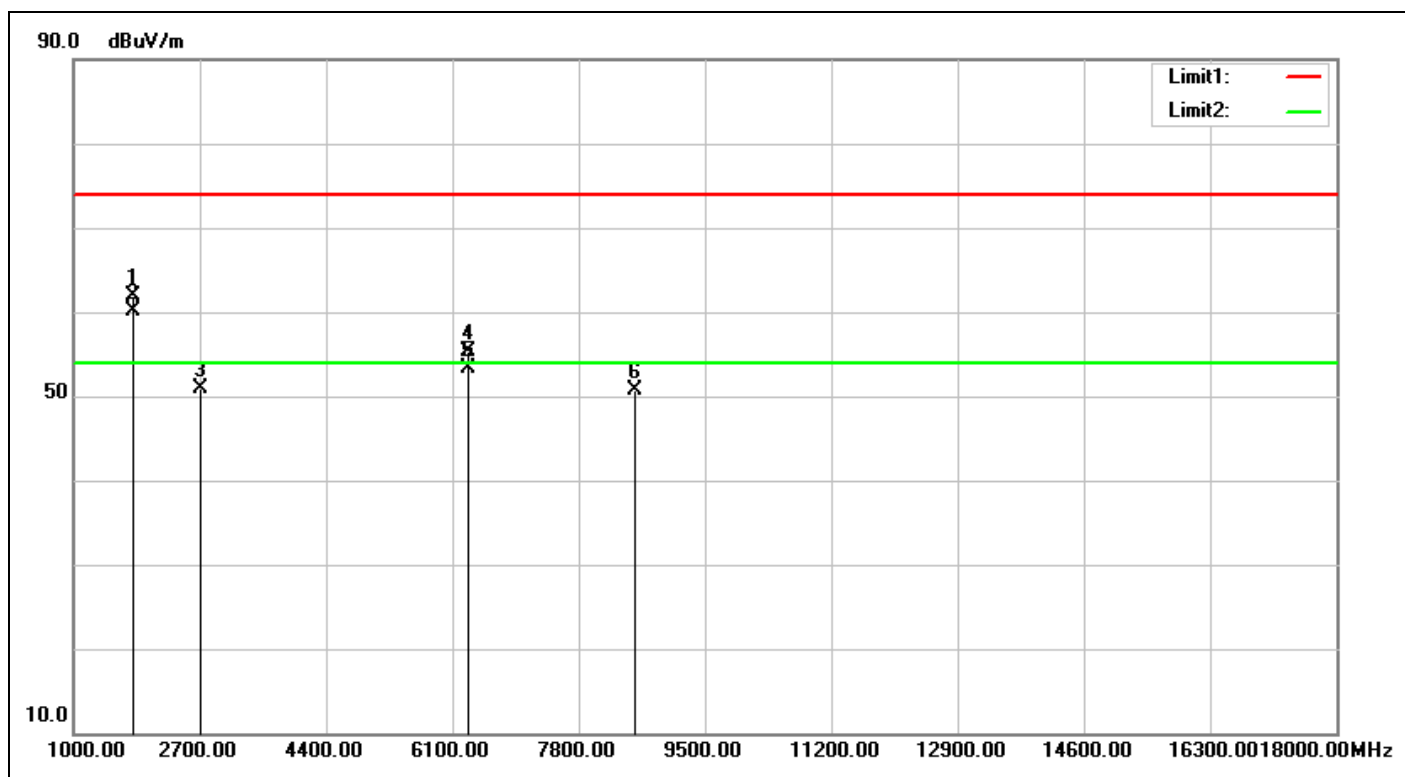
Spurious Emissions, TX Mode, 1-18G



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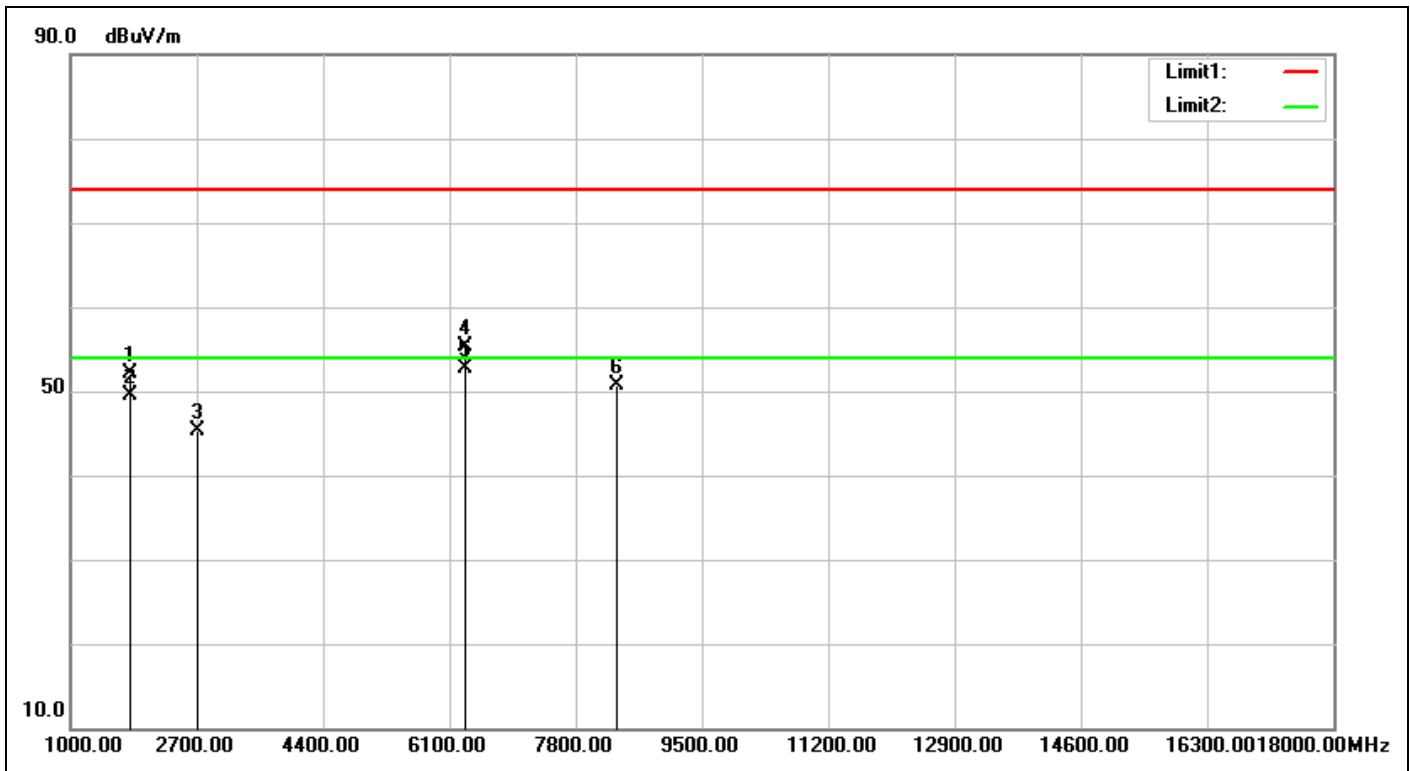
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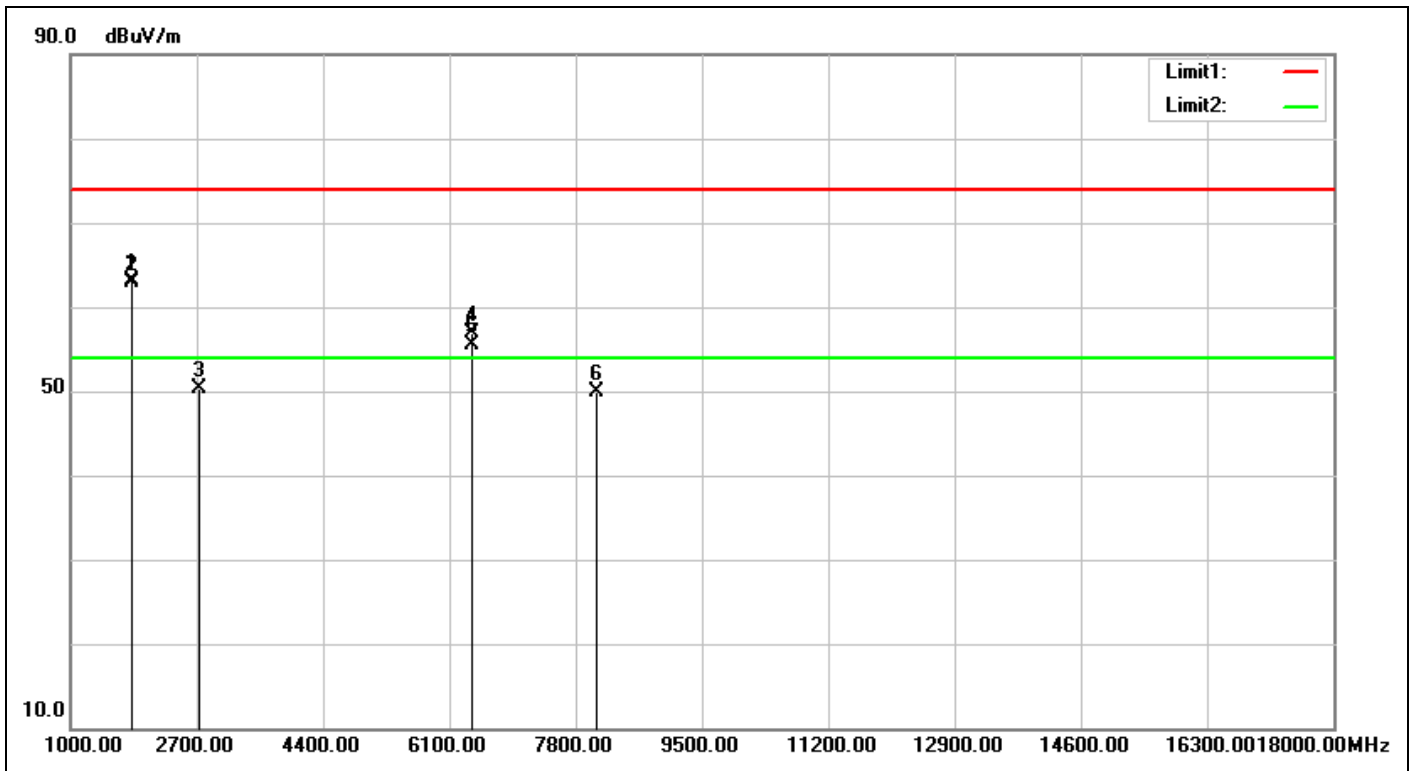
Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/10 09:43:10
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	902.3-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1/2	1804.600	-9.46	71.29	61.83	N/A	N/A	peak	100	86	Non-Restricted band
3	2706.900	-7.67	58.63	50.96	74.00	-23.04	peak	100	188	
4/5	6316.100	3.63	51.75	55.38	N/A	N/A	peak	100	267	Non-Restricted band
6	8548.000	5.47	45.24	50.71	74.00	-23.29	peak	100	68	



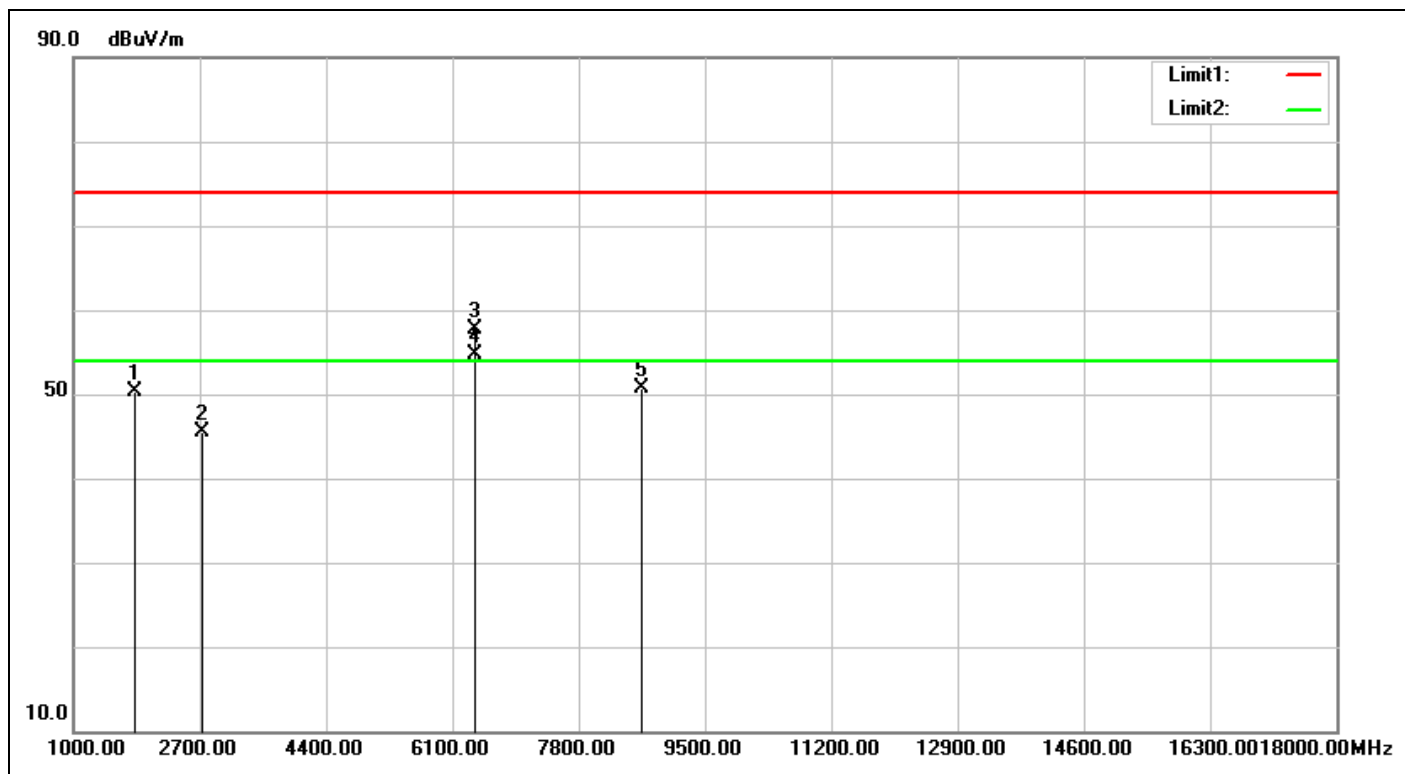
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/10 09:44:03
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%)	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	902.3-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1/2	1804.600	-9.46	61.47	52.01	N/A	N/A	peak	100	138	Non-Restricted band
3	2706.900	-7.67	53.03	45.36	74.00	-28.64	peak	100	14	
4/5	6316.100	3.63	51.76	55.39	N/A	N/A	peak	100	291	Non-Restricted band
6	8344.000	5.24	45.39	50.63	74.00	-23.37	peak	100	289	



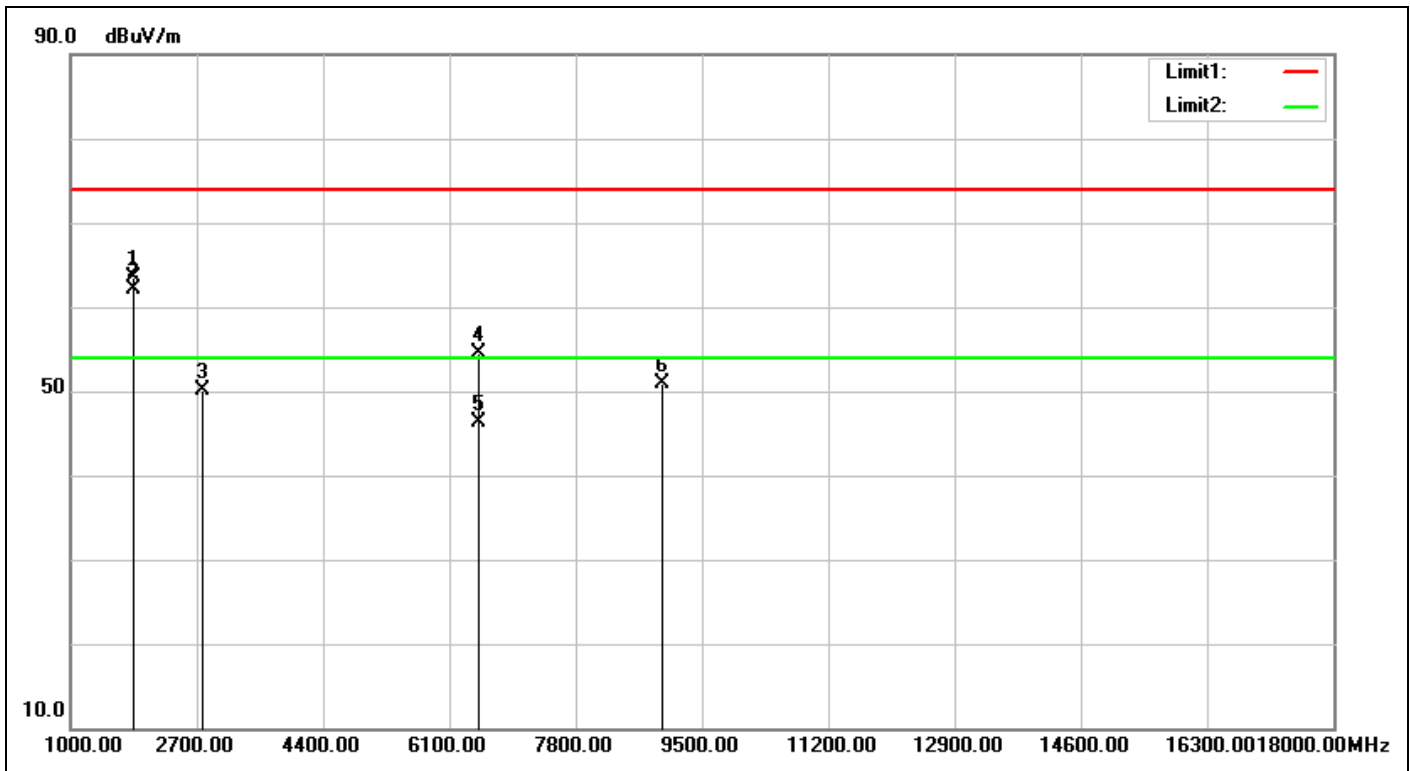
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/10 09:55:04
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1/2	1829.800	-9.30	72.47	63.17	N/A	N/A	peak	100	85	Non-Restricted band
3	2744.700	-7.62	57.83	50.21	74.00	-23.79	peak	100	295	
4/5	6404.300	3.99	52.88	56.87	N/A	N/A	peak	100	267	Non-Restricted band
6	8072.000	4.83	44.98	49.81	74.00	-24.19	peak	100	175	



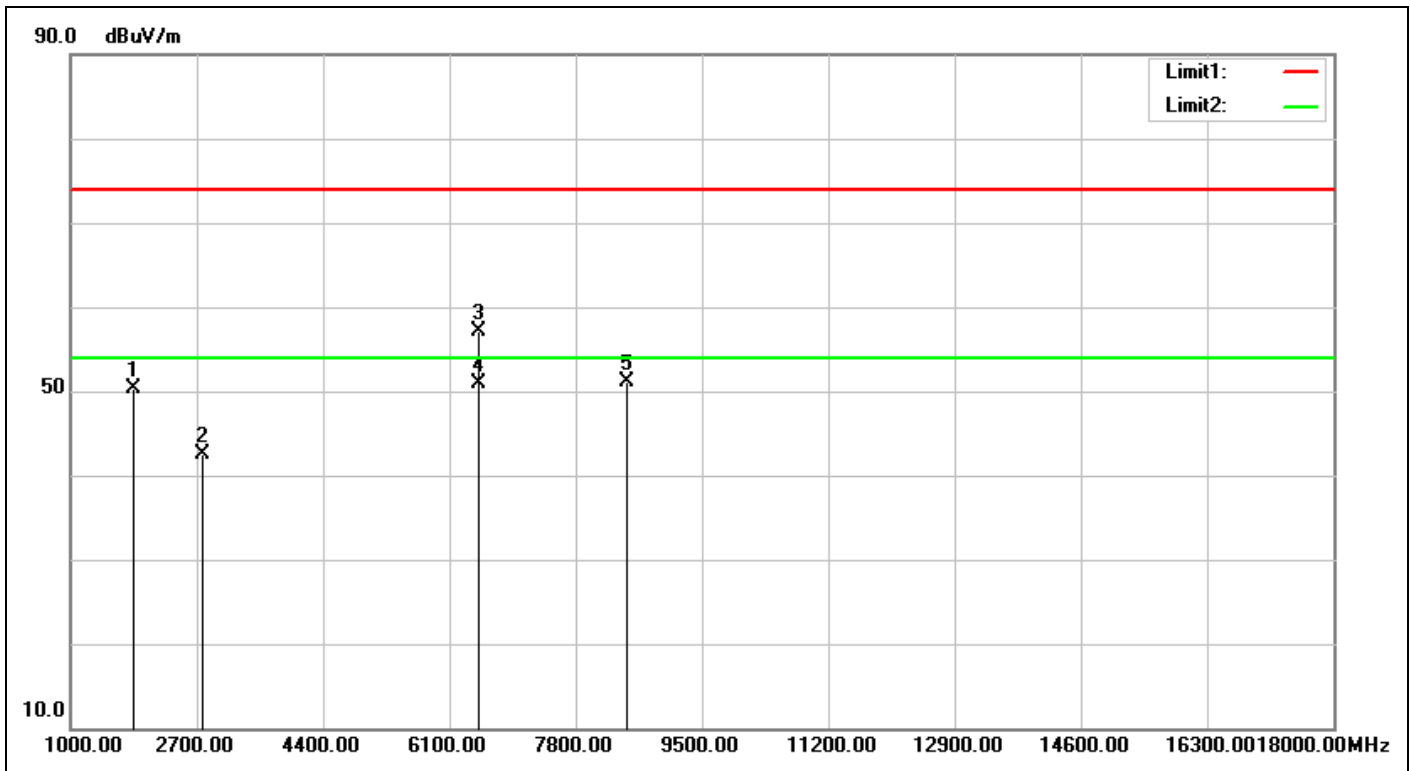
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/10 09:55:57
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%)	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1829.800	-9.30	59.66	50.36	N/A	N/A	peak	100	141	Non-Restricted band
2	2744.700	-7.62	53.06	45.44	74.00	-28.56	peak	100	18	
3/4	6404.300	3.99	53.63	57.62	N/A	N/A	peak	100	114	Non-Restricted band
5	8650.000	5.49	45.14	50.63	74.00	-23.37	peak	100	193	



Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/10 10:01:31
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	927.5-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1/2	1855.000	-9.13	72.62	63.49	N/A	N/A	peak	100	86	Non-Restricted band
3	2782.500	-7.55	57.65	50.10	74.00	-23.90	peak	100	268	
4/5	6492.500	4.36	50.09	54.45	N/A	N/A	peak	100	144	Non-Restricted band
6	8956.000	5.51	45.49	51.00	74.00	-23.00	peak	100	11	



Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/10 10:02:23
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	927.5-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1855.000	-9.13	59.41	50.28	N/A	N/A	peak	100	147	Non-Restricted band
2	2782.500	-7.55	50.09	42.54	74.00	-31.46	peak	100	88	
3/4	6492.500	4.36	52.77	57.13	N/A	N/A	peak	100	123	Non-Restricted band
5	8497.000	5.47	45.56	51.03	74.00	-22.97	peak	100	109	

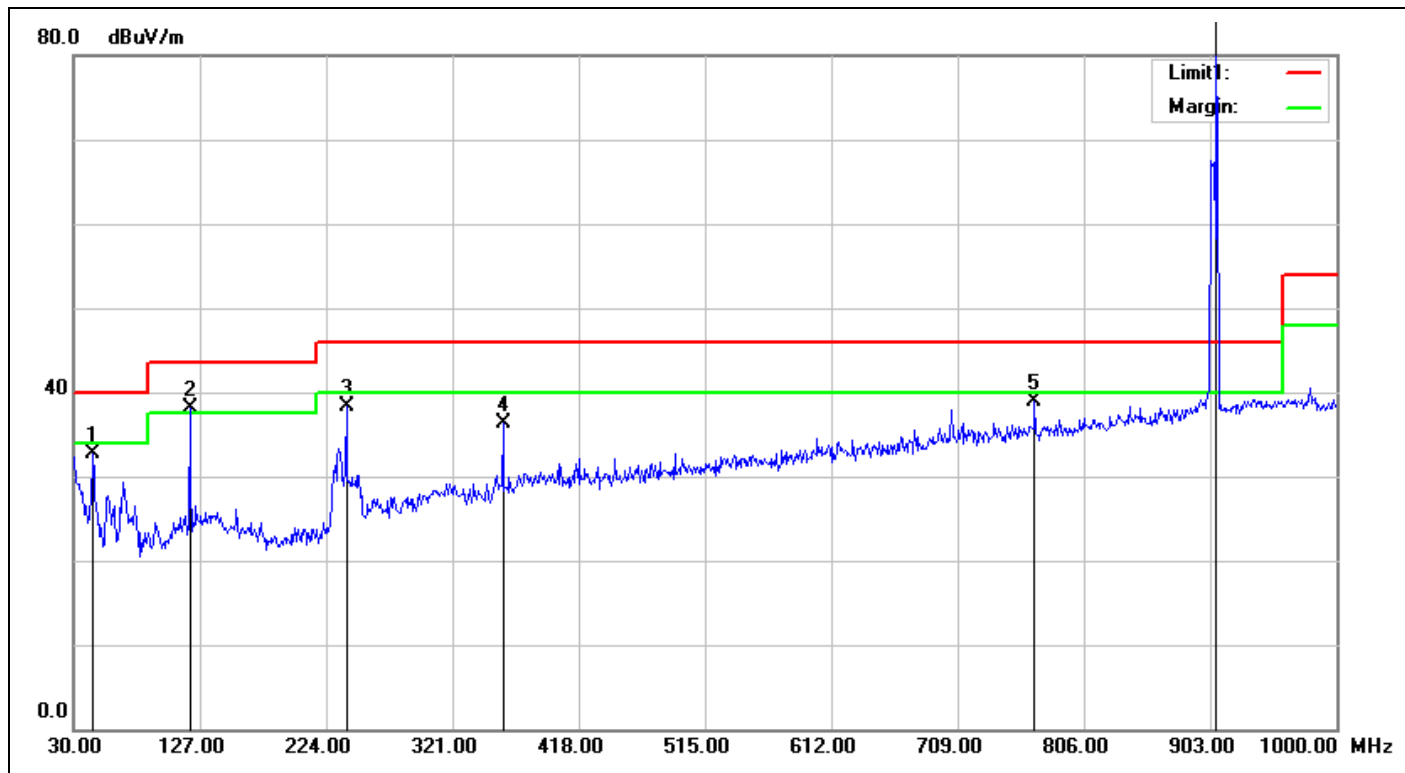
Spurious Emissions, TX Mode, 30M-1G



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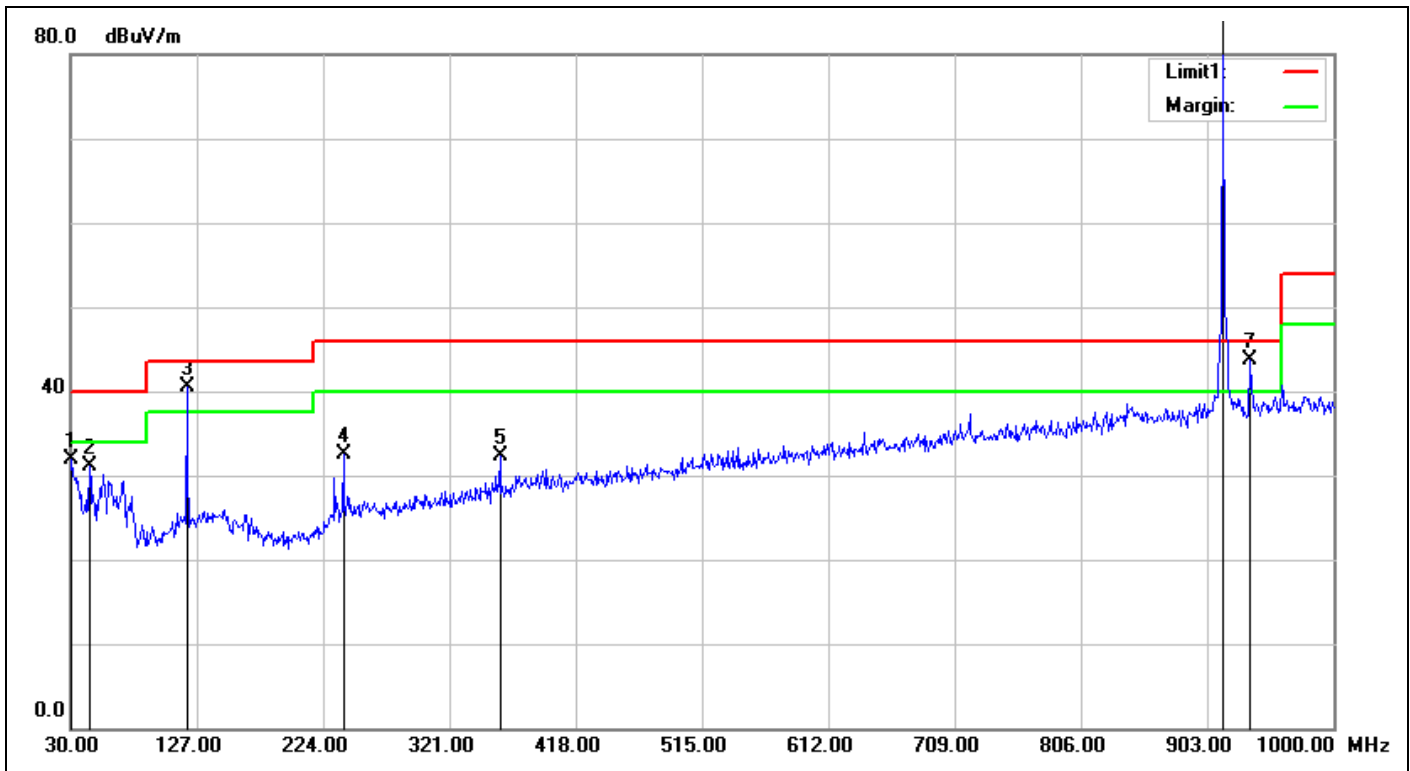
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Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/10 11:03:23
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%)	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	44.5500	-8.12	40.88	32.76	40.00	-7.24	QP	100	85	
2	119.2400	-7.44	45.54	38.10	43.50	-5.40	QP	100	293	
3	239.5200	-6.73	45.07	38.34	46.00	-7.66	QP	100	141	
4	359.8000	-3.10	39.45	36.35	46.00	-9.65	QP	100	101	
5	768.1700	2.73	36.15	38.88	46.00	-7.12	QP	100	105	
6	907.8500	4.90	88.85	93.75	46.00	47.75	QP	100	223	TX



Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/10 11:04:16
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.9700	-0.48	32.39	31.91	40.00	-8.09	QP	100	48	
2	44.5500	-8.12	39.32	31.20	40.00	-8.80	QP	100	8	
3	119.2400	-7.44	47.95	40.51	43.50	-2.99	QP	100	242	
4	239.5200	-6.73	39.28	32.55	46.00	-13.45	QP	100	90	
5	359.8000	-3.10	35.45	32.35	46.00	-13.65	QP	100	249	
6	915.6100	5.10	111.46	116.56	46.00	70.56	QP	100	163	TX
7	935.9800	5.69	38.04	43.73	46.00	-2.27	QP	100	163	

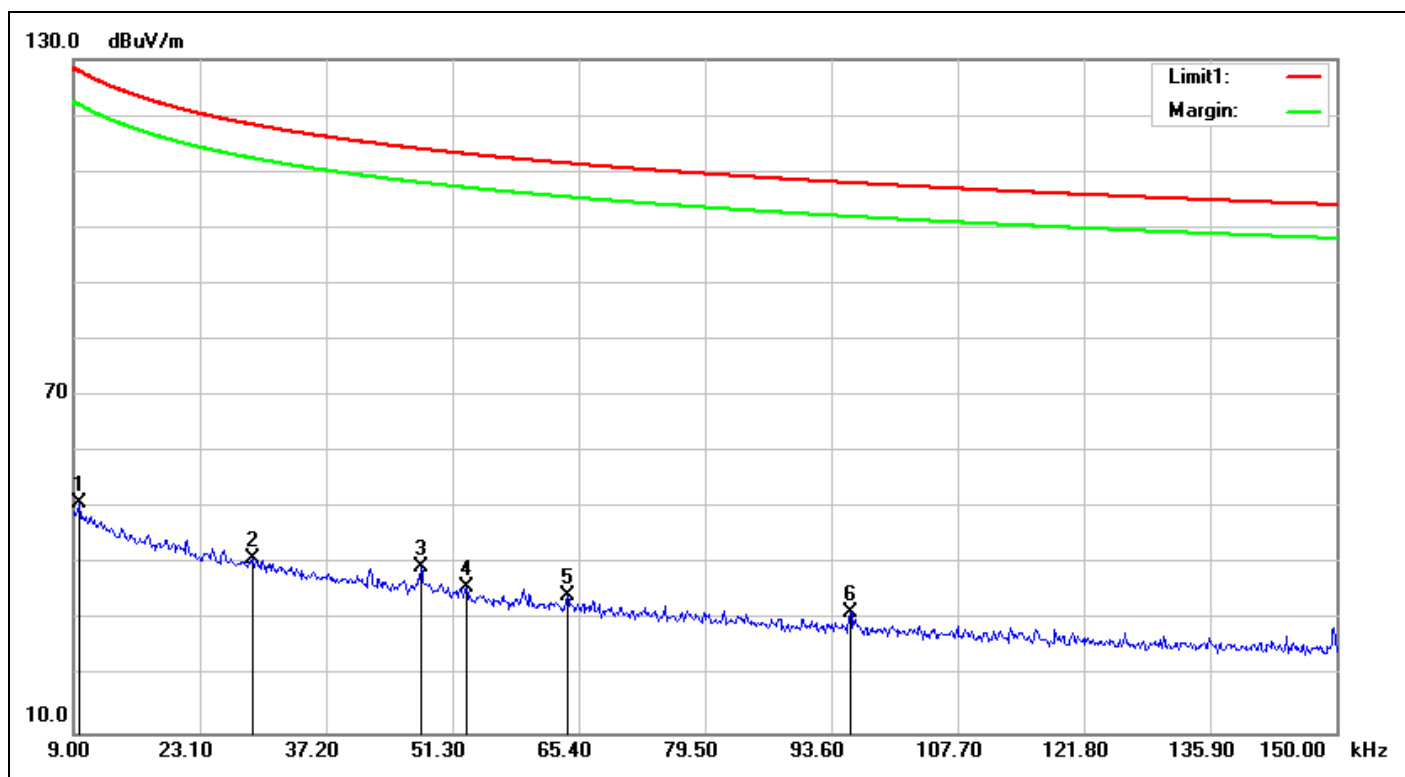
Spurious Emissions, TX Mode, 9k-30M



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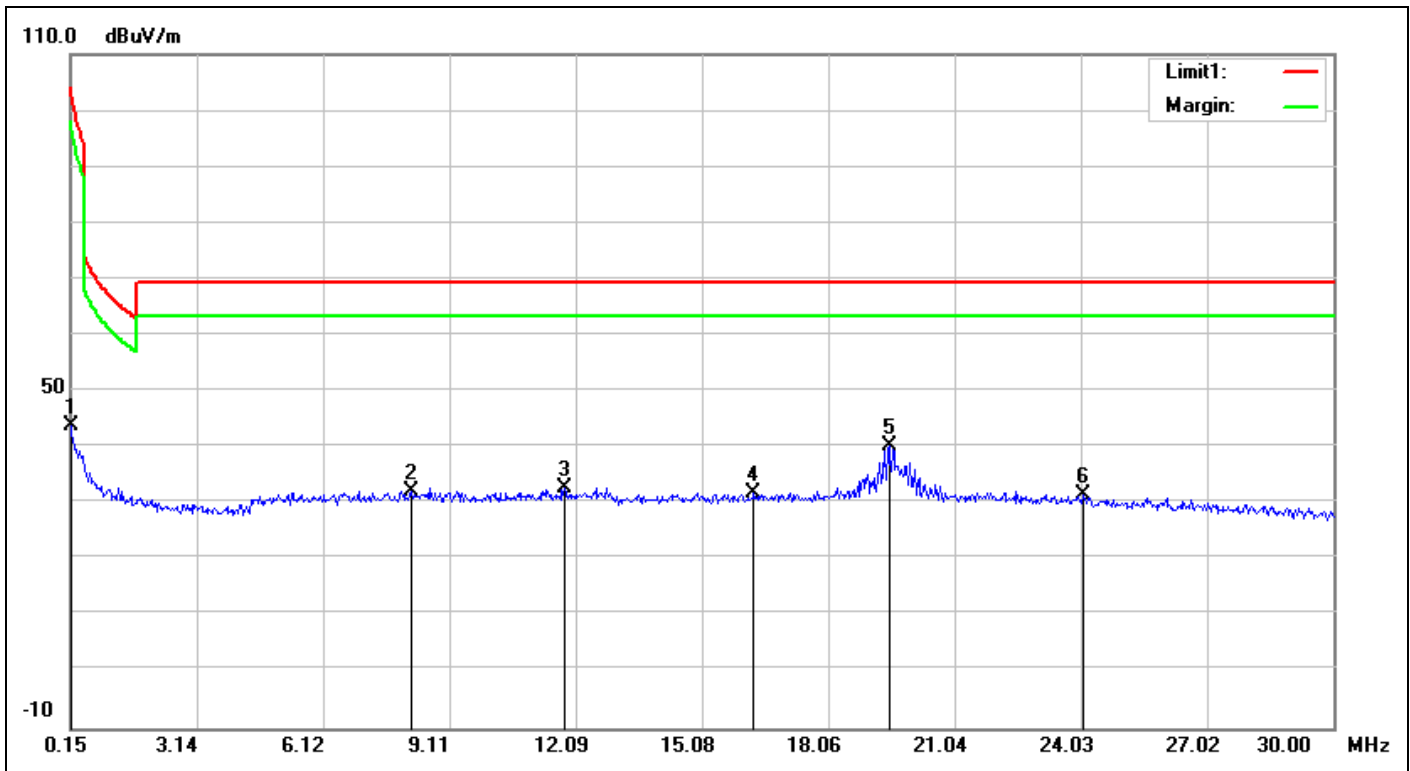
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Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/10 11:16:07
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0097	18.46	32.64	51.10	127.85	-76.75	QP	100	0	
2	0.0290	19.28	21.87	41.15	118.34	-77.19	QP	100	128	
3	0.0477	18.97	20.47	39.44	114.02	-74.58	QP	100	253	
4	0.0528	18.89	16.92	35.81	113.14	-77.33	QP	100	29	
5	0.0641	18.75	15.64	34.39	111.46	-77.07	QP	100	230	
6	0.0957	18.38	13.05	31.43	107.98	-76.55	QP	100	171	



Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/10 11:19:24
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%) :	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-TX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1500	18.36	25.35	43.71	104.08	-60.37	QP	100	345	
2	8.2095	20.09	12.07	32.16	69.50	-37.34	QP	100	181	
3	11.8213	20.65	12.05	32.70	69.50	-36.80	QP	100	121	
4	16.2988	21.17	10.58	31.75	69.50	-37.75	QP	100	118	
5	19.4928	21.54	18.79	40.33	69.50	-29.17	QP	100	115	
6	24.0897	21.75	9.75	31.50	69.50	-38.00	QP	100	121	

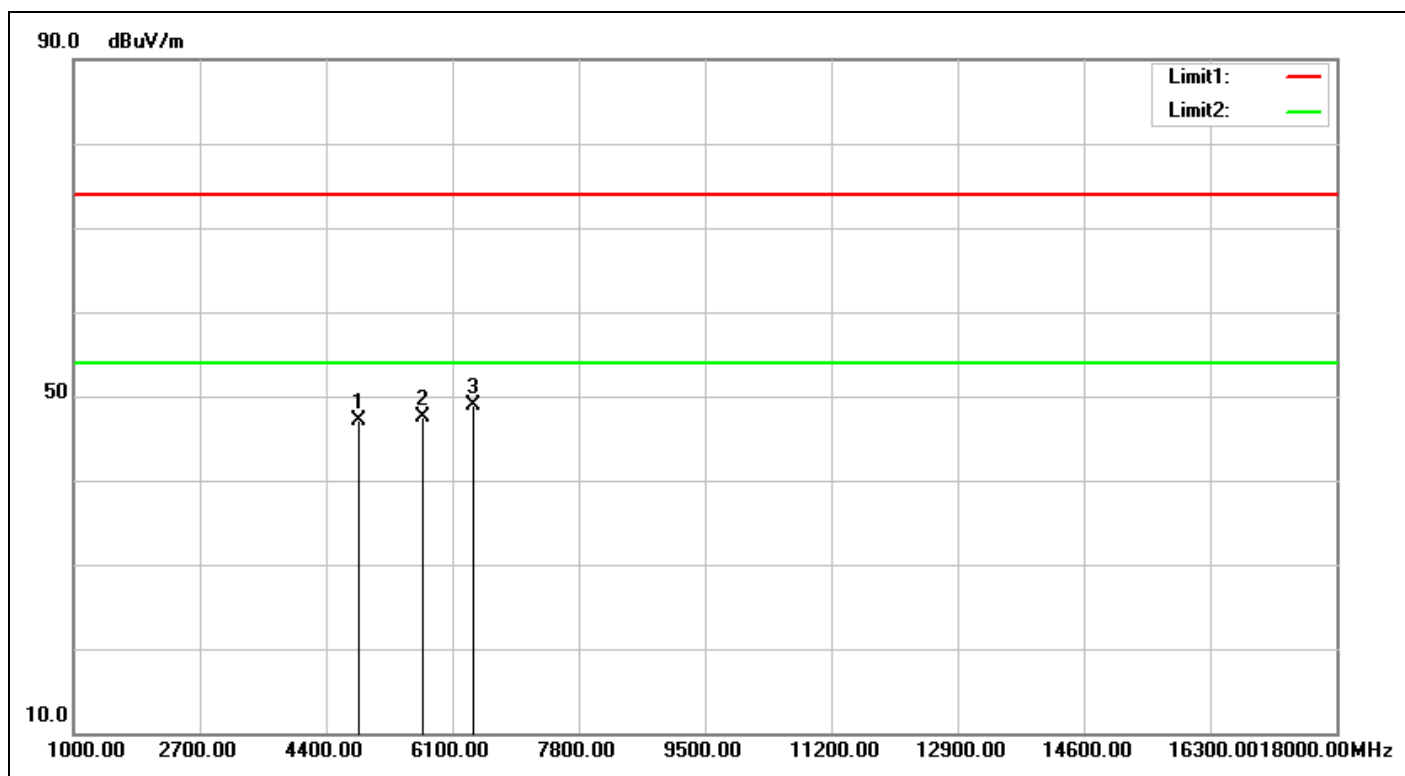
Spurious Emissions, RX Mode, 1-18G



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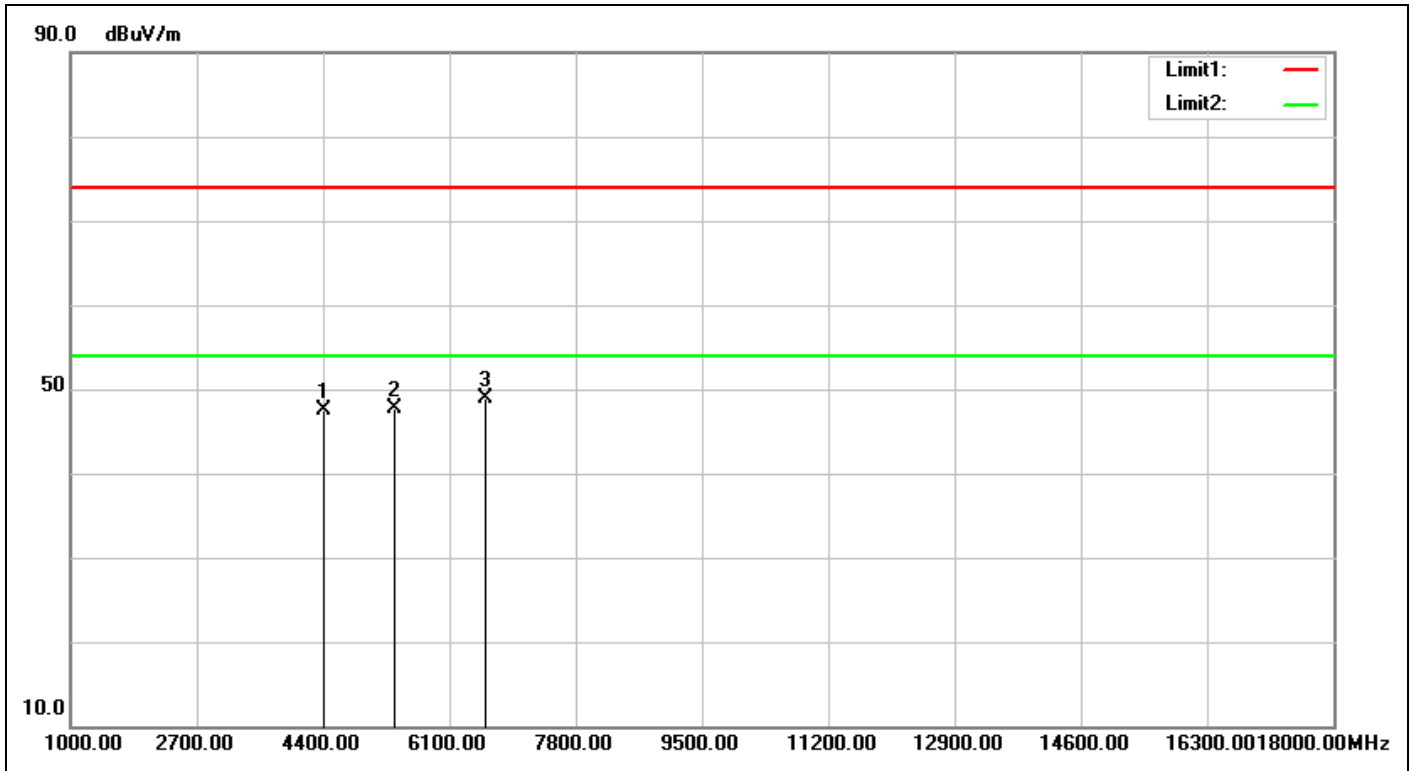
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Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/10 10:18:30
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-RX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4842.000	-3.40	50.49	47.09	74.00	-26.91	peak	100	141	
2	5692.000	0.35	47.22	47.57	74.00	-26.43	peak	100	69	
3	6389.000	3.93	45.03	48.96	74.00	-25.04	peak	100	130	



Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/10 10:19:22
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-RX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4417.000	-4.24	51.80	47.56	74.00	-26.44	peak	100	316	
2	5369.000	-1.46	49.13	47.67	74.00	-26.33	peak	100	316	
3	6576.000	4.29	44.59	48.88	74.00	-25.12	peak	100	333	

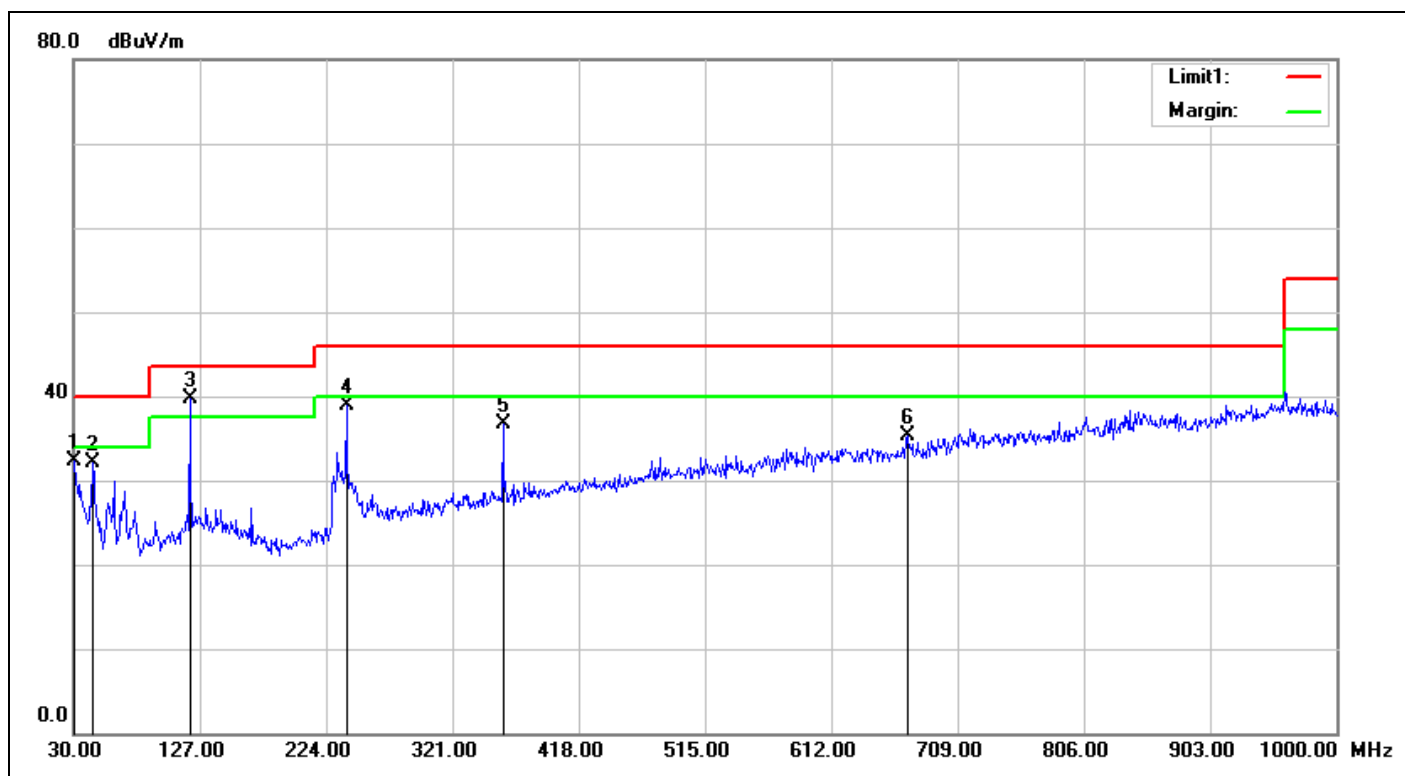
Spurious Emissions, RX Mode, 30M-1G



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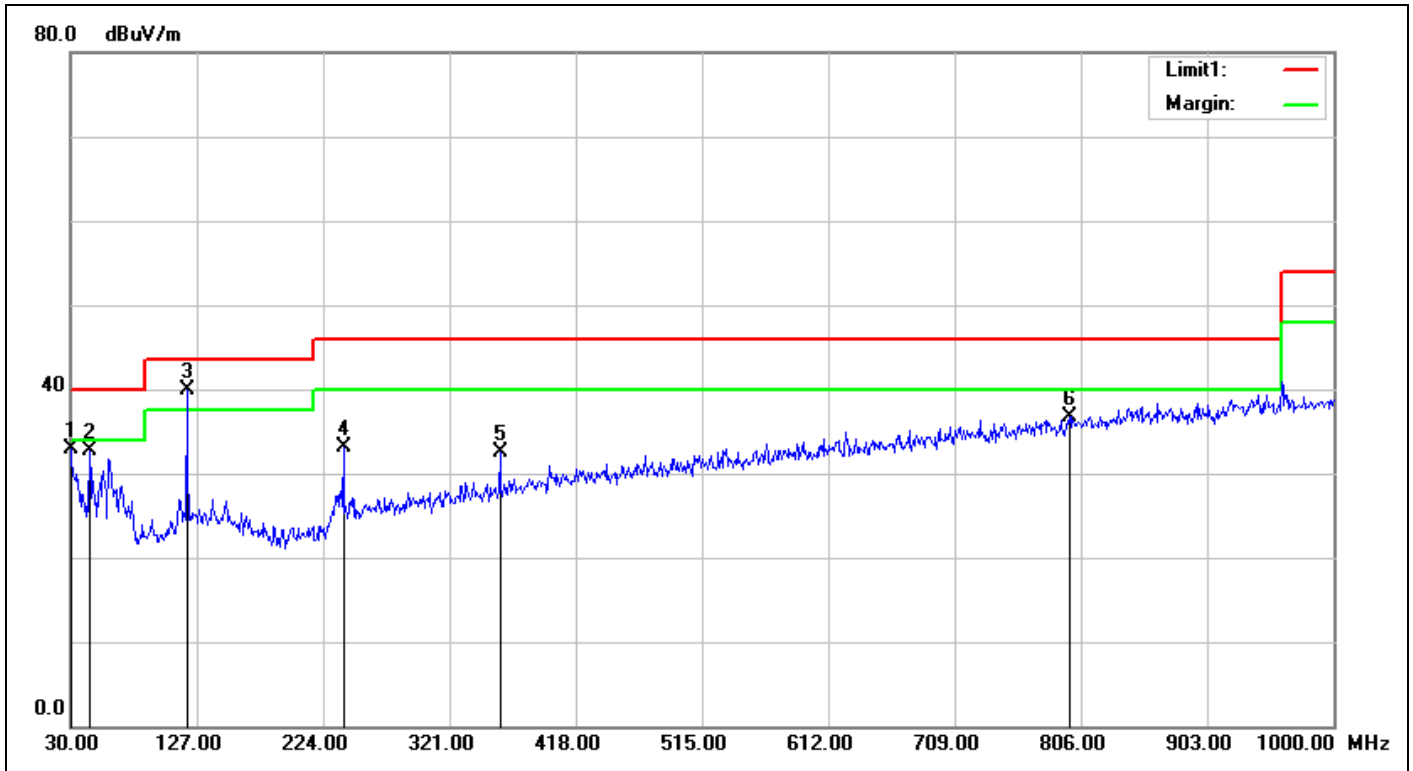
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Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/10 11:07:40
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%)	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-RX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.9700	-0.48	32.79	32.31	40.00	-7.69	QP	100	221	
2	44.5500	-8.12	40.26	32.14	40.00	-7.86	QP	100	135	
3	119.2400	-7.44	47.06	39.62	43.50	-3.88	QP	100	296	
4	239.5200	-6.73	45.64	38.91	46.00	-7.09	QP	100	132	
5	359.8000	-3.10	39.84	36.74	46.00	-9.26	QP	100	112	
6	670.2000	1.01	34.25	35.26	46.00	-10.74	QP	100	49	



Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/10 11:08:33
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-RX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	0.09	32.85	32.94	40.00	-7.06	QP	100	235	
2	44.5500	-8.12	40.81	32.69	40.00	-7.31	QP	100	107	
3	119.2400	-7.44	47.38	39.94	43.50	-3.56	QP	100	275	
4	239.5200	-6.73	39.77	33.04	46.00	-12.96	QP	100	104	
5	359.8000	-3.10	35.63	32.53	46.00	-13.47	QP	100	54	
6	797.2700	3.17	33.56	36.73	46.00	-9.27	QP	100	1	

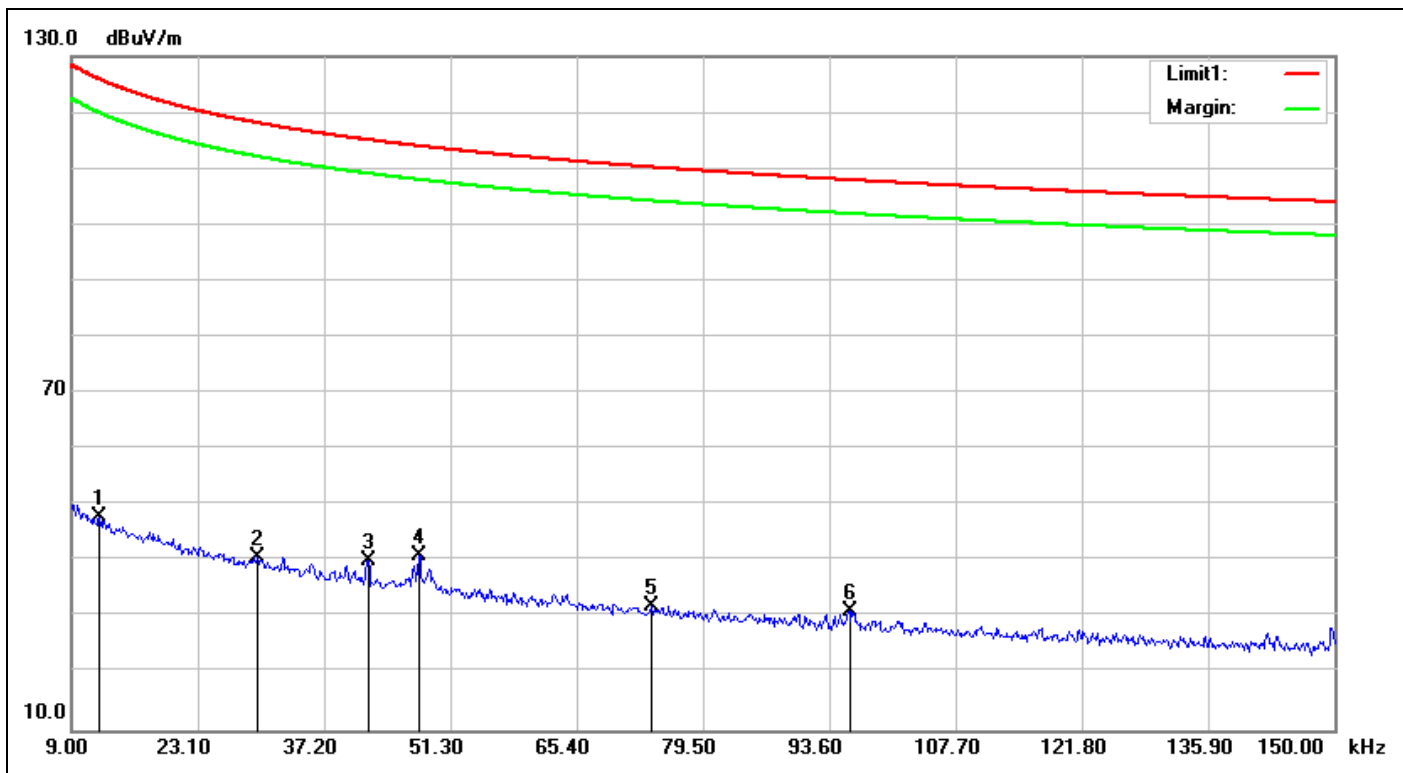
Spurious Emissions, RX Mode, 9K-30M



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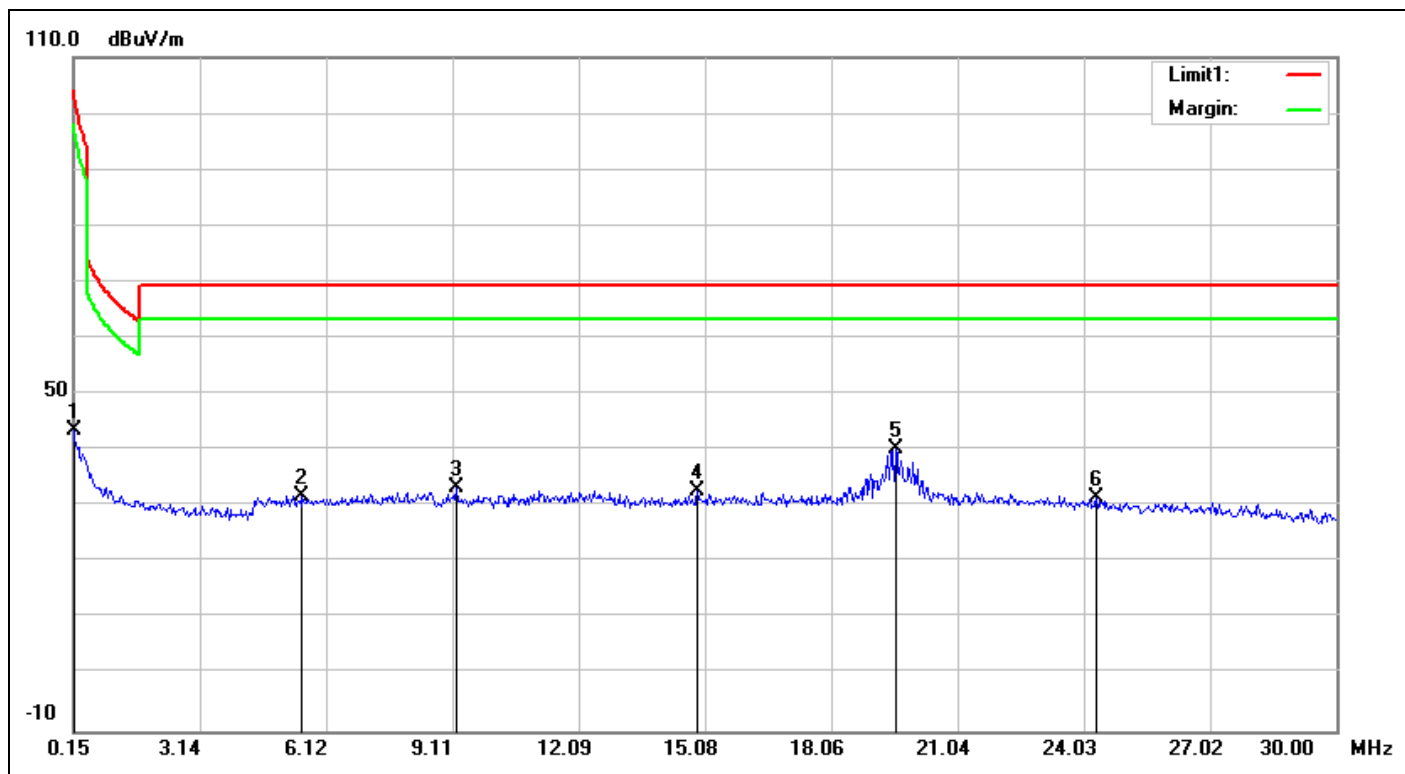
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Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/10 11:17:00
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-RX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0121	18.60	29.41	48.01	125.93	-77.92	QP	100	84	
2	0.0297	19.31	21.40	40.71	118.14	-77.43	QP	100	130	
3	0.0421	19.08	21.13	40.21	115.11	-74.90	QP	100	360	
4	0.0478	18.96	22.01	40.97	114.00	-73.03	QP	100	130	
5	0.0737	18.64	13.42	32.06	110.25	-78.19	QP	100	193	
6	0.0959	18.38	12.74	31.12	107.96	-76.84	QP	100	144	

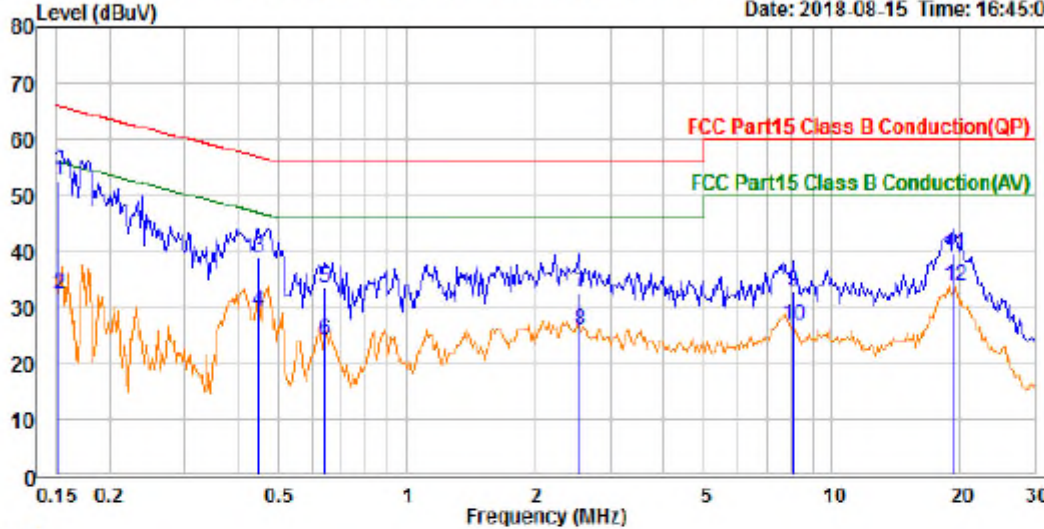


Service No.:	114077828	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/10 11:20:17
Applicant:	Microchip Technology Inc.	Test Rating:	DC 5V
Product:	SAM R34 Xplained Pro Evaluation Kit	Temp.(°C)/Hum.(%):	21(°C)/51%
Model No.:	A09-3167	Test Engineer:	Curry Chen
Test Mode:	914.9-RX		
Remark:	Power:20 sf:10 BW:125k		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1500	18.36	25.05	43.41	104.08	-60.67	QP	100	357	
2	5.5529	19.58	12.34	31.92	69.50	-37.58	QP	100	140	
3	9.1946	20.29	13.07	33.36	69.50	-36.14	QP	100	196	
4	14.8959	21.01	11.65	32.66	69.50	-36.84	QP	100	258	
5	19.5824	21.55	18.60	40.15	69.50	-29.35	QP	100	360	
6	24.3285	21.76	9.71	31.47	69.50	-38.03	QP	100	38	

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Date: 2018-08-15 Time: 16:45:08



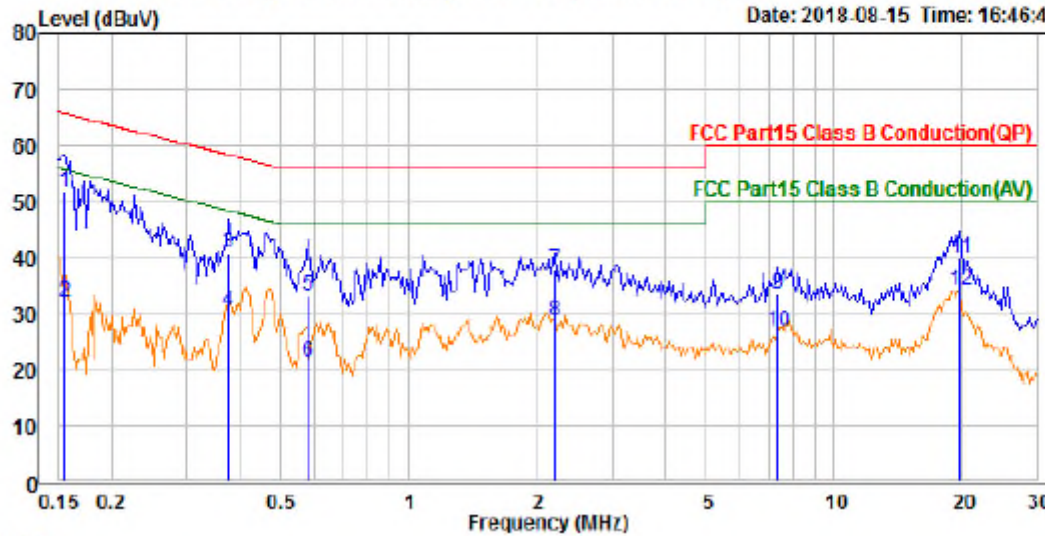
Trace: 1

Site : Conduction room
Condition : FCC Part15 Class B Conduction(QP) line1
Test Engineer: Joe Tien
Applicant : Microchip Technology Inc.
Product : SAM R34 Xplained Pro Evaluation Kit
Model No. : A09-3167
Test Rating : 120Vac/60Hz
Tmp/Hum : 23.3 °C / 41 %
Memo : USB & Lora link

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.151	42.97	9.68	52.65	65.92	-13.27	QP
2	0.151	22.68	9.68	32.36	55.92	-23.56	Average
3	0.448	29.36	9.69	39.05	56.92	-17.87	QP
4	0.448	19.48	9.69	29.17	46.92	-17.75	Average
5	0.640	23.81	9.69	33.50	56.00	-22.50	QP
6	0.640	14.21	9.69	23.90	46.00	-22.10	Average
7	2.550	22.83	9.72	32.55	56.00	-23.45	QP
8	2.550	16.10	9.72	25.82	46.00	-20.18	Average
9	8.077	22.94	9.81	32.75	60.00	-27.25	QP
10	8.077	16.86	9.81	26.67	50.00	-23.33	Average
11	19.372	29.64	9.86	39.50	60.00	-20.50	QP
12	19.372	23.81	9.86	33.67	50.00	-16.33	Average

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Date: 2018-08-15 Time: 16:46:48



Trace: 1

Site : Conduction room
Condition : FCC Part15 Class B Conduction(QP) neutral
Test Engineer: Joe Tien
Applicant : Microchip Technology Inc.
Product : SAM R34 Xolained Pro Evaluation Kit
Model No. : A09-3167
Test Rating : 120Vac/60Hz
Tmp/Hum : 23.3 °C / 41 %
Memo : USB & Lora link

	Read Freq	Level dBuV	Factor dB	Level dBuV	Limit Line dBuV	Over Limit dB	Remark
	MHz						
1	0.155	41.95	9.68	51.63	65.75	-14.12	QP
2	0.155	22.23	9.68	31.91	55.75	-23.84	Average
3	0.374	31.12	9.68	40.80	58.40	-17.60	QP
4	0.374	20.69	9.68	30.37	48.40	-18.03	Average
5	0.580	23.43	9.68	33.11	56.00	-22.89	QP
6	0.580	11.63	9.68	21.31	46.00	-24.69	Average
7	2.196	27.94	9.72	37.66	56.00	-18.34	QP
8	2.196	18.75	9.72	28.47	46.00	-17.53	Average
9	7.386	23.62	9.80	33.42	60.00	-26.58	QP
10	7.386	16.98	9.80	26.78	50.00	-23.22	Average
11	19.761	29.96	9.91	39.87	60.00	-20.13	QP
12	19.761	24.12	9.91	34.03	50.00	-15.97	Average