

Test Report No.50176780 001

Appendix D: Radiated and Mains Spurious Emission Data

(File: 50176780 001 AppendixD)

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Chip Antenna

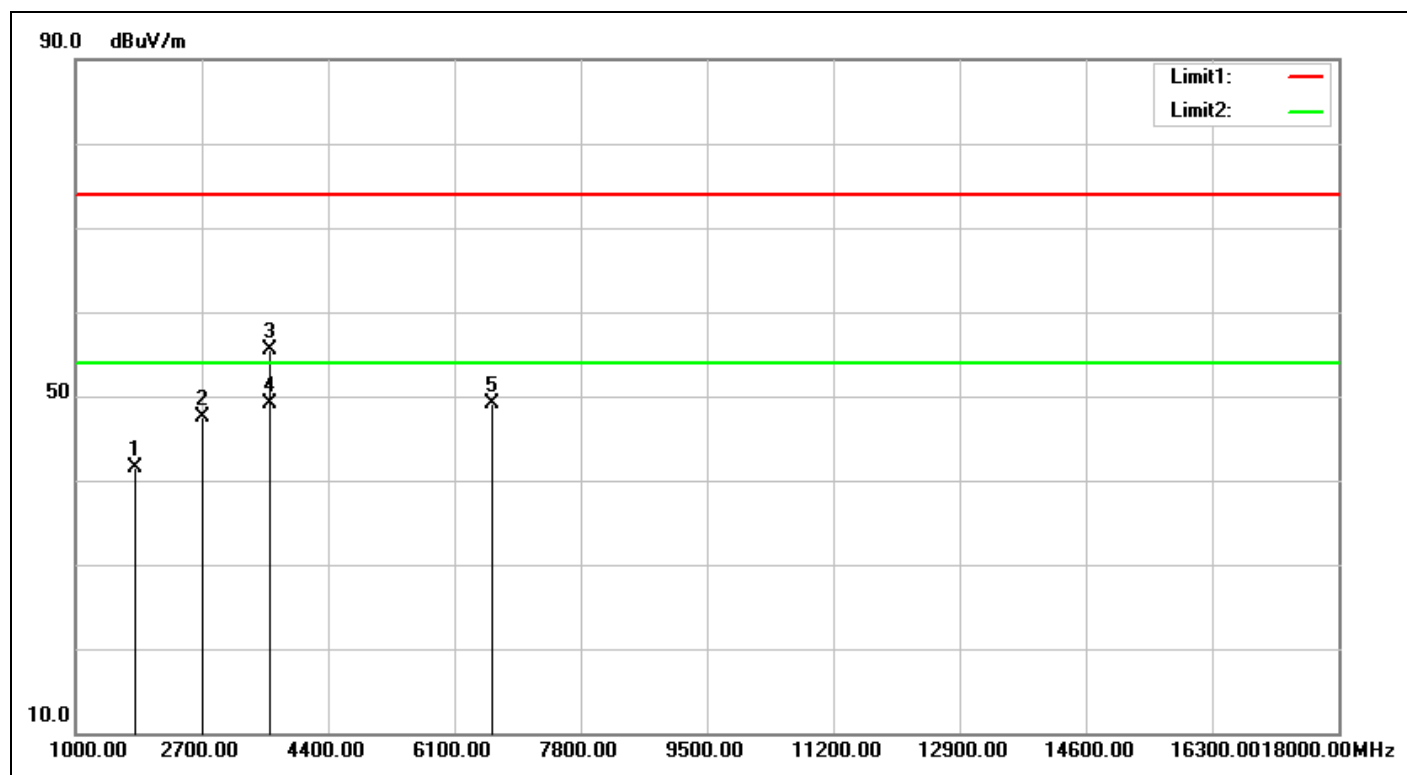
Spurious Emissions, TX Mode, 1-18G, 40kbps, BPSK



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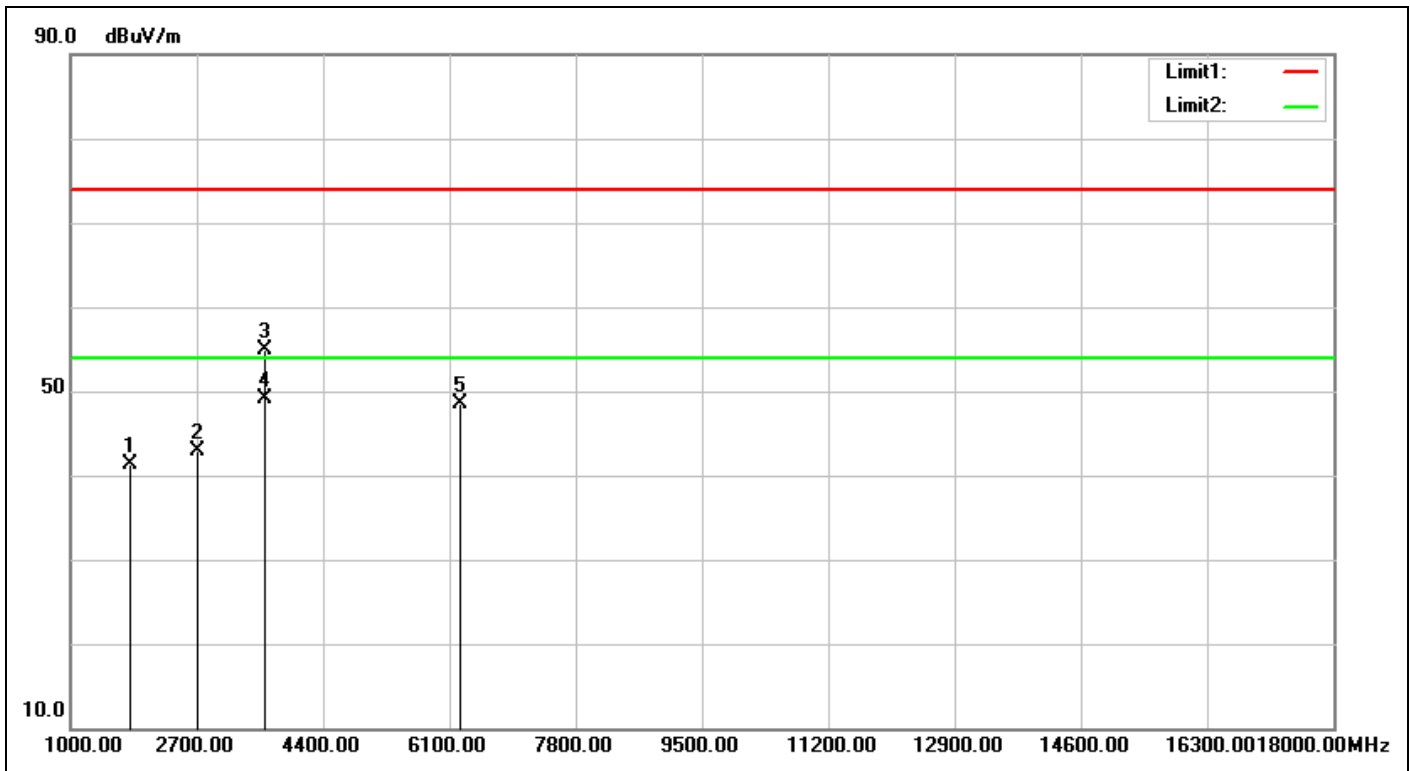
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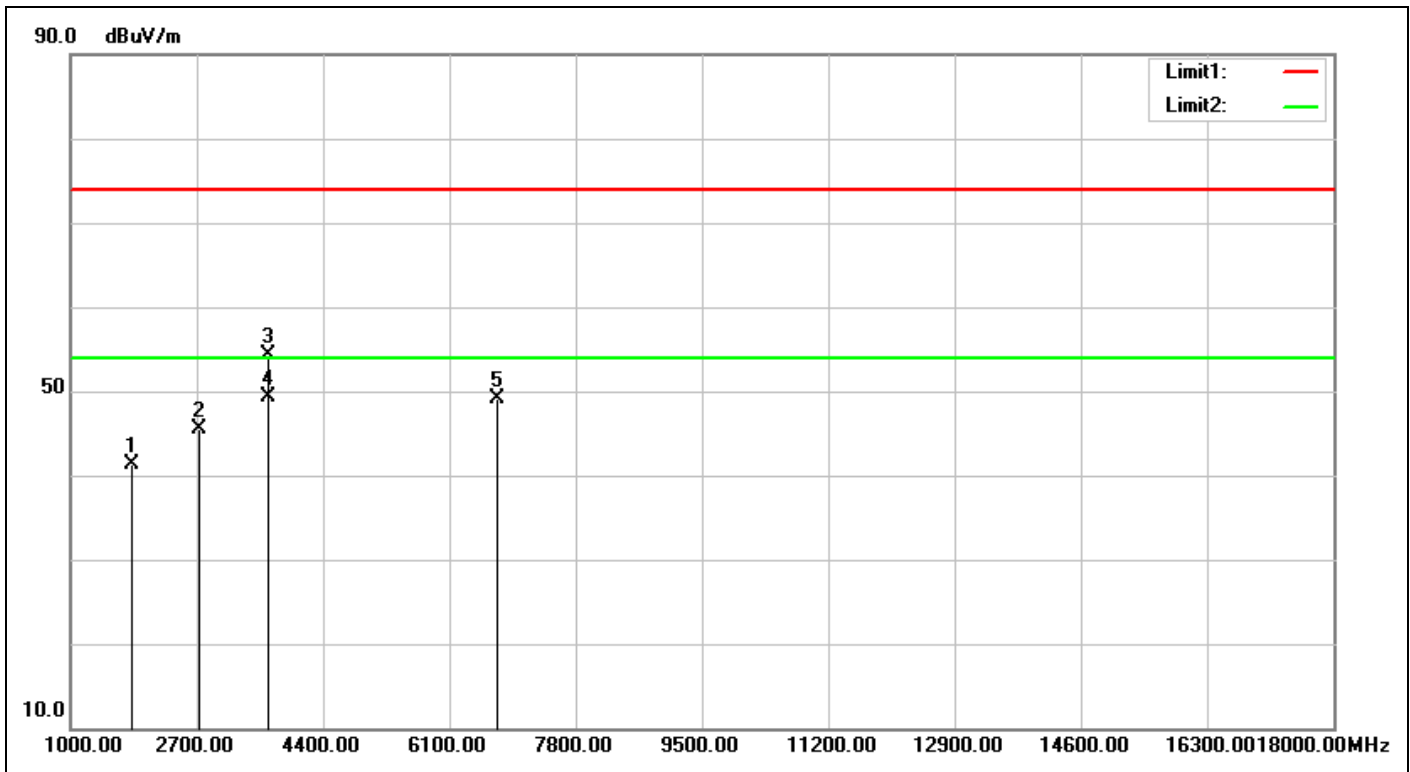
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 13:39:15
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	Chip antenna		
	40kbps, BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	50.99	41.57	74.00	-32.43	peak		0	
2	2718.000	-7.66	55.17	47.51	74.00	-26.49	peak	100	113	
3	3624.000	-6.53	62.07	55.54	74.00	-18.46	peak	100	4	
4	3624.000	-6.53	55.54	49.01	54.00	-4.99	AVG	100	4	
5	6610.000	4.25	44.81	49.06	74.00	-24.94	peak	100	355	



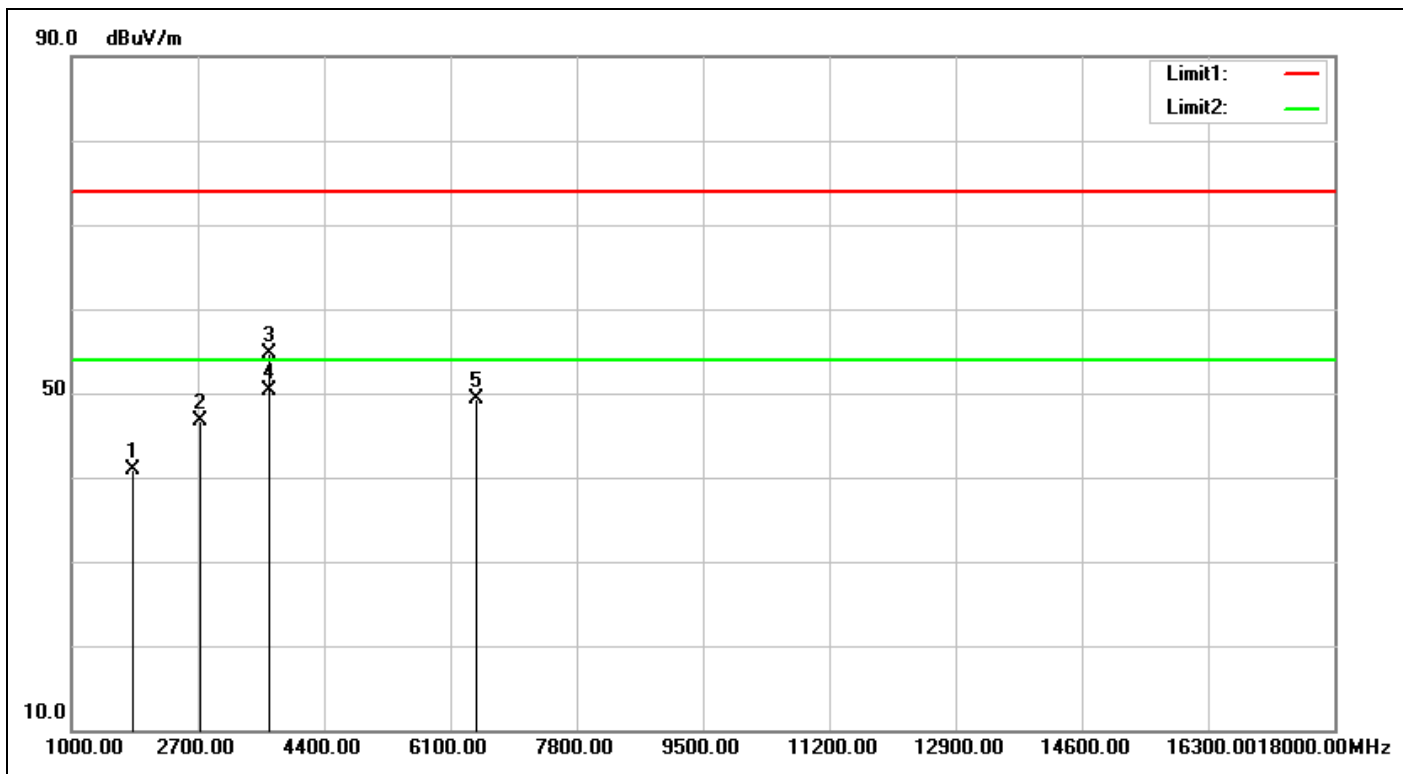
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 13:40:08
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	50.68	41.26	74.00	-32.74	peak			
2	2718.000	-7.66	50.60	42.94	74.00	-31.06	peak			
3	3624.000	-6.53	61.37	54.84	74.00	-19.16	peak	100	210	
4	3624.000	-6.53	55.63	49.10	54.00	-4.90	AVG	100	210	
5	6253.000	3.35	45.10	48.45	74.00	-25.55	peak	100	1	



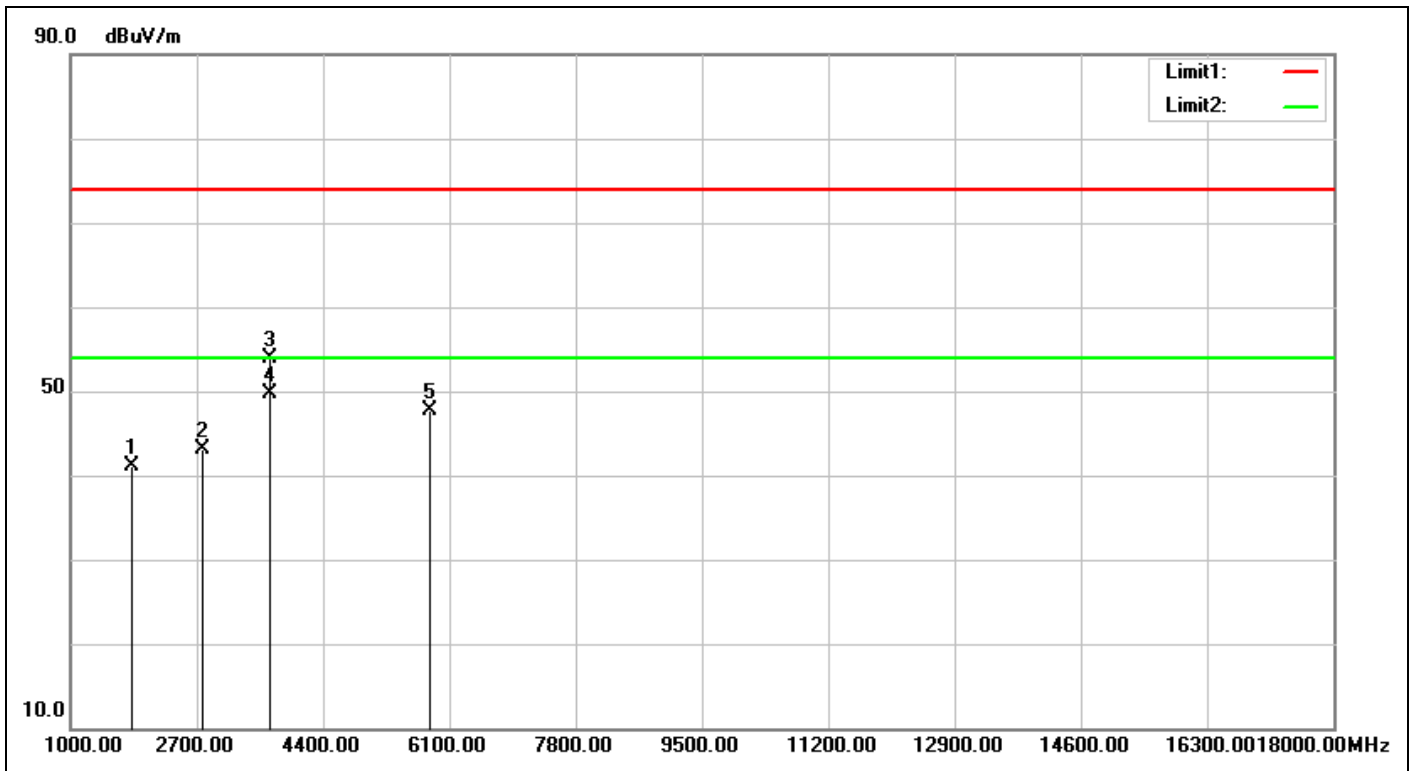
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 13:46:24
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	50.54	41.23	74.00	-32.77	peak			
2	2742.000	-7.62	53.13	45.51	74.00	-28.49	peak	100	274	
3	3656.000	-6.45	60.67	54.22	74.00	-19.78	peak	100	7	
4	3656.000	-6.45	55.66	49.21	54.00	-4.79	AVG	100	7	
5	6746.000	4.07	44.97	49.04	74.00	-24.96	peak	100	290	



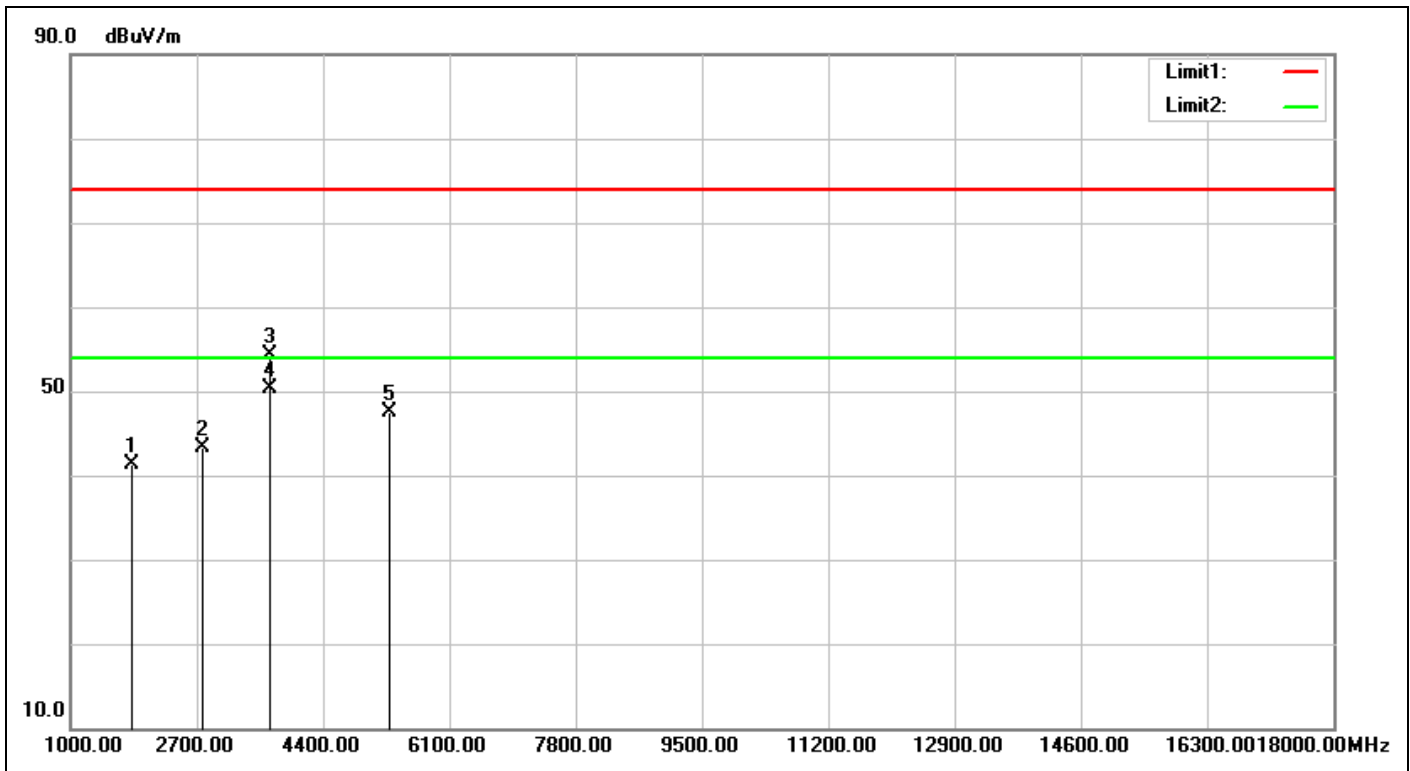
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 13:47:17
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	50.24	40.93	74.00	-33.07	peak			
2	2742.000	-7.62	54.34	46.72	74.00	-27.28	peak	100	196	
3	3656.000	-6.45	61.15	54.70	74.00	-19.30	peak	100	213	
4	3656.000	-6.45	56.84	50.39	54.00	-3.61	AVG	100	213	
5	6440.000	4.14	45.15	49.29	74.00	-24.71	peak	100	196	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 13:52:29
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.20	41.02	74.00	-32.98	peak			
2	2772.000	-7.57	50.58	43.01	74.00	-30.99	peak			
3	3696.000	-6.37	60.20	53.83	74.00	-20.17	peak	100	157	
4	3696.000	-6.37	56.14	49.77	54.00	-4.23	AVG	100	157	
5	5828.000	1.21	46.58	47.79	74.00	-26.21	peak	100	353	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 13:53:22
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.48	41.30	74.00	-32.70	peak			
2	2772.000	-7.57	50.83	43.26	74.00	-30.74	peak			
3	3696.000	-6.37	60.61	54.24	74.00	-19.76	peak	100	214	
4	3696.000	-6.37	56.73	50.36	54.00	-3.64	AVG	100	214	
5	5301.000	-1.77	49.33	47.56	74.00	-26.44	peak	100	334	

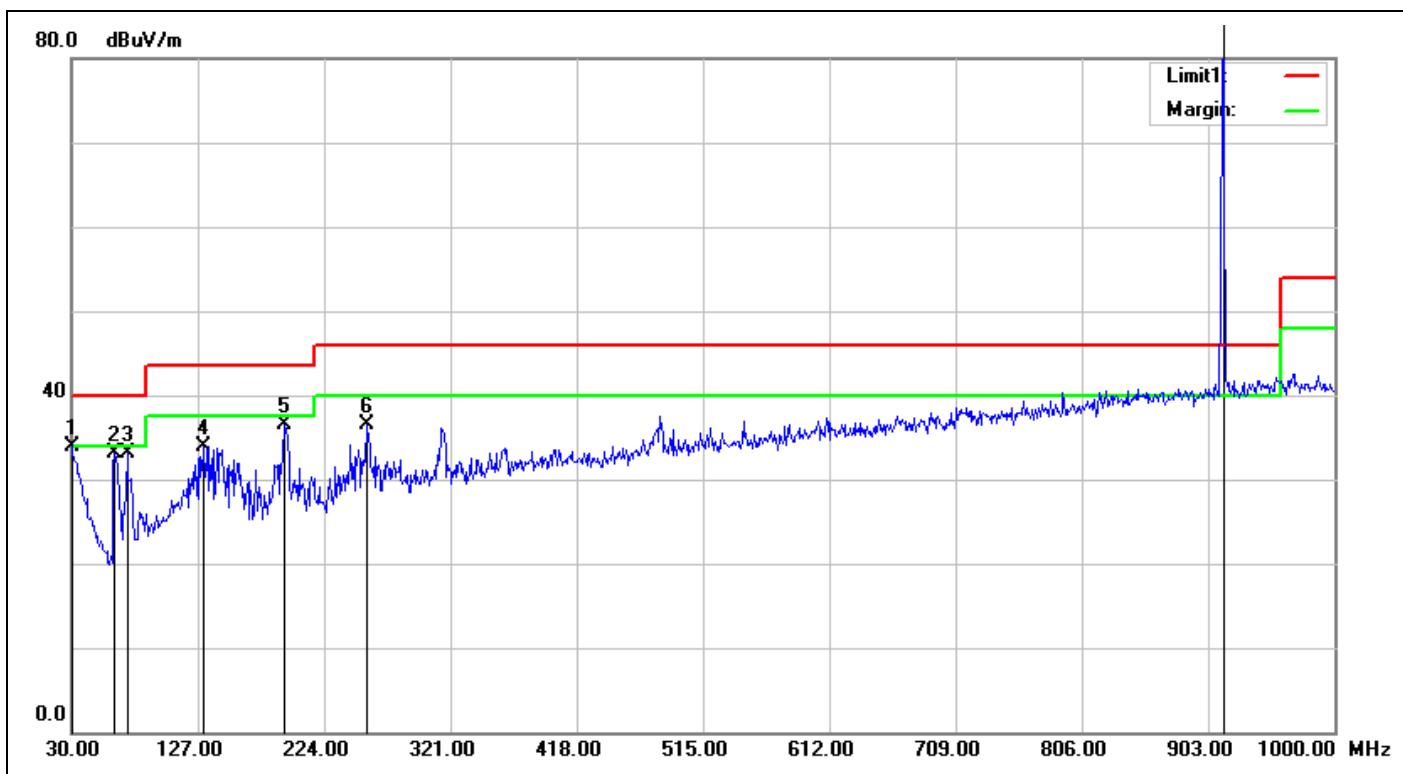
Spurious Emissions, TX Mode, 30M-1G, 40kbps,BPSK



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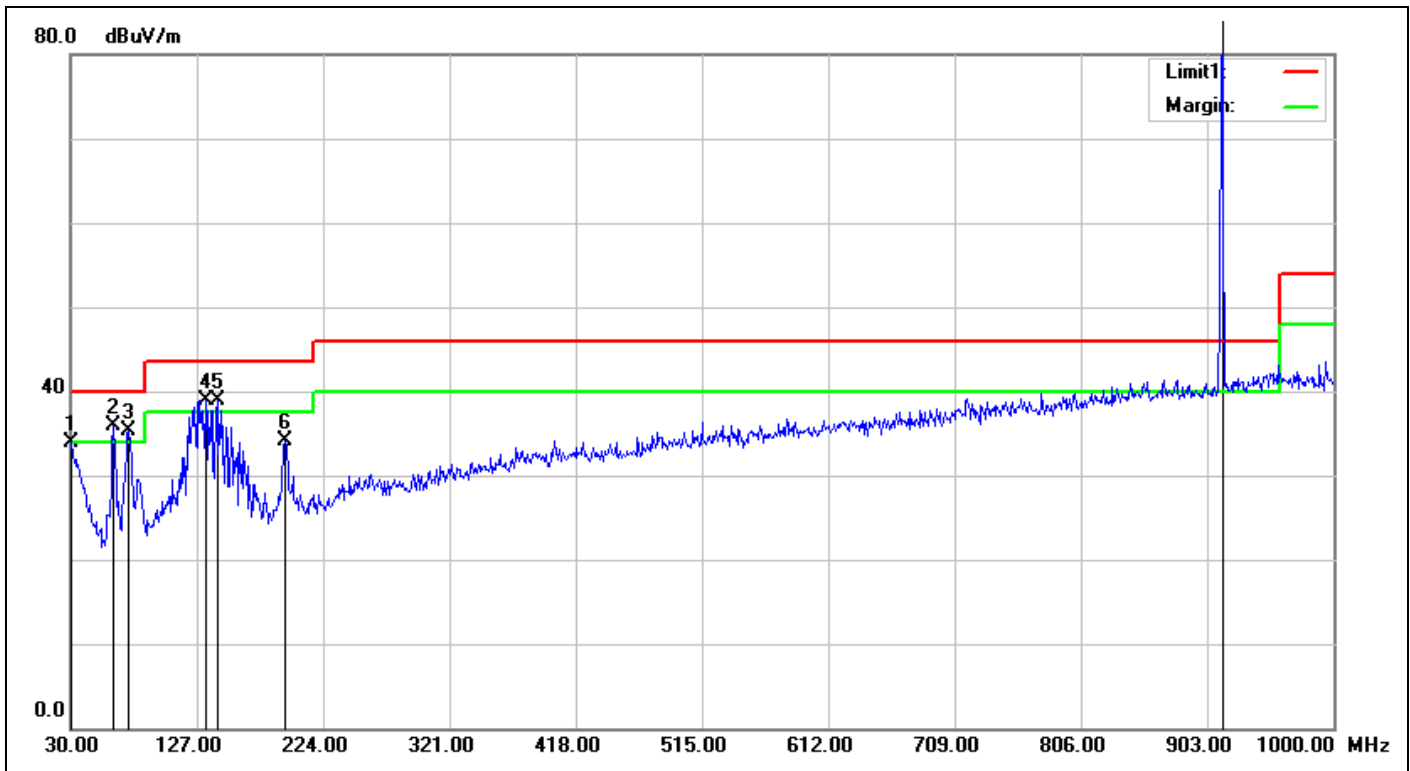
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 13:02:35
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	35.39	33.99	40.00	-6.01	QP	100	43	
2	62.9799	-14.91	48.00	33.09	40.00	-6.91	QP	100	293	
3	72.6800	-14.25	47.45	33.20	40.00	-6.80	QP	100	161	
4	131.8499	-8.45	42.44	33.99	43.50	-9.51	QP	100	138	
5	193.9299	-10.77	47.24	36.47	43.50	-7.03	QP	100	233	
6	256.9800	-6.71	43.14	36.43	46.00	-9.57	QP	100	220	
7	914.6399	4.25	91.64	95.89	46.00	49.89	QP	100	3	TX



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 13:03:28
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.9700	-1.98	35.96	33.98	40.00	-6.02	QP	100	226	
2	62.9800	-14.91	50.91	36.00	40.00	-4.00	QP	100	187	
3	74.6200	-14.00	49.33	35.33	40.00	-4.67	QP	100	193	
4	133.7899	-8.44	47.33	38.89	43.50	-4.61	QP	100	212	
5	143.4900	-8.54	47.47	38.93	43.50	-4.57	QP	100	196	
6	194.9000	-10.72	44.74	34.02	43.50	-9.48	QP	100	206	
7	914.6400	4.25	86.79	91.04	46.00	45.04	QP	100	311	TX

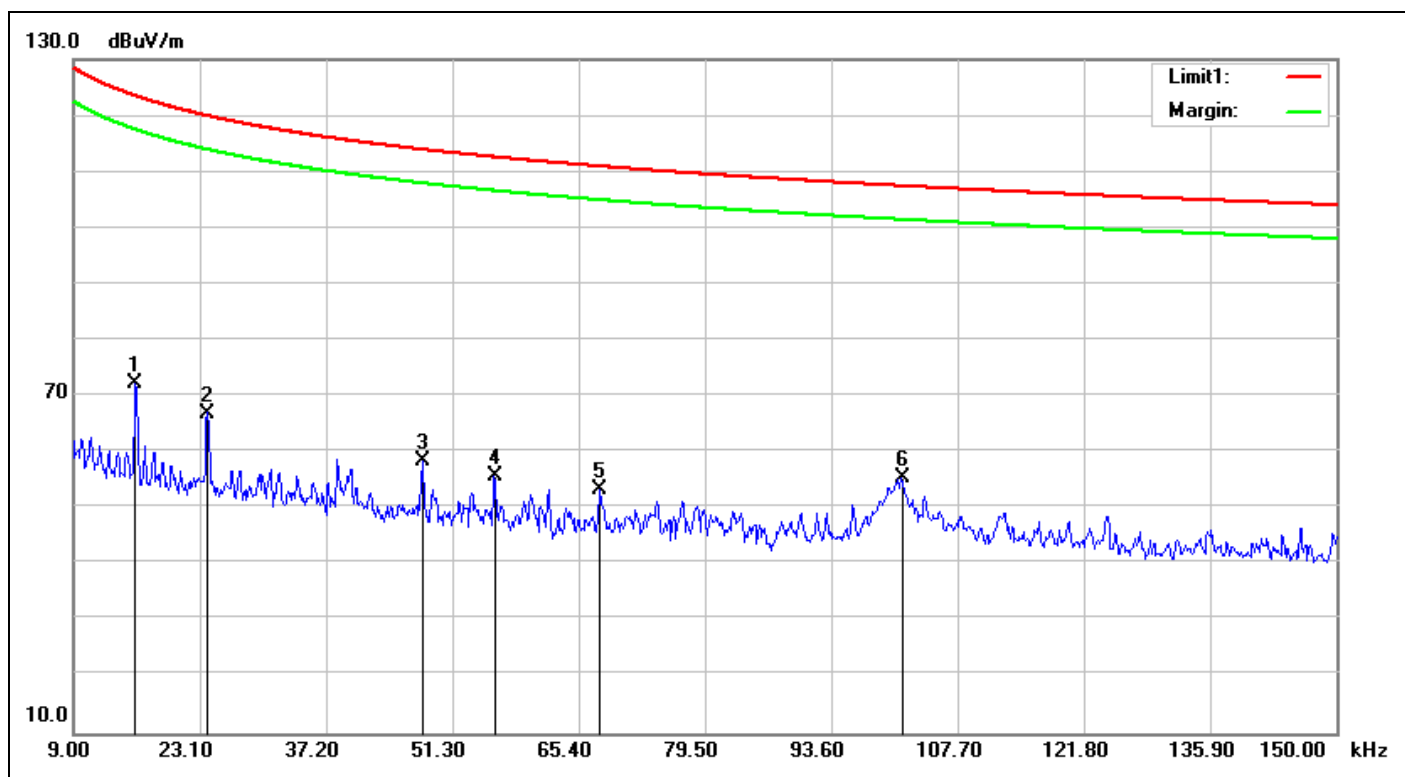
Spurious Emissions, TX Mode, 9k-30M, 40kbps,BPSK



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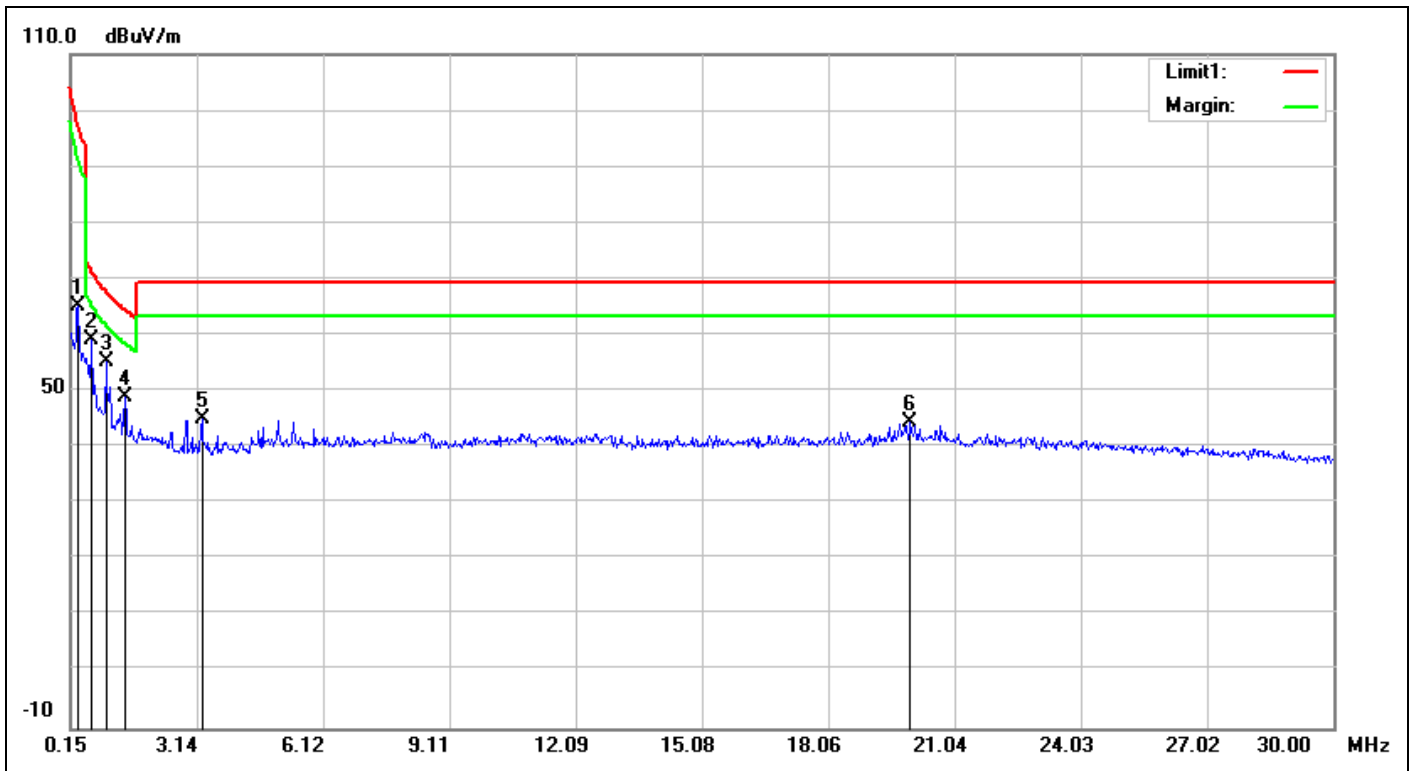
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/16 13:15:40
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	53.61	72.37	123.48	-51.11	QP	100	194	
2	0.0239	19.08	47.92	67.00	119.95	-52.95	QP	100	197	
3	0.0479	18.96	39.44	58.40	113.93	-55.53	QP	100	197	
4	0.0560	18.85	37.00	55.85	112.58	-56.73	QP	100	197	
5	0.0678	18.71	34.51	53.22	110.92	-57.70	QP	100	237	
6	0.1014	18.33	37.00	55.33	107.44	-52.11	QP	100	207	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/16 13:19:55
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	46.58	65.05	97.24	-32.19	QP	100	256	
2	0.6574	18.66	40.41	59.07	71.25	-12.18	QP	100	266	
3	0.9858	18.68	36.57	55.25	67.74	-12.49	QP	100	249	
4	1.4336	18.65	30.19	48.84	64.50	-15.66	QP	100	200	
5	3.2544	18.64	26.40	45.04	69.50	-24.46	QP	100	206	
6	20.0003	21.60	23.00	44.60	69.50	-24.90	QP	100	216	

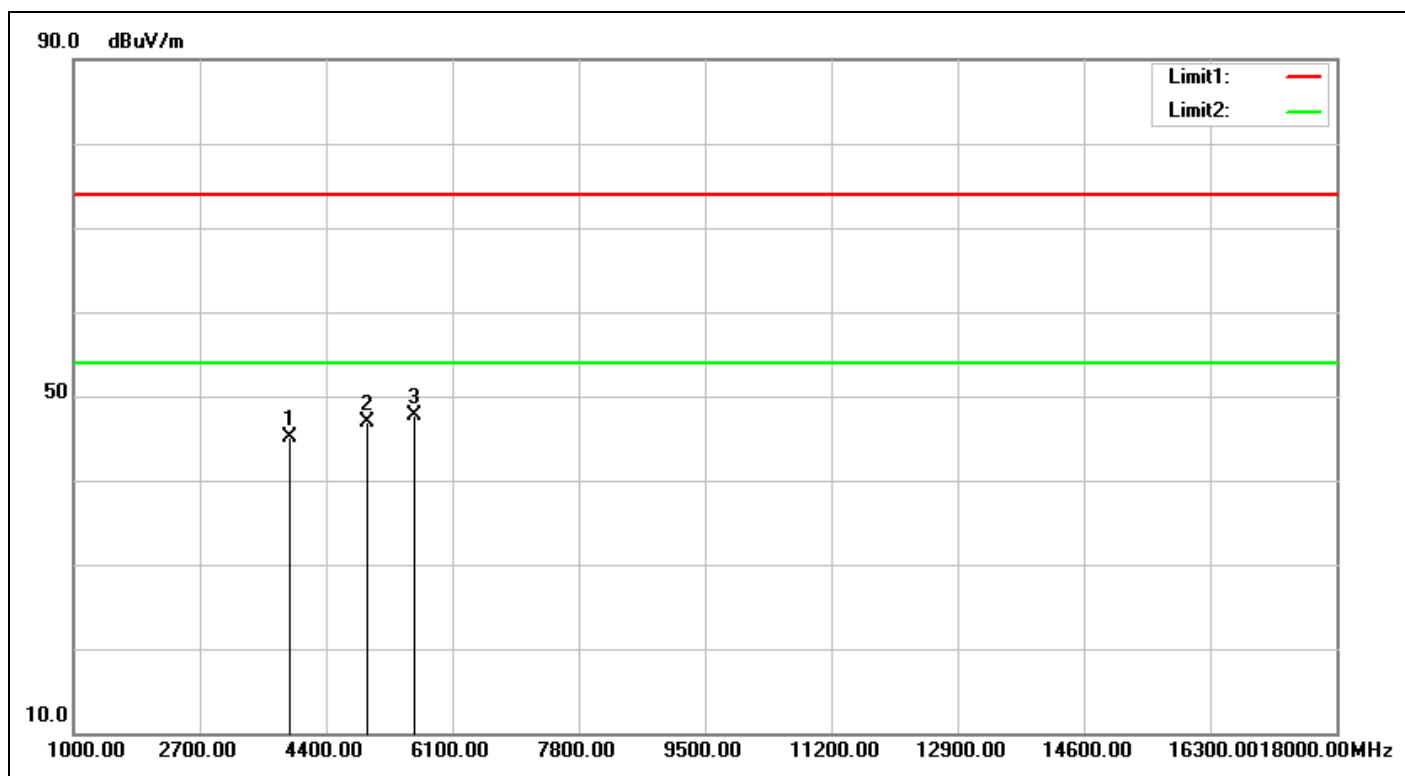
Spurious Emissions, RX Mode, 1-18G, 40kbps, BPSK



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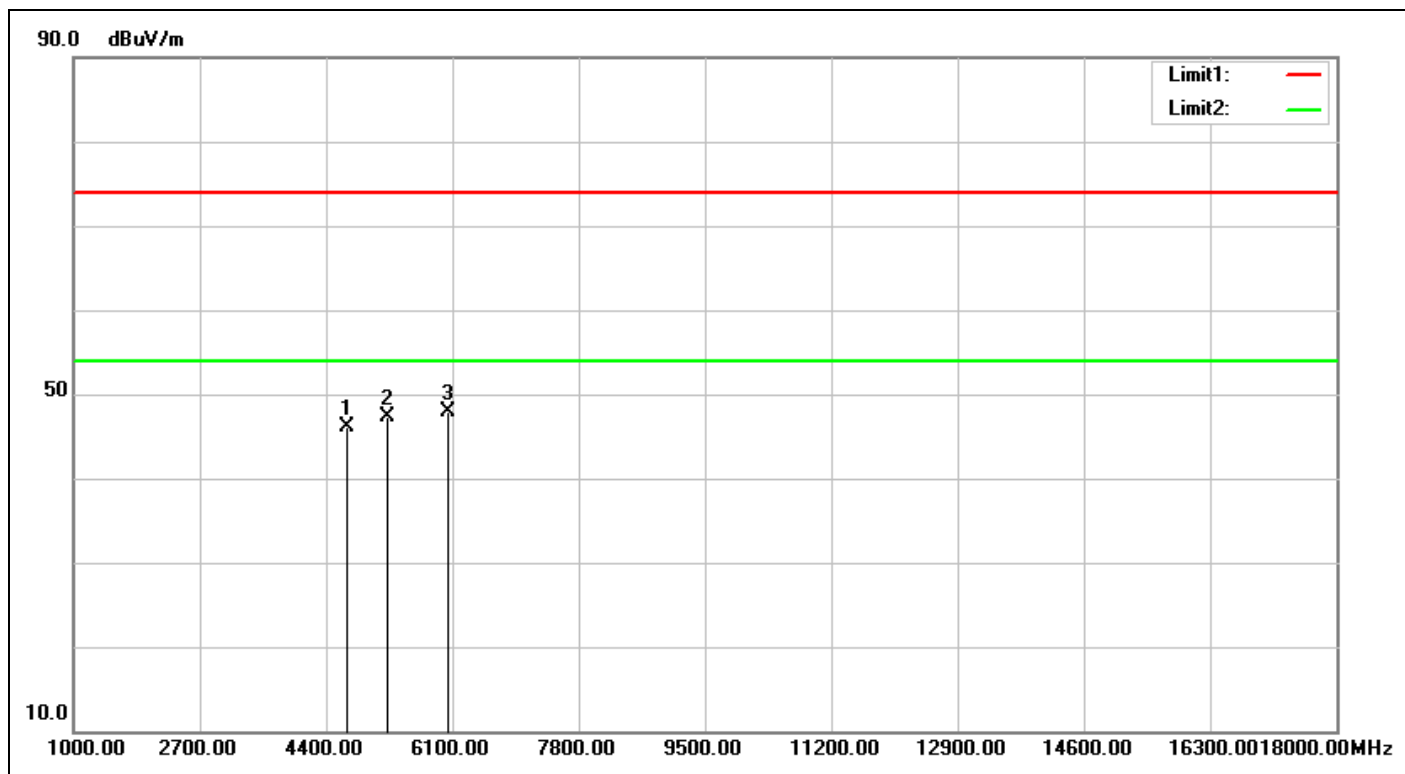
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:17:25
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	40kbps, BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	3907.000	-5.91	50.93	45.02	74.00	-28.98	peak	100	71	
2	4961.000	-3.21	50.02	46.81	74.00	-27.19	peak	100	235	
3	5590.000	-0.28	48.08	47.80	74.00	-26.20	peak	100	321	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:18:17
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4689.000	-3.64	49.84	46.20	74.00	-27.80	peak	100	0	
2	5216.000	-2.16	49.49	47.33	74.00	-26.67	peak	100	330	
3	6032.000	2.43	45.55	47.98	74.00	-26.02	peak	100	39	

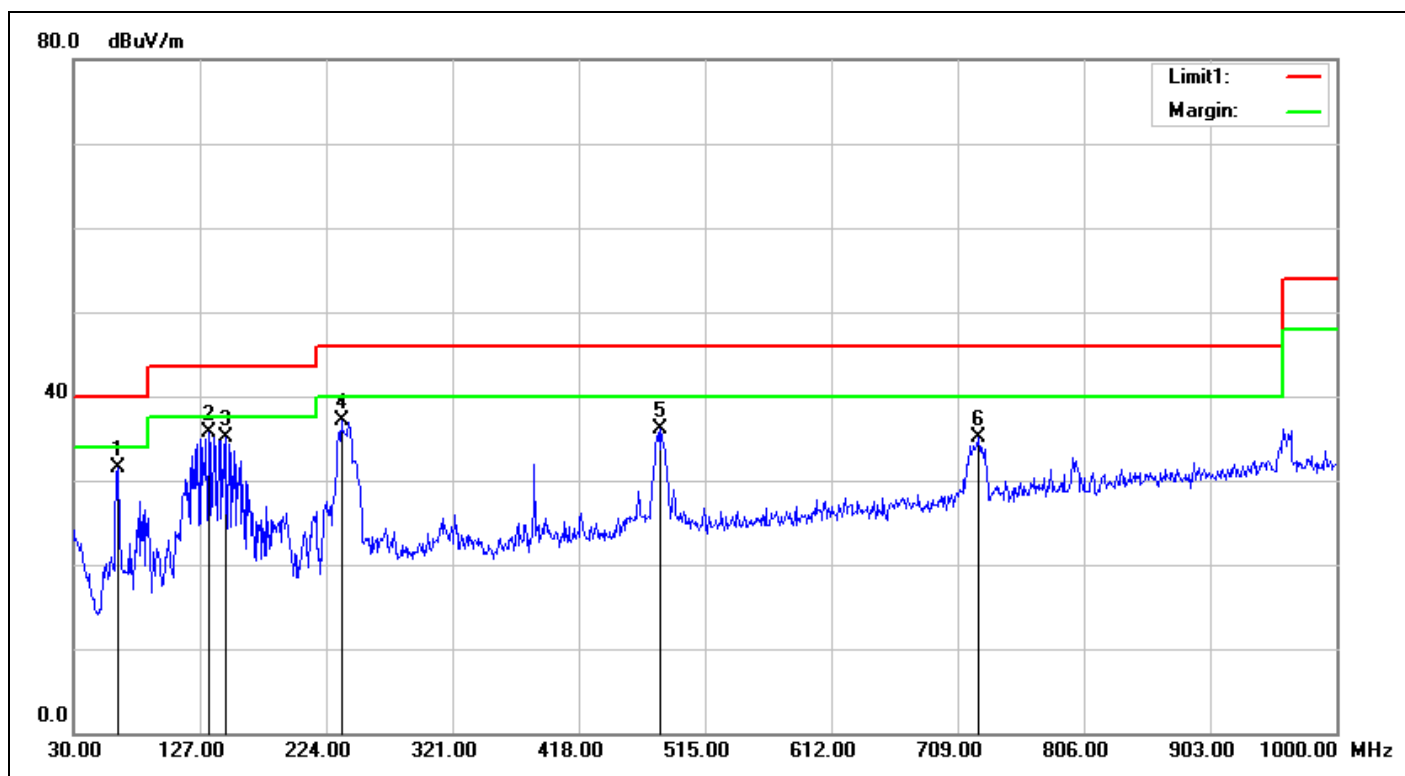
Spurious Emissions, RX Mode, 30M-1G, 40kbps, BPSK



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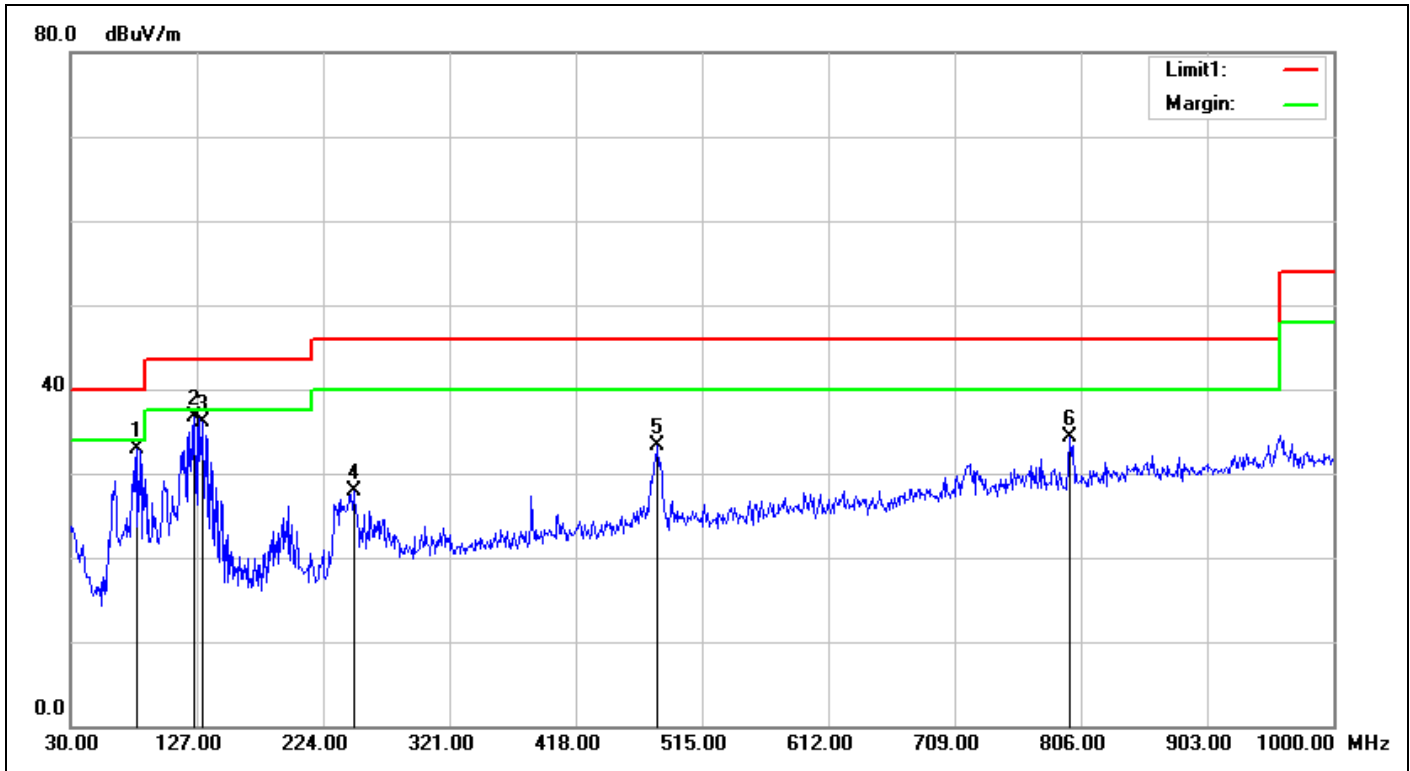
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:31:53
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	40kbps, BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	63.9500	-14.87	46.37	31.50	40.00	-8.50	QP	100	165	
2	133.7900	-8.44	44.15	35.71	43.50	-7.79	QP	100	148	
3	147.3700	-8.71	43.86	35.15	43.50	-8.35	QP	100	148	
4	235.6400	-8.58	45.64	37.06	46.00	-8.94	QP	100	207	
5	481.0500	-2.69	38.86	36.17	46.00	-9.83	QP	100	175	
6	725.4900	1.00	34.20	35.20	46.00	-10.80	QP	100	358	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:32:46
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	81.4100	-13.17	46.16	32.99	40.00	-7.01	QP	100	140	
2	125.0600	-8.70	45.44	36.74	43.50	-6.76	QP	100	196	
3	131.8500	-8.45	44.49	36.04	43.50	-7.46	QP	100	271	
4	247.2800	-7.55	35.39	27.84	46.00	-18.16	QP	100	268	
5	481.0500	-2.69	36.04	33.35	46.00	-12.65	QP	100	173	
6	797.2700	2.23	32.11	34.34	46.00	-11.66	QP	100	45	

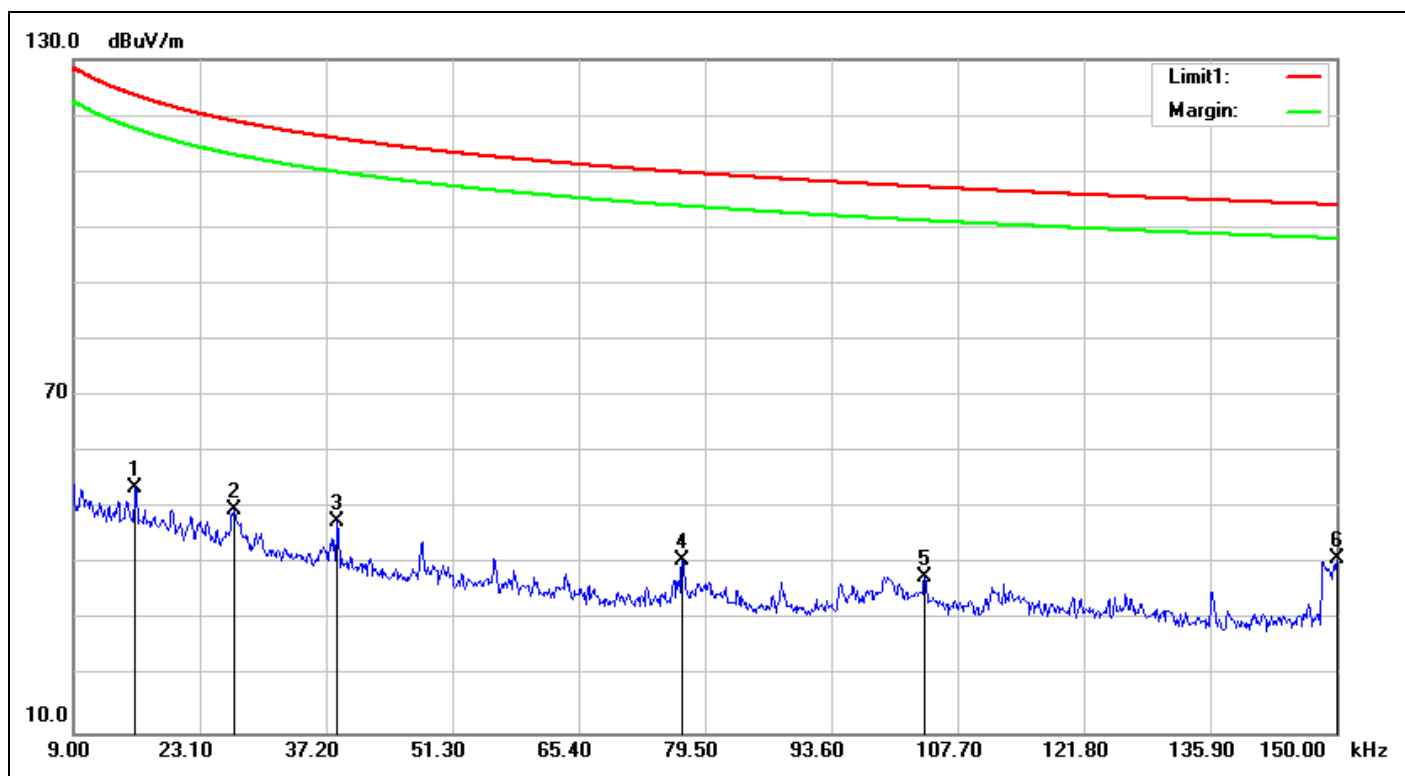
Spurious Emissions, RX Mode, 9K-30M, 40kbps,BPSK



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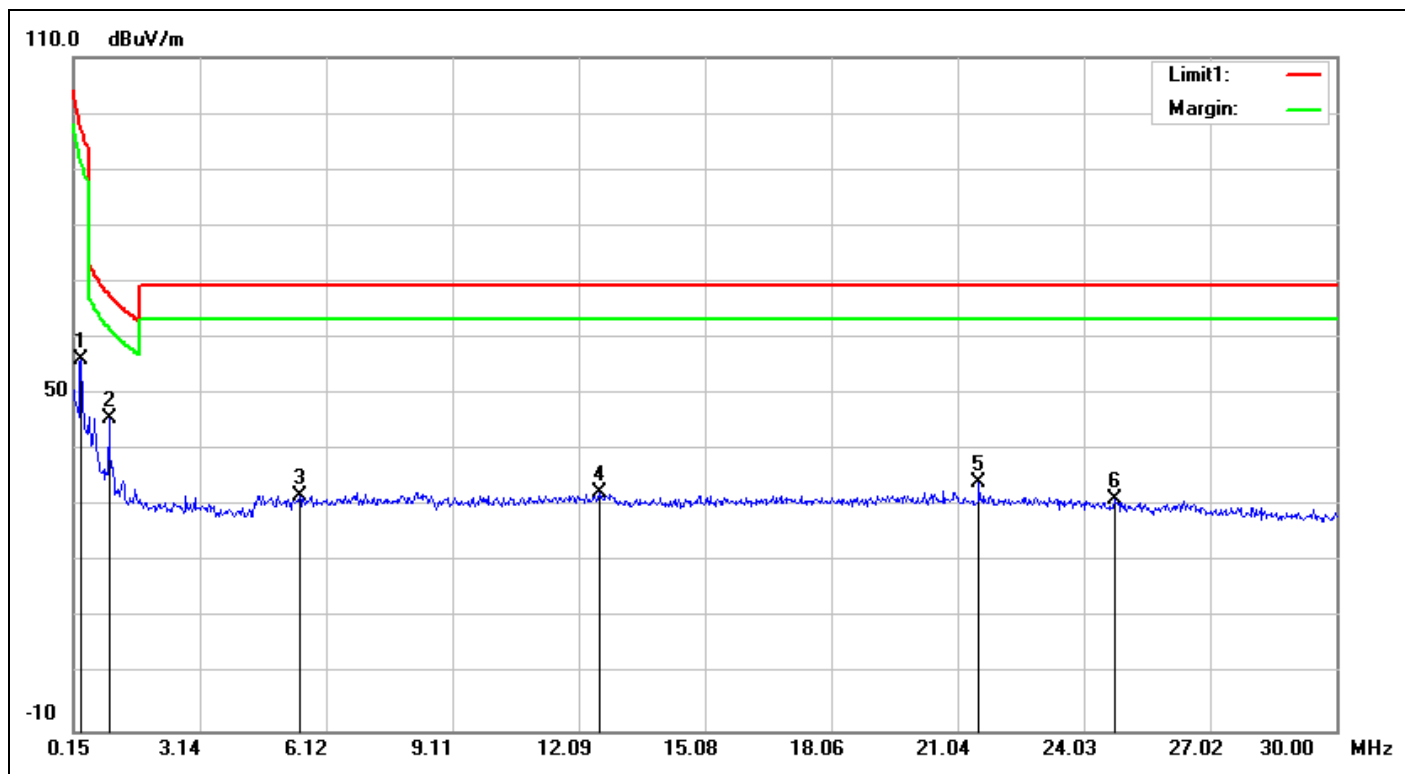
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:16:30
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	34.86	53.62	123.56	-69.94	QP	100	281	
2	0.0269	19.20	30.42	49.62	119.00	-69.38	QP	100	265	
3	0.0385	19.15	28.59	47.74	115.88	-68.14	QP	100	196	
4	0.0770	18.60	22.06	40.66	109.87	-69.21	QP	100	193	
5	0.1040	18.33	19.57	37.90	107.26	-69.36	QP	100	186	
6	0.1500	18.36	22.84	41.20	104.08	-62.88	QP	100	249	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:20:22
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna 40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	37.62	56.09	97.26	-41.17	QP	100	259	
2	0.9858	18.68	27.05	45.73	67.75	-22.02	QP	100	253	
3	5.4932	19.57	12.34	31.91	69.50	-37.59	QP	100	230	
4	12.5676	20.74	11.70	32.44	69.50	-37.06	QP	100	282	
5	21.5525	21.67	12.70	34.37	69.50	-35.13	QP	100	269	
6	24.7464	21.78	9.35	31.13	69.50	-38.37	QP	100	52	

Chip Antenna

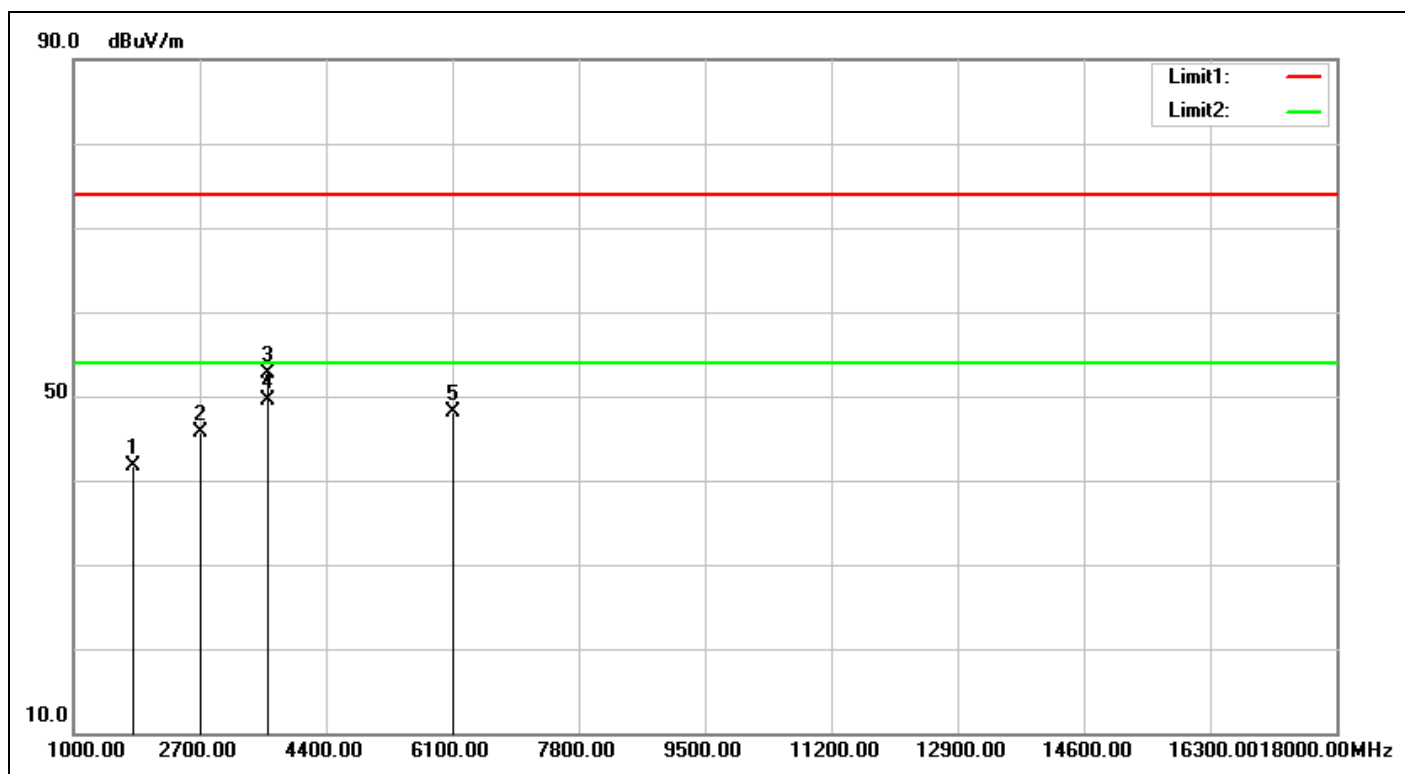
Spurious Emissions, TX Mode, 1-18G, 250kbps, O-QPSK



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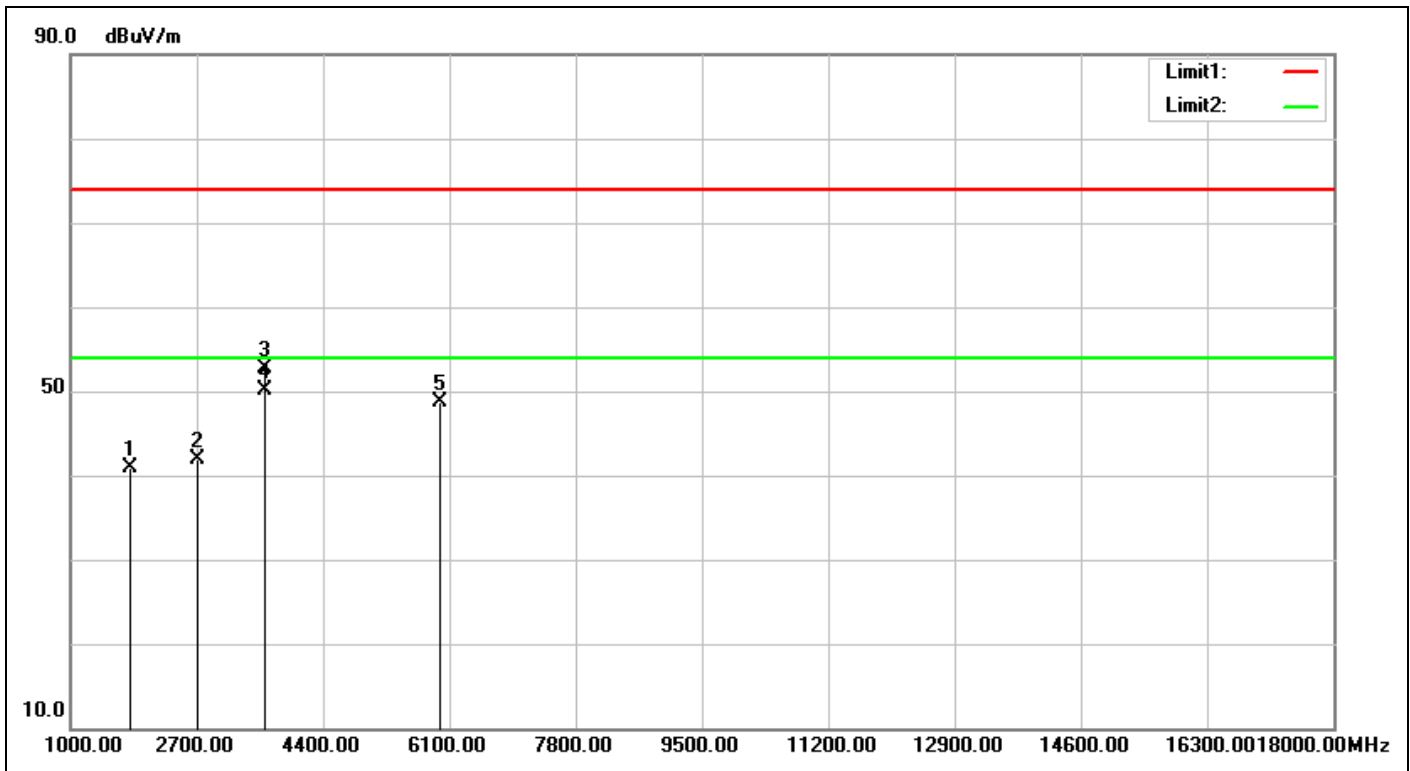
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



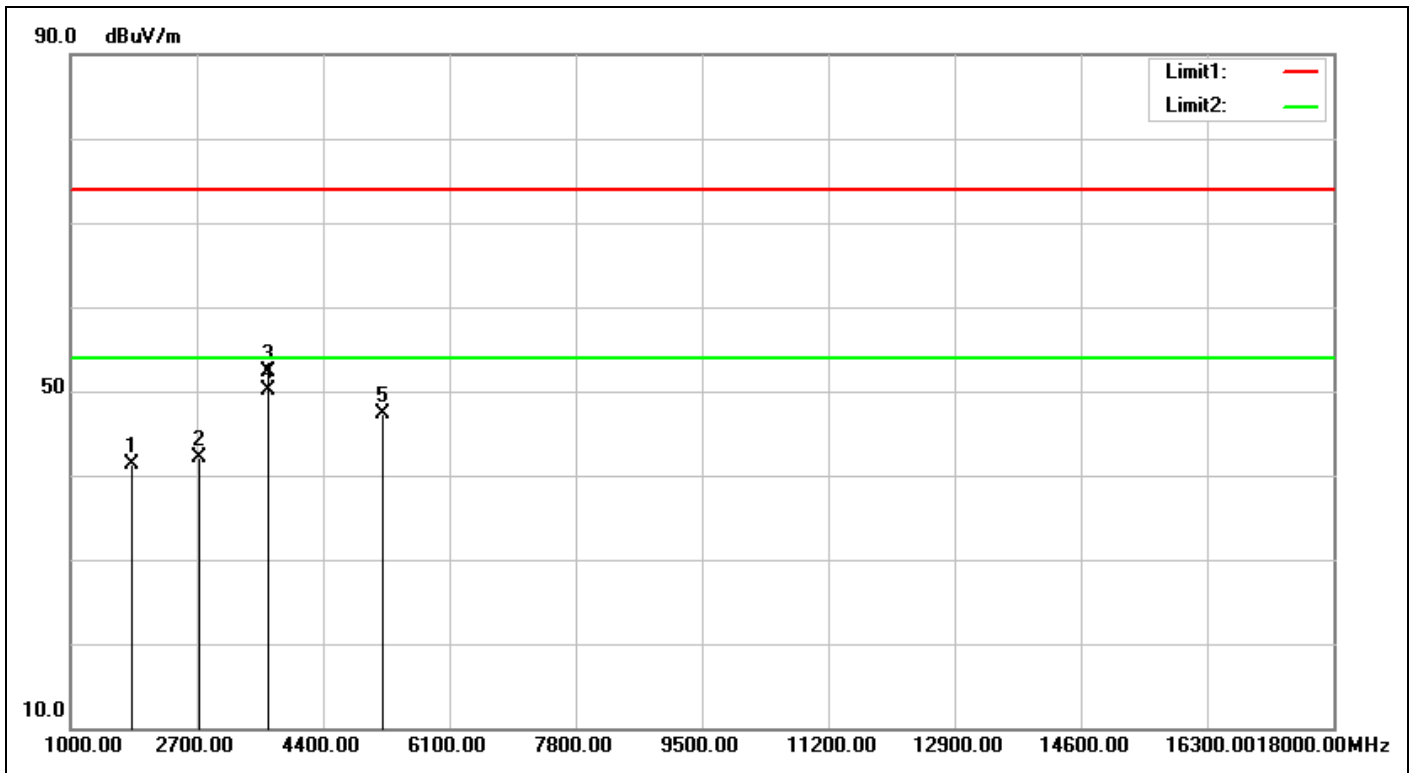
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 14:00:16
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	Chip antenna		
	250kbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	51.15	41.73	74.00	-32.27	peak		0	
2	2718.000	-7.66	53.46	45.80	74.00	-28.20	peak	100	106	
3	3624.000	-6.53	59.19	52.66	74.00	-21.34	peak	100	58	
4	3624.000	-6.53	56.13	49.60	54.00	-4.40	AVG	100	58	
5	6100.000	2.72	45.38	48.10	74.00	-25.90	peak	100	199	



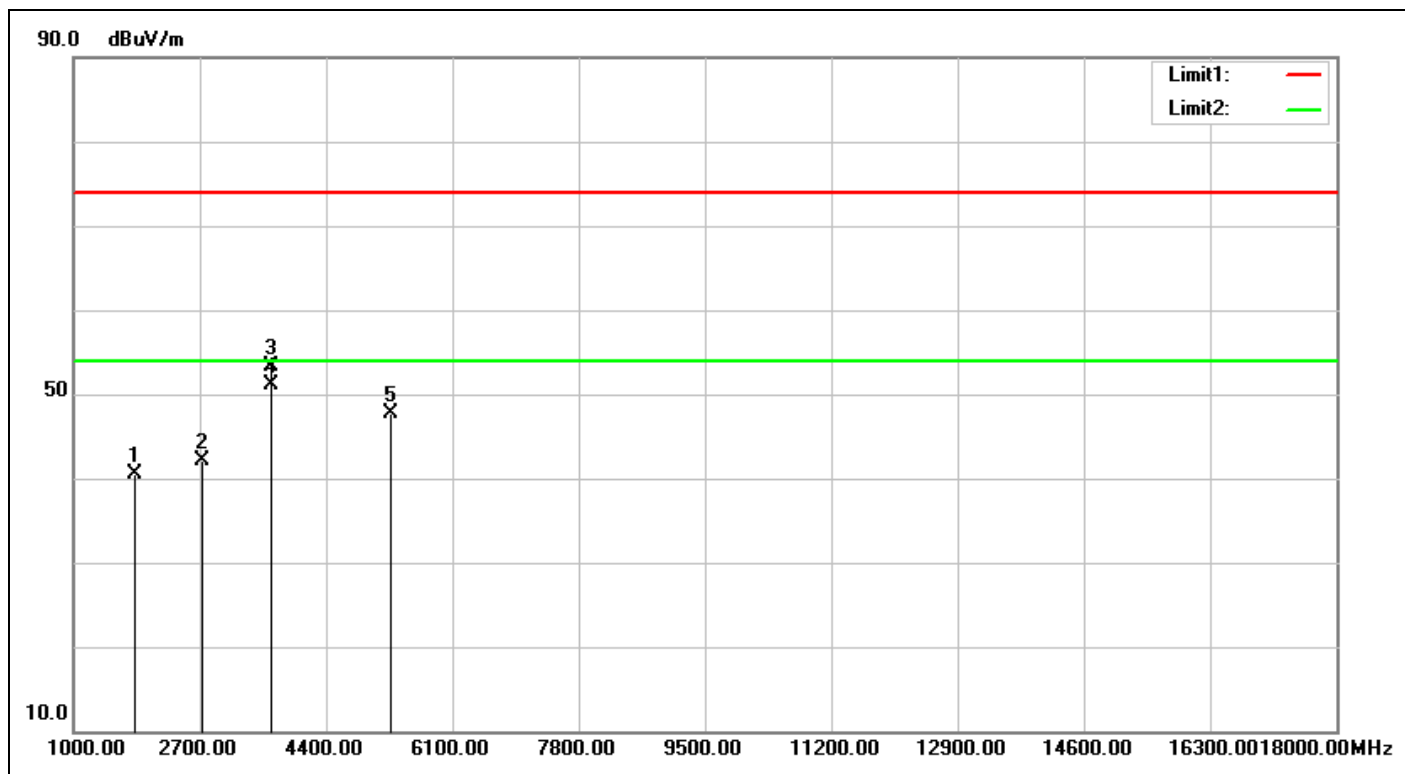
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 14:01:08
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	50.28	40.86	74.00	-33.14	peak			
2	2718.000	-7.66	49.61	41.95	74.00	-32.05	peak			
3	3624.000	-6.53	59.21	52.68	74.00	-21.32	peak	100	213	
4	3624.000	-6.53	56.54	50.01	54.00	-3.99	AVG	100	213	
5	5964.000	2.07	46.68	48.75	74.00	-25.25	peak	100	248	



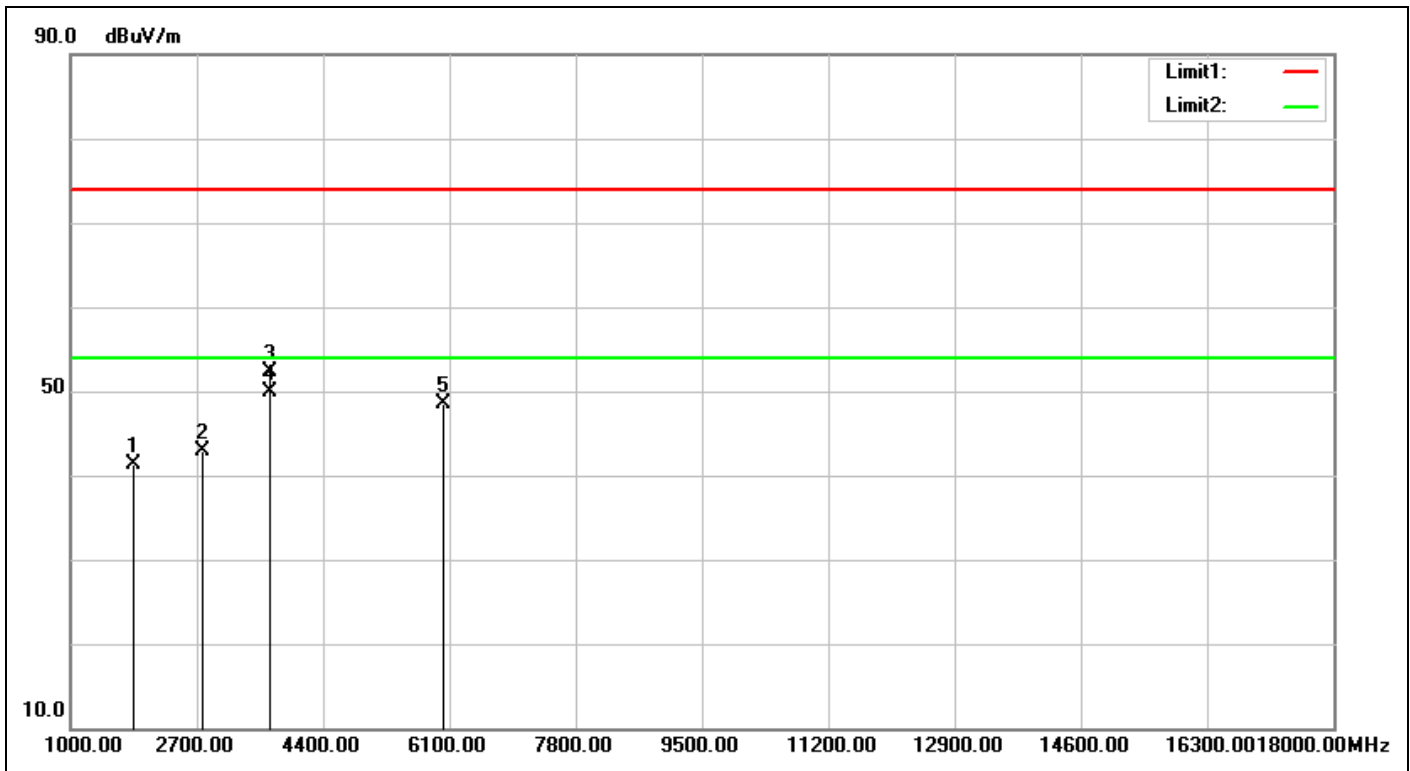
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 14:05:52
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	50.69	41.38	74.00	-32.62	peak			
2	2742.000	-7.62	49.82	42.20	74.00	-31.80	peak			
3	3656.000	-6.45	58.82	52.37	74.00	-21.63	peak	100	6	
4	3656.000	-6.45	56.49	50.04	54.00	-3.96	AVG	100	6	
5	5199.000	-2.24	49.51	47.27	74.00	-26.73	peak	100	208	



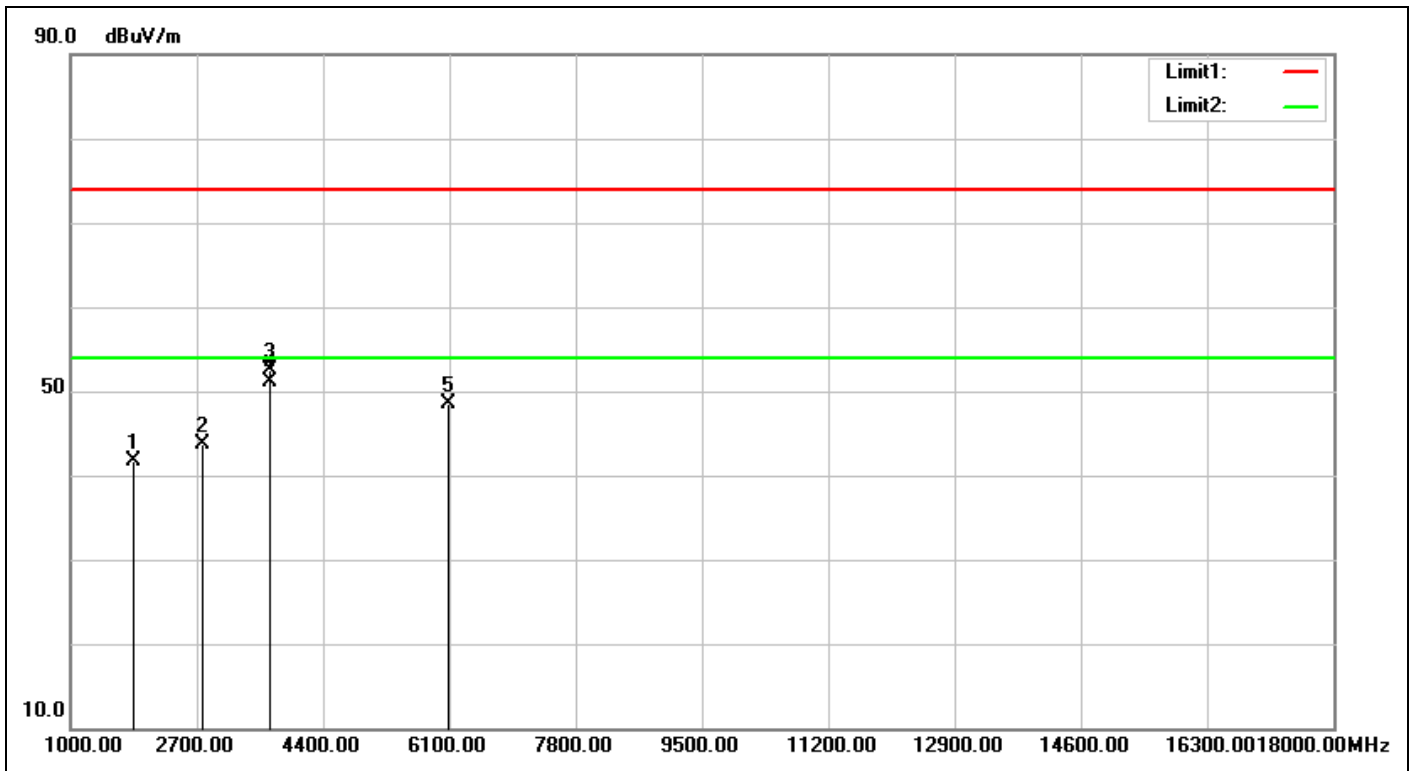
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 14:06:45
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	49.83	40.52	74.00	-33.48	peak			
2	2742.000	-7.62	49.67	42.05	74.00	-31.95	peak			
3	3656.000	-6.45	59.76	53.31	74.00	-20.69	peak	100	213	
4	3656.000	-6.45	57.58	51.13	54.00	-2.87	AVG	100	213	
5	5267.000	-1.92	49.59	47.67	74.00	-26.33	peak	100	329	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 14:10:57
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.52	41.34	74.00	-32.66	peak			
2	2772.000	-7.57	50.51	42.94	74.00	-31.06	peak			
3	3696.000	-6.37	58.69	52.32	74.00	-21.68	peak	100	0	
4	3696.000	-6.37	56.28	49.91	54.00	-4.09	AVG	100	0	
5	6015.000	2.37	46.18	48.55	74.00	-25.45	peak	100	99	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 14:11:49
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.85	41.67	74.00	-32.33	peak			
2	2772.000	-7.57	51.31	43.74	74.00	-30.26	peak			
3	3696.000	-6.37	58.85	52.48	74.00	-21.52	peak	100	214	
4	3696.000	-6.37	57.38	51.01	54.00	-2.99	AVG	100	214	
5	6083.000	2.65	45.88	48.53	74.00	-25.47	peak	100	22	

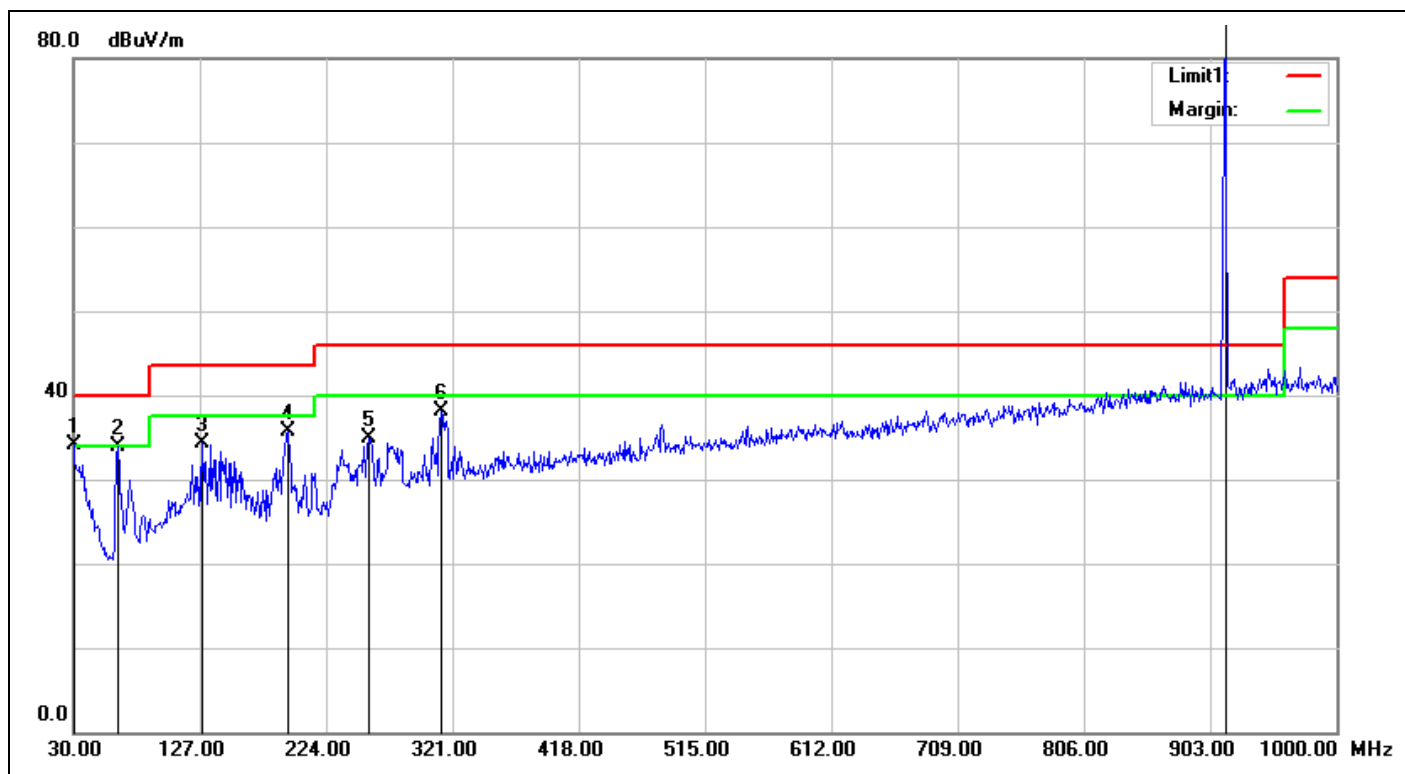
Spurious Emissions, TX Mode, 30M-1G, 250kbps, O-QPSK



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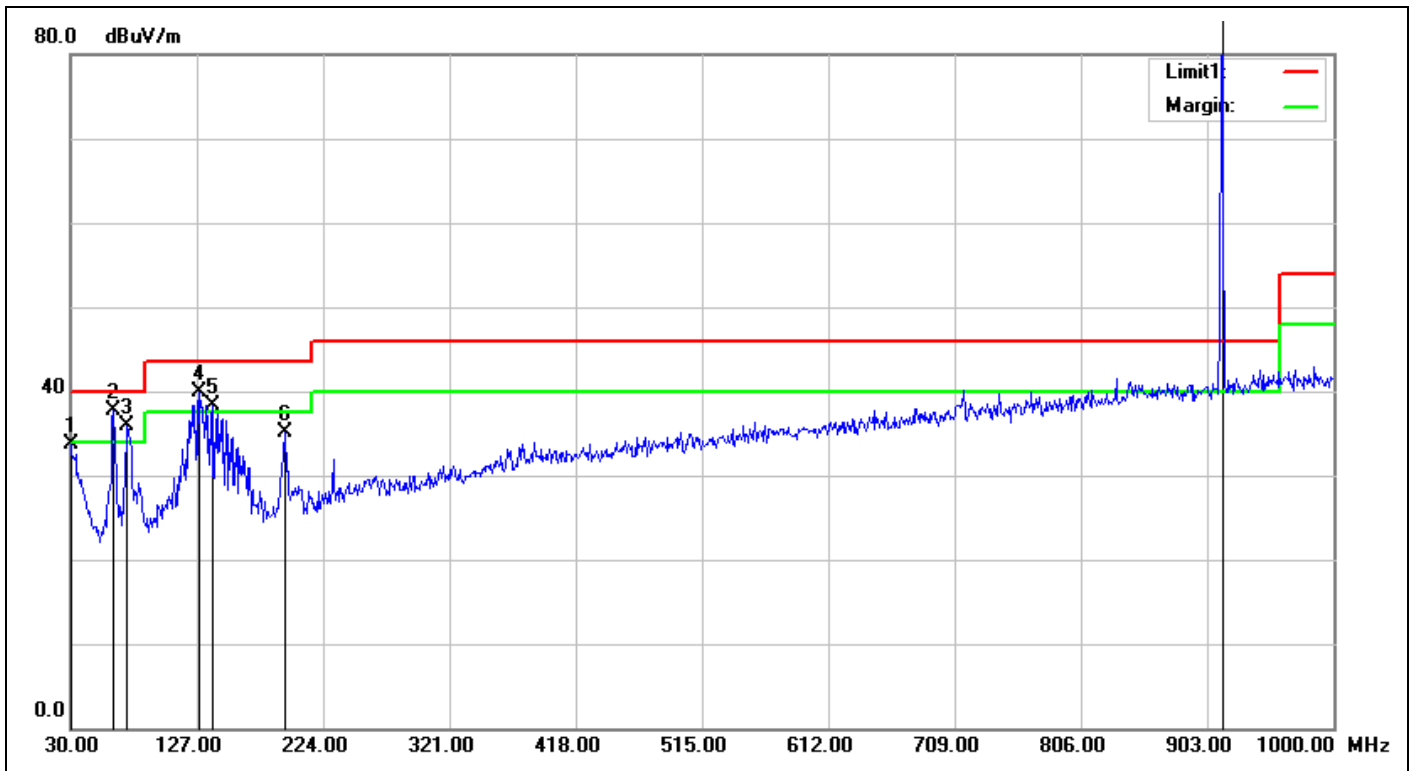
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 13:05:28
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	250kbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	35.48	34.08	40.00	-5.92	QP	100	168	
2	63.9500	-14.87	48.73	33.86	40.00	-6.14	QP	100	283	
3	128.9399	-8.51	42.78	34.27	43.50	-9.23	QP	100	122	
4	194.9000	-10.72	46.48	35.76	43.50	-7.74	QP	100	300	
5	256.9800	-6.71	41.62	34.91	46.00	-11.09	QP	100	309	
6	312.2699	-5.79	43.81	38.02	46.00	-7.98	QP	100	234	
7	914.6399	4.25	91.38	95.63	46.00	49.63	QP	100	49	TX



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 13:06:21
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	35.09	33.69	40.00	-6.31	QP	100	237	
2	62.9800	-14.91	52.61	37.70	40.00	-2.30	QP	100	280	
3	73.6500	-14.12	50.00	35.88	40.00	-4.12	QP	100	240	
4	128.9400	-8.51	48.38	39.87	43.50	-3.63	QP	100	37	
5	139.6100	-8.40	46.68	38.28	43.50	-5.22	QP	100	215	
6	194.9000	-10.72	45.76	35.04	43.50	-8.46	QP	100	201	
7	914.6400	4.25	87.09	91.34	46.00	45.34	QP	100	320	TX

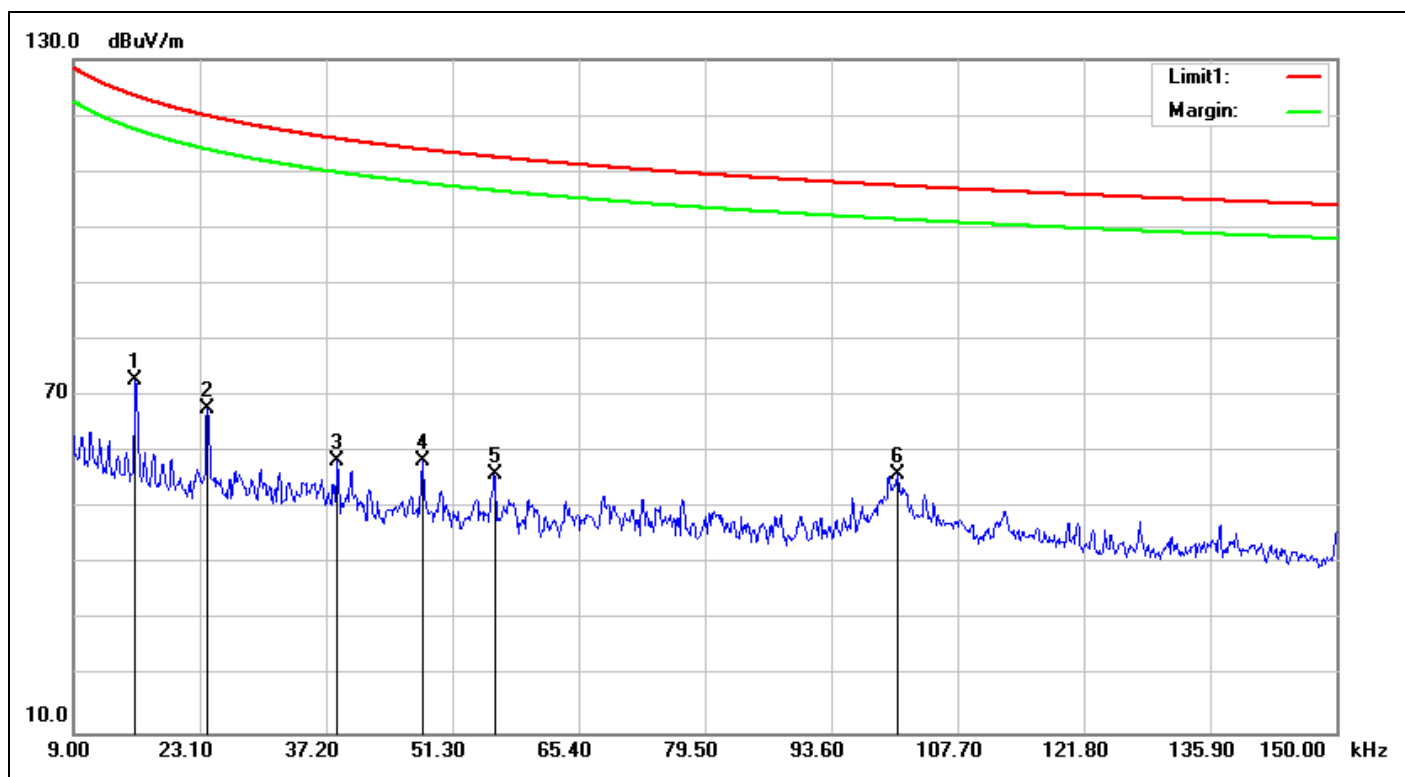
Spurious Emissions, TX Mode, 9k-30M, 250kbps,O-QPSK



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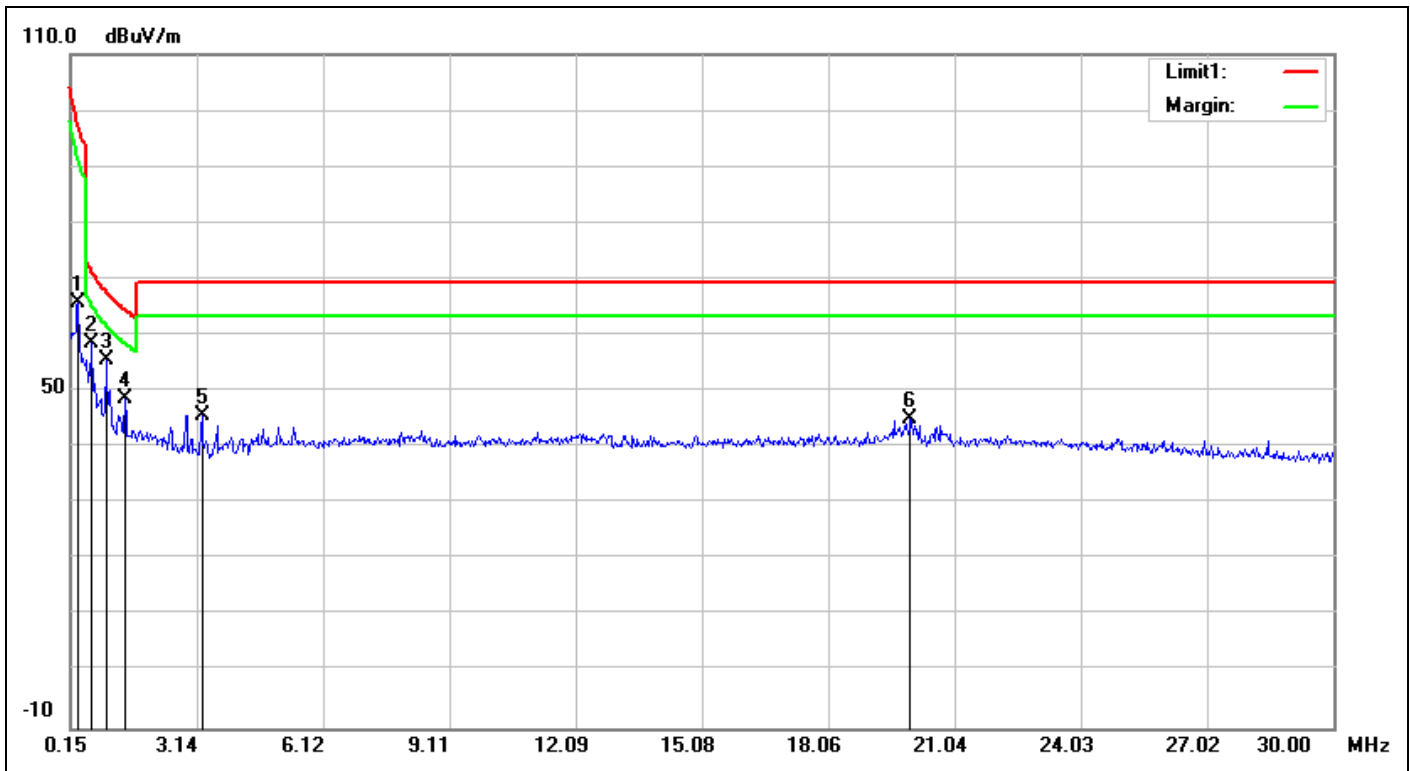
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/16 13:17:16
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	54.07	72.83	123.48	-50.65	QP	100	199	
2	0.0239	19.08	48.53	67.61	119.95	-52.34	QP	100	203	
3	0.0384	19.15	39.22	58.37	115.84	-57.47	QP	100	196	
4	0.0479	18.96	39.60	58.56	113.93	-55.37	QP	100	205	
5	0.0560	18.85	37.16	56.01	112.58	-56.57	QP	100	199	
6	0.1008	18.33	37.83	56.16	107.49	-51.33	QP	100	205	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/16 13:21:06
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	47.22	65.69	97.24	-31.55	QP	100	249	
2	0.6574	18.66	39.92	58.58	71.25	-12.67	QP	100	249	
3	0.9858	18.68	36.77	55.45	67.74	-12.29	QP	100	259	
4	1.4336	18.65	30.12	48.77	64.50	-15.73	QP	100	216	
5	3.2544	18.64	27.14	45.78	69.50	-23.72	QP	100	206	
6	20.0003	21.60	23.39	44.99	69.50	-24.51	QP	100	233	

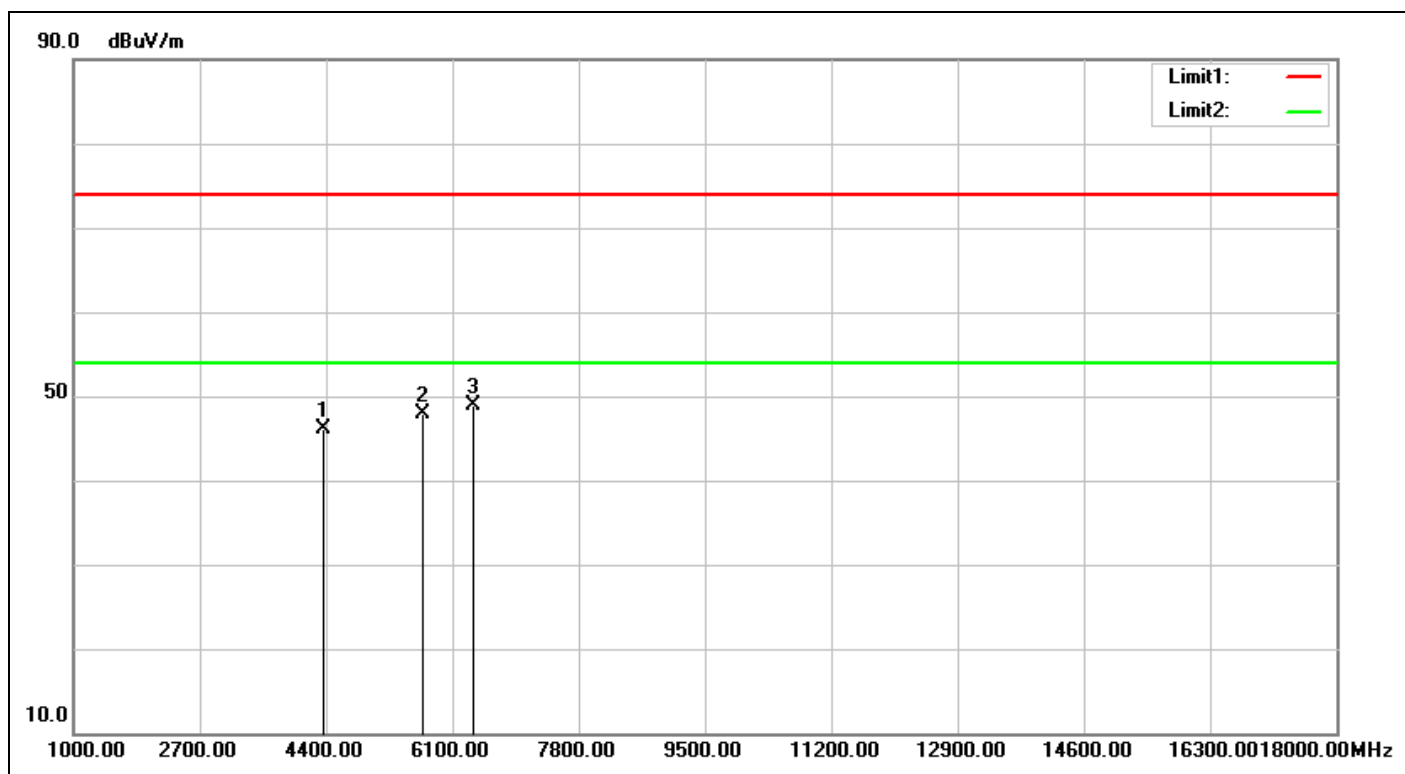
Spurious Emissions, RX Mode, 1-18G, 250kbps, O-QPSK



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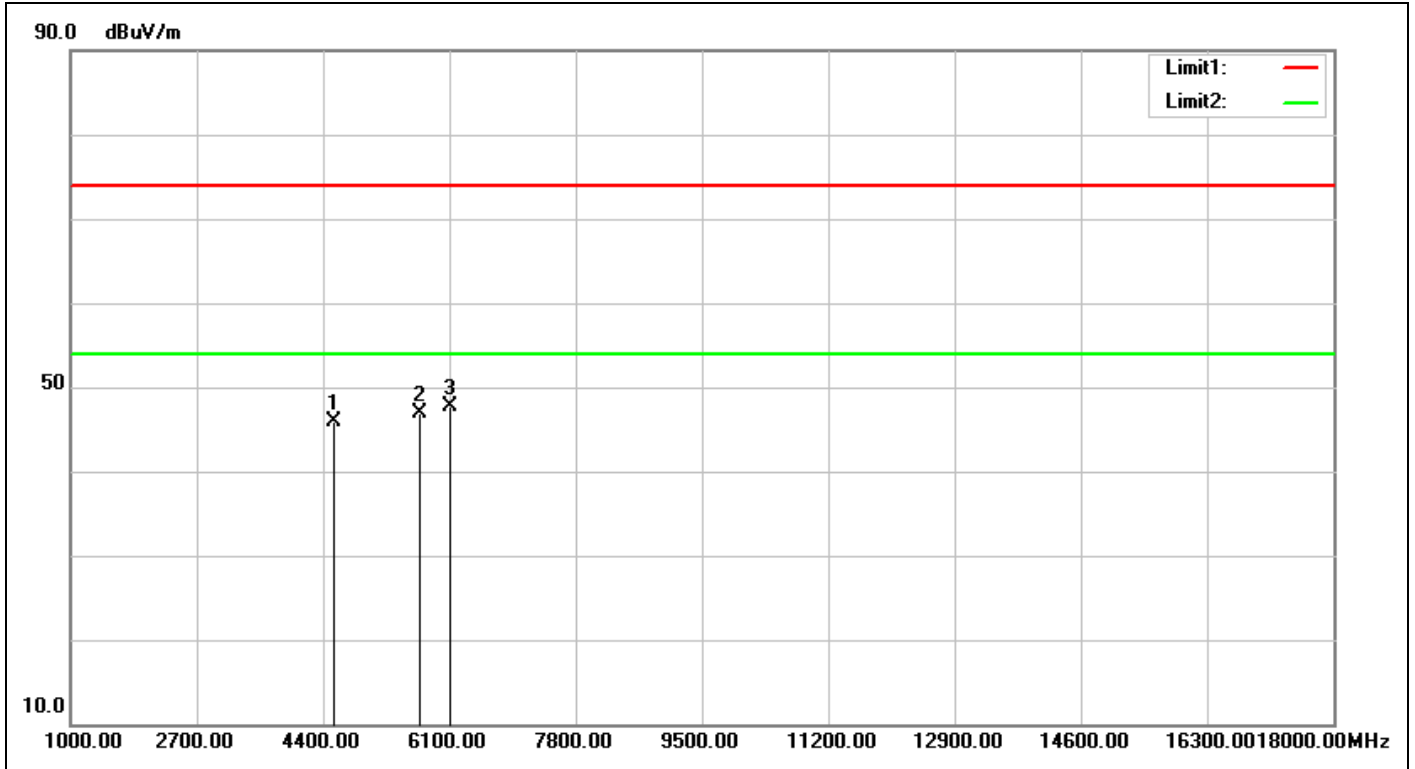
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:19:35
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	250kbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4366.000	-4.42	50.54	46.12	74.00	-27.88	peak	100	205	
2	5692.000	0.35	47.49	47.84	74.00	-26.16	peak	100	359	
3	6389.000	3.93	45.03	48.96	74.00	-25.04	peak	100	123	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:20:28
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4536.000	-3.90	49.74	45.84	74.00	-28.16	peak	100	234	
2	5709.000	0.46	46.47	46.93	74.00	-27.07	peak	100	282	
3	6100.000	2.72	45.02	47.74	74.00	-26.26	peak	100	354	

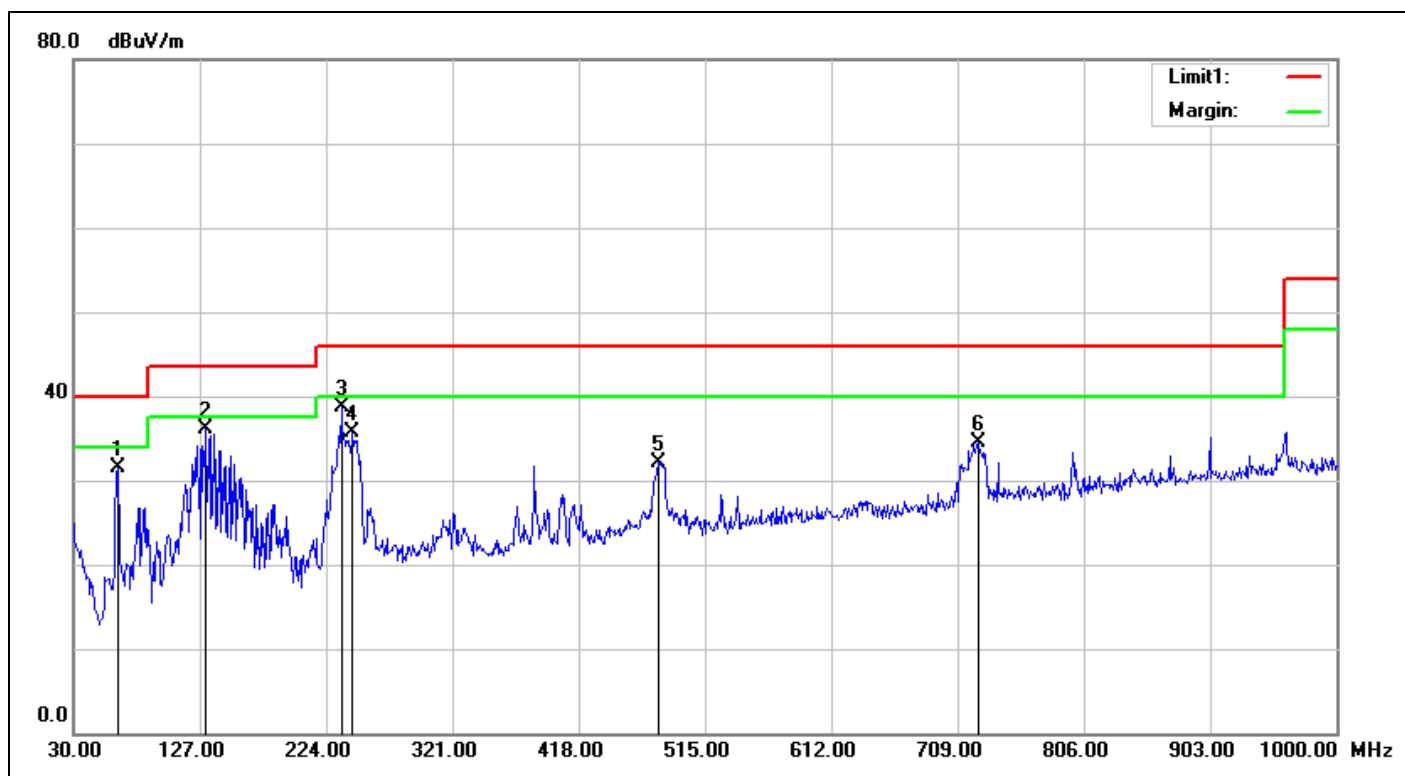
Spurious Emissions, RX Mode, 30M-1G, 250kbps, O-QPSK



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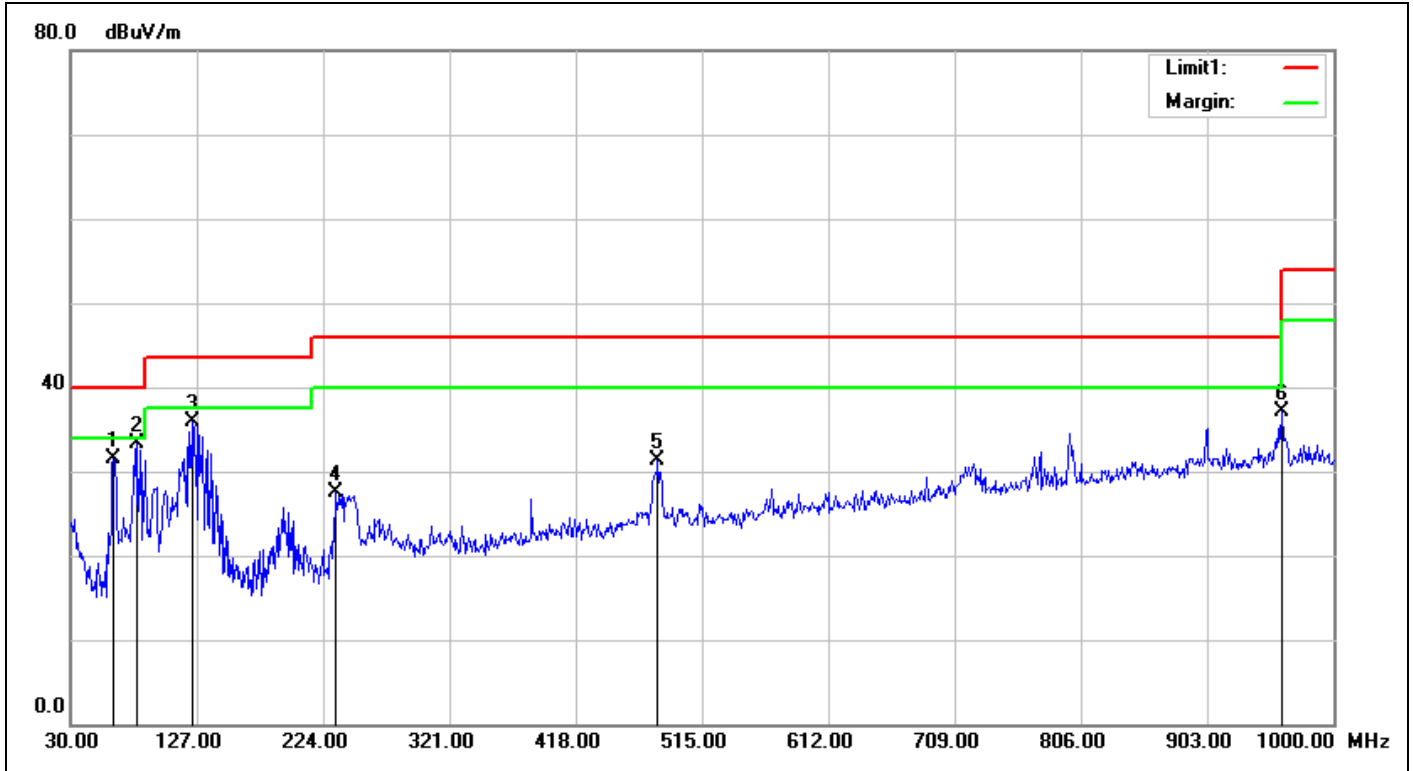
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:34:35
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	250kbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	63.9500	-14.87	46.33	31.46	40.00	-8.54	QP	100	308	
2	131.8500	-8.45	44.46	36.01	43.50	-7.49	QP	100	186	
3	235.6400	-8.58	47.30	38.72	46.00	-7.28	QP	100	213	
4	244.3700	-7.84	43.47	35.63	46.00	-10.37	QP	100	197	
5	479.1100	-2.73	34.91	32.18	46.00	-13.82	QP	100	252	
6	724.5200	0.97	33.50	34.47	46.00	-11.53	QP	100	351	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:35:29
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	62.9800	-14.91	46.32	31.41	40.00	-8.59	QP	100	239	
2	81.4100	-13.17	46.54	33.37	40.00	-6.63	QP	100	1	
3	123.1200	-8.79	44.78	35.99	43.50	-7.51	QP	100	249	
4	233.7000	-8.73	36.26	27.53	46.00	-18.47	QP	100	230	
5	481.0500	-2.69	33.90	31.21	46.00	-14.79	QP	100	91	
6	960.2300	5.26	31.86	37.12	54.00	-16.88	QP	100	255	

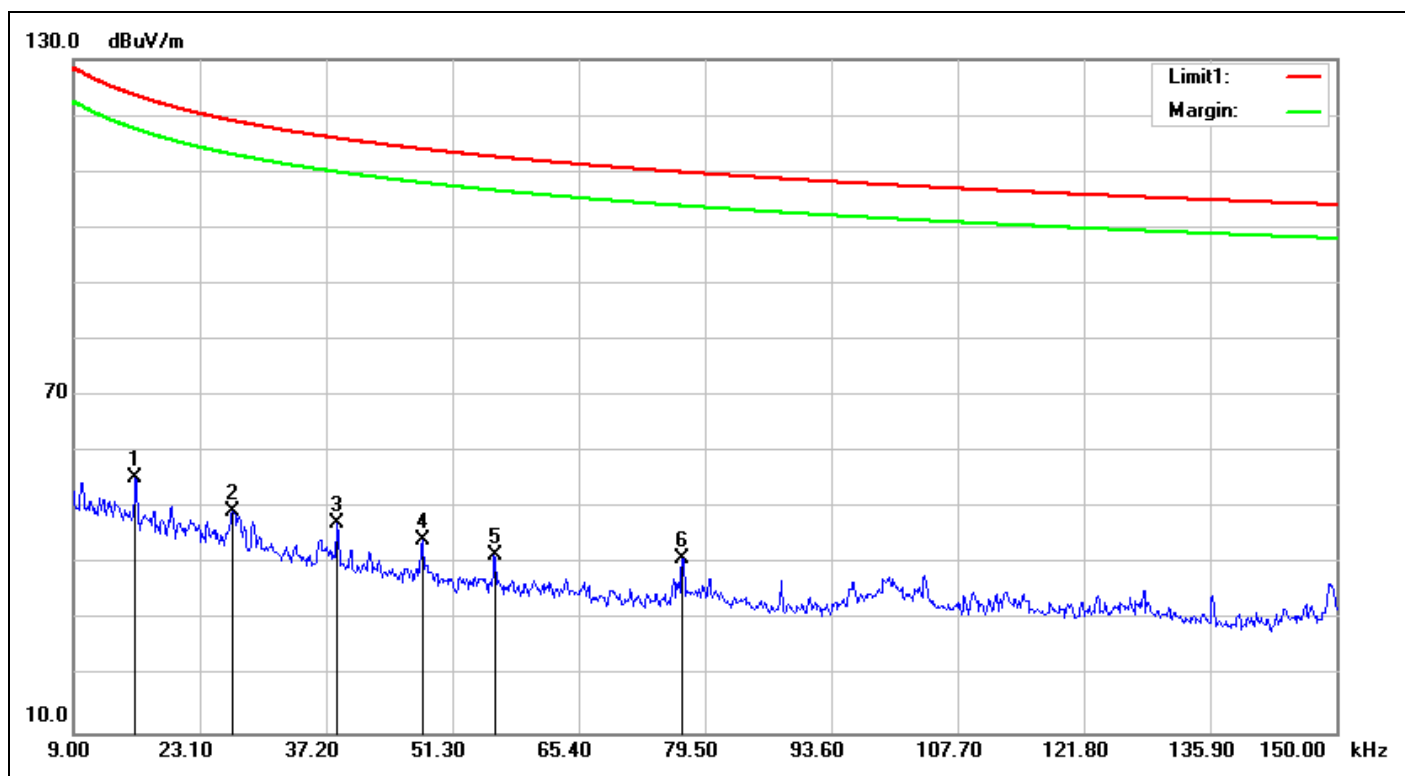
Spurious Emissions, RX Mode, 9K-30M, 250kbps,O-QPSK



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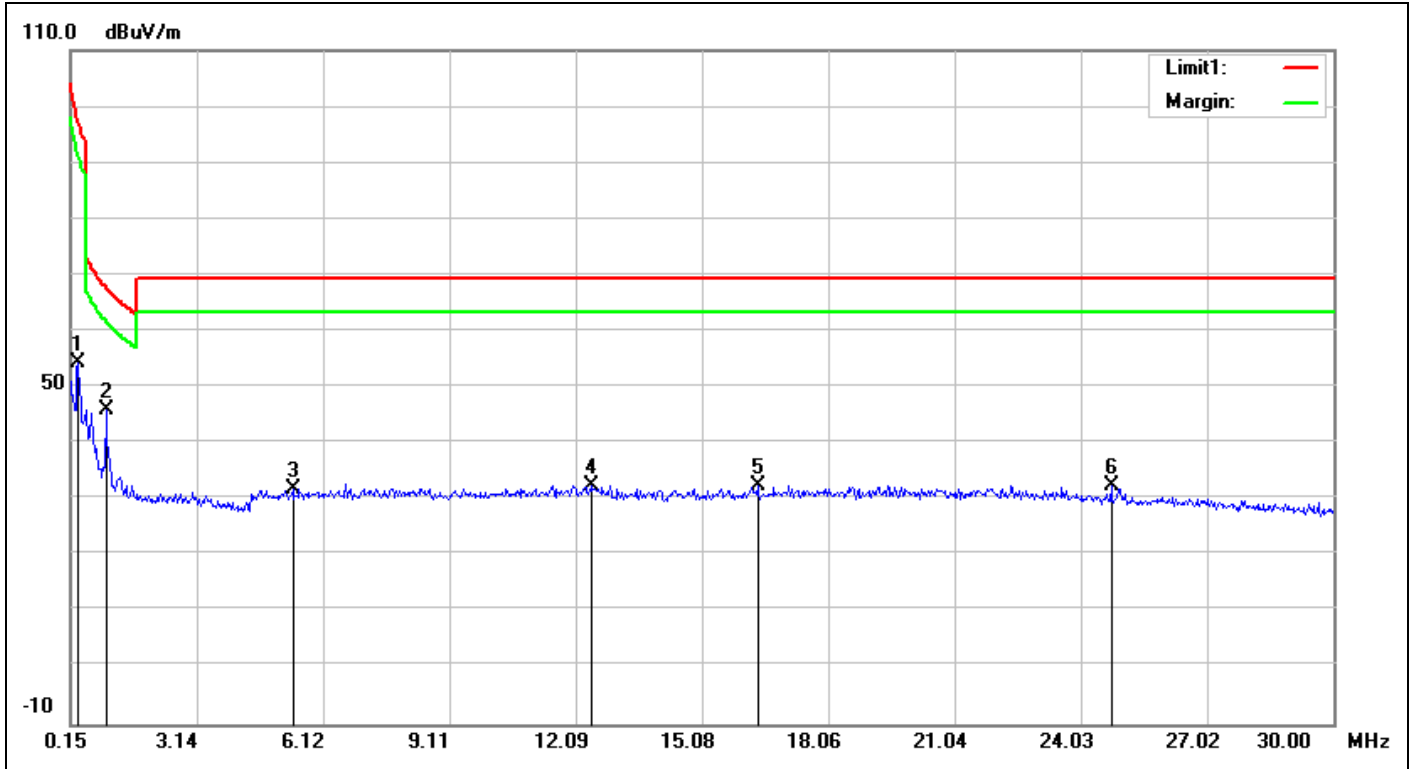
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Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:17:40
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	36.72	55.48	123.56	-68.08	QP	100	259	
2	0.0268	19.19	30.28	49.47	119.03	-69.56	QP	100	262	
3	0.0385	19.15	28.22	47.37	115.88	-68.51	QP	100	206	
4	0.0479	18.96	25.46	44.42	113.99	-69.57	QP	100	232	
5	0.0560	18.85	22.76	41.61	112.63	-71.02	QP	100	206	
6	0.0770	18.60	22.51	41.11	109.87	-68.76	QP	100	213	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:24:32
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	35.75	54.22	97.26	-43.04	QP	100	249	
2	0.9858	18.68	27.17	45.85	67.75	-21.90	QP	100	246	
3	5.4036	19.55	12.44	31.99	69.50	-37.51	QP	100	190	
4	12.4482	20.73	11.85	32.58	69.50	-36.92	QP	100	302	
5	16.3884	21.18	11.19	32.37	69.50	-37.13	QP	100	43	
6	24.7464	21.78	10.55	32.33	69.50	-37.17	QP	100	36	

Chip Antenna

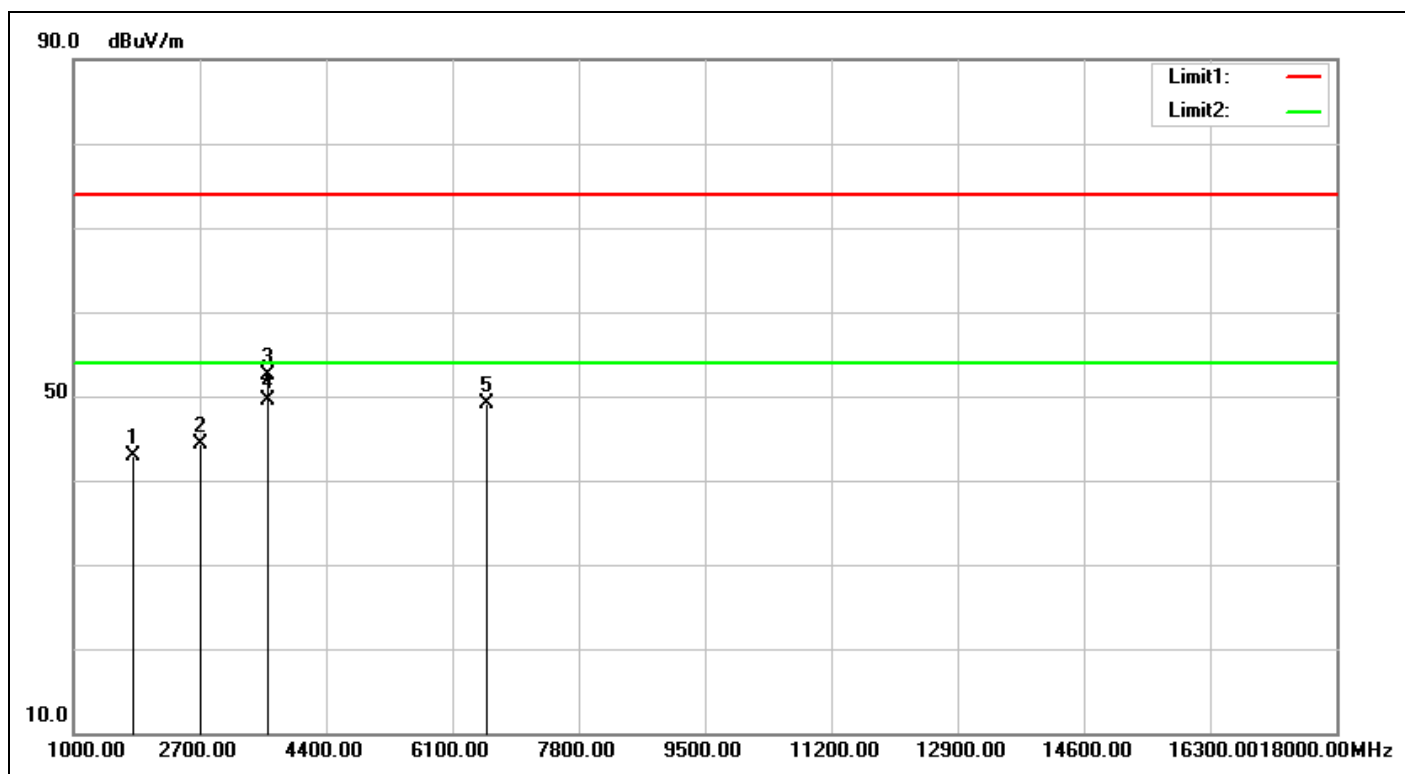
Spurious Emissions, TX Mode, 1-18G, 1Mbps, O-QPSK



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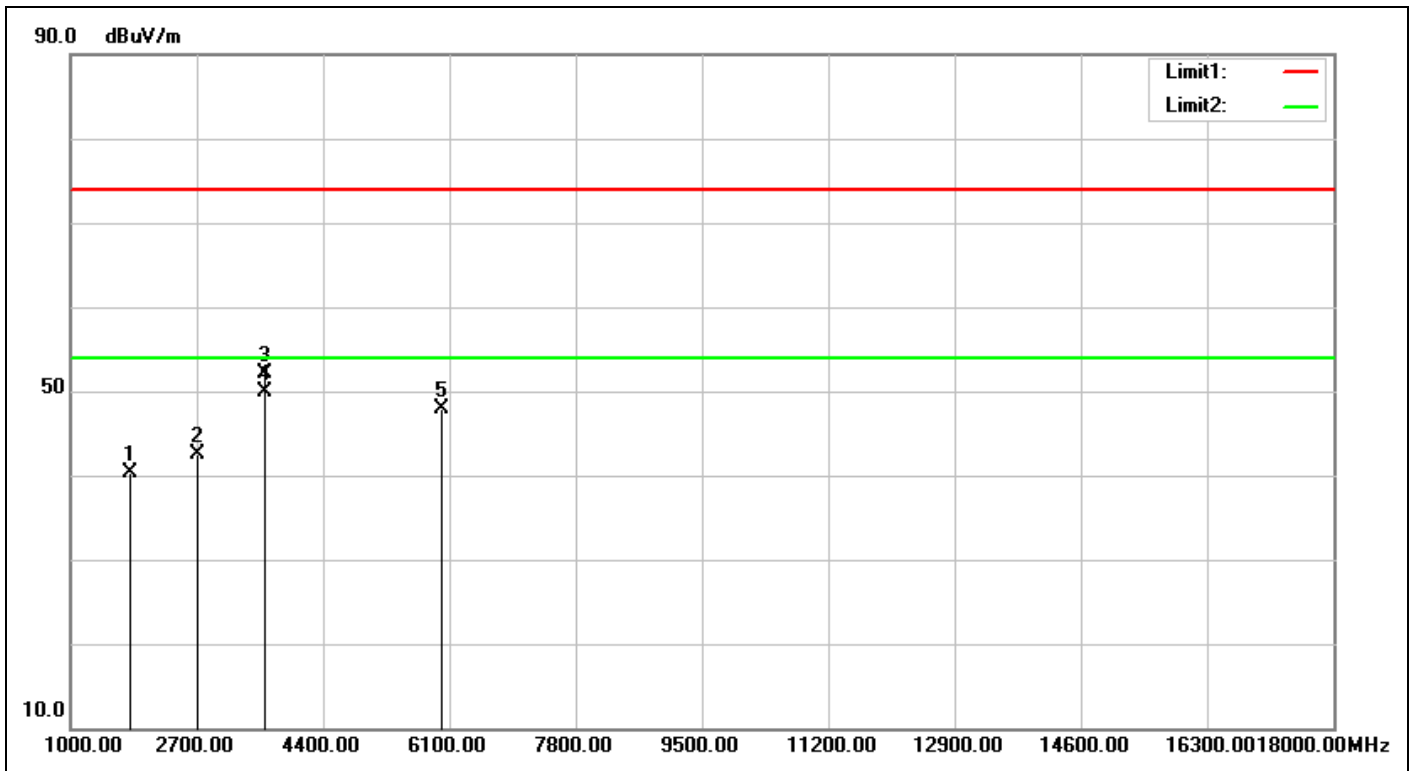
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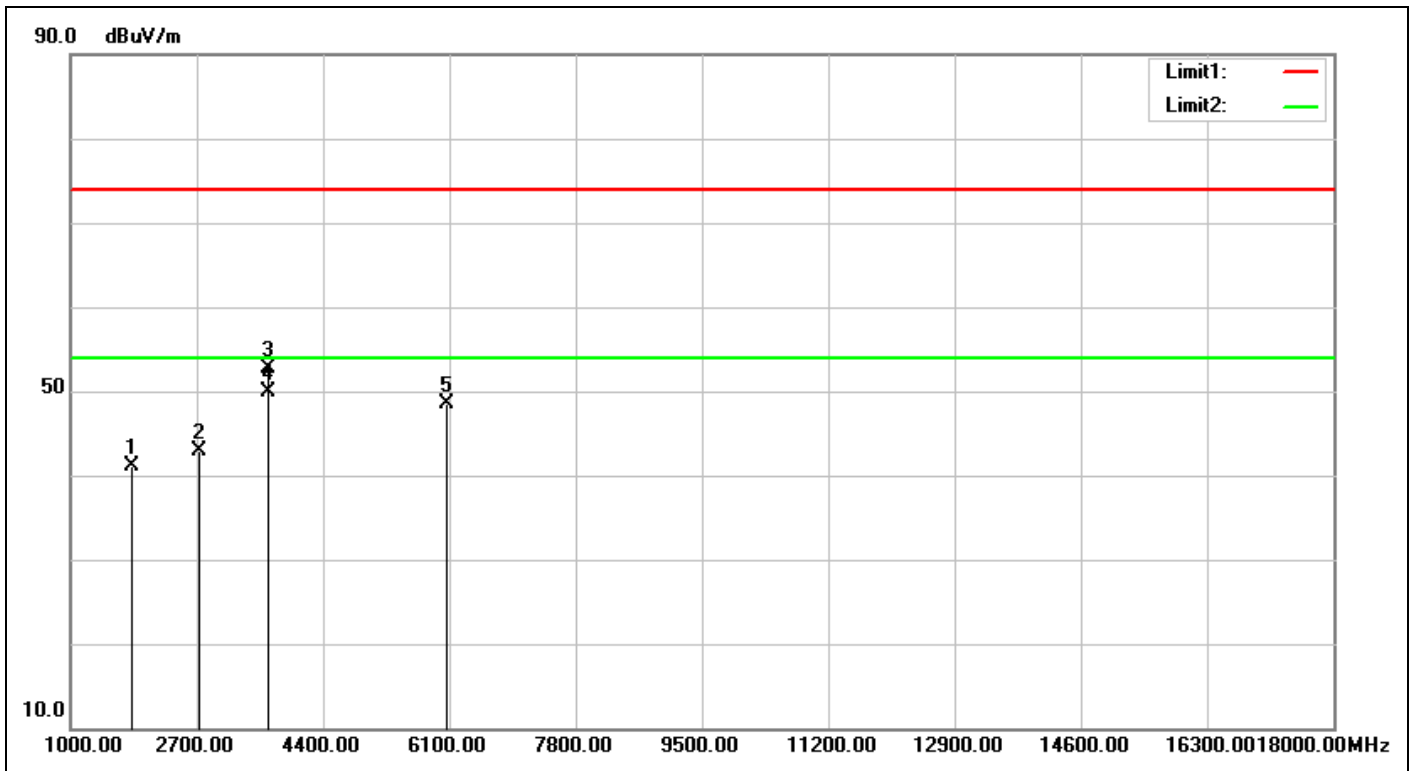
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 14:18:14
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	Chip antenna		
	1Mbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	52.35	42.93	74.00	-31.07	peak	100	58	
2	2718.000	-7.66	51.87	44.21	74.00	-29.79	peak	100	106	
3	3624.000	-6.53	59.11	52.58	74.00	-21.42	peak	100	7	
4	3624.000	-6.53	55.99	49.46	54.00	-4.54	AVG	100	7	
5	6559.000	4.31	44.89	49.20	74.00	-24.80	peak	100	331	



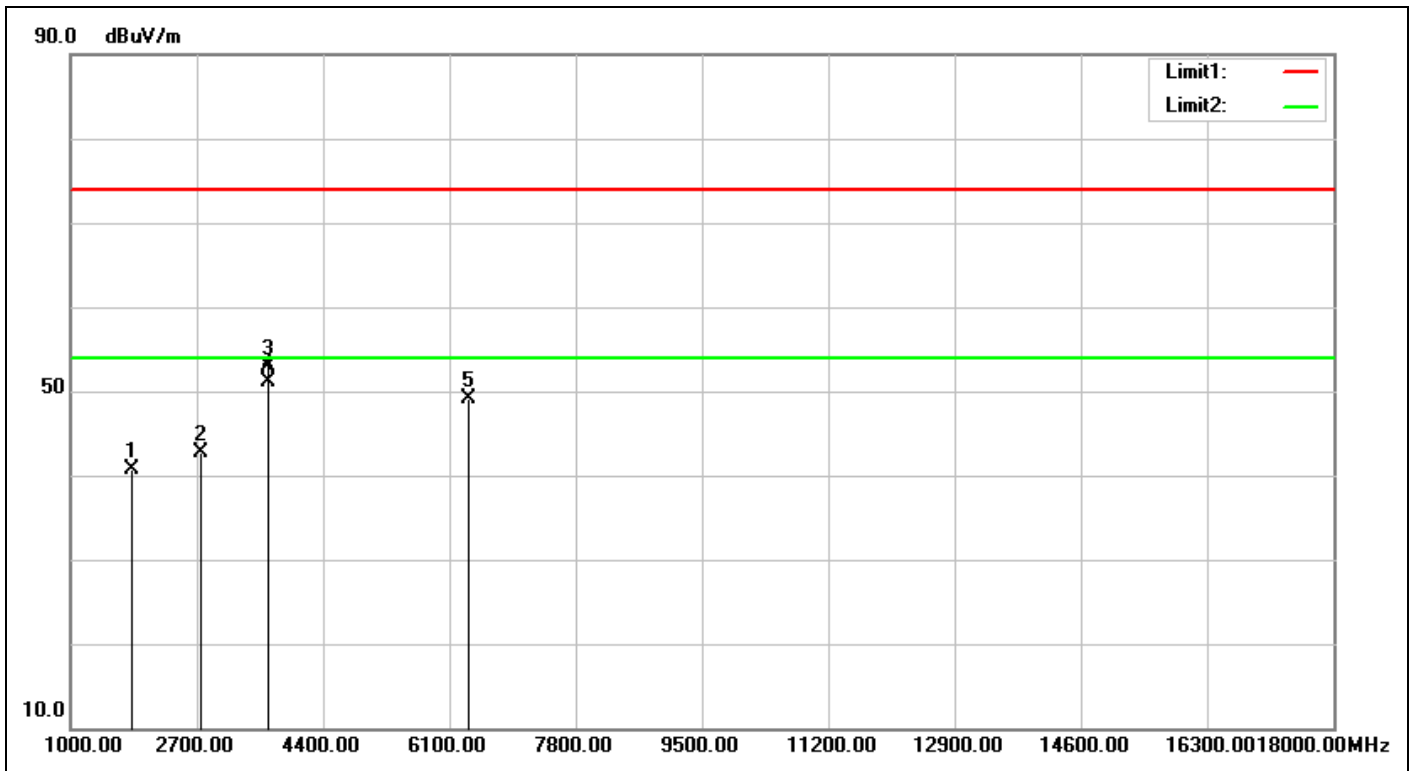
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 14:19:07
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	49.81	40.39	74.00	-33.61	peak			
2	2718.000	-7.66	50.16	42.50	74.00	-31.50	peak			
3	3624.000	-6.53	58.57	52.04	74.00	-21.96	peak	100	213	
4	3624.000	-6.53	56.40	49.87	54.00	-4.13	AVG	100	213	
5	5998.000	2.29	45.56	47.85	74.00	-26.15	peak	100	247	



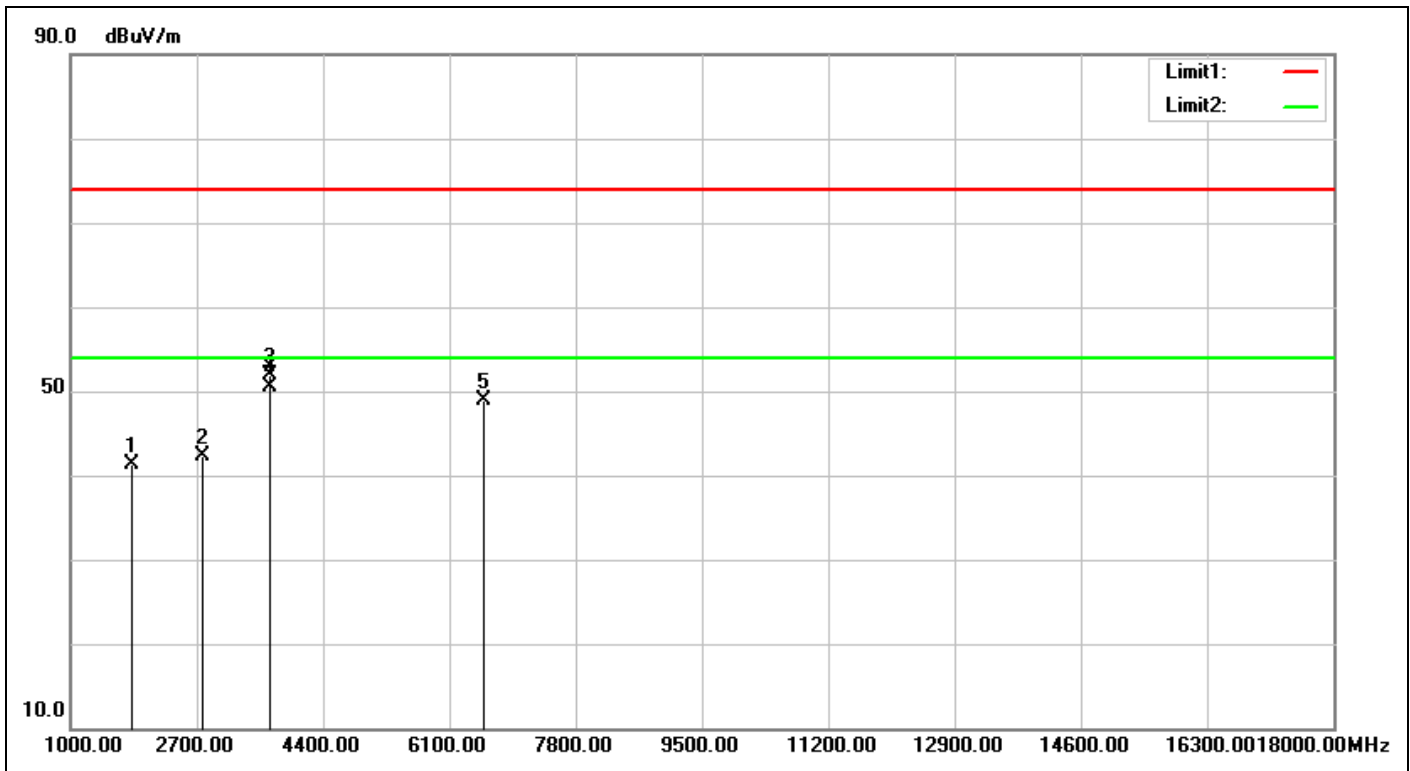
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 14:25:13
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	50.43	41.12	74.00	-32.88	peak			
2	2742.000	-7.62	50.44	42.82	74.00	-31.18	peak			
3	3656.000	-6.45	59.14	52.69	74.00	-21.31	peak	100	0	
4	3656.000	-6.45	56.45	50.00	54.00	-4.00	AVG	100	0	
5	6066.000	2.58	45.94	48.52	74.00	-25.48	peak	100	54	



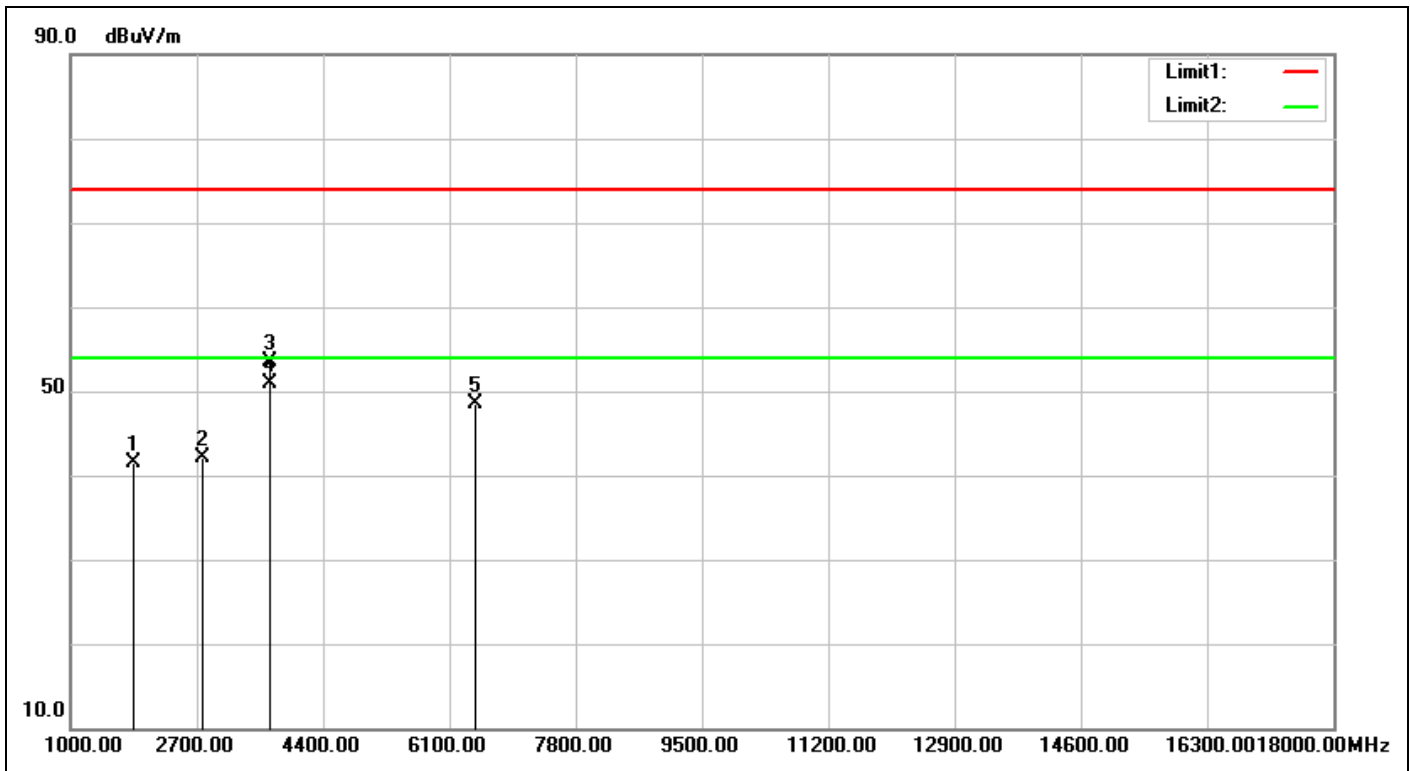
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 14:26:05
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	1Mbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	50.05	40.74	74.00	-33.26	peak			
2	2742.000	-7.62	50.36	42.74	74.00	-31.26	peak			
3	3656.000	-6.45	59.36	52.91	74.00	-21.09	peak	100	213	
4	3656.000	-6.45	57.54	51.09	54.00	-2.91	AVG	100	213	
5	6355.000	3.79	45.40	49.19	74.00	-24.81	peak	100	313	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 14:59:30
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.53	41.35	74.00	-32.65	peak			
2	2772.000	-7.57	49.85	42.28	74.00	-31.72	peak			
3	3696.000	-6.37	58.26	51.89	74.00	-22.11	peak	100	153	
4	3696.000	-6.37	56.84	50.47	54.00	-3.53	AVG	100	153	
5	6559.000	4.31	44.52	48.83	74.00	-25.17	peak	100	0	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 15:00:22
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.67	41.49	74.00	-32.51	peak			
2	2772.000	-7.57	49.62	42.05	74.00	-31.95	peak			
3	3696.000	-6.37	59.91	53.54	74.00	-20.46	peak	100	214	
4	3696.000	-6.37	57.31	50.94	54.00	-3.06	AVG	100	214	
5	6457.000	4.22	44.26	48.48	74.00	-25.52	peak	100	327	

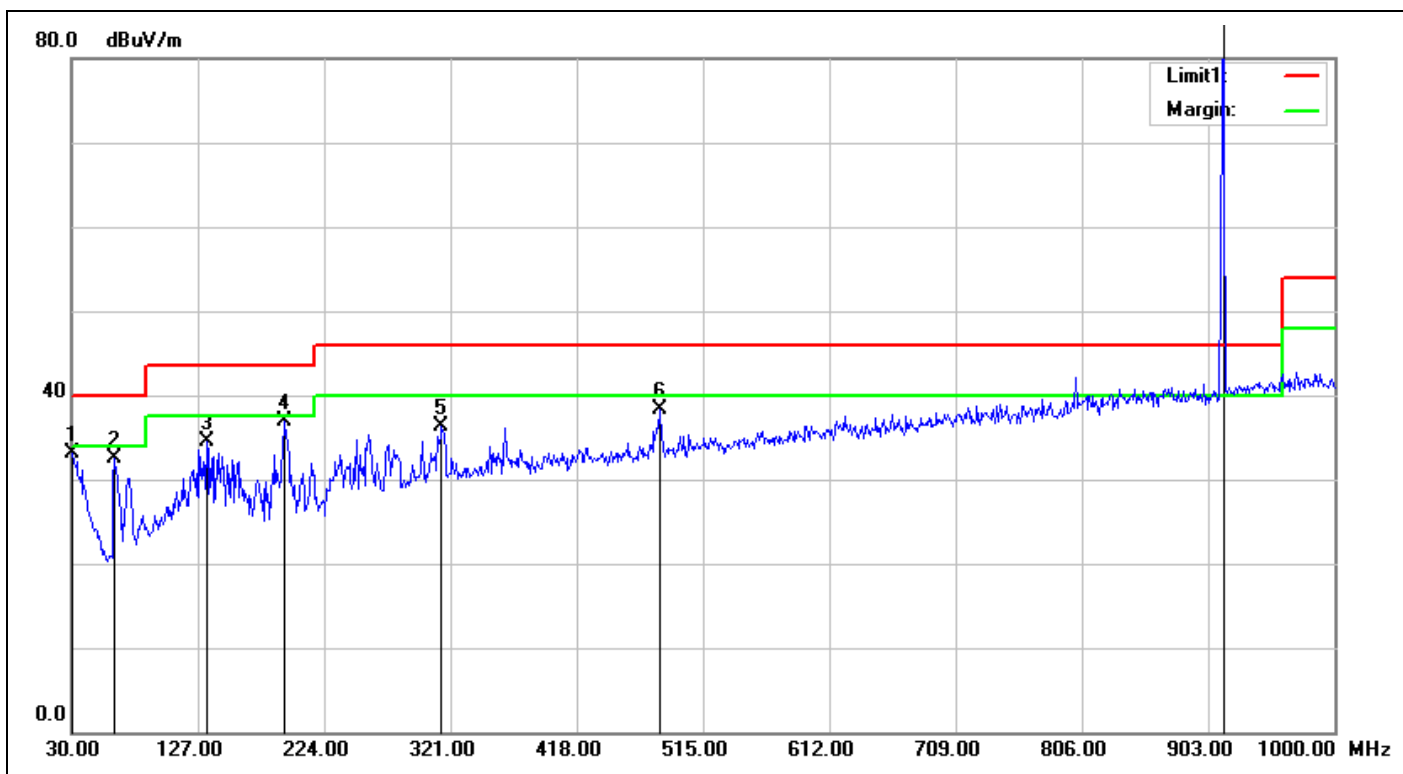
Spurious Emissions, TX Mode, 30M-1G, 1Mbps,O-QPSK



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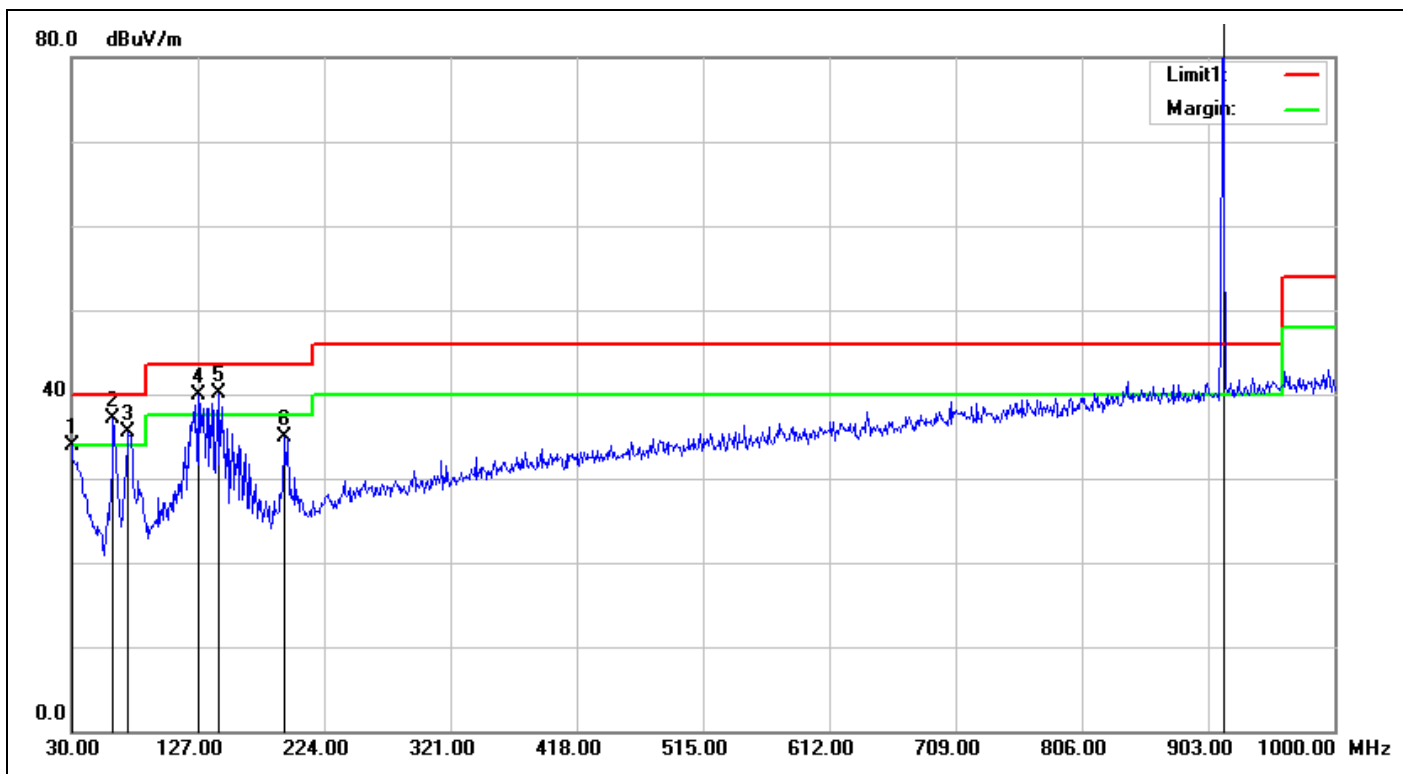
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 13:08:56
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	34.58	33.18	40.00	-6.82	QP	100	246	
2	62.9799	-14.91	47.42	32.51	40.00	-7.49	QP	100	269	
3	133.7899	-8.44	43.04	34.60	43.50	-8.90	QP	100	128	
4	193.9299	-10.77	47.58	36.81	43.50	-6.69	QP	100	210	
5	314.2099	-5.74	41.95	36.21	46.00	-9.79	QP	100	223	
6	482.0199	-2.67	40.91	38.24	46.00	-7.76	QP	100	39	
7	914.6399	4.25	91.42	95.67	46.00	49.67	QP	100	43	TX



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 13:09:49
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	35.25	33.85	40.00	-6.15	QP	100	0	
2	62.0100	-14.96	52.07	37.11	40.00	-2.89	QP	100	278	
3	73.6500	-14.12	49.59	35.47	40.00	-4.53	QP	100	278	
4	127.0000	-8.61	48.53	39.92	43.50	-3.58	QP	100	38	
5	143.4900	-8.54	48.58	40.04	43.50	-3.46	QP	100	219	
6	193.9299	-10.77	45.64	34.87	43.50	-8.63	QP	100	196	
7	914.6400	4.25	86.87	91.12	46.00	45.12	QP	100	315	TX

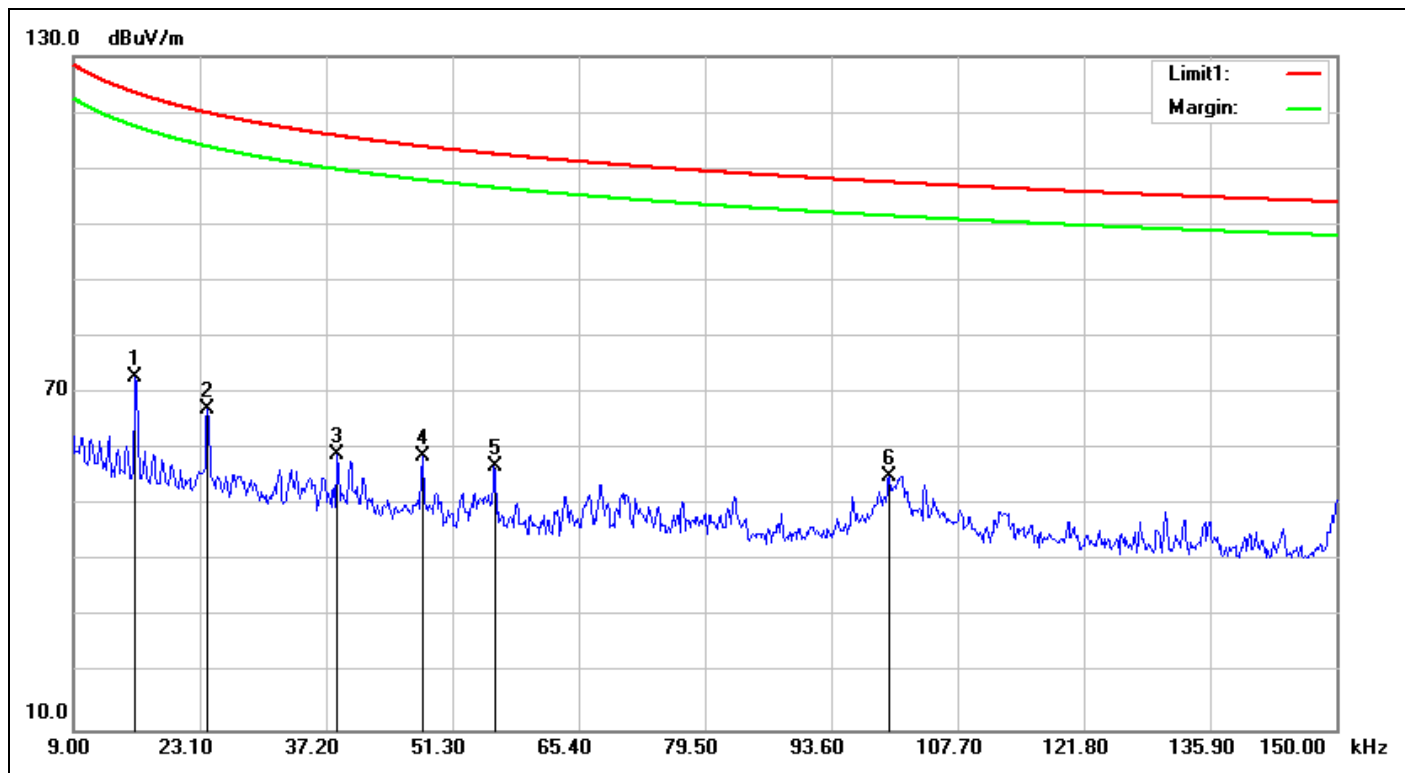
Spurious Emissions, TX Mode, 9k-30M, 1Mbps,O-QPSK



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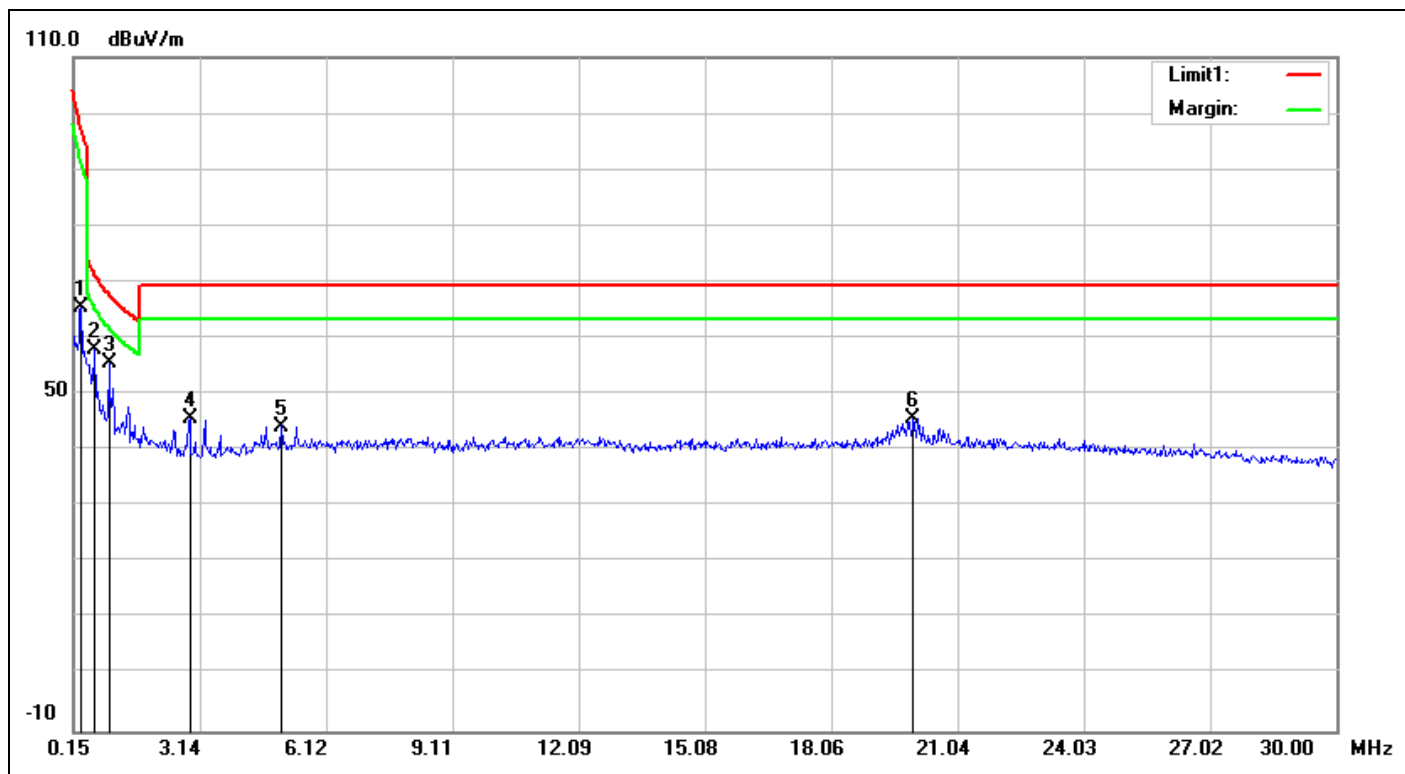
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/16 13:18:26
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	53.98	72.74	123.48	-50.74	QP	100	206	
2	0.0239	19.08	47.95	67.03	119.95	-52.92	QP	100	203	
3	0.0384	19.15	39.80	58.95	115.84	-56.89	QP	100	213	
4	0.0479	18.96	39.93	58.89	113.93	-55.04	QP	100	213	
5	0.0560	18.85	37.98	56.83	112.58	-55.75	QP	100	203	
6	0.1001	18.33	36.94	55.27	107.55	-52.28	QP	100	200	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/16 13:22:31
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	46.91	65.38	97.24	-31.86	QP	100	262	
2	0.6574	18.66	39.29	57.95	71.25	-13.30	QP	100	249	
3	0.9858	18.68	36.84	55.52	67.74	-12.22	QP	100	242	
4	2.8962	18.53	27.12	45.65	69.50	-23.85	QP	100	213	
5	5.0752	19.48	24.82	44.30	69.50	-25.20	QP	100	213	
6	20.0003	21.60	24.15	45.75	69.50	-23.75	QP	100	360	

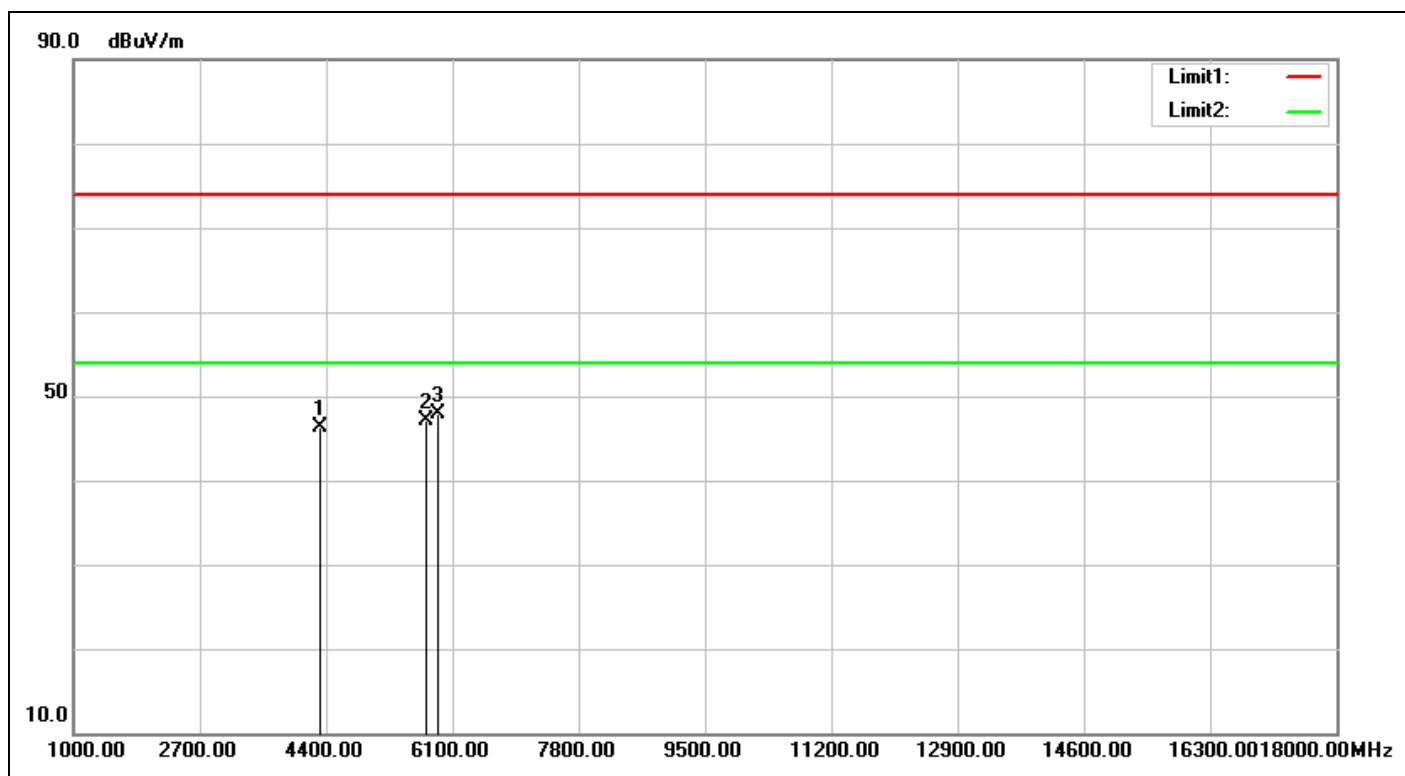
Spurious Emissions, RX Mode, 1-18G, 1Mbps, O-QPSK



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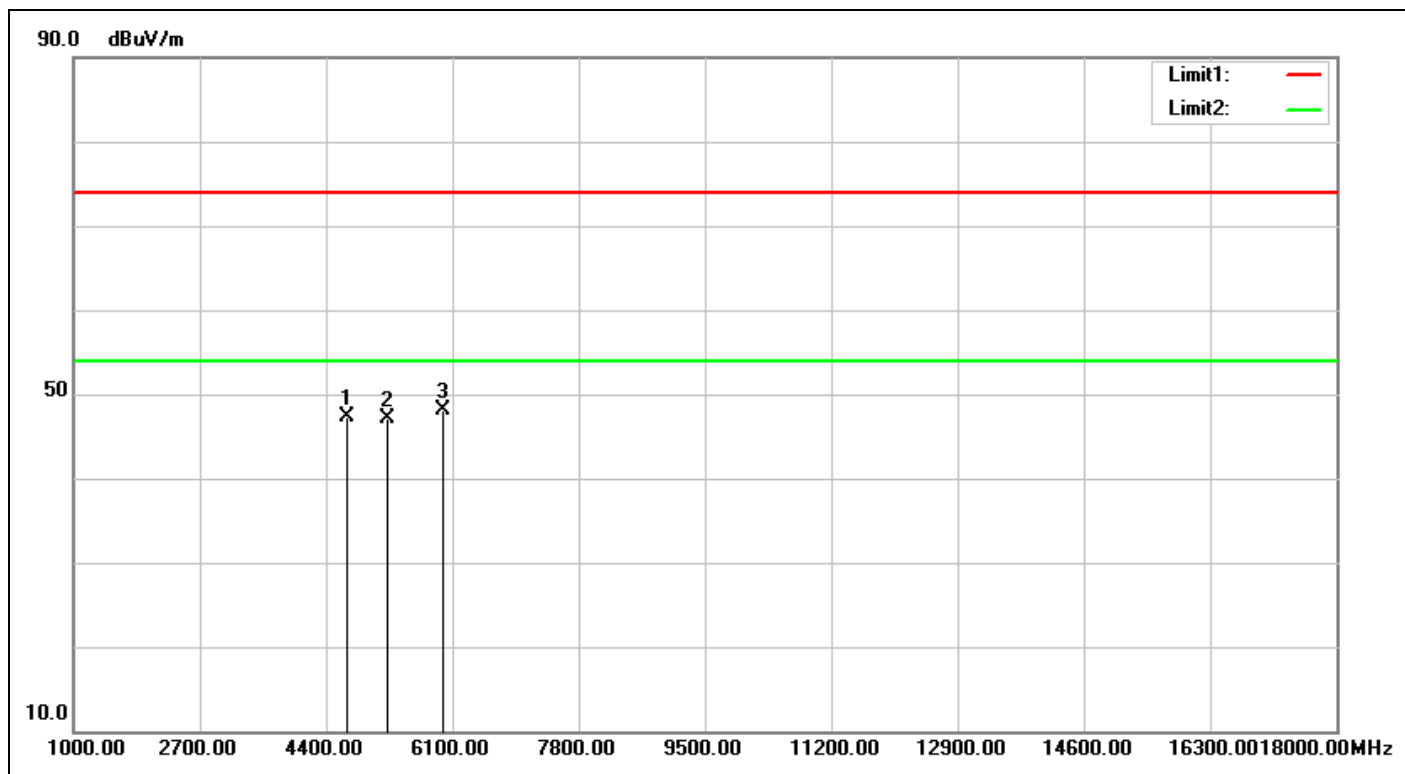
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:21:39
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	1Mbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4315.000	-4.61	50.89	46.28	74.00	-27.72	peak	100	202	
2	5743.000	0.68	46.33	47.01	74.00	-26.99	peak	100	355	
3	5913.000	1.75	46.23	47.98	74.00	-26.02	peak	100	359	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:22:31
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4672.000	-3.67	51.05	47.38	74.00	-26.62	peak	100	306	
2	5216.000	-2.16	49.36	47.20	74.00	-26.80	peak	100	313	
3	5964.000	2.07	46.05	48.12	74.00	-25.88	peak	100	74	

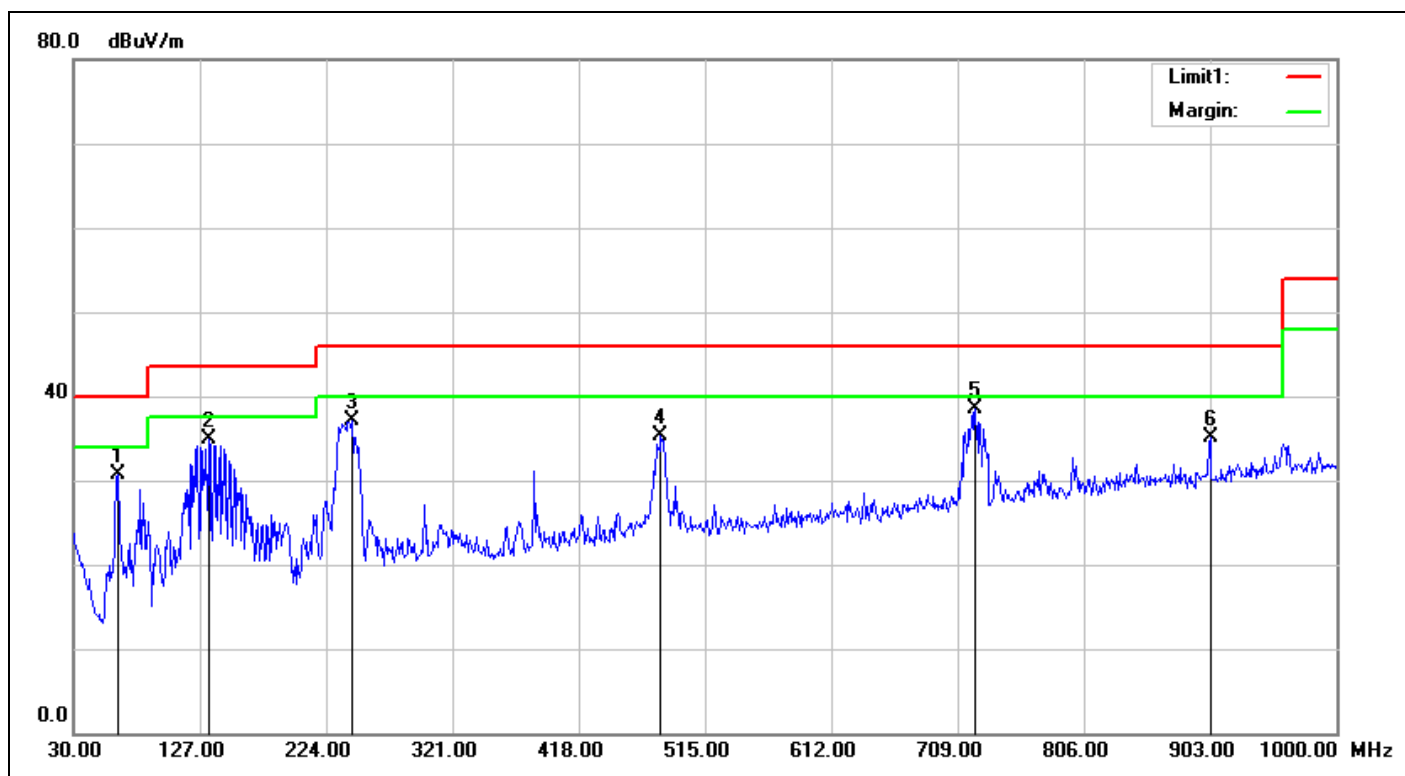
Spurious Emissions, RX Mode, 30M-1G, 1Mbps, O-QPSK



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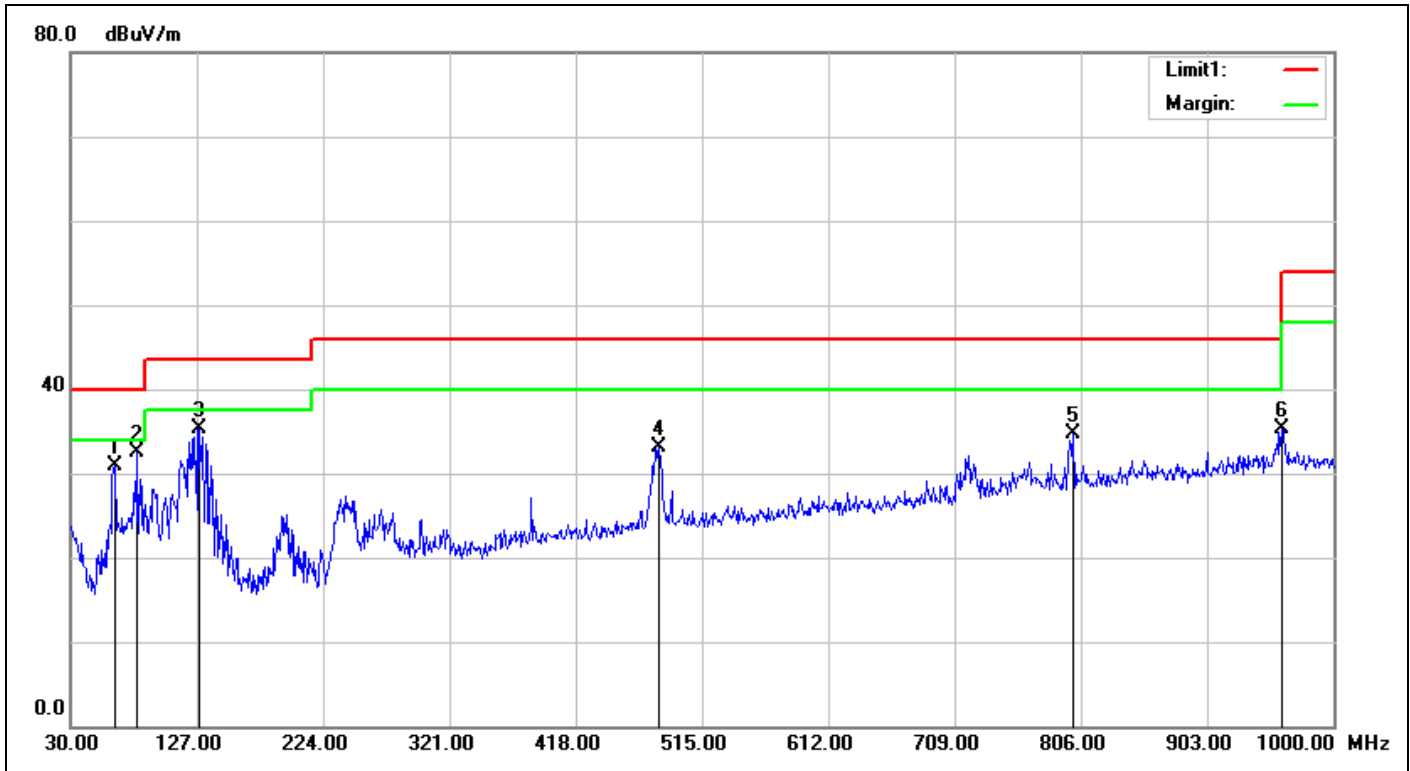
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:37:34
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	1Mbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	63.9500	-14.87	45.64	30.77	40.00	-9.23	QP	100	314	
2	133.7900	-8.44	43.40	34.96	43.50	-8.54	QP	100	177	
3	244.3700	-7.84	44.98	37.14	46.00	-8.86	QP	100	203	
4	481.0500	-2.69	38.04	35.35	46.00	-10.65	QP	100	177	
5	722.5800	0.94	37.63	38.57	46.00	-7.43	QP	100	298	
6	903.0000	3.92	31.20	35.12	46.00	-10.88	QP	100	127	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:38:27
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	63.9500	-14.87	45.76	30.89	40.00	-9.11	QP	100	239	
2	81.4100	-13.17	45.60	32.43	40.00	-7.57	QP	100	1	
3	128.9400	-8.51	43.89	35.38	43.50	-8.12	QP	100	259	
4	482.0200	-2.67	35.73	33.06	46.00	-12.94	QP	100	167	
5	800.1800	2.27	32.37	34.64	46.00	-11.36	QP	100	56	
6	960.2300	5.26	30.04	35.30	54.00	-18.70	QP	100	262	

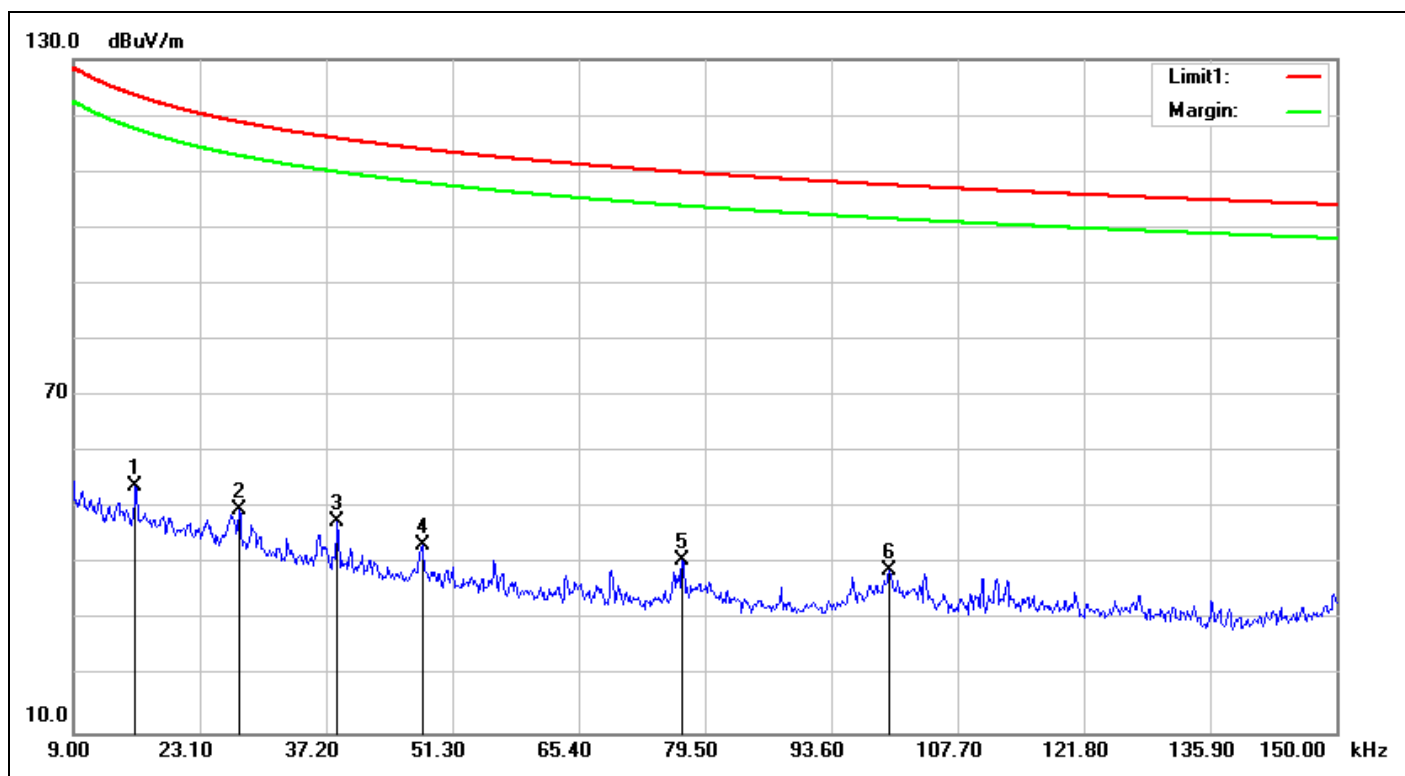
Spurious Emissions, RX Mode, 9K-30M, 1Mbps,O-QPSK



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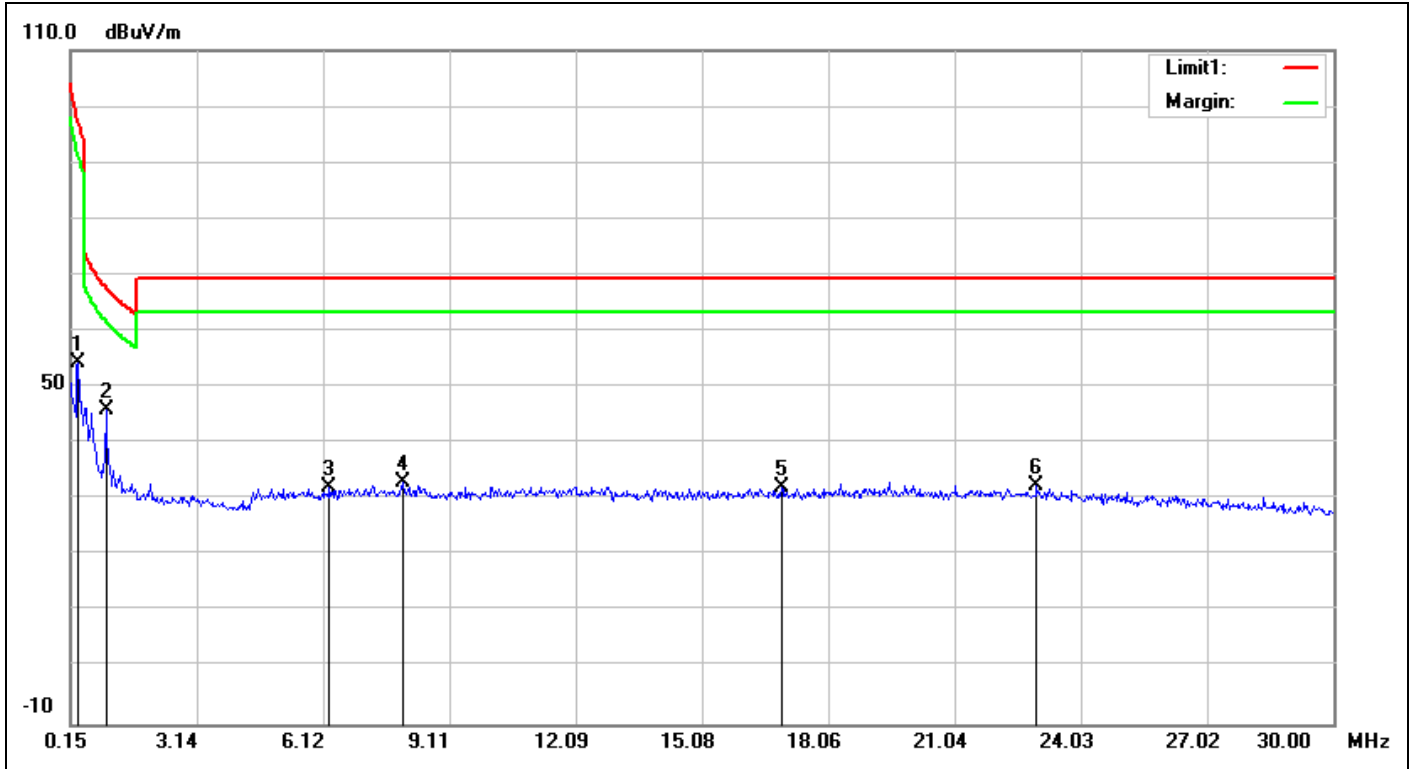
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:18:51
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	35.25	54.01	123.56	-69.55	QP	100	259	
2	0.0275	19.22	30.55	49.77	118.80	-69.03	QP	100	249	
3	0.0385	19.15	28.60	47.75	115.88	-68.13	QP	100	200	
4	0.0479	18.96	24.56	43.52	113.99	-70.47	QP	100	223	
5	0.0770	18.60	22.28	40.88	109.87	-68.99	QP	100	203	
6	0.1001	18.33	20.54	38.87	107.59	-68.72	QP	100	213	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:25:44
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	Chip antenna 1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	35.80	54.27	97.26	-42.99	QP	100	249	
2	0.9858	18.68	27.28	45.96	67.75	-21.79	QP	100	243	
3	6.2693	19.72	12.56	32.28	69.50	-37.22	QP	100	322	
4	8.0006	20.05	12.90	32.95	69.50	-36.55	QP	100	334	
5	16.9556	21.26	10.85	32.11	69.50	-37.39	QP	100	278	
6	22.9853	21.71	10.60	32.31	69.50	-37.19	QP	100	325	

External Antenna of ANT-916-CW-QW-SMA

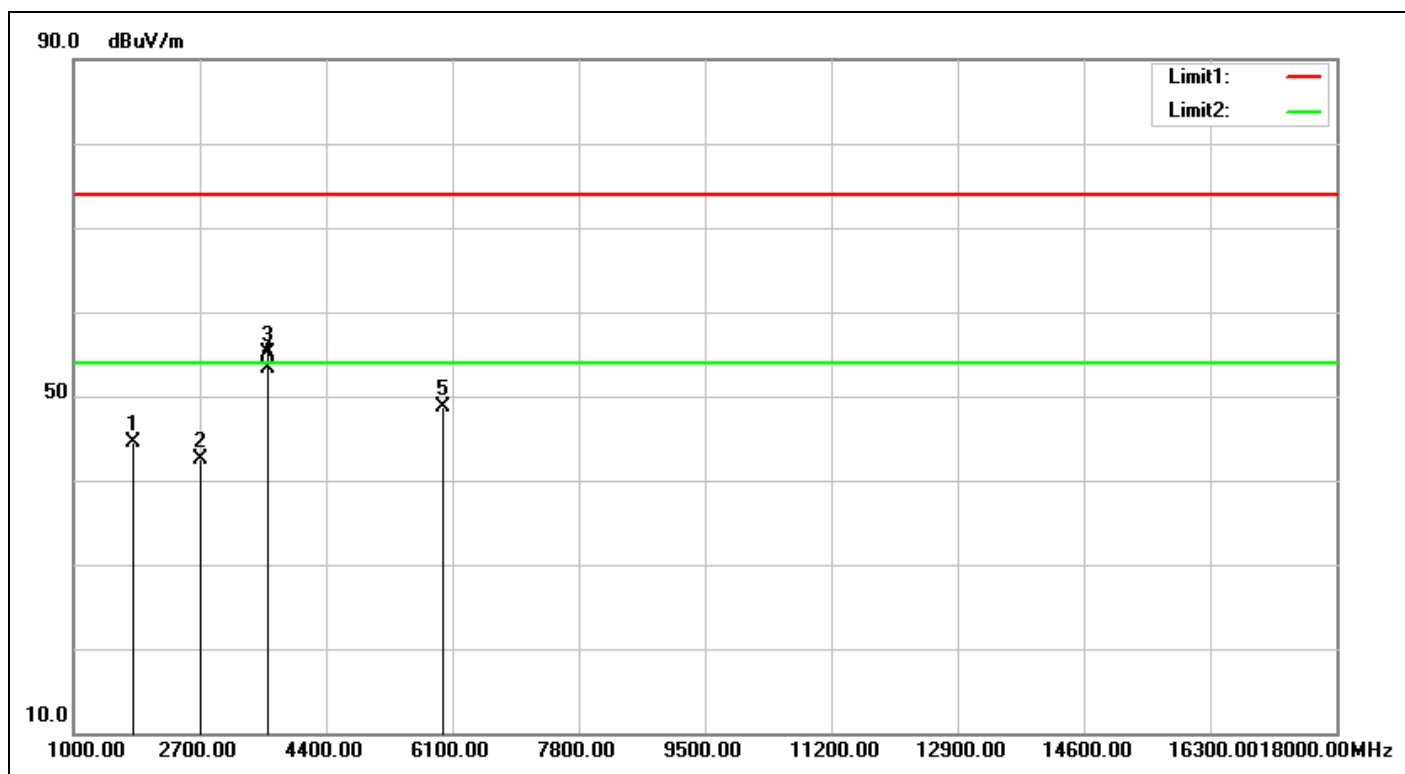
Spurious Emissions, TX Mode, 1-18G, 40kbps, BPSK



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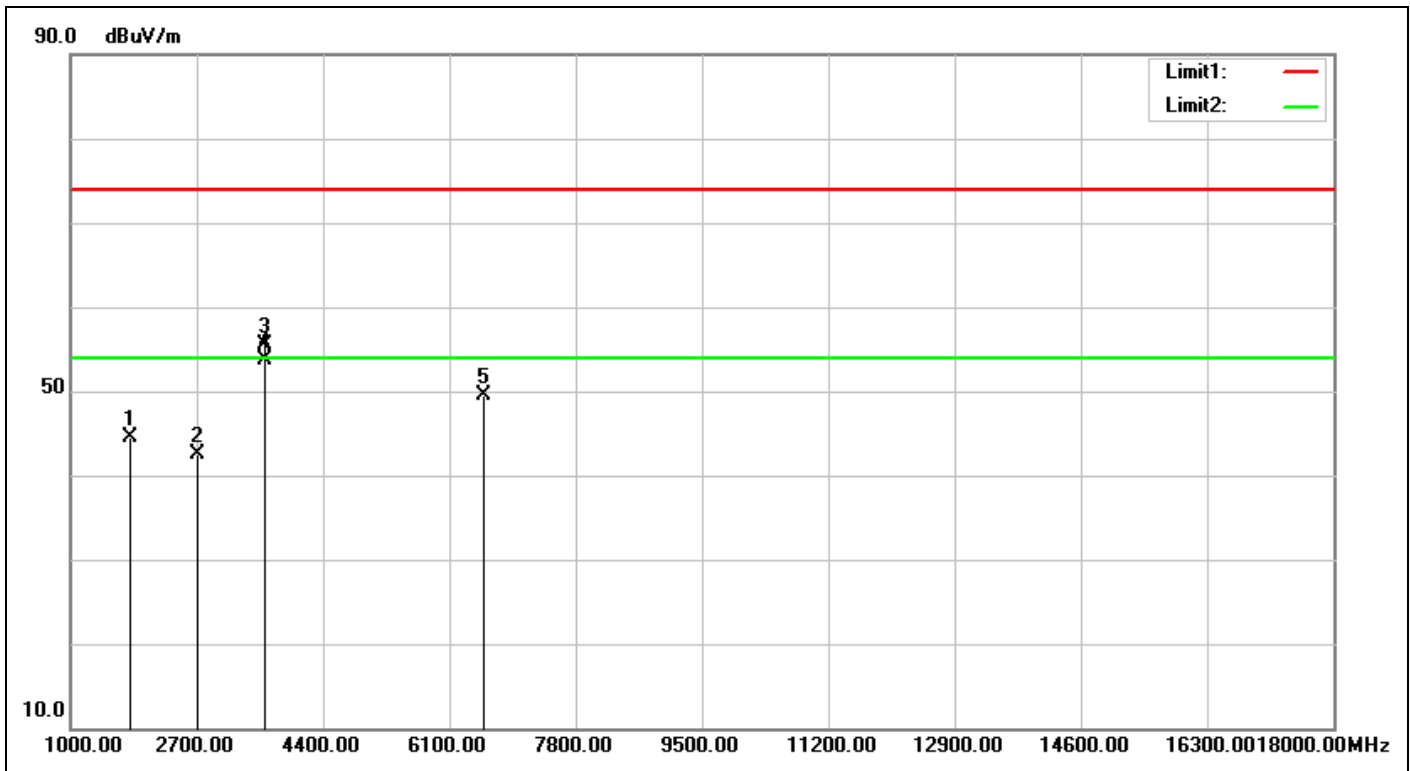
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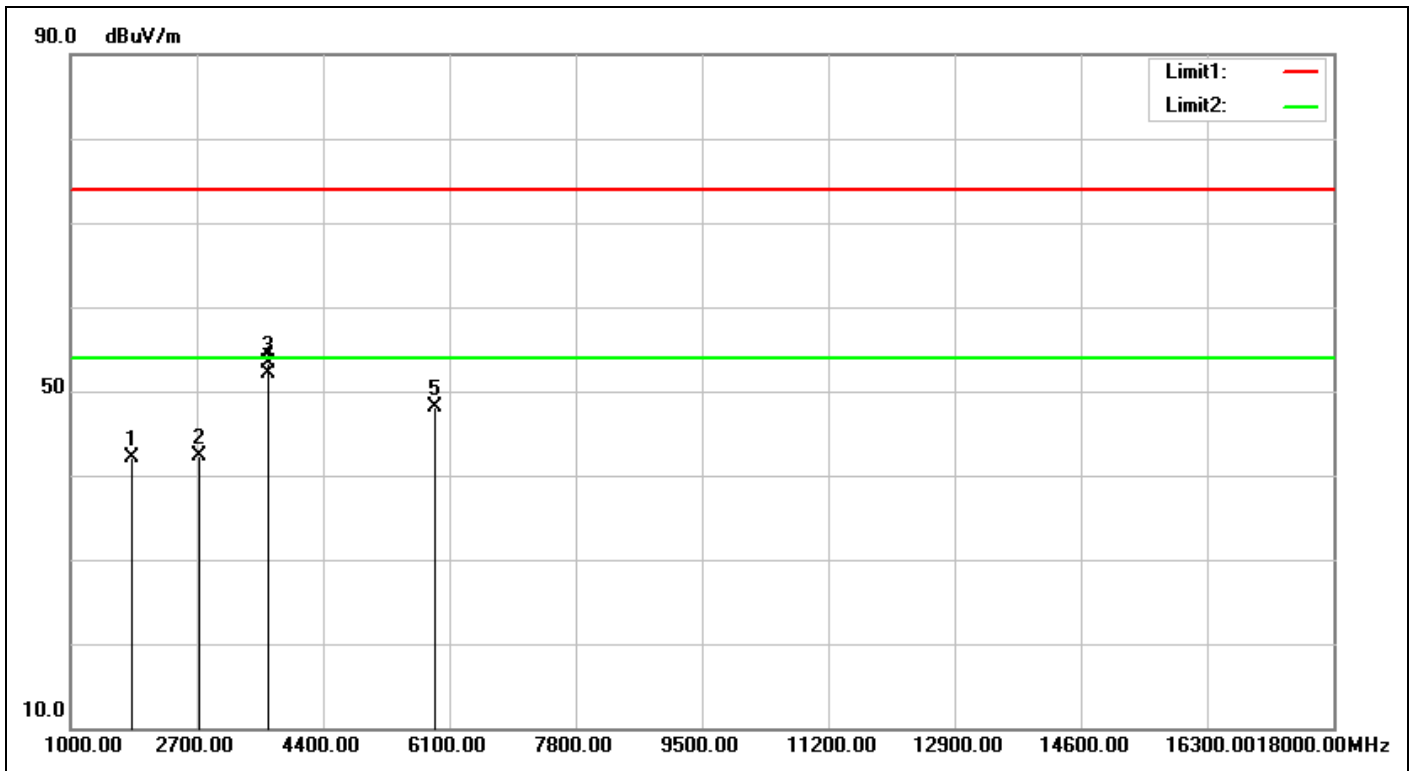
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/15 16:46:14
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	External antenna 40kbps, BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	53.84	44.42	74.00	-29.58	peak	100	232	
2	2718.000	-7.66	50.14	42.48	74.00	-31.52	peak		0	
3	3624.000	-6.53	61.60	55.07	74.00	-18.93	peak	100	218	
4	3624.000	-6.53	59.75	53.22	54.00	-0.78	AVG	100	218	
5	5964.000	2.07	46.65	48.72	74.00	-25.28	peak	100	354	



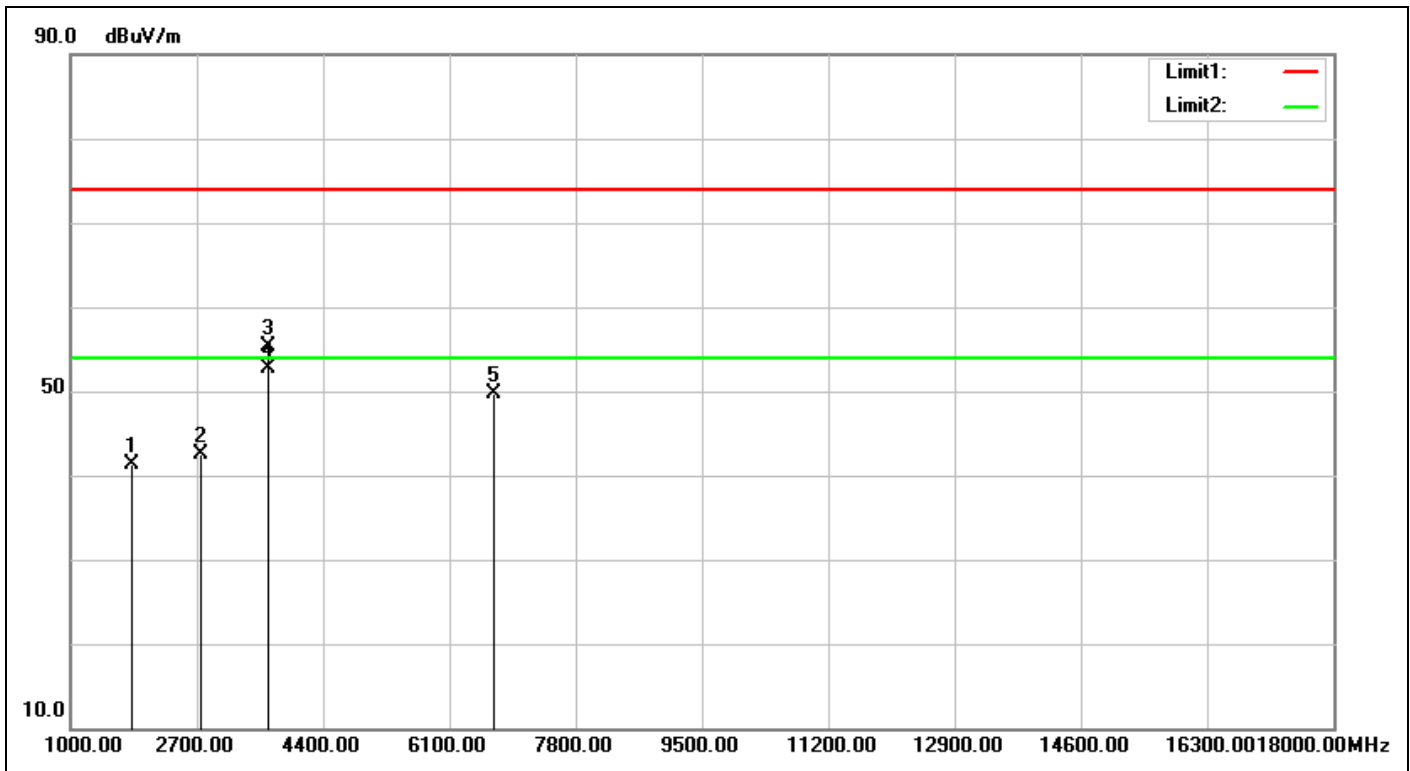
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/15 16:47:17
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	53.87	44.45	74.00	-29.55	peak	100	111	
2	2718.000	-7.66	50.18	42.52	74.00	-31.48	peak			
3	3624.000	-6.53	62.12	55.59	74.00	-18.41	peak	100	145	
4	3624.000	-6.53	60.27	53.74	54.00	-0.26	AVG	100	145	
5	6559.000	4.31	45.25	49.56	74.00	-24.44	peak	100	338	



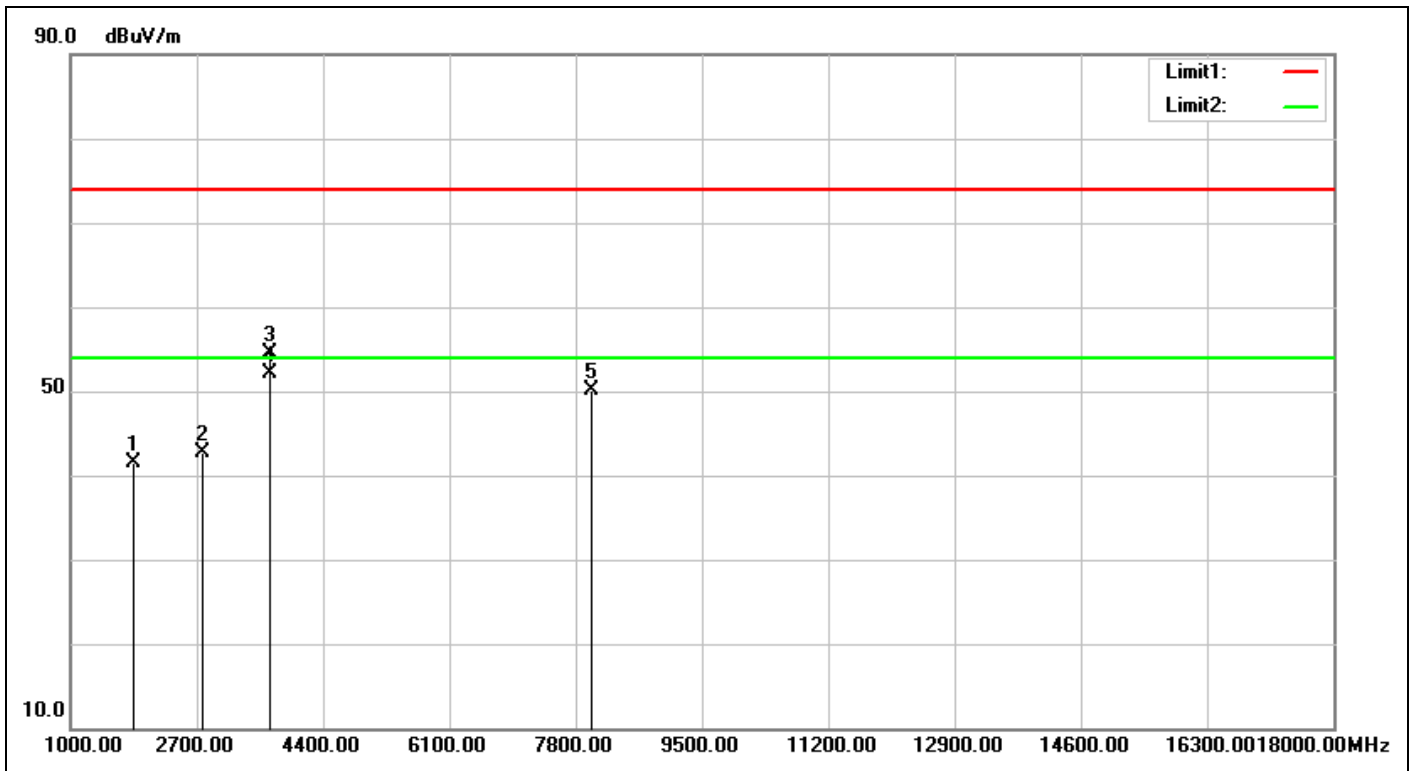
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/15 17:00:40
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.30	51.35	42.05	74.00	-31.95	peak			
2	2742.000	-7.62	49.94	42.32	74.00	-31.68	peak			
3	3656.000	-6.45	59.84	53.39	74.00	-20.61	peak	100	221	
4	3656.000	-6.45	58.63	52.18	54.00	-1.82	AVG	100	221	
5	5913.000	1.75	46.44	48.19	74.00	-25.81	peak	100	354	



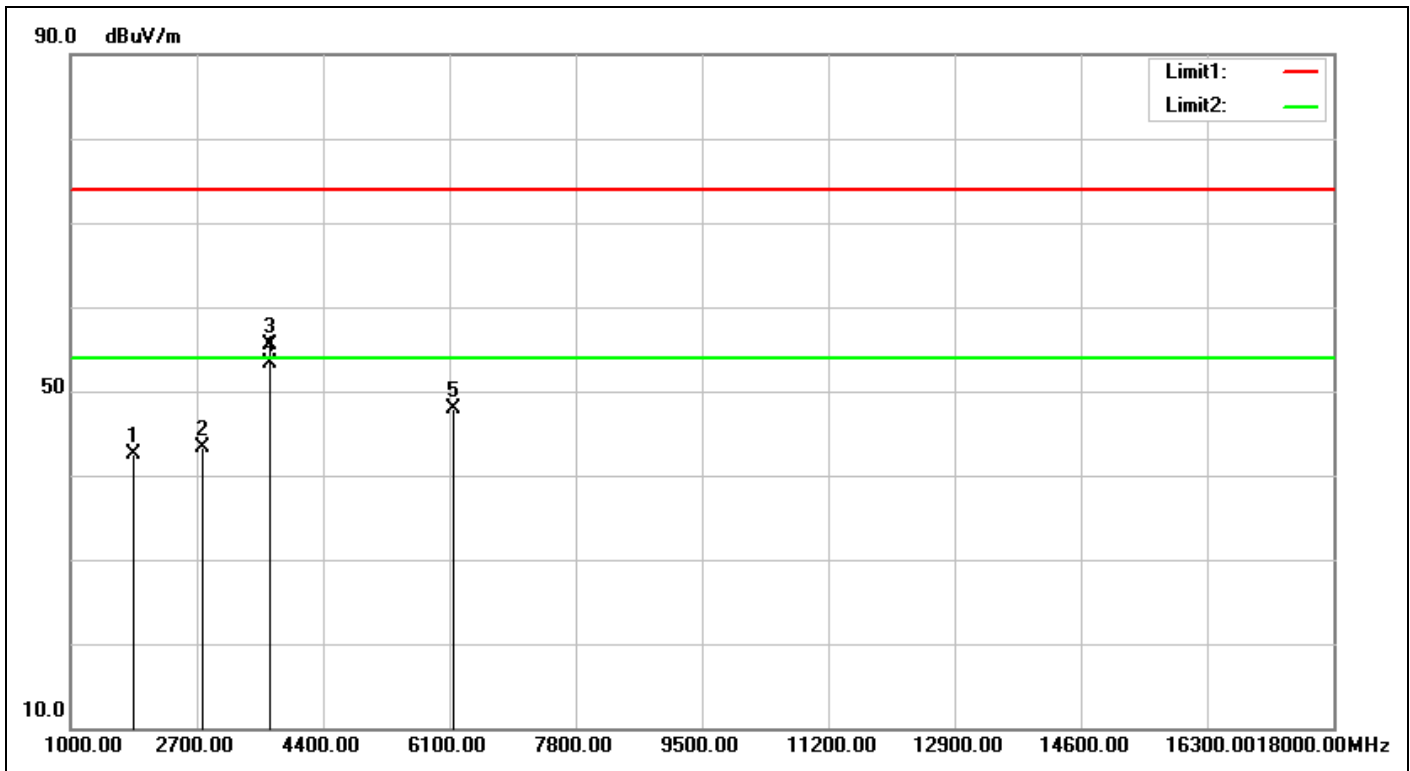
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/15 17:01:43
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.30	50.70	41.40	74.00	-32.60	peak			
2	2742.000	-7.62	50.13	42.51	74.00	-31.49	peak			
3	3656.000	-6.45	61.68	55.23	74.00	-18.77	peak	100	142	
4	3656.000	-6.45	59.06	52.61	54.00	-1.39	AVG	100	142	
5	6695.000	4.14	45.65	49.79	74.00	-24.21	peak	100	250	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/15 17:15:42
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.75	41.57	74.00	-32.43	peak		0	
2	2772.000	-7.57	50.22	42.65	74.00	-31.35	peak		0	
3	3696.000	-6.37	60.90	54.53	74.00	-19.47	peak	100	218	
4	3696.000	-6.37	58.42	52.05	54.00	-1.95	AVG	100	218	
5	8021.000	4.76	45.33	50.09	74.00	-23.91	peak	100	268	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/15 17:16:44
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	51.68	42.50	74.00	-31.50	peak			
2	2772.000	-7.57	50.97	43.40	74.00	-30.60	peak			
3	3696.000	-6.37	61.78	55.41	74.00	-18.59	peak	100	142	
4	3696.000	-6.37	59.77	53.40	54.00	-0.60	AVG	100	142	
5	6151.000	2.93	45.03	47.96	74.00	-26.04	peak	100	51	

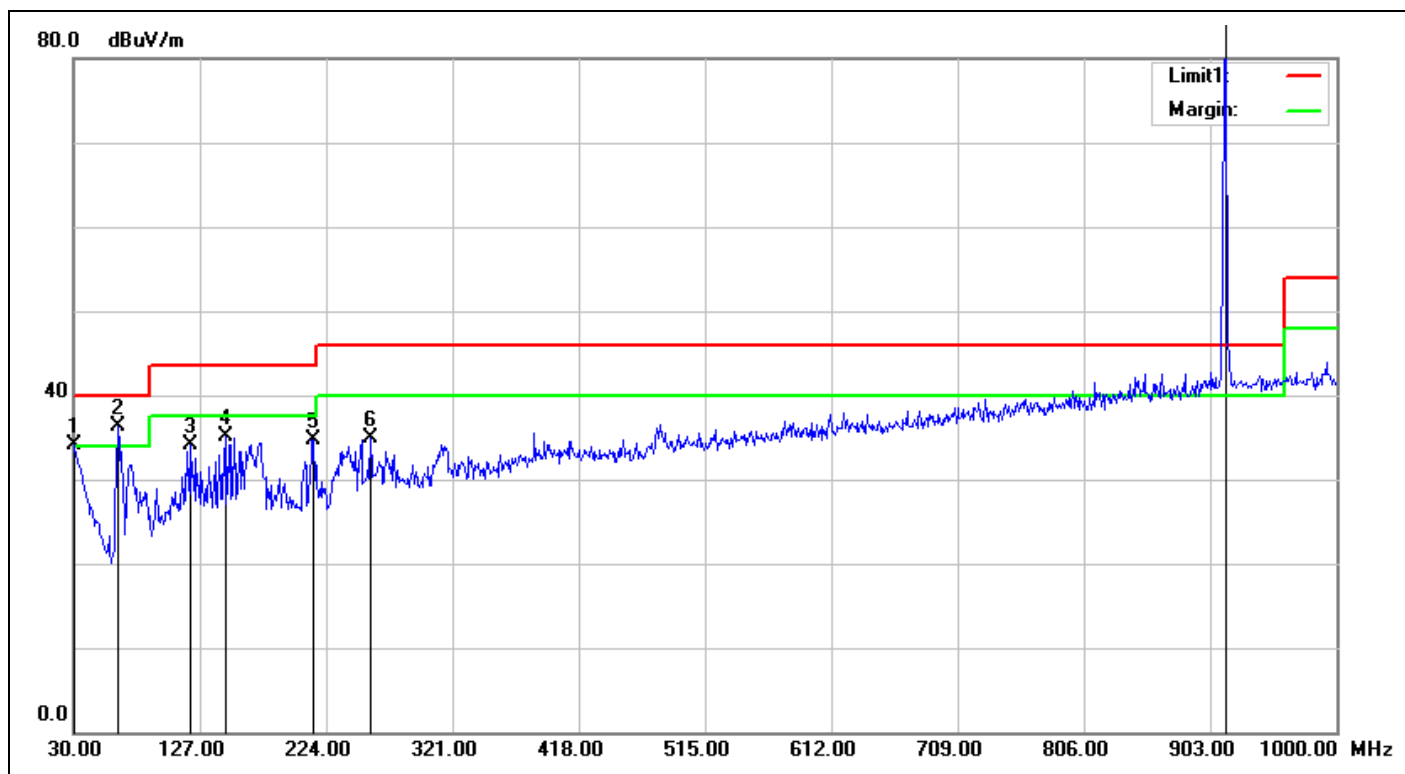
Spurious Emissions, TX Mode, 30M-1G, 40kbps,BPSK



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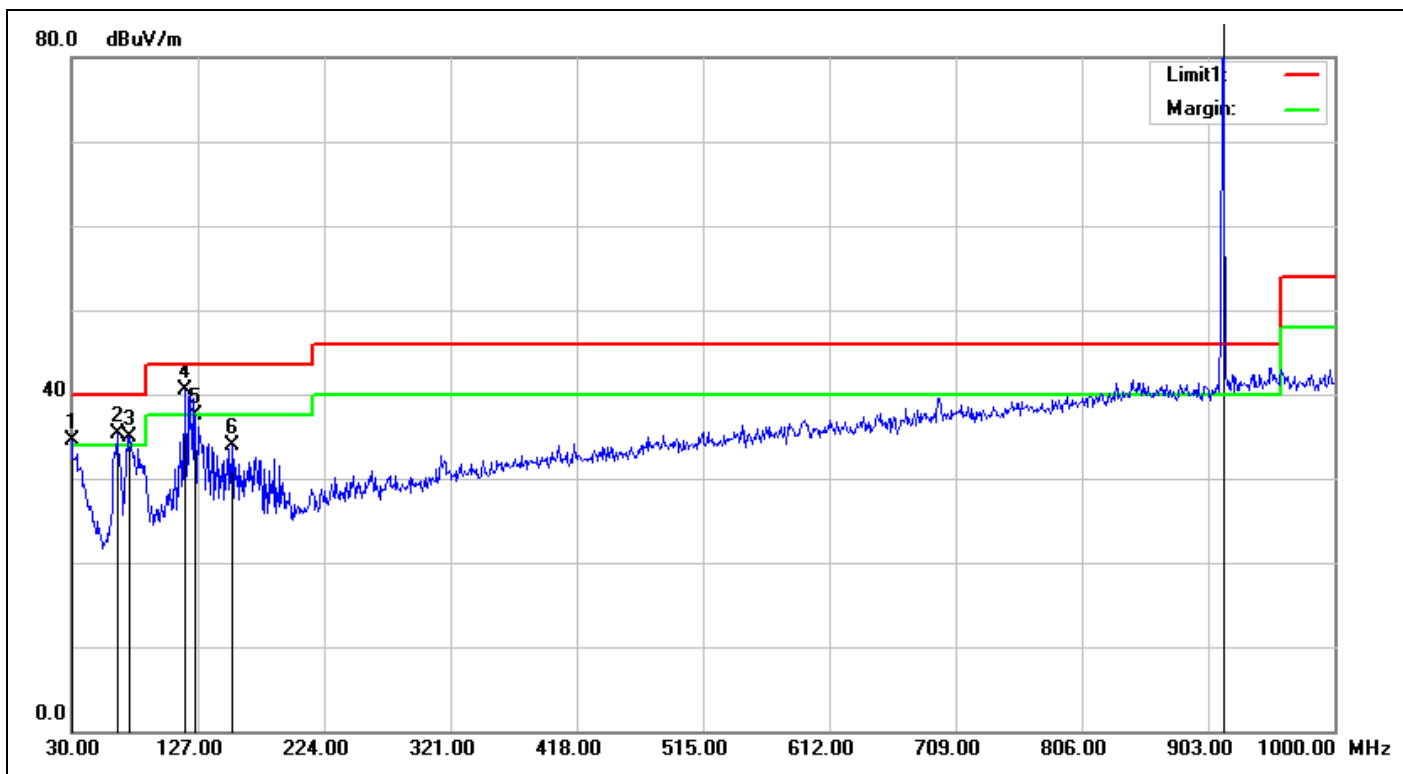
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/15 15:12:44
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	20.2(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	35.42	34.02	40.00	-5.98	QP	100	15	
2	63.9500	-14.87	51.25	36.38	40.00	-3.62	QP	100	358	
3	119.2400	-9.00	43.07	34.07	43.50	-9.43	QP	100	158	
4	147.3700	-8.71	43.76	35.05	43.50	-8.45	QP	100	34	
5	214.3000	-10.02	44.75	34.73	43.50	-8.77	QP	100	156	
6	257.9500	-6.61	41.61	35.00	46.00	-11.00	QP	100	78	
7	914.6400	4.25	103.41	107.66	46.00	61.66	QP	100	56	TX



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/15 15:13:47
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	20.2(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	35.86	34.46	40.00	-5.54	QP	100	275	
2	64.9200	-14.81	50.02	35.21	40.00	-4.79	QP	100	154	
3	74.6200	-14.00	48.92	34.92	40.00	-5.08	QP	100	222	
4	117.3000	-9.11	49.57	40.46	43.50	-3.04	QP	100	354	
5	125.0600	-8.70	46.16	37.46	43.50	-6.04	QP	100	45	
6	153.1900	-8.96	42.84	33.88	43.50	-9.62	QP	100	159	
7	914.6400	4.25	94.75	99.00	46.00	53.00	QP	100	111	TX

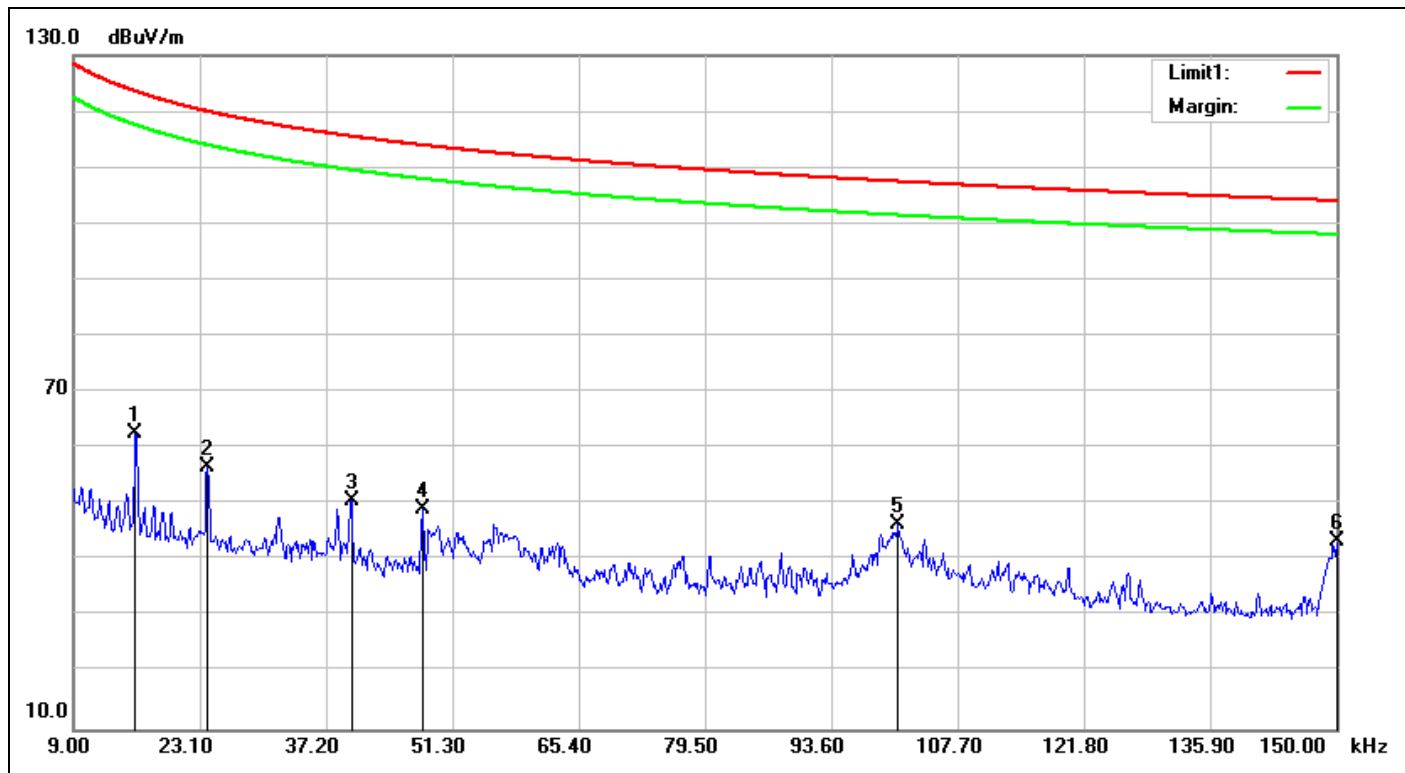
Spurious Emissions, TX Mode, 9k-30M, 40kbps,BPSK



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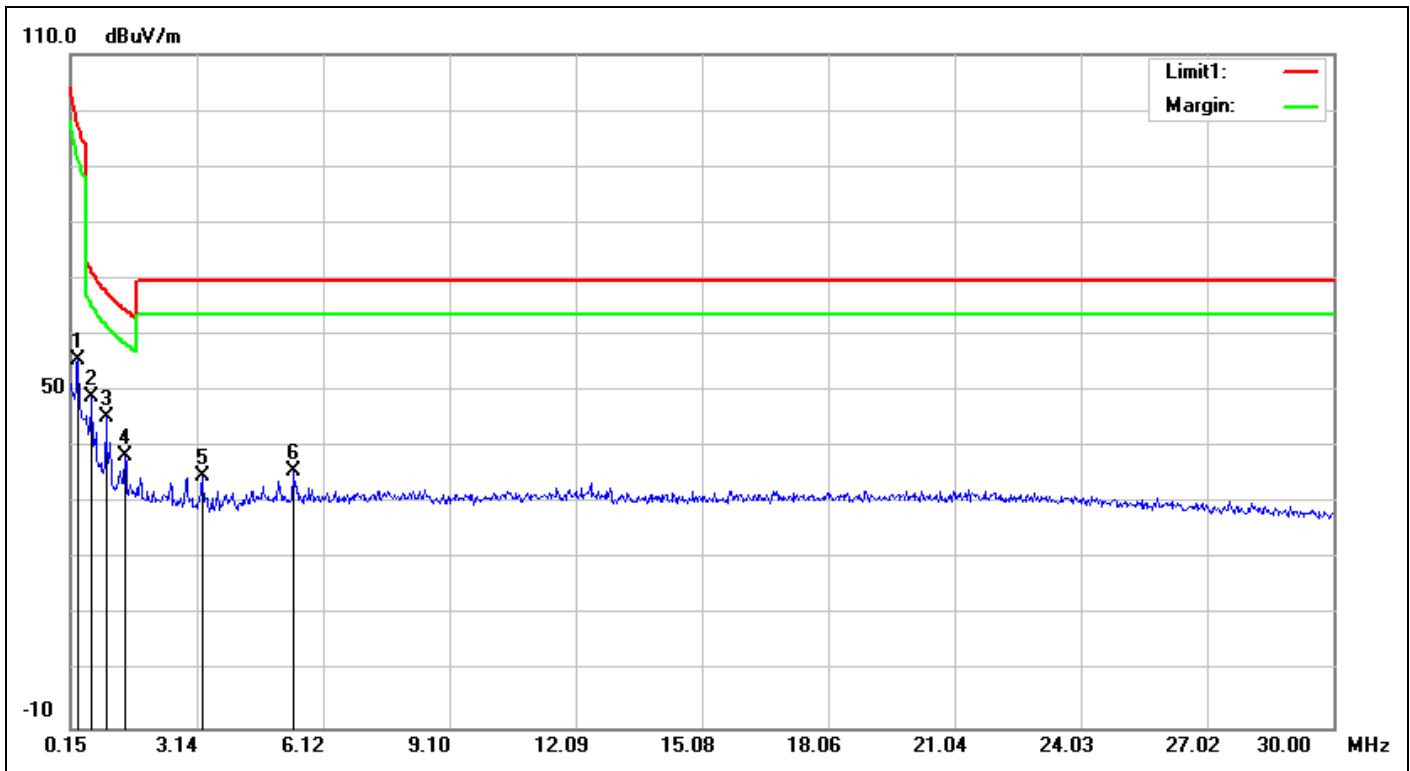
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Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/15 16:05:32
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	44.04	62.80	123.56	-60.76	QP	100	211	
2	0.0239	19.08	37.71	56.79	120.02	-63.23	QP	100	205	
3	0.0400	19.12	31.58	50.70	115.55	-64.85	QP	100	203	
4	0.0479	18.96	30.19	49.15	113.99	-64.84	QP	100	205	
5	0.1011	18.33	28.22	46.55	107.50	-60.95	QP	100	192	
6	0.1500	18.35	25.04	43.39	104.08	-60.69	QP	100	253	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/15 16:08:43
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	36.98	55.45	97.26	-41.81	QP	100	246	
2	0.6575	18.66	30.43	49.09	71.25	-22.16	QP	100	251	
3	0.9858	18.68	26.60	45.28	67.75	-22.47	QP	100	254	
4	1.4336	18.65	19.75	38.40	64.50	-26.10	QP	100	213	
5	3.2544	18.64	16.14	34.78	69.50	-34.72	QP	100	203	
6	5.4036	19.55	16.14	35.69	69.50	-33.81	QP	100	203	

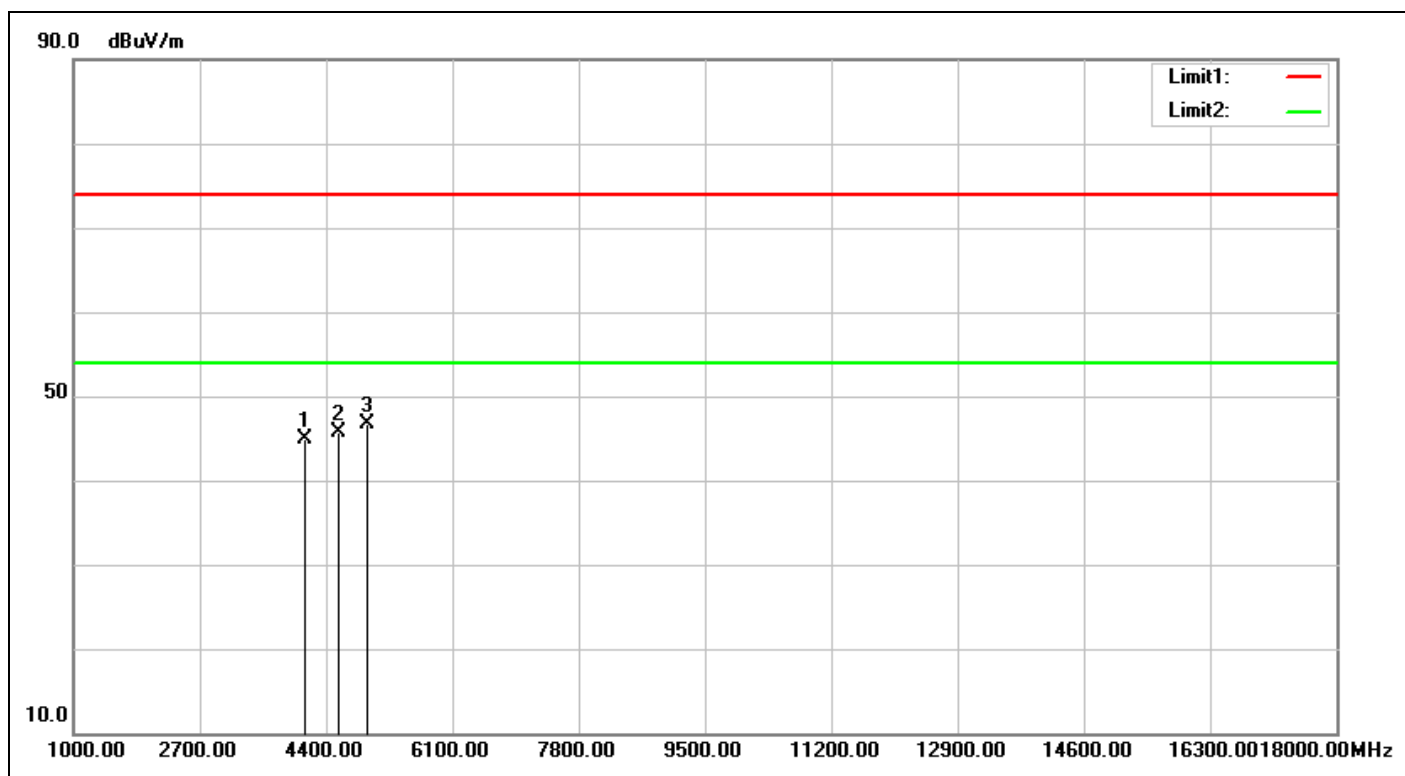
Spurious Emissions, RX Mode, 1-18G, 40kbps, BPSK



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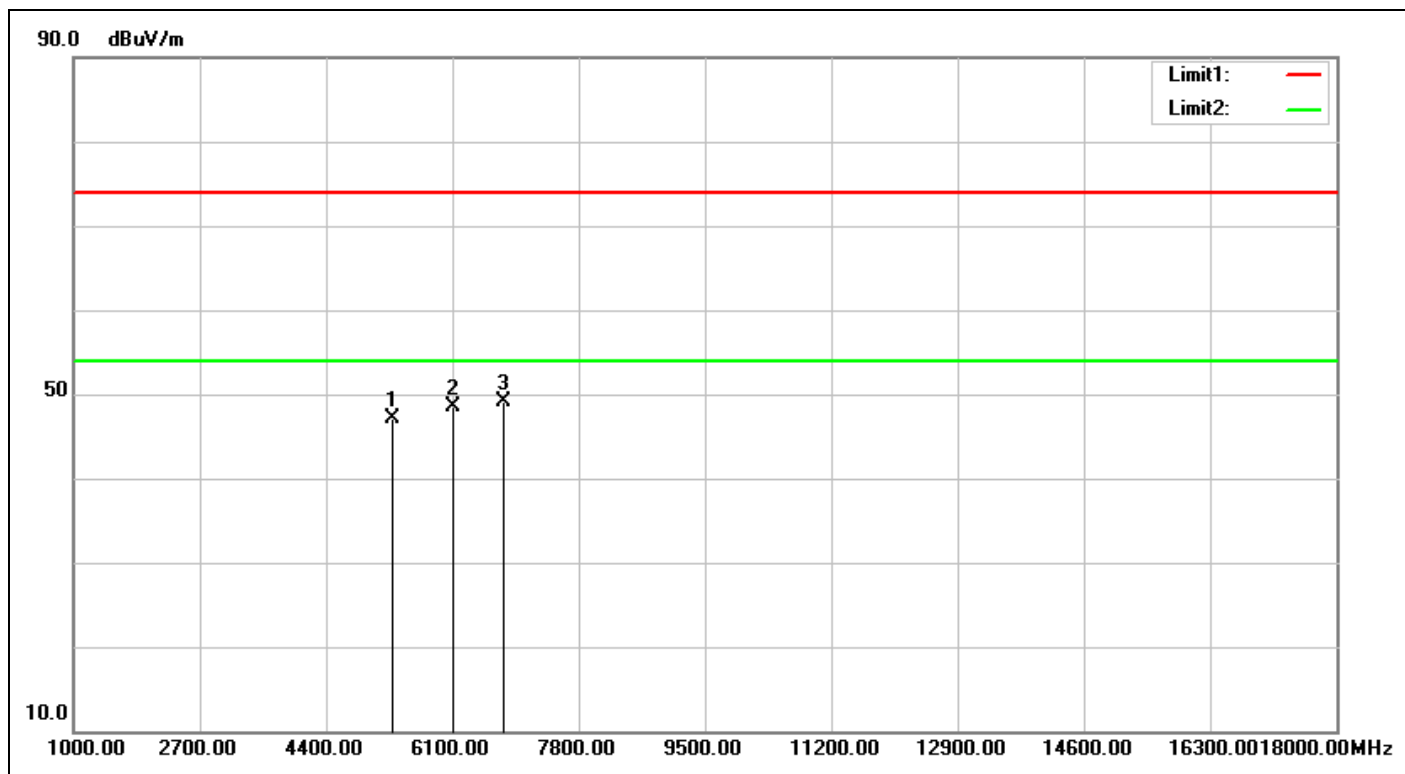
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:06:09
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	40kbps, BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4111.000	-5.31	50.27	44.96	74.00	-29.04	peak	100	71	
2	4570.000	-3.84	49.62	45.78	74.00	-28.22	peak	100	133	
3	4961.000	-3.21	50.00	46.79	74.00	-27.21	peak	100	105	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:07:02
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	5284.000	-1.85	48.95	47.10	74.00	-26.90	peak	100	12	
2	6100.000	2.72	45.88	48.60	74.00	-25.40	peak	100	244	
3	6780.000	4.03	45.07	49.10	74.00	-24.90	peak	100	197	

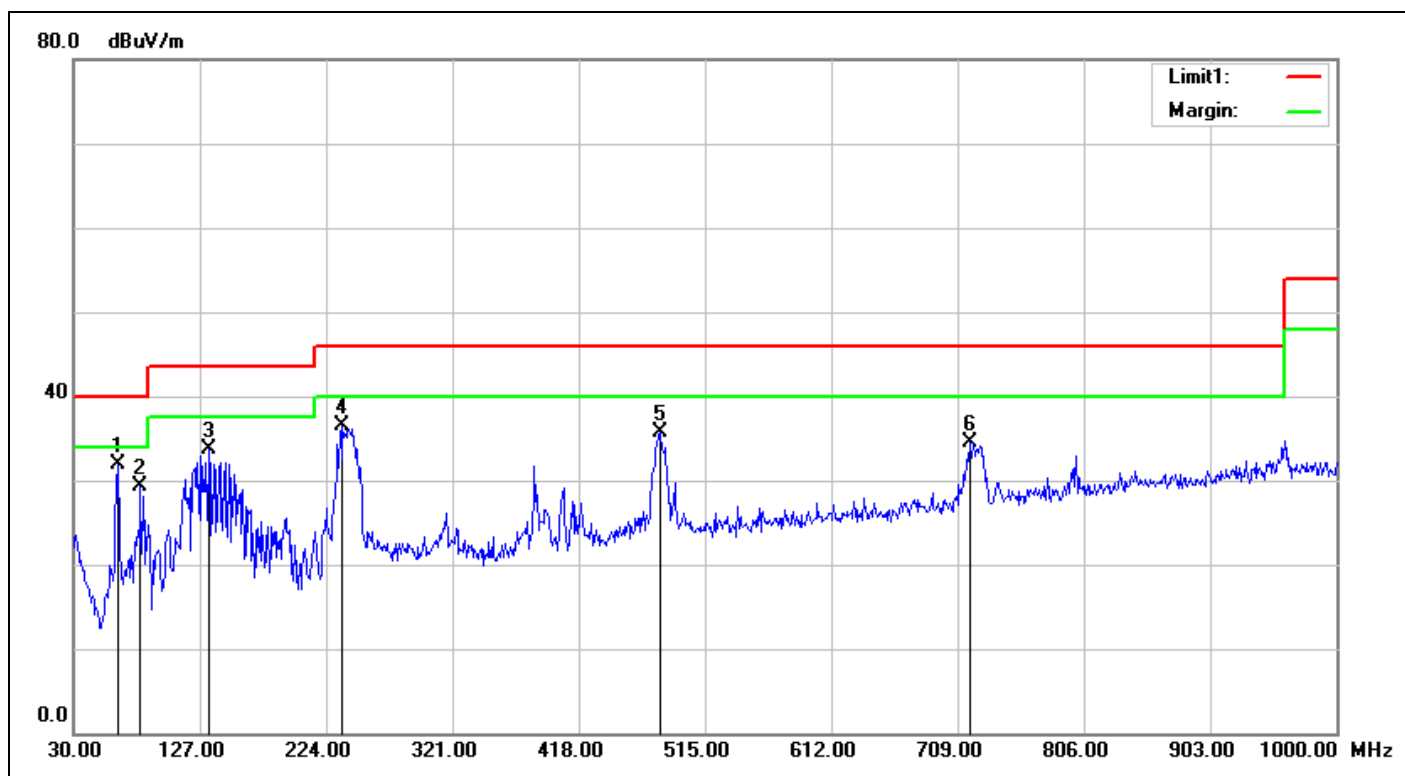
Spurious Emissions, RX Mode, 30M-1G 40kbps,BPSK



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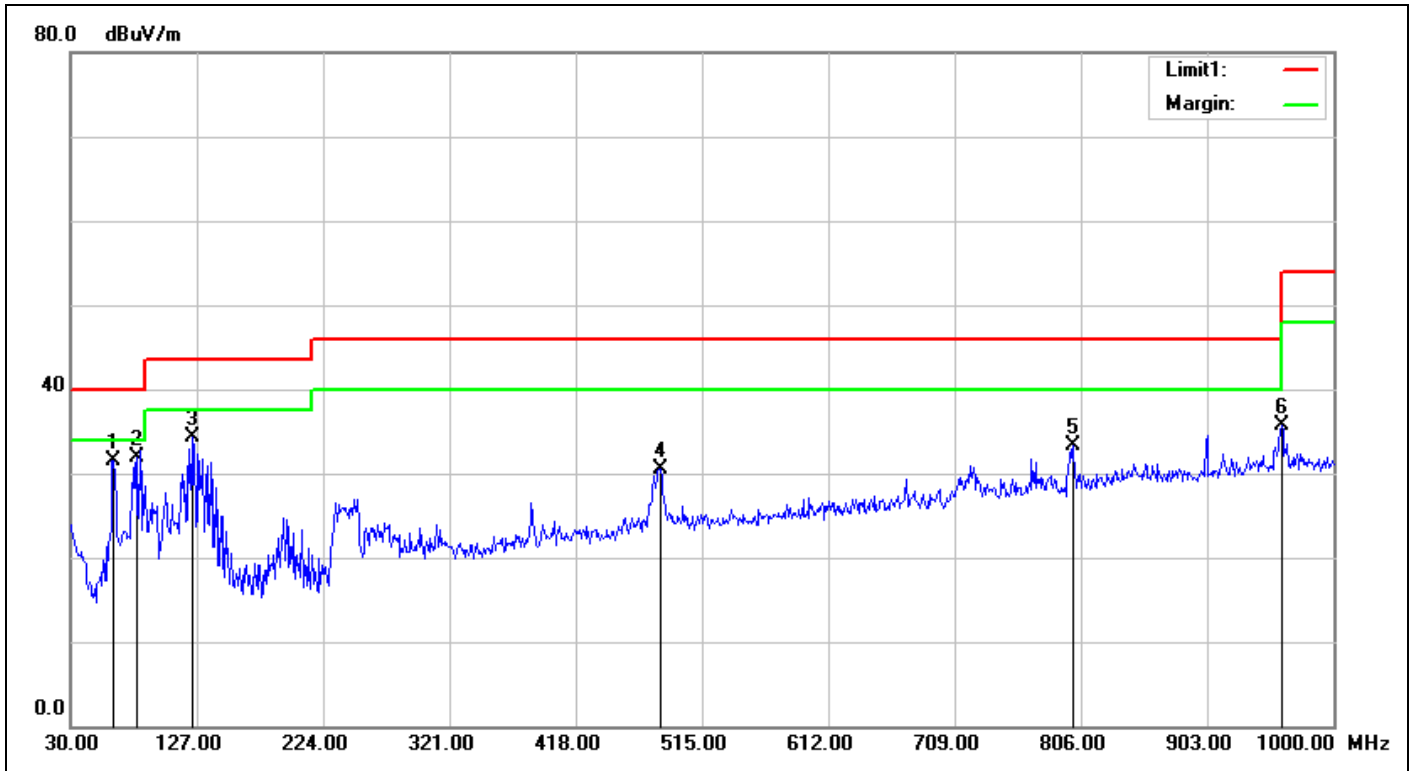
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:50:57
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	63.9500	-14.87	46.77	31.90	40.00	-8.10	QP	100	164	
2	81.4100	-13.17	42.46	29.29	40.00	-10.71	QP	100	226	
3	133.7900	-8.44	42.18	33.74	43.50	-9.76	QP	100	191	
4	236.6100	-8.51	45.11	36.60	46.00	-9.40	QP	100	197	
5	480.0800	-2.71	38.47	35.76	46.00	-10.24	QP	100	170	
6	718.7000	0.86	33.61	34.47	46.00	-11.53	QP	100	302	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:51:50
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	62.9800	-14.91	46.38	31.47	40.00	-8.53	QP	100	239	
2	81.4100	-13.17	45.13	31.96	40.00	-8.04	QP	100	3	
3	123.1200	-8.79	43.17	34.38	43.50	-9.12	QP	100	239	
4	482.9900	-2.65	33.17	30.52	46.00	-15.48	QP	100	183	
5	800.1800	2.27	31.04	33.31	46.00	-12.69	QP	100	56	
6	960.2300	5.26	30.35	35.61	54.00	-18.39	QP	100	321	

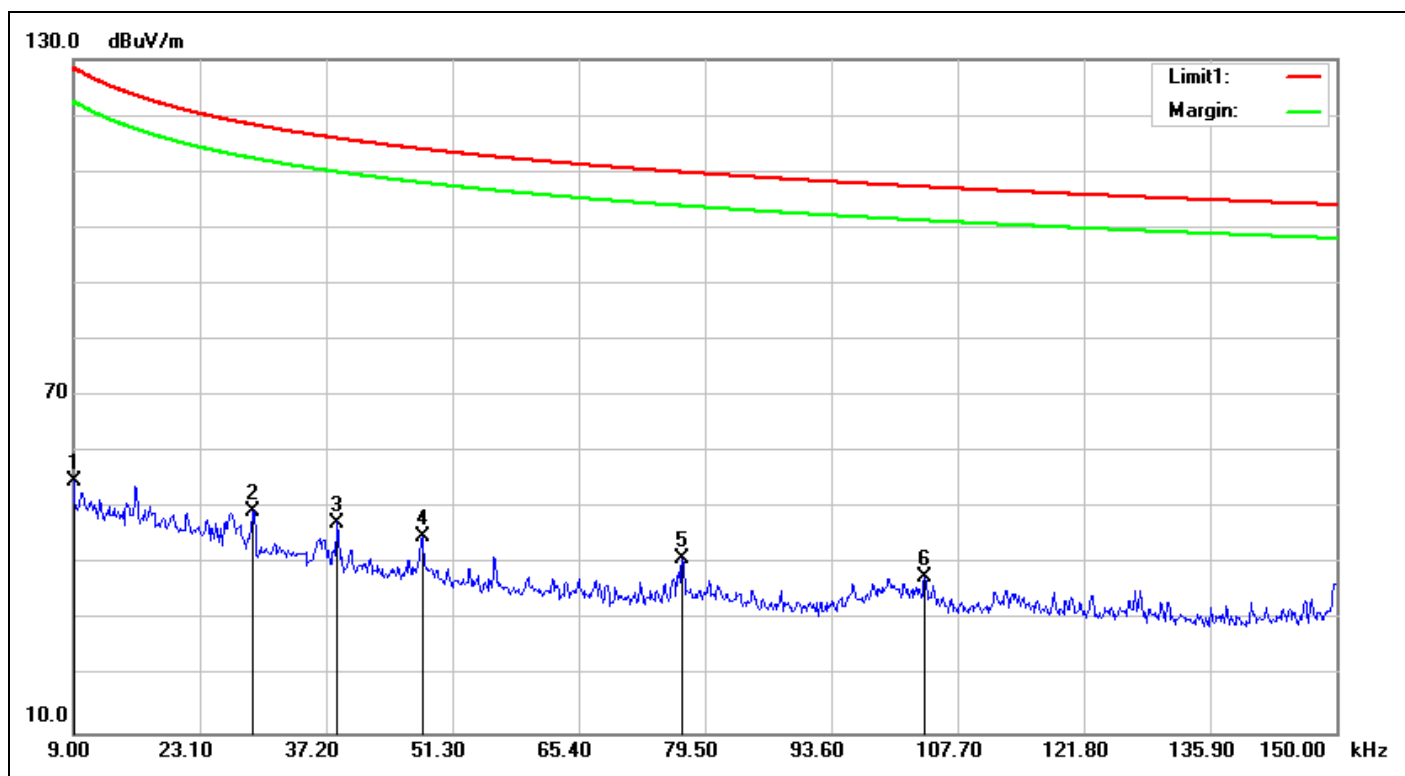
Spurious Emissions, RX Mode, 9K-30M, 40kbps,BPSK



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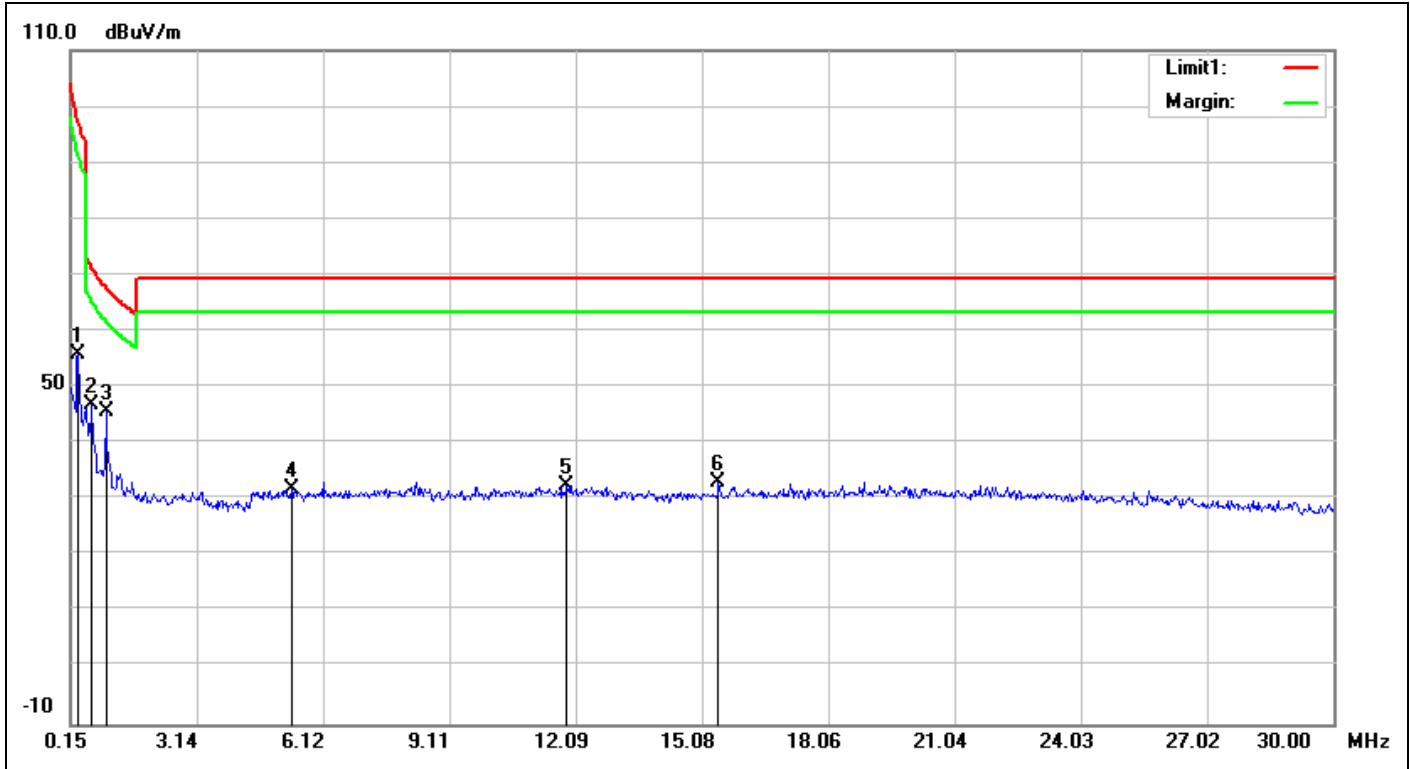
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:03:58
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna 40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0090	18.32	36.60	54.92	128.50	-73.58	QP	100	246	
2	0.0290	19.28	30.22	49.50	118.34	-68.84	QP	100	249	
3	0.0385	19.15	28.35	47.50	115.88	-68.38	QP	100	200	
4	0.0479	18.96	26.12	45.08	113.99	-68.91	QP	100	180	
5	0.0770	18.60	22.43	41.03	109.87	-68.84	QP	100	193	
6	0.1040	18.33	19.32	37.65	107.26	-69.61	QP	100	187	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:05:21
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna 40kbps,BPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	37.25	55.72	97.26	-41.54	QP	100	262	
2	0.6575	18.66	28.13	46.79	71.25	-24.46	QP	100	252	
3	0.9858	18.68	26.94	45.62	67.75	-22.13	QP	100	246	
4	5.3738	19.55	12.41	31.96	69.50	-37.54	QP	100	98	
5	11.8811	20.66	11.80	32.46	69.50	-37.04	QP	100	2	
6	15.4631	21.08	11.92	33.00	69.50	-36.50	QP	100	160	

External Antenna of ANT-916-CW-QW-SMA

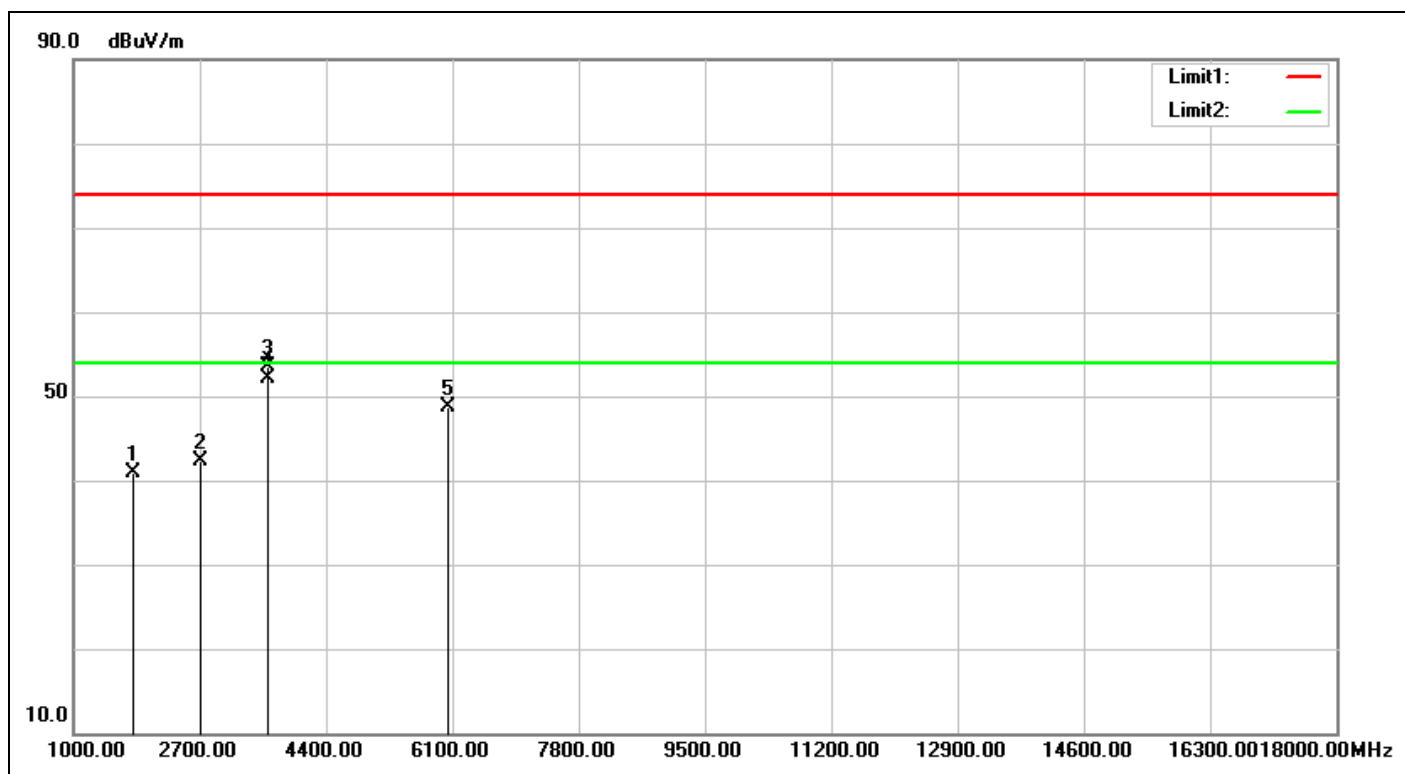
Spurious Emissions, TX Mode, 1-18G, 250kbps, O-QPSK



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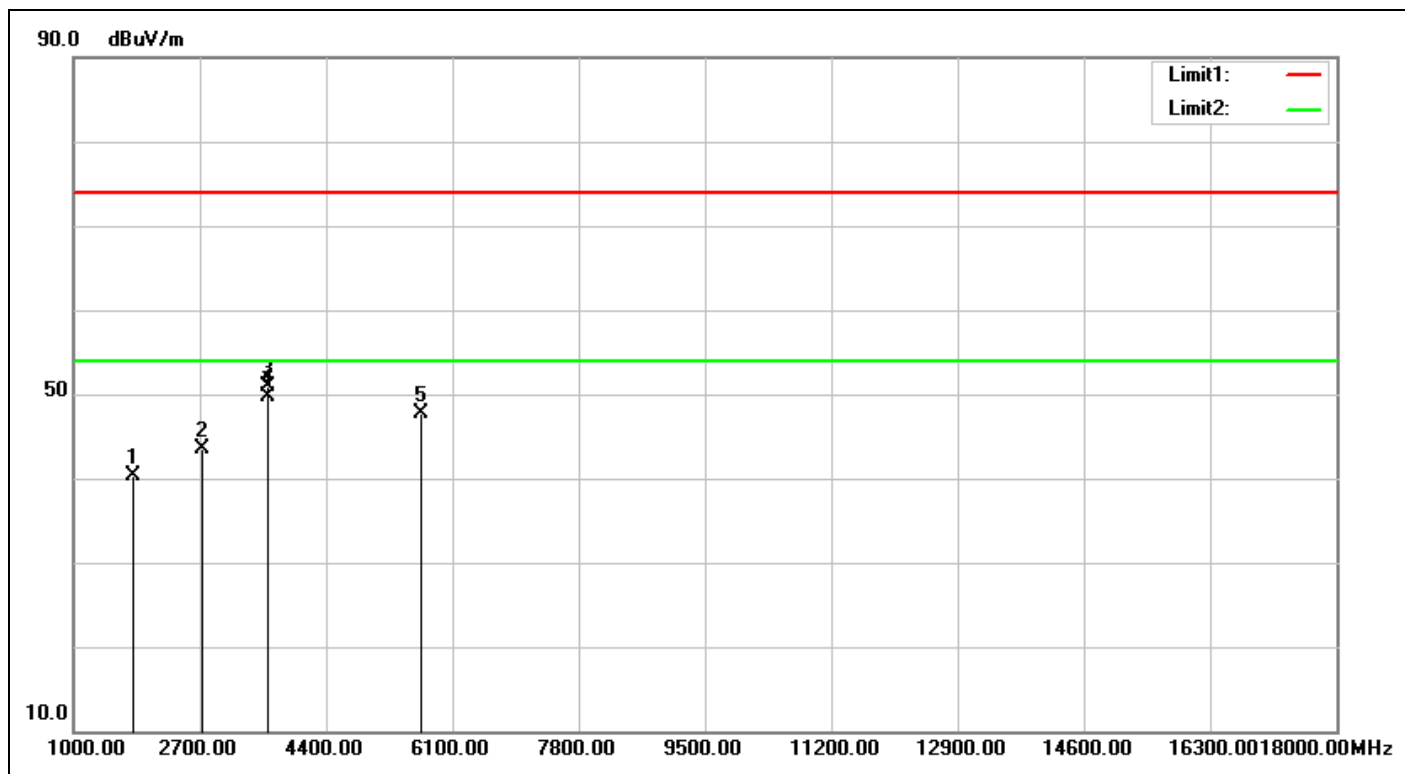
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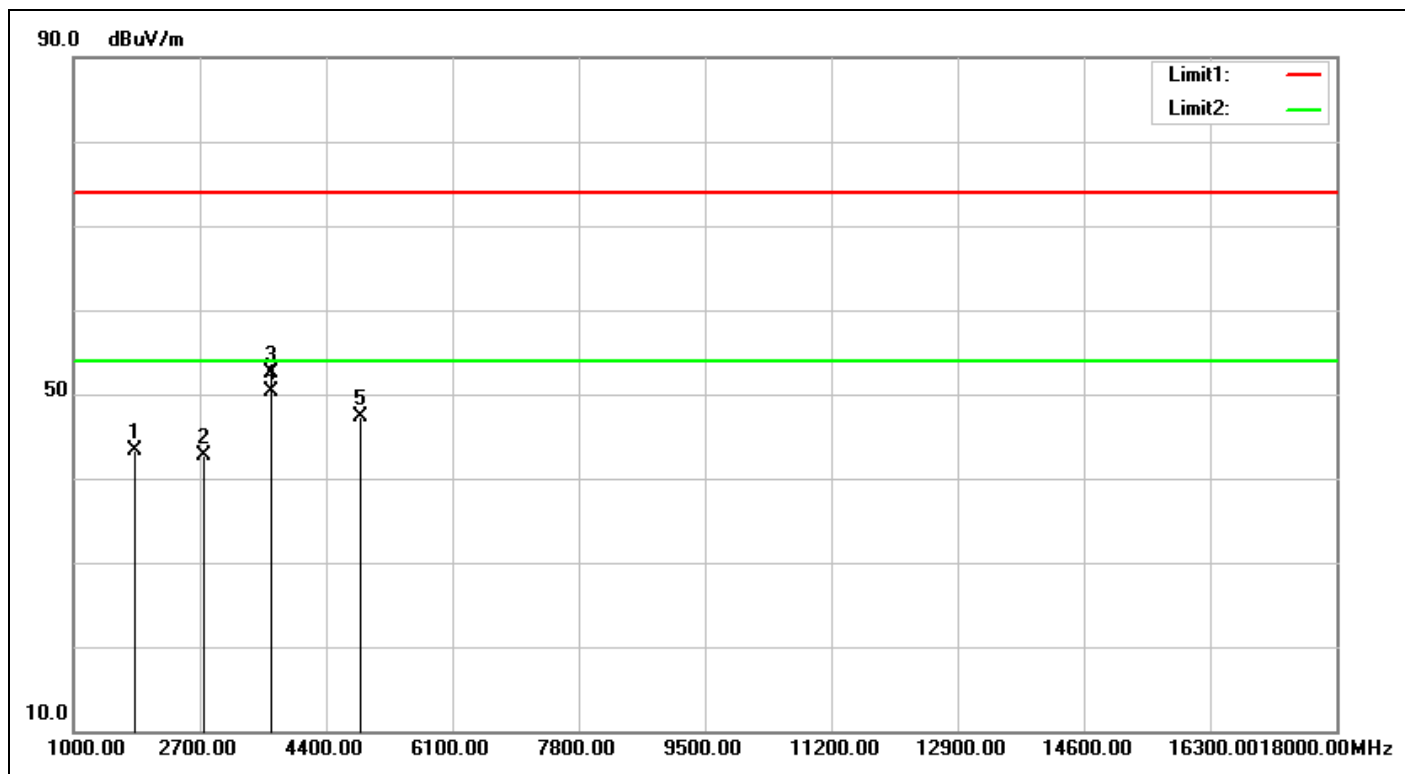
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 15:24:06
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	External antenna 250kbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	50.38	40.96	74.00	-33.04	peak		0	
2	2718.000	-7.66	49.90	42.24	74.00	-31.76	peak		0	
3	3624.000	-6.53	60.09	53.56	74.00	-20.44	peak	100	211	
4	3624.000	-6.53	58.69	52.16	54.00	-1.84	AVG	100	211	
5	6032.000	2.43	46.27	48.70	74.00	-25.30	peak	100	116	



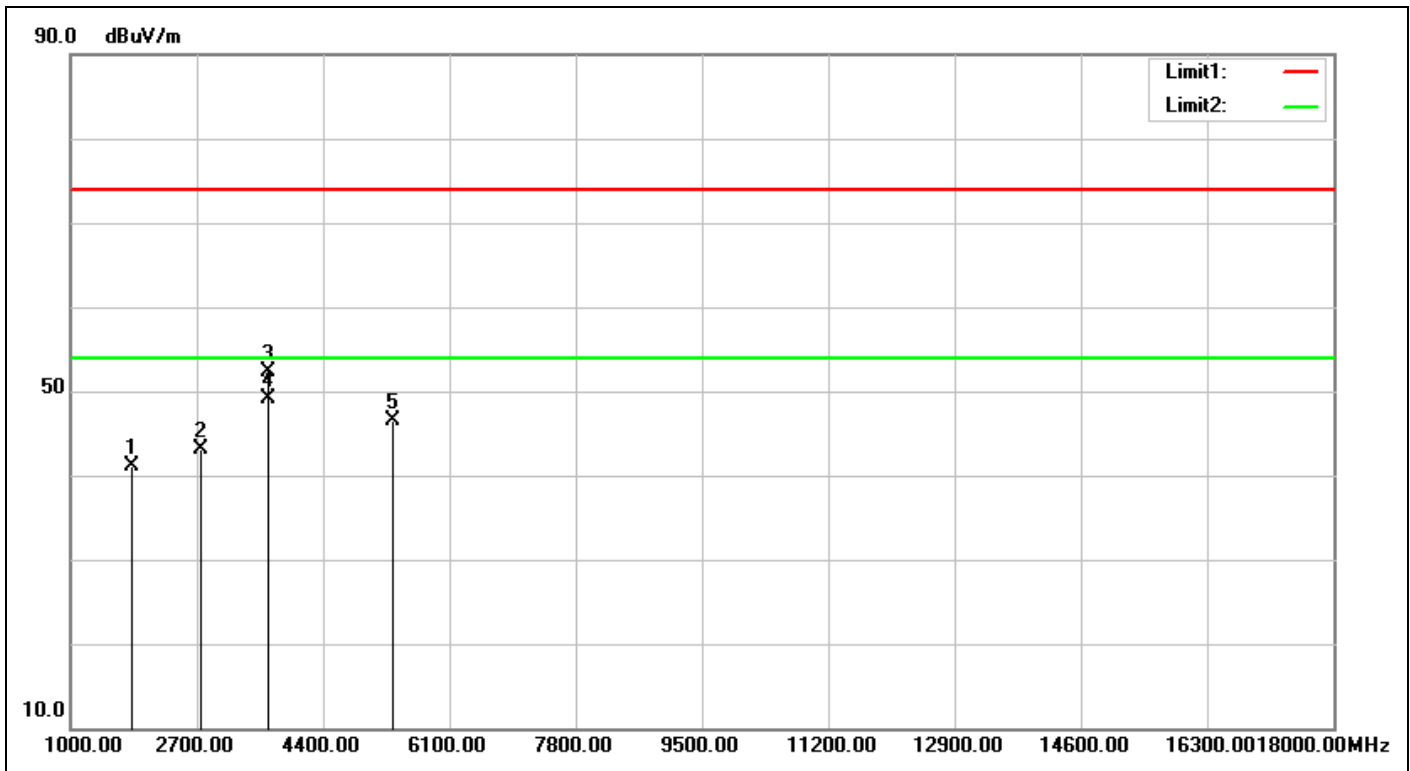
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 15:24:59
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	External antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	49.69	40.27	74.00	-33.73	peak			
2	2718.000	-7.66	51.07	43.41	74.00	-30.59	peak			
3	3624.000	-6.53	57.48	50.95	74.00	-23.05	peak	100	176	
4	3624.000	-6.53	56.31	49.78	54.00	-4.22	AVG	100	176	
5	5675.000	0.24	47.41	47.65	74.00	-26.35	peak	100	262	



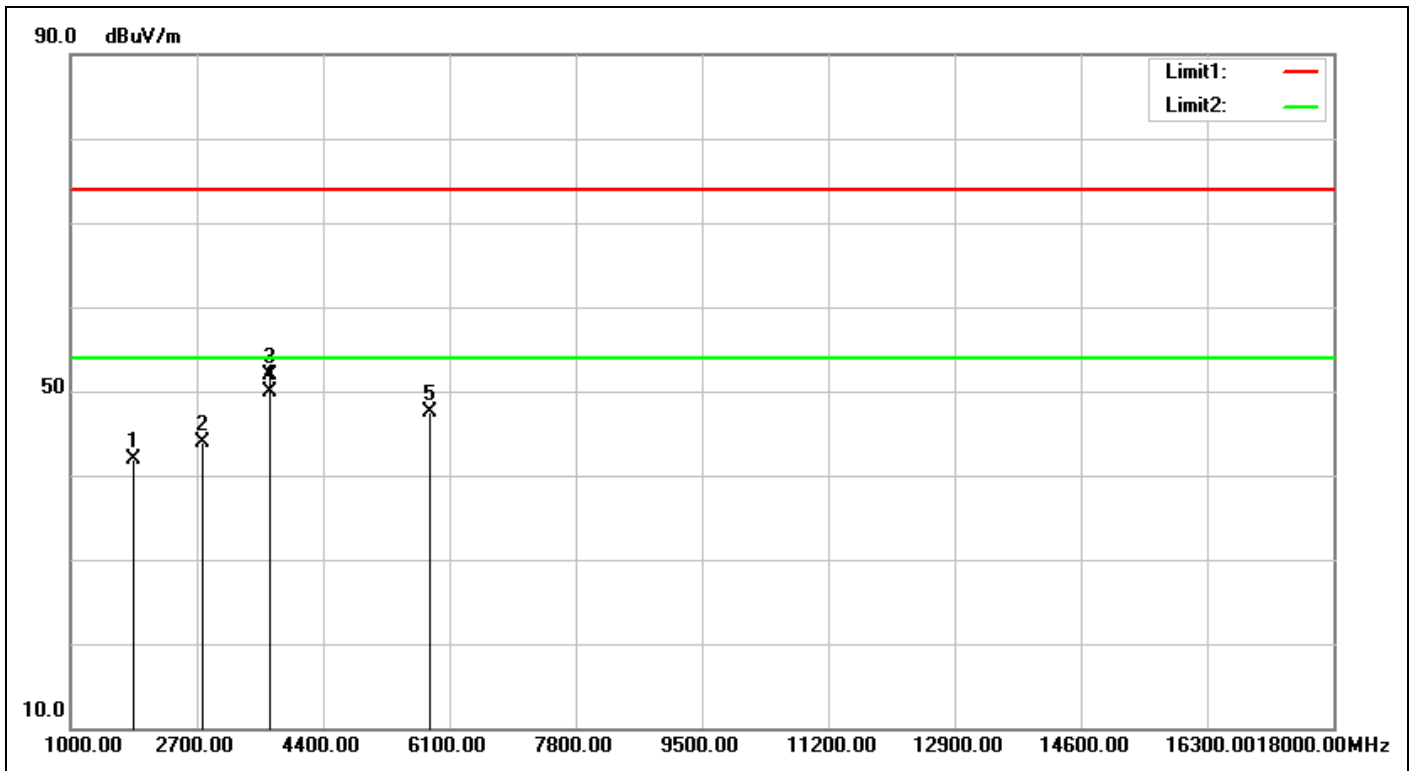
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 15:29:10
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	52.54	43.23	74.00	-30.77	peak			
2	2742.000	-7.62	50.27	42.65	74.00	-31.35	peak			
3	3656.000	-6.45	59.04	52.59	74.00	-21.41	peak	100	211	
4	3656.000	-6.45	56.71	50.26	54.00	-3.74	AVG	100	211	
5	4859.000	-3.38	50.72	47.34	74.00	-26.66	peak	100	183	



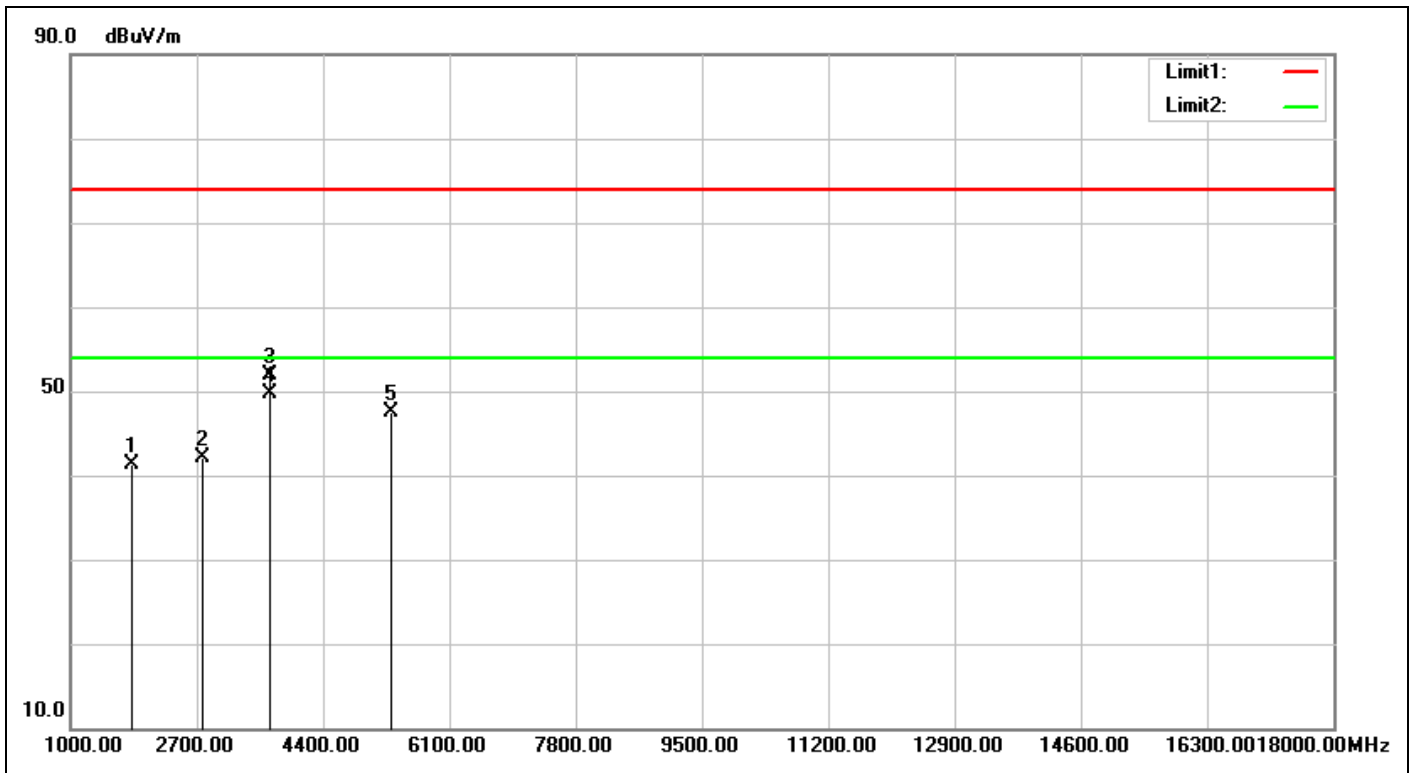
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 15:30:03
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	50.35	41.04	74.00	-32.96	peak			
2	2742.000	-7.62	50.78	43.16	74.00	-30.84	peak			
3	3656.000	-6.45	58.71	52.26	74.00	-21.74	peak	100	147	
4	3656.000	-6.45	55.54	49.09	54.00	-4.91	AVG	100	147	
5	5335.000	-1.62	48.05	46.43	74.00	-27.57	peak	100	123	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 15:35:38
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	External antenna 250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	51.09	41.91	74.00	-32.09	peak			
2	2772.000	-7.57	51.56	43.99	74.00	-30.01	peak			
3	3696.000	-6.37	58.36	51.99	74.00	-22.01	peak	100	213	
4	3696.000	-6.37	56.21	49.84	54.00	-4.16	AVG	100	213	
5	5845.000	1.32	46.23	47.55	74.00	-26.45	peak	100	138	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 15:36:31
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	External antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.48	41.30	74.00	-32.70	peak			
2	2772.000	-7.57	49.71	42.14	74.00	-31.86	peak			
3	3696.000	-6.37	58.20	51.83	74.00	-22.17	peak	100	181	
4	3696.000	-6.37	56.07	49.70	54.00	-4.30	AVG	100	181	
5	5318.000	-1.69	49.14	47.45	74.00	-26.55	peak	100	317	

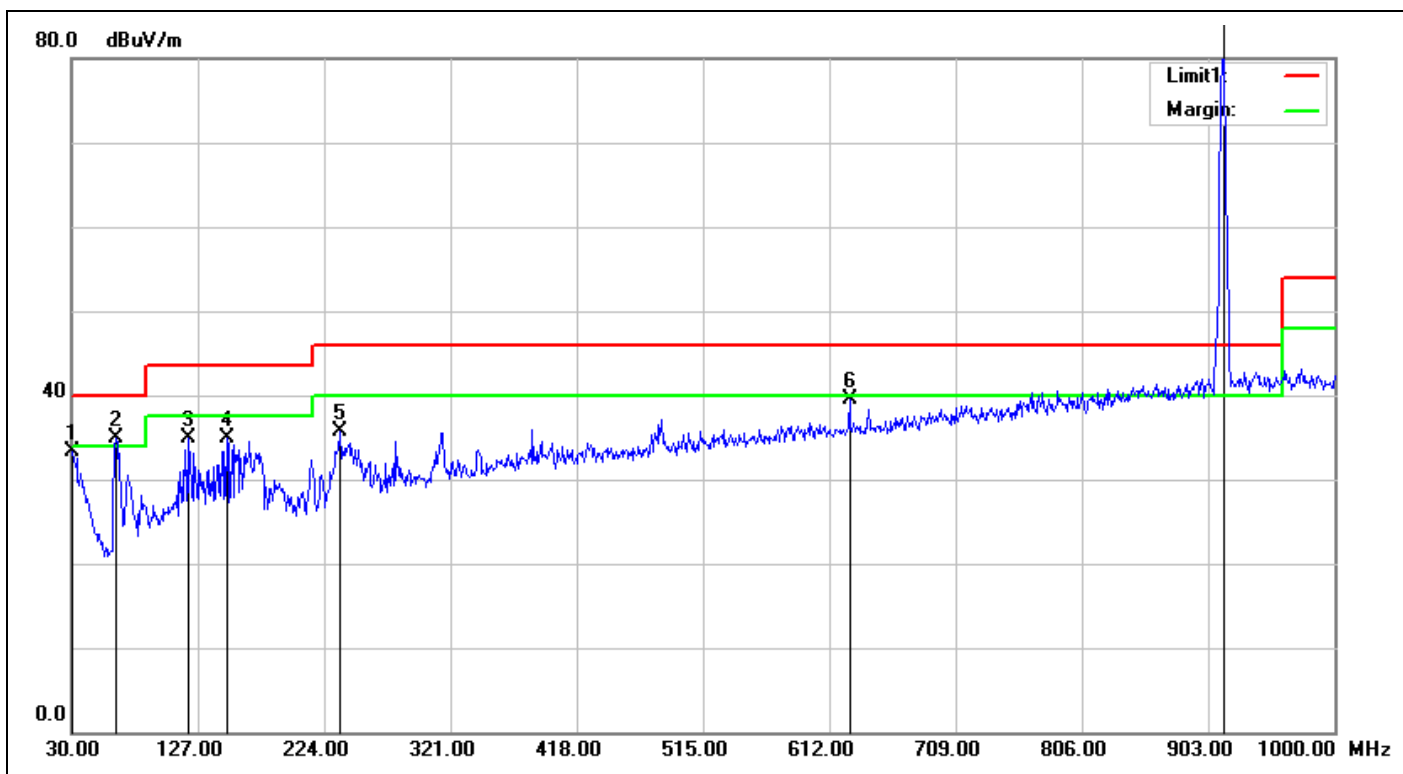
Spurious Emissions, TX Mode, 30M-1G, 250kbps, O-QPSK



TUV Rheinland Taiwan Ltd.

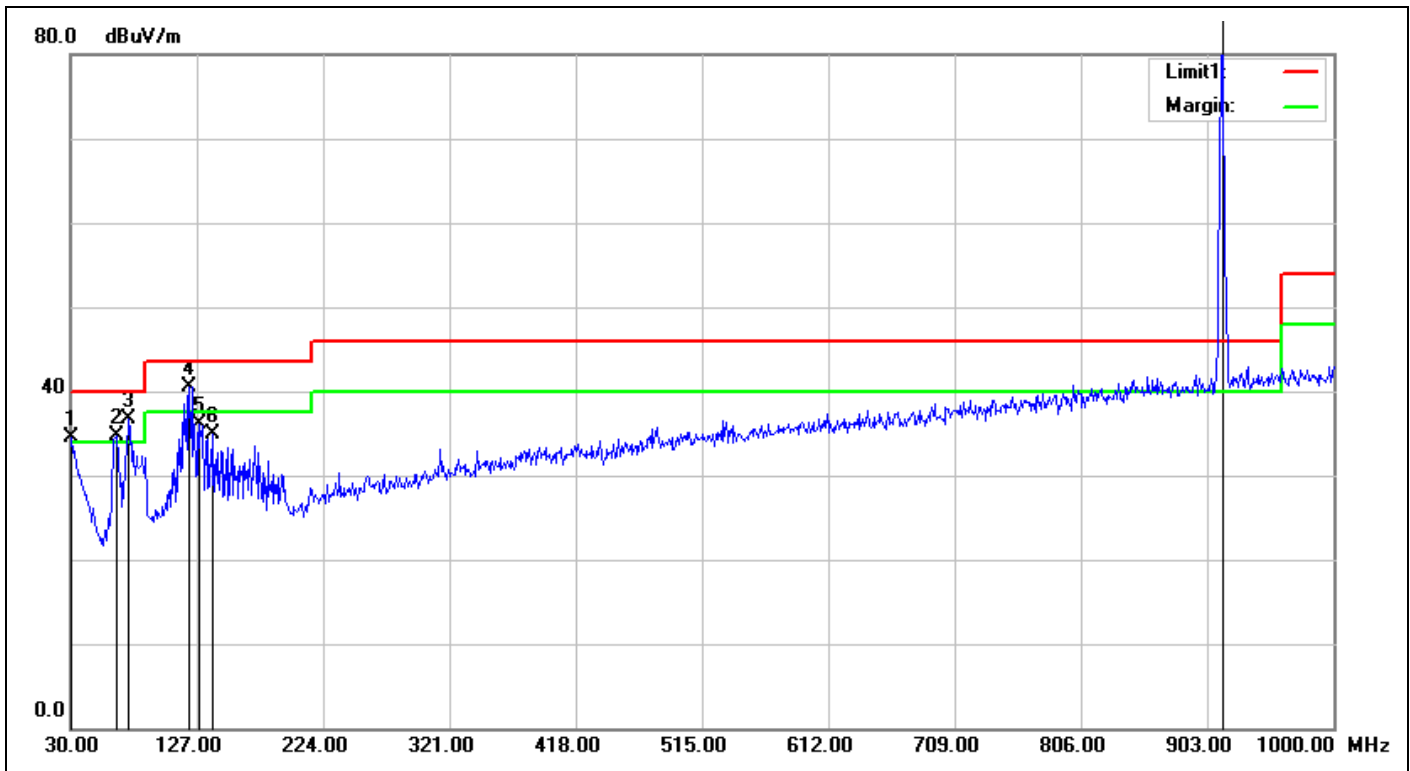
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Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/15 15:29:01
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	20.2(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	250kbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.9700	-1.98	35.36	33.38	40.00	-6.62	QP	101	51	
2	63.9500	-14.87	49.82	34.95	40.00	-5.05	QP	101	315	
3	119.2400	-9.00	43.98	34.98	43.50	-8.52	QP	101	104	
4	149.3100	-8.80	43.78	34.98	43.50	-8.52	QP	101	176	
5	236.6100	-8.51	44.20	35.69	46.00	-10.31	QP	101	325	
6	627.5200	-0.63	40.05	39.42	46.00	-6.58	QP	101	48	
7	914.6400	4.25	102.54	106.79	46.00	60.79	QP	101	288	TX



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/15 15:30:05
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	20.2(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.9700	-1.98	36.41	34.43	40.00	-5.57	QP	101	83	
2	65.8900	-14.77	49.43	34.66	40.00	-5.34	QP	101	358	
3	74.6200	-14.00	50.67	36.67	40.00	-3.33	QP	101	227	
4	121.1800	-8.88	49.40	40.52	43.50	-2.98	QP	101	360	
5	128.9400	-8.51	44.61	36.10	43.50	-7.40	QP	101	317	
6	139.6100	-8.40	43.22	34.82	43.50	-8.68	QP	101	235	
7	914.6400	4.25	92.37	96.62	46.00	50.62	QP	101	240	TX

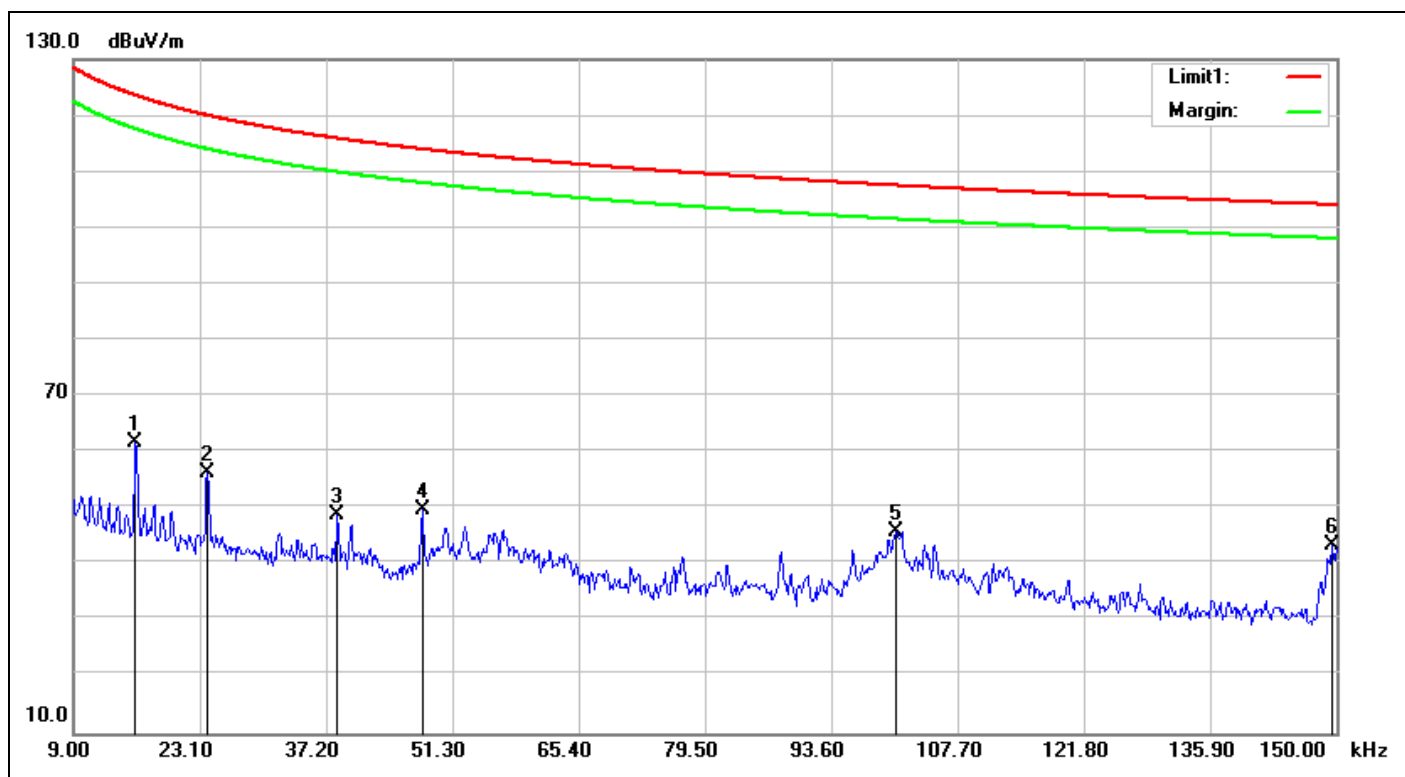
Spurious Emissions, TX Mode, 9k-30M, 250kbps,O-QPSK



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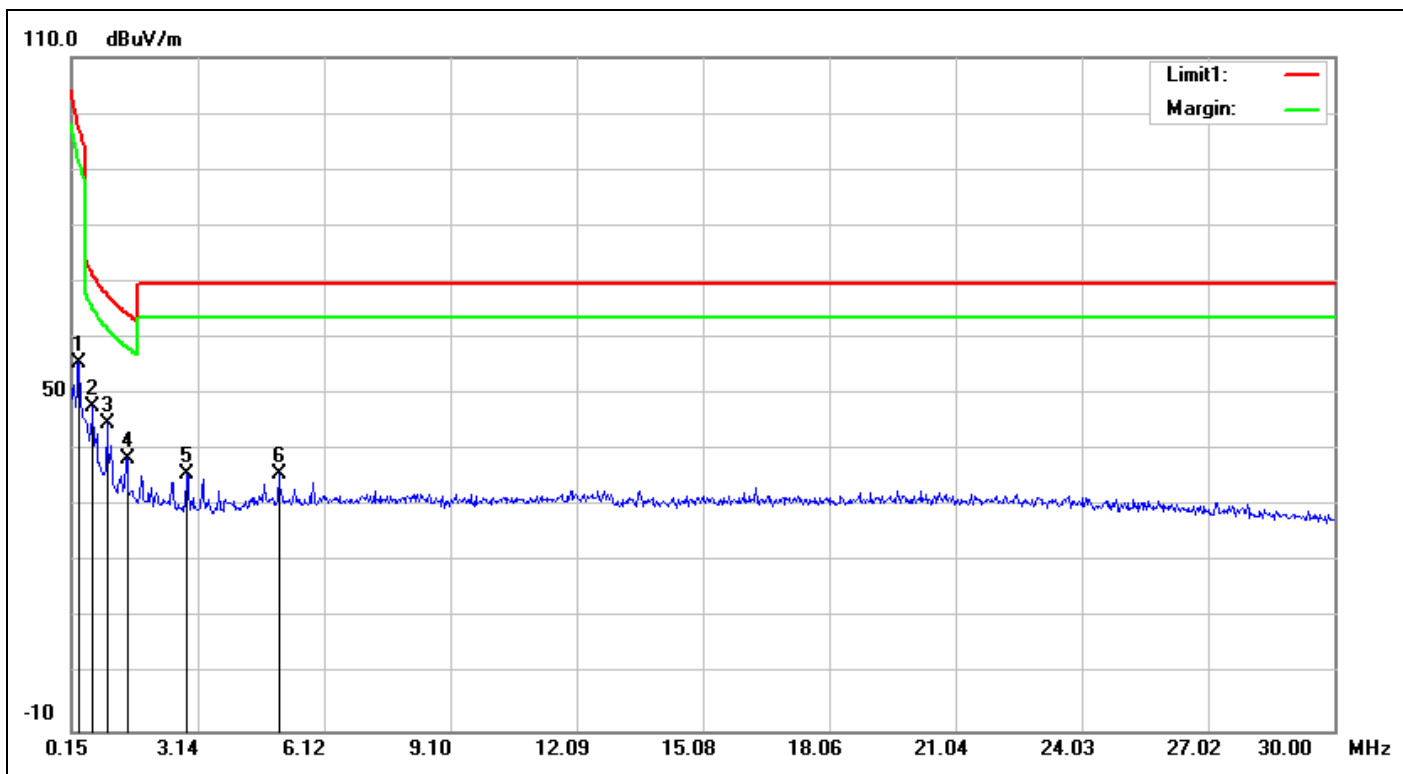
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/15 15:58:31
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	43.08	61.84	123.56	-61.72	QP	100	200	
2	0.0239	19.08	37.38	56.46	120.02	-63.56	QP	100	205	
3	0.0385	19.15	29.61	48.76	115.88	-67.12	QP	100	205	
4	0.0479	18.96	30.76	49.72	113.99	-64.27	QP	100	200	
5	0.1008	18.33	27.66	45.99	107.53	-61.54	QP	100	210	
6	0.1494	18.35	25.20	43.55	104.11	-60.56	QP	100	243	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/15 16:00:46
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna 250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	37.10	55.57	97.26	-41.69	QP	100	235	
2	0.6575	18.66	28.99	47.65	71.25	-23.60	QP	100	272	
3	0.9858	18.68	26.19	44.87	67.75	-22.88	QP	100	251	
4	1.4634	18.64	19.79	38.43	64.32	-25.89	QP	100	211	
5	2.8664	18.53	17.09	35.62	69.50	-33.88	QP	100	205	
6	5.0454	19.48	16.22	35.70	69.50	-33.80	QP	100	203	

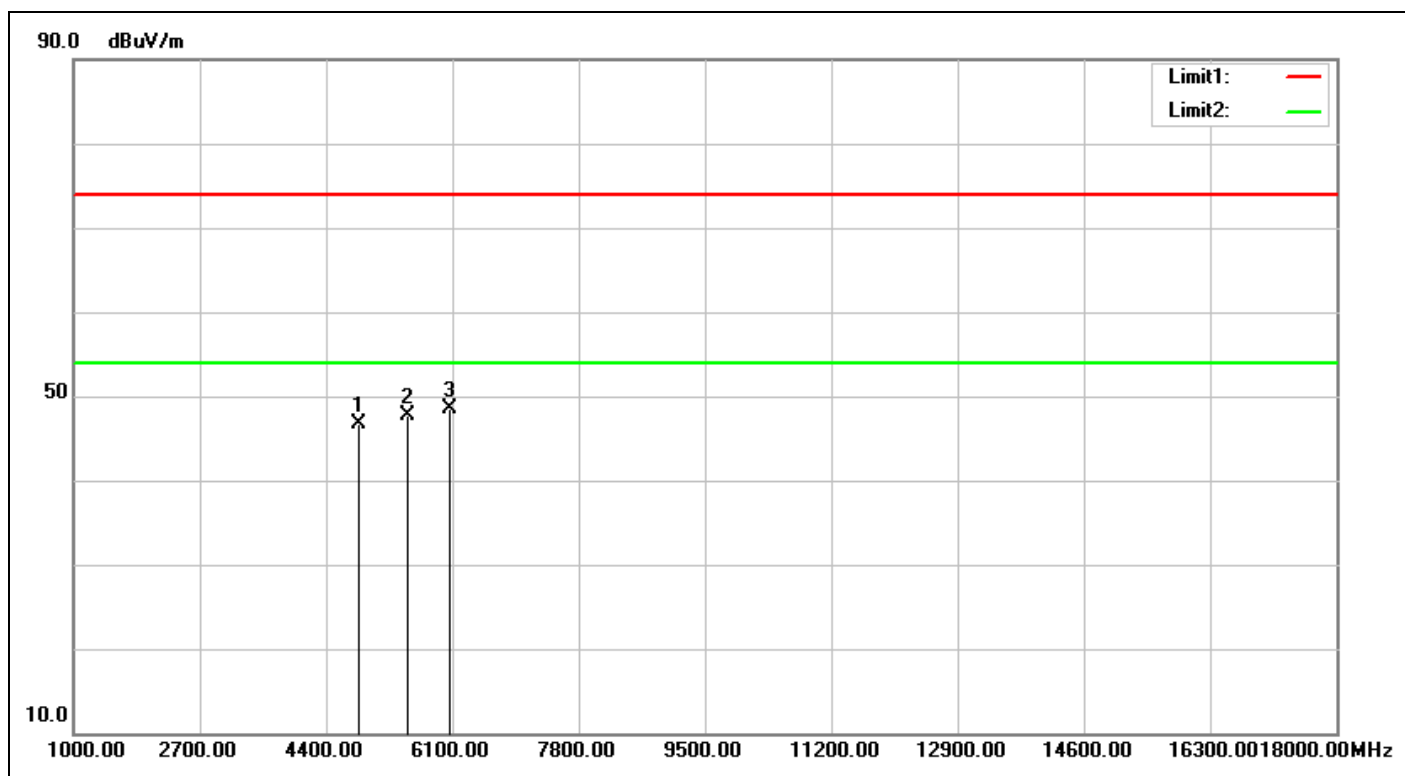
Spurious Emissions, RX Mode, 1-18G, 250kbps, O-QPSK



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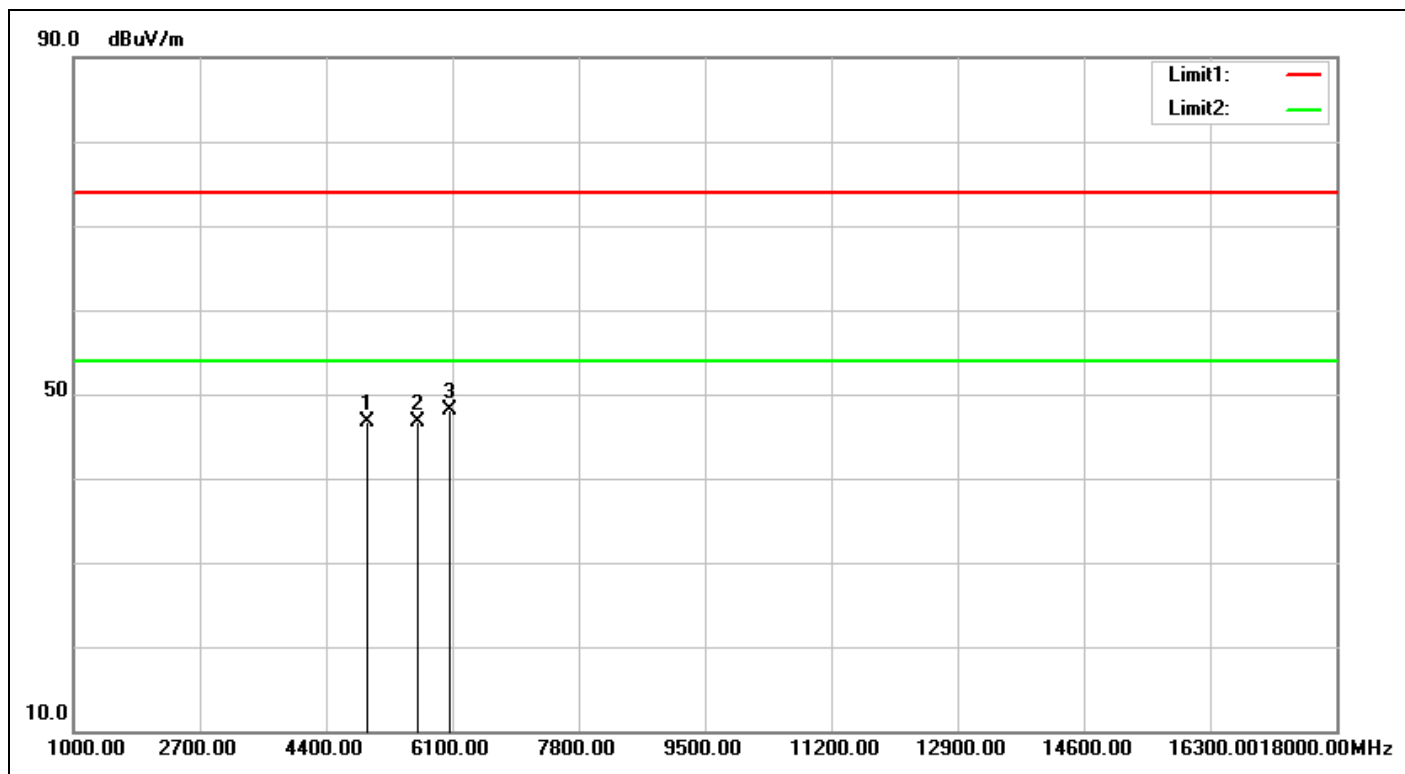
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:08:58
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	250kbps, O-QPSK		

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	50.16	46.76	74.00	-27.24	peak	100	238	
2	5488.000	-0.91	48.55	47.64	74.00	-26.36	peak	100	297	
3	6066.000	2.58	45.91	48.49	74.00	-25.51	peak	100	27	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:09:50
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna 250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4944.000	-3.23	49.87	46.64	74.00	-27.36	peak	100	203	
2	5641.000	0.03	46.75	46.78	74.00	-27.22	peak	100	114	
3	6066.000	2.58	45.45	48.03	74.00	-25.97	peak	100	237	

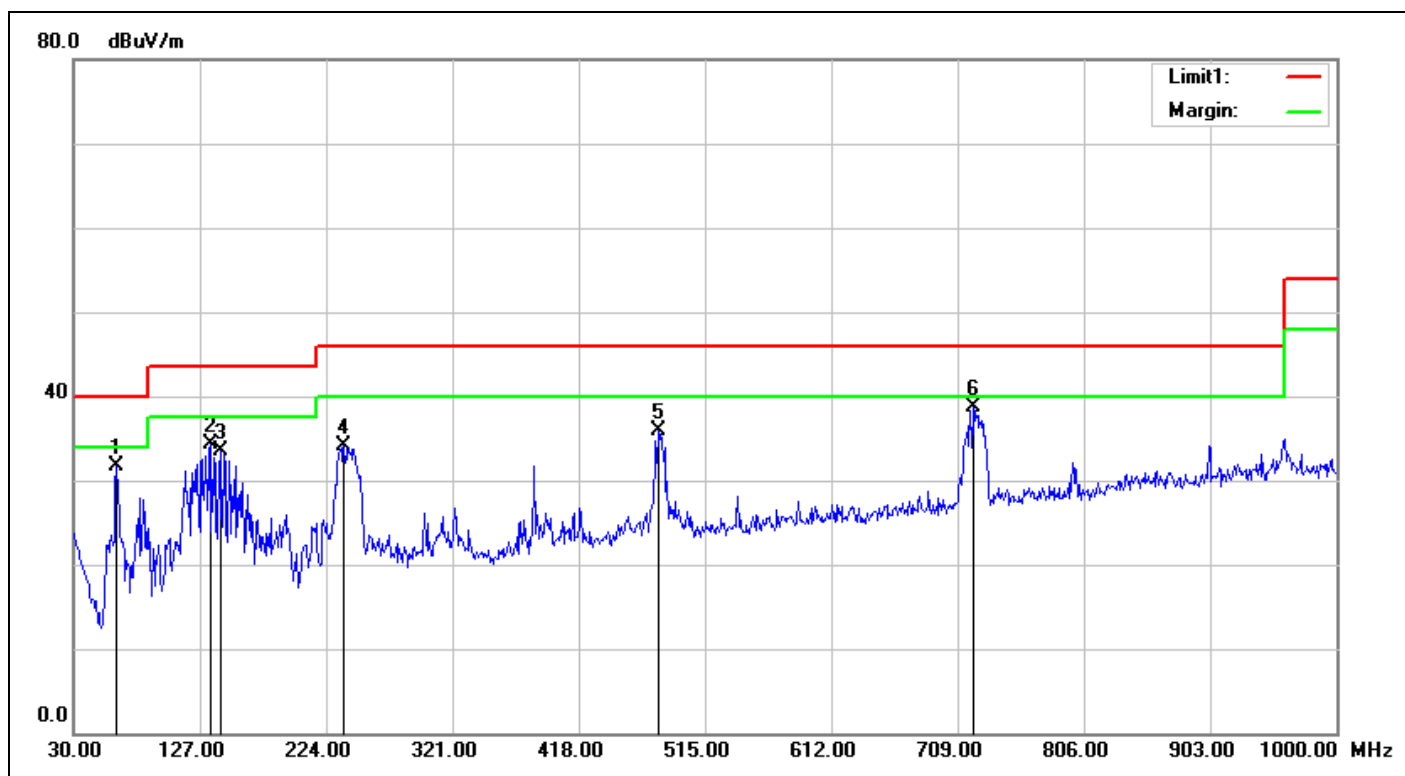
Spurious Emissions, RX Mode, 30M-1G 250kbps,O-QPSK



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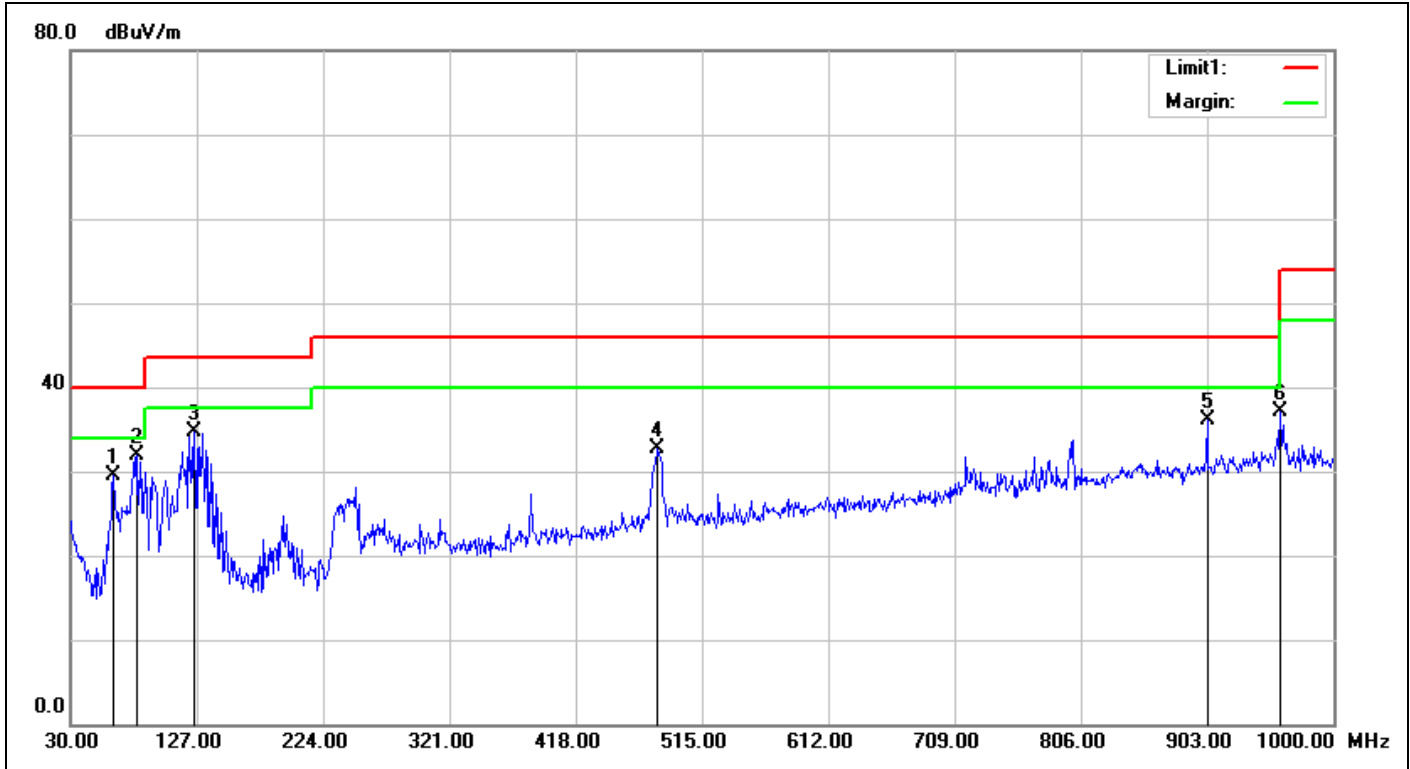
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:53:33
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	62.9800	-14.91	46.62	31.71	40.00	-8.29	QP	100	138	
2	135.7300	-8.42	42.73	34.31	43.50	-9.19	QP	100	167	
3	143.4900	-8.54	41.98	33.44	43.50	-10.06	QP	100	167	
4	237.5800	-8.44	42.57	34.13	46.00	-11.87	QP	100	183	
5	479.1100	-2.73	38.56	35.83	46.00	-10.17	QP	100	173	
6	720.6400	0.90	37.87	38.77	46.00	-7.23	QP	100	295	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:54:26
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna 250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	62.9800	-14.91	44.37	29.46	40.00	-10.54	QP	100	220	
2	81.4100	-13.17	45.09	31.92	40.00	-8.08	QP	100	0	
3	125.0600	-8.70	43.41	34.71	43.50	-8.79	QP	100	259	
4	481.0500	-2.69	35.30	32.61	46.00	-13.39	QP	100	174	
5	903.0000	3.92	32.15	36.07	46.00	-9.93	QP	100	174	
6	959.2600	5.26	31.77	37.03	46.00	-8.97	QP	100	275	

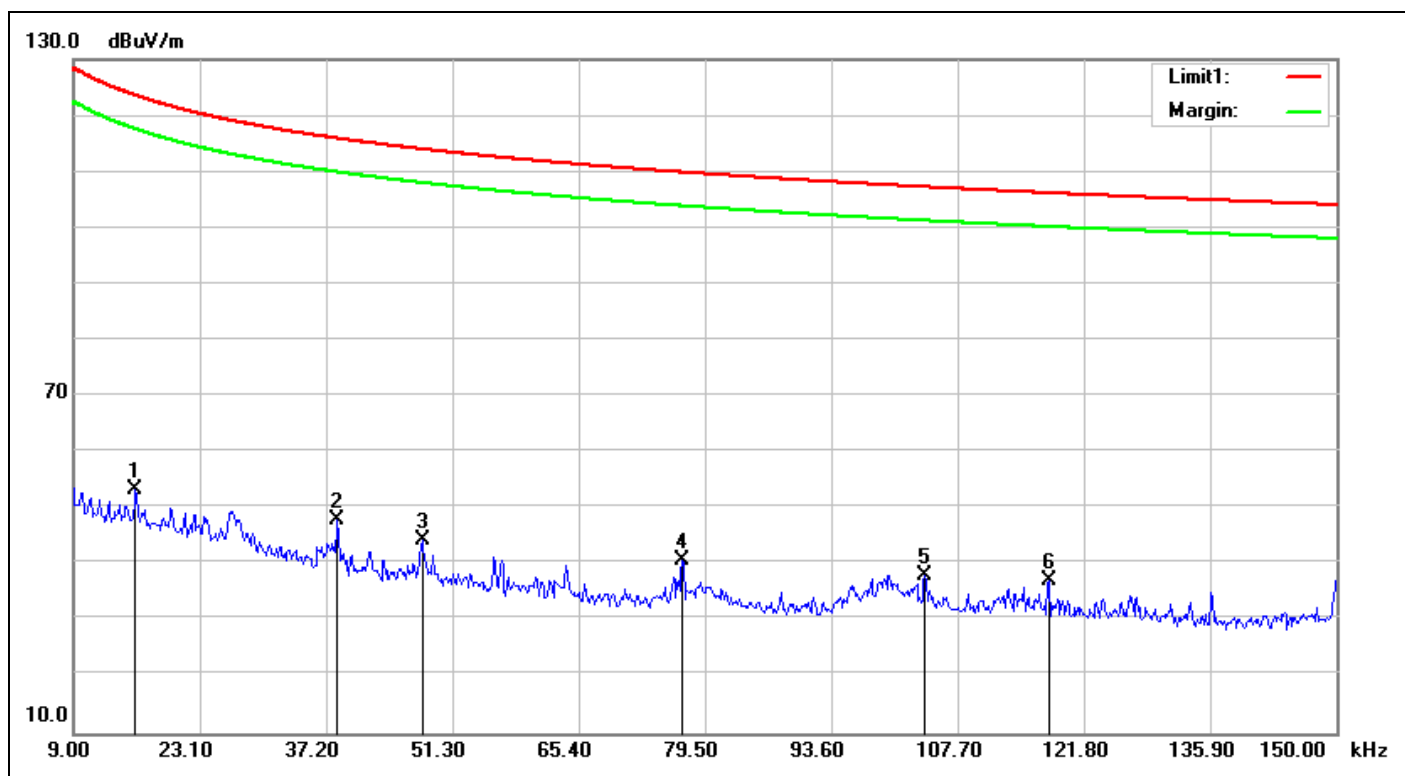
Spurious Emissions, RX Mode, 9K-30M, 250kbps,O-QPSK



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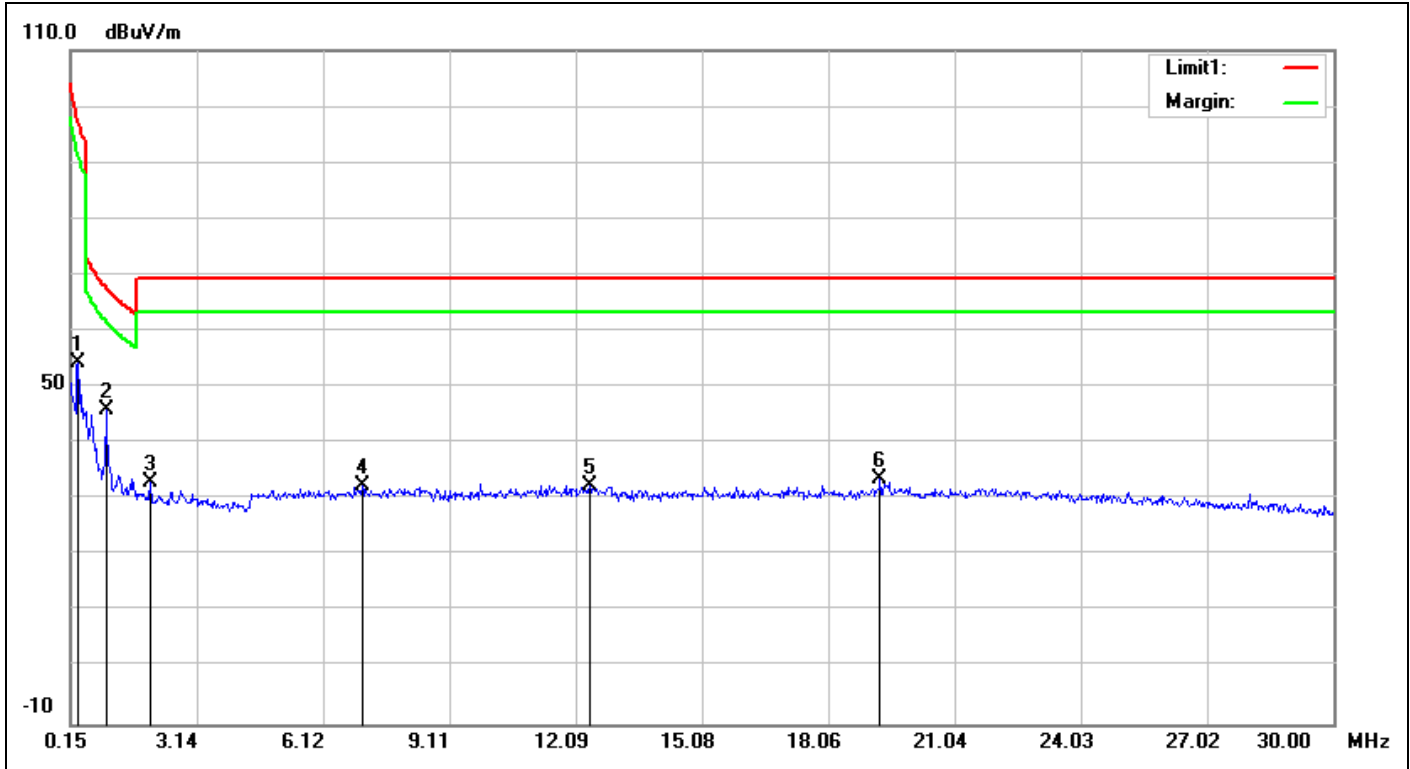
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:06:56
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	34.66	53.42	123.56	-70.14	QP	100	177	
2	0.0385	19.15	28.71	47.86	115.88	-68.02	QP	100	193	
3	0.0479	18.96	25.34	44.30	113.99	-69.69	QP	100	184	
4	0.0770	18.60	22.26	40.86	109.87	-69.01	QP	100	203	
5	0.1040	18.33	19.77	38.10	107.26	-69.16	QP	100	193	
6	0.1179	18.34	18.83	37.17	106.17	-69.00	QP	100	216	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:08:18
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna 250kbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	35.78	54.25	97.26	-43.01	QP	100	259	
2	0.9858	18.68	27.30	45.98	67.75	-21.77	QP	100	246	
3	2.0306	18.60	14.52	33.12	69.50	-36.38	QP	100	180	
4	7.0454	19.87	12.51	32.38	69.50	-37.12	QP	100	112	
5	12.4184	20.73	11.71	32.44	69.50	-37.06	QP	100	0	
6	19.2839	21.52	12.11	33.63	69.50	-35.87	QP	100	160	

External Antenna of ANT-916-CW-QW-SMA

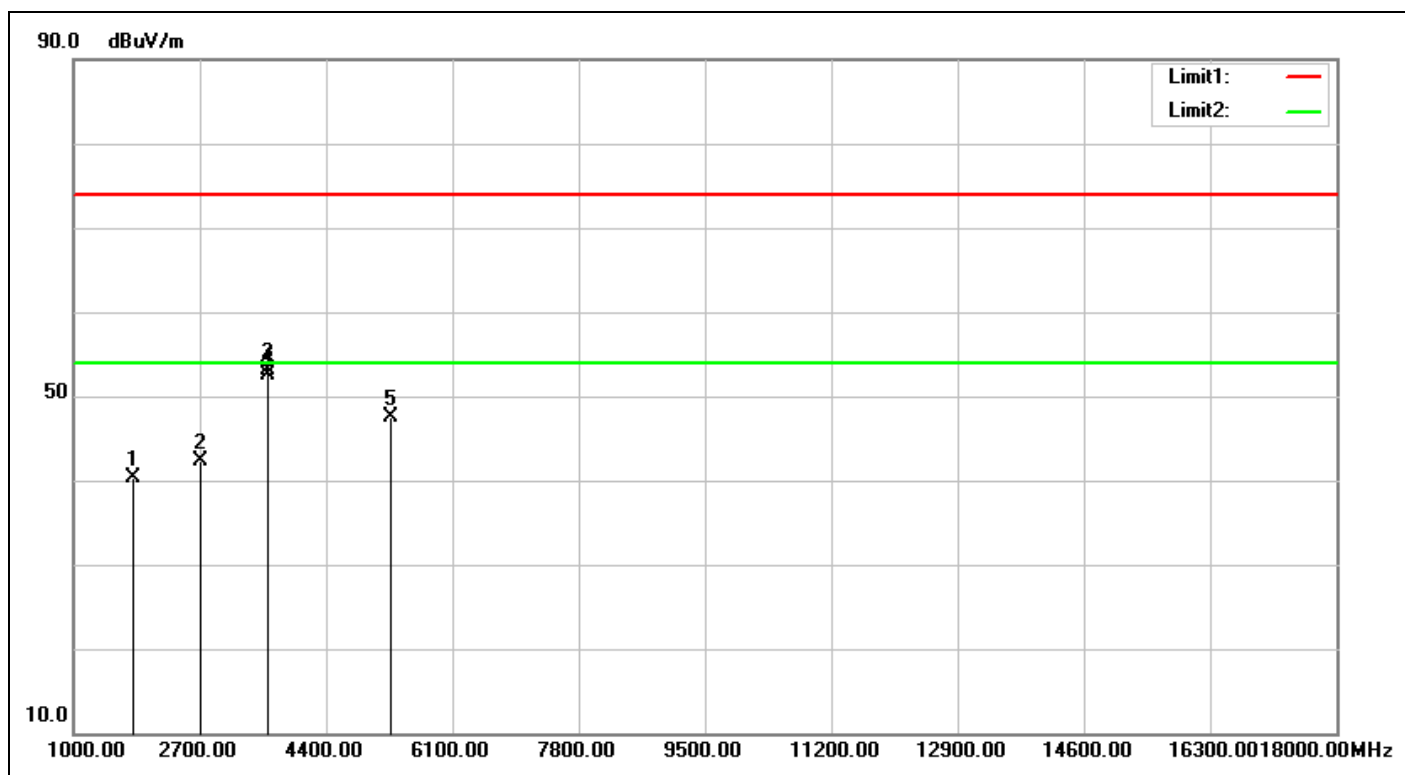
Spurious Emissions, TX Mode, 1-18G, 1Mbps, O-QPSK



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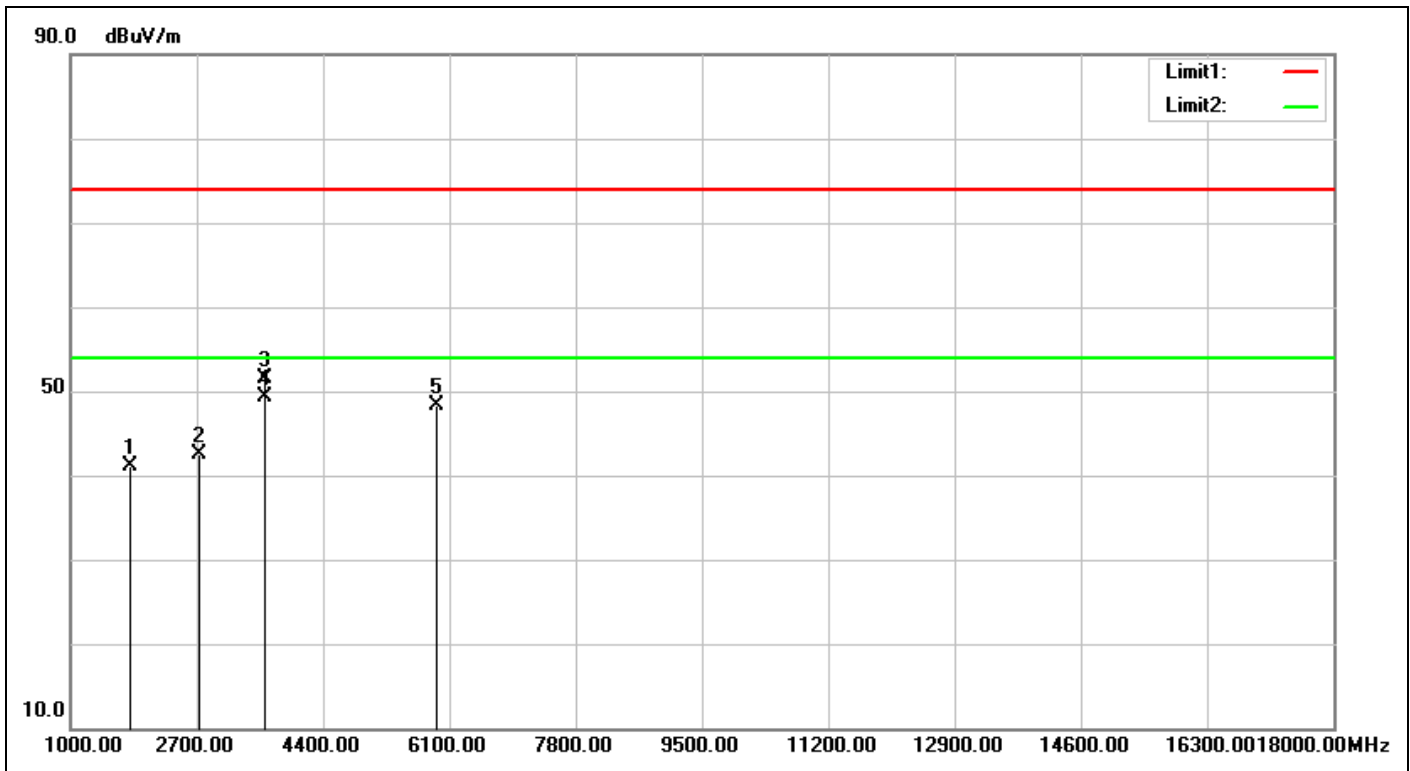
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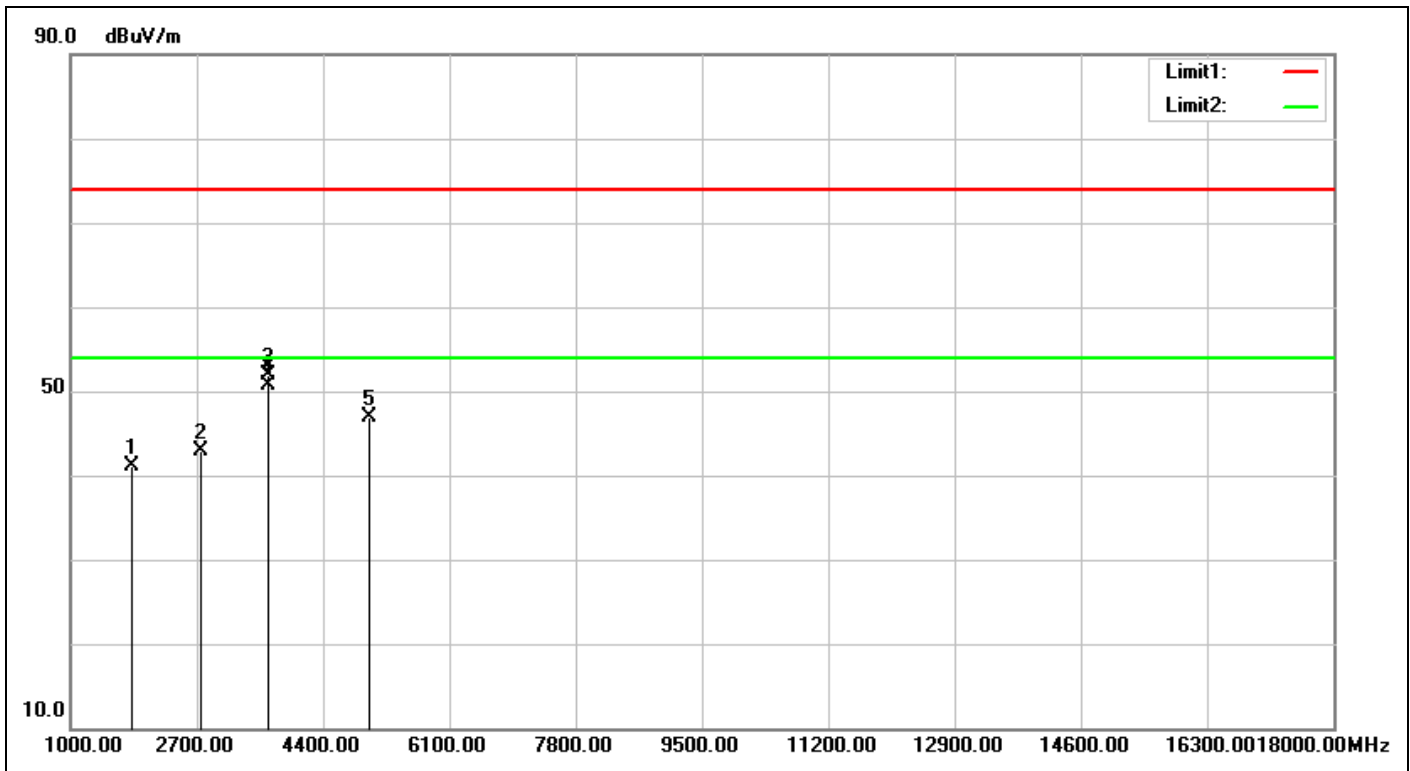
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 15:42:52
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	External antenna		
	1Mbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	49.78	40.36	74.00	-33.64	peak		0	
2	2718.000	-7.66	49.93	42.27	74.00	-31.73	peak		0	
3	3624.000	-6.53	59.66	53.13	74.00	-20.87	peak	100	217	
4	3624.000	-6.53	58.99	52.46	54.00	-1.54	AVG	100	217	
5	5267.000	-1.92	49.50	47.58	74.00	-26.42	peak	100	152	



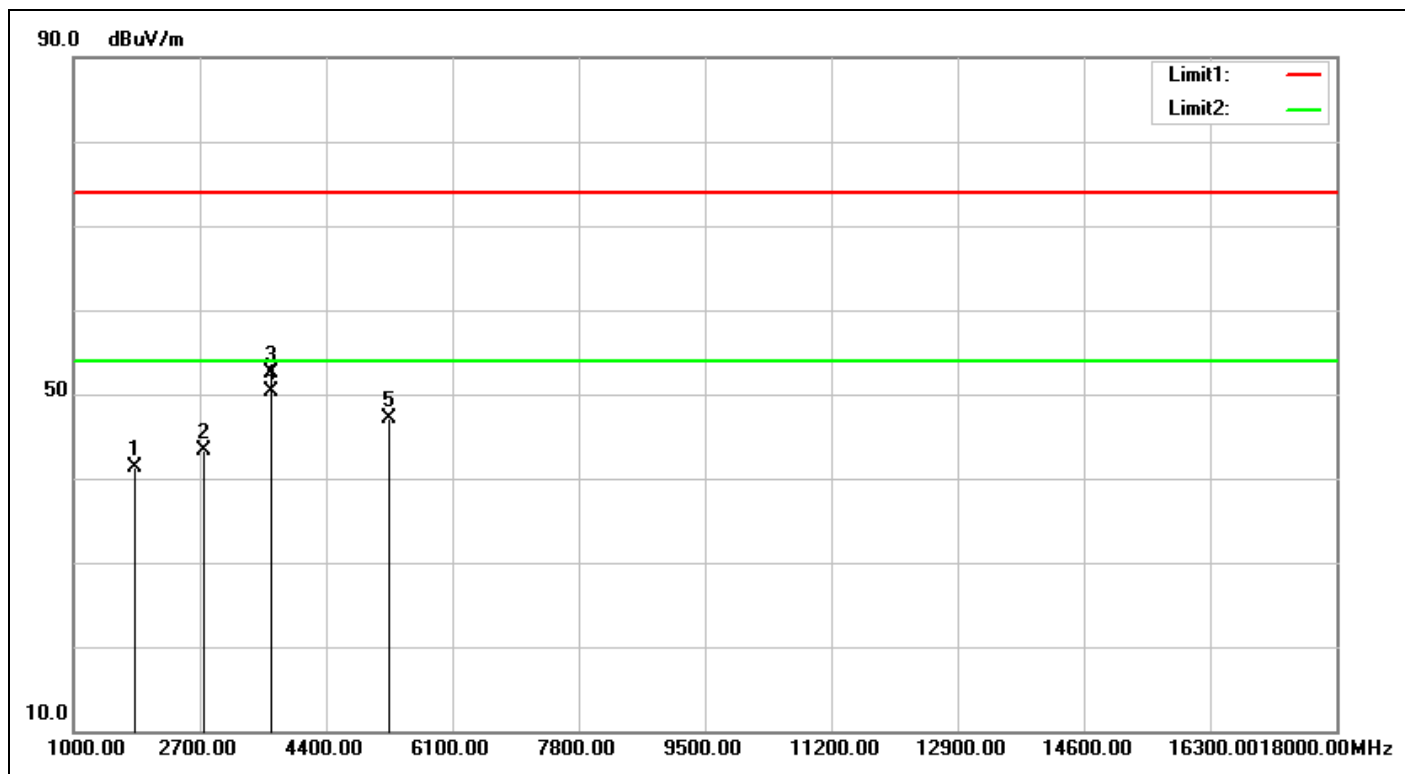
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 15:43:44
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	External antenna 1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.42	50.45	41.03	74.00	-32.97	peak			
2	2718.000	-7.66	50.22	42.56	74.00	-31.44	peak			
3	3624.000	-6.53	58.04	51.51	74.00	-22.49	peak	100	270	
4	3624.000	-6.53	55.86	49.33	54.00	-4.67	AVG	100	270	
5	5930.000	1.85	46.45	48.30	74.00	-25.70	peak	100	102	



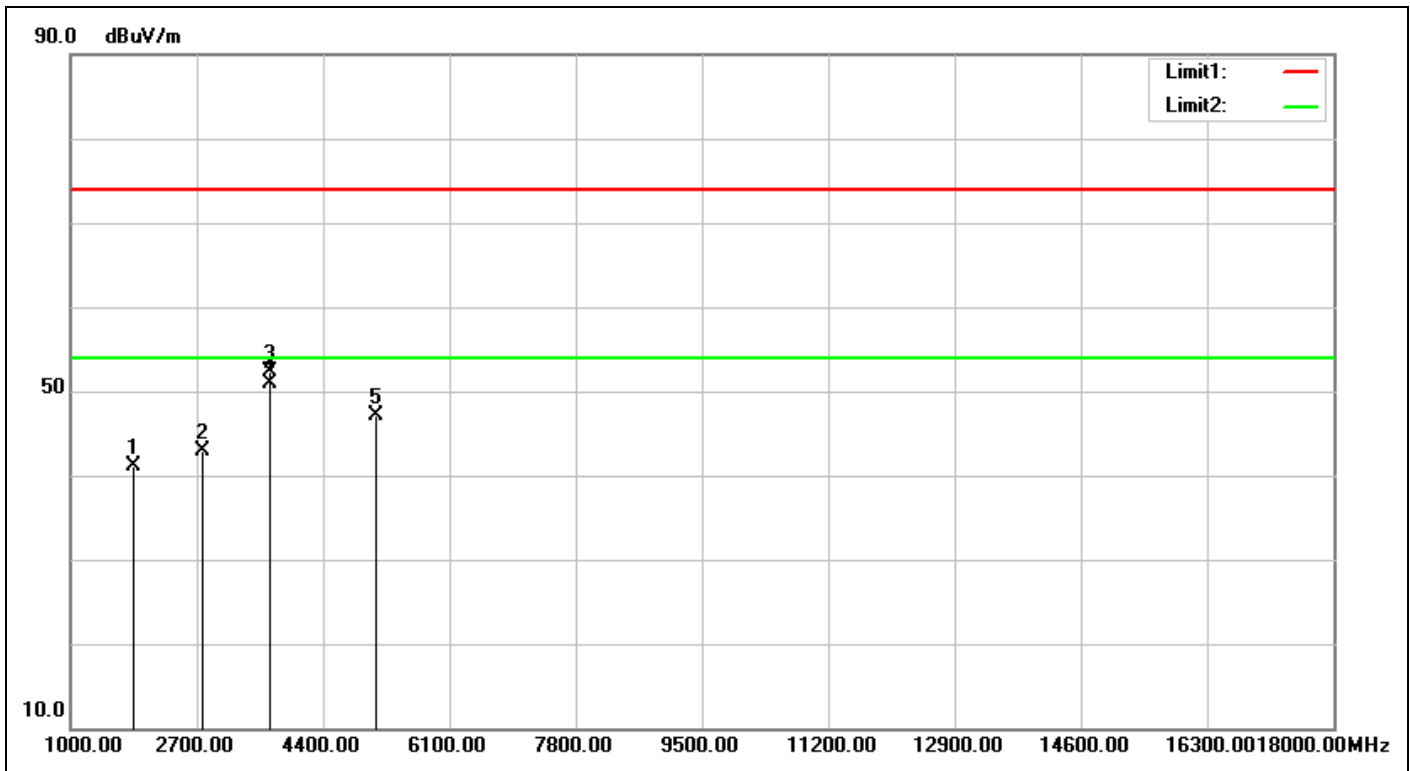
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 15:52:10
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	50.36	41.05	74.00	-32.95	peak			
2	2742.000	-7.62	50.52	42.90	74.00	-31.10	peak			
3	3656.000	-6.45	58.29	51.84	74.00	-22.16	peak	100	217	
4	3656.000	-6.45	57.21	50.76	54.00	-3.24	AVG	100	217	
5	5029.000	-3.02	49.96	46.94	74.00	-27.06	peak	100	84	



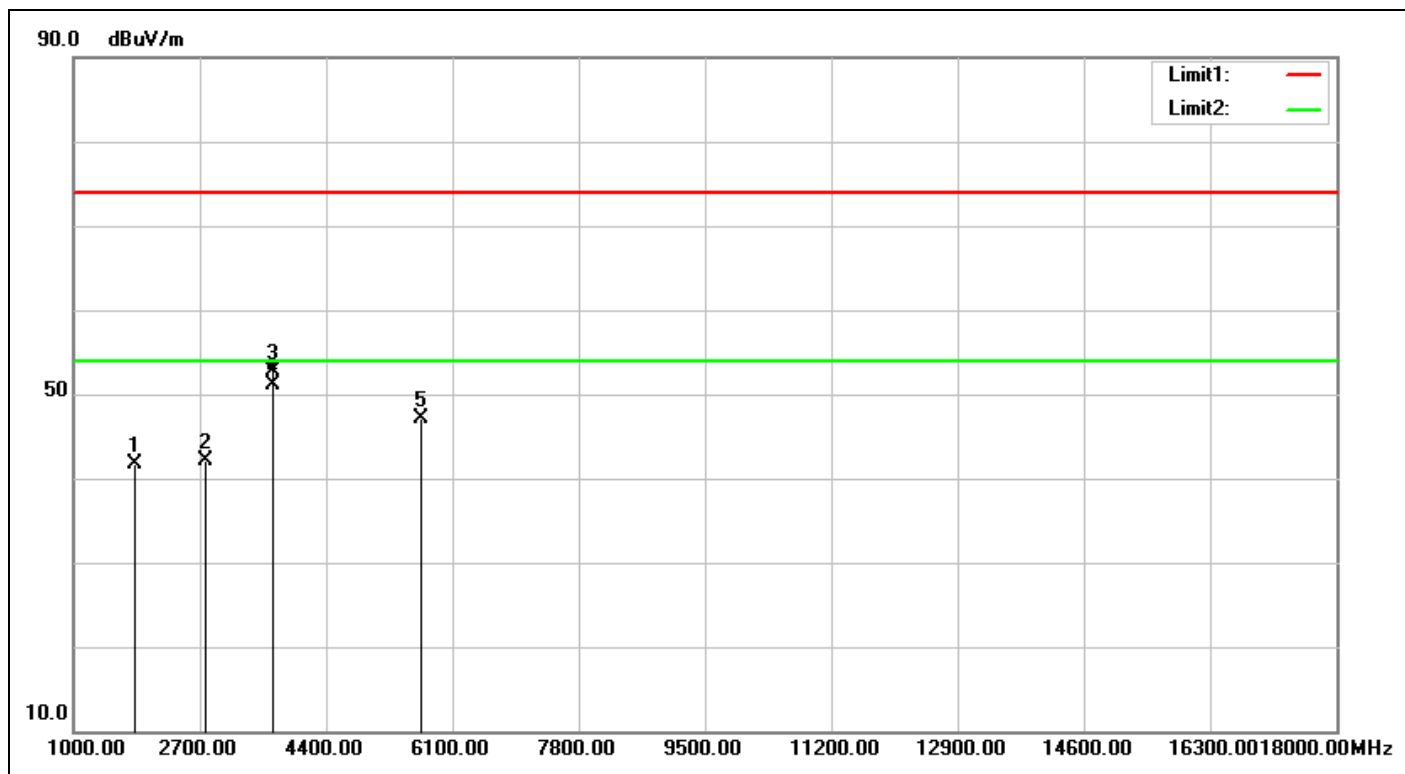
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Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 15:53:03
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.31	50.59	41.28	74.00	-32.72	peak			
2	2742.000	-7.62	50.89	43.27	74.00	-30.73	peak			
3	3656.000	-6.45	58.99	52.54	74.00	-21.46	peak	100	177	
4	3656.000	-6.45	56.84	50.39	54.00	-3.61	AVG	100	177	
5	5250.000	-2.01	49.13	47.12	74.00	-26.88	peak	100	180	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/16 15:58:25
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.36	41.18	74.00	-32.82	peak			
2	2772.000	-7.57	50.45	42.88	74.00	-31.12	peak			
3	3696.000	-6.37	58.64	52.27	74.00	-21.73	peak	100	210	
4	3696.000	-6.37	57.27	50.90	54.00	-3.10	AVG	100	210	
5	5114.000	-2.62	49.76	47.14	74.00	-26.86	peak	100	210	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/16 15:59:17
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.8(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.18	50.85	41.67	74.00	-32.33	peak			
2	2772.000	-7.57	49.77	42.20	74.00	-31.80	peak			
3	3696.000	-6.37	59.17	52.80	74.00	-21.20	peak	100	178	
4	3696.000	-6.37	57.45	51.08	54.00	-2.92	AVG	100	178	
5	5675.000	0.24	46.92	47.16	74.00	-26.84	peak	100	212	

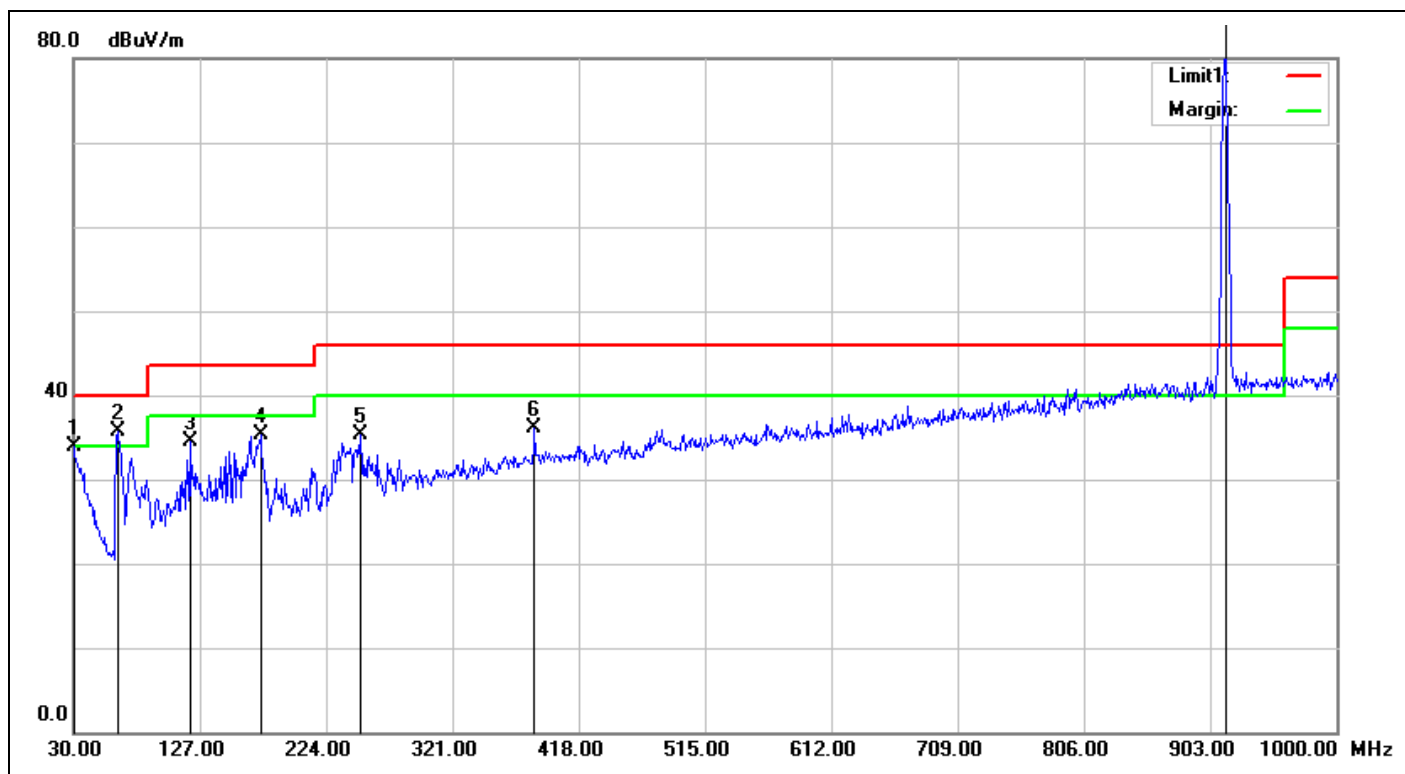
Spurious Emissions, TX Mode, 30M-1G, 1Mbps,O-QPSK



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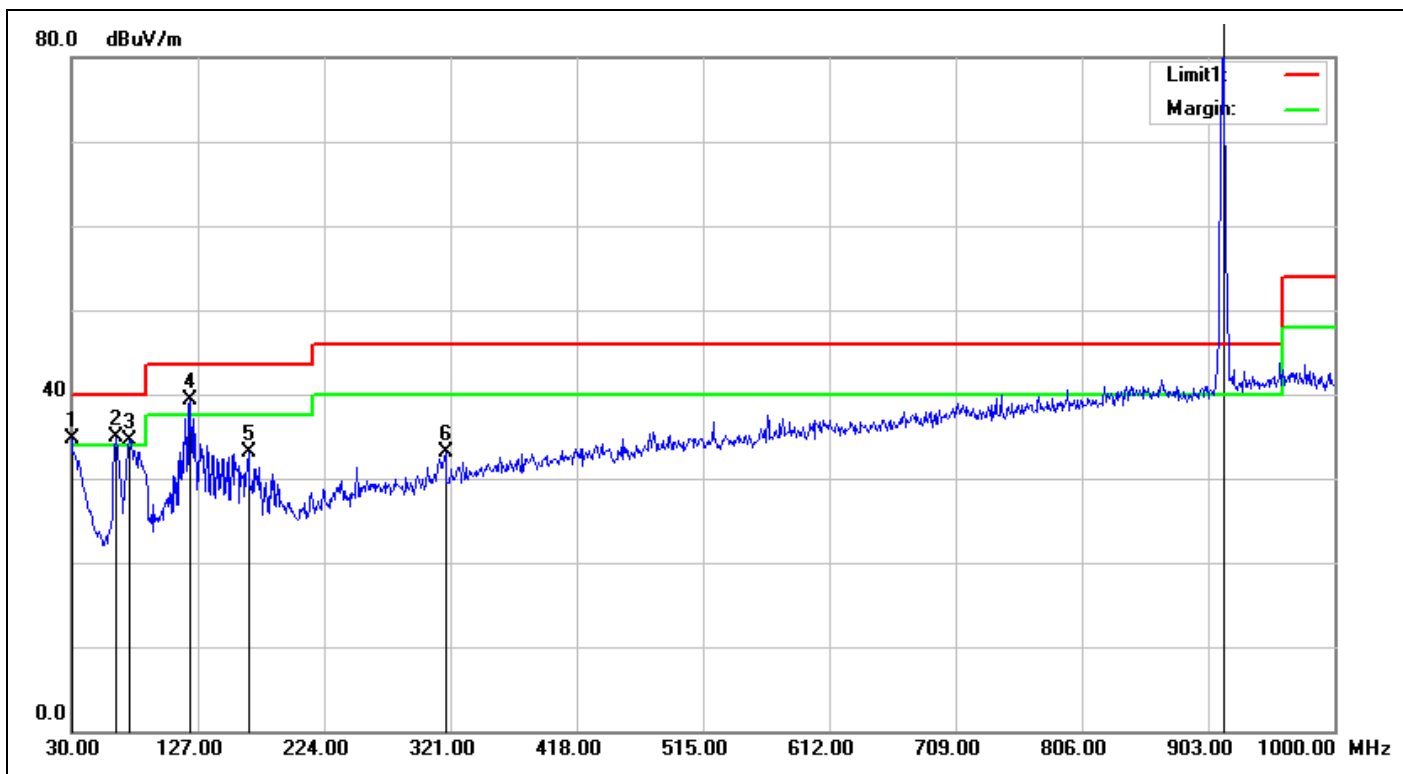
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Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/15 15:37:13
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	20.2(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	35.30	33.90	40.00	-6.10	QP	101	163	
2	63.9500	-14.87	50.50	35.63	40.00	-4.37	QP	101	317	
3	119.2400	-9.00	43.60	34.60	43.50	-8.90	QP	101	91	
4	173.5600	-10.64	45.88	35.24	43.50	-8.26	QP	101	184	
5	250.1900	-7.27	42.61	35.34	46.00	-10.66	QP	101	163	
6	384.0500	-4.07	40.10	36.03	46.00	-9.97	QP	101	285	
7	914.6400	4.25	103.53	107.78	46.00	61.78	QP	101	285	TX



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/15 15:38:17
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	20.2(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-1.40	36.19	34.79	40.00	-5.21	QP	101	359	
2	63.9500	-14.87	49.79	34.92	40.00	-5.08	QP	101	282	
3	74.6200	-14.00	48.53	34.53	40.00	-5.47	QP	101	237	
4	121.1800	-8.88	48.15	39.27	43.50	-4.23	QP	101	269	
5	165.8000	-9.91	42.98	33.07	43.50	-10.43	QP	101	359	
6	317.1200	-5.65	38.66	33.01	46.00	-12.99	QP	101	0	
7	914.6400	4.25	94.73	98.98	46.00	52.98	QP	101	317	TX

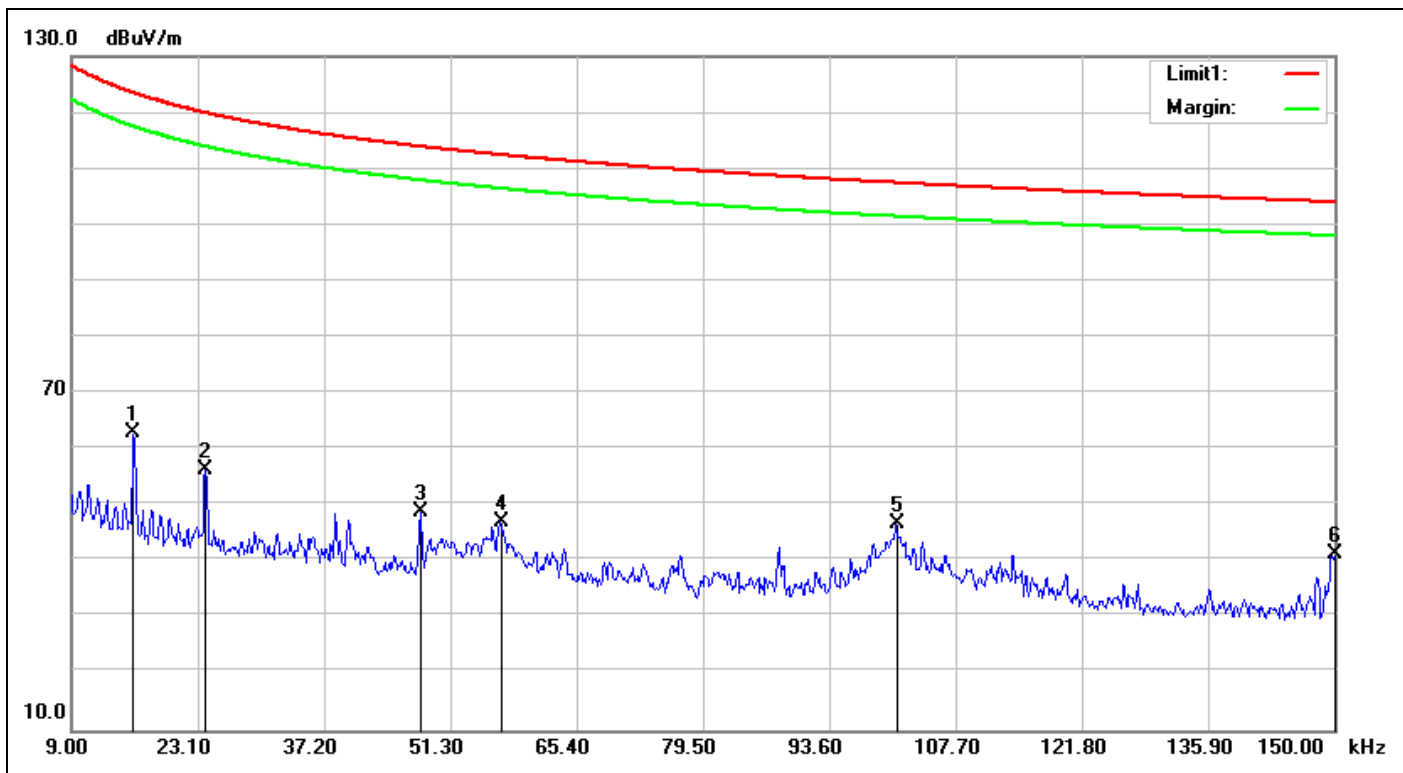
Spurious Emissions, TX Mode, 9k-30M, 1Mbps,O-QPSK



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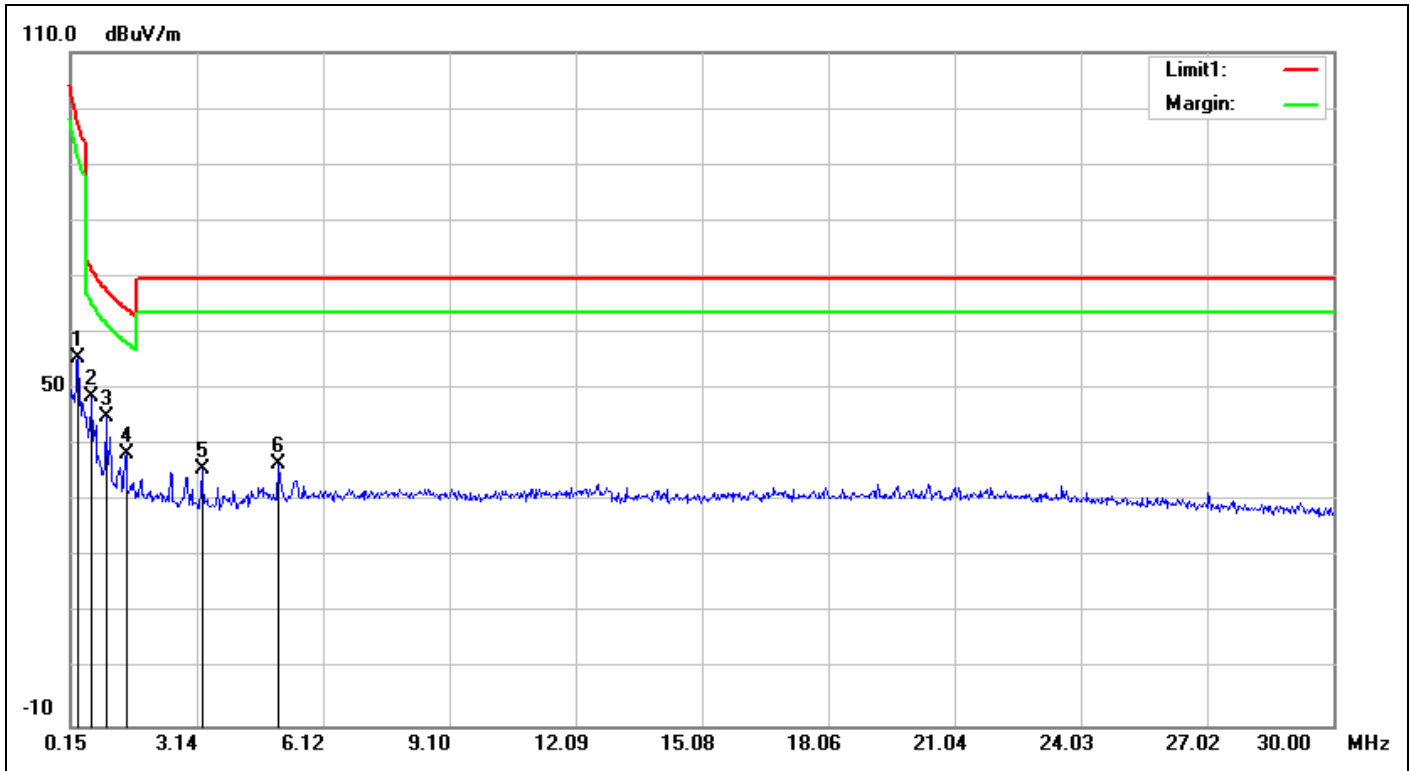
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Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/15 15:49:49
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0159	18.76	44.05	62.81	123.48	-60.67	QP	100	205	
2	0.0239	19.08	37.41	56.49	119.95	-63.46	QP	100	200	
3	0.0479	18.96	29.94	48.90	113.93	-65.03	QP	100	207	
4	0.0568	18.84	28.28	47.12	112.45	-65.33	QP	100	194	
5	0.1011	18.33	28.53	46.86	107.46	-60.60	QP	100	197	
6	0.1500	18.35	22.93	41.28	104.05	-62.77	QP	100	245	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/15 15:52:21
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.6(°C)/49%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna 1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	37.01	55.48	97.24	-41.76	QP	100	251	
2	0.6574	18.66	29.86	48.52	71.25	-22.73	QP	100	259	
3	0.9858	18.68	26.51	45.19	67.74	-22.55	QP	100	248	
4	1.4633	18.64	19.73	38.37	64.32	-25.95	QP	100	210	
5	3.2544	18.64	17.13	35.77	69.50	-33.73	QP	100	210	
6	5.0453	19.48	17.19	36.67	69.50	-32.83	QP	100	216	

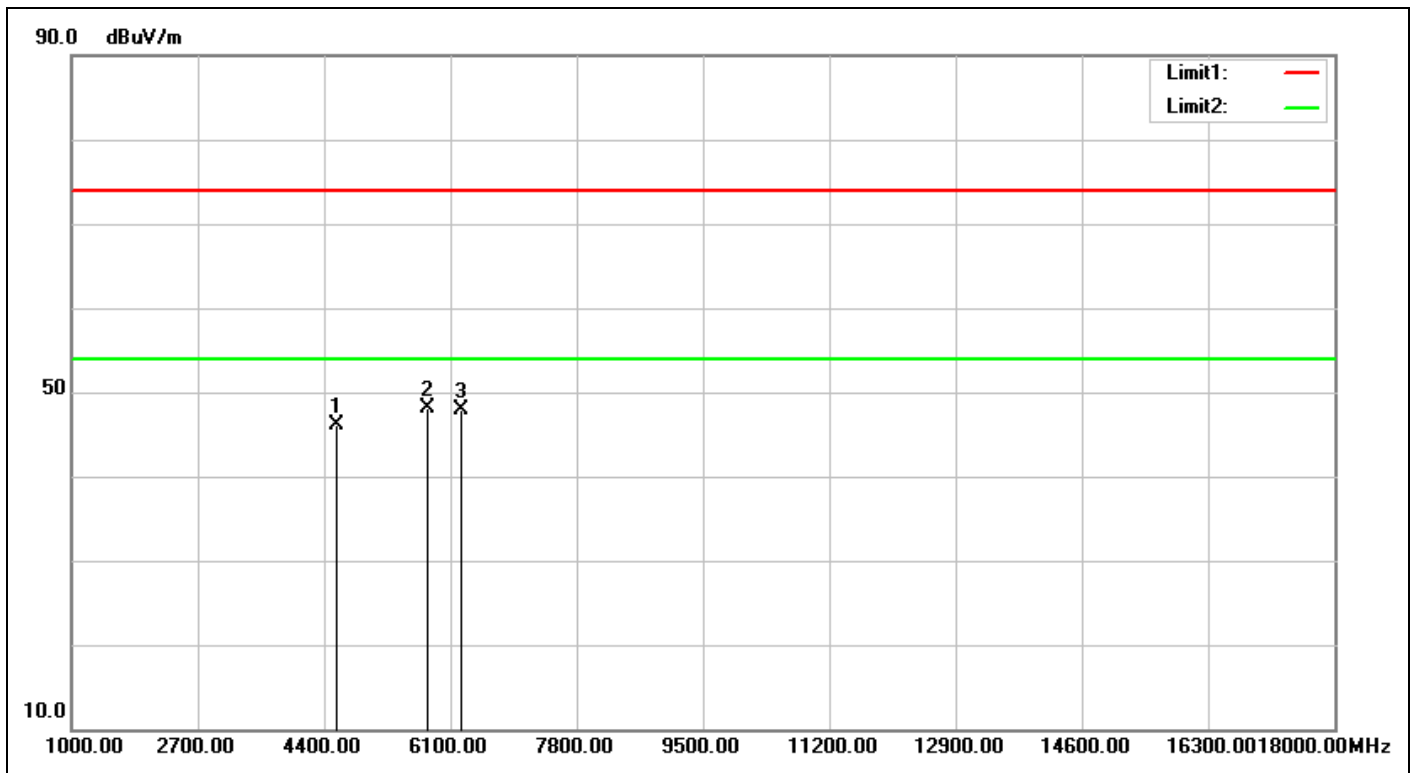
Spurious Emissions, RX Mode, 1-18G, 1Mbps, O-QPSK



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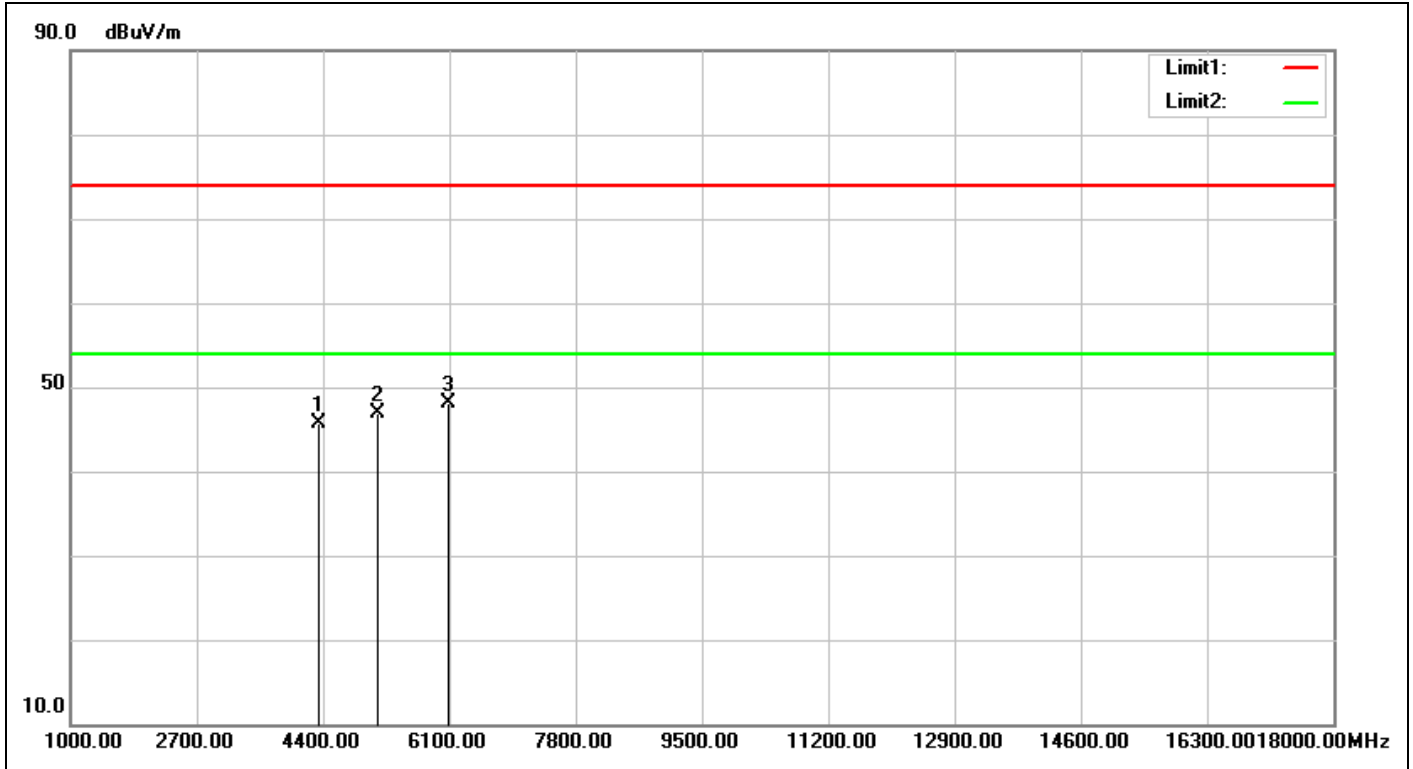
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Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:11:15
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	1Mbps, O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4570.000	-3.84	49.85	46.01	74.00	-27.99	peak	100	17	
2	5794.000	0.99	47.19	48.18	74.00	-25.82	peak	100	78	
3	6253.000	3.35	44.57	47.92	74.00	-26.08	peak	100	358	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:12:07
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4332.000	-4.54	50.20	45.66	74.00	-28.34	peak	100	2	
2	5131.000	-2.55	49.39	46.84	74.00	-27.16	peak	100	53	
3	6083.000	2.65	45.38	48.03	74.00	-25.97	peak	100	285	

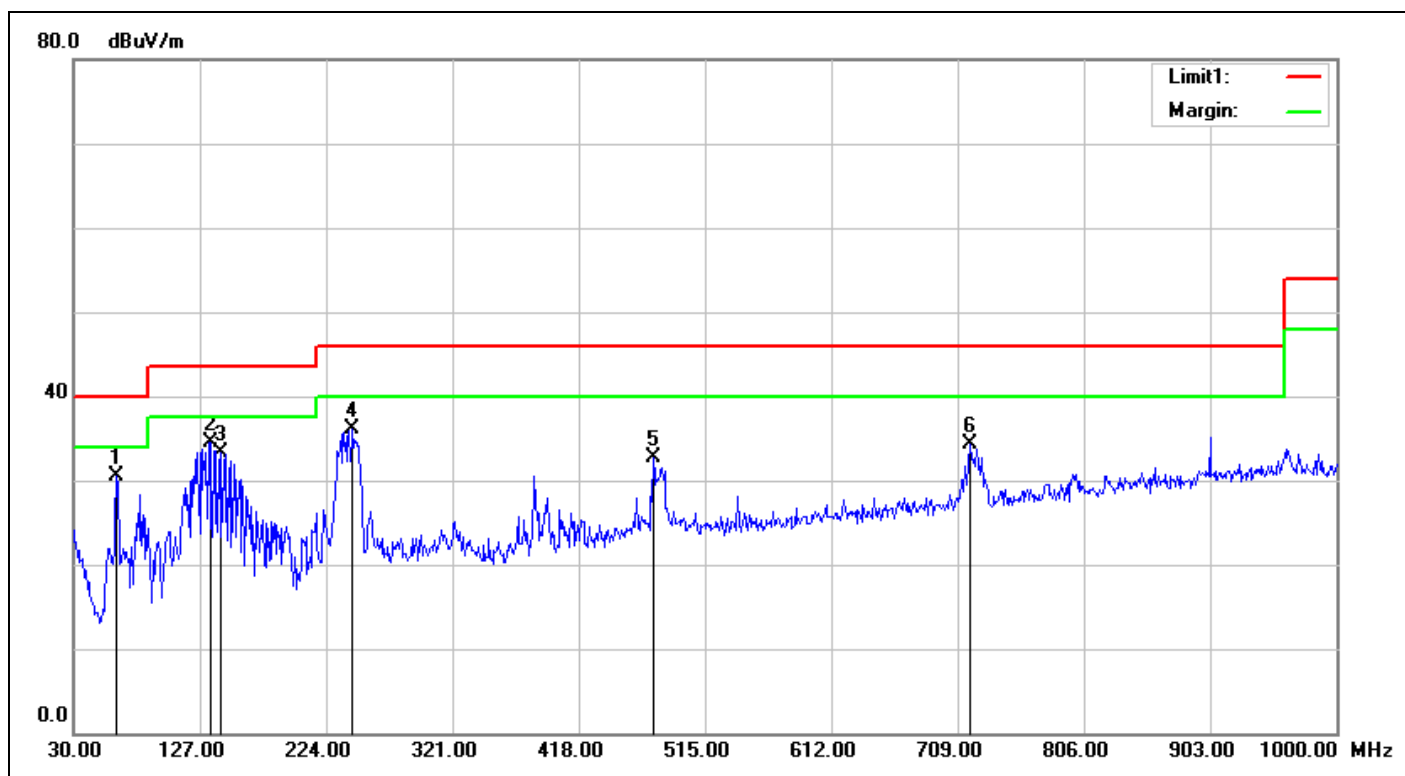
Spurious Emissions, RX Mode, 30M-1G 1Mbps,O-QPSK



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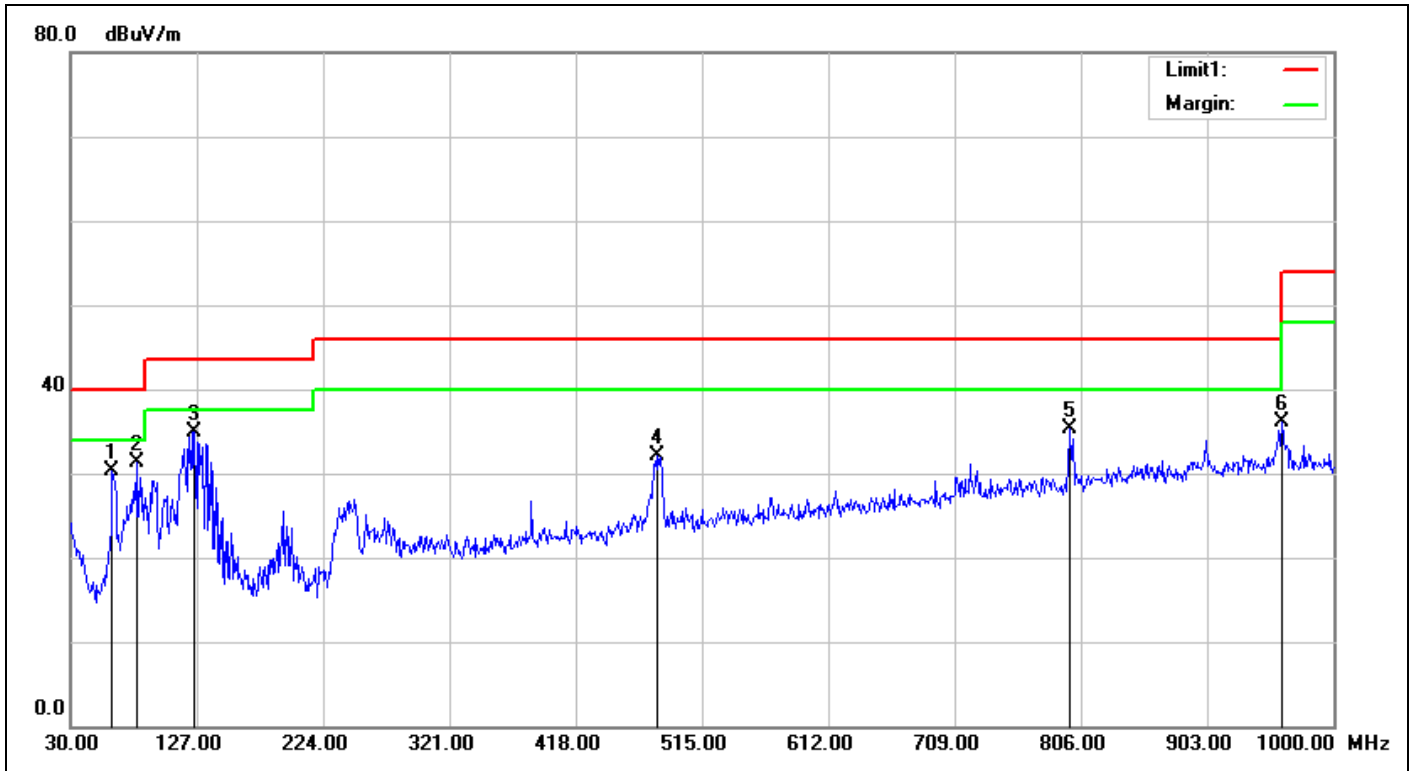
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/8/27 13:56:12
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	62.9800	-14.91	45.35	30.44	40.00	-9.56	QP	100	161	
2	135.7300	-8.42	42.98	34.56	43.50	-8.94	QP	100	174	
3	143.4900	-8.54	41.78	33.24	43.50	-10.26	QP	100	174	
4	244.3700	-7.84	43.88	36.04	46.00	-9.96	QP	100	197	
5	475.2300	-2.81	35.51	32.70	46.00	-13.30	QP	100	164	
6	718.7000	0.86	33.42	34.28	46.00	-11.72	QP	100	161	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/8/27 13:57:06
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna 1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	62.0100	-14.96	45.33	30.37	40.00	-9.63	QP	100	246	
2	81.4100	-13.17	44.39	31.22	40.00	-8.78	QP	100	147	
3	125.0600	-8.70	43.64	34.94	43.50	-8.56	QP	100	19	
4	480.0800	-2.71	34.81	32.10	46.00	-13.90	QP	100	164	
5	797.2700	2.23	33.01	35.24	46.00	-10.76	QP	100	52	
6	960.2300	5.26	30.76	36.02	54.00	-17.98	QP	100	266	

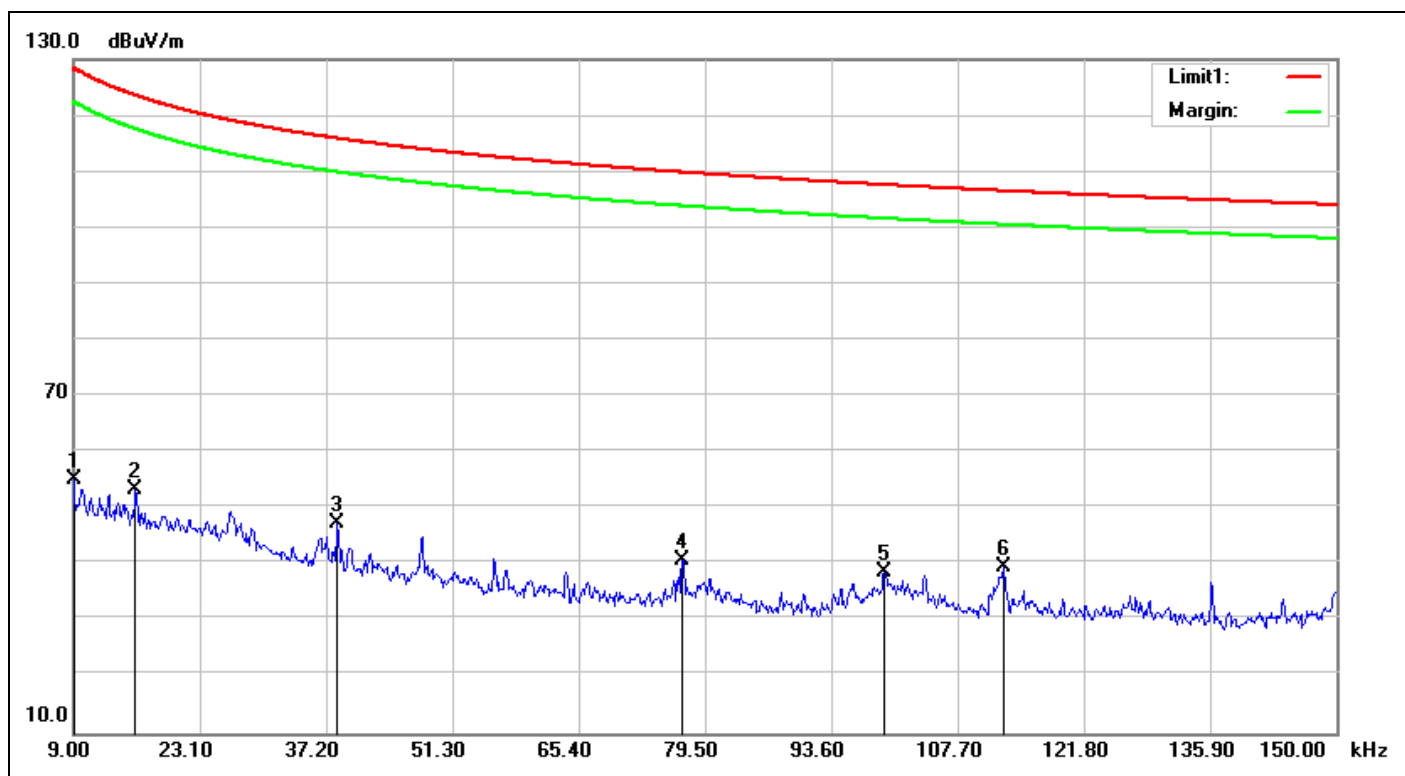
Spurious Emissions, RX Mode, 9K-30M, 1Mbps,O-QPSK



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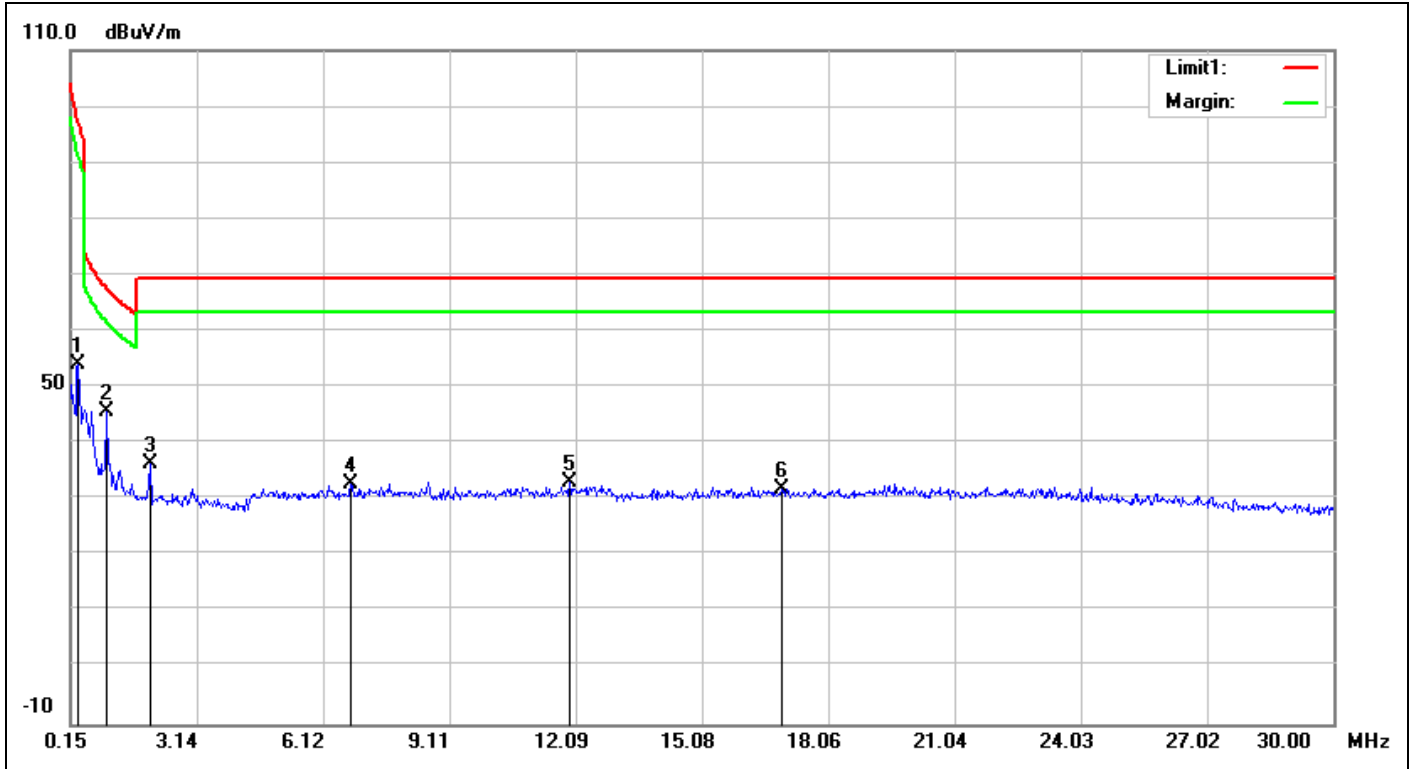
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:09:46
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna 1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0090	18.32	36.74	55.06	128.50	-73.44	QP	100	258	
2	0.0159	18.76	34.48	53.24	123.56	-70.32	QP	100	186	
3	0.0385	19.15	28.22	47.37	115.88	-68.51	QP	100	193	
4	0.0770	18.60	22.25	40.85	109.87	-69.02	QP	100	200	
5	0.0995	18.34	20.22	38.56	107.64	-69.08	QP	100	206	
6	0.1129	18.34	21.12	39.46	106.54	-67.08	QP	100	265	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-30M_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/8/27 14:11:08
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	21(°C)/58%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna 1Mbps,O-QPSK		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.3291	18.47	35.65	54.12	97.26	-43.14	QP	100	246	
2	0.9858	18.68	27.11	45.79	67.75	-21.96	QP	100	248	
3	2.0306	18.60	17.88	36.48	69.50	-33.02	QP	100	190	
4	6.7767	19.81	12.81	32.62	69.50	-36.88	QP	100	359	
5	11.9408	20.66	12.31	32.97	69.50	-36.53	QP	100	347	
6	16.9556	21.26	10.67	31.93	69.50	-37.57	QP	100	52	

Spot Check Sample of ANT-916-CW-QW-SMA

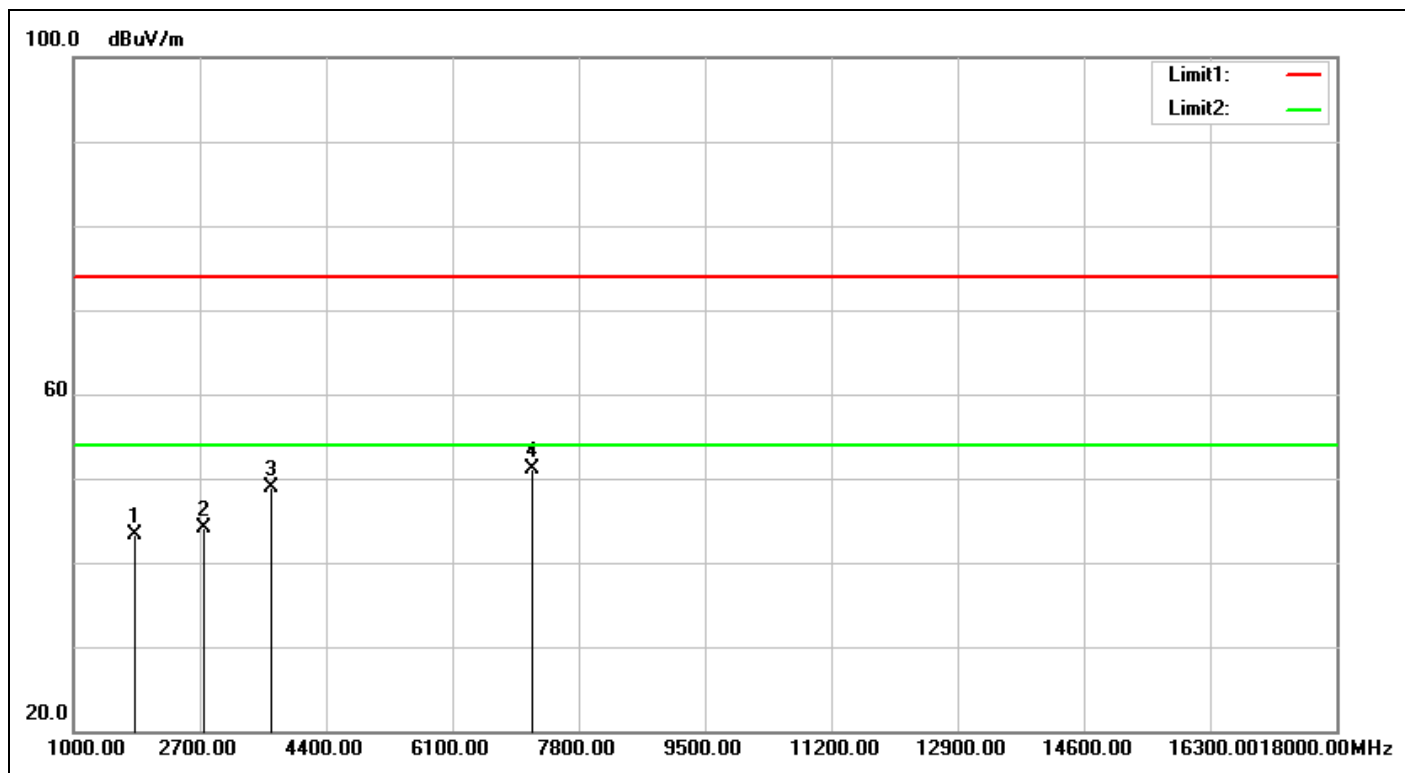
Spurious Emissions, TX Mode, 1-18G, 1Mbps, O-QPSK



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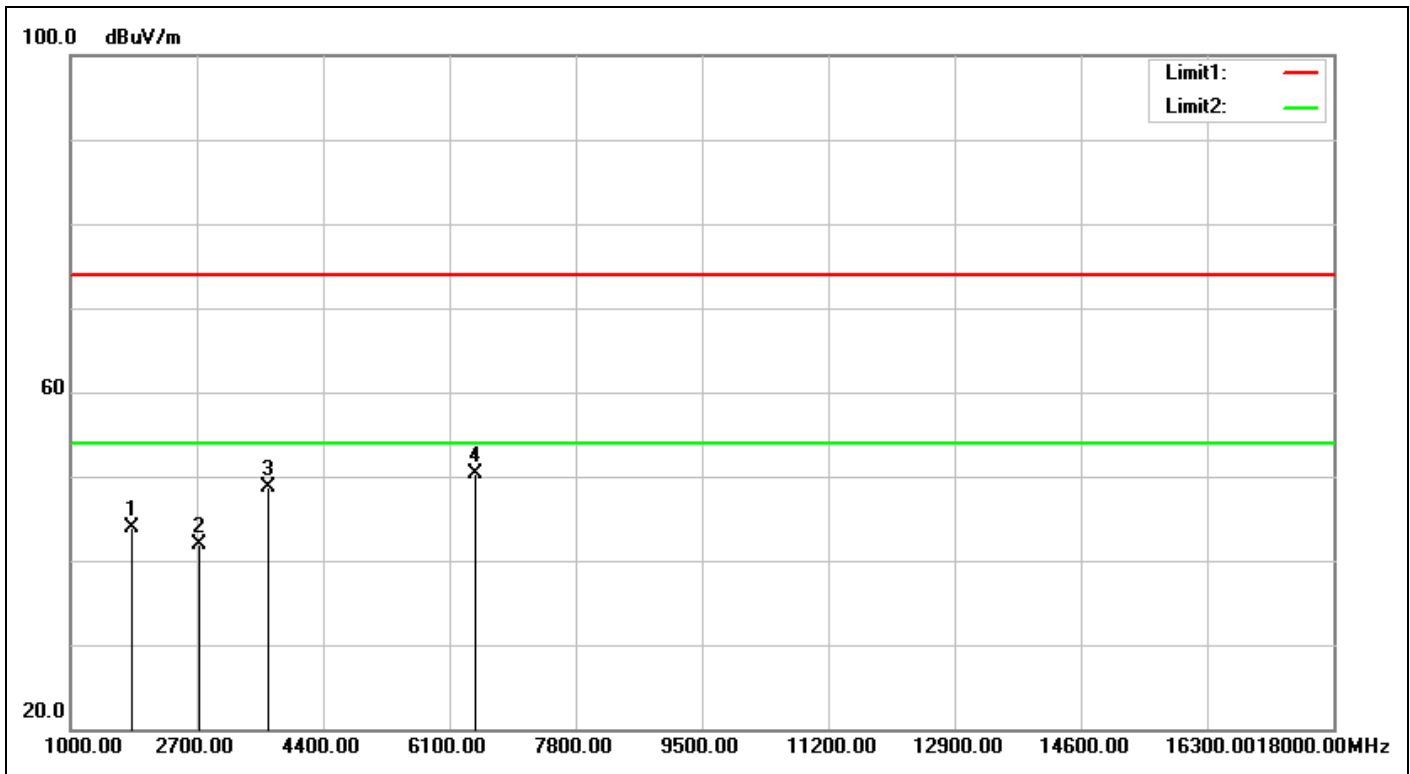
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/10/24 21:10:54
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	17(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Kevin Kuo
Test Mode:	40kbps,BPSK-914M-TX-1-18G		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.400	-9.30	52.69	43.39	74.00	-30.61	peak	100	36	
2	2742.600	-7.62	51.66	44.04	74.00	-29.96	peak	100	254	
3	3656.800	-6.45	55.29	48.84	74.00	-25.16	peak	100	108	
4	7171.000	4.13	47.05	51.18	74.00	-22.82	peak	100	5	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/10/24 21:11:46
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	17(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Kevin Kuo
Test Mode:	40kbps,BPSK-914M-TX-1-18G		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.400	-9.30	53.22	43.92	74.00	-30.08	peak	100	155	
2	2742.600	-7.62	49.52	41.90	74.00	-32.10	peak	100	20	
3	3656.800	-6.45	55.13	48.68	74.00	-25.32	peak	100	231	
4	6440.000	4.14	46.15	50.29	74.00	-23.71	peak	100	19	

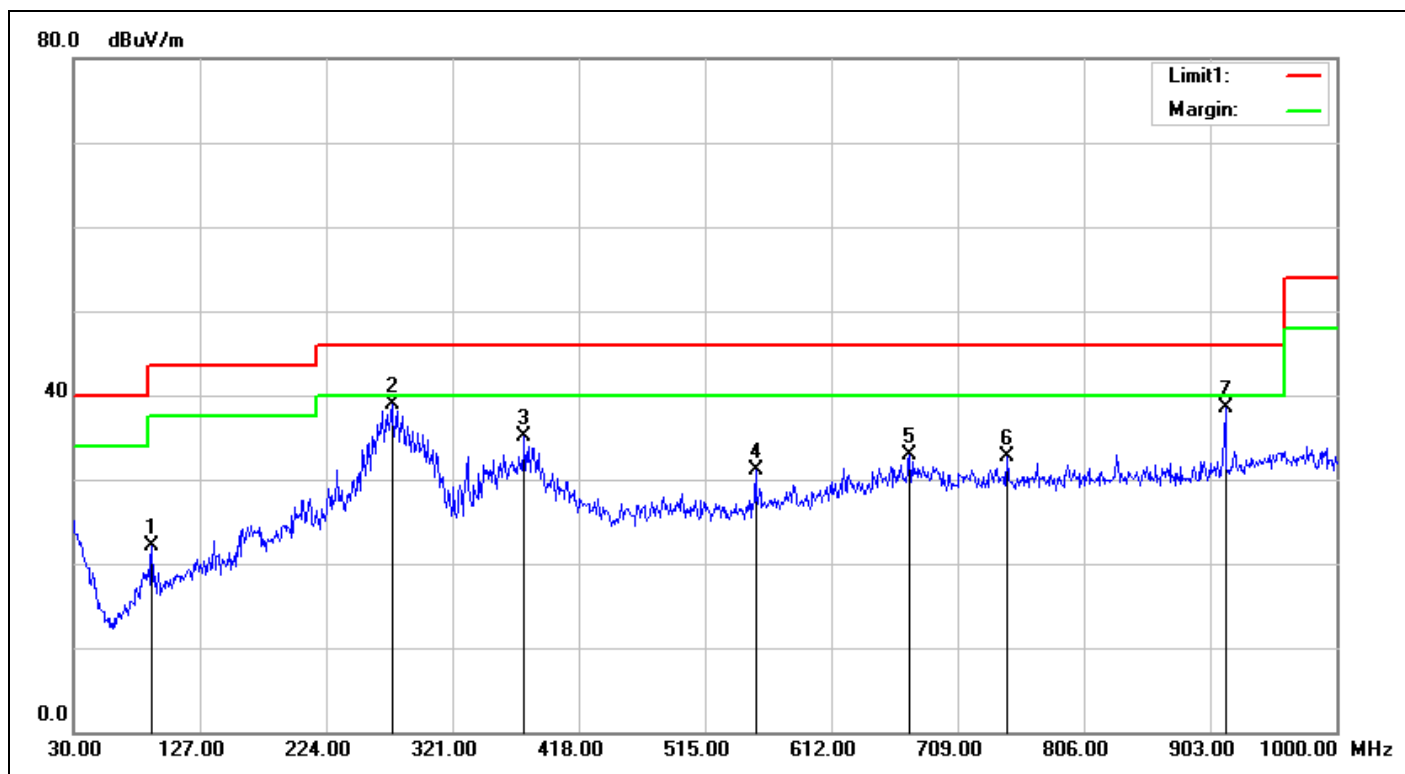
Spurious Emissions, TX Mode, 30M-1G, 1Mbps, O-QPSK



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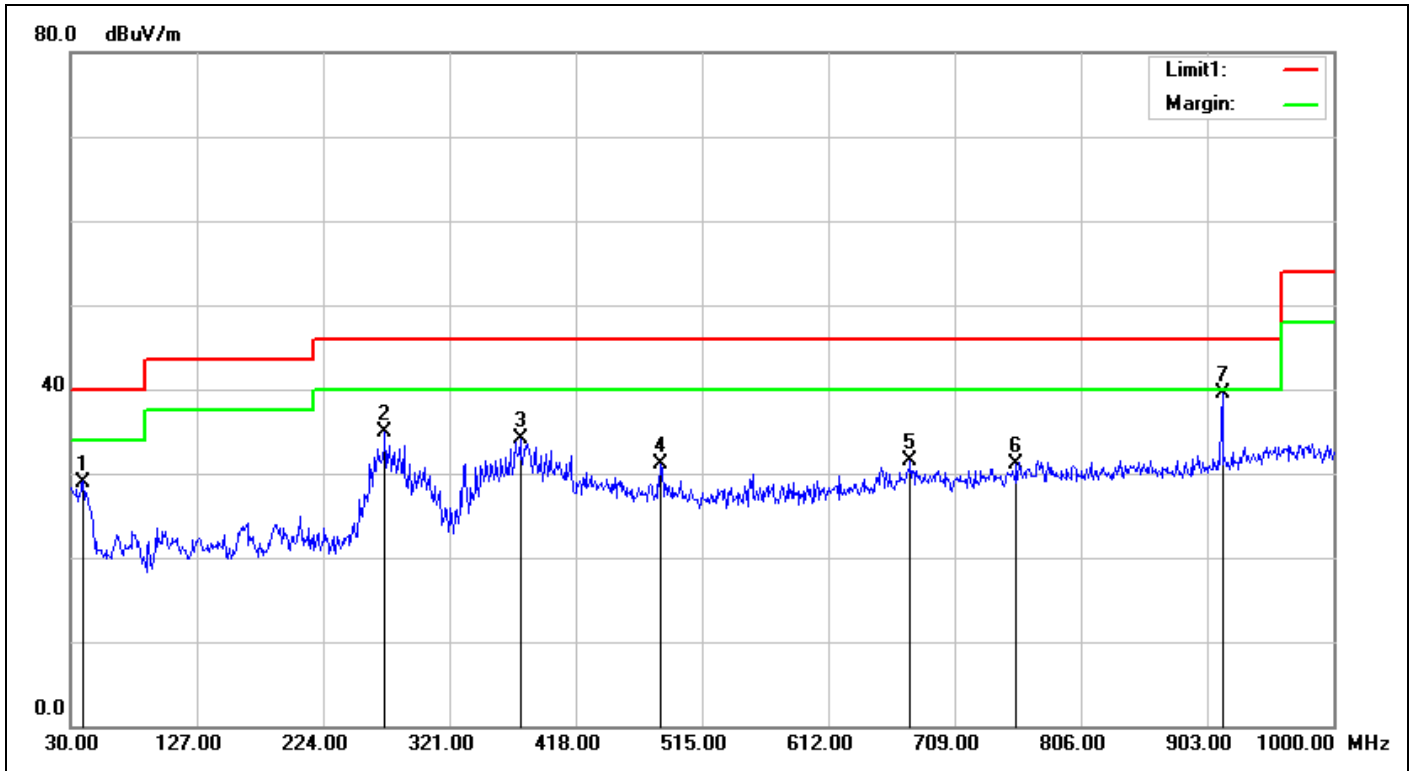
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Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/10/24 21:36:49
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	17(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Kevin Kuo
Test Mode:	40kbps,BPSK-914M-TX-30M-1G		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	90.1400	-10.87	32.94	22.07	43.50	-21.43	QP	100	204	
2	274.4399	-5.27	44.15	38.88	46.00	-7.12	QP	100	116	
3	376.2900	-3.01	38.20	35.19	46.00	-10.81	QP	100	27	
4	553.7999	-0.35	31.36	31.01	46.00	-14.99	QP	100	131	
5	672.1399	1.06	31.88	32.94	46.00	-13.06	QP	100	306	
6	746.8300	2.38	30.25	32.63	46.00	-13.37	QP	100	331	
7	914.2000	4.54	33.92	38.46	46.00	-7.54	QP	100	23	TX*

*Used band-pass filter to protect a receiver equipment, the model name is LPM50008 which is manufacture by Micro-Tronics.



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/10/24 21:37:42
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	17(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Kevin Kuo
Test Mode:	40kbps,BPSK-914M-TX-30M-1G		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	39.7000	-5.56	34.56	29.00	40.00	-11.00	QP	100	259	
2	271.5300	-5.29	40.22	34.93	46.00	-11.07	QP	100	154	
3	375.3200	-3.06	37.12	34.06	46.00	-11.94	QP	100	196	
4	482.9900	-1.47	32.58	31.11	46.00	-14.89	QP	100	3	
5	675.0500	1.12	30.37	31.49	46.00	-14.51	QP	100	288	
6	756.5300	2.54	28.60	31.14	46.00	-14.86	QP	100	131	
7	914.2000	4.54	35.01	39.55	46.00	-6.45	QP	100	216	TX*

*Used band-pass filter to protect a receiver equipment, the model name is LPM50008 which is manufacture by Micro-Tronics.

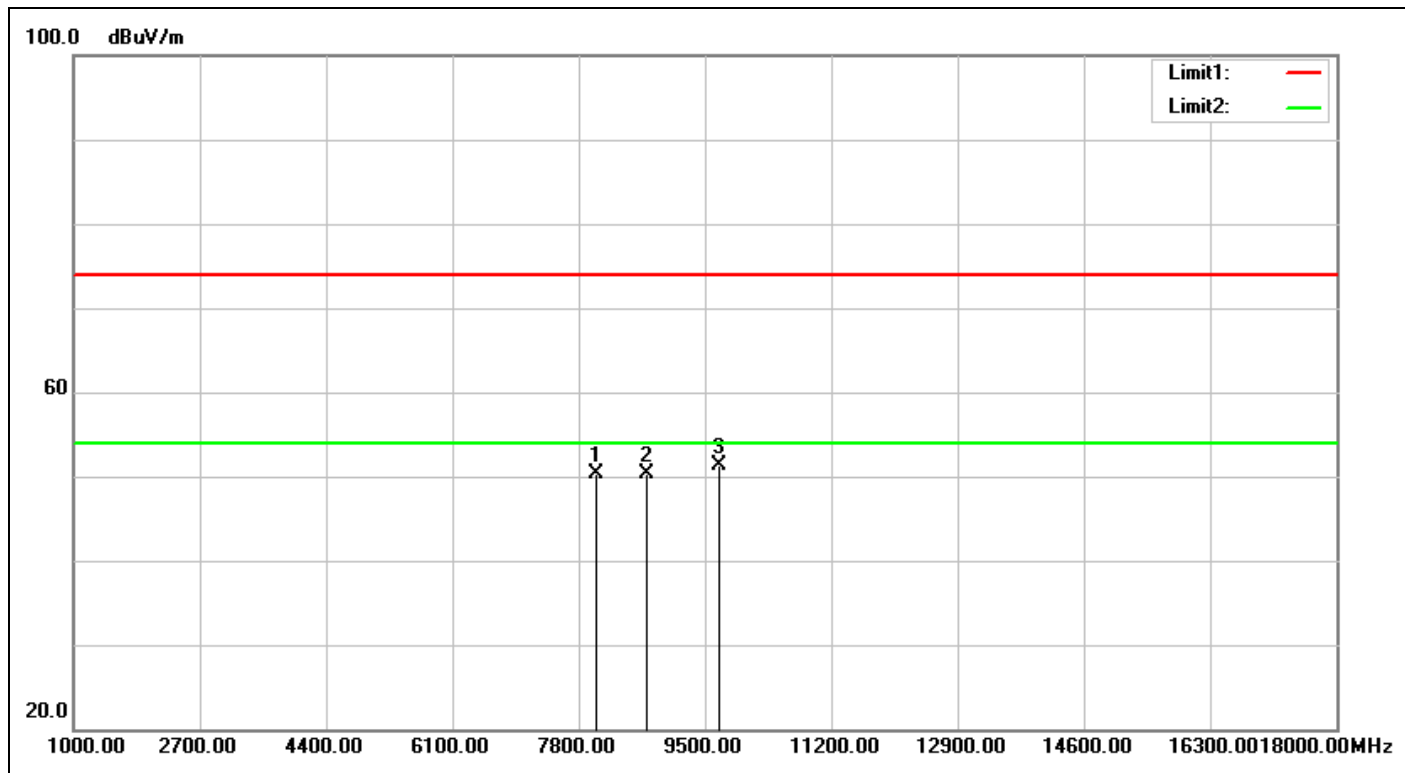
Spurious Emissions, RX Mode, 1-18G, 1Mbps, O-QPSK



TUV Rheinland Taiwan Ltd.

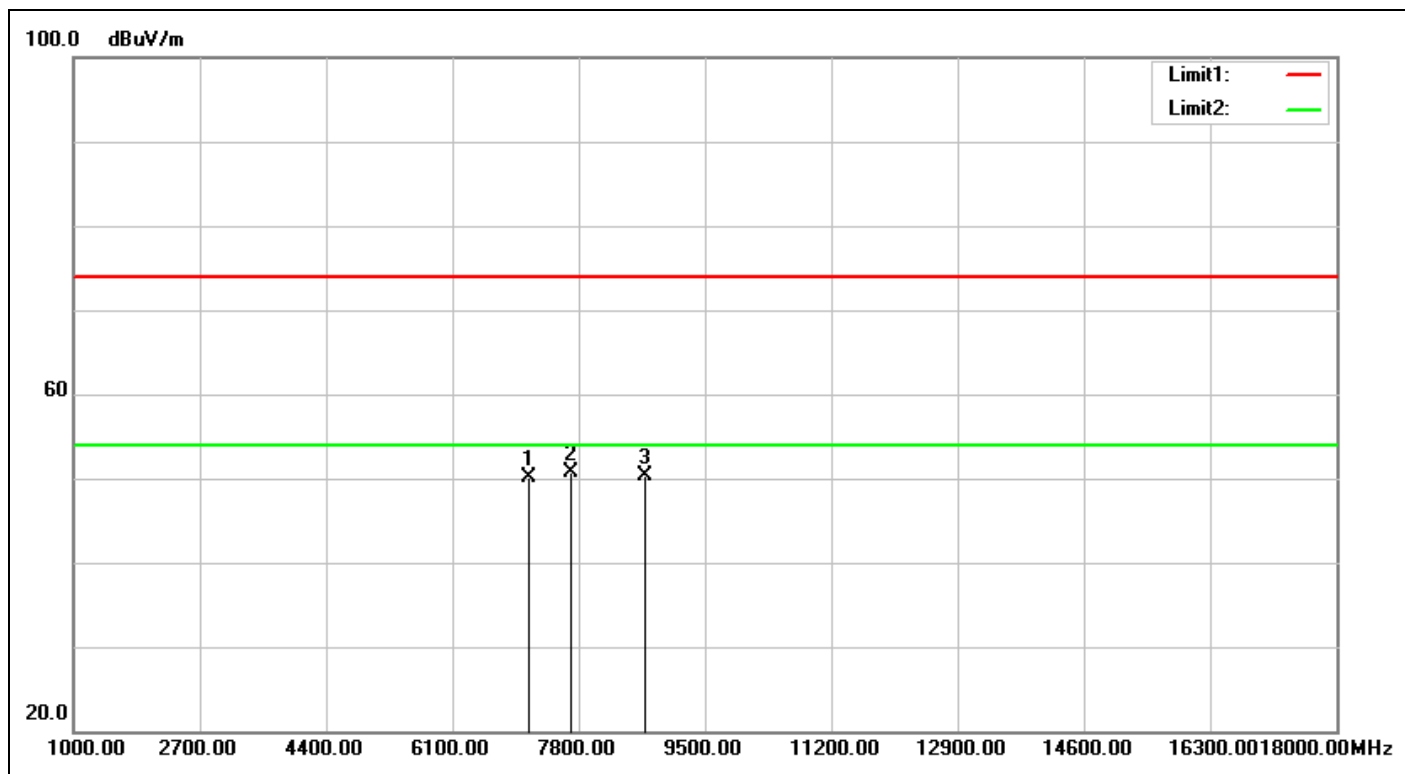
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/10/24 21:17:16
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	17(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Kevin Kuo
Test Mode:	40kbps,BPSK-914M-RX-1-18G		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	8038.000	4.79	45.61	50.40	74.00	-23.60	peak	100	135	
2	8718.000	5.49	44.84	50.33	74.00	-23.67	peak	100	67	
3	9687.000	5.11	46.25	51.36	74.00	-22.64	peak	100	226	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/10/24 21:18:09
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	17(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Kevin Kuo
Test Mode:	40kbps,BPSK-914M-RX-1-18G		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	7137.000	4.06	45.96	50.02	74.00	-23.98	peak	100	295	
2	7698.000	4.83	45.79	50.62	74.00	-23.38	peak	100	110	
3	8701.000	5.49	44.83	50.32	74.00	-23.68	peak	100	206	

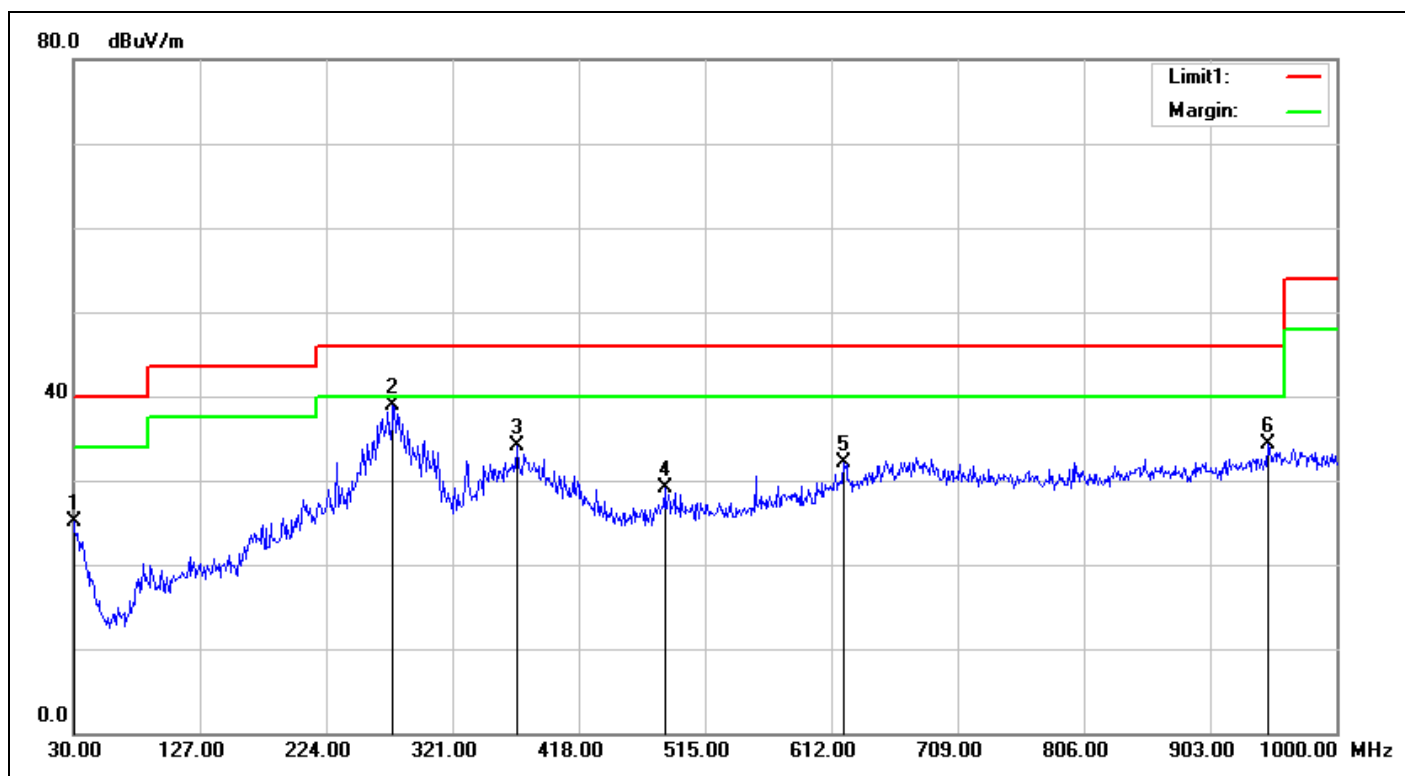
Spurious Emissions, RX Mode, 30M-1G, 1Mbps, O-QPSK



TUV Rheinland Taiwan Ltd.

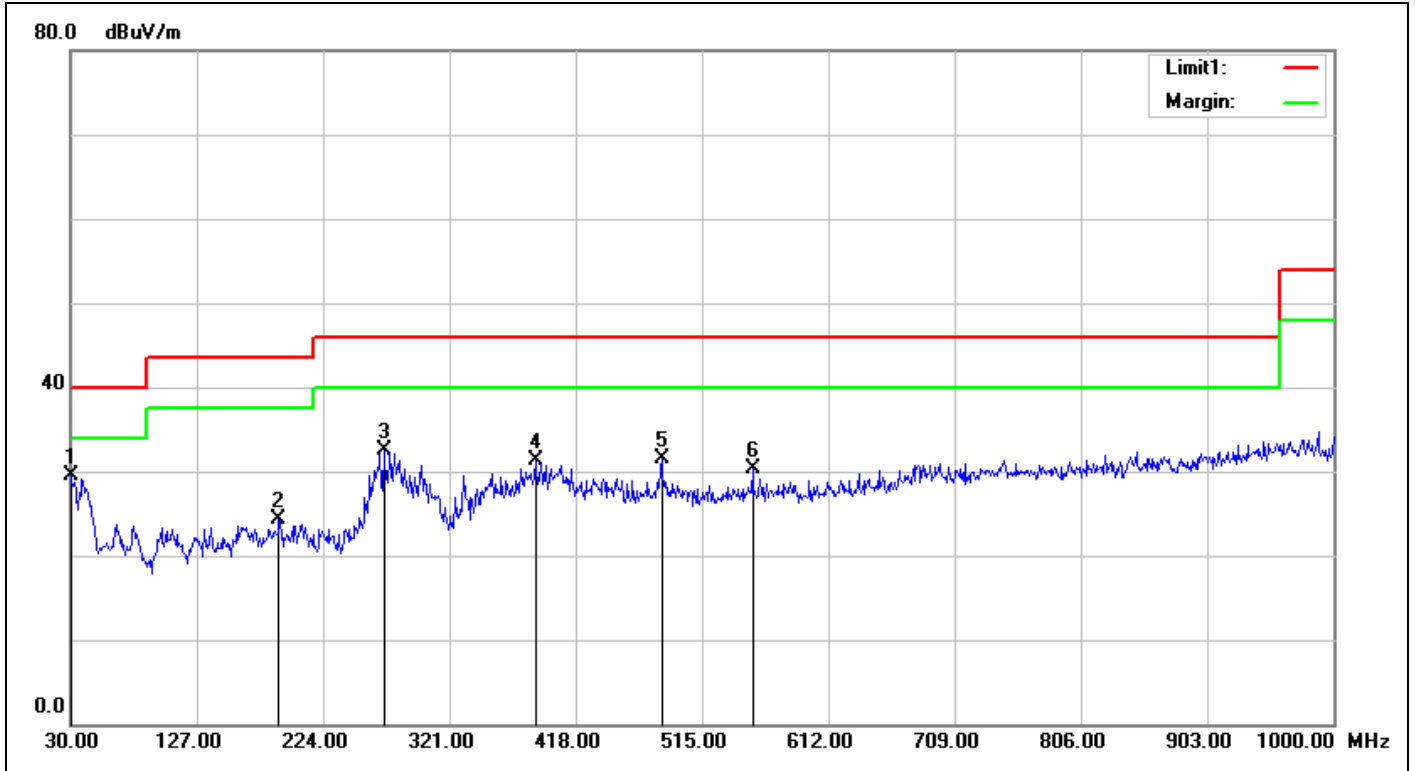
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/10/24 21:29:33
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	17(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Kevin Kuo
Test Mode:	40kbps,BPSK-914M-RX-30M-1G		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.03	25.16	25.13	40.00	-14.87	QP	100	166	
2	275.4100	-5.26	44.08	38.82	46.00	-7.18	QP	100	231	
3	370.4700	-3.04	37.16	34.12	46.00	-11.88	QP	100	30	
4	483.9599	-1.46	30.63	29.17	46.00	-16.83	QP	100	228	
5	621.7000	0.48	31.65	32.13	46.00	-13.87	QP	100	19	
6	947.6200	5.59	28.77	34.36	46.00	-11.64	QP	100	47	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/10/24 21:30:26
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	17(°C)/56%
Model No.:	ATSAMR30M18A	Test Engineer:	Kevin Kuo
Test Mode:	40kbps,BPSK-914M-RX-30M-1G		
Remark:			

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.03	29.47	29.44	40.00	-10.56	QP	100	318	
2	190.0500	-9.40	33.64	24.24	43.50	-19.26	QP	100	131	
3	270.5600	-5.29	37.76	32.47	46.00	-13.53	QP	100	176	
4	386.9600	-2.79	34.13	31.34	46.00	-14.66	QP	100	42	
5	483.9600	-1.46	33.01	31.55	46.00	-14.45	QP	100	357	
6	553.8000	-0.35	30.65	30.30	46.00	-15.70	QP	100	272	

Spot Check Sample of antenna W1910

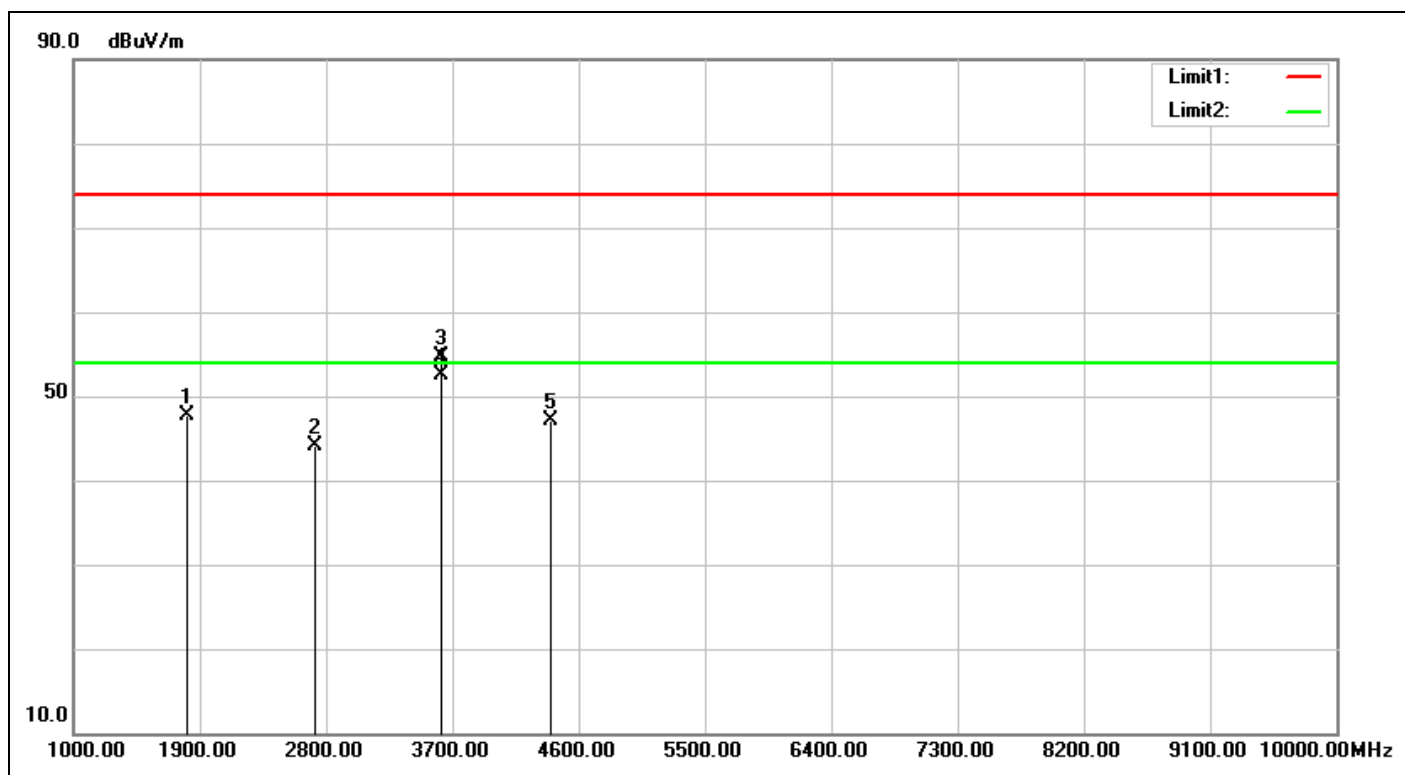
Spurious Emissions, TX Mode, 1-10G CW mode



TUV Rheinland Taiwan Ltd.

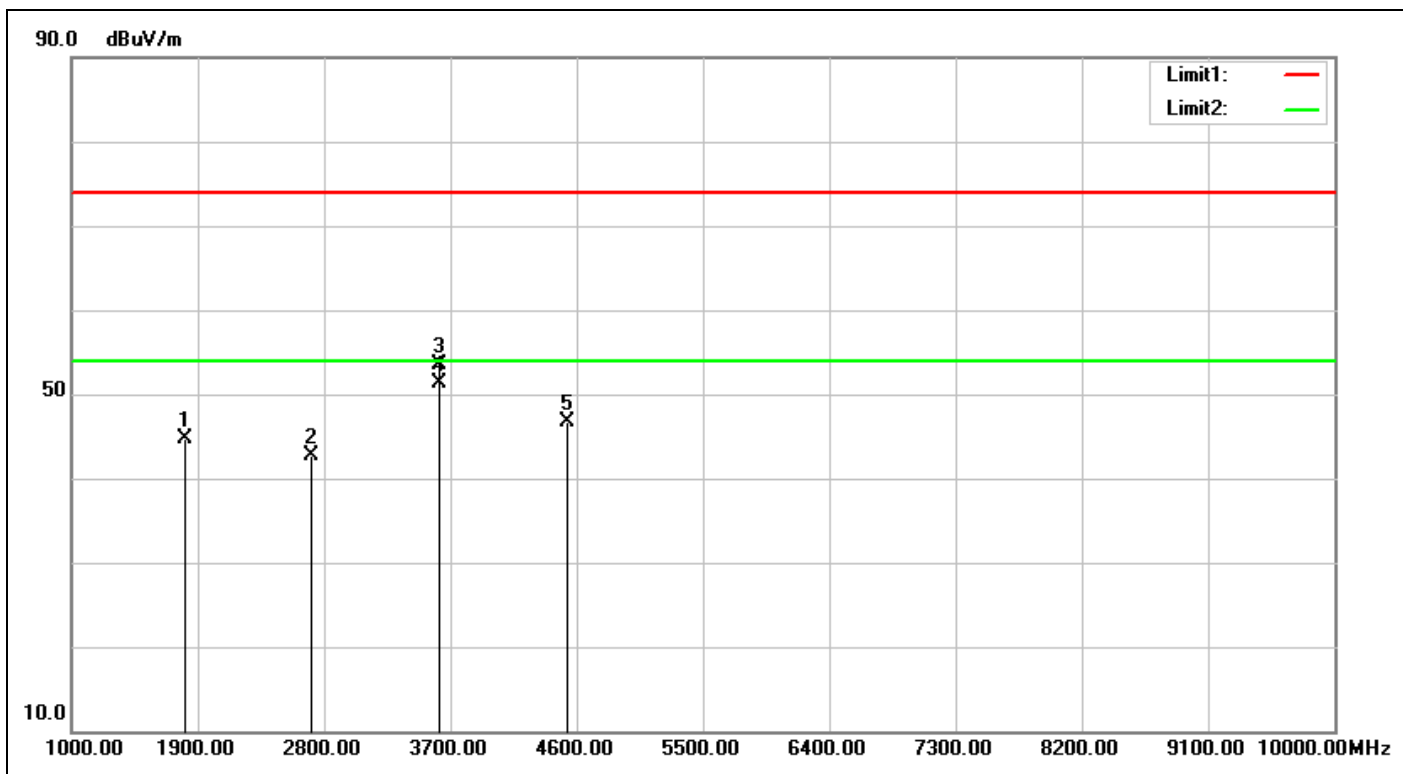
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel: +886-2172-7000 fax: +886-2528-0018



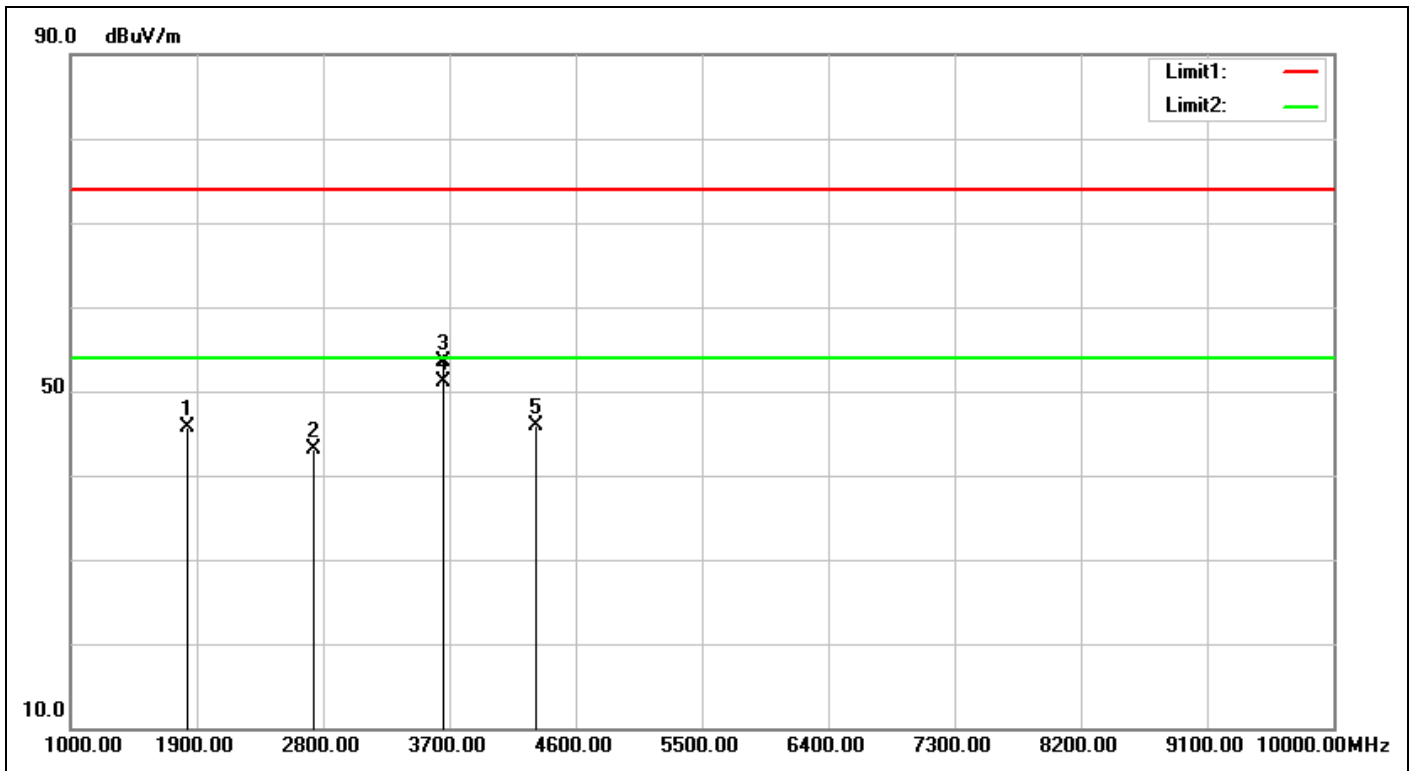
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/7/19 10:48:33
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	23.8(°C)/62%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.24	56.91	47.67	74.00	-26.33	peak	100	200	
2	2718.000	-7.46	51.54	44.08	74.00	-29.92	peak		0	
3	3624.000	-6.32	61.07	54.75	74.00	-19.25	peak	100	254	
4	3624.000	-6.32	58.73	52.41	54.00	-1.59	AVG	100	254	
5	4402.000	-4.11	51.27	47.16	74.00	-26.84	peak	100	8	



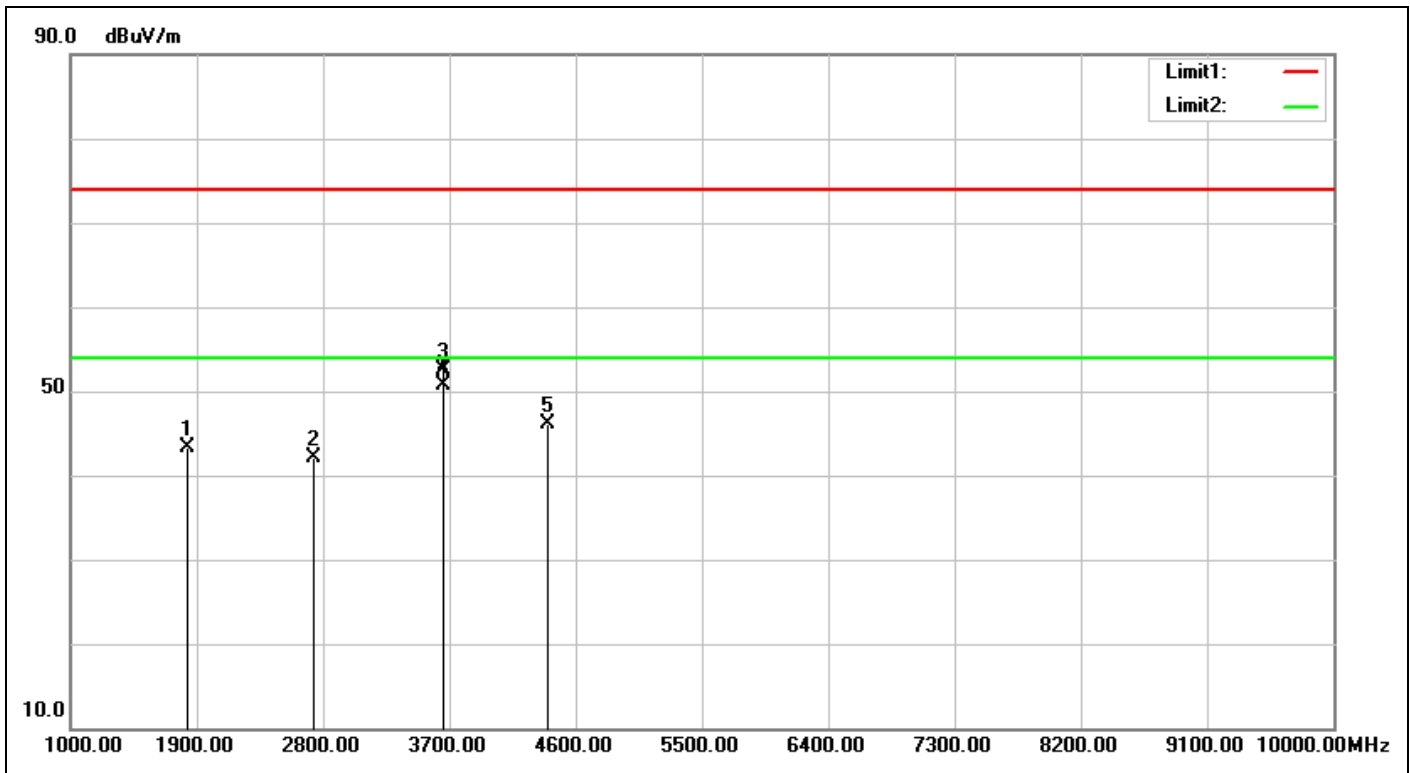
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/7/19 10:49:25
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	23.8(°C)/62%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	906-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1812.000	-9.24	53.92	44.68	74.00	-29.32	peak	100	154	
2	2718.000	-7.46	50.26	42.80	74.00	-31.20	peak			
3	3624.000	-6.32	59.76	53.44	74.00	-20.56	peak	100	127	
4	3624.000	-6.32	57.65	51.33	54.00	-2.67	AVG	100	127	
5	4528.000	-3.72	50.35	46.63	74.00	-27.37	peak	100	147	



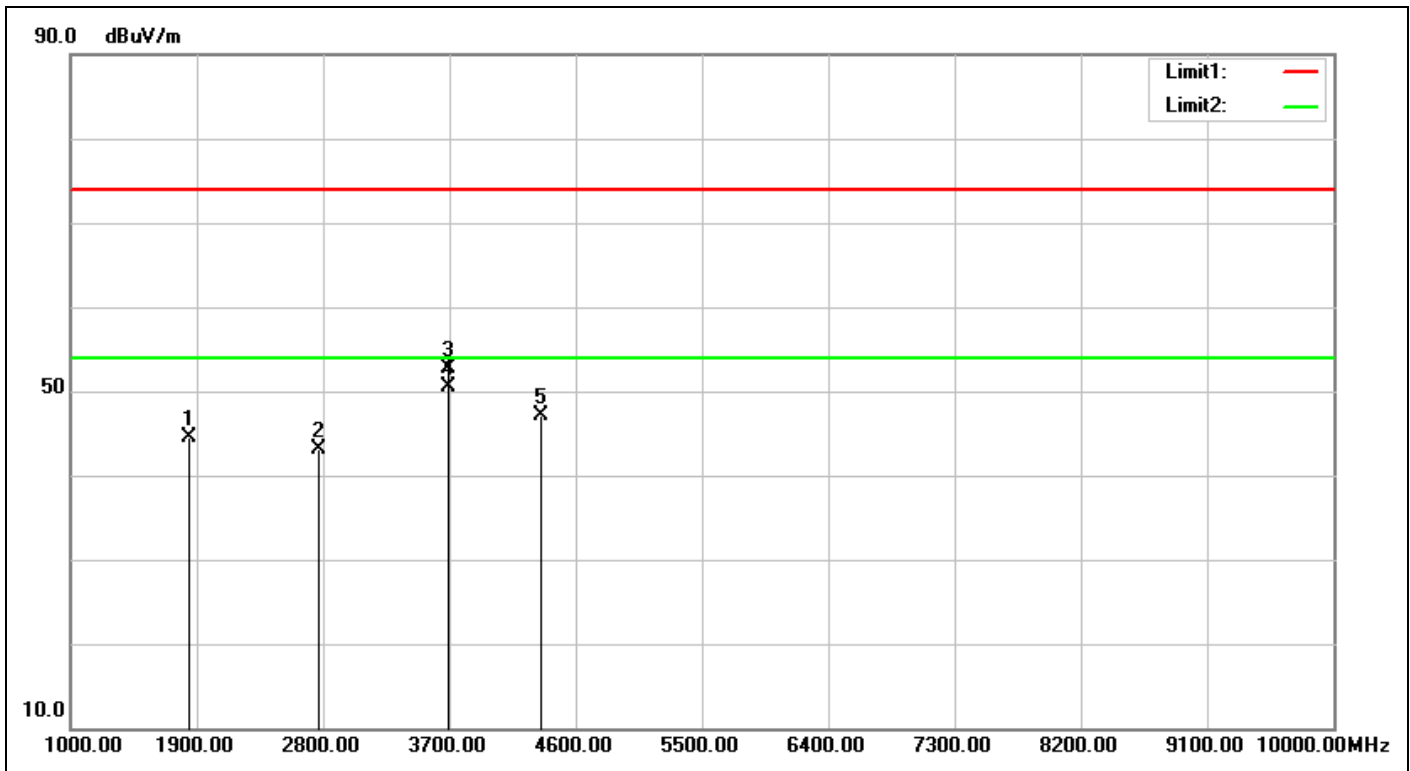
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/7/19 10:52:46
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	23.8(°C)/62%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.12	54.74	45.62	74.00	-28.38	peak	100	197	
2	2742.000	-7.42	50.47	43.05	74.00	-30.95	peak			
3	3656.000	-6.24	59.65	53.41	74.00	-20.59	peak	100	255	
4	3656.000	-6.24	57.35	51.11	54.00	-2.89	AVG	100	255	
5	4312.000	-4.42	50.39	45.97	74.00	-28.03	peak	100	36	



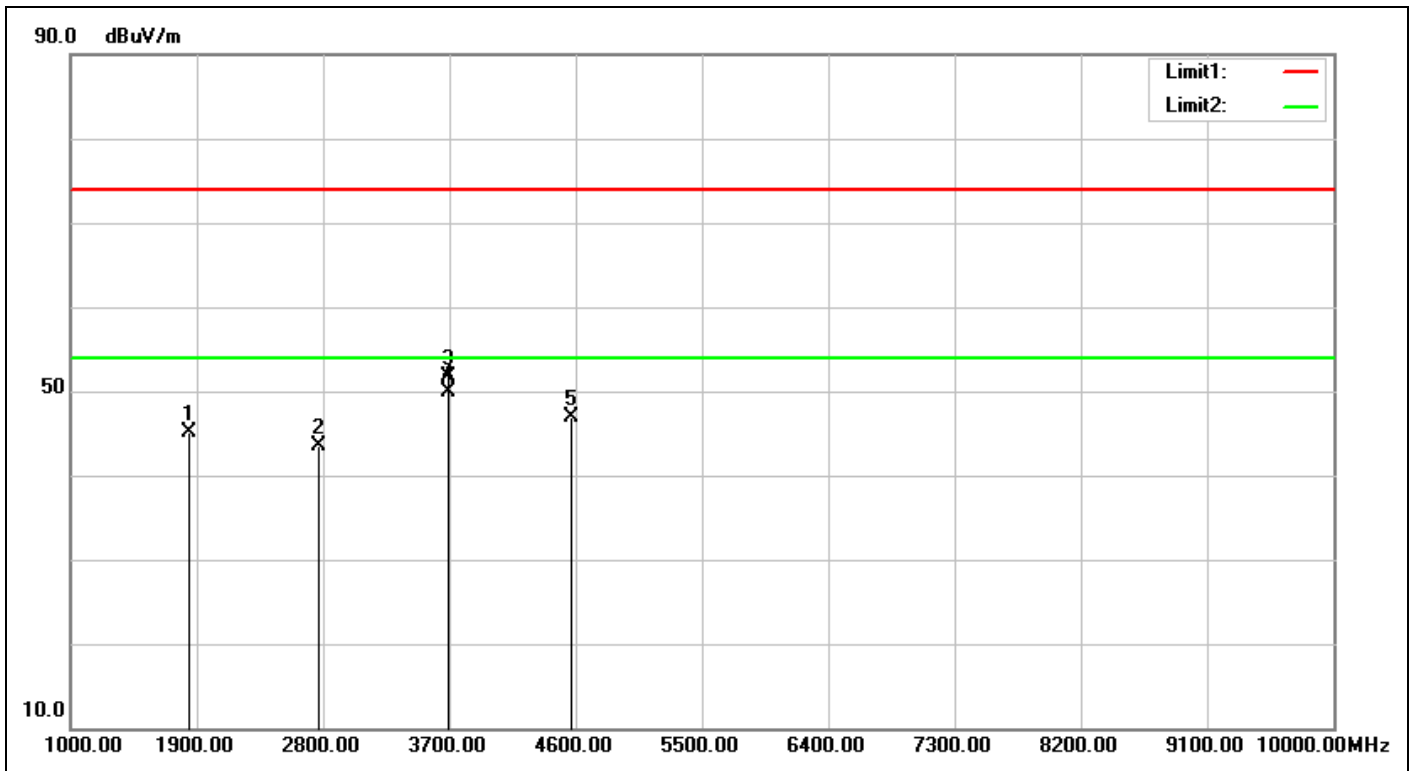
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/7/19 10:53:38
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	23.8(°C)/62%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1828.000	-9.12	52.50	43.38	74.00	-30.62	peak	100	146	
2	2742.000	-7.42	49.43	42.01	74.00	-31.99	peak			
3	3656.000	-6.24	58.81	52.57	74.00	-21.43	peak	100	136	
4	3656.000	-6.24	57.02	50.78	54.00	-3.22	AVG	100	136	
5	4402.000	-4.11	50.22	46.11	74.00	-27.89	peak	100	0	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/7/19 10:56:46
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	23.8(°C)/62%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.00	53.56	44.56	74.00	-29.44	peak	100	206	
2	2772.000	-7.37	50.39	43.02	74.00	-30.98	peak			
3	3696.000	-6.17	58.82	52.65	74.00	-21.35	peak	100	251	
4	3696.000	-6.17	56.73	50.56	54.00	-3.44	AVG	100	251	
5	4348.000	-4.29	51.47	47.18	74.00	-26.82	peak	100	275	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/7/19 10:57:39
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	23.8(°C)/62%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	924-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	1848.000	-9.00	54.02	45.02	74.00	-28.98	peak	100	79	
2	2772.000	-7.37	50.96	43.59	74.00	-30.41	peak			
3	3696.000	-6.17	57.89	51.72	74.00	-22.28	peak	100	331	
4	3696.000	-6.17	56.15	49.98	54.00	-4.02	AVG	100	331	
5	4573.000	-3.64	50.51	46.87	74.00	-27.13	peak	100	85	

Spot Check Sample of antenna W1910

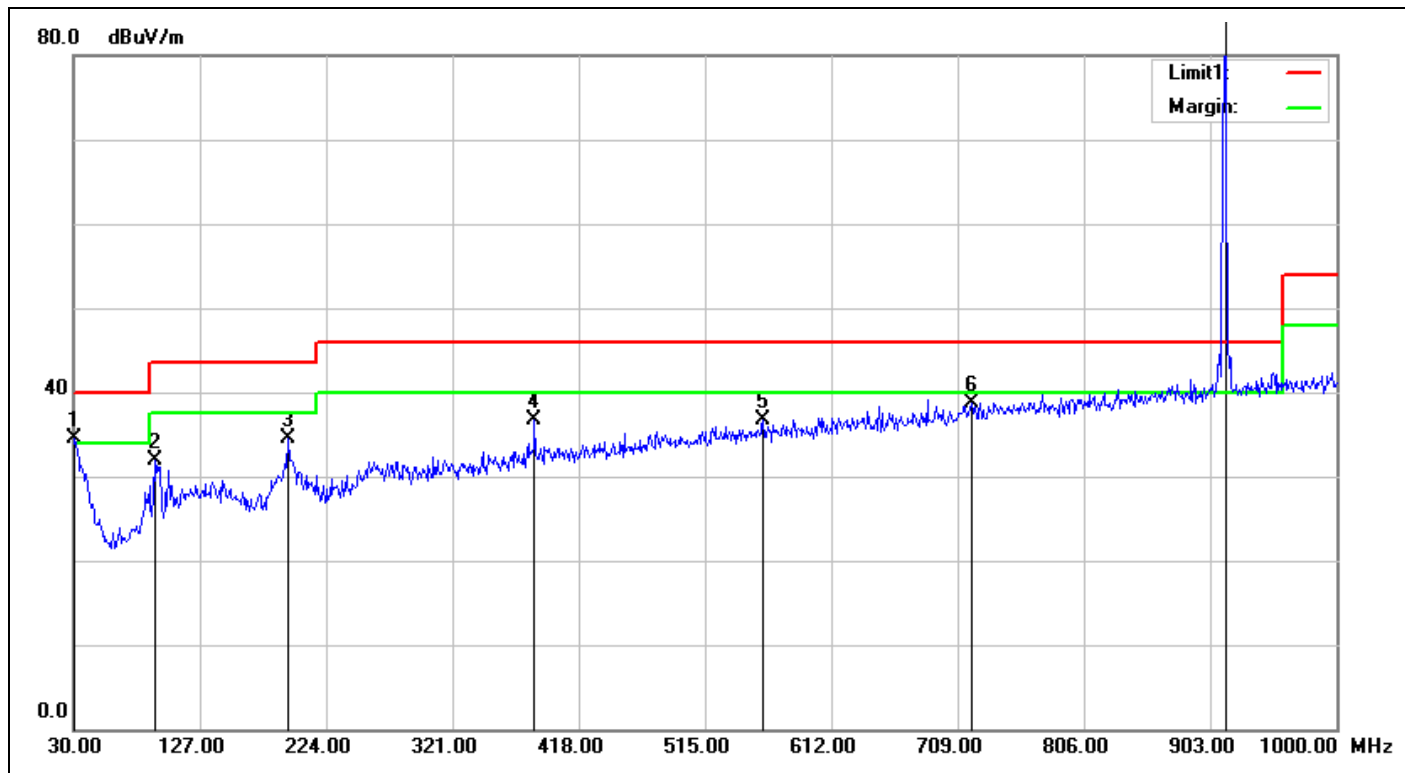
Spurious Emissions, TX Mode, 30M-1G, CW Mode



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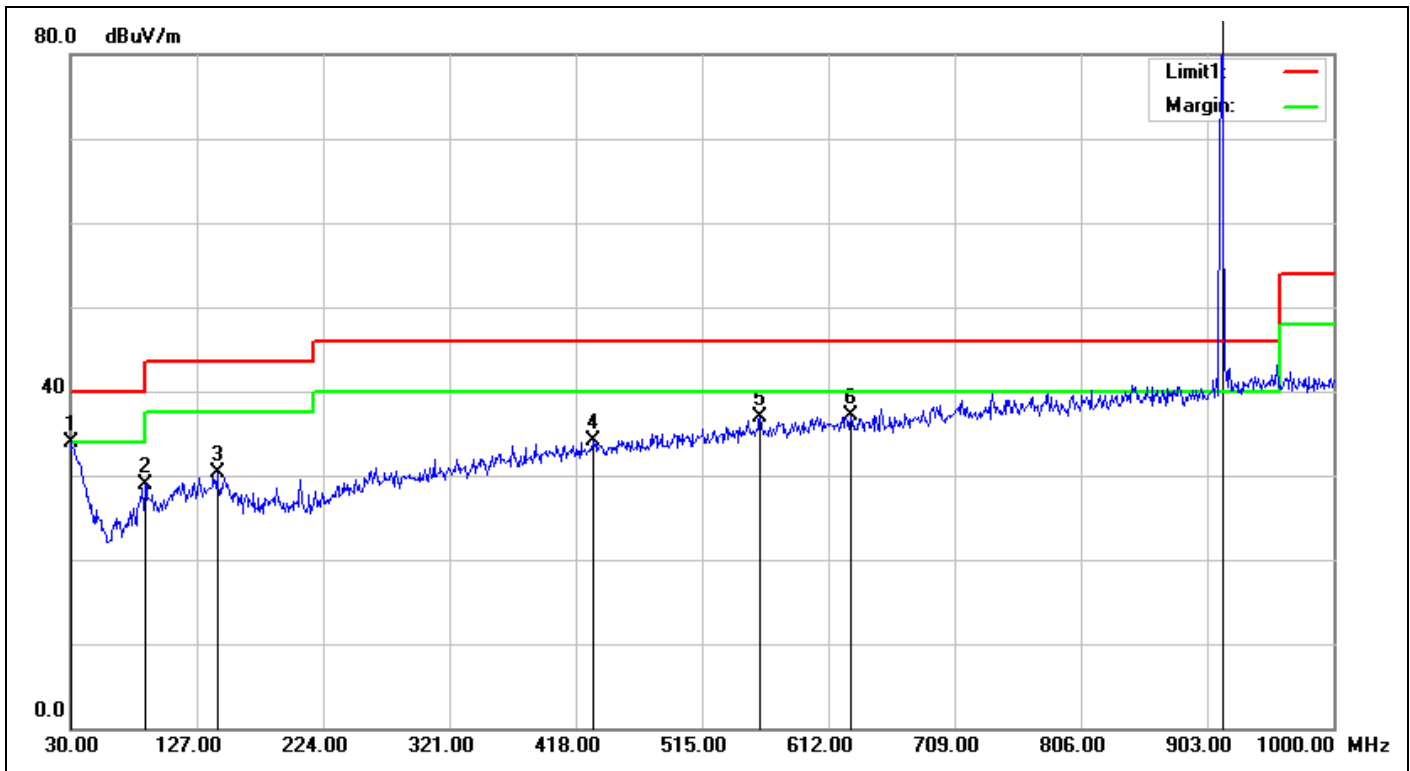
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/7/18 10:04:02
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	23.6(°C)/59%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.9700	-1.01	35.49	34.48	40.00	-5.52	QP	100	88	
2	92.0800	-11.06	42.93	31.87	43.50	-11.63	QP	100	97	
3	194.9000	-9.82	44.31	34.49	43.50	-9.01	QP	100	150	
4	384.0500	-3.54	40.31	36.77	46.00	-9.23	QP	100	33	
5	559.6200	-1.33	38.02	36.69	46.00	-9.31	QP	100	265	
6	719.6700	0.61	38.14	38.75	46.00	-7.25	QP	100	95	
7	914.6400	3.29	104.32	107.61	46.00	61.61	QP	100	356	TX



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/7/18 10:04:55
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	23.6(°C)/59%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.47	34.35	33.88	40.00	-6.12	QP	100	12	
2	87.2300	-11.65	40.52	28.87	40.00	-11.13	QP	100	170	
3	142.5200	-7.59	37.86	30.27	43.50	-13.23	QP	100	194	
4	431.5800	-2.96	36.97	34.01	46.00	-11.99	QP	100	84	
5	559.6200	-1.33	38.24	36.91	46.00	-9.09	QP	100	163	
6	629.4600	-0.69	37.86	37.17	46.00	-8.83	QP	100	57	
7	914.6400	3.29	99.93	103.22	46.00	57.22	QP	100	91	TX

Spot Check Sample of antenna W1910

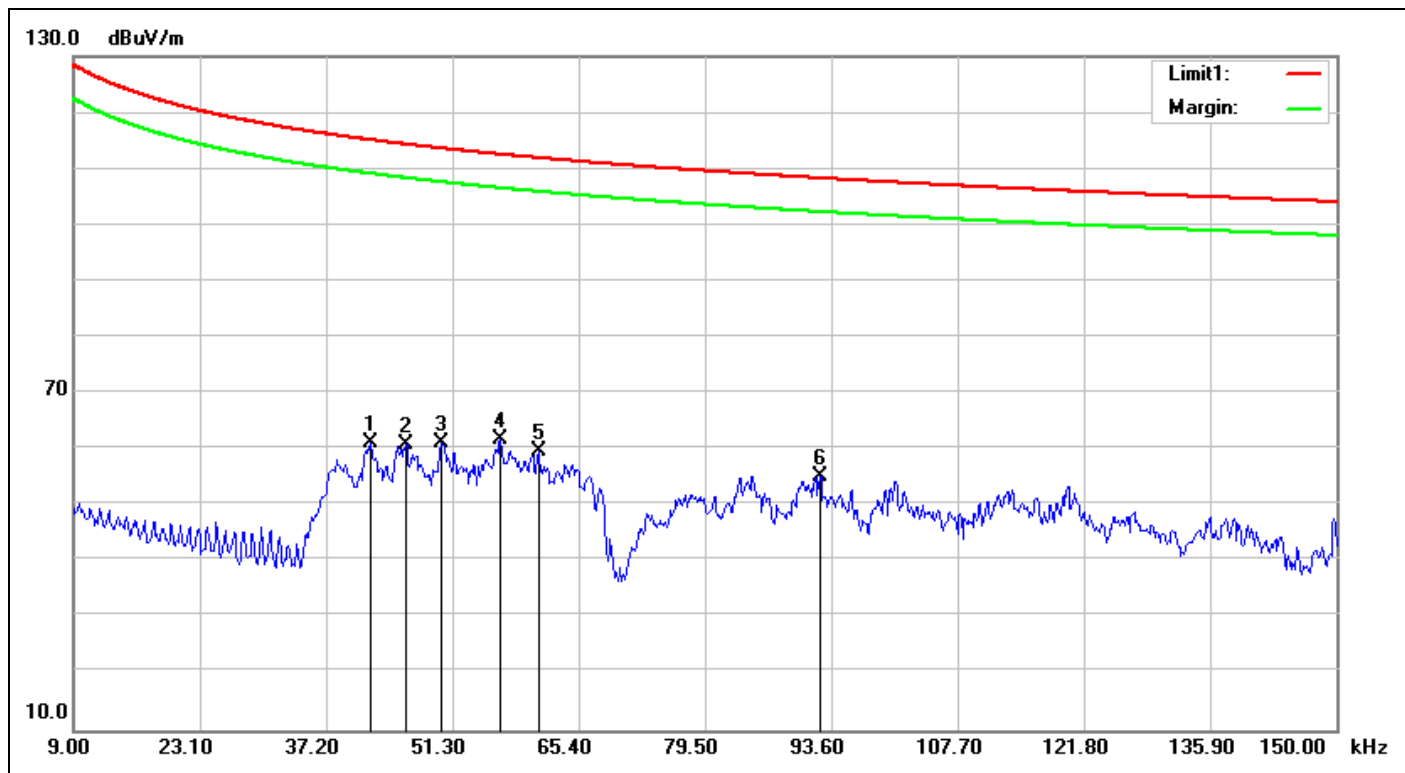
Spurious Emissions, TX Mode, 9K-30M, CW Mode



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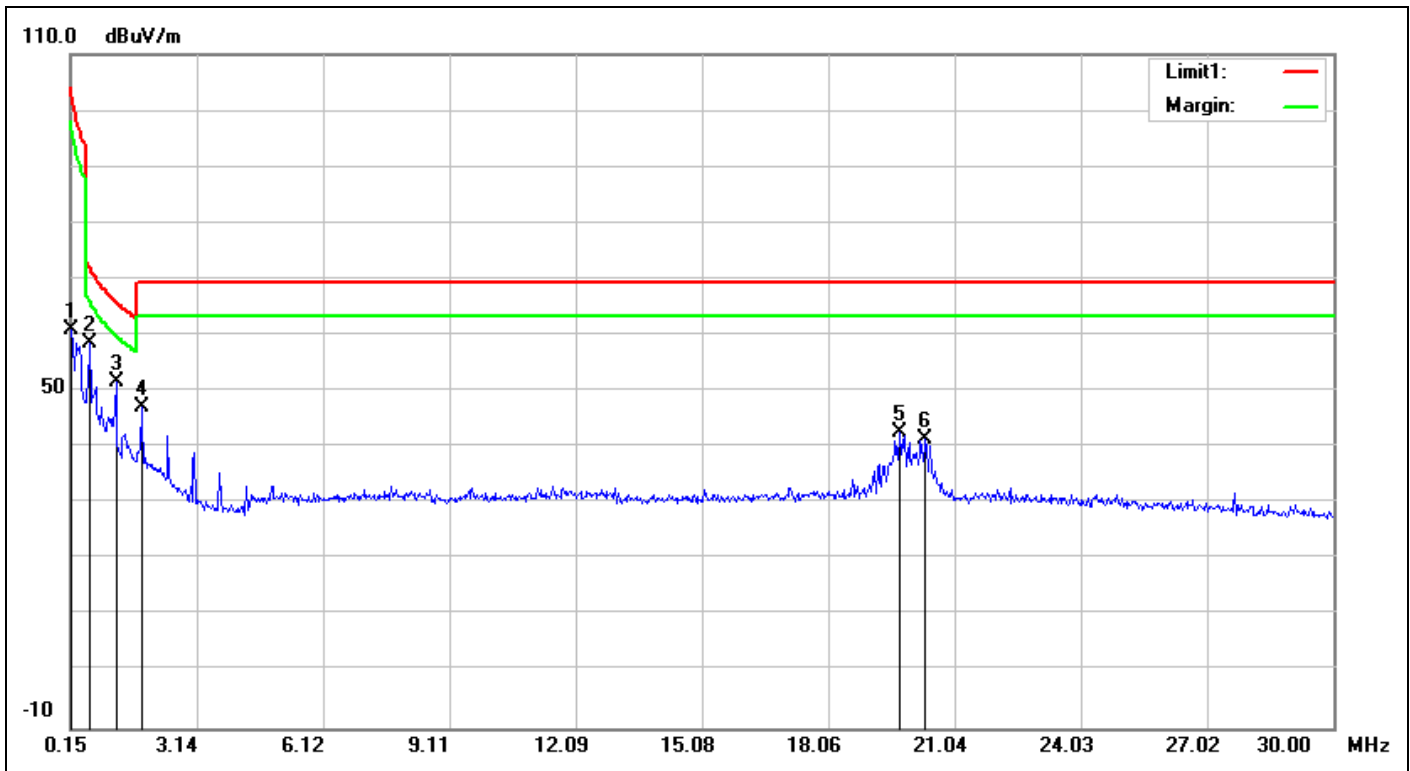
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/7/18 10:45:09
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.9(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0421	19.09	41.95	61.04	115.11	-54.07	QP	100	252	
2	0.0460	19.01	41.92	60.93	114.34	-53.41	QP	100	265	
3	0.0500	18.93	42.10	61.03	113.61	-52.58	QP	100	259	
4	0.0566	18.85	43.03	61.88	112.54	-50.66	QP	100	255	
5	0.0608	18.80	40.91	59.71	111.92	-52.21	QP	100	272	
6	0.0923	18.42	36.79	55.21	108.29	-53.08	QP	100	265	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/7/18 10:48:16
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	22.9(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-TX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1798	18.37	42.50	60.87	102.50	-41.63	QP	100	182	
2	0.5977	18.66	40.01	58.67	72.08	-13.41	QP	100	193	
3	1.2246	18.66	33.11	51.77	65.87	-14.10	QP	100	173	
4	1.8216	18.62	28.39	47.01	69.50	-22.49	QP	100	189	
5	19.7614	21.57	21.19	42.76	69.50	-26.74	QP	100	323	
6	20.3584	21.61	19.95	41.56	69.50	-27.94	QP	100	15	

Spot Check Sample of antenna W1910

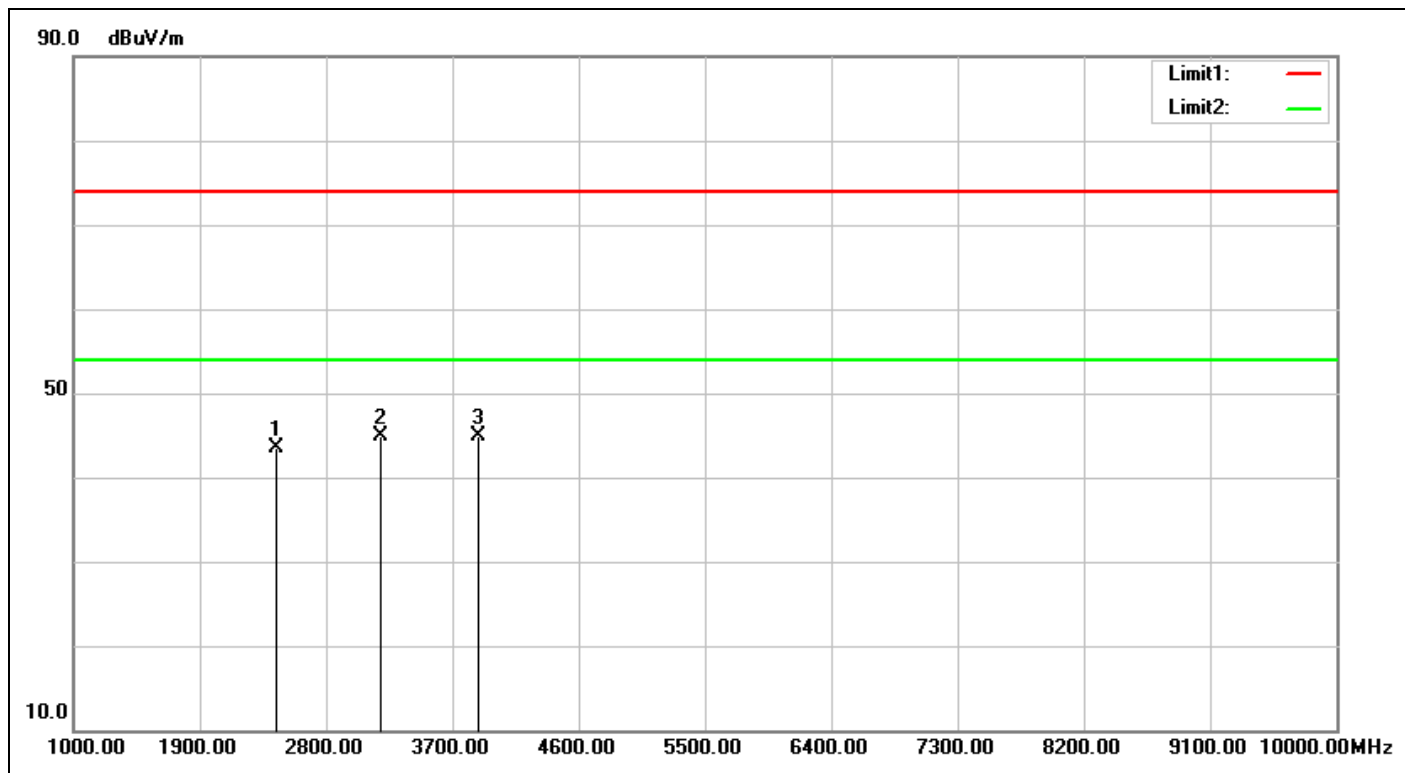
Spurious Emissions, RX Mode, 1-10G



TUV Rheinland Taiwan Ltd.

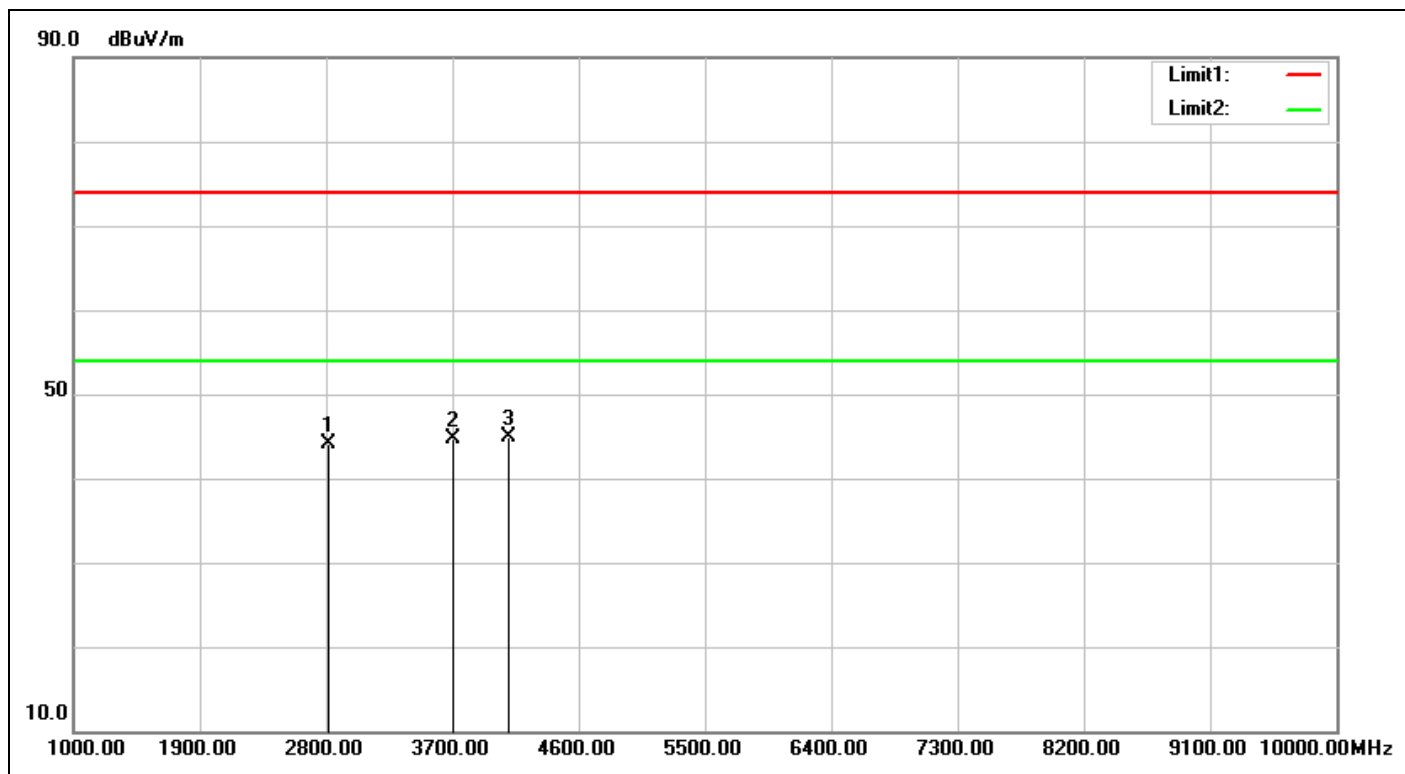
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/7/19 11:01:43
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	23.8(°C)/62%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2440.000	-7.82	51.33	43.51	74.00	-30.49	peak	100	101	
2	3187.000	-6.84	51.78	44.94	74.00	-29.06	peak	100	114	
3	3889.000	-5.76	50.68	44.92	74.00	-29.08	peak	100	289	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/7/19 11:02:35
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%):	23.8(°C)/62%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	2818.000	-7.30	51.35	44.05	74.00	-29.95	peak	100	201	
2	3700.000	-6.16	50.91	44.75	74.00	-29.25	peak	100	273	
3	4105.000	-5.15	50.03	44.88	74.00	-29.12	peak	100	204	

Spot Check Sample of antenna W1910

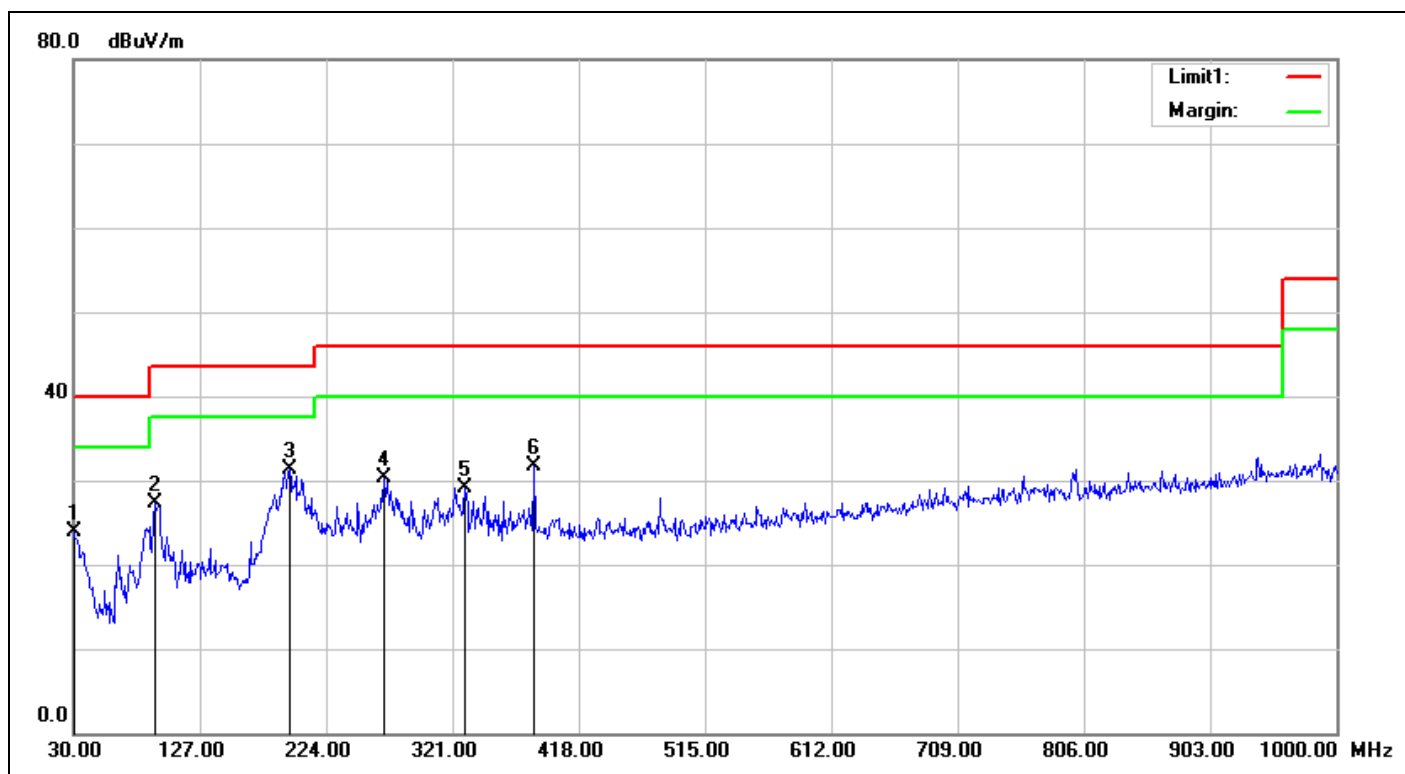
Spurious Emissions, RX Mode, 30M-1G



TUV Rheinland Taiwan Ltd.

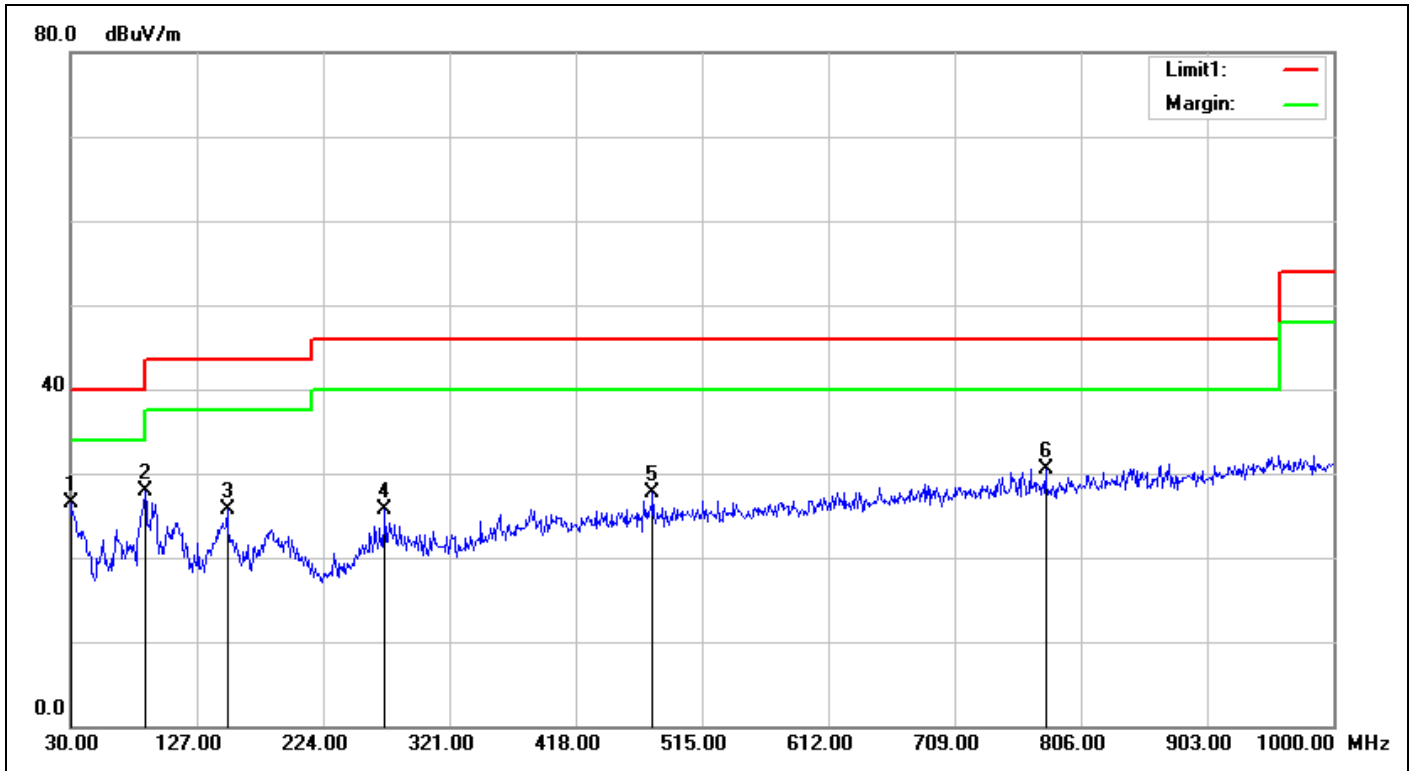
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2018/7/18 10:10:47
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	23.6(°C)/59%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.47	24.42	23.95	40.00	-16.05	QP	100	285	
2	92.0800	-11.06	38.29	27.23	43.50	-16.27	QP	100	182	
3	195.8700	-9.75	41.07	31.32	43.50	-12.18	QP	100	203	
4	268.6200	-6.01	36.25	30.24	46.00	-15.76	QP	100	315	
5	330.7000	-4.57	33.75	29.18	46.00	-16.82	QP	100	336	
6	384.0500	-3.54	35.27	31.73	46.00	-14.27	QP	100	29	



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2018/7/18 10:11:40
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	23.6(°C)/59%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	30.0000	-0.47	26.99	26.52	40.00	-13.48	QP	100	44	
2	87.2300	-11.65	39.62	27.97	40.00	-12.03	QP	100	195	
3	150.2800	-7.86	33.55	25.69	43.50	-17.81	QP	100	266	
4	271.5300	-6.04	31.72	25.68	46.00	-20.32	QP	100	106	
5	477.1700	-2.43	30.21	27.78	46.00	-18.22	QP	100	160	
6	778.8400	1.48	29.12	30.60	46.00	-15.40	QP	100	120	

Spot Check Sample of antenna W1910

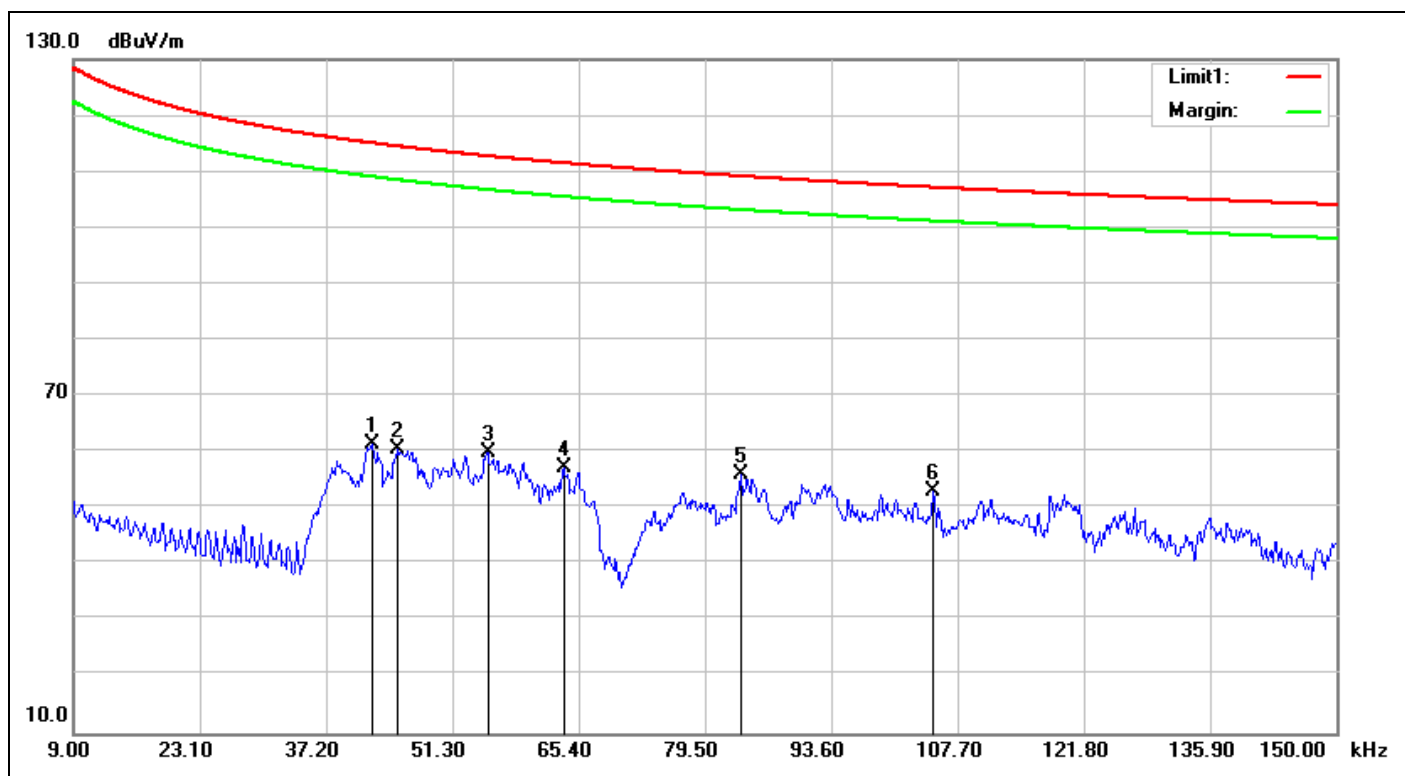
Spurious Emissions, RX Mode, 9K-30M



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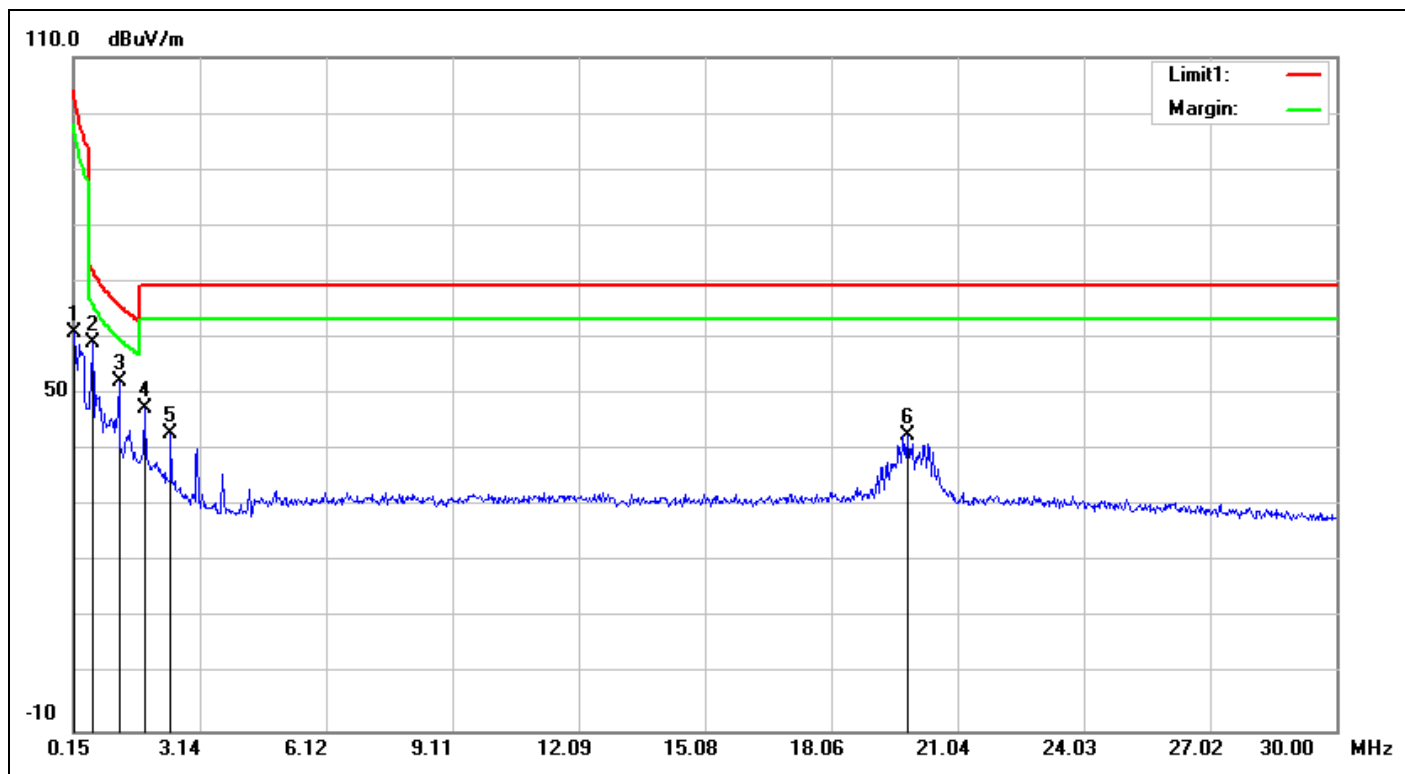
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/7/18 10:46:02
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.9(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0424	19.08	42.39	61.47	115.04	-53.57	QP	100	273	
2	0.0452	19.03	41.43	60.46	114.49	-54.03	QP	100	157	
3	0.0552	18.87	41.16	60.03	112.75	-52.72	QP	100	250	
4	0.0637	18.77	38.58	57.35	111.51	-54.16	QP	100	253	
5	0.0834	18.53	37.38	55.91	109.17	-53.26	QP	100	276	
6	0.1050	18.33	34.64	52.97	107.17	-54.20	QP	100	250	



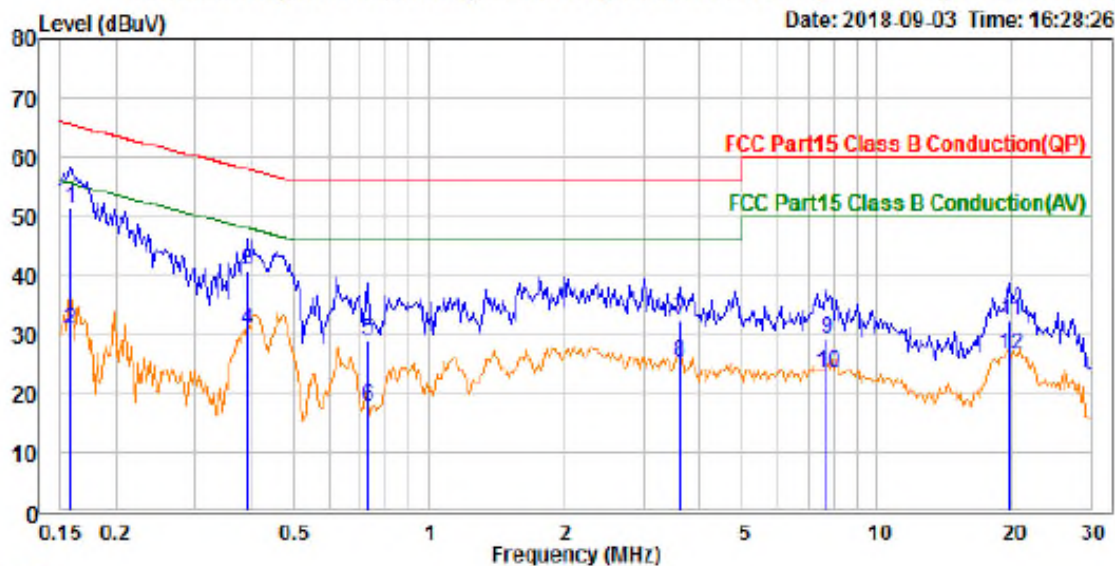
Service No.:	114079598	Test Distance:	3m
Test Standard:	FCC15.209_9k-1G_3m	Ant. Polarization:	N/A
Test item:	Radiation Emission	Test Time:	2018/7/18 10:49:10
Applicant:	Microchip Technology Inc.	Test Rating:	DC 3.3V
Product:	SAMR30 IEEE 802.15.4 Sub-1GHz Module	Temp.(°C)/Hum.(%)	22.9(°C)/53%
Model No.:	ATSAMR30M18A	Test Engineer:	Curry Chen
Test Mode:	914-RX		
Remark:	External antenna		
	CW Mode		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1798	18.37	42.65	61.02	102.50	-41.48	QP	100	185	
2	0.5977	18.66	40.51	59.17	72.08	-12.91	QP	100	188	
3	1.2246	18.66	33.50	52.16	65.87	-13.71	QP	100	192	
4	1.8216	18.62	28.83	47.45	69.50	-22.05	QP	100	188	
5	2.4484	18.57	24.46	43.03	69.50	-26.47	QP	100	168	
6	19.8510	21.58	21.02	42.60	69.50	-26.90	QP	100	208	



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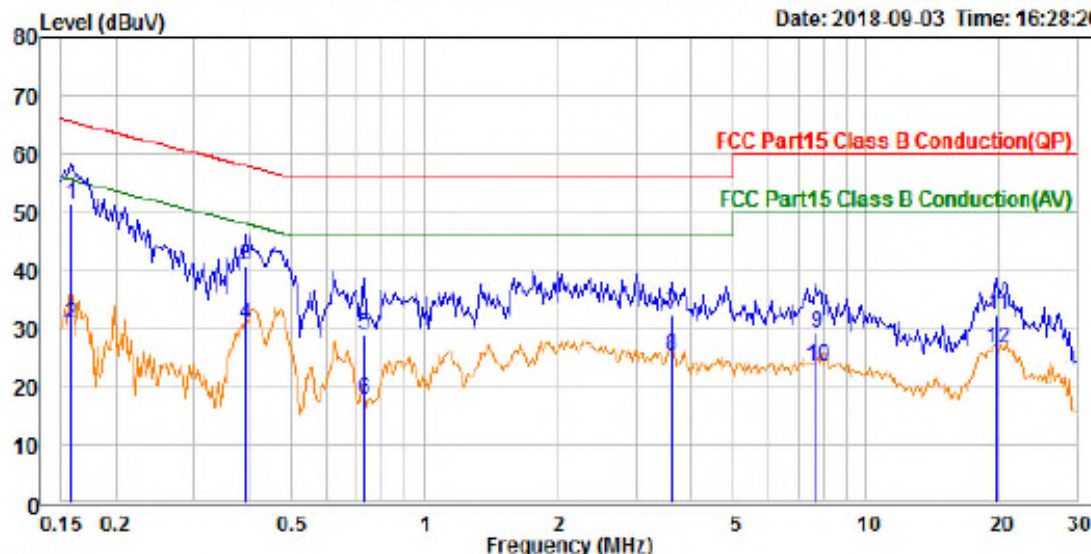
Trace: 1

Site : Conduction room
Condition : FCC Part15 Class B Conduction(QP) line1
Test Engineer: Joe Tien
Applicant : Microchip
Product : SAMR30 IEEE 802.15.4 Sub-1 GHz Module
Model No. : ATSAMR30M18A
Test Rating : 120Vac/60Hz
Tmp/Hum : 22.6 °C / 35 %
Memo : LoRa link

	Freq	Read Level	Factor	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	41.85	9.68	51.53	65.59	-14.06	QP
2	0.158	21.01	9.68	30.69	55.59	-24.90	Average
3	0.393	31.20	9.69	40.89	57.99	-17.10	QP
4	0.393	21.16	9.69	30.85	47.99	-17.14	Average
5	0.729	19.30	9.69	28.99	56.00	-27.01	QP
6	0.729	7.94	9.69	17.63	46.00	-28.37	Average
7	3.611	22.60	9.74	32.34	56.00	-23.66	QP
8	3.611	15.42	9.74	25.16	46.00	-20.84	Average
9	7.686	19.25	9.81	29.06	60.00	-30.94	QP
10	7.686	13.72	9.81	23.53	50.00	-26.47	Average
11	19.761	22.29	9.86	32.15	60.00	-27.85	QP
12	19.761	16.55	9.86	26.41	50.00	-23.59	Average

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Date: 2018-09-03 Time: 16:28:26



Trace: 1

Site : Conduction room
Condition : FCC Part15 Class B Conduction(QP) line1
Test Engineer: Joe Tien
Applicant : Microchip
Product : SAMR30 IEEE 802.15.4 Sub-1 GHz Module
Model No. : ATSAMR30M18A
Test Rating : 120Vac/60Hz
Tmp/Hum : 22.6 °C / 35 %
Memo : LoRa link

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.158	41.85	9.68	51.53	65.59	-14.06	QP
2	0.158	21.01	9.68	30.69	55.59	-24.90	Average
3	0.393	31.20	9.69	40.89	57.99	-17.10	QP
4	0.393	21.16	9.69	30.85	47.99	-17.14	Average
5	0.729	19.30	9.69	28.99	56.00	-27.01	QP
6	0.729	7.94	9.69	17.63	46.00	-28.37	Average
7	3.611	22.60	9.74	32.34	56.00	-23.66	QP
8	3.611	15.42	9.74	25.16	46.00	-20.84	Average
9	7.686	19.25	9.81	29.06	60.00	-30.94	QP
10	7.686	13.72	9.81	23.53	50.00	-26.47	Average
11	19.761	22.29	9.86	32.15	60.00	-27.85	QP
12	19.761	16.55	9.86	26.41	50.00	-23.59	Average