

Test Report No.50229966 001

Appendix D: Radiated and Mains Spurious Emission Data

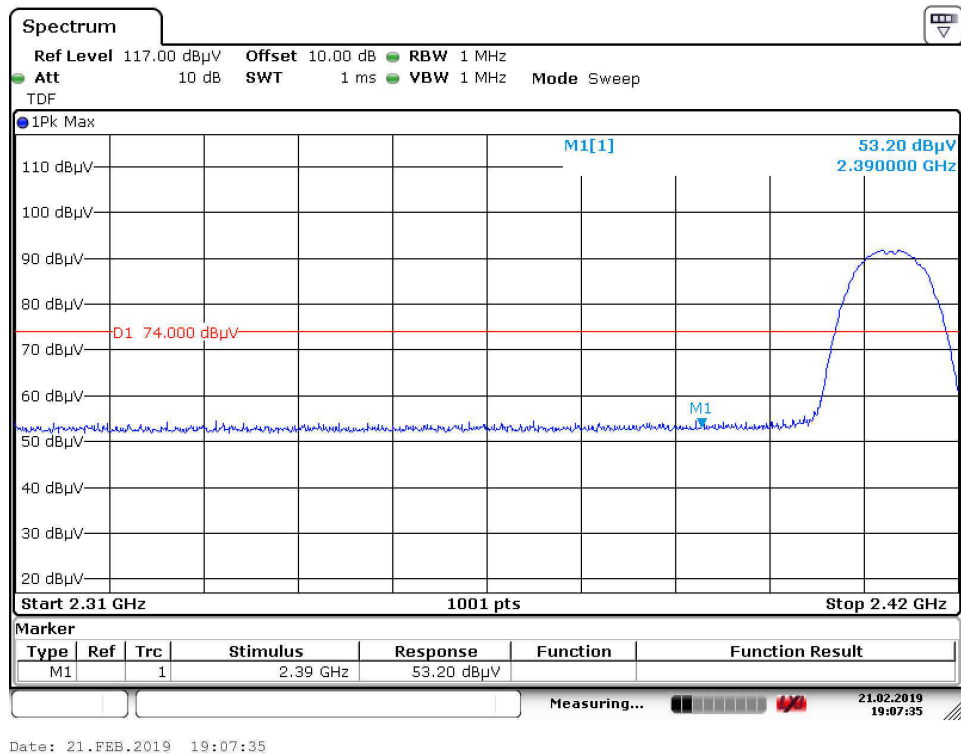
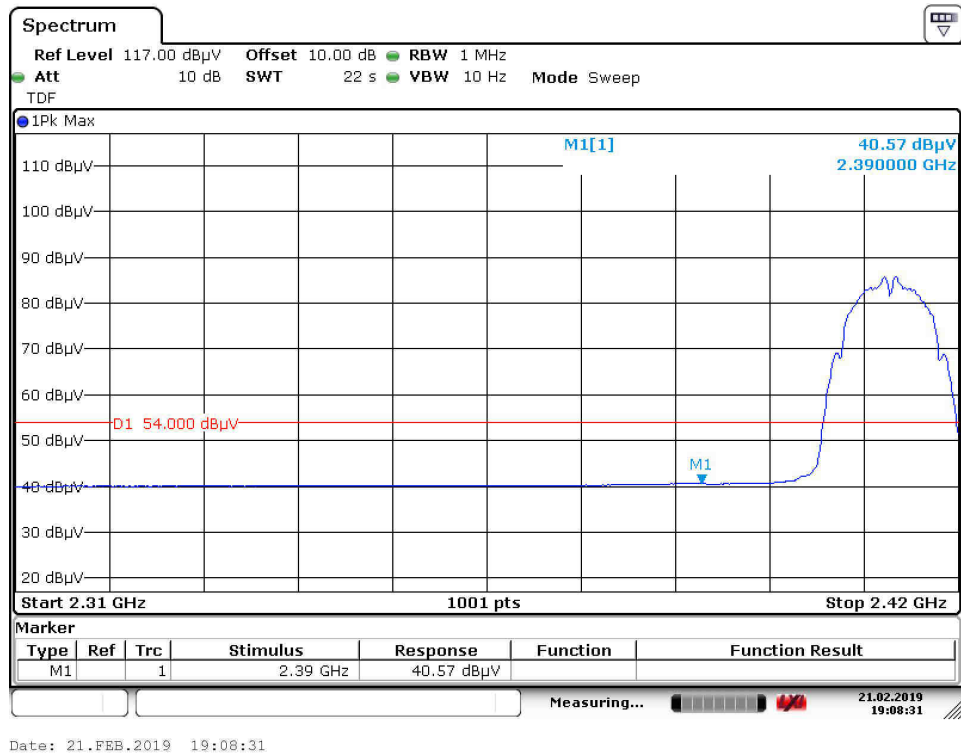
(File: 50229966AppendixD)

Contents

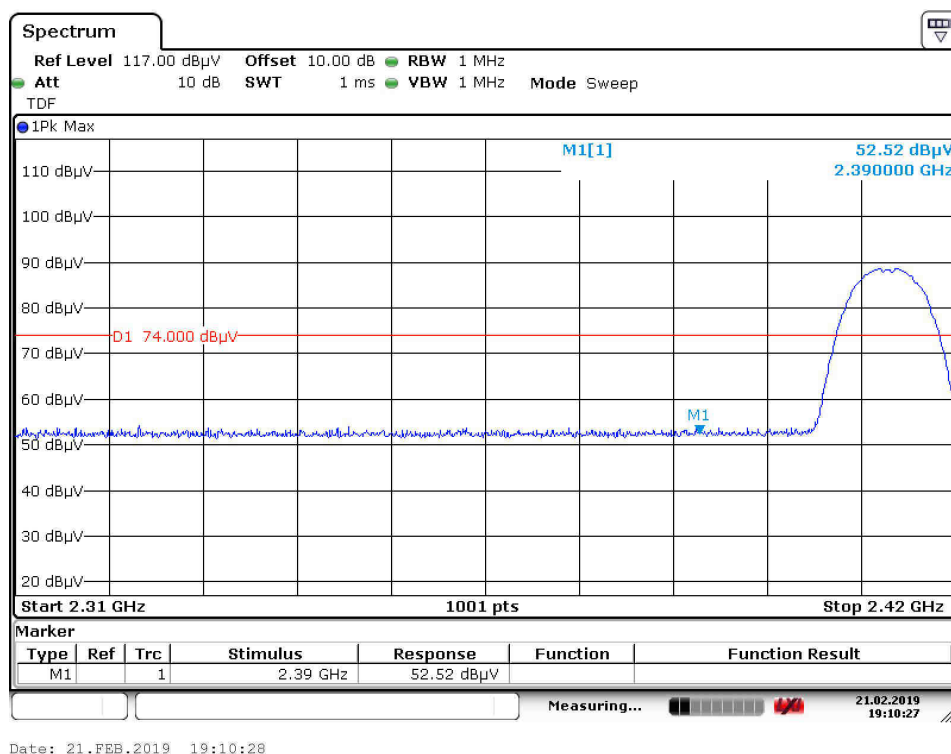
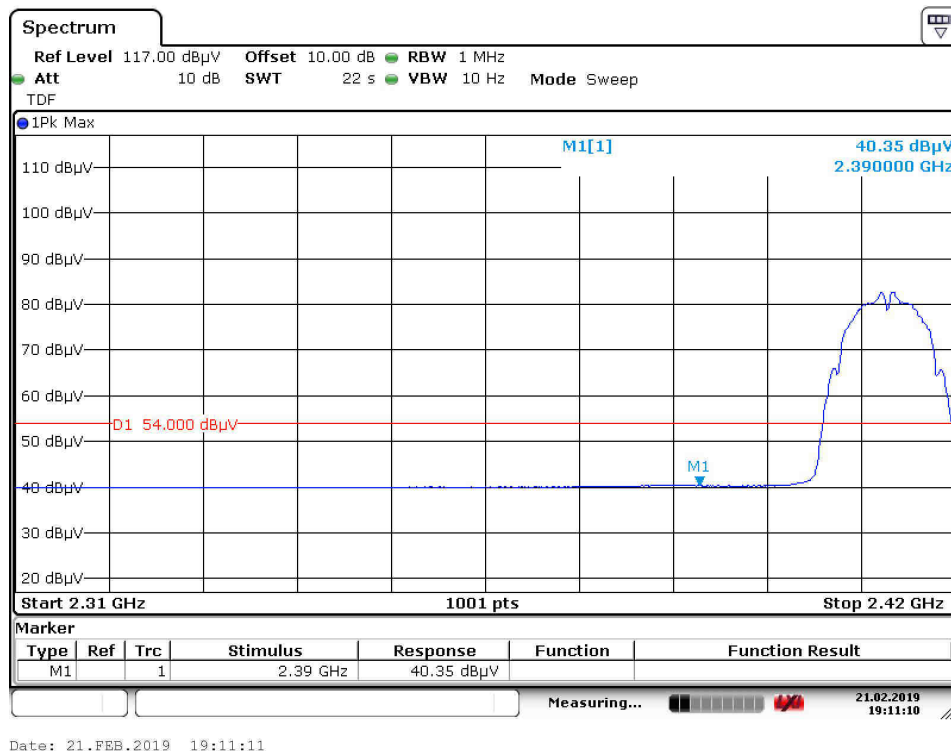
Spurious Emissions, Band Edges, 2.35-2.5G	2
Spurious Emissions, TX Mode, 1-18G	14
Spurious Emissions, TX Mode, 18-26G	32
Spurious Emissions, TX Mode, 30M-1G	50
Spurious Emissions, TX Mode, 9k-30M	52
Spurious Emissions, RX Mode, 1-18G	54
Spurious Emissions, RX Mode, 18-26G	56
Spurious Emissions, RX Mode, 30M-1G	58
Spurious Emissions, RX Mode, 9K-30M	60
Spurious Emissions, Mains, 150kHz - 30MHz	62

Radiated Bandedge 11b

Low Channel (Hor) 2412



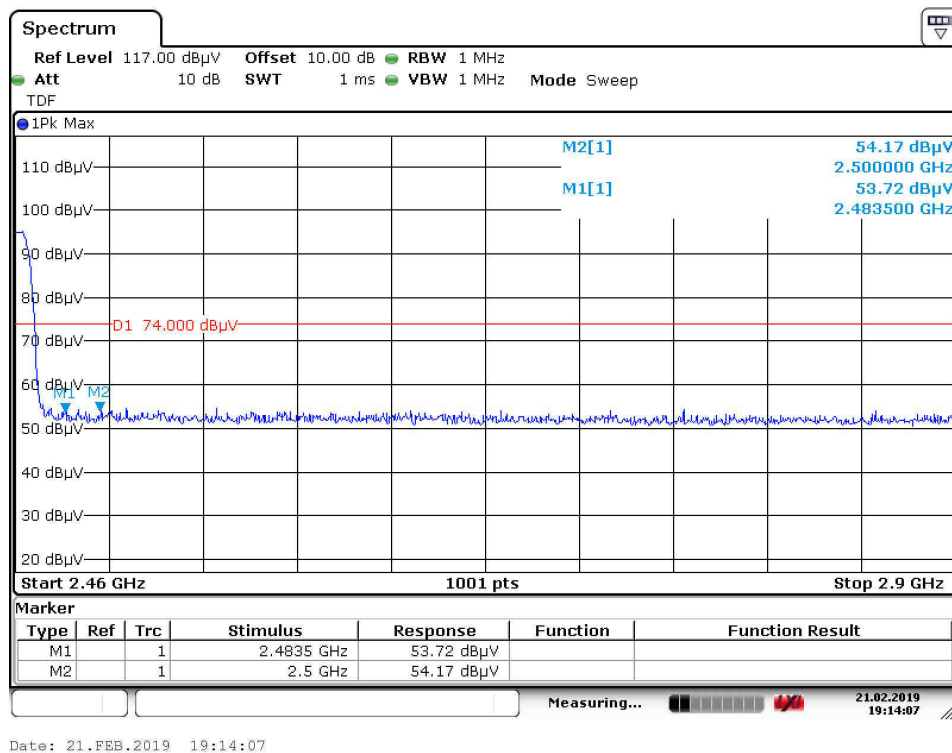
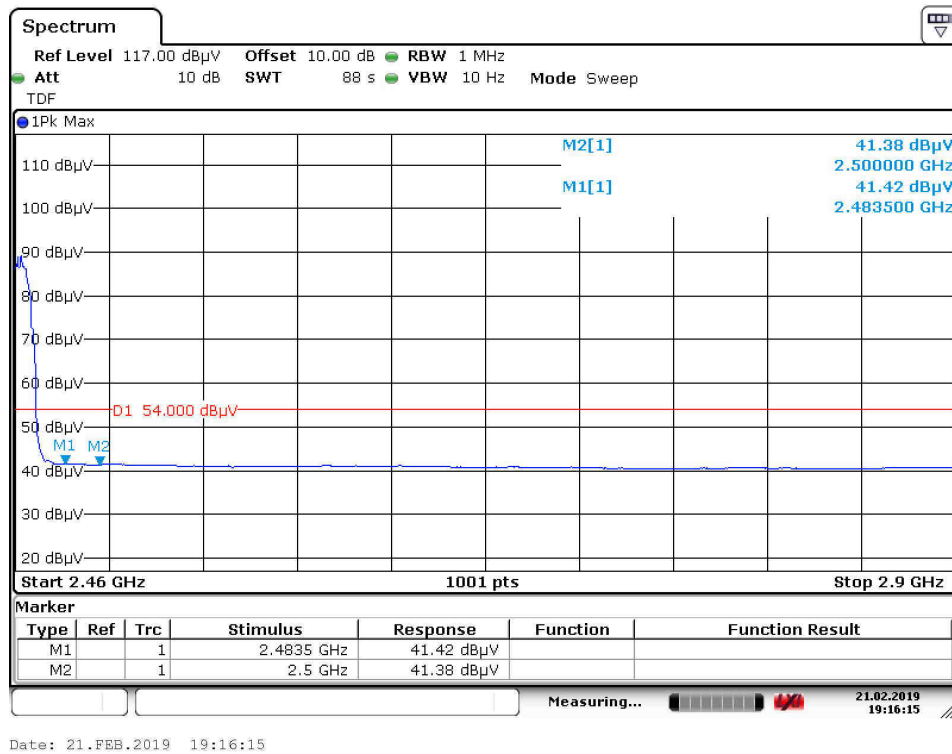
Low Channel (Ver) 2412



Spurious Emissions, Band Edge, 2.35-2.5G

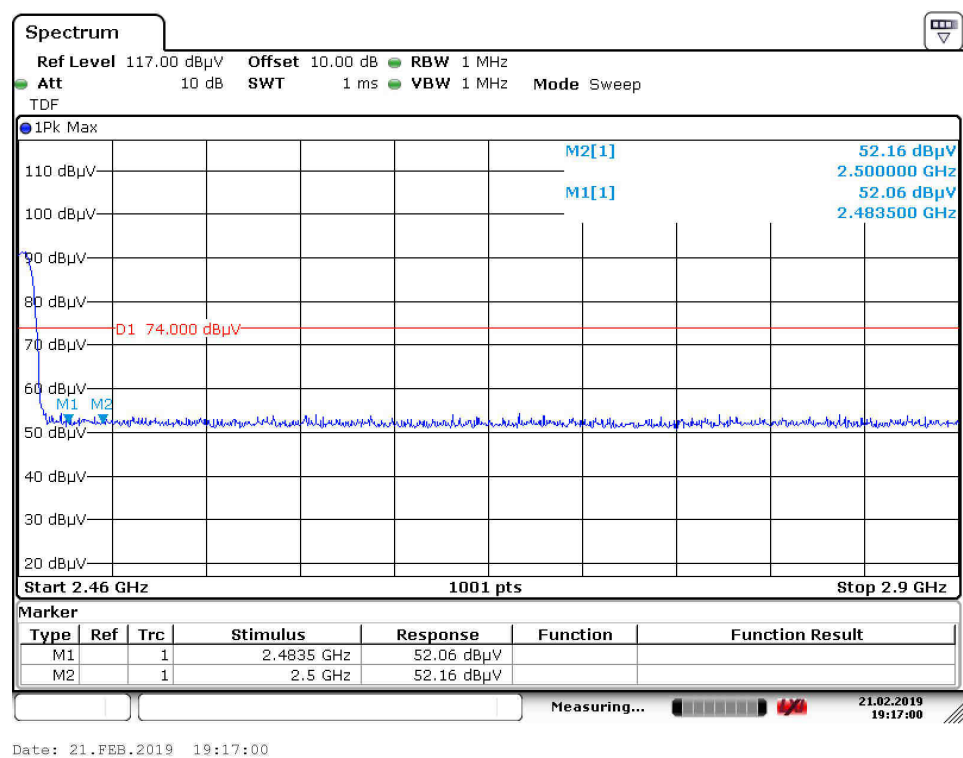
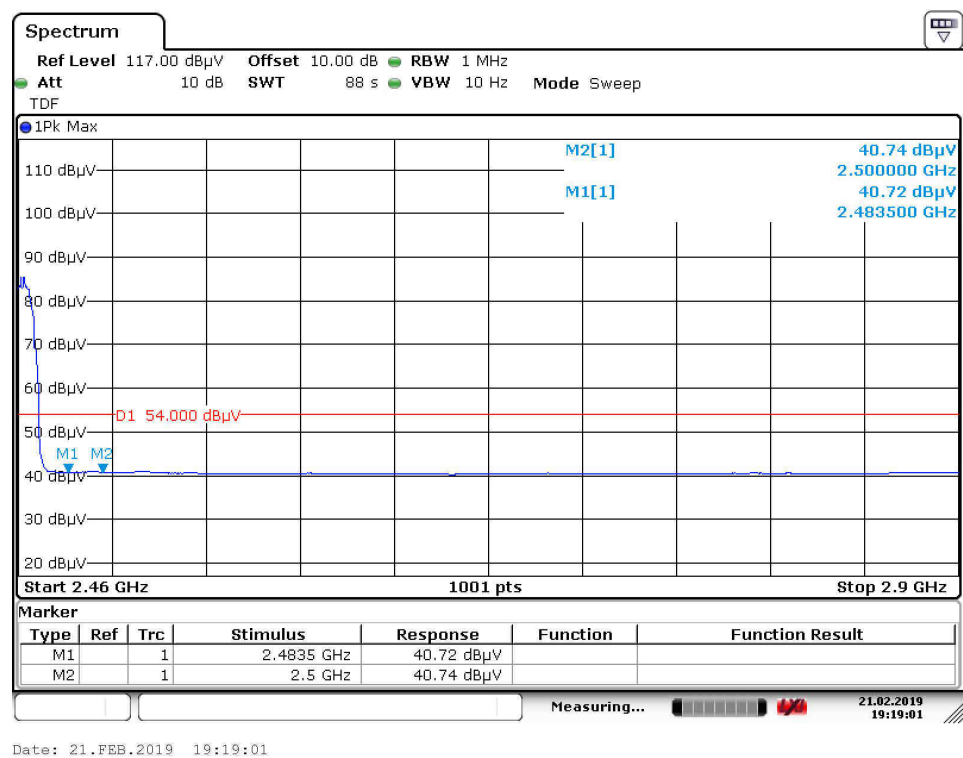
Radiated Bandedge 11b

High Channel (Hor) 2462



Spurious Emissions, Band Edge, 2.35-2.5G

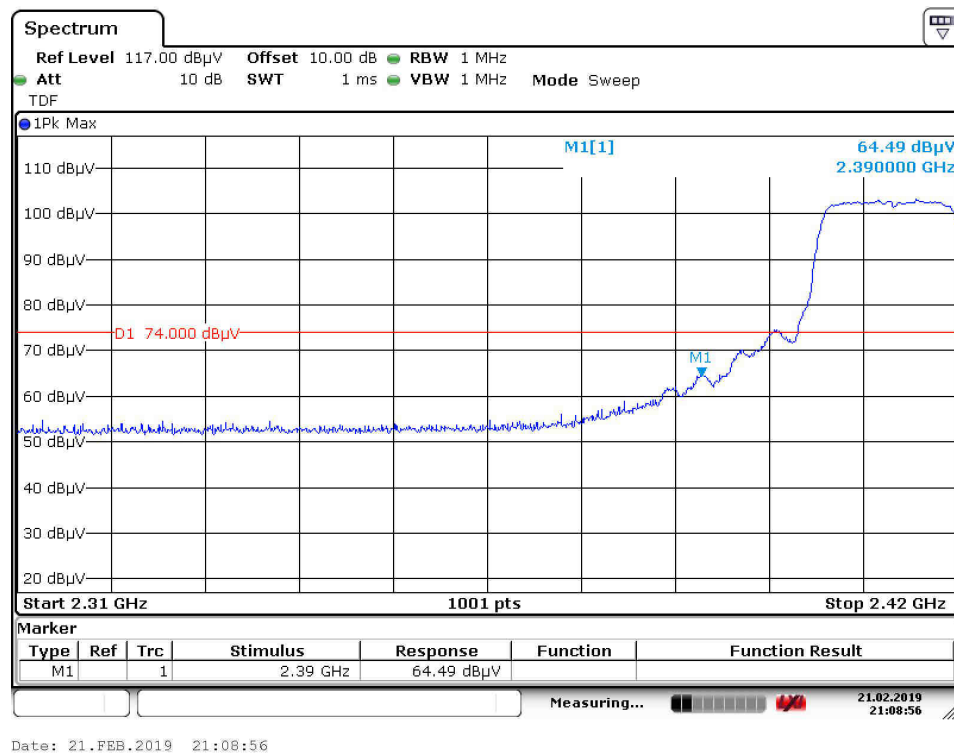
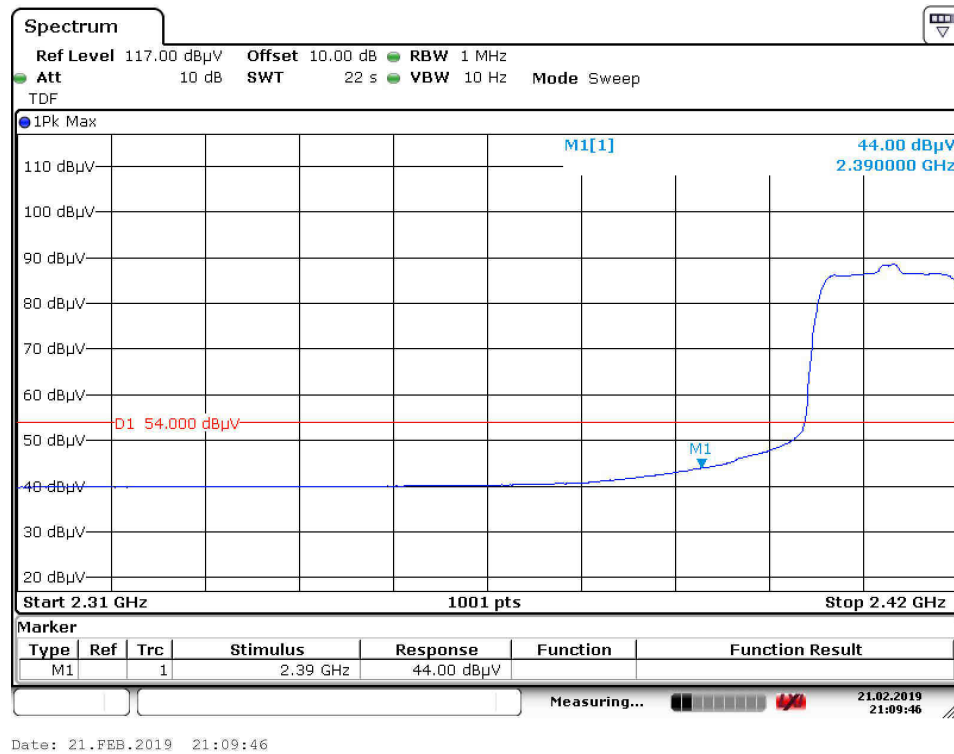
High Channel (Ver) 2462



Spurious Emissions, Band Edge, 2.35-2.5G

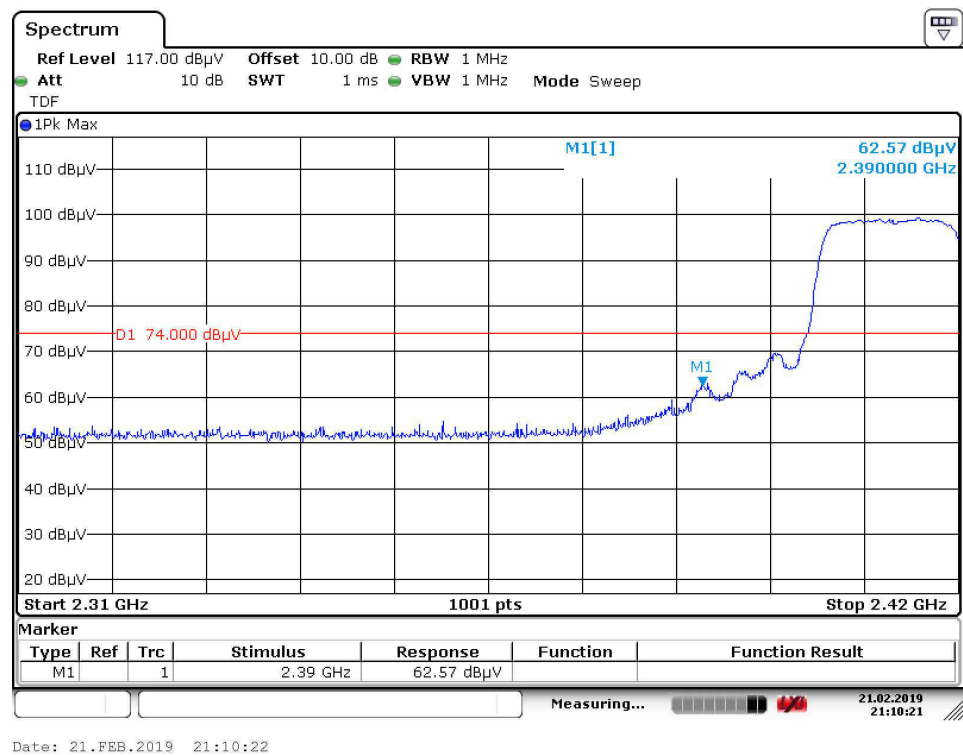
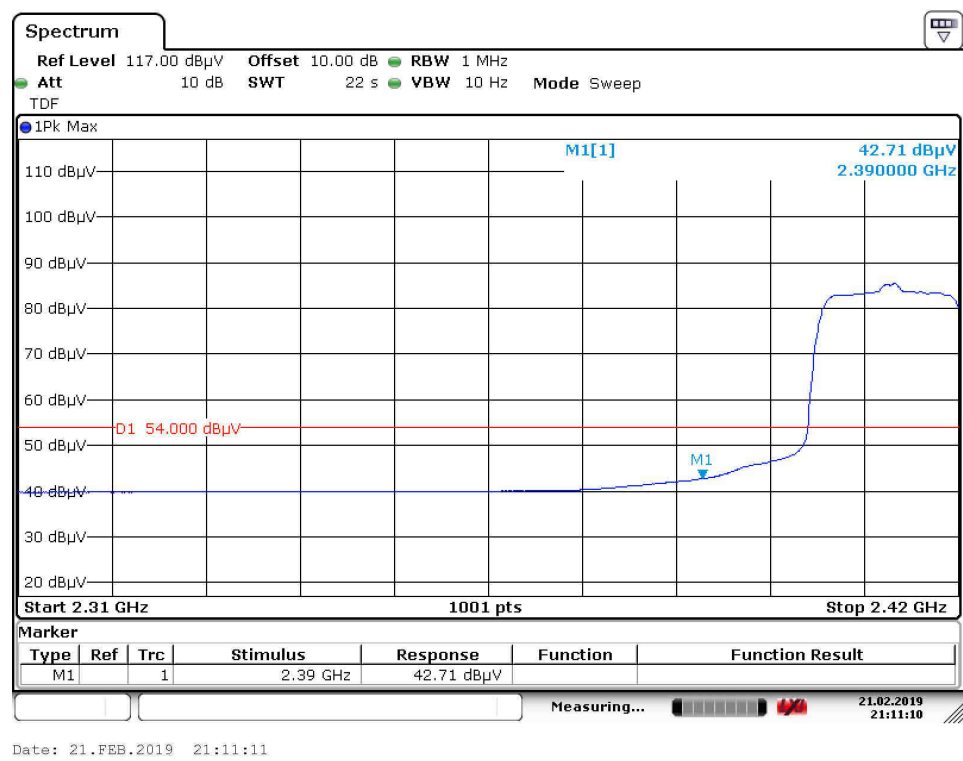
Radiated Bandedge 11g

Low Channel (Hor) 2412



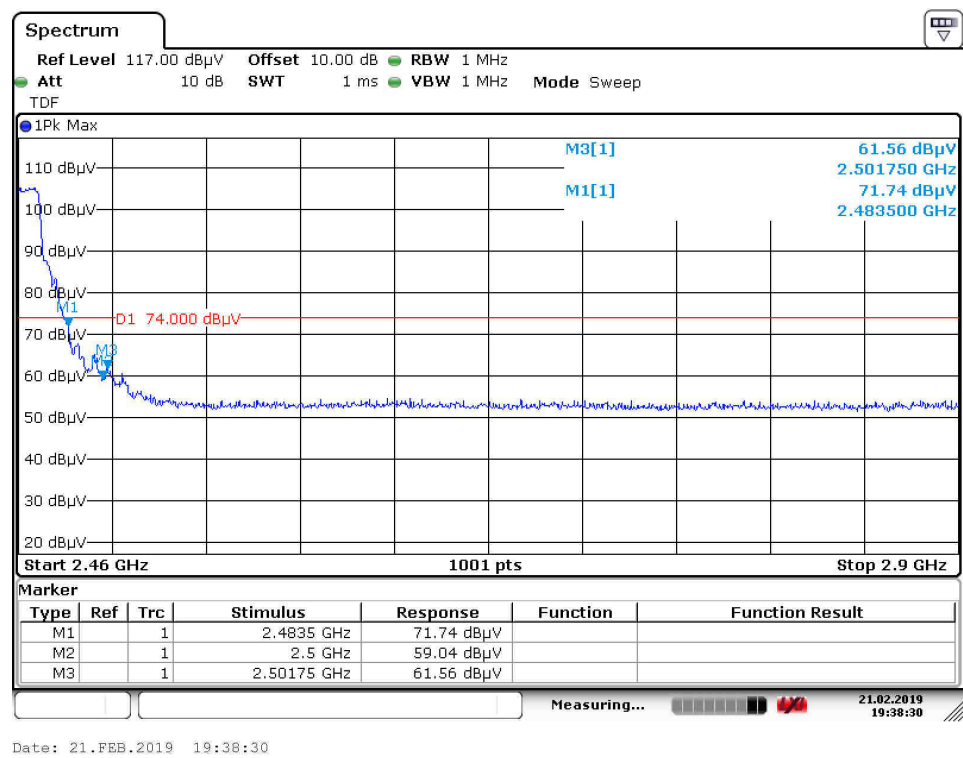
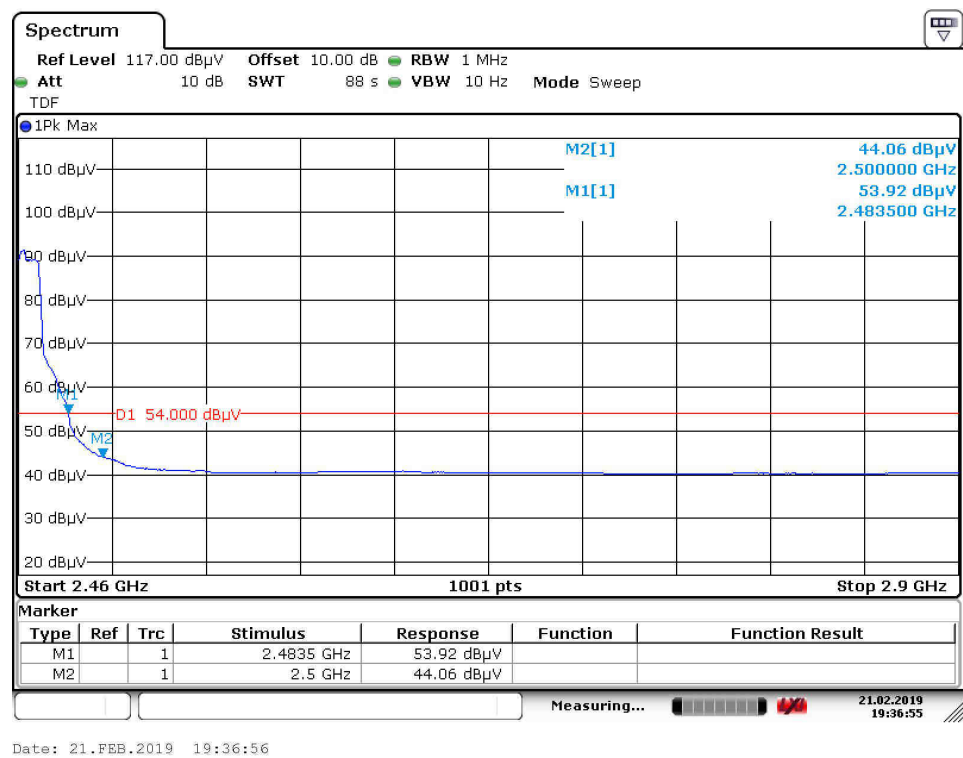
Spurious Emissions, Band Edge, 2.35-2.5G

Low Channel (Ver) 2412



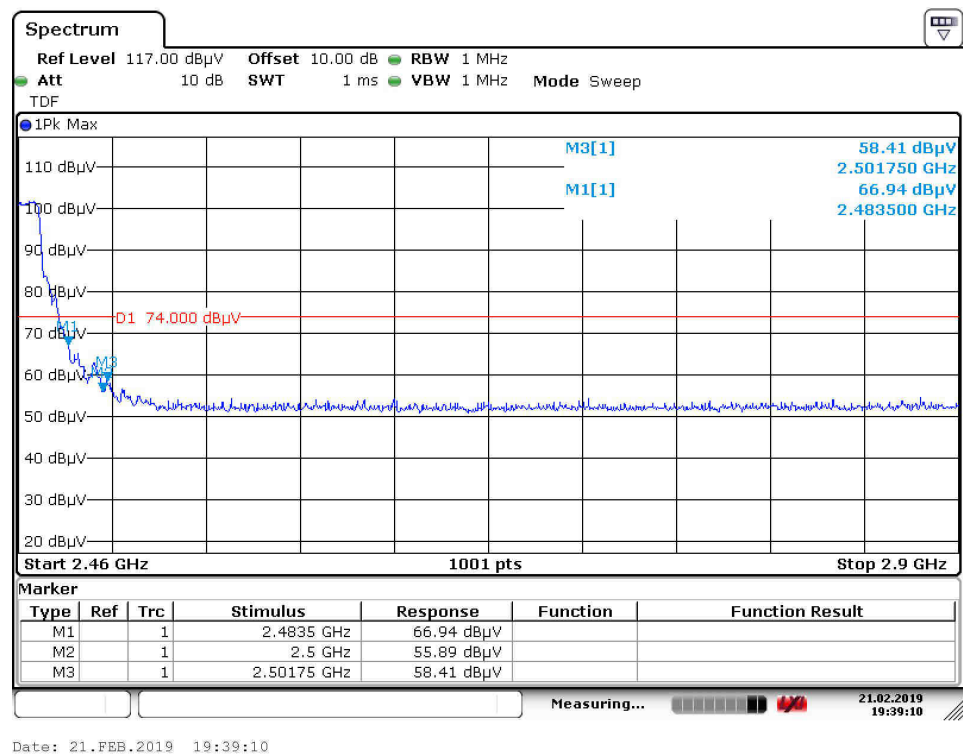
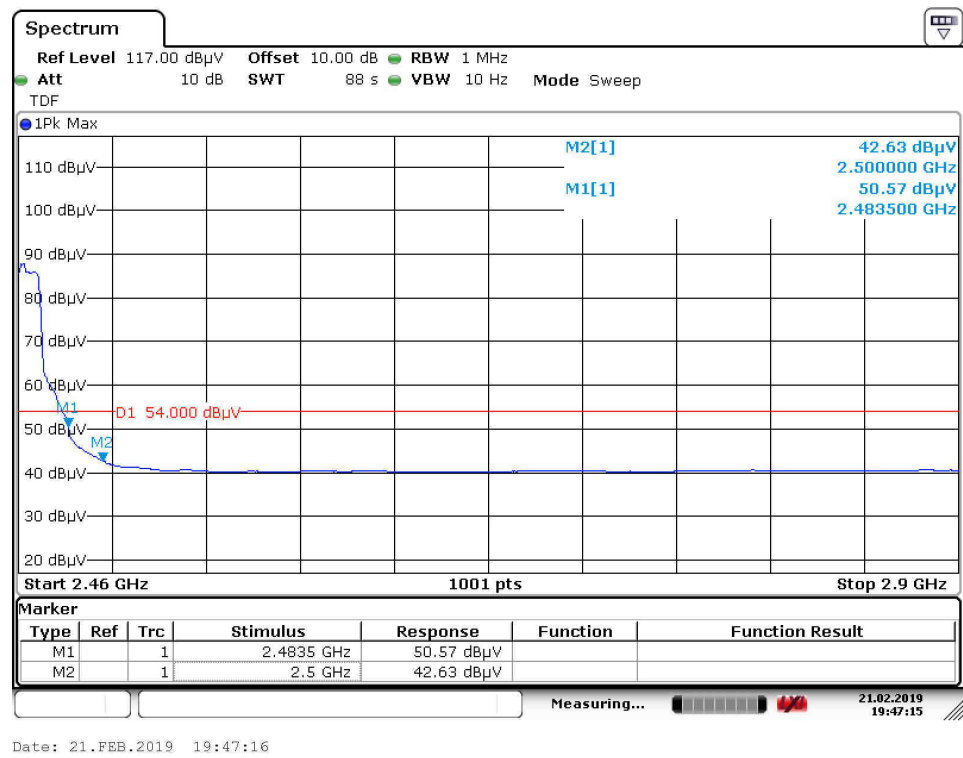
Radiated Bandedge 11g

High Channel (Hor) 2462



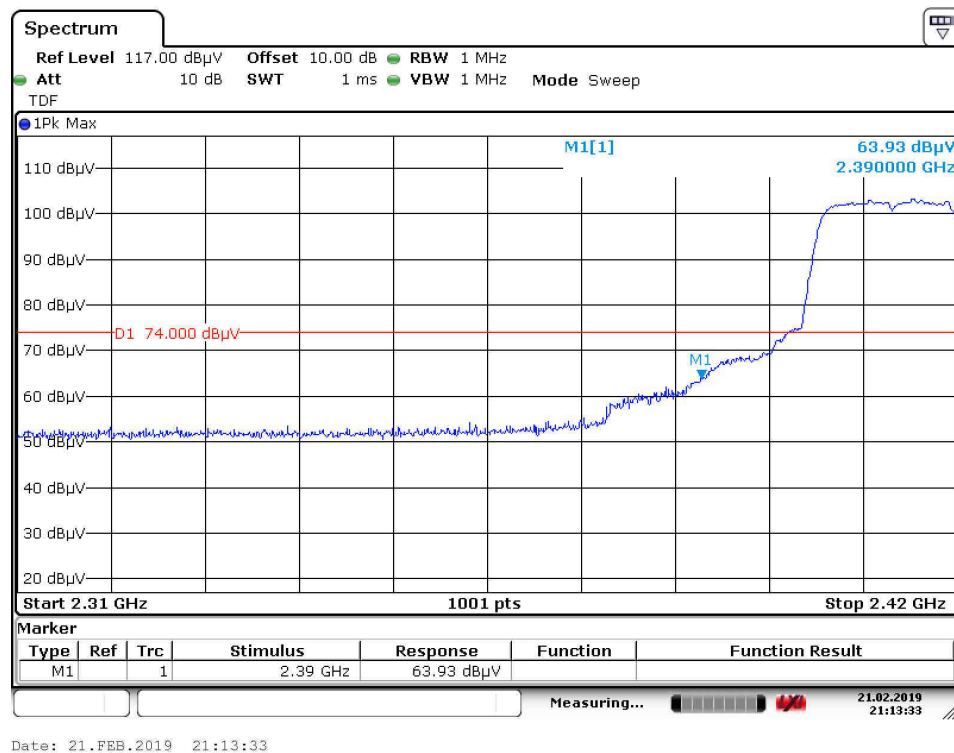
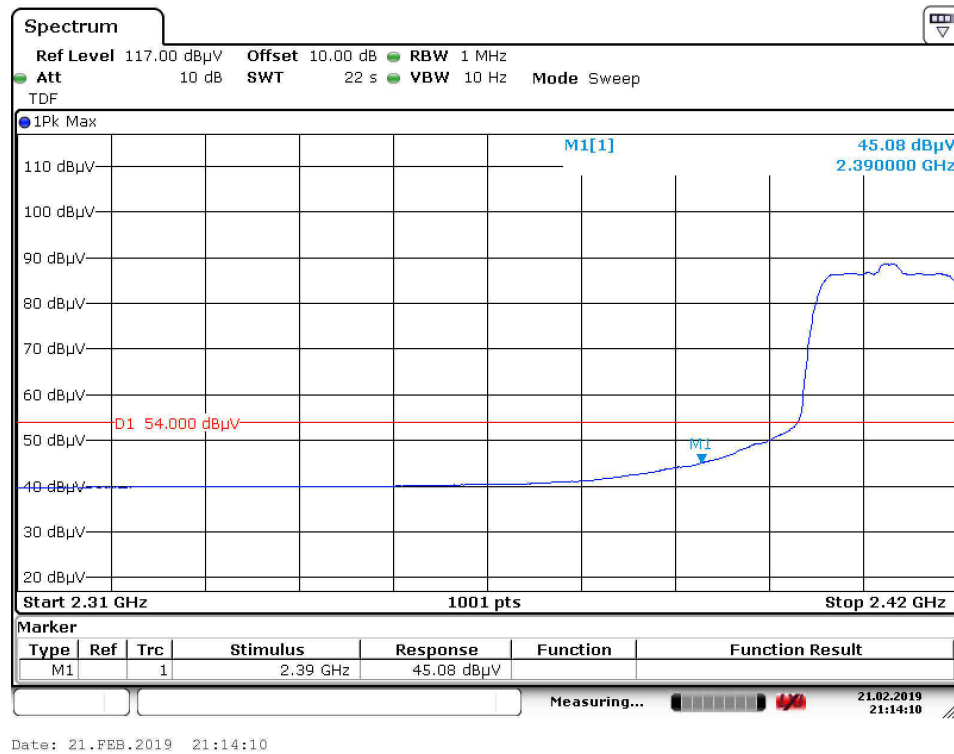
Spurious Emissions, Band Edge, 2.35-2.5G

High Channel (Ver) 2462



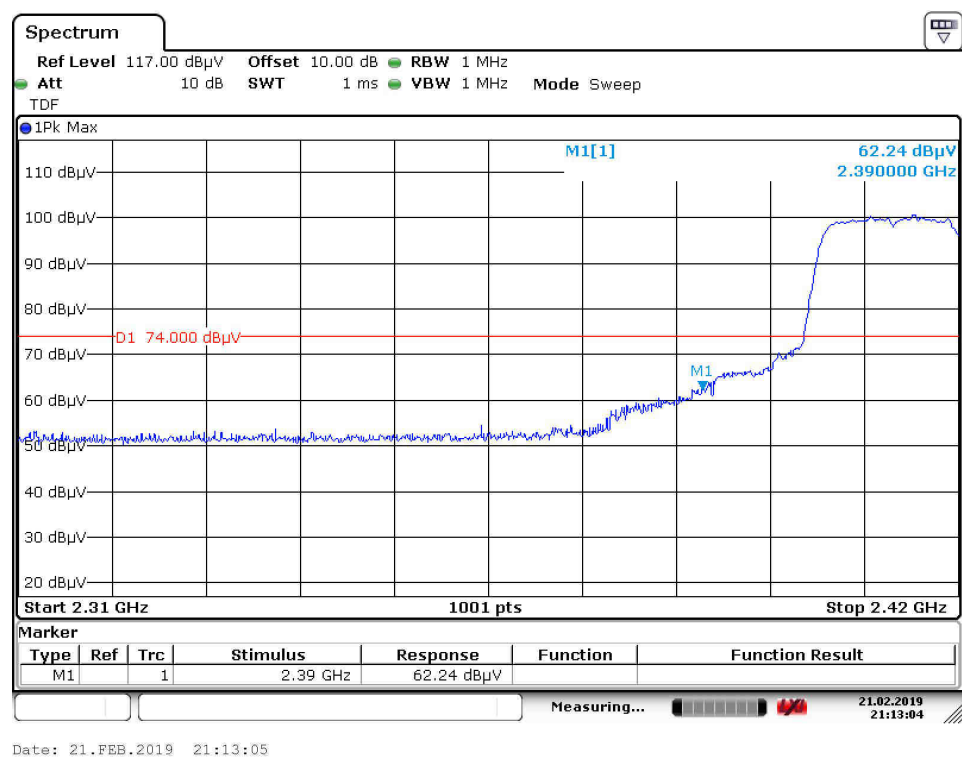
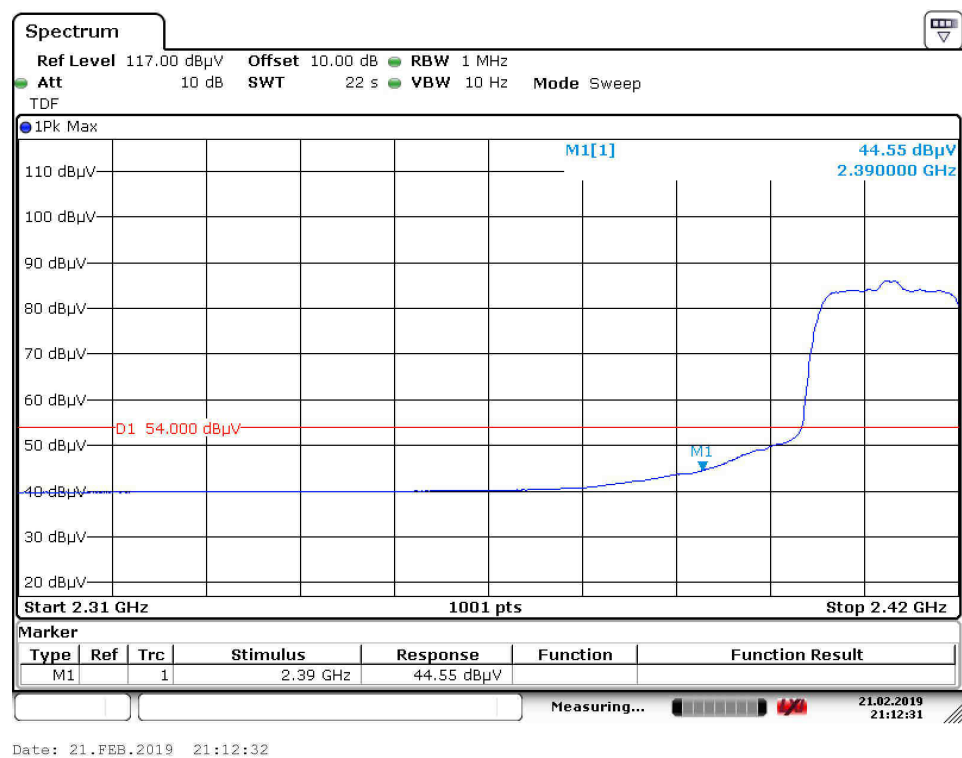
Radiated Bandedge HT20

Low Channel (Hor) 2412



Spurious Emissions, Band Edge, 2.35-2.5G

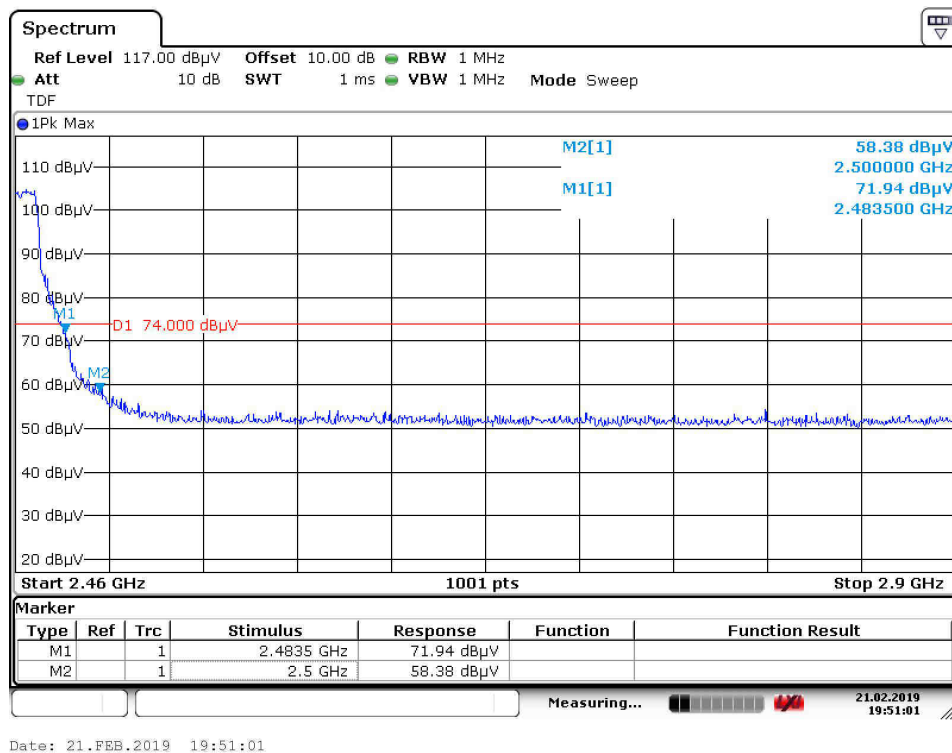
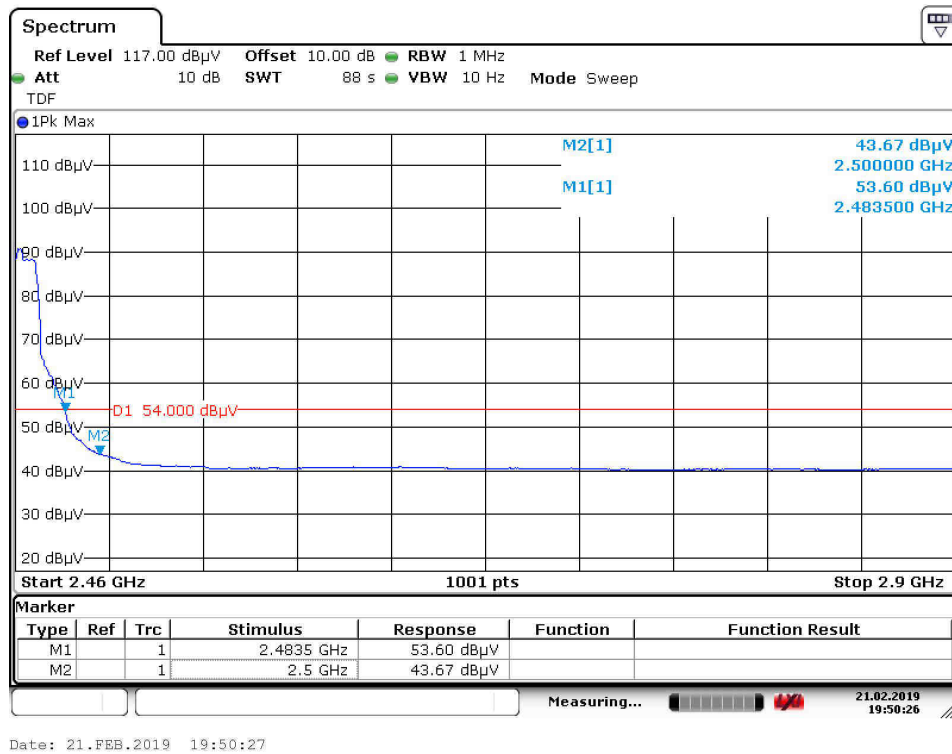
Low Channel (Ver) 2412



Spurious Emissions, Band Edge, 2.35-2.5G

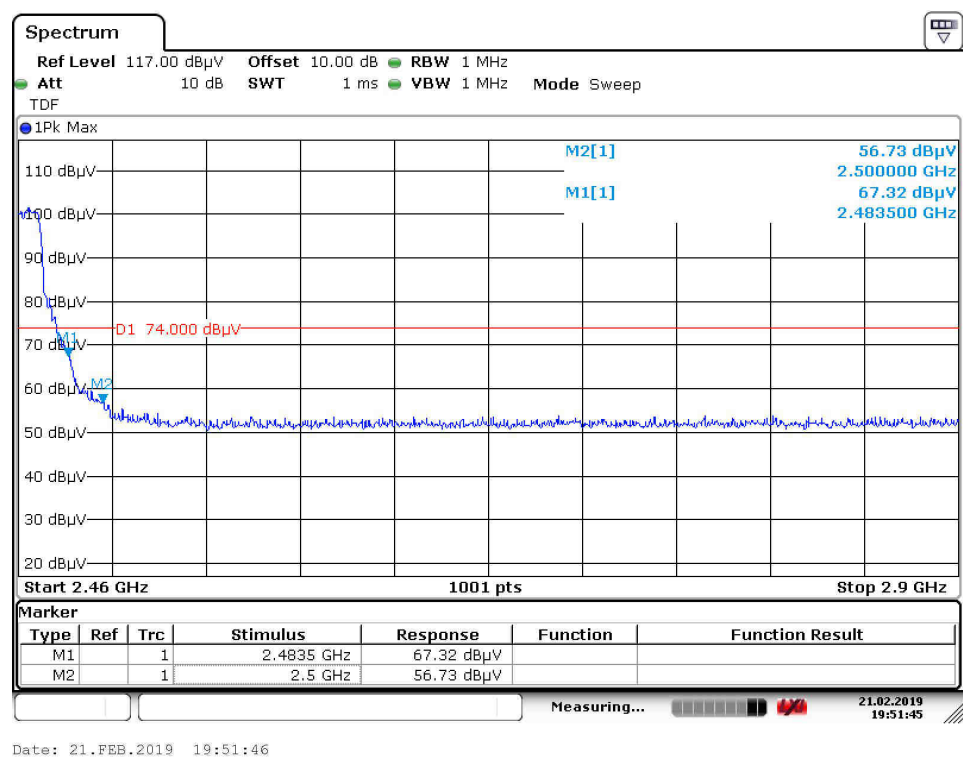
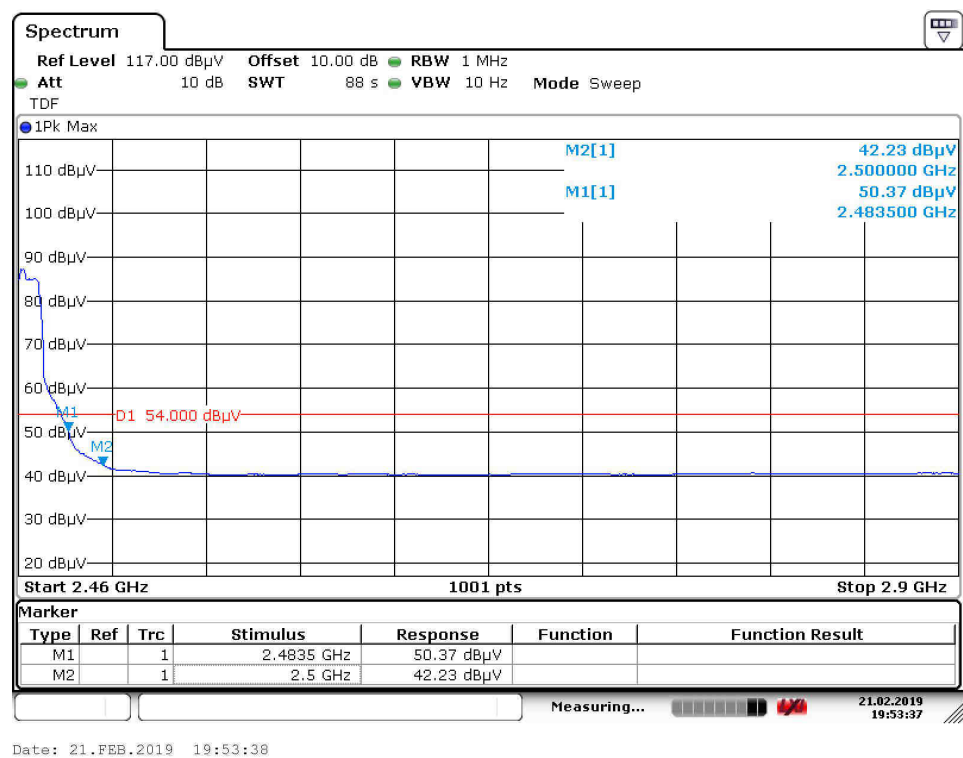
Radiated Bandedge HT20

High Channel (Hor) 2462



Spurious Emissions, Band Edge, 2.35-2.5G

High Channel (Ver) 2462



Spurious Emissions, Band Edge, 2.35-2.5G

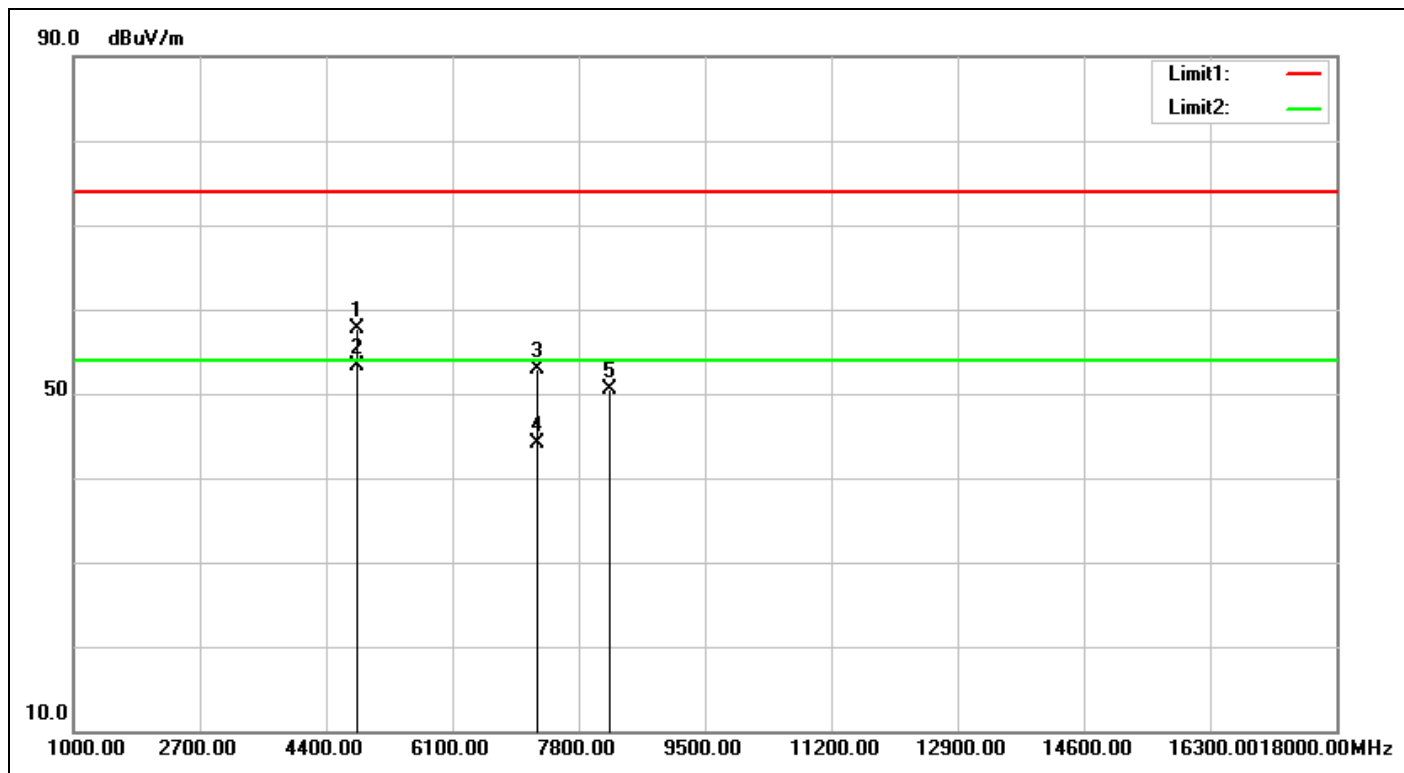
Spurious Emissions, TX Mode, 1-18G



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.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2019/2/21 18:25:40

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

Model No.: ESP-12F

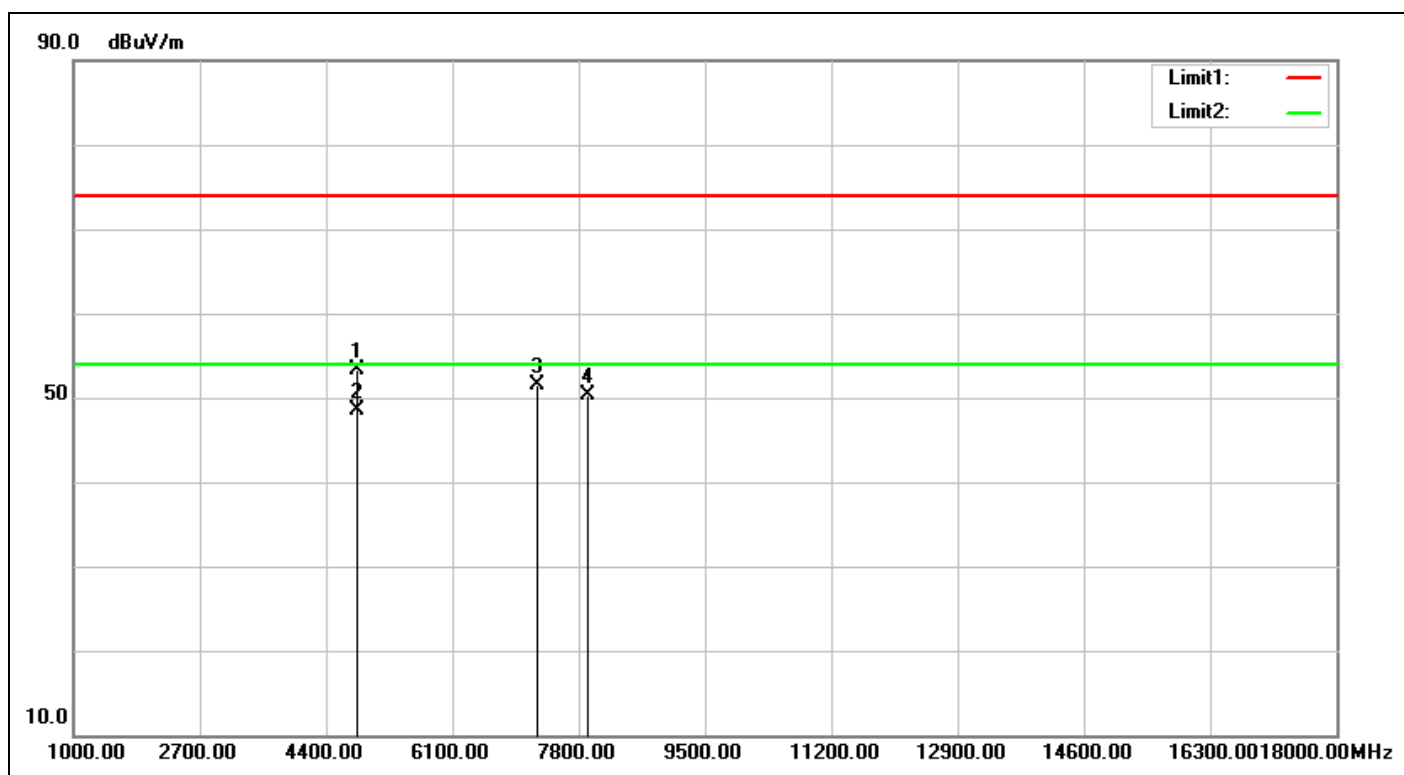
Test Engineer: Curry Chen

Test Mode: B-2412-TX

Remark: setting 9.25db

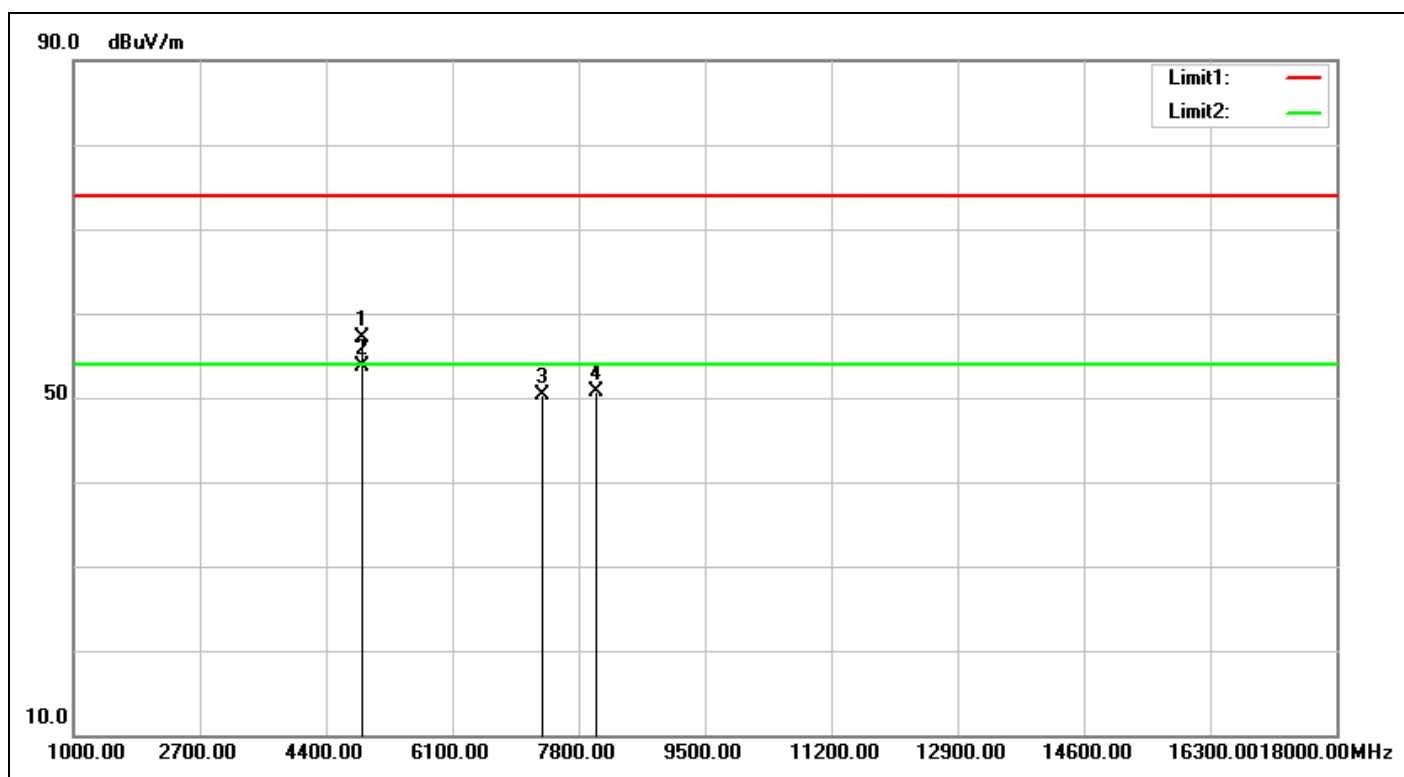
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4824.000	-2.58	60.26	57.68	74.00	-16.32	peak	147	302	
2	4824.000	-2.58	55.89	53.31	54.00	-0.69	AVG	147	302	
3	7236.000	5.33	47.64	52.97	74.00	-21.03	peak	143	158	
4	7236.000	5.33	38.71	44.04	54.00	-9.96	AVG	143	158	
5	8225.000	6.13	44.43	50.56	74.00	-23.44	peak	100	275	

Spurious Emissions, TX Mode, 9k-30M



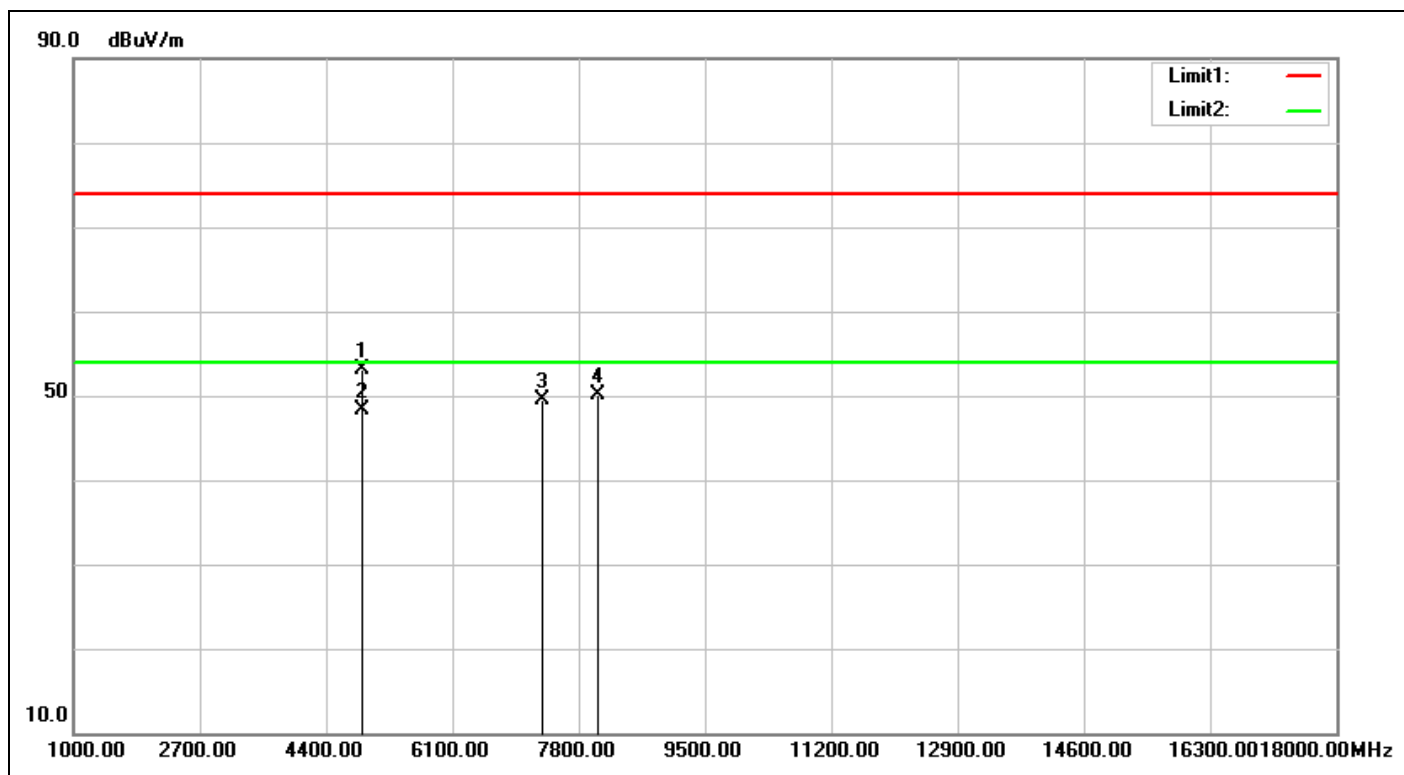
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 18:26:32
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2412-TX		
Remark:	setting 9.25db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4824.000	-2.58	55.90	53.32	74.00	-20.68	peak	100	174	
2	4824.000	-2.58	51.13	48.55	54.00	-5.45	AVG	100	174	
3	7236.000	5.33	46.21	51.54	74.00	-22.46	peak	100	142	
4	7919.000	5.76	44.46	50.22	74.00	-23.78	peak	100	116	



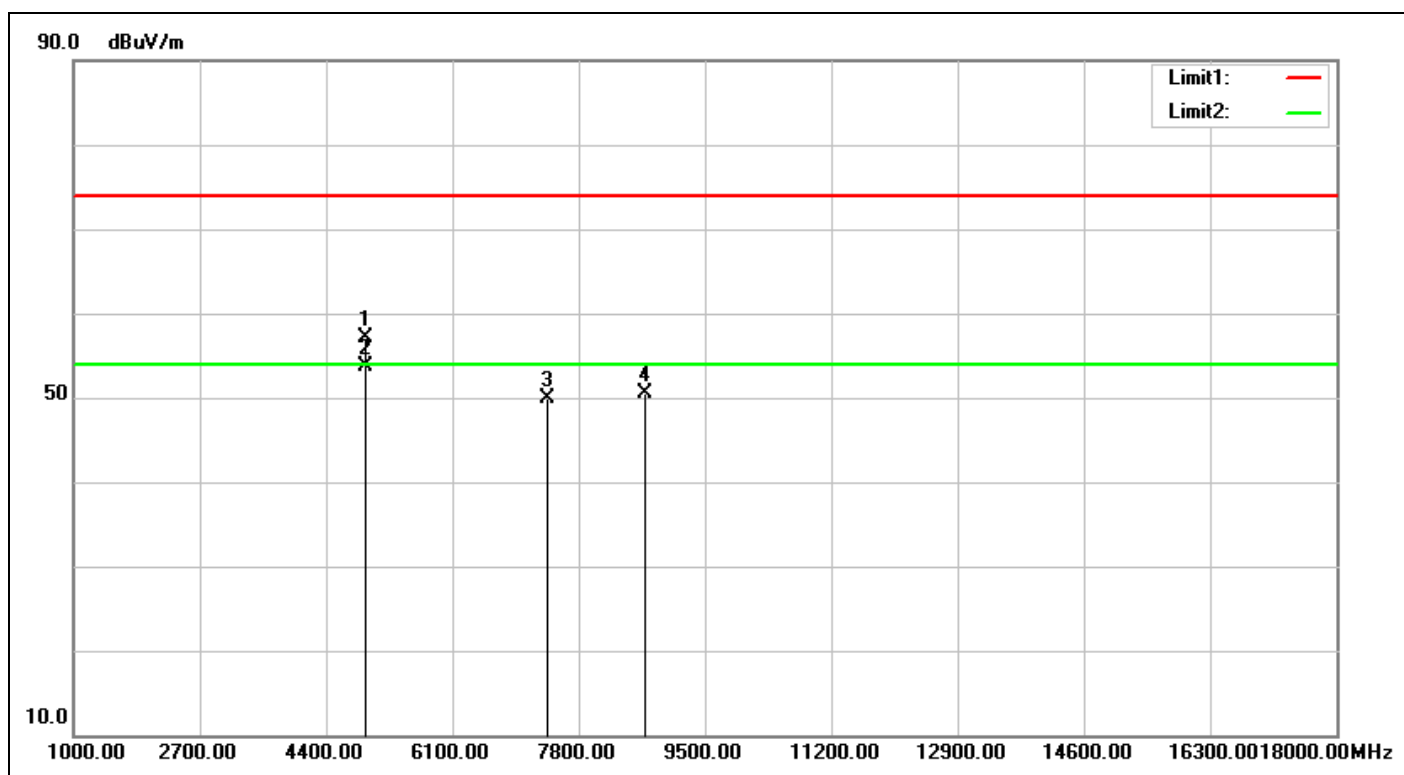
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 18:37:34
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-TX		
Remark:	setting 7.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4874.000	-2.46	59.53	57.07	74.00	-16.93	peak	168	302	
2	4874.000	-2.46	56.07	53.61	54.00	-0.39	AVG	168	302	
3	7311.000	5.51	44.70	50.21	74.00	-23.79	peak	100	245	
4	8038.000	5.79	44.98	50.77	74.00	-23.23	peak	100	336	



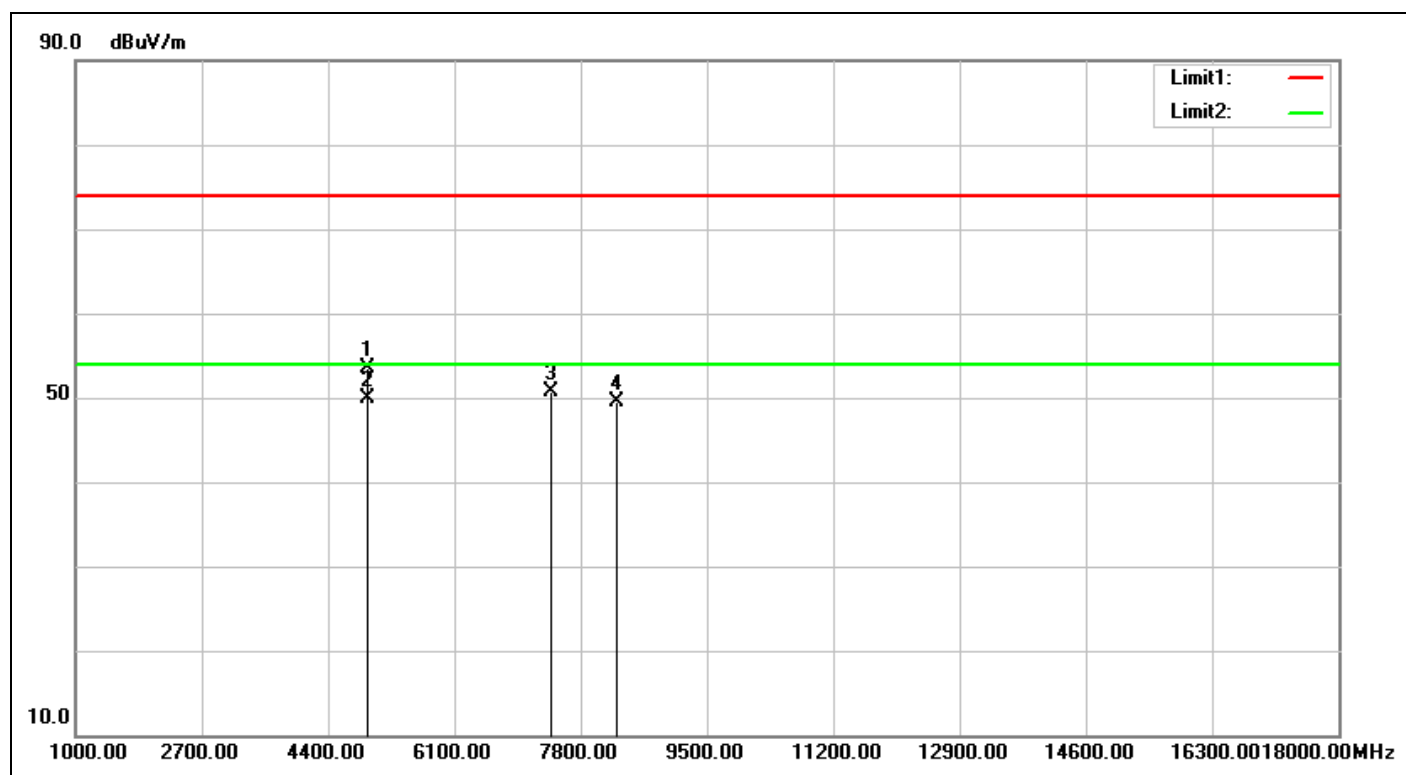
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 18:38:26
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-TX		
Remark:	setting 7.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4874.000	-2.46	55.48	53.02	74.00	-20.98	peak	100	129	
2	4874.000	-2.46	50.67	48.21	54.00	-5.79	AVG	100	129	
3	7311.000	5.51	43.96	49.47	74.00	-24.53	peak	100	97	
4	8055.000	5.81	44.20	50.01	74.00	-23.99	peak	100	0	



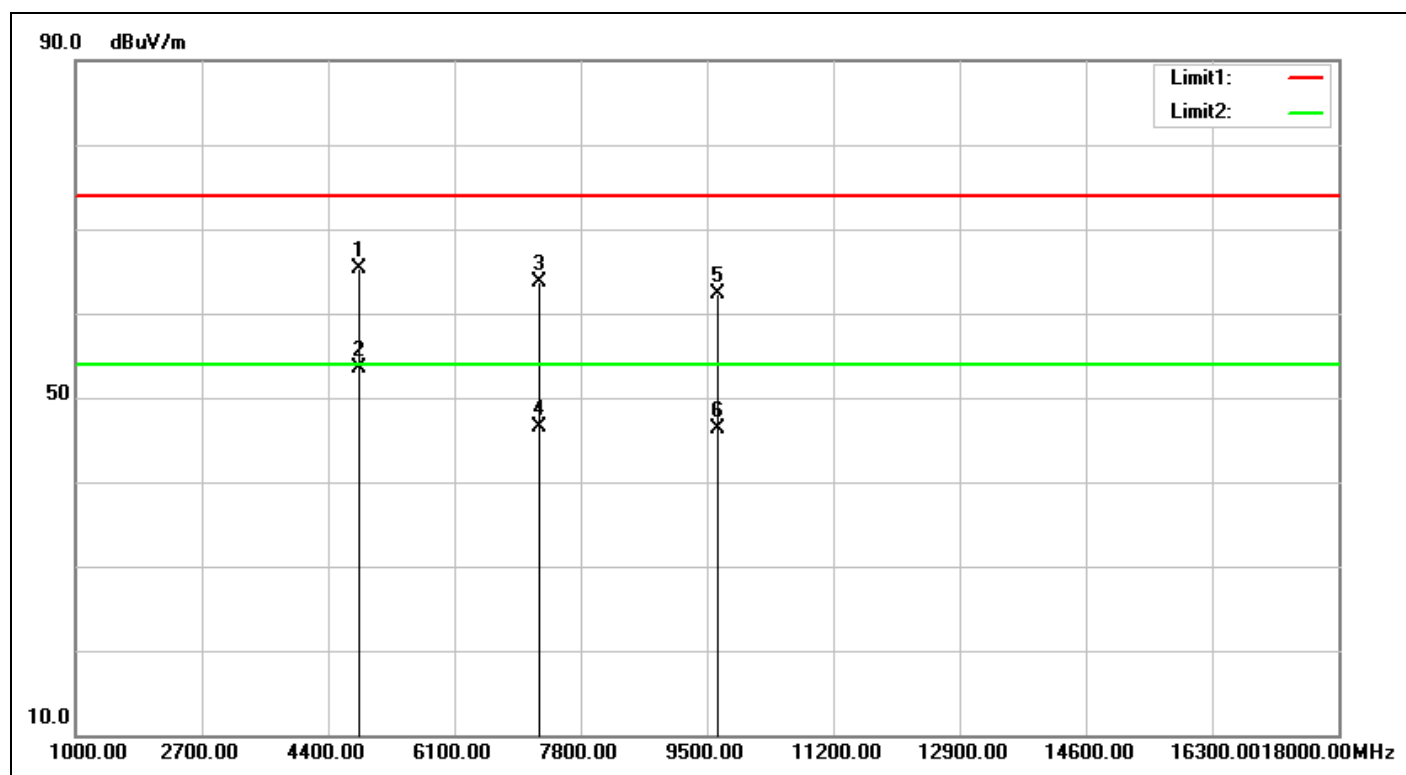
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 18:44:48
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2462-TX		
Remark:	setting 5.75db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4924.000	-2.33	59.45	57.12	74.00	-16.88	peak	167	302	
2	4924.000	-2.33	56.02	53.69	54.00	-0.31	AVG	167	302	
3	7386.000	5.70	44.18	49.88	74.00	-24.12	peak	100	255	
4	8701.000	6.61	43.90	50.51	74.00	-23.49	peak	100	42	



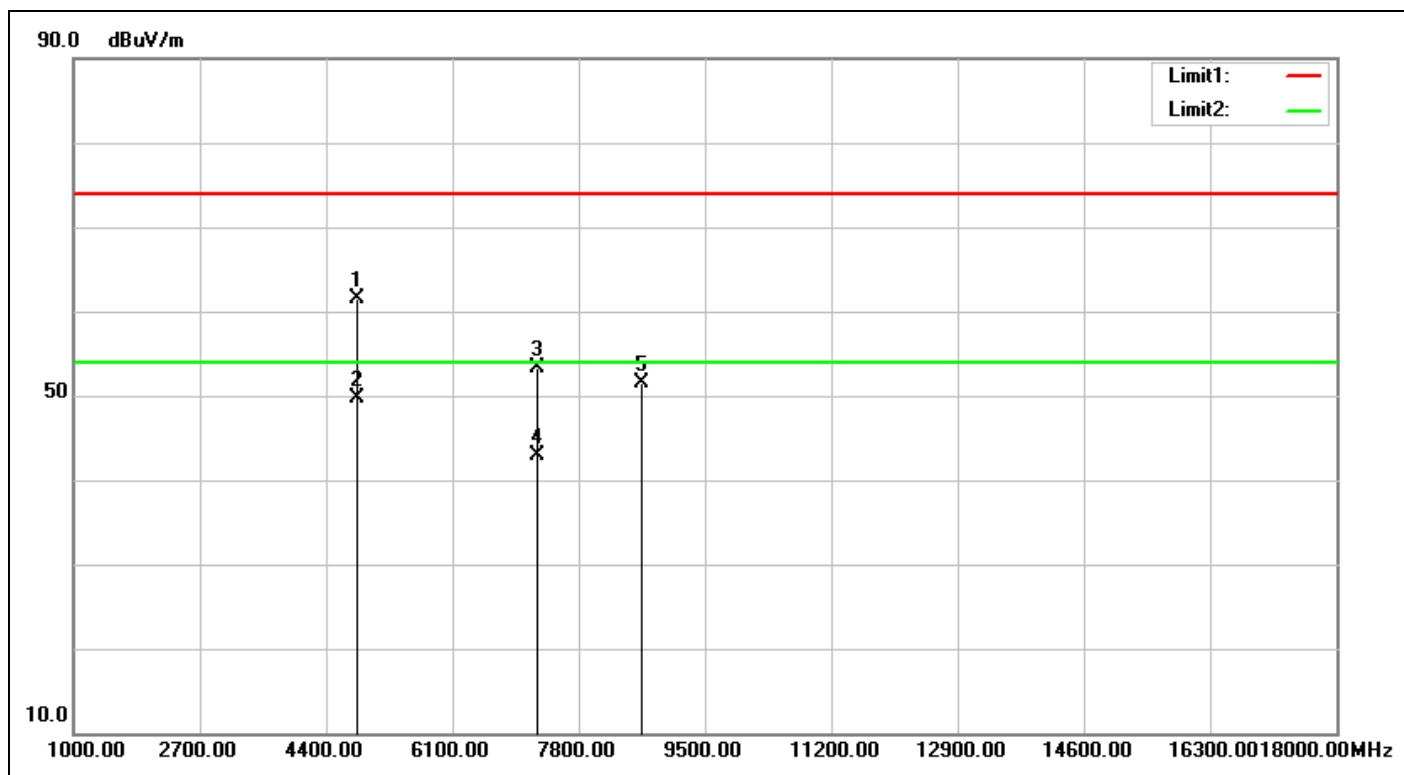
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 18:45:41
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2462-TX		
Remark:	setting 5.75db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4924.000	-2.33	55.78	53.45	74.00	-20.55	peak	100	133	
2	4924.000	-2.33	52.25	49.92	54.00	-4.08	AVG	100	133	
3	7386.000	5.70	45.02	50.72	74.00	-23.28	peak	100	150	
4	8293.000	6.24	43.36	49.60	74.00	-24.40	peak	100	115	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 19:52:11
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	G-2412-TX		
Remark:	setting -3.25db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4824.000	-2.58	67.89	65.31	74.00	-8.69	peak	148	302	
2	4824.000	-2.58	56.07	53.49	54.00	-0.51	AVG	148	302	
3	7236.000	5.33	58.46	63.79	74.00	-10.21	peak	159	183	
4	7236.000	5.33	41.24	46.57	54.00	-7.43	AVG	159	183	
5	9648.000	6.20	56.06	62.26	74.00	-11.74	peak	152	169	
6	9648.000	6.20	40.04	46.24	54.00	-7.76	AVG	152	169	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 19:53:04

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

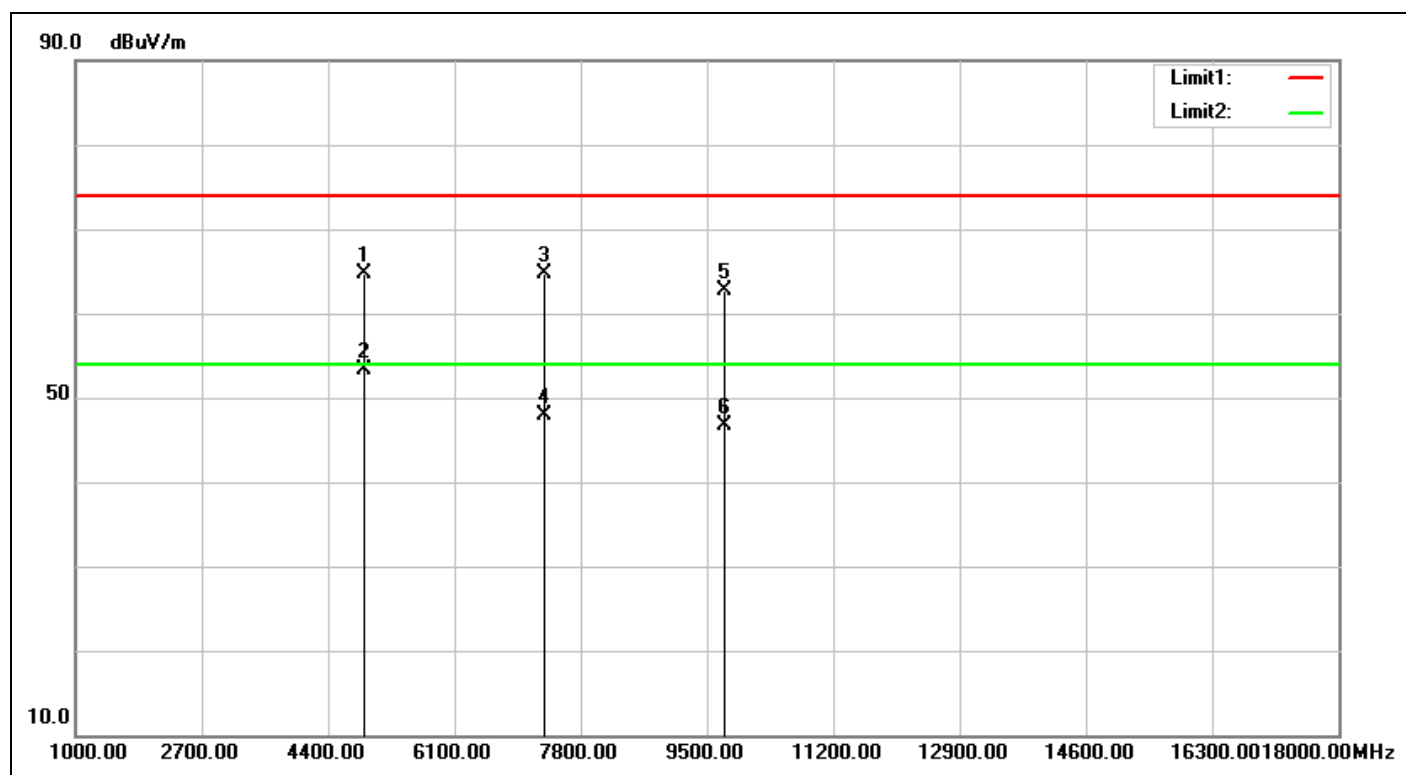
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: G-2412-TX

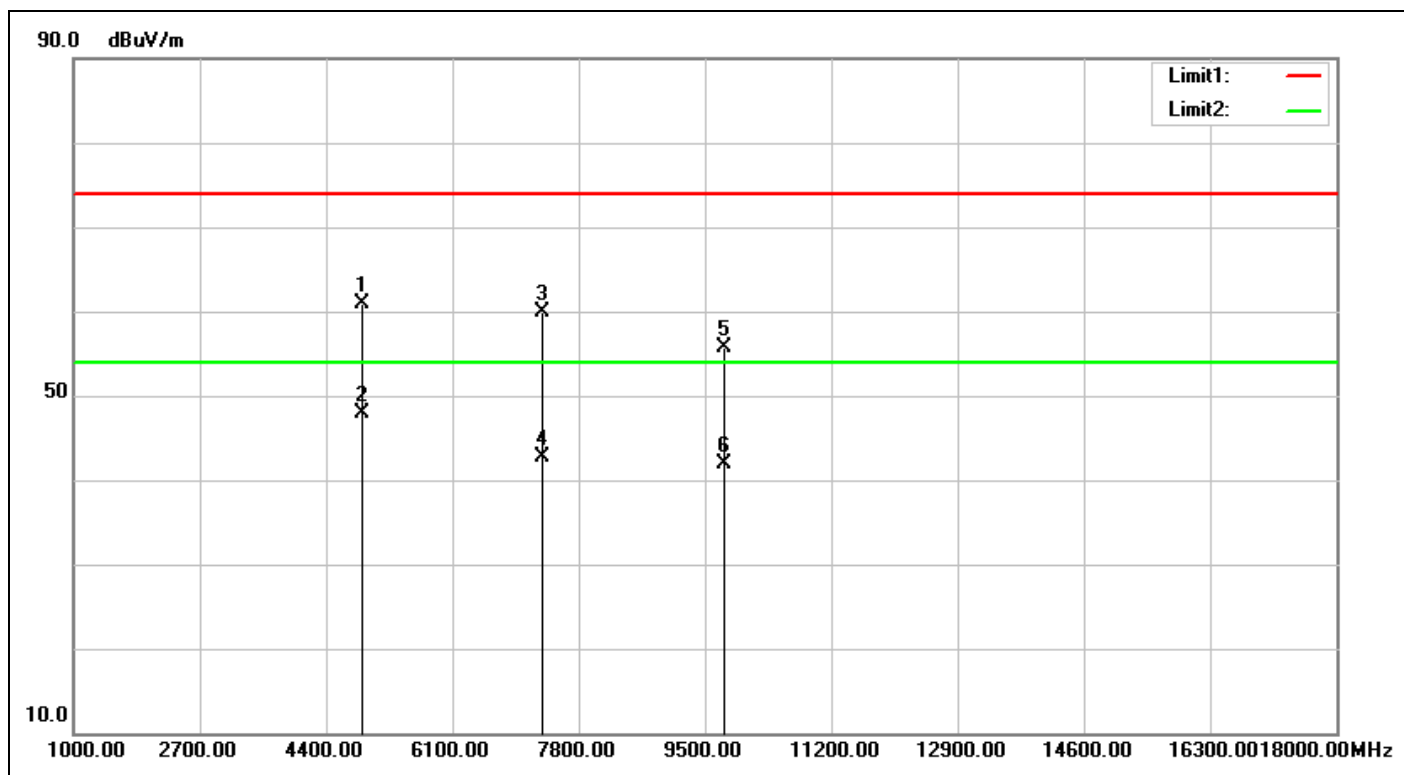
Remark: setting -3.25db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4824.000	-2.58	64.11	61.53	74.00	-12.47	peak	100	130	
2	4824.000	-2.58	52.35	49.77	54.00	-4.23	AVG	100	130	
3	7236.000	5.33	47.91	53.24	74.00	-20.76	peak	100	201	
4	7236.000	5.33	37.54	42.87	54.00	-11.13	AVG	100	201	
5	8650.000	6.61	44.97	51.58	74.00	-22.42	peak	100	359	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 20:01:27
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	G-2437-TX		
Remark:	setting -3.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4874.000	-2.46	67.16	64.70	74.00	-9.30	peak	167	305	
2	4874.000	-2.46	55.83	53.37	54.00	-0.63	AVG	167	305	
3	7311.000	5.51	59.11	64.62	74.00	-9.38	peak	154	182	
4	7311.000	5.51	42.47	47.98	54.00	-6.02	AVG	154	182	
5	9748.000	6.06	56.71	62.77	74.00	-11.23	peak	160	326	
6	9748.000	6.06	40.70	46.76	54.00	-7.24	AVG	160	326	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 20:02:20

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

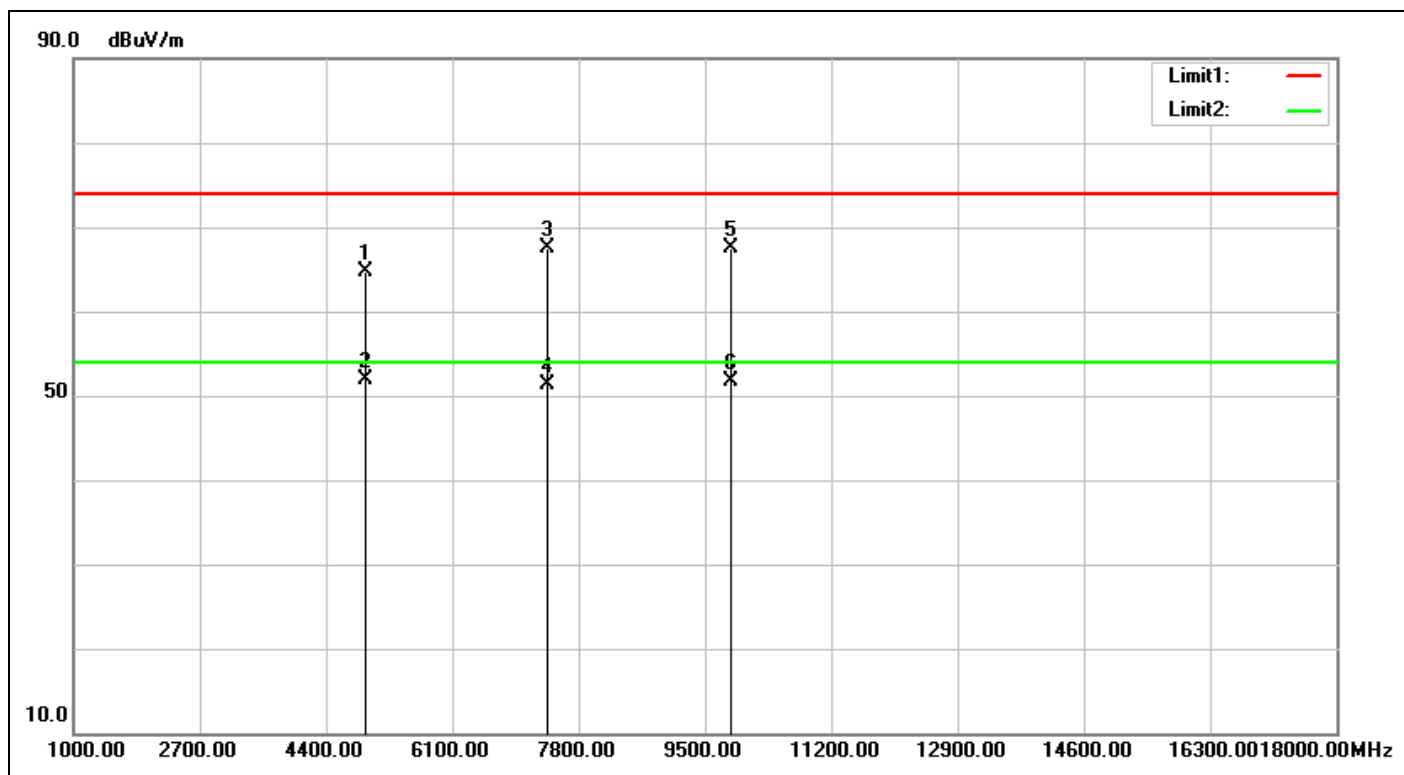
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: G-2437-TX

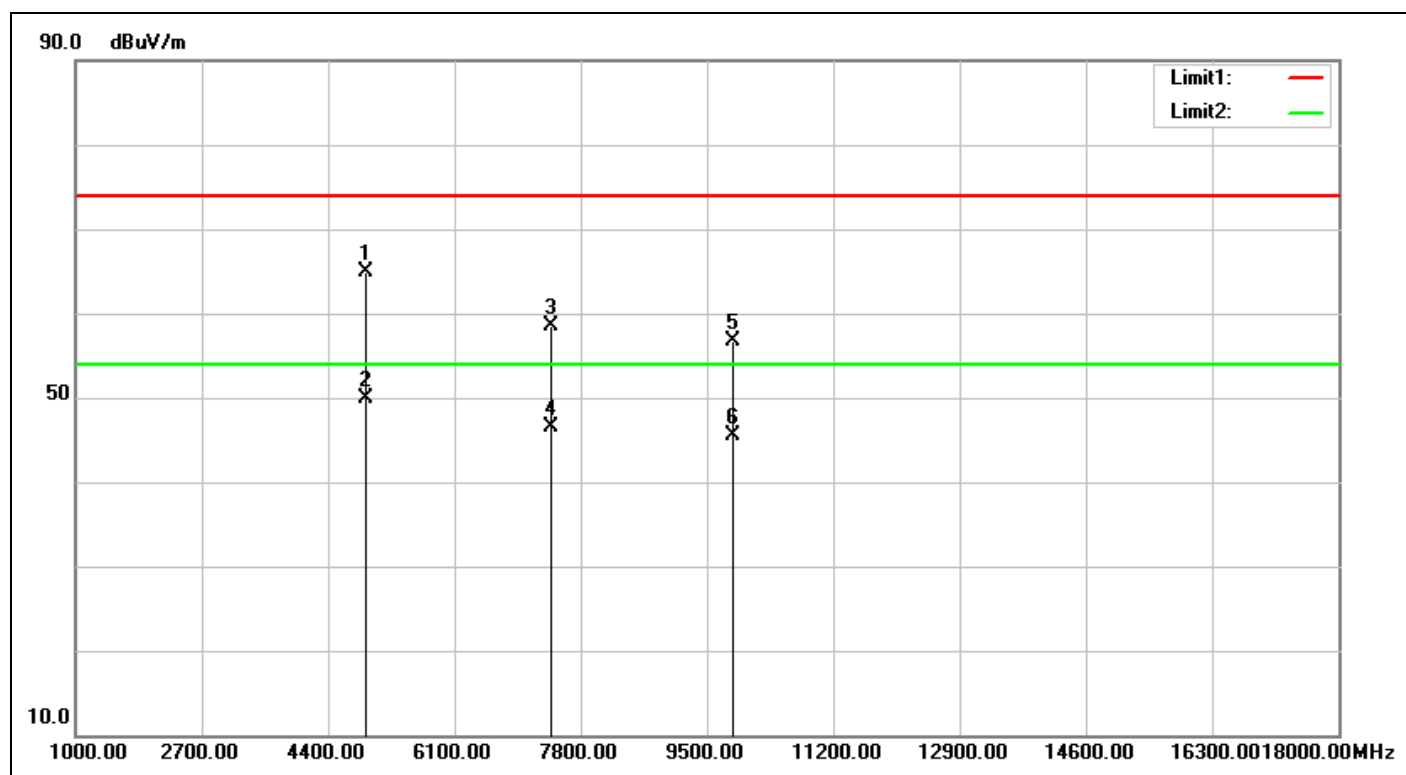
Remark: setting -3.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4874.000	-2.46	63.29	60.83	74.00	-13.17	peak	100	178	
2	4874.000	-2.46	50.46	48.00	54.00	-6.00	AVG	100	178	
3	7311.000	5.51	54.36	59.87	74.00	-14.13	peak	100	133	
4	7311.000	5.51	37.21	42.72	54.00	-11.28	AVG	100	133	
5	9748.000	6.06	49.74	55.80	74.00	-18.20	peak	100	205	
6	9748.000	6.06	35.83	41.89	54.00	-12.11	AVG	100	205	



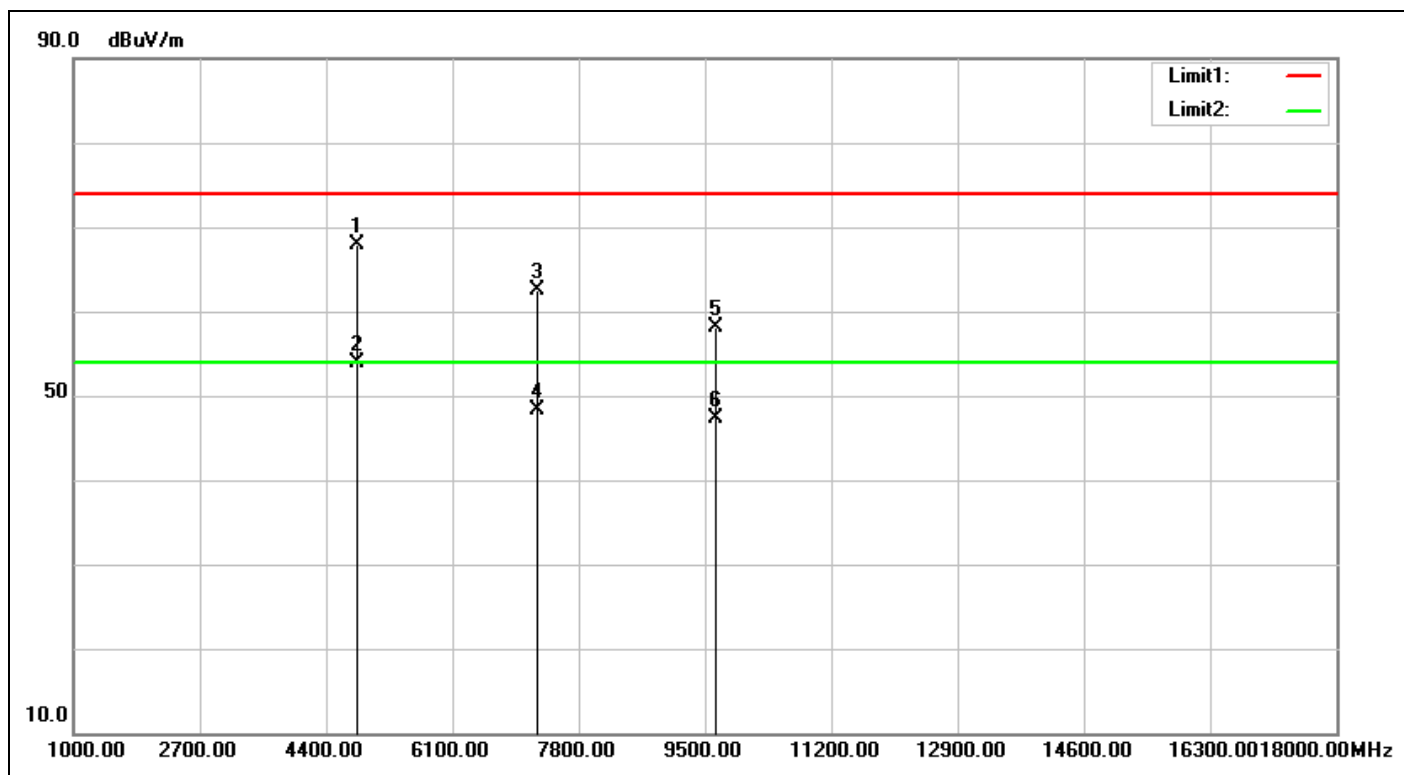
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 20:12:11
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	G-2462-TX		
Remark:	setting -6.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4924.000	-2.33	67.12	64.79	74.00	-9.21	peak	160	200	
2	4924.000	-2.33	54.30	51.97	54.00	-2.03	AVG	160	200	
3	7386.000	5.70	61.71	67.41	74.00	-6.59	peak	159	180	
4	7386.000	5.70	45.67	51.37	54.00	-2.63	AVG	159	180	
5	9848.000	5.93	61.65	67.58	74.00	-6.42	peak	149	176	
6	9848.000	5.93	45.75	51.68	54.00	-2.32	AVG	149	176	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 20:13:03
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	G-2462-TX		
Remark:	setting -6.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4924.000	-2.33	67.26	64.93	74.00	-9.07	peak	100	184	
2	4924.000	-2.33	52.19	49.86	54.00	-4.14	AVG	100	184	
3	7386.000	5.70	52.81	58.51	74.00	-15.49	peak	100	198	
4	7386.000	5.70	40.71	46.41	54.00	-7.59	AVG	100	198	
5	9848.000	5.93	50.84	56.77	74.00	-17.23	peak	100	122	
6	9848.000	5.93	39.63	45.56	54.00	-8.44	AVG	100	122	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2019/2/21 20:21:52

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

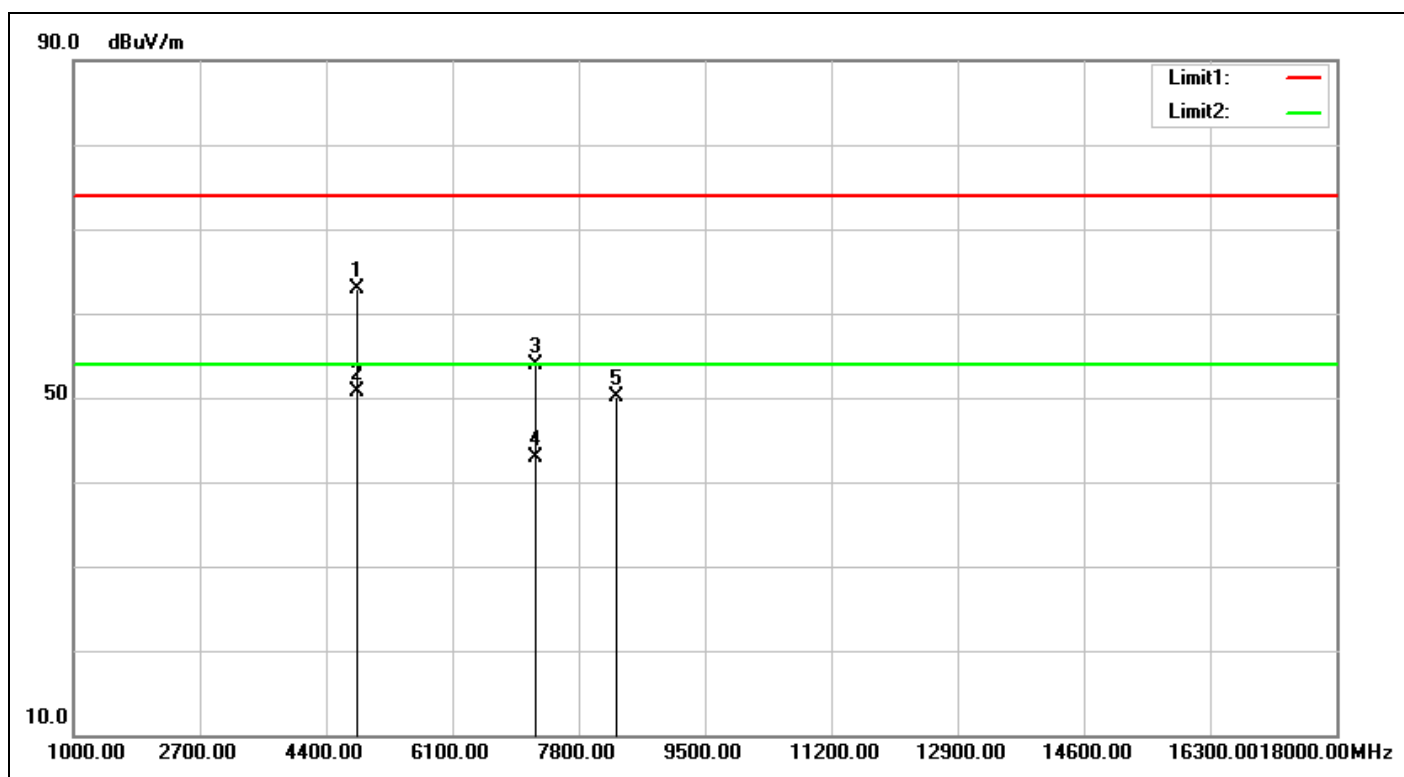
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: N20-2412-TX

Remark: setting -4.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4824.000	-2.58	70.57	67.99	74.00	-6.01	peak	150	278	
2	4824.000	-2.58	56.54	53.96	54.00	-0.04	AVG	150	278	
3	7236.000	5.33	57.19	62.52	74.00	-11.48	peak	161	169	
4	7236.000	5.33	43.01	48.34	54.00	-5.66	AVG	161	169	
5	9648.000	6.20	51.96	58.16	74.00	-15.84	peak	155	179	
6	9648.000	6.20	41.20	47.40	54.00	-6.60	AVG	155	179	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 20:22:45

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

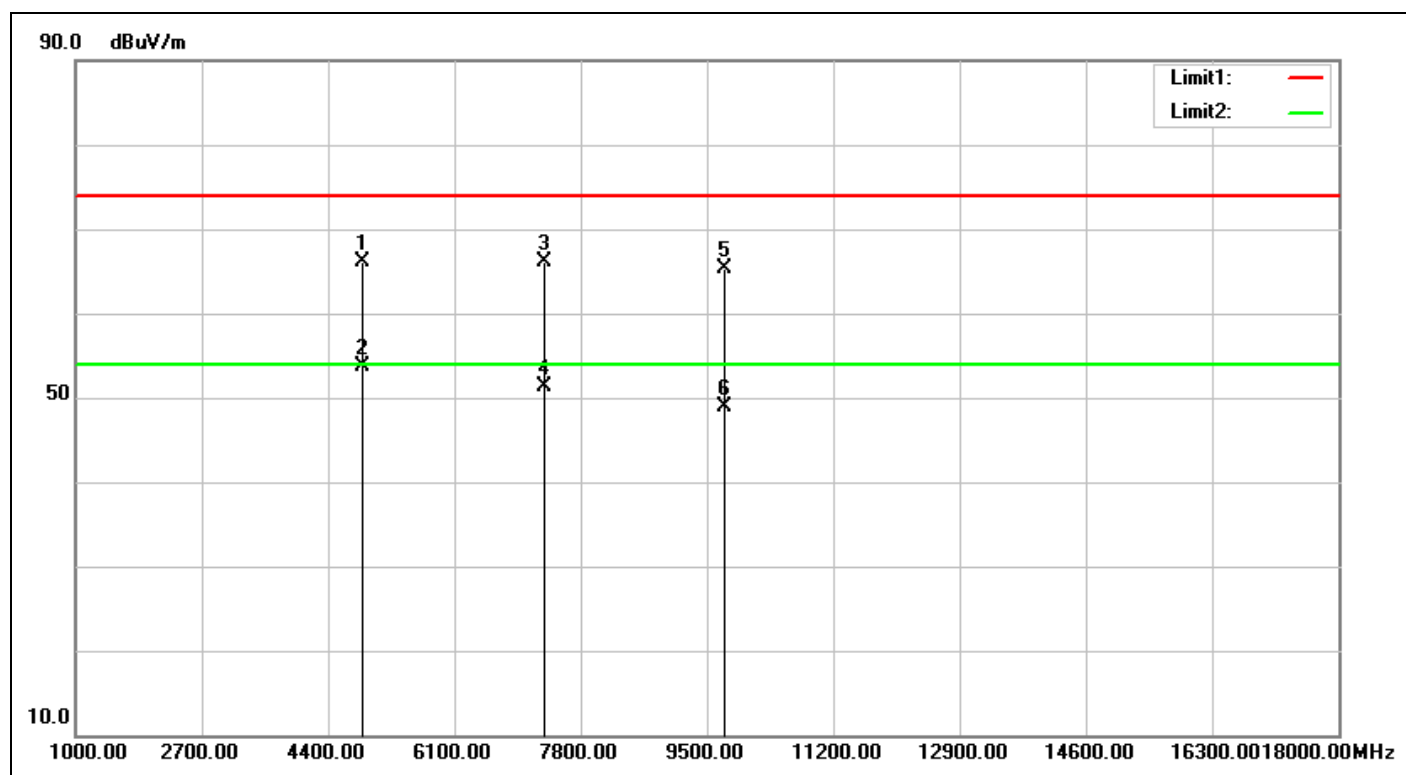
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: N20-2412-TX

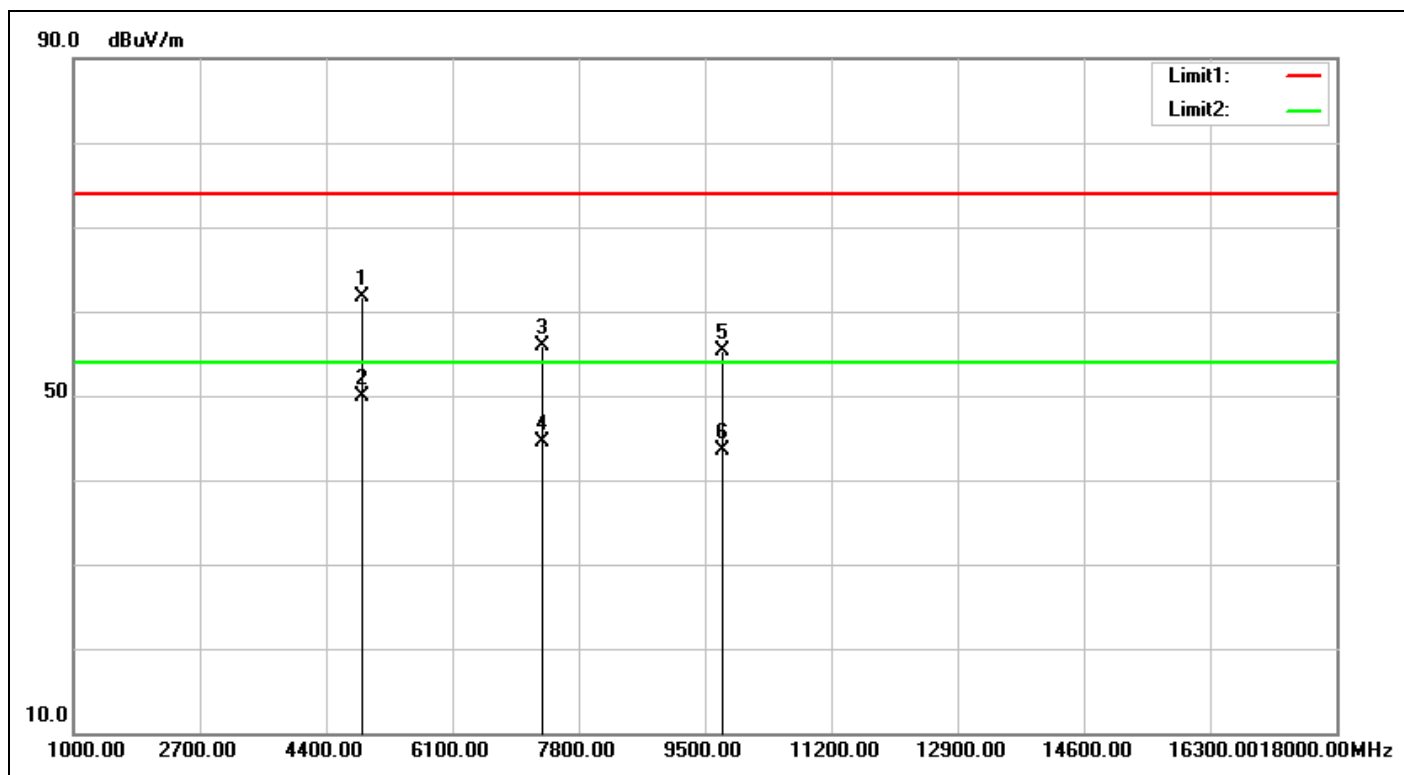
Remark: setting -4.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4824.000	-2.58	65.46	62.88	74.00	-11.12	peak	100	167	
2	4824.000	-2.58	53.27	50.69	54.00	-3.31	AVG	100	167	
3	7236.000	5.33	48.58	53.91	74.00	-20.09	peak	100	136	
4	7236.000	5.33	37.61	42.94	54.00	-11.06	AVG	100	136	
5	8310.000	6.27	43.76	50.03	74.00	-23.97	peak	100	44	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 20:29:05
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	N20-2437-TX		
Remark:	setting -5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4874.000	-2.46	68.52	66.06	74.00	-7.94	peak	196	203	
2	4874.000	-2.46	56.25	53.79	54.00	-0.21	AVG	196	203	
3	7311.000	5.51	60.53	66.04	74.00	-7.96	peak	181	172	
4	7311.000	5.51	45.82	51.33	54.00	-2.67	AVG	181	172	
5	9748.000	6.06	59.30	65.36	74.00	-8.64	peak	190	169	
6	9748.000	6.06	42.82	48.88	54.00	-5.12	AVG	190	169	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 20:29:57

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

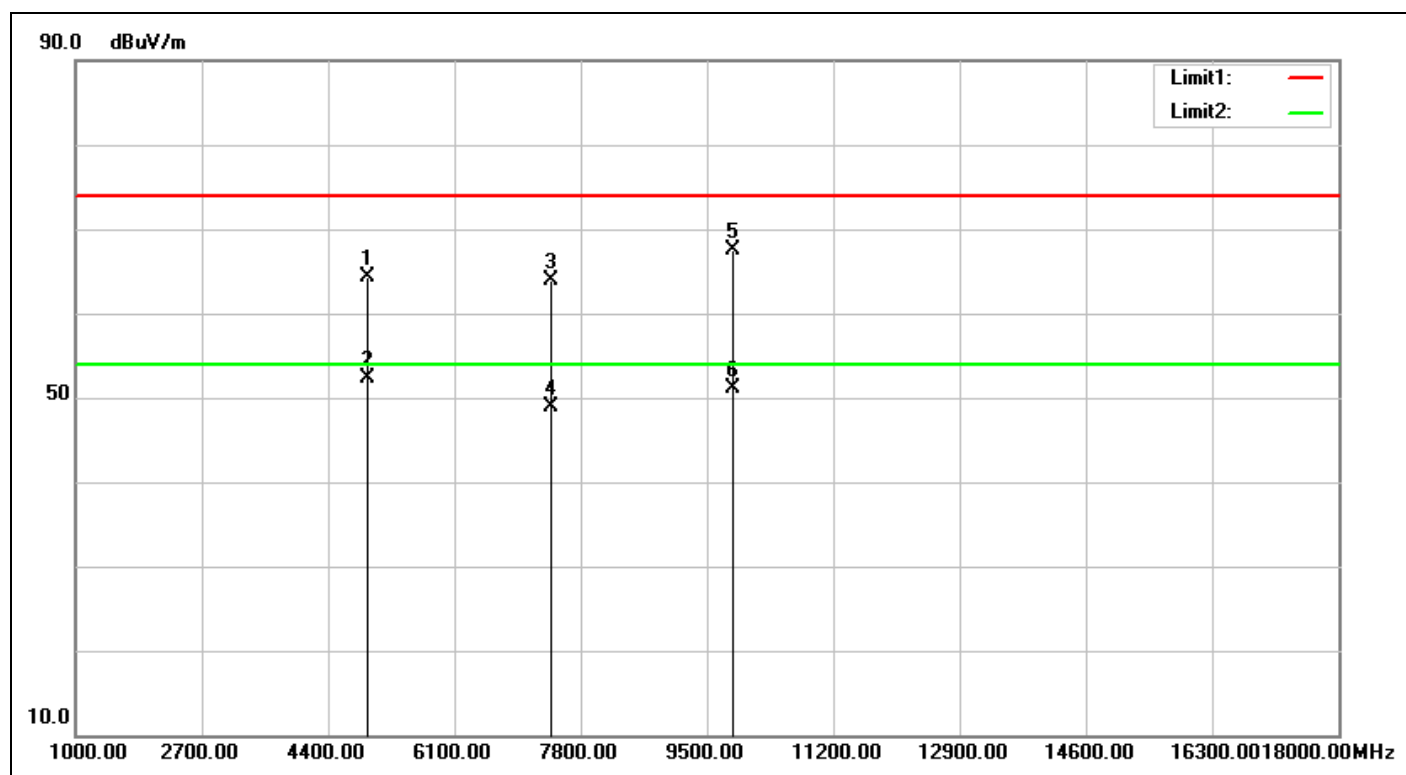
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: N20-2437-TX

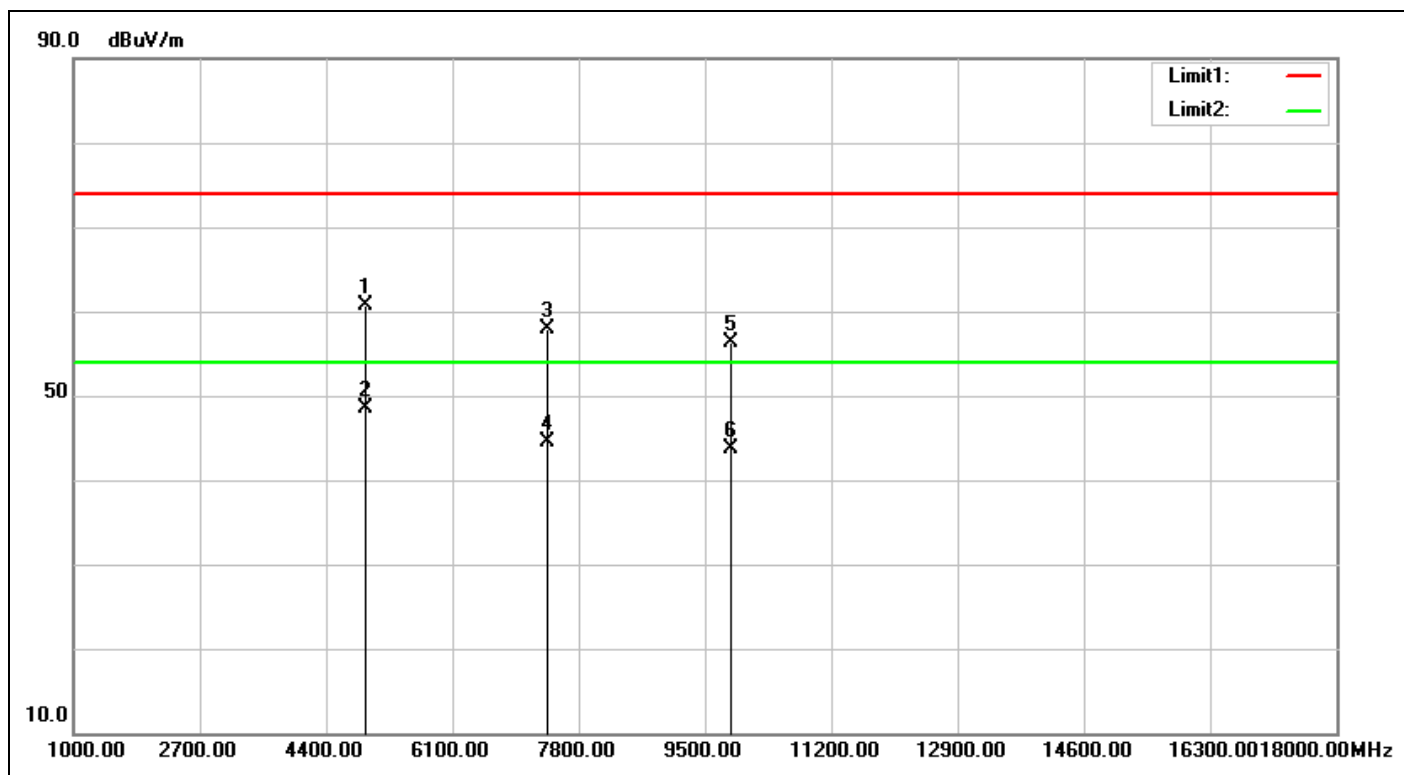
Remark: setting -5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4874.000	-2.46	64.09	61.63	74.00	-12.37	peak	100	178	
2	4874.000	-2.46	52.27	49.81	54.00	-4.19	AVG	100	178	
3	7311.000	5.51	50.37	55.88	74.00	-18.12	peak	100	136	
4	7311.000	5.51	38.99	44.50	54.00	-9.50	AVG	100	136	
5	9748.000	6.06	49.16	55.22	74.00	-18.78	peak	100	201	
6	9748.000	6.06	37.41	43.47	54.00	-10.53	AVG	100	201	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 20:37:32
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	N20-2462-TX		
Remark:	setting -6.25db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4924.000	-2.33	66.58	64.25	74.00	-9.75	peak	166	295	
2	4924.000	-2.33	54.60	52.27	54.00	-1.73	AVG	166	295	
3	7386.000	5.70	58.22	63.92	74.00	-10.08	peak	170	186	
4	7386.000	5.70	43.28	48.98	54.00	-5.02	AVG	170	186	
5	9848.000	5.93	61.65	67.58	74.00	-6.42	peak	161	169	
6	9848.000	5.93	45.12	51.05	54.00	-2.95	AVG	161	169	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 20:38:24

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: N20-2462-TX

Remark: setting -6.25db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	4924.000	-2.33	63.02	60.69	74.00	-13.31	peak	100	147	
2	4924.000	-2.33	50.85	48.52	54.00	-5.48	AVG	100	147	
3	7386.000	5.70	52.12	57.82	74.00	-16.18	peak	100	133	
4	7386.000	5.70	38.83	44.53	54.00	-9.47	AVG	100	133	
5	9848.000	5.93	50.28	56.21	74.00	-17.79	peak	100	198	
6	9848.000	5.93	37.68	43.61	54.00	-10.39	AVG	100	198	

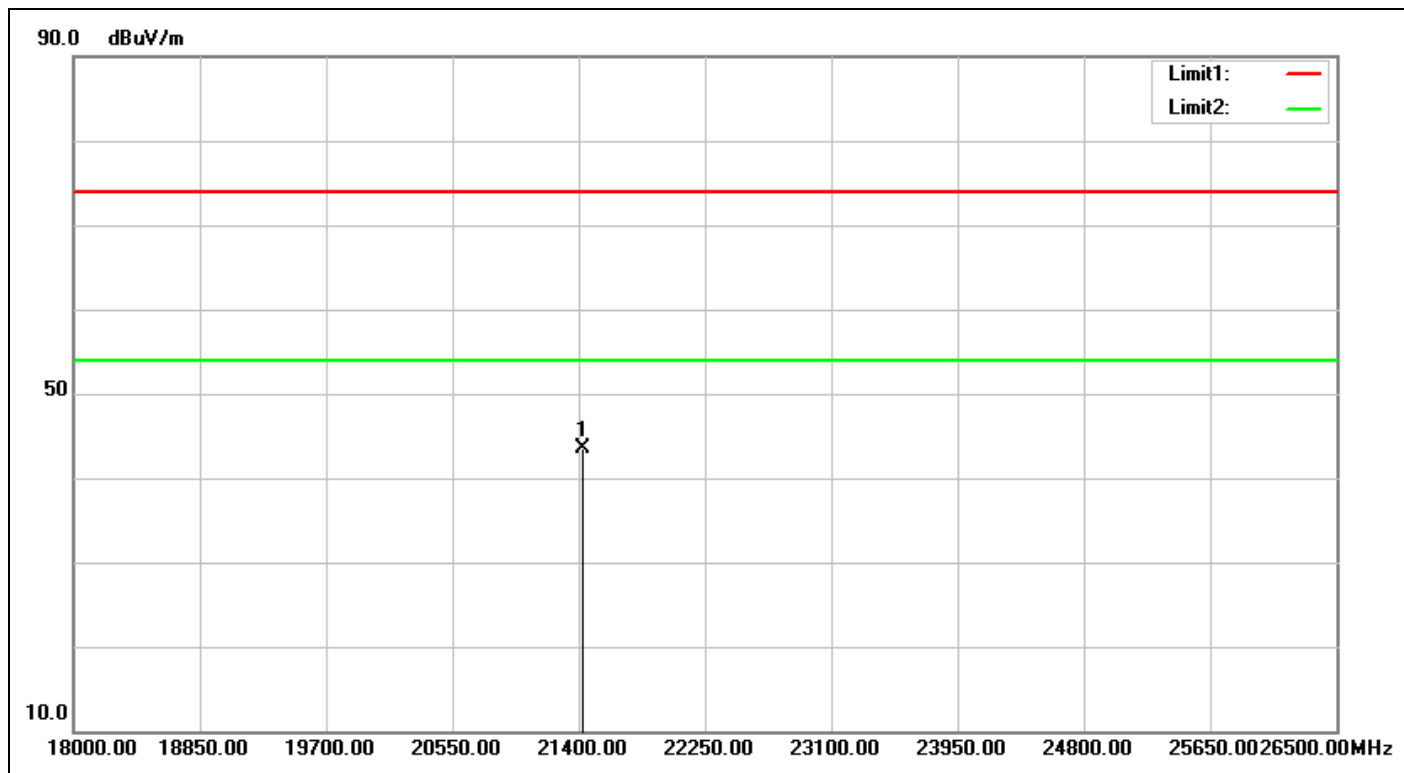
Spurious Emissions, TX Mode, 18-26G



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.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2019/2/21 21:10:42

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

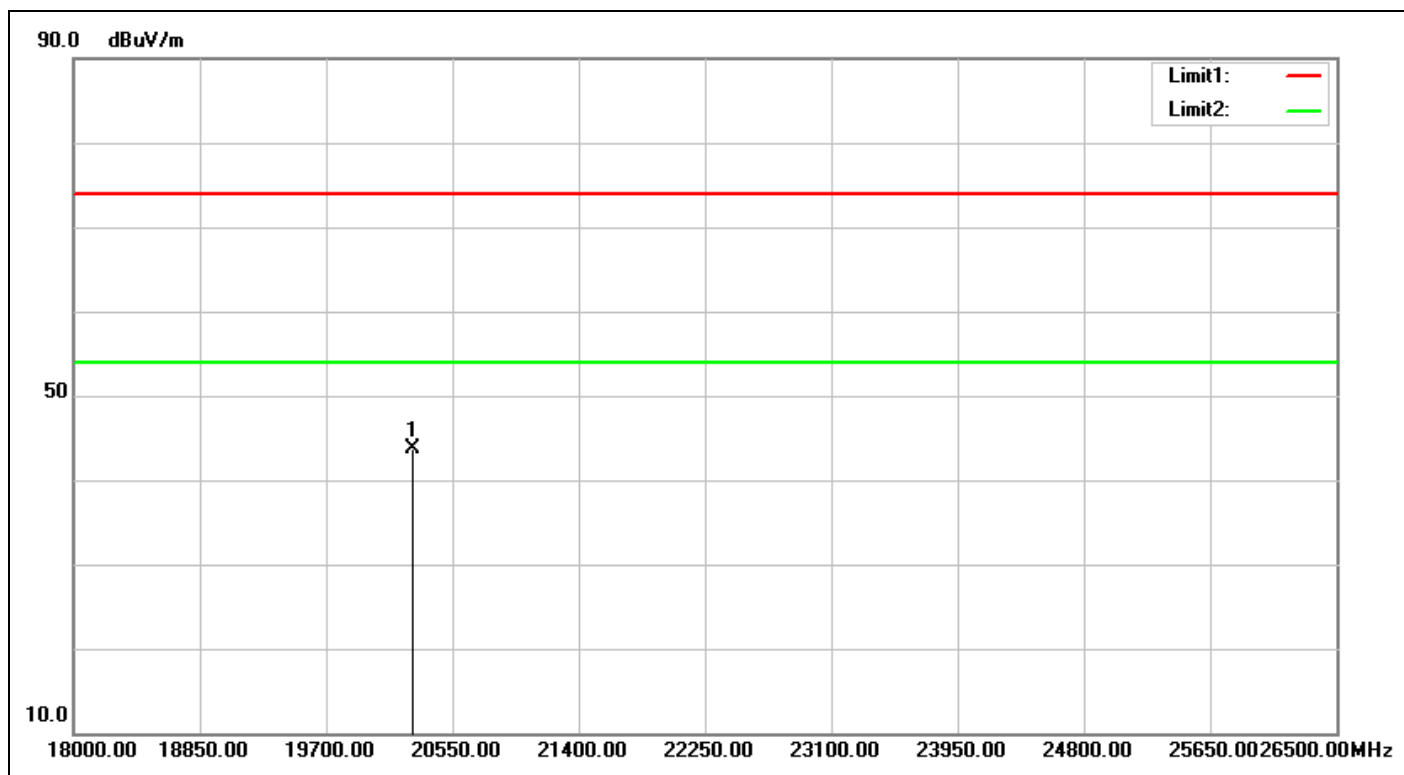
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: B-2412-TX

Remark: setting 9.25db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	21425.500	4.42	39.02	43.44	74.00	-30.56	peak	100	42	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 21:10:48

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

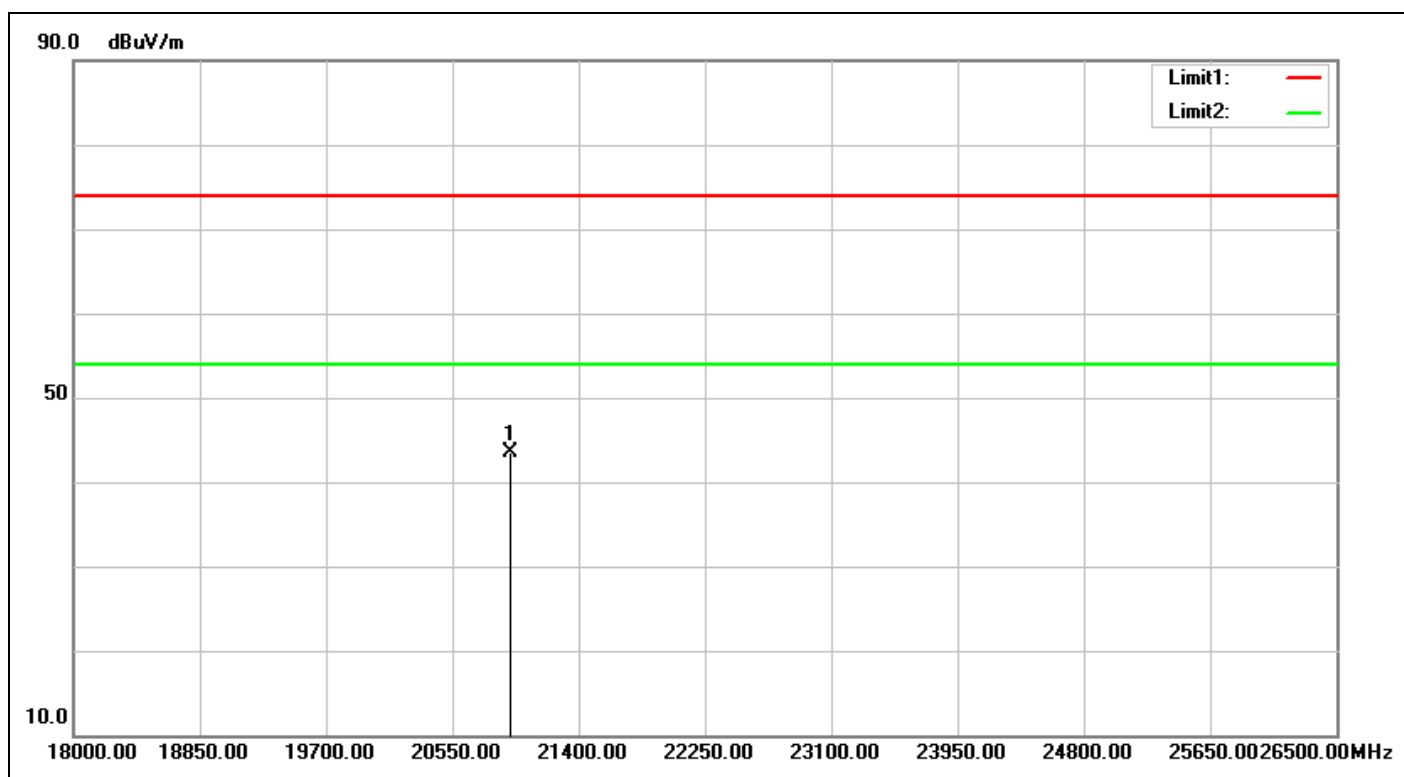
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: B-2412-TX

Remark: setting 9.25db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20278.000	4.49	39.25	43.74	74.00	-30.26	peak	100	324	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2019/2/21 21:11:35

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

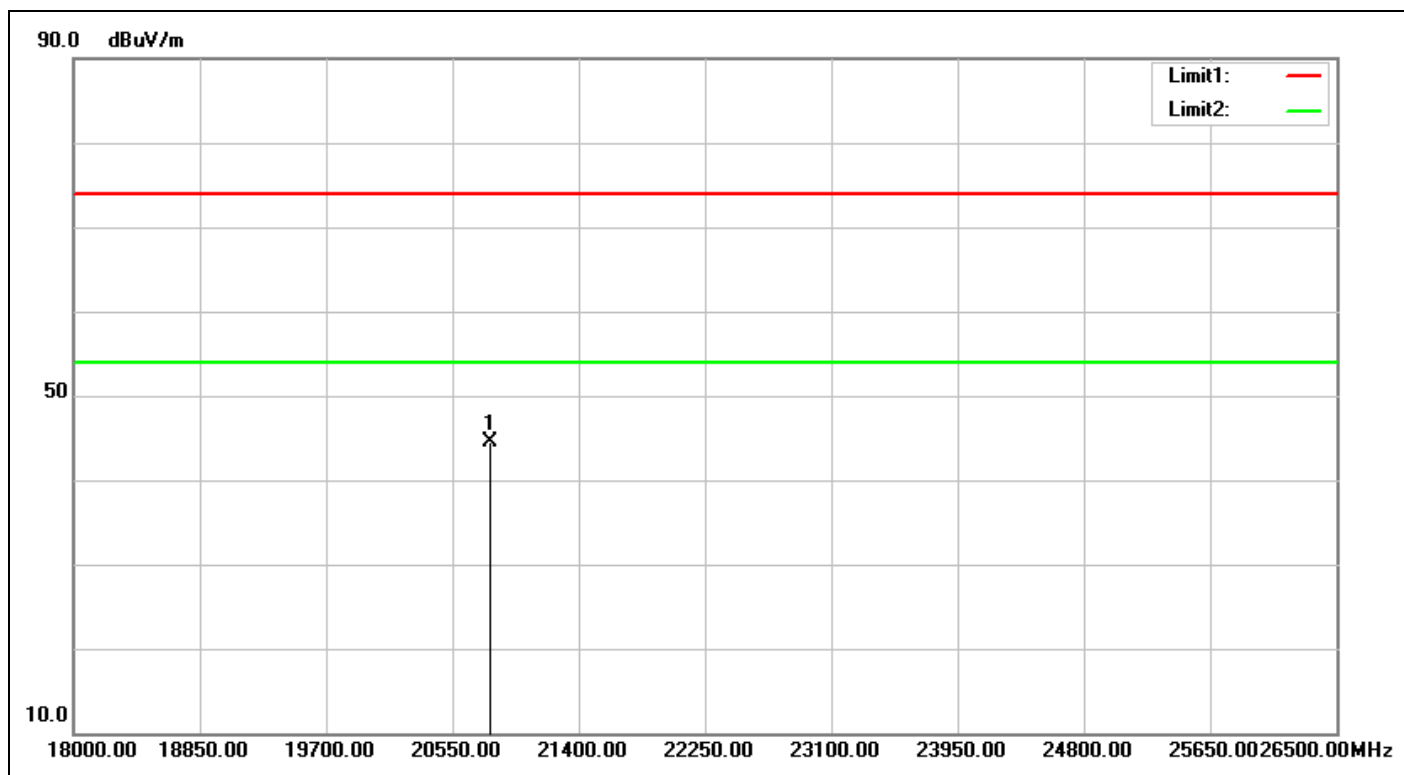
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: B-2437-TX

Remark: setting 7.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20941.000	4.31	39.27	43.58	74.00	-30.42	peak	100	698	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 21:11:41

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

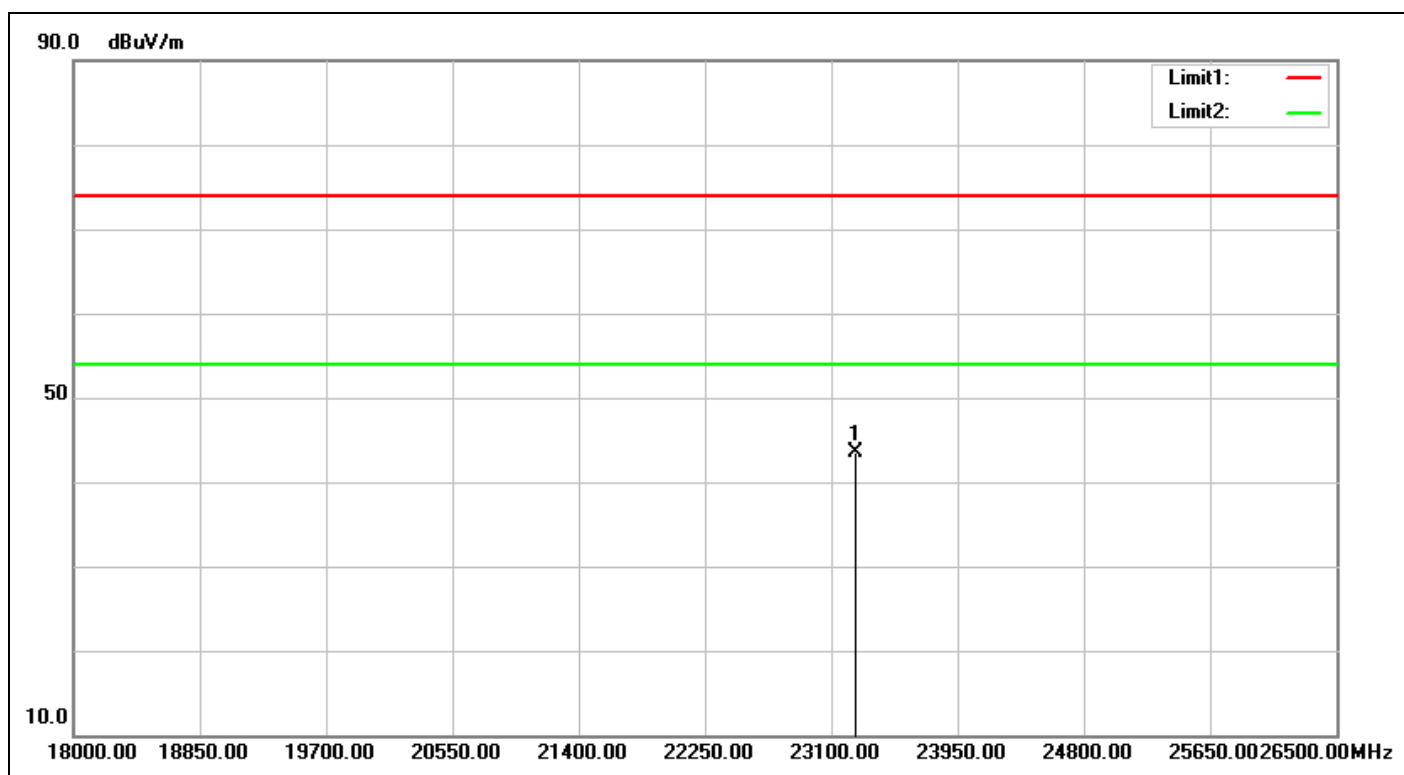
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: B-2437-TX

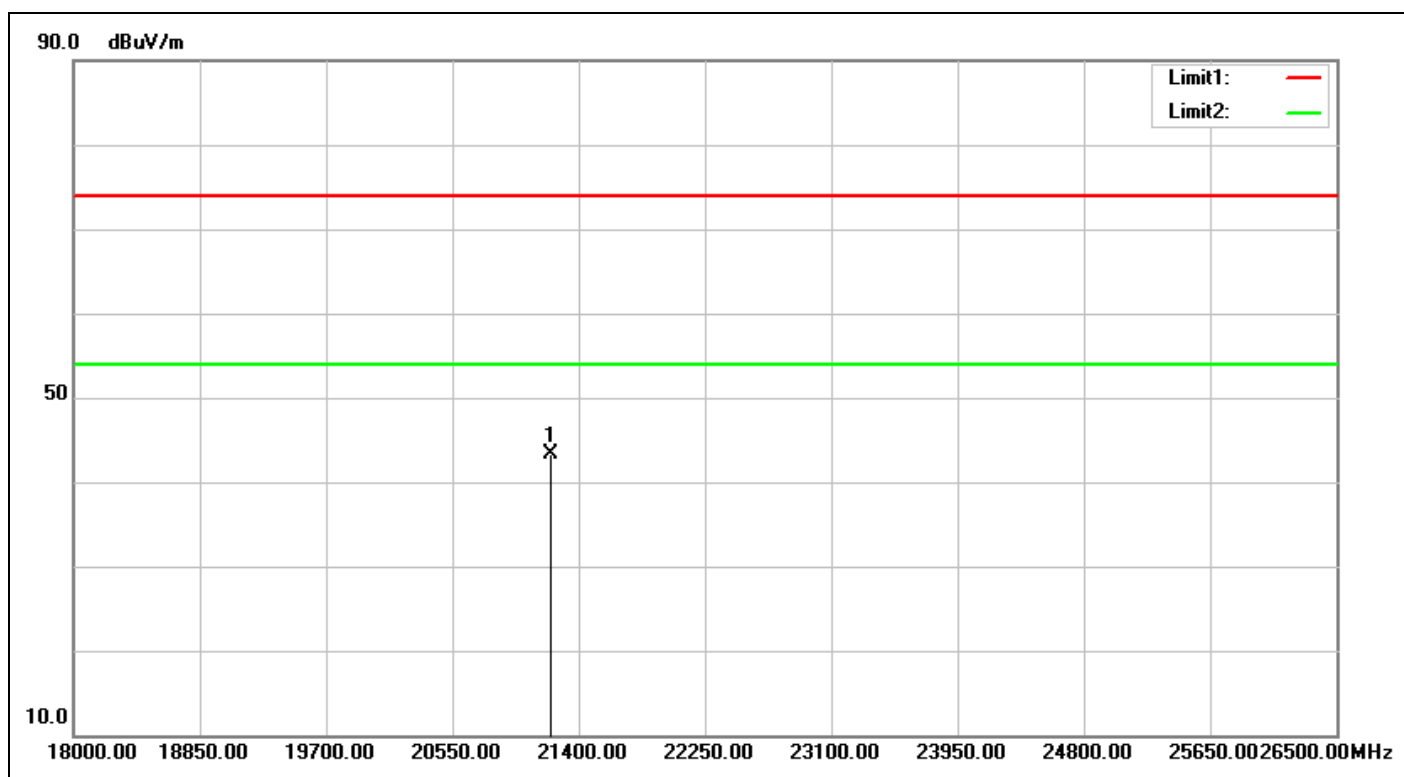
Remark: setting 7.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20805.000	4.33	40.09	44.42	74.00	-29.58	peak	100	254	



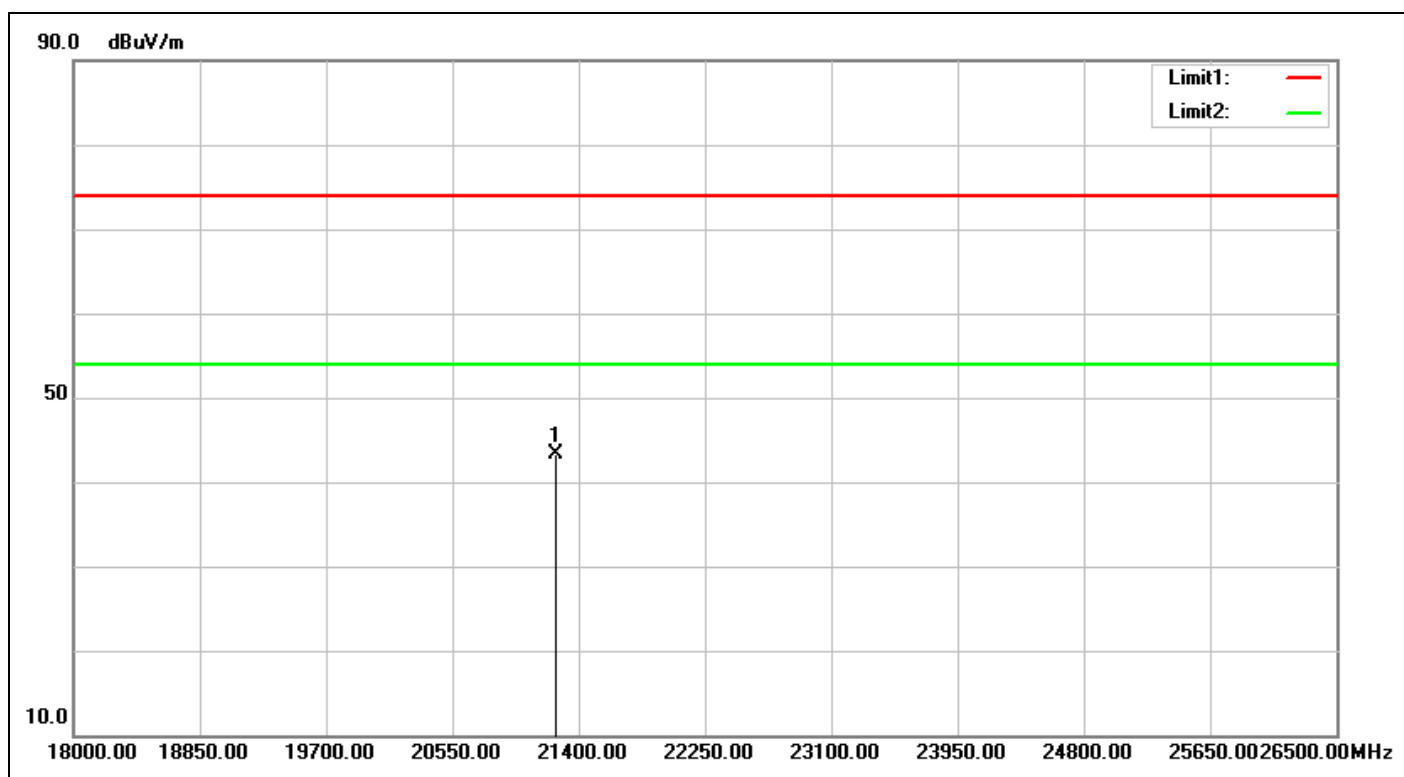
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 21:12:27
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2462-TX		
Remark:	setting 5.75db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	23261.500	5.25	38.31	43.56	74.00	-30.44	peak	100	150	



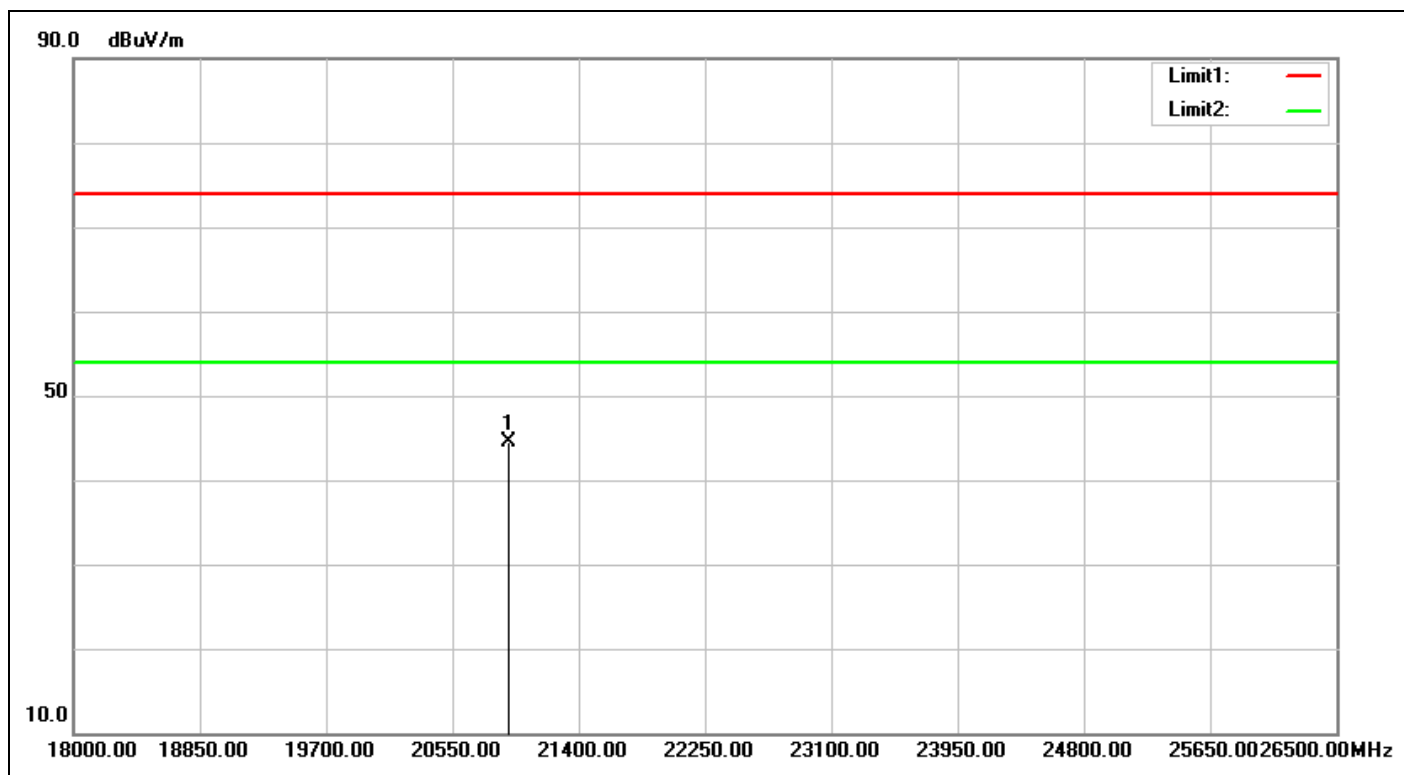
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 21:12:34
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2462-TX		
Remark:	setting 5.75db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	21213.000	4.61	38.67	43.28	74.00	-30.72	peak	100	42	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 21:13:34
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	G-2412-TX		
Remark:	setting -3.25db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	21247.000	4.66	38.57	43.23	74.00	-30.77	peak	100	188	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 21:13:40

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

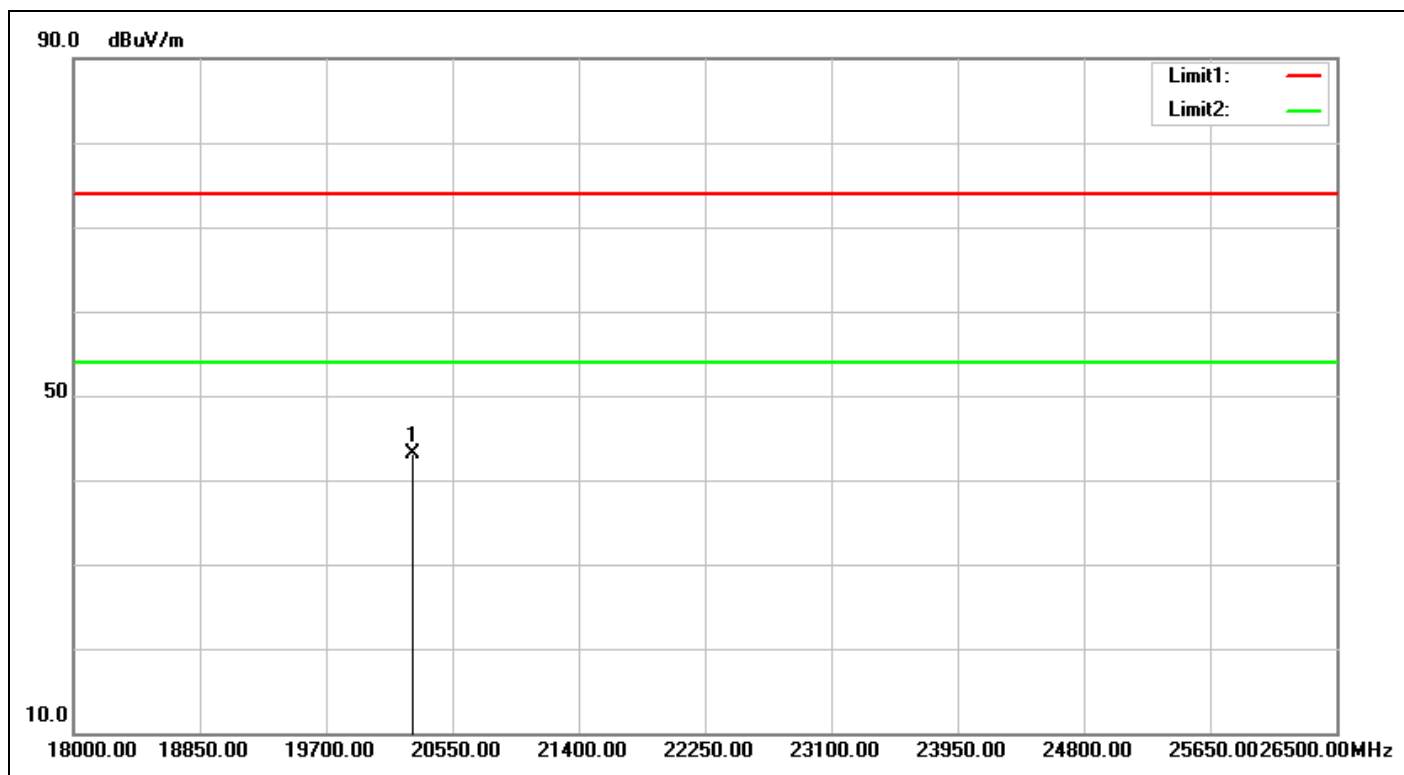
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: G-2412-TX

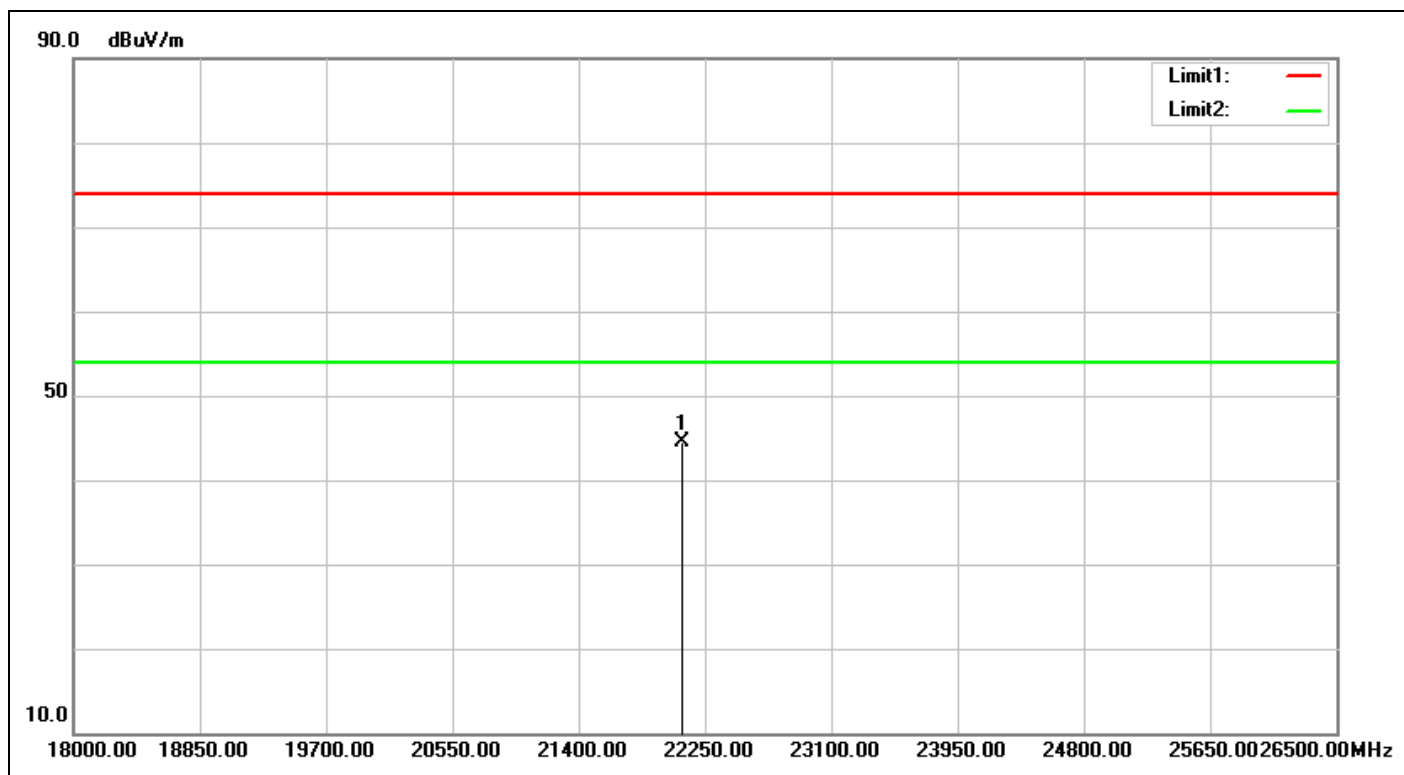
Remark: setting -3.25db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20932.500	4.30	40.13	44.43	74.00	-29.57	peak	100	222	



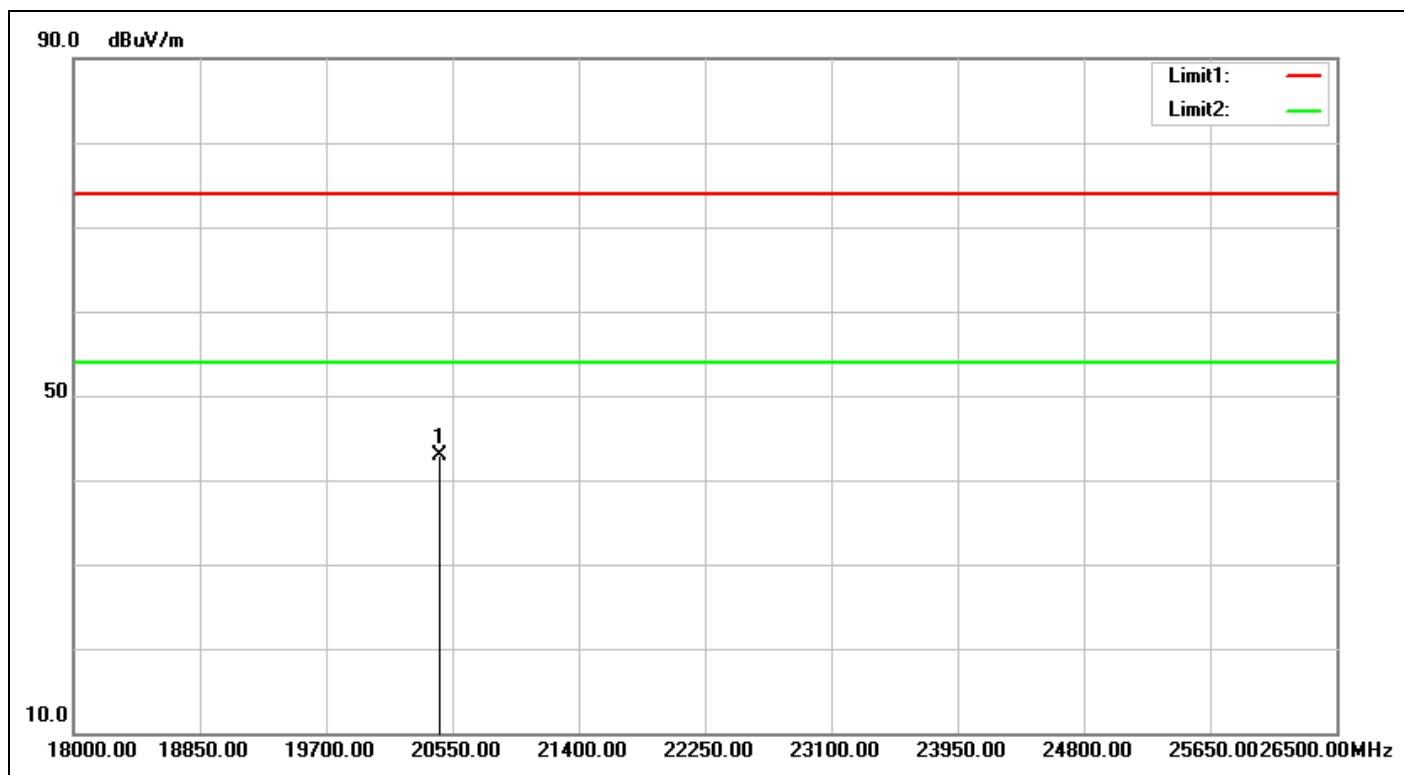
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 21:14:38
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	G-2437-TX		
Remark:	setting -3.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20286.500	4.49	38.59	43.08	74.00	-30.92	peak	100	320	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 21:14:45
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	G-2437-TX		
Remark:	setting -3.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	22097.000	4.52	40.02	44.54	74.00	-29.46	peak	100	2	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2019/2/21 21:15:30

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

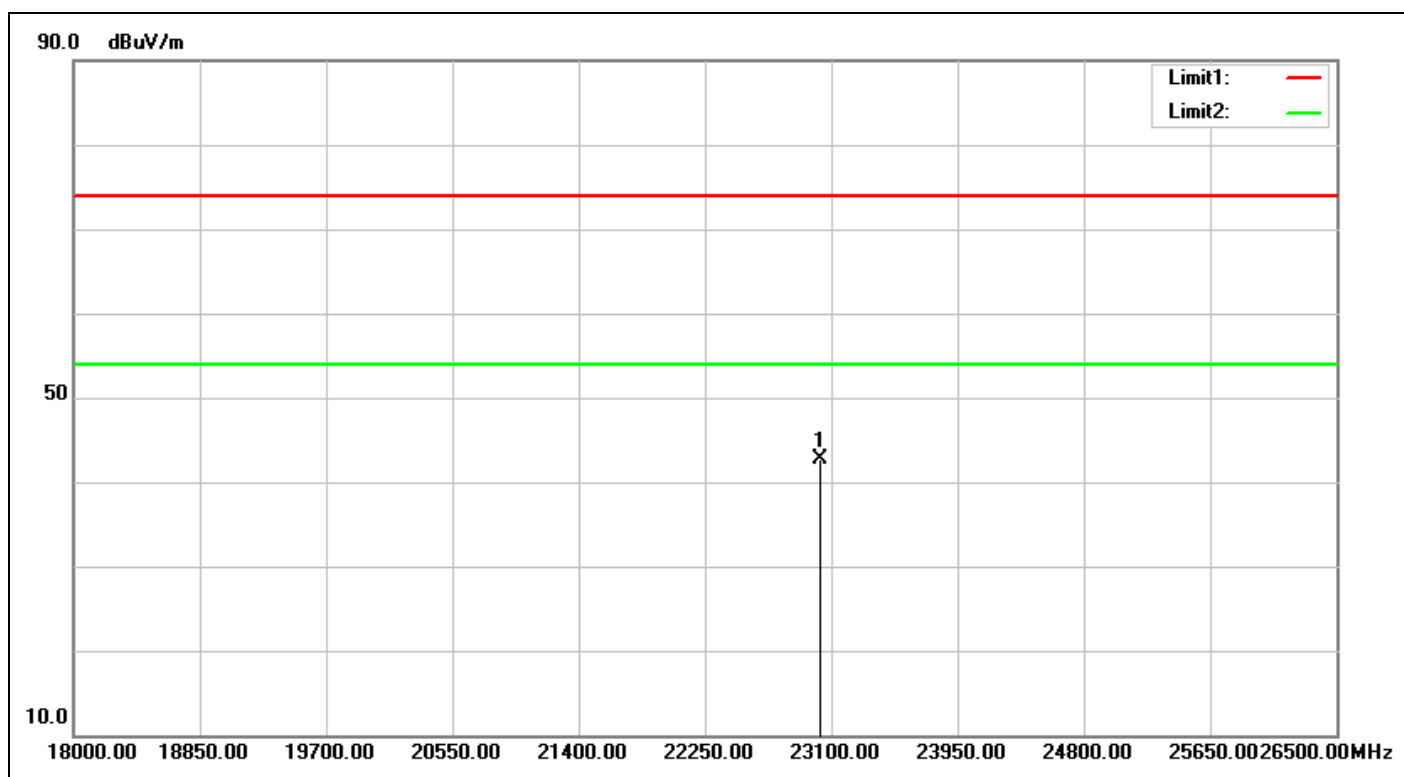
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: G-2462-TX

Remark: setting -6.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20465.000	4.23	38.75	42.98	74.00	-31.02	peak	100	98	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 21:15:37

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

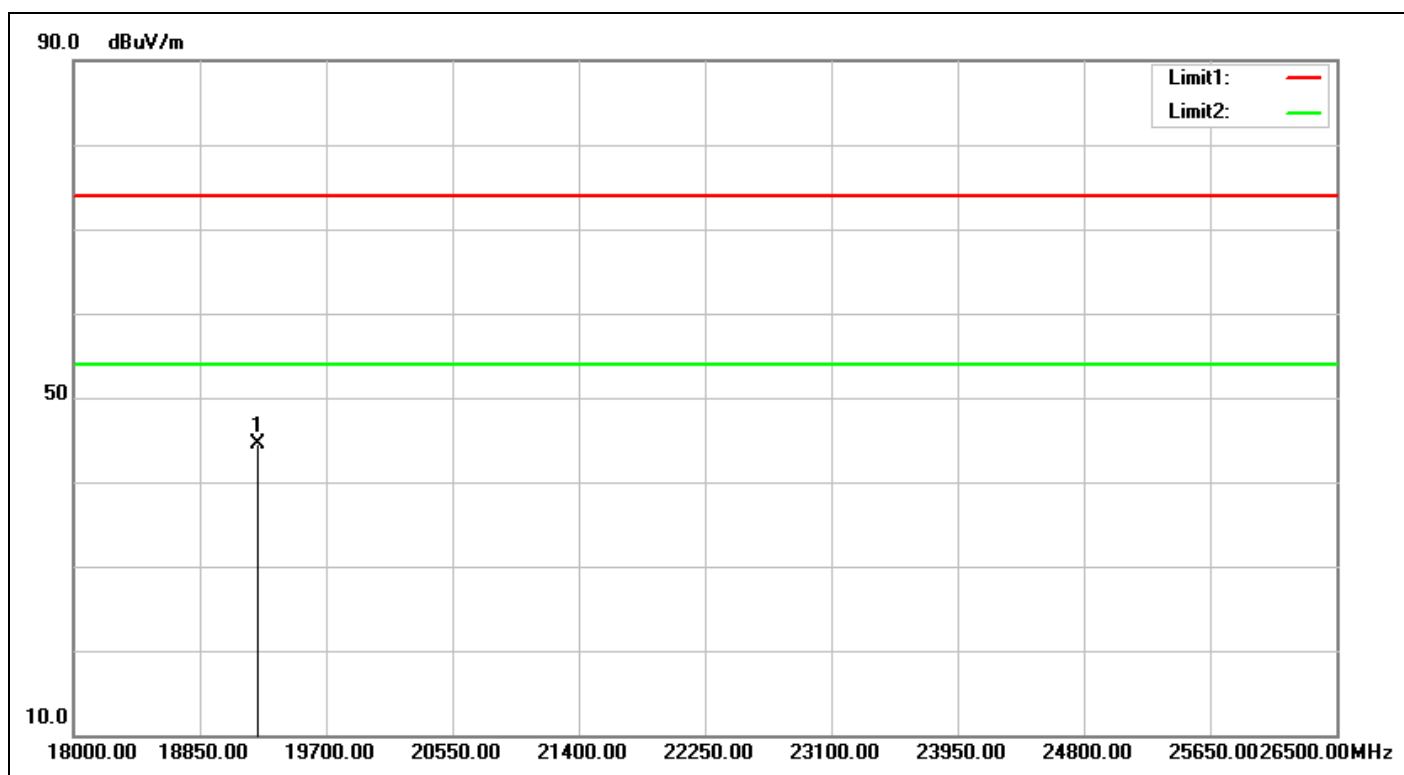
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: G-2462-TX

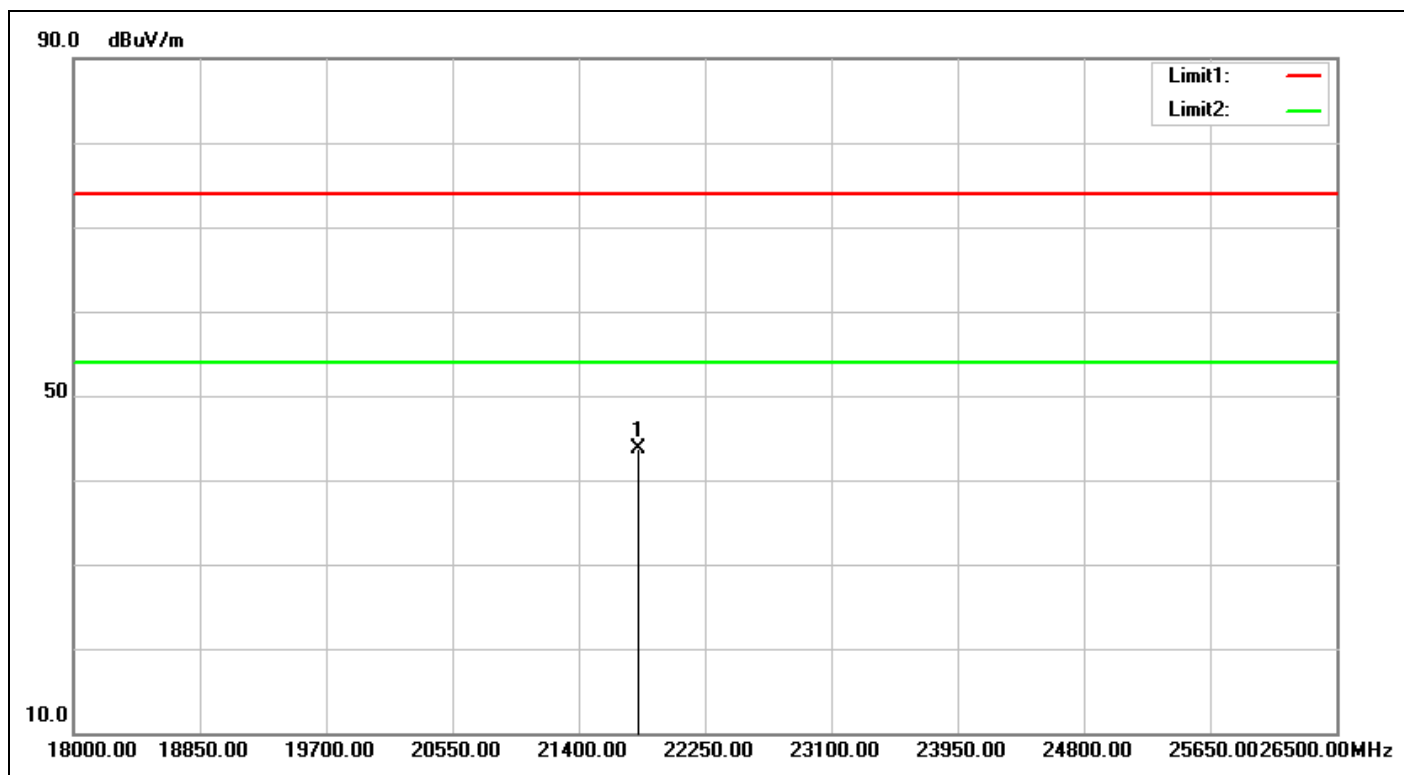
Remark: setting -6.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	23023.500	5.12	37.57	42.69	74.00	-31.31	peak	100	254	



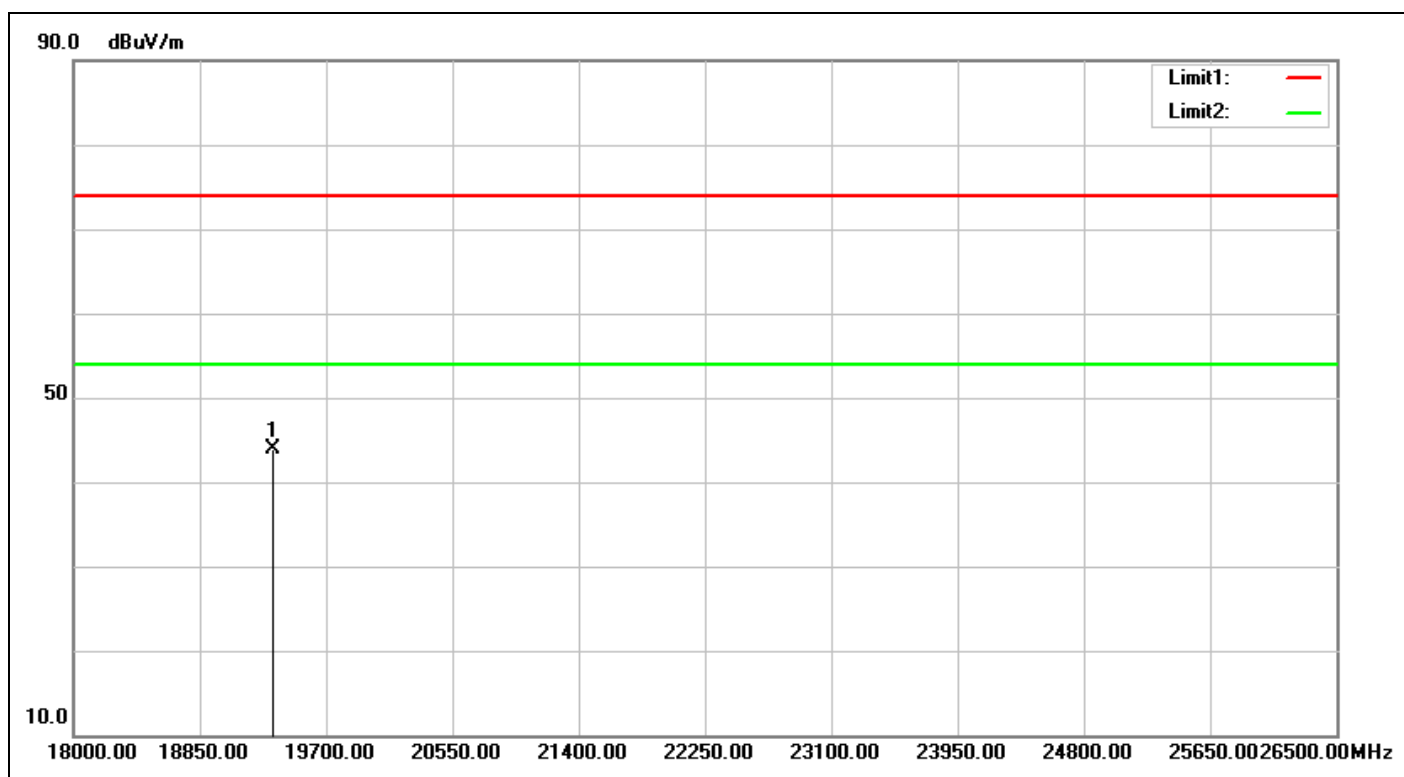
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 21:16:19
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	N20-2412-TX		
Remark:	setting -4.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19241.000	4.11	40.47	44.58	74.00	-29.42	peak	100	9	



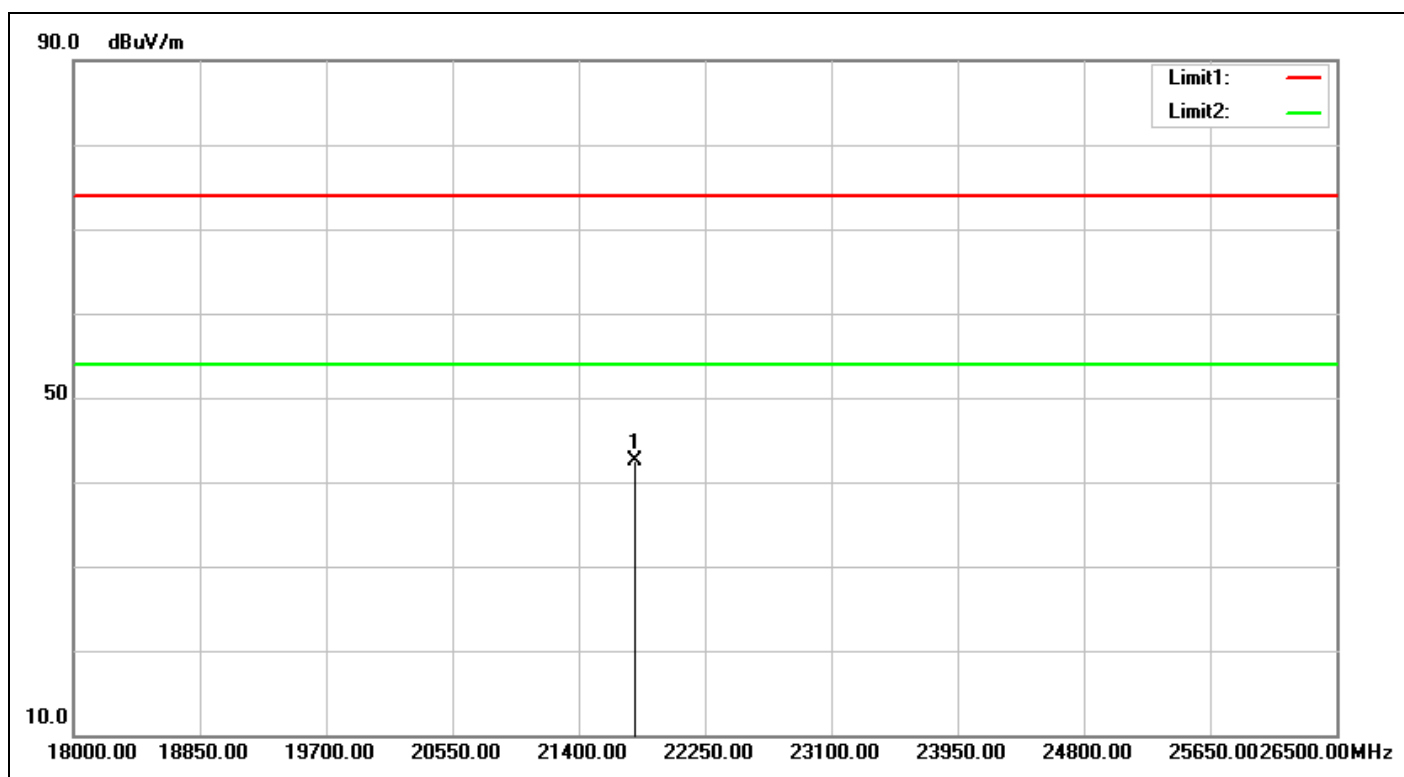
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 21:16:26
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	N20-2412-TX		
Remark:	setting -4.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	21799.500	4.31	39.31	43.62	74.00	-30.38	peak	100	354	



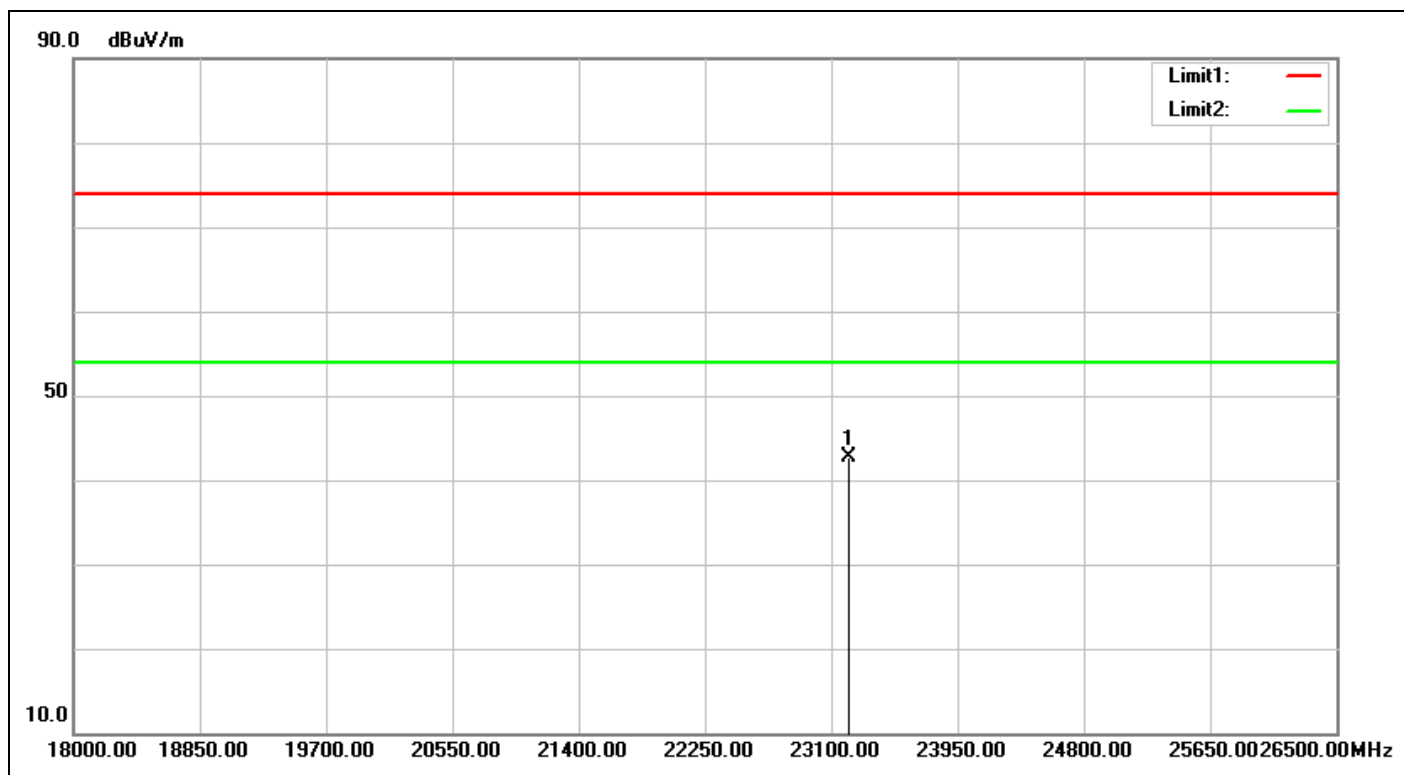
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 21:17:00
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	N20-2437-TX		
Remark:	setting -5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	19343.000	3.92	39.91	43.83	74.00	-30.17	peak	100	142	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 21:17:06
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	N20-2437-TX		
Remark:	setting -5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	21782.500	4.32	38.19	42.51	74.00	-31.49	peak	100	254	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2019/2/21 21:17:41

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

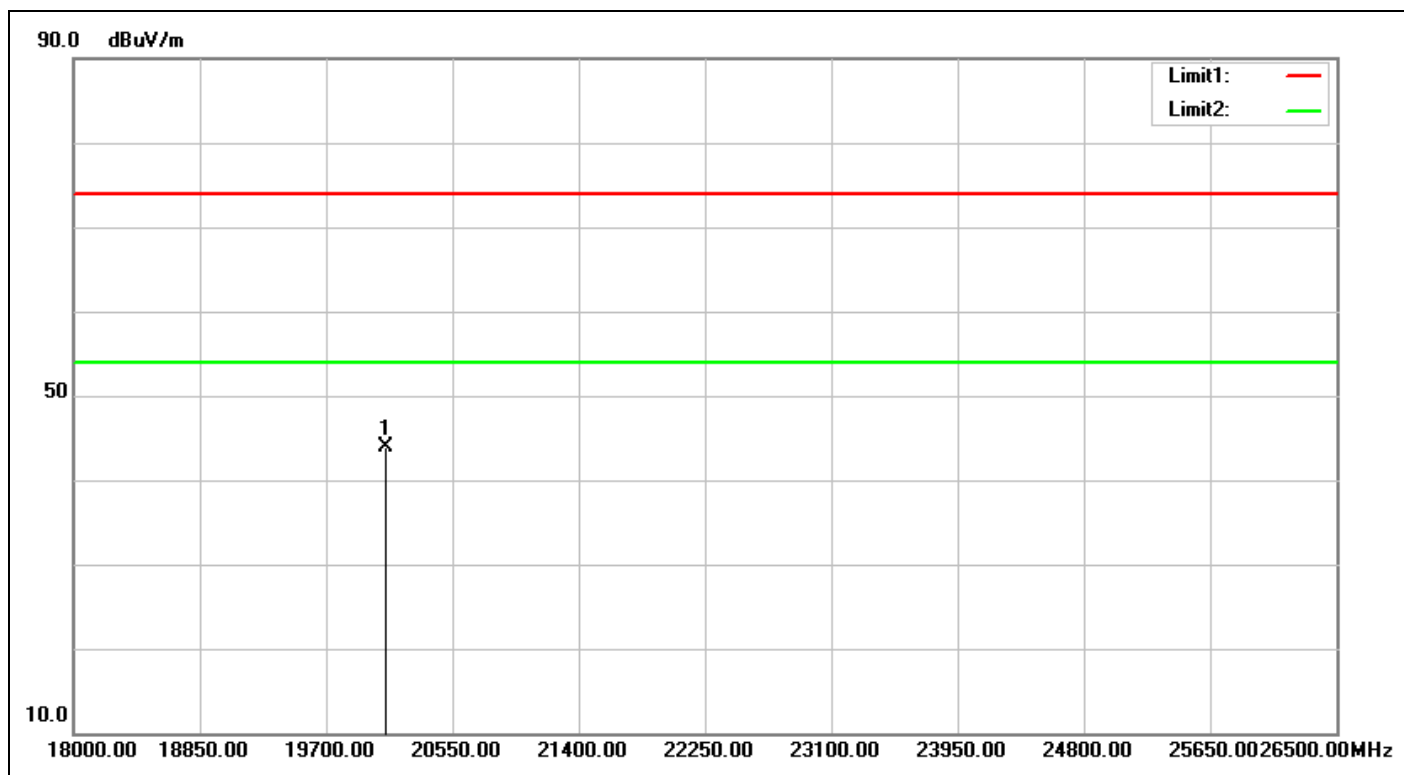
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: N20-2462-TX

Remark: setting -6.25db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	23219.000	5.22	37.39	42.61	74.00	-31.39	peak	100	142	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 21:17:47
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	N20-2462-TX		
Remark:	setting -6.25db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	20099.500	4.13	39.68	43.81	74.00	-30.19	peak	100	130	

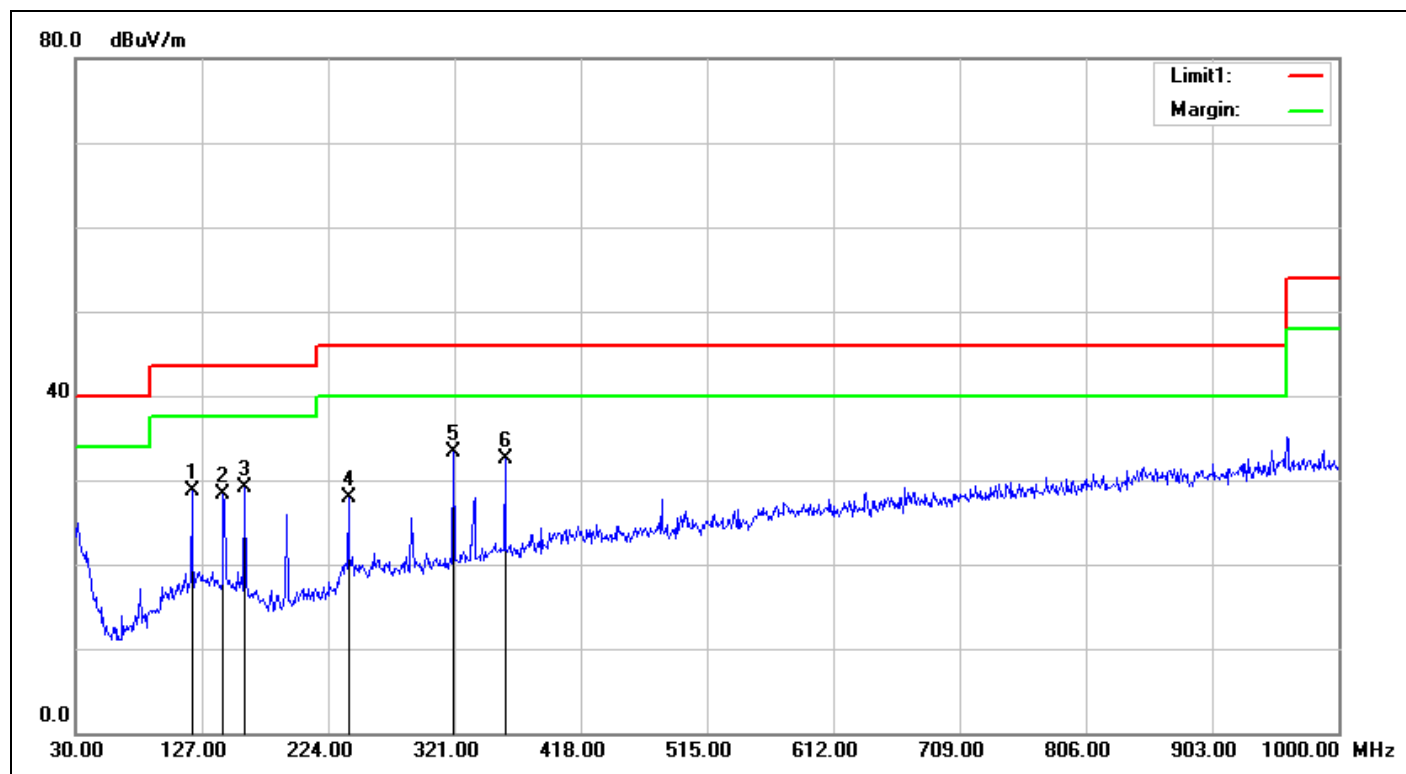
Spurious Emissions, TX Mode, 30M-1G



TUV Rheinland Taiwan Ltd.

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

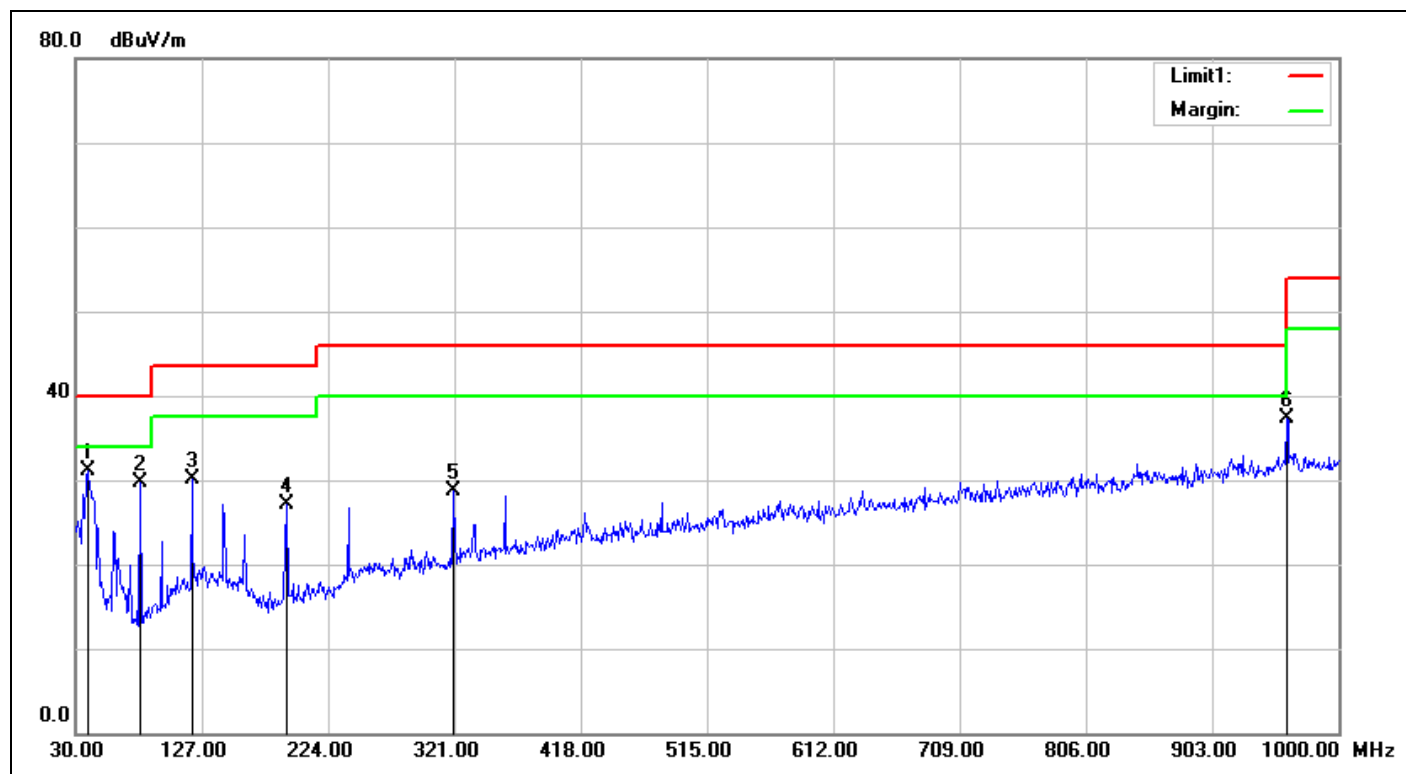
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 21:27:54
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-TX		
Remark:	setting 7.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	119.2400	-7.46	36.16	28.70	43.50	-14.80	QP	100	82	
2	143.4900	-7.02	35.41	28.39	43.50	-15.11	QP	100	256	
3	159.9800	-7.94	36.98	29.04	43.50	-14.46	QP	100	256	
4	239.5200	-6.78	34.66	27.88	46.00	-18.12	QP	100	66	
5	320.0299	-4.36	37.63	33.27	46.00	-12.73	QP	100	98	
6	359.8000	-3.18	35.60	32.42	46.00	-13.58	QP	100	27	

Spurious Emissions, TX Mode, 9k-30M



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 21:28:48
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-TX		
Remark:	setting 7.5db		

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	36.62	31.06	40.00	-8.94	QP	100	301	
2	79.4700	-12.00	41.74	29.74	40.00	-10.26	QP	100	86	
3	119.2400	-7.46	37.55	30.09	43.50	-13.41	QP	100	155	
4	191.9900	-9.30	36.36	27.06	43.50	-16.44	QP	100	70	
5	320.0300	-4.36	33.10	28.74	46.00	-17.26	QP	100	175	
6	960.2300	5.94	31.46	37.40	54.00	-16.60	QP	100	93	

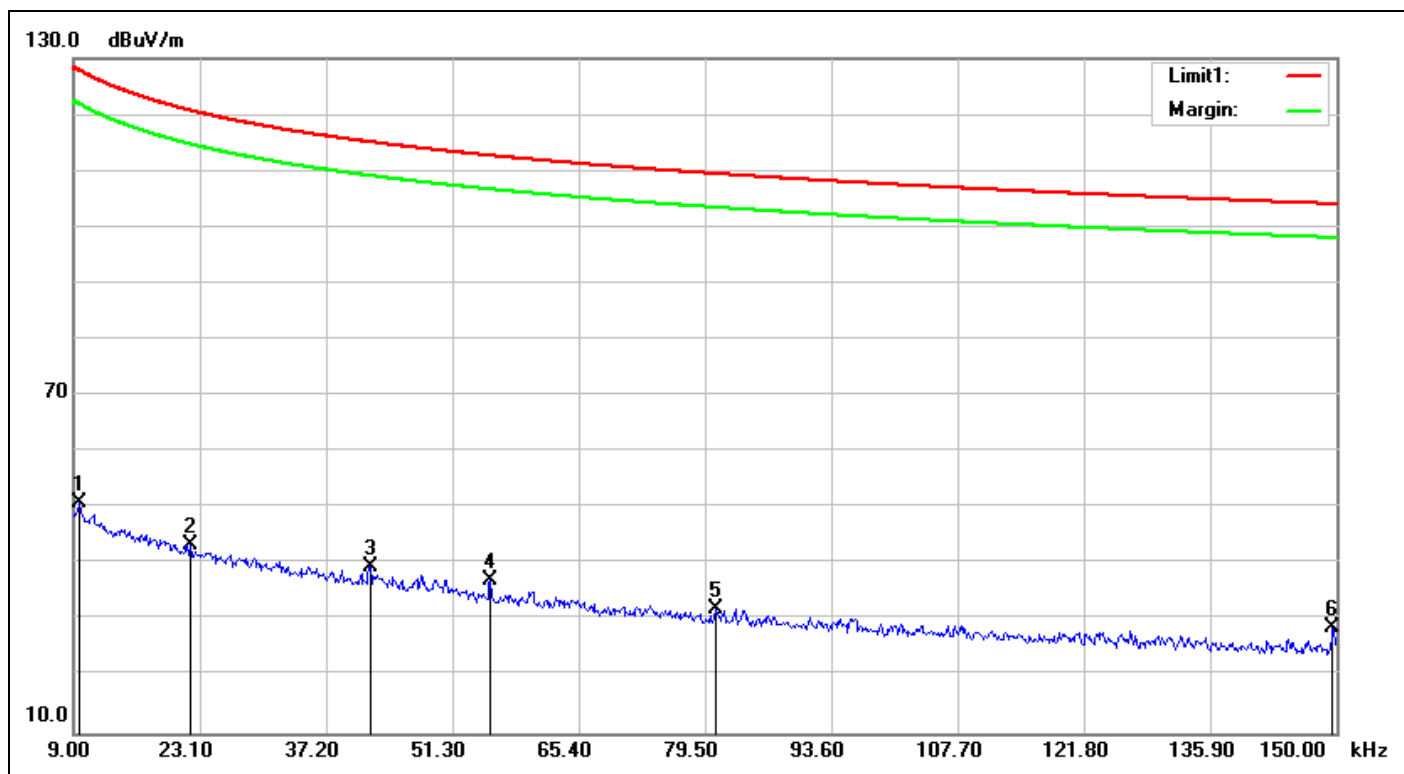
Spurious Emissions, TX Mode, 9k-30M



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.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC2.8_9k-1G_3m

Ant. Polarization:

Test item: Radiation Emission

Test Time: 2019/2/21 21:36:22

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

Model No.: ESP-12F

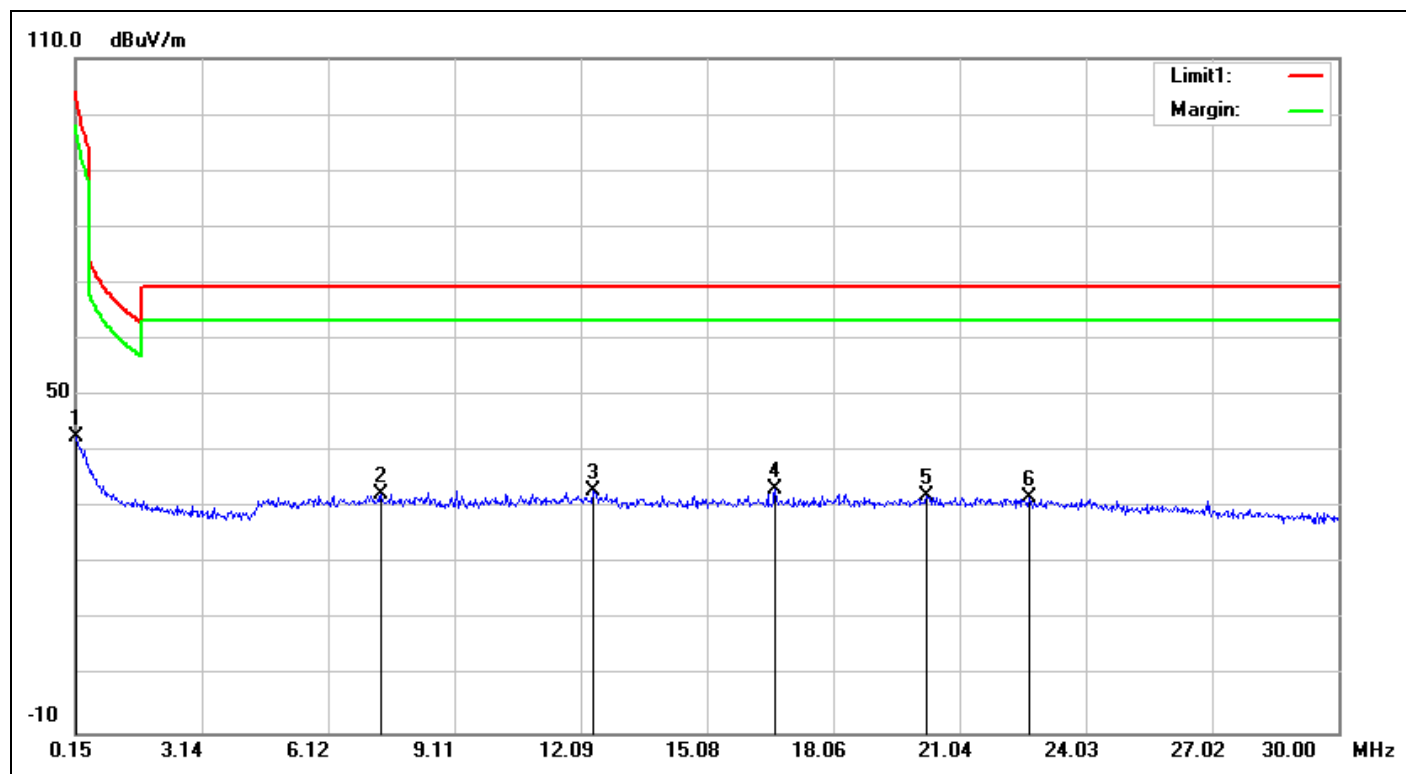
Test Engineer: Curry Chen

Test Mode: B-2437-TX

Remark: setting 7.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0097	18.46	32.36	50.82	127.85	-77.03	QP	100	0	
2	0.0219	19.00	24.42	43.42	120.78	-77.36	QP	100	207	
3	0.0421	19.08	20.37	39.45	115.11	-75.66	QP	100	203	
4	0.0555	18.85	18.26	37.11	112.71	-75.60	QP	100	275	
5	0.0807	18.55	13.47	32.02	109.46	-77.44	QP	100	75	
6	0.1495	18.35	10.51	28.86	104.11	-75.25	QP	100	0	

Spurious Emissions, TX Mode, 9k-30M



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC2.8_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2019/2/21 21:39:14
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-TX		
Remark:	setting 7.5db		

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	24.26	42.63	102.50	-59.87	QP	100	111	
2	7.3737	19.93	12.41	32.34	69.50	-37.16	QP	100	167	
3	12.3885	20.72	12.20	32.92	69.50	-36.58	QP	100	33	
4	16.6869	21.22	12.01	33.23	69.50	-36.27	QP	100	187	
5	20.2689	21.62	10.42	32.04	69.50	-37.46	QP	100	203	
6	22.6867	21.70	10.04	31.74	69.50	-37.76	QP	100	141	

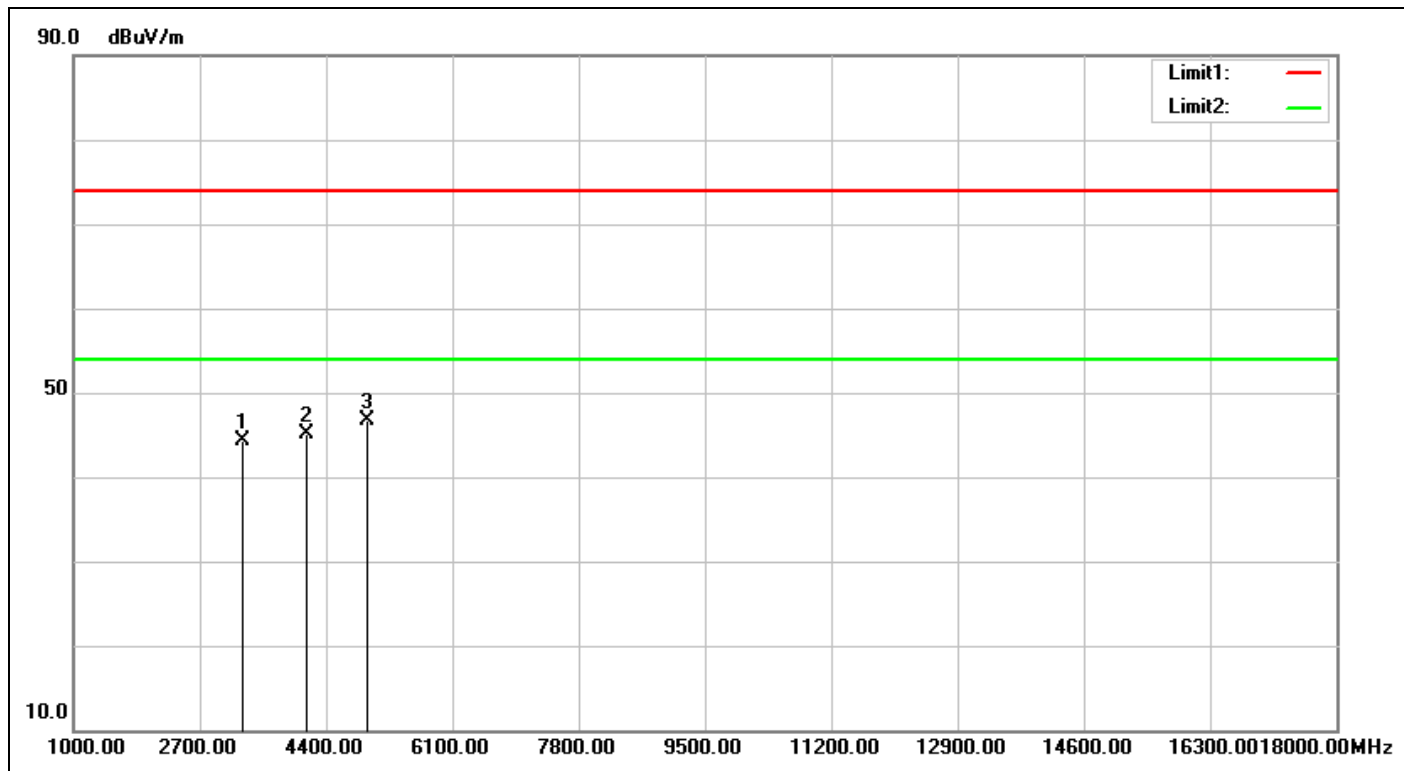
Spurious Emissions, RX Mode, 1-18G



TUV Rheinland Taiwan Ltd.

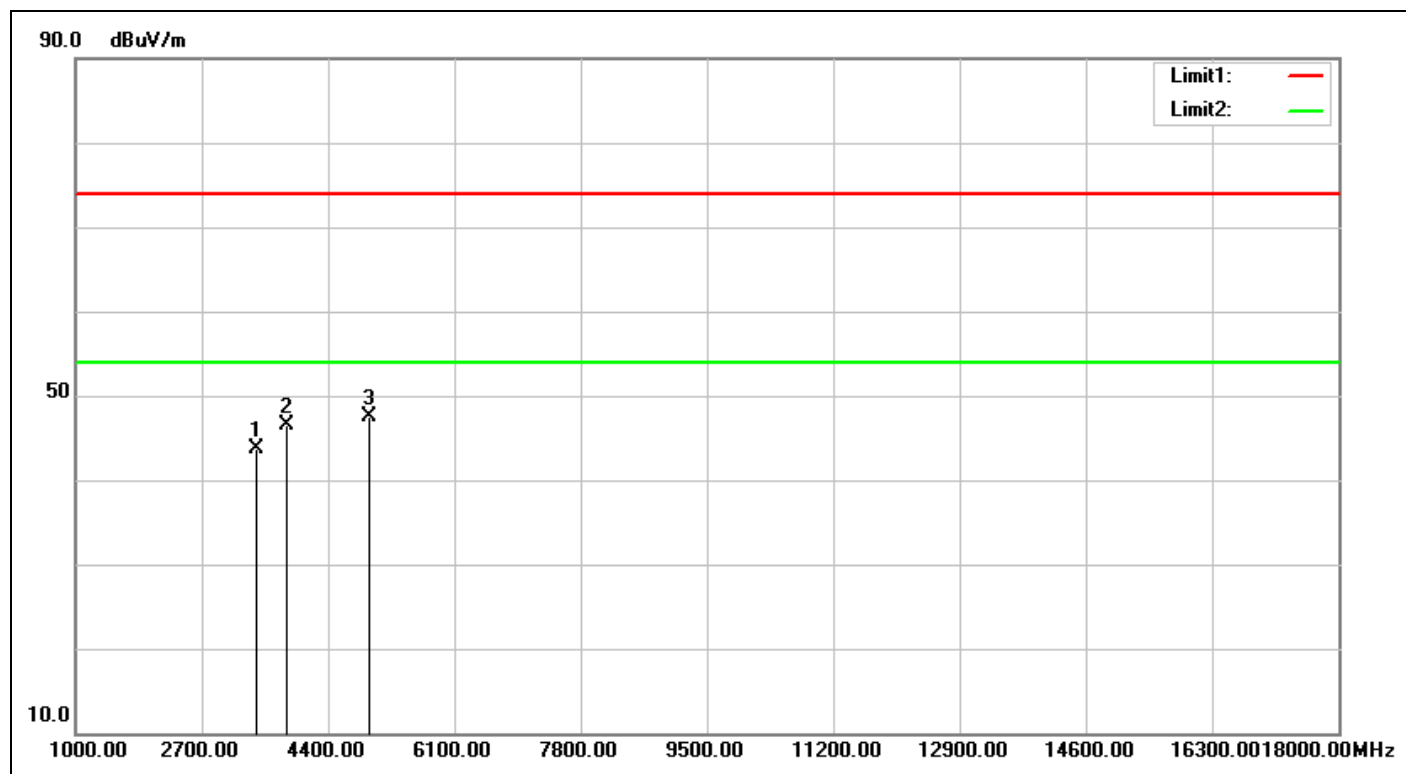
11F., No.758, Sec.4 Bade Road. Songshan Dist, Taipei City 105

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



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 20:43:59
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-RX		
Remark:	setting 7.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	3278.000	-7.04	51.42	44.38	74.00	-29.62	peak	100	116	
2	4145.000	-5.19	50.23	45.04	74.00	-28.96	peak	100	154	
3	4961.000	-3.24	49.85	46.61	74.00	-27.39	peak	100	126	



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Above 1G PEAK	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 20:44:52
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-RX		
Remark:	setting 7.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	3431.000	-6.92	50.60	43.68	74.00	-30.32	peak	100	121	
2	3839.000	-6.11	52.57	46.46	74.00	-27.54	peak	100	258	
3	4944.000	-3.25	50.78	47.53	74.00	-26.47	peak	100	271	

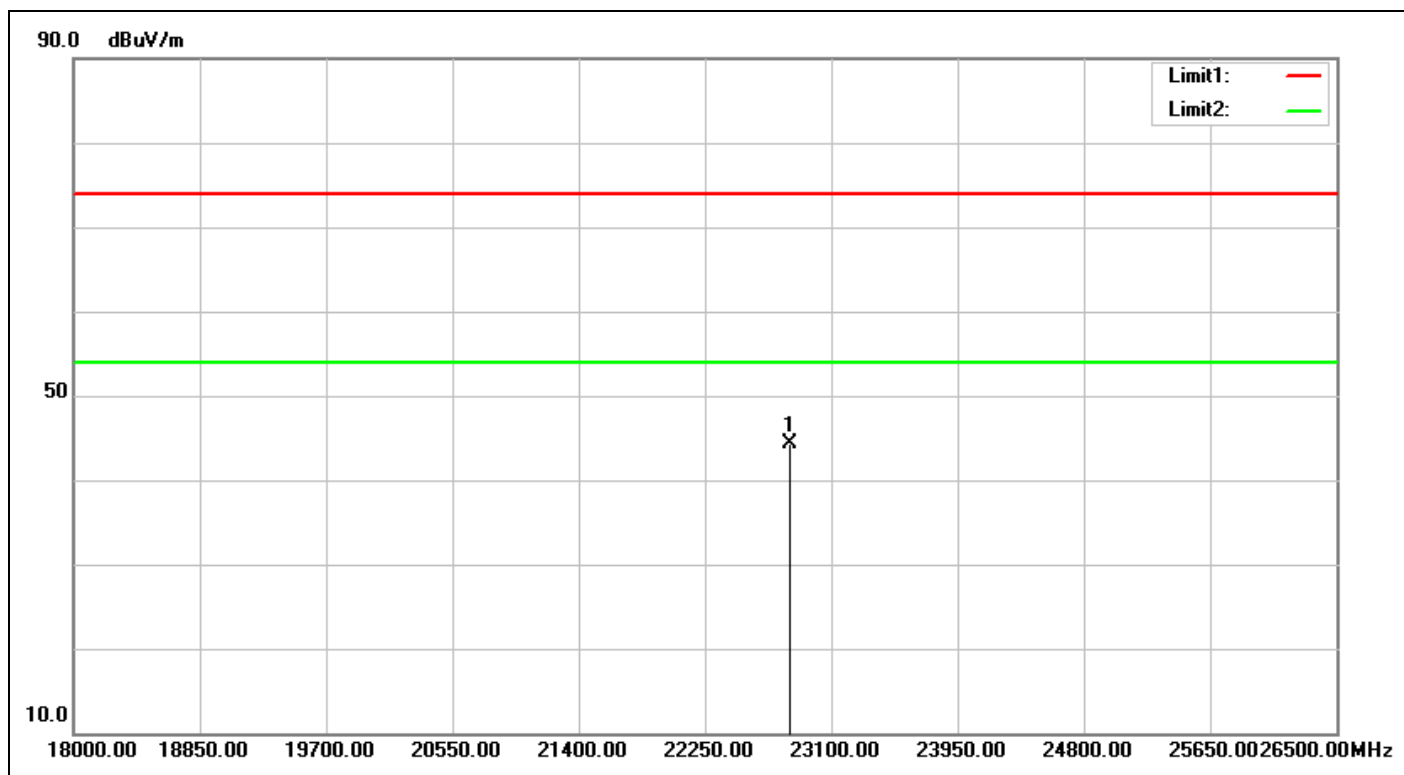
Spurious Emissions, RX Mode, 18-26G



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.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Horizontal

Test item: Radiation Emission

Test Time: 2019/2/21 21:18:25

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

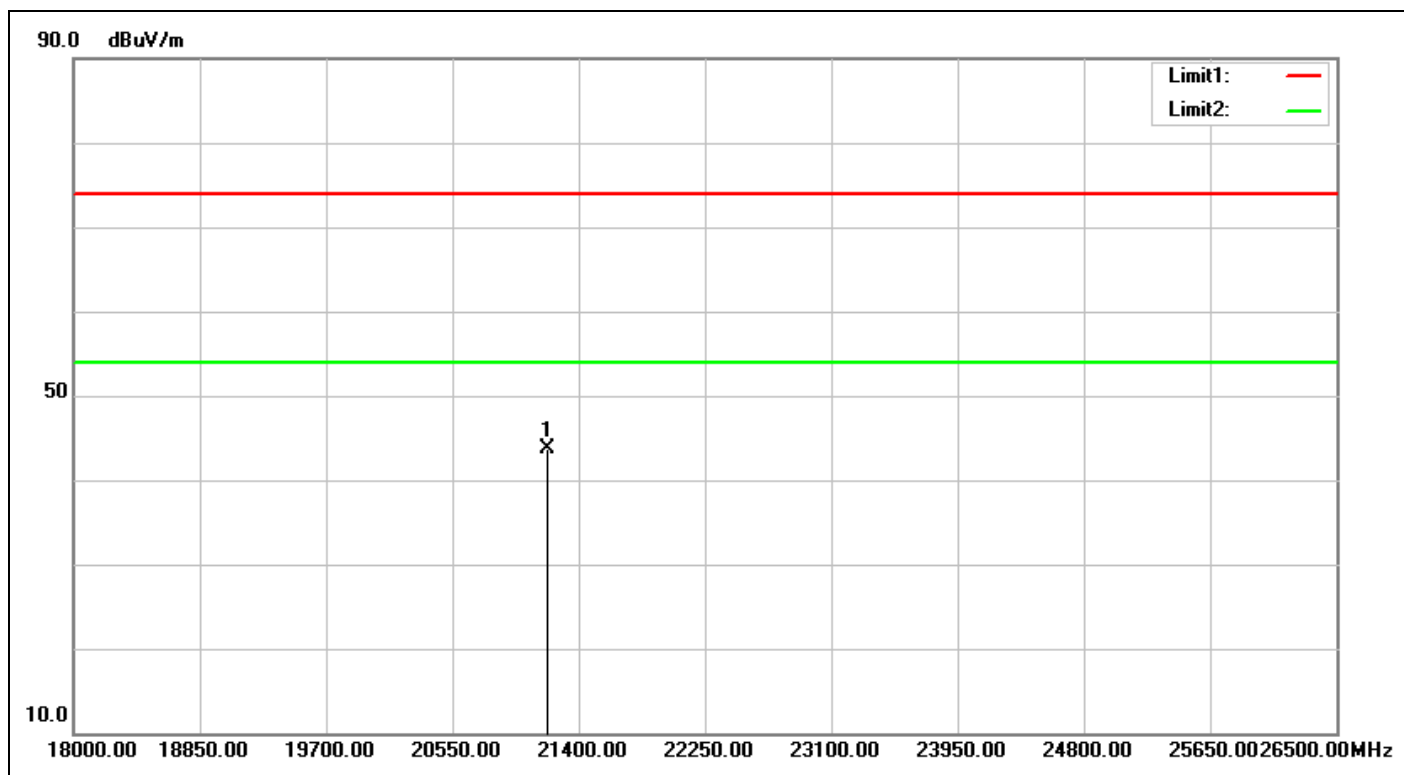
Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: B-2437-RX

Remark: setting 7.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	22819.500	4.84	39.38	44.22	74.00	-29.78	peak	100	333	



Service No.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC Above 1G PEAK

Ant. Polarization: Vertical

Test item: Radiation Emission

Test Time: 2019/2/21 21:18:32

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

Model No.: ESP-12F

Test Engineer: Curry Chen

Test Mode: B-2437-RX

Remark: setting 7.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	21187.500	4.57	39.17	43.74	74.00	-30.26	peak	100	14	

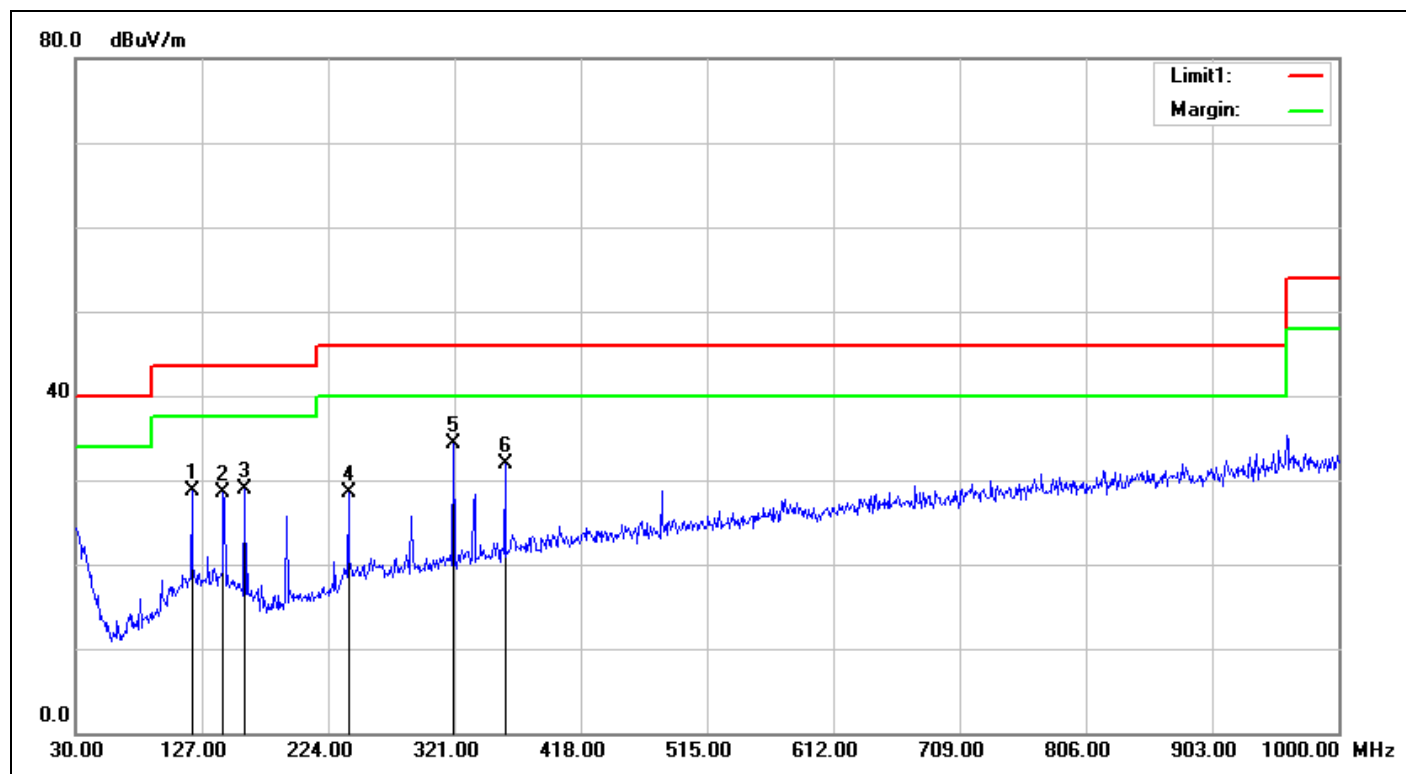
Spurious Emissions, RX Mode, 30M-1G



TUV Rheinland Taiwan Ltd.

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

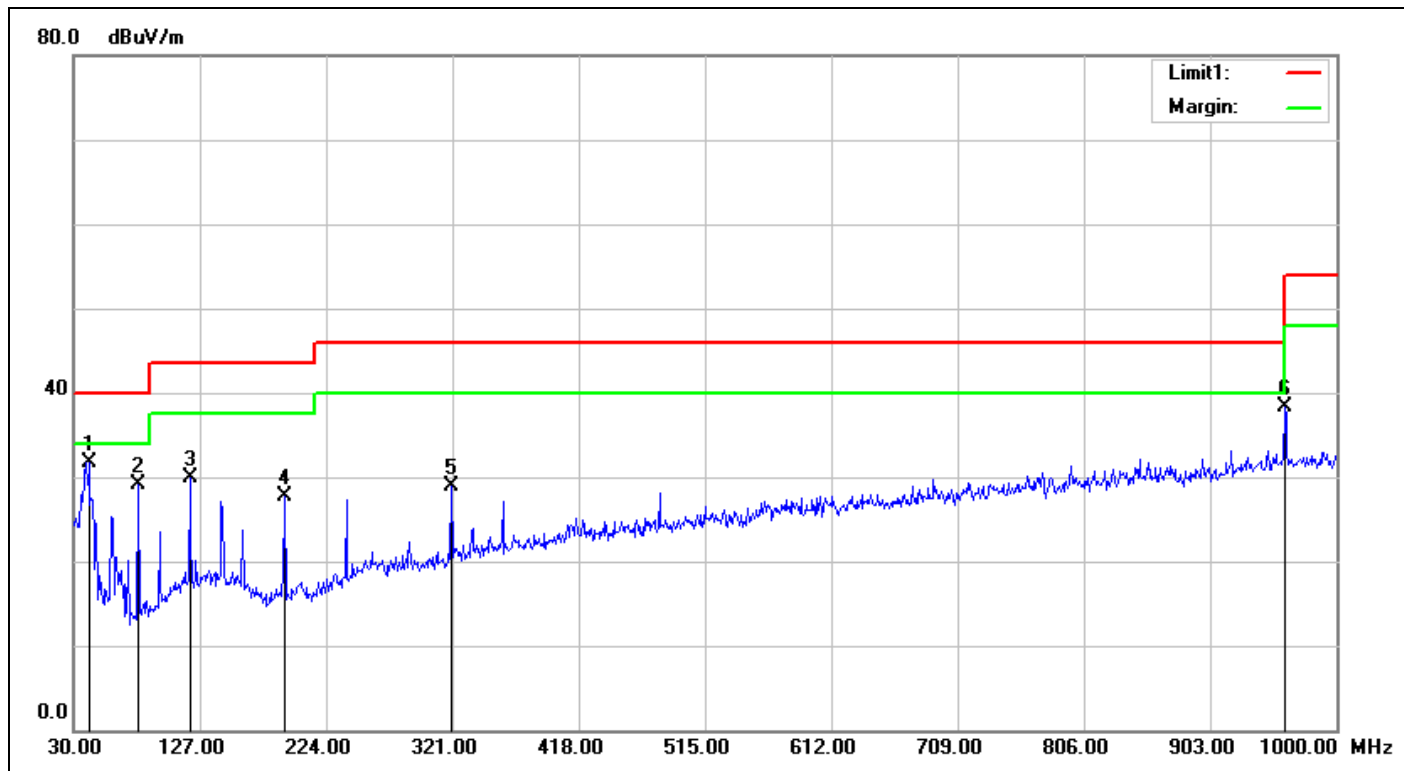
Tel:+886-2172-7000 fax:+886-2528-0018



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Class B 3M Radiation	Ant. Polarization:	Horizontal
Test item:	Radiation Emission	Test Time:	2019/2/21 21:30:19
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-RX		
Remark:	setting 7.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	119.2400	-7.46	36.15	28.69	43.50	-14.81	QP	100	98	
2	143.4900	-7.02	35.57	28.55	43.50	-14.95	QP	100	233	
3	159.9800	-7.94	36.82	28.88	43.50	-14.62	QP	100	229	
4	239.5200	-6.78	35.22	28.44	46.00	-17.56	QP	100	72	
5	320.0299	-4.36	38.57	34.21	46.00	-11.79	QP	100	203	
6	359.8000	-3.18	35.06	31.88	46.00	-14.12	QP	100	49	

Spurious Emissions, RX Mode, 30M-1G



Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC Class B 3M Radiation	Ant. Polarization:	Vertical
Test item:	Radiation Emission	Test Time:	2019/2/21 21:31:12
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%)	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-RX		
Remark:	setting 7.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	41.6400	-6.75	38.42	31.67	40.00	-8.33	QP	100	5	
2	79.4700	-12.00	41.09	29.09	40.00	-10.91	QP	100	202	
3	119.2400	-7.46	37.37	29.91	43.50	-13.59	QP	100	153	
4	191.9900	-9.30	37.01	27.71	43.50	-15.79	QP	100	78	
5	320.0300	-4.36	33.33	28.97	46.00	-17.03	QP	100	153	
6	960.2300	5.94	32.30	38.24	54.00	-15.76	QP	100	94	

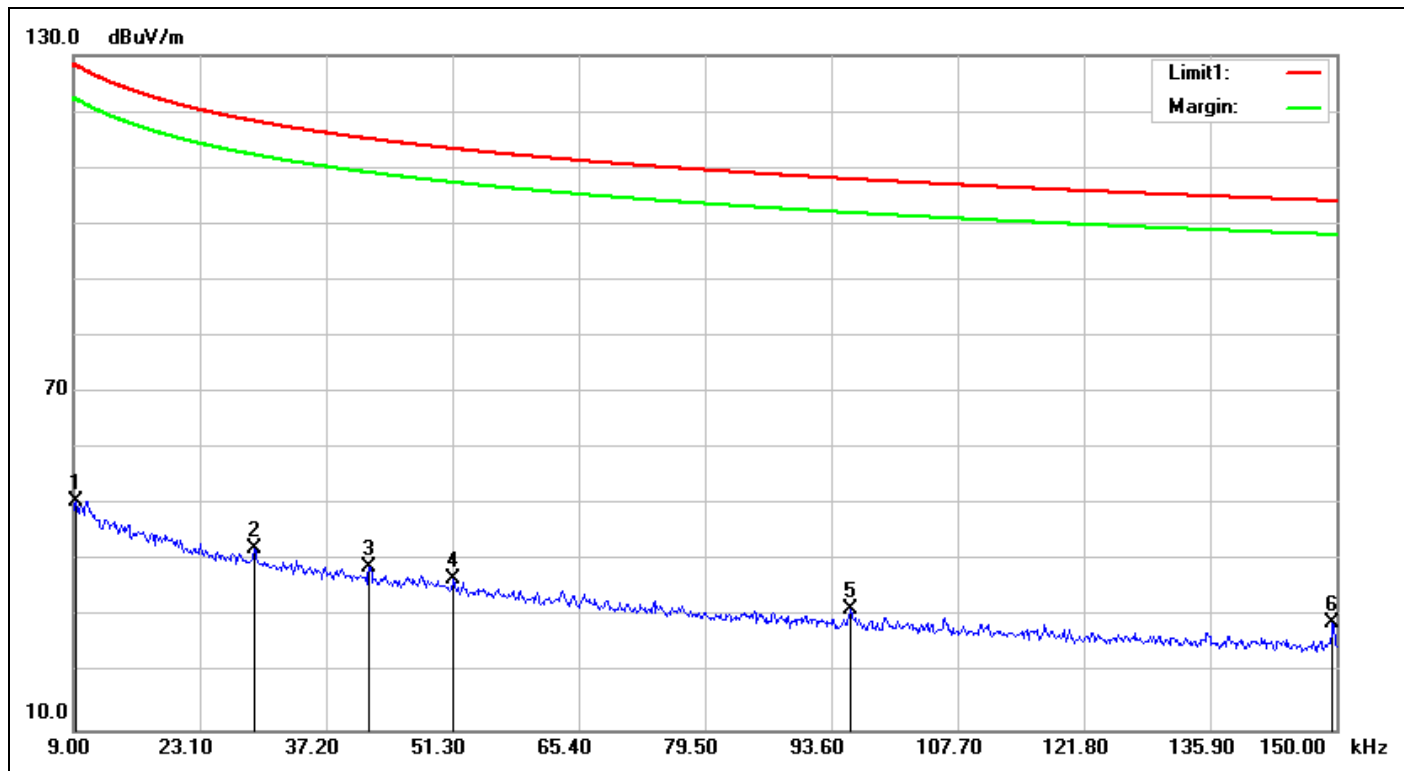
Spurious Emissions, RX Mode, 9K-30M



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.: 238100076(ESP-12F)_NCC_WIFI

Test Distance: 3m

Test Standard: NCC2.8_9k-1G_3m

Ant. Polarization:

Test item: Radiation Emission

Test Time: 2019/2/21 21:37:15

Applicant: 台灣海克斯康

Test Rating: DC 5V

Product: WiFi 模組

Temp.(°C)/Hum.(%): 20(°C)/69%

Model No.: ESP-12F

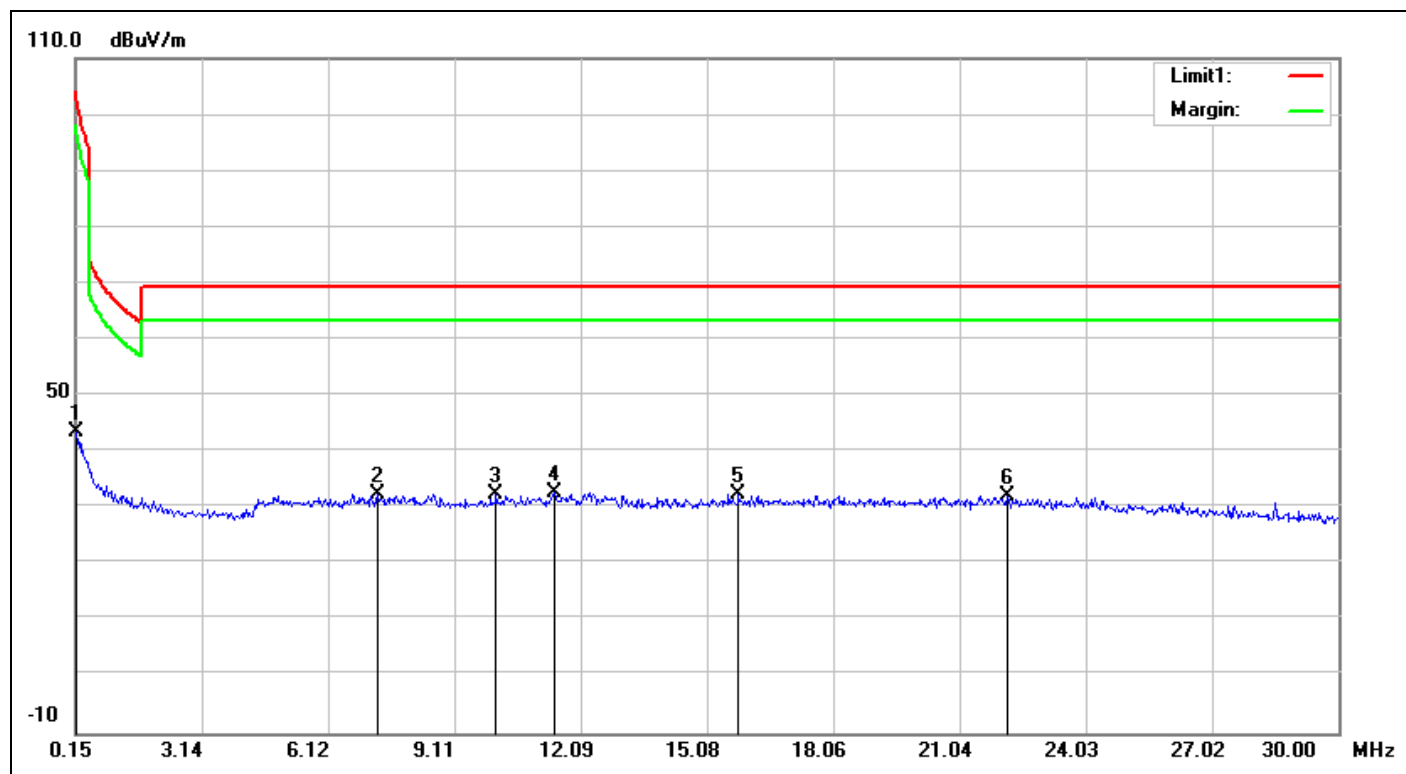
Test Engineer: Curry Chen

Test Mode: B-2437-RX

Remark: setting 7.5db

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.0092	18.36	32.37	50.73	128.31	-77.58	QP	100	301	
2	0.0291	19.28	22.92	42.20	118.31	-76.11	QP	100	45	
3	0.0419	19.08	19.96	39.04	115.15	-76.11	QP	100	10	
4	0.0514	18.90	17.95	36.85	113.37	-76.52	QP	100	105	
5	0.0957	18.38	13.09	31.47	107.98	-76.51	QP	100	45	
6	0.1495	18.35	10.68	29.03	104.11	-75.08	QP	100	118	

Spurious Emissions, RX Mode, 30M-1G



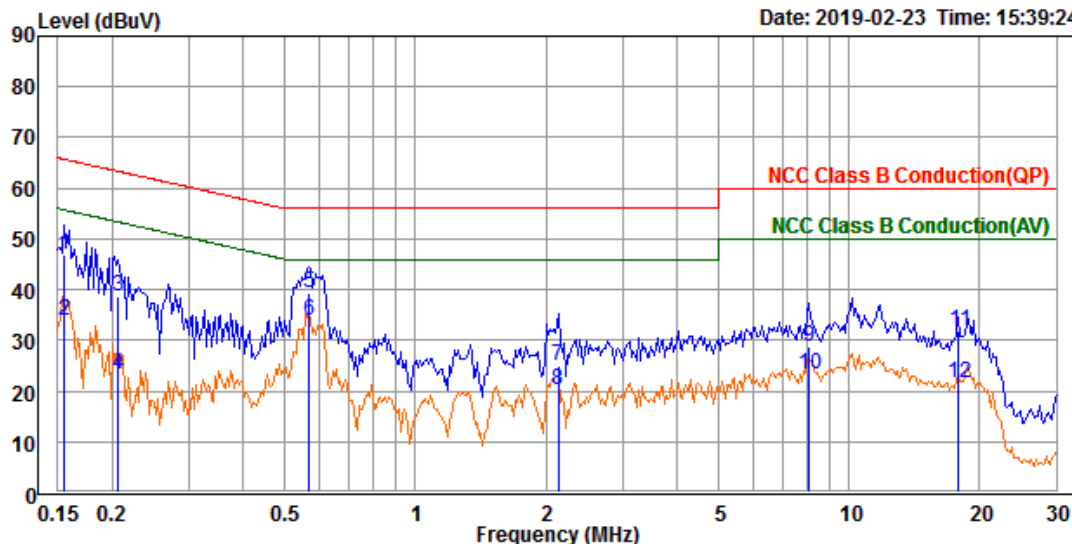
Service No.:	238100076(ESP-12F)_NCC_WIFI	Test Distance:	3m
Test Standard:	NCC2.8_9k-1G_3m	Ant. Polarization:	
Test item:	Radiation Emission	Test Time:	2019/2/21 21:40:07
Applicant:	台灣海克斯康	Test Rating:	DC 5V
Product:	WiFi 模組	Temp.(°C)/Hum.(%):	20(°C)/69%
Model No.:	ESP-12F	Test Engineer:	Curry Chen
Test Mode:	B-2437-RX		
Remark:	setting 7.5db		

No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (°)	Remark
1	0.1799	18.37	25.14	43.51	102.50	-58.99	QP	100	6	
2	7.2842	19.91	12.58	32.49	69.50	-37.01	QP	100	6	
3	10.0901	20.45	12.15	32.60	69.50	-36.90	QP	100	186	
4	11.4632	20.61	12.15	32.76	69.50	-36.74	QP	100	131	
5	15.8213	21.12	11.34	32.46	69.50	-37.04	QP	100	153	
6	22.1793	21.69	10.50	32.19	69.50	-37.31	QP	100	252	

Mains Spurious Emissions

File: C:\EMC\Report\2019\台灣海克斯康\238100076_00001.EMI

Date: 2019-02-23 Time: 15:39:24



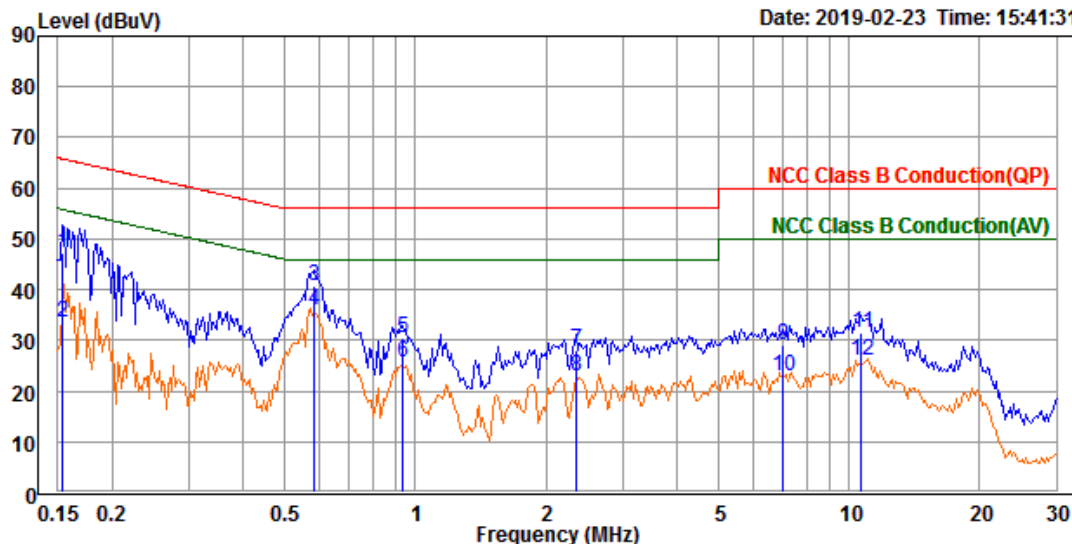
Trace: 1

Site : Conduction room
Condition : NCC Class B Conduction(QP) line1
Test Engineer: Kevin Kuo
Applicant : 台灣海克斯康
Product : WiFi module
Model No. : ESP-12F
Test Rating : 110Vac/60Hz
Tmp/Hum : 19°C/46%
Memo : WiFi 2.4G AC Mains

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.155	37.23	9.68	46.91	65.75	-18.84	QP
2	0.155	24.36	9.68	34.04	55.75	-21.71	Average
3	0.206	28.93	9.68	38.61	63.36	-24.75	QP
4	0.206	13.47	9.68	23.15	53.36	-30.21	Average
5	0.568	29.70	9.69	39.39	56.00	-16.61	QP
6	0.568	24.07	9.69	33.76	46.00	-12.24	Average
7	2.132	15.38	9.72	25.10	56.00	-30.90	QP
8	2.132	10.45	9.72	20.17	46.00	-25.83	Average
9	8.077	18.78	9.81	28.59	60.00	-31.41	QP
10	8.077	13.34	9.81	23.15	50.00	-26.85	Average
11	17.891	22.14	9.85	31.99	60.00	-28.01	QP
12	17.891	11.76	9.85	21.61	50.00	-28.39	Average

File: C:\EMC\Report\2019\台灣海克斯康\238100076_00003.EMI

Date: 2019-02-23 Time: 15:41:31



Trace: 1

Site : Conduction room
Condition : NCC Class B Conduction(QP) neutral
Test Engineer: Kevin Kuo
Applicant : 台灣海克斯康
Product : WiFi module
Model No. : ESP-12F
Test Rating : 110Vac/60Hz
Tmp/Hum : 19°C/46%
Memo : WiFi 2.4G AC Mains

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.153	37.52	9.68	47.20	65.83	-18.63	QP
2	0.153	23.74	9.68	33.42	55.83	-22.41	Average
3	0.586	31.20	9.68	40.88	56.00	-15.12	QP
4	0.586	26.24	9.68	35.92	46.00	-10.08	Average
5	0.934	20.63	9.70	30.33	56.00	-25.67	QP
6	0.934	15.93	9.70	25.63	46.00	-20.37	Average
7	2.355	18.35	9.72	28.07	56.00	-27.93	QP
8	2.355	13.15	9.72	22.87	46.00	-23.13	Average
9	7.028	19.28	9.80	29.08	60.00	-30.92	QP
10	7.028	13.05	9.80	22.85	50.00	-27.15	Average
11	10.669	21.73	9.84	31.57	60.00	-28.43	QP
12	10.669	16.12	9.84	25.96	50.00	-24.04	Average