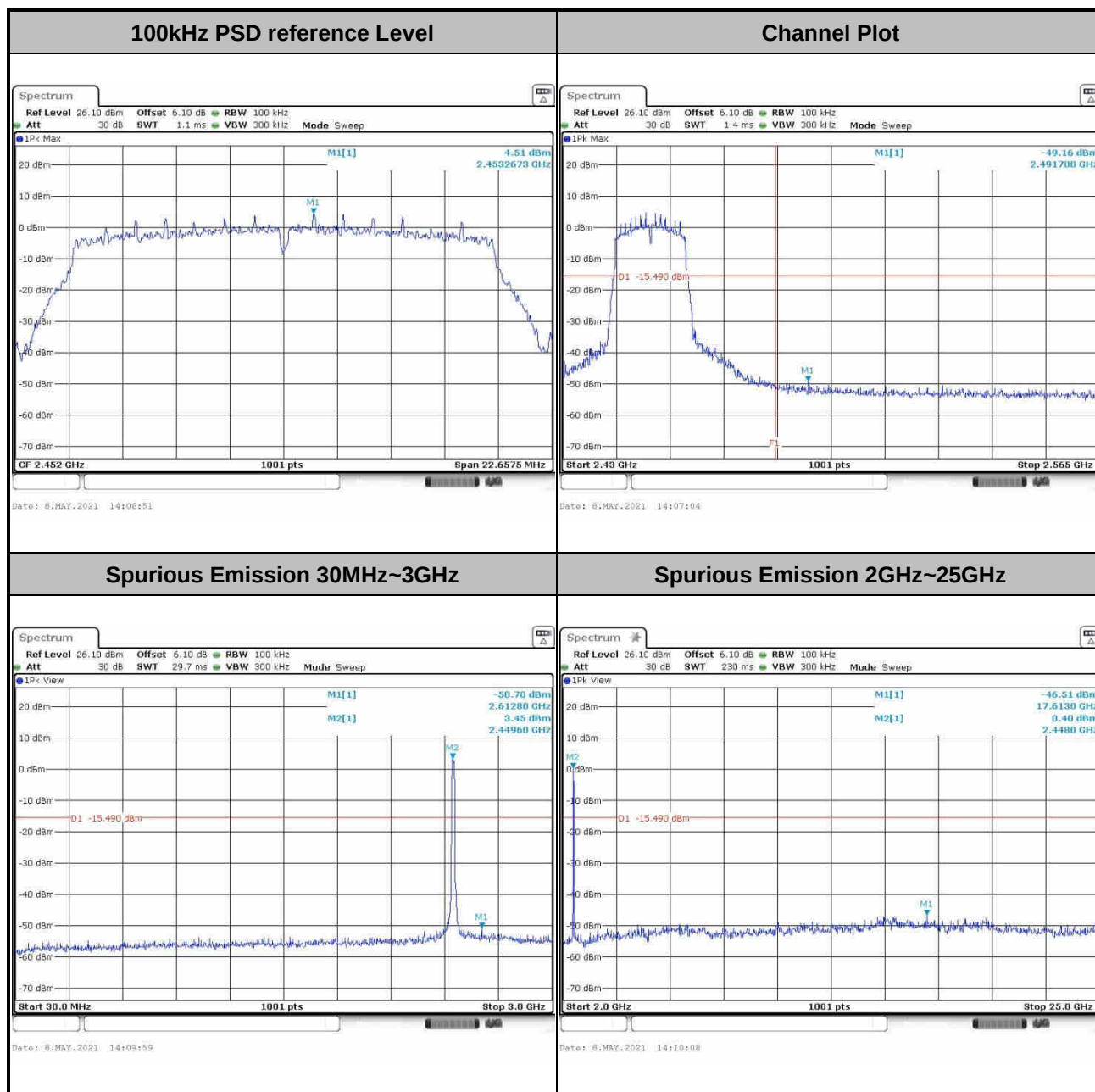




<Ant 1>

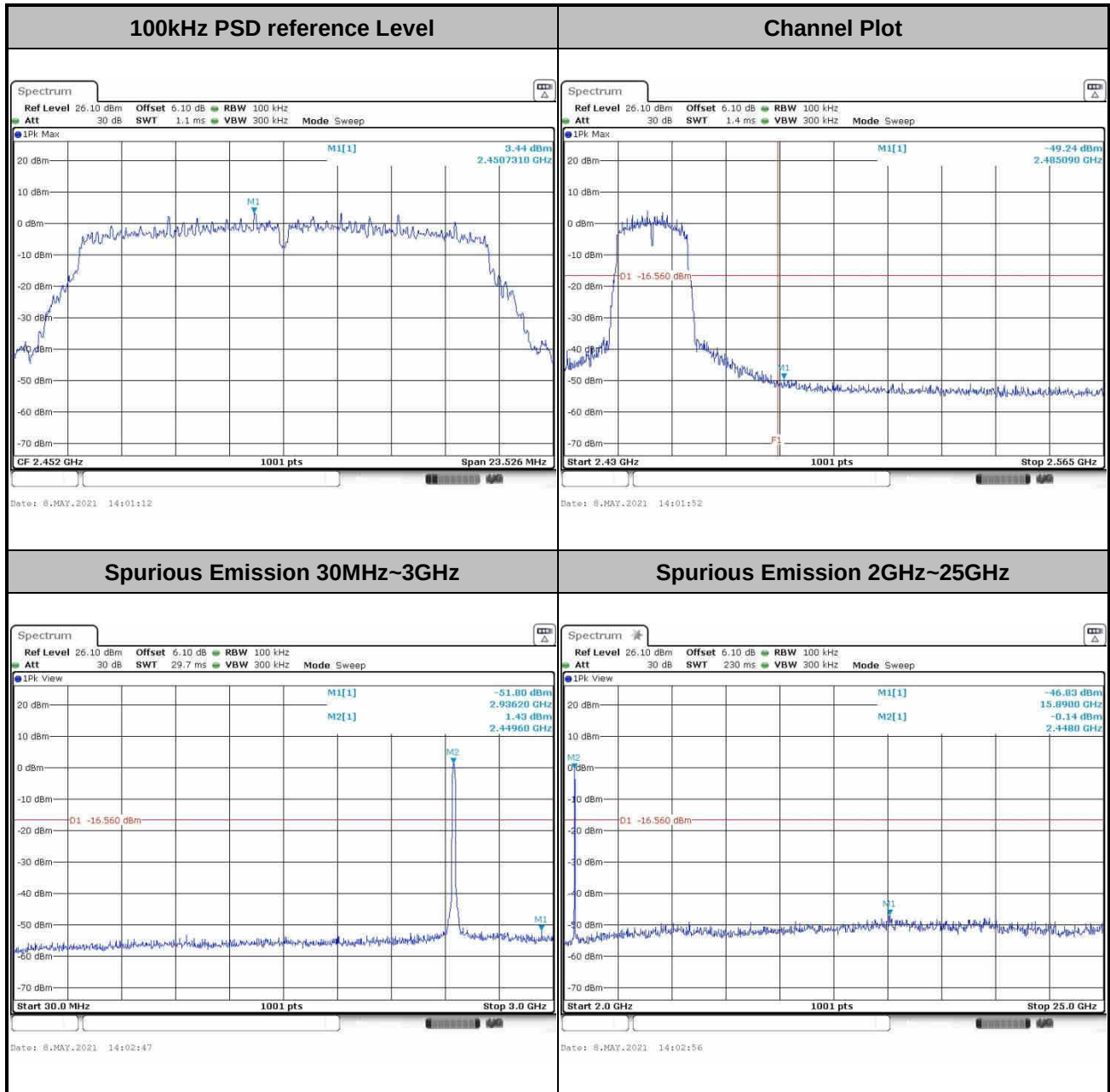
Test Mode :	802.11n HT20	Test Channel :	09
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<Ant 2>

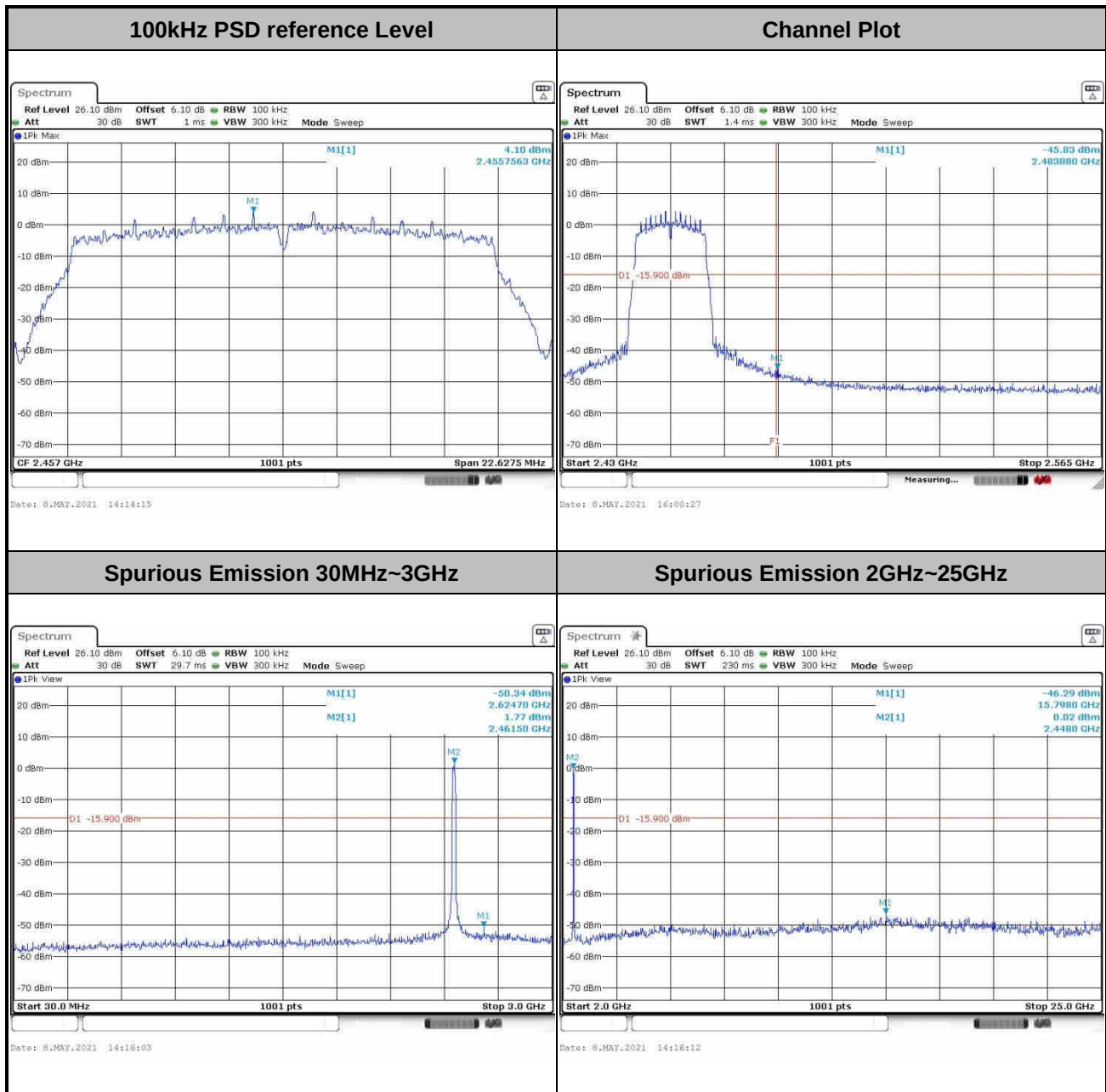
Test Mode :	802.11n HT20	Test Channel :	09
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<Ant 1>

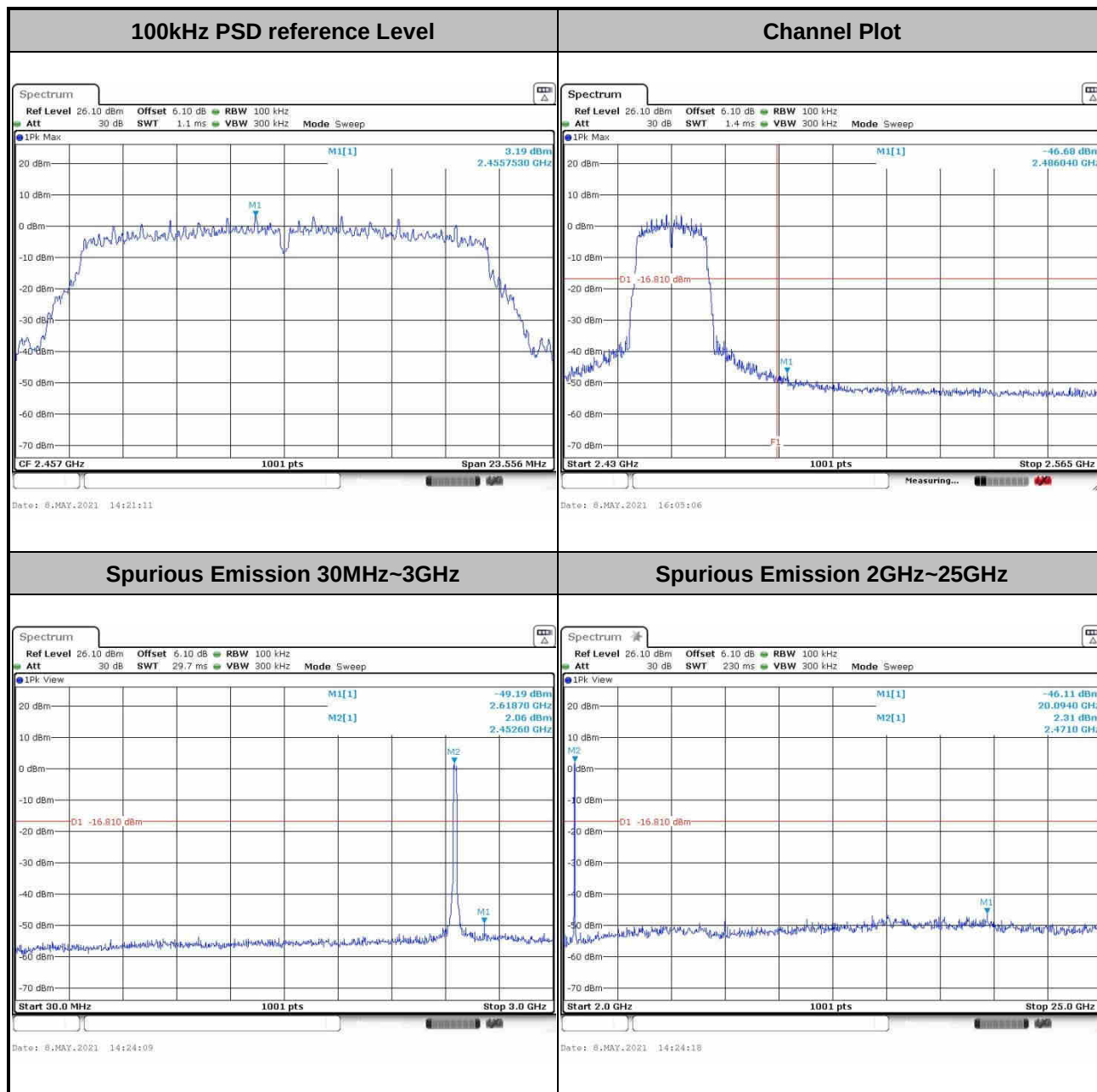
Test Mode :	802.11n HT20	Test Channel :	10
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<Ant 2>

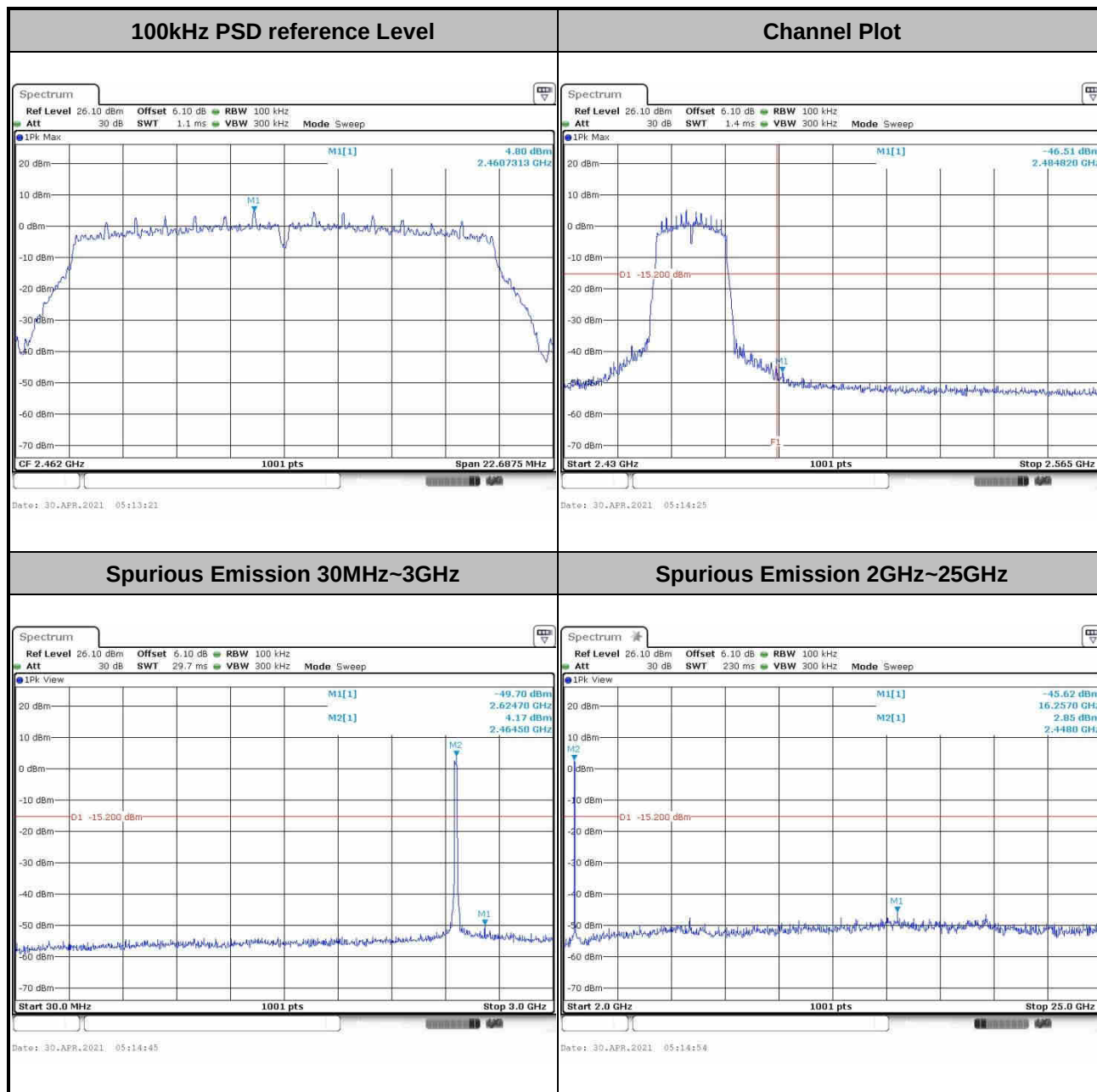
Test Mode :	802.11n HT20	Test Channel :	10
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<Ant 1>

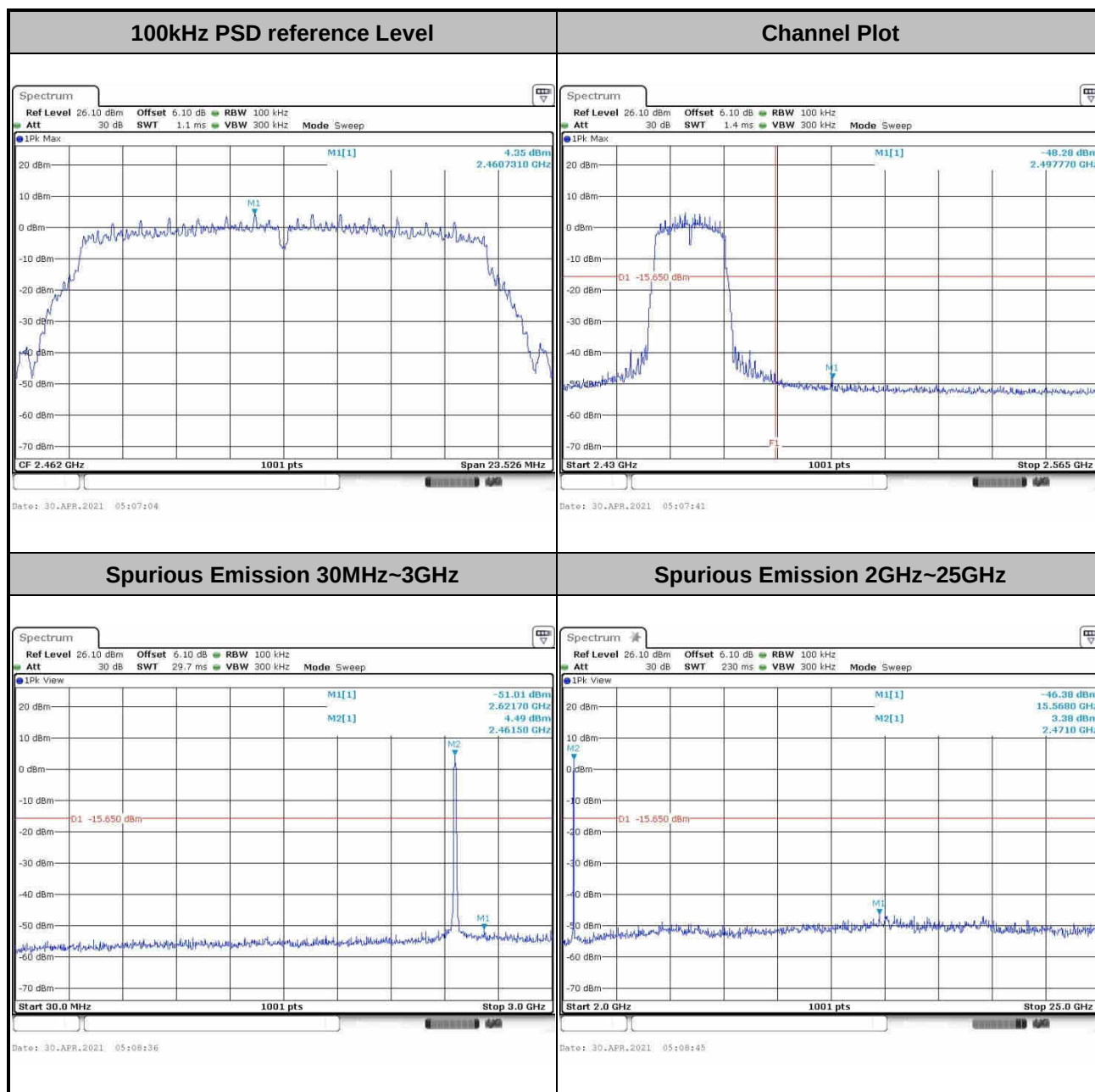
Test Mode :	802.11n HT20	Test Channel :	11
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<Ant 2>

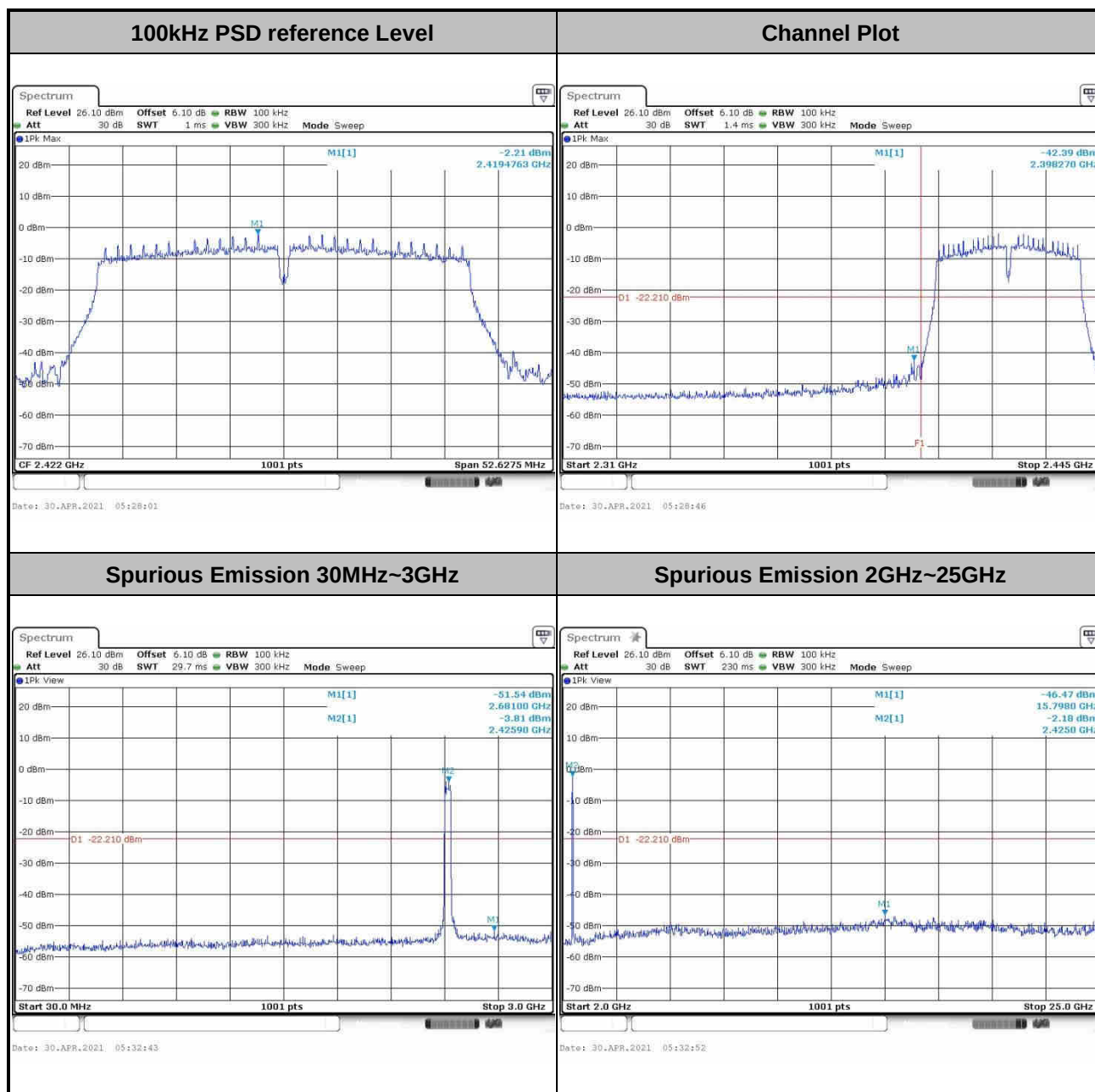
Test Mode :	802.11n HT20	Test Channel :	11
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<Ant 1>

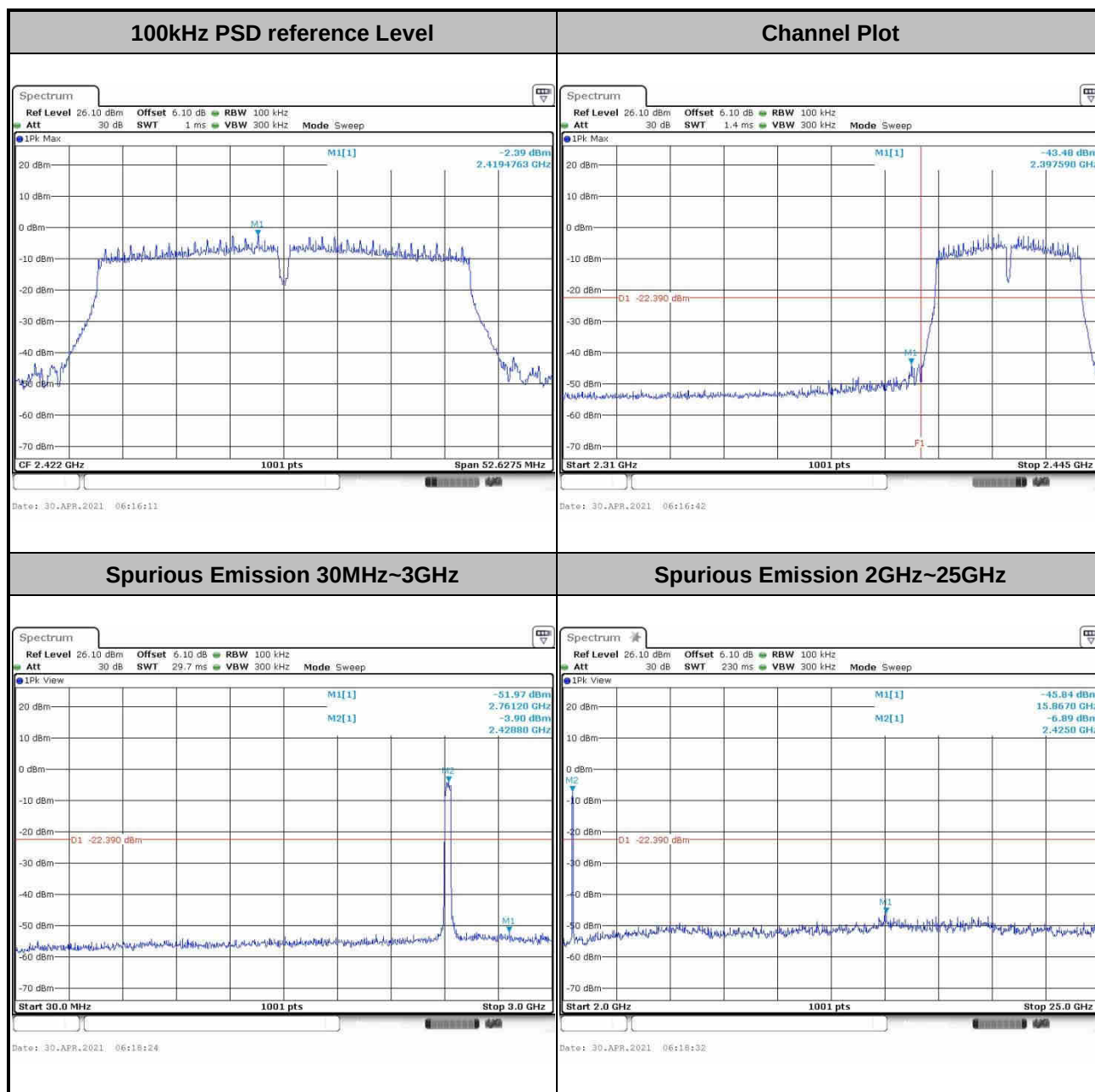
Test Mode :	802.11n HT40	Test Channel :	03
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<Ant 2>

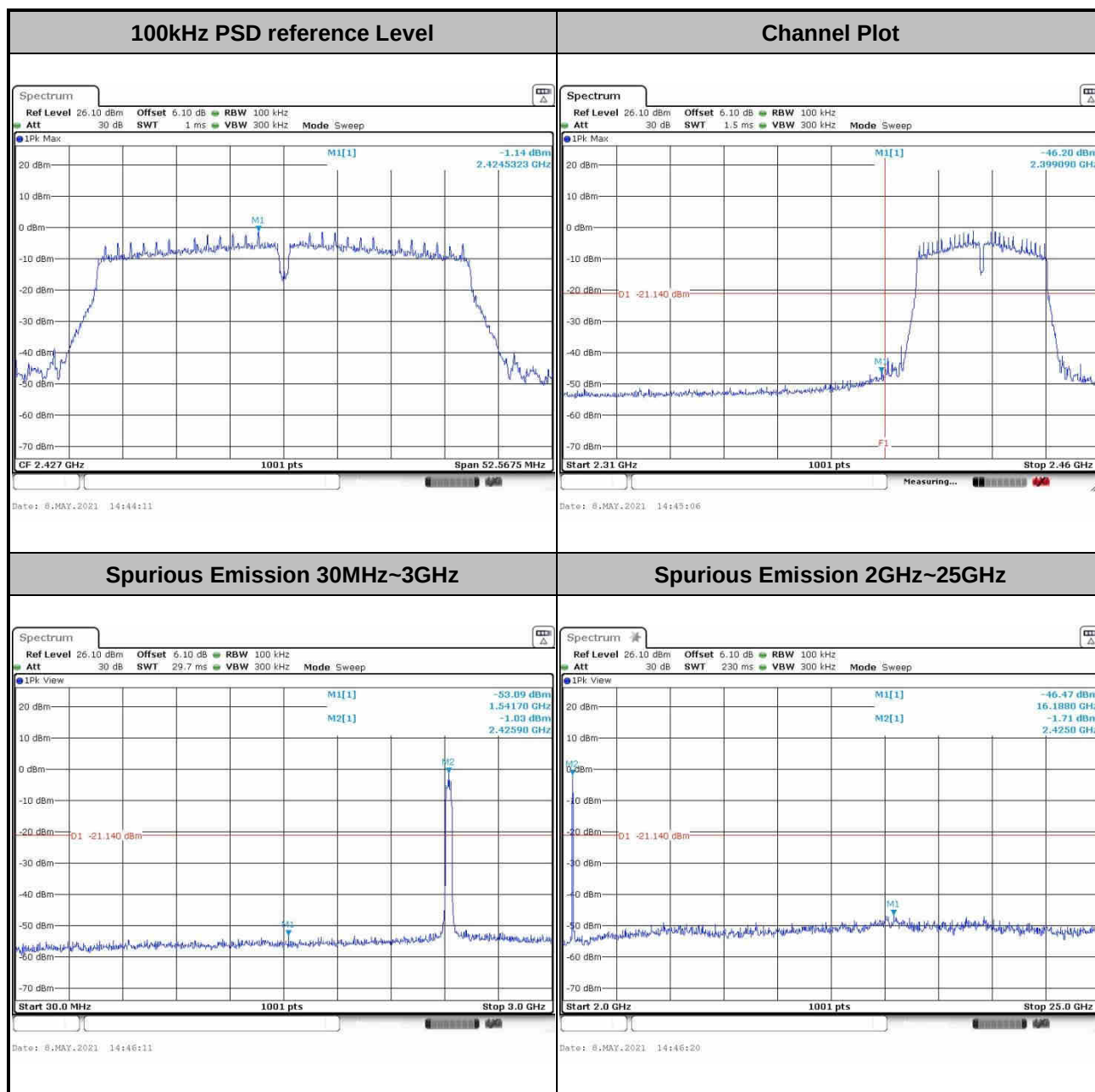
Test Mode :	802.11n HT40	Test Channel :	03
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<Ant 1>

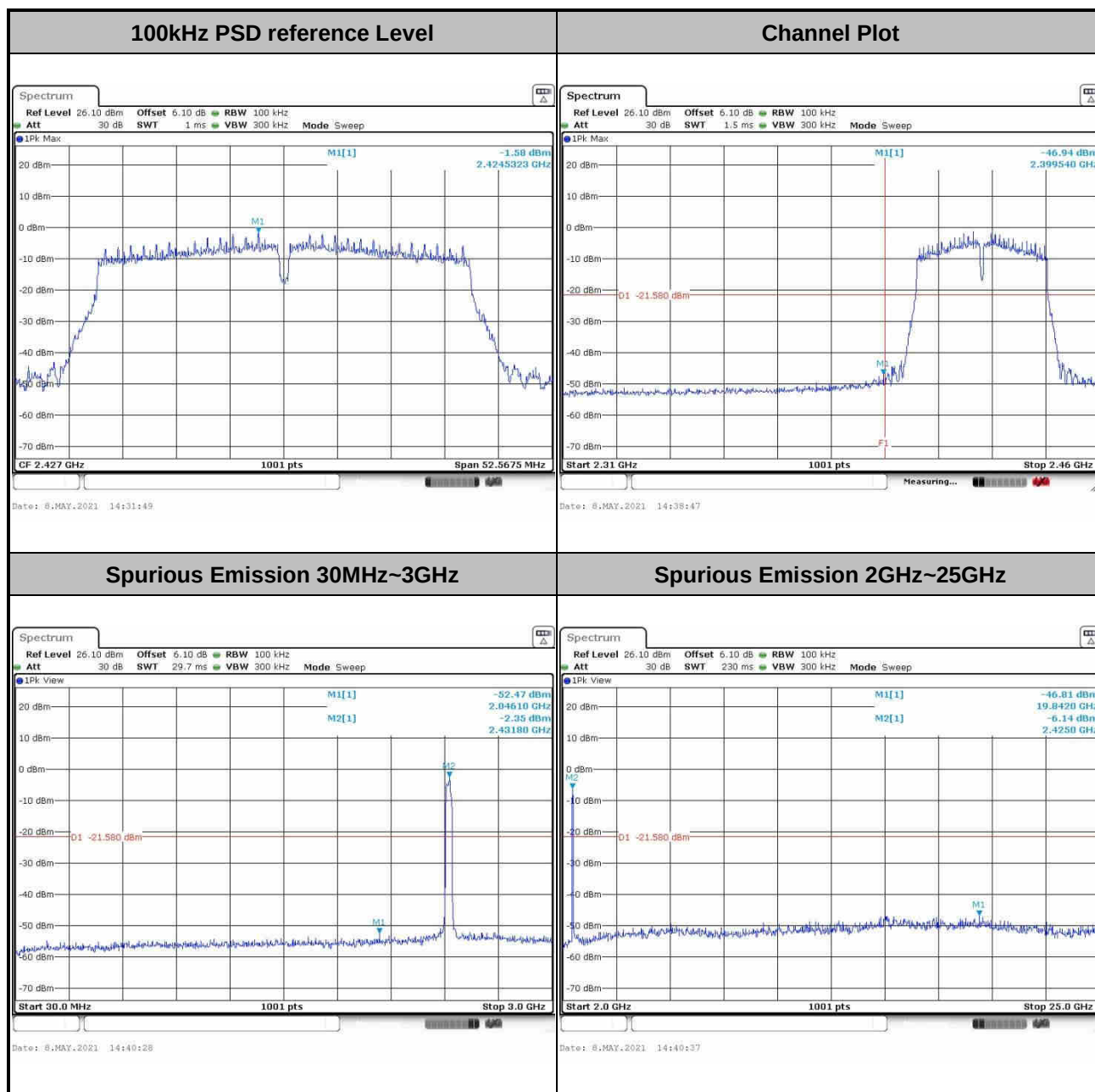
Test Mode :	802.11n HT40	Test Channel :	04
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<Ant 2>

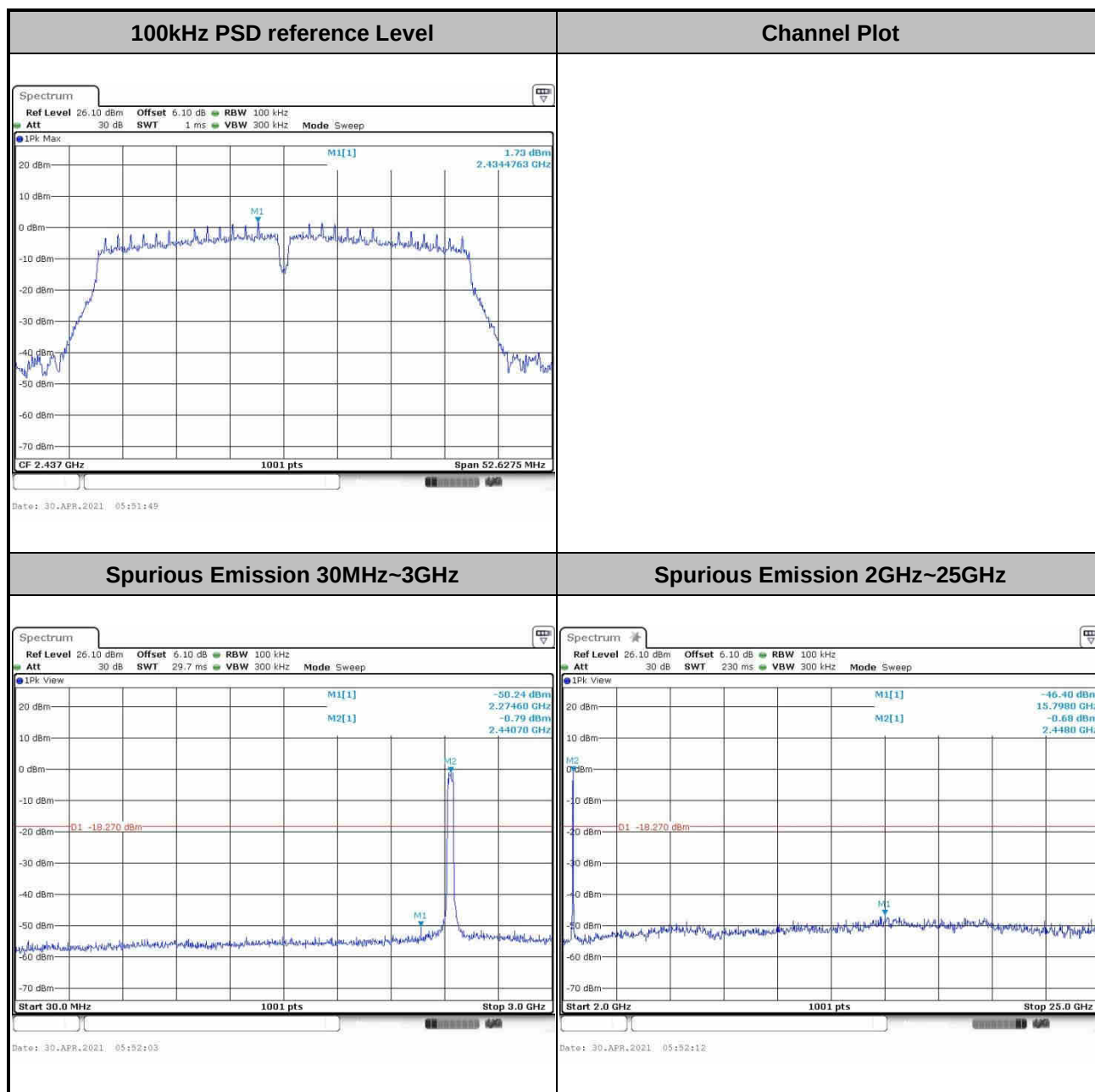
Test Mode :	802.11n HT40	Test Channel :	04
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<Ant 1>

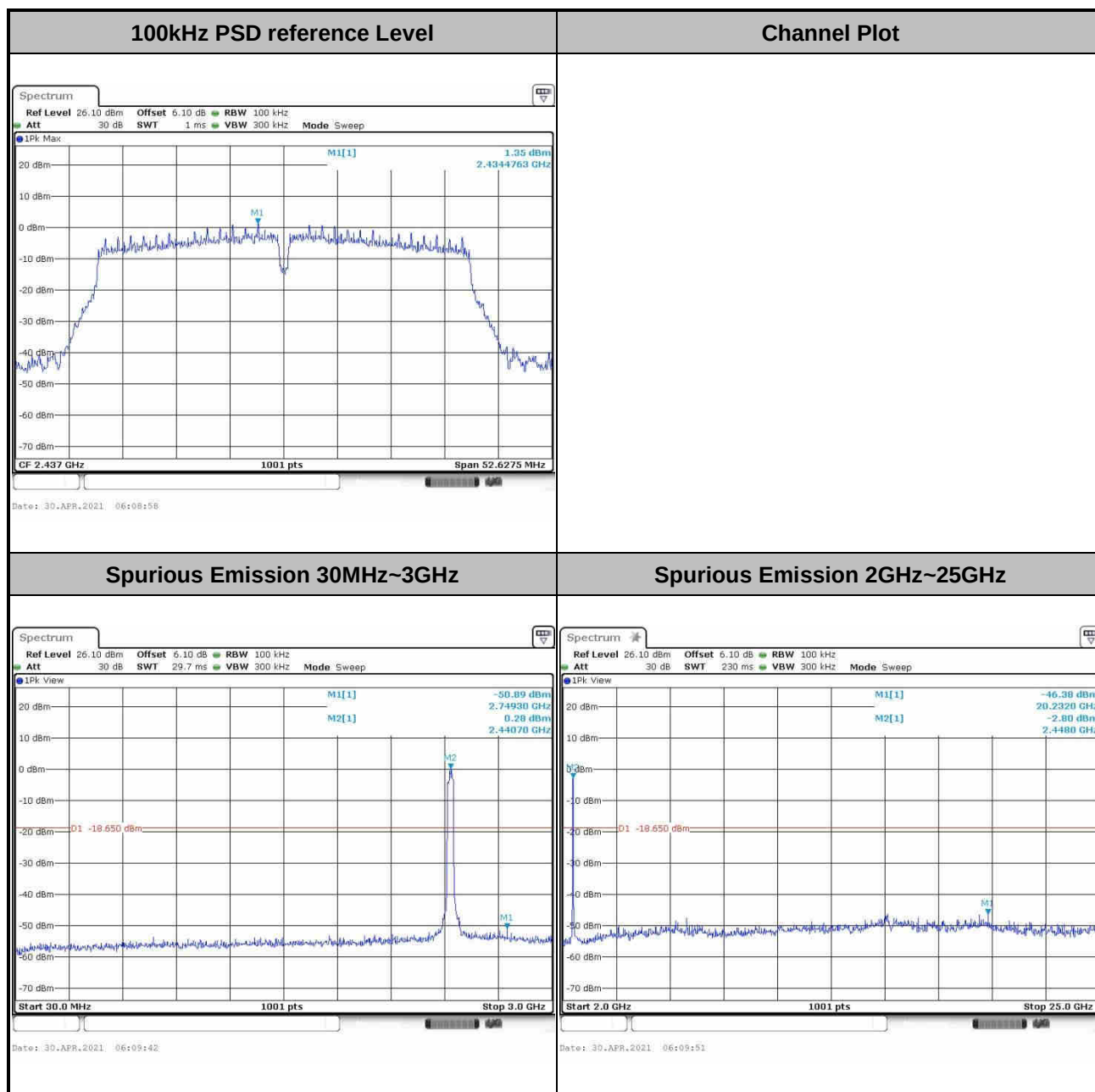
Test Mode :	802.11n HT40	Test Channel :	06
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<Ant 2>

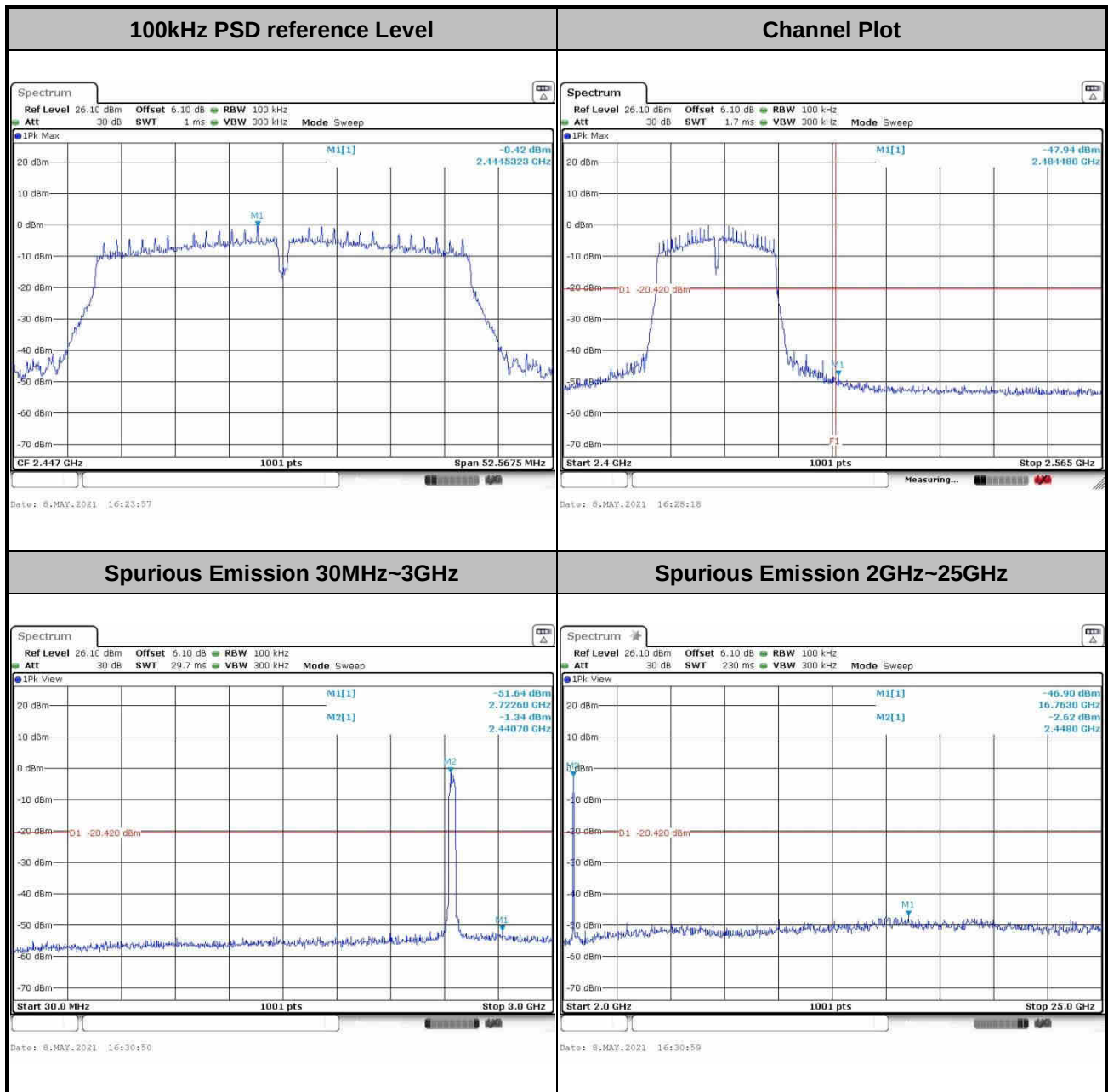
Test Mode :	802.11n HT40	Test Channel :	06
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<Ant 1>

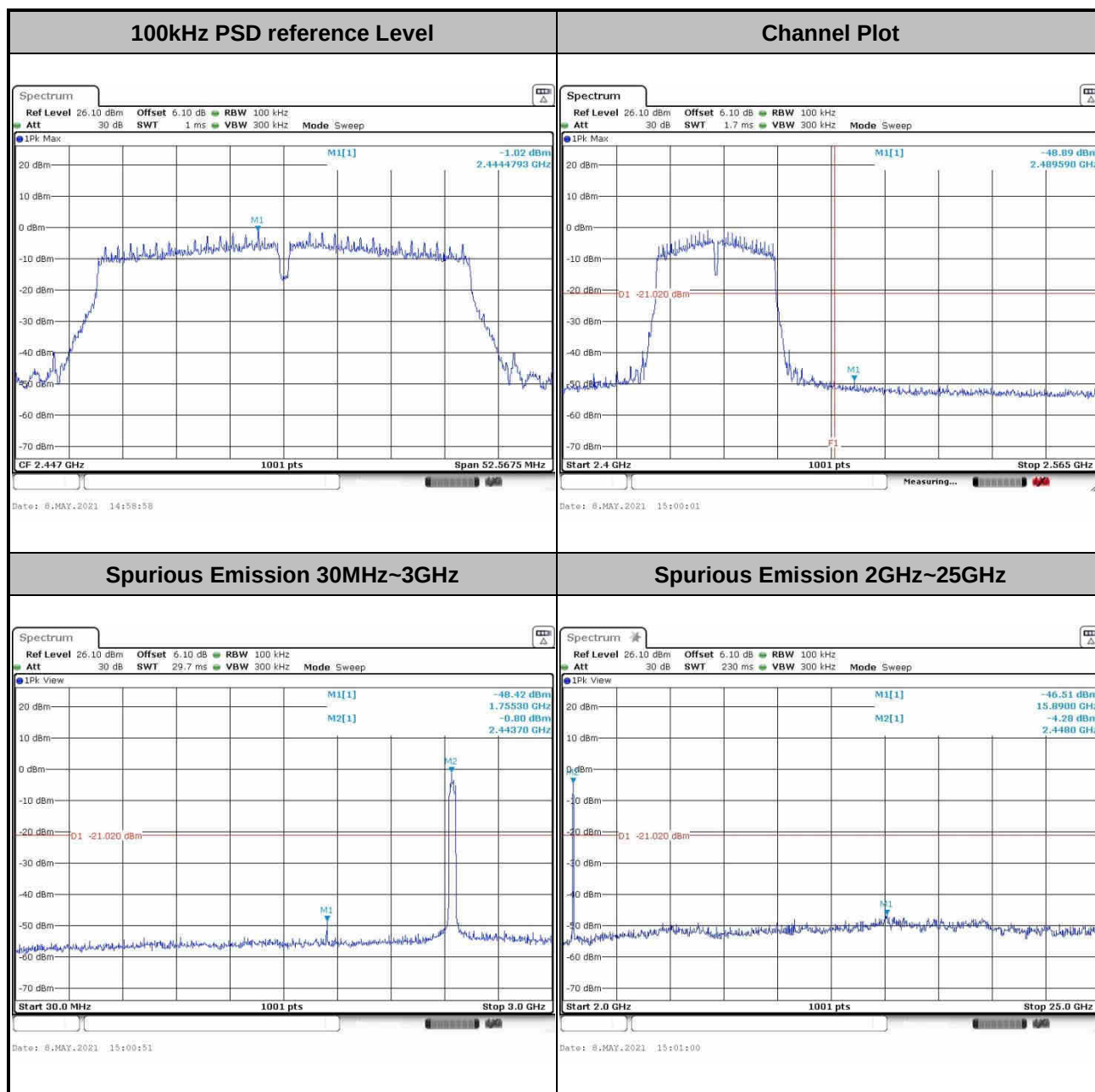
Test Mode :	802.11n HT40	Test Channel :	08
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<Ant 2>

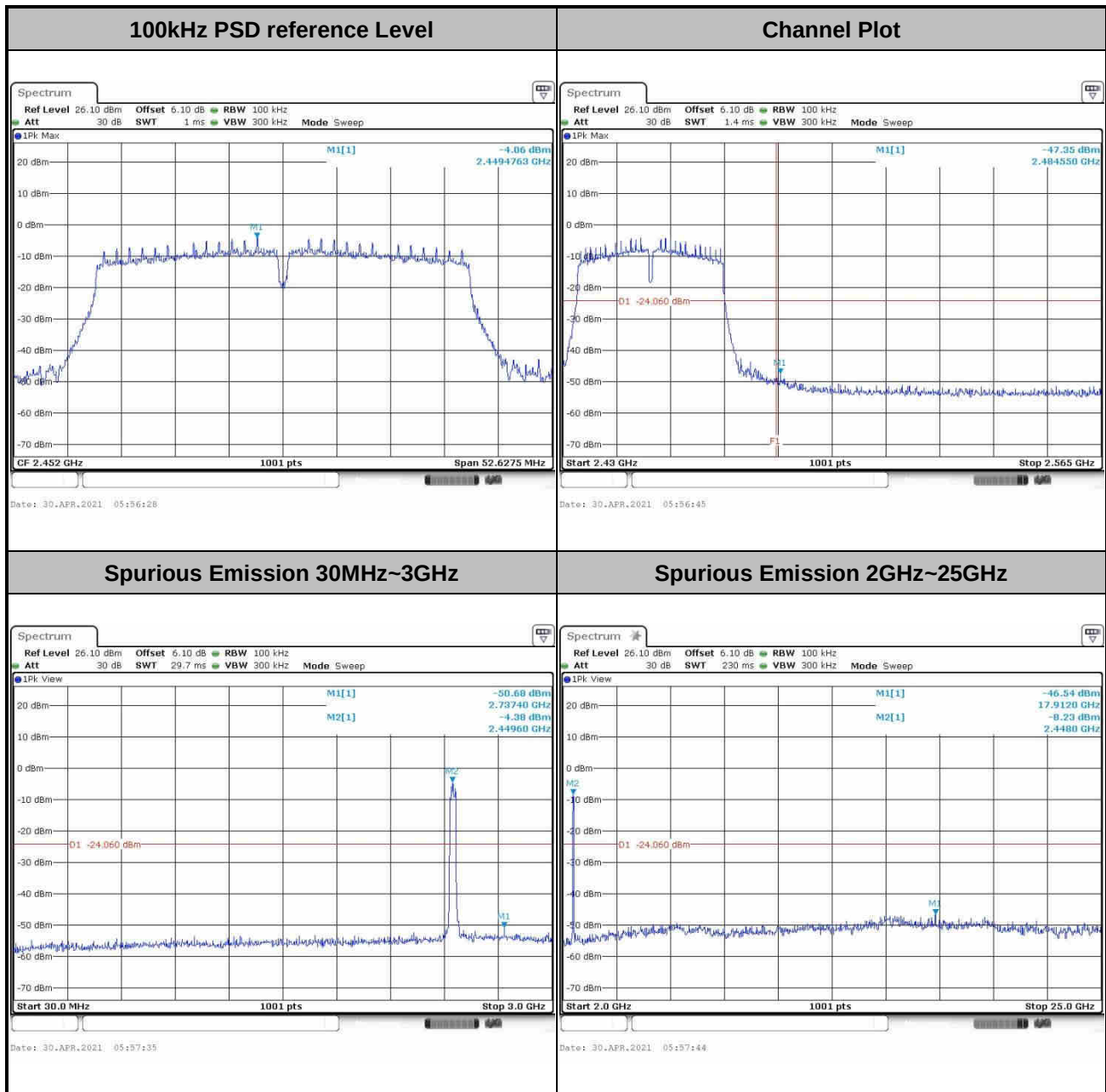
Test Mode :	802.11n HT40	Test Channel :	08
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<Ant 1>

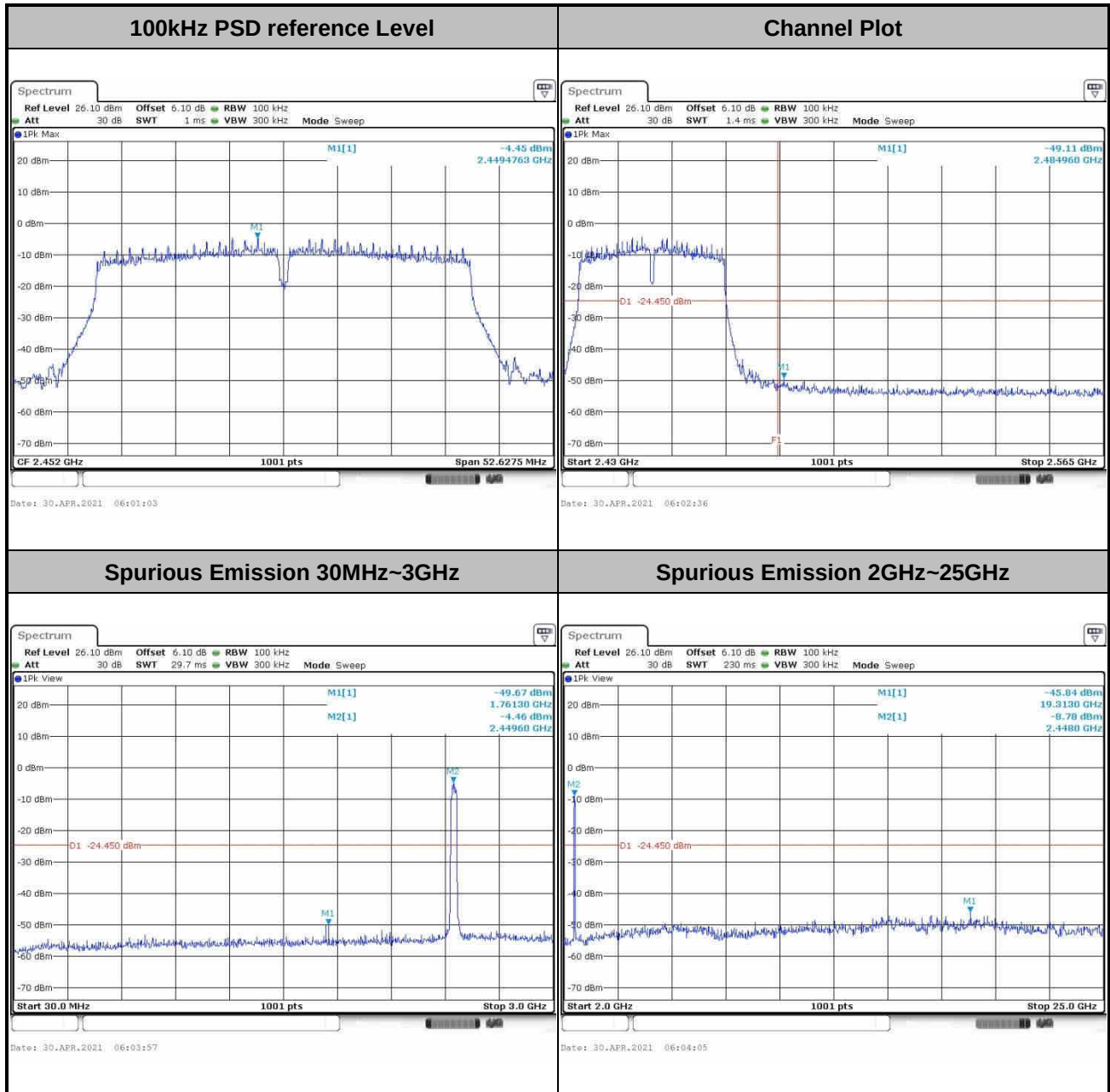
Test Mode :	802.11n HT40	Test Channel :	09
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<Ant 2>

Test Mode :	802.11n HT40	Test Channel :	09
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3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

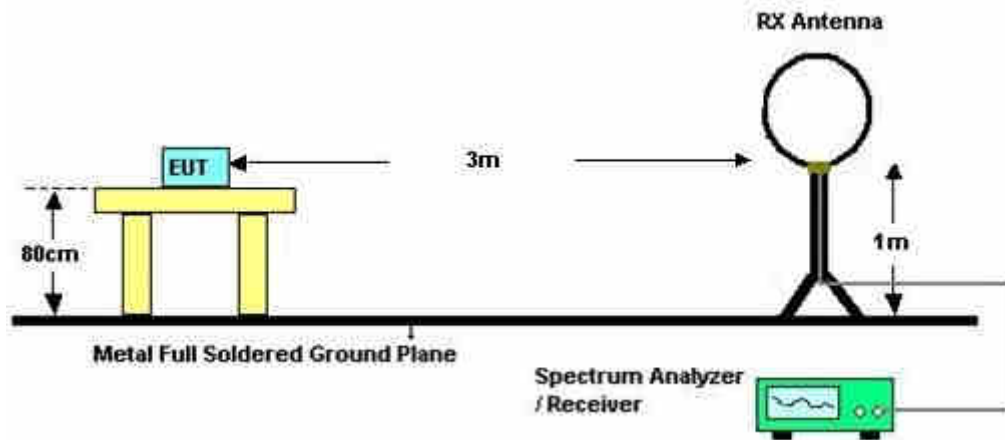
The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

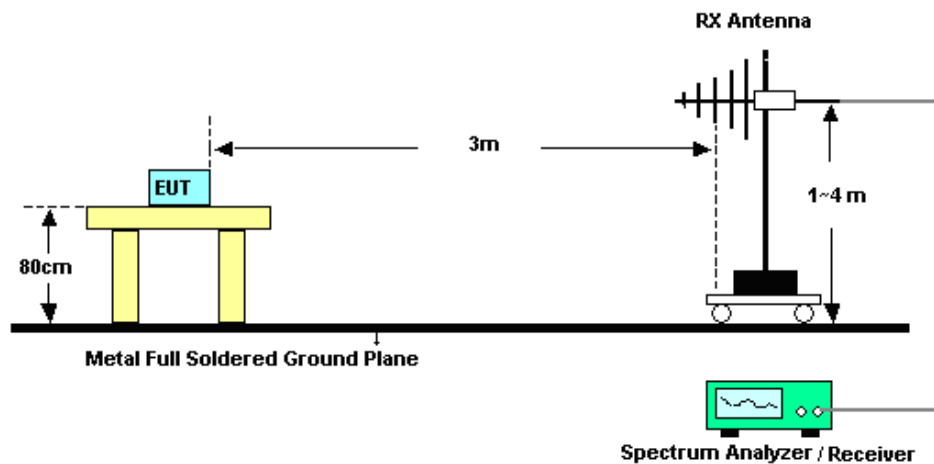
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than peak limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.
For average measurement:
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

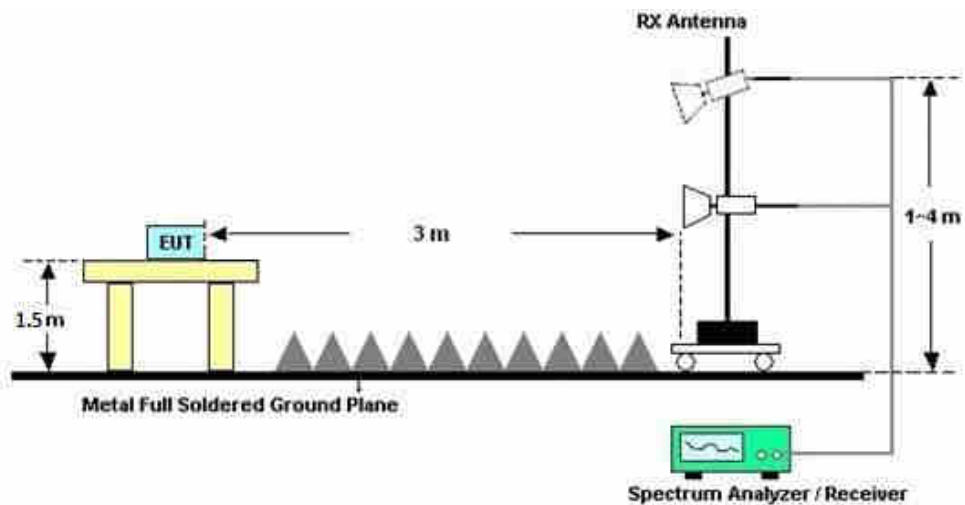
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



**3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.5.7 Duty Cycle

Please refer to Appendix D.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic or 40GHz, whichever is lower)

Please refer to Appendix C.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

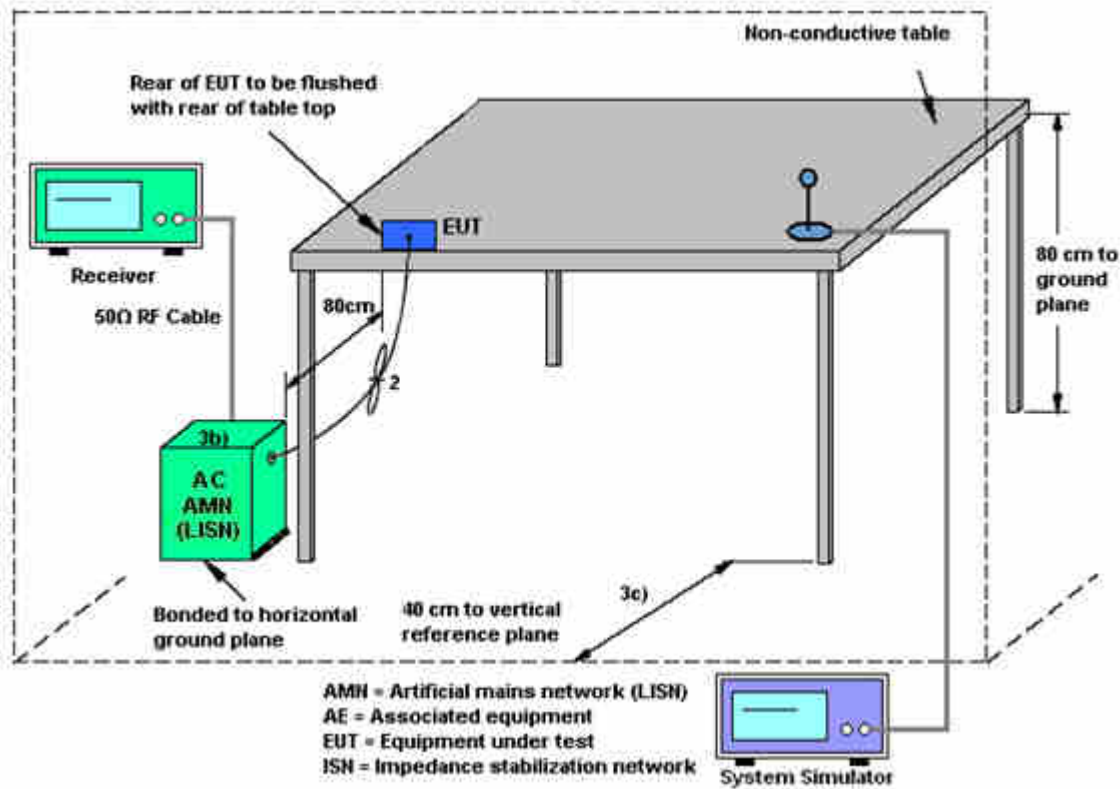
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

<CDD Modes>						
			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant. 1	Ant. 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
2.4 GHz	-5.80	-6.30	-5.80	-3.04	0.00	0.00

Power Limit Reduction = $DG(\text{Power}) - 6\text{dBi}$, (min = 0)

PSD Limit Reduction = $DG(\text{PSD}) - 6\text{dBi}$, (min = 0)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Nov. 01, 2020	Apr. 25, 2021~ May 10, 2021	Oct. 31, 2021	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 07, 2021	Apr. 25, 2021~ May 10, 2021	Jan. 06, 2022	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 07, 2021	Apr. 25, 2021~ May 10, 2021	Jan. 06, 2022	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY564000 04	3Hz~8.5GHz; Max 30dBm	Oct. 17, 2020	May 07, 2021	Oct. 16, 2021	Radiation (03CH05-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY551502 44	10Hz~44G, MAX 30dB	Apr. 13, 2021	May 07, 2021	Apr. 12, 2022	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 01, 2020	May 07, 2021	Oct. 31, 2021	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz~1GHz	May 30, 2020	May 07, 2021	May 29, 2021	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 24, 2021	May 07, 2021	Apr. 23, 2022	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 10, 2020	May 07, 2021	Nov. 09, 2021	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	187289	9KHz~1GHz	Apr. 13, 2021	May 07, 2021	Apr. 12, 2022	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40GG A	060728	18~40GHz	Jan. 07, 2021	May 07, 2021	Jan. 06, 2022	Radiation (03CH05-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	2012228	1Ghz~18Ghz	Oct. 17, 2020	May 07, 2021	Oct. 16, 2021	Radiation (03CH05-KS)
Amplifier	Keysight	83017A	MY532703 16	500MHz~26.5G Hz	Oct. 17, 2020	May 07, 2021	Oct. 16, 2021	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F1040900 04	N/A	NCR	May 07, 2021	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	May 07, 2021	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	May 07, 2021	NCR	Radiation (03CH05-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 21, 2021	Apr. 22, 2021	Apr. 20, 2022	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 17, 2020	Apr. 22, 2021	Oct. 16, 2021	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr. 13, 2021	Apr. 22, 2021	Apr. 12, 2022	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000 0811	AC 0V~300V, 45Hz~1000Hz	Oct. 17, 2020	Apr. 22, 2021	Oct. 16, 2021	Conduction (CO01-KS)

NCR: No Calibration Required

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.94dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Appendix A. Conducted Test Results

Test Engineer:	Lex Wu/Long Wu	Temperature:	21~25	°C
Test Date:	2021/4/25~2021/5/10	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2		
11b	1Mbps	2	1	2412	13.89	13.84	8.55	9.05	0.50	Pass
11b	1Mbps	2	6	2437	14.04	13.94	9.55	9.05	0.50	Pass
11b	1Mbps	2	11	2462	13.89	13.74	8.55	8.53	0.50	Pass
11g	6Mbps	2	1	2412	17.68	17.68	15.11	15.09	0.50	Pass
11g	6Mbps	2	2	2417	17.43	17.38	15.30	15.12	0.50	Pass
11g	6Mbps	2	3	2422	17.43	17.28	15.12	15.10	0.50	Pass
11g	6Mbps	2	6	2437	17.78	17.63	15.10	15.12	0.50	Pass
11g	6Mbps	2	8	2447	17.38	17.28	15.10	15.08	0.50	Pass
11g	6Mbps	2	9	2452	17.33	17.33	14.07	15.11	0.50	Pass
11g	6Mbps	2	10	2457	17.53	17.23	15.11	15.11	0.50	Pass
11g	6Mbps	2	11	2462	17.73	17.68	15.08	15.47	0.50	Pass
HT20	MCS0	2	1	2412	18.28	18.23	15.11	15.68	0.50	Pass
HT20	MCS0	2	2	2417	18.13	18.18	15.13	16.28	0.50	Pass
HT20	MCS0	2	3	2422	18.18	18.23	15.09	16.26	0.50	Pass
HT20	MCS0	2	6	2437	18.38	18.33	15.12	15.12	0.50	Pass
HT20	MCS0	2	9	2452	18.23	18.08	15.11	15.68	0.50	Pass
HT20	MCS0	2	10	2457	18.23	18.08	15.09	15.70	0.50	Pass
HT20	MCS0	2	11	2462	18.28	18.28	15.13	15.68	0.50	Pass
HT40	MCS0	2	3	2422	36.16	36.06	35.09	35.09	0.50	Pass
HT40	MCS0	2	4	2427	35.96	36.26	35.05	35.05	0.50	Pass
HT40	MCS0	2	6	2437	36.06	36.06	35.09	35.09	0.50	Pass
HT40	MCS0	2	8	2447	35.96	36.16	35.05	35.05	0.50	Pass
HT40	MCS0	2	9	2452	36.16	36.16	35.09	35.09	0.50	Pass

TEST RESULTS DATA
Peak Output Power

2.4GHz Band																
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	2	1	2412	21.68	21.26	24.49	30.00		-5.80		18.69		36.00		Pass
11b	1Mbps	2	6	2437	21.88	21.34	24.63	30.00		-5.80		18.83		36.00		Pass
11b	1Mbps	2	11	2462	21.69	20.93	24.34	30.00		-5.80		18.54		36.00		Pass
11g	6Mbps	2	1	2412	22.54	22.15	25.36	30.00		-5.80		19.56		36.00		Pass
11g	6Mbps	2	2	2417	22.93	24.39	26.73	30.00		-5.80		20.93		36.00		Pass
11g	6Mbps	2	3	2422	24.24	25.29	27.81	30.00		-5.80		22.01		36.00		Pass
11g	6Mbps	2	6	2437	26.08	25.38	28.75	30.00		-5.80		22.95		36.00		Pass
11g	6Mbps	2	8	2447	24.51	24.00	27.27	30.00		-5.80		21.47		36.00		Pass
11g	6Mbps	2	9	2452	23.58	24.04	26.83	30.00		-5.80		21.03		36.00		Pass
11g	6Mbps	2	10	2457	22.42	21.88	25.17	30.00		-5.80		19.37		36.00		Pass
11g	6Mbps	2	11	2462	23.40	24.42	26.95	30.00		-5.80		21.15		36.00		Pass
HT20	MCS0	2	1	2412	22.02	21.46	24.76	30.00		-5.80		18.96		36.00		Pass
HT20	MCS0	2	2	2417	22.88	24.11	26.55	30.00		-5.80		20.75		36.00		Pass
HT20	MCS0	2	3	2422	24.69	23.46	27.13	30.00		-5.80		21.33		36.00		Pass
HT20	MCS0	2	6	2437	25.22	24.78	28.02	30.00		-5.80		22.22		36.00		Pass
HT20	MCS0	2	9	2452	23.44	23.65	26.56	30.00		-5.80		20.76		36.00		Pass
HT20	MCS0	2	10	2457	22.75	21.93	25.37	30.00		-5.80		19.57		36.00		Pass
HT20	MCS0	2	11	2462	23.35	22.92	26.15	30.00		-5.80		20.35		36.00		Pass
HT40	MCS0	2	3	2422	22.15	21.94	25.06	30.00		-5.80		19.26		36.00		Pass
HT40	MCS0	2	4	2427	19.85	19.69	22.78	30.00		-5.80		16.98		36.00		Pass
HT40	MCS0	2	6	2437	21.88	21.55	24.73	30.00		-5.80		18.93		36.00		Pass
HT40	MCS0	2	8	2447	19.92	19.56	22.75	30.00		-5.80		16.95		36.00		Pass
HT40	MCS0	2	9	2452	20.65	20.23	23.46	30.00		-5.80		17.66		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
11b	1Mbps	2	1	2412	0.03	0.03	19.68	19.14	22.43
11b	1Mbps	2	6	2437	0.03	0.03	19.76	19.18	22.49
11b	1Mbps	2	11	2462	0.03	0.03	19.60	18.76	22.21
11g	6Mbps	2	1	2412	0.13	0.16	14.41	14.12	17.28
11g	6Mbps	2	2	2417	0.13	0.16	15.28	15.05	18.18
11g	6Mbps	2	3	2422	0.13	0.16	16.77	16.64	19.72
11g	6Mbps	2	6	2437	0.13	0.16	18.81	18.38	21.61
11g	6Mbps	2	8	2447	0.13	0.16	16.79	16.18	19.51
11g	6Mbps	2	9	2452	0.13	0.16	15.84	15.25	18.56
11g	6Mbps	2	10	2457	0.13	0.16	14.81	14.07	17.47
11g	6Mbps	2	11	2462	0.13	0.16	15.44	15.28	18.37
HT20	MCS0	2	1	2412	0.14	0.14	13.33	13.25	16.30
HT20	MCS0	2	2	2417	0.14	0.14	14.77	14.46	17.63
HT20	MCS0	2	3	2422	0.14	0.14	16.21	15.90	19.07
HT20	MCS0	2	6	2437	0.14	0.14	17.63	17.39	20.52
HT20	MCS0	2	9	2452	0.14	0.14	15.17	14.78	17.99
HT20	MCS0	2	10	2457	0.14	0.14	14.70	14.25	17.49
HT20	MCS0	2	11	2462	0.14	0.14	14.72	14.56	17.65
HT40	MCS0	2	3	2422	0.28	0.28	10.65	10.30	13.49
HT40	MCS0	2	4	2427	0.28	0.28	11.74	11.19	14.49
HT40	MCS0	2	6	2437	0.28	0.28	13.99	13.46	16.74
HT40	MCS0	2	8	2447	0.28	0.28	12.16	11.53	14.87
HT40	MCS0	2	9	2452	0.28	0.28	8.56	8.29	11.44

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

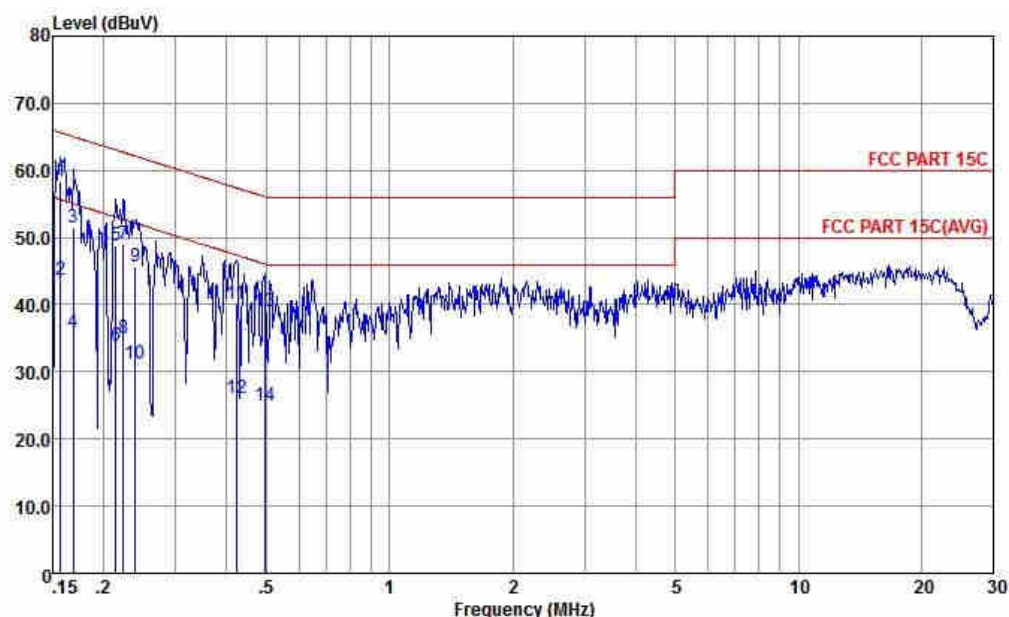
2.4GHz Band												
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	2	1	2412	-6.10	-7.51	-3.09	-3.04		8.00		Pass
11b	1Mbps	2	6	2437	-5.71	-6.52	-2.70	-3.04		8.00		Pass
11b	1Mbps	2	11	2462	-7.04	-8.37	-4.03	-3.04		8.00		Pass
11g	6Mbps	2	1	2412	-11.94	-11.95	-8.93	-3.04		8.00		Pass
11g	6Mbps	2	2	2417	-11.89	-11.84	-8.83	-3.04		8.00		Pass
11g	6Mbps	2	3	2422	-8.48	-10.92	-5.47	-3.04		8.00		Pass
11g	6Mbps	2	6	2437	-7.07	-6.33	-3.32	-3.04		8.00		Pass
11g	6Mbps	2	8	2447	-7.92	-10.11	-4.91	-3.04		8.00		Pass
11g	6Mbps	2	9	2452	-10.44	-10.64	-7.43	-3.04		8.00		Pass
11g	6Mbps	2	10	2457	-9.95	-11.69	-6.94	-3.04		8.00		Pass
11g	6Mbps	2	11	2462	-10.99	-10.69	-7.68	-3.04		8.00		Pass
HT20	MCS0	2	1	2412	-12.68	-10.31	-7.30	-3.04		8.00		Pass
HT20	MCS0	2	2	2417	-12.14	-11.75	-8.74	-3.04		8.00		Pass
HT20	MCS0	2	3	2422	-9.12	-10.29	-6.11	-3.04		8.00		Pass
HT20	MCS0	2	6	2437	-6.90	-6.84	-3.83	-3.04		8.00		Pass
HT20	MCS0	2	9	2452	-10.59	-11.83	-7.58	-3.04		8.00		Pass
HT20	MCS0	2	10	2457	-10.65	-11.66	-7.64	-3.04		8.00		Pass
HT20	MCS0	2	11	2462	-8.43	-10.60	-5.42	-3.04		8.00		Pass
HT40	MCS0	2	3	2422	-18.54	-17.67	-14.66	-3.04		8.00		Pass
HT40	MCS0	2	4	2427	-18.03	-19.06	-15.02	-3.04		8.00		Pass
HT40	MCS0	2	6	2437	-13.91	-14.69	-10.90	-3.04		8.00		Pass
HT40	MCS0	2	8	2447	-16.81	-17.40	-13.80	-3.04		8.00		Pass
HT40	MCS0	2	9	2452	-18.41	-20.72	-15.40	-3.04		8.00		Pass

Measured power density (dBm) has offset with cable loss.



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

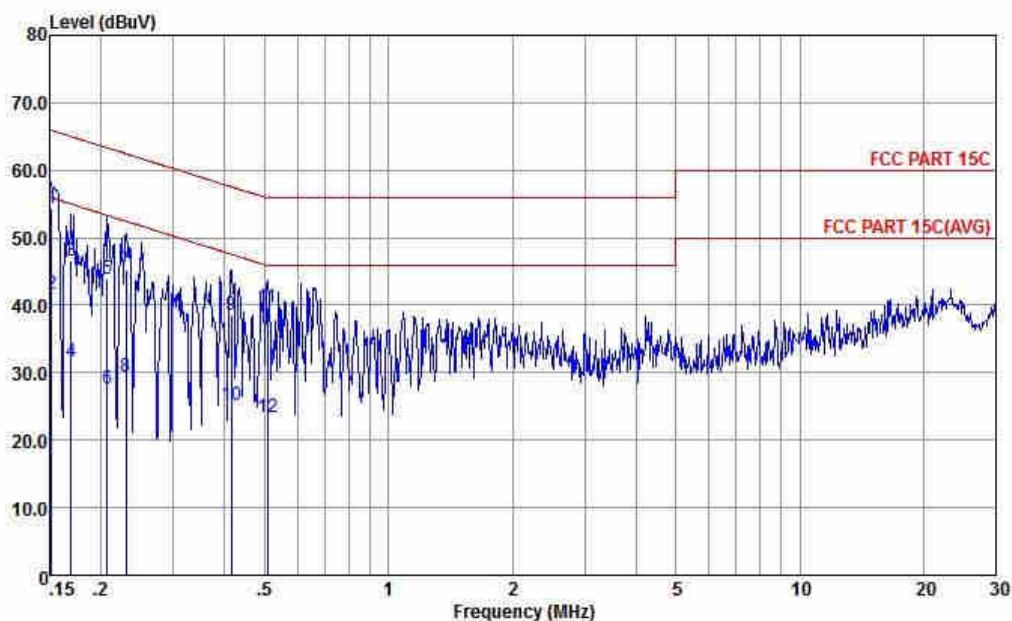


Site : CO01-KS
Condition : FCC PART 15C TWO-LISN-CN02-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1 *	0.156	58.30	-7.35	65.65	38.20	9.64	10.46	QP
2	0.156	43.70	-11.95	55.65	23.60	9.64	10.46	Average
3	0.169	51.57	-13.46	65.03	31.80	9.64	10.43	QP
4	0.169	35.97	-19.06	55.03	15.90	9.64	10.43	Average
5	0.214	48.90	-14.15	63.05	28.91	9.64	10.35	QP
6	0.214	33.80	-19.25	53.05	13.81	9.64	10.35	Average
7	0.223	49.09	-13.61	62.70	29.10	9.64	10.35	QP
8	0.223	34.89	-17.81	52.70	14.90	9.64	10.35	Average
9	0.239	45.58	-16.55	62.13	25.60	9.64	10.34	QP
10	0.239	31.28	-20.85	52.13	11.30	9.64	10.34	Average
11	0.421	40.11	-17.31	57.42	20.20	9.65	10.26	QP
12	0.421	26.11	-21.31	47.42	6.20	9.65	10.26	Average
13	0.494	38.99	-17.11	56.10	19.10	9.65	10.24	QP
14	0.494	24.99	-21.11	46.10	5.10	9.65	10.24	Average



Test Engineer :	Amos Zhang	Temperature :	25.3~26.2℃
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC PART 15C TWO-LISN-CN02-N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1 *	0.152	54.48	-11.43	65.91	34.20	9.80	10.48	QP
2	0.152	41.68	-14.33	55.91	21.30	9.80	10.48	Average
3	0.169	46.47	-18.52	64.99	26.20	9.84	10.43	QP
4	0.169	31.67	-23.42	54.99	11.30	9.84	10.43	Average
5	0.207	43.84	-19.48	63.32	23.60	9.88	10.36	QP
6	0.207	27.74	-25.58	63.32	7.50	9.88	10.36	Average
7	0.230	45.30	-17.14	62.44	25.10	9.86	10.34	QP
8	0.230	29.40	-23.04	62.44	9.20	9.86	10.34	Average
9	0.416	38.51	-19.04	57.55	18.50	9.75	10.26	QP
10	0.416	25.11	-22.44	47.55	5.10	9.75	10.26	Average
11	0.507	39.66	-16.44	56.00	19.59	9.73	10.24	QP
12	0.507	23.46	-22.54	46.00	3.49	9.73	10.24	Average

Note:

1. $\text{Level(dBuV)} = \text{Read Level(dBuV)} + \text{LISN Factor(dB)} + \text{Cable Loss(dB)}$
2. $\text{Over Limit(dB)} = \text{Level(dBuV)} - \text{Limit Line(dBuV)}$



Appendix C. Radiated Spurious Emission

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2384.88	58.13	-15.87	74	50.07	32.15	7.56	31.65	136	114	P	H
		2389.95	48.96	-5.04	54	40.82	32.2	7.59	31.65	136	114	A	H
	*	2412	116.29	-	-	108.14	32.18	7.62	31.65	136	114	P	H
	*	2414	113.24	-	-	105.09	32.18	7.62	31.65	136	114	A	H
		2389.69	57	-17	74	48.86	32.2	7.59	31.65	393	74	P	V
		2389.95	47.05	-6.95	54	38.91	32.2	7.59	31.65	393	74	A	V
	*	2414	113.67	-	-	105.52	32.18	7.62	31.65	393	74	P	V
	*	2414	110.65	-	-	102.5	32.18	7.62	31.65	393	74	A	V
802.11b CH 11 2462MHz		2486.68	58.35	-15.65	74	50.08	32.12	7.73	31.58	172	241	P	H
		2486.62	48.37	-5.63	54	40.1	32.12	7.73	31.58	172	241	A	H
	*	2462	114.22	-	-	105.99	32.13	7.7	31.6	172	241	P	H
	*	2460	110.93	-	-	102.7	32.13	7.7	31.6	172	241	A	H
		2491.24	58.45	-15.55	74	50.17	32.1	7.76	31.58	382	68	P	V
		2483.5	47.41	-6.59	54	39.14	32.12	7.73	31.58	382	68	A	V
	*	2460	111.14	-	-	102.91	32.13	7.7	31.6	382	68	P	V
	*	2460	107.8	-	-	99.57	32.13	7.7	31.6	382	68	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	48.6	-25.4	74	63.27	34.31	11.06	60.04	300	0	P	H
		7236	52.95	-21.05	74	64.08	35.95	13.42	60.5	300	0	P	H
		4824	45.18	-28.82	74	59.85	34.31	11.06	60.04	300	360	P	V
		7236	51.41	-22.59	74	62.54	35.95	13.42	60.5	300	360	P	V
802.11b CH 06 2437MHz		4872	46.63	-27.37	74	61.28	34.34	11.04	60.03	300	0	P	H
		7308	52.86	-21.14	74	63.95	35.94	13.48	60.51	100	177	P	H
		7308	47.8	-6.2	54	58.89	35.94	13.48	60.51	100	177	A	H
		4872	42.48	-31.52	74	57.13	34.34	11.04	60.03	300	360	P	V
		7308	52.7	-21.3	74	63.79	35.94	13.48	60.51	105	28	P	V
		7308	44.65	-9.35	54	55.74	35.94	13.48	60.51	105	28	A	V
802.11b CH 11 2462MHz		4926	49.81	-24.19	74	64.44	34.36	11.03	60.02	300	0	P	H
		7386	54.09	-19.91	74	65.15	35.92	13.55	60.53	100	175	P	H
		7386	50.07	-3.93	54	61.13	35.92	13.55	60.53	100	175	A	H
		4926	46.39	-27.61	74	61.02	34.36	11.03	60.02	300	360	P	V
		7386	50.93	-23.07	74	61.99	35.92	13.55	60.53	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2387.48	60.48	-13.52	74	52.34	32.2	7.59	31.65	138	114	P	H
		2387.09	50.17	-3.83	54	42.03	32.2	7.59	31.65	138	114	A	H
	*	2412	112.59	-	-	104.44	32.18	7.62	31.65	138	114	P	H
	*	2412	105.62	-	-	97.47	32.18	7.62	31.65	138	114	A	H
		2389.56	58.82	-15.18	74	50.68	32.2	7.59	31.65	396	78	P	V
		2389.95	48.77	-5.23	54	40.63	32.2	7.59	31.65	396	78	A	V
	*	2412	110.46	-	-	102.31	32.18	7.62	31.65	396	78	P	V
	*	2412	103.52	-	-	95.37	32.18	7.62	31.65	396	78	A	V
802.11g CH 02 2417MHz		2386.57	61.43	-12.57	74	53.29	32.2	7.59	31.65	140	109	P	H
		2389.95	50.93	-3.07	54	42.79	32.2	7.59	31.65	140	109	A	H
	*	2414	114.67	-	-	106.52	32.18	7.62	31.65	140	109	P	H
	*	2414	106.87	-	-	98.72	32.18	7.62	31.65	140	109	A	H
		2389.43	59.73	-14.27	74	51.59	32.2	7.59	31.65	396	65	P	V
		2389.95	49.11	-4.89	54	40.97	32.2	7.59	31.65	396	65	A	V
	*	2420	112.23	-	-	104.05	32.17	7.64	31.63	396	65	P	V
	*	2418	104.53	-	-	96.36	32.18	7.62	31.63	396	65	A	V



802.11g CH 03 2422MHz		2382.28	61.18	-12.82	74	53.12	32.15	7.56	31.65	126	111	P	H
		2389.95	51	-3	54	42.86	32.2	7.59	31.65	126	111	A	H
	*	2420	115.49	-	-	107.31	32.17	7.64	31.63	126	111	P	H
	*	2424	107.65	-	-	99.47	32.17	7.64	31.63	126	111	A	H
		2389.95	60	-14	74	51.86	32.2	7.59	31.65	396	66	P	V
		2389.56	48.47	-5.53	54	40.33	32.2	7.59	31.65	396	66	A	V
	*	2424	113.34	-	-	105.16	32.17	7.64	31.63	396	66	P	V
	*	2424	105.79	-	-	97.61	32.17	7.64	31.63	396	66	A	V
802.11g CH 08 2447MHz		2483.68	60.59	-13.41	74	52.32	32.12	7.73	31.58	108	113	P	H
		2483.8	50.16	-3.84	54	41.89	32.12	7.73	31.58	108	113	A	H
	*	2442	114.89	-	-	106.68	32.15	7.67	31.61	108	113	P	H
	*	2446	107.49	-	-	99.28	32.15	7.67	31.61	108	113	A	H
		2485.54	58.44	-15.56	74	50.17	32.12	7.73	31.58	390	66	P	V
		2483.5	48.22	-5.78	54	39.95	32.12	7.73	31.58	390	66	A	V
	*	2446	113.06	-	-	104.85	32.15	7.67	31.61	390	66	P	V
	*	2446	106.11	-	-	97.9	32.15	7.67	31.61	390	66	A	V
802.11g CH 09 2452MHz		2483.68	60.44	-13.56	74	52.17	32.12	7.73	31.58	135	109	P	H
		2484.16	50.22	-3.78	54	41.95	32.12	7.73	31.58	135	109	A	H
	*	2452	113.69	-	-	105.48	32.15	7.67	31.61	135	109	P	H
	*	2452	106.48	-	-	98.27	32.15	7.67	31.61	135	109	A	H
		2489.14	59.22	-14.78	74	50.94	32.1	7.76	31.58	390	64	P	V
		2483.62	48.04	-5.96	54	39.77	32.12	7.73	31.58	390	64	A	V
	*	2452	111.73	-	-	103.52	32.15	7.67	31.61	390	64	P	V
	*	2452	104.77	-	-	96.56	32.15	7.67	31.61	390	64	A	V
802.11g CH 10 2457MHz		2484.1	62.35	-11.65	74	54.08	32.12	7.73	31.58	124	113	P	H
		2483.5	50.92	-3.08	54	42.65	32.12	7.73	31.58	124	113	A	H
	*	2456	112.54	-	-	104.31	32.13	7.7	31.6	124	113	P	H
	*	2458	105.39	-	-	97.16	32.13	7.7	31.6	124	113	A	H
		2484.4	59.18	-14.82	74	50.91	32.12	7.73	31.58	390	67	P	V
		2483.56	48.38	-5.62	54	40.11	32.12	7.73	31.58	390	67	A	V
	*	2456	110.48	-	-	102.25	32.13	7.7	31.6	390	67	P	V
	*	2456	103.53	-	-	95.3	32.13	7.7	31.6	390	67	A	V



802.11g CH 11 2462MHz		2487.88	60.75	-13.25	74	52.47	32.1	7.76	31.58	126	111	P	H
		2486.14	50.59	-3.41	54	42.32	32.12	7.73	31.58	126	111	A	H
	*	2462	113.89	-	-	105.66	32.13	7.7	31.6	126	111	P	H
	*	2462	106.63	-	-	98.4	32.13	7.7	31.6	126	111	A	H
		2487.28	59.23	-14.77	74	50.96	32.12	7.73	31.58	388	65	P	V
		2485.6	48.86	-5.14	54	40.59	32.12	7.73	31.58	388	65	A	V
	*	2462	111.33	-	-	103.1	32.13	7.7	31.6	388	65	P	V
	*	2462	104.35	-	-	96.12	32.13	7.7	31.6	388	65	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	42.36	-31.64	74	57.03	34.31	11.06	60.04	300	0	P	H
		4824	41.56	-32.44	74	56.23	34.31	11.06	60.04	300	360	P	V
802.11g CH 02 2417MHz		4836	41.57	-32.43	74	56.23	34.32	11.05	60.03	100	360	P	H
		7251	46.16	-27.84	74	57.28	35.95	13.43	60.5	100	360	P	H
		4836	40.18	-33.82	74	54.84	34.32	11.05	60.03	100	360	P	V
		7251	44.16	-29.84	74	55.28	35.95	13.43	60.5	100	360	P	V
802.11g CH 03 2422MHz		4842	42.61	-31.39	74	57.27	34.32	11.05	60.03	300	0	P	H
		7266	49.69	-24.31	74	60.81	35.94	13.45	60.51	300	0	P	H
		4842	41.03	-32.97	74	55.69	34.32	11.05	60.03	300	360	P	V
		7266	45.85	-28.15	74	56.97	35.94	13.45	60.51	300	360	P	V
802.11g CH 06 2437MHz		4872	45.55	-28.45	74	60.2	34.34	11.04	60.03	300	0	P	H
		7308	55.49	-18.51	74	66.58	35.94	13.48	60.51	100	174	P	H
		7308	44.03	-9.97	54	55.12	35.94	13.48	60.51	100	174	A	H
		4872	42.84	-31.16	74	57.49	34.34	11.04	60.03	300	360	P	V
		7308	50.86	-23.14	74	61.95	35.94	13.48	60.51	300	360	P	V
802.11g CH 08 2447MHz		4896	44.35	-29.65	74	58.98	34.35	11.04	60.02	300	0	P	H
		7344	49.26	-24.74	74	60.34	35.93	13.51	60.52	300	0	P	H
		4896	41.51	-32.49	74	56.14	34.35	11.04	60.02	300	360	P	V
		7344	48.1	-25.9	74	59.18	35.93	13.51	60.52	300	360	P	V
802.11g CH 09 2452MHz		4902	43.63	-30.37	74	58.27	34.35	11.03	60.02	300	0	P	H
		7356	47.07	-26.93	74	58.14	35.93	13.52	60.52	300	0	P	H
		4902	41.02	-32.98	74	55.66	34.35	11.03	60.02	300	360	P	V
		7356	44.95	-29.05	74	56.02	35.93	13.52	60.52	300	360	P	V



802.11g CH 10 2457MHz		4914	44.12	-29.88	74	58.76	34.35	11.03	60.02	300	0	P	H
		7371	45.25	-28.75	74	56.32	35.92	13.54	60.53	300	0	P	H
		4914	41.32	-32.68	74	55.96	34.35	11.03	60.02	300	360	P	V
		7368	45.37	-28.63	74	56.44	35.92	13.54	60.53	300	360	P	V
802.11g CH 11 2462MHz		4926	43.5	-30.5	74	58.13	34.36	11.03	60.02	300	0	P	H
		7386	47.21	-26.79	74	58.27	35.92	13.55	60.53	300	0	P	H
		4926	41.48	-32.52	74	56.11	34.36	11.03	60.02	300	360	P	V
		7386	45.62	-28.38	74	56.68	35.92	13.55	60.53	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2389.17	59.9	-14.1	74	51.76	32.2	7.59	31.65	136	111	P	H
		2389.56	50.07	-3.93	54	41.93	32.2	7.59	31.65	136	111	A	H
	*	2414	110.52	-	-	102.37	32.18	7.62	31.65	136	111	P	H
	*	2414	103.46	-	-	95.31	32.18	7.62	31.65	136	111	A	H
		2388.52	59.21	-14.79	74	51.07	32.2	7.59	31.65	396	66	P	V
		2389.43	48.91	-5.09	54	40.77	32.2	7.59	31.65	396	66	A	V
	*	2414	108.22	-	-	100.07	32.18	7.62	31.65	396	66	P	V
	*	2414	101.37	-	-	93.22	32.18	7.62	31.65	396	66	A	V
802.11n HT20 CH 02 2417MHz		2389.04	61.82	-12.18	74	53.68	32.2	7.59	31.65	137	112	P	H
		2389.04	50.58	-3.42	54	42.44	32.2	7.59	31.65	137	112	A	H
	*	2418	112.69	-	-	104.52	32.18	7.62	31.63	137	112	P	H
	*	2416	105.37	-	-	97.2	32.18	7.62	31.63	137	112	A	H
		2389.04	60.71	-13.29	74	52.57	32.2	7.59	31.65	395	67	P	V
	!	2389.95	48.77	-5.23	54	40.63	32.2	7.59	31.65	395	67	A	V
	*	2418	110.84	-	-	102.67	32.18	7.62	31.63	395	67	P	V
	*	2418	103.2	-	-	95.03	32.18	7.62	31.63	395	67	A	V



802.11n HT20 CH 03 2422MHz		2387.35	62.13	-11.87	74	53.99	32.2	7.59	31.65	127	109	P	H
		2389.95	50.73	-3.27	54	42.59	32.2	7.59	31.65	127	109	A	H
	*	2422	113.71	-	-	105.53	32.17	7.64	31.63	127	109	P	H
	*	2424	106.47	-	-	98.29	32.17	7.64	31.63	127	109	A	H
		2385.79	58.87	-15.13	74	50.73	32.2	7.59	31.65	395	67	P	V
		2389.43	48.33	-5.67	54	40.19	32.2	7.59	31.65	395	67	A	V
	*	2424	112.13	-	-	103.95	32.17	7.64	31.63	395	67	P	V
	*	2422	104.35	-	-	96.17	32.17	7.64	31.63	395	67	A	V
802.11n HT20 CH 09 2452MHz		2483.92	60.7	-13.3	74	52.43	32.12	7.73	31.58	124	112	P	H
		2483.92	50.14	-3.86	54	41.87	32.12	7.73	31.58	124	112	A	H
	*	2454	112.41	-	-	104.18	32.13	7.7	31.6	124	112	P	H
	*	2454	105.17	-	-	96.94	32.13	7.7	31.6	124	112	A	H
		2495.38	58.38	-15.62	74	50.08	32.1	7.76	31.56	388	67	P	V
		2484.46	48.24	-5.76	54	39.97	32.12	7.73	31.58	388	67	A	V
	*	2452	110.03	-	-	101.82	32.15	7.67	31.61	388	67	P	V
	*	2450	102.83	-	-	94.62	32.15	7.67	31.61	388	67	A	V



802.11n HT20 CH 10 2457MHz		2484.22	62.3	-11.7	74	54.03	32.12	7.73	31.58	126	113	P	H
		2483.8	50.99	-3.01	54	42.72	32.12	7.73	31.58	126	113	A	H
	*	2458	112.74	-	-	104.51	32.13	7.7	31.6	126	113	P	H
	*	2458	105.36	-	-	97.13	32.13	7.7	31.6	126	113	A	H
		2486.98	59.15	-14.85	74	50.88	32.12	7.73	31.58	389	71	P	V
		2483.62	48.8	-5.2	54	40.53	32.12	7.73	31.58	389	71	A	V
	*	2460	109.66	-	-	101.43	32.13	7.7	31.6	389	71	P	V
	*	2458	102.47	-	-	94.24	32.13	7.7	31.6	389	71	A	V
802.11n HT20 CH 11 2462MHz		2484.28	61.84	-12.16	74	53.57	32.12	7.73	31.58	104	112	P	H
		2484.34	50.66	-3.34	54	42.39	32.12	7.73	31.58	104	112	A	H
	*	2462	112.19	-	-	103.96	32.13	7.7	31.6	104	112	P	H
	*	2464	105.17	-	-	96.94	32.13	7.7	31.6	104	112	A	H
		2483.68	60.78	-13.22	74	52.51	32.12	7.73	31.58	346	69	P	V
		2483.56	49.41	-4.59	54	41.14	32.12	7.73	31.58	346	69	A	V
	*	2464	109.87	-	-	101.64	32.13	7.7	31.6	346	69	P	V
	*	2464	102.89	-	-	94.66	32.13	7.7	31.6	346	69	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4824	42.07	-31.93	74	56.74	34.31	11.06	60.04	300	0	P	H
		4824	41.63	-32.37	74	56.3	34.31	11.06	60.04	300	360	P	V
802.11n HT20 CH 02 2417MHz		4836	41.05	-32.95	74	55.71	34.32	11.05	60.03	100	360	P	H
		7251	44.91	-29.09	74	56.03	35.95	13.43	60.5	100	360	P	H
		4836	39.78	-34.22	74	54.44	34.32	11.05	60.03	100	360	P	V
		7251	43.23	-30.77	74	54.35	35.95	13.43	60.5	100	360	P	V
802.11n HT20 CH 03 2422MHz		4842	41.38	-32.62	74	56.04	34.32	11.05	60.03	300	0	P	H
		7266	47.3	-26.7	74	58.42	35.94	13.45	60.51	300	0	P	H
		4842	40.84	-33.16	74	55.5	34.32	11.05	60.03	300	360	P	V
		7266	45.15	-28.85	74	56.27	35.94	13.45	60.51	300	360	P	V

802.11n HT20 CH 06 2437MHz		4872	43.32	-30.68	74	57.97	34.34	11.04	60.03	300	0	P	H
		7308	53.11	-20.89	74	64.2	35.94	13.48	60.51	100	177	P	H
		7308	40.61	-13.39	54	51.7	35.94	13.48	60.51	100	177	A	H
		4872	41.73	-32.27	74	56.38	34.34	11.04	60.03	300	360	P	V
		7308	48.55	-25.45	74	59.64	35.94	13.48	60.51	300	360	P	V
802.11n HT20 CH 09 2452MHz		4902	42.49	-31.51	74	57.13	34.35	11.03	60.02	300	0	P	H
		7356	45.94	-28.06	74	57.01	35.93	13.52	60.52	300	0	P	H
		4902	41.09	-32.91	74	55.73	34.35	11.03	60.02	300	360	P	V
		7356	44.23	-29.77	74	55.3	35.93	13.52	60.52	300	360	P	V
802.11n HT20 CH 10 2577MHz		4914	42.4	-31.6	74	57.04	34.35	11.03	60.02	300	0	P	H
		7371	45.51	-28.49	74	56.58	35.92	13.54	60.53	300	0	P	H
		4914	41.86	-32.14	74	56.5	34.35	11.03	60.02	300	360	P	V
		7368	44.4	-29.6	74	55.47	35.92	13.54	60.53	300	360	P	V



802.11n		4926	43.29	-30.71	74	57.92	34.36	11.03	60.02	300	0	P	H
HT20		7386	47.61	-26.39	74	58.67	35.92	13.55	60.53	300	0	P	H
CH 11		4926	41.34	-32.66	74	55.97	34.36	11.03	60.02	300	360	P	V
2462MHz		7386	45.7	-28.3	74	56.76	35.92	13.55	60.53	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		2389.56	65.18	-8.82	74	57.04	32.2	7.59	31.65	104	113	P	H
		2389.95	50.7	-3.3	54	42.56	32.2	7.59	31.65	104	113	A	H
		2484.34	57.36	-16.64	74	49.09	32.12	7.73	31.58	104	113	P	H
		2492.2	46.58	-7.42	54	38.28	32.1	7.76	31.56	104	113	A	H
	*	2426	105.23	-	-	97.05	32.17	7.64	31.63	104	113	P	H
	*	2426	98.33	-	-	90.15	32.17	7.64	31.63	104	113	A	H
		2389.3	61.87	-12.13	74	53.73	32.2	7.59	31.65	394	67	P	V
		2389.95	48.14	-5.86	54	40	32.2	7.59	31.65	394	67	A	V
		2490.7	56.57	-17.43	74	48.29	32.1	7.76	31.58	394	67	P	V
		2485.3	46.5	-7.5	54	38.23	32.12	7.73	31.58	394	67	A	V
	*	2420	103.53	-	-	95.35	32.17	7.64	31.63	394	67	P	V
	*	2420	96.55	-	-	88.37	32.17	7.64	31.63	394	67	A	V
802.11n HT40 CH 04 2427MHz		2389.43	60.44	-13.56	74	52.3	32.2	7.59	31.65	100	115	P	H
		2388.91	50.67	-3.33	54	42.53	32.2	7.59	31.65	100	115	A	H
		2492.14	57.9	-16.1	74	49.6	32.1	7.76	31.56	100	115	P	H
		2485.84	48.41	-5.59	54	40.14	32.12	7.73	31.58	100	115	A	H
	*	2430	107.96	-	-	99.78	32.17	7.64	31.63	100	115	P	H
	*	2430	100.91	-	-	92.73	32.17	7.64	31.63	100	115	A	H
		2388.91	58.66	-15.34	74	50.52	32.2	7.59	31.65	397	67	P	V
		2389.3	48.75	-5.25	54	40.61	32.2	7.59	31.65	397	67	A	V
		2490.22	57.47	-16.53	74	49.19	32.1	7.76	31.58	397	67	P	V
		2485.9	47.02	-6.98	54	38.75	32.12	7.73	31.58	397	67	A	V
	*	2430	105.57	-	-	97.39	32.17	7.64	31.63	397	67	P	V
	*	2430	98.45	-	-	90.27	32.17	7.64	31.63	397	67	A	V



802.11n HT40 CH 06 2437MHz		2388.39	60.16	-13.84	74	52.02	32.2	7.59	31.65	105	110	P	H
		2389.95	50.66	-3.34	54	42.52	32.2	7.59	31.65	105	110	A	H
		2483.5	60.11	-13.89	74	51.84	32.12	7.73	31.58	105	110	P	H
		2483.62	50.02	-3.98	54	41.75	32.12	7.73	31.58	105	110	A	H
	*	2436	110.1	-	-	101.9	32.17	7.64	31.61	105	110	P	H
	*	2434	102.35	-	-	94.17	32.17	7.64	31.63	105	110	A	H
		2388.52	58.31	-15.69	74	50.17	32.2	7.59	31.65	314	69	P	V
		2389.82	48.46	-5.54	54	40.32	32.2	7.59	31.65	314	69	A	V
		2486.68	58.05	-15.95	74	49.78	32.12	7.73	31.58	314	69	P	V
		2485.3	48.02	-5.98	54	39.75	32.12	7.73	31.58	314	69	A	V
	*	2436	106.52	-	-	98.32	32.17	7.64	31.61	314	69	P	V
	*	2434	99.22	-	-	91.04	32.17	7.64	31.63	314	69	A	V
802.11n HT40 CH 08 2447MHz		2357.84	58.43	-15.57	74	50.46	32.11	7.53	31.67	109	110	P	H
		2389.82	48.58	-5.42	54	40.44	32.2	7.59	31.65	109	110	A	H
		2483.68	62.35	-11.65	74	54.08	32.12	7.73	31.58	109	110	P	H
		2483.56	50.56	-3.44	54	42.29	32.12	7.73	31.58	109	110	A	H
	*	2440	108.48	-	-	100.27	32.15	7.67	31.61	109	110	P	H
	*	2446	100.55	-	-	92.34	32.15	7.67	31.61	109	110	A	H
		2388.39	57.44	-16.56	74	49.3	32.2	7.59	31.65	389	68	P	V
		2389.82	47.47	-6.53	54	39.33	32.2	7.59	31.65	389	68	A	V
		2490.34	59.15	-14.85	74	50.87	32.1	7.76	31.58	389	68	P	V
		2483.5	48.97	-5.03	54	40.7	32.12	7.73	31.58	389	68	A	V
	*	2446	106.12	-	-	97.91	32.15	7.67	31.61	389	68	P	V
	*	2446	98.9	-	-	90.69	32.15	7.67	31.61	389	68	A	V



802.11n HT40 CH 09 2452MHz		2358.62	56.58	-17.42	74	48.6	32.11	7.53	31.66	136	106	P	H
		2384.49	46.47	-7.53	54	38.41	32.15	7.56	31.65	136	106	A	H
		2483.74	60.05	-13.95	74	51.78	32.12	7.73	31.58	136	106	P	H
		2483.56	50.56	-3.44	54	42.29	32.12	7.73	31.58	136	106	A	H
	*	2444	103.56	-	-	95.35	32.15	7.67	31.61	136	106	P	H
	*	2450	96.67	-	-	88.46	32.15	7.67	31.61	136	106	A	H
		2327.94	56.75	-17.25	74	48.93	32.02	7.47	31.67	391	64	P	V
		2375.39	46.13	-7.87	54	38.08	32.15	7.56	31.66	391	64	A	V
		2483.62	59.48	-14.52	74	51.21	32.12	7.73	31.58	391	64	P	V
		2483.5	48.42	-5.58	54	40.15	32.12	7.73	31.58	391	64	A	V
	*	2450	101.44	-	-	93.23	32.15	7.67	31.61	391	64	P	V
	*	2450	94.47	-	-	86.26	32.15	7.67	31.61	391	64	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n		4842	42.09	-31.91	74	56.75	34.32	11.05	60.03	300	0	P	H
HT40		7266	43.76	-30.24	74	54.88	35.94	13.45	60.51	300	0	P	H
CH 03		4842	41.01	-32.99	74	55.67	34.32	11.05	60.03	300	360	P	V
2422MHz		7266	44.19	-29.81	74	55.31	35.94	13.45	60.51	300	360	P	V
802.11n		4854	39.6	-34.4	74	54.25	34.33	11.05	60.03	300	0	P	H
HT40		7284	43.95	-30.05	74	55.06	35.94	13.46	60.51	300	0	P	H
CH 04		4854	39.99	-34.01	74	54.64	34.33	11.05	60.03	300	360	P	V
2427MHz		7284	43.11	-30.89	74	54.22	35.94	13.46	60.51	300	360	P	V
802.11n		4872	41.04	-32.96	74	55.69	34.34	11.04	60.03	300	0	P	H
HT40		7308	45	-29	74	56.09	35.94	13.48	60.51	300	0	P	H
CH 06		4872	41.45	-32.55	74	56.1	34.34	11.04	60.03	300	360	P	V
2437MHz		7308	43.55	-30.45	74	54.64	35.94	13.48	60.51	300	360	P	V
802.11n		4894	41.31	-32.69	74	55.94	34.35	11.04	60.02	300	0	P	H
HT40		7344	44.28	-29.72	74	55.36	35.93	13.51	60.52	300	0	P	H
CH 08		4896	41.24	-32.76	74	55.87	34.35	11.04	60.02	300	360	P	V
2447MHz		7341	44.12	-29.88	74	55.2	35.93	13.51	60.52	300	360	P	V
802.11n		4902	41.86	-32.14	74	56.5	34.35	11.03	60.02	300	0	P	H
HT40		7356	42.84	-31.16	74	53.91	35.93	13.52	60.52	300	0	P	H
CH 09		4902	41.22	-32.78	74	55.86	34.35	11.03	60.02	300	360	P	V
2452MHz		7356	43.15	-30.85	74	54.22	35.93	13.52	60.52	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11g LF		30	18.45	-21.55	40	24.7	25.14	0.81	32.2			P	H
		168.71	23.48	-20.02	43.5	36.75	16.57	2.26	32.1			P	H
		287.05	20.11	-25.89	46	30.16	19.12	2.96	32.13			P	H
		568.35	23.23	-22.77	46	25.77	25.61	4.15	32.3			P	H
		654.68	24.77	-21.23	46	25.86	26.66	4.45	32.2			P	H
		740.04	26.58	-19.42	46	25.96	28.17	4.73	32.28	262	35	P	H
		38.73	32.8	-7.2	40	43.46	20.44	1.04	32.14	162	35	P	V
		42.61	30.67	-9.33	40	43.4	18.29	1.12	32.14			P	V
		78.5	22.62	-17.38	40	40.2	13.09	1.53	32.2			P	V
		169.68	23.75	-19.75	43.5	37	16.58	2.27	32.1			P	V
		764.29	26.63	-19.37	46	25.72	28.4	4.81	32.3			P	V
		866.14	26.73	-19.27	46	24.71	29.25	5.11	32.34			P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)

2. Level(dBμV/m) =

Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

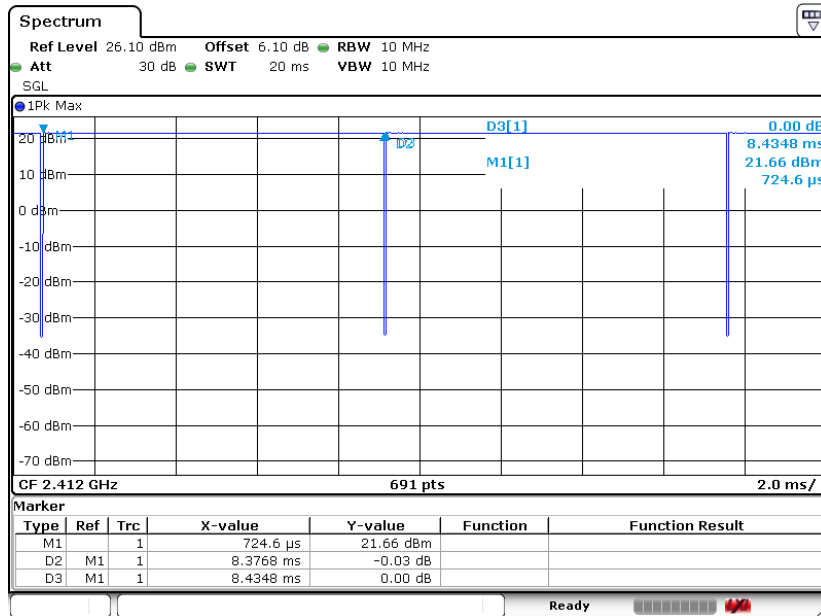
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.

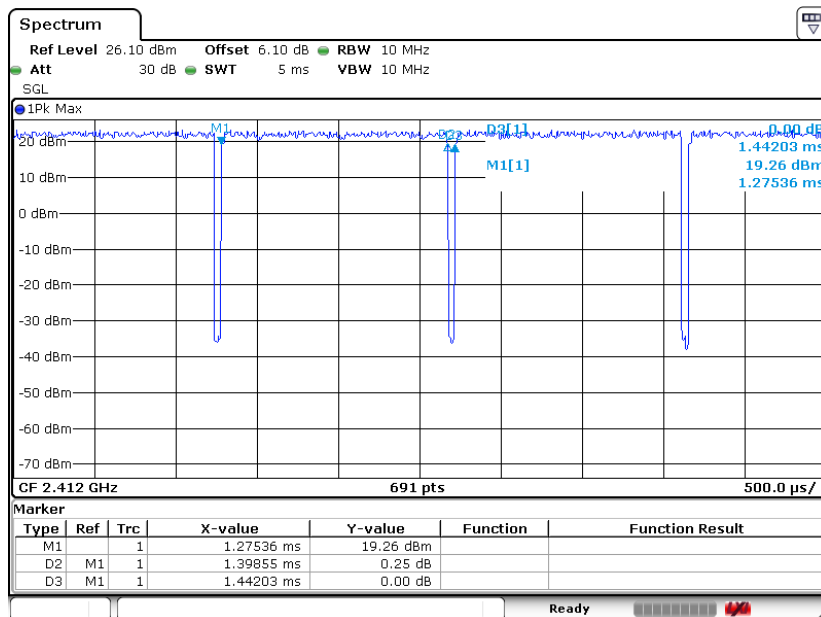
Appendix D. Duty Cycle Plots

Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11b Ant 1+2	99.31	-	-	10Hz
802.11g Ant 1+2	96.99	1.399	0.715	0.75KHz
802.11n HT20 Ant 1+2	96.77	1.304	0.767	0.82KHz
802.11n HT40 Ant 1+2	93.73	0.649	1.540	1.6KHz

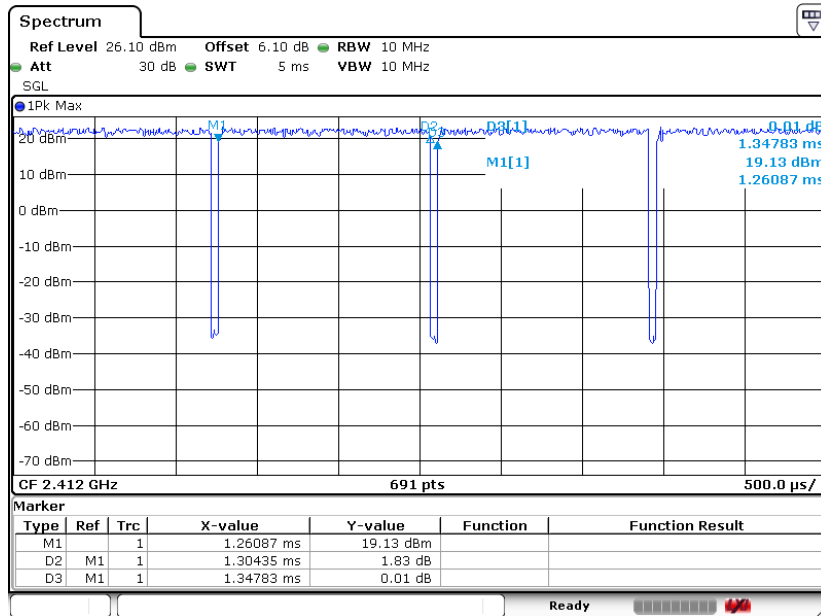
802.11b



802.11g



802.11n HT20



802.11n HT40

