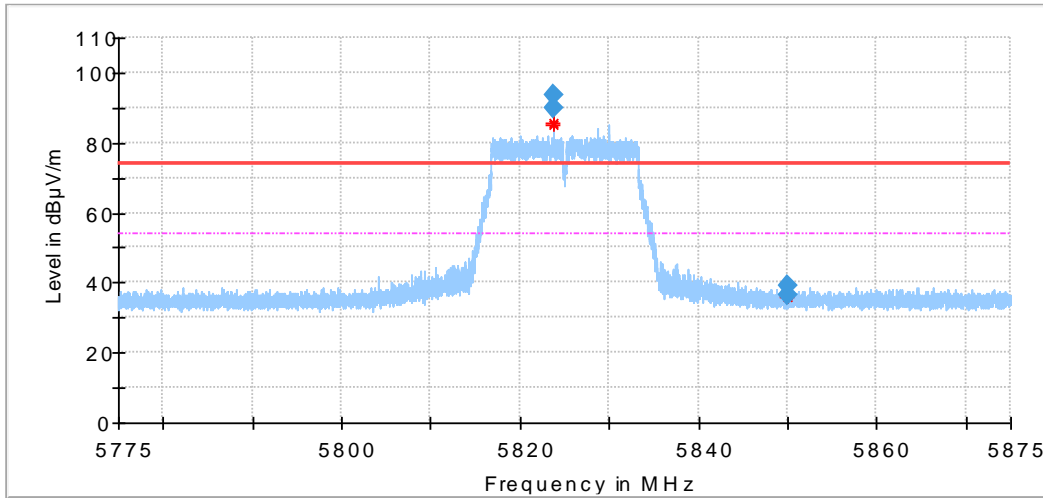
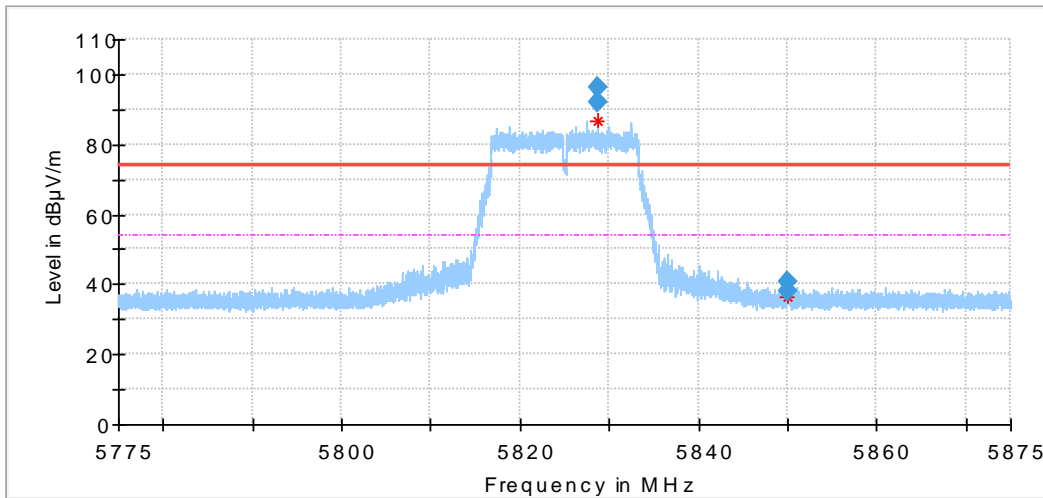


802.11A Modulation 5825MHz Test Result

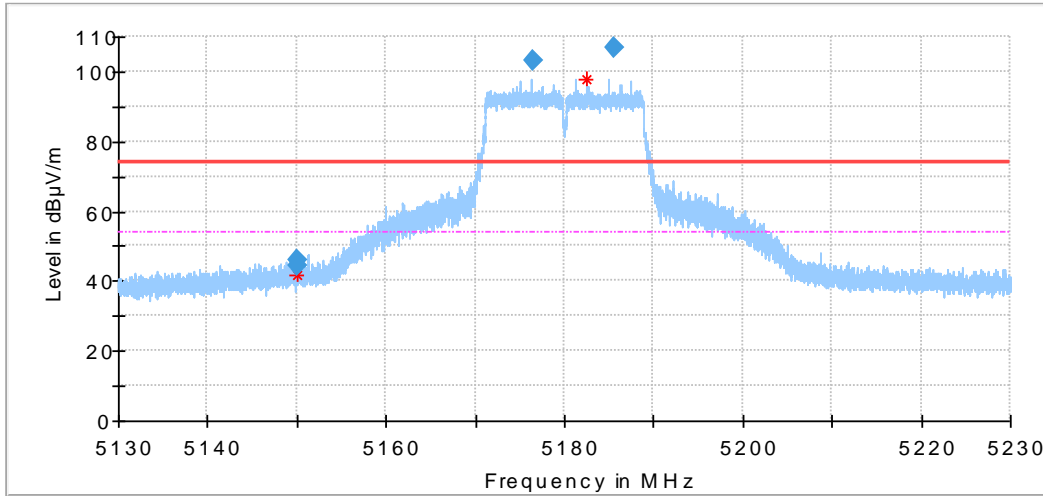


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5823.731250	93.50		74.00	-19.50	154.0	H	251.0	3.5
5823.737500		89.70	54.00	-35.70	154.0	H	251.0	3.5
5849.996875	39.20		74.00	34.80	154.0	H	137.0	3.5
5850.000000		36.50	54.00	17.50	154.0	H	137.0	3.5

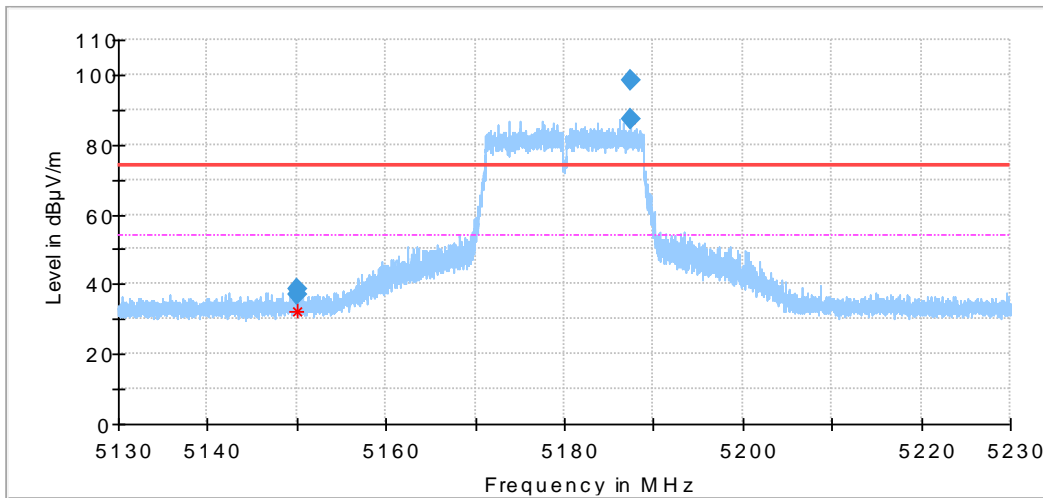


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5828.728125	96.10		74.00	-22.10	154.0	V	244.0	3.6
5828.734375		91.80	54.00	-37.80	154.0	V	244.0	3.6
5849.990625	40.70		74.00	33.30	154.0	V	76.0	3.6
5849.996875		38.20	54.00	15.80	154.0	V	76.0	3.6

802.11N20 Modulation 5180MHz Test Result

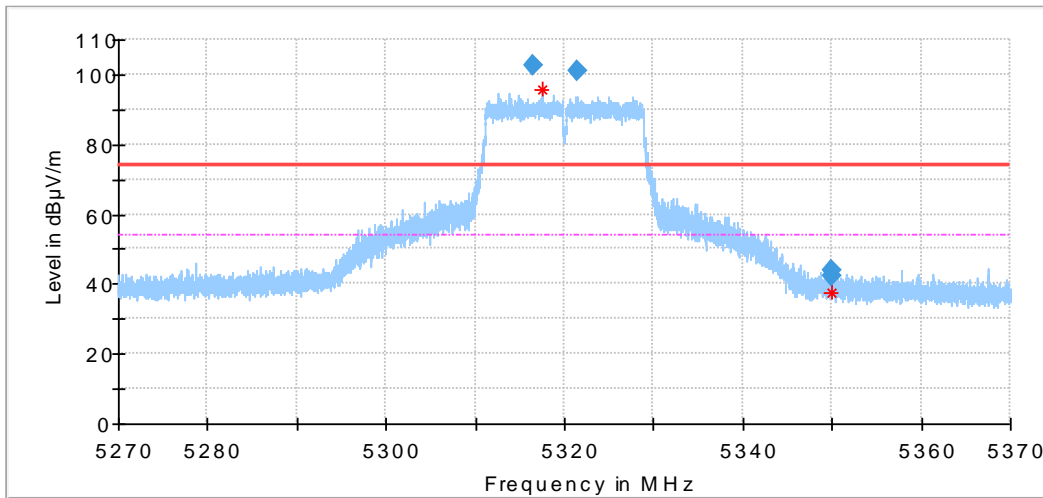


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5149.981250	45.98		74.00	28.02	154.0	H	355.0	2.9
5150.000000		44.51	54.00	9.49	154.0	H	355.0	2.9
5185.481250	106.72		74.00	-32.72	154.0	H	0.0	3.0
5176.500000		103.02	54.00	-44.02	154.0	H	357.0	3.0

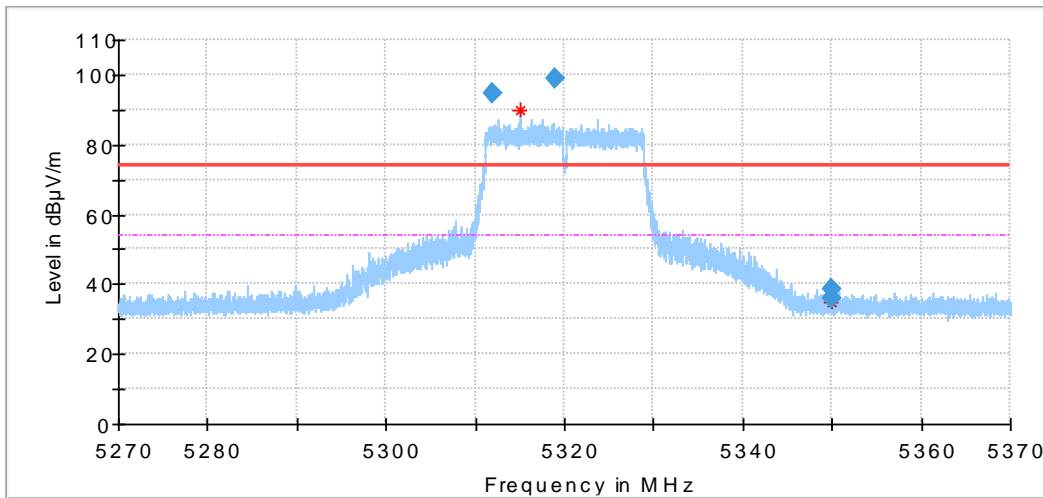


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5149.993750	38.62		74.00	35.35	154.0	V	255.0	3.0
5150.000000		37.25	54.00	16.75	154.0	V	255.0	3.0
5187.484375	98.57		74.00	-24.57	154.0	V	132.0	3.0
5187.487500		87.27	54.00	-33.27	154.0	V	132.0	3.0

802.11N20 Modulation 5320MHz Test Result

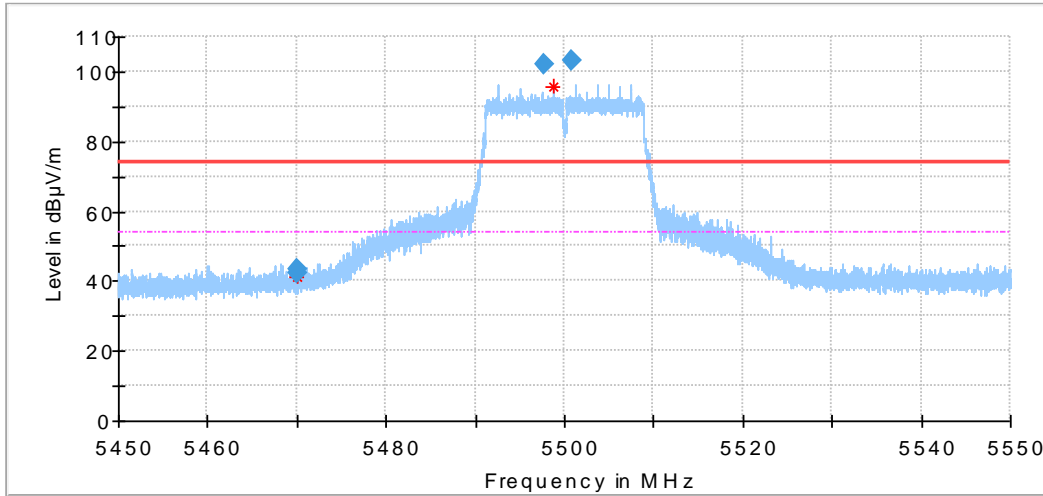


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5316.481250	102.48		74.00	-28.48	154.0	H	0.0	2.9
5321.487500		101.20	54.00	-47.20	154.0	H	0.0	2.9
5350.000000	43.86		74.00	43.86	154.0	H	357.0	2.9
5350.003125		42.15	54.00	11.85	154.0	H	352.0	2.9

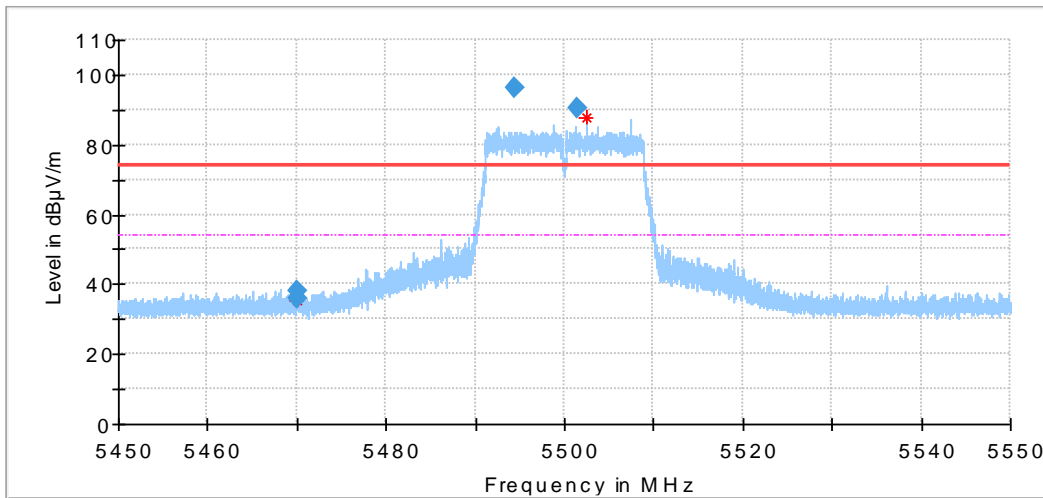


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5319.025000	98.76		74.00	-24.76	154.0	V	134.0	3.0
5312.028125		94.71	54.00	-40.71	154.0	V	134.0	3.0
5349.993750	38.58		74.00	35.42	154.0	V	262.0	3.0
5350.000000		35.73	54.00	18.27	154.0	V	262.0	3.0

802.11N20 Modulation 5500MHz Test Result

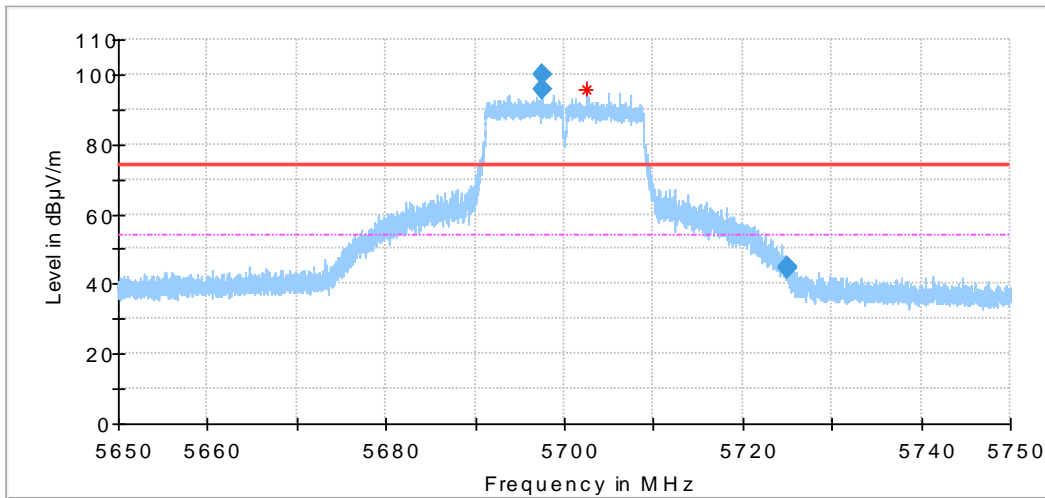


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5470.015625	43.25		74.00	30.75	154.0	H	19.0	2.8
5470.025000		42.14	54.00	11.86	154.0	H	19.0	2.8
5500.737500	103.17		74.00	-29.17	154.0	H	358.0	2.8
5497.746875		102.23	54.00	-48.23	154.0	H	358.0	2.8

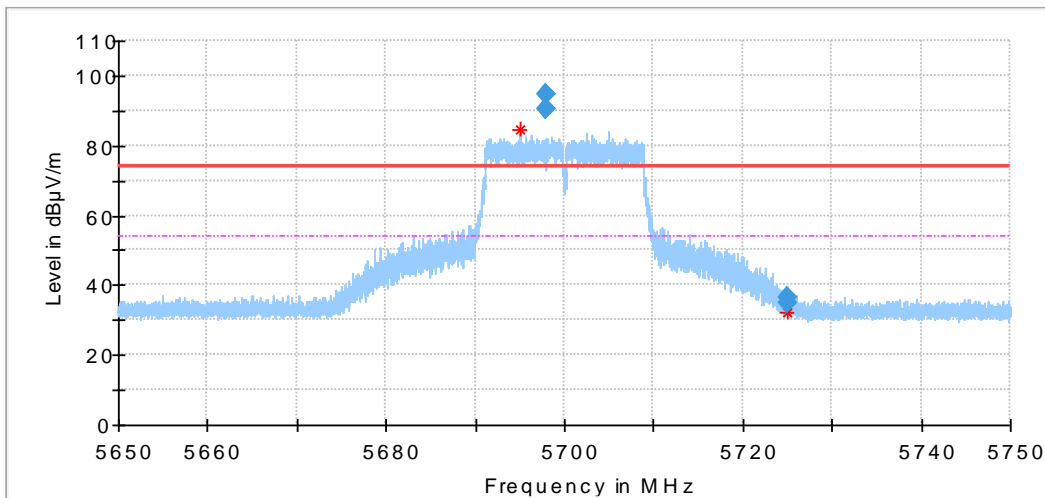


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5470.000000	37.87		74.00	36.13	154.0	V	269.0	2.8
5470.006250		36.16	54.00	17.84	154.0	V	269.0	2.8
5494.500000	96.10		74.00	-22.10	154.0	V	46.0	2.9
5501.506250		90.30	54.00	-36.30	154.0	V	46.0	2.9

802.11N20 Modulation 5700MHz Test Result

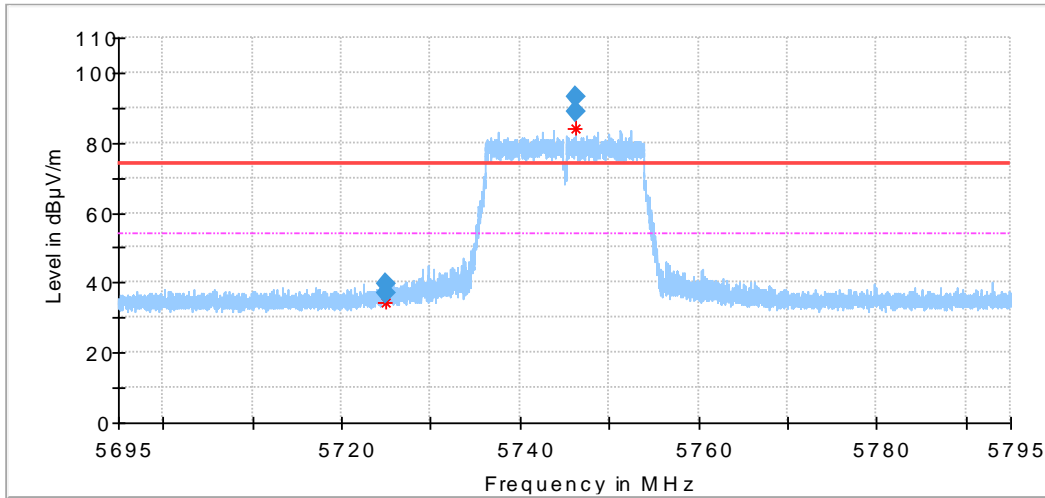


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5697.496875	104.50		74.00	-30.50	154.0	H	9.0	3.3
5697.503125		100.20	54.00	-46.20	154.0	H	9.0	3.3
5724.990625	46.59		74.00	27.41	154.0	H	2.0	3.2
5724.993750		44.52	54.00	9.48	154.0	H	2.0	3.2

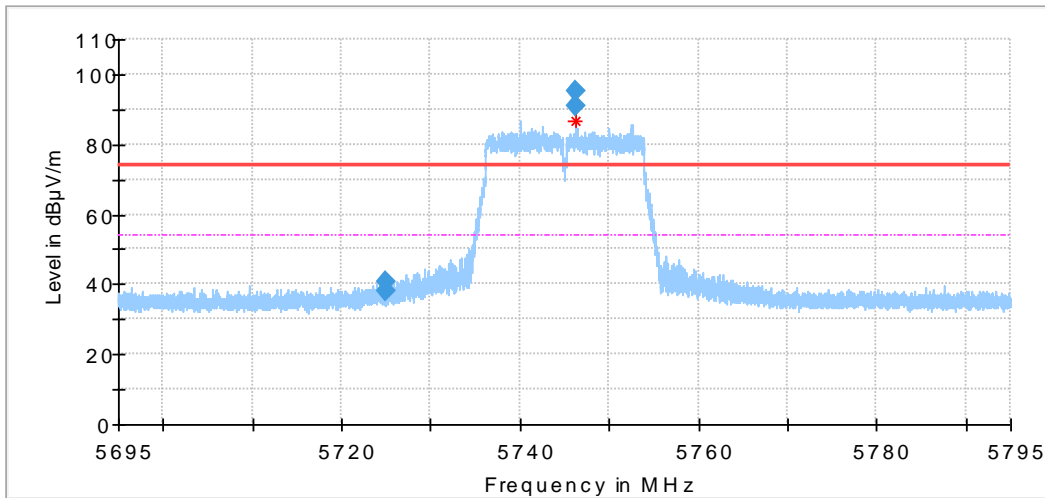


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5697.971875	94.88		74.00	-20.88	154.0	V	38.0	3.3
5697.975000		90.36	54.00	-36.36	154.0	V	38.0	3.3
5724.996875	36.53		74.00	37.47	154.0	V	49.0	3.3
5725.000000		35.04	54.00	18.96	154.0	V	49.0	3.3

802.11N20 Modulation 5745MHz Test Result

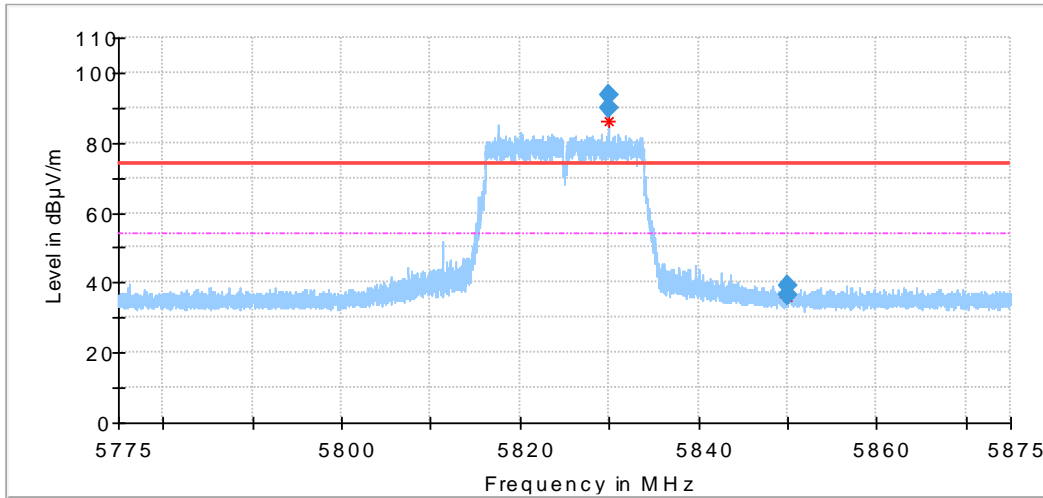


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5725.003125		37.20	54.00	16.80	154.0	H	51.0	3.2
5725.012500	39.40		74.00	34.60	154.0	H	288.0	3.2
5746.228125	93.20		74.00	-19.20	154.0	H	267.0	3.3
5746.231250		89.00	54.00	-35.00	154.0	H	267.0	3.3

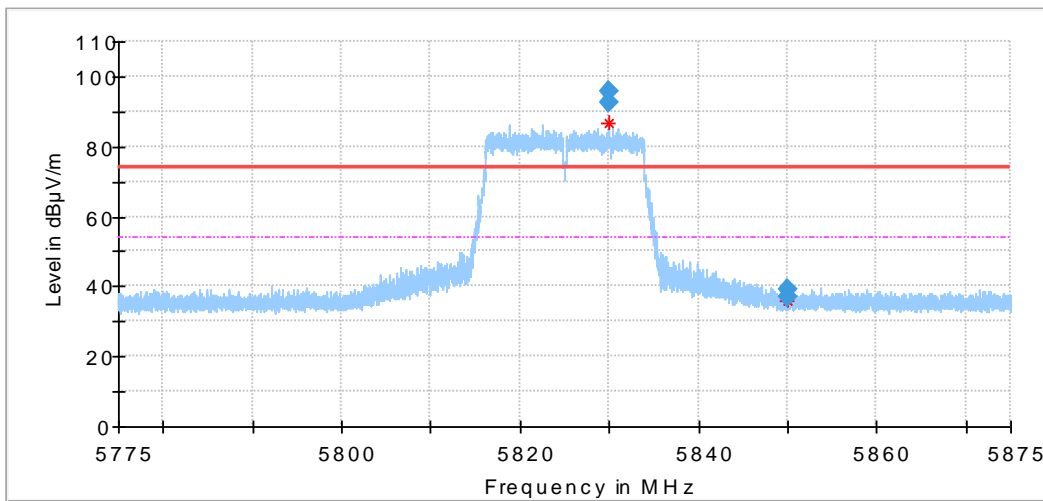


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5724.990625		38.30	54.00	15.70	154.0	V	154.0	3.3
5724.996875	40.60		74.00	33.40	154.0	V	154.0	3.3
5746.287500	95.00		74.00	-21.00	154.0	V	246.0	3.4
5746.290625		90.80	54.00	-36.80	154.0	V	246.0	3.4

802.11N20 Modulation 5825MHz Test Result

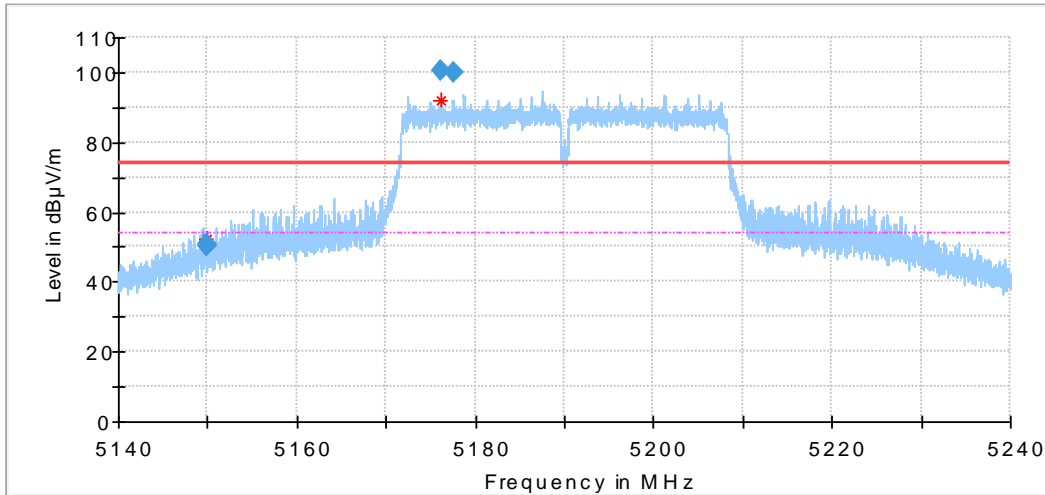


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5829.975000	93.50		74.00	-19.50	154.0	H	249.0	3.5
5829.981250		90.00	54.00	-36.00	154.0	H	249.0	3.5
5849.984375	39.20		74.00	34.80	154.0	H	354.0	3.5
5850.003125		36.50	54.00	17.50	154.0	H	197.0	3.5

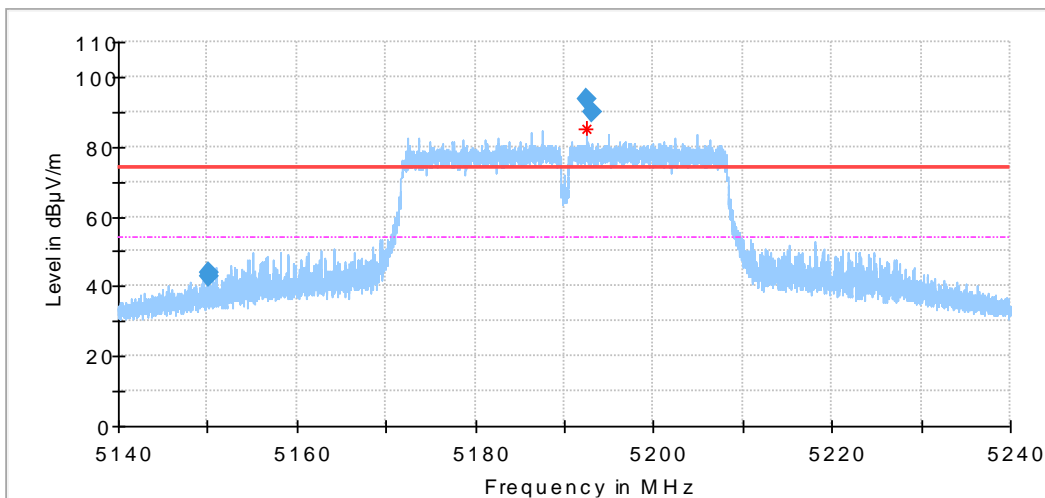


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5830.006250	95.60		74.00	-21.60	154.0	V	264.0	3.6
5830.012500		92.60	54.00	-38.60	154.0	V	264.0	3.6
5850.000000	39.00		74.00	35.00	154.0	V	250.0	3.6
5850.003125		37.10	54.00	16.90	154.0	V	0.0	3.6

802.11N40 Modulation 5190MHz Test Result

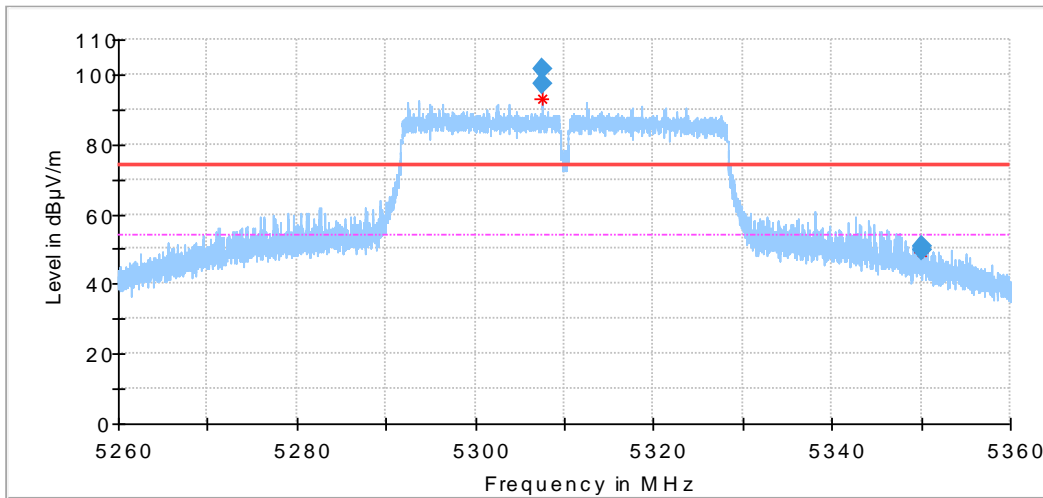


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5149.981250	50.52		74.00	23.48	154.0	H	3.0	2.9
5149.990625		50.12	54.00	3.88	154.0	H	359.0	2.9
5176.203125	100.36		74.00	-26.36	154.0	H	4.0	3.0
5177.503125		99.86	54.00	-45.86	154.0	H	7.0	3.0

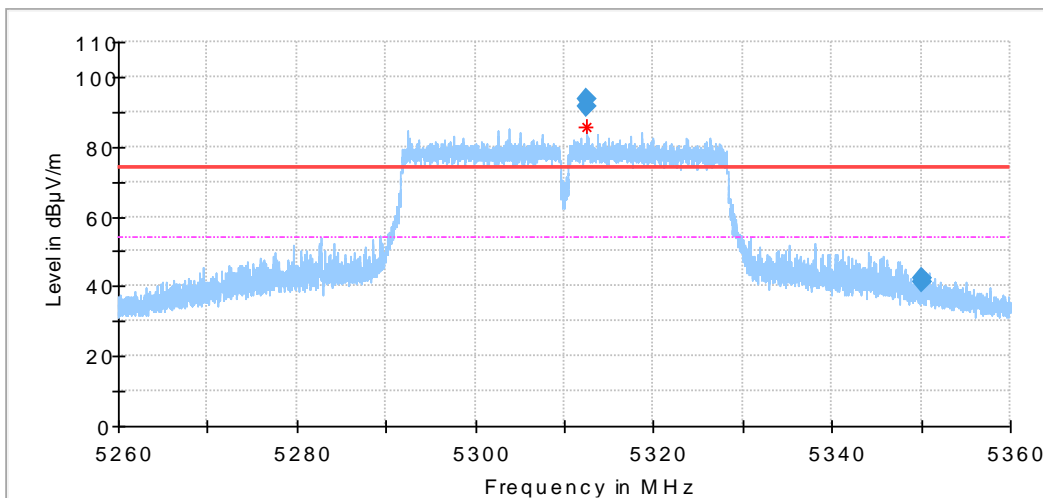


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5150.062500	43.68		74.00	30.32	154.0	V	131.0	3.0
5150.068750		42.69	54.00	11.31	154.0	V	131.0	3.0
5192.503125	93.56		74.00	-19.56	154.0	V	121.0	3.0
5193.106250		89.69	54.00	-32.69	154.0	V	136.0	3.0

802.11N40 Modulation 5310MHz Test Result

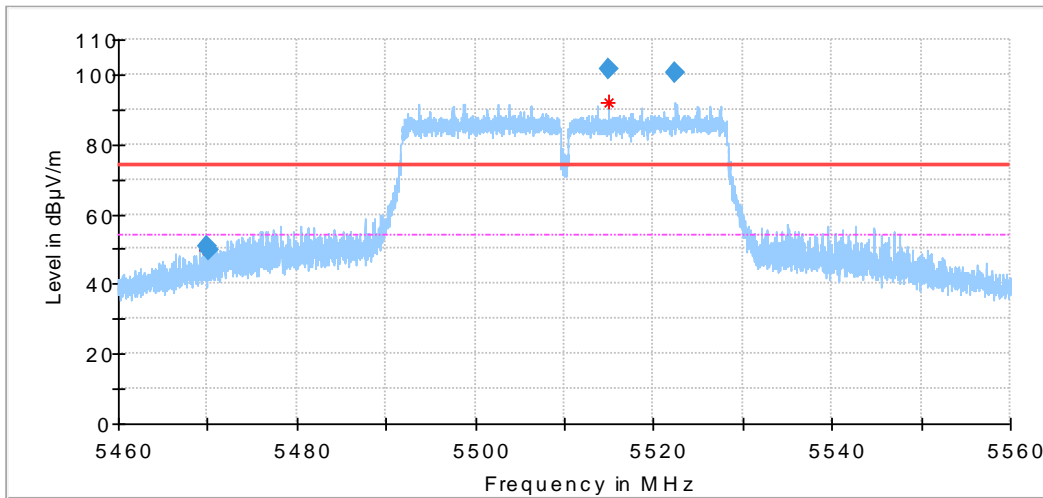


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5307.506250	101.36		74.00	-27.36	154.0	H	0.0	2.9
5307.525000		97.51	54.00	-43.51	154.0	H	0.0	2.9
5350.021875	50.88		74.00	23.12	154.0	H	358.0	2.9
5350.028125		49.68	54.00	4.32	154.0	H	358.0	2.9

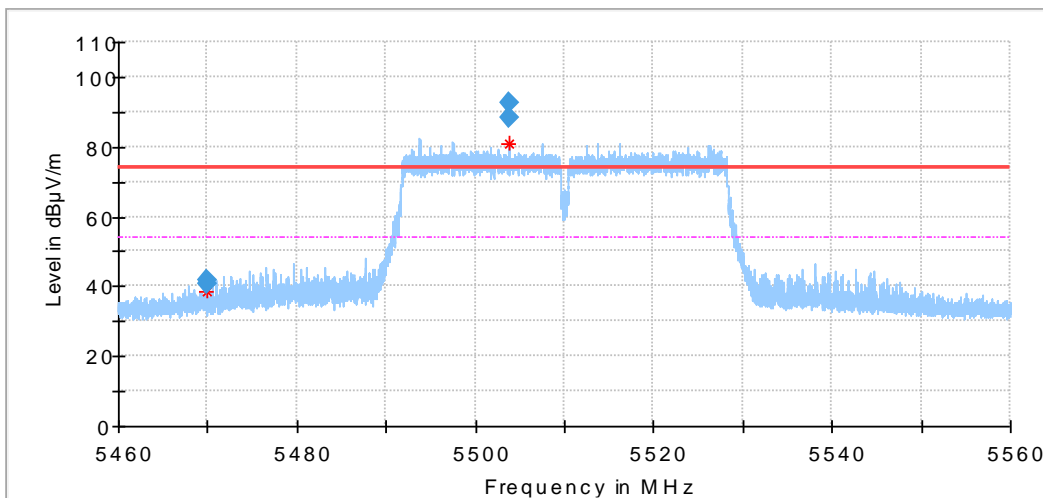


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5312.503125	93.36		74.00	-19.36	154.0	V	137.0	3.0
5312.575000		91.36	54.00	-37.36	154.0	V	137.0	3.0
5349.987500	42.37		74.00	31.63	154.0	V	228.0	3.0
5349.993750		41.14	54.00	12.86	154.0	V	228.0	3.0

802.11N40 Modulation 5510MHz Test Result

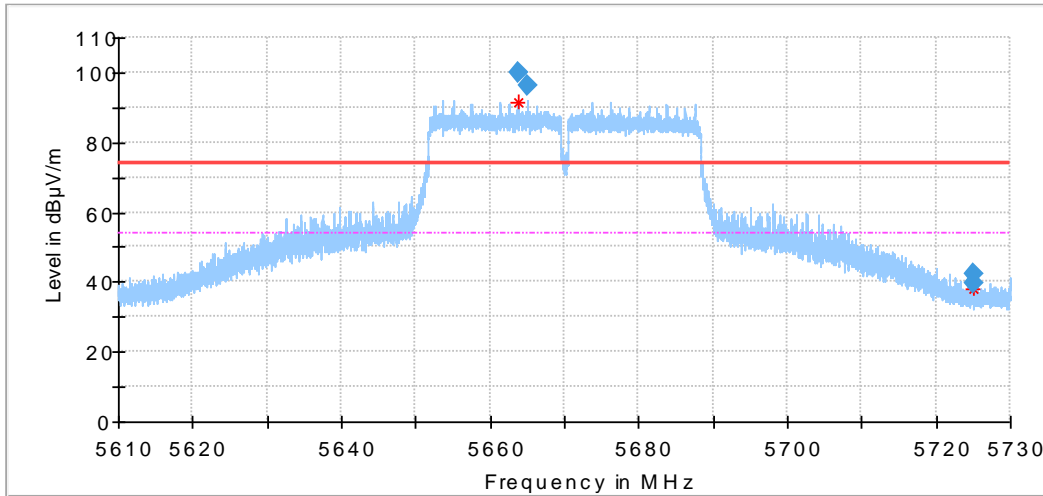


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5470.012500	50.75		74.00	23.25	154.0	H	1.0	2.8
5470.025000		49.65	54.00	4.35	154.0	H	1.0	2.8
5514.996875	101.36		74.00	-27.36	154.0	H	7.0	2.9
5522.490625		100.47	54.00	-46.47	154.0	H	9.0	2.9

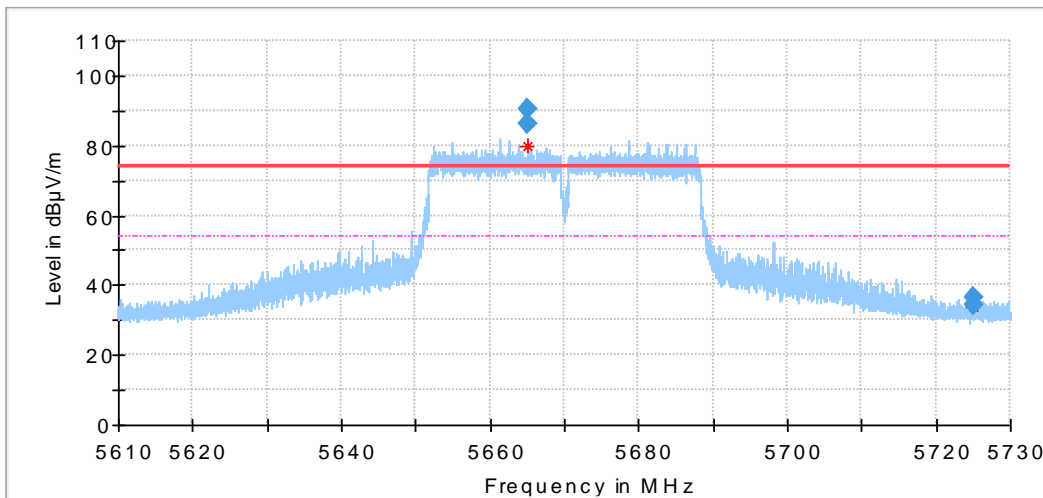


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5470.000000	41.68		74.00	32.32	154.0	V	126.0	2.8
5470.012500		40.47	54.00	13.53	154.0	V	126.0	2.8
5503.765625	92.36		74.00	-18.36	154.0	V	51.0	2.9
5503.781250		88.34	54.00	-34.34	154.0	V	51.0	2.9

802.11N40 Modulation 5670MHz Test Result

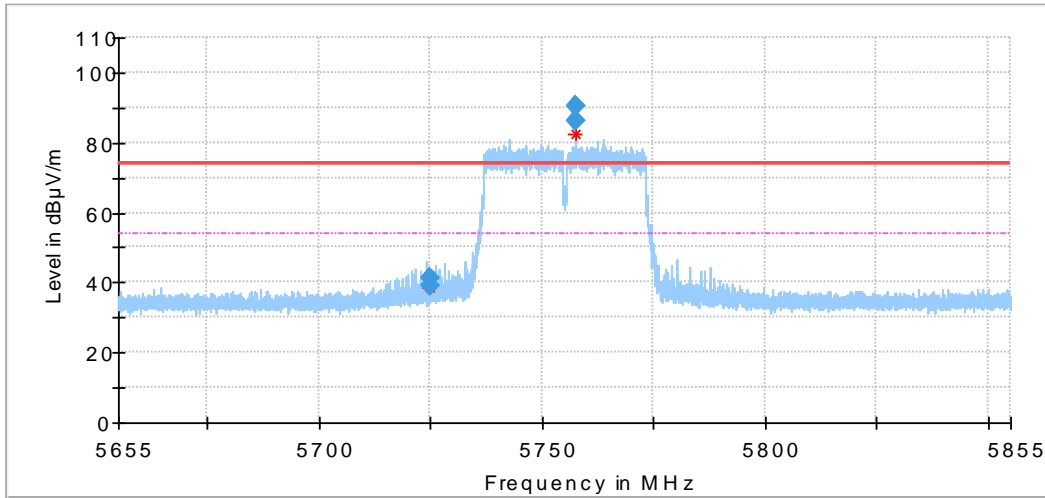


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5663.733750	100.01		74.00	-26.01	154.0	H	358.0	3.3
5664.967500		96.35	54.00	-42.35	154.0	H	357.0	3.3
5725.050000	42.30		74.00	31.70	154.0	H	0.0	3.2
5725.057500		39.48	54.00	14.52	154.0	H	0.0	3.2

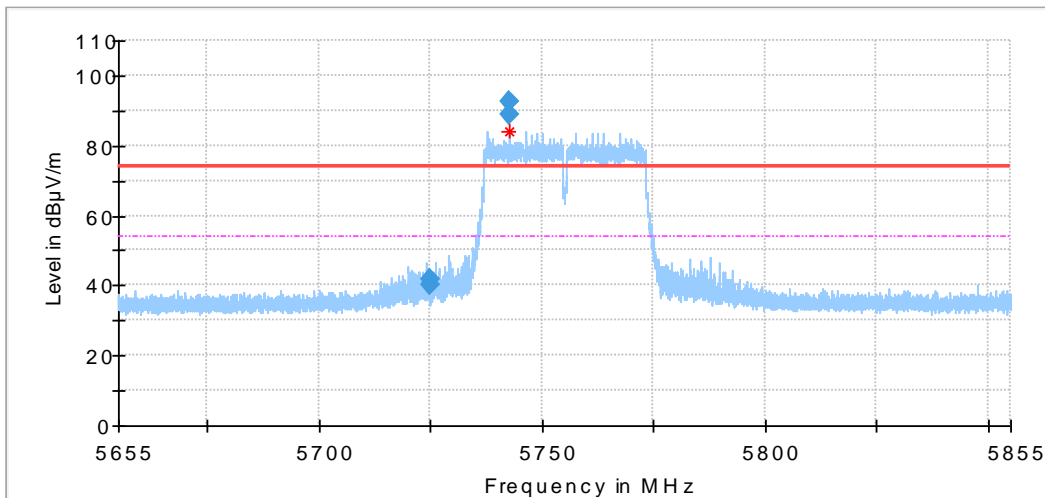


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5664.952500	90.36		74.00	-16.36	154.0	V	51.0	3.4
5664.971250		86.32	54.00	-32.32	154.0	V	51.0	3.4
5724.993750	36.36		74.00	37.64	154.0	V	70.0	3.3
5725.046250		34.14	54.00	19.86	154.0	V	41.0	3.3

802.11N40 Modulation 5755MHz Test Result

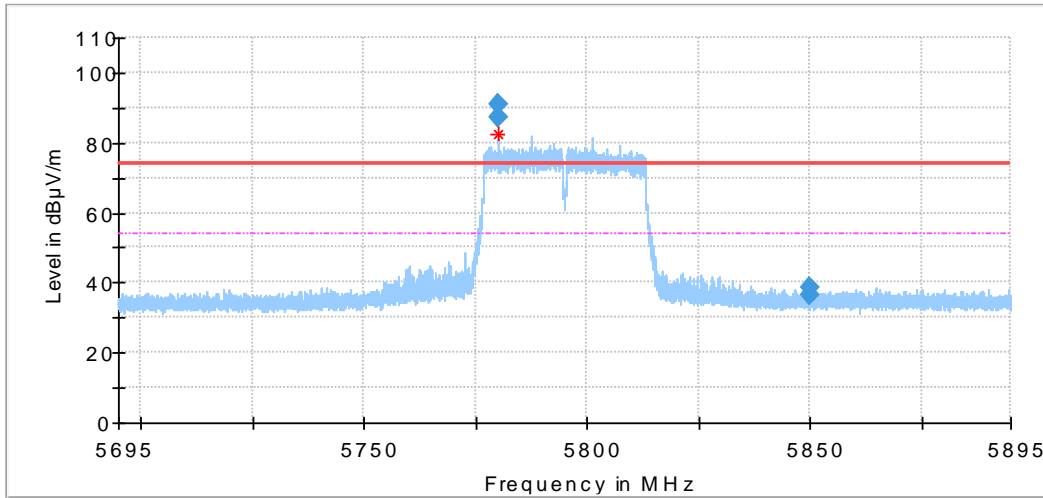


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5724.987500		39.00	54.00	15.00	154.0	H	238.0	3.2
5725.000000	41.10		74.00	32.90	154.0	H	238.0	3.2
5757.493750		86.24	54.00	-32.25	154.0	H	263.0	3.4
5757.518750	90.40		74.00	-16.40	154.0	H	267.0	3.4

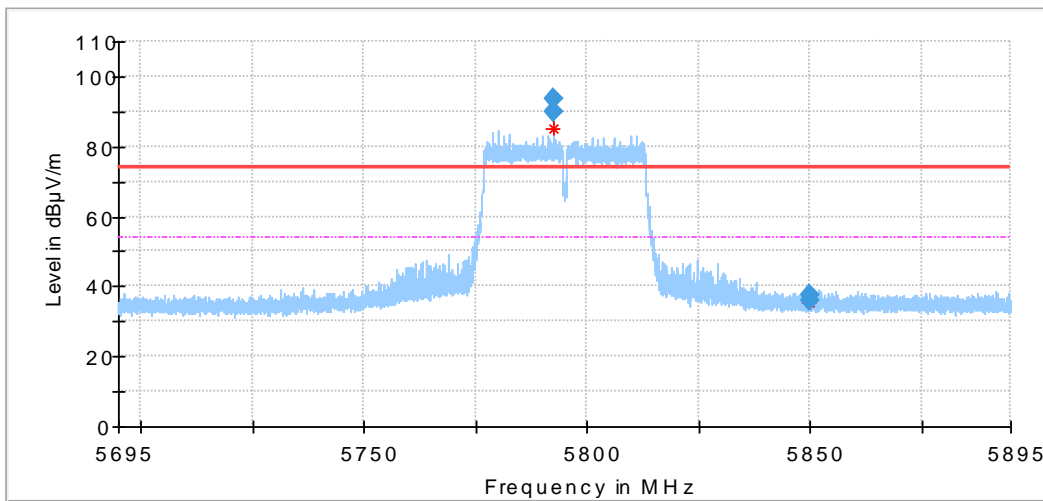


Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5724.968750		40.20	54.00	13.80	154.0	V	339.0	3.3
5725.025000	41.90		74.00	12.10	154.0	V	276.0	3.3
5742.531250	92.40		74.00	-18.40	154.0	V	229.0	3.4
5742.537500		88.66	54.00	-34.66	154.0	V	229.0	3.4

802.11N40 Modulation 5795MHz Test Result



Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5780.000000	91.10		74.00	-17.10	154.0	H	262.0	3.4
5780.012500		87.30	54.00	-33.30	154.0	H	262.0	3.4
5849.981250	38.70		74.00	35.30	154.0	H	156.0	3.5
5850.000000		36.50	54.00	17.50	154.0	H	66.0	3.5



Frequency (MHz)	MaxPeak (dBµV/m)	MaxAV (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5792.506250	93.50		74.00	-19.50	154.0	V	219.0	3.5
5792.512500		89.70	54.00	-35.70	154.0	V	219.0	3.5
5849.956250	37.70		74.00	36.30	154.0	V	168.0	3.6
5849.981250		36.10	54.00	17.90	154.0	V	350.0	3.6

Remark:

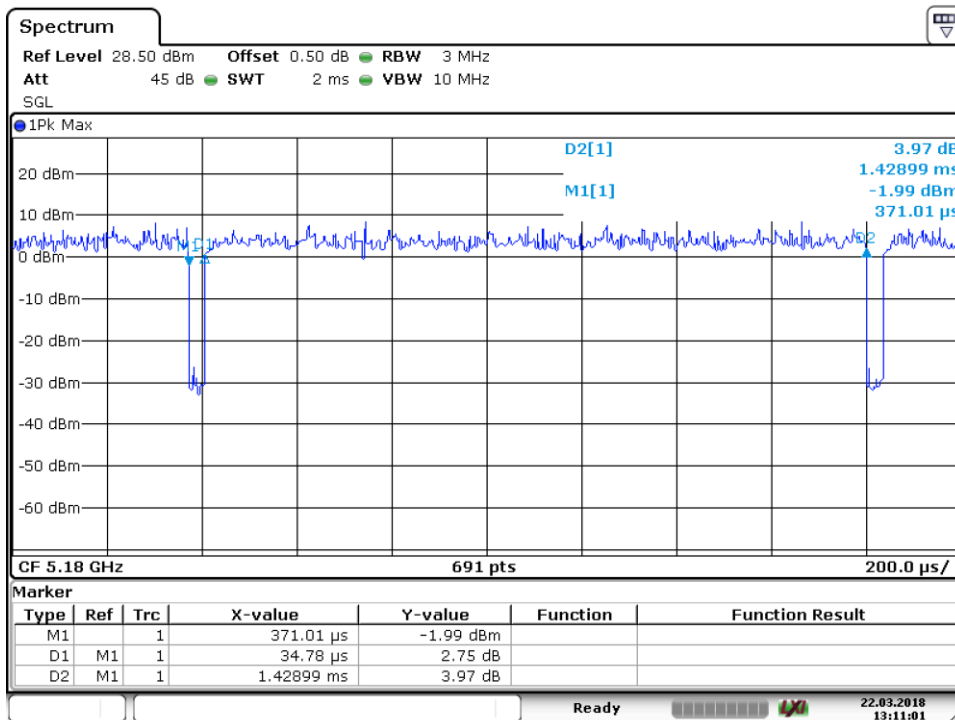
- (1) Above 1GHz Corrector factor= Antenna Factor +Cable Loss - Amp. factor

9.7 Duty Cycle

Test Data:

Mode	ON Time (msec)	Period (msec)	Duty Cycle (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11a	1.39421	1.42899	0.9757	97.57%	0.1
802.11n HT20	1.30435	1.33913	0.9740	97.40%	0.1
802.11n HT40	0.6493	0.6841	0.9491	81.54%	0.2

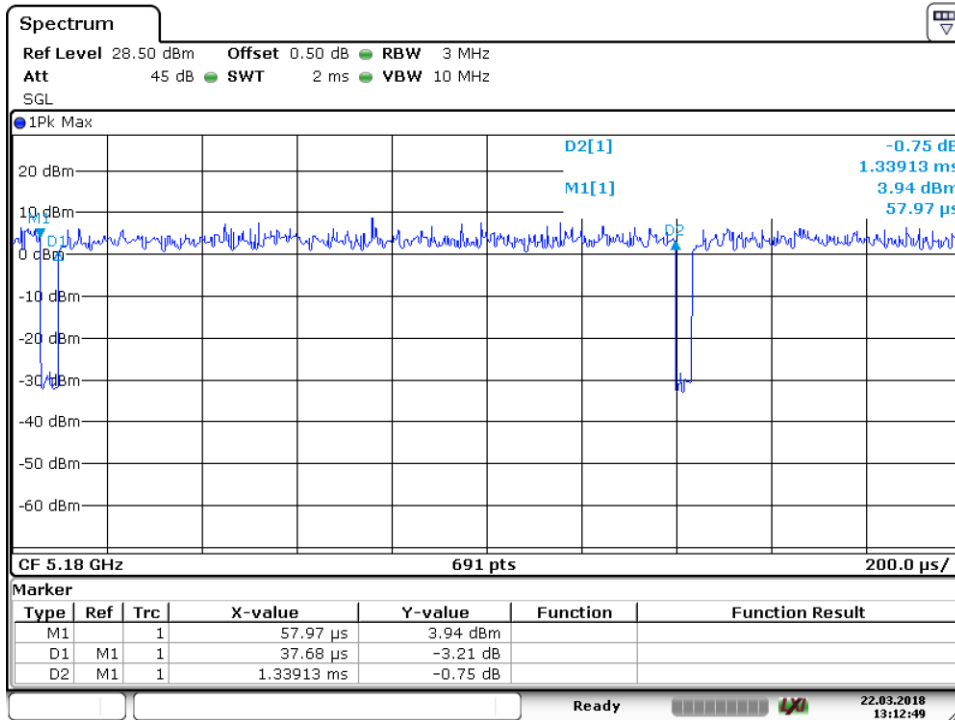
802.11a



Date: 22.MAR.2018 13:11:01

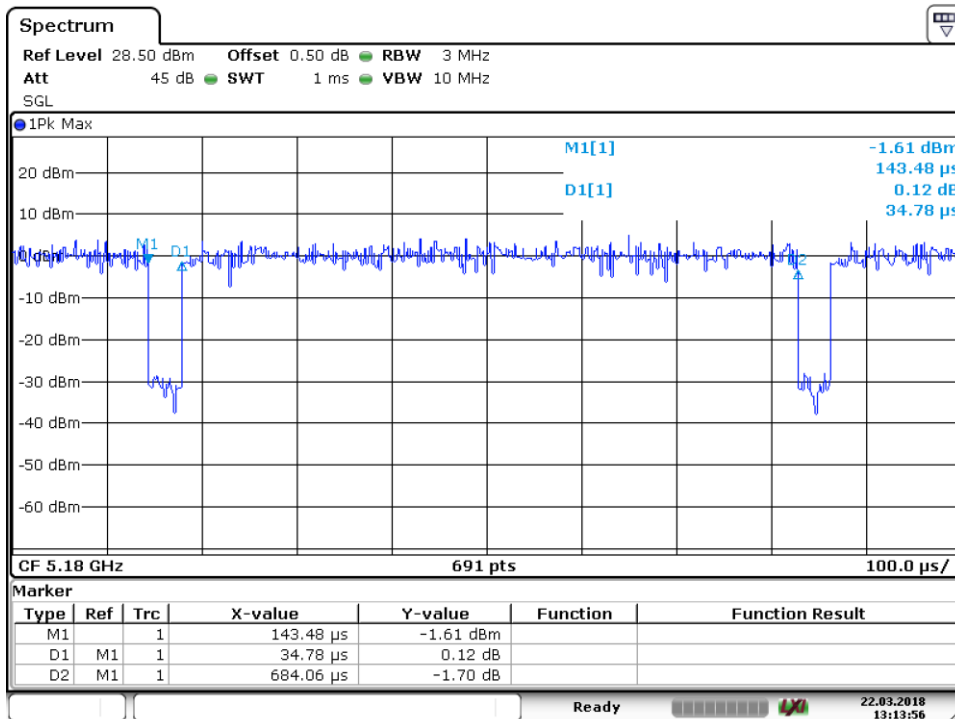


802.11n HT20



Date: 22.MAR.2018 13:12:50

802.11n HT40



Date: 22.MAR.2018 13:13:57

9.8 Frequencies Stability

Frequency Error vs. Voltage:

Test Conditions	Measured Frequency (MHz)
	5180
V nom(V)	5180
V max(V)	5180
V min(V)	5180
Max. Deviation Frequency	0
Max. Frequency Error (ppm)	0

Frequency Error vs. Temperature:

Test Conditions (°C)	Measured Frequency (MHz)
	5180
5	5180
35	5180
Max. Deviation Frequency	0
Max. Frequency Error (ppm)	0

Frequency Error vs. Voltage:

Test Conditions	Measured Frequency (MHz)
	5500
V nom(V)	5500
V max(V)	5500
V min(V)	5500
Max. Deviation Frequency	0
Max. Frequency Error (ppm)	0

Frequency Error vs. Temperature:

Test Conditions (°C)	Measured Frequency (MHz)
	5500
0	5500
40	5500
Max. Deviation Frequency	0
Max. Frequency Error (ppm)	0

Frequency Error vs. Voltage:

Test Conditions	Measured Frequency (MHz)
V nom(V)	5745.0430
V max(V)	5745.0430
V min(V)	5745.0430
Max. Deviation Frequency	0.0430
Max. Frequency Error (ppm)	7.48

Frequency Error vs. Temperature:

Test Conditions (°C)	Measured Frequency (MHz)
0	5745.0420
40	5745.0411
Max. Deviation Frequency	0.0420
Max. Frequency Error (ppm)	7.31

Remark: V min(V) = 85% of the nominal supply voltage

V max(V)=115% of the nominal supply voltage

9.9 Dynamic Frequency Selection (DFS)

1、 General Test Condition

Parameters of EUT	
Frequency	5250 – 5350 MHz & 5470 – 5725 MHz
Operational Mode	Slave
Modulation:	OFDM
Channel Bandwidth:	20 MHz , 40 MHz, 80 MHz

Note: This device was functioned as a Slave device during the DFS

2、 Test requirement

The manufacturer shall whether the EUT is capable of operating as a master and a client. If the EUT is capable of operating in more than one operating mode then each operating mode shall be tested separately.

DFS Applicability

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

DFS Applicability During Normal Operation

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Yes	Not required
Uniform Spreading	Yes	Yes	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

3、 Test Limited

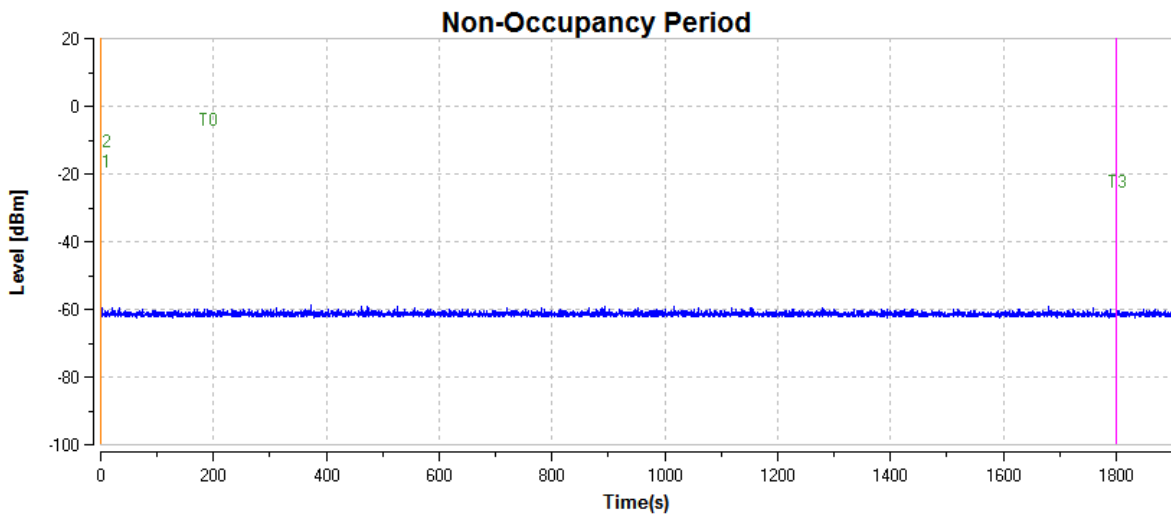
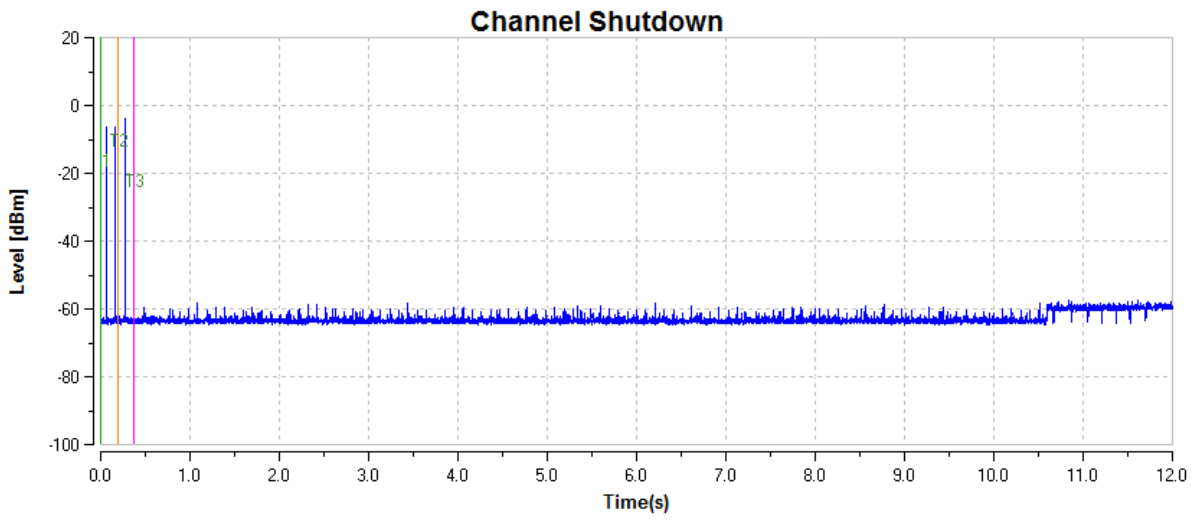
According to KDB 905462 D02 Table 4 DFS Response Requirement Values

Parameter	Value
<i>Non-occupancy period</i>	Minimum 30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds See Note 1.
<i>Channel Closing Transmission Time</i>	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
<i>U-NII Detection Bandwidth</i>	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
<p>Note 1: <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.</p> <p>Note 2: The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel</i> move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.</p> <p>Note 3: During the <i>U-NII Detection Bandwidth</i> detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.</p>	

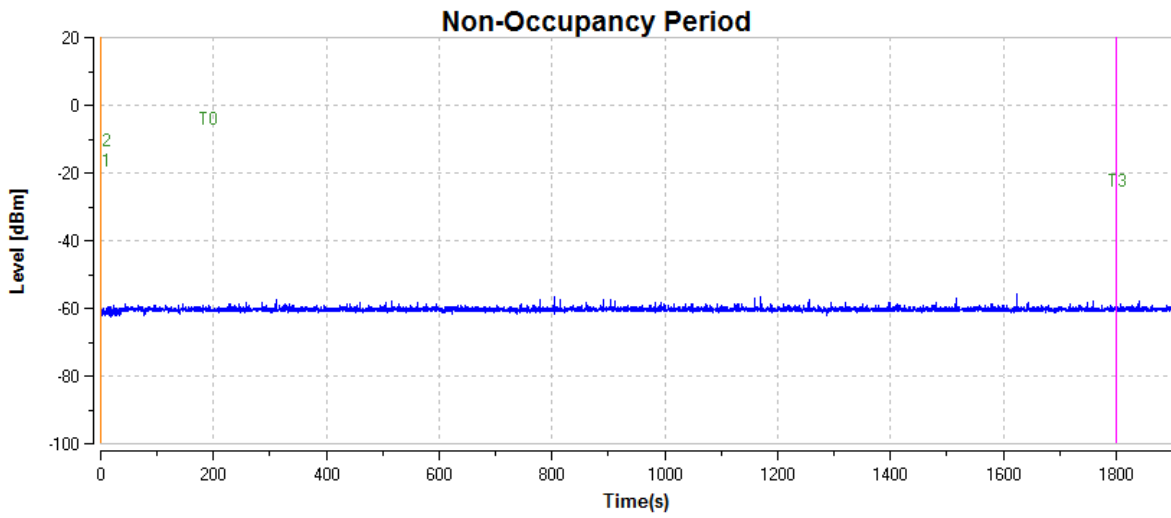
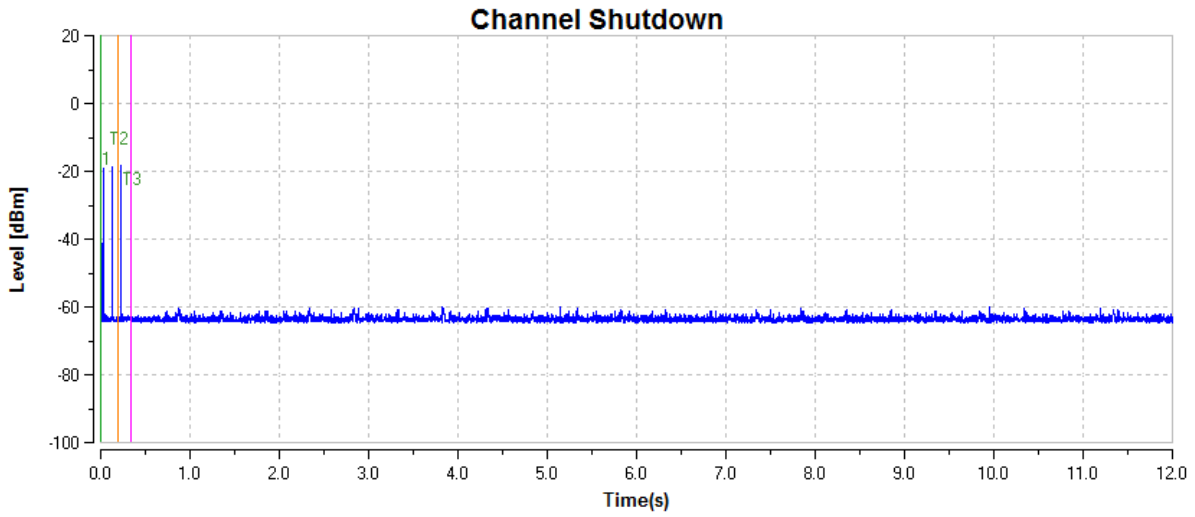
4、 Test Result

Clause	Test Parameter	Remarks	Pass/Fail
15.407	DFS Detection Threshold	No Applicable	N/A
15.407	Channel Availability Check time	No Applicable	N/A
15.407	Channel Move time	Applicable	Pass
15.407	Channel Closing Transmission Time	Applicable	Pass
15.407	Non-Occupancy Period	Applicable	Pass
15.407	Uniform Spreading	No Applicable	N/A
15.407	U-NII Detection Bandwidth	No Applicable	N/A

TX(20M)



TX(40M)



10 Test Equipment List

List of Test Instruments

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2018-7-14
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2018-7-14
Horn Antenna	Rohde & Schwarz	HF907	102294	2018-7-14
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2018-7-14
Signal Generator	Rohde & Schwarz	SMY01	839369/005	2018-7-7
Attenuator	Agilent	8491A	MY39264334	2018-7-7
3m Semi-anechoic chamber	TDK	9X6X6	----	2020-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

Conducted Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2018-7-14
LISN	Rohde & Schwarz	ENV4200	100249	2018-7-14
LISN	Rohde & Schwarz	ENV432	101318	2018-7-14
LISN	Rohde & Schwarz	ENV216	100326	2018-7-14
ISN	Rohde & Schwarz	ENY81	100177	2018-7-14
ISN	Rohde & Schwarz	ENY81-CA6	101664	2018-7-14
High Voltage Probe	Rohde & Schwarz	TK9420(VT94 20)	9420-584	2018-7-14
RF Current Probe	Rohde & Schwarz	EZ-17	100816	2018-7-14
Attenuator	Shanghai Huaxiang	TS2-26-3	080928189	2018-7-7
Test software	Rohde & Schwarz	EMC32	Version9.15.00	N/A

C - Conducted RF tests

- Emission bandwidth
- Maximum Conducted Output Power
- Peak Power Spectral Density
- Unwanted Emissions
- Duty Cycle
- Frequencies Stability

11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty for Radiated Spurious Emission 25MHz-3000MHz	Horizontal: 4.95dB; Vertical: 5.02dB;
Uncertainty for Radiated Spurious Emission 3000MHz-18000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	Horizontal: 4.93dB; Vertical: 4.92dB;
Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV216)	3.50dB
Uncertainty for Conducted RF test	2.04dB

THE END