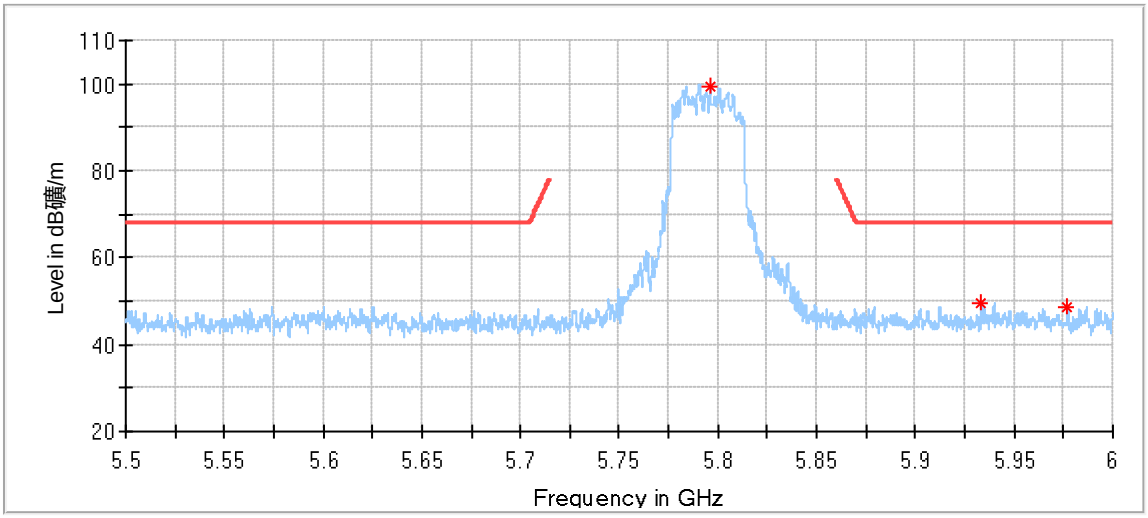
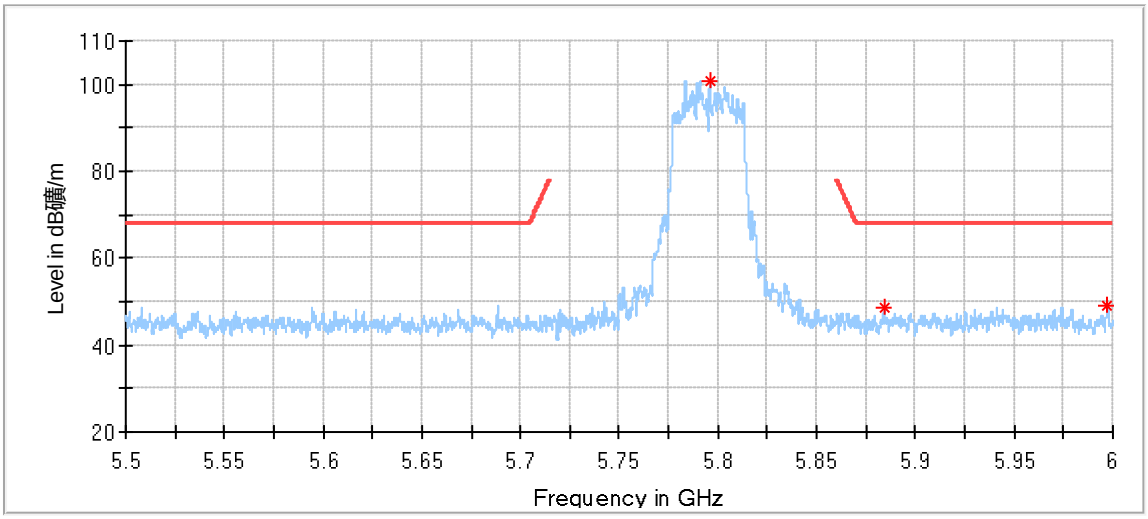
MiMo_11ac40_5795MHz:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5796.000000	99.16	---	---	150.0	H	108.0	5.60
5933.458333	49.45	68.20	18.75	150.0	H	108.0	5.89
5977.083333	48.43	68.20	19.77	150.0	H	115.0	6.11



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5795.958333	100.70	---	---	150.0	V	26.0	5.60
5884.041667	48.43	68.20	19.77	150.0	V	276.0	5.84
5997.250000	49.13	68.20	19.07	150.0	V	188.0	6.22

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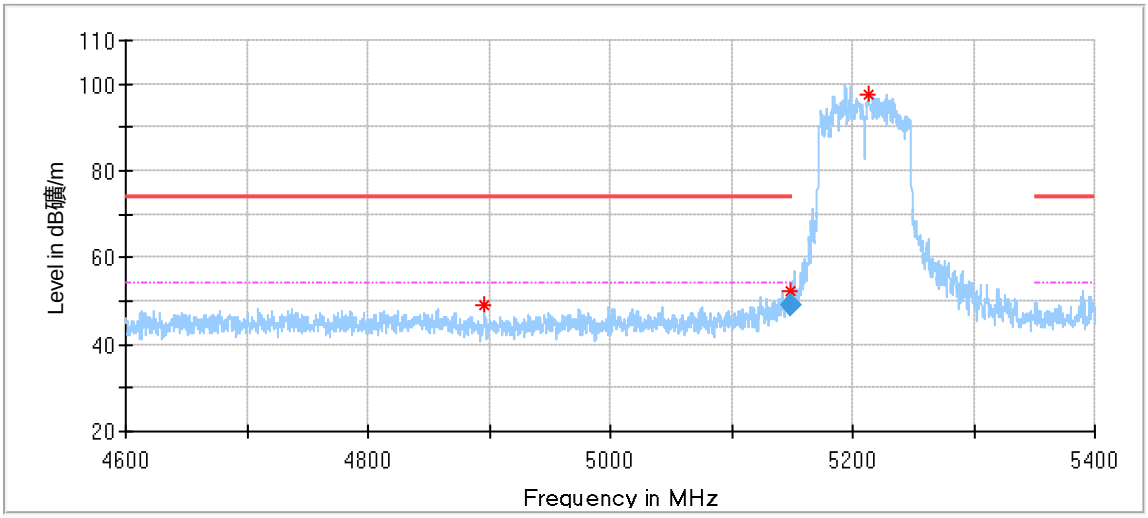
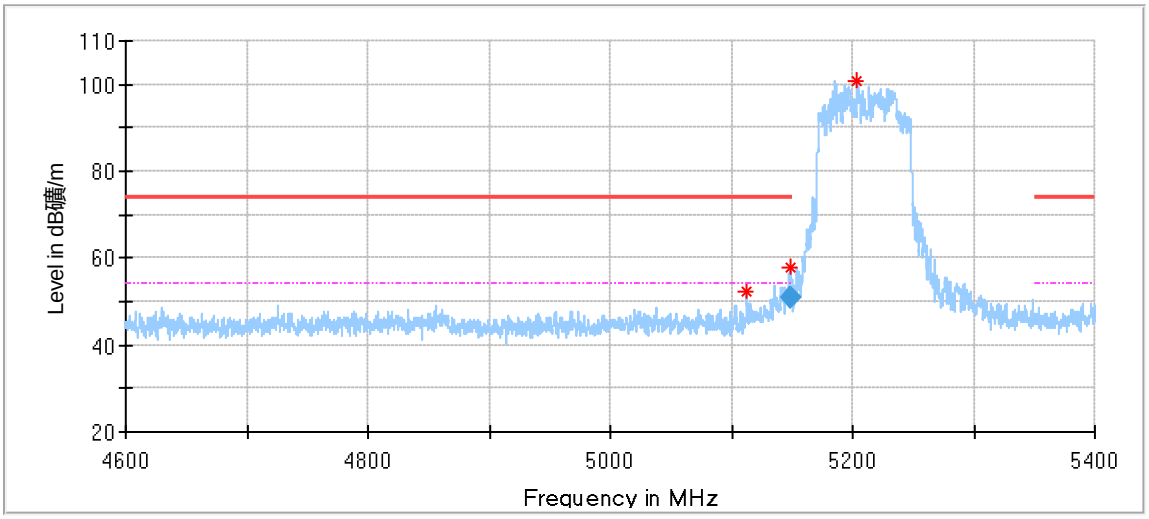
MiMo_11ac80_5210MHz:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4896.200000	48.96	74.00	25.04	150.0	V	71.0	4.22
5149.266667	52.31	74.00	21.69	150.0	V	14.0	5.38
5213.000000	97.44	---	---	150.0	V	353.0	5.46
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
5149.266667	49.14	54.00	4.86	150.0	V	14.0	5.38



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5112.866667	52.21	74.00	21.79	150.0	H	4.0	5.04
5148.866667	57.69	74.00	16.31	150.0	H	20.0	5.37
5203.800000	100.87	---	---	150.0	H	20.0	5.43
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
5148.866667	51.07	54.00	2.93	150.0	H	20.0	5.37

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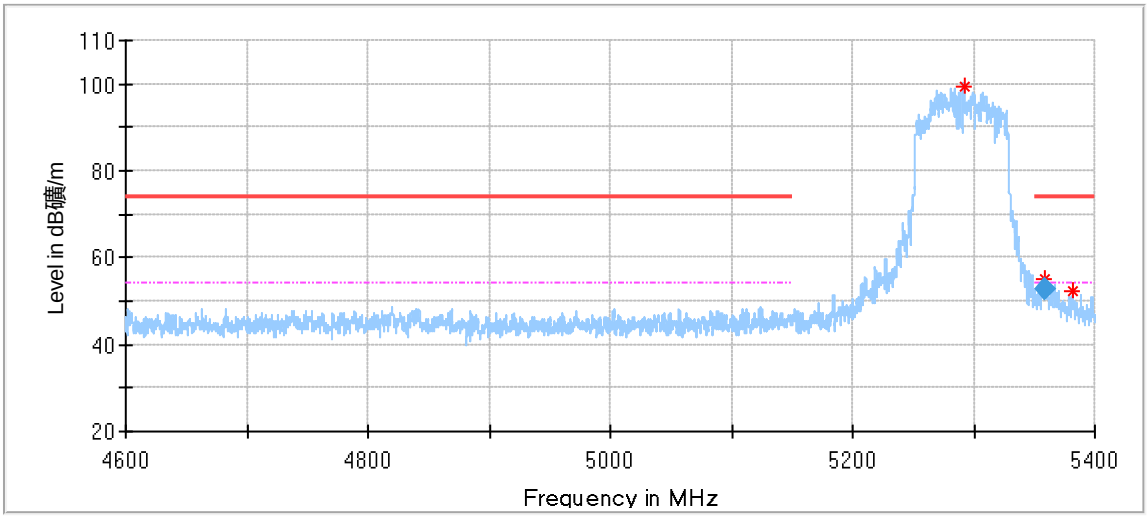
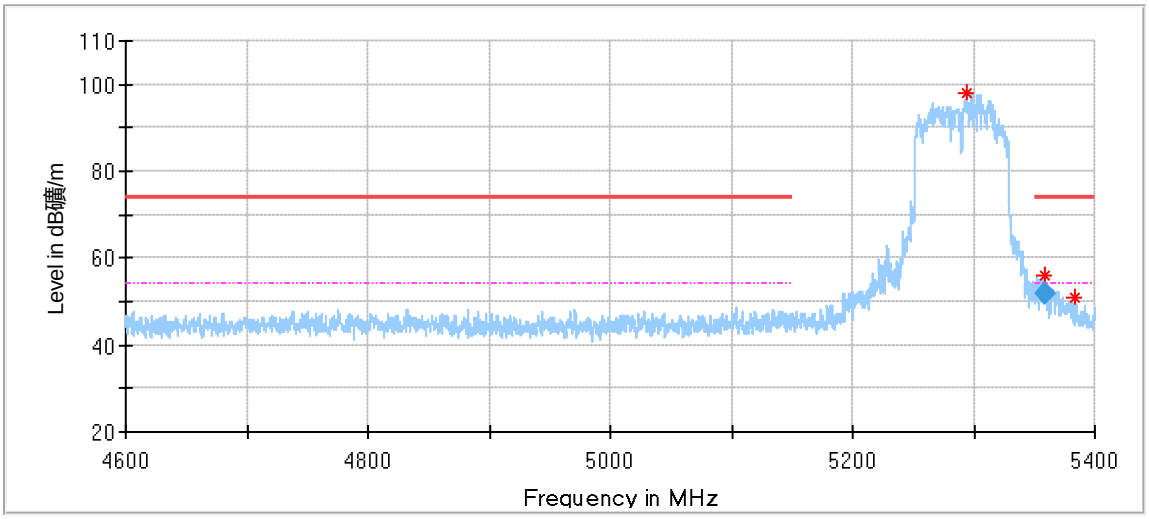
MiMo_11ac80_5290MHz:

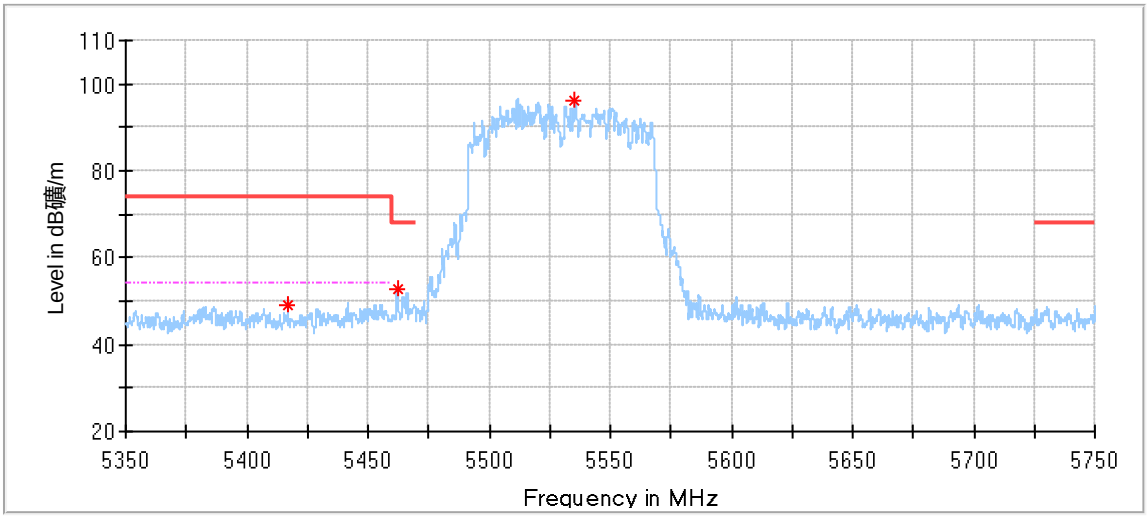


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5291.866667	99.45	---	---	150.0	H	21.0	5.42
5359.200000	55.12	74.00	18.88	150.0	H	87.0	5.35
5381.266667	52.27	74.00	21.73	150.0	H	344.0	5.35
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
5359.200000	52.94	54.00	1.06	150.0	H	87.0	5.35

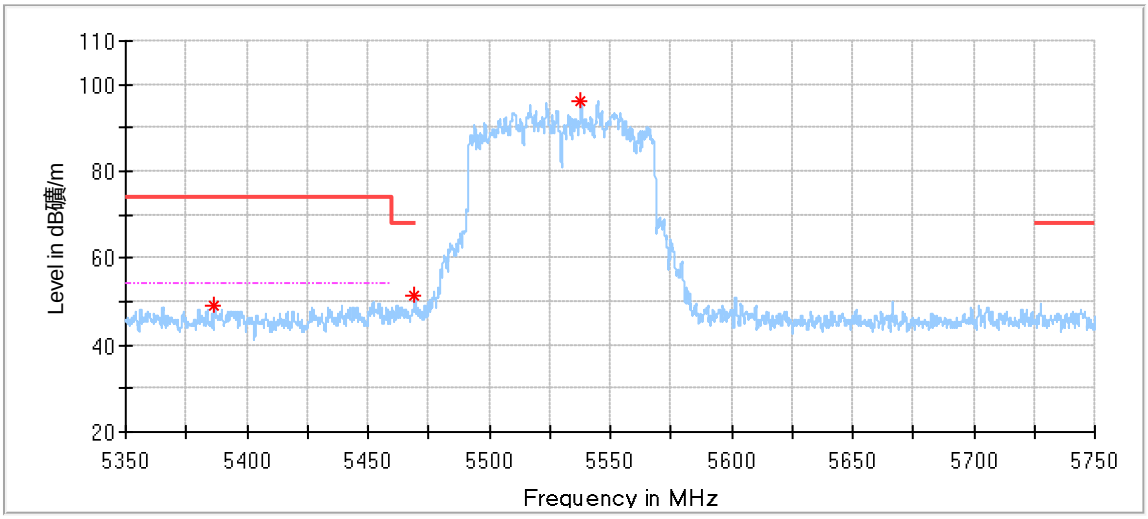


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5293.866667	97.88	---	---	150.0	V	353.0	5.43
5357.866667	55.85	74.00	18.15	150.0	V	21.0	5.35
5384.000000	50.94	74.00	23.06	150.0	V	73.0	5.37
Frequency (MHz)	**Average (dBµV/m)**	**Limit (dBµV/m)**	**Margin (dB)**	**Height (cm)**	**Pol**	**Azimuth (deg)**	**Corr. (dB/m)**
5357.866667	52.06	54.00	1.94	150.0	V	21.0	5.35

MiMo_11ac80_5530MHz:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5416.666667	49.02	74.00	24.98	150.0	H	173.0	5.57
5462.000000	52.92	68.20	15.28	150.0	H	25.0	5.92
5535.466667	96.02	---	---	150.0	H	13.0	5.62



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5386.533333	49.14	74.00	24.86	150.0	V	76.0	5.38
5469.300000	51.26	68.20	16.94	150.0	V	30.0	5.97
5537.733333	96.06	---	---	150.0	V	17.0	5.62

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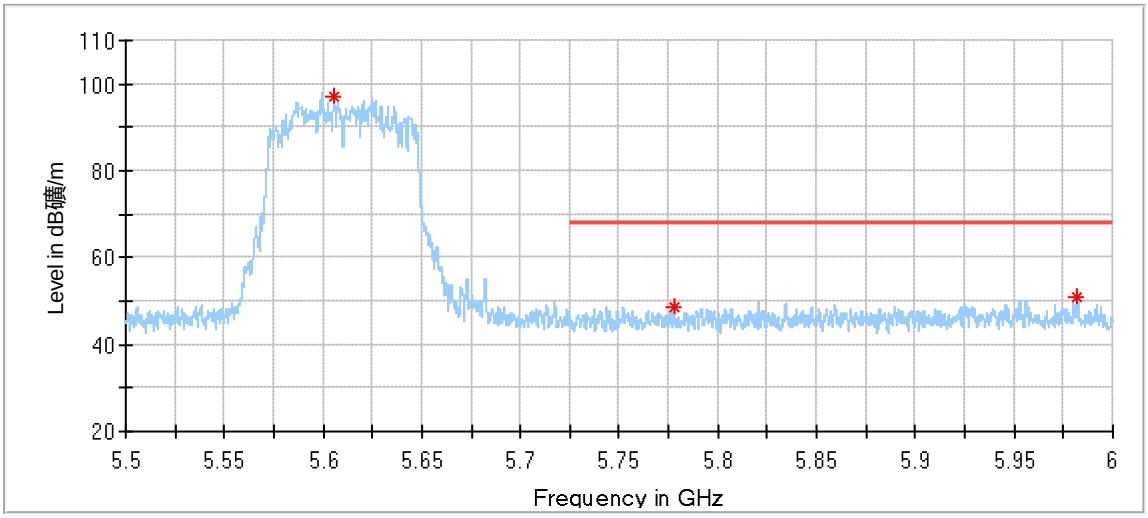
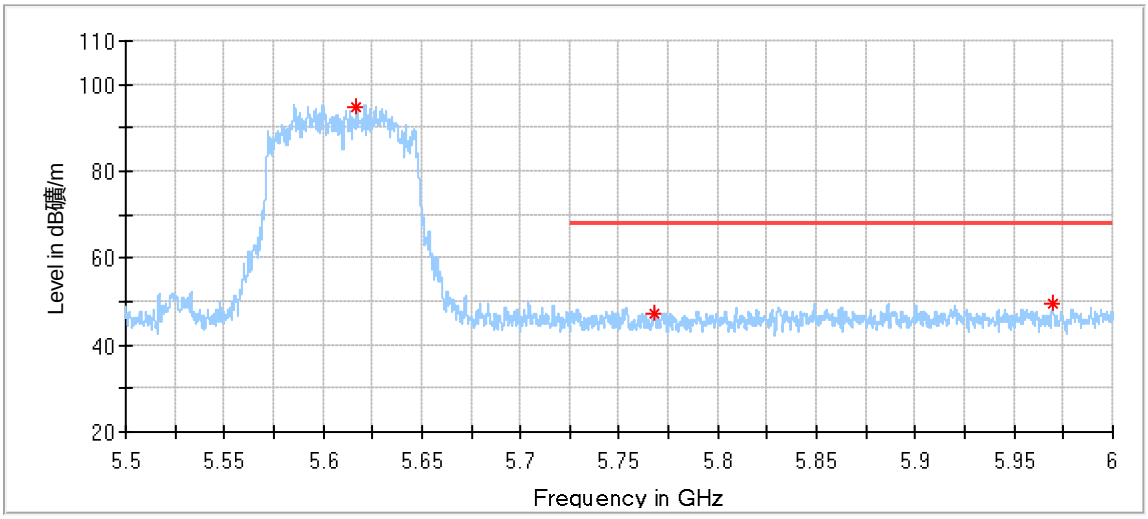
MiMo_11ac80_5610MHz:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5605.416667	96.86	---	---	150.0	H	19.0	5.66
5778.083333	48.55	68.20	19.65	150.0	H	34.0	5.52
5982.250000	51.09	68.20	17.11	150.0	H	107.0	6.14



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5616.833333	94.78	---	---	150.0	V	8.0	5.55
5768.250000	47.44	68.20	20.76	150.0	V	354.0	5.48
5969.333333	49.40	68.20	18.80	150.0	V	8.0	6.07

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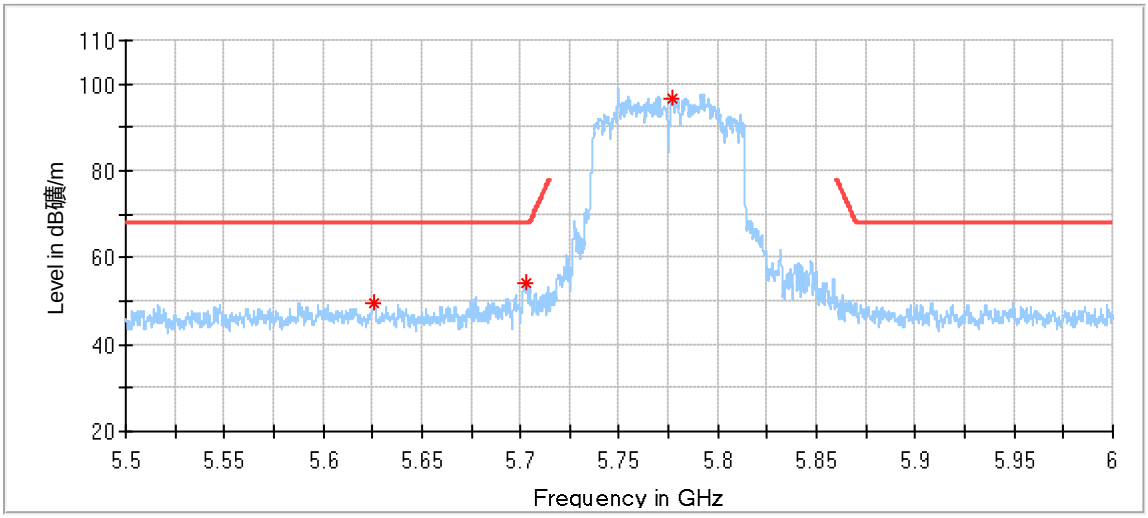
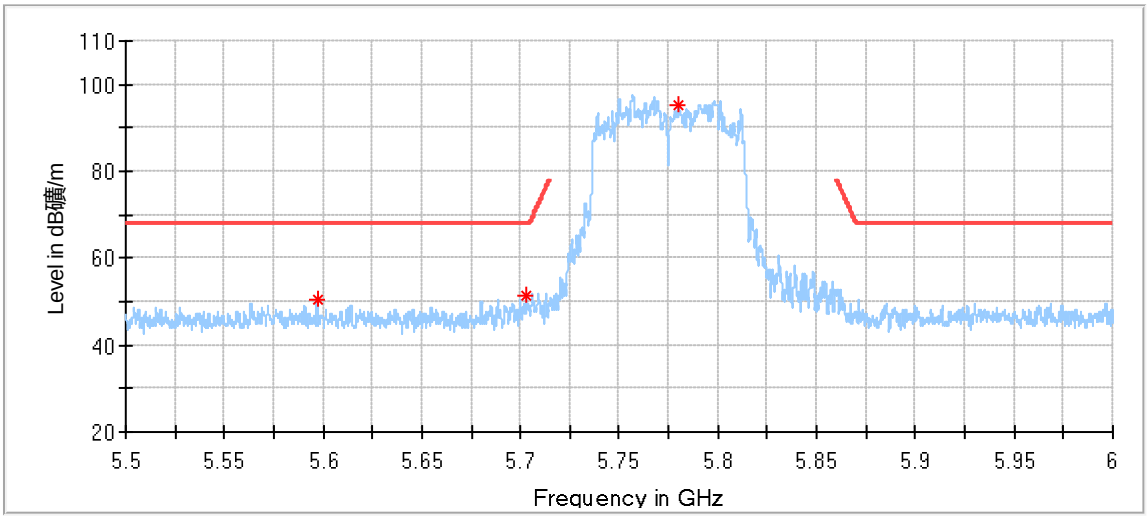
MiMo_11ac80_5775MHz:



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5626.208333	49.44	68.20	18.76	150.0	H	2.0	5.47
5703.208333	53.96	68.20	14.24	150.0	H	327.0	5.40
5776.583333	96.67	---	---	150.0	H	109.0	5.52



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
5596.916667	50.68	68.20	17.52	150.0	V	344.0	5.73
5702.875000	51.46	68.20	16.74	150.0	V	128.0	5.40
5779.916667	95.04	---	---	150.0	V	25.0	5.53

Remark:
1, Corrected Amplitude = Read level + Corrector factor
Above 1GHz: Corrector factor = Antenna Factor + Cable Loss- Amplifier Gain
Below 1GHz: Corrector factor = Antenna Factor + Cable Loss
2, "*" means the emission(s) appear within the restrict bands shall follow the requirement of section 15.205.
We test all modes and only the worst case (802.11ac80 modulation 5210MHz Channel) recorded in the report.
Testing is carried out with frequency rang 9KHz to 40GHz, which below 30MHz and data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 30dB below the permissible limits or the field strength is too small to be measured.
3, According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

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9.6 Duty Cycle

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Use the following spectrum analyzer settings:
   Span = 0, RBW = 100 kHz, VBW≥RBW, Sweep = auto, Detector function = peak, Trace = max hold
3. Allow the trace to stabilize. Mark the OFF time and ON time. and the duty cycle is T_{on} / T_{on}+T_{off}
4. Repeat above procedures until all frequencies measured were complete.

Test Mode	Antenna	Channel (MHz)	Duty Cycle [%]
11A	Ant0	5180	81.0
		5200	81.0
		5240	81.0
		5260	81.0
		5280	81.0
		5320	81.0
		5500	81.0
		5580	81.0
		5700	81.0
		5720	81.0
		5745	81.0
		5785	81.0
		5825	81.0
11N20	Ant0	5180	82.0
		5200	82.0
		5240	82.0
		5260	82.0
		5280	82.0
		5320	82.0
		5500	82.0
		5580	82.0
		5700	82.0
		5720	82.0
		5745	82.0
		5785	82.0
		5825	82.0
11N40	Ant0	5190	81.5
		5230	81.5
		5270	81.5
		5310	81.5
		5510	81.5
		5550	81.5
		5670	81.5
		5710	81.5
		5755	81.5
		5795	81.5
11AC20	Ant0	5180	81.5
		5200	81.5
		5240	81.5
		5260	81.5
		5280	81.5
		5320	81.5
		5500	81.5
		5580	81.5
		5700	81.5
		5720	81.5

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		5745	81.5
		5785	81.5
		5825	81.5
11AC40	Ant0	5190	80.3
		5230	80.3
		5270	80.3
		5310	80.3
		5510	80.3
		5550	80.3
		5670	80.3
		5710	80.3
		5755	80.3
		5795	80.3
11AC80	Ant0	5210	79.3
		5290	79.3
		5530	79.3
		5610	79.3
		5690	79.3
		5775	79.3

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9.7 Frequencies Stability

Test Method:

1, Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn on the EUT and tune it to one of the number of frequency shown in section 8.
b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT, or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.
c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level
d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit
e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize
f) While maintaining a control on the chamber to the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.
g) Measure the frequency at each of frequency specified in section 8.
h) Switch OFF the EUT but do not switch OFF the oscillator heater.
i) Lower the chamber temperature by not more that -30℃, and allow the temperature inside the chamber to stabilize.
j) Repeat step f) through step i) down to the lowest specified temperature.

2, Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature. An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.
b) Turn the EUT to one of the number if frequencies required in Section8. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level.
c) Measure the frequency at each of the frequencies specified in section 8.
d) Repeat the above procedure at 85% and 115% of the nominal supply voltage.

Limit: It is required that that the emissions are maintained within the band of operation under all conditions of normal operation as specified in the user’s manual.

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Voltage								
TestMode	Antenna	Channel (MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AC20 SISO	Ant0	5180	NV	NT	-24000	-4.633205	20	PASS
			LV	NT	-25000	-4.826255	20	PASS
			HV	NT	-25000	-4.826255	20	PASS
		5200	NV	NT	-24000	-4.615385	20	PASS
			LV	NT	-25000	-4.807692	20	PASS
			HV	NT	-24000	-4.615385	20	PASS
		5240	NV	NT	-20000	-3.816794	20	PASS
			LV	NT	-19000	-3.625954	20	PASS
			HV	NT	-19000	-3.625954	20	PASS
		5260	NV	NT	-21000	-3.992395	20	PASS
			LV	NT	-20000	-3.802281	20	PASS
			HV	NT	-20000	-3.802281	20	PASS
		5280	NV	NT	-21000	-3.977273	20	PASS
			LV	NT	-19000	-3.598485	20	PASS
			HV	NT	-19000	-3.598485	20	PASS
		5320	NV	NT	-22000	-4.135338	20	PASS
			LV	NT	-21000	-3.947368	20	PASS
			HV	NT	-21000	-3.947368	20	PASS
		5500	NV	NT	-23000	-4.181818	20	PASS
			LV	NT	-21000	-3.818182	20	PASS
			HV	NT	-21000	-3.818182	20	PASS
		5580	NV	NT	-23000	-4.121864	20	PASS
			LV	NT	-22000	-3.942652	20	PASS
			HV	NT	-22000	-3.942652	20	PASS
		5700	NV	NT	-24000	-4.210526	20	PASS
			LV	NT	-23000	-4.035088	20	PASS
			HV	NT	-23000	-4.035088	20	PASS
		5720	NV	NT	-23000	-4.020979	20	PASS
			LV	NT	-22000	-3.846154	20	PASS
			HV	NT	-22000	-3.846154	20	PASS
		5745	NV	NT	-22000	-3.829417	20	PASS
			LV	NT	-20000	-3.481288	20	PASS
			HV	NT	-21000	-3.655352	20	PASS
		5785	NV	NT	-23000	-3.975799	20	PASS
			LV	NT	-22000	-3.802939	20	PASS
			HV	NT	-22000	-3.802939	20	PASS
		5825	NV	NT	-23000	-3.948498	20	PASS
			LV	NT	-22000	-3.776824	20	PASS
			HV	NT	-23000	-3.948498	20	PASS
11AC40 SISO	Ant0	5190	NV	NT	-22000	-4.238921	20	PASS
			LV	NT	-22000	-4.238921	20	PASS
			HV	NT	-22000	-4.238921	20	PASS
		5230	NV	NT	-20000	-3.824092	20	PASS
			LV	NT	-18000	-3.441683	20	PASS
			HV	NT	-18000	-3.441683	20	PASS
		5270	NV	NT	-20000	-3.795066	20	PASS
			LV	NT	-19000	-3.605313	20	PASS
			HV	NT	-18000	-3.41556	20	PASS
		5310	NV	NT	-20000	-3.766478	20	PASS
			LV	NT	-19000	-3.578154	20	PASS
			HV	NT	-19000	-3.578154	20	PASS
		5510	NV	NT	-23000	-4.174229	20	PASS
			LV	NT	-22000	-3.99274	20	PASS
			HV	NT	-22000	-3.99274	20	PASS
		5550	NV	NT	-21000	-3.783784	20	PASS
			LV	NT	-21000	-3.783784	20	PASS
			HV	NT	-20000	-3.603604	20	PASS
		5670	NV	NT	-23000	-4.056437	20	PASS
			LV	NT	-23000	-4.056437	20	PASS
			HV	NT	-23000	-4.056437	20	PASS

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		5710	NV	NT	-28000	-4.903678	20	PASS
			LV	NT	-27000	-4.728546	20	PASS
			HV	NT	-26000	-4.553415	20	PASS
		5755	NV	NT	-22000	-3.822763	20	PASS
			LV	NT	-21000	-3.649001	20	PASS
			HV	NT	-21000	-3.649001	20	PASS
		5795	NV	NT	-23000	-3.968939	20	PASS
			LV	NT	-21000	-3.623814	20	PASS
			HV	NT	-21000	-3.623814	20	PASS
11AC80 SISO	Ant0	5210	NV	NT	-21000	-4.03071	20	PASS
			LV	NT	-21000	-4.03071	20	PASS
			HV	NT	-21000	-4.03071	20	PASS
		5290	NV	NT	-21000	-3.969754	20	PASS
			LV	NT	-19000	-3.591682	20	PASS
			HV	NT	-19000	-3.591682	20	PASS
		5530	NV	NT	-23000	-4.159132	20	PASS
			LV	NT	-21000	-3.797468	20	PASS
			HV	NT	-21000	-3.797468	20	PASS
		5610	NV	NT	-23000	-4.099822	20	PASS
			LV	NT	-22000	-3.921569	20	PASS
			HV	NT	-22000	-3.921569	20	PASS
		5690	NV	NT	-24000	-4.217926	20	PASS
			LV	NT	-23000	-4.042179	20	PASS
			HV	NT	-23000	-4.042179	20	PASS
		5775	NV	NT	-25000	-4.329004	20	PASS
			LV	NT	-24000	-4.155844	20	PASS
			HV	NT	-24000	-4.155844	20	PASS

Temperature								
TestMode	Antenna	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AC20 SISO	Ant1	5180	NV	-30	-24000	-4.633205	20	PASS
			NV	-20	-22000	-4.247104	20	PASS
			NV	-10	-22000	-4.247104	20	PASS
			NV	0	-21000	-4.054054	20	PASS
			NV	10	-20000	-3.861004	20	PASS
			NV	20	-20000	-3.861004	20	PASS
			NV	30	-19000	-3.667954	20	PASS
			NV	40	-21000	-4.054054	20	PASS
			NV	50	-26000	-5.019305	20	PASS
		5200	NV	-30	-24000	-4.615385	20	PASS
			NV	-20	-24000	-4.615385	20	PASS
			NV	-10	-23000	-4.423077	20	PASS
			NV	0	-23000	-4.423077	20	PASS
			NV	10	-23000	-4.423077	20	PASS
			NV	20	-23000	-4.423077	20	PASS
			NV	30	-23000	-4.423077	20	PASS
			NV	40	-23000	-4.423077	20	PASS
			NV	50	-23000	-4.423077	20	PASS
		5240	NV	-30	-19000	-3.625954	20	PASS
			NV	-20	-19000	-3.625954	20	PASS
			NV	-10	-19000	-3.625954	20	PASS
			NV	0	-20000	-3.816794	20	PASS
			NV	10	-20000	-3.816794	20	PASS
			NV	20	-20000	-3.816794	20	PASS
			NV	30	-20000	-3.816794	20	PASS
			NV	40	-20000	-3.816794	20	PASS
			NV	50	-20000	-3.816794	20	PASS
		5260	NV	-30	-20000	-3.802281	20	PASS
			NV	-20	-21000	-3.992395	20	PASS
			NV	-10	-21000	-3.992395	20	PASS
			NV	0	-21000	-3.992395	20	PASS
			NV	10	-21000	-3.992395	20	PASS
			NV	20	-21000	-3.992395	20	PASS
			NV	30	-21000	-3.992395	20	PASS

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			NV	40	-21000	-3.992395	20	PASS
			NV	50	-21000	-3.992395	20	PASS
		5280	NV	-30	-19000	-3.598485	20	PASS
			NV	-20	-19000	-3.598485	20	PASS
			NV	-10	-20000	-3.787879	20	PASS
			NV	0	-19000	-3.598485	20	PASS
			NV	10	-19000	-3.598485	20	PASS
			NV	20	-20000	-3.787879	20	PASS
			NV	30	-20000	-3.787879	20	PASS
			NV	40	-20000	-3.787879	20	PASS
			NV	50	-20000	-3.787879	20	PASS
		5320	NV	-30	-22000	-4.135338	20	PASS
			NV	-20	-22000	-4.135338	20	PASS
			NV	-10	-21000	-3.947368	20	PASS
			NV	0	-21000	-3.947368	20	PASS
			NV	10	-21000	-3.947368	20	PASS
			NV	20	-21000	-3.947368	20	PASS
			NV	30	-21000	-3.947368	20	PASS
			NV	40	-21000	-3.947368	20	PASS
			NV	50	-21000	-3.947368	20	PASS
		5500	NV	-30	-21000	-3.818182	20	PASS
			NV	-20	-21000	-3.818182	20	PASS
			NV	-10	-21000	-3.818182	20	PASS
			NV	0	-21000	-3.818182	20	PASS
			NV	10	-21000	-3.818182	20	PASS
			NV	20	-20000	-3.636364	20	PASS
			NV	30	-20000	-3.636364	20	PASS
			NV	40	-20000	-3.636364	20	PASS
			NV	50	-20000	-3.636364	20	PASS
		5580	NV	-30	-22000	-3.942652	20	PASS
			NV	-20	-22000	-3.942652	20	PASS
			NV	-10	-22000	-3.942652	20	PASS
			NV	0	-23000	-4.121864	20	PASS
			NV	10	-22000	-3.942652	20	PASS
			NV	20	-22000	-3.942652	20	PASS
			NV	30	-22000	-3.942652	20	PASS
			NV	40	-22000	-3.942652	20	PASS
			NV	50	-23000	-4.121864	20	PASS
		5700	NV	-30	-23000	-4.035088	20	PASS
			NV	-20	-23000	-4.035088	20	PASS
			NV	-10	-23000	-4.035088	20	PASS
			NV	0	-23000	-4.035088	20	PASS
			NV	10	-23000	-4.035088	20	PASS
			NV	20	-23000	-4.035088	20	PASS
			NV	30	-24000	-4.210526	20	PASS
			NV	40	-23000	-4.035088	20	PASS
			NV	50	-24000	-4.210526	20	PASS
		5720	NV	-30	-22000	-3.846154	20	PASS
			NV	-20	-22000	-3.846154	20	PASS
			NV	-10	-22000	-3.846154	20	PASS
			NV	0	-21000	-3.671329	20	PASS
			NV	10	-21000	-3.671329	20	PASS
			NV	20	-21000	-3.671329	20	PASS
			NV	30	-22000	-3.846154	20	PASS
			NV	40	-22000	-3.846154	20	PASS
			NV	50	-22000	-3.846154	20	PASS
		5745	NV	-30	-20000	-3.481288	20	PASS
			NV	-20	-20000	-3.481288	20	PASS
			NV	-10	-20000	-3.481288	20	PASS
			NV	0	-21000	-3.655352	20	PASS
			NV	10	-21000	-3.655352	20	PASS
			NV	20	-21000	-3.655352	20	PASS
			NV	30	-21000	-3.655352	20	PASS
			NV	40	-21000	-3.655352	20	PASS

			NV	50	-21000	-3.655352	20	PASS
		5785	NV	-30	-22000	-3.802939	20	PASS
			NV	-20	-23000	-3.975799	20	PASS
			NV	-10	-23000	-3.975799	20	PASS
			NV	0	-23000	-3.975799	20	PASS
			NV	10	-23000	-3.975799	20	PASS
			NV	20	-22000	-3.802939	20	PASS
			NV	30	-22000	-3.802939	20	PASS
			NV	40	-21000	-3.630078	20	PASS
			NV	50	-21000	-3.630078	20	PASS
		5825	NV	-30	-22000	-3.776824	20	PASS
			NV	-20	-23000	-3.948498	20	PASS
			NV	-10	-21000	-3.60515	20	PASS
			NV	0	-20000	-3.433476	20	PASS
			NV	10	-24000	-4.120172	20	PASS
			NV	20	-25000	-4.291845	20	PASS
			NV	30	-25000	-4.291845	20	PASS
			NV	40	-24000	-4.120172	20	PASS
			NV	50	-24000	-4.120172	20	PASS
11AC40SISO	Ant1	5190	NV	-30	-21000	-4.046243	20	PASS
			NV	-20	-21000	-4.046243	20	PASS
			NV	-10	-21000	-4.046243	20	PASS
			NV	0	-21000	-4.046243	20	PASS
			NV	10	-21000	-4.046243	20	PASS
			NV	20	-21000	-4.046243	20	PASS
			NV	30	-22000	-4.238921	20	PASS
			NV	40	-22000	-4.238921	20	PASS
			NV	50	-21000	-4.046243	20	PASS
		5230	NV	-30	-18000	-3.441683	20	PASS
			NV	-20	-19000	-3.632887	20	PASS
			NV	-10	-19000	-3.632887	20	PASS
			NV	0	-19000	-3.632887	20	PASS
			NV	10	-19000	-3.632887	20	PASS
			NV	20	-19000	-3.632887	20	PASS
			NV	30	-19000	-3.632887	20	PASS
			NV	40	-19000	-3.632887	20	PASS
			NV	50	-19000	-3.632887	20	PASS
		5270	NV	-30	-19000	-3.605313	20	PASS
			NV	-20	-19000	-3.605313	20	PASS
			NV	-10	-19000	-3.605313	20	PASS
			NV	0	-20000	-3.795066	20	PASS
			NV	10	-20000	-3.795066	20	PASS
			NV	20	-20000	-3.795066	20	PASS
			NV	30	-20000	-3.795066	20	PASS
			NV	40	-20000	-3.795066	20	PASS
			NV	50	-20000	-3.795066	20	PASS
		5310	NV	-30	-19000	-3.578154	20	PASS
			NV	-20	-19000	-3.578154	20	PASS
			NV	-10	-19000	-3.578154	20	PASS
			NV	0	-19000	-3.578154	20	PASS
			NV	10	-19000	-3.578154	20	PASS
			NV	20	-21000	-3.954802	20	PASS
			NV	30	-21000	-3.954802	20	PASS
			NV	40	-21000	-3.954802	20	PASS
			NV	50	-21000	-3.954802	20	PASS
		5510	NV	-30	-22000	-3.99274	20	PASS
			NV	-20	-22000	-3.99274	20	PASS
			NV	-10	-22000	-3.99274	20	PASS
			NV	0	-21000	-3.811252	20	PASS
			NV	10	-22000	-3.99274	20	PASS
			NV	20	-22000	-3.99274	20	PASS
			NV	30	-22000	-3.99274	20	PASS
			NV	40	-22000	-3.99274	20	PASS
			NV	50	-22000	-3.99274	20	PASS

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		5550	NV	-30	-21000	-3.783784	20	PASS
			NV	-20	-21000	-3.783784	20	PASS
			NV	-10	-20000	-3.603604	20	PASS
			NV	0	-21000	-3.783784	20	PASS
			NV	10	-21000	-3.783784	20	PASS
			NV	20	-21000	-3.783784	20	PASS
			NV	30	-21000	-3.783784	20	PASS
			NV	40	-21000	-3.783784	20	PASS
			NV	50	-21000	-3.783784	20	PASS
		5670	NV	-30	-23000	-4.056437	20	PASS
			NV	-20	-23000	-4.056437	20	PASS
			NV	-10	-23000	-4.056437	20	PASS
			NV	0	-22000	-3.880071	20	PASS
			NV	10	-23000	-4.056437	20	PASS
			NV	20	-22000	-3.880071	20	PASS
			NV	30	-23000	-4.056437	20	PASS
			NV	40	-23000	-4.056437	20	PASS
			NV	50	-23000	-4.056437	20	PASS
		5710	NV	-30	-26000	-4.553415	20	PASS
			NV	-20	-26000	-4.553415	20	PASS
			NV	-10	-25000	-4.378284	20	PASS
			NV	0	-26000	-4.553415	20	PASS
			NV	10	-26000	-4.553415	20	PASS
			NV	20	-26000	-4.553415	20	PASS
			NV	30	-26000	-4.553415	20	PASS
			NV	40	-26000	-4.553415	20	PASS
			NV	50	-26000	-4.553415	20	PASS
		5755	NV	-30	-21000	-3.649001	20	PASS
			NV	-20	-21000	-3.649001	20	PASS
			NV	-10	-22000	-3.822763	20	PASS
			NV	0	-22000	-3.822763	20	PASS
			NV	10	-22000	-3.822763	20	PASS
			NV	20	-22000	-3.822763	20	PASS
			NV	30	-22000	-3.822763	20	PASS
			NV	40	-21000	-3.649001	20	PASS
			NV	50	-22000	-3.822763	20	PASS
		5795	NV	-30	-22000	-3.796376	20	PASS
			NV	-20	-22000	-3.796376	20	PASS
			NV	-10	-22000	-3.796376	20	PASS
			NV	0	-21000	-3.623814	20	PASS
			NV	10	-21000	-3.623814	20	PASS
			NV	20	-21000	-3.623814	20	PASS
			NV	30	-21000	-3.623814	20	PASS
			NV	40	-21000	-3.623814	20	PASS
			NV	50	-21000	-3.623814	20	PASS
11AC80SISO	Ant1	5210	NV	-30	-21000	-4.03071	20	PASS
			NV	-20	-21000	-4.03071	20	PASS
			NV	-10	-21000	-4.03071	20	PASS
			NV	0	-21000	-4.03071	20	PASS
			NV	10	-21000	-4.03071	20	PASS
			NV	20	-21000	-4.03071	20	PASS
			NV	30	-21000	-4.03071	20	PASS
			NV	40	-21000	-4.03071	20	PASS
			NV	50	-20000	-3.838772	20	PASS
		5290	NV	-30	-19000	-3.591682	20	PASS
			NV	-20	-19000	-3.591682	20	PASS
			NV	-10	-20000	-3.780718	20	PASS
			NV	0	-20000	-3.780718	20	PASS
			NV	10	-20000	-3.780718	20	PASS
			NV	20	-20000	-3.780718	20	PASS
			NV	30	-20000	-3.780718	20	PASS
			NV	40	-20000	-3.780718	20	PASS
			NV	50	-21000	-3.969754	20	PASS
		5530	NV	-30	-21000	-3.797468	20	PASS

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			NV	-20	-22000	-3.9783	20	PASS
			NV	-10	-22000	-3.9783	20	PASS
			NV	0	-22000	-3.9783	20	PASS
			NV	10	-21000	-3.797468	20	PASS
			NV	20	-22000	-3.9783	20	PASS
			NV	30	-22000	-3.9783	20	PASS
			NV	40	-22000	-3.9783	20	PASS
			NV	50	-22000	-3.9783	20	PASS
		5610	NV	-30	-22000	-3.921569	20	PASS
			NV	-20	-22000	-3.921569	20	PASS
			NV	-10	-22000	-3.921569	20	PASS
			NV	0	-22000	-3.921569	20	PASS
			NV	10	-22000	-3.921569	20	PASS
			NV	20	-22000	-3.921569	20	PASS
			NV	30	-22000	-3.921569	20	PASS
			NV	40	-22000	-3.921569	20	PASS
			NV	50	-22000	-3.921569	20	PASS
		5690	NV	-30	-23000	-4.042179	20	PASS
			NV	-20	-23000	-4.042179	20	PASS
			NV	-10	-23000	-4.042179	20	PASS
			NV	0	-24000	-4.217926	20	PASS
			NV	10	-23000	-4.042179	20	PASS
			NV	20	-23000	-4.042179	20	PASS
			NV	30	-24000	-4.217926	20	PASS
			NV	40	-23000	-4.042179	20	PASS
			NV	50	-23000	-4.042179	20	PASS
		5775	NV	-30	-25000	-4.329004	20	PASS
			NV	-20	-25000	-4.329004	20	PASS
			NV	-10	-24000	-4.155844	20	PASS
			NV	0	-24000	-4.155844	20	PASS
			NV	10	-24000	-4.155844	20	PASS
			NV	20	-24000	-4.155844	20	PASS
			NV	30	-25000	-4.329004	20	PASS
			NV	40	-25000	-4.329004	20	PASS
			NV	50	-25000	-4.329004	20	PASS

Remark 1: LV = 85% of the nominal supply voltage, HV =115% of the nominal supply voltage
Remark 2: we test all frequencies which specified in section 8 and only show these representative frequencies.

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9.8 Dynamic Frequency Selection (DFS)

1、General Test Condition

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

Note: This device was functioned as a Slave device with Radar Detection during the DFS declared by the manufacturer.

2、Test Requirement

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

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

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3、Test Limited

According to KDB 905462 D02 Table 4 DFS Response Requirement Values

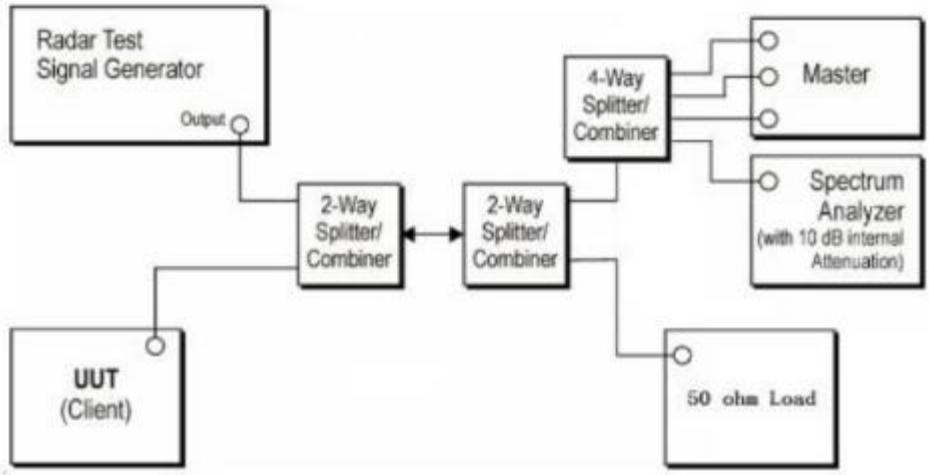
Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.

Note 1: *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
Note 2: The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* 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.
Note 3: During the *U-NII Detection Bandwidth* 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.

4、Calibration of Radar Waveform

(1) A 50ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master.
(2) The interference Radar Detection Threshold Level is -62dBm+3.7dB+1.5dB=-55.8dBm that had been taken into account the output power range and antenna gain.
(3) The following equipment setup was used to calibrate the conducted radar waveform. A vector signal generator was utilized to establish the test signal level for radar type 0. During this process there were no transmissions by either the master or client device. The spectrum analyzer was switched to the zero spans (time domain) at the frequency of the radar waveform generator. Peak detection was used. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3MHz. The spectrum analyzer had offset -1.5dB to compensate RF cable loss 1.5dB.
(4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was -62dBm+3.7dB+1.5dB=-55.8dBm. Capture the spectrum analyzer plots on short pulse radar waveform.

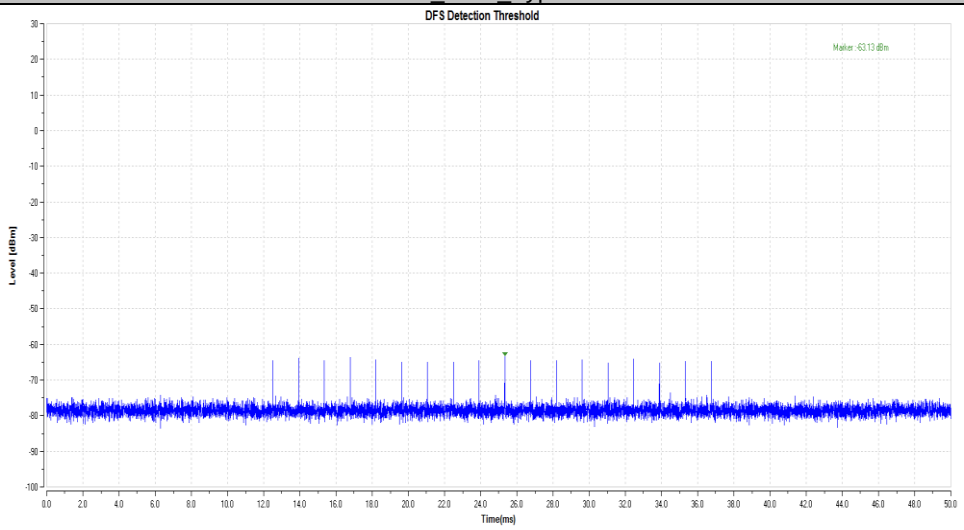
Conducted Calibration Setup:



TestMode	Channel	Radar Type	Result	Limit[dbm]	Verdict
11A	5280	Type0	-63.13	-61.00	PASS
	5500	Type0	-62.95	-61.00	PASS
11N40SISO	5270	Type0	-63.60	-61.00	PASS
	5510	Type0	-63.38	-61.00	PASS
11AC80SISO	5290	Type0	-62.79	-61.00	PASS
	5530	Type0	-63.07	-61.00	PASS

Radar Waveform Calibration result:

11A_5280_Type0



11A_5500_Type0

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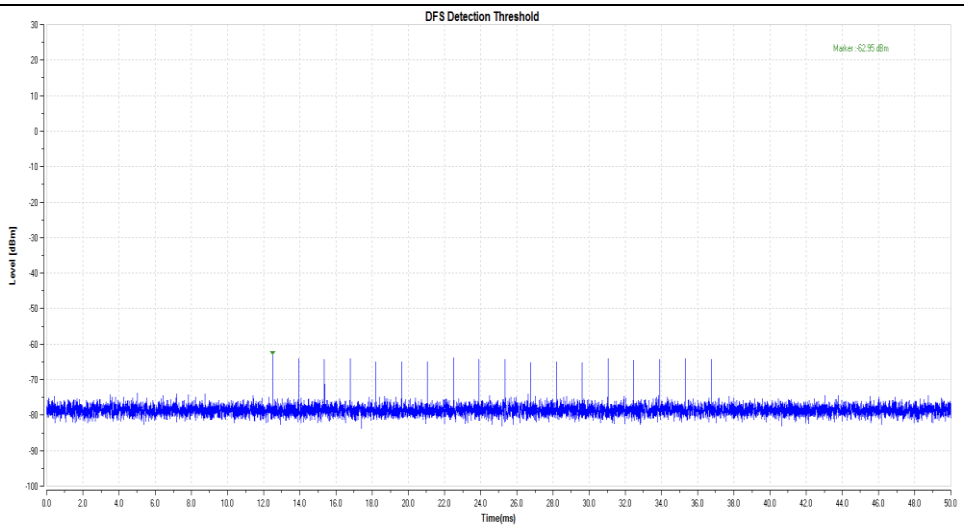

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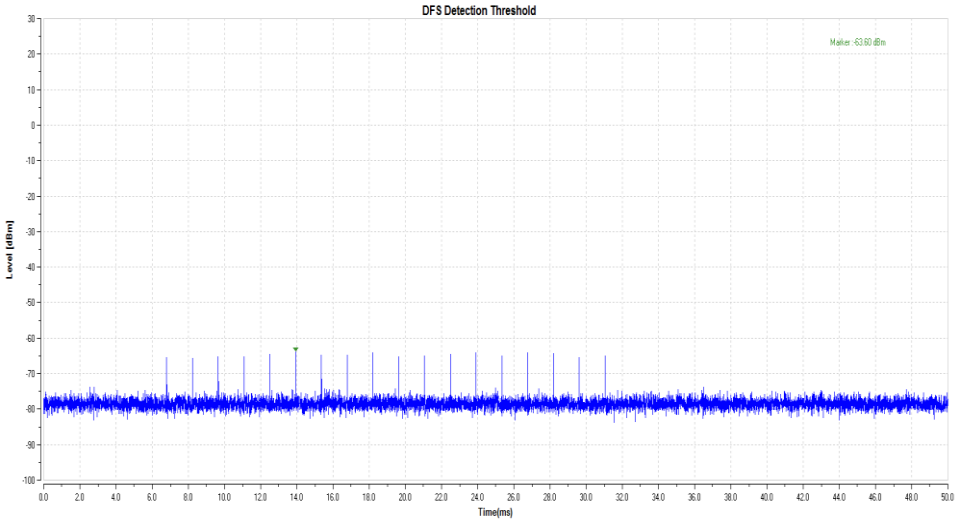

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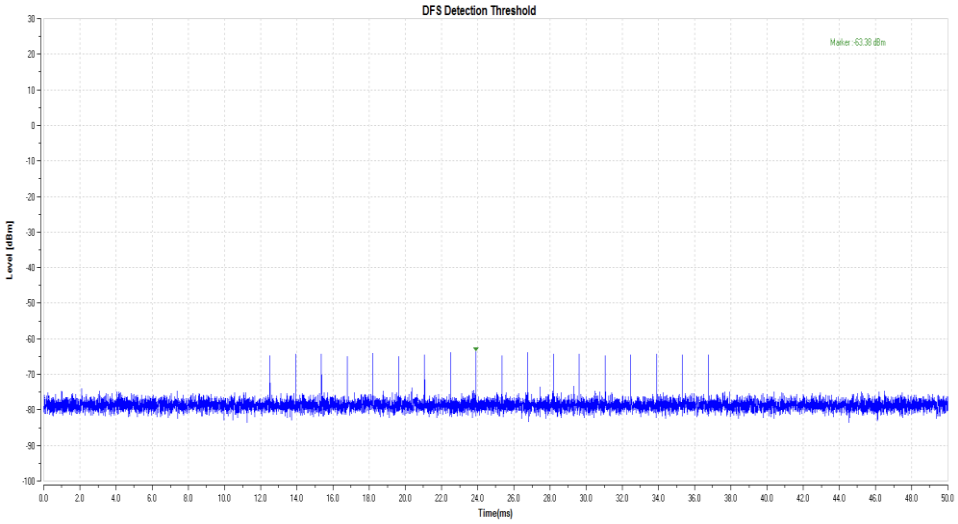

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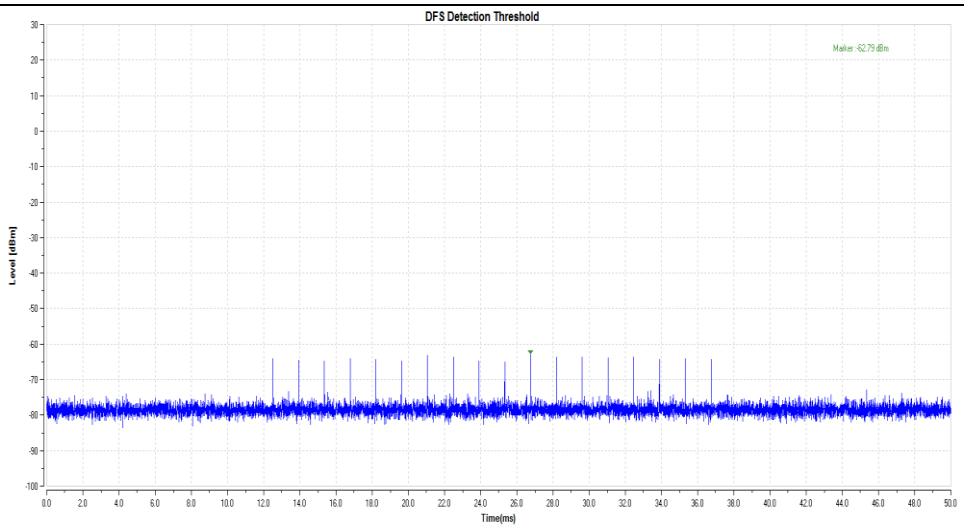

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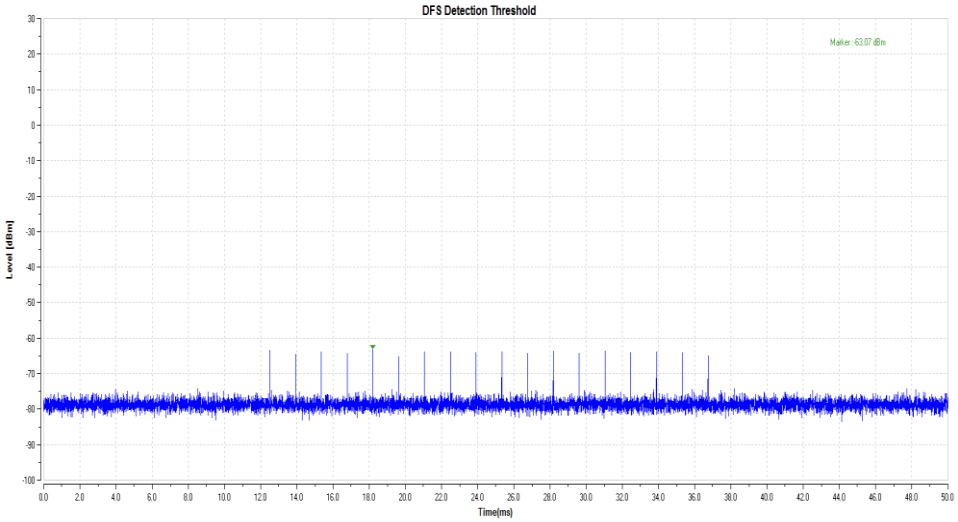
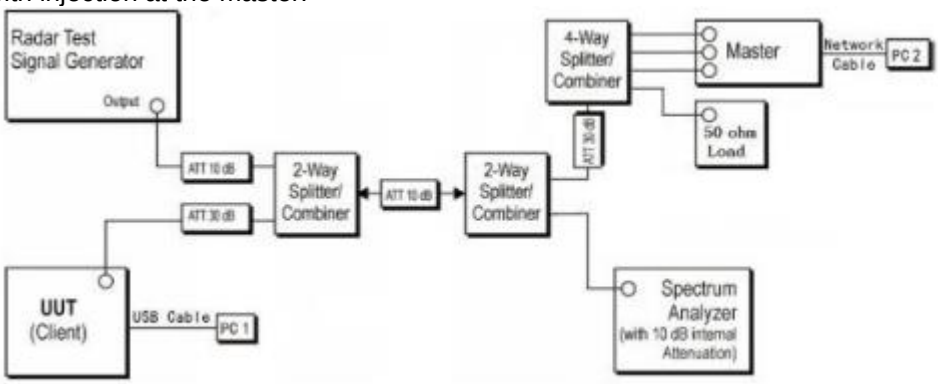


Channel Closing Transmission Time, Channel Move Time and Non-Occupancy Period.

Block Diagram of test setup test procedure.

(1) The Radar Pulse generator is setup to provide a pulse at frequency that the master and client are operating, A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
(2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -55.8dBm at the antenna of the master device.
(3) A trigger is provided from the pulse generator to the DFS monitoring system in order to capture the traffic and the occurrence of the radar pulse.
(4) EUT will associate with the master at channel. The file “iperf.exe” specified by the FCC is streamed from the PC 2 through the master and the client device to the PC 1 and played in full motion video using test software in order to properly load the network for the entire period of the test.
(5) When radar burst with a Level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection threshold +1dB.
(6) Observer the transmissions of the EUT at the end of the radar Burst on the Operating channel. Measure and record the transmissions form the UUT during The observation time (channel move time). One 15 seconds plot is reported for the short pulse radar type 0. The plot for the short pulse radar burst. The channel move time will be calculated based on the zoom in 600ms plot of the short pulse radar type.
(7) Measurement of the aggregate duration of the channel closed transmission time method. With the spectrum analyzer set to zero span tuned to the center frequency of the EUT operating channel at the radar simulated frequency, peak detection, and max hold, the dwell time per bin is given by: Dwell (3.0)=S(12000ms)/B(4000); where dwell time per spectrum analyzer sampling bin, S is sweep time and B is the number of spectrum analyzer sampling bins. An upper bound of the aggregate duration of the intermittent control signals of channel closing transmission time is calculated by: C(ms)=N X Dwell (0.3ms); where C is the closing time, N is the number of spectrum analyzer sampling bins (intermittent control signals) showing a U-NII transmission and dwell is the dwell time per bin.
(8) Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

Test Setup:
Setup for client with injection at the master.



5、Test Result

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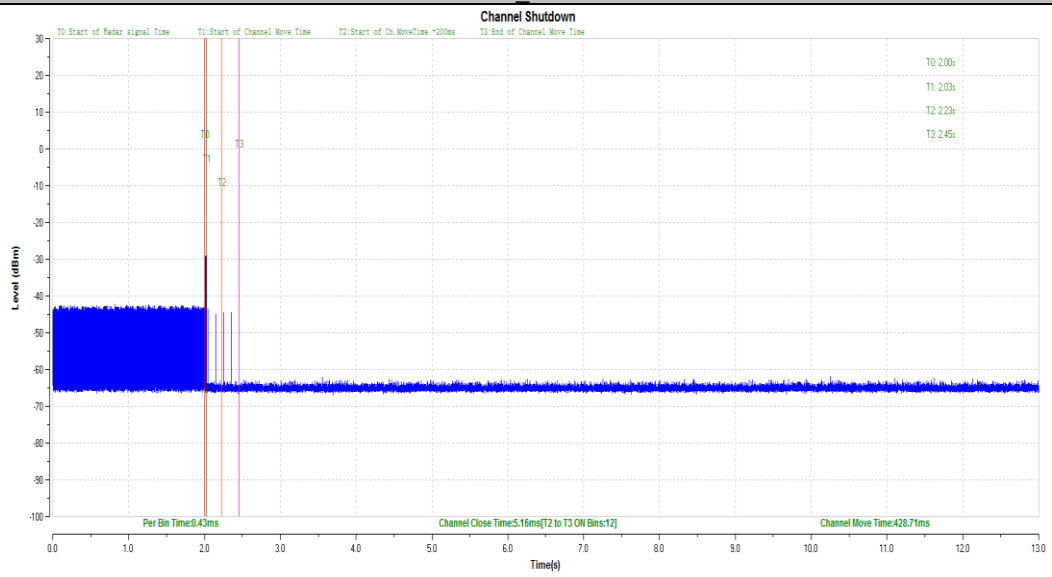
Clause	Test Parameter	Remarks	Pass/Fail
15.407	DFS Detection Threshold	No Applicable	N/A
15.407	Channel Availability Check time	No Applicable	N/A
15.407	Channel Move time	Applicable	Pass
15.407	Channel Closing Transmission Time	Applicable	Pass
15.407	Non-Occupancy Period	Applicable	Pass
15.407	Uniform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

TestMode	Channel	CCT[s]	Limit[s]	CMT[ms]	Limit[ms]	Verdict
11A	5280	5.16	60	428.71	10000	PASS
	5500	8.17	60	448.06	10000	PASS
11N40SISO	5510	8.6	60	506.54	10000	PASS
11AC80SISO	5290	6.02	60	454.08	10000	PASS
	5530	5.16	60	418.82	10000	PASS

11A_5280



11A_5500

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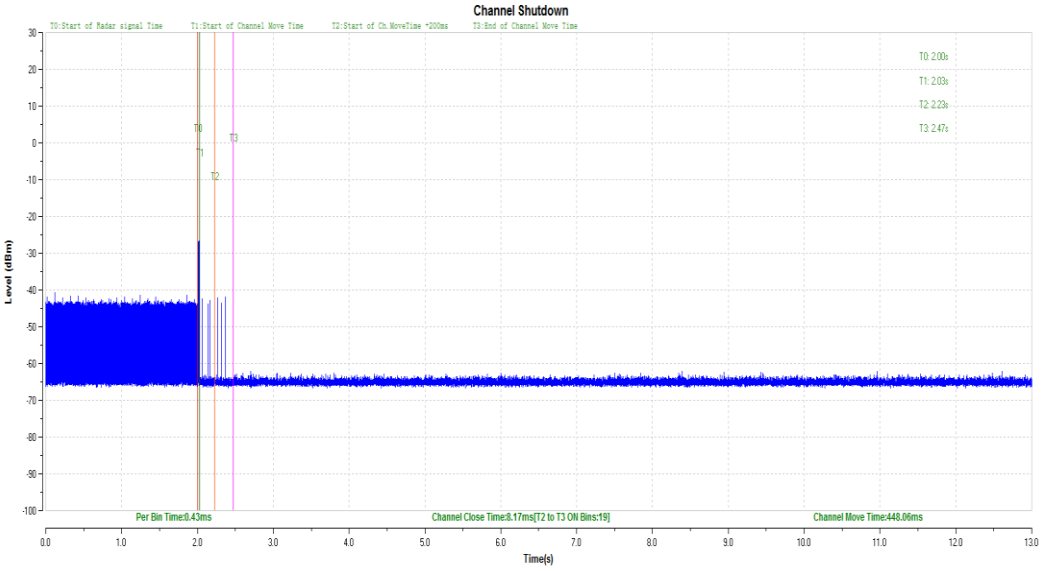
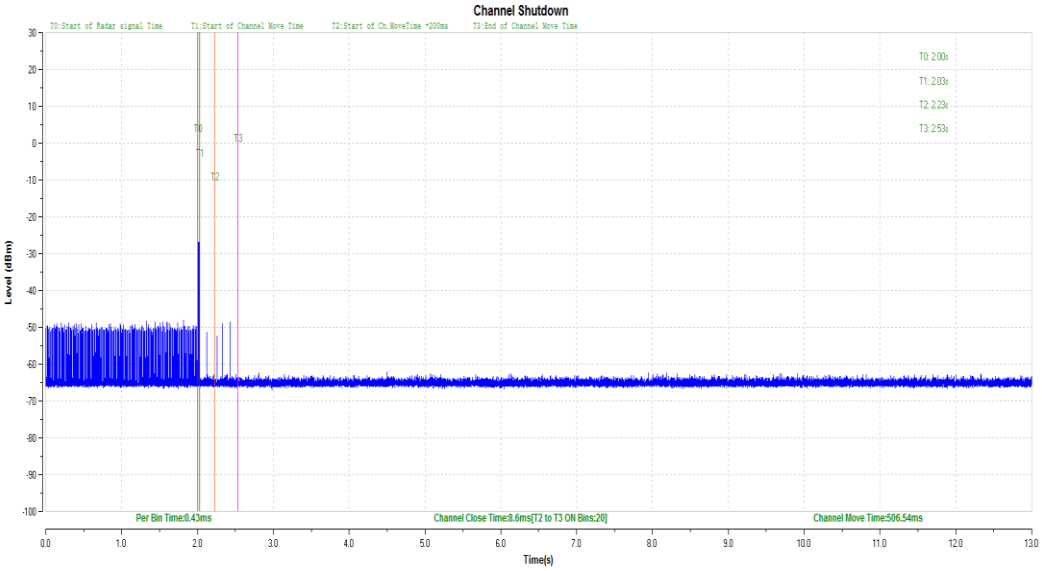
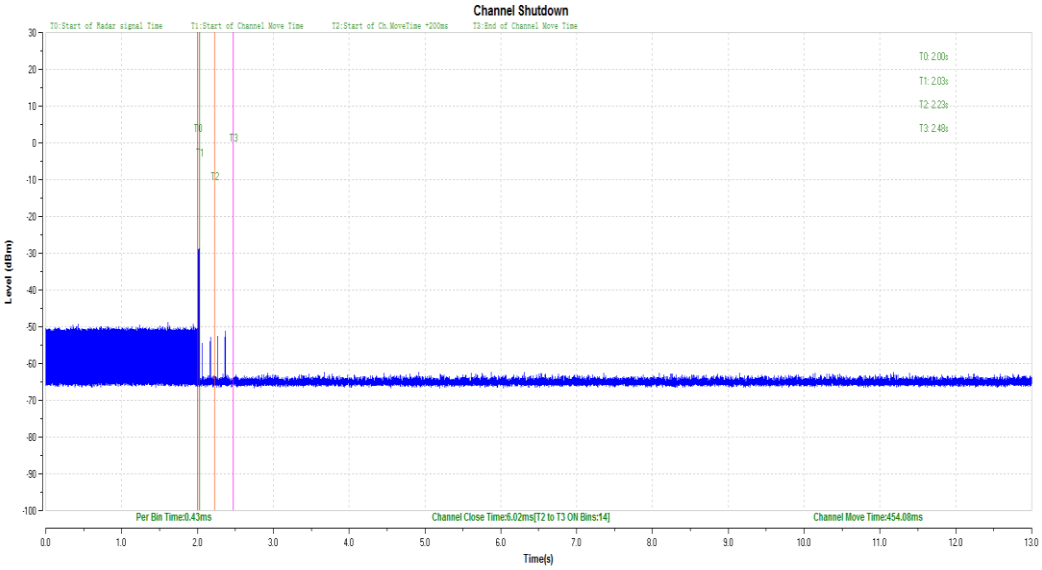


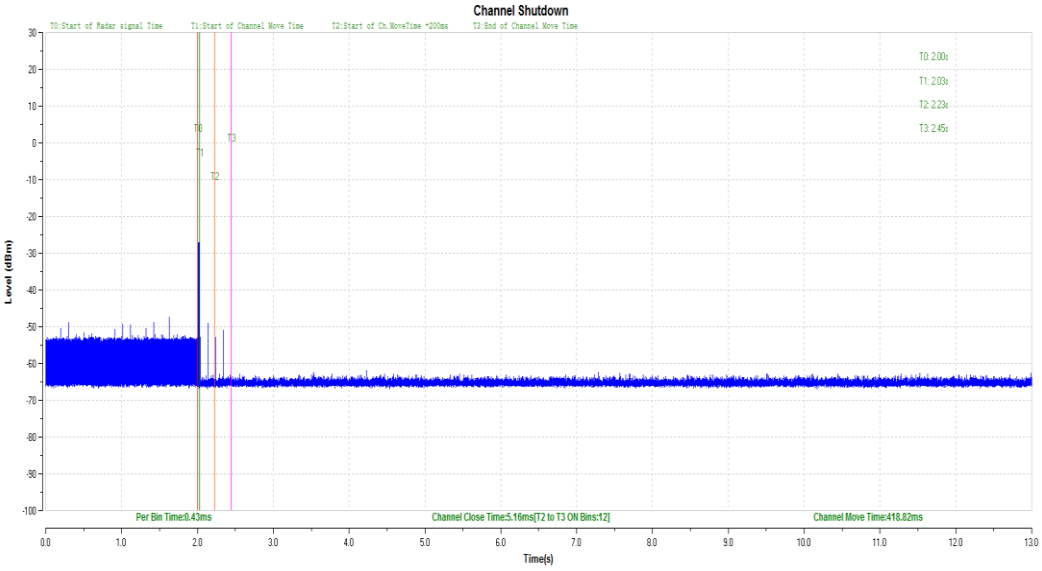
11N40SISO_5510



11AC80SISO_5290



11AC80SISO_5530



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10 Test Equipment List

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	68-4-74-14-002	101269	1	2023-5-28
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9162	68-4-80-19-003	284	1	2023-7-12
Wave Guide Antenna	ETS	3117	68-4-80-19-001	00218954	1	2023-5-9
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-001	100745	1	2023-5-28
Pre-amplifier	Rohde & Schwarz	SCU 18F	68-4-29-19-002	100746	1	2023-5-28
Sideband Horn Antenna	Q-PAR	QWH-SL-18-40-K-SG	68-4-80-14-008	12827	1	2023-7-12
Pre-amplifier	Rohde & Schwarz	SCU 40A	68-4-29-14-002	100432	1	2023-7-27
Attenuator	Mini-circuits	UNAT-6+	68-4-81-21-002	15542	1	2023-5-27
3m Semi-anechoic chamber	TDK	SAC-3 #2	68-4-90-19-006	----	2	2023-5-28
Test software	Rohde & Schwarz	EMC32	68-4-90-19-006-A01	Version10.35.02	N/A	N/A

Conducted Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 3	68-4-74-19-002	102590	1	2023-5-27
LISN	Rohde & Schwarz	ENV216	68-4-87-19-001	102472	1	2023-5-27
Attenuator	Shanghai Huaxiang	TS2-26-3	68-4-81-16-003	080928189	1	2023-5-27
Test software	Rohde & Schwarz	EMC32	68-4-90-19-005-A01	Version10.35.02	N/A	N/A
Shielding Room	TDK	CSR #2	68-4-90-19-005	----	3	2025-10-15

Conducted RF Test System

DESCRIPTION	MANUFACTURER	MODEL NO.	EQUIPMENT ID	SERIAL NO.	CAL INTERVAL (YEAR)	CAL. DUE DATE
Signal Analyzer	Rohde & Schwarz	FSV40	68-4-74-14-004	101030	1	2023-5-27
RF Switch Module	Rohde & Schwarz	OSP120/OSP-B157	68-4-93-14-003	101226/100851	1	2023-5-27
Signal Generator	Rohde & Schwarz	SMB100A	68-4-48-14-001	108272	1	2023-5-27
Vector Signal Generator	Rohde & Schwarz	SMBV100A	68-4-48-18-001	262825	1	2023-5-27
Vector Signal Generator	Rohde & Schwarz	SMU 200A	68-4-48-14-003	105324	1	2023-5-27
Power Splitter	Weinschel	1580	68-4-85-14-001	SC319	1	2023-5-28
10dB Attenuator	Weinschel	4M-10	68-4-81-14-003	43152	1	2023-5-28
10dB Attenuator	R&S	DNF	68-4-81-14-004	DNF-001	1	2023-5-27
10dB Attenuator	R&S	DNF	68-4-81-14-005	DNF-002	1	2023-5-27
10dB Attenuator	R&S	DNF	68-4-81-14-006	DNF-003	1	2023-5-27
10dB Attenuator	R&S	DNF	68-4-81-14-007	DNF-004	1	2023-5-27
Test software	Tonscend	System for BT/WIFI	68-4-74-14-006-A13	Version 2.6.77.0518	N/A	N/A
Shielding Room	TDK	TS8997	68-4-90-19-003	----	3	2025-10-15

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11 System Measurement Uncertainly

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 Conducted Emission 150kHz-30MHz	3.57dB
Uncertainty for Radiated Emission 25MHz-3000MHz	Horizontal: 4.59dB; Vertical: 4.75dB
Uncertainty for Radiated Emission 3000MHz-18000MHz	Horizontal: 5.08dB; Vertical: 5.09dB;
Uncertainty for Radiated Emission 18000MHz-40000MHz	Horizontal: 4.52dB; Vertical: 4.51dB
Uncertainty for Conducted RF test with TS 8997	RF Power Conducted: 1.31dB Frequency test involved: 0.6×10-8 or 1%

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2021, clause 4.4.3 and 4.5.1.

THE END

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