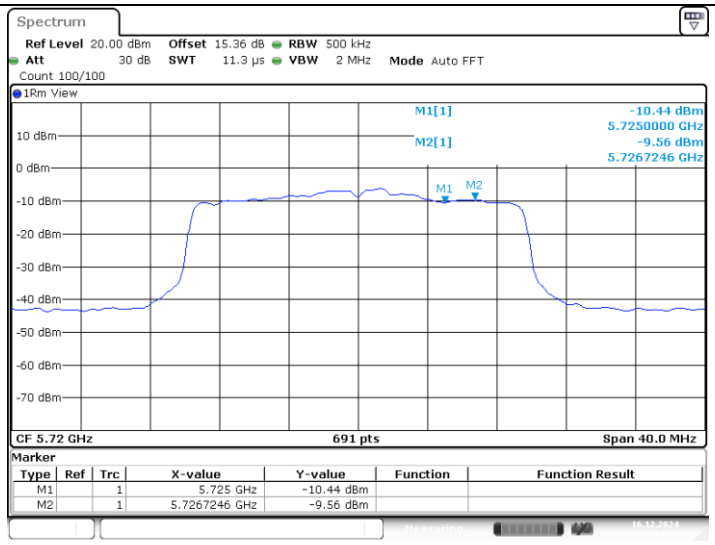
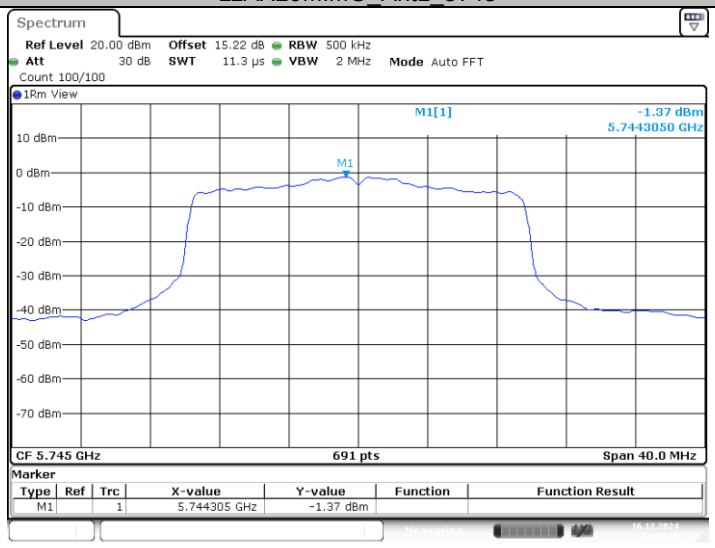
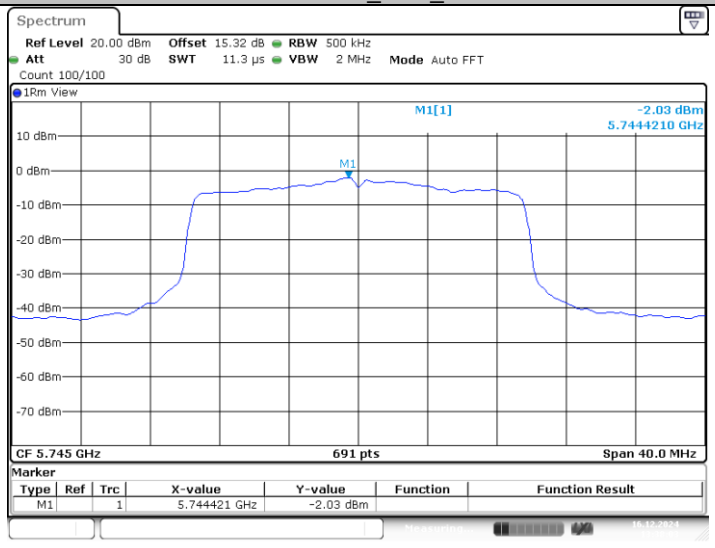


11AX20MIMO_Ant1_5745



11AX20MIMO_Ant2_5745



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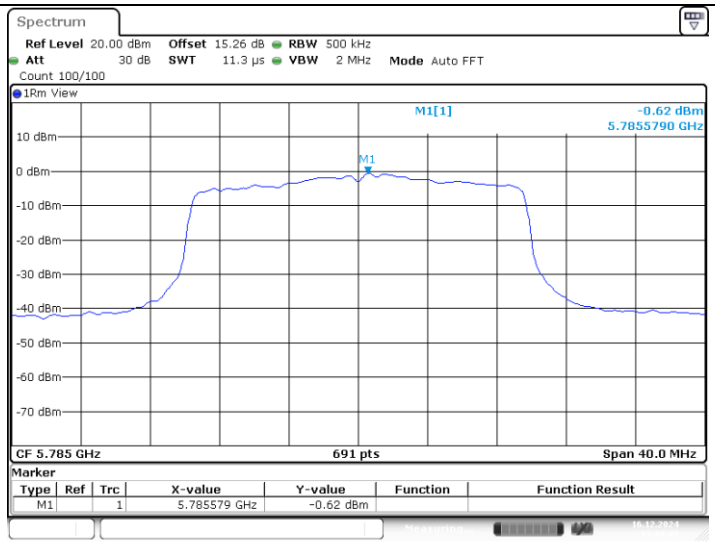

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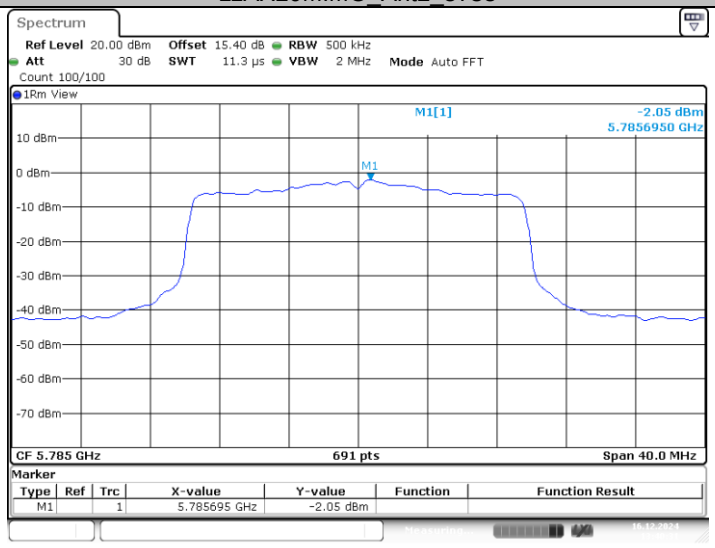
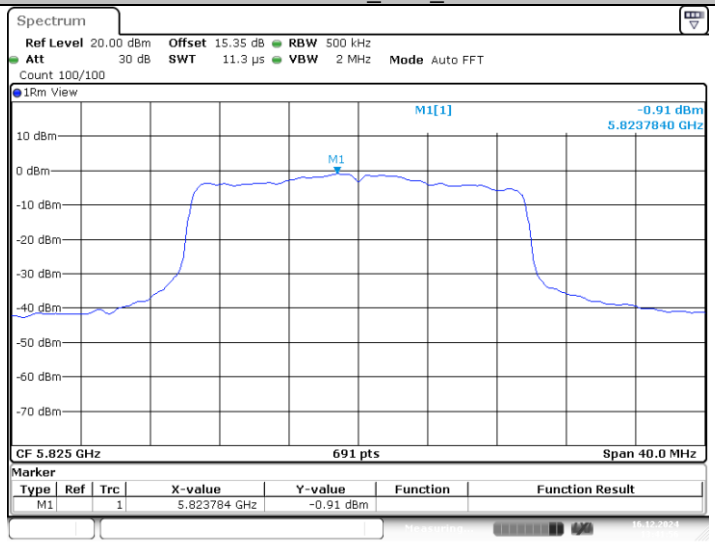
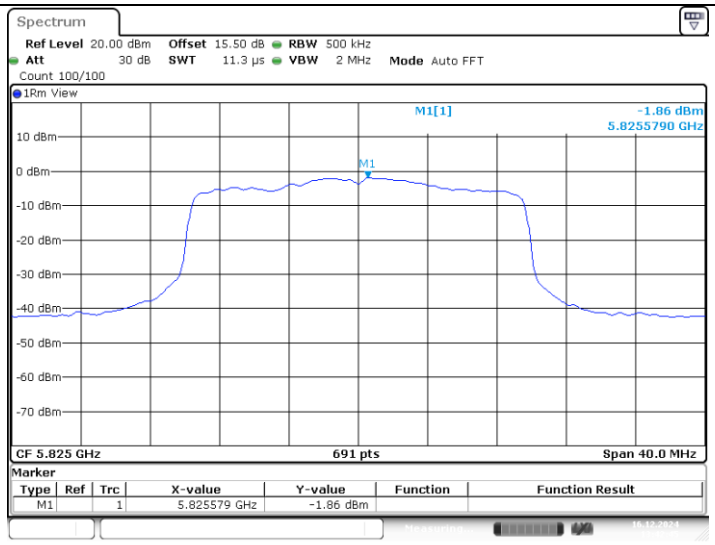


11AX20MIMO_Ant1_5825



11AX20MIMO_Ant2_5825



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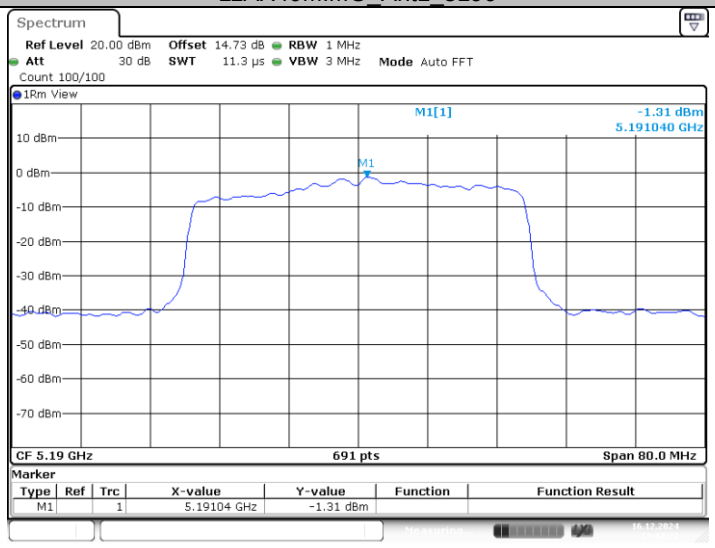
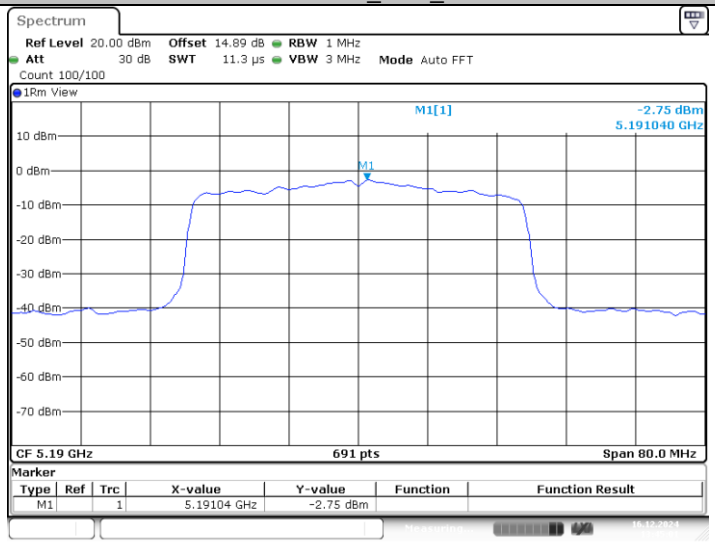
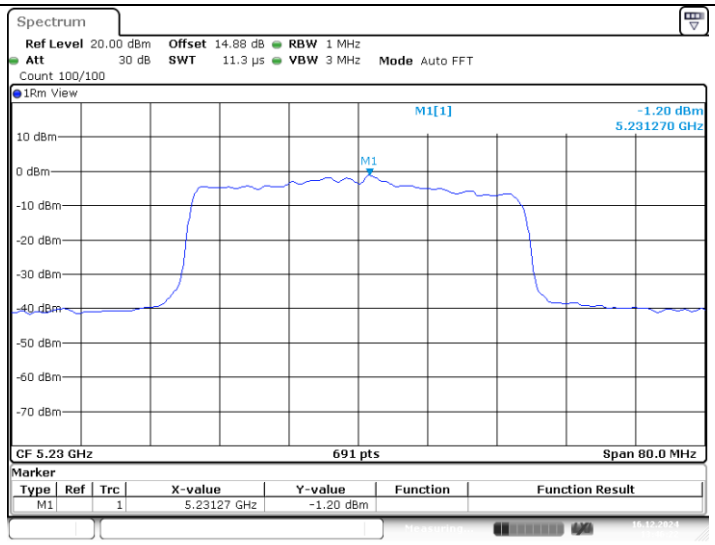


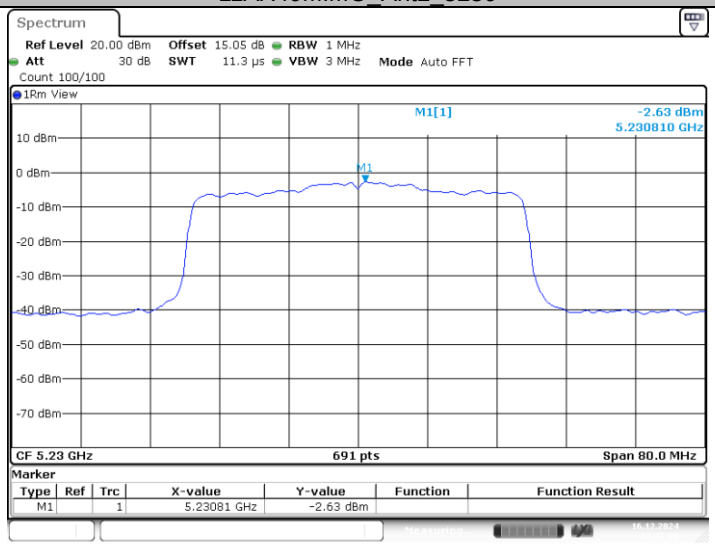
11AX40MIMO_Ant2_5190



11AX40MIMO_Ant1_5230



11AX40MIMO_Ant2_5230



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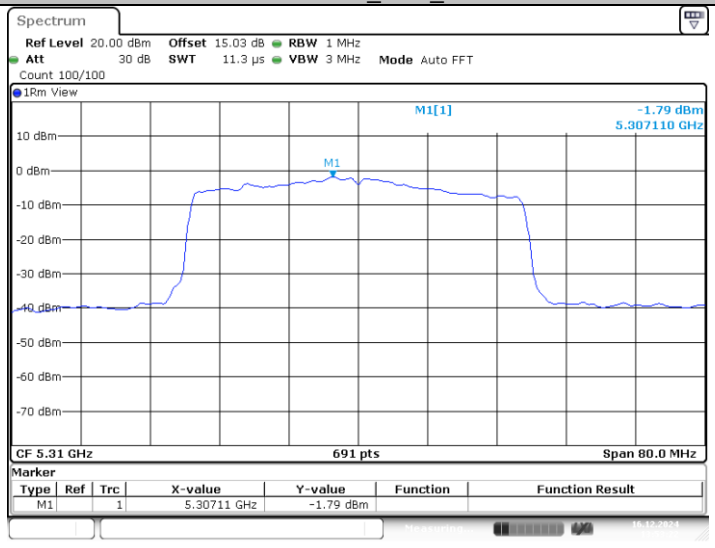

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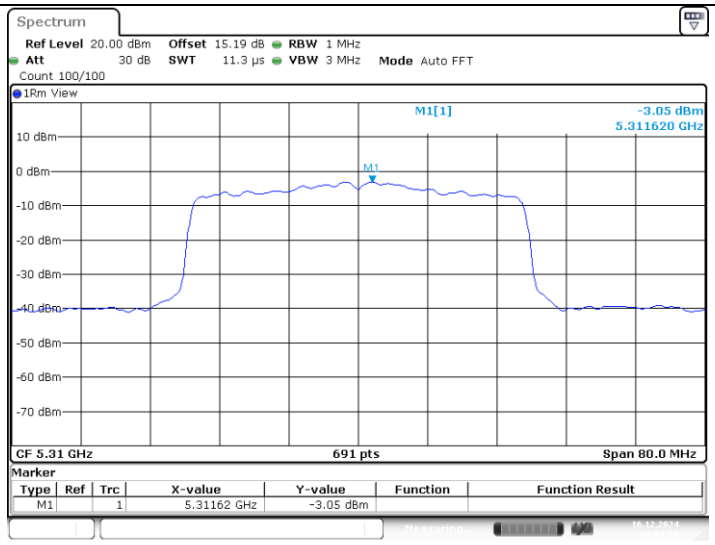

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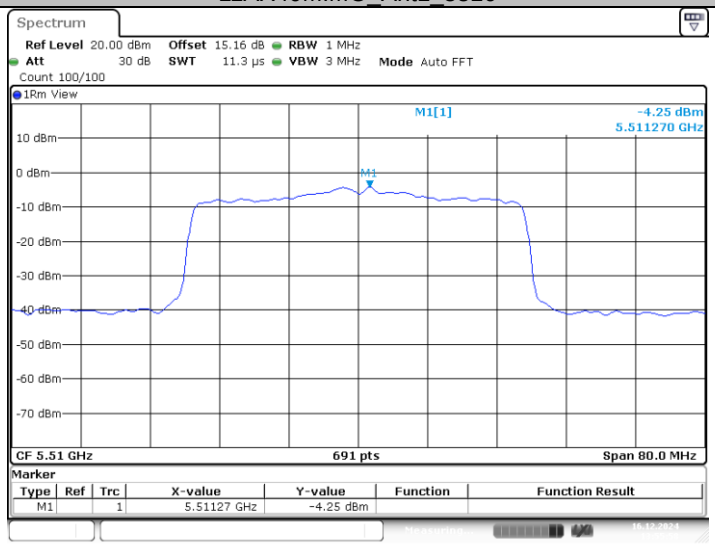
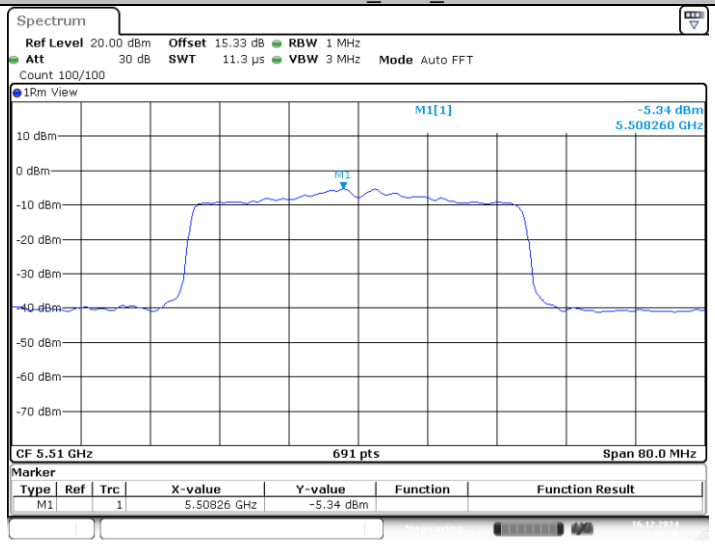
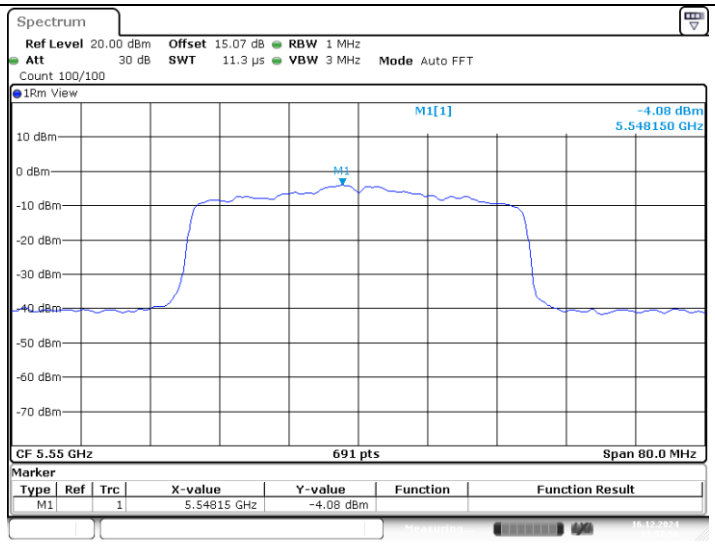


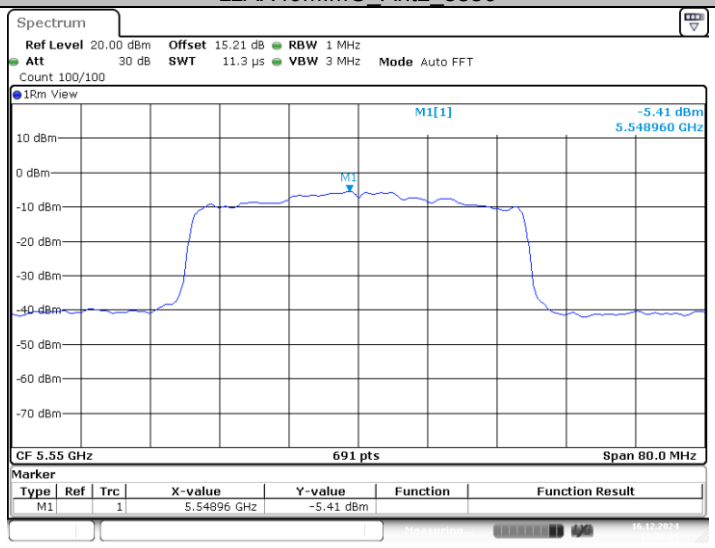
11AX40MIMO_Ant2_5510



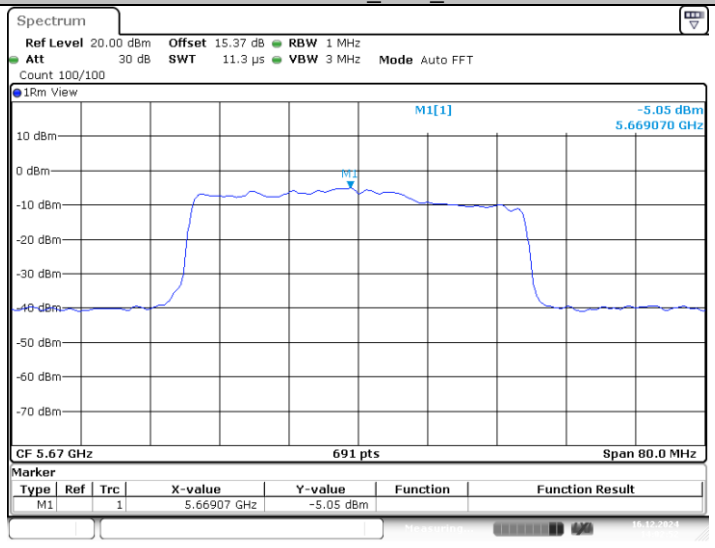
11AX40MIMO_Ant1_5550



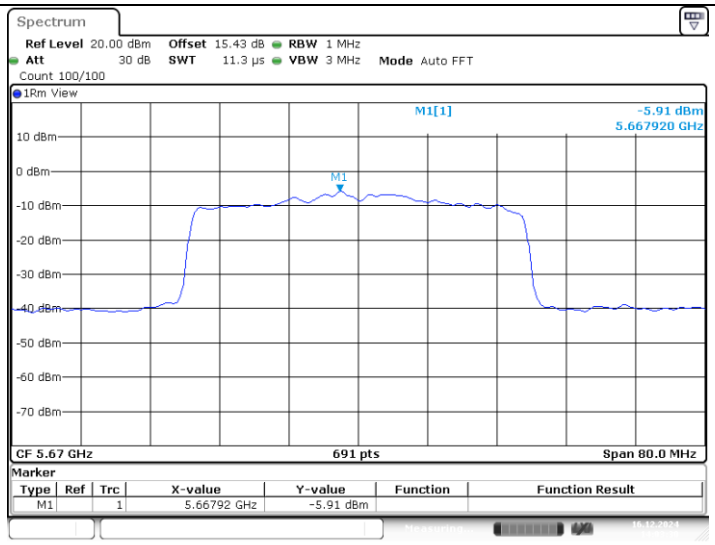
11AX40MIMO_Ant2_5550



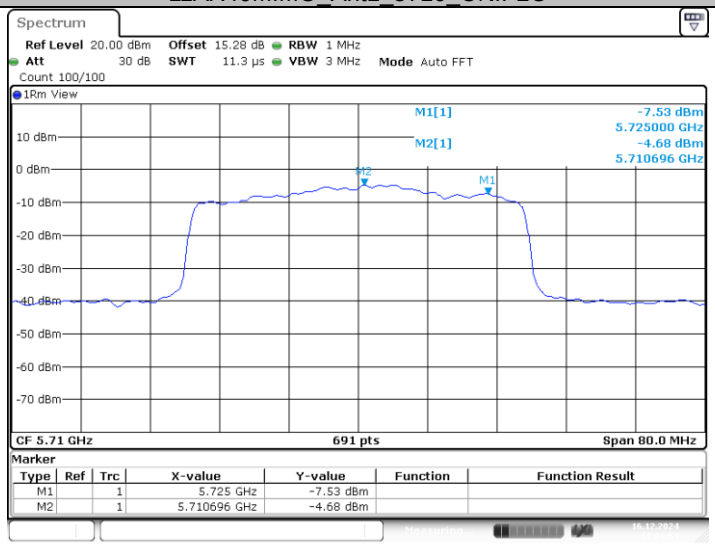
11AX40MIMO_Ant1_5670



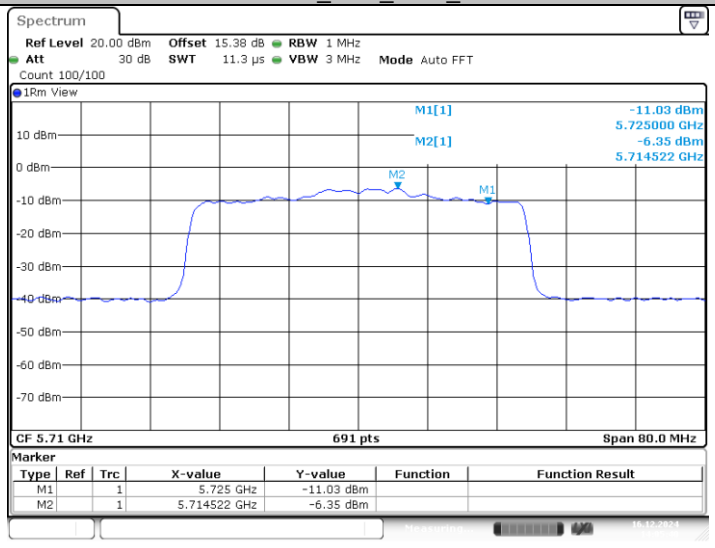
11AX40MIMO_Ant2_5670



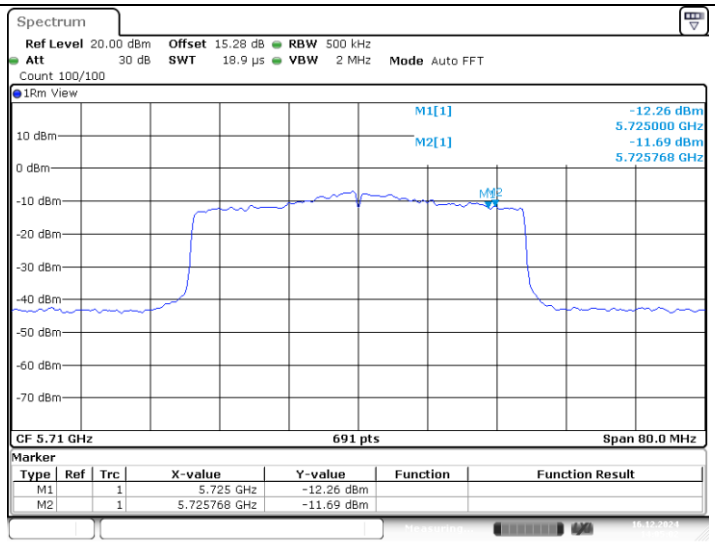
11AX40MIMO_Ant1_5710_UNII-2C



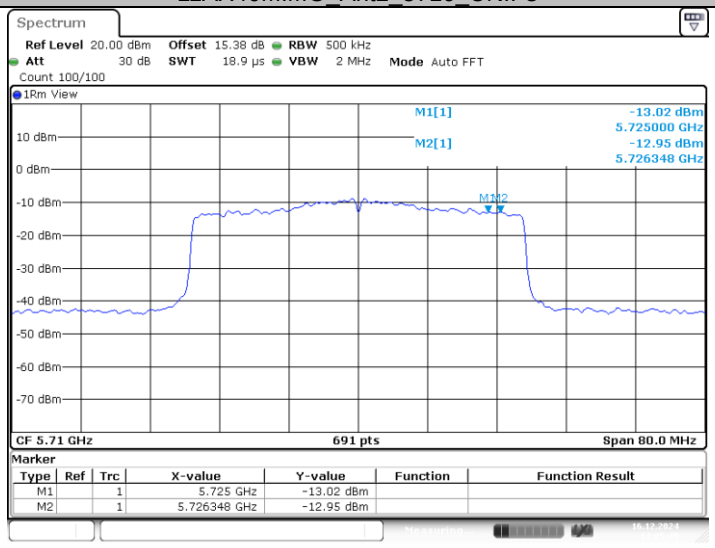
11AX40MIMO_Ant2_5710_UNII-2C



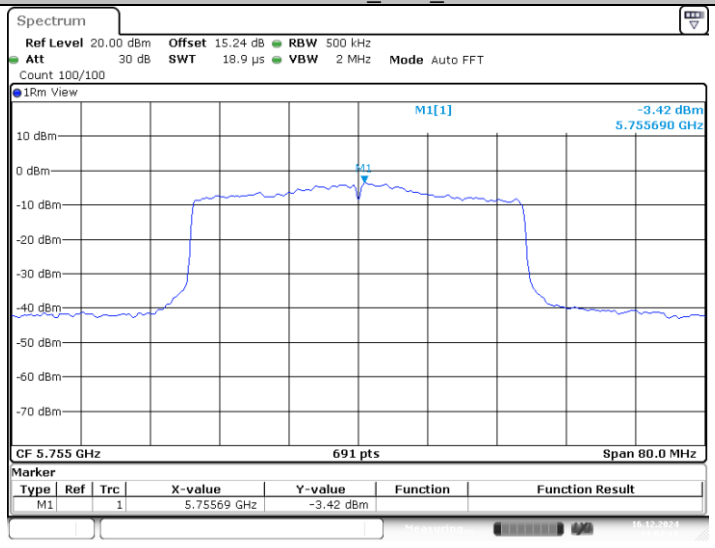
11AX40MIMO_Ant1_5710_UNII-3



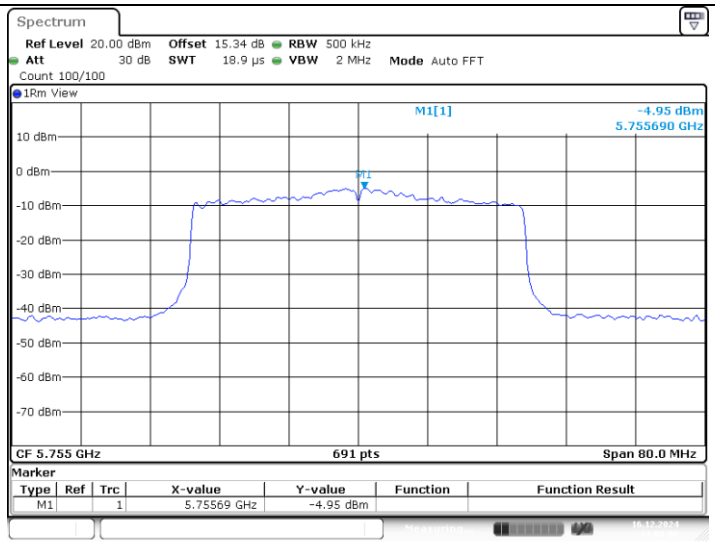
11AX40MIMO_Ant2_5710_UNII-3



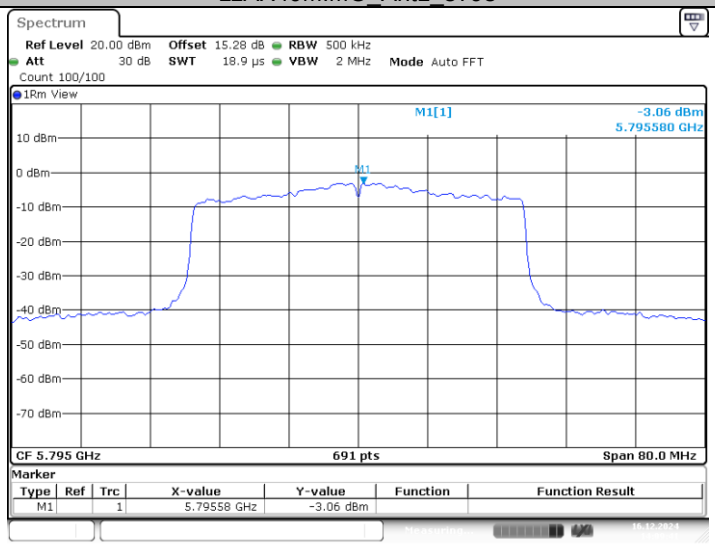
11AX40MIMO_Ant1_5755



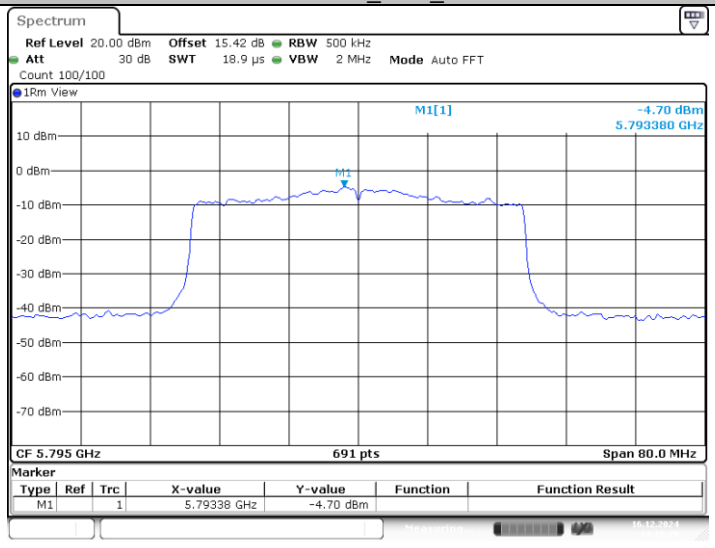
11AX40MIMO_Ant2_5755



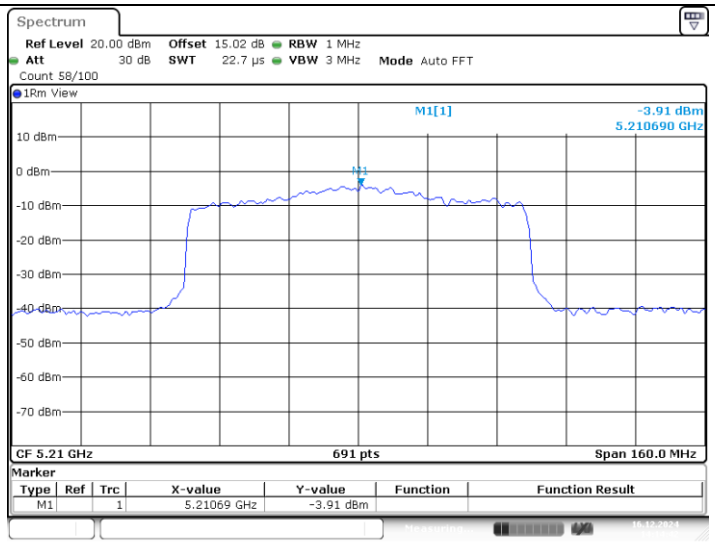
11AX40MIMO_Ant1_5795



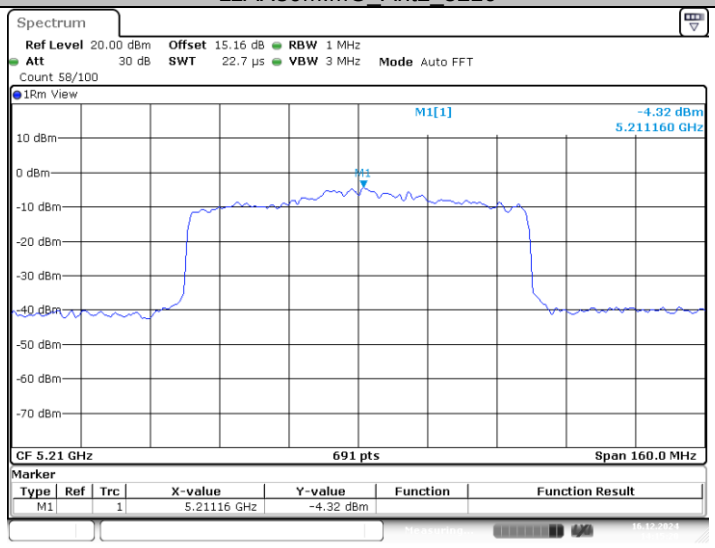
11AX40MIMO_Ant2_5795



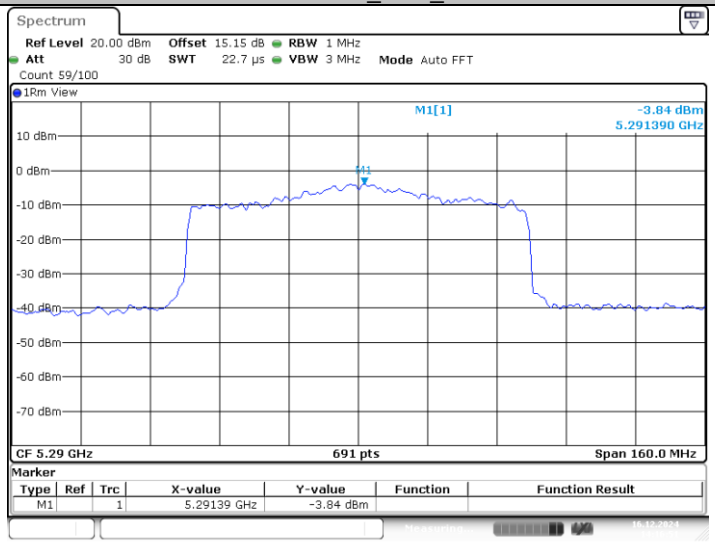
11AX80MIMO_Ant1_5210



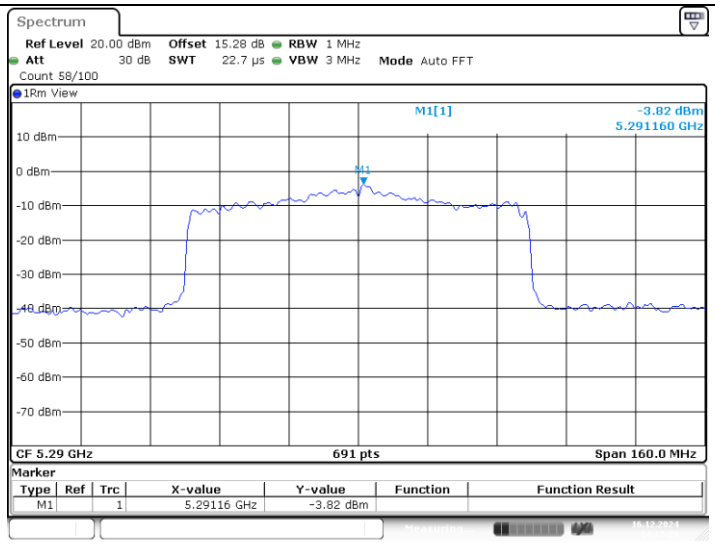
11AX80MIMO_Ant2_5210



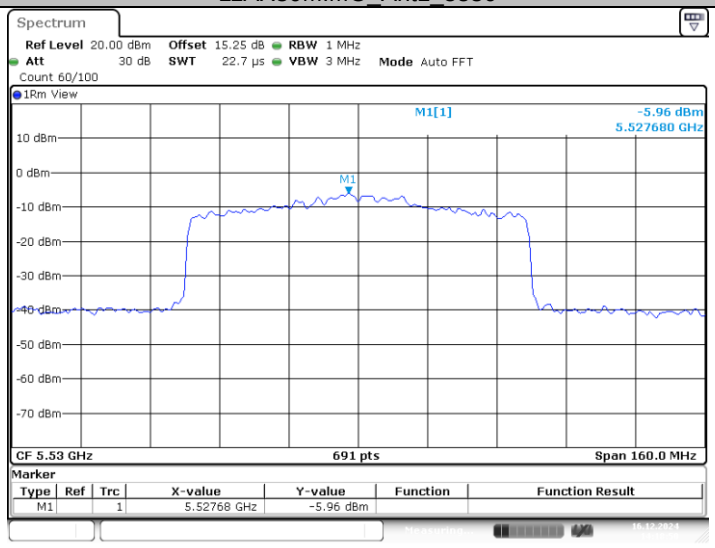
11AX80MIMO_Ant1_5290



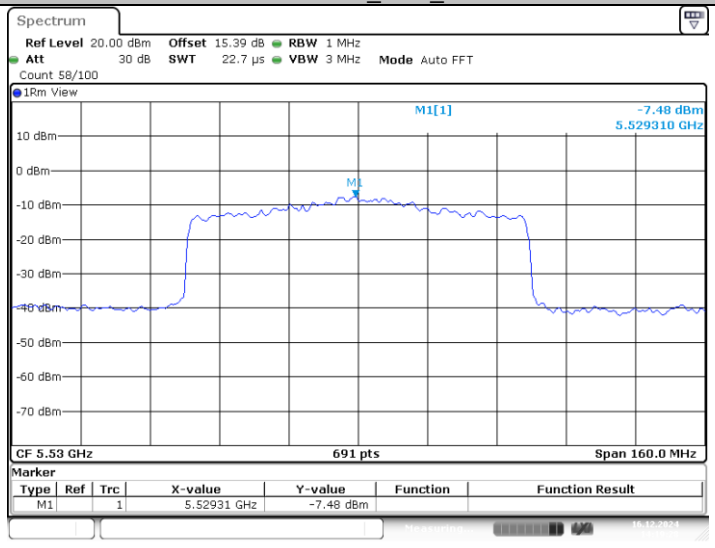
11AX80MIMO_Ant2_5290



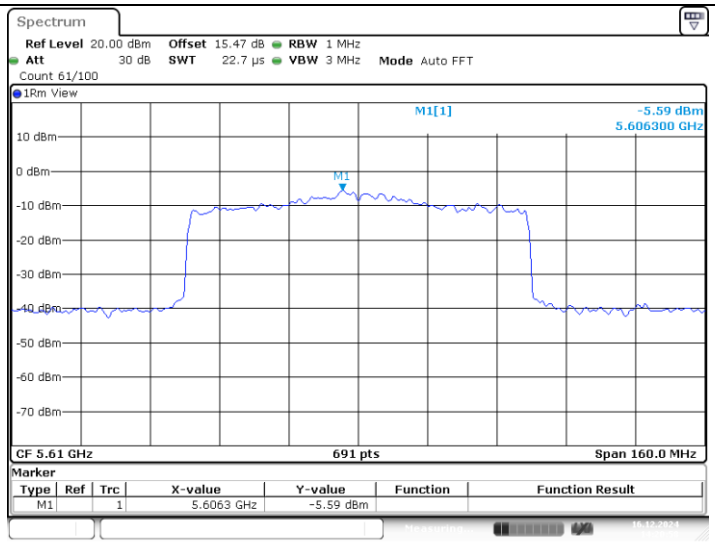
11AX80MIMO_Ant1_5530



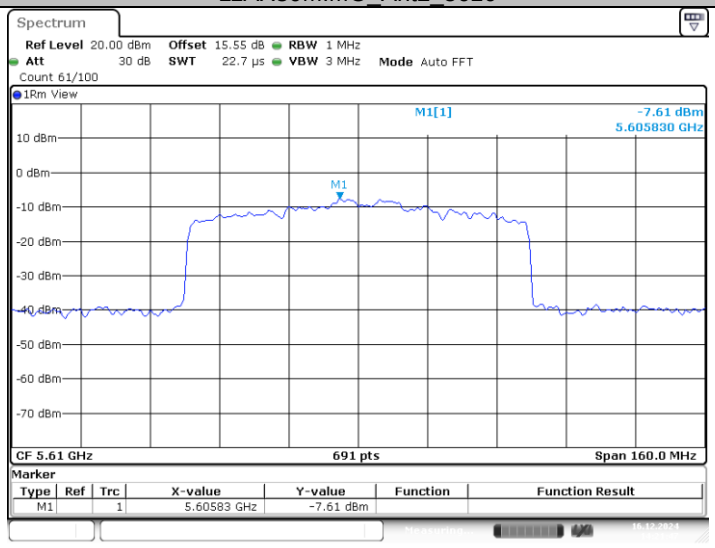
11AX80MIMO_Ant2_5530



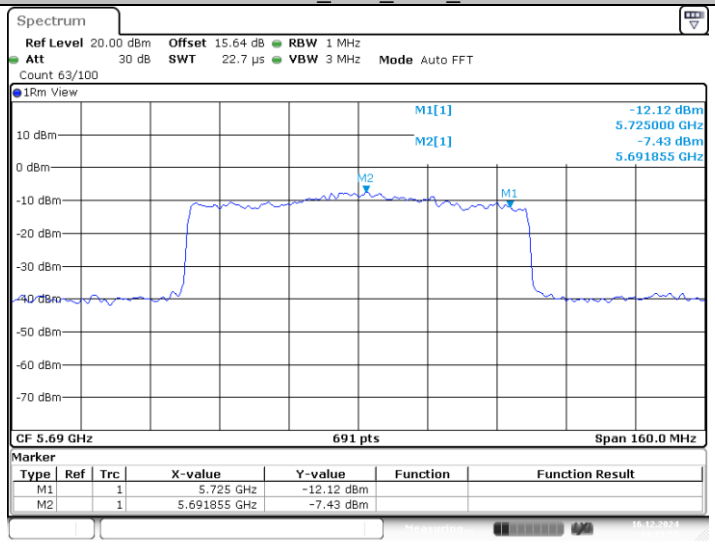
11AX80MIMO_Ant1_5610



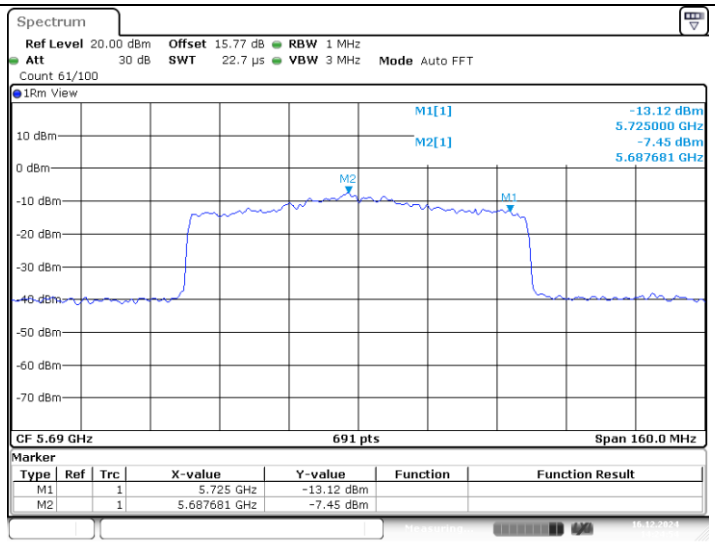
11AX80MIMO_Ant2_5610



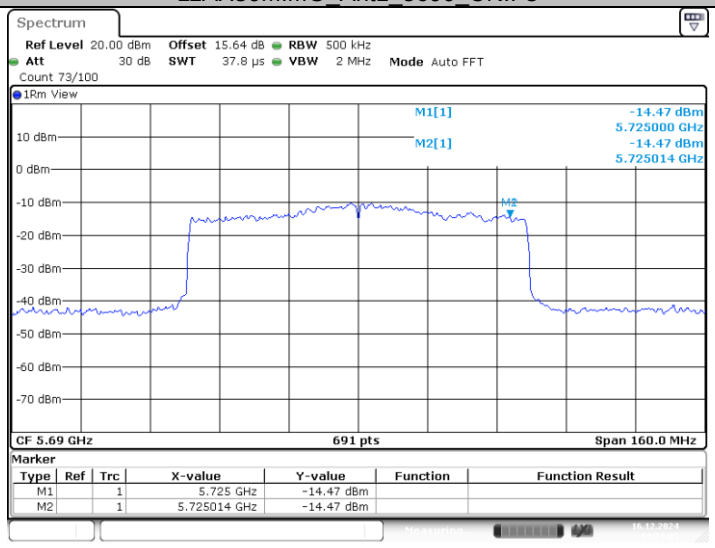
11AX80MIMO_Ant1_5690_UNII-2C



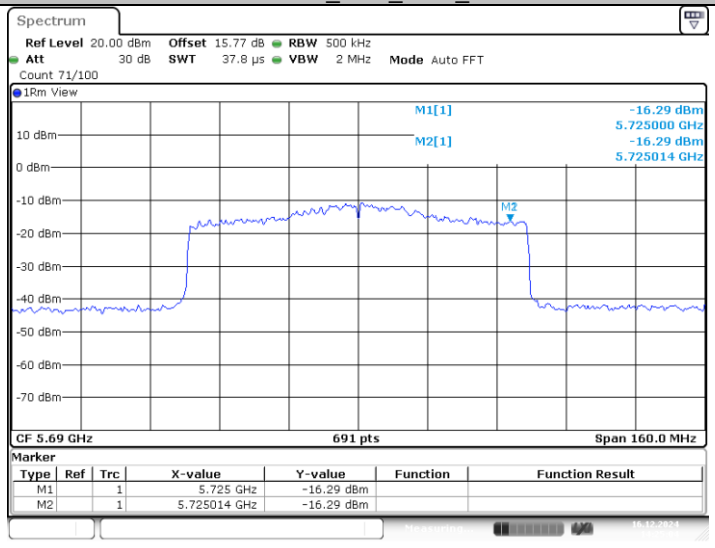
11AX80MIMO_Ant2_5690_UNII-2C



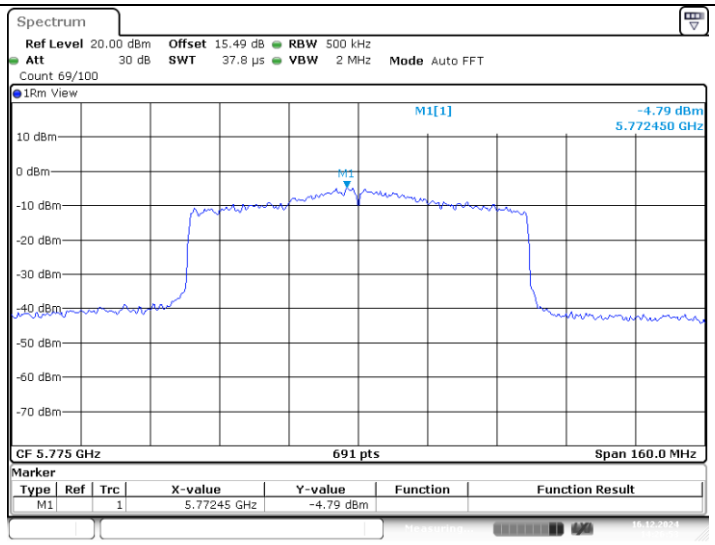
11AX80MIMO_Ant1_5690_UNII-3



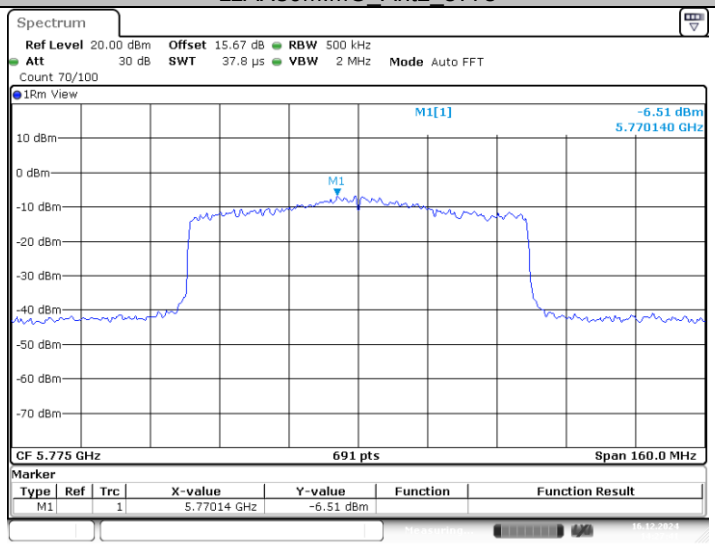
11AX80MIMO_Ant2_5690_UNII-3



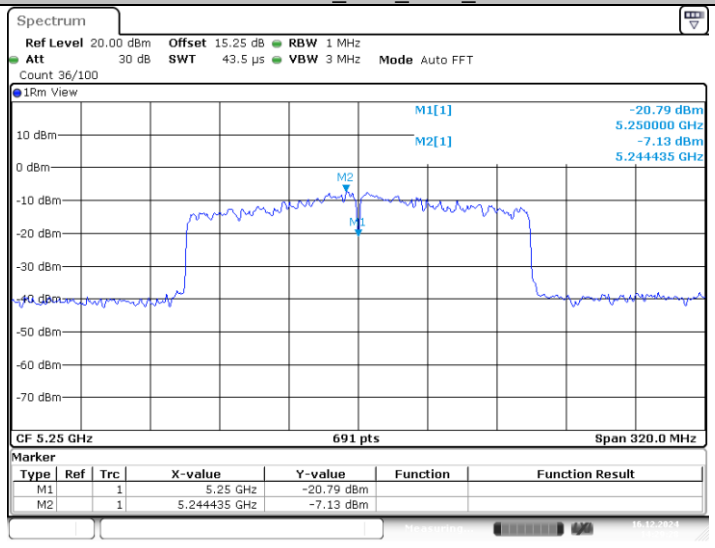
11AX80MIMO_Ant1_5775



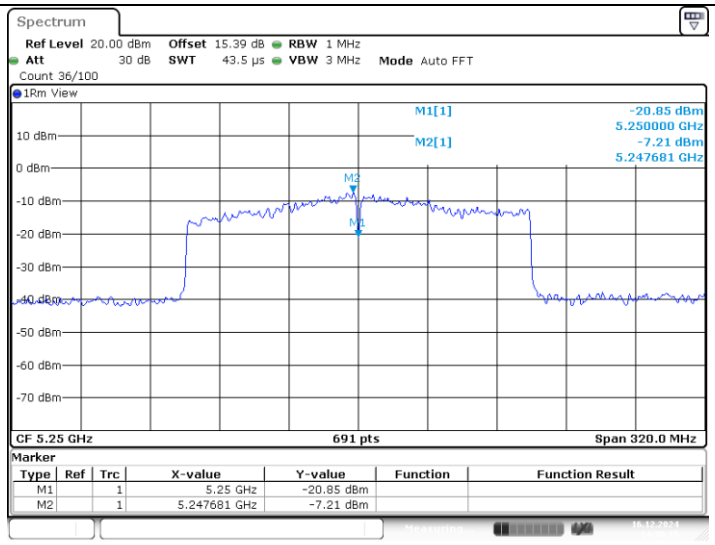
11AX80MIMO_Ant2_5775



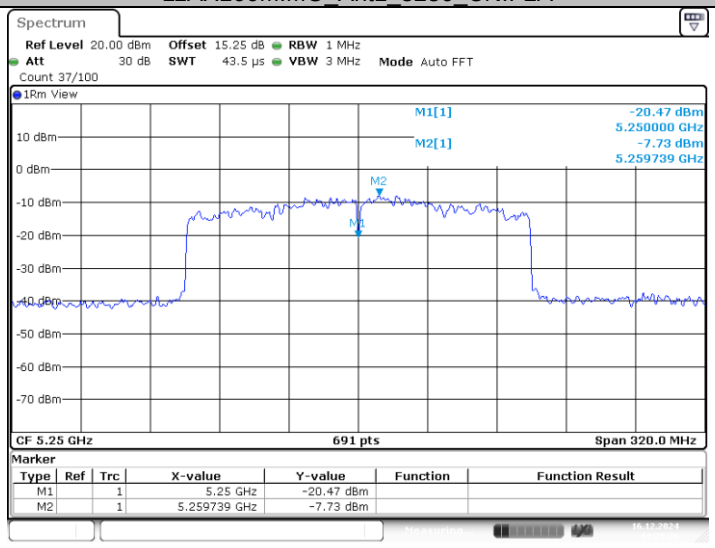
11AX160MIMO_Ant1_5250_UNII-1



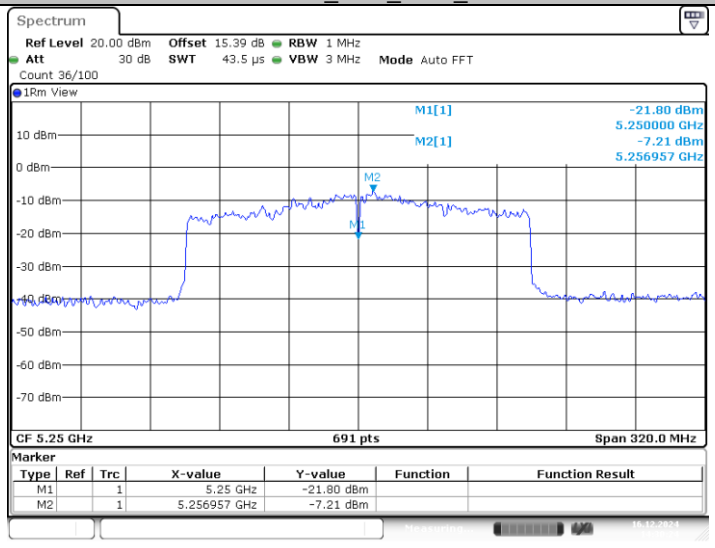
11AX160MIMO_Ant2_5250_UNII-1



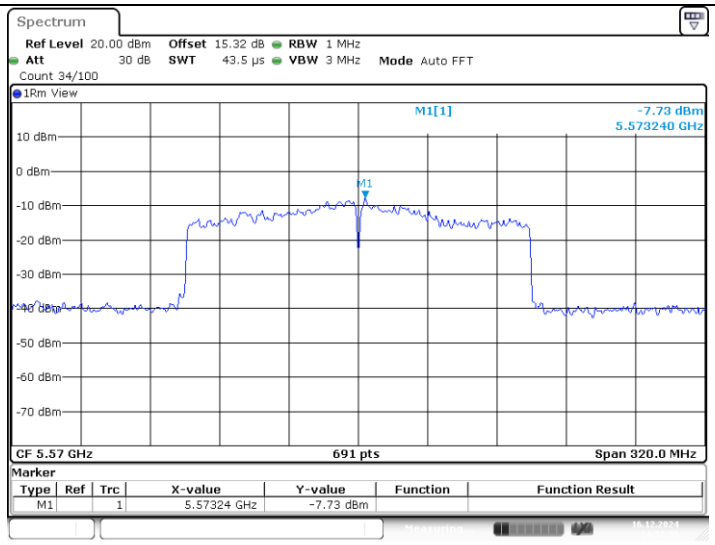
11AX160MIMO_Ant1_5250_UNII-2A



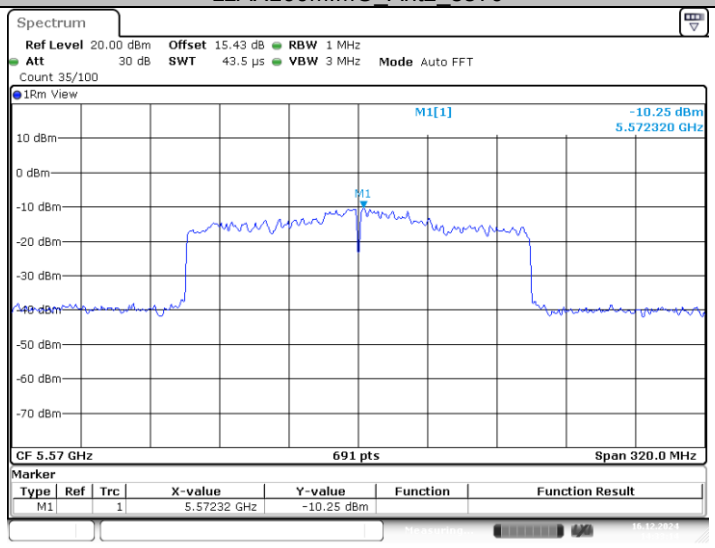
11AX160MIMO_Ant2_5250_UNII-2A



11AX160MIMO_Ant1_5570



11AX160MIMO_Ant2_5570



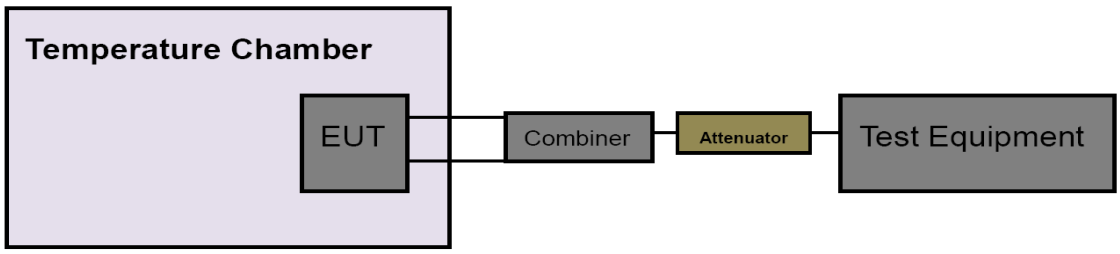
3.7. Frequency Stability

Limit

FCC CFR Title 47 Part 15 Subpart E Section 15.407(g) / RSS-Gen 6.11

Test Item	Limit	Frequency Range (MHz)
Frequency Stability	Specified in the user's manual, the transmitter center frequency tolerance shall be ±20 ppm maximum for the 5 GHz band (IEEE 802.11n specification)	5150~5250
		5250~5350
		5500~5700
		5725~5850

Test Configuration



Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above.

(1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
(2) Set analyzer center frequency to transmitting frequency.
(3) Set the span to encompass the entire emissions bandwidth (EBW) of the signal.
(4) Set the RBW to: 8MHz, VBW=8MHz with peak detector and max hold settings.
(5) The test extreme voltage is to change the primary supply voltage from 3.465V to 4.235V percent of the nominal value.
(6) Extreme temperature is 0℃~30℃

NOTE: The EUT was set to continuously transmitting in continuously un-modulation transmitting mode.

Test Mode

Please refer to the clause 2.4.

Test Result

Voltage								
TestMode	Antenna	Freq(MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AX20MIMO	Ant1	5180	NV	NT	20680.00	3.992278	20	PASS
			LV	NT	20680.00	3.992278	20	PASS
			HV	NT	20680.00	3.992278	20	PASS
	Ant2	5180	NV	NT	22180.00	4.281853	20	PASS
			LV	NT	20980.00	4.050193	20	PASS
			HV	NT	21880.00	4.223938	20	PASS
	Ant1	5200	NV	NT	22480.00	4.323077	20	PASS
			LV	NT	22480.00	4.323077	20	PASS
			HV	NT	21580.00	4.150000	20	PASS
	Ant2	5200	NV	NT	20980.00	4.034615	20	PASS
			LV	NT	20080.00	3.861538	20	PASS
			HV	NT	21880.00	4.207692	20	PASS
	Ant1	5240	NV	NT	22780.00	4.347328	20	PASS
			LV	NT	22780.00	4.347328	20	PASS
			HV	NT	22480.00	4.290076	20	PASS
	Ant2	5240	NV	NT	21280.00	4.061069	20	PASS
			LV	NT	21880.00	4.175573	20	PASS
			HV	NT	21580.00	4.118321	20	PASS
	Ant1	5260	NV	NT	22780.00	4.330798	20	PASS
			LV	NT	23080.00	4.387833	20	PASS
			HV	NT	22780.00	4.330798	20	PASS
	Ant2	5260	NV	NT	22180.00	4.216730	20	PASS
			LV	NT	22180.00	4.216730	20	PASS
			HV	NT	21880.00	4.159696	20	PASS
	Ant1	5280	NV	NT	22480.00	4.257576	20	PASS
			LV	NT	22780.00	4.314394	20	PASS
			HV	NT	23080.00	4.371212	20	PASS
	Ant2	5280	NV	NT	21880.00	4.143939	20	PASS
			LV	NT	23080.00	4.371212	20	PASS
			HV	NT	22480.00	4.257576	20	PASS
	Ant1	5320	NV	NT	23380.00	4.394737	20	PASS
			LV	NT	22180.00	4.169173	20	PASS
			HV	NT	23380.00	4.394737	20	PASS
	Ant2	5320	NV	NT	22480.00	4.225564	20	PASS
			LV	NT	22180.00	4.169173	20	PASS
			HV	NT	22780.00	4.281955	20	PASS
	Ant1	5500	NV	NT	21580.00	3.923636	20	PASS
			LV	NT	21880.00	3.978182	20	PASS
			HV	NT	20680.00	3.760000	20	PASS
	Ant2	5500	NV	NT	19480.00	3.541818	20	PASS
			LV	NT	18580.00	3.378182	20	PASS
			HV	NT	18580.00	3.378182	20	PASS
	Ant1	5580	NV	NT	19480.00	3.491039	20	PASS
			LV	NT	20380.00	3.652330	20	PASS
			HV	NT	19180.00	3.437276	20	PASS
	Ant2	5580	NV	NT	20380.00	3.652330	20	PASS
			LV	NT	18580.00	3.329749	20	PASS
			HV	NT	19480.00	3.491039	20	PASS
	Ant1	5700	NV	NT	25470.00	4.468421	20	PASS
			LV	NT	25770.00	4.521053	20	PASS
			HV	NT	25470.00	4.468421	20	PASS
	Ant2	5700	NV	NT	25170.00	4.415789	20	PASS
			LV	NT	25170.00	4.415789	20	PASS
			HV	NT	24880.00	4.364912	20	PASS
	Ant1	5720	NV	NT	20680.00	3.615385	20	PASS
			LV	NT	20680.00	3.615385	20	PASS
			HV	NT	19480.00	3.405594	20	PASS
	Ant2	5720	NV	NT	18880.00	3.300699	20	PASS
			LV	NT	18280.00	3.195804	20	PASS

			HV	NT	18280.00	3.195804	20	PASS
	Ant1	5745	NV	NT	25170.00	4.381201	20	PASS
			LV	NT	24580.00	4.278503	20	PASS
			HV	NT	24580.00	4.278503	20	PASS
	Ant2	5745	NV	NT	24880.00	4.330722	20	PASS
			LV	NT	23980.00	4.174064	20	PASS
			HV	NT	23680.00	4.121845	20	PASS
	Ant1	5785	NV	NT	24580.00	4.248920	20	PASS
			LV	NT	24580.00	4.248920	20	PASS
			HV	NT	25170.00	4.350908	20	PASS
	Ant2	5785	NV	NT	23680.00	4.093345	20	PASS
			LV	NT	24880.00	4.300778	20	PASS
			HV	NT	24280.00	4.197061	20	PASS
	Ant1	5825	NV	NT	24280.00	4.168240	20	PASS
			LV	NT	25470.00	4.372532	20	PASS
			HV	NT	24880.00	4.271245	20	PASS
	Ant2	5825	NV	NT	24280.00	4.168240	20	PASS
			LV	NT	24280.00	4.168240	20	PASS
			HV	NT	24580.00	4.219742	20	PASS
11AX40MIMO	Ant1	5190	NV	NT	22480.00	4.331407	20	PASS
			LV	NT	23080.00	4.447013	20	PASS
			HV	NT	23380.00	4.504817	20	PASS
	Ant2	5190	NV	NT	22780.00	4.389210	20	PASS
			LV	NT	22180.00	4.273603	20	PASS
			HV	NT	22180.00	4.273603	20	PASS
	Ant1	5230	NV	NT	24580.00	4.699809	20	PASS
			LV	NT	24880.00	4.757170	20	PASS
			HV	NT	24280.00	4.642447	20	PASS
	Ant2	5230	NV	NT	23080.00	4.413002	20	PASS
			LV	NT	21580.00	4.126195	20	PASS
			HV	NT	23080.00	4.413002	20	PASS
	Ant1	5270	NV	NT	23380.00	4.436433	20	PASS
			LV	NT	24580.00	4.664137	20	PASS
			HV	NT	23380.00	4.436433	20	PASS
	Ant2	5270	NV	NT	22480.00	4.265655	20	PASS
			LV	NT	23680.00	4.493359	20	PASS
			HV	NT	23380.00	4.436433	20	PASS
	Ant1	5310	NV	NT	23680.00	4.459510	20	PASS
			LV	NT	23380.00	4.403013	20	PASS
			HV	NT	24280.00	4.572505	20	PASS
	Ant2	5310	NV	NT	23380.00	4.403013	20	PASS
			LV	NT	23080.00	4.346516	20	PASS
			HV	NT	24880.00	4.685499	20	PASS
	Ant1	5510	NV	NT	26370.00	4.785844	20	PASS
			LV	NT	25170.00	4.568058	20	PASS
			HV	NT	25470.00	4.622505	20	PASS
	Ant2	5510	NV	NT	25470.00	4.622505	20	PASS
			LV	NT	23980.00	4.352087	20	PASS
			HV	NT	25470.00	4.622505	20	PASS
	Ant1	5550	NV	NT	25770.00	4.643243	20	PASS
			LV	NT	26070.00	4.697297	20	PASS
			HV	NT	26070.00	4.697297	20	PASS
	Ant2	5550	NV	NT	26370.00	4.751351	20	PASS
			LV	NT	23380.00	4.212613	20	PASS
			HV	NT	25170.00	4.535135	20	PASS
	Ant1	5670	NV	NT	26370.00	4.650794	20	PASS
			LV	NT	25470.00	4.492063	20	PASS
			HV	NT	26670.00	4.703704	20	PASS
	Ant2	5670	NV	NT	26670.00	4.703704	20	PASS
			LV	NT	25770.00	4.544974	20	PASS
			HV	NT	25470.00	4.492063	20	PASS
	Ant1	5710	NV	NT	19780.00	3.464098	20	PASS
			LV	NT	18280.00	3.201401	20	PASS
			HV	NT	19780.00	3.464098	20	PASS
	Ant2	5710	NV	NT	19480.00	3.411559	20	PASS

			LV	NT	18580.00	3.253940	20	PASS
			HV	NT	18280.00	3.201401	20	PASS
	Ant1	5755	NV	NT	26070.00	4.529974	20	PASS
			LV	NT	25470.00	4.425717	20	PASS
			HV	NT	25770.00	4.477845	20	PASS
	Ant2	5755	NV	NT	25770.00	4.477845	20	PASS
			LV	NT	25170.00	4.373588	20	PASS
			HV	NT	25170.00	4.373588	20	PASS
	Ant1	5795	NV	NT	25170.00	4.343399	20	PASS
			LV	NT	26970.00	4.654012	20	PASS
			HV	NT	25770.00	4.446937	20	PASS
	Ant2	5795	NV	NT	26370.00	4.550475	20	PASS
			LV	NT	25770.00	4.446937	20	PASS
			HV	NT	26070.00	4.498706	20	PASS
11AX80MIMO	Ant1	5210	NV	NT	24880.00	4.775432	20	PASS
			LV	NT	24880.00	4.775432	20	PASS
			HV	NT	24280.00	4.660269	20	PASS
	Ant2	5210	NV	NT	23980.00	4.602687	20	PASS
			LV	NT	24280.00	4.660269	20	PASS
			HV	NT	24280.00	4.660269	20	PASS
	Ant1	5290	NV	NT	25470.00	4.814745	20	PASS
			LV	NT	24880.00	4.703214	20	PASS
			HV	NT	23680.00	4.476371	20	PASS
	Ant2	5290	NV	NT	24880.00	4.703214	20	PASS
			LV	NT	24580.00	4.646503	20	PASS
			HV	NT	24880.00	4.703214	20	PASS
	Ant1	5530	NV	NT	25770.00	4.660036	20	PASS
			LV	NT	25170.00	4.551537	20	PASS
			HV	NT	24280.00	4.390597	20	PASS
	Ant2	5530	NV	NT	25470.00	4.605787	20	PASS
			LV	NT	24880.00	4.499096	20	PASS
			HV	NT	25470.00	4.605787	20	PASS
	Ant1	5610	NV	NT	26370.00	4.700535	20	PASS
			LV	NT	25770.00	4.593583	20	PASS
			HV	NT	25170.00	4.486631	20	PASS
	Ant2	5610	NV	NT	25470.00	4.540107	20	PASS
			LV	NT	25170.00	4.486631	20	PASS
			HV	NT	26070.00	4.647059	20	PASS
	Ant1	5690	NV	NT	20080.00	3.528998	20	PASS
			LV	NT	19480.00	3.423550	20	PASS
			HV	NT	19180.00	3.370826	20	PASS
	Ant2	5690	NV	NT	18880.00	3.318102	20	PASS
			LV	NT	19180.00	3.370826	20	PASS
			HV	NT	19180.00	3.370826	20	PASS
	Ant1	5775	NV	NT	22180.00	3.840693	20	PASS
			LV	NT	22180.00	3.840693	20	PASS
			HV	NT	23680.00	4.100433	20	PASS
	Ant2	5775	NV	NT	23980.00	4.152381	20	PASS
			LV	NT	23080.00	3.996537	20	PASS
			HV	NT	22780.00	3.944589	20	PASS
11AX160MIMO	Ant1	5250	NV	NT	22480.00	4.281905	20	PASS
			LV	NT	22480.00	4.281905	20	PASS
			HV	NT	22180.00	4.224762	20	PASS
	Ant2	5250	NV	NT	21580.00	4.110476	20	PASS
			LV	NT	22180.00	4.224762	20	PASS
			HV	NT	21580.00	4.110476	20	PASS
	Ant1	5570	NV	NT	16780.00	3.012567	20	PASS
			LV	NT	17980.00	3.228007	20	PASS
			HV	NT	17680.00	3.174147	20	PASS
	Ant2	5570	NV	NT	18580.00	3.335727	20	PASS
			LV	NT	18580.00	3.335727	20	PASS
			HV	NT	18280.00	3.281867	20	PASS

Temperature								
TestMode	Antenna	Freq(MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11AX20MIMO	Ant1	5180	NV	0	21580.00	4.166023	20	PASS
			NV	10	20080.00	3.876448	20	PASS
			NV	20	22480.00	4.339768	20	PASS
			NV	30	21280.00	4.108108	20	PASS
	Ant2	5180	NV	0	21880.00	4.223938	20	PASS
			NV	10	21880.00	4.223938	20	PASS
			NV	20	22180.00	4.281853	20	PASS
			NV	30	21880.00	4.223938	20	PASS
	Ant1	5200	NV	0	22180.00	4.265385	20	PASS
			NV	10	22180.00	4.265385	20	PASS
			NV	20	22480.00	4.323077	20	PASS
			NV	30	22780.00	4.380769	20	PASS
	Ant2	5200	NV	0	22180.00	4.265385	20	PASS
			NV	10	21580.00	4.150000	20	PASS
			NV	20	21880.00	4.207692	20	PASS
			NV	30	20980.00	4.034615	20	PASS
	Ant1	5240	NV	0	22180.00	4.232824	20	PASS
			NV	10	21880.00	4.175573	20	PASS
			NV	20	22180.00	4.232824	20	PASS
			NV	30	21580.00	4.118321	20	PASS
	Ant2	5240	NV	0	21580.00	4.118321	20	PASS
			NV	10	21580.00	4.118321	20	PASS
			NV	20	21880.00	4.175573	20	PASS
			NV	30	21580.00	4.118321	20	PASS
	Ant1	5260	NV	0	22480.00	4.273764	20	PASS
			NV	10	23680.00	4.501901	20	PASS
			NV	20	21880.00	4.159696	20	PASS
			NV	30	23380.00	4.444867	20	PASS
	Ant2	5260	NV	0	22780.00	4.330798	20	PASS
			NV	10	21580.00	4.102662	20	PASS
			NV	20	22780.00	4.330798	20	PASS
			NV	30	22480.00	4.273764	20	PASS
	Ant1	5280	NV	0	22780.00	4.314394	20	PASS
			NV	10	23380.00	4.428030	20	PASS
			NV	20	22180.00	4.200758	20	PASS
			NV	30	22480.00	4.257576	20	PASS
	Ant2	5280	NV	0	21880.00	4.143939	20	PASS
			NV	10	22180.00	4.200758	20	PASS
			NV	20	22780.00	4.314394	20	PASS
			NV	30	22480.00	4.257576	20	PASS
	Ant1	5320	NV	0	23080.00	4.338346	20	PASS
			NV	10	22780.00	4.281955	20	PASS
			NV	20	21880.00	4.112782	20	PASS
			NV	35	22180.00	4.169173	20	PASS
	Ant2	5320	NV	0	22780.00	4.281955	20	PASS
			NV	10	23080.00	4.338346	20	PASS
			NV	20	22480.00	4.225564	20	PASS
			NV	30	22480.00	4.225564	20	PASS
	Ant1	5500	NV	0	20380.00	3.705455	20	PASS
			NV	10	20380.00	3.705455	20	PASS
			NV	20	20980.00	3.814545	20	PASS
			NV	30	19180.00	3.487273	20	PASS
	Ant2	5500	NV	0	19180.00	3.487273	20	PASS
			NV	10	19480.00	3.541818	20	PASS
			NV	20	20080.00	3.650909	20	PASS
			NV	30	17380.00	3.160000	20	PASS
	Ant1	5580	NV	0	19180.00	3.437276	20	PASS
			NV	10	20080.00	3.598566	20	PASS
			NV	20	20080.00	3.598566	20	PASS
			NV	30	18280.00	3.275986	20	PASS

	Ant2	5580	NV	0	18880.00	3.383513	20	PASS
			NV	10	18880.00	3.383513	20	PASS
			NV	20	18280.00	3.275986	20	PASS
			NV	30	19180.00	3.437276	20	PASS
	Ant1	5700	NV	0	25170.00	4.415789	20	PASS
			NV	10	25470.00	4.468421	20	PASS
			NV	20	25470.00	4.468421	20	PASS
			NV	30	24280.00	4.259649	20	PASS
	Ant2	5700	NV	0	25470.00	4.468421	20	PASS
			NV	10	24280.00	4.259649	20	PASS
			NV	20	24580.00	4.312281	20	PASS
			NV	30	24880.00	4.364912	20	PASS
	Ant1	5720	NV	0	19180.00	3.353147	20	PASS
			NV	10	19780.00	3.458042	20	PASS
			NV	20	20080.00	3.510490	20	PASS
			NV	30	19780.00	3.458042	20	PASS
	Ant2	5720	NV	0	18880.00	3.300699	20	PASS
			NV	10	19780.00	3.458042	20	PASS
			NV	20	18280.00	3.195804	20	PASS
			NV	30	18280.00	3.195804	20	PASS
	Ant1	5745	NV	0	24580.00	4.278503	20	PASS
			NV	10	24280.00	4.226284	20	PASS
			NV	20	25170.00	4.381201	20	PASS
			NV	30	24580.00	4.278503	20	PASS
	Ant2	5745	NV	0	24880.00	4.330722	20	PASS
			NV	10	24280.00	4.226284	20	PASS
			NV	20	23380.00	4.069626	20	PASS
			NV	30	25170.00	4.381201	20	PASS
	Ant1	5785	NV	0	24580.00	4.248920	20	PASS
			NV	10	24580.00	4.248920	20	PASS
			NV	20	24880.00	4.300778	20	PASS
			NV	30	23380.00	4.041487	20	PASS
	Ant2	5785	NV	0	23980.00	4.145203	20	PASS
			NV	10	23380.00	4.041487	20	PASS
			NV	20	24580.00	4.248920	20	PASS
			NV	30	24280.00	4.197061	20	PASS
	Ant1	5825	NV	0	23980.00	4.116738	20	PASS
			NV	10	25470.00	4.372532	20	PASS
			NV	20	23380.00	4.013734	20	PASS
			NV	30	23680.00	4.065236	20	PASS
	Ant2	5825	NV	0	24280.00	4.168240	20	PASS
			NV	10	24580.00	4.219742	20	PASS
			NV	20	24280.00	4.168240	20	PASS
			NV	30	24880.00	4.271245	20	PASS
11AX40MIMO	Ant1	5190	NV	0	23380.00	4.504817	20	PASS
			NV	10	21880.00	4.215800	20	PASS
			NV	20	21280.00	4.100193	20	PASS
			NV	30	22480.00	4.331407	20	PASS
	Ant2	5190	NV	0	22180.00	4.273603	20	PASS
			NV	10	21580.00	4.157996	20	PASS
			NV	20	22180.00	4.273603	20	PASS
			NV	30	22180.00	4.273603	20	PASS
	Ant1	5230	NV	0	23980.00	4.585086	20	PASS
			NV	10	23680.00	4.527725	20	PASS
			NV	20	23980.00	4.585086	20	PASS
			NV	30	23080.00	4.413002	20	PASS
	Ant2	5230	NV	0	22780.00	4.355641	20	PASS
			NV	10	22180.00	4.240918	20	PASS
			NV	20	22780.00	4.355641	20	PASS
			NV	30	22480.00	4.298279	20	PASS
	Ant1	5270	NV	0	22780.00	4.322581	20	PASS
			NV	10	23380.00	4.436433	20	PASS
			NV	20	23380.00	4.436433	20	PASS
			NV	30	22780.00	4.322581	20	PASS
	Ant2	5270	NV	0	22780.00	4.322581	20	PASS

			NV	10	23080.00	4.379507	20	PASS
			NV	20	23380.00	4.436433	20	PASS
			NV	30	23980.00	4.550285	20	PASS
	Ant1	5310	NV	0	23680.00	4.459510	20	PASS
			NV	10	24280.00	4.572505	20	PASS
			NV	20	23680.00	4.459510	20	PASS
			NV	30	24280.00	4.572505	20	PASS
	Ant2	5310	NV	0	23980.00	4.516008	20	PASS
			NV	10	24580.00	4.629002	20	PASS
			NV	20	24280.00	4.572505	20	PASS
			NV	30	23380.00	4.403013	20	PASS
	Ant1	5510	NV	0	25470.00	4.622505	20	PASS
			NV	10	25170.00	4.568058	20	PASS
			NV	20	24880.00	4.515426	20	PASS
			NV	30	24880.00	4.515426	20	PASS
	Ant2	5510	NV	0	24580.00	4.460980	20	PASS
			NV	10	24880.00	4.515426	20	PASS
			NV	20	24580.00	4.460980	20	PASS
			NV	30	25470.00	4.622505	20	PASS
	Ant1	5550	NV	0	24880.00	4.482883	20	PASS
			NV	10	24280.00	4.374775	20	PASS
			NV	20	25770.00	4.643243	20	PASS
			NV	30	24880.00	4.482883	20	PASS
	Ant2	5550	NV	0	25470.00	4.589189	20	PASS
			NV	10	25770.00	4.643243	20	PASS
			NV	20	24580.00	4.428829	20	PASS
			NV	30	24580.00	4.428829	20	PASS
	Ant1	5670	NV	0	26370.00	4.650794	20	PASS
			NV	10	24880.00	4.388007	20	PASS
			NV	20	26370.00	4.650794	20	PASS
			NV	30	25470.00	4.492063	20	PASS
	Ant2	5670	NV	0	26370.00	4.650794	20	PASS
			NV	10	26070.00	4.597884	20	PASS
			NV	20	26070.00	4.597884	20	PASS
			NV	30	26070.00	4.597884	20	PASS
	Ant1	5710	NV	0	20080.00	3.516637	20	PASS
			NV	10	19480.00	3.411559	20	PASS
			NV	20	19780.00	3.464098	20	PASS
			NV	30	20080.00	3.516637	20	PASS
	Ant2	5710	NV	0	19180.00	3.359019	20	PASS
			NV	10	19480.00	3.411559	20	PASS
			NV	20	19480.00	3.411559	20	PASS
			NV	30	19480.00	3.411559	20	PASS
	Ant1	5755	NV	0	26070.00	4.529974	20	PASS
			NV	10	25770.00	4.477845	20	PASS
			NV	20	26070.00	4.529974	20	PASS
			NV	30	25770.00	4.477845	20	PASS
	Ant2	5755	NV	0	24580.00	4.271069	20	PASS
			NV	10	24880.00	4.323197	20	PASS
			NV	20	25470.00	4.425717	20	PASS
			NV	30	26070.00	4.529974	20	PASS
	Ant1	5795	NV	0	26070.00	4.498706	20	PASS
			NV	10	26370.00	4.550475	20	PASS
			NV	20	25470.00	4.395168	20	PASS
			NV	30	26370.00	4.550475	20	PASS
	Ant2	5795	NV	0	26370.00	4.550475	20	PASS
			NV	10	26070.00	4.498706	20	PASS
			NV	20	25770.00	4.446937	20	PASS
			NV	30	26070.00	4.498706	20	PASS
11AX80MIMO	Ant1	5210	NV	0	23980.00	4.602687	20	PASS
			NV	10	23980.00	4.602687	20	PASS
			NV	20	24280.00	4.660269	20	PASS
			NV	30	23980.00	4.602687	20	PASS
	Ant2	5210	NV	0	23380.00	4.487524	20	PASS
			NV	10	23980.00	4.602687	20	PASS

			NV	20	24280.00	4.660269	20	PASS
			NV	30	24580.00	4.717850	20	PASS
	Ant1	5290	NV	0	25170.00	4.758034	20	PASS
			NV	10	24880.00	4.703214	20	PASS
			NV	20	24280.00	4.589792	20	PASS
			NV	30	24280.00	4.589792	20	PASS
	Ant2	5290	NV	0	23380.00	4.419660	20	PASS
			NV	10	24880.00	4.703214	20	PASS
			NV	20	24580.00	4.646503	20	PASS
			NV	30	23380.00	4.419660	20	PASS
	Ant1	5530	NV	0	25170.00	4.551537	20	PASS
			NV	10	25470.00	4.605787	20	PASS
			NV	20	26070.00	4.714286	20	PASS
			NV	30	26370.00	4.768535	20	PASS
	Ant2	5530	NV	0	25770.00	4.660036	20	PASS
			NV	10	25470.00	4.605787	20	PASS
			NV	20	23980.00	4.336347	20	PASS
			NV	30	24880.00	4.499096	20	PASS
	Ant1	5610	NV	0	26070.00	4.647059	20	PASS
			NV	10	26070.00	4.647059	20	PASS
			NV	20	25770.00	4.593583	20	PASS
			NV	30	26370.00	4.700535	20	PASS
	Ant2	5610	NV	0	26070.00	4.647059	20	PASS
			NV	10	25470.00	4.540107	20	PASS
			NV	20	26370.00	4.700535	20	PASS
			NV	30	25470.00	4.540107	20	PASS
	Ant1	5690	NV	0	19480.00	3.423550	20	PASS
			NV	10	19180.00	3.370826	20	PASS
			NV	20	18280.00	3.212654	20	PASS
			NV	30	20080.00	3.528998	20	PASS
	Ant2	5690	NV	0	19480.00	3.423550	20	PASS
			NV	10	18280.00	3.212654	20	PASS
			NV	20	18880.00	3.318102	20	PASS
			NV	30	18580.00	3.265378	20	PASS
	Ant1	5775	NV	0	23380.00	4.048485	20	PASS
			NV	10	23680.00	4.100433	20	PASS
			NV	20	23080.00	3.996537	20	PASS
			NV	30	22480.00	3.892641	20	PASS
	Ant2	5775	NV	0	23080.00	3.996537	20	PASS
			NV	10	23080.00	3.996537	20	PASS
			NV	20	24280.00	4.204329	20	PASS
			NV	30	23980.00	4.152381	20	PASS
11AX160MIMO	Ant1	5250	NV	0	22180.00	4.224762	20	PASS
			NV	10	22480.00	4.281905	20	PASS
			NV	20	22180.00	4.224762	20	PASS
			NV	30	22180.00	4.224762	20	PASS
	Ant2	5250	NV	0	21880.00	4.167619	20	PASS
			NV	10	20980.00	3.996190	20	PASS
			NV	20	21580.00	4.110476	20	PASS
			NV	30	21580.00	4.110476	20	PASS
	Ant1	5570	NV	0	17980.00	3.228007	20	PASS
			NV	10	17680.00	3.174147	20	PASS
			NV	20	18580.00	3.335727	20	PASS
			NV	30	18880.00	3.389587	20	PASS
	Ant2	5570	NV	0	19480.00	3.497307	20	PASS
			NV	10	18580.00	3.335727	20	PASS
			NV	20	17980.00	3.228007	20	PASS
			NV	30	18880.00	3.389587	20	PASS

3.8. Antenna Requirement

Requirement

FCC CFR Title 47 Part 15 Subpart C Section 15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Test Result

The directional gain of the antenna is less than 6dBi, please refer to the EUT internal photographs antenna photo.

3.9. Dynamic Frequency Selection

Requirement

Table 1: Applicability of DFS Requirements Prior to Use of a Channel

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
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode	
	Master Device or Client with Radar Detection	Client Without Radar Detection
DFS Detection Threshold	Yes	Not required
Channel Closing Transmission Time	Yes	Yes
Channel Move Time	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar Detection	Client Without Radar Detection
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in each of the bonded 20 MHz channels and the channel center frequency.		

Limit

1. DFS Detection Thresholds

Table 3: DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

Maximum Transmit Power	Value (See Notes 1, 2, and 3)
EIRP ≥ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

2. DFS Response Requirements

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 facilitating 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.	

Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Table 5 Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	$\text{Roundup}\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot10^6}{\text{PRI}_{\mu\text{sec}}}\right)\right\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are used for Short Pulse Radar Type 1, then each additional waveform is generated with Test B and must also be unique and not repeated from the previous waveforms in Tests A or B.

For example if in Short Pulse Radar Type 1 Test B a PRI of 3066 μsec is selected, the number of pulses would be Round up $\left\{\left(\frac{1}{360}\right)\cdot\left(\frac{19\cdot10^6}{3066}\right)\right\}$ = Round up {17.2} = 18.

Table 5a - Pulse Repetition Intervals Values for Test A

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
1	1930.5	518
2	1858.7	538
3	1792.1	558
4	1730.1	578
5	1672.2	598
6	1618.1	618
7	1567.4	638
8	1519.8	658

Pulse Repetition Frequency Number	Pulse Repetition Frequency (Pulses Per Second)	Pulse Repetition Interval (Microseconds)
9	1474.9	678
10	1432.7	698
11	1392.8	718
12	1355	738
13	1319.3	758
14	1285.3	778
15	1253.1	798
16	1222.5	818
17	1193.3	838
18	1165.6	858
19	1139	878
20	1113.6	898
21	1089.3	918
22	1066.1	938
23	326.2	3066

Table 6 – Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse Radar Type waveforms. If more than 30 waveforms are used for the Long Pulse Radar Type wave forms, then each additional waveform must also be unique and not repeated from the previous waveforms.

Table 7 – Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

For the Frequency Hopping Radar Type, the same Burst parameters are used for each wave form. The hopping sequence is different for each wave form and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

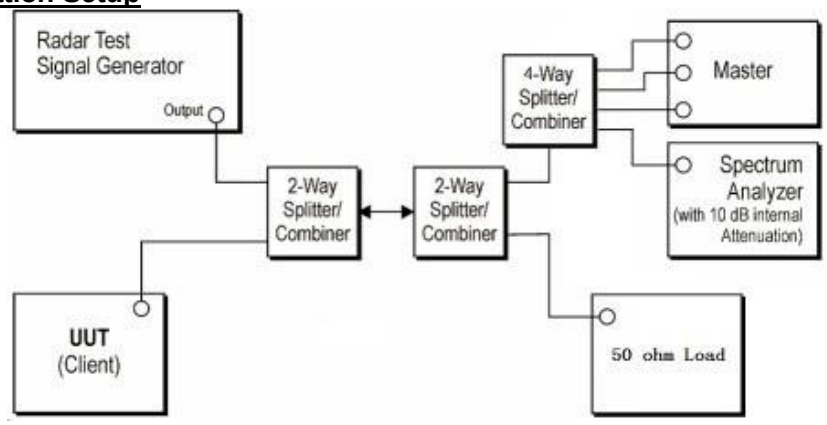
The first frequency in a hopping sequence is selected randomly from the group of 475 integer frequencies from 5250–5724MHz. Next, the frequency that was just chosen is removed from the group and a frequency is randomly selected from the remaining 474 frequencies in the group. This process continues until all 475 frequencies are chosen for the set. For selection of a random frequency, the frequencies remaining within the group are always treated as equally likely.

Calibration of Radar Waveform

Radar Waveform Calibration Procedure

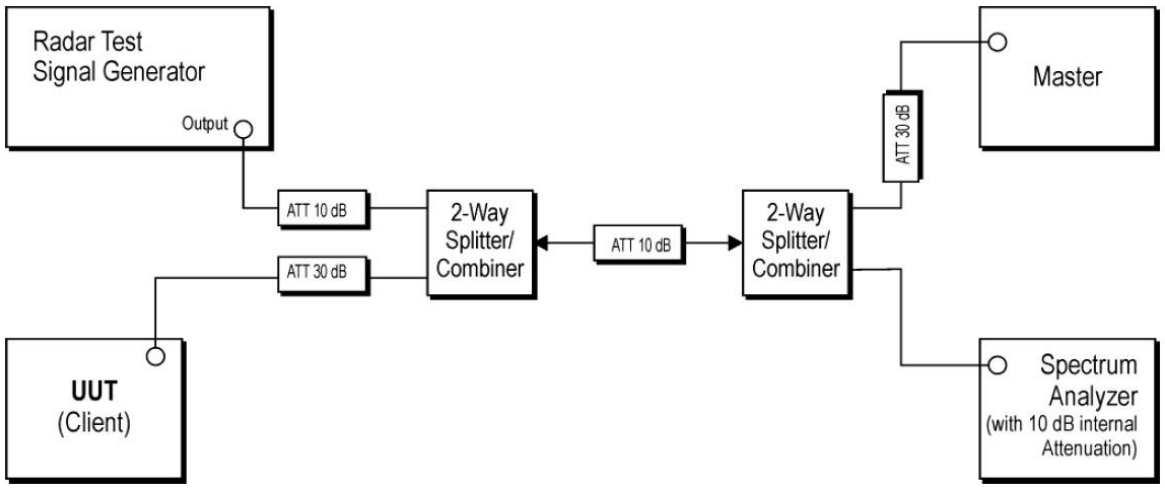
1) A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master
2) The interference Radar Detection Threshold Level is -62dBm + 2.09dBi +1dB = -58.91dBm that had been taken into account the output power range and antenna gain.
3) The following 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 3 MHz. The spectrum analyzer had offset -1.0dB to compensate RF cable loss 1.0dB.
4) The vector signal generator amplitude was set so that the power level measured at the spectrum analyzer was -62dBm + 2.09dBi +1dB = -58.91. Capture the spectrum analyzer plots on short pulse radar waveform.

Conducted Calibration Setup

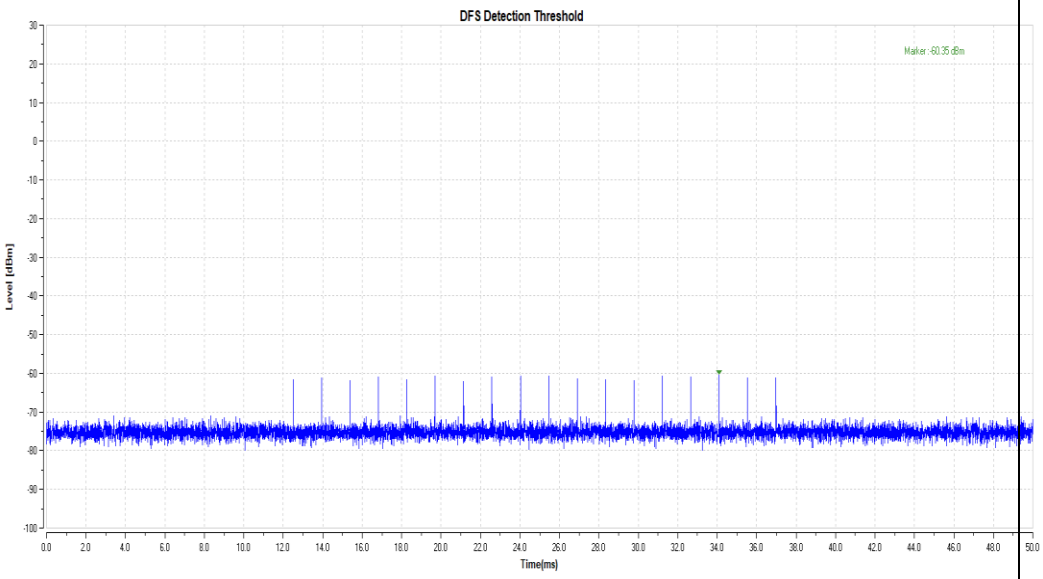
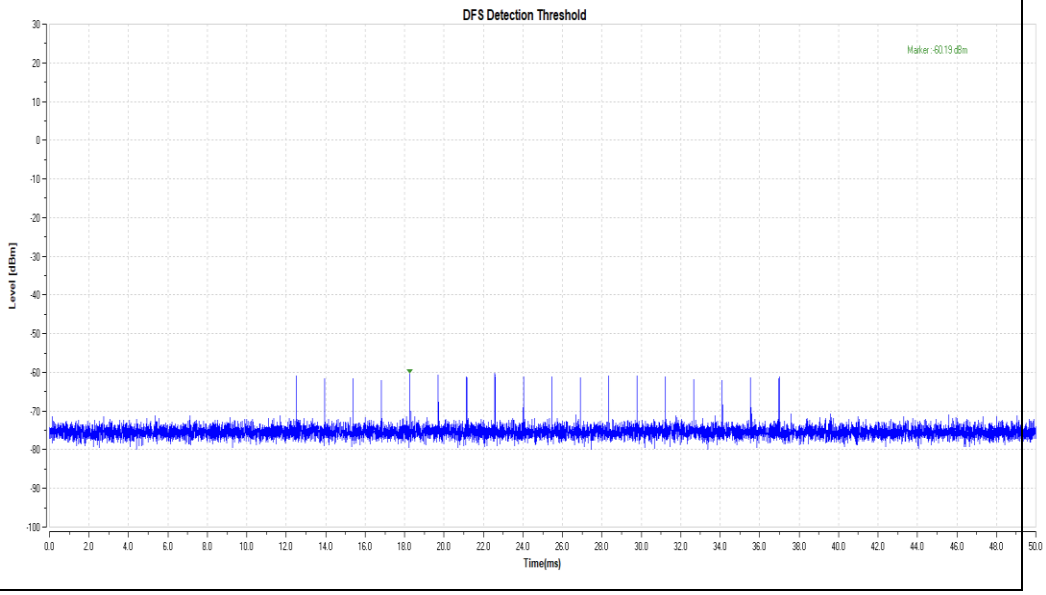


Test Configuration

Setup for Client with injection at the Master



Radar Waveform Calibration Result

Reference DFS test signal	
11AX20MIMO_5320	
11AX20MIMO_5500	

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 -61dBm at the antenna port 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 Media Player Classic Ver. 6.4.8.6 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. Observe the transmissions of the EUT at the end of the radar Burst on the Operating Channel Measure and record the transmissions from 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 Types start at the end of the 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 (0.3ms) =S (12000ms) / B (4000); where Dwell is the 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 Mode

Please refer to the clause 2.4.

Test Result

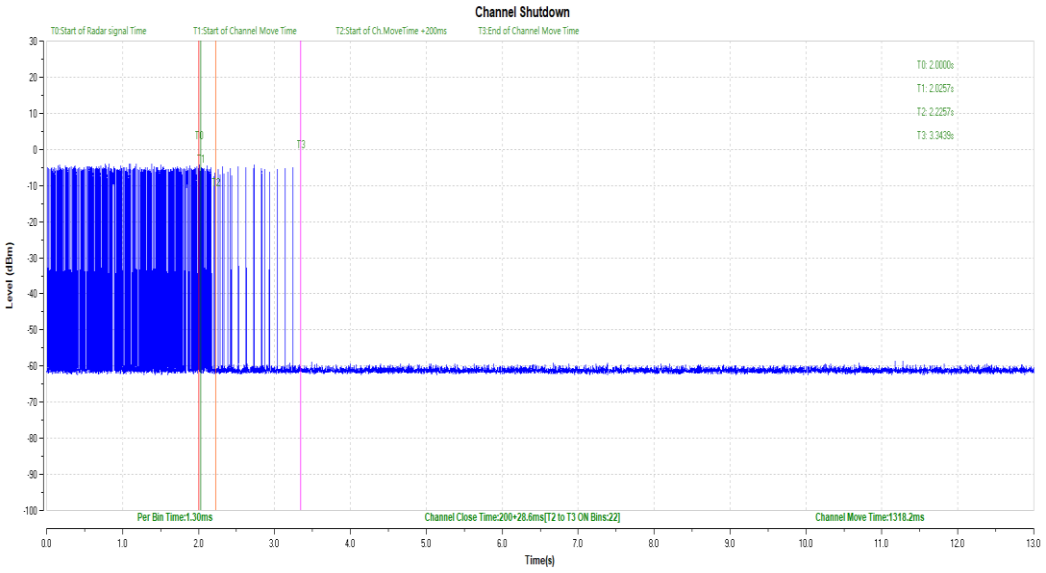
☒ **Passed** ☐ **Not Applicable**

The product in this report belongs to Client Without Radar Detection.

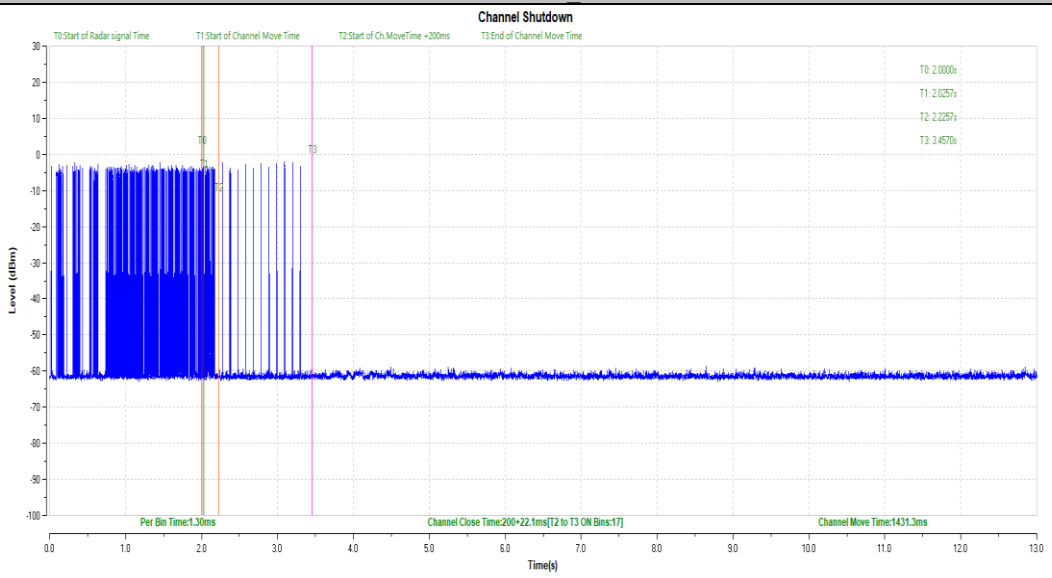
TestMode	Frequency[MHz]	CCTT[ms]	Limit[ms]	CMT[ms]	Limit[ms]	Verdict
11AX20MIMO	5320	200+28.6	200+60	1318.2	10000	PASS
	5500	200+22.1	200+60	1431.3	10000	PASS

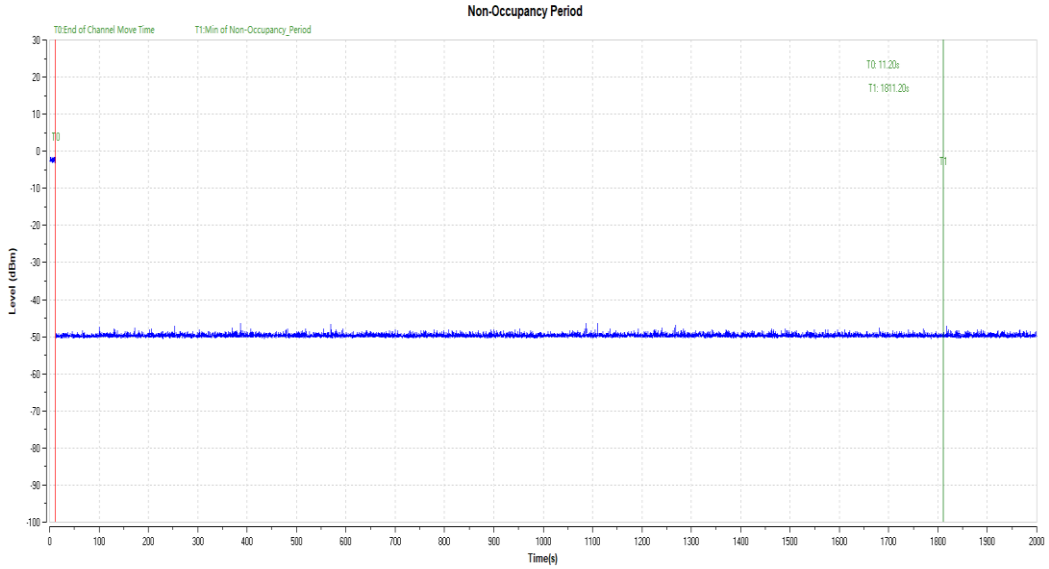
TestMode	Frequency[MHz]	Result	Limit[s]	Verdict
11AX20MIMO	5320	see test graph	≥1800	PASS
11AX20MIMO	5500	see test graph	≥1800	PASS

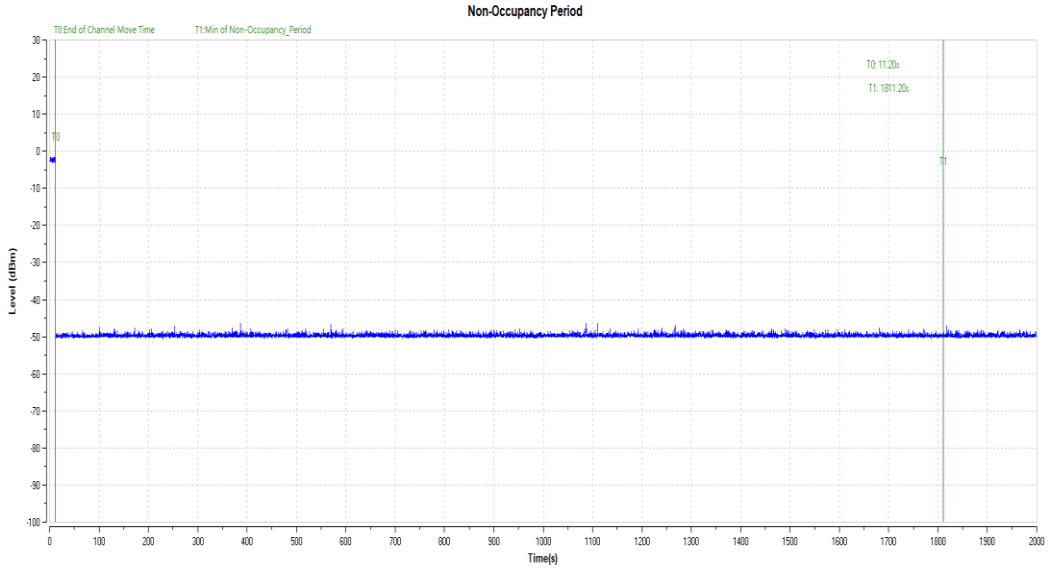
11AX20MIMO_5320



11AX20MIMO_5500



11AX20MIMO_5320


11AX20MIMO_5500


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