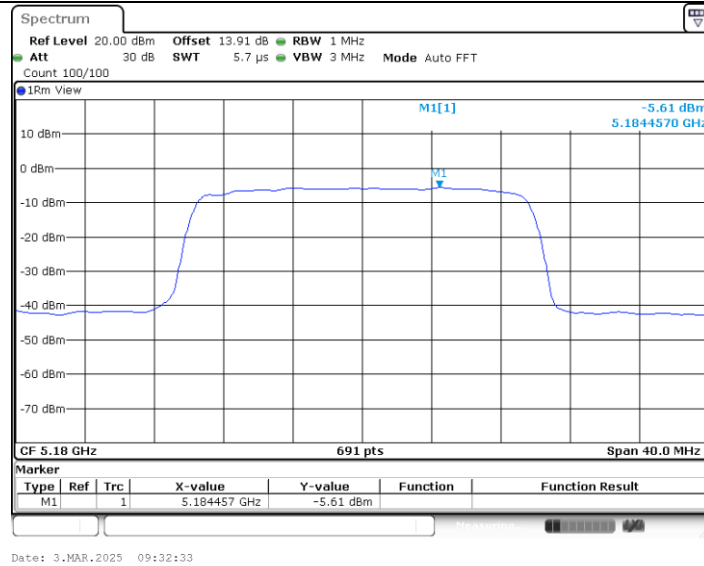
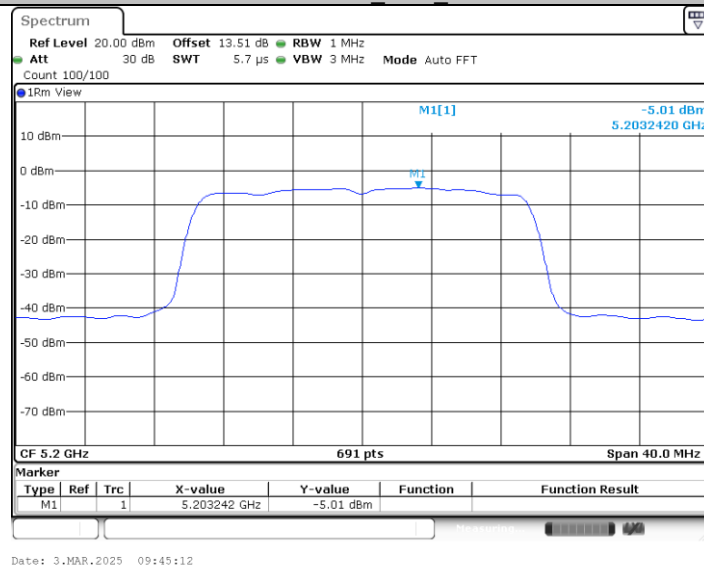
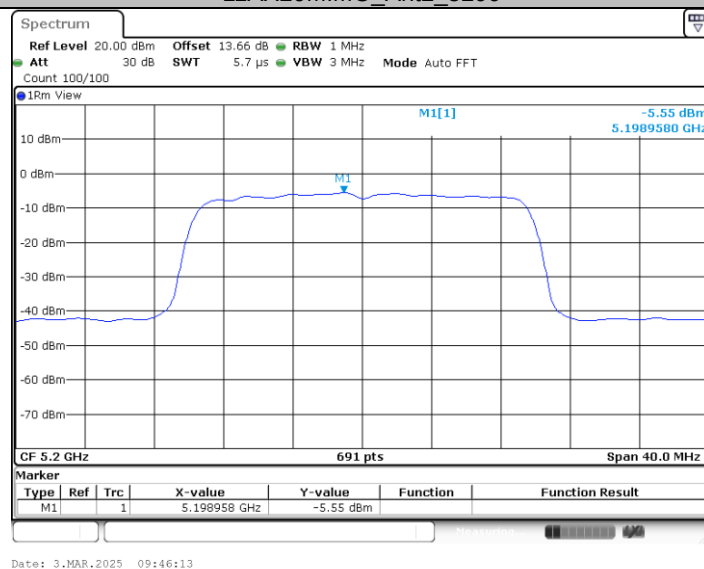




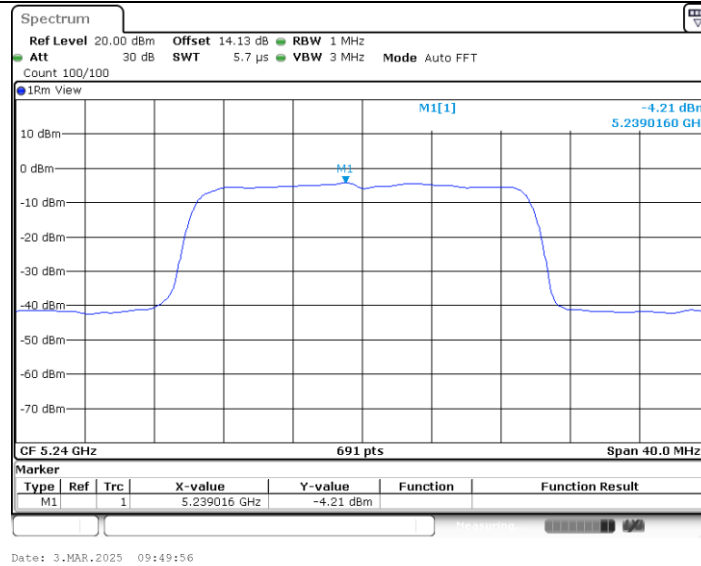
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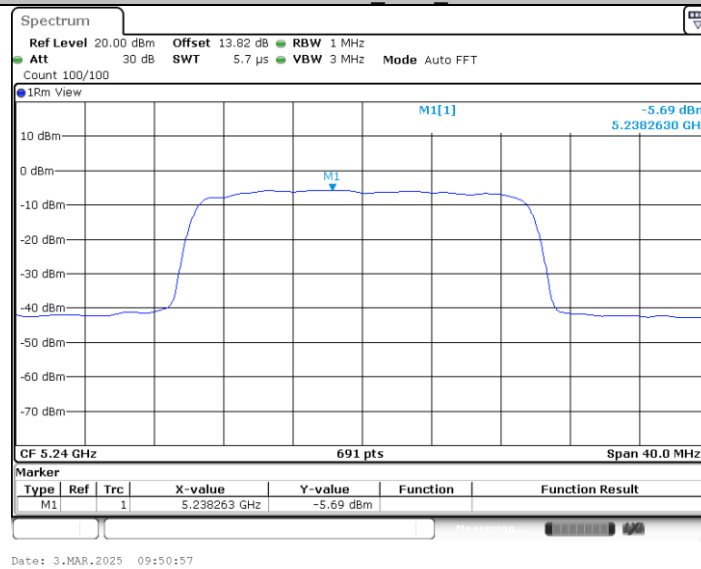
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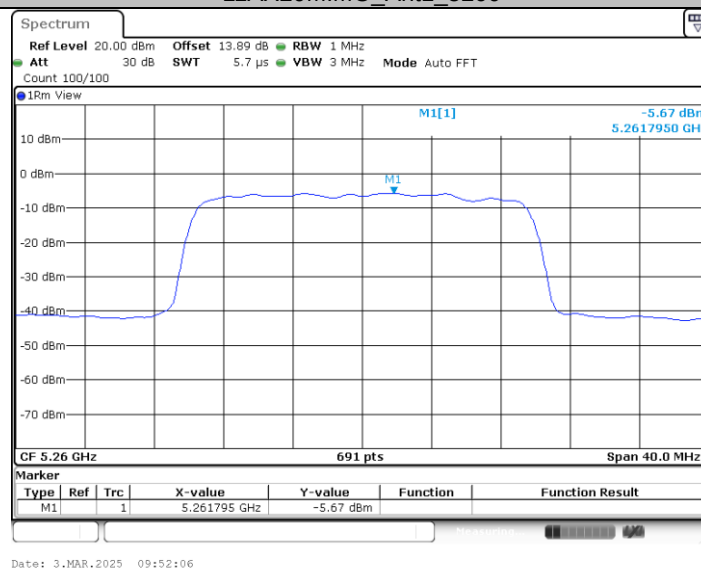
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11AX20MIMO_Ant2_5240



11AX20MIMO_Ant1_5260



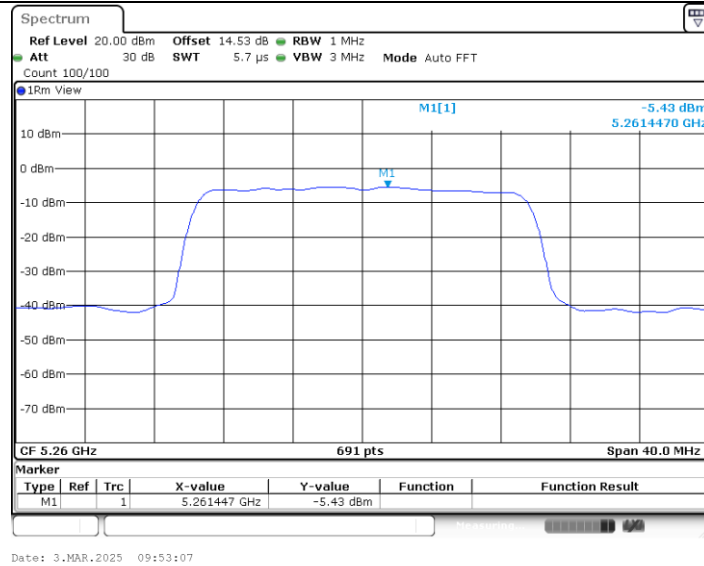
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CTC Laboratories, Inc.

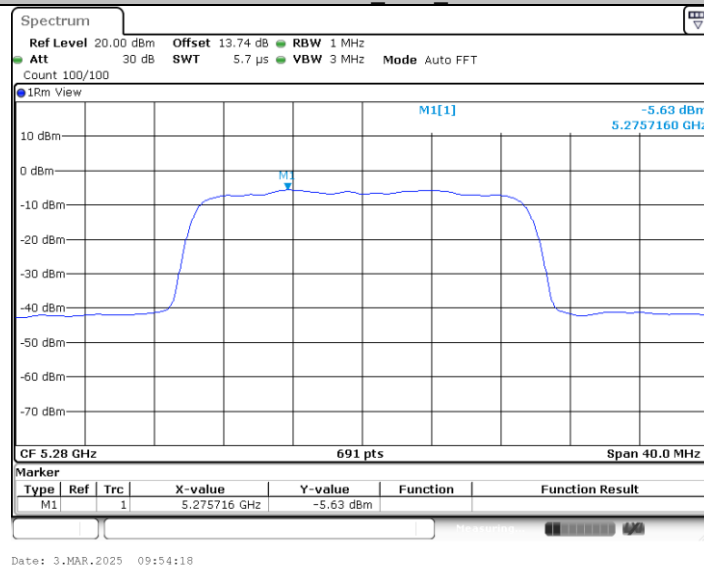
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

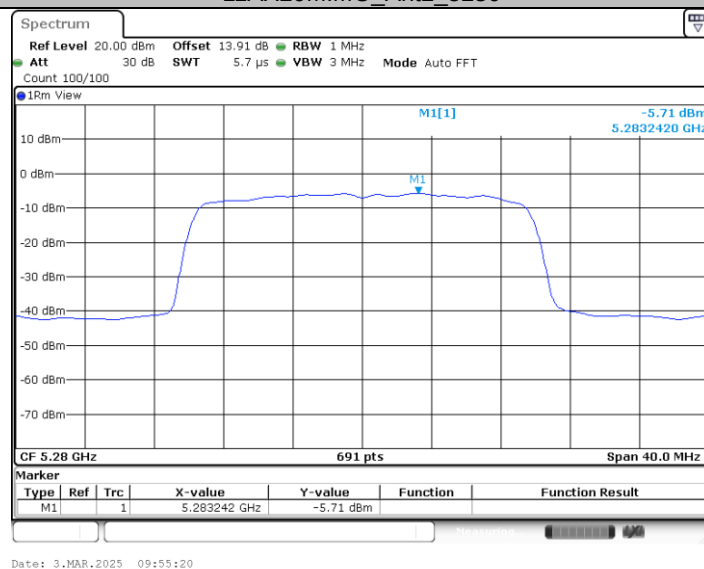
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



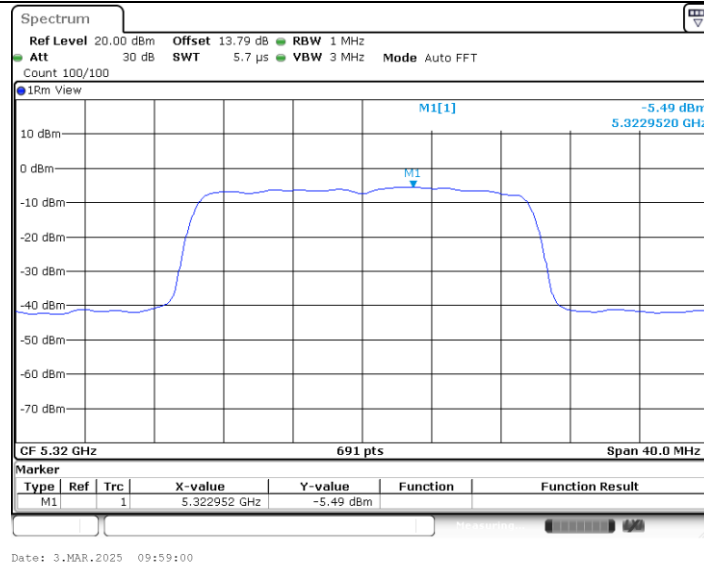
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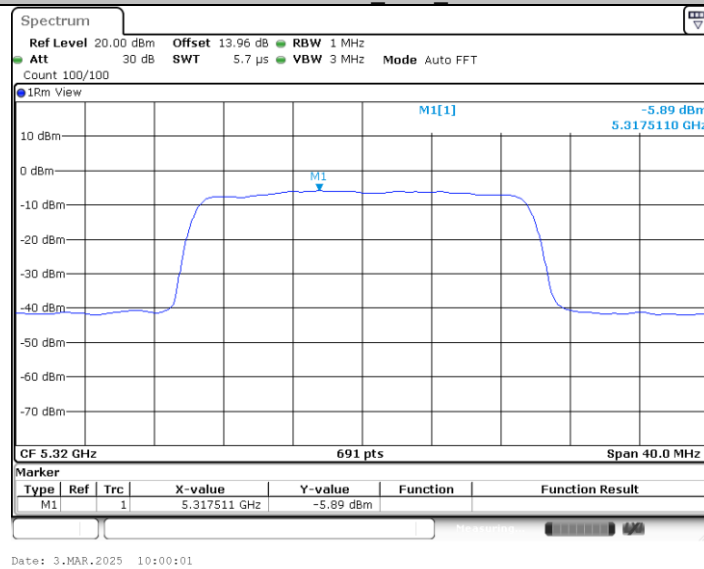
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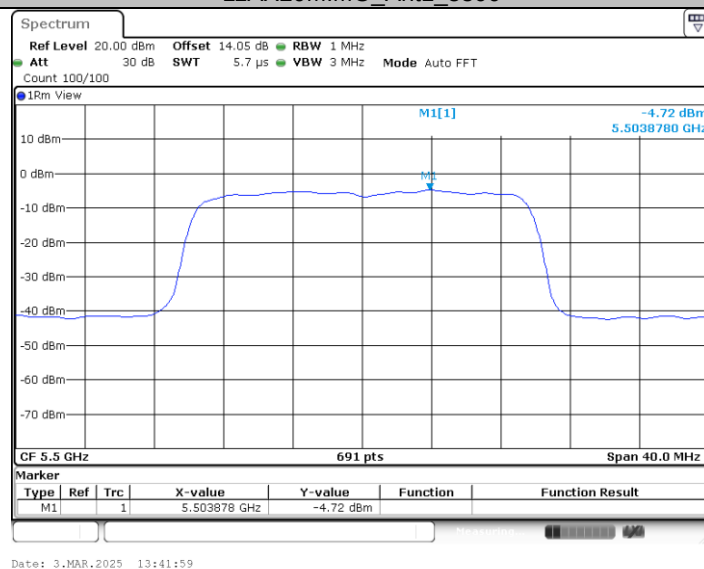
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11AX20MIMO_Ant2_5320



11AX20MIMO_Ant1_5500



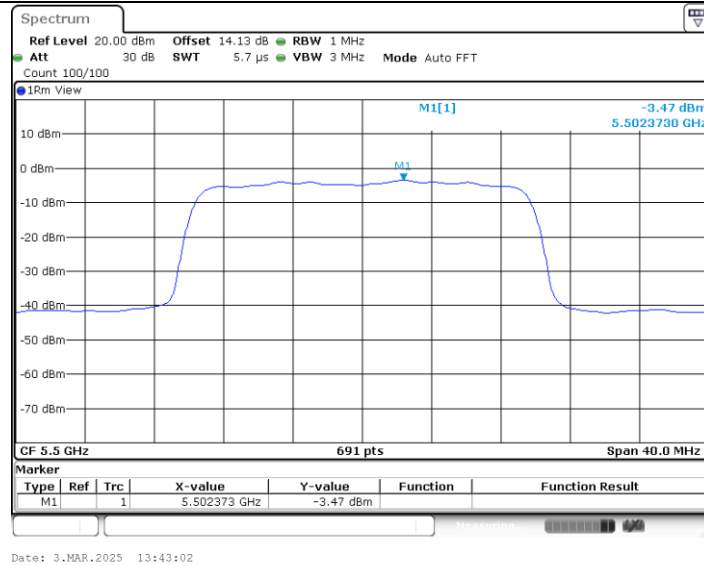
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CTC Laboratories, Inc.

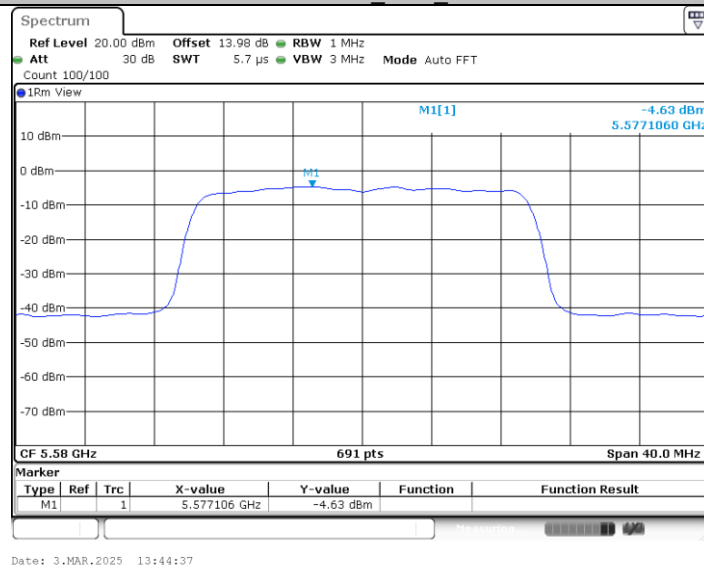
Room 101 Building B, No. 7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

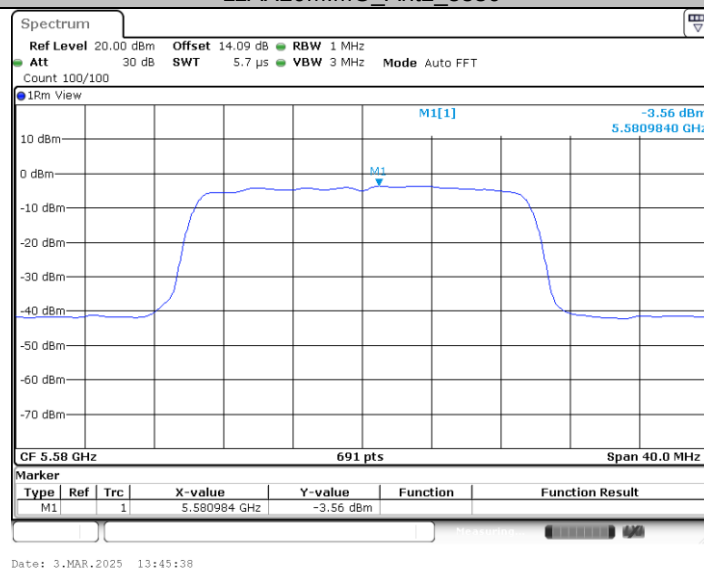
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



11AX20MIMO_Ant1_5580



11AX20MIMO_Ant2_5580



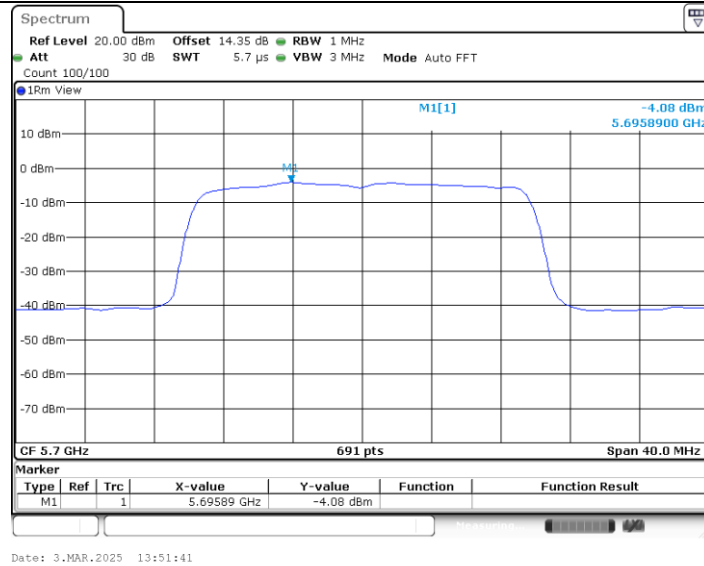
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CTC Laboratories, Inc.

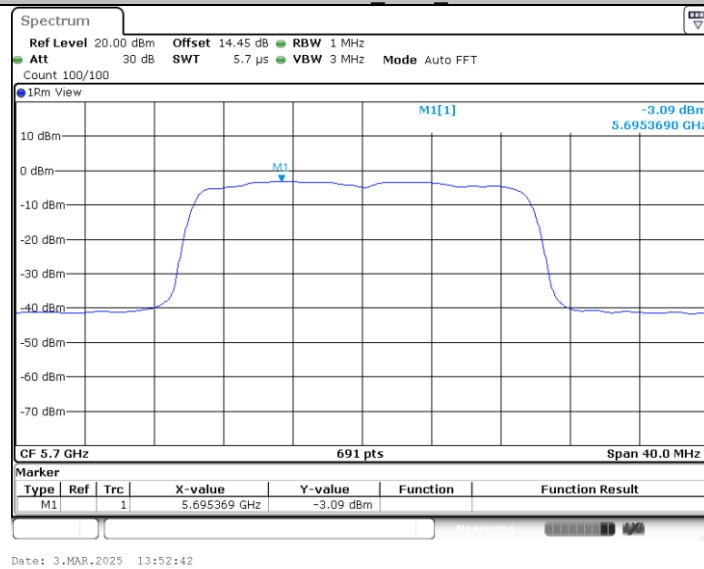
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

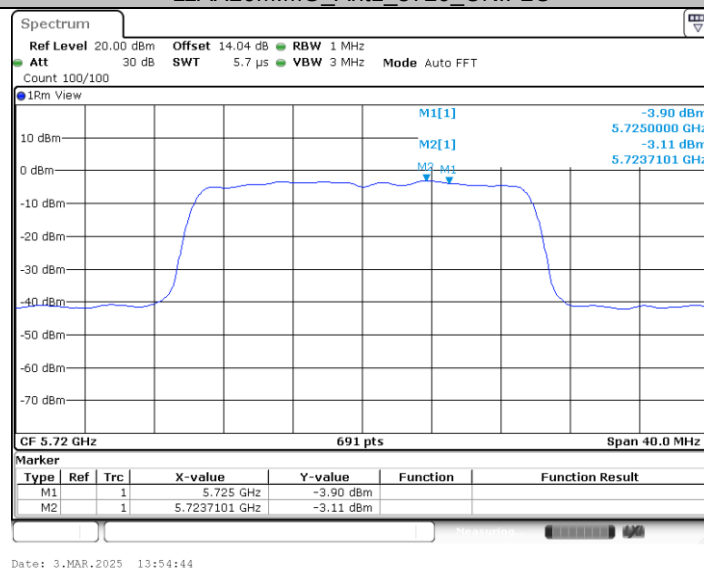
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



11AX20MIMO_Ant2_5700



11AX20MIMO_Ant1_5720_UNII-2C



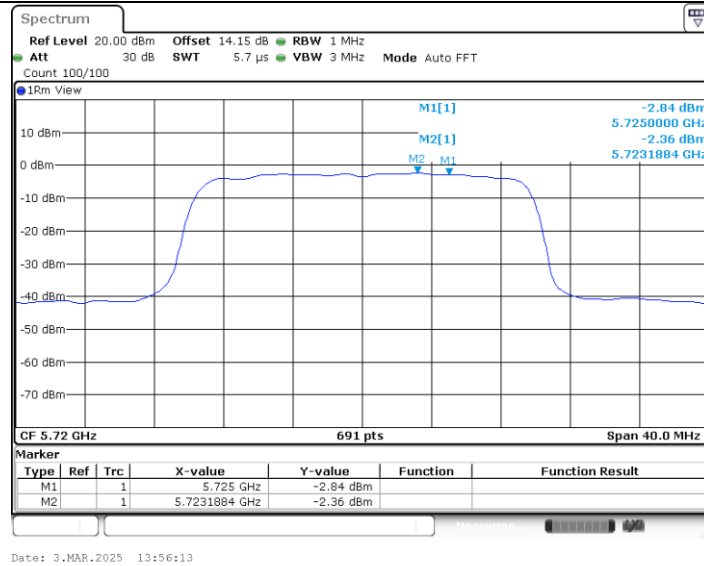
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CTC Laboratories, Inc.

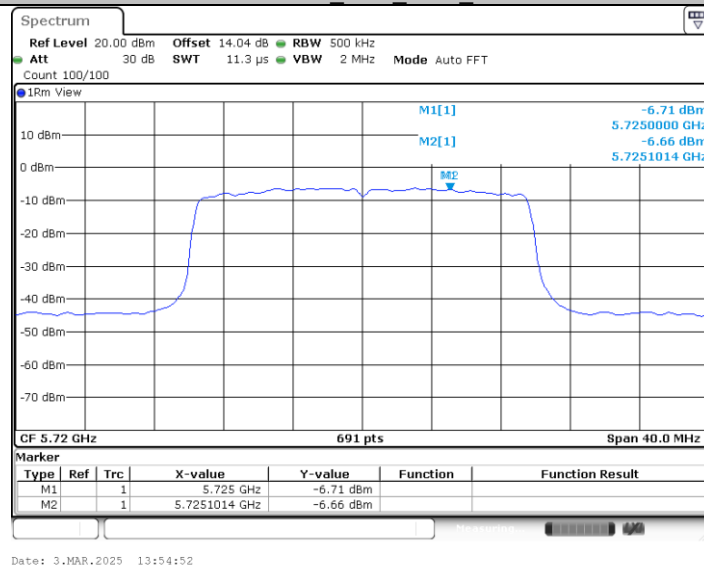
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

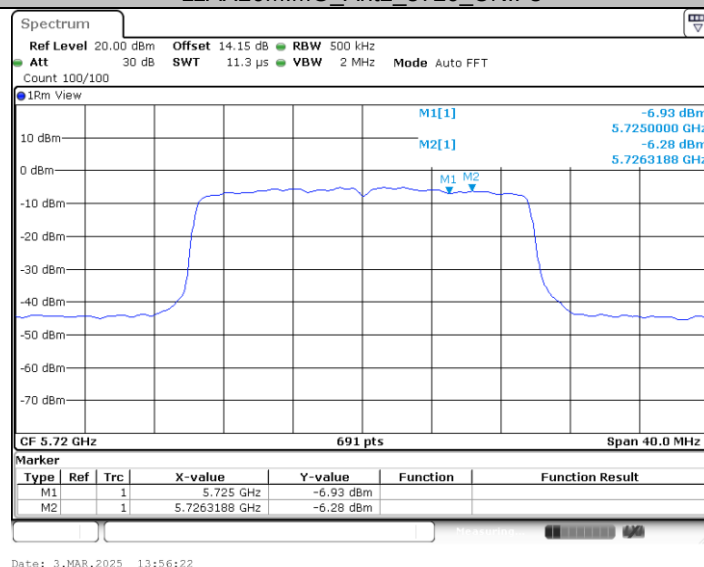
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



11AX20MIMO_Ant1_5720_UNII-3



11AX20MIMO_Ant2_5720_UNII-3



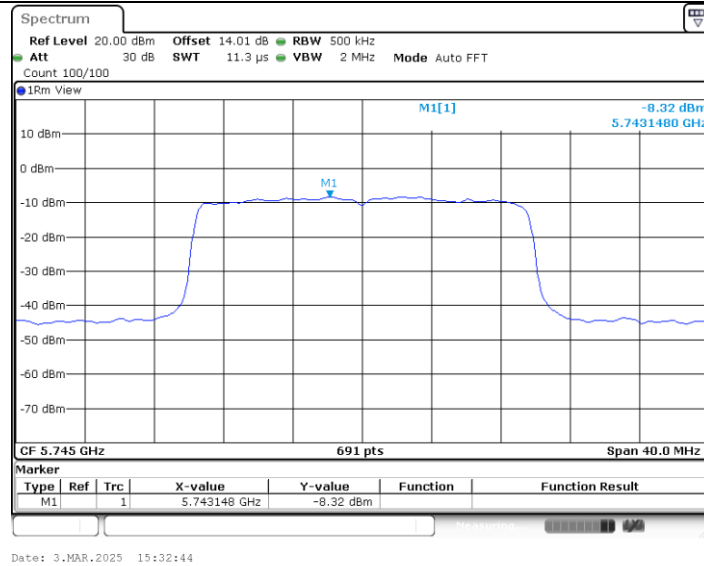
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CTC Laboratories, Inc.

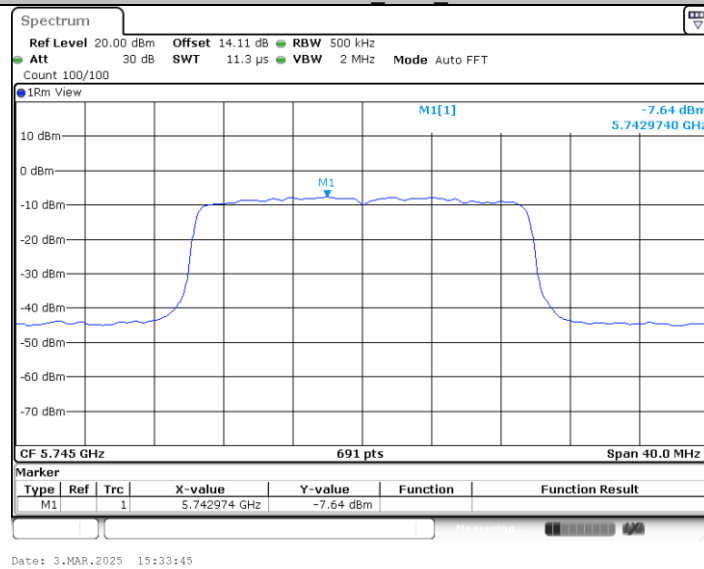
Room 101 Building B, No. 7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

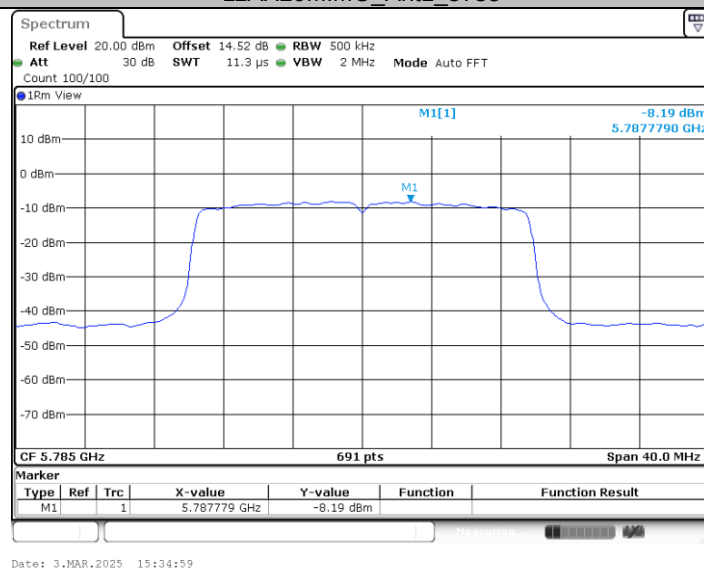
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



11AX20MIMO_Ant2_5745



11AX20MIMO_Ant1_5785



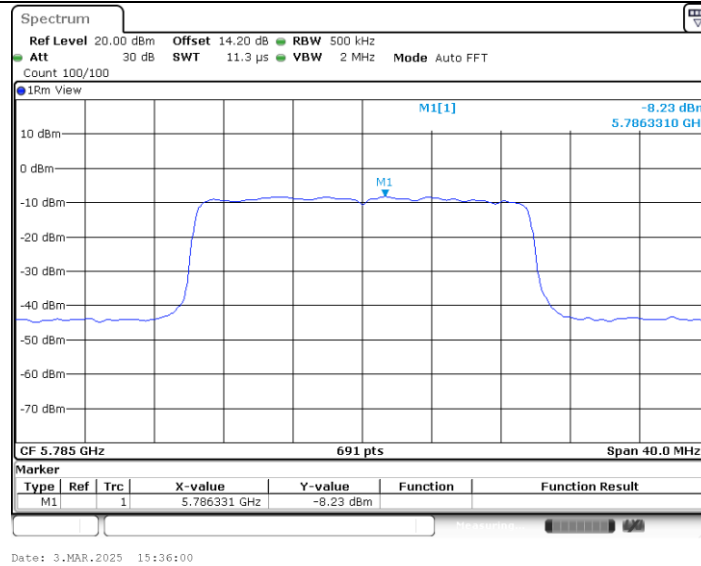
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CTC Laboratories, Inc.

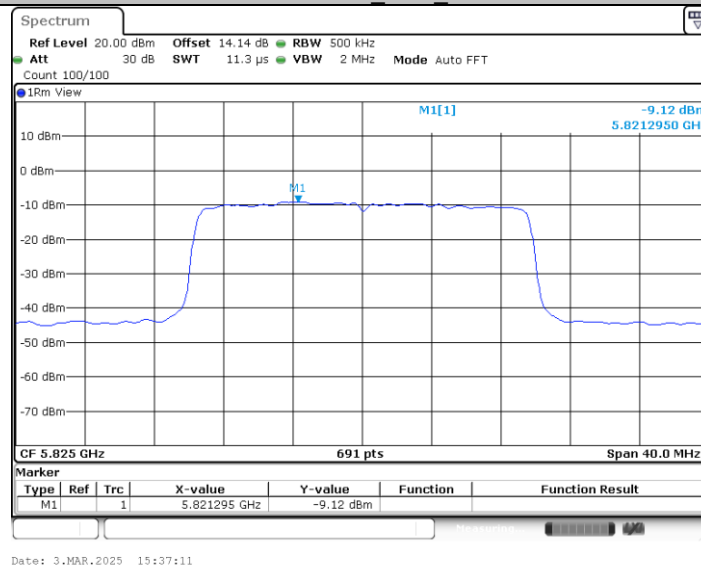
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

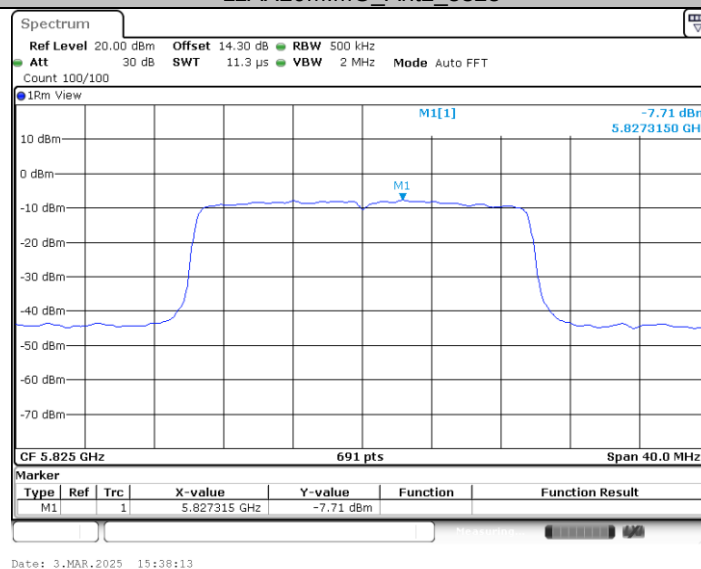
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



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11AX20MIMO_Ant2_5825



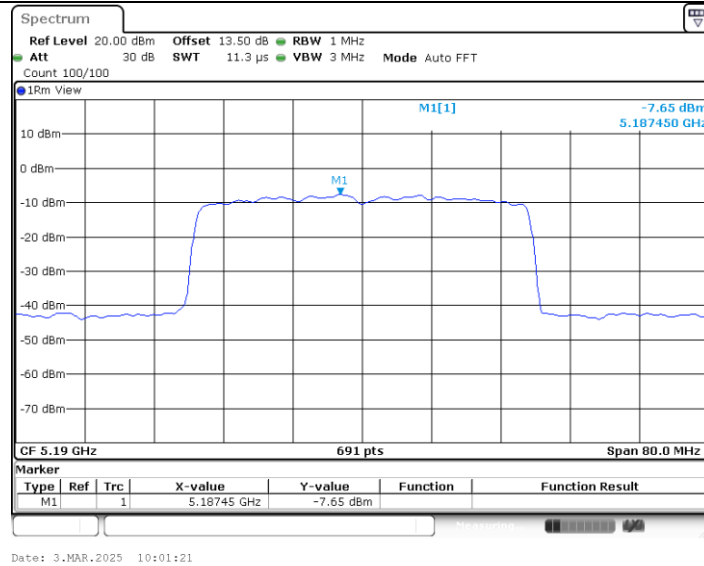
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CTC Laboratories, Inc.

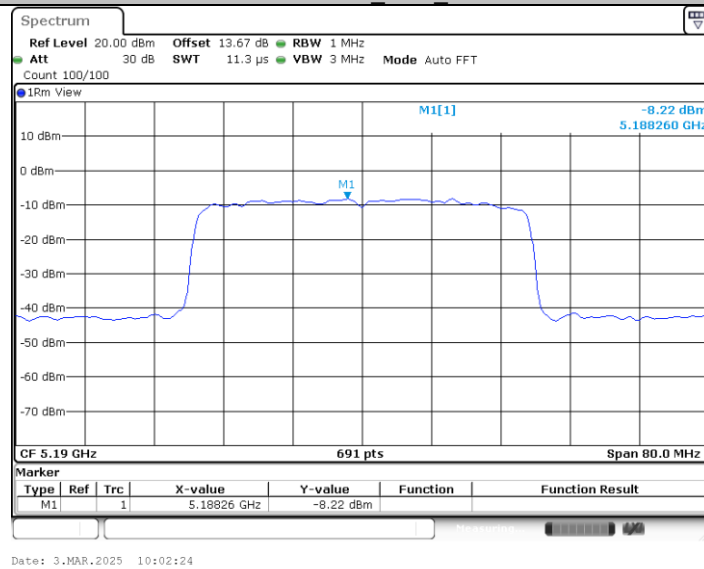
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

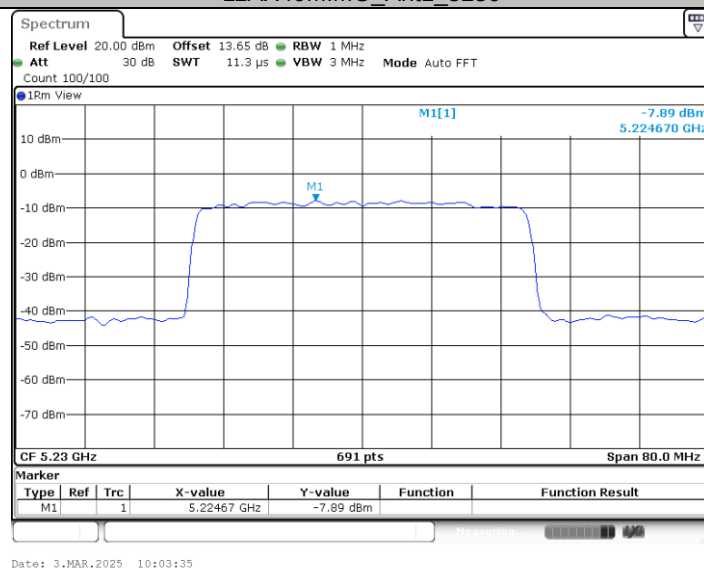
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11AX40MIMO_Ant2_5190



11AX40MIMO_Ant1_5230



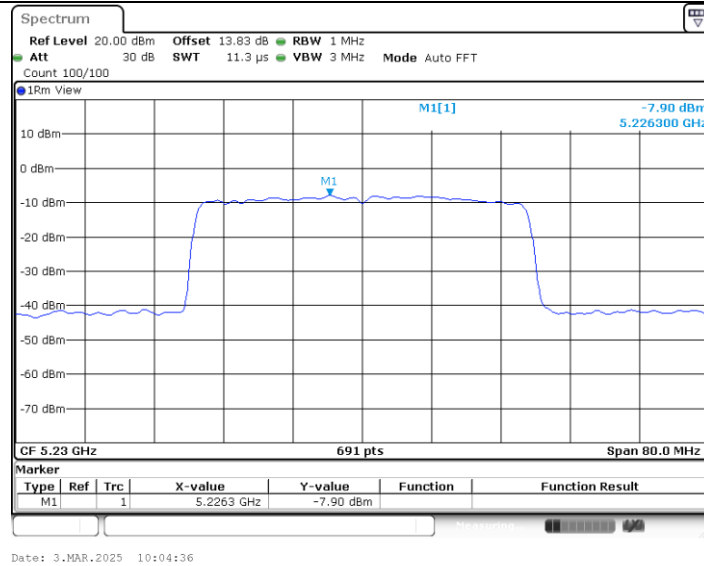
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CTC Laboratories, Inc.

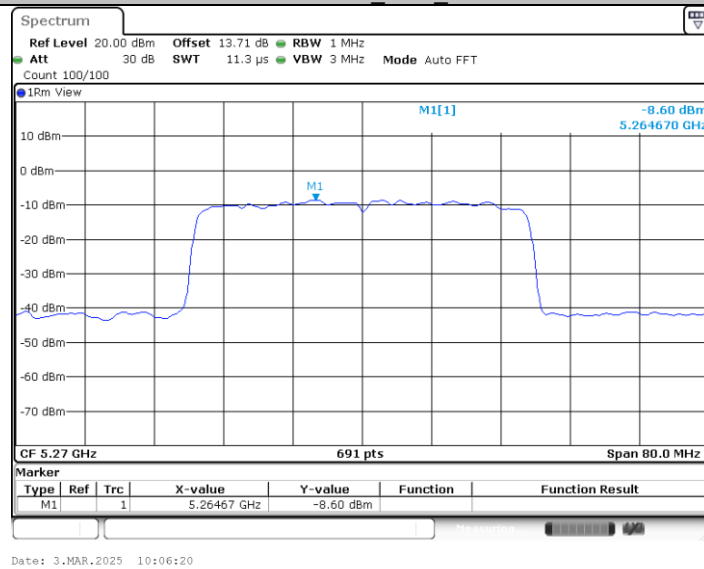
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

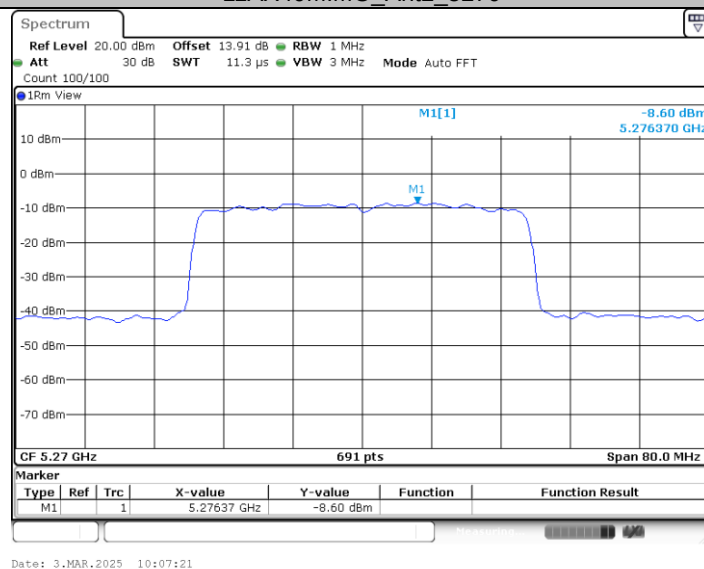
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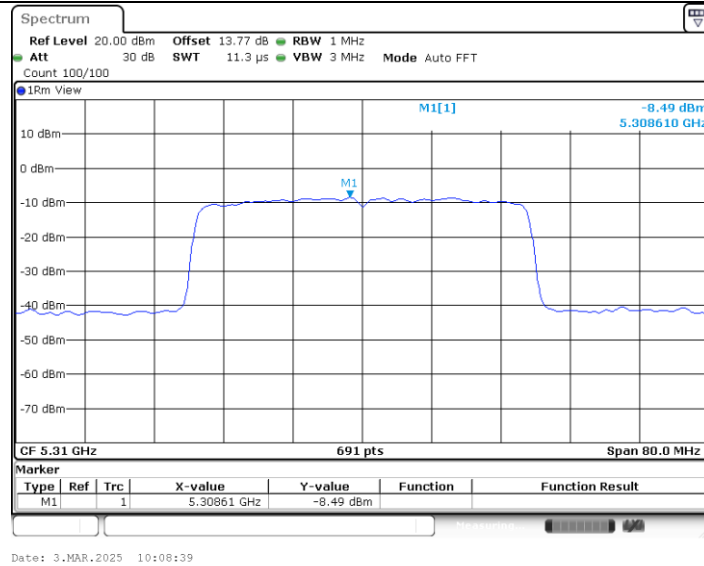
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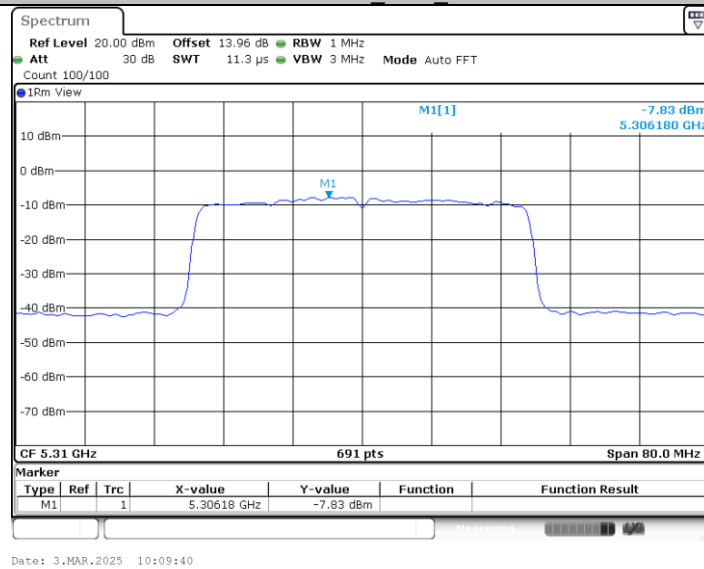
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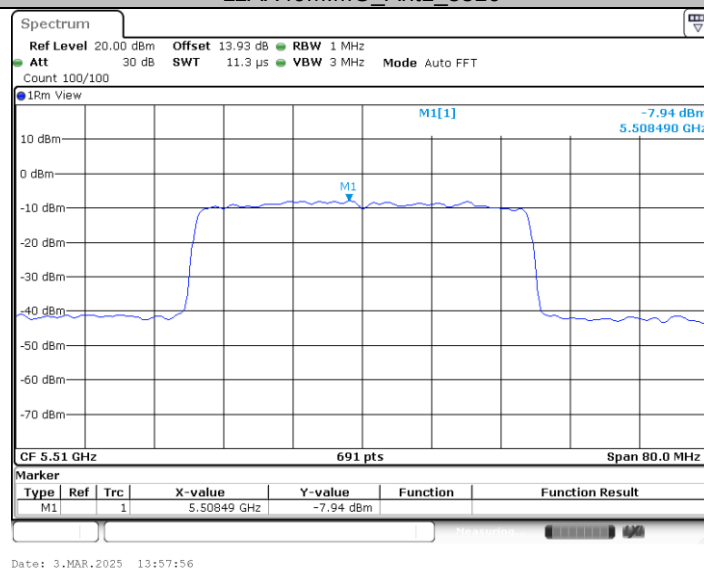
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11AX40MIMO_Ant2_5310



11AX40MIMO_Ant1_5510



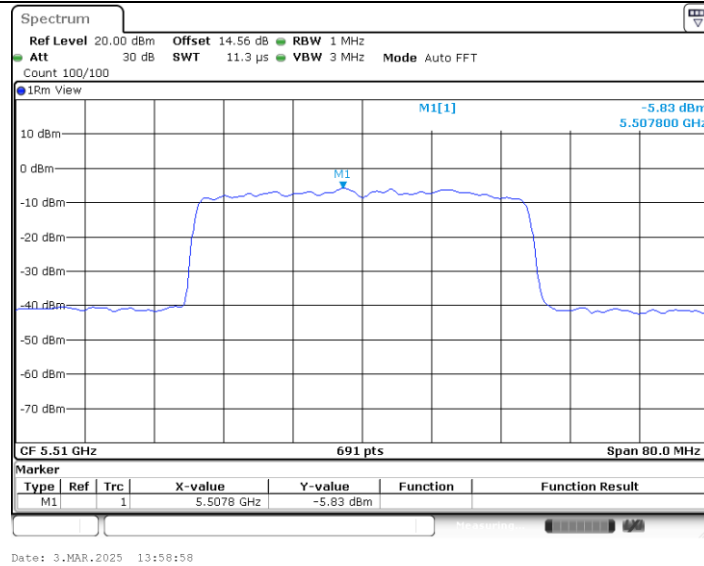
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CTC Laboratories, Inc.

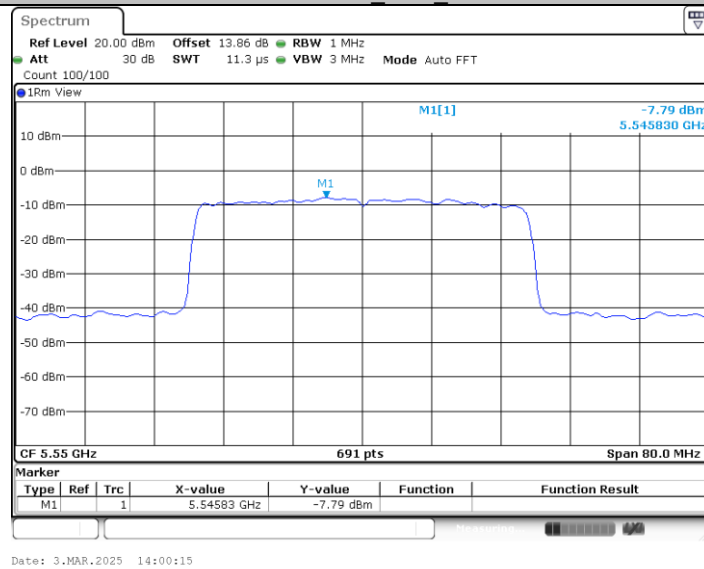
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

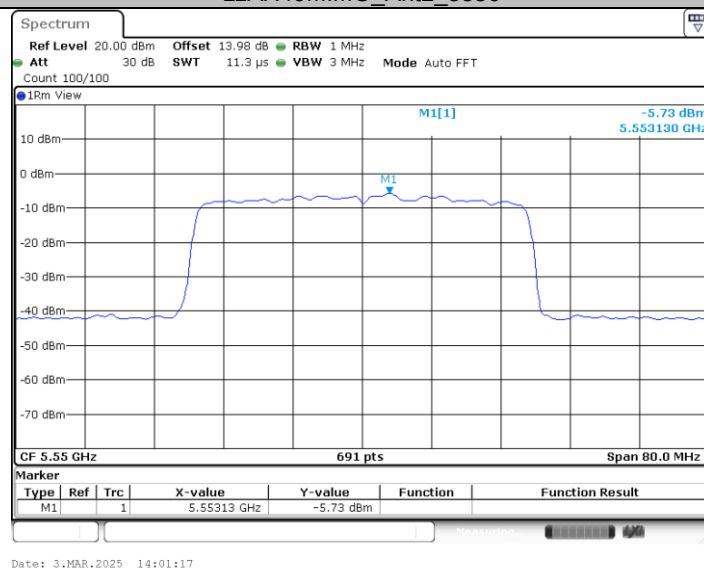
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



11AX40MIMO_Ant1_5550



11AX40MIMO_Ant2_5550



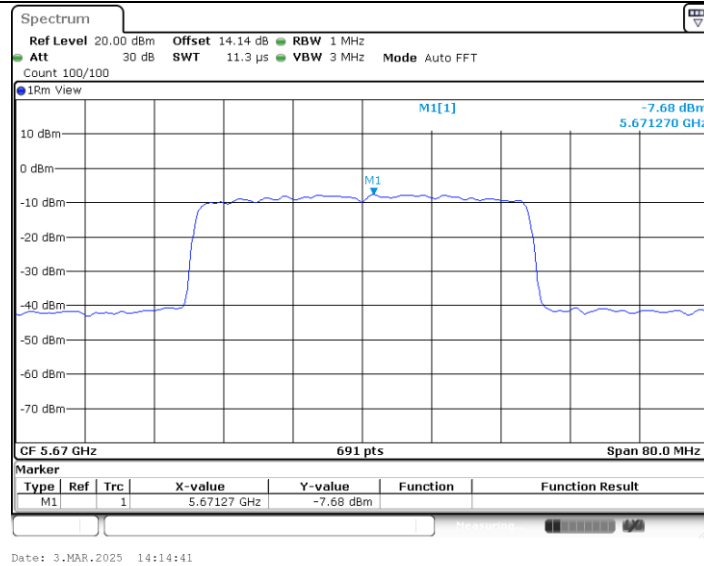
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CTC Laboratories, Inc.

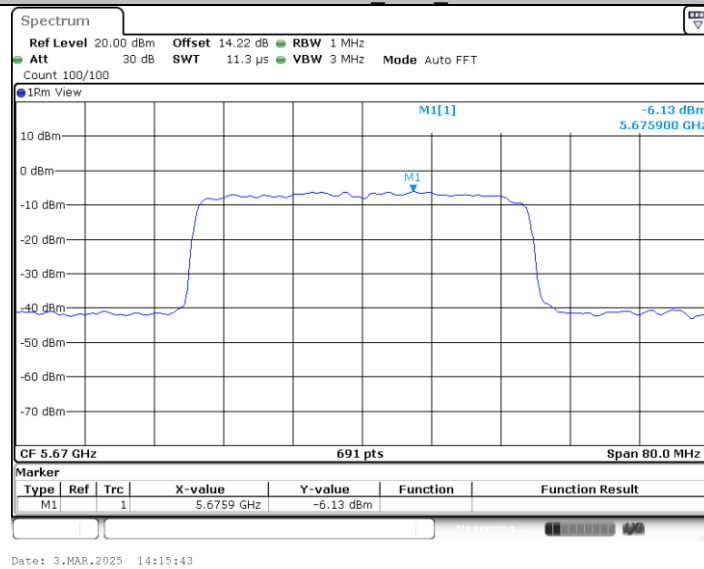
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

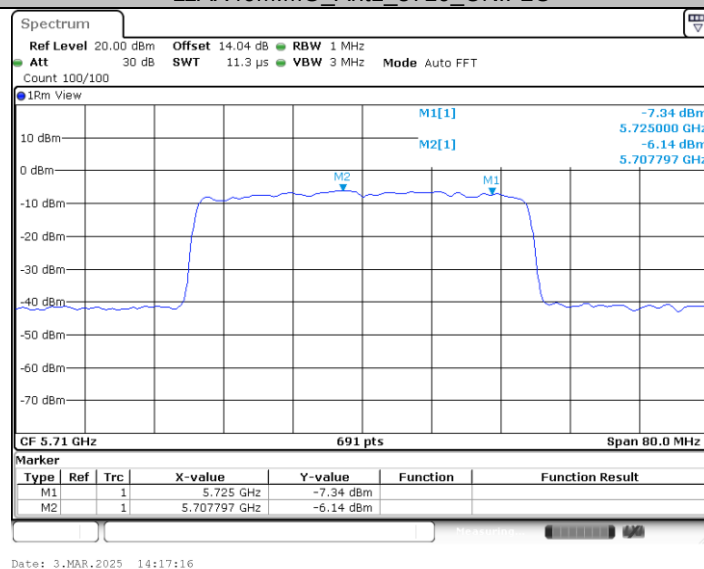
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



11AX40MIMO_Ant2_5670



11AX40MIMO_Ant1_5710_UNII-2C



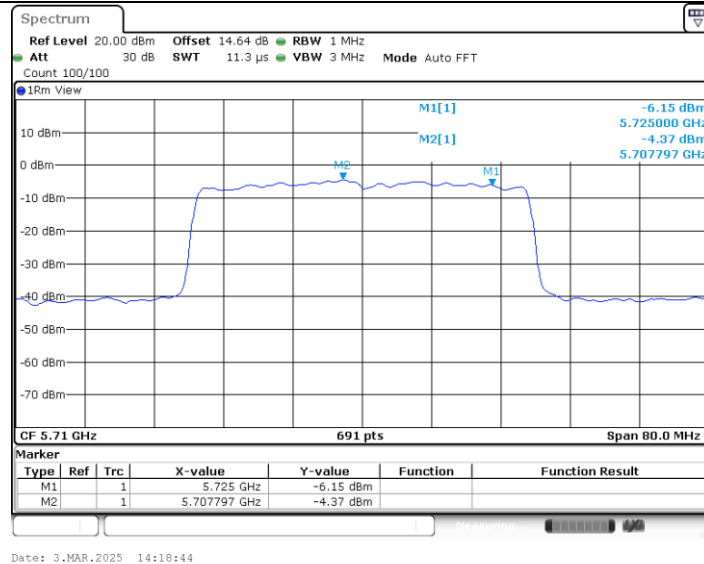
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CTC Laboratories, Inc.

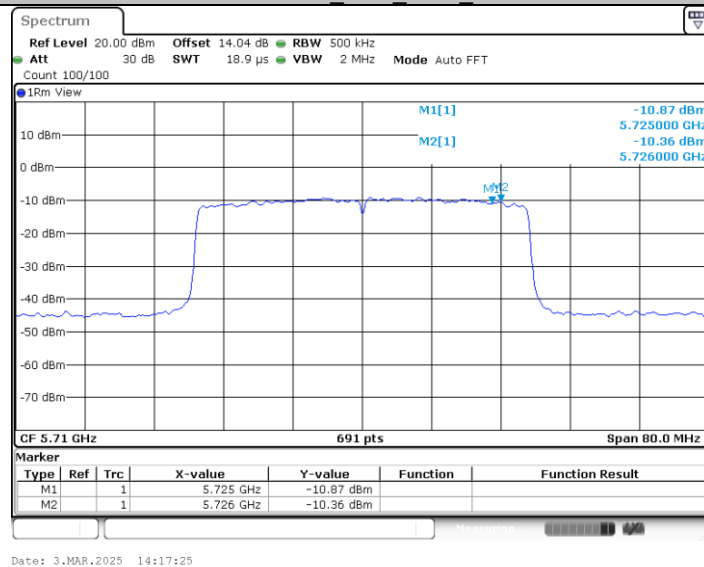
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

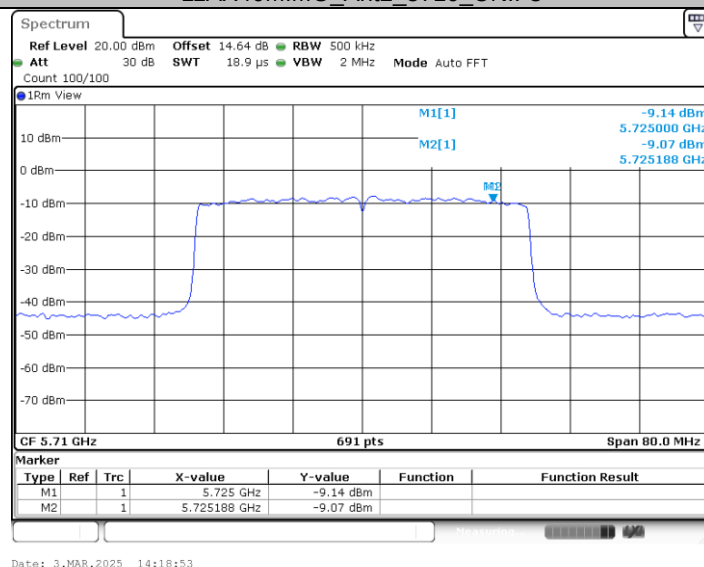
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



11AX40MIMO_Ant1_5710_UNII-3



11AX40MIMO_Ant2_5710_UNII-3



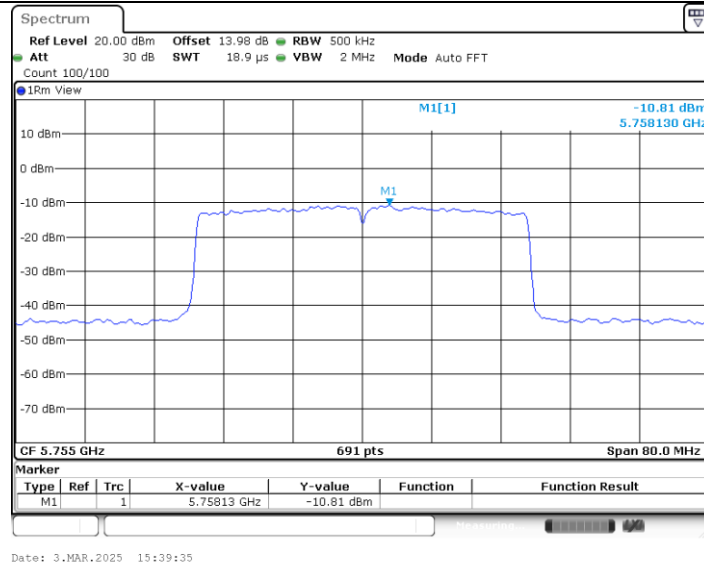
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CTC Laboratories, Inc.

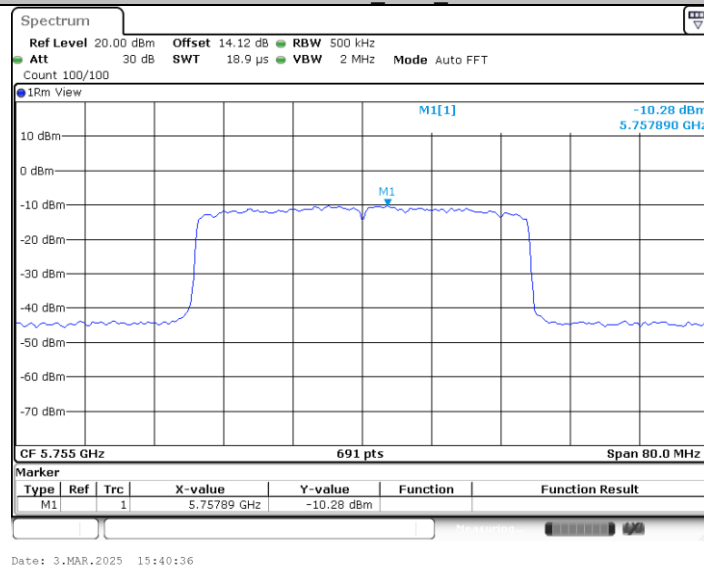
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

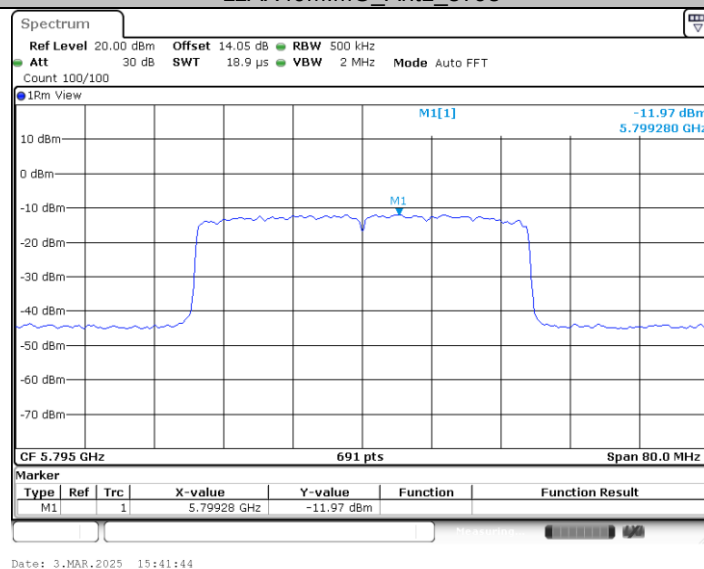
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11AX40MIMO_Ant2_5755



11AX40MIMO_Ant1_5795



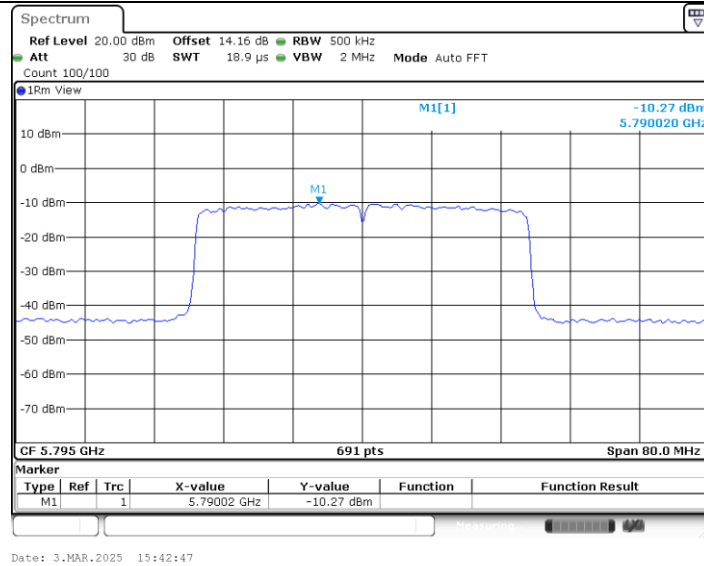
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CTC Laboratories, Inc.

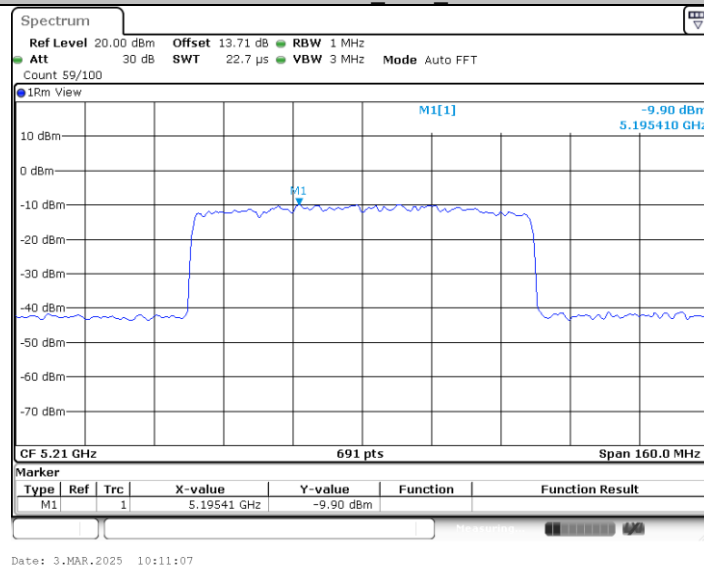
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

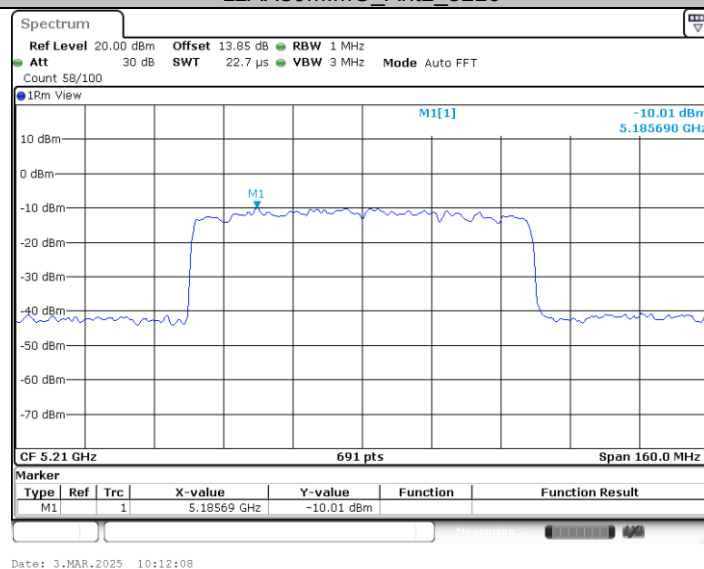
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



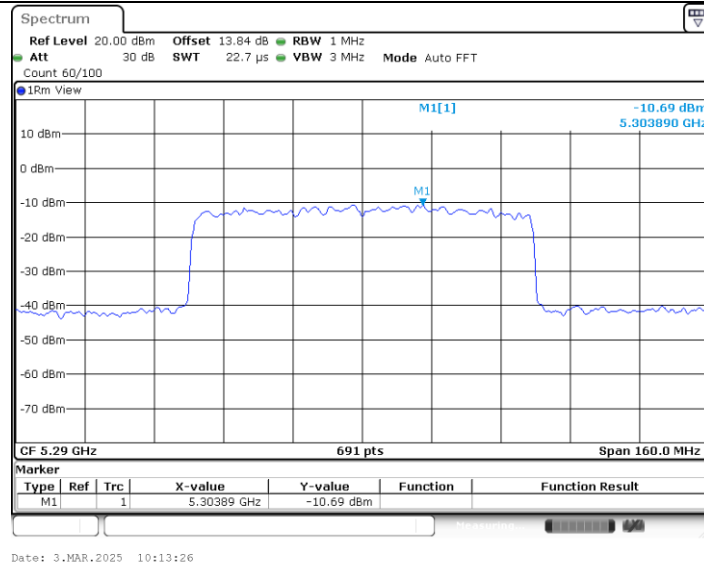
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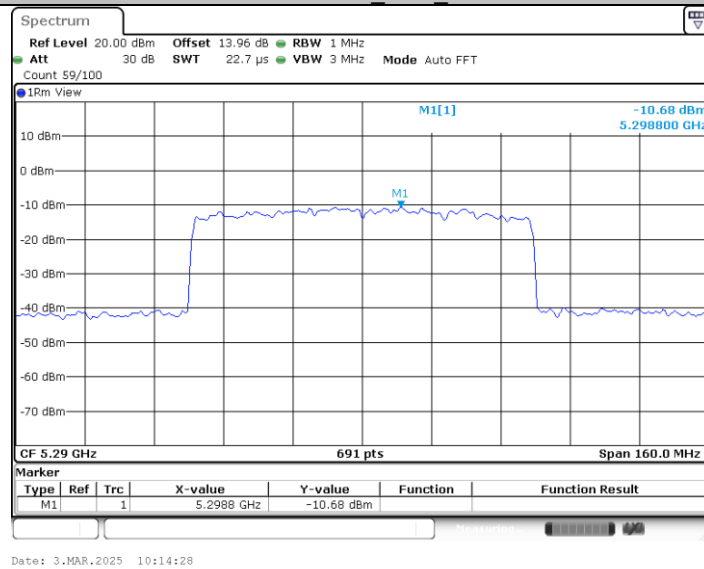
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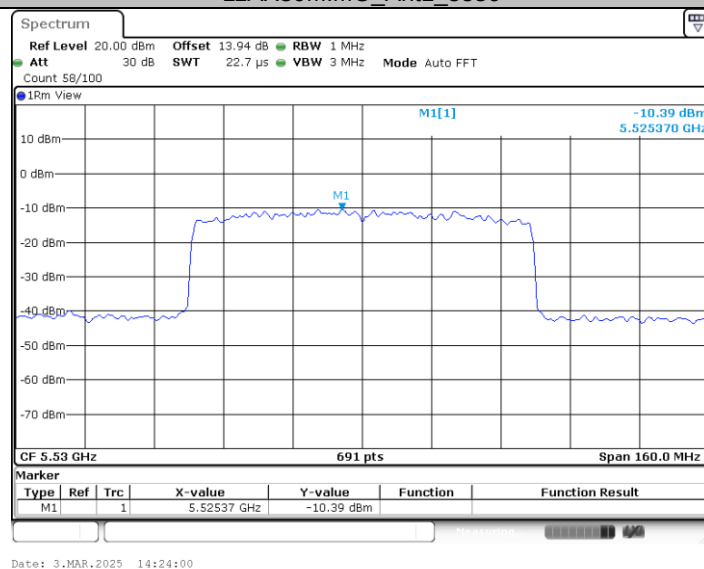
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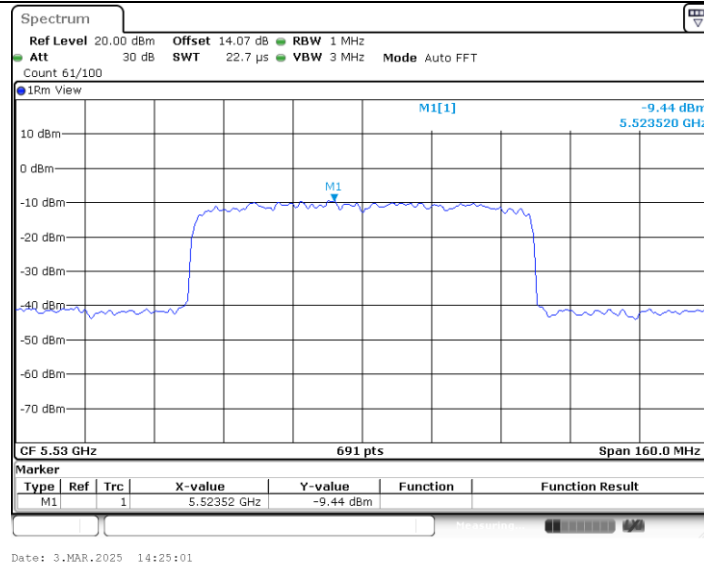
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CTC Laboratories, Inc.

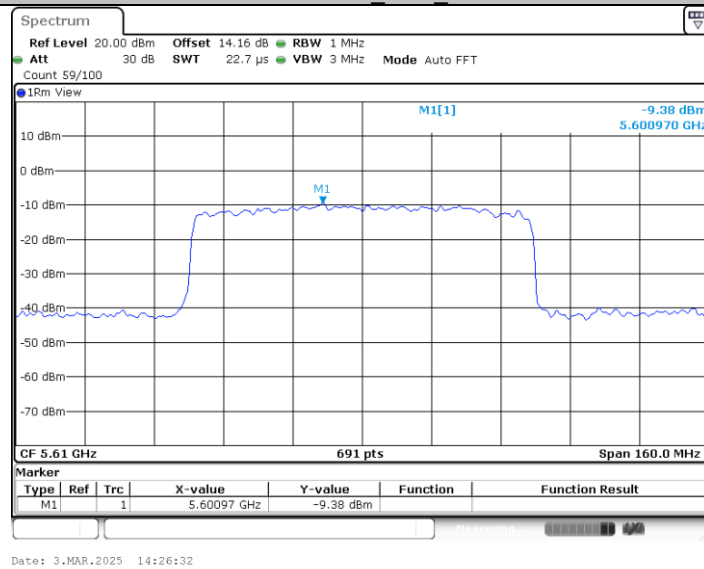
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

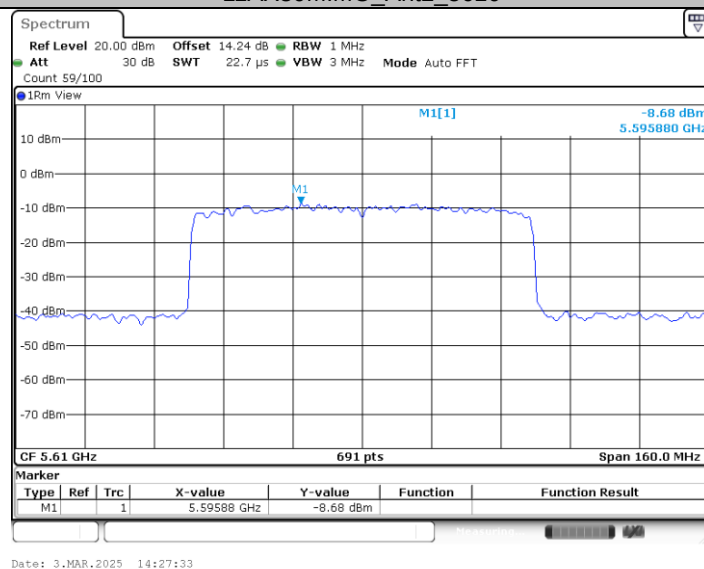
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11AX80MIMO_Ant1_5610



11AX80MIMO_Ant2_5610



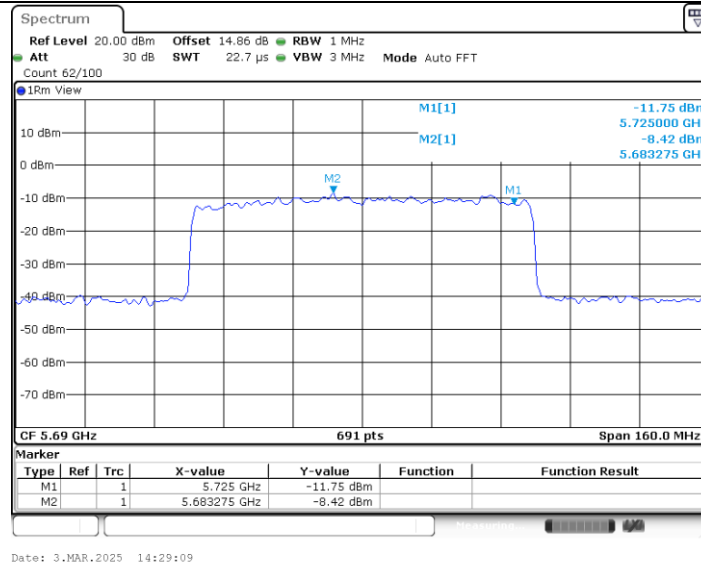
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CTC Laboratories, Inc.

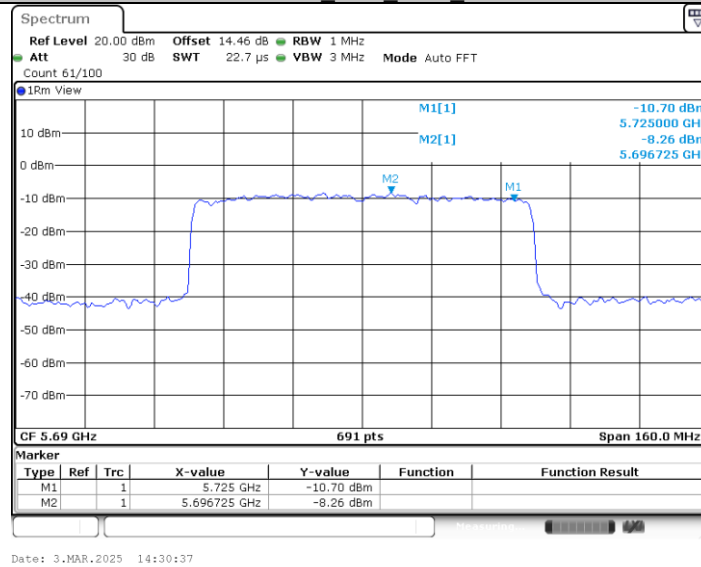
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

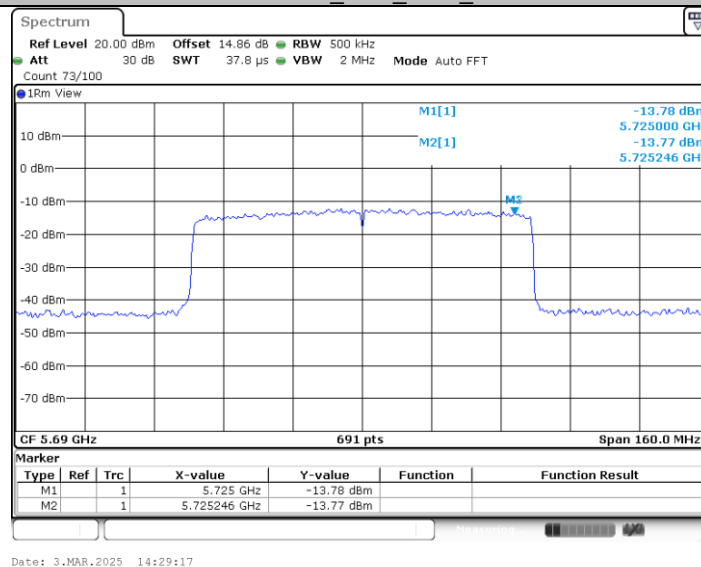
For anti-fake verification, please visit the official website of China Inspection And Testing Society : yz.cnca.cn



11AX80MIMO_Ant2_5690_UNII-2C



11AX80MIMO_Ant1_5690_UNII-3



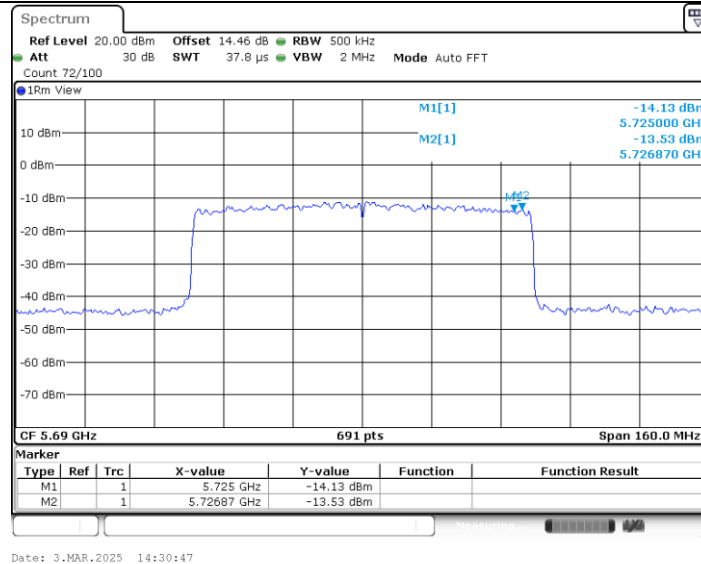
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CTC Laboratories, Inc.

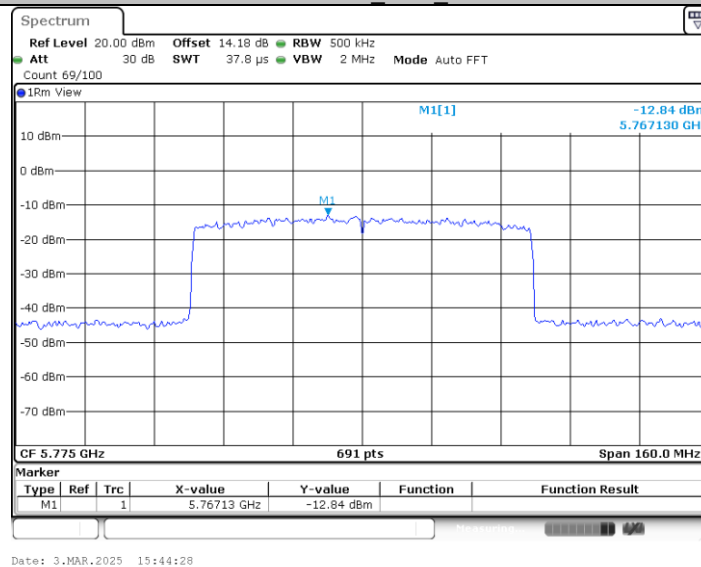
Room 101 Building B, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

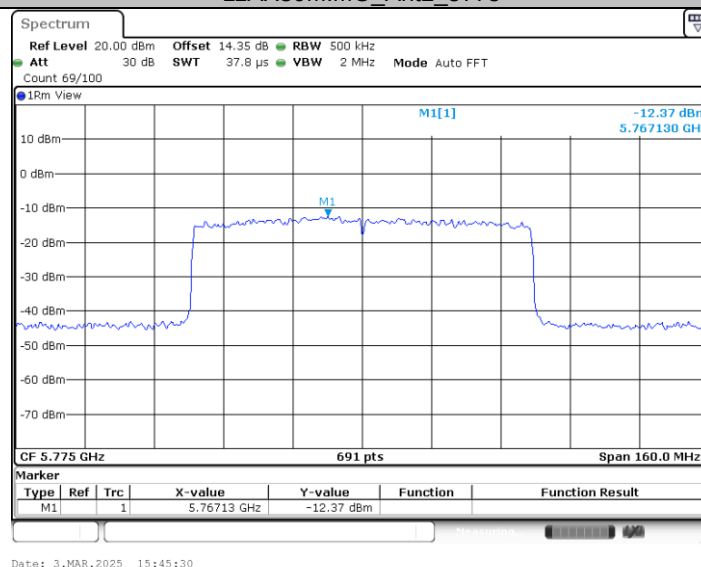
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11AX80MIMO_Ant1_5775



11AX80MIMO_Ant2_5775



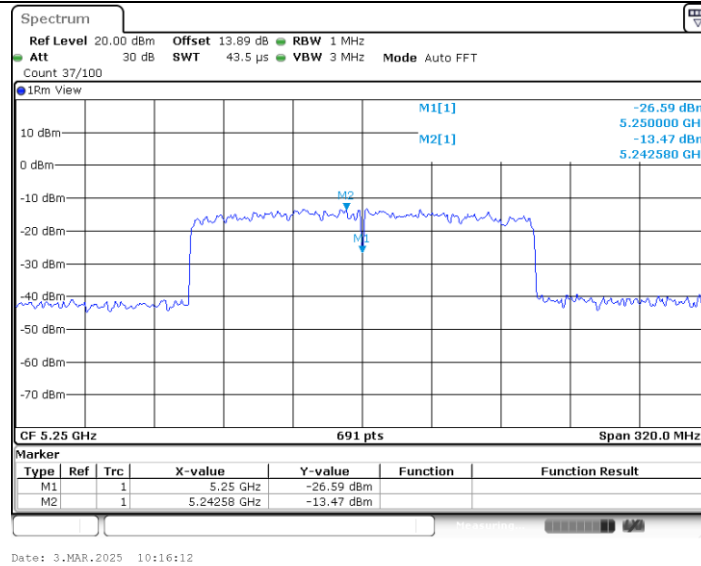
11AX160MIMO_Ant1_5250_UNII-1

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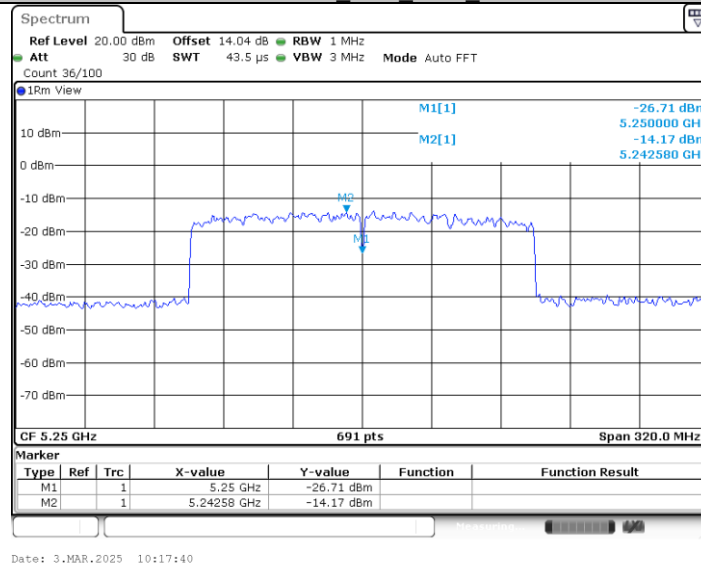
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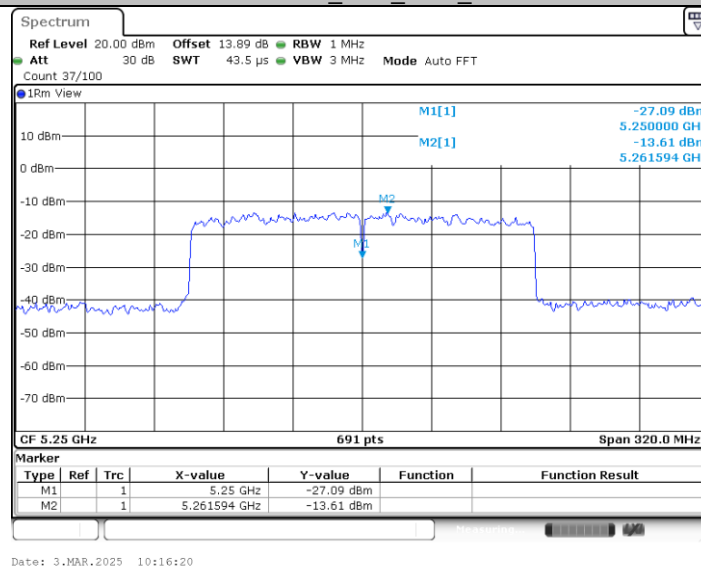
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11AX160MIMO_Ant2_5250_UNII-1



11AX160MIMO_Ant1_5250_UNII-2A



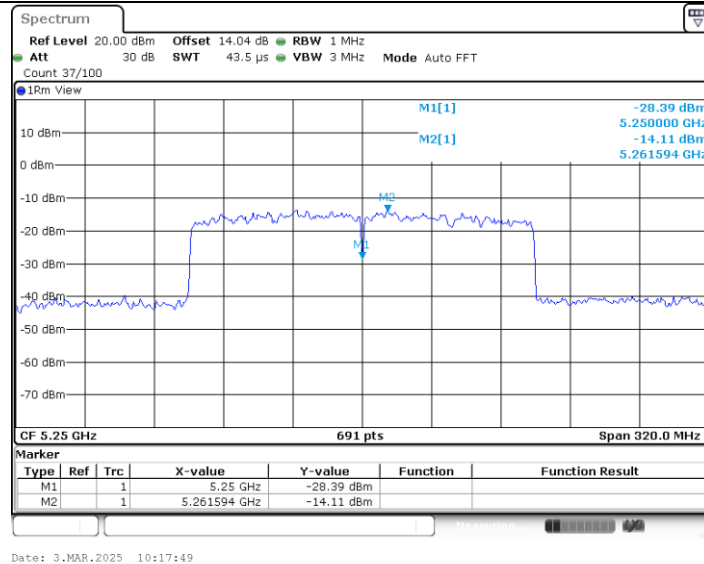
11AX160MIMO_Ant2_5250_UNII-2A

CTC Laboratories, Inc.

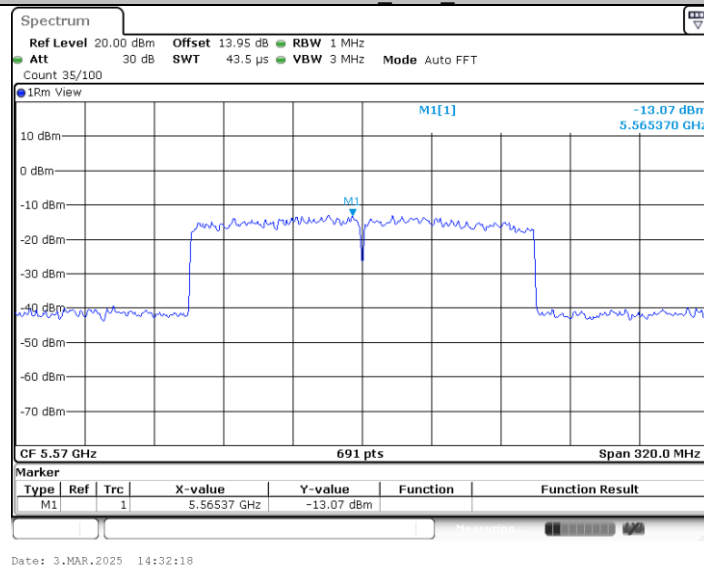
Room 101 Building B, No. 7, Lanqing 1st Road, Luhua Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China
Tel.: (86)755-27521059 Fax: (86)755-27521011 Http://www.sz-ctc.org.cn

TRF No: CTC-TR-062_A1

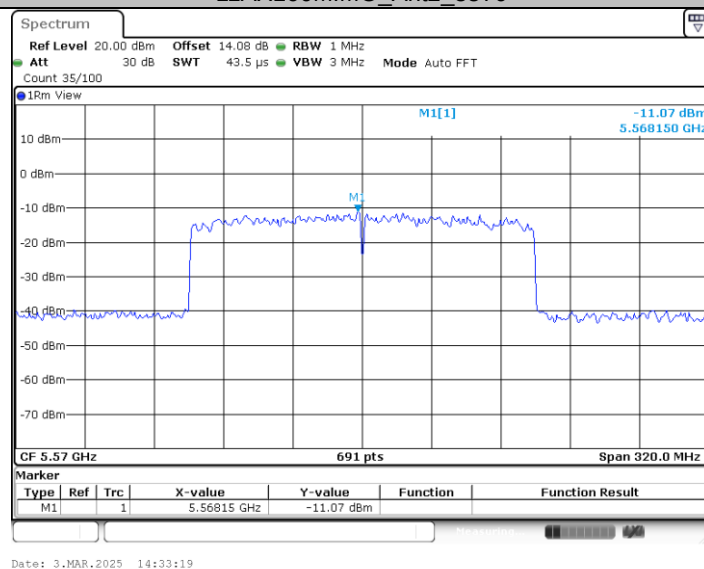
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11AX160MIMO_Ant1_5570



11AX160MIMO_Ant2_5570



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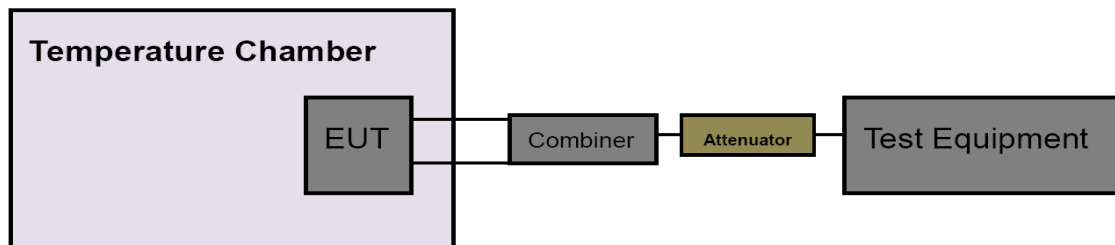
3.7. Frequency Stability

Limit

FCC CFR Title 47 Part 15 Subpart E Section 15.407(g)

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 6.97V to 8.51V percent of the nominal value.
- (6) Extreme temperature is -10°C~35°C

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 (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20M	Ant1	5180	NV	NT	29970.00	5.785714	20	PASS
			LV	NT	31470.00	6.075290	20	PASS
			HV	NT	31470.00	6.075290	20	PASS
	Ant2	5180	NV	NT	29470.00	5.689189	20	PASS
			LV	NT	28970.00	5.592664	20	PASS
			HV	NT	29970.00	5.785714	20	PASS
	Ant1	5200	NV	NT	32470.00	6.244231	20	PASS
			LV	NT	31970.00	6.148077	20	PASS
			HV	NT	31970.00	6.148077	20	PASS
	Ant2	5200	NV	NT	27970.00	5.378846	20	PASS
			LV	NT	28470.00	5.475000	20	PASS
			HV	NT	28470.00	5.475000	20	PASS
	Ant1	5240	NV	NT	32470.00	6.196565	20	PASS
			LV	NT	32470.00	6.196565	20	PASS
			HV	NT	32470.00	6.196565	20	PASS
	Ant2	5240	NV	NT	28470.00	5.433206	20	PASS
			LV	NT	28470.00	5.433206	20	PASS
			HV	NT	29470.00	5.624046	20	PASS
	Ant1	5260	NV	NT	34470.00	6.553232	20	PASS
			LV	NT	33470.00	6.363118	20	PASS
			HV	NT	32970.00	6.268061	20	PASS
	Ant2	5260	NV	NT	28470.00	5.412548	20	PASS
			LV	NT	28970.00	5.507605	20	PASS
			HV	NT	28970.00	5.507605	20	PASS
	Ant1	5280	NV	NT	33470.00	6.339015	20	PASS
			LV	NT	32970.00	6.244318	20	PASS
			HV	NT	32970.00	6.244318	20	PASS
	Ant2	5280	NV	NT	30470.00	5.770833	20	PASS
			LV	NT	28970.00	5.486742	20	PASS
			HV	NT	29470.00	5.581439	20	PASS
	Ant1	5320	NV	NT	33470.00	6.291353	20	PASS
			LV	NT	33470.00	6.291353	20	PASS
			HV	NT	32470.00	6.103383	20	PASS
	Ant2	5320	NV	NT	31470.00	5.915414	20	PASS
			LV	NT	30470.00	5.727444	20	PASS
			HV	NT	31470.00	5.915414	20	PASS
	Ant1	5500	NV	NT	34970.00	6.358182	20	PASS
			LV	NT	34470.00	6.267273	20	PASS
			HV	NT	33970.00	6.176364	20	PASS
	Ant2	5500	NV	NT	32970.00	5.994545	20	PASS
			LV	NT	32970.00	5.994545	20	PASS
			HV	NT	32470.00	5.903636	20	PASS
	Ant1	5580	NV	NT	34470.00	6.177419	20	PASS
			LV	NT	34970.00	6.267025	20	PASS
			HV	NT	33970.00	6.087814	20	PASS
	Ant2	5580	NV	NT	33470.00	5.998208	20	PASS
			LV	NT	33470.00	5.998208	20	PASS
			HV	NT	33970.00	6.087814	20	PASS
	Ant1	5700	NV	NT	35960.00	6.308772	20	PASS
			LV	NT	35460.00	6.221053	20	PASS
			HV	NT	35960.00	6.308772	20	PASS
	Ant2	5700	NV	NT	34470.00	6.047368	20	PASS
			LV	NT	34970.00	6.135088	20	PASS
			HV	NT	34470.00	6.047368	20	PASS
	Ant1	5720	NV	NT	35460.00	6.199301	20	PASS
			LV	NT	34970.00	6.113636	20	PASS
			HV	NT	35460.00	6.199301	20	PASS
	Ant2	5720	NV	NT	34970.00	6.113636	20	PASS
			LV	NT	34970.00	6.113636	20	PASS
			LV	NT	34970.00	6.113636	20	PASS

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	Ant1	5745	HV	NT	34970.00	6.113636	20	PASS
			NV	NT	35460.00	6.172324	20	PASS
			LV	NT	35960.00	6.259356	20	PASS
			HV	NT	34970.00	6.087032	20	PASS
	Ant2	5745	NV	NT	35960.00	6.259356	20	PASS
			LV	NT	35960.00	6.259356	20	PASS
			HV	NT	35960.00	6.259356	20	PASS
			NV	NT	36460.00	6.302506	20	PASS
	Ant1	5785	LV	NT	36960.00	6.388937	20	PASS
			HV	NT	35460.00	6.129646	20	PASS
			NV	NT	36960.00	6.388937	20	PASS
			LV	NT	36460.00	6.302506	20	PASS
	Ant2	5785	HV	NT	35960.00	6.216076	20	PASS
			NV	NT	37460.00	6.430901	20	PASS
			LV	NT	36960.00	6.345064	20	PASS
			HV	NT	36960.00	6.345064	20	PASS
	Ant1	5825	NV	NT	37460.00	6.430901	20	PASS
			LV	NT	36960.00	6.345064	20	PASS
			HV	NT	37460.00	6.430901	20	PASS
			NV	NT	33470.00	6.448940	20	PASS
40M	Ant1	5190	LV	NT	33970.00	6.545279	20	PASS
			HV	NT	32470.00	6.256262	20	PASS
			NV	NT	33470.00	6.448940	20	PASS
			LV	NT	32970.00	6.352601	20	PASS
	Ant2	5190	HV	NT	32970.00	6.352601	20	PASS
			NV	NT	32970.00	6.304015	20	PASS
			LV	NT	32470.00	6.208413	20	PASS
			HV	NT	33470.00	6.399618	20	PASS
	Ant1	5230	NV	NT	33970.00	6.495220	20	PASS
			LV	NT	33970.00	6.495220	20	PASS
			HV	NT	33970.00	6.495220	20	PASS
			NV	NT	33470.00	6.351044	20	PASS
	Ant2	5230	LV	NT	33970.00	6.351044	20	PASS
			HV	NT	33470.00	6.351044	20	PASS
			NV	NT	34470.00	6.540797	20	PASS
			LV	NT	34470.00	6.540797	20	PASS
	Ant1	5270	HV	NT	34470.00	6.540797	20	PASS
			NV	NT	32470.00	6.114878	20	PASS
			LV	NT	33970.00	6.397363	20	PASS
			HV	NT	33470.00	6.303202	20	PASS
	Ant2	5270	NV	NT	35460.00	6.677966	20	PASS
			LV	NT	35960.00	6.772128	20	PASS
			HV	NT	34470.00	6.491525	20	PASS
			NV	NT	34470.00	6.255898	20	PASS
	Ant1	5310	LV	NT	34970.00	6.346642	20	PASS
			HV	NT	34470.00	6.255898	20	PASS
			NV	NT	36960.00	6.707804	20	PASS
			LV	NT	36960.00	6.707804	20	PASS
	Ant2	5310	HV	NT	35960.00	6.526316	20	PASS
			NV	NT	34470.00	6.210811	20	PASS
			LV	NT	34970.00	6.300901	20	PASS
			HV	NT	33970.00	6.120721	20	PASS
	Ant1	5510	NV	NT	36960.00	6.659459	20	PASS
			LV	NT	36460.00	6.569369	20	PASS
			HV	NT	37460.00	6.749550	20	PASS
			NV	NT	34970.00	6.167549	20	PASS
	Ant2	5510	LV	NT	35460.00	6.253968	20	PASS
			HV	NT	34970.00	6.167549	20	PASS
			NV	NT	38460.00	6.783069	20	PASS
			LV	NT	37960.00	6.694885	20	PASS
	Ant1	5550	HV	NT	38460.00	6.783069	20	PASS
			NV	NT	35960.00	6.297723	20	PASS
			LV	NT	35460.00	6.210158	20	PASS
			HV	NT	35960.00	6.297723	20	PASS
	Ant2	5550	NV	NT	38460.00	6.735552	20	PASS
			LV	NT	38460.00	6.735552	20	PASS
			NV	NT	38460.00	6.735552	20	PASS
			LV	NT	38460.00	6.735552	20	PASS

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	Ant1	5755	LV	NT	38960.00	6.823117	20	PASS
			HV	NT	38460.00	6.735552	20	PASS
			NV	NT	35460.00	6.161599	20	PASS
	Ant2	5755	LV	NT	35460.00	6.161599	20	PASS
			HV	NT	35960.00	6.248480	20	PASS
			NV	NT	38460.00	6.682884	20	PASS
	Ant1	5795	LV	NT	39460.00	6.856646	20	PASS
			HV	NT	38460.00	6.682884	20	PASS
			NV	NT	36460.00	6.291631	20	PASS
	Ant2	5795	LV	NT	35960.00	6.205349	20	PASS
			HV	NT	35960.00	6.205349	20	PASS
			NV	NT	38960.00	6.723037	20	PASS
80M	Ant1	5210	LV	NT	38960.00	6.723037	20	PASS
			HV	NT	38960.00	6.723037	20	PASS
			NV	NT	39460.00	6.809318	20	PASS
	Ant2	5210	NV	NT	46450.00	8.915547	20	PASS
			LV	NT	45450.00	8.723608	20	PASS
			HV	NT	42960.00	8.245681	20	PASS
	Ant1	5290	NV	NT	35460.00	6.806142	20	PASS
			LV	NT	35460.00	6.806142	20	PASS
			HV	NT	34970.00	6.712092	20	PASS
	Ant2	5290	NV	NT	39460.00	7.459357	20	PASS
			LV	NT	39460.00	7.459357	20	PASS
			HV	NT	38460.00	7.270321	20	PASS
	Ant1	5530	NV	NT	36460.00	6.892250	20	PASS
			LV	NT	35460.00	6.703214	20	PASS
			HV	NT	34970.00	6.610586	20	PASS
	Ant2	5530	NV	NT	39460.00	7.135624	20	PASS
			LV	NT	38460.00	6.954792	20	PASS
			HV	NT	38460.00	6.954792	20	PASS
	Ant1	5610	NV	NT	36960.00	6.683544	20	PASS
			LV	NT	37460.00	6.773960	20	PASS
			HV	NT	36960.00	6.683544	20	PASS
	Ant2	5610	NV	NT	38960.00	6.944742	20	PASS
			LV	NT	37960.00	6.766488	20	PASS
			HV	NT	38460.00	6.855615	20	PASS
	Ant1	5690	NV	NT	37460.00	6.677362	20	PASS
			LV	NT	36960.00	6.588235	20	PASS
			HV	NT	37460.00	6.677362	20	PASS
	Ant2	5690	NV	NT	40460.00	7.110721	20	PASS
			LV	NT	38460.00	6.759227	20	PASS
			HV	NT	38460.00	6.759227	20	PASS
	Ant1	5775	NV	NT	37460.00	6.583480	20	PASS
			LV	NT	37960.00	6.671353	20	PASS
			HV	NT	36960.00	6.495606	20	PASS
	Ant2	5775	NV	NT	39460.00	6.832900	20	PASS
			LV	NT	38960.00	6.746320	20	PASS
			HV	NT	38460.00	6.659740	20	PASS
160M	Ant1	5250	NV	NT	37960.00	6.573160	20	PASS
			LV	NT	37960.00	6.573160	20	PASS
			HV	NT	37960.00	6.573160	20	PASS
	Ant2	5250	NV	NT	33470.00	6.375238	20	PASS
			LV	NT	33470.00	6.375238	20	PASS
			HV	NT	33470.00	6.375238	20	PASS
	Ant1	5570	NV	NT	35460.00	6.754286	20	PASS
			LV	NT	34470.00	6.565714	20	PASS
			HV	NT	34470.00	6.565714	20	PASS
	Ant2	5570	NV	NT	35460.00	6.366248	20	PASS
			LV	NT	34970.00	6.278276	20	PASS
			HV	NT	35460.00	6.366248	20	PASS
	Ant1	5570	NV	NT	36960.00	6.635548	20	PASS
			LV	NT	37460.00	6.725314	20	PASS
			HV	NT	36460.00	6.545781	20	PASS



TestMode	Antenna	Freq(MHz)	Temperature					Verdict
			Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	
20M	Ant1	5180	NV	-10	30970.00	5.978764	20	PASS
			NV	0	30970.00	5.978764	20	PASS
			NV	10	30970.00	5.978764	20	PASS
			NV	20	30970.00	5.978764	20	PASS
			NV	30	30470.00	5.882239	20	PASS
			NV	35	31470.00	6.075290	20	PASS
	Ant2	5180	NV	-10	29470.00	5.689189	20	PASS
			NV	0	29470.00	5.689189	20	PASS
			NV	10	29470.00	5.689189	20	PASS
			NV	20	28970.00	5.592664	20	PASS
			NV	30	28470.00	5.496139	20	PASS
			NV	35	28970.00	5.592664	20	PASS
	Ant1	5200	NV	-10	32470.00	6.244231	20	PASS
			NV	0	31470.00	6.051923	20	PASS
			NV	10	32470.00	6.244231	20	PASS
			NV	20	31470.00	6.051923	20	PASS
			NV	30	31970.00	6.148077	20	PASS
			NV	35	31970.00	6.148077	20	PASS
	Ant2	5200	NV	-10	28970.00	5.571154	20	PASS
			NV	0	28470.00	5.475000	20	PASS
			NV	10	28470.00	5.475000	20	PASS
			NV	20	28470.00	5.475000	20	PASS
			NV	30	28470.00	5.475000	20	PASS
			NV	35	27970.00	5.378846	20	PASS
	Ant1	5240	NV	-10	32470.00	6.196565	20	PASS
			NV	0	32470.00	6.196565	20	PASS
			NV	10	32970.00	6.291985	20	PASS
			NV	20	32470.00	6.196565	20	PASS
			NV	30	32470.00	6.196565	20	PASS
			NV	35	32470.00	6.196565	20	PASS
	Ant2	5240	NV	-10	28470.00	5.433206	20	PASS
			NV	0	28470.00	5.433206	20	PASS
			NV	10	28470.00	5.433206	20	PASS
			NV	20	28970.00	5.528626	20	PASS
			NV	30	28470.00	5.433206	20	PASS
			NV	35	28470.00	5.433206	20	PASS
	Ant1	5260	NV	-10	33470.00	6.363118	20	PASS
			NV	0	32470.00	6.173004	20	PASS
			NV	10	32470.00	6.173004	20	PASS
			NV	20	32470.00	6.173004	20	PASS
			NV	30	32470.00	6.173004	20	PASS
			NV	35	33470.00	6.363118	20	PASS
	Ant2	5260	NV	-10	29470.00	5.602662	20	PASS
			NV	0	28970.00	5.507605	20	PASS
			NV	10	28970.00	5.507605	20	PASS
			NV	20	28970.00	5.507605	20	PASS
			NV	30	29470.00	5.602662	20	PASS
			NV	35	29970.00	5.697719	20	PASS
	Ant1	5280	NV	-10	33470.00	6.339015	20	PASS
			NV	0	32970.00	6.244318	20	PASS
			NV	10	33470.00	6.339015	20	PASS
			NV	20	32970.00	6.244318	20	PASS
			NV	30	33470.00	6.339015	20	PASS
			NV	35	32470.00	6.149621	20	PASS
	Ant2	5280	NV	-10	28970.00	5.486742	20	PASS
			NV	0	29470.00	5.581439	20	PASS
			NV	10	28970.00	5.486742	20	PASS
			NV	20	30470.00	5.770833	20	PASS
			NV	30	29970.00	5.676136	20	PASS
			NV	35	29970.00	5.676136	20	PASS
	Ant1	5320	NV	-10	32970.00	6.197368	20	PASS

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			NV	0	32970.00	6.197368	20	PASS
			NV	10	33470.00	6.291353	20	PASS
			NV	20	33970.00	6.385338	20	PASS
			NV	30	33470.00	6.291353	20	PASS
			NV	35	32970.00	6.197368	20	PASS
	Ant2	5320	NV	-10	31470.00	5.915414	20	PASS
			NV	0	29970.00	5.633459	20	PASS
			NV	10	31470.00	5.915414	20	PASS
			NV	20	30470.00	5.727444	20	PASS
			NV	30	30970.00	5.821429	20	PASS
			NV	35	31470.00	5.915414	20	PASS
			NV	-10	34470.00	6.267273	20	PASS
			NV	0	34470.00	6.267273	20	PASS
			NV	10	34470.00	6.267273	20	PASS
			NV	20	33970.00	6.176364	20	PASS
	Ant1	5500	NV	30	33970.00	6.176364	20	PASS
			NV	35	33970.00	6.176364	20	PASS
			NV	-10	32470.00	5.903636	20	PASS
			NV	0	32470.00	5.903636	20	PASS
			NV	10	32470.00	5.903636	20	PASS
	Ant2	5500	NV	20	31970.00	5.812727	20	PASS
			NV	30	32970.00	5.994545	20	PASS
			NV	35	32970.00	5.994545	20	PASS
			NV	-10	33970.00	6.087814	20	PASS
			NV	0	34970.00	6.267025	20	PASS
	Ant1	5580	NV	10	34470.00	6.177419	20	PASS
			NV	20	34470.00	6.177419	20	PASS
			NV	30	33470.00	5.998208	20	PASS
			NV	35	33970.00	6.087814	20	PASS
			NV	-10	33470.00	5.998208	20	PASS
	Ant2	5580	NV	0	32970.00	5.908602	20	PASS
			NV	10	32970.00	5.908602	20	PASS
			NV	20	34470.00	6.177419	20	PASS
			NV	30	33970.00	6.087814	20	PASS
			NV	35	33970.00	6.087814	20	PASS
			NV	-10	34970.00	6.135088	20	PASS
			NV	0	35460.00	6.221053	20	PASS
			NV	10	34970.00	6.135088	20	PASS
			NV	20	35460.00	6.221053	20	PASS
			NV	30	34970.00	6.135088	20	PASS
	Ant1	5700	NV	35	34970.00	6.135088	20	PASS
			NV	-10	34970.00	6.135088	20	PASS
			NV	0	34470.00	6.047368	20	PASS
			NV	10	34970.00	6.135088	20	PASS
			NV	20	34970.00	6.135088	20	PASS
	Ant2	5700	NV	30	35460.00	6.221053	20	PASS
			NV	35	34970.00	6.135088	20	PASS
			NV	-10	35960.00	6.286713	20	PASS
			NV	0	34470.00	6.026224	20	PASS
			NV	10	35460.00	6.199301	20	PASS
	Ant1	5720	NV	20	34970.00	6.113636	20	PASS
			NV	30	34970.00	6.113636	20	PASS
			NV	35	34470.00	6.026224	20	PASS
			NV	-10	34970.00	6.113636	20	PASS
			NV	0	34970.00	6.113636	20	PASS
	Ant2	5720	NV	10	34470.00	6.026224	20	PASS
			NV	20	34970.00	6.113636	20	PASS
			NV	30	34970.00	6.113636	20	PASS
			NV	35	34970.00	6.113636	20	PASS
			NV	-10	34970.00	6.087032	20	PASS
	Ant1	5745	NV	0	35460.00	6.172324	20	PASS
			NV	10	35460.00	6.172324	20	PASS
			NV	20	34970.00	6.087032	20	PASS
			NV	30	34970.00	6.087032	20	PASS
			NV	35	34970.00	6.087032	20	PASS

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	Ant2	5745	NV	-10	35460.00	6.172324	20	PASS
			NV	0	35460.00	6.172324	20	PASS
			NV	10	35960.00	6.259356	20	PASS
			NV	20	35460.00	6.172324	20	PASS
			NV	30	35960.00	6.259356	20	PASS
			NV	35	35960.00	6.259356	20	PASS
	Ant1	5785	NV	-10	35460.00	6.129646	20	PASS
			NV	0	35460.00	6.129646	20	PASS
			NV	10	35960.00	6.216076	20	PASS
			NV	20	34970.00	6.044944	20	PASS
			NV	30	35960.00	6.216076	20	PASS
			NV	35	35960.00	6.216076	20	PASS
	Ant2	5785	NV	-10	36460.00	6.302506	20	PASS
			NV	0	35960.00	6.216076	20	PASS
			NV	10	36460.00	6.302506	20	PASS
			NV	20	35960.00	6.216076	20	PASS
			NV	30	36960.00	6.388937	20	PASS
			NV	35	35960.00	6.216076	20	PASS
	Ant1	5825	NV	-10	36960.00	6.345064	20	PASS
			NV	0	36960.00	6.345064	20	PASS
			NV	10	36960.00	6.345064	20	PASS
			NV	20	36960.00	6.345064	20	PASS
			NV	30	35960.00	6.173391	20	PASS
			NV	35	36960.00	6.345064	20	PASS
	Ant2	5825	NV	-10	36960.00	6.345064	20	PASS
			NV	0	36460.00	6.259227	20	PASS
			NV	10	37460.00	6.430901	20	PASS
			NV	20	36960.00	6.345064	20	PASS
			NV	30	35960.00	6.173391	20	PASS
			NV	35	37460.00	6.430901	20	PASS
40M	Ant1	5190	NV	-10	31970.00	6.159923	20	PASS
			NV	0	32470.00	6.256262	20	PASS
			NV	10	31970.00	6.159923	20	PASS
			NV	20	32970.00	6.352601	20	PASS
			NV	30	32470.00	6.256262	20	PASS
			NV	35	32470.00	6.256262	20	PASS
	Ant2	5190	NV	-10	33470.00	6.448940	20	PASS
			NV	0	33470.00	6.448940	20	PASS
			NV	10	33470.00	6.448940	20	PASS
			NV	20	33470.00	6.448940	20	PASS
			NV	30	32970.00	6.352601	20	PASS
			NV	35	33470.00	6.448940	20	PASS
	Ant1	5230	NV	-10	33470.00	6.399618	20	PASS
			NV	0	31970.00	6.112811	20	PASS
			NV	10	32970.00	6.304015	20	PASS
			NV	20	32970.00	6.304015	20	PASS
			NV	30	31970.00	6.112811	20	PASS
			NV	35	32970.00	6.304015	20	PASS
	Ant2	5230	NV	-10	34470.00	6.590822	20	PASS
			NV	0	32470.00	6.208413	20	PASS
			NV	10	34470.00	6.590822	20	PASS
			NV	20	33470.00	6.399618	20	PASS
			NV	30	34470.00	6.590822	20	PASS
			NV	35	33470.00	6.399618	20	PASS
	Ant1	5270	NV	-10	33970.00	6.445920	20	PASS
			NV	0	33470.00	6.351044	20	PASS
			NV	10	33470.00	6.351044	20	PASS
			NV	20	32970.00	6.256167	20	PASS
			NV	30	32970.00	6.256167	20	PASS
			NV	35	32970.00	6.256167	20	PASS
	Ant2	5270	NV	-10	34470.00	6.540797	20	PASS
			NV	0	33970.00	6.445920	20	PASS
			NV	10	34470.00	6.540797	20	PASS
			NV	20	34470.00	6.540797	20	PASS
			NV	30	33970.00	6.445920	20	PASS

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	Ant1	5310	NV	35	33970.00	6.445920	20	PASS
			NV	-10	32970.00	6.209040	20	PASS
			NV	0	33470.00	6.303202	20	PASS
			NV	10	33470.00	6.303202	20	PASS
			NV	20	33470.00	6.303202	20	PASS
			NV	30	32470.00	6.114878	20	PASS
	Ant2	5310	NV	35	33470.00	6.303202	20	PASS
			NV	-10	35460.00	6.677966	20	PASS
			NV	0	35460.00	6.677966	20	PASS
			NV	10	34970.00	6.585687	20	PASS
			NV	20	34470.00	6.491525	20	PASS
			NV	30	34970.00	6.585687	20	PASS
	Ant1	5510	NV	35	34970.00	6.585687	20	PASS
			NV	-10	33970.00	6.165154	20	PASS
			NV	0	33970.00	6.165154	20	PASS
			NV	10	34970.00	6.346642	20	PASS
			NV	20	33970.00	6.165154	20	PASS
			NV	30	34470.00	6.255898	20	PASS
	Ant2	5510	NV	35	34470.00	6.255898	20	PASS
			NV	-10	35460.00	6.435572	20	PASS
			NV	0	35960.00	6.526316	20	PASS
			NV	10	35960.00	6.526316	20	PASS
			NV	20	36460.00	6.617060	20	PASS
			NV	30	35960.00	6.526316	20	PASS
	Ant1	5550	NV	35	35960.00	6.526316	20	PASS
			NV	-10	33970.00	6.120721	20	PASS
			NV	0	34470.00	6.210811	20	PASS
			NV	10	34470.00	6.210811	20	PASS
			NV	20	33970.00	6.120721	20	PASS
			NV	30	33970.00	6.120721	20	PASS
	Ant2	5550	NV	35	33970.00	6.120721	20	PASS
			NV	-10	36460.00	6.569369	20	PASS
			NV	0	35960.00	6.479279	20	PASS
			NV	10	36960.00	6.659459	20	PASS
			NV	20	35960.00	6.479279	20	PASS
			NV	30	35960.00	6.479279	20	PASS
	Ant1	5670	NV	35	36460.00	6.569369	20	PASS
			NV	-10	34970.00	6.167549	20	PASS
			NV	0	33970.00	5.991182	20	PASS
			NV	10	34970.00	6.167549	20	PASS
			NV	20	34970.00	6.167549	20	PASS
			NV	30	34970.00	6.167549	20	PASS
	Ant2	5670	NV	35	35460.00	6.253968	20	PASS
			NV	-10	37960.00	6.694885	20	PASS
			NV	0	36960.00	6.518519	20	PASS
			NV	10	37460.00	6.606702	20	PASS
			NV	20	37460.00	6.606702	20	PASS
			NV	30	37460.00	6.606702	20	PASS
	Ant1	5710	NV	35	37460.00	6.606702	20	PASS
			NV	-10	35460.00	6.210158	20	PASS
			NV	0	34970.00	6.124343	20	PASS
			NV	10	34970.00	6.124343	20	PASS
			NV	20	35460.00	6.210158	20	PASS
			NV	30	34970.00	6.124343	20	PASS
	Ant2	5710	NV	35	34970.00	6.124343	20	PASS
			NV	-10	37460.00	6.560420	20	PASS
			NV	0	37960.00	6.647986	20	PASS
			NV	10	37960.00	6.647986	20	PASS
			NV	20	37460.00	6.560420	20	PASS
			NV	30	37460.00	6.560420	20	PASS
	Ant1	5755	NV	35	37960.00	6.647986	20	PASS
			NV	-10	34970.00	6.076455	20	PASS
			NV	0	35460.00	6.161599	20	PASS
			NV	10	35460.00	6.161599	20	PASS
			NV	20	35960.00	6.248480	20	PASS

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			NV	30	35460.00	6.161599	20	PASS
			NV	35	34970.00	6.076455	20	PASS
	Ant2	5755	NV	-10	38460.00	6.682884	20	PASS
			NV	0	38460.00	6.682884	20	PASS
			NV	10	38460.00	6.682884	20	PASS
			NV	20	37960.00	6.596003	20	PASS
			NV	30	38460.00	6.682884	20	PASS
			NV	35	38960.00	6.769765	20	PASS
	Ant1	5795	NV	-10	35460.00	6.119068	20	PASS
			NV	0	36960.00	6.377912	20	PASS
			NV	10	35960.00	6.205349	20	PASS
			NV	20	35460.00	6.119068	20	PASS
			NV	30	35960.00	6.205349	20	PASS
			NV	35	35960.00	6.205349	20	PASS
	Ant2	5795	NV	-10	38960.00	6.723037	20	PASS
			NV	0	38460.00	6.636756	20	PASS
			NV	10	37960.00	6.550475	20	PASS
			NV	20	38460.00	6.636756	20	PASS
			NV	30	37960.00	6.550475	20	PASS
			NV	35	37960.00	6.550475	20	PASS
80M	Ant1	5210	NV	-10	42460.00	8.149712	20	PASS
			NV	0	41960.00	8.053743	20	PASS
			NV	10	40960.00	7.861804	20	PASS
			NV	20	40460.00	7.765835	20	PASS
			NV	30	39460.00	7.573896	20	PASS
			NV	35	38960.00	7.477927	20	PASS
	Ant2	5210	NV	-10	34970.00	6.712092	20	PASS
			NV	0	34470.00	6.616123	20	PASS
			NV	10	34970.00	6.712092	20	PASS
			NV	20	34470.00	6.616123	20	PASS
			NV	30	34970.00	6.712092	20	PASS
			NV	35	34970.00	6.712092	20	PASS
	Ant1	5290	NV	-10	37960.00	7.175803	20	PASS
			NV	0	37960.00	7.175803	20	PASS
			NV	10	37460.00	7.081285	20	PASS
			NV	20	37460.00	7.081285	20	PASS
			NV	30	36960.00	6.986767	20	PASS
			NV	35	36960.00	6.986767	20	PASS
	Ant2	5290	NV	-10	34970.00	6.610586	20	PASS
			NV	0	35960.00	6.797732	20	PASS
			NV	10	35460.00	6.703214	20	PASS
			NV	20	34970.00	6.610586	20	PASS
			NV	30	35960.00	6.797732	20	PASS
			NV	35	35460.00	6.703214	20	PASS
	Ant1	5530	NV	-10	37460.00	6.773960	20	PASS
			NV	0	37960.00	6.864376	20	PASS
			NV	10	37960.00	6.864376	20	PASS
			NV	20	37460.00	6.773960	20	PASS
			NV	30	38460.00	6.954792	20	PASS
			NV	35	36960.00	6.683544	20	PASS
	Ant2	5530	NV	-10	36460.00	6.593128	20	PASS
			NV	0	35960.00	6.502712	20	PASS
			NV	10	35460.00	6.412297	20	PASS
			NV	20	36460.00	6.593128	20	PASS
			NV	30	36460.00	6.593128	20	PASS
			NV	35	35960.00	6.502712	20	PASS
	Ant1	5610	NV	-10	37960.00	6.766488	20	PASS
			NV	0	38460.00	6.855615	20	PASS
			NV	10	37460.00	6.677362	20	PASS
			NV	20	37960.00	6.766488	20	PASS
			NV	30	37960.00	6.766488	20	PASS
			NV	35	37960.00	6.766488	20	PASS
	Ant2	5610	NV	-10	36960.00	6.588235	20	PASS
			NV	0	36960.00	6.588235	20	PASS
			NV	10	36960.00	6.588235	20	PASS

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			NV	20	36960.00	6.588235	20	PASS
			NV	30	36460.00	6.499109	20	PASS
			NV	35	36960.00	6.588235	20	PASS
	Ant1	5690	NV	-10	38460.00	6.759227	20	PASS
			NV	0	38960.00	6.847100	20	PASS
			NV	10	37960.00	6.671353	20	PASS
			NV	20	37960.00	6.671353	20	PASS
			NV	30	38460.00	6.759227	20	PASS
			NV	35	38460.00	6.759227	20	PASS
	Ant2	5690	NV	-10	36960.00	6.495606	20	PASS
			NV	0	36960.00	6.495606	20	PASS
			NV	10	37460.00	6.583480	20	PASS
			NV	20	37460.00	6.583480	20	PASS
			NV	30	36960.00	6.495606	20	PASS
			NV	35	36960.00	6.495606	20	PASS
	Ant1	5775	NV	-10	39460.00	6.832900	20	PASS
			NV	0	38460.00	6.659740	20	PASS
			NV	10	38460.00	6.659740	20	PASS
			NV	20	38460.00	6.659740	20	PASS
			NV	30	38960.00	6.746320	20	PASS
			NV	35	39460.00	6.832900	20	PASS
	Ant2	5775	NV	-10	37960.00	6.573160	20	PASS
			NV	0	38460.00	6.659740	20	PASS
			NV	10	38460.00	6.659740	20	PASS
			NV	20	36960.00	6.400000	20	PASS
			NV	30	38460.00	6.659740	20	PASS
			NV	35	38460.00	6.659740	20	PASS
160M	Ant1	5250	NV	-10	33470.00	6.375238	20	PASS
			NV	0	32970.00	6.280000	20	PASS
			NV	10	32970.00	6.280000	20	PASS
			NV	20	33970.00	6.470476	20	PASS
			NV	30	32470.00	6.184762	20	PASS
			NV	35	32970.00	6.280000	20	PASS
	Ant2	5250	NV	-10	34470.00	6.565714	20	PASS
			NV	0	34970.00	6.660952	20	PASS
			NV	10	34970.00	6.660952	20	PASS
			NV	20	34970.00	6.660952	20	PASS
			NV	30	34970.00	6.660952	20	PASS
			NV	35	35460.00	6.754286	20	PASS
	Ant1	5570	NV	-10	34970.00	6.278276	20	PASS
			NV	0	34970.00	6.278276	20	PASS
			NV	10	34970.00	6.278276	20	PASS
			NV	20	33970.00	6.098743	20	PASS
			NV	30	34470.00	6.188510	20	PASS
			NV	35	34970.00	6.278276	20	PASS
	Ant2	5570	NV	-10	36460.00	6.545781	20	PASS
			NV	0	36460.00	6.545781	20	PASS
			NV	10	36460.00	6.545781	20	PASS
			NV	20	36960.00	6.635548	20	PASS
			NV	30	35960.00	6.456014	20	PASS
			NV	35	36460.00	6.545781	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

PASS.



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 $\geq$ 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	$\text{Roundup} \left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{\text{PRI}_{\mu\text{sec}}} \right) \right\}$	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

$$\left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{3066} \right) \right\}$$

would be Round up $\left\{ \left(\frac{1}{360} \right) \cdot \left(\frac{19 \cdot 10^6}{3066} \right) \right\} = \text{Round up } \{17.2\} = 18$.

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

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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 waveforms, 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.

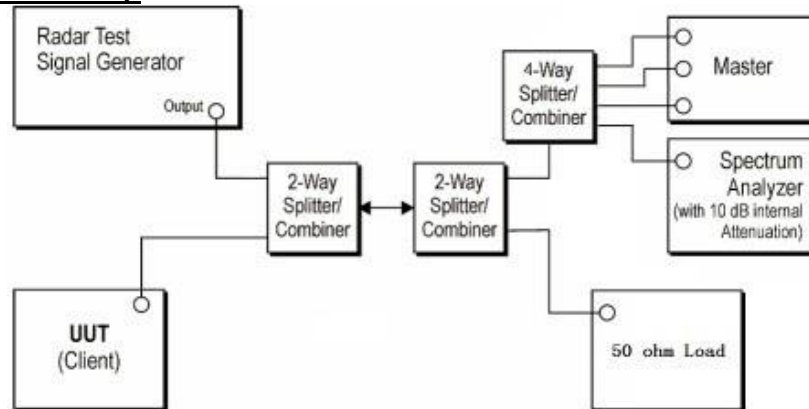


Calibration of Radar Waveform

Radar Waveform Calibration Procedure

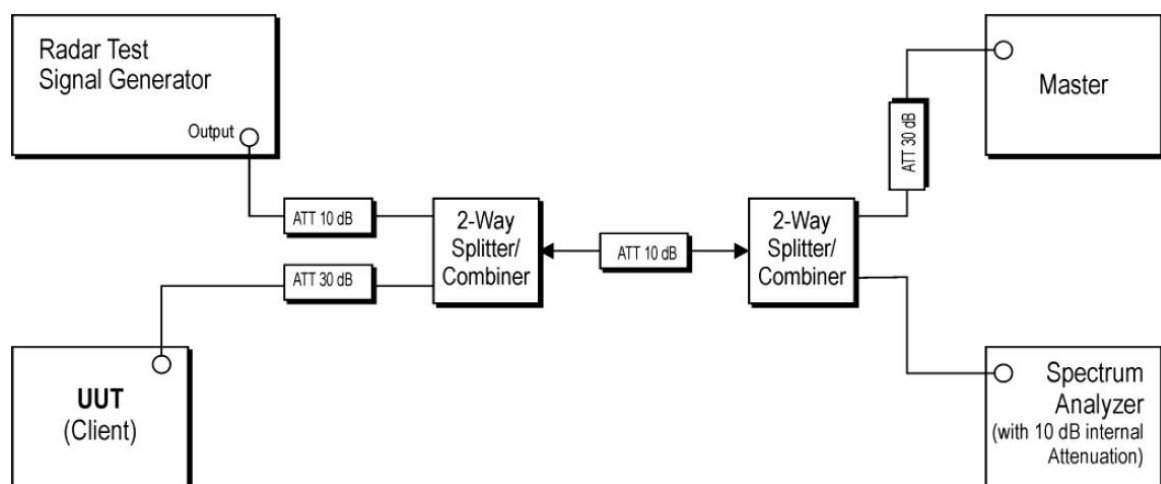
- 1) A 50 ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to place of the master
- 2) The interference Radar Detection Threshold Level is $-62\text{dBm} + 5.67\text{dBi} + 1\text{dB} = -55.33\text{dBm}$ that had been taken into account the output power 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 $-62\text{dBm} + 5.67\text{dBi} + 1\text{dB} = -55.33\text{dBm}$. Capture the spectrum analyzer plots on short pulse radar waveform.

Conducted Calibration Setup



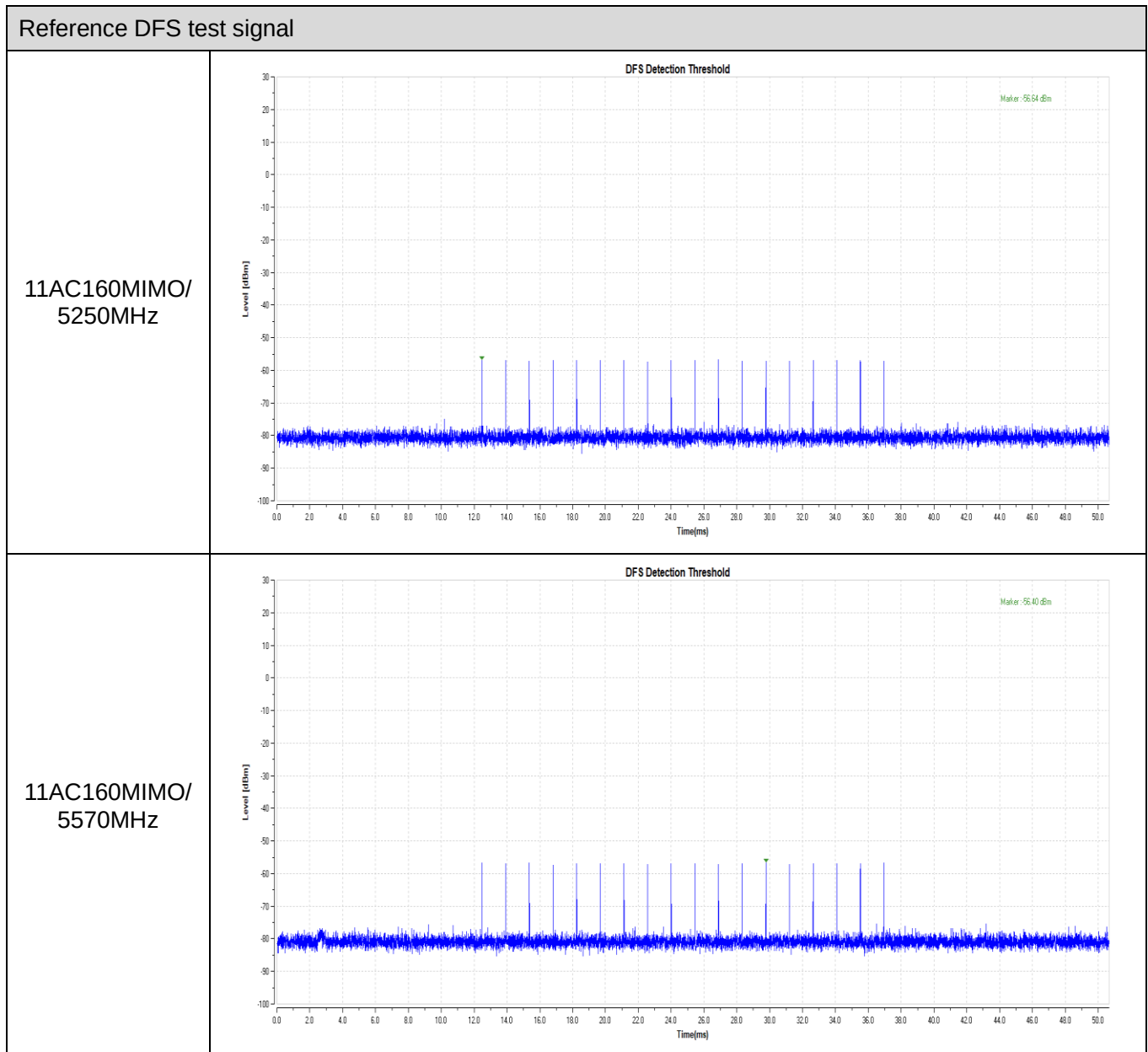
Test Configuration

Setup for Client with injection at the Master





Radar Waveform Calibration Result



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

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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: $C (ms) = N \times Dwell (0.3ms)$; 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.

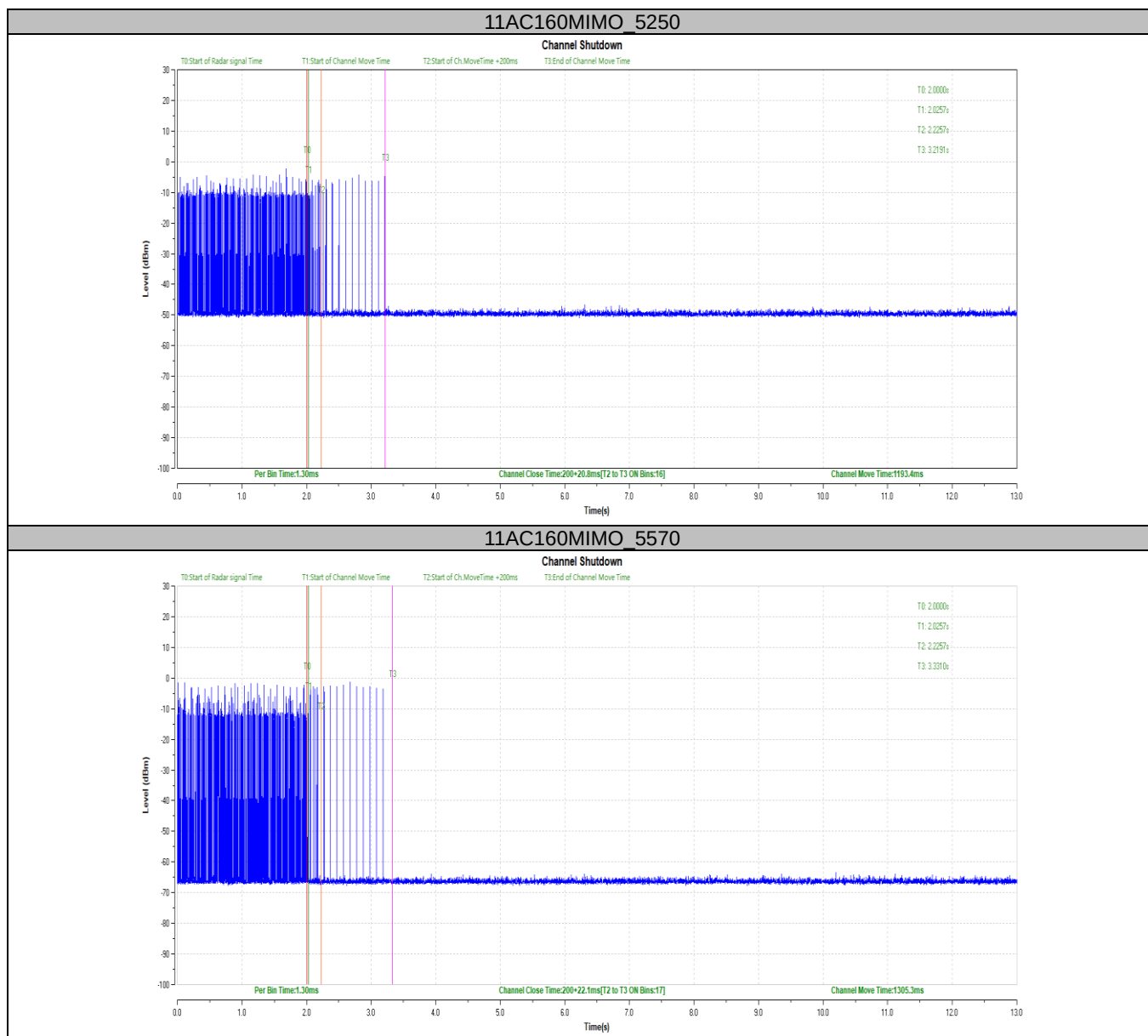
Test Mode

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
11AC160MIMO	5250	200+20.8	200+60	1193.4	10000	PASS
	5570	200+22.1	200+60	1305.3	10000	PASS

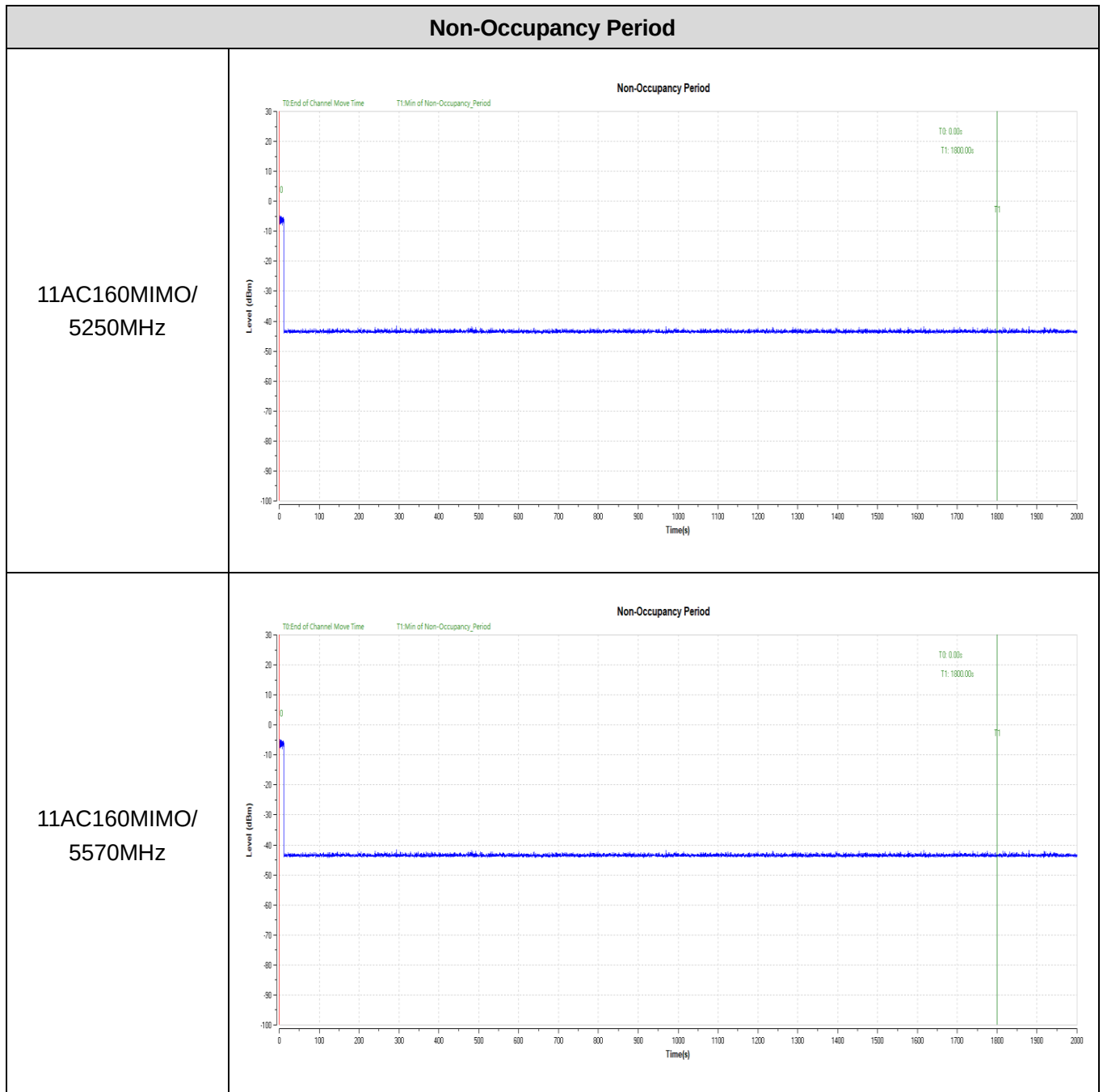


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*****THE END OF REPORT*****