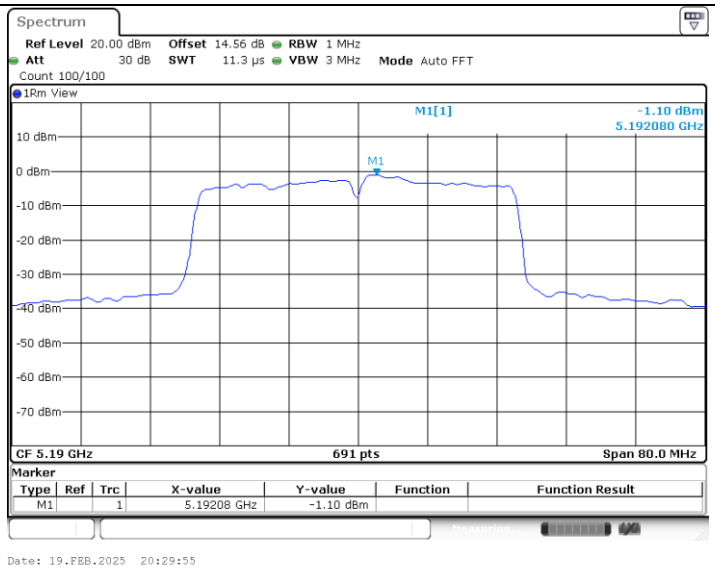
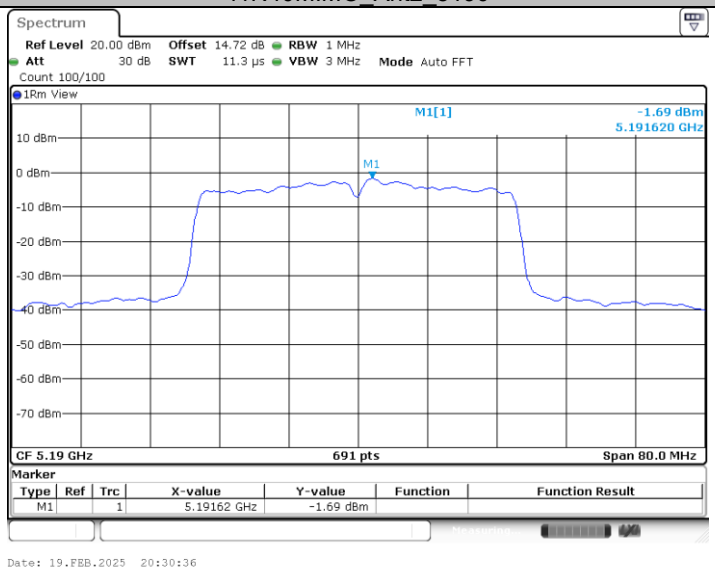
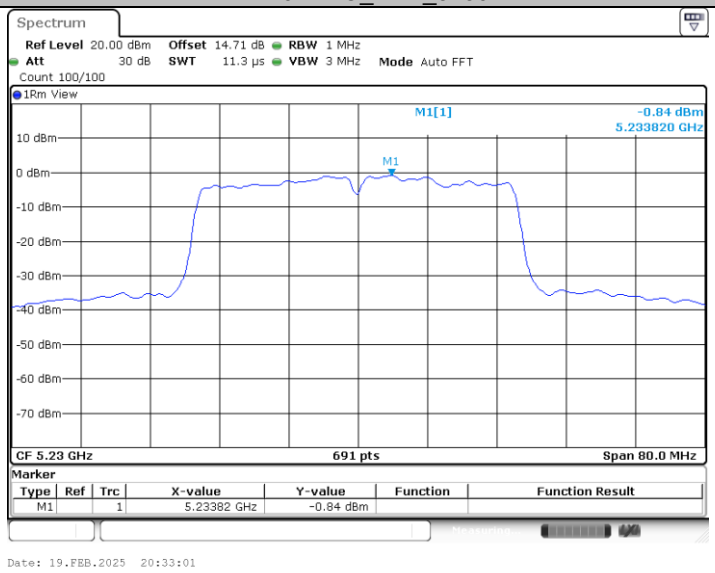


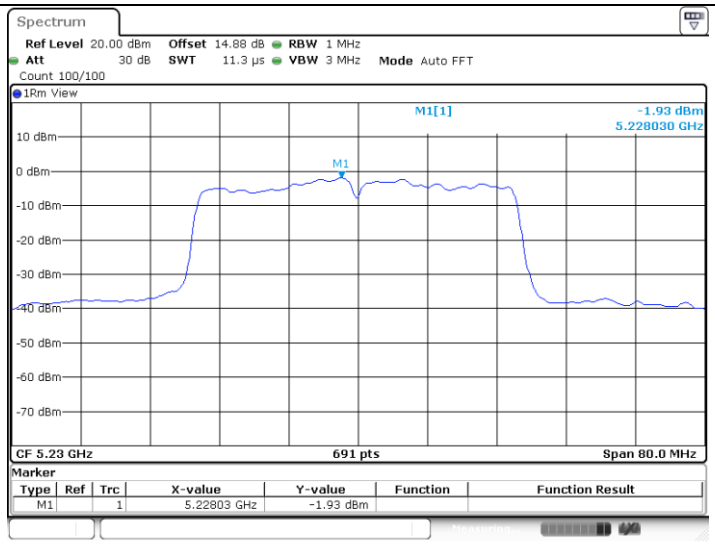
11N40MIMO_Ant2_5190



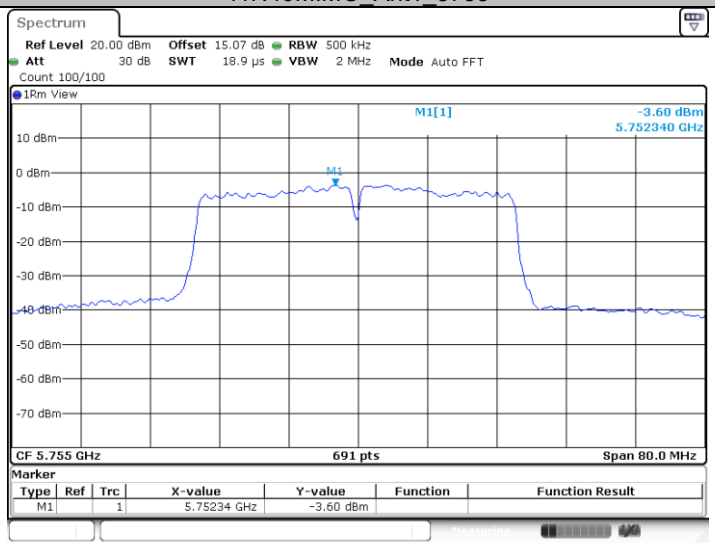
11N40MIMO_Ant1_5230



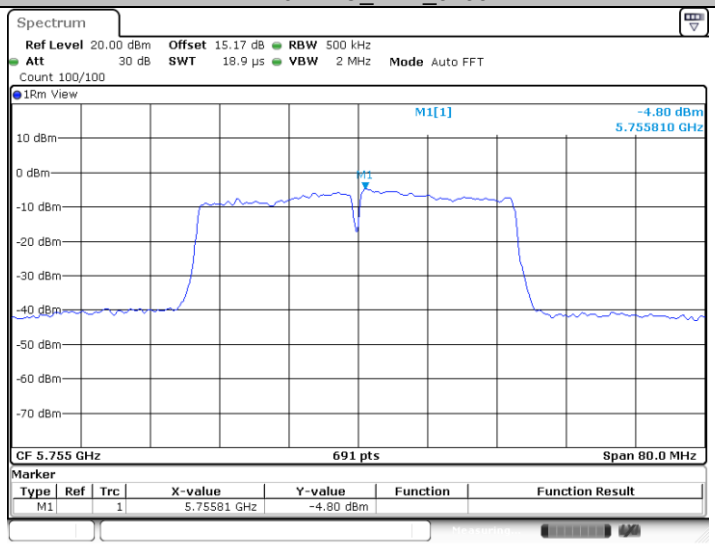
11N40MIMO_Ant2_5230



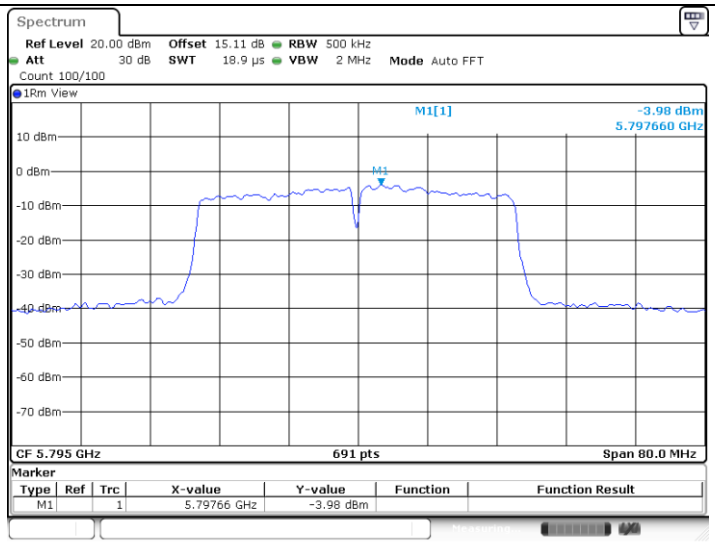
11N40MIMO_Ant1_5755



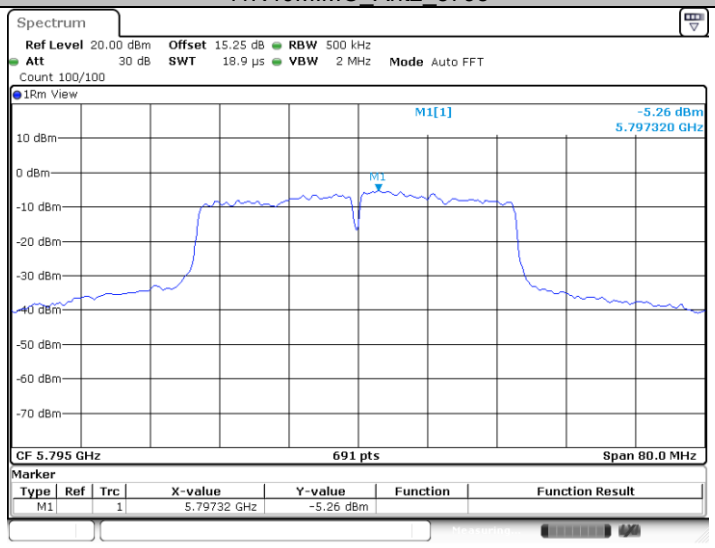
11N40MIMO_Ant2_5755



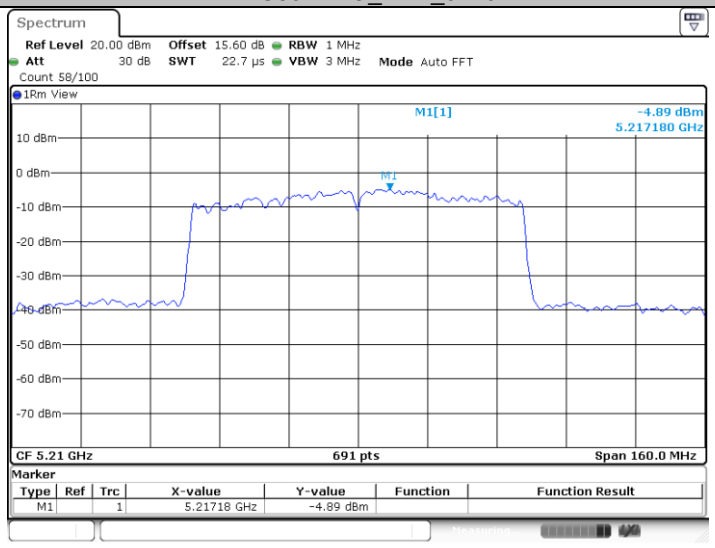
11N40MIMO_Ant1_5795



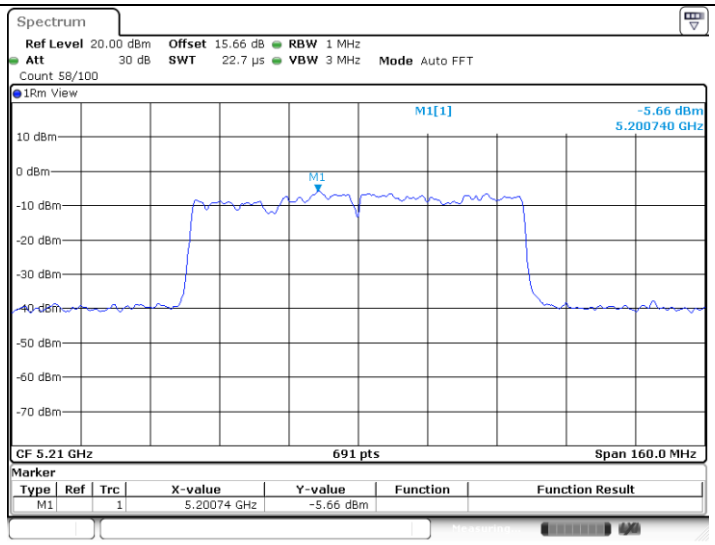
11N40MIMO_Ant2_5795



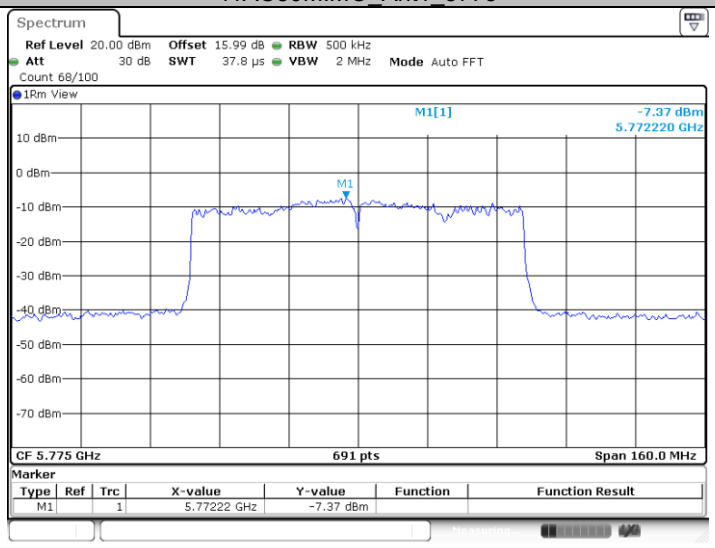
11AC80MIMO_Ant1_5210



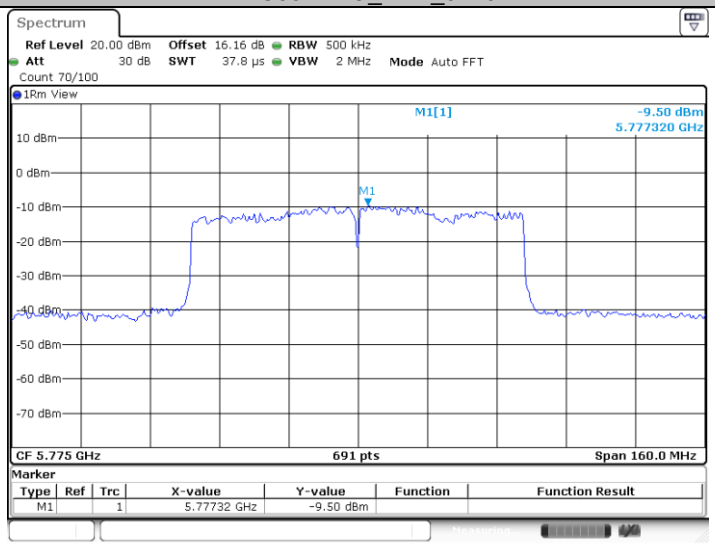
11AC80MIMO_Ant2_5210



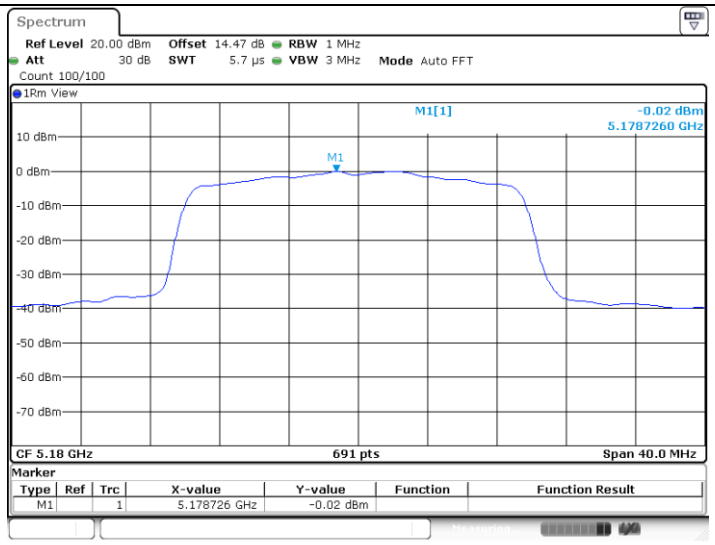
11AC80MIMO_Ant1_5775



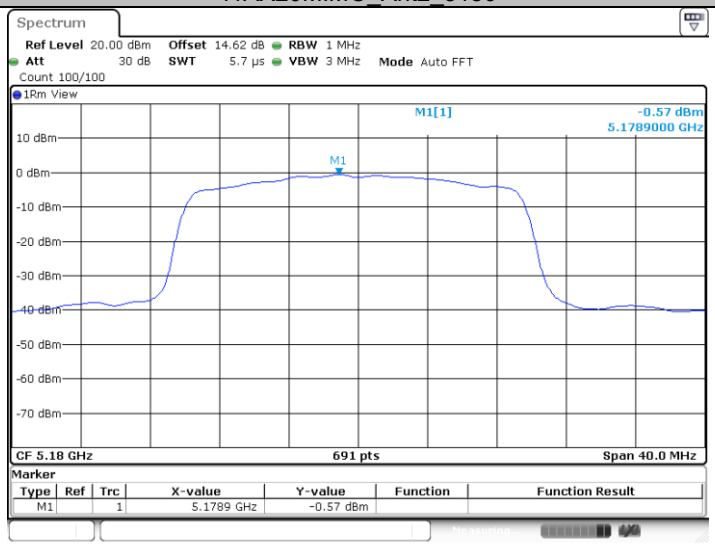
11AC80MIMO_Ant2_5775



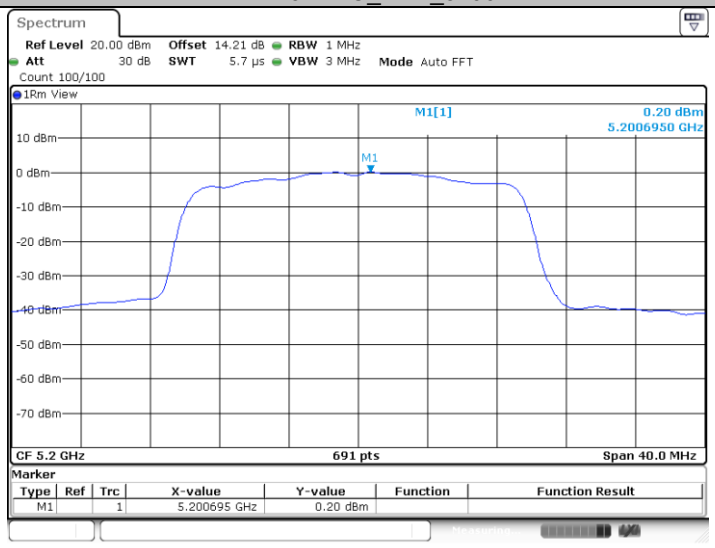
11AX20MIMO_Ant1_5180



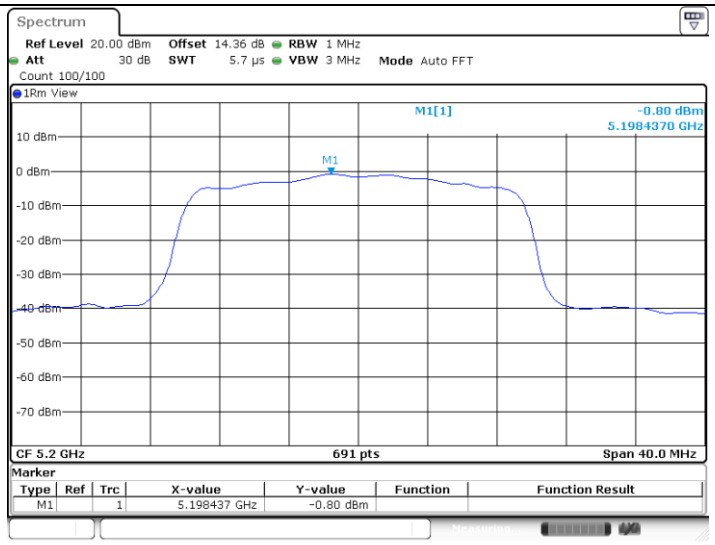
11AX20MIMO_Ant2_5180



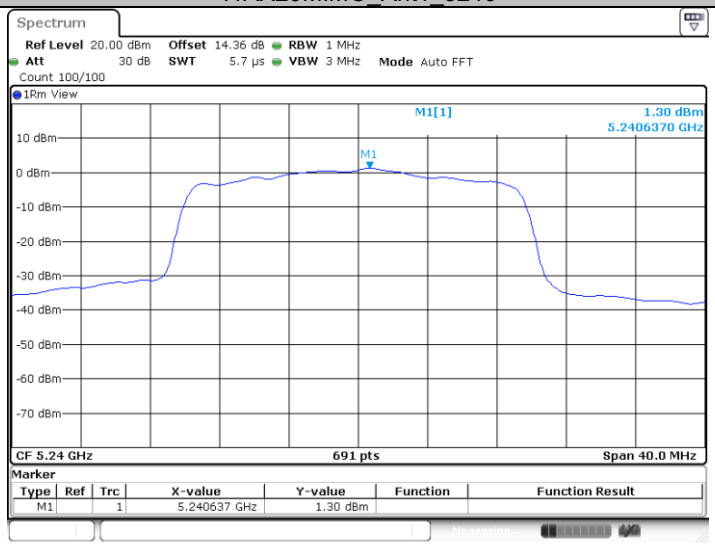
11AX20MIMO_Ant1_5200



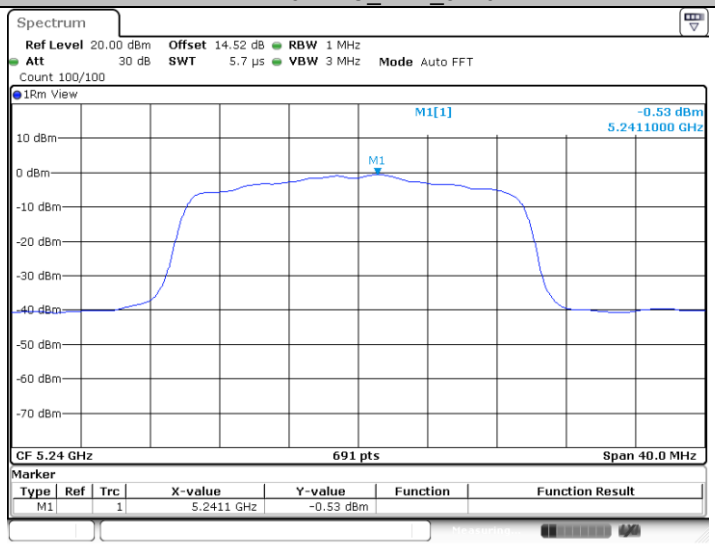
11AX20MIMO_Ant2_5200



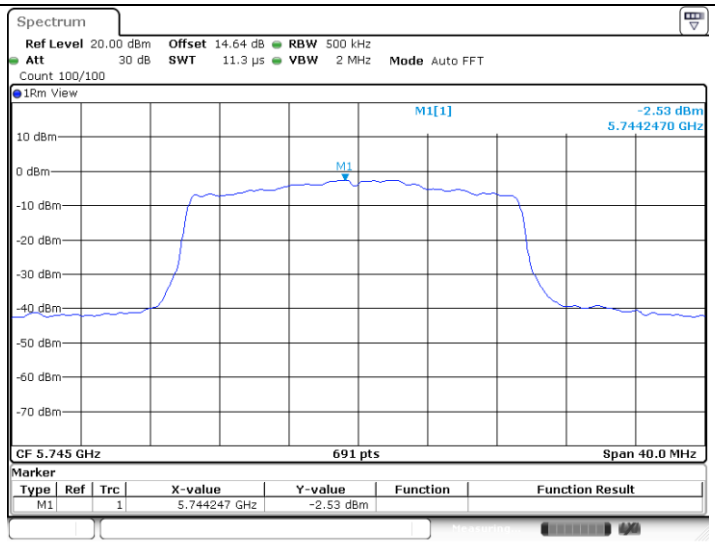
11AX20MIMO_Ant1_5240



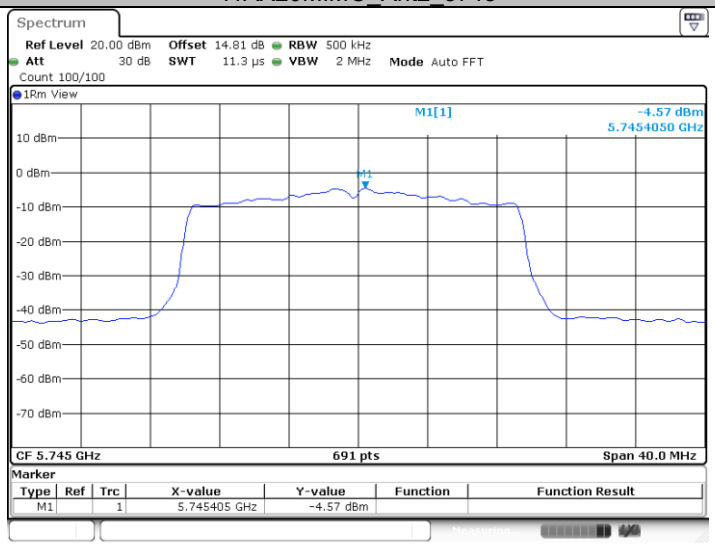
11AX20MIMO_Ant2_5240



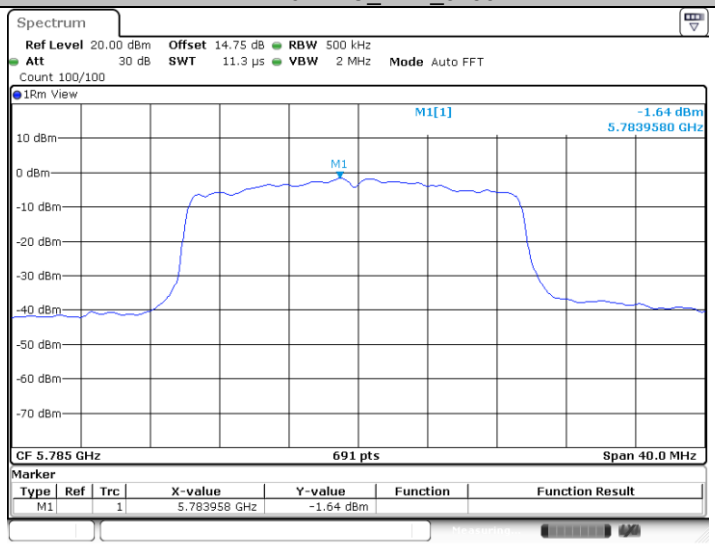
11AX20MIMO_Ant1_5745



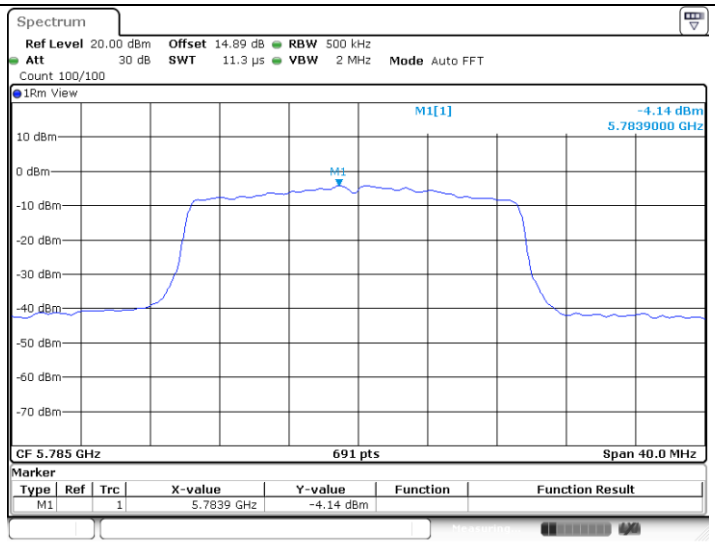
11AX20MIMO_Ant2_5745



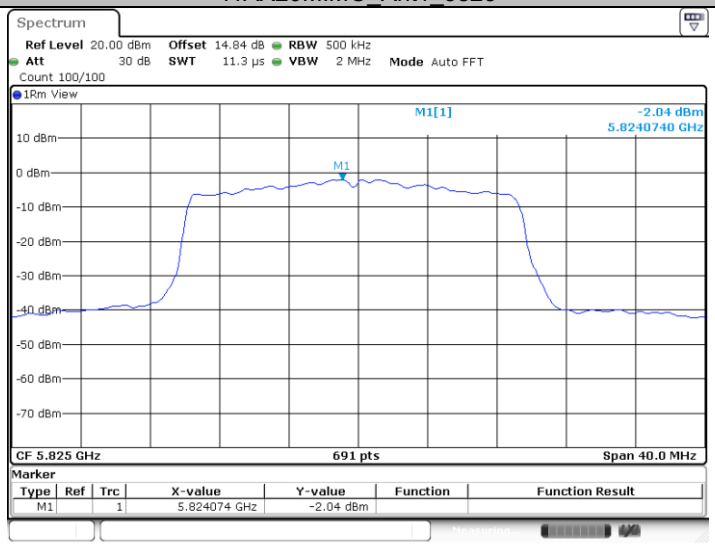
11AX20MIMO_Ant1_5785



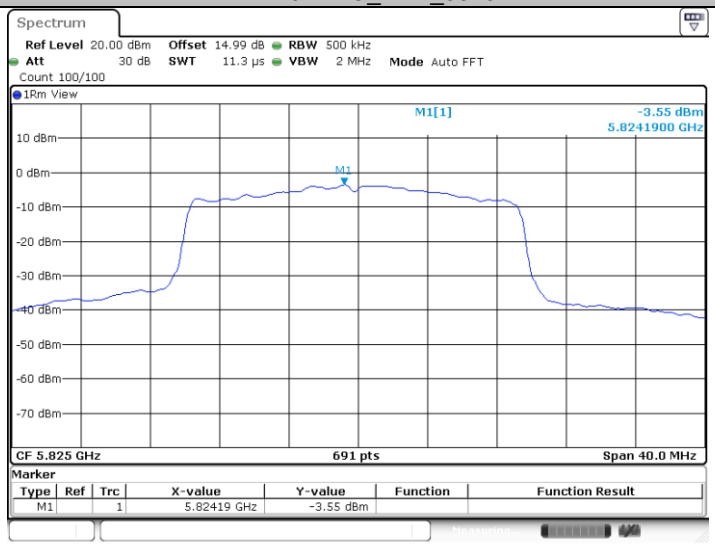
11AX20MIMO_Ant2_5785



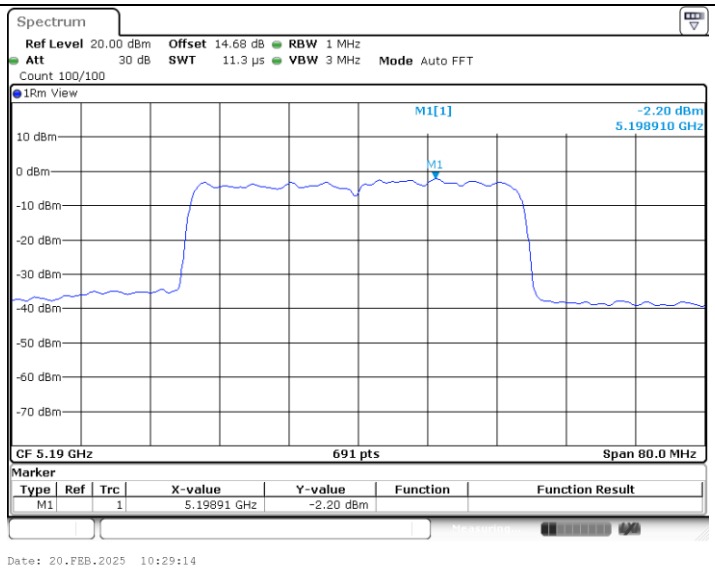
11AX20MIMO_Ant1_5825



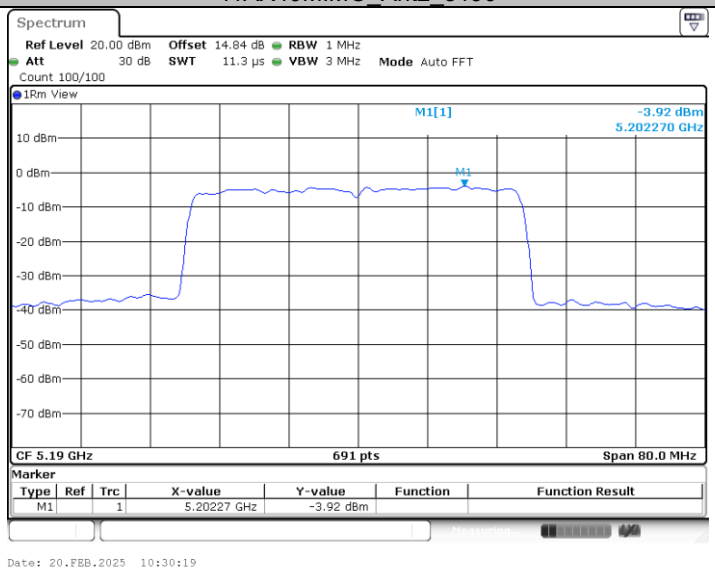
11AX20MIMO_Ant2_5825



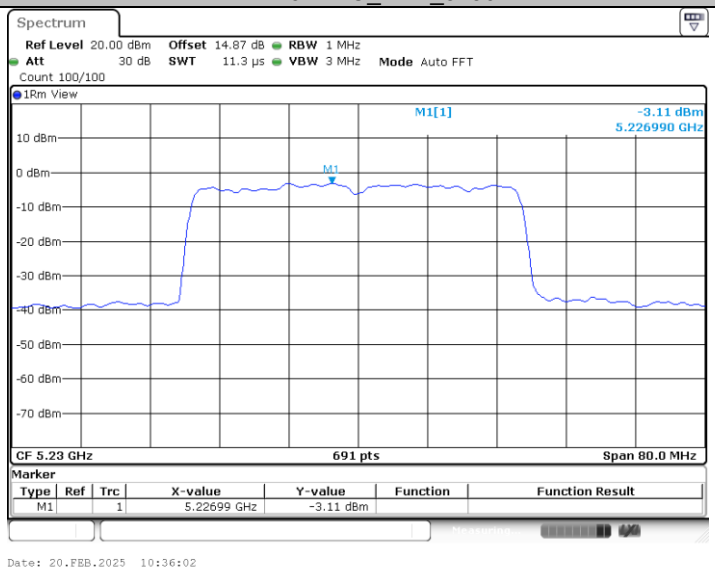
11AX40MIMO_Ant1_5190



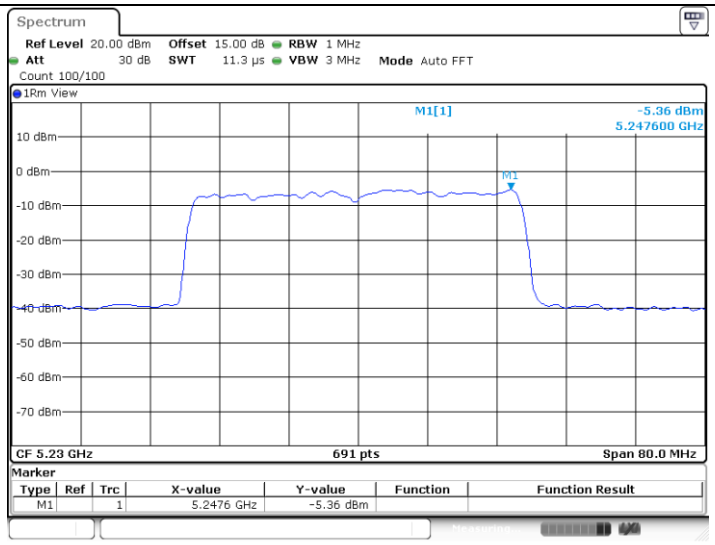
11AX40MIMO_Ant2_5190



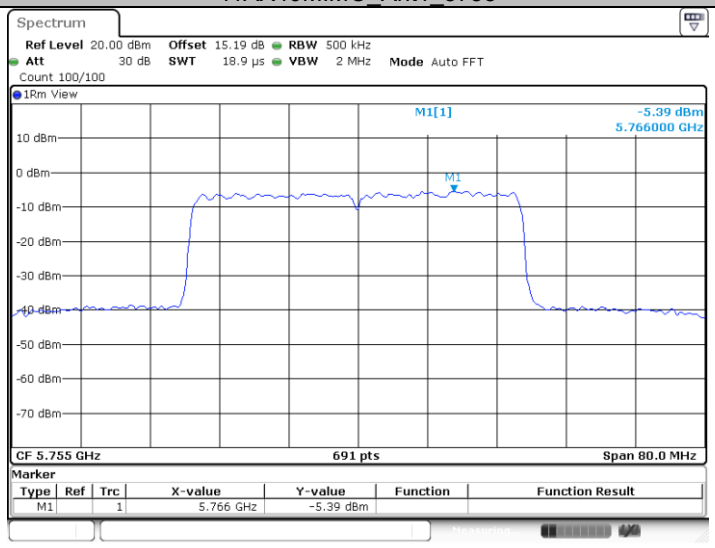
11AX40MIMO_Ant1_5230



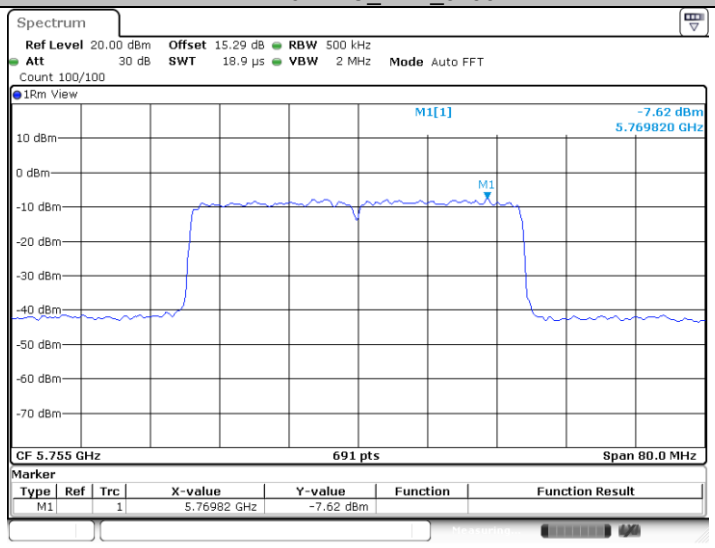
11AX40MIMO_Ant2_5230



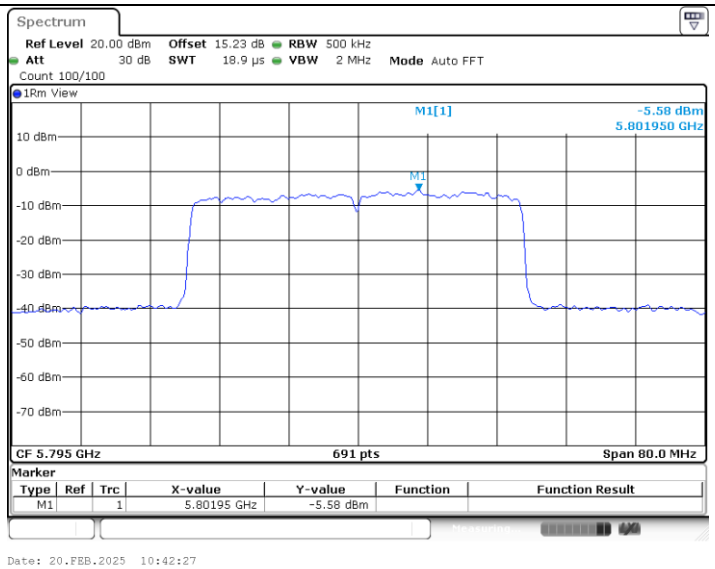
11AX40MIMO_Ant1_5755



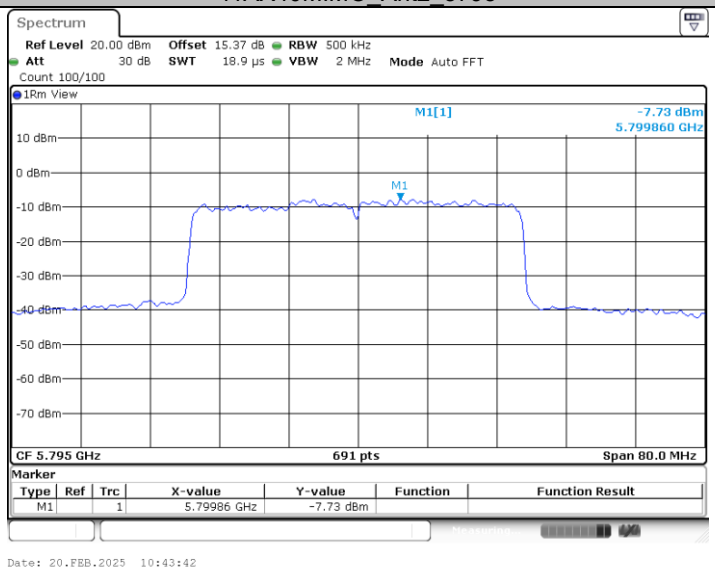
11AX40MIMO_Ant2_5755



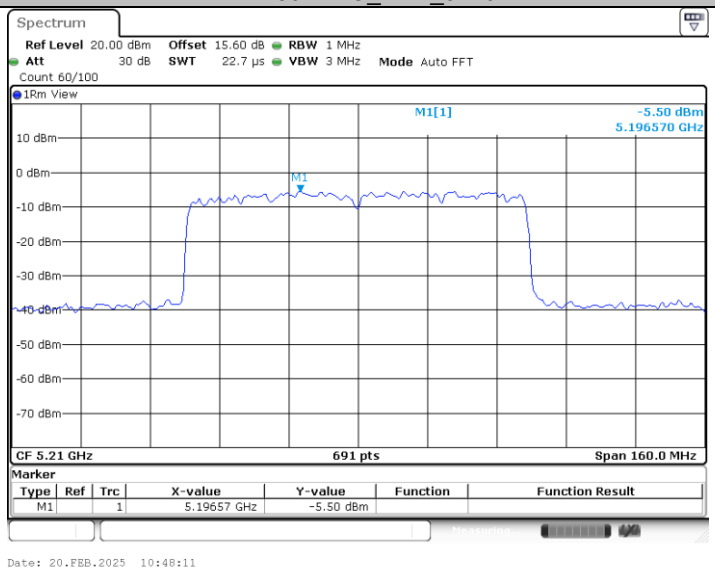
11AX40MIMO_Ant1_5795



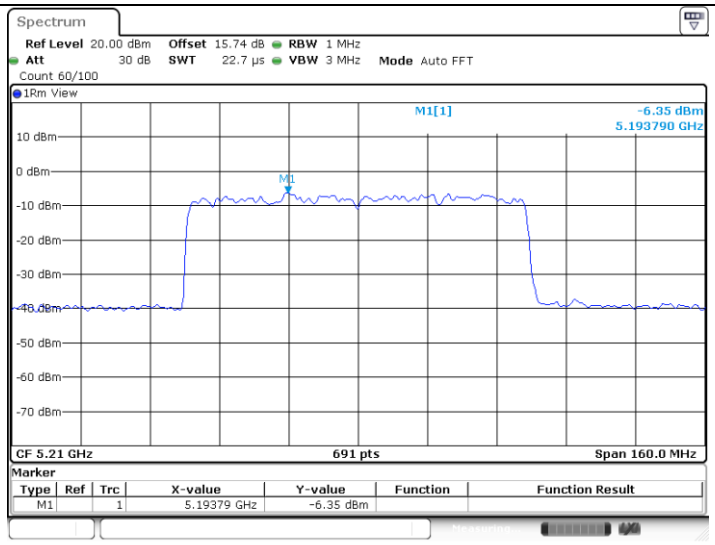
11AX40MIMO_Ant2_5795



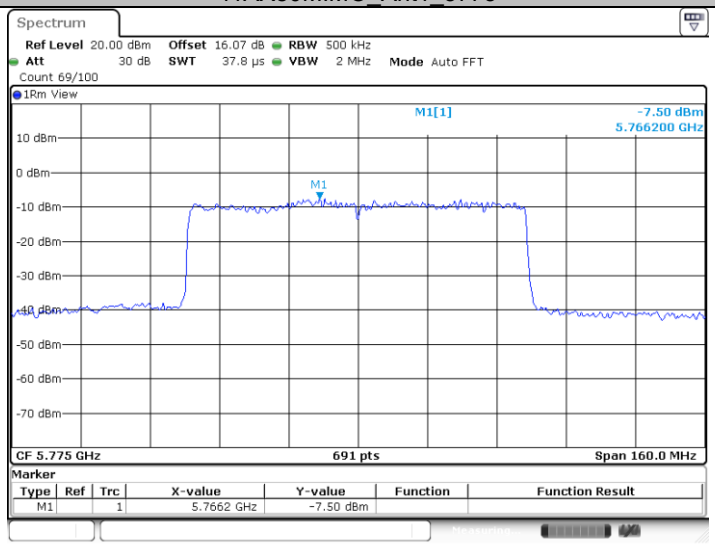
11AX80MIMO_Ant1_5210



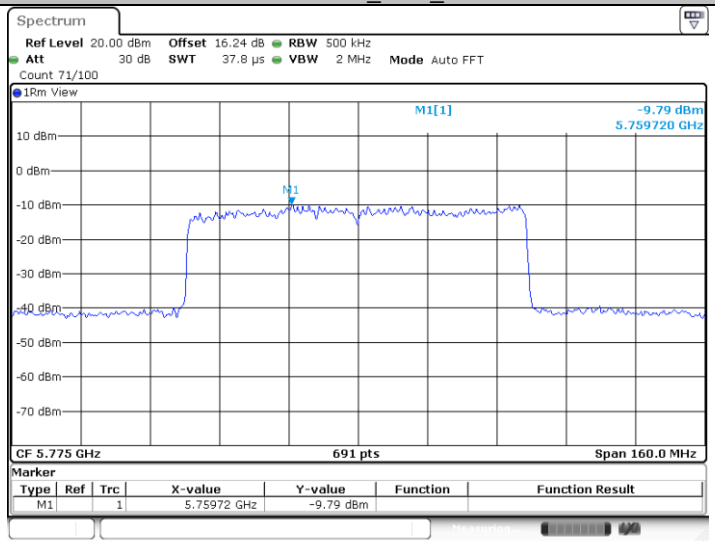
11AX80MIMO_Ant2_5210



11AX80MIMO_Ant1_5775



11AX80MIMO_Ant2_5775



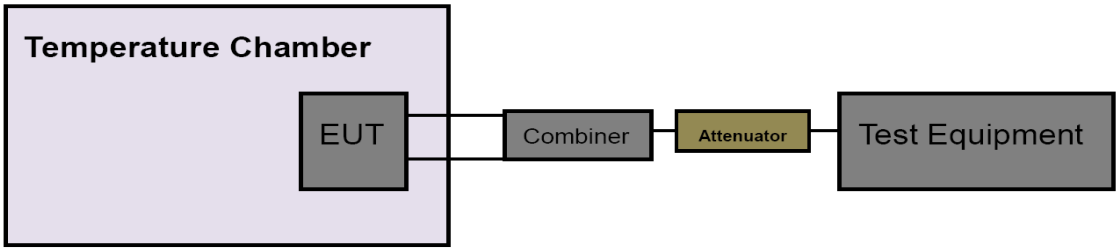
3.7. Frequency Stability

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 100V to 240V percent of the nominal value.
(6) Extreme temperature is 0℃~45℃

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
20M	Ant1	5180	NV	NT	-66930.00	-12.920849	20	PASS
			LV	NT	-66930.00	-12.920849	20	PASS
			HV	NT	-67430.00	-13.017375	20	PASS
	Ant2	5180	NV	NT	-71430.00	-13.789575	20	PASS
			LV	NT	-71430.00	-13.789575	20	PASS
			HV	NT	-71430.00	-13.789575	20	PASS
	Ant1	5200	NV	NT	-67430.00	-12.967308	20	PASS
			LV	NT	-67430.00	-12.967308	20	PASS
			HV	NT	-67930.00	-13.063462	20	PASS
	Ant2	5200	NV	NT	-72430.00	-13.928846	20	PASS
			LV	NT	-71930.00	-13.832692	20	PASS
			HV	NT	-72930.00	-14.025000	20	PASS
	Ant1	5240	NV	NT	-66430.00	-12.677481	20	PASS
			LV	NT	-67430.00	-12.868321	20	PASS
			HV	NT	-67430.00	-12.868321	20	PASS
	Ant2	5240	NV	NT	-72930.00	-13.917939	20	PASS
			LV	NT	-72930.00	-13.917939	20	PASS
			HV	NT	-73430.00	-14.013359	20	PASS
	Ant1	5745	NV	NT	-75920.00	-13.214970	20	PASS
			LV	NT	-75920.00	-13.214970	20	PASS
			HV	NT	-75920.00	-13.214970	20	PASS
	Ant2	5745	NV	NT	-79920.00	-13.911227	20	PASS
			LV	NT	-79920.00	-13.911227	20	PASS
			HV	NT	-79920.00	-13.911227	20	PASS
	Ant1	5785	NV	NT	-77420.00	-13.382887	20	PASS
			LV	NT	-77420.00	-13.382887	20	PASS
			HV	NT	-77420.00	-13.382887	20	PASS
	Ant2	5785	NV	NT	-74430.00	-12.866033	20	PASS
			LV	NT	-77420.00	-13.382887	20	PASS
			HV	NT	-78420.00	-13.555748	20	PASS
	Ant1	5825	NV	NT	-74430.00	-12.777682	20	PASS
			LV	NT	-76420.00	-13.119313	20	PASS
			HV	NT	-76920.00	-13.205150	20	PASS
	Ant2	5825	NV	NT	-74430.00	-12.777682	20	PASS
			LV	NT	-76920.00	-13.205150	20	PASS
			HV	NT	-78920.00	-13.548498	20	PASS
40M	Ant1	5190	NV	NT	-69930.00	-13.473988	20	PASS
			LV	NT	-69930.00	-13.473988	20	PASS
			HV	NT	-69930.00	-13.473988	20	PASS
	Ant2	5190	NV	NT	-71430.00	-13.763006	20	PASS
			LV	NT	-71430.00	-13.763006	20	PASS
			HV	NT	-71430.00	-13.763006	20	PASS
	Ant1	5230	NV	NT	-71430.00	-13.657744	20	PASS
			LV	NT	-70930.00	-13.562141	20	PASS
			HV	NT	-70930.00	-13.562141	20	PASS
	Ant2	5230	NV	NT	-71930.00	-13.753346	20	PASS
			LV	NT	-71930.00	-13.753346	20	PASS
			HV	NT	-71930.00	-13.753346	20	PASS
	Ant1	5755	NV	NT	-78420.00	-13.626412	20	PASS
			LV	NT	-77920.00	-13.539531	20	PASS
			HV	NT	-76920.00	-13.365769	20	PASS
	Ant2	5755	NV	NT	-74430.00	-12.933102	20	PASS
			LV	NT	-75920.00	-13.192007	20	PASS
			HV	NT	-76920.00	-13.365769	20	PASS
	Ant1	5795	NV	NT	-74930.00	-12.930112	20	PASS
			LV	NT	-74430.00	-12.843831	20	PASS
			HV	NT	-74930.00	-12.930112	20	PASS
	Ant2	5795	NV	NT	-72430.00	-12.498706	20	PASS

			LV	NT	-78420.00	-13.532355	20	PASS
			HV	NT	-80420.00	-13.877481	20	PASS
80M	Ant1	5210	NV	NT	-66930.00	-12.846449	20	PASS
			LV	NT	-66930.00	-12.846449	20	PASS
			HV	NT	-66930.00	-12.846449	20	PASS
	Ant2	5210	NV	NT	-69930.00	-13.422265	20	PASS
			LV	NT	-70430.00	-13.518234	20	PASS
			HV	NT	-70430.00	-13.518234	20	PASS
	Ant1	5775	NV	NT	-74430.00	-12.888312	20	PASS
			LV	NT	-74430.00	-12.888312	20	PASS
			HV	NT	-74930.00	-12.974892	20	PASS
	Ant2	5775	NV	NT	-78920.00	-13.665801	20	PASS
			LV	NT	-78920.00	-13.665801	20	PASS
			HV	NT	-79420.00	-13.752381	20	PASS

Temperature								
TestMode	Antenna	Freq(MHz)	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
20M	Ant1	5180	NV	0	-66930.00	-12.920849	20	PASS
			NV	10	-66930.00	-12.920849	20	PASS
			NV	20	-67430.00	-13.017375	20	PASS
			NV	30	-67430.00	-13.017375	20	PASS
			NV	40	-66930.00	-12.920849	20	PASS
			NV	45	-66930.00	-12.920849	20	PASS
	Ant2	5180	NV	0	-71930.00	-13.886100	20	PASS
			NV	10	-72430.00	-13.982625	20	PASS
			NV	20	-72430.00	-13.982625	20	PASS
			NV	30	-71930.00	-13.886100	20	PASS
			NV	40	-71430.00	-13.789575	20	PASS
			NV	45	-71930.00	-13.886100	20	PASS
	Ant1	5200	NV	0	-66930.00	-12.871154	20	PASS
			NV	10	-67430.00	-12.967308	20	PASS
			NV	20	-67430.00	-12.967308	20	PASS
			NV	30	-67430.00	-12.967308	20	PASS
			NV	40	-67430.00	-12.967308	20	PASS
			NV	45	-67430.00	-12.967308	20	PASS
	Ant2	5200	NV	0	-72430.00	-13.928846	20	PASS
			NV	10	-71930.00	-13.832692	20	PASS
			NV	20	-72930.00	-14.025000	20	PASS
			NV	30	-72430.00	-13.928846	20	PASS
			NV	40	-72430.00	-13.928846	20	PASS
			NV	45	-72430.00	-13.928846	20	PASS
	Ant1	5240	NV	0	-67430.00	-12.868321	20	PASS
			NV	10	-67930.00	-12.963740	20	PASS
			NV	20	-67930.00	-12.963740	20	PASS
			NV	30	-68430.00	-13.059160	20	PASS
			NV	40	-68430.00	-13.059160	20	PASS
			NV	45	-68930.00	-13.154580	20	PASS
	Ant2	5240	NV	0	-72930.00	-13.917939	20	PASS
			NV	10	-72930.00	-13.917939	20	PASS
			NV	20	-72930.00	-13.917939	20	PASS
			NV	30	-72430.00	-13.822519	20	PASS
			NV	40	-72930.00	-13.917939	20	PASS
			NV	45	-72930.00	-13.917939	20	PASS
	Ant1	5745	NV	0	-76420.00	-13.302002	20	PASS
			NV	10	-76420.00	-13.302002	20	PASS
			NV	20	-76420.00	-13.302002	20	PASS
			NV	30	-76420.00	-13.302002	20	PASS
			NV	40	-76420.00	-13.302002	20	PASS
			NV	45	-76920.00	-13.389034	20	PASS
	Ant2	5745	NV	0	-79420.00	-13.824195	20	PASS
			NV	10	-79920.00	-13.911227	20	PASS
			NV	20	-79920.00	-13.911227	20	PASS
			NV	30	-80420.00	-13.998259	20	PASS

			NV	40	-79920.00	-13.911227	20	PASS
			NV	45	-79920.00	-13.911227	20	PASS
	Ant1	5785	NV	0	-77420.00	-13.382887	20	PASS
			NV	10	-77420.00	-13.382887	20	PASS
			NV	20	-77420.00	-13.382887	20	PASS
			NV	30	-77420.00	-13.382887	20	PASS
			NV	40	-77920.00	-13.469317	20	PASS
			NV	45	-77920.00	-13.469317	20	PASS
	Ant2	5785	NV	0	-78920.00	-13.642178	20	PASS
			NV	10	-79420.00	-13.728608	20	PASS
			NV	20	-79420.00	-13.728608	20	PASS
			NV	30	-79920.00	-13.815039	20	PASS
			NV	40	-79420.00	-13.728608	20	PASS
			NV	45	-79920.00	-13.815039	20	PASS
	Ant1	5825	NV	0	-77420.00	-13.290987	20	PASS
			NV	10	-77920.00	-13.376824	20	PASS
			NV	20	-78420.00	-13.462661	20	PASS
			NV	30	-78420.00	-13.462661	20	PASS
			NV	40	-78420.00	-13.462661	20	PASS
			NV	45	-78920.00	-13.548498	20	PASS
	Ant2	5825	NV	0	-78920.00	-13.548498	20	PASS
			NV	10	-79420.00	-13.634335	20	PASS
			NV	20	-79420.00	-13.634335	20	PASS
			NV	30	-79920.00	-13.720172	20	PASS
			NV	40	-80420.00	-13.806009	20	PASS
			NV	45	-79920.00	-13.720172	20	PASS
40M	Ant1	5190	NV	0	-69930.00	-13.473988	20	PASS
			NV	10	-70430.00	-13.570328	20	PASS
			NV	20	-70430.00	-13.570328	20	PASS
			NV	30	-70430.00	-13.570328	20	PASS
			NV	40	-70430.00	-13.570328	20	PASS
			NV	45	-70430.00	-13.570328	20	PASS
	Ant2	5190	NV	0	-71430.00	-13.763006	20	PASS
			NV	10	-71930.00	-13.859345	20	PASS
			NV	20	-71430.00	-13.763006	20	PASS
			NV	30	-71930.00	-13.859345	20	PASS
			NV	40	-71430.00	-13.763006	20	PASS
			NV	45	-71430.00	-13.763006	20	PASS
	Ant1	5230	NV	0	-71430.00	-13.657744	20	PASS
			NV	10	-70930.00	-13.562141	20	PASS
			NV	20	-71430.00	-13.657744	20	PASS
			NV	30	-70930.00	-13.562141	20	PASS
			NV	40	-71430.00	-13.657744	20	PASS
			NV	45	-71430.00	-13.657744	20	PASS
	Ant2	5230	NV	0	-72430.00	-13.848948	20	PASS
			NV	10	-72430.00	-13.848948	20	PASS
			NV	20	-72930.00	-13.944551	20	PASS
			NV	30	-71930.00	-13.753346	20	PASS
			NV	40	-72430.00	-13.848948	20	PASS
			NV	45	-72430.00	-13.848948	20	PASS
	Ant1	5755	NV	0	-76420.00	-13.278888	20	PASS
			NV	10	-75420.00	-13.105126	20	PASS
			NV	20	-75420.00	-13.105126	20	PASS
			NV	30	-74930.00	-13.019983	20	PASS
			NV	40	-74930.00	-13.019983	20	PASS
			NV	45	-74430.00	-12.933102	20	PASS
	Ant2	5755	NV	0	-77920.00	-13.539531	20	PASS
			NV	10	-77920.00	-13.539531	20	PASS
			NV	20	-78920.00	-13.713293	20	PASS
			NV	30	-78420.00	-13.626412	20	PASS
			NV	40	-78420.00	-13.626412	20	PASS
			NV	45	-78920.00	-13.713293	20	PASS
	Ant1	5795	NV	0	-74430.00	-12.843831	20	PASS
			NV	10	-74930.00	-12.930112	20	PASS
			NV	20	-74430.00	-12.843831	20	PASS

			NV	30	-74930.00	-12.930112	20	PASS
			NV	40	-74930.00	-12.930112	20	PASS
			NV	45	-74930.00	-12.930112	20	PASS
	Ant2	5795	NV	0	-82420.00	-14.222606	20	PASS
			NV	10	-83420.00	-14.395168	20	PASS
			NV	20	-84420.00	-14.567731	20	PASS
			NV	30	-84920.00	-14.654012	20	PASS
			NV	40	-85410.00	-14.738568	20	PASS
			NV	45	-85910.00	-14.824849	20	PASS
80M	Ant1	5210	NV	0	-66930.00	-12.846449	20	PASS
			NV	10	-66930.00	-12.846449	20	PASS
			NV	20	-66930.00	-12.846449	20	PASS
			NV	30	-67430.00	-12.942418	20	PASS
			NV	40	-66930.00	-12.846449	20	PASS
			NV	45	-67430.00	-12.942418	20	PASS
	Ant2	5210	NV	0	-70930.00	-13.614203	20	PASS
			NV	10	-70930.00	-13.614203	20	PASS
			NV	20	-71430.00	-13.710173	20	PASS
			NV	30	-70430.00	-13.518234	20	PASS
			NV	40	-70930.00	-13.614203	20	PASS
			NV	45	-71430.00	-13.710173	20	PASS
	Ant1	5775	NV	0	-74430.00	-12.888312	20	PASS
			NV	10	-74930.00	-12.974892	20	PASS
			NV	20	-74930.00	-12.974892	20	PASS
			NV	30	-74430.00	-12.888312	20	PASS
			NV	40	-74930.00	-12.974892	20	PASS
			NV	45	-74430.00	-12.888312	20	PASS
	Ant2	5775	NV	0	-78920.00	-13.665801	20	PASS
			NV	10	-79420.00	-13.752381	20	PASS
			NV	20	-79420.00	-13.752381	20	PASS
			NV	30	-79420.00	-13.752381	20	PASS
			NV	40	-79420.00	-13.752381	20	PASS
			NV	45	-79420.00	-13.752381	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.