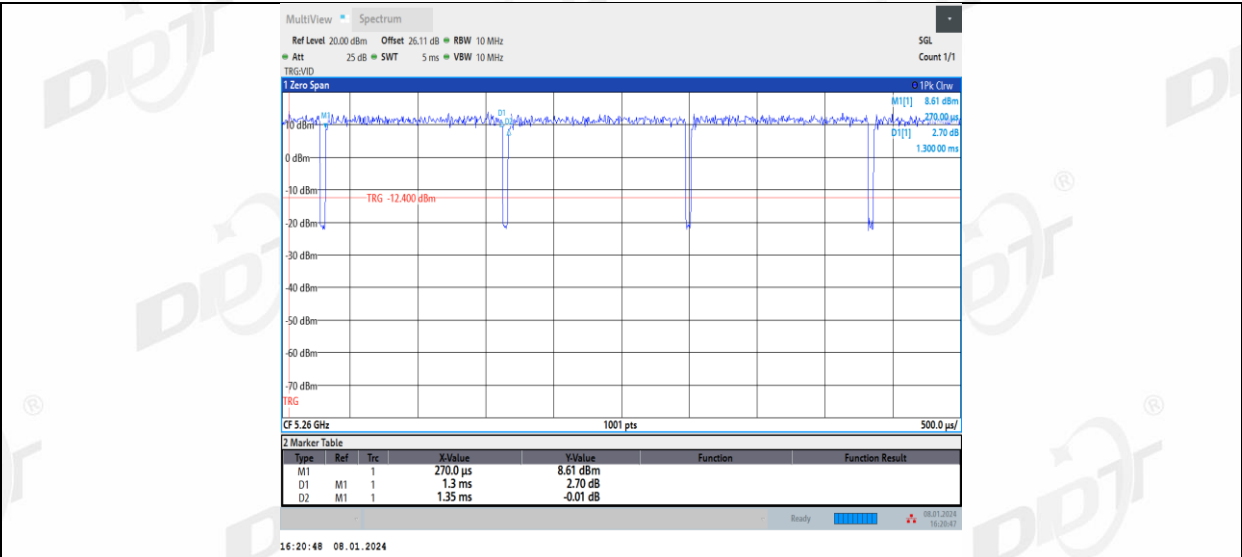
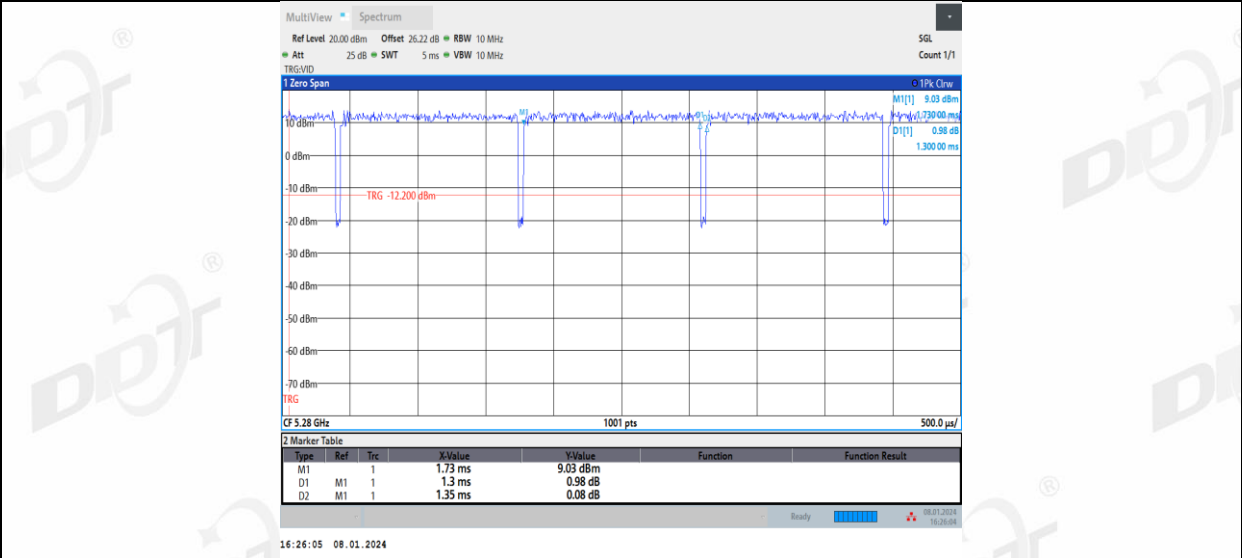
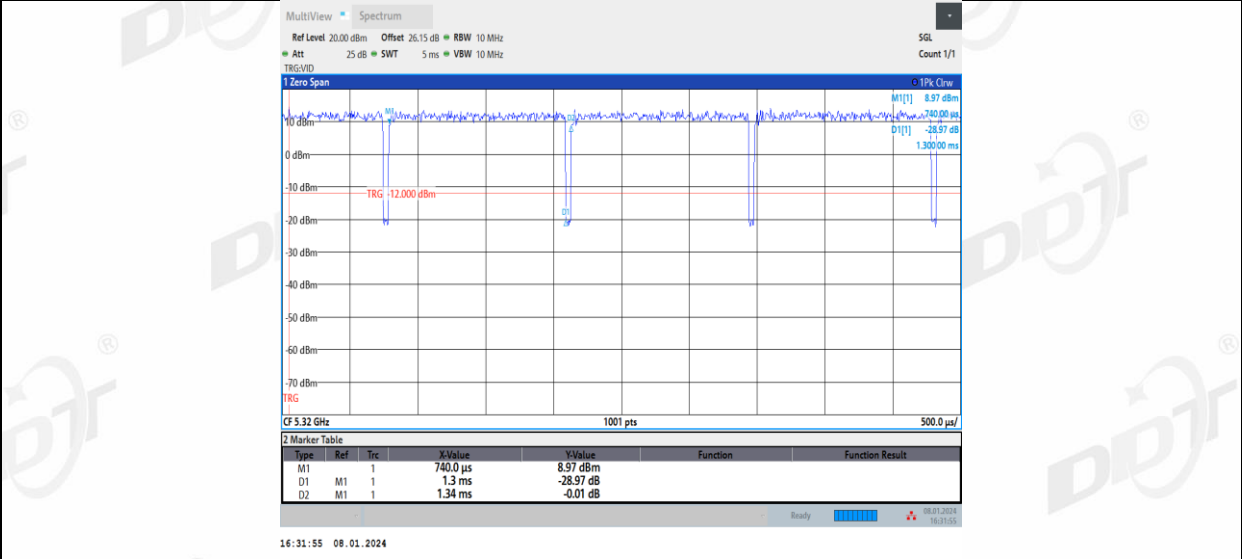




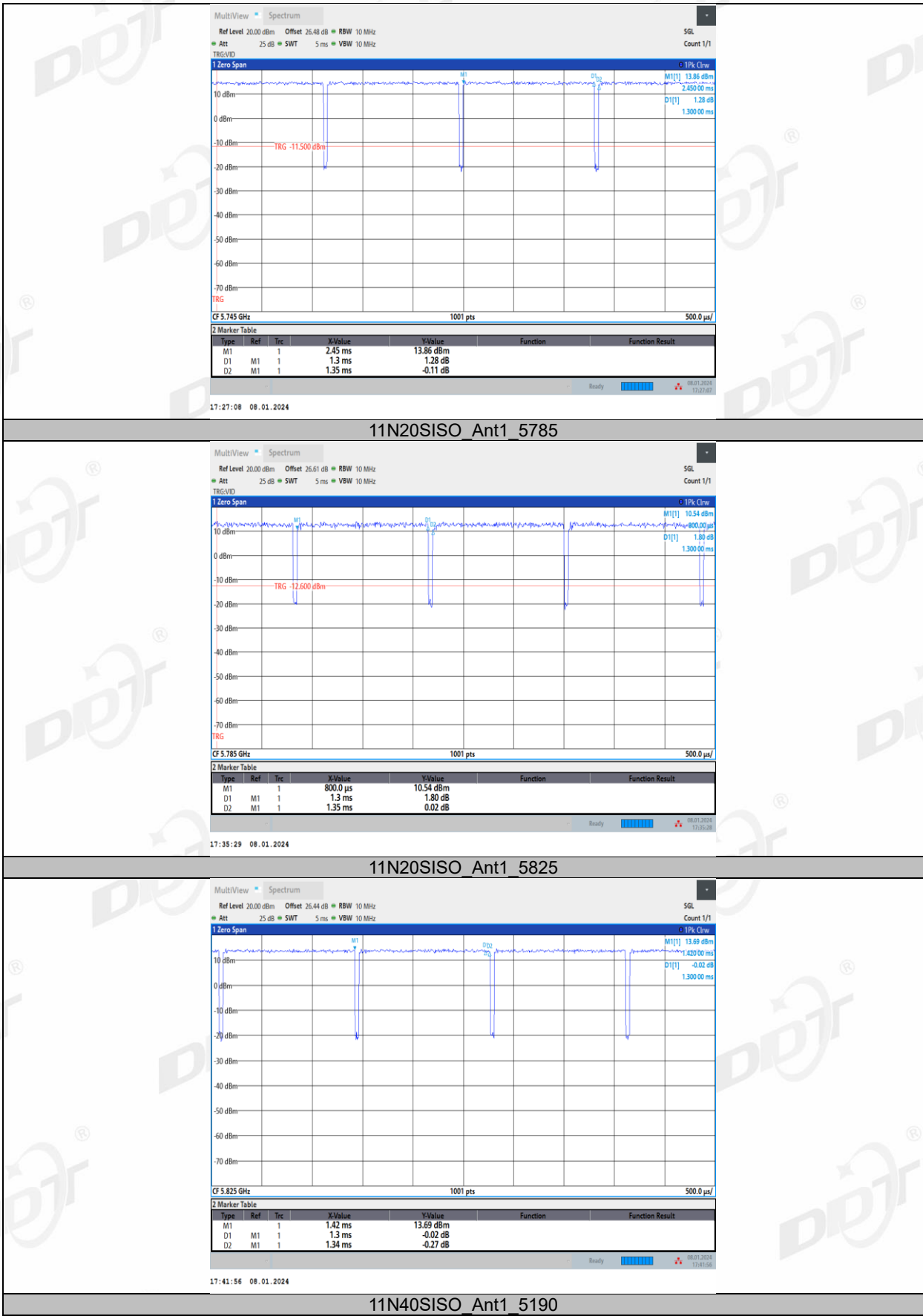
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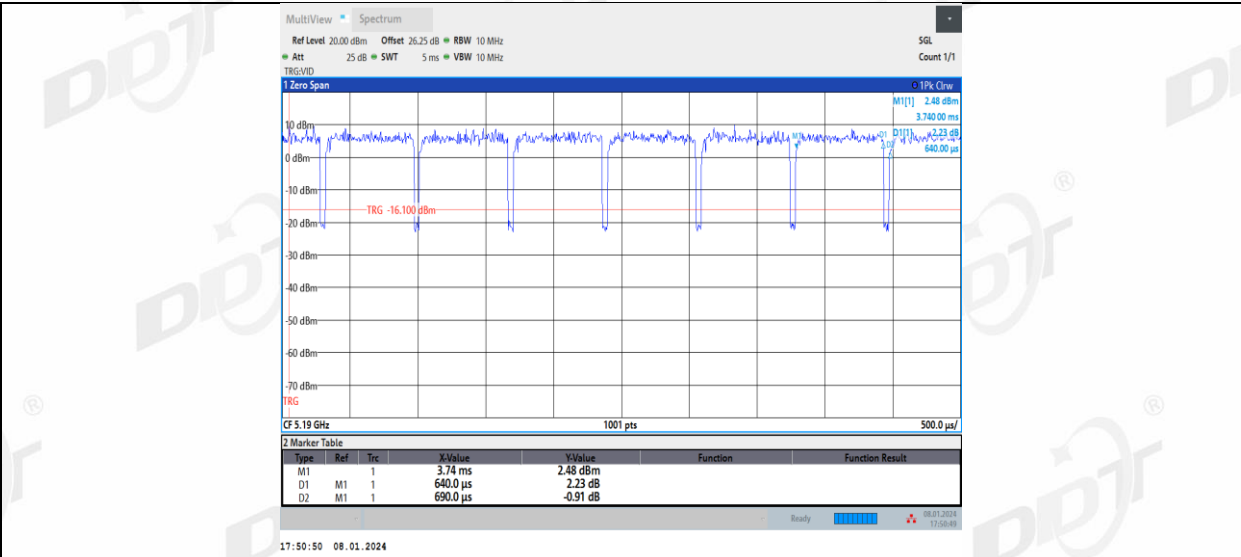


11N20SISO_Ant1_5320

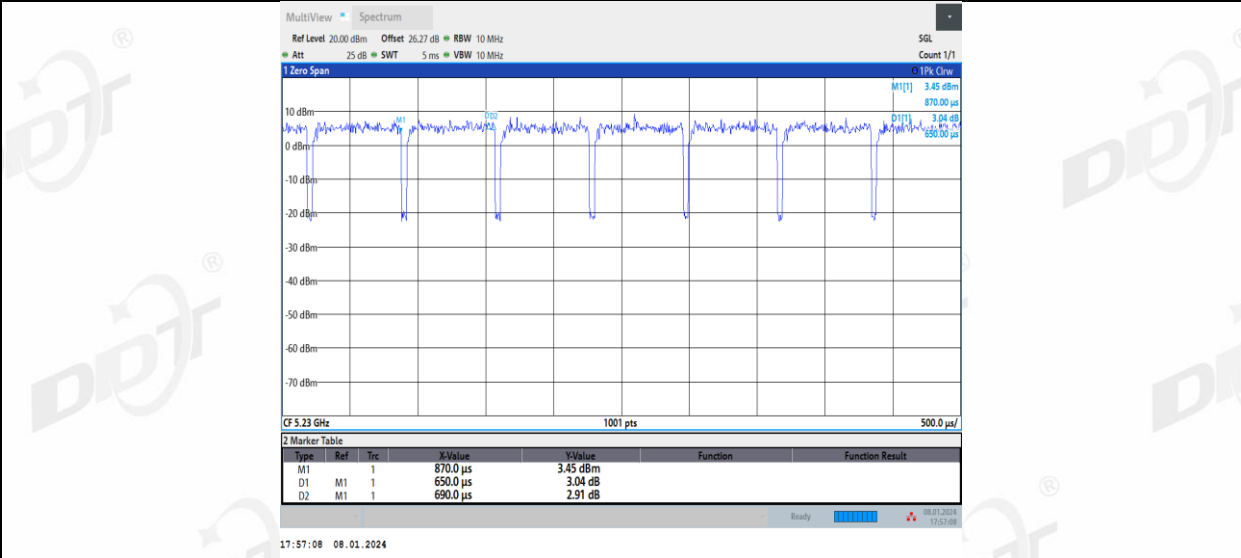


11N20SISO_Ant1_5745





11N40SISO_Ant1_5230

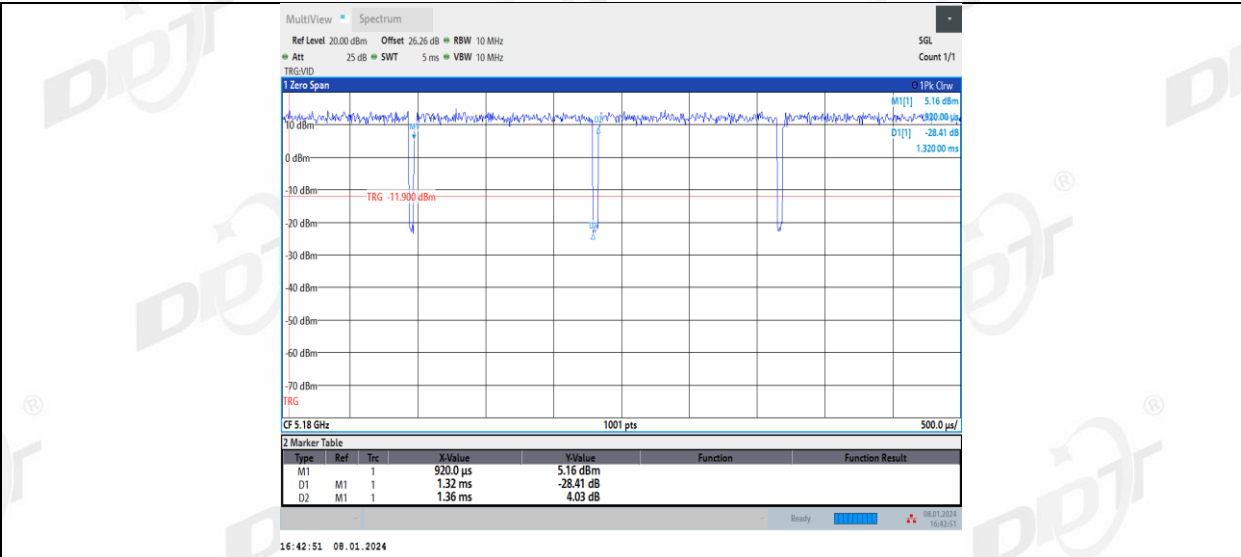


11N40SISO_Ant1_5270

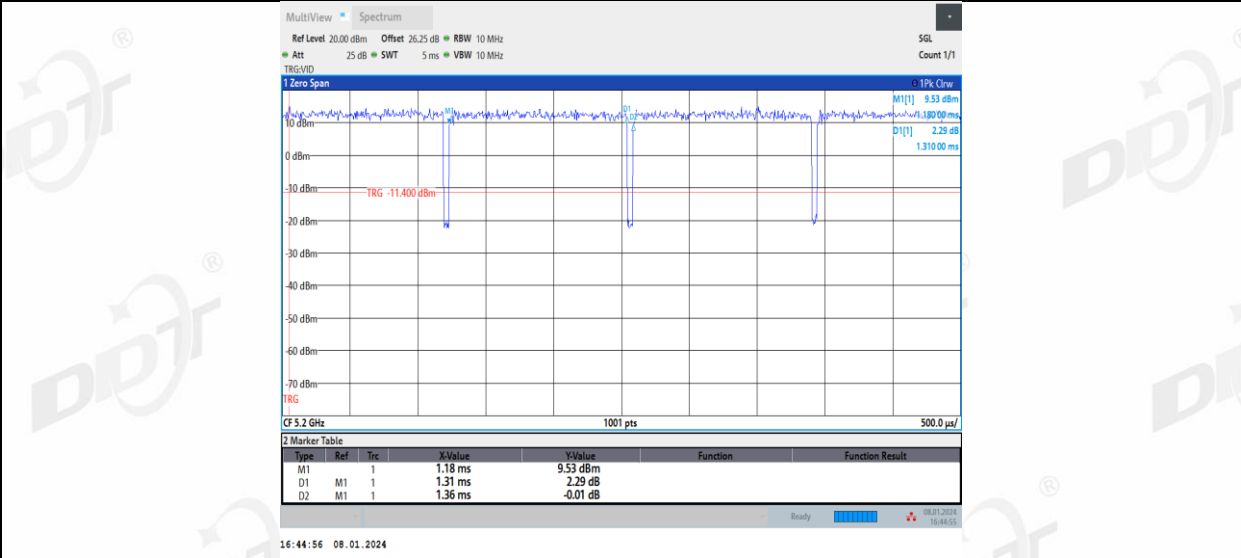


11N40SISO_Ant1_5310

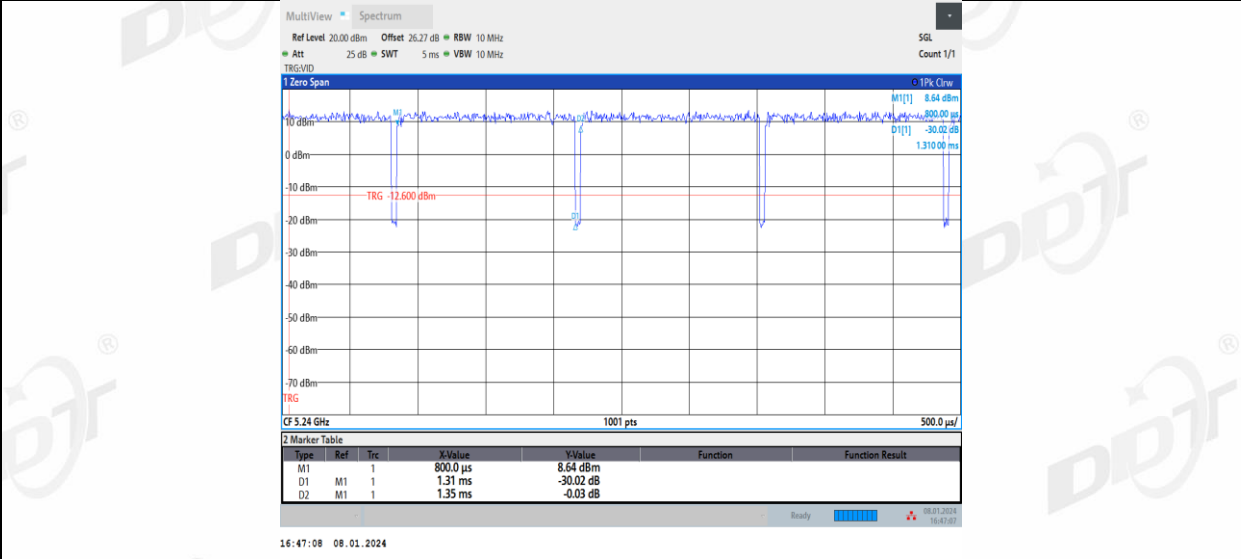




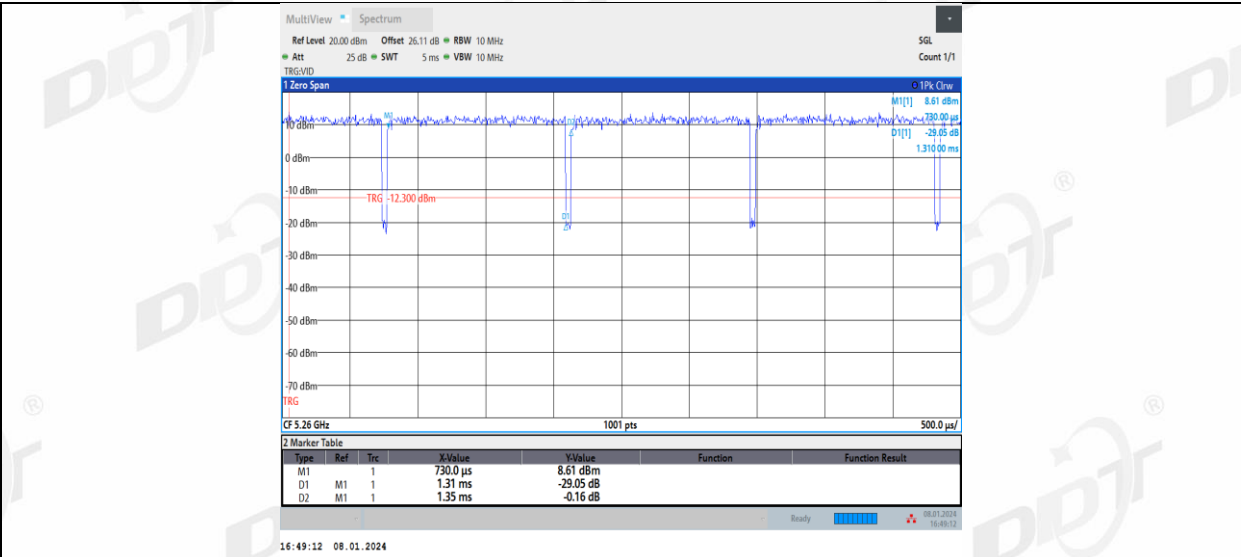
11AC20SISO_Ant1_5200



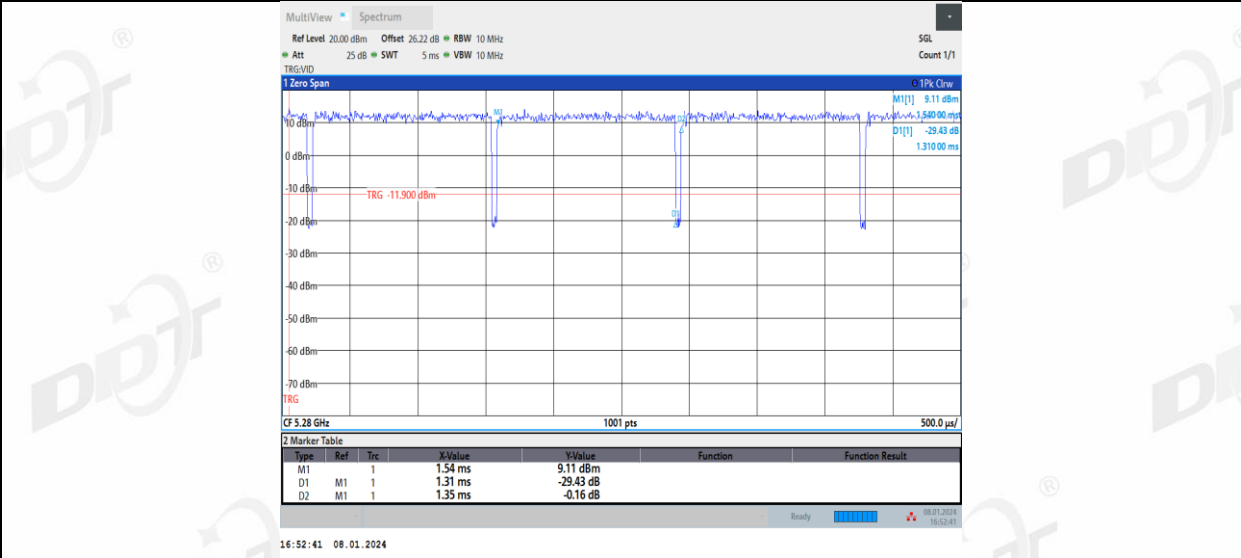
11AC20SISO_Ant1_5240



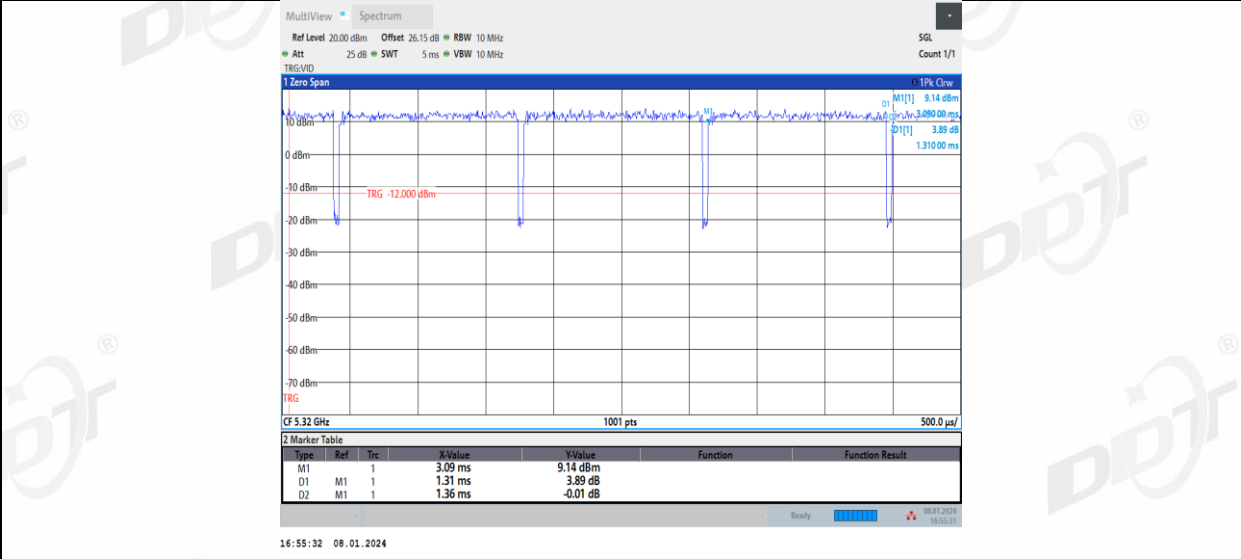
11AC20SISO_Ant1_5260



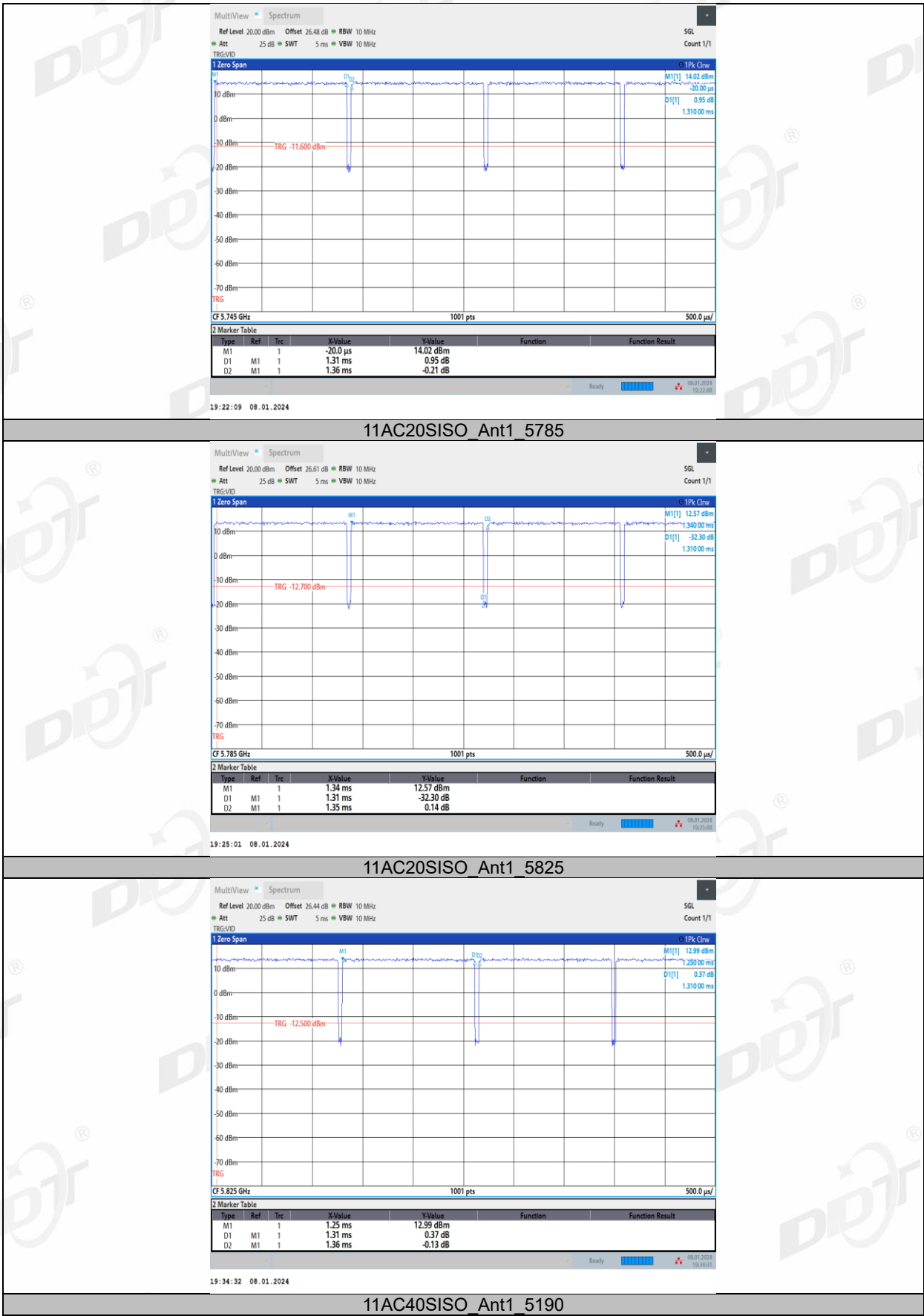
11AC20SISO_Ant1_5280

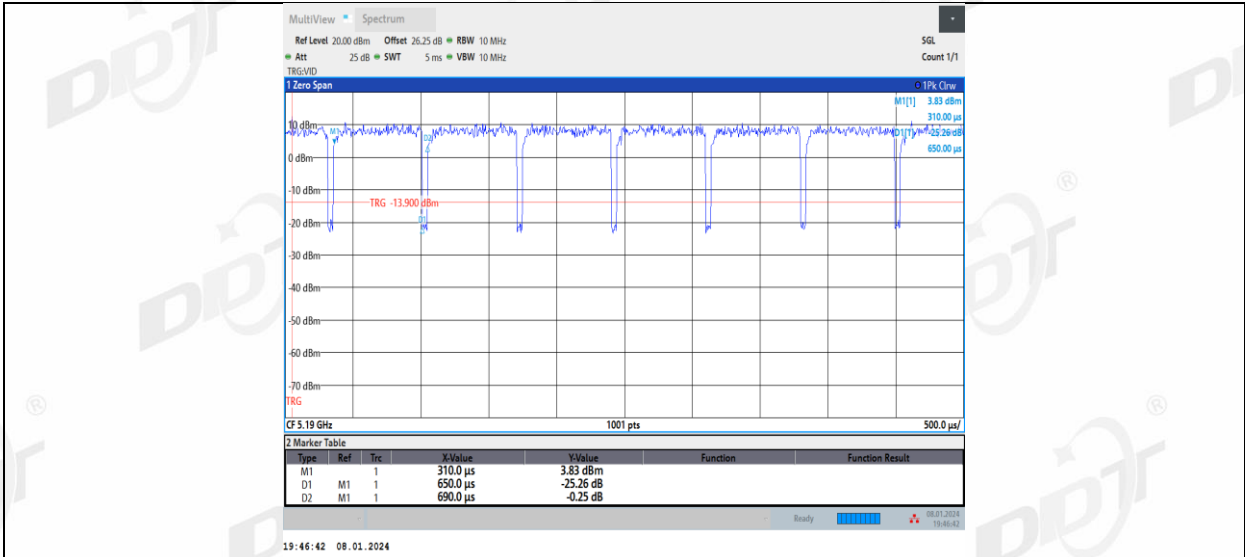


11AC20SISO_Ant1_5320

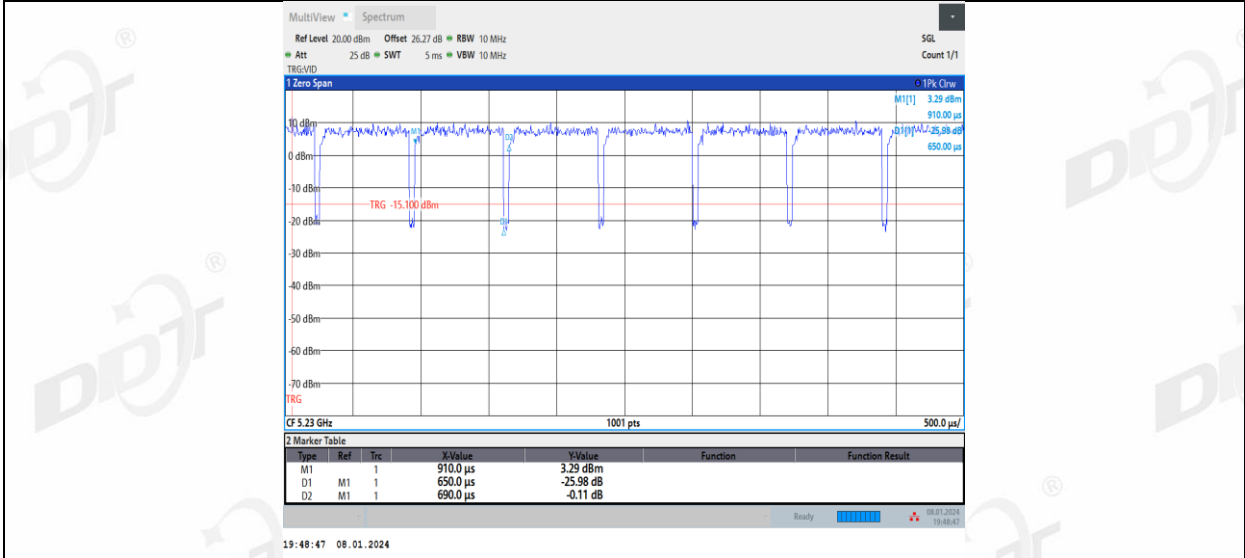


11AC20SISO_Ant1_5745

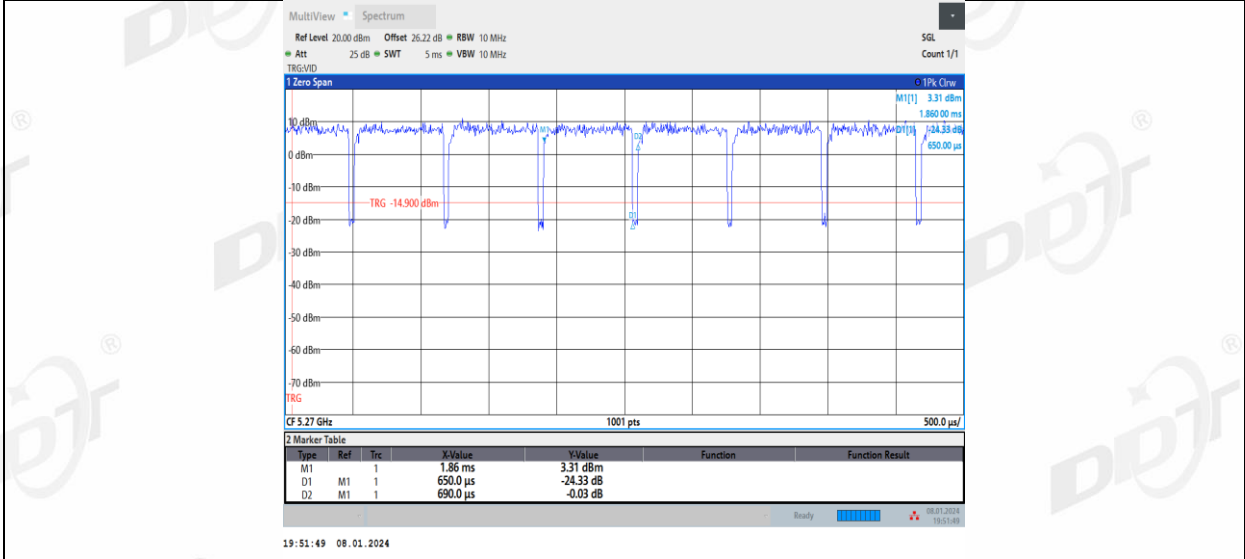




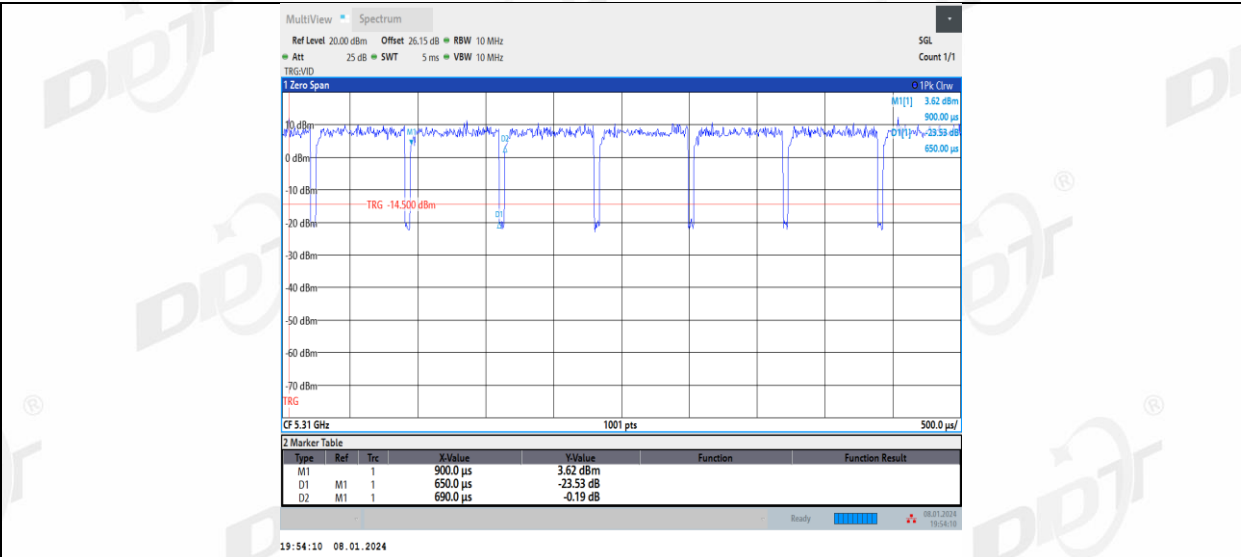
11AC40SISO_Ant1_5230



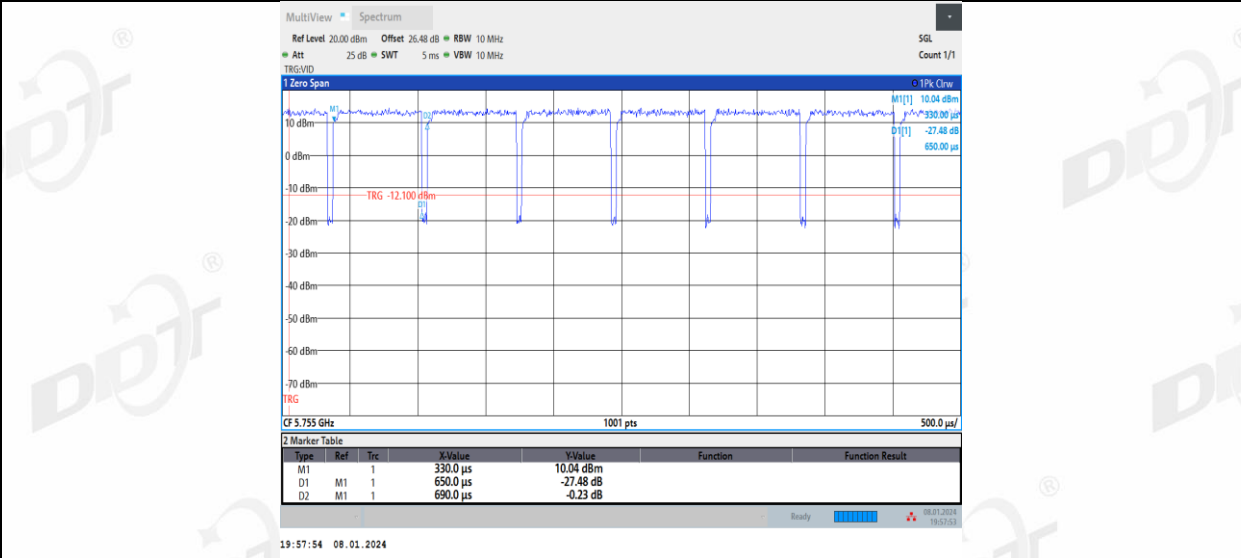
11AC40SISO_Ant1_5270



11AC40SISO_Ant1_5310



11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795

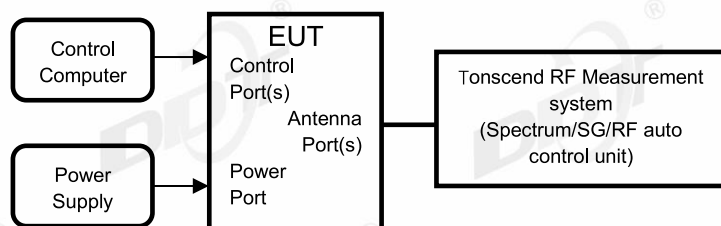


11AC80SISO_Ant1_5210



7. Maximum Output Power

7.1. Block diagram of test setup



7.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Maximum Output Power	outdoor access point: 1 W(30 dBm) indoor access point: 1 W(30 dBm) fixed point-to-point access points1 W(30 dBm) client devices: 250 mW (24 dBm)	5150-5250
	250 mW (24 dBm) or $11 + 10 \log_{10} B$	5250-5350
	250 mW (24 dBm) or $11 + 10 \log_{10} B$	5470 - 5725
	1 Watt (30 dBm)	5725-5850
Note: B=26 bandwidth		

7.3. Test procedure

Connect each EUT's antenna output to power sensor by RF cable and attenuator
Measure the output power of each antenna port by power sensor.

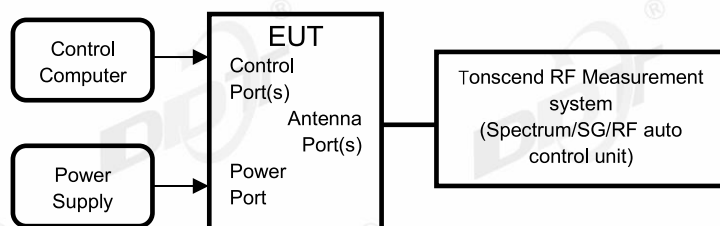
7.4. Test result channel power

Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 4#
Ambient Condition:	25.2℃,45.6%RH	Test Date:	2024.01.08
Test Power Supply:	DC 12V	EUT:	Multimedia
Sample Number:	S23121811-002	Model No.:	Kansas City 150

Test Mode	Antenna	Frequency [MHz]	Duty Cycle [%]	DC Factor [dB]	Result [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	96.53	0.15	9.65	≤23.98	PASS
		5200	96.53	0.15	9.85	≤23.98	PASS
		5240	96.53	0.15	8.78	≤23.98	PASS
		5260	96.53	0.15	8.87	≤23.98	PASS
		5280	96.53	0.15	9.43	≤23.98	PASS
		5320	97.20	0.12	9.39	≤23.98	PASS
		5745	97.20	0.12	12.80	≤30.00	PASS
		5785	96.53	0.15	11.74	≤30.00	PASS
11N20SISO	Ant1	5825	97.20	0.12	12.13	≤30.00	PASS
		5180	97.01	0.13	8.66	≤23.98	PASS
		5200	97.01	0.13	8.65	≤23.98	PASS
		5240	96.30	0.16	7.79	≤23.98	PASS
		5260	96.30	0.16	7.82	≤23.98	PASS
		5280	96.30	0.16	8.35	≤23.98	PASS
		5320	97.01	0.13	8.25	≤23.98	PASS
		5745	96.30	0.16	12.64	≤30.00	PASS
11N40SISO	Ant1	5785	96.30	0.16	11.72	≤30.00	PASS
		5825	97.01	0.13	12.12	≤30.00	PASS
		5190	92.75	0.33	4.67	≤23.98	PASS
		5230	94.20	0.26	3.98	≤23.98	PASS
		5270	94.20	0.26	4.01	≤23.98	PASS
		5310	94.20	0.26	4.37	≤23.98	PASS
11AC20SISO	Ant1	5755	94.20	0.26	13.16	≤30.00	PASS
		5795	92.75	0.33	12.14	≤30.00	PASS
		5180	97.06	0.13	8.67	≤23.98	PASS
		5200	96.32	0.16	8.77	≤23.98	PASS
		5240	97.04	0.13	7.88	≤23.98	PASS
		5260	97.04	0.13	7.81	≤23.98	PASS
		5280	97.04	0.13	8.28	≤23.98	PASS
		5320	96.32	0.16	8.37	≤23.98	PASS
11AC40SISO	Ant1	5745	96.32	0.16	12.69	≤30.00	PASS
		5785	97.04	0.13	11.67	≤30.00	PASS
		5825	96.32	0.16	12.15	≤30.00	PASS
		5190	94.20	0.26	6.88	≤23.98	PASS
		5230	94.20	0.26	6.33	≤23.98	PASS
		5270	94.20	0.26	6.19	≤23.98	PASS
11AC80SISO	Ant1	5310	94.20	0.26	6.52	≤23.98	PASS
		5755	94.20	0.26	13.10	≤30.00	PASS
		5795	92.86	0.32	11.94	≤30.00	PASS
		5210	86.49	0.63	6.76	≤23.98	PASS
	Ant1	5290	86.49	0.63	6.70	≤23.98	PASS
		5775	86.49	0.63	12.83	≤30.00	PASS

8. Power Spectral Density

8.1. Block diagram of test setup



8.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	Other than Mobile and portable:17 dBm/MHz Mobile and portable client devices:11 dBm/MHz	5150-5250
	11 dBm/MHz	5250-5350
	11 dBm/MHz	5470 - 5725
	30 dBm/500 kHz	5725-5850

8.3. Test procedure

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW.

Connect the UUT to the spectrum analyser and use the following settings:

5150 MHz~5250 MHz, 5250 MHz~5350 MHz, 5470 MHz~5725 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	1MHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

5725 MHz-5850 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	$\geq 3 \times \text{RBW}$
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

8.4. Test result

Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 4#
Ambient Condition:	25.2℃,45.6%RH	Test Date:	2024.01.08
Test Power Supply:	DC 12V	EUT:	Multimedia
Sample Number:	S23121811-002	Model No.:	Kansas City 150

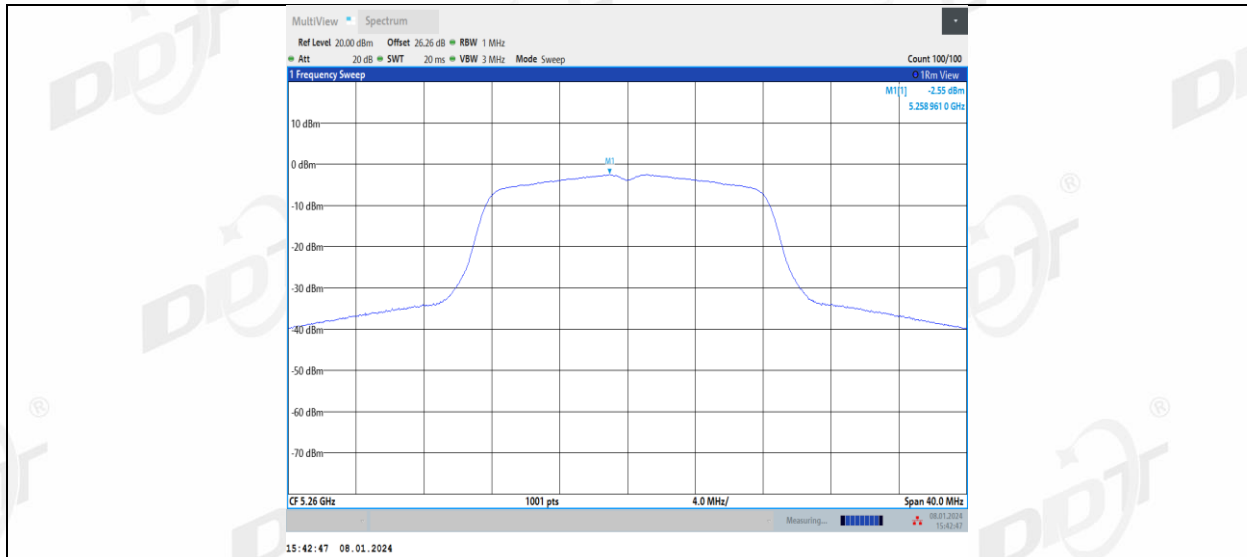
Test Mode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	-1.81	≤11.00	PASS
		5200	-1.49	≤11.00	PASS
		5240	-2.56	≤11.00	PASS
		5260	-2.55	≤11.00	PASS
		5280	-1.91	≤11.00	PASS
		5320	-1.96	≤11.00	PASS
		5745	-1.37	≤30.00	PASS
		5785	-2.52	≤30.00	PASS
11N20SISO	Ant1	5825	-2.33	≤30.00	PASS
		5180	-3.03	≤11.00	PASS
		5200	-2.89	≤11.00	PASS
		5240	-3.76	≤11.00	PASS
		5260	-3.73	≤11.00	PASS
		5280	-3.21	≤11.00	PASS
		5320	-3.24	≤11.00	PASS
		5745	-1.78	≤30.00	PASS
11N40SISO	Ant1	5785	-2.88	≤30.00	PASS
		5825	-2.67	≤30.00	PASS
		5190	-9.88	≤11.00	PASS
		5230	-10.58	≤11.00	PASS
		5270	-10.49	≤11.00	PASS
11AC20SISO	Ant1	5310	-10.17	≤11.00	PASS
		5755	-4.47	≤30.00	PASS
		5795	-5.51	≤30.00	PASS
		5180	-3.04	≤11.00	PASS
		5200	-2.70	≤11.00	PASS
		5240	-3.67	≤11.00	PASS
		5260	-3.79	≤11.00	PASS
		5280	-3.31	≤11.00	PASS
11AC40SISO	Ant1	5320	-3.15	≤11.00	PASS
		5745	-1.81	≤30.00	PASS
		5785	-2.86	≤30.00	PASS
		5825	-2.69	≤30.00	PASS
		5190	-7.73	≤11.00	PASS
		5230	-8.38	≤11.00	PASS
11AC80SISO	Ant1	5270	-8.40	≤11.00	PASS
		5310	-7.97	≤11.00	PASS
		5755	-4.45	≤30.00	PASS
		5795	-5.71	≤30.00	PASS
	Ant1	5210	-11.24	≤11.00	PASS
		5290	-11.38	≤11.00	PASS
		5775	-8.28	≤30.00	PASS

Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725~5.85 GHz.

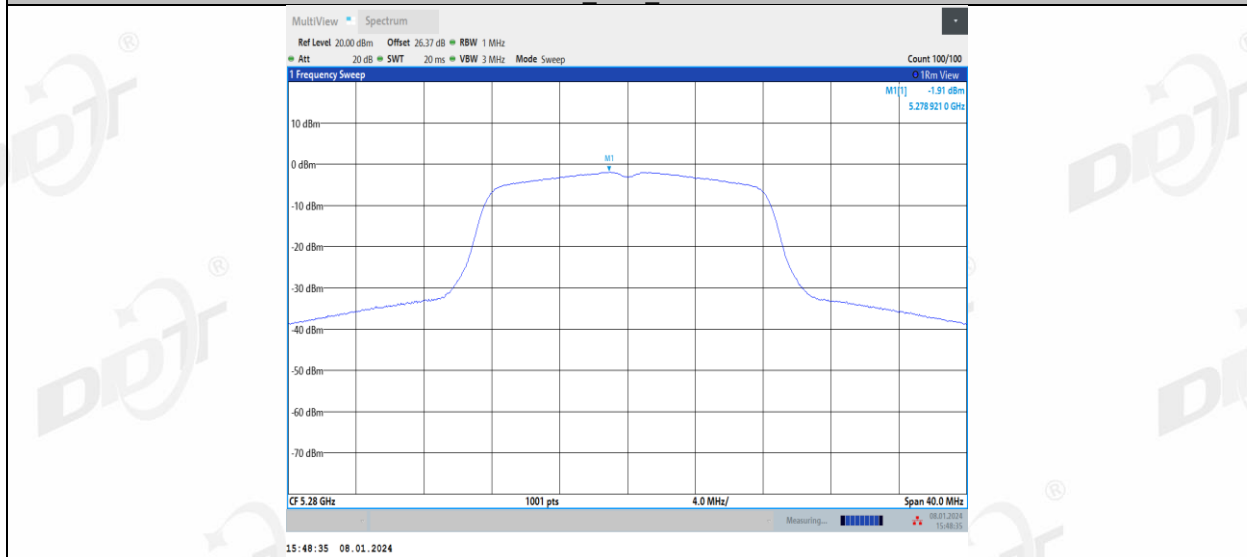
2.The Duty Cycle Factor is compensated in the graph.

8.5. Test graphs

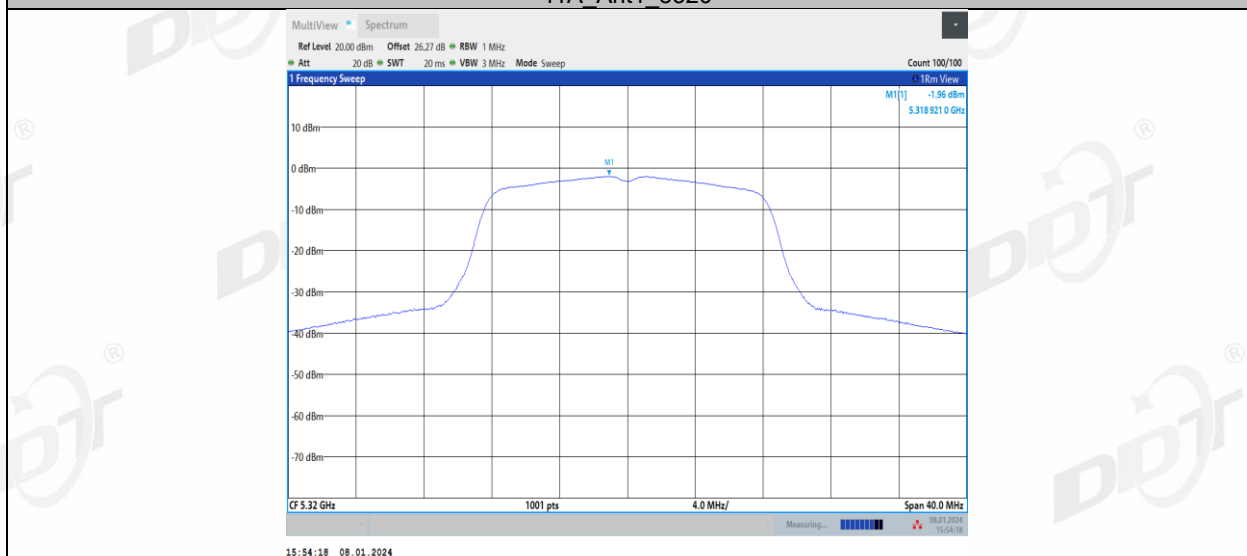




11A_Ant1_5280



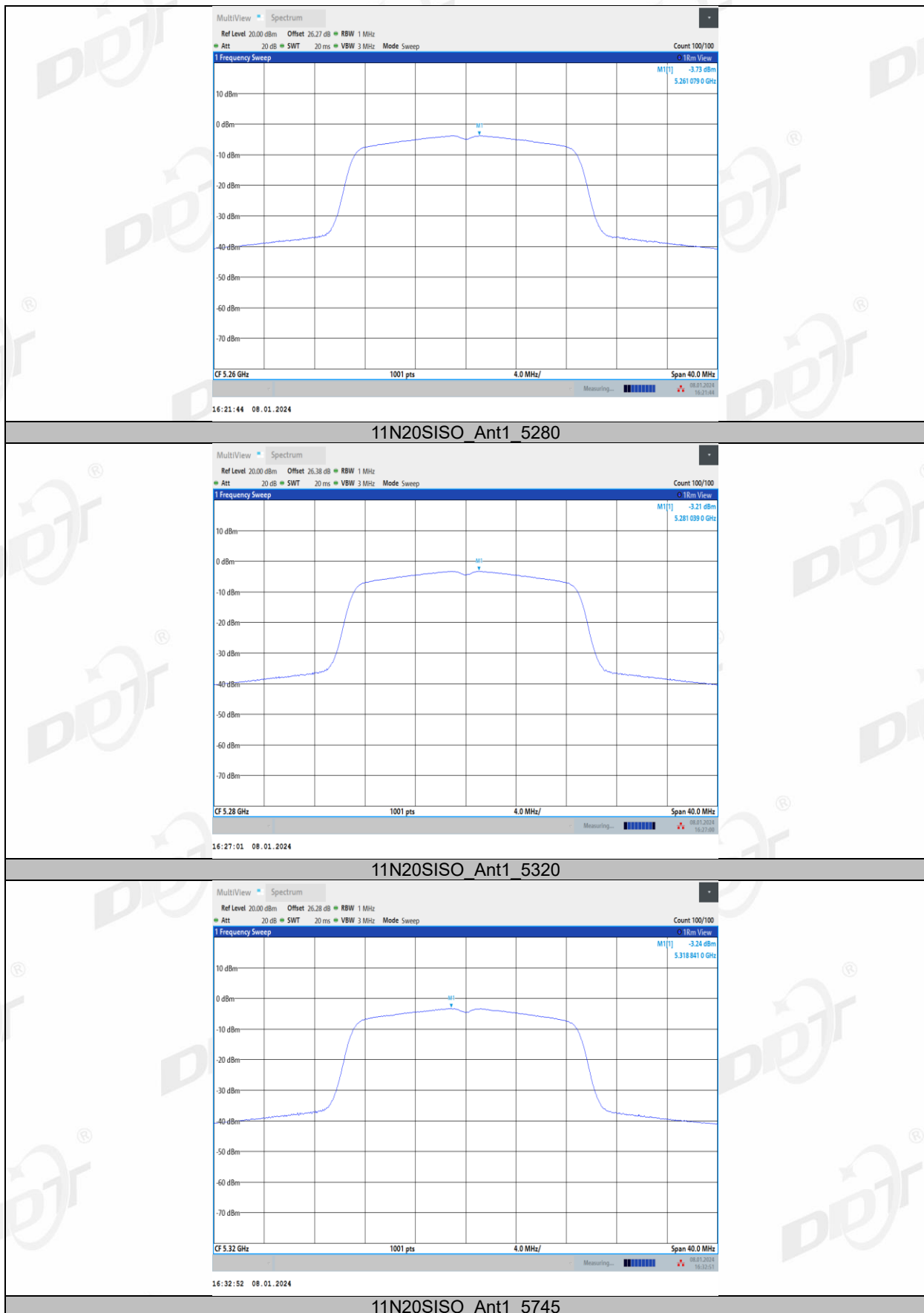
11A_Ant1_5320

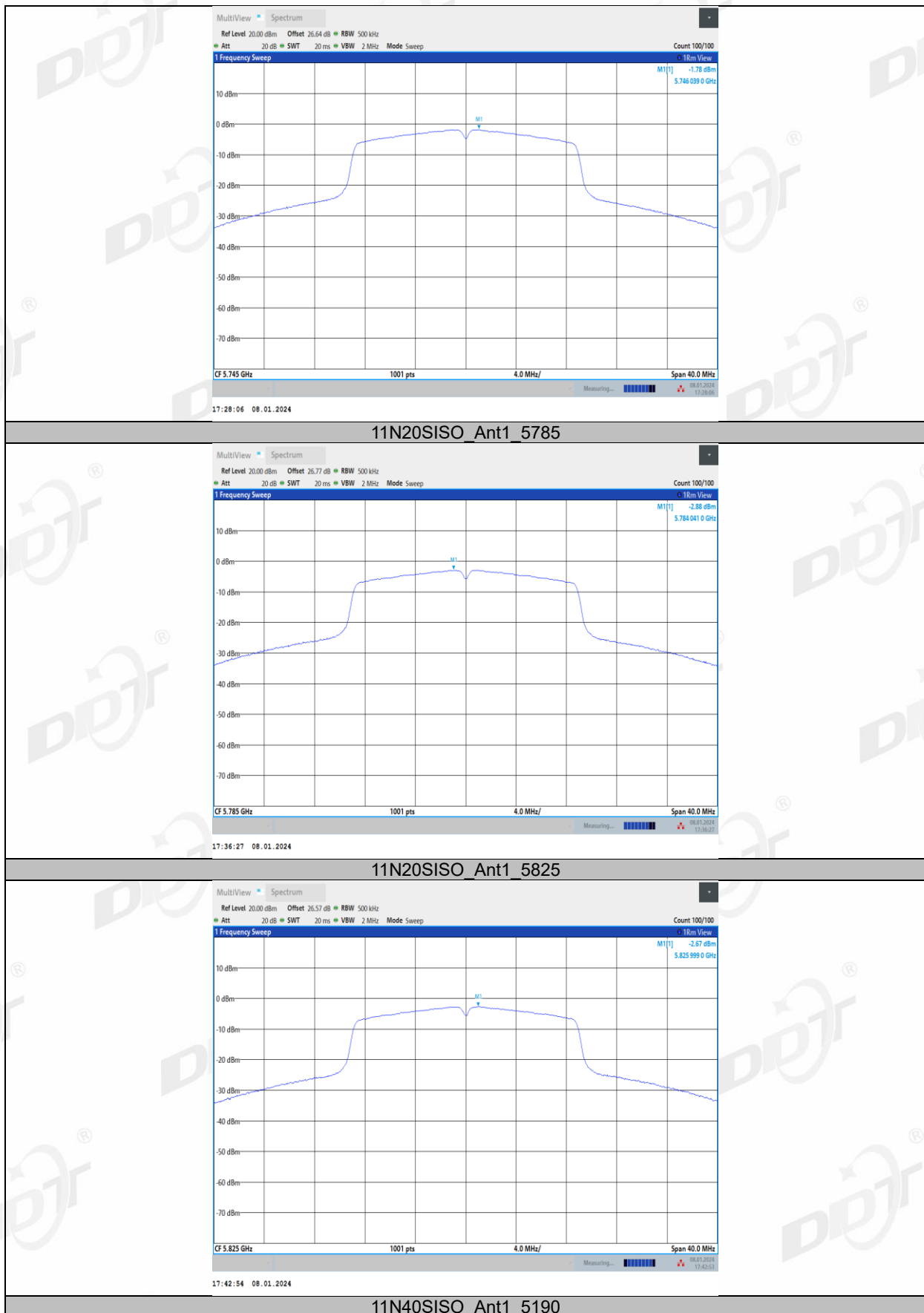


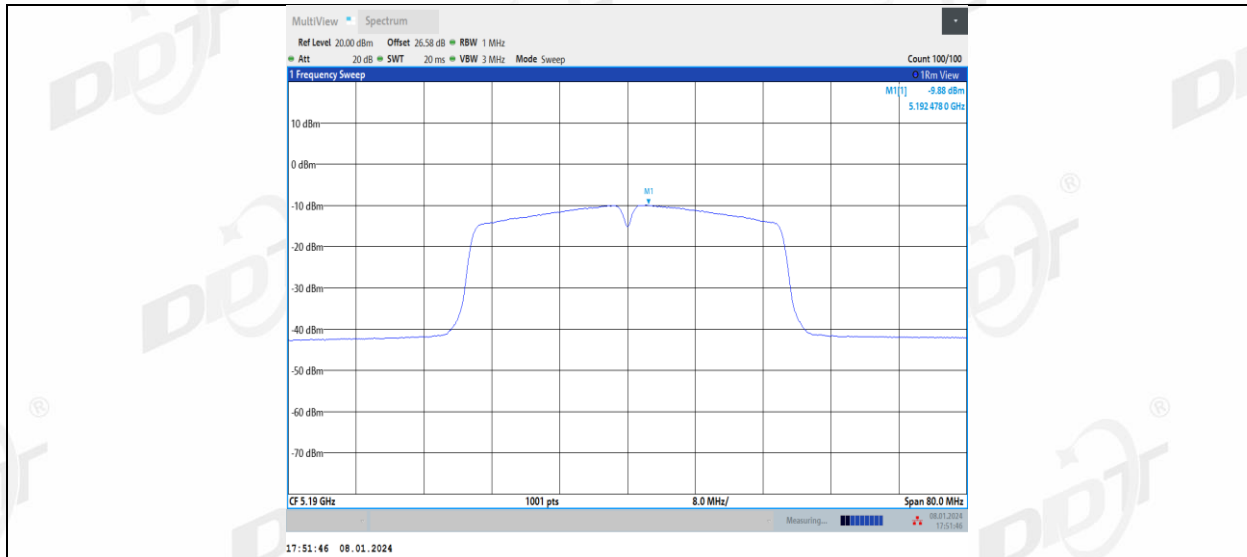
11A_Ant1_5745



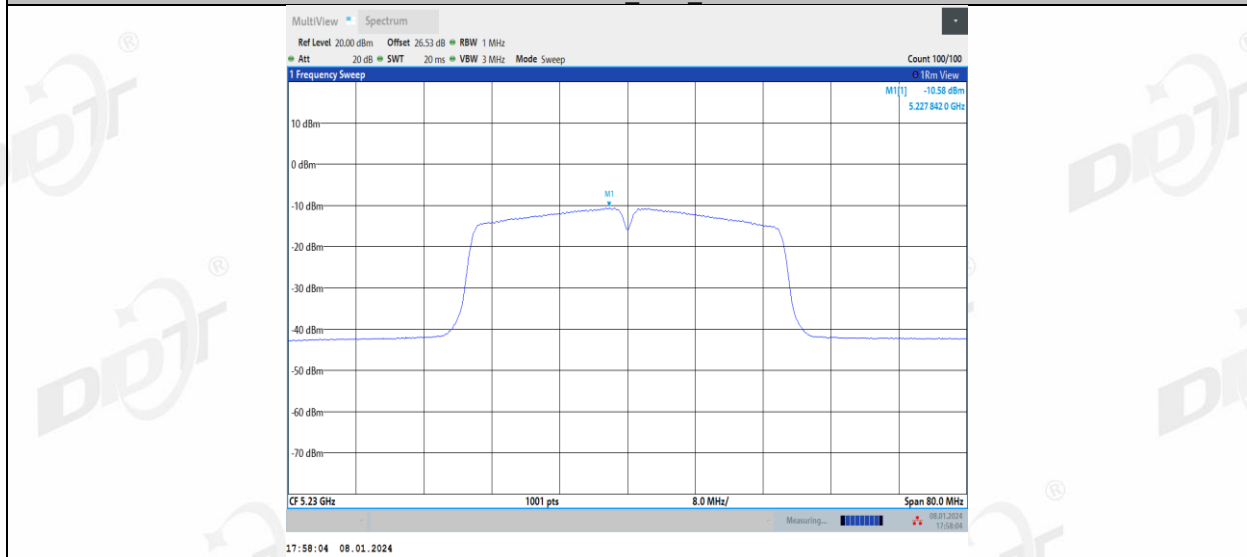




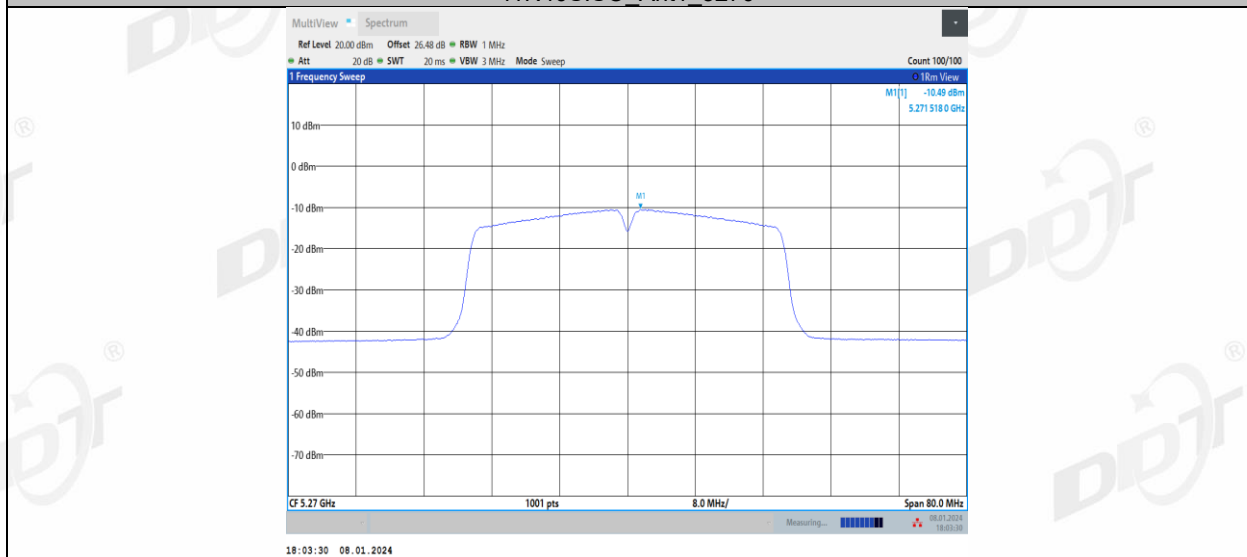




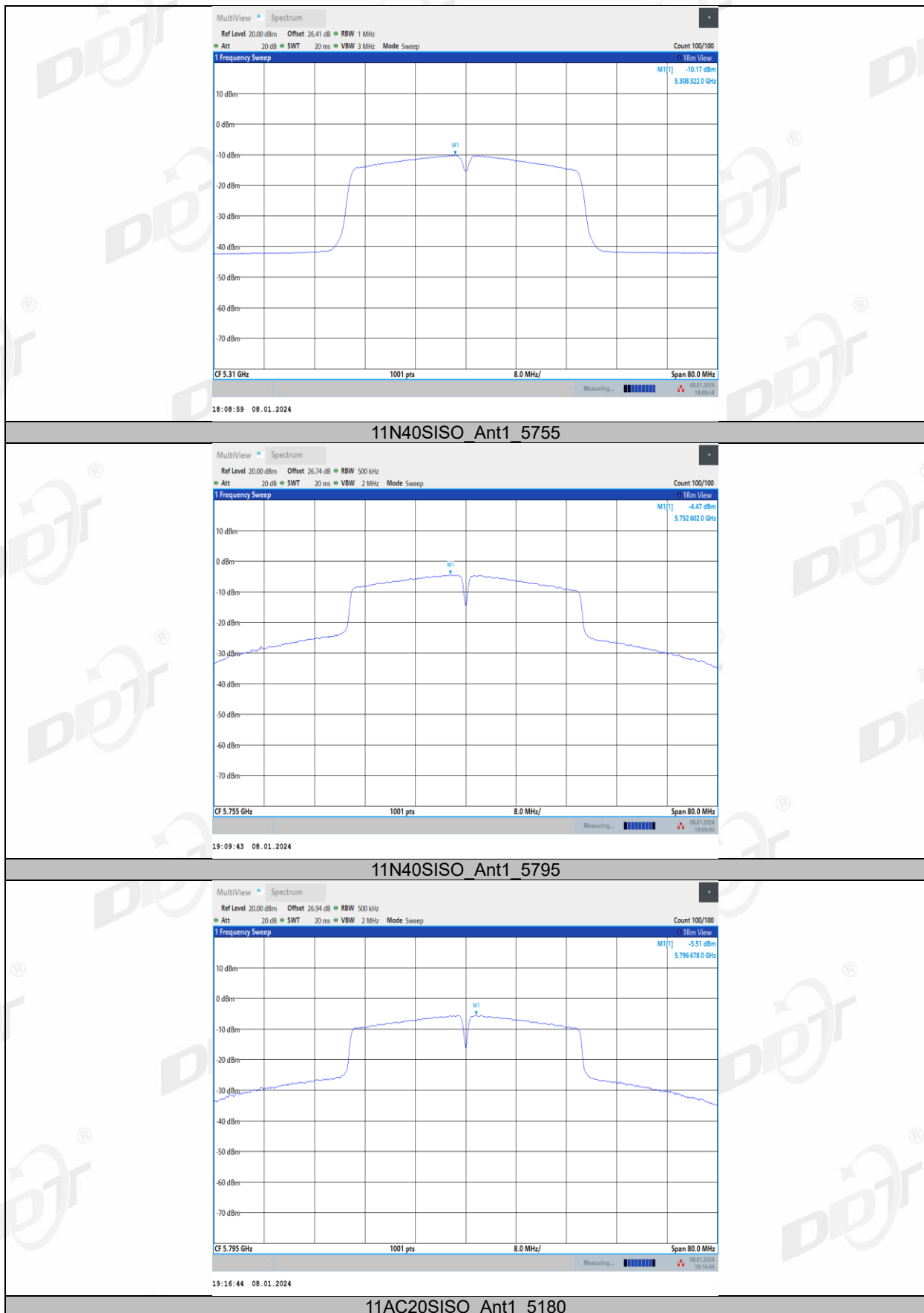
11N40SISO_Ant1_5230



11N40SISO_Ant1_5270

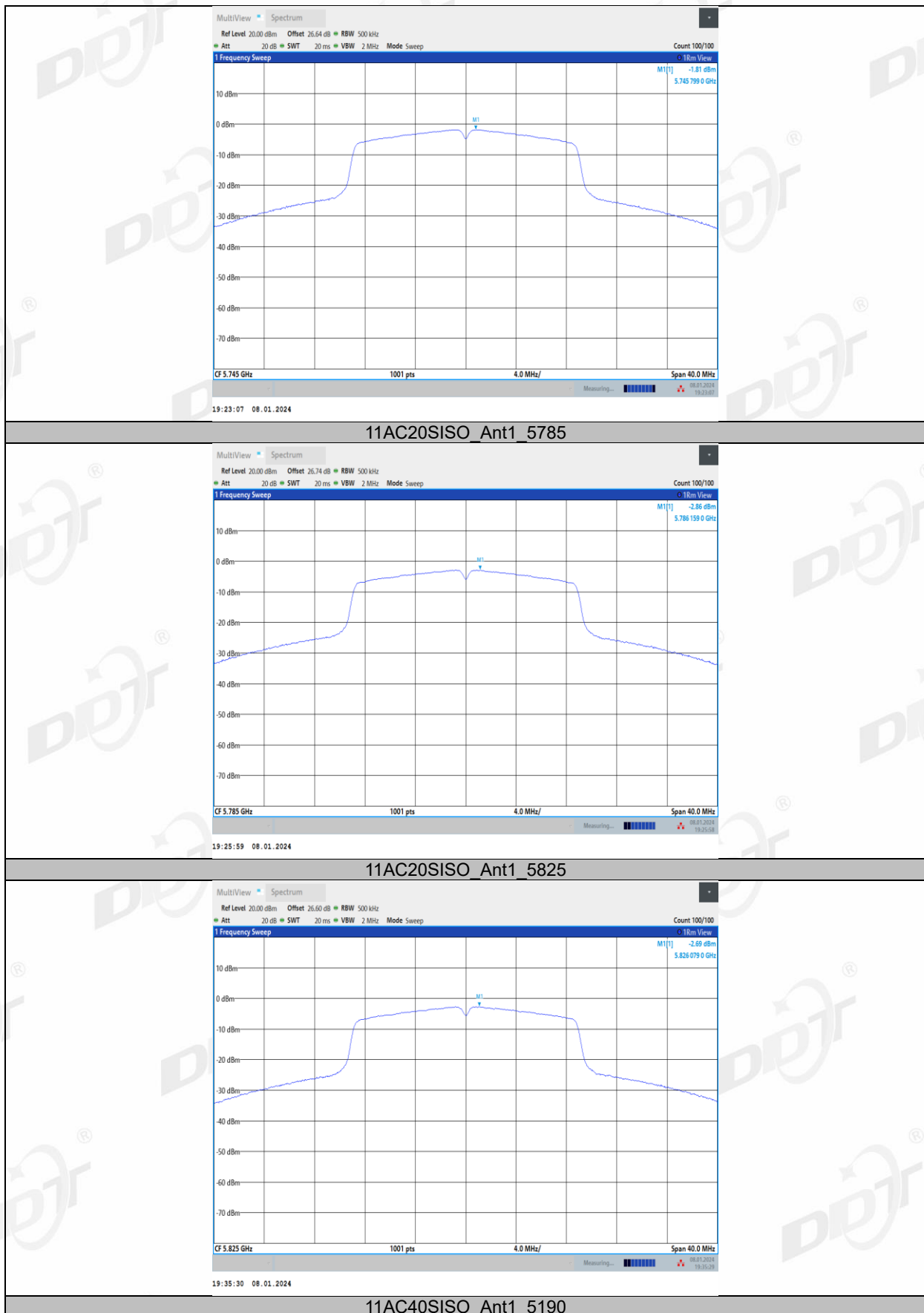


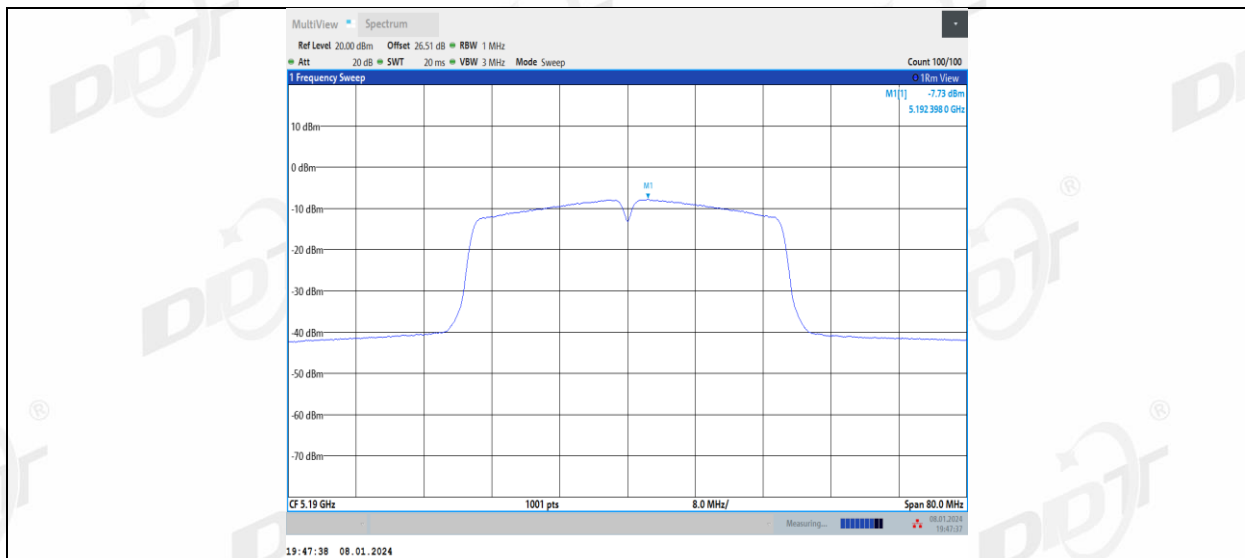
11N40SISO_Ant1_5310



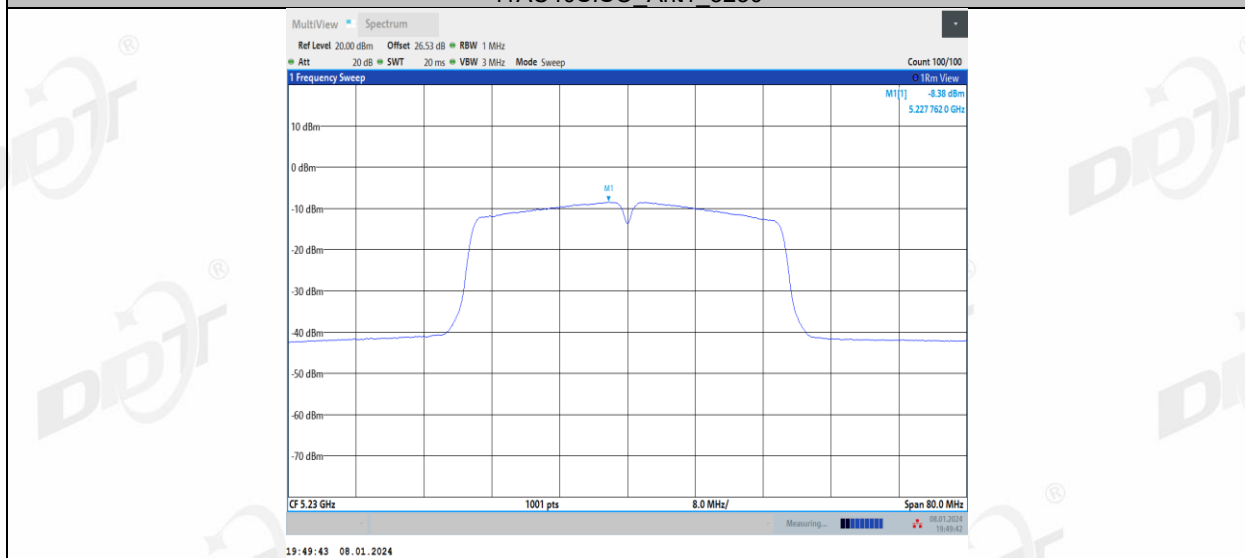




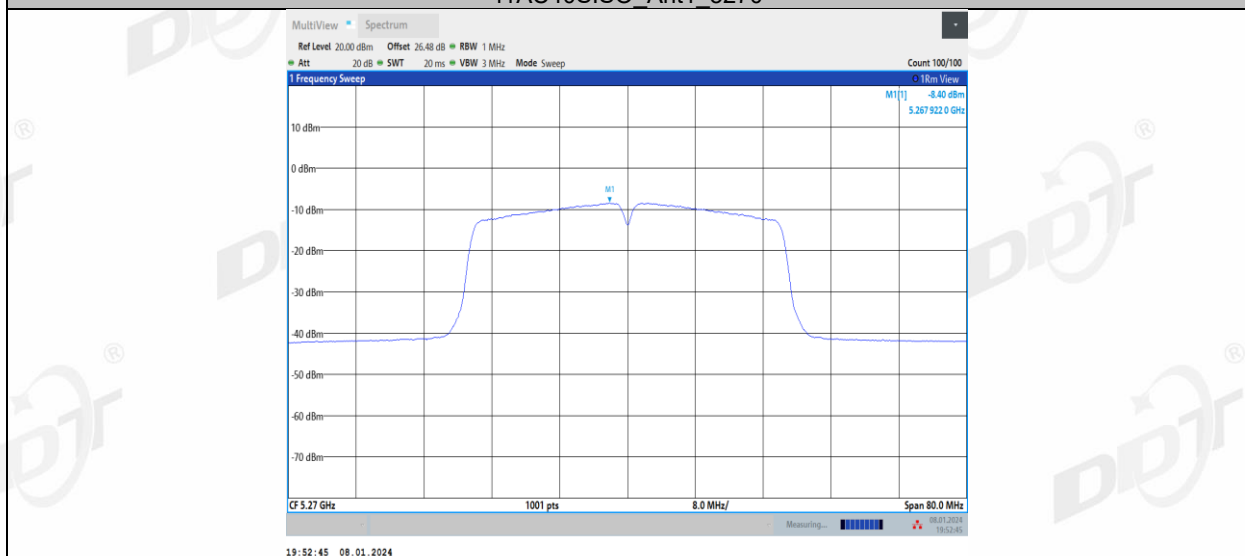




11AC40SISO_Ant1_5230

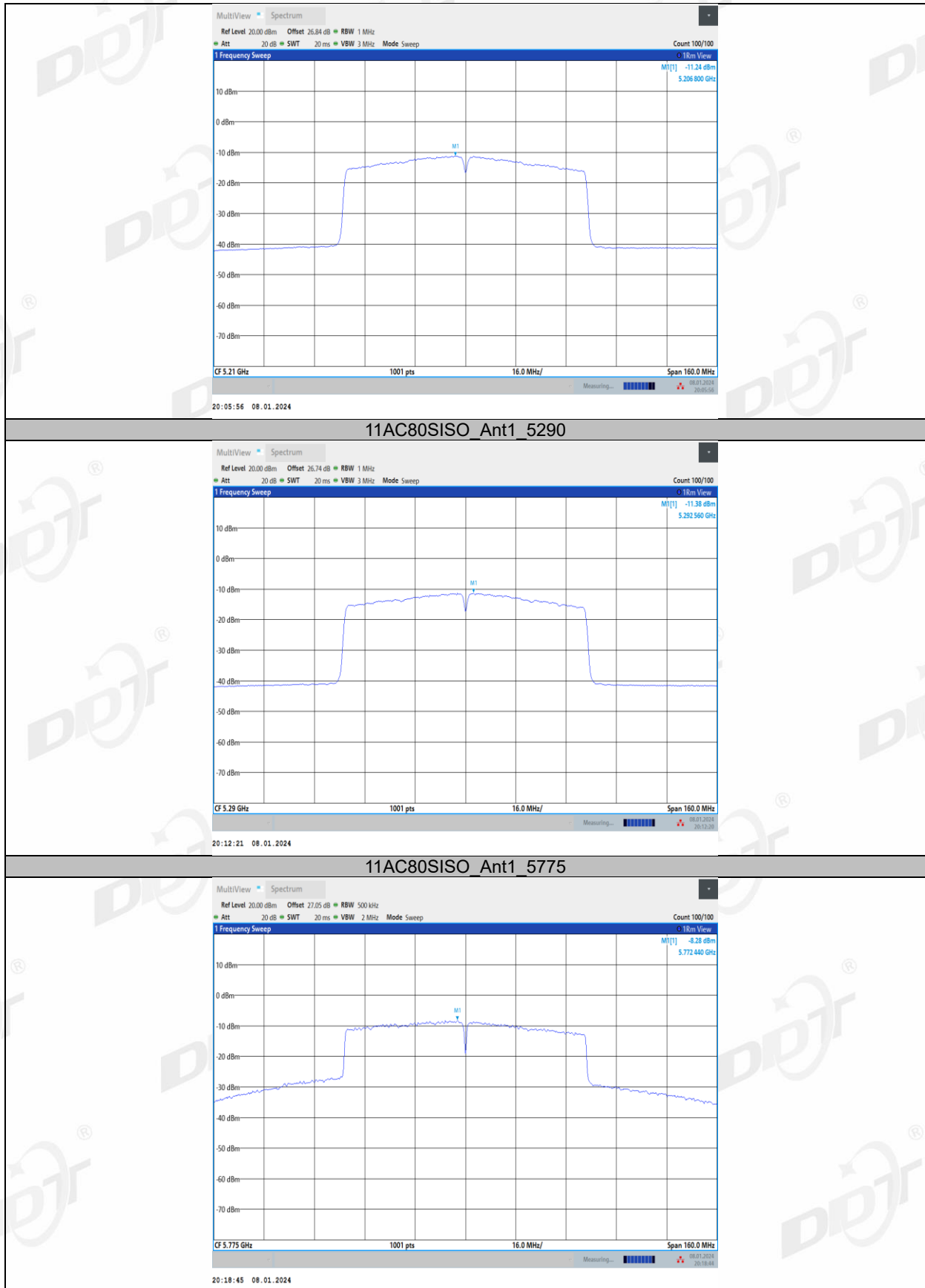


11AC40SISO_Ant1_5270



11AC40SISO_Ant1_5310





9. Frequency Stability Measurement

9.1. Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

9.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

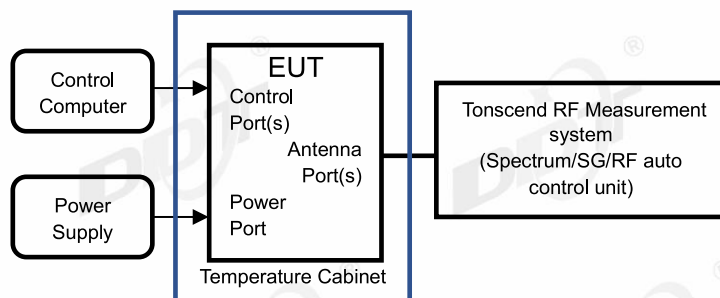
9.3. Test procedures

(1) To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.

(2) The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.

(3) The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

9.4. Test setup



9.5. Test result

Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 4#
Ambient Condition:	25.2℃,45.6%RH	Test Date:	2024.01.08
Test Power Supply:	DC 12V	EUT:	Multimedia
Sample Number:	S23121811-002	Model No.:	Kansas City 150

Voltage								
Test Mode	Antenna	Frequency[MHz]	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	20000.00	3.861004	20	PASS
		5200	NV	NT	20000.00	3.846154	20	PASS
			LV	NT	-20000.00	-3.846154	20	PASS
			HV	NT	-20000.00	-3.846154	20	PASS
		5240	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	-20000.00	-3.816794	20	PASS
		5260	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5280	NV	NT	20000.00	3.787879	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5320	NV	NT	20000.00	3.759398	20	PASS
			LV	NT	-20000.00	-3.759398	20	PASS
			HV	NT	-40000.00	-7.518797	20	PASS
		5745	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5785	NV	NT	20000.00	3.457217	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5825	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
11N20SISO	Ant1	5180	NV	NT	20000.00	3.861004	20	PASS
			LV	NT	20000.00	3.861004	20	PASS
			HV	NT	20000.00	3.861004	20	PASS
		5200	NV	NT	0.00	0.000000	20	PASS
			LV	NT	-20000.00	-3.846154	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5240	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5260	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5280	NV	NT	0.00	0.000000	20	PASS
			LV	NT	20000.00	3.787879	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5320	NV	NT	-20000.00	-3.759398	20	PASS
			LV	NT	-20000.00	-3.759398	20	PASS
			HV	NT	-20000.00	-3.759398	20	PASS
		5745	NV	NT	-20000.00	-3.481288	20	PASS
			LV	NT	0.00	0.000000	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5785	NV	NT	20000.00	3.457217	20	PASS
			LV	NT	20000.00	3.457217	20	PASS
			HV	NT	0.00	0.000000	20	PASS
		5825	NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS

11N40SISO	Ant1	5190	HV	NT	-20000.00	-3.433476	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	40000.00	7.707129	20	PASS
		5230	HV	NT	0.00	0.000000	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
		5270	HV	NT	0.00	0.000000	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	40000.00	7.590133	20	PASS
		5310	HV	NT	0.00	0.000000	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
		5755	HV	NT	0.00	0.000000	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
		5795	HV	NT	-40000.00	-6.902502	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
11AC20SISO	Ant1	5785	HV	NT	20000.00	3.457217	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
11AC80SISO	Ant1	5210	HV	NT	0.00	0.000000	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
		5290	HV	NT	0.00	0.000000	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS
		5775	HV	NT	0.00	0.000000	20	PASS
			NV	NT	0.00	0.000000	20	PASS
			LV	NT	0.00	0.000000	20	PASS

Temperature								
Test Mode	Antenna	Frequency[MHz]	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5180	NV	-30	-20000.00	-3.861004	20	PASS
			NV	-20	20000.00	3.861004	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	20000.00	3.861004	20	PASS
			NV	10	20000.00	3.861004	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.861004	20	PASS
			NV	40	20000.00	3.861004	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5200	NV	-30	0.00	0.000000	20	PASS
			NV	-20	20000.00	3.846154	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	-20000.00	-3.846154	20	PASS
			NV	20	-20000.00	-3.846154	20	PASS
			NV	30	20000.00	3.846154	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	20000.00	3.846154	20	PASS
		5240	NV	-30	20000.00	3.816794	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.816794	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5260	NV	-30	0.00	0.000000	20	PASS
			NV	-20	-20000.00	-3.802281	20	PASS

			NV	-10	20000.00	3.802281	20	PASS
			NV	0	20000.00	3.802281	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.802281	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5280	NV	-30	-20000.00	-3.787879	20	PASS
			NV	-20	-20000.00	-3.787879	20	PASS
			NV	-10	-20000.00	-3.787879	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	-20000.00	-3.787879	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-20000.00	-3.787879	20	PASS
			NV	40	-20000.00	-3.787879	20	PASS
			NV	50	-20000.00	-3.787879	20	PASS
		5320	NV	-30	-20000.00	-3.759398	20	PASS
			NV	-20	-20000.00	-3.759398	20	PASS
			NV	-10	-40000.00	-7.518797	20	PASS
			NV	0	20000.00	3.759398	20	PASS
			NV	10	-20000.00	-3.759398	20	PASS
			NV	20	-20000.00	-3.759398	20	PASS
			NV	30	-20000.00	-3.759398	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5745	NV	-30	20000.00	3.481288	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-20000.00	-3.481288	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-20000.00	-3.481288	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5785	NV	-30	-20000.00	-3.457217	20	PASS
			NV	-20	-20000.00	-3.457217	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-20000.00	-3.457217	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	-20000.00	-3.457217	20	PASS
			NV	30	20000.00	3.457217	20	PASS
			NV	40	-20000.00	-3.457217	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5825	NV	-30	0.00	0.000000	20	PASS
			NV	-20	20000.00	3.433476	20	PASS
			NV	-10	-20000.00	-3.433476	20	PASS
			NV	0	20000.00	3.433476	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
11N20SISO	Ant1	5180	NV	-30	20000.00	3.861004	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	20000.00	3.861004	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-20000.00	-3.861004	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	20000.00	3.861004	20	PASS
		5200	NV	-30	20000.00	3.846154	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-20000.00	-3.846154	20	PASS

			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
		5240	NV	50	0.00	0.000000	20	PASS
			NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-20000.00	-3.816794	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	-20000.00	-3.816794	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	-20000.00	-3.816794	20	PASS
			NV	40	-20000.00	-3.816794	20	PASS
			NV	50	-20000.00	-3.816794	20	PASS
			NV	-30	20000.00	3.802281	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
		5260	NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.802281	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	20000.00	3.802281	20	PASS
			NV	50	20000.00	3.802281	20	PASS
			NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-20000.00	-3.787879	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	-20000.00	-3.787879	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5280	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-20000.00	-3.787879	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	-20000.00	-3.787879	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
			NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-20000.00	-3.759398	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
		5320	NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
			NV	-30	-20000.00	-3.481288	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	-20000.00	-3.481288	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	20000.00	3.481288	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	20000.00	3.481288	20	PASS
			NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	20000.00	3.457217	20	PASS
		5745	NV	0	20000.00	3.457217	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.457217	20	PASS
			NV	40	20000.00	3.457217	20	PASS
			NV	50	0.00	0.000000	20	PASS
			NV	-30	-20000.00	-3.433476	20	PASS
			NV	-20	20000.00	3.433476	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
		5785	NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.457217	20	PASS
			NV	40	20000.00	3.457217	20	PASS
			NV	50	0.00	0.000000	20	PASS
			NV	-30	-20000.00	-3.433476	20	PASS
			NV	-20	20000.00	3.433476	20	PASS
			NV	-10	0.00	0.000000	20	PASS
		5825	NV	0	0.00	0.000000	20	PASS

11N40SISO	Ant1		NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	20000.00	3.433476	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5190	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	40000.00	7.707129	20	PASS
			NV	30	40000.00	7.707129	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5230	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
		5270	NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	40000.00	7.648184	20	PASS
			NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	40000.00	7.590133	20	PASS
		5310	NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	40000.00	7.590133	20	PASS
			NV	40	40000.00	7.590133	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5755	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	-40000.00	-7.532957	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
11AC20SISO	Ant1	5785	NV	30	-40000.00	-6.950478	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
			NV	-30	0.00	0.000000	20	PASS
			NV	-20	40000.00	6.902502	20	PASS
			NV	-10	-40000.00	-6.902502	20	PASS
		5795	NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
		5785	NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
			NV	-30	0.00	0.000000	20	PASS
			NV	-20	-20000.00	-3.457217	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	20000.00	3.457217	20	PASS
			NV	10	0.00	0.000000	20	PASS

11AC80SISO	Ant1		NV	20	-20000.00	-3.457217	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5210	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5290	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS
		5775	NV	-30	0.00	0.000000	20	PASS
			NV	-20	0.00	0.000000	20	PASS
			NV	-10	0.00	0.000000	20	PASS
			NV	0	0.00	0.000000	20	PASS
			NV	10	0.00	0.000000	20	PASS
			NV	20	0.00	0.000000	20	PASS
			NV	30	0.00	0.000000	20	PASS
			NV	40	0.00	0.000000	20	PASS
			NV	50	0.00	0.000000	20	PASS

10. Dynamic Frequency Selection

10.1. Applicability of DFS requirements

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 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.

10.2. 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 3.21 dBi 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.

10.3. Parameters of 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	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			
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. Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a 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					

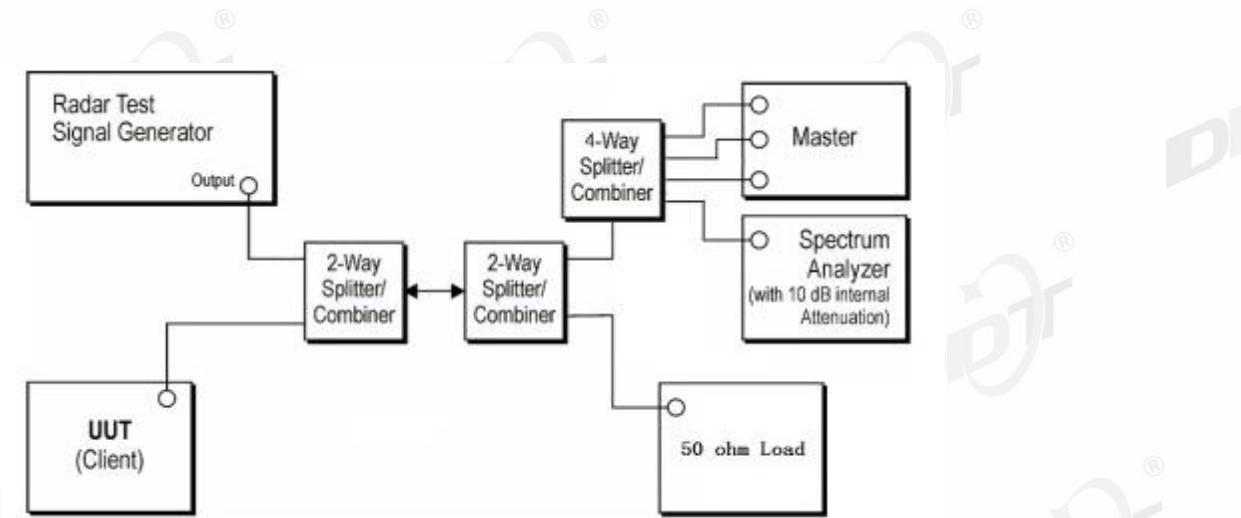
A minimum of 30 unique waveforms are required for each of the Short Pulse Radar Types 2 through 4. If more than 30 waveforms are used for Short Pulse Radar Types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. If more than 30 waveforms are 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. Test aggregate is average of the percentage of successful detections of short pulse radar types 1-4

10.4. 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 $-62\text{dBm} + 3.21\text{dBi} + 1\text{dB} = -57.79\text{dBm}$ 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 $-62\text{dBm} + 3.21\text{dBi} + 1\text{dB} = -57.79\text{dBm}$. Capture the spectrum analyzer plots on short pulse radar waveform.

Conducted Calibration Setup:

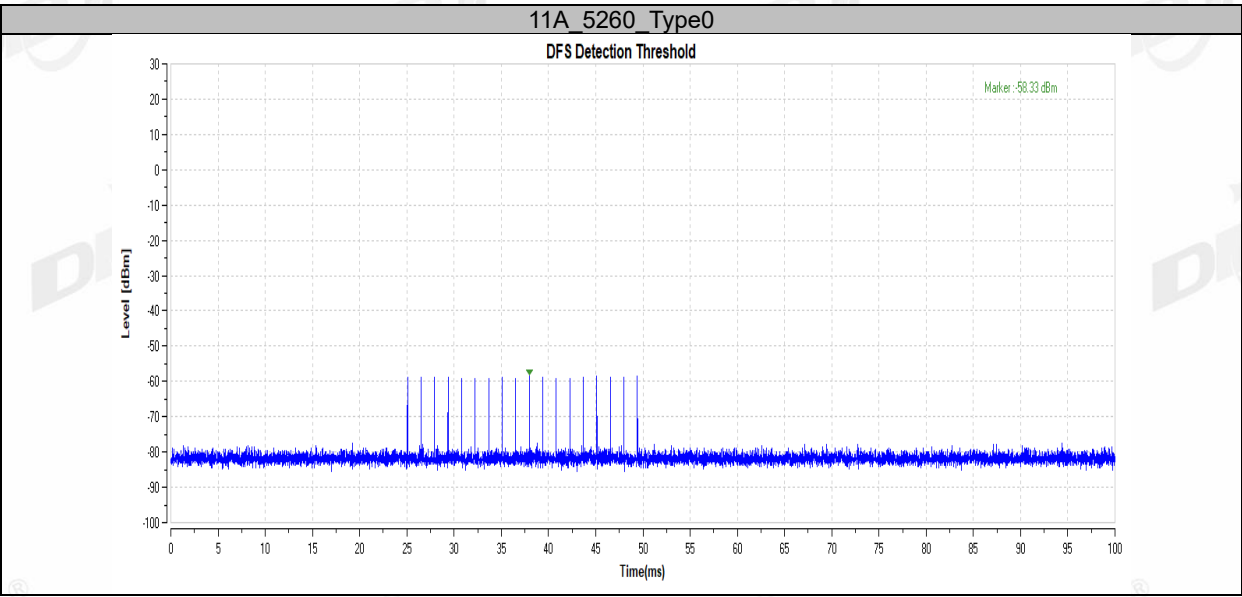


Note: 1. Use the software "Web" to set the frequency channel.

2. EUT is not support TPC and not with Radar detection.

Radar Waveform Calibration Result:

Frequency [MHz]	Radar Type	Result [dBm]	Limit [dBm]	Verdict
5260	Type0	-58.33	-58.11	PASS



10.5. Channel closing transmission time, channel move time and non-occupancy period

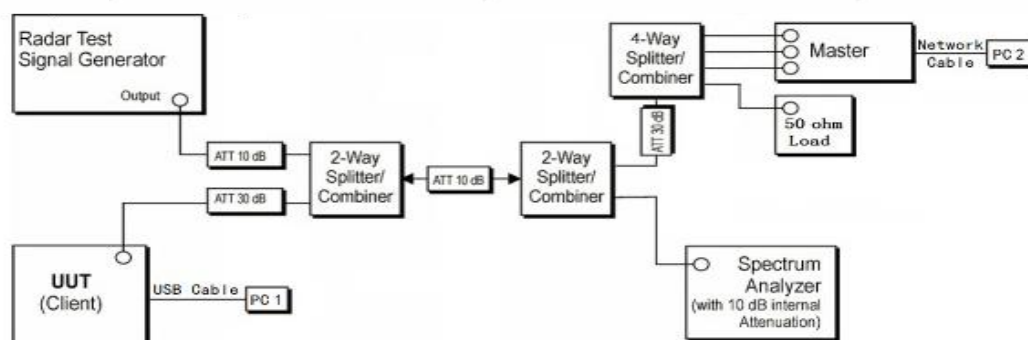
Block diagram of test setup Test Procedure:

- (1) The radar pulse generator is setup to provide a pulse at frequency that the master and client are operating. A type 0 radar pulse with a 1us pulse width and a 1428us PRI is used for the testing.
- (2) The vector signal generator is adjusted to provide the radar burst (18 pulses) at the level of approximately -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 Test Software in order to properly load the network for the entire period of the test.
- (5) When radar burst with a level equal to the DFS Detection Threshold +1dB is generated on the operating channel of the U-NII device. At time T0 the radar waveform generator sends a burst of pulse of the radar waveform at Detection Threshold +1dB.
- (6) 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
- (8) 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.

Measurement the EUT for more than 30 minutes following the channel move time to verify that no transmission or beacons occur on this channel.

10.6. Test setup

Setup for Client with injection at the Master

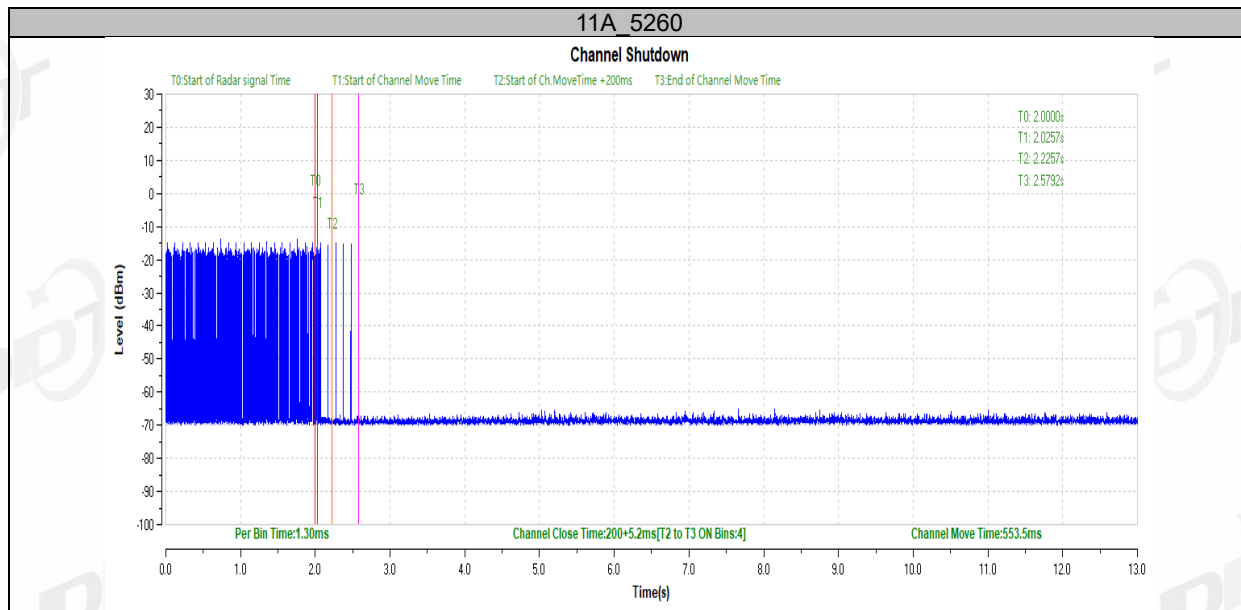


10.7. Test result

Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 4#
Ambient Condition:	25.2℃,45.6%RH	Test Date:	2024.01.08
Test Power Supply:	DC 12V	EUT:	Multimedia
Sample Number:	S23121811-002	Model No.:	Kansas City 150

Test Mode	Frequency [MHz]	CCTT[ms]	Limit[ms]	CMT[ms]	Limit[ms]	Verdict
11A	5260	200+5.2	200+60	553.5	10000	PASS

Test plots as follows:



11. Emissions in Restricted Frequency Bands

11.1. Test equipment

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☑Radiation 3#Chamber				
EMI TEST RECEIVER	R&S	ESU26	100472	2024/04/22
PSA Series Spectrum Analyzer	Agilent	E4447A	MY50180031	2024/04/22
Active Loop Antenna	Schwarzbeck	FMZB-1519	1519-038	2024/09/10
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	2024/07/11
Double Ridged Horn Antenna	Schwarzbeck	BBHA 9120 D	02468	2024/09/17
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	2024/04/25
Pre-amplifier	COM-POWER	PAM-118A	18040084	2024/07/14
Pre-amplifier	COM-POWER	PAM-840A	461369	2024/04/26
RE Cable	N/A	W23.02 CP1-X2 + W23.09 AP1-X8+ JCT26S-NJ-NJ- 1.5M	4.5M+8M+1.5 M	2024/04/20
RF Cable	Yuhu	JCTB810-NJ-NJ- 9M+ ZT26S- SMAJ-SMAJ-1M	21123964	2024/04/22
Band Reject Filter(5150-5880 MHz)	REBES	BRM50716	G392	N/A
Test Software	Tonscend	JS32-RE	V 5.0.0.1	N/A