

7.5 Test Environmental Conditions

Temperature:	22.4° C
Relative Humidity:	34 %
ATM Pressure:	101.8 kPa

The testing was performed by Rachana Khanduri on 2026-03-11 in the RF Site

7.6 Test Results

15dBi SISO Ant A

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	14.89	2.94	3.88	11.01	≤ 13
	4955		14.95	2.94	3.88	11.07	≤ 13
	4980		14.80	2.81	3.75	11.05	≤ 13
Radio 2	4950		14.63	3.12	4.03	10.60	≤ 13
	4955		14.67	3.01	3.92	10.75	≤ 13
	4980		14.92	3.20	4.11	10.81	≤ 13

13dBi SISO Ant A

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	16.90	4.78	5.72	11.18	≤ 13
	4955		16.64	4.68	5.62	11.02	≤ 13
	4980		16.94	4.72	5.66	11.28	≤ 13

≤8dBi SISO Ant A

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	16.90	4.78	5.72	11.18	≤ 13
	4955		16.64	4.68	5.62	11.02	≤ 13
	4980		16.94	4.72	5.66	11.28	≤ 13

Note: Ratio (dB) = Peak PSD – Corrected Avg PSD

Note: Corrected Avg PSD applies Duty Cycle Correction Factor

15dBi SISO Ant B

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	13.25	1.43	2.37	10.88	≤ 13
	4955		13.44	1.22	2.16	11.28	≤ 13
	4980		13.45	1.50	2.44	11.01	≤ 13
Radio 2	4950		14.16	2.56	3.5	10.66	≤ 13
	4955		14.19	2.59	3.53	10.66	≤ 13
	4980		14.56	2.80	3.74	10.82	≤ 13

13dBi SISO Ant B

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	15.84	3.24	4.18	11.66	≤ 13
	4955		15.65	3.15	4.09	11.56	≤ 13
	4980		15.76	3.48	4.42	11.34	≤ 13

≤8dBi SISO Ant B

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Avg PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	15.84	3.24	4.18	11.66	≤ 13
	4955		15.65	3.15	4.09	11.56	≤ 13
	4980		15.76	3.48	4.42	11.34	≤ 13

Note: Ratio (dB) = Peak PSD – Corrected Avg PSD

Note: Corrected Avg PSD applies Duty Cycle Correction Factor

15dBi MIMO

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	14.65	3.56	11.09	≤ 13
	4955		14.76	3.57	11.19	≤ 13
	4980		14.77	3.51	11.26	≤ 13
Radio 2	4950		14.31	3.65	10.65	≤ 13
	4955		14.36	3.75	10.60	≤ 13
	4980		14.71	3.82	10.89	≤ 13

13dBi MIMO

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	16.90	5.46	11.44	≤ 13
	4955		16.71	5.48	11.24	≤ 13
	4980		16.60	5.47	11.13	≤ 13

≤8dBi MIMO

Radio	Freq. (MHz)	Mode	Peak PSD (dBm/MHz)	Corrected Avg PSD (dBm/MHz)	Ratio (dB)	Limit (dB)
Radio 1	4950	802.11n10	19.41	8.02	11.39	≤ 13
	4955		19.18	7.93	11.26	≤ 13
	4980		19.40	8.09	11.31	≤ 13

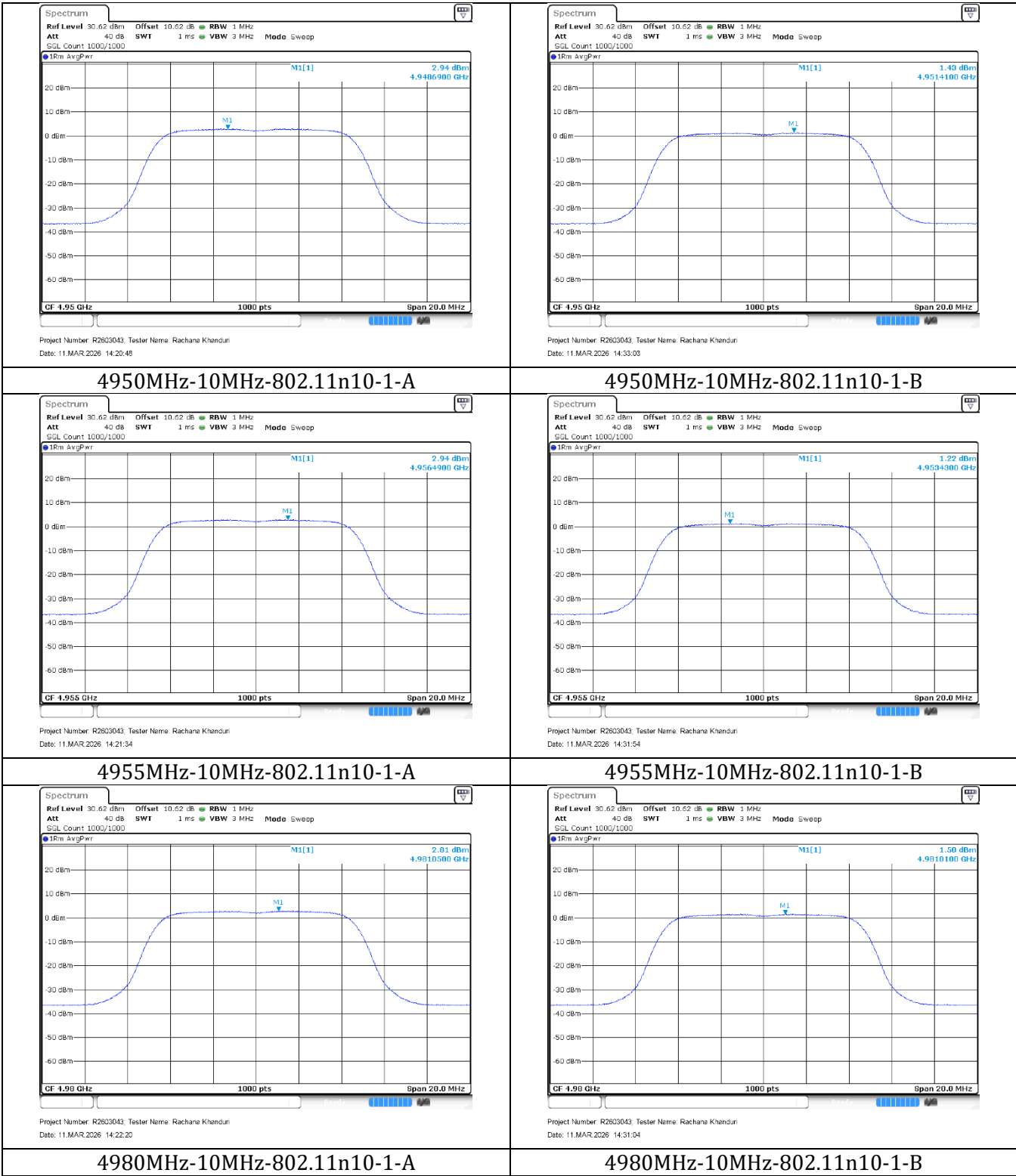
Note: Corrected Avg PSD applies Duty Cycle Correction Factor to individual ports first and calculated by converting logarithmic values to linear values, summing them, then converting the sum into logarithmic value like so: $10 \cdot \log(10^{(\text{ant A}/10)} + 10^{(\text{ant B}/10)})$.

Note: Ratio (dB) = Peak PSD – Corrected Avg PSD

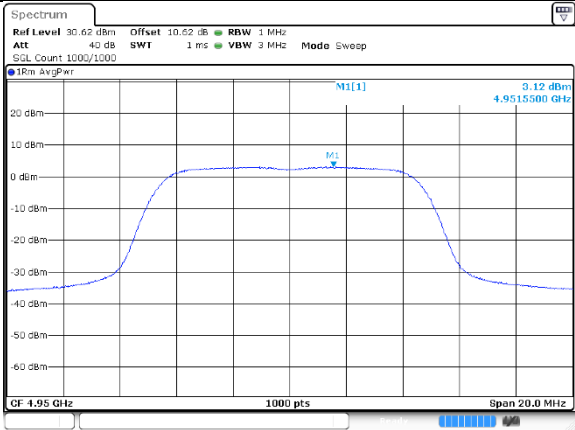
Please refer to below for average PSD plots for reference in calculating the PAPR.

Naming Convention: Frequency(MHz)-Bandwidth(MHz)-Mode-Radio-Antenna

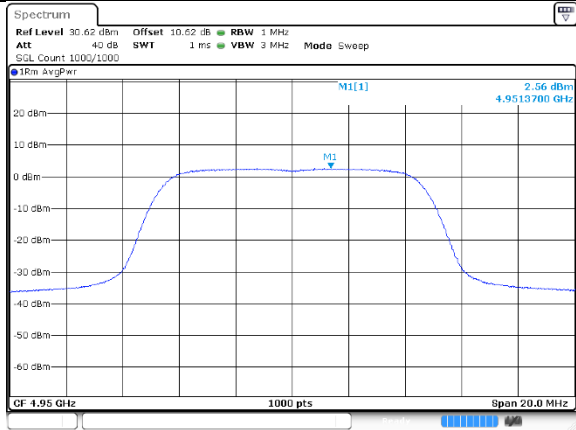
Radio 1 15dBi Antenna Gain – SISO



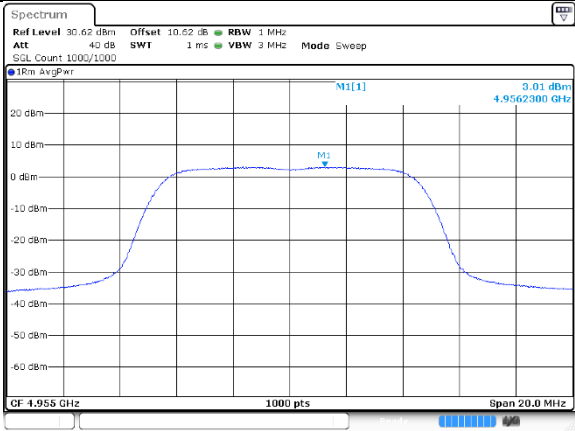
Radio 2 15dBi Antenna Gain - SISO



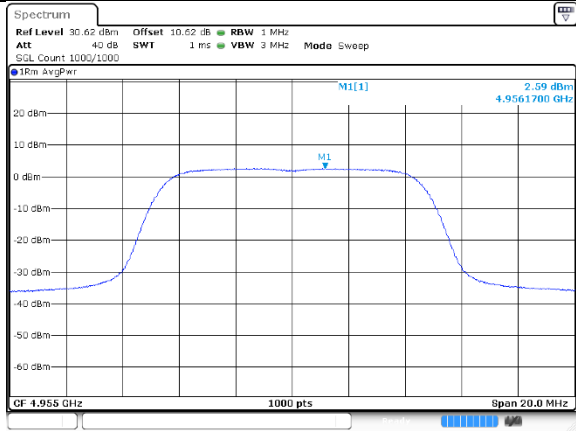
4950MHz-10MHz-802.11n10-2-A



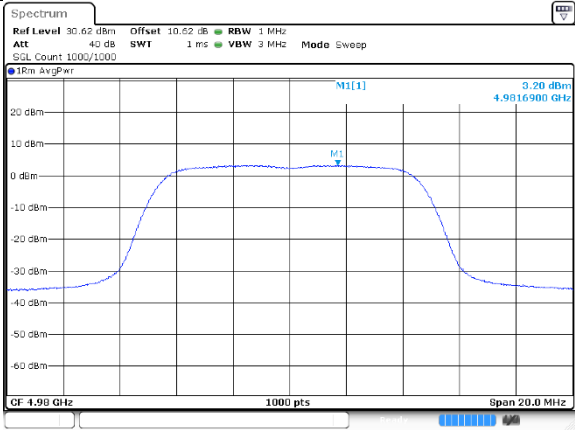
4950MHz-10MHz-802.11n10-2-B



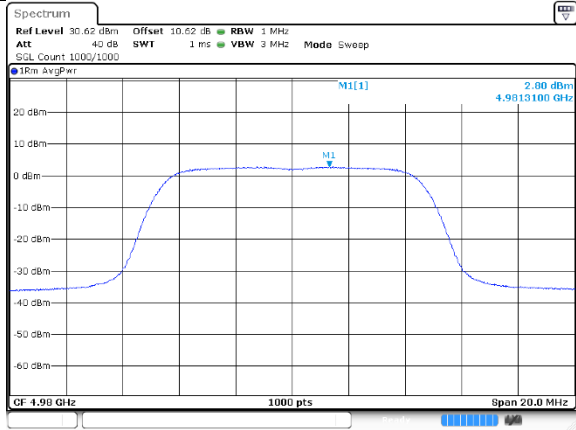
4955MHz-10MHz-802.11n10-2-A



4955MHz-10MHz-802.11n10-2-B

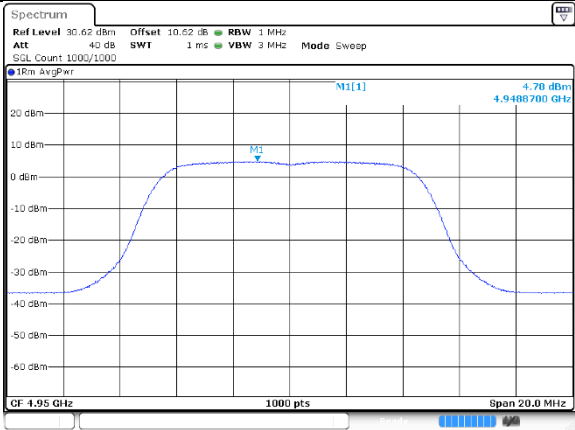


4980MHz-10MHz-802.11n10-2-A

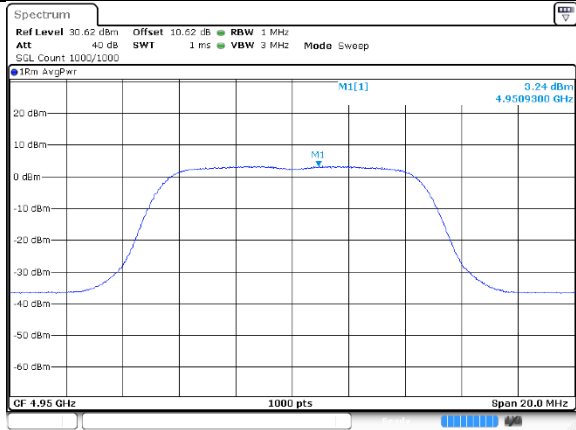


4980MHz-10MHz-802.11n10-2-B

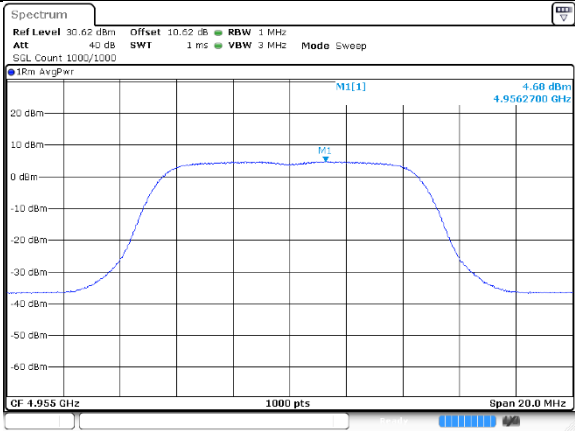
Radio 1 13dBi Antenna Gain – SISO and Radio 1 ≤8dBi Antenna Gain – SISO & MIMO



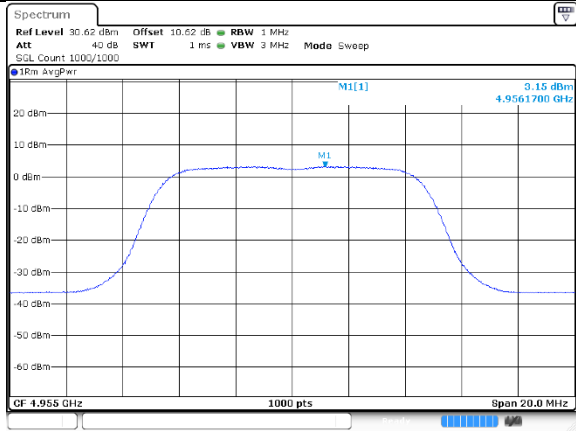
4950MHz-10MHz-802.11n10-1-A



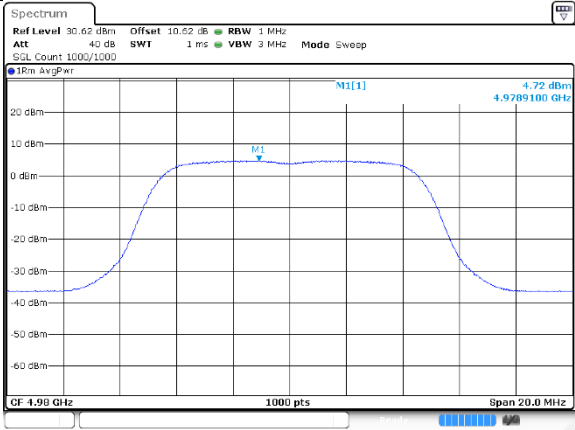
4950MHz-10MHz-802.11n10-1-B



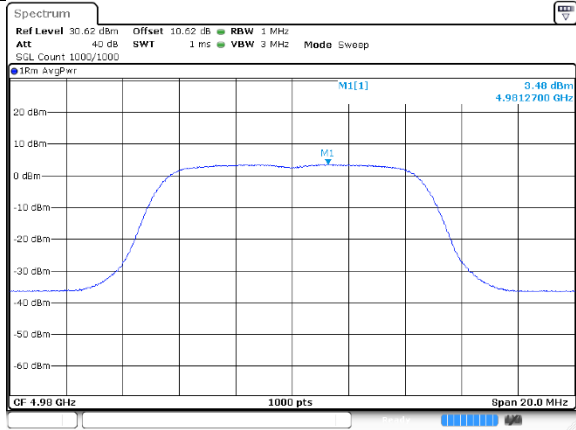
4955MHz-10MHz-802.11n10-1-A



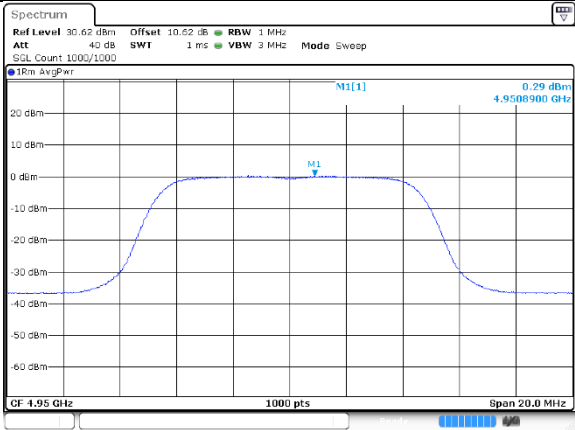
4955MHz-10MHz-802.11n10-1-B



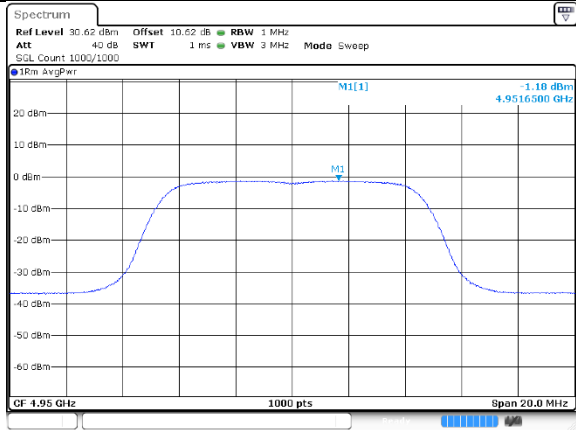
4980MHz-10MHz-802.11n10-1-A



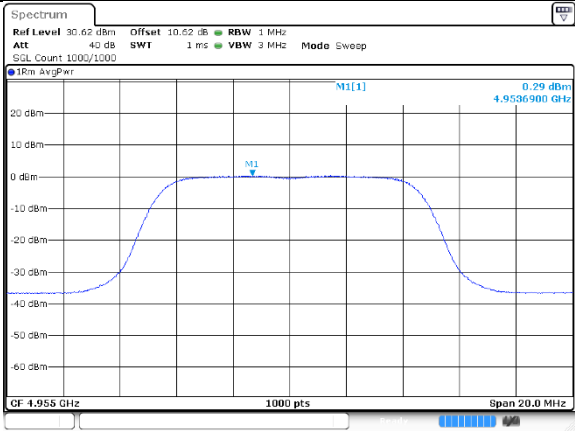
4980MHz-10MHz-802.11n10-1-B



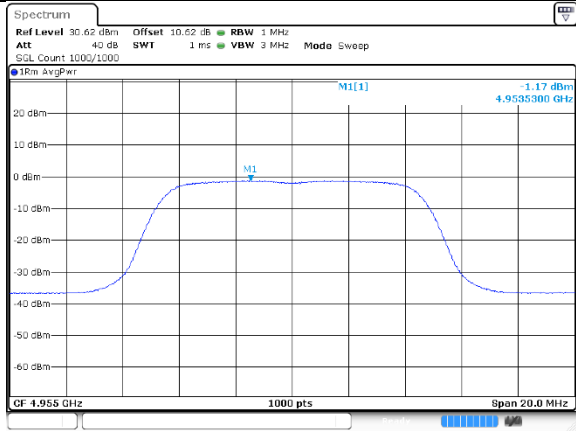
4950MHz-10MHz-802.11n10-1-A



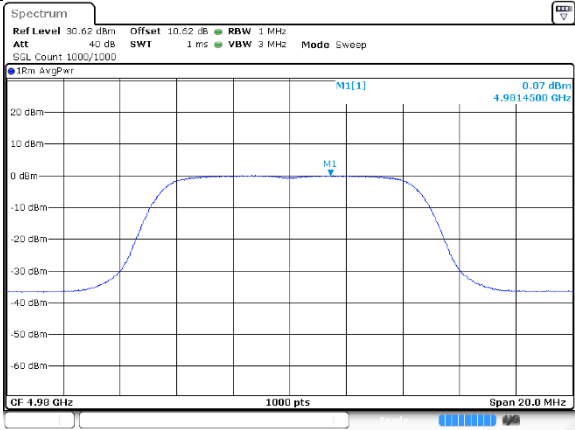
4950MHz-10MHz-802.11n10-1-B



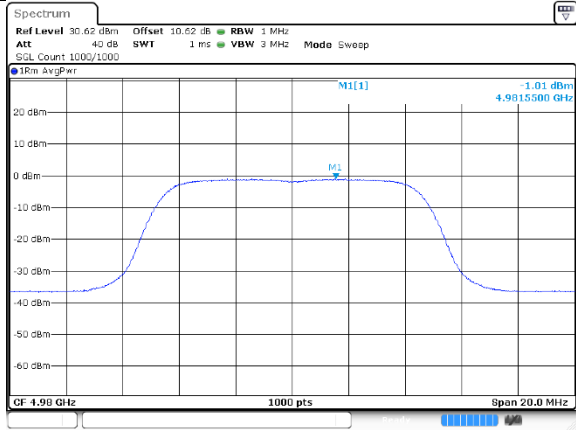
4955MHz-10MHz-802.11n10-1-A



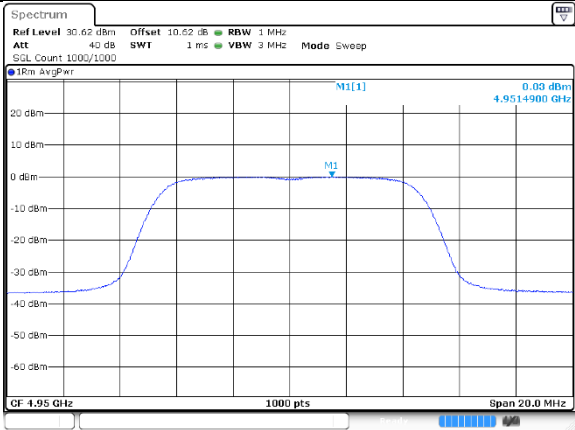
4955MHz-10MHz-802.11n10-1-B



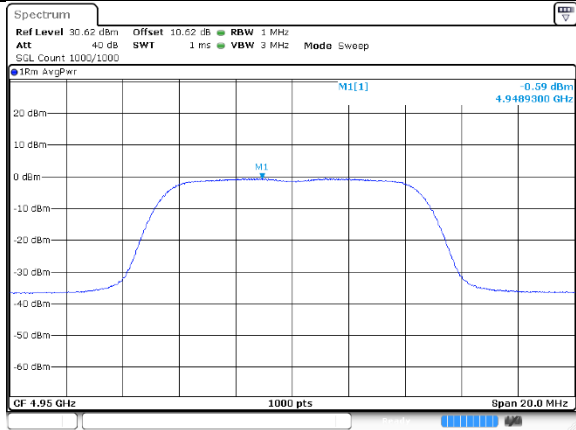
4980MHz-10MHz-802.11n10-1-A



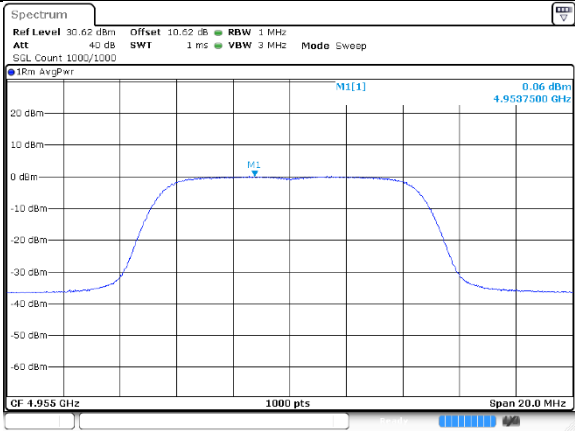
4980MHz-10MHz-802.11n10-1-B



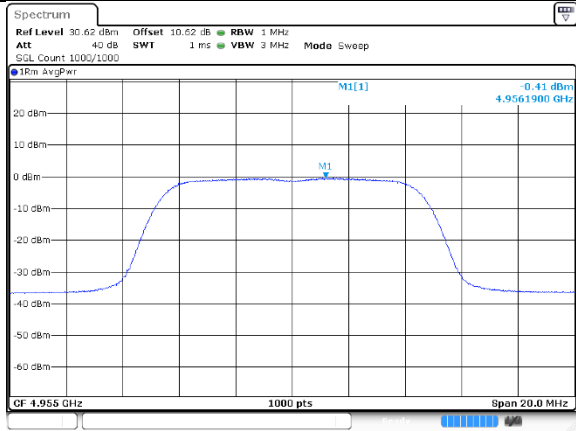
4950MHz-10MHz-802.11n10-2-A



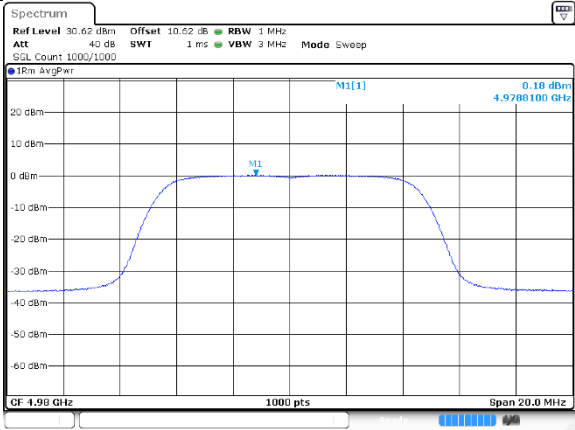
4950MHz-10MHz-802.11n10-2-B



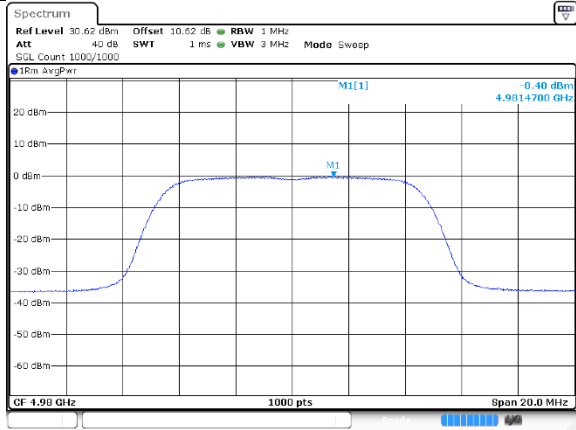
4955MHz-10MHz-802.11n10-2-A



4955MHz-10MHz-802.11n10-2-B

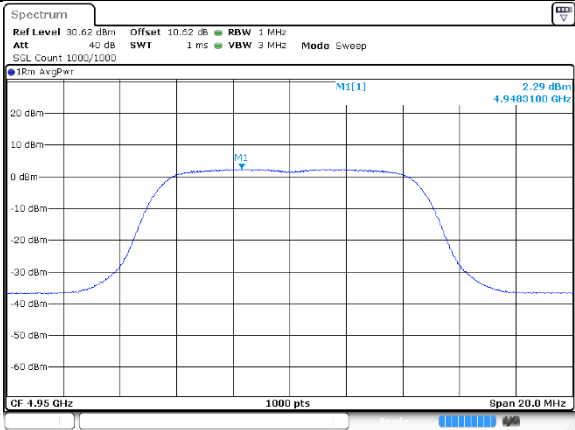


4980MHz-10MHz-802.11n10-2-A

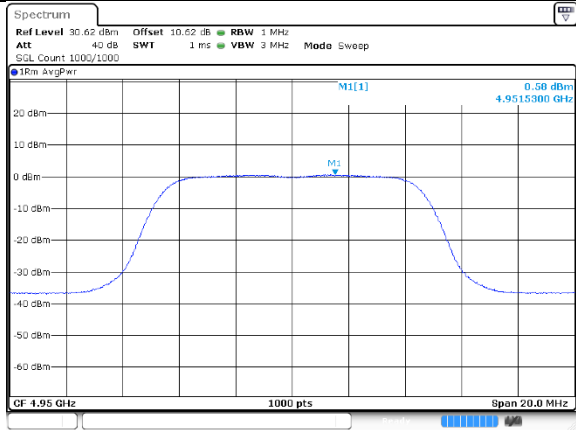


4980MHz-10MHz-802.11n10-2-B

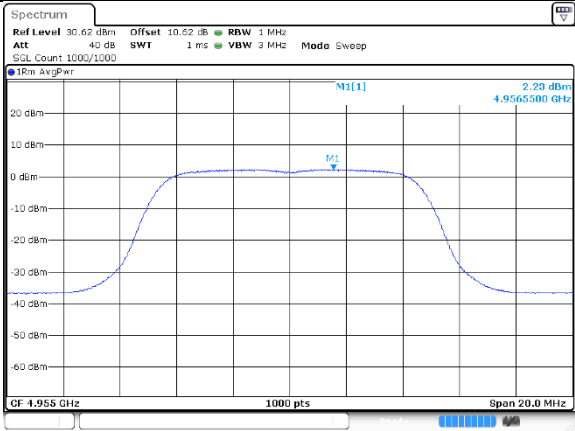
Radio 1 13dBi Antenna Gain - MIMO



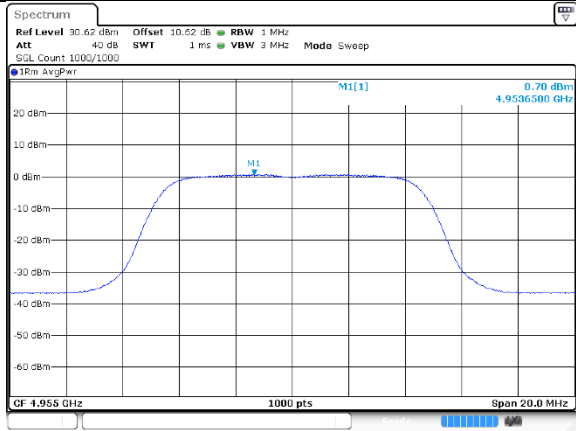
4950MHz-10MHz-802.11n10-1-A



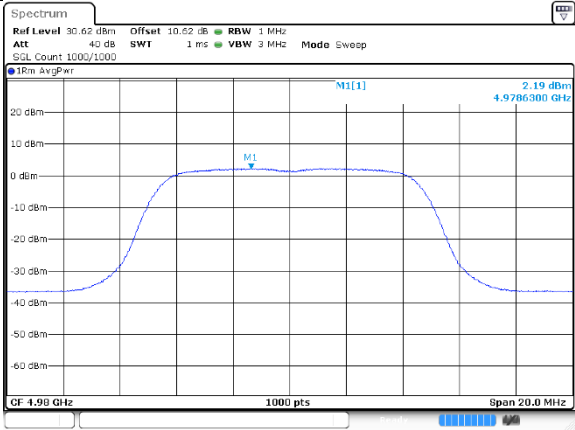
4950MHz-10MHz-802.11n10-1-B



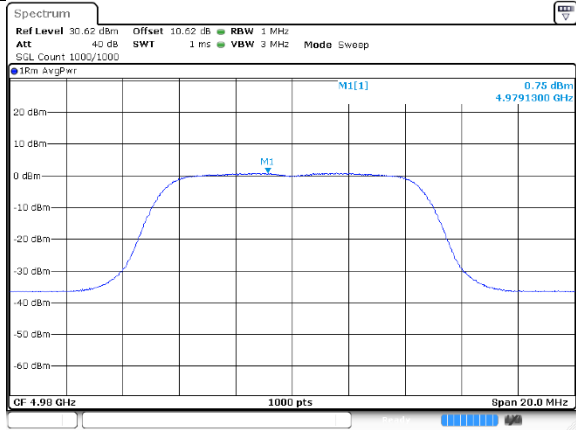
4955MHz-10MHz-802.11n10-1-A



4955MHz-10MHz-802.11n10-1-B



4980MHz-10MHz-802.11n10-1-A



4980MHz-10MHz-802.11n10-1-B

8 FCC §2.1049, §90.209, RSS-111 § 5.3 - Occupied Bandwidth

8.1 Applicable Standards

FCC §90.209, RSS-111 § 5.3

The equipment's occupied bandwidth shall not exceed its channel bandwidth.

8.2 Test Procedure

Span = approximately 2 to 5 times the occupied bandwidth, centered on the transmitting channel

RBW = 1% to 5 % of the occupied bandwidth

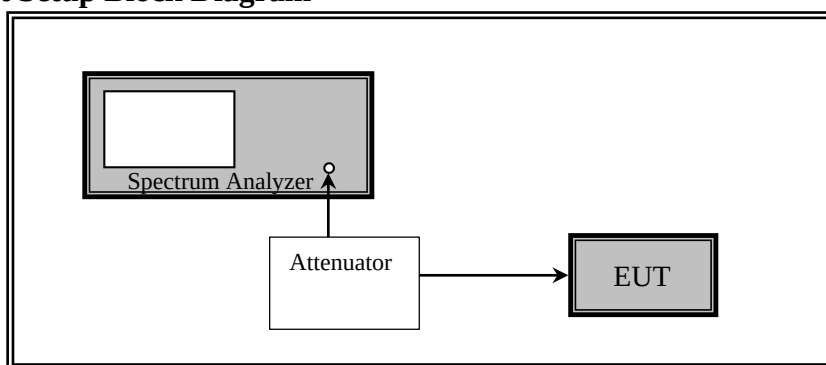
VBW = 3 * RBW

Sweep = auto

Detector function = peak

Trace = max hold

8.3 Test Setup Block Diagram



8.4 Test Equipment List and Details

BACL No.	Manufacturers	Descriptions	Models	Serial Numbers	Calibration Dates	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	1321.3008k39-101203-UW	2025-08-04	1 year
1585	N/A	SMA 24in RF cable	ST18/SMAm /SMAm/24	245210	2025-09-19	6 months
1541	Pasternack	10dB Attenuator, SMA	PE7395-10	BACL01541A	2026-01-27	1 year

Statement of Traceability: **BACL Corp.** attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 "A2LA Policy on Metrological Traceability".

8.5 Test Environmental Conditions

Temperature:	22.4° C
Relative Humidity:	34 %
ATM Pressure:	101.8 kPa

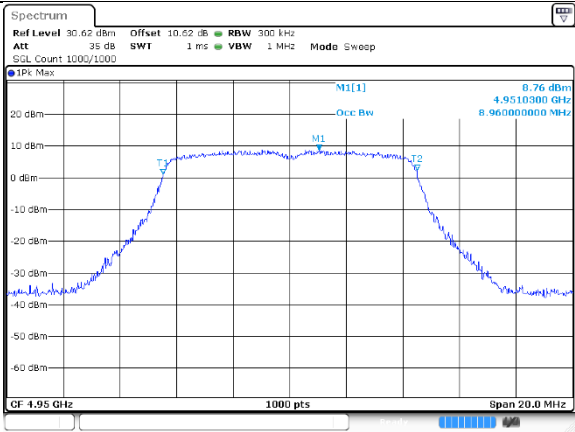
The testing was performed by Rachana Khanduri on 2026-03-10 in the RF Site

8.6 Test Results

Radio	Mode	Frequency (MHz)	99% OBW (MHz) Antenna A	Limit (MHz)
1	802.11n10	4950	8.96	≤ 10
		4955	8.96	≤ 10
		4980	8.96	≤ 10
2		4950	9.00	≤ 10
		4955	8.98	≤ 10
		4980	8.98	≤ 10

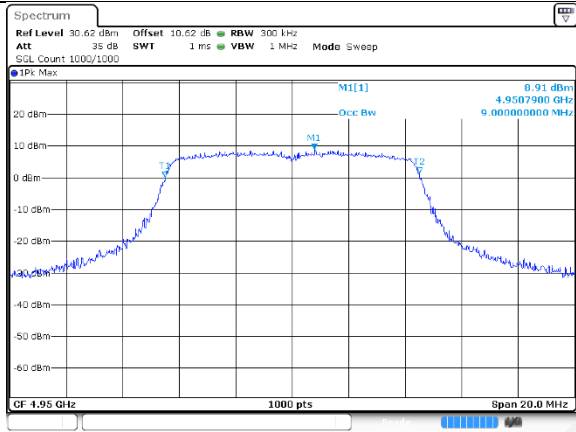
Note: Highest Power & Power Spectral Density is measured at Antenna port A and used as worst case to perform Occupied Bandwidth test.

Naming Convention: Frequency(MHz)-Bandwidth(MHz)-Mode-Radio-Antenna



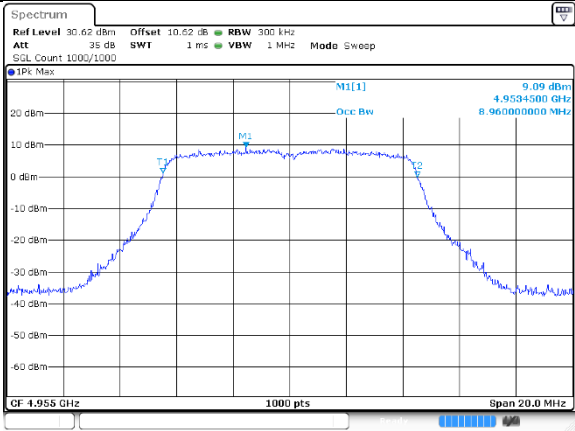
Project Number: R2603043, Tester Name: Rachana Khanduri
Date: 10.MAR.2026 14:04:54

4950MHz-10MHz-802.11n10-1-A



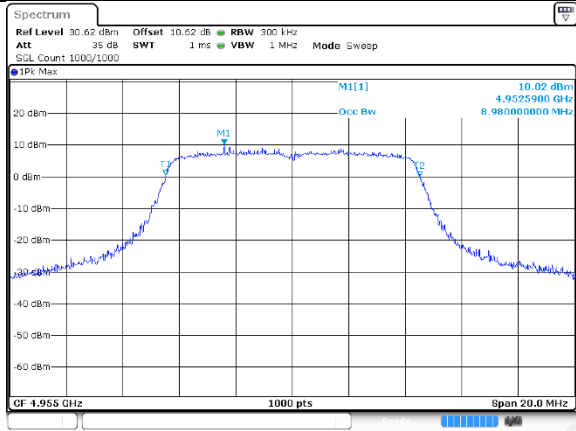
Project Number: R2603043, Tester Name: Rachana Khanduri
Date: 10.MAR.2026 13:56:58

4950MHz-10MHz-802.11n10-2-A



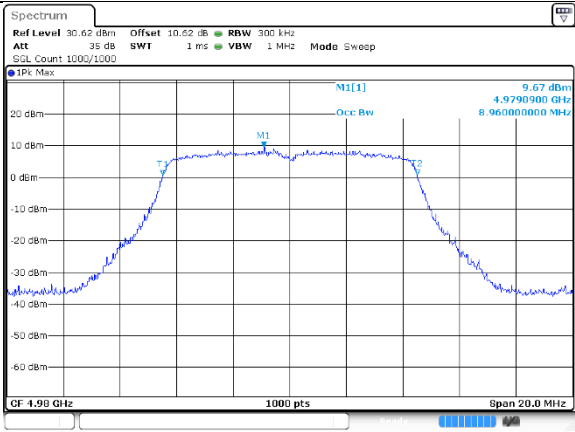
Project Number: R2603043, Tester Name: Rachana Khanduri
Date: 10.MAR.2026 14:03:54

4955MHz-10MHz-802.11n10-1-A



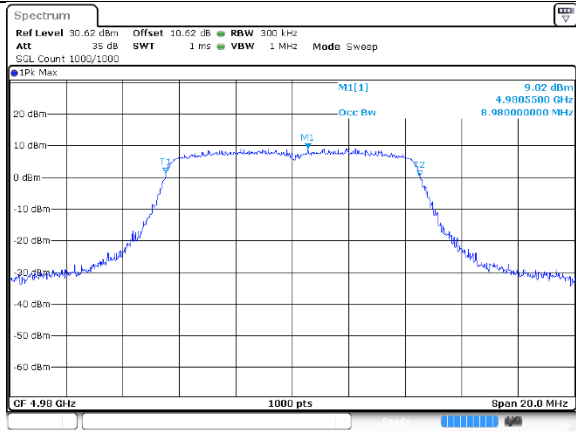
Project Number: R2603043, Tester Name: Rachana Khanduri
Date: 10.MAR.2026 13:59:48

4955MHz-10MHz-802.11n10-2-A



Project Number: R2603043, Tester Name: Rachana Khanduri
Date: 10.MAR.2026 14:03:06

4980MHz-10MHz-802.11n10-1-A



Project Number: R2603043, Tester Name: Rachana Khanduri
Date: 10.MAR.2026 14:01:23

4980MHz-10MHz-802.11n10-2-A

9 FCC §2.1051, §90.210 & ISEDC RSS-111 §5.5 - Spurious Emissions at Antenna Terminals

9.1 Applicable Standards

According to FCC §90.210

TABLE 1 TO §90.210—APPLICABLE EMISSION MASKS

Frequency band (MHz)	Mask for equipment with audio low pass filter	Mask for equipment without audio low pass filter
Below 25 ¹	A or B	A or C
25-50	B	C
72-76	B	C
150-174 ²	B, D, or E	C, D or E
150 paging only	B	C
220-222	F	F
421-512 ^{2 5}	B, D, or E	C, D, or E
450 paging only	B	G
806-809/851-854 ⁶	B	H
809-824/854-869 ³⁵	B, D	D, G.
896-901/935-940	I	J
902-928	K	K
929-930	B	G
4940-4990 MHz	L or M	L or M
5850-5925 ⁴		
All other bands	B	C

(m) **Emission Mask M.** For high power transmitters (greater than 20 dBm) operating in the 4940-4990 MHz frequency band, the power spectral density of the emissions must be attenuated below the output power of the transmitter as follows:

- (1) On any frequency removed from the assigned frequency between 0-45% of the authorized bandwidth (BW): 0 dB.
- (2) On any frequency removed from the assigned frequency between 45-50% of the authorized bandwidth: $56.8 \log (\% \text{ of } (BW)/45)$ dB.
- (3) On any frequency removed from the assigned frequency between 50-55% of the authorized bandwidth: $26 + 14.5 \log (\% \text{ of } (BW)/50)$ dB.
- (4) On any frequency removed from the assigned frequency between 55-100% of the authorized bandwidth: $32 + 31 \log (\% \text{ of } (BW)/55)$ dB.
- (5) On any frequency removed from the assigned frequency between 100-150% of the authorized bandwidth: $40 + 5.7 \log (\% \text{ of } (BW)/100)$ dB.
- (6) On any frequency removed from the assigned frequency between above 150% of the authorized bandwidth: 50 dB or $55 + 10 \log (P)$ dB, whichever is the lesser attenuation.
- (7) The zero dB reference is measured relative to the highest average power of the fundamental emission measured across the designated channel bandwidth using a resolution bandwidth of at least one percent of the occupied bandwidth of the fundamental emission and a video bandwidth of 30 kHz. The power spectral density is the power measured within the resolution bandwidth of the measurement device divided by the resolution bandwidth of the measurement device. Emission levels are also based on the use of measurement instrumentation employing a resolution bandwidth of at least one percent of the occupied bandwidth.

According to ISERC RSS-111 §5.5

5.5 Transmitter Unwanted Emissions

Transmitter unwanted emissions shall be measured according to the method described in [Section 4.3](#).

On any frequency f , offset from the channel centre frequency f_c by a separation f_d (expressed as a percentage of the channel bandwidth), the power spectral density of the unwanted emissions for low- and high-power transmitters shall comply with the limits specified below in [Table 2](#). [Figure 1](#) shows the emission mask for low- and high-power transmitters. For equipment with multiple transmitters, the unwanted emissions of each transmitter shall comply with the emission limits based on the output power of the transmitter regardless of the total output power of the equipment (i.e. total output power from all the transmitters).

Table 2 — Emission Mask for Low- and High-power Transmitters		
Offset Frequency f_d (% of the Equipment's Channel Bandwidth)	Minimum Attenuation (dB)	
	Low-power Transmitter	High-power Transmitter
$0 < f_d \leq 45$	0	0
$45 < f_d \leq 50$	$219 \log (f_d/45)$	$568 \log (f_d/45)$
$50 < f_d \leq 55$	$10 + 242 \log (f_d/50)$	$26 + 145 \log (f_d/50)$
$55 < f_d \leq 100$	$20 + 31 \log (f_d/55)$	$32 + 31 \log (f_d/55)$
$100 < f_d \leq 150$	$28 + 68 \log (f_d/100)$	$40 + 57 \log (f_d/100)$
$f_d > 150$	40	whichever is less stringent 50 or $55 + 10 \log p$

Where: f_d (%) = $((f - f_c) / \text{channel bandwidth}) \times 100$
 p : transmitter's output power (in watts), measured as per [Section 4.1](#)

9.2 Test Procedure

Conducted spurious emissions:

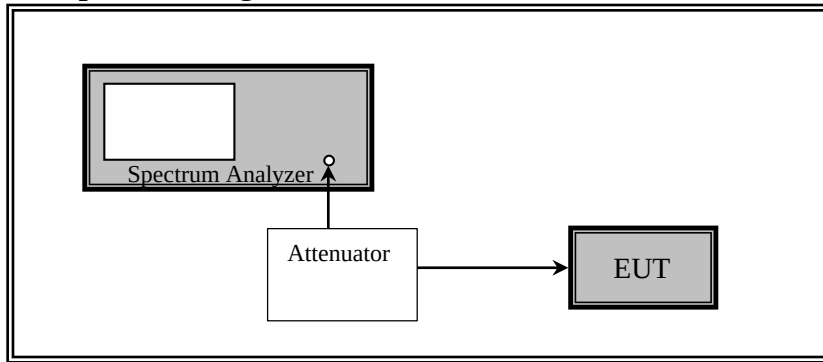
The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for measurements up to 1GHz and set to 1 MHz for measurements up to the 10th harmonic.

Band-edge emissions:

According to ANSI C63.26-2015 section 5.7 Unwanted (out-of-band and spurious) conducted emissions measurement procedures (conducted test at antenna port):

A RBW narrower than the specified reference bandwidth can be used (generally limited to no less than 1% of the OBW).

9.3 Test Setup Block Diagram



BACL No.	Manufacturers	Descriptions	Models	Serial Numbers	Calibration Dates	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	1321.3008k39-101203-UW	2025-08-04	1 year
1585	N/A	SMA 24in RF cable	ST18/SMAm /SMAm/24	245210	2025-09-19	6 months
1467	N/A	SMA 24in RF cable	ST18/SMAm /SMAm/24	245207	2025-09-19	6 months
1541	Pasternack	10dB Attenuator, SMA	PE7395-10	BACL01541A	2026-01-27	1 year

Statement of Traceability: *BACL Corp.* attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy PI02 “A2LA Policy on Metrological Traceability”.

9.4 Test Environmental Conditions

Temperature:	22.4° C
Relative Humidity:	34 %
ATM Pressure:	101.8 kPa

The testing was performed by Rachana Khanduri on 2026-03-02, 2026-03-11 and 2026-03-12 in the RF Site

9.5 Test Results

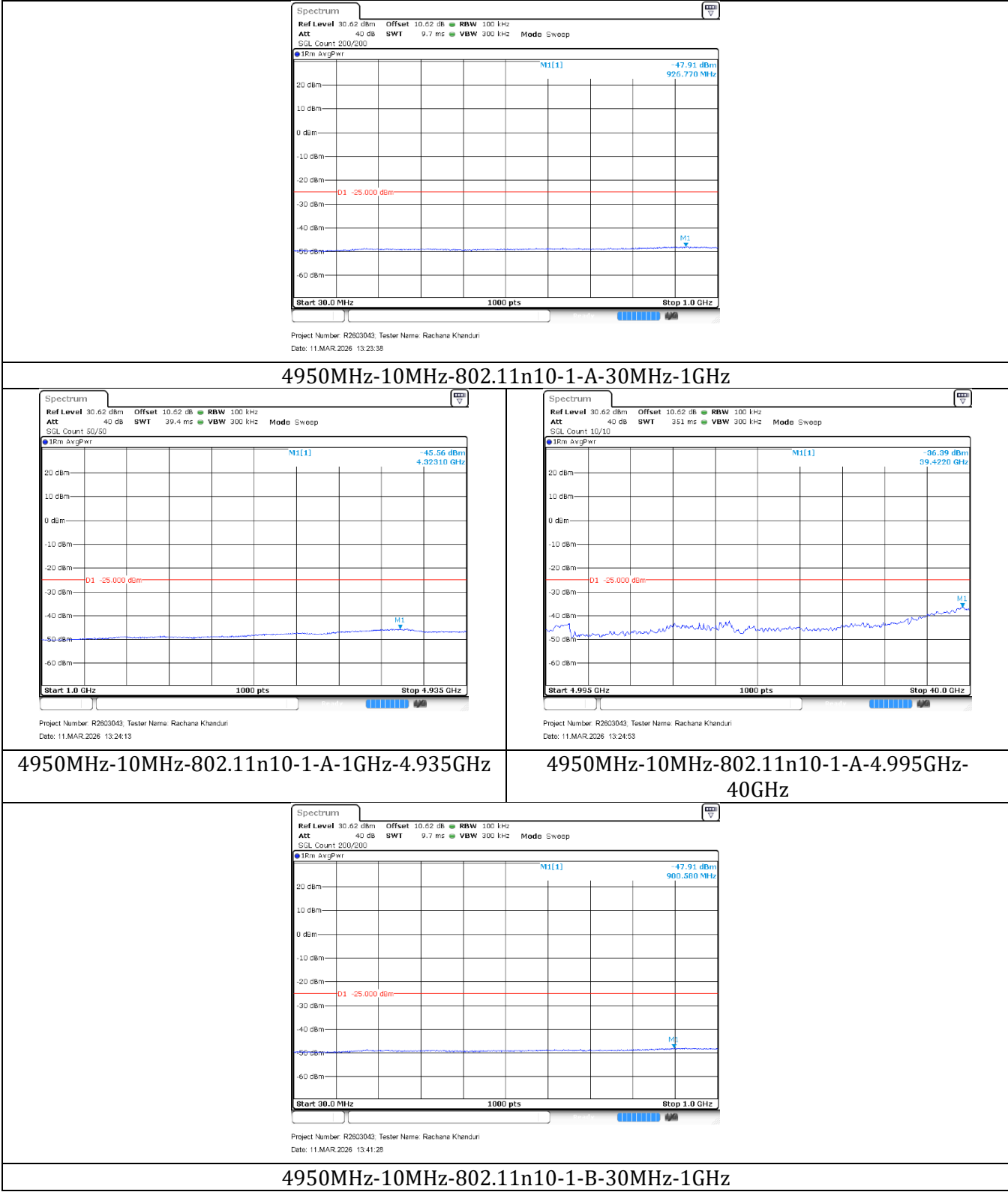
Test Result: Pass

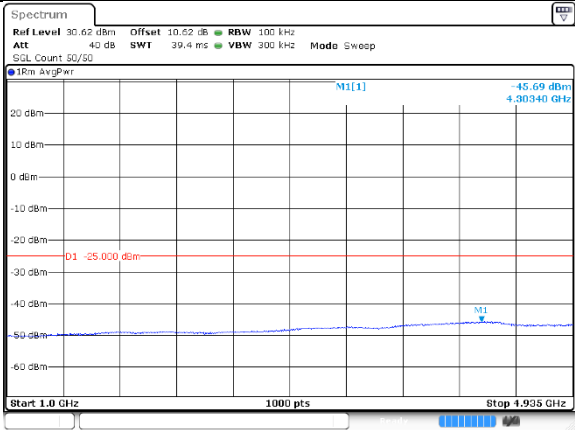
Note: Worst case power setting was used to perform Spurious Emissions and Emission Mask.

Spurious Emissions at Antenna Terminals

Naming Convention: Frequency(MHz)-Bandwidth(MHz)-Mode-Radio-Antenna-Frequency range

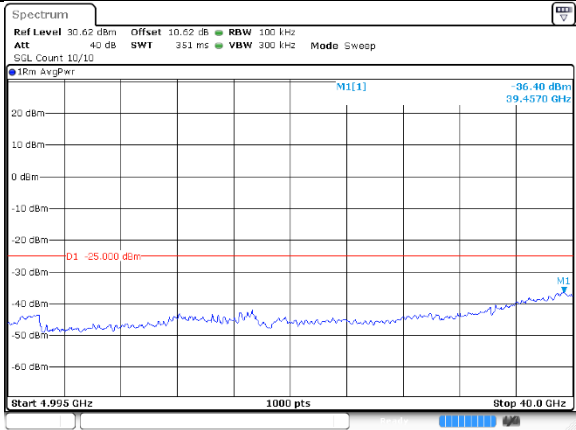
Radio 1





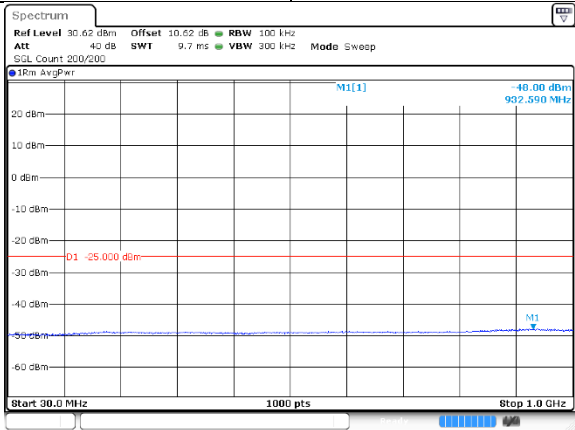
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:42:04

4950MHz-10MHz-802.11n10-1-A-1GHz-4.935GHz



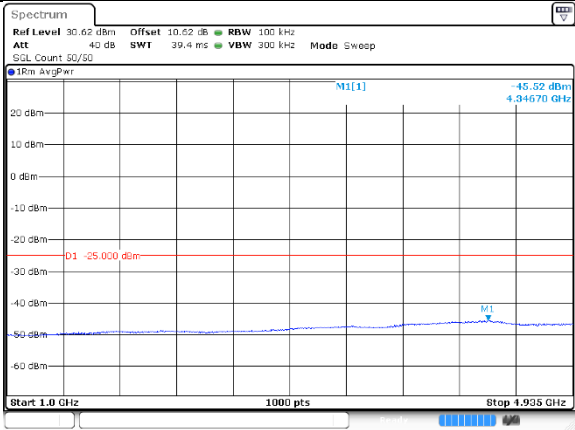
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:42:44

4950MHz-10MHz-802.11n10-1-B-4.995GHz-40GHz



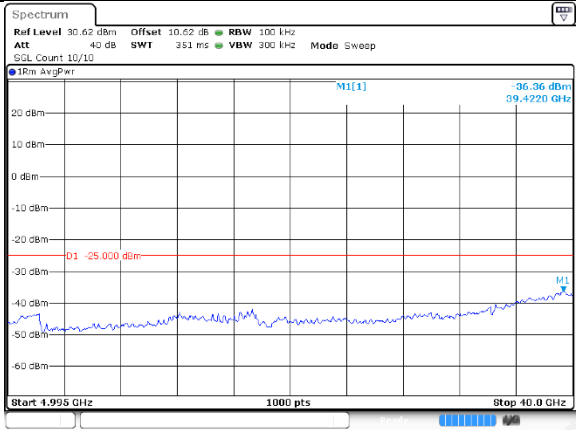
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:29:16

4955MHz-10MHz-802.11n10-1-A-30MHz-1GHz



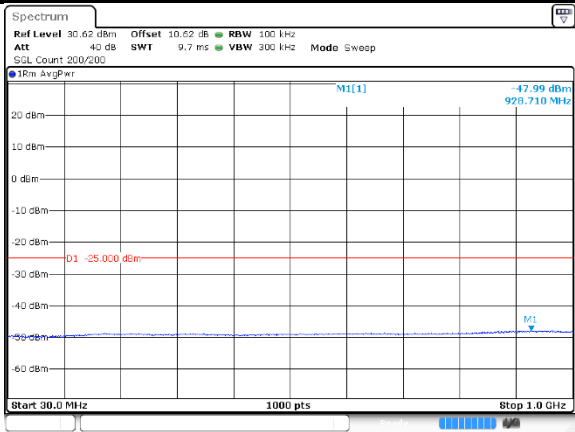
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:29:51

4955MHz-10MHz-802.11n10-1-A-1GHz-4.935GHz



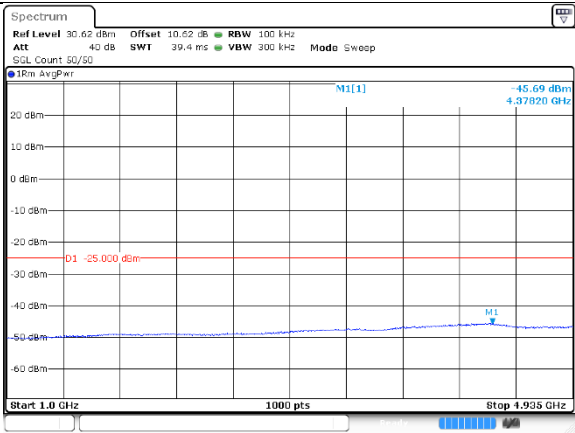
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:30:31

4955MHz-10MHz-802.11n10-1-A-4.995GHz-40GHz



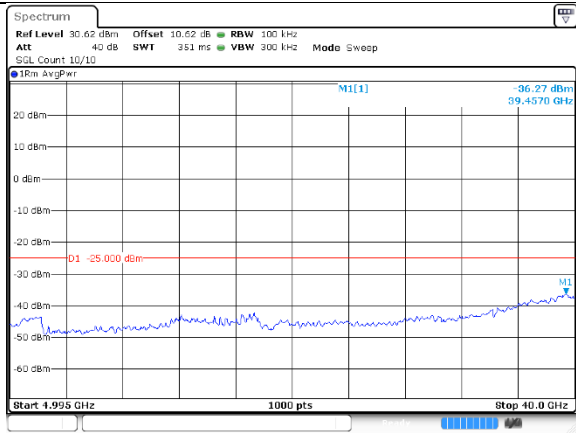
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:48:29

4955MHz-10MHz-802.11n10-1-B-30MHz-1GHz



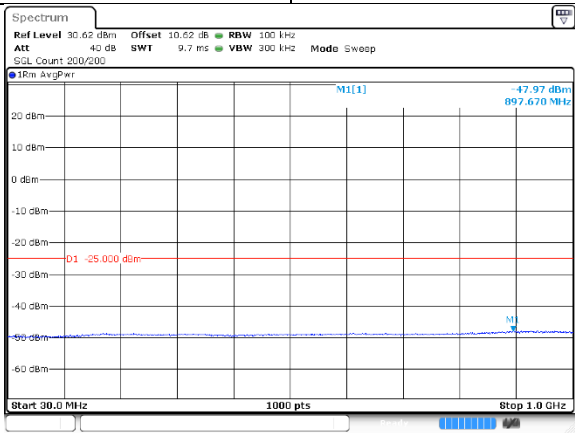
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:49:05

4955MHz-10MHz-802.11n10-1-B-1GHz-4.935GHz



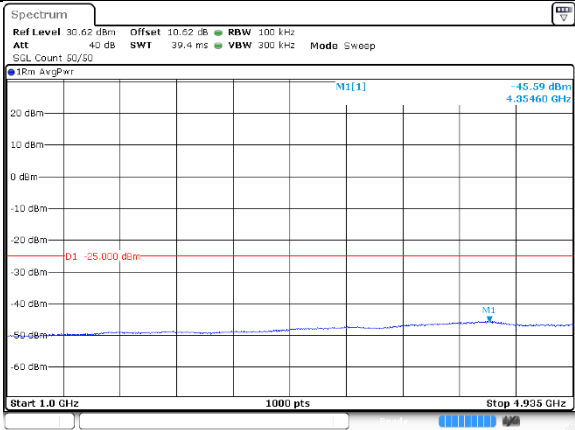
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:49:45

4955MHz-10MHz-802.11n10-1-B-4.995GHz-40GHz



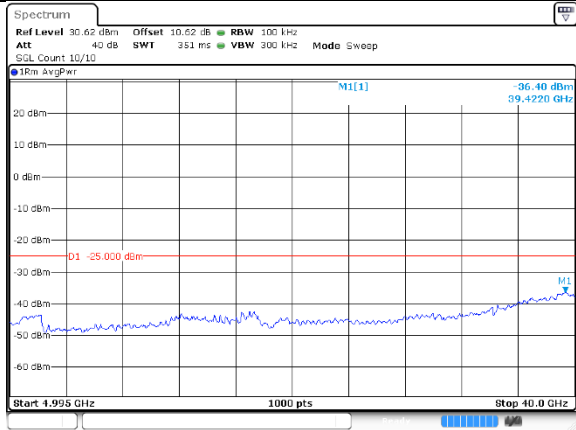
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:50:58

4980MHz-10MHz-802.11n10-1-A-30MHz-1GHz



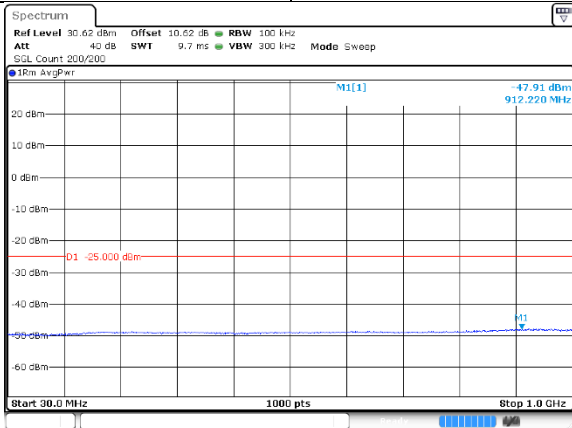
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:38:34

4980MHz-10MHz-802.11n10-1-A-1GHz-4.935GHz



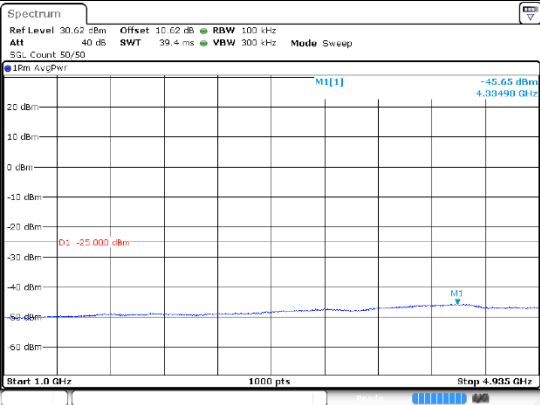
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:37:14

4980MHz-10MHz-802.11n10-1-A-4.995GHz-40GHz



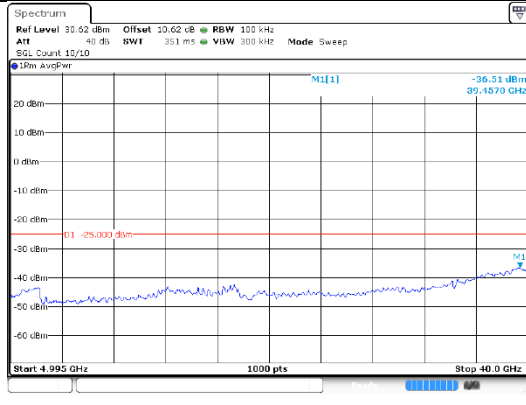
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:37:27

4980MHz-10MHz-802.11n10-1-B-30MHz-1GHz



Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:58:03

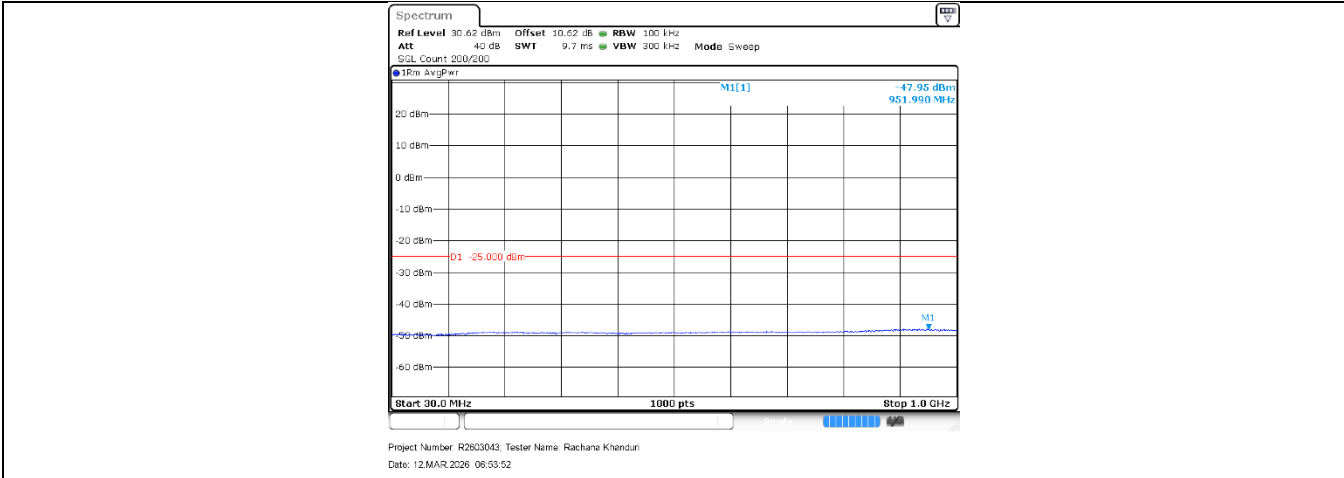
4980MHz-10MHz-802.11n10-1-B-1GHz-4.935GHz



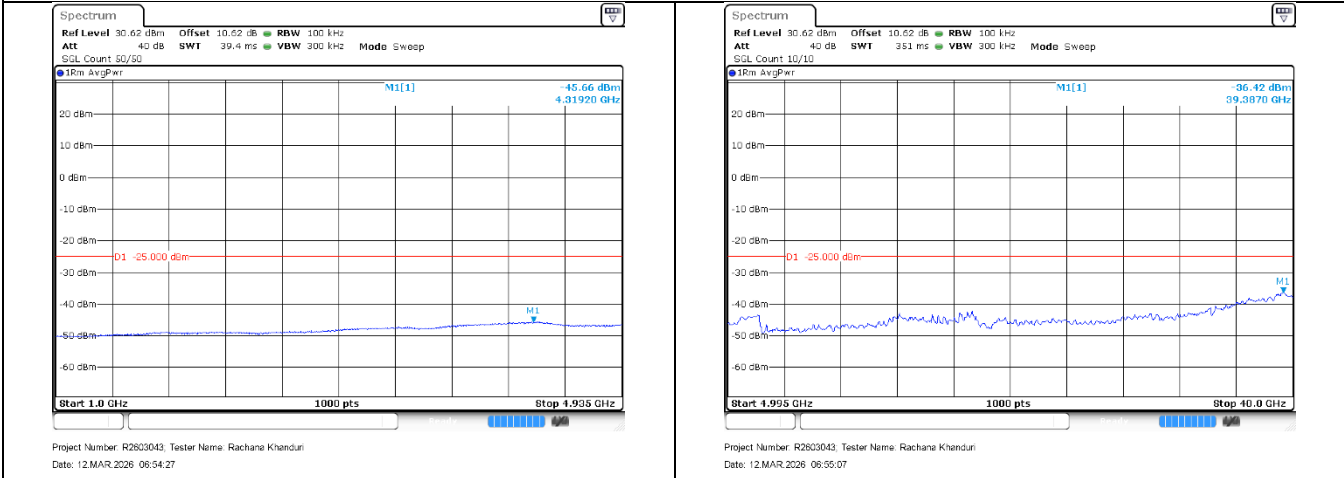
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 11.MAR.2026 13:58:43

4980MHz-10MHz-802.11n10-1-B-4.995GHz-40GHz

Radio 2

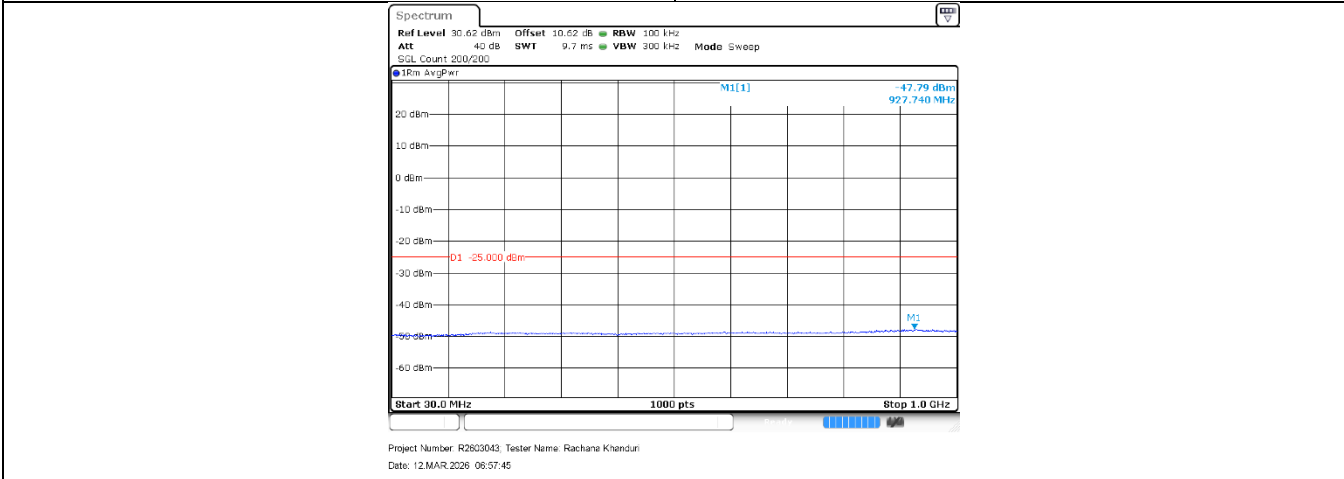


4950MHz-10MHz-802.11n10-2-A-30MHz-1GHz

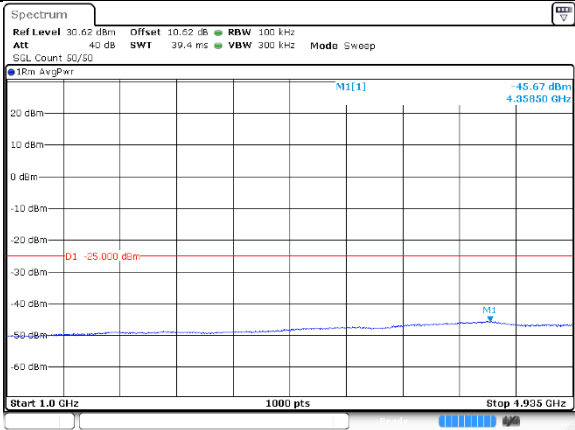


4950MHz-10MHz-802.11n10-2-A-1GHz-4.935GHz

4950MHz-10MHz-802.11n10-2-A-4.995GHz-40GHz

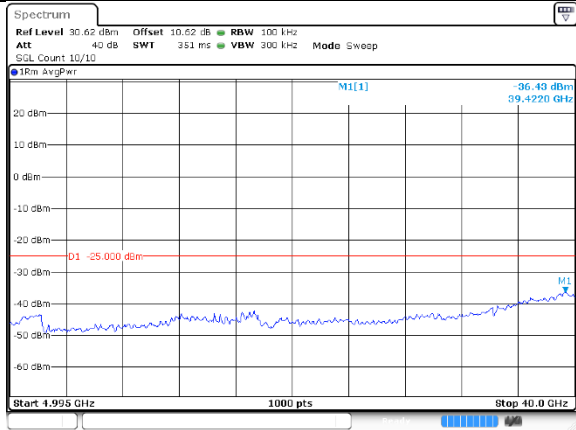


4950MHz-10MHz-802.11n10-2-B-30MHz-1GHz



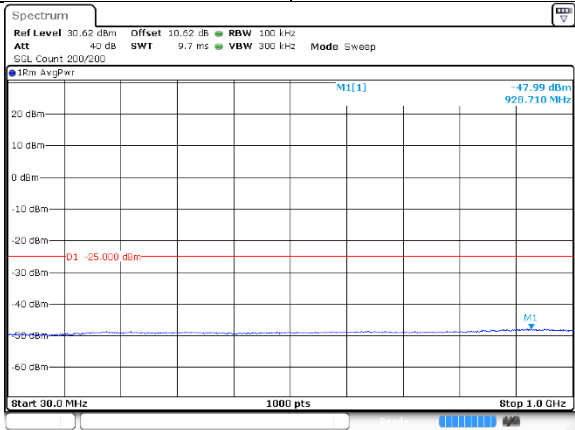
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12/MAR/2026 06:58:21

4950MHz-10MHz-802.11n10-2-A-1GHz-4.935GHz



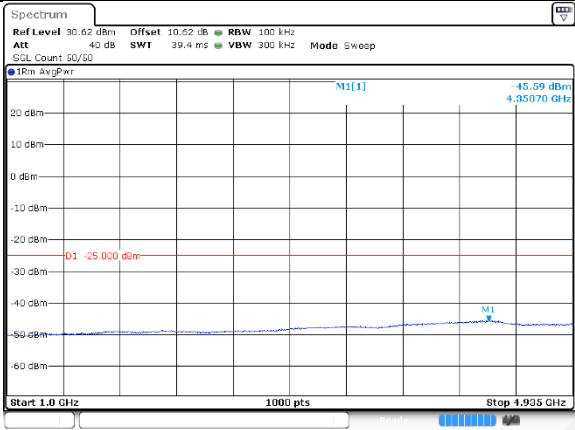
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12/MAR/2026 06:59:01

4950MHz-10MHz-802.11n10-2-B-4.995GHz-40GHz



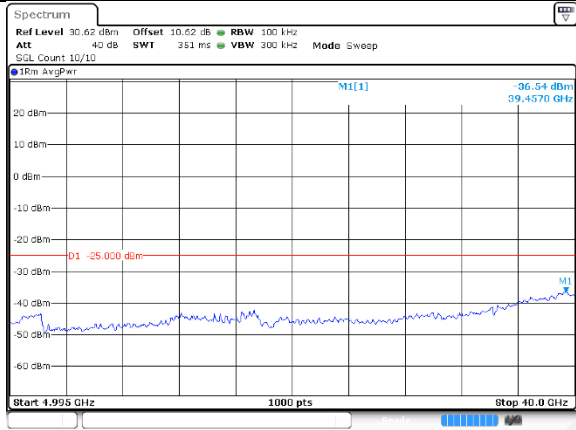
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12/MAR/2026 06:49:39

4955MHz-10MHz-802.11n10-2-A-30MHz-1GHz



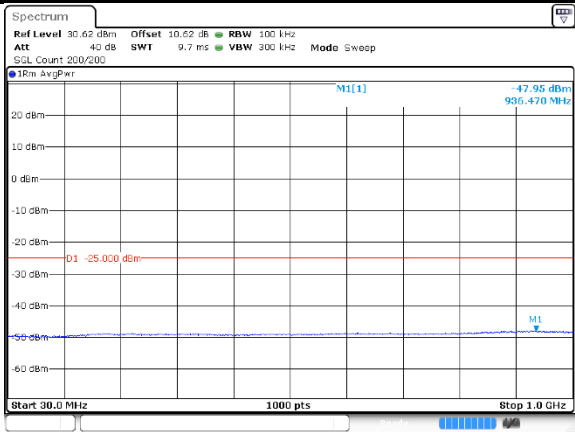
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12/MAR/2026 06:50:15

4955MHz-10MHz-802.11n10-2-A-1GHz-4.935GHz



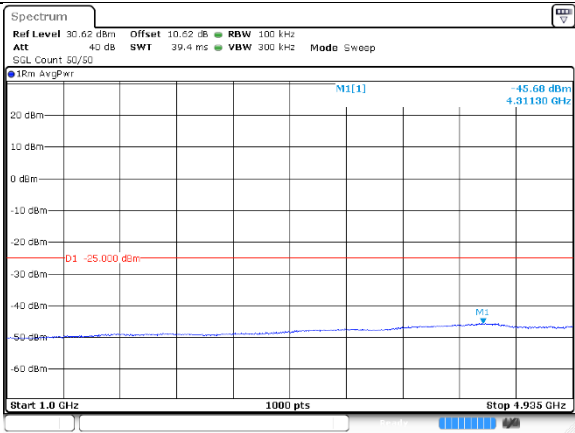
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12/MAR/2026 06:50:55

4955MHz-10MHz-802.11n10-2-A-4.995GHz-40GHz

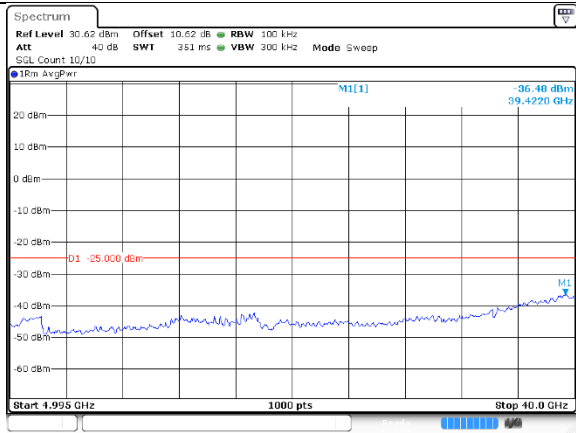


Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 07:01:56

4955MHz-10MHz-802.11n10-2-B-30MHz-1GHz



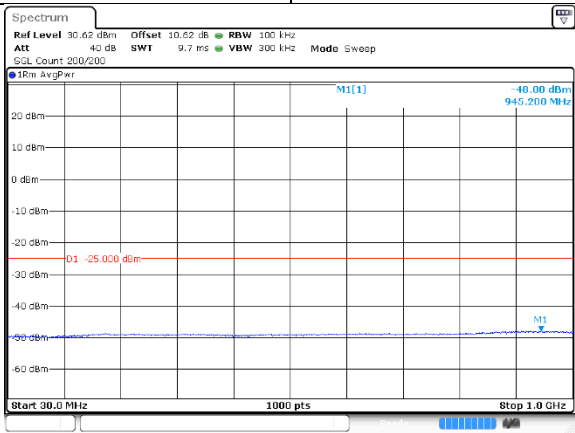
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 07:02:31



Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 07:03:11

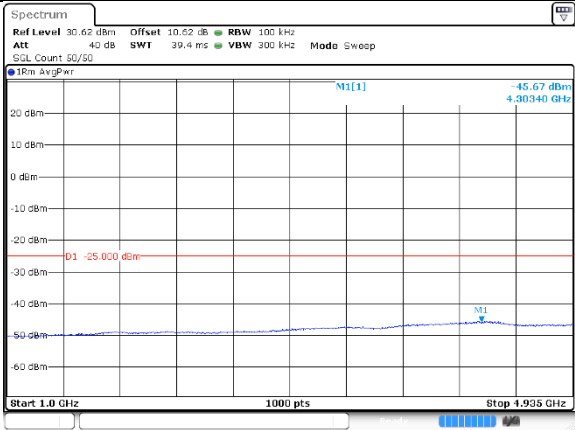
4955MHz-10MHz-802.11n10-2-B-1GHz-4.935GHz

4955MHz-10MHz-802.11n10-2-B-4.995GHz-40GHz



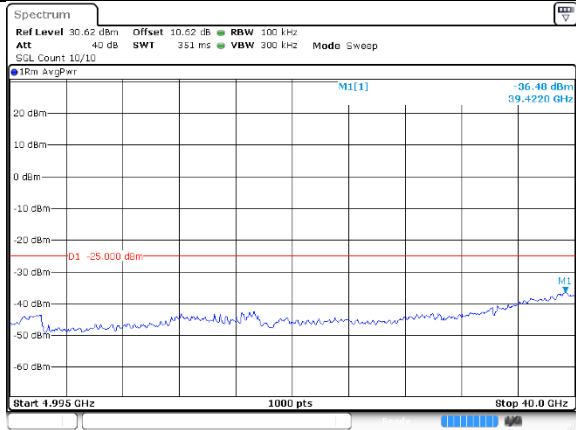
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 06:45:05

4980MHz-10MHz-802.11n10-2-A-30MHz-1GHz



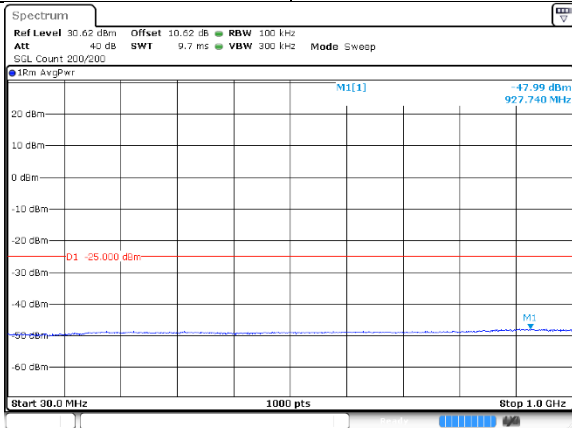
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 06:45:40

4980MHz-10MHz-802.11n10-2-A-1GHz-4.935GHz



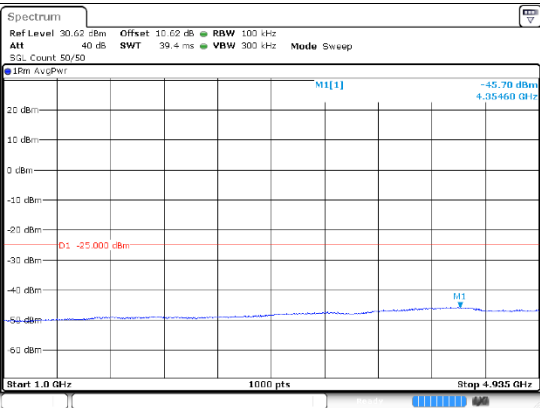
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 06:48:20

4980MHz-10MHz-802.11n10-2-A-4.995GHz-40GHz



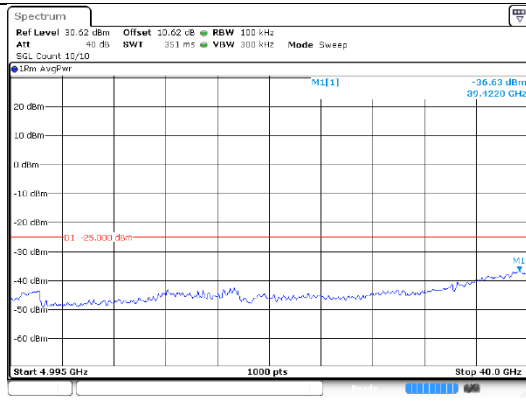
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 07:06:35

4980MHz-10MHz-802.11n10-2-B-30MHz-1GHz



Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 07:07:10

4980MHz-10MHz-802.11n10-2-B-1GHz-4.935GHz



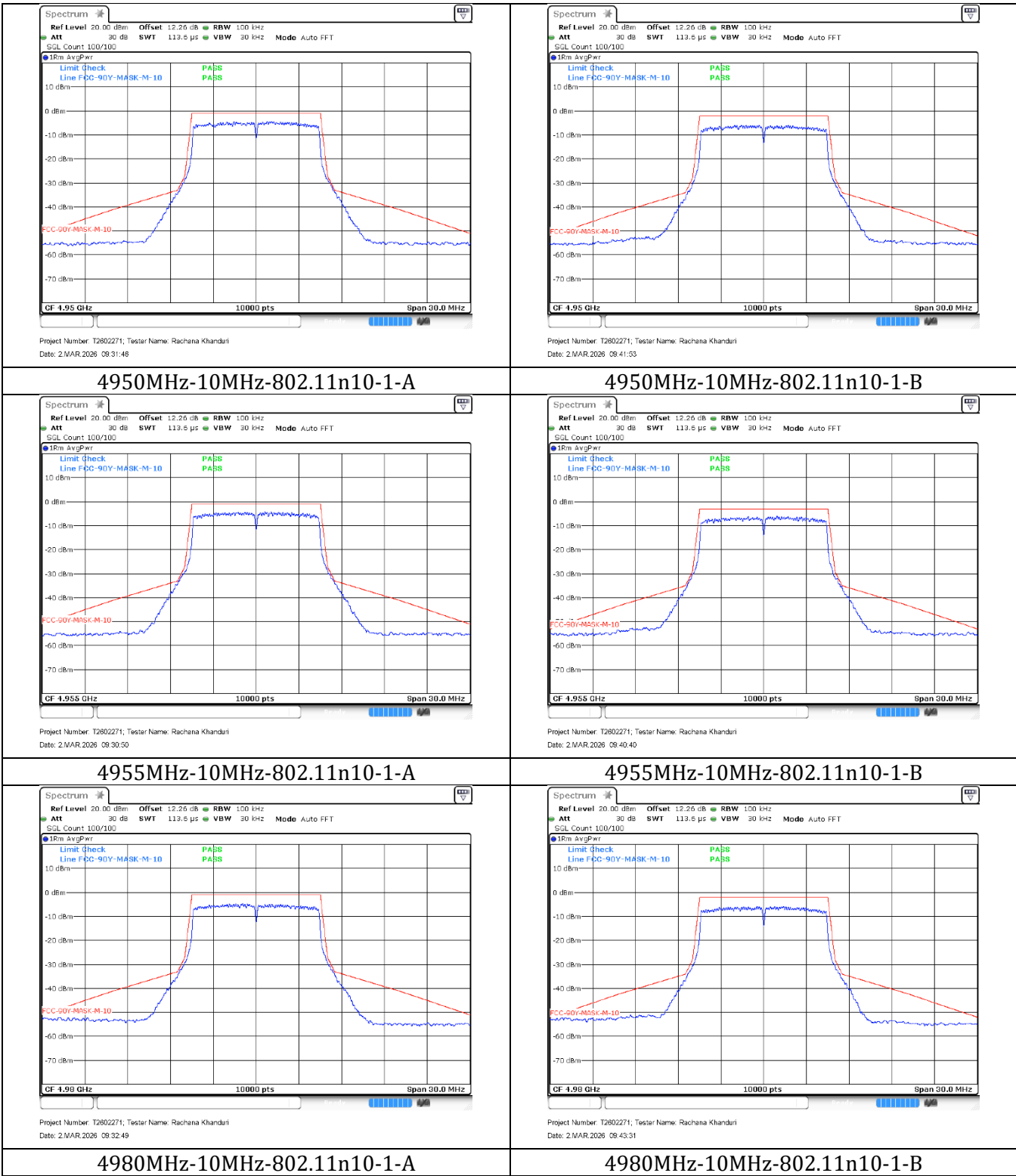
Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 12.MAR.2026 07:07:50

4980MHz-10MHz-802.11n10-2-B-4.995GHz-40GHz

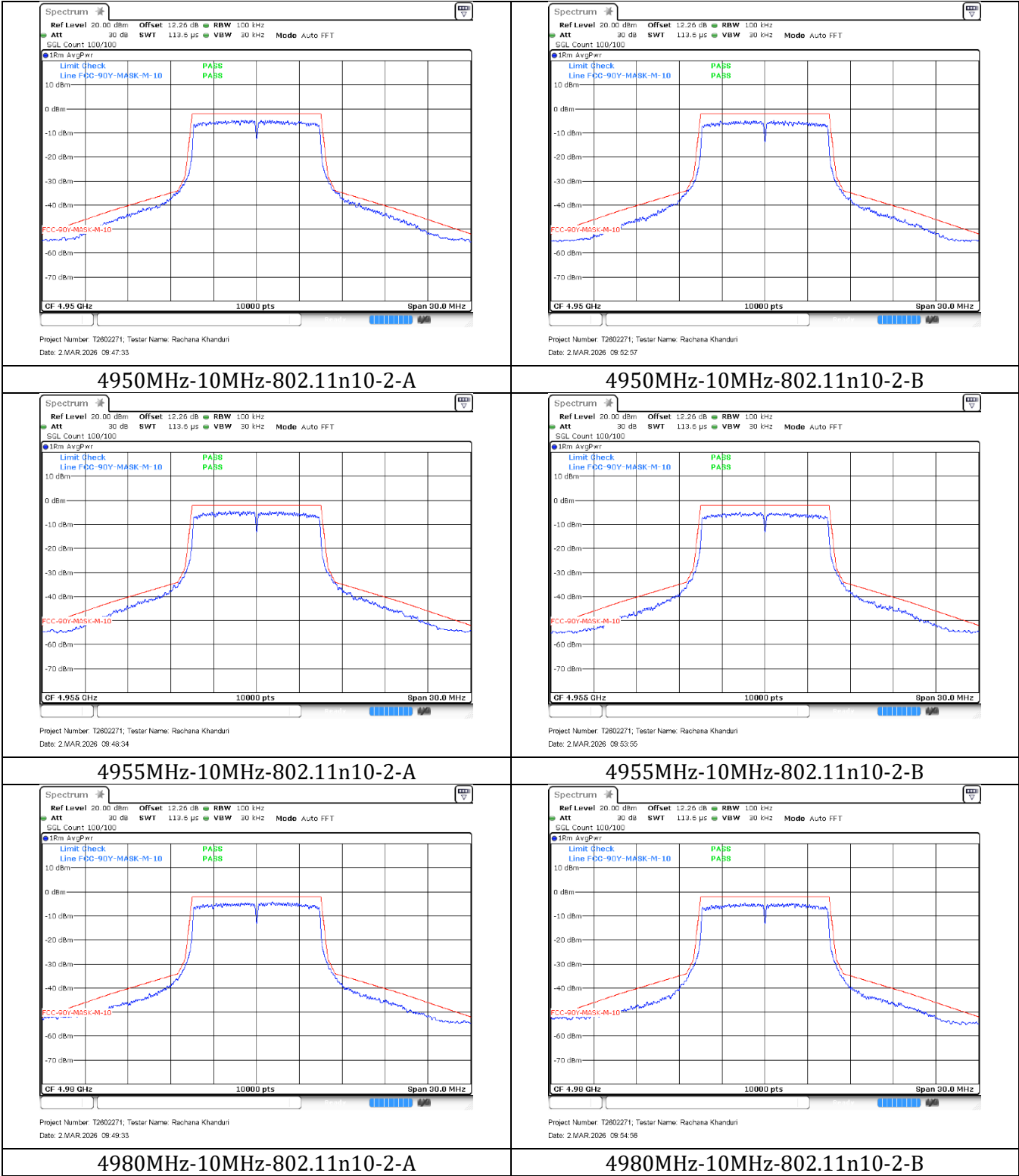
Emission Mask

Naming Convention: Frequency(MHz)-Bandwidth(MHz)-Mode-Radio-Antenna

Radio 1



Radio 2



10 FCC §2.1055, §90.213, RSS-111 § 5.2 - Frequency Tolerance

10.1 Applicable Standard

According to FCC Part 90.213,

§90.213 Frequency stability.

(a) Unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

TABLE 1 TO §90.213(a)—MINIMUM FREQUENCY STABILITY

[Parts per million (ppm)]

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	^{1 2 3} 100	100	200
25-50	20	20	50
72-76	5		50
150-174	^{5 11} 5	⁶ 5	^{4 6} 50
216-220	1.0		1.0
220-222 ¹²	0.1	1.5	1.5
421-512	^{7 11 14} 2.5	⁸ 5	⁸ 5
806-809	¹⁴ 1.0	1.5	1.5
809-824	¹⁴ 1.5	2.5	2.5
851-854	1.0	1.5	1.5
854-869	1.5	2.5	2.5
896-901	¹⁴ 0.1	1.5	1.5
902-928	2.5	2.5	2.5
902-928 ¹³	2.5	2.5	2.5
929-930	1.5		
935-940	0.1	1.5	1.5
1427-1435	⁹ 300	300	300
Above 2450 ¹⁰			

According to RSS-111 § 5.2,

The applicant shall ensure frequency stability by showing that the occupied bandwidth is maintained within the band of operation when tested at the temperature and supply voltage variations specified for the frequency stability measurement in RSS-Gen.

10.2 Test Procedure

(a) The frequency stability shall be measured with variation of ambient temperature as follows:

(1) From -30° to $+50^{\circ}$ centigrade for all equipment except that specified in paragraphs (a) (2) and (3) of this section.

(2) From -20° to $+50^{\circ}$ centigrade for equipment to be licensed for use in the Maritime Services under part 80 of this chapter, except for Class A, B, and S Emergency Position Indicating Radiobeacons (EPIRBS), and equipment to be licensed for use above 952 MHz at operational fixed stations in all services, stations in the Local Television Transmission Service and Point-to-Point Microwave Radio Service under part 21 of this chapter, equipment licensed for use aboard aircraft in the Aviation Services under part 87 of this chapter, and equipment authorized for use in the Family Radio Service under part 95 of this chapter.

(3) From 0° to + 50° centigrade for equipment to be licensed for use in the Radio Broadcast Services under part 73 of this chapter.

(b) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10° centigrade through the range. A period of time sufficient to stabilize all of the components of the oscillator circuit at each temperature level shall be allowed prior to frequency measurement. The short term transient effects on the frequency of the transmitter due to keying (except for broadcast transmitters) and any heating element cycling normally occurring at each ambient temperature level also shall be shown. Only the portion or portions of the transmitter containing the frequency determining and stabilizing circuitry need be subjected to the temperature variation test.

(c) In addition to all other requirements of this section, the following information is required for equipment incorporating heater type crystal oscillators to be used in mobile stations, for which type acceptance is first requested after March 25, 1974, except for battery powered, hand carried, portable equipment having less than 3 watts mean output power.

(1) Measurement data showing variation in transmitter output frequency from a cold start and the elapsed time necessary for the frequency to stabilize within the applicable tolerance. Tests shall be made after temperature stabilization at each of the ambient temperature levels; the lower temperature limit, 0° centigrade and + 30° centigrade with no primary power applied.

(2) Beginning at each temperature level specified in paragraph (c)(1) of this section, the frequency shall be measured within one minute after application of primary power to the transmitter and at intervals of no more than one minute thereafter until ten minutes have elapsed or until sufficient measurements are obtained to indicate clearly that the frequency has stabilized within the applicable tolerance, whichever time period is greater. During each test, the ambient temperature shall not be allowed to rise more than 10° centigrade above the respective beginning ambient temperature level.

(3) The elapsed time necessary for the frequency to stabilize within the applicable tolerance from each beginning ambient temperature level as determined from the tests specified in this paragraph shall be specified in the instruction book for the transmitter furnished to the user.

(4) When it is impracticable to subject the complete transmitter to this test because of its physical dimensions or power rating, only its frequency determining and stabilizing portions need be tested.

(d) The frequency stability shall be measured with variation of primary supply voltage as follows:

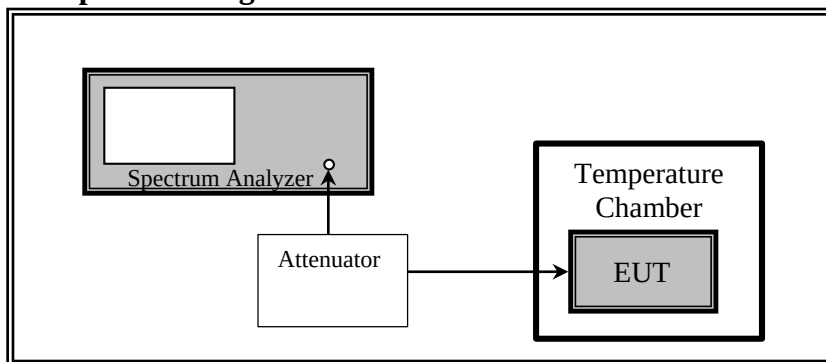
(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.

(3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided. Effects on frequency of transmitter keying (except for broadcast transmitters) and any heating element cycling at the nominal supply voltage and at each extreme also shall be shown.

(e) When deemed necessary, the Commission may require tests of frequency stability under conditions in addition to those specifically set out in paragraphs (a), (b), (c), and (d) of this section. (For example measurements showing the effect of proximity to large metal objects, or of various types of antennas, may be required for portable equipment.)

10.3 Test Setup Block Diagram



10.4 Test Equipment List and Details

BACL No.	Manufacturers	Descriptions	Models	Serial Numbers	Calibration Dates	Calibration Interval
912	Rhode & Schwarz	Signal Analyzer	FSV40	1321.3008k39-101203-UW	2025-08-04	1 year
1060	BACL	Temperature Chamber	BTH-150-40	30078	2025-11-20	1 year
1604	N/A	20dB Attenuator, SMA	MCL BW-S20W5+	N/A	2025-12-28	1 year
1588	N/A	SMA 36in RF Cable	1-3636-301-3236	MFR 64023 0242	2025-09-19	6 months

Statement of Traceability: BACL Corp. attests that all of the calibrations on the equipment items listed above were traceable to NIST or to another internationally recognized National Metrology Institute (NMI), and were compliant with the latest version of A2LA policy P102 “A2LA Policy on Metrological Traceability”.

10.5 Test Environmental Conditions

Temperature:	18.8° C
Relative Humidity:	34 %
ATM Pressure:	101.8 kPa

The testing was performed by Rachana Khanduri on 2026-03-06 in the RF Site.

10.6 Test Results

FCC: 4.9GHz Radio1 and Radio 2 Antenna A:

Temperature (°C)/Voltage Conditions	Radio	Reference Frequency (GHz)	Tested Frequency (GHz)	Frequency Deviation (ppm)
-30°C/normal voltage (120V)	Radio 1	4.955	4.95507473	15.08
-30°C /normal voltage (120V)	Radio 2	4.955	4.95508019	16.18
-20°C /normal voltage (120V)	Radio 1	4.955	4.95507533	15.20
-20°C /normal voltage (120V)	Radio 2	4.955	4.95507791	15.72
-10°C /normal voltage (120V)	Radio 1	4.955	4.95507029	14.19
-10°C /normal voltage (120V)	Radio 2	4.955	4.95506825	13.77
0°C /normal voltage (120V)	Radio 1	4.955	4.95505955	12.02
0°C /normal voltage (120V)	Radio 2	4.955	4.95504869	9.83
10°C /normal voltage (120V)	Radio 1	4.955	4.95504503	9.09
10°C /normal voltage (120V)	Radio 2	4.955	4.95503501	7.07
20°C /normal voltage (120V)	Radio 1	4.955	4.95500555	1.12
20°C /normal voltage (120V)	Radio 2	4.955	4.95501047	2.11
30°C /normal voltage (120V)	Radio 1	4.955	4.95499199	-1.62
30°C /normal voltage (120V)	Radio 2	4.955	4.95499571	-0.87
40°C /normal voltage (120V)	Radio 1	4.955	4.95498785	-2.45
40°C /normal voltage (120V)	Radio 2	4.955	4.95498677	-2.67
50°C /normal voltage (120V)	Radio 1	4.955	4.95498317	-3.40
50°C /normal voltage (120V)	Radio 2	4.955	4.95497771	-4.50
20°C /low voltage (102V)	Radio 1	4.955	4.95501641	3.31
20°C /low voltage (102V)	Radio 2	4.955	4.95500927	1.87
20°C /high voltage (138V)	Radio 1	4.955	4.95502811	5.67
20°C /high voltage (138V)	Radio 2	4.955	4.95501131	2.28

Note: Testing done using CW mode

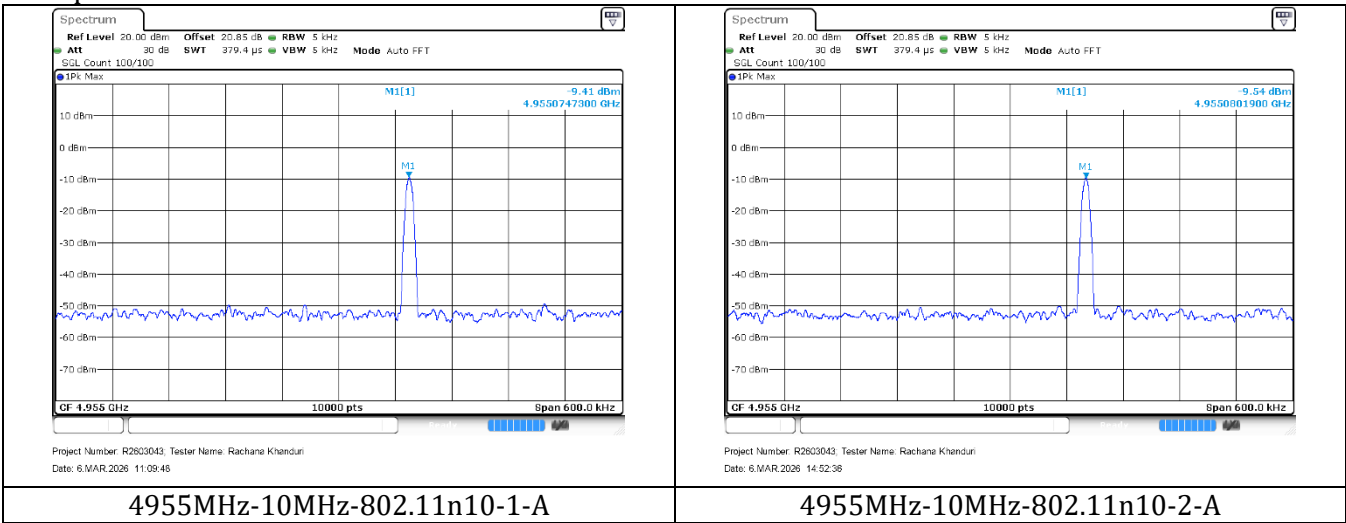
Note: Highest Power & Power Spectral Density is measured at Antenna port A and used as worst case to perform test.

Note: ppm calculated with $((\text{Tested Freq} - \text{Reference Freq}) / \text{Reference Freq}) * 1000000$

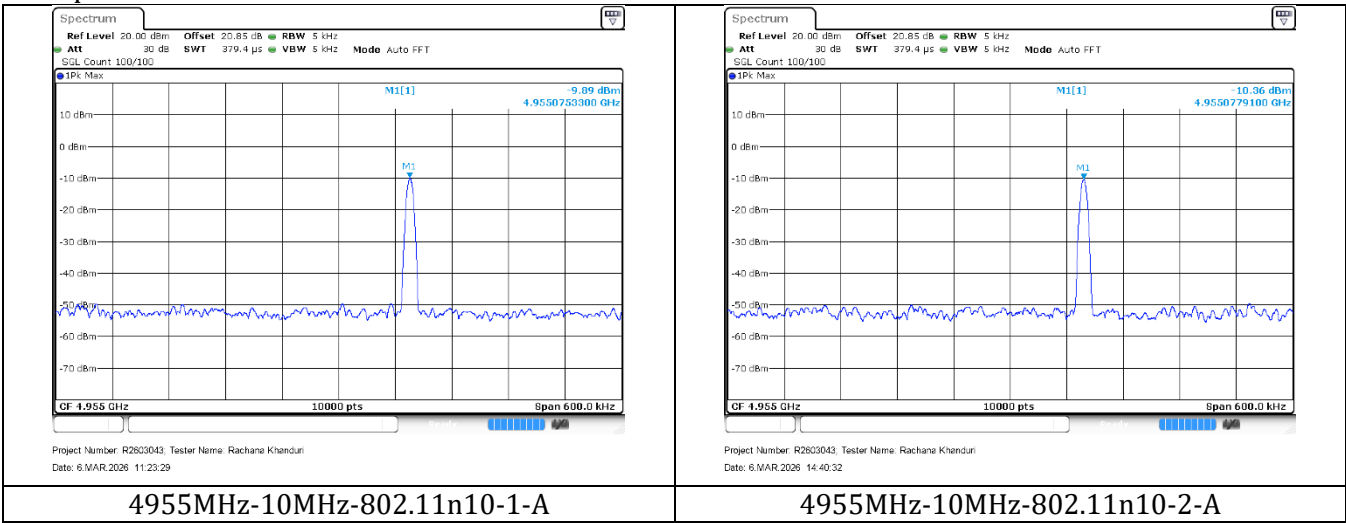
Frequency Tolerance FCC

Naming Convention: Frequency(MHz)-Bandwidth(MHz)-Mode-Radio-Antenna

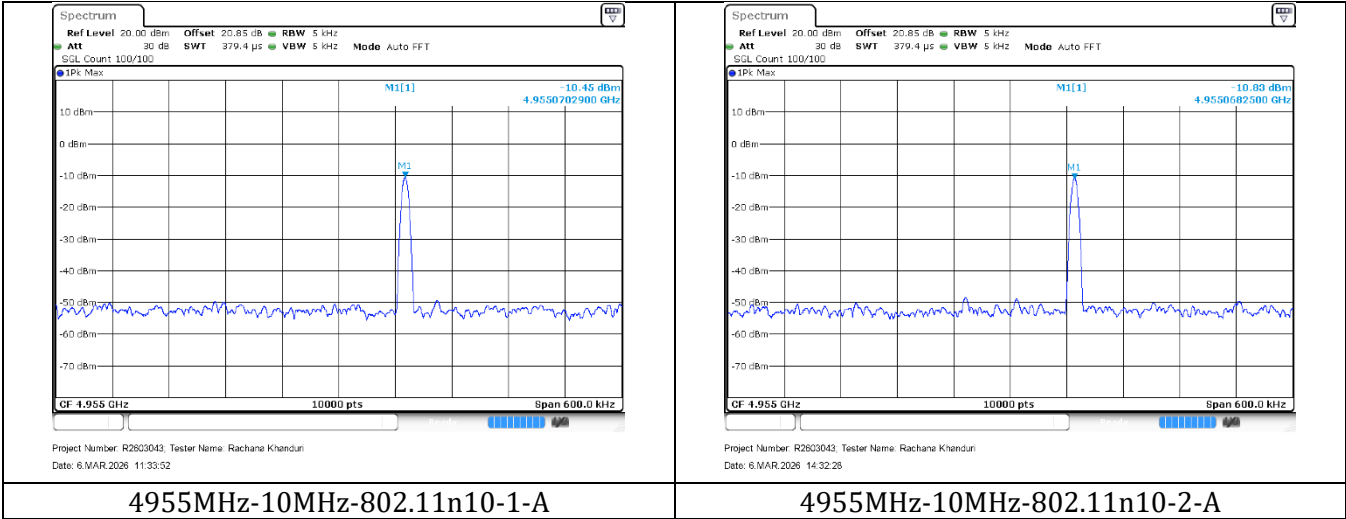
Temperature: -30 °C



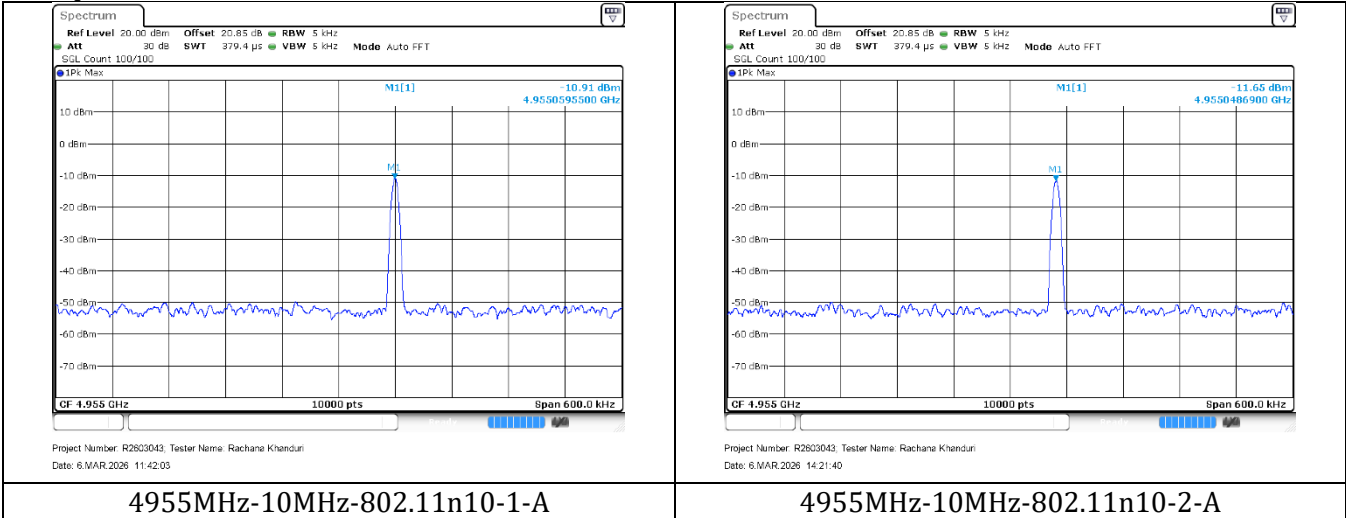
Temperature: -20 °C



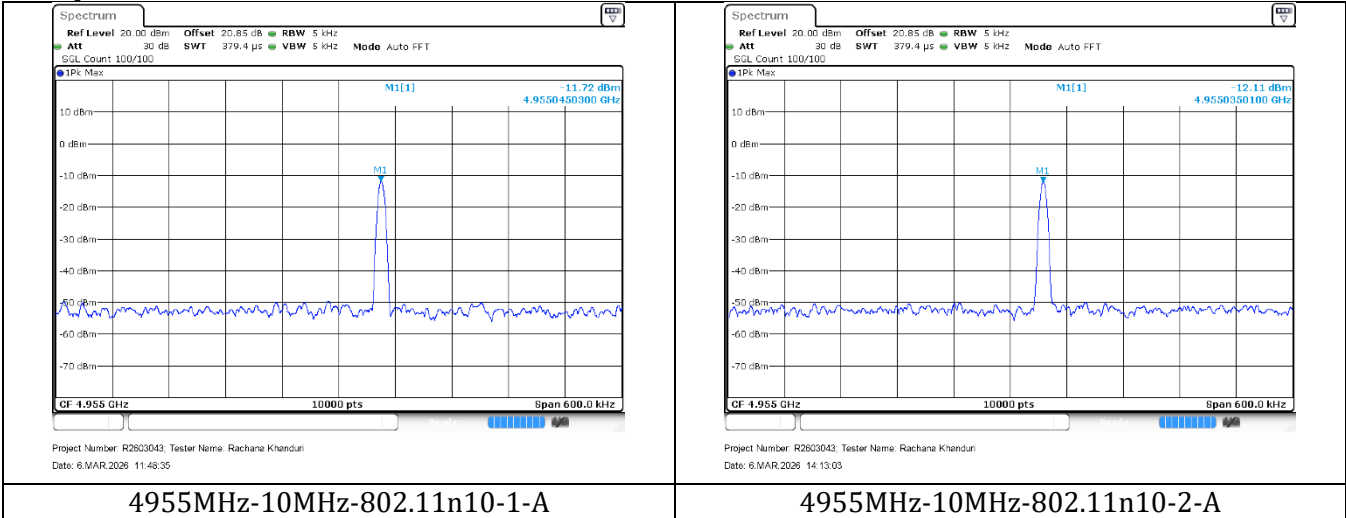
Temperature: -10 °C



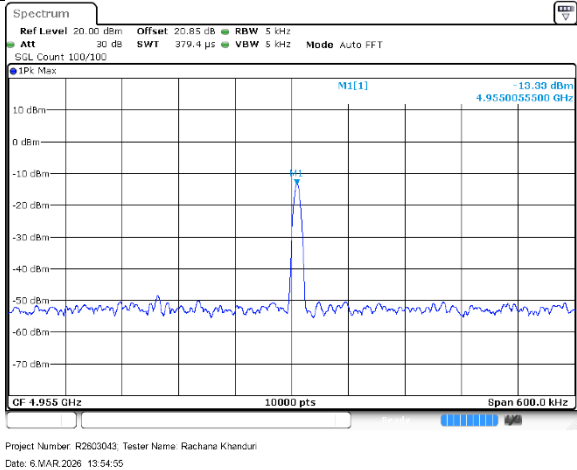
Temperature: 0 °C



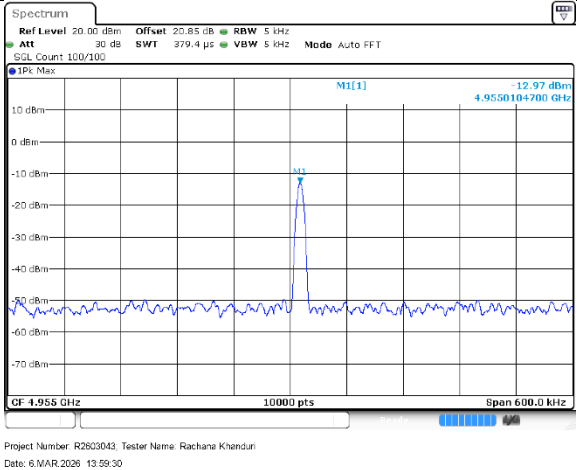
Temperature: 10 °C



Temperature: 20 °C

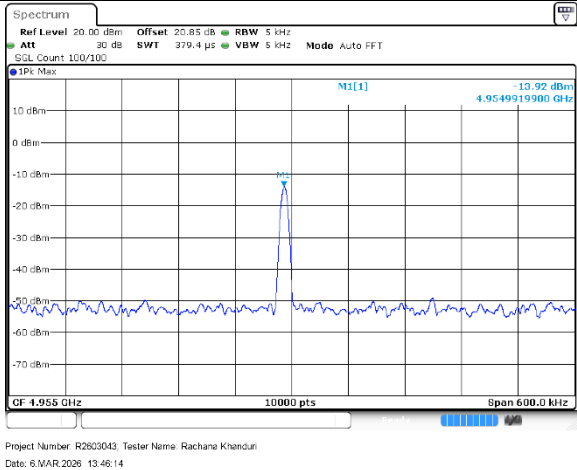


4955MHz-10MHz-802.11n10-1-A

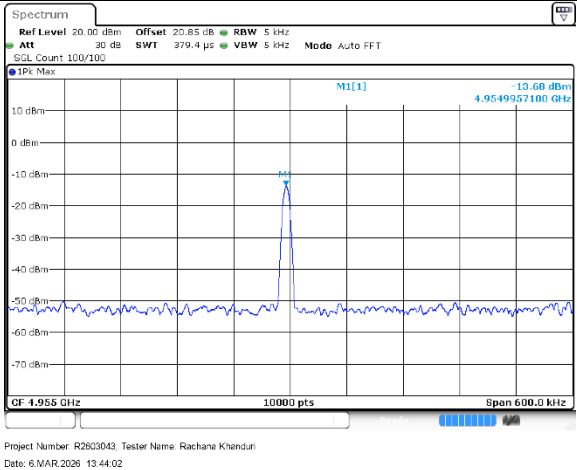


4955MHz-10MHz-802.11n10-2-A

Temperature: 30 °C

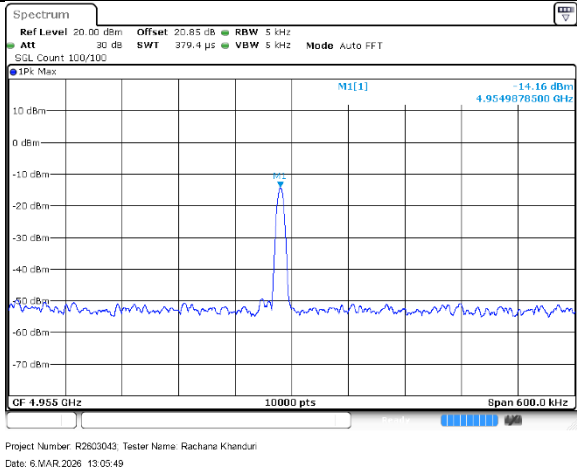


4955MHz-10MHz-802.11n10-1-A

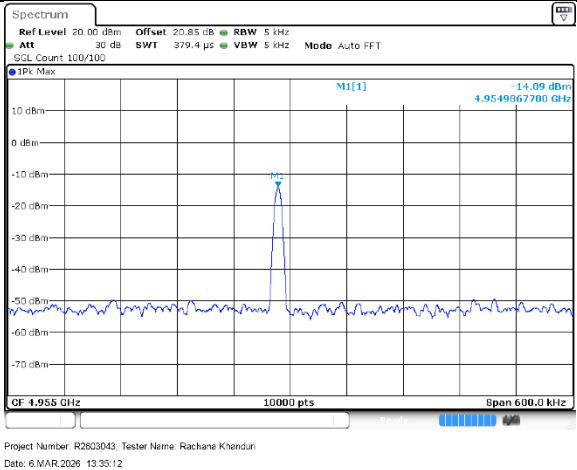


4955MHz-10MHz-802.11n10-2-A

Temperature: 40 °C

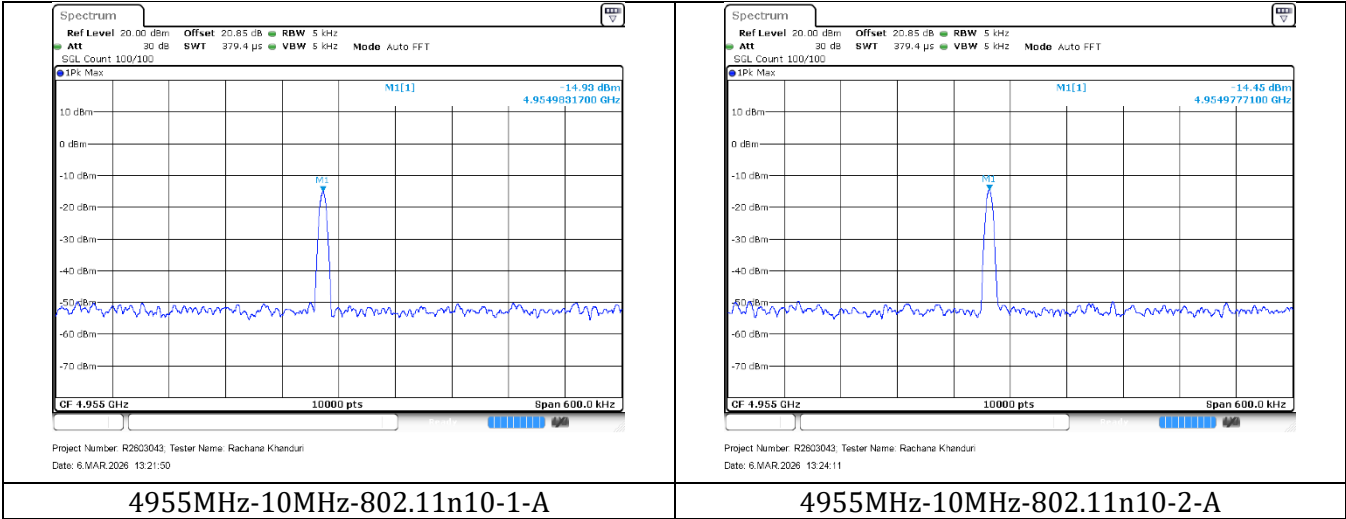


4955MHz-10MHz-802.11n10-1-A

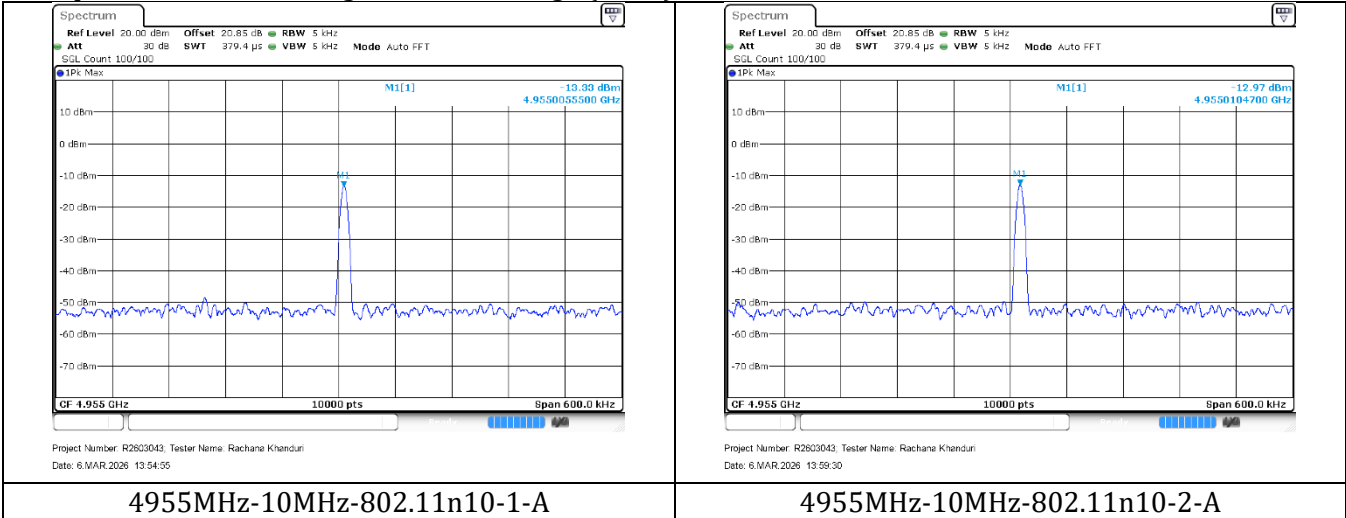


4955MHz-10MHz-802.11n10-2-A

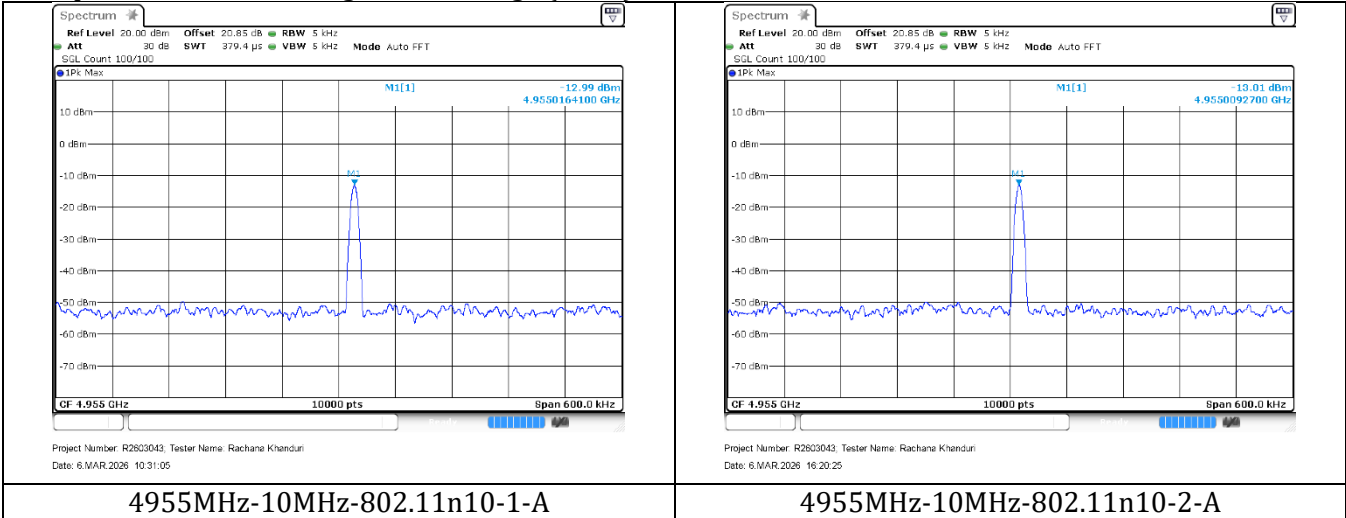
Temperature: 50 °C



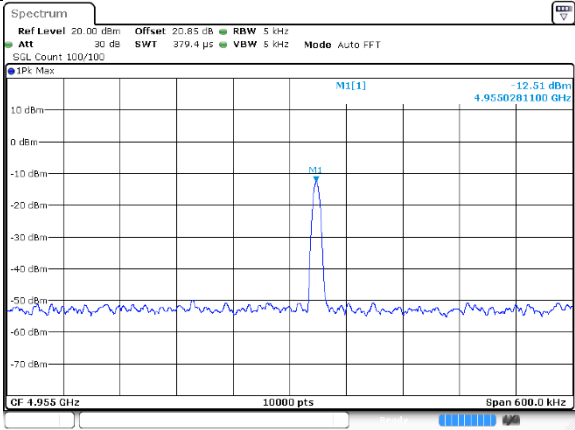
Temperature: 20 °C, Voltage: Normal Voltage (120V)



Temperature: 20 °C, Voltage: Low Voltage (102V)

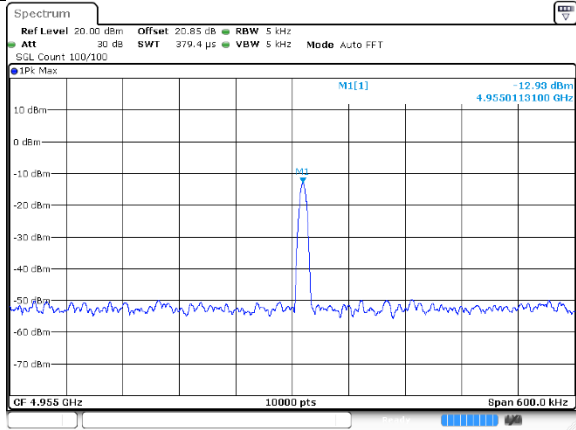


Temperature: 20 °C, Voltage: High Voltage (138V)



Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 6.MAR.2026 11:57:49

4955MHz-10MHz-802.11n10-1-A



Project Number: R2603043, Tester Name: Rachana Khenduri
Date: 6.MAR.2026 16:23:23

4955MHz-10MHz-802.11n10-2-A

IC: 4.9GHz Radio1 and Radio 2 Antenna A:

Temperature (°C)/Voltage Conditions	Radio	Antenna	Low Channel (GHz)	High Channel (GHz)	Limit (MHz)	Result
-30°C /normal voltage (120V)	Radio 1	A	4.9456275	4.98449895	4940 – 4990	Pass
-30°C /normal voltage (120V)	Radio 2	A	4.9455165	4.9845375	4940 – 4990	Pass
20°C /normal voltage (120V)	Radio 1	A	4.9456155	4.9844505	4940 – 4990	Pass
20°C /normal voltage (120V)	Radio 2	A	4.9455915	4.9844835	4940 – 4990	Pass
50°C /normal voltage (120V)	Radio 1	A	4.9455225	4.9844055	4940 – 4990	Pass
50°C /normal voltage (120V)	Radio 2	A	4.9454865	4.9844565	4940 – 4990	Pass
20°C /low voltage (102V)	Radio 1	A	4.9456035	4.9845045	4940 – 4990	Pass
20°C /low voltage (102V)	Radio 2	A	4.9455795	4.9844835	4940 – 4990	Pass
20°C /high voltage (138V)	Radio 1	A	4.9456125	4.9844625	4940 – 4990	Pass
20°C /high voltage (138V)	Radio 2	A	4.9455855	4.9844535	4940 – 4990	Pass

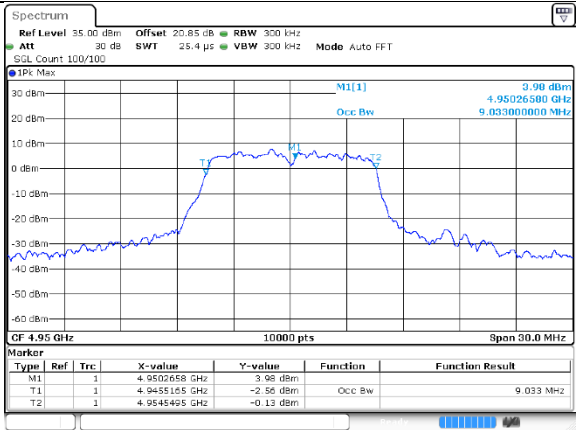
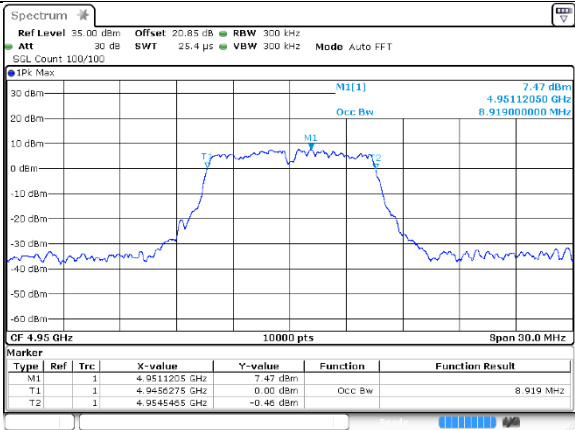
Note: Testing done using Modulated mode

Note: Highest Power & Power Spectral Density is measured at Antenna port A and used as worst case to perform test.

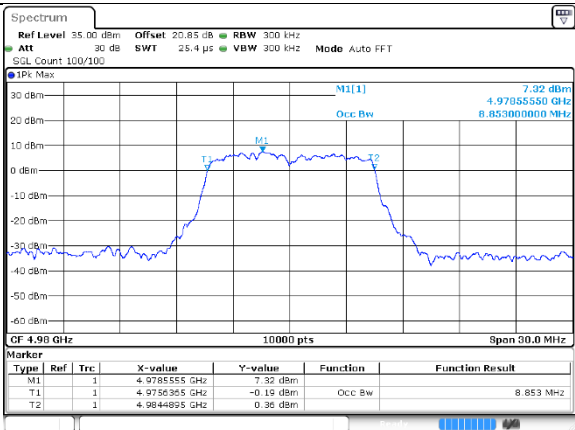
Frequency Tolerance IC

Naming Convention: Frequency(MHz)-Bandwidth(MHz)-Mode-Radio-Antenna

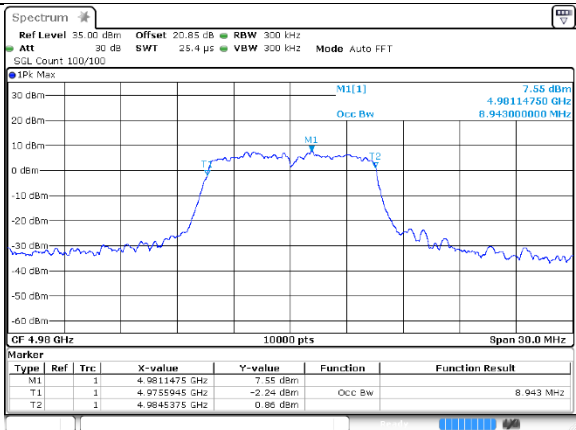
Temperature: -30 °C



4950MHz-10MHz-802.11n10-1-A



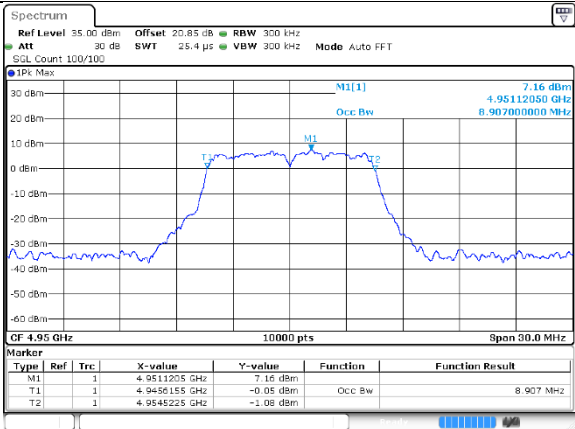
4950MHz-10MHz-802.11n10-2-A



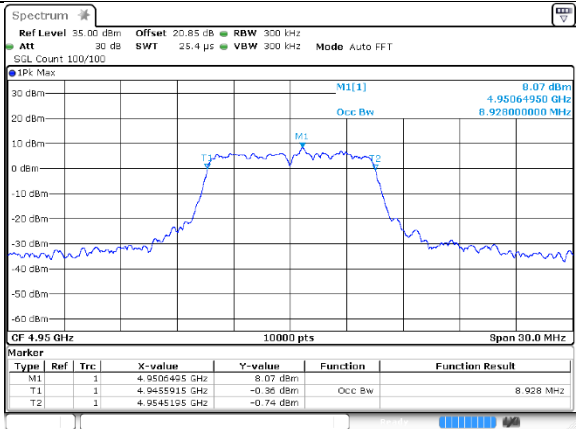
4980MHz-10MHz-802.11n10-1-A

4980MHz-10MHz-802.11n10-2-A

Temperature: 20 °C

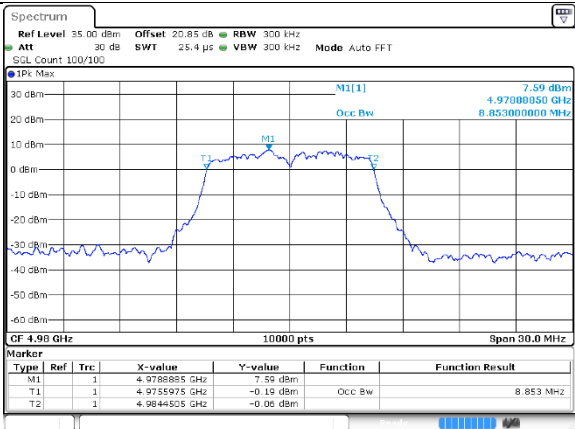


Project Number: R2603043; Tester Name: Rachana Khenduri
Date: 6.MAR.2026 15:26:23



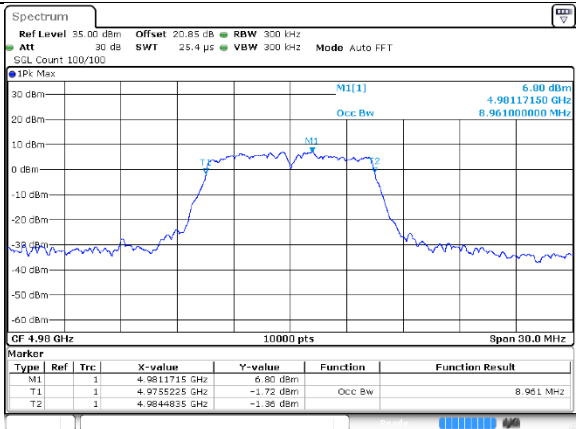
Project Number: R2603043; Tester Name: Rachana Khenduri
Date: 6.MAR.2026 15:38:23

4950MHz-10MHz-802.11n10-1-A



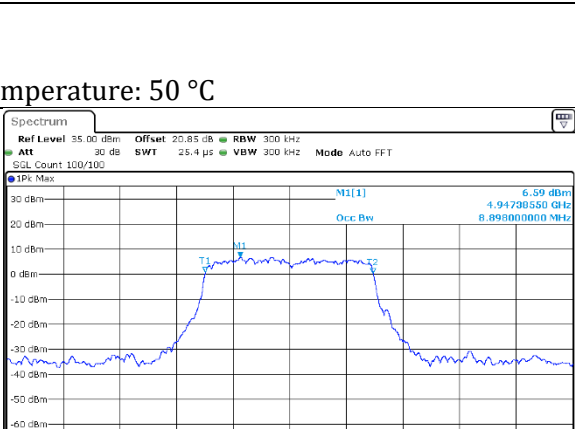
Project Number: R2603043; Tester Name: Rachana Khenduri
Date: 6.MAR.2026 15:34:01

4950MHz-10MHz-802.11n10-2-A



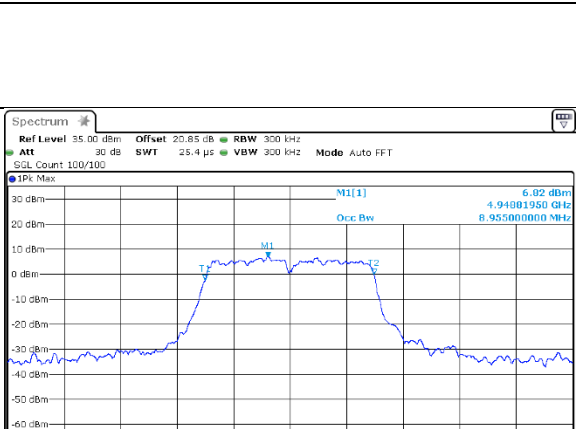
Project Number: R2603043; Tester Name: Rachana Khenduri
Date: 6.MAR.2026 15:36:39

4980MHz-10MHz-802.11n10-1-A



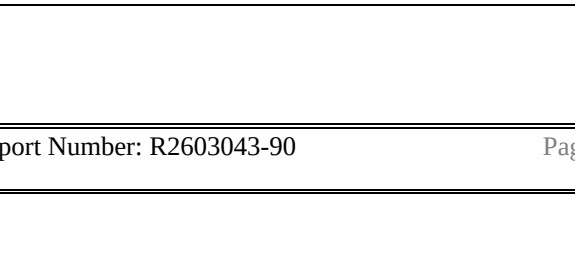
Project Number: R2603043; Tester Name: Rachana Khenduri
Date: 6.MAR.2026 16:00:45

4980MHz-10MHz-802.11n10-2-A

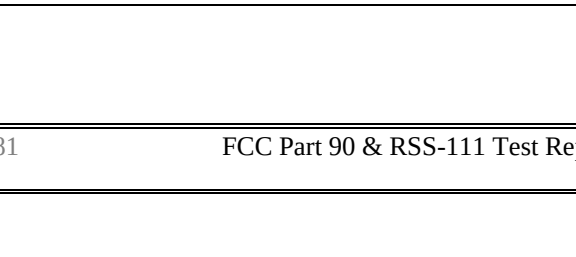


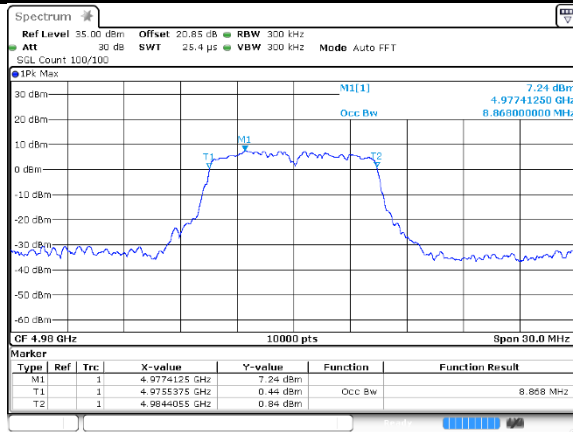
Project Number: R2603043; Tester Name: Rachana Khenduri
Date: 6.MAR.2026 15:58:19

4950MHz-10MHz-802.11n10-1-A

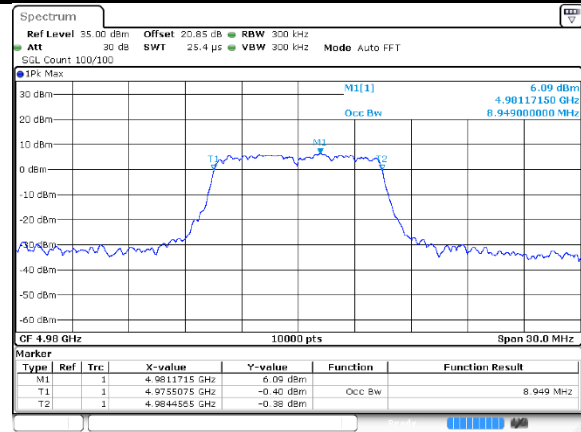


4950MHz-10MHz-802.11n10-2-A



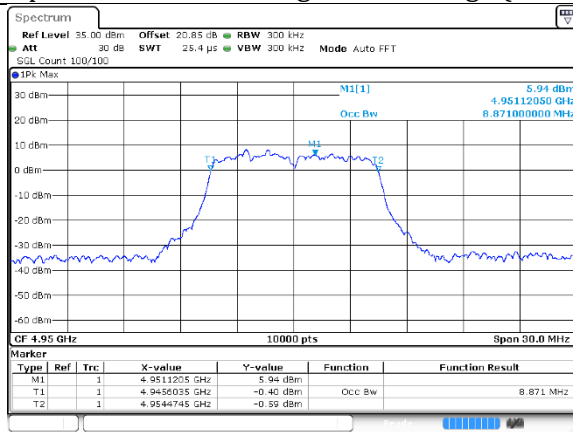


4980MHz-10MHz-802.11n10-1-A

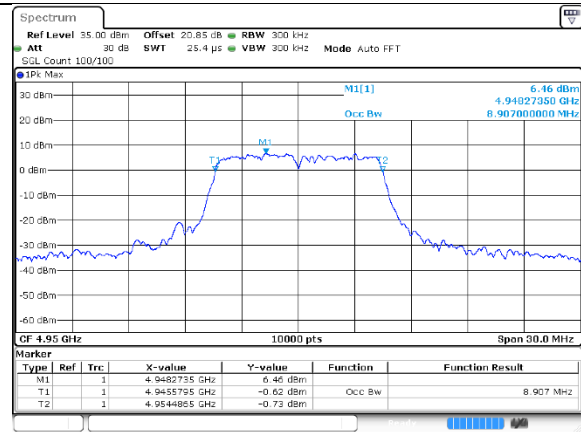


4980MHz-10MHz-802.11n10-2-A

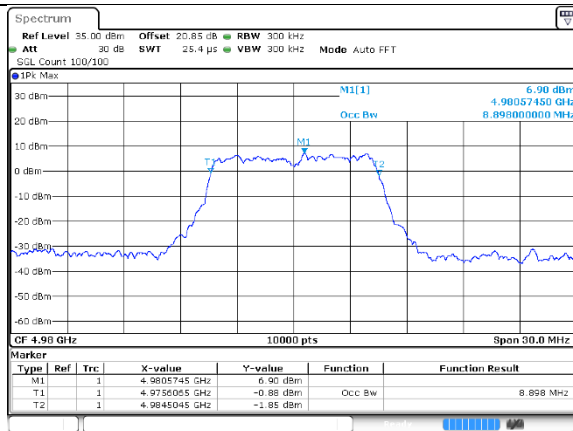
Temperature: 20 °C, Voltage: Low Voltage (102V)



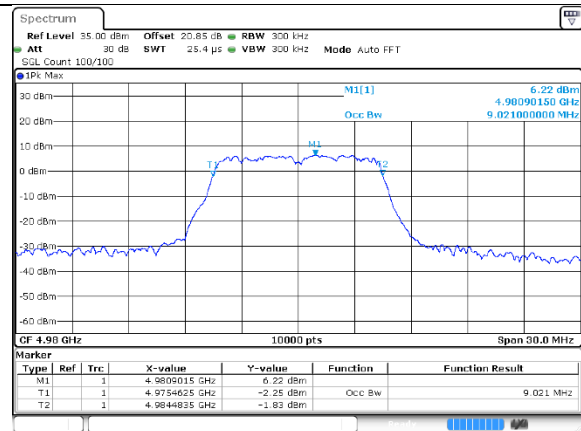
4950MHz-10MHz-802.11n10-1-A



4950MHz-10MHz-802.11n10-2-A

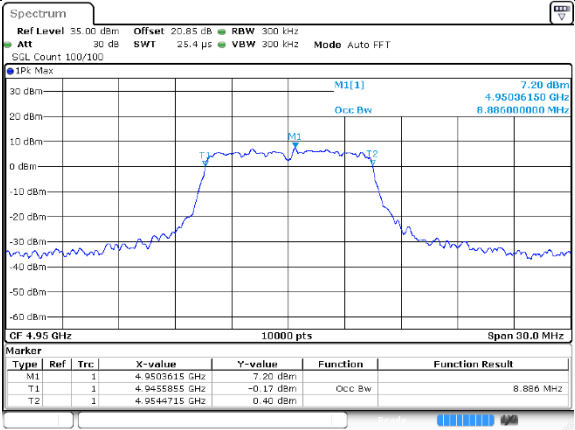
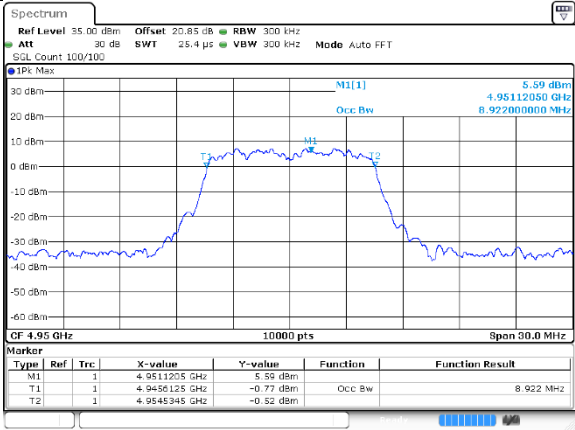


4980MHz-10MHz-802.11n10-1-A

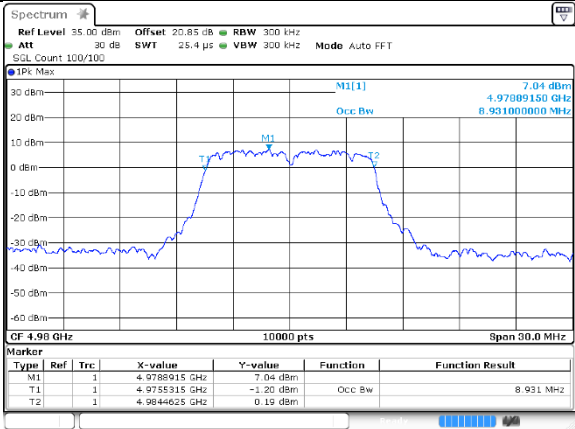


4980MHz-10MHz-802.11n10-2-A

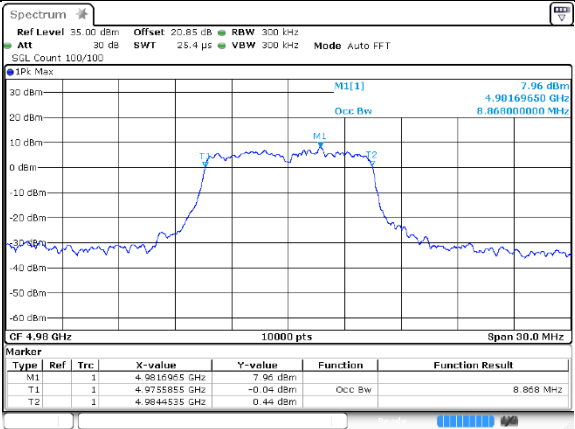
Temperature: 20 °C, Voltage: High Voltage (138V)



4950MHz-10MHz-802.11n10-1-A



4950MHz-10MHz-802.11n10-2-A



4980MHz-10MHz-802.11n10-1-A

4980MHz-10MHz-802.11n10-2-A

11 Appendix A (Normative) – A2LA Electrical Testing Certificate**Accredited Laboratory**

A2LA has accredited

BAY AREA COMPLIANCE LABORATORIES CORP.

Sunnyvale, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets A2LA R222 - Specific Requirements EPA ENERGY STAR Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

Presented this 13th day of September 2024.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3297.02
Valid to September 30, 2026

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

Please follow the web link below for a full ISO 17025 scope

<https://www.a2la.org/scopepdf/3297-02.pdf>**--- END OF REPORT ---**