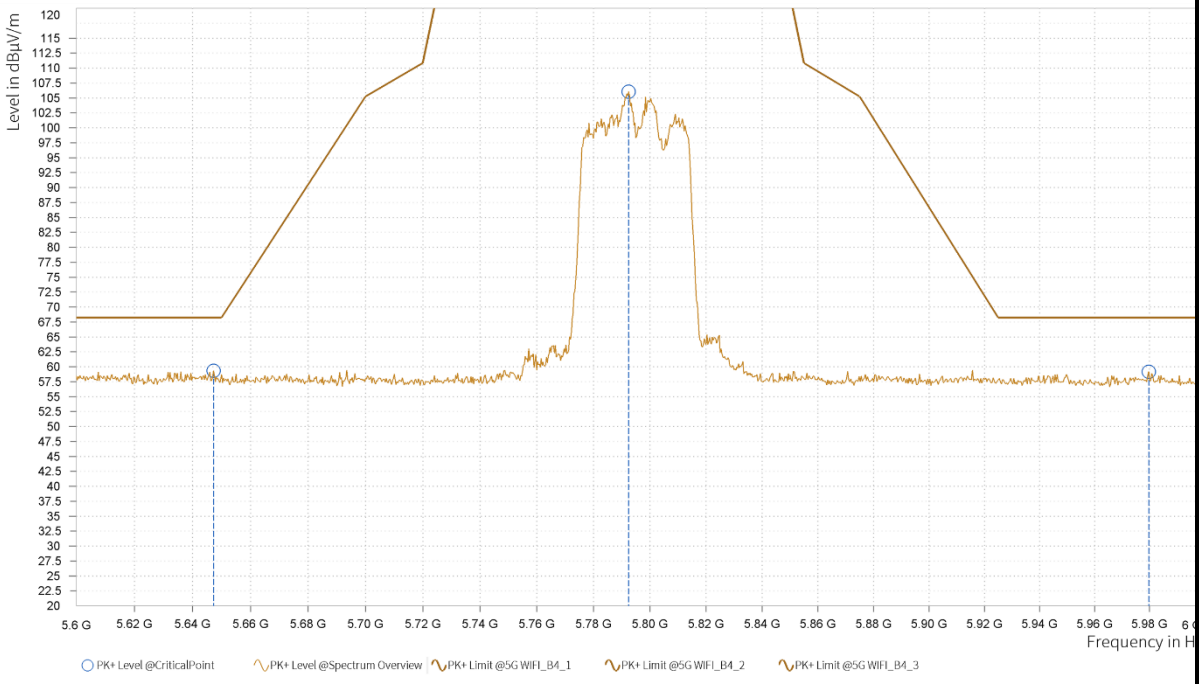
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
10	5,647.188	59.35	68.20	8.85	44.37	V	355	2.00
11	5,792.500	106.06			44.67	V	103.6	2.00
12	5,979.750	59.18	68.20	9.02	44.33	V	58.1	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna FAXtor + Cable Loss- Preamp FAXtor
2. Margin value = Limit value- Emission level.
3. 5795MHz: Fundamental frequency.

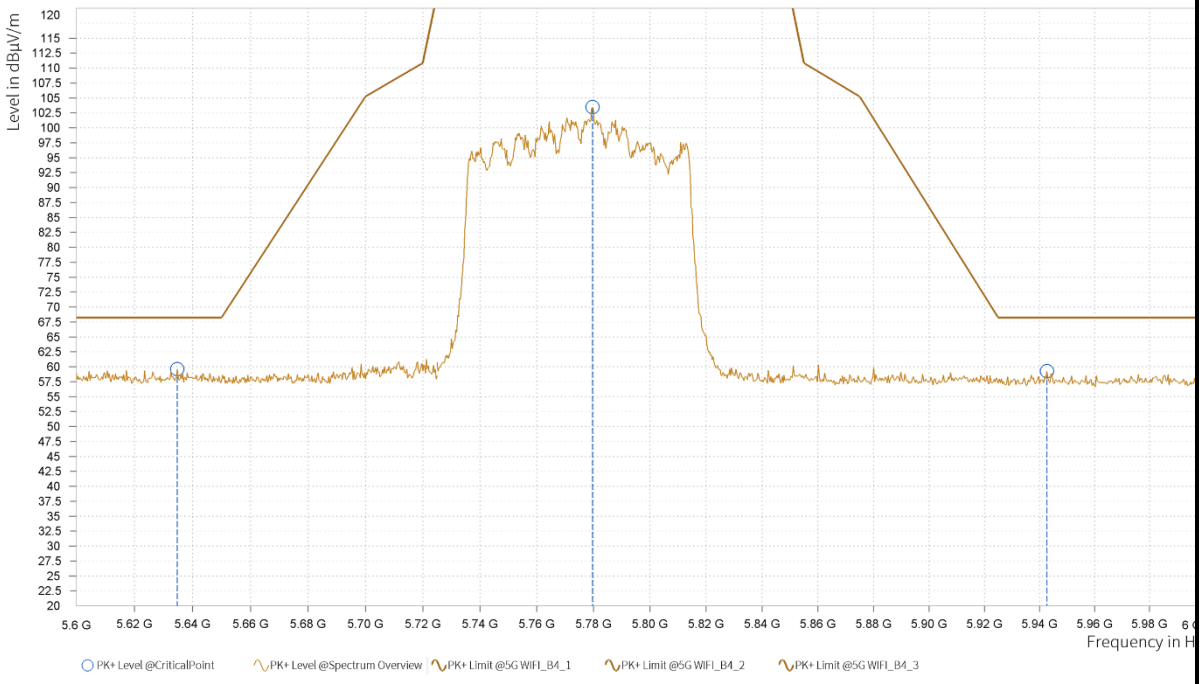
802.11AX (80MHz)			
CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
5	5,645.938	59.71	68.20	8.49	44.37	H	9	1.00
6	5,778.438	99.25			44.62	H	0.9	2.00
7	5,948.625	59.09	68.20	9.11	44.28	H	186	2.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
5	5,634.688	59.62	68.20	8.58	44.35	V	351.3	1.00
6	5,779.690	103.46			44.62	V	258.9	1.00
7	5,942.625	59.25	68.20	8.95	44.32	V	192	2.00



REMARKS:

1. Emission Level = Read Level+ Antenna FAXtor + Cable Loss- Preamp FAXtor
2. Margin value = Limit value- Emission level.
3. 5775MHz: Fundamental frequency.

RADIATED EMISSION
BELOW 1GHz WORST-CASE DATA

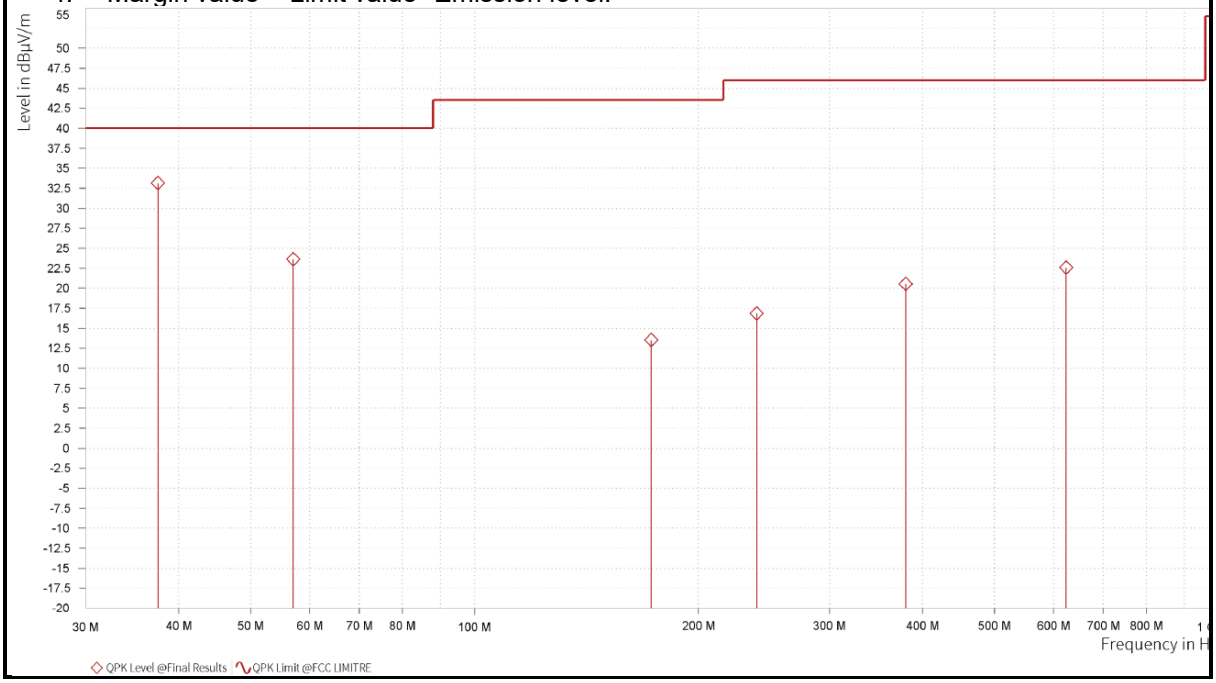
Band 802.11ax (20MHz RU106)			
CHANNEL	TX Channel 140	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
1	37.518	33.11	40.00	6.89	-10.49	H	345.8	1.00	120.000
1	57.063	23.61	40.00	16.39	-9.51	H	359.1	1.00	120.000
1	172.736	13.50	43.50	30.00	-13.17	H	188.6	2.00	120.000
1	239.520	16.84	46.00	29.16	-8.42	H	4.9	1.00	120.000
1	379.831	20.52	46.00	25.48	-3.35	H	171.4	1.00	120.000
1	623.786	22.55	46.00	23.45	-2.07	H	359	2.00	120.000

REMARKS:

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.



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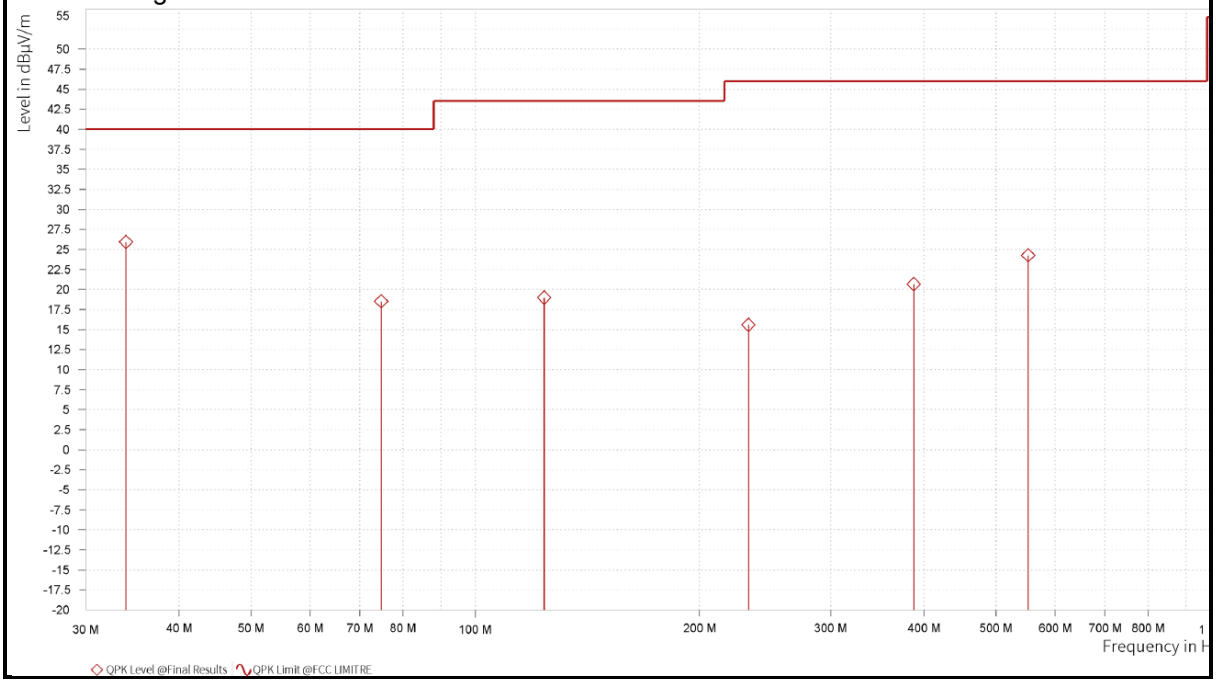
CHANNEL	Channel 140	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]	Meas. BW [kHz]
1	33.977	25.91	40.00	14.09	-13.67	V	347.3	1.00	120.000
1	74.766	18.52	40.00	21.48	-16.49	V	4.9	1.00	120.000
1	123.702	18.95	43.50	24.55	-12.51	V	359	1.00	120.000
1	232.536	15.59	46.00	30.41	-9.15	V	4.9	1.00	120.000
1	387.591	20.65	46.00	25.35	-3.48	V	173.8	1.00	120.000
1	552.006	24.26	46.00	21.74	-2.78	V	173.8	1.00	120.000

REMARKS:

1. Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.



ABOVE 1GHz WORST-CASE DATA

Note: 1. For higher frequency, the emission is too low to be detected.

2.For radiated emission testing, all supported channels, bandwidths and modes have been tested, the report only shown the worst-case data of each sub-band.

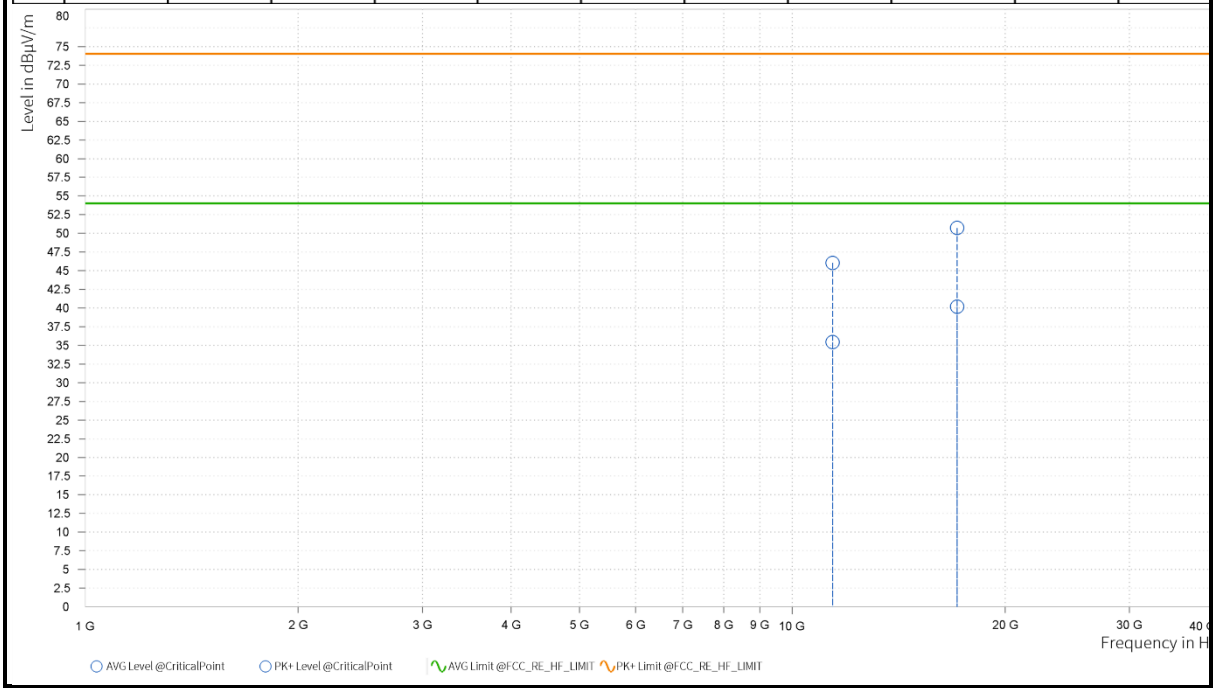
Band 3

802.11ax (20MHz)

CHANNEL	TX Channel 140	**DETECTOR**	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	**FUNCTION**	Average (AV)

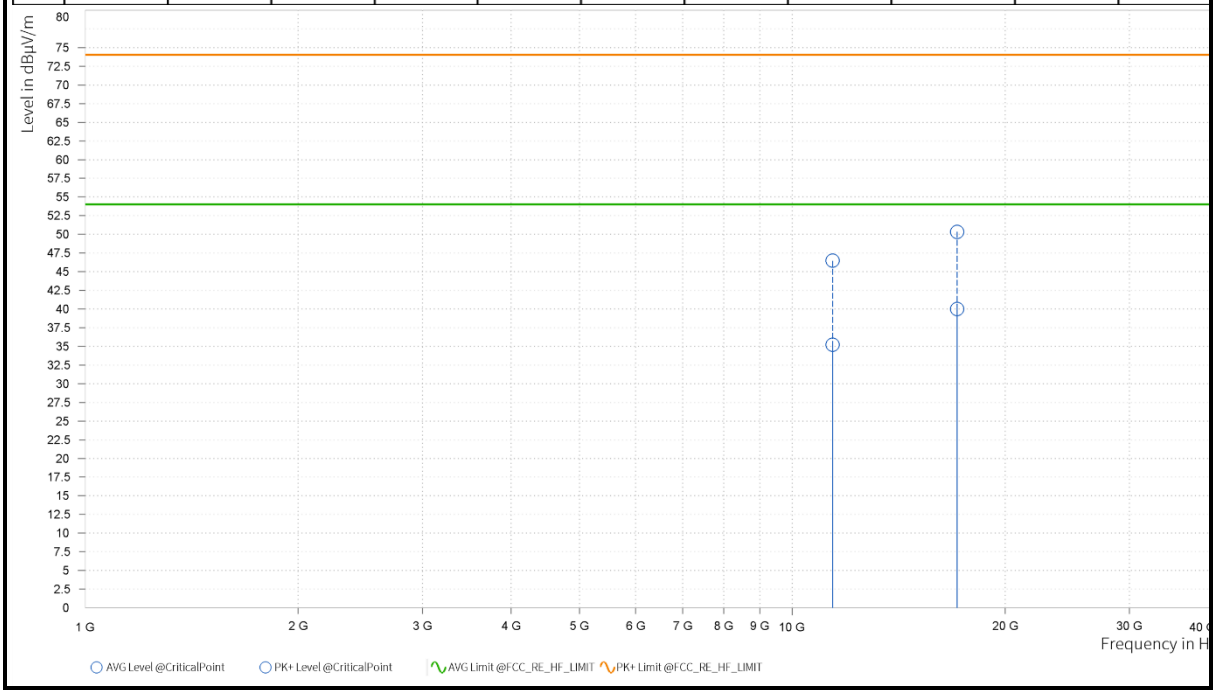
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,400.000	46.04	74.00	27.96	35.42	54.00	18.58	7.59	H	359	2.00
2	17,100.000	50.72	74.00	23.28	40.18	54.00	13.82	13.54	H	1	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

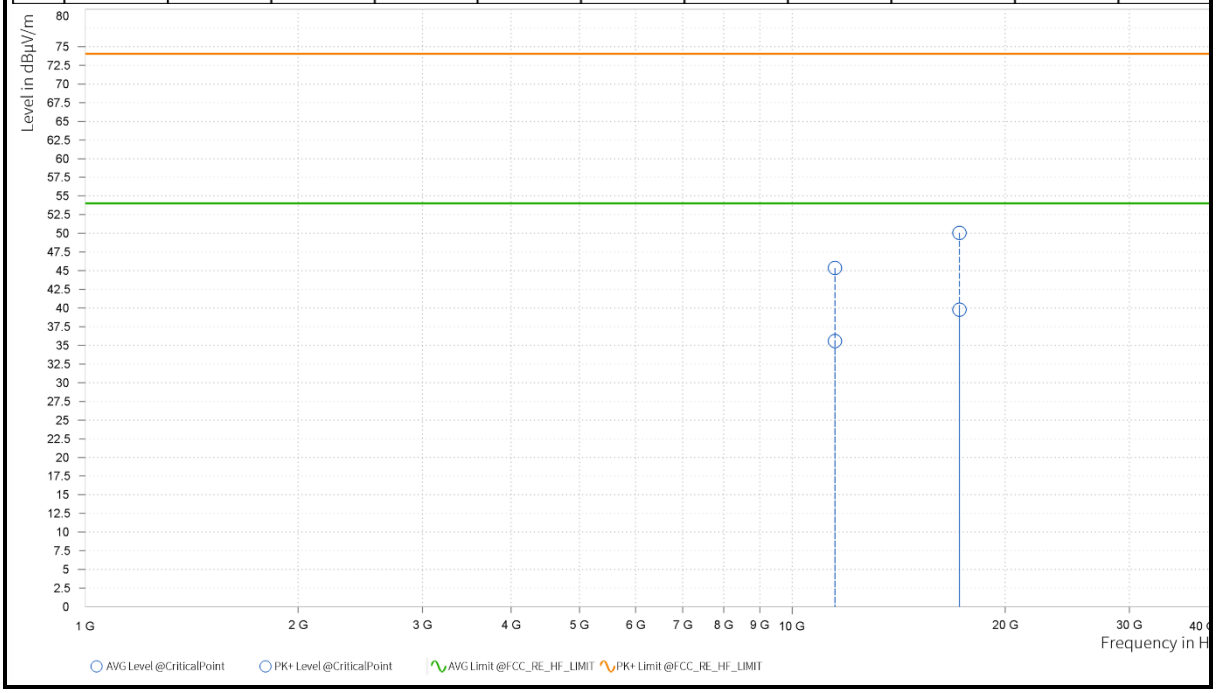
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,400.000	46.46	74.00	27.54	35.22	54.00	18.78	7.59	V	0.9	2.00
2	17,100.000	50.34	74.00	23.66	39.99	54.00	14.01	13.54	V	0.9	2.00



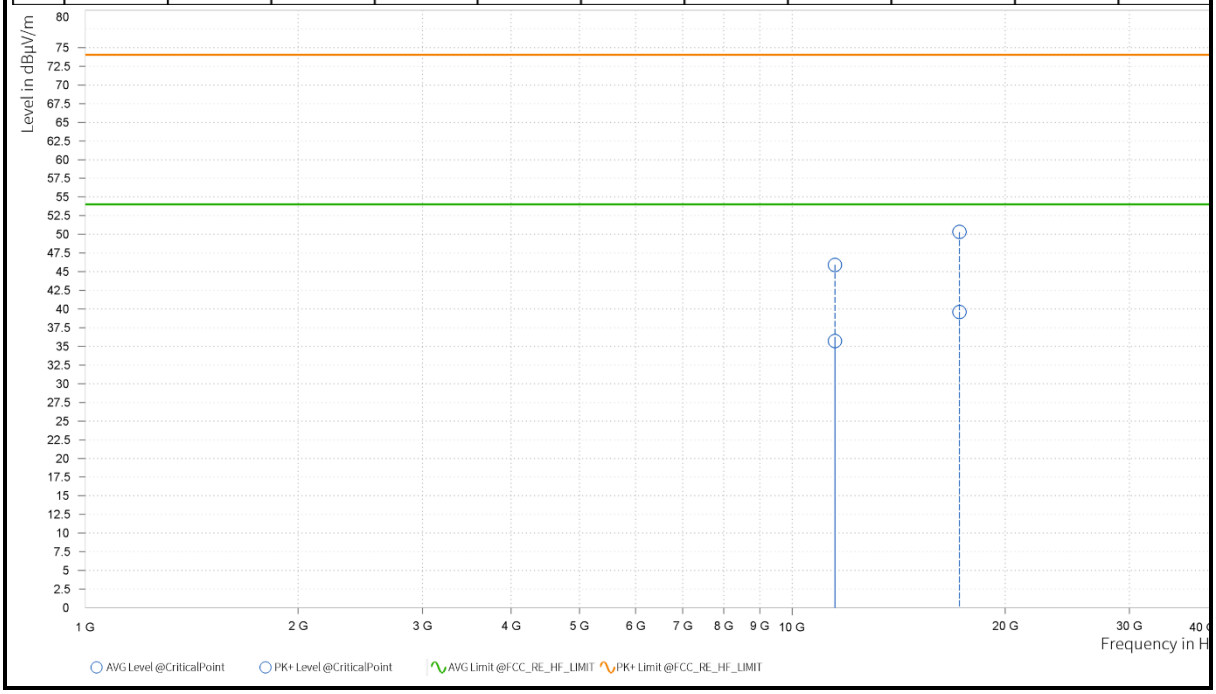
Band 4 802.11ax (20MHz)			
CHANNEL	TX Channel 149	**DETECTOR**	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	**FUNCTION**	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,490.000	45.36	74.00	28.64	35.59	54.00	18.41	7.87	H	235.2	2.00
2	17,235.000	50.07	74.00	23.93	39.79	54.00	14.21	13.39	H	359	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,490.000	45.91	74.00	28.09	35.72	54.00	18.28	7.87	V	359	2.00
2	17,235.000	50.31	74.00	23.69	39.62	54.00	14.38	13.39	V	9.4	2.00



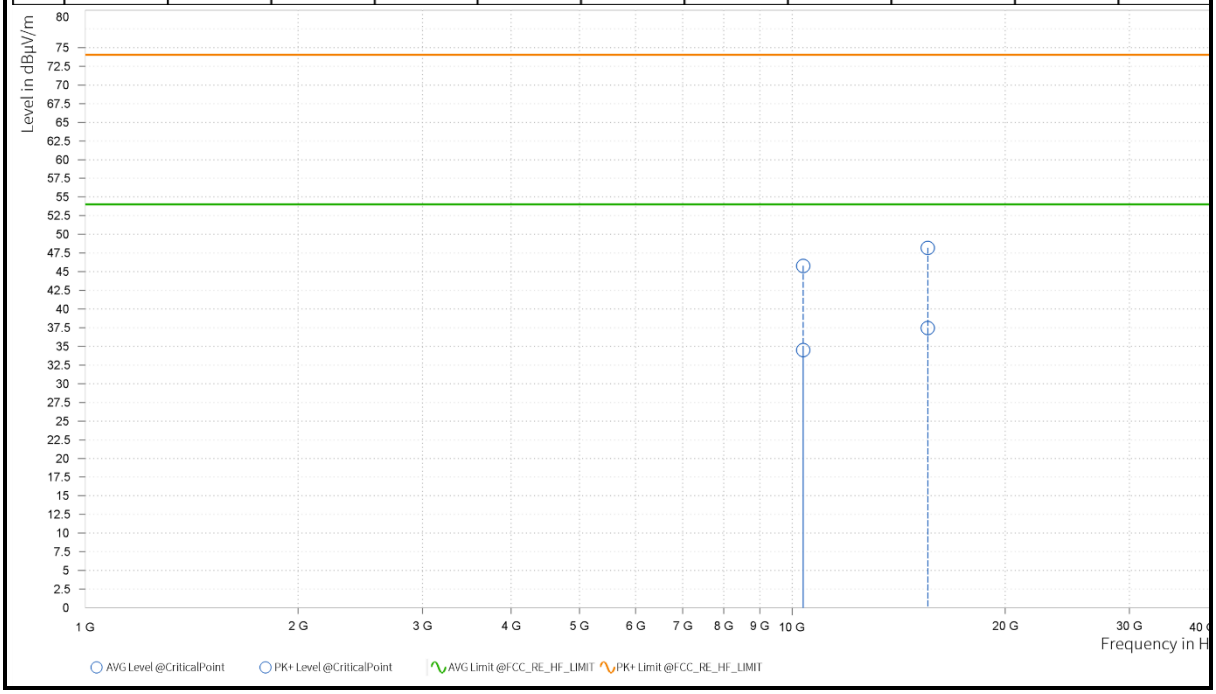
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
2. Margin value = Limit value- Emission level.
3. 5210MHz: Fundamental frequency.

Band 1 802.11ax (20M RU52)			
CHANNEL	TX Channel 36	**DETECTOR**	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	**FUNCTION**	Average (AV)

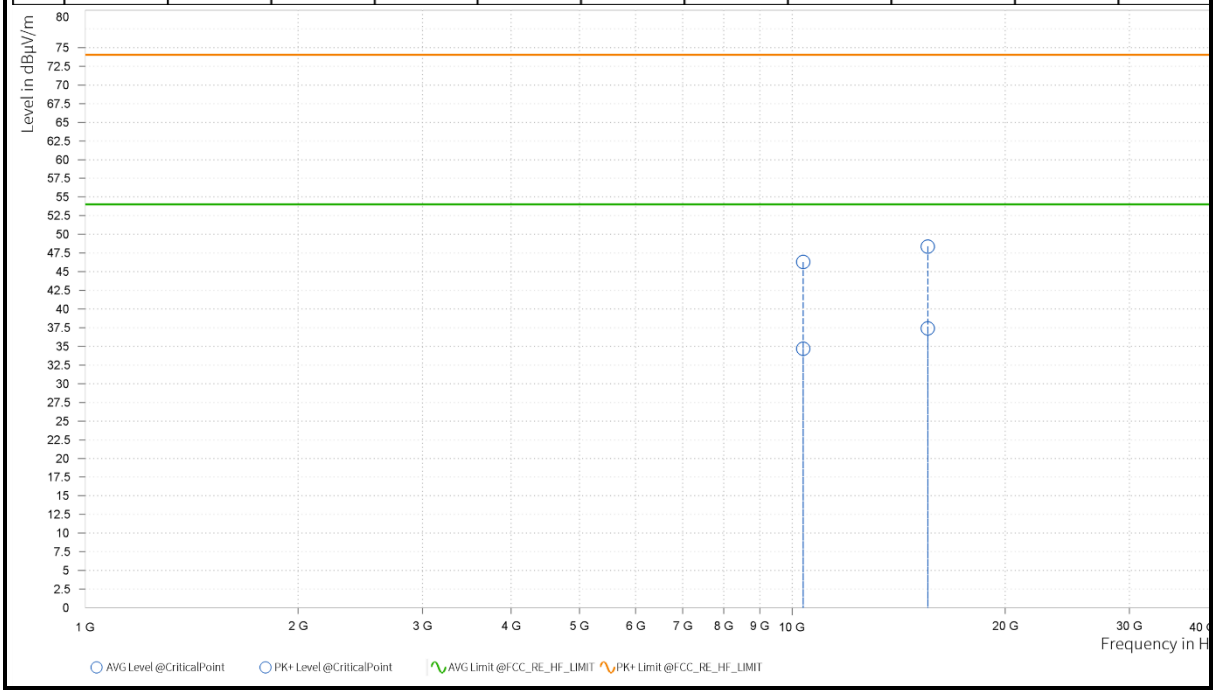
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,360.000	45.78	74.00	28.22	34.50	54.00	19.50	6.70	H	0.9	2.00
2	15,540.000	48.19	74.00	25.81	37.43	54.00	16.57	9.64	H	0.9	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

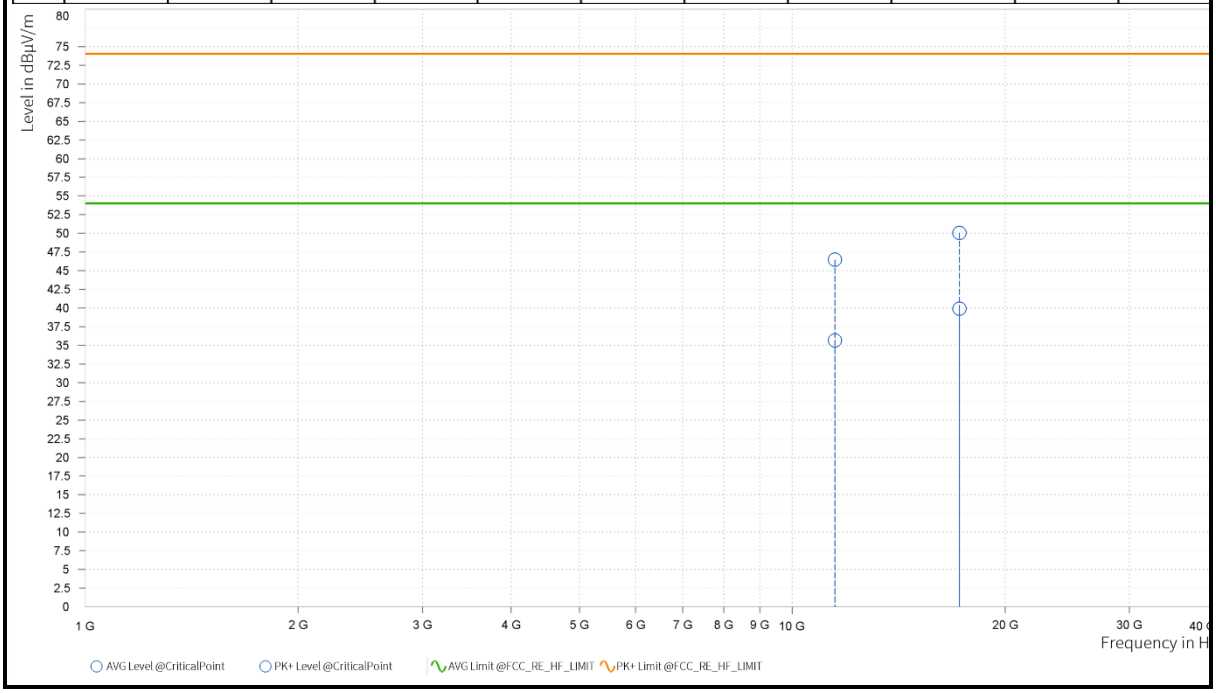
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,360.000	46.28	74.00	27.72	34.66	54.00	19.34	6.70	V	77.5	2.00
2	15,540.000	48.37	74.00	25.63	37.42	54.00	16.58	9.64	V	359	2.00



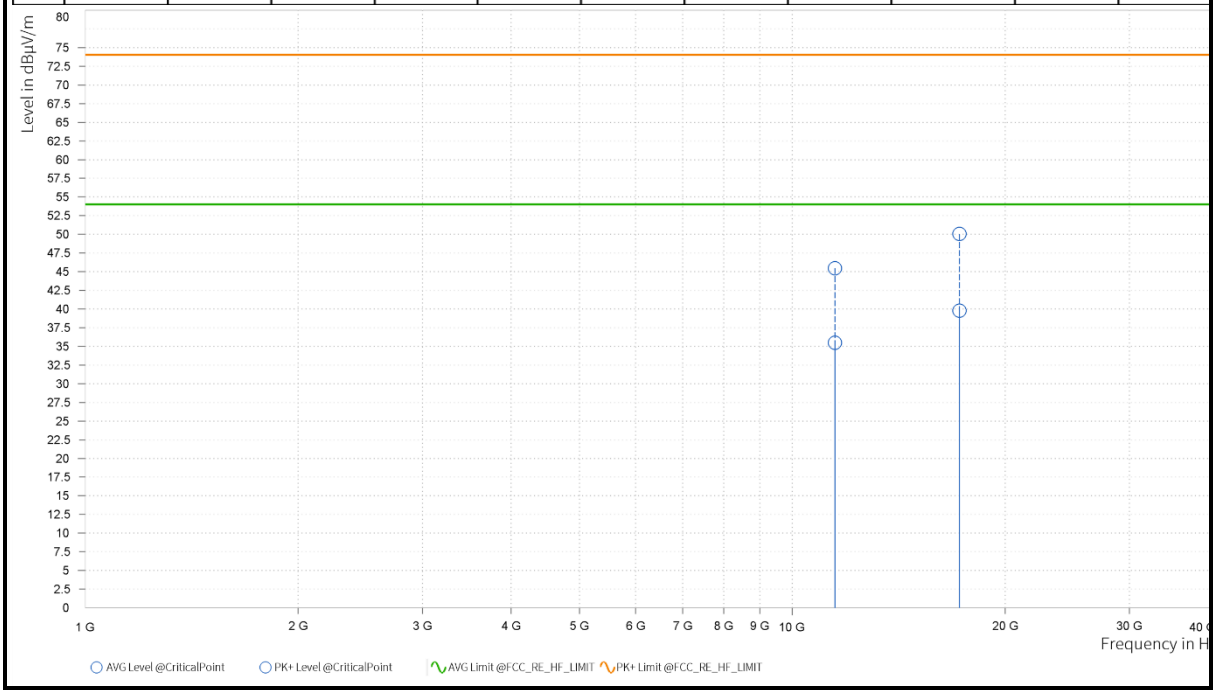
Band 3 802.11ax (20M RU52)			
CHANNEL	TX Channel 149	**DETECTOR**	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	**FUNCTION**	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,490.000	46.47	74.00	27.53	35.67	54.00	18.33	7.87	H	359	2.00
2	17,235.000	50.07	74.00	23.93	39.91	54.00	14.09	13.39	H	359.1	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,490.000	45.46	74.00	28.54	35.48	54.00	18.52	7.87	V	286.2	1.00
2	17,235.000	50.04	74.00	23.96	39.77	54.00	14.23	13.39	V	1	2.00



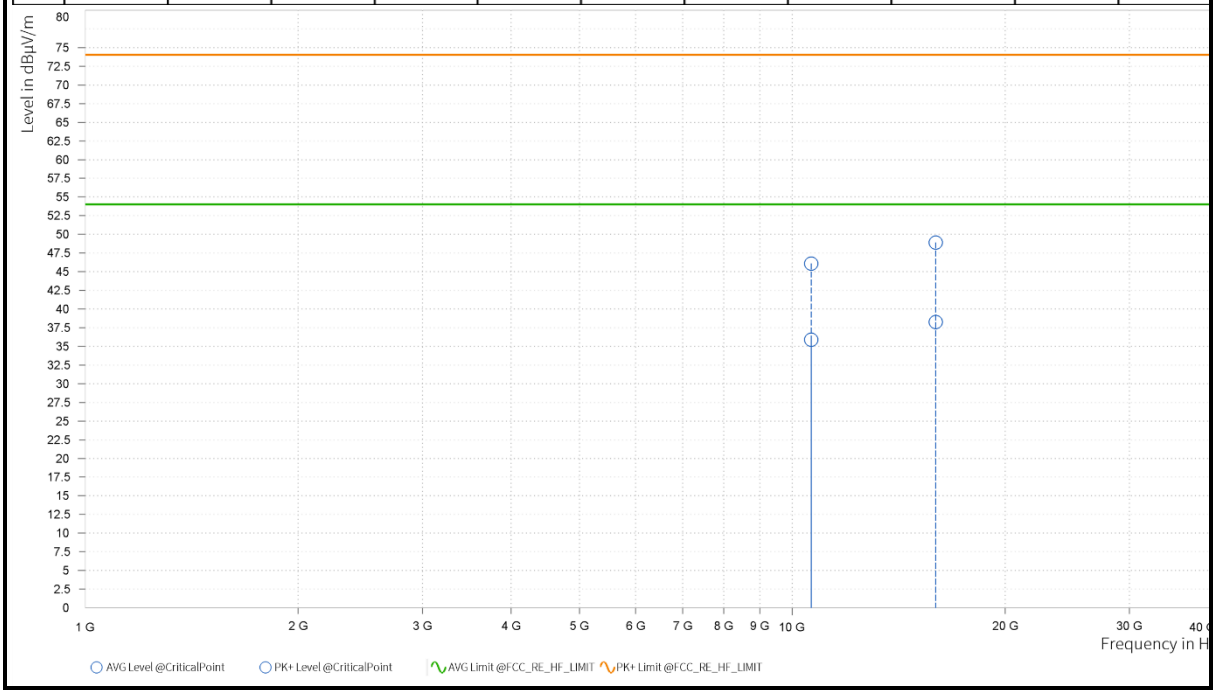
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
2. Margin value = Limit value- Emission level.
3. 5290MHz: Fundamental frequency.

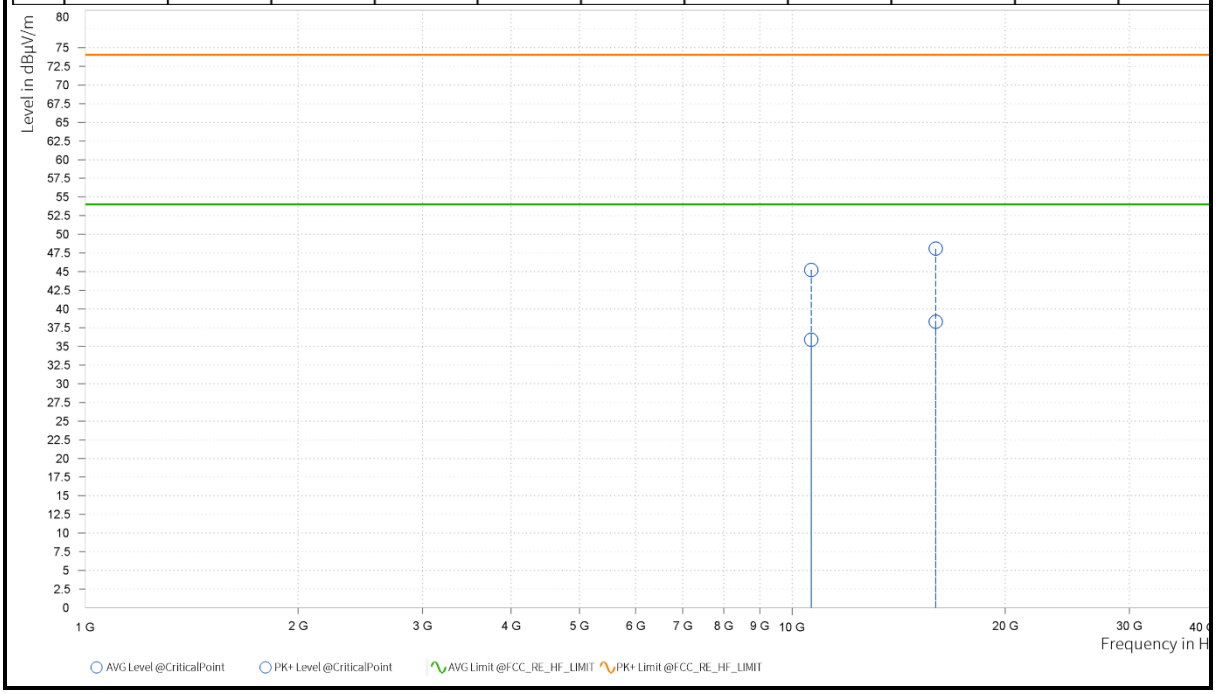
Band 2 802.11ax (20M RU106)			
CHANNEL	TX Channel 64	**DETECTOR**	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	**FUNCTION**	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,640.000	46.10	74.00	27.90	35.88	54.00	18.12	7.10	H	260.3	2.00
2	15,960.000	48.90	74.00	25.10	38.25	54.00	15.75	10.73	H	1	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,640.000	45.25	74.00	28.75	35.87	54.00	18.13	7.10	V	69.1	2.00
2	15,960.000	48.09	74.00	25.91	38.28	54.00	15.72	10.73	V	251.9	2.00



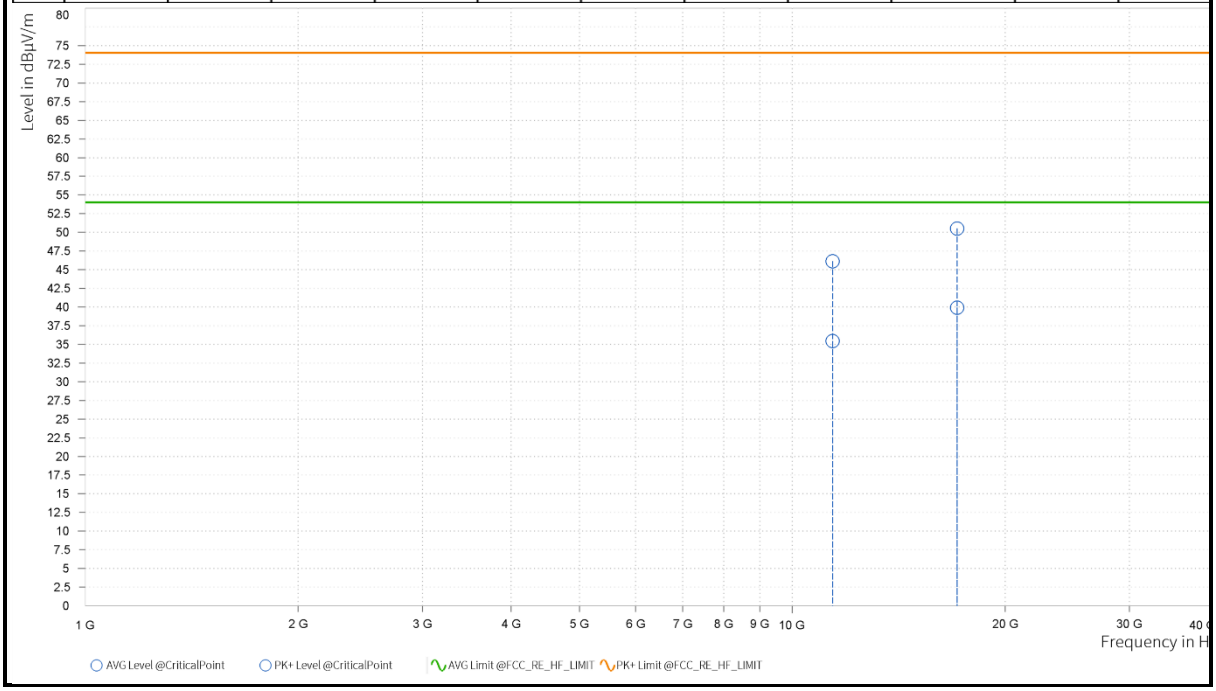
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
2. Margin value = Limit value- Emission level.
3. 5530MHz: Fundamental frequency.
4. #: Out of restricted band.

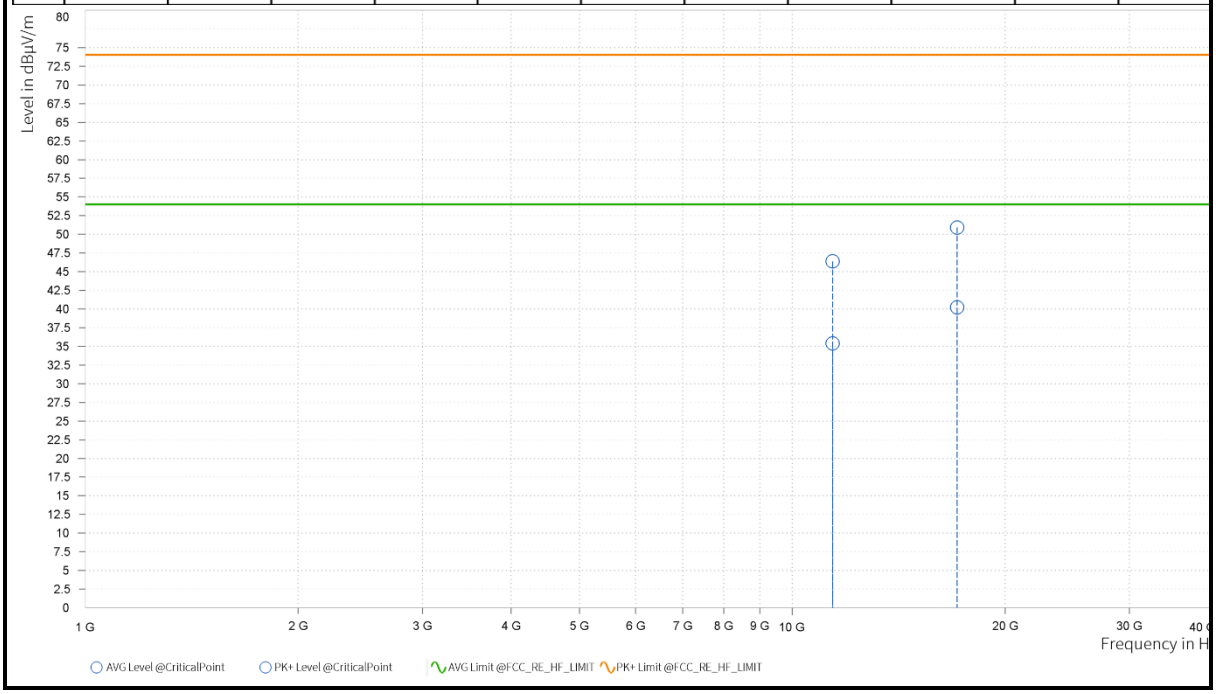
Band 3 802.11ax(20M RU 106)			
CHANNEL	TX Channel 140	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,400.000	46.14	74.00	27.86	35.46	54.00	18.54	7.59	H	1	2.00
2	17,100.000	50.50	74.00	23.50	39.91	54.00	14.09	13.54	H	359.1	1.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,400.000	46.38	74.00	27.62	35.42	54.00	18.58	7.59	V	359	2.00
2	17,100.000	50.91	74.00	23.09	40.22	54.00	13.78	13.54	V	359.1	1.00



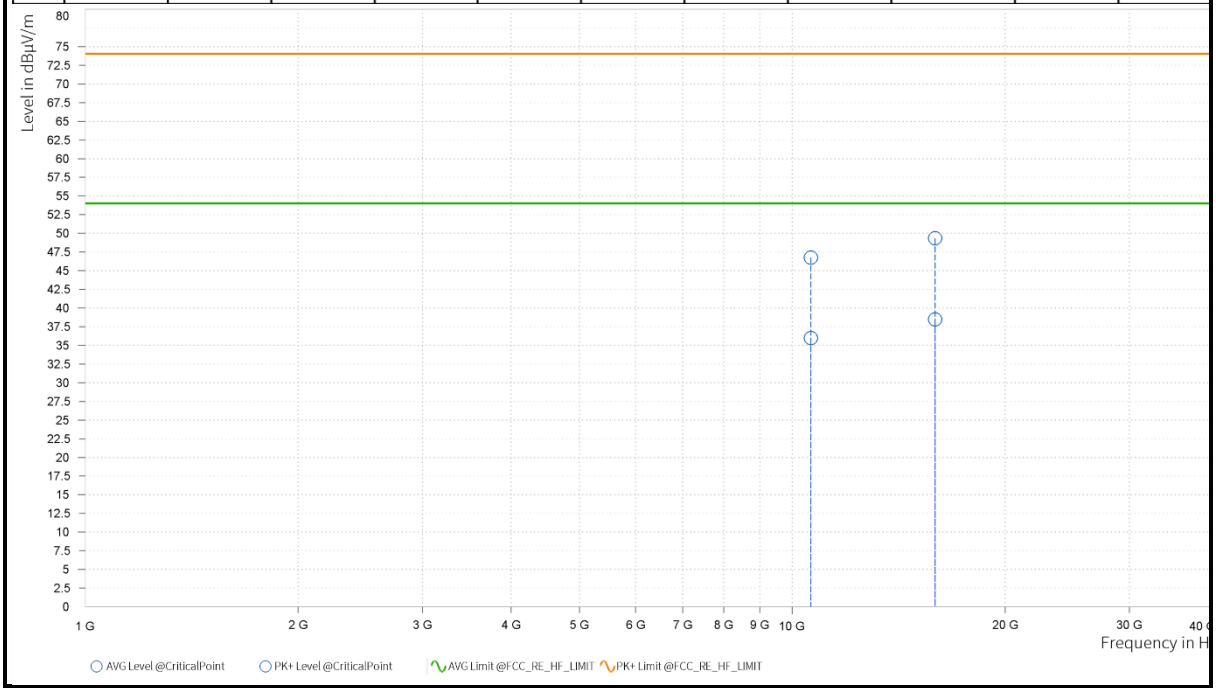
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
2. Margin value = Limit value- Emission level.
3. 5785MHz: Fundamental frequency.

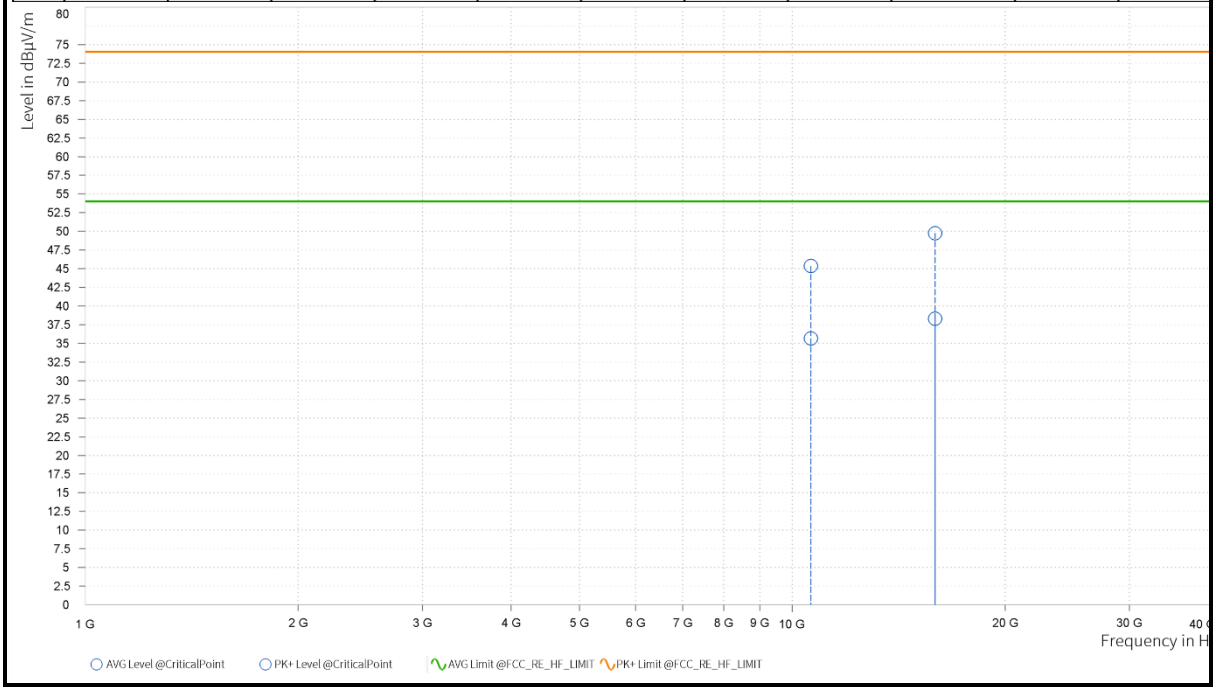
Band 2 802.11ac (40M)			
CHANNEL	TX Channel 62	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,620.000	46.76	74.00	27.24	35.96	54.00	18.04	7.13	H	359	1.00
2	15,930.000	49.33	74.00	24.67	38.46	54.00	15.54	10.33	H	100.1	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,620.000	45.35	74.00	28.65	35.65	54.00	18.35	7.13	V	1	2.00
2	15,930.000	49.75	74.00	24.25	38.30	54.00	15.70	10.33	V	1	2.00



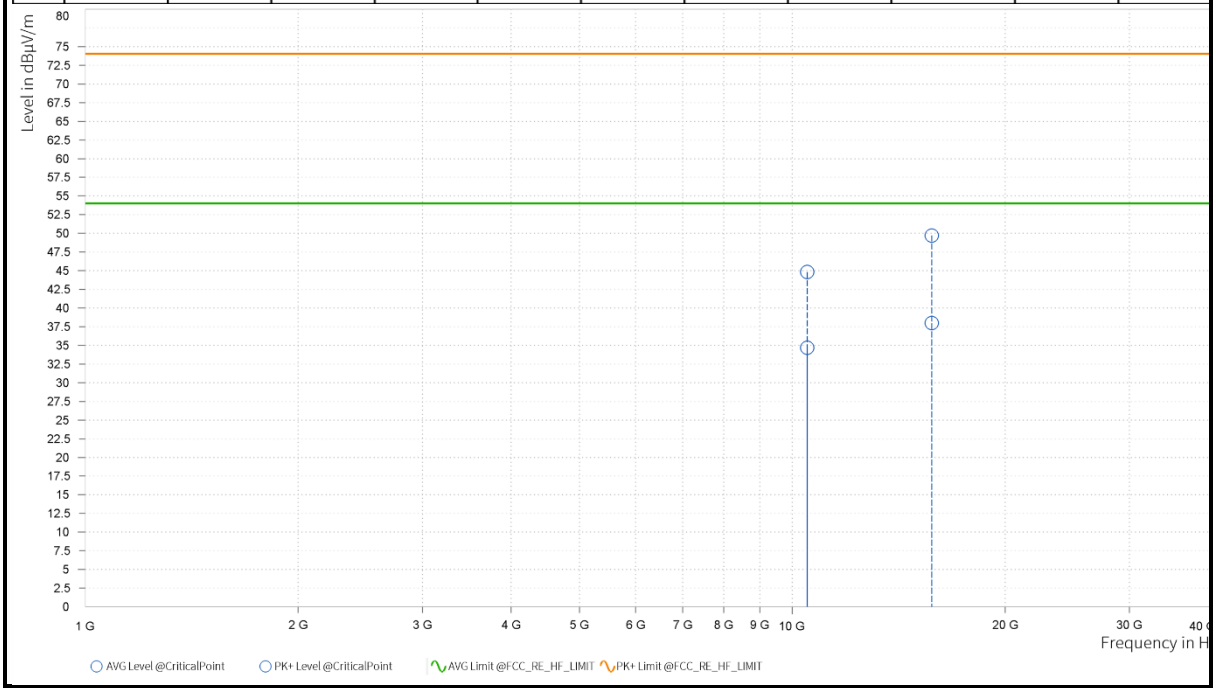
REMARKS:

1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
2. Margin value = Limit value- Emission level.
3. 5785MHz: Fundamental frequency.

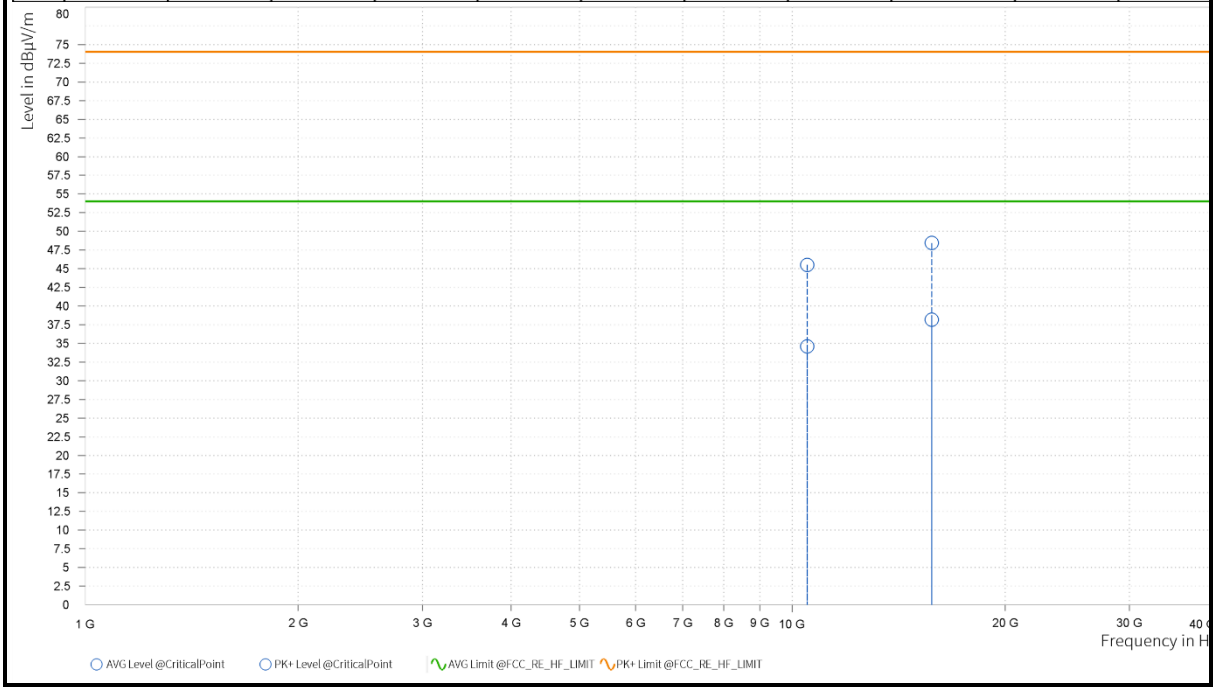
Band 1 802.11ac (160M)			
CHANNEL	TX Channel 50	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,500.000	44.82	74.00	29.18	34.68	54.00	19.32	7.24	H	1	2.00
2	15,750.000	49.71	74.00	24.29	37.97	54.00	16.03	9.31	H	359	2.00



ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,500.000	45.52	74.00	28.48	34.61	54.00	19.39	7.24	V	359.1	1.00
2	15,750.000	48.43	74.00	25.57	38.18	54.00	15.82	9.31	V	36.8	2.00



REMARKS:

1 Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor

2 Margin value = Limit value- Emission level.

3 5785MHz: Fundamental frequency.

3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE:

1 The lower limit shall apply at the transition frequencies.

2 The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3 All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	102749	Mar.28,24	Mar.27,26
ELEKTRA test software	Rohde&Schwarz	ELEKTRA	NA	N/A	N/A
LISN network	Rohde&Schwarz	ENV216	102640	Mar.28,24	Mar.27,26
CABLE	Rohde&Schwarz	W61.01	N/A	Apr.26,25	Apr.25,26
CABLE	Rohde&Schwarz	W601	N/A	Apr.26,25	Apr.25,26

NOTE:

1. The test was performed in CE shielded room.
2. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.2.3 TEST PROCEDURES

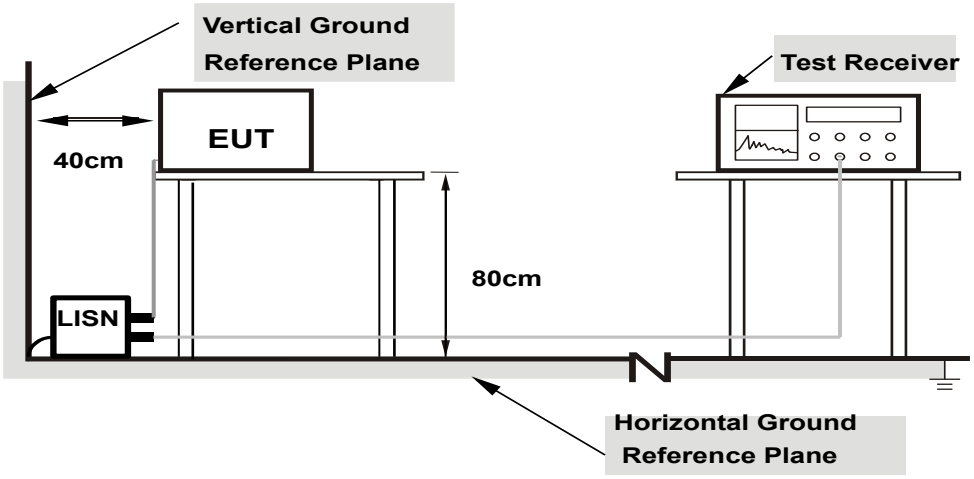
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

3.2.4 DEVIATION FROM TEST STANDARD

No deviation.

3.2.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.2.6 EUT OPERATING CONDITIONS

Same as 3.1.7.

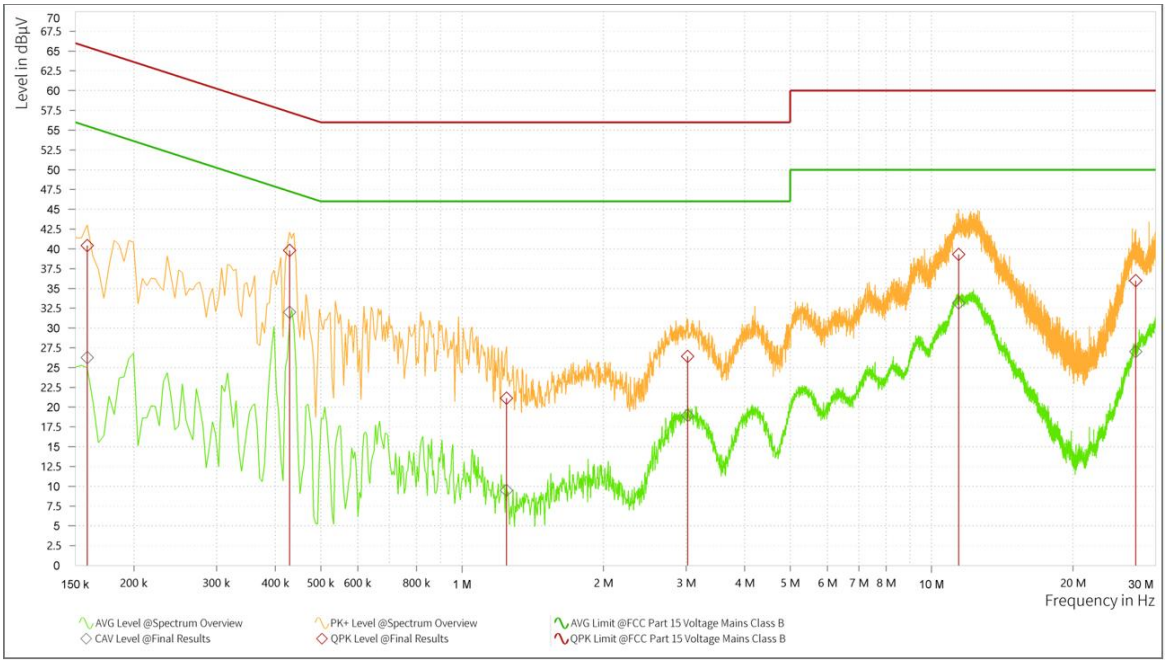
3.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA			
FREQUENCY RANGE	150KHz ~ 30MHz	**DETECTOR FUNCTION & RESOLUTION BANDWIDTH**	Quasi-Peak (QP) / Average (AV), 9 kHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 51%RH
TESTED BY	Hanwen Xu		

Rg	Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	CAV Level [dBµV]	CAV: AVG Limit [dBµV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
1	0.159	40.41	65.52	25.11	26.25	55.52	29.27	9.80	L1	9.000
1	0.429	39.82	57.27	17.45	32.00	47.27	15.27	9.75	L1	9.000
1	1.244	21.14	56.00	34.86	9.48	46.00	36.52	9.78	L1	9.000
1	3.021	26.41	56.00	29.59	18.96	46.00	27.04	9.95	L1	9.000
1	11.423	39.29	60.00	20.71	33.16	50.00	16.84	11.35	L1	9.000
1	27.236	35.99	60.00	24.01	27.01	50.00	22.99	14.33	L1	9.000

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and
3. measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Limit value - Emission level
6. Correction factor = Insertion loss + Cable loss
7. Emission Level = Correction Factor + Reading Value.

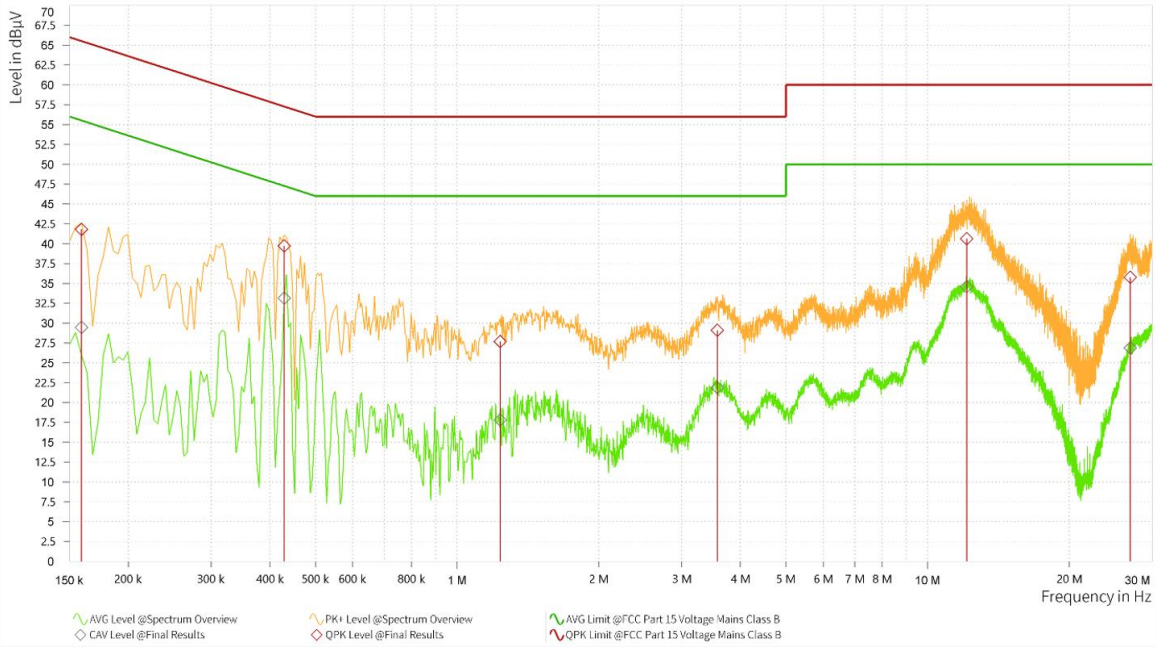


FREQUENCY RANGE	150KHz ~ 30MHz	DETECTOR FUNCTION & RESOLUTION BANDWIDTH	Quasi-Peak (QP) / Average (AV), 9 kHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	26deg. C, 51%RH
TESTED BY	Hanwen Xu		

Rg	Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	CAV Level [dBµV]	CAV: AVG Limit [dBµV]	CAV Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]
1	0.159	41.80	65.52	23.72	29.45	55.52	26.07	9.82	N	9.000
1	0.429	39.72	57.27	17.55	33.13	47.27	14.14	9.77	N	9.000
1	1.235	27.67	56.00	28.33	17.80	46.00	28.20	9.79	N	9.000
1	3.575	29.11	56.00	26.89	21.89	46.00	24.11	10.03	N	9.000
1	12.111	40.64	60.00	19.36	34.59	50.00	15.41	11.59	N	9.000
1	26.984	35.76	60.00	24.24	26.87	50.00	23.13	14.03	N	9.000

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and
3. measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Limit value - Emission level
6. Correction factor = Insertion loss + Cable loss
7. Emission Level = Correction Factor + Reading Value.



3.3 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

3.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

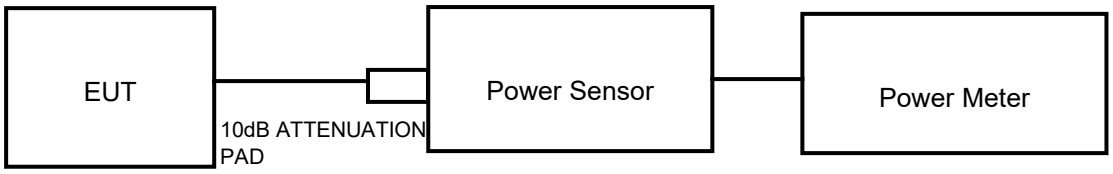
Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	B	Indoor Access Point	1 Watt (30 dBm)
	√	Client devices	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

NOTE: Where B is the 26dB emission bandwidth in MHz.

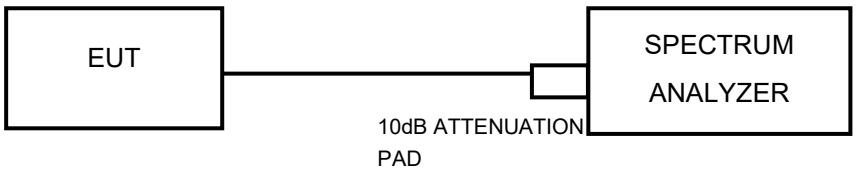
3.3.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

802.11a, 802.11n/ac/ax (20MHz), 802.11 n/ac/ax (40MHz) ,802.11 ac/ax (160MHz) TEST CONFIGURATION



FOR 26dB BANDWIDTH



3.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	R&S	ESW 44	101973	Mar.28,24	Mar.27,26
Open Switch and Control Unit	R&S	OSP-B157W8	100836	N/A	N/A
Vector Signal Generator	R&S	SMBV100B	102176	Mar.29,24	Mar.28,26
Signal Generator	R&S	SMB100A03	182185	Mar.29,24	Mar.28,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Hygrothermograph	DELI	20210528	SZ015	Mar.18,25	Mar.17,27
PC	LENOVO	E14	HRSW0024	N/A	N/A
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.26,25	Apr.25,26
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.26,25	Apr.25,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26
Power Meter	R&S	NRX	102380	Mar.28,24	Mar.27,26
Power Meter probe	R&S	NRP6A	102942	Mar.28,24	Mar.27,26

NOTE:

1. The calibration interval of the above test instruments is 12 /24months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.

3.3.4 TEST PROCEDURE

FOR POWER MEASUREMENT

For 802.11a, 802.11n/ac/ax (20MHz), 802.11 n/ac/ax (40MHz) ,802.11 ac/ax (160MHz)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 99 PERCENT OCCUPIED BANDWIDTH

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

FOR 26dB BANDWIDTH

1) Set RBW = shall be in the range of 1% to 5% of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is in the range of 1% to 5%.

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

3.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

3.3.7 TEST RESULTS

Please Refer to Appendix of this test report.

3.4 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

3.4.1 LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Client devices	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

3.4.2 TEST SETUP

3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.4.4 TEST PROCEDURES

Using method SA-2(Band1/2/3)

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
7) Record the max value

Using method SA-2 (Band4)

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Add 10 log(500kHz/RBW) to the test result. 10 log(500kHz/300KHZ) = 2.22dBm
7) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
8) Record the max value

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

Same as 3.1.7.

3.4.7 TEST RESULTS

Please Refer to Appendix of this test report.

3.5 AUTOMATICALLY DISCONTINUE TRANSMISSION

3.5.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information, or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

3.5.2 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.5.3 TEST RESULT

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving。 The EUT can detect the controlling of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.6 ANTENNA REQUIREMENTS

3.6.1 STANDARD APPLICABLE

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmits power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 ANTENNA CONNECTED CONSTRUCTION

An embedded-in antenna design is used.

3.6.3 ANTENNA GAIN

According to FCC KDB 662911 D01 Multiple Transmitter Output v02r01
For CDD transmissions, directional gain is calculated as
Directional gain=GANT +Array Gain, where Array Gain is as follows.
For power spectral density (PSD) measurements on all devices,
Array Gain= 10 log(NANT/ Nss) dB;
For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for NANT≤ 4;
The EUT supports Cyclic Delay Diversity (CDD) mode,
For power measurements, the directional GANT is set equal to the antenna having the highest gain as following formulas.

Directional Gain = Max.Gain + Array Gain.

For PSD measurements, the directional GANT is calculation is following F)2)f)ii of KDB 662911 D01 v02r01.
The directional gain is calculated as following table.

	Band	Ant 8 (dBi)	Ant 11 (dBi)	DG For Power (dBi)	DG For PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
5GHz	**U-NII 1**	-3	-3	-3	**0.01**	**0**	**0**
	U-NII 2A	-3	-3	-3	**0.01**	**0**	**0**
	U-NII 2C	-3	-3	-3	**0.01**	**0**	**0**
	U-NII 3	-3	-3	-3	**0.01**	**0**	**0**

NOTE :DG= directional gain, Power Limit Reduction = DG For Power Gain -6dbi<0

PSD Limit Reduction = DG For PSD – 6dBi<0.Therefore, it is not necessary to reduce maximum peak output power and PSD limit.

4. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

5. MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

6. Appendix

RLAN

EMISSION BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A-CDD	Ant10	5180	18.480	5170.680	5189.160	---	---
11A-CDD	Ant7	5180	19.800	5170.280	5190.080	---	---
11A-CDD	Ant10	5200	18.680	5190.600	5209.280	---	---
11A-CDD	Ant7	5200	18.720	5190.440	5209.160	---	---
11A-CDD	Ant10	5240	18.920	5230.400	5249.320	---	---
11A-CDD	Ant7	5240	18.720	5230.760	5249.480	---	---
11A-CDD	Ant10	5260	18.760	5250.320	5269.080	---	---
11A-CDD	Ant7	5260	19.240	5250.440	5269.680	---	---
11A-CDD	Ant10	5280	18.600	5270.560	5289.160	---	---
11A-CDD	Ant7	5280	19.200	5270.280	5289.480	---	---
11A-CDD	Ant10	5320	19.480	5310.200	5329.680	---	---
11A-CDD	Ant7	5320	19.080	5310.360	5329.440	---	---
11A-CDD	Ant10	5500	18.920	5490.320	5509.240	---	---
11A-CDD	Ant7	5500	19.040	5490.320	5509.360	---	---
11A-CDD	Ant10	5580	19.440	5570.440	5589.880	---	---
11A-CDD	Ant7	5580	19.160	5570.280	5589.440	---	---
11A-CDD	Ant10	5700	18.400	5690.680	5709.080	---	---
11A-CDD	Ant7	5700	18.720	5690.480	5709.200	---	---
11A-CDD	Ant10	5720	19.520	5710.400	5729.920	---	---
11A-CDD	Ant7	5720	19.120	5710.240	5729.360	---	---
11A-CDD	Ant10	5720_UNII-2C	14.6	5710.400	5725	---	---
11A-CDD	Ant7	5720_UNII-2C	14.76	5710.240	5725	---	---
11A-CDD	Ant10	5720_UNII-3	4.92	5725	5729.920	---	---
11A-CDD	Ant7	5720_UNII-3	4.36	5725	5729.360	---	---
11N20MIMO	Ant10	5180	20.120	5169.880	5190.000	---	---
11N20MIMO	Ant7	5180	20.280	5169.600	5189.880	---	---
11N20MIMO	Ant10	5200	20.000	5190.000	5210.000	---	---
11N20MIMO	Ant7	5200	19.920	5189.840	5209.760	---	---
11N20MIMO	Ant10	5240	20.520	5229.760	5250.280	---	---
11N20MIMO	Ant7	5240	19.680	5230.000	5249.680	---	---

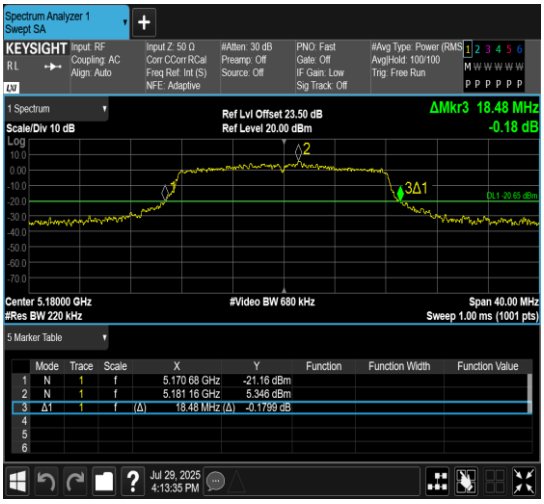
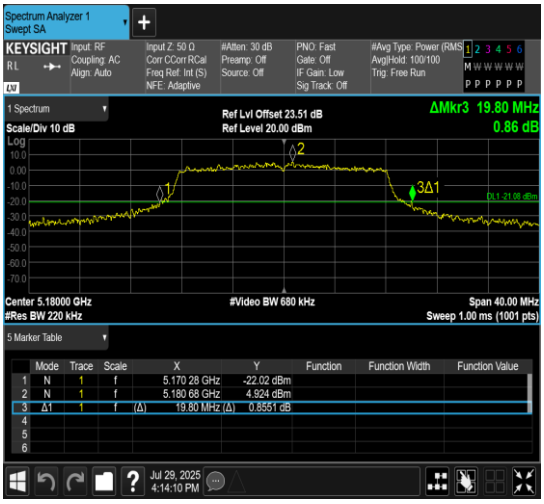
11N20MIMO	Ant10	5260	20.000	5250.040	5270.040	---	---
11N20MIMO	Ant7	5260	19.840	5249.960	5269.800	---	---
11N20MIMO	Ant10	5300	19.960	5289.920	5309.880	---	---
11N20MIMO	Ant7	5300	19.880	5290.160	5310.040	---	---
11N20MIMO	Ant10	5320	20.200	5309.680	5329.880	---	---
11N20MIMO	Ant7	5320	19.800	5310.080	5329.880	---	---
11N20MIMO	Ant10	5500	19.920	5489.760	5509.680	---	---
11N20MIMO	Ant7	5500	20.560	5489.440	5510.000	---	---
11N20MIMO	Ant10	5580	19.760	5570.040	5589.800	---	---
11N20MIMO	Ant7	5580	20.200	5569.760	5589.960	---	---
11N20MIMO	Ant10	5700	19.960	5689.800	5709.760	---	---
11N20MIMO	Ant7	5700	19.760	5689.920	5709.680	---	---
11N20MIMO	Ant10	5720	20.320	5709.520	5729.840	---	---
11N20MIMO	Ant7	5720	20.040	5709.800	5729.840	---	---
11N20MIMO	Ant10	5720_UNII-2C	15.48	5709.520	5725	---	---
11N20MIMO	Ant7	5720_UNII-2C	15.2	5709.800	5725	---	---
11N20MIMO	Ant10	5720_UNII-3	4.84	5725	5729.840	---	---
11N20MIMO	Ant7	5720_UNII-3	4.84	5725	5729.840	---	---
11N40MIMO	Ant10	5190	39.760	5170.080	5209.840	---	---
11N40MIMO	Ant7	5190	38.960	5170.400	5209.360	---	---
11N40MIMO	Ant10	5230	39.440	5210.160	5249.600	---	---
11N40MIMO	Ant7	5230	38.720	5210.560	5249.280	---	---
11N40MIMO	Ant10	5270	39.360	5250.320	5289.680	---	---
11N40MIMO	Ant7	5270	38.720	5250.480	5289.200	---	---
11N40MIMO	Ant10	5310	39.360	5290.240	5329.600	---	---
11N40MIMO	Ant7	5310	38.960	5290.400	5329.360	---	---
11N40MIMO	Ant10	5510	39.280	5490.320	5529.600	---	---
11N40MIMO	Ant7	5510	39.120	5490.400	5529.520	---	---
11N40MIMO	Ant10	5550	39.680	5530.000	5569.680	---	---
11N40MIMO	Ant7	5550	39.120	5530.400	5569.520	---	---
11N40MIMO	Ant10	5670	39.760	5649.920	5689.680	---	---
11N40MIMO	Ant7	5670	38.560	5650.640	5689.200	---	---
11N40MIMO	Ant10	5710	38.800	5690.480	5729.280	---	---
11N40MIMO	Ant7	5710	38.960	5690.400	5729.360	---	---
11N40MIMO	Ant10	5710_UNII-2C	34.52	5690.480	5725	---	---
11N40MIMO	Ant7	5710_UNII-2C	34.6	5690.400	5725	---	---
11N40MIMO	Ant10	5710_UNII-3	4.28	5725	5729.280	---	---

11N40MIMO	Ant7	5710_UNII-3	4.36	5725	5729.360	---	---
11AC80MIMO	Ant10	5210	81.920	5168.400	5250.320	---	---
11AC80MIMO	Ant7	5210	80.000	5169.840	5249.840	---	---
11AC80MIMO	Ant10	5290	80.800	5249.200	5330.000	---	---
11AC80MIMO	Ant7	5290	80.640	5249.680	5330.320	---	---
11AC80MIMO	Ant10	5530	81.760	5489.840	5571.600	---	---
11AC80MIMO	Ant7	5530	80.000	5489.840	5569.840	---	---
11AC80MIMO	Ant10	5610	81.280	5569.520	5650.800	---	---
11AC80MIMO	Ant7	5610	81.280	5569.360	5650.640	---	---
11AC80MIMO	Ant10	5690	80.640	5649.360	5730.000	---	---
11AC80MIMO	Ant7	5690	80.640	5649.520	5730.160	---	---
11AC80MIMO	Ant10	5690_UNII-2C	75.64	5649.360	5725	---	---
11AC80MIMO	Ant7	5690_UNII-2C	75.48	5649.520	5725	---	---
11AC80MIMO	Ant10	5690_UNII-3	5	5725	5730.000	---	---
11AC80MIMO	Ant7	5690_UNII-3	5.16	5725	5730.160	---	---
11AC160MIMO	Ant10	5250	163.200	5168.720	5331.920	---	---
11AC160MIMO	Ant7	5250	163.200	5168.720	5331.920	---	---
11AC160MIMO	Ant10	5250_UNII-1	81.28	5168.720	5250	---	---
11AC160MIMO	Ant7	5250_UNII-1	81.28	5168.720	5250	---	---
11AC160MIMO	Ant10	5250_UNII-2A	81.92	5250	5331.920	---	---
11AC160MIMO	Ant7	5250_UNII-2A	81.92	5250	5331.920	---	---
11AC160MIMO	Ant10	5570	163.200	5488.400	5651.600	---	---
11AC160MIMO	Ant7	5570	163.200	5487.760	5650.960	---	---
11AX20MIMO	Ant10	5180	20.680	5169.520	5190.200	---	---
11AX20MIMO	Ant7	5180	21.000	5169.480	5190.480	---	---
11AX20MIMO	Ant10	5200	20.480	5189.680	5210.160	---	---
11AX20MIMO	Ant7	5200	20.520	5189.720	5210.240	---	---
11AX20MIMO	Ant10	5240	20.280	5229.800	5250.080	---	---
11AX20MIMO	Ant7	5240	20.680	5229.560	5250.240	---	---
11AX20MIMO	Ant10	5260	20.560	5249.680	5270.240	---	---
11AX20MIMO	Ant7	5260	20.320	5249.720	5270.040	---	---
11AX20MIMO	Ant10	5300	20.440	5289.800	5310.240	---	---
11AX20MIMO	Ant7	5300	20.480	5289.760	5310.240	---	---
11AX20MIMO	Ant10	5320	20.720	5309.600	5330.320	---	---
11AX20MIMO	Ant7	5320	20.560	5309.640	5330.200	---	---
11AX20MIMO	Ant10	5500	20.320	5489.840	5510.160	---	---
11AX20MIMO	Ant7	5500	20.600	5489.560	5510.160	---	---

11AX20MIMO	Ant10	5580	20.640	5569.480	5590.120	---	---
11AX20MIMO	Ant7	5580	20.680	5569.440	5590.120	---	---
11AX20MIMO	Ant10	5700	21.200	5689.320	5710.520	---	---
11AX20MIMO	Ant7	5700	20.760	5689.480	5710.240	---	---
11AX20MIMO	Ant10	5720	20.360	5709.760	5730.120	---	---
11AX20MIMO	Ant7	5720	20.560	5709.520	5730.080	---	---
11AX20MIMO	Ant10	5720_UNII-2C	15.24	5709.760	5725	---	---
11AX20MIMO	Ant7	5720_UNII-2C	15.48	5709.520	5725	---	---
11AX20MIMO	Ant10	5720_UNII-3	5.12	5725	5730.120	---	---
11AX20MIMO	Ant7	5720_UNII-3	5.08	5725	5730.080	---	---
11AX40MIMO	Ant10	5190	39.920	5170.000	5209.920	---	---
11AX40MIMO	Ant7	5190	40.000	5169.840	5209.840	---	---
11AX40MIMO	Ant10	5230	40.240	5209.840	5250.080	---	---
11AX40MIMO	Ant7	5230	40.000	5209.920	5249.920	---	---
11AX40MIMO	Ant10	5270	39.760	5250.000	5289.760	---	---
11AX40MIMO	Ant7	5270	40.080	5249.840	5289.920	---	---
11AX40MIMO	Ant10	5310	39.920	5289.920	5329.840	---	---
11AX40MIMO	Ant7	5310	39.920	5290.000	5329.920	---	---
11AX40MIMO	Ant10	5510	39.920	5490.080	5530.000	---	---
11AX40MIMO	Ant7	5510	39.840	5490.000	5529.840	---	---
11AX40MIMO	Ant10	5550	40.000	5529.760	5569.760	---	---
11AX40MIMO	Ant7	5550	39.760	5530.080	5569.840	---	---
11AX40MIMO	Ant10	5670	40.080	5649.920	5690.000	---	---
11AX40MIMO	Ant7	5670	40.000	5649.920	5689.920	---	---
11AX40MIMO	Ant10	5710	40.320	5689.600	5729.920	---	---
11AX40MIMO	Ant7	5710	39.760	5690.080	5729.840	---	---
11AX40MIMO	Ant10	5710_UNII-2C	35.4	5689.600	5725	---	---
11AX40MIMO	Ant7	5710_UNII-2C	34.92	5690.080	5725	---	---
11AX40MIMO	Ant10	5710_UNII-3	4.92	5725	5729.920	---	---
11AX40MIMO	Ant7	5710_UNII-3	4.84	5725	5729.840	---	---
11AX80MIMO	Ant10	5210	81.440	5169.360	5250.800	---	---
11AX80MIMO	Ant7	5210	80.800	5169.520	5250.320	---	---
11AX80MIMO	Ant10	5290	80.640	5249.680	5330.320	---	---
11AX80MIMO	Ant7	5290	81.440	5249.040	5330.480	---	---
11AX80MIMO	Ant10	5530	80.960	5489.200	5570.160	---	---
11AX80MIMO	Ant7	5530	80.320	5489.680	5570.000	---	---
11AX80MIMO	Ant10	5610	81.920	5569.360	5651.280	---	---

11AX80MIMO	Ant7	5610	80.800	5569.200	5650.000	---	---
11AX80MIMO	Ant10	5690	80.800	5649.360	5730.160	---	---
11AX80MIMO	Ant7	5690	80.960	5649.200	5730.160	---	---
11AX80MIMO	Ant10	5690_UNII-2C	75.64	5649.360	5725	---	---
11AX80MIMO	Ant7	5690_UNII-2C	75.8	5649.200	5725	---	---
11AX80MIMO	Ant10	5690_UNII-3	5.16	5725	5730.160	---	---
11AX80MIMO	Ant7	5690_UNII-3	5.16	5725	5730.160	---	---
11AX160MIMO	Ant10	5250	164.160	5168.400	5332.560	---	---
11AX160MIMO	Ant7	5250	163.520	5168.080	5331.600	---	---
11AX160MIMO	Ant10	5250_UNII-1	81.6	5168.400	5250	---	---
11AX160MIMO	Ant7	5250_UNII-1	81.92	5168.080	5250	---	---
11AX160MIMO	Ant10	5250_UNII-2A	82.56	5250	5332.560	---	---
11AX160MIMO	Ant7	5250_UNII-2A	81.6	5250	5331.600	---	---
11AX160MIMO	Ant10	5570	164.160	5487.440	5651.600	---	---
11AX160MIMO	Ant7	5570	163.520	5488.080	5651.600	---	---

TEST GRAPHS

11A-CDD-Ant10-5180	11A-CDD-Ant7-5180
	
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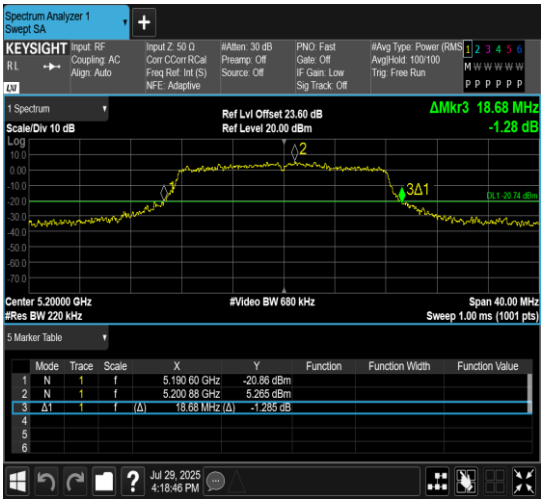	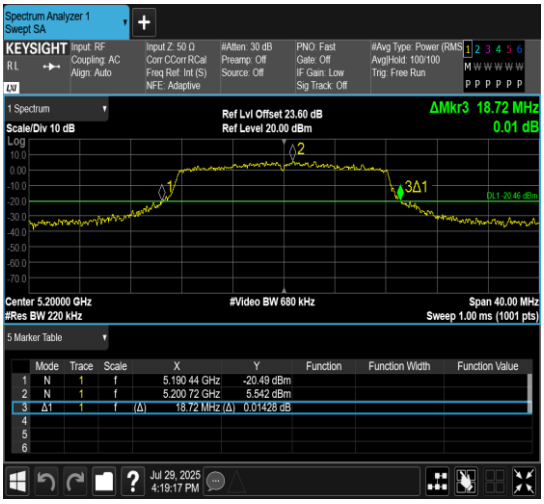
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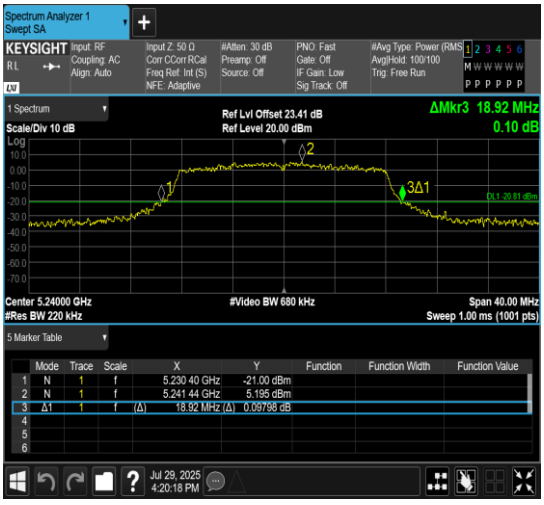	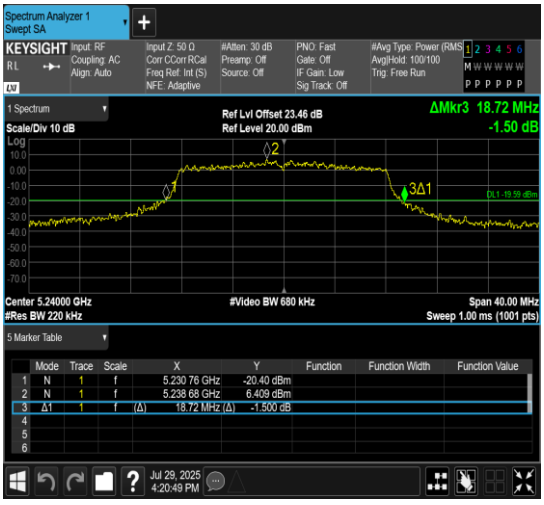

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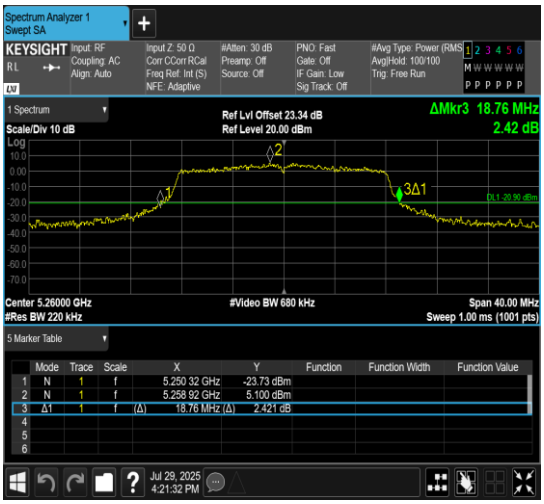	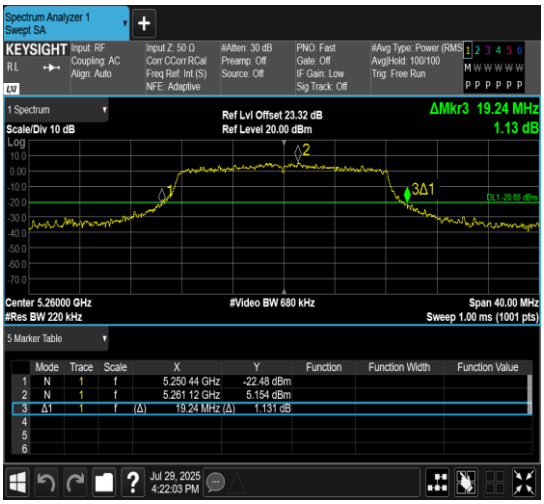
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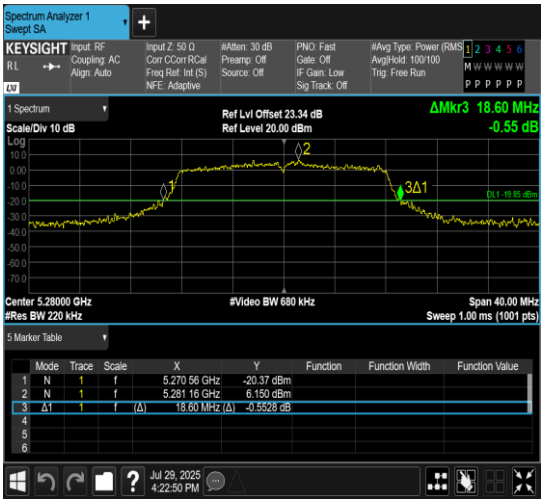	
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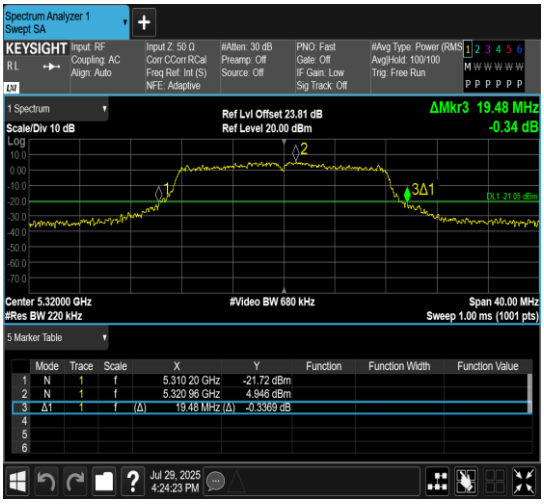	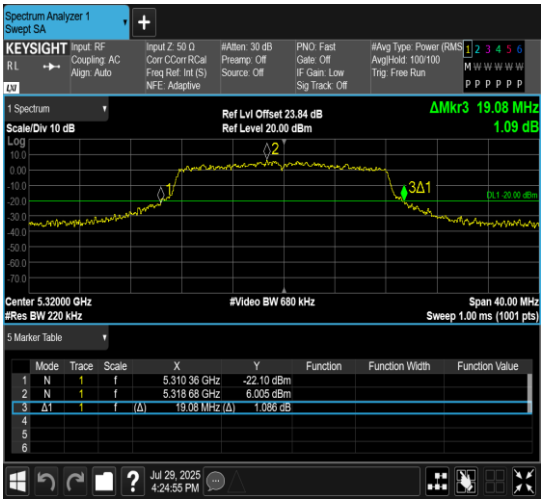
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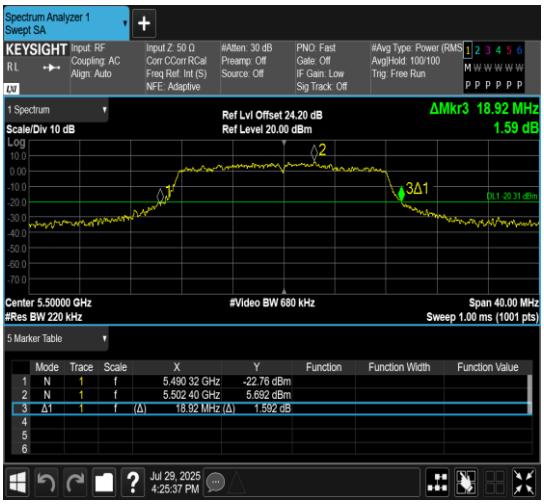

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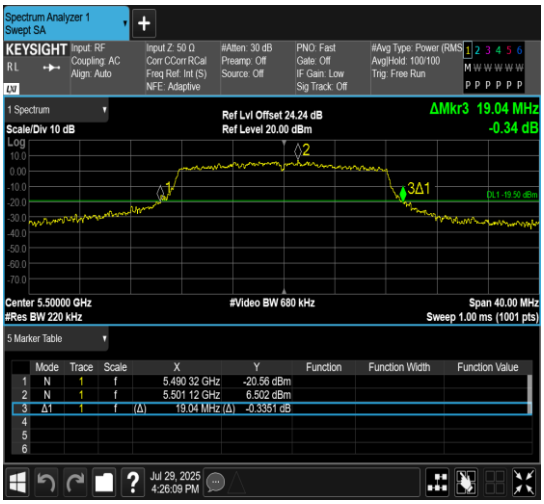

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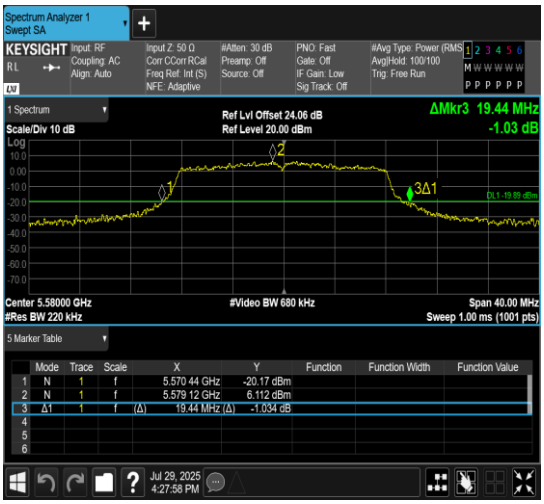

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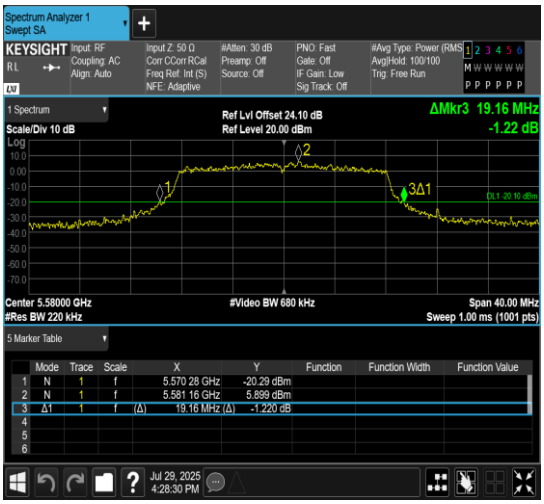

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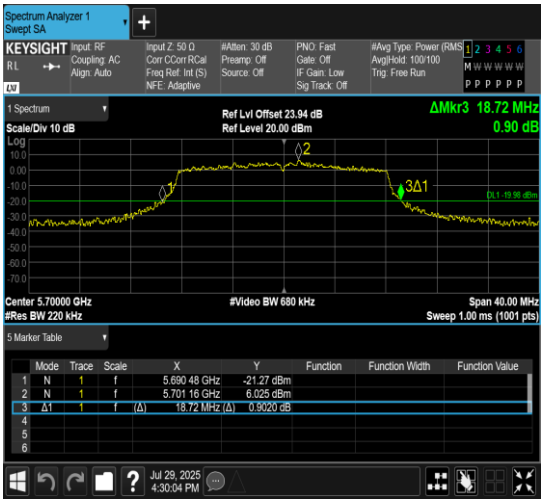
11A-CDD-Ant10-5720



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