

Page 42 of 74



Page 43 of 74

10.5.4. 802.11ax HE20(Full RU) MODE

2TX Antenna 0 MODE



Page 44 of 74

REPORT NO: U-4791479704-FR1V2 FCC ID: A3LWCF933M IC: 649E-WCF933M 2TX Antenna 1 MODE



13 Channel Band-edge

Page 45 of 74

10.5.5. 802.11ax HE20(RU) MODE

2TX Antenna 0 MODE



Page 46 of 74

UL Korea, Ltd. Uiwang Laboratory FORM ID: FCC_15C(05) TEL: (031) 389-9603 FAX: (031) 462-8355 42, Obongsandan 1-ro, Uiwang-si, Gyeonggi-do, Republic of Korea UL KOREA LTD. Confidential This report shall not be reproduced except in full, without the written approval of UL KOREA LTD.

103378 Swept SA KEYSIGHT Input: Ri RL ↔ Align: Auto N	pout Z: 50 Ω Atten: 30 dB PNO: Fa Sen CCort Preamp. Off Cate: 01 Freq Ref. Int.(S) μW Path: Standard IF Gata. HFL Adaptive Sig Tacd	st #Awg Type Power (RMS) AvgiHold: 100/100 Low Trig: Free Run Loff	1 2 3 4 5 6 MWWWWW P N N N N N	103378 Swept SA KEYSIGHT input i RL → Align A	4 ⁻ hp: DC Core Core Freq Ref. Int (S) NFE. Adaptive	Atten: 24 dB PNO: Fast Preamp: Off Gale: Off JW Path: Standard IF Gain: Low Sig Track. Off	MAvg Type: Power (RMIS 2 1 4 5 6 AvgHold 100100 M W W W W Trig. Free Run P N N N N N	
1 Spectrum Scale/Div 10 dB Log 8 75 -1 74	Ref Lev	el 18.26 dBm	Mkr2 2.500 545 GI -47.52 dB	1 Spectrum Scale/Div 10 dB Log 2 65 -7 35		Ref Level 12.6	35 dBm	Mkr2 2.483 500 GHz -41.05 dBm
-117 -217 -317 -417 -517 -517	persenter freedormenter from	utation Sure Solies data (Salies Society)	DL1 25 92 d	-17.4 -27.4 -37.4 -47.4 -57.4 -57.4	perseption of	aran panaradana /	2	OL1-30 88 dBm
-71.7 Center 2.48350 GHz #Res BW 100 kHz 5 Marker Table	#Video	BW 300 kHz	Span 70.00 M Sweep 2.67 ms (2001 p	Hz Center 2.48350 GHz #Res BW 100 kHz 5 Marker Table		#Video BW 3	00 kHz	Span 70.00 MHz Sweep 2.67 ms (2001 pts)
Mode Trace Scale 1 N 1 f 2 N 1 f 3 - - - 4 - - - - 6 - - - -	X Y 2.475 975 GHz 4.02 2.500 545 GHz 47.5	Function Function Function Function	ction Width Function Value	Mode Trace 1 N 1 2 N 1 3 4 5 6	Scale X f 2.479 f 2.483	Y 895 GHz -0.8793 dBm 500 GHz -41.05 dBm	Function Function Width	Function Value
∎ <> <> ■ ? <	Dec 27, 2024		.:: 🖹 🕂	ا ^ی د 🕨	Dec 27, 2024 12:13:37 PM	∍∆		
1:	2 Channel B	and-edge	(8RU)		13 Ch	annel Bar	nd-edge(8Rl	J)

Page 47 of 74

REPORT NO: U-4791479704-FR1V2 FCC ID: A3LWCF933M IC: 649E-WCF933M 2TX Antenna 1 MODE



Page 48 of 74

DATE: 2025-01-23



Page 49 of 74

11. RADIATED TEST RESULTS

LIMITS

FCC §15.205 and §15.209

Limits	for radiated disturbance o	f an intentional radiator
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 - 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

RSS-Gen (8.9)

Frequency (MHz)	Field strength (µV/m at 3 m)
30 – 88	100
88 – 216	150
216 – 960	200
Above 960	500

Frequency (MHz)	Magnetic field strength (H-Field) (µA/m)	Measurement Distance (m)									
0.009–0.490 Note 1	6.37/F (F in kHz)	300									
0.490-1.705	63.7/F (F in kHz)	30									
1.705–30.0	0.08	30									
Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on											
measurements employing a linear average detector.											

Note: The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω . For example, the measurement frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

RSS-Gen (8.10) / FCC Part 15.205 (a): Restricted frequency bands

Page 50 of 74

MHz	MHz	MHz	MHz	GHz	GHz	ĺ
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	4.5 ~ 5.15	14.47 ~ 14.5	
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	5.35 ~ 5.46	15.35 ~ 16.2	
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	7.25 ~ 7.75	17.7 ~ 21.4	
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12	
4.17725 ~ 4.17775	13.36 ~ 13.41	156.52525	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0	
4.20725 ~ 4.20775	16.42 ~ 16.423	156.7 ~ 156.9	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8	
6.215 ~ 6.218	16.69475 ~ 16.69525	162.0125 ~	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5	
6.26775 ~ 6.26825	16.80425 ~ 16.80475	167.17	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6	
6.31175 ~ 6.31225	25.5 ~ 25.67	167.72 ~ 173.2	2655 ~ 2900			
8.291 ~ 8.294	37.5 ~ 38.25	240 ~ 285	3260 ~ 3267			
8.362 ~ 8.366	73 ~ 74.6	322 ~ 335.4	3332 ~ 3339			
8.37625 ~ 8.38675	74.8 ~ 75.2	399.90 ~ 410	3345.8 ~ 3358			
		608 ~ 614	3600 ~ 4400			
		960 ~ 1240				

• RSS-Gen 8.10 : Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

• FCC Part 15.205(b) : The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

Page 51 of 74

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1 GHz and 150 cm for above 1 GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. (Restriced bandedge, Final detection of spurious harmonic emissions)

Duty cycle factor = $10\log(1/x)$ For this sample:

802.11b SISO mode = 0.22 dB (94.98%); 802.11g SISO mode = 0.69 dB (85.27%); 802.11n(HT20) MIMO mode = 0.41 dB (90.94%); 802.11ax(HE20) MIMO Full RU(242T) mode = 1.35 dB (73.37%); 802.11ax(HE20) MIMO 26 Tone mode = 1.00 dB (79.47%).

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.

The spectrum from 1 GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Note : Emission was pre-scanned from 9 kHz to 30 MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor). Per FCC part 15.31(o), test results were not reported.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.

Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

Page 52 of 74

11.1. TRANSMITTER ABOVE 1 GHz

11.1.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

BANDEDGE (WORST CASE: 13 CHANNEL, ANT 0)



VERTICAL RESULT

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	CH1_AF_1- 18G_3117_240 924 (dB/m)	FB1_PL_1- 18G_10dB_240 718 (dB)	CH1_CL_1- 40G_Thru_2411 04 (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	44.94	Pk	32.1	-30.5	7.2	0	53.74	-	-	74	-20.26	248	109	V
2	* 2.48538	49.39	Pk	32.2	-30.5	7.2	0	58.29	-	-	74	-15.71	248	109	V
3	* 2.4835	34.22	RMS	32.1	-30.5	7.2	.22	43.24	54	-10.76		-	248	109	V
4	* 2 48563	42.86	RMS	32.2	-30.5	72	22	51.98	54	-2.02	-	-	248	109	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band Pk - Peak detector

RMS - RMS detection

Page 53 of 74

BANDEDGE TEST DATA

Freq.	Antonna	Frequency	Reading	Detector	ANT Factor	FB Gain	Loss	DC Corr	Result	AV Limit	AV Margin	PK Limit	PK Margin	Azimuth	Height	Belarity
[MHz]	Antenna	[GHz]	[dBuV]	Mode	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[dBuV/m]	[dB]	[Degs]	[cm]	Polarity
14 C C C		* 2.39	42.09	Pk	31.90	-30.50	6.90	0.00	50.39	-	-	74.00	-23.61	324	187	н
		* 2.3841	45.55	Pk	31.90	-30.50	6.90	0.00	53.85	-	-	74.00	-20.15	324	187	н
		* 2.39	32.91	RMS	31.90	-30.50	6.90	0.22	41.43	54.00	-12.57	-	-	324	187	н
0.440	41170	* 2.3853	35.32	RMS	31.90	-30.50	6.90	0.22	43.84	54.00	-10.16	-	-	324	187	н
2412	ANTU	* 2.39	45.07	Pk	31.90	-30.50	6.90	0.00	53.37	-	-	74.00	-20.63	235	112	V
		* 2.3864	50.84	Pk	31.90	-30.50	6.90	0.00	59.14	-	-	74.00	-14.86	235	112	V
		* 2.39	35.61	RMS	31.90	-30.50	6.90	0.22	44.13	54.00	-9.87	-	-	235	112	V
		* 2.38534	42.30	RMS	31.90	-30.50	6.90	0.22	50.82	54.00	-3.18	-	-	235	112	V
		* 2.4835	43.61	PK	32.10	-30.50	7.20	0.00	52.41			74.00	-21.59	324	224	н
		2.526	45.02	Pk	32.20	-30.50	7.20	0.00	53.92	-	-	74.00	-20.08	324	224	н
		* 2.4835	32.19	RMS	32.10	-30.50	7.20	0.22	41.21	54.00	-12.79	-	-	324	224	н
		* 2,49008	33.60	RMS	32.20	-30.50	7.20	0.22	42.72	54.00	-11.28	-	-	324	224	н
2462	ANTO	* 2 4835	43.28	Pk	32 10	-30.50	7 20	0.00	52.08	-	-	74 00	-21.92	221	105	V
		* 2 48953	46.72	Pk	32.20	-30.50	7.20	0.00	55.62	-	-	74.00	-18.38	221	105	v
		* 2 4835	33.40	RMS	32 10	-30.50	7 20	0.22	42.42	54 00	-11.58	-	-	221	105	v
		* 2 48989	35.63	RMS	32.20	-30 50	7 20	0.22	44 75	54 00	-9.25	-	-	221	105	v
		* 2 4835	44.13	Pk	32.10	-30.50	7 20	0.00	52.93		-	74.00	-21.07	322	224	H
		* 2 48501	45.21	Pk	32.20	-30.50	7 20	0.00	54 11	-		74.00	-19.89	322	224	н
		* 2 4835	33.91	RMS	32.10	-30.50	7 20	0.22	42.93	54 00	-11.07	-	-	322	224	н
		* 2 48438	34.81	RMS	32.10	-30.50	7 20	0.22	43.83	54.00	-10.17	-		322	224	н
2467	ANTO	* 2 4835	45.81	Pk	32.10	-30.50	7 20	0.00	54 61		-	74.00	-19.39	244	109	v
		* 2 4838	47.72	Dk	32.10	-30.50	7 20	0.00	56.52			74.00	-17.48	244	100	v
		* 2 4835	37.56	DMS	32.10	-30.50	7.20	0.00	46.58	54.00	7 42	74.00	-17.40	244	100	v
		* 2 48443	38.21	PMS	32.10	-30.50	7.20	0.22	40.00	54.00	-6.77			244	103	v
		* 2 4935	41.91	Dk	32.10	30.50	7.20	0.00	50.71	04.00	-0.11	74.00	23.29	329	159	
		* 2 48542	41.51	DK	32.10	-30.50	7.20	0.00	54.54			74.00	-20.25	320	159	
		*0.40042	40.04	DMC	32.20	-30.50	7.20	0.00	41.04	54.00	12.00	74.00	-13.40	323	150	
		2.4033	32.32	RIVIS	32.10	-30.50	7.20	0.22	41.34	54.00	-12.00			323	150	
2472	ANT0	2.40001	37.31	RIVIS	32.20	-30.50	7.20	0.22	40.45	54.00	-7.57	74.00		329	100	
		2.4033	44.94	PK	32.10	-30.50	7.20	0.00	50.00			74.00	-20.20	240	109	V V
		2.40030	49.39	DMS	32.20	-30.50	7.20	0.00	12 24	- 54.00	10.76	74.00	-15.71	240	109	- V
		* 2.4055	42.96	DMO	32.10	-30.50	7.20	0.22	51.09	54.00	-10.70	-		240	100	V
<u> </u>		2.40303	42.00	RIVIS	32.20	-30.50	6.00	0.22	52.71	04.00	-2.02	- 74.00	20.20	240	103	
		* 2 38544	40.41	Dk	31.90	-30.50	6.90	0.00	57.42	-	-	74.00	-20.23	330	103	
		* 2 39	35.79	PMS	31.90	-30.50	6.90	0.22	44.31	54.00	-9.69	74.00	-10.00	330	103	H
	1000	* 2 38547	39.53	RMS	31.90	-30.50	6.90	0.22	48.05	54.00	-5.95			330	103	H
2412	ANT1	* 2.39	43.86	Pk	31,90	-30.50	6.90	0.00	52.16	-	-	74.00	-21.84	13	396	v
		* 2.38622	46.60	Pk	31.90	-30.50	6.90	0.00	54.90	-	-	74.00	-19,10	13	396	V
		* 2.39	33.79	RMS	31.90	-30.50	6.90	0.22	42.31	54.00	-11.69	-	-	13	396	V
		* 2.38736	36.78	RMS	31.90	-30.50	6.90	0.22	45.30	54.00	-8.70	-	-	13	396	V
		* 2.4835	45.53	Pk	32.10	-30.50	7.20	0.00	54.33	-	-	74.00	-19.67	330	123	н
		* 2.48937	47.28	Pk	32.20	-30.50	7.20	0.00	56.18	-	-	74.00	-17.82	330	123	н
		* 2.4835	36.31	RMS	32.10	-30.50	7.20	0.22	45.33	54.00	-8.67	-	-	330	123	Н
2462	ANT1	* 2.49021	37.28	RMS	32.20	-30.50	7.20	0.22	46.40	54.00	-7.60	-	-	330	123	н
		* 2.4835	42.48	Pk	32.10	-30.50	7.20	0.00	51.28	-	-	74.00	-22.72	184	262	V
		2.554	45.28	Pk	32.20	-30.50	7.20	0.00	54.18	-	-	74.00	-19.82	184	262	V
		* 2.4835	32.85	RMS	32.10	-30.50	7.20	0.22	41.87	54.00	-12.13		-	184	262	V
		* 2.48967	33.69	RMS	32.20	-30.50	7.20	0.22	42.81	54.00	-11.19	-	-	184	262	V
		2.4835	49.86	PK	32.10	-30.50	7.20	0.00	58.66			74.00	-15.34	329	124	H
		2.48363	50.53	PK	32.10	-30.50	7.20	0.00	59.33	-	-	/4.00	-14.67	329	124	н
		2.4030	41.44	RIVIS	32.10	-30.50	7.20	0.22	50.46	54.00	-3.34			329	124	
2467	ANT1	* 2 4835	41.23	Pk	32.10	-30.50	7.20	0.22	53.70	54.00	-3.75	74.00	-20.30	175	256	N N
		* 2 48408	44.50		32.10	-30.50	7.20	0.00	55 33			74.00	-20.50	175	256	V
		* 2.4835	35.82	RMS	32.10	-30 50	7.20	0.22	44 84	54 00	-9 16	-		175	256	v
		* 2 48353	36.19	RMS	32.10	-30.50	7 20	0.22	45.21	54.00	-8.79	-	-	175	256	v
		* 2.4835	47.60	Pk	32.10	-30.50	7.20	0.00	56.40	-	-	74.00	-17.60	338	124	H
		* 2 48557	49.23	Pk	32.20	-30 50	7 20	0.00	58 13	-	-	74.00	-15.87	338	124	н
		* 2,4835	38.55	RMS	32.10	-30.50	7.20	0.22	47.57	54.00	-6.43	-	-	338	124	н
0.470		* 2.48557	42.71	RMS	32.20	-30.50	7.20	0.22	51.83	54.00	-2.17	-	-	338	124	н
2472	ANT1	* 2.4835	42.85	Pk	32.10	-30.50	7.20	0.00	51.65	-	-	74.00	-22.35	177	255	V
		* 2.48557	46.04	Pk	32.20	-30.50	7.20	0.00	54.94	-	-	74.00	-19.06	177	255	V
1		* 2.4835	34.32	RMS	32.10	-30.50	7.20	0.22	43.34	54.00	-10.66	-	-	177	255	V
1		* 2 49547	26.91	PMS	32.20	-30.50	7 20	0.22	45.92	54.00	-8.07	_	-	177	255	V

Note1. Pk - Peak detector, RMS - RMS detection

Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Page 54 of 74

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 1 CHANNEL, ANT0)



CH 1 RESULTS

HORIZONTAL



VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	CH1_AF_1- 18G_3117_24 0924 (dB/m)	FB1_PL_1- 18G_3G HP_240718 (dB)	CH1_CL_1- 40G_Thru_24 1104 (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.82386	39.35	PK2	33.9	-39.4	9.7	0	43.55	-	-	74	-30.45	250	318	Н
* 4.82402	29.69	MAv1	33.9	-39.4	9.7	.22	34.11	54	-19.89	-	-	250	318	Н
* 4.82406	40.46	PK2	33.9	-39.4	9.7	0	44.66	-	-	74	-29.34	211	214	V
* 4.82398	31.91	MAv1	33.9	-39.4	9.7	.22	36.33	54	-17.67	-	-	211	214	V
7.23542	39	PK2	35.6	-39.2	12.2	0	47.6	-	-	74	-26.4	334	199	н
7.23633	39.09	PK2	35.6	-39.2	12.2	0	47.69	-	-	74	-26.31	238	101	V
9.64941	34.6	PK2	36.6	-37.7	15.1	0	48.6	-	-	74	-25.4	325	105	Н
9.64805	36.17	PK2	36.6	-37.7	15.1	0	50.17	-	-	74	-23.83	241	374	V
* 14.47204	34.61	PK2	39.1	-37	16.6	0	53.31	-	-	74	-20.69	248	104	н
* 14.47197	25.26	MAv1	39.1	-37	16.6	.22	44.18	54	-9.82	-	-	248	104	н
* 14.47181	36	PK2	39.1	-37	16.6	0	54.7	-	-	74	-19.3	238	227	V
* 14.47185	28.31	MAv1	39.1	-37	16.6	.22	47.23	54	-6.77	-	-	238	227	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

Page 55 of 74

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-			-													1
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	FB Gain [dB]	Loss [dB]	[dB]	Result [dBuV/m	AV Limit][dBuV/m	AV Margin	PK Limit [dBuV/m]	PK Margin	Azimuth [Degs]	Height [cm]	Polarity
		* 4.82386	39.35	PK2	33.90	-39.40	9.70	0.00	43.55	-	-	74.00	-30.45	250	318	н
		* 4.82402	29.69	MAv1	33.90	-39.40	9.70	0.22	34.11	54.00	-19.89	-	-	250	318	н
		* 4.82406	40.46	PK2	33.90	-39.40	9.70	0.00	44.66	-	-	74.00	-29.34	211	214	V
		* 4.82398	31.91	MAv1	33.90	-39.40	9.70	0.22	36.33	54.00	-17.67	-	-	211	214	V
		7.235	39.00	PK2	35.60	-39.20	12.20	0.00	47.60	-	-	74.00	-26.40	334	199	н
0440	ANITO	7.236	39.09	PK2	35.60	-39.20	12.20	0.00	47.69	-	-	74.00	-26.31	238	101	V
2412	ANTO	9.649	34.60	PK2	36.60	-37.70	15.10	0.00	48.60	-	-	74.00	-25.40	325	105	н
		9.648	36.17	PK2	36.60	-37.70	15.10	0.00	50.17	-	-	74.00	-23.83	241	374	V
		* 14.47204	34.61	PK2	39.10	-37.00	16.60	0.00	53.31	-	-	74.00	-20.69	248	104	н
		* 14.47197	25.26	MAv1	39.10	-37.00	16.60	0.22	44.18	54.00	-9.82	-	-	248	104	н
		* 14.47181	36.00	PK2	39.10	-37.00	16.60	0.00	54.70	-	-	74.00	-19.30	238	227	V
		* 14,47185	28.31	MAv1	39.10	-37.00	16.60	0.22	47.23	54.00	-6.77	-	-	238	227	V
		* 4.87388	39.69	PK2	33,90	-39.40	9,70	0.00	43.89	-	-	74.00	-30.11	301	307	н
		* 4.87398	31.03	MAv1	33.90	-39.40	9.70	0.22	35.45	54.00	-18.55	-	-	301	307	н
		* 4 874	41.97	PK2	33.90	-39.40	9 70	0.00	46.17	-	-	74 00	-27.83	208	251	V
		* 4 87388	35.57	MAv1	33,90	-39.40	9.70	0.22	39.99	54.00	-14.01	-	-	208	251	V
		* 7 31135	37.59	PK2	35.60	-39.40	12 10	0.00	45.89	-	-	74 00	-28 11	220	103	H
		* 7 31026	27.53	MAv1	35.60	-39.40	12 10	0.22	36.05	54 00	-17.95	-	-	220	103	H
2437	ANTO	* 7 31004	38.67	PK2	35.60	-39.40	12 10	0.00	46.97			74.00	-27.03	207	346	v
		* 7 31174	29.50	MAv1	35.60	-39.40	12.10	0.00	38.02	54.00	-15.98	74.00	-27.00	207	346	v
		9.747	35.55	PK2	36.70	-37.60	14.40	0.00	19.05	04.00	10.00	74.00	-24.95	201	299	
		9.749	37.35	DK2	36.70	37.60	14.40	0.00	50.85			74.00	23.15	236	195	v
		14 620	24.00		20.20	-57.00	16.60	0.00	52.00			74.00	20.02	200	104	- V
		14.620	34.20	PK2	39.30	-37.10	10.00	0.00	54.00			74.00	-20.92	244	104	
		14.022	30.09	PK2	39.30	-37.10	16.70	0.00	04.99		-	74.00	-19.01	237	150	V
		4.92007	32.14	PK	33.90	-39.00	9.00	0.00	41.00			74.00	-37.00	0-360	100	H
		4.92387	36.88	PK	33.90	-39.50	9.80	0.00	41.08	-		74.00	-32.92	0-360	100	V
		7.38684	26.87	PK	35.60	-39.10	12.90	0.00	36.27	-	-	74.00	-37.73	0-360	150	H
2462	ANTO	1.38684	27.83	PK	35.60	-39.10	12.90	0.00	37.23	-		74.00	-36.77	0-360	100	V
		9.040	20.34	PK	36.90	-30.10	14.60	0.00	41.74			74.00	-32.26	0-360	150	H
		9.848	30.12	PK	36.90	-38.10	14.60	0.00	43.52	-	-	74.00	-30.48	0-360	250	V
		14.772	25.20	PK	39.40	-36.80	16.60	0.00	44.40			74.00	-29.60	0-360	150	H
		14.772	27.22	PK	39.40	-36.80	16.60	0.00	46.42	-	-	74.00	-27.58	0-360	100	V
		* 4.824	41.63	PK2	33.90	-39.40	9.70	0.00	45.83	-		74.00	-28.17	270	118	H
		4.82392	35.73	MAV1	33.90	-39.40	9.70	0.22	40.15	54.00	-13.85	-	-	2/0	118	H
		4.82394	41.62	PK2	33.90	-39.40	9.70	0.00	40.82	-	-	74.00	-28.18	343	338	V
2412	ANT1	4.624	30.06	DK2	33.90	-39.40	9.70	0.22	39.40	54.00	-14.02	74.00	25.50	159	102	V
		7 227	40.34	PK2	35.60	-39.20	12.10	0.00	40.44			74.00	-20.00	251	220	
		0.646	24.67		35.60	-33.20	15.10	0.00	40.04		-	74.00	-23.10	0	100	- V
		9.649	34.07	DK2	36.60	37.70	15.10	0.00	40.07			74.00	25.54	0	100	V V
		* 4 87403	42.36	PK2	33.00	-39.40	9.70	0.00	40.40		-	74.00	-27.44	272	100	-
		* 4 87401	35.97	MAv1	33.90	-39.40	9.70	0.00	40.30	54.00	-13.61	74.00	-21.44	272	102	H
		* 4 87372	40.13	PK2	33.90	-39.40	9.70	0.00	44.33			74 00	-29.67	13	102	v
		* 4 87388	30.83	MAv1	33.90	-39.40	9.70	0.22	35.25	54.00	-18 75			13	102	v
		* 7.3124	39.70	PK2	35.60	-39.40	12.10	0.00	48.00	-	-	74.00	-26.00	194	118	H
2437	ANT1	* 7.31004	30.38	MAv1	35.60	-39.40	12.10	0.22	38.90	54.00	-15.10	-	-	194	118	H
		* 7.30946	39.92	PK2	35.60	-39.40	12.10	0.00	48.22	-	-	74.00	-25.78	346	348	V
		* 7.31004	31.59	MAv1	35.60	-39.40	12.10	0.22	40.11	54.00	-13.89	-	-	346	348	V
		9.744	35.24	PK2	36.70	-37.60	14.50	0.00	48.84	-	-	74.00	-25.16	223	106	н
		9.753	34.75	PK2	36.70	-37.60	14.40	0.00	48.25	-	-	74.00	-25.75	138	107	V
		* 4.92372	42.69	PK2	33.90	-39.50	9.80	0.00	46.89	-	-	74.00	-27.11	321	100	н
		* 4.92394	37.12	MAv1	33.90	-39.50	9.80	0.22	41.54	54.00	-12.46	-	-	321	100	Н
		* 4.92398	41.17	PK2	33.90	-39.50	9.80	0.00	45.37	-	-	74.00	-28.63	24	304	V
		* 4.92396	33.61	MAv1	33.90	-39.50	9.80	0.22	38.03	54.00	-15.97	-	-	24	304	V
2462	ANT1	* 7.38662	39.91	PK2	35.60	-39.10	12.90	0.00	49.31	-	-	74.00	-24.69	161	109	H
2402	ANTI	* 7.38734	29.57	MAv1	35.60	-39.10	12.90	0.22	39.19	54.00	-14.81	-	-	161	109	Н
		* 7.38683	38.17	PK2	35.60	-39.10	12.90	0.00	47.57	-	-	74.00	-26.43	333	102	V
		* 7.38665	28.83	MAv1	35.60	-39.10	12.90	0.22	38.45	54.00	-15.55	-	-	333	102	V
		9.848	36.02	PK2	36.90	-38.10	14.60	0.00	49.42	-	-	74.00	-24.58	228	109	H
	1	0.040														

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Note1. PK2 - KDB558074 Method: Maximum Peak / MAv1 - KDB558074 Option 1 Maximum RMS Average Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Page 56 of 74

11.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

BANDEDGE (WORST CASE: 13 CHANNEL, ANT 1)



HORIZONTAL RESULT

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	CH1_AF_1- 18G_3117_240 924 (dB/m)	FB1_PL_1- 18G_10dB_240 718 (dB)	CH1_CL_1- 40G_Thru_2411 04 (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	49.67	Pk	32.1	-30.5	7.2	0	58.47	•	-	74	-15.53	330	102	Н
2	* 2.48402	53.33	Pk	32.1	-30.5	7.2	0	62.13	•	-	74	-11.87	330	102	Н
3	* 2.4835	39.17	RMS	32.1	-30.5	7.2	.69	48.66	54	-5.34	-	-	330	102	Н
4	* 2.48402	42.48	RMS	32.1	-30.5	7.2	.69	51.97	54	-2.03	-	-	330	102	Н

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band Pk - Peak detector RMS - RMS detection

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Page 57 of 74

BANDEDGE TEST DATA

Freq.	Antenna	Frequency	Reading	Detector Mode	ANT Factor	FB Gain	Loss [dB]	DC Corr	Result	AV Limit	AV Margin	PK Limit	PK Margin	Azimuth	Height	Polarity
[IIIII2]		* 2.39	47.61	Pk	31.90	-30.50	6,90	0.00	55.91	-	-	74.00	-18.09	328	100	н
		* 2.3891	50.59	Pk	31.90	-30.50	6.90	0.00	58.89	-	-	74.00	-15.11	328	100	H
		* 2.39	34.10	RMS	31.90	-30.50	6.90	0.69	43.09	54.00	-10.91	-	-	328	100	Н
2412	ANTO	* 2.38998	35.00	RMS	31.90	-30.50	6.90	0.69	43.99	54.00	-10.01	-	-	328	100	Н
2412	ANTO	* 2.39	51.61	Pk	31.90	-30.50	6.90	0.00	59.91	-	-	74.00	-14.09	246	100	V
		* 2.38452	62.33	Pk	31.90	-30.50	6.90	0.00	70.63	-	-	74.00	-3.37	246	100	V
		* 2.39	40.15	RMS	31.90	-30.50	6.90	0.69	49.14	54.00	-4.86	-	-	246	100	V
		* 2.3899	40.82	RMS	31.90	-30.50	6.90	0.69	49.81	54.00	-4.19	-	- 19.60	246	256	V
		* 2 38965	52.50	Pk	31.90	-30.50	6.90	0.00	60.80			74.00	-13.20	315	256	H
		* 2.39	33.80	RMS	31.90	-30.50	6.90	0.69	42.79	54.00	-11.21	-	-	315	256	H
2417	ANITO	* 2.38809	35.16	RMS	31.90	-30.50	6.90	0.69	44.15	54.00	-9.85	-	-	315	256	Н
2417	ANTO	* 2.39	56.72	Pk	31.90	-30.50	6.90	0.00	65.02	-	-	74.00	-8.98	246	129	V
		* 2.38969	62.04	Pk	31.90	-30.50	6.90	0.00	70.34	-	-	74.00	-3.66	246	129	V
		* 2.39	39.38	RMS	31.90	-30.50	6.90	0.69	48.37	54.00	-5.63	-	-	246	129	V
		* 2.38962	41.86	RMS	31.90	-30.50	6.90	0.69	50.85	54.00	-3.15	-	- 10.76	246	129	V
		* 2 48378	43.44	Pk	32.10	-30.50	7.20	0.00	55.98			74.00	-18.02	322	171	н
		* 2.4835	33.74	RMS	32,10	-30.50	7.20	0.69	43.23	54.00	-10.77	-	-	322	171	H
2462	ANITO	* 2.48373	34.72	RMS	32.10	-30.50	7.20	0.69	44.21	54.00	-9.79	-	-	322	171	н
2402	ANTO	* 2.4835	53.69	Pk	32.10	-30.50	7.20	0.00	62.49	-	-	74.00	-11.51	228	109	V
		* 2.48537	54.72	Pk	32.20	-30.50	7.20	0.00	63.62	-	-	74.00	-10.38	228	109	V
		* 2.4835	40.58	RMS	32.10	-30.50	7.20	0.69	50.07	54.00	-3.93	-	-	228	109	V
		* 2.48364	40.22	RMS	32.10	-30.50	7.20	0.69	49.71	54.00	-4.29	-	-	228	109	V
		* 2 48416	40.20	PK	32.10	-30.50	7.20	0.00	56.34		-	74.00	-10.95	317	171	П
		* 2.4835	34.67	RMS	32.10	-30.50	7.20	0.69	44.16	54.00	-9.84	-	-	317	171	н
2467	ANITO	* 2.48351	35.84	RMS	32.10	-30.50	7.20	0.69	45.33	54.00	-8.67	-	-	317	171	H
2467	ANTO	* 2.4835	54.53	Pk	32.10	-30.50	7.20	0.00	63.33	-	-	74.00	-10.67	237	108	V
		* 2.48402	56.94	Pk	32.10	-30.50	7.20	0.00	65.74	-	-	74.00	-8.26	237	108	V
		* 2.4835	41.58	RMS	32.10	-30.50	7.20	0.69	51.07	54.00	-2.93	-	-	237	108	V
		* 2.48359	42.47	RMS	32.10	-30.50	7.20	0.69	51.96	54.00	-2.04	-	-	237	108	V
		* 2 48384	44.01	Pk	32.10	-30.50	7.20	0.00	56.12			74.00	-20.39	322	172	н
		* 2.4835	34.01	RMS	32.10	-30.50	7.20	0.69	43.50	54.00	-10.50	-	-	322	172	H
2472	ANITO	* 2.48414	36.83	RMS	32.10	-30.50	7.20	0.69	46.32	54.00	-7.68	-	-	322	172	Н
2412	ANTO	* 2.4835	51.69	Pk	32.10	-30.50	7.20	0.00	60.49	-	-	74.00	-13.51	237	128	V
		* 2.48407	52.90	Pk	32.10	-30.50	7.20	0.00	61.70	-	-	74.00	-12.30	237	128	V
		* 2.4835	39.61	RMS	32.10	-30.50	7.20	0.69	49.10	54.00	-4.90	-	-	237	128	V
L		* 2.39	42.20	RMS Pk	32.10	-30.50	6.90	0.69	62.55	54.00	-2.31	-	-11.45	237	128	V H
		* 2.38674	62.49	Pk	31.90	-30.50	6.90	0.00	70.79	-	-	74.00	-3.21	214	131	Н
		* 2.39	38.96	RMS	31.90	-30.50	6.90	0.69	47.95	54.00	-6.05	-	-	214	131	Н
2412	ANT1	* 2.38937	40.58	RMS	31.90	-30.50	6.90	0.69	49.57	54.00	-4.43	-	-	214	131	Н
		* 2.39	53.94	Pk	31.90	-30.50	6.90	0.00	62.24		-	74.00	-11.76	167	347	V
		* 2 39	34.63	RMS	31.90	-30.50	6.90	0.00	43.62	54 00	-10.38	- 14.00	-0.32	167	347	V
		* 2.38977	37.16	RMS	31.90	-30.50	6.90	0.69	46.15	54.00	-7.85	-	-	167	347	v
		* 2.4835	54.63	Pk	32.10	-30.50	7.20	0.00	63.43	-	-	74.00	-10.57	332	100	Н
		* 2.49066	60.22	Pk	32.20	-30.50	7.20	0.00	69.12	-	-	74.00	-4.88	332	100	Н
		* 2.4835	39.59	RMS	32.10	-30.50	7.20	0.69	49.08	54.00	-4.92	-	-	332	100	H
2457	ANT1	* 2.48539	40.43	RMS	32.20	-30.50	7.20	0.69	50.02	54.00	-3.98	-	- 17.91	332	100	H
		* 2 48801	52.63	Pk	32.10	-30.50	7.20	0.00	61.53			74.00	-12.47	171	328	V
		* 2.4835	35.37	RMS	32.10	-30.50	7.20	0.69	44.86	54.00	-9.14	-	-	171	328	V
		* 2.48479	35.78	RMS	32.10	-30.50	7.20	0.69	45.27	54.00	-8.73	-	-	171	328	V
		* 2.4835	55.95	Pk	32.10	-30.50	7.20	0.00	64.75	-	-	74.00	-9.25	333	100	Н
		* 2.48356	59.53	Pk	32.10	-30.50	7.20	0.00	68.33	-	-	74.00	-5.67	333	100	н
	12002	* 2 48355	40.94	RMS	32.10	-30.50	7.20	0.69	49.47	54.00	-4.53			333	100	н
2462	ANT1	* 2.4835	45.85	Pk	32.10	-30.50	7.20	0.00	54.65	-	-0.01	74.00	-19.35	180	262	v
		* 2.48443	49.29	Pk	32.10	-30.50	7.20	0.00	58.09	-	-	74.00	-15.91	180	262	V
		* 2.4835	34.69	RMS	32.10	-30.50	7.20	0.69	44.18	54.00	-9.82	-	-	180	262	V
L		* 2.48503	35.00	RMS	32.20	-30.50	7.20	0.69	44.59	54.00	-9.41	-	-	180	262	V
		* 2.48507	62.50	Pk	32.10	-30.50	7.20	0.00	71.40			74.00	-13.23	335	211	н
		* 2.4835	40.36	RMS	32.10	-30.50	7.20	0.69	49.85	54.00	-4.15	-	-	335	211	H
2467	ANT1	* 2.48356	40.60	RMS	32.10	-30.50	7.20	0.69	50.09	54.00	-3.91	-	-	335	211	Н
2.101		* 2.4835	43.92	Pk	32.10	-30.50	7.20	0.00	52.72		-	74.00	-21.28	182	263	V
		* 2 48354	33.85	PK	32.10	-30.50	7.20	0.00	62.23	54.00	-10.66	74.00	-11.77	182	263	V
		* 2.48366	34.69	RMS	32.10	-30.50	7.20	0.69	43.34	54.00	-9.82			182	263	V
		* 2.4835	49.67	Pk	32.10	-30.50	7.20	0.00	58.47	-	-	74.00	-15.53	330	102	Н
		* 2.48402	53.33	Pk	32.10	-30.50	7.20	0.00	62.13	-	-	74.00	-11.87	330	102	Н
		* 2.4835	39.17	RMS	32.10	-30.50	7.20	0.69	48.66	54.00	-5.34	-	-	330	102	Н
2472	ANT1	*2.48402	42.48	RMS	32.10	-30.50	7.20	0.69	51.97	54.00	-2.03	-	- 20.00	330	102	H
		* 2,48427	47.37	Pk	32.10	-30.50	7.20	0.00	56 17		-	74.00	-17.83	177	255	V
		* 2.4835	34.37	RMS	32.10	-30.50	7.20	0.69	43.86	54.00	-10.14	-	-	177	255	V
		* 2.48399	37.01	RMS	32.10	-30.50	7.20	0.69	46.50	54.00	-7.50	-	-	177	255	V

Note1. Pk - Peak detector, RMS - RMS detection

Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Page 58 of 74

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 6 CHANNEL, ANT 1)



CH 6 RESULTS

HORIZONTAL



VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	CH1_AF_1- 18G_3117_24 0924 (dB/m)	FB1_PL_1- 18G_3G HP_240718 (dB)	CH1_CL_1- 40G_Thru_24 1104 (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.86649	39.12	PK2	33.9	-39.3	9.7	0	43.42	-	-	74	-30.58	0	100	Н
* 4.87764	39.3	PK2	33.9	-39.4	9.7	0	43.5	-	-	74	-30.5	0	100	V
* 7.31649	41.06	PK2	35.6	-39.4	12.2	0	49.46	-	-	74	-24.54	157	146	Н
* 7.31359	27.18	MAv1	35.6	-39.4	12.2	.69	36.27	54	-17.73	-	-	157	146	н
* 7.31873	42.18	PK2	35.6	-39.3	12.2	0	50.68	-	-	74	-23.32	357	370	V
* 7.30899	28.17	MAv1	35.6	-39.4	12.1	.69	37.16	54	-16.84	-	-	357	370	V
9.74173	35.71	PK2	36.7	-37.6	14.5	0	49.31	-	-	74	-24.69	0	100	Н
9.73998	36.95	PK2	36.7	-37.6	14.5	0	50.55	-	-	74	-23.45	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

Page 59 of 74

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