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Carnegie Robotics LLC RF EXPOSURE REPORT

SCOPE OF WORK

RF EXPOSURE CALCULATION
ON THE RB5 CORE KIT

REPORT NUMBER

105883475LEX-004

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RF EXPOSURE TEST REPORT

Report Number: 105883475LEX-004

Project Number: G105883475

Report Issue Date: 7/8/2025

Product Name: 55001384

Product Model: RB5 Core Kit

Standards: FCC Title 47 CFR Part 1.1310(e)(1) Limits for
Maximum Permissible Exposure (MPE)

RSS-102 Issue 6 RF Field Strength Limits for
Devices Used by the General Public

EN IEC 62311:2020,
with limits from ICNIRP Guidelines (2020)

Tested by:
Intertek Testing Services NA, Inc.
731 Enterprise Drive
Lexington, KY 40510
USA

Client:
Carnegie Robotics LLC
4501 Hatfield St.
Pittsburgh, PA 15201
USA

Report prepared by



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1 Introduction and Conclusion

The tests indicated in section 2 were performed on the product constructed as described in section 4. The remaining test sections are the verbatim text from the actual data sheets used during the investigation. These test sections include the test name, the specified test Method, a list of the actual Test Equipment Used, documentation Photos, Results and raw Data. No additions, deviations, or exclusions have been made from the standard(s) unless specifically noted.

Based on the results of our investigation, we have concluded the product tested **complies** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested. Intertek does not make any claims of compliance for samples or variants which were not tested.

2 Test Summary

Section	Test full name	Result
11	FCC Title 47 CFR Part 1.1310(e)(1) Limits for Maximum Permissible Exposure (MPE) (Limits for General Population / Uncontrolled Exposure)	Pass
	RSS-102 Issue 6 RF Field Strength Limits (For Devices Used by the General Public)	Pass
	ICNIRP Guidelines for Limiting Exposure to Electromagnetic Fields (100 kHz to 300 GHz) (2020) (EN IEC 62311:2020)	Pass



3 Client Information

This product was tested at the request of the following:

Client Information	
Client Name:	Carnegie Robotics LLC
Address:	4501 Hatfield St. Pittsburgh, PA 15201 USA
Contact:	Paul Santucci
Telephone:	4125528960
Email:	psantucci@carnegierobotics.com
Manufacturer Information	
Manufacturer Name:	Carnegie Robotics LLC
Manufacturer Address:	4501 Hatfield St. Pittsburgh, PA 15201 USA



4 Description of Equipment under Test

Equipment Under Test	
Product Name	RB5 Core Kit
PMN	55001384
HVIN	1.0
Serial Number	867826050712090
Embedded Module(s)	Wi-Fi: Thundercomm TurboX C5165 SOM
FCC ID	Wi-Fi: 2AOHHTURBOXC5165DK ¹
Wireless Technology	2.4/5G Wi-Fi
Supported Transmit Bands	Wi-Fi: 2412-2462MHz, 5180-5825MHz
Supported Transmit Modes	802.11a/b/g/n/ac/ax
Antenna Gain ²	Wi-Fi: See Section 6
Maximum Output Power ²	Wi-Fi: See Section 5
Ratings	Battery Operated (120VAC / 60Hz, Charging)
Description of Equipment Under Test (provided by client)	
The Carnegie Robotics model 55001384 is identical in design to the Thundercomm C5165 SOM operating with connections for external antennas only. Thundercomm C5165 SOM is a small size(45mm x 56mm), production ready, pre-certified(CE, FCC, ROHS)module, powered by 7nm Qualcomm Snapdragon premium-tier processor QRB5165, supports SA/NSA dual mode 5G network with Thundercomm T55 module via PCIE interface. C5165 SOM is suitable for high performance, low power consumption, robotics or XR device. It provides pre-tested HW and SW OS/BSP, rich interfaces and valid AVLS, and reference IO board.	

¹ FCC ID Change as per QA-FR-169-B

² Values were provided by the client and may affect compliance. Intertek does not make any claims of compliance for values other than those shown.



5 Output Power

The following was taken from section 7.7 of Intertek report 105883475LEX-003.2.

7.7 Test Data:

7.7.1 2.4GHz Wi-Fi

7.7.1.1 Antenna Port 1

802.11b

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2412	21.35	0.136	1.2	22.55	0.18	1	4
2437	21.44	0.139	1.2	22.64	0.184	1	4
2462	21.34	0.136	1.2	22.54	0.179	1	4

802.11g

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2412	25.55	0.359	1.2	26.75	0.473	1	4
2437	25.64	0.366	1.2	26.84	0.483	1	4
2462	25.53	0.357	1.2	26.73	0.471	1	4

802.11n20

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2412	25.89	0.388	1.2	27.09	0.512	1	4
2437	25.87	0.386	1.2	27.07	0.509	1	4
2462	25.76	0.377	1.2	26.96	0.497	1	4



802.11n40

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2422	26.02	0.4	1.2	27.22	0.527	1	4
2437	26.28	0.425	1.2	27.48	0.56	1	4
2452	26.27	0.424	1.2	27.47	0.558	1	4

802.11ax20

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2412	21.66	0.147	1.2	22.860	0.193	1	4
2437	22.92	0.196	1.2	24.120	0.258	1	4
2462	22.35	0.172	1.2	23.550	0.226	1	4

802.11ax40

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2422	21.96	0.157	1.2	23.160	0.207	1	4
2437	22.33	0.171	1.2	23.530	0.225	1	4
2452	21.14	0.130	1.2	22.340	0.171	1	4

**7.7.1.2 Antenna Port 2**

802.11b

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2412	21.49	0.141	1.20	22.690	0.186	1	4
2437	21.69	0.148	1.20	22.890	0.195	1	4
2462	21.64	0.146	1.20	22.840	0.192	1	4

802.11g

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2412	25.62	0.365	1.20	26.820	0.481	1	4
2437	25.63	0.366	1.20	26.830	0.482	1	4
2462	25.56	0.360	1.20	26.760	0.474	1	4

802.11n20

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2412	25.83	0.383	1.20	27.030	0.505	1	4
2437	25.85	0.385	1.20	27.050	0.507	1	4
2462	25.75	0.376	1.20	26.950	0.495	1	4

802.11n40

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2422	26.22	0.419	1.20	27.420	0.552	1	4
2437	26.49	0.446	1.20	27.690	0.587	1	4
2452	26.22	0.419	1.20	27.420	0.552	1	4



802.11ax20

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2412	20.97	0.125	1.2	22.170	0.165	1	4
2437	20.46	0.111	1.2	21.660	0.147	1	4
2462	21.59	0.144	1.2	22.790	0.190	1	4

802.11ax40

Frequency (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Output Power Limit (W)	EIRP Limit (W)
2422	20.94	0.124	1.2	22.140	0.164	1	4
2437	20.7	0.117	1.2	21.900	0.155	1	4
2452	21.16	0.131	1.2	22.360	0.172	1	4

**7.7.2 5GHz Wi-Fi (U-NII-1)****7.7.2.1 Antenna Port 1**

802.11a

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5180	16.63	14.1	0.026	2.00	16.100	0.041	0.1663
5220	16.65	14.52	0.028	2.00	16.520	0.045	0.1665
5240	16.62	14.66	0.029	2.00	16.660	0.046	0.1662

802.11n20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5180	17.75	13.11	0.020	2.00	15.110	0.032	0.1775
5220	17.74	13.64	0.023	2.00	15.640	0.037	0.1774
5240	17.74	13.54	0.023	2.00	15.540	0.036	0.1774

802.11n40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5190	36.27	13.77	0.024	2.00	15.770	0.038	0.2
5230	36.22	14.21	0.026	2.00	16.210	0.042	0.2

802.11ac20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5180	17.78	12.07	0.016	2.00	14.070	0.026	0.1778
5220	17.78	12.41	0.017	2.00	14.410	0.028	0.1778
5240	17.78	12.71	0.019	2.00	14.710	0.030	0.1778

802.11ac40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5190	36.23	12.75	0.019	2.00	14.750	0.030	0.2
5230	36.32	13.20	0.021	2.00	15.200	0.033	0.2



802.11ac80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5210	75.59	13	0.020	2.00	15.000	0.032	0.2

802.11ax20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5180	19.01	11.25	0.013	2.00	13.250	0.021	0.1901
5220	19.00	11.73	0.015	2.00	13.730	0.024	0.19
5240	18.99	11.70	0.015	2.00	13.700	0.023	0.1899

802.11ax40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5190	37.93	11.59	0.014	2.00	13.590	0.023	0.2
5230	37.91	12.13	0.016	2.00	14.130	0.026	0.2

802.11ax80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5210	77.3	12.05	0.016	2.00	14.050	0.025	0.2

**7.7.2.2 Antenna Port 2**

802.11a

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5180	16.62	13.84	0.024	2.00	15.840	0.038	0.1662
5220	16.63	13.39	0.022	2.00	15.390	0.035	0.1663
5240	16.64	13.14	0.021	2.00	15.140	0.033	0.1664

802.11n20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5180	17.73	12.92	0.020	2.00	14.920	0.031	0.1773
5220	17.74	12.57	0.018	2.00	14.570	0.029	0.1774
5240	17.75	12.23	0.017	2.00	14.230	0.026	0.1775

802.11n40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5190	36.2	13.41	0.022	2.00	15.410	0.035	0.2
5230	36.26	13.08	0.020	2.00	15.080	0.032	0.2

802.11ac20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5180	17.78	11.87	0.015	2.00	13.870	0.024	0.1778
5220	17.74	11.45	0.014	2.00	13.450	0.022	0.1774
5240	17.74	11.21	0.013	2.00	13.210	0.021	0.1774

802.11ac40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5190	36.26	12.39	0.017	2.00	14.390	0.027	0.2
5230	36.23	12.13	0.016	2.00	14.130	0.026	0.2



802.11ac80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5210	75.59	12.01	0.016	2.00	14.010	0.025	0.2

802.11ax20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5180	19.01	10.90	0.012	2.00	12.900	0.019	0.1901
5220	18.99	10.52	0.011	2.00	12.520	0.018	0.1899
5240	19.00	10.28	0.011	2.00	12.280	0.017	0.19

802.11ax40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5190	37.93	11.38	0.014	2.00	13.380	0.022	0.2
5230	37.96	10.92	0.012	2.00	12.920	0.020	0.2

802.11ax80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	EIRP Limit (W)
5210	77.46	11.07	0.013	2.00	13.070	0.020	0.2

**7.7.3 5GHz Wi-Fi (U-NII-2A)****7.7.3.1 Antenna Port 1**

802.11a

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5260	16.63	14.82	0.030	2.00	16.820	0.048	0.2094	0.8335
5300	16.65	15.07	0.032	2.00	17.070	0.051	0.2096	0.8345
5320	16.62	14.44	0.028	2.00	16.440	0.044	0.2092	0.8330

802.11n20

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5260	17.75	13.68	0.023	2.00	15.680	0.037	0.2235	0.8896
5300	17.74	14.01	0.025	2.00	16.010	0.040	0.2233	0.8891
5320	17.74	13.60	0.023	2.00	15.600	0.036	0.2233	0.8891

802.11n40

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5270	36.27	14.30	0.027	2.00	16.300	0.043	0.25	1
5310	36.22	14.42	0.028	2.00	16.420	0.044	0.25	1

802.11ac20

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5260	17.79	12.71	0.019	2.00	14.710	0.030	0.2240	0.8916
5300	17.78	13.09	0.020	2.00	15.090	0.032	0.2238	0.8911
5320	17.77	12.69	0.019	2.00	14.690	0.029	0.2237	0.8906



802.11ac40

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5270	36.38	13.46	0.022	2.00	15.460	0.035	0.25	1
5310	36.3	13.54	0.023	2.00	15.540	0.036	0.25	1

802.11ac80

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5290	75.67	13.66	0.023	2.00	15.660	0.037	0.25	1

802.11ax20

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5260	18.98	11.87	0.015	2.00	13.870	0.024	0.2389	0.9513
5300	19.04	12.25	0.017	2.00	14.250	0.027	0.2397	0.9543
5320	19.00	11.74	0.015	2.00	13.740	0.024	0.2392	0.9523

802.11ax40

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5270	37.93	12.23	0.017	2.00	14.230	0.026	0.25	1
5310	37.97	12.41	0.017	2.00	14.410	0.028	0.25	1

802.11ax80

Frequency	99% Bandwidth	Output Power	Output Power	Antenna Gain	EIRP	EIRP	Conducted Output Power Limit	EIRP Limit
(MHz)	(MHz)	(dBm)	(W)	(dBi)	(dBm)	(W)	(W)	(W)
5290	77.21	12.68	0.019	2.00	14.680	0.029	0.25	1

**7.7.3.2 Antenna Port 2**

802.11a

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5260	16.64	13.14	0.021	2.00	15.140	0.033	0.2095	0.8340
5300	16.66	13.14	0.021	2.00	15.140	0.033	0.2097	0.8350
5320	16.71	12.88	0.019	2.00	14.880	0.031	0.2104	0.8375

802.11n20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5260	17.73	12.21	0.017	2.00	14.210	0.026	0.2232	0.8886
5300	17.74	12.26	0.017	2.00	14.260	0.027	0.2233	0.8891
5320	17.8	12.00	0.016	2.00	14.000	0.025	0.2241	0.8921

802.11n40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5270	36.3	12.81	0.019	2.00	14.810	0.030	0.25	1
5310	36.29	12.86	0.019	2.00	14.860	0.031	0.25	1

802.11ac20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5260	17.49	11.19	0.013	2.00	13.190	0.021	0.2202	0.8766
5300	17.77	11.11	0.013	2.00	13.110	0.020	0.2237	0.8906
5320	17.76	11.01	0.013	2.00	13.010	0.020	0.2236	0.8901

802.11ac40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5270	36.26	11.88	0.015	2.00	13.880	0.024	0.25	1
5310	36.29	11.85	0.015	2.00	13.850	0.024	0.25	1



802.11ac80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5290	75.62	11.62	0.015	2.00	13.620	0.023	0.25	1

802.11ax20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5260	18.98	10.28	0.011	2.00	12.280	0.017	0.2389	0.9513
5300	18.99	10.44	0.011	2.00	12.440	0.018	0.2391	0.9518
5320	19	10.04	0.010	2.00	12.040	0.016	0.2392	0.9523

802.11ax40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5270	37.92	10.73	0.012	2.00	12.730	0.019	0.25	1
5310	37.95	10.58	0.011	2.00	12.580	0.018	0.25	1

802.11ax80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5290	77.22	10.70	0.012	2.00	12.700	0.019	0.25	1

**7.7.4 5GHz Wi-Fi (U-NII-2C)****7.7.4.1 Antenna Port 1**

802.11a

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5500	16.63	12.84	0.019	2.00	14.840	0.030	0.2094	0.8335
5580	16.65	12.37	0.017	2.00	14.370	0.027	0.2096	0.8345
5700	16.62	13.15	0.021	2.00	15.150	0.033	0.2092	0.8330

802.11n20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5500	17.75	11.91	0.016	2.00	13.910	0.025	0.2235	0.8896
5580	17.74	11.41	0.014	2.00	13.410	0.022	0.2233	0.8891
5700	17.74	12.13	0.016	2.00	14.130	0.026	0.2233	0.8891

802.11n40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5550	36.27	12.16	0.016	2.00	14.160	0.026	0.25	1
5670	36.22	12.65	0.018	2.00	14.650	0.029	0.25	1

802.11ac20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5500	17.75	10.98	0.013	2.00	12.980	0.020	0.2235	0.8896
5580	17.75	10.37	0.011	2.00	12.370	0.017	0.2235	0.8896
5700	17.78	11.18	0.013	2.00	13.180	0.021	0.2238	0.8911



802.11ac40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5550	36.26	11.09	0.013	2.00	13.090	0.020	0.25	1
5670	36.29	11.65	0.015	2.00	13.650	0.023	0.25	1

802.11ac80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5530	75.68	13.05	0.020	2.00	15.050	0.032	0.25	1
5690	75.76	11.59	0.014	2.00	13.590	0.023	0.25	1

802.11ax20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5500	19.00	10.07	0.010	2.00	12.070	0.016	0.2392	0.9523
5580	18.98	9.37	0.009	2.00	11.370	0.014	0.2389	0.9513
5700	19.00	10.28	0.011	2.00	12.280	0.017	0.2392	0.9523

802.11ax40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5550	37.96	9.88	0.010	2.00	11.880	0.015	0.25	1
5670	38.00	10.44	0.011	2.00	12.440	0.018	0.25	1

802.11ax80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5530	77.36	9.85	0.010	2.00	11.850	0.015	0.25	1
5690	77.43	10.53	0.011	2.00	12.530	0.018	0.25	1

**7.7.4.2 Antenna Port 2**

802.11a

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5500	16.61	12.59	0.018	2.00	14.590	0.029	0.2091	0.8325
5580	16.61	12.78	0.019	2.00	14.780	0.030	0.2091	0.8325
5700	16.66	12.67	0.018	2.00	14.670	0.029	0.2097	0.8350

802.11n20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5500	17.72	11.55	0.014	2.00	13.550	0.023	0.2231	0.8881
5580	17.7	11.74	0.015	2.00	13.740	0.024	0.2228	0.8871
5700	17.71	11.67	0.015	2.00	13.670	0.023	0.2230	0.8876

802.11n40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5550	36.21	12.22	0.017	2.00	14.220	0.026	0.25	1
5670	36.22	12.43	0.017	2.00	14.430	0.028	0.25	1

802.11ac20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5500	17.75	10.61	0.012	2.00	12.610	0.018	0.2235	0.8896
5580	17.76	10.81	0.012	2.00	12.810	0.019	0.2236	0.8901
5700	17.75	10.72	0.012	2.00	12.720	0.019	0.2235	0.8896

802.11ac40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5550	36.26	11.41	0.014	2.00	13.410	0.022	0.25	1
5670	36.27	11.62	0.015	2.00	13.620	0.023	0.25	1



802.11ac80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5530	75.58	11.08	0.013	2.00	13.080	0.020	0.25	1
5690	75.75	11.10	0.013	2.00	13.100	0.020	0.25	1

802.11ax20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5500	18.98	9.82	0.010	2.00	11.820	0.015	0.2389	0.9513
5580	18.97	10.00	0.010	2.00	12.000	0.016	0.2388	0.9508
5700	19	9.79	0.010	2.00	11.790	0.015	0.2392	0.9523

802.11ax40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5550	37.88	10.28	0.011	2.00	12.280	0.017	0.25	1
5670	38.02	10.52	0.011	2.00	12.520	0.018	0.25	1

802.11ax80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Conducted Output Power Limit (W)	EIRP Limit (W)
5530	77.27	9.97	0.010	2.00	11.970	0.016	0.25	1
5690	77.4	10.16	0.010	2.00	12.160	0.016	0.25	1

**7.7.5 5GHz Wi-Fi (U-NII-3)****7.7.5.1 Antenna Port 1**

802.11a

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5745	16.7	13.48	0.022	1
5785	16.77	13.14	0.021	1
5825	16.88	13.33	0.022	1

802.11n20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5745	17.78	12.35	0.017	1
5785	17.83	12.36	0.017	1
5825	17.9	12.44	0.018	1

802.11n40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5755	36.48	13.06	0.020	1
5795	36.49	12.94	0.020	1

802.11ac20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5745	17.78	11.48	0.014	1
5785	17.78	11.34	0.014	1
5825	17.78	11.46	0.014	1

802.11ac40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5755	36.29	12.09	0.016	1
5795	36.27	12.12	0.016	1



802.11ac80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5775	75.87	11.82	0.015	1

802.11ax20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5745	19.00	10.37	0.011	1
5785	18.98	10.44	0.011	1
5825	19.00	10.53	0.011	1

802.11ax40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5755	38.03	10.92	0.012	1
5795	37.95	10.80	0.012	1

802.11ax80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5775	77.36	10.72	0.012	1

**7.7.5.2 Antenna Port 2**

802.11a

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5745	16.61	12.78	0.019	1
5785	16.61	12.42	0.017	1
5825	16.66	11.96	0.016	1

802.11n20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5745	17.72	11.90	0.015	1
5785	17.7	11.50	0.014	1
5825	17.71	11.09	0.013	1

802.11n40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5755	36.21	12.03	0.016	1
5795	36.22	12.11	0.016	1

802.11ac20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5745	17.75	10.92	0.012	1
5785	17.76	10.55	0.011	1
5825	17.75	10.06	0.010	1

802.11ac40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5755	36.26	11.09	0.013	1
5795	36.31	11.15	0.013	1



802.11ac80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5775	75.74	11.11	0.013	1

802.11ax20

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5745	18.98	10.01	0.010	1
5785	18.97	9.72	0.009	1
5825	19	9.22	0.008	1

802.11ax40

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5755	37.97	10.10	0.010	1
5795	37.92	10.05	0.010	1

802.11ax80

Frequency (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power (W)	Conducted Output Power Limit (W)
5775	77.32	10.05	0.010	1



6 Antenna Gain

6.1 Abracon Antenna

Wi-Fi antenna gain from “Abracon AECW0401W2-0600F_DS” data sheet provided by the client.

Electrical Specification

Parameters	Specifications		Units	Notes
Frequency Range	2400-2500	5150-5850	MHz	
VSWR (Typ.)	2.0	2.5		
Gain (Main & Aux)	1.2	2.0	dBi	Zenith
Efficiency (Main & Aux)	46	52	%	
Polarization	Linear			
Impedance	50		Ω	

6.2 Taoglas Antenna

Wi-Fi antenna gain from “Taoglas MA210.K.CG.001” data sheet provided by the client.

Wi-Fi MIMO Free Space Electrical								
Band	Frequency (MHz)	Setup	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern
2.4GHz Wi-Fi	2400~2500	MIMO 1	28.7	-5.4	0.2	50 Ω	Linear	Omni-Directional
		MIMO2	31.5	-5	0.6			
5.8GHz Wi-Fi	5150~5850	MIMO 1	29.3	-5.4	1.4			
		MIMO2	31.8	-5	1.4			
7.1GHz Wi-Fi 6	5925~7125	MIMO 1	34.5	-4.7	1.9			
		MIMO2	28.9	-5.4	0.2			



7 FCC RF Exposure Limits

Title 47 CFR Part 1.1310(d)(2):

For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 in paragraph (e)(1) of this section, may be used instead of whole-body SAR limits as set forth in paragraphs (a) through (c) of this section to evaluate the environmental impact of human exposure to RF radiation as specified in § 1.1307(b) of this part, except for portable devices as defined in § 2.1093 of this chapter as these evaluations shall be performed according to the SAR provisions in § 2.1093.

Table 1 to § 1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*(900/f ²)	<6
30–300	61.4	0.163	1.0	<6
300–1,500			f/300	<6
1,500–100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	<30
1.34–30	824/f	2.19/f	*(180/f ²)	<30
30–300	27.5	0.073	0.2	<30
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.



8 RSS-102 Issue 6 RF Exposure Limits

RSS-102 Issue 6 § 6.6:

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1 W (adjusted for tune-up tolerance)
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance)
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz
- at or above 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 5 W (adjusted for tune-up tolerance)

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

RSS-102 Issue 6 § 5.3.2:

The electric and magnetic field strength reference levels, power density reference levels, and associated reference period for devices employed by the general public (uncontrolled environment) and controlled-use devices (controlled environment) are specified in table 7 and table 8. Note that the power density limits specified in these tables apply to whole body exposure conditions.

Table 7: RF field strength and power density limits for devices used by the general public (uncontrolled environment)

Frequency range (MHz)	Electric field (V _{RMS} /m)	Magnetic field (A _{RMS} /m)	Power density (W/m ²)	Reference period (minutes)
10-20	27.46	0.0728	2	6
20-48	$58.07 / f^{0.25}$	$0.1540 / f^{0.25}$	$8.944 / f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142 f^{0.3417}$	$0.008335 f^{0.3417}$	$0.02619 f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000 / f^{1.2}$
150000-300000	$0.158 f^{0.5}$	$4.21 \times 10^{-4} f^{0.5}$	$6.67 \times 10^{-5} f$	$616000 / f^{1.2}$

Note: f is frequency in MHz.



9 ICNIRP Guidelines (2020) RF Exposure Limits

Table 5. Reference levels for exposure, averaged over 30 min and the whole body, to electromagnetic fields from 100 kHz to 300 GHz (unperturbed rms values).^a

Exposure scenario	Frequency range	Incident E-field strength; E_{inc} ($V\ m^{-1}$)	Incident H-field strength; H_{inc} ($A\ m^{-1}$)	Incident power density; S_{inc} ($W\ m^{-2}$)
Occupational	0.1 – 30 MHz	$660/f_M^{0.7}$	$4.9/f_M$	NA
	>30 – 400 MHz	61	0.16	10
	>400 – 2000 MHz	$3f_M^{0.5}$	$0.008f_M^{0.5}$	$f_M/40$
	>2 – 300 GHz	NA	NA	50
General public	0.1 – 30 MHz	$300/f_M^{0.7}$	$2.2/f_M$	NA
	>30 – 400 MHz	27.7	0.073	2
	>400 – 2000 MHz	$1.375f_M^{0.5}$	$0.0037f_M^{0.5}$	$f_M/200$
	>2 – 300 GHz	NA	NA	10

^aNote:

1. “NA” signifies “not applicable” and does not need to be taken into account when determining compliance.
2. f_M is frequency in MHz.
3. S_{inc} , E_{inc} , and H_{inc} are to be averaged over 30 min, over the whole-body space. Temporal and spatial averaging of each of E_{inc} and H_{inc} must be conducted by averaging over the relevant square values (see eqn 8 in Appendix A for details).
4. For frequencies of 100 kHz to 30 MHz, regardless of the far-field/near-field zone distinctions, compliance is demonstrated if neither E_{inc} or H_{inc} exceeds the above reference level values.
5. For frequencies of >30 MHz to 2 GHz: (a) within the far-field zone: compliance is demonstrated if either S_{inc} , E_{inc} or H_{inc} , does not exceed the above reference level values (only one is required); S_{eq} may be substituted for S_{inc} ; (b) within the radiative near-field zone, compliance is demonstrated if either S_{inc} , or both E_{inc} and H_{inc} , does not exceed the above reference level values; and (c) within the reactive near-field zone: compliance is demonstrated if both E_{inc} and H_{inc} do not exceed the above reference level values; S_{inc} cannot be used to demonstrate compliance, and so basic restrictions must be assessed.
6. For frequencies of >2 GHz to 300 GHz: (a) within the far-field zone: compliance is demonstrated if S_{inc} does not exceed the above reference level values; S_{eq} may be substituted for S_{inc} ; (b) within the radiative near-field zone, compliance is demonstrated if S_{inc} does not exceed the above reference level values; and (c) within the reactive near-field zone, reference levels cannot be used to determine compliance, and so basic restrictions must be assessed.



10 Test Procedure

An RF exposure calculation was performed to show that the device was compliant with the general population exposure limits from FCC Title 47 CFR Part 1.1310(e)(1), RSS-102 Issue 6, and ICNIRP Guidelines (2020). The maximum power density was calculated for each transmitter at a separation distance of 20cm using the maximum conducted output power (including tune up tolerance) plus antenna gain, or measured EIRP.

For each transmitter the maximum power density at a 20cm distance using the formula:

$$EIRP(dBm) = Conducted\ Power(dBm) + Antenna\ Gain(dBi)$$

$$EIRP(mW) = 10^{EIRP(dBm)/10}$$

$$Power\ Density\left(mW/cm^2\right) = \frac{EIRP(mW)}{4\pi \cdot (20cm)^2}$$

$$Power\ Density\left(W/m^2\right) = \left(\frac{100cm}{1m}\right)^2 \left(\frac{1W}{1000mW}\right) Power\ Density\left(mW/cm^2\right)$$

For transmitters that could operate simultaneously, the ratio of calculated power density to the corresponding limit for each transmitter was calculated and then summed. If the sum of the ratios was less than 1, that specific combination of transmitters was deemed to comply.

**11 Results:**

The calculated maximum power density at 20cm was less than or equal to the limits for general population exposure in FCC Title 47 CFR Part 1.1310(e)(1), RSS-102 Issue 6, and ICNIRP Guidelines (2020). The worst case 2.4GHz and 5GHz channels were taken and their co-location ratios were summed.

**11.1 FCC RF Exposure Data****11.1.1 Abracon Antenna**

Band / Modulation	Channel	Frequency (MHz)	Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle (%)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value @ 20cm (mW/cm ²)	MPE Limit (mW/cm ²)	MPE / Limit Ratio (for Co- Location)
802.11n40	6	2437	26.28	100.0%	26.28	1.2	0.1114	1.0000	0.1114
802.11a	60	5300	15.07	100.0%	15.07	2	0.0101	1.0000	0.0101
Sum:									0.1215

**11.1.2 Taoglas Antenna**

Band / Modulation	Channel	Frequency (MHz)	Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle (%)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value @ 20cm (mW/cm ²)	MPE Limit (mW/cm ²)	MPE / Limit Ratio (for Co-Location)
802.11n40	6	2437	26.28	100.0%	26.28	0.6	0.0970	1.0000	0.0970
802.11a	60	5300	15.07	100.0%	15.07	1.4	0.0088	1.0000	0.0088
Sum:									0.1058

**11.2 RSS-102 Issue 6 RF Exposure Data****11.2.1 Abracon Antenna**

Band / Modulation	Channel	Frequency (MHz)	Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle (%)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	FRL Value @ 20cm (W/m ²)	FRL Limit (W/m ²)	FRL / Limit Ratio (for Co-Location)
802.11n40	6	2437	26.28	100.0%	26.28	1.2	1.1136	5.4040	0.2061
802.11a	60	5300	15.07	100.0%	15.07	2	0.1013	9.1898	0.0110
Sum:									0.2171

**11.2.2 Taoglas Antenna**

Band / Modulation	Channel	Frequency (MHz)	Declared Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle (%)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	FRL Value @ 20cm (W/m ²)	FRL Limit (W/m ²)	FRL / Limit Ratio (for Co-Location)
802.11n40	6	2437	26.28	100.0%	26.28	0.6	0.9699	5.4040	0.1795
802.11a	60	5300	15.07	100.0%	15.07	1.4	0.0883	9.1898	0.0096
Sum:									0.1891

**11.3 ICNIRP Guidelines (2020) RF Exposure Data****11.3.1 Abracon Antenna**

Band / Modulation	Channel	Frequency (MHz)	Declared Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle (%)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value @ 20cm (W/m ²)	MPE Limit (W/m ²)	MPE / Limit Ratio (for Co- Location)
802.11n40	6	2437	26.28	100.0%	26.28	1.2	1.1136	10.0000	0.1114
802.11a	60	5300	15.07	100.0%	15.07	2	0.1013	10.0000	0.0101
Sum:									0.1215

**11.3.2 Taoglas Antenna**

Band / Modulation	Channel	Frequency (MHz)	Declared Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle (%)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value @ 20cm (W/m ²)	MPE Limit (W/m ²)	MPE / Limit Ratio (for Co-Location)
802.11b	6	2437	26.28	100.0%	26.28	0.6	0.9699	10.0000	0.0970
802.11a	64	5300	15.07	100.0%	15.07	1.4	0.0883	10.0000	0.0088
Sum:									0.1058

**12 Revision History**

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	7/8/2025	105883475LEX-004	MC	AP	Original Issue