

Assessment report No:

NIE: 51330RAN.001A1

Assessment report (Modification 1)
RF EXPOSURE REPORT ACCORDING TO
FCC 47 CFR Part 2.1093

Identification of item tested.....	Wellness device for Isometric exercises and games.
Trade mark	ActivBody
Model and /or type reference	Activ5
Other identification of the product	FCC ID: 2AGCI-A5P1
Final HW version	5 (Note: This will be changed to version 6: it will have 2 changes with zero impact on EMC/FCC/IC/Bluetooth RF functions).
Final SW version	0.06 (Note: This will be changed to version 1.0: Application update only, with zero impact on EMC/FCC/IC/Bluetooth RF functions).
Features.....	Force sensing, Bluetooth Communications.
Manufacturer.....	ActivBody Inc. 65 Enterprise Aliso Viejo, 92656 CA, USA
Test method requested, standard.....	FCC 47 CFR Part 2.1093. (10-1-15 Edition) Radiofrequency radiation exposure evaluation: portable devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Miguel Lacave Antennas Lab Manager
Date of issue	2017-02-13
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Competences and guarantees

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AT4 wireless guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at AT4 wireless at the time of performance of the test.

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The results presented in this Test Report apply only to the particular item under test established in this document.

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Identification of the client

ActivBody Inc.

65 Enterprise Aliso Viejo, 92656 CA, USA

Modifications to the reference test report

It was introduced the following modifications in respect to the test report number 51330RAN.001 in the next clauses and sub-clauses:

Clauses / Sub-clauses	Modification	Justification
General description of the device under test	Table 1 has been updated with the conducted output power values measured by the laboratory.	Updated needed.
FCC Evaluation results	Table 5 has been updated with the maximum conducted output power value measured by the laboratory.	Updated needed.

This modification test report cancels and replaces the test report 51330RAN.001.

General description of the device under evaluation

The device under evaluation is a Wellness digital device with force (pressure) sensors and load cells.

As stated in AT4 wireless test report num. 51330RRF.002A1, the maximum measured conducted average output power values for the device are:

Technology	Frequency (MHz)	Max. measured avg. output power (dBm)
Bluetooth LE	2402	0.72
	2440	0.31
	2480	-0.09

Table 1: Maximum output power.

Assessment summary

Radiofrequency radiation exposure limits		
FCC 47 CFR § 2.1093		
Band (MHz)	Technology	VERDICT (Pass/Fail)
2450	Bluetooth LE	Pass

Table 2: Assessment summary.

Appendix A – FCC RF Exposure

FCC Exposure evaluation portable or mobile devices

Human exposure to RF emissions from portable devices (47 CFR §2.1093), as defined by the FCC, must be evaluated with respect to the FCC-adopted limits for SAR. Evaluation of mobile devices, as defined by the FCC, may also be performed with respect to SAR limits, but in such cases it is usually simpler and more cost-effective to evaluate compliance with respect to field strength or power density limits. For certain devices that are designed to be used in both mobile and portable configurations similar to those described in 47 CFR §2.1091(d)(4), such as certain desktop phones and wireless modem modules, compliance for mobile configurations is also satisfied when the same device is evaluated for SAR compliance in portable configurations.

FCC SAR test exclusion considerations

According to FCC OET KDB 447498 D01 General RF Exposure Guidance:

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition is satisfied.

- For distances ≤ 50 mm

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \\ \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$

Where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table:

MHz	5	10	15	20	25	30	35	40	45	50	mm
150	39	77	116	155	194	232	271	310	349	387	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	164	192	219	246	274	
450	22	45	67	89	112	134	157	179	201	224	
835	16	33	49	66	82	98	115	131	148	164	
900	16	32	47	63	79	95	111	126	142	158	
1500	12	24	37	49	61	73	86	98	110	122	
1900	11	22	33	44	54	65	76	87	98	109	
2450	10	19	29	38	48	57	67	77	86	96	
3600	8	16	24	32	40	47	55	63	71	79	
5200	7	13	20	26	33	39	46	53	59	66	
5400	6	13	19	26	32	39	45	52	58	65	
5800	6	12	19	25	31	37	44	50	56	62	

Table 3: SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

- For distances > 50 mm

At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:

[Power allowed at numeric threshold for 50 mm in table 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz

[Power allowed at numeric threshold for 50 mm in table 1) + (test separation distance - 50 mm)·10] mW, at > 1500 MHz and ≤ 6 GHz

Approximate SAR test exclusion power thresholds at selected frequencies and test separation distances are illustrated in the following table

MHz	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	mm
100	474	481	487	494	501	507	514	521	527	534	541	547	554	561	567	SAR Test Exclusion Threshold (mW)
150	387	397	407	417	427	437	447	457	467	477	487	497	507	517	527	
300	274	294	314	334	354	374	394	414	434	454	474	494	514	534	554	
450	224	254	284	314	344	374	404	434	464	494	524	554	584	614	644	
835	164	220	275	331	387	442	498	554	609	665	721	776	832	888	943	
900	158	218	278	338	398	458	518	578	638	698	758	818	878	938	998	
1500	122	222	322	422	522	622	722	822	922	1022	1122	1222	1322	1422	1522	
1900	109	209	309	409	509	609	709	809	909	1009	1109	1209	1309	1409	1509	
2450	96	196	296	396	496	596	696	796	896	996	1096	1196	1296	1396	1496	
3600	79	179	279	379	479	579	679	779	879	979	1079	1179	1279	1379	1479	
5200	66	166	266	366	466	566	666	766	866	966	1066	1166	1266	1366	1466	
5400	65	165	265	365	465	565	665	765	865	965	1065	1165	1265	1365	1465	
5800	62	162	262	362	462	562	662	762	862	962	1062	1162	1262	1362	1462	

Table 4: SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and > 50 mm

FCC Evaluation Results

The maximum output power declared by the manufacturer, for the device is 5.0 dBm. The evaluation according to an intended use distance of 0 mm will be as follow:

Technology	Max Declared Time Avg. Output Power (dBm)		Min. Test Distance (mm)	Freq. (GHz)	Result	Test Exclusion
	(dBm)	(mW)				
Bluetooth LE	0.72	1.18	5	2.402	0.37	✓

Table 5: Evaluation Result

The computed value of 1.0 is < 3.0, so according to KDB 447498 D01 – General RF Exposure Guidance, this mode qualifies for Standalone SAR test exclusion for 1-g SAR and 10-g SAR.