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RF EXPOSURE TEST REPORT

FCC ID:	**K7SBPD010**
Model(s):	BPD010, BBA009
Device Type:	Wireless Power Transfer Device
Report Issue Date:	August 25, 2025

Belkin International, Inc.
555 S. Aviation Blvd., Suite 180
El Segundo, CA 90245

Certification

Quantity	Frequency (kHz)	Result	Limit
SAR (W/kg)	111-148	< 0.1	**1.6**

The measurement evaluations presented in this report is based on the maximum performance of the tested device(s) which has been shown to be capable of compliance for uncontrolled environment/ general population exposure limits in 47CFR § 1.1310 and has been tested in accordance with the measurement procedures specified within this report.

Steve Liu
President

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1. DUT Specifics

1.1. Device Under Test

Table 1-1
DUT Information

Bands	Frequency (kHz)	Antenna Type
WPT	111-148	Loop

Two variants were fully evaluated for compliance, BPD010 and BBA009. See manufacturer documents for more information about the differences between the two variants.

The manufacturer has confirmed that the device(s) are within operational tolerances expected for production units and has the same physical, mechanical, and thermal characteristics expected for production units. The serial number of the device(s) used for each test is indicated alongside the results.

Thermal effects were evaluated at 0mm as a most conservative exposure against the basic restrictions.

When applicable, the following information can be found in the operational description.

- Description of each antenna within the EUT, including the number of elements, element type relevant, dimensions, etc.
- Description of the waveforms generated by each transmitter within the EUT, including the fundamental wave shape (sinusoidal, triangular, rectangular or otherwise) and frequency, applied modulation and 99% occupied bandwidth (OBW), duty factor, etc.
- Description of EUT behavior in each operating state, and the triggering conditions and timings for state transitions
- Description of the conducted power of excitation level applied to each antenna based on the applicable use-cases and operating states

1.2. Test Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 447498 D04v01 (General SAR Guidance)
- FCC KDB Publication 865664 D02v01r02 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 680106 D01v04 (Wireless Power Transfer)
- SPEAG PIA Inquiry "Compliance Testing Against SAR and MPE Limits" (V1.2 August 2025)

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2. RF Exposure Test Results

Table 2-1
RF Exposure Test Results

Mode/Band	Frequency (kHz)	Model	Surface/Edge	DUT Serial No.	Source Maximum Charging Rate (W)	Load	Load Maximum Charging Rate (W)	Measurement Distance (mm)	Module WPT SW version	Measured SAR 1g (mW/kg)	Measured Exposure Ratio SAR 1g (dB)	Test Plot
WPT	111-148	BPD010	Front	00216	7.5	iPhone 16 Pro	25	0	2.8	0.00004030	-73.4	-
WPT	111-148	BPD010	Back	00216	7.5	iPhone 16 Pro	25	0	2.8	0.00010600	-71.8	A1
WPT	111-148	BPD010	Top	00216	7.5	iPhone 16 Pro	25	0	2.8	0.00000710	-78.2	-
WPT	111-148	BPD010	Bottom	00216	7.5	iPhone 16 Pro	25	0	2.8	0.00000940	-79.5	-
WPT	111-148	BPD010	Left	00216	7.5	iPhone 16 Pro	25	0	2.8	0.00002850	-76.4	-
WPT	111-148	BPD010	Right	00216	7.5	iPhone 16 Pro	25	0	2.8	0.00007680	-82.7	-
WPT	111-148	BBA009	Front	00001	7.5	iPhone 16 Pro	25	0	2.8	0.00007160	-71.6	-
WPT	111-148	BBA009	Back	00001	7.5	iPhone 16 Pro	25	0	2.8	0.00013200	-54.7	A2
WPT	111-148	BBA009	Top	00001	7.5	iPhone 16 Pro	25	0	2.8	0.00000626	-60.4	-
WPT	111-148	BBA009	Bottom	00001	7.5	iPhone 16 Pro	25	0	2.8	0.00001780	-77.1	-
WPT	111-148	BBA009	Left	00001	7.5	iPhone 16 Pro	25	0	2.8	0.00007320	-73.2	-
WPT	111-148	BBA009	Right	00001	7.5	iPhone 16 Pro	25	0	2.8	0.00001740	-79.5	-

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2.1. Testing Notes

1. A smartphone was used as the receiver during testing. The load was at a low battery percentage at the start of the test to ensure that the maximum charging rate was captured during the exposure assessment. See test setup photos appendix for details about the physical setup.
2. Receiver(s) were confirmed to be charging throughout the entire duration of testing.
3. Results above include coverage factor and multi-frequency enhancement from test equipment manufacturer software and are for the total induced fields (i.e., the exposures from both the incident H-field and E-field are assessed)
4. Results above are representative of the worst case transmit power, duty cycle, displacement of receiver(s) in any direction where WPT is still activated from the position/orientation yielding optimal performance, and user/bystander positions at the corresponding separation distance.
5. Signal-to-noise ratio was confirmed to be greater than 20 dB when measurement probe was at 0mm from DUT before testing.
6. Local E-field check was confirmed to be valid/successful after test completion.
7. 1.6 W/kg is equivalent to 1600 mW/kg.
8. The applicant has confirmed that the “no load case” results, which accounts for the high fields that occur as the device is removed (results including the scaling of the fields measured observed in charging mode), would cover the pings which is at a lower coil current than the current immediately after the device is removed. Therefore, these modes were not included in the report.

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3. Background on Radiofrequency (RF) Exposure Limits

3.1. Basic Restrictions

Basic restrictions are limits such as electric, magnetic and/or electromagnetic fields that were derived directly from health effects thresholds. Devices evaluated against the basic restrictions are determined to be compliant against these potential health effects.

3.2. Reference Levels

Reference levels are secondary quantities derived from the basic restrictions, to provide an alternative for assessment against the basic restrictions. When devices are evaluated against the reference levels, they are determined to be complaint to the basic restrictions, and thus, potential health effects.

3.3. Uncontrolled Environment

Uncontrolled environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

3.4. Controlled Environment

Controlled environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

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3.5. RF Exposure Limits for 100kHz – 6 GHz

Per FCC 47 CFR §1.1310, the SAR limits are applied for frequencies 100kHz ~ 6 GHz as shown below.

Table 3-1

Human Exposure to RF Radiation Limits in 47 CFR §1.1310 SAR Basic Restrictions

Environment	Condition	SAR	Averaging volume
Uncontrolled / General Population	Head, Neck Trunk	**1.6 W/kg**	1g cube
	Extremity	**4.0 W/kg**	10g cube
Controlled	Head/Trunk	**8 W/kg**	1g cube
	Extremity / Limbs	**20 W/kg**	10g cube

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4. RF Safety Laboratory Measurement System

4.1. Measurement Hardware and Software

Measurements are performed using a DASY8 robot system with cDASY8 module WPT software. The DASY8 is made by SPEAG in Switzerland and consists of a 6-axis robot, robot controller, computer, dosimetric probe, and probe alignment light beam unit.

4.2. E-Field and H-Field Probe

Manufacturer	Schmid & Partner Engineering AG
Model	MAGPy-8H3D+E3DV2
Description	Near-field Electric and Magnetic Field Sensor System
Frequency Range	3 kHz - 10 MHz
H-Field Measurement Range	0.1–3200 A/m, 0.12 μT–4 mT
H-Field Gradient Range	0–80 T/m/T
E-Field Measurement Range	0.08–2000 V/m
8 isotropic H-field sensors	concentric loops of 1 cm2 arranged at the corner of a cube of 22 mm side length
1 isotropic E-field sensor	orthogonal dipole/monopole (arm length: 50 mm)
Measurement center	18.5 mm from the probe tip
Diameter	60 mm
Overall Dimensions	110 x 635 x 35 mm
Temperature Range	0 - 40 °C
Applications	High precision measurements of wireless power transfer systems and other strong magnetic near-field sources in 3 kHz - 10 MHz range
Compatibility	DASY8 robot + cDASY8 module WPT

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4.3. Measurement Procedures

The DASY Module WPT operates by making 3D measurements of the H-Fields and E-Fields over the device. The MAGPy probe measures these fields and assesses the gradients of the field over the measurement area. After the scan, the Module WPT simulates the incident fields and induced fields using the measurement data as an input to the simulation. The figure below provides a high-level overview of the workflow.

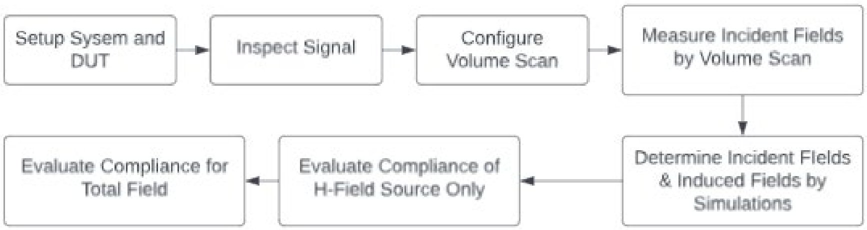

Figure 4-1
Measurement workflow

In the volume scan, all three components of the magnetic (H-) field (i.e., Hx , Hy , and Hz) generated by the DUT are measured in a volume on top of and as close as physically possible to the DUT. The scan volume is large enough to include the entire incident field to which the standardized homogeneous phantom is exposed. The peak frequency of the DUT is determined from the spectrum derived by application of a fast Fourier transformation (FFT) to the time-domain signal captured at the reference probe positioned next to the DUT. The amplitudes of Hx , Hy , and Hz at the peak frequency are determined by applying discrete Fourier transformation (DFT) of the time-domain signals captured at the corresponding H-field sensors. Phases of Hx , Hy , and Hz with respect to the reference probe at the peak frequency are retrieved from the complex-valued frequency-domain data. With the electric (E-) field sensors integrated in the MAGPy probe, the amplitudes of all three components of the incident E-field (i.e., Ex , Ey , and Ez) are also measured in the volume scan.

The extra- and interpolation operations are both applied to the incident H-field. The extrapolation down to the probe tip (also called surface field reconstruction) is achieved by reconstruction based on the curl- and divergence-free conditions of Maxwell's equations.

The determination of the induced E-field includes reconstruction of the vector potential (i.e., A-field) based on the measured and reconstructed H-field, solution of the induced scalar potential via application of the finite element method (FEM) with linear nodal elements and zero-flux boundary conditions in the standardized homogeneous phantom, and computation of the induced E-fields.

The computation of the local SAR is based on the induced E-field. The local SAR distribution is numerically integrated within the 1g or 10g volume, and the maximum value is reported as psSAR1g/10g.

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4.4. RF Safety Laboratory System Measurement Uncertainty

pSAR 1g according to IEC/IEEE 63184

Item	Description	Unc. (+/- dB)	Probab. Distri.	Div.	ci	Std. Unc. (+/- dB)	vi
Measurement System							
1	Amplitude Calibraiton Uncertainty	0.35	N	1	1	0.35	∞
2	Probe Anisotropy	0.60	R	√3	1	0.35	∞
3	Probe Dynamic Linearity	0.20	R	√3	1	0.12	∞
4	Probe Frequency Domain Response	0.30	R	√3	1	0.17	∞
5	Probe Frequency Linear Interpolation Fit	0.15	R	√3	1	0.09	∞
6	Spatial Averaging	0.10	R	√3	1	0.06	∞
7	Parasitic E-Field Sensitivity	0.10	R	√3	1	0.06	∞
8	Detection Limit	0.15	R	√3	1	0.09	∞
9	Readout Electronics	0.00	N	1	1	0.00	∞
10	Probe Positioning	0.19	N	1	1	0.19	∞
11	Repeatability	0.10	N	1	1	0.10	∞
12	Surface Field Reconstruction	0.20	N	1	1	0.20	∞
Numerical Simulations							
13	Grid Resolution	0.02	R	√3	1	0.01	∞
14	Tissue Parameters	0.00	R	√3	1	0.00	∞
15	Exposure Position	0.00	R	√3	1	0.00	∞
16	Source Representation	0.09	N	1	1	0.09	∞
17	Convergence and Power Budget	0.00	R	√3	1	0.00	∞
18	Boundary Conditions	0.10	R	√3	1	0.06	∞
19	Phantom loading/backscattering	0.10	R	√3	1	0.06	∞
	Combined Standard Uncertainty					0.64	∞
	Expanded Standard Uncertainty and Effective Degrees of Freedom (k=2)					1.28	

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5. Testing Equipment List

Manufacturer	Model	Description	Serial Number	Calibration Date	Calibration Due
Control Company	4040	Ambient Thermometer	230581656	8/28/2023	8/28/2025
SPEAG	V-Coil350/85	85 kHz System Verification Source	1025	8/30/2024	8/30/2025
SPEAG	MAGPy-8H3D+E3DV2	Near-field Electric and Magnetic Field Sensor System	3119	10/10/2024	10/10/2025
SPEAG	MAGPy-DASV2	Near-field Electric and Magnetic Field Data Acquisition System	3113	10/10/2024	10/10/2025
Staubli	TX2-90XL	DASY8 Robot TX2-90XL	F/23/0052572/A/003	-	-
Staubli	SCS9C	DASY8 Robot Controller CS9C	F/23/0052572/C/003	-	-
SPEAG	DASY8 Server	DASY8 Robot Measurement Server	10147	-	-

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6. Conclusion

This evaluation indicates that the DUT is capable of compliance with the RF radiation exposure limits of FCC, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.