

David Sanchez Minguez

From: leon@51mti.com
Sent: Thursday, December 23, 2021 9:43 AM
To: judy xu
Subject: Fw: Response to Inquiry to FCC (Tracking Number 467725)

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Best Regards!

陈勇 Leon Chen

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Please choose "reply to all" for quick response.

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From: oetech@fcc.gov
Date: 2021-12-23 00:23
To: leon@51mti.com
Subject: Response to Inquiry to FCC (Tracking Number 467725)

Inquiry on 08/30/2021 :

Inquiry:

Dear Sir/Madam,

there are a WPT power bank product, which can be portable using when wireless charging for Iphone 12 series, because the product have magnet around the coil, please help to guide me how to do MPE or SAR test.

product parameter:

capacity: 5000mAh

Wireless output: 5W?7.5W

WPT frequency range: 115kHz-205kHz

WPT protocol: Qi

KDB 680106 D01 v03r01 5b

description:

1. Power transfer frequency is less than 1 MHz

Yes, operating frequency are 115kHz-205kHz

2. Output power from each primary coil is less than or equal to 15 watts

Yes, the maximum output power is 7.5W

3. The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.

Yes, the product have one single primary coils

4. Client device is placed directly in contact with the transmitter

Yes, the client is placed directly in contact with the transmitter

5. Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion). The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.

No. for wireless charging for Iphone 12 series, user can use the product portable, the maximum output power is 7.5W.

FCC response on 09/08/2021

Thank you for your inquiry as this device does need to consider how it may affect an attached host (in this case, the iPhone 12 series).

We are defining compliance guidelines to address the issue of two (or more, in principle) combined transmitters, the accessory and the host, that may lead to an RF exposure out-of-compliance situation while operating simultaneously. The different cases are treated in a similar way as we do for modules (per 447498, Section 4).

A key point is that this guideline accounts for those cases of “general purpose” accessories, i.e., that can work with many hosts from different manufacturers, thus dealing with the impracticality of testing the accessory with all possible hosts.

A notable example is that of a wireless charger attached (magnetically, or else) to the back of a phone/tablet that is light enough to allow next-to-the-ear calls, while taking pictures, or works while the phone is operating as a hotspot.

In the short term, we are proposing the following internal guideline for consistent, case-by-case answers to KDB inquiries, and this matter will eventually be included in a publication. This guideline applies to accessories equipped with a RF transmitter that are designed to be used with another “host” transmitter, while operating at the same time, and physically connected or in very close proximity (that, in this context, means smaller than the largest near-field distance, as computed among all the applicable host device transmitters).

For portable (as defined in §2.1093) use conditions, the compliance of the accessory + host combination is evaluated by referring to field strengths, or SAR values, depending on the frequency, measured in the most conservative position related to the portable condition of use (as close as 5 mm from the body, if applicable).

For mobile (as defined in §2.1091) use conditions, the compliance of the accessory + host combination is evaluated by referring to field strengths, or SAR values, depending of the frequency, measured in the most conservative position related to the portable condition of use (as close as 20 cm from the body, or larger if applicable).

For both mobile and portable conditions, this evaluation will be conducted according to either of the following procedures:

Procedure A, for accessory transmitters operating between 4 MHz and 6 GHz (i.e., SAR is applicable)

Procedure B, for accessory transmitters operating below 4 MHz or above 6 GHz (i.e., when SAR is either difficult to measure, or is not applicable)

Procedure A

- The SAR of the accessory, referred to as SAR_{acc} while operating at its maximum power (for each separate mode of operation in different bands, if applicable) is evaluated.
- If SAR_{acc} < 0.4 W/kg, use is permitted for every host device

- For $0.4 \leq SAR_{acc} < 0.8$, only use with a family of devices can be permitted. This requires a KDB inquiry submission and
 - o FCC concurrence on of the proposed family of devices (based on similarities)
 - o FCC concurrence on the choice of a reference model that provides the worst-case emission scenario (typically, the largest SAR)
 - o showing that $SAR < 1.6$ when evaluating the combined accessory and host simultaneous operations in the defined worst-case scenario
- For $0.8 < SAR_{acc} < 1.2$, use is permitted only for a single specific model, tested in the worst-case emission scenario.
- For $SAR_{acc} > 1.2$, full SAR testing of the combined device is required, not only for the host worst case scenario

Procedure B

- The right-hand-side of the formula C.1 of 447498 D01-DR04-Appendix C, for accessory while operating at its maximum power (for each separate mode of operation in different bands, if applicable) is evaluated.
- The evaluation of P_{acc} is here performed by using:
 - o for frequencies below 100 kHz the largest of the E/E_{lim} and H/H_{lim} , where E and H are the electric and magnetic fields (in the most conservative position related to the portable condition of use) and $E_{lim} = 83$ V/m and $H_{lim} = 90$ A/m, as per KDB Pub. 680106
 - o for frequencies between 100 kHz and 4 MHz, either a SAR evaluation from a validated numerical simulation is used, or the MPE limits based on §1.1310(e)(1) - Table 1
 - o for frequencies above 6 GHz, the applicable MPE limit per §1.1310(e)(1) - Table 1
- If $P_{acc} < 0.4$, use is permitted for every host device
- For $0.4 \leq P_{acc} < 0.8$, only use with a family of devices can be permitted. This requires a KDB inquiry submission and
 - o FCC concurrence on of the proposed family of devices (based on similarities)
 - o FCC concurrence on the choice of a reference model that provides the worst-case emission scenario (typically, the largest contributions to the formula C.1)
 - o showing that the MPE limits are met when evaluating the combined accessory and host simultaneous operations in the defined worst-case scenario
- For $0.8 < P_{acc} < 1.2$, use is permitted only for a single specific model, tested in the worst-case emission scenario.
- For $P_{acc} > 1.2$, full RF exposure testing of the combined device is required, not only for the host worst case scenario

---Reply from Customer on 11/02/2021---

Dear Sir,

I have performed perform H-field measurements refer to the TCB Workshop 2019, at each edge/top surface of the host/client pair at every 2 cm, starting from as close as possible out to 10 cm for this product used as portable conditions.

the maximum H-field value is 0.7122 A/m tested at 0cm away from the product. the Percentage of the limits of H-field is 43.7%.

please see the test report for the details.

FCC response on 11/16/2021

We apologize for the delay in responding. We have been working on updating our procedures for wireless power transfer devices. As for the interim guidance previously provided, the limits for Procedure B have been revised and are listed here:

Procedure B

- The right-hand-side of the formula C.1 of 447498 D01-DR04-Appendix C, for accessory while operating at its maximum power (for each separate mode of operation in different bands, if applicable) is evaluated.
- The evaluation of P_{acc} is here performed by using:
 - o for frequencies below 100 kHz the largest of the E/E_{lim} and H/H_{lim} , where E and H are the electric and magnetic fields (in the most conservative position related to the portable condition of use) and $E_{lim} = 83$ V/m and $H_{lim} = 90$ A/m, as per KDB Pub. 680106
 - o for frequencies between 100 kHz and 4 MHz, either a SAR evaluation from a validated numerical simulation is used, or the MPE limits based on §1.1310(e)(1) - Table 1
 - o for frequencies above 6 GHz, the applicable MPE limit per §1.1310(e)(1) - Table 1
- If $P_{acc} < 25\%$, use is permitted for every host device
- For $25\% \leq P_{acc} < 50\%$, only use with a family of devices can be permitted. This requires a KDB inquiry submission and
 - o FCC concurrence on of the proposed family of devices (based on similarities)
 - o FCC concurrence on the choice of a reference model that provides the worst-case emission scenario (typically, the largest contributions to the formula C.1)
 - o showing that the MPE limits are met when evaluating the combined accessory and host simultaneous operations in the defined worst-case scenario
- For $50\% < P_{acc} < 75\%$, use is permitted only for a single specific model, tested in the worst-case emission scenario.
- For $P_{acc} > 75\%$, full RF exposure testing of the combined device is required, not only for the host worst case scenario

NOTICE:

A PDF file containing the latest update from the October 2021 TCB Workshop is attached to this response. (see WPT TCBWS 10-21) Please follow the procedures in the PDF attachment for your device.

---Reply from Customer on 12/15/2021---

Dear sir,

please see the attached MPE test report.

FCC response on 12/22/2021

MPE test report is acceptable.

Attachment Details:

[WPT TCBWS 10-21](#)

Do not reply to this message. Please select the [Reply to an Inquiry Response](#) link from the OET Inquiry System to add any additional information pertaining to this inquiry.