

INTERTEK TESTING SERVICES

Radiofrequency radiation exposure evaluation

The equipment under test (EUT) is a EcoFlow RAPID Pro X Power Bank(27K, 300W), EF-HB-140-X with Bluetooth 5.0 BLE function operating in 2402-2480MHz and Wi-Fi function operating at 2412-2462MHz for 802.11b/g/n-HT20/ax-VHT20, 11 channels with 5MHz channel spacing and 2422-2452MHz for 802.11n-HT40, 7 channels with 5MHz channel spacing. The EUT is powered by DC 25.2 V from battery or USB-C1 DC 5V/9V/12V/15V/20V/28V powered by adapter from AC mains 120V60Hz. For more detail information pls. refer to the user manual. The EUT consists of two parts, the power bank main unit and the pogopin adapter.

Ratings:

Total Cell Capacity: 27650mAh($7 \times 3.6V = 3950mAh$)
Lithium Battery Energy: 3950mAh 25.2V/99.54Wh
Rated Capacity: 15.9Ah(5V=3A)
USB-C1 Input: 5V/9V/12V/15V=3A, 20V/28V=5A, 140W Max
USB-C1 Output: 5V/9V/12V/15V=3A, 20V/28V=5A, UFCS 63W, 140W Max
USB-C2/C3 Output: 5V/9V/12V/15V=3A, 20V=3.25A, UFCS 63W, 65W Max
Total Output: 300W Max

For Bluetooth function:

Bluetooth function Modulation Type: GFSK
Bluetooth Version: 5.0 BLE (Single Mode BLE only, support 1M and 2M)
Antenna Type: PCB antenna
Antenna Gain: 3.18dBi Max.

The nominal radiated output power (e.i.r.p) specified: -7dBm (tolerance: $\pm 2dB$).
The nominal conducted output power specified: -10.18dBm (tolerance: $\pm 2dB$).

According to the KDB 447498 V06:

The Maximum peak radiated emission for the EUT is the frequency 2440MHz	89.22 dBμV/m at 3m in for BLE 1M
The EIRP = $[(FS \times D)^2 / 30]$ mW = -6.01dBm which is within the production variation.	

The Minimum peak radiated emission for the EUT is the frequency 2480MHz	86.93 dBμV/m at 3m in for BLE 1M
The EIRP = $[(FS \times D)^2 / 30]$ mW = -8.30dBm which is within the production variation.	

The Maximum peak radiated emission for the EUT is 89.25 dB μ V/m at 3m in
the frequency 2440MHz for BLE 2M
The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -5.98dBm
which is within the production variation.

The Minimum peak radiated emission for the EUT is 86.50 dB μ V/m at 3m in
the frequency 2480MHz for BLE 2M
The EIRP = $[(FS \cdot D)^2 / 30]$ mW = -8.73dBm
which is within the production variation.

The maximum conducted output power specified is -8.18dBm= 0.152mW
The source- based time-averaging conducted output power
=0.152mW

The SAR Exclusion Threshold Level:
= $3.0 \cdot (\text{min. test separation distance, mm}) / \sqrt{\text{freq. in GHz}}$
= $3.0 \cdot 5 / \sqrt{2.480}$ mW
= 9.53 mW

Since the source-based time-averaging conducted output power is well below the SAR
low threshold level, so the EUT is considered to comply with SAR requirement without
testing.

For Wi-Fi function:

Wi-Fi function Modulation Type: BPSK, QPSK, 16QAM, 64QAM for OFDM; BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM for OFDMA; CCK, DQPSK, DBPSK for DSSS.

Antenna Type: PCB antenna

Antenna Gain: 3.18dBi Max.

The nominal radiated output power (e.i.r.p) specified: 0.18dBm (tolerance: ± 4 dB).

The nominal conducted output power specified: -3dBm (tolerance: ± 4 dB).

According to the KDB 447498 V06:

The Maximum peak conducted output power for the EUT is the frequency 2412MHz	0.83 dBm in for 802.11n-HT20
which is within the production variation.	

The Minimum peak conducted output power for the EUT is the frequency 2422MHz	-6.23 dBm in for 802.11n-HT40
which is within the production variation.	

The maximum conducted output power specified is	1dBm= 1.259mW
The source- based time-averaging conducted output power =1.259mW	

The SAR Exclusion Threshold Level:

= $3.0 * (\text{min. test separation distance, mm}) / \text{sqrt}(\text{freq. in GHz})$

= $3.0 * 5 / \text{sqrt} (2.462)$ mW

= 9.56 mW

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

Simultaneous Transmission:

EUT can't transmit simultaneously. (Bluetooth and Wi-Fi use a single antenna and do not support simultaneous transmission.)