

Inquiry on 08/19/2016 :

Inquiry:

Dear Sir

The device is a backpack with WLAN 2Tx only, the appearance/antenna location/surface definition is illustrated in the attached plot1.

For the front side of the backpack, the form factor is like a pyramid, and it is flat for backside.

About the use scenario, I drawn some pictures for your review.

For plot 2, the backpack is behind the human's back, so SAR evaluation with the backpack's backside (surface 4) touching against the flat phantom is required.

For plot 3, the backpack may be in front of the user whatever the user is stand or sit, also, the user's hand may be near the antenna location. For SAR test configuration, whether we shall make the surfaces 2-1/2-2/3 touching against the flat phantom for body SAR and surface 1 touching against the flat phantom for extremity SAR?

For plot 4, the device may be rarely used like that since the pyramid may make the user uncomfortable, in this case, do we need to evaluate SAR with surface 1 touching against the flat phantom for body SAR?

Thank you

FCC response on 08/19/2016

Thank you for your inquiry. In order to provide you with appropriate guidance more information is needed.

1. Please provide a diagram that includes the dimensions of the device (including the thickness of the backpack). Please also include the distances from the antennas to the edges/surfaces of the device.
2. Actual photographs of the device taken from several angles would also be helpful. Please also show the straps/belts that will secure the device to the user.
3. Please confirm if simultaneous transmission is possible. Also, please provide information about the transmission frequency and conducted powers (if available).
4. Please provide information about the intended function of the device. Expected duty cycle information would also be helpful.
5. Please provide a user manual, in English, if available.

---Reply from Customer on 08/25/2016---

Dear Sir

Thanks for your comment.

We reply them as below, thanks.

To reply your response 1, you can refer to the attached plot 5/6, including the dimensional size and updated antenna location (include the distance from the antennas to the edges/surfaces).

To reply your response 2, it is under the evaluation process/stage, so there is no the actual photographs and the straps/belts presently.

To reply your response 3, the simultaneous transmission is possible, such as WLAN MIMO. Also, the device supports WLAN 2.4G/5G, and the maximum output power is 20.5dBm.

To reply your response 4, the intended function of the device is to transmit the data to the smart TV by WLAN.

To reply your response 5, it is under the evaluation process/stage, so there is no the user manual presently.

FCC response on 08/31/2016

Thank you for your responses. It may be best to submit this inquiry when an actual device is available, to ensure all of the possible use cases are known. However, there is some preliminary guidance that can be given based

on the information provided. Note this guidance may change if when the actual device is available the use cases change.

For the plot 2 position, the device should be tested for 1-g SAR at 0 mm from the flat phantom filled with body-tissue simulating liquid.

For plot 3, the device should be tested for 10-g extremity SAR at 0 mm from the flat phantom filled with body-tissue simulating liquid for sides/edges 1, 2-1, and 2-2. Also, edge 3 should not be tested for extremity SAR but instead be tested 1-g SAR at 0 mm from the flat phantom filled with body-tissue simulating liquid. When the user is sitting, edge 3 will most likely be touching (or in close proximity to) the user's upper leg/thighs. The upper legs/thighs are not considered extremities. Therefore, edge 3 should be tested for 1-g SAR.

For plot 4, it is difficult to provide exact testing guidance without seeing an actual photograph of the device to determine if it's a viable use case. If you would like to cover that position, test surface 1 for 1-g SAR at 0 mm from the flat phantom filled with body-tissue simulating liquid. If you test in this position, you can exclude the testing of surface 1 for extremity SAR as required for plot 3, since the 1-g SAR at 0 mm for this position is more conservative.

Once again, this is preliminary guidance and may be subject to change until an actual sample of the device is available. It is recommended to reconfirm the above guidance via this KDB Inquiry when an actual sample is available and the possible use cases are known.

---Reply from Customer on 12/07/2016---

Hello Sir

Thanks for your preliminary guidance.

We got the actual sample and took some photos for your reference, also, the antenna location of WLAN Tx2 is updated as attached plot 1/2.

Besides, there is the protrusion on the backside (plot5) to mount the strap, just like plot 4/9/10.

Also, the manufacturer claimed that using the backpack reversely will not be allowed, it means that the use scenario would be plot 9/10 only.

In this case, for SAR test configuration, if we make the back surface touch against the flat phantom with body tissue (1g-SAR<1.6), do you accept this?

Thank you

FCC response on 12/13/2016

Thank you for the clarifying information. Please address the following items.

1. Please provide information about the distance of the TX 2 antenna from the edges and surfaces of the device.
2. You state the manufacturer claimed the backpack cannot be used reversely. I am assuming this means the backpack cannot be worn on the front of the user's body. However, this could also mean the backpack is not intended to be worn upside down. Please clarify.
3. Also, even though the manufacturer claims the backpack cannot be worn reversely there is a possibility this may happen. However, if the distance between the TX 1 antenna and the lower edge of the backpack is large enough, the exposure concerns may be minimized. Please provide the distance between the TX 1 antenna and the lower edge of the backpack.
4. You state the distance between the gap of antenna and top case is 4 mm in one diagram and 2 mm in another diagram. Please clarify. I am assuming this is for TX 1 antenna. As requested above please provide information about TX 2 antenna.
5. You state the distance between the antenna (assuming this means the TX 1 antenna) and the bottom case is 35 mm. Does this take into account the protrusions on the back of the device? If not how big are the protrusions?
6. Once again, please provide a User Manual, in English if available.

---Reply from Customer on 01/04/2017---

Hi Sir

Thanks for your comments.

To reply your response 1,

you may refer to the attached plot 11, TX2 to top surface(2) is 3.7mm, TX2 to back surface(3) is 36.6mm (without taking into account the protrusions on the backside).

To reply your response 2,

yes, the manufacturer claimed the backpack cannot be used reversely, including the backpack cannot be worn on the front of the user's body, and the backpack cannot be worn upside down.

To reply your response 3,

you may refer to plot 12, the smallest distance between the TX 1 antenna and the lower edge of the backpack is 37.6mm.

To reply your response 4,

you may refer to plot 13, the distance between the gap of TX1 and top surface is 2mm, TX1 to side is 4mm.

To reply your response 5,

it doesn't take into account the protrusions on the back of the device, the protrusion height is 6.5mm.

To reply your response 6,

you may refer to the attached user manual.

Thank you

---Reply from Customer on 01/16/2017---

Hello Sir

Do you have further comment for this?

Thank you

FCC response on 01/30/2017

The user manual provided appears to be for an HP computer, not the equipment mentioned in this inquiry. Please provide the correct user manual. The user manual should include diagrams of how to properly wear the device, specifically showing the user not to wear the device upside down or with the front (the surface labelled surface 1 and 2 in the most recent attachment) surface against their body.

Based on the antenna diagrams, due to the large distance between the antennas and the user's back when worn in the normal use conditions, SAR testing for the surface that faces the user's back may be excluded from SAR testing. Please apply the standalone SAR test exclusion found in FCC KDB Publication 447498 D01 General RF Exposure Guidance v06 to see if you qualify for SAR test exclusion. As for the various edges, if those edges do not qualify for SAR test exclusion based on the formula found in FCC KDB Publication 447498 D01 General RF Exposure Guidance v06, please test for 10-g extremity SAR at 0 mm against the flat phantom filled with body tissue simulating liquid for all edges and surfaces with a transmitting antenna located at ≤ 25 mm from that surface or edge to address hand exposure.

---Reply from Customer on 02/13/2017---

Hello Sir

Thanks for your comment.

For the user manual, the manufacturer will provide it later.

For the surface that faces the user's back, SAR testing can't be excluded based on the maximum specified output power (20.5dBm for 2.4/5GHz) and the min. distance between the antenna and the user's back (41.5mm, including the protrusion height), you may refer to plot 15 table.

Since the surface that faces the user's back can't be excluded from SAR testing, and the protrusions are flat (plot 14), for SAR measurement on that surface, I supposed that whether we can make the protrusion touch against the flat phantom for $1g-SAR < 1.6$ (body SAR)? (like plot 16 shown)

Thank you

FCC response on 02/13/2017

Once the correct user manual is available, please respond to this inquiry with it as an attachment. We want to ensure, as mentioned in the previous FCC response on 01/30/2017, the user manual includes diagrams of how to properly wear the device, specifically showing the user not to wear the device upside down or with the front (the surface labelled surface 1 and 2 in the most recent attachment) surface against their body.

Since the back surface (labelled as surface 3 in the most recent attachment) does not qualify for SAR test exclusion, please test this surface at 0 mm, with the protrusions touching the flat phantom, similar to what you propose in plot 16.

---Reply from Customer on 02/14/2017---

Hello Sir

Thanks for your comment.

For the user manual, if it include the diagrams of how to wear the backpack correctly, but it doesn't specifically showing the user not to wear the

device upside down or with the front surface against their body, is this acceptable?

Thank you

FCC response on 02/15/2017

It would be preferable if the user manual shows the user not to wear the device upside down or backwards in addition to showing the user how it should be worn correctly (so there is no ambiguity).

---Reply from Customer on 05/17/2017---

Hello Sir

Please refer to the attached user manual.

Thanks a lot.

FCC response on 05/19/2017

Thank you for the updated user manual. As mentioned in the previous FCC response on 02/15/2017, it would be preferable if the user manual shows the user not to wear the device upside down or backwards in addition to showing the user how it should be worn correctly (so there is no ambiguity). However, after reviewing the attached user manual, the diagram provided is sufficient and the proper use condition is clear.

That being said, the user manual contains no FCC regulatory information, only EU regulatory information. Please update the user manual to include the appropriate FCC regulatory information.

---Reply from Customer on 05/25/2017---

Hello Sir

Thanks for your comment.

Please refer to the attachment for FCC regulatory information

Thank you

FCC response on 05/26/2017

Thank you for the FCC regulatory information document. The information is acceptable. If you have any additional questions please do not hesitate to ask.

---Reply from Customer on 07/05/2018---

Hello Sir

Is the inquiry still applicable?

Thankyou

FCC response on 07/10/2018

I am not sure exactly what you are asking. Do you have a new device? The previously issued guidance including the user manual statement requirements is still applicable unless there have been changes made to the device.

---Reply from Customer on 07/11/2018---

Hello Sir

No, this is the same device.

There are no any changes made to the device except WLAN module is changed.

It is still WLAN 802.11a/b/g/n/ac but just change to another model number.

In this case, is the inquiry still applicable?

(SAR will be measured fully based on the previously issued guidance including the user manual statement requirements.)

Thank you

FCC response on 07/18/2018

Yes, the previous guidance still applies. If a different WLAN module is being used please ensure the grant conditions grant notes permit the new WLAN module to be used in this context (i.e. it is classified as portable, it can be co-located with other transmitters if needed, etc.)

---Reply from Customer on 03/18/2019---

Hello Sir

Thanks, we will follow the previous guidance to proceed SAR testing.

Thank you

FCC response on 03/20/2019

You're welcome. This inquiry is now closed.

Attachment Details:

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.