Federal Communications Commission

Office of Engineering and Technology

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Reply to an OET Inquiry Response

Currently Displaying Inquiry Tracking Number: 646987

Contact Information:

Customer First Name: Stan
Customer Last Name: DuPont
Telephone Number: 8137495454
Extension: 1332
E-mail Address: sdupont@attentigroup.com

Address:

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Line 2:
P.O. Box:
City: Odessa
State: Florida
Zip Code: 33556
Country: United States

Inquiry Details on 02/22/2018:

First category: RF Exposure *
Second category: Test Procedures (RF Exposure)
Third category:
Subject: Wi-Fi SAR Test - Extremely Low Data Usage
Inquiry: Dear Madam or Sir,

We have implemented an 802.11 B,G, & N std WLAN Transceiver into our Extremely low data-rate wearable product. The addition of this Wi-Fi module was done primarily to provide indoor location & an alternate means of uploading very small amounts of data (GPS positions & Alerts/Alarms) to our back-end monitoring systems only when the cellular network is not available.

Even during the times when the Cellular network may not be available, the most data that we would expect to see on a daily basis would be about 12 kbits or less. Due to this low data rate, the electronic hardware was designed such that the max data rate to the WLAN Transceiver module is only 115.2 kbps or roughly 10X greater than the expected data rate. This makes it impossible for the WLAN Transceiver module to operate at any data rate above 115.2 kbps.

With this extremely low data rate in mind, we would like to know if either a WLAN SAR Exclusion or Limited SAR Certification test would be permissible for this wearable device. We can provide a Letter of Declaration or a technical statement describing these design parameters.

Please Consider Our Special Case & Let us know.

Thanks,
Stan DuPont

FCC Response on 02/27/2018:

It is difficult to provide guidance without reviewing the operational detail of the device. However, low duty factor and low power generally have been the hallmark of SAR exclusion determination, hence, you may need to prove that your low data rate configuration is a function of low power/duty factor to qualify for SAR exclusion. Review KDB publication 447498 v 6.3 on low data transmission to see if you qualify.

---Reply from Customer on 03/09/2018---

Hi - Thanks for the response.

Please find our operational detail attached.
Please let us know if you have any questions.

Thanks,
Stan DuPont

---Reply from Customer on 03/15/2018---

Dear Madam or Sir,

We realize that with the recent personnel cutbacks that your team must be very busy.

We are requesting a Low Duty Factor SAR Exclusion for Wi-Fi only on our composite device. Please confirm that you received our attachment.

Thanks,
Stan DuPont

FCC Response on 03/19/2018:

Please delineate theoretically using variables on how low duty factor is determined. Provided DF determination lacks sufficient reliable variables and description

---Reply from Customer on 03/19/2018---

Dear Madam or Sir,

RE: Low Duty Factor SAR Exclusion for Wi-Fi only

Please find attached the Delineation Work Sheet showing the detail behind our data usage and power ON time.

Please let us know if you have any questions.

Thanks,
Stan

---Reply from Customer on 03/19/2018---

I am re-submitting the attachment because I think that the first attempt at sending failed.
If the reviewer would like to have an Excel version of the sheet please inform how to send it.
Attached should be the Low Duty Factor Wi-Fi Analysis Delineation Work Sheet in PDF form.
Thanks,
Stan

---Reply from Customer on 03/19/2018---

Still not seeing the attachment show up, unlike the other attachments I have sent - shortened the file name this time.

---Reply from Customer on 03/19/2018---

Attaching only JPG instead of PDF this time.

---Reply from Customer on 03/19/2018---

Found the problem-here goes again.

FCC Response on 03/22/2018:

What is the percentage of the Duty factor? and how was it determined

---Reply from Customer on 03/22/2018---

Dear Madam or Sir,

Please allow me to summarize this inquiry at this point.
We are requesting a Low Duty Factor SAR Exclusion for Wi-Fi only on our composite device.

Please find attached the Delineation Work Sheet showing the detail behind our data usage and Wi-Fi module power ON time.

As before please, let us know if there are any questions.

Thanks,
Stan DuPont

---Reply from Customer on 03/22/2018---

Dear Madam or Sir,

Attached is what we believe to be the percent Duty Cycle based upon the information provided by FCC documents 865664 D02 & KDB Publication 447498 D01.

(Please see attachment "2018_03-22_FCC ID NC3-24014VL_Percent Low Duty Factor Wi-Fi Analysis Delineation Work Sheet.pdf")

If the attached document is not what is expected for a Low Duty Factor SAR Exclusion request, Please forward an example & calculations for us to learn from. FCC documents 865664 D02 Paragraph 2.4 & KDB Publication 447498 D01 Paragraph 6.3 are not clear on what calculations are expected.

Is there possibly an established worksheet/example that we could use for this?

Thanks,
Stan DuPont

FCC Response on 03/23/2018:

What is the maximum transmission power and operating frequency of the WiFi

---Reply from Customer on 03/23/2018---

Thanks for the rapid response.

The answers to your questions are contained in the updated attachment labeled:
2018_03-23_FCC ID NC3-24014VL_PctLowDutyFactorWi-Fi AnalysisDelineationWork&DataSheet

Thanks,
Stan DuPont

---Reply from Customer on 03/29/2018---

Hi Madam or Sir,

Please let us know if we can provide any other information.

As far as we know all the information is contained in the attachment: 2018_03-23_FCC ID NC3-24014VL_PctLowDutyFactorWi-Fi Analysis that was sent in last message.

Thanks,
Stan

---Reply from Customer on 04/04/2018---

Dear Madam or Sir,

We are concerned as we have not had a FCC response on this in over 10 days.

Please allow me to summarize this inquiry at this point.
We are requesting a Low Duty Factor SAR Exclusion for Wi-Fi only on our composite device.

Please find attached the Delineation Work Sheet showing the percent duty factor of the Wi-Fi module power ON time.

As before please, let us know if there are any questions.

Thanks,
Stan DuPont

FCC Response on 04/05/2018:

Test proposal has been given one time approval specific to this device only.The manufacturer should include an attestationletter to identify that the worst case stated duty factor is permanentlyimplemented within the device where no further changes or modifications arefeasible.

---Reply from Customer on 04/19/2018---

Dear Madam or Sir,

We have reviewed this use case and after some deliberation among our engineers would like to make certain that we have some substantial amount of margin allowed to us in our design should we ever need it.

Please find & review attached updated sheet showing what we believe to be our worst case with added margin.

Please review and let us know if you find this satisfactory for Low Duty Factor SAR Test Exclusion for Wi-Fi.

Attached:
(2018_04-19_FCC ID NC3-24014VL_PctLowDutyFactorWi-Fi AnalysisDelineationWork&DataSheet)

Thanks,
Stan DuPont

FCC Response on 04/20/2018:

Test proposal has been accepted and approved

---Reply from Customer on 04/20/2018---

Dear Madam or Sir,

This means that the same delineation sheet attached both yesterday & today is approved also?

Thanks,
Stan DuPont

FCC Response on 04/26/2018:

The last documentation illuminates on the pervious and hence approved

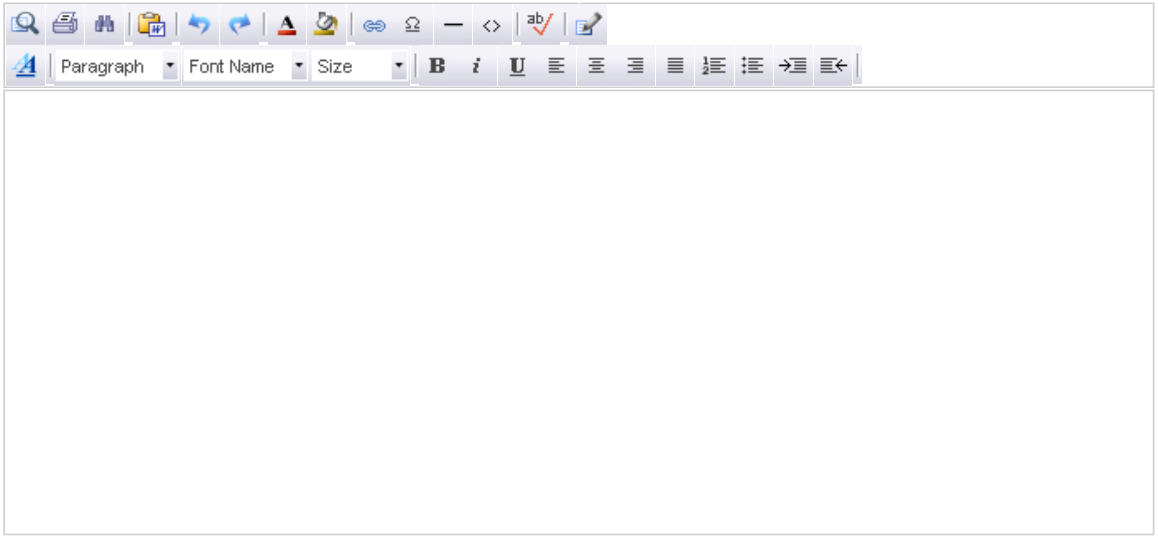
Attachment List:

2018_03-22_FCC ID NC3-24014VL_Low Duty Factor Wi-Fi Analysis
2018_03-22_FCC ID NC3-24014VL_Percent Low Duty Factor Wi-Fi
2018_03-23_FCC ID NC3-24014VL_PctLowDutyFactorWi-Fi Analysi
2018_04-04_Low Duty Factor Percentage Wi-Fi Analysis Delineation
2018_04-19_FCC ID NC3-24014VL_PctLowDutyFactorWi-Fi AnalysisDel
FCC ID NC3-24014VL Low Duty Factor SAR Exclusion Request
FCC ID NC3-24014VL Low Duty Factor Wi-Fi AnalysisDelineationWorkSheet
Image of FCC ID NC3-24014VL_LowDutyFactorWi-FiAnalysisDelineation
Low Duty Factor Wi-Fi Analysis Delineation Work Sheet

Low Duty Factor Wi-Fi Analysis Exclusion Request
PctLowDutyFactorWi-Fi Analysis Delineation sheet
SAR Analysis for WIFI Implementation on FCC ID NC3-24014VL Send1

Enter any additional comments below:

*(This is a text only field. Users will be able to upload attachments after clicking on the "Proceed" button below)



Proceed Clear

Please use the Submit Inquiry link at www.fcc.gov/labhelp to send any comments or suggestions for this site

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