

Re: FCC ID: NBZNRM-MIFI2372R  
Applicant: Novatel Wireless, Inc.  
Correspondence Reference Number: 86796, 87799  
731 Confirmation Number: TC791569  
Date of Original Email: 6/23/10, 7/13/10, & 7/14/10

Info from 6/23/10

fyi this application is among several similar identified for review - TCB please facilitate to submit response addressing the following

1) if not already clearly shown within internal photos exhibit, please amend to show WWAN and WLAN transmit antennas

[Please see additional Internal Photographs Provided.](#)

2) Battery Operated Wireless Hubs and Routers Battery operated wireless hubs and routers are typically packaged in a rather small form factor, similar to the size of most cellphones. It is not practical and also difficult, if not impossible, to prevent users from operating these types of devices in portable exposure conditions. Unless a device has specific means or mechanisms to ensure that it cannot be operated in portable exposure conditions, addressing RF exposure compliance with respect to mobile exposure conditions is generally inappropriate. Depending on the design and operating characteristics of an individual device, the use of caution labels on the device also may not always be effective in addressing exposure concerns. When external antenna ports are available or external antennas are specified for these types of small form-factor products, effective means must also be available to ensure external antennas cannot be operated by users in portable exposure conditions to allow such antennas to qualify for applying mobile exposure conditions. If these types of wireless hubs and routers can be operated through direct or short cable connections to a laptop or netbook computer, portable exposure conditions should generally be considered. When SAR evaluation is required to demonstrate compliance, the device should be tested on all sides with a device to phantom separation distance not larger than 5 mm to address RF exposure concerns in various operating conditions and configurations expected by users. Larger test separation distances are generally inappropriate for addressing RF exposure concerns for these types of devices. While acceptable manual instructions are necessary; however, such instructions do not substitute for appropriate testing to demonstrate compliance for consumer wireless devices. RF exposure for simultaneous transmission must be fully addressed for all transmitters in the device in all applicable operating modes. When applicable, the simultaneous transmission test reduction procedures for handsets in KDB 648474 may be applied through prior KDB inquiry and approval.

- [Note for this device external antenna ports are not available to the end user. From conference call presentations/discussions with the FCC the week of July 12, and further RT's as given below, SAR was tested per RT's of 6/23 and 7/14/10. Please see attached SAR report.](#)

Info from 7/13/10

The following TC application audit items are separate from the RF exposure item 2) in the 6/23/10 corresp. 86796 / 86797 of the above referenced application. Technical information for the separate RF exposure item remains due within 30 days of the date of its original e-mail; failure to provide the requested information may result in application dismissal pursuant to Section 2.917(c), or the grantee code may be temporarily constricted. due to Applicant Contact name differs from Applicant Contact email address in this filing, this corresp. is sent only to TCB form-731 Contact; TCB please coordinate with applicant for reply

1) user manual exhibit indicates "draft only" - please address 2.1033(c)(3), i.e. please submit actual installation and operations instructed furnished to users, as available

[This has been revised. Please see new users manual exhibit provided.](#)

2) user manual includes text: "FCC Equipment Authorization ID: NBZNRM-MiFi 2352 / 2372" as stated in numerous FCC-TCB conferences, although rules do not require FCC ID to be listed in user manuals, when listed by grantee choice then TCB must ensure it is correct the correct FCC ID for this specific filing is "NBZNRM-MIFI2372R", i.e. all capital letters, no spaces, no slash mark [2.926 etc] - please revise user manual exhibit as appropriate TCB also please inform accreditor about internal process improvements implemented to preclude similar review issues in future applications

[This has been revised. Please see new users manual exhibit provided.](#)

3) we note filing includes exhibit entitled "Deputy Letter" which appears to designate an alternate Form-731 contact; however we did not see that identified person listed in Form-731 - in future filings please ensure consistency across exhibits and Form-731 as appropriate

[Per KDB 852134](#)

[Authorized Individual Policy for 731](#)

<https://fjallfoss.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?id=33316&switch=P>

[another contact for the grantee was authorized for purposes of signing confidentiality letter\(s\). Additionally, there have been changes made to the Grantee contact as well for the future.](#)

4) for output watts ERP (800) and EIRP (1900), form-731 lines and EMC/radio report show: 824.2-848.8 1.16 GPRS 824.2-848.8 0.84 EDGE 826.4 - 846.6 0.23 WCDMA 1850.2-1909.8 1.64 GPRS 1850.2-1909.8 1.93 EDGE 1852.4-1907.6 0.66 WCDMA we note all except third line are same as listed on grant for similar device NBZNRM-MIFI2352R whereas MPE estimate in NBZNRM-MIFI2352R appears to use correct power data, in NBZNRM-MIFI2372R there appears to be math error at least for 850-band analysis - please revise that and other issues if any

[This has been revised. Please see MPE exhibit provided.](#)

5) an op. desc. exhibit mentions "Classic" and "Refresh" versions - where relevant for this filing please amend op. desc. to explain differences

[Please see additional exhibit uploaded in regards to this \(operational description\).](#)

Info from 7/14/10

TCB please forward asap to applicant contact (tgallagher@nvtl.com). This amends the preceding corresp. sent 6/23/10. FCC is providing the following additional clarifications about RF exposure evaluations for wireless-router device types such as this. Note that to qualify a device for mobile exposure conditions, other than basic user instructions in general there must be effective means or mechanisms available to ensure devices cannot be operated by consumers in portable exposure conditions. Although some years ago similar devices with "tethered" (cable-connected) operations only and no battery had been evaluated as mobile devices, latest technology devices have sizes and shapes such as could be expected to operate for example in a user's pocket under portable exposure conditions. To verify compliance with the exposure rules, FCC is requesting abridged SAR evaluation results for each device surface or edge closest to each WWAN and each WLAN transmitting antenna positioned at a device to phantom separation distance of 1 cm. In addition, simultaneous transmission evaluation using KDB pub. 648474 procedures must be applied and reported. A KDB inquiry should be used if additional testing guidance is needed for a specific device. Please address this SAR evaluation request as soon as possible within 45 days from the 6/23/10 initial technical info request correspondence sent about this matter.

Please see attached SAR report.

**NOTE From Applicant:**

You will note for the SAR reports we have submitted data at 1 cm as per the FCC request/guidance as well the report contains data taken to identify the distance away from the phantom we need to be at in order to pass 1.6 W/Kg in WCDMA PCS on the "Top" side of the devices.

ATCB