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RE: Trimble Navigation
FCC ID: JUP-5580090
IC: 1756A-5580090 and 1756A-55800

1) Your response to previous items 1) and 3) is not clear.
a) First, please confirm if the 450 MHz is intended for use with the 900 MHz TX at the same time or not. Manual suggests that unit may only be one radio or the other, but it is not clear if this is always the case. If they can be installed at the same time, then what precludes them from being co-located.

> The 450 MHz and 900 MHz transceivers are never installed at the same time. The device can be configured with one or the other.

b) If 450 and 900 may be installed at the same time, then additional information may be necessary (photos, RF exposure, explanations, etc.). Again are they considered co-located or what prevents them from being co-located?

> Not applicable, refer to response to 1(a).

c) It appears the 450 may be modularly approved and therefore not the scope of this application – except for possible RF exposure concerns. This may or may not apply given a) and b) above. However the scope of this application is on the 900 MHz version and therefore any combinations with 450 MHz would require either a 2nd FCC ID (for the modular approval) or a new FCC ID (to certify the whole unit for a particular set of transmitters). The current FCC ID only covers the unit itself with 900 MHz Radio and does not fully consider the 450 MHz radio (except for a possible RF exposure concerns)

> Correct in that the 450MHz operation is outside the scope of this application for FCC approval.

d) It is uncertain what is meant by your response to 3) when you cite that the BT is not co-located and continue to mention co-location will be dealt with in the grant notes. Please explain as these 2 facts appear to contradict each other. It may be that the intent was to deal with the 450 MHz version. However if the BT is co-located, then recent FCC information requires the grant notes of both approvals to address co-location.

> The comment was with respect to the 450MHz transceiver. For the 900 MHz transceiver, see response to (e) below.

e) Please explain why the BT is not considered co-located. Are all antennas always separated by > 20 cm? Note in the response provided, one of the antennas for the 900 MHz may be directly mounted on the EUT. Can the 2 transmitters operate at the same time?

It is expected that the grant conditions include a comment that the 900MHz is intended to be collocated with the module (FCC ID: Q2331307). The rf exposure exhibit explains that the contribution from the Bluetooth module (eirp theoretical max of 8dBm, 6.3mW) is negligible.

The MPE calculation has been revised.

2) Regarding considering the device as a PC peripheral – if the ports were only for setup and/or upgrading, these would not be deemed normal operation. However your description and the manual both support use for data communications/downloading information. This is no different than today's cell phones where you can download addresses, phone numbers, music, database information, etc. Even cell phones that allow for end-user connection to a PC are considered a PC peripheral device. Options available appear to be:

a) Device is considered as a digital device under Class A emissions
which required verification and appropriate information in the manual
b) Perform a DoC for the device as a PC peripheral and appropriately label and place information in the manual as directed by 2.1077,
c) Certify the device as a PC peripheral as well. This will allow all labeling information to stay the same, but will require appropriate test data and other possible exhibits as well as another grant (under the same FCC ID) would be issued.

The manufacturer wants to classify the device as a Class B digital device when used in its surveying mode (i.e. not connected to a PC). However, for data logging and other, temporary, connection to a PC, Class A digital device requirements are applicable. The manufacturer will deal with ensuring that the appropriate statements are included in the manual to reflect this.

Please advise if you require the corrected statements to complete the certification of the transceiver.

3) There appears to be a small shielded area on the back of the TX board. If not a shield please explain or provide photographs with the shield removed as well. Note that a second one of these shields also appears on the main board as well, however if the shield on the main board is not part of the radio circuitry, please simply explain this.

The device you point to in the picture is a TXO component.

4) It appears that this application is trying to take advantage of a modular approved Bluetooth device. However reviewing the original Bluetooth approval and grant notes does not show the antenna used in this device to be covered by the modular approved Bluetooth. Additionally, it appears that new testing may have been done on the Bluetooth, but the Bluetooth approval does not show any appropriate PC applications. Note that the labeling of this device is such that use of the modular approval is assumed as well as information from the last response. Currently it does not appear that the Bluetooth portion of this application has been requested to be reviewed nor covered by its last application. Options include certifying the BT + 900 MHz under a single FCC ID, but this will not allow flexibility of offering BT by itself or with other transmitters. Further information is necessary on how to handle the Bluetooth portion of this application.

A complete set of test data has been uploaded and the scope of the grant has been changed to include the Bluetooth operation within the scope of the approval for FCC.

An additional certification request for the version of the product with the Bluetooth but without the 900 MHz operation has been filed under FCC ID *JUP-55800*.

Test report, photographs and operation al description for the Bluetooth device were uploaded to support the Industry Canada application. In addition, external photos of the module have also been provided.

5) Regarding the theory – it is uncertain if the dwell time on a single frequency is always constant or is it variable? If variable, how is equal use on the average ensured.

The dwell time is constant.

6) To appropriately address IC application, various co-locations, RF exposure, and BT issues need to be resolved first as cited above. However of prime importance is understanding if the BT is approved for IC as a module or not (similar to FCC concerns above). It appears that for IC the entire device is being approved. The response for IC appears to also mention 2 different IC certification numbers but lists the same model numbers. Please briefly explain the difference in the certifications. Second – IC does not allow direct use of a model number more than once, even if under different certification numbers. May I suggest listing as PN (MN)? If so, then please update the IC form.

> Correct, the Bluetooth module does not have IC approval as a module therefore the manufacturer is requesting two applications for IC.
>
> The first, covered by this application, is for the configurations with Bluetooth and 900 MHz transceiver. The second is for the Bluetooth-only and Bluetooth with 450MHz transceiver.
>
> Thank you for the suggestion. We are confirming the part numbers, and their use on the IC label, and will update the application forms accordingly. We will advise once the forms have been updated and uploaded to the ATCB web site.

7) The Canadian label will have to show the manufacturer, model number and the IC number according to RSS-GEN 5.2.

> The label shows a placeholder for the model number and part number. The part number as listed on the label is being confirmed. Refer also to response to (6).

Regards,

Mark Briggs
Principal Engineer