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American TCB

December 21, 2005

RE: FCC ID: BRWDAMTX10

Attention: Tim Johnson

Please find our responses to your comments on this Application below:

1) Please verify labeling information. Internal Photographs provided appears to suggest a different FCC ID.

Internal photographs have been updated with the correct label. Original photographs showed the label for a lower-power version of this device

2) Agent letter was not provided – the exhibit labeled as such was actually a confidentiality letter. Please provide.

Agent authorization has been uploaded.

3) Please provide a bottom view of the board with the label removed.

Internal photographs have been updated with the correct label (moved to the front of the device and on top of the shield), a photo of the bottom of the board without the original label and photos of the top with and without shields have been uploaded as a new exhibit. (See also (1) above).

4) The device appears to be tested within a portable device. This type of device is commonly held against the stomach during use and 20 cm as a mobile device does not appear to always be possible. Note this type of transmitter commonly have a neck strap as well. Please review/explain in more detail the intended types of installations.

The device provided was used for convenience to provide power/signaling to the EUT, but the host system will not be used with this device.

The host systems that will use this device will be designed to ensure that the antenna and its feed point will be positioned on the device to provide a 20cm separation from persons. Further the host device will be designed to ensure that the normal location of hands on the controller and the location of the controls will also be more than 20cm from the antenna.

To relieve some of these issues please change the application to one for limited modular approval. The limitations should restrict the module's use to Horizon Hobby's end products.

5) Photographs regarding what antenna was tested (i.e. to be approved) was not provided. Please provide.

The antenna specification sheet and a photograph of the antenna have been uploaded.

6) Please comment on the high spur seen at 30 MHz on page 41.

The spur is, in fact, the artifact of “0Hz”, this occurs on the first plot plots but not on all. This is noted in the text immediately above the first plot.

As this artifact was 20dB below the fundamental the engineer did not re-take the measurement.

7) Users manual page 2 mentions a 200 mW EIRP rating, while page 3 mentions 20 dBm Radiated maximum. The report suggests 128 mW maximum. Please review/correct as necessary.

The guide has been updated to reflect the correct values of 21dBm for conducted power and 23dBm for eirp.

8) Instructions to the integrator appear to suggest use of the FCC Logo (DoC Authorization). However it is uncertain how this can be instructed to the integrator since it is uncertain how the device will be used (applicant doesn't control use by integrator, and integrator should only label DoC when applicable).

There is no justification for a DoC procedure for this device. The suggested use of the FCC logo has been removed from the user instructions.

9) The users manual should also caution the integrator that this device may not be co-located with another transmitter per FCC RF exposure requirements.

The wording *“To meet the rf exposure requirements of the FCC this device shall not be co-located with another transmitting device.”* has been added to the user manual.

10) Please explain the intent of this module as these are typically not allowed to be installed by the end user and also not clear what types of devices this is intended for. It is uncertain if these devices can meet appropriate RF exposure requirements if their intent is for a portable controller.

The modules will be used in purpose-built controllers that are designed to operate in the 2.4 GHz band (current units use alternative frequency bands for model control). There is no intent to provide the end user with the module, in fact the end user would not have access to the module as it would be installed inside the controller.

Limited modular approval is requested to limit use of the module to the Horizon Hobby.

See also item (4) above for rf exposure concerns.

11) FYI...It is recommended that the users manual provide information that the end user is not to be given information on how to install or remove this device.

As per your recommendation this instruction is included in section 5.1 of the user's guide.

12) FYI....Generally the FCC strongly prefers for the FCC ID to be visible to the user upon purchase and after installation (when possible). Modular approvals are somewhat unique in the respect that they do get integrated and it is hard to meet this requirement per se. However generally we see that these types of devices would place the labels on the shield of the device. By placing on the bottom side of the board, anyone opening the device (for any reason, including compliance issues) may not have access to the label, especially if the board is soldered in by the integrator instead of placed on a removable mount. We highly suggest that labeling be done on the shield on the other side of the board instead of underneath.

As per your recommendation the label is now on the shield.

13) FYI....Proposed Grant Notes: Power Output listed is Conducted. Limited Modular Approval (LMA) restricted to installation in devices manufactured by that applicant. Information must not be provided to the end user regarding how to install or remove this RF module in the user's manual of the end product which will integrate this module. The antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users must be provided with transmitter operating conditions for satisfying RF exposure compliance.

Noted and acceptable. Thanks.

#### **IC Specific Issues**

14) The IC label is missing the dash ("-") between the CN and UPN codes. Please correct.

Corrected and uploaded the label.

15) Please provide an RSS-102 attestation according the our new IC form and newly released RSS-102.

16) Occupied bandwidth on the form is reported as 1.52 MHz. Please explain as report suggests 1.2 MHz.

The form has been updated to reflect the correct 99% bandwidth and ITU designator code

The following documents have been uploaded to support this response:

- antenna photo.JPG
- Antenna spec sheet.pdf
- Appoint Elliot.pdf
- ATCB-Appendix I and II revised.pdf
- Internal Photos revised.pdf
- RSS 102 attestation.pdf
- X1TXN Label drawing revised.pdf
- X1TXN User Guide rev 1.pdf

Regards

  
Mark Briggs