

From: Mike Spataro ES-DEN

Suresh,

Question 1 and 2 below should have been addressed, I have sent plots and screen images for 1 and Goliath has sent a reply for 2.

In regard to question 6, the data you are asking for is in the test report in tabular form. 15.247(d) is not just 900 to 902 and 928 to 930 it is "any" emission outside the band. We are showing that in the section labeled 15.209/15.247(d). All other emissions are that are not in the band or harmonics of the fundamental are below the limits specified in 15.209. If there were emission seen between 900 to 902 and 928 to 930 they would be contained in that section of the test report.

In regards to question 9, FCC 1.1310 does not specify a distance, I'm attaching a new exhibit for RF exposure using OET bulletin 65, the calculation is based off of EIRP and a specified distance of 20cm.

In regards to question 10, yes the highest power and nominal cable were used. The general remarks in the test report state already that the highest power was used, it can be updated for nominal cable length as well. Let me know

Mike Spataro

-----Original Message-----

From: jack pyne [mailto:jpyne@goliathsolutions.com]

Sent: Tuesday, October 24, 2006 12:05 PM

To: Mike Spataro ES-DEN

Subject: Goliath tags

Mike,

The Goliath tags are what's considered "battery assisted" . They do not have any active transmitter components. The tags wake periodically and switch on and off an RF switch at the subcarrier frequency opening and closing a printed dipole on the circuit. The battery is used to provide the 1 or 2 uA of current required during this action. This is done simply to increase read range. In this sense they are passive.

It should be noted that the tags were tested and measured for unintentional emissions as a precautionary measure only. No spectrum came closer than 15dB to the limit. Also, Criterion Technology Labs and IA Labs have previously informed us that it was not necessary to certify tags with passive backscatter transmissions.

Jack

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Jack Pyne

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From: Suresh Kondapalli ES-MPK
Sent: Thursday, October 26, 2006 9:48 AM
To: jpyne@goliathsolutions.com
Cc: Mike Spataro ES-DEN
Subject: TCB Application Goliath tags and updated docs

Dear Jack,
I am reviewing your TCB application, I have following questions.

1) I have seen the Grant for Maxstream ZigBee wireless Module with FCC ID: OUR-XBEE. The grant condition states that it can not co-located with any other Transmitter.

Please explain how this has been addressed in design your equipment. You can support your statement with plots timing digrams.

2. MEU TX channel Dwell time and Channel Spacing documents are is in Excel/CSV format, We not able to decipher it. Please send me graph, plot or a screen shot of spectrum Analyzer.

Thanks,
Suresh Kondapalli
Intertek ETL SEMKO
Phone: 650-463-2928

Suresh,

I have added comments in red to your email below. I will submit updated exhibits to the TCB Admin.

From: Suresh Kondapalli ES-MPK
Sent: Saturday, October 21, 2006 7:13 PM
To: Mike Spataro ES-DEN
Cc: Robert Cresswell ES-DEN; Terre Wolak ES-ATL
Subject: RE: Goliath Solutions 3103930 FCC TCB submittal.

Hi Mike,

I have following questions regarding Goliath solutions

1) Test report does not show average time occupancy and number of hopping channels as required as per FCC 15.247 (a) (1) (i).

The theory of Operation states the average time of occupancy and number of hopping channels, the customer provided data I will forward it as an exhibit.

2) The theory of Operation states

"The MEU receiver uses direct conversion to extract the 460.8 kHz and subsequently extracts the tag data. Tag reads are

collected and transmitted to the SMU over a IEEE 15.4.2 wireless link."

There seems to be another Transmitter built in the unit, requires additional approval?. Please explain.

The SMU is an approved modular device by ZigBee, see theory of operation page 5 "Component Certifications".

3) Please explain why TX antenna port conducted measurements not used to show compliance with restricted emissions limits.

The TX antenna contains an amplifier and is connected directly to a circuit board as shown in Spider III TX antenna internal photos.

4) Form 731, Please correct Para 12 (power) to reflect maximum measured power, not rated power.

Form 731 will be updated and resubmitted.

5) Please confirm that all radiated measurements were at highest level power claimed.

The following or similar statement will be added to the test report and resubmitted. "All measurements were made at the highest power level."

6) Band edge compliance as per 15.247(d) is not shown in the Test report.

Band edge compliance is shown in the Test report under sections 15.209 and 15.247(b)(2)/15.205. "15.247 (d)" will be added to the test report.

7) Label does not seem to right, Label given is suitable for unintentional Radiator for DOC. No need for Frn # on the label

Should be FCC ID: Grantee code followed by product code FCC ID: XXXXXXXXXXXXXXXX (product code does not exceed 14 Arabic numerals and Capital letters).

Please see FCC 2.926 for details.

On or around October 6, an updated label was sent to the TCB Admin, do you have the updated label?

8) FCC ID does not seem to be consistent thought documentation, on some documents it is Spider III 10-100 and some documents it is Spider 10-100.

Please provide a list of documents that need to be updated.

9) 15.247 devices are required to provide a Separate RF exposure exhibit with application. additionally, Please note that the FCC only considers 20cms and greater for purposes of MPE calculations. Please review/correct/provide Power spectral density at 20 cm from antenna.

The RF exposure data sheet is contained in the test report. The EUT's TX and RX antennas are to be mounted on the ceiling, >20 cm.

10) User manual is required to contain RF exposure information. Typically this type of device would contain the following or similar.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons
and must not be co-located or operating in conjunction with any other antenna or transmitter.

Please update user Manual

The users manual will be updated and resubmitted.

11) Specifications/details of TX antenna should be added to the application.

The theory of operation describes the TX antenna on pages 9,10, it is referred to as ATA(active transmit antenna). Also, schematic 75-009k is for the TX antenna as well as internal and external photos in the external photos exhibit and TX internal photos exhibit.

Please reply back to me as soon as possible,

Thanks,

Suresh Kondapalli

Team Leader & TCB Approver

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