

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

**From:** Curtis-Straus Certification Dept. [mailto:[certification@curtis-straus.com](mailto:certification@curtis-straus.com)]  
**Sent:** Tuesday, November 26, 2002 6:27 PM  
**To:** Teresa White  
**Cc:** Jim Blaha  
**Subject:** Ember FCC ID: QMLEMBER2002

Hi Teresa,

Our reviewers have identified the following issues:

1. The module datasheet specifies an input voltage range of 3.0 to 5.0 volts however the 15.31(e) requirements were conducted at 5.0 v +/- 15%. Please supply new data.

See response below.

2. The modules datasheet indicates this module is also for use within a portable device. This application will need to be resubmitted in the portable category. There may be SAR issues to address.

New specification and manual submitted showing this module is only to be used in mobile or fixed applications.

3. Please submit a complete manual.

Submitted.

4. Please describe the type, length and construction of the cables attached to the multi pin headers during the spurious radiated emissions testing.

See response below.

5. Please confirm the device was rotated through three orthogonal planes to maximize the emissions.

Testing was conducted only with the antenna mounted vertically. Manual states that the antenna should be mounted vertically.

6. Please supply a block diagram.

Supplied.

7. Please supply a MPE calculation.

Supplied.

Best regards  
Barry C. Quinlan  
Certification Manager  
Curtis-Straus TCB

**Response to questions about the Ember filing**

**From:** Abtin Spantman [aspantman@lsr.com]  
**Sent:** Friday, December 06, 2002 2:03 PM  
**To:** Teresa White  
**Subject:** Response to questions about the Ember filing

Teresa:

The following is a response to the questions that had arrose from the Ember filing, on the power supply variation to be more specific.

The operating voltage for the Ember node has been defined as 3.5 volt to 5.0 volt DC, and was tested at 15% below the minimum (2.975 VDC), and 15% above the maximum (5.750 VDC), accross low, mid, and high channels. There were no appreciable differences at 5.750 VDC, in frequency or output power. At 2.975 VDC, the power output was reduced by approximately 7dB, but the frequency was stable, with less than -0.1 MHz deviation.

Best regards,

**Abtin Spantman**  
EMC Engineer

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**Ember test fixture**

From: Kenneth L Boston [kboston@lsr.com]  
Sent: Friday, December 06, 2002 2:27 PM  
To: twhite@lsr.com  
Subject: Ember test fixture

Hi Teresa,

the following description of the emberNet Node test fixture is described, for response to item #4 in the e-mail from Curtis-Straus on Nov 26 regarding Ember, ID: QMLEMBER2002.

The Ember TX/RX module, about 1.5 by 2.2 inches is attached to a small plexiglass base, of 1 by 5 inches. 2 leads attach to the 24 pin header on the antenna end of the board, and are jumpered over to the 32 pin header, about 1.75 inches back. From this header, 8 leads of about 0.75 inches length run to an 8 position dip-switch, in a 16 pin SOIC package. From the 24 pin header, a pair of 24 gauge insulated leads run off the Plexiglass base, for a length of about 1 meter, to the 5 volt regulated DC (H. P.) supply. a picture of the fixture can be found on page 14 of the test report, 302319.

Please respond if further details are needed.

Kenneth L. Boston  
EMC Lab Manager, PE, NCE

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