



Elliott Laboratories Inc.
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RE: Moteiv Corporation
FCC ID: TOQTMOTESKY

1) The block diagram provided appears to be for a system of some type and not the TX itself being approved. The block diagram should show the frequencies of all oscillators in the TX portion of the device (CFR 2.1033(a)(5)). Please provide.

Response: New block diagram has been provided. Since the chip is from another vendor they did not wish to provide block diagram without further information on the frequency for the filters and LO's, VCO's.

2) It does not appear that a confidentiality letter was provided. Please explain if confidentiality is necessary for any exhibits associated with this application. If so, please provide a confidentiality letter.

Response: Client does not wish confidentiality at the moment.

3) This device appears to be a PC peripheral as well. However the device does not appear to be labeled nor does the user manual appear to support a DoC. It is uncertain how the device is being approved for the PC peripheral portion of the device. Please explain if DoC or Certification is being pursued for this portion of the device.

Response: Only Certification is being sought for this device. OEM integrator will perform a DoC or verification on the final product. We performed a Part 15 class B verification for the digital portion of the device as a stand-alone module.

4) The RF exposure information appears to use different antenna gain information than specified in the report (i.e. page 23 of the report). Please review.

Response: This has been revised to show the correct antenna gain.

5) Antenna gain information could affect the power and PSD tests since this is factored into the equations. Please comment.

Response: The measured field includes the antenna gain since the values are converted into dBm by using a theoretical 95.2dB conversion factor. This is explained on the note below the power and psd tables.

6) Data for average mode appears to use a 300 Hz VBW. However, for average measurements, the VBW must be $>1/T_{on}$ time. From the information given regarding duty cycle, it appears that a proper video bandwidth of 1250 or 2000 Hz would be required or higher. Please provide sufficient information to show compliance to T_{on} time with proper VBW settings. It may be best to support a worse case duty factor correction and only provide average measurements based on the mathematical correction. Please review.

Response: This has been corrected. The average value is now determined by subtracting the duty factor (-14dB) from the peak measurement.

7) Peak and average data at the fundamental were taken using 10 Hz RBW for average as well. It is uncertain if 5) above will affect this reading also. Also, it is uncertain why the peak to average delta at the fundamental is only 3.8 dB when much higher would be expected if the device was actually transmitting packets. Was this test done with the fundamental in Continuous CW transmission. Please review and explain. It may be preferred that average results for the fundamental also be done with worse case duty cycle correction.

Response: The first time the radio was being tested it was set by the manufacture to transmit short data packets. We ask the client to modify the radio to continuously transmit packets. This explains the minor difference in the peak to average delta values.

8) Several places in the report that discuss the duty cycle correction mention more information is needed and the measurements made were worse than information provided. Please review and correct or provide further information as necessary.

Response: Revised report to remove the “need more information” statement. Revise report uploaded.

9) There appears to be a very large difference between 6 dB and 99% bandwidth. Additionally, the 99% is typically close to the 26 dB bandwidth, which is only about 3 -6 MHz from reviewing many of the plots. Please verify that both are correct.

Response: Data has been included to show the 26-dB bandwidth. Unfortunately the software did not correctly calculated the bandwidth so below each plot is included a calculated 26-dB bandwidth determined from FL and FH. All show that the 26-dB bandwidth is 4.5 MHz. This has been corrected in the report also.

10) Please comment on if the 99% bandwidth was measured using IC techniques as specified in the attachment?

Additionally, this typically requires using $RBW > 1\%$, $VBW > 3*RBW$ and NO Video Averaging? RSS-GEN, section 4.4.1, issue 1. Please correct the IC form as necessary.

Response: Plots showing the setting used to measure the 99% (or 26-dB) has been provided for your review. The actual measurement was taken with $RBW=VBW=100kHz$, no video averaging.

11) This device may be powered from a host device, which derives its power from AC. Therefore this device must be subject to AC powerline emissions due to indirect AC supplied power. Please refer to the provided attachment as well.

Response: AC power line data has been uploaded.

12) Page 24 of the users manual mentions a pending FCC ID. This should be corrected.

Response: This has been corrected. The manual has the FCC ID number now.

13) Given the nature of the device, was it checked in 3 positions in effort to obtain worse case positioning?

Response: Pre-liminary scans were made in a chamber to determine worse case orientation. Worst case was determine to be laying flat and was used for final measurements.



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14) Device does not appear to be properly labeled for IC, including Certification Number, model and manufacturer name according to RSS-GEN, Section 5.2. Please review.

Response: Due to the size of the device only the IC certification number can be place on it. The rest of the information can be found in the manual page 24 of 27.

15) FYI.....This device appears to support a possible external antenna. Please note that currently this option is not covered by this application.

Response: Understood. Client is aware of this restriction.

Regards,

A handwritten signature in black ink that reads "Juan Martinez".

Juan Martinez
Senior EMC Engineer
JM/dmg