



RE: Microwave Data Systems
FCC ID: E5MDS-2710AC

1.) It appears the most applicable FCC Rule part for this device is 90.259. Do you concur with this finding?

Response: Yes we concur.

2.) With your permission, I propose to call this device a "Point to Point/Multipoint Wireless Modem." Is that acceptable to your client?

Response: Yes this is indeed a wireless modem that is used in a point/multipoint applications

3.) With your permission, I will state the frequency tolerance on the Grant as 1ppm. It is not necessary to state the measured frequency tolerance on the Grant.

Response: This will be fine with us.

4.) The FCC is usually very emphatic about having a tune-up procedure for any filing even when no user serviceable parts are accessible. This could be simply a tune up procedure for how it is adjusted on the factory floor. Of most interest to FCC is how this device will maintain its RF Pout. Kindly provide a tune up specification for this product. Please be advised that this can be held Confidential assuming it is listed in the Confidentiality Request letter.

Response: The 2710AC radio is a DSP based digital radio modem that is software controlled and factory calibrated. When the radio requires any adjustment other than receiver helical tuning, the radio is returned to the factory where a comprehensive process is followed for calibrating. The radio is connected to a RS232 port, test and alignment software is loaded, then through a combination of LABVIEW software and MDS test and alignment software, the radio is calibrated. The tests include a wide array of IEEE bus driven equipment controlled from a host server, the radio's barcode is read and the software is automatically loaded, the barcode details all the radios settings from RX channel, TX channel, RF power settings, Modem settings etc. Once the radio configuration is read, the local computer gathers all the data and writes it to server for future reference. The only factory adjustable part in the entire radio is the receiver front end helical filter, and this is tuned by the test operator for best receiver sensitivity on channel. The RF power is calibrated using a forward power detector on the PCB, this voltage is logged and stored in the Micro, so the according "A to D" value reflects a particular RF power setting. Typically all the SCADA radios we manufacture calibrate from +20 to +37dBm in 1 dB steps. So a typical value might be FPWR (forward power) 255 will equal +37dBm etc. This is all stored and referenced and thus the RF power is constantly under a forward, closed loop power control. All this information is stored in the Micro on the radio, then the final customer configuration is set and the radio is shipped. This above information is not required to listed as confidential.

5.) FYI: In my research, I found just a few products which utilize this frequency band under Part 90. Several applicants submitted Transient Frequency Response data as a part of this filing. Although not specifically called out in the technical standards for Part 90, kindly be aware that this data may be requested. It may be prudent to perform this test and make it available as a supplement to this filing.

Response: Understood. We will perform the transient measurements just in case FCC does ask for them. Please proceed with the application and grant while we set the time to schedule the transient test.

6.) In response to your answer to my question #6 from my October 1 questions, the Grant Notes will specifically state that this device will be limited to outdoor use only on permanent structures. Indoor use will be prohibited. If indoor use is sought, then a more comprehensive indoor installation procedure must be included.

Response: Right now outdoor use is typical, the 220MHz band is not generally used indoors, and if it is, usually a omni unity gain antenna is used. In this case all the FCC radiation hazards must be met and the MPE safety distances must be figured according to transmit power.

With a 2 watt radio, with a 0 gain antenna, and a 50% duty cycle, at 216MHz, the RF safety distance is only 11 inches. This can easily be met in a typical roaming cart application.

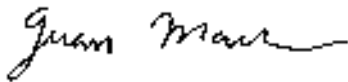
We have no control over the end user/installer and their application, but we can distribute RF safety literature with the radio in this case, I referenced above.

If the device is used indoors we will ensure the FCC MPE/RF Safety guideline information is distributed to proper personnel.

If the above generic information is not good enough to satisfy the TCB for indoor installation, then it is OK to list the grant as outdoor installation only.

Also if we have a customer in the future that wants to use this at a indoor factory we will have to file class 2 change to allow indoor installation.

Regards,



Juan Martinez
Sr. EMC Engineer