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January 14, 2002

RE: FCC ID DE 8-2011 Pending Application

Mr. Joe Dichoso
Office of Engineering and Technology Laboratory
Federal Communications Commission
7435 Oakland Mills Rd
Columbia, MD 21046-1609

Dear Mr. Dichoso:

I have been requested to supply some additional information at the request of Mr. Steve Cheng from CCSEM test lab (who did the testing and application for the FCC ID DE8-2011) and which is under additional question concerning the DATA BUFFER. I am responding to your request as the GRE America President and Design Engineer for this DE8-2011 RF Module Application.

I am assuming that term "buffer for modulation/data input" means same as providing limiting circuit at modulator input data lines to prevent RF module from over-modulating, and not other common meanings of BUFFER like inverter circuit, or memory to temporary store data like for streaming video or audio.

The RF Module DE8-2011 utilizes a digital PSK,QPSK phase modulation technique which is used for the Direct Spread Spectrum modulation transmitter. Therefore this RF Module does not perform the same as FSK or AM modulation. Data is 3 volt logic only. This over modulation does not happen when the input data voltage changes.

The input data will be 0 or 3, 3V DC to modulate the wide band spread spectrum that the occupation bandwidth data indicated within the test report,

page 17 of 96. This RF Module requires a maximum 3.3V dc to interface from other hardware. If more than this voltage is applied to the data input, the RF Module will not have any over modulation.

However the Module will damage it self . The GINA Technical Users Manual clearly states this WARNING in order to avoid any damage. Therefore, this FCC ID DE8-2011 does not require any data buffer.

I trust you now better understand the operation of the Applicant DE8-2011.

Best Regards and with my Sincere Appreciation,

Teru Takahashi

President,
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