U.S. TECH
A TRADITION IN TESTING SERVICES

March 10, 2005

Attention: Mr. William Graff
ATCB

Bill,

Following is our response to your comments.

RE: Nivis, LLC
FCC ID: SQBNIVISP9050103

I have a few comments on this Application. Depending on your responses, kindly understand there may be additional comments.

1.) Please note the Confidentiality Request letter asks for the Manual to be held Confidential. This is not permitted under the FCC rules and interpretations, except in very specific circumstances. Kindly either remove the references to Manual from the Confidentiality Request letter or provide substantial justification for its inclusion.

As in previous submittals, this product is a modular transmitter, and the manual is only intended for supply to the integrator. The end user will not receive these instructions. For that reason, the request to hold the manual in permanent confidentiality is made, to prevent users from accessing the commands provided exclusively for the integrator of the module. Nivis will supply a cover letter to the integrator instructing that all information contained in the integration manual is restricted from the end user, under FCC rules and interpretations.

2.) The photographs lump both Internal Photos and External Photos into one Exhibit. This is not permitted. The FCC database requires separated Internal and External photos without exception. FYI: May I suggest that all Module photos show all antennas and the device with RF shields intact as External photos, while all views with shields removed should be considered Internal Photos. This is generally the best practice.

Photos have been changed and uploaded as you suggested.

3.) The Manual indicates the end user has access to RF channel selection, RF power control, modulation on/off, etc. This is a violation of 15.15(b) which reads in part: “Except as follows, an intentional or unintentional radiator must be constructed such that the adjustments of any control that is readily accessible by or intended to be accessible to the user will not cause operation of the device in violation of the regulations.” Since it appears that the end user can alter the characteristics of this device so that it will no longer operate as a spread spectrum frequency hopping transmitter, I do not see how this meets the requirements. See the definition of a Frequency Hopper as defined under 2.1(c) and review the Manual carefully.

As stated in item 1, this manual is intended for the integrator only. These commands are for testing and design specifications while incorporating the module into the end product. The final version will operate as tested.

4.) I do not understand the method expressed in section 2.11 of the Test Report. Is the manufacturer dictating the measurement bandwidths (RBW and VBW) to be used during this measurement?

The statement was a misprint. The RBW was set to 1% of the operating bandwidth. This has been corrected in the report.

5.) I am not convinced the 8dB duty cycle correction specified in your Test Report is valid. Consider the fact that a 1MHz RBW is specified for measurement above 1GHz. If I analyze the hop sequence provided, there are many instances when the carrier hop does not exceed 1MHz. Therefore I cannot be sure that the carrier will not add extra energy to average measurements at, say, the third, fourth or fifth harmonic. This difference may be critical for compliance with the provisions of 15.205. Your comments would be appreciated.

My response is taken from FCC publication Number 575077.

"If the dwell time (transmit time) of the Equipment Under Test (EUT) on a single channel, under normal operating conditions, is less than 100 ms, then an additional duty cycle correction may be mathematically applied to the measured average value. This correction is calculated from 20 log (dwell time/100ms). If the dwell time of the EUT on a single channel exceeds 100 (corrected from 199) ms, then this duty cycle correction is not applicable.

The number of channels to which the EUT hops has no bearing on this calculation."

It is my understanding that this method is acceptable for all FHSS transmitters, regardless of number of channels, based upon time of occupancy of each channel, and we have followed that method in this instance.

6.) The hop sequence is not truly "pseudorandom". Hops appear in groups of three which sequentially increment 910, 911, 912…927 MHz. Please review with your client. If this creates a significant design problem with your client, I will be happy to consult with the Commission for a "second opinion".

The client has responded to this by stating that they provided a pseudo-random hop table by mistake. Please disregard this list from the review.

If you review the frequency to channel list, you will see that the frequency assignments per channel are assigned using a pseudo-random order. The client has chosen to assign the frequencies in a random order, then sequentially transmit each channel in order (0-49), thereby creating a pseudo random hop sequence of the frequencies, in this manner.

7.) FYI: Please remember that, by definition, the receiver must hop in synchronization with the transmitter. This is true with all frequency hopping spread spectrum devices.

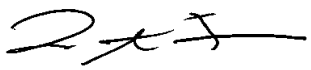
Thank you.

8.) The Theory of Operation in section 5.1.1 indicates this device operates outside of the 902-928MHz band allowed for Unlicensed spread spectrum operations. Moreover, this device appears to operate outside of the requested frequency range requested on Form 731. Please address.

The Theory of Operation has been corrected and uploaded to reflect 902-928 MHz.

Please contact me with any further comments,

Sincerely,



Louis A. Feudi
Operations Manager