Tom Tidwell

From: Tom Tidwell
Sent: Tuesday, January 29, 2008 10:55 AM
To: 'David Webb'; Tom Frederick
Cc: Larry Conway; David Light
Subject: FW: Response to Inquiry to FCC (Tracking Number 510799)
Importance: High
Attachments: image002.png; oledata.mso

Looks like we got the “thumbs up” from FCC.

Tom

Nemko

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From: oetech@fcc.gov [mailto:oetech@fcc.gov]
Sent: Tuesday, January 29, 2008 10:13 AM
To: Tom Tidwell
Subject: Response to Inquiry to FCC (Tracking Number 510799)

Office of Engineering and Technology

Inquiry:

We have a question regarding the ?average time of occupancy? according to 15.247(a)(1)(i). The system under test uses an algorithm that dictates exactly 50 channels are used. The hopping sequence is generated as follows:

1. The set of 50 channels is shuffled in random order.
2. Transmit each channel in the order set by step 1 for equal, fixed periods of time. This time can be from 0.3 sec to 0.4 sec. but never more than 0.4 seconds.
3. When the last channel is completed from the set, the order of channels is shuffled as in step 1 and the sequence is repeated.

This reshuffling algorithm guarantees each channel is used equally. By construction each channel will be used 1/50 = 0.02 = 0.4 seconds / 20 seconds, which satisfies the *average* occupancy limit over time.

The test guideline in **DA 00-705** does not seem to allow for measurement of the ***average*** on this particular system. If we set the spectrum analyzer in time domain and adjust the sweep time to show a 20 second sweep it is statistically possible that we may trigger the measurement such that we capture two 0.4 sec dwell sequences within a 20 second period although the average occupancy is less. We would like to propose a slightly modified method of measurement.

Time of Occupancy (Dwell Time)

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = zero span, centered on a hopping channel
RBW = 1 MHz
VBW ³ RBW

Sweep = as necessary to capture the entire dwell time per hopping channel (**WE PROPOSE USING TWO PLOTS AS SHOWN BELOW. THE FIRST PLOT WOULD DEMONSTRATE THAT ONE DWELL SEQUENCE DOES NOT EXCEED 0.4 SECONDS. THE SECOND PLOT WOULD SHOW THE USE OF THAT CHANNEL OVER A PERIOD OF 100 SECONDS TO DEMONSTRATE THAT THE AVERAGE DWELL TIME DOES NOT EXCEED 2%.**

Detector function = peak
Trace = max hold
Use the marker-delta function to determine the dwell time.

Given the values from the attached plots:

TIME OF OCCUPANCY
(0.312sec x 13)/200sec = 0.02
0.02 x 100 = 2%

Is this method acceptable?
312 mS pulse

Response:
We accept your proposed method for average dwell time as described.

Do not reply to this message. Please select the Reply to an Inquiry Response link from the OET Inquiry

System to add any additional information pertaining to this inquiry.