

Report Number: 06-0105

Issue Date: July 6, 2006

Customer: Nivis, LLC

Model: Nivis NRD Module Model IC-NRD2-01-01

2.11 Band Edge Measurements

Band Edge measurements were made at a Low Channel and High Channel peak at highest EUT related emission outside the occupied bandwidth. A peak measurement was made of the fundamental, and the emission was measured using a peak setting. A Resolution Bandwidth of $> 1\%$ of the emission bandwidth was used. This procedure was repeated for the high channel.

The plots shown were verified using a 17 foot, Flexco cable and Horn Antenna. No preamp was used.

The limits were derived as follows:

High Bandedge

$5000 \text{ uV/m} = -32.02 \text{ dBm}$

$-33.02 \text{ dBm} - 31.88 \text{ dB (antenna factor and cable loss)} = -64.9 \text{ dBm}$

$-64.9 \text{ dBm} + 9.54^* \text{ dB} = -55.36 \text{ dBm limit}$

Low Bandedge

$-33.02 \text{ dBm} - 32.03 \text{ dB (antenna factor and cable loss)} = -65.05 \text{ dBm}$

$-65.05 \text{ dBm} + 9.54^* \text{ dB} = -55.51 \text{ dBm limit}$

* -9.54 dB correction from 3m to 1m distance.

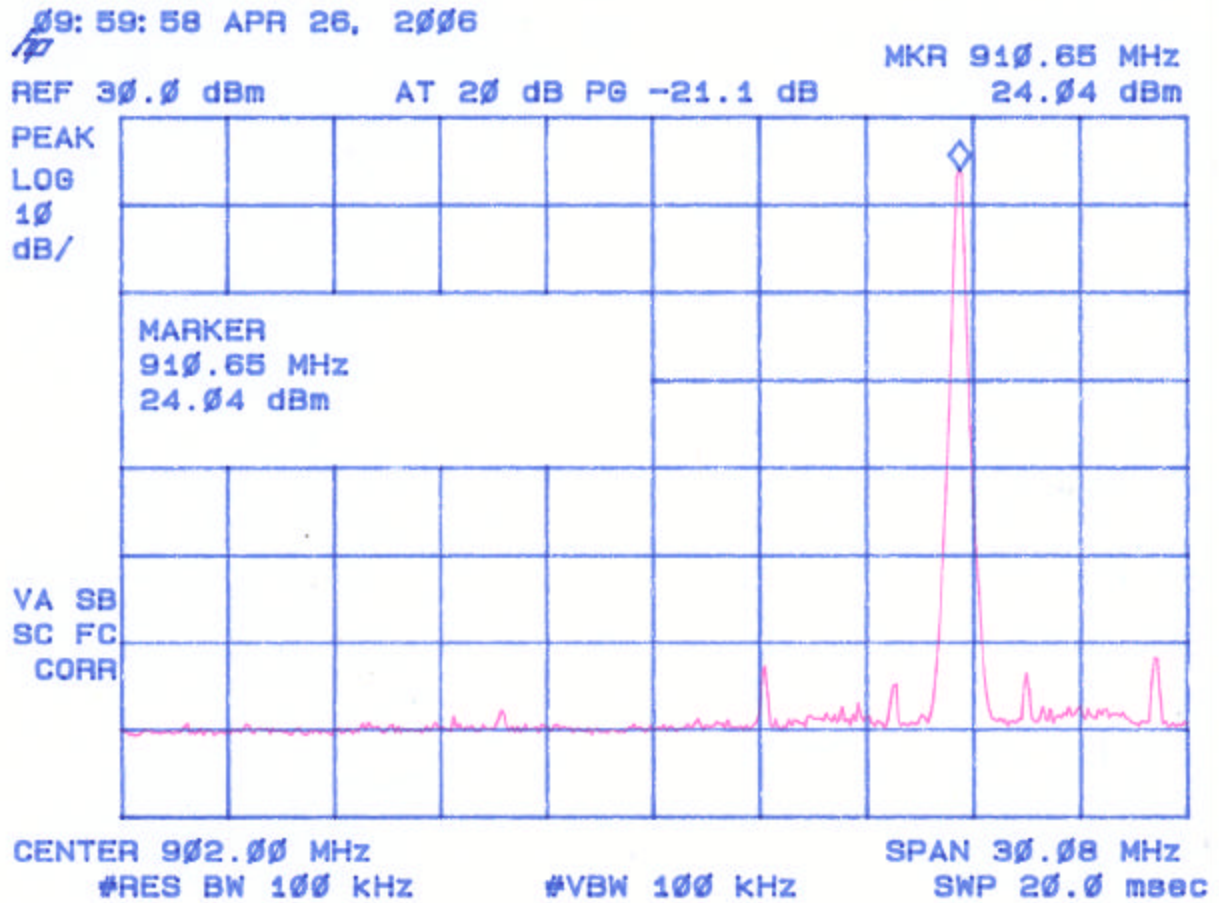
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**Figure 7a. Band Edge Compliance
Low Channel (conducted)**



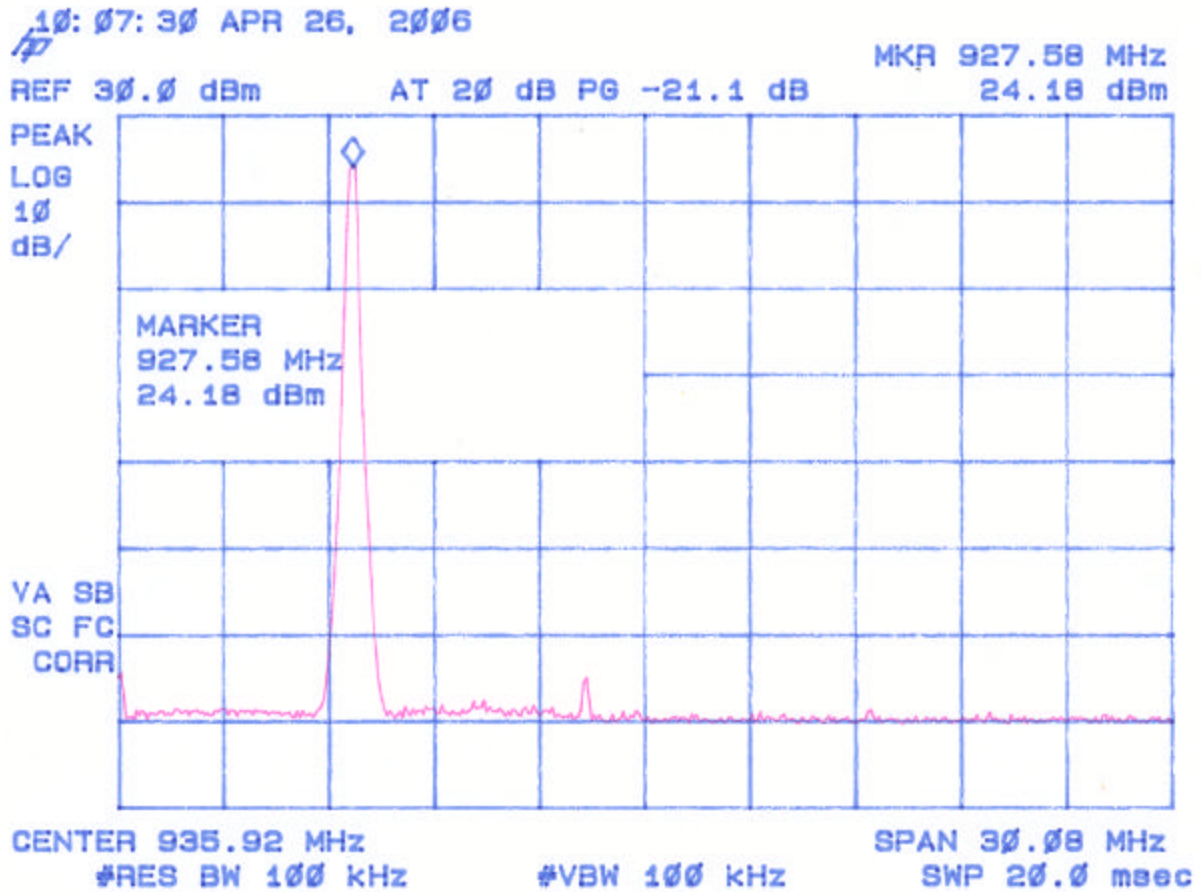
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**Figure 7b. Band Edge Compliance
High Channel (conducted)**



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2.12 20 dB Bandwidth per FCC Section 15.247(a)(1)(ii)

The antenna port was connected to a spectrum analyzer that was set for a 50 Ω impedance with the RBW = approximately 1/100 of the manufacturers claimed RBW & VBW > RBW. The results of this test are given in Table 5 and Figure 8a through 8c.

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TABLE 5
20 dB Bandwidth

Frequency (MHz)	20 dB Bandwidth (MHz)	MAXIMUM FCC LIMIT (MHz)
910.5060	0.0355	1.0
919.1762	0.0315	1.0
927.5000	0.0230	1.0

Test Date: April 25, 2006**Tested by
Signature:****Name:** Austin Thompson

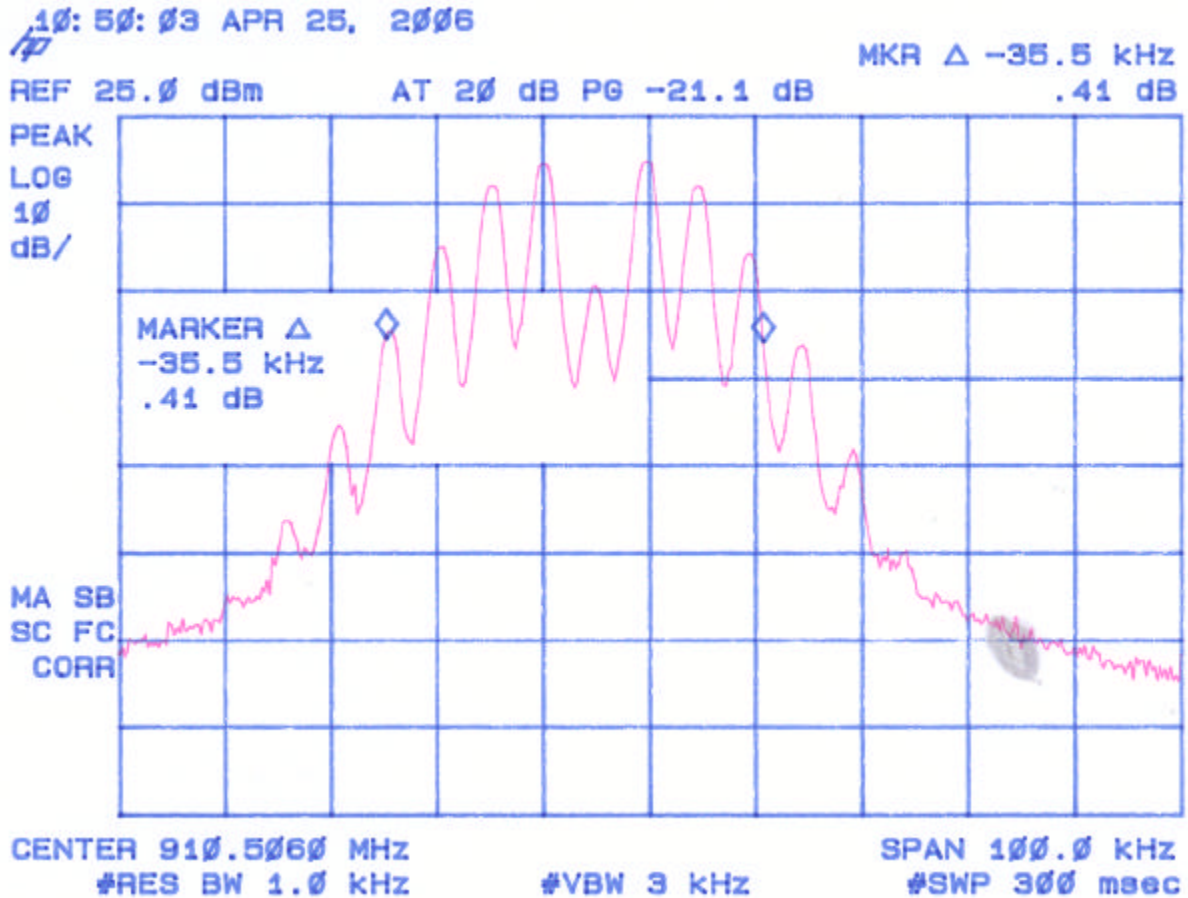
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Figure 8a.
20 dB Bandwidth per FCC Section 15.247(a)(1)(ii) (Low Channel)



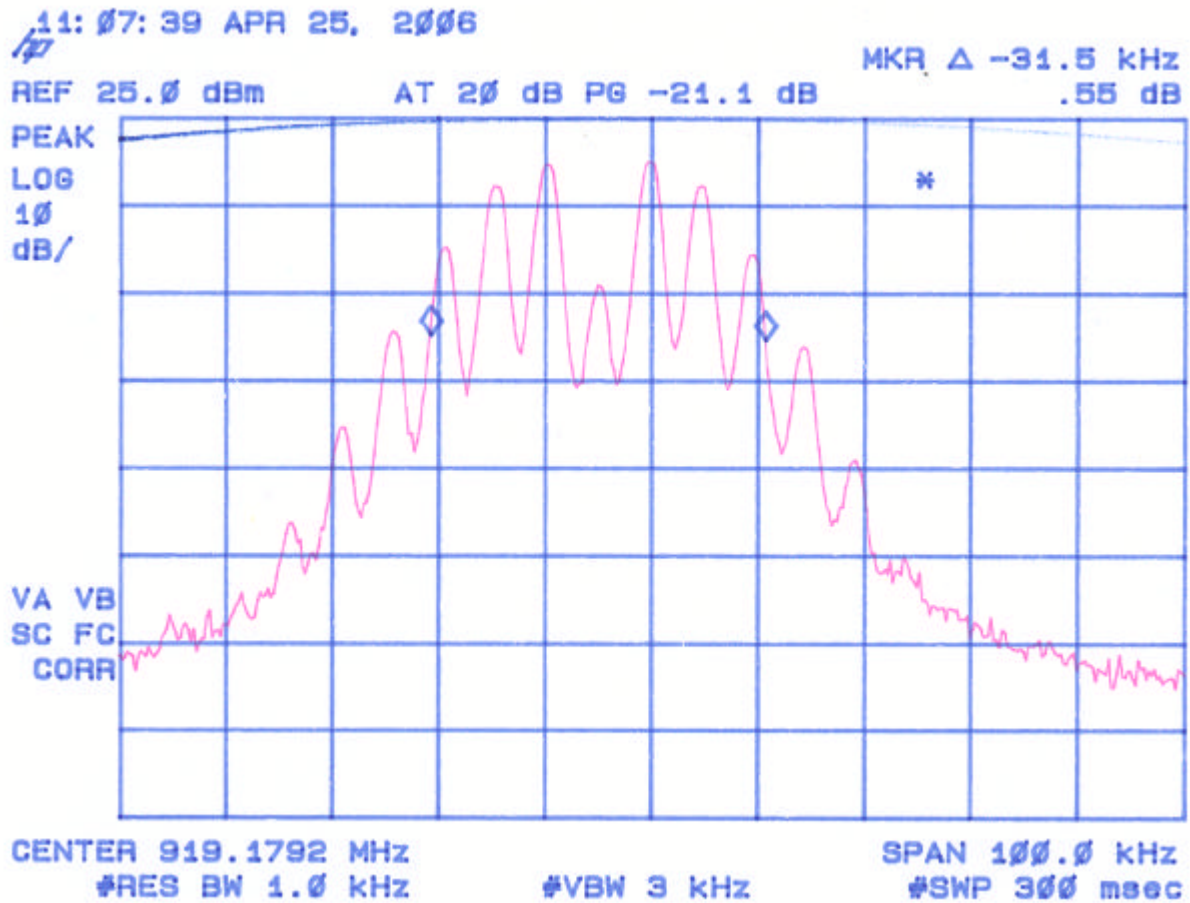
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Figure 8b.
20 dB Bandwidth per FCC Section 15.247(a)(1)(ii) (Mid Channel)



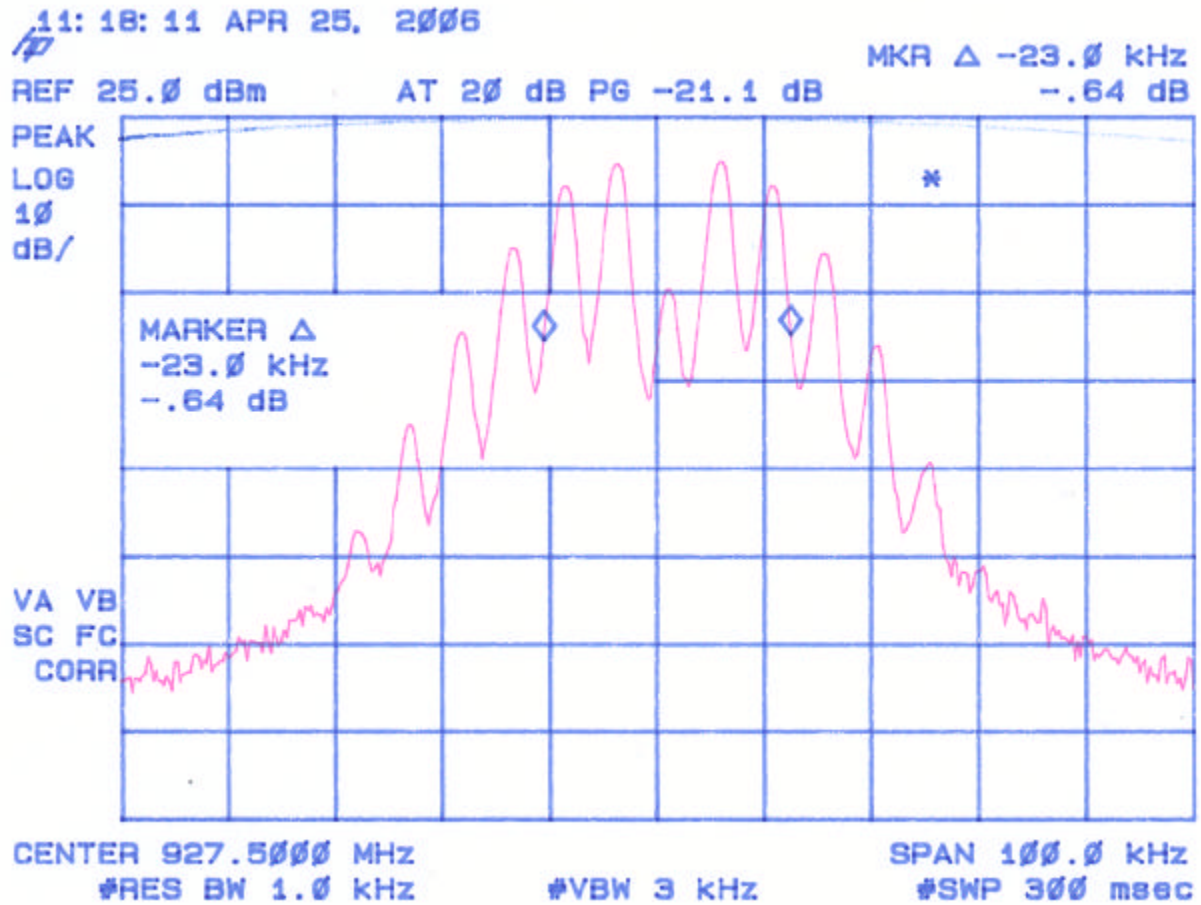
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Figure 8c.
20 dB Bandwidth per FCC Section 15.247(a)(1)(ii) (High Channel)



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2.13 Number of Hopping Channels FCC Section 15.247(a)(1)(ii)

The transmitter was placed into a typical frequency hopping mode of operation. The 902-928 MHz band was centered on the screen and the RBW and VBW chosen such that the individual channels could be discerned. The trace capture time was a minimum of 5 minutes.

The results of this test are given in Table 6 and Figure 9a-9c.

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TABLE 6**NUMBER OF HOPPING CHANNELS**

Number of Hopping Frequencies Measured	FCC Limit (Minimum Number of Channels)
50	50

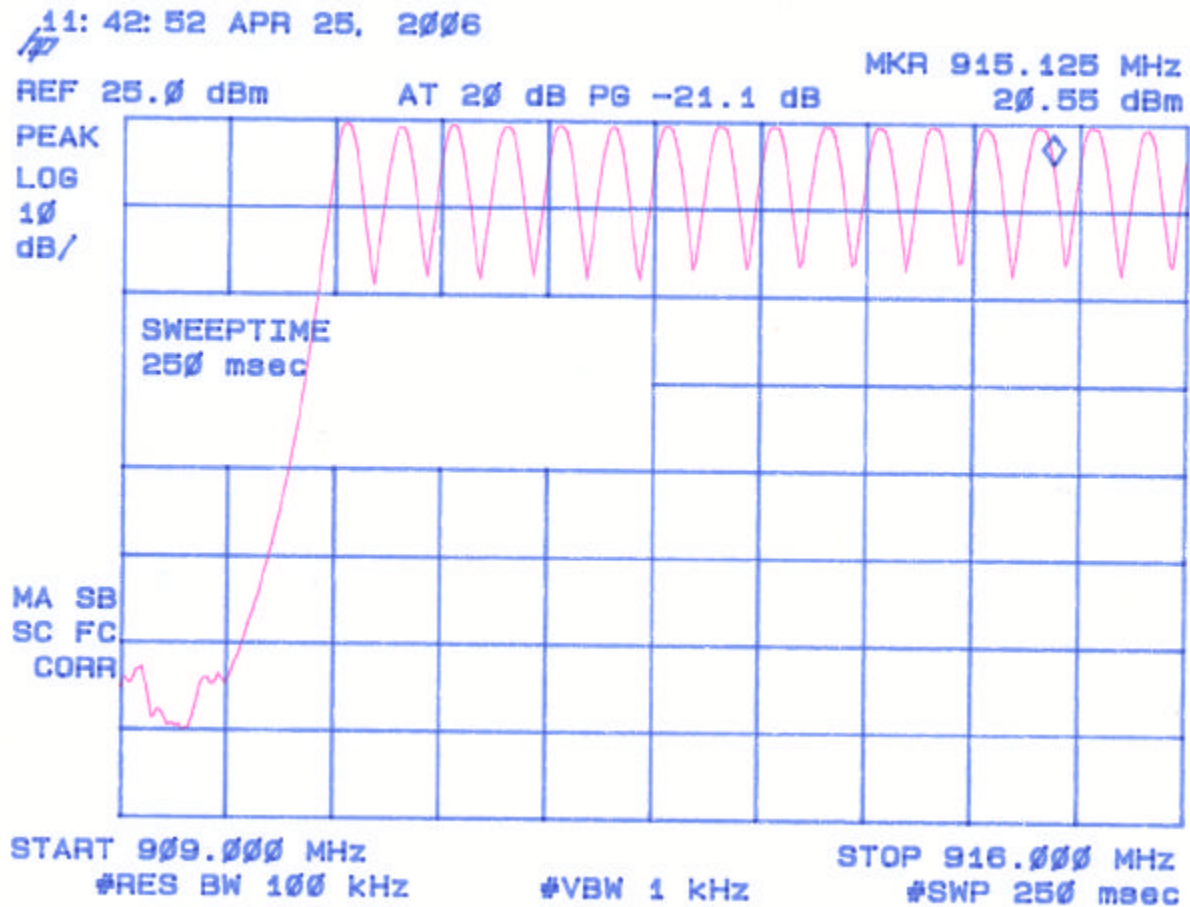
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Figure 9a
Number of Hopping Channels FCC Section 15.247(a)(1)(ii)



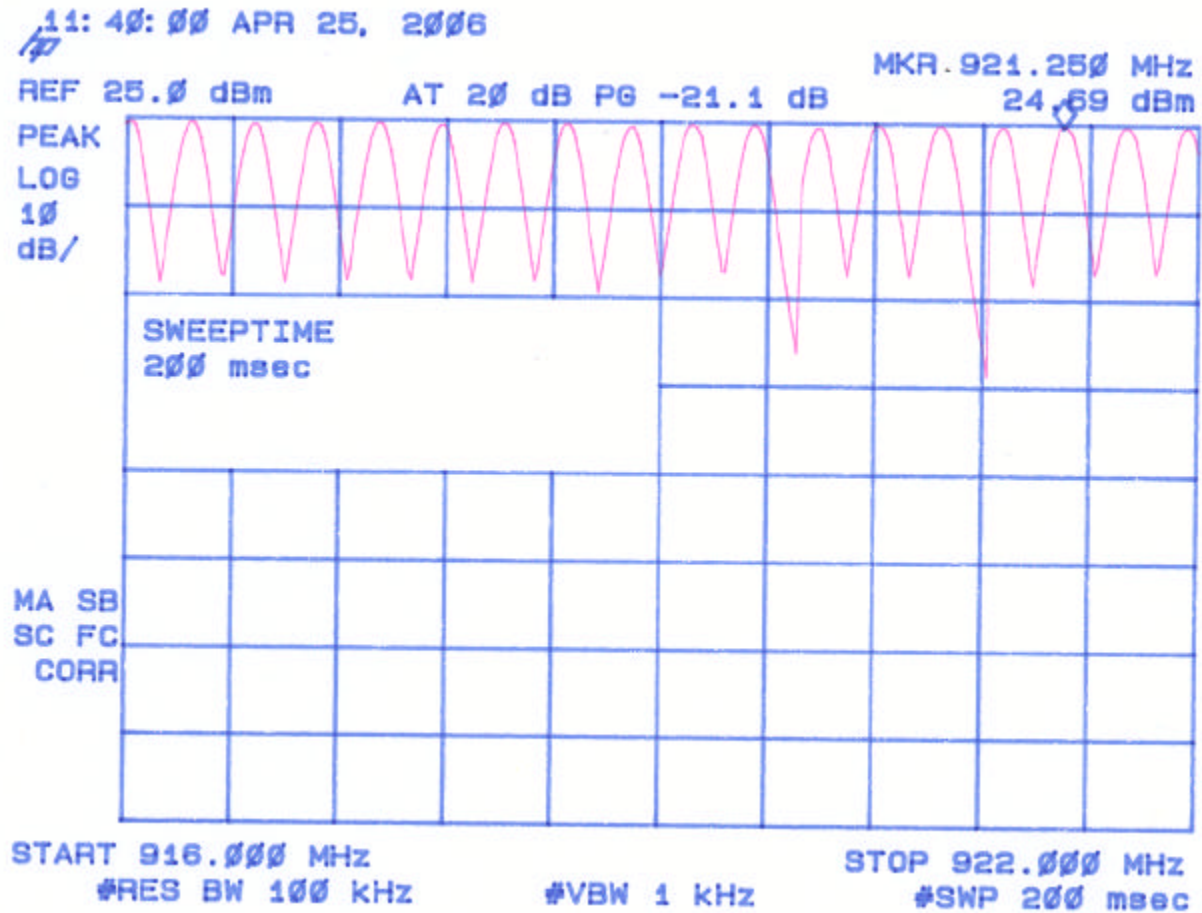
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Figure 9b
Number of Hopping Channels Continued FCC Section 15.247(a)(1)(ii)



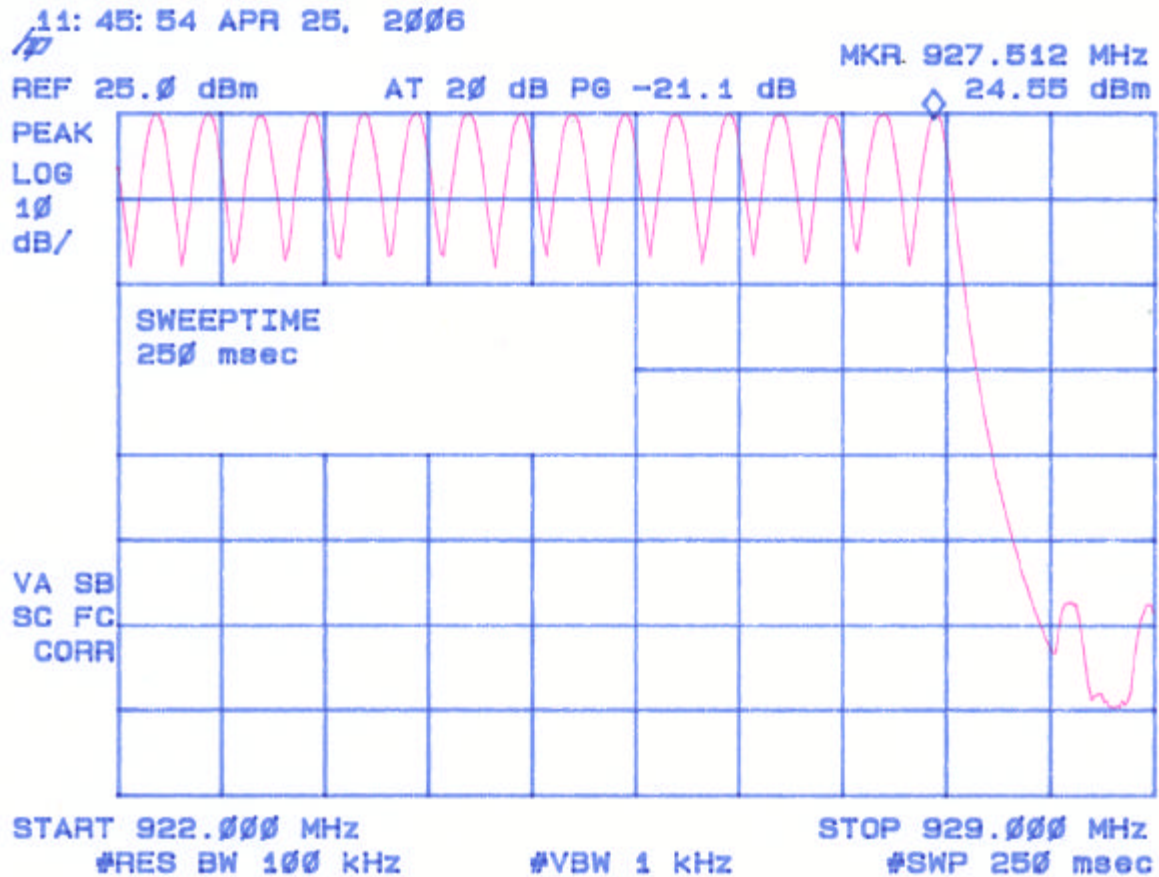
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Figure 9c
Number of Hopping Channels Continued FCC Section 15.247(a)(1)(ii)



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2.14 Average Time of Occupancy per Channel FCC Section 15.247(a)(1)(ii)

The maximum transmit time of the EUT, based upon software and firmware settings, is 400 ms average time of occupancy, per 20 s.

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2.15 Power Line Conducted Emissions for Transmitter FCC Section 15.207

The conducted voltage measurements have been carried out in accordance with FCC Section 15.207, with a spectrum analyzer connected to a LISN and the EUT placed into a continuous mode of transmit. The results are given in Tables 7a-7b.

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TABLE 7a. CONDUCTED EMISSIONS DATA**CLASS B****Worse Case Mode of Operaton (TX – Low channel)****(Peak-Quasi Peak Measurements vs Average Limits) PHASE DATA**

FREQUENCY (MHz)	TEST DATA (dBuV) PHASE	AF + CA - AMP	RESULTS (dBuV) PHASE	EN55022 CLASS B LIMITS (dBuV)	MARGIN BELOW LIMIT (dB) PHASE
Not Applicable EUT is DC Powered Only					

Test Date: April 26, 2006**Tested by
Signature:****Name: Austin Thompson**

Report Number: 06-0105

Issue Date: July 6, 2006

Customer: Nivis, LLC

Model: Nivis NRD Module Model IC-NRD2-01-01

TABLE 7b. CONDUCTED EMISSIONS DATA**CLASS B****Worse Case Mode of Operaton (TX – Low channel)****(Peak-Quasi Peak Measurements vs Average Limits) NEUTRAL DATA**

FREQUENCY (MHz)	TEST DATA NEUTRAL	AF + CA - AMP	RESULTS (dBuV) NEUTRAL	EN55022 CLASS B LIMITS (dBuV)	MARGIN BELOW LIMIT (dB) NEUTRAL
Not Applicable EUT is DC Powered only					

Test Date: April 26, 2006

Tested by  Name: Austin Thompson

Signature: _____