May 7, 2001

Mr. Andy Leimer
Federal Communications Commission
Application Processing Branch
7435 Oakland Mills Road
Columbia, Maryland 21046

Re: Question from the FCC

FCC ID: NBZNRM-6835
Correspondence Reference Number: 19081
731 Confirmation Number EA100427
Date of Original E-Mail: May 4, 2001

Dear Mr. Leimer:
Pursuant to your e-mail to Mr. Owen Thistle, Novatel Wireless Technologies Ltd., I am forwarding to you our responses to item 1. The relevant portions of the FCC's e-mail follow with our response inserted in the appropriate place:

> From: OET [mailto:oetech@fccsun07w.fcc.gov]
> Sent: Friday, May 04, 2001 7:01 AM
> To: Owen Thistle
> Subject: Spurious RE Measurements
>
> To: Owen Thistle, Novatel Wireless Technologies Ltd.
> From: Andy Leimer
> aleimer@fcc.gov
> FCC Application Processing Branch
> Re: FCC ID NBZNRM-6835
> Applicant: Novatel Wireless
> Technologies Ltd
> Correspondence Reference Number: 19081
> 731 Confirmation Number: EA100427
>
> **1) It appears that the spurious RE measurements were not done using the substitution method. Repeat the measurements using the substitution method using a procedure similar to that described in the ERP measurement portion of the Test Report. The substitution method measurements are described in the document TIA/EIA - 603 Section 2.2.12.**

Response:

The Minstrel m500 m500 was re-tested for spurious RE measurement using the substitution method using a procedure similar to that used in the ERP measurement and described in the ERP

measurement portion of the Test Report. A set of three reference dipoles, a horn antenna and a signal generator to duplicate the signal were used. Signals radiated from the Minstrel m500 on the fundamental frequency as well as second and third harmonic were evaluated by comparing to the signals transmitted from the reference dipoles. The antenna used for the first three harmonics were a set of three dipoles, l = 17.9 cm (first harmonic/fundamental), l = 9.0 cm (second harmonic), and l = 6.0 cm (third harmonic). For testing the higher frequencies, fourth and fifth harmonics, a horn antenna (gain) was used as replacement source of radiation thus substituting the Minstrel m500. The duplicated reading was then referenced to the dipole. Finally, the duplicated readings were converted to dBµV/m.

The data after the re-test is presented in the following two tables:

Test Data using Substitution Method

Vertical polarization

f	ERP_V	E_V@3m	Limit	Margin
MHz	dBM	dBµV/m	dBµV/m	dB
1672.98	-40.4	57.0	78.7	21.7
2509.47	-50.2	47.2	78.7	31.5
3345.96	-54.5	42.9	78.7	35.8
4182.45	Noise Floor	Noise Floor	78.7	32.2

Horizontal polarization

f	ERP_V	E_V@3m	Limit	Margin
MHz	dBM	dBµV/m	dBµV/m	dB
1672.98	-62.1	35.3	78.7	43.4
2509.47	-58.7	38.7	78.7	40.0
3345.96	-54.4	43.0	78.7	35.7
4182.45	Noise Floor	Noise Floor	78.7	31.6

I trust that the above will answer your inquiry. If not, please feel free to contact me.

Regards,

Jayanta (Jay) K.Sarkar
Director Technical Director, Standards and Certification