

Application For:
Class II Permissive Change

Sierra Wireless Inc.
FCC ID: N7NOEM3
Model: SB320

Prepared by:
Sierra Wireless Inc.

#150 – 13575 Commerce Parkway
Richmond, B.C.
V6V 2L1

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July 6, 1999

Federal Communications Commission
Authorization and Standards Division
7435 Oakland Mills Rd.
Columbia, M.D. 21046

RE: FCCID: N7NOEM3 Grantee: Sierra Wireless Inc.
Equipment Class: Non-broadcast transmitter
Application for Class II Permissive Change dated July 6, 1999

Dear Sir/Madam:

The following information is submitted in support of a Class II Permissive Change to the certification of the N7NOEM3 transmitter. There are no physical or electrical changes as defined in Section 2.908.

Presently, the N7NOEM3 transmitter has received a grant of equipment authorization for Emission Designators: 31K5FXW, 40K0F1D, 40K0F8W. We would like to request the addition of emission designator 40K0F3E to the present grant for the N7NOEM3 transmitter.

Please advise me if we may provide any additional information for your review of this application for Class II Permissive change to the certification of the N7NOEM3 transmitter.

Sincerely

A handwritten signature in black ink, appearing to read "Markus Myers", with a stylized flourish at the end.

Markus Myers
Engineering Technologist



July 6, 1999

Federal Communications Commission
Authorization and Standards Division
7435 Oakland Mills Rd.
Columbia, M.D. 21046

Gentlemen:

Sierra Wireless Incorporated has tested this transmitter in accordance with the requirements contained in the appropriate Commission Regulations. To the best of my knowledge, these tests were performed using measurement procedures consistent with the Industry or Commission standards and demonstrates that the equipment complies with the published standard. We are unable to warrant against unpublished changes in requirements. The applicable rules are listed in the following test report.

Sincerely

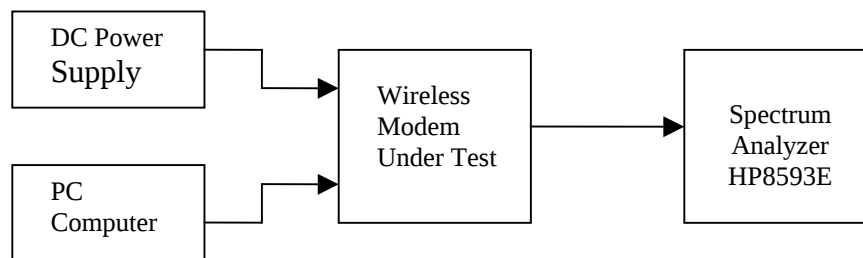
A handwritten signature in cursive script that reads "Markus Myers".

Markus Myers
Engineering Technologist

1. Occupied Bandwidth (2.989)

Name of Test:	Occupied Bandwidth
FCC ID:	N7NOEM3
Grantee:	Sierra Wireless
Serial No.:	206-00068160
Minimum Standard Specified	Para. 22.907 (b) and (d)
Test Results	Equipment is Compliant with Standard
Equipment Authorization Procedure	Para 2.989 (c)(1)
Test Equipment:	HP8593E Spectrum Analyzer HP3631A DC power supply Zegna 486 PC Computer

Test Setup Block Diagram



Measurement Data

Spectrum Analyzer:	Hewlett Packard 8593E	
Settings:	Resolution Bandwidth	300 Hz
	Video Filter	300 Hz
	Scan Time	3.33 sec
	Scan Width	100 kHz
	Center Frequency	837.00 MHz
Data Or Signaling Type	Tx Deviation	Emission Designator
1) AMPS Voice over Voice Channel	14.0 kHz	40K0F3E

Figure 2.1-1: Occupied Spectrum (Pwr: 8 dBm). Modulated input is 20 dB greater than needed to achieve 8kHz deviation (i.e. worst case deviation).

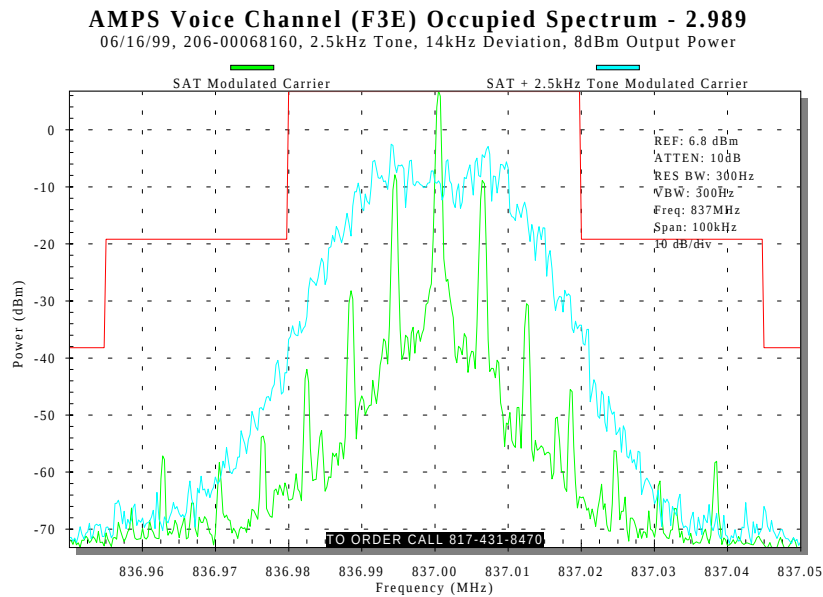
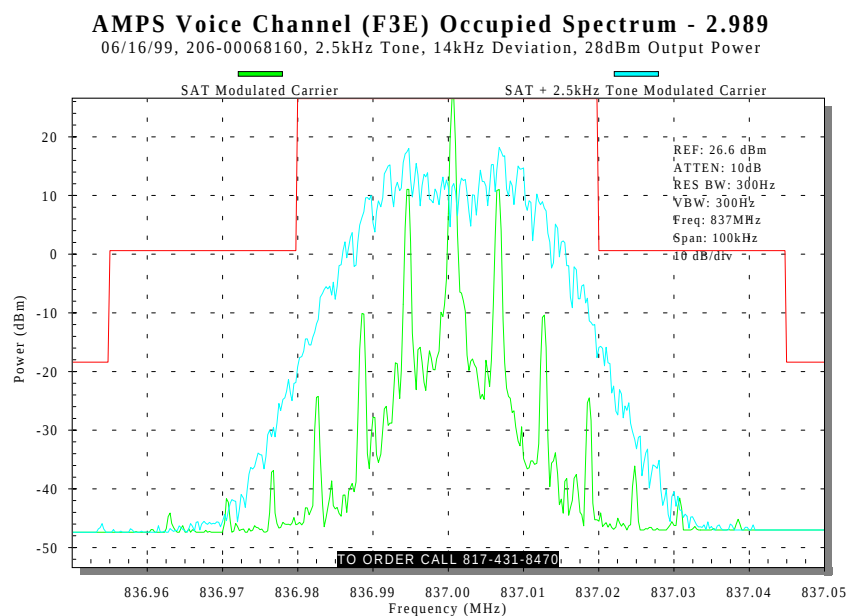


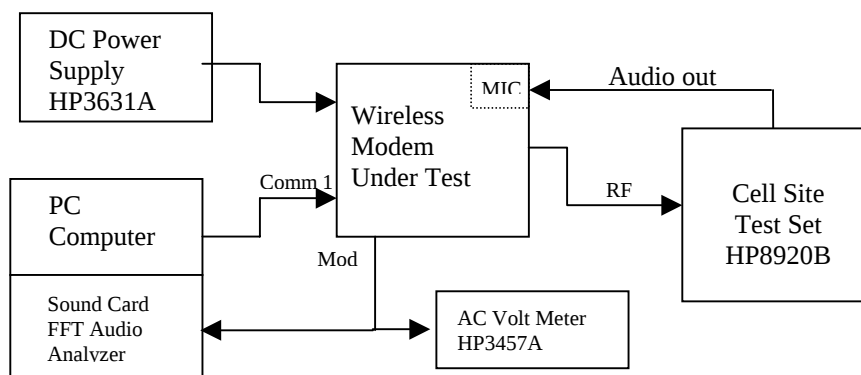
Figure 2.1-2: Occupied Spectrum (Pwr: 28 dBm). Modulated input is 20 dB greater than needed to achieve 8kHz deviation (i.e. worst case deviation).



2. Modulation Characteristics (2.987)

Name of Test:	Modulation Characteristics
FCC ID:	N7NOEM3
Grantee:	Sierra Wireless
Serial No.:	206-00068160
Minimum Standard Specified	Para. 22.907 (b) and (d)
Test Results	Equipment is Compliant with Standard
Equipment Authorization Procedure	Para 2.989 (c)(1)
Test Equipment:	HP8593E Spectrum Analyzer HP8920B Cell Site Test Set HP3631A DC power supply HP3457A Acer PII PC Computer Sound Card SpectraPLUS - V2.32 PC Base FFT Audio Analyzer Software

Test Setup Block Diagram



Measurement Data

Modulation Analyzer:
Settings:

Hewlett Packard 8920B
Center Frequency 837.00 MHz

Data Or Signaling Type
1) Voice Channel

Tx Deviation
14kHz

Emission Designator
40K0F3E

2.1 Modulation Limiting Capability

Figure 2.1-1: Peak Deviation vs. Signal Amplitude. Section 2.987(b): Modulation Characteristics. Modulation: 1kHz tone with varying amplitude. Note: Maximum deviation is achieved with the AGC disabled or off.

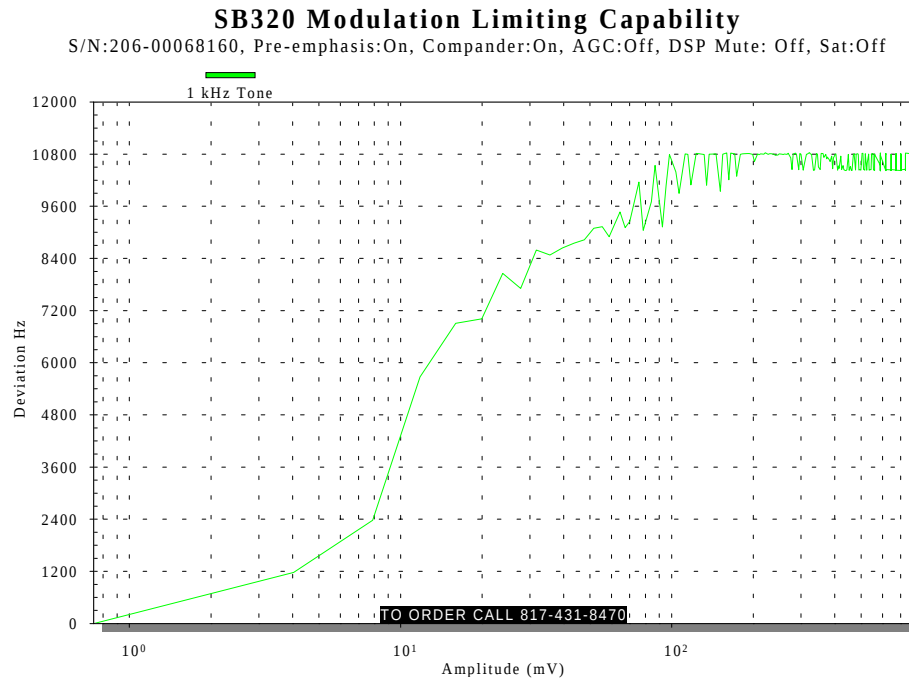


Figure 2.1-2: Peak Deviation vs. Input Frequency. Section 2.987(b): Modulation Characteristics. Modulation: Variable frequency tone, signal amplitude is 20 dB larger than that necessary to give 8 kHz deviation with a 1 kHz tone. Note: Maximum deviation is achieved with the AGC disabled (off).

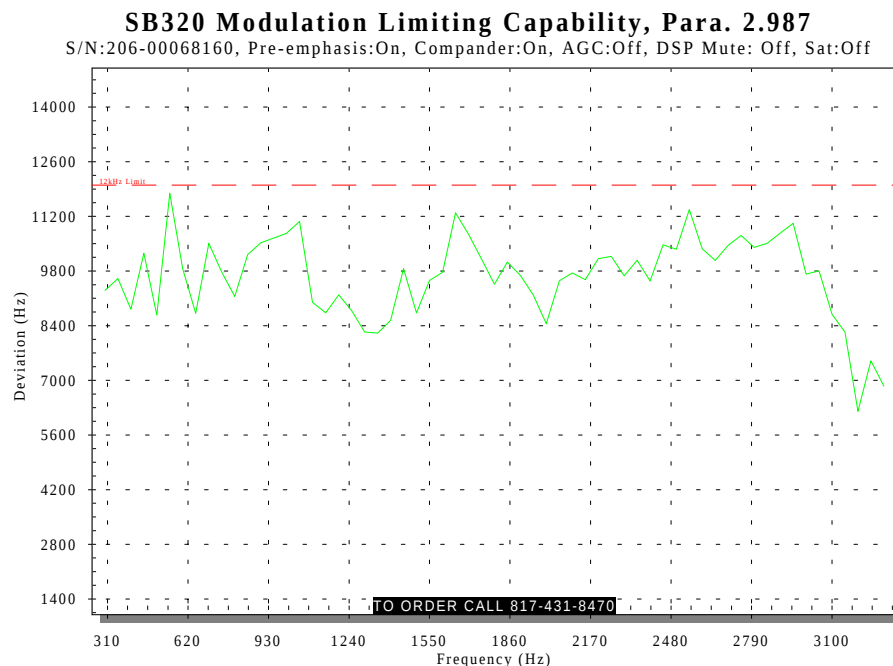
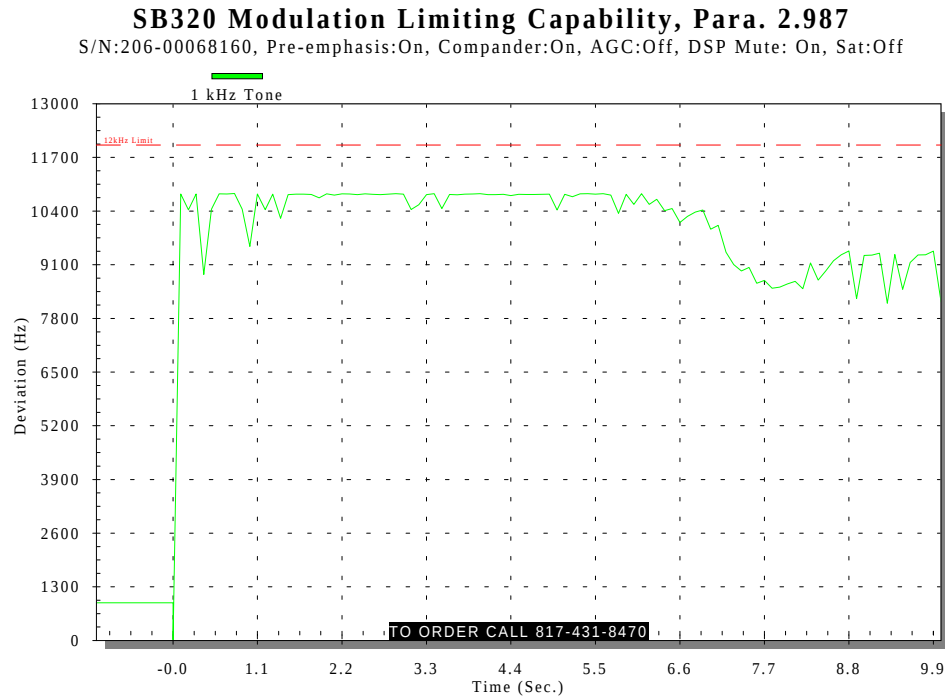


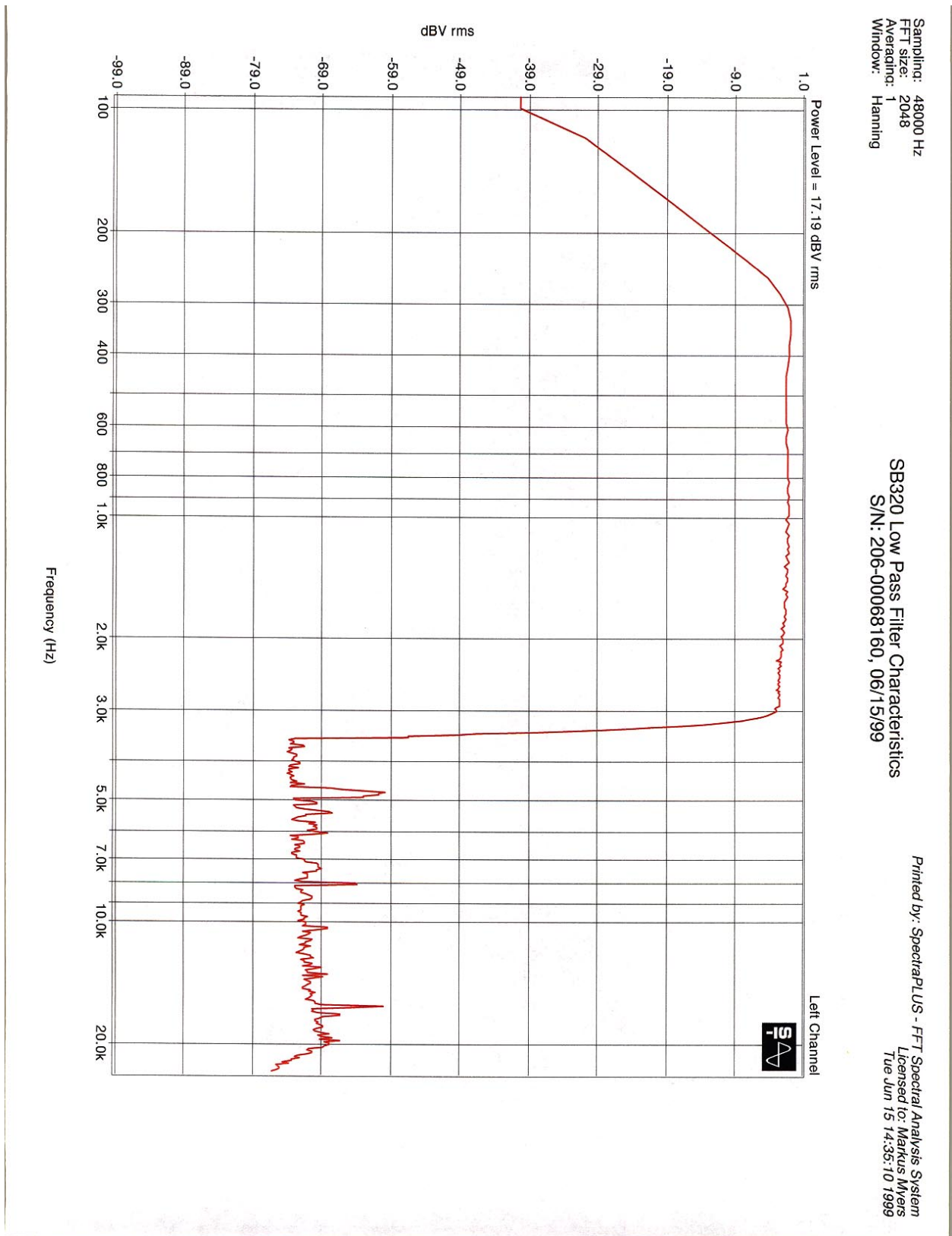
Figure 2.1-3: Peak Deviation vs Time. Peak frequency deviation of a 1 kHz signal with audio input level increased by 20 dB (from reference level giving 8 kHz deviation) in one step. It should be noted that at approximately 7 sec. after applying a continuous audio signal, the DSP mute function reduces the modulation deviation by ~ 14%.



2.2 Band Pass Filter Response

The band pass filter response was captured using a computer sound card with the SpectraPLUS - V2.32 PC Base FFT Audio Analyzer Software. The microphone input level was set to 500 mV rms and the frequency varied from 50 Hz – 20 kHz, (pre-emphasis, AGC, compander and SAT was disabled), while the transmitters modulation signal was being analyzed in the PC.

Figure 2.2-1: Band Pass Filter Response.



3. Test Equipment List

Table 1 Test Equipment List

Spectrum Analyzer	Hewlett Packard HP8593E Opt. 041, 101, 130	3801A03362	
Cell Site Test Set	Hewlett Packard HP8920B Opt. 001, 004, 006, 013, 102	US37423716	0.05PPM +/-1Hz, +/- 5% +/- 0.01mW
Power Supply	Hewlett Packard HP3631A	KR53600263	DCV +/- 0.1% +5mV
Multimeter	Hewlett Packard HP3457A	3114A14978	
Attenuator	Mini-Circuits CAT-10	940613	