Nemko Test Report:	4L0619RUS1REV1
Applicant:	Navini Networks 2240 Campbell Creek Blvd. Suite 110 Richardson, TX 75082
Equipment Under Test: (E.U.T.)	2500-2686 MHz PCMCIA MODEM
In Accordance With:	FCC PART 27, Subpart M Broadband Radio Service and Educational Broadband Service
Tested By:	Nemko Dallas Inc. 802 N. Kealy Lewisville, Texas 75057-3136
Authorized By:	Justi Caks

Dustin Oaks, Engineer

Date:

May 17, 2005

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Section 1.	Summary of Test Results					
Manufacturer:	Navini Networks					
Model No.:	2500-2686 MHz PCMCIA MODEM					
Serial No.:	None					
General:	All measurements are traceab	le to na	tional standards.			
	onducted on a sample of the equi pliance with FCC Part 27, Subpar	•	or the purpose of			
New Submis	New Submission Production Unit					
Class II Perr	Class II Permissive Change Pre-Production Unit					
THIS T	EST REPORT RELATES ONLY TO	THE IT	EM(S) TESTED.			

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE. NONE

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This report applies only to the items tested.

Summary Of Test Data

NAME OF TEST	PARA. NO.	SPEC. LIMIT	RESULT
RF Power Output	2.1046	33 dBW + 10log(X/Y) dBW	Complies
Occupied Bandwidth	2.1049	5.5 MHz	Complies
Spurious Emissions @ Antenna	2.1051	-13 dBm	Complies
Terminals			-
Field Strength of Spurious Radiation	2.1053	-13 dBm	Complies
Frequency Stability	2.1055	Must remain within	Complies
		authorized bandwidth	-

Footnotes:

X is the actual channel width in MHz and Y is either 6 MHz if prior to transition or the station is in the MBS following transition or 5.5 MHz if the station is in the LBS and UBS following transition

General Equipment Specification Section 2.

Power Supply		120 Vac							
Frequency Range (S below):	2500.5 to 2685.5 MHz								
Type(s) of Modulatio	on:	F3E (Voice)	F1D	F2D	D7W	F9W			
					(QAM)	\boxtimes			
Emission Designato	r:	2M00F9W							
Output Impedance:		50 ohms							
		25 dBm Conducted 32.9 dBm (1.927Watts) 33.0 dBm (2. Watts) 33.1 dBm (2.032 Watts)							
Duty Cycle:		50% TDD							
Selection Of Operati Frequency:	ing	Not selectable b	y operator						
Power Output Adjustment Capabili	ity:	Not selectable b	y operator						

Description of EUT

Navini's Wireless Modem is a sleek end-user wireless terminal device used to give the user access to Navini's wireless broadband network.

System Diagram

Refer to separate exhibit.

Section 3. RF Power Output

NAME OF TEST: RF Power Output	PARA. NO.: 2.1046
TESTED BY: Kevin Rose	DATE: 4/21/05

Test Results: Complies

Measurement Data: See Tables.

MAX RF POWER OUTPUT

Freq	Power (dBm)	Power (Watts)
Low	25.07	.3214
Mid	25.1	.3236
High	25.12	.3251

RF POWER at mask edges

Freq	Power (dBm)	Power (Watts)
Low	22.9	.195
Mid	23.25	.211
High	23.04	.201

Note:

Power is reduced at mask edges to comply with mask requirements, see mask plots for details.

Test Data – EIRP

Ner	nko Dallas		nko				Lev Tel:	as Headqua 802 N. Keal visville, TX 7 : (972) 436- :: (972) 436-	y 5057 9600
				Carrie	r EIRP				
Page <u>1</u> o	of <u>1</u>						Complete	Х	
Specification:	PT27		Temperature(°C):	23					_
Fested By:	Kevin Rose		Relative Humidity(%)	49					-
E.U.T.:	PCMCIA mo	odem							
Configuration:	TX OMNI								
Sample No:	1								
Location:	lab 2			RBW:	REF PLOT		Measurement		
Detector Type:	peak			VBW:	REF PLOT		Distance:		m
Test Equipn	ent Used								
Antenna:	1304		D	virectional Coupler:	#REF!				
Pre-Amp:				Cable #1:	1485				
Filter:				Cable #2:	#REF!				
Receiver:	1464			Cable #3:	1042				
Attenuator #1				Cable #4:	1042				
Attenuator #2:				Mixer:	#N/A				
Attenuator #2:	_			Mixer:					
Additional equij									
Measurement U	ncertainty:	+/-1.7 dB	-						
Frequency	Meter	Correction	Pre-Amp	Substitution		EIRP	EIRP	Polarity	Comments
	Reading	Factor	Gain	Antenna Gain					
(MHz)	(dBm)	(dB)	(dB)	(dBi)		(dBm)	(mW)		
									F Antenna
2502	-26.0	35.6	0	10.1		19.7	92.90	v	
2502	-30.3	34.6	0	8.0		12.3	16.90	Н	
2502 2590	-30.3 -25.3	34.6 35.6	0	8.0 10.1		12.3 20.4	16.90 109.14	H V	
2502 2590 2590	-30.3 -25.3 -30.3	34.6 35.6 34.6	0 0 0	8.0 10.1 8.0		12.3 20.4 12.3	16.90 109.14 16.90	H V H	
2502 2590 2590 2683	-30.3 -25.3 -30.3 -23.2	34.6 35.6 34.6 35.6	0 0 0 0	8.0 10.1 8.0 10.1		12.3 20.4 12.3 22.5	16.90 109.14 16.90 178.24	H V H V	
2502 2590 2590	-30.3 -25.3 -30.3	34.6 35.6 34.6	0 0 0	8.0 10.1 8.0		12.3 20.4 12.3	16.90 109.14 16.90	H V H	
2502 2590 2590 2683 2683	-30.3 -25.3 -30.3 -23.2 -32.8	34.6 35.6 34.6 35.6 34.6	0 0 0 0 0	8.0 10.1 8.0 10.1 8.0		12.3 20.4 12.3 22.5 9.8	16.90 109.14 16.90 178.24 9.51	H V H V H	STICK Antenna
2502 2590 2683 2683 2683 2683	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1	34.6 35.6 34.6 35.6 34.6 35.6	0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1		12.3 20.4 12.3 22.5 9.8 32.6	16.90 109.14 16.90 178.24 9.51 1811.34	H V H V H	STICK Antenna
2502 2590 2590 2683 2683 2683 2502 2502	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5	34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0		12.3 20.4 12.3 22.5 9.8 32.6 17.1	16.90 109.14 16.90 178.24 9.51 1811.34 51.05	H V H V H V H	STICK Antenna
2502 2590 2683 2683 2683 2502 2502 2502 2590	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 35.6	0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86	H V H V H V H V	STICK Antenna
2502 2590 2683 2683 2683 2502 2502 2502 2590 2590	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80	H V H V H V H V H	STICK Antenna
2502 2590 2590 2683 2683 2683 2502 2502 2590 2590 2590 2683	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7 -12.9	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9 32.8	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80 1896.71	H V H V H V H V V H V	STICK Antenna
2502 2590 2683 2683 2683 2502 2502 2502 2590 2590	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80	H V H V H V H V H	
2502 2590 2683 2683 2683 2502 2502 2590 2590 2590 2683 2683	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7 -12.9 -24.3	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9 32.8 18.3	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80 1896.71 67.30	H V H V H V H V H V H	STICK Antenna EXTERNAL Antenn
2502 2590 2683 2683 2502 2502 2502 2590 2590 2683 2683 2683 2502	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7 -12.9 -24.3 -13.0	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 10.1		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9 32.8 18.3 32.7	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80 1896.71 67.30 1853.53	H V H V H V H V H V H V V H	
2502 2590 2683 2683 2502 2502 2502 2590 2683 2683 2683 2502 2502	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7 -12.9 -24.3 -13.0 -26.2	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9 32.8 18.3 32.7 16.4	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80 1896.71 67.30 1853.53 43.75	H V H V H V H V H V V H	
2502 2590 2683 2683 2502 2502 2590 2590 2683 2683 2683 2683 2502 2502 2502	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7 -12.9 -24.3 -13.0 -26.2 -12.6	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 10		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9 32.8 18.3 32.7 16.4 33.1	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80 1896.71 67.30 1853.53 43.75 2032.36	H V H V H V H V H V H V V H V V	
2502 2590 2683 2683 2502 2502 2590 2590 2683 2683 2683 2683 2683 2502 2502 2502 2590 2590	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7 -12.9 -24.3 -13.0 -26.2 -12.6 -26.3	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9 32.8 18.3 32.7 16.4 33.1 16.3	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80 1896.71 67.30 1853.53 43.75 2032.36 42.17	H V H V H V H V H V H V H	
2502 2590 2683 2683 2502 2502 2590 2590 2683 2683 2683 2502 2502 2590 2590 2590 2590 2590 2683	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7 -12.9 -24.3 -13.0 -26.2 -12.6 -26.3 -13.4	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 10.		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9 32.8 18.3 32.7 16.4 33.1 16.3 32.3	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80 1896.71 67.30 1853.53 43.75 2032.36 42.17 1690.44	H V H V H V H V H V H V H V V H V V	
2502 2590 2683 2683 2502 2502 2590 2590 2683 2683 2683 2683 2683 2502 2502 2502 2590 2590	-30.3 -25.3 -30.3 -23.2 -32.8 -13.1 -25.5 -12.7 -23.7 -12.9 -24.3 -13.0 -26.2 -12.6 -26.3	34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6 35.6 34.6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0 10.1 8.0		12.3 20.4 12.3 22.5 9.8 32.6 17.1 33.0 18.9 32.8 18.3 32.7 16.4 33.1 16.3	16.90 109.14 16.90 178.24 9.51 1811.34 51.05 1999.86 77.80 1896.71 67.30 1853.53 43.75 2032.36 42.17	H V H V H V H V H V H V H	

Section 4. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 2.1049
TESTED BY: Kevin Rose	DATE: 4/21/05

Test Results: Complies

Measurement Data: See attached plots.

Test Data – Occupied Bandwidth

						Dalla	s Headquarters		
						:	802 N. Kealy		
		mko					isville, TX 75057		
							(972) 436-9600		
							(972) 436-2667		
Nen	nko Dallas, Inc					1 654	(0/2) 100 2001		
Data Plot			Occupied Bar	ndwidth					
Page 1 of	F 1		Occupica Dai	<u>lu wiuui</u>		Complete	v		
Job No.:	4L0619	Т	Date: 4/21/2005			Preliminary:			
Specification:	4L0819 PT27	Temperature				r tenninai y.			
*		-							
Tested By: E.U.T.:	Kevin Rose	Relative Humidi	ty(%) 49						
	PCMCIA								
Configuration:	TX								
Sample Number:	-		DDW 20						
Location:	Lab 1		RBW: 20			Measurement			
Detector Type:	Rms		VBW: Re	fer to plots		Distance:	<u>NA</u> m		
Test Equipm	ent Used								
Antenna:			Directional Coupler:						
Pre-Amp:			Cable #1:						
Filter:				1082					
Receiver:	1036		Cable #3:						
Attenuator #1			Cable #4:						
Attenuator #2:	1477		Mixer:						
Additional equip									
Measurement Un		.7 dB							
					011-1	<u></u>	~ + +	00 -0	
Ref	1 1	Marker 1	-8.58 dBm	КВМ УВМ	20 k 20 k	Hz Ri	- Att	20 dB	
· ·	.3 dBm	2 50	3050168 GHz	SML	20 R 16.5 m		пit	dBm	
31.3	.5 0.00	2.0.		IMC	10.3 1			UDII	
21		set			▼1	[T1]	-8.	58 dBm	A
							2.590501	68 GHz	
20					1	[] 1]	<u> </u>	58 dB	
						-99	2.850869	58 kHz	
10			namara						
10		7	0 0 000 00		my				
							l		
1 V I	EW				4				1MA
-10									
-18		MM				000 mm	M A.L		
	Mar						IN Mah		
-20							V Y	\sim	
	v							ע א	TDS
-30								$ \longrightarrow $	
								N I	
								v	
-40									
-50									
-60									
-68.7	ter 2.59 0		262.1336	1 23 レロマ	·	Snan S	2.6213364	23 MH-	
				.23 NHZ				23 1112	
Date:	21.APR	.2005 11:21	:38						
Notes:									
I									

Section 5. Spurious Emissions at Antenna Terminals

NAME OF TEST: Spurious Emissions @ Antenna Terminals	PARA. NO.: 2.1051
TESTED BY: Kevin Rose	DATE: 4/21/05

Test Results: Complies

Measurement Data: See attached plots.

Test Data – Spurious Emissions at Antenna Terminals

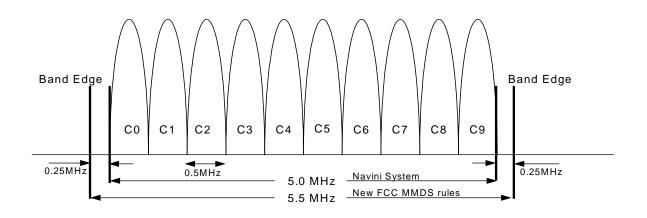
								Dall	as Headquarte	rs:	
IAND			mk					Lev	802 N. Kealy visville, TX 750	57	
									: (972) 436-960		
								Fa	k: (972) 436-266	67	
	n <mark>ko D</mark> a	allas, Inc.									
<u>Data Plot</u>			<u>Spur</u>	ious Emi	ssions at A	Antenna T	<u>[erminals</u>]				
Page <u>1</u> o				~					<u>X</u>		
Job No.: Specification:	4L0619 PT27)	Tomm	Date: erature(°C):	4/21/05			Preliminary			
Tested By:	Kevin l	Rose	-	[umidity(%)	35						
E.U.T.:	-	modem	_								
Configuration:	TX										
Sample Number:											
Location:	Lab					efer to plots		Measuremen			
Detector Type:	Pea	ik			VBW: R	efer to plots		Distance	<u>NA</u> n	1	
Test Equipm	ent Use	ed									
Antenna:				Direct	ional Coupler:						
Pre-Amp:					Cable #1:	1002					
Filter: Receiver:	103	26			Cable #2: Cable #3:	1082					
Attenuator #1	103				Cable #3:						
Attenuator #2:					Mixer:						
Additional equip	ment use										
Measurement Ur	certainty	/: +/-1.7 d	В								
			Marker	1 [1]		КВМ		IHz R	F Att	10 dB	
Ref	Lvi .3 df	3			.10 dBm 473 GHz	VBW SWT	1 M 260 m	IHz	nit	dBr	
21.3				. 10250		JAT		I	1		
21	3	B Offse	et				▼1	[T1]	-24	.10 dBm	A
10									5.18236	473 GHZ	
10											
0											
-10											
10/1	⊑⊮ 13	dBm——									1MA
-20											
20		1									
-30											
											TDS
-40				w							
		1 m	*		a moral	hno	1 .An		monus	mound	
-50		hun		- Charles	-	· · ·	V. M	num		V martin	
-von											
-60	· ·										
-70											
-78.7											J
		D MHz			2.597	'GHz∕			Stop	26 GHz	
Date:	2	1.APR.2	11	:23:57							
Notes:											
	The s	pectrum was s	searched in de	tail. The plo	t shown is repr	esentative of	the noise floor	r readings for	ınd		
-				<u> </u>	· ·			0			

Test Data – Spurious Emissions at Antenna Terminals - Emissions Mask

Explanation of Testing Method

The Navini networks system is comprised of a BTS which occupies 5 MHz of spectrum, a CPE which occupies 2MHz, and a PCMCIA card which occupies 1 MHz. Since the channels are spaced at 5.5MHz that leaves .25 MHz of guard band on both the upper and lower edges of the Channel for the BTS. Within the 5 MHz of spectrum which the BTS occupies we have ten 500 KHz carriers (please see figure below). Of these ten carriers the PCMCIA will use only 2 carriers.

When the PCMCIA occupies carriers C0, and C1, or carriers C8, and C9 the power at the antenna port is 23 dBm avg. To show compliance the mask is reduced from 5.5 MHz wide to 1.5 MHz wide. By placing the signal in the center of this mask we are able to show compliance to both the upper and lower edges of the channel. If however the PCMCIA occupies any two carriers from C2 to C7 then the power at the antenna port is increased to 35dBm avg. In this case the mask is increased to 3.5 MHz. In doing so we show compliance to both the upper and lower edges of the Channel with a 1.25Mhz guard band at both edges.



10-Carrier BTS Signal Operating in a 5 MHz Band

FCC PART 27, SUBPART M Broadband Radio Service and Educational Broadband Service

EQUIPMENT: 2500-2686 MHz PCMCIA MODEM

PROJECT NO.:4L0619RUS1

Mask Center (Conducted Power at 25dBm)

							Dalla	as Headquarte	ers:	
	Ne							802 N. Kealy		
LUND		\mathbf{m}	•				Lev	visville, TX 750	57	
							Tel	: (972) 436-96	00	
							Fax	: (972) 436-26	67	
Nen	nko Dallas, Inc.									
Data Plot		Spurio	ous Emiss	sions at	Antenna T	Ferminals				
Page <u>1</u> or	F 2	opund		10115 ut	invennu i	<u>er minuis</u>	Complete	Х		
Job No.:	4L0619		Date:	4/21/05			Preliminary:			
Specification:	PT27	Tompor	ature(°C):	20			i icililiary.			
Tested By:	Kevin Rose	Relative Hu		35						
E.U.T.:	pcmcia modem	Kelative Hu	manty(70)	55						
Configuration:	TX									
Sample Number:										
Location:	Lab 1			DDW-1	Refer to plots		Measurement			
Detector Type:	Peak			-	Refer to plots		Distance:		n	
Detector Type.	1 Cak			v D W . 1	kerer to plots		Distance	<u> </u>	u –	
Test Equipm	ent Used									
Antenna:			Direction	nal Coupler:						
Pre-Amp:			Director	Cable #1:						
Filter:				Cable #2:	1082					
Receiver:	1036			Cable #3:						
Attenuator #1	1472			Cable #4:						
Attenuator #2:				Mixer:						
Additional equip	ment used:									
Measurement Ur		IB								
Ref	1 . 1				КВМ		Hz RI	- Att	20 dB	
*					VBW		Hz	- 1 +	dDa	~
10.6	6 dBm				SWT	33 m		nit	dBn	
21	.3 dB Offs	e t	I TR	IT CHE		ASSED				A
					-ur : 1	нээси				
0								1		
-10					_					
-PT2	7-11		A							
			KMM			IM A				
-20 1 V I	EW					I A				1MA
						V ~	m,			
-30					1	-				
		M.M					1 May			
-40	- In the second se	V				-	u			
	MANN							" Vuyh	<u>~</u> ^4	TDS
	www							Mugh	I L.M.	105
-50									h h	
-60		-			-					-
-70										
-80					1	1		1		1
-89.3				<u></u>				1		L
Cen	ter 2.68299	u256 GHz	5:	24.267	2846 kHz	2/	Span 8	5.242672	2846 MHz	
Date:	21.APR.2	005 11:	09:31							
Notes:										
	The spectrum was	searched in deta	il. The plot s	hown is rep	resentative of	the noise floor	r readings fou	nd		

FCC PART 27, SUBPART MBroadband Radio Service and Educational Broadband ServiceCMCIA MODEMPROJECT NO.:4L0619RUS1

EQUIPMENT: 2500-2686 MHz PCMCIA MODEM

Mask Edges (Conducted Power at 23dBm)

Nemko Dallas, Inc.	mko	Dallas Headquarters: 802 N. Kealy Lewisville, TX 75057 Tel: (972) 436-9600 Fax: (972) 436-2667					
ta Plot Page 2 of 2 No.: 4L0619 fifcation: PT27 d By: Kevin Rose T.: pcmcia modem iguration: TX	Spurious Emissions Date: 4/21/2005 Temperature(°C): 20 Relative Humidity(%) 35	at Antenna Tern	<u>ninals</u>				
Ref Lvl 11.6 dBm	Marker 1 [11] 11.57 c 2.58960601 c		2U KHZ RF Att 20 KHZ 33 ms Unit	2U dB dBm			
21.3 BB OFF 0 10 PT27-3 20 1VIEW 30 40		CHEEK : PASS		1.57 dBm 50601 GHz 1			
				· · · · · · · · · · · · · · · · · · ·			
Center 2.59 G e: 21.APR.		2672846 kHz/	Span 5.24267	'2846 MHz			

Section 6. Field Strength of Spurious

NAME OF TEST: Field Strength of Spurious Emissions	PARA. NO.: 2.1053
TESTED BY: Kevin Rose	DATE: 4/21/05

Complies Test Results:

See attached table. Measurement Data:

Test Data - Radiated Emissions

Page <u>1</u> o Job No.: Specification: Tested By: E.U.T.: Configuration: Sample No:	nko Dallas	, Inc.			Spurious]	Emissions -	Lev Tel Fax	as Headqua 802 N. Keal visville, TX 7 : (972) 436- c: (972) 436- C	y 5057 9600 2667
Location: Detector Type:	AC 3 Peak			RBW: VBW:	1 MHz 1 MHz	-	Measurement Distance:	3	m
Test Equipm Antenna: Pre-Amp: Filter: Receiver: Attenuator #1 Attenuator #2: Additional equip Measurement Ur	1480 1016 1482 1464 ment used:	+/- 1.7 dB	E	Cable #2: Cable #3: Cable #4:	1484 1485	- - - - -			
Frequency (MHz)	Meter Reading (dBm)	Correction Factor (dB)	Pre-Amp Gain (dB)	Substitution Antenna Gain (dBi)		EIRP (dBm)	EIRP (mW)	Polarity	Comments
									Tx @ 2590 MHz
									F Antenna
5180	-53.7	40.6	32.3	11.2		-34.2	0.00	V	
7770	-54.5	40.4	32.9	11.6		-35.4	0.00	V V	
10360 12950	-61.7 -63.8	41.0 44.5	34.7 33.7	12.7 13.8		-42.8 -39.1	0.00	v V	NF
15600	-63.7	43.2	32.2	15.8		-36.9	0.00	v	NF
18200	-63.3	53.1	34	8.6		-35.7	0.00	v	NF
5180	-57.0	36.3	32.3	9.1		-44.0	0.00	Н	
7770	-59.2	39.8	32.9	9.4		-42.9	0.00	Н	
10360	-61.2	42.5	34.7	10.5		-42.9	0.00	Н	
12950	-64.5	47.5	33.7	11.7		-39.0	0.00	Н	NF
15540	-66.5	44.0	32.2	13.6		-41.1	0.00	Н	NF
18200	-65.8	54.6	34	6.4		-38.8	0.00	H	NF

FCC PART 27, SUBPART M
Broadband Radio Service and Educational Broadband Service

EQUIPMENT: 2500-2686 MHz PCMCIA MODEM

PROJECT NO.:4L0619RUS1

Nem) R			0				Lew Tel:	as Headqua 802 N. Keal visville, TX 7 (972) 436-9 : (972) 436-2	y 5057 9600
		,		Field S	trength of S	Spurious]	Emissions			
Page 1 0	f <u>1</u>							Complete		-
Job No.:	4L0619				4/21/2005			Preliminary		-
Specification:	PT27 Kanin Basa			perature(°C): Humidity(%)						
Tested By: E.U.T.:	Kevin Rose PCMCIA		Relative	numiany(%)	49					
Configuration:	-	NAL Antenna					-			
Sample No:	1						-			
Location:	AC 3				RBW:	1 MHz	_	Measurement		
Detector Type:	Peak				VBW:	1 MHz	-	Distance:	3	m
Test Equipm	ent Used									
Antenna:	1480			D	irectional Coupler:		_			
Pre-Amp:	1016				Cable #1:		_			
Filter:	1482				Cable #2:		_			
Receiver:	1464				Cable #3:		_			
Attenuator #1							_			
Attenuator #2: Additional equip					Mixer:		_			
Measurement U		+/- 1.7 dB					-			
Frequency	Meter	Correction		Pre-Amp	Substitution		EIRP	EIRP	Polarity	Comments
	Reading	Factor		Gain	Antenna Gain					
(MHz)	(dBm)	(dB)		(dB)	(dBi)		(dBm)	(mW)		
										Tx @ 2590 MHz
										EXTERNAL Antenna
5180	-46.8	40.6		32.3	11.2		-27.3	0.00	V	
7770	-54.2	40.4		32.9	11.6		-35.1	0.00	V	
10360	-61.2	41.0		34.7	12.7		-42.3	0.00	V	
12950	-62.7	44.5		33.7	13.8		-38.0	0.00	V	NF
15600	-63.8	43.2		32.2	15.8		-37.0	0.00	V	NF
18200 5180	-62.7 -50.8	53.1 36.3		34 32.3	8.6 9.1		-35.1 -37.8	0.00	V H	NF
7770	-56.3	39.8		32.3	9.1		-40.0	0.00	Н	
10360	-61.8	42.5		34.7	10.5		-43.5	0.00	H	
12950	-62.7	47.5		33.7	11.7		-37.2	0.00	Н	NF
15540	-63.2	44.0		32.2	13.6		-37.8	0.00	Н	NF
18200	-64.0	54.6		34	6.4		-37.0	0.00	Н	NF
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							-			
	+						╂───┤			
	+						+			
							┼───┤			
			I				1		1	I
										-

Test Data - Radiated Emissions

	nko Dallas		nko				Lev Tel Fa:	as Headqua 802 N. Keal wisville, TX 7 : (972) 436- x: (972) 436-	y 5057 9600
			Field S	trength of S	purious l	Emissions			
Page 1 o	f <u>1</u>						Complete	X	
ob No.:	4L0619		Date:	4/21/2005			Preliminary	x	-
pecification:	PT27		Temperature(°C):	23					_
ested By:	Kevin Rose		Relative Humidity(%)	49					
.U.T.:	PCMCIA					_			
onfiguration:	TX STICK	Antenna				_			
ample No:	1								
ocation:	AC 3			RBW:	1 MHz	_	Measurement		
etector Type:	Peak			VBW:	1 MHz	-	Distance	: 3	m
est Equipm	ent Used								
ntenna:	1480		D	irectional Coupler:		-			
re-Amp:	1016			Cable #1:		-			
ilter:	1482			Cable #2:		-			
eceiver:	1464					-			
ttenuator #1						-			
ttenuator #2:				Mixer:		-			
dditional equip	ment used:								
leasurement Ur	ncertainty:	+/- 1.7 dB							
Frequency	Meter	Correction	Pre-Amp	Substitution		EIRP	EIRP	Polarity	Comments
	Reading	Factor	Gain	Antenna Gain					
(MHz)	(dBm)	(dB)	(dB)	(dBi)		(dBm)	(mW)		
								İ –	Tx @ 2590 MHz
									STICK Antenna
5180	-55.3	40.6	32.3	11.2		-35.8	0.00	V	
7770	-52.3	40.4	32.9	11.6		-33.2	0.00	V	
10360	-62.3	40.4 41.0	32.9 34.7	12.7		-43.4	0.00	V	
10360 12950	-62.3 -64.2	40.4 41.0 44.5	32.9 34.7 33.7	12.7 13.8		-43.4 -39.5	0.00 0.00 0.00	V V	NF
10360 12950 15600	-62.3 -64.2 -64.2	40.4 41.0 44.5 43.2	32.9 34.7 33.7 32.2	12.7 13.8 15.8		-43.4 -39.5 -37.4	0.00 0.00 0.00 0.00	V V V	NF
10360 12950 15600 18200	-62.3 -64.2 -64.2 -61.5	40.4 41.0 44.5 43.2 53.1	32.9 34.7 33.7 32.2 34	12.7 13.8 15.8 8.6		-43.4 -39.5 -37.4 -33.9	0.00 0.00 0.00 0.00 0.00	V V V V	
10360 12950 15600 18200 5180	-62.3 -64.2 -64.2 -61.5 -58.2	40.4 41.0 44.5 43.2 53.1 36.3	32.9 34.7 33.7 32.2 34 32.3	12.7 13.8 15.8 8.6 9.1		-43.4 -39.5 -37.4 -33.9 -45.2	0.00 0.00 0.00 0.00 0.00 0.00	V V V V V H	NF
10360 12950 15600 18200 5180 7770	-62.3 -64.2 -64.2 -61.5 -58.2 -58.2 -56.7	40.4 41.0 44.5 53.1 36.3 39.8	32.9 34.7 33.7 32.2 34 32.3 32.9	12.7 13.8 15.8 8.6 9.1 9.4		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4	0.00 0.00 0.00 0.00 0.00 0.00 0.00	V V V V H H	NF
10360 12950 15600 18200 5180 7770 10360	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7	12.7 13.8 15.8 8.6 9.1 9.4 10.5		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H	NF NF
10360 12950 15600 18200 5180 7770 10360 12950	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H	NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H	NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF
10360 12950 15600 18200 5180 7770 10360 12950 15540	-62.3 -64.2 -64.2 -61.5 -58.2 -56.7 -61.2 -64.7 -65.2	40.4 41.0 44.5 53.1 36.3 39.8 42.5 47.5 44.0	32.9 34.7 33.7 32.2 34 32.3 32.9 34.7 33.7 32.2	12.7 13.8 15.8 8.6 9.1 9.4 10.5 11.7 13.6		-43.4 -39.5 -37.4 -33.9 -45.2 -40.4 -42.9 -39.2 -39.8	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	V V V H H H H H	NF NF NF NF

The spectrum was searched from 30 MHz to the 10th harmonic of the carrier.

Photos – Radiated Emissions









Section 7. Frequency Stability

NAME OF TEST: Frequency Stability	PARA. NO.: 2.1055
TESTED BY: Kevin Rose	DATE: 4/21/05

Test Results: Complies

Measurement Data: See attached plots.

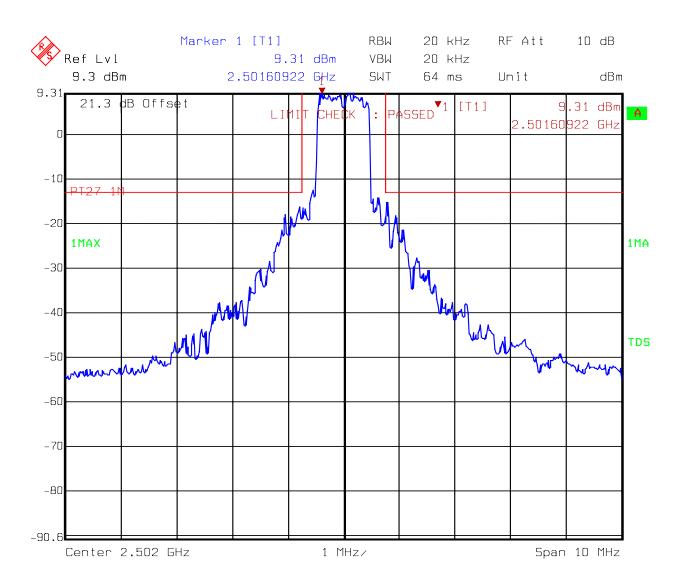
Test Equipment Used: 1036-1469-1474-1625-283-619

Standard Supply Voltage: 120 Vac

Environmental Conditions:

20 °Celsius 50 % RH

+20 C / 102 Vac



+20 C/ 138 Vac

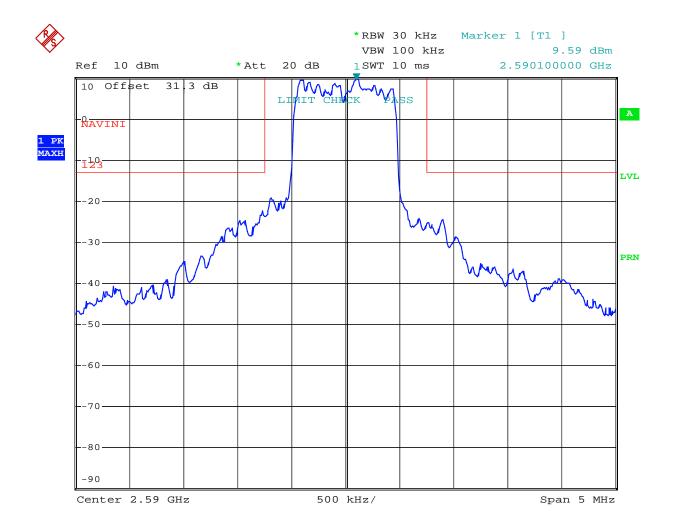




FCC PART 27, SUBPART M Broadband Radio Service and Educational Broadband Service EQUIPMENT: 2500-2686 MHz PCMCIA MODEM PROJECT NO.:4L0619RUS1

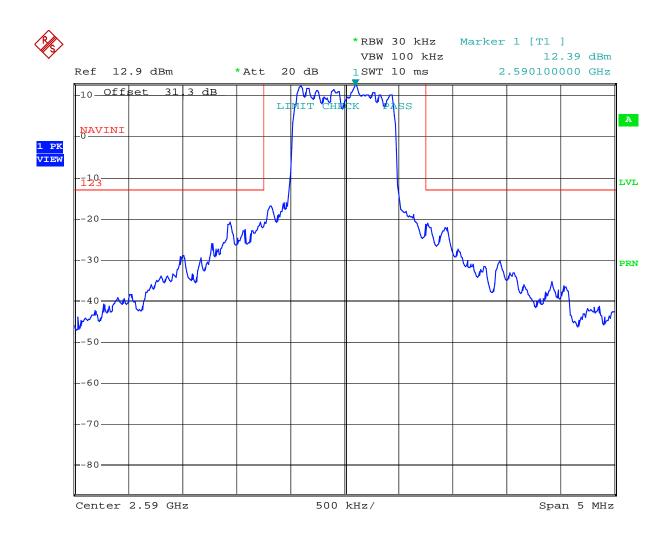
Test Data – Frequency Stability

+50 C



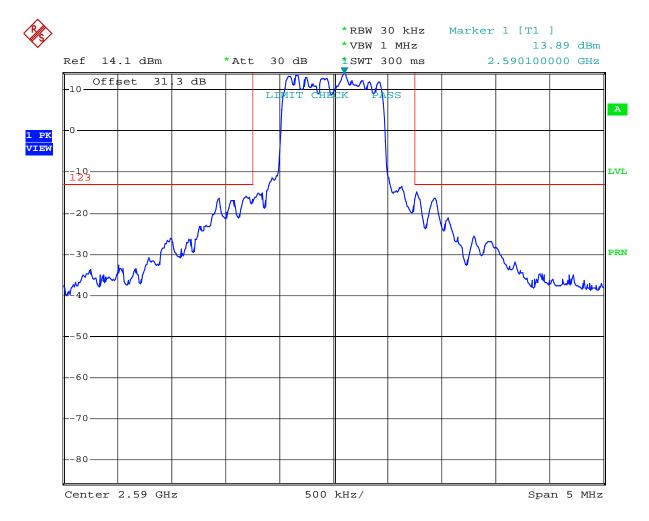
^{22.}APR.2005 12:47:13 Date:

+40 C



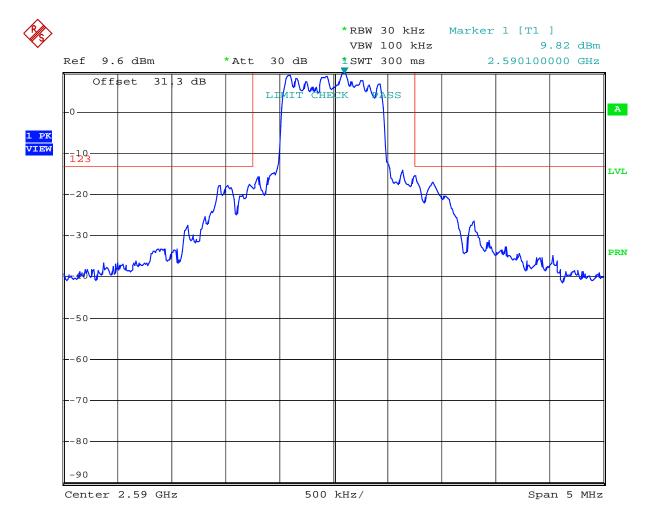
22.APR.2005 13:54:48 Date:

+30 C



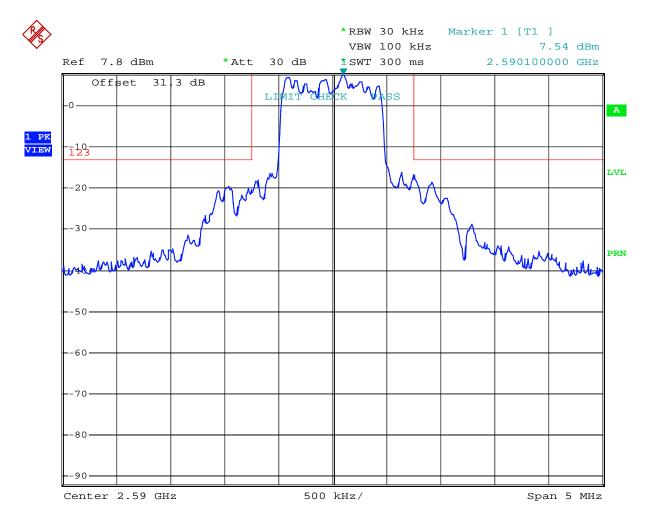
22.APR.2005 15:04:24 Date:

10 C



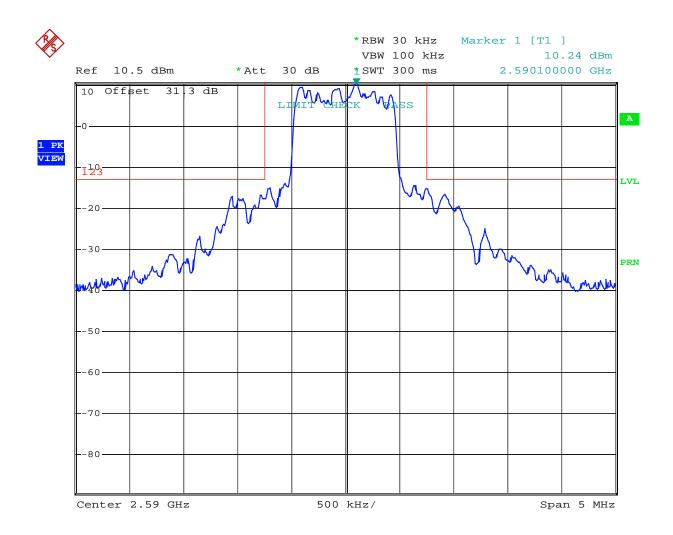
Date: 22.APR.2005 18:27:13

0 C



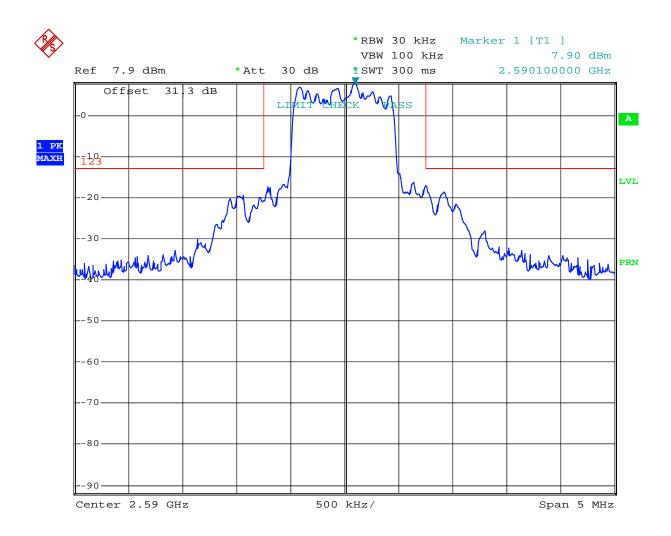
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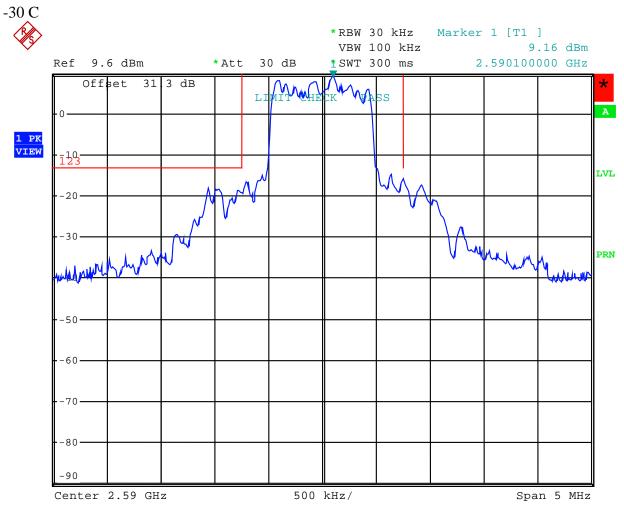


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Section 8. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1004	CABLE, .6m	KTL RG223	N/A	02/18/00	N/A
1082	CABLE 2m	Astrolab 32027-2-29094-72TC	N/A	CBU	N/A
1477	20db Attenuator DC 18 Ghz	MCL Inc. BW-S20W5	NONE	CBU	N/A
1484	Cable 2.0-18.0 Ghz	Storm PR90-010-072	N/A	08/26/04	08/26/05
1485	Cable 2.0-18.0 Ghz	Storm PR90-010-216	N/A	08/02/04	08/02/05
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	11/12/04	11/12/05
1482	Band Pass Filter	K & L 11SH10-4000/T12000-0/0	2	Cal B4 Use	N/A
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	07/30/04	07/31/06
1304	HORN ANTENNA	ELECTRO METRICS RGA-60	6151	09/22/03	09/22/05
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	11/12/04	11/12/05
283	Environmental Chamber with controller # 1189006	ENVIROTRONICS SH27 & 2030-22844	129010083	04/22/03	04/21/04
619	THERMOMETER	FLUKE 51	4520028	09/16/04	09/16/05
1469	10 db Attenuator DC 18 Ghz	MCL Inc. BW-S10W2 10db-2WDC	NONE	CBU	N/A
1474	20db Attenuator DC 18 Ghz	MCL Inc. BW-S20W2	NONE	CBU	N/A
1036	SPECTRUM ANALYZER	ROHDE & SCHWARZ FSEK30	830844/006	03/22/04	03/23/06
791	PREAMP, 25dB	ICC LNA25	398	11/12/04	11/12/05
760	Antenna biconical	Electro Metrics MFC-25	477	06/22/04	06/22/05
759	ANTENNA, LOG PERIODIC	A.H. SYSTEMS SAS-200/510	556	07/23/04	07/23/05

ANNEX A - TEST DETAILS

FCC PART 27, SUBPART M Broadband Radio Service and Educational Broadband Service EQUIPMENT: 2500-2686 MHz PCMCIA MODEM PROJECT NO.:4L0619RUS1

NAME OF TEST: RF Power Output

PARA. NO.: 2.1046

Method Of Measurement:

Antenna Conducted:

The peak power at antenna terminals is measured using a Spectrum Analyzer or Power Meter. Power output is measured with the maximum rated input level.

E.I.R.P.:

If the antenna is not detachable from the circuit then the Peak Power Output is derived from the peak radiated field strength of the fundamental emission by using the plane wave relation GP/ $4\pi R^2 = E^2/120\pi$ and proceeding as follows:

$$P = \frac{E^2 R^2}{30G} = \frac{E^2 3^2}{30G}$$

where,

P = the equivalent isotropic radiated power in watts

E = the maximum measured field strength in V/m

R = the measurement range (3 meters)

G = the numeric gain of the transmit antenna in relation to an isotropic radiator

NAME OF TEST: Occupied Bandwidth

PARA. NO.: 2.1049

Method Of Measurement:

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of at least 1% of the bandwidth of the transmitted signal. The resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform.

The appropriate bandwidth mask is applied to the output waveform to verify compliance.

NAME OF TEST: Spurious Emission at Antenna PARA. NO.: 2.1051 Terminals

Antenna Conducted:

A portion of the transmitted signal is coupled to a Spectrum Analyzer with a resolution bandwidth of 1 MHz for emissions above 1 GHz. Below 1 GHz the resolution bandwidth is chosen so as not to reduce the peak level of the measured waveform.

The appropriate limit line is applied to the output waveform to verify compliance.

NAME OF TEST: Field Strength of Spurious Radiation PARA. NO.: 2.1053

Test Method: TIA/EIA-603-1992, Section 2.2.12

The antenna substitution method was used to determine the equivalent radiated power at spurious frequencies. The spurious emissions were measured at a distance of 3 meters. The EUT was then replaced with a reference substitution antenna with a known gain referenced to an isotropic. This antenna was fed with a signal at the spurious frequency. The level of the signal was adjusted to repeat the previously measured level. The resulting eirp is the signal level fed to the reference antenna corrected for gain referenced to an isotropic.

FCC PART 27, SUBPART M Broadband Radio Service and Educational Broadband Service EOUIPMENT: 2500-2686 MHz PCMCIA MODEM PROJECT NO.:4L0619RUS1

NAME OF TEST: Frequency Stability

2.1055

Method Of Measurement:

Frequency Stability With Voltage Variation:

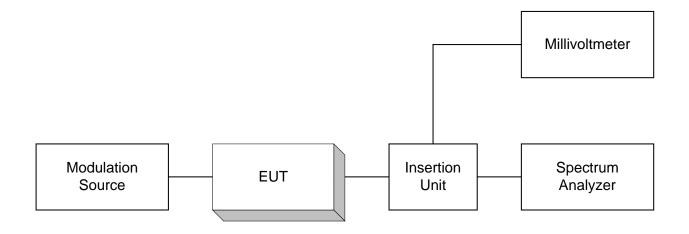
The E.U.T. is placed in an environmental chamber and allowed to stabilize at +20 degrees Celsius for at least 15 minutes. The frequency counter and signal generator are phase locked with the same 10 MHz reference frequency by connecting the 10 MHz ref. out of the counter to the 10 MHz ref, in of the signal generator. With the voltage input to the E.U.T. set to 85% S.T.V., the frequency is measured in 30 second intervals for a period of 5 minutes. This procedure is repeated at 100% S.T.V. and 115% S.T.V.

Frequency Stability With Temperature Variation:

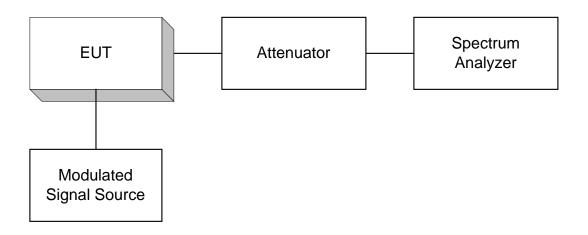
The input voltage to the E.U.T. is set to S.T.V. and the temperature of the environmental chamber is varied in 10 degree steps from -30 degrees C to +50 degrees C. The E.U.T. is allowed to stabilize at each temperature and the frequency is measured in 30 second intervals for a period of 5 minutes.

ANNEX B - TEST DIAGRAMS

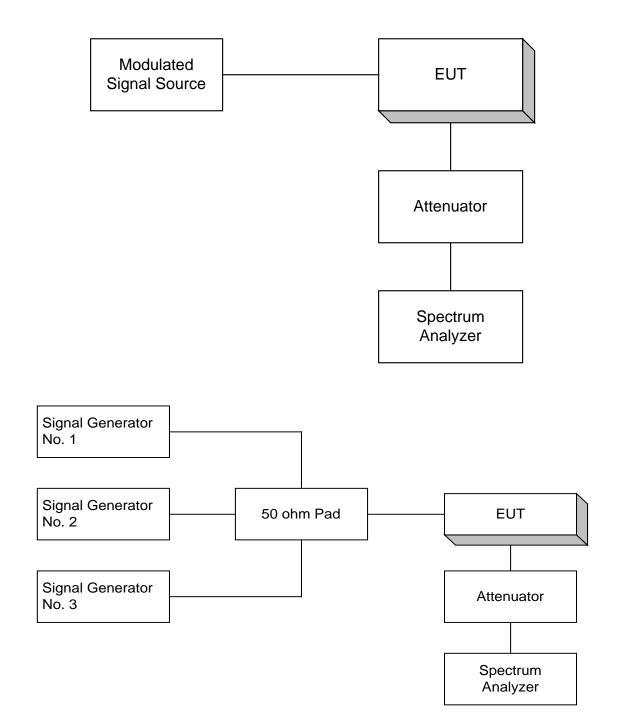
Para. No. 2.1046 - R.F. Power Output



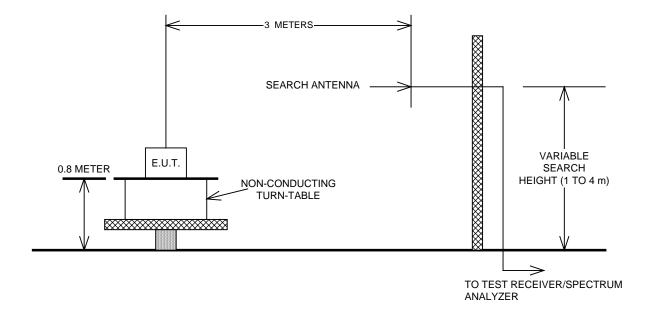
Para. No. 2.1049 - Occupied Bandwidth



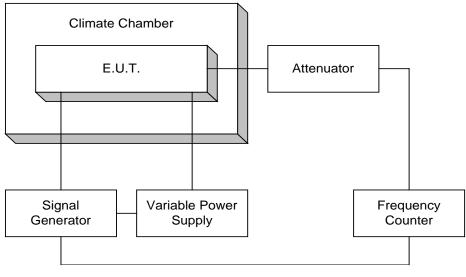








Para. No. 2.1055 - Frequency Stability



10 MHz Reference