

FCC Test Report

FCC Part 22, 24

for the Sierra Wireless

EVDO Mini-PCI Express Card CDMA Modem Module

FCC ID: N7N-MC5725-L

Installed in

Model Number: Thinkpad T61 15.4-inch widescreen

TEST REPORT #:CET10_007_07501_FCC22_24CDMA_RADIATED DATE: 4/16/2007







FCC listed# 101450

IC recognized # 3925

CETECOM Inc.

411 Dixon Landing Road • Milpitas, CA 95035 • U.S.A.

Phone: + 1 (408) 586 6200 • Fax: + 1 (408) 586 6299 • E-mail: info@cetecomusa.com • <u>http://www.cetecom.com</u> *CETECOM* Inc. is a Delaware Corporation with Corporation number: 2113686 Board of Directors: Dr. Harald Ansorge, Dr. Klaus Matkey, Hans Peter May

V1.1 2003-03-01

The BLUETOOTH trademarks are owned by Bluetooth SIG, Inc., U.S.A. and licensed to CETECOM Inc

© Copyright by CETECOM



Table of Contents

1	1 ASSESSMENT	3
2	2 ADMINISTRATIVE DATA	4
	 2.1 IDENTIFICATION OF THE TESTING LABORATORY ISSUING THE SAR ASSESSMENT REPORT 2.2 IDENTIFICATION OF THE CLIENT 	т4 4
	2.3 IDENTIFICATION OF THE MANUFACTURER	4
3	3 EQUIPMENT UNDER TEST (EUT)	5
	3.1 SPECIFICATION OF THE EQUIPMENT UNDER TEST	5
4	4 SUBJECT OF INVESTIGATION	6
5	5 MEASUREMENTS	7
	5.1 RF POWER OUTPUT	7
	Radiated Output Power measurement procedure:	7
	ERP Results 800 MHz band:	8
	EIRP Results 1900 MHz band:	8
	5.2 SPURIOUS EMISSIONS RADIATED	15
	FCC 2.1053 Measurements required: Field strength of spurious radiation	
	Limits:	
	FCC 22.917 Emission limitations for cellular equipment.	13
	Rediated out of band measurement procedure:	13 16
	Radiated out of band emissions results on FUT:	10 18
	RESULTS OF RADIATED TESTS CDMA 800:	
	RADIATED SPURIOUS EMISSIONS (CDMA 800)	
	RADIATED SPURIOUS EMISSIONS (CDMA 800)	20
	RADIATED SPURIOUS EMISSIONS (CDMA 800)	21
	RESULTS OF RADIATED TESTS PCS-1900:	31
	RADIATED SPURIOUS EMISSIONS(PCS 1900)	32
6	6 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS	42
7	7 REFERENCES	43
8	8 BLOCK DIAGRAMS	



1 <u>Assessment</u>

The following is in compliance with the applicable criteria specified in FCC rules Parts 2, 22 and 24 of Title 47 of the Code of Federal Regulations.

Company	Description	Model #	
Sianna Winalaga	EVDO Mini-	MC5725	
Slerra wireless	PCI Express Card CDMA Modem Module	WIC5725	

4/16/2007	EMC & Radio	Pete Krebill (EMC Engineer)		
Date	Section	Name	Signature	
Technical 1	responsibility for a	area of testing:		
4/16/2007	EMC & Radio	Lothar Schmidt (Test Lab Manager)		
Date	Section	Name	Signature	

The test results of this test report relate exclusively to the test item specified in Identification of the Equipment under Test. The CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM Inc USA.



2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the SAR Assessment Report

Company Name:	CETECOM Inc.
Department:	SAR
Address:	411 Dixon Landing Road Milpitas, CA 95035 U.S.A.
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
Responsible Test Lab Manager:	Lothar Schmidt

2.2 Identification of the Client

Applicant's Name:	Sierra Wireless
Address:	2290 Cosmos Ct.
	Carlsbad, CA, USA
Contact Person:	Ying Wang
Phone No.	604-232-1440
Fax:	604-231-1109
e-mail:	ywang@sierrawireless.com

2.3 Identification of the Manufacturer

Same as applicant



3 Equipment under Test (EUT)

3.1 Specification of the Equipment under Test

Product Type	EVDO Mini-PCI Express Card CDMA Modem Module		
Marketing Name:	Thinkpad T61 15.4-inch widescreen		
Model No:	MC5725		
FCC-ID:	N7N-MC5725-L		
Frequency Range:	824.7 MHz to 848.31 MHz & 1851.25 MHz to 1908.75 MHz		
Type(s) of Modulation:	CDMA		
Output Power	ERP 24.77 dBm (0.3W) @ 848.31 MHz EIRP 24.49 dBm (0.281W) @ 1908.75 MHz		



4 Subject of Investigation

All testing was performed on the EUT listed in Section 3. The EUT was installed in a Lenovo Thinkpad T61 15.4-inch widescreen laptop PC.

The objective of the measurements done by Cetecom Inc. was to measure the performance of the EUT as specified by requirements listed in FCC rules Parts 2, 22 and 24 of Title 47 of the Code of Federal Regulations. The maximization of portable equipment is conducted in accordance with ANSI C63.4.

All data in this report shows the worst case between horizontal and vertical polarization for above 1GHz.



5 Measurements

5.1 <u>RF Power Output</u>

<u>Radiated Output Power measurement procedure:</u> Based on TIA-603C 2004

2.2.17.2 Effective Radiated Power (ERP) or Equivalent Isotropic Radiated Power (EIRP)



Connect the equipment as shown in the above diagram with the EUT's antenna in a vertical orientation.

Adjust the settings of the Digital Radiocommunication Tester (DRT) to set the EUT to its maximum power at the required channel.

Set the spectrum analyzer to the channel frequency. Set the analyzer to measure peak hold with the required settings.

Rotate the EUT 360°. Record the peak level in dBm (LVL).

Replace the EUT with a vertically polarized half wave dipole or known gain antenna. The center of the antenna should be at the same location as the center of the EUT's antenna.

Connect the antenna to a signal generator with known output power and record the path loss in dB (LOSS). LOSS = Generator Output Power (dBm) – Analyzer reading (dBm).

Determine the ERP using the following equation:

ERP (dBm) = **LVL** (dBm) + **LOSS** (dB)

Determine the EIRP using the following equation:

EIRP (dBm) = **ERP** (dBm) + 2.14 (dB)

Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band. **Spectrum analyzer settings = rbw=vbw=3MHz**

(**note:** Steps 5 and 6 above are performed prior to testing and **LOSS** is recorded by test software. Steps 3, 4, 7 and 8 above are performed with test software.)



ERP Results 800 MHz band:

	Peak ERP
	≤38.45dBm (7W)
-	

Frequency (MHz)	Effective Radiated Power (dBm)
824.7	24.07
836.52	24.43
848.31	24.77

EIRP Results 1900 MHz band:

Peak EIRP
≤33dBm (2W)

Frequency (MHz)	Equivalent Isotropic Radiated Power (dBm)
1851.25	22.78
1880.0	24.14
1908.75	24.49



EIRP (CDMA 800) §22.913(a) CHANNEL 1013 *CETECOM Inc. 411 Dixon Landing Road, Milpitas CA 95035, USA* EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 1013 ANT Orientation: V EUT Orientation: V Test Engineer: Pete K





EIRP (CDMA 800) §22.913(a) CHANNEL 384 *CETECOM Inc. 411 Dixon Landing Road, Milpitas CA 95035, USA* EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 384 ANT Orientation: V EUT Orientation: V Test Engineer: Pete K





EIRP (CDMA 800) §22.913(a) CHANNEL 777 *CETECOM Inc. 411 Dixon Landing Road, Milpitas CA 95035, USA* EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 777 ANT Orientation: V EUT Orientation: V Test Engineer: Pete K





EIRP (PCS-1900) §24.232(b) CHANNEL 25 *CETECOM Inc. 411 Dixon Landing Road, Milpitas CA 95035, USA* EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 1900 Ch 25 ANT Orientation: V EUT Orientation: V Test Engineer: Pete K





EIRP (PCS-1900) §24.232(b) CHANNEL 600 *CETECOM Inc. 411 Dixon Landing Road, Milpitas CA 95035, USA* EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 1900 Ch 600 ANT Orientation: V EUT Orientation: V Test Engineer: Pete K





EIRP (PCS-1900) §24.232(b) CHANNEL 1175 *CETECOM Inc. 411 Dixon Landing Road, Milpitas CA 95035, USA* EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 1900 Ch 1175 ANT Orientation: V EUT Orientation: V Test Engineer: Pete K





5.2 Spurious Emissions Radiated

FCC 2.1053 Measurements required: Field strength of spurious radiation.

Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission.

Limits:

FCC 22.917 Emission limitations for cellular equipment.

The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.

(a) *Out of band emissions*. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.

(b) *Measurement procedure*. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (*i.e.* 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC 24.238 Emission limitations for Broadband PCS equipment.

The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service.

(a) *Out of band emissions*. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.

(b) Measurement procedure. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted



in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (*i.e.* 100 kHz of 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Radiated out of band measurement procedure:







Connect the equipment as shown in the above diagram with the EUT's antenna in a horizontal orientation.

Adjust the settings of the Digital Radiocommunication Tester (DRT) to set the EUT to its maximum power at the required channel.

Set the spectrum analyzer to measure peak hold with the required settings.

Place the measurement antenna in a horizontal orientation. Rotate the EUT 360°. Raise the measurement antenna up to 4 meters in 0.5 meters increments and rotate the EUT 360° at each height to maximize all emissions. Measure and record all spurious emissions (LVL) up to the tenth harmonic of the carrier frequency.

Replace the EUT with a horizontally polarized half wave dipole or known gain antenna. The center of the antenna should be at the same location as the center of the EUT's antenna. Connect the antenna to a signal generator with known output power and record the path loss in

dB (LOSS). LOSS = Generator Output Power (dBm) – Analyzer reading (dBm).

Determine the level of spurious emissions using the following equation:

Spurious (dBm) = LVL (dBm) + LOSS (dB):

Repeat steps 4, 5 and 6 with all antennas vertically polarized.

Determine the level of spurious emissions using the following equation:

Spurious (dBm) = LVL (dBm) + LOSS (dB):

Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.



(**note:** Steps 5 and 6 above are performed prior to testing and **LOSS** is recorded by test software. Steps 3, 4 and 7 above are performed with test software.)

Spectrum analyzer settings: Res B/W: 1 MHz

Vid B/W: 1 MHz

Measurement Survey:

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the CDMA 800 & PCS-1900 bands. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the CDAM 800 & PCS-1900 band into any of the other blocks respectively. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this.



Radiated out of band emissions results on EUT:

RESULTS OF RADIATED TESTS CDMA 800:

Harmonics	Tx ch-1013 Freq. (MHz)	Level (dBm)	Tx ch-384 Freq. (MHz)	Level (dBm)	Tx ch-777 Freq. (MHz)	Level (dBm)
2	1649.4	NF	1673.04	NF	1696.62	NF
3	2474.1	NF	2509.56	NF	2544.93	NF
4	3298.8	NF	3346.08	NF	3393.24	NF
5	4123.5	NF	4182.6	NF	4241.55	NF
6	4948.2	NF	5019.12	NF	5089.86	NF
7	5772.9	NF	5855.64	NF	5938.17	NF
8	6597.6	NF	6692.16	NF	6786.48	NF
9	7422.3	NF	7528.68	NF	7634.79	NF
10	8247	NF	8365.2	NF	8483.1	NF
NF = NOISE FLOOR						



RADIATED SPURIOUS EMISSIONS (CDMA 800)

Tx @ 824.7 MHz: 30MHz - 1GHz Spurious emission limit –13dBm Antenna: vertical Note: 1.The peak above the limit line is the carrier freq. *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 1013 ANT Orientation: V EUT Orientation: V





RADIATED SPURIOUS EMISSIONS (CDMA 800)

Tx @ 836.52 MHz: 30MHz - 1GHz Spurious emission limit -13dBm Antenna: vertical Note: 1.The peak above the limit line is the carrier freq. *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 384 ANT Orientation: V EUT Orientation: V





RADIATED SPURIOUS EMISSIONS (CDMA 800)

Tx @ 848.31 MHz: 30MHz - 1GHz Spurious emission limit –13dBm Antenna: vertical Note: 1.The peak above the limit line is the carrier freq. *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 777 ANT Orientation: V EUT Orientation: V





RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 824.7 MHz: 1GHz – 1.58GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 1013 ANT Orientation: V EUT Orientation: V

EUT Orientation: V Test Engineer: Pete K





RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 824.7 MHz: 1.58GHz – 3GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 1013 ANT Orientation: V EUT Orientation: V





RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 824.7 MHz: 3GHz – 9GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 1013 ANT Orientation: V EUT Orientation: V





RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 836.52MHz: 1GHz – 1.58GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 384 ANT Orientation: V EUT Orientation: V





RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 836.52MHz: 1.58GHz – 3GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 384 ANT Orientation: V EUT Orientation: V





RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 836.52MHz: 3GHz – 9GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 384 ANT Orientation: V EUT Orientation: V





1.58G

RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 848.31MHz: 1GHz – 1.58GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 777 ANT Orientation: V EUT Orientation: V

-100

1G

1.1G

Test Engineer: Pete K Level [dBm] 0 -20 -40 mMM when the source when the source of the sourc -60 -80

Frequency [Hz]

1.3G

1.4G

1.2G



RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 848.31MHz: 1.58GHz – 3GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 777 ANT Orientation: V EUT Orientation: V

Test Engineer: Pete K

Level [dBm] 30 20 10 0 -10 -20 -30 Mannaha hulloum nd mark MMM MWWWW MARAMAN -40 -50 -60 2.8G 3G 1.58G 1.8G 2G 2.2G 2.4G 2.6G Frequency [Hz]

This report shall not be reproduced except in full without the written approval of: CETECOM, Inc.



RADIATED SPURIOUS EMISSIONS (CDMA 800) Tx @ 848.31MHz: 3GHz – 9GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 800 Ch 777 ANT Orientation: V EUT Orientation: V





RESULTS OF RADIATED TESTS PCS-1900:

Harmonic	Tx ch-25 Freq.(MHz)	Level (dBm)	Tx ch-600 Freq. (MHz)	Level (dBm)	Tx ch-1175 Freq. (MHz)	Level (dBm)			
2	3702.5	NF	3760	NF	3817.5	NF			
3	5553.75	NF	5640	NF	5726.25	NF			
4	7405	NF	7520	NF	7636	NF			
5	9256.25	NF	9400	NF	9543.75	NF			
6	11107.5	NF	11280	NF	11452.5	NF			
7	12958.75	NF	13160	NF	13361.25	NF			
8	14810	NF	15040	NF	15270	NF			
9	16661.25	NF	16920	NF	17178.75	NF			
10	18512.5	NF	18800	NF	19087.5	NF			
NF = NOISE FLOOR									



RADIATED SPURIOUS EMISSIONS(PCS 1900)

TX: 30MHz - 1GHz

Spurious emission limit -13dBm Antenna: vertical Note: This plot is valid for low, mid & high channels (worst-case plot) **CETECOM Inc.** 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 1900 Ch 25 ANT Orientation: V EUT Orientation: V









RADIATED SPURIOUS EMISSIONS(PCS 1900) Tx @ 1851.25MHz: 3GHz – 18GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 1900 Ch 25 ANT Orientation: V EUT Orientation: V













RADIATED SPURIOUS EMISSIONS(PCS 1900) Tx @ 1880.0MHz: 3GHz – 18GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 1900 Ch 600 ANT Orientation: V EUT Orientation: V













RADIATED SPURIOUS EMISSIONS(PCS 1900) Tx @ 1908.75MHz: 3GHz – 18GHz Spurious emission limit –13dBm *CETECOM Inc.* 411 Dixon Landing Road, Milpitas CA 95035, USA EUT: C3 with MC5725 Customer: Lenovo Test Mode: CDMA 1900 Ch 1175 ANT Orientation: V EUT Orientation: V









6 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No	Instrument/Ancillary	Туре	Manufacturer	Serial No.	Cal Due	Interval
01	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2007	1 year
02	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	100017	August 2007	1 year
03	Signal Generator	SMY02	Rohde & Schwarz	836878/011	May 2007	1 year
04	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02	May 2007	1 year
05	Biconilog Antenna	3141	EMCO	0005-1186	June 2007	1 year
06	Horn Antenna (1- 18GHz)	SAS- 200/571	AH Systems	325	June 2007	1 year
07	Horn Antenna (18- 26.5GHz)	3160-09	EMCO	1240	June 2007	1 year
08	Power Splitter	11667B	Hewlett Packard	645348	n/a	n/a
09	Climatic Chamber	VT4004	Voltsch	G1115	May 2007	1 year
10	High Pass Filter	5HC2700	Trilithic Inc.	9926013	n/a	n/a
11	High Pass Filter	4HC1600	Trilithic Inc.	9922307	n/a	n/a
12	Pre-Amplifier	JS4- 00102600	Miteq	00616	May 2007	1 year
13	Power Sensor	URV5-Z2	Rohde & Schwarz	DE30807	May 2007	1 year
14	Digital Radio Comm. Tester	CMD-55	Rohde & Schwarz	847958/008	May 2007	1 year
15	Universal Radio Comm. Tester	CMU 200	Rohde & Schwarz	832221/06	May 2007	1 year
16	LISN	ESH3-Z5	Rohde & Schwarz	836679/003	May 2007	1 year
17	Loop Antenna	6512	EMCO	00049838	July 2007	2 years



7 <u>References</u>

Title 47—Telecommunication, CHAPTER I--FEDERAL COMMUNICATIONS COMMISSION, PART 2--FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS October 1, 2001.

Title 47—Telecommunication, CHAPTER I--FEDERAL COMMUNICATIONS COMMISSION, PART 22 PUBLIC MOBILE SERVICES October 1, 1998.

FCC Report and order 02-229 September 24, 2002.

Title 47—Telecommunication, CHAPTER I--FEDERAL COMMUNICATIONS COMMISSION, PART 24 PERSONAL COMMUNICATIONS SERVICES October 1, 1998.

ANSI / TIA-603-C-2004 Land Mobile FM or PM Communications Equipment Measurement and Performance Standard November 7, 2002.



8 BLOCK DIAGRAMS Radiated Testing



ANECHOIC CHAMBER

Spectrum Analyzer