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MEASUREMENT REPORT
FCC Part 27

Applicant Name:
IP Wireless
Unit 7 Greenways Business Park
Bellinger Close, Chippenham
Wiltshire SN15 1BN

Date of Testing:
Dec. 1-9, 2010
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0Y1011101835.PKT

FCC ID:	**PKTODUAFD1**
APPLICANT:	**IP WIRELESS**

Application Type:	Certification
FCC Classification:	Licensed Non-Broadcast Station Transmitter (TNB)
FCC Rule Part(s):	§2; §27
EUT Type:	Outdoor Directional User Equipment
Model(s):	AFD
Tx Frequency Range:	2496-2690 MHz
Max. RF Output Power:	7.798 W EIRP (2498.8 MHz at 3.84Mcps 16-QAM) (38.92 dBm) 7.551 W EIRP (2593 MHz at 3.84Mcps QPSK) (38.78 dBm) 5.623 W EIRP (2687.2 MHz at 3.84Mcps 16-QAM) (37.5 dBm) 6.714 W EIRP (2501.4 MHz at 7.68Mcps QPSK) (38.27 dBm) 9.354 W EIRP (2593 MHz at 7.68Mcps 16-QAM) (39.71 dBm) 8.035 W EIRP (2684.6 MHz at 7.68Mcps 16-QAM) (39.05 dBm)
Test Device Serial No.:	*identical prototype* [S/N: N/A]

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. **Grant Conditions:** Power output listed is EIRP for Part 27.

PCTEST certifies that no party to this application has been subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

Randy Ortanez
President

TABLE OF CONTENTS

MEASUREMENT REPORT
FCC Part 27

§2.1033 General Information

APPLICANT:	IP Wireless
APPLICANT ADDRESS:	Unit 7 Greenways Business Park
	Bellinger Close, Chippenham , Wiltshire SN15 1BN
TEST SITE:	PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS:	6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S):	§2; §27
BASE MODEL:	AFD
FCC ID:	PKTODUAFD1
FCC CLASSIFICATION:	Licensed Non-Broadcast Station Transmitter (TNB)
MODULATIONS:	QPSK, 16-QAM, 64-QAM
FREQUENCY TOLERANCE:	Frequency must remain in band
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST:	Dec. 1-9, 2010
TEST REPORT S/N:	0Y1011101835.PKT

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab. located in Columbia, MD 21045, U.S.A.

- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (2451A-1).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).

- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (2451A-1) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

1.2 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity are, the Baltimore-Washington Internt'l (BWI) airport, the city of Baltimore and the Washington, DC area. (*See Figure 1-1*).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on January 28, 2009.

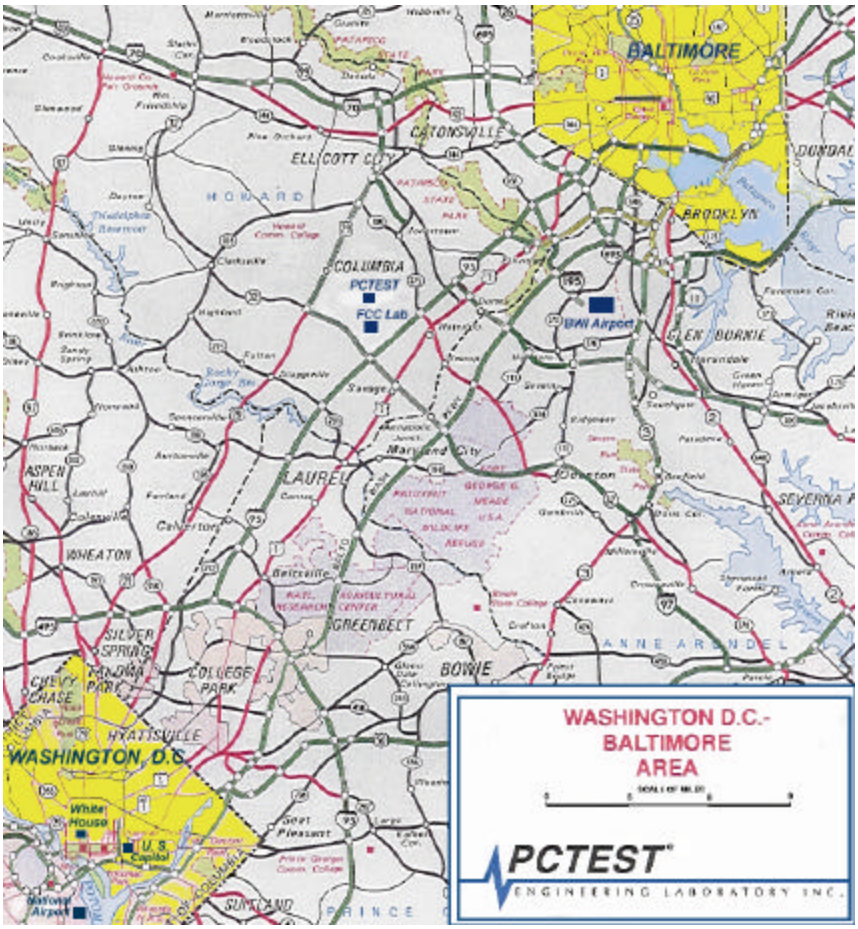

Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **IP Wireless Outdoor Directional User Equipment FCC ID: PKTODUAFD1**. The test data contained in this report pertains only to the emissions due to the EUT's 2.5GHz band function. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
IP Wireless / Model: AFD	PKTODUAFD1	Outdoor Directional User Equipment

Table 2-1. EUT Equipment Description

The EUT was set to transmit continuously at all timeslots and operate at full power (24dBm). The EUT was also tested for chip rates of 3.84Mcps and 7.68Mcps for a channel bandwidth of 5MHz and 10MHz respectively. Each available modulation type (i.e. QPSK, 16-QAM, 64-QAM) was tested to determine the configuration producing the worst case emissions. The EUT was connected to a laptop and AC/DC power supply via an Ethernet cable. The configuration for each modulation was executed through test software installed in the laptop.

2.2 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

2.3 Labeling Requirements

Per 2.925

The FCC identifier shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase.

Per 15.19; Docket 95-19

In addition to this requirement, a device subject to certification shall be labeled as follows:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (See Figure 3-1). The equipment under test is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This power level was recorded using a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded with the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

Deviation from Measurement Procedure……..None

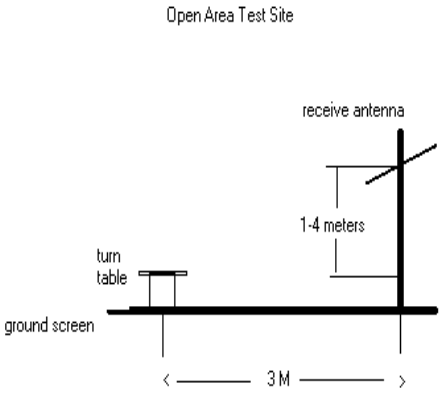

Figure 3-1. Diagram of 3-meter outdoor test range

3.2 2496-2690 MHz Band

§27.5(i)

The 2496-2690MHz band is utilized for Broadband Radio Service and Educational Broadband service. It is a flexible use service that can be used to accommodate a variety of fixed, portable, and mobile services, including high-speed broadband services (including internet access), video programming, and cellularized communications services. It can also be licensed to educational institutions or non-profit educational organizations designed to accommodate a variety of fixed, portable, and mobile services relating to education and instruction. Licensees can also lease excess capacity to other entities so long as they meet educational programming requirements.

3.3 Radiated Power and Radiated Spurious Emissions

§2.1053, 27.53(m)

Radiated power and radiated spurious emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. This level is then measured with a broadband average power meter. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive average power meter reading. This spurious level is recorded with the power meter. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation.

4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	263-10dB	(DC-18GHz) 10 dB Attenuator	N/A		N/A	N/A
-	No.166	(1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167	(100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	12/2/2010	Annual	12/2/2011	3008A00985
Agilent	85650A	Quasi-Peak Adapter	3/30/2010	Annual	3/30/2011	2043A00301
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/11/2010	Annual	10/11/2011	3613A00315
Agilent	E4407B	ESA Spectrum Analyzer	3/30/2010	Annual	3/30/2011	US39210313
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	10/11/2010	Annual	10/11/2011	US42510244
Agilent	E5515C	Wireless Communications Test Set	10/11/2010	Annual	10/11/2011	GB46110872
Agilent	E5515C	Wireless Communications Test Set	10/11/2010	Annual	10/11/2011	GB46310798
Agilent	E5515C	Wireless Communications Test Set	8/12/2010	Annual	8/12/2011	GB41450275
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/30/2010	Annual	3/30/2011	MY45470194
Agilent	E8267C	Vector Signal Generator	10/11/2010	Annual	10/11/2011	US42340152
Agilent	N9020A	MXA Signal Analyzer	9/8/2010	Annual	9/8/2011	US46470561
Compliance Design	Roberts	Dipole Set	4/7/2010	Biennial	4/7/2012	146
Compliance Design	Roberts	Dipole Set	4/7/2010	Biennial	4/7/2012	147
Emco	3115	Horn Antenna (1-18GHz)	10/14/2009	Biennial	10/14/2011	9704-5182
Emco	3115	Horn Antenna (1-18GHz)	4/8/2010	Biennial	4/8/2012	9205-3874
Espec	ESX-2CA	Environmental Chamber	4/1/2010	Annual	4/1/2011	17620
Gigatronics	80701A	(0.05-18GHz) Power Sensor	10/11/2010	Annual	10/11/2011	1833460
Gigatronics	8651A	Universal Power Meter	10/11/2010	Annual	10/11/2011	8650319
K & L	11SH10	Band Pass Filter	N/A	Annual	N/A	1300/4000
K & L	11SH10	Band Pass Filter	N/A	Annual	N/A	4000/12000
MiniCircuits	VHF-1300+	High Pass Filter	N/A		N/A	30716
MiniCircuits	VHF-3100+	High Pass Filter	N/A		N/A	30721
Pasternack	PE2208-6	Bidirectional Coupler	N/A		N/A	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	6/21/2010	Annual	6/21/2011	833855/0010
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Rx	7/17/2009	Biennial	7/17/2011	9105-2404
Schwarzbeck	UHA9105	Dipole Antenna (400 - 1GHz) Tx	7/17/2009	Biennial	7/17/2011	9105-2403
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	5/14/2009	Biennial	5/14/2011	A050307
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	7/17/2009	Biennial	7/17/2011	A051107
Rohde & Schwarz	CMU200	Base Station Simulator	6/17/2010	Annual	6/17/2011	836536/0005
Rohde & Schwarz	FSQ 26	Spectrum Analyzer	8/28/2010	Annual	8/28/2011	200452
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	8/30/2010	Annual	8/30/2011	100976
Anritsu	ML2495A	Power Meter	10/13/2010	Annual	10/13/2011	941001
Anritsu	MA2411B	Pulse Sensor	11/13/2010	Annual	11/13/2011	1027293

Table 4-1. Test Equipment

5.0 SAMPLE CALCULATIONS

Emission Designator

Emission Designator = 8M12G7D

TD-CDMA BW = 8.12 MHz
G = Phase Modulation
7 = Quantized/ Digital Info
D = Amplitude/Angle Modulated

Spurious Radiated Emission – 2500MHz Band

Example: 2500 MHz Band 2nd Harmonic (5186.0 MHz)

The average receive power meter reading at 3 meters with the EUT on the turntable was –81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminal is adjusted to produce a reading of –81.0 dBm on the power meter. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1402.0 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm – (-24.80) = 50.3 dBc.

6.0 TEST RESULTS

6.1 Summary

Company Name: IP Wireless

FCC ID: PKTODUAFD1

FCC Classification: Licensed Non-Broadcast Station Transmitter (TNB)

Mode(s): QPSK, 16-QAM, 64-QAM

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)					
27.50(h)(1)	Equivalent Isotropic Radiated Power	< 33dBW +10log(X/Y) dBW, where X = channel width in MHz and Y = 6MHz for the MBS or Y = 5.5MHz for the LBS and UBS. For 3.84Mcps: where X = 5MHz MBS: < 32.5861 dBW (1813.9 W) LBS, UBS: < 32.2082 dBW (1662.7 W) For 7.68Mcps: where X = 10MHz MBS: < 35.5963 dBW (3627.7 W) LBS,UBS: < 35.2185 dBW (3325.4 W)	RADIATED	PASS	Section 6.2
2.1053, 27.53(m)	Undesirable Emissions	< 43 + 10log$_{10}$ (P[Watts]) for all out-of-band emissions		PASS	Section 6.3, 6.4

Table 6-1. Summary of Test Results

6.2 Equivalent Isotropic Radiated Power Output Data

§27.50(h)(1);

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]
2498.80	QPSK	-9.790	26.36	8.90	V	35.26	3.357
2498.80	16QAM	-6.130	30.02	8.90	V	38.92	7.798
2498.80	64QAM	-6.590	29.56	8.90	V	38.46	7.015

Table 6-2. Equivalent Isotropic Radiated Power Output Data (2496-2690MHz Band @ 3.84 Mcps)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]
2593.00	QPSK	-6.270	29.88	8.90	V	38.78	7.551
2593.00	16QAM	-6.370	29.78	8.90	V	38.68	7.379
2593.00	64QAM	-6.500	29.65	8.90	V	38.55	7.161

Table 6-3. Equivalent Isotropic Radiated Power Output Data (2496-2690MHz Band @ 3.84 Mcps)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]
2687.20	QPSK	-8.000	28.15	9.20	V	37.35	5.433
2687.20	16QAM	-7.850	28.30	9.20	V	37.50	5.623
2687.20	64QAM	-8.230	27.92	9.20	V	37.12	5.152

Table 6-4. Equivalent Isotropic Radiated Power Output Data (2496-2690MHz Band @ 3.84 Mcps)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]
2501.40	QPSK	-6.780	29.37	8.90	V	38.27	6.714
2501.40	16QAM	-6.790	29.36	8.90	V	38.26	6.699
2501.40	64QAM	-7.230	28.92	8.90	V	37.82	6.053

Table 6-5. Equivalent Isotropic Radiated Power Output Data (2496-2690MHz Band @ 7.68 Mcps)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]
2593.00	QPSK	-6.110	30.04	8.90	V	38.94	7.834
2593.00	16QAM	-5.340	30.81	8.90	V	39.71	9.354
2593.00	64QAM	-5.620	30.53	8.90	V	39.43	8.770

Table 6-6. Equivalent Isotropic Radiated Power Output Data (2496-2690MHz Band @ 7.68 Mcps)

Frequency [MHz]	Mode	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]
2684.60	QPSK	-7.200	28.95	9.20	V	38.15	6.531
2684.60	16QAM	-6.300	29.85	9.20	V	39.05	8.035
2684.60	64QAM	-7.260	28.89	9.20	V	38.09	6.442

Table 6-7. Equivalent Isotropic Radiated Power Output Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This level is recorded using the power meter. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the ERP is recorded.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

6.3 TD-CDMA Radiated Measurements for Channel Edge

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY: 2498.80 MHz
MEASURED OUTPUT POWER: 35.260 dBm = 3.357 W
MODULATION SIGNAL: QPSK
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 48.26 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2496.23	-27.79	8.90	-18.89	V	54.2
2501.39	-25.67	8.90	-16.77	V	52.0

Table 6-8. Radiated Emissions Data (2498.8MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2593.00	MHz	
MEASURED OUTPUT POWER:	38.780 dBm	=	7.551 W
MODULATION SIGNAL:	QPSK		
DISTANCE:	3 meters		
LIMIT:	43 + 10 $\log_{10}$ (W)	51.78	dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2590.34	-33.57	9.06	-24.51	V	63.3
2595.62	-33.82	9.06	-24.75	V	63.5

Table 6-9. Radiated Emissions Data (2593MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2687.20	MHz		
MEASURED OUTPUT POWER:	37.350	dBm	=	5.433 W
MODULATION SIGNAL:	QPSK			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W)	50.35	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2684.56	-30.93	9.21	-21.72	V	59.1
2689.81	-30.07	9.22	-20.85	V	58.2

Table 6-10. Radiated Emissions Data (2687.2MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2498.80	MHz		
MEASURED OUTPUT POWER:	38.920	dBm	=	7.798 W
MODULATION SIGNAL:	16QAM			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W)	51.92	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2496.00	-30.27	8.90	-21.37	V	60.3
2501.41	-30.09	8.90	-21.19	V	60.1

Table 6-11. Radiated Emissions Data (2498.2MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2593.00	MHz		
MEASURED OUTPUT POWER:	38.680	dBm	=	7.379 W
MODULATION SIGNAL:	16QAM			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W)	51.68	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2590.34	-32.65	9.06	-23.59	V	62.3
2595.61	-32.60	9.06	-23.53	V	62.2

Table 6-12. Radiated Emissions Data (2593MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY: 2687.20 MHz
MEASURED OUTPUT POWER: 37.500 dBm = 5.623 W
MODULATION SIGNAL: 16QAM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ 50.50 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2684.53	-29.54	9.21	-20.33	V	57.8
2689.77	-30.32	9.22	-21.10	V	58.6

Table 6-13. Radiated Emissions Data (2687.2MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2498.80	MHz		
MEASURED OUTPUT POWER:	38.460	dBm	=	7.015 W
MODULATION SIGNAL:	64QAM			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	51.46	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2495.35	-30.24	8.90	-21.35	V	59.8
2501.34	-28.62	8.90	-19.72	V	58.2

Table 6-14. Radiated Emissions Data (2498.8MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY: 2593.00 MHz
MEASURED OUTPUT POWER: 38.550 dBm = 7.161 W
MODULATION SIGNAL: 64QAM
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 51.55 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2589.77	-31.95	9.06	-22.89	V	61.4
2595.69	-31.49	9.06	-22.42	V	61.0

Table 6-15. Radiated Emissions Data (2593 MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY: 2687.20 MHz
MEASURED OUTPUT POWER: 37.120 dBm = 5.152 W
MODULATION SIGNAL: 64QAM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ = 50.12 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2684.26	-26.97	9.21	-17.76	V	54.9
2689.75	-28.17	9.22	-18.95	V	56.1

Table 6-16. Radiated Emissions Data (2687.2 MHz @ 3.84 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY: 2501.40 MHz
MEASURED OUTPUT POWER: 38.270 dBm = 6.714 W
MODULATION SIGNAL: QPSK
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 51.27 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2496.28	-36.51	8.90	-27.61	V	65.9
2506.62	-34.95	8.91	-26.04	V	64.3

Table 6-17. Radiated Emissions Data (2501.4 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY: 2593.00 MHz
MEASURED OUTPUT POWER: 38.940 dBm = 7.834 W
MODULATION SIGNAL: QPSK
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ 51.94 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2587.73	-37.92	9.05	-28.87	V	67.8
2598.18	-38.22	9.07	-29.15	V	68.1

Table 6-18. Radiated Emissions Data (2593 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2684.60	MHz		
MEASURED OUTPUT POWER:	38.150	dBm	=	6.531 W
MODULATION SIGNAL:	QPSK			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W)	51.15	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2679.36	-33.24	9.21	-24.03	V	62.2
2689.66	-33.09	9.22	-23.87	V	62.0

Table 6-19. Radiated Emissions Data (2684.6 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2501.40	MHz		
MEASURED OUTPUT POWER:	38.260	dBm	=	7.798 W
MODULATION SIGNAL:	16QAM			
DISTANCE:	3	meters		
LIMIT:	$43 + 10 \log_{10}$ (W)	51.92	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2496.19	-35.02	8.90	-26.12	V	64.4
2506.52	-35.64	8.90	-26.74	V	65.0

Table 6-20. Radiated Emissions Data (2501.4 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2593.00	MHz		
MEASURED OUTPUT POWER:	39.710	dBm	=	9.354 W
MODULATION SIGNAL:	16QAM			
DISTANCE:	3	meters		
LIMIT:	$43 + 10 \log_{10} (W)$	52.71	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2587.79	-34.88	9.06	-25.82	V	65.5
2598.33	-33.25	9.06	-24.18	V	63.9

Table 6-21. Radiated Emissions Data (2593 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY: 2684.60 MHz
MEASURED OUTPUT POWER: 39.050 dBm = 8.035 W
MODULATION SIGNAL: 16QAM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ 52.05 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2679.54	-33.55	9.21	-24.34	V	63.4
2689.72	-32.03	9.22	-22.81	V	61.9

Table 6-22. Radiated Emissions Data (2684.6 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2501.40	MHz		
MEASURED OUTPUT POWER:	37.820	dBm	=	6.053 W
MODULATION SIGNAL:	64QAM			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	50.82	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2496.19	-35.26	8.90	-26.37	V	64.2
2506.55	-35.99	8.90	-27.09	V	64.9

Table 6-23. Radiated Emissions Data (2501.4 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY: 2593.00 MHz
MEASURED OUTPUT POWER: 39.430 dBm = 8.770 W
MODULATION SIGNAL: 64QAM
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 52.43 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2587.43	-33.46	9.06	-24.40	V	63.8
2598.45	-32.79	9.06	-23.72	V	63.2

Table 6-24. Radiated Emissions Data (2593 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements for Channel Edge (Cont'd)

§2.1053, §27.53(m)

Field Strength of Emissions at CHANNEL EDGE

OPERATING FREQUENCY:	2684.60	MHz		
MEASURED OUTPUT POWER:	38.090	dBm	=	6.442 W
MODULATION SIGNAL:	64QAM			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	51.09	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
2679.51	-32.31	9.21	-23.10	V	61.2
2690.23	-32.38	9.22	-23.16	V	61.2

Table 6-25. Radiated Emissions Data (2684.6 MHz @ 7.68 Mcps)

NOTES:

Radiated Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

6.4 TD-CDMA Radiated Spurious Measurements

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2498.80 MHz

MEASURED OUTPUT POWER: 34.360 dBm = 2.729 W

MODULATION SIGNAL: QPSK

DISTANCE: 3 meters

LIMIT: 43 + 10 $\log_{10}$ (W) = 47.36 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3330.00	-47.65	9.70	-37.95	V	72.3
4997.60	-40.15	11.20	-28.95	V	63.3
7496.40	-44.17	11.10	-33.07	V	67.4

Table 6-26. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2593.00 MHz
MEASURED OUTPUT POWER: 37.880 dBm = 6.138 W
MODULATION SIGNAL: QPSK
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) 50.88 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3457.00	-52.20	9.70	-42.50	V	80.38
5186.00	-45.44	10.93	-34.50	V	72.4
7779.00	-45.49	11.33	-34.17	V	72.0

Table 6-27. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2687.20 MHz

MEASURED OUTPUT POWER: 36.150 dBm = 4.121 W

MODULATION SIGNAL: QPSK

DISTANCE: 3 meters

LIMIT: 43 + 10 $\log_{10}$ (W) 49.15 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
5374.40	-34.86	10.67	-24.19	V	60.3
8061.60	-44.31	11.51	-32.80	V	69.0

Table 6-28. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2498.80 MHz
MEASURED OUTPUT POWER: 38.020 dBm = 6.339 W
MODULATION SIGNAL: 16QAM
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) 51.02 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3331.30	-47.71	9.70	-38.01	V	76.0
4997.60	-40.39	11.20	-29.19	V	67.2
7496.40	-39.68	11.10	-28.58	V	66.6

Table 6-29. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2593.00 MHz
MEASURED OUTPUT POWER: 37.780 dBm = 5.998 W
MODULATION SIGNAL: 16QAM
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) 50.78 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3457.00	-50.43	9.70	-40.73	V	78.5
5186.00	-40.31	10.93	-29.38	V	67.2
7779.00	-41.14	11.33	-29.81	V	67.6

Table 6-30. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2687.20 MHz

MEASURED OUTPUT POWER: 36.300 dBm = 4.266 W

MODULATION SIGNAL: 16QAM

DISTANCE: 3 meters

LIMIT: $43 + 10 \log_{10} (W)$ 49.30 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
5374.40	-34.63	10.67	-23.96	V	60.3
8061.60	-32.70	11.51	-21.20	V	57.5

Table 6-31. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m))

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2498.80 MHz
MEASURED OUTPUT POWER: 37.560 dBm = 5.702 W
MODULATION SIGNAL: 64QAM
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 50.56 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3330.00	-47.75	9.70	-38.05	V	75.6
4997.60	-38.05	11.20	-26.85	V	64.4
7496.40	-37.65	11.10	-26.55	V	64.1

Table 6-32. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2593.00 MHz
MEASURED OUTPUT POWER: 37.650 dBm = 5.821 W
MODULATION SIGNAL: 64QAM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ = 50.65 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3457.70	-51.87	9.70	-42.17	V	79.8
5186.00	-42.38	10.93	-31.44	V	69.1
7779.00	-41.75	11.33	-30.43	V	68.1

Table 6-33. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2687.20 MHz
MEASURED OUTPUT POWER: 35.920 dBm = 3.908 W
MODULATION SIGNAL: 64QAM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ = 48.92 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
5374.40	-31.51	10.67	-20.84	V	56.8
8061.60	-32.56	11.51	-21.06	V	57.0

Table 6-34. Radiated Spurious Data (2496-2690MHz Band @ 3.84 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2501.40 MHz
MEASURED OUTPUT POWER: 37.370 dBm = 5.458 W
MODULATION SIGNAL: QPSK
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 50.37 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3300.00	-48.67	9.70	-38.97	V	76.3
5002.80	-42.09	11.20	-30.89	V	68.3
7504.20	-43.57	11.10	-32.47	V	69.8

Table 6-35. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2593.00 MHz
MEASURED OUTPUT POWER: 38.040 dBm = 6.368 W
MODULATION SIGNAL: QPSK
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) 51.04 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3457.10	-50.18	9.70	-40.48	V	78.52
5186.00	-45.01	10.93	-34.07	V	72.1
7779.00	-45.81	11.33	-34.49	V	72.5

Table 6-36. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge.. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2684.60 MHz
MEASURED OUTPUT POWER: 36.950 dBm = 4.955 W
MODULATION SIGNAL: QPSK
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) 49.95 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
5369.20	-38.96	10.67	-28.29	V	65.2
8060.80	-45.50	11.51	-33.99	V	70.9

Table 6-37. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2501.40 MHz
MEASURED OUTPUT POWER: 37.360 dBm = 5.445 W
MODULATION SIGNAL: 16QAM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10}$ (W) 50.36 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3300.00	-56.77	9.70	-47.07	V	84.4
5002.80	-41.74	11.20	-30.54	V	67.9
7504.20	-43.45	11.10	-32.35	V	69.7

Table 6-38. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2593.00 MHz

MEASURED OUTPUT POWER: 38.810 dBm = 7.603 W

MODULATION SIGNAL: 16QAM

DISTANCE: 3 meters

LIMIT: 43 + 10 $\log_{10}$ (W) 51.81 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3457.10	-48.93	9.70	-39.23	V	78.0
5186.00	-41.36	10.93	-30.43	V	69.2
7779.00	-41.17	11.33	-29.84	V	68.6

Table 6-39. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2684.60 MHz

MEASURED OUTPUT POWER: 37.850 dBm = 6.095 W

MODULATION SIGNAL: 16QAM

DISTANCE: 3 meters

LIMIT: $43 + 10 \log_{10} (W)$ 50.85 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
5369.20	-36.23	10.68	-25.55	V	63.4
8053.80	-41.86	11.51	-30.36	V	68.2

Table 6-40. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2501.40 MHz

MEASURED OUTPUT POWER: 36.920 dBm = 4.920 W

MODULATION SIGNAL: 64QAM

DISTANCE: 3 meters

LIMIT: $43 + 10 \log_{10} (W)$ = 49.92 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3320.00	-46.79	9.70	-37.09	V	74.0
5002.80	-37.79	11.20	-26.59	V	63.5
7504.20	-39.42	11.10	-28.32	V	65.2

Table 6-41. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2593.00 MHz
MEASURED OUTPUT POWER: 38.530 dBm = 7.129 W
MODULATION SIGNAL: 64QAM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ = 51.53 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3457.70	-51.88	9.70	-42.18	V	80.7
5186.00	-42.51	10.93	-31.57	V	70.1
7779.00	-41.25	11.33	-29.93	V	68.5

Table 6-42. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

TD-CDMA Radiated Measurements (Cont'd)

§2.1053, §27.53(m)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2684.60 MHz
MEASURED OUTPUT POWER: 36.890 dBm = 4.887 W
MODULATION SIGNAL: 64QAM
DISTANCE: 3 meters
LIMIT: $43 + 10 \log_{10} (W)$ = 49.89 dBc

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
5369.20	-38.10	10.68	-27.42	V	64.3
8053.80	-42.24	11.51	-30.74	V	67.6

Table 6-43. Radiated Spurious Data (2496-2690MHz Band @ 7.68 Mcps)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. Final power measurements are made with a broadband average power meter. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. This spurious level is recorded using the power meter. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

This device was tested in all configurations and the highest power is reported as shown in the following test results tables with their respective modulation. This unit was tested while powered over ethernet The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the vertical polarity setup. Modes QPSK, 16QAM, and 64QAM and chip rates of 3.84 and 7.68Mcps were evaluated. RBW = VBW = 100kHz for measuring Channel Edge. All other measurements employed a resolution bandwidth of 1MHz. The data reported in the table above was measured in this test setup.

7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **IP Wireless Outdoor Directional User Equipment FCC ID: PKTODUAFD1** complies with all the requirements of Parts 2 and 27 of the FCC rules.