FCC TEST REPORT

(PART 22)

REPORT NO.:	RF120524C18-3
MODEL NO.:	LEX 700
FCC ID:	UZ7LEX700
RECEIVED:	May 18, 2012
TESTED:	May 22 ~ Jun. 18, 2012
ISSUED:	Jul. 04, 2012

APPLICANT:	Motorola Solutions, Inc.
ADDRESS:	One Motorola Plaza, Holtsville, NY 11742-1300 USA

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120524C18-3	Original release	Jul. 04, 2012

1 CERTIFICATION

PRODUCT:	MISSION CRITICAL HANDHELD
MODEL:	LEX 700
BRAND:	Motorola
APPLICANT:	Motorola Solutions, Inc.
TESTED:	May 22 ~ Jun. 18, 2012
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC PART 22, Subpart H**
	FCC PART 2
	ANSI/TIA/EIA-603-C 2004

The above equipment (model: LEX 700) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE :** Jul. 04, 2012
Pettie Chen / Specialist

APPROVED BY : _____ , **DATE :** Jul. 04, 2012
Gary Chang / Technical Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
2.1046 22.913 (a)	Effective radiated power	PASS	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	PASS	Meet the requirement of limit.
2.1049	Occupied Bandwidth	PASS	Meet the requirement of limit.
22.917	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -28.1dB at 2474.10MHz.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.2 TEST SITE AND INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 19, 2012	Apr. 18, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 04, 2011	Aug. 03, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 03, 2012	Apr. 02, 2013
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 06, 2011	Sep. 05, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Preamplifier Agilent	8449B	3008A01911	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10638	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 19, 2011	Aug. 18, 2012
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 13, 2011	Aug. 12, 2012
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	NA	NA	NA
Mini-Circuits Power Splitter	ZN2PD-9G	N/A	Mar. 23, 2012	Mar. 22, 2013
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Universal Radio Communication Tester R&S	CMU200	104484	Dec. 30, 2011	Dec. 29, 2012

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Chamber 9.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 460141.

5. The IC Site Registration No. is IC 7450F-4.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	MISSION CRITICAL HANDHELD
MODEL NO.	LEX 700
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.7Vdc (Li-ion battery)
MODULATION TYPE	QPSK, OQPSK, HPSK
FREQUENCY RANGE	824.7MHz ~ 848.31MHz
MAX. ERP POWER	0.127Watts (21.05dBm)
ANTENNA TYPE	Refer to NOTE as below
I/O PORTS	Refer to users' manual
DATA CABLE	Refer to NOTE as below
ACCESSORY DEVICES	Refer to NOTE as below

NOTE:

1. The EUT has following accessories.

Battery 1	
P/N	82-154162-01
RATING	3.7V, 1880mAh/7.0Wh

Battery 2	
P/N	82-154162-02
RATING	3.7V, 3760mAh/13.9Wh

*Battery 2 was the worst for final test.

ADAPTER	
BRAND	MOTOROLA
MODEL	IU08-2050120-WP
INPUT	100-240Vac, 50/60Hz, 0.2A
OUTPUT	5Vdc, 1.2A

USB charging cable	
BRAND	MOTOROLA
MODEL	25-128458-01R
CABLE	1.5m shielded cable without core

2. EUT software and firmware version.

OEM NAME	Motorola LEX700
OEM VERSION	0.20.0059
WIRELESS PART NUMBER	31-FUSION-X2.00
WIRELESS FUSION	X_2.00.0.0.041E

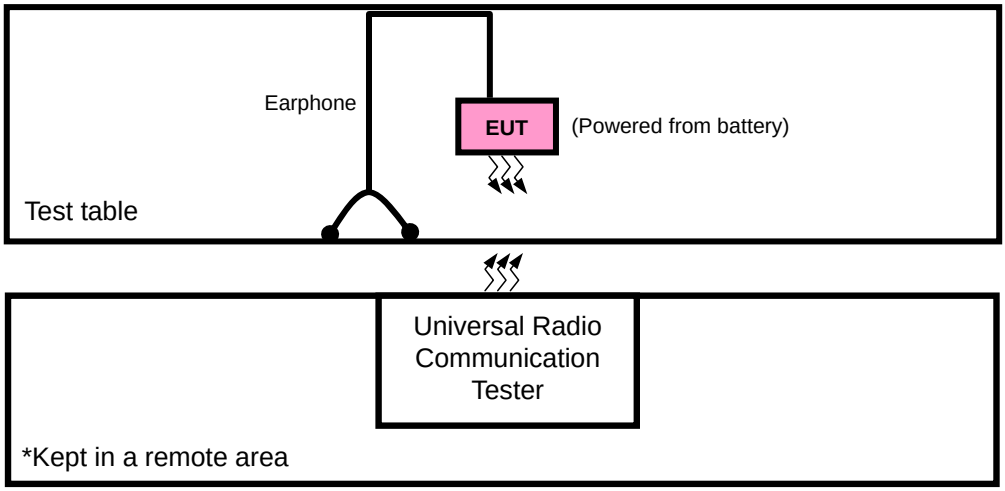
3. The following antennas for the EUT.

Item	Type	Gain(dBi)	Connector
Main	Inverted-F	-0.6	NA
Diversity	Inverted-F	-1.0	NA
Monitoring	Inverted-F	-2.5	NA

*Main antenna was the worst for the final test.

4. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 CONFIGURATION OF SYSTEM UNDER TEST



3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Earphone	Nokia	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.4m shielded cable without core

NOTE: 1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 was provided by client.

3.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case was found when positioned on Z-plane for ERP and Z-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
-	ERP	1013 to 777	1013, 384, 777	CDMA, 1xEVDO Rev. 0 & 1xEVDO Rev. A
-	FREQUENCY STABILITY	1013 to 777	384	CDMA
-	OCCUPIED BANDWIDTH	1013 to 777	1013, 384, 777	CDMA, 1xEVDO Rev. 0 & 1xEVDO Rev. A
-	BAND EDGE	1013 to 777	1013, 777	CDMA, 1xEVDO Rev. 0 & 1xEVDO Rev. A
-	CONDCUDETED EMISSION	1013 to 777	1013, 384, 777	CDMA, 1xEVDO Rev. 0 & 1xEVDO Rev. A
-	RADIATED EMISSION<1G	1013 to 777	1013	1xEVDO Rev. A
-	RADIATED EMISSION≥1G	1013 to 777	1013, 384, 777	1xEVDO Rev. A

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	25deg. C, 68%RH	3.7Vdc	Anderson Hong
FREQUENCY STABILITY	25deg. C, 65%RH	3.7Vdc	Mark Liao
OCCUPIED BANDWIDTH	25deg. C, 68%RH	3.7Vdc	Anderson Hong
BAND EDGE	25deg. C, 68%RH	3.7Vdc	Anderson Hong
CONDCUDETED EMISSION	25deg. C, 68%RH	3.7Vdc	Anderson Hong
RADIATED EMISSION	25deg. C, 65%RH	3.7Vdc	Anderson Hong

3.5 EUT OPERATING CONDITIONS

The EUT makes a call to the Universal Radio Communication Tester. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

ANSI/TIA/EIA-603-C 2004

NOTE: All test items have been performed and recorded as per the above standards.

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 5MHz for CDMA mode.

b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G

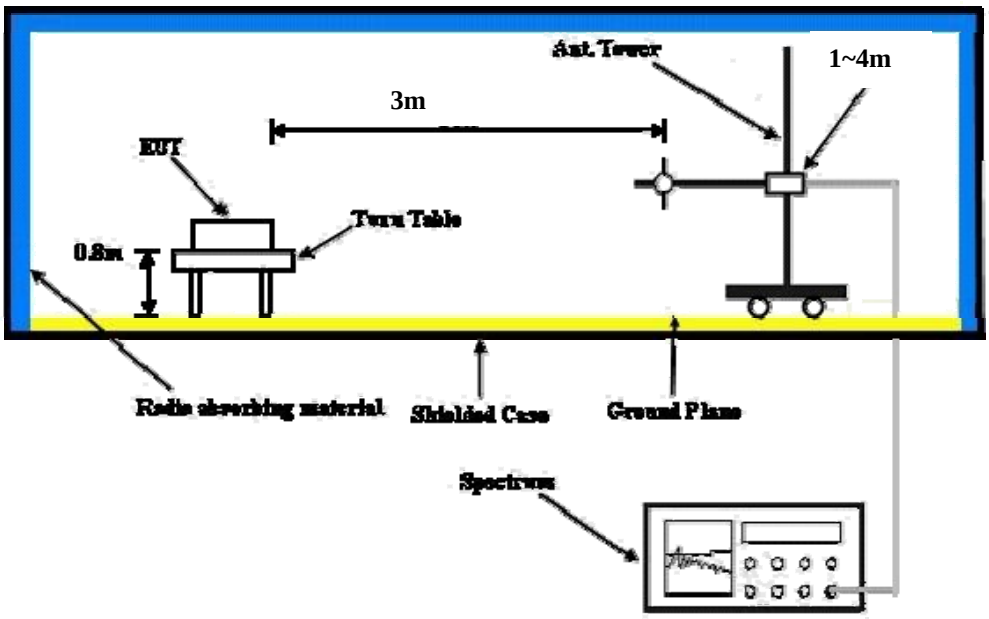
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with CDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

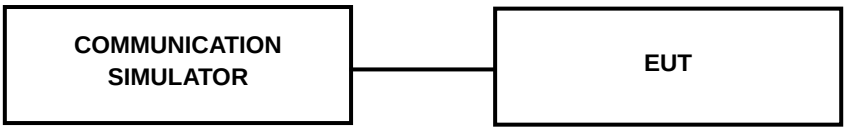
4.1.3 TEST SETUP

EIRP / ERP MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

CONDUCTED POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	CDMA2000 BC0		
Channel	1013	384	777
Frequency (MHz)	824.7	836.52	848.31
RC1+SO55	22.03	21.93	21.98
RC3+SO55	**22.41**	22.09	21.97
RC3+SO32(+ F-SCH)	22.25	21.96	22.02
RC3+SO32(+SCH)	22.18	21.88	22.15
RTAP 153.6	22.33	22.07	21.72
RETAP 4096	22.36	22.28	21.69

ERP POWER (dBm)

FOR CDMA MODE:

Channel	Freq. (MHz)	Antenna polarity	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1013	824.7	H	-14.1	18.4	0	16.25	38.5	-22.25
1013	824.7	V	-8.4	22.8	0	20.65	38.5	-17.85
384	836.52	H	-15.1	16.7	0	14.55	38.5	-23.95
384	836.52	V	-9.5	22.4	0	20.25	38.5	-18.25
777	848.31	H	-15.7	15.6	0.5	13.95	38.5	-24.55
777	848.31	V	-10.3	21.3	0.5	19.65	38.5	-18.85

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)-2.15dB.

FOR 1xEVDO Rev. 0 MODE:

Channel	Freq. (MHz)	Antenna polarity	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1013	824.7	H	-13.9	18.6	0	16.45	38.5	-22.05
1013	824.7	V	-8.1	23.1	0	20.95	38.5	-17.55
384	836.52	H	-15	16.8	0	14.65	38.5	-23.85
384	836.52	V	-9.4	22.5	0	20.35	38.5	-18.15
777	848.31	H	-16	15.3	0.5	13.65	38.5	-24.85
777	848.31	V	-10.6	21.0	0.5	19.35	38.5	-19.15

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)-2.15dB.

FOR 1xEVDO Rev. A MODE

Channel	Freq. (MHz)	Antenna polarity	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1013	824.7	H	-13.8	18.7	0	16.55	38.5	-21.95
1013	824.7	V	-8	23.2	0	21.05	38.5	-17.45
384	836.52	H	-14.8	17.0	0	14.85	38.5	-23.65
384	836.52	V	-9.3	22.6	0	20.45	38.5	-18.05
777	848.31	H	-16	15.3	0.5	13.65	38.5	-24.85
777	848.31	V	-10.6	21.0	0.5	19.35	38.5	-19.15

NOTE: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB)-2.15dB.

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.2.2 TEST PROCEDURE

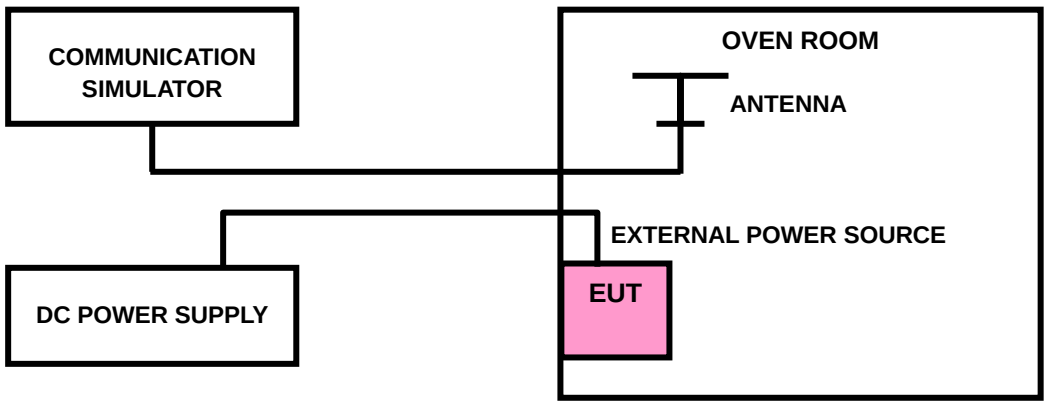
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.2.3 TEST SETUP



4.2.4 TEST RESULTS

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (Hz)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
4.255	16	0.019	2.5
3.18	13	0.016	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.18Vdc to 4.255Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

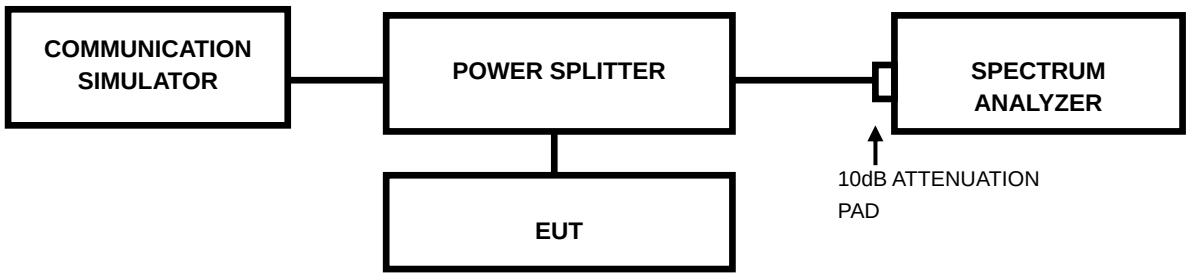
TEMP. (℃)	FREQUENCY ERROR (Hz)	FREQUENCY ERROR (ppm)	LIMIT (ppm)
60	28	0.033	2.5
50	24	0.029	2.5
40	22	0.026	2.5
30	20	0.024	2.5
20	18	0.022	2.5
10	15	0.018	2.5
0	11	0.013	2.5
-10	8	0.010	2.5
-20	12	0.014	2.5
-30	14	0.017	2.5

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.2 TEST SETUP

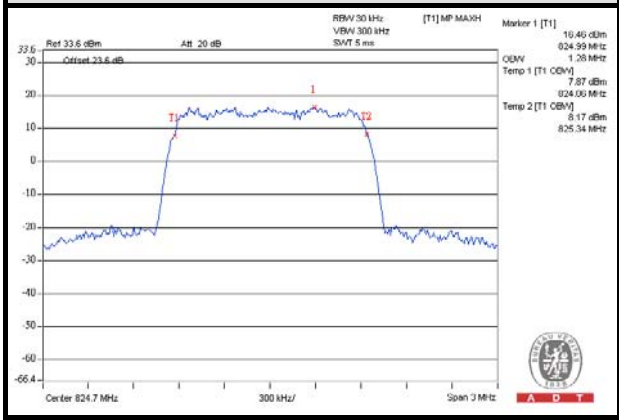


4.3.3 TEST RESULTS

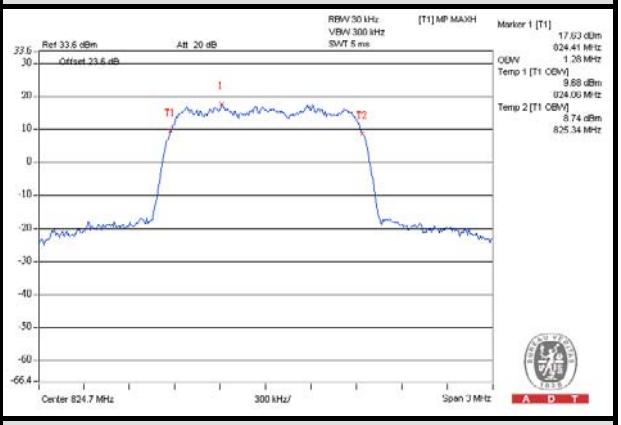
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		
		CDMA MODE	1xEV-DO Rev. 0 MODE	1xEV-DO Rev. A MODE
1013	824.70	1.28	1.28	1.28
384	836.52	1.28	1.27	1.27
777	848.31	1.27	1.27	1.27

SPECTRUM PLOT OF WORST VALUE

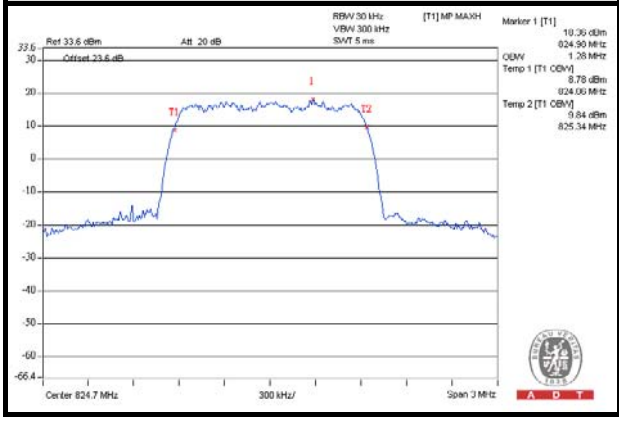
CDMA MODE



1xEV-DO Rev. 0 MODE



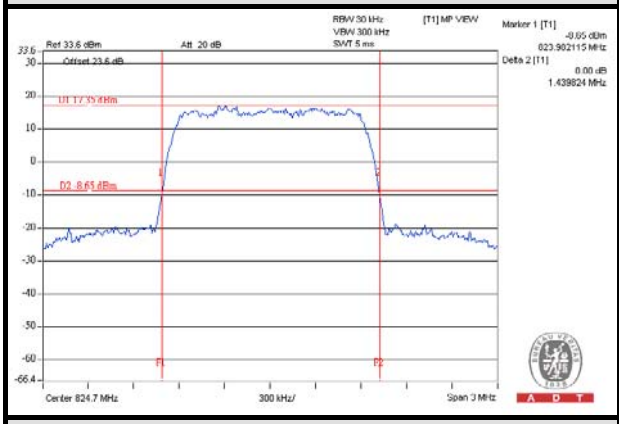
1xEV-DO Rev. A MODE



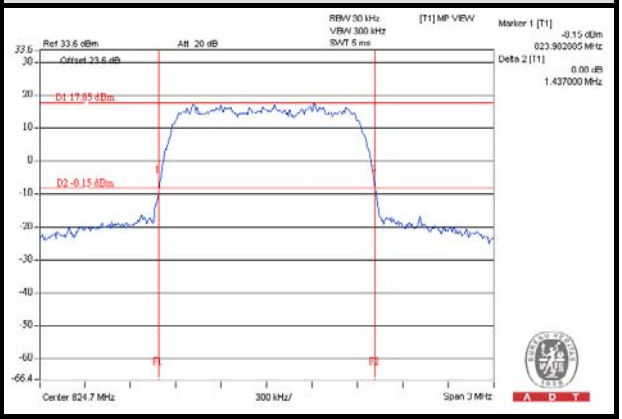
CHANNEL	FREQUENCY (MHz)	26dB BANDWIDTH (MHz)		
		CDMA MODE	1xEV-DO Rev. 0 MODE	1xEV-DO Rev. A MODE
1013	824.70	1.440	1.437	1.442
384	836.52	1.426	1.429	1.429
777	848.31	1.433	1.436	1.427

SPECTRUM PLOT OF WORST VALUE

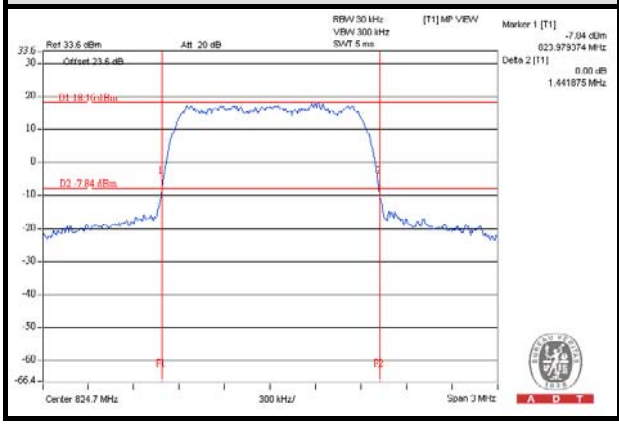
CDMA MODE



1xEV-DO Rev. 0 MODE



1xEV-DO Rev. A MODE

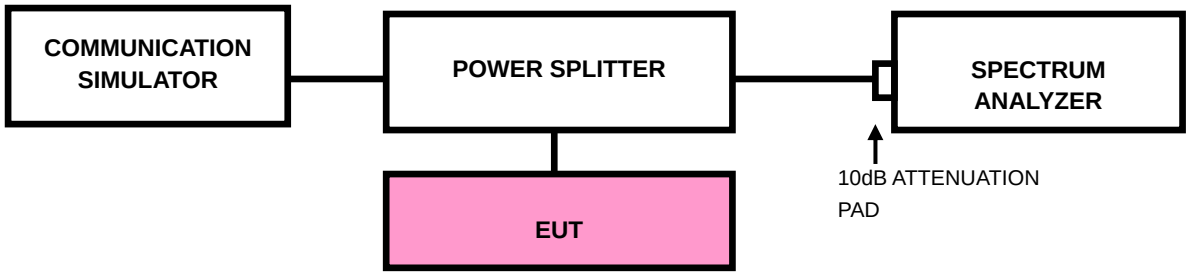


4.4 BAND EDGE MEASUREMENT

4.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.4.2 TEST SETUP



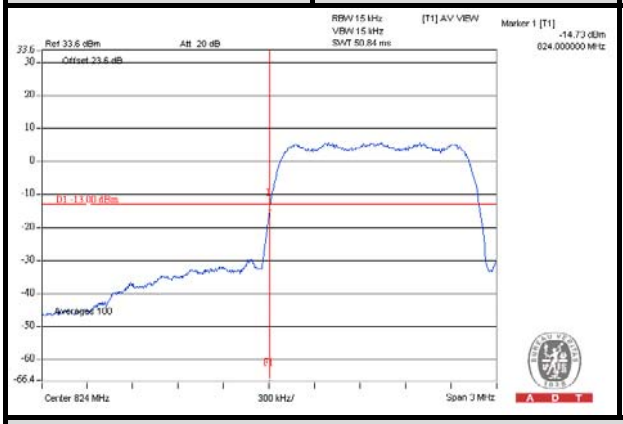
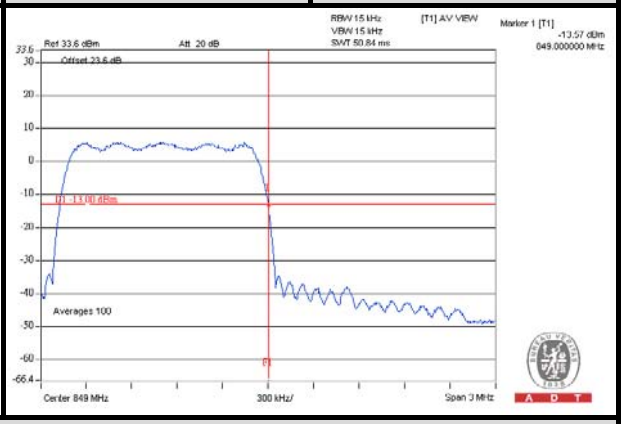
4.4.3 TEST PROCEDURES

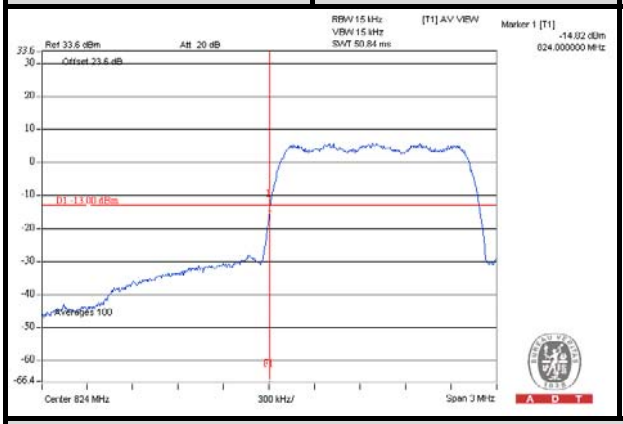
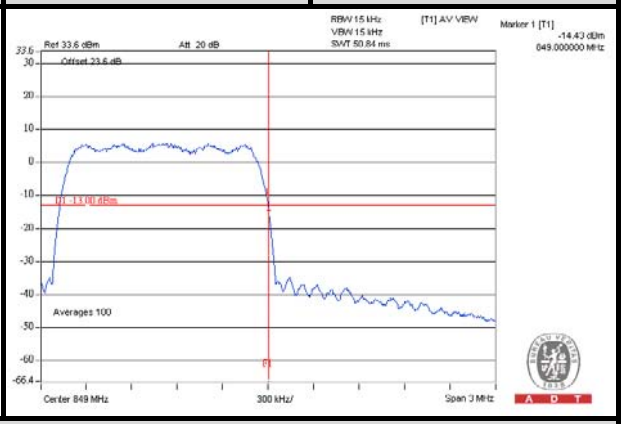
a. All measurements were done at low and high operational frequency range.

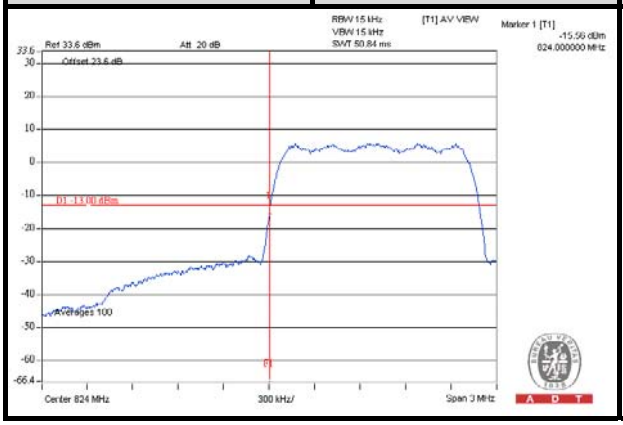
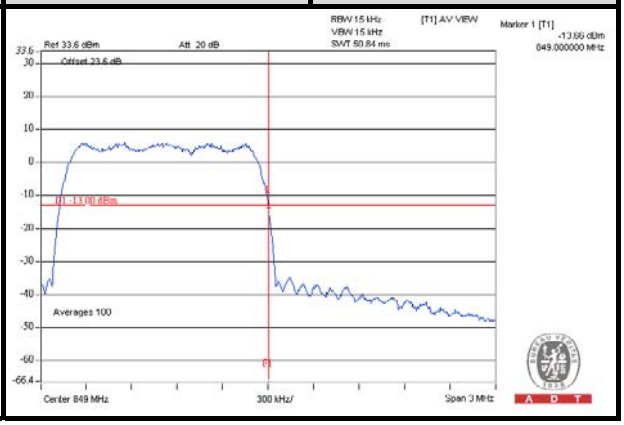
b. The center frequency of spectrum is the band edge frequency and span is 2 MHz. RB of the spectrum is 15kHz and VB of the spectrum is 15kHz.

c. Record the max trace plot into the test report.

4.4.4 TEST RESULTS

CDMA MODE			
CHANNEL	1013	CHANNEL	777
			

1xEV-DO Rev. 0 MODE			
CHANNEL	1013	CHANNEL	777
			

1xEV-DO Rev. A MODE			
CHANNEL	1013	CHANNEL	777
			

4.5 CONDUCTED SPURIOUS EMISSIONS

4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

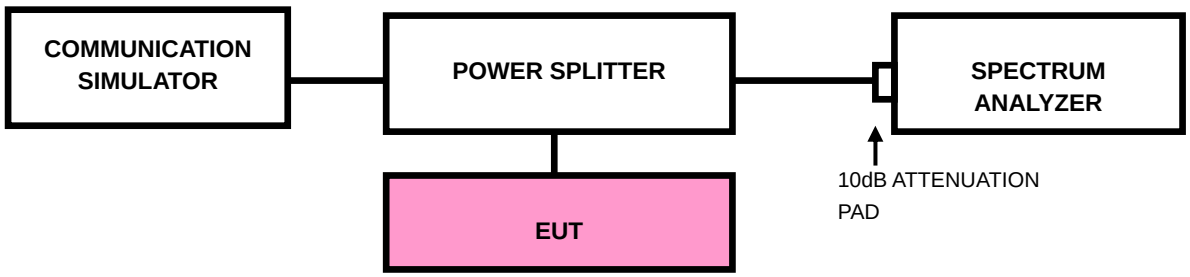
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.5.2 TEST PROCEDURE

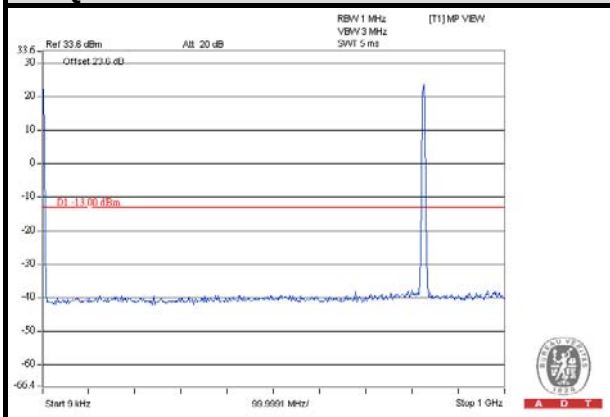
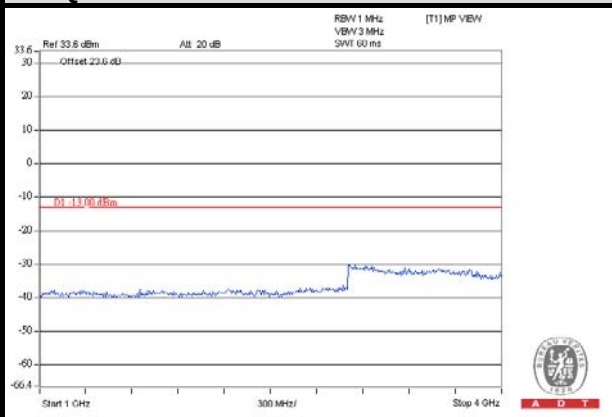
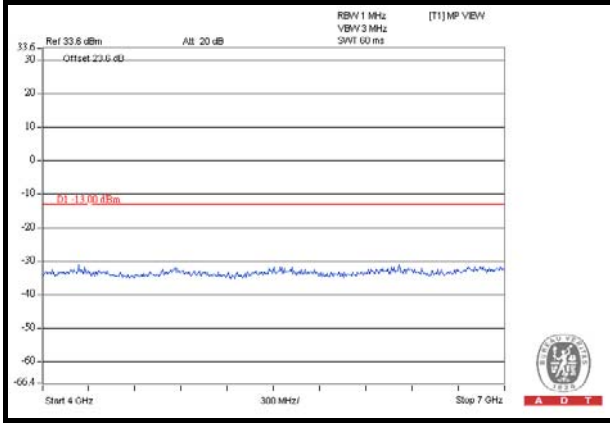
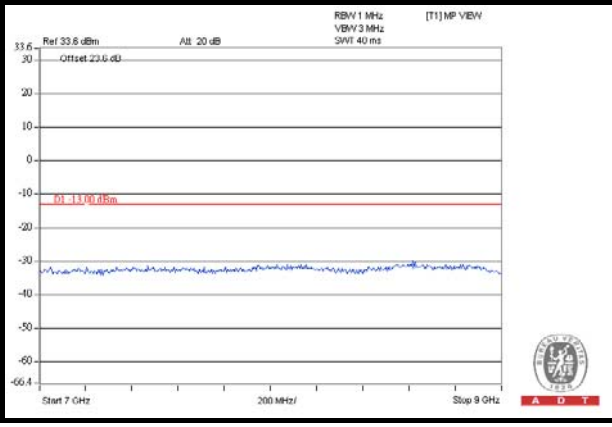
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

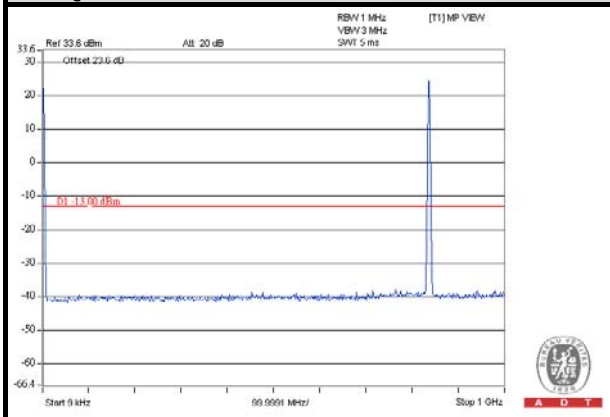
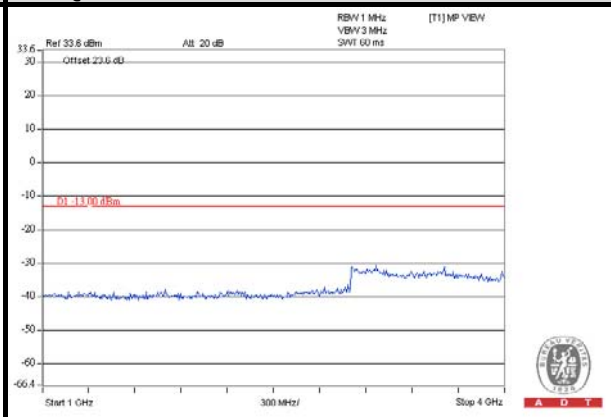
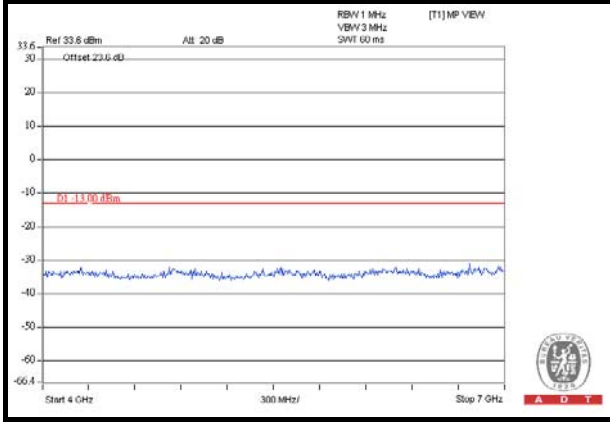
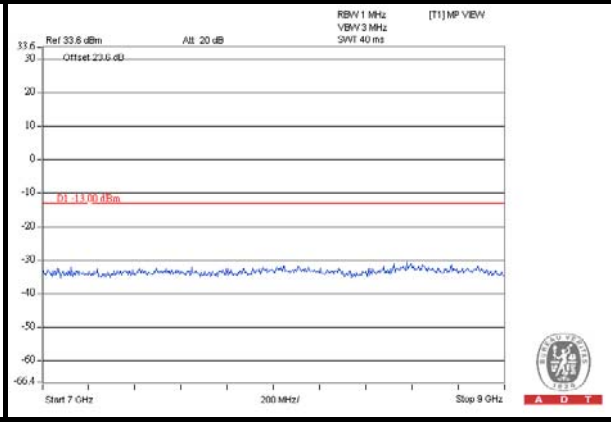
b. Measuring frequency range is from 9kHz to 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

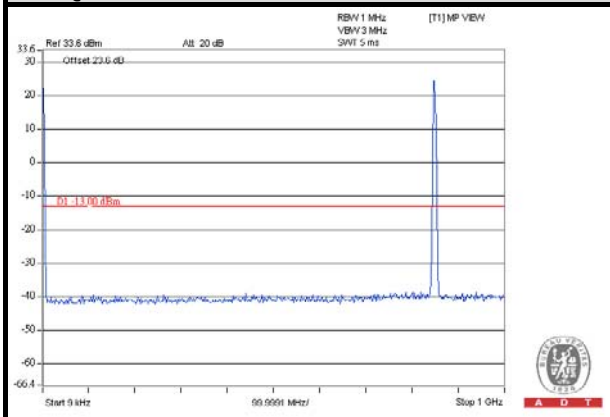
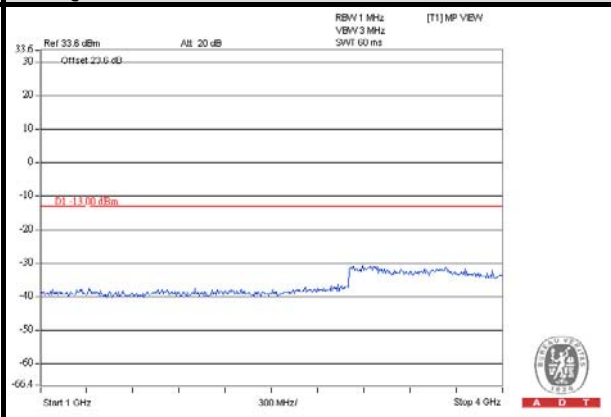
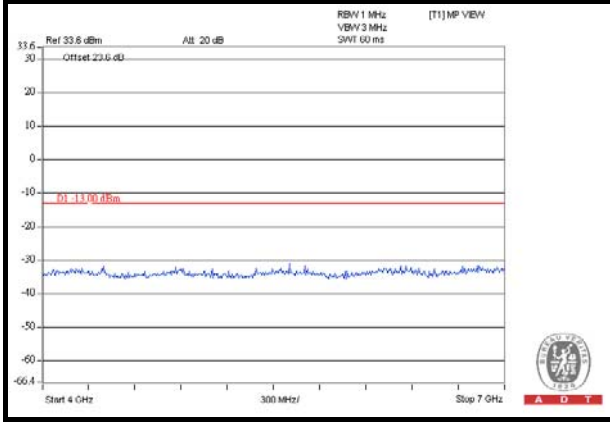
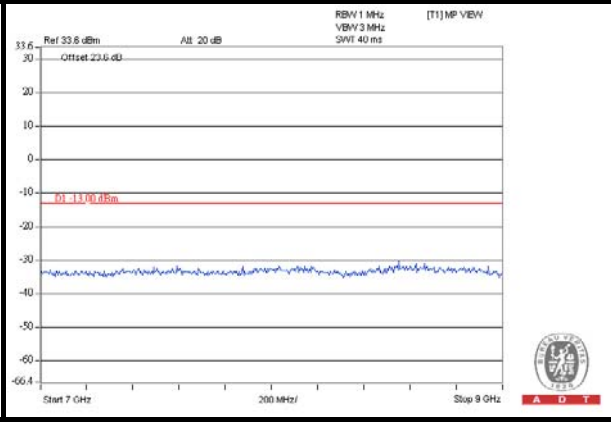
4.5.3 TEST SETUP

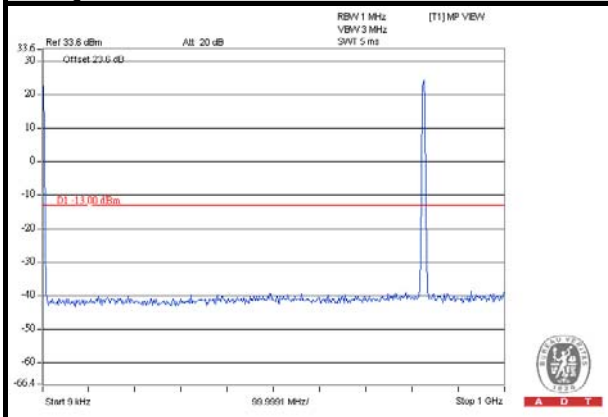
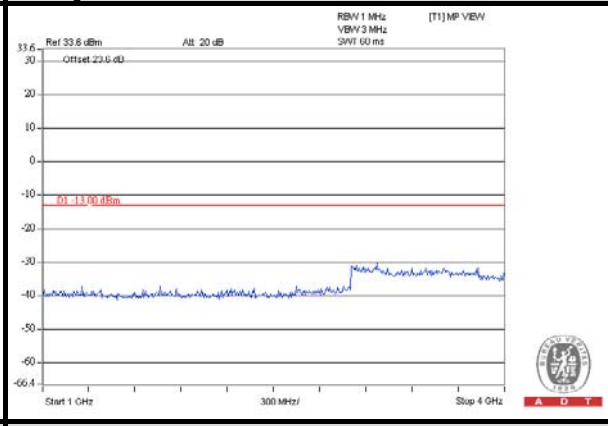
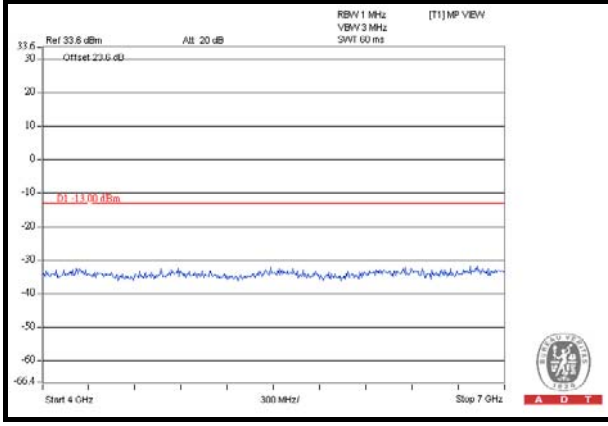
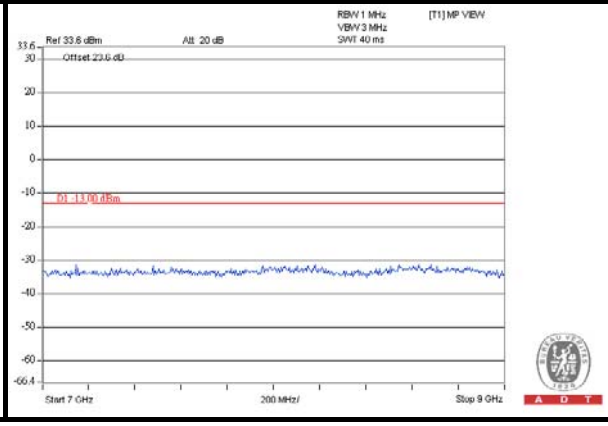


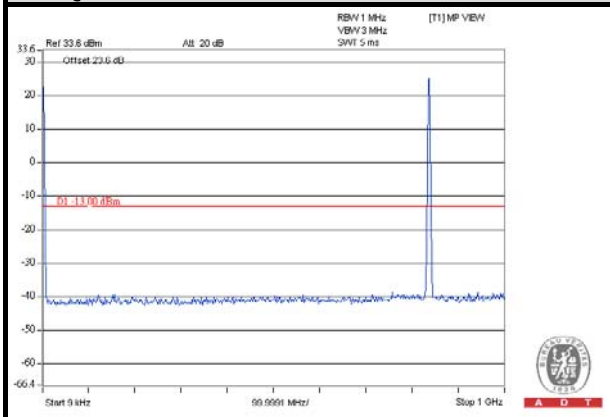
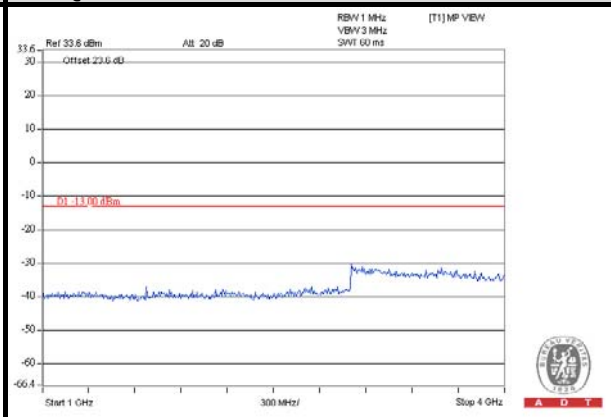
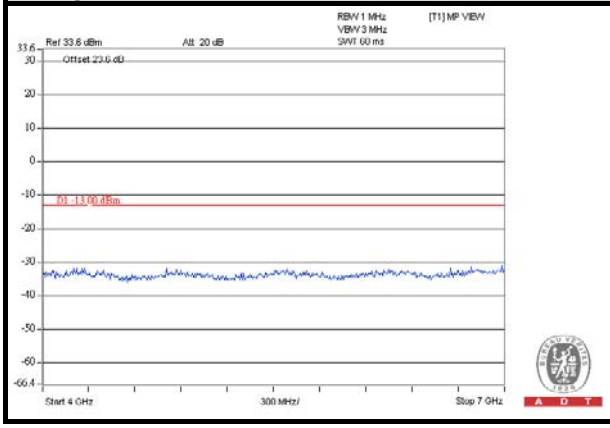
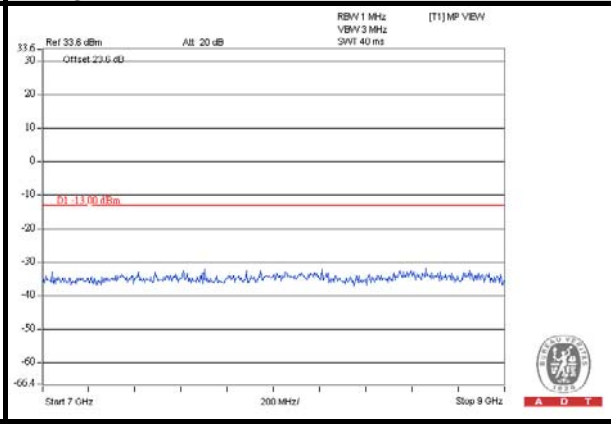
4.5.4 TEST RESULTS

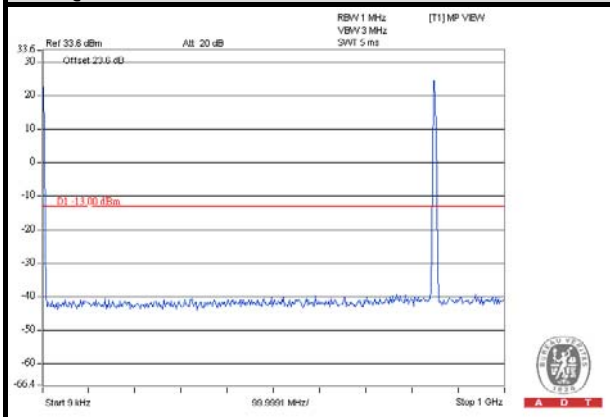
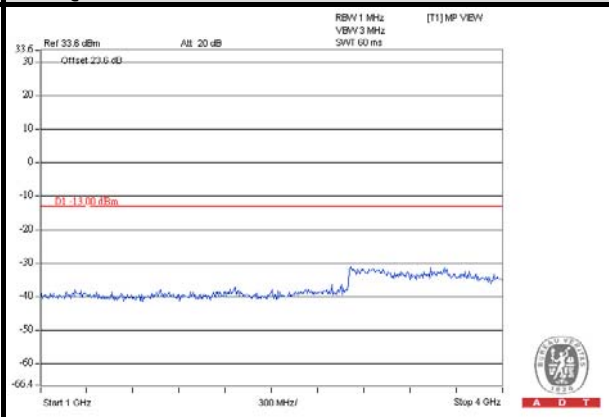
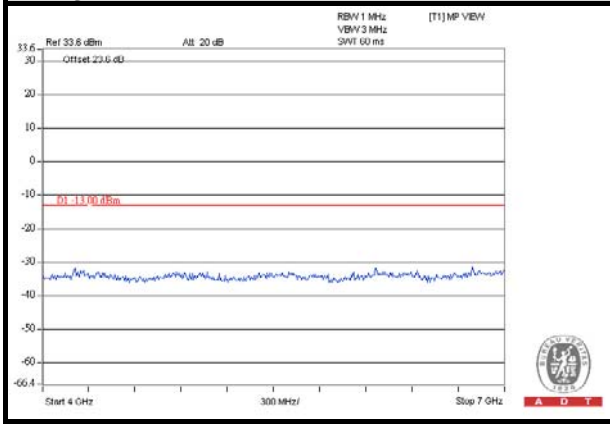
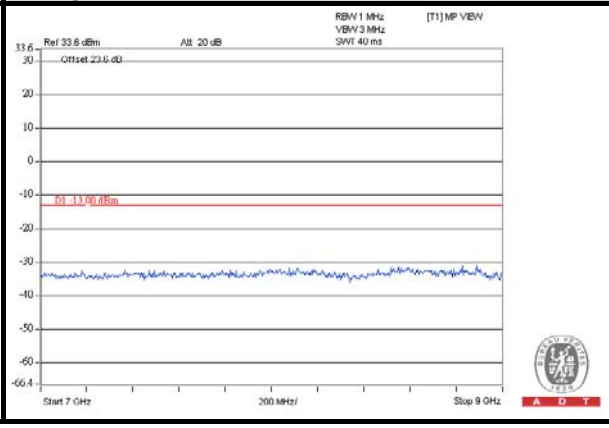
CDMA MODE	
CHANNEL 1013	
FREQUENCY RANGE : 9kHz~1GHz	FREQUENCY RANGE : 1GHz~4GHz
	
FREQUENCY RANGE : 4GHz~7GHz	FREQUENCY RANGE :7GHz~9GHz
	

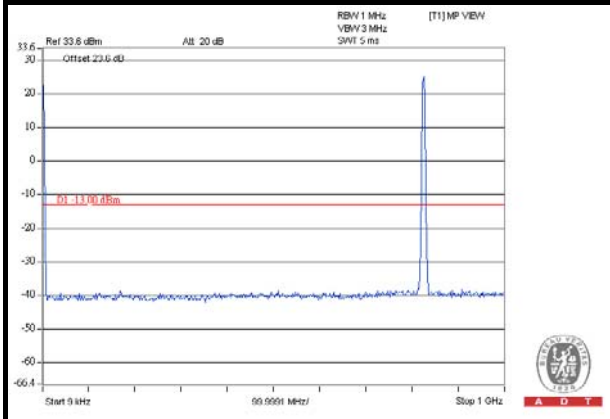
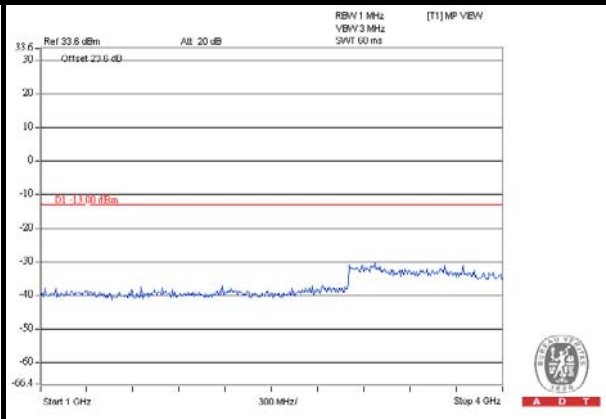
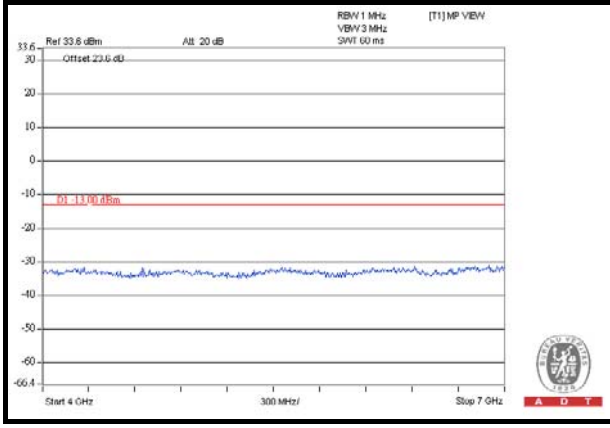
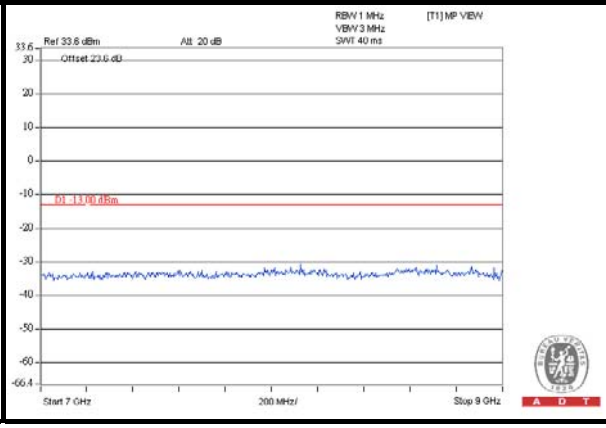
CHANNEL 384	
FREQUENCY RANGE : 9kHz~1GHz	**FREQUENCY RANGE : 1GHz~4GHz**
	
FREQUENCY RANGE : 4GHz~7GHz	**FREQUENCY RANGE :7GHz~9GHz**
	

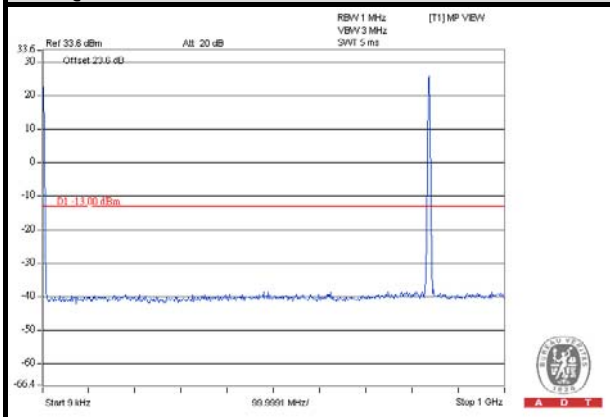
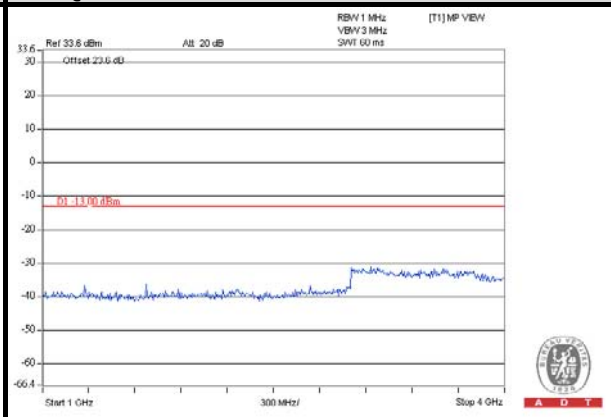
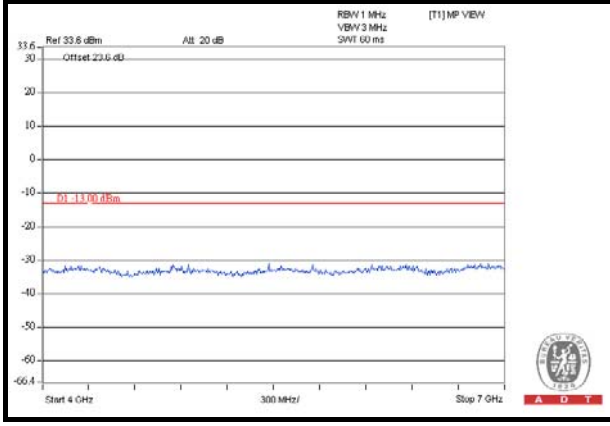
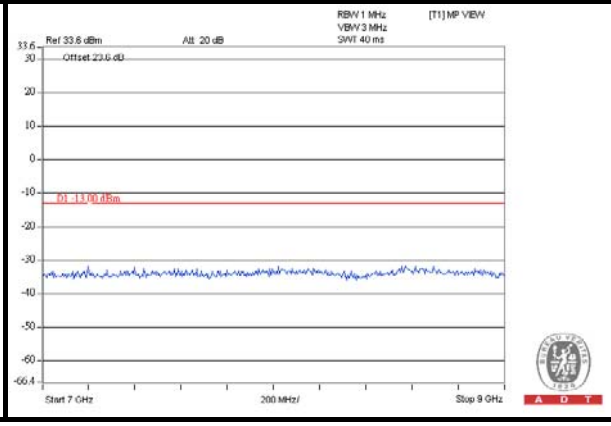
CHANNEL 777	
FREQUENCY RANGE : 9kHz~1GHz	**FREQUENCY RANGE : 1GHz~4GHz**
	
FREQUENCY RANGE : 4GHz~7GHz	**FREQUENCY RANGE :7GHz~9GHz**
	

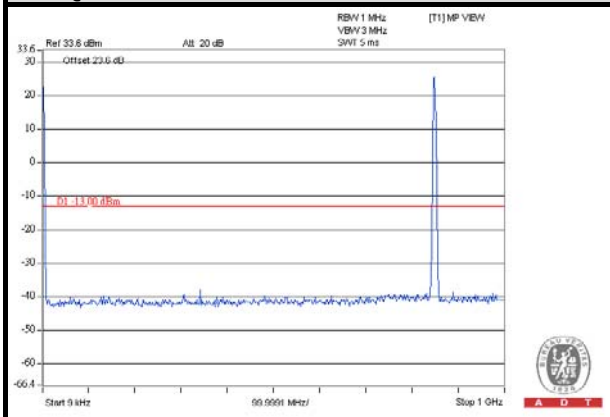
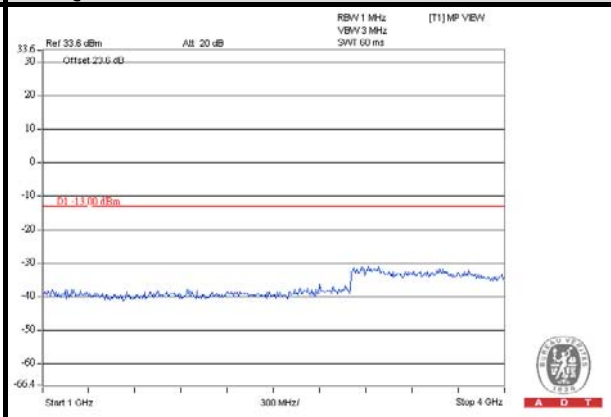
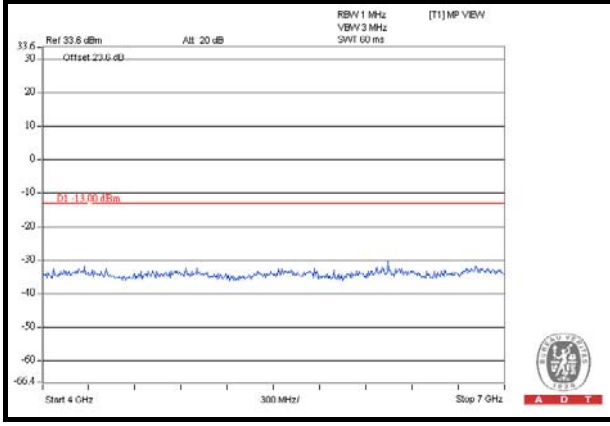
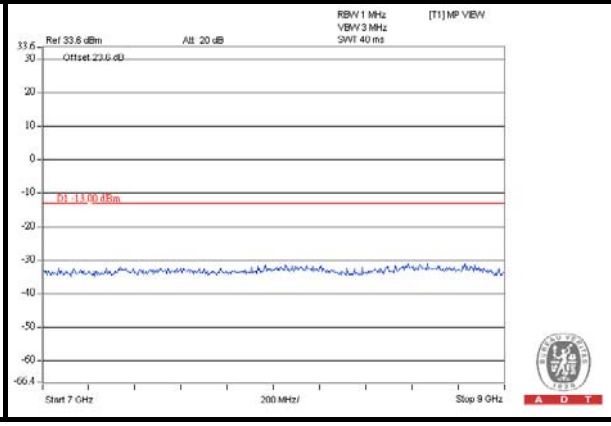
1xEV-DO Rev. 0 MODE	
CHANNEL 1013	
FREQUENCY RANGE : 9kHz~1GHz	FREQUENCY RANGE : 1GHz~4GHz
	
FREQUENCY RANGE : 4GHz~7GHz	FREQUENCY RANGE :7GHz~9GHz
	

CHANNEL 384	
FREQUENCY RANGE : 9kHz~1GHz	**FREQUENCY RANGE : 1GHz~4GHz**
	
FREQUENCY RANGE : 4GHz~7GHz	**FREQUENCY RANGE :7GHz~9GHz**
	

CHANNEL 777	
FREQUENCY RANGE : 9kHz~1GHz	**FREQUENCY RANGE : 1GHz~4GHz**
	
FREQUENCY RANGE : 4GHz~7GHz	**FREQUENCY RANGE :7GHz~9GHz**
	

1xEV-DO Rev. A MODE	
CHANNEL 1013	
FREQUENCY RANGE : 9kHz~1GHz	FREQUENCY RANGE : 1GHz~4GHz
	
FREQUENCY RANGE : 4GHz~7GHz	FREQUENCY RANGE :7GHz~9GHz
	

CHANNEL 384	
FREQUENCY RANGE : 9kHz~1GHz	**FREQUENCY RANGE : 1GHz~4GHz**
	
FREQUENCY RANGE : 4GHz~7GHz	**FREQUENCY RANGE :7GHz~9GHz**
	

CHANNEL 777	
FREQUENCY RANGE : 9kHz~1GHz	**FREQUENCY RANGE : 1GHz~4GHz**
	
FREQUENCY RANGE : 4GHz~7GHz	**FREQUENCY RANGE :7GHz~9GHz**
	

4.6 RADIATED EMISSION MEASUREMENT

4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

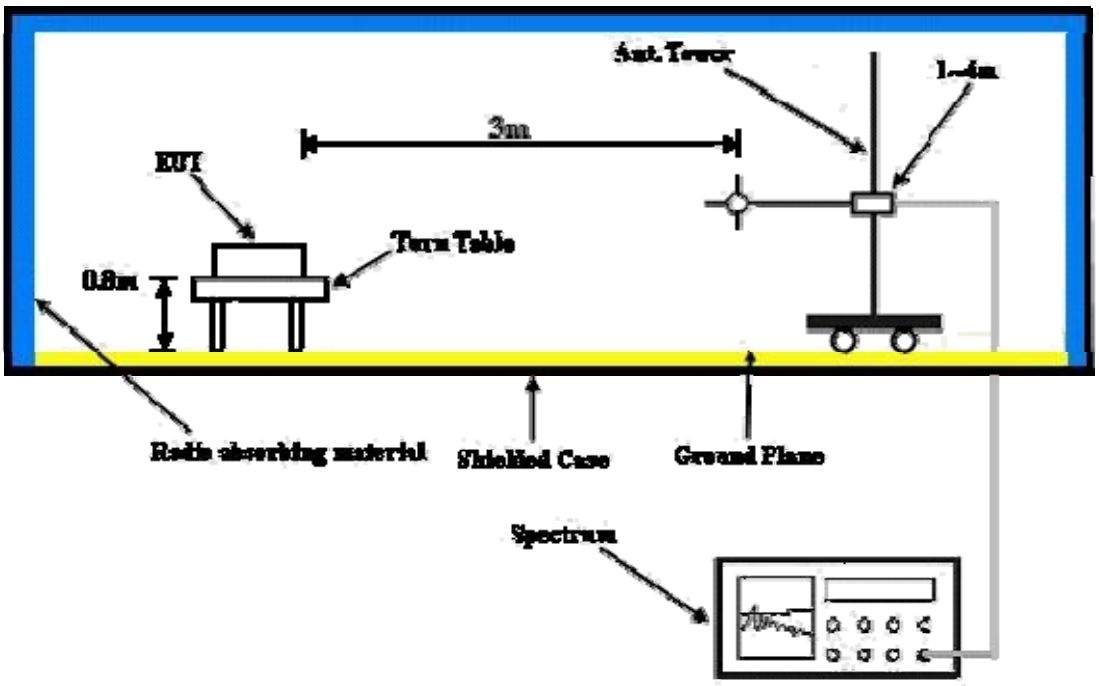
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.6.3 DEVIATION FROM TEST STANDARD

No deviation

4.6.4 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.6.5 TEST RESULTS

FOR 1xEVDO Rev. A MODE:

Below 1GHz

MODE	TX channel 1013	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	**INPUT POWER**	120Vac, 60 Hz
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	**Freq. (MHz)**	**Reading (dBm)**	**S.G Power Value (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**
1	86.26	-49.8	-56.8	0.0	-58.9	-13.0	-45.9
2	171.62	-46.3	-52.3	1.9	-52.5	-13.0	-39.5
3	189.08	-45.2	-55.2	4.1	-53.2	-13.0	-40.2
4	243.40	-46.7	-57.1	5.4	-53.9	-13.0	-40.9
5	317.12	-45.4	-53.2	5.2	-50.1	-13.0	-37.1
6	439.34	-47.1	-51.7	5.1	-48.8	-13.0	-35.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	**Freq. (MHz)**	**Reading (dBm)**	**S.G Power Value (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**
1	103.72	-53.1	-49.1	0.7	-50.5	-13.0	-37.5
2	117.30	-56.9	-53.1	0.0	-55.2	-13.0	-42.2
3	152.22	-62.0	-62.7	0.0	-64.9	-13.0	-51.9
4	189.08	-60.0	-58.3	4.1	-56.4	-13.0	-43.4
5	216.24	-64.5	-62.3	5.5	-58.9	-13.0	-45.9
6	237.58	-61.5	-59.8	5.4	-56.5	-13.0	-43.5

REMARKS:

1. Power Value (dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Above 1GHz

MODE	Channel 1013	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1649.40	-46.9	-49.9	5.5	-46.5	-13.0	-33.5
2	2474.10	-53.7	-55.2	6.4	-50.9	-13.0	-37.9
3	3298.80	-57.2	-56.5	6.9	-51.8	-13.0	-38.8
4	4123.50	-56.3	-53.2	6.9	-48.4	-13.0	-35.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1649.40	-40.5	-46.5	5.5	-43.1	-13.0	-30.1
2	**2474.10**	**-44.7**	**-45.4**	**6.4**	**-41.1**	**-13.0**	**-28.1**
3	3298.80	-56.1	-56.0	6.9	-51.2	-13.0	-38.2
4	4123.50	-55.6	-53.8	6.9	-49.0	-13.0	-36.0

REMARKS:

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

MODE	Channel 384	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg. C, 68%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	**Freq. (MHz)**	**Reading (dBm)**	**S.G Power Value (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**
1	1673.04	-47.2	-50.1	5.5	-46.8	-13.0	-33.8
2	2509.56	-54.1	-55.6	6.4	-51.4	-13.0	-38.4
3	3346.08	-58.4	-57.6	6.9	-52.9	-13.0	-39.9
4	4182.60	-57.6	-54.4	6.9	-49.6	-13.0	-36.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	**Freq. (MHz)**	**Reading (dBm)**	**S.G Power Value (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**
1	1673.04	-41.1	-46.8	5.5	-43.4	-13.0	-30.4
2	2509.56	-45.4	-46.4	6.4	-42.1	-13.0	-29.1
3	3346.08	-57.5	-57.1	6.9	-52.4	-13.0	-39.4
4	4182.60	-56.3	-54.3	6.9	-49.5	-13.0	-36.5

REMARKS:

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

MODE	Channel 777	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg. C, 68%RH
TESTED BY	Anderson Hong		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	**Freq. (MHz)**	**Reading (dBm)**	**S.G Power Value (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**
1	1696.62	-47.7	-50.5	5.6	-47.0	-13.0	-34.0
2	2544.93	-53.4	-54.9	6.4	-50.6	-13.0	-37.6
3	3393.24	-57.1	-56.2	7.0	-51.4	-13.0	-38.4
4	4241.55	-56.3	-53.0	6.9	-48.2	-13.0	-35.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	**Freq. (MHz)**	**Reading (dBm)**	**S.G Power Value (dBm)**	**Correction Factor (dB)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**
1	1696.62	-41.9	-47.4	5.6	-43.9	-13.0	-30.9
2	2544.93	-45.9	-46.9	6.4	-42.6	-13.0	-29.6
3	3393.24	-57.1	-56.5	7.0	-51.6	-13.0	-38.6
4	4241.55	-55.6	-53.4	6.9	-48.6	-13.0	-35.6

REMARKS:

1. ERP(dBm) = S.G Power Value (dBm) + Correction Factor (dB).
2. Correction Factor = gain of substitution antenna + cable loss

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---