FCC Test Report

Product Name : modlet gateway
Model No : TE1211M
FCC ID : Y38TE1211M

Applicant : ThinkEco Inc.
Address : 494 8th Avenue, PH floor, New York, NY, United States, 10001

Date of Receipt : 2013/07/29
Issued Date : 2013/08/22
Report No. : 138044R-HPUSP08V01
Report Version : V1.0

Testing Laboratory
0914

Test Report Certification

Issued Date : 2013/08/22
Report No.: 138044R-HPUSP08V01

Accredited by NIST (NVLAP)
NVLAP Lab Code: 200533-0

Product Name	:	modlet gateway
Applicant	:	ThinkEco Inc.
Address	:	494 8th Avenue, PH floor, New York, NY, United States, 10001
Manufacturer	:	DONG GUAN G-COM COMPUTER CO., LTD.
Trade Name	:	ThinkEco Inc.
Model No.	:	TE1211M
EUT Voltage	:	AC 120V/ 60Hz
Measurement Standard	:	FCC CFR Title 47 Part 2 22 24
Measurement Reference	:	TIA/EIA 603-C, SRSP- 503, SRSP-510
Test Result	:	Complied

Test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of Quie Tek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented By : April Chen
(Adm. Specialist / April Chen)

Tested By : wen Lee
(Engineer / Wen Lee)

Approved By :
(Manager /Vincent Lin)

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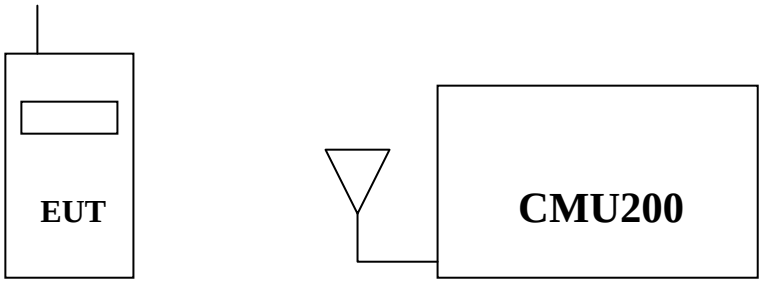
1. GENERAL INFORMATION

1.1. EUT Description

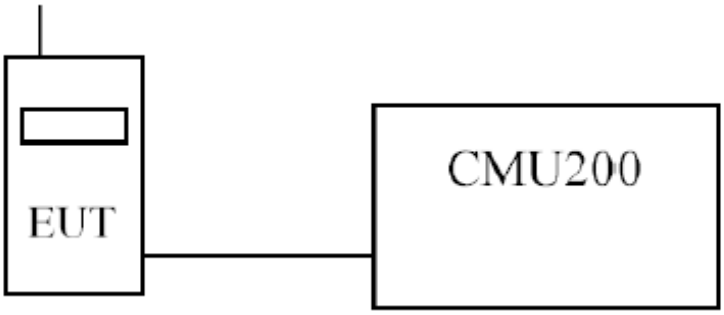
Product Name	modlet gateway
Model No.	TE1211M
Trade Name	ThinkEco Inc.
WWAN Modular	MFR:QUALCOMM, M/N: E396
FCC ID	Y38TE1211M
Antenna Type	PCB
Antenna Kit	MFR: Maglayers , M/N: 3010000417ID , Gain : 3.4 dBi
TX Frequency	Cellular CDMA : 824.7 ~ 848.31MHz PCS CDMA：1851.25 ~ 1908.75MHz
Rx Frequency	Cellular CDMA：869.7 ~ 893.31MHz PCS CDMA：1931.25 ~ 1988.75MHz
Function	CDMA2000/EVDO 0,A,B

1.3. Configuration of tested System

(a) Configuration of Radiated measurement



(b) Configuration of Conducted measurement



1.4. EUT Setup Procedures

(1) Setup the EUT and simulators as shown on 1.3
(2) Turn on the power of all equipments.
(3) The EUT was set to communicate with CMU200.
(4) Repeat the above procedure (3).

1.5. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	53
Barometric pressure (mbar)	860-1060	982

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
FCC Registration Number :92195

Site Name: Quie Tek Corporation

LinKou Testing Laboratory:
No. 5-22, Rueishu Keng, Linkou Dist.,
New Taipei City 24451,
Taiwan. R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

1.6. Type of Emission

CDMA: 1M28F9W
EVDO: 1M28F9W

1.7. voltages and DC currents

CDMA 1X (BC0)		
EUT Transmitting (in maximum power)	:	AC voltage : 120V , AC current : 0.067A
EUT Standby	:	AC voltage : 120V , AC current : 0.051A
CDMA 1X EV-DO REL 0 (BC0)		
EUT Transmitting (in maximum power)	:	AC voltage : 120V , AC current : 0.096A
EUT Standby	:	AC voltage : 120V , AC current : 0.050A
CDMA 1X EV-DO REL A (BC0)		
EUT Transmitting (in maximum power)	:	AC voltage : 120V , AC current : 0.096A
EUT Standby	:	AC voltage : 120V , AC current : 0.050A
CDMA 1X (BC1)		
EUT Transmitting (in maximum power)	:	AC voltage : 120V , AC current : 0.069A
EUT Standby	:	AC voltage : 120V , AC current : 0.051A
CDMA 1X EV-DO REL 0 (BC1)		
EUT Transmitting (in maximum power)	:	AC voltage : 120V , AC current : 0.106A
EUT Standby	:	AC voltage : 120V , AC current : 0.060A
CDMA 1X EV-DO REL A (BC1)		
EUT Transmitting (in maximum power)	:	AC voltage : 120V , AC current : 0.107A
EUT Standby	:	AC voltage : 120V , AC current : 0.060A

2. Peak Power Output

2.1. Test Equipment

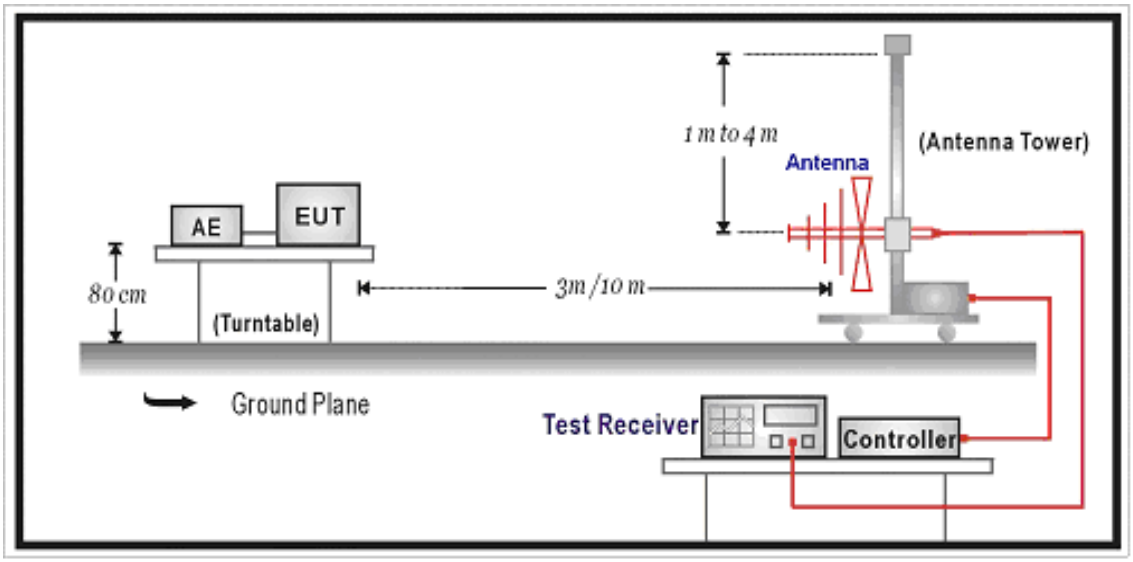
The following test equipments are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒CTR	Spectrum Analyzer	Agilent	N9010A / MY52220597	2012/12/18
	Dual Directional couple	Agilent	778D / 50550	2012/09/14
	Directional coupler	Agilent	87300C / 3239A01864	2012/09/10
☒Site#3	Test Receiver	R & S	ESCS 30/ 100367	2012/11/30
	Universal Radio Communication Tester	R&S	CMU200/104846	2013/05/09
	Spectrum Analyzer	Agilent	N9000A/ MY50510070	2013/03/15
	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	2013/07/14
	Horn Antenna	Schwarzbeck	9120D / 556	2012/12/22
	Pre-Amplifier	QTK	QTK-LK-E-I-AMP4/ CHM-0201003	2013/07/02

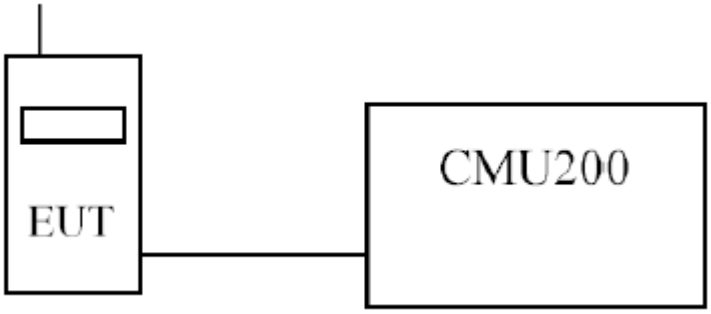
Note: All equipments that need to be calibrated are with calibration period of 1 year.

2.2. Test Setup

Radiated Power Measurement



Conducted Power Measurement



2.3. Limits

Cellular Band 850	**<7W**

PCS Band 1900	**<2W or +33dBm**

2.4. Test Procedure

➢RF Out Power (Radiated)

The Spectrum Analyzer was tuned to the test frequency. The EUT was tested in three The device was put into Transmit mode then rotated through 360 degrees until the highest power level was observed in both horizontal and vertical polarization. The device was then replaced with a substitution antenna, which input signal was adjusted until the received level matched that of the previously detected emission.

(1) The EUT is tested with maximum rated TX power via the Base Station simulator.

(2) The EUT is tested in three orthogonal planes , The worst case test configuration was found in the horizontal position.

➢RF Out Power (Conducted)

The EUT is tested with maximum rated TX power via the Base Station simulator, and the output power was measured at the antenna terminals of the EUT.

2.5. Test Specification

According to Part 2.1046

2.6. Test Result of Peak Power Output

Product	modlet gateway		
Test Mode	RF Output Power (Conducted)		
Date of Test	2013/08/14	Test Site	CTR

MODE	Test cast			BC0 (850MHz)					
				Conducted power (dBm/W)					
	Num	FWD RC/TAP	REV RC/TAP	1013		384		777	
				dBm	Watt	dBm	Watt	dBm	Watt
1x	1	RC1	RC1(SO2)	**24.05**	**0.25**	**23.88**	**0.24**	**23.87**	**0.24**
	2	RC1	RC1(SO55)	24.03	0.25	23.80	0.24	23.82	0.24
	3	RC2	RC2(SO9)	24.04	0.25	23.87	0.24	23.80	0.24
	4	RC2	RC2(SO55)	23.99	0.25	23.87	0.24	23.80	0.24
	5	RC3	RC3(SO55)	23.74	0.24	23.71	0.23	23.85	0.24
	6	RC3	RC3(SO32)	23.69	0.23	23.81	0.24	23.75	0.24
1x EV-DO Rel 0	7a	FTAP rate =307kbps (2 slot)	RTAP rate = 9.6kbps	23.77	0.24	23.72	0.24	23.77	0.24
	7b		RTAP rate = 19.2kbps	**23.88**	**0.24**	**23.6**	**0.23**	**23.46**	**0.22**
	7c		RTAP rate = 38.4kbps	23.86	0.24	23.58	0.23	23.61	0.23
	7d		RTAP rate = 76.8kbps	23.86	0.24	23.64	0.23	23.54	0.23
	7e		RTAP rate = 153.6kbps	23.83	0.24	23.63	0.23	23.61	0.23
1x EV-DO Rev A	8a	FETAP rate=307kbps (2slot)	RETAP-payload size = 128	23.77	0.24	23.66	0.23	23.46	0.22
	8b		RETAP-payload size =256	23.77	0.24	23.65	0.23	23.54	0.23
	8c		RETAP-payload size =512	23.76	0.24	23.59	0.23	23.5	0.22
	8d		RETAP-payload size =768	23.83	0.24	23.67	0.23	23.54	0.23
	8e		RETAP-payload size =1024	23.82	0.24	23.61	0.23	23.45	0.22
	8f		RETAP-payload size =1536	**23.84**	**0.24**	**23.67**	**0.23**	**23.48**	**0.22**
	8g		RETAP-payload size =2048	23.82	0.24	23.67	0.23	23.51	0.22
	8h		RETAP-payload size =3072	23.83	0.24	23.65	0.23	23.49	0.22
	8i		RETAP-payload size =4096	23.83	0.24	23.65	0.23	23.51	0.22
	8j		RETAP-payload size =6144	23.79	0.24	23.69	0.23	23.51	0.22
	8k		RETAP-payload size =8192	23.81	0.24	23.68	0.23	23.51	0.22
	8l		RETAP-payload size =12288	23.81	0.24	23.72	0.24	23.56	0.23

MODE	Test cast			BC1 (1900MHz)					
				Conducted power (dBm/W)					
	Num	FWD RC/TAP	REV RC/TAP	25		600		1175	
				dBm	Watt	dBm	Watt	dBm	Watt
1x	1	RC1	RC1(SO2)	**23.97**	**0.25**	**24.08**	**0.26**	**23.64**	**0.23**
	2	RC1	RC1(SO55)	23.93	0.25	23.99	0.25	23.51	0.22
	3	RC2	RC2(SO9)	23.95	0.25	23.99	0.25	23.50	0.22
	4	RC2	RC2(SO55)	23.91	0.25	23.90	0.25	23.81	0.24
	5	RC3	RC3(SO55)	23.80	0.24	23.79	0.24	23.40	0.22
	6	RC3	RC3(SO32)	23.94	0.25	24.01	0.25	23.51	0.22
1x EV-DO Rel 0	7a	FTAP rate =307kbps (2 slot)	RTAP rate = 9.6kbps	**23.84**	**0.24**	**23.86**	**0.24**	**23.57**	**0.23**
	7b		RTAP rate = 19.2kbps	23.82	0.24	23.79	0.24	23.56	0.23
	7c		RTAP rate = 38.4kbps	23.79	0.24	23.79	0.24	23.41	0.22
	7d		RTAP rate = 76.8kbps	23.77	0.24	23.81	0.24	23.44	0.22
	7e		RTAP rate = 153.6kbps	23.82	0.24	23.84	0.24	23.52	0.22
1x EV-DO Rev A	8a	FETAP rate=307kbps (2slot)	RETAP-payload size = 128	23.93	0.25	23.83	0.24	23.42	0.22
	8b		RETAP-payload size =256	23.87	0.24	23.8	0.24	23.57	0.23
	8c		RETAP-payload size =512	23.86	0.24	23.8	0.24	23.52	0.22
	8d		RETAP-payload size =768	23.88	0.24	23.88	0.24	23.48	0.22
	8e		RETAP-payload size =1024	23.93	0.25	23.93	0.25	23.38	0.22
	8f		RETAP-payload size =1536	**23.98**	**0.25**	**23.98**	**0.25**	**23.47**	**0.22**
	8g		RETAP-payload size =2048	23.9	0.25	23.97	0.25	23.38	0.22
	8h		RETAP-payload size =3072	23.97	0.25	23.9	0.25	23.39	0.22
	8i		RETAP-payload size =4096	23.94	0.25	23.87	0.24	23.35	0.22
	8j		RETAP-payload size =6144	23.92	0.25	23.91	0.25	23.39	0.22
	8k		RETAP-payload size =8192	23.94	0.25	23.93	0.25	23.4	0.22
	8l		RETAP-payload size =12288	23.97	0.25	23.84	0.24	23.37	0.22

Product	modlet gateway		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/08/14	Test Site	Site3
Test Condition	CDMA 1X (BC0)		

Maximum Power- CDMA 1X (BC0)

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
824.70	-8.70	22.02	2.85	1	23.87	**0.24**
836.52	-9.45	21.28	2.85	1	23.13	0.21
848.31	-10.27	20.48	2.85	1	22.33	0.17

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 22, Section 22.913(a) for Effective Radiated Power.
2. Receiver setting (RMS Detector) in Channel power Mode: RBW:75KHz; VBW:300KHz
3. Result ERP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	modlet gateway		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/08/14	Test Site	Site3
Test Condition	CDMA 1X EV-DO REL 0 (BC0)		

Maximum Power- CDMA 1X EV-DO REL 0 (BC0)

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
824.70	-8.019	22.69	2.85	1	24.54	**0.28**
836.52	-8.526	22.19	2.85	1	24.04	0.25
848.31	-8.922	21.80	2.85	1	23.65	0.23

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 22, Section 22.913(a) for Effective Radiated Power.
2. Receiver setting (RMS Detector) in Channel power Mode: RBW:75KHz; VBW:300KHz
3. Result ERP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	modlet gateway		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/08/14	Test Site	Site3
Test Condition	CDMA 1X EV-DO REL A (BC0)		

Maximum Power- CDMA 1X EV-DO REL A (BC0)

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBd)	Cable Loss (dB)	Result ERP (dBm)	Result ERP (W)
824.70	-7.818	22.88	2.85	1	24.73	**0.30**
836.52	-9.104	21.62	2.85	1	23.47	0.22
848.31	-9.542	21.19	2.85	1	23.04	0.20

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 22, Section 22.913(a) for Effective Radiated Power.
2. Receiver setting (RMS Detector) in Channel power Mode: RBW:75KHz; VBW:300KHz
3. Result ERP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	modlet gateway		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/08/14	Test Site	Site3
Test Condition	CDMA 1X (BC1)		

Maximum Power- CDMA 1X (BC1)

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1851.25	-15.988	15.499	10.4	1.02	24.879	0.31
1880.00	-15.842	15.59	10.4	1.02	24.97	0.31
1908.75	-14.831	16.444	10.4	1.02	25.824	**0.38**

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 24, Section 24.232(b) for Effective Isotropically Radiated Power.
2. Receiver setting (RMS Detector) in Channel power Mode: RBW:75KHz; VBW:300KHz
3. Result EIRP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	modlet gateway		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/08/14	Test Site	Site3
Test Condition	CDMA 1X EV-DO REL 0 (BC1)		

Maximum Power- CDMA 1X EV-DO REL 0 (BC1)

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1851.25	-15.437	16.05	10.4	1.02	25.43	0.35
1880.00	-14.212	17.22	10.4	1.02	26.6	**0.46**
1908.75	-14.335	16.94	10.4	1.02	26.32	0.43

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 24, Section 24.232(b) for Effective Isotropically Radiated Power.
2. Receiver setting (RMS Detector) in Channel power Mode: RBW:75KHz; VBW:300KHz
3. Result EIRP = Substitution Level + Substitution Antenna Gain - Cable Loss

Product	modlet gateway		
Test Mode	RF Output Power (Radiated)		
Date of Test	2013/08/14	Test Site	Site3
Test Condition	CDMA 1X EV-DO REL A (BC1)		

Maximum Power- CDMA 1X EV-DO REL A (BC1)

Frequency (MHz)	Reading Level (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dBi)	Cable Loss (dB)	Result EIRP (dBm)	Result EIRP (W)
1851.25	-15.737	15.75	10.4	1.02	25.13	0.33
1880.00	-14.812	16.62	10.4	1.02	26	0.40
1908.75	-14.335	16.94	10.4	1.02	26.32	**0.43**

Note:

1. The EUT meets the requirements of FCC CFR 47: Part 24, Section 24.232(b) for Effective Isotropically Radiated Power.
2. Receiver setting (RMS Detector) in Channel power Mode: RBW:75KHz; VBW:300KHz
3. Result EIRP = Substitution Level + Substitution Antenna Gain - Cable Loss

3. Occupied Bandwidth

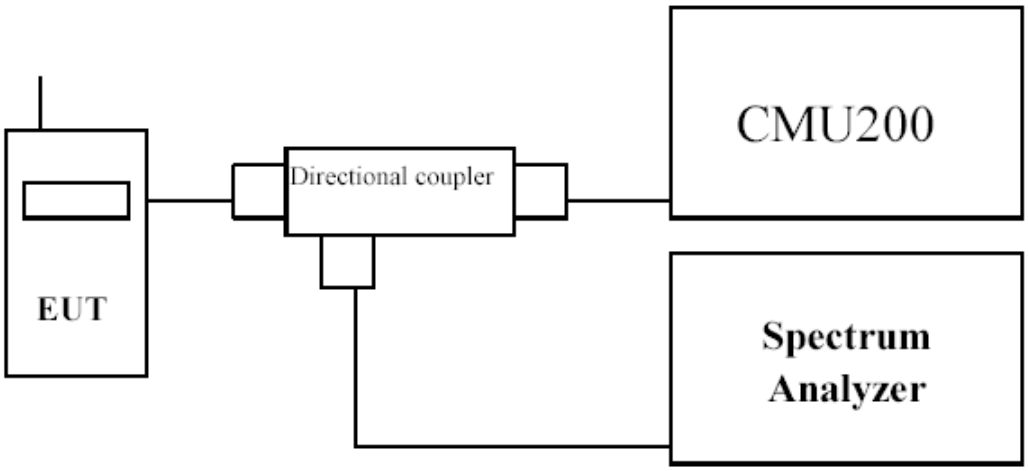
3.1. Test Equipment

The following test equipments are used during the occupied bandwidth tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	Agilent	N9010A / MY52220597	2012/12/18
Universal Radio Communication Tester	R & S	CMU200/104846	2013/05/09
Directional coupler	Agilent	87300C / MY44300353	2012/09/13
Directional coupler	Agilent	778D-012 / 50550	2012/09/14

Note: All equipments upon which need to be calibrated are with calibration period of 1 year.

3.2. Test Setup



3.3. Test Procedure

The EUT is tested with maximum rated TX power via the Base Station simulator, and the occupied bandwidth was measured at the antenna terminals of the EUT.

The Resolution BW of the analyzer is set to 1 % of the emission bandwidth. The EUT's occupied bandwidth is measured as the width of the signal between two points, one below the carrier center frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
The plots below show the resultant display from the Spectrum Analyser.

3.4. Test Specification

According to Part 2.1049, 22.917, 24.238.

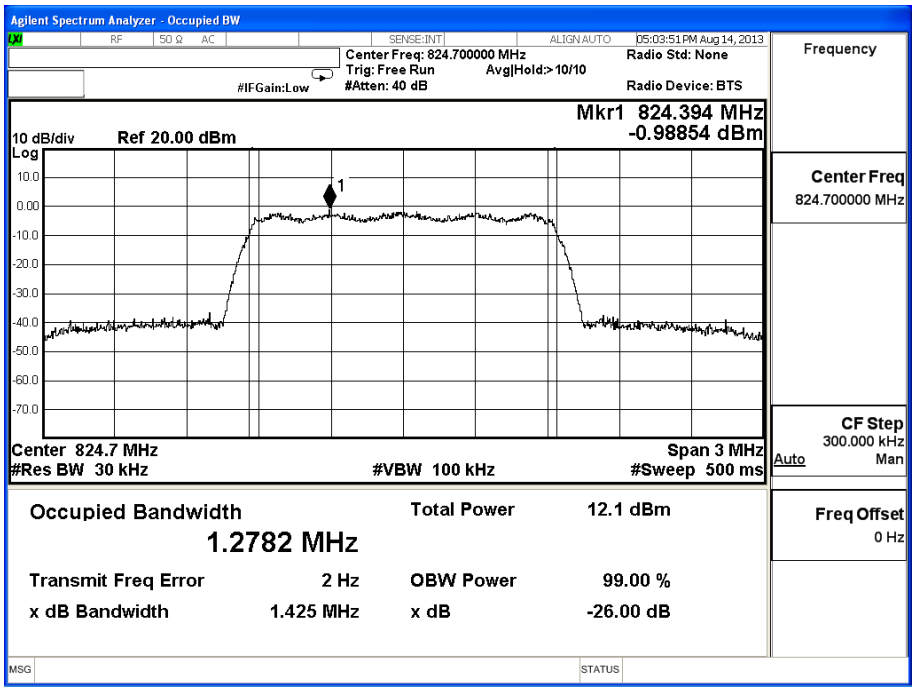
3.5. Test Result of Occupied Bandwidth

Product	modlet gateway
Test Mode	Occupied Bandwidth
Test Site	CTR

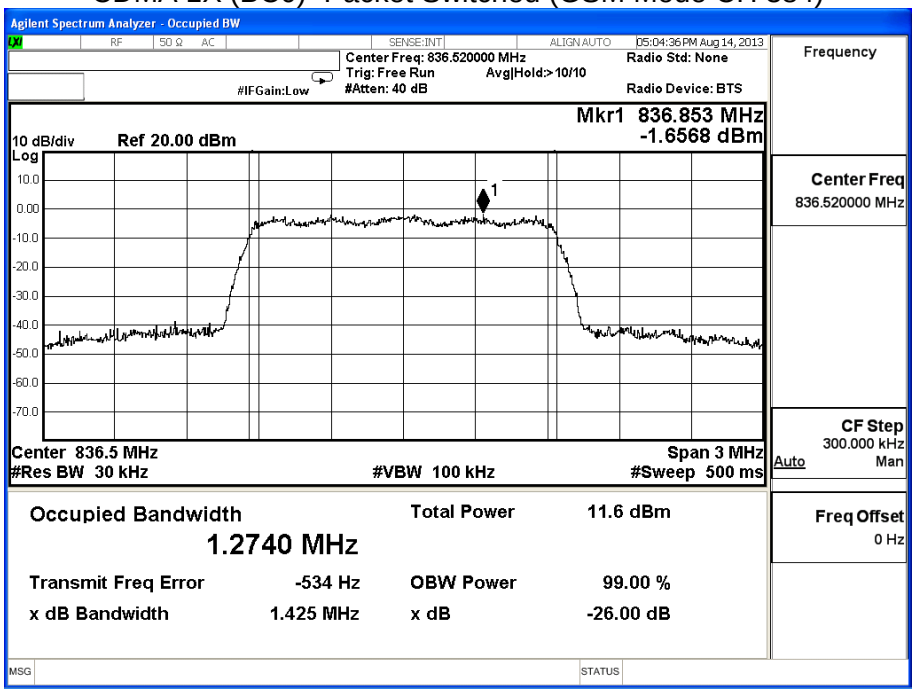
Test Mode	Channel & TX Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB bandwidth (MHz)	Required Limit (MHz)	Result
CDMA 1X (BC0)	1013 (824.7)	1.2782	1.425	N/A	Pass
	384 (836.52)	1.2740	1.425	N/A	Pass
	777 (848.31)	1.2749	1.429	N/A	Pass
CDMA 1X EV-DO REL 0 (BC0)	1013 (824.7)	1.2473	1.435	N/A	Pass
	384 (836.52)	1.2741	1.431	N/A	Pass
	777 (848.31)	1.2747	1.431	N/A	Pass
CDMA 1X EV-DO REL A (BC0)	1013 (824.7)	1.2758	1.434	N/A	Pass
	384 (836.52)	1.2743	1.432	N/A	Pass
	777 (848.31)	1.2744	1.431	N/A	Pass
CDMA 1X (BC1)	25 (1851.25)	1.2819	1.434	N/A	Pass
	600 (1880)	1.2802	1.439	N/A	Pass
	1175 (1908.75)	1.2780	1.432	N/A	Pass
CDMA 1X EV-DO REL 0 (BC1)	25 (1851.25)	1.2799	1.439	N/A	Pass
	600 (1880)	1.2779	1.438	N/A	Pass
	1175 (1908.75)	1.2782	1.437	N/A	Pass
CDMA 1X EV-DO REL A (BC1)	25 (1851.25)	1.2791	1.441	N/A	Pass
	600 (1880)	1.2793	1.441	N/A	Pass
	1175 (1908.75)	1.2805	1.444	N/A	Pass

Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X (BC0)		

CDMA 1X (BC0)- Packet Switched (GSM Mode CH 1013)

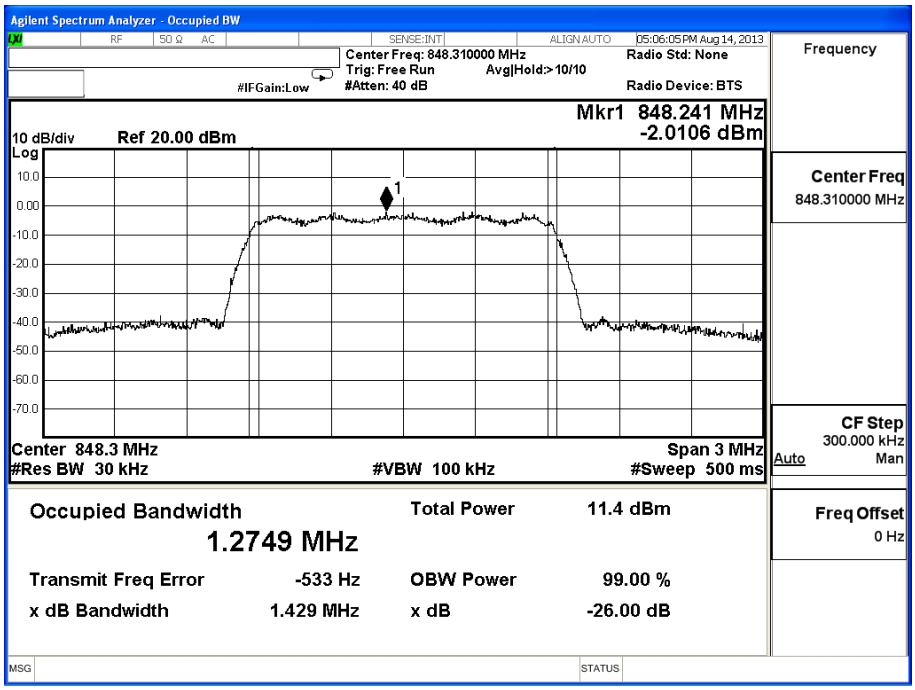


CDMA 1X (BC0)- Packet Switched (GSM Mode CH 384)



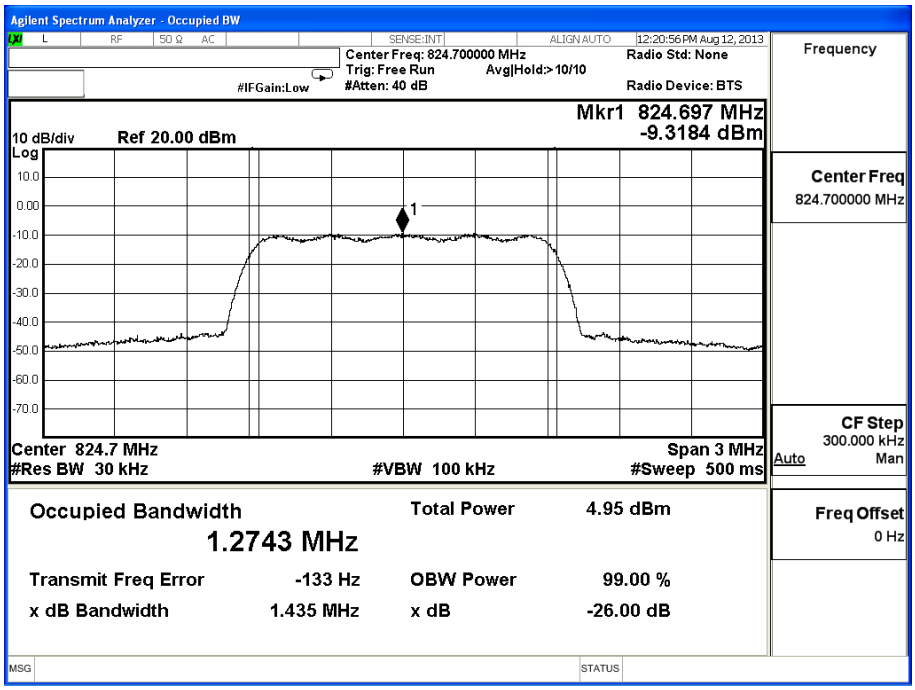
Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X (BC0)		

CDMA 1X (BC0)- Packet Switched (GSM Mode CH 777)

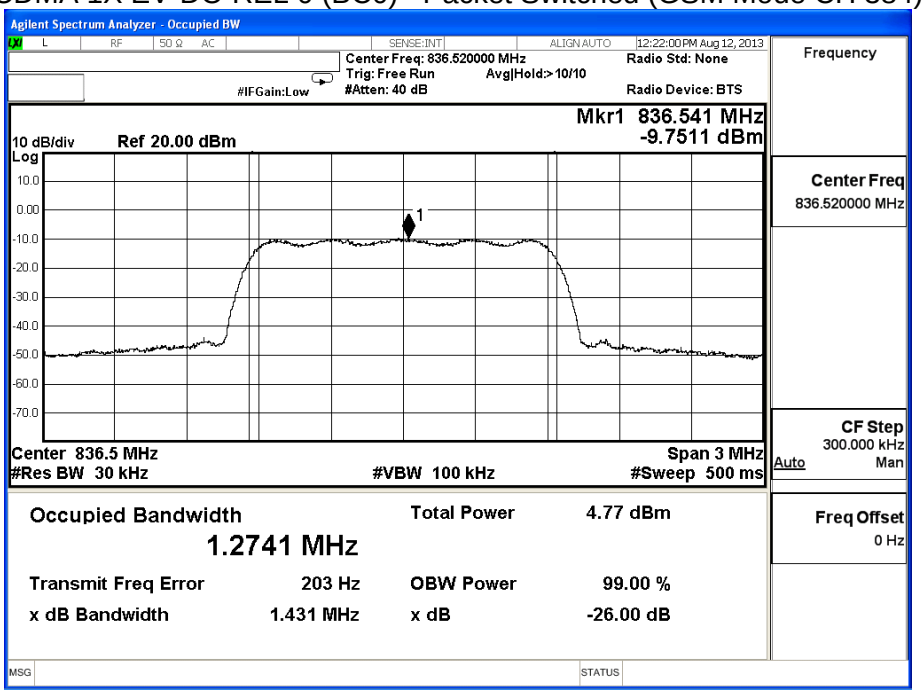


Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL 0 (BC0)		

CDMA 1X EV-DO REL 0 (BC0) - Packet Switched (GSM Mode CH 1013)

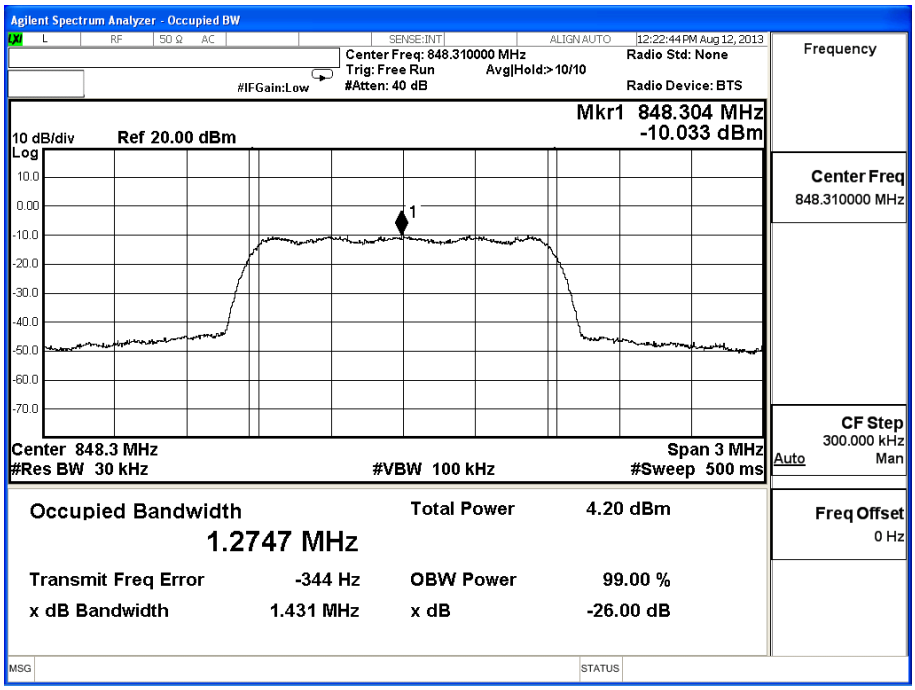


CDMA 1X EV-DO REL 0 (BC0) - Packet Switched (GSM Mode CH 384)



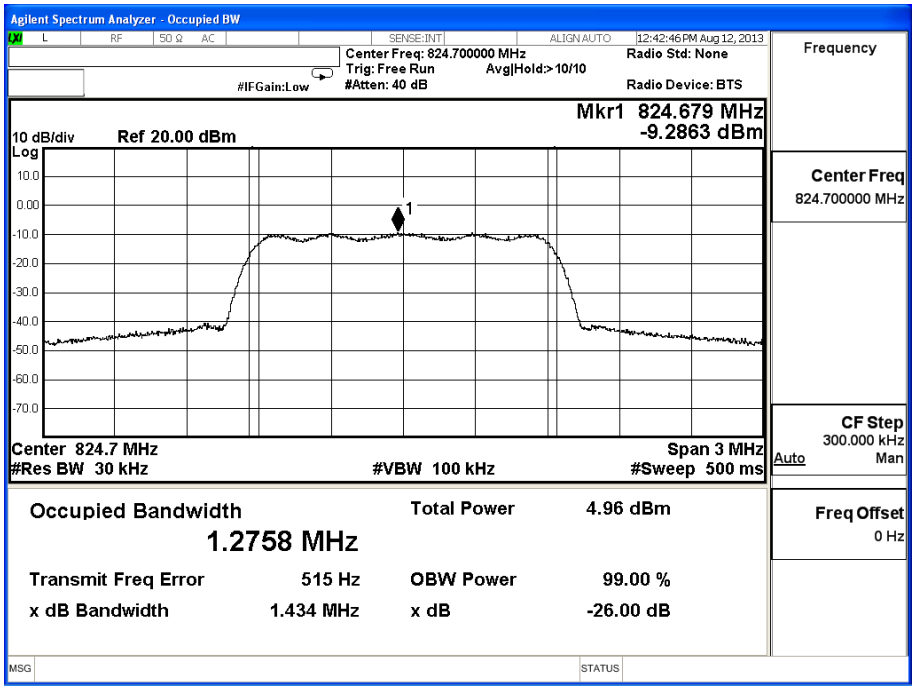
Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL 0 (BC0)		

CDMA 1X EV-DO REL 0 (BC0) - Packet Switched (GSM Mode CH 777)

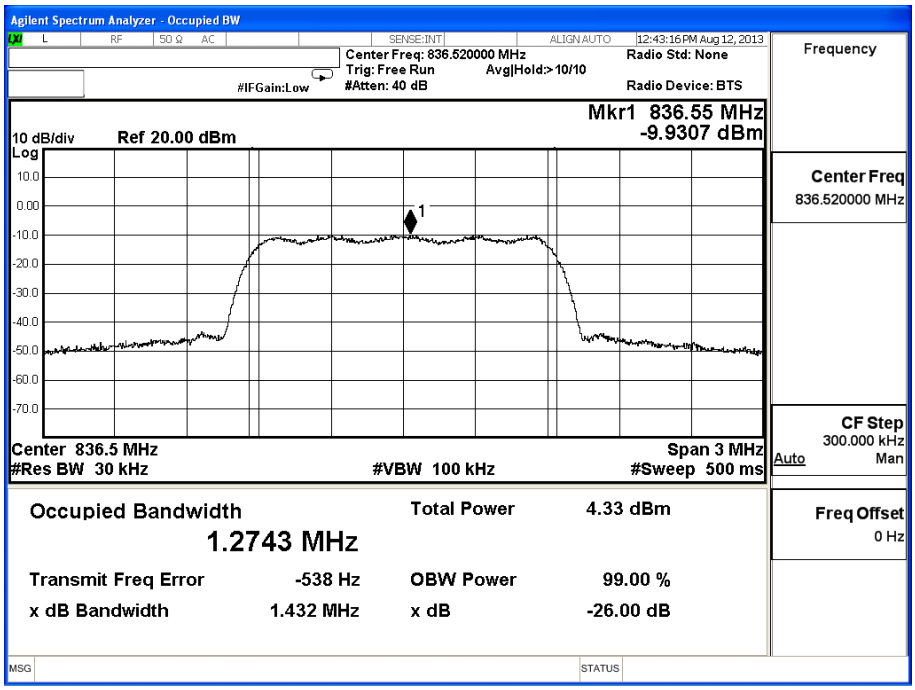


Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REV A (BC0)		

CDMA 1X EV-DO REV A (BC0)- Packet Switched (GSM Mode CH 1013)

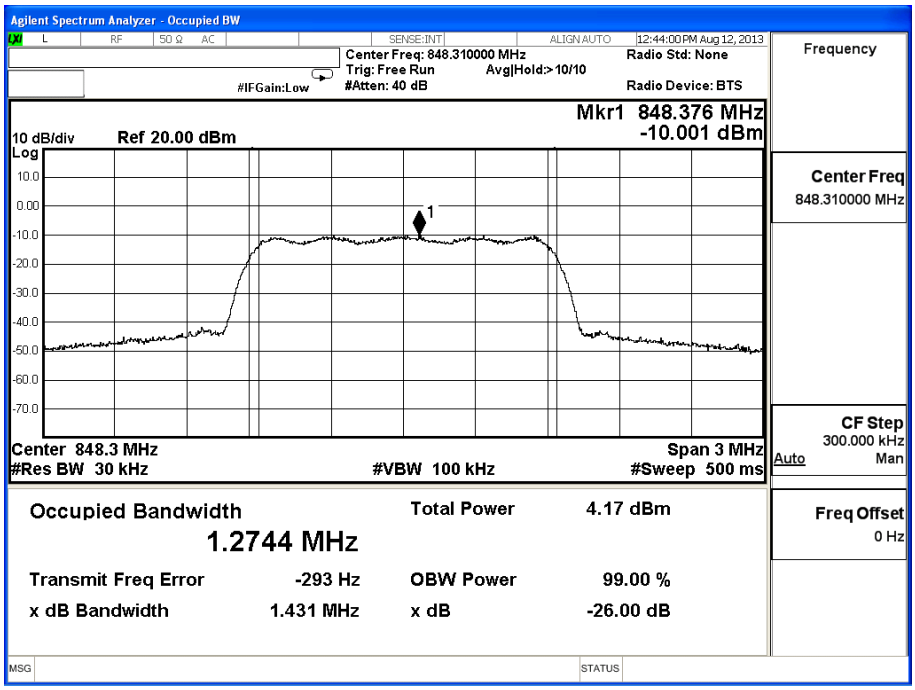


CDMA 1X EV-DO REV A (BC0)- Packet Switched (GSM Mode CH 384)



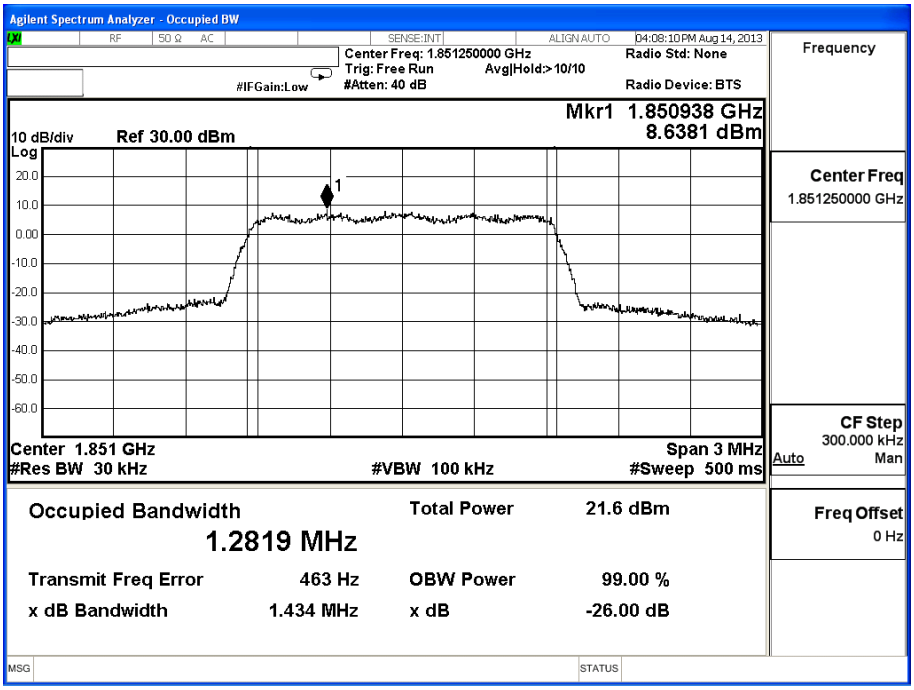
Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REV A (BC0)		

CDMA 1X EV-DO REV A (BC0)-Packet Switched (GSM Mode CH 777)

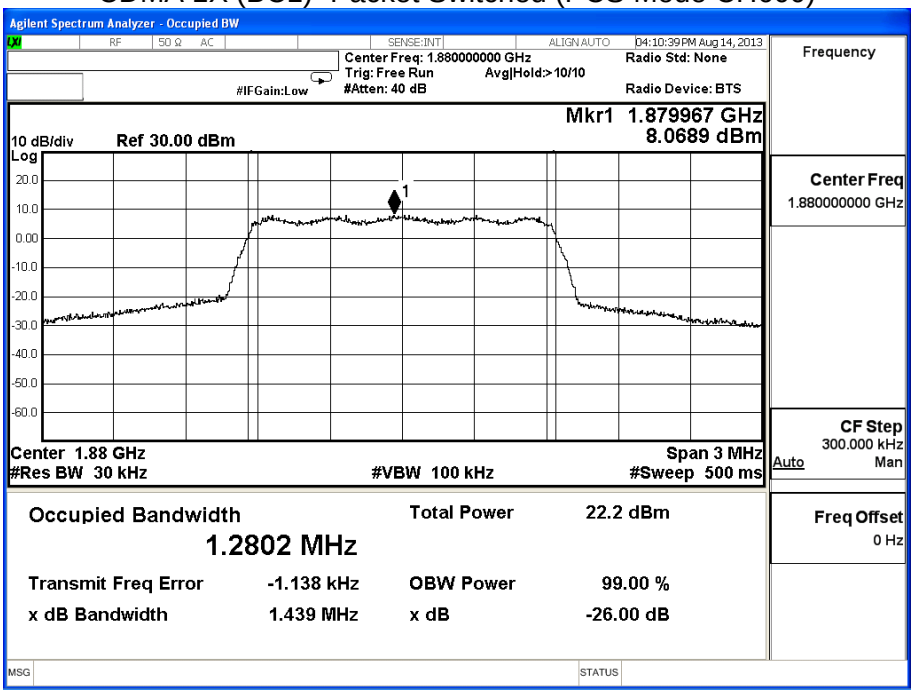


Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X (BC1)		

CDMA 1X (BC1)- Packet Switched (PCS Mode CH 25)

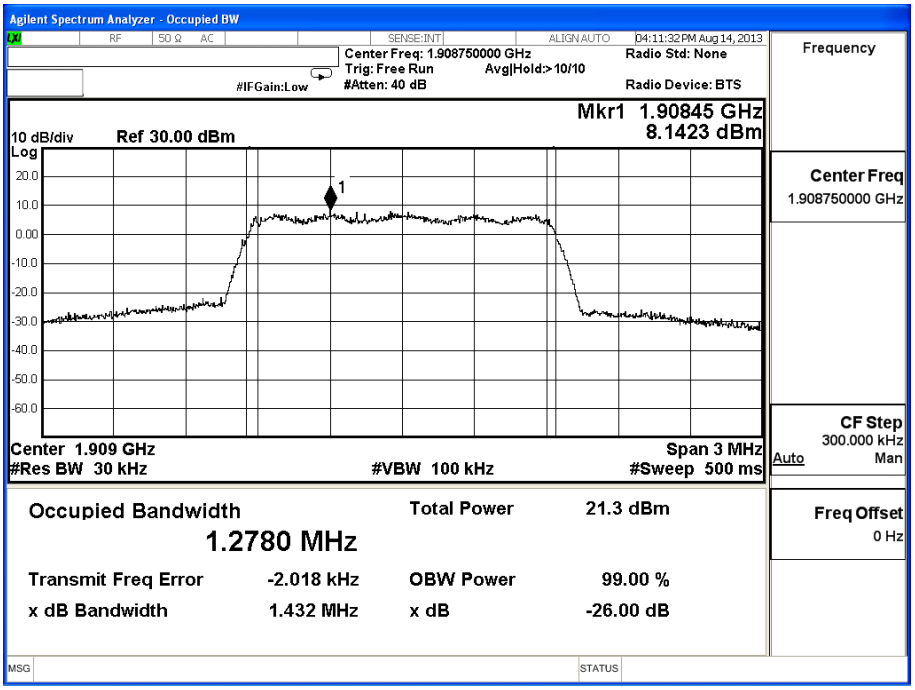


CDMA 1X (BC1)- Packet Switched (PCS Mode CH600)



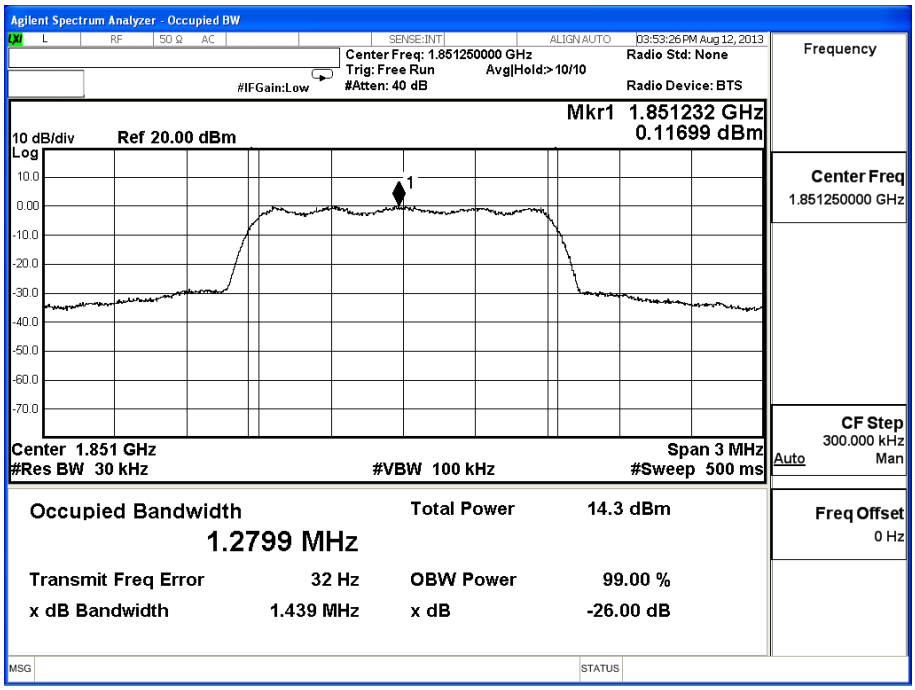
Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X (BC1)		

CDMA 1X (BC1)- Packet Switched (PCS Mode CH 1175)

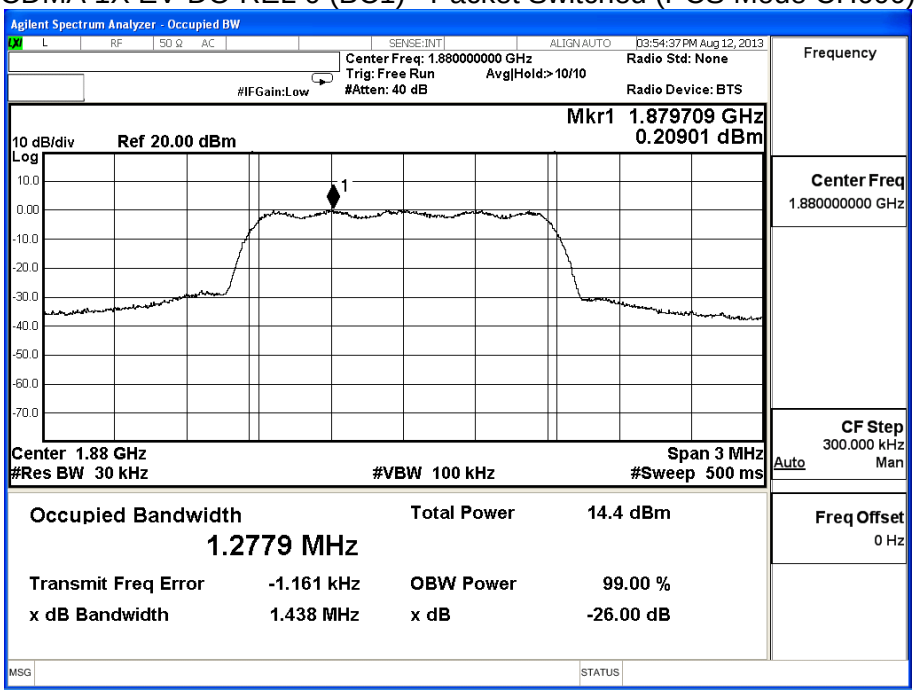


Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL 0 (BC1)		

CDMA 1X EV-DO REL 0 (BC1) - Packet Switched (PCS Mode CH 25)

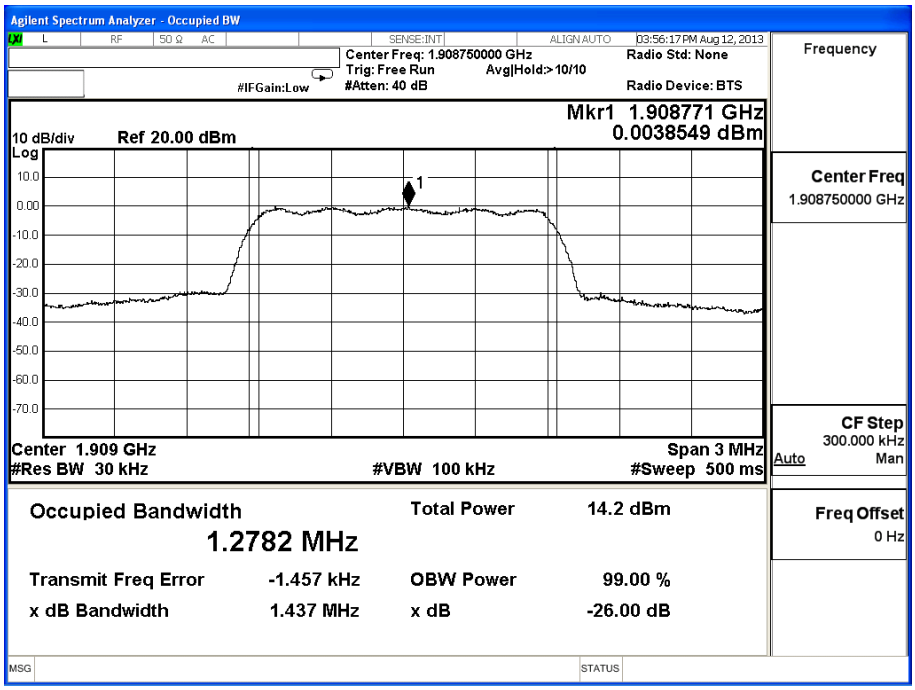


CDMA 1X EV-DO REL 0 (BC1) - Packet Switched (PCS Mode CH600)



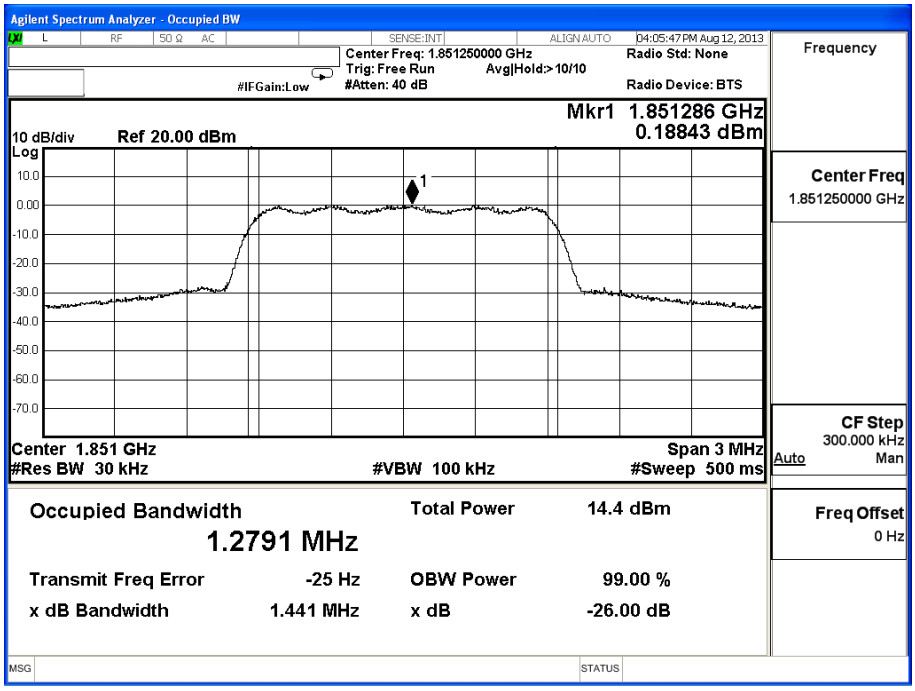
Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL 0 (BC1)		

CDMA 1X EV-DO REL 0 (BC1) - Packet Switched (PCS Mode CH 1175)

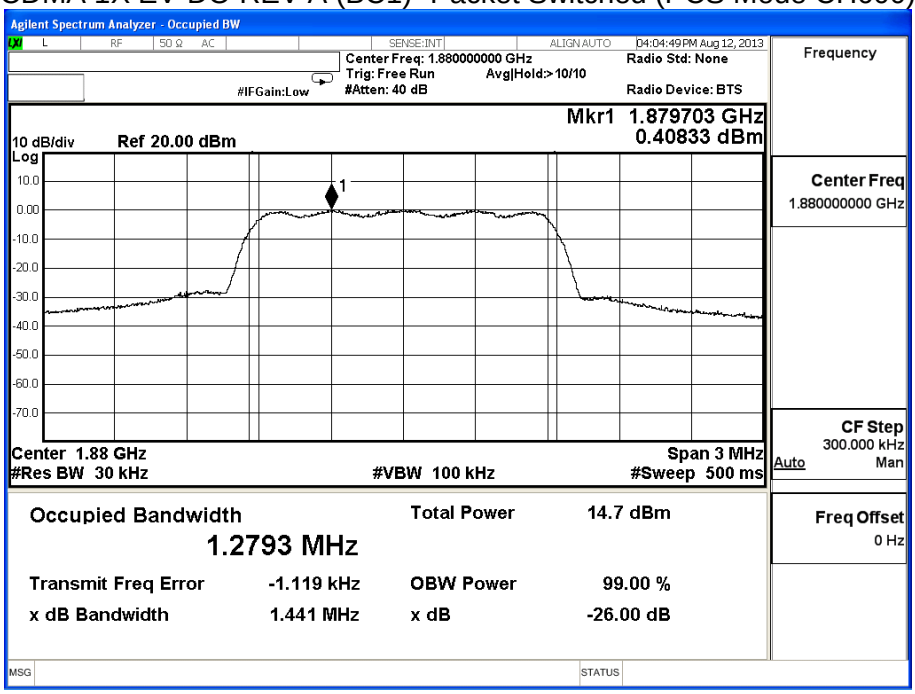


Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REV A (BC1)		

CDMA 1X EV-DO REV A (BC1) - Packet Switched (PCS Mode CH 25)

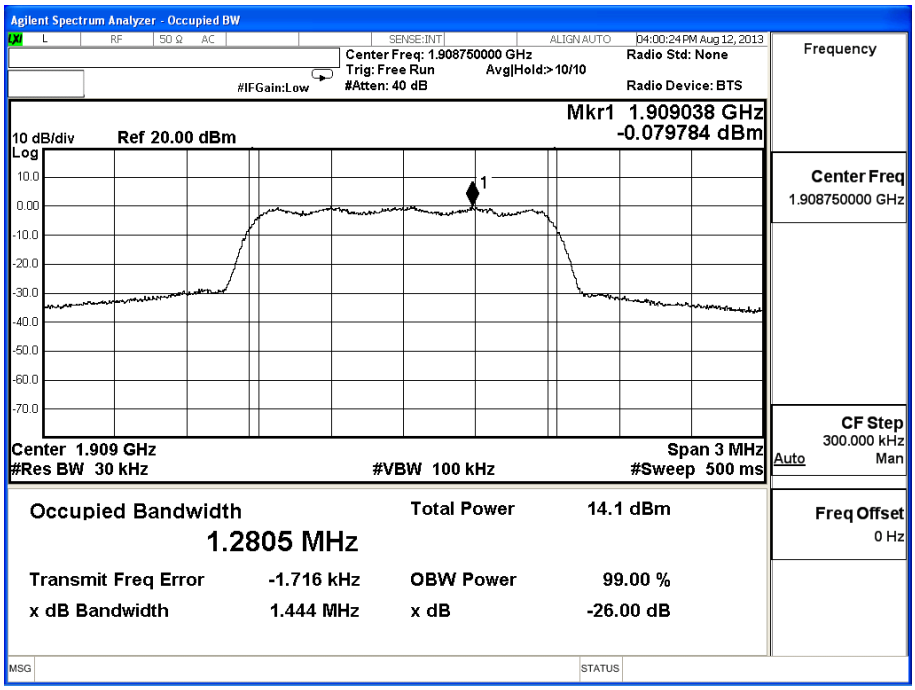


CDMA 1X EV-DO REV A (BC1)- Packet Switched (PCS Mode CH600)



Product	modlet gateway		
Test Mode	Occupied Bandwidth		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REV A (BC1)		

CDMA 1X EV-DO REV A (BC1) - Packet Switched (PCS Mode CH 1175)



4. Spurious Emission At Antenna Terminals (+/-1MHz)

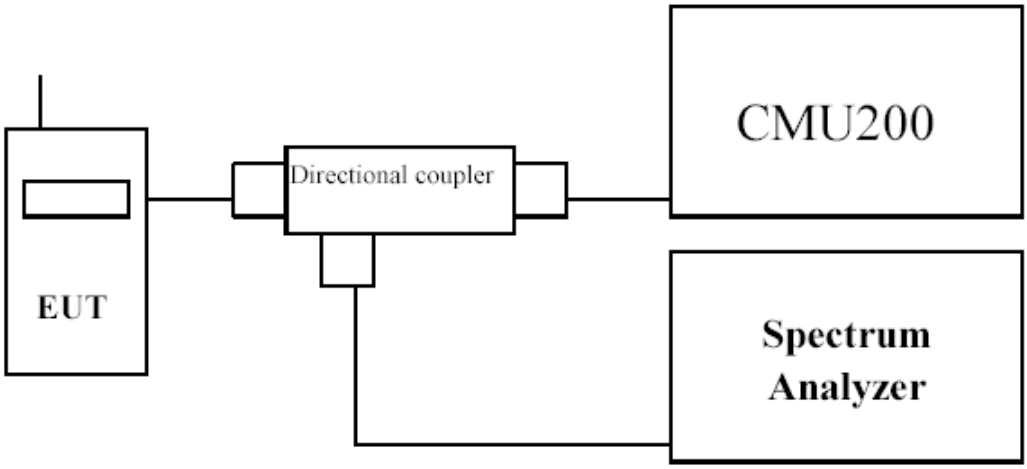
4.1. Test Equipment

The following test equipments are used during the spurious emission test

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum Analyzer	Agilent	N9010A / MY52220597	2012/12/18
Universal Radio Communication Tester	R & S	CMU200/104846	2013/05/09
Directional coupler	Agilent	87300C / MY44300353	2012/09/13
Directional coupler	Agilent	778D-012 / 50550	2012/09/14

Note: All equipments upon which need to be calibrated are with calibration period of 1 year.

4.2. Setup



4.3. Limits

Cellular Band Transmitter limits for narrowband spurious emission

Lower Block Edge Test Frequencies	**Upper Block Edge Test Frequencies**
Block A Channel : 128 Frequency : 824.7 MHz	Block B Channel : 251 Frequency : 848.31 MHz

PCS Band Transmitter limits for narrowband spurious emission

Lower Block Edge Test Channels/Frequencies	**Upper Block Edge Test Channels/Frequencies**
Block A Channel : 512 Frequency : 1851.25 MHz	Block C Channel : 810 Frequency : 1908.75 MHz

4.4. Test Procedure

In accordance with Part 22.917 and 24.238, at least 1% of the emission bandwidth was used for the resolution and video bandwidths up to 1MHz away from the Block Edge. At greater than 1MHz, the resolution and video bandwidth were increased to 1MHz.

The reference power and path losses of all channels used for testing in each frequency block were measured.

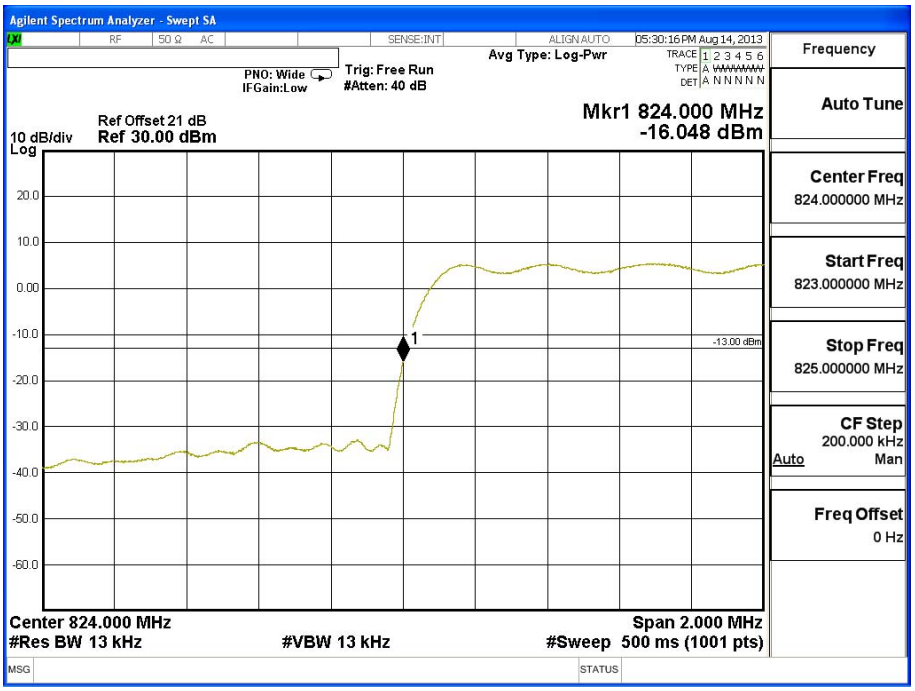
4.5. Test Specification

According to Part 2.1049, 22.917,24.238.

4.6. Test Result of Spurious Emission At Antenna Terminals (+/-1MHz)

Product	modlet gateway		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	Block Edge Test (CDMA 1X (BC0))		

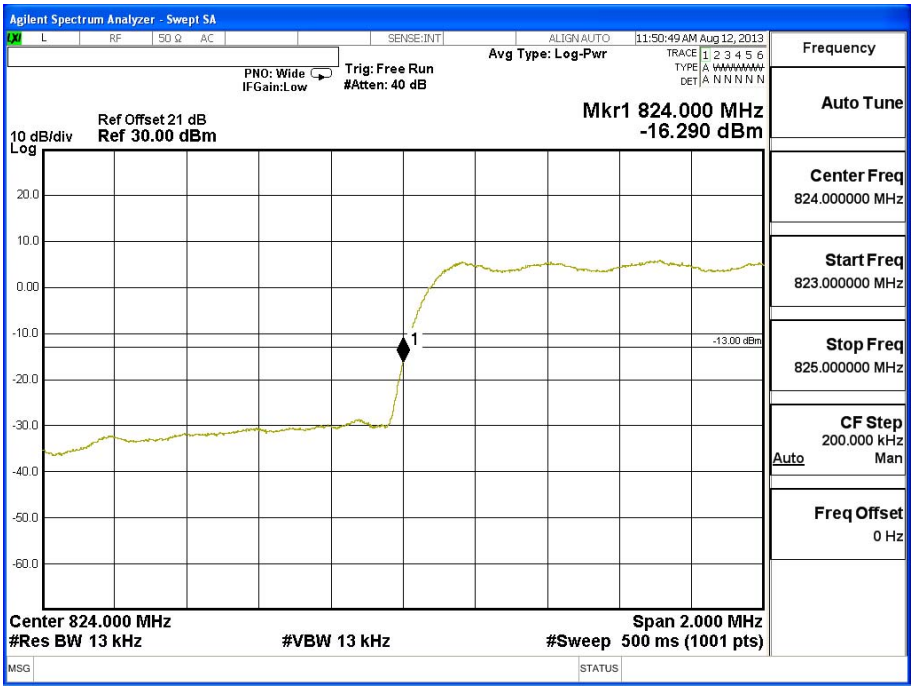
CDMA 1X (BC0) Lower Channel 1013 (824.7MHz)



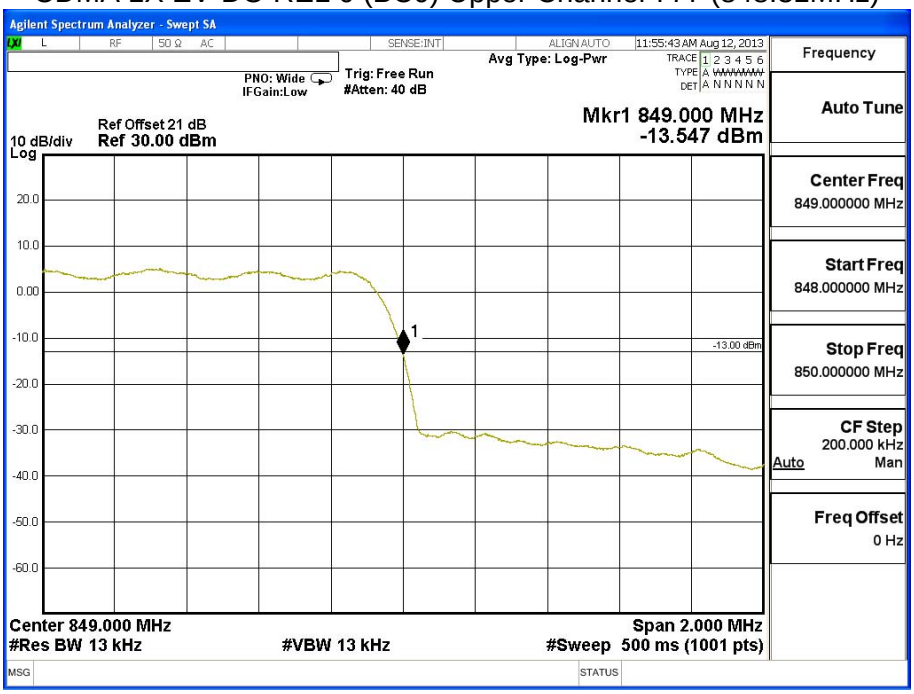
CDMA 1X (BC0) Upper Channel 777 (848.31MHz)

Product	modlet gateway		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	Block Edge Test (CDMA 1X EV-DO REL 0 (BC0))		

CDMA 1X EV-DO REL 0 (BC0) Lower Channel 1013 (824.7MHz)

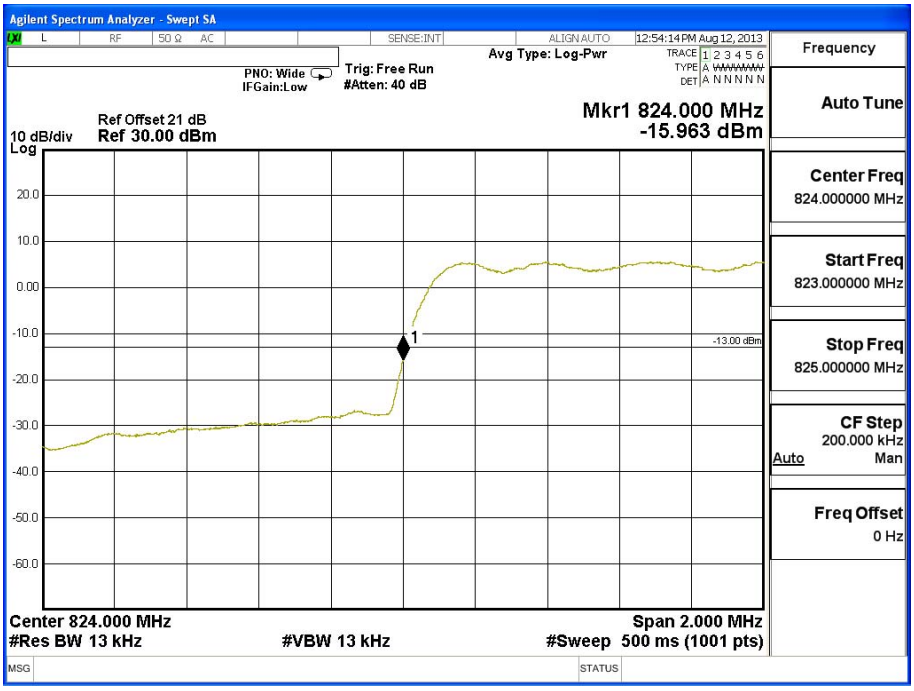


CDMA 1X EV-DO REL 0 (BC0) Upper Channel 777 (848.31MHz)

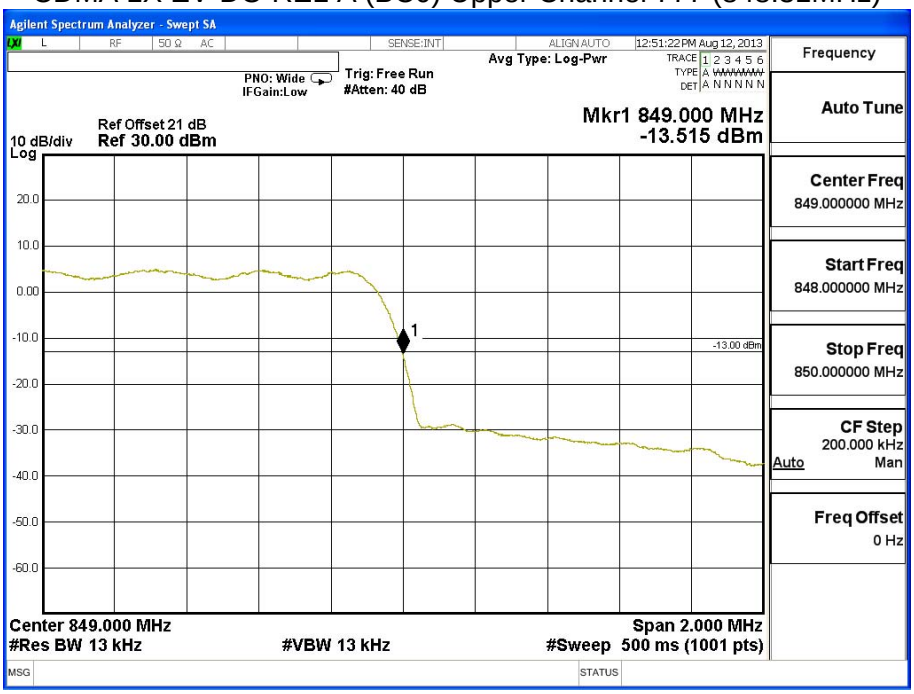


Product	modlet gateway		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	Block Edge Test (CDMA 1X EV-DO REV A (BC0))		

CDMA 1X EV-DO REL A (BC0) Lower Channel 1013 (824.7MHz)



CDMA 1X EV-DO REL A (BC0) Upper Channel 777 (848.31MHz)



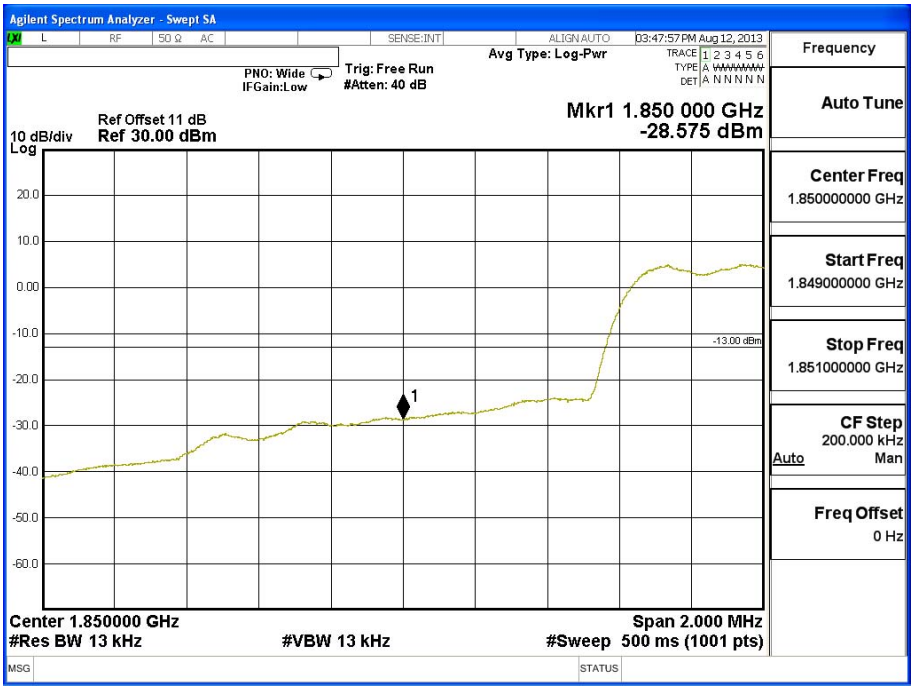
Product	modlet gateway		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	Block Edge Test (CDMA 1X (BC1))		

CDMA 1X (BC1) Lower Channel 25 (1851.25MHz)

CDMA 1X (BC1) Upper Channel 1175 (1908.75MHz)

Product	modlet gateway		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	Block Edge Test (CDMA 1X EV-DO REL 0 (BC1))		

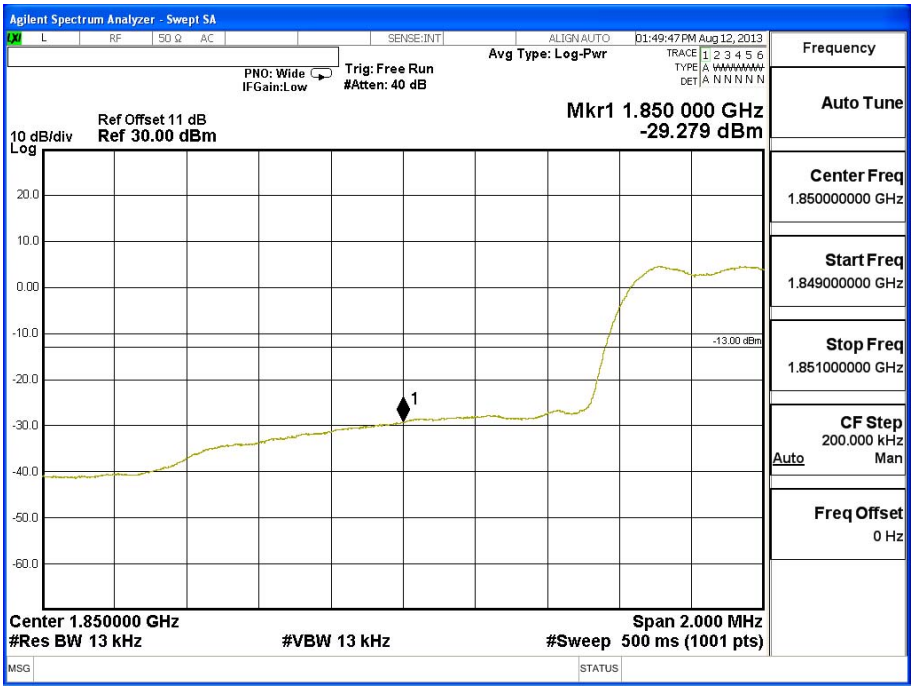
CDMA 1X EV-DO REL 0 (BC1) Lower Channel 25 (1851.25MHz)



CDMA 1X EV-DO REL 0 (BC1) Upper Channel 1175 (1908.75MHz)

Product	modlet gateway		
Test Mode	Spurious Emission At Antenna Terminals (+/-1MHz)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	Block Edge Test (CDMA 1X EV-DO REL A (BC1))		

CDMA 1X EV-DO REL A (BC1) Lower Channel 25 (1851.25MHz)



CDMA 1X EV-DO REL A (BC1) Upper Channel 1175 (1908.75MHz)

5. Spurious Emission

5.1. Test Equipment

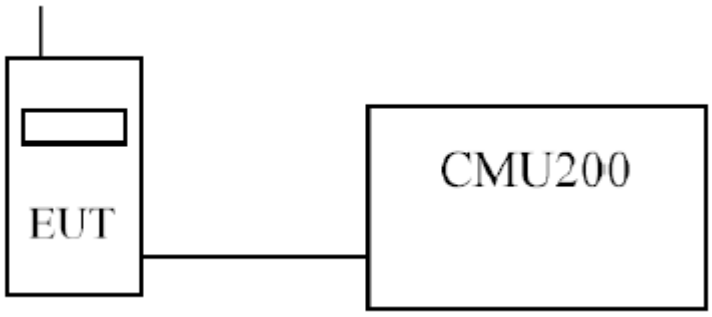
The following test equipments are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒CTR	Spectrum Analyzer	Agilent	N9010A / MY52220597	2012/12/18
	Dual Directional couple	Agilent	778D / 50550	2012/09/14
	Directional coupler	Agilent	87300C / 3239A01864	2012/09/10
☒Site#3	Test Receiver	R & S	ESCS 30/ 100367	2012/11/30
	Universal Radio Communication Tester	R&S	CMU200/104846	2013/05/09
	Spectrum Analyzer	Agilent	N9000A/ MY50510070	2013/03/15
	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	2013/07/14
	Horn Antenna	Schwarzbeck	9120D / 556	2012/12/22
	Pre-Amplifier	QTK	QTK-LK-E-I-AMP4/ CHM-0201003	2013/07/02

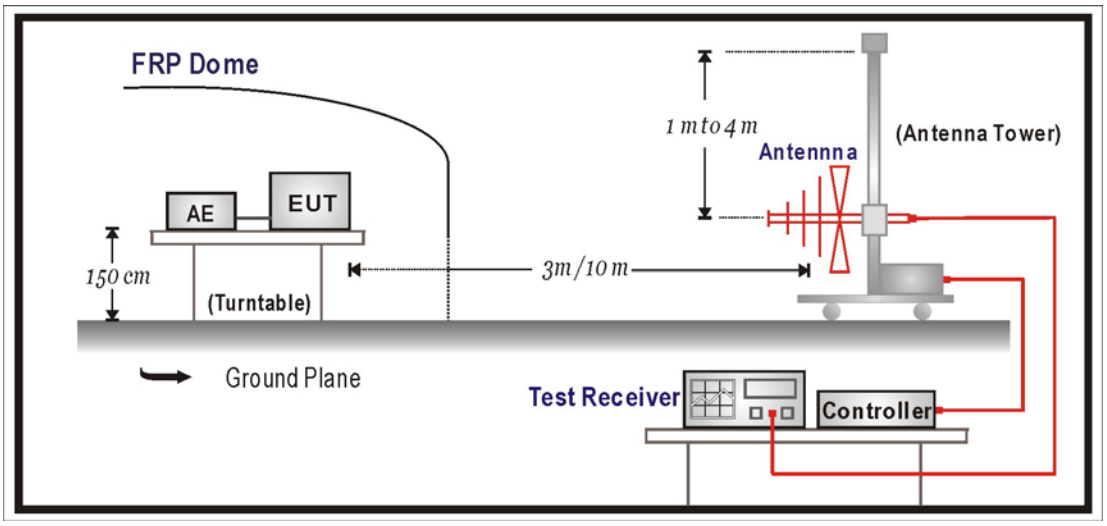
Note: All equipments that need to be calibrated are with calibration period of 1 year.

5.2. Test Setup

5.2.1.1 Spurious emissions at antenna terminals.



5.2.1.2 Field strength of spurious radiation.



5.3. Limits

Limit	**<-13dBm**

43 + 10Log(P) down on the carrier where P is the power in Watts.

5.4. Test Procedure

In accordance with Part 2.1051, the spurious emissions from the antenna terminal were measured. The transmitter output power was attenuated using a combination of filters and attenuators and the frequency spectrum investigated from 30MHz to 20GHz. The EUT was set to transmit on full power. The EUT was tested on Low, middle and High channels for both power levels where worst case are recorded in this report. The resolution and video bandwidth was set to 1MHz/ 3MHz in accordance with Part 22.917&24.238. The spectrum analyzer detector was set to Max Hold. In addition, measurements were made up to the 10th harmonic of the fundamental. The device was then replaced with a substitution antenna, which input signal was adjusted until the received level matched that of the previously detected emission.

(1) The EUT is tested with maximum rated TX power via the Base Station simulator.

(2) The EUT is tested in three orthogonal planes , The worst case test configuration was found in the horizontal position.

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to TIA/EIA 603-C on radiated measurement.

5.5. Test Specification

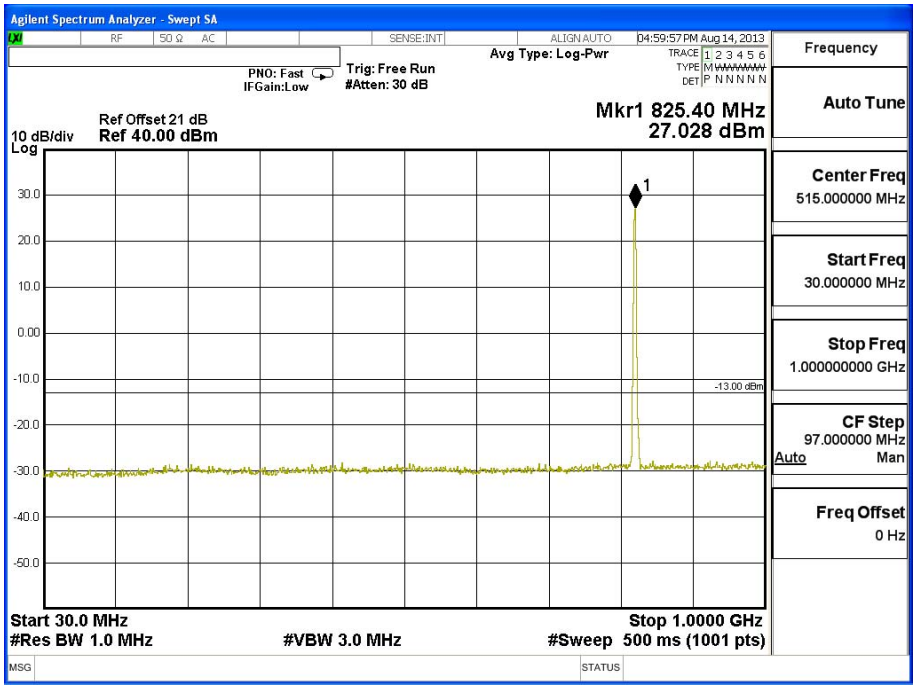
According to Part 2.1051, 2.1053, 22.917(a), 24.238(a).

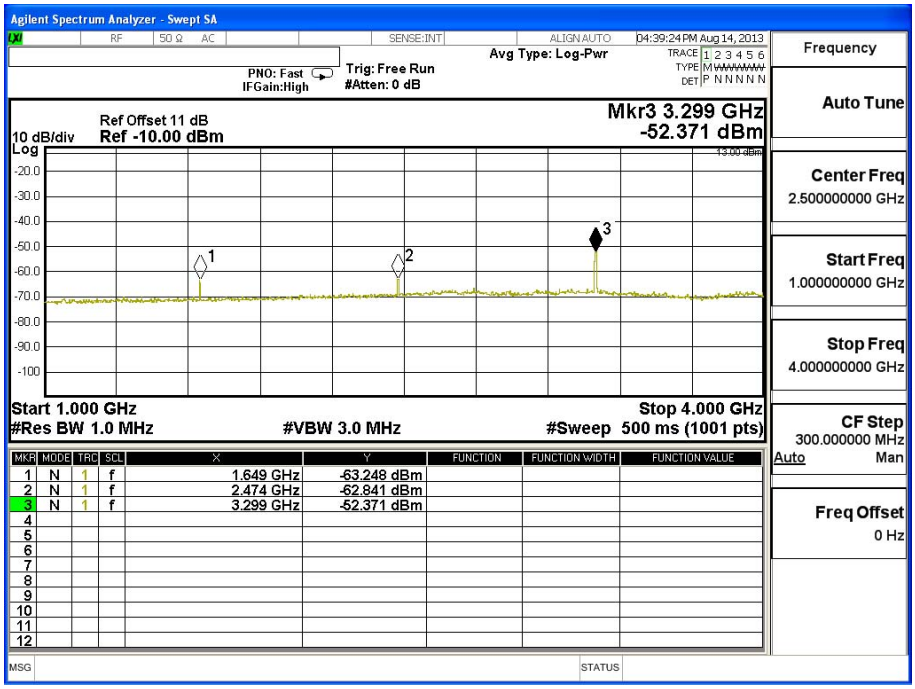
5.6. Test Result of Spurious Emission

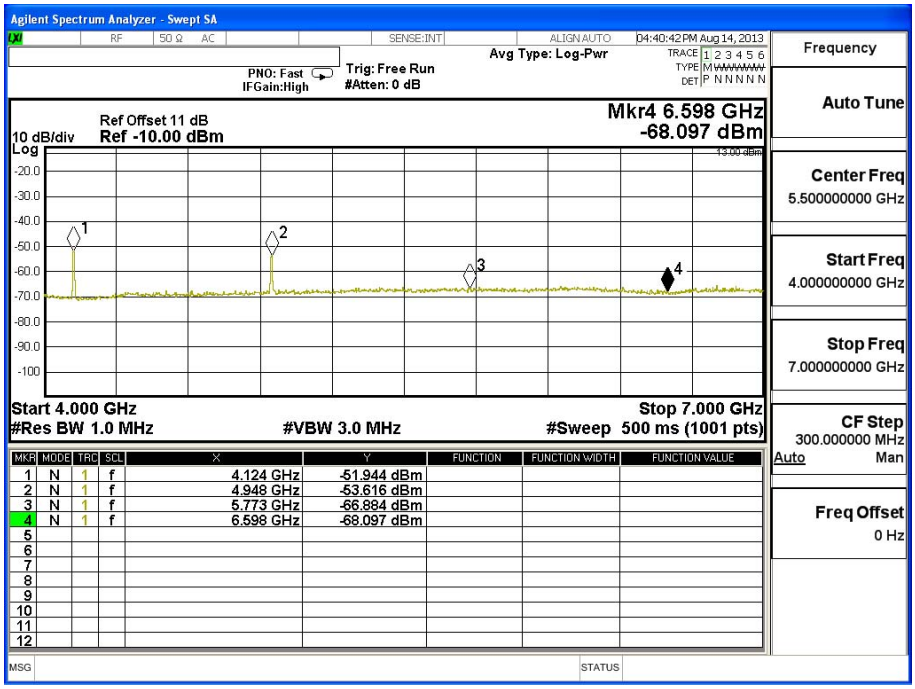
Product	modlet gateway		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X (BC0)	Test Range	30MHz~10GHz

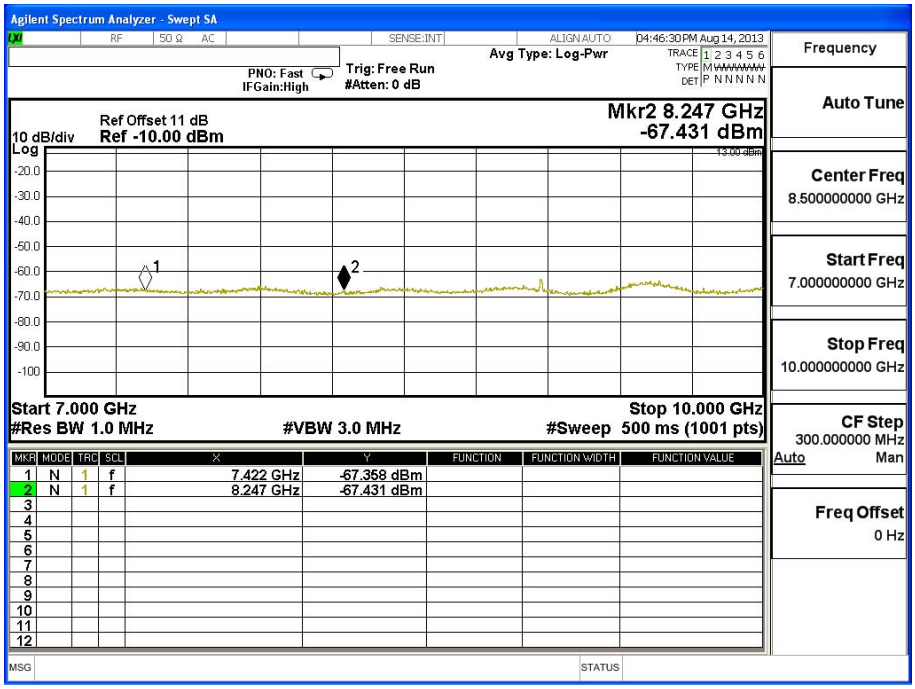
CDMA 1X (BC0) Low-Channel 1013

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
1649.4	-63.248	0.58	-62.668	-13
2474.1	-62.841	0.7	-62.141	-13
3298.8	-52.371	1.01	-51.361	-13
4123.5	-51.944	1.18	-50.764	-13
4948.2	-53.616	1.23	-52.386	-13
5772.9	-66.884	1.45	-65.434	-13
6597.6	-68.097	1.56	-66.537	-13
7422.3	-67.358	1.59	-65.768	-13
8247	-67.431	1.82	-65.611	-13




Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:39:24 PM Aug 14, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr3 3.299 GHz
-52.371 dBm
13.00 dBm
Log
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 4.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 1.649 GHz -63.248 dBm
2 N 1 f 2.474 GHz -62.841 dBm
3 N 1 f 3.299 GHz -52.371 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
4.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz

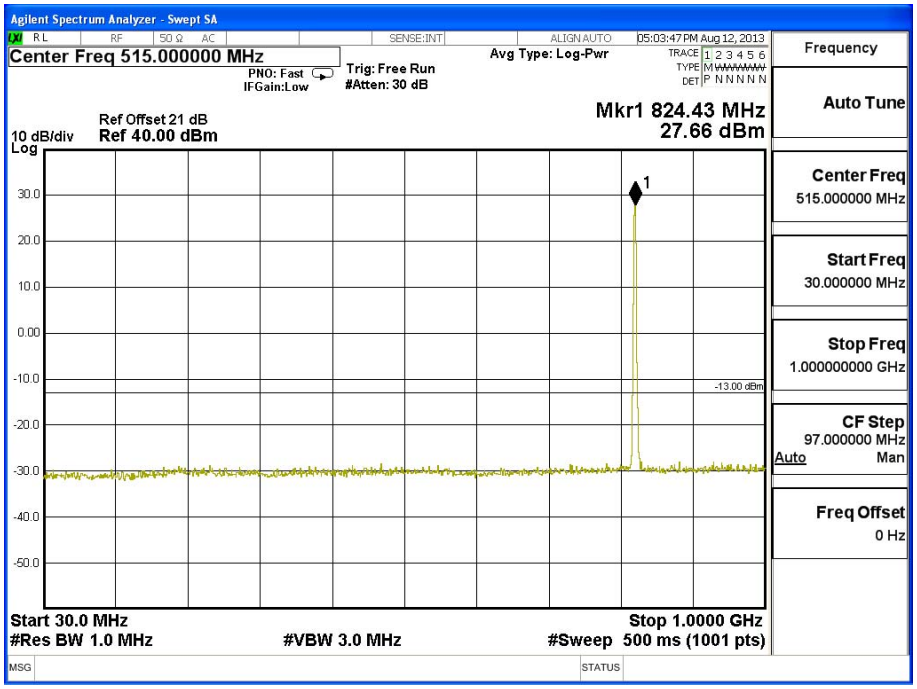

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:40:42 PM Aug 14, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr4 6.598 GHz
-68.097 dBm
13.00 dBm
Log
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 4.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 7.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 4.124 GHz -51.944 dBm
2 N 1 f 4.948 GHz -53.616 dBm
3 N 1 f 5.773 GHz -66.884 dBm
4 N 1 f 6.598 GHz -68.097 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
4.000000000 GHz
Stop Freq
7.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz

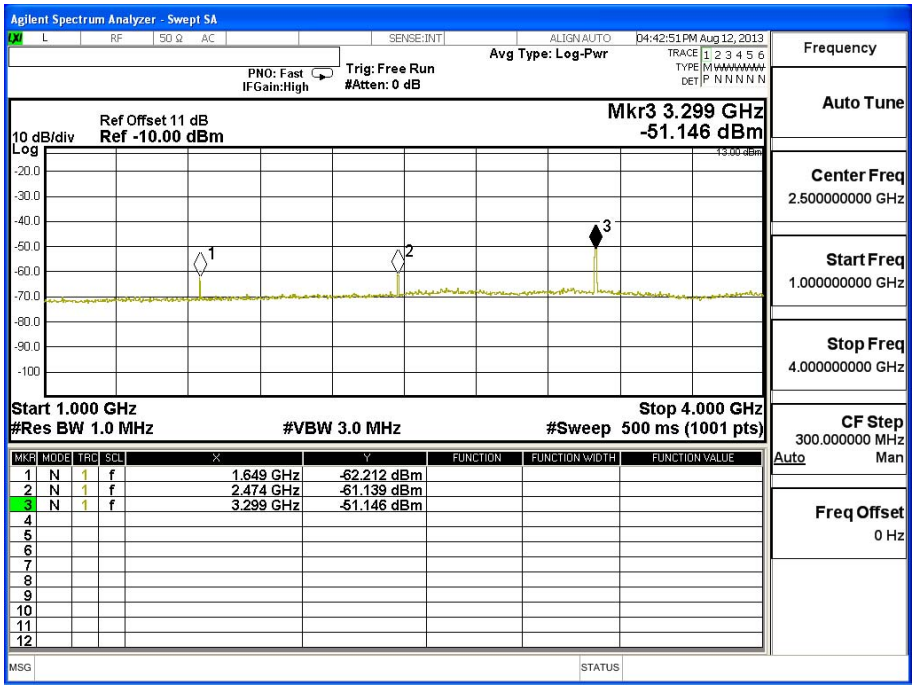

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:46:30 PM Aug 14, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Mkr2 8.247 GHz
-67.431 dBm
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Log
13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
1
2
Start 7.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 7.422 GHz -67.358 dBm
2 N 1 f 8.247 GHz -67.431 dBm
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
8.500000000 GHz
Start Freq
7.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz

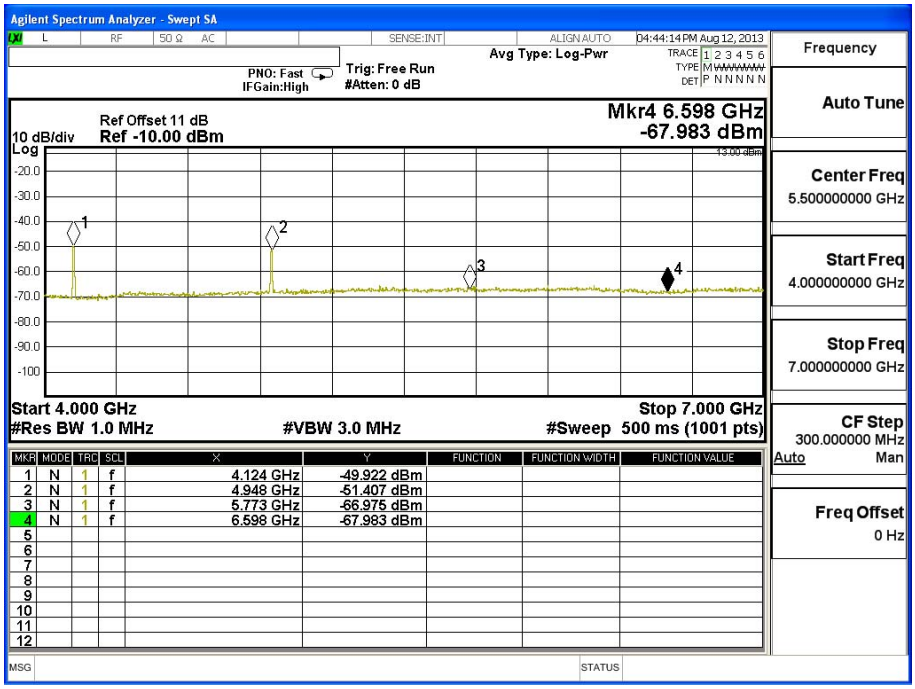
Product	modlet gateway		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL 0 (BC0)	Test Range	30MHz~10GHz

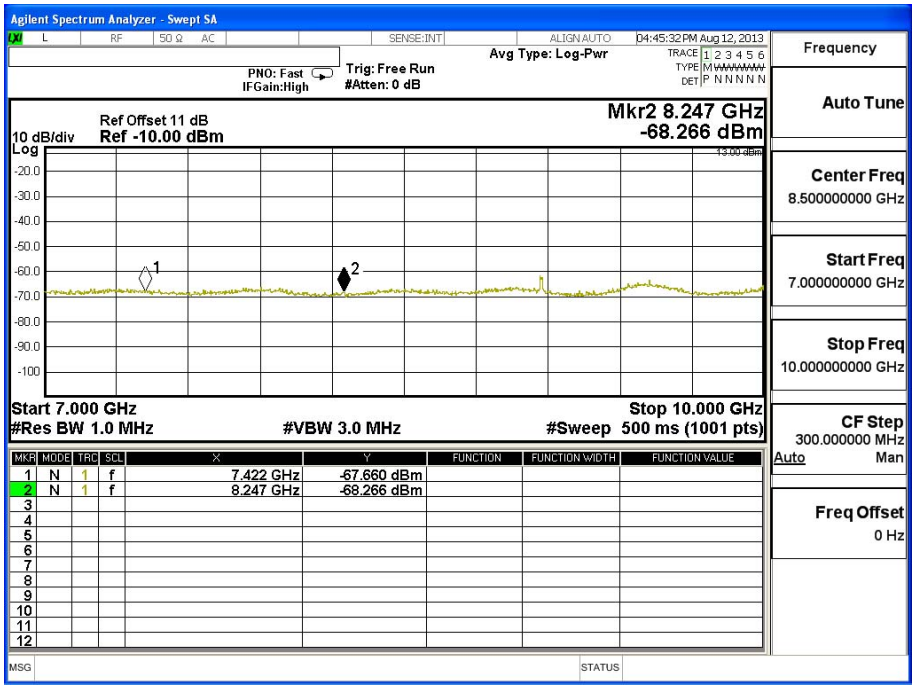
CDMA 1X EV-DO REL 0 (BC0) Low-Channel 1013

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
1649.4	-62.212	0.58	-61.632	-13
2474.1	-61.139	0.7	-60.439	-13
3298.8	-51.146	1.01	-50.136	-13
4123.5	-49.922	1.18	-48.742	-13
4948.2	-51.407	1.23	-50.177	-13
5772.9	-66.975	1.45	-65.525	-13
6597.6	-67.983	1.56	-66.423	-13
7422.3	-67.660	1.59	-66.070	-13
8247	-68.266	1.82	-66.446	-13




Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:42:51 PM Aug 12, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Mkr3 3.299 GHz
-51.146 dBm
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Log
13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 4.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 1.649 GHz -62.212 dBm
2 N 1 f 2.474 GHz -51.139 dBm
3 N 1 f 3.299 GHz -51.146 dBm
Frequency
Auto Tune
Center Freq
2.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
4.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

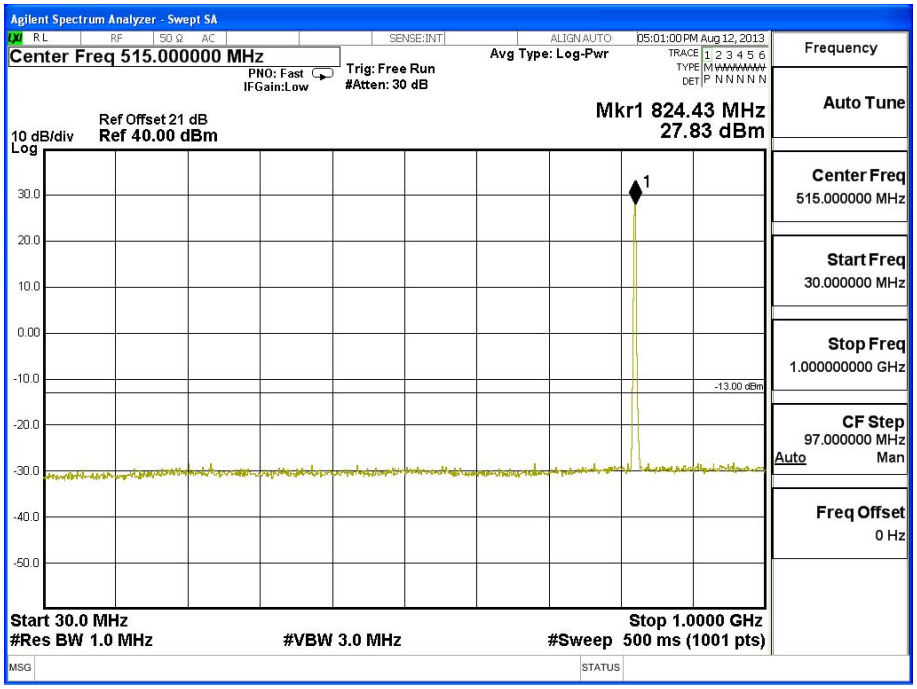

Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:44:14 PM Aug 12, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Mkr4 6.598 GHz
-67.983 dBm
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Log
13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 4.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 7.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 4.124 GHz -49.922 dBm
2 N 1 f 4.948 GHz -51.407 dBm
3 N 1 f 5.773 GHz -66.975 dBm
4 N 1 f 6.598 GHz -67.983 dBm
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
4.000000000 GHz
Stop Freq
7.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

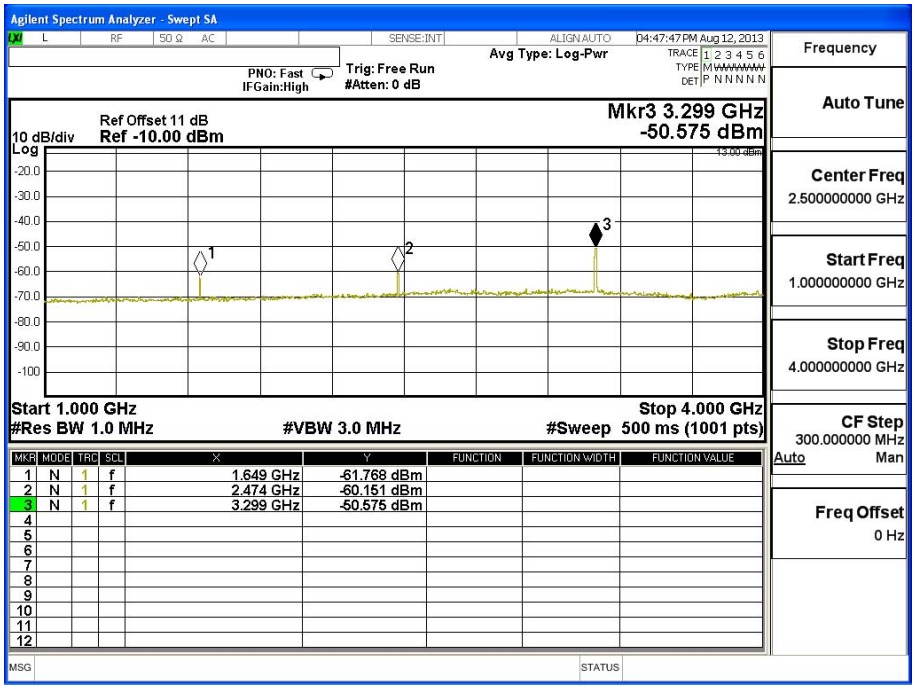

Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:45:32 PM Aug 12, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr2 8.247 GHz
-68.266 dBm
Log
13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 7.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 7.422 GHz -67.660 dBm
2 N 1 f 8.247 GHz -68.266 dBm
Frequency
Auto Tune
Center Freq
8.500000000 GHz
Start Freq
7.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

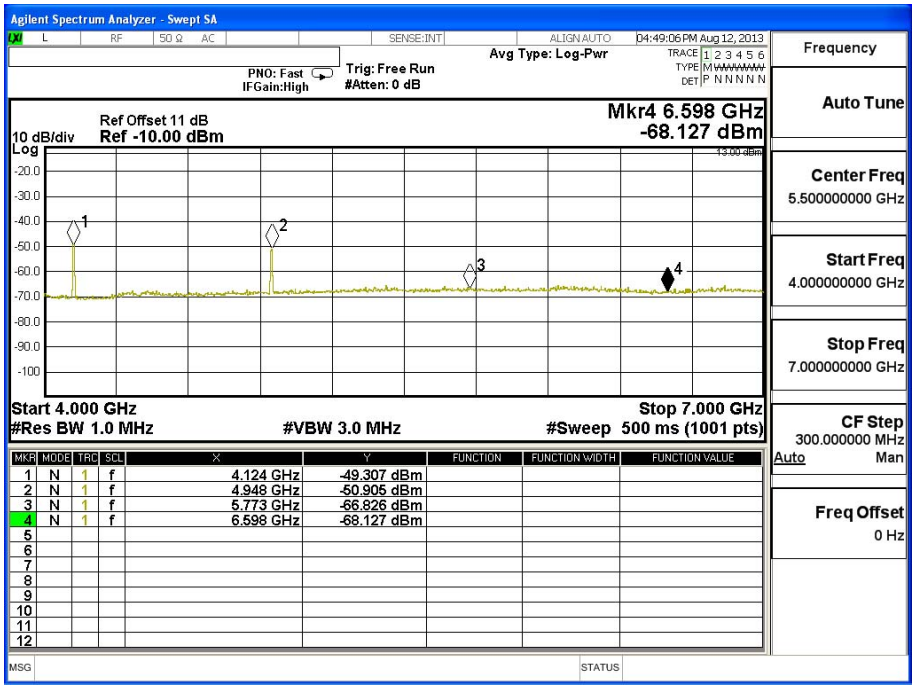
Product	modlet gateway		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL A (BC0)	Test Range	30MHz~10GHz

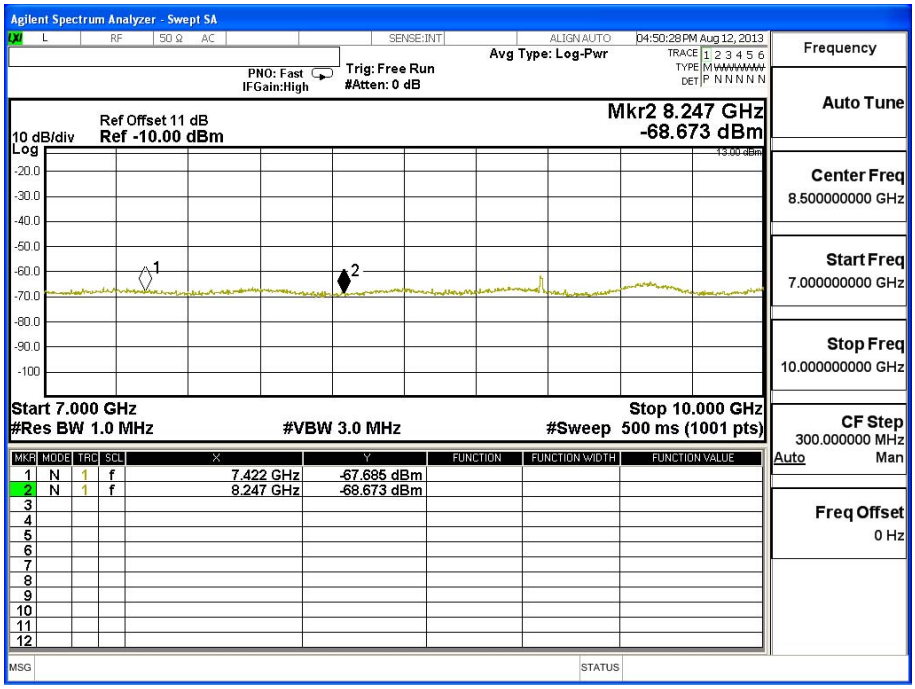
CDMA 1X EV-DO REL A (BC0) Low-Channel 1013

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
1649.4	-61.768	0.58	-61.188	-13
2474.1	-60.151	0.7	-59.451	-13
3298.8	-50.575	1.01	-49.565	-13
4123.5	-49.307	1.18	-48.127	-13
4948.2	-50.905	1.23	-49.675	-13
5772.9	-66.826	1.45	-65.376	-13
6597.6	-68.127	1.56	-66.567	-13
7422.3	-67.685	1.59	-66.095	-13
8247	-68.673	1.82	-66.853	-13




Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:47:47 PM Aug 12, 2013
Avg Type: Log-Pwr
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr3 3.299 GHz
-50.575 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 4.000 GHz
#Sweep 500 ms (1001 pts)
1 N 1 f 1.649 GHz -61.768 dBm
2 N 1 f 2.474 GHz -60.151 dBm
3 N 1 f 3.299 GHz -50.575 dBm
Frequency
Auto Tune
Center Freq
2.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
4.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz

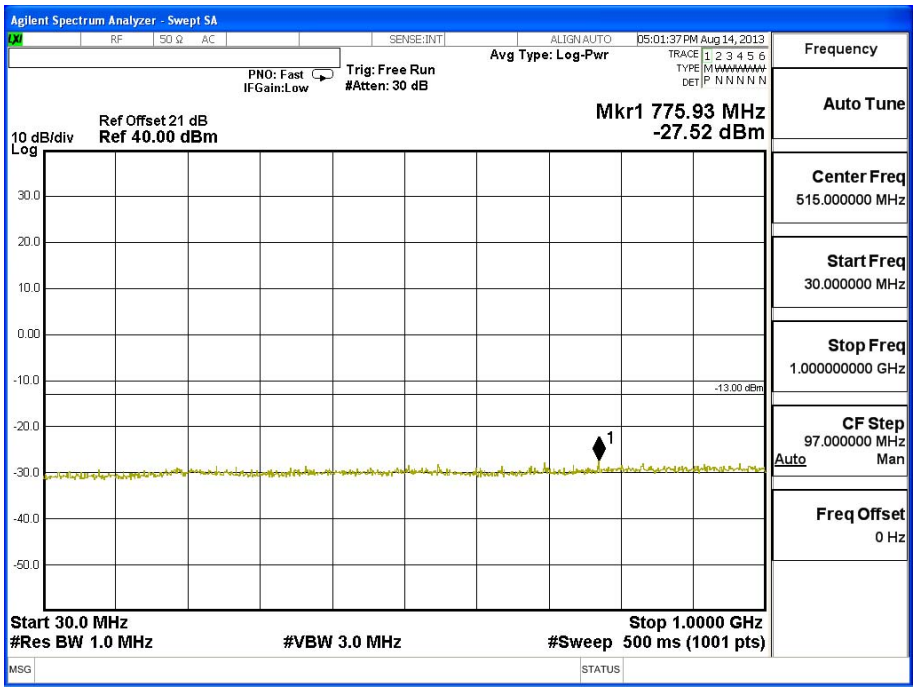

Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:49:06 PM Aug 12, 2013
Avg Type: Log-Pwr
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr4 6.598 GHz
-68.127 dBm
Start 4.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 7.000 GHz
#Sweep 500 ms (1001 pts)
1 N 1 f 4.124 GHz -49.307 dBm
2 N 1 f 4.948 GHz -50.905 dBm
3 N 1 f 5.773 GHz -66.826 dBm
4 N 1 f 6.598 GHz -68.127 dBm
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
4.000000000 GHz
Stop Freq
7.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz

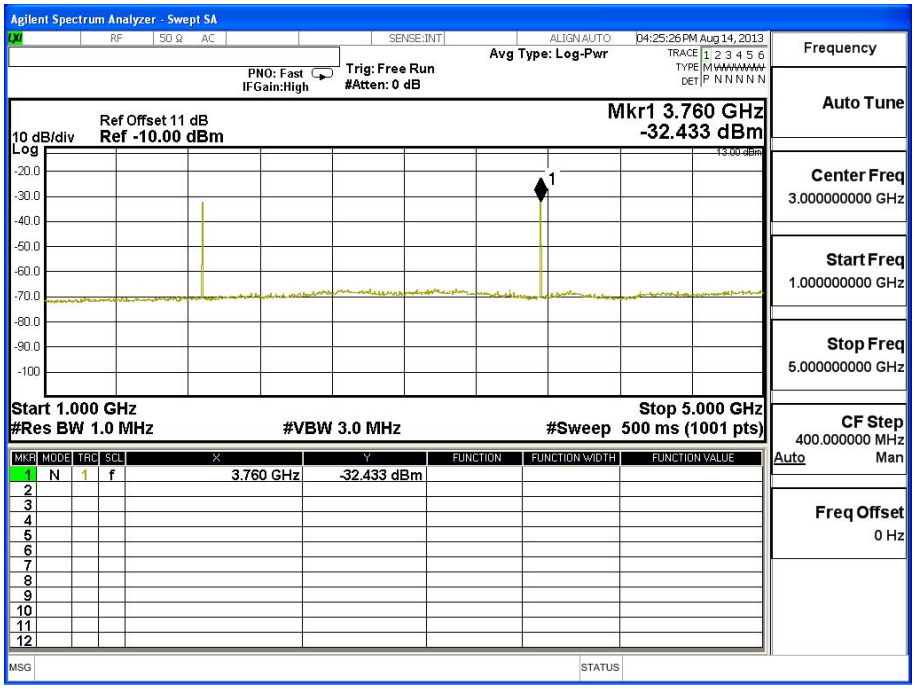

Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:50:28 PM Aug 12, 2013
Avg Type: Log-Pwr
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr2 8.247 GHz
-68.673 dBm
Start 7.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
#Sweep 500 ms (1001 pts)
Frequency
Auto Tune
Center Freq
8.500000000 GHz
Start Freq
7.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
300.000000 MHz
Auto
Man
Freq Offset
0 Hz
1 N 1 f 7.422 GHz -67.685 dBm
2 N 1 f 8.247 GHz -68.673 dBm

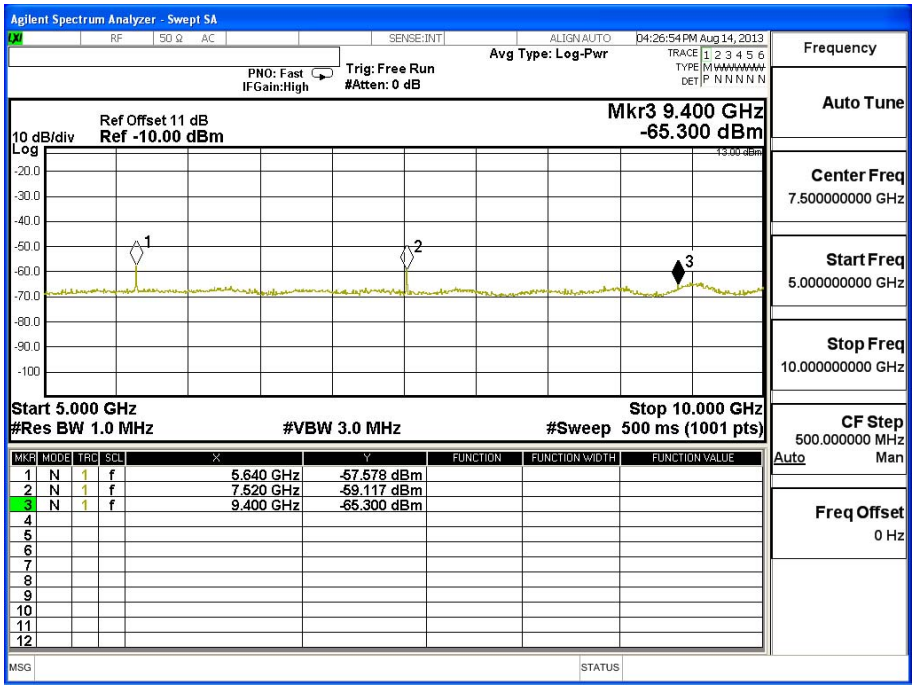
Product	modlet gateway		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X (BC1)	Test Range	30MHz~20GHz

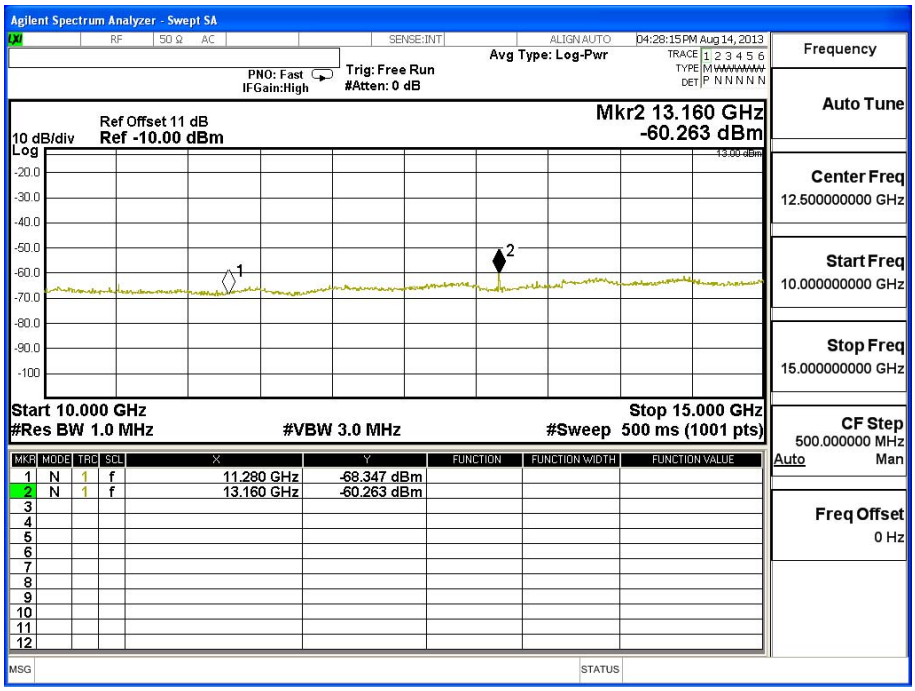
CDMA 1X (BC1) Mid-Channel 600

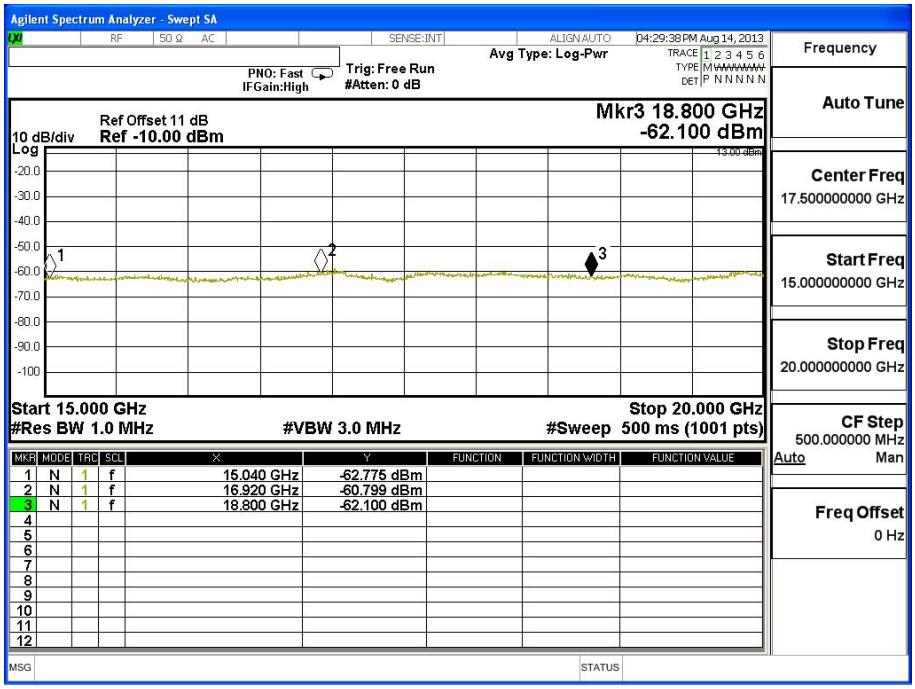
Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3760	-32.433	1.1	-31.333	-13
5640	-57.578	1.23	-56.348	-13
7520	-59.117	1.59	-57.527	-13
9400	-65.300	1.89	-63.410	-13
11280	-68.347	2.07	-66.277	-13
13160	-60.263	2.26	-58.003	-13
15040	-62.775	2.64	-60.135	-13
16920	-60.799	3.5	-57.299	-13
18800	-62.100	3.7	-58.400	-13




Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:25:26 PM Aug 14, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Mkr1 3.760 GHz
-32.433 dBm
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Log
13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 5.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 3.760 GHz -32.433 dBm
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
04:26:54 PM Aug 14, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Mkr3 9.400 GHz
-65.300 dBm
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Log
13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 5.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.640 GHz -57.578 dBm
2 N 1 f 7.520 GHz -59.117 dBm
3 N 1 f 9.400 GHz -65.300 dBm
Frequency
Auto Tune
Center Freq
7.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

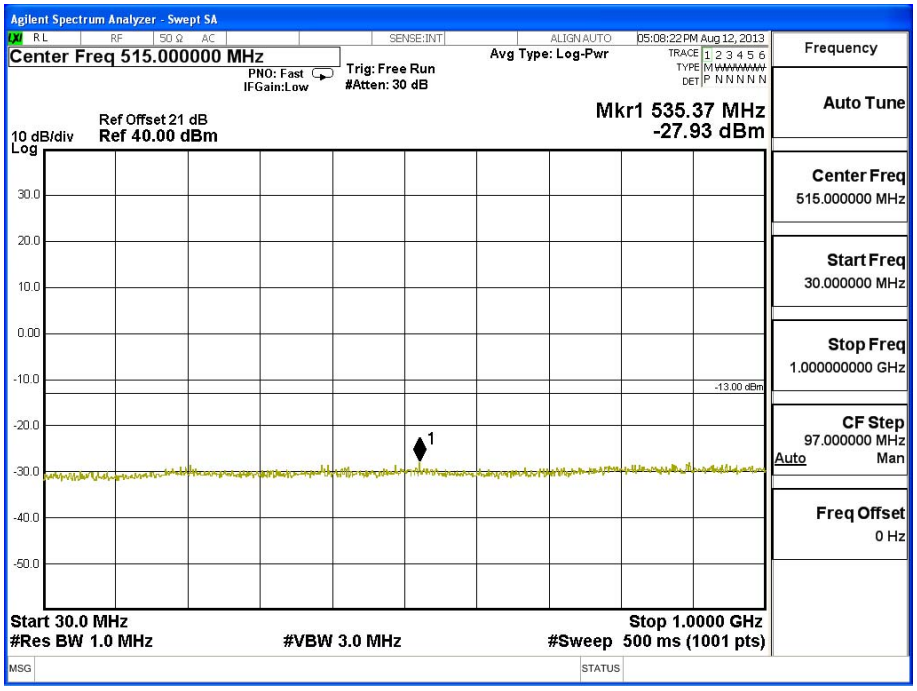

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
04:28:15 PM Aug 14, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Log
Mkr2 13.160 GHz
-60.263 dBm
13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 10.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 15.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 11.280 GHz -68.347 dBm
2 N 1 f 13.160 GHz -60.263 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
15.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz

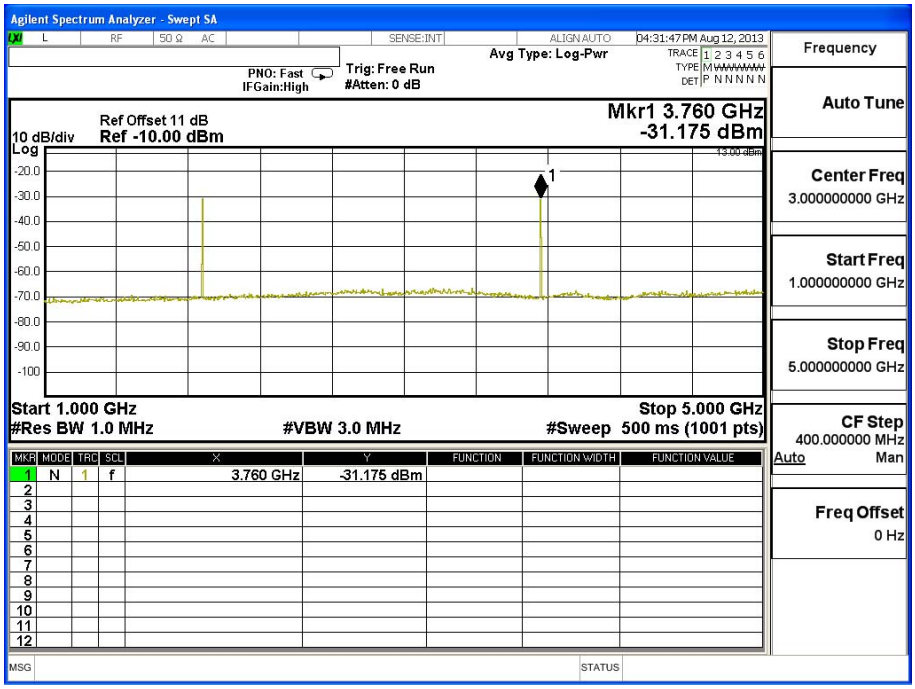

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
04:29:38 PM Aug 14, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Log
Mkr3 18.800 GHz
-62.100 dBm
13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 15.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 20.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 15.040 GHz -62.775 dBm
2 N 1 f 16.920 GHz -60.799 dBm
3 N 1 f 18.800 GHz -62.100 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
17.500000000 GHz
Start Freq
15.000000000 GHz
Stop Freq
20.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz

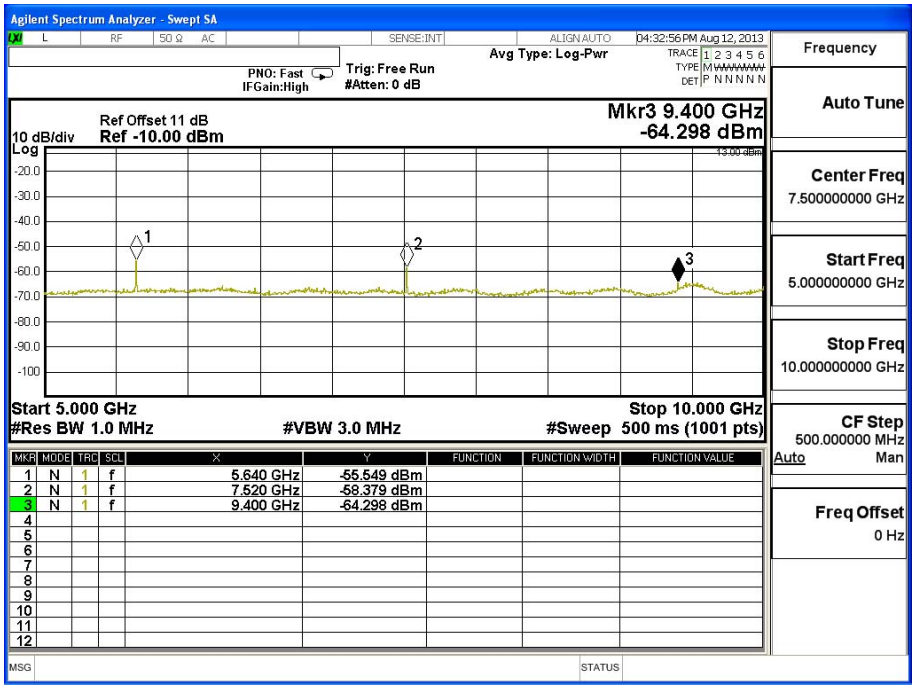
Product	modlet gateway		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL 0 (BC1)	Test Range	30MHz~20GHz

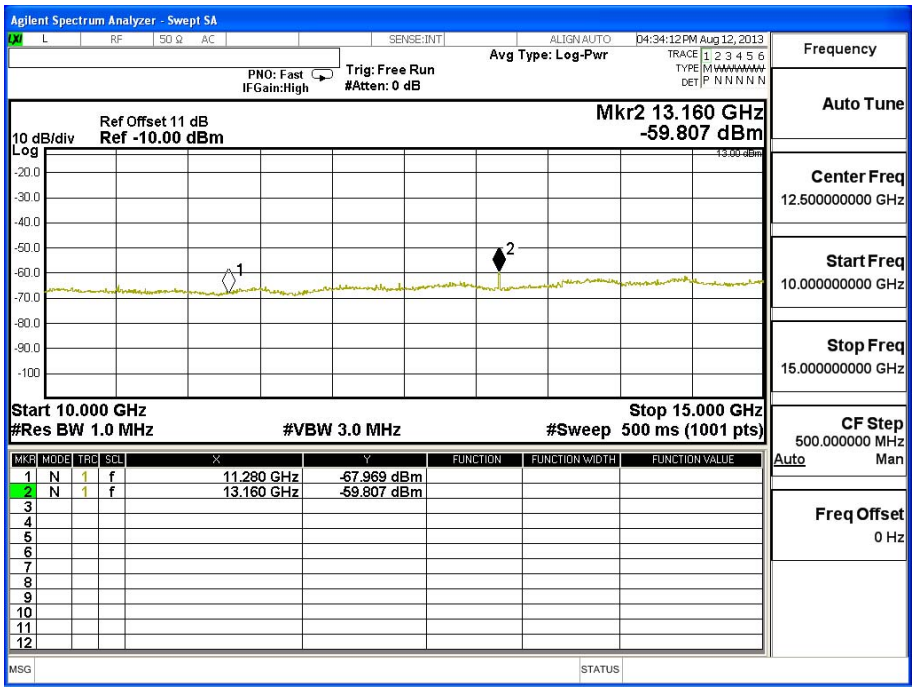
CDMA 1X EV-DO REL 0 (BC1) Mid-Channel 600

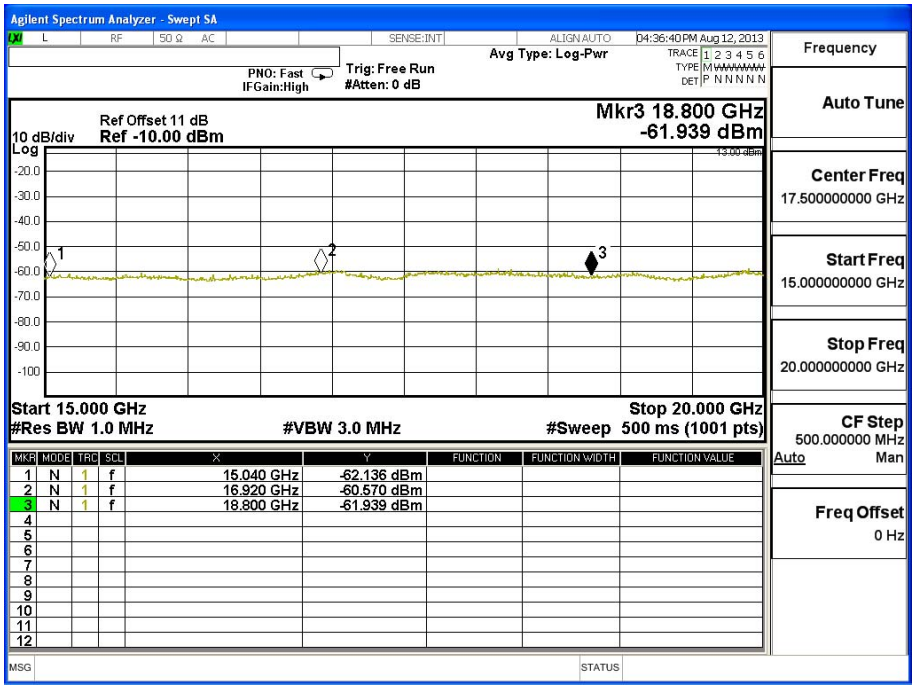
Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3760	-31.175	1.1	-30.075	-13
5640	-55.549	1.23	-54.319	-13
7520	-58.379	1.59	-56.789	-13
9400	-64.298	1.89	-62.408	-13
11280	-67.969	2.07	-65.899	-13
13160	-59.807	2.26	-57.547	-13
15040	-62.136	2.64	-59.496	-13
16920	-60.570	3.5	-57.070	-13
18800	-61.939	3.7	-58.239	-13




Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:31:47 PM Aug 12, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr1 3.760 GHz
-31.175 dBm
13.00 dBm
Log
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 5.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 3.760 GHz -31.175 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:32:56 PM Aug 12, 2013
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr3 9.400 GHz
-64.298 dBm
13.00 dBm
Log
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 5.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.640 GHz -55.549 dBm
2 N 1 f 7.520 GHz -58.379 dBm
3 N 1 f 9.400 GHz -64.298 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
7.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz

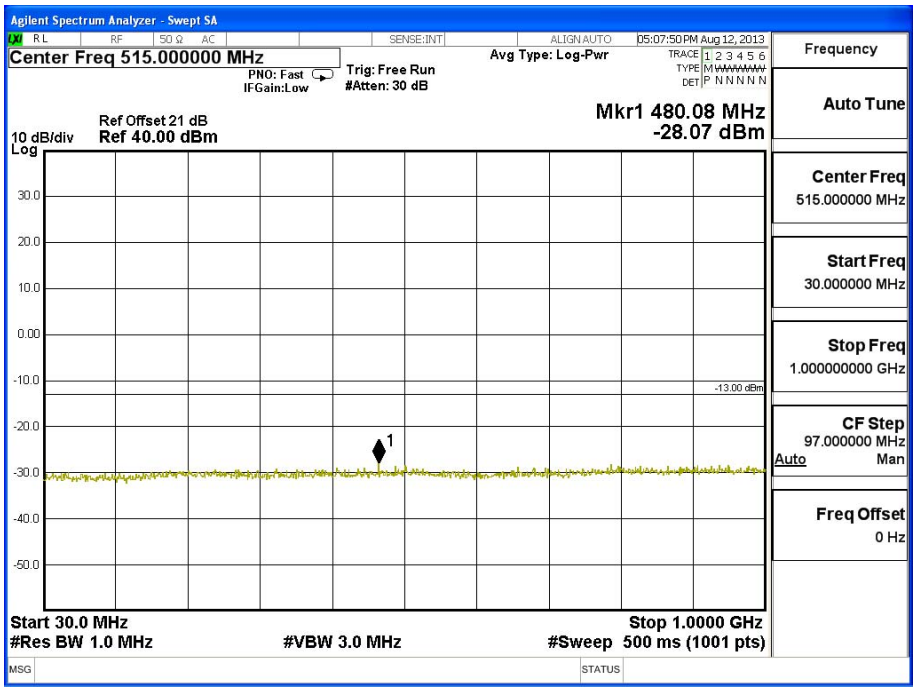

Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:34:12 PM Aug 12, 2013
Avg Type: Log-Pwr
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr2 13.160 GHz
-59.807 dBm
Start 10.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 15.000 GHz
#Sweep 500 ms (1001 pts)
1 N 1 f 11.280 GHz -67.969 dBm
2 N 1 f 13.160 GHz -59.807 dBm
Frequency
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
15.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz

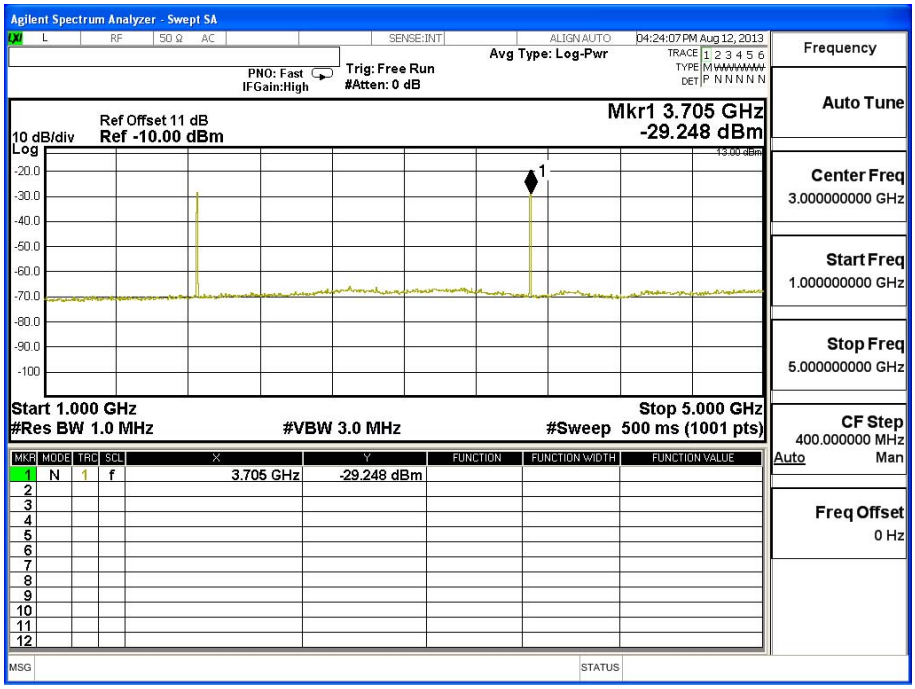

Agilent Spectrum Analyzer - Swept SA
SENSE:INT
ALIGN AUTO
04:36:40 PM Aug 12, 2013
Avg Type: Log-Pwr
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr3 18.800 GHz
-61.939 dBm
Start 15.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 20.000 GHz
#Sweep 500 ms (1001 pts)
1 N 1 f 15.040 GHz -62.136 dBm
2 N 1 f 16.920 GHz -60.570 dBm
3 N 1 f 18.800 GHz -61.939 dBm
Frequency
Auto Tune
Center Freq
17.500000000 GHz
Start Freq
15.000000000 GHz
Stop Freq
20.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	modlet gateway		
Test Mode	Spurious Emission (Conducted)		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL A (BC1)	Test Range	30MHz~20GHz

CDMA 1X EV-DO REL A (BC1) Mid-Channel 600

Frequency (MHz)	Reading Level (dBm)	Path Loss (dB)	Emission Level (dBm)	Limit (dBm)
3760	-29.248	1.1	-28.148	-13
5640	-50.930	1.23	-49.700	-13
7520	-66.429	1.59	-64.839	-13
9400	-66.021	1.89	-64.131	-13
11280	-68.296	2.07	-66.226	-13
13160	-62.120	2.26	-59.860	-13
15040	-64.227	2.64	-61.587	-13
16920	-61.548	3.5	-58.048	-13
18800	-61.374	3.7	-57.674	-13

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ALIGN AUTO
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Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
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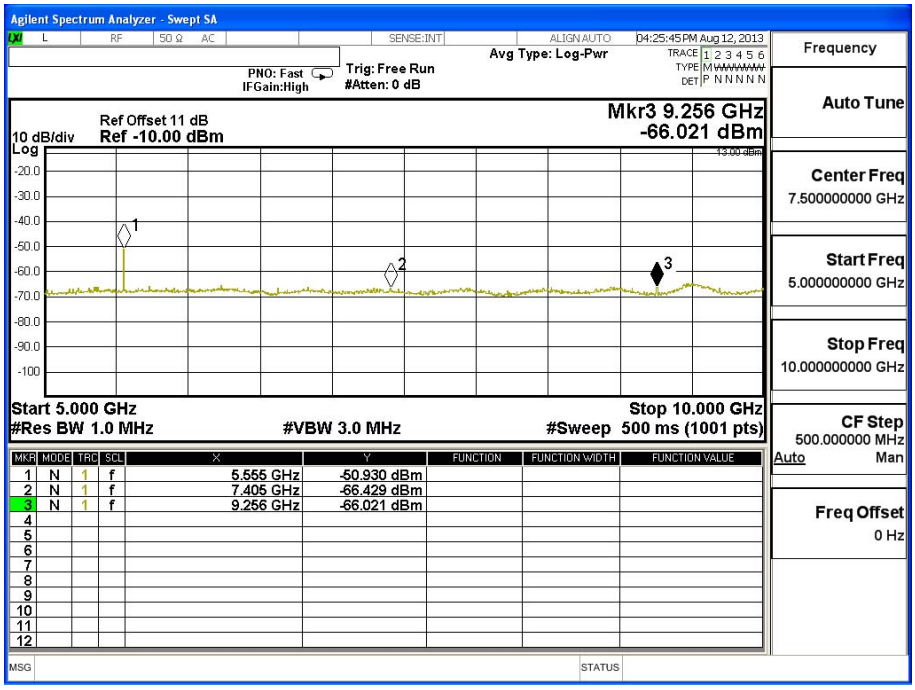
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr1 3.705 GHz
-29.248 dBm
13.00 dBm
Log
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 5.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 3.705 GHz -29.248 dBm
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS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ALIGN AUTO
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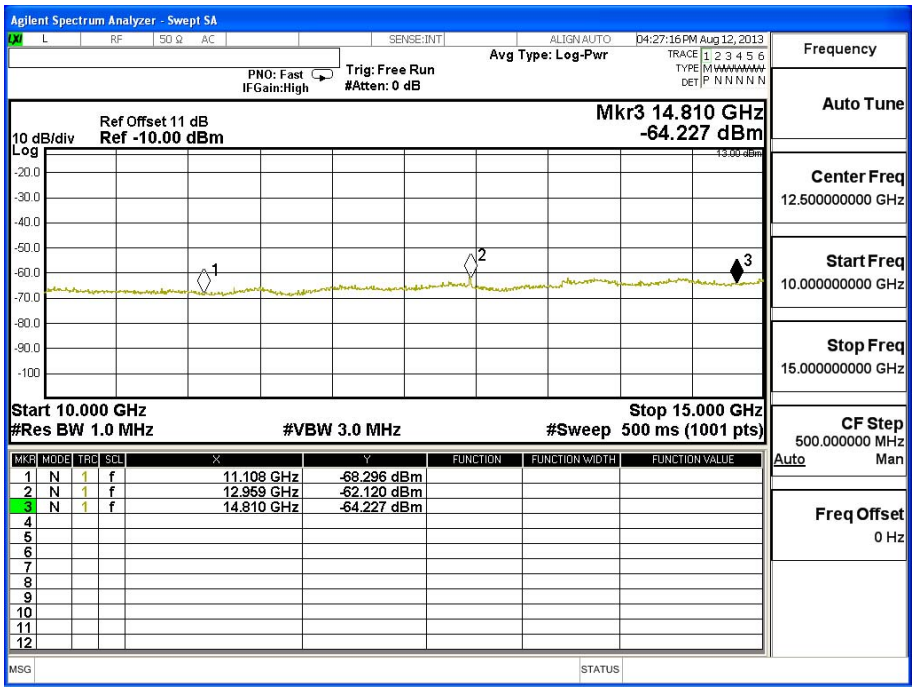
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr3 9.256 GHz
-66.021 dBm
13.00 dBm
Log
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
Start 5.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
#Sweep 500 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.555 GHz -50.930 dBm
2 N 1 f 7.405 GHz -66.429 dBm
3 N 1 f 9.256 GHz -66.021 dBm
Frequency
Auto Tune
Center Freq
7.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS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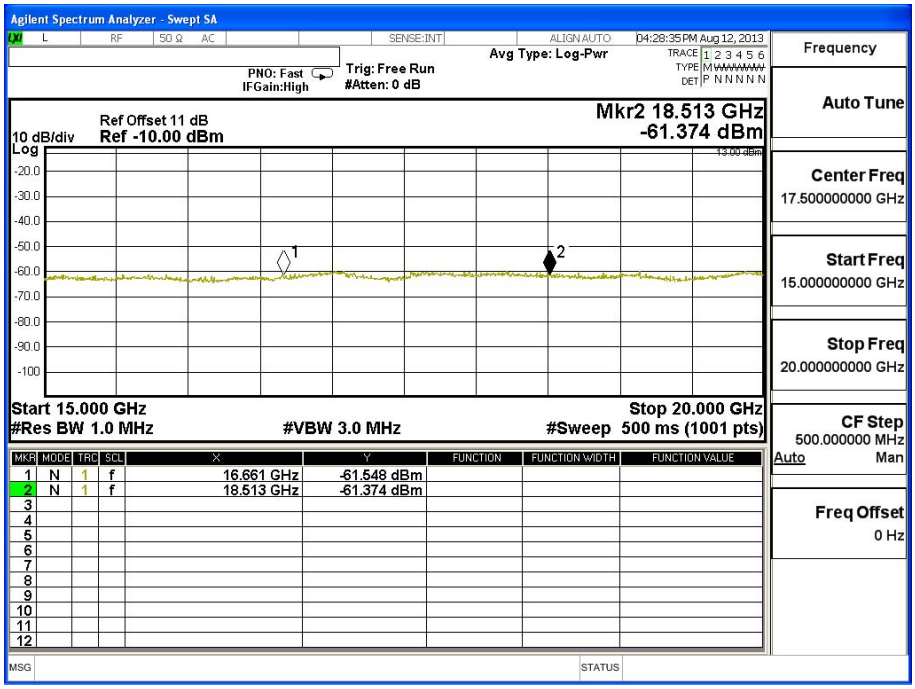
Avg Type: Log-Pwr
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr3 14.810 GHz
-64.227 dBm
Start 10.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 15.000 GHz
#Sweep 500 ms (1001 pts)
1 N 1 f 11.108 GHz -68.296 dBm
2 N 1 f 12.959 GHz -62.120 dBm
3 N 1 f 14.810 GHz -64.227 dBm
Frequency
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
15.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz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PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Ref Offset 11 dB
10 dB/div
Ref -10.00 dBm
Mkr2 18.513 GHz
-61.374 dBm
Start 15.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 20.000 GHz
#Sweep 500 ms (1001 pts)
1 N 1 f 16.661 GHz -61.548 dBm
2 N 1 f 18.513 GHz -61.374 dBm
Frequency
Auto Tune
Center Freq
17.500000000 GHz
Start Freq
15.000000000 GHz
Stop Freq
20.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	modlet gateway		
Test Mode	Spurious Emission (Radiated)		
Date of Test	2013/08/15	Test Site	Site3
Test Condition	Channel 1013 (CDMA 1X (BC0))	Test Range	9KHz ~10GHz

Frequency	Reading Level	Signal Generator Level	Cable Loss	Antenna Gain	ERP Value	Limit
(GHz)	(dBm)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)

Horizontal Emissions

1649.400	-54.385	-67.506	1.630	9.800	-59.336	-13
2474.100	-54.047	-65.158	2.100	10.600	-56.658	-13
3298.800	-55.420	-67.900	2.350	12.300	-57.950	-13
4123.500	-58.919	-68.528	2.700	12.600	-58.628	-13
4948.200	-60.629	-68.209	2.830	12.700	-58.339	-13
5772.900	-57.787	-62.303	3.200	13.000	-52.503	-13

Vertical Emissions

1649.400	-54.940	-67.118	1.630	9.800	-58.948	-13
2474.100	-58.769	-71.266	2.100	10.600	-62.766	-13
3298.800	-54.186	-66.182	2.350	12.300	-56.232	-13
4123.500	-58.423	-67.947	2.700	12.600	-58.047	-13
4948.200	-60.084	-66.914	2.830	12.700	-57.044	-13
5772.900	-60.480	-65.940	3.200	13.000	-56.140	-13

Note:

1. Receiver setting (Peak Detector) : RBW:3MHz; VBW:3MHz
2. ERP Value = Signal Generator Level + Antenna Gain - Cable Loss
3. Spurious emissions past 6 GHz are not shown, due to the magnitude of spurious emissions attenuated more than 20 dB below the limit.

Product	modlet gateway		
Test Mode	Spurious Emission (Radiated)		
Date of Test	2013/08/15	Test Site	Site3
Test Condition	Channel 1013 (CDMA 1X EV-DO REL 0 (BC0))	Test Range	9KHz ~10GHz

Frequency	Reading Level	Signal Generator Level	Cable Loss	Antenna Gain	ERP Value	Limit
(GHz)	(dBm)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)

Horizontal Emissions

1649.400	-54.001	-67.122	1.630	9.800	-58.952	-13
2474.100	-56.554	-67.665	2.100	10.600	-59.165	-13
3298.800	-54.351	-66.831	2.350	12.300	-56.881	-13
4123.500	-58.508	-68.117	2.700	12.600	-58.217	-13
4948.200	-56.847	-64.427	2.830	12.700	-54.557	-13
5772.900	-55.974	-60.490	3.200	13.000	-50.690	-13

Vertical Emissions

1649.400	-54.608	-66.786	1.630	9.800	-58.616	-13
2474.100	-57.032	-69.529	2.100	10.600	-61.029	-13
3298.800	-53.276	-65.272	2.350	12.300	-55.322	-13
4123.500	-59.159	-68.683	2.700	12.600	-58.783	-13
4948.200	-57.164	-63.994	2.830	12.700	-54.124	-13
5772.900	-55.831	-61.291	3.200	13.000	-51.491	-13

Note:

4. Receiver setting (Peak Detector) : RBW:3MHz; VBW:3MHz
5. ERP Value = Signal Generator Level + Antenna Gain - Cable Loss
6. Spurious emissions past 6 GHz are not shown, due to the magnitude of spurious emissions attenuated more than 20 dB below the limit.

Product	modlet gateway		
Test Mode	Spurious Emission (Radiated)		
Date of Test	2013/08/15	Test Site	Site3
Test Condition	Channel 1013 (CDMA 1X EV-DO REL A (BC0))	Test Range	9KHz ~10GHz

Frequency	Reading Level	Signal Generator Level	Cable Loss	Antenna Gain	ERP Value	Limit
(GHz)	(dBm)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)

Horizontal Emissions

1649.400	-53.407	-66.528	1.630	9.800	-58.358	-13
2474.100	-57.071	-68.182	2.100	10.600	-59.682	-13
3298.800	-55.209	-67.689	2.350	12.300	-57.739	-13
4123.500	-59.004	-68.613	2.700	12.600	-58.713	-13
4948.200	-57.334	-64.914	2.830	12.700	-55.044	-13
5772.900	-55.688	-60.204	3.200	13.000	-50.404	-13

Vertical Emissions

1649.400	-54.371	-66.549	1.630	9.800	-58.379	-13
2474.100	-57.024	-69.521	2.100	10.600	-61.021	-13
3298.800	-53.277	-65.273	2.350	12.300	-55.323	-13
4123.500	-59.399	-68.923	2.700	12.600	-59.023	-13
4948.200	-57.471	-64.301	2.830	12.700	-54.431	-13
5772.900	-55.565	-61.025	3.200	13.000	-51.225	-13

Note:

7. Receiver setting (Peak Detector) : RBW:3MHz; VBW:3MHz
8. ERP Value = Signal Generator Level + Antenna Gain - Cable Loss

Spurious emissions past 6 GHz are not shown, due to the magnitude of spurious emissions attenuated more than 20 dB below the limit.

Product	modlet gateway		
Test Mode	Spurious Emission (Radiated)		
Date of Test	2013/08/15	Test Site	Site3
Test Condition	Channel 1175 (CDMA 1X (BC1))	Test Range	9KHz ~20GHz

Frequency	Reading Level	Signal Generator Level	Cable Loss	Antenna Gain	EIRP Value	Limit
(GHz)	(dBm)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)
Horizontal Emissions						
3817.500	-51.831	-62.931	2.530	12.600	-52.861	-13
5726.250	-55.833	-60.774	3.050	13.100	-50.724	-13
7635.000	-58.105	-54.858	3.650	11.500	-47.008	-13
9543.750	-54.615	-52.590	3.850	12.000	-44.440	-13
11452.500	-60.711	-53.973	4.580	12.000	-46.553	-13
Vertical Emissions						
3817.500	-50.469	-61.183	2.530	12.600	-51.113	-13
5726.250	-59.509	-65.341	3.050	13.100	-55.291	-13
7635.000	-60.476	-56.373	3.650	11.500	-48.523	-13
9543.750	-58.886	-56.467	3.850	12.000	-48.317	-13
11452.500	-59.738	-51.472	4.580	12.000	-44.052	-13

Note:

1. Receiver setting (Peak Detector) : RBW:3MHz; VBW:3MHz
2. EIRP Value = Signal Generator Level + Antenna Gain - Cable Loss
3. Spurious emissions past 12GHz are not shown, due to the magnitude of spurious emissions attenuated more than 20 dB below the limit.

Product	modlet gateway		
Test Mode	Spurious Emission (Radiated)		
Date of Test	2013/08/15	Test Site	Site3
Test Condition	Channel 600 (CDMA 1X EV-DO REL 0 (BC1))	Test Range	9KHz ~20GHz

Frequency	Reading Level	Signal Generator Level	Cable Loss	Antenna Gain	EIRP Value	Limit
(GHz)	(dBm)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)

Horizontal Emissions

3760.000	-47.628	-59.204	2.530	12.600	-49.134	-13
5640.000	-55.833	-61.223	3.050	13.100	-51.173	-13
7520.000	-57.161	-54.265	3.650	11.500	-46.415	-13
9400.000	-55.125	-51.188	3.850	12.000	-43.038	-13
11280.000	-60.438	-55.705	4.580	12.000	-48.285	-13

Vertical Emissions

3760.000	-44.554	-55.772	2.530	12.600	-45.702	-13
5640.000	-56.103	-61.805	3.050	13.100	-51.755	-13
7520.000	-57.937	-54.545	3.650	11.500	-46.695	-13
9400.000	-57.840	-53.978	3.850	12.000	-45.828	-13
11280.000	-58.683	-52.000	4.580	12.000	-44.580	-13

Note:

1. Receiver setting (Peak Detector) : RBW:3MHz; VBW:3MHz
2. EIRP Value = Signal Generator Level + Antenna Gain - Cable Loss
3. Spurious emissions past 12GHz are not shown, due to the magnitude of spurious emissions attenuated more than 20 dB below the limit.

Product	modlet gateway		
Test Mode	Spurious Emission (Radiated)		
Date of Test	2013/08/15	Test Site	Site3
Test Condition	Channel 600 (CDMA 1X EV-DO REL A (BC1))	Test Range	9KHz ~20GHz

Frequency	Reading Level	Signal Generator Level	Cable Loss	Antenna Gain	EIRP Value	Limit
(GHz)	(dBm)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)

Horizontal Emissions

3816.000	-47.130	-58.706	2.530	12.600	-48.636	-13
5725.000	-55.246	-60.636	3.050	13.100	-50.586	-13
7635.000	-57.528	-54.632	3.650	11.500	-46.782	-13
9543.750	-55.347	-51.410	3.850	12.000	-43.260	-13
11453.000	-60.018	-55.285	4.580	12.000	-47.865	-13

Vertical Emissions

3816.000	-43.292	-54.510	2.530	12.600	-44.440	-13
5725.000	-56.880	-62.582	3.050	13.100	-52.532	-13
7635.000	-57.729	-54.337	3.650	11.500	-46.487	-13
9543.750	-58.539	-54.677	3.850	12.000	-46.527	-13
11453.000	-59.307	-52.624	4.580	12.000	-45.204	-13

Note:

3. Receiver setting (Peak Detector) : RBW:3MHz; VBW:3MHz
4. EIRP Value = Signal Generator Level + Antenna Gain - Cable Loss
3. Spurious emissions past 12GHz are not shown, due to the magnitude of spurious emissions attenuated more than 20 dB below the limit.

6. Frequency Stability Under Temperature & Voltage Variations

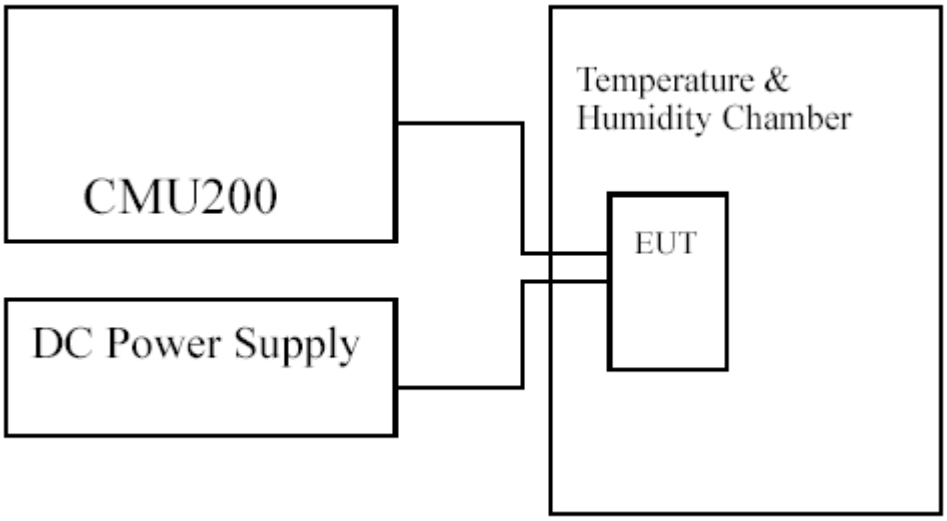
6.1. Test Equipment

The following test equipments are used during the frequency stability test:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Universal Radio Communication Tester	R & S	CMU200/104846	2013/05/09
Standard Temperature & Humidity Chamber	WIT	TH-1S-B / EQ-201-00146	2012/09/26

Note: All equipments upon which need to be calibrated are with calibration period of 1 year

6.2. Test Setup



6.3. Limits

Limit	**<±2.5ppm**

6.4. Test Procedure

The frequency stability of transmitter is measured by:

(a) Temperature: The temperature is varied from -30°C to 50°C in 10°C increment using a standard temperature & Humidity chamber.

(b) Primary Supply Voltage: The primary supply voltage is varied 85% to 115% of the nominal value for non hand-carried equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating endpoint which shall be specified by the manufacturer.

The EUT was connected via the base station simulator. Universal Radio Communication Tester, (CMU200), was used to measure The Frequency Error. The maximum result of measurements was recorded.

6.5. Test Specification

According to Part 2.1055, 22.355, 24.235

6.6. Test Result of Frequency Stability Under Temperature Variations

Product	modlet gateway		
Test Mode	Frequency Stability Under Temperature Variations & Voltage Variations		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X (BC0) / Channel 384	Test Range	-20℃~+50℃

Frequency Stability Under Temperature Variations

Temperature Interval(℃)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
-30	0.836	21	±2.09
-20	0.836	20	±2.09
-10	0.836	20	±2.09
0	0.836	22	±2.09
10	0.836	-25	±2.09
20	0.836	-24	±2.09
30	0.836	-25	±2.09
40	0.836	-22	±2.09
50	0.836	-24	±2.09

Voltage Variations

DC Voltage (V)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
138	0.836	21	±2.09
120	0.836	-24	±2.09
102	0.836	28	±2.09

Product	modlet gateway		
Test Mode	Frequency Stability Under Temperature Variations & Voltage Variations		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL 0 (BC0) / Channel 384	Test Range	-20℃~+50℃

Frequency Stability Under Temperature Variations

Temperature Interval(℃)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
-30	0.836	-3	±2.09
-20	0.836	-4	±2.09
-10	0.836	3	±2.09
0	0.836	4	±2.09
10	0.836	3	±2.09
20	0.836	5	±2.09
30	0.836	5	±2.09
40	0.836	4	±2.09
50	0.836	3	±2.09

Voltage Variations

DC Voltage (V)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
138	0.836	4	±2.09
120	0.836	5	±2.09
102	0.836	4	±2.09

Product	modlet gateway		
Test Mode	Frequency Stability Under Temperature Variations & Voltage Variations		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL A (BC0) / Channel 384	Test Range	-20℃~+50℃

Frequency Stability Under Temperature Variations

Temperature Interval(℃)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
-30	0.836	-4	±2.09
-20	0.836	-4	±2.09
-10	0.836	4	±2.09
0	0.836	4	±2.09
10	0.836	4	±2.09
20	0.836	5	±2.09
30	0.836	4	±2.09
40	0.836	4	±2.09
50	0.836	4	±2.09

Voltage Variations

DC Voltage (V)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
138	0.836	4	±2.09
120	0.836	5	±2.09
102	0.836	5	±2.09

Product	modlet gateway		
Test Mode	Frequency Stability Under Temperature Variations & Voltage Variations		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X (BC1) / Channel 600	Test Range	-30℃~+50℃

Frequency Stability Under Temperature Variations

Temperature Interval(℃)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
-30	1.88	-18	±4.7
-20	1.88	-17	±4.7
-10	1.88	-13	±4.7
0	1.88	-16	±4.7
10	1.88	-14	±4.7
20	1.88	-19	±4.7
30	1.88	-21	±4.7
40	1.88	-21	±4.7
50	1.88	-19	±4.7

Voltage Variations

DC Voltage (V)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
138	1.88	-23	±4.7
120	1.88	-19	±4.7
102	1.88	-21	±4.7

Product	modlet gateway		
Test Mode	Frequency Stability Under Temperature Variations & Voltage Variations		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL 0 (BC1) / Channel 600	Test Range	-30℃~+50℃

Frequency Stability Under Temperature Variations

Temperature Interval(℃)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
-30	1.88	-5	±4.7
-20	1.88	5	±4.7
-10	1.88	-7	±4.7
0	1.88	-6	±4.7
10	1.88	-6	±4.7
20	1.88	-8	±4.7
30	1.88	-7	±4.7
40	1.88	-6	±4.7
50	1.88	-7	±4.7

Voltage Variations

DC Voltage (V)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
4.2	1.88	-7	±4.7
3.9	1.88	-8	±4.7
3.8	1.88	-7	±4.7

Product	modlet gateway		
Test Mode	Frequency Stability Under Temperature Variations & Voltage Variations		
Date of Test	2013/08/14	Test Site	CTR
Test Condition	CDMA 1X EV-DO REL A (BC1) / Channel 600	Test Range	-30℃~+50℃

Frequency Stability Under Temperature Variations

Temperature Interval(℃)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
-30	1.88	-6	±4.7
-20	1.88	-6	±4.7
-10	1.88	-9	±4.7
0	1.88	-7	±4.7
10	1.88	-7	±4.7
20	1.88	-8	±4.7
30	1.88	-9	±4.7
40	1.88	-11	±4.7
50	1.88	-7	±4.7

Voltage Variations

DC Voltage (V)	Test Frequency (GHz)	Deviation (Hz)	Limit (KHz)
4.2	1.88	-7	±4.7
3.9	1.88	-8	±4.7
3.8	1.88	-8	±4.7

7. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs