



Part 24

TEST REPORT

Product Name	Tablet PC
Model Name	R8
FCC ID	NV8-R8
Client	Estone Technology Inc


TA Technology (Shanghai) Co., Ltd.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 2of 42

GENERAL SUMMARY

Product Name	Tablet PC	Model Name	R8
FCC ID	NV8-R8		
Report No.	RXC1209-0833RF04R3		
Client	Estone Technology Inc		
Manufacturer	Shenzhenshi ChuangZhiCheng Technology Co., Ltd Manufacturing Center		
Reference Standard(s)	<p>FCC CFR47 Part 2 (2012-12) Frequency Allocations And Radio Treaty Matters; General Rules And Regulations</p> <p>FCC CFR47 Part 24E (2012-12) Personal Communications Services</p> <p>ANSI/TIA-603-C(2004) Land mobile FM or PM Communications Equipment Measurements and Performance Standards.</p>		
Conclusion	<p>This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards.</p> <p>General Judgment: Pass</p> <div style="text-align: right;">  (Stamp) Date of issue: December 21st, 2012 </div>		
Comment	The test result only responds to the measured sample.		

Approved by 初伟中
Director

Revised by 徐凯
RF Manager

Performed by 王峰
RF Engineer

TABLE OF CONTENT

1. General Information	4
1.1. Notes of the test report	4
1.2. Testing laboratory	4
1.3. Applicant Information	5
1.4. Manufacturer Information	5
1.5. Information of EUT	6
1.6. Test Date	6
2. Test Information	7
2.1. Summary of test results	7
2.2. RF Power Output	7
2.3. Effective Isotropic Radiated Power	10
2.4. Occupied Bandwidth	13
2.5. Band Edge Compliance	20
2.6. Frequency Stability	27
2.7. Spurious Emissions at Antenna Terminals	29
2.8. Radiates Spurious Emission	36
3. Main Test Instruments	40
ANNEX A: EUT Appearance and Test Setup	41
A.1 EUT Appearance	41
A.2 Test Setup	42

1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

If the electrical report is inconsistent with the printed one, it should be subject to the latter.

1.2. Testing laboratory

Company:	TA Technology (Shanghai) Co., Ltd.
Registration Number:	428261
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Yang Weizhong
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	yangweizhong@ta-shanghai.com

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RXC1209-0833RF04R3

Page 5 of 42

1.3. Applicant Information

Company: Estone Technology Inc
Address: 3324 secor road #8, Toledo, OH 43606
City: Toledo
Postal Code: /
Country: America

1.4. Manufacturer Information

Company: Shenzhenshi ChuangZhiCheng Technology Co., Ltd Manufacturing Center
Address: 3F, Block A2, A3, Beida Funder Hi-tech park, Songbai Road, ShiyuanStreet, Baoan District, Shenzhen
City: Shenzhen
Postal Code: 518000
Country: China

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RXC1209-0833RF04R3

Page 6 of 42

1.5. Information of EUT

General information

Name of EUT:	Tablet PC		
IMEI:	CZC1260024620010		
Hardware Version:	VerD		
Software Version:	R802R007		
Antenna Type:	Internal Antenna		
Device Operating Configurations:			
Operating Mode(s):	CDMA PCS; (tested);		
Support mode:	1x RTT/EVDO Rev.0/ Rev.A		
Test Modulation:	(CDMA)BPSK,QPSK,HPSK		
Maximum E.I.R.P.	CDMA PCS: 23.67 dBm		
Power Supply:	Battery or Charger (AC adaptor)		
Rated Power Supply Voltage:	10.8 V		
Extreme Voltage:	Minimum: 9V Maximum: 12.6V		
Extreme Temperature:	Lowest: -10°C Highest: +50°C		
Test Channel: (Low - Middle - High)	25 – 600 – 1175 (CDMA PCS) (tested)		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	CDMA PCS	1851.25 ~ 1908.75	1931.25 ~ 1988.75

Equipment Under Test (EUT) is Tablet PC with internal antenna. The EUT is tested CDMA PCS in this report.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test is performed from October 26, 2012 to November 15, 2012.

TA Technology (Shanghai) Co., Ltd.

Test Report

2. Test Information

2.1. Summary of test results

Number	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power	24.232	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	24.238	PASS
5	Frequency Stability	2.1055 / 24.235	PASS
6	Spurious Emissions at Antenna Terminals	2.1051 / 24.238	PASS
7	Radiates Spurious Emission	2.1053 / 24.238	PASS

2.2. Test Mode

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

During the EIRP measurement, the highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna moved up and down over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.

Test Mode		
Band	Radiated Test Cases	Conducted Test Cases
CDMA PCS	1x RTT(RC1 SO2)	1x RTT(RC1 SO2)
	EVDO (Rev.0) RTAP153.6 kbps	EVDO (Rev.0) RTAP153.6 kbps
	EVDO(Rev.A) RETAP 4096 bits	EVDO(Rev.A) RETAP 4096 bits

Note: The maximum RF output power levels are RC1 SO2 for 1x RTT mode, RTAP153.6 kbps for EVDO (Rev.0) mode, RETAP 4096 bits For EVDO (Rev.A) mode, only these modes were used for all tests.

For RSE and CSE, only the maximum RF output power level is chosen.

2.3. RF Power Output

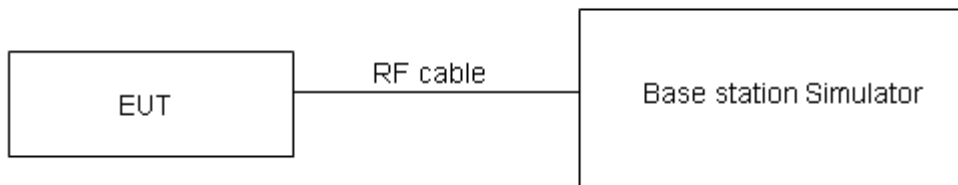
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure proper test configuration.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 9 of 42

Test Results

CDMA PCS			Conducted Power(dBm)		
			Channel 25	Channel 600	Channel 1175
			1851.25 (MHz)	1880 (MHz)	1908.75 (MHz)
1x RTT	RC1	SO55	24.16	23.66	23.71
		SO2	24.25	23.71	23.82
	RC3	SO55	24.14	23.68	23.67
		SO2	24.21	23.75	23.73
		SO32(+F-SCH)	24.13	23.65	23.66
		SO32(+SCH)	24.15	23.68	23.72
EVDO (Rev.0)	RTAP	9.6 kbps	24.07	23.44	23.69
		38.4 kbps	24.09	23.46	23.65
		153.6 kbps	24.13	23.48	23.72
EVDO (Rev.A)	RETAP	128 bits	23.99	23.48	23.64
		2048 bits	24.01	23.52	23.66
		4096 bits	24.03	23.56	23.68

Note:

1) The maximum RF Output Power is marking in bold.

2.4. Effective Isotropic Radiated Power

Ambient condition

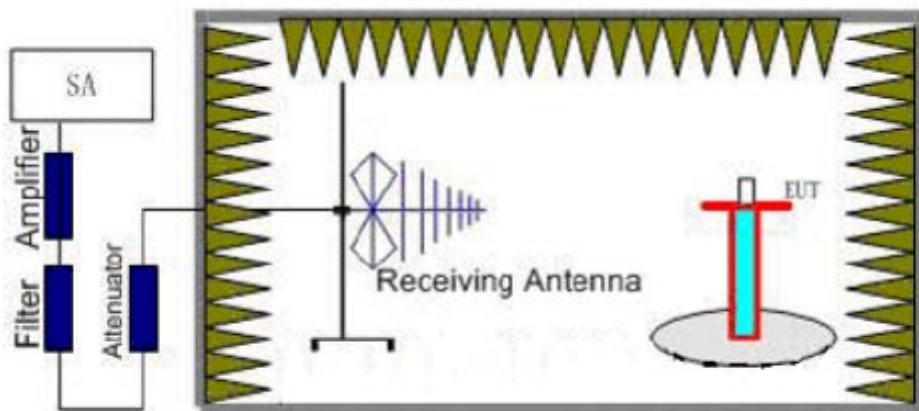
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

The measurement procedures in TIA- 603C are used.

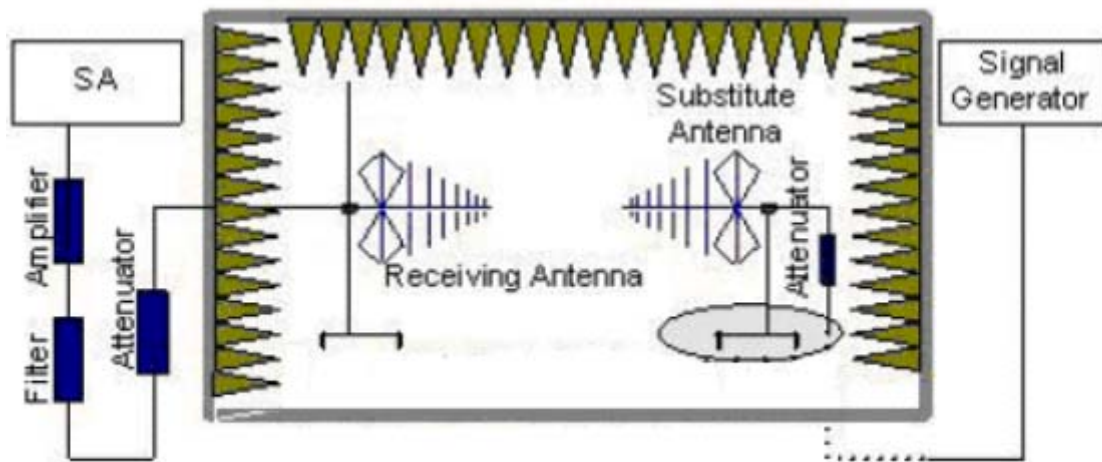
Step 1:

The measurement is carried out in the semi-anechoic chamber.. EUT was placed on a 0.8 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used while RBW and VBW are both set to 3MHz. During the measurement, the highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna moved up and down over a range from 1 to 4 meters in both horizontally and vertically polarized orientations. The test setup refers to figure below.



Step 2:

A dipole antenna shall be substituted in place of the EUT. The antenna will be driven by a signal generator with a adjustable S.G. applied through a 30dB amplifier and a Tx cable. Then the Analyzer reading which is equal to LVL is recorded while the antenna was moving up and down. The E.R.P. /E.I.R.P. of the EUT can be calculated through the level of the signal generator, Tx cable loss and the gain of the substitution antenna. The test setup refers to figure below.



$$E.R.P = S.G + 30. - Tx \text{ Cable loss} + \text{Substitution antenna gain} - 2.15.$$

$$EIRP = E.R.P + 2.15$$

Limits

Rule Part 24.232(b) specifies that "Mobile/portable stations are limited to 2 watts EIRP. Peak power" and Rule Part 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage".

Limit (EIRP)	$\leq 2 \text{ W}$ (33 dBm)
--------------	-----------------------------

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 1.19 \text{ dB}$

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 12 of 42

Test Results: Pass

CDMA PCS	Channel	Polarization	LVL (dBm)	SG+30 (dBm)	Gain (dBi)	Cable Loss (dB)	E.I.R.P. (dBm)
RC1 (SO2)	25	Vertical	-26.43	39.55	1.92	18.18	23.29
	600	Vertical	-25.46	38.54	1.94	18.27	22.21
	1175	Vertical	-23.87	38.73	1.9	18.30	22.33
EVDO (Rev.0)	25	Vertical	-26.63	39.75	1.92	18.18	23.49
	600	Vertical	-25.66	38.74	1.94	18.27	22.41
	1175	Vertical	-24.07	38.93	1.9	18.30	22.53
EVDO (Rev.A)	25	Vertical	-26.81	39.93	1.92	18.18	23.67
	600	Vertical	-25.79	38.87	1.94	18.27	22.54
	1175	Vertical	-23.30	39.16	1.9	18.30	22.76

Note:1.This device was tested under all configurations and the worst case radiated power is reported while transmitting with the maximum number of resource blocks in each channel bandwidth.

2. E.R.P =S.G+30. - Tx Cable loss + Substitution antenna gain – 2.15.

3. EIRP= E.R.P+2.15

2.5. Occupied Bandwidth

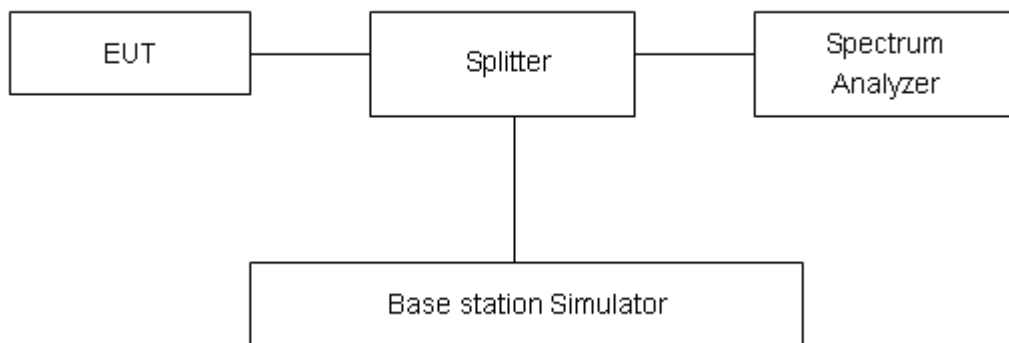
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer. The RBW is set larger than 1% of 26dB bandwidth. 99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 624\text{Hz}$.

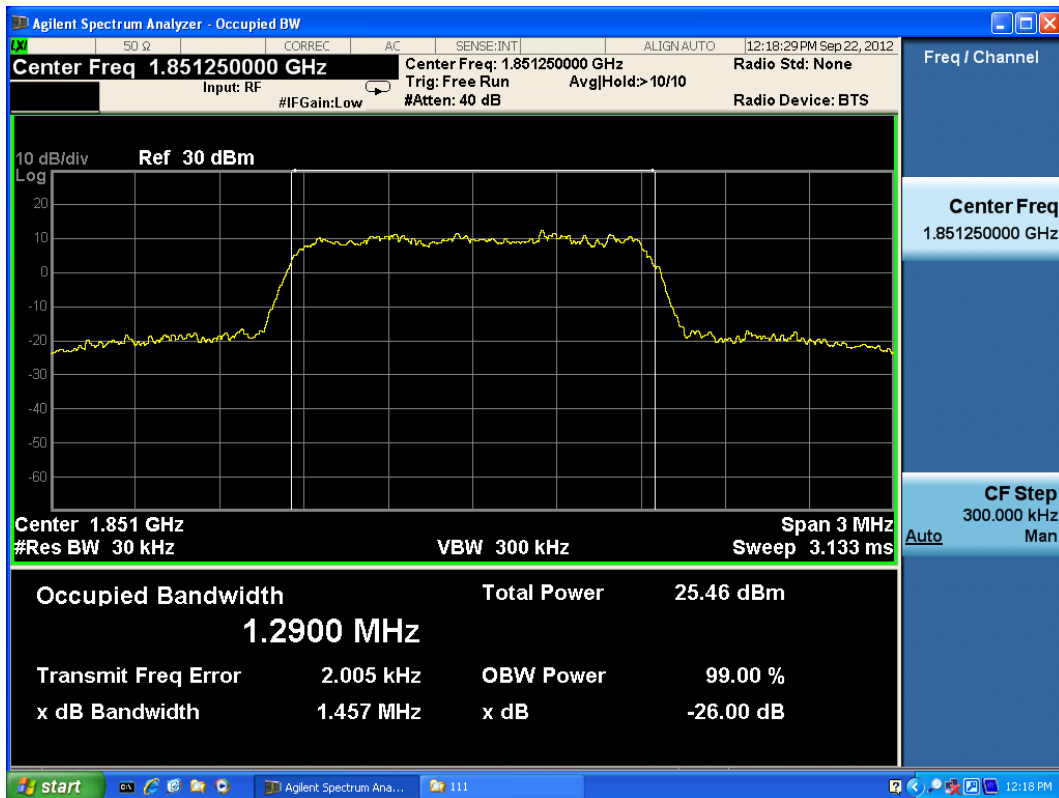
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXC1209-0833RF04R3

Page 14 of 42

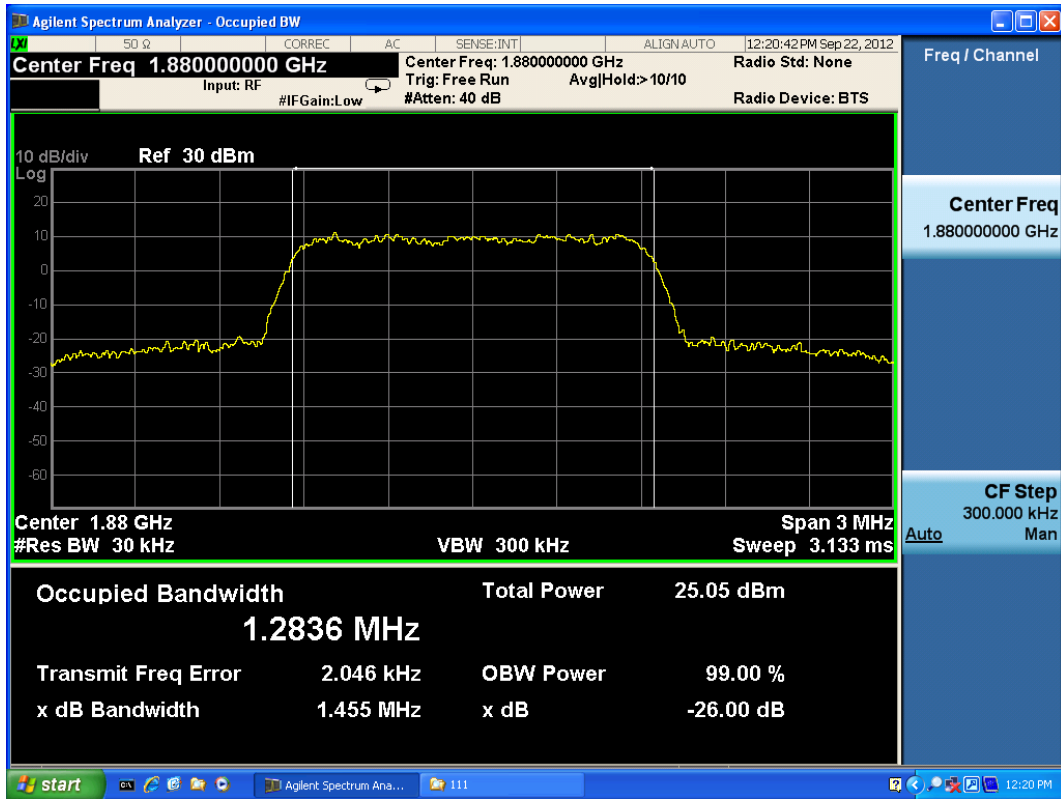
Test Result

CDMA PCS	Channel	Frequency (MHz)	99% Power Bandwidth (kHz)	-26dBc Bandwidth(kHz)
RC1 (SO2)	25	1851.25	1.2900	1.547
	600	1880.0	1.2836	1.455
	1175	1908.75	1.2815	1.456
EVDO (Rev.0)	25	1851.25	1.2817	1.433
	600	1880.0	1.2887	1.439
	1175	1908.75	1.2846	1.566
EVDO (Rev.A)	25	1851.25	1.2849	1.440
	600	1880.0	1.2895	1.450
	1175	1908.75	1.2989	1.526

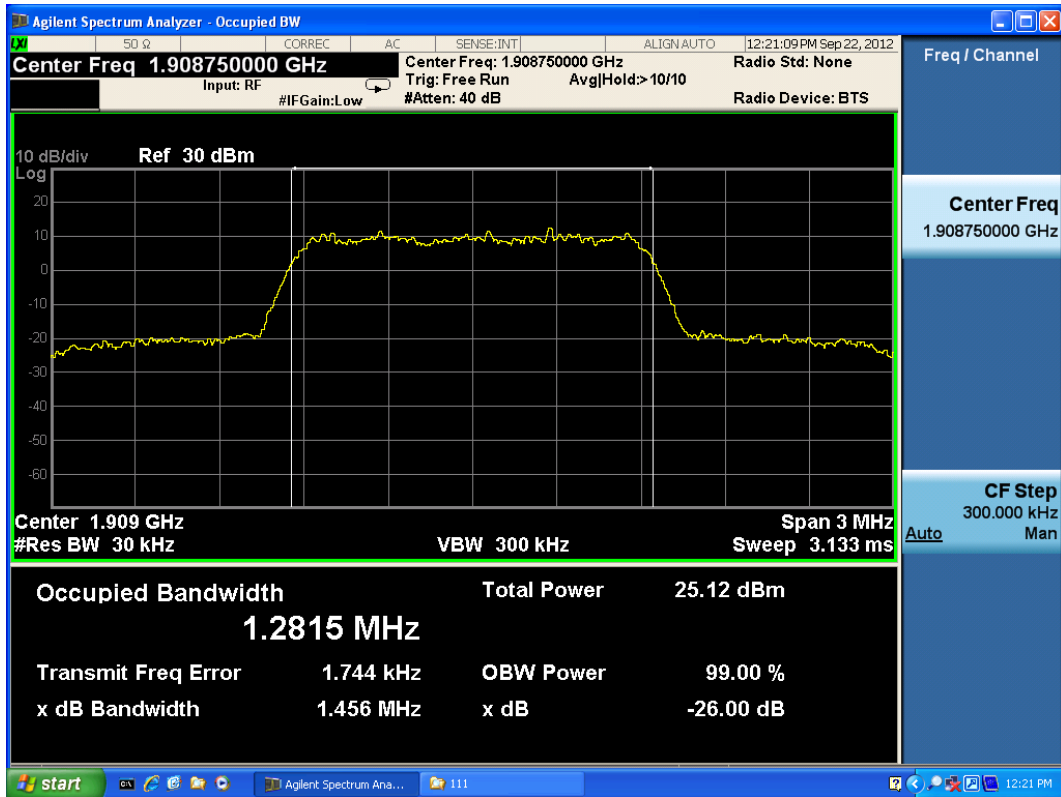


CDMA PCS RC1 (SO2) CH25 Occupied Bandwidth

TA Technology (Shanghai) Co., Ltd. Test Report



CDMA PCS RC1 (SO2) CH600 Occupied Bandwidth

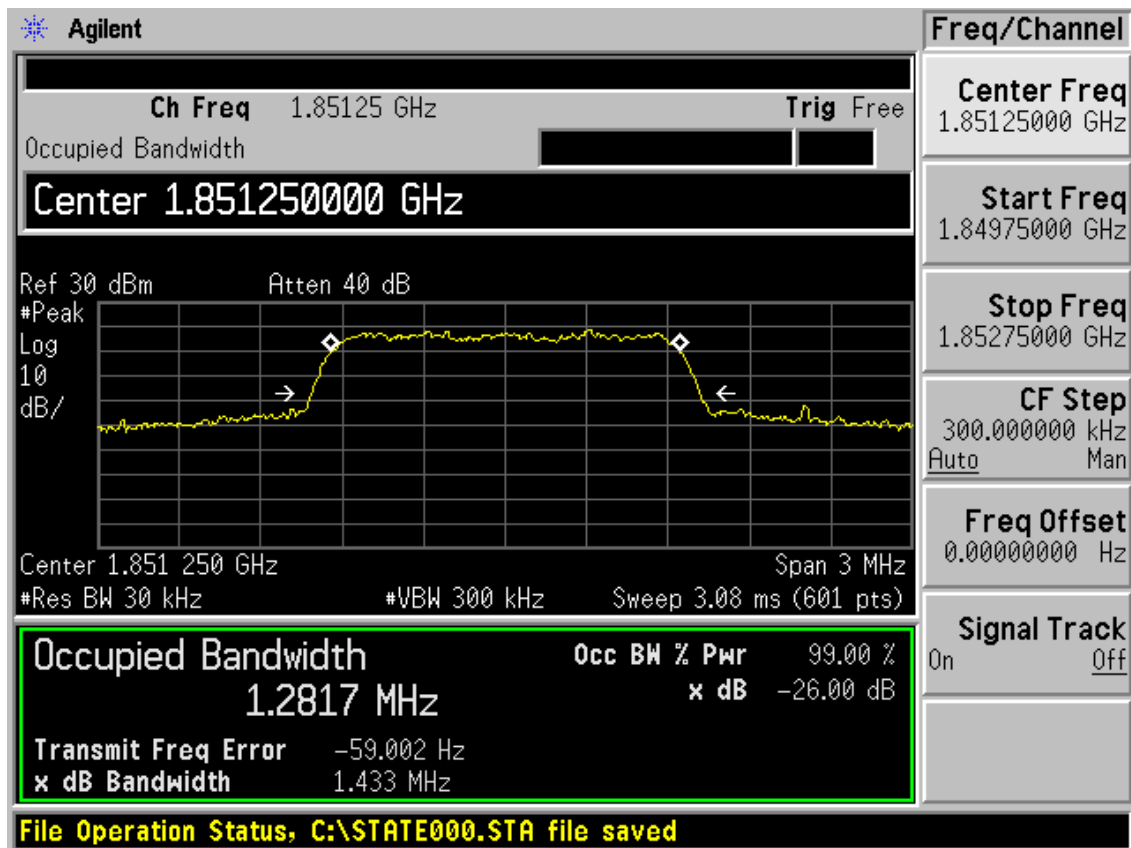


CDMA PCS RC1 (SO2) CH1175 Occupied Bandwidth

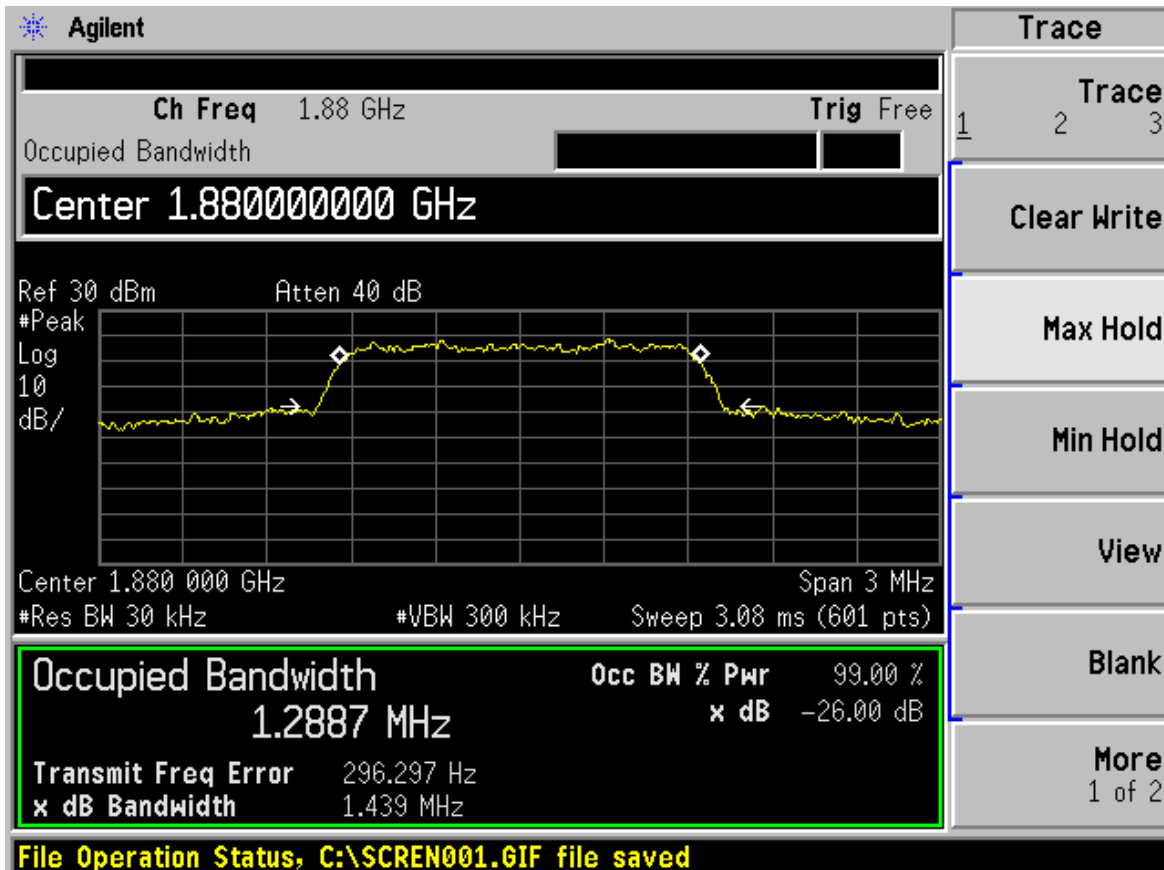
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXC1209-0833RF04R3

Page 16 of 42



CDMA PCS EVDO (Rev.0) CH25 Occupied Bandwidth

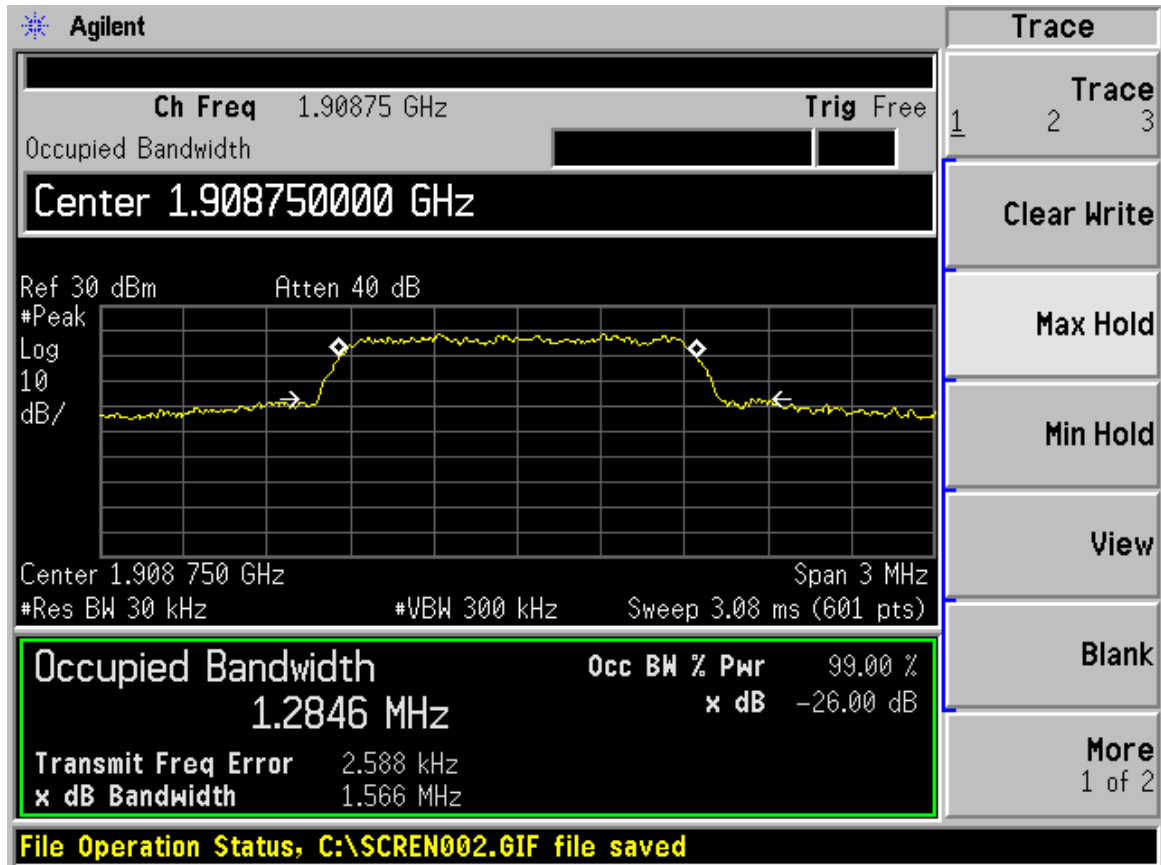


CDMA PCS EVDO (Rev.0) CH600 Occupied Bandwidth

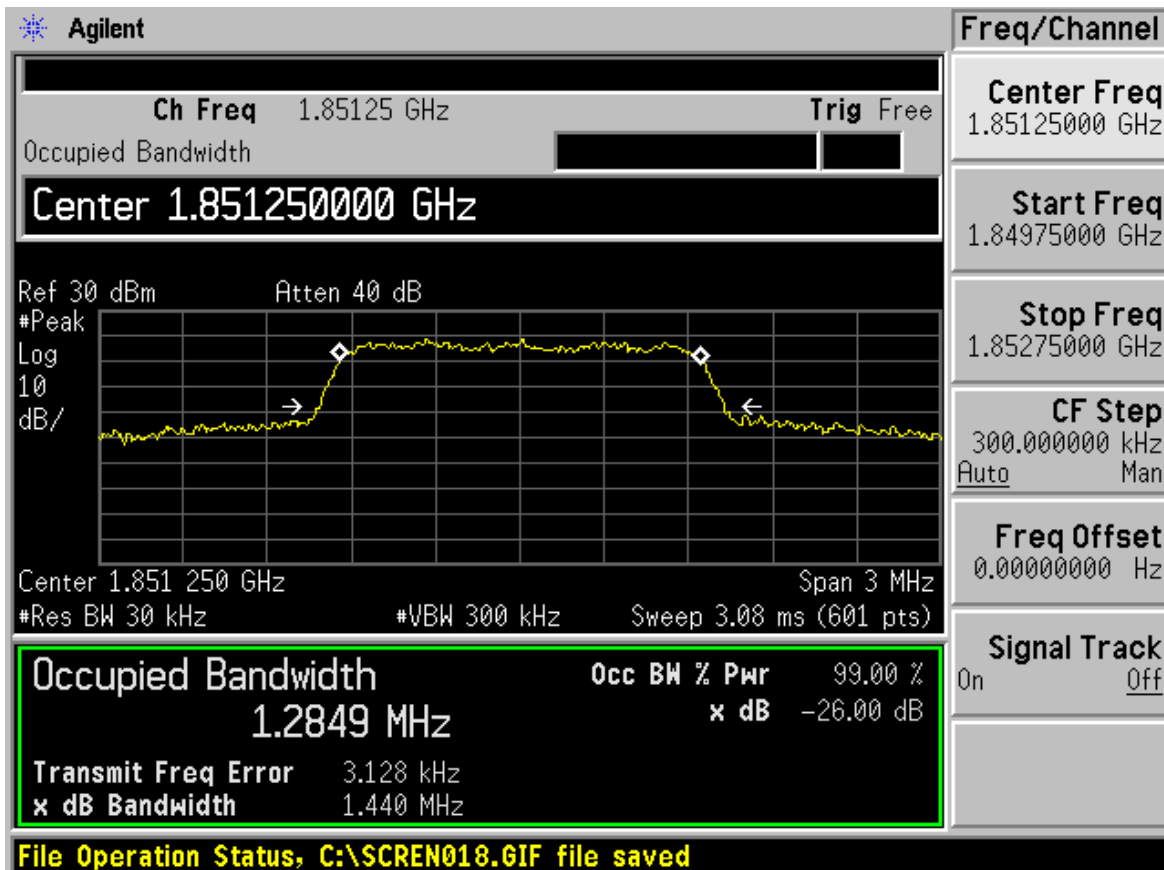
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXC1209-0833RF04R3

Page 17 of 42



CDMA PCS EVDO (Rev.0) CH1175 Occupied Bandwidth

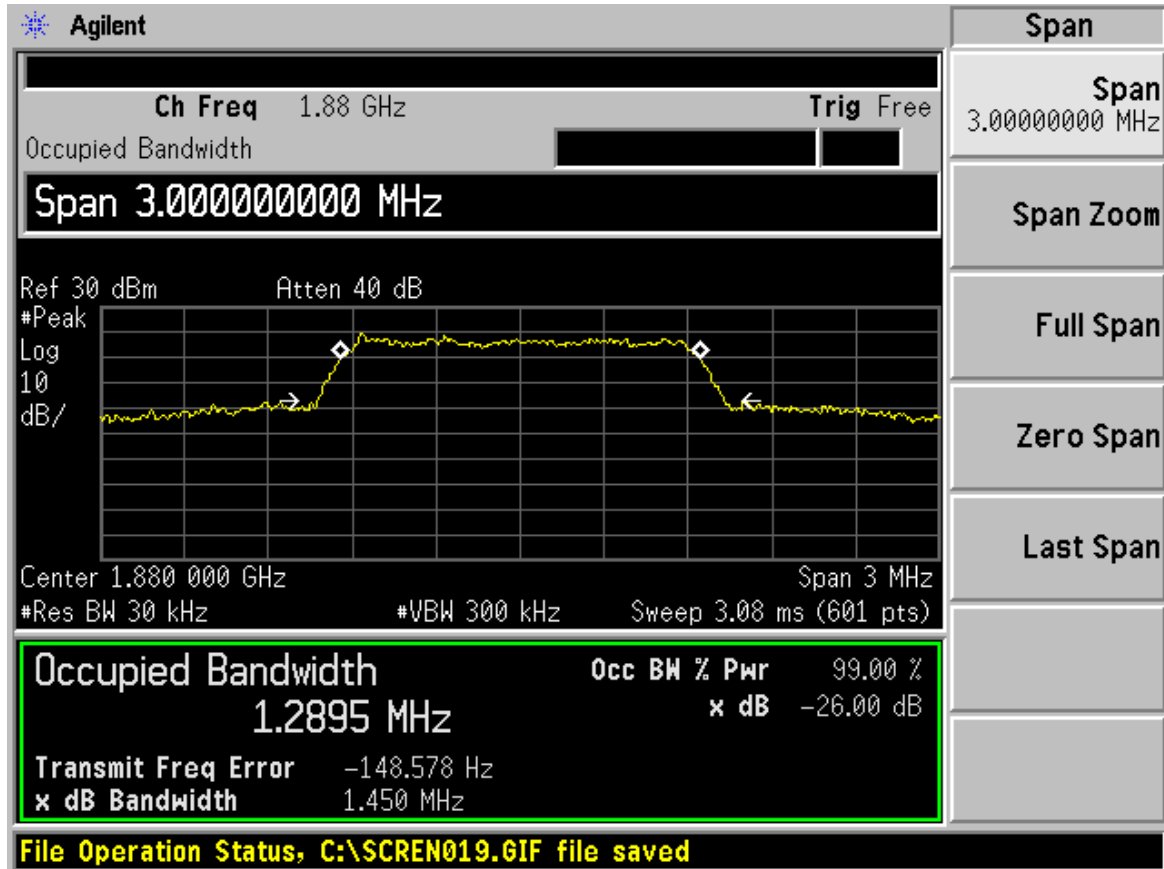


CDMA PCS EVDO (Rev.A) CH25 Occupied Bandwidth

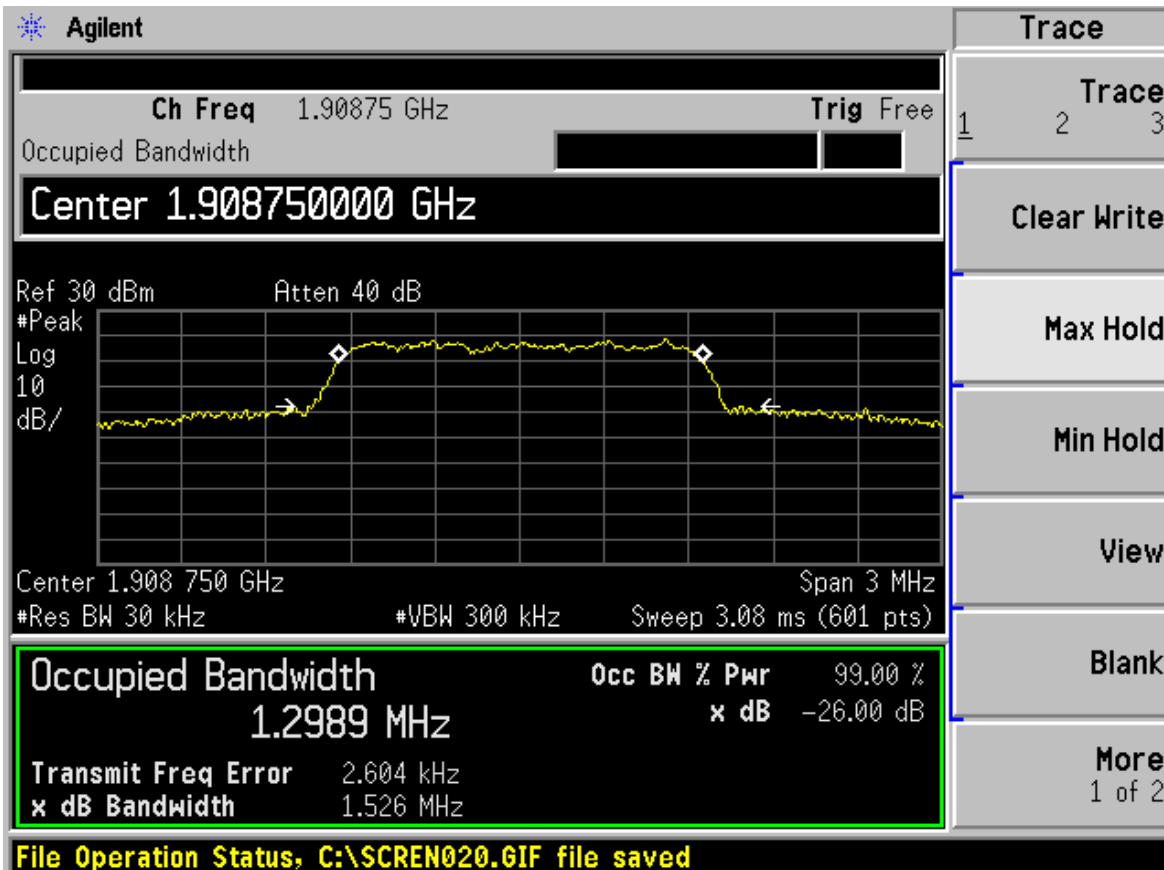
TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXC1209-0833RF04R3

Page 18 of 42



CDMA PCS EVDO (Rev.A) CH600 Occupied Bandwidth



CDMA PCS EVDO (Rev.A) CH1175 Occupied Bandwidth

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 19 of 42

2.6. Band Edge Compliance

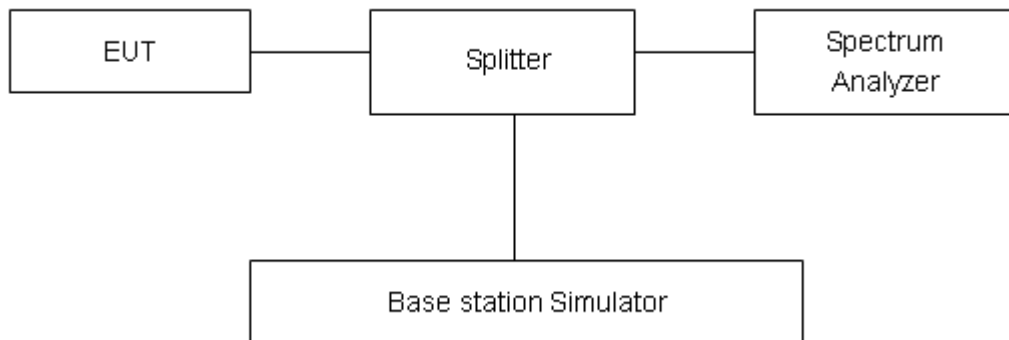
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The RBW is set larger than 1% of 26dB bandwidth. The Average detector is used. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.”

Limit	-13 dBm
-------	---------

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=0.684$ dB.

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RXC1209-0833RF04R3

Page 21 of 42

Test Result:

CDMA PCS	Carrier frequency (MHz)	Reference value (dBm)	Limit	Conclusion
RC1 (SO2)	1850.0	-14.78	-13	PASS
	1910.0	-18.82	-13	PASS
EVDO (Rev.0)	1850.0	-21.24	-13	PASS
	1910.0	-18.09	-13	PASS
EVDO (Rev.A)	1850.0	-15.40	-13	PASS
	1910.0	-16.95	-13	PASS



CDMA PCS RC1 (SO2) 25 Channel

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXC1209-0833RF04R3

Page 22 of 42



CDMA PCS RC1 (SO2) 1175Channel



CDMA Cellular RC3 (SO2) CH25 Channel

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXC1209-0833RF04R3

Page 23 of 42



CDMA Cellular RC3 (SO2) CH1175 Channel

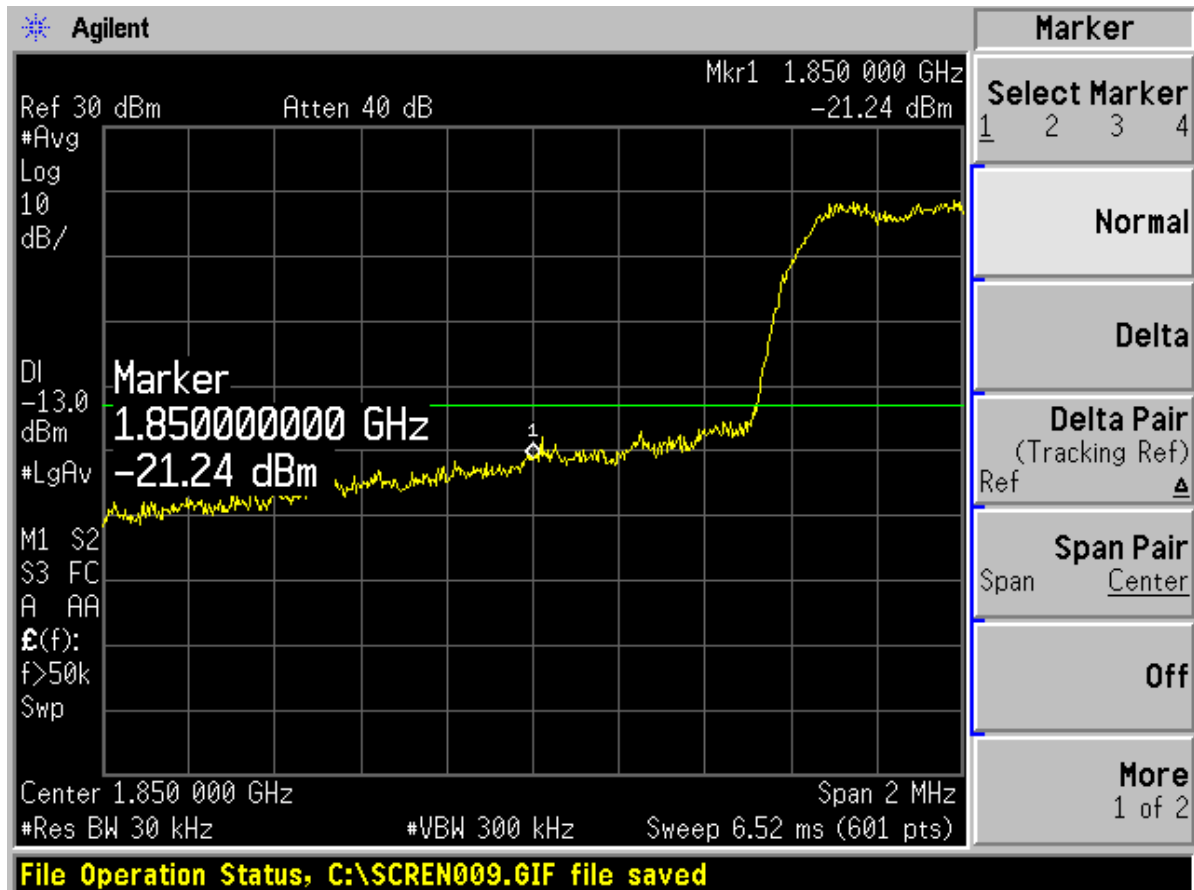


CDMA Cellular RC3 (SO32) (+FCH-SCH) CH25 Channel

TA Technology (Shanghai) Co., Ltd. Test Report



CDMA Cellular RC3 (SO32) (+FCH-SCH) CH1175 Channel

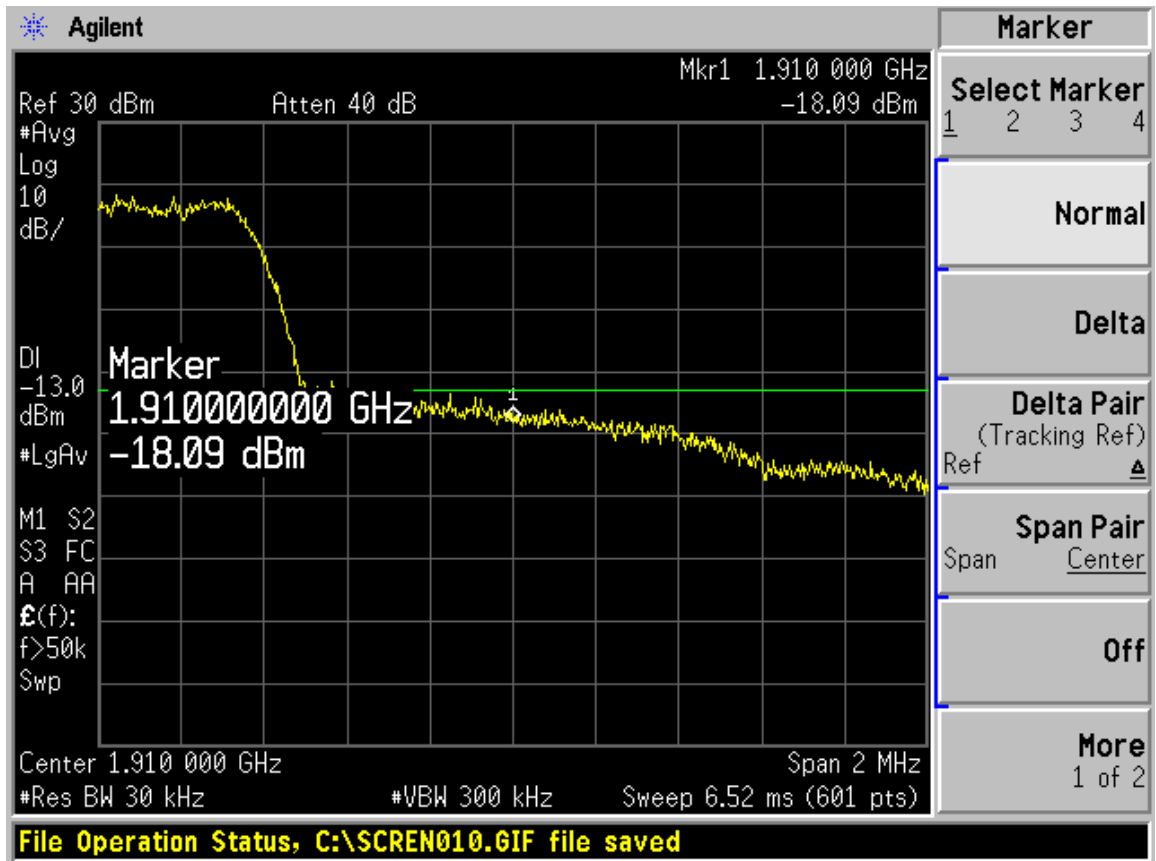


CDMA PCS EV-DO(Rev.0) 25 Channel

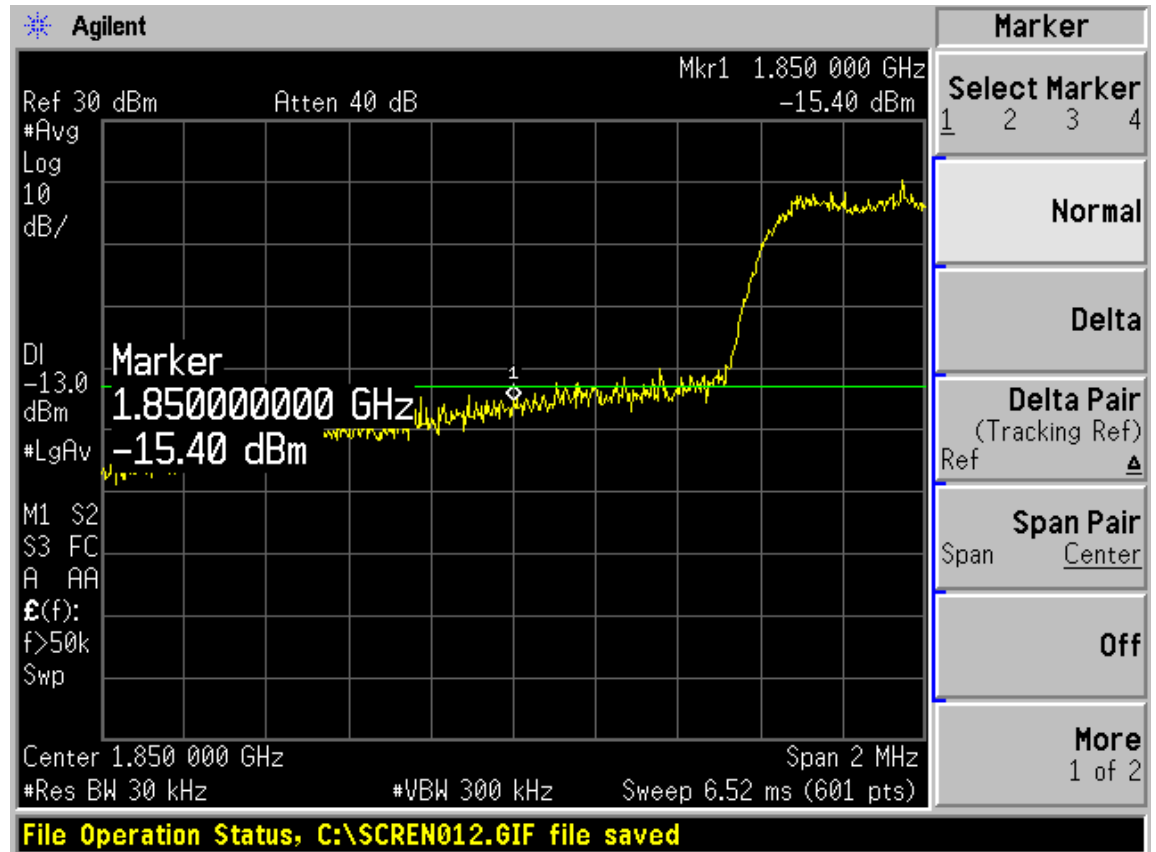
TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 25 of 42



CDMA PCS EV-DO(Rev.0) 1175Channel

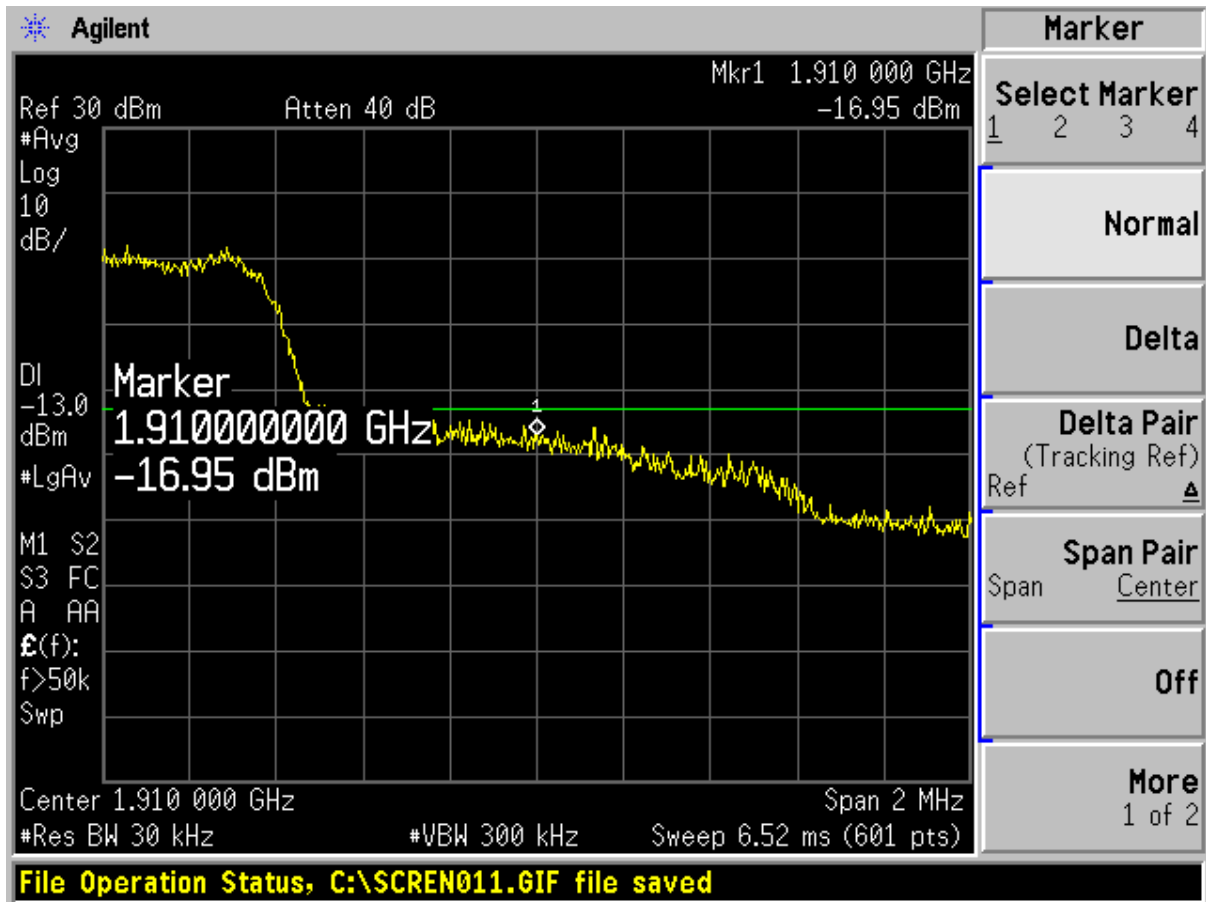


CDMA PCS EV-DO(Rev.A) 25 Channel

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 26 of 42



CDMA PCS EV-DO(Rev.A) 1175Channel

2.7. Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size,

(1) With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

2. Frequency Stability (Voltage Variation)

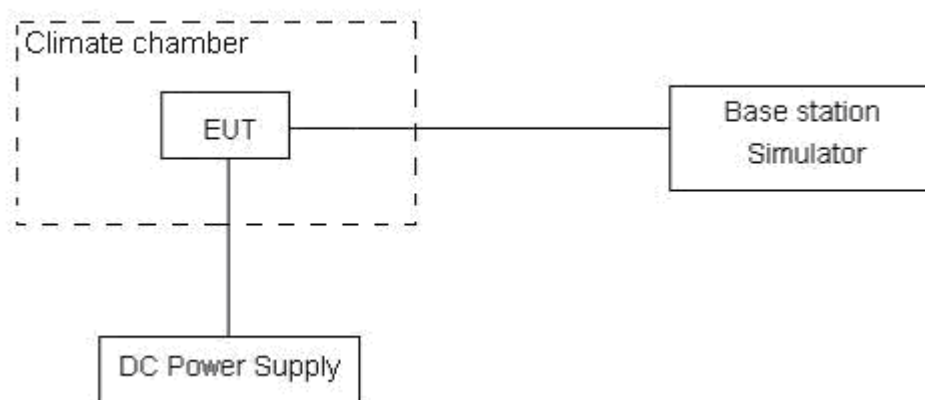
The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 9 V and 12.6 V, with a nominal voltage of 10.8V.

Test setup



TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 28 of 42

Limits

No specific frequency stability requirements in part 24.235

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3$, $U = 0.01\text{ppm}$.

Test Result

Temperature (°C)	Test Results (ppm) / 10.8 V Power supply Channel 600		
	RC1 (SO2)	EV-DO(Rev.0)	EV-DO(Rev.A)
-30	0.0076	0.0052	0.0055
-20	0.0047	0.0039	0.0046
-10	0.0097	0.0029	0.0049
0	0.0048	0.0022	0.0040
10	0.0076	0.0013	0.0023
20	0.0036	0.0028	0.0039
30	0.0056	0.0030	0.0028
40	0.0039	0.0036	0.0041
50	0.0038	0.0038	0.0052

Voltage (V)	Test Results(ppm) / 20°C Channel 600		
	RC1 (SO2)	EV-DO Rev.0	EV-DO Rev.A
9	0.0037	0.0044	0.0046
10.8	0.0036	0.0028	0.0039
12.6	0.0045	0.0036	0.0037

2.8. Spurious Emissions at Antenna Terminals

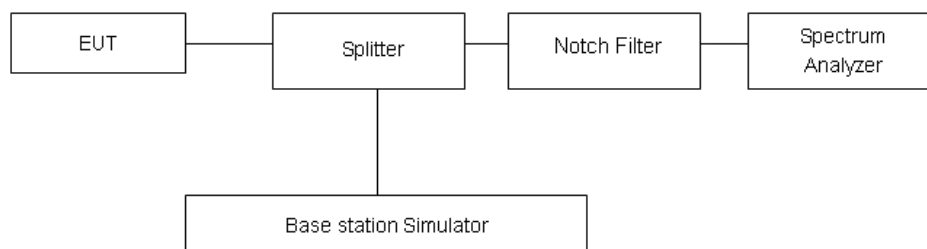
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. For below 1GHz, RBW and VBW are set to 100 kHz, Sweep is set to ATUO. For above 1GHz, RBW and VBW are set to 1MHz, Sweep is set to ATUO.

Test setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.”

Limit	-13 dBm
-------	---------

Measurement Uncertainty

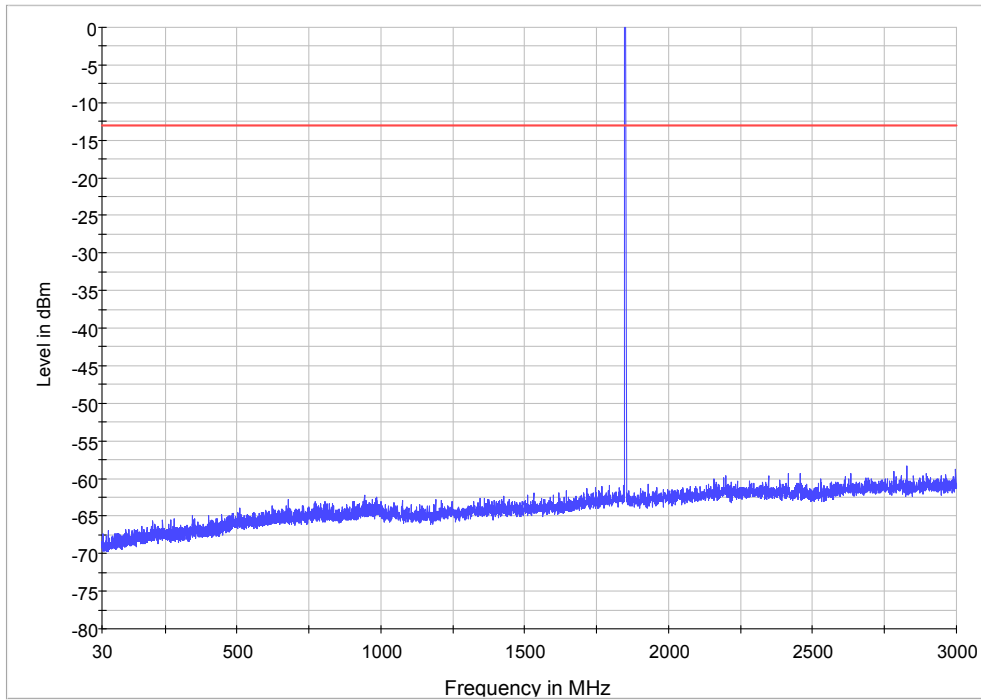
The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
Above 2GHz	1.407 dB

TA Technology (Shanghai) Co., Ltd. Test Report

Test Result(Worst Case EV-DO Rev.0)

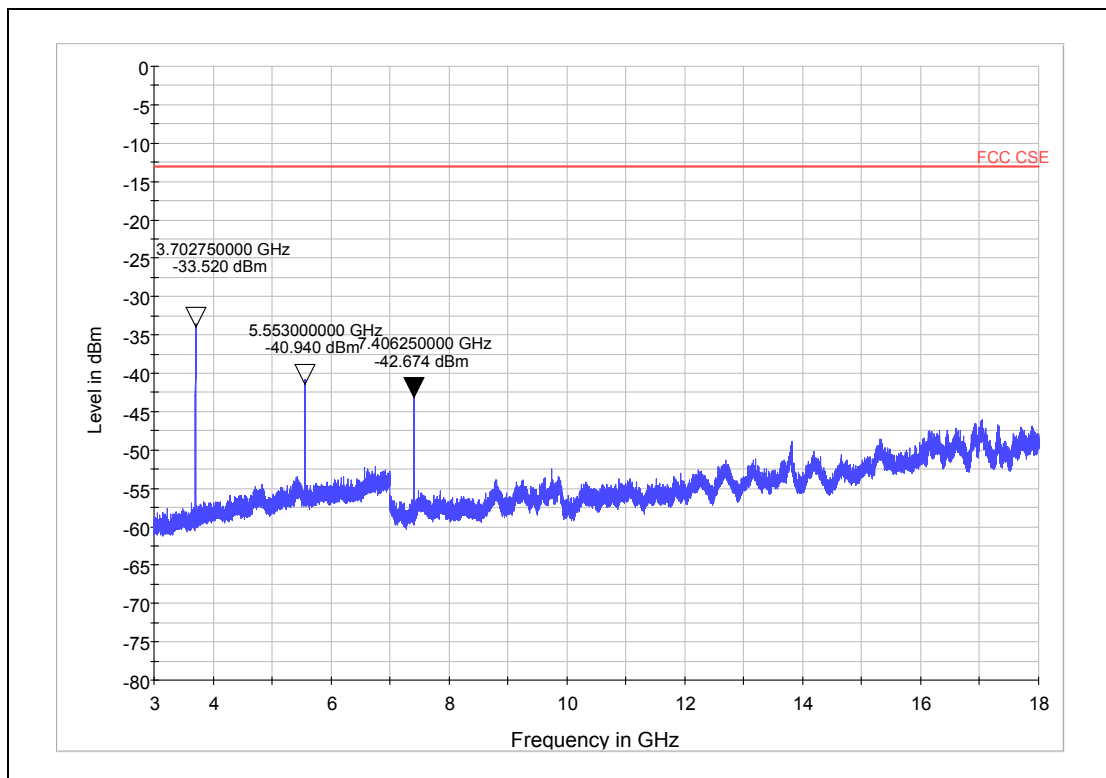
CDMA PCS CH25



Note: the plot was out of the highest scale that was the result of software compensation of the path loss factor in carrier frequency band.

Note: The signal beyond the limit is carrier.

CDMA PCS 25 Channel 30MHz~3GHz

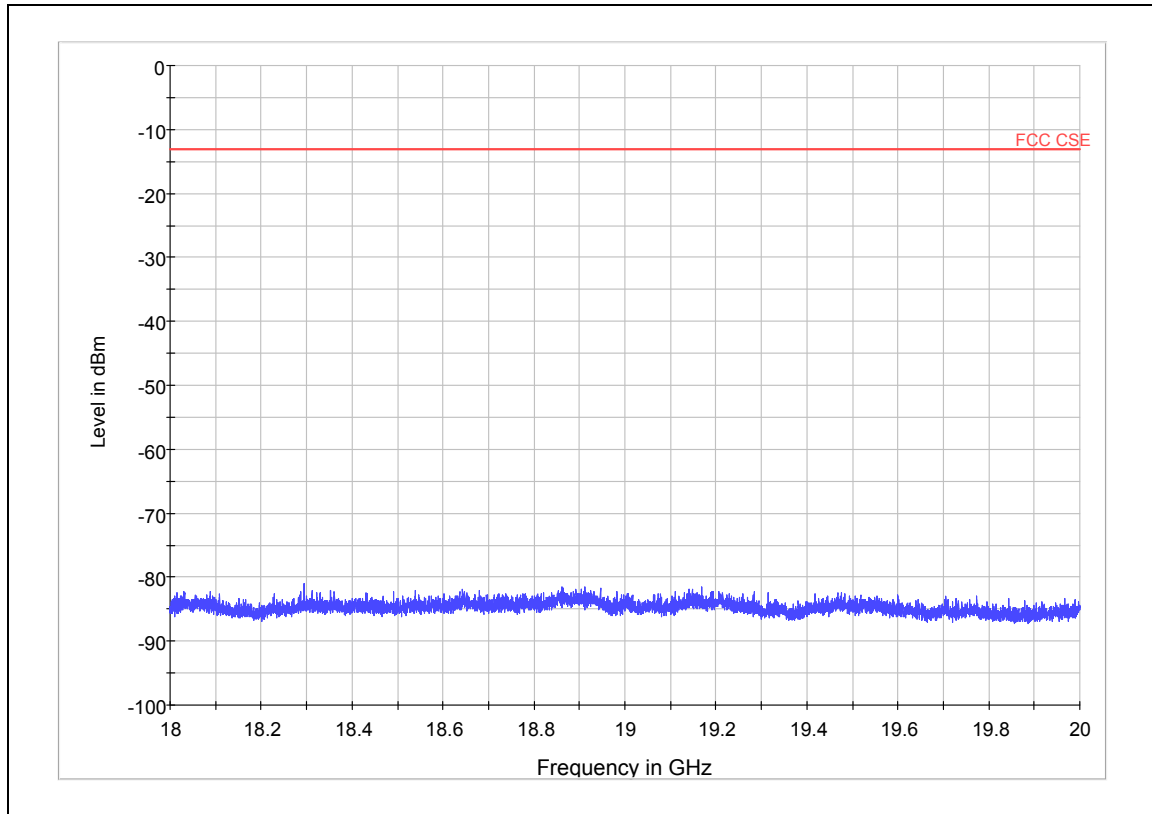


CDMA PCS 25 Channel 3GHz~18GHz

TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RXC1209-0833RF04R3

Page 31 of 42



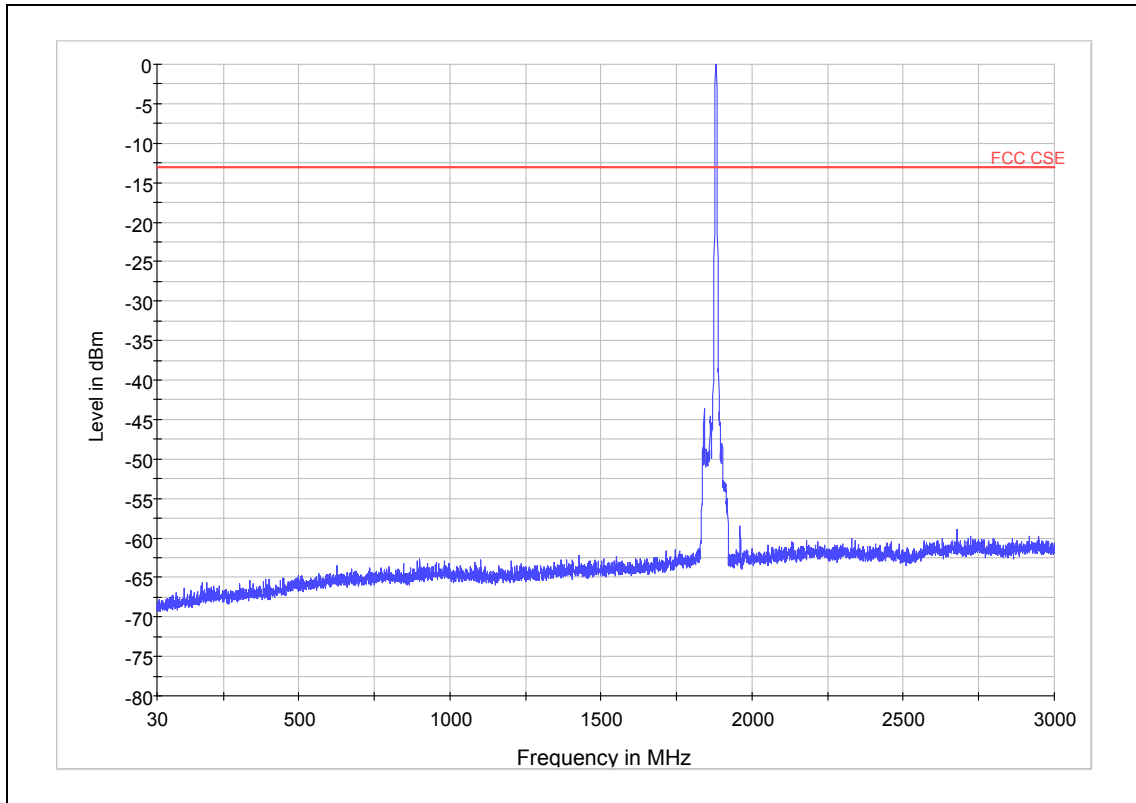
CDMA PCS 25 Channel 18GHz~20GHz

Harmonic	TX ch.25 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	3701.6	-33.520	-13
3	5553.8	-40.940	-13
4	7406.3	-42.674	-13
5	9257.3	Nf	-13
6	11107.5	Nf	-13
7	12958.75	Nf	-13
8	14810	Nf	-13
9	16661.25	Nf	-13
10	18512.5	Nf	-13
Nf: noise floor			

Note: The other Spurious RF conducted emissions level is no more than noise floor.

TA Technology (Shanghai) Co., Ltd. Test Report

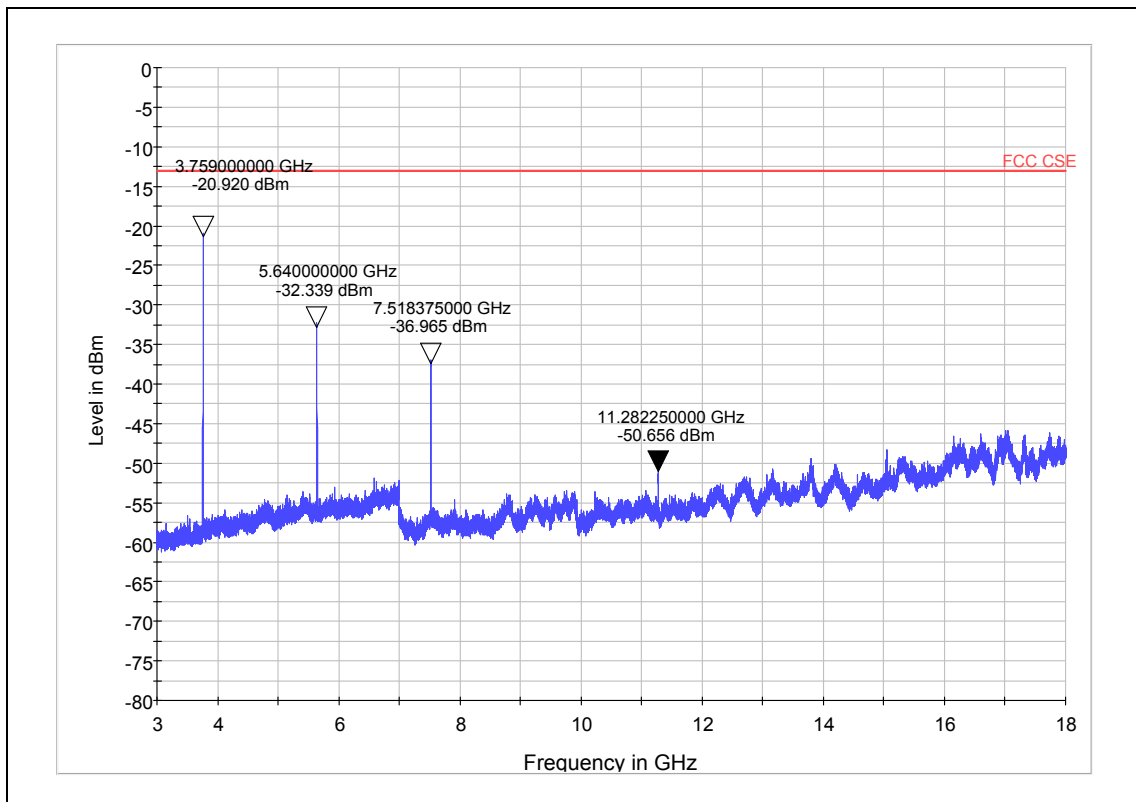
CDMA PCS CH600



Note: the plot was out of the highest scale that was the result of software compensation of the path loss factor in carrier frequency band.

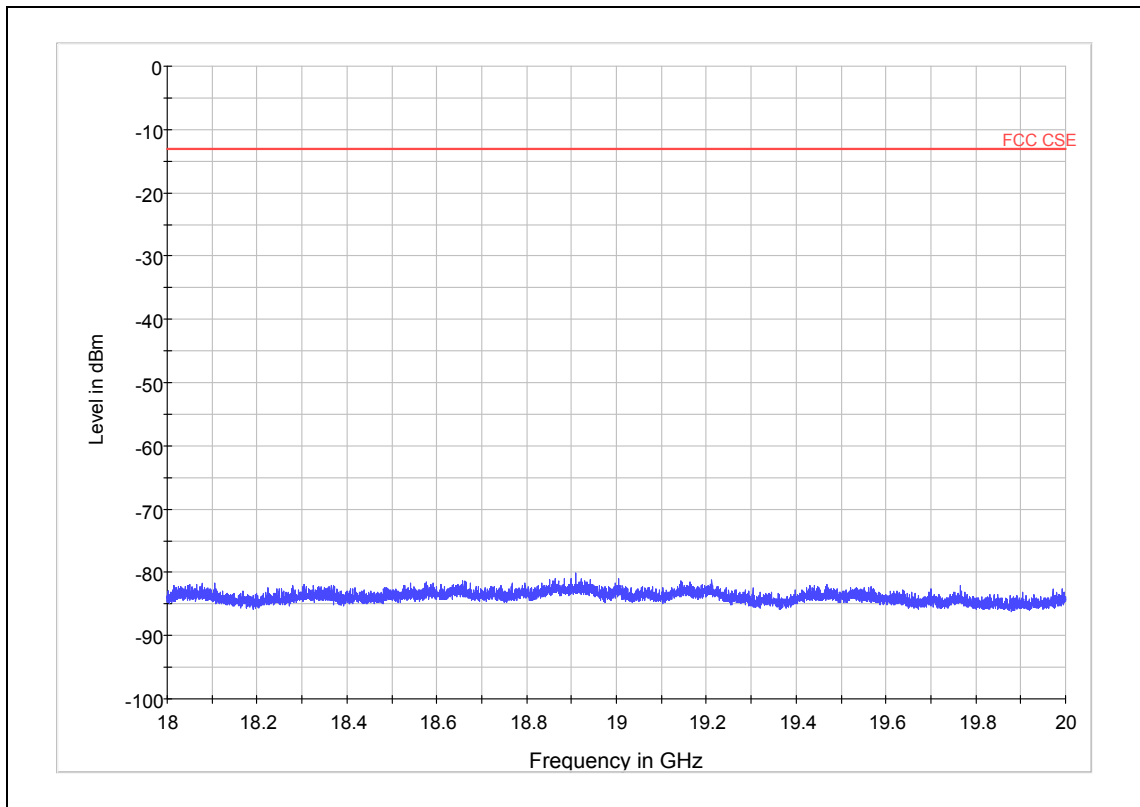
Note: The signal beyond the limit is carrier.

CDMA PCS 600 Channel 30MHz~3GHz



CDMA PCS 600 Channel 3GHz~18GHz

TA Technology (Shanghai) Co., Ltd. Test Report

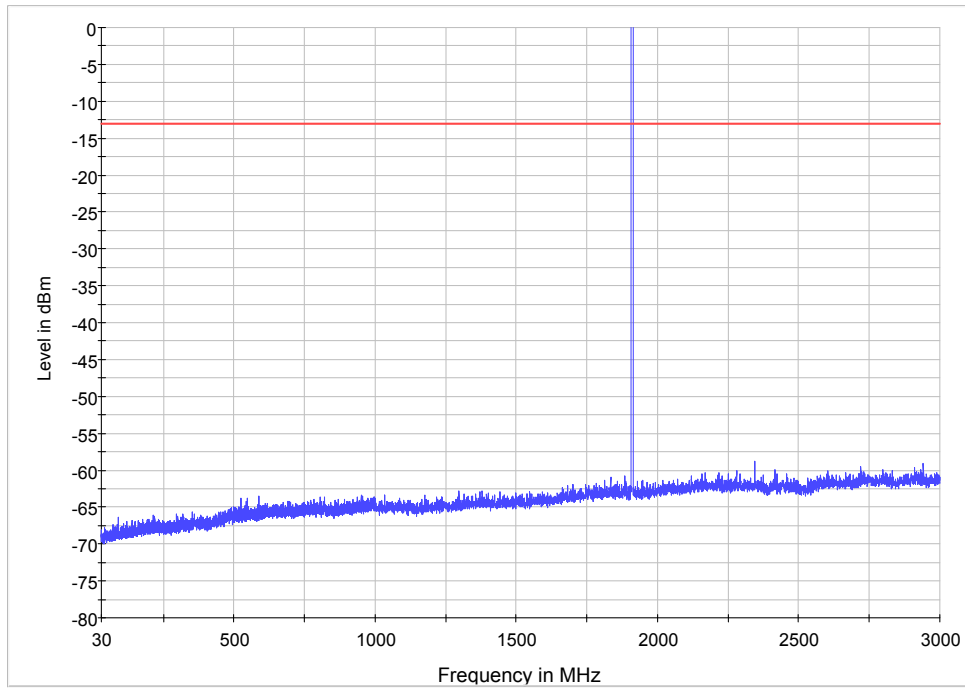


CDMA PCS 600 Channel 18GHz~20GHz

Harmonic	TX ch.600 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	3759.3	-20.920	-13
3	5638.9	-32.339	-13
4	7520.3	-36.965	-13
5	9400	Nf	-13
6	11280	-50.656	-13
7	13160	Nf	-13
8	15040	Nf	-13
9	16920	Nf	-13
10	18800	Nf	-13
Nf: noise floor			

Note: The other Spurious RF conducted emissions level is no more than noise floor.

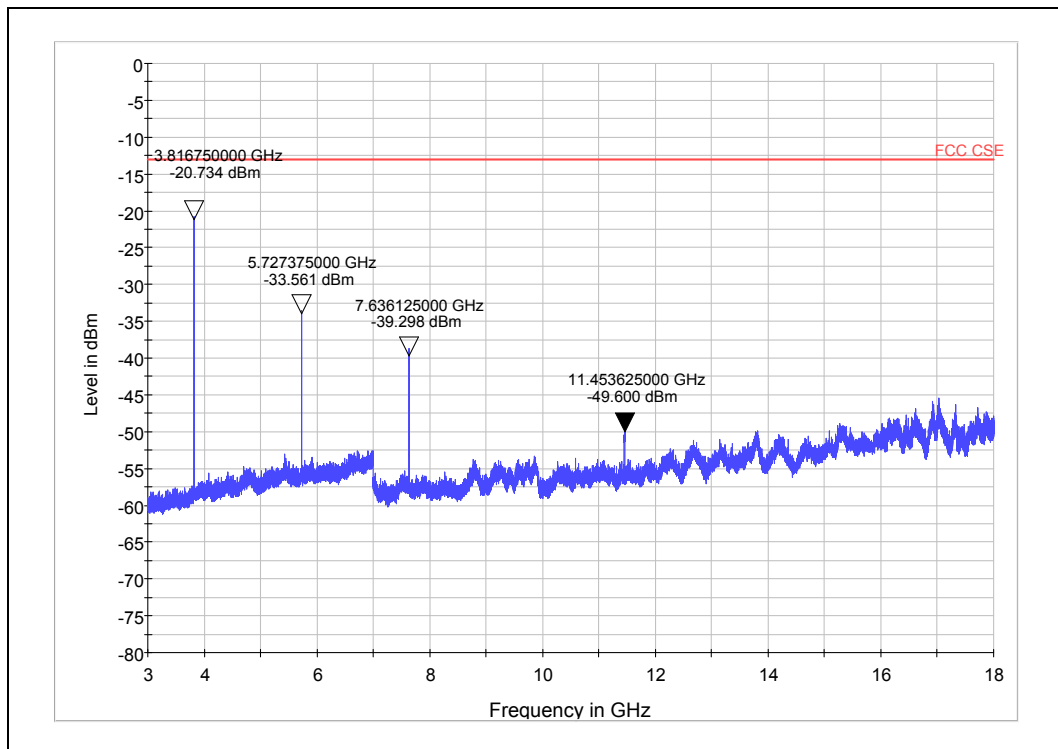
CDMA PCS CH 1175



Note: the plot was out of the highest scale that was the result of software compensation of the path loss factor in carrier frequency band.

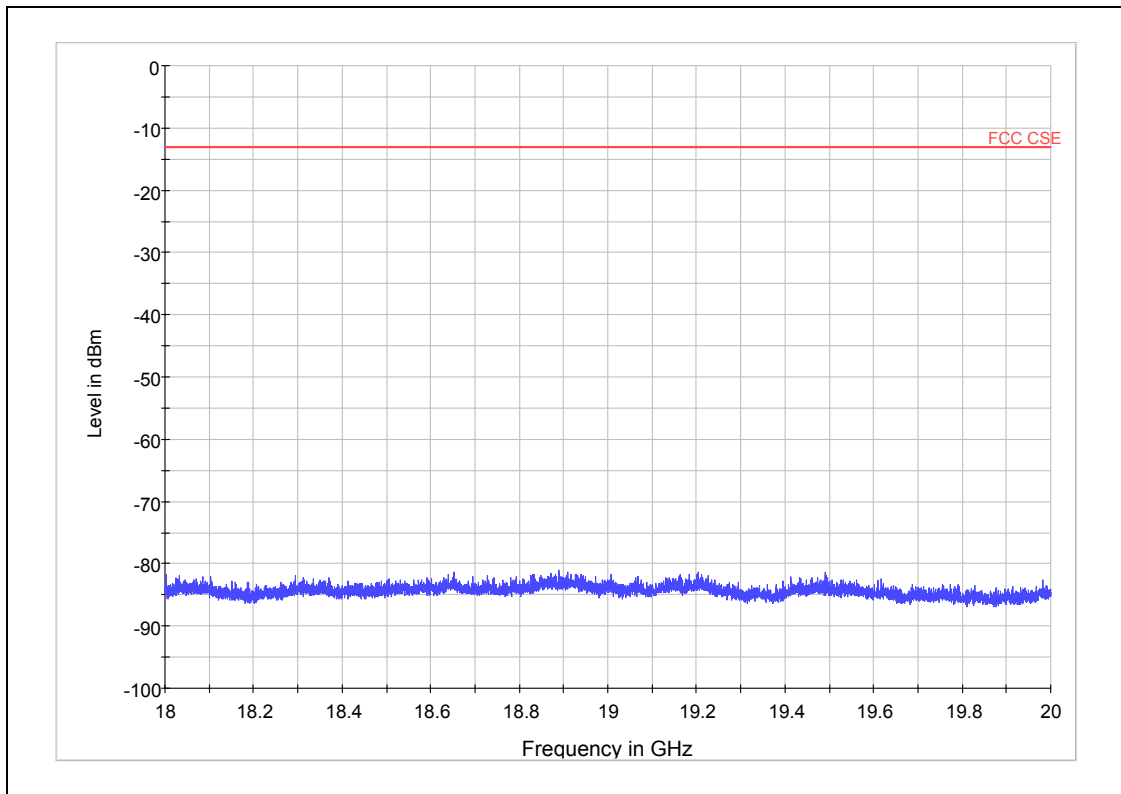
Note: The signal beyond the limit is carrier.

CDMA PCS 1175 Channel 30MHz~3GHz



CDMA PCS 1175 Channel 3GHz~18GHz

TA Technology (Shanghai) Co., Ltd. Test Report



CDMA PCS 1175 Channel 18GHz~20GHz

Harmonic	TX ch.1175 Frequency (MHz)	Level (dBm)	Limit (dBm)
2	3817.1	-20.734	-13
3	5727.0	-33.561	-13
4	7635	-39.298	-13
5	9543.75	Nf	-13
6	11452.5	-49.600	-13
7	13361.25	Nf	-13
8	15270	Nf	-13
9	17178.75	Nf	-13
10	19087.5	Nf	-13
Nf: noise floor			

Note: The other Spurious RF conducted emissions level is no more than noise floor.

2.9. Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity
23°C ~25°C	45%~50%

Method of Measurement

The measurements procedures in TIA -603C are used.

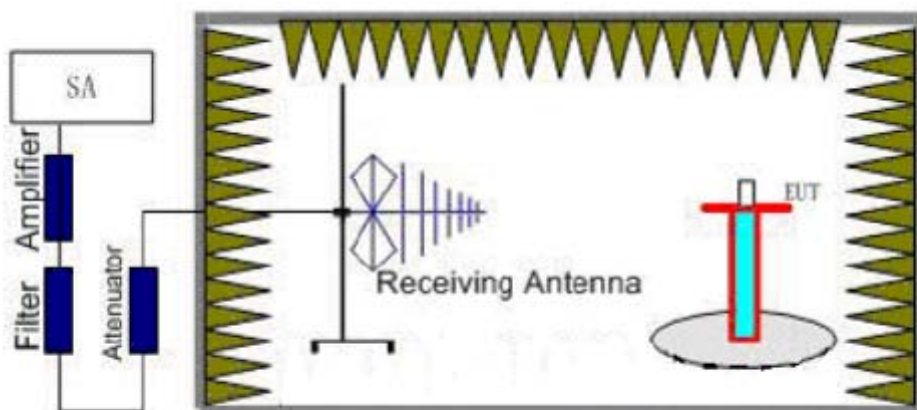
the spectrum is investigated from 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

The emissions less than 20 dB below the permissible value are reported.

The procedure of Radiates Spurious Emission is as follows:

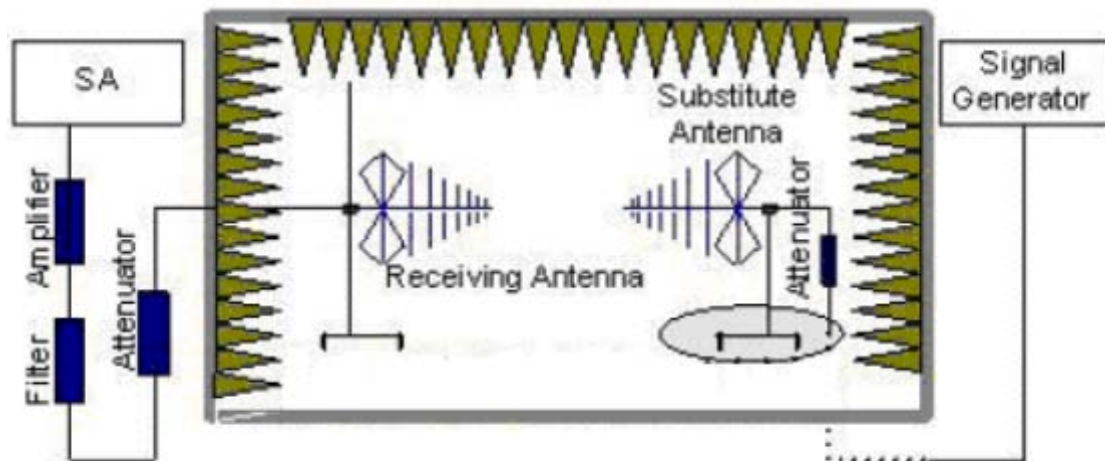
Step 1:

The measurement is carried out in the semi-anechoic chamber. EUT was placed on a 1.5 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used while RBW and VBW are both set to 3MHz. During the measurement, the highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna moved up and down over a range from 1 to 4 meters in both horizontally and vertically polarized orientations. The test setup refers to figure below.



Step 2:

A dipole antenna shall be substituted in place of the EUT. The antenna will be driven by a signal generator with an adjustable S.G. applied through a Tx cable. Adjust the level of the signal generator output until the value of the receiver reach the previously recorded analyzer power level (LVL). Then The E.R.P. /E.I.R.P. of the EUT can be calculated through the level of the signal generator, Tx cable loss and the gain of the substitution antenna. The test setup refers to figure below.



$$\text{E.R.P (peak power)} = \text{S.G.} - \text{Tx Cable loss} + \text{Substitution antenna gain} - 2.15.$$

$$\text{EIRP} = \text{E.R.P} + 2.15$$

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Y axis) and the antenna is vertical.

We tested all modes for CDMA PCS and LTE Band 2. The worst emission was recorded in the report.

Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10} (P)$ dB.”

Limit	-13 dBm
-------	---------

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 3.55$ dB.

TA Technology (Shanghai) Co., Ltd.

Test Report

Report No.: RXC1209-0833RF04R3

Page 38 of 42

Test Result(Worst Case EV-DO Rev.0)

CDMA PCS CH25

Harmonic	TX ch.25 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3702.50	-51.868	5.10	11.05	-45.918	-13	32.918	0
3	5553.75	/	/	/	Nf	-13	/	/
4	7405.00	/	/	/	Nf	-13	/	/
5	9256.25	/	/	/	Nf	-13	/	/
6	11107.50	/	/	/	Nf	-13	/	/
7	12958.75	/	/	/	Nf	-13	/	/
8	14810.00	/	/	/	Nf	-13	/	/
9	16661.25	/	/	/	Nf	-13	/	/
10	18512.50	/	/	/	Nf	-13	/	/

Nf: noise floor

Note: The other Spurious RF Radiated emissions level is no more than noise floor.

CDMA PCS CH 600

Harmonic	TX ch.600 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.00	-43.333	4.20	11.05	-36.483	-13	23.483	0
3	5640.00	/	/	/	Nf	-13	/	/
4	7520.00	/	/	/	Nf	-13	/	/
5	9400.00	/	/	/	Nf	-13	/	/
6	11280.00	/	/	/	Nf	-13	/	/
7	13160.00	/	/	/	Nf	-13	/	/
8	15040.00	/	/	/	Nf	-13	/	/
9	16920.00	/	/	/	Nf	-13	/	/
10	18800.00	/	/	/	Nf	-13	/	/

Nf: noise floor

Note: The other Spurious RF Radiated emissions level is no more than noise floor.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 39 of 42

CDMA PCS CH 1175

Harmonic	TX ch.1175 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3817.50	-36.861	5.20	11.05	-31.011	-13	18.011	90
3	5726.25	/	/	/	Nf	-13	/	/
4	7635.00	/	/	/	Nf	-13	/	/
5	9543.75	/	/	/	Nf	-13	/	/
6	11452.50	/	/	/	Nf	-13	/	/
7	13361.25	/	/	/	Nf	-13	/	/
8	15270.00	/	/	/	Nf	-13	/	/
9	17178.75	/	/	/	Nf	-13	/	/
10	19087.50	/	/	/	Nf	-13	/	/

Nf: noise floor

Note: The other Spurious RF Radiated emissions level is no more than noise floor.

TA Technology (Shanghai) Co., Ltd.
Test Report

Report No.: RXC1209-0833RF04R3

Page 40 of 42

3. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	Base Station Simulator	CMU200	R&S	118133	2012-06-30	One year
02	Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA
03	Spectrum Analyzer	E4445A	Agilent	MY46181146	2012-06-30	One year
04	Universal Radio Communication Tester	E5515C	Agilent	MY48367192	2012-06-30	One year
05	Signal Analyzer	FSV30	R&S	100815	2012-06-30	One year
06	Signal generator	SMB 100A	R&S	102594	2012-06-30	One year
07	EMI Test Receiver	ESCI	R&S	100948	2012-06-30	One year
08	Loop Antenna	FMZB1516	SCHWARZB ECK	237	2012-06-30	Two years
09	Trilog Antenna	VUBL 9163	SCHWARZB ECK	9163-201	2010-06-20	Three years
10	Horn Antenna	HF907	R&S	100126	2012-07-01	Three years
11	Climatic Chamber	PT-30B	Re Ce	20101891	2010-09-10	Three years
12	Semi-Anechoic Chamber	9.6*6.7*6.6m	ETS-Lindgren	NA	NA	NA
13	EMI test software	ES-K1	R&S	NA	NA	NA

*****END OF REPORT BODY*****

ANNEX A: EUT Appearance and Test Setup

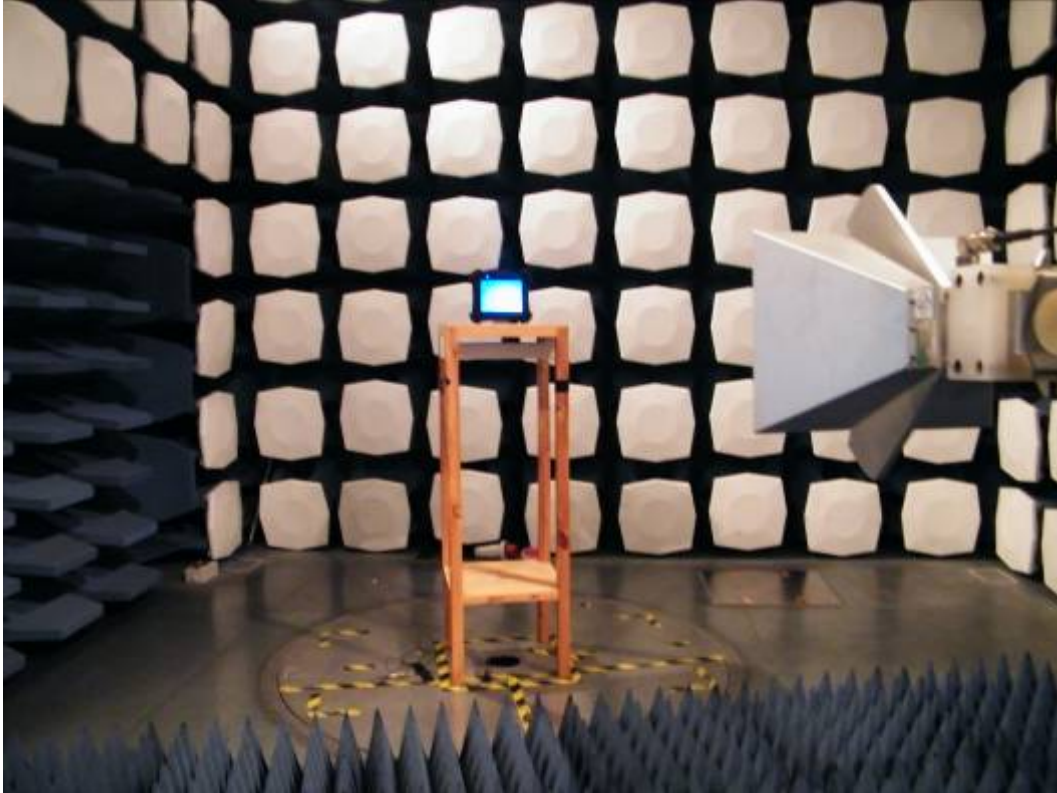
A.1 EUT Appearance



a: EUT

Picture 1 EUT and Auxiliary

A.2 Test Setup



Picture 2: Radiated Spurious Emissions Test setup