FCC CFR47 CERTIFICATION

PART 22H and 24E

TEST REPORT

FOR

SMARTPHONE

MODEL: ST10B

FCC ID: NM8VIVIDA

REPORT NUMBER: 04T2458-1

ISSUE DATE: JANUARY 30, 2004

Prepared for
HIGH TECH COMPUTER CORP.
1F, 6-3, BAU-CHIAN RD., HSIN TIEN
TAIPAI, TAIWAN, 231

Prepared by
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TABLE OF CONTENT

1. TEST RESULT CERTIFICATION

COMPANY NAME: HIGH TECH COMPUTER CORP.
1F, 6-3, BAU-CHIAN RD., HSIN TIEN
TAIPAI, TAIWAN, 231

EUT DESCRIPTION: SMARTPHONE

MODEM NAME: ST10B

DATE TESTED: JANUARY 30, 2004

TYPE OF EQUIPMENT	INTENTIONAL RADIATOR
EQUIPMENT TYPE	LICENSED TX MODULE IN MOBILE APPLICATION
MEASUREMENT PROCEDURE	ANSI 63.4 / 2001, TIA/EIA 603
PROCEDURE	CERTIFICATION
FCC RULE	CFR 47 PART 22 Subpart H and 24 Subpart E

Compliance Certification Services, Inc. tested the above equipment for compliance with the requirement set forth in CFR 47, PART 22 Subpart H-Cellular Radiotelephone Service and 24 Subpart E-Broadband PCS. The equipment in the configuration described in this report, shows the measured emission levels emanating from the equipment do not exceed the specified limit.

Note : This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document.

Tested By:

CHIN PANG
EMC TECHNICIAN
COMPLIANCE CERTIFICATION SERVICES

Released For CCS By:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

2. EUT DESCRIPTION

The SmartPhone has an output power 24.3dBm (CDMA, ERP), and 25.7dBm (PCS, EIRP) which is designed for the bands transmitting of frequency range 824 ~ 849MHz and 1850 ~ 1910MHz.

3. TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures documented on chapter 13 of ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

4. TEST FACILITY

The open area test sites and conducted measurement facilities used to collect the radiated data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5. ACCREDITATION AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code: 200065-0 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government. In addition, the test facilities are listed with Federal Communications Commission (reference no: 31040/SIT (1300B3) and 31040/SIT (1300F2))

6. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

7. TEST SETUP, PROCEDURE AND RESULT

7.1. SECTION 2.1046: RF POWER OUTPUT

INSTRUMENTS LIST

EQUIPMENT	MANUFACTURE	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Receiver, 9 KHz ~ 2.9 GHz	HP	8542E	3942A00286	11/21/04
RF Filter Section	HP	85420E	3705A00256	11/21/04
Wireless Communication Test Set	Agilent	E5515C	NA	9/22/05
10dB Attenuator	Agilent	8493C	59028	N/A
Power Splitter	Agilent	11667B	53331	N/A
DC Power Supply	Kenwood	PA36-3A	7060074	N/A
Bilog Antenna	A.R.A.	LPB 2520/A	1185	3/6/04
Tune Dipole	ETS	DB-4	1629	5/14/04
Tx Horn Antenna	EMCO	3115	6739	2/4/2004
Rx Horn Antenna	EMCO	3115	6717	2/4/2004
Amplifier	MITEQ	NSP2600-SP	924342	4/25/2004
40dB Attenuator	AR	DC7144A	305089	11/12/04
1.5GHz HPF	MICROTRONICS	HPM13190	N/A	N/A
2.7GHz HPF	MICROTRONICS	HPM13194	N/A	N/A

MEASUREMENT PROCEDURE

1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.

2). The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the frequency of the transmitter.

3). The output of the test antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.

4). The transmitter shall be placed 0.80 meter above the ground plane, the X, Y, and Z positions shall be tested and the worst case reported. The transmitter shall be switched on with typical modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.

5). The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.

6). The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

7). The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.

8). The maximum signal level detected by the measuring receiver shall be noted.

9). The transmitter shall be replaced by a tuned dipole / horn (substitution antenna).

10). The substitution antenna shall be oriented for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.

11). The substitution antenna shall be connected to a calibrated signal generator.

12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

13). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.

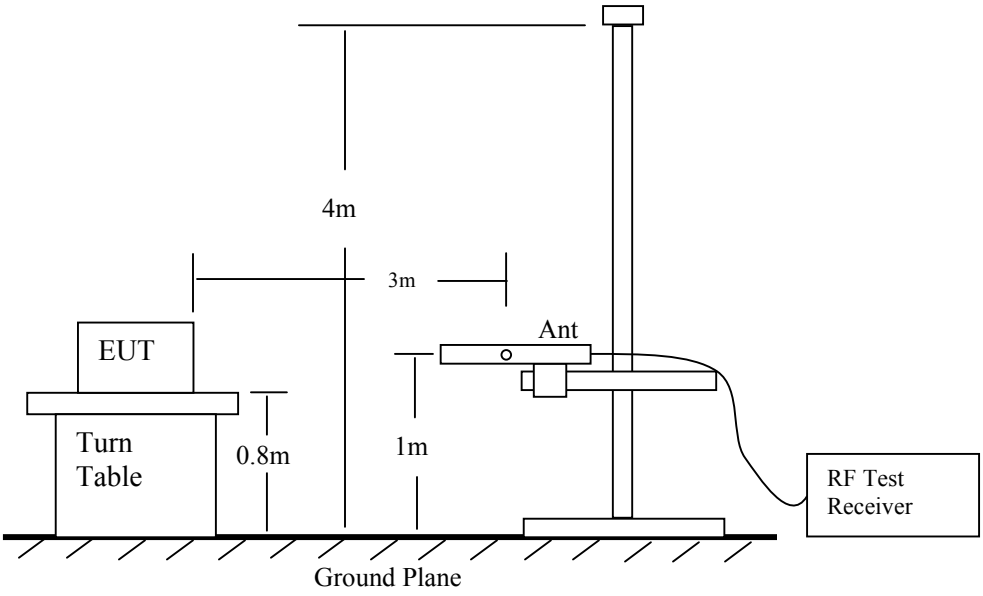
14). The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.

15). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

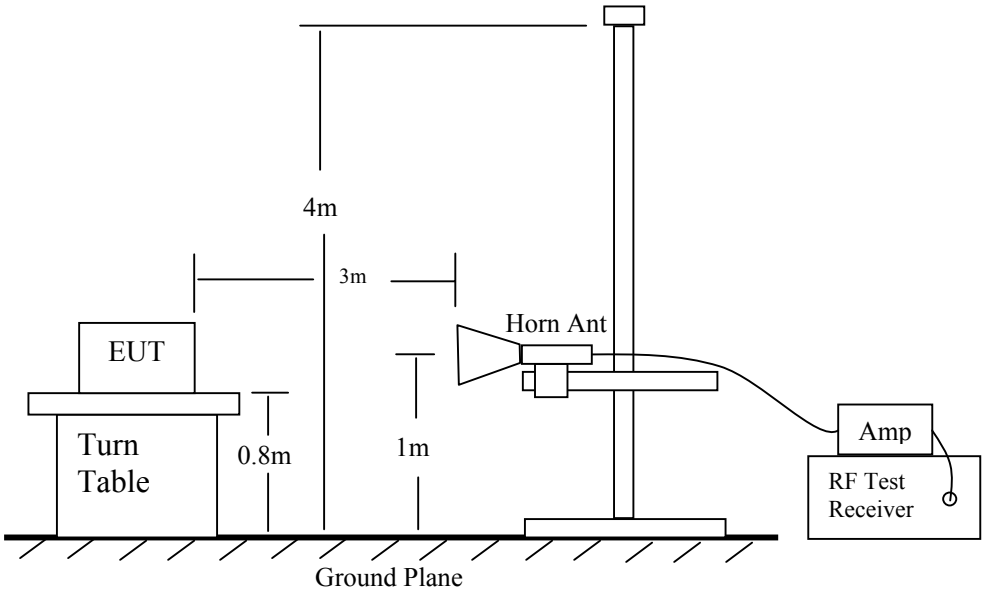
16). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

17). The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.

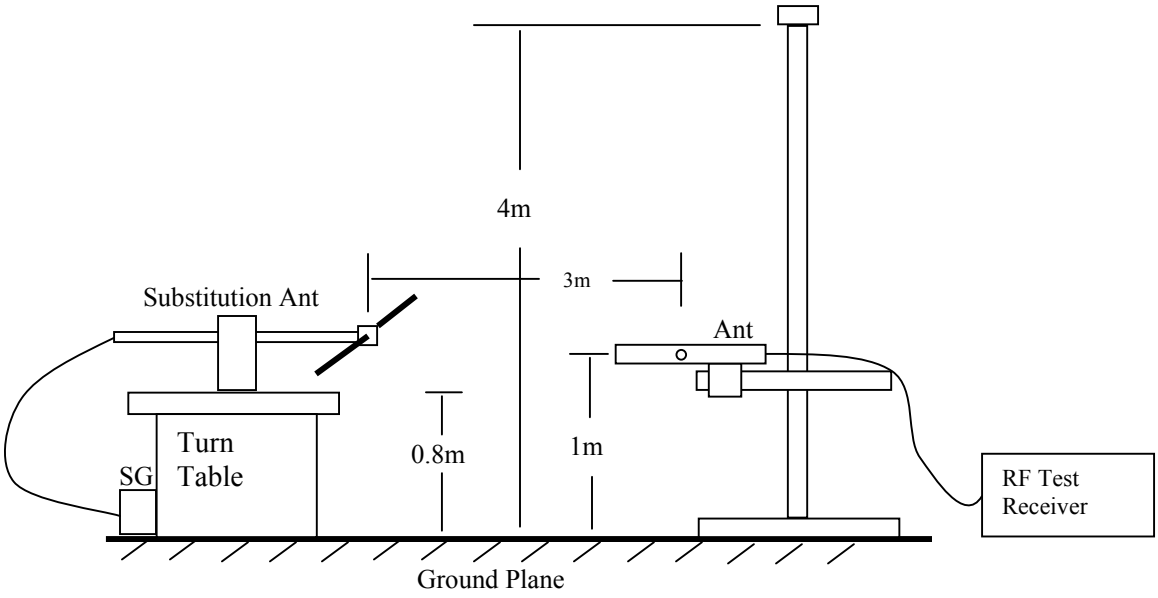
TEST SETUP



Radiated Emission Measurement 30 to 1000 MHz



Radiated Emission Above 1000 MHz



Radiated Emission – Substitution Method Set-up

MEASUREMENT RESULT:

Peak EIRP Output Power Measurement:

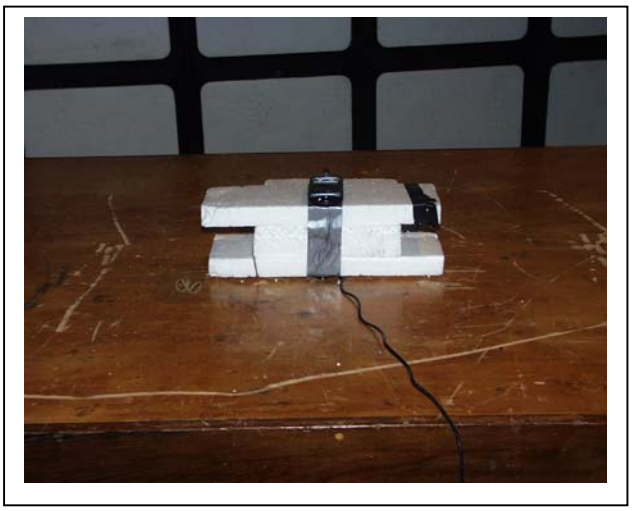
CDMA

	Ch.#	Freq. (MHz)	Pwr_Pk ERP(dBm)
Low Ch.	1013	824.7	23.20
Mid Ch.	384	836.52	24.30
High Ch.	777	848.31	22.40

PCS

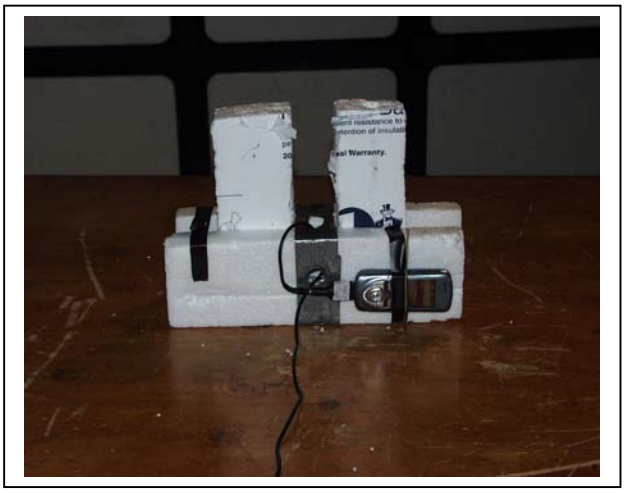
	Ch.#	Freq. (MHz)	Pwr_Pk EIRP(dBm)
Low Ch.	25	1851.25	23.40
Mid Ch.	600	1880	25.70
High Ch.	1175	1908.75	22.80

Radiated Emissions



Y-Position

X-Position



Z-Position

CDMA Output Power (ERP):

RBW=VBW=3MHz at Worst Position (Y-Position)

f GHz	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	(dBm)	Limit (dBm)	Margin (dB)	Notes
0.824	100.7	25.8	0.5	0.0	-2.2	23.2	38.5	-15.4	H
0.824	96.3	23.6	0.5	0.0	-2.2	21.0	38.5	-17.6	V
0.837	101.9	26.9	0.5	0.0	-2.2	24.3	38.5	-14.3	H
0.837	95.2	22.5	0.5	0.0	-2.2	19.9	38.5	-18.7	V
0.848	99.0	25.0	0.5	0.0	-2.2	22.4	38.5	-16.2	H
0.848	95.0	22.3	0.5	0.0	-2.2	19.7	38.5	-18.9	V

PCS Output Power (EIRP):

f GHz	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	(dBm)	Limit (dBm)	Margin (dB)	Notes
1.851	94.3	17.1	0.9	7.2	5.0	23.4	33.0	-9.6	H
1.851	89.1	13.2	0.9	7.2	5.0	19.5	33.0	-13.5	V
1.880	96.7	19.4	0.9	7.2	5.1	25.7	33.0	-7.3	H
1.880	88.3	12.0	0.9	7.2	5.1	18.3	33.0	-14.7	V
1.909	93.7	16.5	0.9	7.2	5.1	22.8	33.0	-10.2	H
1.909	87.3	11.1	0.9	7.2	5.1	17.4	33.0	-15.6	V

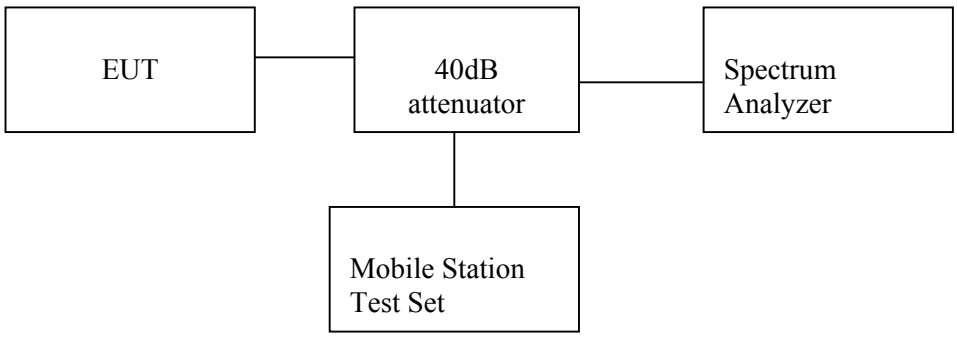
7.2. SECTION 2.1047: MODULATION CHARACTERISTICS

Not applicable

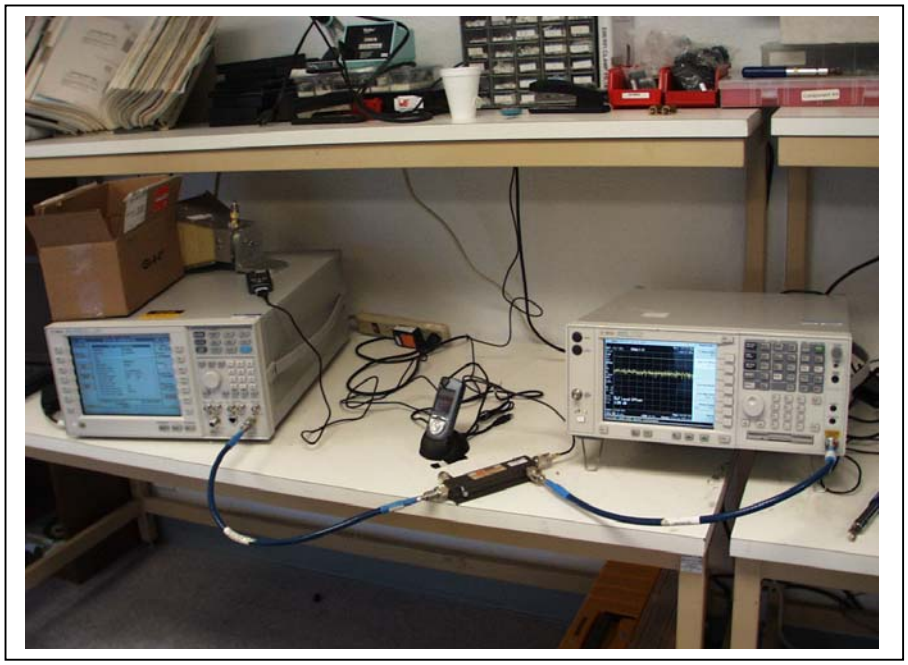
7.3. SECTION 2.1049: OCCUPIED BANDWIDTH

PROVISIONS APPLICABLE
According to CFR 47 section 22.917.

TEST SETUP



Set-up Configuration



TEST PROCEDURE FOR 800 MHz CDMA and 1900MHz PCS MODULATION

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RES BW was set to about 1% of emission BW, -26 dBc display line was placed on the screen, the occupied BW is the delta frequency between the two points where the display line intersects the signal trace. 26dB BW was measured for low, middle and high channels on both RF input and output ports of the EUT.

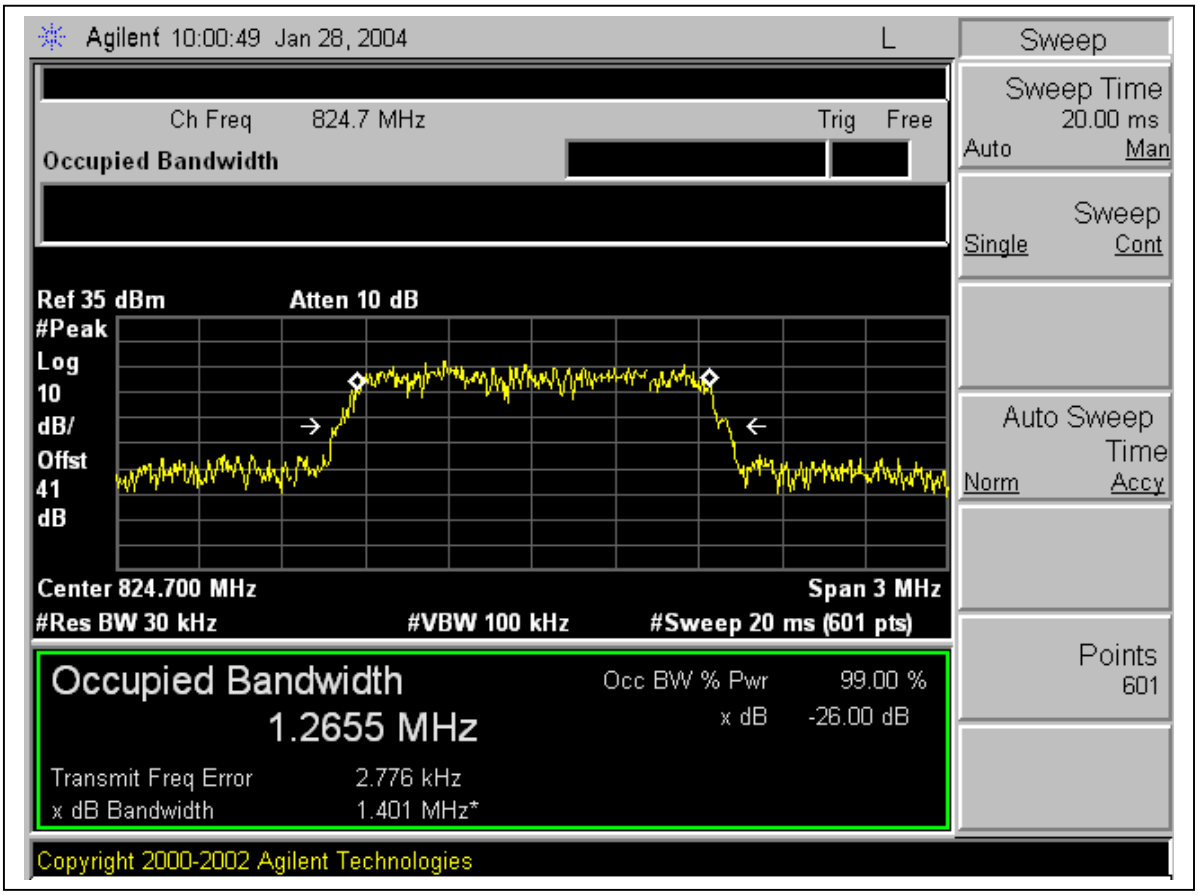
CDMA RESULT

Channel	Frequency (MHz)	-26dBc BW (MHz)
Low	824.7	1.401
Middle	836.52	1.409
High	848.31	1.406

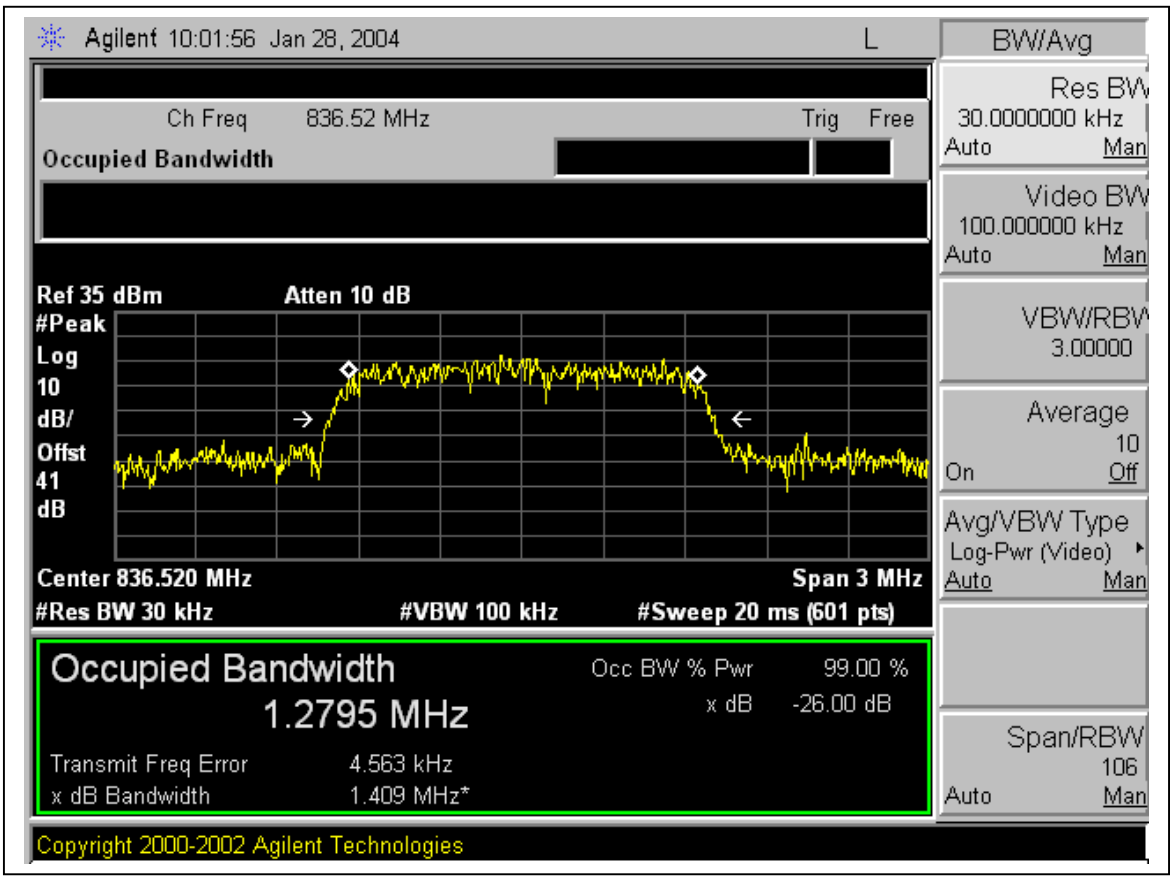
PCS RESULT

Channel	Frequency (MHz)	-26dBc BW (MHz)
Low	1851.25	1.420
Middle	1880.00	1.419
High	1908.75	1.400

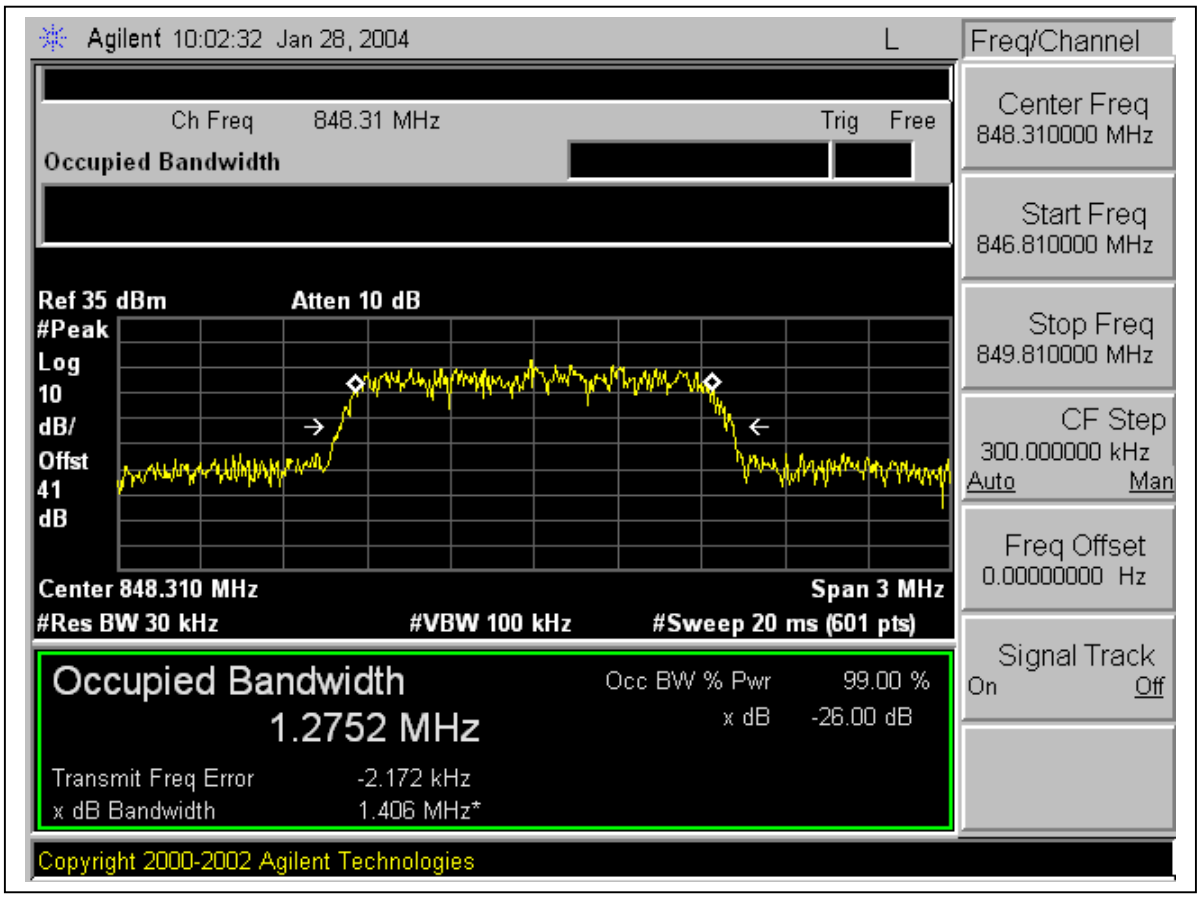
Low Channel



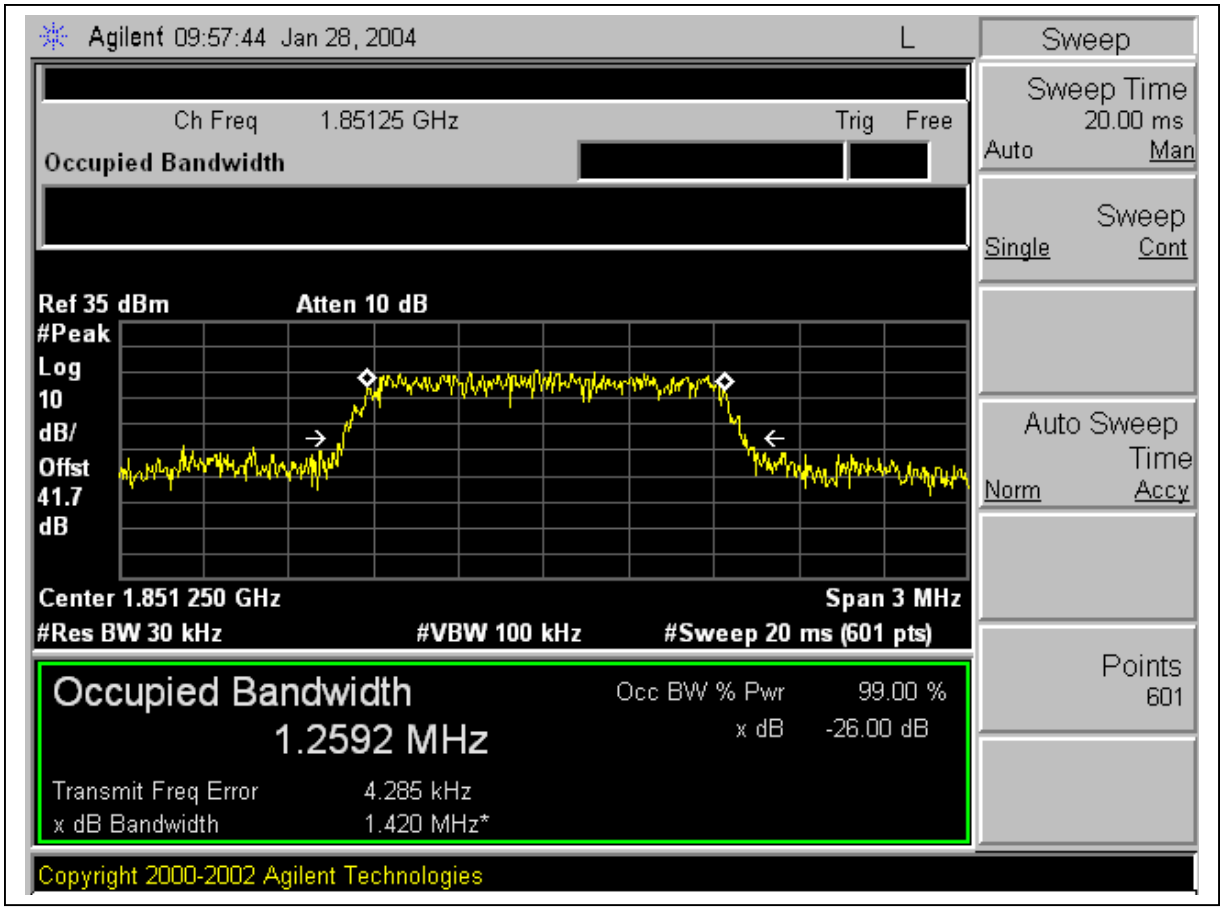
Mid Channel



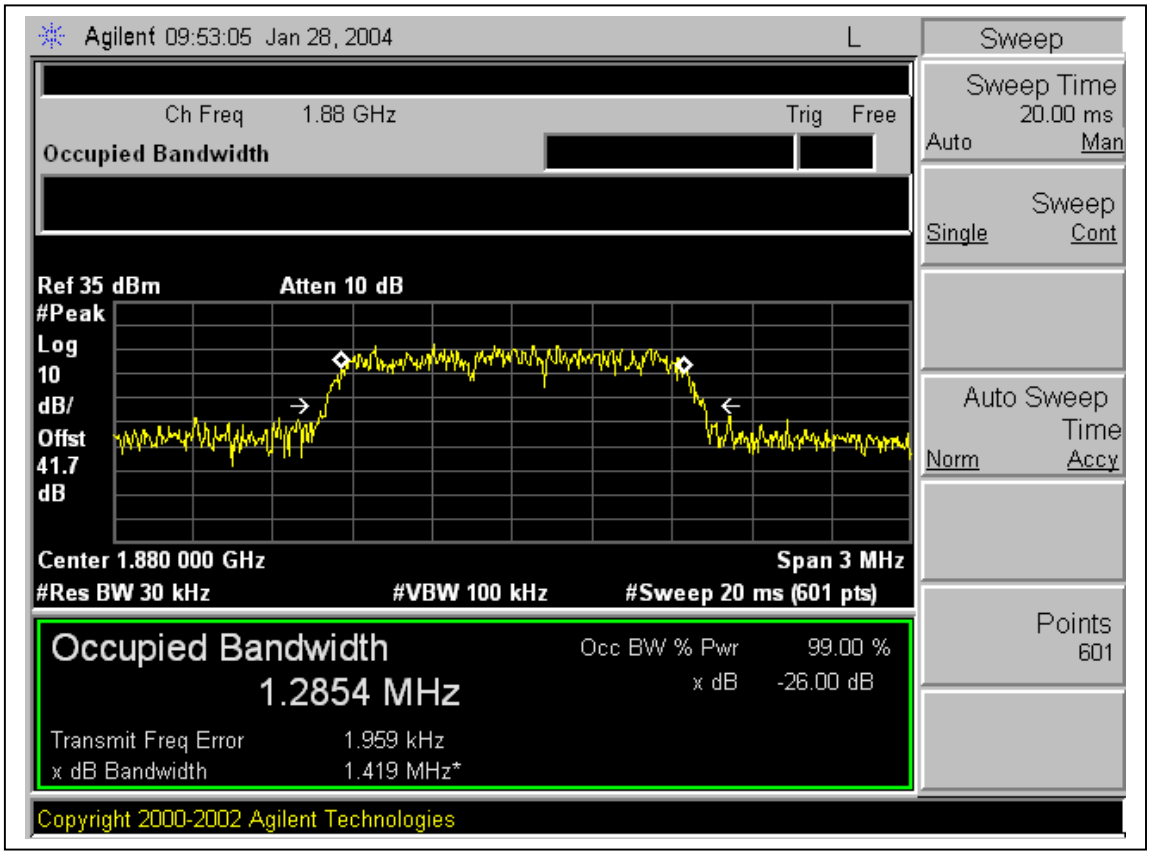
High Channel



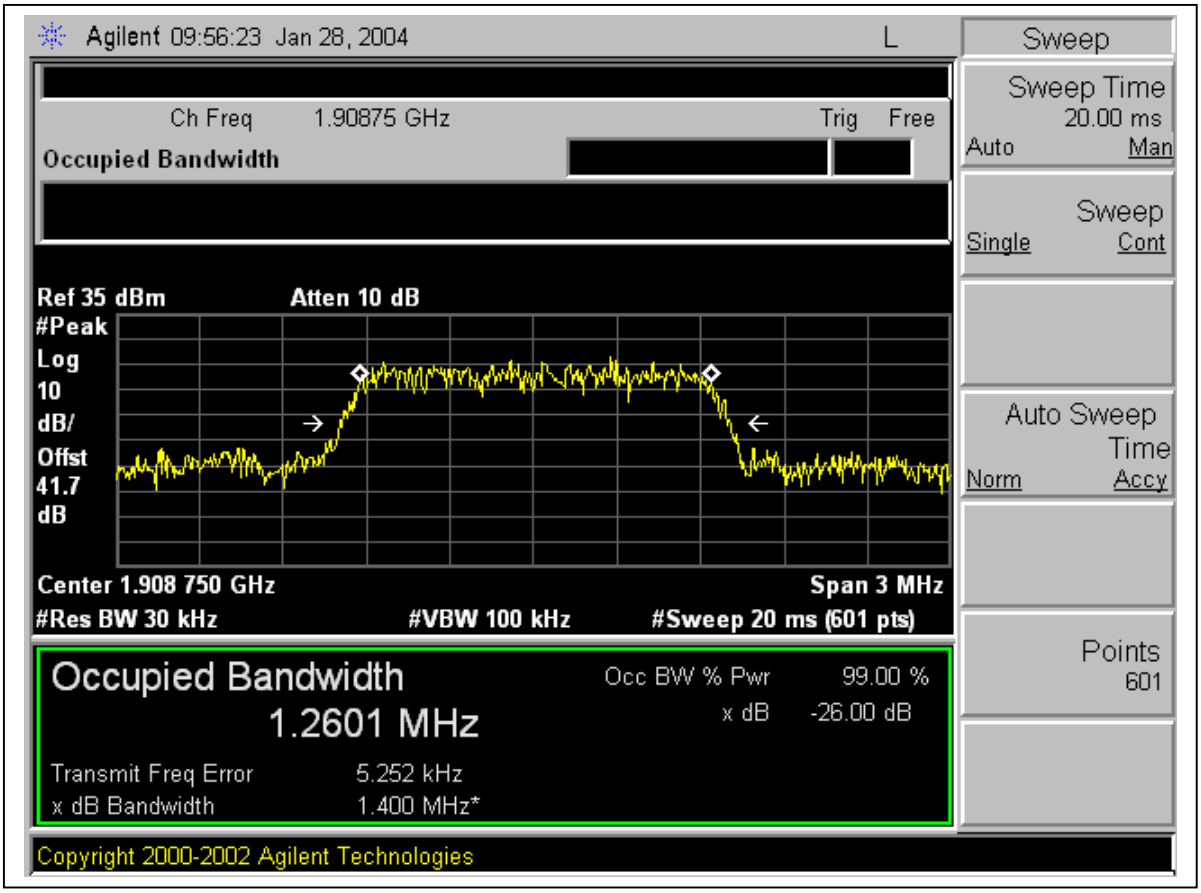
Low Channel



Mid Channel



High Channel

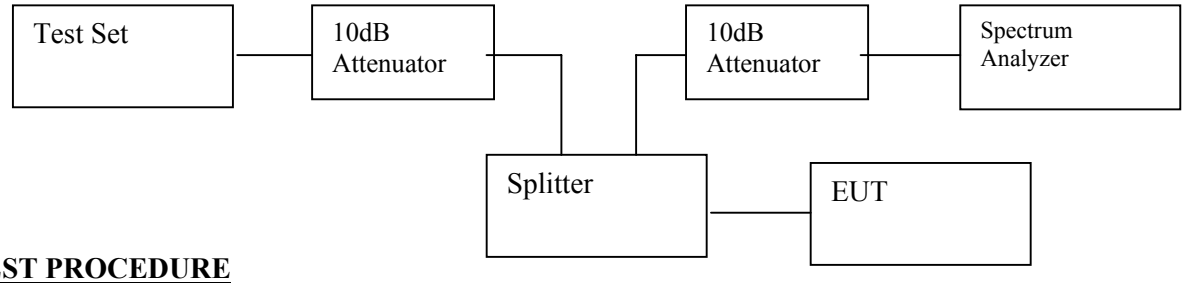


7.4. SECTION 2.1051: SPURIOUS EMISSION AT ANTENNA TERMINAL

INSTRUMENTS LIST

EQUIPMENT	MANUFACTURE	MODEL NO.	SERIAL NO.	CAL. DUE DATE
PSA Analyzer	Agilent	E4446A	US42070220	1/13/04
Wireless Communication Test Set	Agilent	E5515C	NA	9/22/05
10dB Attenuator	Agilent	8493C	59028	N/A
Power Splitter	Agilent	11667B	53331	N/A

TEST SETUP



TEST PROCEDURE

1) EUT's RF output connector (made solely for the purpose of the test) is connected to the spectrum analyzer, and set as close as possible to the bottom of the block edge and one set as close as possible to the top of the block edge. Set the RES BW to 1% of the emission bandwidth to show compliance with the –13dBm limit, in the 1 MHz bands immediately outside and adjacent to the top and bottom edges of the frequency block.

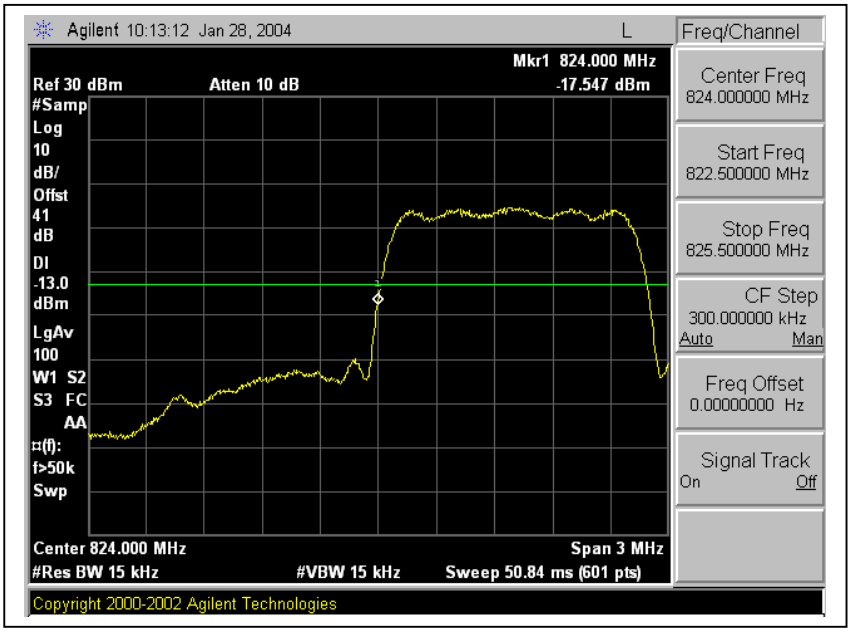
2) For the Out-of-Band measurements a 1 MHz RES BW was used to scan from 15 MHz to 10x*f*o of the fundamental carrier for all frequency block. A display line was placed at –13dBm to show compliance for spurious, and harmonics.

3) 22.917(f): Mobile emissions in base frequency range. The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitter operated must be attenuated to a level not to exceed –80dBm at the transmit antenna connector.

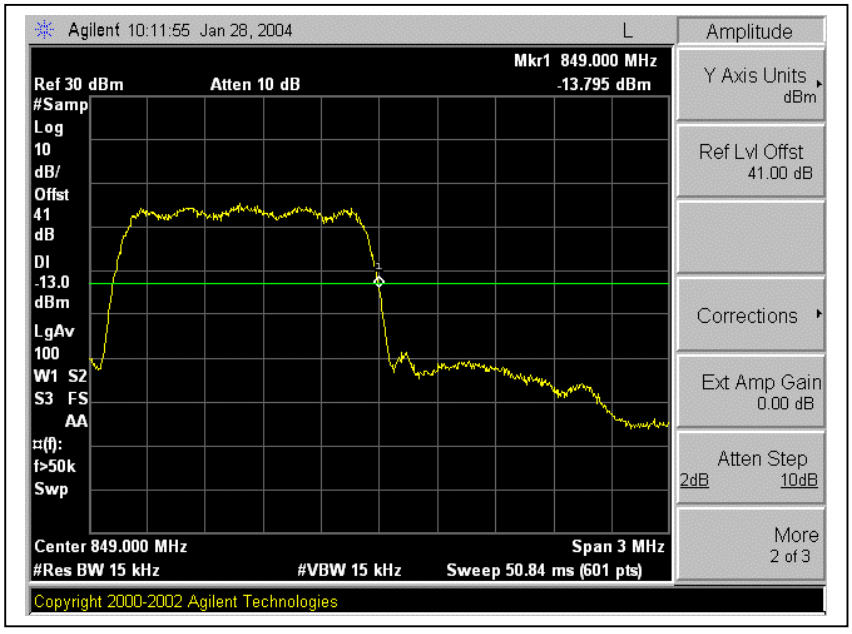
MEASUREMENT RESULT:

CDMA Modulation: Low / Mid / High, Band Edge, Out-Of-Band Emissions

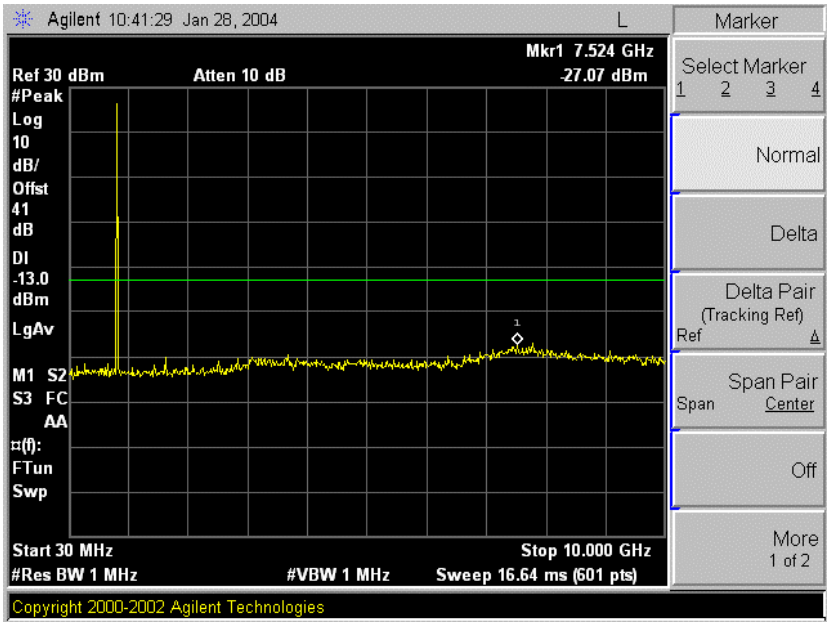
Low Band Edge-



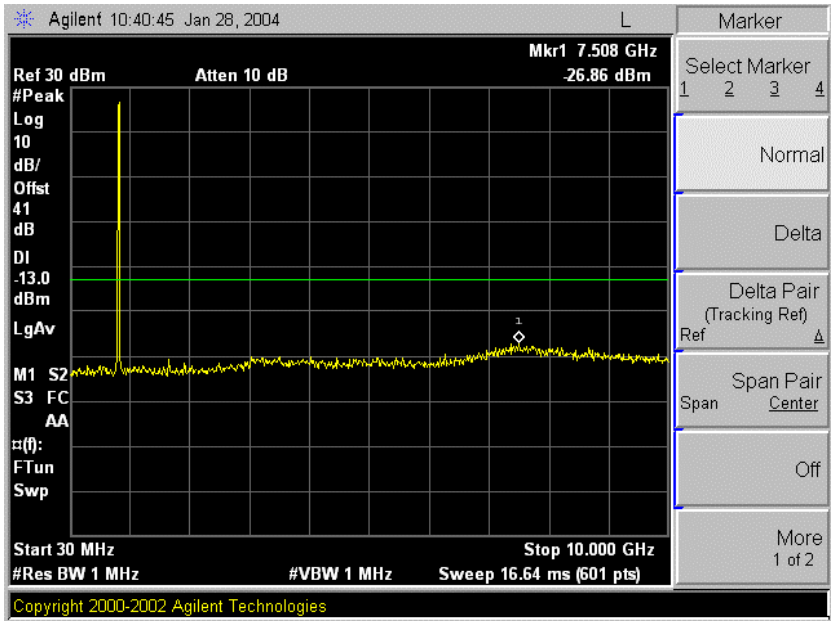
High Band Edge



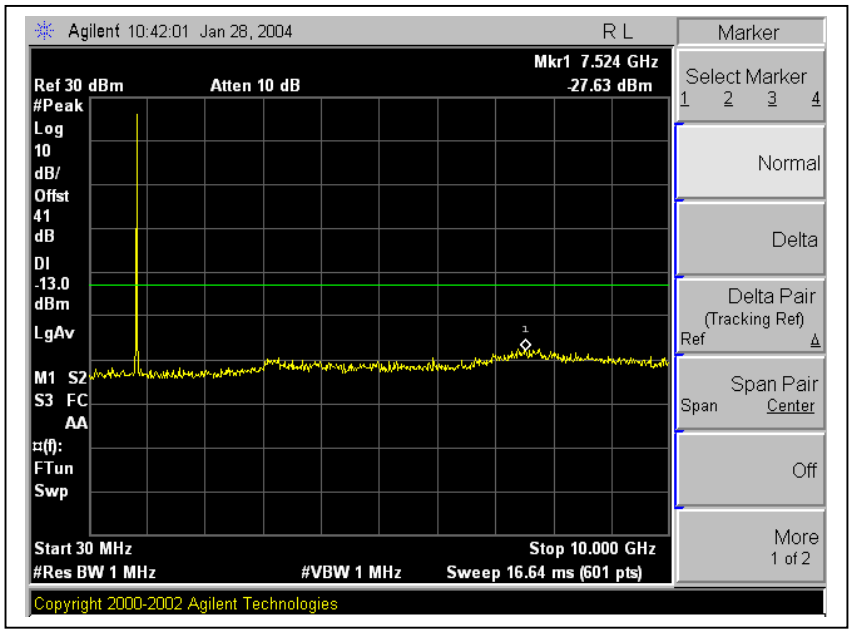
Out-Of-Band Emissions-Low Channel



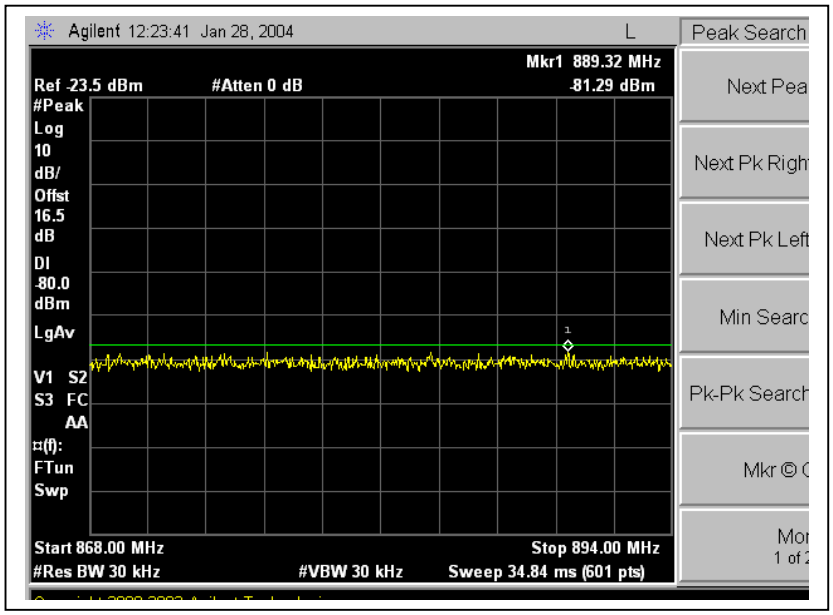
Out-Of-Band Emissions-Mid Channel



Out-Of-Band Emissions-High Channel

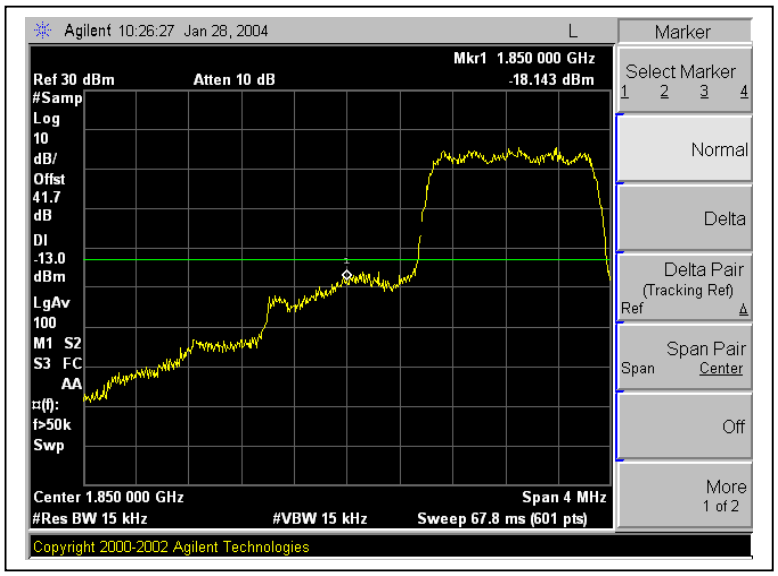


Mobile Emissions in Base Frequency Range

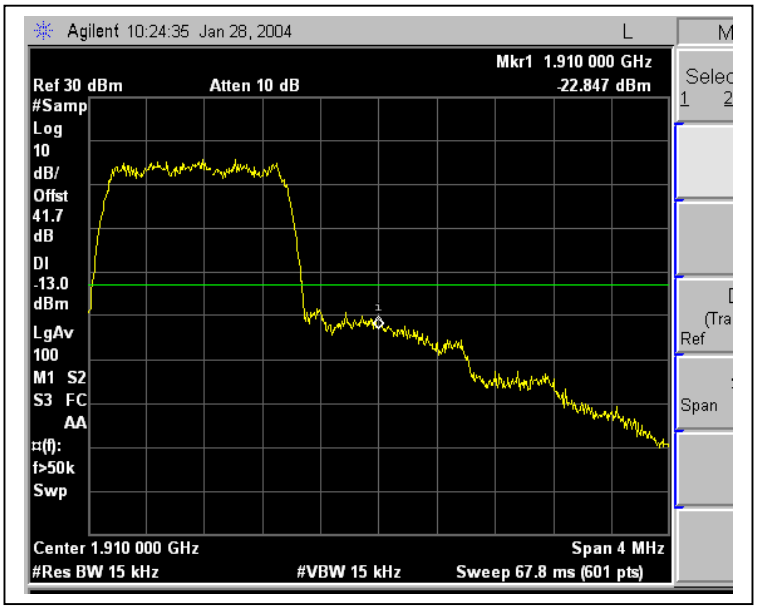


PCS Modulation: Low / Mid / High, Band Edge, Out-Of-Band Emissions

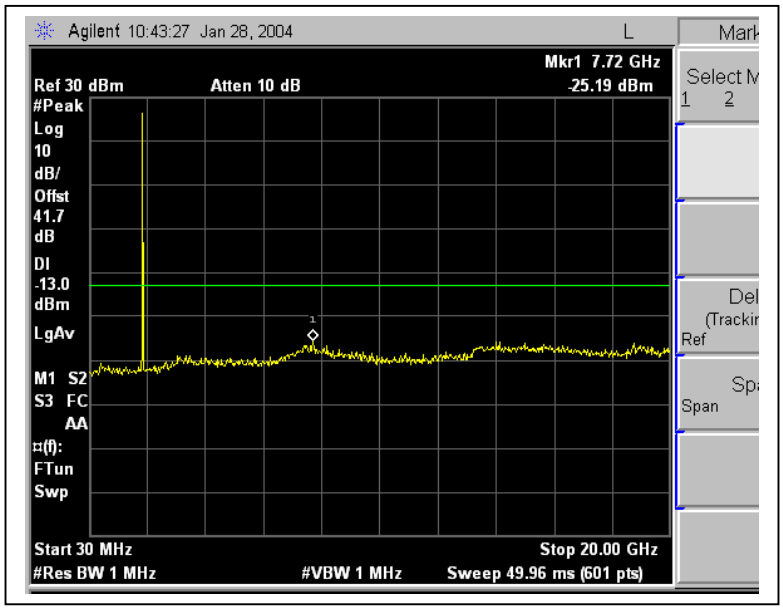
Low Band Edge



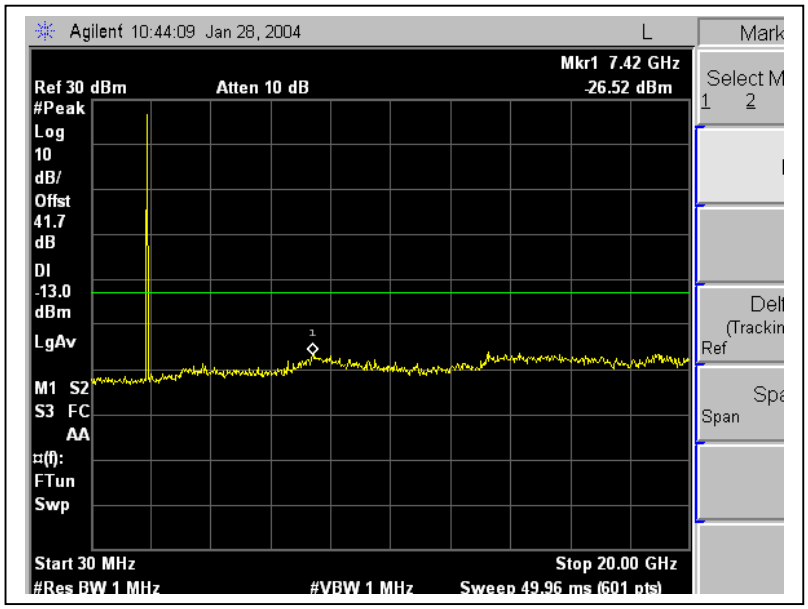
High Band Edge



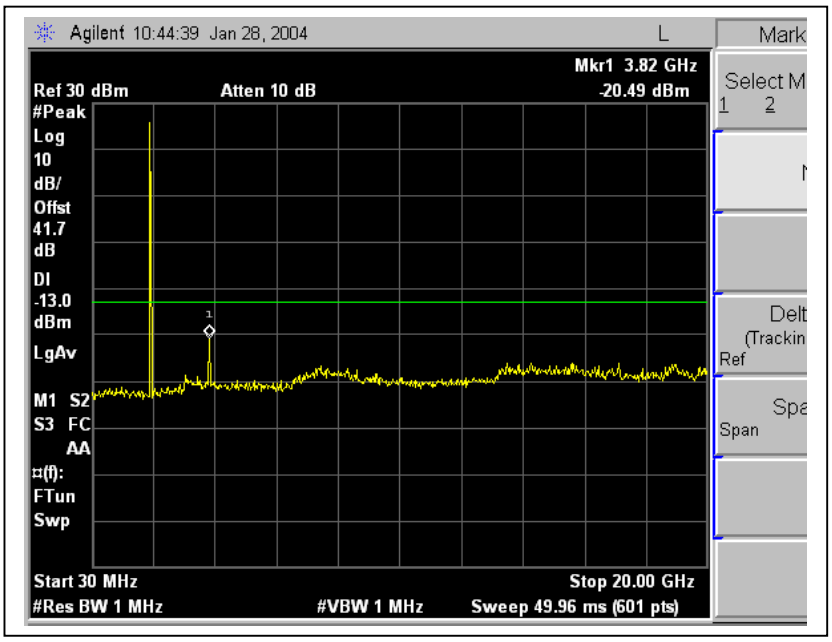
Out-Of-Band Emissions-Low Channel



Out-Of-Band Emissions-Mid Channel



Out-Of-Band Emissions-High Channel



7.5. SECTION 2.1053: FIELD STRENGTH OF SPURIOUS RADIATION

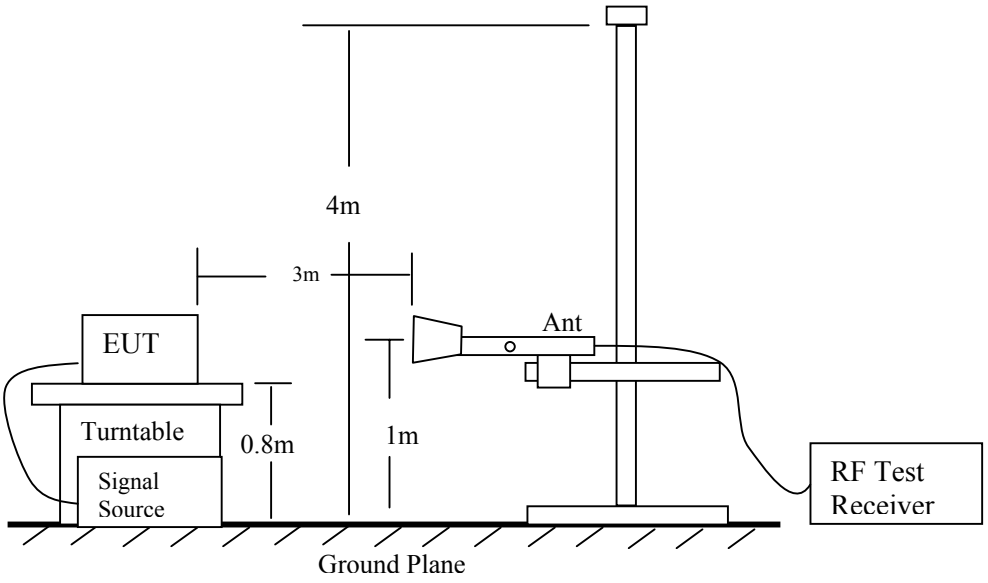
INSTRUMENTS LIST

EQUIPMENT	MANUFACTURE	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Receiver, 9 KHz ~ 2.9 GHz	HP	8542E	3942A00286	11/21/04
RF Filter Section	HP	85420E	3705A00256	11/21/04
Wireless Communication Test Set	Agilent	E5515C	NA	9/22/05
10dB Attenuator	Agilent	8493C	59028	N/A
Power Splitter	Agilent	11667B	53331	N/A
DC Power Supply	Kenwood	PA36-3A	7060074	N/A
Bilog Antenna	A.R.A.	LPB 2520/A	1185	3/6/04
Tune Dipole	ETS	DB-4	1629	5/14/04
Tx Horn Antenna	EMCO	3115	6739	2/4/2004
Rx Horn Antenna	EMCO	3115	6717	2/4/2004
Amplifier	MITEQ	NSP2600-SP	924342	4/25/2004
1.5GHz HPF	MICROTRONICS	HPM13190	N/A	N/A
2.7GHz HPF	MICROTRONICS	HPM13194	N/A	N/A

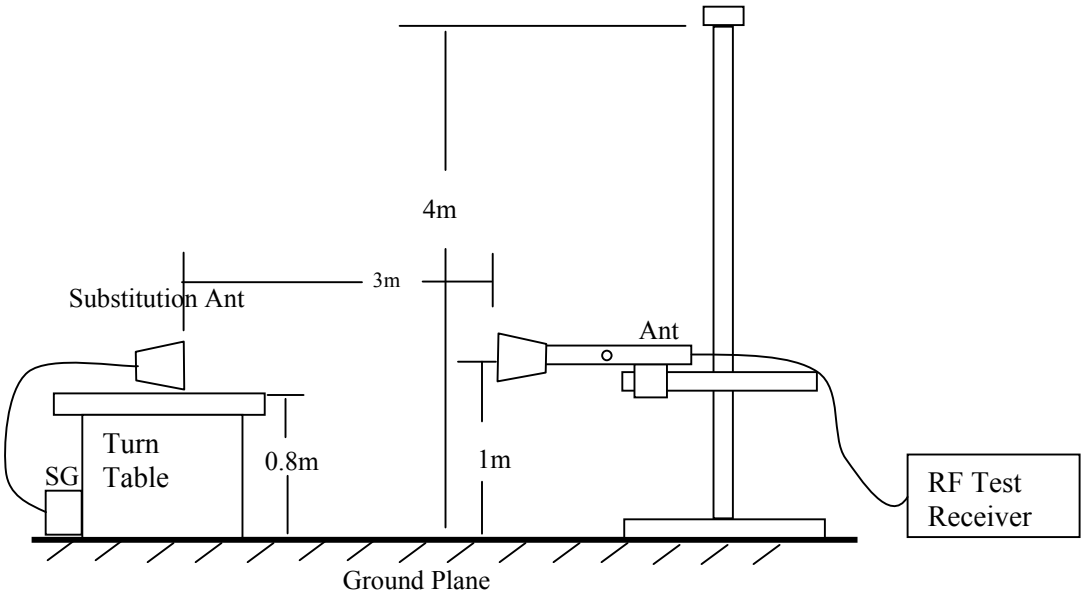
Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	☒ Peak ☐ Average	☒ 1 MHz ☐ 1 MHz	☒ 1 MHz ☐ 10 Hz

TEST SETUP



Radiated Emission Measurement



Radiated Emission – Substitution Method set-up

TEST PROCEDURE

1). On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
2). The test antenna shall be oriented initially for vertical polarization located 1m from the EUT to correspond to the frequency of the transmitter.
3). The output of the test antenna shall be connected to the measuring receiver and either a peak or average detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
4). The transmitter shall be switched on, if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
5). The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
6). The transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
7). The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
8). The maximum signal level detected by the measuring receiver shall be noted.
9). The transmitter shall be replaced by a substitution antenna.
10). The substitution antenna shall be oriented for vertical polarization.
11). The substitution antenna shall be connected to a calibrated signal generator.
12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
13). The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
14). The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
15). The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
16). The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.
17). The measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.

MEASUREMENT RESULT

No non-compliance noted, as shown below

CDMA Harmonics & Spurious Emissions: Low, Mid, & High Channels:

01/29/04 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:Chin Pang
Project #:04T2458-1
Company:High Tech Computer
EUT Descrip.:PDA Phone (CDMA 800/1900MHz)
EUT M/N:ST10B
Test Target: FCC 22
Mode Oper:Tx

Test Equipment:

EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz	Limit
T73; S/N: 6717 @3m				

Hi Frequency Cables
☐ (2 ft) ☐ (2 ~ 3 ft) ☑ (4 ~ 6 ft) ☐ (12 ft)

Peak Measurements:
Fundamental: RBW>99% or 26dB Emissions BW, VBW=RBW
Bandedge: RBW=>1% Emissions BW, VBW=> 3*RBW
Spurious: RBW=1MHz, VBW=1MHz

f GHz	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
800MHz Band, Low Ch, 824.7MHz									
1.649	64.7	-49.5	0.8	7.5	5.4	-45.0	-13.0	-32.0	V
2.474	58.0	-53.5	1.2	8.6	6.4	-48.3	-13.0	-35.3	V
1.649	66.0	-48.3	0.8	7.5	5.4	-43.7	-13.0	-30.7	H
2.474	59.3	-52.2	1.2	8.6	6.4	-47.0	-13.0	-34.0	H
800MHz Band, Mid Ch, 836.51MHz									
1.673	65.6	-48.5	0.8	7.6	5.4	-43.9	-13.0	-30.9	V
2.510	58.5	-52.9	1.2	8.6	6.4	-47.7	-13.0	-34.7	V
1.673	64.5	-49.6	0.8	7.6	5.4	-45.0	-13.0	-32.0	H
2.510	59.4	-52.0	1.2	8.6	6.4	-46.8	-13.0	-33.8	H
									V
800MHz Band, High Ch, 848.31MHz									
1.697	66.0	-48.0	0.8	7.6	5.5	-43.4	-13.0	-30.4	V
2.545	59.3	-52.1	1.2	8.6	6.5	-46.8	-13.0	-33.8	V
1.697	66.3	-47.7	0.8	7.6	5.5	-43.1	-13.0	-30.1	H
2.545	61.7	-49.7	1.2	8.6	6.5	-44.4	-13.0	-31.4	H

PCS Harmonics & Spurious Emissions: Low, Mid, & High Channels:

01/29/04 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:Chin Pang
Project #:04T2458-1
Company:High Tech Computer
EUT Descrip.:PDA Phone (CDMA 800/1900MHz)
EUT M/N:ST10B
Test Target: FCC 24
Mode Oper:Tx

Test Equipment:

EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz	Limit
T73; S/N: 6717 @3m				

Hi Frequency Cables
☐ (2 ft) ☐ (2 ~ 3 ft) ☑ (4 ~ 6 ft) ☐ (12 ft)

Peak Measurements:
Fundamental: RBW>99% or 26dB Emissions BW, VBW=RBW
Bandedge: RBW=>1% Emissions BW, VBW=> 3*RBW
Spurious: RBW=1MHz, VBW=1MHz

f GHz	SA reading (dBuV)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1900MHz Band, Low Ch, 1851.25MHz									
3.703	71.5	-40.1	1.6	9.6	7.4	-32.2	-13.0	-19.2	V
5.554	63.8	-47.3	2.1	11.1	9.0	-38.3	-13.0	-25.3	V
3.703	69.6	-42.0	1.6	9.6	7.4	-34.1	-13.0	-21.1	H
5.554	62.3	-48.8	2.1	11.1	9.0	-39.8	-13.0	-26.8	H
1900MHz Band, Mid Ch, 1880MHz									
3.760	67.6	-44.0	1.6	9.6	7.4	-36.0	-13.0	-23.0	V
5.640	62.6	-48.4	2.1	11.2	9.0	-39.4	-13.0	-26.4	V
3.760	69.3	-42.3	1.6	9.6	7.4	-34.3	-13.0	-21.3	H
5.640	63.2	-47.8	2.1	11.2	9.0	-38.8	-13.0	-25.8	H
1900MHz Band, High Ch, 1908.75MHz									
3.818	67.2	-36.1	1.6	9.6	7.5	-28.1	-13.0	-15.1	V
5.726	62.7	-40.1	2.1	11.2	9.1	-31.0	-13.0	-18.0	V
3.818	68.6	-34.7	1.6	9.6	7.5	-26.7	-13.0	-13.7	H
5.726	64.5	-38.3	2.1	11.2	9.1	-29.1	-13.0	-16.1	H

7.6. SECTION 2.1055: FREQUENCY STABILITY

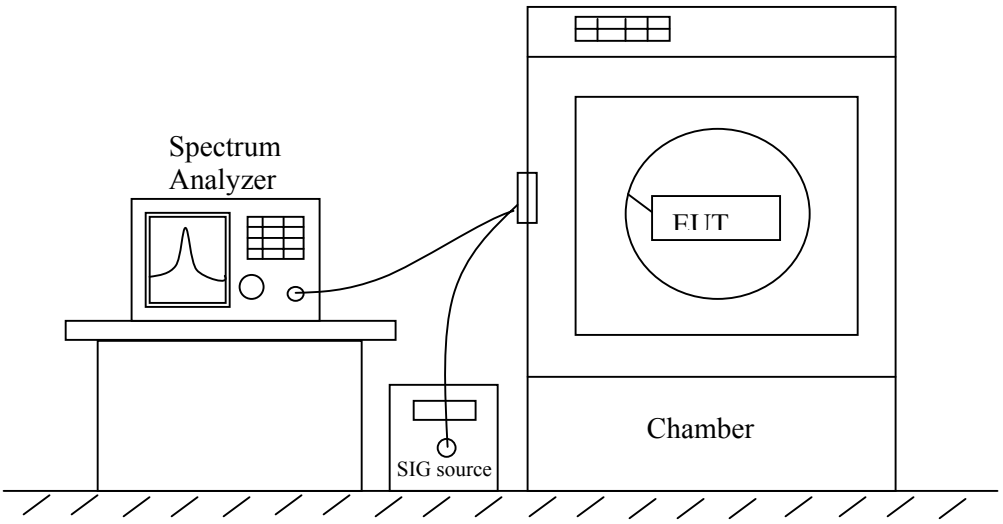
INSTRUMENTS LIST

EQUIPMENT	MANUFACTURE	MODEL NO.	SERIAL NO.	CAL. DUE DATE
PSA Analyzer	Agilent	E4446A	US42070220	1/13/04
Environmental Chamber	Thermotron	SE 600-10-10	2980	4/23/04
Wireless Communication Test Set	Agilent	E5515C	NA	9/22/05
10dB Attenuator	Agilent	8493C	59028	N/A
Power Splitter	Agilent	11667B	53331	N/A
DC Power Supply	Kenwood	PA36-3A	7060074	N/A

Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
Above 1000	Peak	300 Hz	300 Hz

TEST SETUP



Frequency Stability Setup

TEST PROCEDURE

- **Frequency stability versus environmental temperature**

1). Setup the configuration per figure 6 for frequencies measurement inside the environmental chamber. Set the temperature of the chamber to 25°C. Set SA Resolution Bandwidth low enough to obtain the desired frequency resolution and measure the EUT 25°C operating frequency as reference frequency.
2). Turn EUT off and set Chamber temperature to -30°C.
3). Allow sufficient time (approximately 20 to 30 minus after chamber reach the assigned temperature) for EUT to stabilize. Turn on EUT and measure the EUT operating frequency. Turn off EUT after the measurement.
4). Repeat step 3 with a 10°C increased per stage until the highest temperature of +50°C reached, record all measured frequencies on each temperature step.

- **Frequency stability versus AC input voltage**

1). Setup the configuration per figure 6 and set chamber temperature to 25°C. Use a variable AC power supply to power the EUT and set AC output voltage to EUT nominal input AC voltage. Set SA Resolution Bandwidth low enough to obtain the desired frequency resolution and measure the EUT 25°C operating frequency as reference frequency.
2). Slowly reduce the EUT input voltage to specified extreme voltage variation (±15%) and record the maximum frequency change.

MEASUREMENT RESULT

No non-compliance noted, as shown below.

Reference Frequency: CDMA Mid Channel 836.52002MHz @ 25?C Limit: to stay ± 2.5 ppm = 2091.300 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
(Vdc)	**Temperature (?C)**	**(MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.70	50	836.52000600	-0.007	± 2.5
3.70	40	836.52000540	-0.006	± 2.5
3.70	30	836.52000510	-0.006	± 2.5
3.70	***25***	***836.52000000***	***0***	***± 2.5***
3.70	20	836.52000600	-0.007	± 2.5
3.70	10	836.52000470	-0.006	± 2.5
3.70	0	836.52000530	-0.006	± 2.5
3.70	-10	836.52000590	-0.007	± 2.5
3.70	-20	836.52000510	-0.006	± 2.5
3.70	-30	836.52000450	-0.005	± 2.5

Reference Frequency: CDMA Mid Channel 836.52002MHz @ 25?C Limit: to stay ± 2.5 ppm = 2089.530 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
(Vdc)	**Temperature (?C)**	**(MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.70	***25***	***835.81197660***	***0***	***± 2.5***
2.9-2.97	25	835.81197651	*0.00011*	± 2.5
3.145	25	835.81197658	*0.00002*	± 2.5
4.255	25	835.81197655	*0.00006*	± 2.5

Reference Frequency: PCS Mid Channel 1880.00000MHz @ 25?C Limit: to stay ± 2.5 ppm = 4700.000 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
(Vdc)	**Temperature (?C)**	**(MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.70	50	1880.0000108	-0.006	± 2.5
3.70	40	1880.0000103	-0.005	± 2.5
3.70	30	1880.0000103	-0.005	± 2.5
3.70	***25***	***1880.0000000***	***0***	***± 2.5***
3.70	20	1880.0000083	-0.004	± 2.5
3.70	10	1880.0000095	-0.005	± 2.5
3.70	0	1880.0000115	-0.006	± 2.5
3.70	-10	1880.0000128	-0.007	± 2.5
3.70	-20	1880.0000117	-0.006	± 2.5
3.70	-30	1880.0000112	-0.006	± 2.5

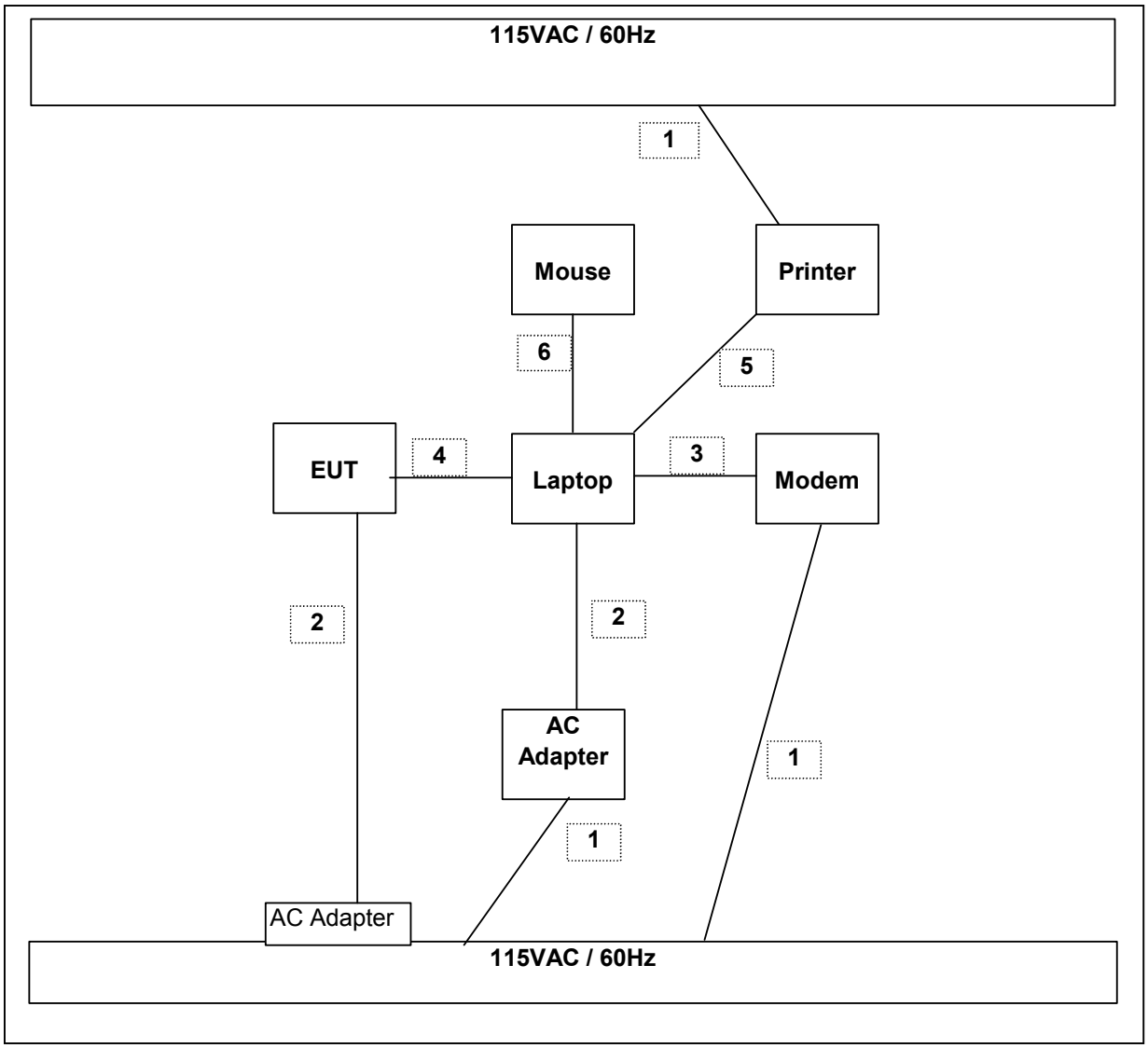
Reference Frequency: PCS Mid Channel 1880.00004MHz @ 25?C Limit: to stay ± 2.5 ppm = 4700.000 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
(Vdc)	**Temperature (?C)**	**(MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.70	***25***	***1880.00000***	***0***	***± 2.5***
2.9 - 2.97 (end point)	25	1880.00001	-0.006	± 2.5
3.145	25	1880.00001	-0.006	± 2.5
4.255	25	1879.99999	0.006	± 2.5

7.7. RADIATED EMISSION

Detector Setting of Spectrum Analyzer

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	☒ Peak ☒ Quasi Peak	☒ 100 KHz ☒ 1 MHz	☒ 100 KHz ☒ 1 MHz

TEST SETUP



TEST PROCEDURE

1. The EUT was placed on the turn table 0.8 meter above ground inside 3 meter Anechoic Chamber.
2. Set the resolution bandwidth to 120KHz in the test receiver and select Peak function to scan the frequency below 1 GHz.
3. Shift the interference-receiving antenna located in antenna tower upwards and downwards between 1 and 4 meters above ground and find out the local peak emission on frequency domain.
4. Locate the interference-receiving antenna at the position where the local peak reach the maximum emission.
5. Rotate the turn table and stop at the angle where the measurement device has maximum reading
6. Shift the interference-receiving antenna again to detect the maximum emission of the local peak
7. If the reading of the local peak under Peak function is lower than limit by 6dB, then Quasi Peak detection is not needed and this reading should be recorded. And if it is higher than Peak limit, then the test is fail. Others, switch the receiver to Quasi Peak function, set the resolution bandwidth to 100kHz and repeat the procedures (3)~(6). If the reading is lower than limit, this reading should be recorded, otherwise, the test is fail.

MEASUREMENT RESULT

No non-compliance noted, as shown below.

CDMA Modulation and EUT in Horizontal Position:

COMPLIANCE Certification Services

FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

561F MONTEREY ROAD, SAN JOSE, CA 95037-9001
PHONE: (408) 463-0885 FAX: (408) 463-0888

Project #: 04T2458-1
Report #: 040123B1
Date& Time: 01/23/04 4:12 PM
Test Engr: Chin Pang

Company: High Tech Computer, Corp
EUT Description: PDA Phones (CDMA 800/1900 MHz)
Test Configuration : EUT/Support Equipment
Type of Test: FCC Class B
Mode of Operation: Tx

<< Main Sheet

Freq.	Reading	AF	Closs	Pre-amp	Level	Limit	Margin	Pol	Az	Height	Mark
(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	FCC_B	(dB)	(H/V)	(Deg)	(Meter)	(P/Q/A
530.00	46.20	18.14	5.80	29.20	40.94	46.00	-5.06	3mH	0.00	2.00	P
530.80	44.90	18.15	5.81	29.20	39.65	46.00	-6.35	3mV	0.00	1.00	P
36.00	45.30	14.84	1.61	29.30	32.45	40.00	-7.55	3mH	0.00	1.50	P
442.87	45.30	16.56	5.25	29.02	38.09	46.00	-7.91	3mV	0.00	1.00	P
441.00	45.30	16.52	5.23	29.01	38.04	46.00	-7.96	3mH	0.00	2.00	P
157.73	50.30	10.31	3.02	28.84	34.79	43.50	-8.71	3mH	0.00	2.00	P
6 Worst Data											

Radiated Emission photos

Front View:

Back View:

7.8. POWERLINE CONDUCTED EMISSION

Detector Function Setting of Test Receiver

Frequency Range (MHz)	Detector Function	Resolution Bandwidth	Video Bandwidth
150 KHz to 30 MHz	☒ Peak ☐ CISPR Quasi Peak	☒ 9 KHz	☒ 9 KHz

Power Line Conducted Emission photos

Front View:

Side View:

TEST PROCEDURE
1. The EUT was placed on a wooden table 40 cm from a vertical ground plane and approximately 80 cm above the horizontal ground plane on the floor. The EUT was set to transmit in a continuous mode.

2. Line conducted data was recorded for both NEUTRAL and HOT lines.

MEASUREMENT RESULT

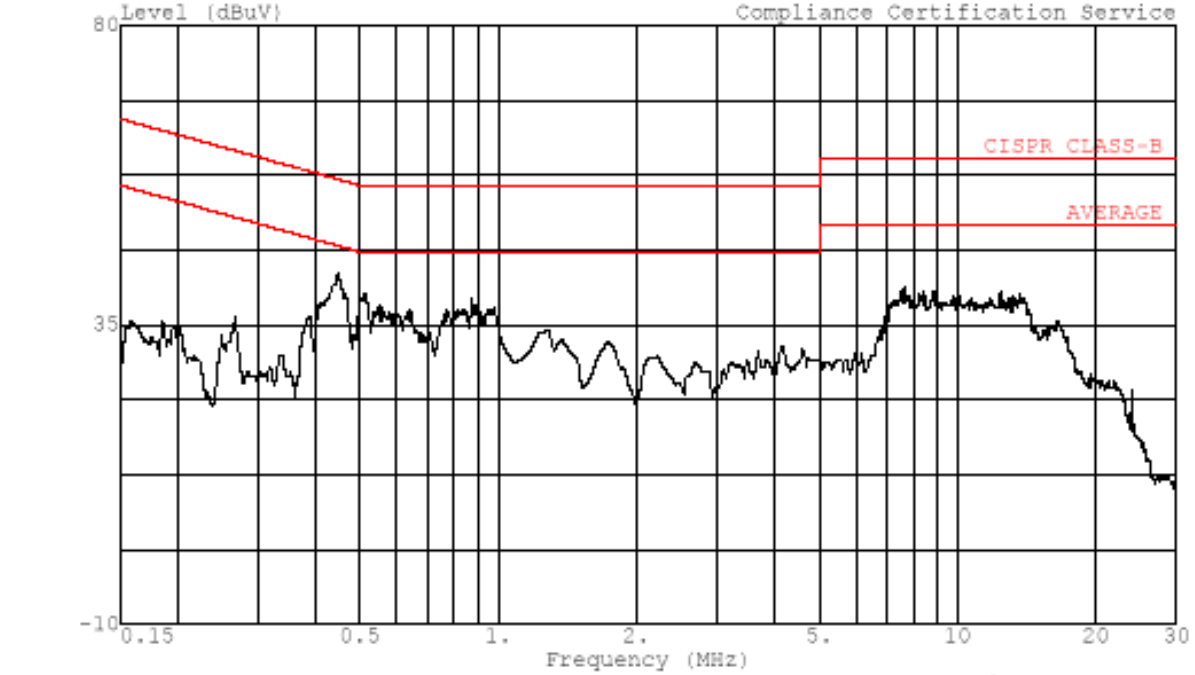
No non-compliance noted, as shown below.

CONDUCTED EMISSIONS DATA (115VAC 60Hz)

Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.45	42.68	--	--	0.00	57.51	47.51	-14.83	-4.83	L1
0.88	39.26	--	--	0.00	56.00	46.00	-16.74	-6.74	L1
7.58	40.24	--	--	0.00	60.00	50.00	-19.76	-9.76	L1
0.50	41.05	--	--	0.00	56.00	46.00	-14.95	-4.95	L2
0.76	39.64	--	--	0.00	56.00	46.00	-16.36	-6.36	L2
7.65	42.36	--	--	0.00	60.00	50.00	-17.64	-7.64	L2
6 Worst Data									

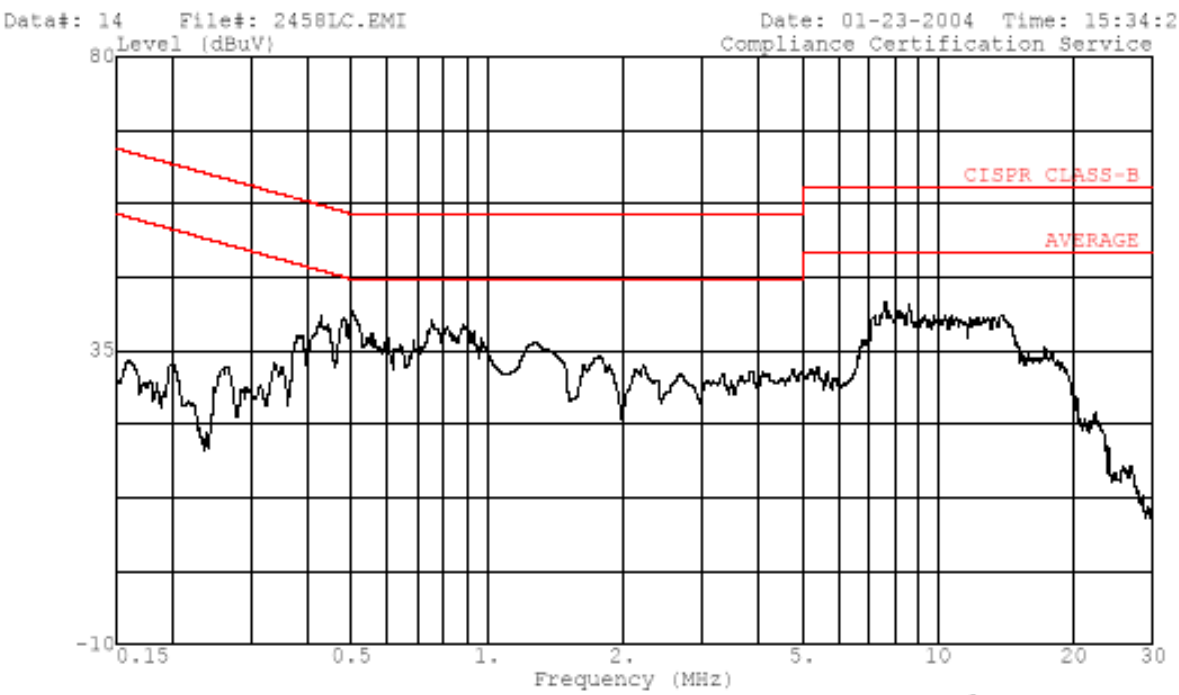
CDMA Modulation:

COMPLIANCE Engineering Services, Inc.
561F Monterey Road,
San Jose, CA 95037 USA
Tel: (408) 463-0885
Fax: (408) 463-0888



Trace: Ref Trace:
Project # : 04T2458-1
Test Operator : Chin Pang
Company : High Tech Computer, Corp
EUT : PDA Phone | CDMA 800/1900 MHz |
Model : ST10B
Configuration : EUT/Support Equipment
Mode of Operation: Tx
Target of Test : FCC 15 Class B
Voltage : 115VAC, 60Hz
: L1: Peak | Black |

COMPLIANCE Engineering Services, Inc.
561F Monterey Road,
San Jose, CA 95037 USA
Tel: (408) 463-0885
Fax: (408) 463-0888



Trace: Ref Trace:
Project # : 04T2458-1
Test Operator : Chin Pang
Company : High Tech Computer, Corp
EUT : PDA Phone | CDMA 800/1900 MHz |
Model : ST10B
Configuration : EUT/Support Equipment
Mode of Operation: Tx
Target of Test : FCC 15 Class B
Voltage : 115VAC, 60Hz
: L2: Peak | Black |

8. APENDIX

8.1. EXTERNAL & INTERNAL PHOTOS

8.2. SCHEMATICS

8.3. BLOCK DIAGRAM

8.4. USER MANUAL

END OF REPORT