

FCC PART 22 TYPE APPROVAL
EMI MEASUREMENT AND TEST REPORT
 For
ZTE Corporation

ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, China

FCC ID: Q78-CBTSO18A

May 30, 2006

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: CDMA2000 Outdoor Compact BTS - O1
Test Engineer: JX HE 	
Report No.: RSZ06053003	
Test Date: May 01-28, 2006	
Reviewed By: ZH XIE 	
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Note: The test report is specially limited to the above company and this particular sample only. It may not be duplicated without prior written consent of ZTE Corporation. This report must not be used by the client to claim product certification, approval, or endorsement by any agency of the US Government.

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The ZTE Corporation's product, model number: ZXC10 CBTS O18A or the "EUT" as referred to in this report is a CDMA2000 Outdoor Compact BTS-O1. The EUT is measured approximately 90.0 cm L x 78.0cmW x 180.0cmH, rated input voltage: AC 220V.

** The test data gathered are from production sample, serial number: 0504150.*

Objective

This Type approval report is prepared on behalf of ZTE Corporation in accordance with Part 2, Subpart J and Part 22 Subpart H of the Federal Communication Commissions rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2,Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services

Applicable Standards: TIA EIA 137-A, TIA EIA 97-D, TIA/EIA 603-B, Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

Test Facility

The Test site used by ZTE Corporation to collect test data is located in the ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China, Tel: +86-755-26770000, Fax: +86-755-26771999. Test site at ZTE Corporation has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 0009043175. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

External I/O Cable

Cable Description	Length (M)	From/Port	To
Unshielded Undetachable AC Power Cable	3.0	EUT	AC Power

SYSTEM TEST CONFIGURATION

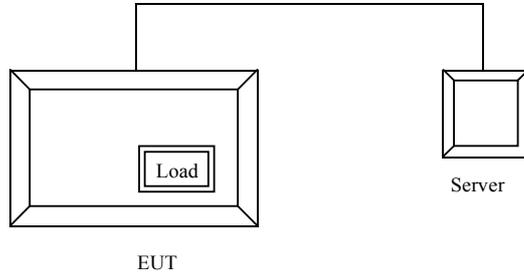
Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

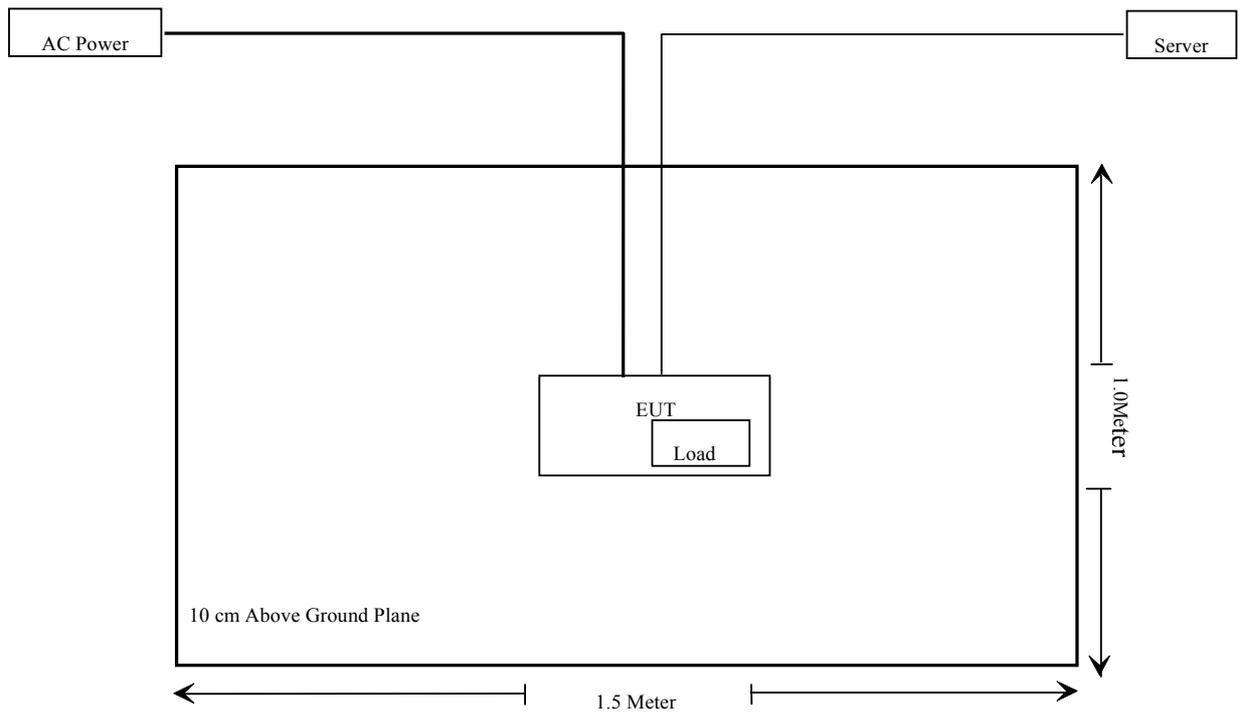
Equipment Modifications

ZTE Corporation has not done any modification on the EUT.

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 2.1091	RF Exposure	Compliant
§2.1046, §22.913(a)	EFFECTIVE RADIATED POWER	Compliant
§2.1047	Modulation characteristic	Compliant
§15.109(a)	Unintentional Radiation Emission	Compliant
§2.1053	Spurious Radiated Emissions	Compliant
§2.1051, §24.238(a)	Spurious Emissions AT Antenna Terminals	Compliant
§2.1049, §24.238	Occupied Bandwidth	Compliant
§24.238	Band Edge	Compliant
§ 2.1055 (a) § 2.1055 (d) § 24.235	Frequency stability	Compliant
§15.107 (a)	Conduction Emission	Compliant

§2.1091 - RF EXPOSURE

Limit

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300.	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6

f = frequency in MHz

* = Plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal: 46.70 (dBm)

Maximum peak output power at antenna input terminal: 46.77 (W)

Prediction distance: 300 (cm)

Predication frequency: 874.185 (MHz)

Antenna Gain (typical): 17 (dBi)

Power density at predication frequency at 300 cm: 0.702 (mW/cm²)

MPE limit for uncontrolled exposure at prediction frequency: 2.914(mW/cm²)

Test Result: Pass

§2.1046, §22.913(a) - EFFECTIVE RADIATED POWER

Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of transmitters and cellular repeaters must not exceed 500 Watts.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2006-3-2	2007-3-2

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

The testing was performed by JX HE on May 01-28, 2006.

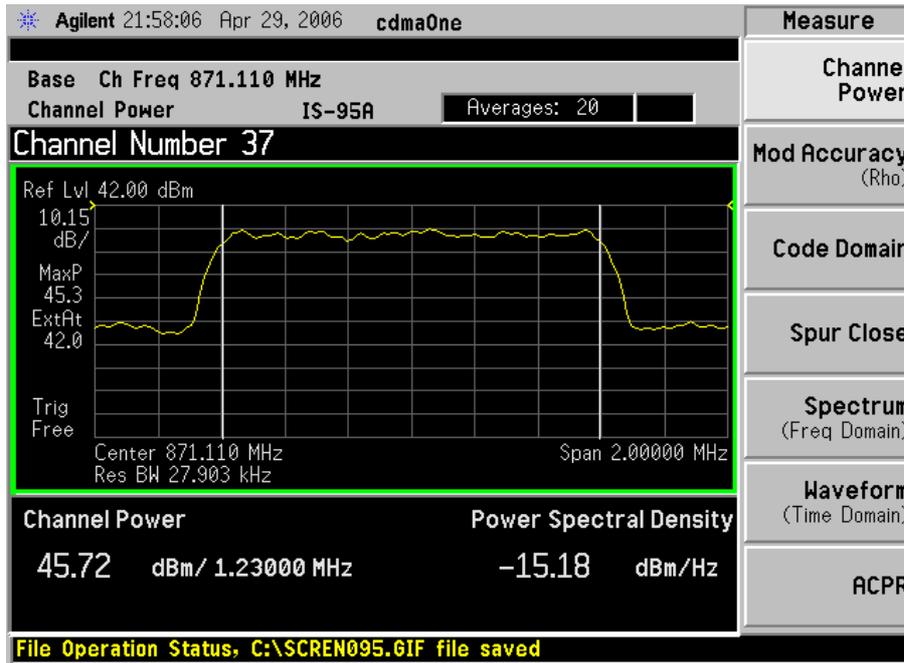
Test Result: Pass

Test Mode: Transmitting/CDMA2000 1X EV

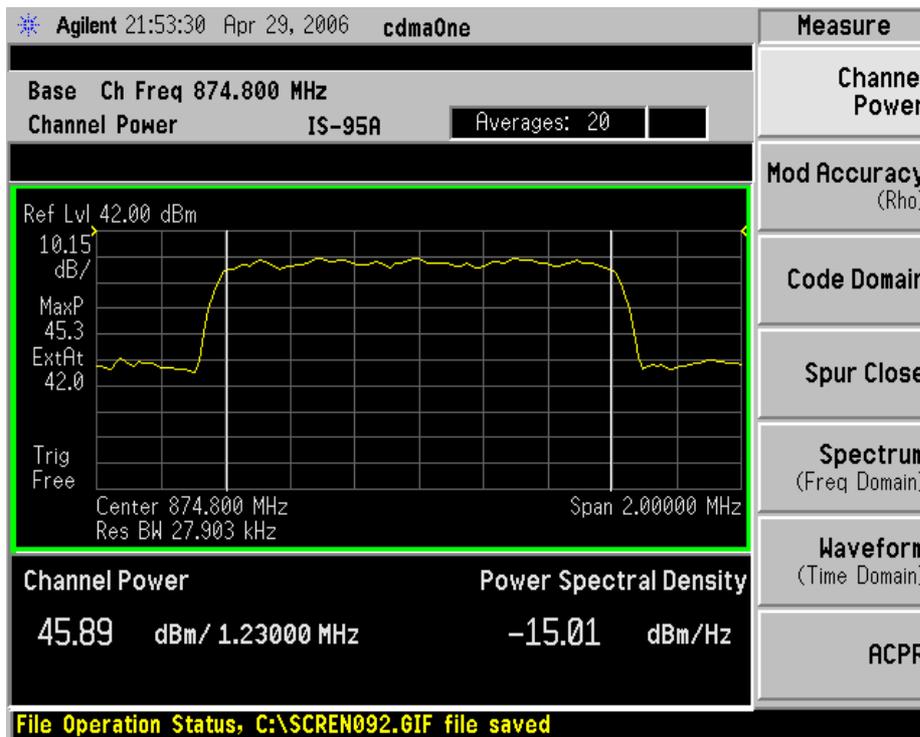
1 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 37	871.11	45.72	37.33	500
Channel 160	874.80	45.89	38.82	500
Channel 310	879.30	45.36	34.36	500

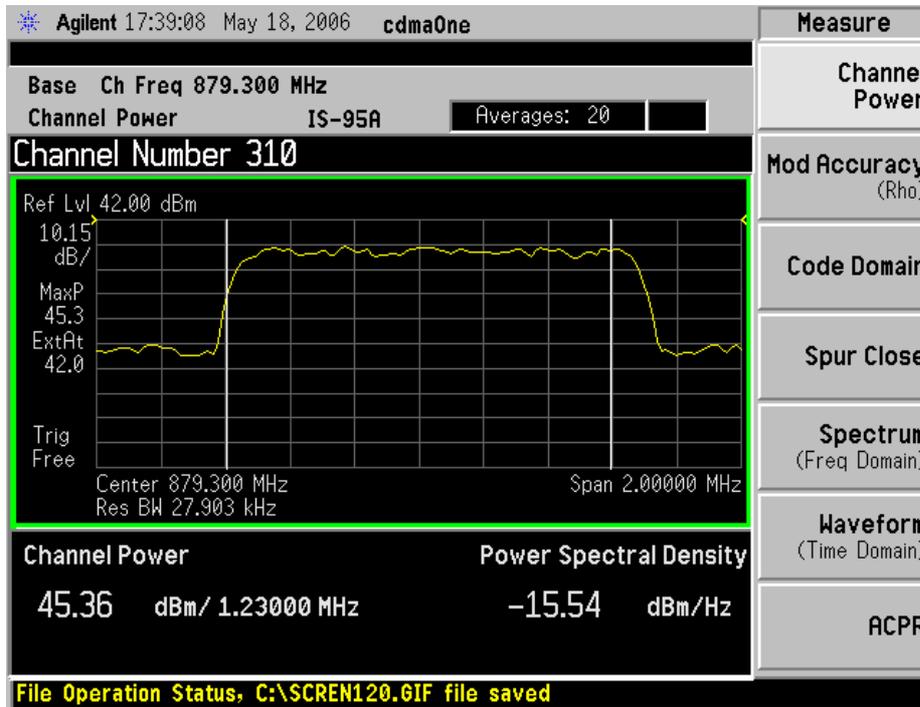
Channel 37



Channel 160



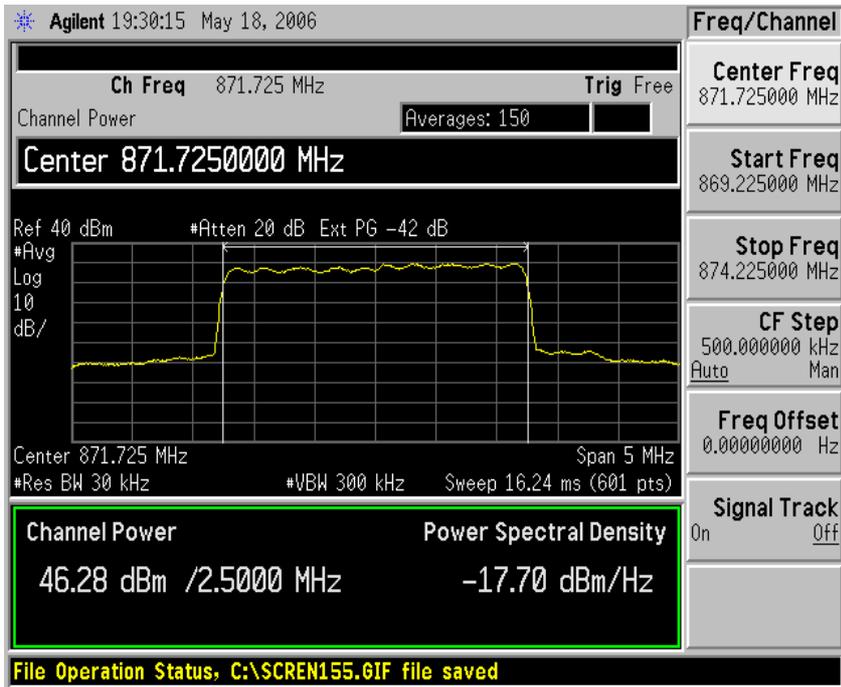
Channel 310



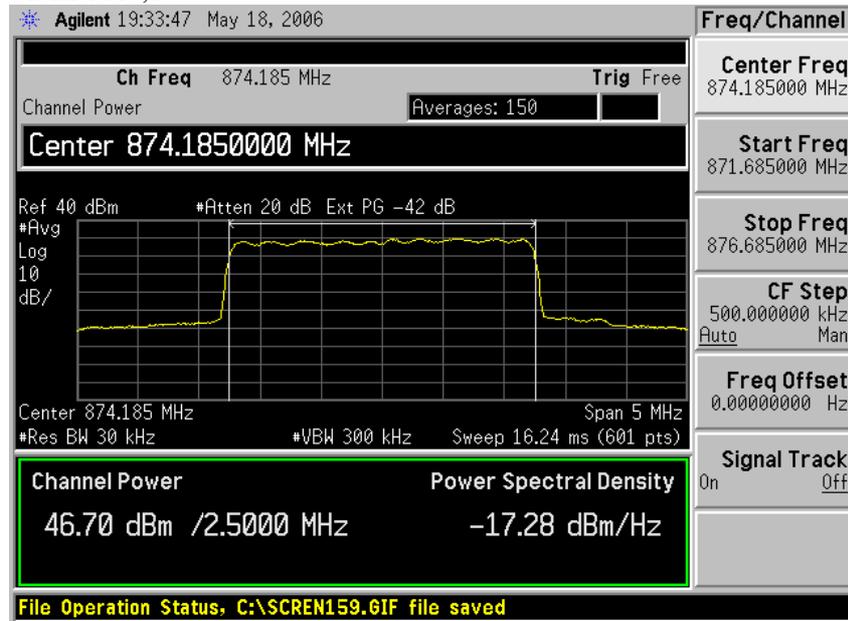
2 Carrier

Channel	Frequency (MHz)	Output Power in dBm	Output Power in W	Limit in W
Channel 37,78	871.725	46.28	42.46	500
Channel 119,160	874.185	46.70	46.77	500
Channel 269, 310	878.685	46.19	41.59	500

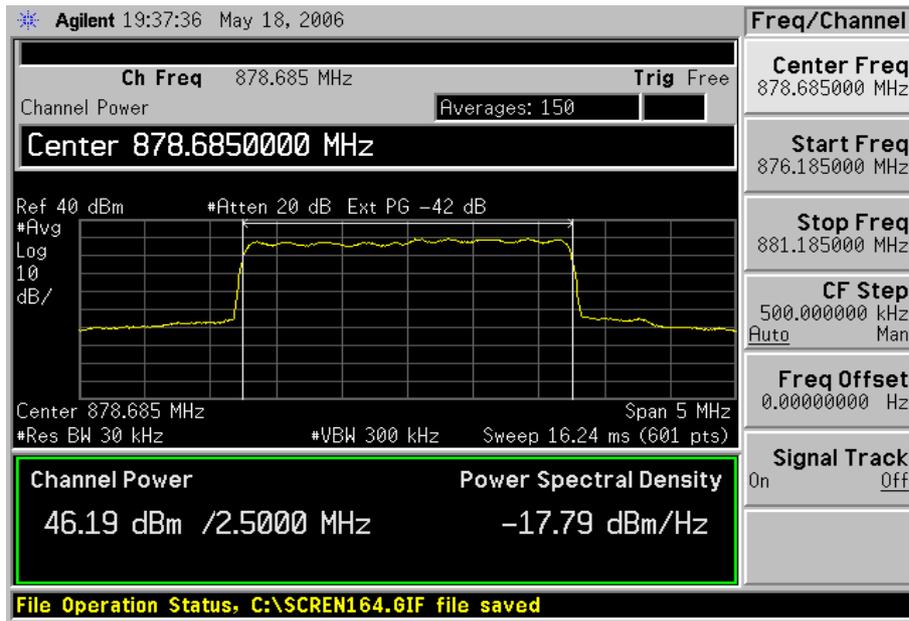
Channel 37, 78



Channel 119,160



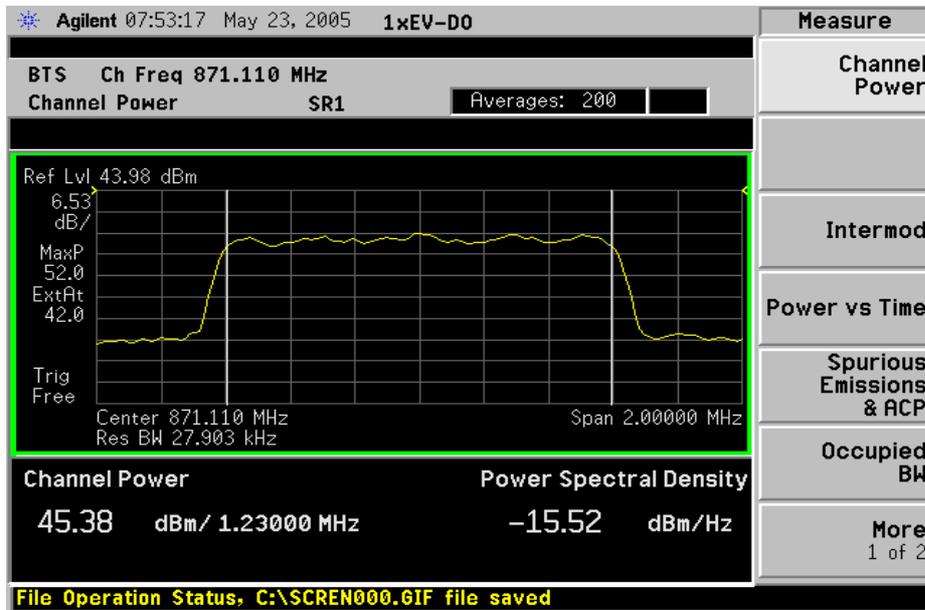
Channel 269, 310



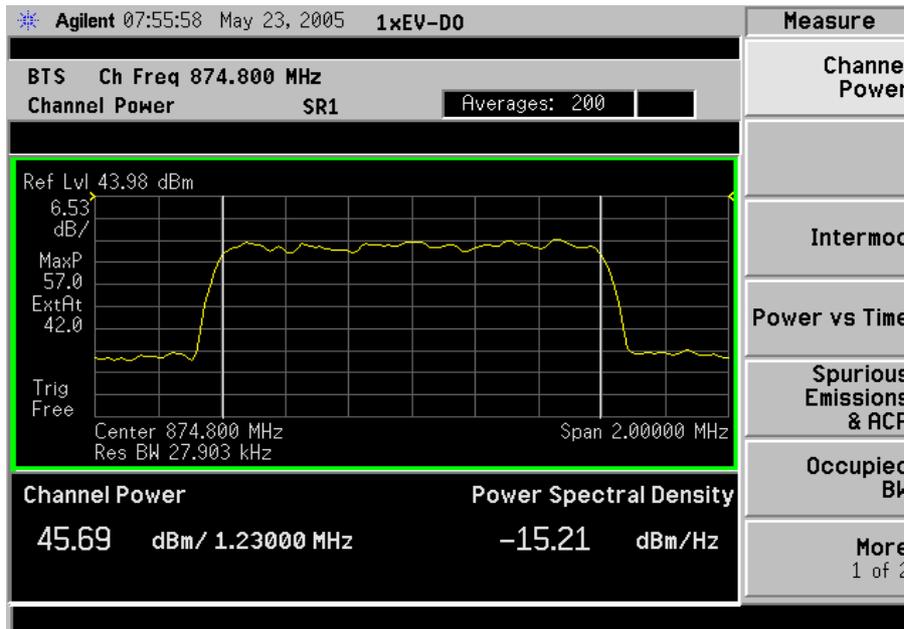
Test Mode: Transmitting/CDMA2000 1X EV DO
1 Carrier

Channel	Frequency (MHz)	Total Power in dBm	Total Power in W	Limit in W
Channel 37	871.11	45.38	34.51	500
Channel 160	874.80	45.69	37.07	500
Channel 310	879.30	46.25	42.17	500

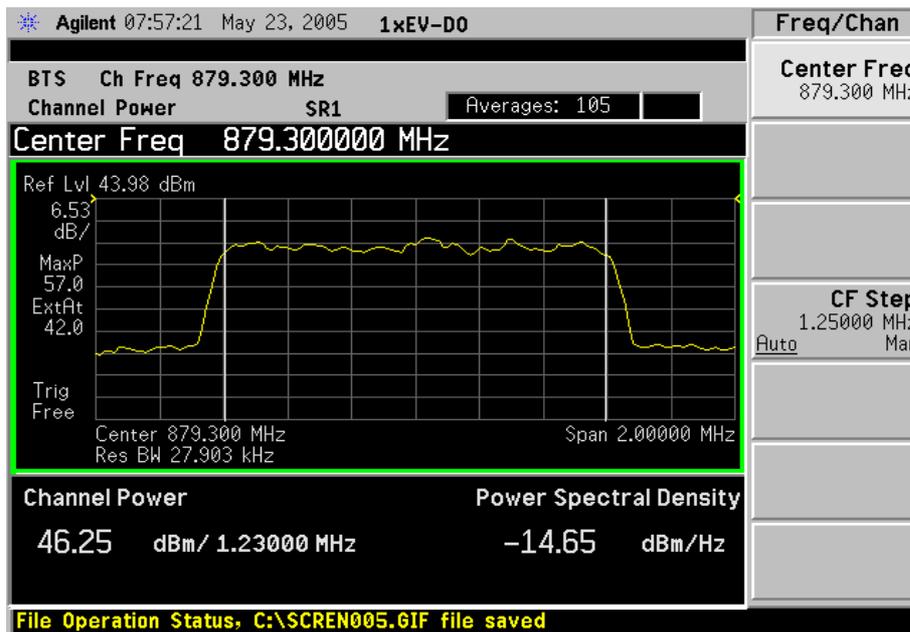
Channel 37



Channel 160



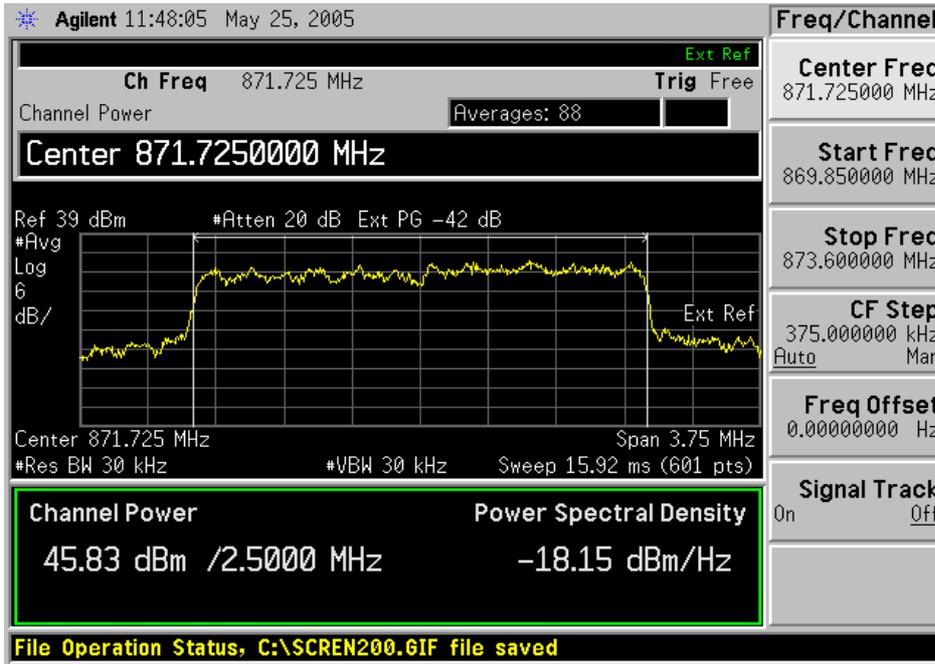
Channel 310



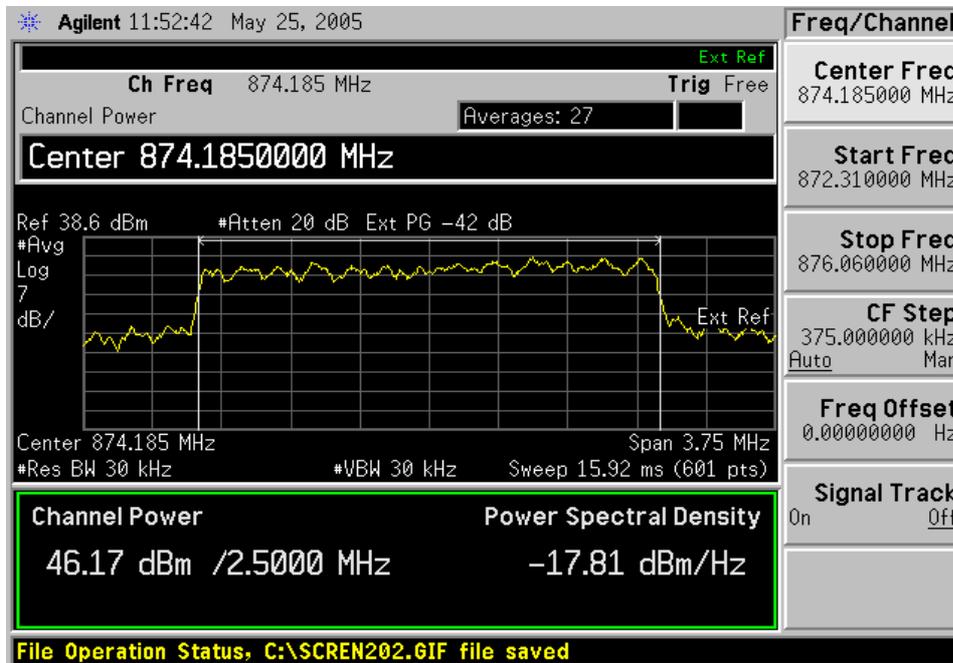
2 Carrier

Channel	Frequency (MHz)	Output Power in dBm	Output Power in W	Limit in W
Channel 37,78	871.725	45.83	38.28	500
Channel 119,160	874.185	46.17	41.40	500
Channel 269,310	878.685	45.81	38.11	500

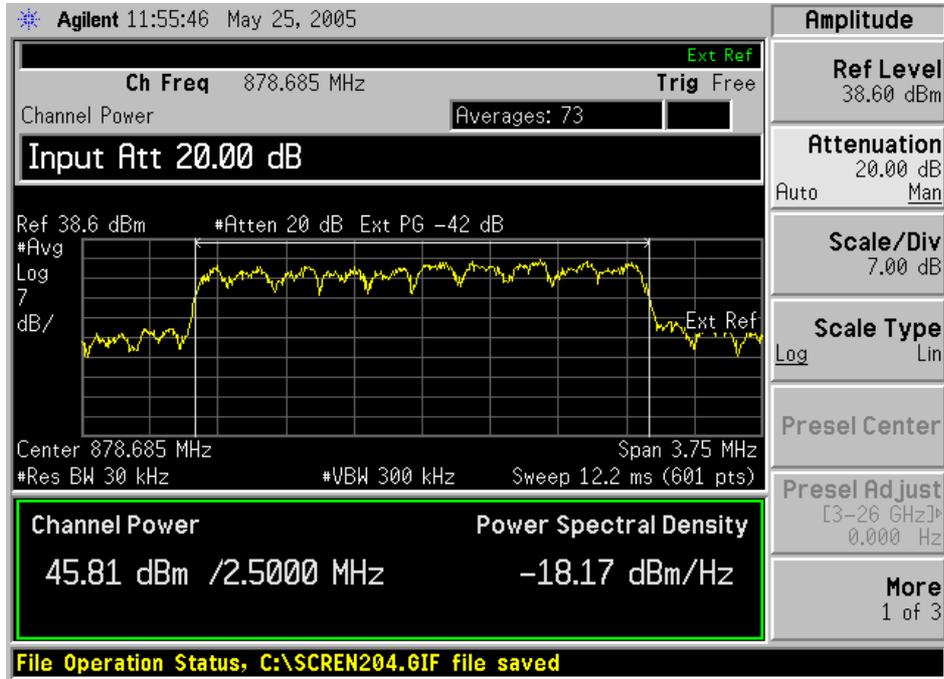
Channel 37, 78



Channel 119,160



Channel 269, 310



§2.1047- MODULATION CHARACTERISTIC

Applicable Standard

Requirement: §2.1047.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2006-3-2	2007-3-2

Test Procedure

CDMA digital mode is used by EUT.

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

The testing was performed by JX HE on May 01-28, 2006.

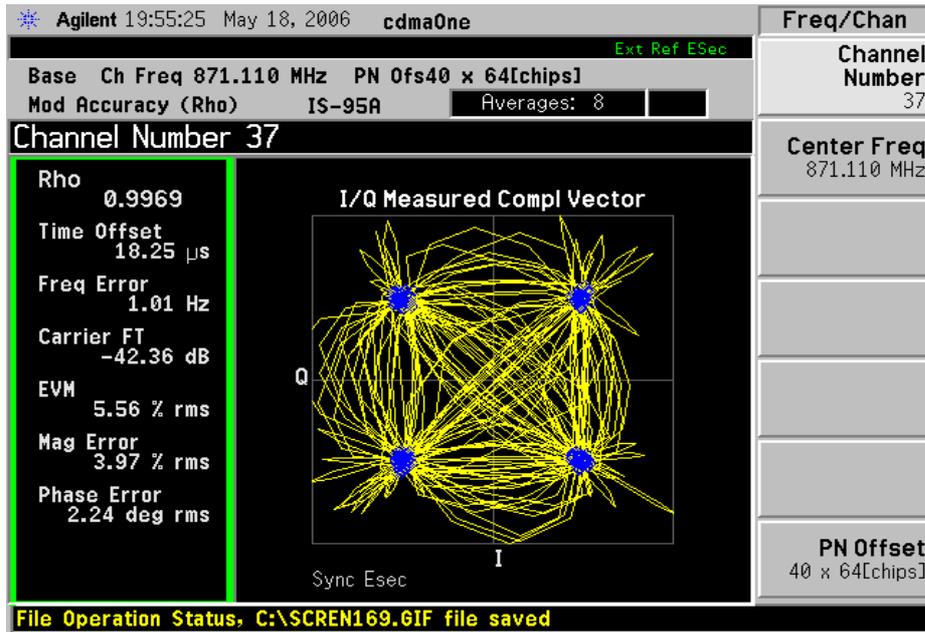
Test Result: Pass

Test Mode: Transmitting/CDMA2000 1X EV

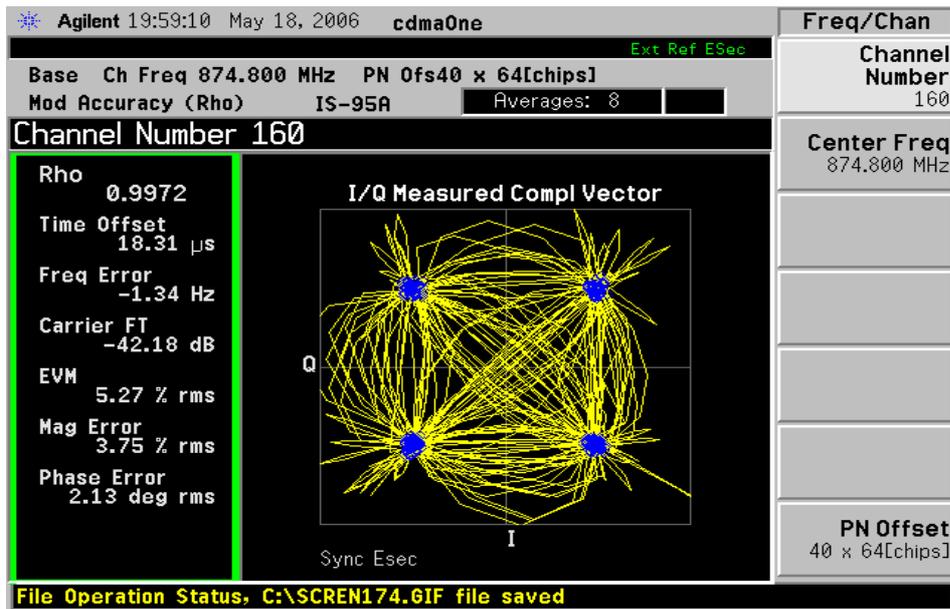
1 Carrier

Channel	Frequency (MHz)	Rho
Channel 37	871.11	0.9969
Channel 160	874.80	0.9972
Channel 310	879.30	0.9972

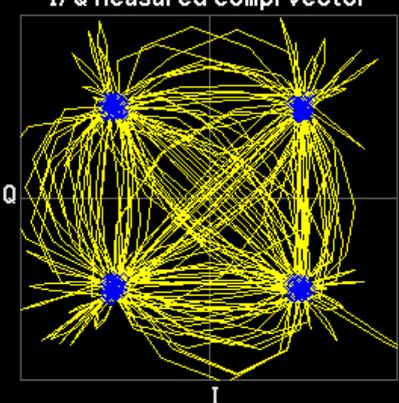
Channel 37



Channel 160



Channel 310

Agilent 20:02:01 May 18, 2006 cdmaOne		Freq/Chan	
Base Ch Freq 879.300 MHz PN Ofs40 x 64[chips]		Channel Number	
Mod Accuracy (Rho) IS-95A Averages: 5		310	
Channel Number 310		Center Freq	
Rho 0.9972		879.300 MHz	
Time Offset 18.27 μ s			
Freq Error -2.14 Hz			
Carrier FT -42.09 dB			
EVM 5.28 % rms			
Mag Error 3.72 % rms			
Phase Error 2.15 deg rms			
I/Q Measured Compl Vector		PN Offset	
		40 x 64[chips]	
File Operation Status, C:\SCREEN180.GIF file saved			

2 Carrier

Channel	Frequency (MHz)	Rho
Channel 37,78	871.11	0.9756
Channel 119, 160	874.80	0.9885
Channel 269, 310	879.30	0.9895

Channel 37,78

Agilent 20:08:54 May 18, 2006 cdmaOne Ext Ref ESec

Base Ch Freq 871.110 MHz PN Ofs40 x 64[chips]
 Mod Accuracy (Rho) IS-95A Averages: 1

Center Freq 871.110000 MHz

Rho	0.9756
Time Offset	18.31 μ s
Freq Error	-1.42 Hz
Carrier FT	-42.92 dB
EVM	15.63 % rms
Mag Error	11.07 % rms
Phase Error	6.45 deg rms

File Operation Status, C:\SCREN182.GIF file saved

Freq/Chan
 Channel Number 37
 Center Freq 871.110 MHz
 PN Offset 40 x 64[chips]

Channel 119, 160

Agilent 20:11:33 May 18, 2006 cdmaOne Ext Ref ESec

Base Ch Freq 874.800 MHz PN Ofs40 x 64[chips]
 Mod Accuracy (Rho) IS-95A Averages: 3

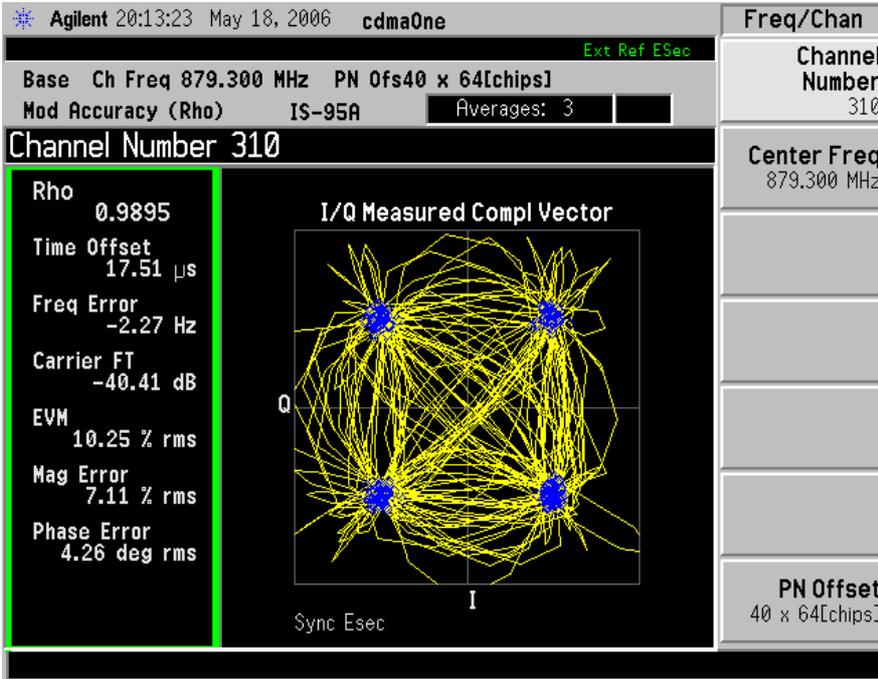
Channel Number 160

Rho	0.9885
Time Offset	17.49 μ s
Freq Error	-1.05 Hz
Carrier FT	-40.74 dB
EVM	10.73 % rms
Mag Error	7.48 % rms
Phase Error	4.44 deg rms

File Operation Status, C:\SCREN187.GIF file saved

Freq/Chan
 Channel Number 160
 Center Freq 874.800 MHz
 PN Offset 40 x 64[chips]

Channel 269, 310

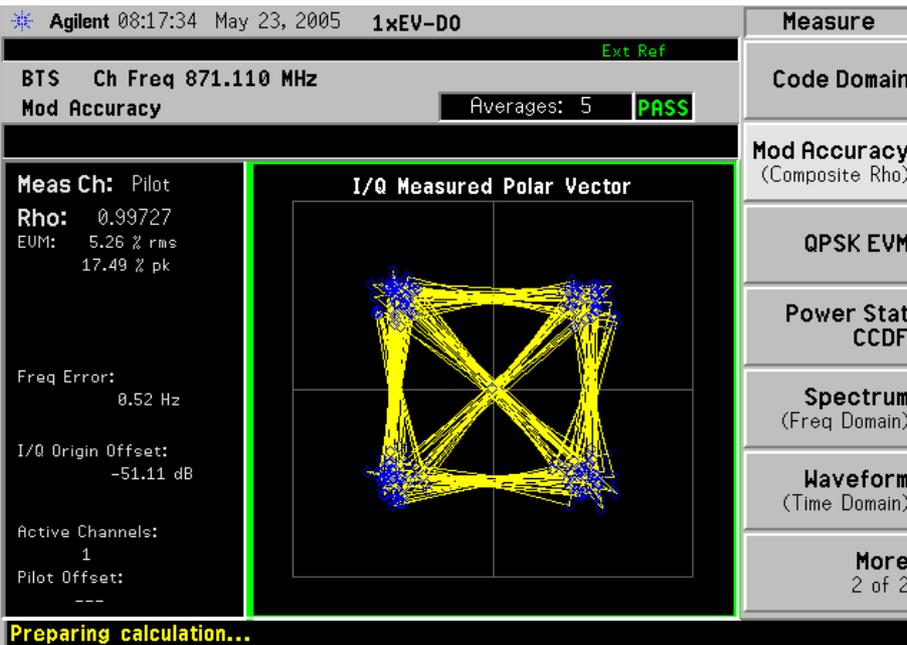


Test Mode: Transmitting/CDMA2000 1X EV DO

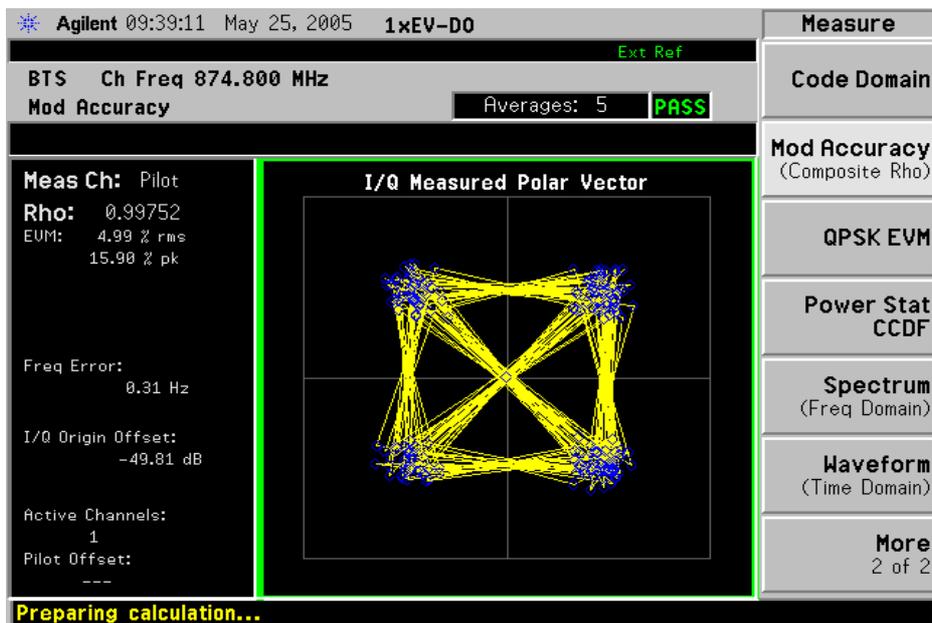
1 Carrier

Channel	Frequency (MHz)	Rho
Channel 37	871.11	0.99727
Channel 160	874.80	0.99752
Channel 310	879.30	0.99674

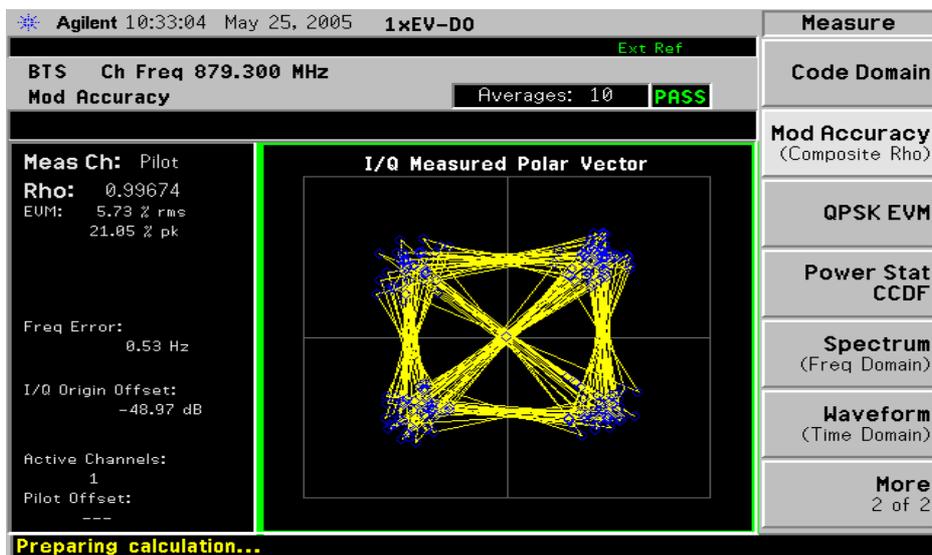
Channel 37



Channel 160



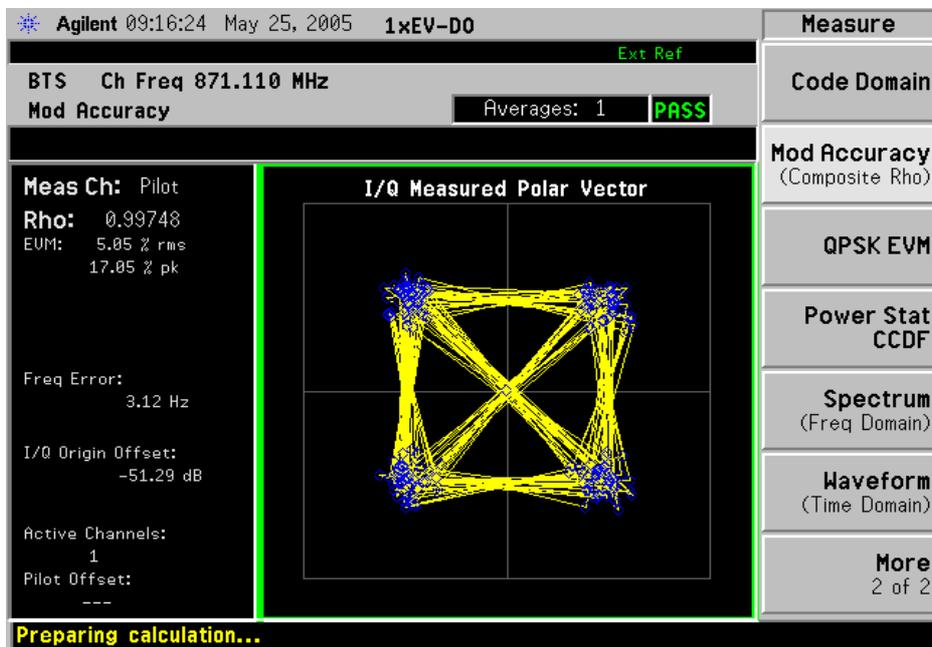
Channel 310



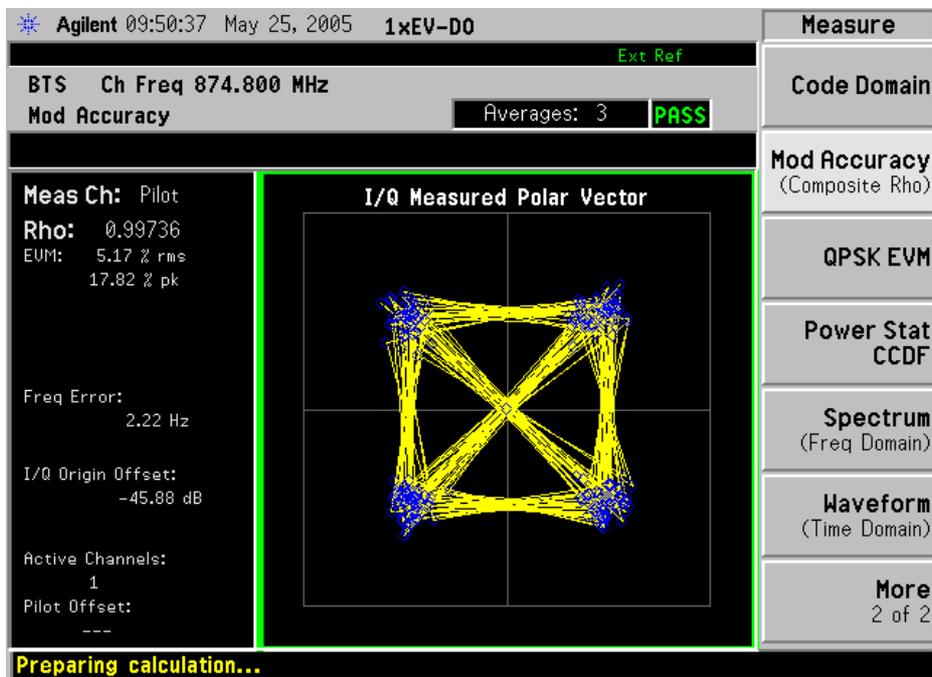
2 Carrier

Channel	Frequency (MHz)	Rho
Channel 37,78	871.11	0.99748
Channel 119, 160	874.80	0.99736
Channel 269, 310	879.30	0.98662

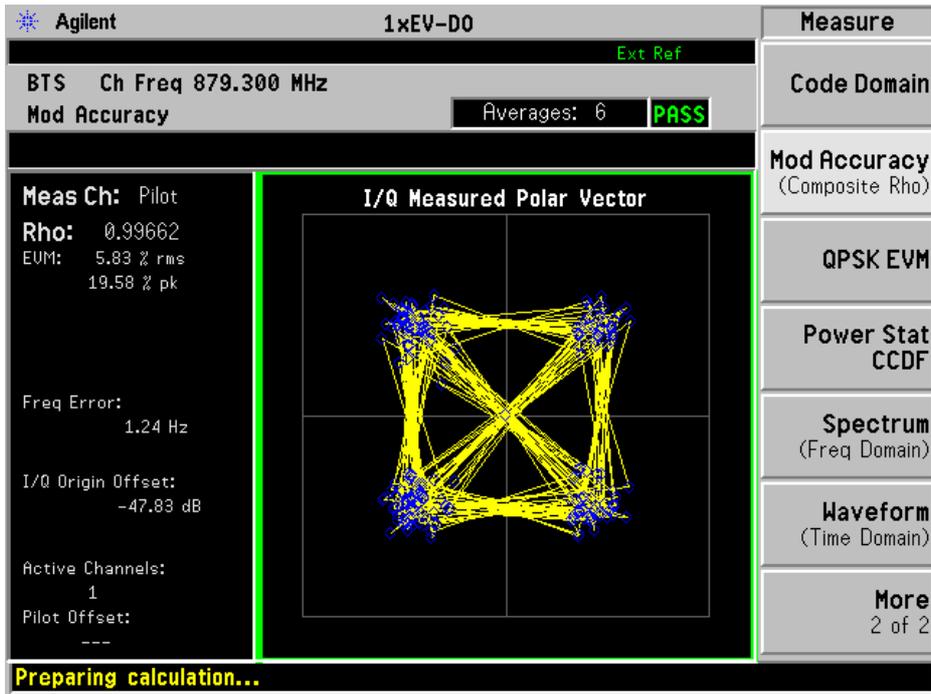
Channel 37,78



Channel 119, 160



Channel 269, 310



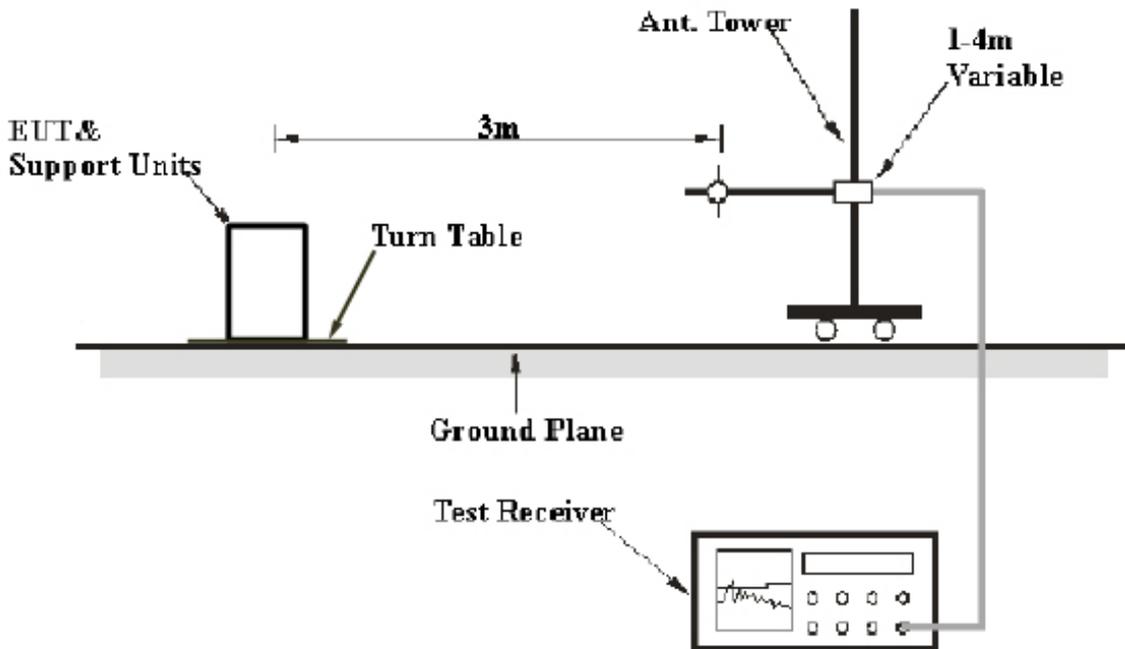
§15.109(a)- RADIATED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiated emissions measurement at the EMC lab of ZTE Corp. is $\pm 3.6\text{dB}$.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with the TIA/EIA 603-B. The specification used was the FCC 15.109 limits.

Test Receiver Setup

The system was investigated from 30 MHz to 1000 MHz.

During the radiated emission test, the Test Receiver was set with the following configurations:

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>	<i>IF B/W</i>
30 – 1000 MHz	100 kHz	300kHz	120kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESI26	100058	2005-10-17	2006-10-16
R&S	Ultra roadband Antenna	HL562	100022	2003-3-7	2008-3-6
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100032	2004-10-10	2009-10-9
Albatross	Anechoic Chamber	3m Site	N/A	2005-7-15	2008-7-14
R&S	Cable Set	RE Cable	N/A	2005-10-17	2006-10-16
R&S	Software	ES-K1	N/A	N/A	N/A

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the PK detection mode.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corr. Ampl.}$$

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.109(a), with the worst margin reading of:

7.9 dB at 461.54 MHz in the Vertical polarization.

Test Data**Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	53 %
ATM Pressure:	1015 mbar

The testing was performed by Guan Bin on 2006-5-24, and the data were only for unintentional radiator and be subjected to verification

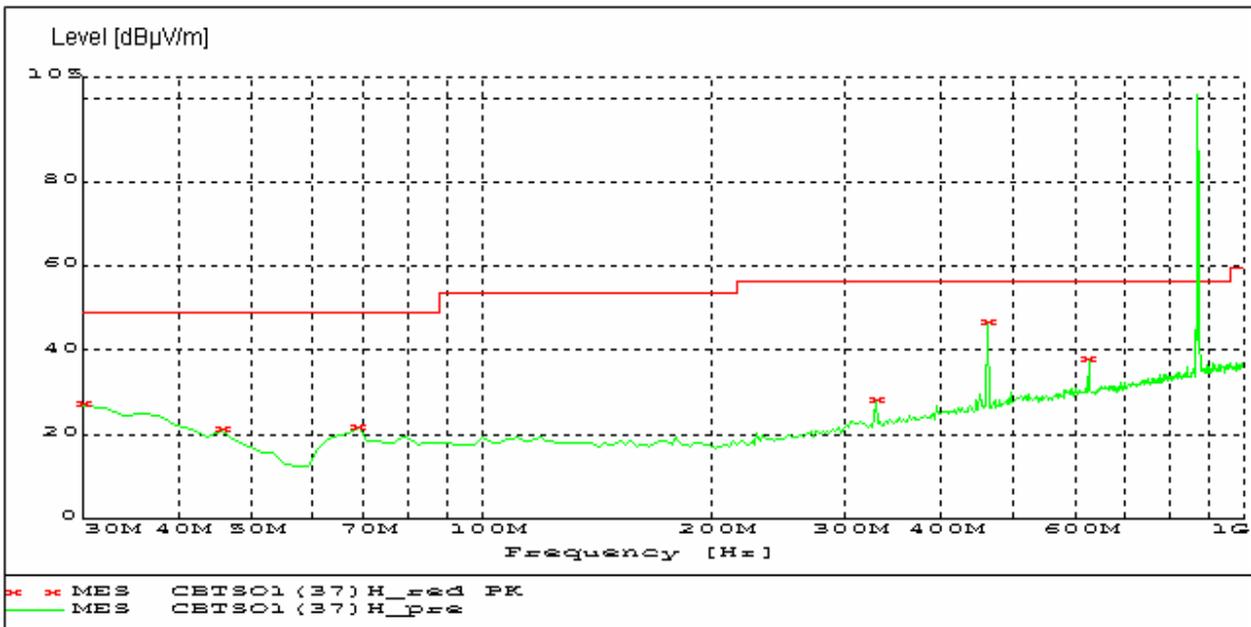
Test Mode: Transmitting

Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference.

Channel 37

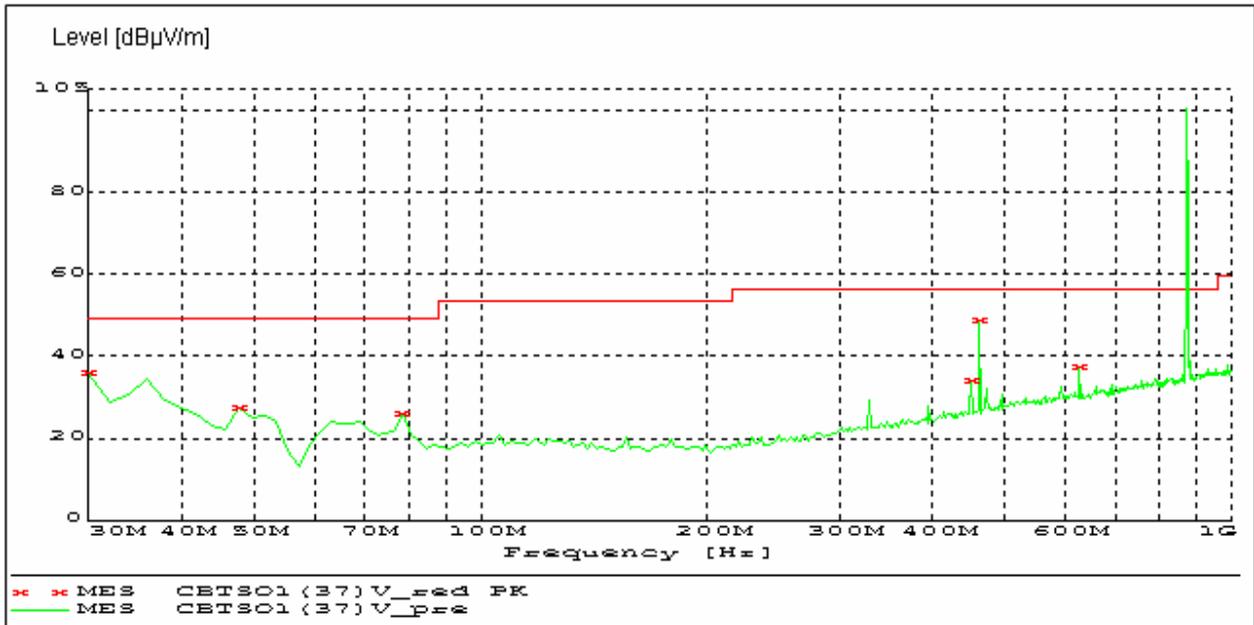
EUT: ZXC10 CBTS O18A
 Manufacturer: ZTE
 Operating Condition: Running
 Test Site: Anechoic Chamber
 Operator:
 Test Specification: FCC Part15 Class A
 Comment: Horizontal, channel 37
 Start of Test: 2006-5-25 / 13:05:01



MEASUREMENT RESULT: "CBTS01(37)H_red PK"

Frequency MHz	Level dBµV/m	Azimuth deg	Height cm	Polarisation	Transd dB	Limit dBµV/m	Margin dB
30.000000	26.78	200.00	100.0	HOR	-5.4	49.1	22.3
45.551102	20.73	352.00	200.0	HOR	-13.9	49.1	28.3
68.877756	21.51	96.00	200.0	HOR	-18.1	49.1	27.6
329.358717	27.92	327.00	100.0	HOR	-10.4	56.4	28.5
461.543086	46.46	324.00	200.0	HOR	-6.6	56.4	10.0
626.773547	37.42	186.00	100.0	HOR	-3.4	56.4	19.0

EUT: ZXC10 CBTS O18A
 Manufacturer: ZTE
 Operating Condition: Running
 Test Site: Anechoic Chamber
 Operator:
 Test Specification: FCC Part15 Class A
 Comment: Vertical, channel 37
 Start of Test: 2006-5-25 / 13:11:09

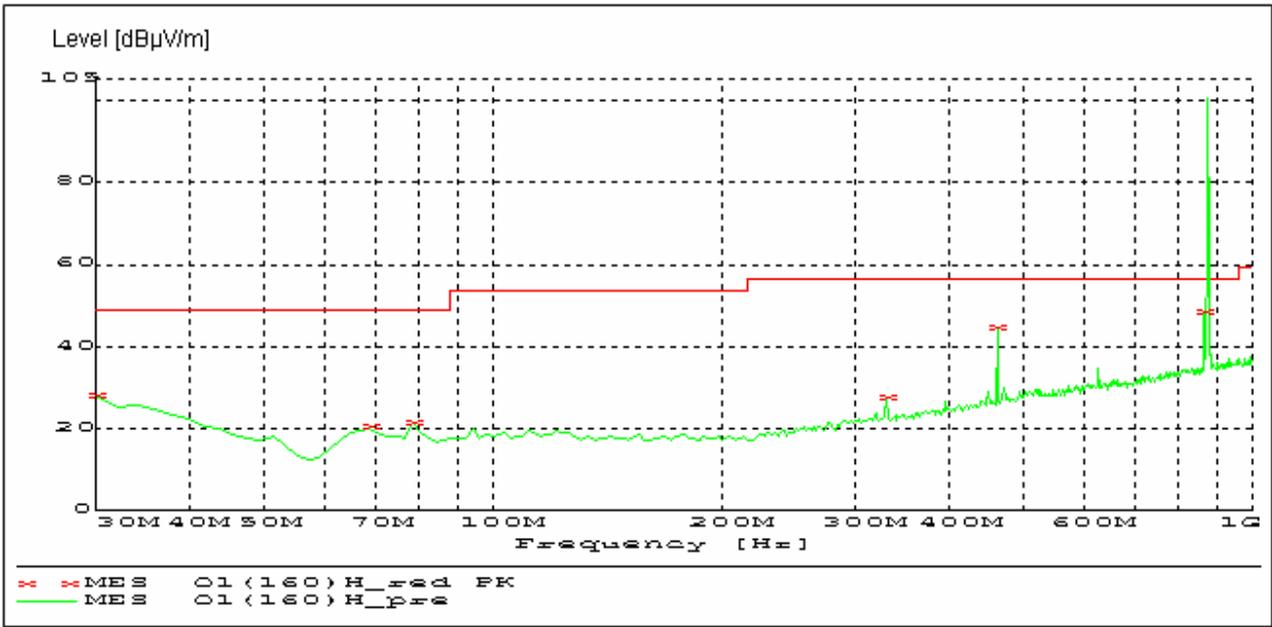


MEASUREMENT RESULT: "CBTS01(37)V_red PK"

Frequency MHz	Level dBµV/m	Azimuth deg	Height cm	Polarisation	Transd dB	Limit dBµV/m	Margin dB
30.000000	35.84	12.00	100.0	VER	-5.4	49.1	13.2
47.494990	27.13	259.00	100.0	VER	-15.1	49.1	22.0
78.597194	25.68	360.00	100.0	VER	-16.1	49.1	23.4
449.879760	33.79	342.00	100.0	VER	-7.0	56.4	22.7
461.543086	48.59	96.00	100.0	VER	-6.6	56.4	7.9
626.773547	36.88	232.00	100.0	VER	-3.4	56.4	19.6

Channel 160

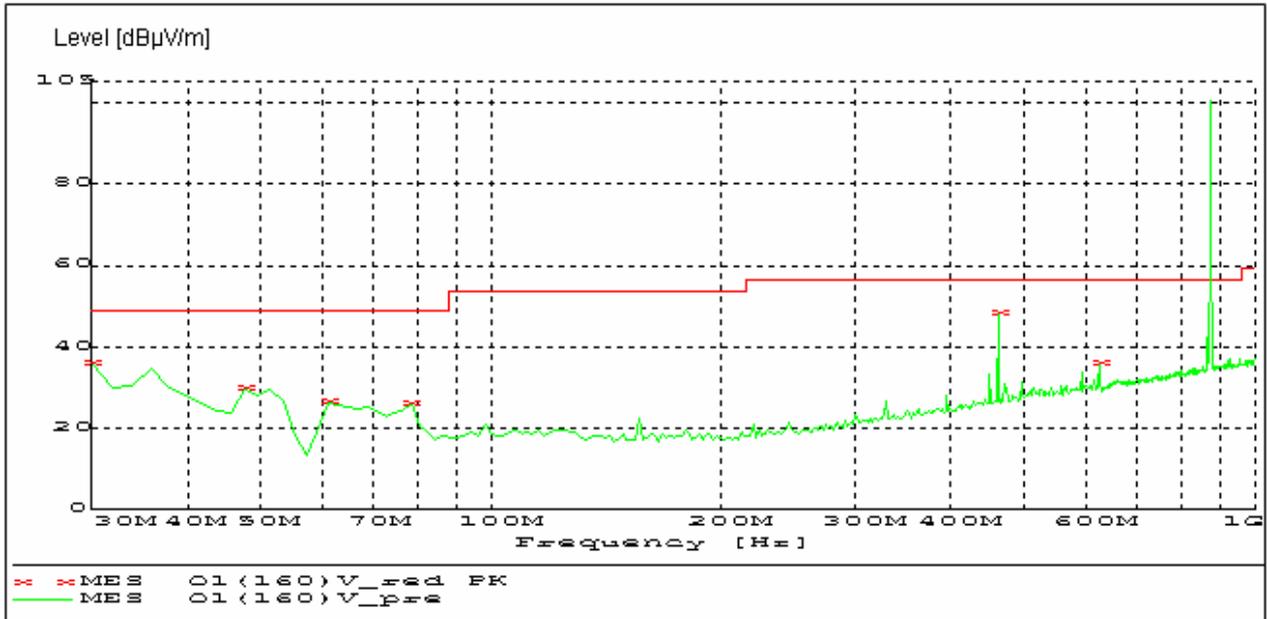
EUT: ZXC10 CBTS O18A
 Manufacturer: ZTE
 Operating Condition: Running
 Test Site: Anechoic Chamber
 Operator:
 Test Specification: FCC Part15 Class A
 Comment: Horizontal, channel 160
 Start of Test: 2006-5-25 / 13:37:09



MEASUREMENT RESULT: "O1(160)H_red PK"

Frequency MHz	Level dBµV/m	Azimuth deg	Height cm	Polarisation	Transd dB	Limit dBµV/m	Margin dB
30.000000	28.03	297.00	200.0	HOR	-5.4	49.1	21.1
68.877756	20.19	83.00	200.0	HOR	-18.1	49.1	28.9
78.597194	21.40	112.00	200.0	HOR	-16.1	49.1	27.7
329.358717	27.63	310.00	100.0	HOR	-10.4	56.4	28.8
461.543086	44.33	337.00	100.0	HOR	-6.6	56.4	12.1
865.871743	48.08	212.00	100.0	HOR	0.4	56.4	8.4

EUT: ZXC10 CBTS O18A
 Manufacturer: ZTE
 Operating Condition: Running
 Test Site: Anechoic Chamber
 Operator:
 Test Specification: FCC Part15 Class A
 Comment: Vertical, channel 160
 Start of Test: 2006-5-25 / 13:30:49

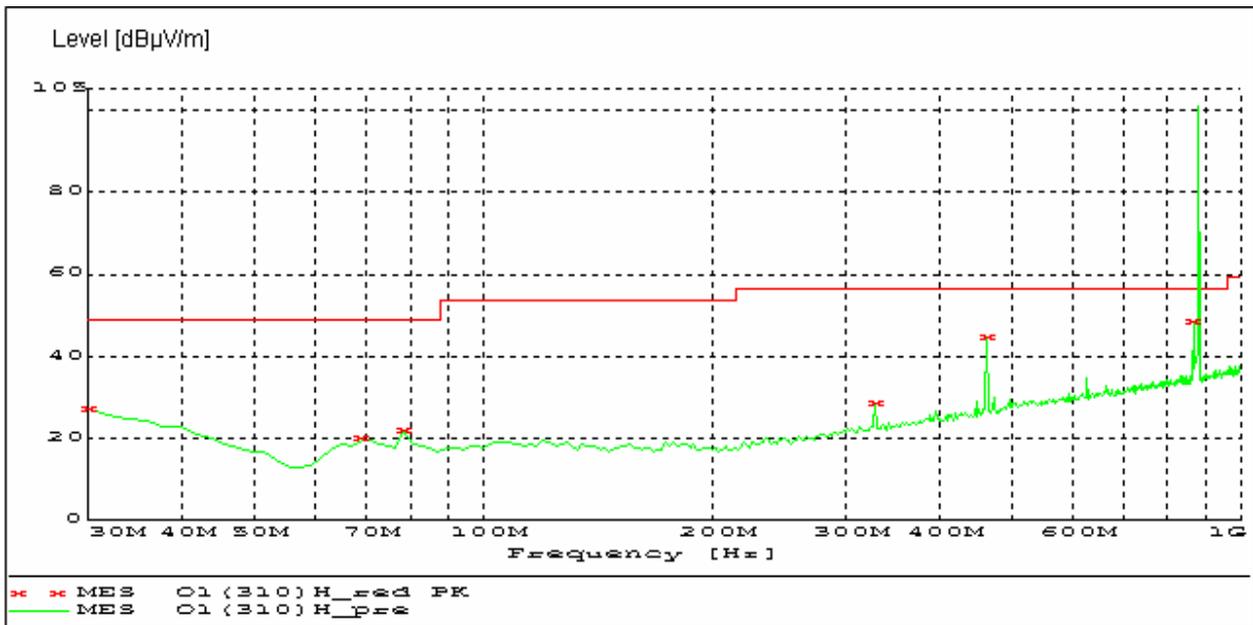


MEASUREMENT RESULT: "O1(160)V_red PK"

Frequency MHz	Level dBµV/m	Azimuth deg	Height cm	Polarisation	Transd dB	Limit dBµV/m	Margin dB
30.000000	36.06	82.00	100.0	VER	-5.4	49.1	13.0
47.494990	29.58	275.00	100.0	VER	-15.1	49.1	19.5
61.102204	26.33	0.00	200.0	VER	-20.6	49.1	22.8
78.597194	26.20	13.00	100.0	VER	-16.1	49.1	22.9
461.543086	48.18	343.00	100.0	VER	-6.6	56.4	8.3
626.773547	35.97	27.00	100.0	VER	-3.4	56.4	20.5

Channel 310

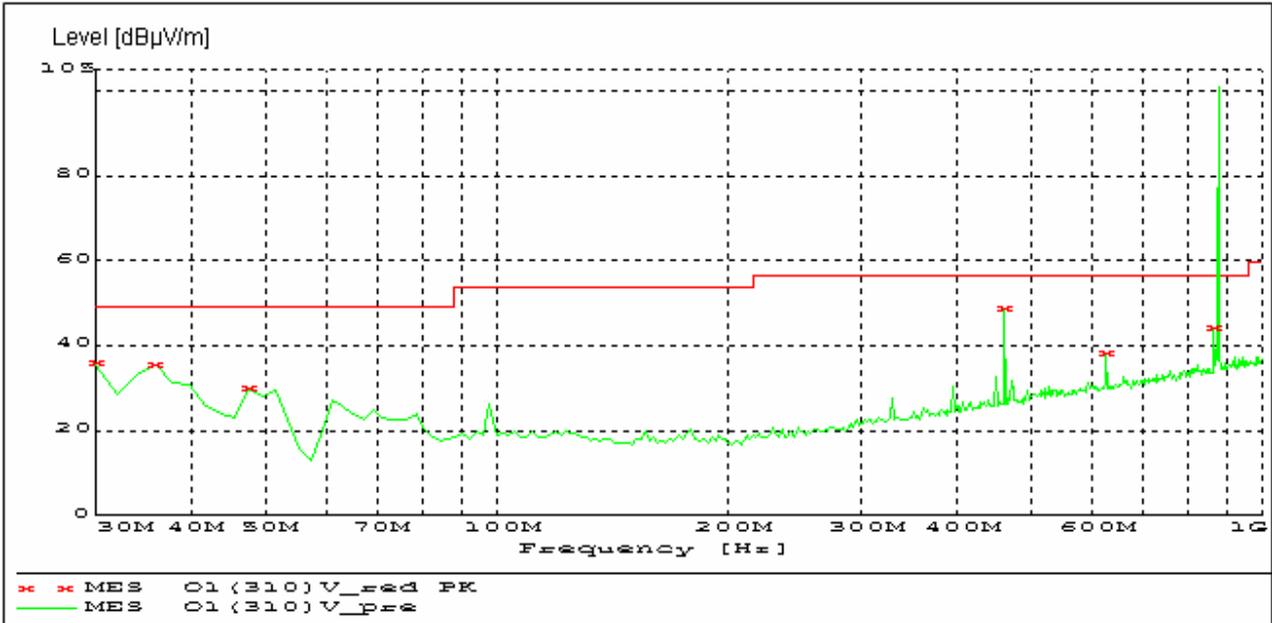
EUT: ZXC10 CBTS O18A
 Manufacturer: ZTE
 Operating Condition: Running
 Test Site: Anechoic Chamber
 Operator:
 Test Specification: FCC Part15 Class A
 Comment: Horizontal, channel 310
 Start of Test: 2006-5-25 / 13:46:51



MEASUREMENT RESULT: "O1(310)H_red PK"

Frequency MHz	Level dBµV/m	Azimuth deg	Height cm	Polarisation	Transd dB	Limit dBµV/m	Margin dB
30.000000	26.91	108.00	200.0	HOR	-5.4	49.1	22.2
68.877756	19.82	108.00	200.0	HOR	-18.1	49.1	29.3
78.597194	21.95	108.00	200.0	HOR	-16.1	49.1	27.1
329.358717	28.49	244.00	200.0	HOR	-10.4	56.4	27.9
461.543086	44.66	55.00	100.0	HOR	-6.6	56.4	11.8
865.871743	48.10	206.00	100.0	HOR	0.4	56.4	8.3

EUT: ZXC10 CBTS I28A
 Manufacturer: ZTE
 Operating Condition: Running
 Test Site: Anechoic Chamber
 Operator:
 Test Specification: FCC Part15 Class A
 Comment: Vertical, channel 310
 Start of Test: 2006-5-25 / 13:53:59



MEASUREMENT RESULT: "O1(310)V_red PK"

Frequency MHz	Level dBµV/m	Azimuth deg	Height cm	Polarisation	Transd dB	Limit dBµV/m	Margin dB
30.000000	35.55	68.00	100.0	VER	-5.4	49.1	13.5
35.831663	35.22	27.00	100.0	VER	-8.4	49.1	13.9
47.494990	29.72	273.00	100.0	VER	-15.1	49.1	19.4
461.543086	48.37	95.00	100.0	VER	-6.6	56.4	8.1
626.773547	37.64	232.00	100.0	VER	-3.4	56.4	18.8
865.871743	43.87	108.00	100.0	VER	0.4	56.4	12.6

§2.1053- SPURIOUS RADIATED EMISSIONS

Applicable Standard

Requirements: CFR 47, §2.1053

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Dat	Calibration Due Date
R&S	EMI Test Receiver	ESI26	100058	2005-10-17	2006-10-16
R&S	Ultra roadband Antenna	HL562	100022	2003-3-7	2008-3-6
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100032	2004-10-10	2009-10-9
Albatross	Anechoic Chamber	3m Site	N/A	2005-7-15	2008-7-14
R&S	Cable Set	RE Cable	N/A	2005-10-17	2006-10-16
R&S	Software	ES-K1	N/A	N/A	N/A

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to teeth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001)-the absolute level

Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts)

Test Results Summary

Channel 37: -39 dB at 6182.36 MHz
 Channel 160: -34.8 dB at 8106.21 MHz
 Channel 310: -35 dB at 8298.6 MHz

Test Data**Environmental Conditions**

Temperature:	26°C
Relative Humidity:	60 %
ATM Pressure:	1009 mbar

The testing was performed by Guan Bin on 2006-5-25

Indicated Frequency MHz	Meter Reading dBuV/m	Table	Test Antenna		Substituted			Antenna Gain Correction dBi	Cable Loss dB	Absolute Level dBm	Limit dBm	Margin dB
		Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V					
Channel 37 f= 871.11MHz												
6182.36	51.36	255	200	H	6182.36	-52	H	6.9	9.05	-52	-13	-39
6158.32	51.14	66	100	V	6158.32	-55.5	V	6.9	9.05	-55.5	-13	-42.5
8895.79	53.36	66	100	H	8895.79	-55.2	H	8.4	9.65	-56.1	-13	-43.1
8711.42	53.69	256	200	V	8711.42	-55.7	V	8.3	9.65	-56.5	-13	-43.5
4018.04	44.32	0	200	H	4018.04	-59.9	H	5.3	7.95	-59.4	-13	-46.4
2851.7	41.16	255	200	H	2851.7	-62.8	H	4.5	7.95	-61.5	-13	-48.5
4210.42	43.7	297	200	V	4210.42	-64	V	5.5	7.95	-63.7	-13	-50.7
2611.22	40.94	340	200	V	2611.22	-66.8	V	4.4	7.95	-65.4	-13	-52.4
2022.04	38.78	109	100	H	2022.04	-67.9	H	3.8	7.05	-66.8	-13	-53.8
1372.75	34.75	360	100	H	1372.75	-71.4	H	3.1	4.25	-72.4	-13	-59.4
1108.22	35.28	192	100	V	1108.22	-71.9	V	2.7	4.25	-72.5	-13	-59.5
2070.14	38.71	340	200	V	2070.14	-74	V	3.9	7.05	-73	-13	-60
Channel 160 f=874.8MHz												
8106.21	53.75	340	200	V	8106.21	-47.1	V	8	9.45	-47.8	-13	-34.8
6182.36	50.36	4	200	H	6182.36	-53.1	H	6.9	9.05	-53.1	-13	-40.1
8919.84	53.92	323	100	H	8919.84	-54	H	8.4	9.65	-54.9	-13	-41.9
6975.95	51.09	155	100	H	6975.95	-55	H	7.3	9.25	-55.2	-13	-42.2
6158.32	49.88	235	100	V	6158.32	-57.5	V	6.9	9.05	-57.5	-13	-44.5
2923.85	41.37	151	100	V	2923.85	-60.4	V	4.6	7.95	-59.2	-13	-46.2
4078.16	44.63	4	200	H	4078.16	-59.9	H	5.4	7.95	-59.5	-13	-46.5
4102.2	44.6	23	100	V	4102.2	-61.8	V	5.4	7.95	-61.4	-13	-48.4
2767.54	40.21	360	200	H	2767.54	-68.2	H	4.4	7.95	-66.8	-13	-53.8
2070.14	38.48	155	100	H	2070.14	-67.9	H	3.9	7.05	-66.9	-13	-53.9
2010.02	38.33	171	200	V	2010.02	-69.2	V	3.8	7.05	-68.1	-13	-55.1
1396.79	34.88	235	100	V	1396.79	-68.9	V	3.1	4.25	-69.9	-13	-56.9

Indicated		Table	Test Antenna		Substituted			Antenna	Cable	Absolute	Limit	Margin
Frequency MHz	Meter Reading dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V	Gain Correction dBi	Loss dB	Level dBm	dBm	dB
Channel 310 f=879.3MHz												
8298.6	53.94	75	200	V	8298.6	-47.1	V	8.2	9.45	-48	-13	-35
6218.44	50.08	5	200	H	6218.44	-51.9	H	6.9	9.05	-51.9	-13	-38.9
8202.4	54.14	340	200	H	8202.4	-53.2	H	8.1	9.45	-54	-13	-41
6963.93	50.56	317	100	H	6963.93	-55	H	7.3	9.25	-55.2	-13	-42.2
6146.29	51.86	33	200	V	6146.29	-55.5	V	6.8	9.05	-55.4	-13	-42.4
4066.13	45.25	65	100	H	4066.13	-59.4	H	5.4	7.95	-59	-13	-46
2911.82	41.12	317	100	H	2911.82	-60.4	H	4.6	7.95	-59.2	-13	-46.2
2959.92	41.11	358	100	V	2959.92	-60.4	V	4.6	7.95	-59.2	-13	-46.2
4090.18	44.72	276	100	V	4090.18	-60.8	V	5.4	7.95	-60.4	-13	-47.4
2022.04	38.97	200	200	V	2022.04	-64.5	V	3.8	7.05	-63.4	-13	-50.4
2070.14	38.09	256	200	H	2070.14	-68.4	H	3.9	7.05	-67.4	-13	-54.4
1432.86	35.72	158	200	V	1432.86	-77.8	V	3.2	4.25	-78.9	-13	-65.9

§2.1051, §22.917(a)- SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard

Requirements: CFR 47§ 2.1051, §22.917(a)

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in §2.1057

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2006-3-2	2007-3-2

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

Test Data

Environmental Conditions

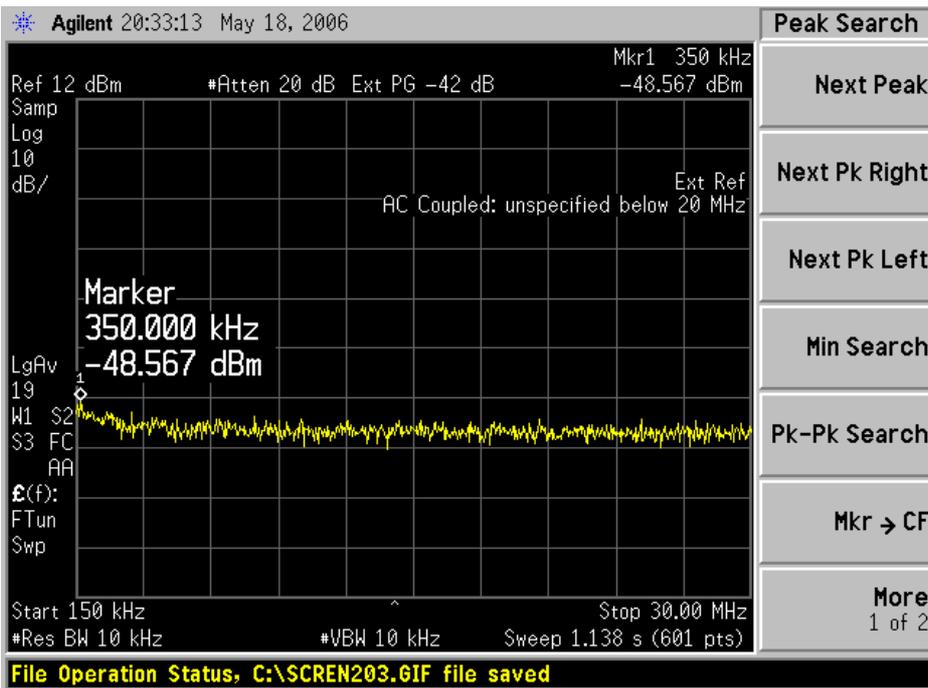
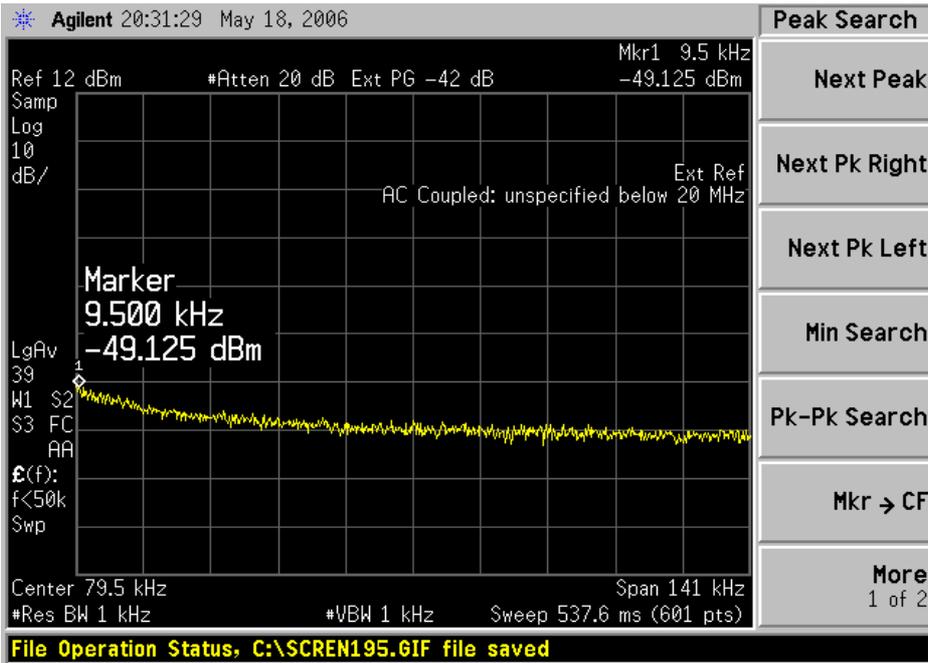
Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

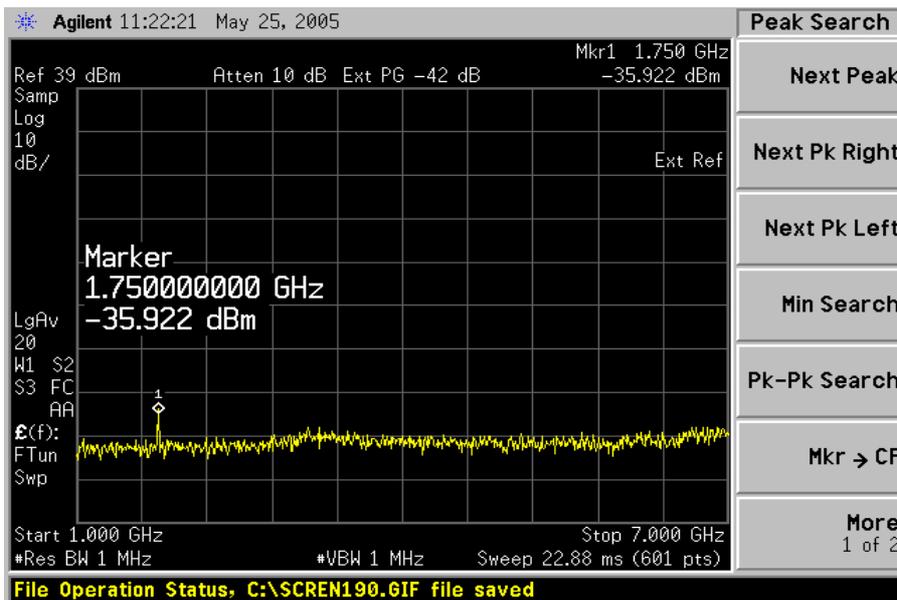
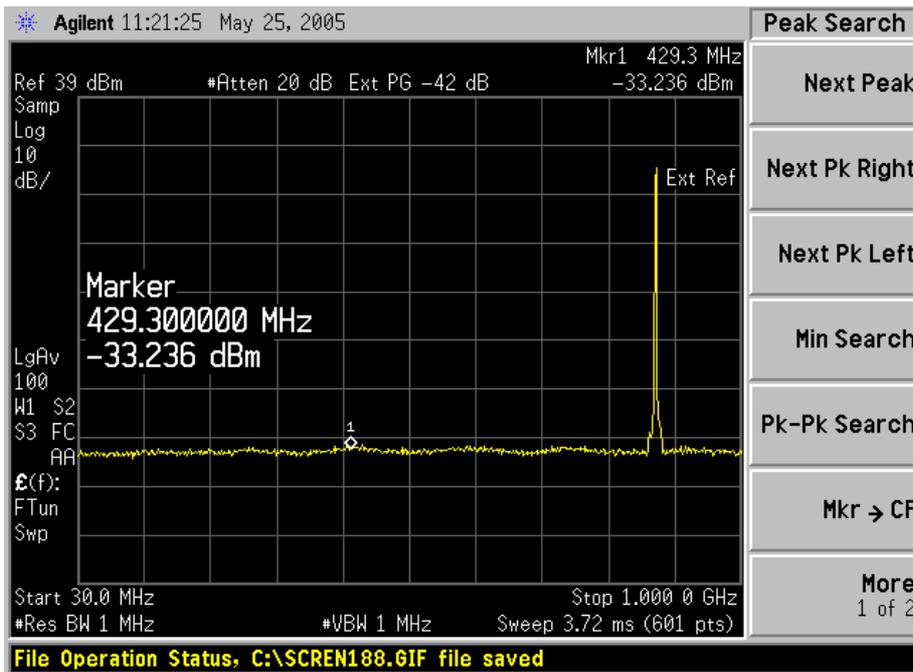
The testing was performed by JX HE on May 01-28, 2006.

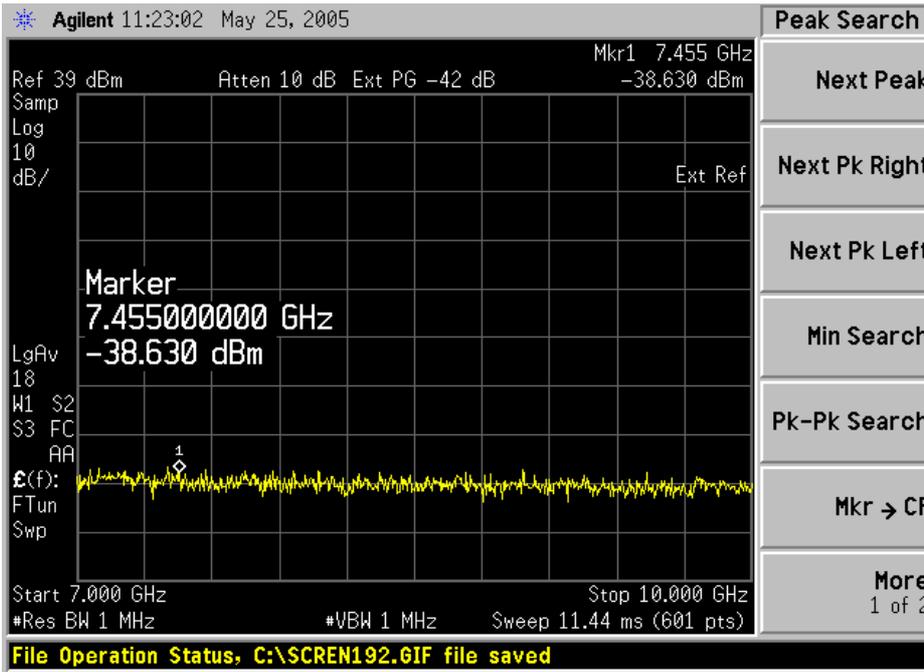
Test Result: Pass

Test Mode: Transmitting

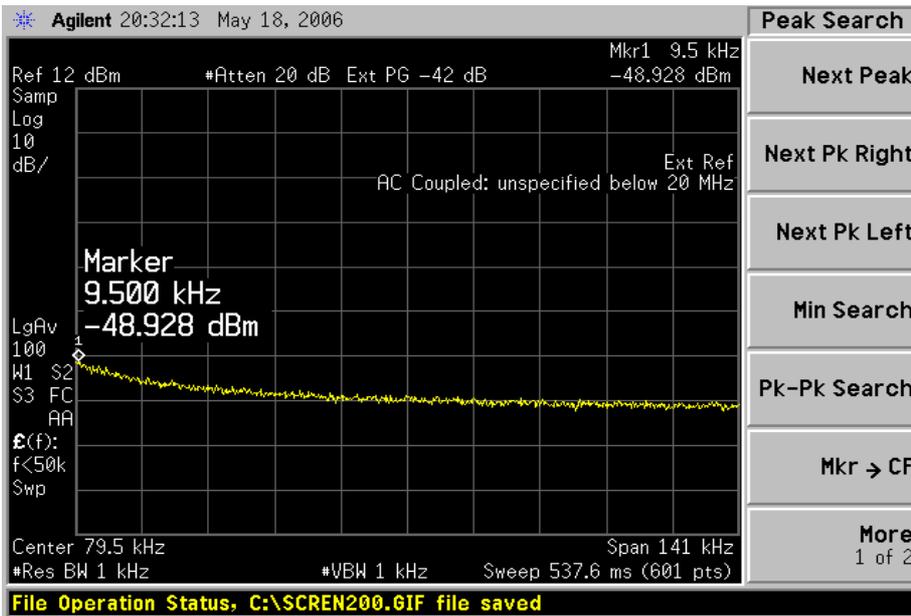
Channel 37

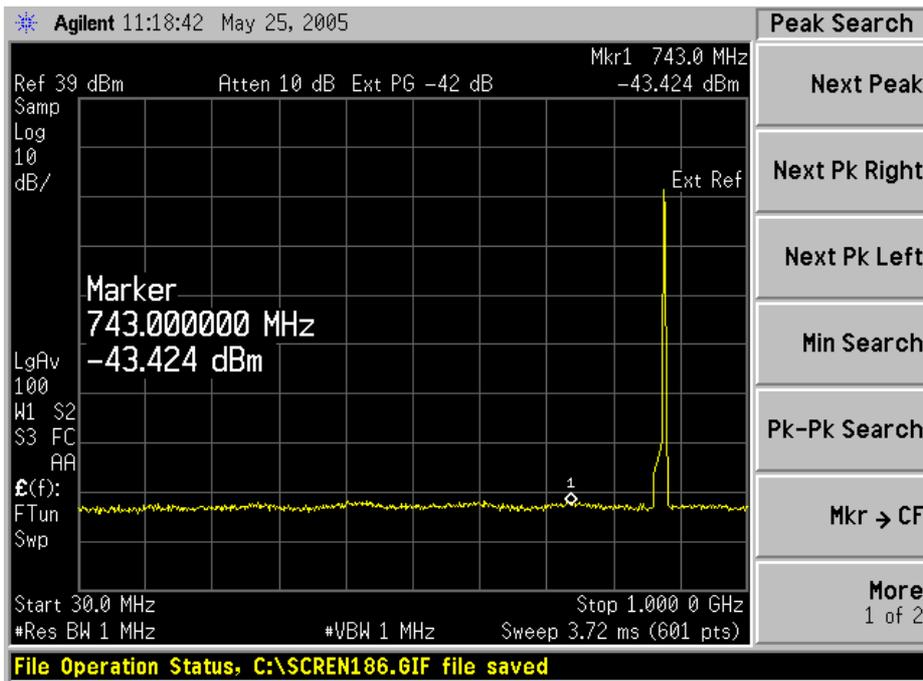
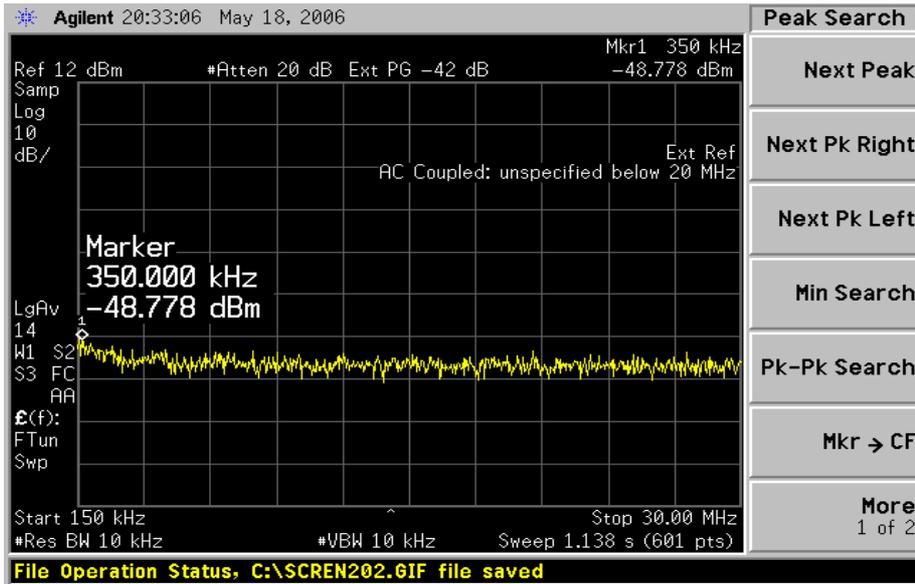


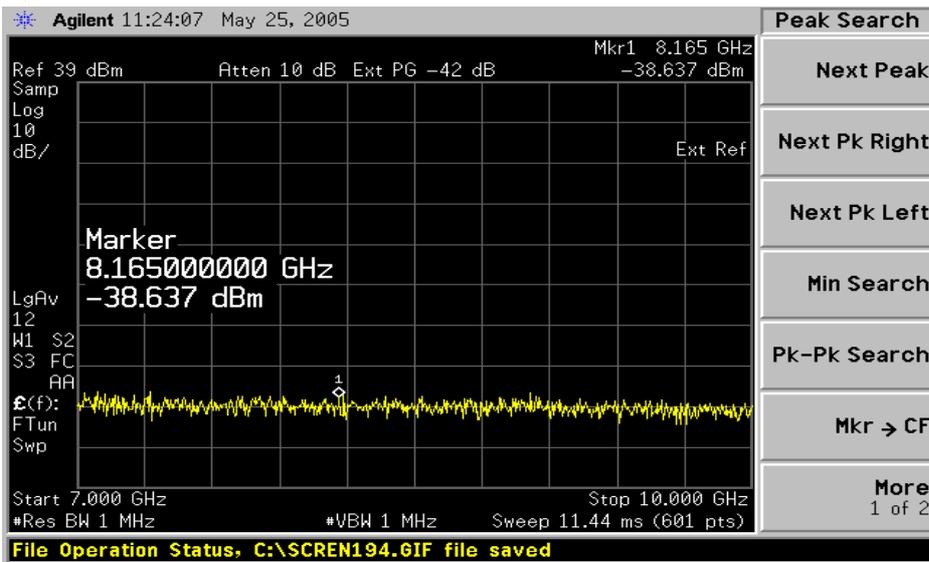
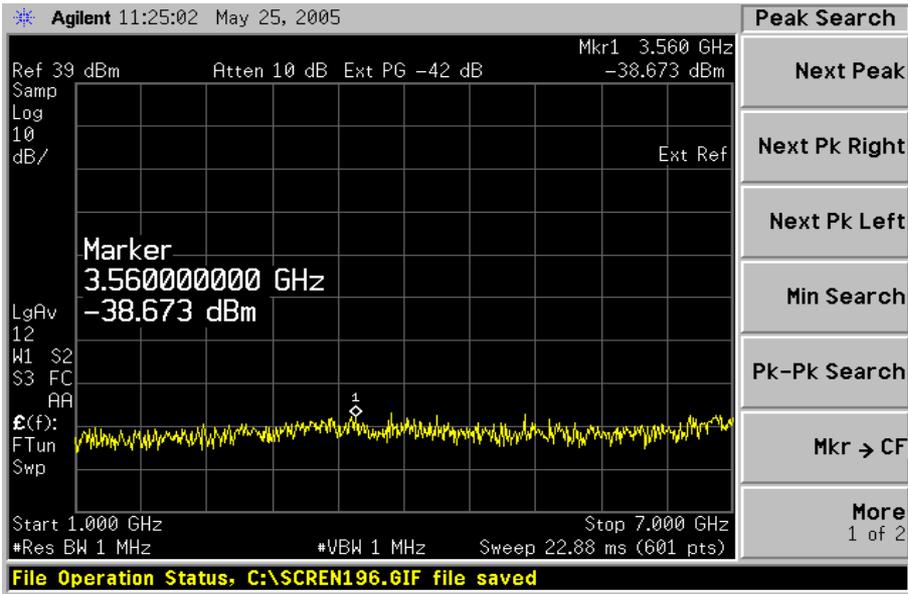




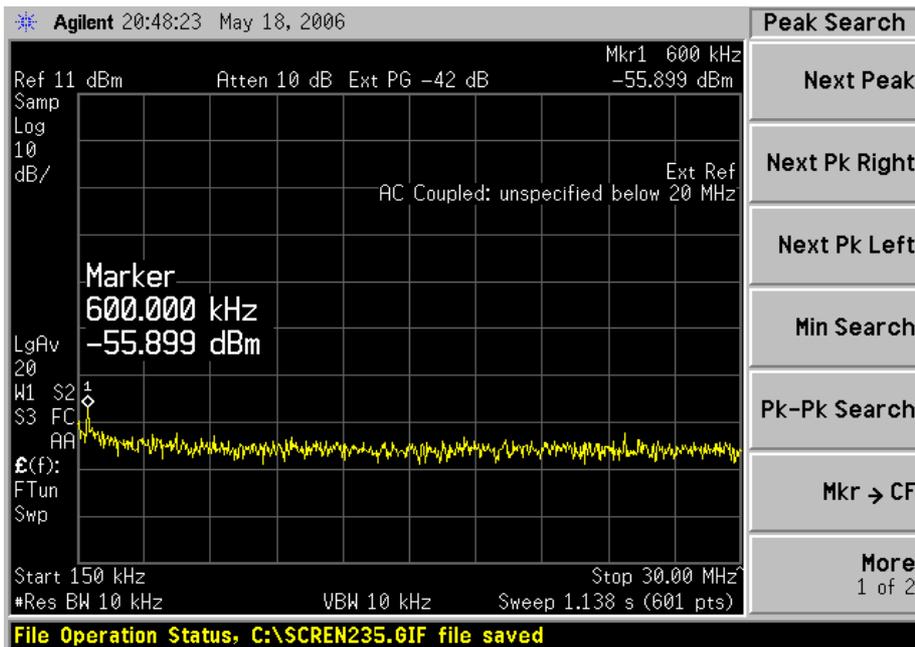
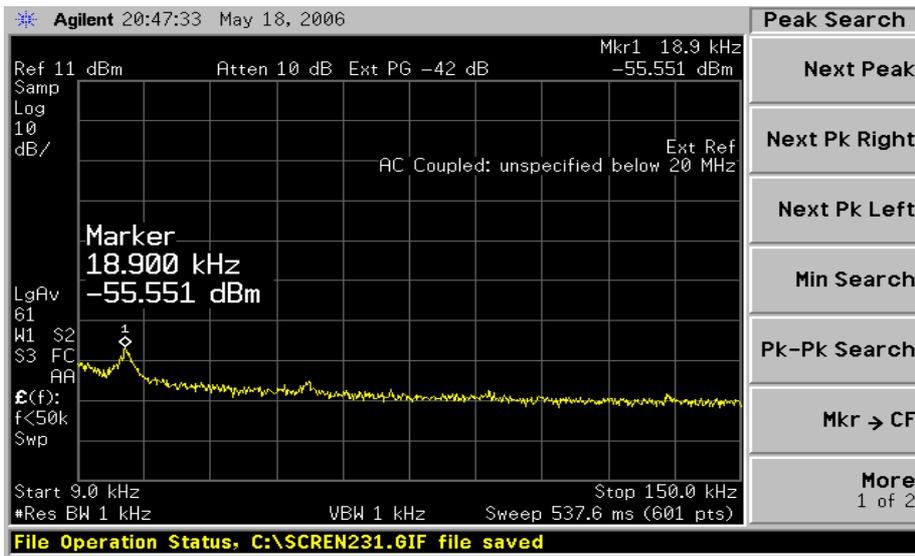
Channel 160

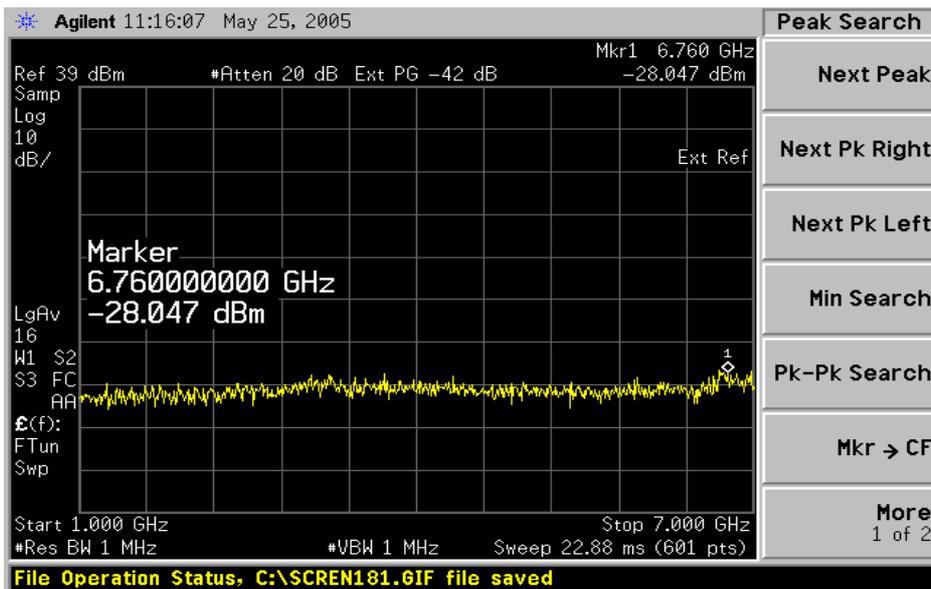
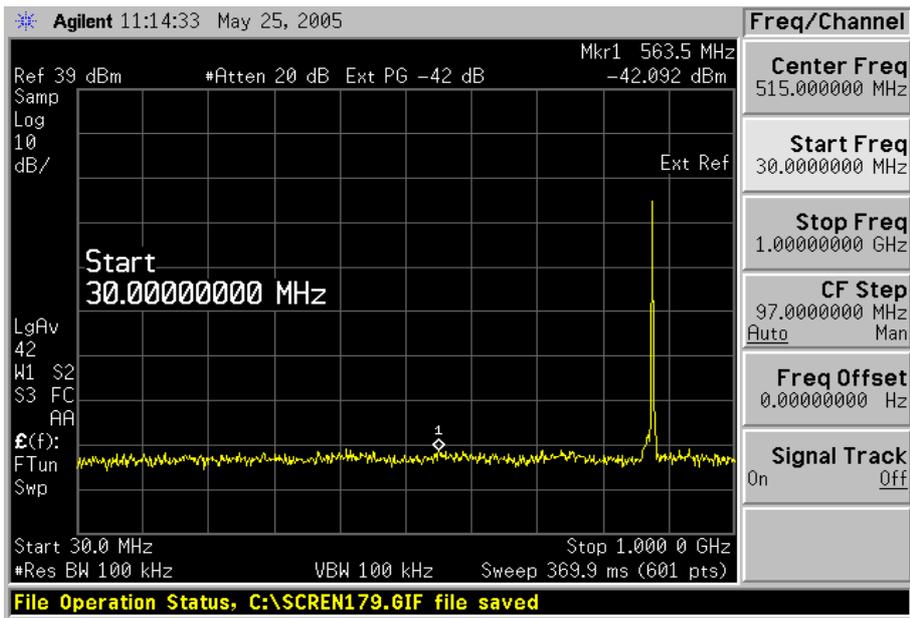


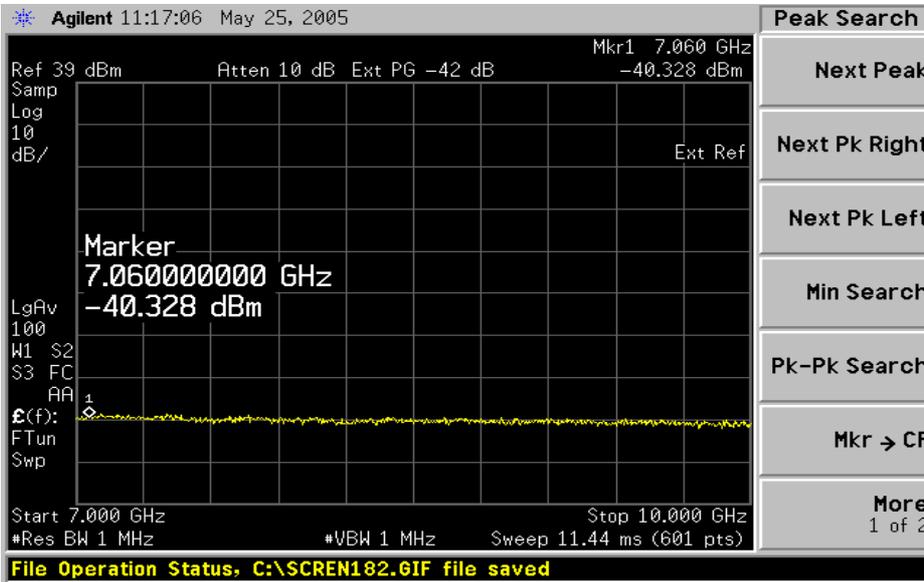




Channel 310







§2.1049, §22.917, §22.905 -OCCUPIED BANDWIDTH

Applicable Standard

Requirements: CFR 47, Section 2.1049, Section 22.901 and Section 22.917.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2006-3-2	2007-3-2

Test Procedure

The RF out of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 30 kHz and the 26 dB and 99%Power bandwidth was recorded.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	1009mbar

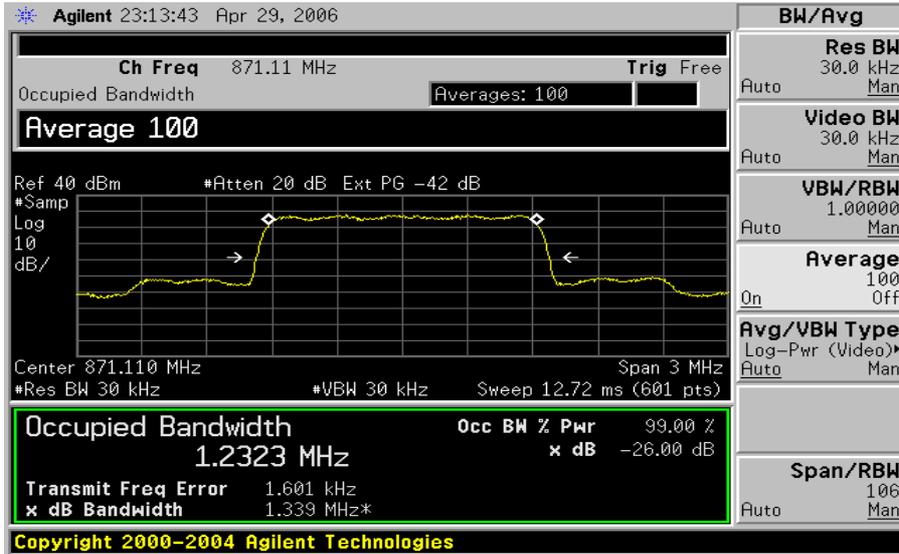
The testing was performed by JX HE on May 01-28, 2006.

Test Result: Pass

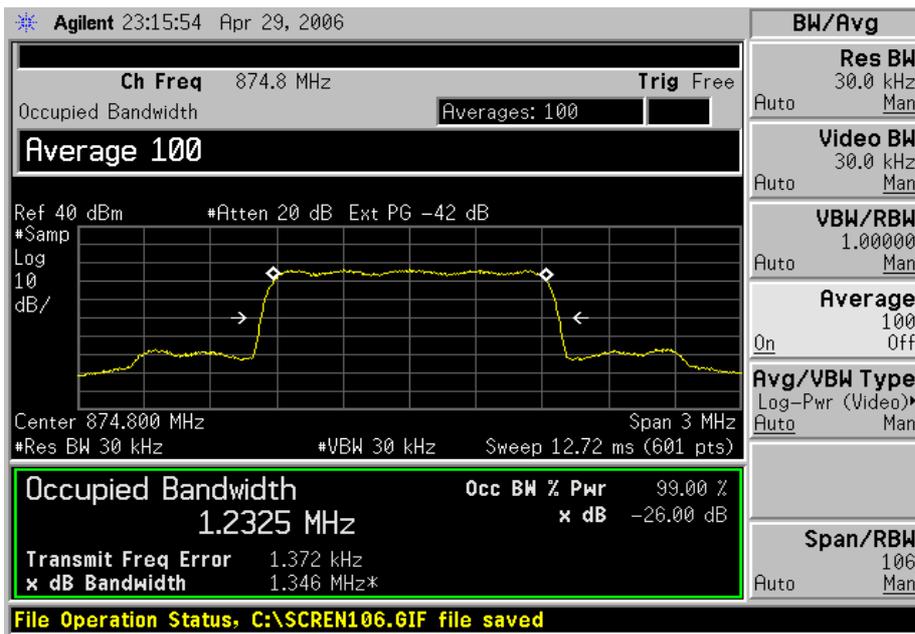
Test Mode: Transmitting

Channel	Channel frequency (MHz)	99% Power Bandwidth (MHz)
Channel 37	871.11	1.2323
Channel 160	874.80	1.2325
Channel 310	879.30	1.2349

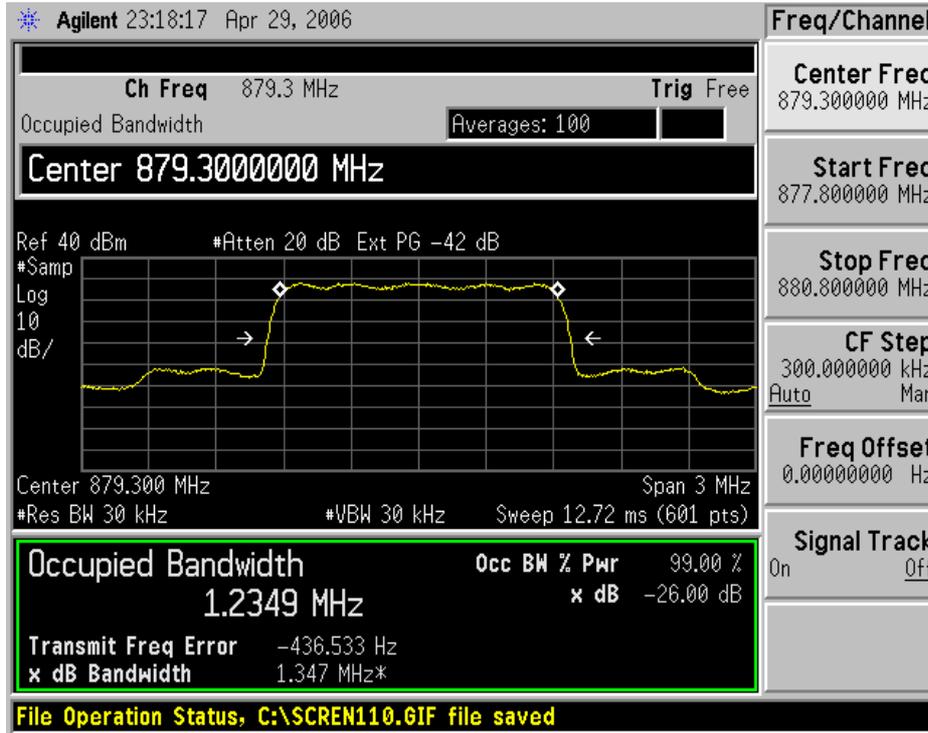
Channel 37



Channel 160



Channel 310



§22.917- BAND EDGES

Applicable Standard

According to §22.917, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (p) by a factor of at least $43 + 10 \log (p)$ dB.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2006-3-2	2007-3-2

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency.

Test Data

Environmental Conditions

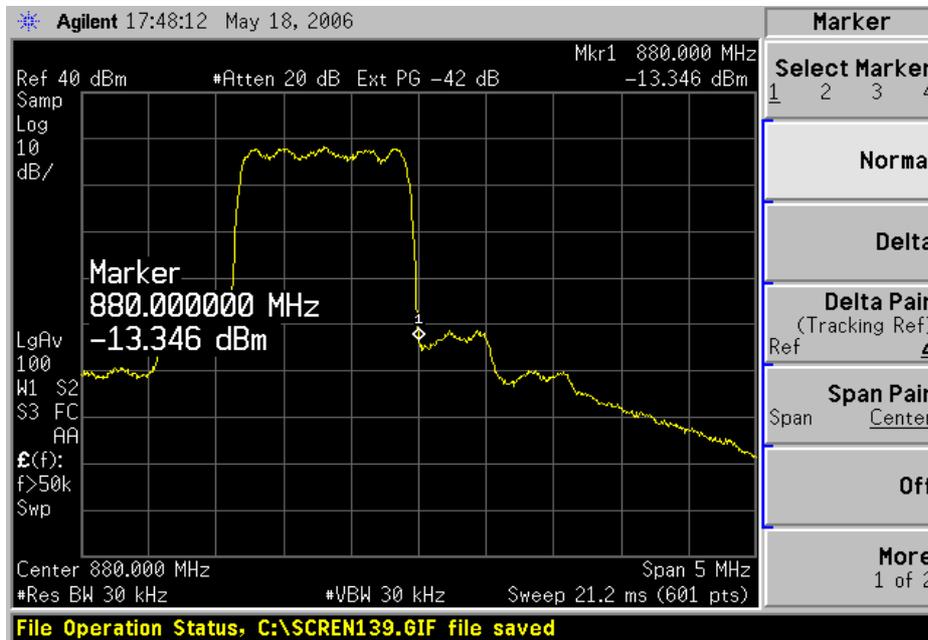
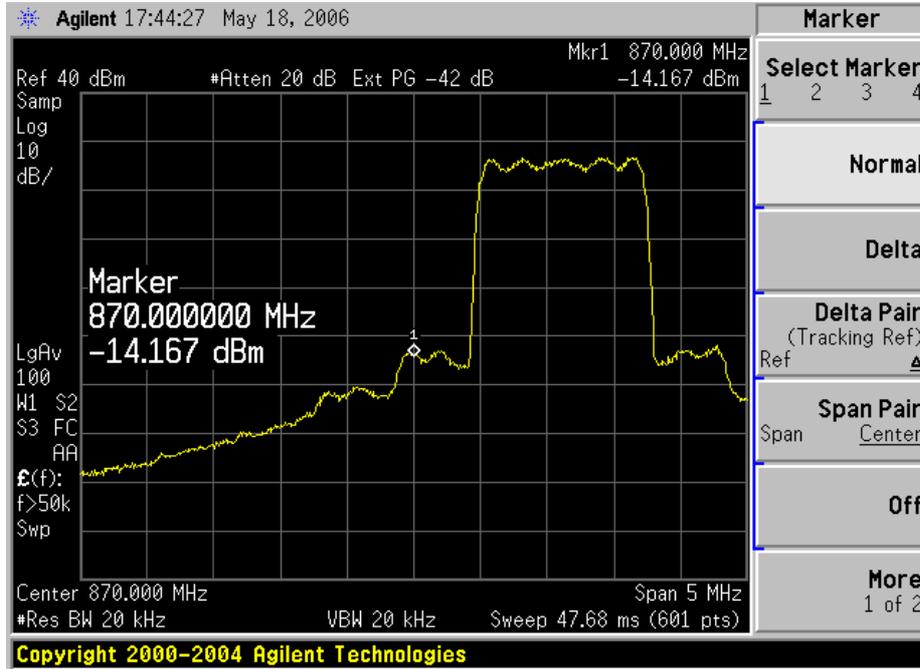
Temperature:	24 °C
Relative Humidity:	59%
ATM Pressure:	1009mbar

The testing was performed by JX HE on May 01-28, 2006.

Test Result: Pass

Test Mode: Transmitting

Frequency MHz	Emission dBm	Limit dBm
870.00	-14.167	-13.00
880.00	-13.346	-13.00



§2.1055 (a), §2.1055 (d), §22.355 - FREQUENCY STABILITY

Applicable Standard

Requirements: FCC § 2.1055 (a), § 2.1055 (d) & following:

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Table C-1_Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Mobile		
	Base, fixed (ppm)	[SU][le]3 watts (ppm)	Mobile [le]3 watts (ppm)
25 to 50.....	20.0	20.0	50.0
50 to 450.....	5.0	5.0	50.0
450 to 512.....	2.5	5.0	5.0
821 to 896.....	1.5	2.5	2.5
928 to 929.....	5.0	n/a	n/a
929 to 960.....	1.5	n/a	n/a
2110 to 2220.....	10.0	n/a	n/a

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2006-3-2	2007-3-2
GZ-ESPEC	Temperature Chamber	GRW-120	00020268	2006-3-8	2007-3-8

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external AC power supply and the RF output was connected to a f Spectrum Analyzer via feed-through attenuators. The EUT was placed inside the temperature chamber. The AC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the counter.

Frequency Stability vs. Voltage: An external variable AC power supply Source. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the end point. The output frequency was recorded for each voltage.

Test Data

Environmental Conditions

Temperature:	20° C
Relative Humidity:	49%
ATM Pressure:	1011 mbar

The testing was performed by JX HE on May 01-28, 2006.

Test Result: Pass

Test Mode: Transmitting

Frequency Stability Versus Temperature

Frequency Stability vs. Temperature				
Temperature °C	Power Supplied Vac	Frequency Measure Error Hz	Error ppm	Result
CH37 f=871.11MHz				
-40	220	-0.10	0.000115	PASS
-30	220	2.11	0.002422	PASS
-20	220	0.52	0.000597	PASS
-10	220	-0.28	0.000321	PASS
0	220	1.47	0.001687	PASS
10	220	-0.22	0.000253	PASS
20	220	-0.71	0.000815	PASS
30	220	-0.87	0.000999	PASS
40	220	-0.68	0.000781	PASS
50	220	0.16	0.000184	PASS
55	220	0.34	0.000390	PASS
CH160 f=874.8MHz				
-40	220	-0.28	0.000320	PASS
-30	220	0.64	0.000731	PASS
-20	220	-0.05	0.000057	PASS
-10	220	0.19	0.000217	PASS
0	220	-3.48	0.003978	PASS
10	220	0.29	0.000332	PASS
20	220	-2.26	0.002583	PASS
30	220	-0.10	0.000114	PASS
40	220	-0.27	0.000309	PASS
50	220	0.47	0.000537	PASS
55	220	0.25	0.000286	PASS
CH310 f=879.3MHz				
-40	220	0.11	0.000125	PASS
-30	220	0.36	0.000409	PASS
-20	220	0.37	0.000421	PASS
-10	220	-0.37	0.000421	PASS
0	220	0.43	0.000489	PASS
10	220	0.19	0.000216	PASS
20	220	0.36	0.000409	PASS
30	220	0.37	0.000421	PASS
40	220	-0.37	0.000421	PASS
50	220	-0.14	0.000159	PASS
55	220	0.90	0.001024	PASS

Frequency Stability Versus Voltage

Frequency Stability vs. Voltage				
Voltage Vac	Temperature °C	Frequency Measure	Error ppm	Limit 1.5ppm
CH37 f=871.11MHz				
150	20	0.36	0.000413	PASS
180	20	0.13	0.000149	PASS
210	20	-0.78	0.000895	PASS
240	20	-1.20	0.001378	PASS
270	20	0.83	0.000953	PASS
300	20	-0.16	0.000184	PASS
CH160 f=874.8MHz				
150	20	-2.74	0.003132	PASS
180	20	-2.39	0.002732	PASS
210	20	0.88	0.001006	PASS
240	20	0.54	0.000617	PASS
270	20	0.68	0.000777	PASS
300	20	1.67	0.001909	PASS
CH310 f=879.3MHz				
150	20	-0.08	0.000091	PASS
180	20	-0.08	0.000091	PASS
210	20	0.36	0.000409	PASS
240	20	-0.28	0.000318	PASS
270	20	-0.54	0.000614	PASS
300	20	-0.13	0.000148	PASS

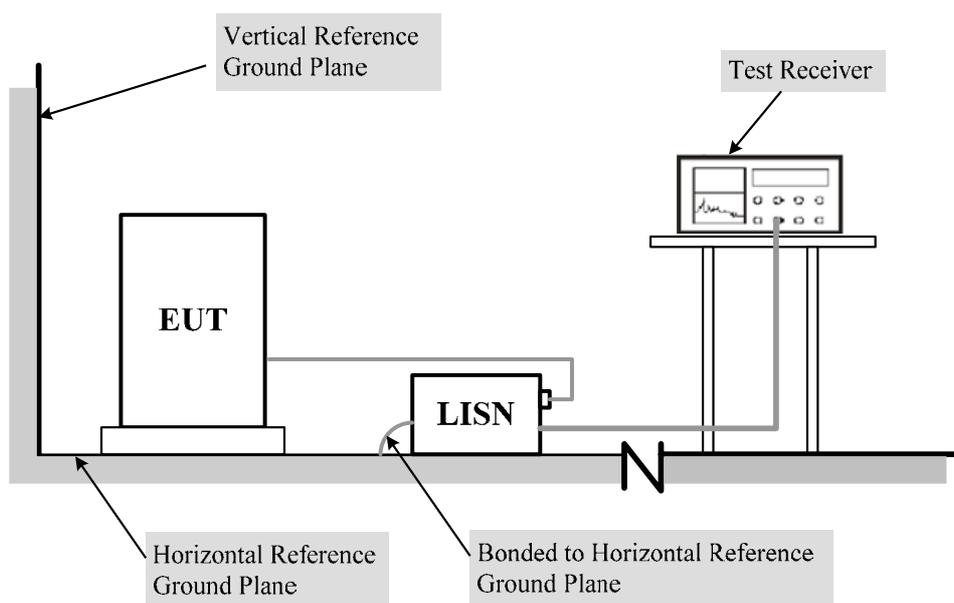
§15.107 (a)- CONDUCTED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at ZTE Corp. is +2.3 dB.

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs(AMN) 80cm from EUT and at the least 80cm from other units and other metal planes support units.

The setup of EUT is according with per TIA/EIA 603-B measurement procedure. The specification used was with the FCC Part 15.107 (a) Limit.

The external I/O cables were connected and positioned properly.

The spacing between the peripherals was 10 cm.

The EUT was connected to a 220 VAC/50 Hz power source.

Test Receiver Setup

The test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the test receiver was set with the following configurations:

<u>Frequency Range</u>	<u>IFBW</u>
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS30	100068	2005-10-17	2006-10-16
R&S	LISN	ESH2-Z5	100027	2005-10-17	2006-10-16
SCHWARZBECK	LISN	NNLK8129	8129-151	2005-10-17	2006-10-16
R&S	ISN	ENY22	100046	2005-10-17	2006-10-16
R&S	ISN	ENY41	100057	2005-10-17	2006-10-16
R&S	Pulse Limiter	ESH3-Z2	100063	2005-10-18	2006-10-17
HP	Current Probe	HP11967A	555	2004-10-22	2007-10-19
R&S	Software	ES-K1	N/A	N/A	N/A
R&S	Cable	CE Cable	N/A	2005-10-17	2006-10-16

* Com-Power's LISN were used as the supporting equipment.

Test Procedure

During the conducted emission test, the EUT power cord was connected the LISN. Maximizing procedure was performed on the six (6) highest were emissions of the EUT. All data was recorded in the Quasi-peak and average detection mode.

Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	47 %
ATM Pressure:	1000 mbar

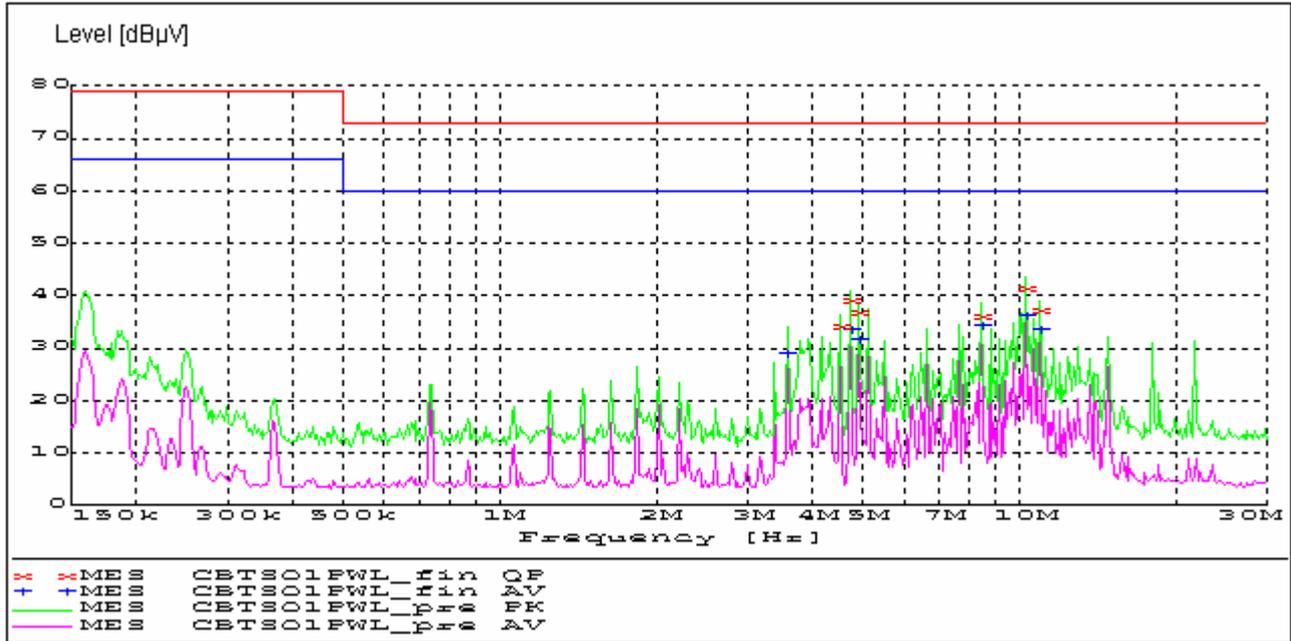
The testing was performed by Guan Bin on 2006-5-25

Test result: Pass

Plot(s) of Test Data is presented hereinafter as reference.

Conducted Emission

EUT: ZXC10 CBTS O18A
 Manufacturer: ZTE
 Operating Condition: Running
 Test Site: ZTE
 Operator:
 Test Specification: FCC Part15 Class A
 Comment: AC, L line
 Start of Test: 2006-05-25/ 19:02:05



MEASUREMENT RESULT: "CBTSO1PWL_fin QP"

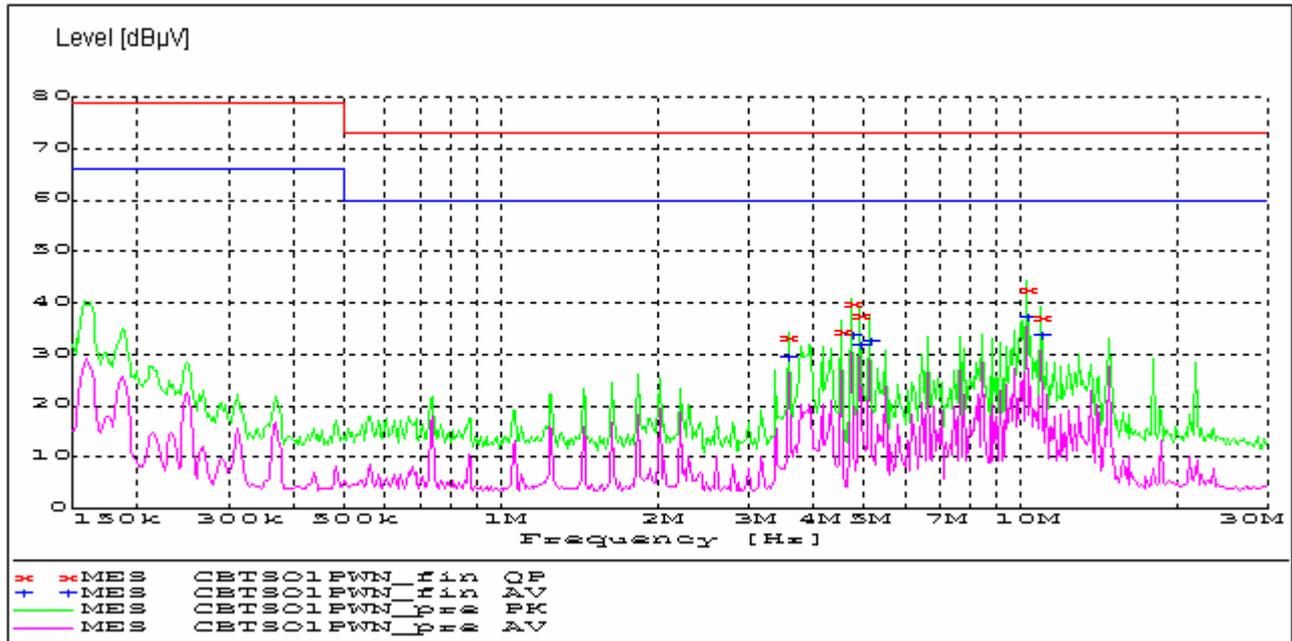
Frequency MHz	Level dBµV	Transd	Limit dB	Margin dBµV	Line dB	PE
4.541497	34.00	9.9	73	39.0	L1	GND
4.726086	39.10	9.9	73	33.9	L1	GND
4.918179	36.70	10.0	73	36.3	L1	GND
8.455134	35.70	9.9	73	37.3	L1	GND
10.318910	41.40	9.9	73	31.6	L1	GND
10.910824	37.00	9.9	73	36.0	L1	GND

MEASUREMENT RESULT: "CBTSO1PWL_fm AV"

Frequency MHz	Level dBμV	Transd dB	Limit dB	Margin dBμV	Line dB	PE
3.575881	28.80	9.9	60	31.2	L1	GND
4.726086	33.10	9.9	60	26.9	L1	GND
4.918179	31.20	10.0	60	28.8	L1	GND
8.455134	34.00	9.9	60	26.0	L1	GND
10.318910	35.70	9.9	60	24.3	L1	GND
10.910824	33.20	9.9	60	26.8	L1	GND

Conducted Emission

EUT: ZXC10 CBTS O18A
 Manufacturer: ZTE
 Operating Condition: Running
 Test Site: ZTE
 Operator:
 Test Specification: FCC Part15 Class A
 Comment: AC, N line
 Start of Test: 2006-05-25/18:58:05



MEASUREMENT RESULT: "CBTSO1PWN_fin QP"

Frequency Hz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Line	PE
3.575881	32.80	9.9	73	40.2	N	GND
4.541497	34.20	9.9	73	38.8	N	GND
4.726086	39.60	9.9	73	33.4	N	GND
4.918179	37.10	10.0	73	35.9	N	GND
10.318910	42.30	9.9	73	30.7	N	GND
10.910824	37.00	9.9	73	36.0	N	GND

MEASUREMENT RESULT: "CBTSO1PWN_fin AV"

Frequency MHz	Level dB μ V	Transd dB	Limit dB μ V	Margin dB	Line	PE
3.575881	29.10	9.9	60	30.9	N	GND
4.726086	33.50	9.9	60	26.5	N	GND
4.918179	31.60	10.0	60	28.4	N	GND
5.118079	32.10	9.9	60	27.9	N	GND
10.318910	36.80	9.9	60	23.2	N	GND
10.910824	33.40	9.9	60	26.6	N	GND