

ZTE Corporation FCC ID: Q78- ZXMBW-E9200

FCC PART 27 MEASUREMENT AND TEST REPORT

For

ZTE Corporation

ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen,
Guangdong, China 518057

FCC ID: Q78-ZXMBW-E9200
Feb10, 2009

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: ZTE Indoor PICO Base station
<p>Test Engineer: Wei bin</p> <p>Report No.: FCC-2009-001</p> <p>Test Date: Feb 1- 10, 2009</p> <p>Reviewed By: Xie yuming</p> <p>Prepared By: ZTE Corporation.</p> <p>ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, China 518057, P.R.China Tel: +86-755-26770000 Fax: +86-755-26771999</p>	

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.

1 TABLE OF CONTENTS

1	TABLE OF CONTENTS	2
2	GENERAL INFORMATION.....	4
	Product Description for Equipment Under Test (EUT).....	4
	Objective.....	4
	Test Methodology	4
	Test Facility.....	4
3	SYSTEM TEST CONFIGURATION.....	5
	Description of Test Configuration.....	5
4	SUMMARY OF TEST RESULTS	6
5	§2.1046, §27.5(h) - EFFECTIVE RADIATED POWER	7
	Applicable Standard	7
	Test Equipment List and Details.....	7
	Test Procedure.....	7
	Test Result: Pass.....	8
	Test Mode: Transmitting OFDMA 802.16e.....	8
	Test Data:.....	8
6	§2.1091 – RF EXPOSURE	10
	<i>Limit</i>	10
	<i>Test Data</i>	10
7	§2.1053-SPURIOUS RADIATED EMISSIONS.....	11
	Applicable Standard Requirements: CFR 47, §2.1053.....	11
	Test Equipment List and Details.....	11
	Environmental Conditions	12
	Test Procedure.....	12
	Test Results Summary: PASS	13
	Test Data.....	13
8	§2.1051, §27.53- SPURIOUS EMISSIONS AT ANTENNA TERMINALS	26
	Test Equipment List and Details.....	26
	Test Procedure.....	26
	Test Data Environmental Conditions	27
	Test Result: Pass.....	27
	Test Mode: Transmitting OFDMA 802.16e.....	27
	Test Data:.....	27
9	§2.1049-OCCUPIED BANDWIDTH	32
	Applicable Standard Requirements: CFR 47, Section 2.1049.....	32
	Test Equipment List and Details :.....	32
	Test Procedure.....	32
	Environmental Conditions	32
	Test Result: Pass.....	33
	Test Mode: Transmitting OFDMA 802.16e.....	33
	Test Data.....	33
10	§27.53-BAND EDGES	36
	Applicable Standard	36
	Test Equipment List and Details.....	36
	Test Procedure.....	36
	Test Data Environmental Conditions	36
	Test Result: Pass.....	37
	Test Mode: Transmitting OFDMA 802.16e.....	37

Test Data..... 37

11§2.1055 (a), §2.1055 (d), §27.54 - FREQUENCY STABILITY..... 43

Applicable Standard 43

Test Equipment List and Details..... 43

Test Procedure..... 43

Test Data..... 44

Test Result: Pass..... 44

Test Mode: Transmitting OFDMA 802.16e..... 44

2 GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The ZTE Corporation's product, model number: ZXMBW E9200 or the "EUT" as referred to in this report is a Indoor PICO base station. The EUT is measured approximately 260 mm × 200 mm ×65 mm (W × D × H), input voltage: 100 -220Vac.

The serial number of the EUT is 210000002132;

Objective

This Type approval report is prepared on behalf of ZTE Corporation in accordance with Part 2、 Part 15、 Part 27 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 27 Wireless Communication 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.

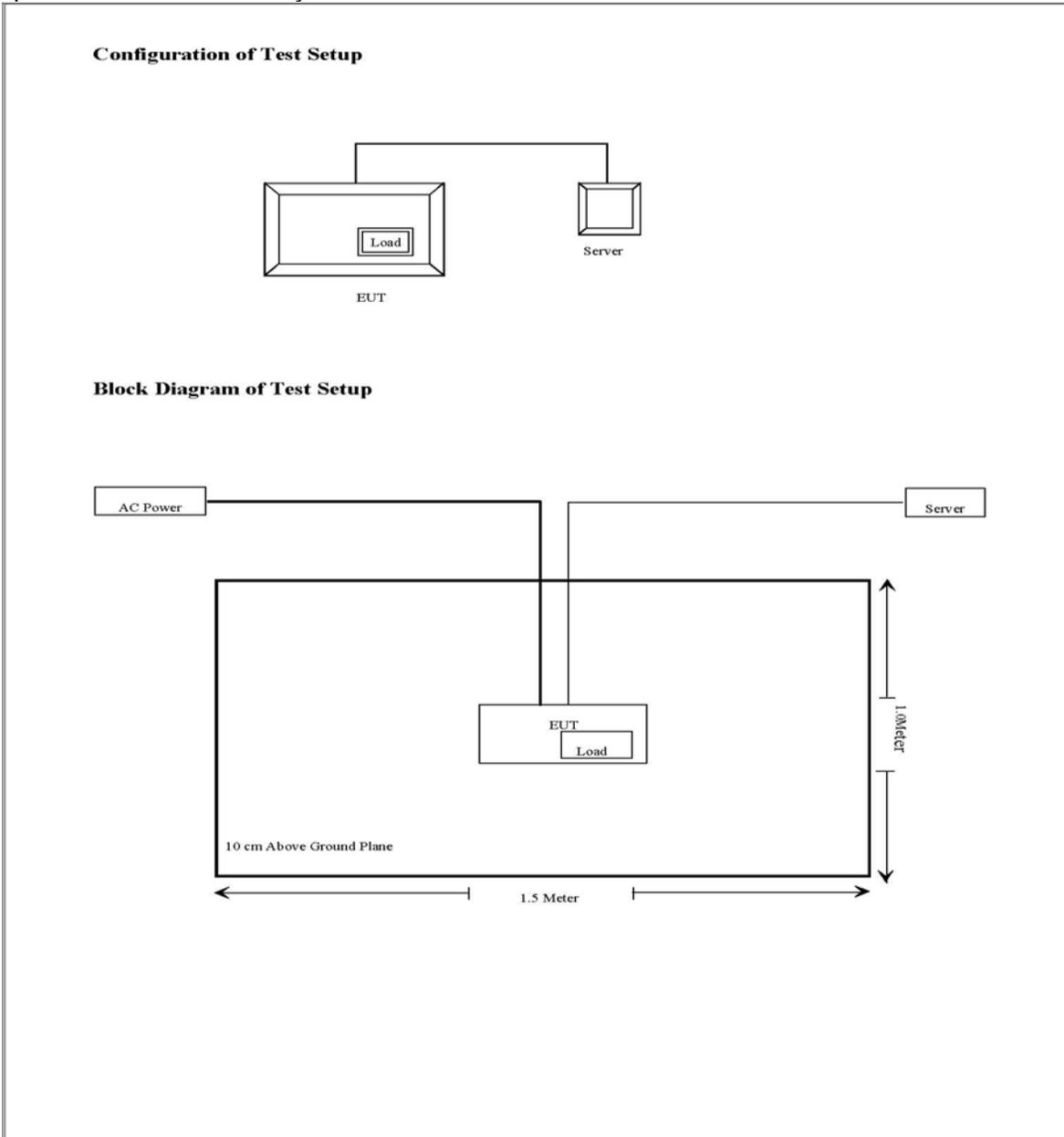
External I/O Cable

Cable Description	Length (M)	From/Port	To
Unshielded Undetachable AC Power Cable	2.0	EUT	AC POWER

3 SYSTEM TEST CONFIGURATION

Description of Test Configuration

Equipment Modifications
ZTE Corporation has not done any modification on the EUT.



4 SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§2.1046&27.50	Effective Radiated Power	Pass
§2.1091	RF Exposure	Pass
§2.1053	Radiated Spurious Emissions	Pass
§2.1051, §27.53	Spurious Emissions at Antenna Terminal	Pass
§2.1049	Occupied Bandwidth	Pass
§27.53	Band Edge	Pass
§ 2.1055 (a) § 2.1055 (d) § 27.54	Frequency stability	Pass

5 §2.1046, §27.50 - EFFECTIVE RADIATED POWER

Applicable Standard

According to FCC §2.1046&27.50, the conducted power must not exceed 2000 Watts.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	N/A	2008-5-2	2009-5-2
MCL	BW-S10W2 10dB Attenuator	BW-S10W2	N/A	N/A	N/A
SWA	SWA Packard RF Cable	RFC1/07-1050	N/A	N/A	N/A

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation. External attenuation Loss is 20dB, Cable Loss is about 3dB

Test Data Environmental Conditions

Temperature:	24 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

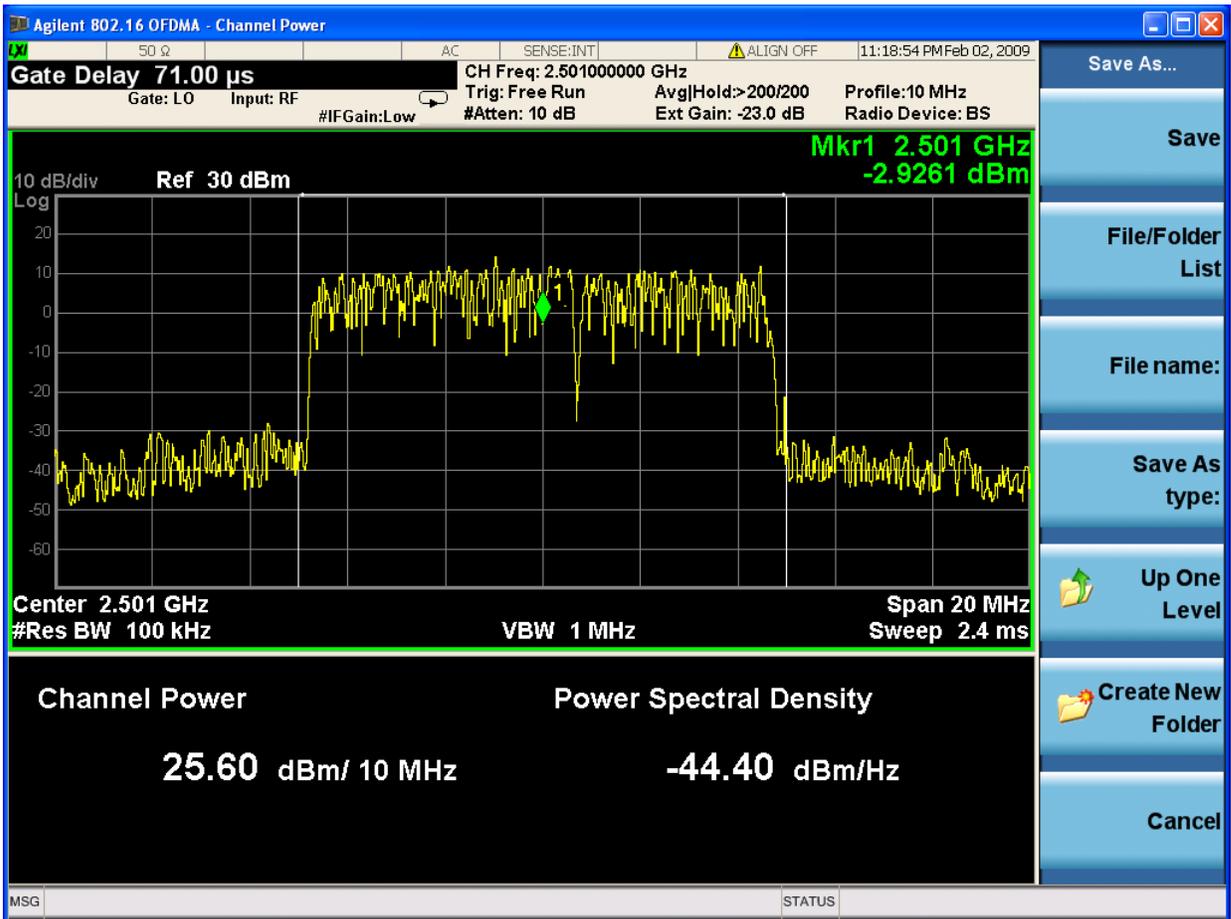
The testing was performed by Wei bin on Feb 3, 2009

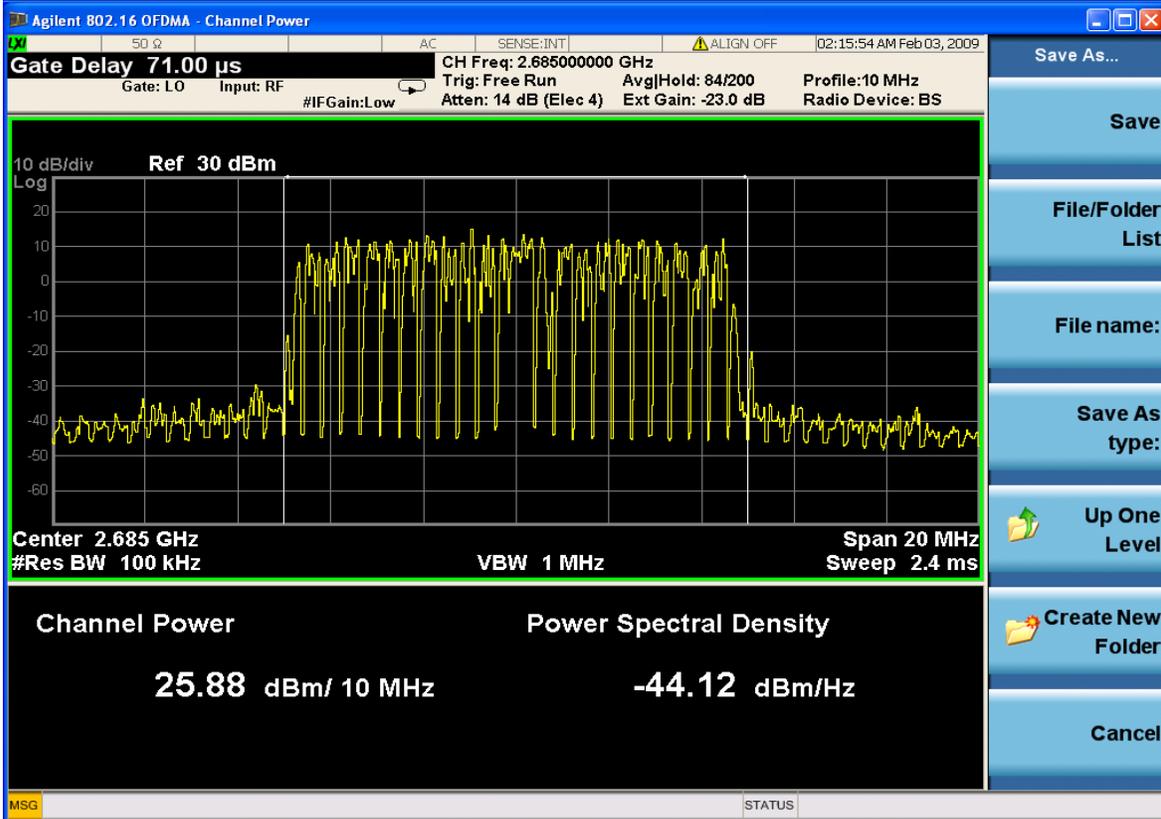
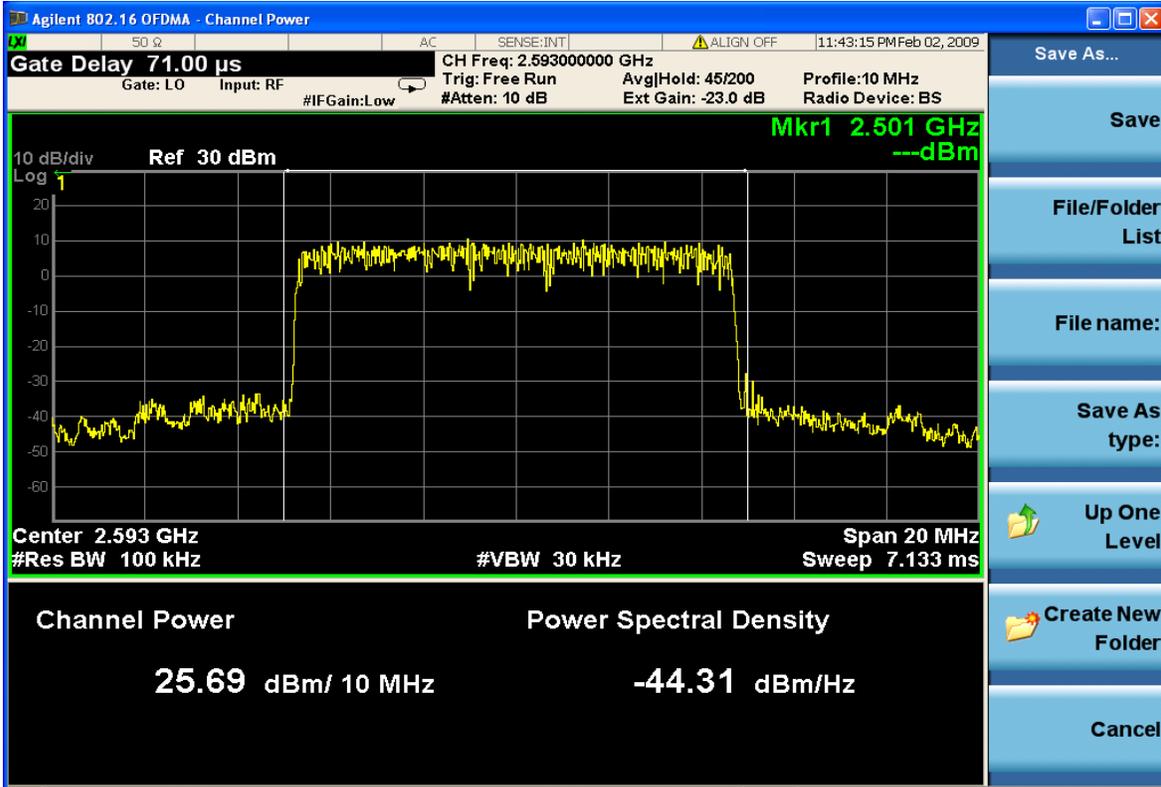
Test Result: Pass

Test Mode: Transmitting OFDMA 802.16e

Test Data:

Center Freq. (MHz)	Frequency (MHz)	Total Power in dBm (Max)	Antenna gain dBi	Total Power in W (EIRP)	Limit in W
2593	2501/2593/2685	25.88	2.2	0.643	2000





6 §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 §2.1091 RF exposure is calculated. Limits for Maximum Permissible Exposure (MPE)

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

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: 26.7(dBm)(about 0.5Watt) Maximum peak output power at antenna (with antenna gain)

Prediction distance: 20 (cm)

Predication frequency: 2593 (MHz)

Antenna Gain (typical): 2.2 (dBi)

Power density at predication frequency at 20 cm: 0.15(mW/cm²)

MPE limit for uncontrolled exposure at prediction frequency: 1.00 (mW/cm²)

Test Result: pass

7§2.1053-SPURIOUS RADIATED EMISSIONS

Applicable Standard Requirements: CFR 47, §2.1053

Test Equipment List and Details

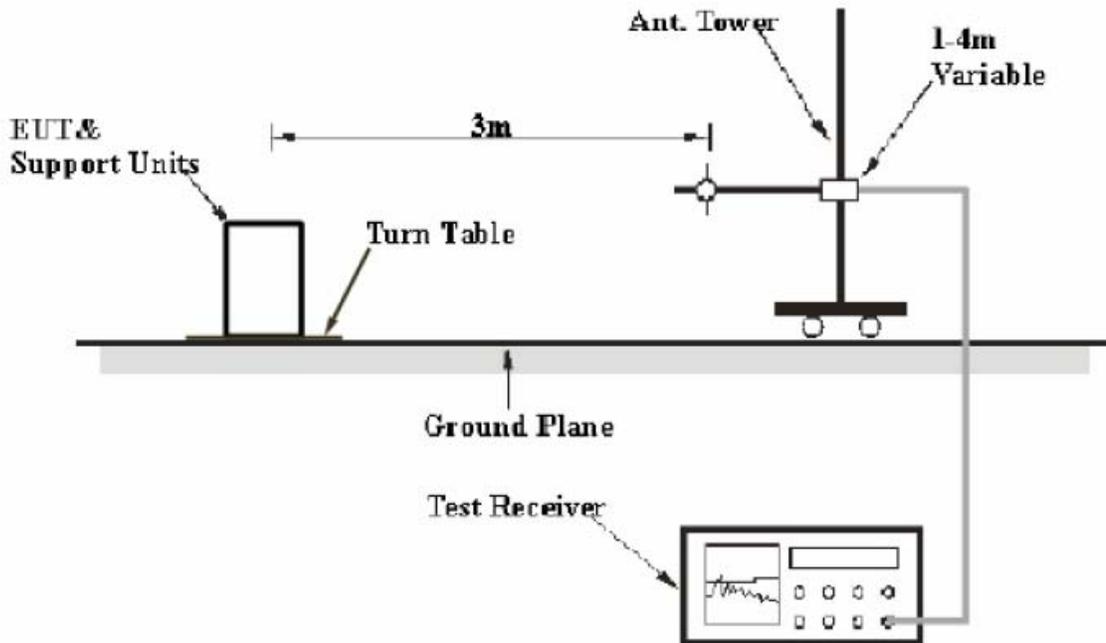
Item	Equipment	Manufacturer	Mode	Serial	Last Cal.	Cal. Interval
1	EMI Test Receiver	R&S	ESI26	100058	2008-10-16	1 Year
2	Ultra Broadband Antenna	R&S	HL562	100022	2006-3-6	3 Years
3	Double-Ridged Waveguide Horn Antenna	R&S	HF906	100032	2007-10-10	3 Years
4	Anechoic Chamber	Albatross	3m Site	N/A	2007-7-15	3 Year
5	Cable Set	R&S	RE Cable	N/A	2008-8-17	1Year
6	Cable set II	R&S	Substitution Tx Cable	N/A	2008-8-17	1Year
7	Cable set III	R&S	Hi-freq RX Antenna Cable	N/A	2008-8-17	1Year
8	Software	R&S	ES-K1	N/A	N/A	N/A
9	Double-Ridged Waveguide Horn Antenna	R&S	HF906	100013	2008-8-11	3 Years
10	VHF-UHF Broad band Antenna	SCHWARZBEC K	VUBA 9117	SB3174	2007-11-17	3 Years
11	Signal Generator	R&S	SMR20	100098	2008-12-17	1Year

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 2dB.

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.

Environmental Conditions

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

The testing was performed by Wang tieshan on Dec 20 2008

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)

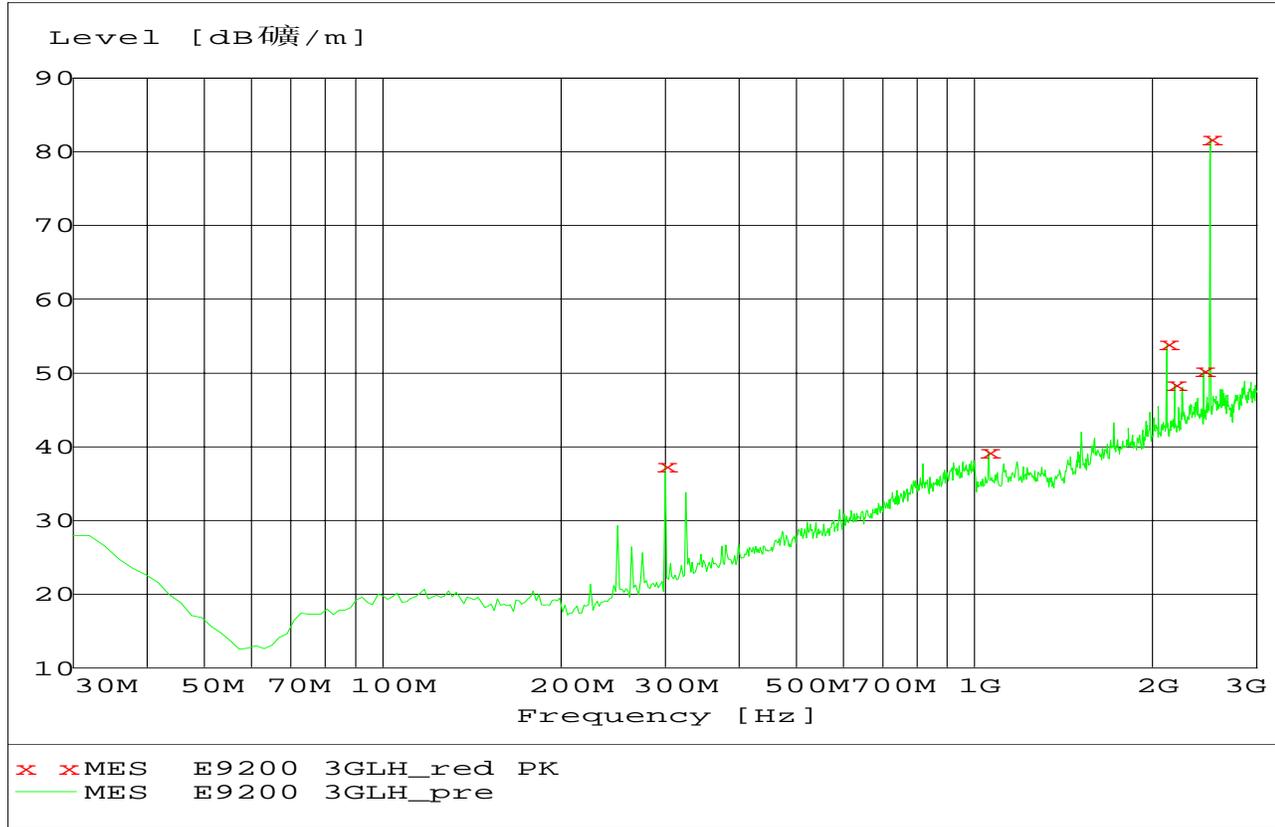
For all the radiated spurious, the spectrum analyzer set up as :

Below 1GHz, The RBW is set up as 100KHz, Up 1GHz, RBW is set up as 1MHz. VBW set up as "auto".

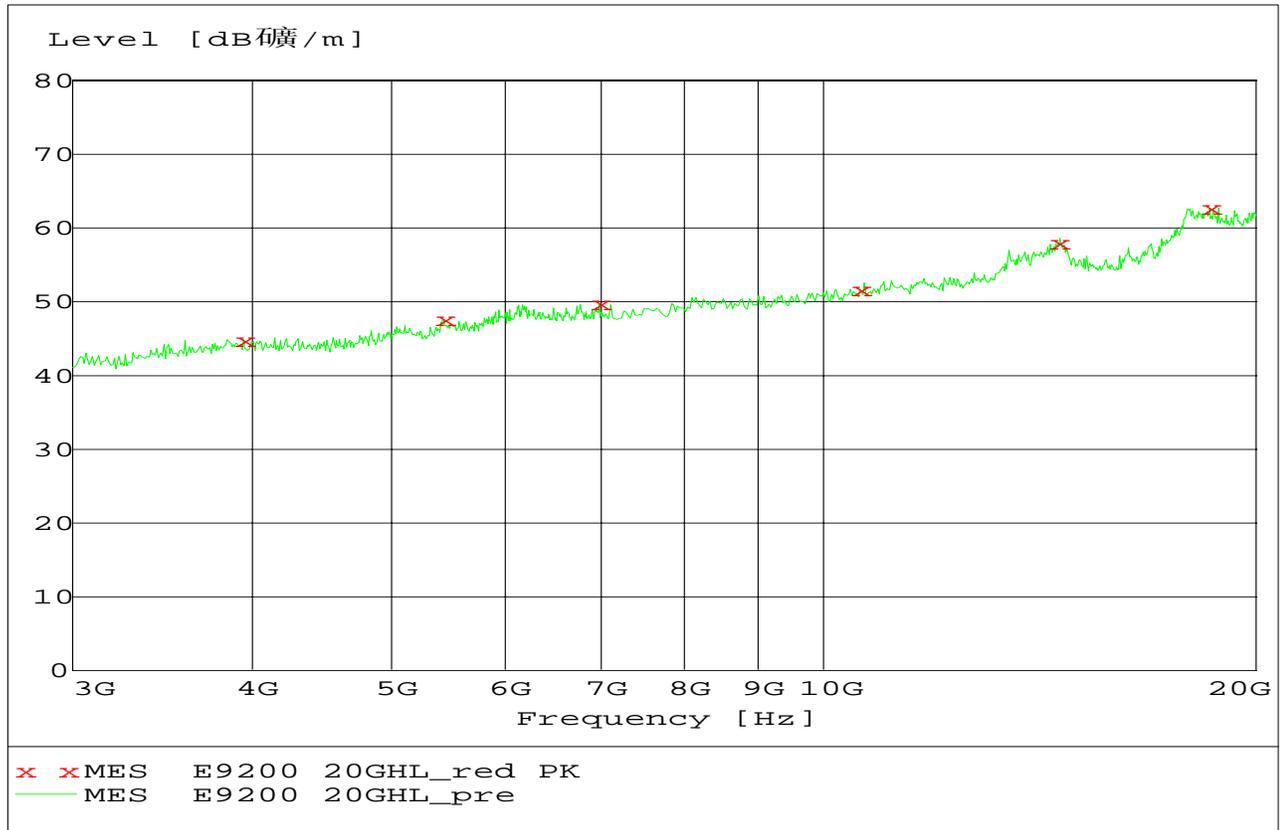
Test Results Summary: PASS

Test Data

Horizontal 2501MHZ

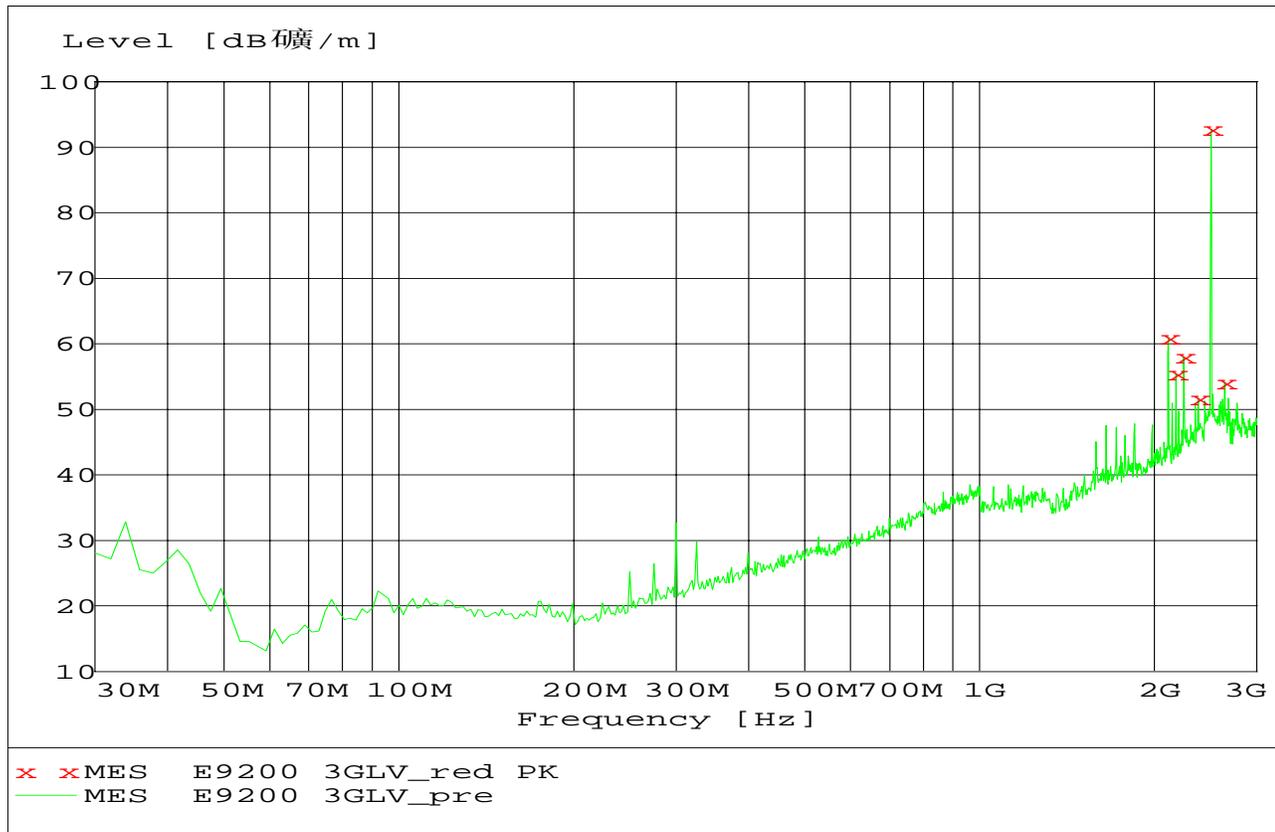


Frequency MHz	Field dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
300.2004	37.46	-60.19	1.4	0.41	-63.33	-13	53.33
1056.1122	39.37	-66.32	2.7	4.25	-66.92	-13	53.92
2114.2285	53.98	-51.22	3.9	7.05	-50.22	-13	37.22
2178.3567	48.52	-56.68	3.9	7.05	-55.68	-13	42.68
2438.8778	50.38	-54.84	4.2	7.05	-54.14	-13	41.14
2503.006	81.74	-23.48	4.2	7.95	-21.88	-13	8.88

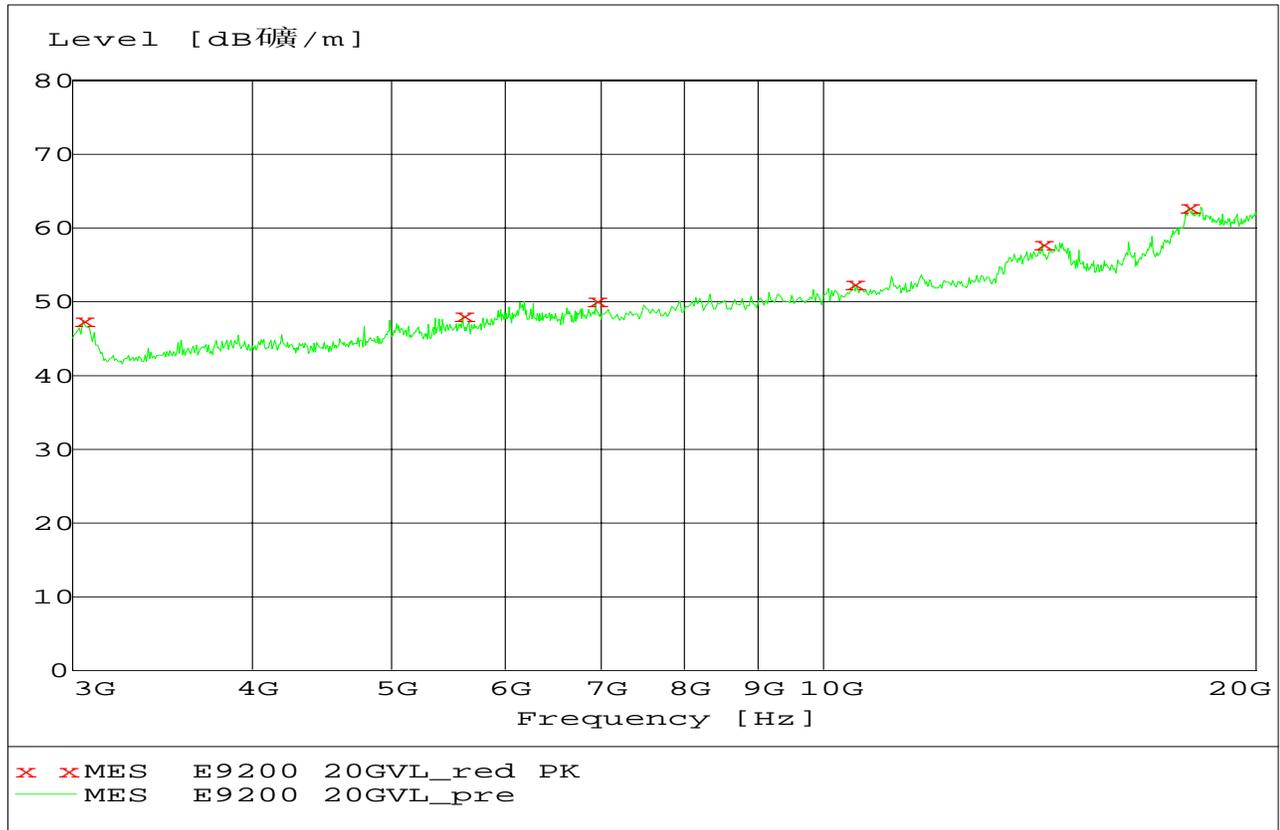


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
3945.8918	44.88	-58.52	5.3	7.75	-58.22	-13	45.22
5436.8737	47.6	-53.3	6.3	8.55	-53.2	-13	40.20
6975.9519	49.75	-55.67	7.3	9.25	-55.87	-13	42.87
10595.19	51.73	-57.37	9.1	11.75	-56.87	-13	43.87
14555.11	57.99	-50.36	11	9.15	-54.36	-13	41.36
18567.134	62.71	-40.34	12.2	6.45	-48.24	-13	35.24

Vertical 2501MHZ

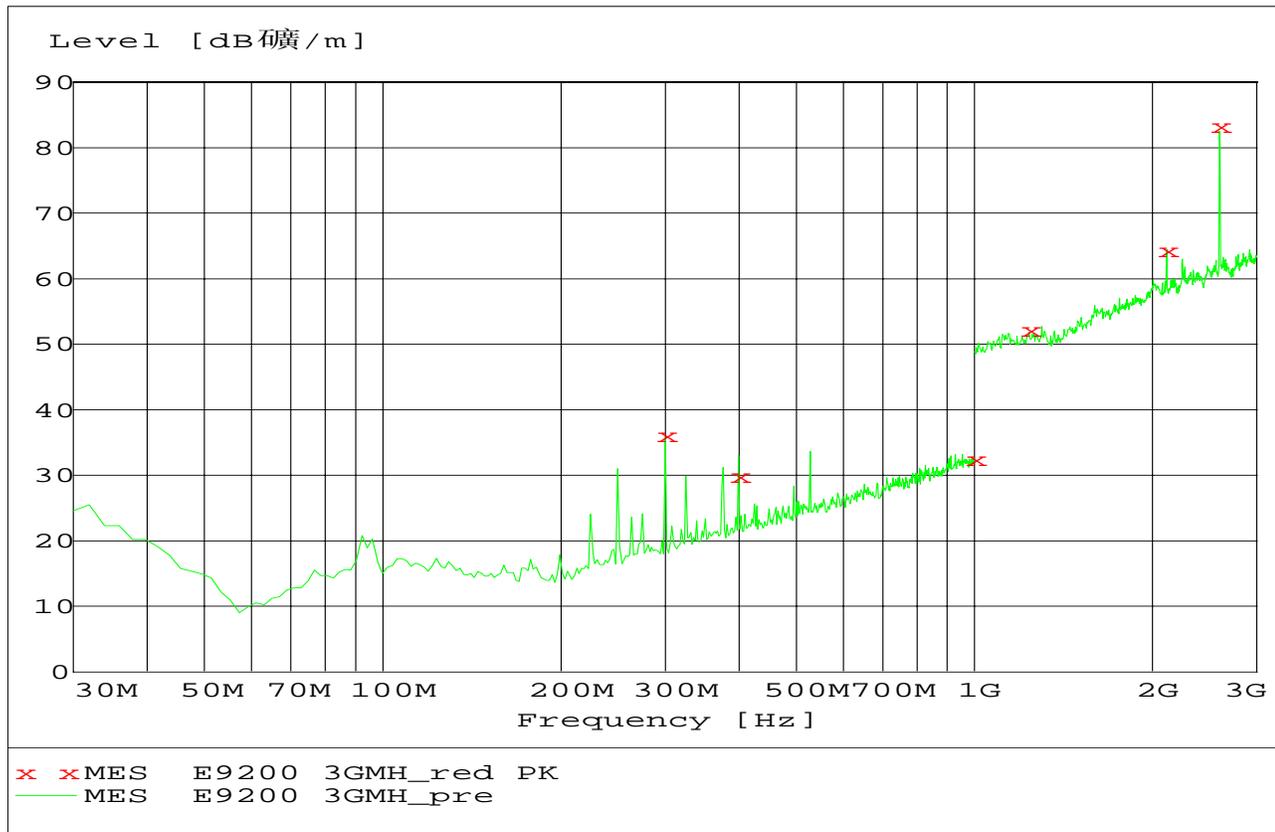


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
2114.2285	60.96	-40.52	3.9	7.05	-39.52	-13	26.52
2178.3567	55.41	-46.07	3.9	7.05	-45.07	-13	32.07
2246.493	58.09	-47.38	4	7.05	-46.48	-13	33.48
2378.7575	51.69	-51.53	4.1	7.05	-50.73	-13	37.73
2503.006	92.75	-14.78	4.2	7.95	-13.18	-13	0.18
2643.2866	54.14	-53.39	4.3	7.95	-51.89	-13	38.89

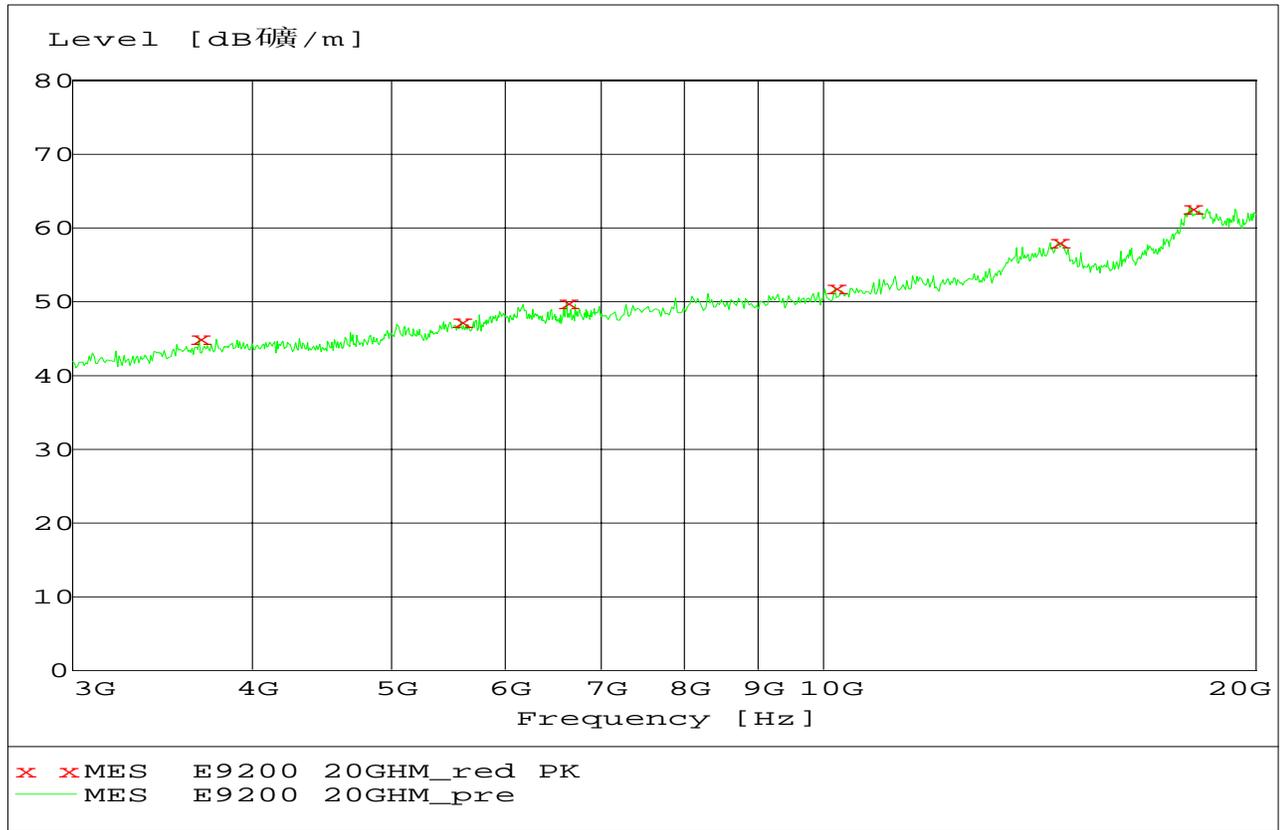


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
3048.0962	47.46	-54.28	4.7	7.75	-53.38	-13	40.38
5605.2104	48.12	-58.51	6.5	9.05	-58.11	-13	45.11
6935.8717	50.15	-58.02	7.3	9.25	-58.22	-13	45.22
10490.982	52.42	-55.81	9.1	11.35	-55.71	-13	42.71
14190.381	57.85	-51.67	10.7	9.65	-54.87	-13	41.87
17941.884	62.89	-48.04	12.2	8.95	-53.44	-13	40.44

Horizontal 2593MHZ

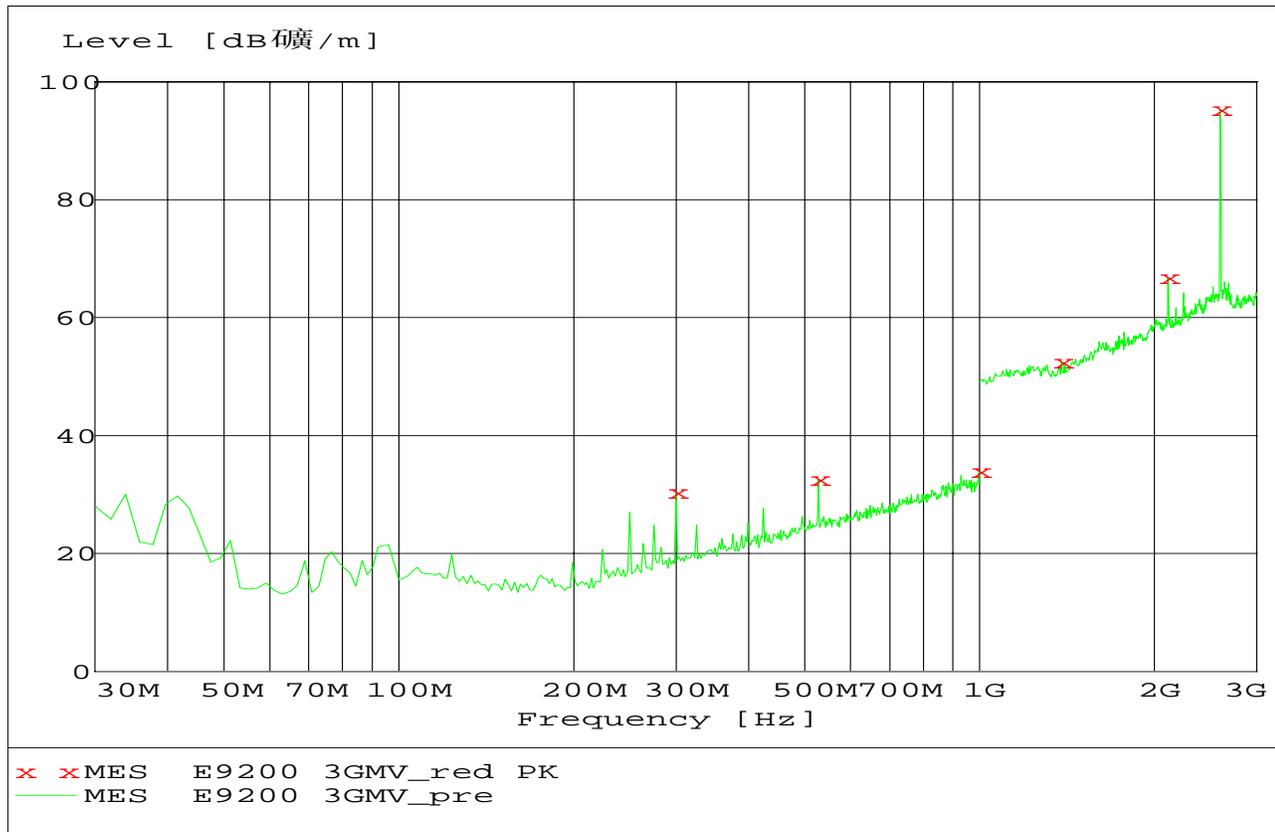


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
300.2004	36.07	-61.58	1.4	0.41	-64.72	-13	51.72
399.33868	29.88	-67.18	1.7	-0.85	-71.88	-13	58.88
1000	32.43	-59.57	2.7	4.25	-60.17	-13	47.17
1236.4729	52.19	-53.21	3	4.25	-54.11	-13	41.11
2110.2204	64.33	-40.87	3.9	7.05	-39.87	-13	26.87
2595.1904	83.35	-21.87	4.3	7.95	-20.37	-13	7.37

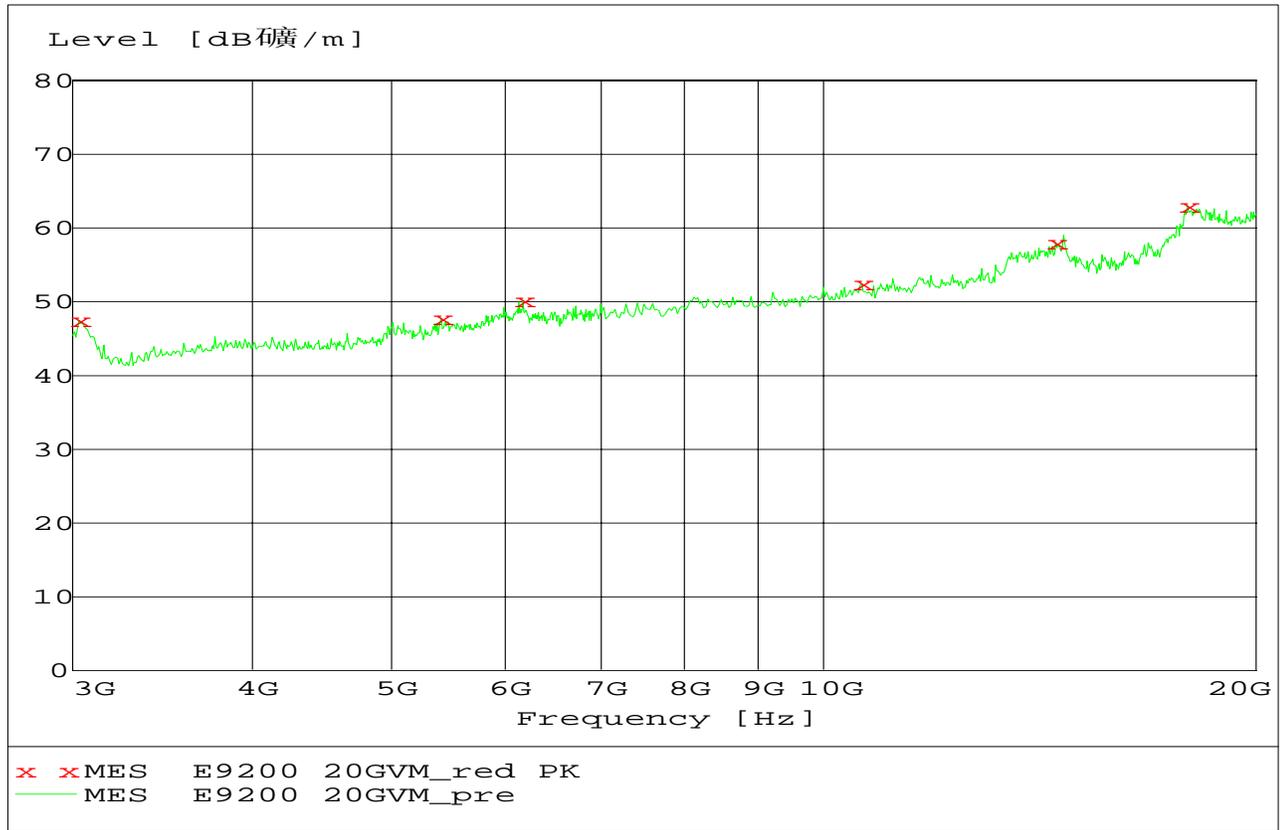


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
3673.3467	45.12	-58.96	5.1	7.75	-58.46	-13	45.46
5589.1784	47.43	-51.18	6.4	9.05	-50.68	-13	38.68
6623.2465	49.9	-51.87	7.1	9.25	-51.87	-13	38.87
10178.357	51.91	-57.03	8.9	11.35	-56.73	-13	43.73
14555.11	58.12	-50.23	11	9.15	-54.23	-13	41.23
18020.04	62.75	-43.69	12.2	6.45	-51.59	-13	38.59

Vertical 2593MHZ

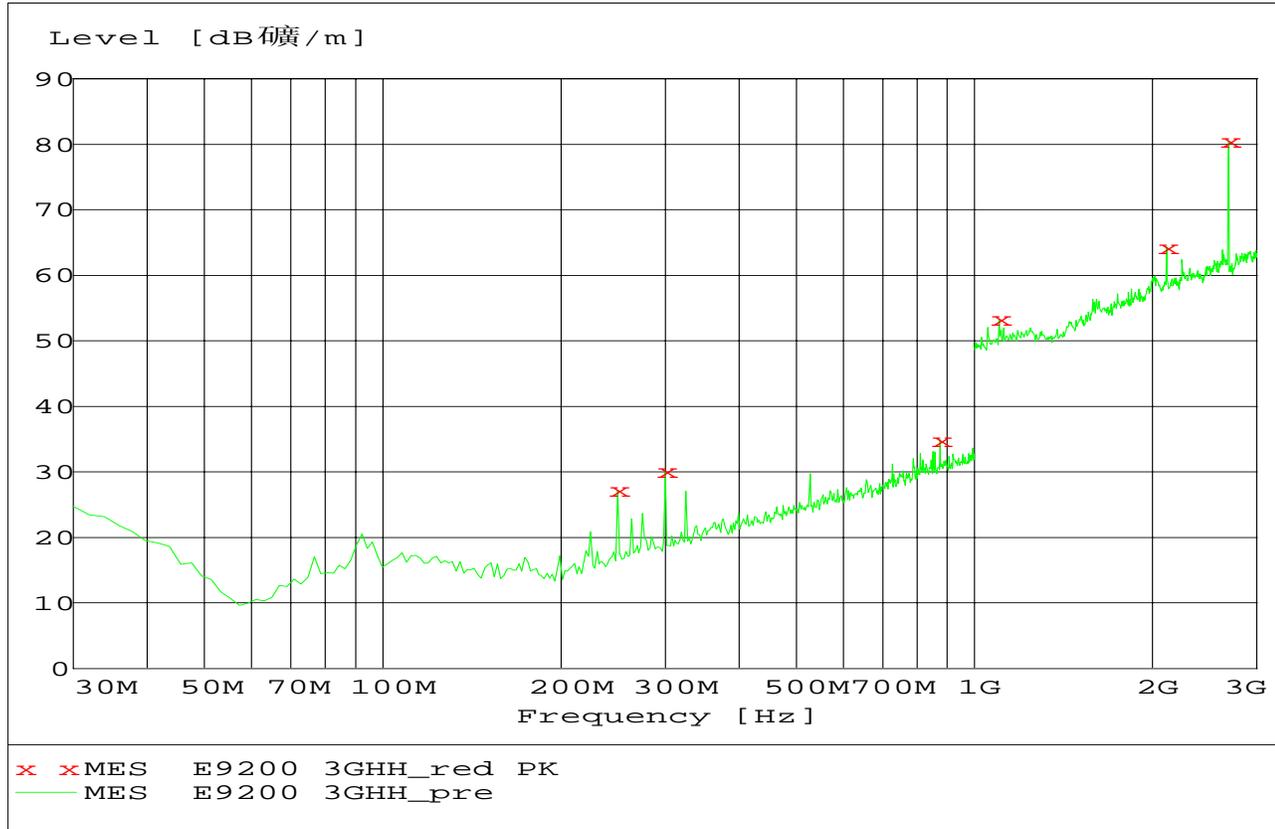


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
300.2004	30.41	-66.78	1.4	0.41	-69.92	-13	56.92
527.63527	32.63	-62.32	1.9	-1.32	-67.69	-13	54.69
1000	33.91	-62.2	2.7	4.25	-62.8	-13	49.8
1384.7695	52.45	-51.34	3.1	4.25	-52.34	-13	39.34
2110.2204	66.77	-34.71	3.9	7.05	-33.71	-13	20.71
2595.1904	95.33	-12.2	4.3	7.95	-10.7	-13	-2.3

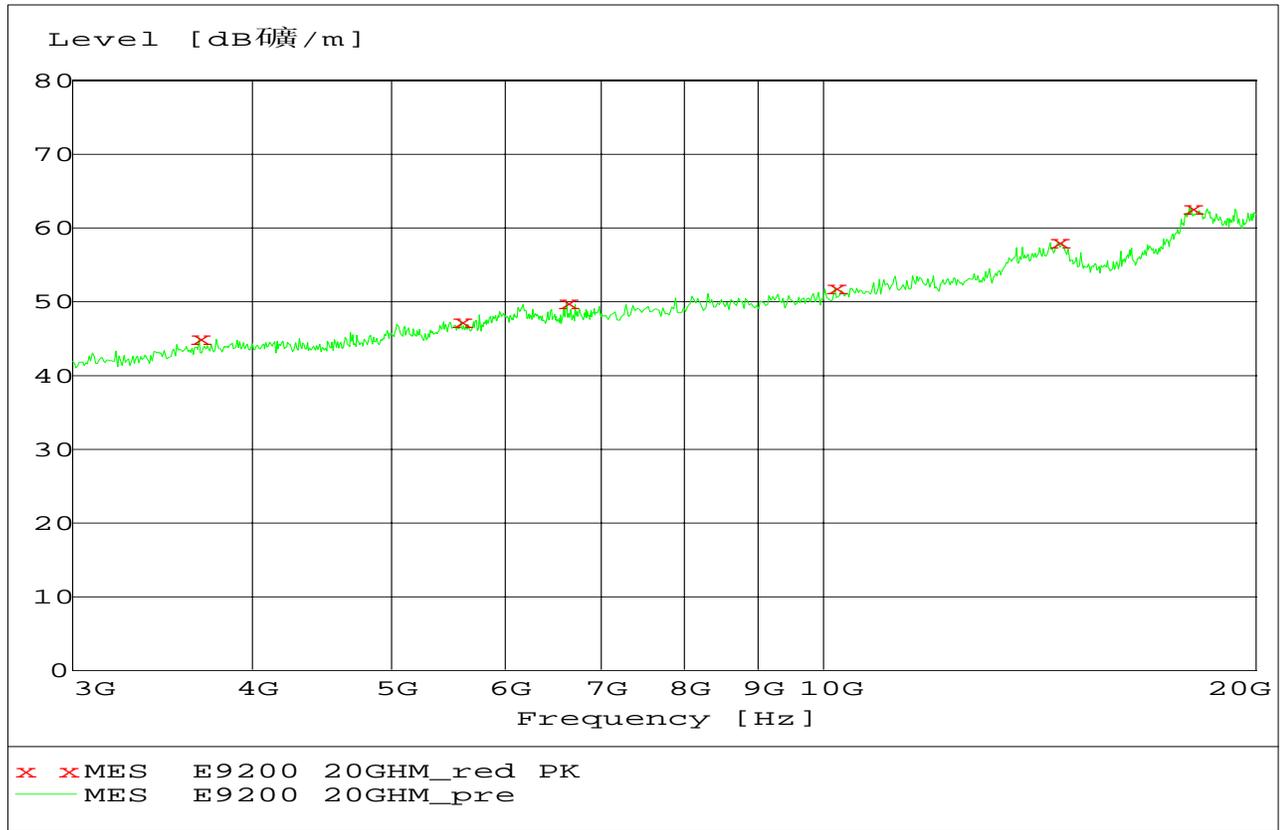


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
3032.0641	47.46	-54.28	4.7	7.75	-53.38	-13	43.38
5412.8257	47.84	-58.79	6.3	8.55	-58.69	-13	45.69
6174.3487	50.19	-57.28	6.9	9.05	-57.28	-13	44.28
10621.242	52.46	-55.77	9.1	11.75	-55.27	-13	42.27
14503.006	58.09	-51.43	11	9.15	-55.43	-13	42.43
17915.832	63.01	-47.92	12.2	8.95	-53.32	-13	40.32

Horizontal 2685MHZ

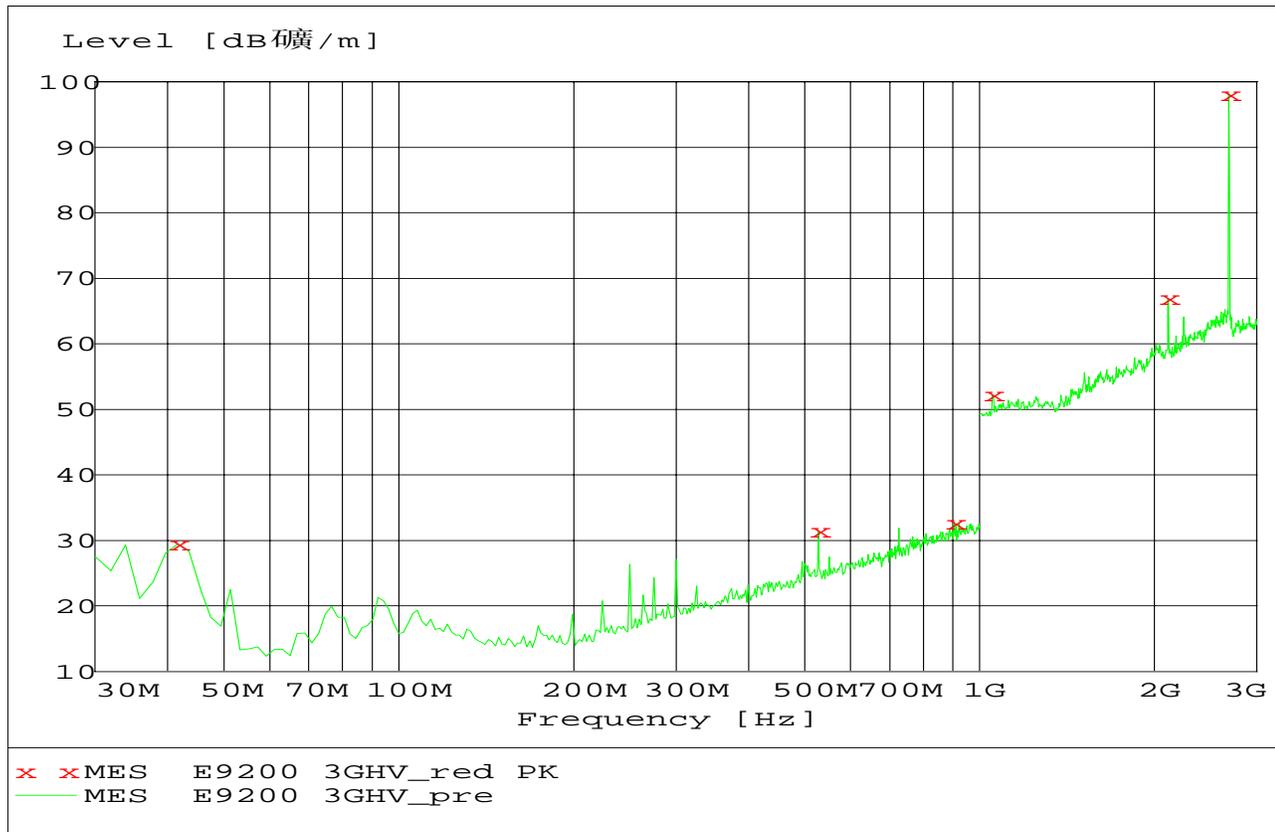


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
249.65932	27.23	-67.53	1.3	1.49	-69.49	-13	56.49
300.2004	30.1	-67.55	1.4	0.41	-70.69	-13	57.69
875.59118	34.9	-62.19	2.5	-1.24	-68.08	-13	55.08
1100.2004	53.36	-52.33	2.7	4.25	-52.93	-13	39.93
2110.2204	64.33	-40.87	3.9	7.05	-39.87	-13	26.87
2687.3747	80.53	-24.21	4.4	7.95	-22.81	-13	9.81

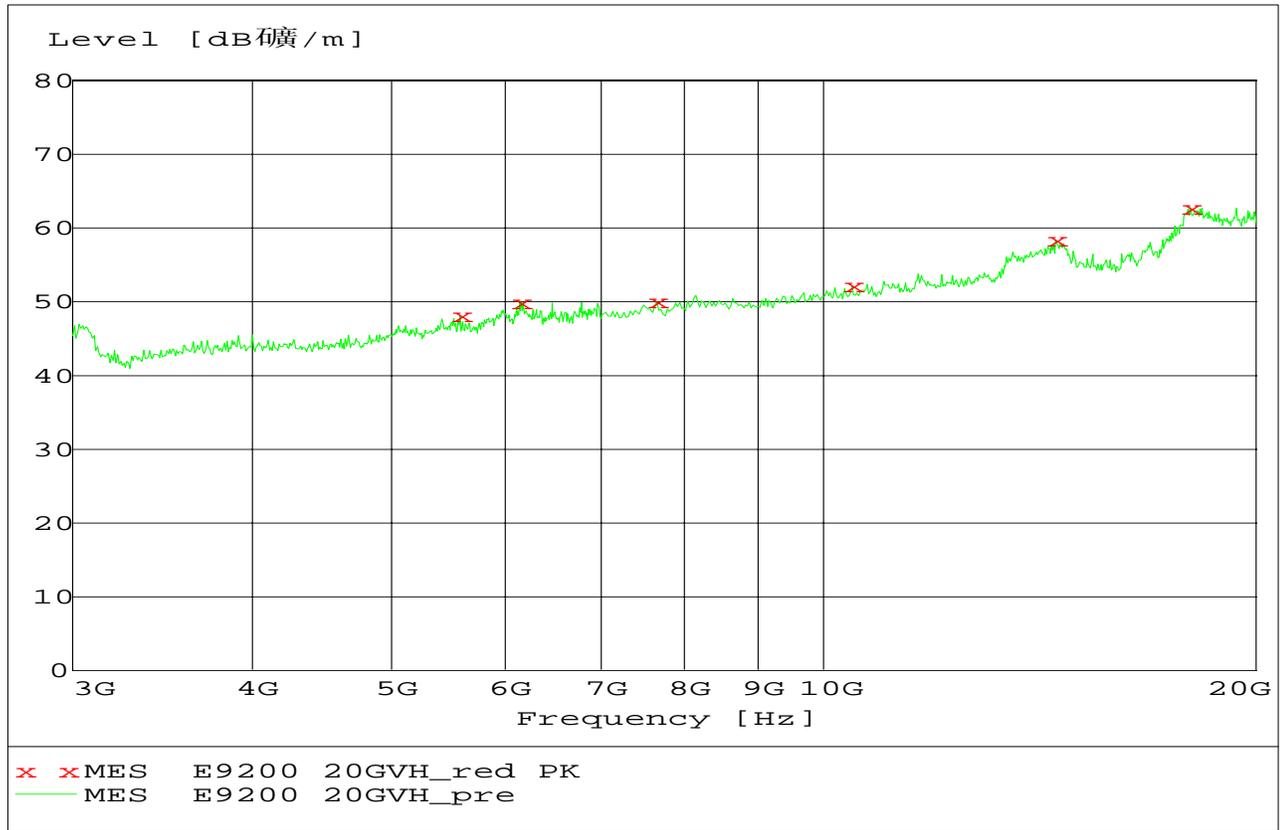


Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
3673.3467	45.12	-58.96	5.1	7.75	-58.46	-13	45.46
5589.1784	47.43	-51.18	6.4	9.05	-50.68	-13	37.68
6623.2465	49.9	-51.87	7.1	9.25	-51.87	-13	38.87
10178.357	51.91	-57.03	8.9	11.35	-56.73	-13	43.73
14555.11	58.12	-50.23	11	9.15	-54.23	-13	41.23
18020.04	62.75	-43.69	12.2	6.45	-51.59	-13	38.59

Vertical 2685MHZ



Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
41.663327	29.48	-36.74	0.5	-37.01	-76.4	-13	63.4
527.63527	31.51	-63.44	1.9	-1.32	-68.81	-13	55.81
902.80561	32.79	-64.4	2.5	-1.77	-70.82	-13	57.82
1052.1042	52.24	-55.95	2.7	4.25	-56.55	-13	43.55
2110.2204	66.95	-34.53	3.9	7.05	-33.53	-13	20.53
2687.3747	98.2	-9.33	4.4	7.95	-7.93	-13	-5.07



Frequency MHz	Field strength dBmV/m	Output power of the signal generator (dBm)	Cable loss (dB)	Isotropic gain of the substitution antenna (dBi)	Measurement result (dBm)	Limit (dBm)	Margin (dB)
5581.1623	48.15	-58.48	6.4	9.05	-57.98	-13	44.98
6142.2846	49.94	-57.53	6.8	9.05	-57.43	-13	44.43
7651.3026	50.02	-62.33	7.8	9.25	-63.03	-13	50.03
10464.93	52.19	-56.04	9.1	11.35	-55.94	-13	42.94
14503.006	58.41	-51.11	11	9.15	-55.11	-13	42.11
17993.988	62.77	-48.16	12.2	8.95	-53.56	-13	40.56

Indicated		Table	Test Antenna		Substituted			Cable Loss dB	Antenna Gain Correction	Absolute Level (dBm)	FCC Part 27	
Frequency (MHz)	Amp. (dBu) V	Angle Degree	Height (M)	Polar H/V	Frequency (MHz)	Level (dBm)	Polar H/V				Limit (dBm)	Margin (dB)
Low channel(2501MHz)												
29673	49.00	190	1.9	H	29673	-67.85	H	6.9	46.5	-28.25	-13	15.25
20249	48.00	200	1.6	H	20249	-69.29	H	6.5	45	-30.79	-13	17.79
20358	48.50	150	1.5	V	20358	-70.21	V	6.5	45	-31.71	-13	18.71
29936	49.00	210	1.0	V	29936	-68.31	V	6.9	46.5	-28.71	-13	15.71
Middle channel(2593MHz)												
20303	47.67	170	1.6	H	20303	-71.08	H	6.5	45	-32.58	-13	19.58
26722	49.17	80	1.5	H	26722	-69.01	H	6.8	45.5	-30.31	-13	17.31
20163	48.00	180	1.5	V	20163	-70.65	V	6.5	45	-32.15	-13	19.15
26564	49.17	110	1.5	V	26564	-68.59	V	6.8	45.5	-29.89	-13	16.89
High channel(2685MHz)												
20488	47.83	242	1.2	H	20488	-69.35	H	6.5	45	-30.85	-13	17.85
29598	49.50	70	1.5	H	29598	-68.24	H	6.9	46.5	-28.64	-13	15.64
20423	48.33	150	1.5	V	20423	-69.58	V	6.5	45	-31.08	-13	18.08
29732	50.00	210	1.0	V	29732	-62.38	V	6.9	46.5	-22.78	-13	9.78

Radiation spurious from 20GHz to 30GHz

8§2.1051, §27.53- SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard Requirements: CFR 47§2.1051, §27.53 .

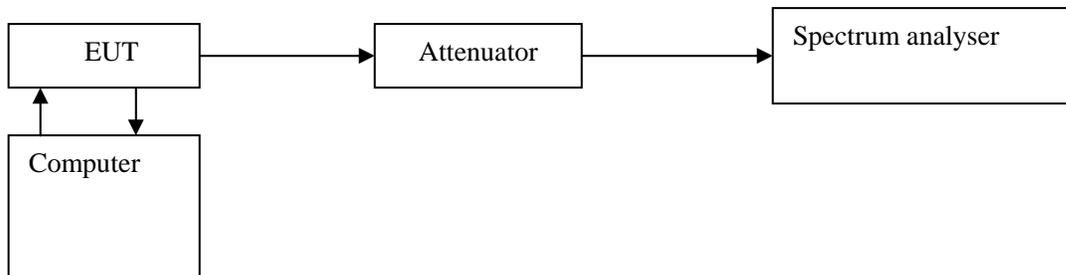
The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in §2.1051.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	N/A	2008-5-2	2009-5-2
MCL	BW-S10W2 10dB Attenuator	BW-S10W2	N/A	N/A	N/A
SWA	SWA Packard RF Cable	RFC1/07-1050	N/A	N/A	N/A

Test Procedure

EUT Setup:



REMARKS: Attenuator loss (dB)=20dB, Cable Loss (dB)=3dB.

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:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

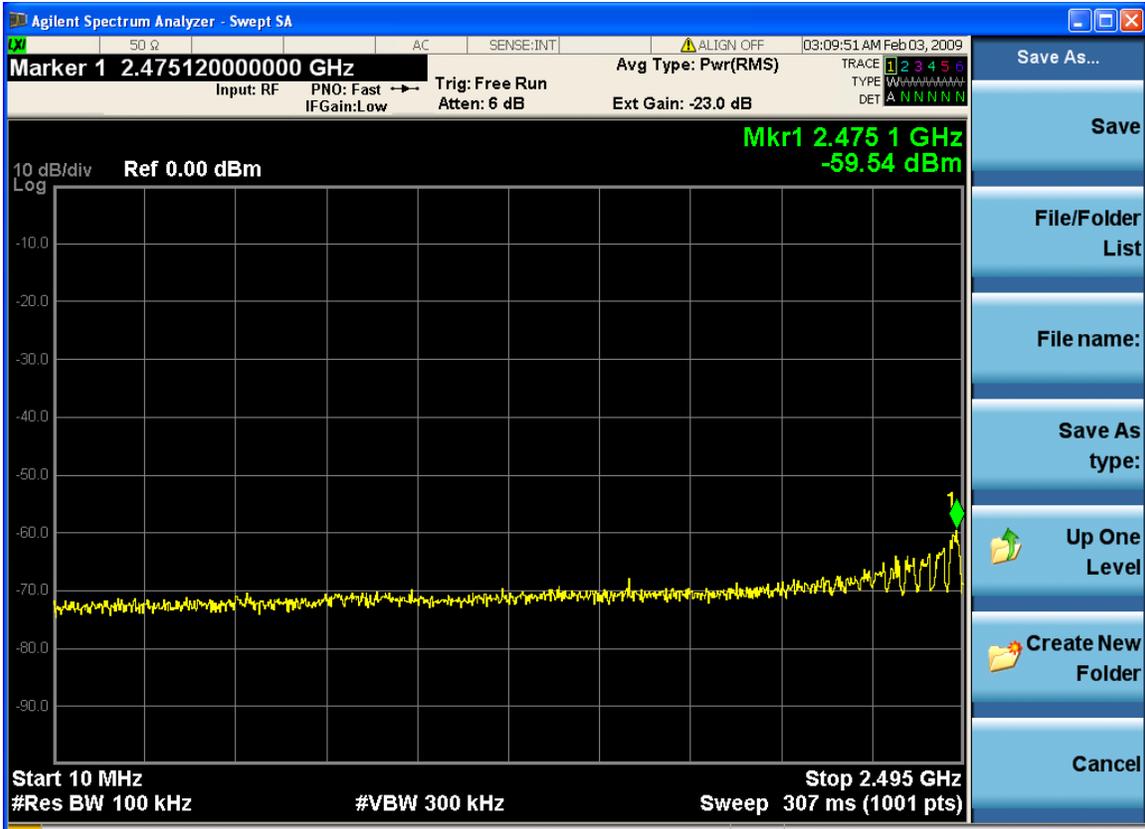
The testing was performed by Wei bin on Feb 5,2008

Test Result: Pass

Test Mode: Transmitting OFDMA 802.16e

Test Data:

Scanning Range	Frequency(MHz)of Carrier	Limit(dBm)
10MHz~2495MHz	2501/2593/2685	-13
2691MHz ~13.6GHz	2501/2593/2685	-13



Save As...

Save

File/Folder List

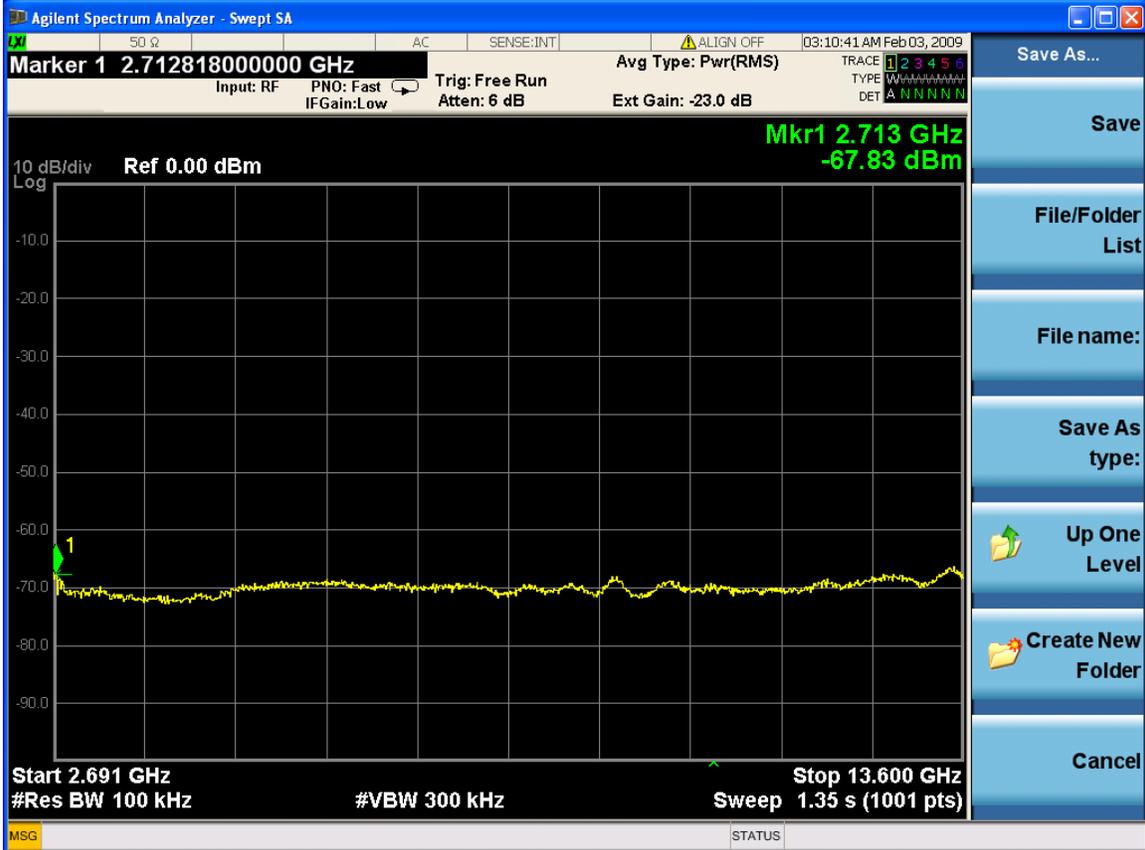
File name:

Save As type:

Up One Level

Create New Folder

Cancel



Save As...

Save

File/Folder List

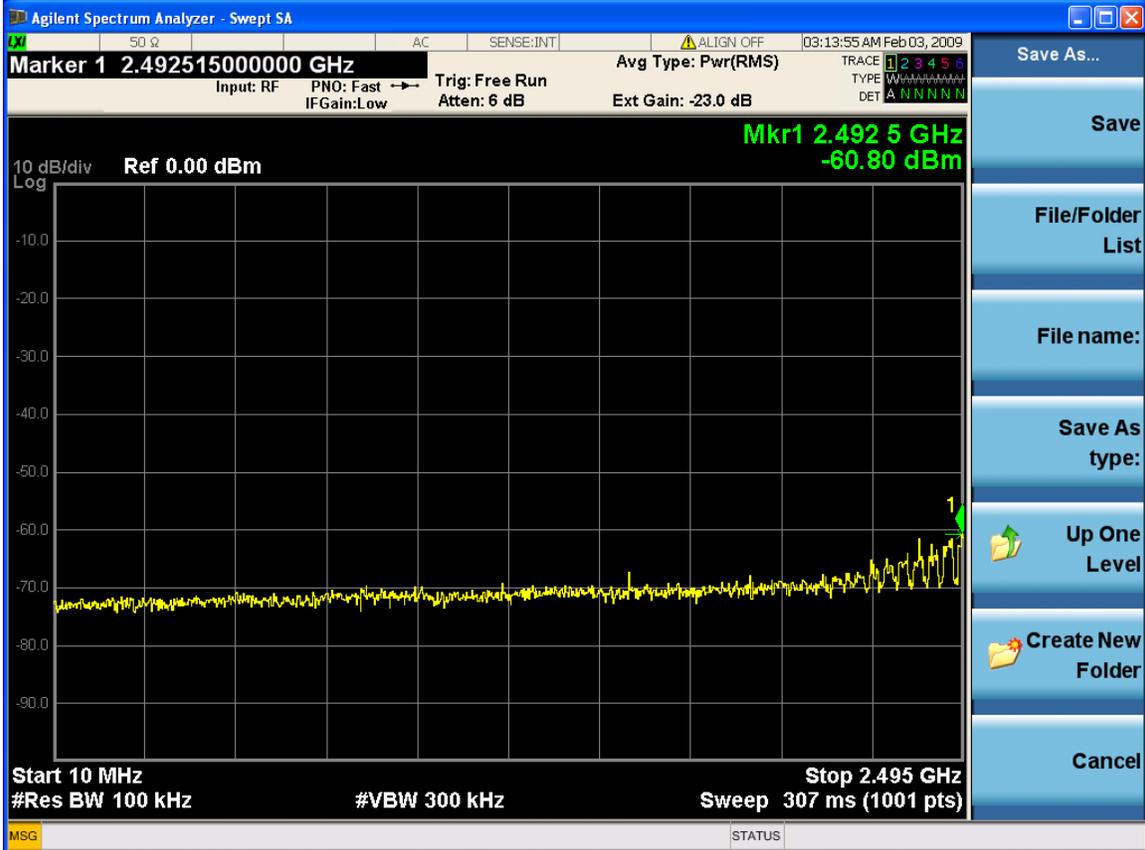
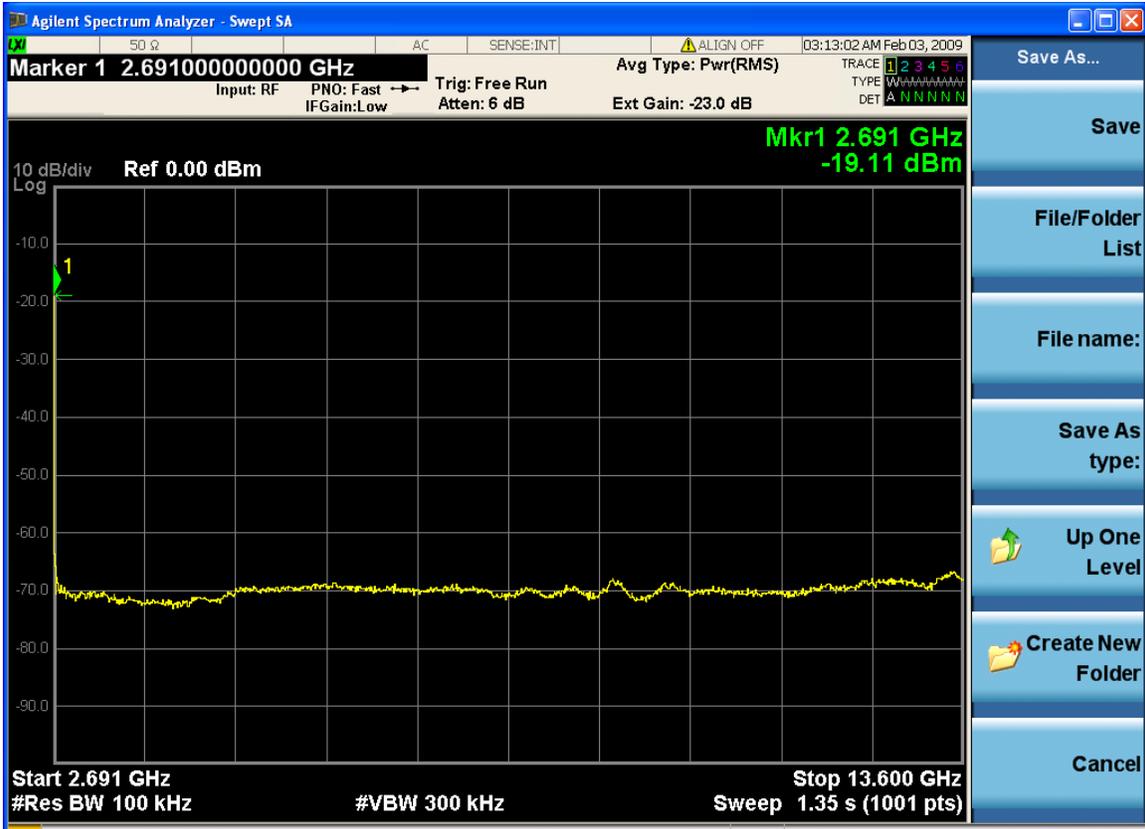
File name:

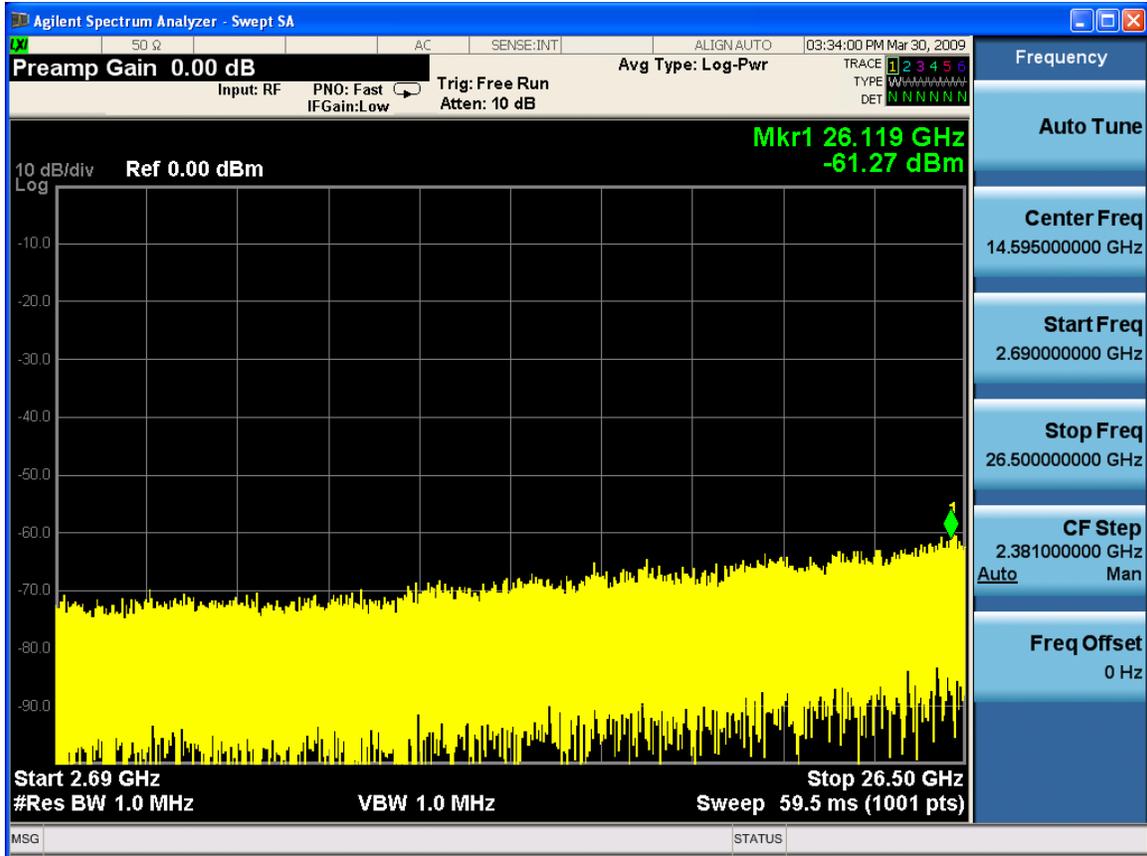
Save As type:

Up One Level

Create New Folder

Cancel





9§2.1049-OCCUPIED BANDWIDTH

Applicable Standard Requirements: CFR 47, Section 2.1049

Test Equipment List and Details :

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	N/A	2008-5-2	2009-5-2
MCL	BW-S10W2 10dB Attenuator	BW-S10W2	N/A	N/A	N/A
SWA	SWA Packard RF Cable	RFC1/07-1050	N/A	N/A	N/A

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 99%Power bandwidth was recorded.

Environmental Conditions

Temperature:	20 ° C
Relative Humidity:	53%
ATM Pressure:	1009mbar

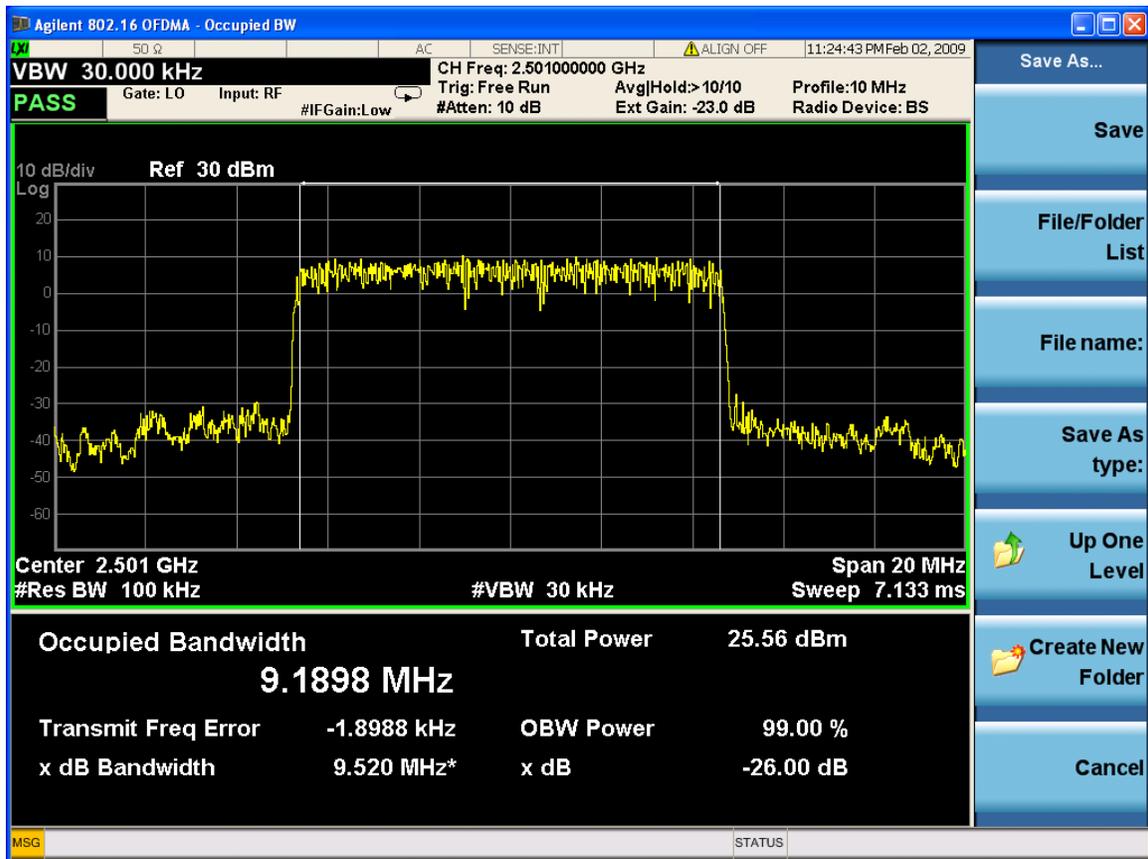
The testing was performed by Wei bin on Feb 5, 2008.

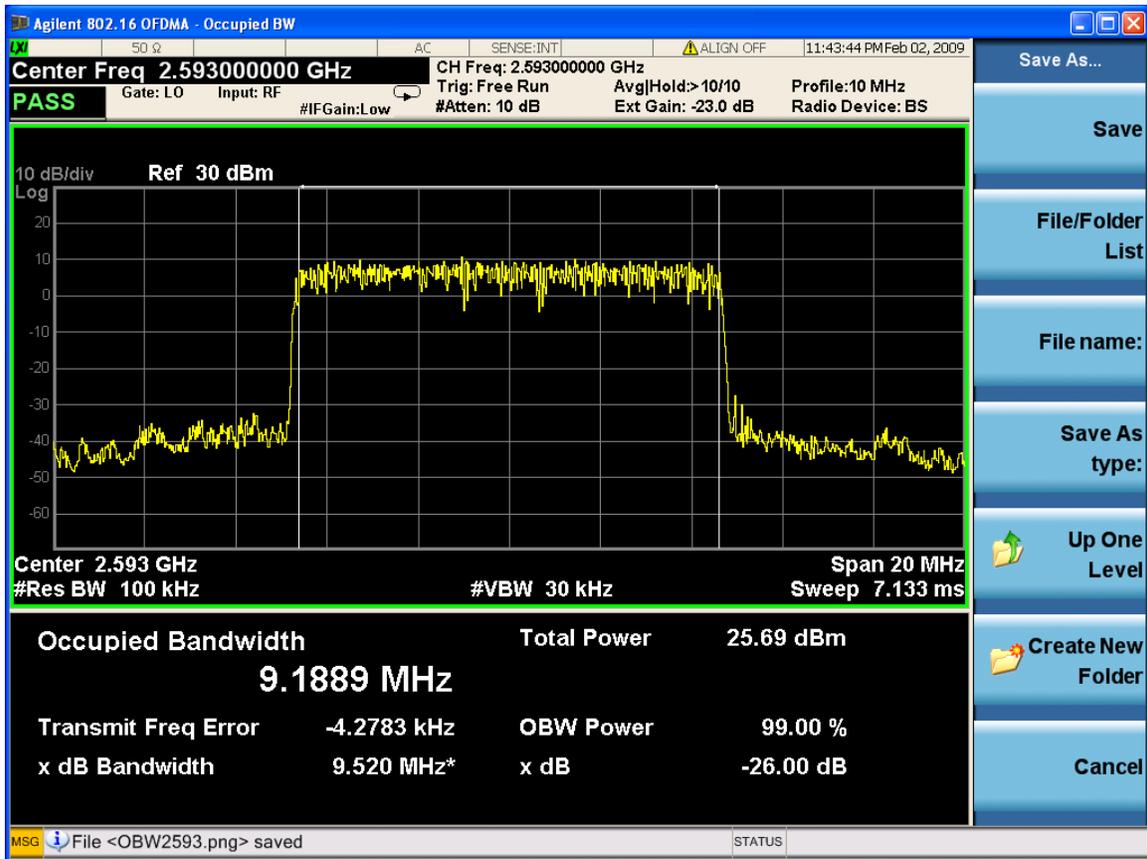
Test Result: Pass

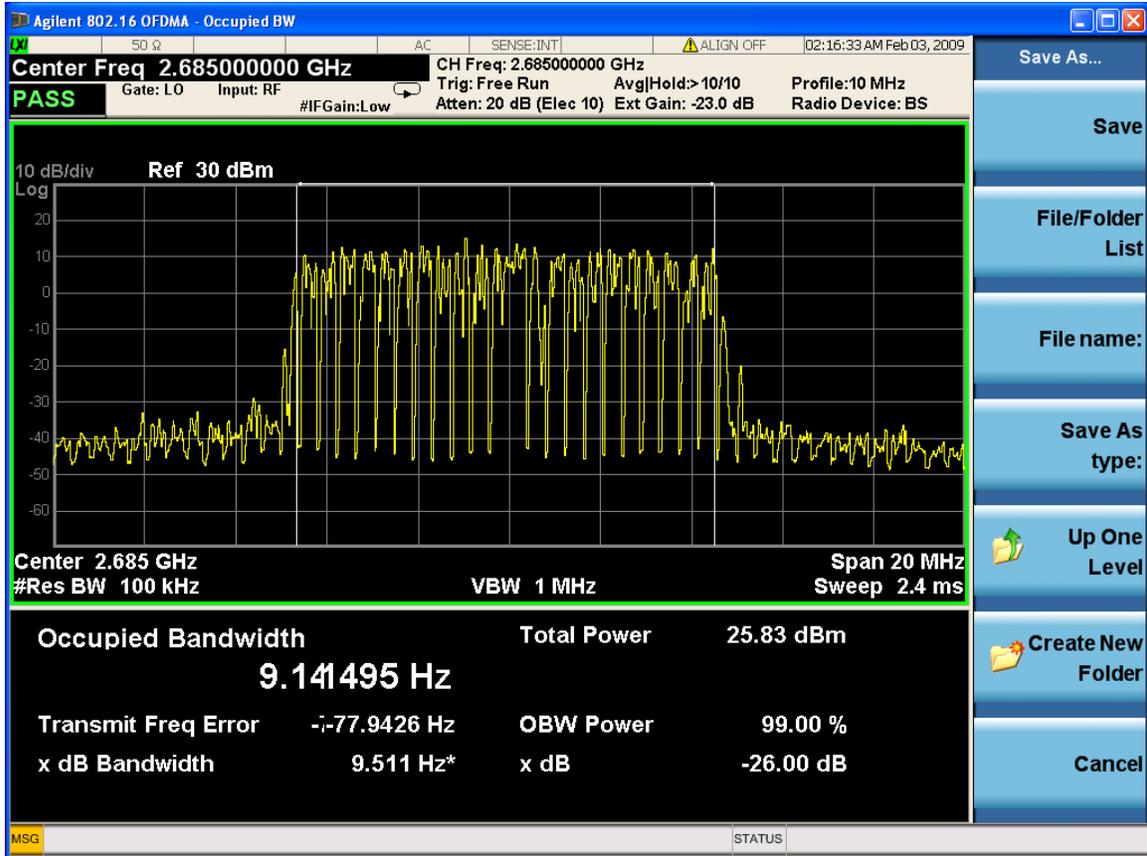
Test Mode: Transmitting OFDMA 802.16e

Test Data

Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
2501/2593/2685	9.1898/9.1889/9.1495	<10







10§27.53-BAND EDGES

Applicable Standard

According to §27.53, 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	MXA Series Spectrum Analyzer	N9020A	N/A	2008-5-2	2009-5-2
MCL	BW-S10W2 10dB Attenuator	BW-S10W2	N/A	N/A	N/A
SWA	SWA Packard RF Cable	RFC1/07-1050	N/A	N/A	N/A

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:	20 °C
Relative Humidity:	53%
ATM Pressure:	1009mbar

The testing was performed by Wei bin , Feb 5 2008

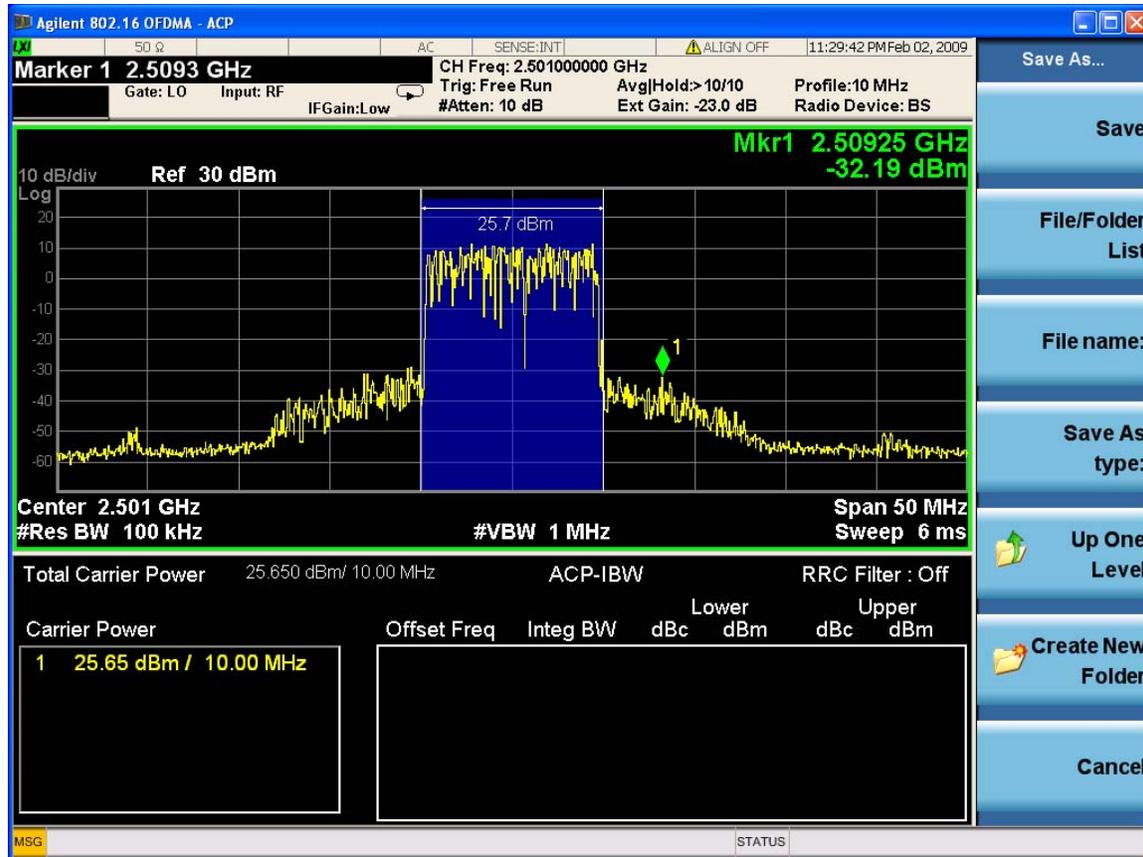
Test Result: Pass

Test Mode: Transmitting OFDMA 802.16e

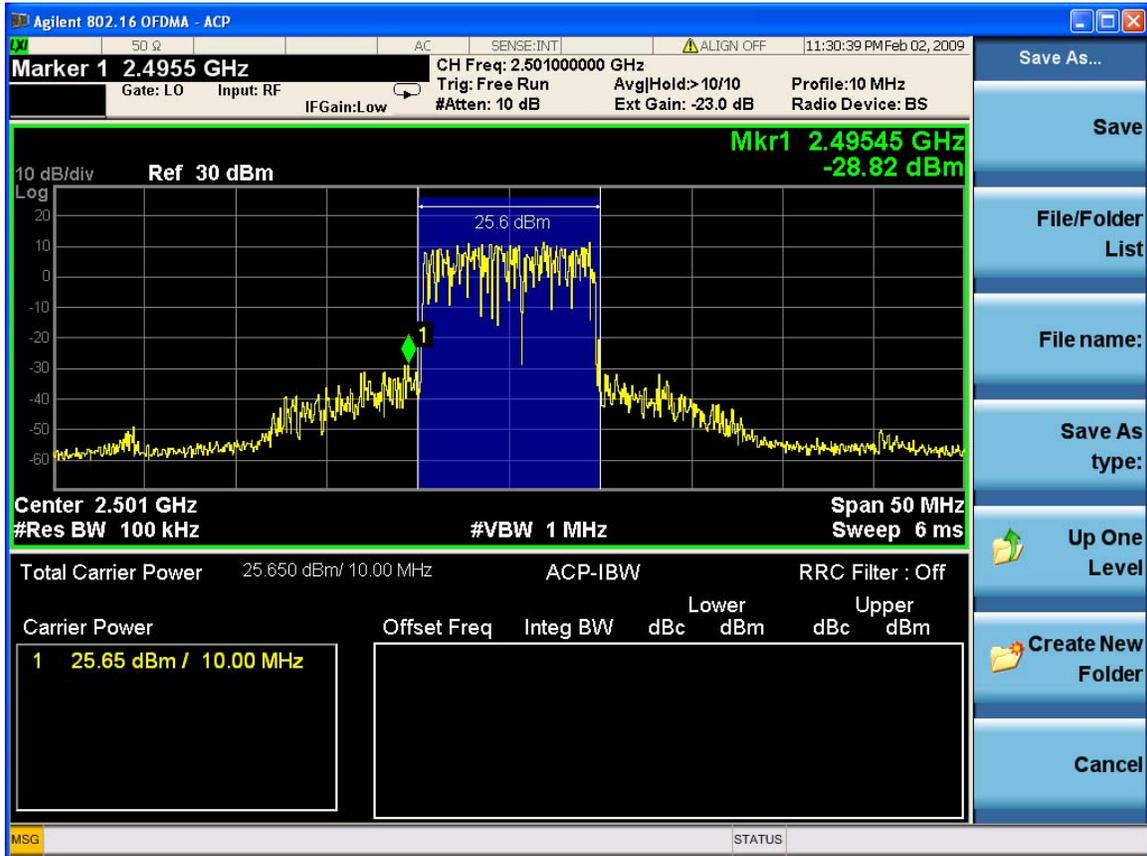
Test Data

Frequency (MHz)	Emission (dBm)	Limit (dBm)
2501/2593/2685	-28.82/30.58/20.05	-13.00

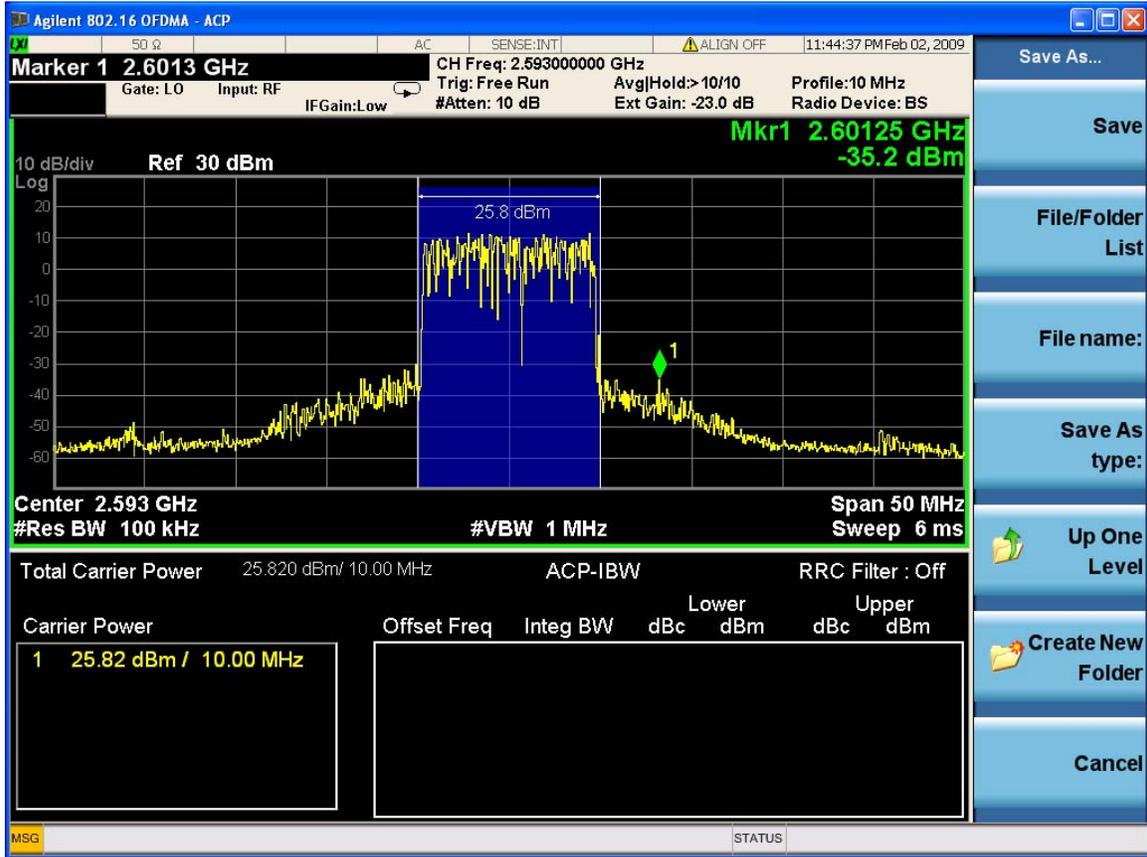
The peak value on left band edge



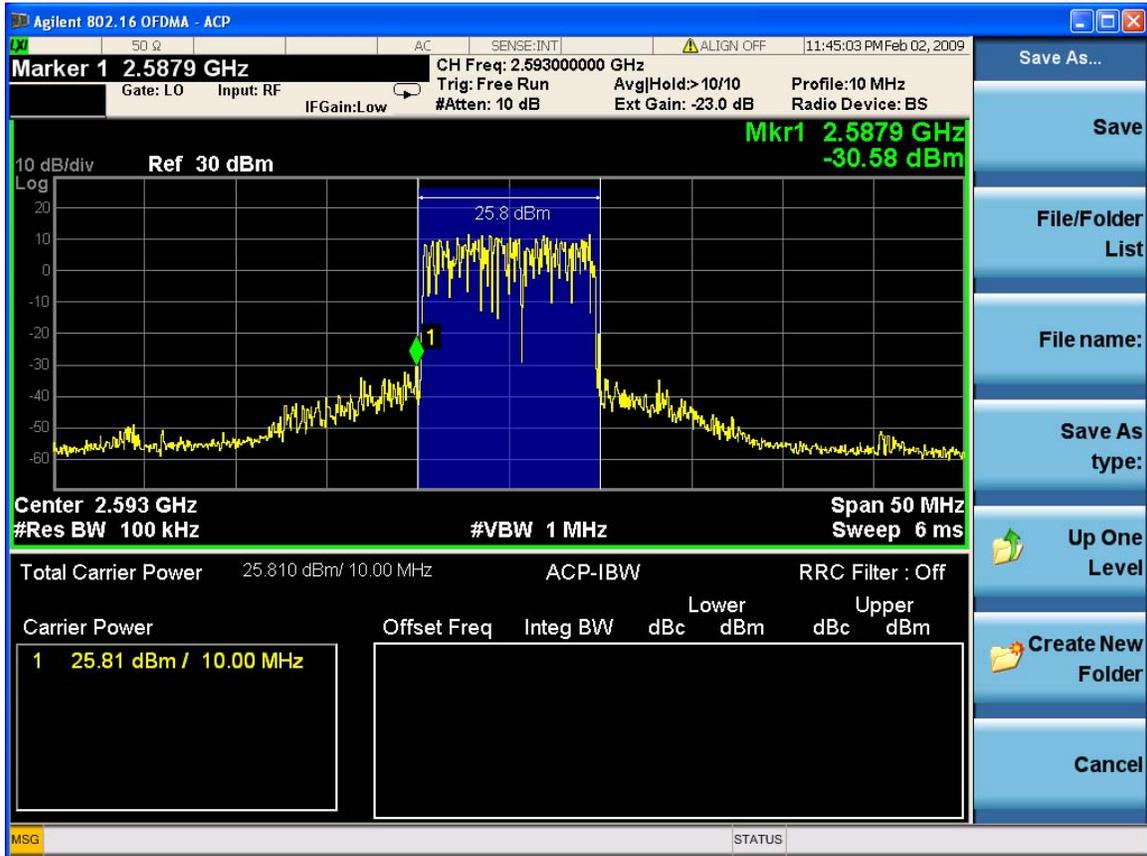
The peak value on right band edge



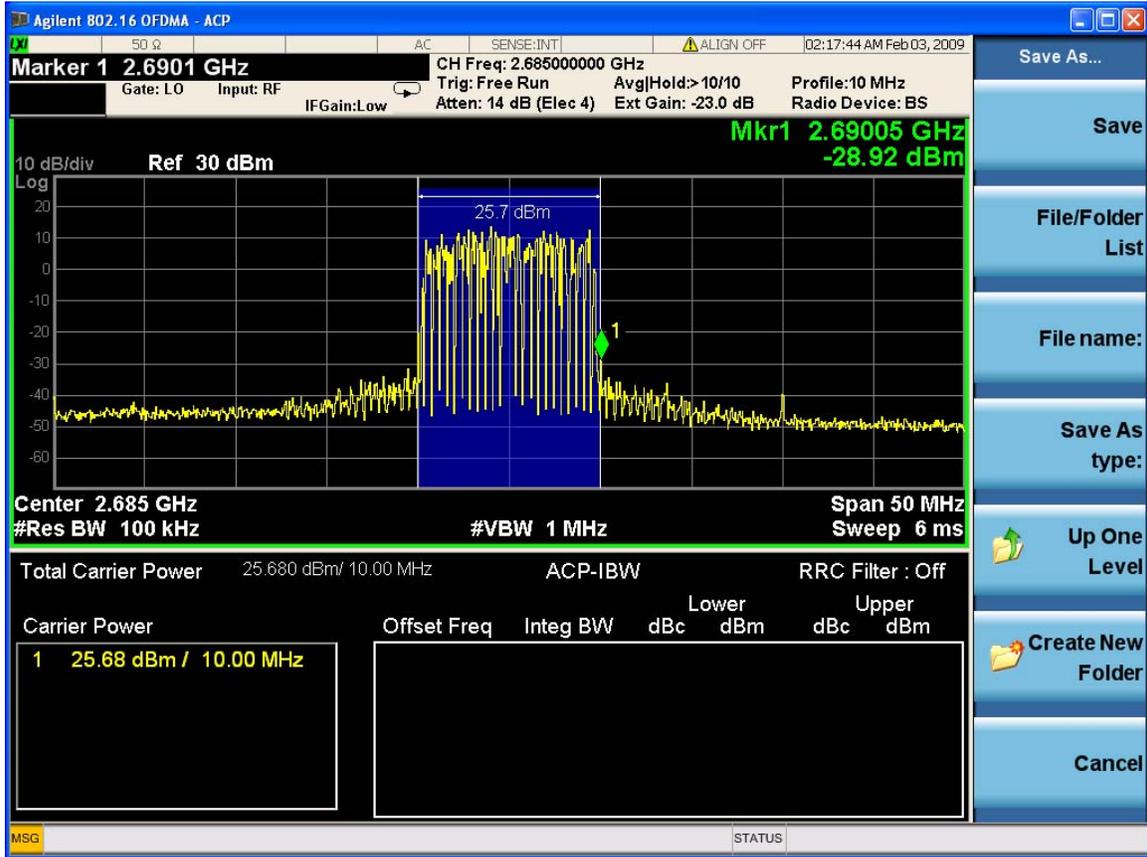
The peak value on right band edge



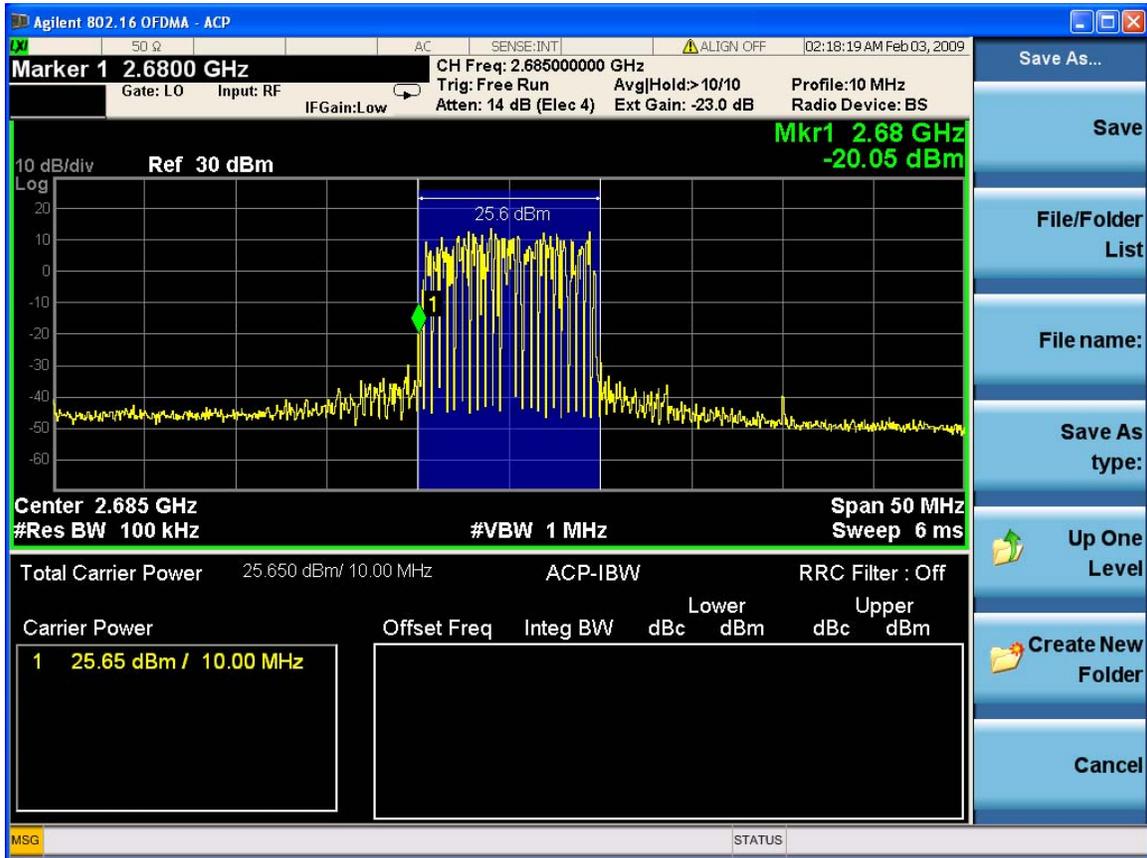
The peak value on left band edge



The peak value on right band edge



The peak value on left band edge



11§2.1055 (a), §2.1055 (d), §27.54 - FREQUENCY STABILITY

Applicable Standard

Requirements: FCC § 2.1055 (a), Part27.54 following:

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation .The limit of the tolerance of the frequency is +/-0.02 PPM, so the limit in HZ are below:

frequency	limit
2501 MHZ	+/- 50.02 HZ
2593 MHZ	+/- 51.86 HZ
2685 MHZ	+/- 53.70 HZ

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Spectrum Analyzer	N9020A	N/A	2008-5-2	2009-5-2
GZ-ESPEC	Temperature Chamber	EW0470	6113028	2008.5.28	2009-5-28

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 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 150 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 +/-10% of the nominal value and then working in normal working conditions for about two hours; The output frequency was recorded for each voltage.

Test Data

Environmental Conditions

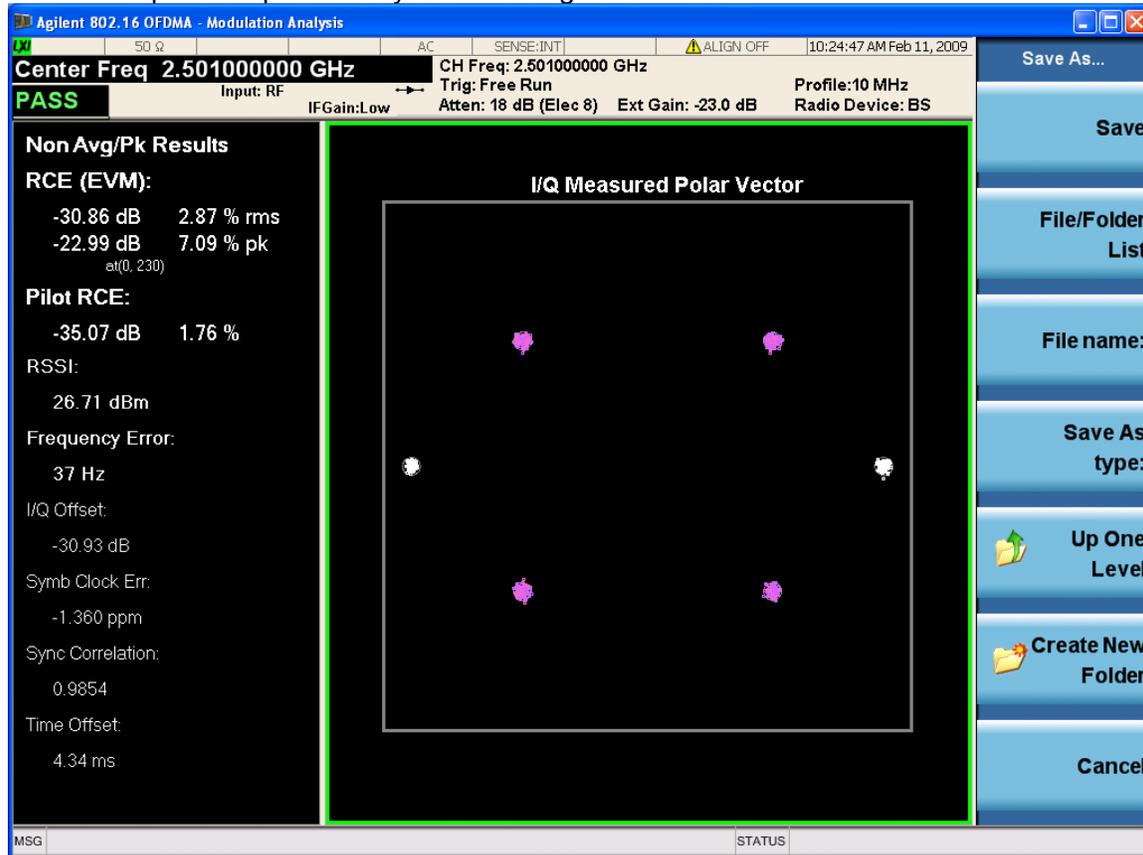
Normal temp.	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar
The highest temp.	50° C
The highest voltage	240 Vac
The lowest temp.	-10° C
The lowest voltage	100Vac

The testing was performed by Wei bin ,Feb 6 2009.

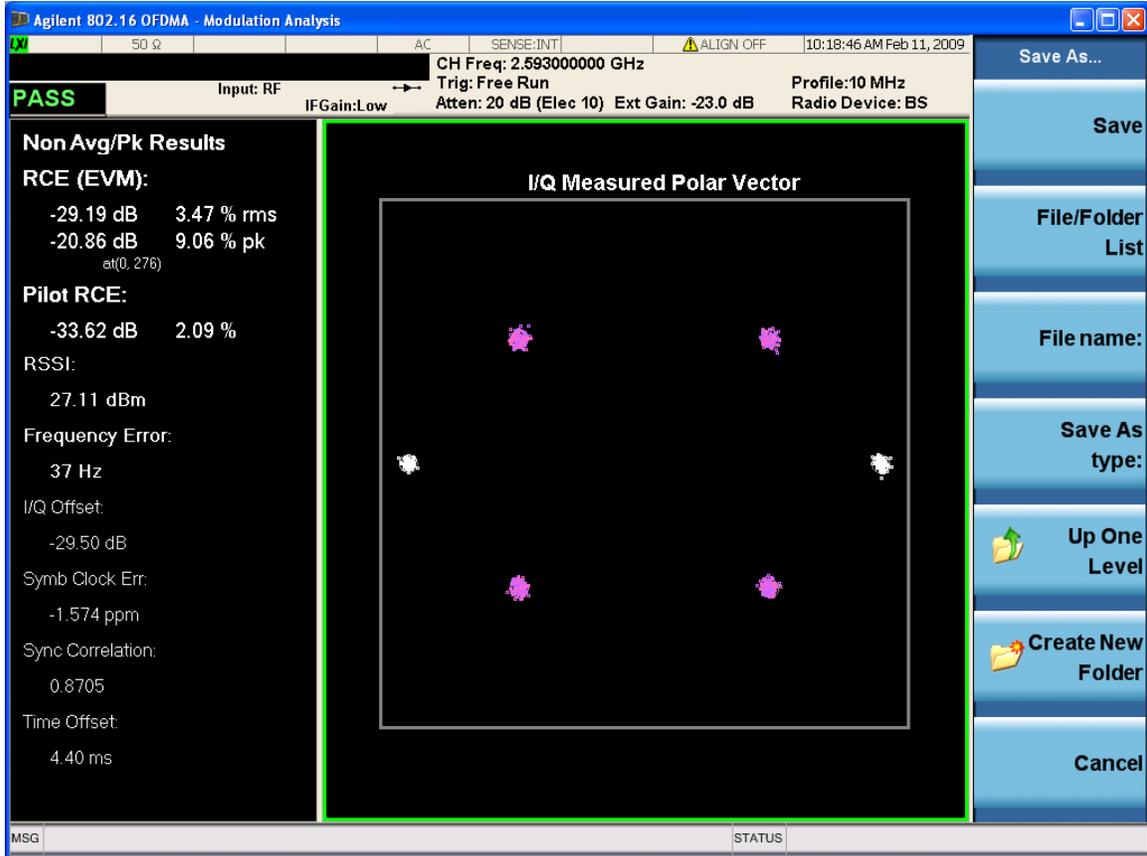
Test Result: Pass

Test Mode: Transmitting OFDMA 802.16e

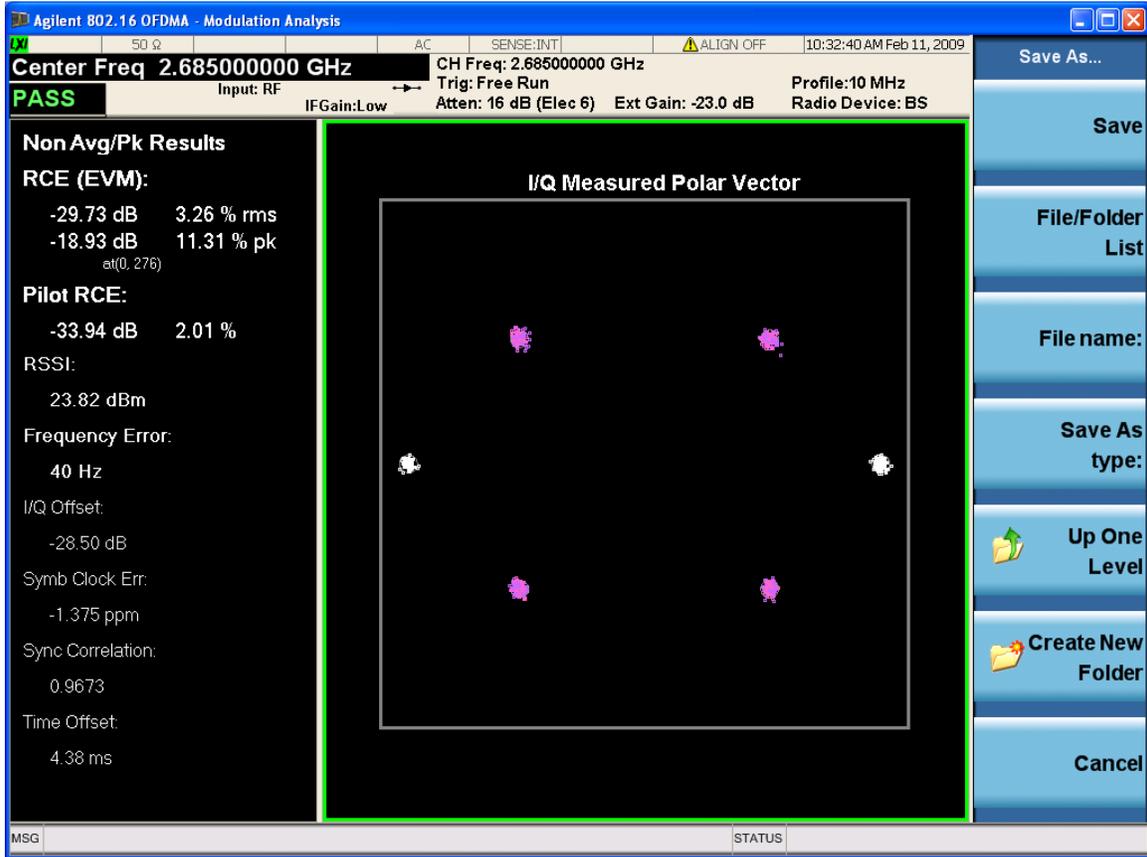
Lowest temperature powered by lowest voltage in 2501MHZ



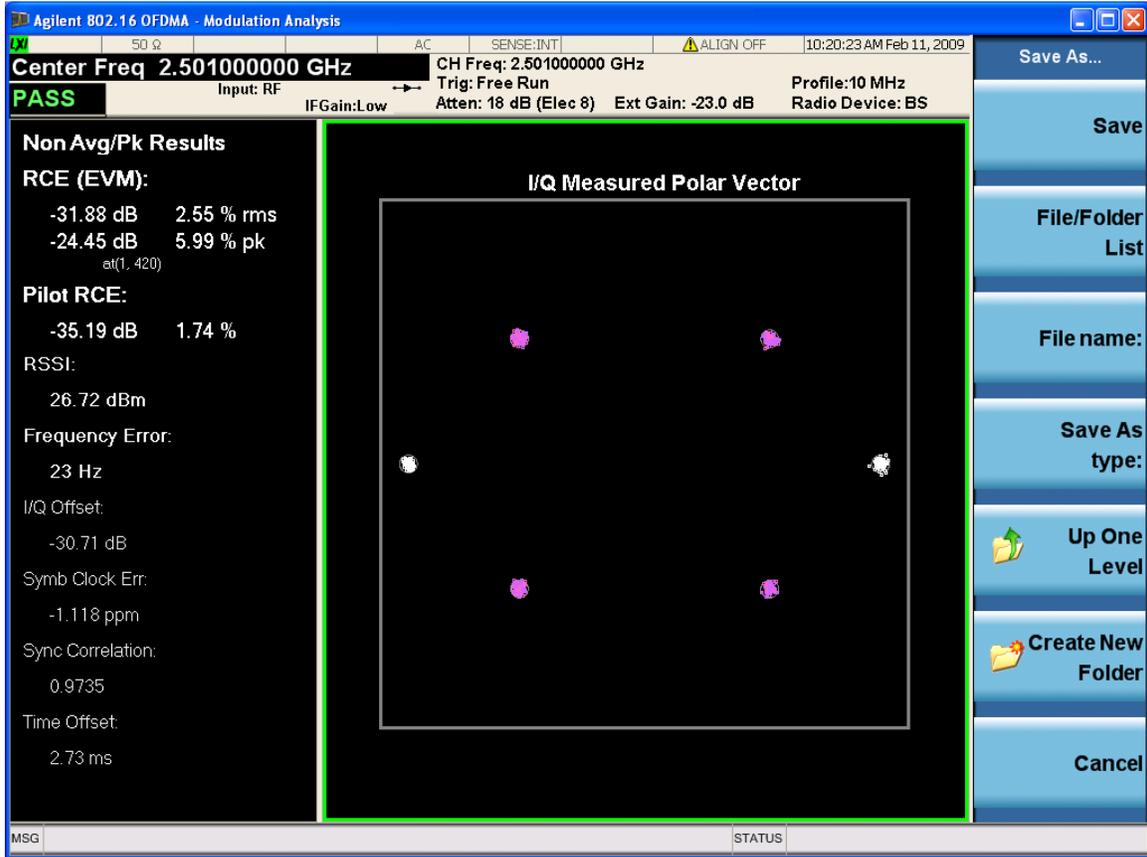
Lowest temperature powered by lowest voltage in 2593MHZ



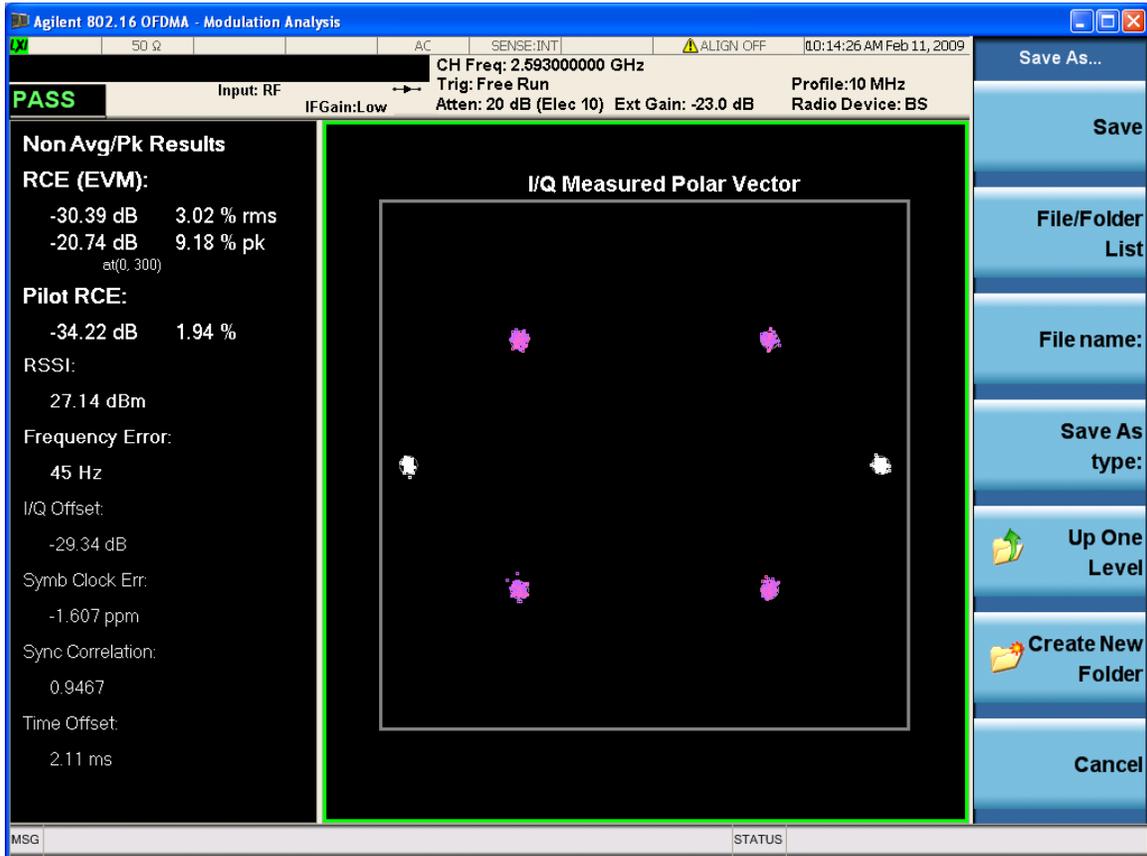
Lowest temperature powered by lowest voltage in 2685MHZ



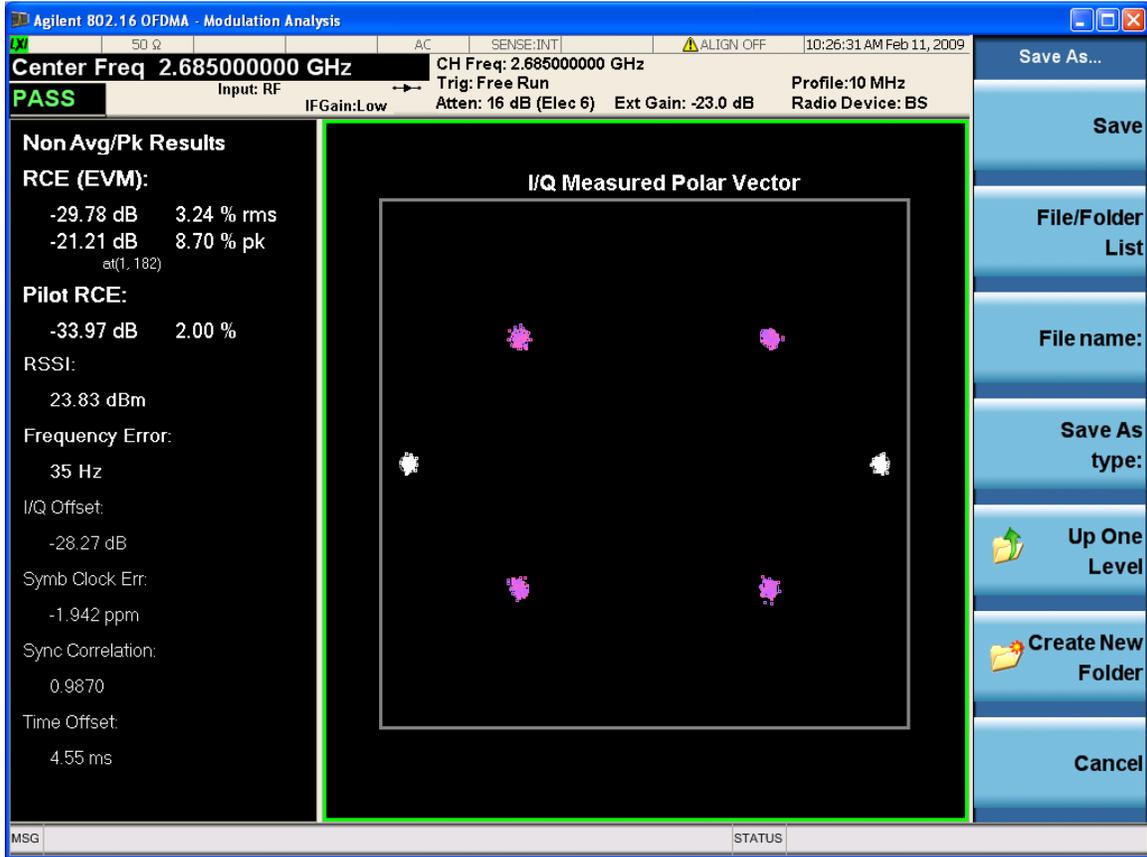
Lowest temperature powered by highest voltage in 2501MHZ



Lowest temperature powered by highest voltage in 2593MHZ



Lowest temperature powered by highest voltage in 2685MHZ



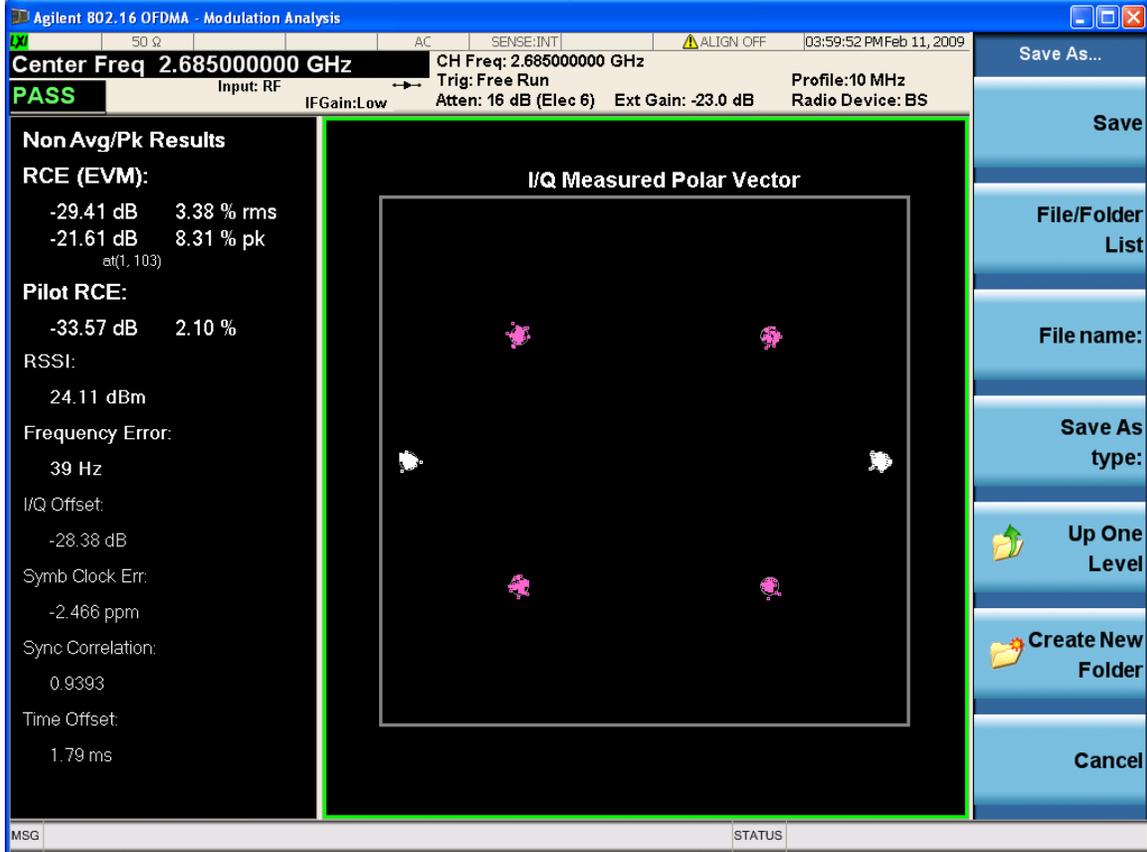
Highest temperature powered by lowest voltage in 2501MHZ



Highest temperature powered by lowest voltage in 2593MHZ



Highest temperature powered by lowest voltage in 2685MHZ



Highest temperature powered by highest voltage in 2501MHZ



Highest temperature powered by highest voltage in 2593MHZ



Highest temperature powered by highest voltage in 2685MHZ

