TEST REPORT

of

FCC Part 27, Part 2

FCC ID: QMNRM-375

Equipment Under Test	:	CDMA 2000 1xRTT Mobile Phone
Model Name	:	RM-375
Serial No.	:	N/A
Applicant	:	Nokia Inc.
Manufacturer	:	Compal Communications(Nanjing) Co., Ltd.
Date of Test(s)	:	2008-04-05 ~ 2008-05-07
Date of Issue	:	2008-05-23

In the configuration tested, the EUT complied with the standards specified above.

Tested By: **Date:** **2008-05-23**

Feel Jeong

Approved By: **Date:** **2008-05-23**

Jim Kim

INDEX

TABLE OF CONTENTS

1. General Information

1-1. Testing Laboratory

SGS Testing Korea Co., Ltd.
- 705, Dongchun-Dong Sooji-Gu, Yongin-Shi, Kyungki-Do, South Korea.
www.electrolab.kr.sgs.com
Telephone : +82 +31 428 5700
FAX : +82 +31 427 2371

1-2. Details of Applicant

Applicant : Nokia Inc.
Address : 12278 Scripps Summit Dr.San Diego CA92131 USA
Contact Person : Stephen Walmsley
Phone No. : +1 604 456 5544
Fax No. : -

1.3. Basic Description of Equipment under Test

Kind of Product		CDMA 2000 1xRTT Mobile Phone
Model Name		RM-375
AC Adapter	**Manufacture**	Astec
	Brand Name	Nokia
	Model Name	AC-6U
	Power Rating	I/P: 100 - 240 V_{ac}, 50 - 60 Hz, 150 mA O/P: 5.0 V_{dc}, 550 mA
	AC Power Cord Type	1.7 m non-shielded cable without ferrite core
Battery	**Manufacture**	Panasonic
	Brand Name	Nokia
	Model Name	BL-4B
	Power Rating	3.7 V_{dc}, 700mAh
	Type	Li-ion
Earphone	**Manufacture**	Hosiden
	Brand Name	Nokia
	Model Name	HS-49
	Signal Line Type	1.7 meter non-shielded cable without ferrite core
USB Cable	**Manufacture**	Cheng Uei
	Brand Name	Nokia
	Model Name	CA-101
	Signal Line Type	1.1 m shielded cable without ferrite core

1-4. Description of EUT

Kind of Product		CDMA 2000 1xRTT Mobile Phone
Model Name		RM-375
Serial Number		N/A
Power Supply	**Manufacture**	Panasonic
	Brand Name	Nokia
	Model Name	BL-4B
	Power Rating	3.7 V_{dc}, 700mAh
	Type	Li-ion
Tx Frequency Range		Cellular: 824 ~ 849 MHz AWS: 1710 ~1755 MHz PCS: 1850 ~ 1910 MHz BT: 2402 ~ 2480 MHz
Rx Frequency Range		Cellular: 869 ~ 894 MHz AWS: 2110 ~2155 MHz PCS: 1930 ~ 1990 MHz BT: 2402 ~ 2480 MHz
Transmit Power		CDMA : ERP 24.51 dBm (282.49 mW) US PCS :EIRP 29.80 dBm (955.00 mW) AWS : EIRP 29.06 dBm (805.38 mW)
Modulation Technique		CDMA2000 :QPSK Bluetooth: GFSK, π/4DQPSK, 8DPSK
Emission Designation		1M28F9W(CDMA), 1M27F9W(AWS),1M28F9W(PCS),
Operating Conditions		-30 ~ 60℃
Antenna Type		Fixed type(BT, CDMA, US PCS, AWS)
H/W Version		4000
S/W Version		DS-1100B-GEN
MEID		268435456102530121

* The spurious emission was measured in three orthogonal EUT positions (X-axis, Y-axis and Z-axis). Worst case is Z-axis(AWS)

1-5. Details of modification

-N/A

1.6. Test Equipment List

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Signal Generator	Agilent	E4438C	May 09 2009
Spectrum Analyzer	Agilent	E4440A	May 09 2009
Spectrum Analyzer	H.P	8593E	May 09 2009
Power Meter	Agilent	E4416A	May 09 2009
Power Sensor	Agilent	E9327A	May 09 2009
DC Power Supply	Agilent	6674A	May 09 2009
Test Receiver	Rohde & Schwarz	ESVS10	Mar. 21 2009
Ultra-Broadband Antenna	Rohde & Schwarz	HL562	Oct. 02 2009
Horn Antenna	Rohde & Schwarz	HF906	Nov. 13 2009
Dipole Antenna	VHAP/UHAP	975/958	Jan. 18 2010
Communication Antenna	AR	AT 4002	N/A
Band Reject Filter	Wainwright	WRCG824/849-814/85960/10SS	May 09 2009
Highpass Filter	Wainwright	WHK3.0/18G-10SS	Dec. 06 2008
Mobile Test Unit	Agilent	E5515C	May 09 2009

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Preamplifier	Agilent	8449B	May 09 2009
Preamplifier	Agilent	8447F	Sep. 17 2008
Power Amplifier	Empower RF System, Inc.	2001-BBS3Q7ECK	May 09 2009
Dual Directional Coupler	Agilent	778D	Feb. 04 2009
Anechoic Chamber	SY Corporation	L x W x H 9.6 m x 6.4 m x 6.4 m	Feb. 15 2009

1.7. Summary of Test Results

APPLIED STANDARD: FCC Part 2, 27		
Section in FCC Part 2,27	**Test Item**	**Result**
§2.1046 §27.50(d)(2)	RF Radiated Output Power	Complied
§2.1053 §27.53(g)	Field Strength of Spurious Radiation	Complied
§2.1046	Conducted Output Power	Complied
§2.1049	Occupied Bandwidth 26dB	Complied
§2.1051 §27.53(g)	Spurious Emission at Antenna Terminal	Complied
§2.1055(a)(1) §27.54(g)	Frequency Stability	Complied
§27.53(g)	Band Edge	Complied

1.8 Test Report Revision

Revision	Report number
0	F690501/RF-RTL001999
1	F690501/RF-RTL002003
2	F690501/RF-RTL002027
3	F690501/RF-RTL002043

2. RF Radiated Output Power

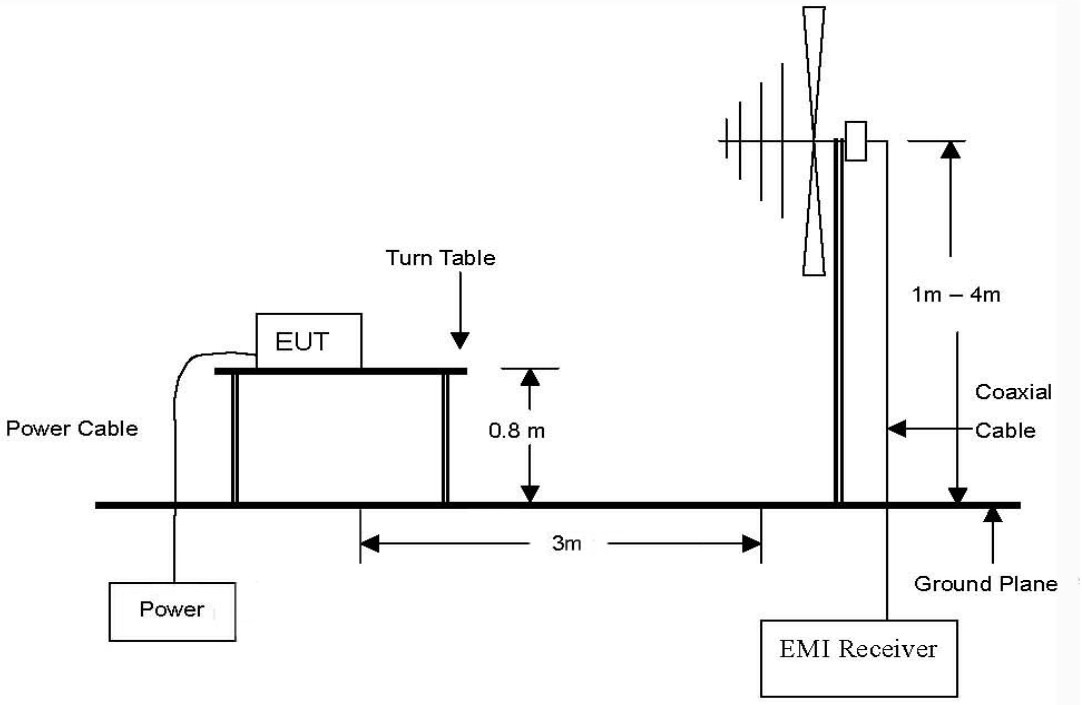
2.1. Limit

§27.50(d) (2) Fixed, mobile, and portable (hand-held) stations operating in the 1710 ~ 1755 MHz band are limited to a peak EIRP of 1 watt.

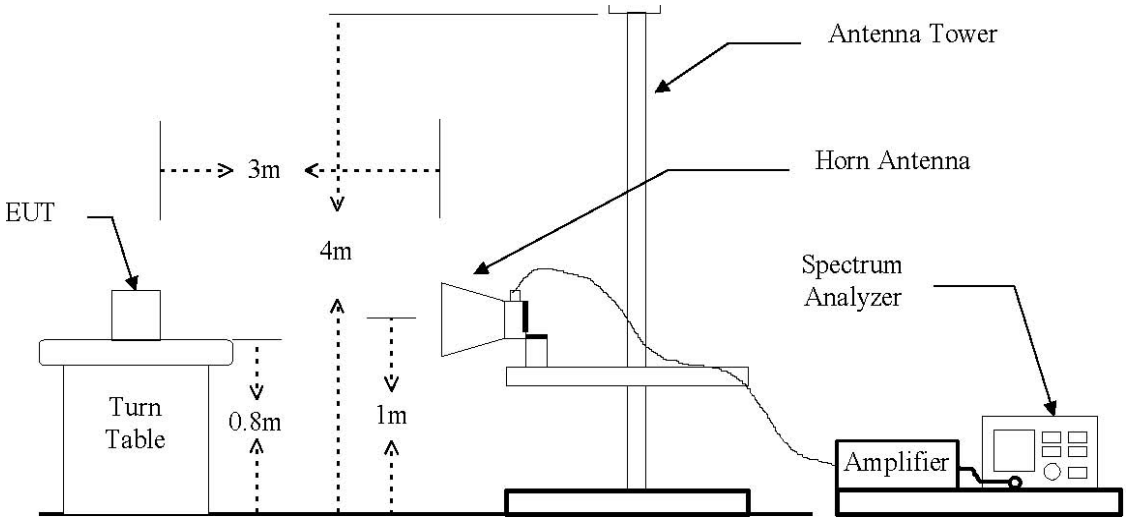
2.2. Test Procedure

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position closest to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3m from EUT to correspond to the frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. The transmitter shall be switched on, the measuring 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 then the 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 horn (substitution antenna).
10. The substitution antenna shall be orientated 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. In necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase he sensitivity of the measuring receiver.
13. The test antenna shall be raised and lowered through the specified range of 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 received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator 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 orientated for horizontal polarization.
17. The measure of the effective radiated power is the large of the two levels recorded, at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.
18. The ERP/EIPR test under RC3/S02(AWS).

The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to 18 GHz Emissions.



2.3. Test Results

Ambient temperature : 21 ℃ Relative humidity : 48 %

EIRP: AWS

Frequency (MHz)	Ant. Pol. (H/V)	C.L (dB)	S.G. Reading +Amp (dBm)	Antenna Gain (dBi)	E. I. R. P.	
					(dBm)	(mW)
1711.25	H	0.96	21.28	8.30	28.62	727.78
	V	0.96	20.87	8.30	28.21	662.22
1732.50	H	0.99	20.65	8.38	28.04	636.80
	V	0.99	20.74	8.38	28.13	650.13
1753.75	H	1.09	20.60	8.45	27.96	625.17
	V	1.09	21.70	8.45	29.06	805.38

Remake: 1. ERP/EIRP= SG Reading +Amp-C.L. +Gain

3. Field Strength of Spurious Radiation

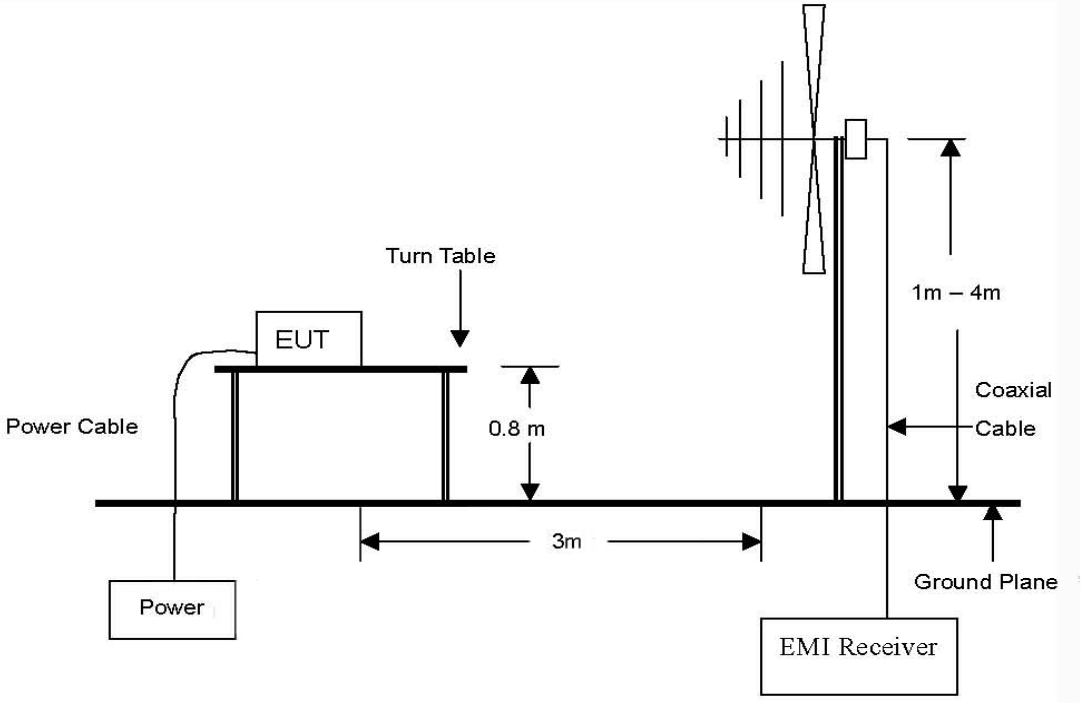
3.1. Limit

§ 27.53(g) For operation in the 1710 ~ 1755 MHz and 2110 ~ 2155 MHz bands, the power of any emission outside a license's block shall be attenuated below the transmitting (P) by a factor of at least 43+10log(P)dB.

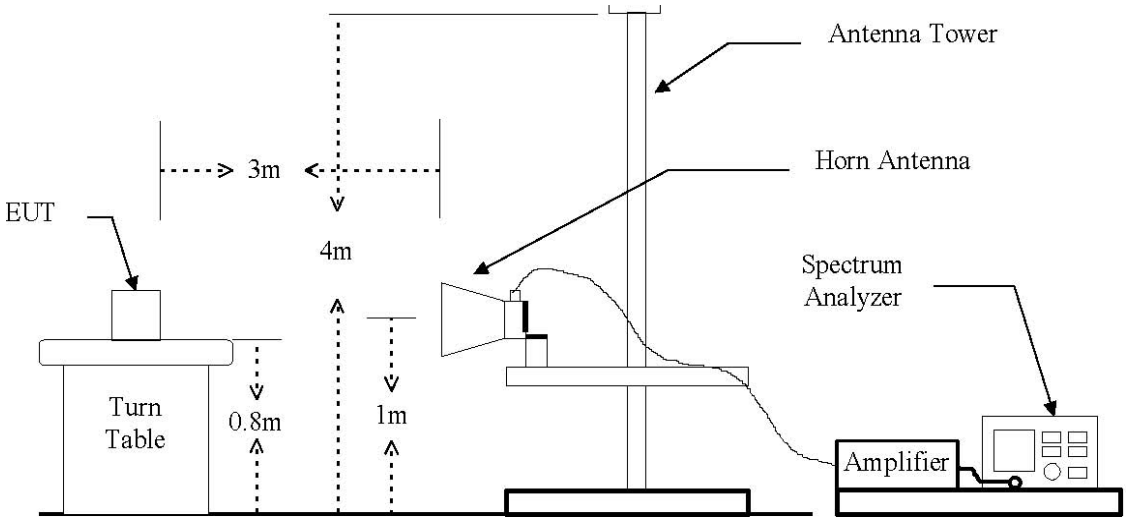
3.2. Test Procedure

1. On a test site, the EUT shall be placed at 0.8cm height on a turn table, and in the position closest to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3m from EUT to correspond to the frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. The transmitter shall be switched on, the measuring 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 then the 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 horn (substitution antenna).
10. The substitution antenna shall be orientated 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. In necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase he sensitivity of the measuring receiver.
13. The test antenna shall be raised and lowered through the specified range of 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 received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator 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 orientated for horizontal polarization.
17. The measure of the effective radiated power is the large of the two levels recorded, at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary
18. Spurious radiated emission was tested under RC3/S02(AWS).

The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to 18 GHz Emissions.



3.3. Test Result

Ambient temperature : 21 ℃ Relative humidity : 48 %

AWS

Frequency (MHz)	Ant.Pol. (H/V)	S.G. reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)
TX LOW channel (1711.25 MHz)								
3422.50	H	-38.23	2.87	10.95	8.80	-30.15	-13.00	17.15
	V	-43.95	2.87	10.95	8.80	-35.87	-13.00	22.87
TX MID Channel (1732.50 MHz)								
3465.00	H	-44.51	2.43	10.99	8.84	-35.95	-13.00	22.95
	V	-48.71	2.43	10.99	8.84	-40.15	-13.00	27.15
TX HIGH Channel (1753.75 MHz)								
3507.50	H	-38.00	2.19	11.03	8.88	-29.16	-13.00	16.16
	V	-43.96	2.19	11.03	8.88	-35.12	-13.00	22.12

Remake: 1. No more harmonic above 2rd harmonic for all channel.
2. EIRP= SG Reading –Cable Loss +Gain

4. Conducted Output Power

4.1. Limit

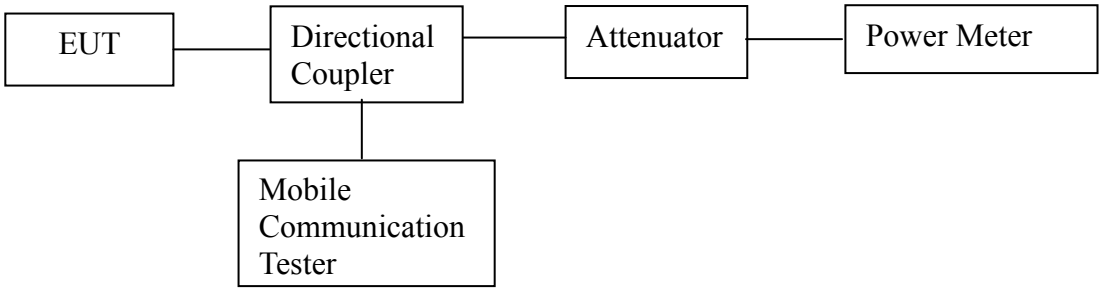
Requirements: CFR 47, Section §2.1046

4.2. Test Procedure

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

2. The Agilent 8960 Test Set has the following procedure.
 - Call Setup >Shift & Preset - Protocol Rev >6 (IS-2000-0)
 - Radio Config.(RC)>RC 11(Fwd1, Rvs1)
 - Traffic Data Rate > Full - Cell Info > Cell Parameters >Primary Ch (450:AWS)

3. Once “Active Cell” show “ Connected” then change “Rvs. Power Ctrl” from “ Active bits” to "All Up bits” to get the maximum power.



4.3. Test Results

Ambient temperature : 23 ℃ Relative humidity : 46 %

Conducted Average Power Output Table (CDMA 1xRTT)

Band	Channel	CDMA2000 RC	S02 (dBm)	S09 (dBm)	S032(+SCH) (dBm)	S032(+F-SCH) (dBm)	S055 (dBm)
AWS	Middle(425)	(Fwd1,Rvs1)	23.66				23.57
		(Fwd2,Rvs2)		23.64			23.60
		(Fwd3,Rvs3)	**23.80**		22.85	23.42	23.67
		(Fwd4,Rvs3)	23.70		22.87	23.28	23.70
		(Fwd5,Rvs4)		23.58			23.71

Remake: RF Power measurements were made in ‘closed’ position.

AWS (1xRTT)

Channel	Frequency (MHz)	Average Output Power (dBm)	Average Output Power (W)	Limit (W)
Low(25)	1711.25	23.30	0.21	1
Middle(425)	1732.50	23.80	0.24	1
High(875)	1753.75	23.66	0.23	1

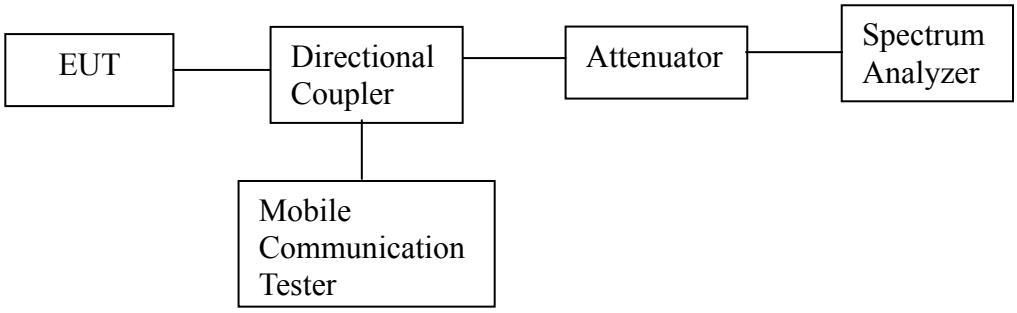
5. Occupied Bandwidth 26 dB

5.1. Limit

Requirements: CFR 47, Section §2.1049.

5.2. Test Procedure

1. The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.
2. The resolution bandwidth of the spectrum analyzer was set at 30 kHz.
   Occupied Bandwidth 26dB was tested under



5.3 Test Results

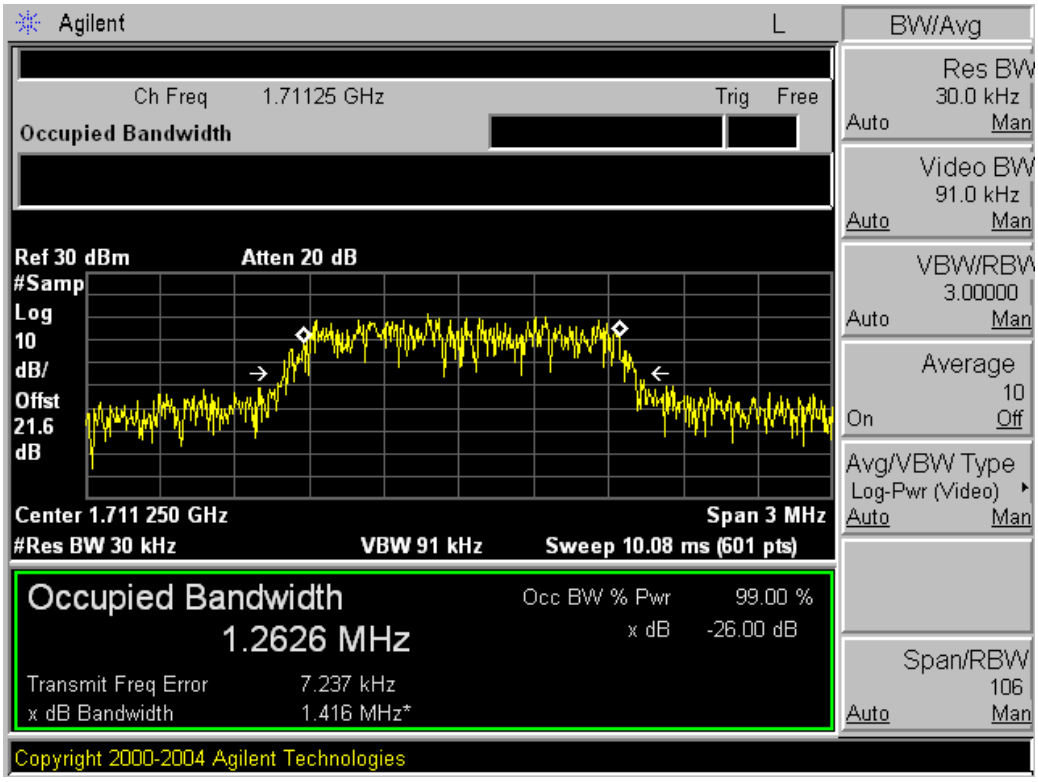
Ambient temperature : 23 ℃ Relative humidity : 46 %

AWS

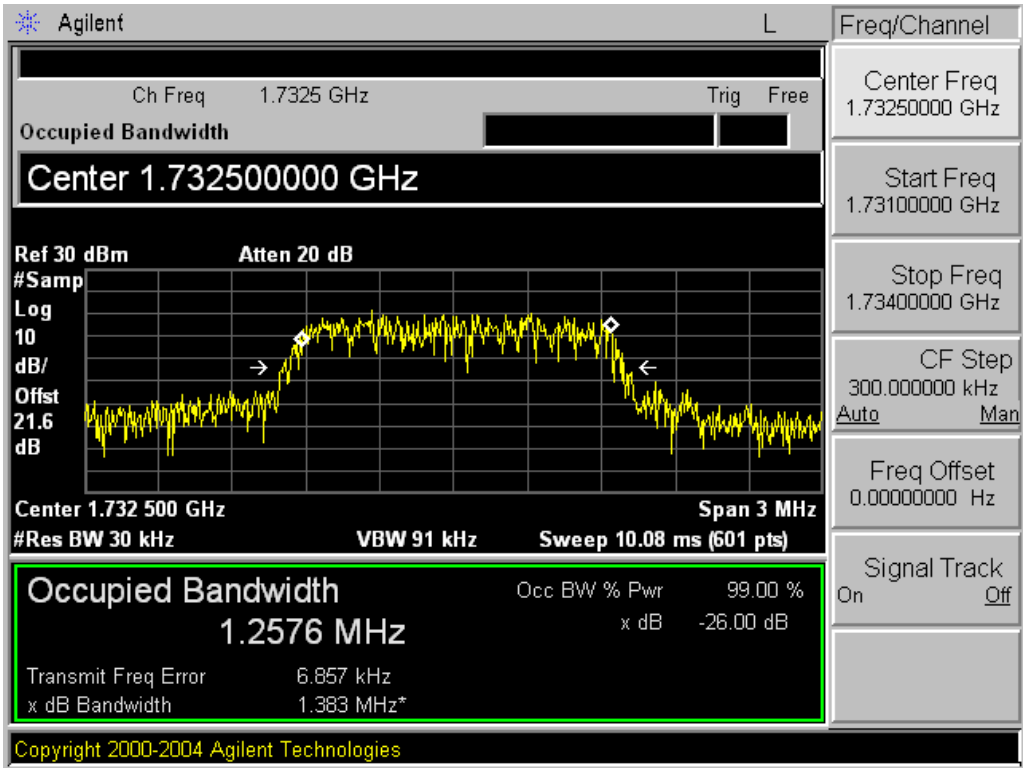
Channel	Frequency(MHz)	-26 dB Bandwidth(MHz)
Low(25)	1711.25	1.416
Middle(425)	1732.50	1.383
High(875)	1753.75	1.405

Please refer to the following plots.

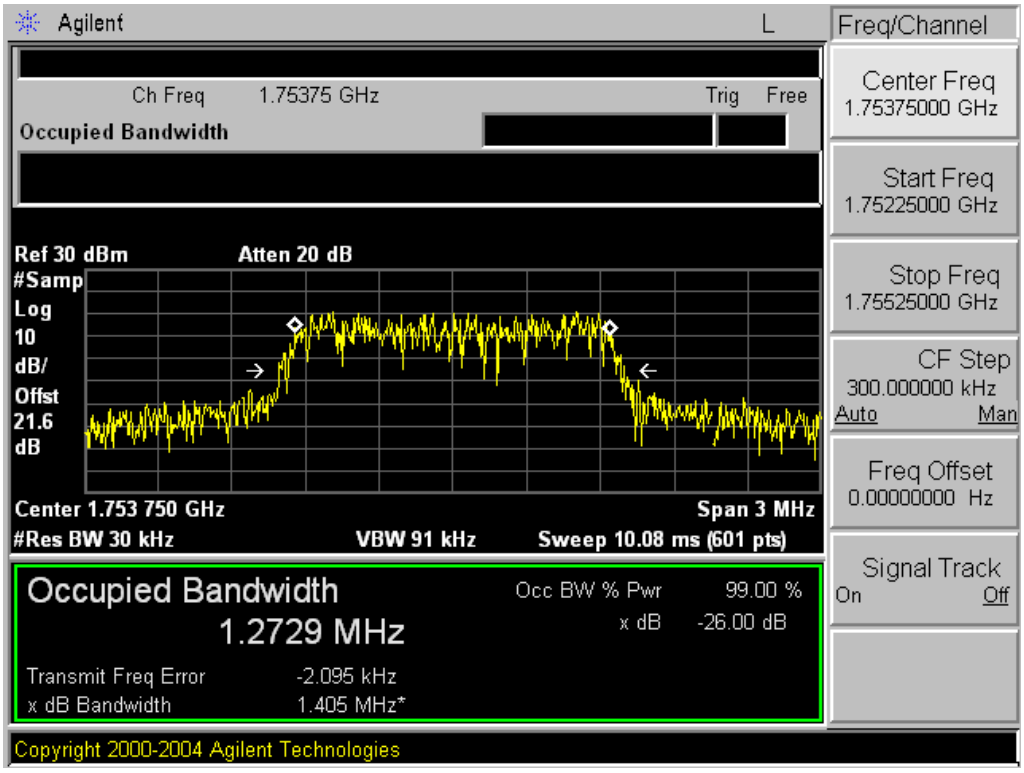
Low Channel



Middle Channel



High Channel



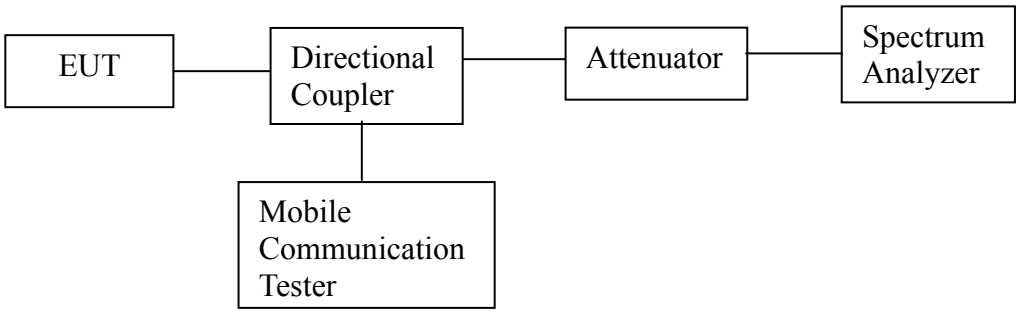
6. Spurious Emissions at Antenna Terminal

6.1. Limit

§ 27.53(g) For operation in the 1710 ~ 1755 MHz and 2110 ~ 2155 MHz bands, the power of any emission outside a license's block shall be attenuated below the transmitting (P) by a factor of at least 43+10log(P)dB.

6.2. Test Procedure

1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of the spectrum analyzer was set at 1 MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.
3. Spurious Emission was tested under RC5/SO55



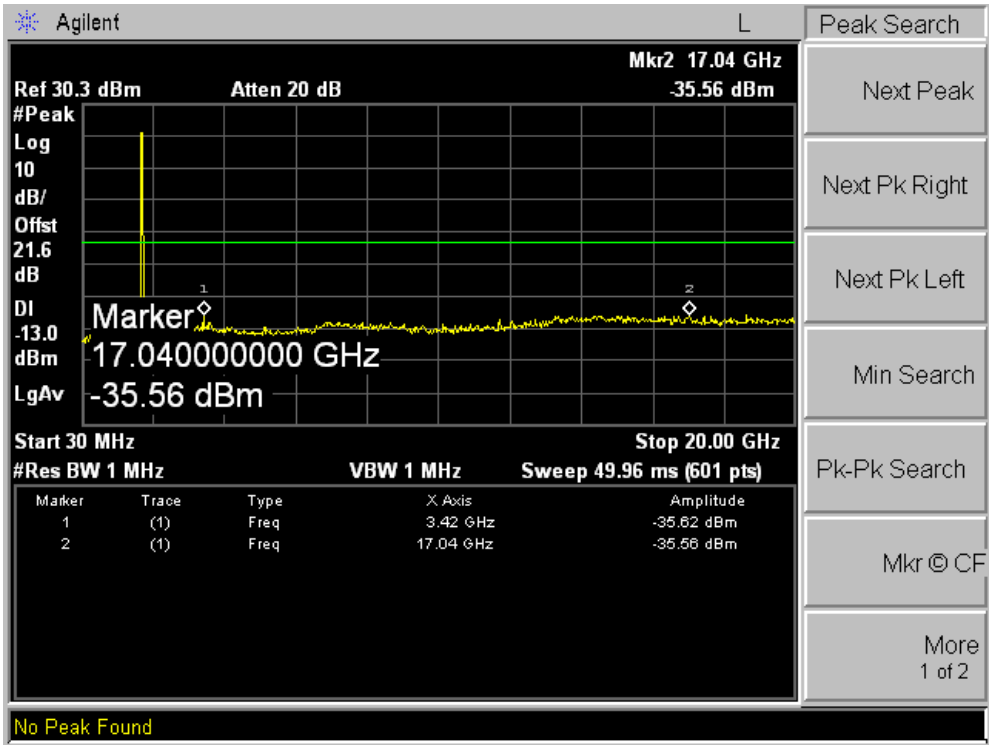
6.3. Test Results

Ambient temperature : 23 ℃ Relative humidity : 46 %

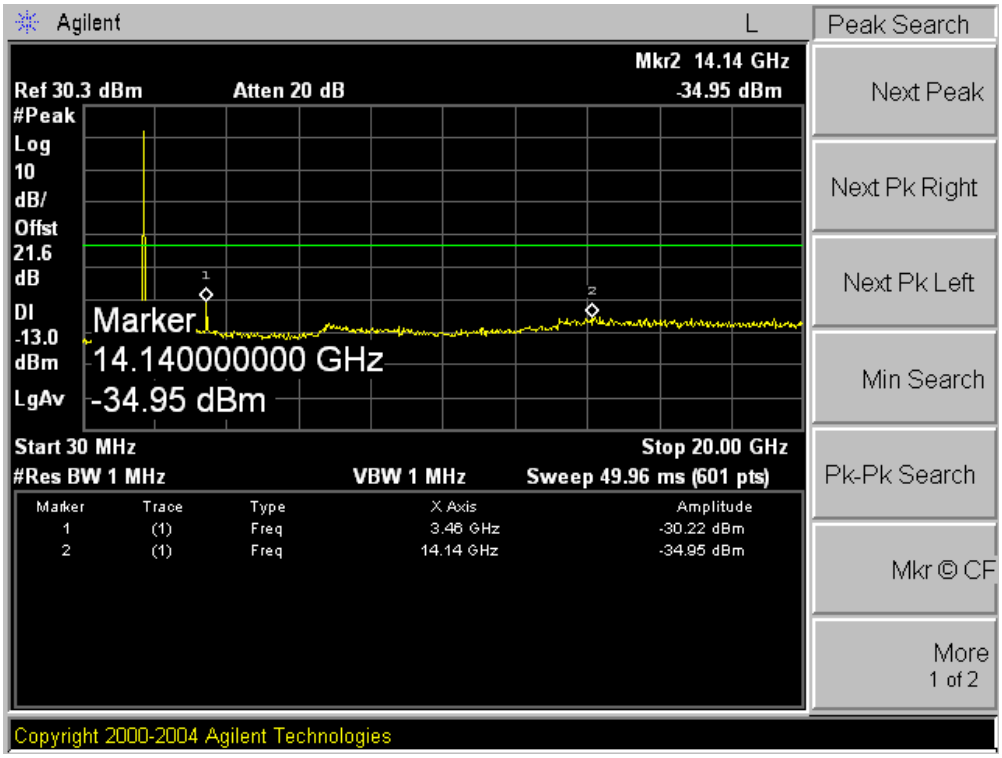
Please refer to the following plots.

AWS

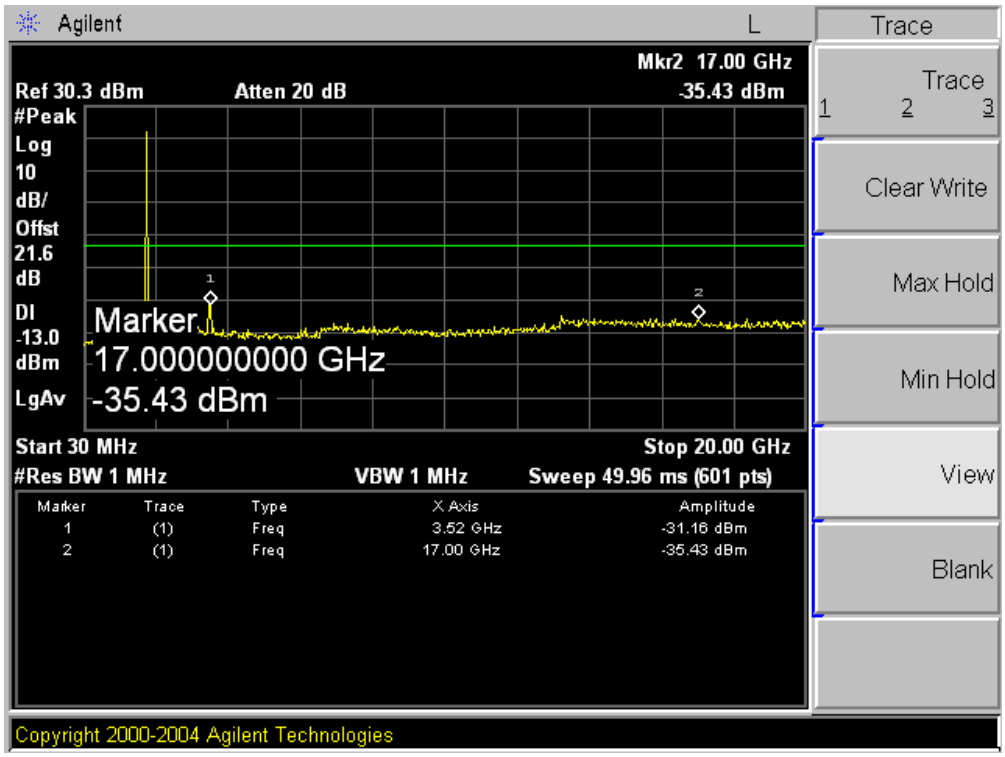
Low Channel



Middle Channel



High Channel



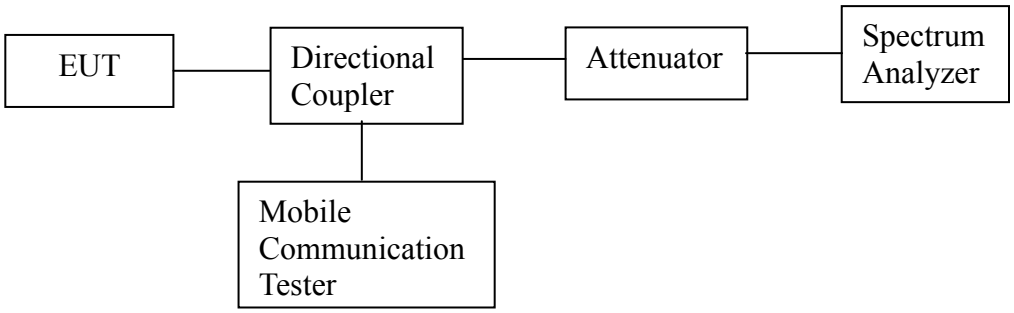
7. Band Edge

7.1. Limit

§ 27.53(g) For operation in the 1710 ~ 1755 MHz and 2110 ~ 2155 MHz bands, the power of any emission outside a license's block shall be attenuated below the transmitting (P) by a factor of at least 43+10log(P)dB.

7.2. Test Procedure

1. The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.
2. The center of the spectrum analyzer was set to block edge frequency, RBW set to 15 kHz.



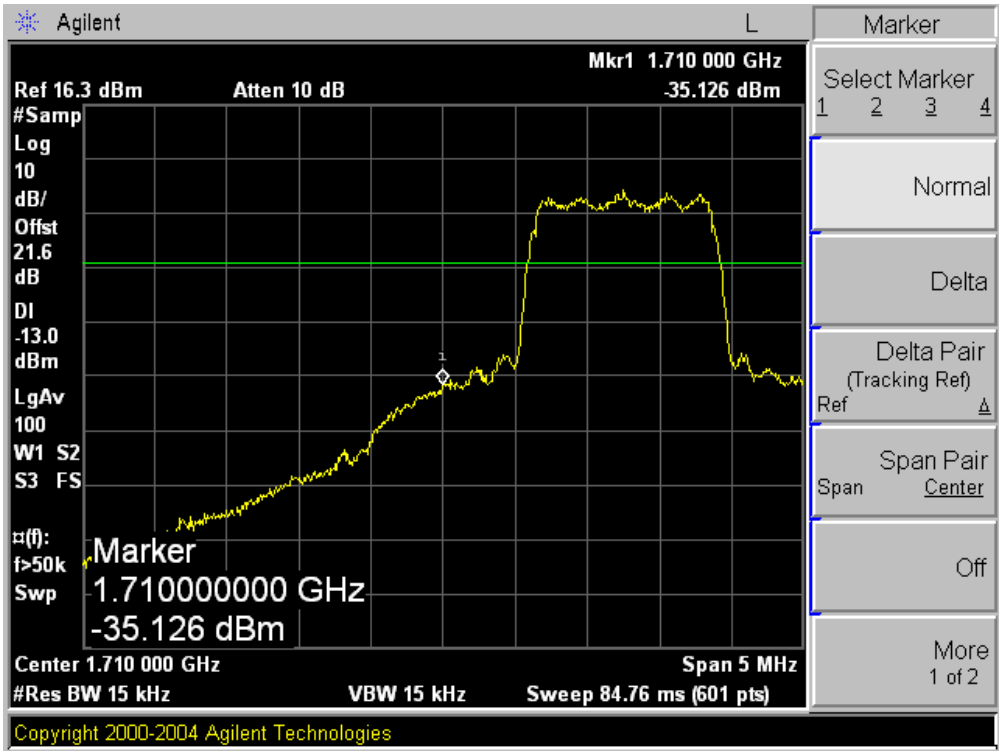
7.3. Test Results

Ambient temperature : 23 ℃ Relative humidity : 46 %

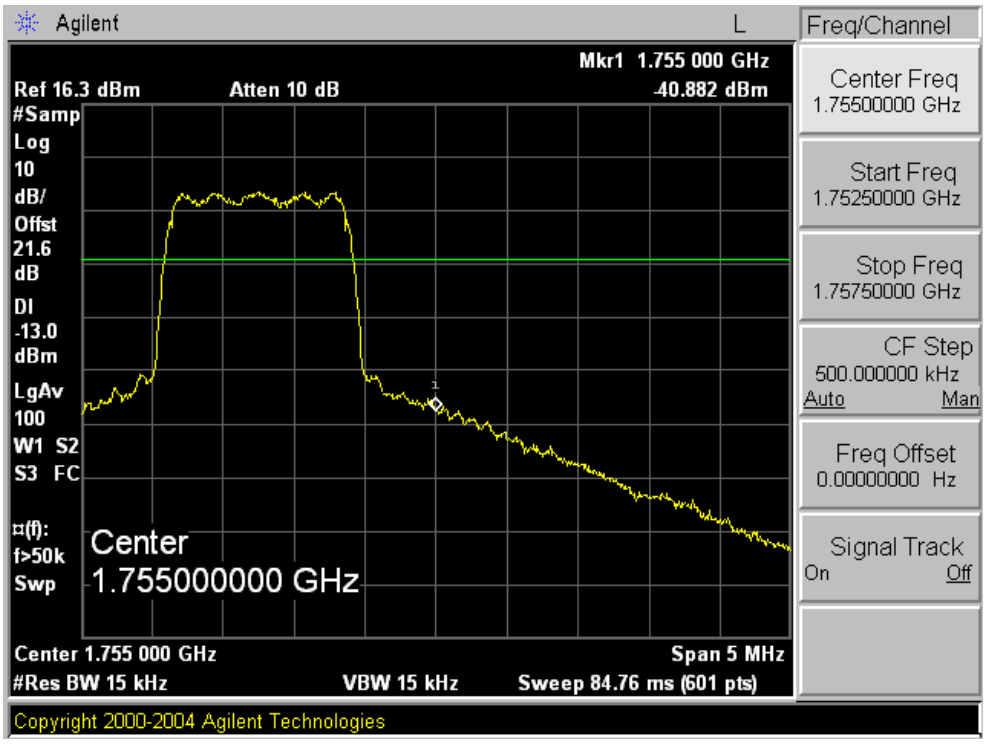
Please refer to the following plots.

AWS

Low Channel



High Channel



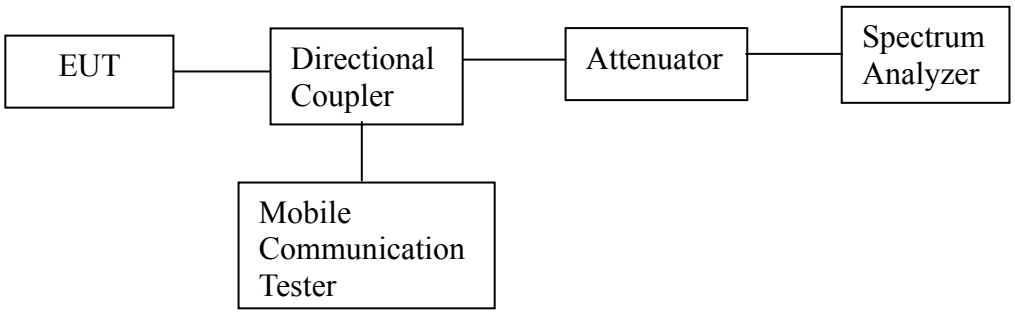
8. Frequency Stability

8.1. Limit

Requirements: FCC § 2.1055 (a), § 2.1055 (d) & following:
§27.54 The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block

8.2. Test Procedure

1. Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a frequency counter via feed-through attenuators.
2. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.
3. After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the counter.
4. Frequency Stability vs. Voltage: An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the battery end point. The output frequency was recorded for each battery voltage.



8.3. Test Results

Ambient temperature : 23 ℃ Relative humidity : 46 %

Frequency Stability versus Temperature

AWS

Reference Frequency: 1732.50 MHz, Limit: 2.5 ppm			
Environment Temperature (℃)	Power Supplied (Vdc)	Frequency Measure with Time Elapse	
		Frequency Error (Hz)	ppm
20(Ref.)	3.7	-4.2	-0.002
60	3.7	-2.8	-0.002
50	3.7	-2.1	-0.001
40	3.7	-3.0	-0.002
30	3.7	-2.4	-0.001
20	3.7	-4.5	-0.003
10	3.7	6.3	0.004
0	3.7	9.2	0.005
-10	3.7	11.8	0.007
-20	3.7	-8.2	-0.005
-30	3.7	-10.1	-0.006

Frequency Stability versus Battery Voltage

AWS

Reference Frequency:1732.50 MHz, Limit:2.5ppm			
Power Supplied (Vdc)	Environment Temperature (℃)	Frequency Error (Hz)	ppm
4.26	20	3.1	0.002
3.15	20	4.2	0.002