



## Test Report

Product Name	Mobile Clinical Assistant C5
Model No	CFT-001
FCC ID	MSQCFTA1
Transmitter Module.	ASKEY / WLL4080

Applicant	ASUSTeK COMPUTER INC.
Address	4FL., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

Date of Receipt	Apr. 25, 2007
Issued Date	May 21, 2007
Report No.	074L159-RFUSP09V01

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of Quietek Corporation.

This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

# Test Report Certification

Issued Date: May 21, 2007

Rport No.: 074L159-RFUSP09V01



Product Name	Mobile Clinical Assistant C5
Applicant	ASUSTeK COMPUTER INC.
Address	4FL., No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
Manufacturer	ASUSTeK COMPUTER INC.
Model No.	CFT-001
FCC ID.	MSQCFTA1
Rated Voltage	AC 120V/60Hz
Working Voltage	AC 120V/60Hz
Trade Name	Motion Computing Incorporated
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2005 ANSI C63.4: 2003
Test Result	Complied



The Test Results relate only to the samples tested.

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Documented By : Rita Huang  
( Engineering Adm. Specialist / Rita Huang )



Tested By : Tim Sung  
( Engineer / Tim Sung )



Approved By : Gene Chang  
( President / Gene Chang )

0914

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Attachment : Test data of verify  
Attachment 1: EUT Test Photographs  
Attachment 2: EUT Detailed Photographs

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	Mobile Clinical Assistant C5
Trade Name	Motion Computing Incorporated
FCC ID.	MSQCFTA1
Model No.	CFT-001
Frequency Range	2412MHz - 2462MHz, 5150-5250MHz, 5745-5825MHz
Number of Channels	11 in 2.4GHz band, 4 in 5GHz band
Channel Separation	5MHz in 2.4GHz band, 20MHz in 5GHz band
Channel Control	Auto
Data Rate	802.11b – 1, 2, 5.5, 11Mbps
	802.11a/g – 6, 9, 12, 18, 24, 36, 48, 54Mbps
Type of Modulation	DSSS/ OFDM
Antenna type	Connector
Antenna Gain	Refer to the table “Antenna List”
Power Adapter	MFR: DELTA, M/N: ADP-50HH REV.B Cable Out: Non-Shielded, 1.8m with one ferrite core bonded. Power Cord: Shielded, 1.8m

#### Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	Yageo	CAN4313580012501B (Main) CAN4313580022501B (Aux)	1.72 dBi for 2.4 GHz 2.91 dBi for 5.15-5.35 GHz 1.14 dBi for 5.725-5.850 GHz

Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	5180 MHz	Channel 2:	5200 MHz	Channel 3:	5220 MHz	Channel 4:	5240 MHz

Frequency of Each Channel (Turbo mode):

Channel	Frequency
Channel 1:	5200 MHz

## Note:

1. This device is a Mobile Clinical Assistant C5 with a built-in 2.4GHz and 5GHz transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps, 802.11g and 802.11a are 6Mbps, turbo are 12Mbps)
3. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.

## 1.2. Operational Description

EUT is a Mobile Clinical Assistant C5 with a built-in 2.4GHz and 5GHz transceiver. There are 8 channels in 5150 – 5250MHz. The channels are separated by 20MHz. This device supports the data rates of 1, 2, 5.5, 11Mbps in 802.11b mode and 6, 9, 12, 18, 24, 36, 48, 54Mbps in 802.11a/g mode. The signals are modulated by DSSS in 802.11b mode and OFDM in 802.11a/g mode. The antennas are Connector and use diversity to improve the receiving sensitivity.

This Mobile Clinical Assistant C5, complied with IEEE 802.11b, IEEE 802.11g, and IEEE 802.11a, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without network wires. Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b, IEEE 802.11g, and IEEE 802.11a network.

Test Mode	Mode 1: Transmitter 802.11a-ASKEY:WLL4080
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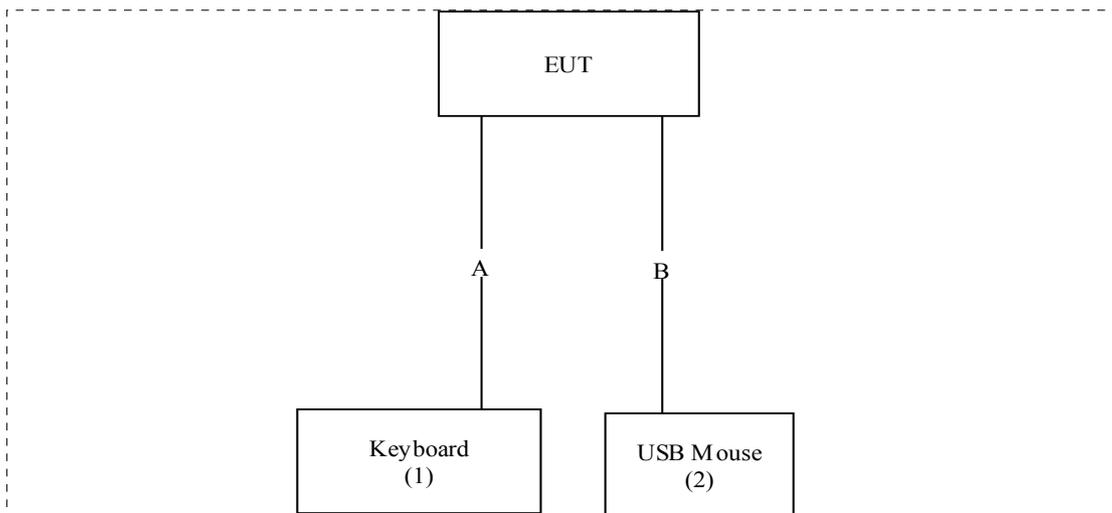
### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
(1) Keyboard	BTC	5200U	N/A	N/A
(2) USB Mouse	Logitech	M-BE58	HCA30103100	N/A

Signal Cable Type	Signal cable Description
A. Keyboard Cable	Shielded, 1.8m
B. Mouse Cable	Shielded, 1.8m

### 1.4. Configuration of tested System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute ART on the notebook.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous transmission.
- (5) Verify that the EUT works properly.

**1.6. Test Facility**

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: File on  
 Federal Communications Commission  
 FCC Engineering Laboratory  
 7435 Oakland Mills Road  
 Columbia, MD 21046  
 Reference 31040/SIT1300F2



Accreditation on NVLAP  
 NVLAP Lab Code: 200533-0



Site Name: Quietek Corporation  
 Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,  
 Lin-Kou Shiang, Taipei,  
 Taiwan, R.O.C.  
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 E-Mail : [service@quietek.com](mailto:service@quietek.com)



**0914**

## 2. Conducted Emission

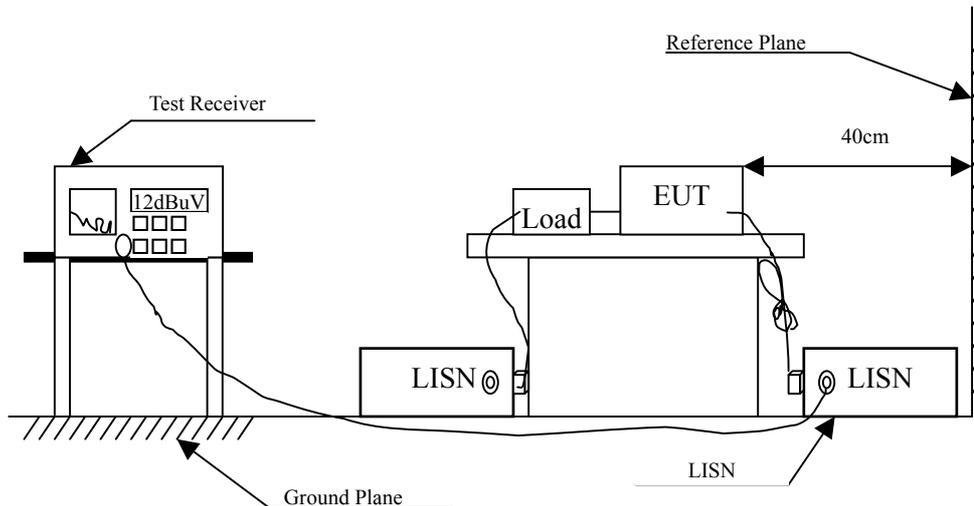
### 2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2007	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2007	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2007	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2007	
5	No.1 Shielded Room			N/A	

Note: All equipments are calibrated every one year.

### 2.2. Test Setup



### 2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

## 2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

## 2.5. Uncertainty

± 2.26 dB

## 2.6. Test Result of Conducted Emission

Product : Mobile Clinical Assistant C5  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.203	0.202	50.100	50.302	-14.184	64.486
0.273	0.211	44.460	44.671	-17.815	62.486
0.343	0.214	37.830	38.044	-22.442	60.486
0.412	0.215	38.160	38.375	-20.139	58.514
0.482	0.216	31.810	32.026	-24.488	56.514
0.552	0.217	32.560	32.777	-23.223	56.000
<b>Average</b>					
0.203	0.202	31.890	32.092	-22.394	54.486
0.273	0.211	29.040	29.251	-23.235	52.486
0.343	0.214	24.280	24.494	-25.992	50.486
0.412	0.215	24.720	24.935	-23.579	48.514
0.482	0.216	20.930	21.146	-25.368	46.514
0.552	0.217	20.760	20.977	-25.023	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Mobile Clinical Assistant C5  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.205	0.202	51.600	51.802	-12.627	64.429
0.275	0.203	45.070	45.273	-17.156	62.429
0.345	0.214	36.730	36.944	-23.485	60.429
0.415	0.215	36.040	36.255	-22.174	58.429
0.485	0.216	29.210	29.426	-27.003	56.429
0.545	0.217	33.540	33.757	-22.243	56.000
<b>Average</b>					
0.205	0.202	33.960	34.162	-20.267	54.429
0.275	0.203	29.450	29.653	-22.776	52.429
0.345	0.214	23.210	23.424	-27.005	50.429
0.415	0.215	23.160	23.375	-25.054	48.429
0.485	0.216	19.110	19.326	-27.103	46.429
0.545	0.217	20.620	20.837	-25.163	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Mobile Clinical Assistant C5  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5200MHz) (Turbo Mode)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 1</b>					
<b>Quasi-Peak</b>					
0.209	0.202	50.650	50.852	-13.462	64.314
0.279	0.213	43.210	43.423	-18.891	62.314
0.349	0.214	36.040	36.254	-24.060	60.314
0.419	0.215	30.690	30.905	-27.409	58.314
0.479	0.216	31.990	32.206	-24.394	56.600
0.549	0.217	31.840	32.057	-23.943	56.000
<b>Average</b>					
0.209	0.202	41.080	41.282	-13.032	54.314
0.279	0.213	34.800	35.013	-17.301	52.314
0.349	0.214	29.140	29.354	-20.960	50.314
0.419	0.215	23.560	23.775	-24.539	48.314
0.479	0.216	26.740	26.956	-19.644	46.600
0.549	0.217	26.840	27.057	-18.943	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : Mobile Clinical Assistant C5  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5200MHz) (Turbo Mode)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>LINE 2</b>					
<b>Quasi-Peak</b>					
0.205	0.202	50.570	50.772	-13.657	64.429
0.275	0.203	45.420	45.623	-16.806	62.429
0.345	0.214	39.700	39.914	-20.515	60.429
0.415	0.215	36.370	36.585	-21.844	58.429
0.485	0.216	33.260	33.476	-22.953	56.429
0.555	0.217	30.430	30.647	-25.353	56.000
<b>Average</b>					
0.205	0.202	43.950	44.152	-10.277	54.429
0.275	0.203	43.050	43.253	-9.176	52.429
0.345	0.214	33.170	33.384	-17.045	50.429
0.415	0.215	29.850	30.065	-18.364	48.429
0.485	0.216	28.040	28.256	-18.173	46.429
0.555	0.217	25.270	25.487	-20.513	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

### 3. Peak Transmit Power

#### 3.1. Test Equipment

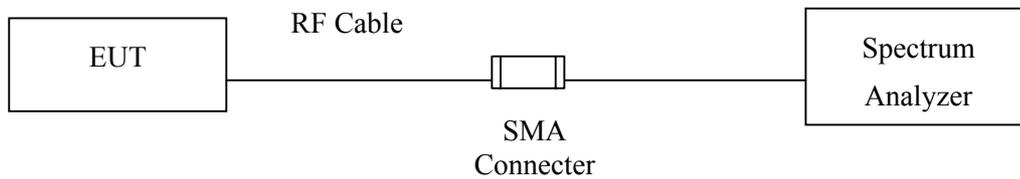
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments marked by “X” are used to measure the final test results.

#### 3.2. Test Setup

##### Conduction Power Measurement



#### 3.3. Limits

- (1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (2) For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (3) For the band 5.725-5.825 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1W or 17 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

#### 3.4. Limits

The maximum peak power shall be less 1 Watt.

#### 3.5. Uncertainty

± 1.27 dB

### 3.6. Test Result of Peak Transmit Power

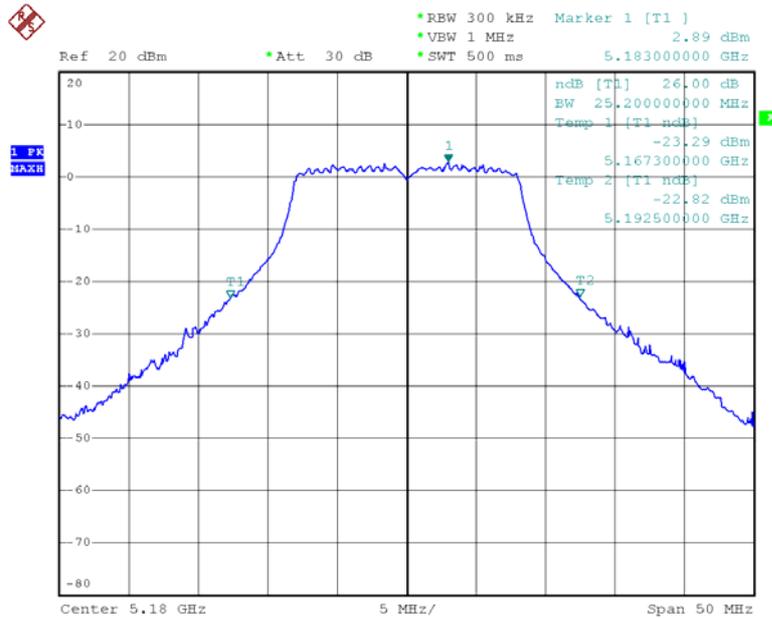
Product : Mobile Clinical Assistant C5  
 Test Item : Peak Transmit Power  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5180MHz)

#### Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
1	5180	25.2	15.49

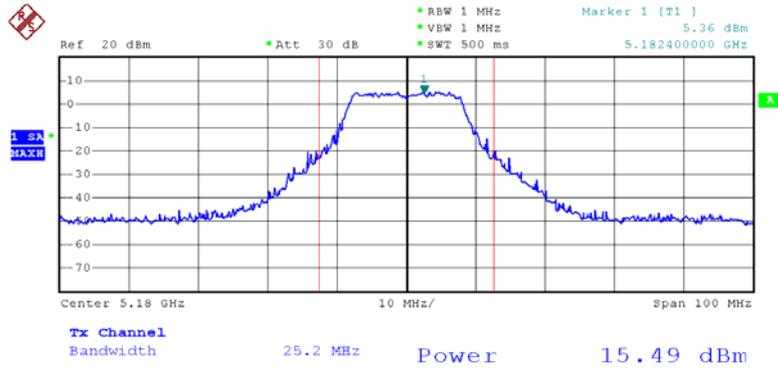
Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 25.2MHz)=18.014dBm	Pass

#### 26dBc Occupied Bandwidth: Channel 1



PN1  
 Date: 14.MAY.2007 14:17:48

### Peak Transmit Power: Channel 1



PN1

Date: 14.MAY.2007 15:12:46

Product : Mobile Clinical Assistant C5  
 Test Item : Peak Transmit Power  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5220MHz)

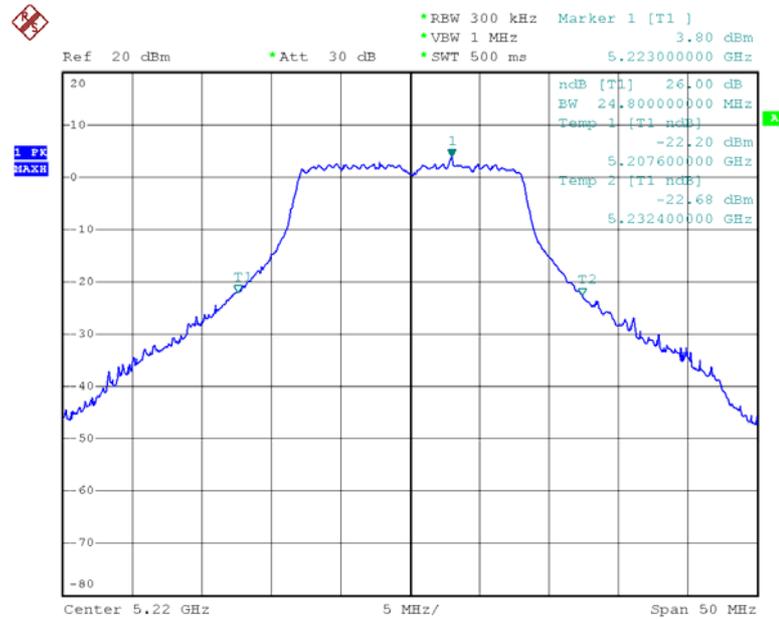
**Peak Transmit Power Measurement:**

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
3	5220	24.8	16.20

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 24.8MHz)=17.944dBm	Pass

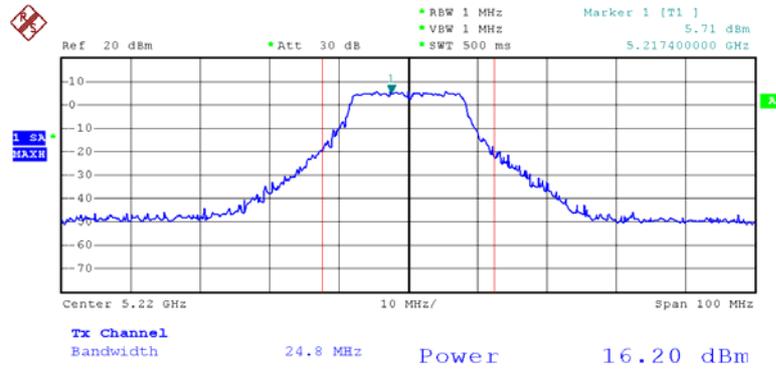
**26dBc Occupied Bandwidth:**

**Channel 3**



PN1  
 Date: 14.MAY.2007 14:19:25

### Peak Transmit Power: Channel 3



PN1  
Date: 14.MAY.2007 15:15:54

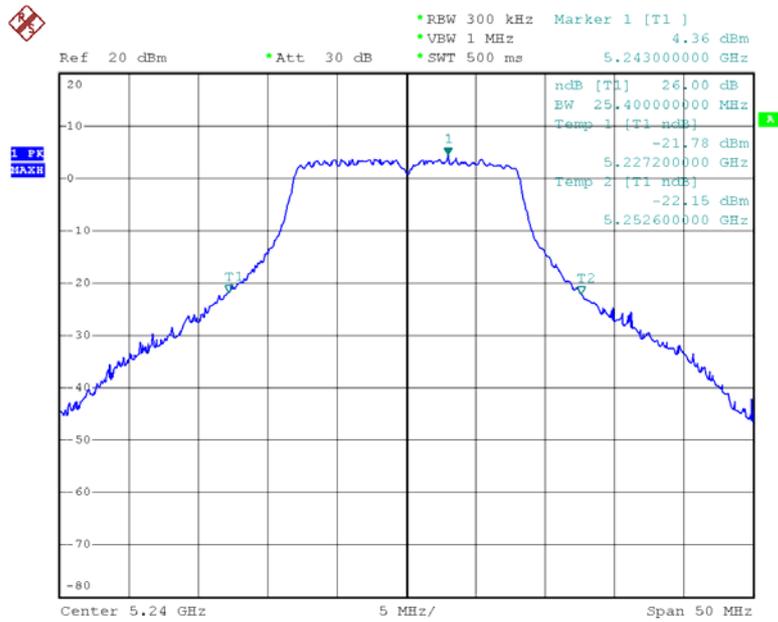
Product : Mobile Clinical Assistant C5  
 Test Item : Peak Transmit Power  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5240MHz)

**Peak Transmit Power Measurement:**

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
4	5240	25.4	16.67

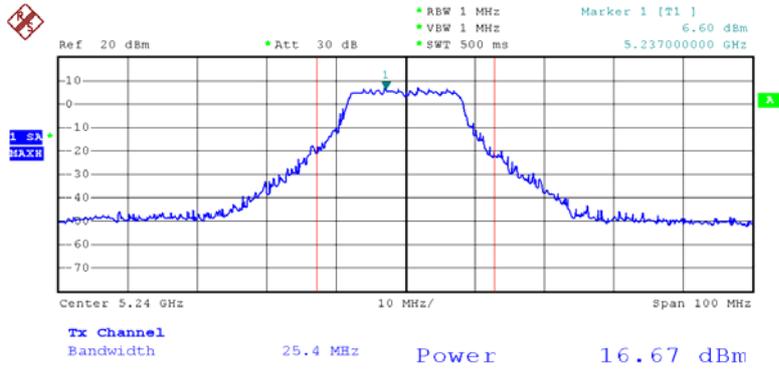
Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B=25.4MHz)=18.048dBm	Pass

**26dBc Occupied Bandwidth:  
Channel 4**



PN1  
 Date: 14.MAY.2007 14:20:59

### Peak Transmit Power: Channel 4



PN1  
Date: 14.MAY.2007 15:17:31

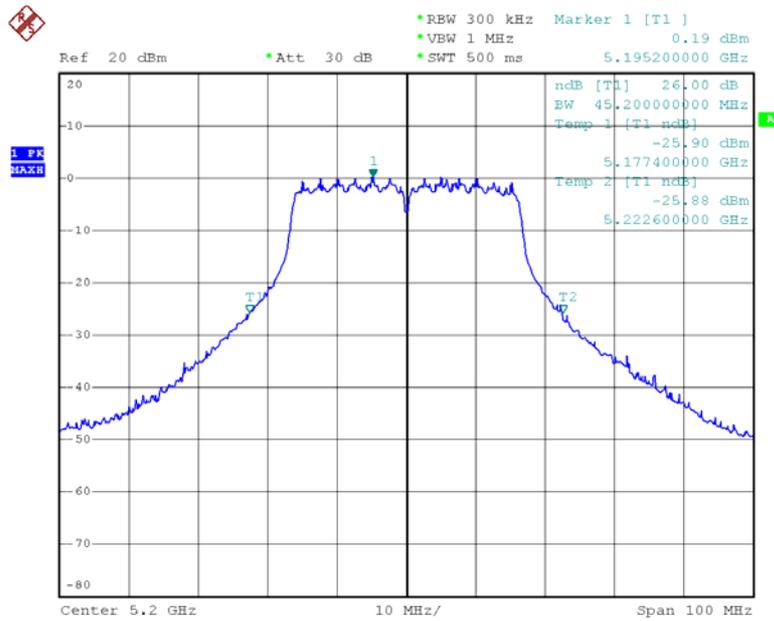
Product : Mobile Clinical Assistant C5  
 Test Item : Peak Transmit Power  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5220MHz) (Turbo Mode)

**Peak Transmit Power Measurement:**

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
1	5200	45.2	16.07

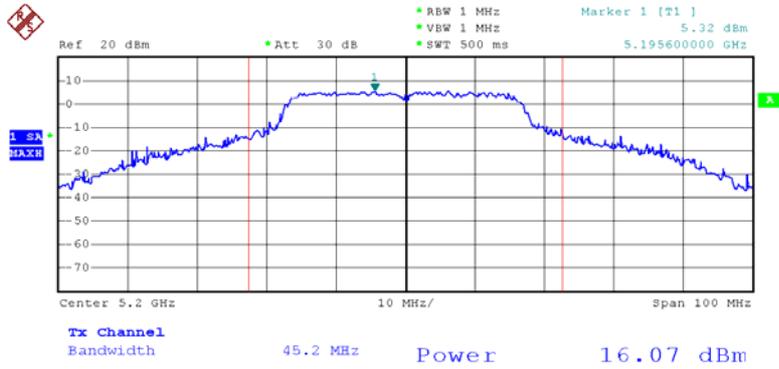
Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B=45.2MHz)=20.551dBm	Pass

**26dBc Occupied Bandwidth:  
Channel 1**



PN1  
 Date: 14.MAY.2007 14:27:21

### Peak Transmit Power: Channel 1



PN1

Date: 14.MAY.2007 15:10:51

## 4. Peak Power Spectral Density

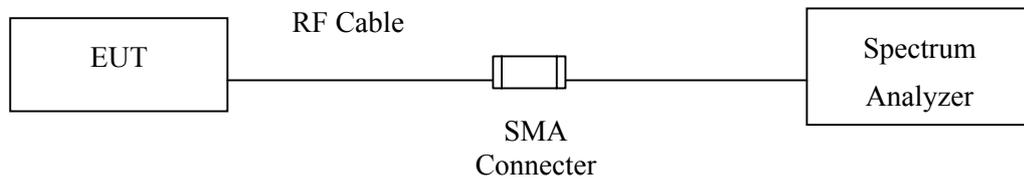
### 4.1. Test Equipment

The following test equipments are used during the radiated emission tests:

Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments marked by “X” are used to measure the final test results.

### 4.2. Test Setup



### 4.3. Limits

- (4) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (5) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (6) For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

### 4.4. Uncertainty

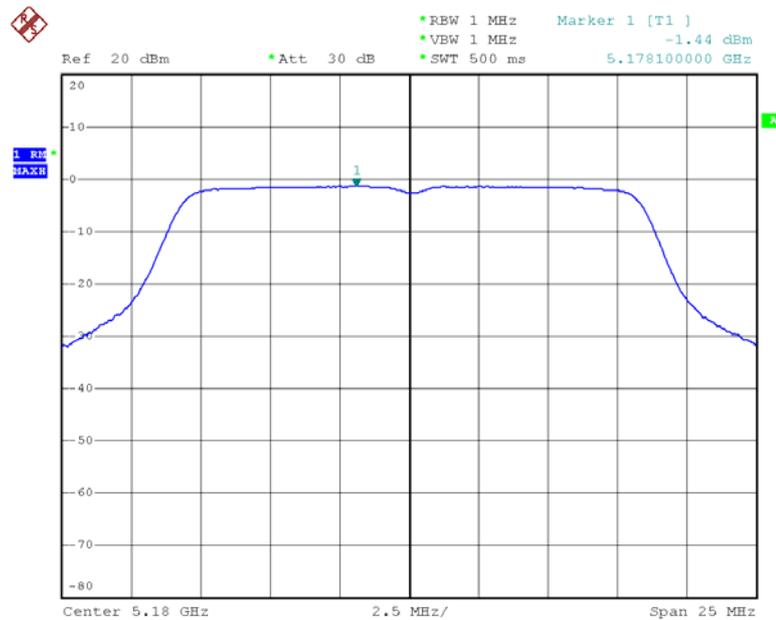
± 1.27 dB

### 4.5. Test Result of Peak Power Spectral Density

Test Item : Peak Power Spectral Density  
 Product : Mobile Clinical Assistant C5  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080

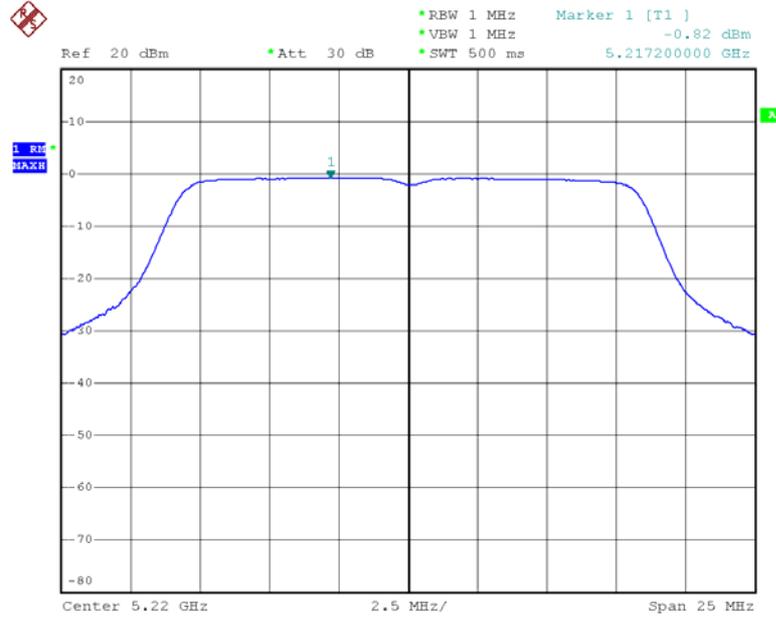
Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
1	5180.00	-1.44	< 4	Pass
3	5220.00	-0.82	< 4	Pass
4	5240.00	0.20	< 4	Pass

**Channel 1:**



PN1  
 Date: 14.MAY.2007 14:56:12

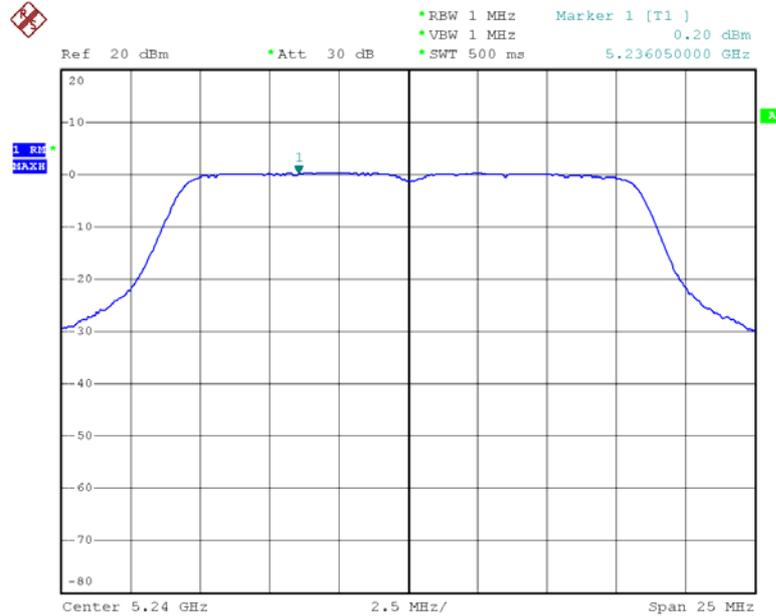
### Channel 3:



PN1

Date: 14.MAY.2007 14:56:57

### Channel 4:



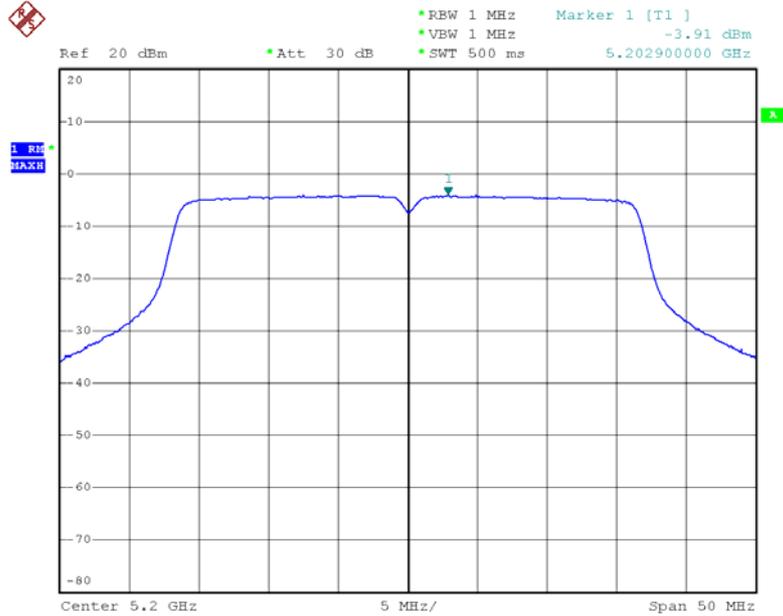
PN1

Date: 14.MAY.2007 14:57:39

Test Item : Peak Power Spectral Density  
 Product : Mobile Clinical Assistant C5  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (Turbo Mode)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
1	5200.00	-3.91	< 4	Pass

**Channel 1:**



PN1

Date: 14.MAY.2007 14:58:43

**5. Peak Excursion**

**5.1. Test Equipment**

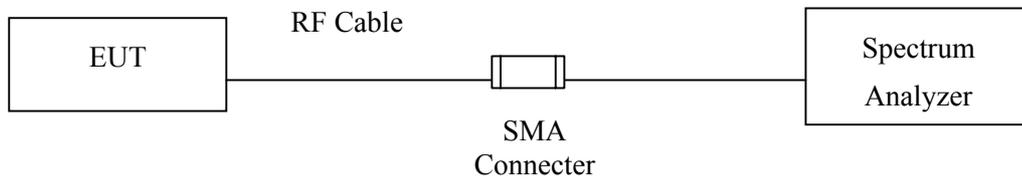
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments marked by “X” are used to measure the final test results.

**5.2. Test Setup**

**Conduction Power Measurement**



**5.3. Limits**

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

**5.4. Uncertainty**

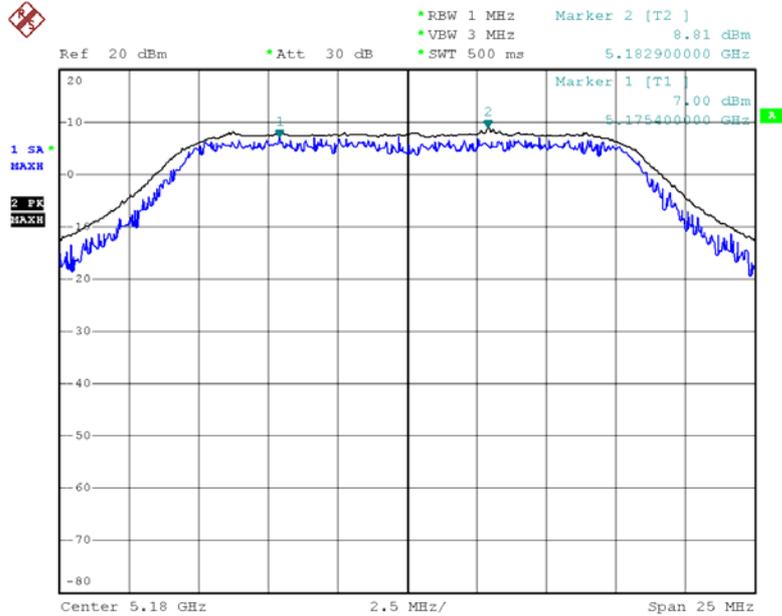
± 1.27 dB

### 5.5. Test Result of Peak Excursion

Product : Mobile Clinical Assistant C5  
 Test Item : Peak Excursion  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080

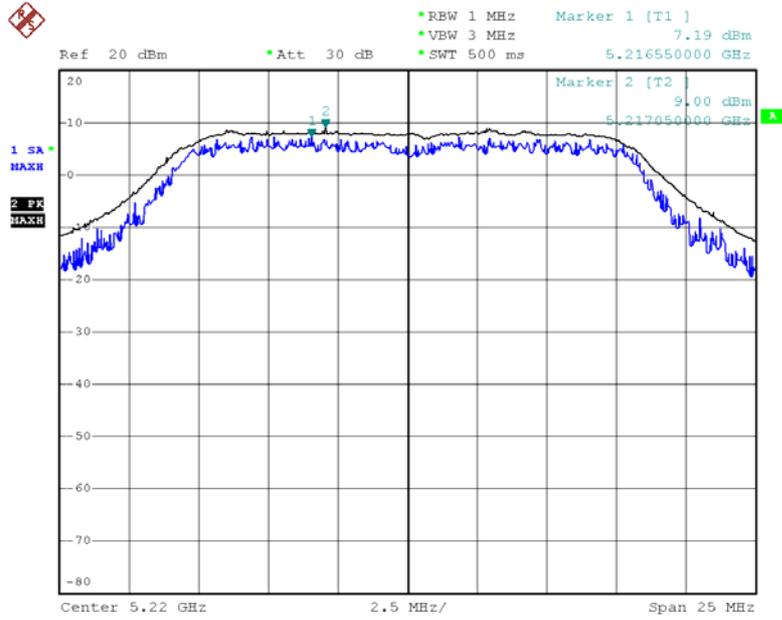
Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dB)	Result
1	5180.00	1.81	≤ 13	Pass
3	5220.00	1.81	≤ 13	Pass
4	5240.00	1.44	≤ 13	Pass

**Channel 1:**



PN1  
 Date: 15.MAY.2007 03:49:34

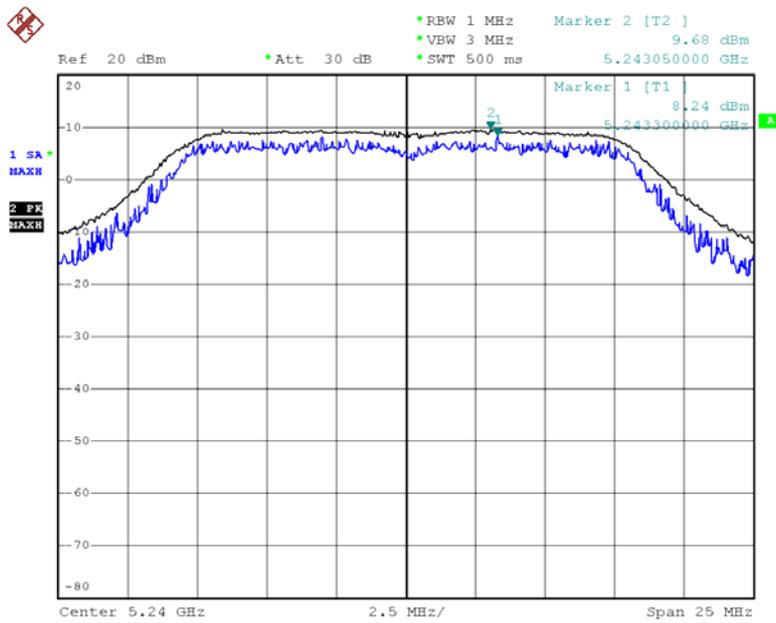
### Channel 3:



PN1

Date: 15.MAY.2007 03:59:10

### Channel 4:



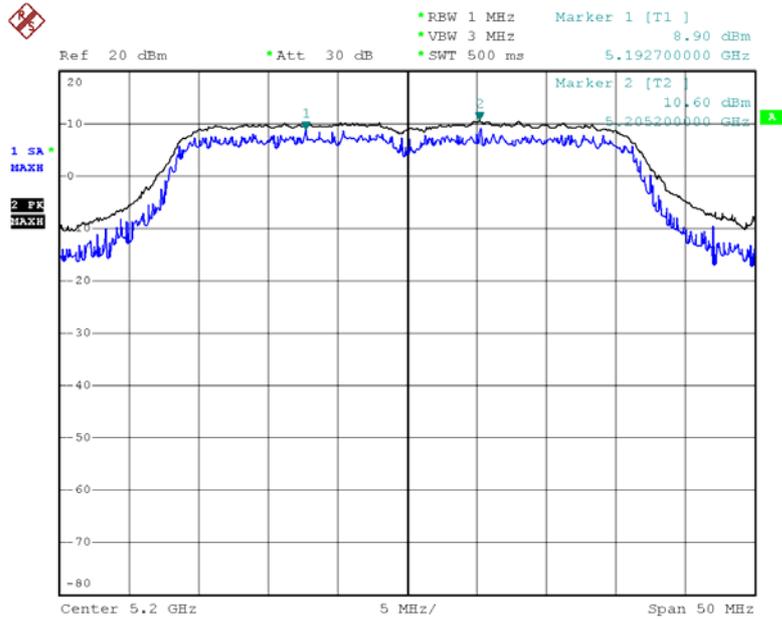
PN1

Date: 15.MAY.2007 04:02:33

Product : Mobile Clinical Assistant C5  
 Test Item : Peak Excursion  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (Turbo Mode)

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dB)	Result
1	5200.00	1.70	≤ 13	Pass

**Channel 1:**



PN1

Date: 15.MAY.2007 04:13:47

## 6. Undesirable Emission

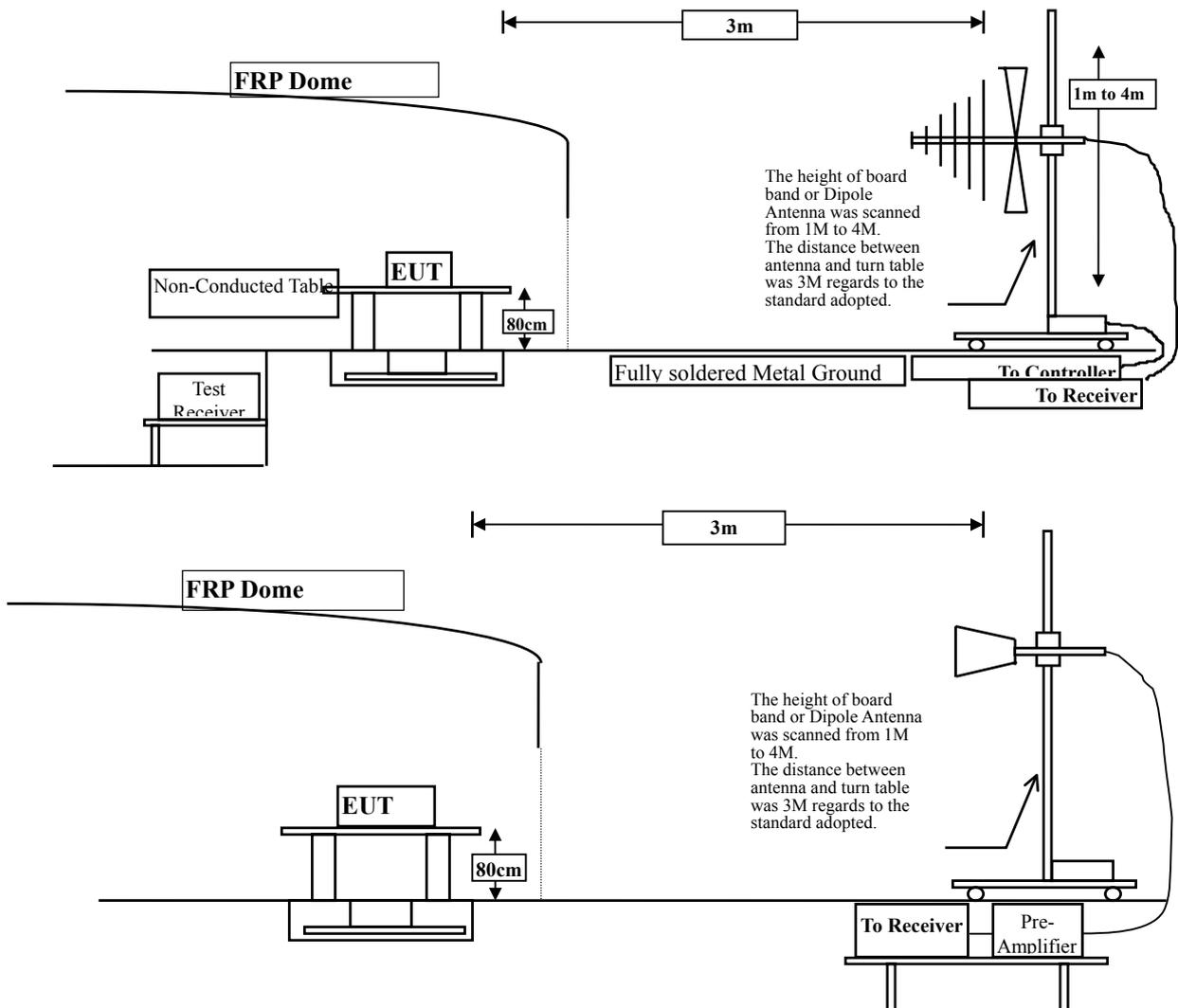
### 6.1. Test Equipment

The following test equipment are used during the radiated emission test:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	X Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2007
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
	X Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
	X Horn Antenna	ETS	3115 / 0005-6160	July, 2006
	X Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2006

- Note:
1. All equipments are calibrated every one year.
  2. The test instruments marked by "X" are used to measure the final test results.

### 6.2. Test Setup



**6.3. Limits**

- (1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.
- (3) For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz.
- (4) The field strength of emissions appearing within restricted bands of operation shall not exceed the limits in the Section 15.209.
- (5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209:

<b>FCC Part 15 Subpart C Paragraph 15.209 Limits</b>		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks :
- 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
  - 2. In the Above Table, the tighter limit applies at the band edges.
  - 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

#### 6.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2001 on radiated measurement.

The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The frequency range from 30MHz to 10th harmonics is checked.

#### 6.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

## 6.6. Test Result of Undesirable Emission

Product : Mobile Clinical Assistant C5  
 Test Item : Undesirable Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5180MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector</b>					
10360.000	12.977	37.180	50.156	-23.844	74.000
15540.000	15.276	36.747	52.022	-21.978	74.000
<b>Average Detector</b>					
--					
<b>Vertical</b>					
<b>Peak Detector</b>					
10360.000	12.977	37.181	50.157	-23.843	74.000
15540.000	15.276	36.295	51.570	-22.430	74.000
<b>Average Detector</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Measurement Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Clinical Assistant C5  
 Test Item : Undesirable Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5220MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level	dB	dBuV/m
	dB	dBuV	dBuV/m		

**Horizontal**
**Peak Detector**

10440.000	13.218	36.253	49.470	-24.530	74.000
15660.000	14.994	35.294	50.288	-23.712	74.000

**Average Detector**

--

**Vertical**
**Peak Detector**

10440.000	13.218	35.876	49.093	-24.907	74.000
15660.000	14.994	35.151	50.145	-23.855	74.000

**Average Detector**

--

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz.
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz.
4. Measurement Level = Reading Level + Correct Factor..
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Clinical Assistant C5  
 Test Item : Undesirable Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5240MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
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**Horizontal**
**Peak Detector**

10480.000	13.343	36.156	49.498	-24.502	74.000
15720.000	14.730	35.964	50.693	-23.307	74.000

**Average Detector**

--

**Vertical**
**Peak Detector**

10480.000	13.343	35.571	48.913	-25.087	74.000
15720.000	14.730	35.593	50.322	-23.678	74.000

**Average Detector**

--

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz ◦
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz ◦
4. Measurement Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Clinical Assistant C5  
 Test Item : Undesirable Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5200MHz) (Turbo Mode)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level	dB	dBuV/m
	dB	dBuV	dBuV/m		

**Horizontal**
**Peak Detector**

10400.000	13.102	36.143	49.245	-24.755	74.000
15600.000	15.241	34.551	49.791	-24.209	74.000

**Average Detector**

--

**Vertical**
**Peak Detector**

10400.000	13.102	35.405	48.507	-25.493	74.000
15600.000	15.241	36.171	51.411	-22.589	74.000

**Average Detector**

--

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz ◦
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz ◦
4. Measurement Level = Reading Level + Correct Factor.
5. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product : Mobile Clinical Assistant C5  
 Test Item : Undesirable Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector</b>					
240.975	12.077	29.734	41.811	-4.189	46.000
456.800	18.477	23.663	42.140	-3.860	46.000
599.875	19.999	20.986	40.985	-5.015	46.000
798.725	21.908	19.573	41.481	-4.519	46.000
876.325	21.967	19.485	41.452	-4.548	46.000
912.700	22.319	19.572	41.891	-4.109	46.000
<b>Vertical</b>					
<b>Peak Detector</b>					
240.975	12.463	30.006	42.469	-3.531	46.000
260.375	14.610	28.188	42.798	-3.202	46.000
335.550	14.360	26.792	41.152	-4.848	46.000
527.125	18.888	22.923	41.811	-4.189	46.000
798.725	21.809	20.332	42.140	-3.860	46.000
876.325	22.616	18.760	41.376	-4.624	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "█" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

Product : Mobile Clinical Assistant C5  
 Test Item : Undesirable Emission  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5200MHz) (Turbo Mode)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector</b>					
240.975	12.463	29.192	41.655	-4.345	46.000
260.375	14.610	26.696	41.306	-4.694	46.000
335.550	14.360	25.825	40.185	-5.815	46.000
527.125	18.888	23.442	42.330	-3.670	46.000
798.725	21.809	20.014	41.822	-4.178	46.000
847.225	21.545	19.838	41.382	-4.618	46.000
<b>Vertical</b>					
<b>Peak Detector</b>					
240.975	12.077	28.048	40.125	-5.875	46.000
527.125	18.485	21.380	39.865	-6.135	46.000
575.625	19.517	18.829	38.346	-7.654	46.000
599.324	19.945	20.270	40.215	-5.785	46.000
798.725	21.908	18.408	40.316	-5.684	46.000
815.700	21.623	17.902	39.525	-6.475	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. "■" means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

## 7. Band Edge

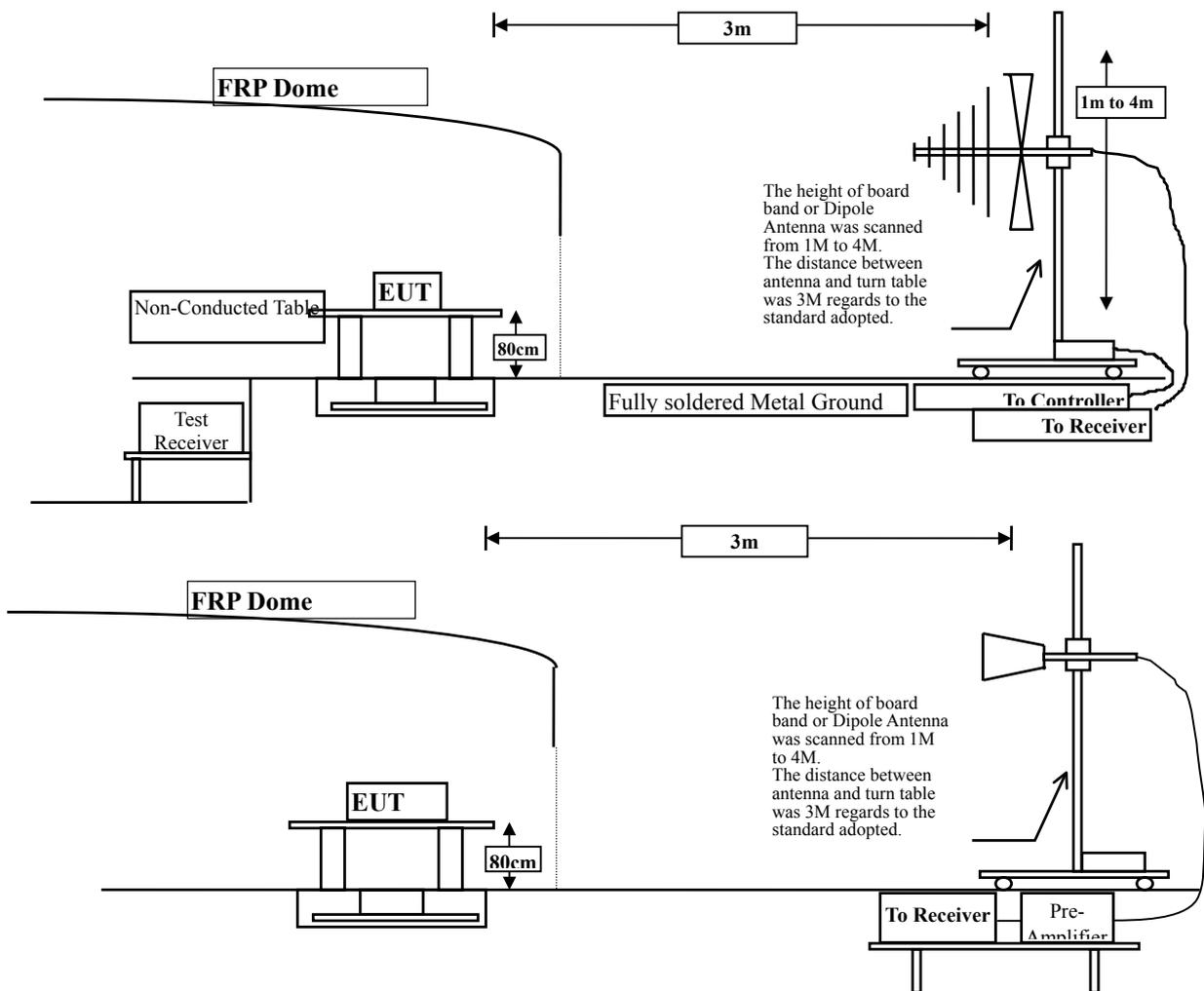
### 7.1. Test Equipment

The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 3	X Test Receiver	R & S	ESI 26 / 838786 / 004	May, 2007
	X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
	X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
	X Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
	X Horn Antenna	ETS	3115 / 0005-6160	July, 2006
	X Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2006

### 7.2. Test Setup

#### RF Radiated Measurement:



### 7.3. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

<b>FCC Part 15 Subpart C Paragraph 15.209 Limits</b>		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
  2. In the Above Table, the tighter limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

### 7.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

### 7.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

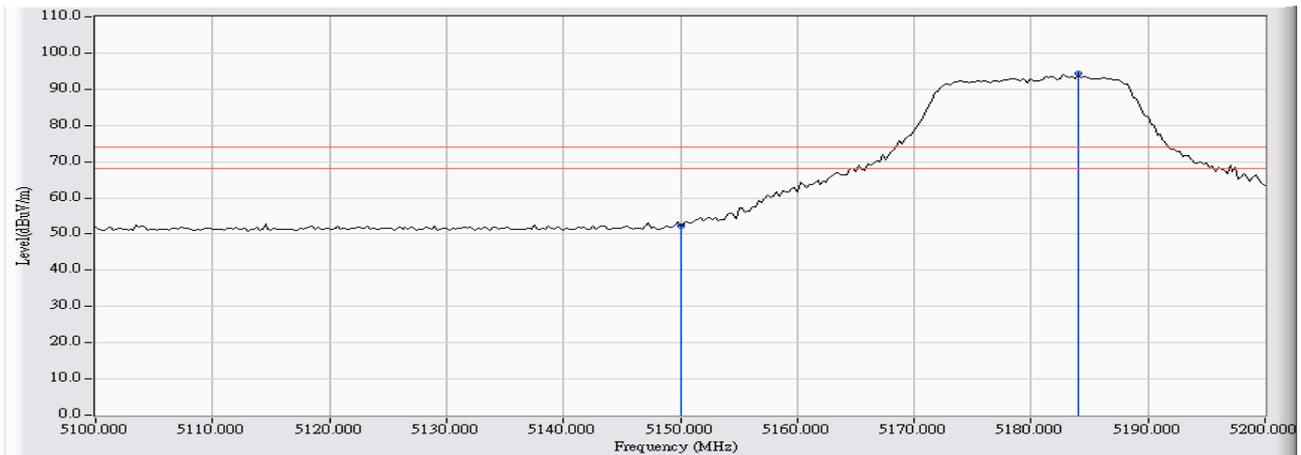
### 7.6. Test Result of Band Edge

Product : Mobile Clinical Assistant C5  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5180MHz)

#### RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	5150.000	4.305	47.806	52.111	74.00	54.00	Pass
1 (Average)	--	--	--	--	74.00	54.00	Pass

**Figure Channel 1: Horizontal (Peak)**



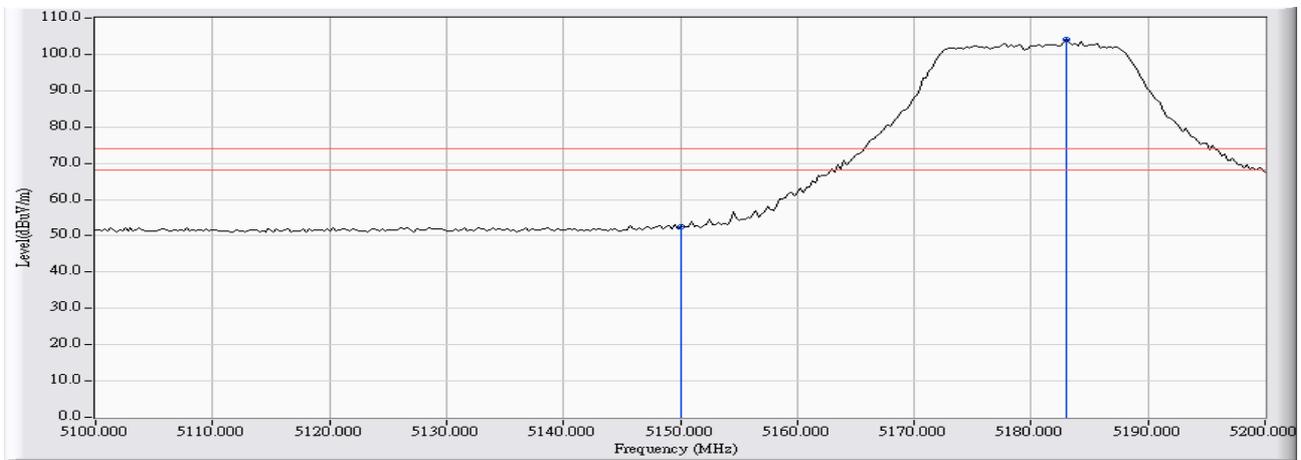
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Mobile Clinical Assistant C5  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5180MHz)

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	5150.000	4.305	48.136	52.441	74.00	54.00	Pass
1 (Average)	--	--	--	--	74.00	54.00	Pass

**Figure Channel 1: Vertical (Peak)**



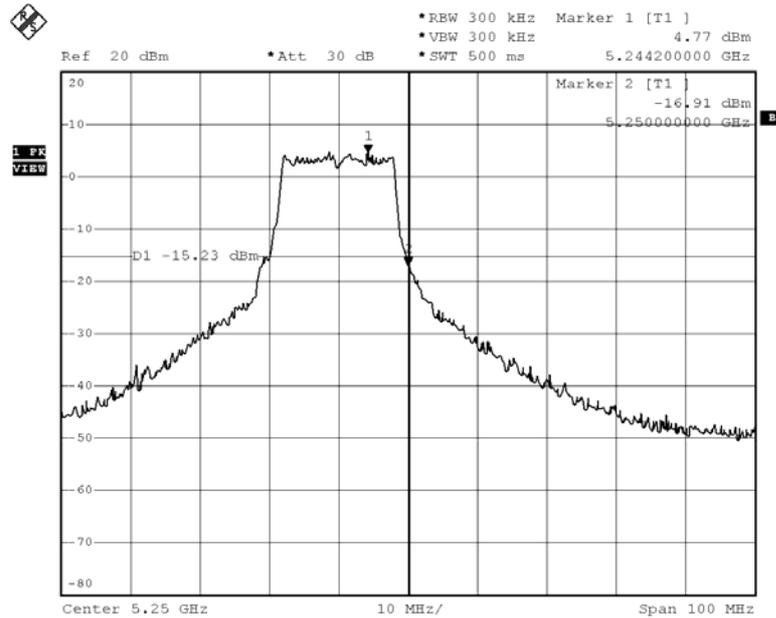
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Mobile Clinical Assistant C5  
 Test Item : Band Edge (20dB Emission)  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5240MHz)

**RF Conduction Measurement:**

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
4	< 5250	>20	Pass

**Figure Channel 4:**



PN1

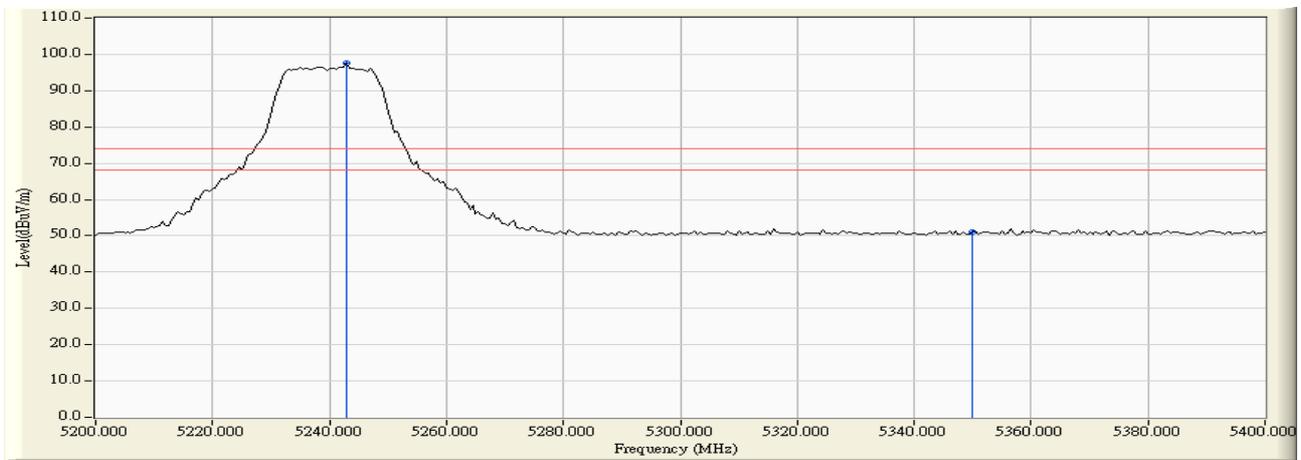
Date: 21.JUN.2007 17:21:26

Product : Mobile Clinical Assistant C5  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5240MHz)

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
4 (Peak)	5350.000	4.446	46.572	51.018	74.00	54.00	Pass
4 (Average)	--	--	--	--	74.00	54.00	Pass

**Figure Channel 4: Horizontal (Peak)**



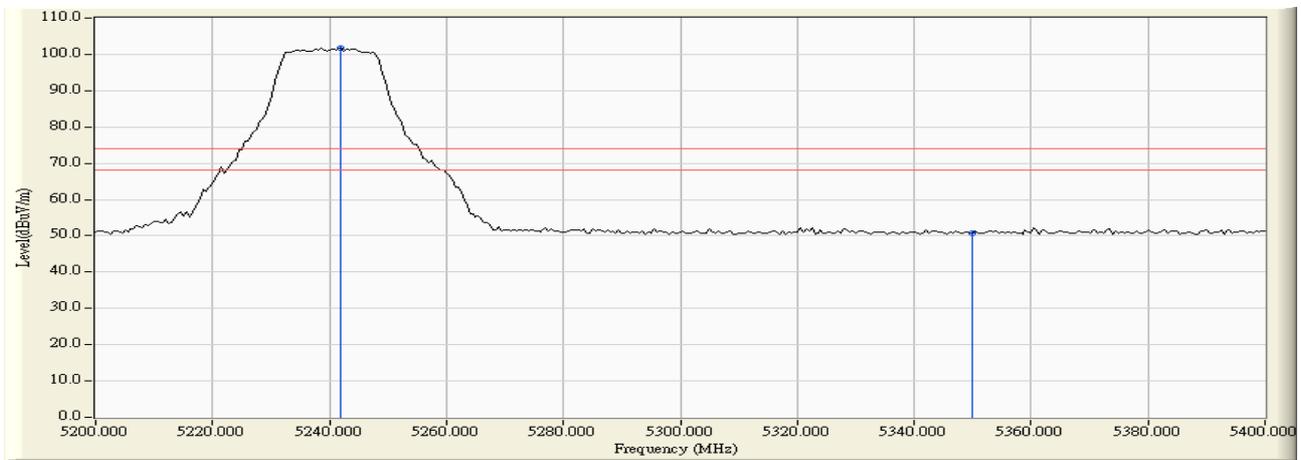
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Mobile Clinical Assistant C5  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5240MHz)

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
4 (Peak)	5350.000	4.446	46.237	50.683	74.00	54.00	Pass
4 (Average)	--	--	--	--	74.00	54.00	Pass

**Figure Channel 4: Vertical (Peak)**



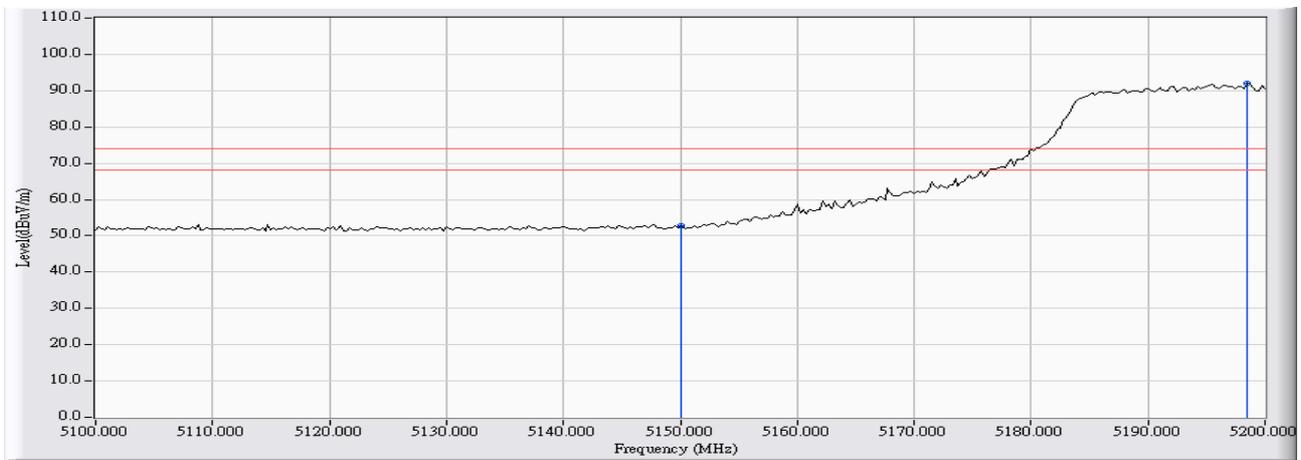
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Mobile Clinical Assistant C5  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5200MHz) (Turbo Mode)

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	5150.000	4.305	48.519	52.824	74.00	54.00	Pass
1 (Average)	--	--	--	--	74.00	54.00	Pass

**Figure Channel 1: Horizontal (Peak)**



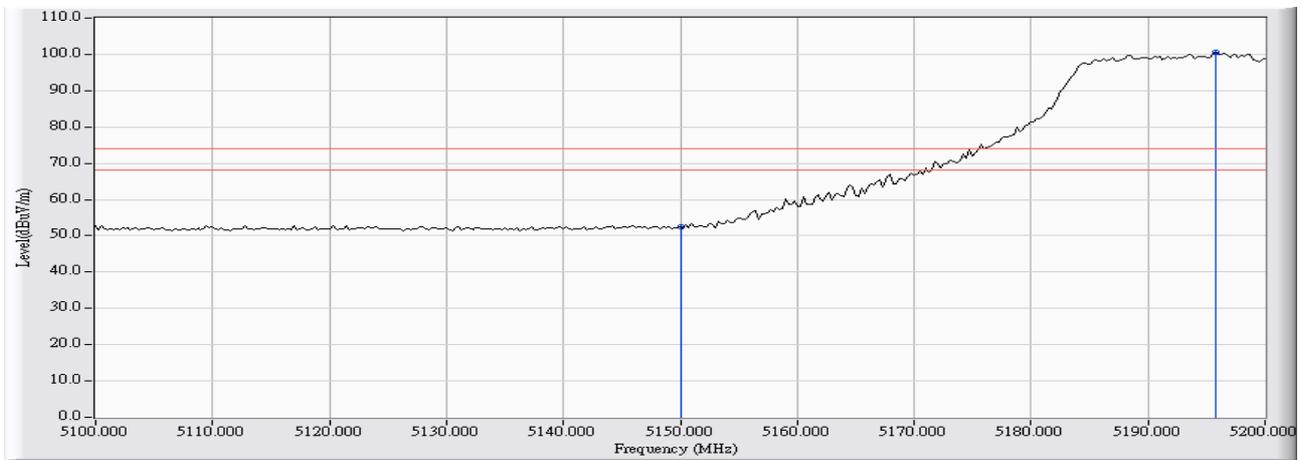
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : Mobile Clinical Assistant C5  
 Test Item : Band Edge  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080 (5200MHz) (Turbo Mode)

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
1 (Peak)	5150.000	4.305	48.300	52.605	74.00	54.00	Pass
1 (Average)	--	--	--	--	74.00	54.00	Pass

**Figure Channel 1: Vertical (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

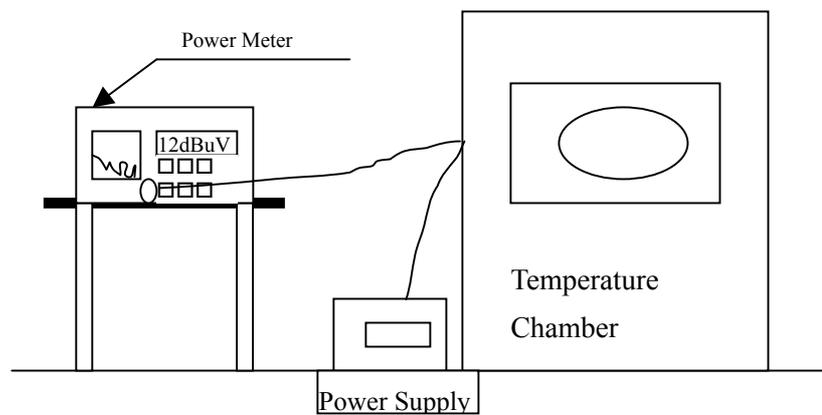
## 8. Frequency Stability

### 8.1. Test Equipment

Equipment	Manufacturer	Model No./Serial No.	Last Cal.	Remark
Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007	
Temperature Chamber	WIT GROUP	TH-1S-B / WIT-02121901	June, 2006	

Note: All equipments are calibrated every one year.

### 8.2. Test Setup



### 8.3. Limits

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified

### 8.4. Uncertainty

± 150 Hz

### 8.5. Test Result of Frequency Stability

Product : Mobile Clinical Assistant C5  
 Test Item : Frequency Stability  
 Test Site : Temperature Chamber  
 Test Mode : Mode 1: Transmitter 802.11a-ASKEY:WLL4080

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	$\Delta F$ (MHz)
Tnom (20) °C	Vnom (120)V	1	5180.00	5180.00	0.00
		3	5220.00	5220.00	0.00
		4	5240.00	5240.00	0.00
Tmax (50) °C	Vnim (102)V	1	5180.00	5180.00	0.00
		3	5220.00	5220.00	0.00
		4	5240.00	5240.00	0.00
Tmax (50) °C	Vmax (138)V	1	5180.00	5180.00	0.00
		3	5220.00	5220.00	0.00
		4	5240.00	5240.00	0.00
Tnim (0) °C	Vnim (102)V	1	5180.00	5180.00	0.00
		3	5220.00	5220.00	0.00
		4	5240.00	5240.00	0.00
Tnim (0) °C	Vmax (138)V	1	5180.00	5180.00	0.00
		3	5220.00	5220.00	0.00
		4	5240.00	5240.00	0.00

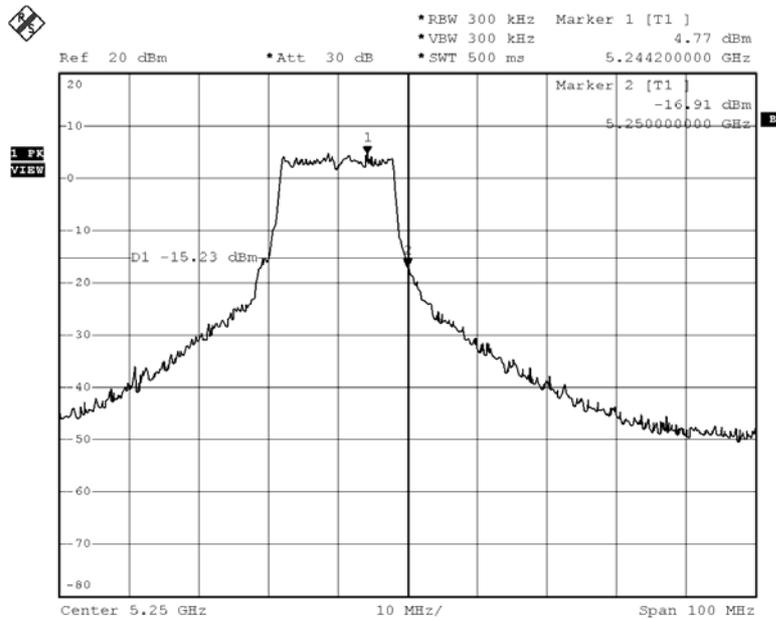
## 9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment : Test data of verify

QTK verify all data rates. To append down, middle, high data rates picture. pls see below photo for reference.

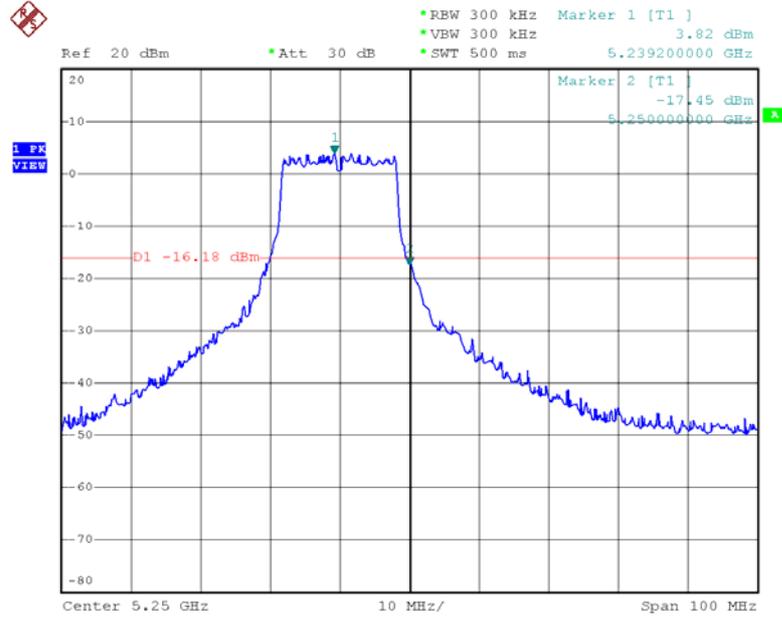
Down (6Mbps) Report data



PN1

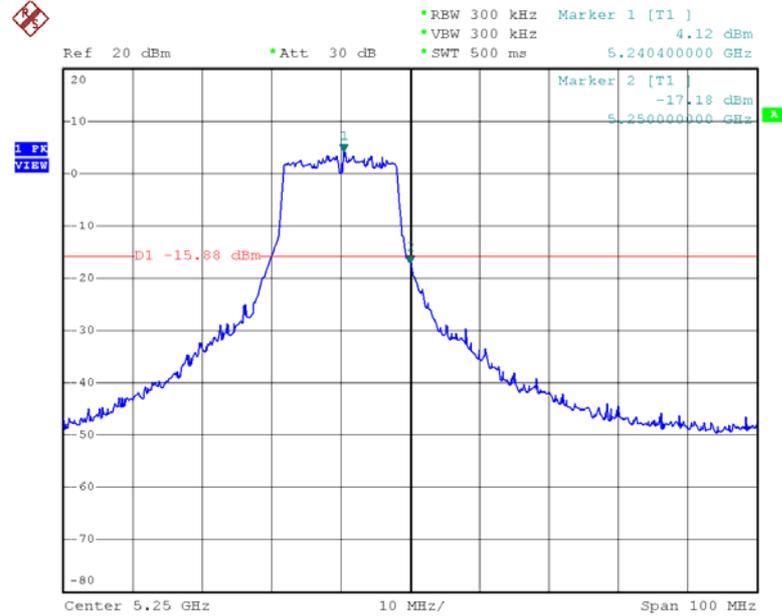
Date: 21.JUN.2007 17:21:26

### Middle (24Mbps)



PN1  
Date: 22.JUN.2007 15:30:06

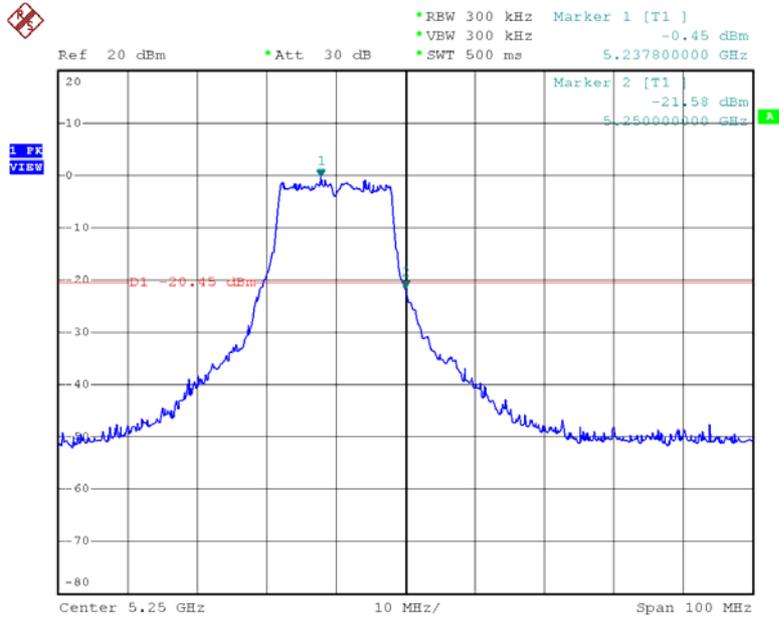
### High (54Mbps)



PN1  
Date: 22.JUN.2007 15:33:07

We don't change the power, even we change the power to perform test, the result is still the same. Reducing power won't influence test data.

### Power down 5dB



PN1  
Date: 22.JUN.2007 15:27:15