



# **EMI TEST REPORT**

## **Test Report No. : 26FE0180-HO-5**

**Applicant** : **CONTEC CO., LTD.**  
**Type of Equipment** : **Wireless LAN MiniPCI Card**  
**Model No.** : **FX-DS540-MPCI6**  
**Test standard** : **FCC Part 15 Subpart E  
Section 15.407 : 2006**  
**FCC ID** : **PQRDS540-MPCI6**  
**Test Result** : **Complied**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.

**Date of test:**

February 14 to 28, 2006

**Tested by :**

Hiroka Umeyama  
EMC Services

Kenichi Adachi  
EMC Services

**Approved by :**

Naoki Sakamoto  
Group Leader of EMC Services

**UL Apex Co., Ltd.**

**Head Office EMC Lab.**

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## **SECTION 1: Client information**

Company Name : CONTEC CO., LTD.  
Address : 33-9-31, Himesato, Nishiyodogawa-ku, Osaka, 555-0025 Japan  
Telephone Number : +81-6-6477-1363  
Facsimile Number : +81-6-6477-7245  
Contact Person : Naoki Ikeda

## **SECTION 2: Equipment under test (E.U.T.)**

### **2.1 Identification of E.U.T.**

Type of Equipment : Wireless LAN MiniPCI Card  
Model No. : FX-DS540-MPCI6  
Serial No. : C09A5440017CC01 for Antenna terminal tests  
C09A54400135C01 for Spurious and Conducted emission tests  
Rating : DC3.3V, 0.54A  
Country of Manufacture : Japan  
Receipt Date of Sample : February 13, 2006  
Condition of EUT : Production model

### **2.2 Product Description**

Clock frequency : 40MHz  
Equipment Type : Transceiver  
Frequency of operation : [IEEE802.11b/g]2412-2462MHz / [IEEE802.11a]5180-5825MHz  
Type of modulation : OFDM, DSSS  
Bandwidth & Channel number : [IEEE802.11b/g]22MHz & 5MHz, [IEEE802.11a]17MHz & 20MHz  
Antenna Type : Chip Antenna  
Antenna Gain : 2.0dBi (2.4GHz)/ 3.0dBi (5GHz)  
Antenna Connector Type : AYU1  
Operating voltage (inner) : DC2.97V to 3.63V  
Operating temperature range : 0 to 70 deg.C.

Remarks :

This Wireless Module consists of 1 chip each of 5GHz band.

### **FCC 15.31 (e)**

This EUT provides stable voltage(DC3.3V) constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

### **FCC Part 15.407(d) Antenna requirement**

This EUT complies with the requirement of 15.407, because a unique coupling (antenna connector, Type: AYU1) is used for this EUT.

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### SECTION 3: Test specification, procedures & results

#### 3.1 Test Specification

Test Specification : FCC Part15 Subpart E : 2006  
Title : FCC 47CFR Part15 Radio Frequency Device  
Subpart E Unlicensed National Information Infrastructure Devices  
Section 15.407 General technical requirements

#### 3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin*0)	Results
1	26dB Emission Bandwidth	ANSI C63.4:2003	Section 15.407(a)(1)(2)(3)	-	N/A	*See data	Complied
2	Peak Transmit Power	ANSI C63.4:2003	Section 15.407(a)(1)(2)(3)	Conducted	N/A		Complied
3	Peak Power Spectral Density	ANSI C63.4:2003	Section 15.407(a)(1)(2)(3)	Conducted	N/A		Complied
4	Peak Excursion Ratio	ANSI C63.4:2003	Section 15.407(a)(6)	Conducted	N/A		Complied
5	Spurious Emission	ANSI C63.4:2003	Section 15.407(b)(1)(2)(3)(4)(5)	Conducted	N/A		Complied
6	Spurious Emission	ANSI C63.4:2003	(6)(7) 15.205/15.209	Radiated	N/A	0.1dB 5120MHz, Hor (5765MHz)	Complied
7	AC Conducted Emission	ANSI C63.4:2003	Section 15.407(b)(6)/15.207	-	N/A	13.9dB 12.2916MHz Phase L (AV)	Complied
8	Band Edge Compliance	ANSI C63.4:2003	Section 15.407(b)(7)/15.205	Conducted Radiated	N/A	*See data	Complied

Note: UL Apex's EMI Work Procedures No.QPM05 and QPM15.

\*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

\*These tests were also referred to FCC Public Notice DA 02-2138 "Measurement Procedure Updated for Peak Transmit Power in the Unlicensed National Information Infrastructure (U-NII) Bands".

\*These tests were performed without any deviations from test procedure except for additions or exclusions.

#### 3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	RSS-Gen 4.4.1	-	Conducted	N/A	N/A	N/A

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### 3.4 Uncertainty

#### Conducted Emission

The measurement uncertainty (with a 95% confidence level) for this test is  $\pm 2.66$ dB.  
The data listed in this report have enough margin, more than site margin.

#### Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is  $\pm 4.59$ dB(3m)/  $\pm 4.58$ dB(10m).  
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is  $\pm 4.62$ dB(3m)/  $\pm 4.60$ dB(10m).  
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is  $\pm 5.27$ dB.  
The data listed in this report meets the limits unless the uncertainty is taken into consideration.

#### Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is  $\pm 3.0$ dB.

### 3.5 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. \*NVLAP Lab. code: 200572-0  
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	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	IC4247	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	846015	IC4247-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.4 shielded room	-	-	3.1 x 5.0 x 2.7m	N/A	-

\* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1 and No.2 semi-anechoic and No.3 shielded room.

### 3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

**SECTION 4: Operation of E.U.T. during testing**

**4.1 Operating Modes**

The EUT was operating in a manner similar to typical use during the tests.

Packet Type : Maximum  
Payload : PN9  
Operation : Transmitting mode (IEEE802.11a)  
Channel 36: 5180MHz  
Channel 52: 5260MHz  
Channel 64: 5320MHz  
Channel 149: 5745MHz  
Channel 153: 5765MHz  
Channel 161: 5805MHz

Receiving mode (IEEE802.11a)  
Channel 52: 5260MHz  
Channel 153: 5765MHz

Conditions : 1) IEEE802.11a:6,9,12,18,24,36,48,54 Mbps  
2) Antenna Port: A,B (same type)

\*We pre-confirmed the above conditions on EUT and performed the final test with the following conditions;

	IEEE802.11a
Conducted emission test	1)Rate:54Mbps
	2)Antenna Port:A
Radiated emission test	1)Rate:18Mbps
	2)Antenna Port:A
Other tests	1)Rate:24/54Mbps
	2)Antenna Port:B

<The details>

Conducted emission test : The above conditions did not affect the test result so that the test was made with these conditions in the above table.

Radiated emission test : As for Rate,18Mbps (Maximum transmission rate of 11a) had worst margins.  
The result of Antenna Port A had worst margin.

Other tests : As for Rate, 24Mbps (Maximum transmission rate of 11g/a) had worst margins.  
The result of Antenna Port B had worst margin.  
The tests that may be affected by the noise were performed with maximum rate 54Mbps.  
The test of peak power density was performed with antenna B.

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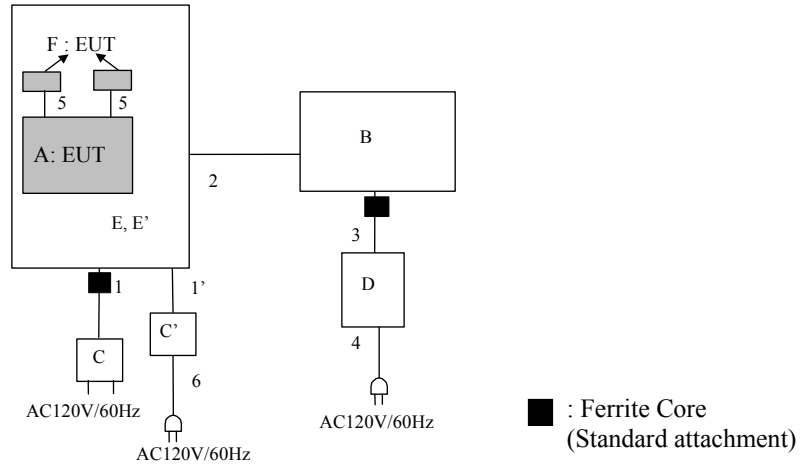
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## 4.2 Configuration and peripherals



\*Cabling and setup were taken into consideration and test data was taken under worse case conditions.

\* Radiated Spurious Emission was measured in the configuration that the enclosure has been removed off the main board.

### Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID
A	Wireless LAN MiniPCI Card	FX-DS540-MPCI6	C09A5440017CC01 for Antenna terminal tests C09A54400135C01 for Spurious and Conducted emission tests	CONTEC	PQRDS540-MPCI6
B	Note PC	2887-7KJ	99-BP829	IBM	DOC
C	3.3V AC Adapter	VHE10P1-33MP	-	AK-II	- *1)
C'	AC Adapter	TAS4600-Y-1-CON	-	KAGA COMPONENTS	- *2)
D	AC Adapter	08K8204	11S08K8204Z1Z9V049L67G	IBM	-
E	Main Board of Wireless LAN Access Point	FX-DS540-APDL2-U	-	CONTEC	- *1)
E'	Main Board of Wireless LAN Access Point	FX-DS540-STB-M-U	-		- *2)
F	Chip Antenna	-	-	FDK	-

\*1) Used for radiated emission test above 1GHz

\*2) Used for radiated emission test below 1GHz

### List of cables used

No.	Name	Length (m)	Shield	Remarks
1	DC Cable	1.5	N	*1)
1'	DC Cable	1.5	N	*2)
2	LAN Cross Cable	1.5	N	-
3	DC Cable	1.8	N	-
4	AC Cable	1.0	N	-
5	Antenna Cable	0.075	Y	-
6	AC cable	1.0	N	*2)

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## **SECTION 5: Conducted Emission**

### **Test Procedure**

EUT was placed on a platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

1) For the tests on EUT with other peripherals (as a whole system)

I/O cable and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

2) For the tests on EUT itself (as a stand alone equipment)

Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN /(AMN) to the input power source. All unused 50ohm connectors of the LISN(AMN) were resistively terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber or a Measurement Room.

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

The measurements have been performed with a CISPR quasi-peak detector (IF BW 9 kHz).

Measurement range: 0.15-30MHz

**Test data** : APPENDIX 3

**Test result** : Pass

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**SECTION 6: Spurious Emission , Band Edge Compliance**

[Conducted]

**Test Procedure**

The Out of Band Emission was measured with a spectrum analyzer connected to the antenna port.

**Test data** : APPENDIX 3  
**Test result** : Pass

[Radiated]

**Test Procedure**

EUT was placed on a platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane. The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) , 1m(10-26.5GHz, Distance Factor :  $20\log(3[m]/1[m])$ ) and 0.3m( Upper 26.5GHz, Distance Factor :  $20\log(3[m]/0.3[m])$  ). The height of the measuring varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver or the Spectrum Analyzer.

Below 1GHz

The result also satisfied with the general limits specified in section 15.209(a).

Above 1GHz

Inside of the restricted bands (Section 15.205) : Apply to limit in the Section 15.209(a)  
Outside of the restricted bands (Section 15.205) : Limit  $-27\text{dBm EIRP}$   
 $-17\text{dBm EIRP (5.725-5.825GHz Band Edge)}$

Frequency	Below 1GHz	Above 1GHz (Inside of the restricted bands)	Above 1GHz (Outside of the restricted bands)
Instrument used	Test Receiver	Spectrum Analyzer	Spectrum Analyzer
Detector	QP: BW 120kHz	PK: RBW:1MHz/VBW: 1MHz	RBW:1MHz/VBW: 1MHz
IF Bandwidth		AV: RBW:1MHz/VBW:10Hz	

**Test data** : APPENDIX 3  
**Test result** : Pass

\*The noise from the EUT was not seen in the above 18GHz. The measurement was made in the residual noise levels.

### **SECTION 7: 26dB Emission Bandwidth**

#### **Test Procedure**

The 26dB Emission Bandwidth was measured with a spectrum analyzer connected to the antenna port.

**Test data** : APPENDIX 3

**Test result** : Pass

### **SECTION 8: Peak Transmit Power**

#### **Test Procedure**

The Peak Transmit Power was measured with a spectrum analyzer connected to the antenna port. The test was made with the spectrum analyzer that has a function of channel-power measurement. We followed the method 1 specified in DA-02-2138A1.

**Test data** : APPENDIX 3

**Test result** : Pass

### **SECTION 9: Peak Power Spectral Density**

#### **Test Procedure**

The Peak Power Spectral Density was measured with a spectrum analyzer connected to the antenna port. We followed the method 2 specified in DA-02-2138A1.

**Test data** : APPENDIX 3

**Test result** : Pass

### **SECTION 10: Peak Excursion Ratio**

#### **Test Procedure**

The Peak Excursion Ratio was measured with a spectrum analyzer connected to the antenna port. The second Sweep was measured based on Method 1 specified in DA-02-2138A1.

**Test data** : APPENDIX 3

**Test result** : Pass

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**APPENDIX 1: Photographs of test setup**

**Conducted Emission**  
**Front**



**Rear**



**Spurious Emission (Radiated:below 1GHz)**

**Front**



**Rear**

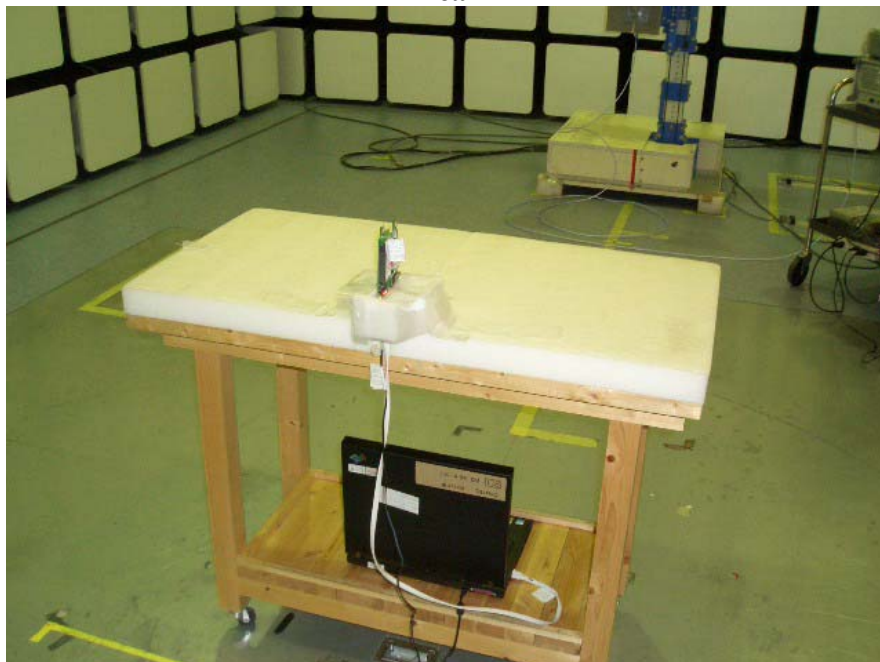


**Spurious Emission (Radiated:above 1GHz)**

**Front**



**Rear**

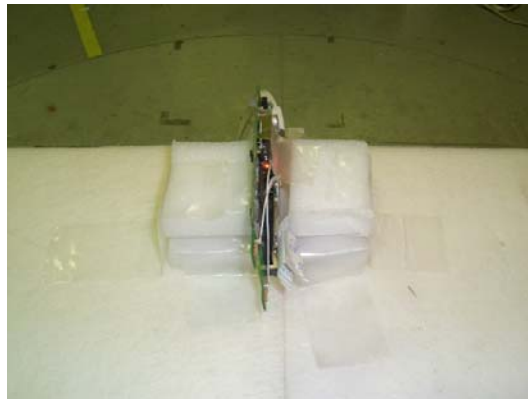


**Worst Case Position (X-axis:Horizontal / Z-axis:Vertical)**

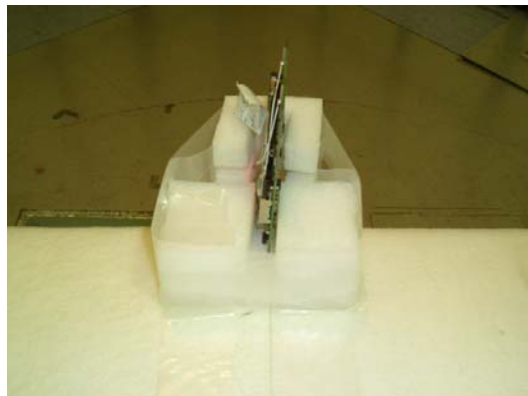
**X-axis**



**Y-axis**



**Z-axis**





**APPENDIX 3: Data of EMI test**

**Conducted Emission**

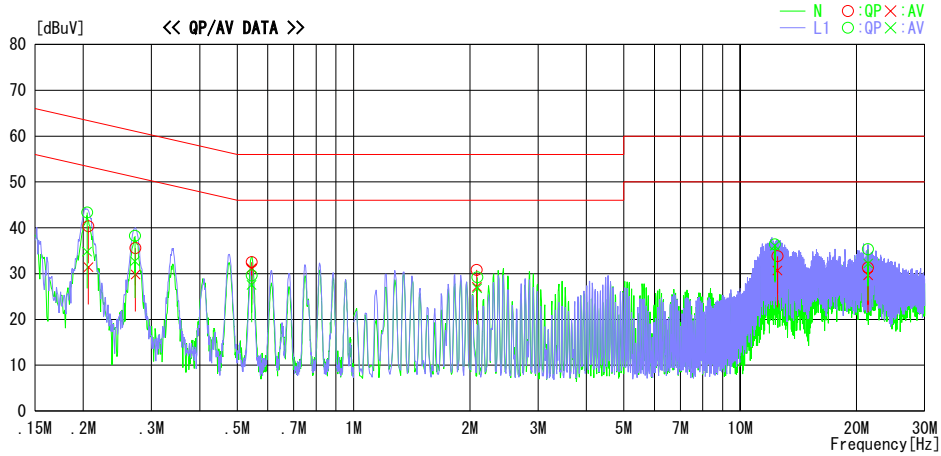
**DATA OF CONDUCTED EMISSION TEST**

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
Date : 2006/02/26 13:44:55

Applicant : CONTEC CO., LTD  
Kind of EUT : Wireless LAN MiniPCI Card  
Model No. : FX-DS540-MPC16  
Serial No. : C09A54400135C01  
Report No. : 26FE0180-H0  
Power : DC 3.3V (AC120V/60Hz)  
Temp./Humi. : 26deg. C / 36%  
Operator : Hiroka Umeyama

Mode / Remarks : Transmitting 11a 5180MHz

LIMIT : FCC15C §15.207 (QP)  
FCC15C §15.207 (AV)



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.20610	40.2	31.3	0.1	40.3	31.4	63.4	53.4	23.1	22.0	N
0.27290	35.5	29.7	0.1	35.6	29.8	61.0	51.0	25.4	21.2	N
0.54525	32.3	31.0	0.2	32.5	31.2	56.0	46.0	23.5	14.8	N
2.08350	30.4	26.7	0.4	30.8	27.1	56.0	46.0	25.2	18.9	N
12.48006	32.6	29.5	1.2	33.8	30.7	60.0	50.0	26.2	19.3	N
21.40026	29.5	27.8	1.8	31.3	29.6	60.0	50.0	28.7	20.4	N
0.20460	43.2	34.7	0.1	43.3	34.8	63.4	53.4	20.1	18.6	L1
0.27200	38.1	32.6	0.1	38.2	32.7	61.1	51.1	22.9	18.4	L1
0.54525	29.4	27.3	0.2	29.6	27.5	56.0	46.0	26.4	18.5	L1
2.08900	28.8	26.4	0.4	29.2	26.8	56.0	46.0	26.8	19.2	L1
12.29160	35.2	34.9	1.2	36.4	36.1	60.0	50.0	23.6	13.9	L1
21.40026	33.5	30.4	1.8	35.3	32.2	60.0	50.0	24.7	17.8	L1

CHART: WITH FACTOR, Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C.F (L1SN LOSS+CABLE LOSS)  
Except for the above table : adequate margin data below the limits.

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## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
 Date : 2006/02/26 13:44:55

Applicant : CONTEC CO., LTD. Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V (AC120V/60Hz) Temp./Humi. : 26deg.C / 36% Operator : Hiroka Umeyama
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Mode / Remarks : Transmitting 11a 5180MHz

LIMIT : FCC15C § 15.207 (QP)  
 FCC15C § 15.207 (AV)

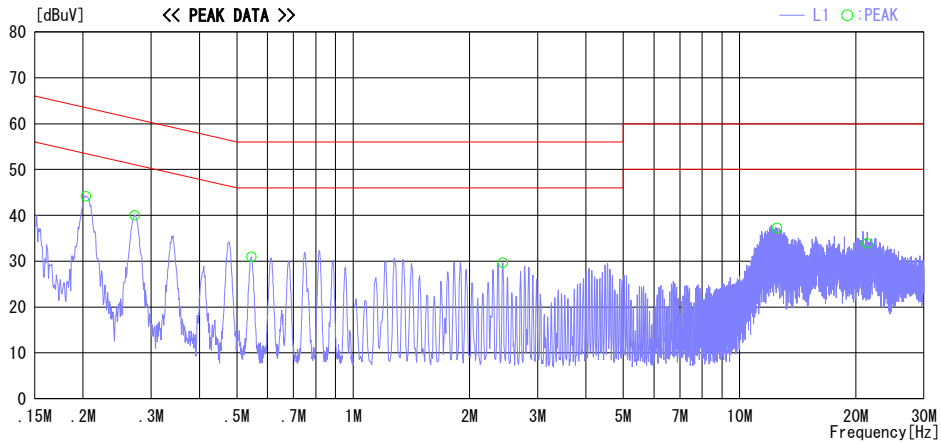
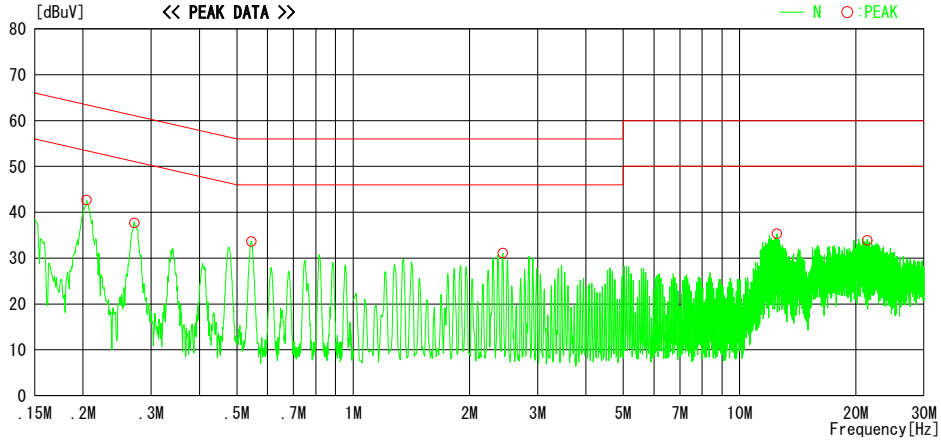


CHART: WITH FACTOR. Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (L1SN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.



## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
 Date : 2006/02/26 13:54:43

Applicant : CONTEC CO., LTD.  
 Kind of EUT : Wireless LAN MiniPCI Card  
 Model No. : FX-DS540-MPC16  
 Serial No. : C09A54400135C01

Report No. : 26FE0180-HO  
 Power : DC 3.3V (AC120V/60Hz)  
 Temp./Humi. : 26deg.C / 36%  
 Operator : Hiroka Umeyama

Mode / Remarks : Transmitting 11a 5260MHz

LIMIT : FCC15C § 15.207 (QP)  
 FCC15C § 15.207 (AV)

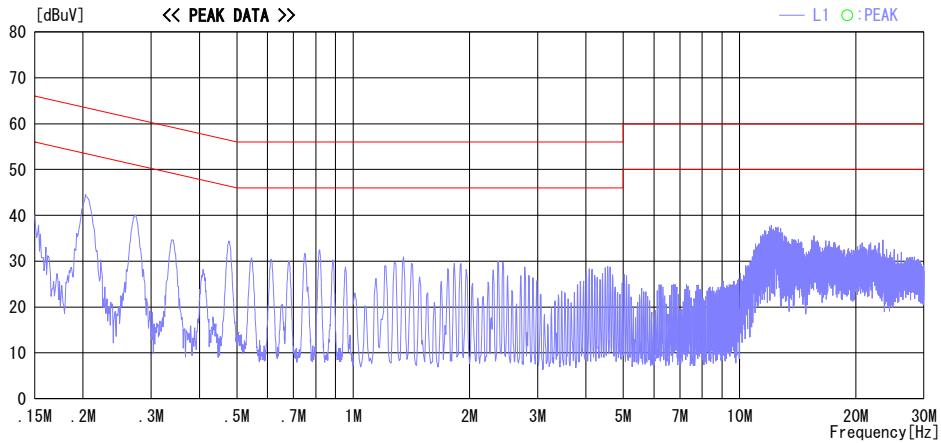
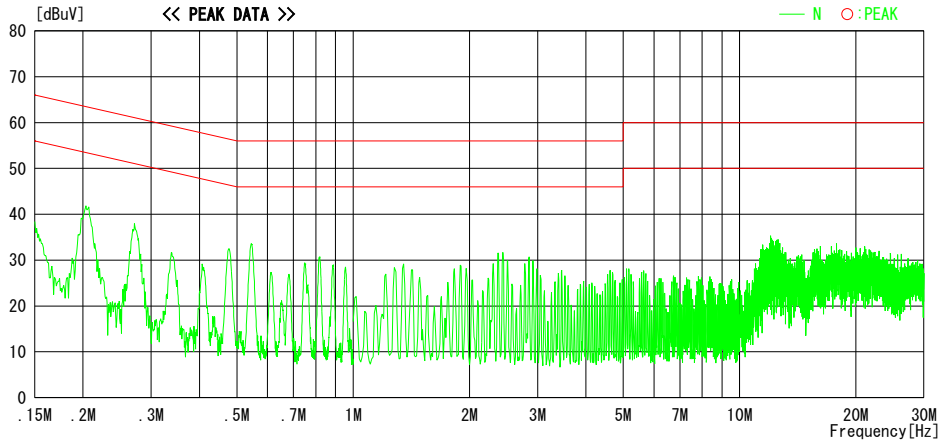


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C. F (L1SN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.

## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
 Date : 2006/02/26 13:49:42

Applicant : CONTEC CO., LTD. Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V (AC120V/60Hz) Temp./Humi. : 26deg.C / 36% Operator : Hiroka Umeyama
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Mode / Remarks : Transmitting 11a 5320MHz

LIMIT : FCC15C § 15.207 (QP)  
 FCC15C § 15.207 (AV)

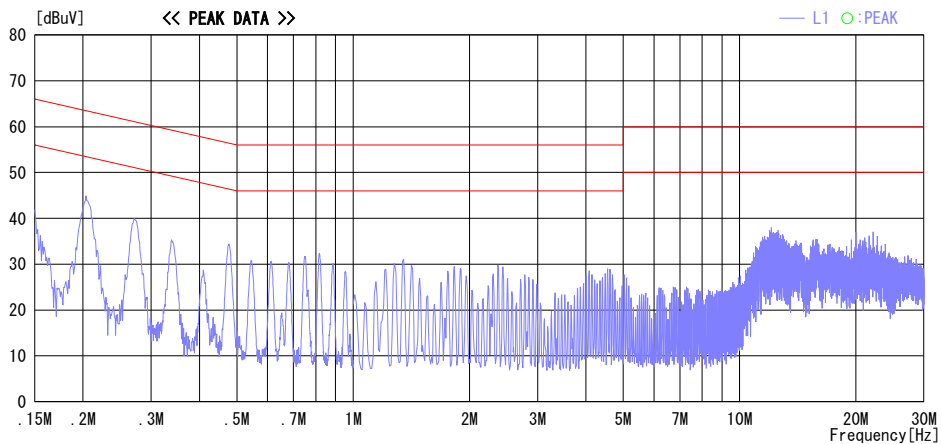
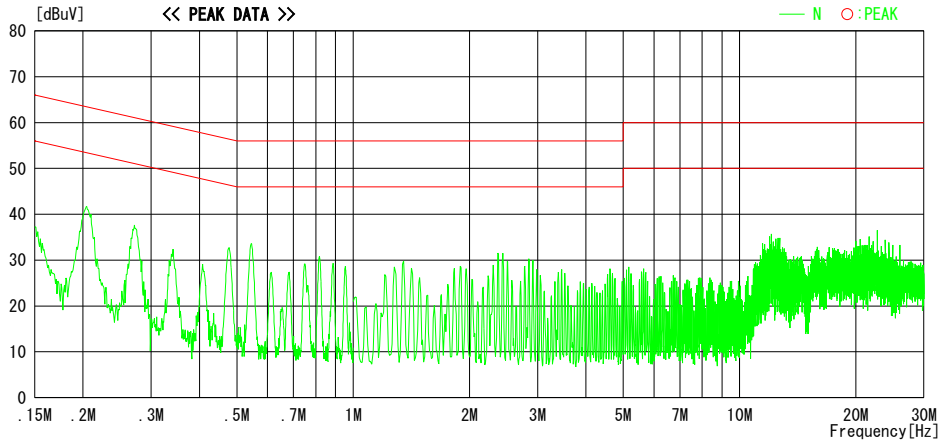


CHART: WITH FACTOR. Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (L1SN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.

## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
 Date : 2006/02/26 14:18:35

Applicant : CONTEC CO., LTD. Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V (AC120V/60Hz) Temp./Humi. : 26deg.C / 36% Operator : Hiroka Umeyama
---	---

Mode / Remarks : Receiving 11a 5260MHz

LIMIT : FCC15C § 15.207 (QP)  
 FCC15C § 15.207 (AV)

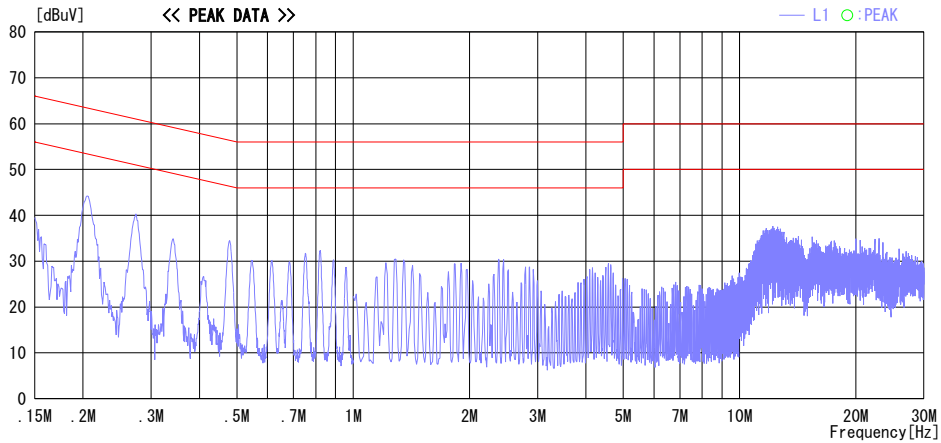
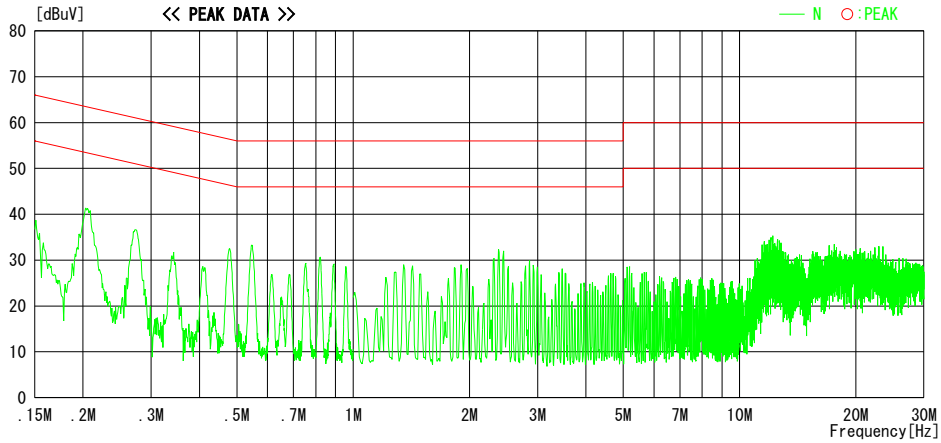


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C. F (L1SN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.

## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
 Date : 2006/02/26 13:59:58

Applicant : CONTEC CO., LTD. Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V (AC120V/60Hz) Temp./Humi. : 26deg.C / 36% Operator : Hiroka Umeyama
---	---

Mode / Remarks : Transmitting 11a 5745MHz

LIMIT : FCC15C § 15.207 (QP)  
 FCC15C § 15.207 (AV)

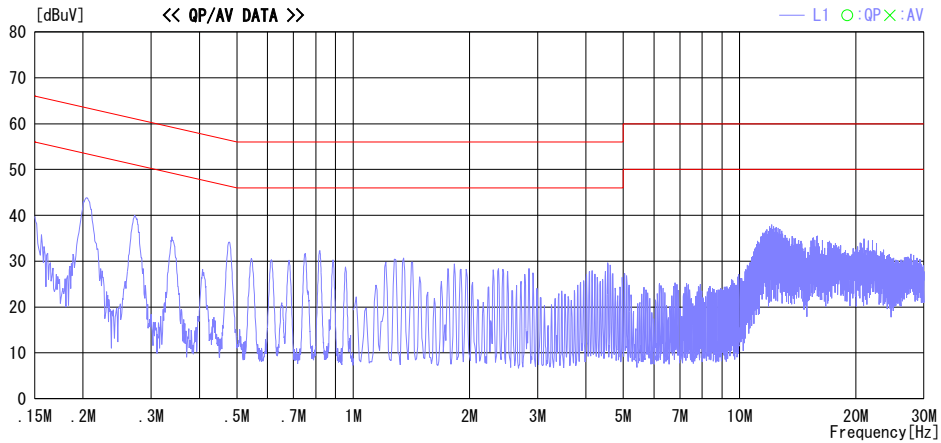


CHART: WITH FACTOR. Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (L1SN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.

## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
 Date : 2006/02/26 14:05:05

Applicant : CONTEC CO., LTD. Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V (AC120V/60Hz) Temp./Humi. : 26deg.C / 36% Operator : Hiroka Umeyama
---	---

Mode / Remarks : Transmitting 11a 5765MHz

LIMIT : FCC15C § 15.207 (QP)  
 FCC15C § 15.207 (AV)

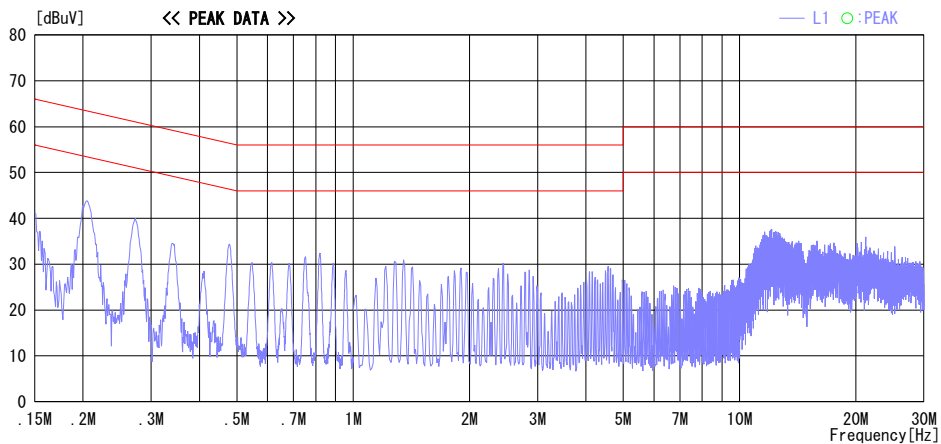
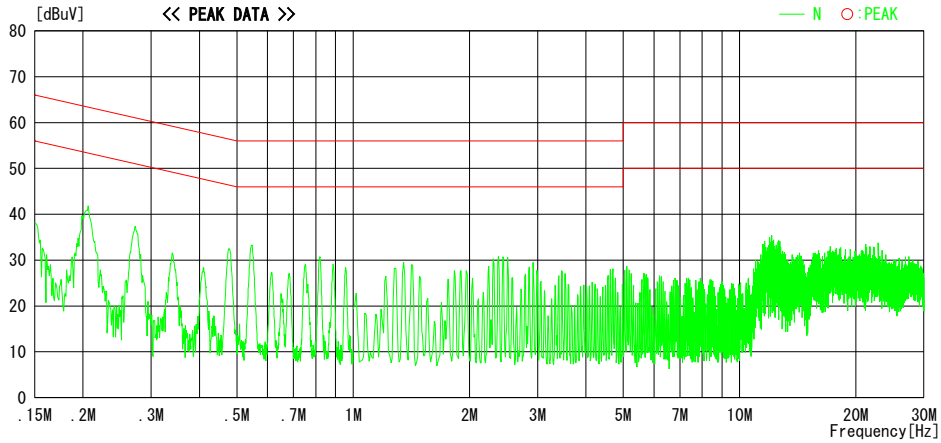


CHART: WITH FACTOR. Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (L1SN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.

## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber  
Date : 2006/02/26 14:11:55

Applicant : CONTEC CO., LTD  
Kind of EUT : Wireless LAN MiniPCI Card  
Model No. : FX-DS540-MPC16  
Serial No. : C09A54400135C01

Report No. : 26FE0180-HO  
Power : DC 3.3V (AC120V/60Hz)  
Temp./Humi. : 26deg. C / 36%  
Operator : Hiroka Umeyama

Mode / Remarks : Transmitting 11a 5805MHz

LIMIT : FCC15C §15.207 (QP)  
FCC15C §15.207 (AV)

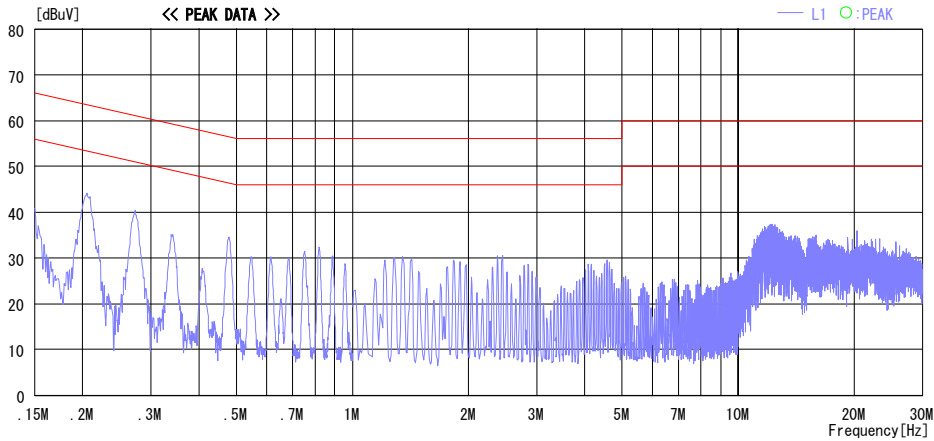
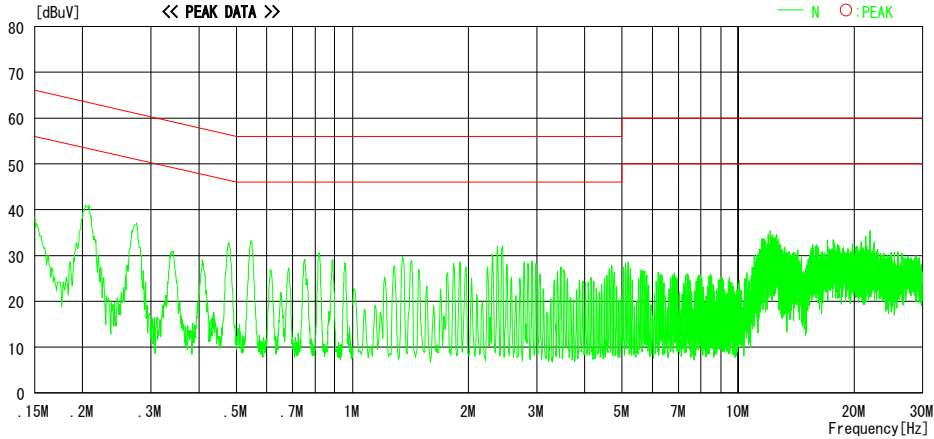


CHART: WITH FACTOR, Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C.F (L1SN LOSS+CABLE LOSS)  
Except for the above table : adequate margin data below the limits.

## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
 Date : 2006/02/26 14:38:28

Applicant : CONTEC CO., LTD. Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V (AC120V/60Hz) Temp./Humi. : 26deg. C / 36% Operator : Hiroka Umeyama
---	--

Mode / Remarks : Receiving 11a 5765MHz

LIMIT : FCC15C §15.207 (QP)  
 FCC15C §15.207 (AV)

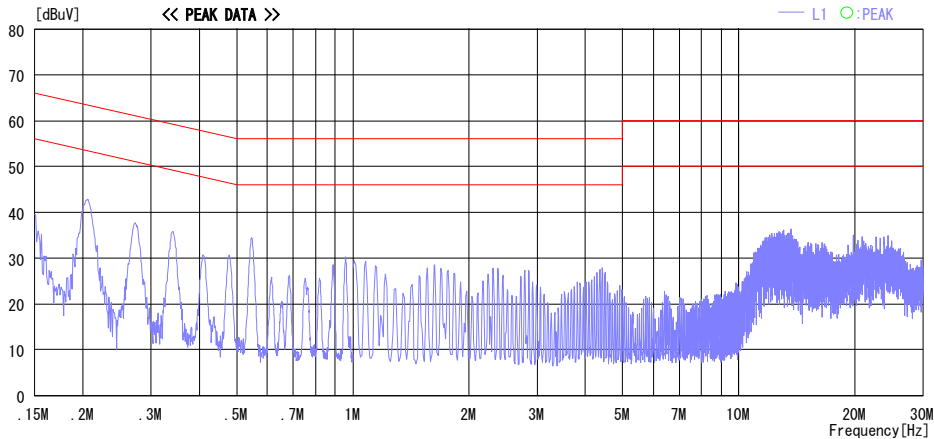
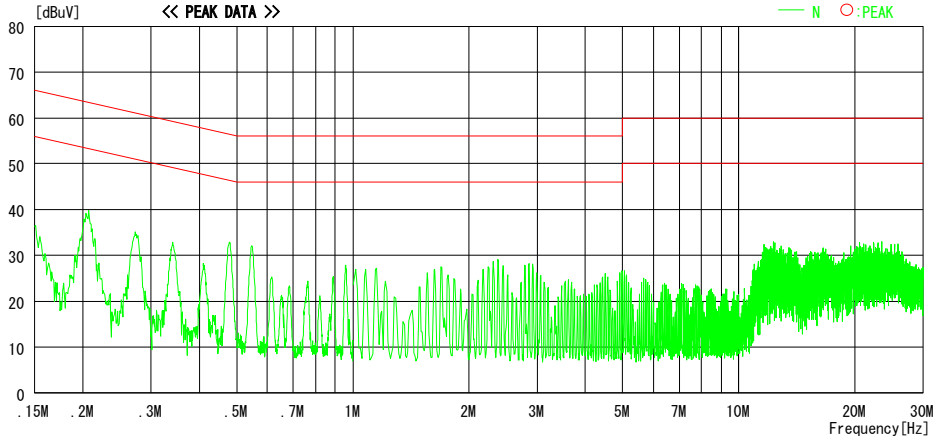


CHART: WITH FACTOR, Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C.F (L1SN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.

## DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
 Date : 2006/02/26 13:32:36

Applicant : CONTEC CO., LTD. Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V (AC120V/60Hz) Temp./Humi. : 26deg.C / 36% Operator : Hiroka Umeyama
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Mode / Remarks : Standby

LIMIT : FCC15C § 15.207 (QP)  
 FCC15C § 15.207 (AV)

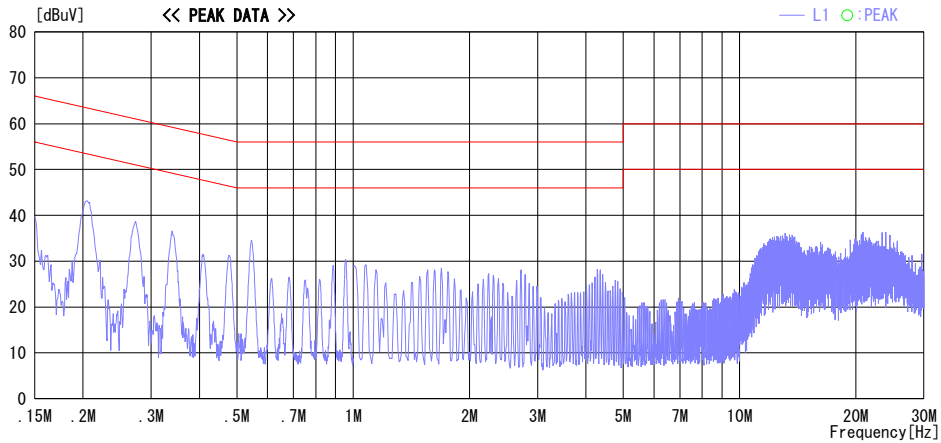
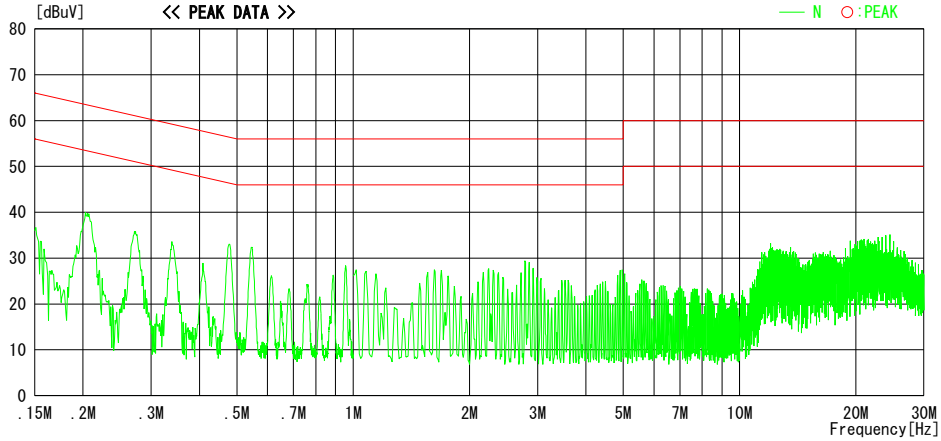


CHART: WITH FACTOR. Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (L1SN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.



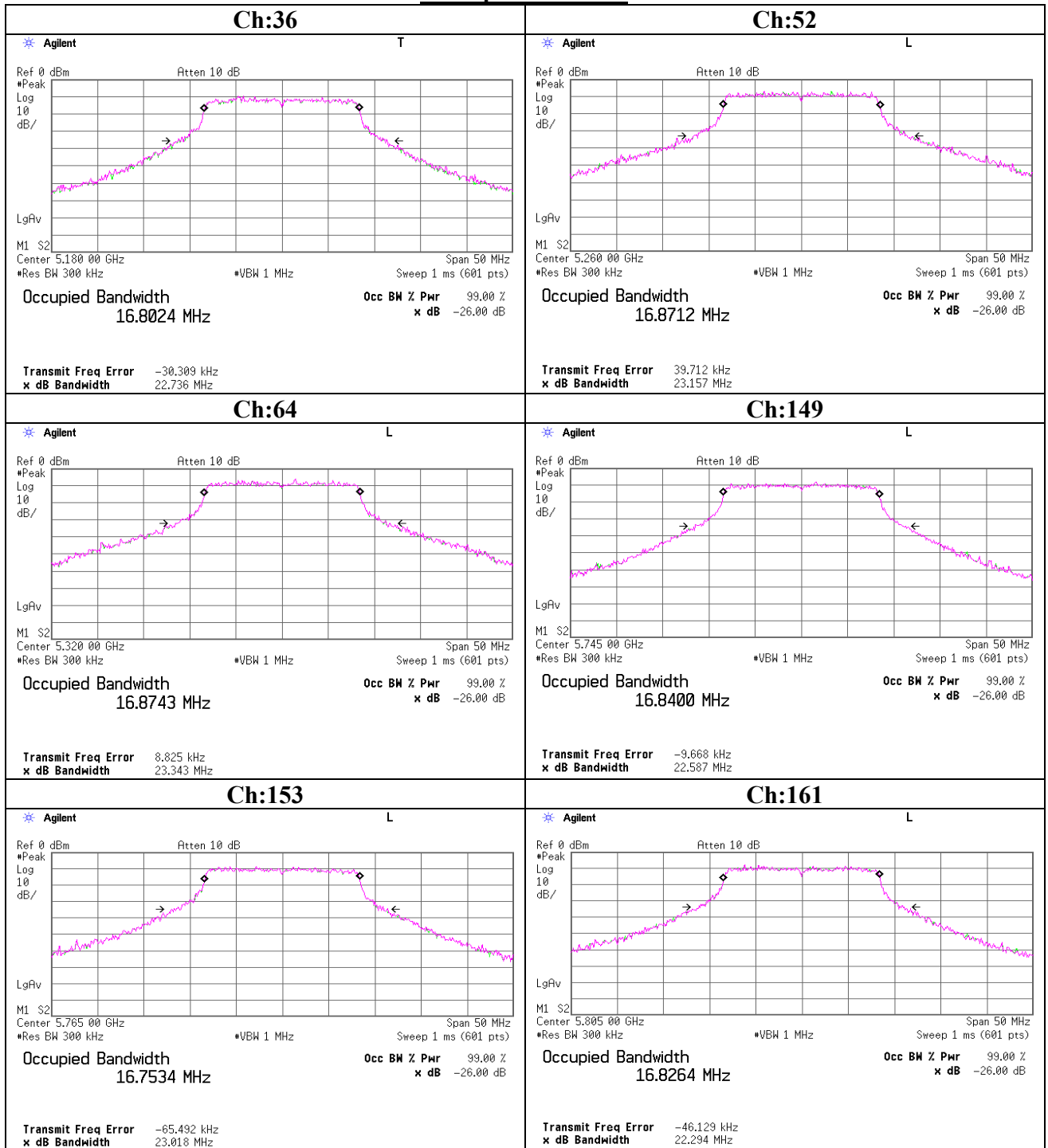
### 26dB Emission Bandwidth

UL Apex Co., Ltd.  
Head Office EMC Lab. No.3 Measurement Room

Company	: CONTEC CO., LTD.	REPORT NO	: 26FE0180-HO
Equipment	: Wireless LAN MiniPCI Card	REGULATION	: FCC 15.407(a)(1)(2)(3)
Model	: FX-DS540-MPCI6	TEST DISTANCE	: -
Sample No.	: C09A5440017CC01	DATE	: 02/22/2006
Power	: DC3.3V	TEMPERATURE	: 24deg.C
Mode	: Tx IEEE 802.11a	HUMIDITY	: 33%
Antenna	: B	ENGINEER	: Hiroka Umeyama
Rate	: 24Mbps		

Ch	Freq. [MHz]	26dB Bandwidth [MHz]	Limit [MHz]
36	5180.0	22.736	-
52	5260.0	23.157	-
64	5320.0	23.343	-
149	5745.0	22.587	-
153	5765.0	23.018	-
161	5805.0	22.294	-

**26dB Emission Bandwidth**  
**24Mbps Antenna:B**



## Peak Transmit Power

UL Apex Co., Ltd.  
Head Office EMC Lab. No.3 Measurement Room

Company : CONTEC CO., LTD.	REPORT NO : 26FE0180-HO
Equipment : Wireless LAN MiniPCI Card	REGULATION : FCC 15.407(a)(1)(2)(3)
Model : FX-DS540-MPC16	TEST DISTANCE : -
Sample No. : C09A5440017CC01	DATE : 02/14/2006
Power : DC3.3V	TEMPERATURE : 22deg.C
Mode : Tx IEEE 802.11a	HUMIDITY : 30%
: Continuous Transmitting	ENGINEER : Hiroka Umeyama

### ANT:A 54Mbps

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
36	5180.0	-5.51	3.40	10.00	7.89	17.00	9.11
52	5260.0	-3.54	3.40	10.00	9.86	17.00	7.14
64	5320.0	-2.90	3.40	10.00	10.50	24.00	13.50
149	5745.0	-5.06	3.40	10.00	8.34	30.00	21.66
153	5765.0	-5.34	3.40	10.00	8.06	30.00	21.94
161	5805.0	-5.95	3.40	10.00	7.45	30.00	22.55

### ANT:A 24Mbps

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
36	5180.0	-1.67	3.40	10.00	11.73	17.00	5.27
52	5260.0	0.19	3.40	10.00	13.59	17.00	3.41
64	5320.0	0.59	3.40	10.00	13.99	24.00	10.01
149	5745.0	-0.82	3.40	10.00	12.58	30.00	17.42
153	5765.0	-1.07	3.40	10.00	12.33	30.00	17.67
161	5805.0	-1.85	3.40	10.00	11.55	30.00	18.45

### ANT:B 54Mbps

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
36	5180.0	-5.37	3.40	10.00	8.03	17.00	8.97
52	5260.0	-3.46	3.40	10.00	9.94	17.00	7.06
64	5320.0	-2.15	3.40	10.00	11.25	24.00	12.75
149	5745.0	-4.70	3.40	10.00	8.70	30.00	21.30
153	5765.0	-5.61	3.40	10.00	7.79	30.00	22.21
161	5805.0	-4.93	3.40	10.00	8.47	30.00	21.53

### ANT:B 24Mbps

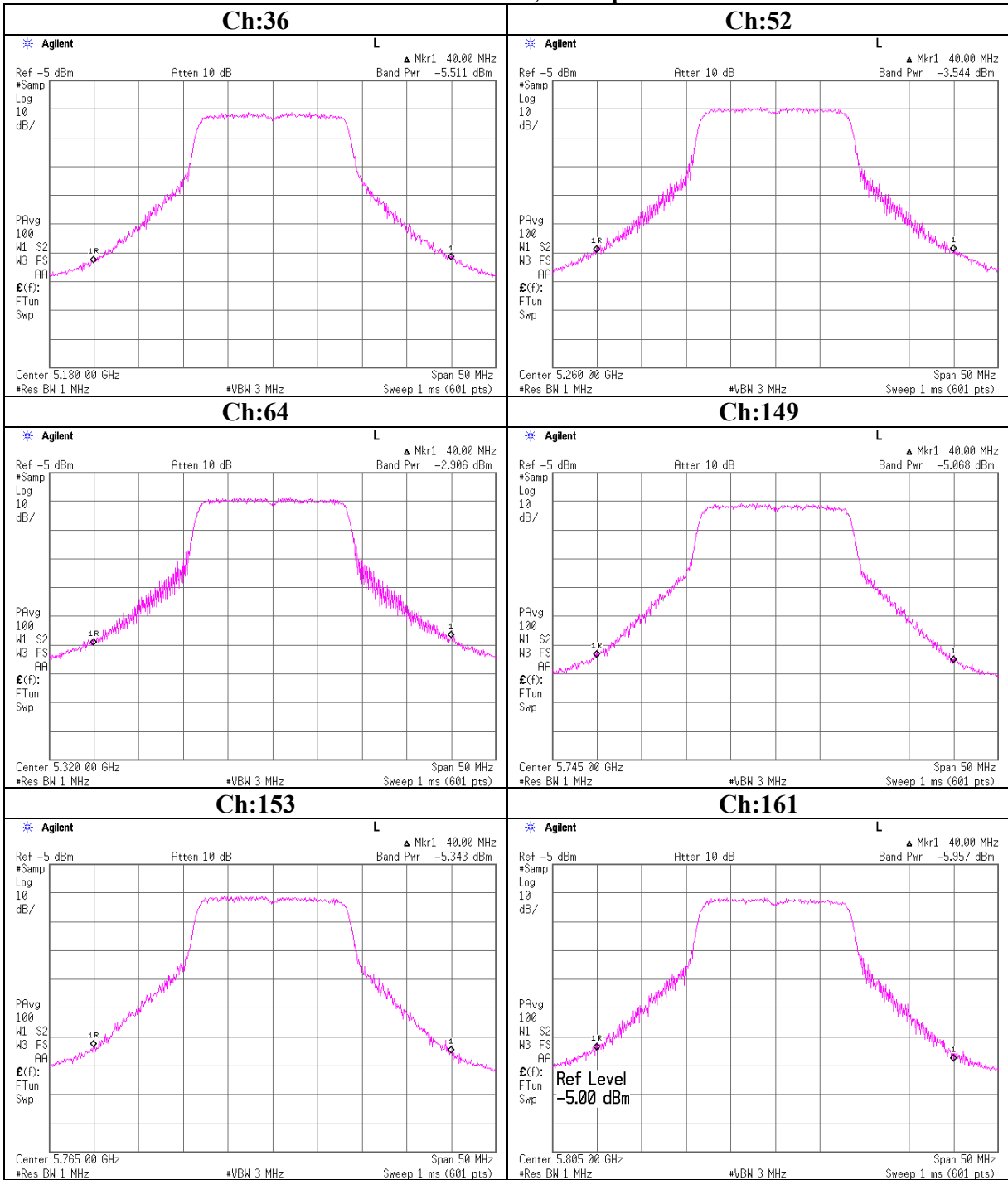
Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
36	5180.0	-0.96	3.40	10.00	12.44	17.00	4.56
52	5260.0	0.68	3.40	10.00	14.08	17.00	2.92
64	5320.0	0.63	3.40	10.00	14.03	24.00	9.97
149	5745.0	-0.51	3.40	10.00	12.89	30.00	17.11
153	5765.0	-0.82	3.40	10.00	12.58	30.00	17.42
161	5805.0	-1.14	3.40	10.00	12.26	30.00	17.74

Sample Calculation:

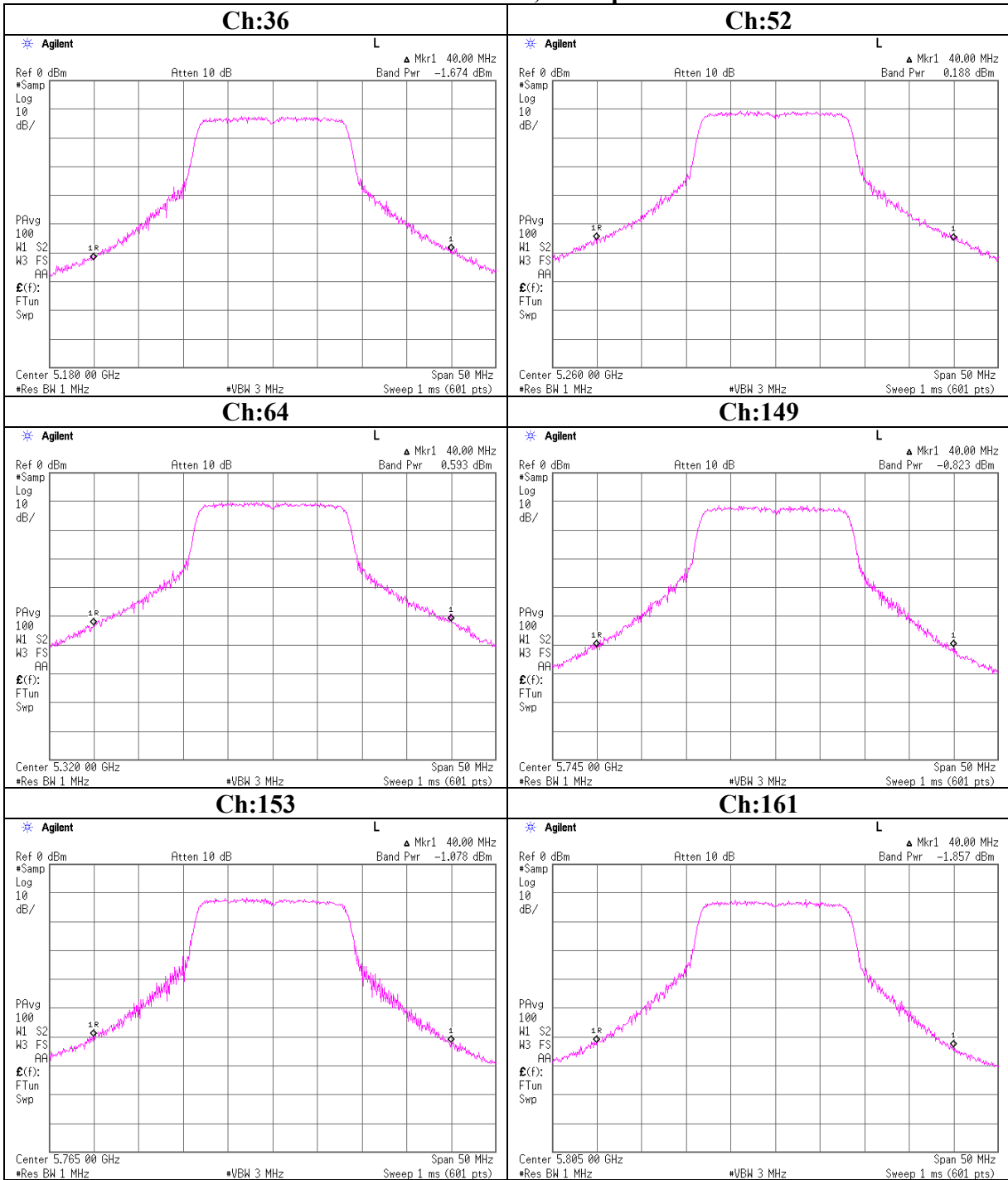
Result = Reading + Cable Loss + Attenuator

\*Result is calculated to two places of decimals. Therefore, there may be 0.1 difference for the result.

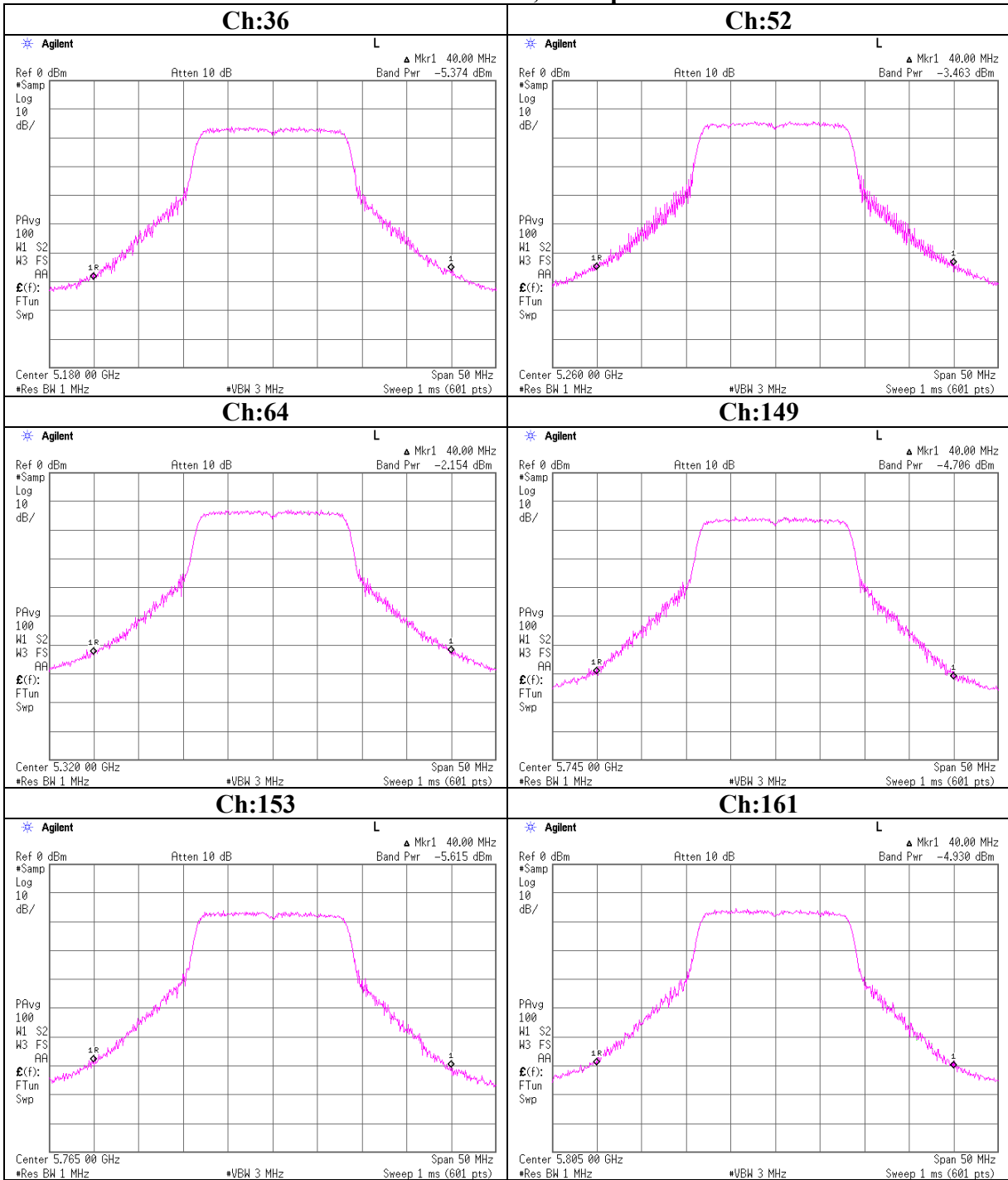
**Peak Transmit Power**  
**ANT:A, 54Mbps**



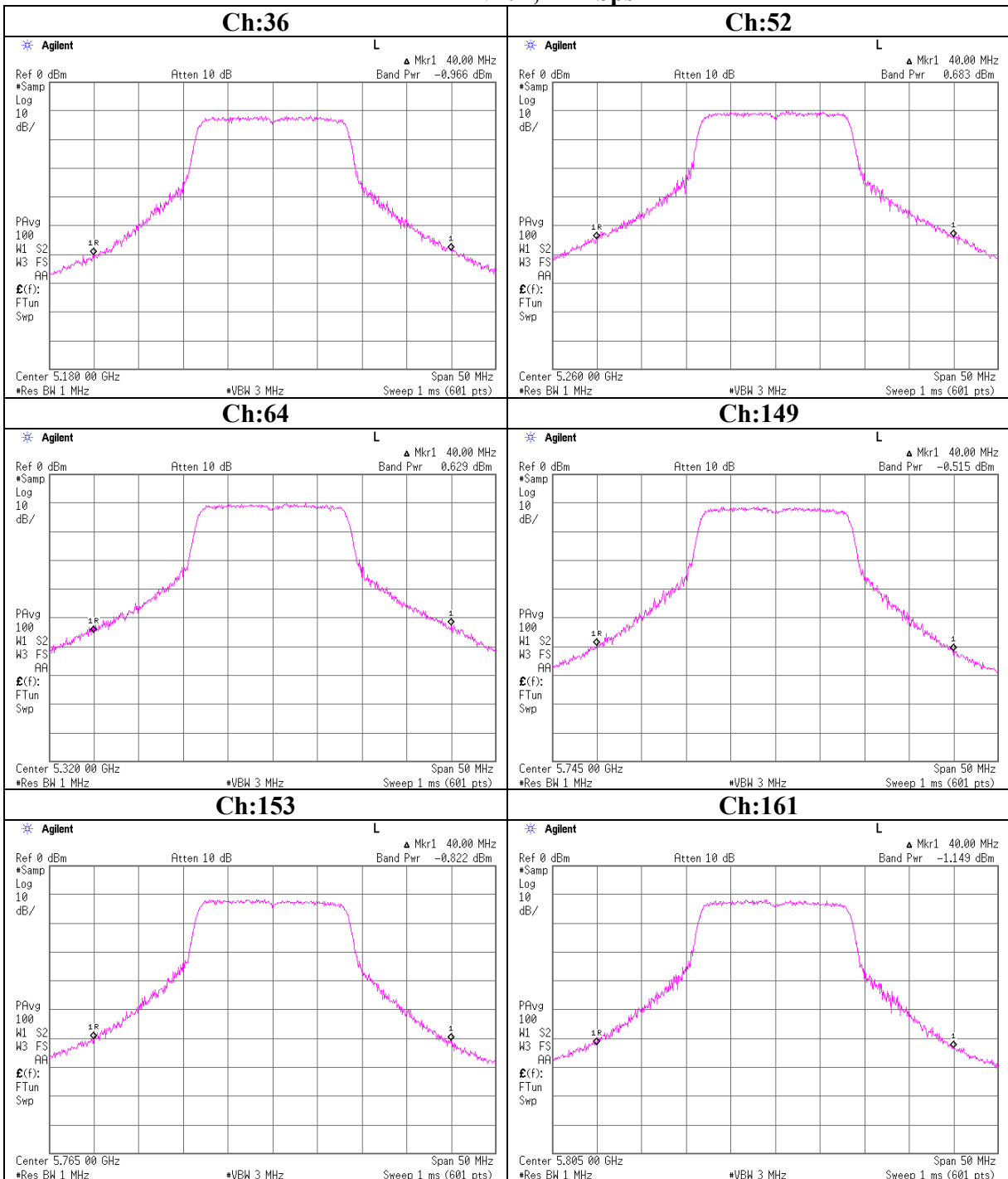
**Peak Transmit Power**  
**ANT:A, 24Mbps**



**Peak Transmit Power**  
**ANT:B, 54Mbps**



**Peak Transmit Power**  
**ANT:B, 24Mbps**



**Radiated Spurious Emission (below 1GHz)**

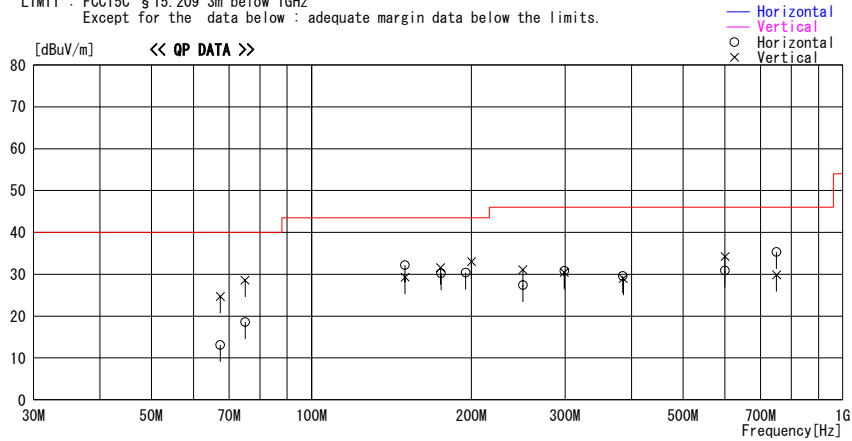
**DATA OF RADIATED EMISSION TEST**

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Date : 2006/02/24 13:30:51

Applicant : CONTEC CO., LTD  
Kind of EUT : Wireless LAN MiniPCI Card  
Model No. : FX-DS540-MPC16  
Serial No. : C09A54400135C01  
Report No. : 26FF0180-HO  
Power : DC 3.3V  
Temp. / Humi. : 25 deg.C / 30 %  
Operator : Hiroka Umeyama

Mode / Remarks : Tx 11a 5180MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC15C § 15.209 3m below 1GHz  
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Gain [dB]						
67.387	28.5	QP	7.0	-22.4	13.1	269	300	Hori.	40.0	26.9
67.392	40.1	QP	7.0	-22.4	24.7	251	100	Vert.	40.0	15.3
75.008	33.9	QP	6.4	-21.7	18.6	268	220	Hori.	40.0	21.4
75.008	43.9	QP	6.4	-21.7	28.6	239	100	Vert.	40.0	11.4
150.008	38.7	QP	14.8	-21.3	32.2	101	253	Hori.	43.5	11.3
150.008	35.8	QP	14.8	-21.3	29.3	79	100	Vert.	43.5	14.2
175.011	36.7	QP	15.8	-20.9	31.6	0	100	Vert.	43.5	11.9
175.260	35.3	QP	15.8	-20.9	30.2	105	206	Hori.	43.5	13.3
200.007	36.8	QP	16.6	-20.4	33.0	82	100	Vert.	43.5	10.5
195.176	34.5	QP	16.5	-20.6	30.4	103	152	Hori.	43.5	13.1
250.011	30.5	QP	17.1	-20.2	27.4	326	100	Hori.	46.0	18.6
250.011	34.2	QP	17.1	-20.2	31.1	260	100	Vert.	46.0	14.9
299.119	30.3	QP	20.1	-19.6	30.8	280	211	Hori.	46.0	15.2
299.120	29.9	QP	20.1	-19.6	30.4	116	100	Vert.	46.0	15.6
385.366	32.2	QP	17.3	-19.9	29.6	303	100	Hori.	46.0	16.4
386.366	31.5	QP	17.4	-19.9	29.0	125	100	Vert.	46.0	17.0
600.000	31.2	QP	19.2	-19.5	30.9	60	100	Hori.	46.0	15.1
600.000	34.5	QP	19.2	-19.5	34.2	78	150	Vert.	46.0	11.8
750.000	26.4	QP	21.0	-17.5	29.9	230	100	Vert.	46.0	16.1
750.108	31.8	QP	21.0	-17.5	35.3	222	114	Hori.	46.0	10.7

CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)



## DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
 Date : 2006/02/24 13:34:37

Applicant : CONTEC CO., LTD Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FF0180-H0 Power : DC 3.3V Temp./ Humi. : 25 deg.C. / 30 % Operator : Hiroka Umeyama
--	---

Mode / Remarks : Tx 11a 5180MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC15C §15.209 3m below 1GHz  
 Except for the data below : adequate margin data below the limits.

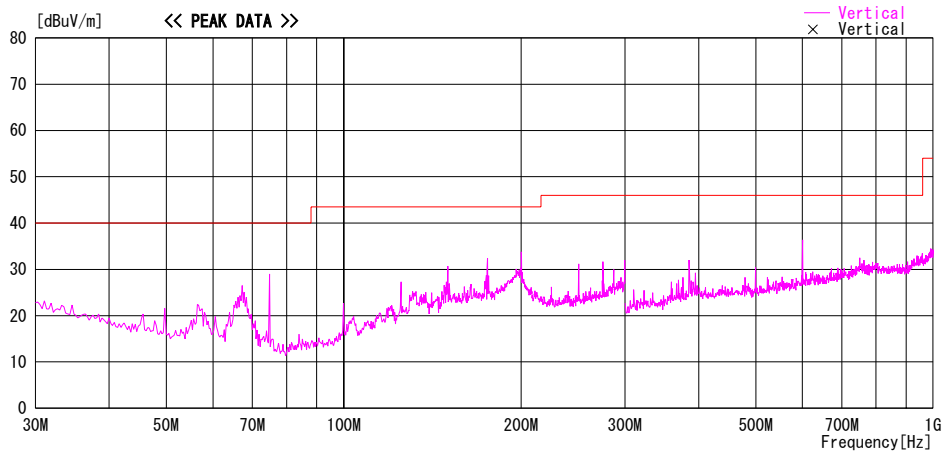
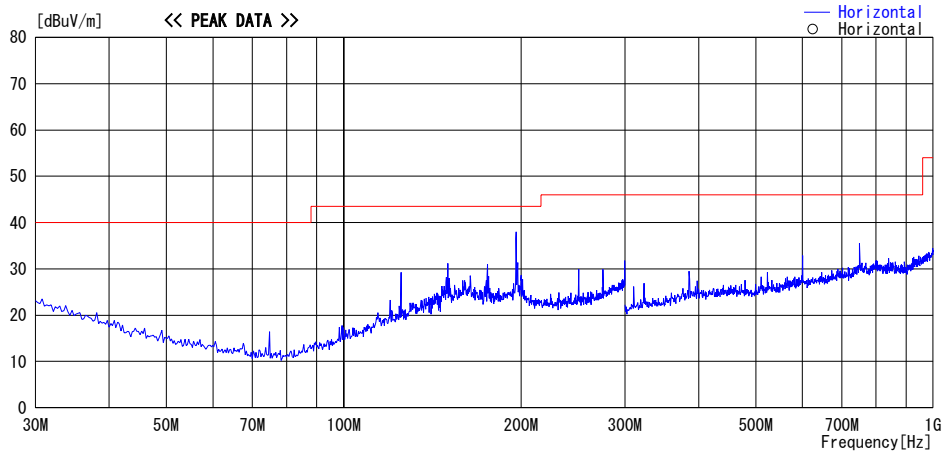


CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

## DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
 Date : 2006/02/24 13:58:42

Applicant : CONTEC CO., LTD Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-H0 Power : DC 3.3V Temp./ Humi. : 25 deg.C. / 30 % Operator : Hiroka Umeyama
--	---

Mode / Remarks : Tx 11a 5260MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC15C §15.209 3m below 1GHz  
 Except for the data below : adequate margin data below the limits.

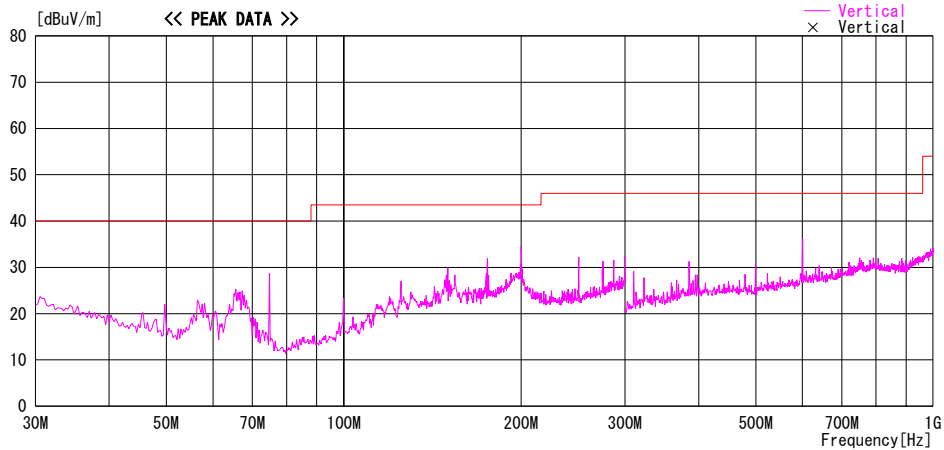
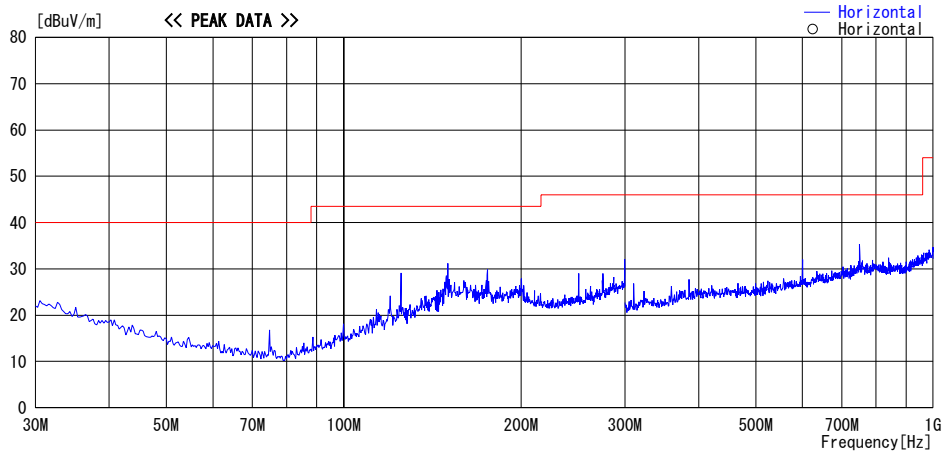


CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

## DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
 Date : 2006/02/24 14:11:15

Applicant : CONTEC CO., LTD Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V Temp./Humi. : 25 deg.C. / 30 % Operator : Hiroka Umeyama
--	--

Mode / Remarks : Tx 11a 5320MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC15C §15.209 3m below 1GHz  
 Except for the data below : adequate margin data below the limits.

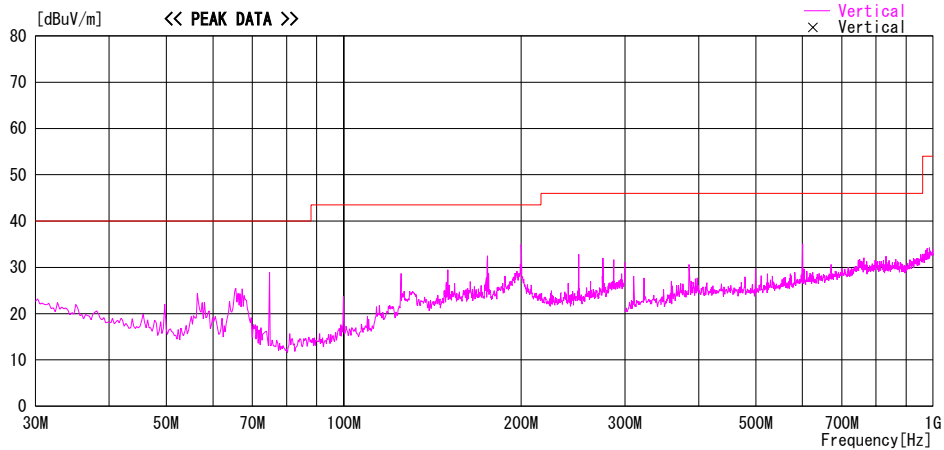
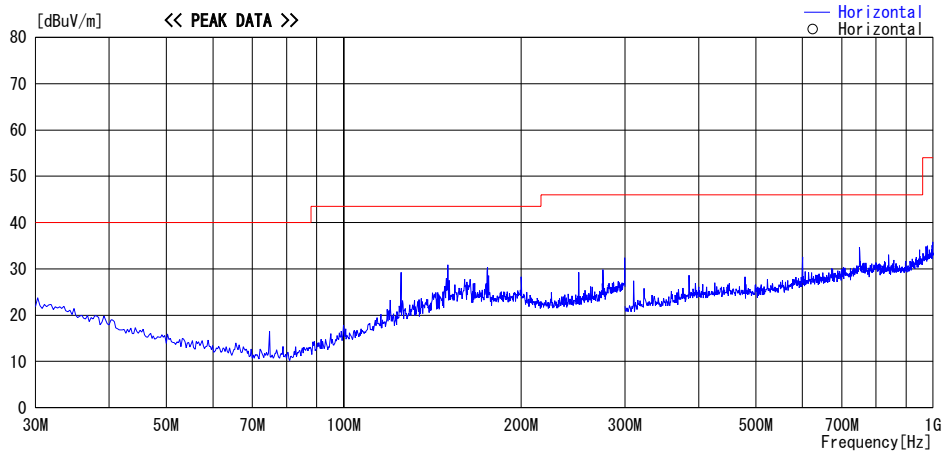


CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

### DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
 Date : 2006/02/24 15:19:10

Applicant	: CONTEC CO., LTD	Report No.	: 26FE0180-HO
Kind of EUT	: Wireless LAN MiniPCI Card	Power	: DC 3.3V
Model No.	: FX-DS540-MPCI6	Temp./ Humi.	: 25 deg. C. / 30 %
Serial No.	: C09A54400135C01	Operator	: Hiroka Umeyama

Mode / Remarks: Rx 11a 5260MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC Part15B / RSS-210 / RSS-Gen 3m  
 Except for the data below : adequate margin data below the limits.

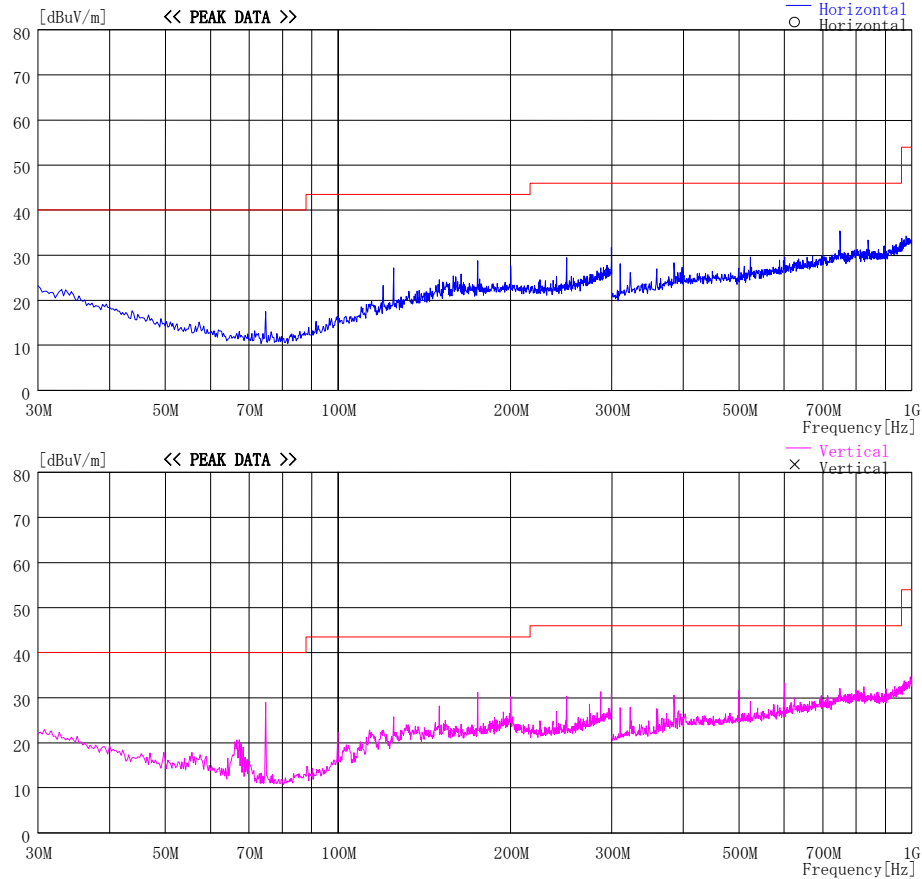


CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

## DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
 Date : 2006/02/24 14:39:41

Applicant	: CONTEC CO., LTD	Report No.	: 26FE0180-H0
Kind of EUT	: Wireless LAN MiniPCI Card	Power	: DC 3.3V
Model No.	: FX-DS540-MPC16	Temp./ Humi.	: 25 deg.C. / 30 %
Serial No.	: C09A54400135C01	Operator	: Hiroka Umeyama

Mode / Remarks : Tx 11a 5745MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC15C §15.209 3m below 1GHz  
 Except for the data below : adequate margin data below the limits.

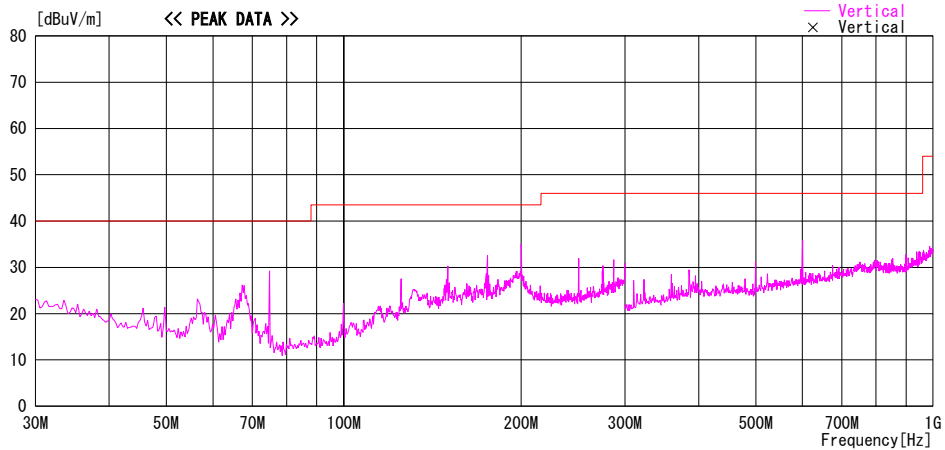
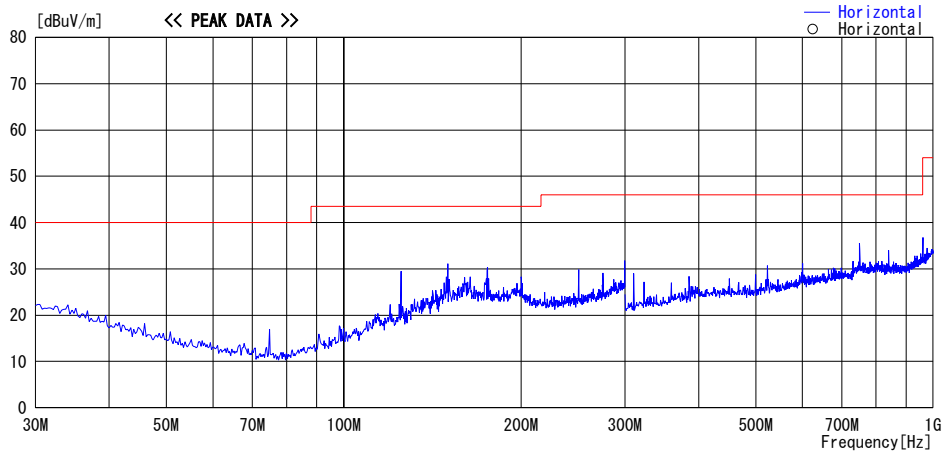


CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

## DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
 Date : 2006/02/24 14:52:51

Applicant : CONTEC CO., LTD Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-H0 Power : DC 3.3V Temp./ Humi. : 25 deg.C. / 30 % Operator : Hiroka Umeyama
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Mode / Remarks : Tx 11a 5765MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC15C §15.209 3m below 1GHz  
 Except for the data below : adequate margin data below the limits.

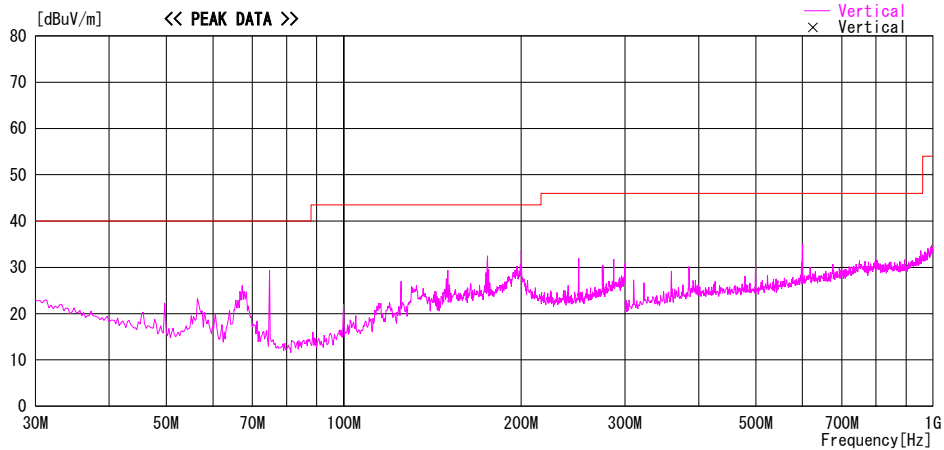
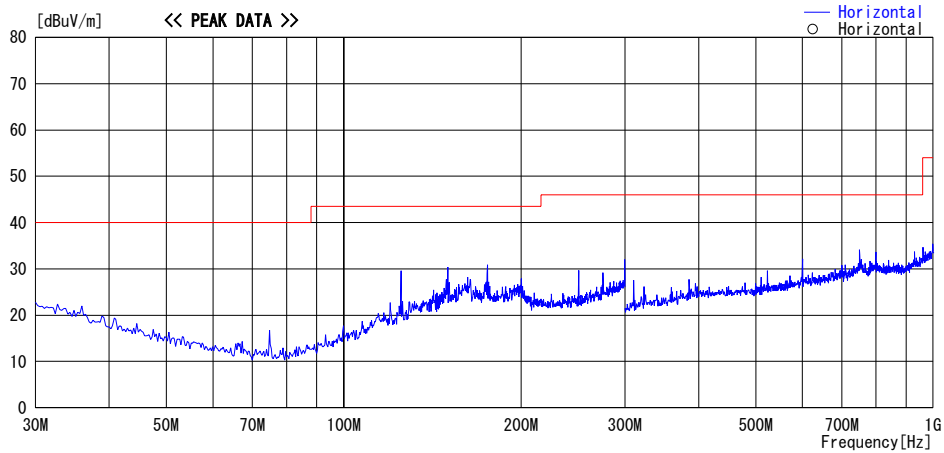


CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

## DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
 Date : 2006/02/24 15:08:26

Applicant : CONTEC CO., LTD Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V Temp./ Humi. : 25 deg.C. / 30 % Operator : Hiroka Umeyama
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Mode / Remarks : Tx 11a 5805MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC15C §15.209 3m below 1GHz  
 Except for the data below : adequate margin data below the limits.

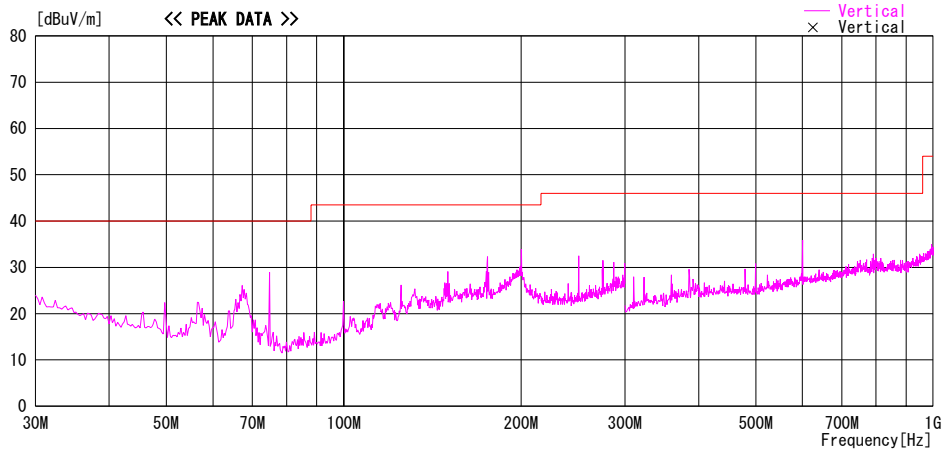
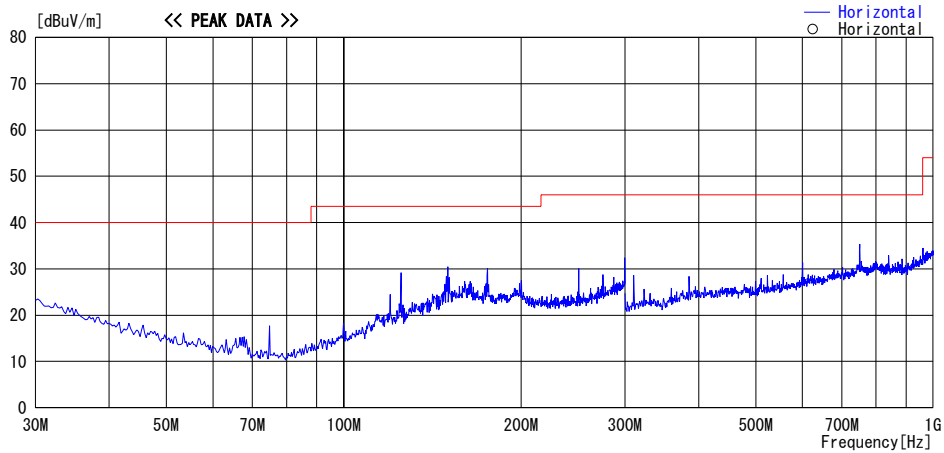


CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

## DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
 Date : 2006/02/24 15:32:12

Applicant : CONTEC CO., LTD Kind of EUT : Wireless LAN MiniPCI Card Model No. : FX-DS540-MPC16 Serial No. : C09A54400135C01	Report No. : 26FE0180-HO Power : DC 3.3V Temp./ Humi. : 25 deg.C. / 30 % Operator : Hiroka Umeyama
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Mode / Remarks: Rx 11a 5765MHz/18Mbps/TX100/PN9/Ant-A /EUT-max-axis

LIMIT : FCC Part15B / RSS-210 / RSS-Gen 3m  
 Except for the data below : adequate margin data below the limits.

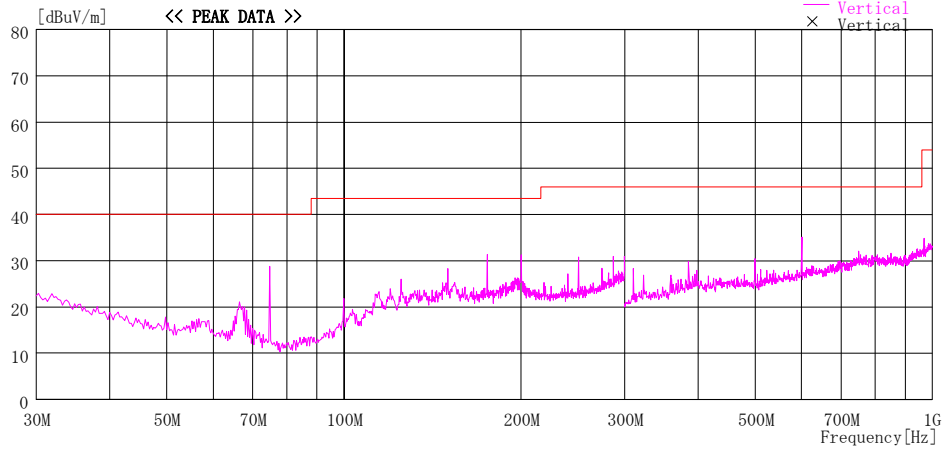
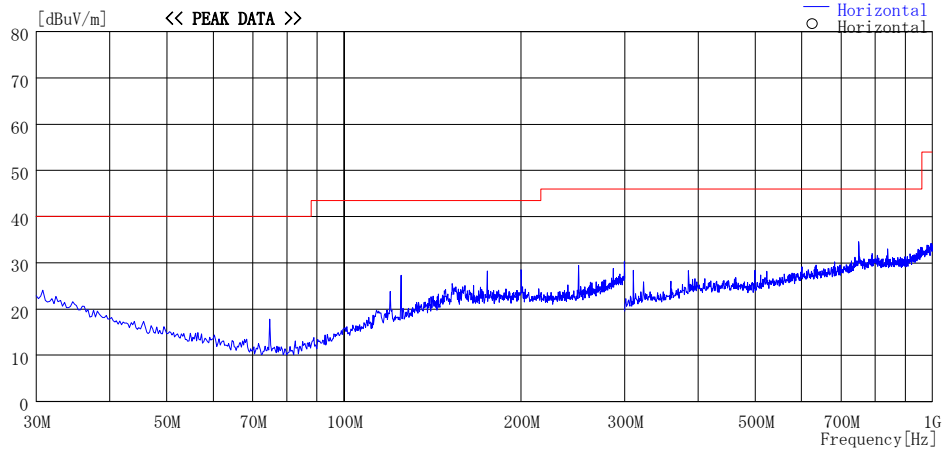


CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN  
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)



**Radiated Spurious Emission (above 1GHz:Inside of the restricted band)**

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber  
REGULATION : Fec Part15 Subpart C 15.247 (d)  
TEST DISTANCE : 3m / 1m  
DATE : 02/25/2006 02/27/2006  
TEMPERATURE : 23deg.C 23 deg.C.  
HUMIDITY : 33% 30 %  
ENGINEER : Hiroka Umeyama Kenichi Adachi

COMPANY : CONTEC CO., LTD.  
EQUIPMENT : Wireless LAN MiniPCI Card User Unit  
MODEL : FX-DS540-MPCI6  
SAMPLE NO. : C09A54400135C01  
POWER : DC3.3V(AC120V/60Hz)  
MODE : Transmitting (11a / 18Mbps / CH34: 5180MHz)

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	47.7	47.8	36.7	31.8	4.2	0.0	56.8	56.9	74.0	17.2	17.1
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	15540.0	44.0	44.8	40.4	31.5	8.7	0.7	52.8	53.6	74.0	21.2	20.4
3	20720.0	45.2	45.3	39.2	30.8	6.6	0.0	50.7	50.8	74.0	23.3	23.2

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	39.8	40.4	36.7	31.8	4.2	0.0	48.9	49.5	54.0	5.1	4.5
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	15540.0	31.1	31.0	40.4	31.5	8.7	0.7	39.9	39.8	54.0	14.1	14.2
3	20720.0	31.9	32.0	39.2	30.8	6.6	0.0	37.4	37.5	54.0	16.6	16.5

\*1) Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB  
\*2) Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*3) In the above table, factor 0.0dB represents no use of Atten. and/or Filter.  
\*4) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.  
\*5) In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

**Radiated Spurious Emission (above 1GHz:Inside of the restricted band)**

COMPANY : CONTEC CO., LTD.  
EQUIPMENT : Wireless LAN MiniPCI Card User Unit  
MODEL : FX-DS540-MPCI6  
SAMPLE NO. : C09A54400135C01  
POWER : DC3.3V(AC120V/60Hz)  
MODE : Transmitting (11a / 18Mbps / CH52: 5260MHz)

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber  
REGULATION : Fcc Part15 Subpart C 15.247 (d)  
TEST DISTANCE : 3m / 1m  
DATE : 02/25/2006 02/27/2006  
TEMPERATURE : 23deg.C 23 deg.C.  
HUMIDITY : 33% 30 %  
ENGINEER : Hiroka Umeyama Kenichi Adachi

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	51.3	49.9	36.7	31.8	4.2	0.0	60.4	59.0	74.0	13.6	15.0
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	15780.0	42.8	44.7	41.3	31.4	8.7	0.5	52.4	54.3	74.0	21.6	19.7
3	21040.0	44.1	44.2	39.1	30.7	6.6	0.0	49.6	49.7	74.0	24.4	24.3

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	43.8	42.7	36.7	31.8	4.2	0.0	52.9	51.8	54.0	1.1	2.2
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	15780.0	31.4	31.2	41.3	31.4	8.7	0.5	41.0	40.8	54.0	13.0	13.2
3	21040.0	31.5	31.6	39.1	30.7	6.6	0.0	37.0	37.1	54.0	17.0	16.9

\*1) Test Distance 1.0m : DistanceFactor(Dfac) = 20log(3/1.0) = 9.54 dB  
\*2) Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*3) In the above table, factor 0.0dB represents no use of Atten. and/or Filter.  
\*4) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.  
\*5) In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

**Radiated Spurious Emission (above 1GHz:Inside of the restricted band)**

COMPANY : CONTEC CO., LTD. Head Office EMC Lab. No.2 Semi Anechoic Chamber  
REGULATION : Fcc Part15 Subpart C 15.247 (d)  
EQUIPMENT : Wireless LAN MiniPCI Card User Unit TEST DISTANCE : 3m / 1m  
MODEL : FX-DS540-MPCI6 DATE : 02/25/2006 02/27/2006  
SAMPLE NO. : C09A54400135C01 TEMPERATURE : 23deg.C 23 deg.C.  
POWER : DC3.3V(AC120V/60Hz) HUMIDITY : 33% 30 %  
MODE : Transmitting (11a / 18Mbps / CH64: 5320MHz) ENGINEER : Hiroka Umeyama Kenichi Adachi

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading [dBuV]		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result [dBuV/m]		Limit PK [dBuV/m]	Margin [dB]	
		HOR	VER					HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	50.9	49.5	36.7	31.8	4.2	0.0	60.0	58.6	74.0	14.0	15.4
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	10640.0	48.1	47.8	36.6	31.9	7.3	0.9	51.5	51.2	74.0	22.5	22.8
3	15960.0	44.4	48.0	41.9	31.4	8.7	0.3	54.4	58.0	74.0	19.6	16.0
4	21280.0	43.5	43.6	39.2	30.5	6.7	0.0	49.4	49.5	74.0	24.6	24.5

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading [dBuV]		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result [dBuV/m]		Limit AV [dBuV/m]	Margin [dB]	
		HOR	VER					HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	43.9	41.5	36.7	31.8	4.2	0.0	53.0	50.6	54.0	1.0	3.4
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	10640.0	35.0	35.2	36.6	31.9	7.3	0.9	38.4	38.6	54.0	15.6	15.4
3	15960.0	31.5	34.2	41.9	31.4	8.7	0.3	41.5	44.2	54.0	12.5	9.8
4	21280.0	31.1	31.2	39.2	30.5	6.7	0.0	37.0	37.1	54.0	17.0	16.9

\*1) Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB  
\*2) Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*3) In the above table, factor 0.0dB represents no use of Atten. and/or Filter.  
\*4) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.  
\*5) In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

**Radiated Spurious Emission (above 1GHz:Inside of the restricted band)**

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber  
REGULATION : Fcc Part15 Subpart C 15.247 (d)  
TEST DISTANCE : 3m / 1m  
DATE : 02/25/2006 02/27/2006  
TEMPERATURE : 23deg.C 23 deg.C  
HUMIDITY : 33% 30 %  
ENGINEER : Hiroka Umeyama Kenichi Adachi

COMPANY : CONTEC CO., LTD.  
EQUIPMENT : Wireless LAN MiniPCI Card User Unit  
MODEL : FX-DS540-MPCI6  
SAMPLE NO. : C09A54400135C01  
POWER : DC3.3V(AC120V/60Hz)  
MODE : Transmitting (11a / 18Mbps / CH149: 5745MHz)

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	52.7	51.4	36.7	31.8	4.2	0.0	61.8	60.5	74.0	12.2	13.5
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	11490.0	42.2	42.4	38.4	31.2	7.7	0.2	47.8	48.0	74.0	26.2	26.0
3	22980.0	44.4	44.5	39.8	30.5	6.4	0.0	50.6	50.7	74.0	23.4	23.3

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	44.4	43.7	36.7	31.8	4.2	0.0	53.5	52.8	54.0	0.5	1.2
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	11490.0	29.8	30.5	38.4	31.2	7.7	0.2	35.4	36.1	54.0	18.6	17.9
3	22980.0	32.1	32.2	39.8	30.5	6.4	0.0	38.3	38.4	54.0	15.7	15.6

\*1) Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB  
\*2) Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*3) In the above table, factor 0.0dB represents no use of Atten. and/or Filter.  
\*4) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.  
\*5) In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

**Radiated Spurious Emission (above 1GHz:Inside of the restricted band)**

COMPANY : CONTEC CO., LTD. UL Apex Co., Ltd.  
EQUIPMENT : Wireless LAN MiniPCI Card User Unit Head Office EMC Lab. No.2 Semi Anechoic Chamber  
MODEL : FX-DS540-MPCI6 REGULATION : Fcc Part15 Subpart C 15.247 (d)  
SAMPLE NO. : C09A54400135C01 TEST DISTANCE : 3m / 1m  
POWER : DC3.3V(AC120V/60Hz) DATE : 02/25/2006 02/27/2006  
MODE : Transmitting (11a / 18Mbps / CH153: 5765MHz) TEMPERATURE : 23deg.C 23 deg.C  
HUMIDITY : 33% 30 %  
ENGINEER : Hiroka Umeyama Kenichi Adachi

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	53.7	51.5	36.7	31.8	4.2	0.0	62.8	60.6	74.0	11.2	13.4
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	11530.0	41.4	42.5	38.5	31.2	7.7	0.2	47.1	48.2	74.0	26.9	25.8
3	23060.0	44.1	44.0	39.8	30.5	6.4	0.0	50.3	50.1	74.0	23.7	23.9

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	44.8	43.7	36.7	31.8	4.2	0.0	53.9	52.8	54.0	0.1	1.2
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	11530.0	29.6	29.2	38.5	31.2	7.7	0.2	35.3	34.9	54.0	18.7	19.1
3	23060.0	32.1	32.0	39.8	30.5	6.4	0.0	38.3	38.2	54.0	15.7	15.8

\*1) Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB  
\*2) Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*3) In the above table, factor 0.0dB represents no use of Atten. and/or Filter.  
\*4) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.  
\*5) In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

**Radiated Spurious Emission (above 1GHz:Inside of the restricted band)**

COMPANY : CONTEC CO., LTD. UL Apex Co., Ltd.  
EQUIPMENT : Wireless LAN MiniPCI Card User Unit Head Office EMC Lab. No.2 Semi Anechoic Chamber  
MODEL : FX-DS540-MPCI6 REGULATION : Fcc Part15 Subpart C 15.247 (d)  
SAMPLE NO. : C09A54400135C01 TEST DISTANCE : 3m / 1m  
POWER : DC3.3V(AC120V/60Hz) DATE : 02/25/2006 02/27/2006  
MODE : Transmitting (11a / 18Mbps / CH161: 5805MHz) TEMPERATURE : 23deg.C 23 deg.C.  
HUMIDITY : 33% 30 %  
ENGINEER : Hiroka Umeyama Kenichi Adachi

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	53.4	52.5	36.7	31.8	4.2	0.0	62.5	61.6	74.0	11.5	12.4
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	11610.0	42.2	42.7	38.8	31.2	7.8	0.2	48.3	48.8	74.0	25.7	25.2

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	5120.0	44.3	43.8	36.7	31.8	4.2	0.0	53.4	52.9	54.0	0.6	1.1
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	11610.0	30.6	30.4	38.8	31.2	7.8	0.2	36.7	36.5	54.0	17.3	17.5

\*1) Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB  
\*2) Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*3) In the above table, factor 0.0dB represents no use of Atten. and/or Filter.  
\*4) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.  
\*5) In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.



**Radiated Spurious Emission (above 1GHz:Inside of the restricted band)**

COMPANY : CONTEC CO., LTD.  
EQUIPMENT : Wireless LAN MiniPCI Card User Unit  
MODEL : FX-DSS40-MPCI6  
SAMPLE NO. : C09A54400135C01  
POWER : DC3.3V(AC120V/60Hz)  
MODE : Receiving (11a / CH153: 5765MHz)

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber  
REGULATION : Fcc Part15 Subpart B / RSS-210 / RSS-Gen  
TEST DISTANCE : 3m / 1m  
DATE : 02/25/2006  
TEMPERATURE : 23deg.C  
HUMIDITY : 33%  
ENGINEER : Hiroka Umeyama Kenichi Adachi

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	3656.0	42.6	42.7	32.0	32.0	3.4	0.0	46.0	46.1	74.0	28.0	27.9
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	17295.0	44.9	45.0	46.2	30.9	9.3	0.0	59.9	60.0	74.0	14.1	14.0

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)</b>												
1	3656.0	30.1	30.1	32.0	32.0	3.4	0.0	33.5	33.5	54.0	20.5	20.5
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac</b>												
2	17295.0	33.1	33.2	46.2	30.9	9.3	0.0	48.1	48.2	54.0	5.9	5.8

\*1) Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB  
\*2) Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*3) In the above table, factor 0.0dB represents no use of Atten. and/or Filter.  
\*4) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.



**Radiated Spurious Emission (above 1GHz:Outside of the restricted band)**  
**\*used conversion formula**

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY	: CONTEC CO., LTD.	REGULATION	: Fcc Part15 Subpart E 15.407
EQUIPMENT	: Wireless LAN MiniPCI Card User Unit	TEST DISTANCE	: 3m / 1m / 0.3m
MODEL	: FX-DS540-MPC16	DATE	: 02/25/2006      02/27/2006
SAMPLE NO.	: C09A54400135C01	TEMPERATURE	: 23deg.C      23 deg.C.
POWER	: DC3.3V(AC120V/60Hz)	HUMIDITY	: 33%      30 %
MODE	: Transmitting (11a / 18Mbps / CH34: 5180MHz)	ENGINEER	: Hiroka Umeyama    Kenichi Adachi
POSITION	: MAX		

No.	Freq. [MHz]	Electric Field Strength (After Factor Calculation) [dBuV/m]		Result (EIRP) [dBm]		Lmit [dBm]	Margin [dB]	
		HOR	VER	HOR	VER		HOR	VER
1	10360.00	46.5	48.6	-48.7	-46.6	-27.0	21.7	19.6
2	25900.00	53.6	53.5	-41.6	-41.7	-27.0	14.6	14.7
3	31080.00	52.4	52.5	-42.8	-42.7	-27.0	15.8	15.7
4	36260.00	65.6	65.8	-29.6	-29.4	-27.0	2.6	2.4

Result(EIRP[dBm])=10\*LOG({ (Electric Field Strength [V/m] \* Distance:3[m] ) ^ 2 } / 30)

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*Result is calculated to two places of decimals. Therefore, there may be 0.1 difference for the result.

**Radiated Spurious Emission (above 1GHz:Outside of the restricted band)**  
**\*used conversion formula**

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY	: CONTEC CO., LTD.	REGULATION	: Fcc Part15 Subpart E 15.407
EQUIPMENT	: Wireless LAN MiniPCI Card User Unit	TEST DISTANCE	: 3m / 1m / 0.3m
MODEL	: FX-DS540-MPCI6	DATE	: 02/25/2006      02/27/2006
SAMPLE NO.	: C09A54400135C01	TEMPERATURE	: 23deg.C      23 deg.C.
POWER	: DC3.3V(AC120V/60Hz)	HUMIDITY	: 33%      30 %
MODE	: Transmitting (11a / 18Mbps / CH52: 5260MHz)	ENGINEER	: Hiroka Umeyama Kenichi Adachi
POSITION	: MAX		

No.	Freq. [MHz]	Electric Field Strength (After Factor Calculation) [dBuV/m]		Result (EIRP) [dBm]		Lmit [dBm]	Margin [dB]	
		HOR	VER	HOR	VER		HOR	VER
1	10520.00	50.6	48.9	-44.6	-46.3	-27.0	17.6	19.3
2	26300.00	51.4	51.5	-43.8	-43.7	-27.0	16.8	16.7
3	31560.00	53.8	53.9	-41.4	-41.3	-27.0	14.4	14.3
4	36820.00	65.9	65.8	-29.3	-29.4	-27.0	2.3	2.4

Result(EIRP[dBm])=10\*LOG( { (Electric Field Strength [V/m] \* Distance:3[m] ) ^ 2 } / 30)

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*Result is calculated to two places of decimals. Therefore, there may be 0.1 difference for the result.

**Radiated Spurious Emission (above 1GHz:Outside of the restricted band)**  
**\*used conversion formula**

UL Apex Co., Ltd.  
 Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY	: CONTEC CO., LTD.	REGULATION	: Fcc Part15 Subpart E 15.407
EQUIPMENT	: Wireless LAN MiniPCI Card User Unit	TEST DISTANCE	: 3m / 1m / 0.3m
MODEL	: FX-DS540-MPC16	DATE	: 02/25/2006      02/27/2006
SAMPLE NO.	: C09A54400135C01	TEMPERATURE	: 23deg.C      23 deg.C.
POWER	: DC3.3V(AC120V/60Hz)	HUMIDITY	: 33%      30%
MODE	: Transmitting (11a / 18Mbps / CH64: 5320MHz)	ENGINEER	: Hiroka Umeyama    Kenichi Adachi
POSITION	: MAX		

No.	Freq. [MHz]	Electric Field Strength (After Factor Calculation) [dBuV/m]		Result (EIRP) [dBm]		Lmit [dBm]	Margin [dB]	
		HOR	VER	HOR	VER		HOR	VER
1	26600.00	49.1	49.0	-46.1	-46.2	-27.0	19.1	19.2
2	31920.00	53.8	54.0	-41.4	-41.2	-27.0	14.4	14.2
3	37240.00	64.5	64.6	-30.7	-30.6	-27.0	3.7	3.6

Result(EIRP[dBm])=10\*LOG{( Electric Field Strength [V/m] \* Distance:3[m] ) ^ 2 } / 30)

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.  
 \*Result is calculated to two places of decimals. Therefore, there may be 0.1 difference for the result.

**Radiated Spurious Emission (above 1GHz:Outside of the restricted band)**  
**\*used conversion formula**

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY	: CONTEC CO., LTD.	REGULATION	: Fcc Part15 Subpart E 15.407
EQUIPMENT	: Wireless LAN MiniPCI Card User Unit	TEST DISTANCE	: 3m / 1m / 0.3m
MODEL	: FX-DS540-MPC16	DATE	: 02/25/2006      02/27/2006
SAMPLE NO.	: C09A54400135C01	TEMPERATURE	: 23deg.C      23 deg.C.
POWER	: DC3.3V(AC120V/60Hz)	HUMIDITY	: 33%      30 %
MODE	: Transmitting (11a / 18Mbps / CH149 : 5745MHz)	ENGINEER	: Hiroka Umeyama      Kenichi Adachi
POSITION	: MAX		

No.	Freq. [MHz]	Electric Field Strength (After Factor Calculation) [dBuV/m]		Result (EIRP) [dBm]		Lmit [dBm]	Margin [dB]	
		HOR	VER	HOR	VER		HOR	VER
1	17235.00	60.6	61.2	-34.6	-34.0	-27.0	7.6	7.0
2	28725.00	50.5	50.4	-44.7	-44.8	-27.0	17.7	17.8
3	34470.00	53.4	53.3	-41.8	-41.9	-27.0	14.8	14.9

Result(EIRP[dBm])=10\*LOG({ (Electric Field Strength [V/m] \* Distance:3[m] ) ^ 2 } / 30)

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*Result is calculated to two places of decimals. Therefore, there may be 0.1 difference for the result.

**Radiated Spurious Emission (above 1GHz:Outside of the restricted band)**  
**\*used conversion formula**

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY	: CONTEC CO., LTD.	REGULATION	: Fcc Part15 Subpart E 15.407
EQUIPMENT	: Wireless LAN MiniPCI Card User Unit	TEST DISTANCE	: 3m / 1m / 0.3m
MODEL	: FX-DS540-MPC16	DATE	: 02/25/2006      02/27/2006
SAMPLE NO.	: C09A54400135C01	TEMPERATURE	: 23deg.C      23 deg.C.
POWER	: DC3.3V(AC120V/60Hz)	HUMIDITY	: 33%      30 %
MODE	: Transmitting (11a / 18Mbps / CH153 : 5765MHz)	ENGINEER	: Hiroka Umeyama      Kenichi Adachi
POSITION	: MAX		

No.	Freq. [MHz]	Electric Field Strength (After Factor Calculation) [dBuV/m]		Result (EIRP) [dBm]		Lmit [dBm]	Margin [dB]	
		HOR	VER	HOR	VER		HOR	VER
1	17295.00	59.1	59.6	-36.1	-35.6	-27.0	9.1	8.6
2	28825.00	50.2	50.3	-45.0	-44.9	-27.0	18.0	17.9
3	34590.00	53.3	53.2	-41.9	-42.0	-27.0	14.9	15.0

Result(EIRP[dBm])=10\*LOG( ( Electric Field Strength [V/m] \* Distance:3[m] ) ^ 2 ) / 30)

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.

\*Result is calculated to two places of decimals. Therefore, there may be 0.1 difference for the result.

**Radiated Spurious Emission (above 1GHz:Outside of the restricted band)**  
**\*used conversion formula**

UL Apex Co., Ltd.  
Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY	: CONTEC CO., LTD.	REGULATION	: Fcc Part15 Subpart E 15.407
EQUIPMENT	: Wireless LAN MiniPCI Card User Unit	TEST DISTANCE	: 3m / 1m / 0.3m
MODEL	: FX-DS540-MPCI6	DATE	: 02/25/2006      02/27/2006
SAMPLE NO.	: C09A54400135C01	TEMPERATURE	: 23deg.C      23 deg.C.
POWER	: DC3.3V(AC120V/60Hz)	HUMIDITY	: 33%      30 %
MODE	: Transmitting (11a / 18Mbps / CH161 : 5805MHz)	ENGINEER	: Hiroka Umeyama      Kenichi Adachi
POSITION	: MAX		

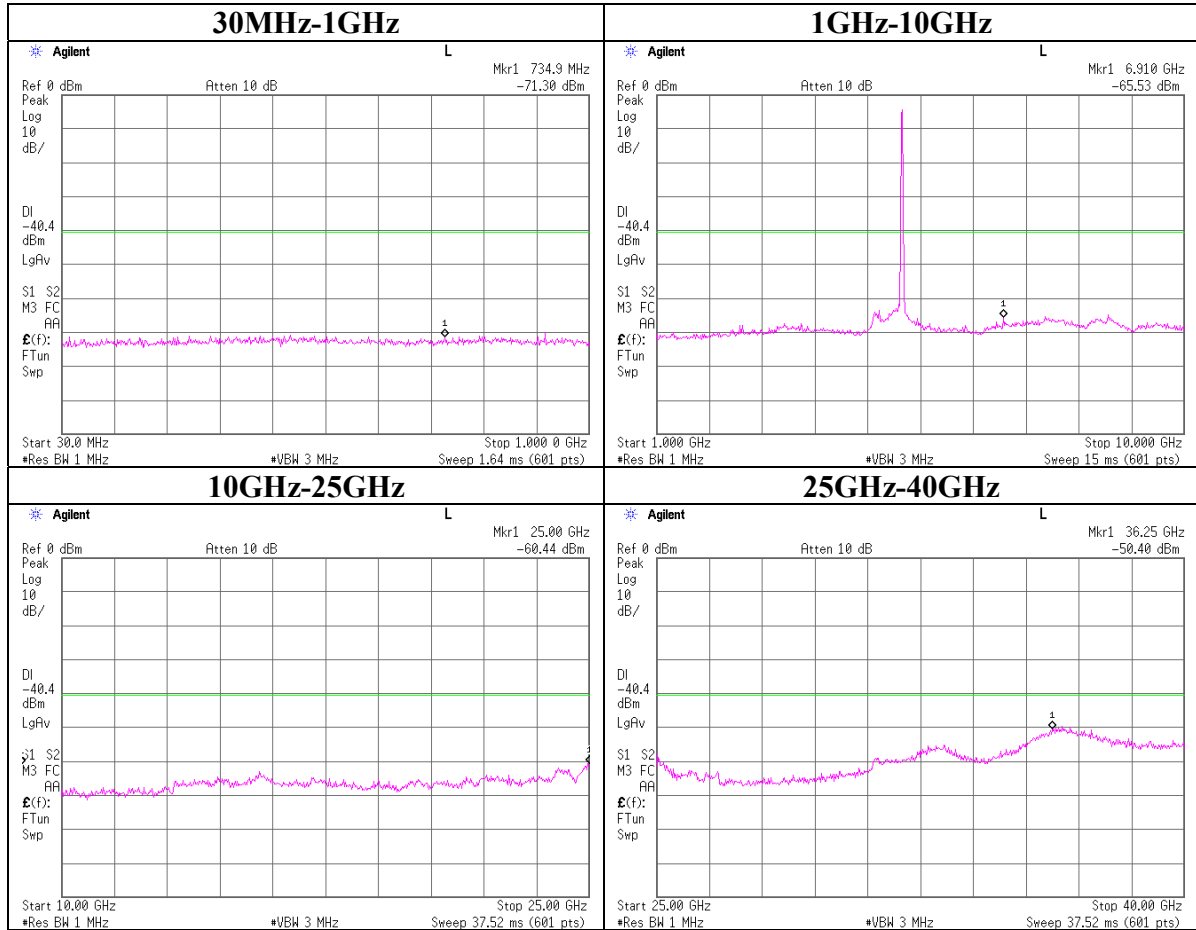
No.	Freq. [MHz]	Electric Field Strength (After Factor Calculation) [dBuV/m]		Result (EIRP) [dBm]		Lmit [dBm]	Margin [dB]	
		HOR	VER	HOR	VER		HOR	VER
1	17415.00	59.1	59.2	-36.1	-36.0	-27.0	9.1	9.0
2	23220.00	51.4	51.3	-43.8	-43.9	-27.0	16.8	16.9
3	29025.00	49.5	49.6	-45.7	-45.6	-27.0	18.7	18.6
4	34830.00	55.5	55.6	-39.7	-39.6	-27.0	12.7	12.6

Result(EIRP[dBm])=10\*LOG({ (Electric Field Strength [V/m] \* Distance:3[m] ) ^ 2 } / 30)

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.

\*Result is calculated to two places of decimals. Therefore, there may be 0.1 difference for the result.

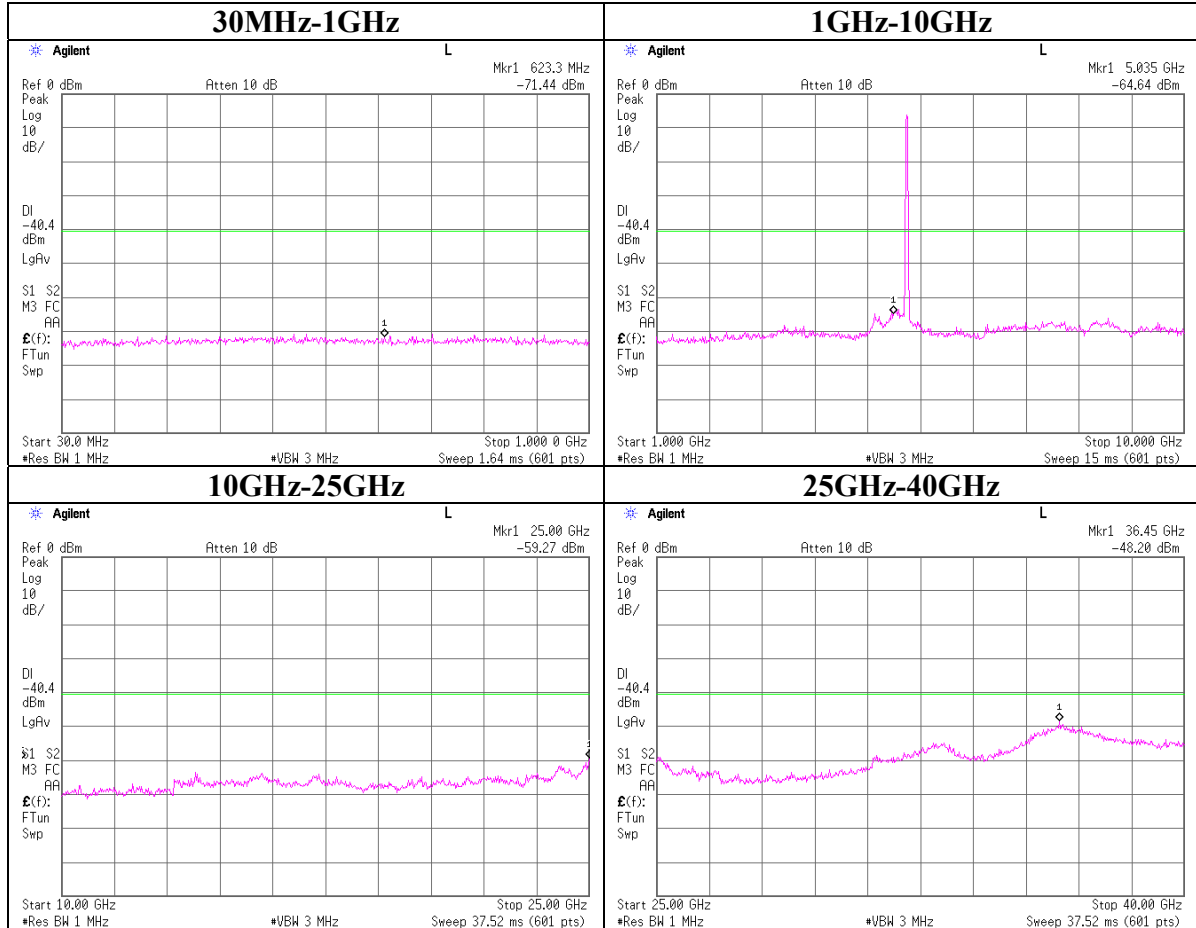
**Conducted Spurious Emission(DSSS and other forms of modulation)**  
**24Mbps Antenna:B**  
**Ch : 36**



**Conducted Spurious Emission(DSSS and other forms of modulation)**

**24Mbps Antenna:B**

**Ch : 52**

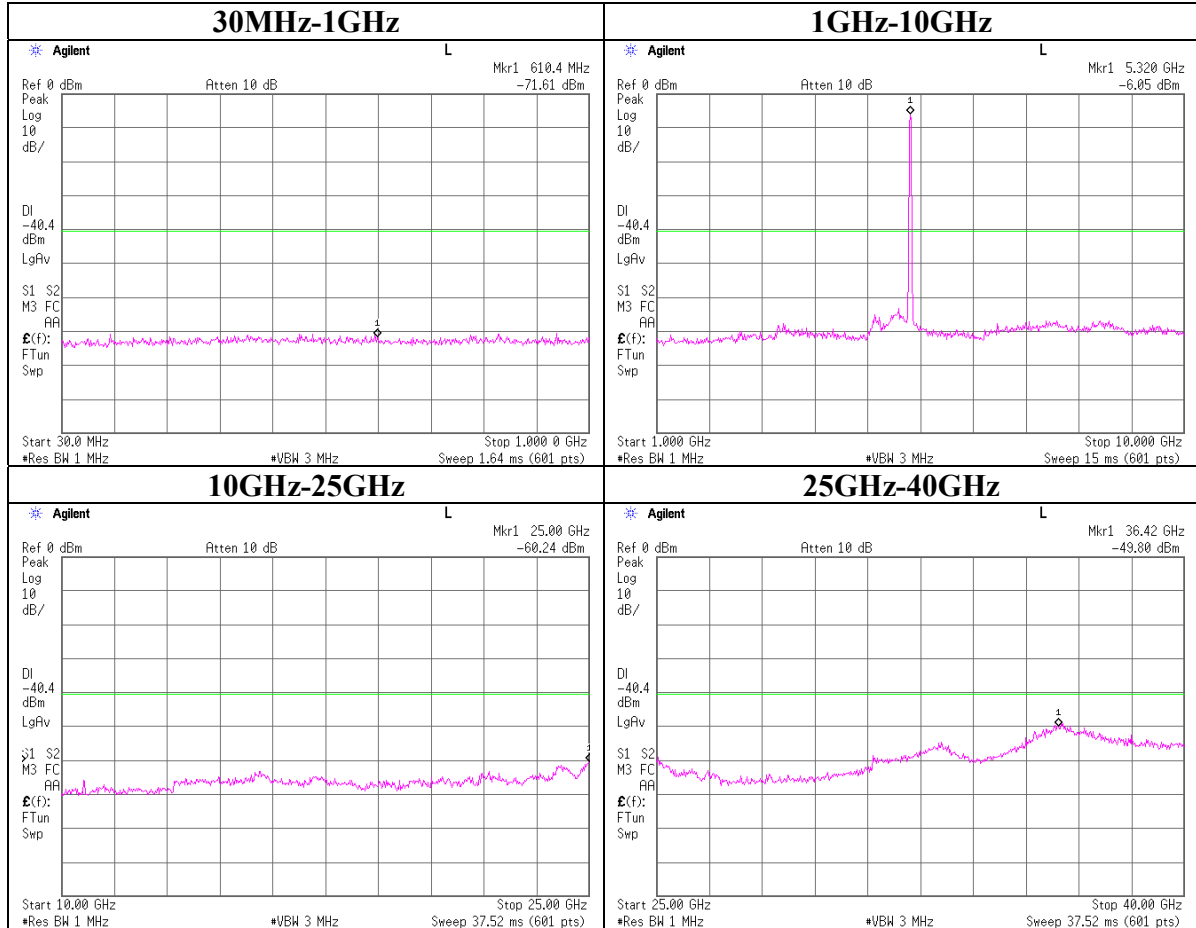




**Conducted Spurious Emission(DSSS and other forms of modulation)**

**24Mbps Antenna:B**

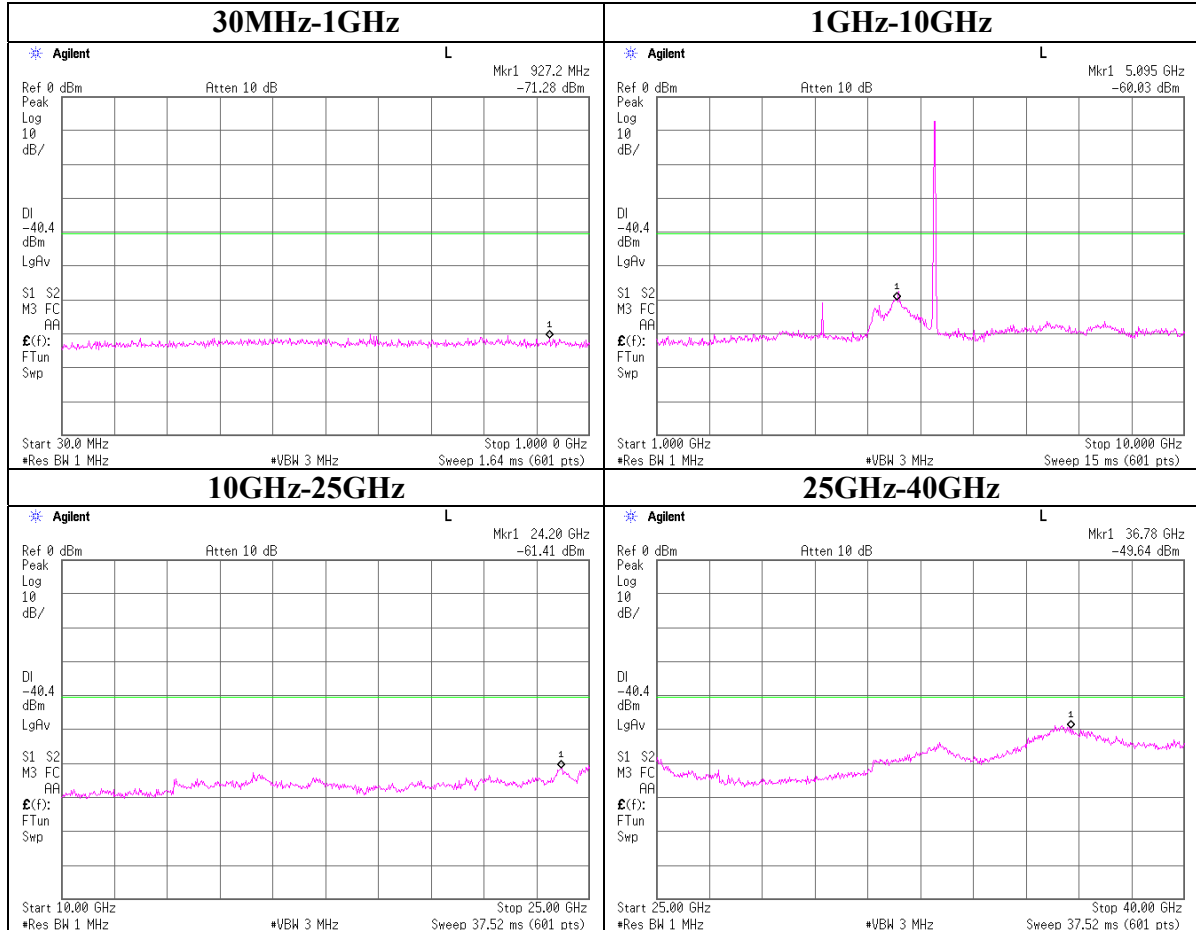
**Ch : 64**



**Conducted Spurious Emission(DSSS and other forms of modulation)**

**24Mbps Antenna:B**

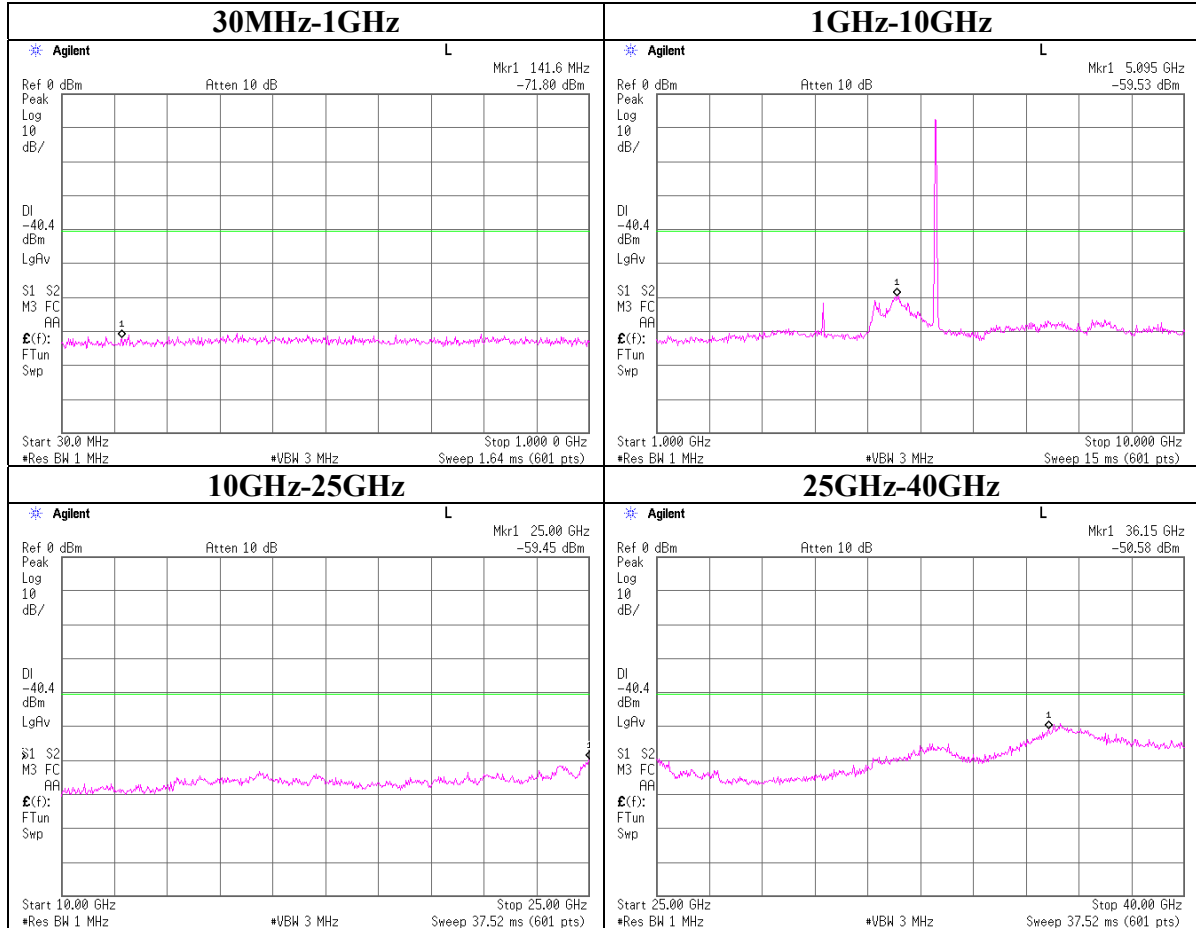
**Ch : 149**



**Conducted Spurious Emission(DSSS and other forms of modulation)**

**24Mbps Antenna:B**

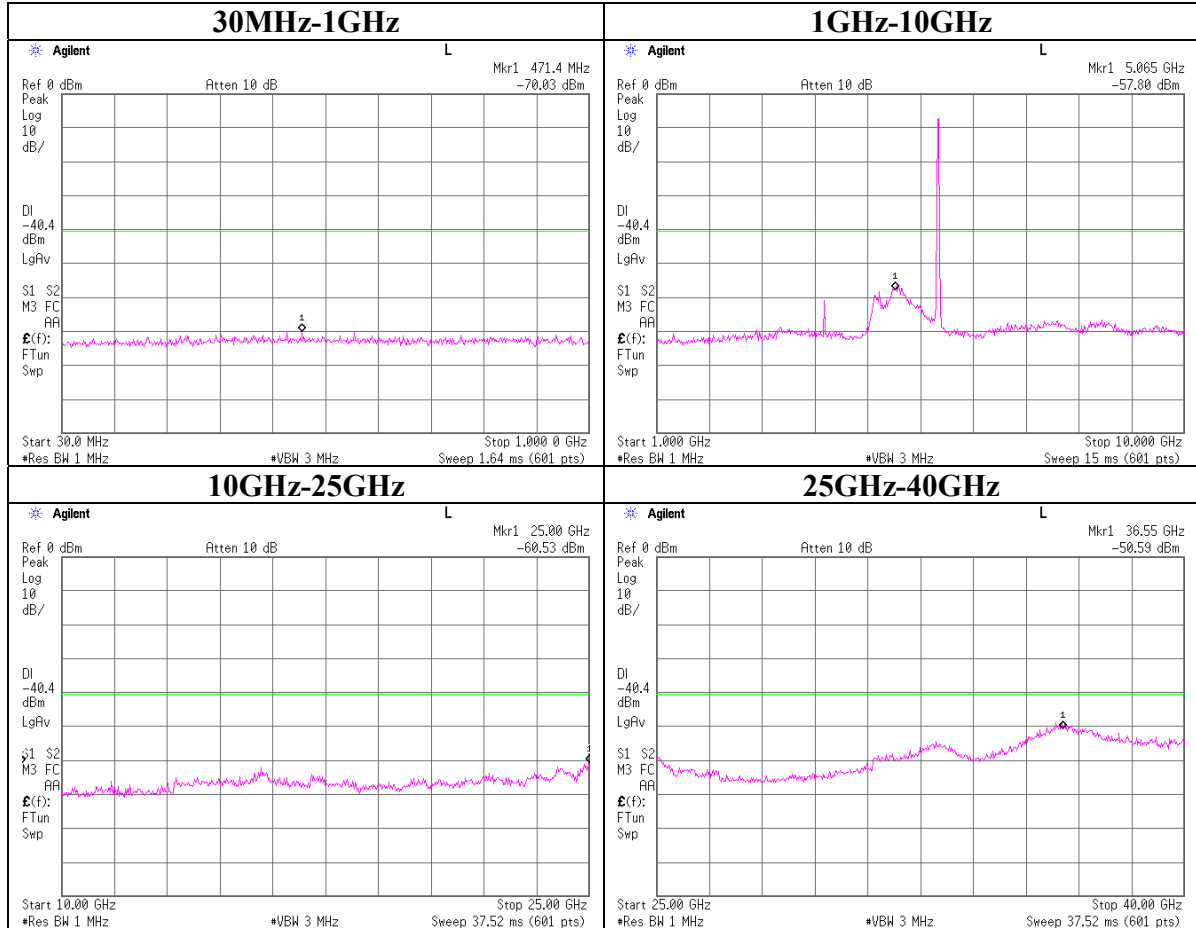
**Ch : 153**



**Conducted Spurious Emission(DSSS and other forms of modulation)**

**24Mbps Antenna:B**

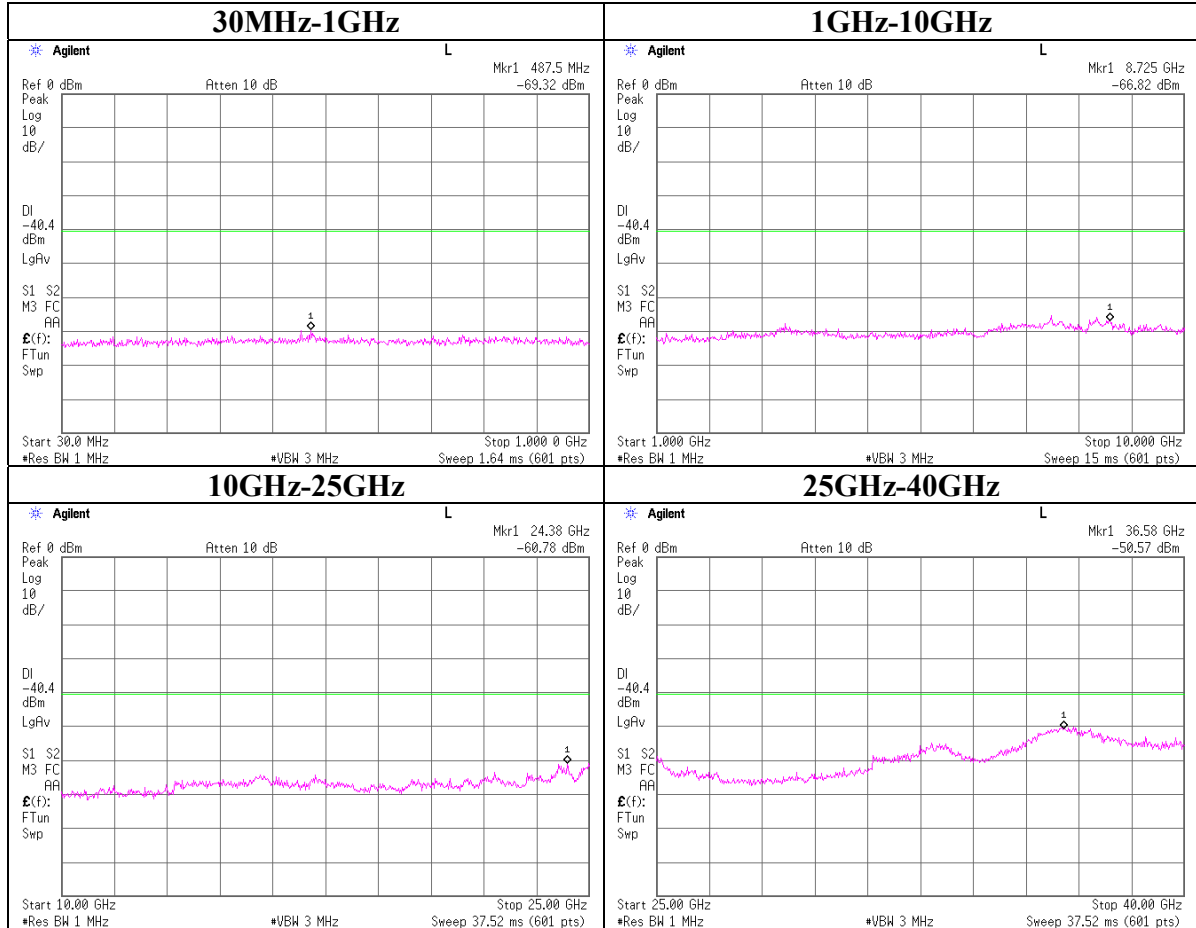
**Ch : 161**



**Conducted Spurious Emission(DSSS and other forms of modulation)**

**24Mbps Antenna:B**

**Rx**



**Radiated emission Band Edge compliance**

**18Mbps Antenna:A**

UL Apex Co., Ltd.  
Head Office EMC Lab. Semi Anechoic Chamber : No2

COMPANY	CONTEC CO., LTD.	REPORT NO	26FE0180-HO
EQUIPMENT	Wireless LAN MiniPCI Card	REGULATION	FCC15.407
MODEL	FX-DS540-MPC16	TEST DISTANCE	3m
S/N	C09A54400135C01	DATE	02/25/2006
POWER	DC3.3V	TEMPERATURE	22 deg.C.
MODE	Tx 5745/5805 MHz	HUMIDITY	33%
POSITION	H: X-axis / V: Z-axis	ENGINEER	Hiroka Umeyama
TX ANTENNA HIGH	0.8m 11a, 18Mbps		

No.	FREQUENCY [MHz]	Electric Field Strength (After Factor Calculation) [dBuV/m]		RESULT (ERP) [dBm]		LIMIT (ERP) [dBm]	MARGIN [dB]		Mode
		HOR	VER	HOR	VER		HOR	VER	
1	5715.00	59.5	56.4	-42.1	-45.7	-27.0	15.1	18.7	Operating
2	5725.00	73.5	70.3	-28.1	-31.8	-17.0	11.1	14.8	Operating
3	5825.00	66.6	67.2	-35.1	-35.0	-17.0	18.1	18.0	Operating
4	5835.00	55.9	54.5	-45.8	-47.7	-27.0	18.8	20.7	Operating

Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperriodic Antenna(300-1000MHz), Horn Antenna(1-12.75GHz)  
Tx-ANTENNA : Dipole Antenna(30-1000MHz), Horn Antenna(1-12.75GHz)

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	FREQ [MHz]	S/A READING [dBuV/m]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT [dBuV/m]		Limit PK [dBuV/m]	MARGIN [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	5150.0	58.4	58.7	36.7	31.8	4.3	0.0	67.6	67.9	74.0	6.4	6.1
2	5350.0	58.8	56.5	36.5	31.8	4.4	0.0	67.9	65.6	74.0	6.1	8.4

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	FREQ [MHz]	S/A READING [dBuV/m]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT [dBuV/m]		Limit AV [dBuV/m]	MARGIN [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	5150.0	38.3	39.3	36.7	31.8	4.3	0.0	47.5	48.5	54.0	6.5	5.5
2	5350.0	43.2	41.3	36.5	31.8	4.4	0.0	52.3	50.4	54.0	1.7	3.6

**Radiated emission Band Edge compliance**

**54Mbps Antenna:A**

UL Apex Co., Ltd.  
Head Office EMC Lab. Semi Anechoic Chamber : No2

COMPANY	CONTEC CO., LTD.	REPORT NO	26FE0180-HO
EQUIPMENT	Wireless LAN MiniPCI Card	REGULATION	FCC15.407
MODEL	FX-DS540-MPC16	TEST DISTANCE	3m
S/N	C09A54400135C01	DATE	02/25/2006
POWER	DC3.3V	TEMPERATURE	22 deg.C.
MODE	Tx 5745/5805 MHz	HUMIDITY	33%
POSITION	H: X-axis / V: Z-axis	-----	---
TX ANTENNA HIGH	0.8m	ENGINEER	Hiroka Umeyama
	11a, 54Mbps		

No.	FREQUENCY [MHz]	Electric Field Strength (After Factor Calculation) [dBuV/m]		RESULT (ERP) [dBm]		LIMIT [dBm] (ERP)	MARGIN [dB]		Mode
		HOR	VER	HOR	VER		HOR	VER	
1	5715.00	52.4	51.7	-49.2	-50.4	-27.0	22.2	23.4	Operating
2	5725.00	64.4	61.9	-37.2	-40.2	-17.0	20.2	23.2	Operating
3	5825.00	59.4	59.3	-42.3	-42.9	-17.0	25.3	25.9	Operating
4	5835.00	50.2	51.5	-51.5	-50.7	-27.0	24.5	23.7	Operating

Rx-ANTENNA : Biconical Antenna(30-300MHz), Logperiodic Antenna(300-1000MHz), Horn Antenna(1-12.75GHz)

Tx-ANTENNA : Dipole Antenna(30-1000MHz), Horn Antenna(1-12.75GHz)

**PK DETECT** (RBW: 1MHz, VBW:1MHz)

No.	FREQ [MHz]	S/A READING [dBuV/m]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT [dBuV/m]		Limit PK [dBuV/m]	MARGIN [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	5150.0	49.6	51.6	36.7	31.8	4.3	0.0	58.8	60.8	74.0	15.2	13.2
2	5350.0	50.0	48.7	36.5	31.8	4.4	0.0	59.1	57.8	74.0	14.9	16.2

**AV DETECT** (RBW: 1MHz, VBW:10Hz)

No.	FREQ [MHz]	S/A READING [dBuV/m]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT [dBuV/m]		Limit AV [dBuV/m]	MARGIN [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	5150.0	32.2	33.3	36.7	31.8	4.3	0.0	41.4	42.5	54.0	12.6	11.5
2	5350.0	33.5	32.5	36.5	31.8	4.4	0.0	42.6	41.6	54.0	11.4	12.4

**UL Apex Co., Ltd.**

**Head Office EMC Lab.**

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

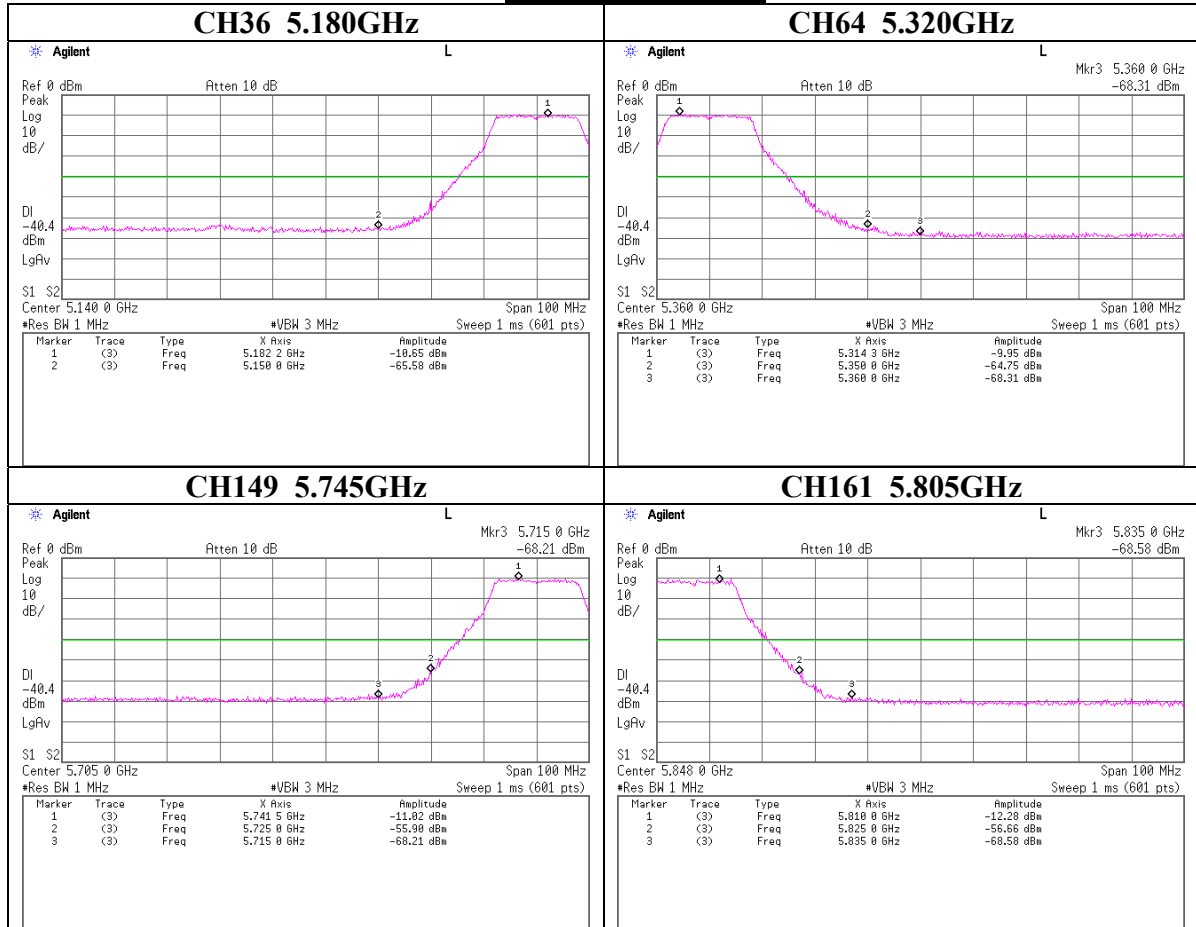
Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

**Conducted emission Band Edge compliance**

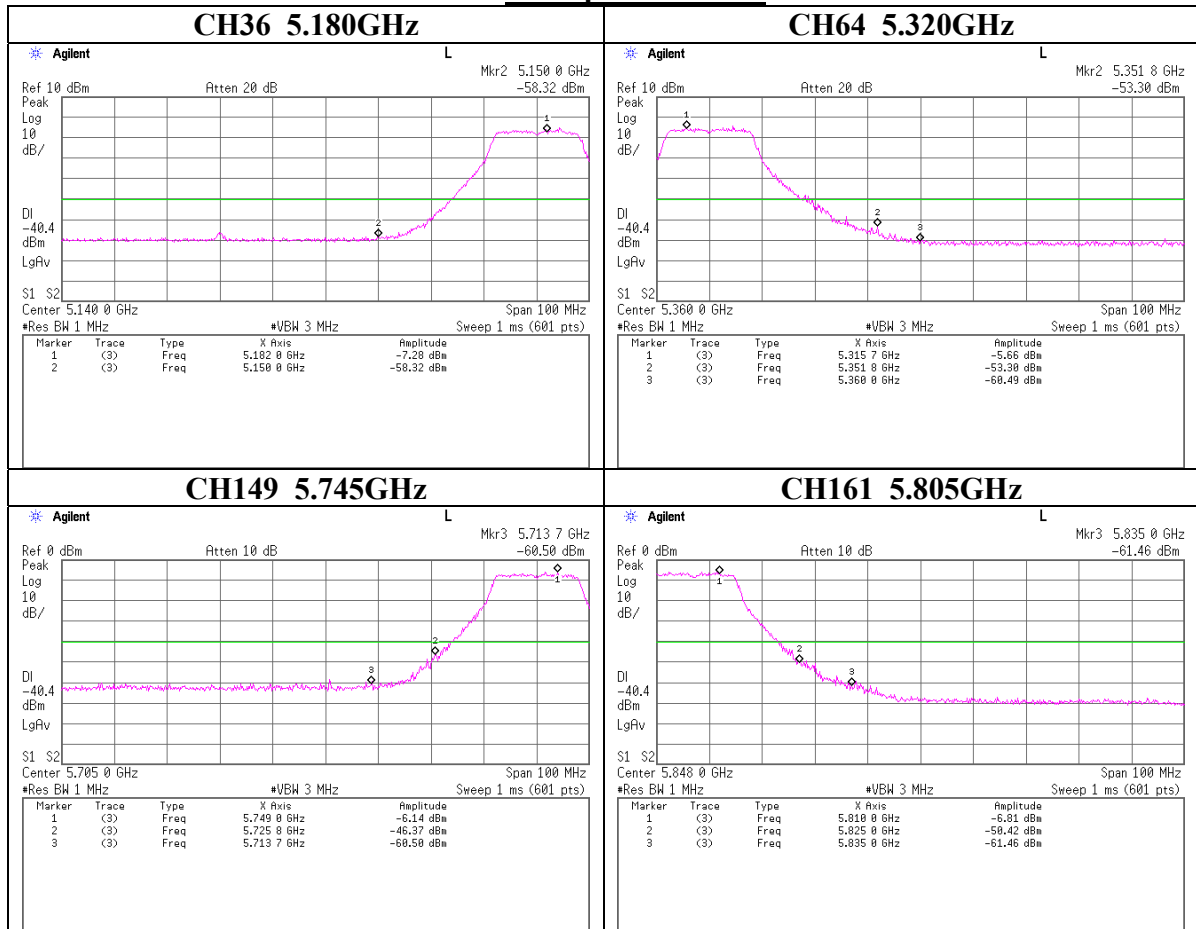
**54Mbps Antenna:B**





**Conducted emission Band Edge compliance**

**24Mbps Antenna:B**



### Peak Power Spectral Density

UL Apex Co., Ltd.  
Head Office EMC Lab. No.3 Measurement Room

Company : CONTEC CO., LTD.                      REPORT NO : 26FE0180-HO  
Equipment : Wireless LAN MiniPCI Card        REGULATION : FCC 15.407(a)(1)(2)(3)  
Model : FX-DS540-MPCI6                        TEST DISTANCE: -  
Sample No. : C09A5440017CC01                DATE : 02/22/2006  
Power : DC3.3V                                  TEMPERATURE: 24deg.C  
Mode : Tx IEEE 802.11a                        HUMIDITY : 33%  
Antenna : B                                        ENGINEER : Hiroka Umeyama  
Rate : 24Mbps

Ch	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
36	5180.0	-11.29	3.4	10.0	2.1	4.0	1.9
52	5260.0	-10.64	3.4	10.0	2.8	4.0	1.2
64	5320.0	-10.34	3.4	10.0	3.1	11.0	7.9
149	5745.0	-11.38	3.4	10.0	2.0	17.0	15.0
153	5765.0	-12.21	3.4	10.0	1.2	17.0	15.8
161	5805.0	-12.77	3.4	10.0	0.6	17.0	16.4

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

\* Atten. was not used for factor 0.0dB of the above table.

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**UL Apex Co., Ltd.**

**Head Office EMC Lab.**

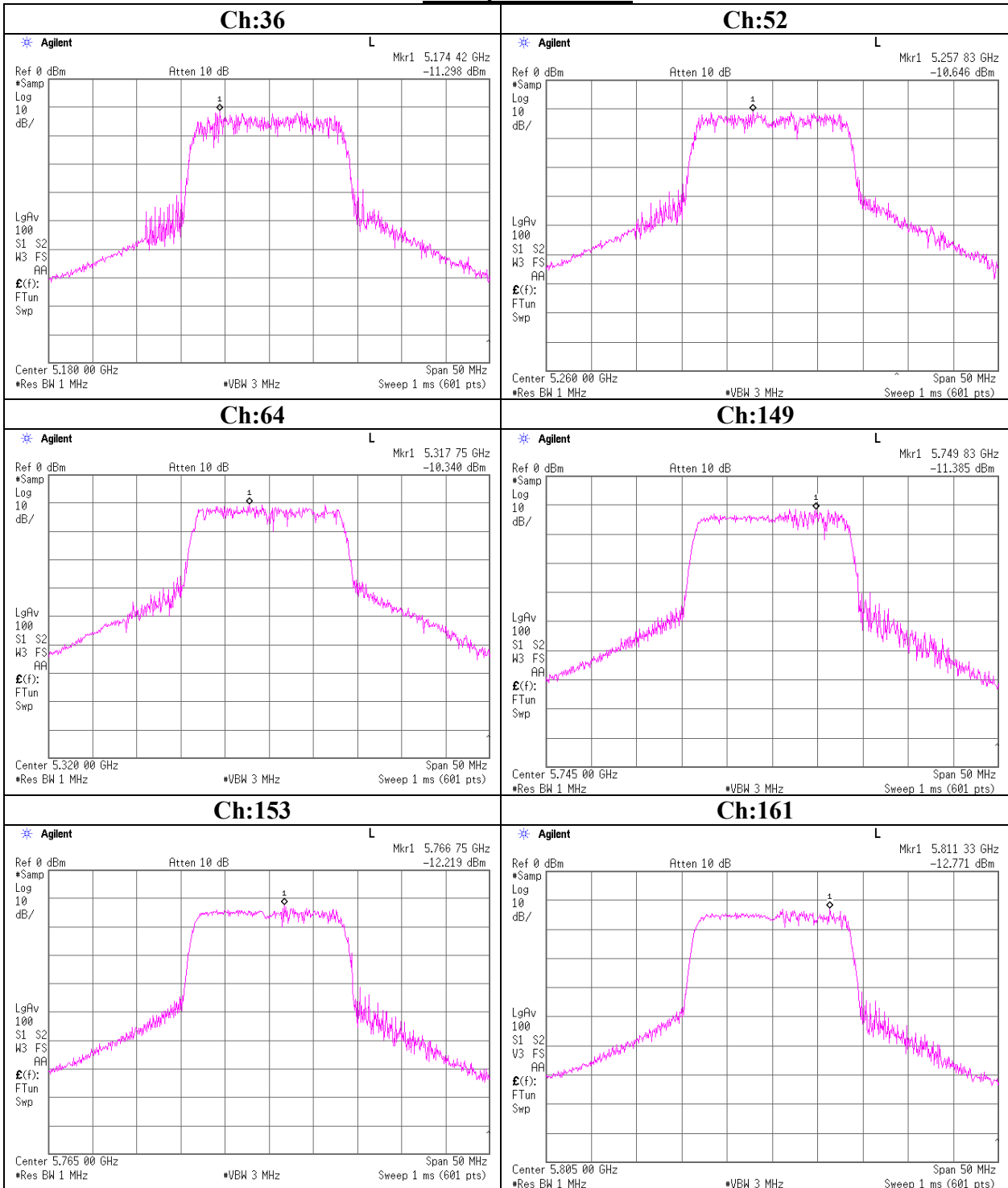
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Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

**Peak Power Spectral Density**  
**24Mbps Antenna:B**



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### Peak Excursion Ratio

UL Apex Co., Ltd.  
Head Office EMC Lab. No.3 Measurement Room

Company : CONTEC CO., LTD.  
Equipment : Wireless LAN MiniPCI Card  
Model : FX-DS540-MPCI6  
Sample No. : C09A5440017CC01  
Power : DC3.3V  
Mode : Tx IEEE 802.11a  
Antenna : B  
Rate : 24Mbps

REPORT NO : 26FE0180-HO  
REGULATION : FCC 15.407(a)(6)  
TEST DISTANCE : -  
DATE : 02/22/2006  
TEMPERATURE : 24deg.C  
HUMIDITY : 33%  
ENGINEER : Hiroka Umeyama

Ch	Freq. [MHz]	Peak Power Excursion [dB]	Limit [dB]
36	5180.0	10.235	13.0
52	5260.0	10.655	13.0
64	5320.0	11.029	13.0
149	5745.0	9.024	13.0
153	5765.0	9.324	13.0
161	5805.0	9.434	13.0

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**UL Apex Co., Ltd.**

**Head Office EMC Lab.**

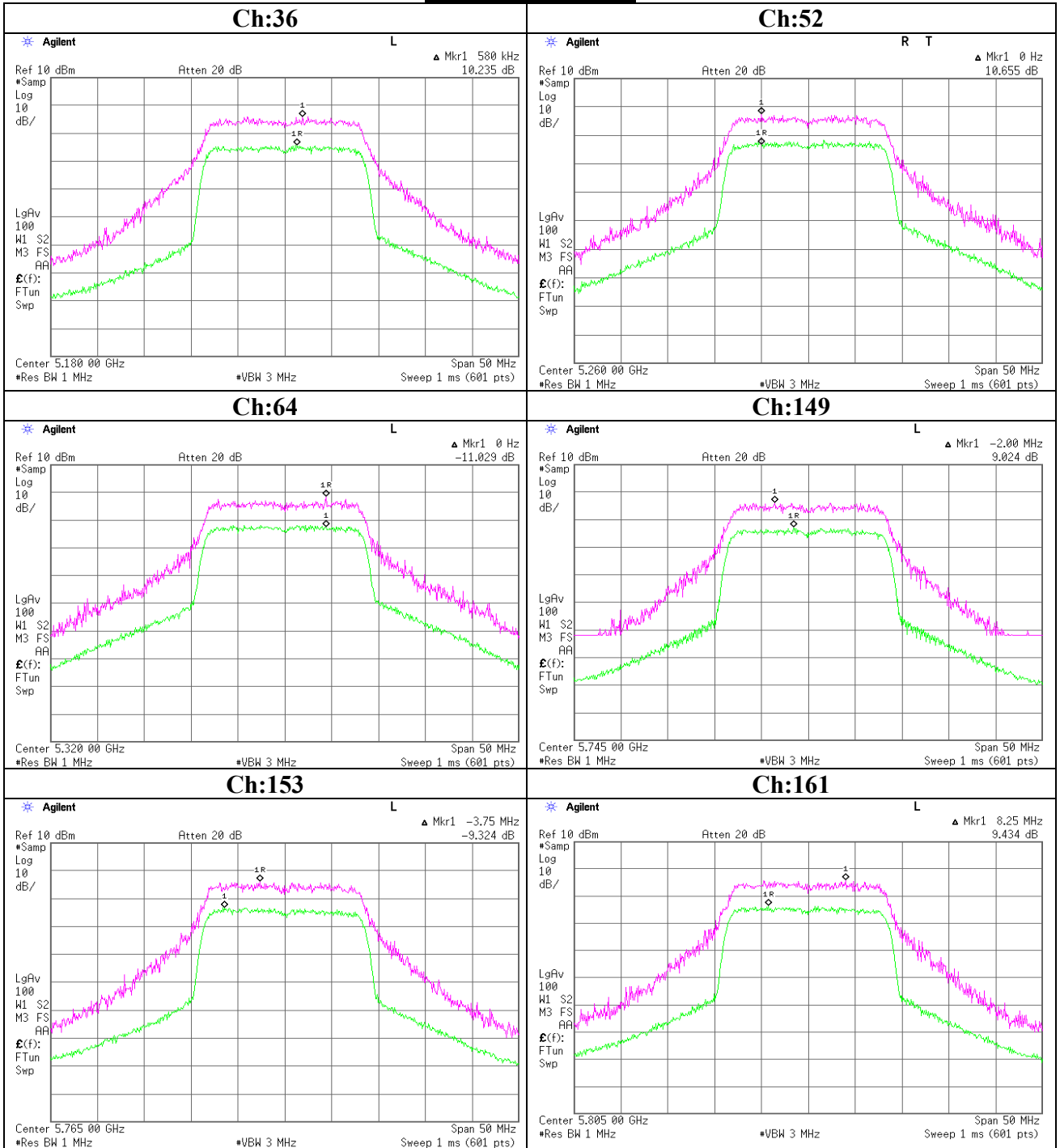
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Facsimile : +81 596 24 8124

MF060b(01.06.05)

**Peak Excursion Ratio**  
**24Mbps Antenna:B**



**99%Occupied Bandwidth**  
**24Mbps Antenna:B**

