



# **EMI TEST REPORT**

**Test Report No. : 26DE0153-YK-1**

**Applicant** : Pioneer Corporation  
**Type of Equipment** : Bluetooth unit  
**Model No.** : ND-BT1  
**FCC ID** : AJDK011  
**Test Standard** : FCC Part15 Subpart C,  
Section 15.209, Section 15.247: 2006  
**Test Result** : Complied

1. This test report shall not be reproduced except in full, 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 test report are traceable to the national or international standards.

**Date of test:** December 22, 2005 and January 11, 2006

**Tested by:** M. Hosaka & T. Imamura  
Makoto Hosaka Toyokazu Imamura

**Approved by:** O. Watatani  
Osamu Watatani  
Site Manager of Yamakita EMC Lab.

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**YAMAKITA EMC LAB.**

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Facsimile: +81 465 77 2112

MF060b(01.06.05)

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## 1 Applicant Information

Company Name : Pioneer Corporation.  
Brand Name : Pioneer  
Address : 25-1 Nishi-machi, Yamada-aza, Kawagoe-shi, Saitama, 350-8555, JAPAN  
Telephone Number : +81-49-228-6343  
Facsimile Number : +81-49-228-6494  
Contact Person : Kazuyoshi Sakai

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## 2 Product Description

Type of Equipment : Bluetooth unit

Model No. : ND-BT1

Serial No. : Out of Band emission (Radiated): TPS No.1  
Antenna port conducted test: TPS No.2

Rating : DC5V, 0.5A

Country of Manufacture : Japan

Receipt Date of Sample : December 20, 2005

Condition of EUT : Production prototype  
(Not for Sale: This sample is equivalent to mass-produced items.)

Clock frequency		Bluetooth module: 26MHz (CPU clock: 26MHz to 120MHz)
Feature of EUT		Hands free system by linking with the mobile phone installed with Bluetooth
Equipment Type		Transceiver
Frequency band	Lower limit	2402MHz
	Upper limit	2480MHz
Channel spacing		1MHz/CH
Type of Modulation		FHSS
Antenna Type		Ceramic patch Antenna (made by Mitsubishi Material) : ACD1403-244ST13
Antenna Connector Type		U.FL-R-SMT
Antenna Gain		+2 dBi max
Mode of Operation		Duplex
ITU code		F7D
Power Supply (Inner)		VCC IO: DC 3.3V, VCC RF: DC 2.8V
Operating Temperature Range		-10 to +60 deg.C.

### FCC Part15.31 (e)

Bluetooth unit, ND-BT1 provides the Bluetooth module with stable power supply (DC 2.8 V), therefore, the equipment complies power supply regulation.

### FCC Part15.203 Antenna requirement

The equipment and its antenna comply with this requirement since this antenna is built in the equipment and it cannot be replaced by end users.

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### 3 Test Specification, Procedures and Results

#### 3.1 Test specification

Test specification : FCC Part15 Subpart C: 2006  
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators  
Section 15.209 Radiated emission limits, general requirements  
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz,  
and 5725-5850MHz

#### 3.2 Procedures & Results

Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A *1	-	N/A
Carrier Frequency Separation	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)	Conducted	N/A	*See data.	Complied
20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)	Conducted	N/A		Complied
Number of Hopping Frequency	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Dwell time	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (b)(1)	Conducted	N/A		Complied
Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.209 Section15.247(d)	Conducted / Radiated	N/A	2.7dB (17087.00MHz, Horizontal)	Complied

The measurements also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".

\*1) The test is not applicable since the EUT has no AC mains.

\* No addition, exclusion nor deviation has been made from the standard.

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### 3.3 Uncertainty

#### Antenna port conducted test

The measurement uncertainty (with 95% confidence level) for this test is  $\pm 0.4$ dB.

#### Spurious emission test (Radiated)

The measurement uncertainty (with 95% confidence level) for this test using Biconical antenna is  $\pm 4.5$ dB.

The measurement uncertainty (with 95% confidence level) for this test using Logperiodic antenna is  $\pm 4.3$ dB.

The measurement uncertainty (with 95% confidence level) for this test using Horn antenna is  $\pm 5.2$ dB.

The data listed in this report meets the limits unless the uncertainty is taken into consideration.

### 3.4 Test Location

UL Apex Co., Ltd. Yamakita EMC Lab.

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Telephone number : +81 465 77 1011

Facsimile number : +81 465 77 2112

NVLAP Lab. code : 200441-0

No. 1 test site has been fully described in a report submitted to FCC office, and accepted on August 26, 2005 (Registration No.: 95486).

IC Registration No. : IC3489A

No. 2 test site has been fully described in a report submitted to FCC office, and accepted on April 4, 2005 (Registration No.: 466226).

IC Registration No. : IC3489A-2

No. 1 anechoic chamber has been fully described in a report submitted to FCC office, and accepted on November 2, 2005 (Registration No.: 95967).

IC Registration No. : IC3489A-B

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 shielded room	8.0 x 5.0 x 2.5	No.1 EMS lab. (Semi-anechoic chamber)	10.0 x 7.5 x 5.7
No.2 shielded room	5.0 x 4.0 x 2.5		
No.3 shielded room	4.0 x 5.0 x 2.7		

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## 4 System Test Configuration

### 4.1 Justification

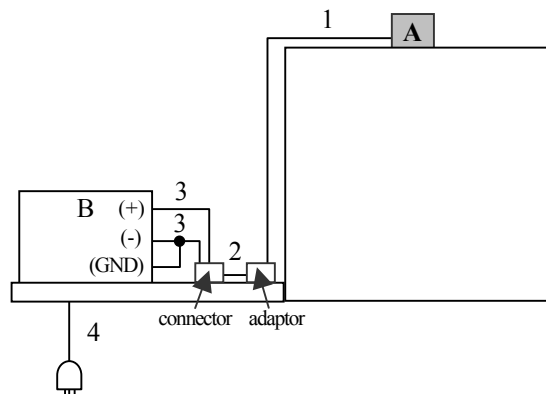
The system was configured in typical fashion (as a customer would normally use it) for testing.

Test mode: Transmitting mode (Packet size: DH5)

- Low channel : 2402MHz
- Middle channel : 2441MHz
- High channel : 2480MHz
- Inquiry
- Hopping

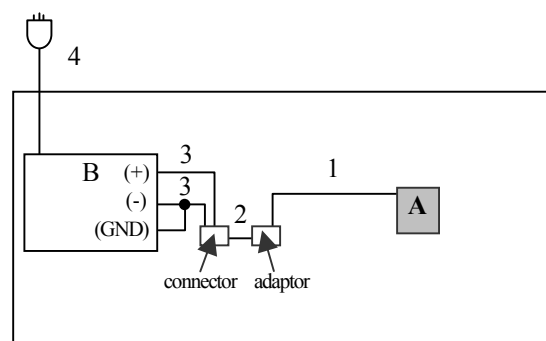
### 4.2 Configuration of Tested System

#### Front View



#### Top View

AC120V/60Hz



\* Test data was taken under worse case conditions.

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**Description of EUT and support equipment**

No.	Item	Model number	Serial number	Manufacturer	FCC ID (Remarks)
A	Bluetooth unit	ND-BT1	TPS-No.1 TPS-No.2 *1	Pioneer	AJDK011 (EUT)
B	DC Power Supply	PAN35-10A	DE001677	KIKUSUI Electronics Corp.	-

For Out of Band emission (Radiated), the model of serial No. TPS-No.1 was under the test. The model of serial No. TPS-No.2 was under the test for Antenna port conducted test.

**List of cables used**

No.	Name	Length (m)	Shield	Remark
1	I/F cable	2	Shielded	-
2	Adaptor cable	0.2	Shielded	-
3	DC cable (+)/(-)	0.75	Unshielded	-
4	AC Power cable (DC power supply)	3	Unshielded	-

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## 5 Carrier Frequency Separation

### Test Procedure

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass  
Date: January 11, 2006

Test data: APPENDIX 2 Page 14  
Test engineer : Toyokazu Imamura

## 6 20dB Bandwidth

### Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass  
Date: January 11, 2006

Test data: APPENDIX 2 Page 15  
Test engineer : Toyokazu Imamura

## 7 Number of Hopping Frequency

### Test Procedure

The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass  
Date: January 11, 2006

Test data: APPENDIX 2 Page 16 - 18  
Test engineer : Toyokazu Imamura

## 8 Dwell time

### Test Procedure

The Dwell time was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass  
Date: January 11, 2006

Test data: APPENDIX 2 Page 19 - 22  
Test engineer : Toyokazu Imamura

## 9 Maximum Peak Output Power

### Test Procedure

The Maximum Peak Output Power was measured with a power meter connected to the antenna port.

Summary of the test results: Pass  
Date: January 11, 2006

Test data: APPENDIX 2 Page 23  
Test engineer : Toyokazu Imamura

## 10 Out of Band Emissions (Antenna Port Conducted)

### Test Procedure

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

Summary of the test results: Pass  
Date: January 11, 2006

Test data: APPENDIX 2 Page 24 - 29  
Test engineer : Toyokazu Imamura

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## 11 Out of Band Emissions (Radiated)

### 11.1 Operating environment

The test was carried out in an open site.

### 11.2 Test configuration

EUT was placed on a platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane. A drawing of the set up is shown in the photos of Appendix 1.

### 11.3 Test conditions

Frequency range : 30MHz - 26.5GHz  
Test distance : 3m  
EUT operation mode : Transmitting

### 11.4 Test procedure

The Radiated Electric Field Strength intensity has been measured with a ground plane and at a distance of 3m. The measuring antenna height was 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.

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

Measurements were performed with QP, PK, and AV detector.

The radiated emission measurements were made with the following detector function of the test receiver.

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector	QP: BW 120kHz	PK: RBW: 1MHz/VBW: 1MHz
IF Bandwidth		AV: RBW: 1MHz/VBW: 10Hz

The equipment was previously checked at each position of three axes X, Y and Z. The position in which the maximum noise occurred was chosen to put into measurement. See the table below and photographs in page 13.

With the position, the noise levels of all the frequencies were measured.

Frequency	Below 1GHz	Above 1GHz
Antenna: Horizontal	X	X
Antenna: Vertical	X	Z

### 11.5 Results

Summary of the test results : Pass  
Test data : APPENDIX 2 Page 30 - 35 (30 - 1000MHz)  
: APPENDIX 2 Page 36 - 41 (1 - 26.5GHz)

Date: December 22, 2005      Test engineer : Makoto Hosaka

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## **APPENDIX 1: Photographs of test setup**

Page 12	:	Radiated emission
Page 13	:	Pre check of worse-case position

## **APPENDIX 2: Test Data**

Page 14	:	Carrier Frequency Separation
Page 15	:	20dB Bandwidth
Page 16 - 18	:	Number of Hopping Frequency
Page 19 - 22	:	Dwell time
Page 23	:	Maximum Peak Output Power
Page 24 - 29	:	Out of Band Emissions (Antenna Port Conducted)
Page 30 - 41	:	Out of Band Emissions (Radiated)
30-35	:	30-1000MHz
36-41	:	1-26.5GHz
Page 42 - 43	:	Occupied Bandwidth

## **APPENDIX 3: Test instruments**

Page 44	:	Test instruments
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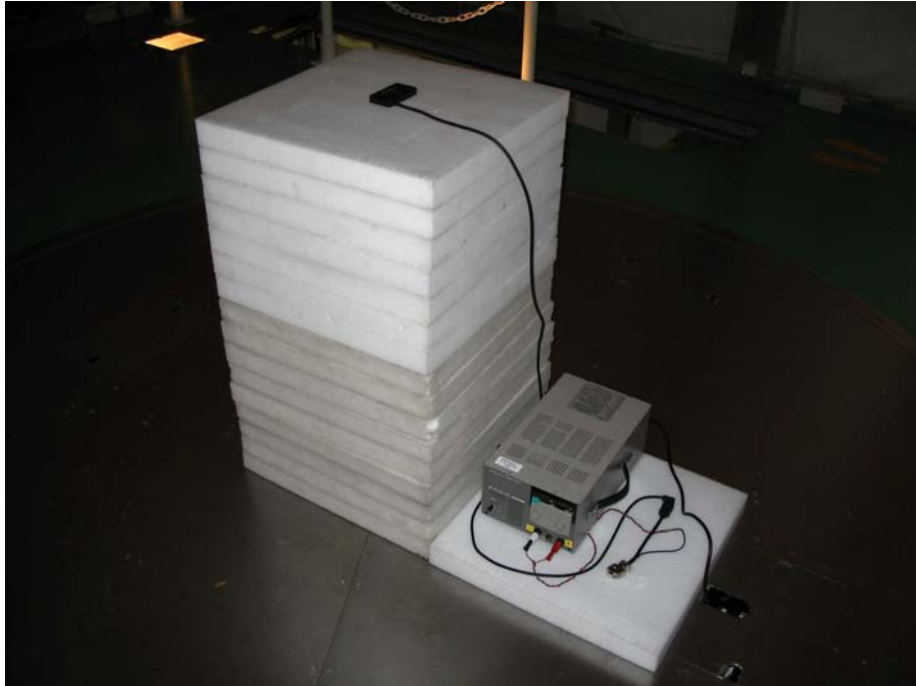
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## Radiated emission



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**Pre check of worse-case position**



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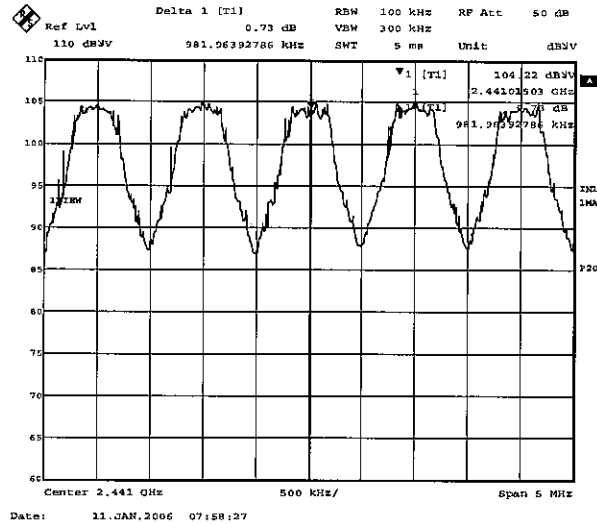
MF060b(01.06.05)

# Channel Separation: FCC 15.247(a)(1)

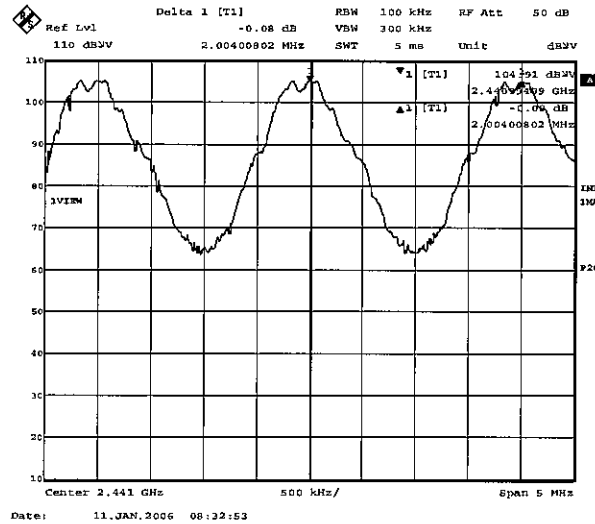
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS-No.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK - 1  
REGULATION : Fcc Part15SubpartC 247(a)(1)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

## 1. Hopping:961.96kHz



## 2. Inquiry:2004.01kHz

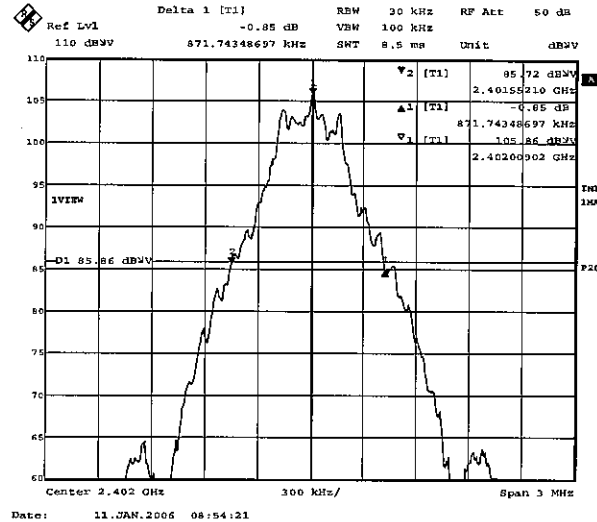


## 20dB Bandwidth: FCC 15.247(a)(1)

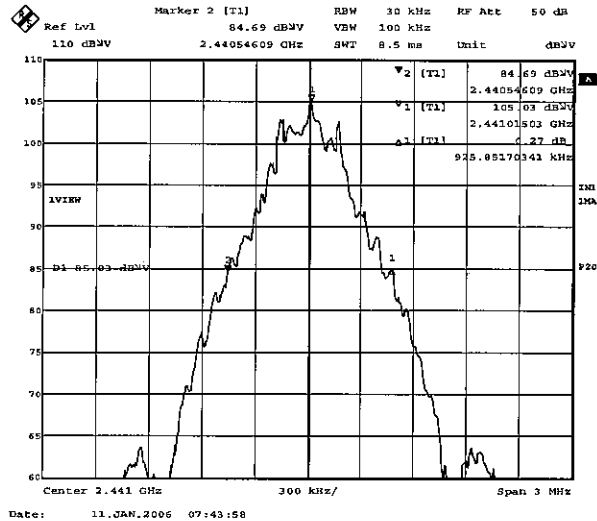
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS N0.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK - 1  
REGULATION : Fcc Part15SubpartC 247(a)(1)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting (Hopping off)  
ENGINEER : Toyokazu Imamura

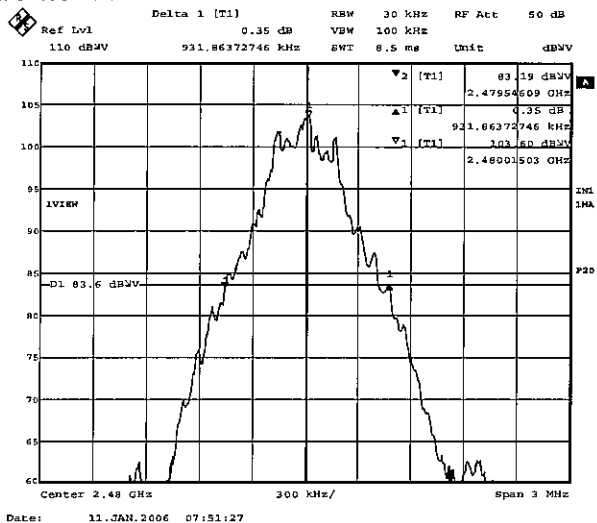
### 1. ch : 2402MHz/20dB Bandwidth:871.74kHz



### 2. ch : 2441MHz/20dB Bandwidth:925.85kHz



### 3. ch : 2480MHz/20dB Bandwidth:931.66kHz



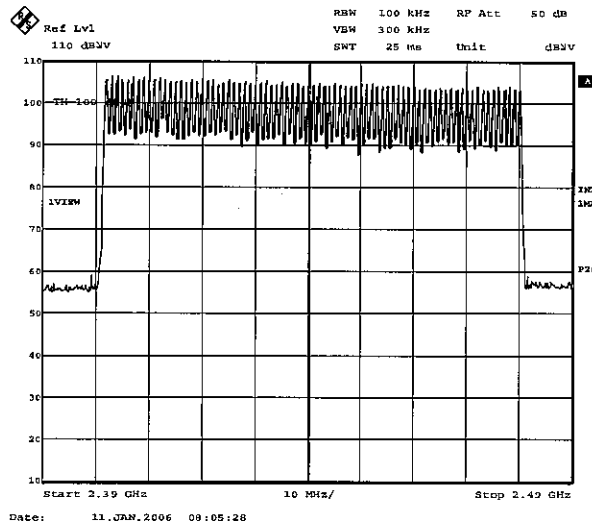
# Channel Utilization: FCC 15.247(a)(1)(iii)

COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER : ND-BT1  
SERIAL NUMBER : TPS N0.2  
FCC ID : AJDK011  
POWER : DC5V

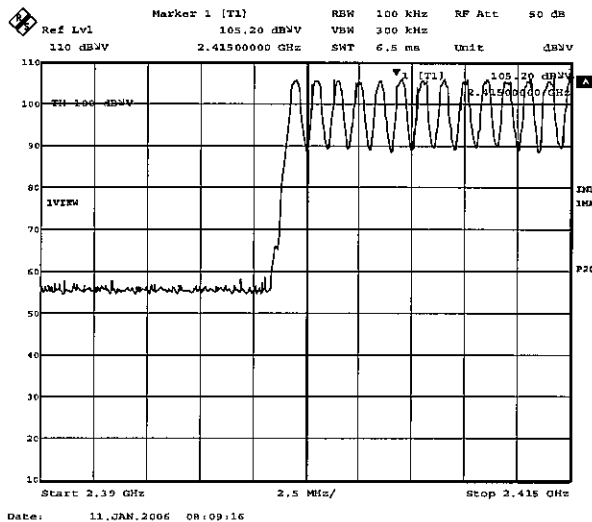
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK - 1  
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

## Hopping: 79ch

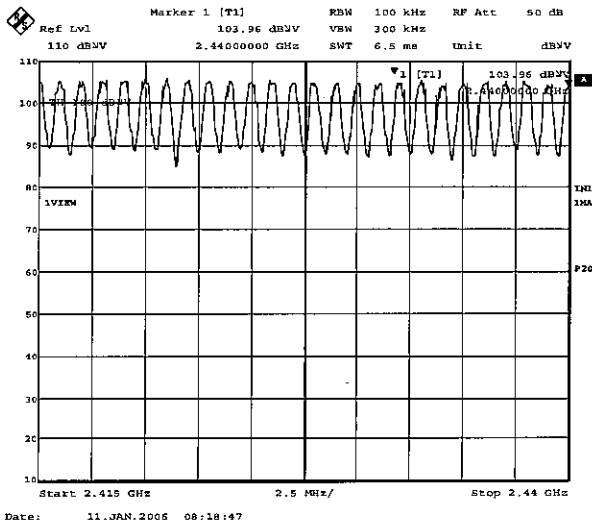
1.



2.



3.



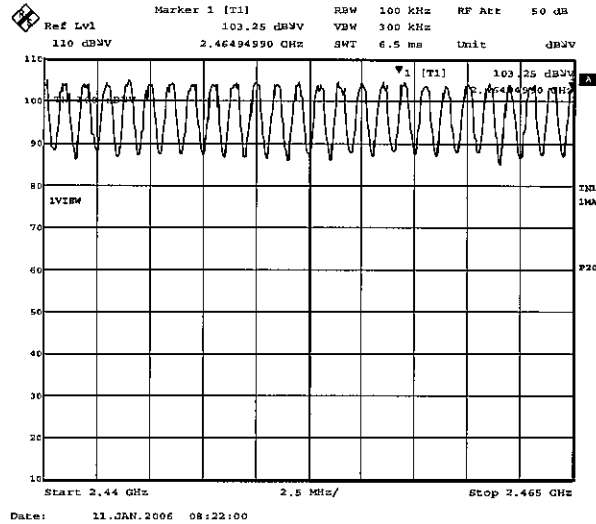


# Channel Utilization: FCC 15.247(a)(1)(iii)

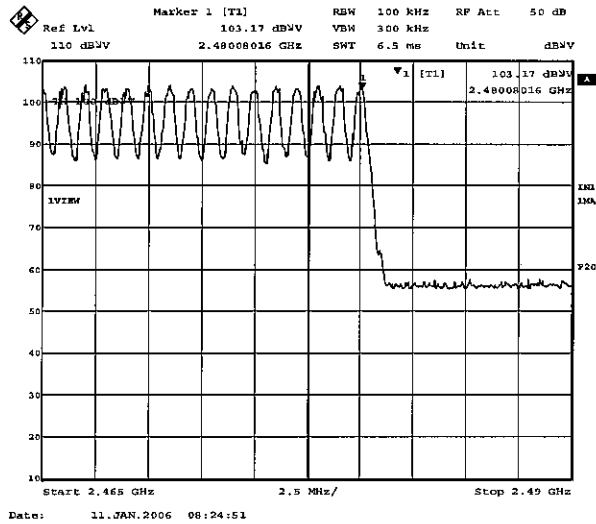
COMPANY : PIONEER CORPORATION  
 EQUIPMENT : Bluetooth Unit  
 MODEL NUMBER: ND-BT1  
 SERIAL NUMBER: TPS N0.2  
 FCC ID : AJDK011  
 POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
 REPORT NO : 26DE0153-YK - 1  
 REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)  
 DATE : 2006/01/11  
 TEMP/HUMI : 20°C/35%  
 TEST MODE : Transmitting  
 ENGINEER : Toyokazu Imamura

4.



5.

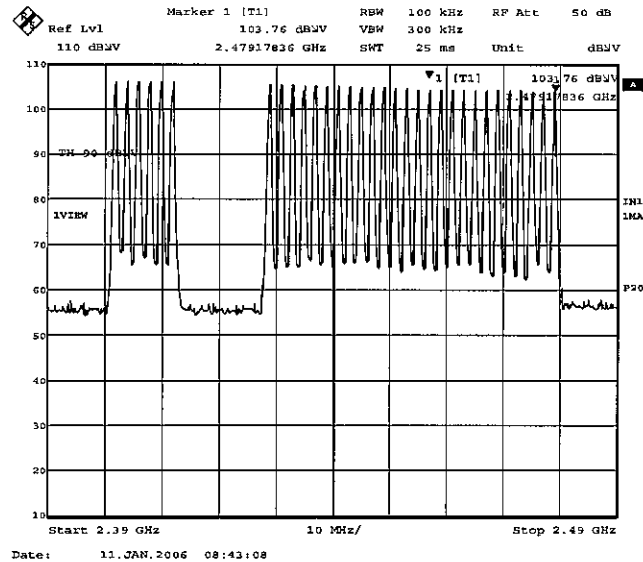


# Channel Utilization: FCC 15.247(a)(1)(iii)

COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS N0.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK **1**  
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

## 1. Inquiry: 32ch

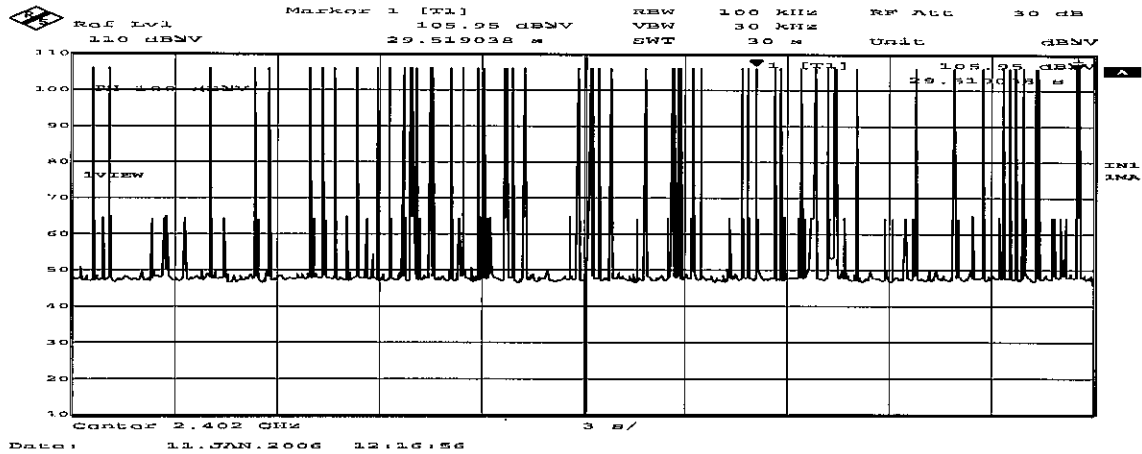


# Dwell Time: FCC 15.247(a)(1)(iii)

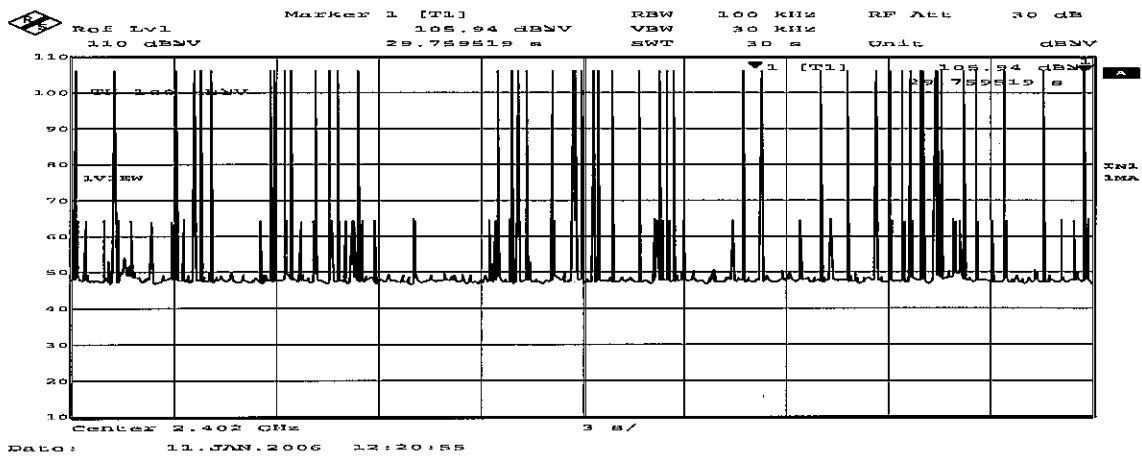
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS N0.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK-1  
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)  
DATE : 2006/01/11  
TEMP./HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

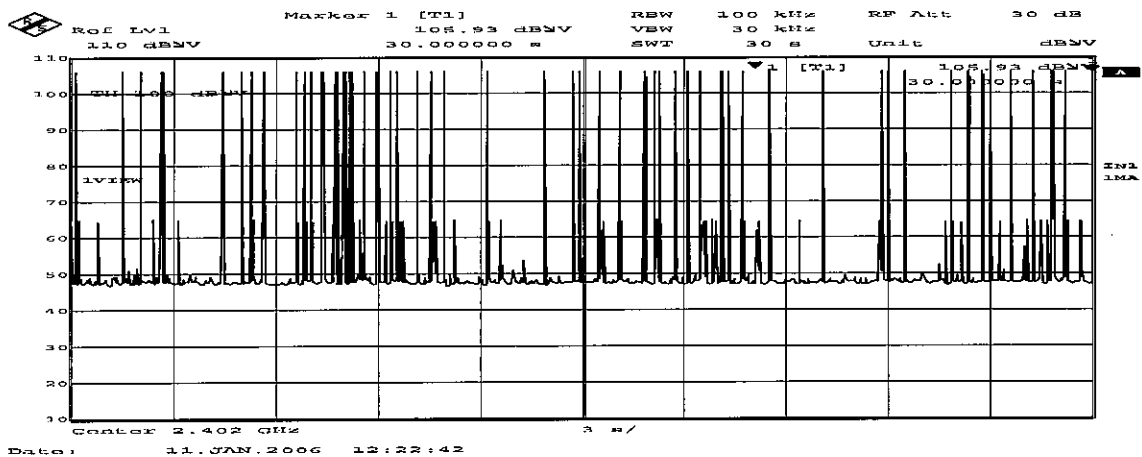
Hopping:  
Count 1



Count 2



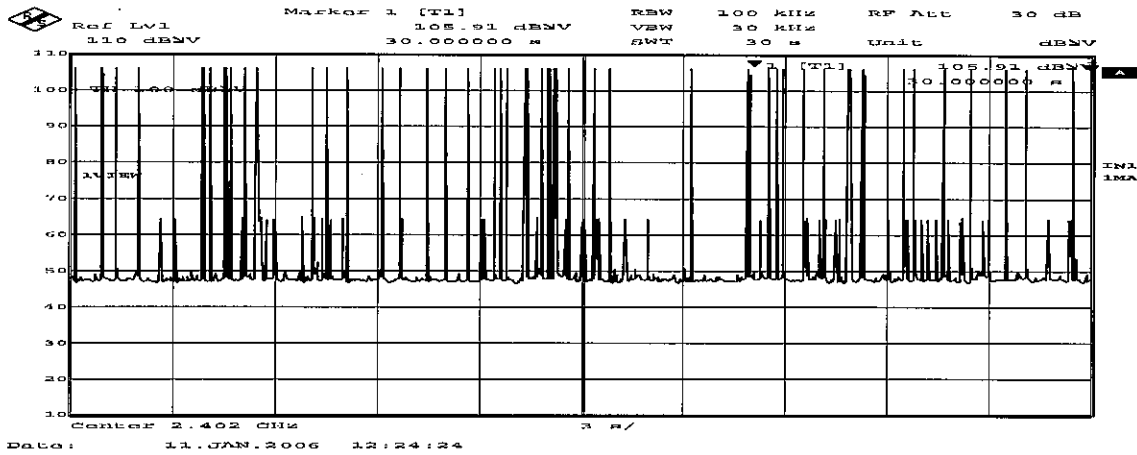
Count 3



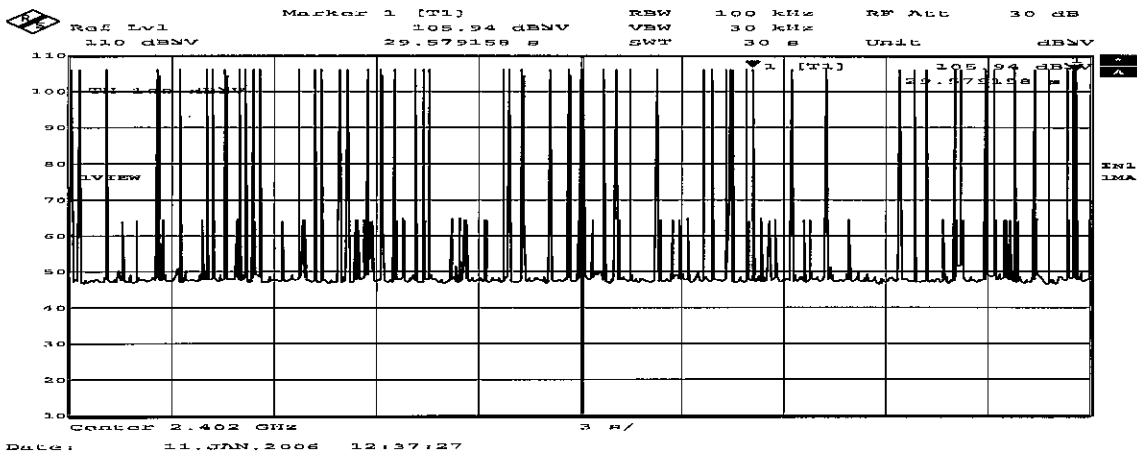
# Dwell Time: FCC 15.247(a)(1)(iii)

COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS N0.2  
FCC ID : AJDK011  
POWER : DC5V  
Count 4

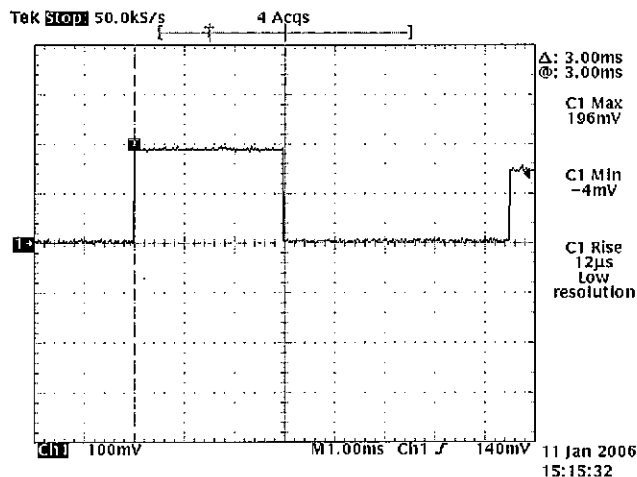
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK-1  
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura



Count 5



## Duty cycle(Hopping)



$$\begin{aligned} \text{Dwell time} &= ((\text{Count 1} + \text{Count 2} + \text{Count 3} + \text{Count 4} + \text{Count 5}) / 5) / 30 * 0.4x * \text{Ton} \\ &= ((50 + 44 + 51 + 45 + 53) / 5) / 30 * 31.6 * 3.00[\text{ms}] \\ &= 153.58 [\text{ms}] \end{aligned}$$

$$\text{Note. } 0.4x = 0.4 * 79\text{ch} = 31.6[\text{s}]$$

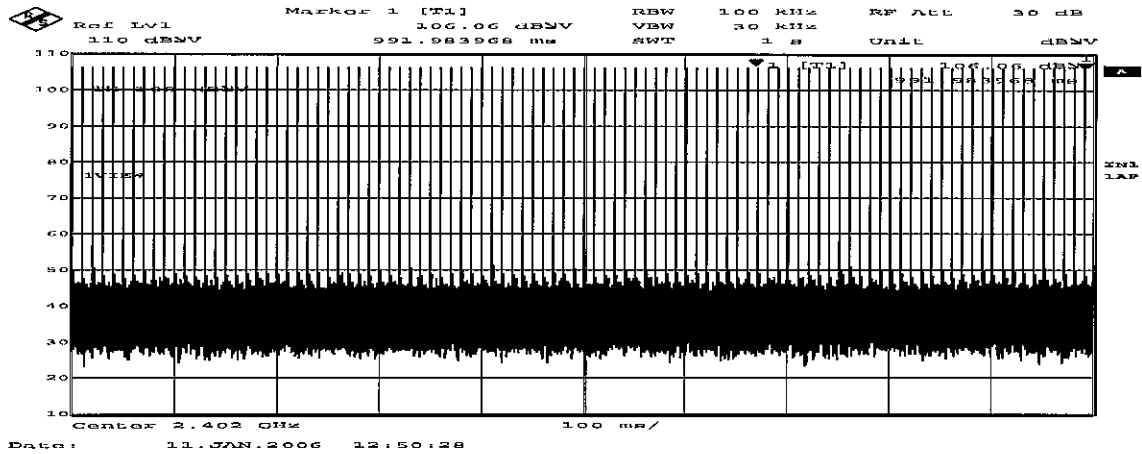
$$\text{Limit : Dwell Time} < 0.4[\text{s}]$$

# Dwell Time: FCC 15.247(a)(1)(iii)

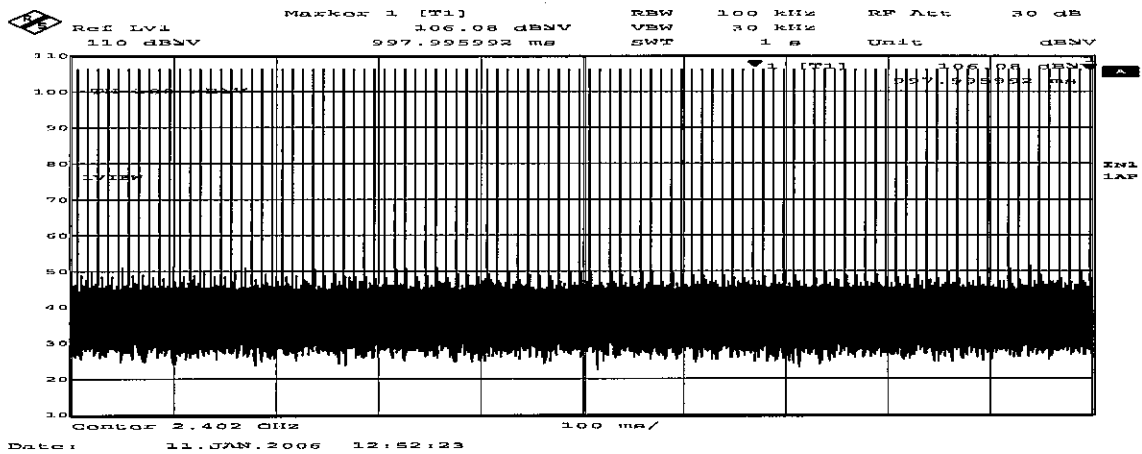
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER : ND-BT1  
SERIAL NUMBER : TPS N0.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK-1  
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)  
DATE : 2006/01/11  
TEMP./HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

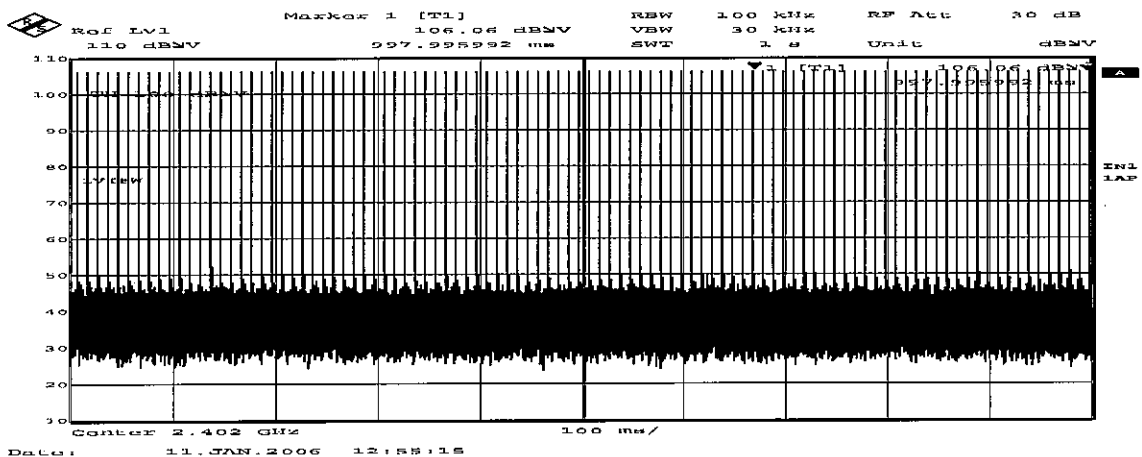
## Inquiry: Count 1



## Count 2



## Count 3

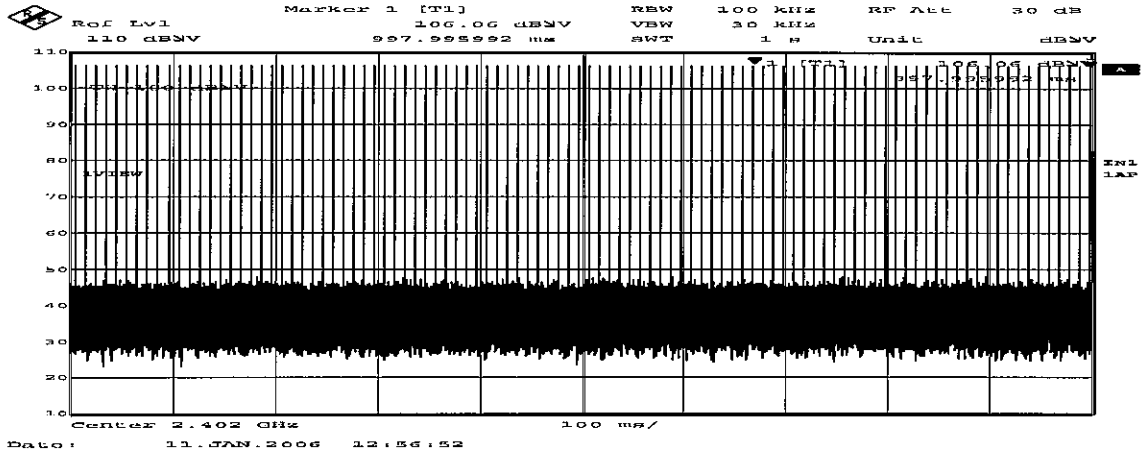


# Dwell Time: FCC 15.247(a)(1)(iii)

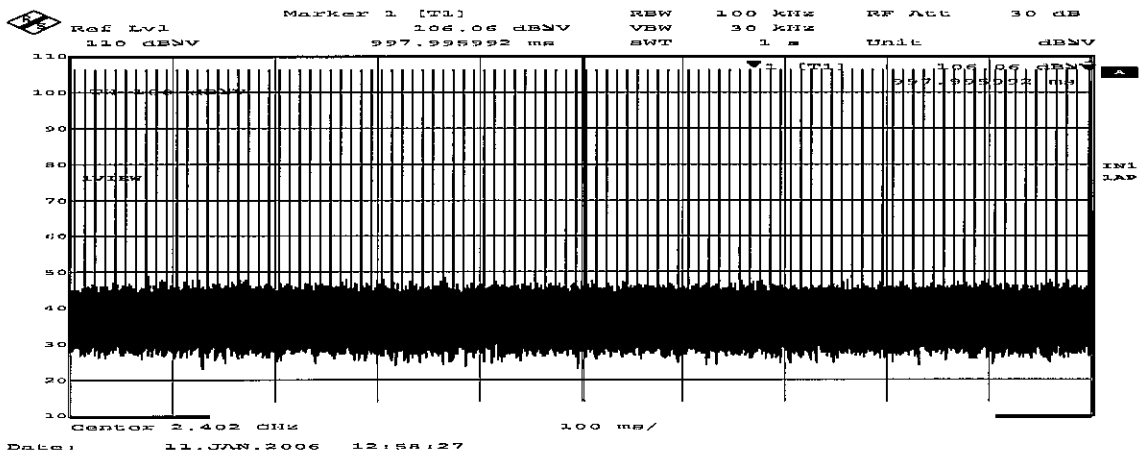
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS N0.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK-1  
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

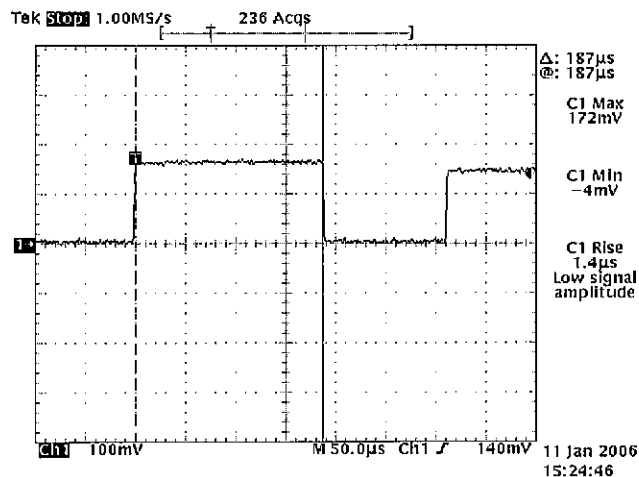
## Count 4



## Count 5



## Duty cycle(Inquiry)



$$\begin{aligned} \text{Dwell time} &= (\text{Count 1} + \text{Count 2} + \text{Count 3} + \text{Count 4} + \text{Count 5}) / 5 * 0.4x * \text{Ton} \\ &= (100 + 100 + 100 + 100 + 100) / 5 * 12.8[s] * 187 [\mu s] \\ &= 239.36 [ms] \end{aligned}$$

$$\text{Note. } 0.4x = 0.4 * 32\text{ch} = 12.8[s]$$

$$\text{Limit : Dwell Time} < 0.4[s]$$

## Maximum Peak Conducted Output Power

UL Apex Co.,Ltd

YAMAKITA No.5 Shielded Room

COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBE : ND-BT1  
SERIAL NUMBE : TPS No.2  
FCC ID : AJDK011  
POWER : DC5V  
TEST MODE : Transmitting

REPORT NO : 26DE0153-YK - **1**  
REGULATION : Fcc Part15SubpartC 247(b)(1)  
DATE : 2006/01/11  
TEMP./HUMI : 20°C/35%

ENGINEER : Toyokazu Imamura

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (1W) [dBm]	MARGIN [dB]
Low	2402.00	-0.72	0.00	-0.72	30.0	30.72
Mid	2441.00	-1.86	0.00	-1.86	30.0	31.86
High	2480.00	-2.85	0.00	-2.85	30.0	32.85
Inquiry	-	-0.85	0.00	-0.85	30.0	30.85
Hopping	-	-0.85	0.00	-0.85	20.96	21.81

Limit: 1W=30dBm

Limit(Hopping): 125mW=20.96dBm

P/M: Power Meter

# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

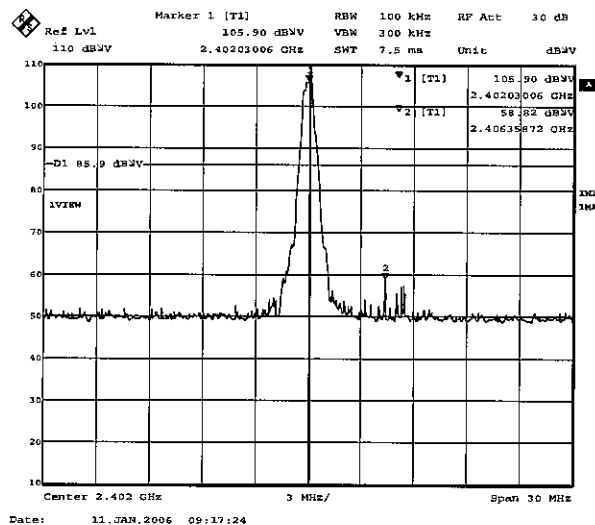
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS No.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK **1**  
REGULATION : Fcc Part15SubpartC 247(d)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

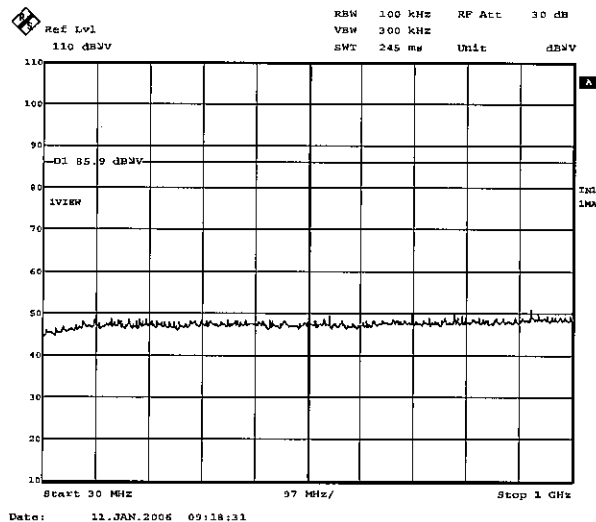
[Transmitting]

Ch:2402MHz

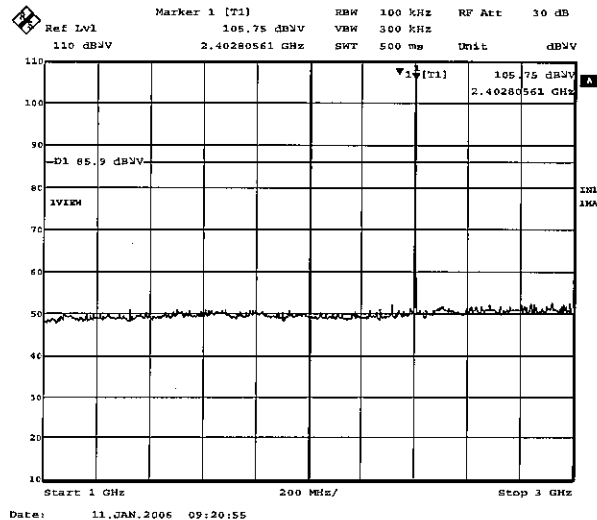
1.



2.



3.





# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

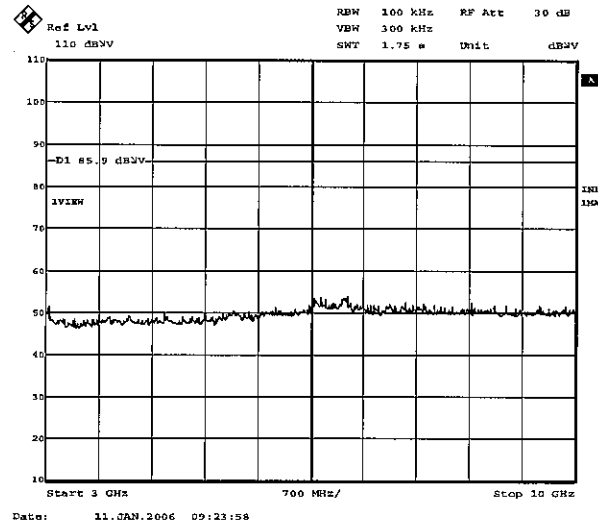
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS No.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK  
REGULATION : Fcc Part15SubpartC 247(d)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

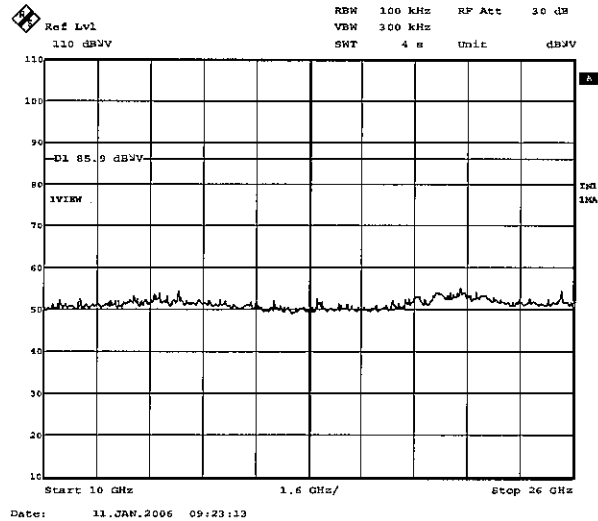
[Transmitting]

Ch:2402MHz

4.



5.



# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

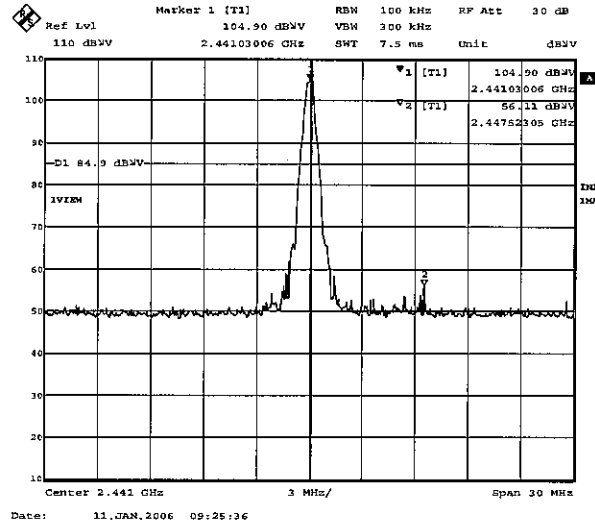
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS No.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK-1  
REGULATION : Fcc Part15SubpartC 247(d)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

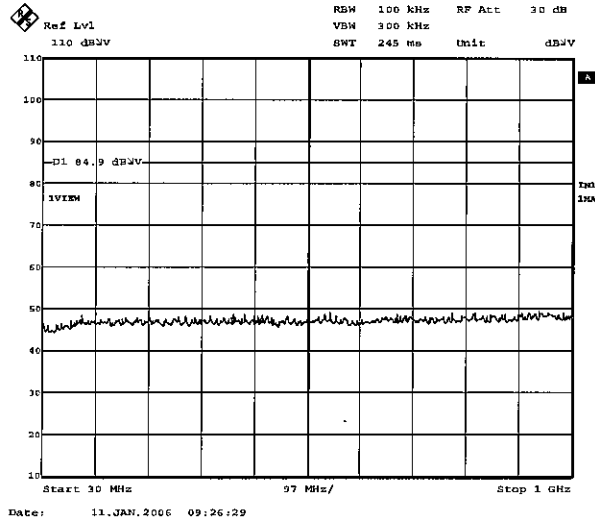
[Transmitting]

Ch:2441MHz

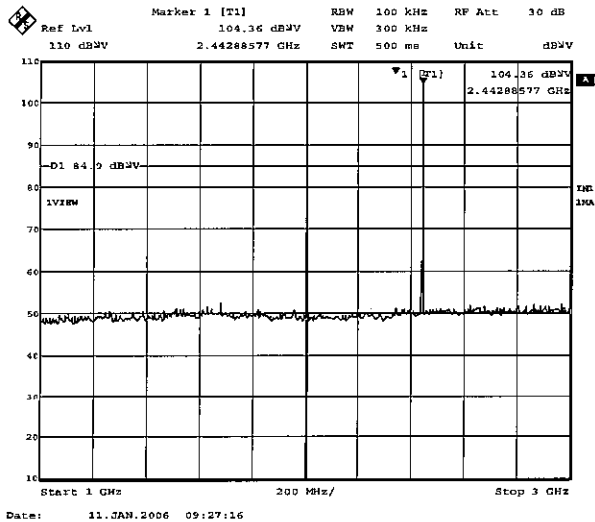
1.



2.



3.



# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

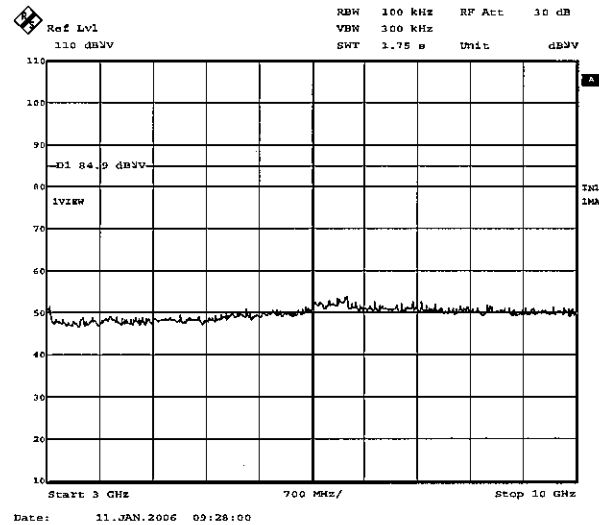
COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS No.2  
FCC ID : AJDK011  
POWER : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK 1  
REGULATION : Fcc Part15SubpartC 247(d)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

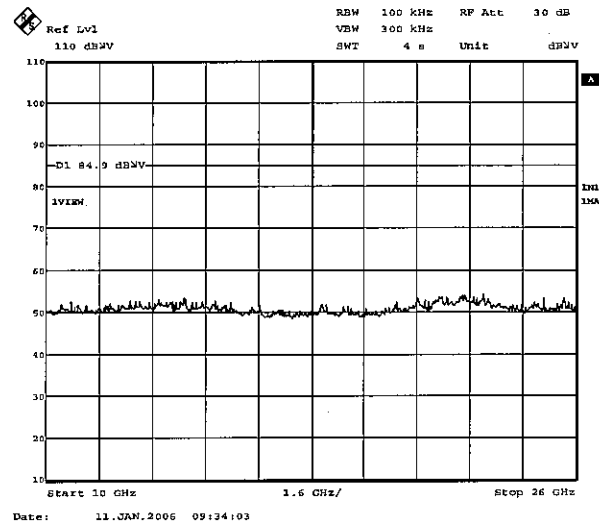
[Transmitting]

Ch:2441MHz

4.



5.



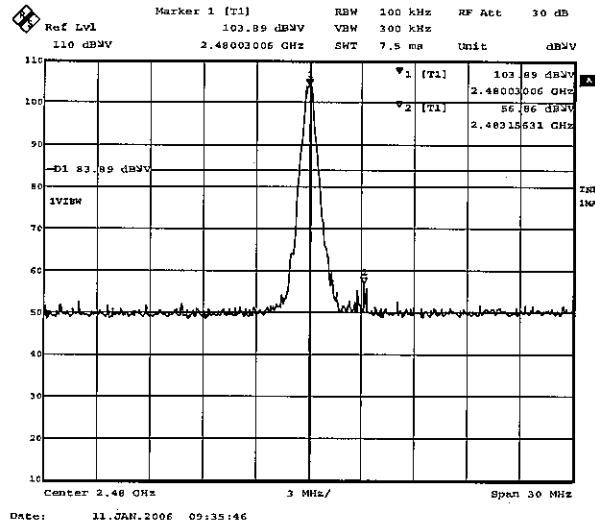
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS No.2  
FCC ID : AJDK011  
POWER : DC5V

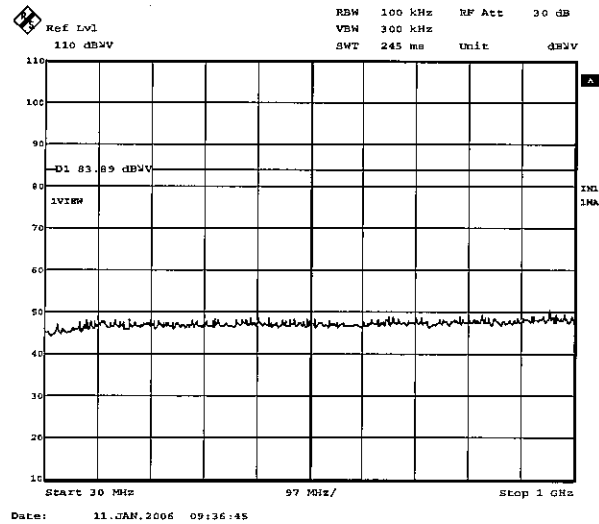
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK ①  
REGULATION : Fcc Part15SubpartC 247(d)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

[Transmitting]  
Ch11:2480MHz

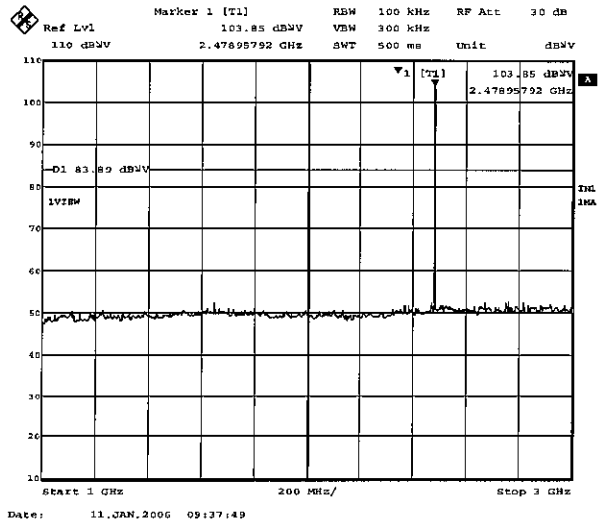
1.



2.



3.



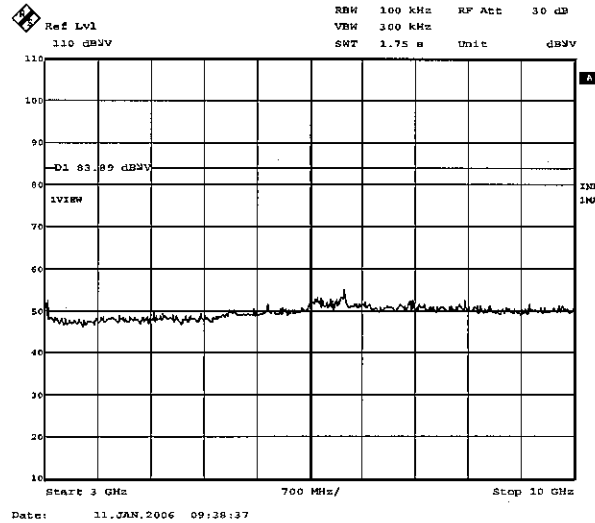
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : PIONEER CORPORATION  
EQUIPMENT : Bluetooth Unit  
MODEL NUMBER: ND-BT1  
SERIAL NUMBER: TPS No.2  
FCC ID : AJDK011  
POWER : DC5V

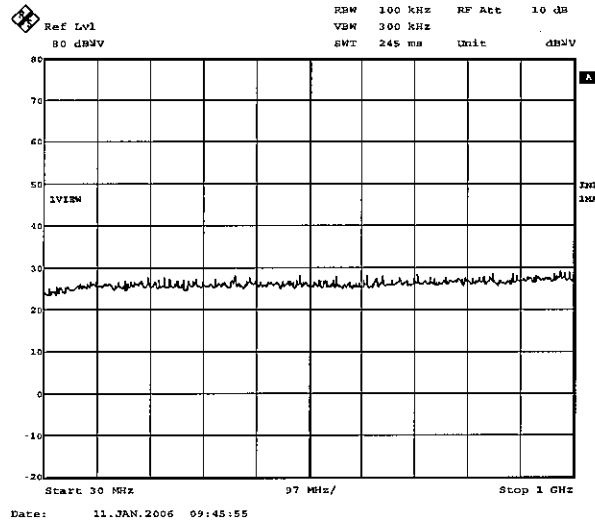
UL Apex Co.,Ltd. Yamakita No.5 Shielded Room  
REPORT NO : 26DE0153-YK 1  
REGULATION : Fcc Part15SubpartC 247(d)  
DATE : 2006/01/11  
TEMP/HUMI : 20°C/35%  
TEST MODE : Transmitting  
ENGINEER : Toyokazu Imamura

[Transmitting]  
Ch:2480MHz

4.



5.



# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK-1

Applicant : PIONEER CORPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2402MHz  
 Remarks :  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	182.01	BB	23.9	25.0	16.6	27.6	2.8	5.8	21.5	22.6	43.5	22.0	20.9
2.	200.00	BB	21.1	21.0	17.1	27.5	3.0	5.8	19.5	19.4	43.5	24.0	24.1
3.	338.03	BB	22.4	23.1	15.4	27.6	4.0	5.8	20.0	20.7	46.0	26.0	25.3
4.	400.00	BB	22.0	23.4	17.1	27.8	4.4	5.8	21.5	22.9	46.0	24.5	23.1
5.	500.00	BB	20.7	20.7	18.5	28.4	5.0	5.8	21.6	21.6	46.0	24.4	24.4
6.	1000.00	BB	20.4	20.4	24.6	28.2	7.3	5.8	29.9	29.9	54.0	24.1	24.1

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KBA-02 (BBA9106) 30-299.99MHz/KLA-02 (USLP9143) 300-1000MHz

■ AMP: KAF-03 (8447D) ■ RECEIVER: KTR-04 (ESVS10) ■ CABLE: KCC-20/21/22/23/29

# DATA OF RADIATION TEST

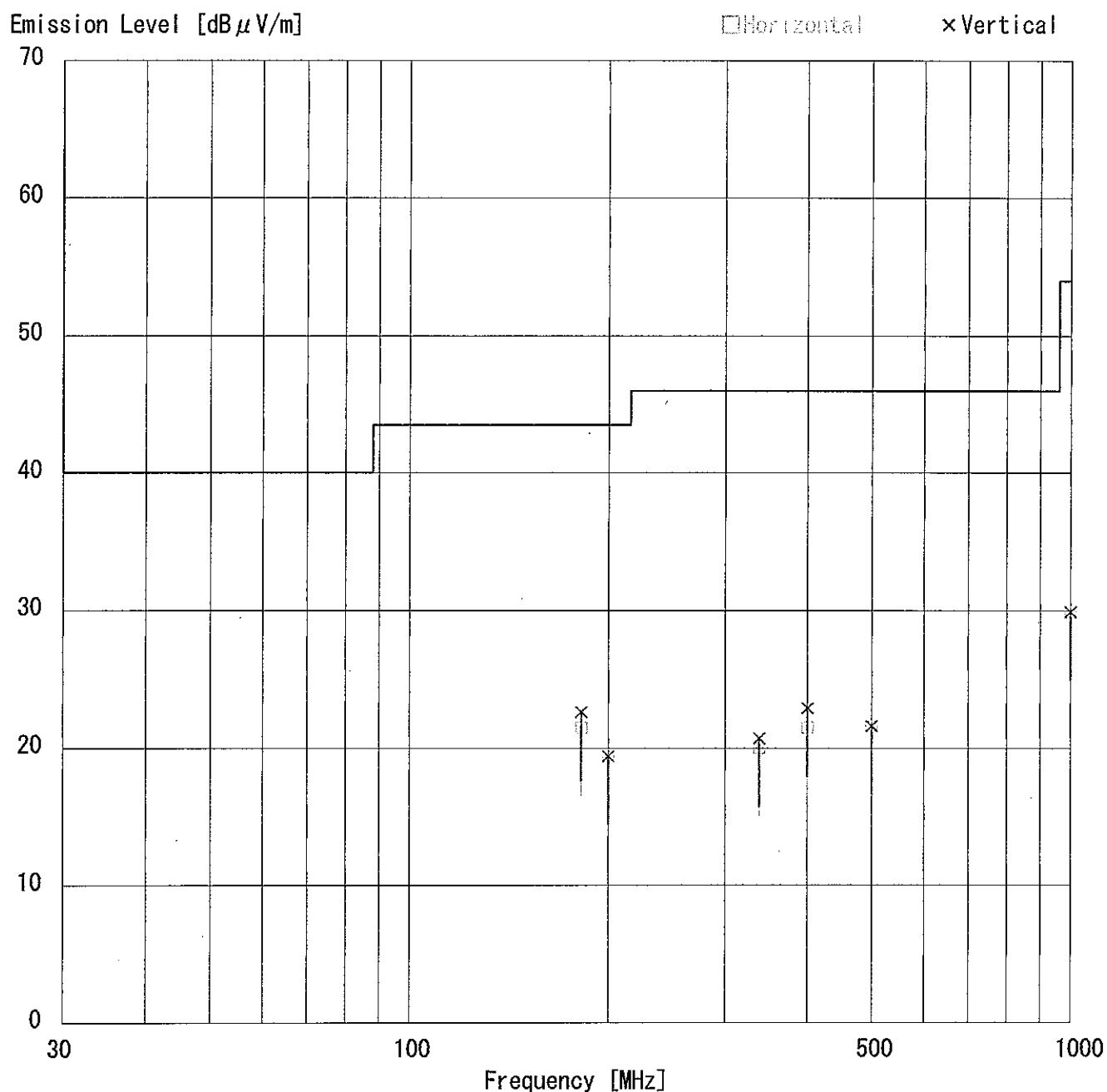
UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK - 1

Applicant : PIONEER CORPORATION  
Kind of Equipment : Bluetooth Unit  
Model No. : ND-BT1  
Serial No. : TPS No.1  
Power : DC5V  
Mode : Transmitting 2402MHz  
Remarks :  
Date : 12/22/2005  
Test Distance : 3 m  
Temperature : 23 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.209

Engineer : Makoto Hosaka



Page:

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK - 1

Applicant : PIONEER CORPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2441MHz  
 Remarks :  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	182.01	BB	23.8	24.6	16.6	27.6	2.8	5.8	21.4	22.2	43.5	22.1	21.3
2.	200.00	BB	21.2	20.9	17.1	27.5	3.0	5.8	19.6	19.3	43.5	23.9	24.2
3.	338.03	BB	23.2	23.3	15.4	27.6	4.0	5.8	20.8	20.9	46.0	25.2	25.1
4.	400.00	BB	21.9	23.0	17.1	27.8	4.4	5.8	21.4	22.5	46.0	24.6	23.5
5.	500.00	BB	20.7	20.8	18.5	28.4	5.0	5.8	21.6	21.7	46.0	24.4	24.3
6.	1000.00	BB	20.9	20.7	24.6	28.2	7.3	5.8	30.4	30.2	54.0	23.6	23.8

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KBA-02 (BBA9106) 30-299.99MHz/KLA-02 (USLP9143) 300-1000MHz

■ AMP: KAF-03 (8447D) ■ RECEIVER: KTR-04 (ESVS10) ■ CABLE: KCC-20/21/22/23/29



# DATA OF RADIATION TEST

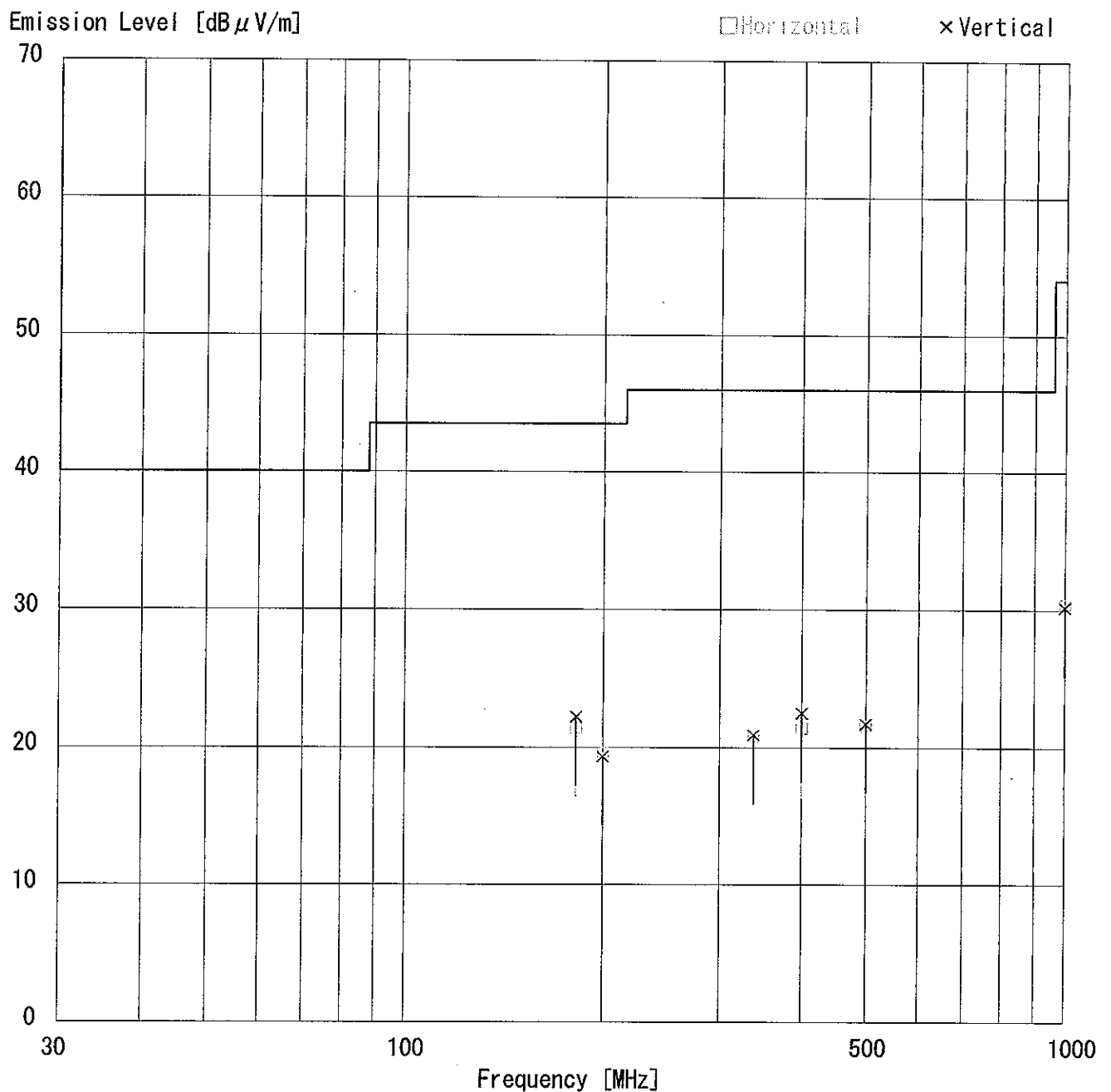
UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK - 1

Applicant : PIONEER CORPORATION  
Kind of Equipment : Bluetooth Unit  
Model No. : ND-BT1  
Serial No. : TPS No.1  
Power : DC5V  
Mode : Transmitting 2441MHz  
Remarks :  
Date : 12/22/2005  
Test Distance : 3 m  
Temperature : 23 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.209

Engineer : Makoto Hosaka



Page:

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK - 1

Applicant : PIONEER COPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2480MHz  
 Remarks :  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15. 209

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	182.01	BB	22.4	24.3	16.6	27.6	2.8	5.8	20.0	21.9	43.5	23.5	21.6
2.	200.00	BB	21.1	21.2	17.1	27.5	3.0	5.8	19.5	19.6	43.5	24.0	23.9
3.	338.03	BB	22.5	24.0	15.4	27.6	4.0	5.8	20.1	21.6	46.0	25.9	24.4
4.	400.00	BB	22.4	23.2	17.1	27.8	4.4	5.8	21.9	22.7	46.0	24.1	23.3
5.	500.00	BB	20.9	21.0	18.5	28.4	5.0	5.8	21.8	21.9	46.0	24.2	24.1
6.	1000.00	BB	20.4	20.4	24.6	28.2	7.3	5.8	29.9	29.9	54.0	24.1	24.1

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KBA-02 (BBA9106) 30-299.99MHz / KLA-02 (USLP9143) 300-1000MHz

■ AMP: KAF-03 (8447D) ■ RECEIVER: KTR-04 (ESVS10) ■ CABLE: KCC-20/21/22/23/29

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK - 1

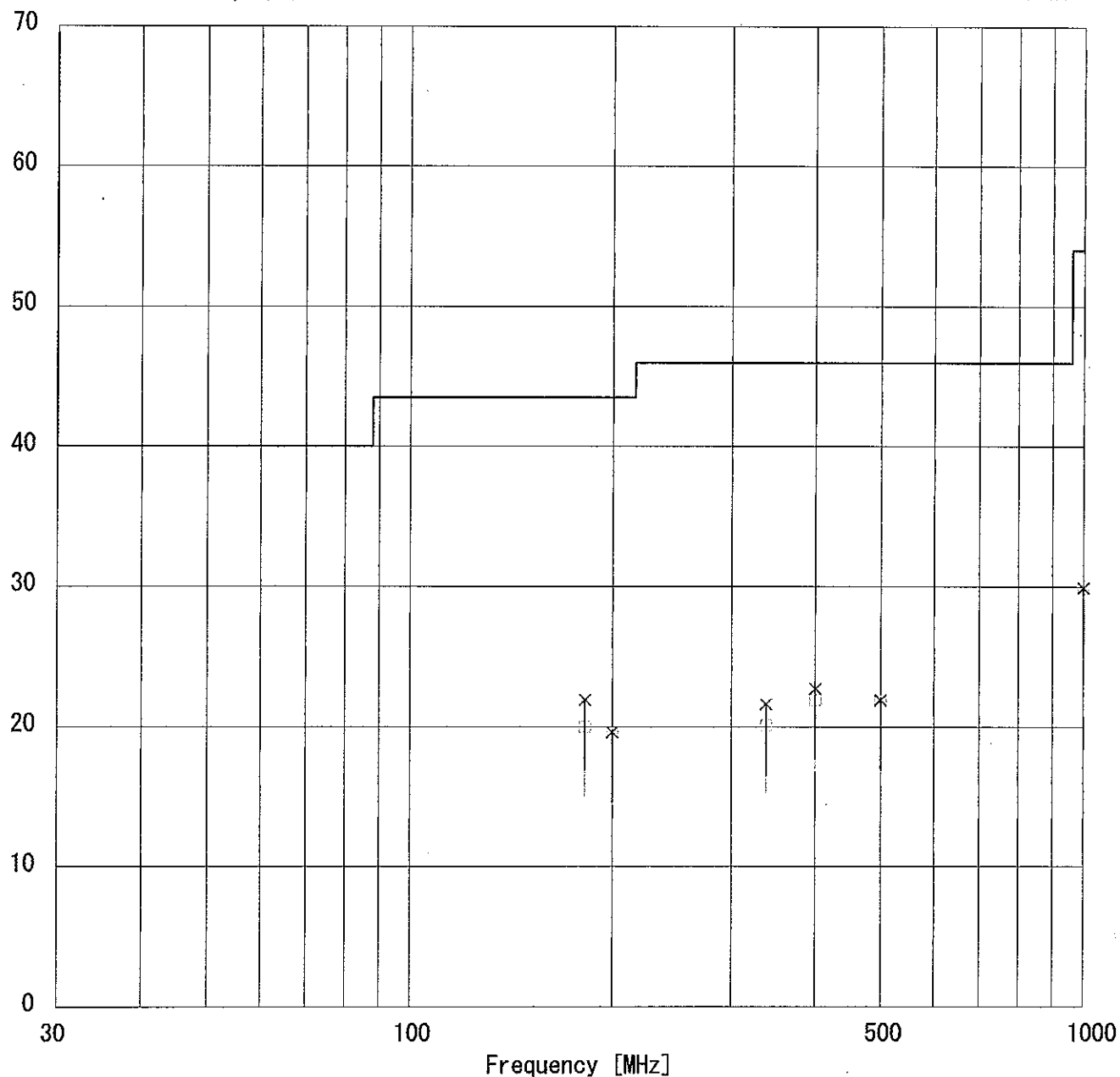
Applicant : PIONEER CORPORATION  
Kind of Equipment : Bluetooth Unit  
Model No. : ND-BT1  
Serial No. : TPS No.1  
Power : DC5V  
Mode : Transmitting 2480MHz  
Remarks :  
Date : 12/22/2005  
Test Distance : 3 m  
Temperature : 23 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.209

Engineer : Makoto Hosaka

Emission Level [dB  $\mu$ V/m]

□ Horizontal

× Vertical



# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK-1

Applicant : PIONEER COPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2402MHz  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR	AMP GAIN	CABLE LOSS	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	2390.00	BB	43.8	43.7	32.1	34.6	4.0	10.0	55.3	55.2	74.0	18.7	18.8
2.	4804.00	BB	42.1	45.3	34.8	34.0	5.5	0.5	48.9	52.1	74.0	25.1	21.9
3.	7206.00	BB	40.1	42.5	37.2	34.3	6.6	0.2	49.8	52.2	74.0	24.2	21.8
4.	9608.00	BB	41.0	41.3	36.7	34.9	7.4	0.5	50.7	51.0	74.0	23.3	23.0
5.	12010.00	BB	40.3	40.8	40.8	34.3	8.2	0.0	55.0	55.5	74.0	19.0	18.5
6.	14412.00	BB	40.6	40.6	42.8	33.8	8.9	0.3	58.8	58.8	74.0	15.2	15.2
7.	16814.00	BB	40.9	41.2	45.7	34.6	9.6	0.6	62.2	62.5	74.0	11.8	11.5
8.	19216.00	BB	39.8	39.3	38.6	33.7	10.2	0.0	54.9	54.4	74.0	19.1	19.6
9.	21618.00	BB	40.5	40.4	39.0	34.2	10.6	0.0	55.9	55.8	74.0	18.1	18.2
10.	24020.00	BB	40.4	40.4	39.3	31.5	11.0	0.0	59.2	59.2	74.0	14.8	14.8

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ AMP: KAF-04 (8449B) ■ SPECTRUM ANALYZER: KTR-01 ■ CABLE: KCC-D3/D7

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK-1

Applicant : PIONEER CORPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2402MHz  
 Remarks : AV RBW:1MHz, VBW:10Hz  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209(AV Detection)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	2390.00	BB	31.9	31.8	32.1	34.6	4.0	10.0	43.4	43.3	54.0	10.6	10.7
2.	4804.00	BB	30.8	32.8	34.8	34.0	5.5	0.5	37.6	39.6	54.0	16.4	14.4
3.	7206.00	BB	29.0	31.0	37.2	34.3	6.6	0.2	38.7	40.7	54.0	15.3	13.3
4.	9608.00	BB	29.8	31.2	36.7	34.9	7.4	0.5	39.5	40.9	54.0	14.5	13.1
5.	12010.00	BB	28.7	28.9	40.8	34.3	8.2	0.0	43.4	43.6	54.0	10.6	10.4
6.	14412.00	BB	29.3	29.4	42.8	33.8	8.9	0.3	47.5	47.6	54.0	6.5	6.4
7.	16814.00	BB	29.8	29.8	45.7	34.6	9.6	0.6	51.1	51.1	54.0	2.9	2.9
8.	19216.00	BB	28.0	28.0	38.6	33.7	10.2	0.0	43.1	43.1	54.0	10.9	10.9
9.	21618.00	BB	29.4	29.3	39.0	34.2	10.6	0.0	44.8	44.7	54.0	9.2	9.3
10.	24020.00	BB	29.4	29.7	39.3	31.5	11.0	0.0	48.2	48.5	54.0	5.8	5.5

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ AMP: KAF-04 (8449B) ■ SPECTRUM ANALYZER: KTR-01 ■ CABLE: KCC-D3/D7

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK-1

Applicant : PIONEER CORPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2441MHz  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	4882.00	BB	42.0	43.1	35.2	34.0	5.5	0.5	49.2	50.3	74.0	24.8	23.7
2.	7323.00	BB	40.8	41.5	37.4	34.3	6.7	0.2	50.8	51.5	74.0	23.2	22.5
3.	9764.00	BB	41.0	41.1	36.6	34.9	7.4	0.3	50.4	50.5	74.0	23.6	23.5
4.	12205.00	BB	40.3	40.9	40.0	34.2	8.1	0.0	54.2	54.8	74.0	19.8	19.2
5.	14646.00	BB	40.7	40.6	42.6	34.1	8.9	0.5	58.6	58.5	74.0	15.4	15.5
6.	17087.00	BB	41.0	41.3	45.9	34.6	9.7	0.5	62.5	62.8	74.0	11.5	11.2
7.	19528.00	BB	39.0	39.4	38.4	34.2	10.5	0.0	53.7	54.1	74.0	20.3	19.9
8.	21969.00	BB	40.0	40.4	39.1	33.8	10.9	0.0	56.2	56.6	74.0	17.8	17.4
9.	24410.00	BB	40.6	40.3	39.4	33.1	11.1	0.0	58.0	57.7	74.0	16.0	16.3

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ AMP: KAF-04 (8449B) ■ SPECTRUM ANALYZER: KTR-01 ■ CABLE: KCC-D3/D7

Page:

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK-1

Applicant : PIONEER CORPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2441MHz  
 Remarks : AV RBW:1MHz, VBW:10Hz  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209 (AV Detection)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	4882.00	BB	30.3	31.5	35.2	34.0	5.5	0.5	37.5	38.7	54.0	16.5	15.3
2.	7323.00	BB	29.2	29.7	37.4	34.3	6.7	0.2	39.2	39.7	54.0	14.8	14.3
3.	9764.00	BB	30.0	30.3	36.6	34.9	7.4	0.3	39.4	39.7	54.0	14.6	14.3
4.	12205.00	BB	28.7	29.3	40.0	34.2	8.1	0.0	42.6	43.2	54.0	11.4	10.8
5.	14646.00	BB	29.5	29.3	42.6	34.1	8.9	0.5	47.4	47.2	54.0	6.6	6.8
6.	17087.00	BB	29.8	29.7	45.9	34.6	9.7	0.5	51.3	51.2	54.0	2.7	2.8
7.	19528.00	BB	28.2	28.0	38.4	34.2	10.5	0.0	42.9	42.7	54.0	11.1	11.3
8.	21969.00	BB	29.7	29.5	39.1	33.8	10.9	0.0	45.9	45.7	54.0	8.1	8.3
9.	24410.00	BB	29.5	29.5	39.4	33.1	11.1	0.0	46.9	46.9	54.0	7.1	7.1

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ AMP: KAF-04 (8449B) ■ SPECTRUM ANALYZER: KTR-01 ■ CABLE: KCC-D3/D7

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK-1

Applicant : PIONEER CORPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2480MHz  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209 (PK Detection)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	2483.50	BB	43.3	42.6	30.1	34.6	4.0	10.0	52.8	52.1	74.0	21.2	21.9
2.	4960.00	BB	41.3	42.2	35.5	34.0	5.6	0.5	48.9	49.8	74.0	25.1	24.2
3.	7440.00	BB	40.4	42.0	37.5	34.3	6.7	0.2	50.5	52.1	74.0	23.5	21.9
4.	9920.00	BB	41.3	41.3	36.5	34.8	7.4	0.2	50.6	50.6	74.0	23.4	23.4
5.	12400.00	BB	40.4	40.8	39.3	34.1	8.1	0.0	53.7	54.1	74.0	20.3	19.9
6.	14880.00	BB	40.7	40.5	42.5	34.4	9.0	0.7	58.5	58.3	74.0	15.5	15.7
7.	17360.00	BB	41.1	41.2	45.8	34.7	9.5	0.2	61.9	62.0	74.0	12.1	12.0
8.	19840.00	BB	39.0	39.4	38.5	34.1	10.5	0.0	53.9	54.3	74.0	20.1	19.7
9.	22320.00	BB	40.3	40.6	39.2	32.9	11.0	0.0	57.6	57.9	74.0	16.4	16.1
10.	24800.00	BB	40.5	40.8	39.5	33.6	11.5	0.0	57.9	58.2	74.0	16.1	15.8

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ AMP: KAF-04 (8449B) ■ SPECTRUM ANALYZER: KTR-01 ■ CABLE: KCC-D3/D7



# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.2 OPEN TEST SITE

Report No. : 26DE0153-YK-1

Applicant : PIONEER CORPORATION  
 Kind of Equipment : Bluetooth Unit  
 Model No. : ND-BT1  
 Serial No. : TPS No.1  
 Power : DC5V  
 Mode : Transmitting 2480MHz  
 Remarks : AV RBW:1MHz, VBW:10Hz  
 Date : 12/22/2005  
 Test Distance : 3 m  
 Temperature : 23 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209(AV Detection)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	2483.50	BB	32.5	31.6	30.1	34.6	4.0	10.0	42.0	41.1	54.0	12.0	12.9
2.	4960.00	BB	29.4	29.8	35.5	34.0	5.6	0.5	37.0	37.4	54.0	17.0	16.6
3.	7440.00	BB	29.1	29.8	37.5	34.3	6.7	0.2	39.2	39.9	54.0	14.8	14.1
4.	9920.00	BB	29.7	30.3	36.5	34.8	7.4	0.2	39.0	39.6	54.0	15.0	14.4
5.	12400.00	BB	28.5	28.7	39.3	34.1	8.1	0.0	41.8	42.0	54.0	12.2	12.0
6.	14880.00	BB	29.1	29.1	42.5	34.4	9.0	0.7	46.9	46.9	54.0	7.1	7.1
7.	17360.00	BB	29.7	29.5	45.8	34.7	9.5	0.2	50.5	50.3	54.0	3.5	3.7
8.	19840.00	BB	27.9	27.8	38.5	34.1	10.5	0.0	42.8	42.7	54.0	11.2	11.3
9.	22320.00	BB	29.3	29.4	39.2	32.9	11.0	0.0	46.6	46.7	54.0	7.4	7.3
10.	24800.00	BB	29.5	29.6	39.5	33.6	11.5	0.0	46.9	47.0	54.0	7.1	7.0

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ AMP: KAF-04 (8449B) ■ SPECTRUM ANALYZER: KTR-01 ■ CABLE: KCC-D3/D7

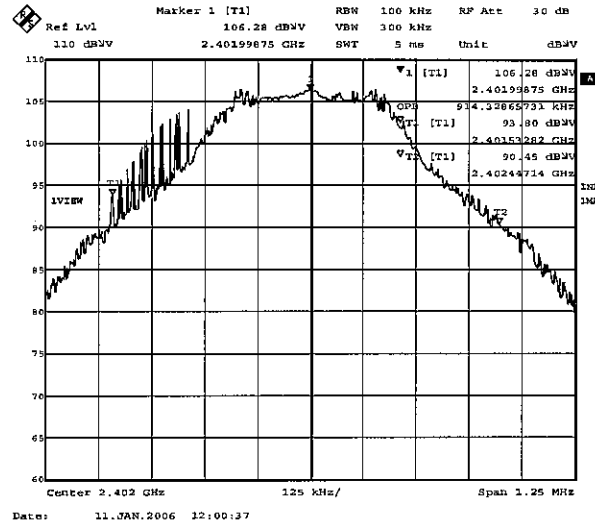
Page:

## Occupied Bandwidth(99%)

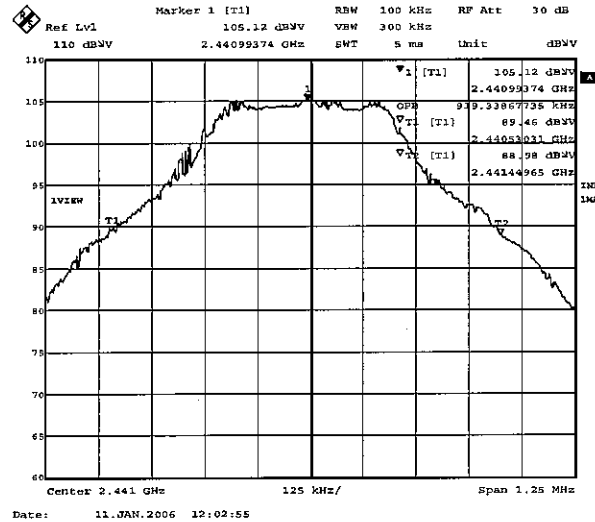
**COMPANY** : PIONEER CORPORATION  
**EQUIPMENT** : Bluetooth Unit  
**MODEL NUMBER** : ND-BT1  
**SERIAL NUMBER** : TPS N0.2  
**FCC ID** : AJDK011  
**POWER** : DC5V

**UL Apex Co.,Ltd. Yamakita No.5 Shielded Room**  
**REPORT NO** : 26DE0153-YK **1**  
**REGULATION** : RSS-210  
**DATE** : 2006/01/11  
**TEMP/HUMI** : 20°C/35%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

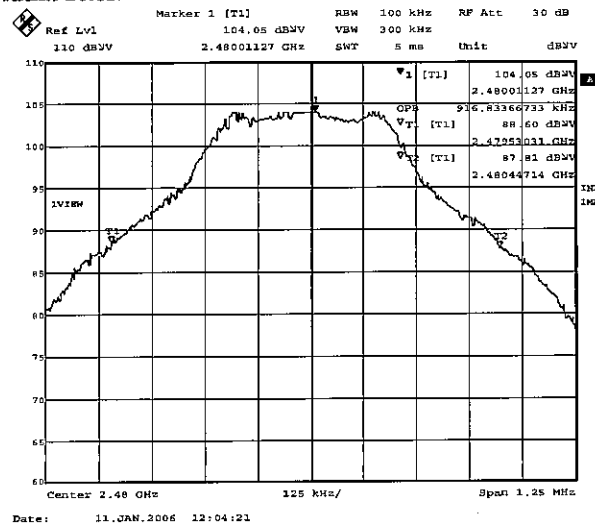
### 1. ch : 2402MHz/Occupied Bandwidth:914.33kHz



### 2. ch : 2437MHz/Occupied Bandwidth:919.34kHz



### 3. ch : 2462MHz/Occupied Bandwidth:916.83kHz



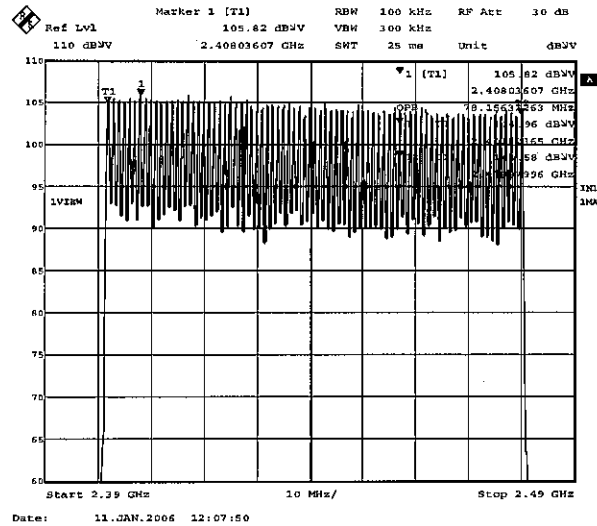
## Occupied Bandwidth(99%)

**COMPANY** : PIONEER CORPORATION  
**EQUIPMENT** : Bluetooth Unit  
**MODEL NUMBER**: ND-BT1  
**SERIAL NUMBER**: TPS N0.2  
**FCC ID** : AJDK011  
**POWER** : DC5V

UL Apex Co.,Ltd. Yamakita No.5 Shielded Room

**REPORT NO** : 26DE0153-YK **1**  
**REGULATION** : RSS-210  
**DATE** : 2006/01/11  
**TEMP./HUMI** : 20°C/35%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

### 4. Hopping/Occupied Bandwidth:78.16MHz



Test Report No :26DE0153-YK-1

### APPENDIX 3

#### Test Instruments

#### EMI test equipment

Control No	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
KAF-03	Pre Amplifier	Hewlett Packard	8447D	RE	2005/09/09 * 12
KAF-04	Pre Amplifier	Agilent	8449B	RE	2005/04/28 * 12
KAT10-S1	Attenuator	Agilent	8449D 010	RE	2005/04/12 * 12
KAT6-03	Attenuator	INMET	18N-6dB	RE	2005/04/07 * 12
KBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/07/29 * 12
KCC-20/21/22 /23/29	Coaxial Cable	Fujikura/Suhner	8D-2W/12D-SFA/S0 4272B/S04272B	RE	2005/09/02 * 12
KCC-D3/D7	Coaxial Cable	Rosenberger/Advantest	2201/JUN-08-01-06 1	RE	2005/04/12 * 12
KFL-01	Highpass Filter	Hewlett Packard	84300 80038	RE	2005/04/12 * 12
KHA-02	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2005/10/15 * 12
KHA-04	Horn Antenna	EMCO	3160-09	RE	2005/05/14 * 12
KLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/07/29 * 12
KOTS-02	Open Test Site	JSE	10m	RE	2005/08/07 * 12
KSA-02	Spectrum Analyzer	Advantest	R3265A	RE	2005/11/10 * 12
KTR-01	Test Receiver	Rohde & Schwarz	ESJ40	RE/AT	2005/08/05 * 12
KTR-04	Test Receiver	Rohde & Schwarz	ESVS10	RE	2005/11/01 * 12
KDT-01	Coaxial Crystal Detector	Agilent	8473C	AT	Pre Check
KPM-05	Power meter	Agilent	E4417A	AT	2005/03/02 * 12
KPSS-01	Power sensor	Agilent	E9327A	AT	2005/03/04 * 12

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

#### Test Item:

RE: Out of Band Emission (Radiated)

AT: Antenna terminal conducted test

- 1 Carrier Frequency Separation
- 2 20dB Bandwidth
- 3 Number of Hopping Frequency
- 4 Dwell time
- 5 Maximum Peak Output Power
- 6 Out of Band Emission (Conducted)