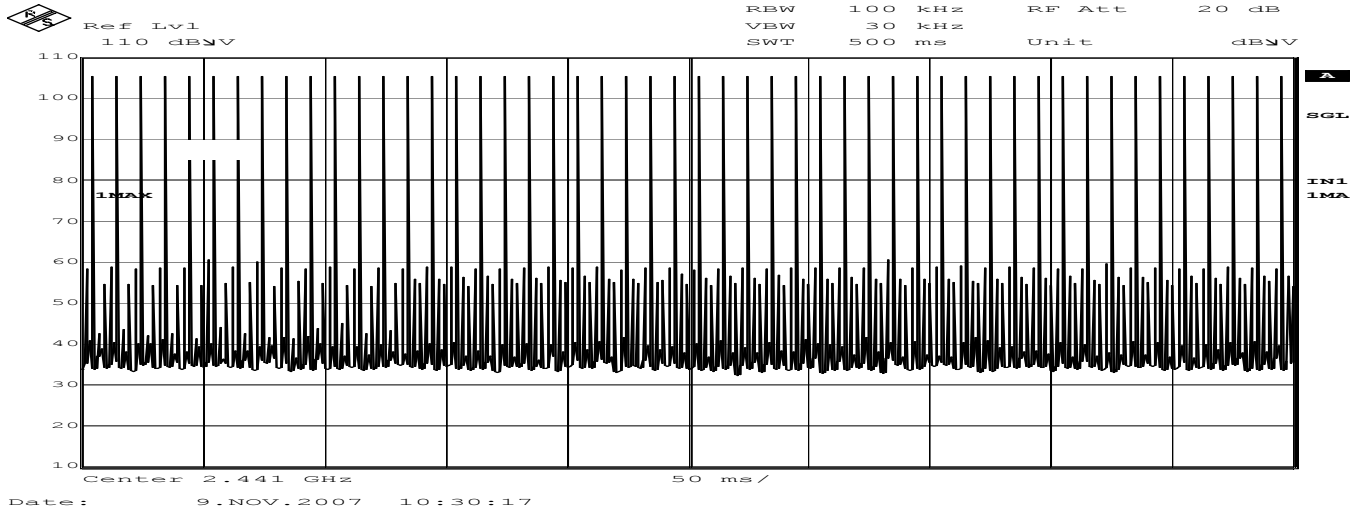


Dwell Time: FCC 15.247(a)(1)(iii)

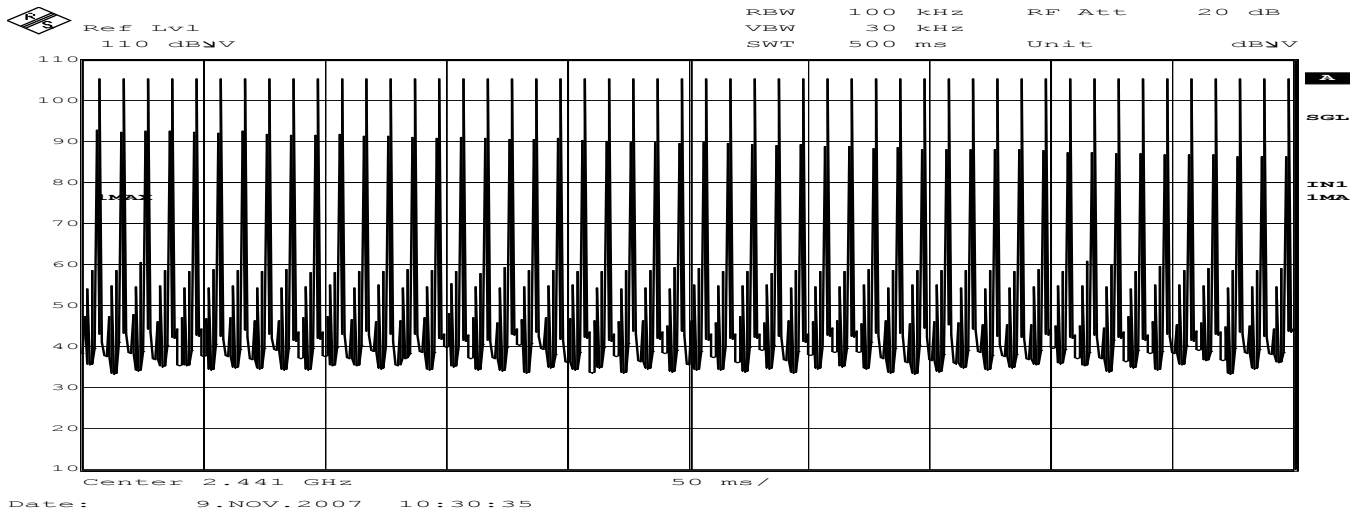
COMPANY : Alps Electric Co., Ltd.  
EQUIPMENT : Bluetooth Transceiver Module  
MODEL NUMBER: UGPZ6-C3  
SERIAL NUMBER: 0002c752d0e9  
FCC ID : CWTUGPZ6-C3  
POWER : AC120V/60Hz

UL Japan, Inc. Yamakita No.4 Shielded Room  
REPORT NO : 28DE0007-YK-01-A  
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)  
DATE : 2007.11.9  
TEMP./HUMI : 23deg.C./51%  
TEST MODE : Transmitting  
ENGINEER : Tatsuya Arai

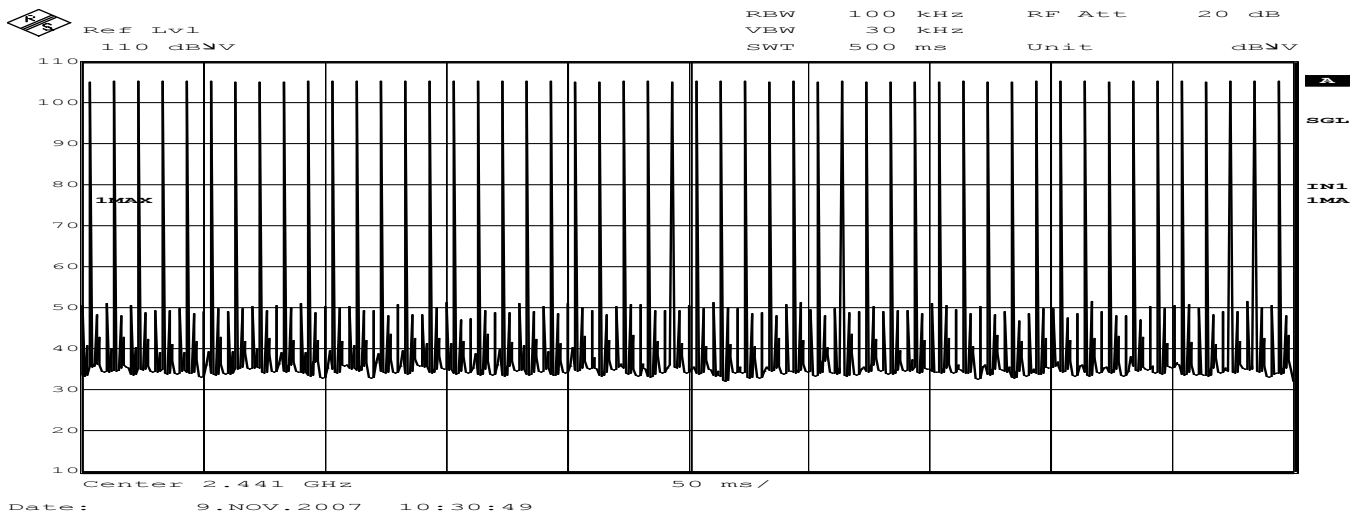
Inquiry:  
Count 1



Count 2



Count 3

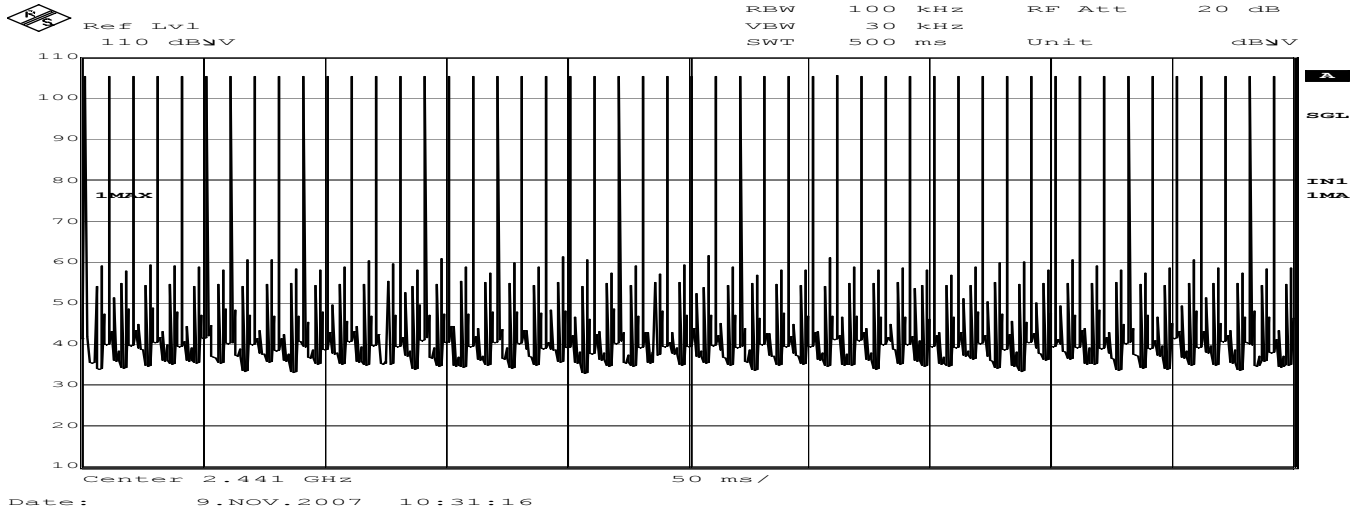


## Dwell Time: FCC 15.247(a)(1)(iii)

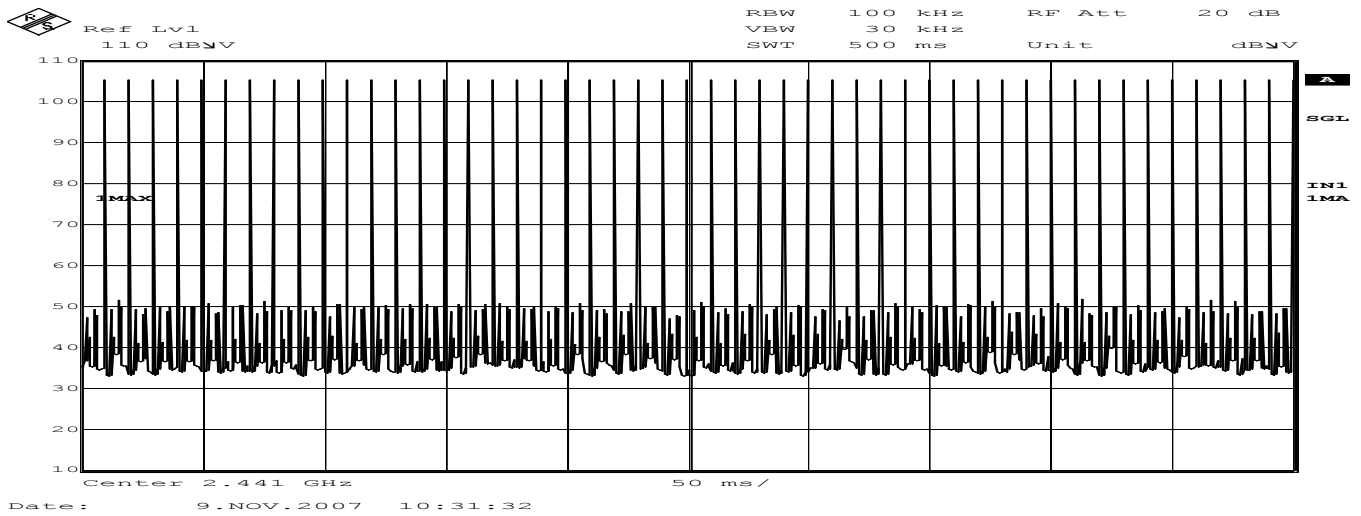
**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(a)(1)(iii)  
**DATE** : 2007.11.9  
**TEMP./HUMI** : 23deg.C./51%  
**TEST MODE** : Transmitting  
**ENGINEER** : Tatsuya Arai

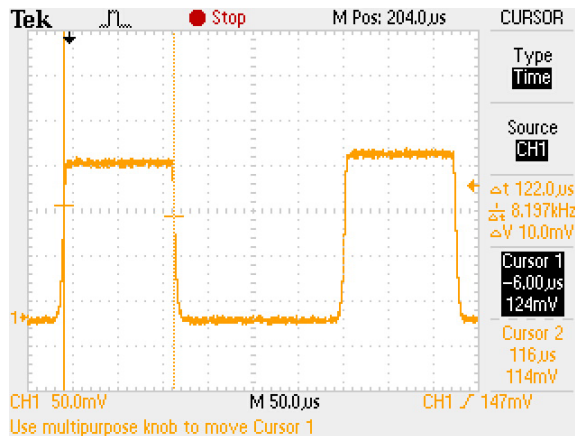
### Count 4



### Count 5



### Duty cycle(Inquiry)



Average times of rising in 30 sec. of sweep =  $(50 + 50 + 50 + 50 + 50) / 5 = 50$

Average times of rising in 1 sec. =  $50 / 0.5s = 100.0$

Average times of rising in 0.4x =  $0.4 * 32ch * 100.0 = 1280.0$

Dwell time =  $1280.0 * 0.122 = 156.16 [ms]$

Limit : Dwell Time < 0.4[s]

# Maximum Peak Conducted Output Power

UL Japan, Inc.  
YAMAKITA No.4 Shielded Room

COMPANY : Alps Electric Co., Ltd.	REPORT NO : 28DE0007-YK-01-A
EQUIPMENT : Bluetooth Transceiver Module	REGULATION : Fcc Part15SubpartC 247(b)(1)
MODEL NUMBER : UGPZ6-C3	DATE : 2007.11.9
SERIAL NUMBER : 0002c752d0e9	TEMP./HUMI : 23deg.C/51%
FCC ID : CWTUGPZ6-C3	
POWER : AC120V/60Hz	
TEST MODE : Transmitting	ENGINEER : Tatsuya Arai

## DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	0.38	2.16	2.54	20.96	18.42
Mid	2441.00	-0.02	2.41	2.39	20.96	18.57
High	2480.00	-0.57	2.33	1.76	20.96	19.20
Inquiry	-	-0.41	2.41	2.00	20.96	18.96

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:0.60dB

## 2DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	2.26	2.16	4.42	20.96	16.54
Mid	2441.00	1.64	2.41	4.05	20.96	16.91
High	2480.00	0.81	2.33	3.14	20.96	17.82

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:0.60dB

## 3DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	2.29	2.16	4.45	20.96	16.51
Mid	2441.00	1.74	2.41	4.15	20.96	16.81
High	2480.00	0.91	2.33	3.24	20.96	17.72

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:0.60dB

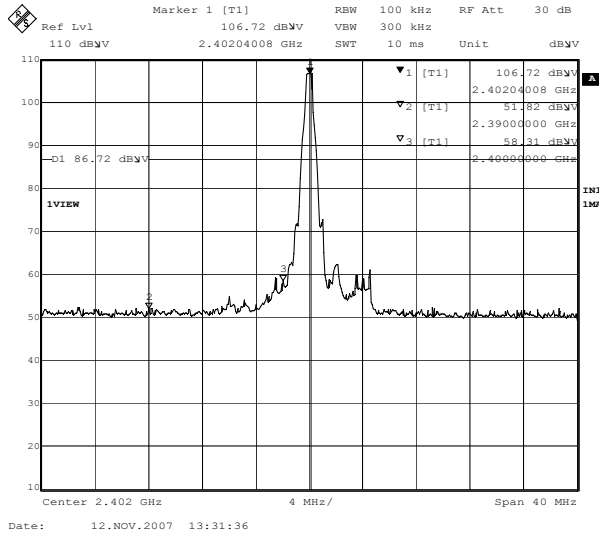
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

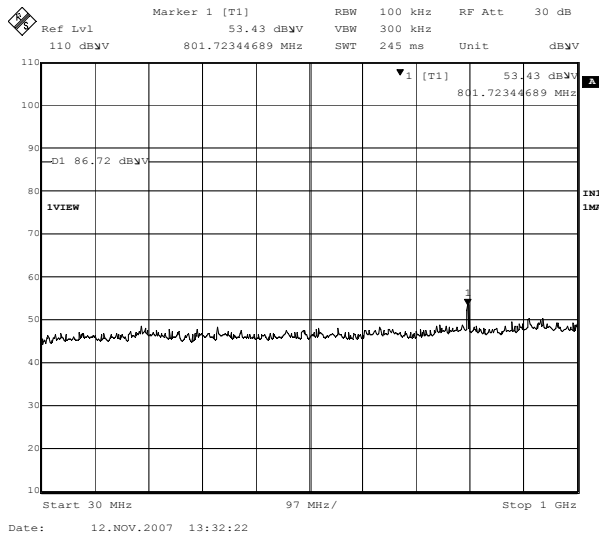
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

**[Transmitting DH5]**  
**Ch:2402MHz**

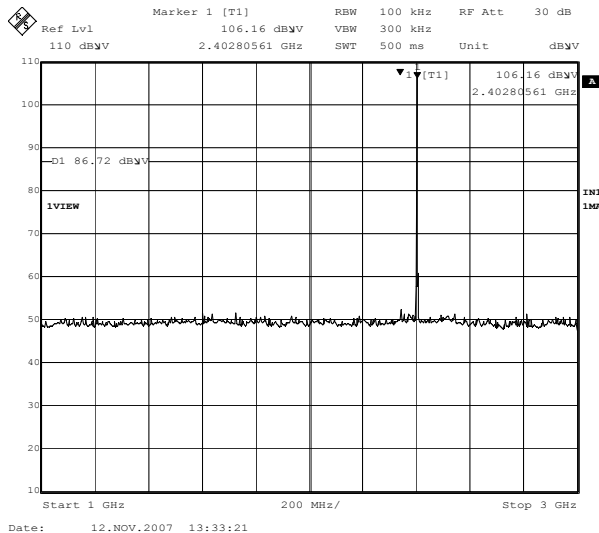
1.



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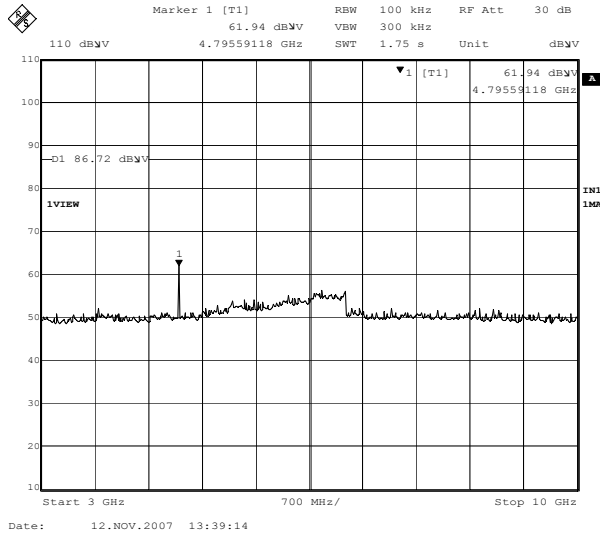
## Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

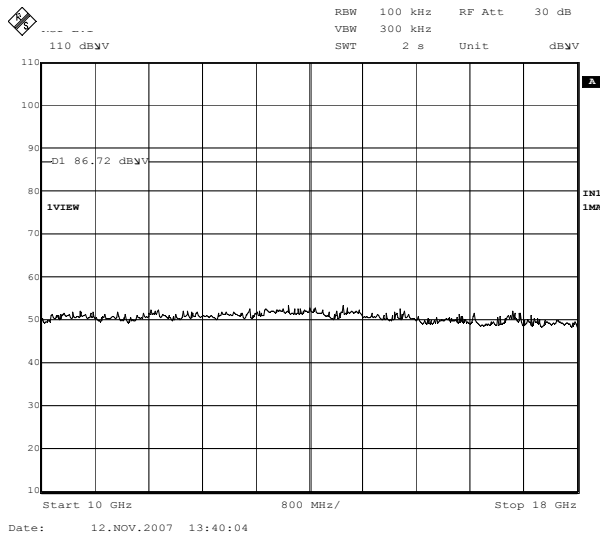
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

**[Transmitting DH5]**  
**Ch:2402MHz**

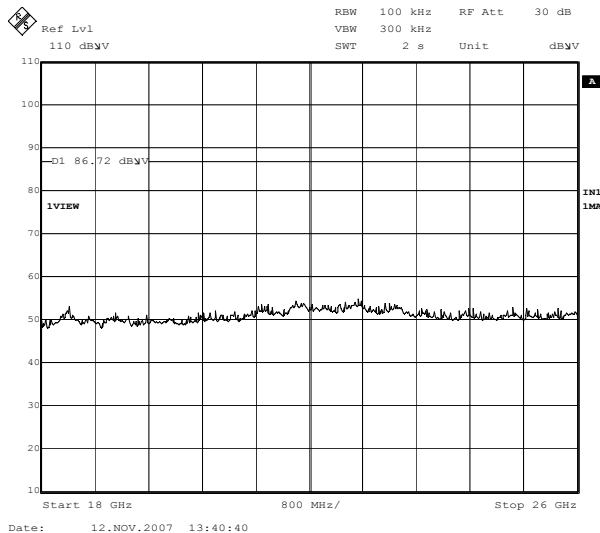
4.



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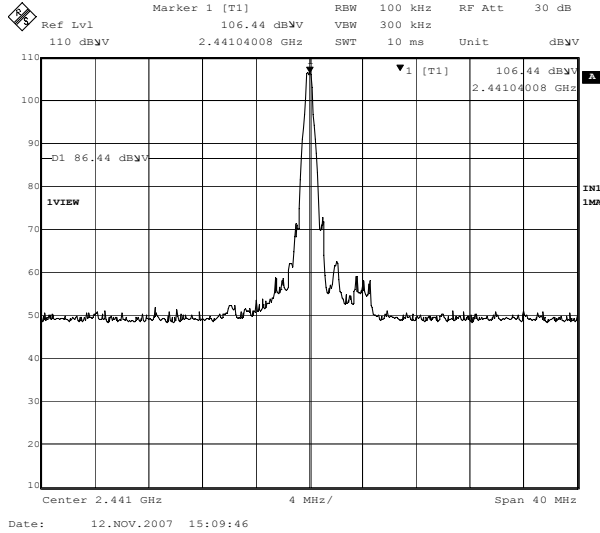
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

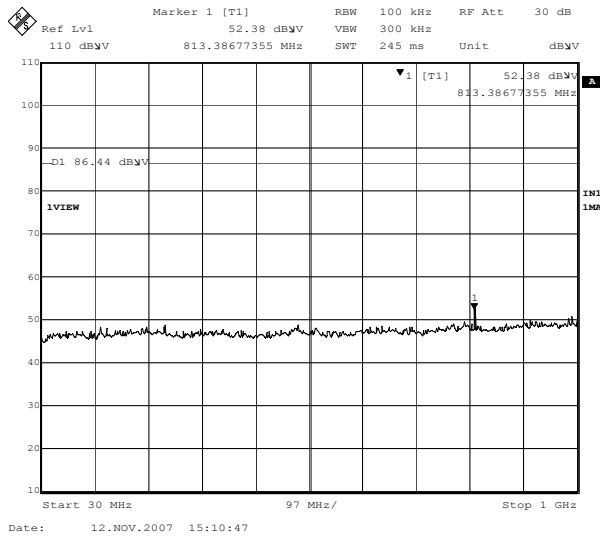
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

[Transmitting DH5]  
Ch:2441MHz

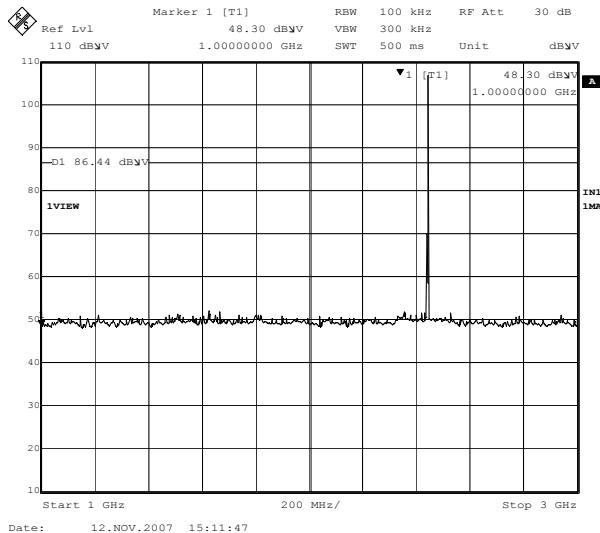
1.



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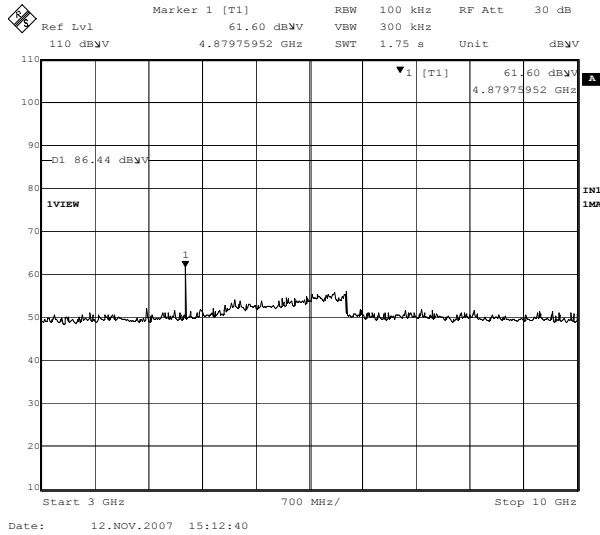
## Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

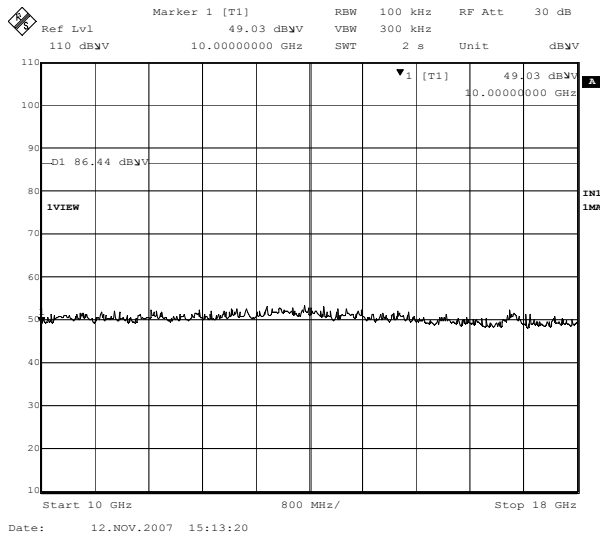
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

[Transmitting DH5]  
Ch:2441MHz

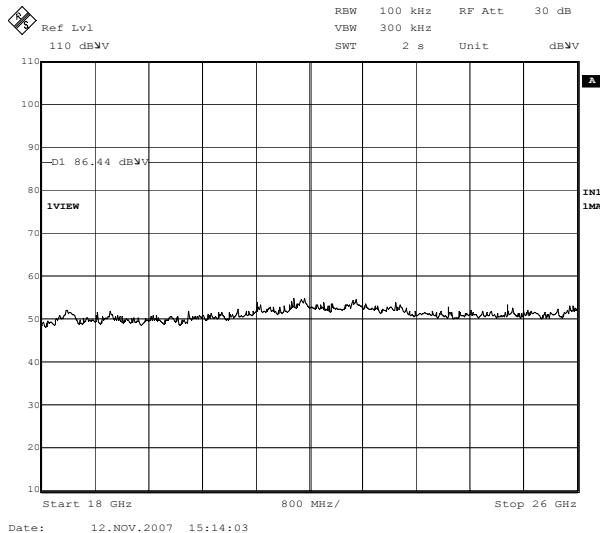
4.



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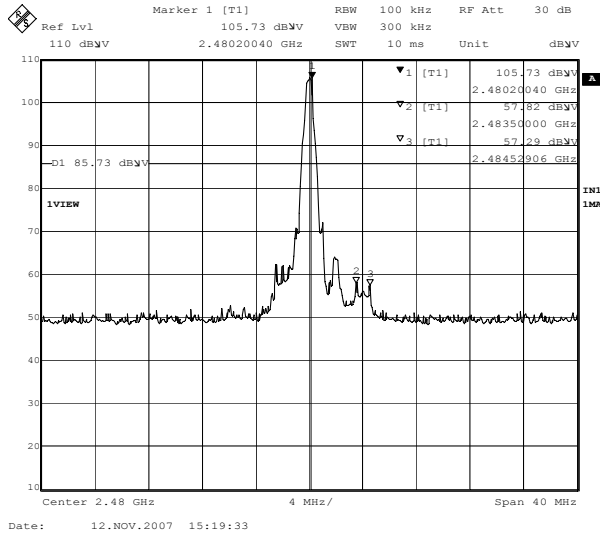
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

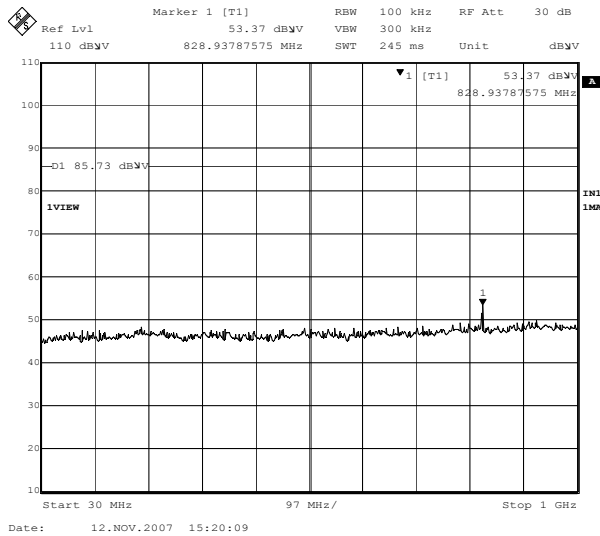
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

**[Transmitting DH5]**  
**Ch:2480MHz**

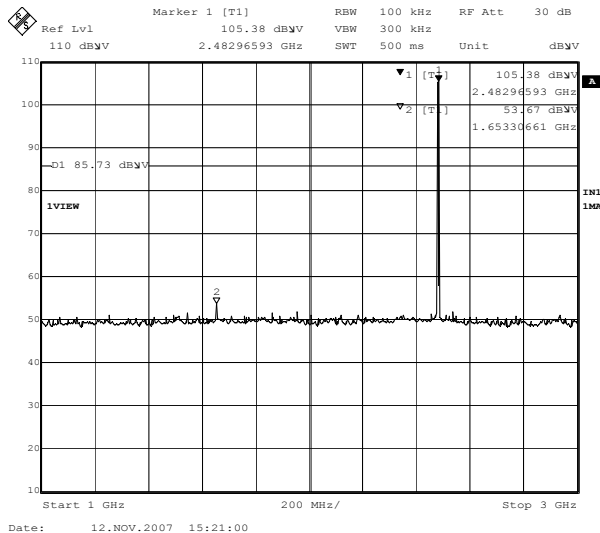
1.



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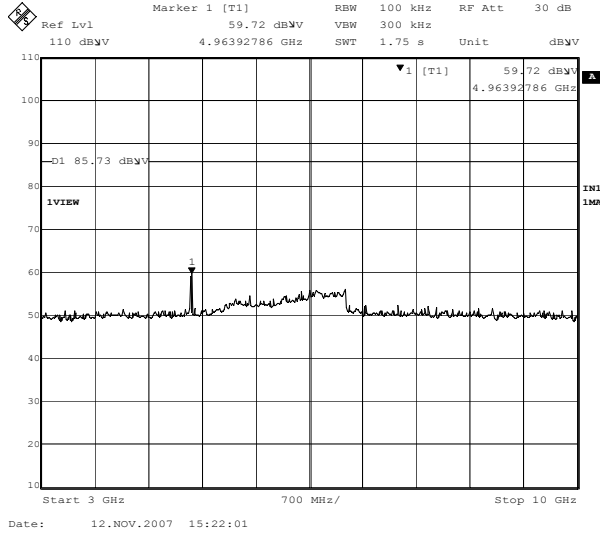
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

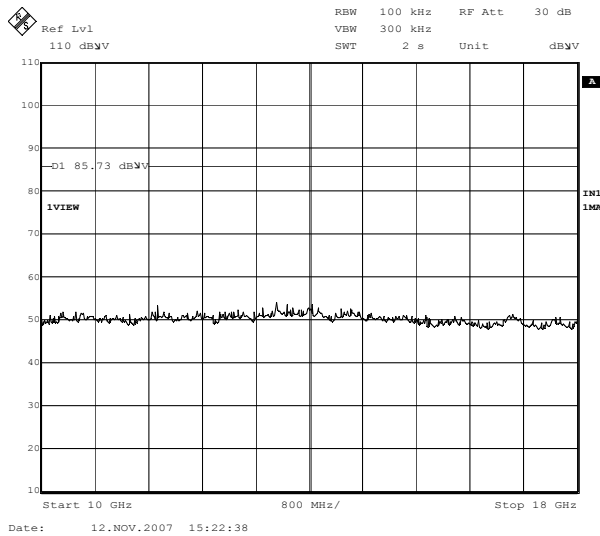
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

**[Transmitting DH5]**  
**Ch:2480MHz**

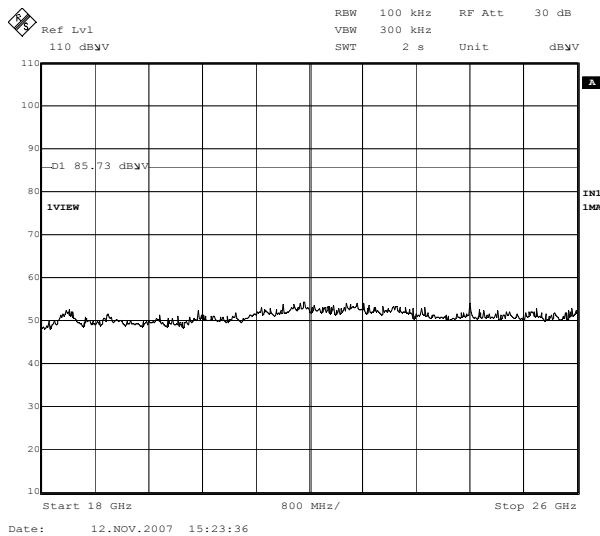
4.



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

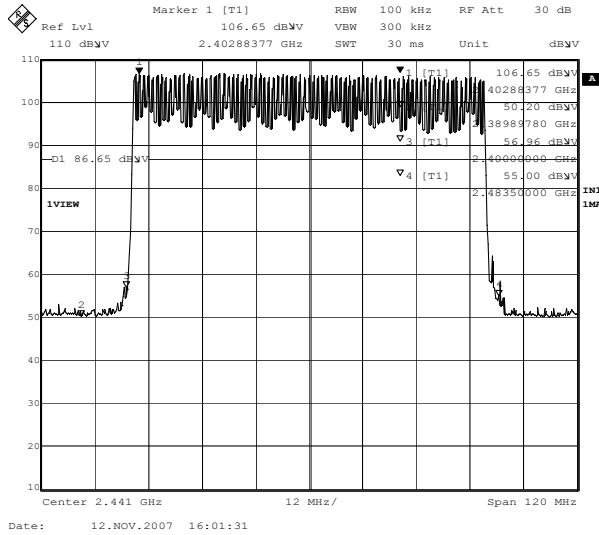
**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

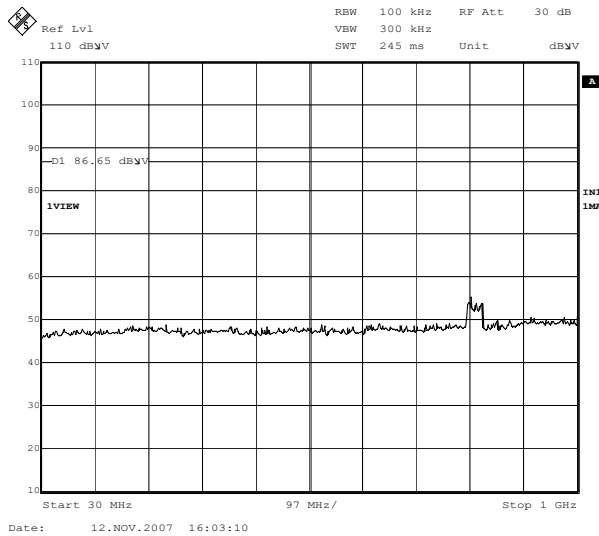
[Transmitting DH5]

Hopping

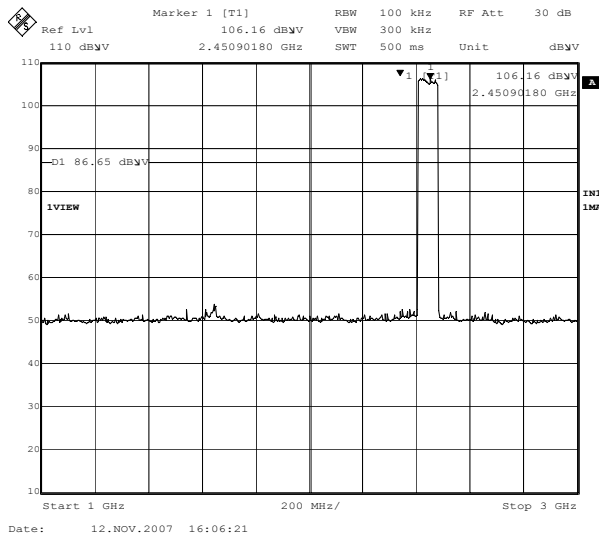
1.



2.



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

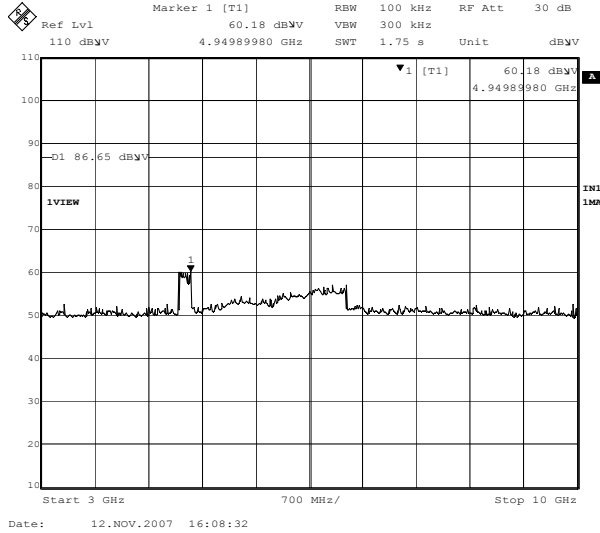
**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

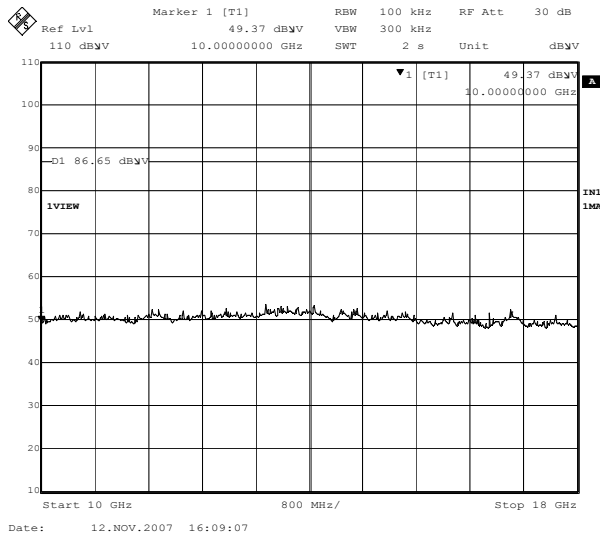
[Transmitting DH5]

Hopping

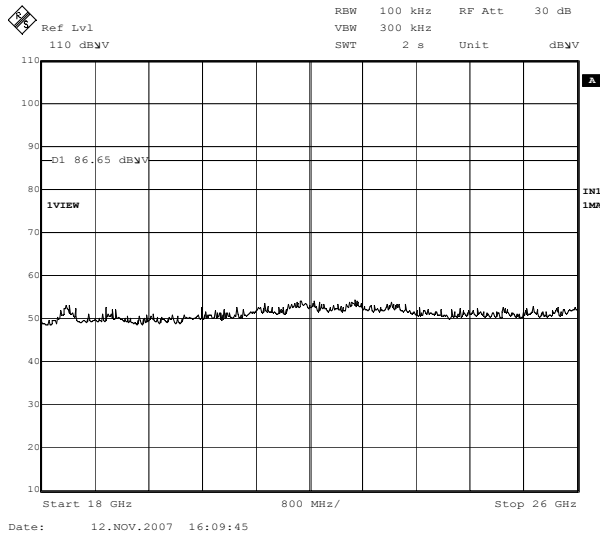
4.



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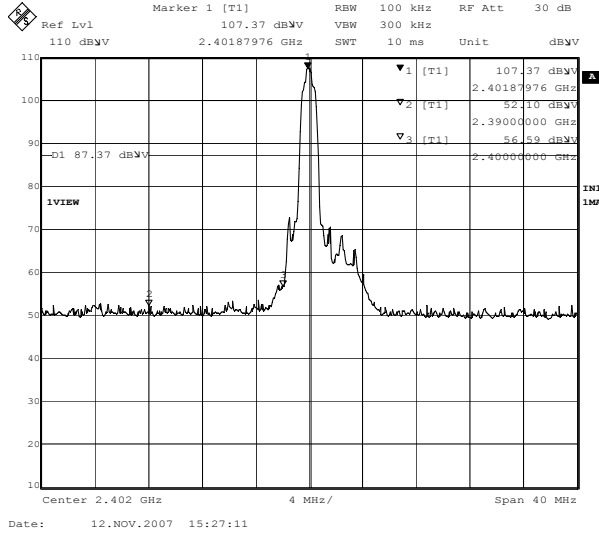
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

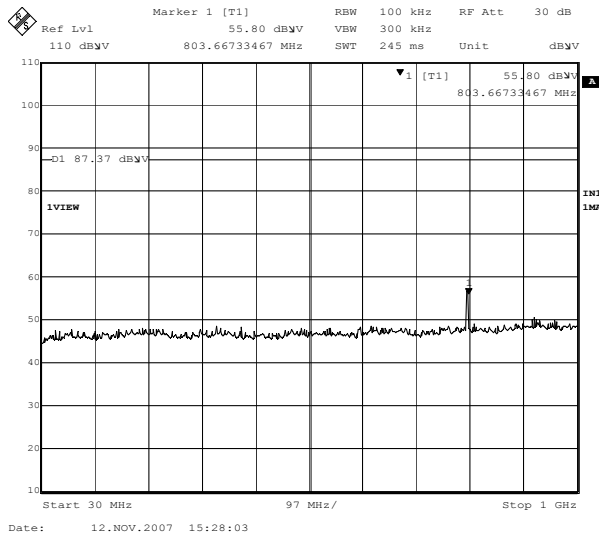
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

**[Transmitting 3DH5]**  
**Ch:2402MHz**

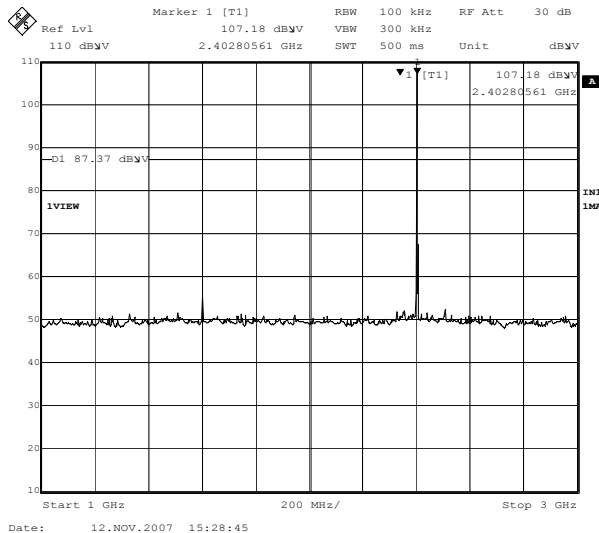
1.



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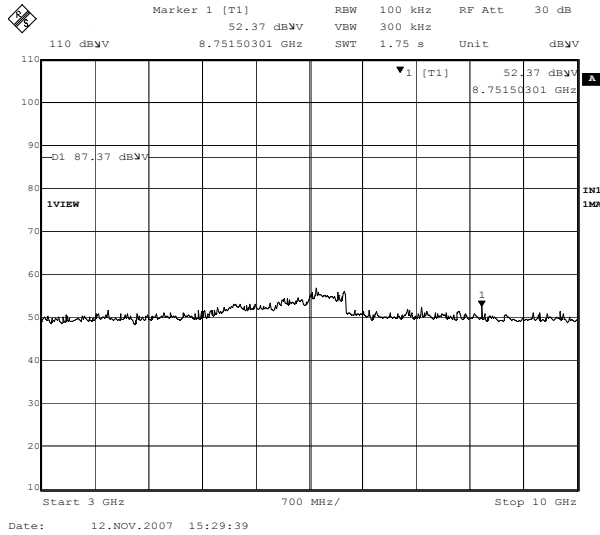
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

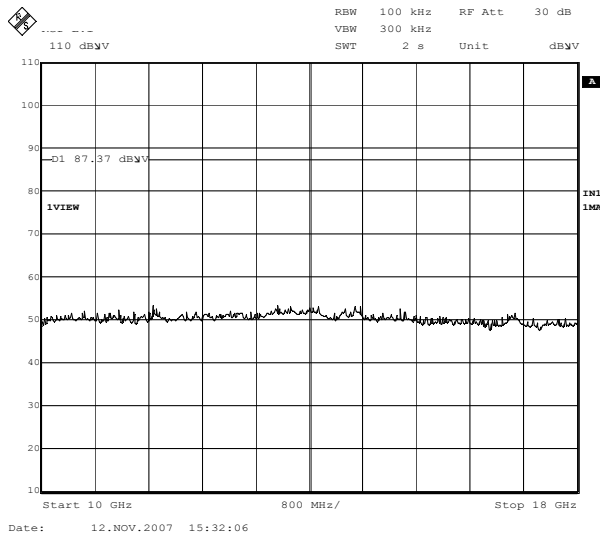
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

**[Transmitting 3DH5]**  
**Ch:2402MHz**

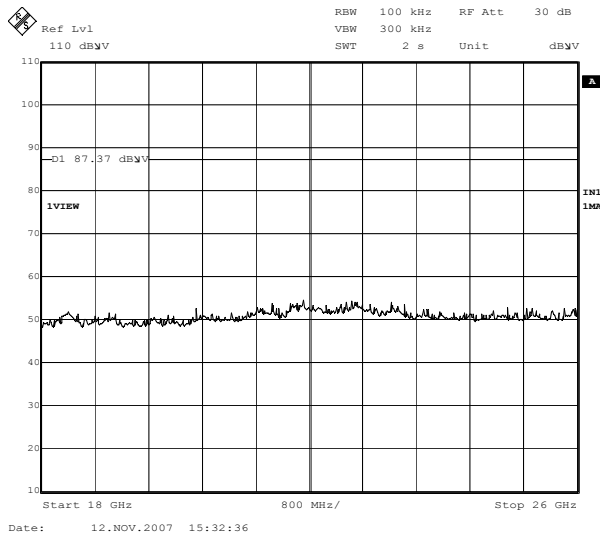
4.



5.



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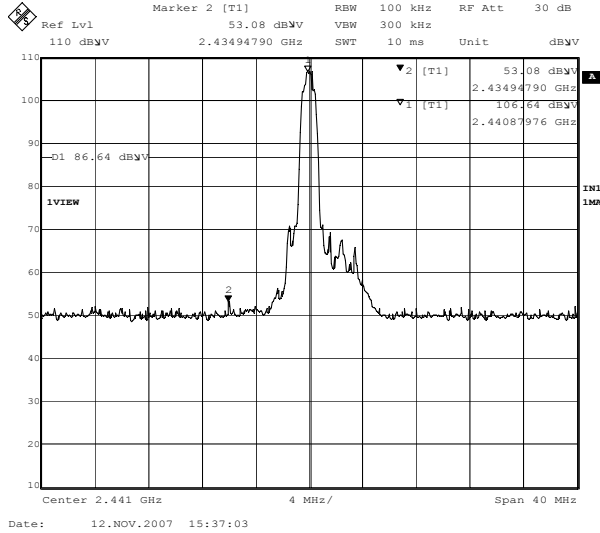
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

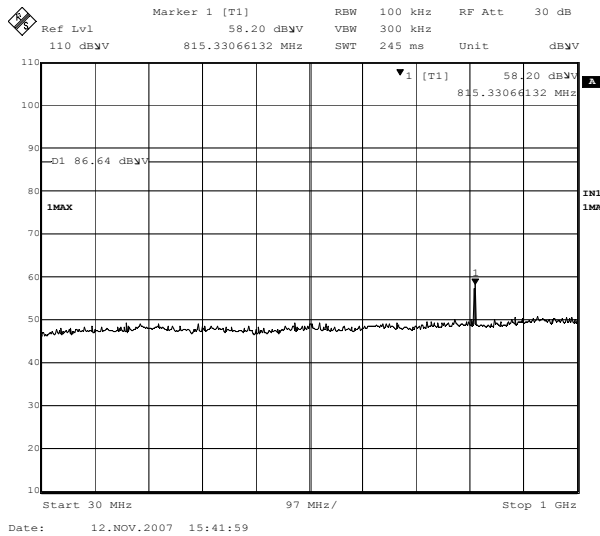
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

[Transmitting 3DHS]  
Ch:2441MHz

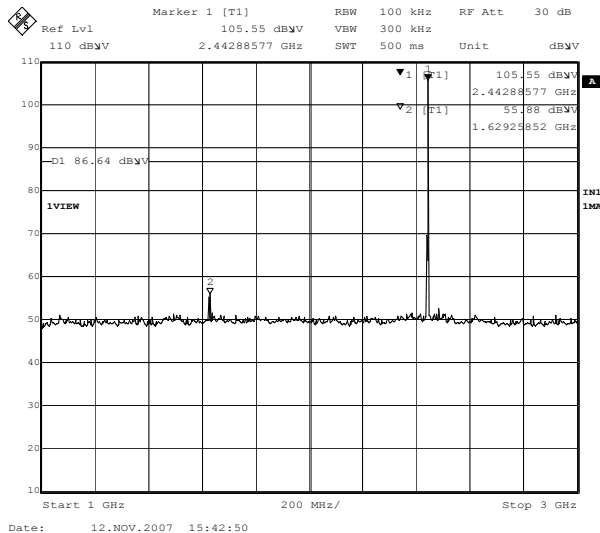
1.



2.



3.



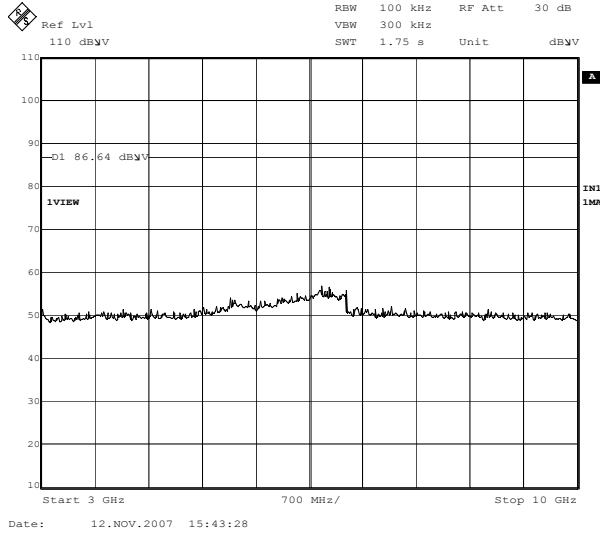
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

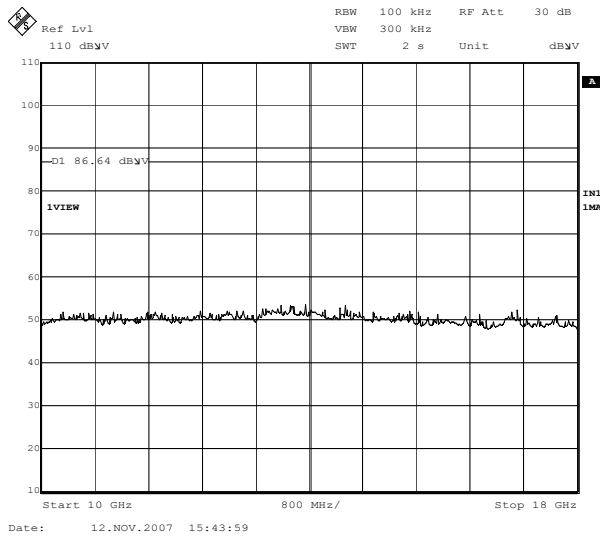
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

[Transmitting 3DHS]  
Ch:2441MHz

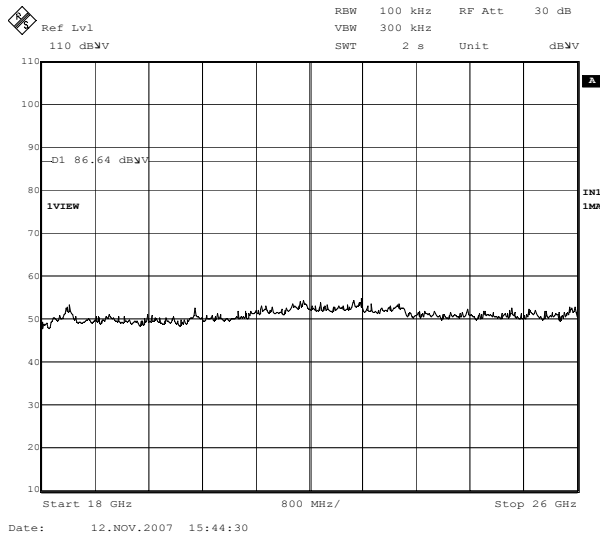
4.



5.



6.



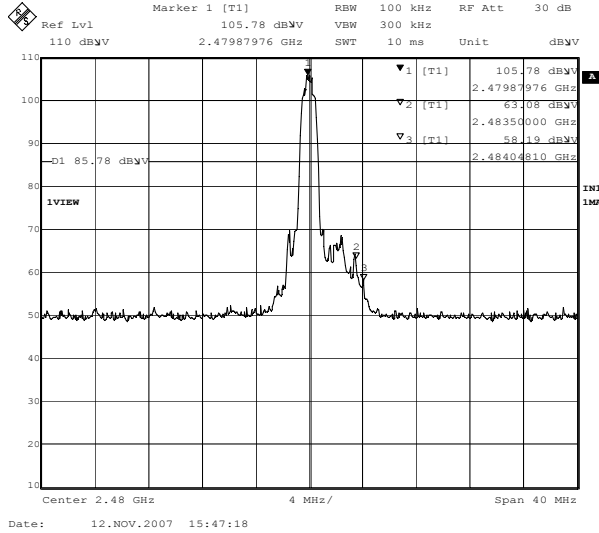
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

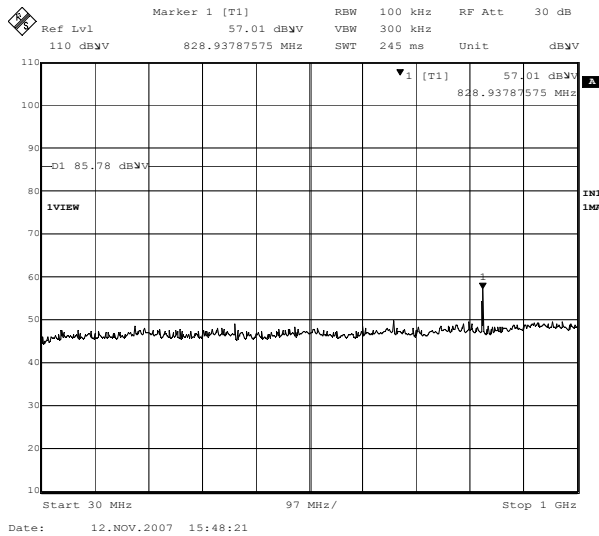
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

**[Transmitting 3DH5]**  
**Ch:2480MHz**

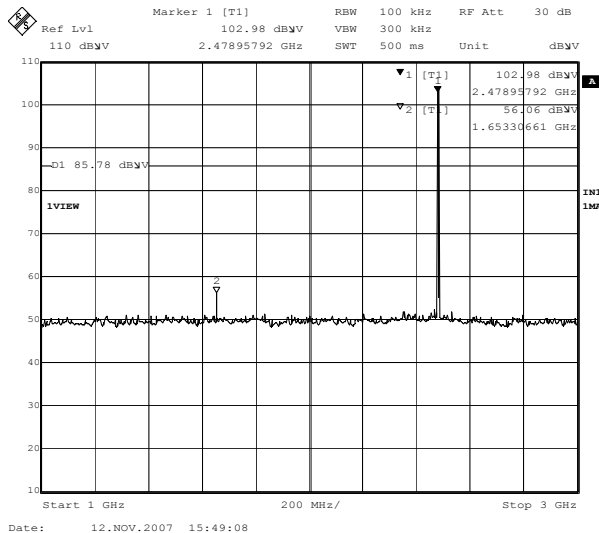
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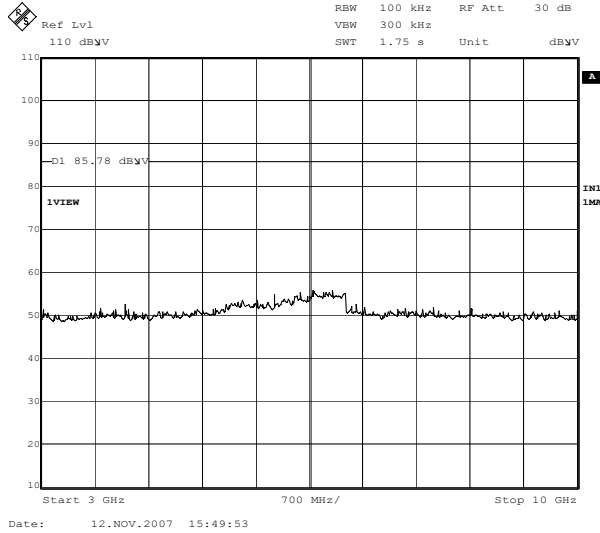
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

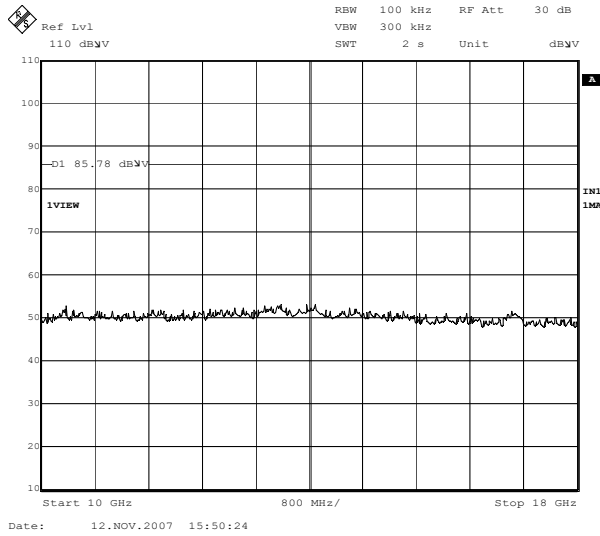
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

**[Transmitting 3DH5]**  
**Ch:2480MHz**

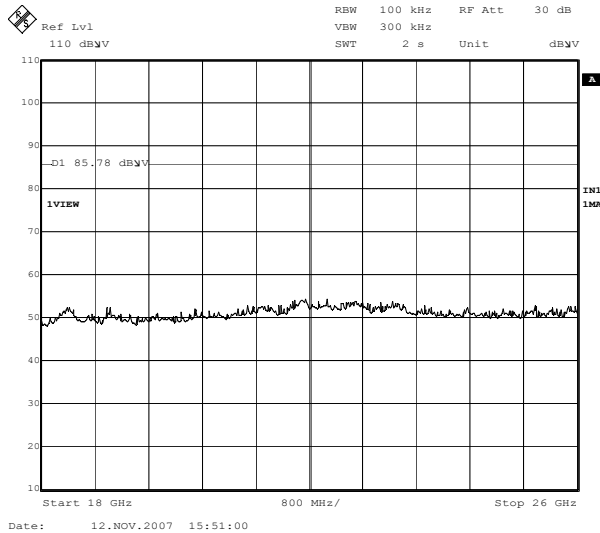
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# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

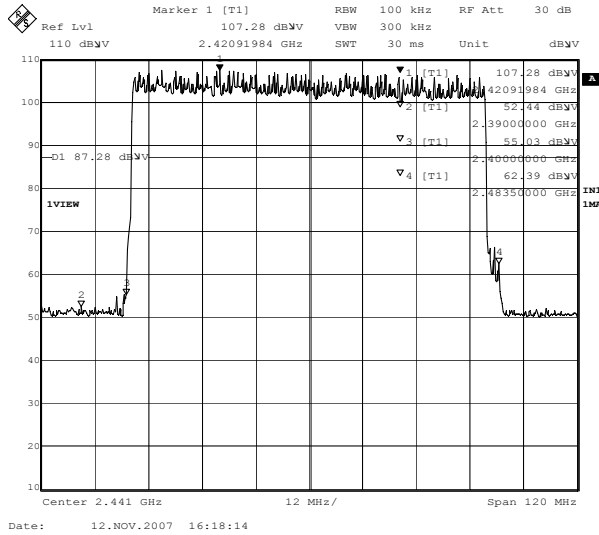
**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

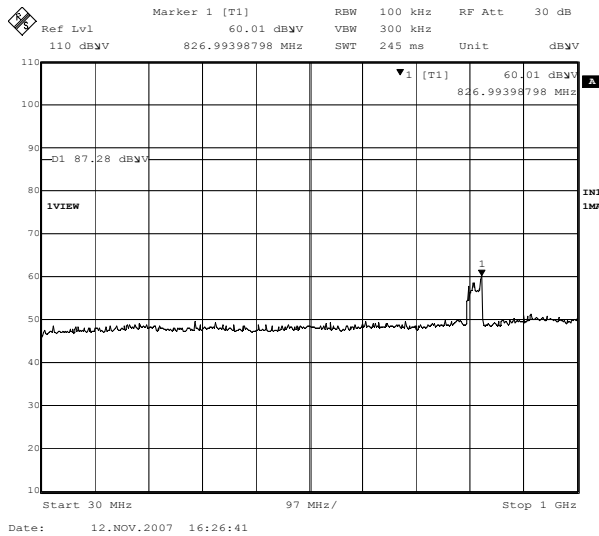
[Transmitting 3DH5]

Hopping

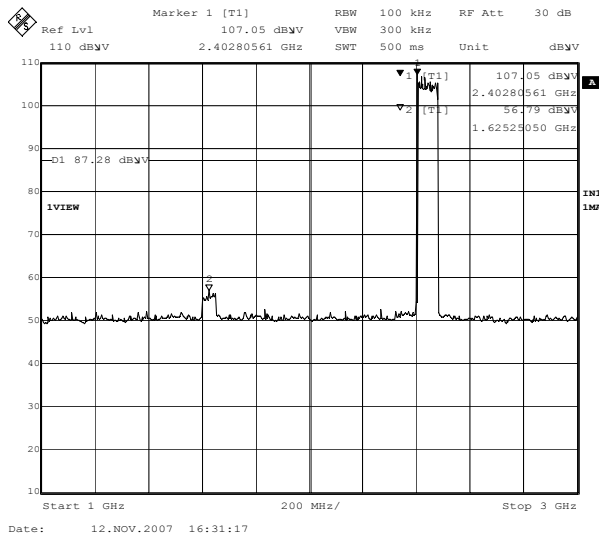
1.



2.



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

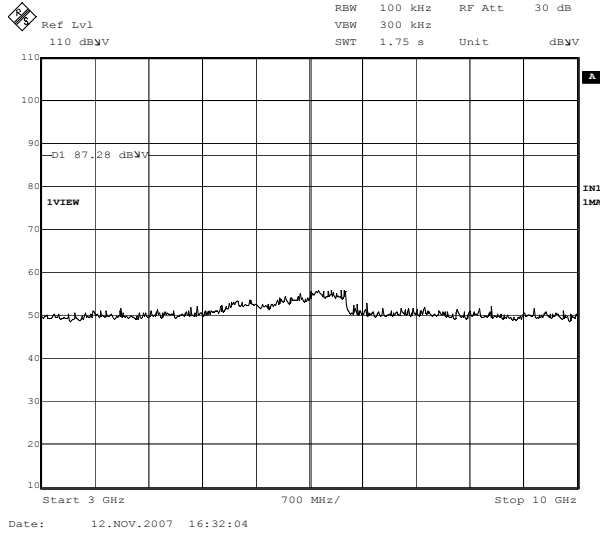
**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

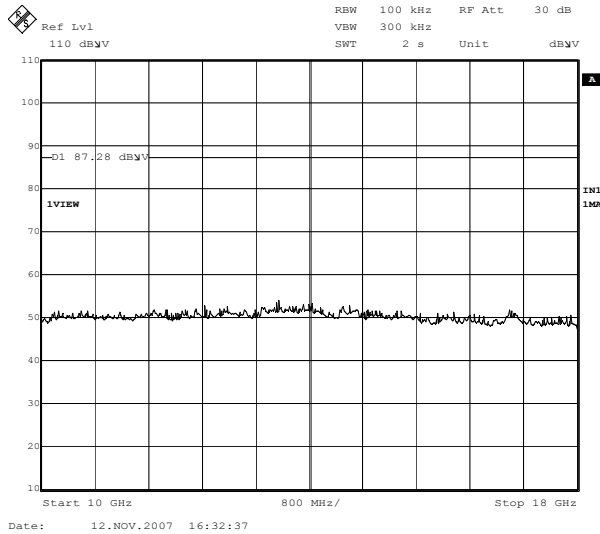
[Transmitting3 DH5]

Hopping

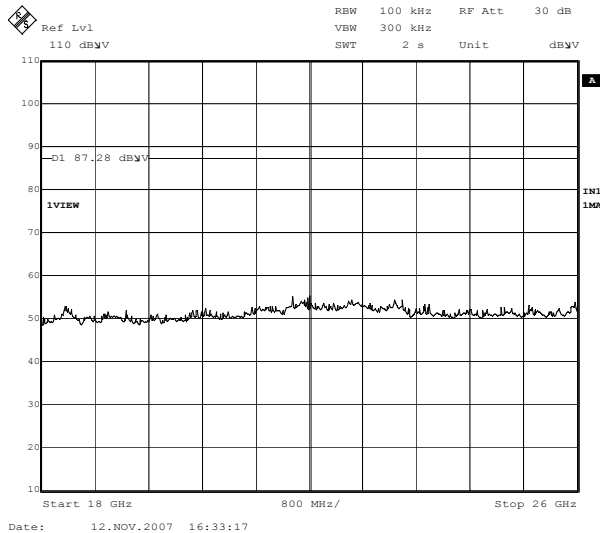
4.



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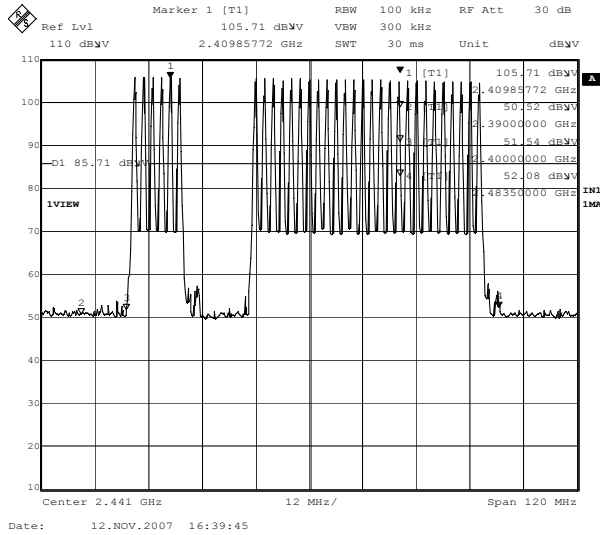
# Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

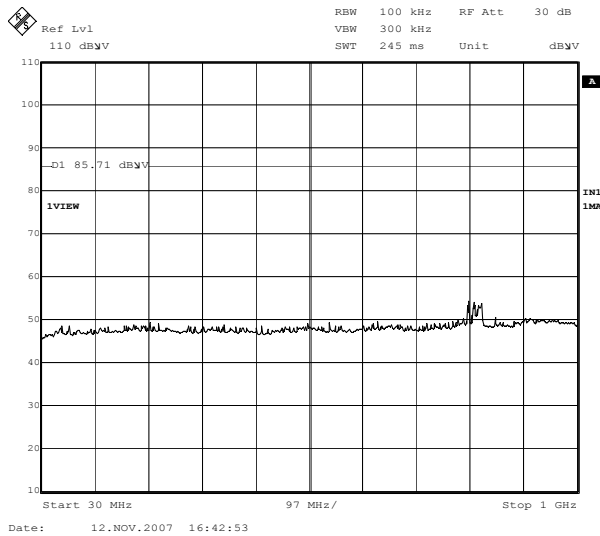
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

[Transmitting]  
Inquiry

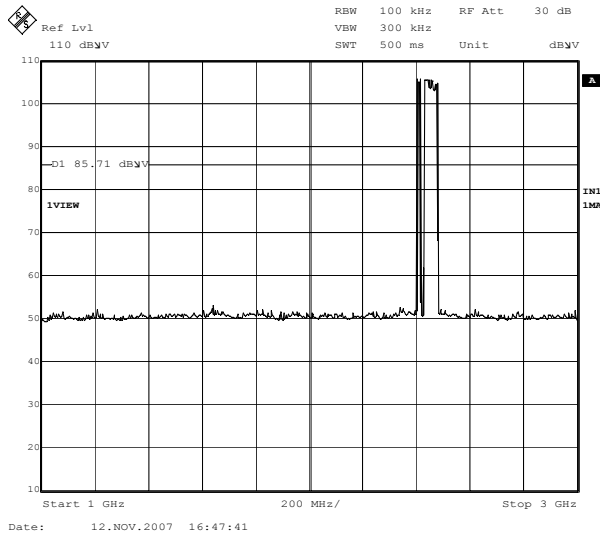
1.



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

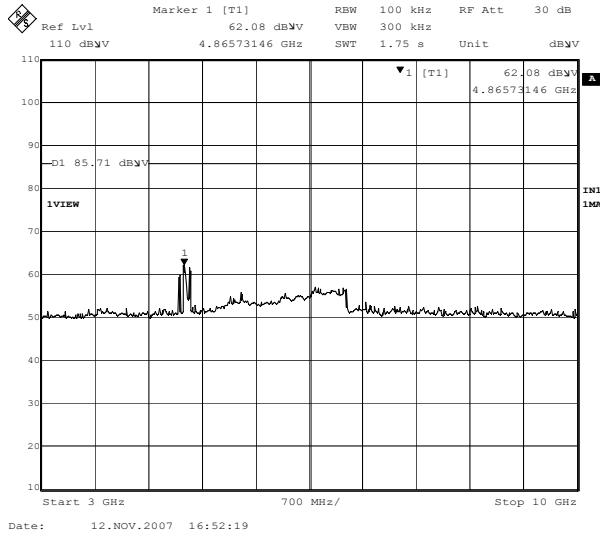
**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : Fcc Part15SubpartC 247(d)  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

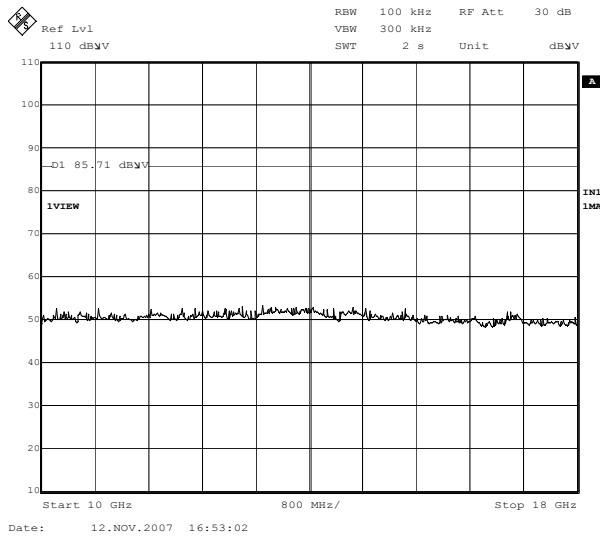
[Transmitting]

### Inquiry

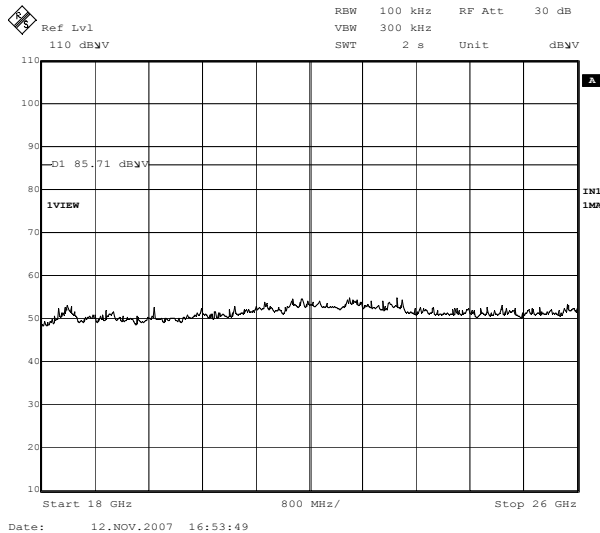
4.



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# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2402MHz (DH5)  
 Remarks : EUT Hor:X Ver:X  
 Date : 11/7/2007  
 Test Distance : 3 m  
 Temperature : 20 °C  
 Humidity : 60 %  
 Regulation : FCC Part15C § 15.209

Engineer : Go Ishiwata

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	44.80	BB	25.6	35.0	12.5	28.8	1.3	5.8	16.4	25.8	40.0	23.6	14.2
2.	60.01	BB	32.2	39.9	8.6	28.7	1.5	5.8	19.4	27.1	40.0	20.6	12.9
3.	120.01	BB	26.0	34.9	13.3	28.4	2.2	5.8	18.9	27.8	43.5	24.6	15.7
4.	199.95	BB	32.9	34.0	16.8	27.9	2.9	5.8	30.5	31.6	43.5	13.0	11.9
5.	399.86	BB	26.4	34.3	17.1	28.4	4.7	5.9	25.7	33.6	46.0	20.3	12.4

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

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz / KLA-03 (USLP9143) 300-1000MHz  
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-05 (8447D) ■ EMI RECEIVER : KTR-05 (ESC1)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2402MHz (DH5)  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C  
 Humidity : 46 %  
 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		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	2390.00	BB	43.8	44.2	28.5	37.5	5.0	10.1	49.9	50.3	74.0	24.1	23.7	
2.	4804.00	BB	43.3	43.1	32.9	37.8	5.7	0.7	44.8	44.6	74.0	29.2	29.4	
3.	7206.00	BB	41.4	41.4	36.5	37.2	7.6	0.1	48.4	48.4	74.0	25.6	25.6	
4.	9608.00	BB	42.0	42.5	37.7	37.4	7.7	0.6	50.6	51.1	74.0	23.4	22.9	
5.	12010.00	BB	41.2	41.4	40.0	36.5	8.9	0.5	54.1	54.3	74.0	19.9	19.7	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2402MHz (DH5)  
 Remarks : AV RBW:1MHz, VBW:300Hz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C Engineer : Makoto Hosaka  
 Humidity : 46 %  
 Regulation : FCC Part15C § 15. 209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	2390.00	BB	33.7	33.9	28.5	37.5	5.0	10.1	39.8	40.0	54.0	14.2	14.0	
2.	4804.00	BB	35.6	35.0	32.9	37.8	5.7	0.7	37.1	36.5	54.0	16.9	17.5	
3.	7206.00	BB	30.4	30.8	36.5	37.2	7.6	0.1	37.4	37.8	54.0	16.6	16.2	
4.	9608.00	BB	32.0	32.0	37.7	37.4	7.7	0.6	40.6	40.6	54.0	13.4	13.4	
5.	12010.00	BB	31.3	31.6	40.0	36.5	8.9	0.5	44.2	44.5	54.0	9.8	9.5	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)



# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2402MHz (3DH5)  
 Remarks : EUT Hor:X Ver:X  
 Date : 11/7/2007  
 Test Distance : 3 m  
 Temperature : 20 °C  
 Humidity : 60 %  
 Regulation : FCC Part15C § 15.209

Engineer : Go Ishiwata

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	44.68	BB	25.9	38.3	12.5	28.8	1.3	5.8	16.7	29.1	40.0	23.3	10.9
2.	60.00	BB	32.1	43.5	8.6	28.7	1.5	5.8	19.3	30.7	40.0	20.7	9.3
3.	108.01	BB	26.9	35.8	11.6	28.4	2.1	5.8	18.0	26.9	43.5	25.5	16.6
4.	199.94	BB	33.9	36.5	16.8	27.9	2.9	5.8	31.5	34.1	43.5	12.0	9.4
5.	366.57	BB	29.2	27.6	16.1	28.0	4.4	5.9	27.6	26.0	46.0	18.4	20.0

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

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz  
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-05 (8447D) ■ EMI RECEIVER : KTR-05 (ESC1)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2402MHz (3DH5)  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C Engineer : Makoto Hosaka  
 Humidity : 46 %  
 Regulation : FCC Part15C § 15. 209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	2390.00	BB	42.1	42.7	28.5	37.5	5.0	10.1	48.2	48.8	74.0	25.8	25.2	
2.	4804.00	BB	40.5	40.4	32.9	37.8	5.7	0.7	42.0	41.9	74.0	32.0	32.1	
3.	7206.00	BB	41.6	41.3	36.5	37.2	7.6	0.1	48.6	48.3	74.0	25.4	25.7	
4.	9608.00	BB	42.3	42.1	37.7	37.4	7.7	0.6	50.9	50.7	74.0	23.1	23.3	
5.	12010.00	BB	40.5	41.6	40.0	36.5	8.9	0.5	53.4	54.5	74.0	20.6	19.5	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2402MHz (3DH5)  
 Remarks : AV RBW:1MHz, VBW:300Hz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C  
 Humidity : 46 %  
 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		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	2390.00	BB	32.5	32.7	28.5	37.5	5.0	10.1	38.6	38.8	54.0	15.4	15.2	
2.	4804.00	BB	30.9	30.7	32.9	37.8	5.7	0.7	32.4	32.2	54.0	21.6	21.8	
3.	7206.00	BB	31.5	30.9	36.5	37.2	7.6	0.1	38.5	37.9	54.0	15.5	16.1	
4.	9608.00	BB	32.3	32.3	37.7	37.4	7.7	0.6	40.9	40.9	54.0	13.1	13.1	
5.	12010.00	BB	31.4	31.6	40.0	36.5	8.9	0.5	44.3	44.5	54.0	9.7	9.5	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2441MHz (DH5)  
 Remarks : EUT Hor:X Ver:X  
 Date : 11/7/2007  
 Test Distance : 3 m  
 Temperature : 20 °C  
 Humidity : 60 %  
 Regulation : FCC Part15C § 15.209

Engineer : Go Ishiwata

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	44.91	BB	26.0	35.8	12.4	28.8	1.3	5.8	16.7	26.5	40.0	23.3	13.5
2.	60.00	BB	32.7	40.8	8.6	28.7	1.5	5.8	19.9	28.0	40.0	20.1	12.0
3.	108.02	BB	26.2	36.1	11.6	28.4	2.1	5.8	17.3	27.2	43.5	26.2	16.3
4.	199.95	BB	33.1	36.2	16.8	27.9	2.9	5.8	30.7	33.8	43.5	12.8	9.7
5.	399.85	BB	26.7	34.2	17.1	28.4	4.7	5.9	26.0	33.5	46.0	20.0	12.5

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

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz / KLA-03 (USLP9143) 300-1000MHz  
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-05 (8447D) ■ EMI RECEIVER : KTR-05 (ESC1)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2441MHz (DH5)  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C Engineer : Makoto Hosaka  
 Humidity : 46 %  
 Regulation : FCC Part15C § 15. 209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	4882.00	BB	44.4	44.9	33.1	37.7	5.8	0.7	46.3	46.8	74.0	27.7	27.2	
2.	7323.00	BB	40.9	39.5	36.7	37.6	7.7	0.1	47.8	46.4	74.0	26.2	27.6	
3.	9764.00	BB	42.3	42.3	37.7	37.1	7.7	0.6	51.2	51.2	74.0	22.8	22.8	
4.	12205.00	BB	42.0	42.0	40.2	36.4	9.0	0.4	55.2	55.2	74.0	18.8	18.8	

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ EMI RECEIVER:KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2441MHz (DH5)  
 Remarks : AV RBW:1MHz, VBW:300Hz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C Engineer : Makoto Hosaka  
 Humidity : 46 %  
 Regulation : FCC Part15C § 15. 209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	4882.00	BB	38.6	38.0	33.1	37.7	5.8	0.7	40.5	39.9	54.0	13.5	14.1	
2.	7323.00	BB	30.1	29.7	36.7	37.6	7.7	0.1	37.0	36.6	54.0	17.0	17.4	
3.	9764.00	BB	32.5	32.6	37.7	37.1	7.7	0.6	41.4	41.5	54.0	12.6	12.5	
4.	12205.00	BB	31.6	31.6	40.2	36.4	9.0	0.4	44.8	44.8	54.0	9.2	9.2	

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ EMI RECEIVER:KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2441MHz(3DH5)  
 Remarks : EUT Hor:X Ver:X  
 Date : 11/7/2007  
 Test Distance : 3 m  
 Temperature : 20 °C  
 Humidity : 60 %  
 Regulation : FCC Part15C § 15.209

Engineer : Go Ishiwata

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	60.00	BB	30.9	41.3	8.6	28.7	1.5	5.8	18.1	28.5	40.0	21.9	11.5
2.	69.23	BB	29.9	43.0	6.7	28.5	1.6	5.8	15.5	28.6	40.0	24.5	11.4
3.	108.00	BB	25.7	35.5	11.6	28.4	2.1	5.8	16.8	26.6	43.5	26.7	16.9
4.	199.95	BB	32.1	35.8	16.8	27.9	2.9	5.8	29.7	33.4	43.5	13.8	10.1
5.	399.85	BB	26.9	33.7	17.1	28.4	4.7	5.9	26.2	33.0	46.0	19.8	13.0

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

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz  
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-05 (8447D) ■ EMI RECEIVER : KTR-05 (ESC1)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2441MHz (3DH5)  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C Engineer : Makoto Hosaka  
 Humidity : 46 %  
 Regulation : FCC Part15C § 15. 209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	4882.00	BB	40.4	40.5	33.1	37.7	5.8	0.7	42.3	42.4	74.0	31.7	31.6	
2.	7323.00	BB	40.8	39.8	36.7	37.6	7.7	0.1	47.7	46.7	74.0	26.3	27.3	
3.	9764.00	BB	41.8	42.7	37.7	37.1	7.7	0.6	50.7	51.6	74.0	23.3	22.4	
4.	12205.00	BB	41.6	41.5	40.2	36.4	9.0	0.4	54.8	54.7	74.0	19.2	19.3	

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ EMI RECEIVER:KTR-01 (ES140)



# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2441MHz (3DH5)  
 Remarks : AV RBW:1MHz, VBW:300Hz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C Engineer : Makoto Hosaka  
 Humidity : 46 %  
 Regulation : FCC Part15C § 15. 209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	4882.00	BB	31.0	30.8	33.1	37.7	5.8	0.7	32.9	32.7	54.0	21.1	21.3	
2.	7323.00	BB	30.4	29.4	36.7	37.6	7.7	0.1	37.3	36.3	54.0	16.7	17.7	
3.	9764.00	BB	32.1	32.2	37.7	37.1	7.7	0.6	41.0	41.1	54.0	13.0	12.9	
4.	12205.00	BB	31.5	31.6	40.2	36.4	9.0	0.4	44.7	44.8	54.0	9.3	9.2	

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ EMI RECEIVER:KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
Kind of Equipment : Bluetooth Transceiver Module  
Model No. : UGPZ6-C3  
Serial No. : 0002c752d0e9  
Power : AC120V/60Hz  
Mode : Tx:2480MHz (DH5)  
Remarks : EUT Hor:X Ver:X  
Date : 11/7/2007  
Test Distance : 3 m  
Temperature : 20 °C  
Humidity : 60 %  
Regulation : FCC Part15C § 15.209

Engineer : Go Ishiwata

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	60.01	BB	33.0	41.1	8.6	28.7	1.5	5.8	20.2	28.3	40.0	19.8	11.7
2.	69.21	BB	32.5	43.4	6.7	28.5	1.6	5.8	18.1	29.0	40.0	21.9	11.0
3.	108.01	BB	26.8	35.8	11.6	28.4	2.1	5.8	17.9	26.9	43.5	25.6	16.6
4.	199.94	BB	32.8	36.4	16.8	27.9	2.9	5.8	30.4	34.0	43.5	13.1	9.5
5.	399.86	BB	26.8	34.0	17.1	28.4	4.7	5.9	26.1	33.3	46.0	19.9	12.7

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

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz / KLA-03 (USLP9143) 300-1000MHz  
■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-05 (8447D) ■ EMI RECEIVER : KTR-05 (ESC1)

Page :

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2480MHz (DH5)  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C  
 Humidity : 46 %  
 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		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	2483.50	BB	47.2	45.8	28.3	37.6	5.1	10.2	53.2	51.8	74.0	20.8	22.2	
2.	4960.00	BB	44.9	44.5	33.4	37.6	5.8	0.7	47.2	46.8	74.0	26.8	27.2	
3.	7440.00	BB	39.1	39.8	36.8	38.0	7.9	0.2	46.0	46.7	74.0	28.0	27.3	
4.	9920.00	BB	42.6	41.7	37.7	36.7	7.7	0.6	51.9	51.0	74.0	22.1	23.0	
5.	12400.00	BB	41.3	40.5	40.3	36.3	9.1	0.4	54.8	54.0	74.0	19.2	20.0	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2480MHz (DH5)  
 Remarks : AV RBW:1MHz, VBW:300Hz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C  
 Humidity : 46 %  
 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		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	2483.50	BB	42.8	40.3	28.3	37.6	5.1	10.2	48.8	46.3	54.0	5.2	7.7	
2.	4960.00	BB	38.2	36.8	33.4	37.6	5.8	0.7	40.5	39.1	54.0	13.5	14.9	
3.	7440.00	BB	29.4	30.0	36.8	38.0	7.9	0.2	36.3	36.9	54.0	17.7	17.1	
4.	9920.00	BB	32.7	32.5	37.7	36.7	7.7	0.6	42.0	41.8	54.0	12.0	12.2	
5.	12400.00	BB	31.1	31.0	40.3	36.3	9.1	0.4	44.6	44.5	54.0	9.4	9.5	

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ EMI RECEIVER:KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2480MHz (3DH5)  
 Remarks : EUT Hor:X Ver:X  
 Date : 11/7/2007  
 Test Distance : 3 m  
 Temperature : 20 °C  
 Humidity : 60 %  
 Regulation : FCC Part15C § 15.209

Engineer : Go Ishiwata

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					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	44.55	BB	26.3	37.9	12.6	28.8	1.3	5.8	17.2	28.8	40.0	22.8	11.2
2.	60.01	BB	32.4	43.3	8.6	28.7	1.5	5.8	19.6	30.5	40.0	20.4	9.5
3.	139.61	BB	37.6	39.6	14.4	28.3	2.4	5.8	31.9	33.9	43.5	11.6	9.6
4.	199.95	BB	34.2	36.7	16.8	27.9	2.9	5.8	31.8	34.3	43.5	11.7	9.2
5.	399.90	BB	25.6	32.5	17.1	28.4	4.7	5.9	24.9	31.8	46.0	21.1	14.2

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

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz  
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-05 (8447D) ■ EMI RECEIVER : KTR-05 (ESC1)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2480MHz (3DH5)  
 Remarks : PK RBW:1MHz, VBW:1MHz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C  
 Humidity : 46 %  
 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		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	2483.50	BB	54.3	51.3	28.3	37.6	5.1	10.2	60.3	57.3	74.0	13.7	16.7	
2.	4960.00	BB	40.6	41.4	33.4	37.6	5.8	0.7	42.9	43.7	74.0	31.1	30.3	
3.	7440.00	BB	40.3	41.2	36.8	38.0	7.9	0.2	47.2	48.1	74.0	26.8	25.9	
4.	9920.00	BB	42.4	42.1	37.7	36.7	7.7	0.6	51.7	51.4	74.0	22.3	22.6	
5.	12400.00	BB	39.9	40.3	40.3	36.3	9.1	0.4	53.4	53.8	74.0	20.6	20.2	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Japan, Inc.  
YAMAKITA No.1 ANECHOIC CHAMBER  
Report No. : 28DE0007-YK-01-A

Applicant : Alps Electric Co.,Ltd.  
 Kind of Equipment : Bluetooth Transceiver Module  
 Model No. : UGPZ6-C3  
 Serial No. : 0002c752d0e9  
 Power : AC120V/60Hz  
 Mode : Tx:2480MHz (3DH5)  
 Remarks : AV RBW:1MHz, VBW:300Hz  
 Date : 11/8/2007  
 Test Distance : 3 m  
 Temperature : 24 °C Engineer : Makoto Hosaka  
 Humidity : 46 %  
 Regulation : FCC Part15C § 15. 209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	2483.50	BB	46.2	43.3	28.3	37.6	5.1	10.2	52.2	49.3	54.0	1.8	4.7	
2.	4960.00	BB	31.0	30.4	33.4	37.6	5.8	0.7	33.3	32.7	54.0	20.7	21.3	
3.	7440.00	BB	30.6	31.2	36.8	38.0	7.9	0.2	37.5	38.1	54.0	16.5	15.9	
4.	9920.00	BB	32.7	32.5	37.7	36.7	7.7	0.6	42.0	41.8	54.0	12.0	12.2	
5.	12400.00	BB	30.9	30.7	40.3	36.3	9.1	0.4	44.4	44.2	54.0	9.6	9.8	

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz  
 ■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

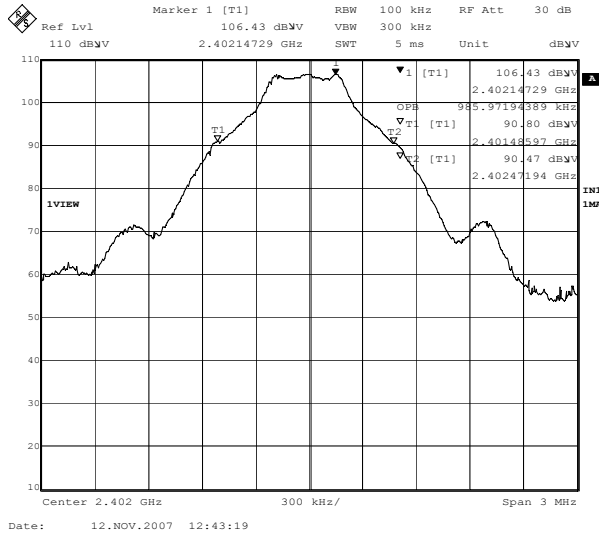
## Occupied Bandwidth(99%)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

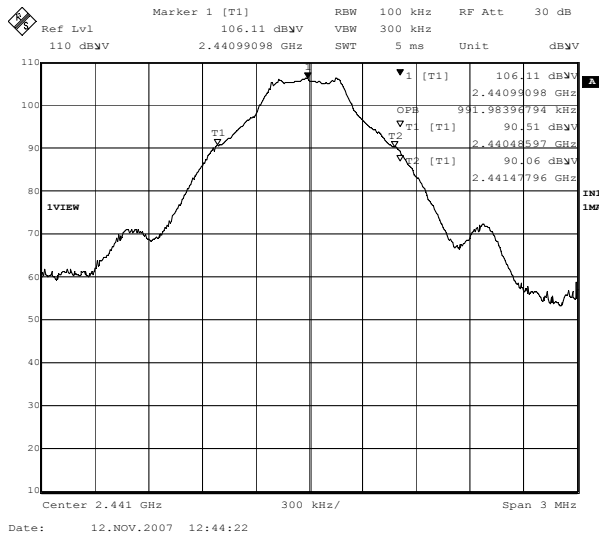
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : RSS-210  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

[Hopping off, DH5]

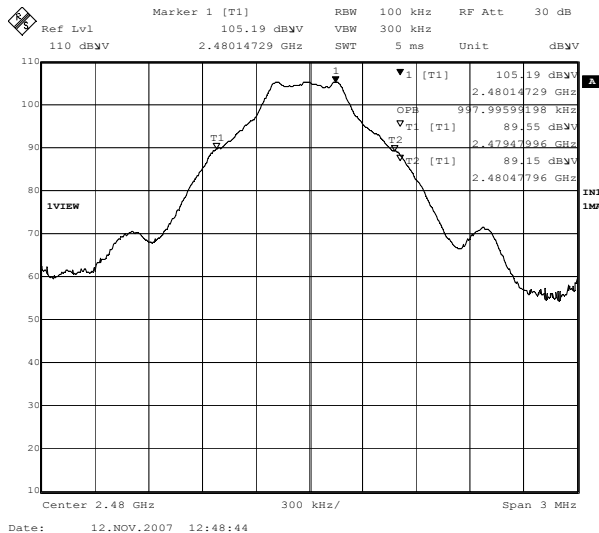
**1. ch : 2402MHz/Occupied Bandwidth:966.0kHz**



**2. ch : 2441MHz/Occupied Bandwidth:992.0kHz**



**3. ch : 2480MHz/Occupied Bandwidth:998.0kHz**





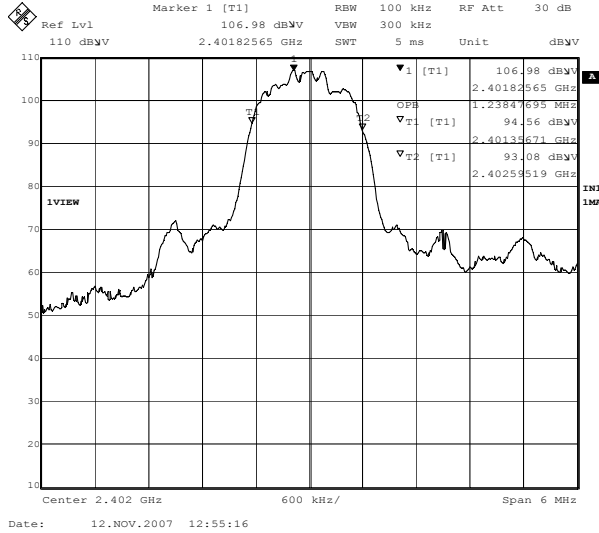
## Occupied Bandwidth(99%)

**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

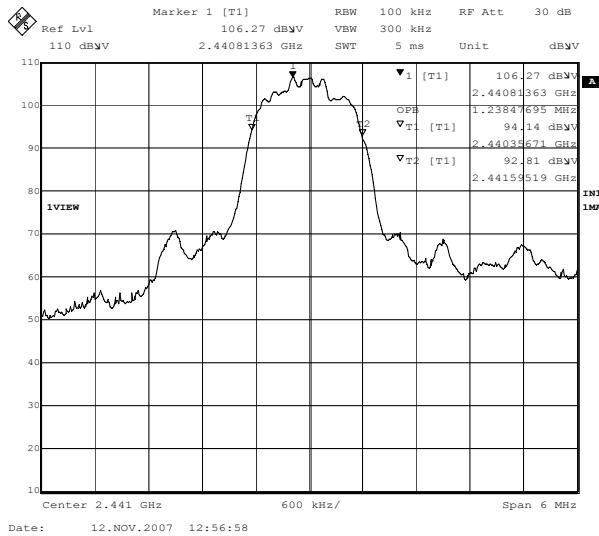
**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : RSS-210  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

[Hopping off, 3DH5]

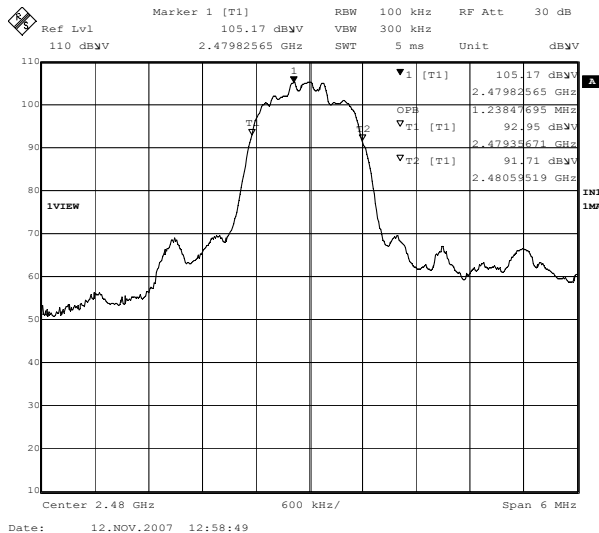
**4. ch : 2402MHz/Occupied Bandwidth:1.2385MHz**



**5. ch : 2441MHz/Occupied Bandwidth:1.2385MHz**



**6. ch : 2480MHz/Occupied Bandwidth:1.2385MHz**

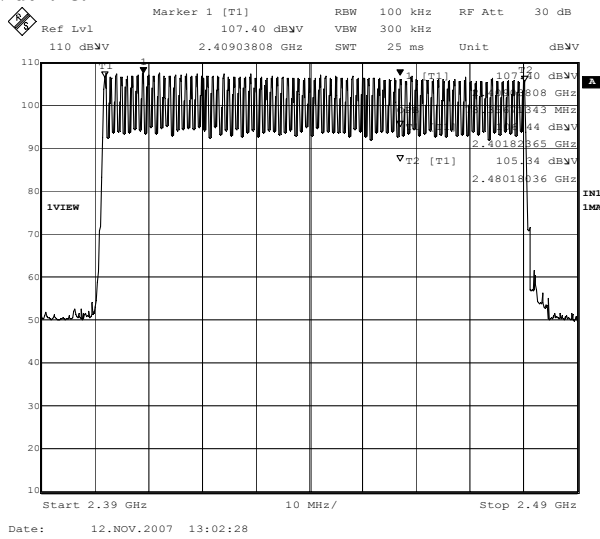


## Occupied Bandwidth(99%)

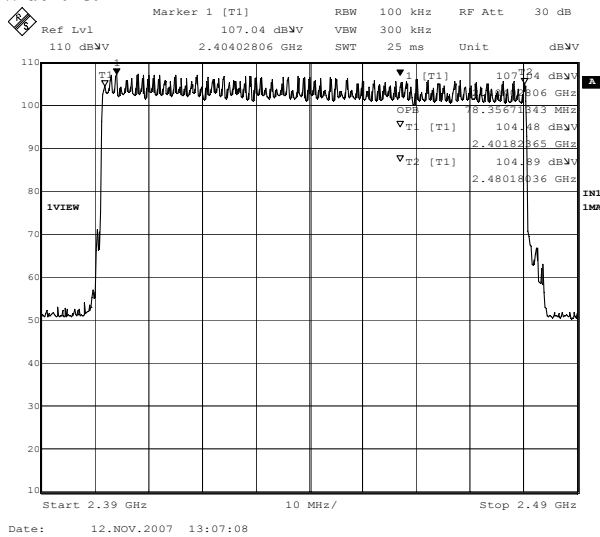
**COMPANY** : Alps Electric Co., Ltd.  
**EQUIPMENT** : Bluetooth Transceiver Module  
**MODEL NUMBER**: UGPZ6-C3  
**SERIAL NUMBER**: 0002c752d0e9  
**FCC ID** : CWTUGPZ6-C3  
**POWER** : AC120V/60Hz

**UL Japan, Inc. Yamakita No.4 Shielded Room**  
**REPORT NO** : 28DE0007-YK-01-A  
**REGULATION** : RSS-210  
**DATE** : 2007.11.12  
**TEMP./HUMI** : 22deg.C./48%  
**TEST MODE** : Transmitting  
**ENGINEER** : Toyokazu Imamura

### 7. Hopping, DH5/Occupied Bandwidth:78.4MHz



### 8. Hopping, 3DH5/Occupied Bandwidth:78.4MHz

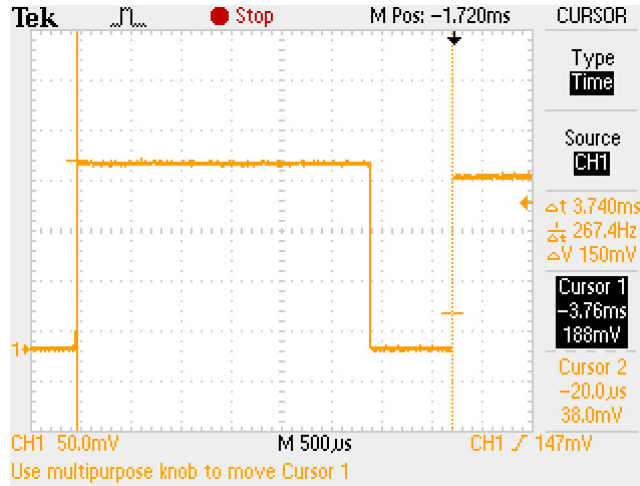


## Duty Cycle

COMPANY : Alps Electric Co., Ltd.  
EQUIPMENT : Bluetooth Transceiver Module  
MODEL NUMBER: UGPZ6-C3  
SERIAL NUMBER: 0002c752d0e9  
POWER : AC120V/60Hz

REPORT NO : 28DE0007-YK-01-A  
DATE : 2007/11/08  
TEMP./HUMI : 24deg.C./46%  
TEST MODE : Tx2402MHz (DH5, 3DH5)  
ENGINEER : Makoto Hosaka

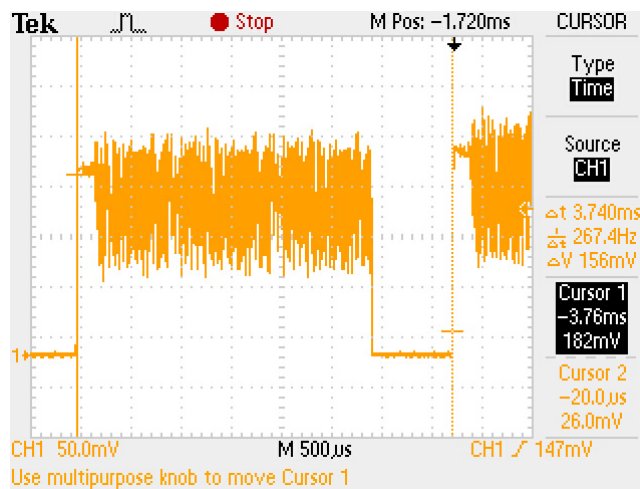
### Tx2402MHz (DH5)



Duty Cycle: 3.74ms

AV Detector VBW:  $1 / 3.74\text{ms} = 267.38\text{Hz} \rightarrow 300\text{Hz}$

### Tx2402MHz (3DH5)



Duty Cycle: 3.74ms

AV Detector VBW:  $1 / 3.74\text{ms} = 267.38\text{Hz} \rightarrow 300\text{Hz}$

\* Duty cycle was within 100msec.

### APPENDIX 3 Test Instruments

#### EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
YA-CE	Conducted emission(software)	UL Japan	CE(Ver.1.6)	CE	-
KCC-33/34/KRM-03	Coaxial Cable/RF Relay Matrix	Fujikura/Suhner/TSJ	5D-2W/S04272B/RFM-E421	CE	2007/11/01 * 12
KLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	CE	2007/08/02 * 12
KOS-01	Humidity Indicator	Custom	CTH-190	CE	2006/07/14 * 24
YA-RE	Radiated emission(software)	UL Japan	RE(Ver.1.5)	RE	-
KAEC-01	Anechoic Chamber	JSE	Semi 3m	RE	2007/08/26 * 12
KAF-05	Pre Amplifier	Agilent	8447D	RE	2007/04/13 * 12
KAT6-01	Attenuator	INMET	18N-6dB	RE	2007/03/28 * 12
KBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/01/06 * 12
KCC-30/31/32/34/KRM-03	Coaxial Cable/RF Relay Matrix	Fujikura/Suhner/TSJ	5D-2W/S04272B/RFM-E421	RE	2007/11/01 * 12
KLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2007/01/06 * 12
KOS-02	Humidity Indicator	Custom	CTH-190	RE	2006/07/10 * 24
KSA-04	Spectrum Analyzer	Advantest	R3271A	CE/RE	2007/09/25 * 12
KTR-05	Test Receiver	Rohde & Schwarz	ESCI	CE/RE	2007/06/26 * 12
KJM-01	Measure	TAJIMA	GL19-55	CE/RE	-
KAF-02	Pre Amplifier	Hewlett Packard	8449B	RE	2007/04/24 * 12
KAT10-S2	Attenuator	Agilent	8490D 010	RE	2006/12/13 * 12
KCC-D3/D7	Coaxial Cable	Rosenberger/Advantest	2201/JUN-08-01-061	RE	2007/04/11 * 12
KCC-D16	Coaxial Cable	INSULATED WIRE INC	KPS-1501-200-KPS	RE/AT all	2007/02/05 * 12
KDT-01	Coaxial Crystal Detector	Agilent	8473C	AT(4)	Pre Check
KFL-01	Highpass Filter	Hewlett Packard	84300 80038	RE	2007/04/11 * 12
KHA-01	Horn Antenna	A.H.Systems	SAS-200/571	RE	2007/08/14 * 12
KHA-03	Horn Antenna	EMCO	3160-09	RE	2007/04/14 * 12
KPM-05	Power meter	Agilent	E4417A	AT(5)	2007/04/03 * 12
KPSS-01	Power sensor	Agilent	E9327A	AT(5)	2007/03/13 * 12
KTR-01	Test Receiver	Rohde & Schwarz	ESI40	AT(1,2,3,4,6)	2007/04/12 * 12
KOSC-01	Oscilloscope	Tektronix	TDS-2022B	AT(4)	2007/05/15 * 12

The expiration date of the calibration is the end of the expired month .

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

#### Test Item :

- CE: Conducted Emission
- RE: Out of Band Emission (Radiated)
- AT: Antenna terminal conducted test
  - 1: Carrier Frequency Separation
  - 2: 20dB Bandwidth/OBW
  - 3: Number of Hopping Frequency
  - 4: Dwell time
  - 5: Maximum Peak Output Power
  - 6: Out of Band Emission (Conducted)