RADIO TEST REPORT

(for Bluetooth Low Energy)

Project No.	:	JB-Z0277-A
Client	:	Sony Corporation
Address	:	1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan
Type of Equipment	:	Wireless Noise Canceling Stereo Headset
Model No.	:	WF-1000X (Left part: WF-1000XL, Right part: WF-1000XR)
Serial No.	:	L1, L2, L4
FCC ID	:	AK8WF1000X
Regulation Applied	:	47 CFR Part 15 Subpart C
Final Judgment	:	**Passed**
Sample Receipt	:	April 21, 2017
Testing	:	April 24, 2017 - May 15, 2017
Reported	:	May 23, 2017
Amend	:	June 28,2017

Amend : This report is to be replaced with the original reprt,No.JB-Z0277,since the following description are revised.
Added duty factor measurement data(P12)

Reported by :

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Approved Signatory :

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TESTING CERT #3203.01

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Note

☒-indicates that the listed condition, standard or equipment is applicable for this report.

☐-indicates that the listed condition, standard or equipment is not applicable for this report.

1. General Information

1.1. Description of Equipment Under Test (EUT)

General specification

Test Sample Condition	: ☐ Prototype ☒ Pre-production ☐ Mass-production
Type of Equipment	: Wireless Noise Canceling Stereo Headset
Trade Name	: SONY
Model No.	: WF-1000X (Left part: WF-1000XL, Right part: WF-1000XR)
Serial No.	: L1, L2, L4
Power Rating	: DC 3.7 V
Software Ver.	: V0004

Similar model (to be covered by this Report)

Model No. : WF-1000XL (Left part), WF-1000XR (Right part)
WF-1000XL is tested as a representative since RF characteristics are same.

Radio specification

Function of the Equipment	: Transceiver
Operating Frequency	: 2400 - 2483.5 MHz
Modulation Type	: GFSK
Channel Spacing	: 2MHz
Channel Bandwidth	: 2MHz
Number of channels	: 40
Antenna Type	: Inverted-F antenna
Antenna connector Type	: None
Antenna Gain	: -0.50 dBi
Operating Temperature	: 0 to +40 deg.C

1.2. Summary of Test Result

Test Item	Worst Margin	Test Frequency band	Results
AC Power-line Conducted Emissions	-	150 kHz - 30 MHz	N/A *2
6dB Bandwidth	Refer to the test data	Carrier	Complied
Maximum Peak Conducted Output Power	30.59 dB	Carrier	Complied
Power Spectral Density	25.12 dB	Carrier	Complied
Radiated Spurious Emissions	5.0 dB (AV) 4803.996 MHz Vertical	9 kHz - 25 GHz (excluding carrier and band edge)	Complied
Conducted Spurious Emissions for Band Edge *1	27.84 dB 2402.00 MHz	Carrier band edge	Complied

*1: Conducted Spurious Emission was tested for the only frequencies in the non-restricted carrier band edges, since the spurious emissions in other non-restricted band were complied with Radiated Spurious Emission measurement.

*2: This item was not applied to the EUT since its transmission is stopped when the battery is being charged by the PC connected to AC Power-line.

Other requirements

Part 15.31(e) Supply voltage requirement
: Complied (The EUT was tested with a new battery)

Part 15.203 / 212 Antenna requirement
: Complied (The EUT has an internal antenna which cannot be replaced by users)

1.3. Tested Methodology

Test Standard : 47 CFR Part15 Subpart C
Test Method : ANSI C63.10 - 2013
KDB 558074 D01 DTS Meas. Guidance v04

Test Condition

Radiated Spurious Emissions
Test Distance : ☒ 3 m ☐ 10m (9kHz - 30 MHz)
☒ 3 m ☐ 10m (30 - 1000 MHz)
☒ 3 m (1 - 25 GHz)
Dimensions of the EUT table : 0.8m (below 1GHz) or 1.5m (above 1GHz) height, 1.5m width and 1m depth.

1.4. Measurement Procedures

We performed the measurements in accordance with NV3-06, available upon the request.
☒ No deviation
☐ Deviation from the above procedure

The summary of the above procedure is mentioned below

Antenna-port Conducted Measurement

1. Antenna-port of the EUT was connected to the power sensor (Maximum peak conducted output power) or spectrum analyzer. (other test items).

2. For each EUT operation mode, the Antenna-port Conducted Measurements were measured with power meter or spectrum analyzer.

Test Item * Antenna-port Conducted Measurements	Detector	RBW
6dB Bandwidth	Peak	30 kHz
Maximum Peak Conducted Output Power	Peak	-
Power Spectral Density	Peak	3 kHz
Conducted Spurious Emissions for Band Edge	Peak	100 kHz

Radiated Spurious Emissions

1. The non-conductive table (EUT table) made of (☐ FRP, ☒ Styrene Foam, ☐ other non-conductive material) was placed in the center of the turntable.

2. The EUT was placed on the center of the tabletop.

3. The test antenna was placed away from the EUT at test distance.

4. The limits compensated the distance factor with follows;
   9 kHz - 490 kHz [Limit at 3m] = [Limit at 300m] + 40log (300[m] / 3[m])
   490 kHz - 30 MHz [Limit at 3m] = [Limit at 30m] + 40log (30[m] / 3[m])

5. Find the worst arrangement of the EUT as follows;
   - Rotate the turntable and/or scanning the antenna.
   - On every condition, explore the highest emissions with the spectrum analyzer. (9 kHz - 25 GHz, peak detector)

6. On the worst arrangement of the EUT found in above, choose the three highest harmonics or spurious emissions on the spectrum data.(*excluding carrier band edges)
   The final measurements are performed with all test operating modes for these emissions as follows;

   The test antenna and the turntable were performed with follows;

	9kHz - 30MHz	30MHz - 1000MHz	above 1GHz
Antenna	Loop Antenna	Bi-conical Antenna, Log-periodic Antenna	Horn Antenna
Antenna scanning range	1m, Vertical, 360 degrees	1 - 4m, Horizontal and Vertical	1 - 4m *, Horizontal and Vertical
Turntable rotating range	360 degrees	360 degrees	360 degrees

*: When the measurement frequencies above 1GHz, final measurements are performed keeping the antenna in the "cone of radiation" from EUT area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.

Instruments settings were carried out with follows;

	9 kHz - 90 kHz 110 kHz - 490 kHz	90 kHz- 110 kHz 490 kHz - 30 MHz	30 MHz - 1000 MHz	above 1GHz
Detector	Peak / Average	Quasi-peak	Quasi-peak	Peak / Average
RBW	200 Hz (6dB) or 9 kHz (6dB) *1	200 Hz (6dB) or 9 kHz (6dB) *1	120 kHz (6dB)	1 MHz (6dB)
VBW	N/A	N/A	N/A	3 MHz (for peak) 10 kHz (for average) *2
Instrument	EMI test receiver	EMI test receiver	EMI test receiver	Spectrum analyzer

*1: When the measurement frequencies below 150 kHz, RBW: 200 Hz was used.
*2: VBW setting (for average) was higher than 1/T. (T is the minimum transmission duration)

7. If the final measurement result exceeded the limit in non-restricted band(excluding carrier band edges), the measurement is carried out additionally with follows;

   Measurement points
   - Fundamental Frequency
   - Frequency that exceeded the limit in non-restricted band (excluding carrier band edges)

	9 kHz - 150 kHz	150 kHz - 30MHz	above 30MHz
Detector	Peak	Peak	Peak
RBW	6dB RBW: 300 Hz *	6 dB RBW: 10 kHz *	6 dB RBW: 100 kHz
Instrument	Spectrum analyzer	Spectrum analyzer	Spectrum analyzer

*: Correction factor of RBW was compensated to a measurement result by the following formula.
C.F. of RBW [dB] = 10*log (100kHz / used RBW)

8. If the final average measurement result exceeded the limit in the authorized band edge, the integration method is carried out with follows;

	2483.5 - 2485.5MHz
Detector	Peak
RBW	6 dB RBW: 100 kHz
Instrument	Spectrum analyzer
Function	Channel Power (integration BW : 1MHz)

9. Although these tests were performed other than open field area test site, adequate comparison measurements were confirmed against 30 m open field area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

1.5. Test Facility

Address of Test Facility

Test Facility Name : Sony Global Manufacturing & Operations Corporation
EMC/ RF Test Laboratory, Main Lab.

Address : Kisarazu Site 8-4 Shiomi Kisarazu-shi Chiba, 292-0834 Japan

Phone : +81 438 37 2750

Antenna-port Conducted Measurements *

Shielded Room

☒ 4th Site SR1

Radiated Spurious Emission

Semi-Anechoic chamber

☒ EMC Site

*Note: This item contains the following

-6dB Bandwidth

-Maximum Peak Conducted Output Power

-Power Spectral Density

-Conducted Spurious Emissions for Band Edge

A2LA Accreditation for Test Facility

The above test facility has been fully reported to A2LA and accepted as follows:

Effective dates: 2015-09-15 through 2017-10-31

1.6. Uncertainty

Test Item	Frequency	4th Site SR1
Conducted Output Power	1 - 6GHz	± 0.84 dB
Power Spectral Density, Conducted Spurious Emissions	below 6GHz	± 0.89 dB

Test Item	Frequency	Distance	4th Site	EMC Site
AC Power-line Conducted Emissions	150kHz - 30MHz	-	± 3.34 dB	± 3.35 dB
Radiated Emissions	below 30 MHz	3m	± 2.59 dB	± 3.12 dB
	30 - 300 MHz	3m	± 4.18 dB	± 5.26 dB
	300 - 1000 MHz	3m	± 4.04 dB	± 4.37 dB
	1 - 6 GHz	3m	± 4.63 dB	± 4.90 dB
	6 - 18 GHz	3m	± 5.31 dB	± 5.50 dB
	18 - 26.5 GHz	3m	± 5.78 dB	± 5.63 dB

2. System Test Configuration

2.1. Validation

The system was configured for testing in a typical (as a customer would normally use it).
The tests were conducted with the worst case modes as follows.

2.2. Test Operating Conditions

The tests have been carried out the following conditions.

Test Items	Operating Mode	Data Rate	Test Channels
6dB Bandwidth, Maximum Peak Conducted Output Power, Power Spectral Density, Radiated Spurious Emissions	Bluetooth Low Energy	1 Mbps	2402 MHz, 2440 MHz, 2480 MHz
Conducted Spurious Emissions for Band Edge	Bluetooth Low Energy	1 Mbps	2402 MHz

The Software for Operating Mode Name: Blue suite
Version: 2.6.4

Special accessories needed for connecting the EUT to achieve compliance:

Item	Manufacturer	Model No.	Serial No.	Remark
Personal Computer	SONY	PCG-4121AN	27547114 1000852	-
AC Adapter	SONY	VPG-AC19C37	0099484	-

2.3. EUT Modifications

☒ No equipment modification to achieve compliance to the standard levels was done during the tests.
☐ Equipment was modified to achieve compliance to the standard level as below.

Responsible Party Signature

_____

Typed/ Print Name :
Responsible Party :
Position :
Date :

2.4. Configuration of Tested System

Antenna-port Conducted Measurements

The equipment under test (EUT)

Symbol	Item	Manufacturer	Model No.	Serial No.
A-1	Wireless Noise Canceling Stereo Headset	SONY	WF-1000XL	L1

Support equipment for operation

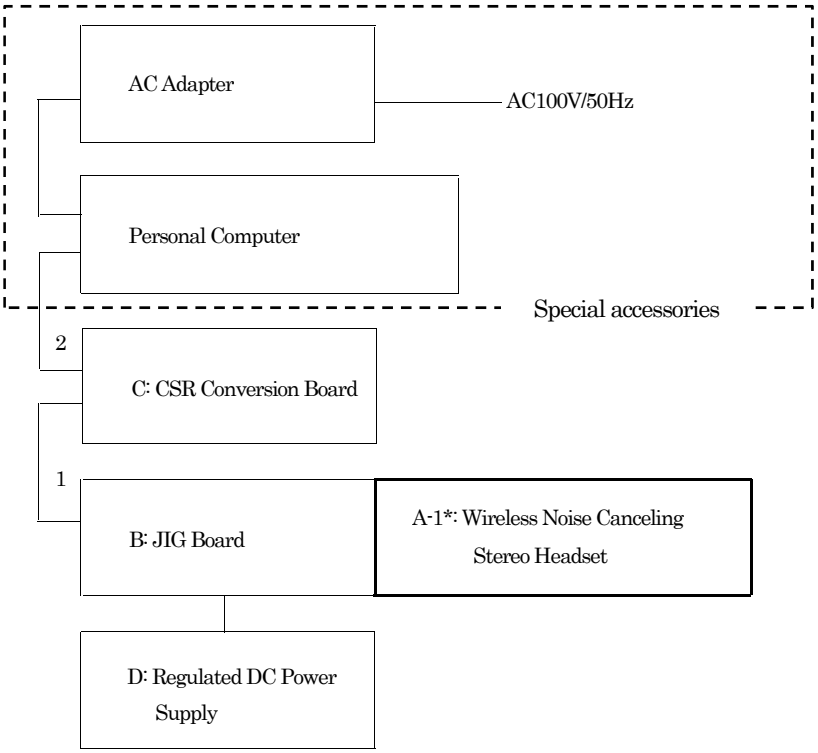
Symbol	Item	Manufacturer	Model No.	Serial No.
B	JIG Board	-	B to B jig	1
C	CSR Conversion Board	CSR	CNS10020V5A	343455
D	Regulated DC Power Supply	KENWOOD	PW18-1.3AT	08046429

Type of cable

Symbol	Description	Identification (Manufacturer etc.)	Shielded YES / NO	Ferrite Core	Length (m)	Bundled
1	USB Cable	-	YES	NO	0.2	-
2	USB Cable	-	YES	NO	2.0	-

System configuration

*: EUT



Radiated Spurious Emissions Measurement

The equipment under test (EUT)

Symbol	Item	Manufacturer	Model No.	Serial No.
A-2	Wireless Noise Canceling Stereo Headset	SONY	WF-1000XL	L2
A-3	Wireless Noise Canceling Stereo Headset	SONY	WF-1000XL	L4

Support equipment for operation

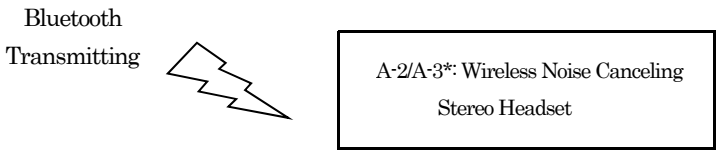
Symbol	Item	Manufacturer	Model No.	Serial No.
-	-	-	-	-

Type of cable

Symbol	Description	Identification (Manufacturer etc.)	Shielded YES / NO	Ferrite Core	Length (m)	Bundled
-	-	-	-	-	-	-

System configuration

*: EUT



3. Test Data

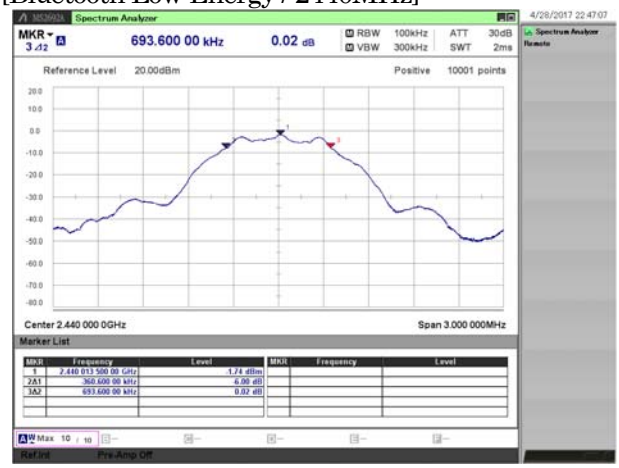
3.1. 6dB Bandwidth

1) Ambient temperature : 23.1 deg.C
2) Relative humidity : 47.0 %
3) Date of measurement : April 24, 2017
4) Measured by : M.KOUGA
5) Operating mode : Transmitting mode

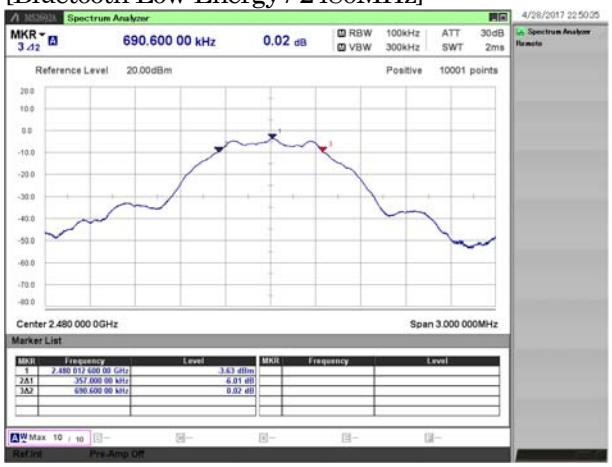
Mode	Rate [Mbps]	Channel [MHz]	Result [MHz]	Limit [MHz]
BLE	1	2402	0.693	0.5
		2440	0.694	0.5
		2480	0.691	0.5

[Bluetooth Low Energy / 2402MHz]

[Bluetooth Low Energy / 2440MHz]



[Bluetooth Low Energy / 2480MHz]



3.2. Maximum Peak Conducted Output Power

1) Ambient temperature : 23.1 deg.C
2) Relative humidity : 47.0 %
3) Date of measurement : April 24, 2017
4) Measured by : M.KOUGA
5) Operating mode : Transmitting mode

Maximum Peak Conducted Output Power

Mode	Rate [Mbps]	Channel [MHz]	Reading(PK) [dBm]	C.F. [dB]	Result(PK) [dBm]	Result(PK) [W]	Limit [dBm]	Margin [dB]
BLE	1	2402	-2.69	0.11	-2.58	0.00055	30.0	32.58
		2440	-0.70	0.11	-0.59	0.00087	30.0	30.59
		2480	-3.02	0.11	-2.91	0.00051	30.0	32.91

Maximum Average Conducted Output Power (for SAR measurement)

Mode	Rate [Mbps]	Channel [MHz]	Reading(AV) [dBm]	C.F. [dB]	Duty Factor [dB]	Result(AV) [dBm]	Result(AV) [W]
BLE	1	2402	-5.14	0.11	1.79	-3.24	0.00047
		2440	-3.10	0.11	1.79	-1.20	0.00076
		2480	-5.38	0.11	1.79	-3.48	0.00045

Duty Factor Measurement (for SAR measurement)

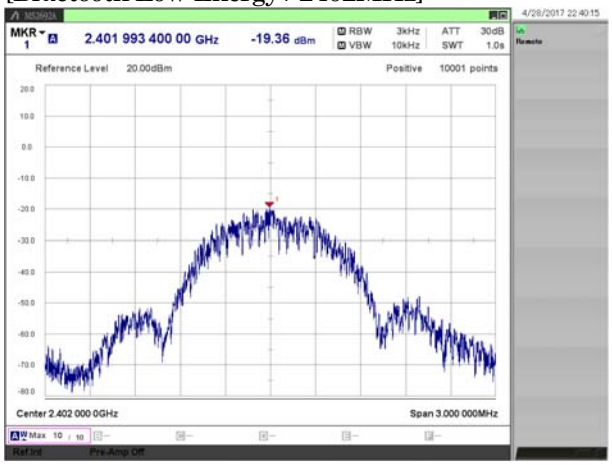
Mode	Rate [Mbps]	Channel [MHz]	T(on+off) [msec]	T(on) [msec]	Duty Factor [dB]	Duty Cycle [%]
BLE	1	2402	0.623	0.413	1.79	66.3

3.3. Power Spectral Density

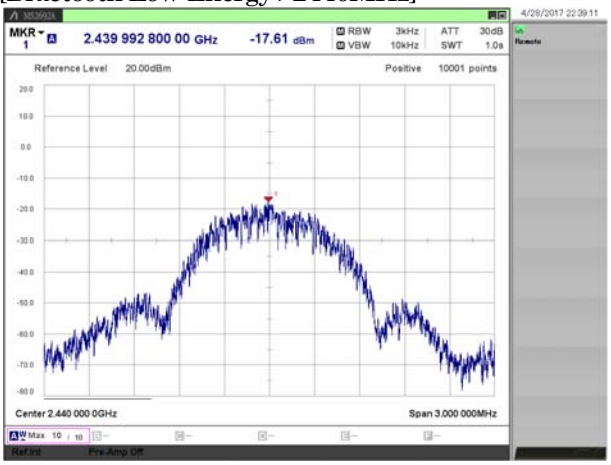
1) Ambient temperature : 23.1 deg.C
2) Relative humidity : 47.0 %
3) Date of measurement : April 24, 2017
4) Measured by : M.KOUGA
5) Operating mode : Transmitting mode

Mode	Rate [Mbps]	Channel [MHz]	Reading(PK) [dBm]	C.F. [dB]	Result(PK) [dBm]	Limit [dBm]	Margin [dB]
BLE	1	2402	-19.36	0.48	-18.88	≦ 8.0	26.88
		2440	-17.61	0.49	-17.12	≦ 8.0	25.12
		2480	-19.35	0.49	-18.86	≦ 8.0	26.86

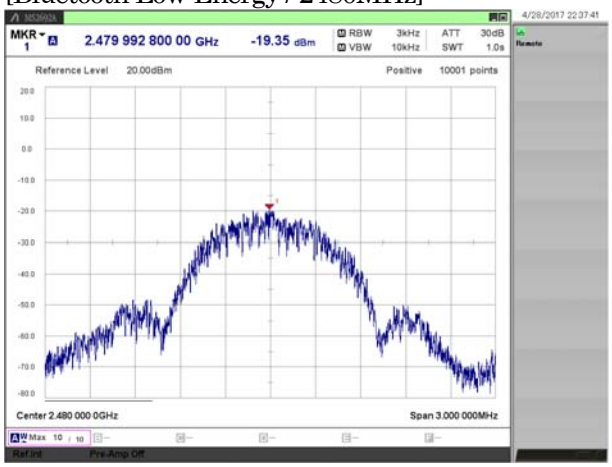
[Bluetooth Low Energy / 2402MHz]



[Bluetooth Low Energy / 2440MHz]



[Bluetooth Low Energy / 2480MHz]



3.4. Radiated Spurious Emissions

1) Date of measurement

9kHz - 30MHz	: May 12, 2017	(all mode)
30MHz - 1000MHz	: May 10, 2017	(all mode)
1GHz - 6GHz	: May 15, 2017	(all mode)
6GHz - 18GHz	: May 15, 2017	(all mode)
18GHz - 24.835GHz	: May 09, 2017	(all mode)

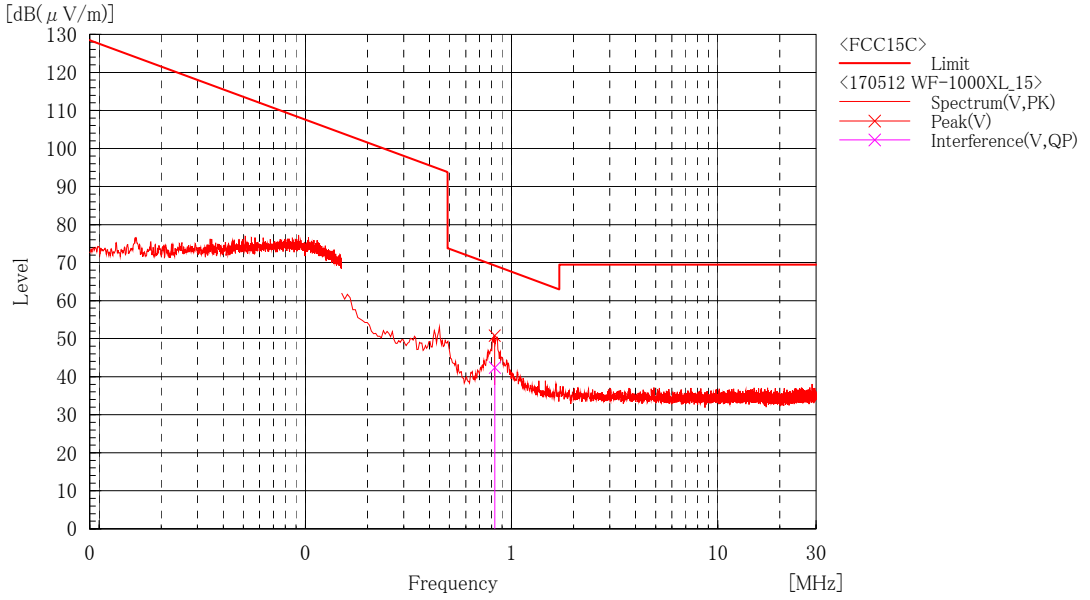
9 kHz - 30 MHz

[Bluetooth Low Energy (1 Mbps) / 2402MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C_15.209 (3m)
Serial	: L2	Remark1	: 90°
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 62%	Remark4	: Low



Final Result

--- Vertical Polarization (QP)---

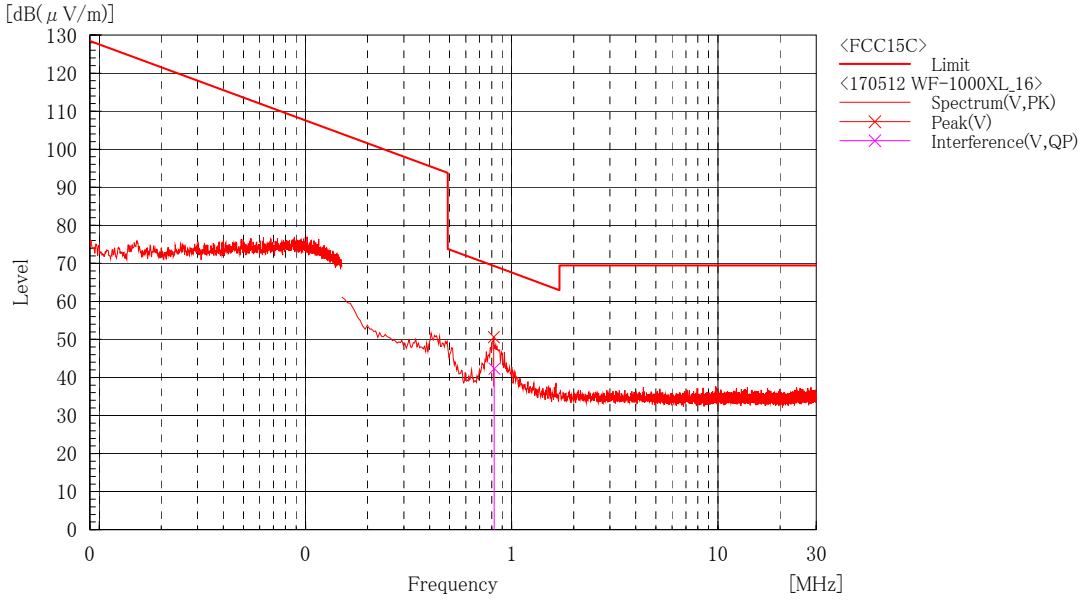
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	0.829	23.0	19.4	42.4	69.2	26.8	100.0	38.7

[Bluetooth Low Energy (1 Mbps) / 2440MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C_15.209 (3m)
Serial	: L4	Remark1	: 90°
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 62%	Remark4	: Mid



Final Result

--- Vertical Polarization (QP)---

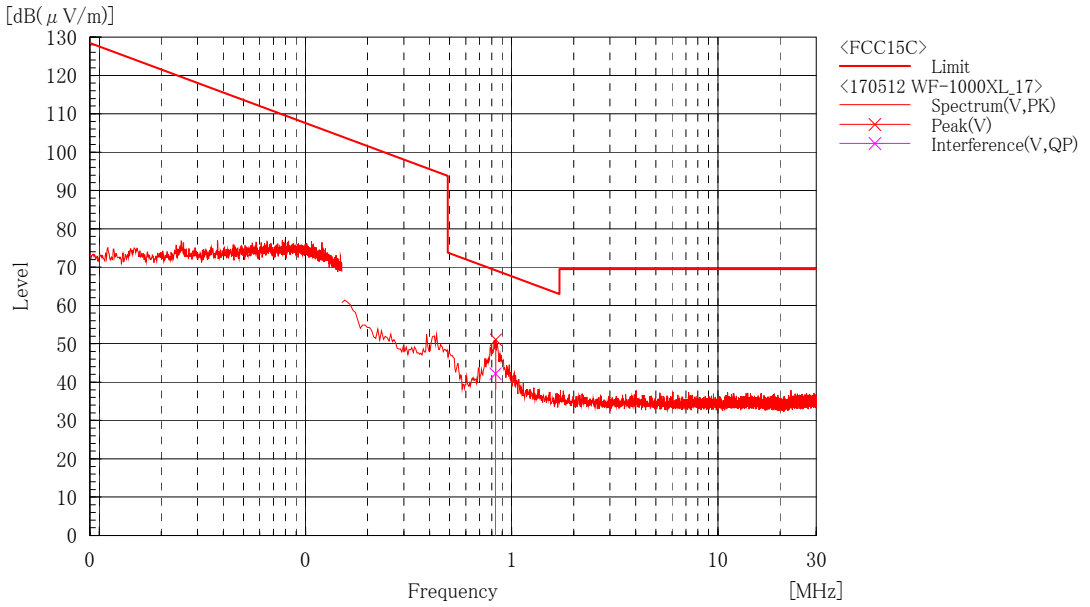
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	0.824	22.9	19.4	42.3	69.3	27.0	100.0	182.5

[Bluetooth Low Energy (1 Mbps) / 2480MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C_15.209 (3m)
Serial	: L2	Remark1	: 90°
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 62%	Remark4	: Hi



Final Result

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	0.834	22.8	19.4	42.2	69.2	27.0	100.0	3.4

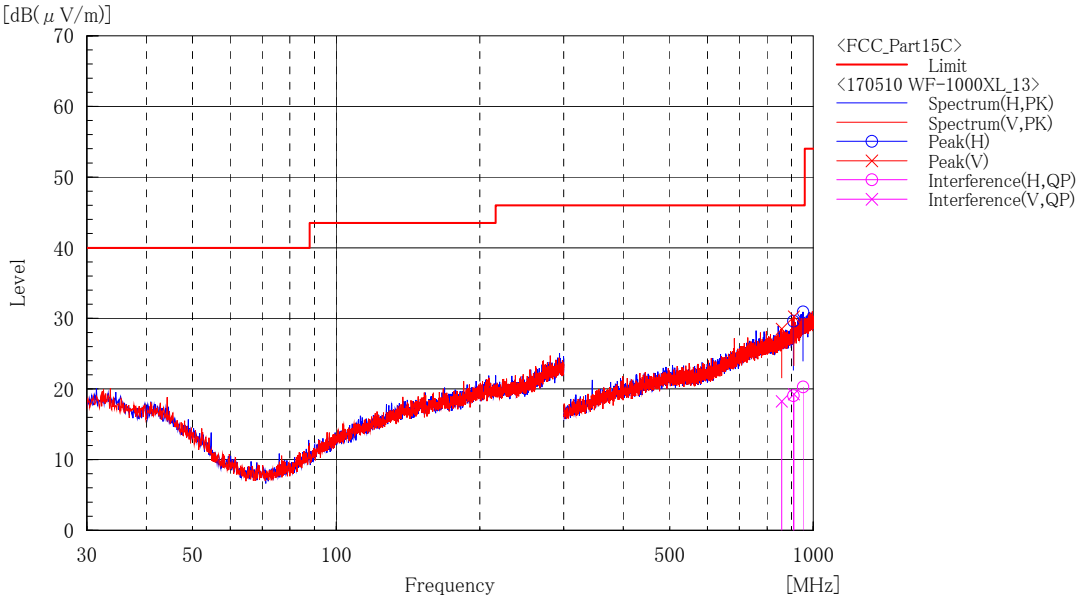
30 MHz - 1000 MHz

[Bluetooth Low Energy (1 Mbps) / 2402MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: N.TAKANO	Remark2	: Y
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 58%	Remark4	: Low



Final Result

--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	908.767	19.2	-0.1	19.1	46.0	26.9	105.4	187.0
2	951.903	19.0	1.3	20.3	46.0	25.7	100.0	23.3

--- Vertical Polarization (QP)---

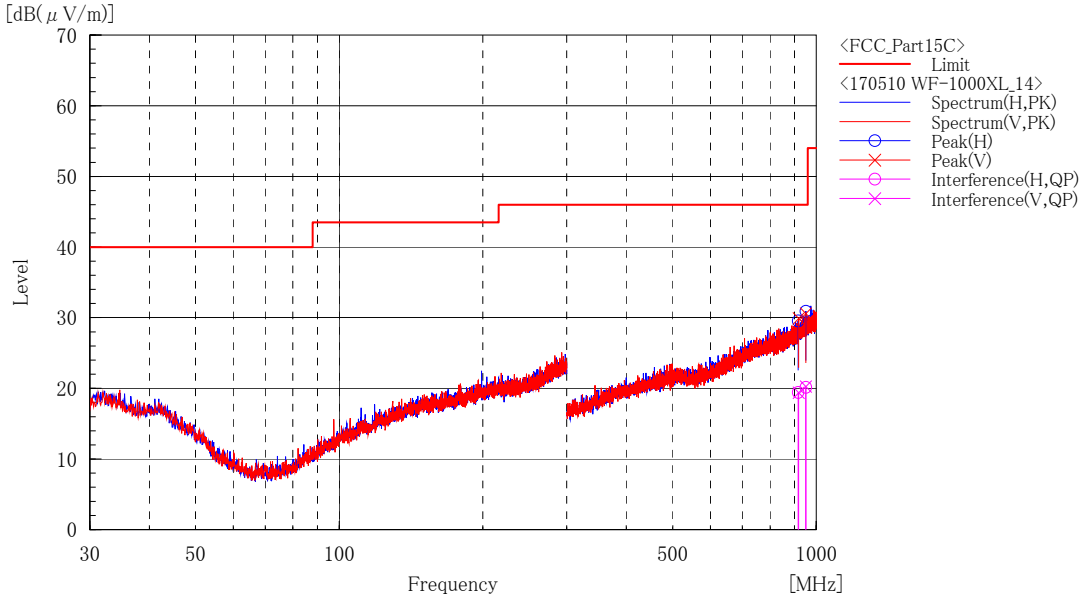
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	859.300	19.4	-1.1	18.3	46.0	27.7	118.5	272.9
2	910.348	19.3	0.0	19.3	46.0	26.7	110.6	350.1

[Bluetooth Low Energy (1 Mbps) / 2440MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: N.TAKANO	Remark2	: Y
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 58%	Remark4	: Mid



Final Result

--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	916.000	19.2	0.2	19.4	46.0	26.6	381.1	270.9
2	950.398	18.9	1.2	20.1	46.0	25.9	101.0	347.0

--- Vertical Polarization (QP)---

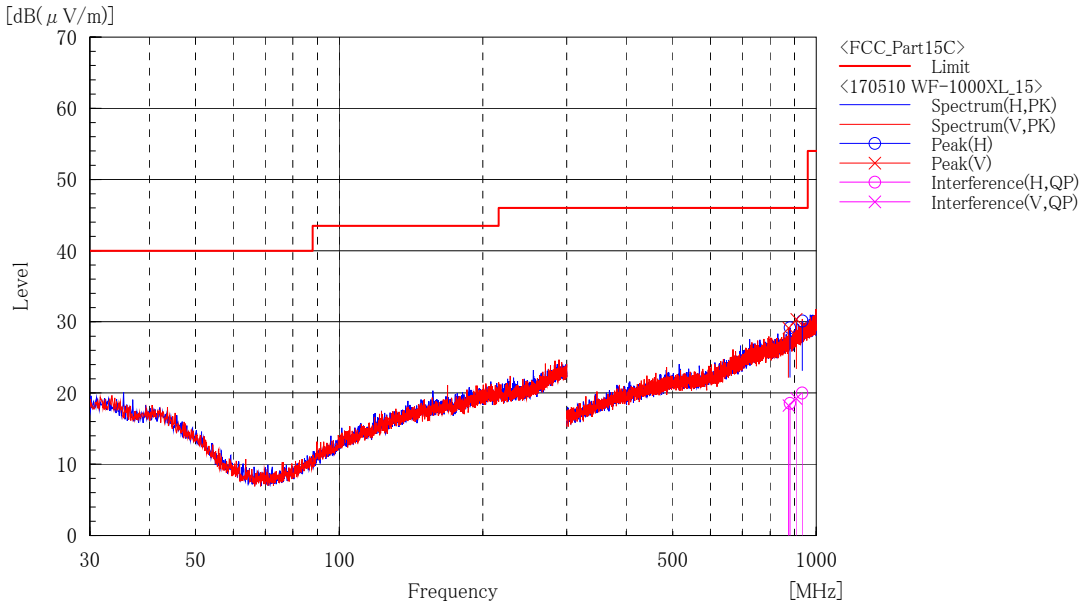
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	918.333	19.2	0.2	19.4	46.0	26.6	388.3	291.0
2	950.995	19.0	1.3	20.3	46.0	25.7	114.1	267.7

[Bluetooth Low Energy (1 Mbps) / 2480MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: N.TAKANO	Remark2	: Y
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 58%	Remark4	: Hi



Final Result

--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	880.767	19.4	-0.8	18.6	46.0	27.4	100.0	322.9
2	933.503	19.3	0.7	20.0	46.0	26.0	100.0	24.8

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	874.000	19.2	-0.9	18.3	46.0	27.7	120.9	335.5
2	907.533	19.4	-0.1	19.3	46.0	26.7	131.0	2.4

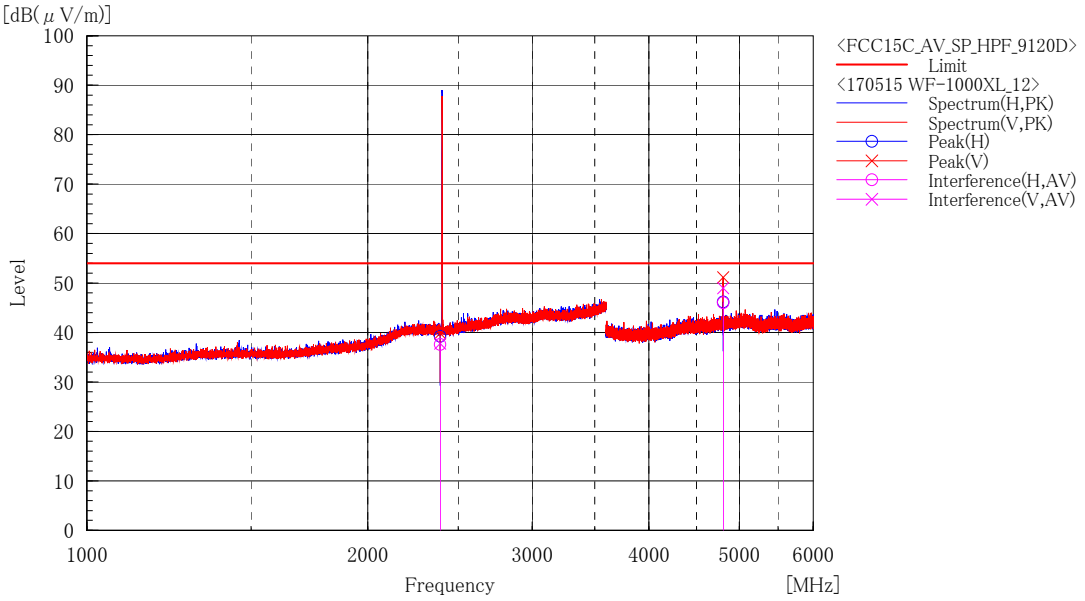
1GHz - 6 GHz

[Bluetooth Low Energy (1 Mbps) / 2402MHz]

Sony Global M&O Corp
Kisarazu TEC No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Low



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	2390.000	36.3	1.3	37.6	54.0	16.4	102.6	273.2
2	4804.105	36.7	9.3	46.0	54.0	8.0	391.4	50.8

--- Vertical Polarization (AV)---

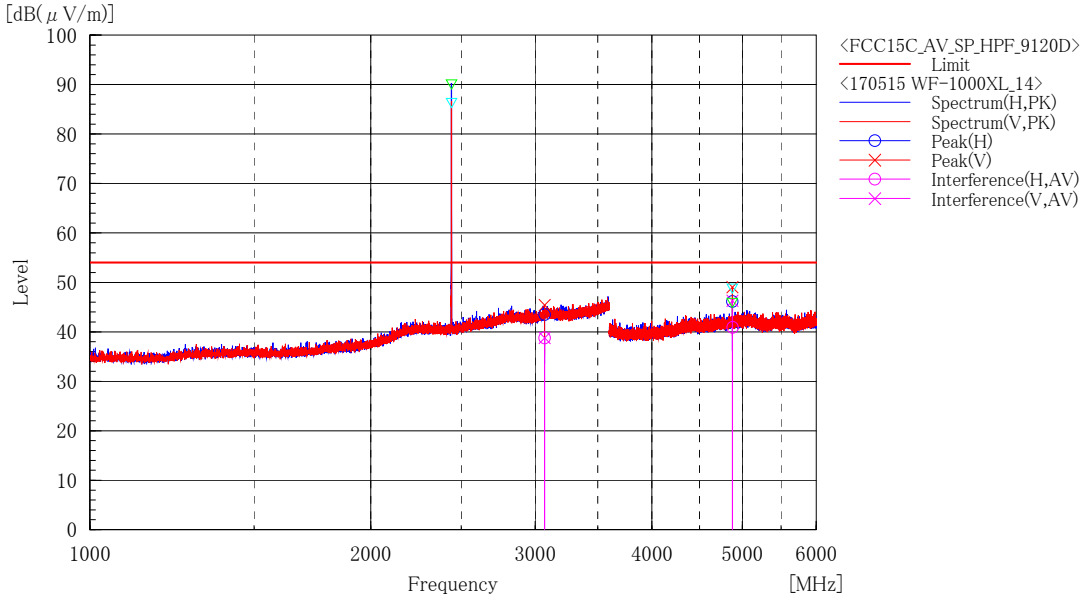
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	2390.000	36.5	1.3	37.8	54.0	16.2	126.1	286.7
2	4803.996	39.7	9.3	49.0	54.0	5.0	116.5	339.6

[Bluetooth Low Energy (1 Mbps) / 2440MHz]

Sony Global M&O Corp
Kisarazu TEC No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Mid



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	3071.292	34.8	4.0	38.8	54.0	15.2	127.6	318.2
2	4879.950	31.5	9.4	40.9	54.0	13.1	108.3	127.6

--- Vertical Polarization (AV)---

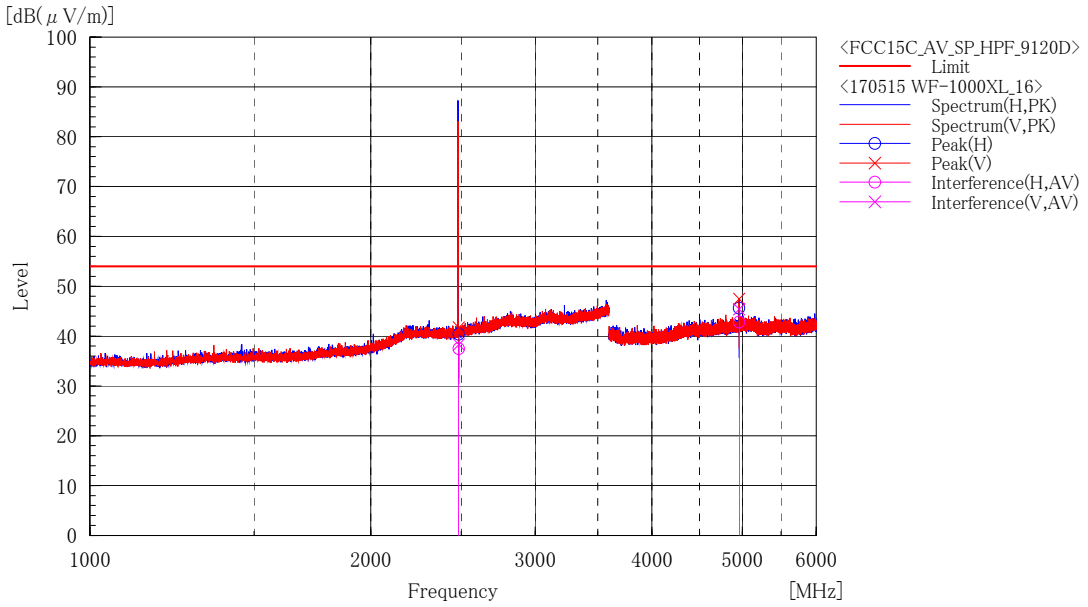
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	3070.926	34.8	4.0	38.8	54.0	15.2	224.4	301.2
2	4879.686	36.9	9.4	46.3	54.0	7.7	156.6	339.0

[Bluetooth Low Energy (1 Mbps) / 2480MHz]

Sony Global M&O Corp
Kisarazu TEC No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Hi



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	2483.500	35.9	1.6	37.5	54.0	16.8	175.3	116.8
2	4959.706	33.4	9.5	42.9	54.0	11.1	132.6	239.2

--- Vertical Polarization (AV)---

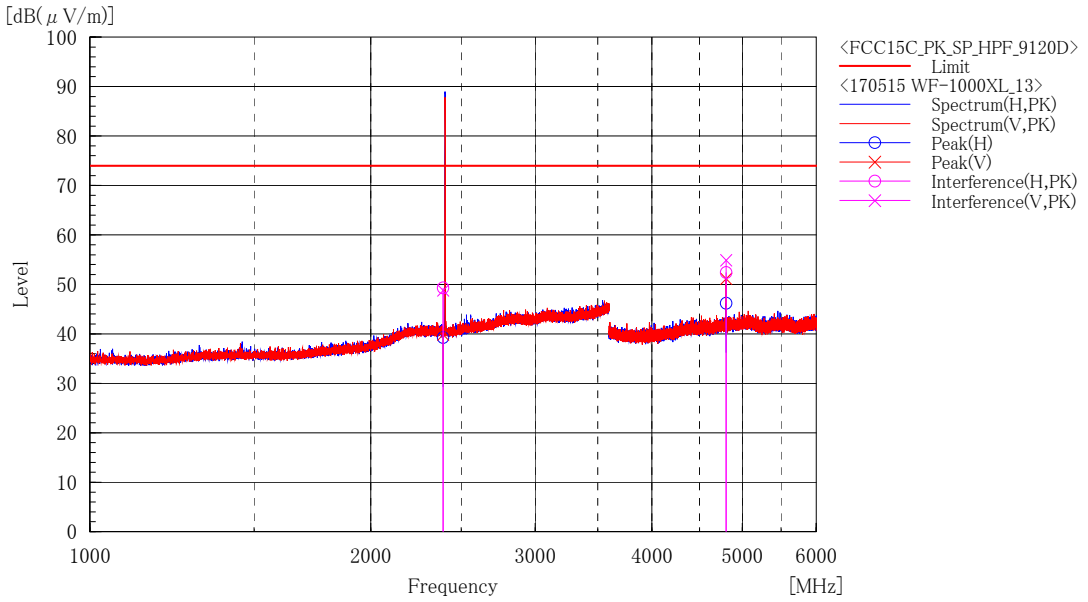
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	2483.500	36.7	1.6	38.3	54.0	15.7	140.6	52.3
2	4959.706	35.9	9.5	45.4	54.0	8.6	146.2	352.9

[Bluetooth Low Energy (1 Mbps) / 2402MHz]

Sony Global M&O Corp
Kisarazu TEC No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Low



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	2390.000	48.0	1.3	49.3	74.0	24.7	102.6	275.0
2	4804.309	43.1	9.3	52.4	74.0	21.6	391.4	48.8

--- Vertical Polarization (PK)---

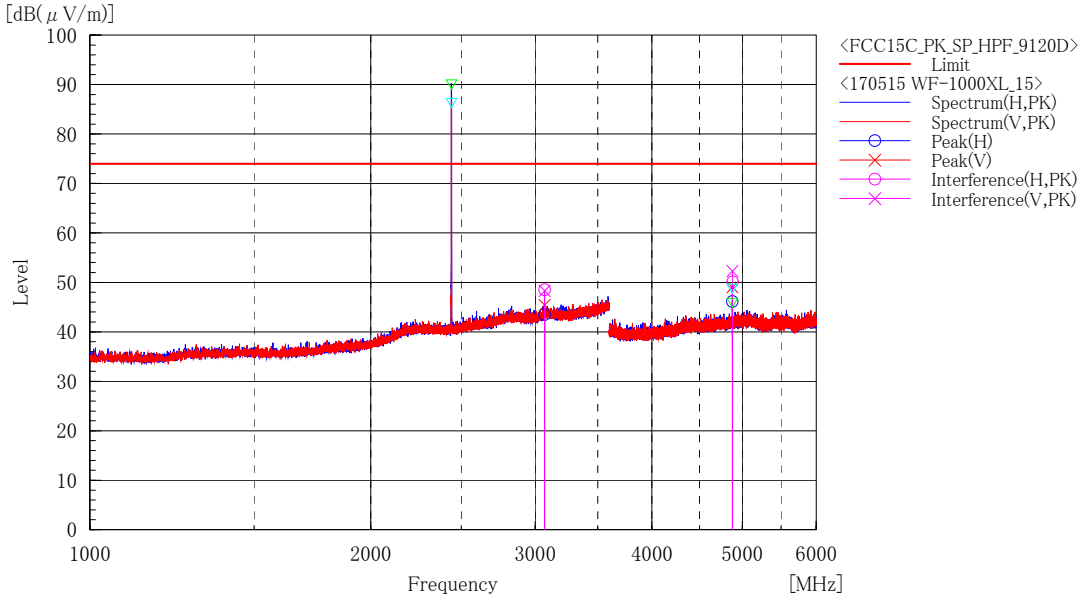
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	2390.000	47.5	1.3	48.8	74.0	25.2	126.1	288.7
2	4804.584	45.6	9.3	54.9	74.0	19.1	116.5	339.6

[Bluetooth Low Energy (1 Mbps) / 2440MHz]

Sony Global M&O Corp
Kisarazu TEC No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Mid



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	3070.338	44.5	4.0	48.5	74.0	25.5	127.6	318.2
2	4880.337	40.7	9.4	50.1	74.0	23.9	108.3	125.7

--- Vertical Polarization (PK)---

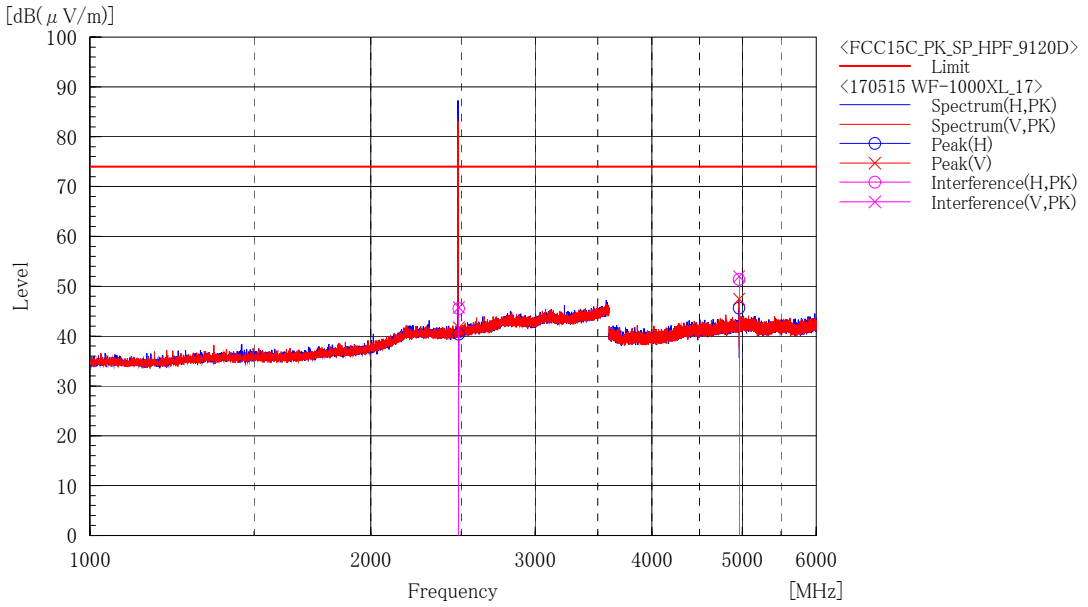
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	3070.291	44.3	4.0	48.3	74.0	25.7	224.4	299.1
2	4879.715	42.9	9.4	52.3	74.0	21.7	156.6	337.1

[Bluetooth Low Energy (1 Mbps) / 2480MHz]

Sony Global M&O Corp
Kisarazu TEC No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Hi



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	2483.500	43.9	1.6	45.5	74.0	28.5	175.3	114.8
2	4959.540	41.8	9.5	51.3	74.0	22.7	132.6	237.3

--- Vertical Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	2483.500	44.2	1.6	45.8	74.0	28.2	140.6	50.3
2	4959.453	42.5	9.5	52.0	74.0	22.0	146.2	352.9

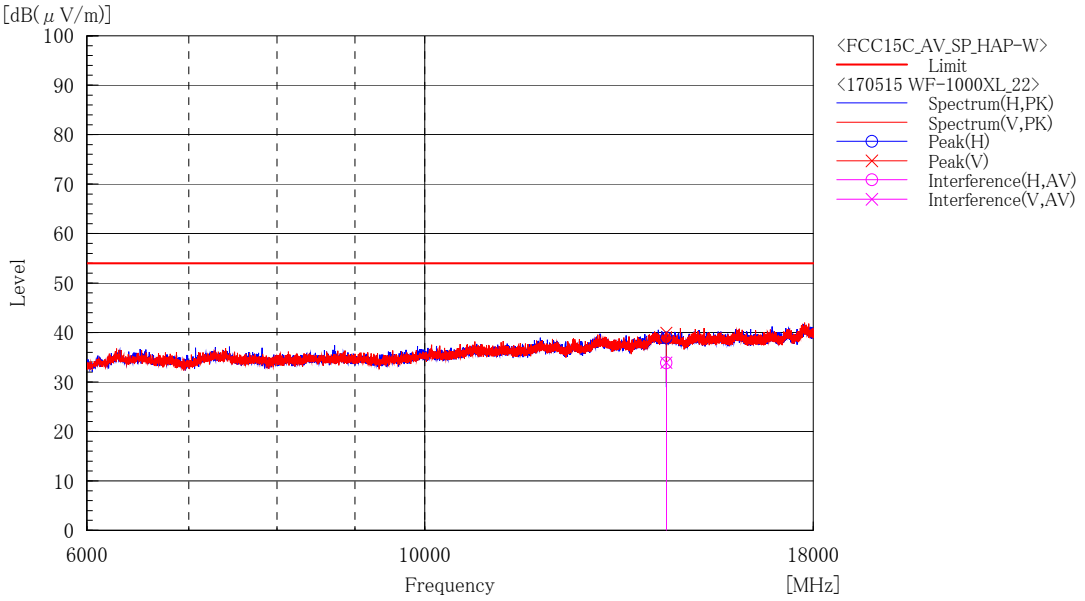
6 GHz - 18 GHz

[Bluetooth Low Energy (1 Mbps) / 2402MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Low



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14411.527	36.3	-2.4	33.9	54.0	20.1	142.5	188.5

--- Vertical Polarization (AV)---

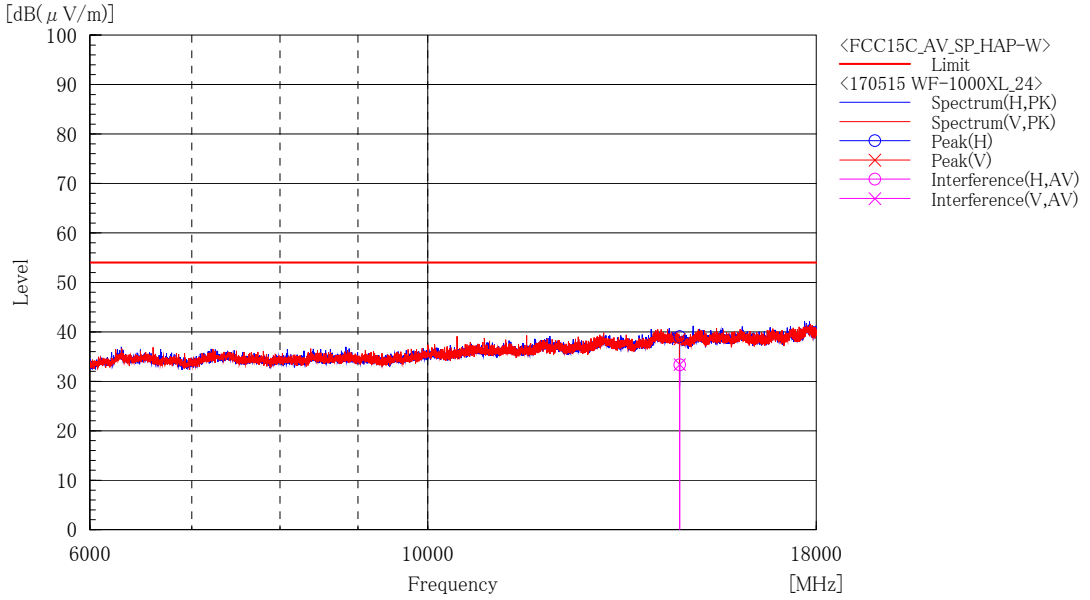
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14411.407	36.3	-2.4	33.9	54.0	20.1	425.4	33.6

[Bluetooth Low Energy (1 Mbps) / 2440MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Mid



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14642.408	35.8	-2.5	33.3	54.0	20.7	127.3	302.9

--- Vertical Polarization (AV)---

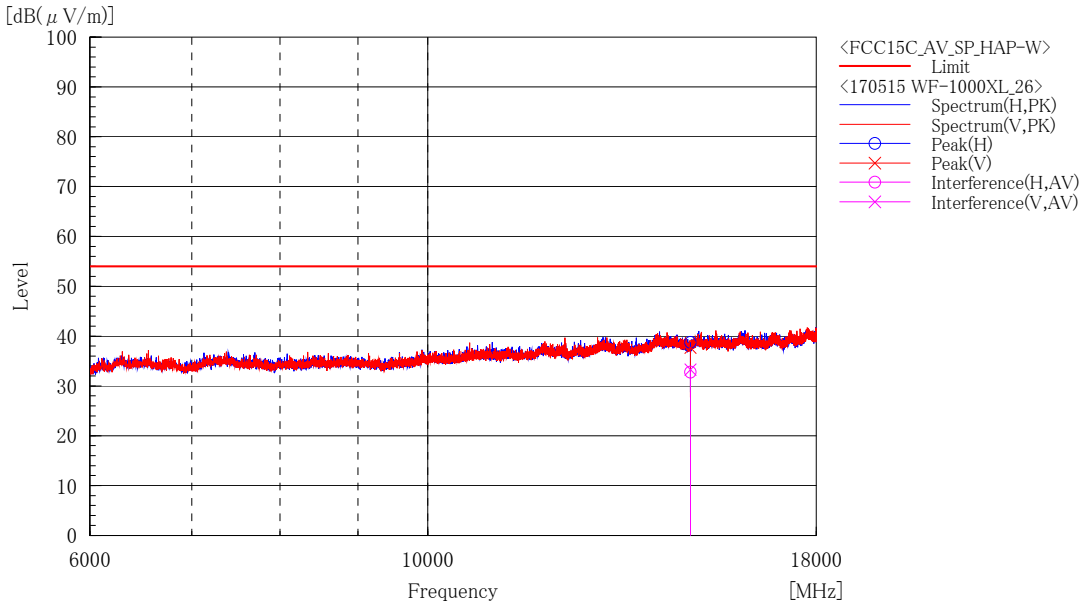
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14639.060	35.9	-2.5	33.4	54.0	20.6	344.8	183.6

[Bluetooth Low Energy (1 Mbps) / 2480MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Hi



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14881.222	35.2	-2.4	32.8	54.0	21.2	166.3	89.2

--- Vertical Polarization (AV)---

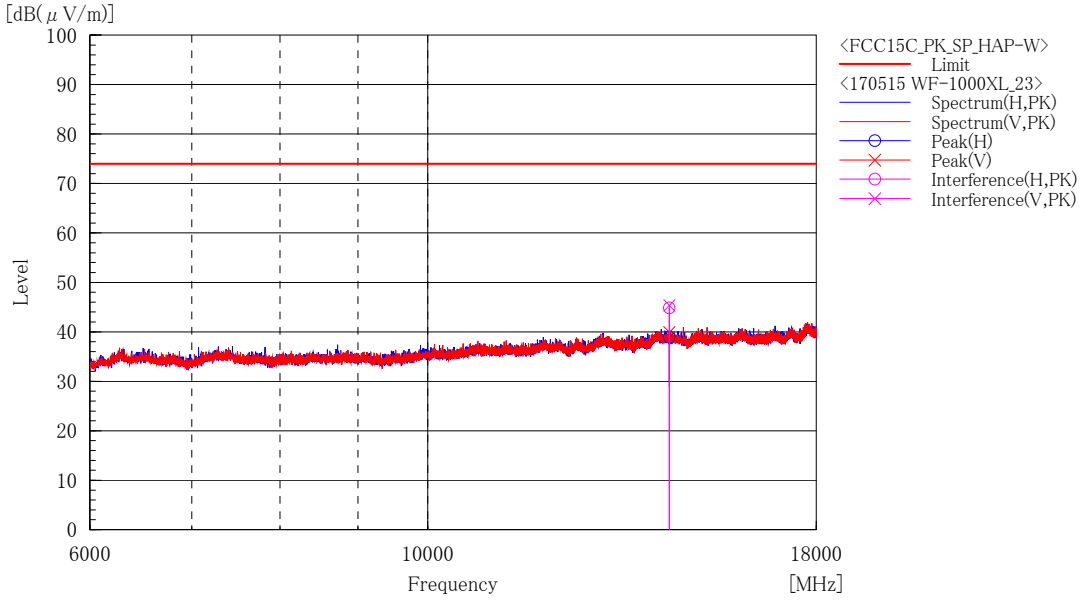
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14882.448	35.7	-2.4	33.3	54.0	20.7	377.7	351.6

[Bluetooth Low Energy (1 Mbps) / 2402MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Low



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14411.080	47.2	-2.4	44.8	74.0	29.2	142.5	186.5

--- Vertical Polarization (PK)---

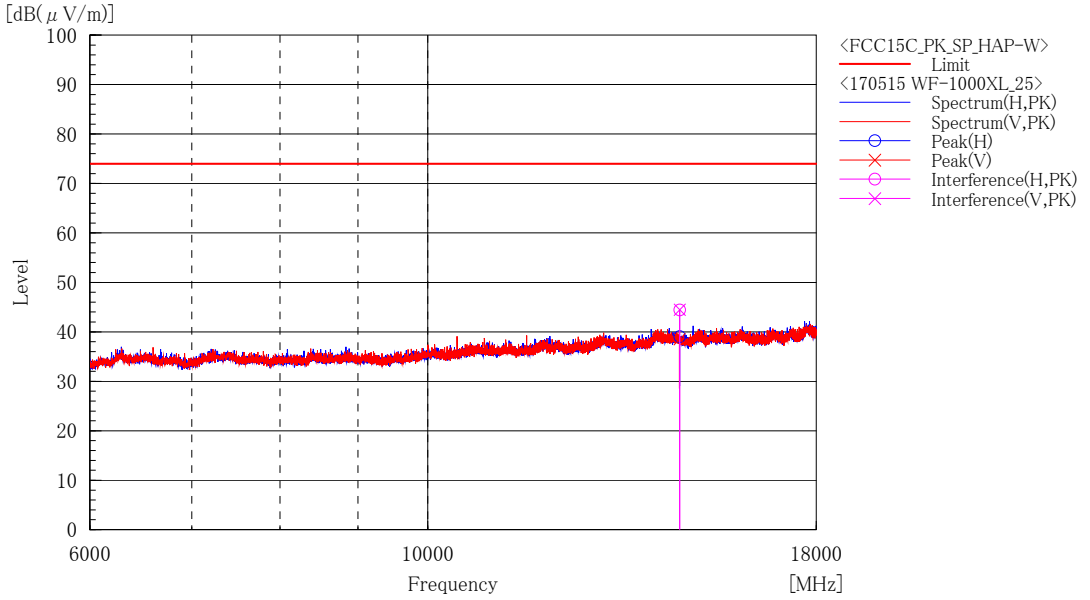
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14412.595	47.8	-2.4	45.4	74.0	28.6	425.4	33.6

[Bluetooth Low Energy (1 Mbps) / 2440MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Mid



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14640.976	46.9	-2.5	44.4	74.0	29.6	127.3	302.9

--- Vertical Polarization (PK)---

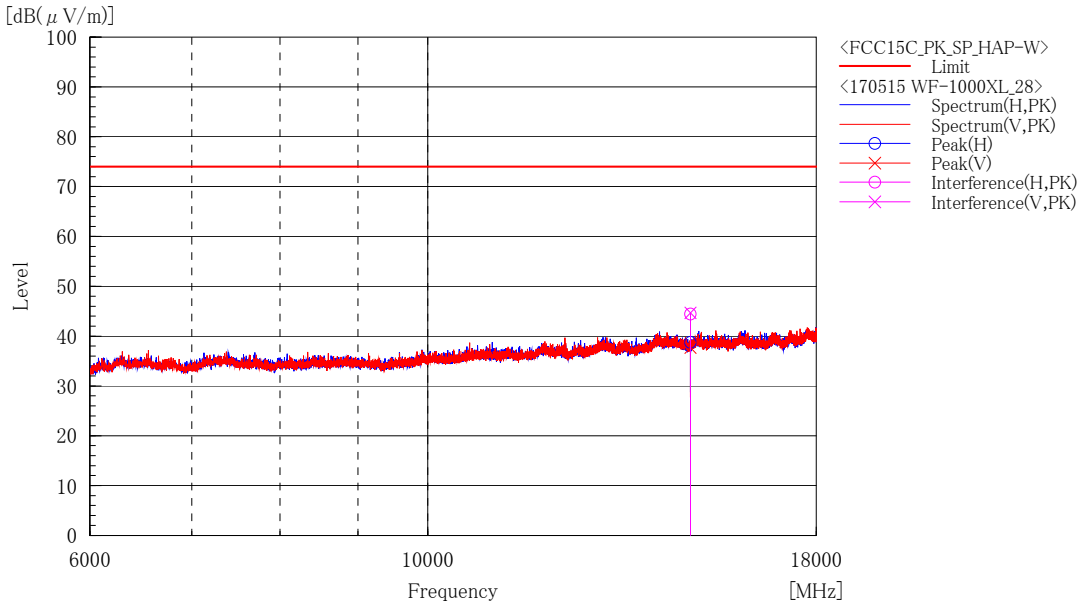
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14639.117	47.0	-2.5	44.5	74.0	29.5	344.8	185.7

[Bluetooth Low Energy (1 Mbps) / 2480MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: Y.MORIMOTO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 21deg / 51%	Remark4	: Hi



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14882.315	46.9	-2.4	44.5	74.0	29.5	166.3	89.2

--- Vertical Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	14882.679	47.1	-2.4	44.7	74.0	29.3	377.7	353.5

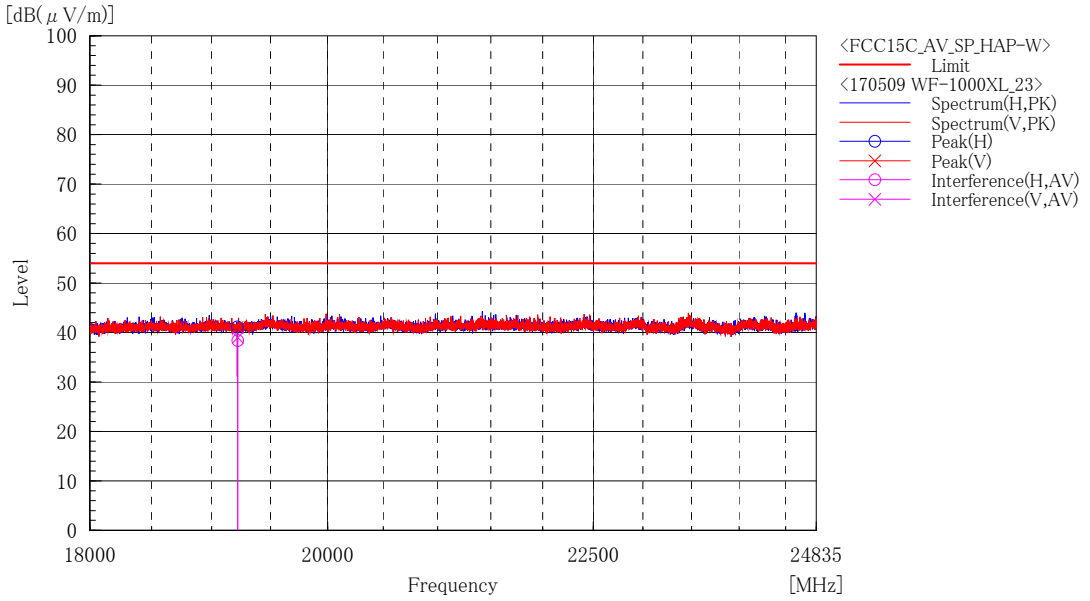
18 GHz - 24.835 GHz

[Bluetooth Low Energy (1 Mbps) / 2402MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 51%	Remark4	: Low



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19220.122	34.9	3.5	38.4	54.0	15.6	100.0	274.5

--- Vertical Polarization (AV)---

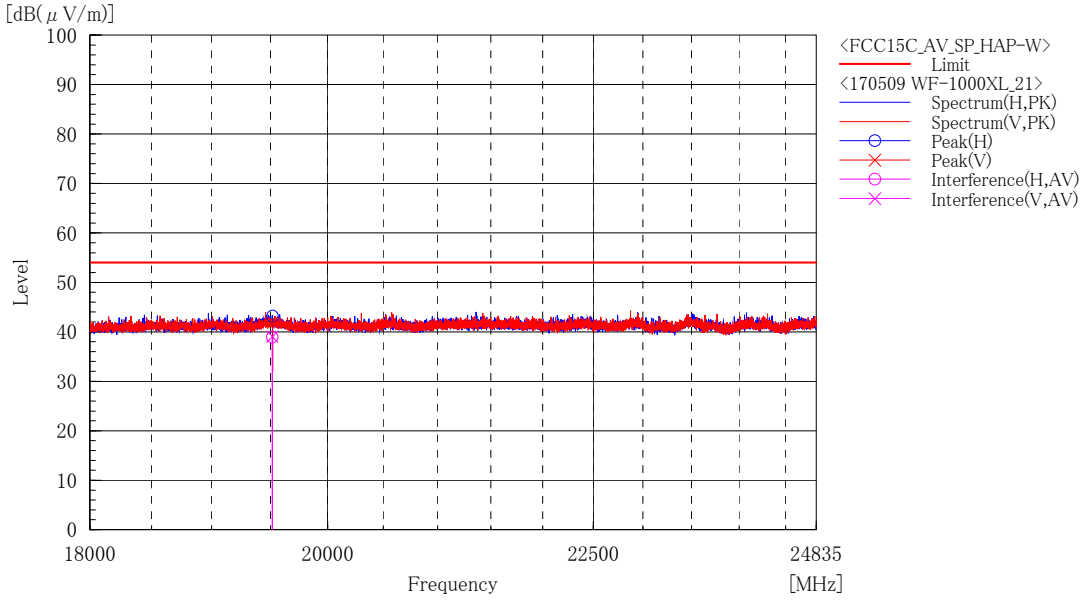
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19220.054	35.5	3.5	39.0	54.0	15.0	100.0	211.8

[Bluetooth Low Energy (1 Mbps) / 2440MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 51%	Remark4	: Mid



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19515.922	35.4	3.6	39.0	54.0	15.0	100.0	84.2

--- Vertical Polarization (AV)---

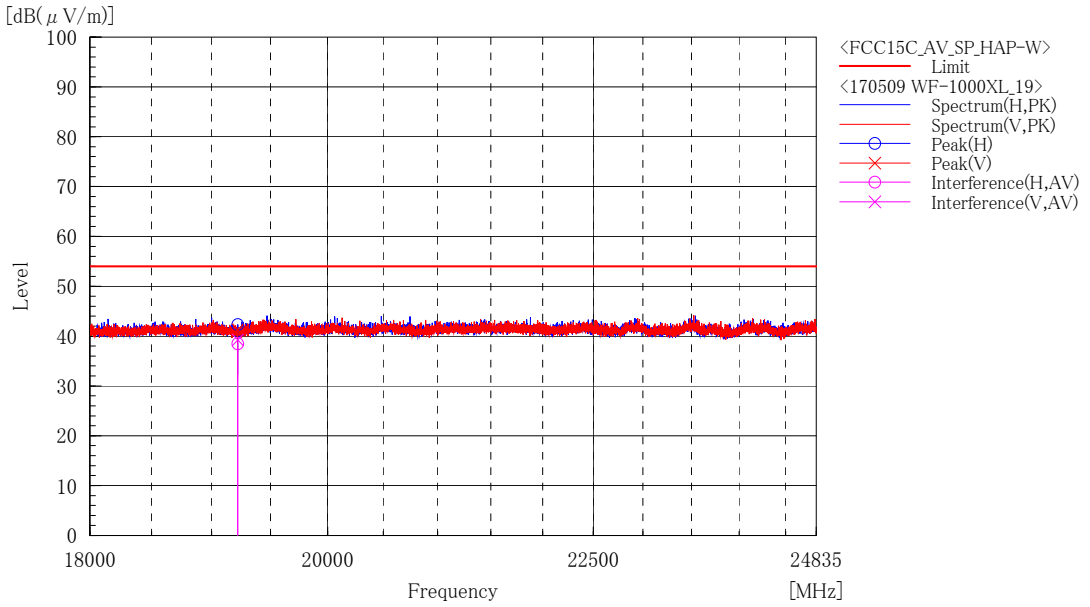
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19515.910	35.4	3.6	39.0	54.0	15.0	100.0	227.0

[Bluetooth Low Energy (1 Mbps) / 2480MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7 V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 51%	Remark4	: Hi



Final Result

--- Horizontal Polarization (AV)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19220.152	35.0	3.5	38.5	54.0	15.5	100.0	271.1

--- Vertical Polarization (AV)---

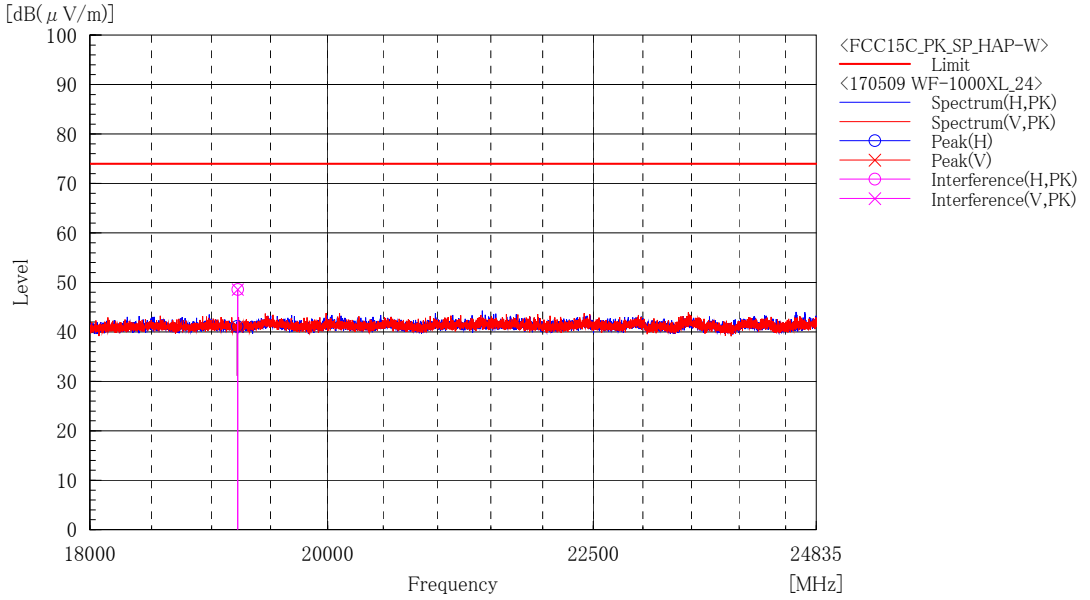
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19220.060	35.8	3.5	39.3	54.0	14.7	100.0	228.9

[Bluetooth Low Energy (1 Mbps) / 2402MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 51%	Remark4	: Low



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19219.874	45.1	3.5	48.6	74.0	25.4	100.0	272.4

--- Vertical Polarization (PK)---

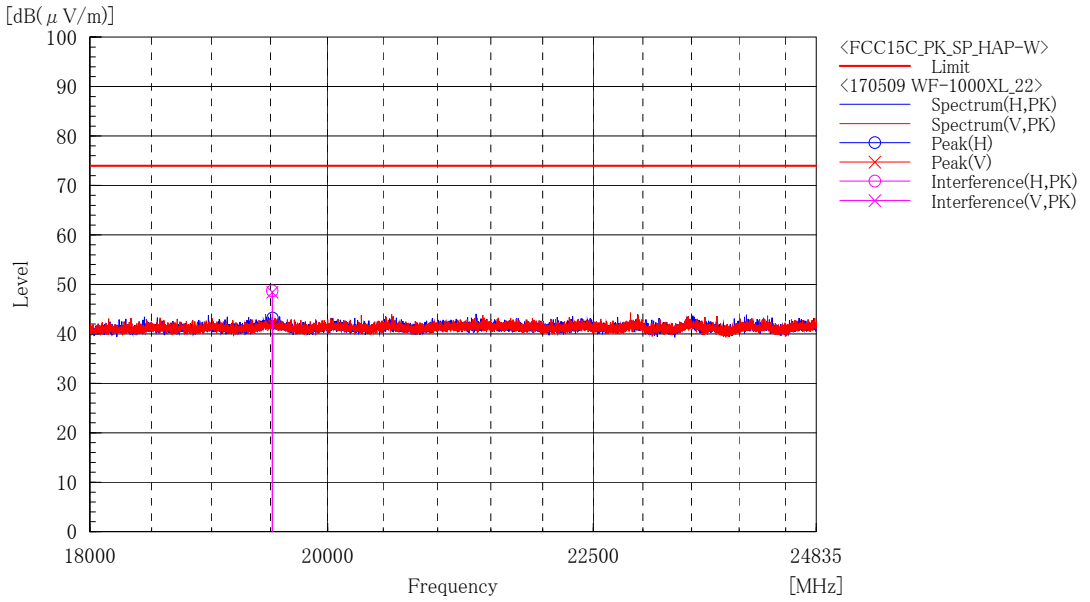
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19219.874	45.1	3.5	48.6	74.0	25.4	100.0	213.8

[Bluetooth Low Energy (1 Mbps) / 2440MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L4	Remark1	:
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 51%	Remark4	: Mid



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19516.664	45.1	3.6	48.7	74.0	25.3	100.0	84.2

--- Vertical Polarization (PK)---

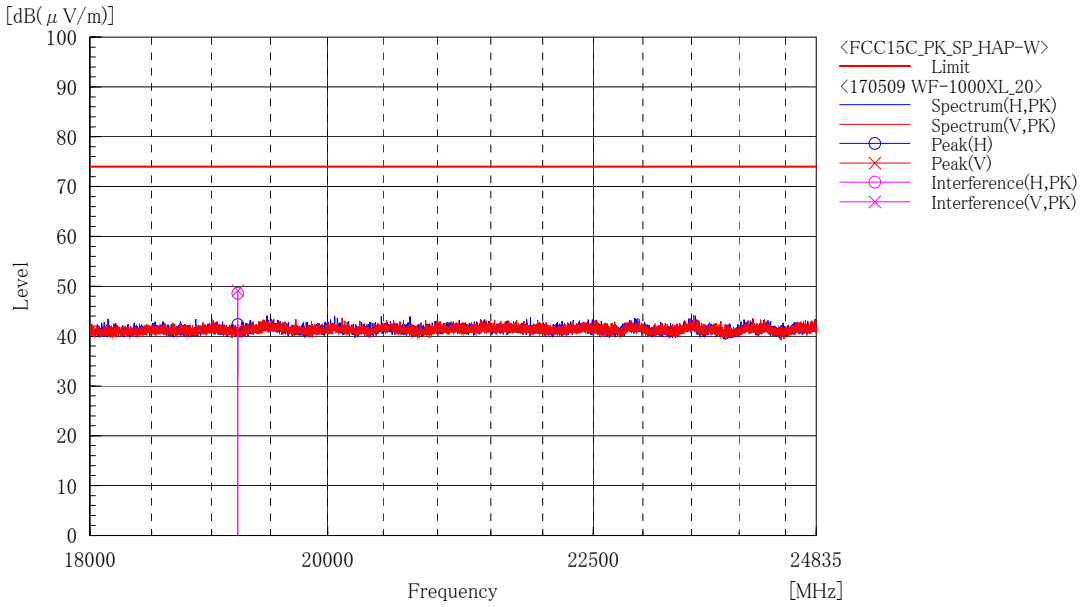
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19515.660	44.8	3.6	48.4	74.0	25.6	100.0	225.1

[Bluetooth Low Energy (1 Mbps) / 2480MHz]

Sony Global M&O Corp
Kisarazu No.1

<<Radiated Emission>>

Model	: WF-1000XL	Limit	: FCC Part15C 15.209(a) 3m
Serial	: L2	Remark1	:
Operator	: N.TAKANO	Remark2	: Z
Power	: DC 3.7 V	Remark3	: Tx / 1M
Temp./Hum.	: 23deg / 51%	Remark4	: Hi



Final Result

--- Horizontal Polarization (PK)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19220.046	45.1	3.5	48.6	74.0	25.4	100.0	269.0

--- Vertical Polarization (PK)---

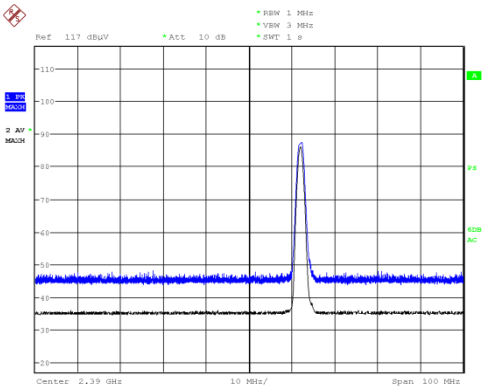
No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	19219.858	45.7	3.5	49.2	74.0	24.8	100.0	228.9

2.4GHz Restricted-Band Edge (Plot data)

These plot data show peak (trace blue) and average (trace black) spectrum for worst case emissions in the restricted-band edges. (Restricted band edges: below 2390MHz and above 2483.5MHz)
The result of the final radiated emissions measurement refers in previous pages.

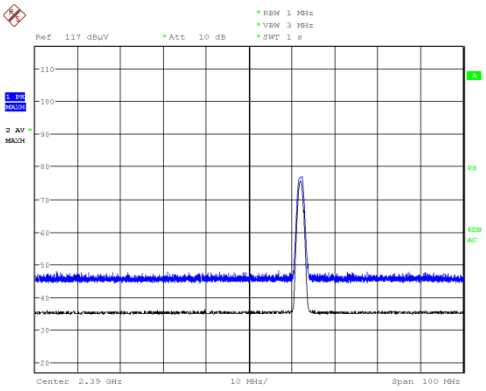
[Bluetooth Low Energy / 2402MHz]

Horizontal



Date: 19.MAY.2017 21:46:07

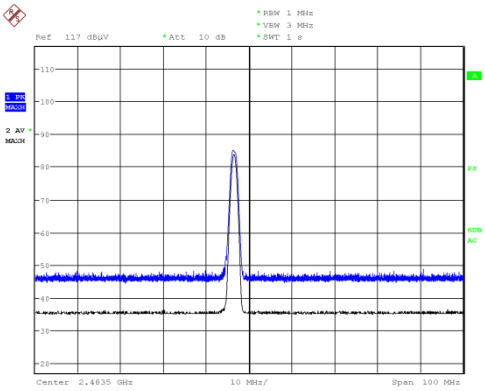
Vertical



Date: 19.MAY.2017 21:35:07

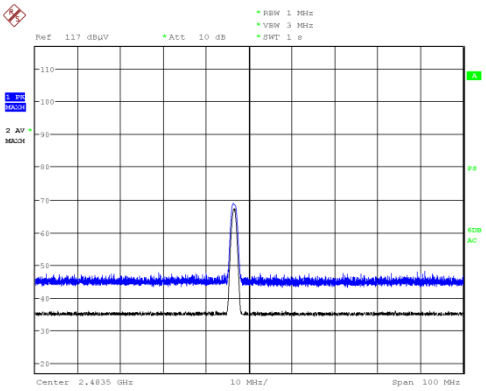
[Bluetooth Low Energy / 2480MHz]

Horizontal



Date: 16.MAY.2017 04:34:54

Vertical



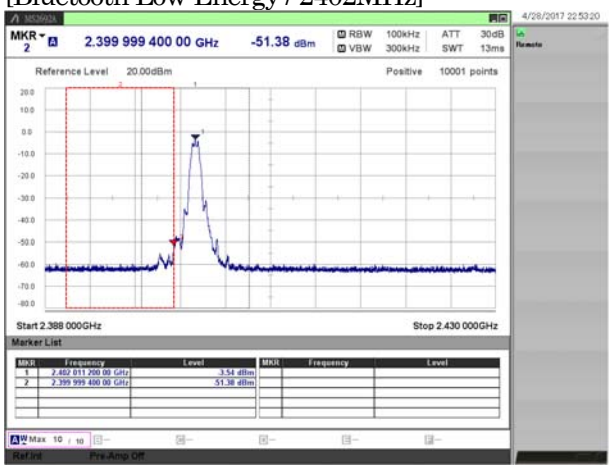
Date: 16.MAY.2017 04:38:33

3.5. Conducted Spurious Emissions for Band Edge

1) Ambient temperature : 23.1 deg.C
2) Relative humidity : 47.0 %
3) Date of measurement : 24 April, 2017
4) Measured by : M.KOUGA
5) Operating mode : Transmitting mode

Mode	Rate [Mbps]	Channel [MHz]	Frequency [MHz]	Reading(PK) [dBm]	C.F. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
BLE	1	2402	2400.00	-51.38	0.48	-50.90	-23.1	27.84
			2402.01	-3.54	0.48	-3.06	-	-

[Bluetooth Low Energy / 2402MHz]



4. Method of Calculation

4.1. Maximum Peak Conducted Output Power Measurement

Method of calculation		: Software
The Software for Calculation	Name	: SW-316
	Version	: Ver.1.3

Test Result (PK) [dBm] = Meter Reading [dBm] + C.F. [dB]
Test Result (AV) [dBm] = Meter Reading [dBm] + C.F. [dB] + Duty Factor [dB]

Notes :

(a) Meter Reading : Reading of the power meter.
(b) C.F. : Attenuator Loss + EUT Cable Loss
(c) Duty Factor : 10log {(Tx ON Time + Tx OFF Time) / (Tx ON Time)}

4.2. Power Density Measurement

Method of calculation		: Software
The Software for Calculation	Name	: SW-316
	Version	: Ver.1.3

Test Result [dBm] = Meter Reading [dBm] + C.F. [dB]

Notes :

(a) Meter Reading : Reading of the spectrum analyzer.
(b) C.F. : System Cable Loss + Attenuator Loss + EUT Cable Loss

4.3. Radiated Spurious Emission Measurement

Method of calculation		: Software
The Software for Calculation	Name	: V-Scan
	Version	: Ver. 4.0.30

Test Result [dBuV/m] = Meter Reading [dBuV] + C.F. [dB/m]

Notes :

(a) Meter Reading : Reading of the EMI test receiver or spectrum analyzer.

(b) C.F. : ☒ Antenna Factor (including Balun Loss) + System GainLoss

: ☐ Antenna Factor (including Balun Loss) + System GainLoss + 20 log (3 m/ 10 m)

4.4. Conducted Spurious Emission for Band Edge Measurement

Method of calculation		: Software
The Software for Calculation	Name	: SW-316
	Version	: Ver.1.3

Test Result [dBm] = Meter Reading [dBm] + C.F. [dB]

Notes :

(a) Meter Reading : Reading of the spectrum analyzer.

(b) C.F. : System Cable Loss + Attenuator Loss + EUT Cable Loss

5. List of Test Equipment

All test results are traceable to the national and/or international standards.

5.1. Antenna-port Conducted Measurements

4th Site Shielded Room 1

	Ctrl.#	Equipment	Model No.	Serial No.	Manufacturer	Cal.Int.	Last Cal.
x	-	Shield Room	B83117-B2432-T161	P26428	Albatross Project	-	-
x	W100	Spectrum Analyzer	MS2692A	6201338954	Anritsu	12	17.04.14
x	W006	Power Meter	N1911A	MY50000295	Keysight Technologies	12	16.10.03
x	W007	Power Sensor	N1922A	MY50180022	Keysight Technologies	12	16.10.03
-	W029	10dB Attenuator	8493C	76549	Keysight Technologies	12	16.08.01
x	WC05	RF Cable	SUCOFLEX 102	34287	HUBER + SUHNER	12	16.11.04
x	M720	Thermometer	TH-321	140044	AS ONE	12	16.06.02

5.2. Radiated Spurious Emissions

EMC Site 3m Semi-Anechoic Chamber

	Ctrl.#	Equipment	Model No.	Serial No.	Manufacturer	Cal.Int.	Last Cal.
x	M115	Semi-Anechoic Chamber	-	7D1-8A11	Otsuka Science	12	16.06.03
x	M686	EMI Receiver	N9038A	MY52260113	Keysight Technologies	12	16.12.08
x	M959	EMI Receiver	ESU40	100041	Rohde & Schwarz	12	16.11.01
x	A073	Loop Antenna	HFH2-Z2	100171	Rohde & Schwarz	12	16.10.04
x	A089	Biconical Antenna	BBA9106	VHA91032835	Schwarzbeck	12	17.01.15
x	A088	Log periodic Antenna	UHALP9108A1	0649	Schwarzbeck	12	17.01.15
x	A064	Horn Antenna	BBHA9120D	746	Schwarzbeck	12	17.01.14
x	A078	Horn Antenna	HAP06-18W	00000070	TOYO Corporation	12	17.02.20
x	A058	Horn Antenna	HAP18-26W	00000016	TOYO Corporation	12	17.03.13
x	CS017	N-RE Cable SYSTEM 1	-	-	EMC/RF Test Lab.	12	17.01.13
x	CS018	N-RE Cable SYSTEM 2	-	-	EMC/RF Test Lab.	12	17.01.13
x	CS045	N-3m EMF Cable SYSTEM	-	-	EMC/RF Test Lab.	12	17.01.13
x	CS074/075	N-RE Cable SYSTEM 4	-	-	EMC/RF Test Lab.	12	17.01.13
x	M126	Step Attenuator	8494H	3837M01144	Keysight Technologies	12	17.01.13
x	M752	Pre Amplifier	310N	320621	SONOMA INSTRUMENT	12	17.01.13
x	M128	Attenuator (3dB)	8491A	53541	Keysight Technologies	12	17.01.13
x	M609	Attenuator (3dB)	8491B	MY39265960	Keysight Technologies	12	17.01.13
x	M737	GHz Filter Box	FB-G1	001	Sony Global M&O	12	17.01.13
x	M687	Thermo Meter	AD-5640A	201301	A&D	12	16.10.06

About calibration interval

Valid until the end of the month listed in “Cal. Int.” column.