



RADIO TEST REPORT

Test Report No. : 10987914S-A

Applicant : TAMIYA, INC.
Type of Equipment : Controller
Model No. : TTU-08
FCC ID : GHL0004
Test regulation : FCC Part 15 Subpart C: 2015
Test Result : Complied

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.
5. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
6. This test report covers Radio technical requirements. It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)

Date of test: October 2 to 15, 2015

Representative test engineer:

Hiroyuki Morikawa
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Approved by:

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- ☒ The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan.
☐ There is no testing item of "Non-accreditation".

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13-EM-F0429

REVISION HISTORY

Original Test Report No.: 10987914S-A

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CONTENTS	PAGE
SECTION 1: Customer information.....	4
SECTION 2: Equipment under test (E.U.T.).....	4
SECTION 3: Test specification, procedures & results.....	5
SECTION 4: Operation of E.U.T. during testing.....	7
SECTION 5: Radiated Spurious Emission	8
SECTION 6: Antenna Terminal Conducted Tests.....	9
APPENDIX 1: Test data	10
20 dB Bandwidth and Carrier Frequency Separation.....	10
Number of Hopping Frequency	12
Dwell time.....	13
Maximum Peak Output Power	15
Average Output Power	16
Burst Rate Confirmation (for average output power)	17
Radiated Spurious Emission	18
Conducted Spurious Emission	24
Conducted Emission Band Edge compliance	27
99 %Occupied Bandwidth	28
APPENDIX 2: Test instruments	29
APPENDIX 3: Photographs of test setup	30
Radiated Spurious Emission	30
Worst Case Position	31

SECTION 1: Customer information

Company Name	:	TAMIYA, INC.
Address	:	3-7 Ondawara, Suruga-ku, Shizuoka 422-8610 Japan
Telephone Number	:	+81-54-286-5105
Facsimile Number	:	+81-54-287-2192
Contact Person	:	Yasuhiko Osa

* TAMIYA, INC. is on behalf of the applicant: TAMIYA AMERICA, INC.

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

2.1 Identification of E.U.T.

Type of Equipment	:	Controller
Model No.	:	TTU-08
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	DC 6 V
Receipt Date of Sample	:	October 2, 2015
Country of Mass-production	:	China
Condition of EUT	:	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No Modification by the test lab.

2.2 Product Description

Model: TTU-08 (referred to as the EUT in this report) is a Controller.

General Specification

Clock frequency(ies) in the system	:	16 MHz
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Radio Specification

Radio Type	:	Transmitter
Frequency of Operation	:	2404.5 MHz - 2452.0 MHz
Modulation	:	FHSS
Power Supply (radio part input)	:	DC 3.3 V
Antenna type	:	Pattern Antenna by the copper foils (P.C.B. (MSA Antenna))
Antenna Gain	:	2.14 dBi

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C: 2015, final revised on September 8, 2015
 Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
 Section 15.207 Conducted limits
 Section 15.247 Operation within the bands 902-928MHz,
 2400-2483.5MHz, and 5725-5850MHz

3.2 Procedures and results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	FCC: ANSI C63.4-2009 7. AC powerline conducted emission measurements IC: RSS-Gen 8.8	FCC: Section 15.207 IC: RSS-Gen 8.8	-	N/A *1)	-
Carrier Frequency Separation	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1) IC: RSS-247 5.1 (2)	See data.	Complied	Conducted
20 dB Bandwidth	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1) IC: RSS-247 5.1 (1)		-	Conducted
Number of Hopping Frequency	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1)(iii) IC: RSS-247 5.1 (4)		Complied	Conducted
Dwell time	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1)(iii) IC: RSS-247 5.1 (4)		Complied	Conducted
Maximum Peak Output Power	FCC: FCC Public Notice DA 00-705 IC: RSS-Gen 6.12	FCC: Section15.247(a)(b)(1) IC: RSS-247 5.4 (2)		Complied	Conducted
Spurious Emission & Band Edge Compliance	FCC: FCC Public Notice DA 00-705 IC: RSS-Gen 6.13	FCC: Section15.247(d) IC: RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10	7.3 dB 12260.00 MHz, AV, Hori. Tx 2452 MHz	Complied	Conducted (below 30 MHz)/ Radiated (above 30 MHz) *2)
*1) The test is not applicable since the EUT has no AC mains. *2) Radiated test was selected over 30 MHz based on section 15.247(d) and KDB 558074 D01 12.2.7. Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422. * In case any questions arise about test procedure, ANSI C63.10: 2013 is also referred. However, there is one deviation from ANSI C63.10: 2013. (ANSI C63.10:2013 is Non-accreditation) Measurement height is not 1.5 m, but 0.8 m.					

FCC Part 15.31 (e)

The test was performed with a new battery. Therefore, the EUT complies with the requirement.

FCC Part 15.203

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT.
 Therefore, the equipment complies with the antenna requirement.

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % Occupied Bandwidth	IC: RSS-Gen 6.6	IC: -	N/A	-	Conducted

Other than above, no addition, exclusion nor deviation has been made from the standard.

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3.4 Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k = 2$.
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Item	Frequency range	Uncertainty (+/-)		
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	3.6 dB	3.4 dB	3.4 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	3.7 dB	3.5 dB	3.5 dB
	30 MHz-300 MHz	4.9 dB	4.9 dB	4.7 dB
	300 MHz-1 GHz	5.0 dB	5.0 dB	4.8 dB
	1 GHz-13 GHz	4.9 dB	4.9 dB	4.9 dB
Radiated emission (Measurement distance: 1 m)	13 GHz-18 GHz	5.7 dB	5.7 dB	5.7 dB
	18 GHz-40 GHz	4.5 dB	4.3 dB	4.3 dB

SAC=Semi-Anechoic Chamber

SR= Shielded Room is applied besides radiated emission

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)_SPM-06	0.76 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	0.79 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	0.74 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.08 dB
Spurious emission (Conducted) below 1GHz	1.5 dB
Spurious emission (Conducted) 1 GHz-3 GHz	1.7 dB
Spurious emission (Conducted) 3 GHz-18 GHz	2.4 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.5 dB
Spurious emission (Conducted) 26.5 GHz-40 GHz	2.5 dB
Bandwidth Measurement	0.66 %
Duty cycle and Time Measurement	0.012 %

Radiated emission test

The data listed in this test report has enough margin, more than the site margin.

3.5 Test Location

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JAB Accreditation No. RTL02610

Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber	2973D-1	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber	2973D-2	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber	2973D-3	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber	-	8.1 x 5.1 x 3.55	8.1 x 5.1	-
No.1 Shielded room	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.2 Shielded room	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.3 Shielded room	-	6.3 x 4.7 x 2.7	6.3 x 4.7	-
No.4 Shielded room	-	4.4 x 4.7 x 2.7	4.4 x 4.7	-
No.5 Shielded room	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.6 Shielded room	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.8 shielded room	-	3.45 x 5.5 x 2.4	3.45 x 5.5	-
No.1 Measurement room	-	2.55 x 4.1 x 2.5	-	-

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

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

4.1 Operating Mode(s)

Test item	Operating mode	Tested frequency
Carrier frequency separation	Transmitting (Hopping ON)	Hopping pattern 1
20 dB bandwidth	Transmitting (Hopping OFF)	2404.5 MHz, 2428.5 MHz, 2452 MHz
Number of hopping frequency	Transmitting (Hopping ON)	Hopping pattern 1
Dwell time	Transmitting (Hopping ON)	Hopping pattern 1
Maximum peak output power	Transmitting (Hopping OFF)	2404.5 MHz, 2428.5 MHz, 2452 MHz
Band edge compliance & Spurious emission (Conducted)	Transmitting -Hopping ON -Hopping OFF	Band edge compliance: 2404.5 MHz, 2452 MHz (Hopping pattern 1, 5) Spurious emission:
(Radiated)	Transmitting	2404.5 MHz, 2428.5 MHz, 2452 MHz
99 % occupied bandwidth	Transmitting -Hopping ON -Hopping OFF	2404.5 MHz, 2428.5 MHz, 2452 MHz

* Payload data pattern was the packet data of equivalent value of PN9.

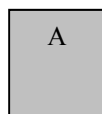
The operation program of EUT was operated by the firmware for the test in EUT. (TTU-08-E-TX, version: 1.00)
The EUT's output power setting cannot be changed.

Hopping patterns of this EUT:

Hopping pattern 1: 2404.5 MHz to 2448.0 MHz	Hopping pattern 6: 2404.5 MHz to 2448.0 MHz
Hopping pattern 2: 2405.0 MHz to 2448.5 MHz	Hopping pattern 7: 2405.0 MHz to 2448.5 MHz
Hopping pattern 3: 2407.5 MHz to 2451.0 MHz	Hopping pattern 8: 2407.5 MHz to 2451.0 MHz
Hopping pattern 4: 2408.0 MHz to 2451.5 MHz	Hopping pattern 9: 2408.0 MHz to 2451.5 MHz
Hopping pattern 5: 2408.5 MHz to 2452.0 MHz	

There are 9 hopping stream patterns in this product. When defined stream pattern, random hopping will start within 30 ch with 1.5 MHz channel spacing. There is no random hopping between hopping stream patterns. The specification of one channel of each pattern is the same. The hopping pattern was using the pattern 1 as a representative.

4.2 Configuration and peripherals



* Test data was taken under worse case conditions.

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Controller	TTU-08	No.3 *1) No.4 *2)	TAMIYA, INC.	EUT

*1) For Radiated Emission test 1 GHz – 25 GHz

*2) For Radiated Emission test 30 MHz – 1000 MHz

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SECTION 5: Radiated Spurious Emission

Test Procedure

EUT was placed on a polystyrene platform of nominal size, 0.5 m by 0.5 m, raised 0.8 m above the conducting ground plane.

The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

The height of the measuring antenna varied between 1 m and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field strength.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.

The measurements were made with the following detector function of the test receiver and the Spectrum analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

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

Test Antennas are used as below;

Frequency	30 MHz to 300 MHz	300 MHz to 1 GHz	Above 1 GHz
Antenna Type	Biconical	Logperiodic	Horn

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

20 dBc was applied to the frequency over the limit of FCC 15.209 / Table 4 of RSS-Gen 8.9 (IC) and outside the restricted band of FCC15.205 / Table 6 of RSS-Gen 8.10 (IC).

Frequency	Below 1 GHz	Above 1 GHz		20 dBc
Instrument used	Test Receiver	Spectrum Analyzer		Spectrum Analyzer
Detector	QP	PK	AV	PK
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	RBW: 1 MHz VBW: 10 Hz *1)	RBW: 100 kHz VBW: 300 kHz
Test Distance	3 m	3 m (below 13 GHz), 1 m*2) (above 13 GHz)		3 m (below 13 GHz), 1 m*2) (above 13 GHz)

*1) Although DA 00-705 accepts VBW = 10 Hz for AV measurements, it was confirmed that superfluous smoothing was not performed.

*2) Distance Factor: $20 \times \log(3.0 \text{ m} / 1.0 \text{ m}) = 9.5 \text{ dB}$

The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Worst position:

	Below 1 GHz	1 G-2.8 GHz	2.8 G-13 GHz	13 G-18 GHz	18 G-25 GHz
Horizontal	X	X	Y	X	X
Vertical	X	Y	Z	X	X

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Measurement range : 30 M - 25 GHz

Test data : APPENDIX

Test result : Pass

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SECTION 6: Antenna Terminal Conducted Tests

Test Procedure

The tests were made with below setting connected to the antenna port.

Test	Span	RBW	VBW	Sweep time	Detector	Trace	Instrument used
20 dB Bandwidth	3 MHz	30 kHz	100 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth *1)	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak	Max Hold *1)	Spectrum Analyzer
Maximum Peak Output Power	-	-	-	Auto	Peak Average *3)	-	Power Meter (Sensor: 50MHz BW)
Carrier Frequency Separation	5 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Number of Hopping Frequency	30 MHz	300 kHz	1 MHz	Auto	Peak	Max Hold	Spectrum Analyzer
Dwell Time	Zero Span	100 kHz, 1 MHz	300 kHz, 3 MHz	As necessary capture the entire dwell time per hopping channel	Peak	Clear Write	Spectrum Analyzer
Conducted Spurious Emission *2)	9 kHz to 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz to 30 MHz	10 kHz	30 kHz				
	30 MHz to 25 GHz	100 kHz	300 kHz				
Conducted Spurious Emission Band Edge compliance	12.5 MHz, 38 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer

*1) The measurement was performed with Max Hold since the duty cycle was not 100 %. Peak hold was applied as Worst-case measurement.
 *2) In the frequency range below 30MHz, RBW was narrowed to separate the noise contents. Then, wide-band noise near the limit was checked separately, however the noise was not detected as shown in the chart. (9 kHz -150 kHz: RBW = 200 Hz, 150 kHz - 30 MHz: RBW = 9.1 kHz)
 *3) Reference data

The test results and limit are rounded off to two decimals place, so some differences might be observed.

Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

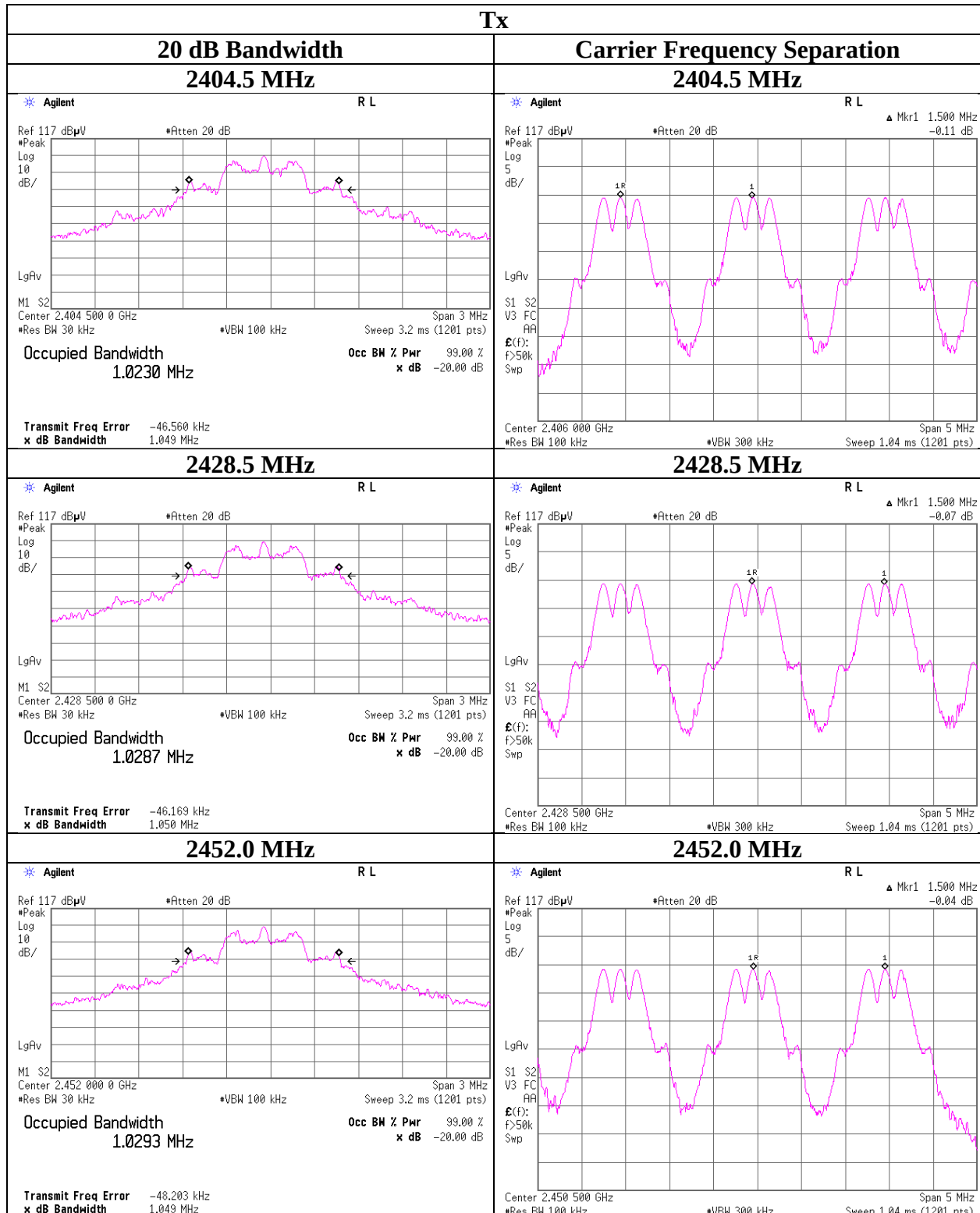
20 dB Bandwidth and Carrier Frequency Separation

Test place Shonan EMC Lab. No.5 Shielded Room
Report No. 10987914S-A
Date October 15, 2015
Temperature / Humidity 25 deg. C / 36 %RH
Engineer Hiroyuki Morikawa
Mode Tx, Hopping Off, Tx, Hopping On

Mode	Freq. [MHz]	20 dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
Tx	2404.5	1.049	1.500	≥ 0.699
Tx	2428.5	1.050	1.500	≥ 0.700
Tx	2452.0	1.049	1.500	≥ 0.699

Limit: Two-thirds of 20 dB Bandwidth or 25 kHz (whichever is greater)
No limit applies to 20 dB Bandwidth.

20 dB Bandwidth and Carrier Frequency Separation

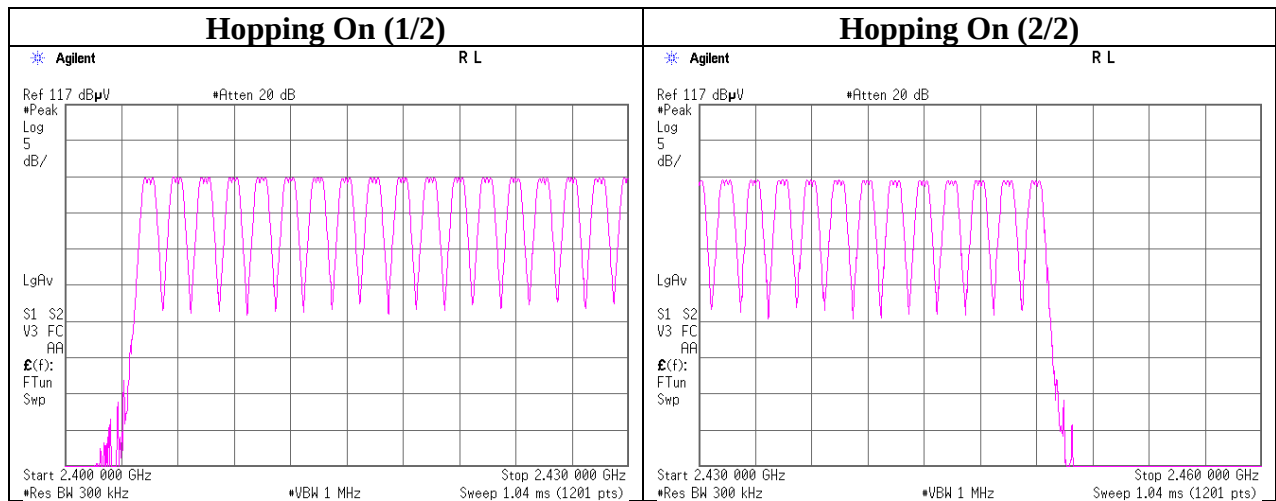


Number of Hopping Frequency

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10987914S-A
Date	October 15, 2015
Temperature / Humidity	25 deg. C / 36 %RH
Engineer	Hiroyuki Morikawa
Mode	Tx, Hopping On

Mode	Number of channel [channels]	Limit [channels]
Tx	30	>= 15

Number of Hopping Frequency



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Dwell time

Test place Shonan EMC Lab. No.5 Shielded Room
Report No. 10987914S-A
Date October 15, 2015
Temperature / Humidity 25 deg. C / 36 %RH
Engineer Hiroyuki Morikawa
Mode Tx, Hopping On

Mode	Number of transmission in a 12.0 (30 Hopping x 0.4) second period	Length of transmission [ms]	Result [ms]	Limit [ms]
Tx	7.0 times / 5 s x 12.0 s = 17 times	4.823	82	400

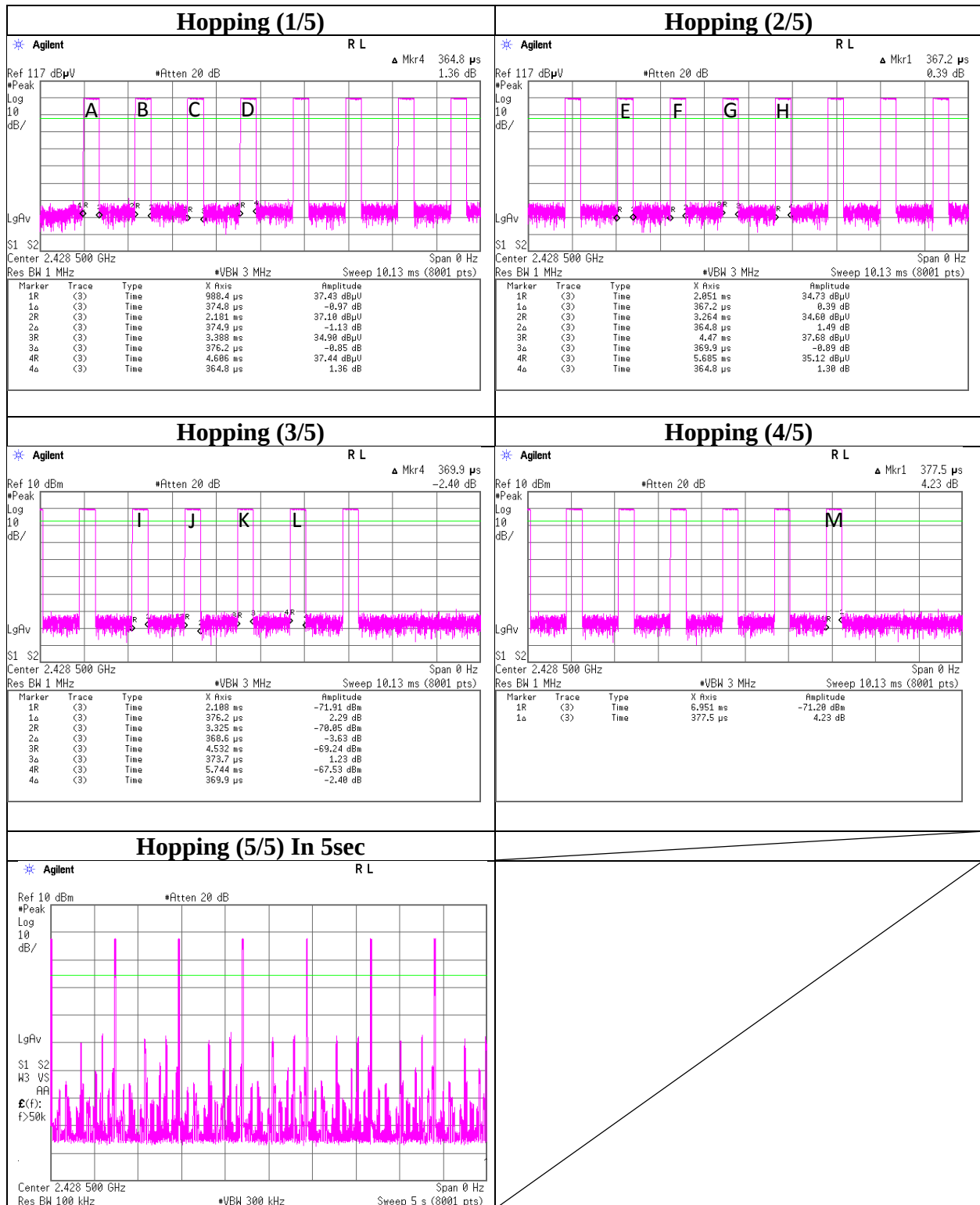
Sample Calculation

Result = Number of transmission x Length of transmission

Length of transmission transmission [ms] = A + B + C + D + E + F + G + H + I + J + K + L + M

= 0.3748 + 0.3749 + 0.3762 + 0.3648 + 0.3672 + 0.3648 + 0.3699 + 0.3648 + 0.3762 + 0.3686 + 0.3737 + 0.3699 + 0.3775

Dwell time



Maximum Peak Output Power

Test place Shonan EMC Lab. No.5 Shielded Room
Report No. 10987914S-A
Date October 15, 2015
Temperature / Humidity 25 deg. C / 36 %RH
Engineer Hiroyuki Morikawa
Mode Tx, Hopping Off

Mode	Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Tx	2404.5	-10.28	1.40	20.13	11.25	13.34	20.96	125	9.71
Tx	2428.5	-10.33	1.40	20.13	11.20	13.18	20.96	125	9.76
Tx	2452.0	-10.38	1.37	20.13	11.12	12.94	20.96	125	9.84

Sample Calculation:

Result = Reading + Cable Loss + Attenuator Loss

Average Output Power
(Reference data for)

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10987914S-A
Date	October 15, 2015
Temperature / Humidity	25 deg. C / 36 %RH
Engineer	Hiroyuki Morikawa
Mode	Tx, Hopping Off

Mode	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Frame power)		Duty factor [dB]	Result (Burst power)	
					[dBm]	[mW]		[dBm]	[mW]
Tx	2404.5	-15.90	1.40	20.13	5.63	3.66	5.14	10.77	11.94
Tx	2428.5	-15.94	1.40	20.13	5.59	3.62	5.14	10.73	11.83
Tx	2452.0	-16.01	1.37	20.13	5.49	3.54	5.14	10.63	11.56

Sample Calculation:

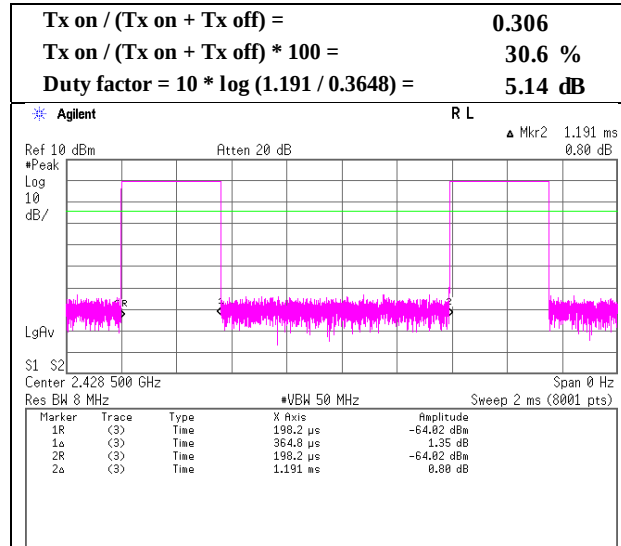
Result (Frame power) = Reading + Cable Loss + Attenuator Loss

Result (Burst power) = Frame power + Duty factor

Burst Rate Confirmation (for average output power)

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10987914S-A
Date	October 15, 2015
Temperature / Humidity	25 deg. C / 36 %RH
Engineer	Hiroyuki Morikawa
Mode	Tx, Hopping Off

Tx



Radiated Spurious Emission

Test place : Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10987914S-A
Date : October 3, 2015 October 7, 2015
Temperature / Humidity : 21 deg. C / 56 %RH 24 deg. C / 47 %RH
Engineer : Tomohiro Hara Tomohiro Hara
(1-25 GHz) (30-1000 MHz)
Mode : Tx, Hopping Off, 2404.5 MHz

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant. Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	239.999	QP	25.3	16.8	8.3	32.0	0.0	18.4	46.0	27.6	383	5	
Hori.	834.360	QP	21.2	21.5	10.8	31.3	0.0	22.2	46.0	23.8	100	27	
Hori.	925.156	QP	20.6	22.7	11.1	30.7	0.0	23.7	46.0	22.3	100	312	
Hori.	2116.515	PK	50.5	27.3	13.5	41.0	3.4	53.7	73.9	20.2	100	225	
Hori.	2372.435	PK	51.1	27.7	13.7	41.0	3.4	54.9	73.9	19.0	100	116	
Hori.	2390.000	PK	49.6	27.8	13.7	41.0	3.4	53.5	73.9	20.4	100	105	
Hori.	2420.282	PK	53.0	27.8	13.7	41.0	3.4	56.9	73.9	17.0	100	243	
Hori.	2436.356	PK	52.0	27.8	13.7	41.0	3.4	55.9	73.9	18.0	100	241	
Hori.	2692.468	PK	49.8	28.0	13.9	40.9	3.4	54.2	73.9	19.7	100	229	
Hori.	4809.000	PK	57.2	31.4	5.7	39.6	3.4	58.1	73.9	15.8	100	197	
Hori.	7213.500	PK	46.4	36.9	7.1	40.1	3.4	53.7	73.9	20.2	100	222	
Hori.	9618.000	PK	46.2	38.5	8.2	39.6	3.4	56.7	73.9	17.2	100	0	
Hori.	12022.500	PK	45.4	39.7	9.3	39.3	3.4	58.5	73.9	15.4	100	0	
Hori.	2116.515	AV	38.1	27.3	13.5	41.0	3.4	41.3	53.9	12.6	100	225	
Hori.	2372.435	AV	38.9	27.7	13.7	41.0	3.4	42.7	53.9	11.2	100	116	
Hori.	2390.000	AV	34.8	27.8	13.7	41.0	3.4	38.7	53.9	15.2	100	105	
Hori.	2420.282	AV	39.6	27.8	13.7	41.0	3.4	43.5	53.9	10.4	100	243	
Hori.	2436.356	AV	39.9	27.8	13.7	41.0	3.4	43.8	53.9	10.1	100	241	
Hori.	2692.468	AV	37.4	28.0	13.9	40.9	3.4	41.8	53.9	12.1	100	229	
Hori.	4809.000	AV	43.6	31.4	5.7	39.6	3.4	44.5	53.9	9.4	100	197	
Hori.	7213.500	AV	35.3	36.9	7.1	40.1	3.4	42.6	53.9	11.3	100	222	
Hori.	9618.000	AV	32.5	38.5	8.2	39.6	3.4	43.0	53.9	10.9	100	0	
Hori.	12022.500	AV	33.2	39.7	9.3	39.3	3.4	46.3	53.9	7.6	100	0	
Vert.	240.002	QP	25.3	16.8	8.3	32.0	0.0	18.4	46.0	27.6	100	353	
Vert.	731.917	QP	21.7	20.7	10.4	31.7	0.0	21.1	46.0	24.9	100	87	
Vert.	811.024	QP	21.3	21.2	10.7	31.4	0.0	21.8	46.0	24.2	100	15	
Vert.	957.368	QP	20.6	23.0	11.1	30.5	0.0	24.2	46.0	21.8	100	25	
Vert.	2148.600	PK	48.3	27.3	13.5	41.0	3.4	51.5	73.9	22.4	100	105	
Vert.	2372.432	PK	50.0	27.7	13.7	41.0	3.4	53.8	73.9	20.1	100	87	
Vert.	2390.000	PK	47.9	27.8	13.7	41.0	3.4	51.8	73.9	22.1	134	105	
Vert.	2420.517	PK	46.1	27.8	13.7	41.0	3.4	50.0	73.9	23.9	100	102	
Vert.	2436.420	PK	48.8	27.8	13.7	41.0	3.4	52.7	73.9	21.2	100	106	
Vert.	4809.000	PK	57.0	31.4	5.7	39.6	3.4	57.9	73.9	16.0	100.0	206.0	
Vert.	7213.500	PK	46.1	36.9	7.1	40.1	3.4	53.4	73.9	20.5	100.0	178.0	
Vert.	9618.000	PK	45.1	38.5	8.2	39.6	3.4	55.6	73.9	18.3	100.0	0.0	
Vert.	12022.500	PK	44.6	39.7	9.3	39.3	3.4	57.7	73.9	16.2	100.0	0.0	
Vert.	2148.600	AV	36.0	27.3	13.5	41.0	3.4	39.2	53.9	14.7	100.0	105.0	
Vert.	2372.432	AV	36.8	27.7	13.7	41.0	3.4	40.6	53.9	13.3	100.0	87.0	
Vert.	2390.000	AV	34.5	27.8	13.7	41.0	3.4	38.4	53.9	15.5	134.0	105.0	
Vert.	2420.517	AV	37.1	27.8	13.7	41.0	3.4	41.0	53.9	12.9	100.0	102.0	
Vert.	2436.420	AV	35.3	27.8	13.7	41.0	3.4	39.2	53.9	14.7	100.0	106.0	
Vert.	4809.000	AV	41.7	31.4	5.7	39.6	3.4	42.6	53.9	11.3	100.0	206.0	
Vert.	7213.500	AV	34.2	36.9	7.1	40.1	3.4	41.5	53.9	12.4	100.0	178.0	
Vert.	9618.000	AV	32.6	38.5	8.2	39.6	3.4	43.1	53.9	10.8	100.0	0.0	
Vert.	12022.500	AV	33.2	39.7	9.3	39.3	3.4	46.3	53.9	7.6	100.0	0.0	

Result = Reading + Ant. Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 13 GHz : 20log(4.43 m / 3.0 m) = 3.4 dB

13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.5 dB

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant. Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2404.500	PK	103.2	27.8	13.7	41.0	3.4	107.1	-	-	Carrier
Hori.	2400.000	PK	52.8	27.8	13.7	41.0	3.4	56.7	87.1	30.4	
Vert.	2404.500	PK	101.6	27.8	13.7	41.0	3.4	105.5	-	-	Carrier
Vert.	2400.000	PK	50.6	27.8	13.7	41.0	3.4	54.5	85.5	31.0	

Result = Reading + Ant. Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 13 GHz : 20log(4.43 m / 3.0 m) = 3.4 dB

13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.5 dB

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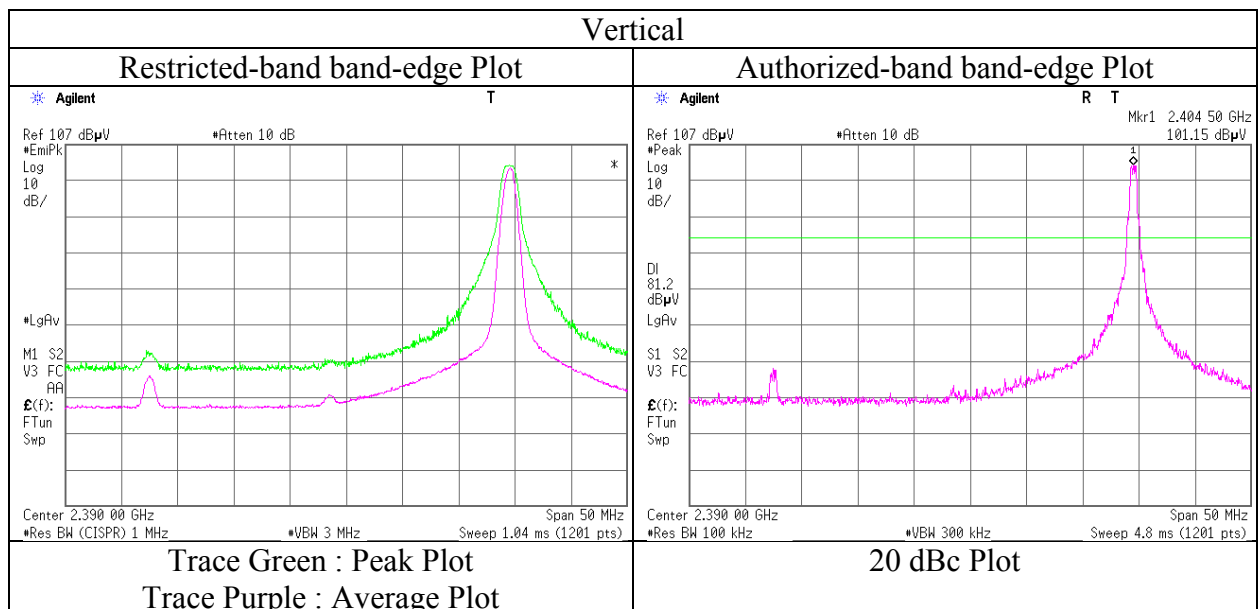
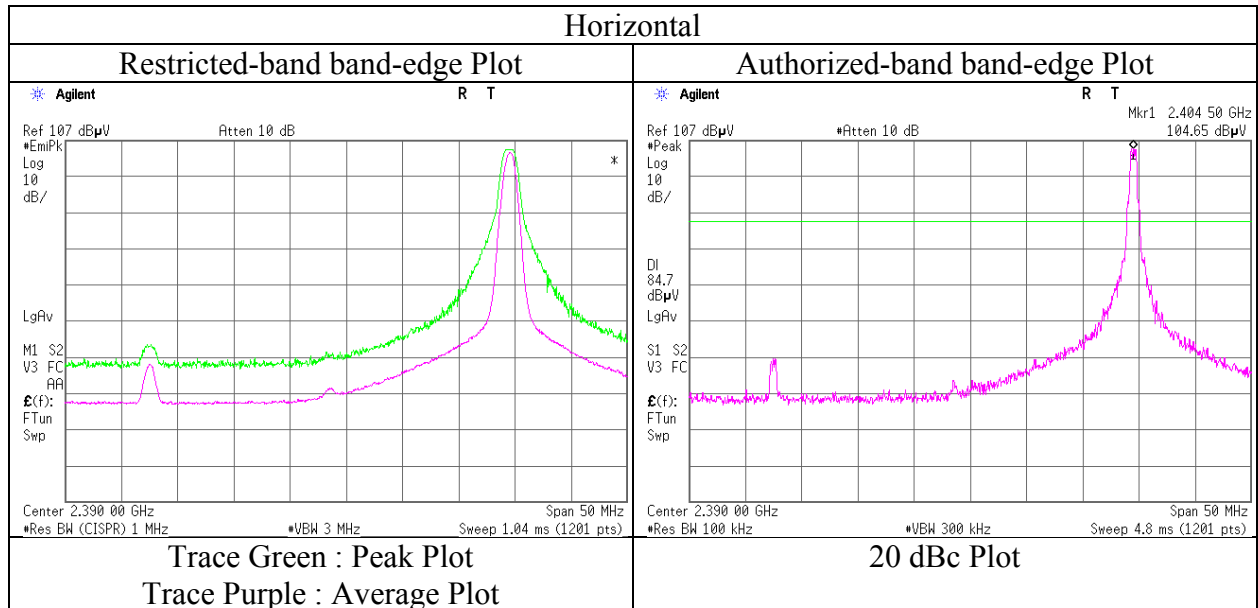
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Radiated Spurious Emission (Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	10987914S-A
Date	October 3, 2015
Temperature / Humidity	21 deg. C / 56 %RH
Engineer	Tomohiro Hara
Mode	Tx, Hopping Off, 2404.5 MHz



* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	10987914S-A		
Date	October 2, 2015	October 3, 2015	October 7, 2015
Temperature / Humidity	26 deg. C / 47 %RH	21 deg. C / 56 %RH	24 deg. C / 47 %RH
Engineer	Kenichi Adachi	Tomohiro Hara	Tomohiro Hara
	(1-13 GHz)	(13-25 GHz)	(30-1000 MHz)
Mode	Tx, Hopping Off, 2428.5 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	239.998	QP	25.3	16.8	8.3	32.0	0.0	18.4	46.0	27.6	378	3	
Hori.	859.071	QP	21.2	21.9	10.8	31.2	0.0	22.7	46.0	23.3	100	33	
Hori.	941.507	QP	20.7	22.9	11.1	30.6	0.0	24.1	46.0	21.9	100	310	
Hori.	2268.494	PK	50.0	27.5	13.6	41.0	3.4	53.5	73.9	20.4	100	218	
Hori.	2396.489	PK	51.3	27.8	13.7	41.0	3.4	55.2	73.9	18.7	100	222	
Hori.	2588.494	PK	48.4	28.0	13.8	40.9	3.4	52.7	73.9	21.2	100	223	
Hori.	2716.495	PK	50.7	28.0	13.9	40.9	3.4	55.1	73.9	18.8	100	224	
Hori.	4857.000	PK	56.6	31.6	5.8	39.5	3.4	57.9	73.9	16.0	114	185	
Hori.	7285.500	PK	46.7	36.9	7.2	40.2	3.4	54.0	73.9	19.9	100	193	
Hori.	9714.000	PK	45.2	38.5	8.2	39.5	3.4	55.8	73.9	18.1	100	0	
Hori.	12142.500	PK	44.4	39.6	9.4	39.4	3.4	57.4	73.9	16.5	100	0	
Hori.	2268.494	AV	38.0	27.5	13.6	41.0	3.4	41.5	53.9	12.4	100	218	
Hori.	2396.489	AV	39.2	27.8	13.7	41.0	3.4	43.1	53.9	10.8	100	222	
Hori.	2588.494	AV	36.2	28.0	13.8	40.9	3.4	40.5	53.9	13.4	100	223	
Hori.	2716.495	AV	38.1	28.0	13.9	40.9	3.4	42.5	53.9	11.4	100	224	
Hori.	4857.000	AV	43.0	31.6	5.8	39.5	3.4	44.3	53.9	9.6	114	185	
Hori.	7285.500	AV	34.3	36.9	7.2	40.2	3.4	41.6	53.9	12.3	100	193	
Hori.	9714.000	AV	33.2	38.5	8.2	39.5	3.4	43.8	53.9	10.1	100	0	
Hori.	12142.500	AV	32.1	39.6	9.4	39.4	3.4	45.1	53.9	8.8	100	0	
Vert.	173.493	QP	22.0	15.8	8.0	32.0	0.0	13.8	43.5	29.7	100	199	
Vert.	239.998	QP	25.3	16.8	8.3	32.0	0.0	18.4	46.0	27.6	100	318	
Vert.	874.138	QP	21.4	22.1	10.9	31.1	0.0	23.3	46.0	22.7	100	87	
Vert.	926.166	QP	20.7	22.7	11.1	30.7	0.0	23.8	46.0	22.2	100	341	
Vert.	2268.494	PK	49.0	27.5	13.6	41.0	3.4	52.5	73.9	21.4	100	70	
Vert.	2396.489	PK	51.2	27.8	13.7	41.0	3.4	55.1	73.9	18.8	172	94	
Vert.	2588.494	PK	48.4	28.0	13.8	40.9	3.4	52.7	73.9	21.2	166	282	
Vert.	2716.495	PK	49.6	28.0	13.9	40.9	3.4	54.0	73.9	19.9	165	284	
Vert.	4857.000	PK	56.2	31.6	5.8	39.5	3.4	57.5	73.9	16.4	100	163	
Vert.	7285.500	PK	48.4	36.9	7.2	40.2	3.4	55.7	73.9	18.2	100	184	
Vert.	9714.000	PK	45.1	38.5	8.2	39.5	3.4	55.7	73.9	18.2	100	0	
Vert.	12142.500	PK	44.5	39.6	9.4	39.4	3.4	57.5	73.9	16.4	100	0	
Vert.	2268.494	AV	36.7	27.5	13.6	41.0	3.4	40.2	53.9	13.7	100	70	
Vert.	2396.489	AV	38.5	27.8	13.7	41.0	3.4	42.4	53.9	11.5	172	94	
Vert.	2588.494	AV	35.7	28.0	13.8	40.9	3.4	40.0	53.9	13.9	166	282	
Vert.	2716.495	AV	37.0	28.0	13.9	40.9	3.4	41.4	53.9	12.5	165	284	
Vert.	4857.000	AV	42.7	31.6	5.8	39.5	3.4	44.0	53.9	9.9	100	163	
Vert.	7285.500	AV	35.2	36.9	7.2	40.2	3.4	42.5	53.9	11.4	100	184	
Vert.	9714.000	AV	33.1	38.5	8.2	39.5	3.4	43.7	53.9	10.2	100	0	
Vert.	12142.500	AV	32.0	39.6	9.4	39.4	3.4	45.0	53.9	8.9	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 13 GHz : 20log (4.43 m / 3.0 m) = 3.4 dB

13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

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Radiated Spurious Emission

Test place : Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 10987914S-A
Date : October 3, 2015 October 7, 2015
Temperature / Humidity : 21 deg. C / 56 %RH 24 deg. C / 47 %RH
Engineer : Tomohiro Hara Tomohiro Hara
(1-25 GHz) (30-1000 MHz)
Mode : Tx, Hopping Off, 2452 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	239.997	QP	25.2	16.8	8.3	32.0	0.0	18.3	46.0	27.7	400	3	
Hori.	702.163	QP	21.4	20.5	10.3	31.8	0.0	20.4	46.0	25.6	100	355	
Hori.	933.167	QP	20.7	22.8	11.1	30.7	0.0	23.9	46.0	22.1	100	17	
Hori.	954.094	QP	20.5	23.0	11.1	30.5	0.0	24.1	46.0	21.9	100	190	
Hori.	2163.960	PK	50.7	27.4	13.5	41.0	3.4	54.0	73.9	19.9	100	225	
Hori.	2291.863	PK	49.3	27.6	13.6	41.0	3.4	52.9	73.9	21.0	100	230	
Hori.	2420.214	PK	50.3	27.8	13.7	41.0	3.4	54.2	73.9	19.7	100	237	
Hori.	2483.500	PK	49.2	27.9	13.7	41.0	3.4	53.2	73.9	20.7	100	250	
Hori.	2484.215	PK	50.9	27.9	13.7	41.0	3.4	54.9	73.9	19.0	100	232	
Hori.	2499.933	PK	50.7	27.9	13.8	41.0	3.4	54.8	73.9	19.1	100	230	
Hori.	4904.000	PK	56.4	31.8	5.8	39.4	3.4	58.0	73.9	15.9	100	186	
Hori.	7356.000	PK	48.7	36.9	7.2	40.3	3.4	55.9	73.9	18.0	100	124	
Hori.	9808.000	PK	44.5	38.5	8.2	39.5	3.4	55.1	73.9	18.8	100	0	
Hori.	12260.000	PK	45.1	39.6	9.5	39.5	3.4	58.1	73.9	15.8	100	0	
Hori.	2163.960	AV	39.0	27.4	13.5	41.0	3.4	42.3	53.9	11.6	100	225	
Hori.	2291.863	AV	36.7	27.6	13.6	41.0	3.4	40.3	53.9	13.6	100	230	
Hori.	2420.214	AV	37.6	27.8	13.7	41.0	3.4	41.5	53.9	12.4	100	237	
Hori.	2483.500	AV	35.7	27.9	13.7	41.0	3.4	39.7	53.9	14.2	100	250	
Hori.	2484.215	AV	38.2	27.9	13.7	41.0	3.4	42.2	53.9	11.7	100	232	
Hori.	2499.933	AV	38.4	27.9	13.8	41.0	3.4	42.5	53.9	11.4	100	230	
Hori.	4904.000	AV	43.3	31.8	5.8	39.4	3.4	44.9	53.9	9.0	100	186	
Hori.	7356.000	AV	35.4	36.9	7.2	40.3	3.4	42.6	53.9	11.3	100	124	
Hori.	9808.000	AV	32.7	38.5	8.2	39.5	3.4	43.3	53.9	10.6	100	0	
Hori.	12260.000	AV	33.6	39.6	9.5	39.5	3.4	46.6	53.9	7.3	100	0	
Vert.	240.001	QP	25.1	16.8	8.3	32.0	0.0	18.2	46.0	27.8	100	356	
Vert.	847.629	QP	21.3	21.7	10.8	31.3	0.0	22.5	46.0	23.5	100	61	
Vert.	940.891	QP	20.7	22.9	11.1	30.6	0.0	24.1	46.0	21.9	100	10	
Vert.	2163.763	PK	50.0	27.4	13.5	41.0	3.4	53.3	73.9	20.6	100	120	
Vert.	2196.029	PK	48.4	27.4	13.5	41.0	3.4	51.7	73.9	22.2	100	68	
Vert.	2323.947	PK	47.1	27.6	13.6	41.0	3.4	50.7	73.9	23.2	100	100	
Vert.	2419.916	PK	48.6	27.8	13.7	41.0	3.4	52.5	73.9	21.4	100	87	
Vert.	2483.500	PK	46.7	27.9	13.7	41.0	3.4	50.7	73.9	23.2	100	63	
Vert.	2499.868	PK	46.9	27.9	13.8	41.0	3.4	51.0	73.9	22.9	100	93	
Vert.	4904.000	PK	57.0	31.8	5.8	39.4	3.4	58.6	73.9	15.3	100	171	
Vert.	7356.000	PK	48.2	36.9	7.2	40.3	3.4	55.4	73.9	18.5	100	215	
Vert.	9808.000	PK	44.3	38.5	8.2	39.5	3.4	54.9	73.9	19.0	100	0	
Vert.	12260.000	PK	46.2	39.6	9.5	39.5	3.4	59.2	73.9	14.7	100	0	
Vert.	2163.763	AV	36.9	27.4	13.5	41.0	3.4	40.2	53.9	13.7	100	120	
Vert.	2196.029	AV	36.6	27.4	13.5	41.0	3.4	39.9	53.9	14.0	100	68	
Vert.	2323.947	AV	35.5	27.6	13.6	41.0	3.4	39.1	53.9	14.8	100	100	
Vert.	2419.916	AV	36.2	27.8	13.7	41.0	3.4	40.1	53.9	13.8	100	87	
Vert.	2483.500	AV	34.3	27.9	13.7	41.0	3.4	38.3	53.9	15.6	100	63	
Vert.	2499.868	AV	34.7	27.9	13.8	41.0	3.4	38.8	53.9	15.1	100	93	
Vert.	4904.000	AV	43.1	31.8	5.8	39.4	3.4	44.7	53.9	9.2	100	171	
Vert.	7356.000	AV	35.0	36.9	7.2	40.3	3.4	42.2	53.9	11.7	100	215	
Vert.	9808.000	AV	32.7	38.5	8.2	39.5	3.4	43.3	53.9	10.6	100	0	
Vert.	12260.000	AV	33.5	39.6	9.5	39.5	3.4	46.5	53.9	7.4	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 13 GHz : 20log(4.43 m / 3.0 m) = 3.4 dB

13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.5 dB

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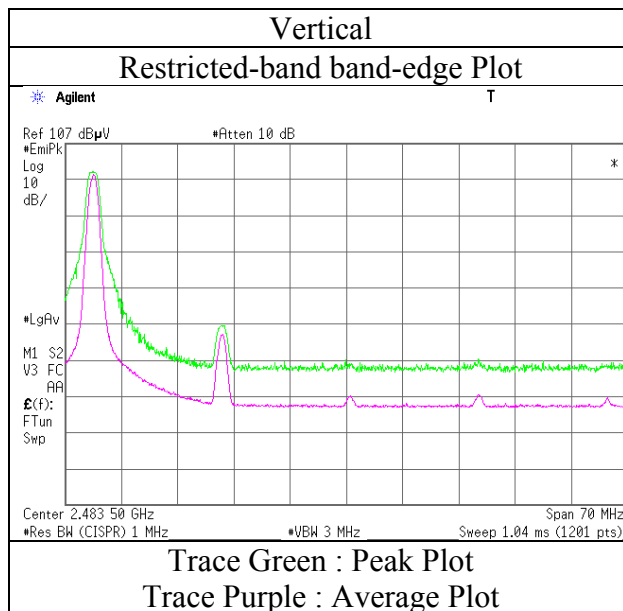
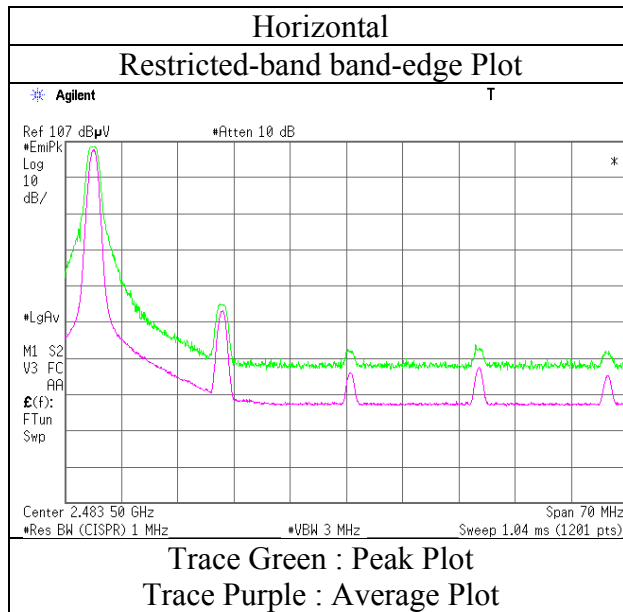
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Radiated Spurious Emission (Reference Plot for band-edge)

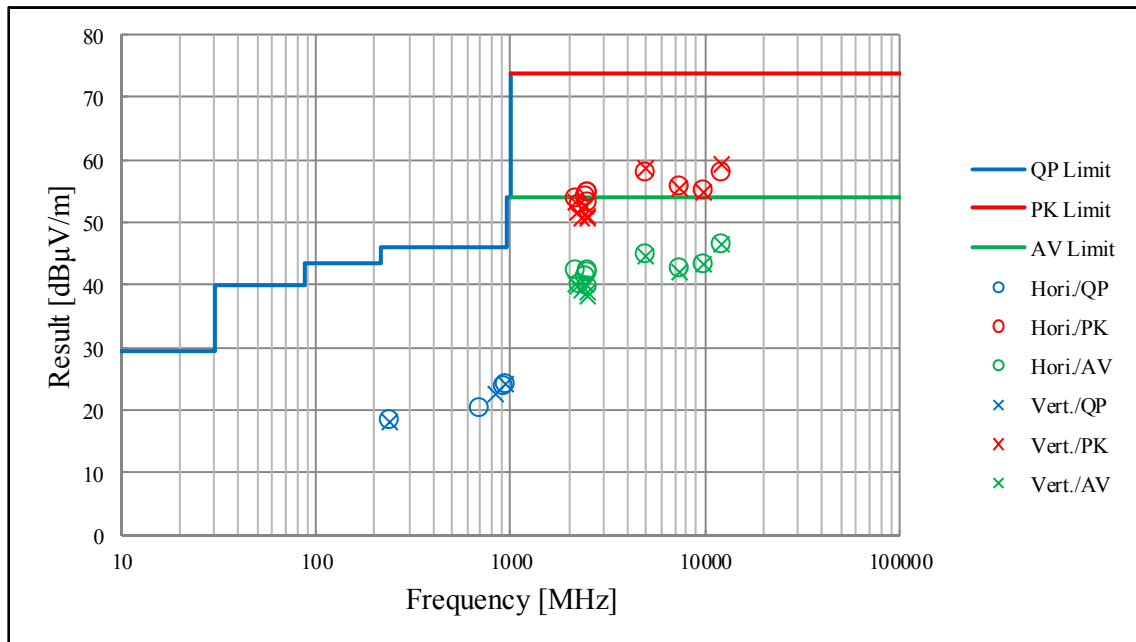
Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	10987914S-A
Date	October 3, 2015
Temperature / Humidity	21 deg. C / 56 %RH
Engineer	Tomohiro Hara
Mode	Tx, Hopping Off, 2452 MHz



* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission
(Plot data, Worst case)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	10987914S-A		
Date	October 3, 2015	October 7, 2015	
Temperature / Humidity	21 deg. C / 56 %RH	24 deg. C / 47 %RH	
Engineer	Tomohiro Hara	Tomohiro Hara	
	(1-25 GHz)	(30-1000 MHz)	
Mode	Tx, Hopping Off 2452 MHz		

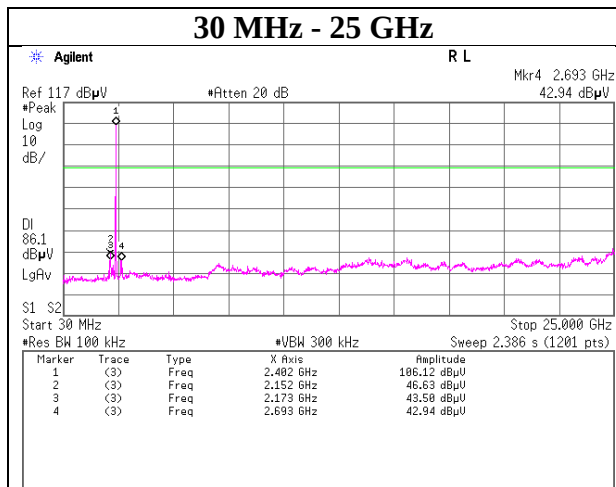
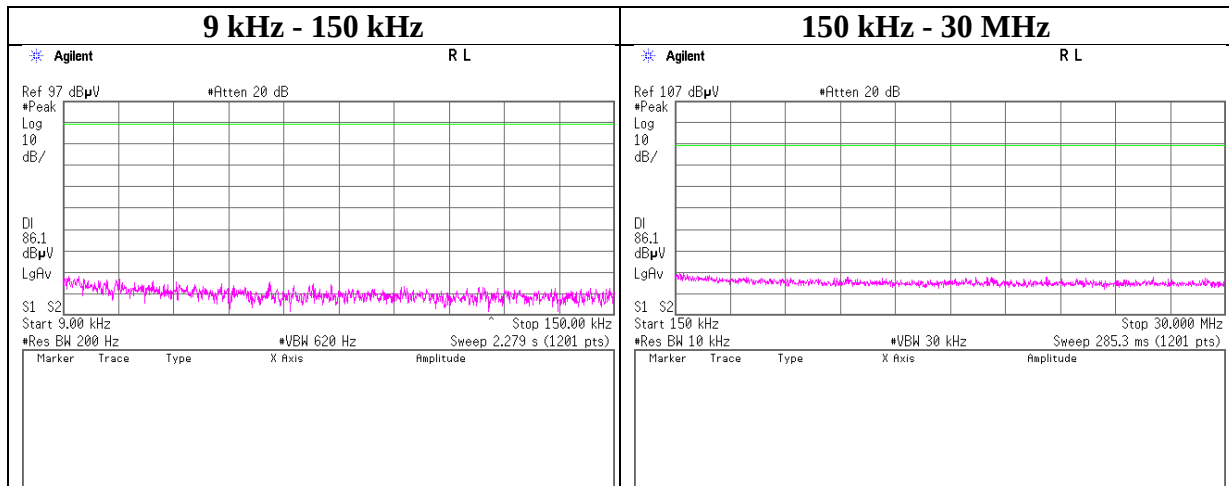


*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10987914S-A
Date	October 15, 2015
Temperature / Humidity	25 deg. C / 36 % RH
Engineer	Hiroyuki Morikawa
Mode	Tx, Hopping Off

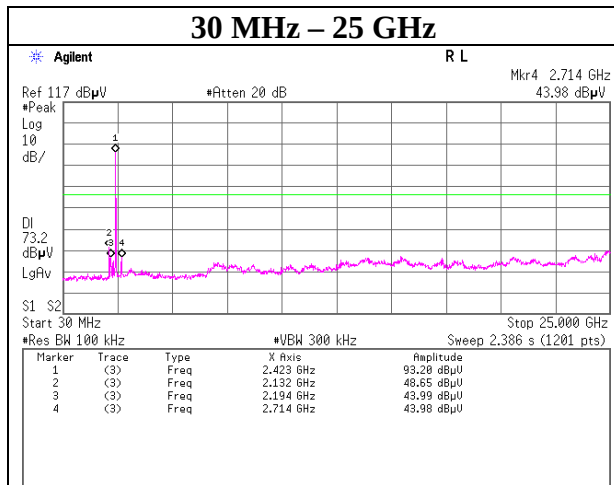
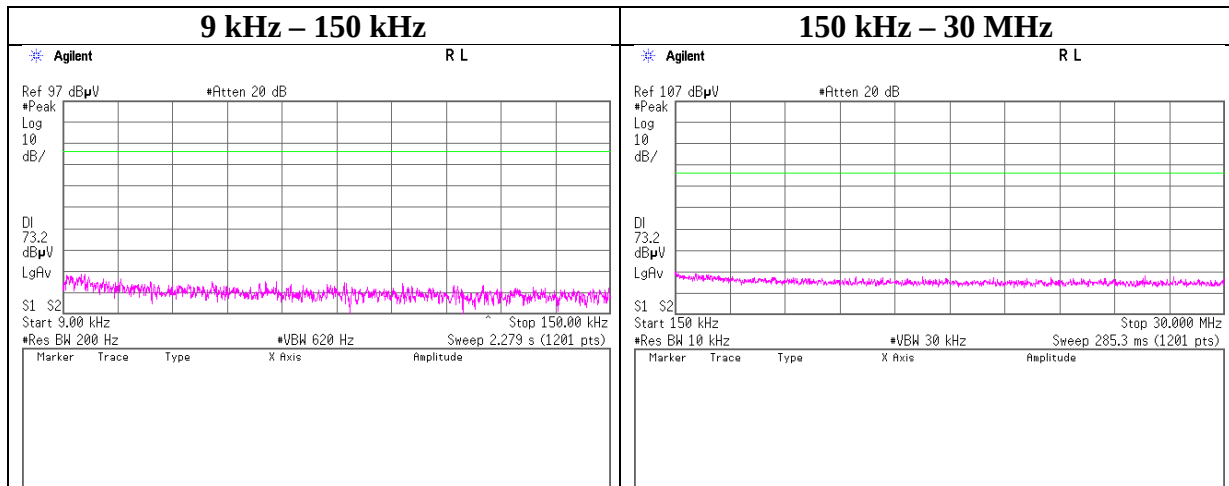
2404.5 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10987914S-A
Date	October 15, 2015
Temperature / Humidity	25 deg. C / 36 % RH
Engineer	Hiroyuki Morikawa
Mode	Tx, Hopping Off

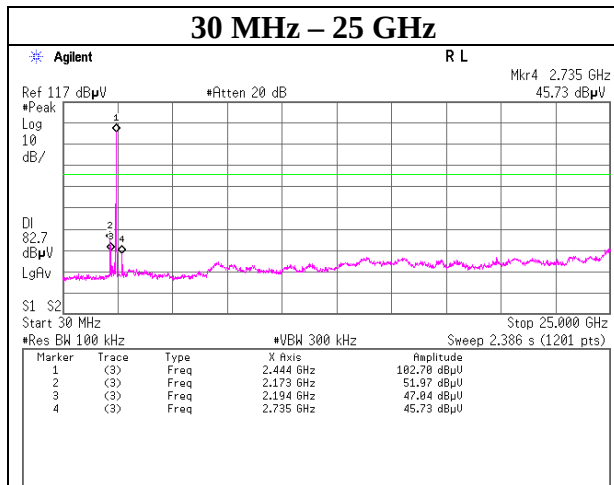
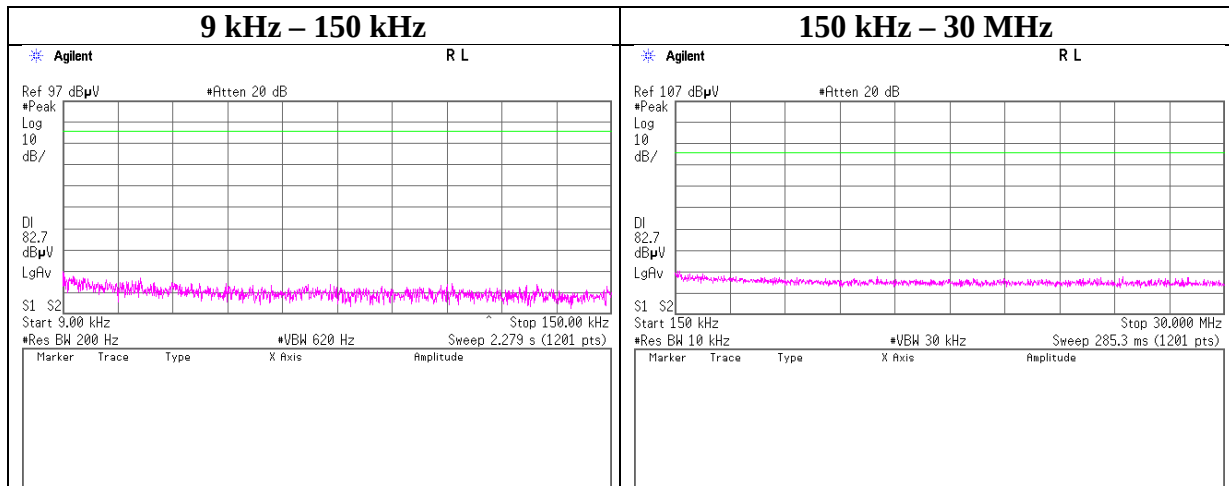
2428.5 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10987914S-A
Date	October 15, 2015
Temperature / Humidity	25 deg. C / 36 % RH
Engineer	Hiroyuki Morikawa
Mode	Tx, Hopping Off

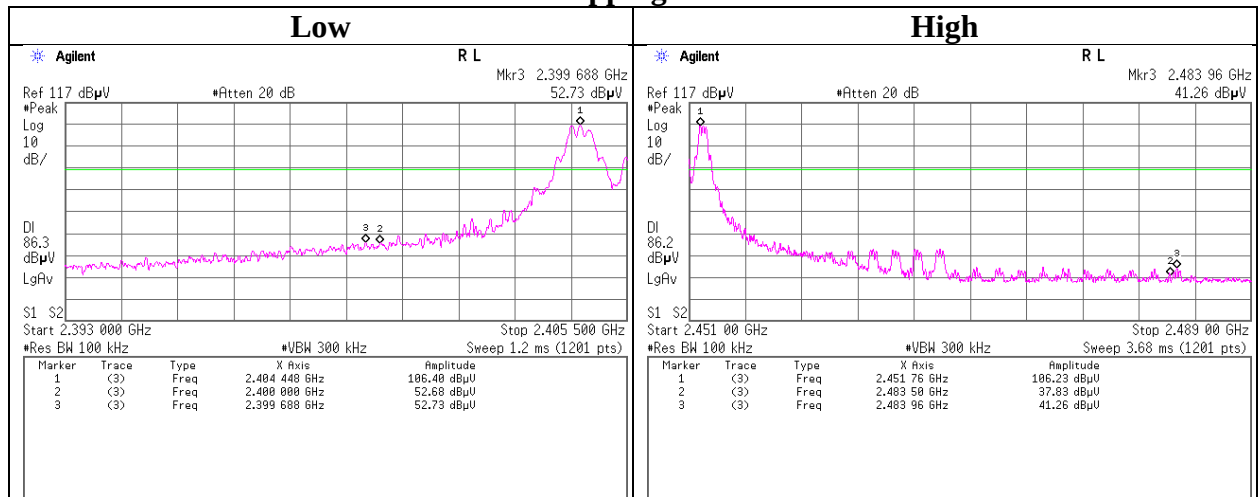
2452.0 MHz



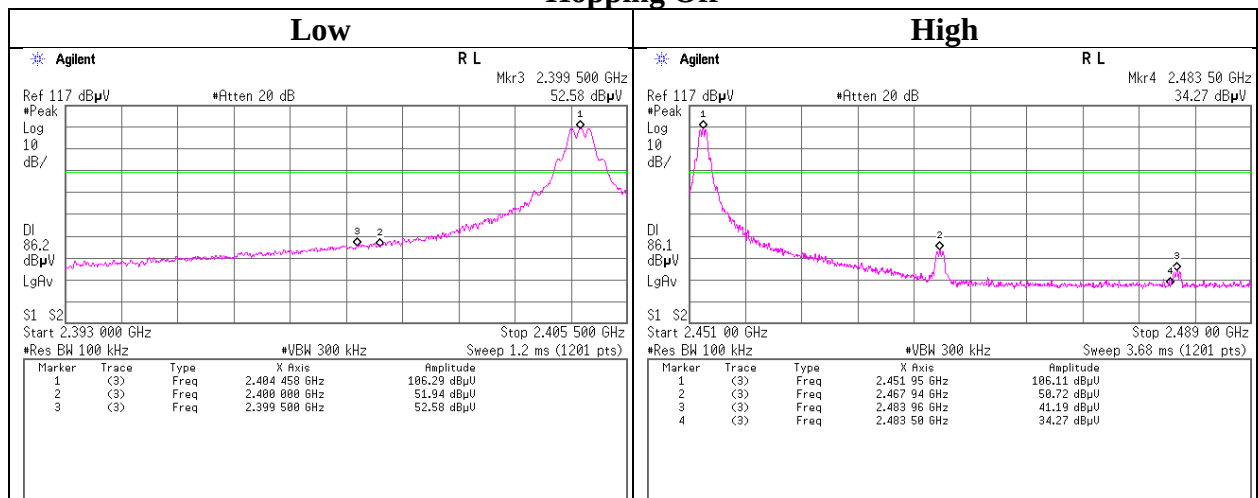
Conducted Emission Band Edge compliance

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 10987914S-A
Date : October 15, 2015
Temperature / Humidity : 25 deg. C / 36 % RH
Engineer : Hiroyuki Morikawa
Mode : Tx

Hopping On



Hopping Off



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Shonan EMC Lab.

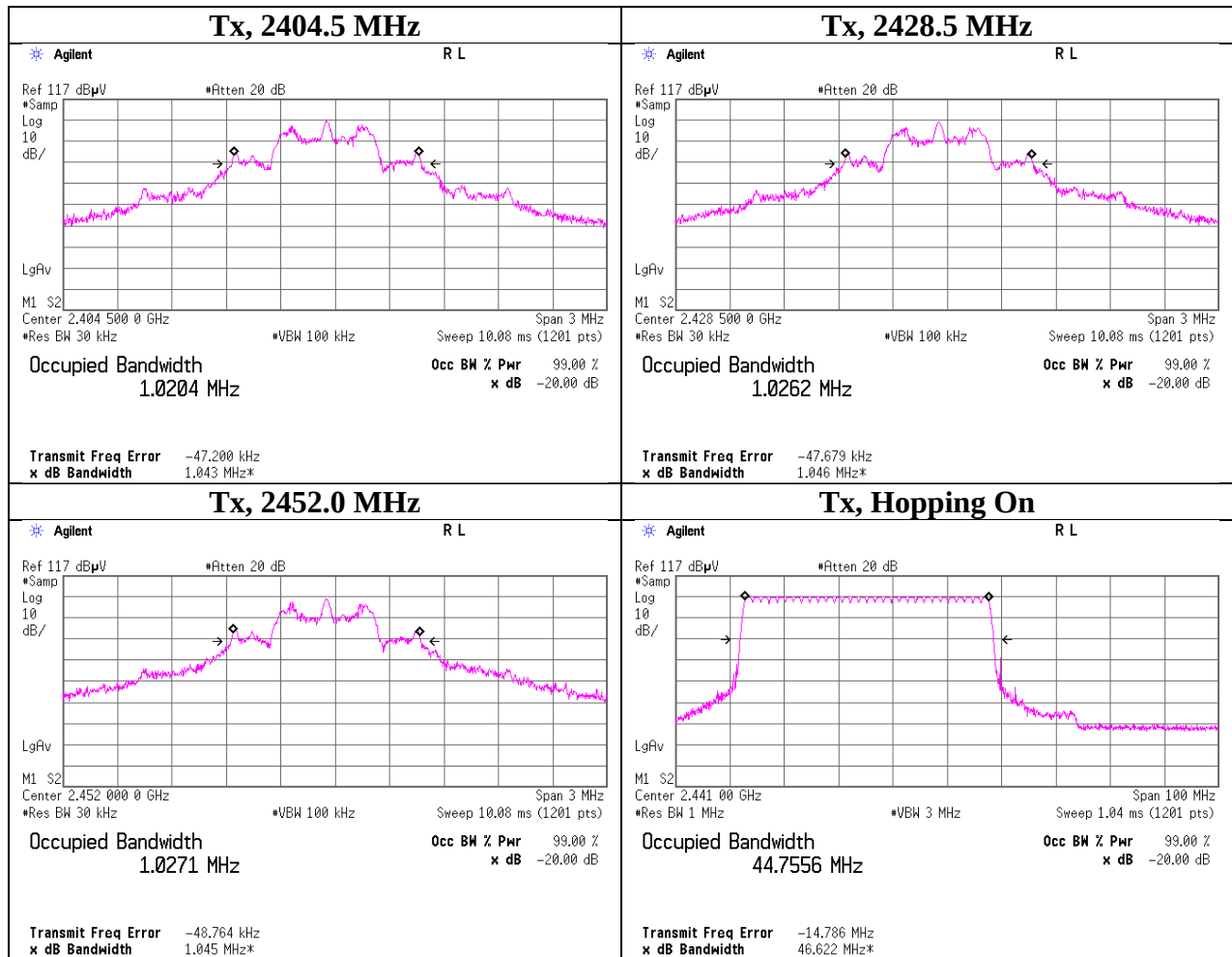
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99 %Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10987914S-A
Date	October 15, 2015
Temperature / Humidity	25 deg. C / 36 % RH
Engineer	Hiroyuki Morikawa
Mode	Tx Hopping Off, Tx Hopping On



APPENDIX 2: Test instruments

Test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAEC-03(SVS WR)	Semi-Anechoic Chamber	TDK	SAEC-03(SVS WR)	3	RE	2015/08/28 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2015/08/11 * 12
SCC-G04	Coaxial Cable	Junkosha	J12J102207-00	JUN-12-14-018	RE	2015/06/08 * 12
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	RE	2014/11/21 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2014/11/21 * 12
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2015/05/27 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2015/05/19 * 12
SSA-01	Spectrum Analyzer	Agilent	N9010A-526	MY48031482	RE	2015/04/10 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI,MF)	-	RE	-
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2014/10/30 * 12
SJM-15	Measure	ASKUL	-	-	RE	-
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	RE	2015/03/23 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2015/03/17 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2015/03/23 * 12
SCC-G15	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	RE	2015/03/11 * 12
SPM-07	Power Meter	Agilent	8990B	MY5100272	AT	2015/04/02 * 12
SPSS-04	Power sensor	Agilent	N1923A	MY5326009	AT	2015/04/02 * 12
SAT20-03	Attenuator	Agilent	8493C-020	74891	AT	2015/03/11 * 12
SCC-G31	Coaxial Cable	Junkosha	MWX241-01000KMSKMS	OCT-08-13-046	AT	2015/04/09 * 12
SCC-H1	Microwave cable	Hirose Electric	U.FL-2LP-066J1-A-(200)	-	AT	Pre Check
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2014/12/24 * 12
SCC-G14	Coaxial Cable	Suhner	SUCOFLEX 102	31600/2	AT	2015/03/11 * 12
SAT10-09	Attenuator	Weinschel Corp.	54A-10	W5692	AT	2014/11/21 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	AT	2015/03/23 * 12
KTS-07	Digital Tester	SANWA	PC500	7019232	AT	2015/05/20 * 12
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2015/07/16 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE	2014/10/18 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0901	RE	2014/10/18 * 12
SAT6-08	Attenuator	HIROSE ELECTRIC CO.,LTD.	AT-406(40)	-	RE	2015/08/31 * 12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	RE	2015/04/17 * 12
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE	2015/02/18 * 12
STR-01	Test Receiver	Rohde & Schwarz	ESU40	100093	RE	2014/11/11 * 12

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

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item: RE: Radiated Emission test
AT: Antenna Terminal Conducted test

UL Japan, Inc.

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