

RADIO TEST REPORT

Test Report No. : 10559364M-A-R1

Applicant : Sony Corporation

Type of Equipment : Smart B-Trainer

Model No. : SSE-BTR1

FCC ID : AK8SSEBTR1

Test regulation : FCC Part 15 Subpart C: 2014

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. This test report must not be used by the customer to claim product certification, approval, or endorsement by any agency of the Federal Government.
6. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Kashima has been accredited.
7. This report is a revised version of 10559364M-A. 10559364M-A is replaced with this report on November 27, 2014.

Date of test: November 10 - 12, 18, 2014

Representative test engineer:



Kazuhiro Ando
Manager of EMC Testing Sec.,
Operation Dept.

Approved by:



Go Ishiwata
Department Manager
Operation Dept.



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

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13-EM-F0429

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REVISION HISTORY

Original Test Report No. 10559364M-A

Revision	Date	Page revised	Revision Description
00	November 21, 2014	-	Original
01	November 25, 2014	P. 4	Change of position of note 1 of Clause 3.2
01	November 25, 2014	P. 7	Change of Operating mode(s) of Clause 4.1
02	November 27, 2014	P.3	Change of description of FCC 15.31 (e) of Clause 2.2
02	November 27, 2014	P. 4	Change of note of Clause 3.2
02	November 27, 2014	ALL	Addition of pages (Number of all page and contents) 10559364M-A was replaced with 10559364M-A-R1 on November 27, 2014.
03	December 2, 2014	P. 28-33	Correction of test date
03	December 2, 2014	P. 25	Correction of test report No. and company name
03	December 2, 2014	P. 26, 27	Correction of test report No.

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SECTION 1: Customer information

Company Name : Sony Corporation
Address : 1-7-1 Konan, Minatoku, Tokyo, 108-0075 Japan
Telephone Number : +81-3-6748-2569
Facsimile Number : +81-3-6748-2574
Contact Person : Hirofumi Kojima

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

2.1 Identification of E.U.T.

Type of Equipment : Smart B-Trainer
Model No. : SSE-BTR1
Serial No. : Refer to Section 4, Clause 4.2
Rating : DC 3.8 V (USB-AC Adapter 5.0 V)
Receipt Date of Sample : November 6, 2014
Country of Mass-production : Malaysia
Condition of EUT : Engineering 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: SSE-BTR1 (referred to as the EUT in this report) is a Smart B-Trainer.

General Specification

Clock frequency(ies) in the system : 24 MHz, 26 MHz, 16.368 MHz, 8 MHz

Radio Specification

Bluetooth specification:

Equipment type : Transceiver
Frequency of operation : 2402-2480MHz
Bandwidth / Channel spacing : 79MHz / 1MHz
Type of modulation : FHSS (GFSK, $\pi/4$ -DQPSK, 8DPSK)
Antenna type : Monopole
Antenna connector type : None
Antenna gain : 0.5dBi
ITU code : F1D, G1D
Operation temperature range : +5 to +35 deg.C

* For Bluetooth Low Energy part, refer to the test report: 10559364M-B-R1.

FCC 15.31 (e)

The stable voltage (DC1.35V) is constantly provided to RF part through a DCDC converter regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC 15.203

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

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C: 2014, final revised on August 15, 2014 and effective October 14, 2014
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.209 Radiated emission limits, general requirements
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz

* The EUT has been tested for compliance with FCC Part 15 Subpart B by the customer.

3.2 Procedures & Results

Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
Conducted emission	ANSI C63.4:2009 7. AC powerline conducted emission measurements	FCC 15.207	-	N/A *1)	16.7 dB Freq.: 0.57110 MHz Detector: AV Phase: N	Complied
Carrier frequency separation	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (a)(1)	Conducted	N/A	*See data.	Complied
20dB bandwidth	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (a)(1)	Conducted	N/A		-
Number of hopping frequency	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (a)(1)(iii)	Conducted	N/A		Complied
Dwell time	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (a)(1)(iii)	Conducted	N/A		Complied
Maximum peak output power	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (b)(1)	Conducted	N/A		Complied
Band edge compliance & Spurious emission	FCC Public Notice DA 00-705 & ANSI C63.4:2009 13. Measurement of intentional radiators	FCC 15.247 (d) 15.209	Conducted/ Radiated	N/A	3.4 dB Freq.: 4960.000 MHz Detection: AV Polarization: Vertical Mode: Tx, 2480 MHz, Tx, Bluetooth, BDR, PRBS9	Complied

Note: UL Kashima's Work Procedures No. 13-EM-W0420 and 13-EM-W0422

*1) During the test, the EUT was connected to charging AC adapter because it performs wireless operation.
(The EUT is designed to stop communication while it is connected to PC via USB port.)

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3.3 Addition to standard

Item	Test Procedure	Specification	Remarks	Worst Margin	Results
Occupied Bandwidth (99%)	ANSI C63.4:2009 13. Measurement of intentional radiators, RSS-Gen 4.6.1	-	Conducted	-	-
Note: UL Kashima's Work Procedures No. 13-EM-W0420 and 13-EM-W0422					

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

3.4 Confirmation

UL Kashima, Inc. hereby confirms the E.U.T., in the configuration tested, complies with the specifications FCC Part 15 Subpart C: 2014.

3.5 Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor k=2.

Item	Frequency range	Uncertainty
Conducted emission (AC Mains) AMN	0.15 MHz-30 MHz	2.8 dB
Radiated emission	30 MHz-300 MHz	4.9 dB
	300 MHz-1 GHz	6.3 dB
	1 GHz-6 GHz	4.5 dB
	6 GHz-18 GHz	4.8 dB
	18 GHz-26.5 GHz	4.9 dB

Antenna port conducted test

Power measurement uncertainty above 1GHz for this test was: (±) 1.5dB

Spurious emission (Conducted) measurement (below 1GHz) uncertainty for this test was: (±) 1.6dB

Spurious emission (Conducted) measurement (1G-3GHz) uncertainty for this test was: (±) 1.4dB

Spurious emission (Conducted) measurement (3G-18GHz) uncertainty for this test was: (±) 2.8dB

Spurious emission (Conducted) measurement (18G-26.5GHz) uncertainty for this test was: (±) 2.5dB

Bandwidth measurement uncertainty for this test was: (±) 5.4%

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3.6 Test Location

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A2LA Accreditation No. : 1266-01

	FCC Registration No.	IC Registration No.	Width x Depth x Height (m)	Size of reference ground plane/horizontal conducting plane (m)	Maximum measurement distance
No.1 Open site	90558	IC 4659A-1	6.0 x 5.5 x 2.5	20 x 40	10 m
No.2 Open site	510504	IC 4659A-2	4.4 x 4.4 x 2.15	18 x 20	10 m
No.5 Open site	99356	IC 4659A-5	8.6 x 7.1 x 2.4	18 x 23	10 m
No.1 Shielded room	90558	IC 4659A-1	5.4 x 4.5 x 2.3	-	-
No.2 Shielded room	510504	IC 4659A-2	3.6 x 2.7 x 2.3	-	-
No.3 Shielded room	-	-	5.4 x 3.6 x 2.3	-	-
No.4 Shielded Room	-	-	6.1 x 6.1 x 3.1	-	-
No.5 Shielded Room	99356	IC 4659A-5	4.2 x 3.1 x 2.5	-	-
No.3 Fully Anechoic Chamber	-	-	7.0 x 3.5 x 3.5	-	-
No.6 Semi-anechoic Chamber	372431	IC 4659A-6	8.5 x 5.5 x 5.2	-	3 m
No.10 Semi-anechoic Chamber	682397	IC 4659A-10	18.4 x 9.9 x 7.7	-	10 m
No.11 Semi-anechoic Chamber	718605	IC 4659A-7	9.0 x 6.5 x 5.2	-	3 m
No.1 Measurement room	-	-	5.0 x 3.7 x 2.6	-	-
No.6 Measurement room	-	-	4.3 x 4.4 x 2.7	-	-

3.7 Data of EMI, Test instruments, and Test set up

Refer to APPENDIX.

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

4.1 Operating Mode(s)

Details of Operating Mode(s)

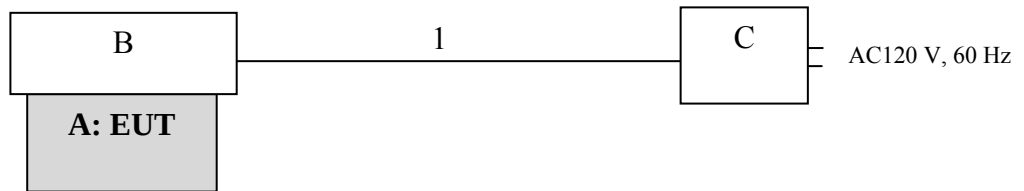
Test Item	Mode	Tested frequency
Conducted emission	Transmitting (Tx) Hopping OFF BDR, EDR Payload: PRBS9	2402MHz 2441MHz 2480MHz
Spurious Emission (Conducted/Radiated)	Tx, Bluetooth, BDR, EDR, PRBS9	2402MHz 2441MHz 2480MHz
Carrier Frequency Separation, 20dB Bandwidth	Tx (Hopping on) DH5, 3DH5 Inquiry	2402MHz 2441MHz 2480MHz
Number of Hopping Frequency	Tx (Hopping on) DH5, 3DH5 Inquiry	-
Dwell time	Tx (Hopping on), - DH1, DH3, DH5 -3DH1, 3DH3, 3DH5 -Inquiry	-
Maximum Peak Output Power	Tx (Hopping off) DH5, 2DH5, 3DH5 Inquiry	2402MHz 2441MHz 2480MHz
Band Edge Compliance (Radiated)	Tx DH5, 3DH5 -Hopping off	2402MHz 2441MHz 2480MHz
99% Occupied Bandwidth	Tx DH5, 3DH5 -Hopping on -Hopping off	2402MHz 2441MHz 2480MHz
*As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload length (except Dwell time test) *2DH mode (2Mb/s EDR: pi/4DQPSK) was excluded for other tests than power measurement by using 3DH mode (3 Mb/s EDR: 8DPSK) as a representative. *EUT has the power settings by the software as follows; Power settings: [BDR] Ext: 23, Int: 27/ [EDR] Ext:72, Int:43 Software: CSR BlueTest3 ver. 2.5.0.93/ [Inquiry] BTCLI Ctrl ver. 2.5.0.93 *This setting of software is the worst case. Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product.		

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4.2 Configuration and peripherals

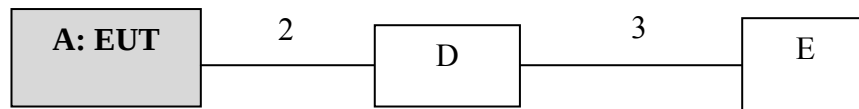
Conducted emission



Radiated emission



Antenna port conducted



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

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Smart B-Trainer	SSE-BTR1	*1)	Sony	EUT
B	USB Cradle	-	-	Sony	-
C	USB Power Adapter	A1357	-	Apple	-
D	Jig	None	None	Sony	-
E	PC	3358-3VJ	LR-L593L	lenovo	-

*1) 001: Antenna port conducted tests, 002: Conducted emission and Radiated emission tests

List of cables used

No.	Name	Length (m)	Shield (Cable)		Remarks
			Cable	Connector	
1	USB	0.5	Shielded	Shielded	Fixed connection to USB Cradle
2	Signal	0.15	Unshielded	Unshielded	-
3	USB	1.5	Shielded	Shielded	-

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SECTION 5: Carrier frequency separation

Test procedure

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

Summary of the test results: Pass
Refer to APPENDIX 1.

SECTION 6: 20dB bandwidth & Occupied bandwidth (99%)

Test procedure

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

Summary of the test results: Pass
Refer to APPENDIX 1.

SECTION 7: Number of hopping frequency

Test procedure

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

Summary of the test results: Pass
Refer to APPENDIX 1.

SECTION 8: Dwell time

Test procedure

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

Summary of the test results: Pass
Refer to APPENDIX 1.

SECTION 9: Maximum peak output power

Test procedure

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

Summary of the test results: Pass
Refer to APPENDIX 1.

SECTION 10: Spurious emissions (Antenna port conducted)

Test procedure

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

The radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement. 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. (9kHz-150kHz:RBW=200Hz, 150kHz-30MHz:RBW=10kHz)

Summary of the test results: Pass
Refer to APPENDIX 1.

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SECTION 11: Conducted emission

11.1 Operating environment

Test room : See test data (APPENDIX 1)
Temperature : See test data (APPENDIX 1)
Humidity : See test data (APPENDIX 1)

11.2 Test configuration

EUT was placed on a platform of nominal size, 1.0m by 2.0m, raised 0.8m above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT was aligned and was flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from LISN. I/O cables that were connected to the peripherals were bundled in center. They were folded back and for the forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.
Each EUT current-carrying power lead was individually connected through a LISN to the input power source. Photographs of the set up are shown in Appendix 3.

11.3 Test conditions

Frequency range : 0.15 - 30MHz
EUT position : Table top

11.4 Test procedure

The AC Mains Terminal Continuous disturbance Voltage had been measured with the EUT in a semi-anechoic chamber. The EUT was connected to a Line Impedance Stabilization Network (LISN).
An overview sweep with peak detection has been performed.
The measurements had been performed with a quasi-peak detector and if required, a CISPR average detector.
The conducted emission measurements were made with the following detection of the test receiver.

Detection Type : Quasi-Peak/ CISPR-Average
IF Bandwidth : 9kHz

11.5 Results

Summary of the test results : Pass

Refer to APPENDIX 1.

SECTION 12: Radiated emission

12.1 Operating environment

Test room : See test data (APPENDIX 1)
 Temperature : See test data (APPENDIX 1)
 Humidity : See test data (APPENDIX 1)

12.2 Test configuration

EUT was placed on a polystyrene platform of nominal size, 0.5m by 0.5m, raised 0.8m above the conducting ground plane. Photographs of the set up are shown in APPENDIX 3.

12.3 Test conditions

Frequency range : 30MHz - 25GHz
 EUT position : Table top

12.4 Test procedure

The Radiated Electric Field Strength intensity has been measured on a semi-anechoic chamber with a ground plane and at a distance of 3m (below 15GHz) / 1m (above 15GHz) (Refer to Figure 1). Measurements were performed with quasi-peak, peak and average detector. The measuring antenna height was varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization.

The radiated emission measurements were made with the following detection.

Frequency	30 - 1000MHz	1 - 25GHz		20dBc
Detection Type	: Quasi-Peak	Peak	Average *1)	Peak
IF Bandwidth	: 120kHz	RBW:1MHz	RBW:1MHz	RBW: 100kHz,
		VBW:3MHz	VBW:10Hz	VBW: 300kHz

*1) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold. Although 00-705 accepts VBW=10Hz for AV measurements, confirmed that superfluous smoothing was not performed.

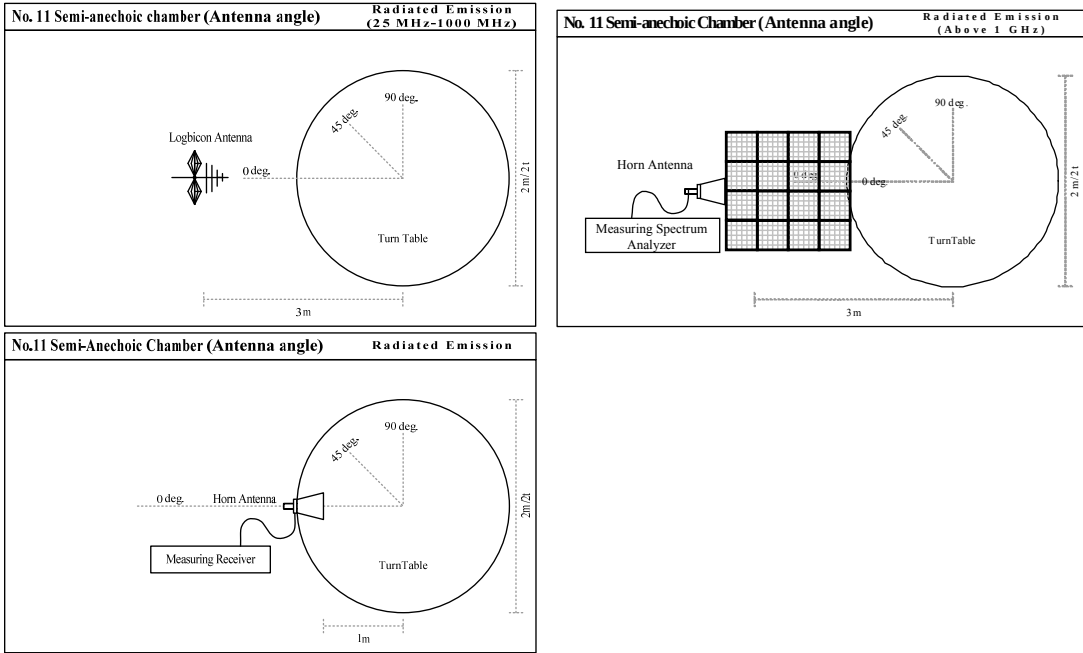
The carrier levels and noise levels were confirmed at each position of X, Y and Z axes to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Antenna polarization	Carrier	Spurious (Below 1GHz)	Spurious (1-15GHz)	Spurious (15-18GHz)	Spurious (18-25GHz)
Horizontal	Y	Y	Y	Y	Y
Vertical	Y	Y	Y	Y	Y

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Figure 1. Antenna angle



12.5 Band edge

Band edge level is below the limits of FCC 15.209. Refer to the data.

12.6 Results

Summary of the test results:

Pass
*No noise was detected above the 3th order harmonics.

Refer to APPENDIX 1.

Contents of APPENDIXES

APPENDIX 1: Data of Radio tests

20dB bandwidth and Carrier frequency separation
Number of hopping frequency
Dwell time
Maximum peak output power
Conducted emission
Radiated emission
Spurious emission (Antenna port conducted)
Occupied bandwidth

APPENDIX 2: Test instruments

Test instruments

APPENDIX 3: Photographs of test setup

Radiated emission
Pre-check of the worst position

APPENDIX 1: Data of EMI test

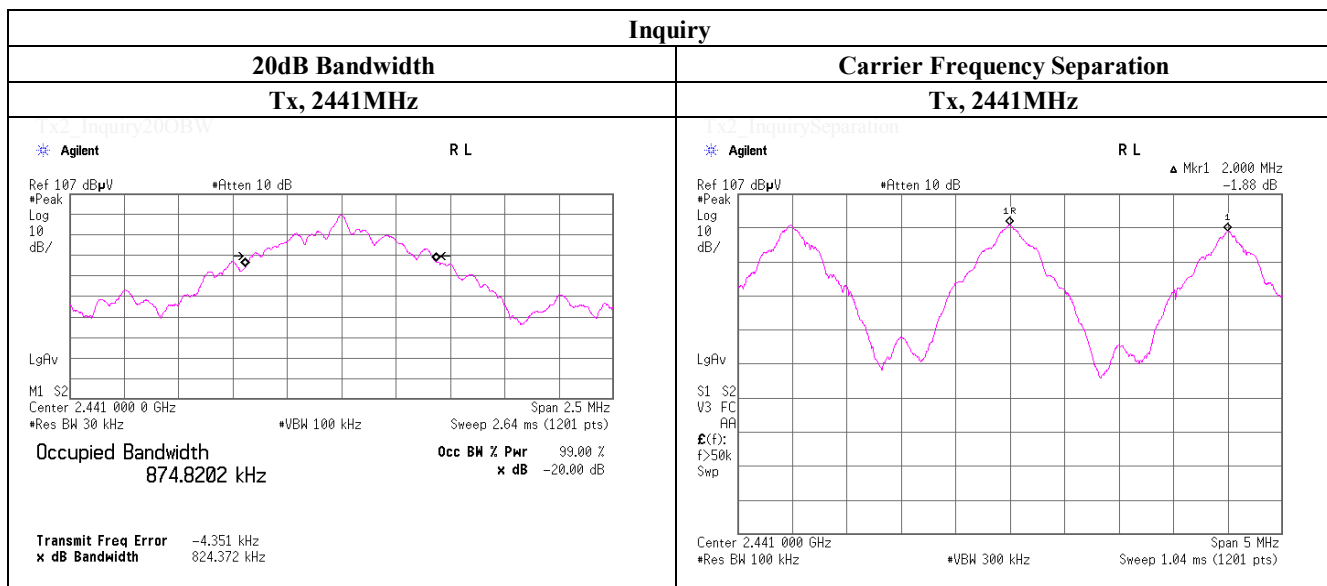
20dB Bandwidth and Carrier Frequency Separation

Test place	UL Kashima, Inc.	No.1 Measurement Room
Date	November 11, 2014	
Temperature / Humidity	23 deg.C , 41 %RH	
Engineer	Kazuhiro Ando	
Mode	Tx, Bluetooth, PRBS9	

Mode	Freq. [MHz]	20dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency Separation [MHz]
DH5	2402.0	0.943	1.000	>= 0.629
DH5	2441.0	0.942	1.000	>= 0.628
DH5	2480.0	0.942	1.000	>= 0.628
3-DH5	2402.0	1.268	1.000	>= 0.845
3-DH5	2441.0	1.259	1.000	>= 0.839
3-DH5	2480.0	1.260	1.000	>= 0.840
Inquiry	2441.0	0.824	2.000	>= 0.550

Limit: Two-thirds of 20dB Bandwidth or 25kHz (whichever is greater).

No limit applies to 20dB Bandwidth.



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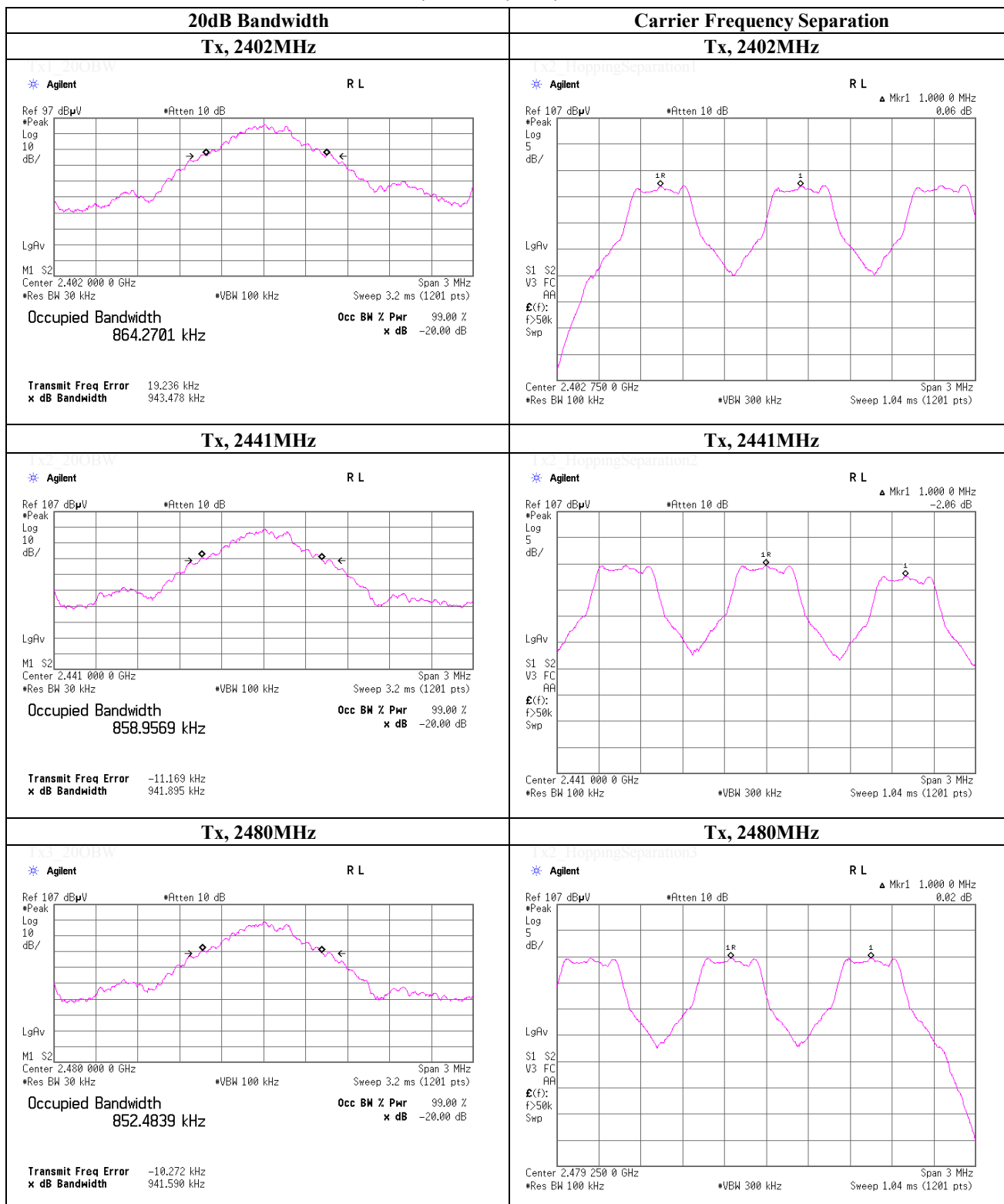
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20dB Bandwidth and Carrier Frequency Separation

Tx, Bluetooth, BDR, PRBS9



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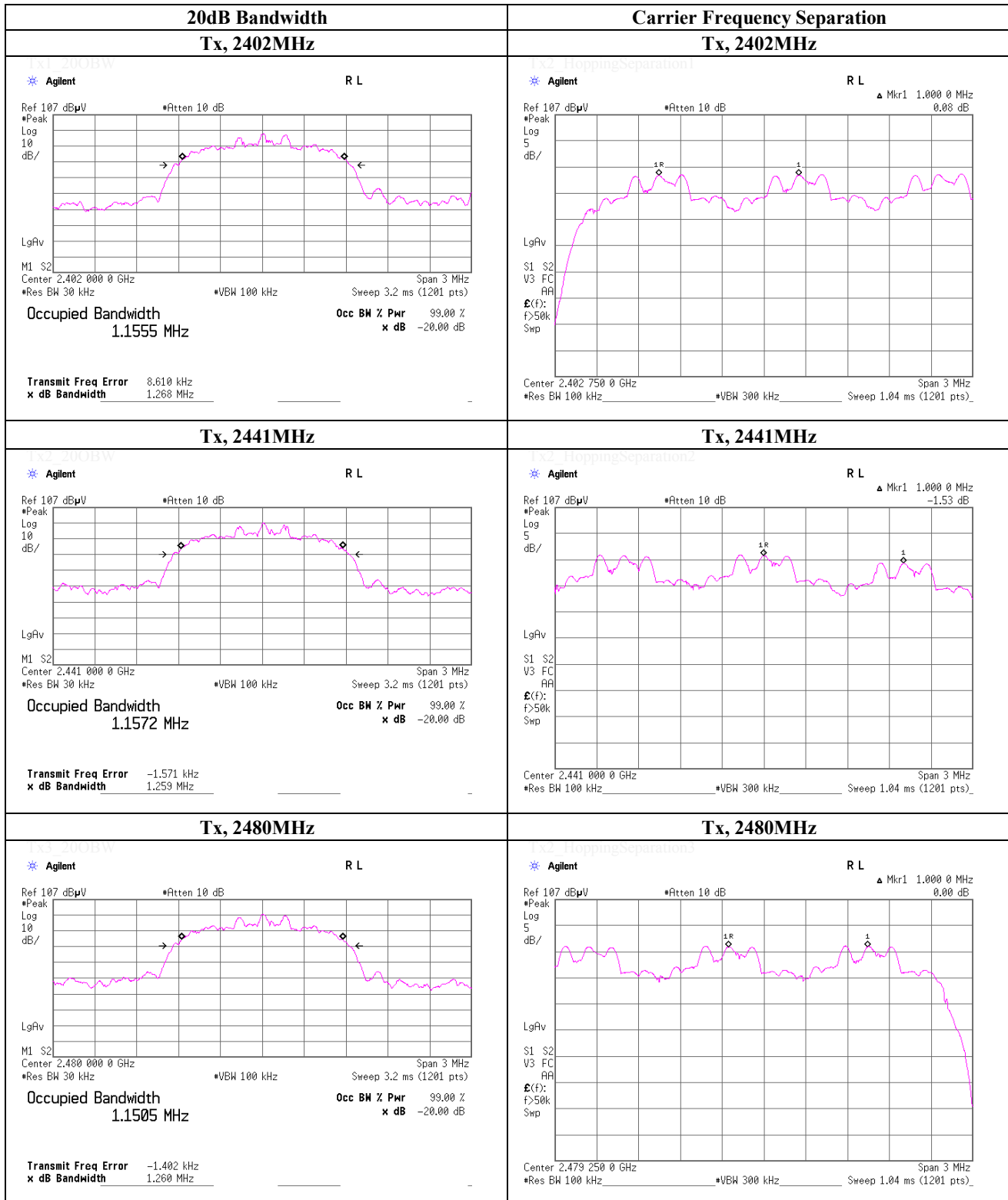
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20dB Bandwidth and Carrier Frequency Separation

Tx, Bluetooth, EDR, PRBS9



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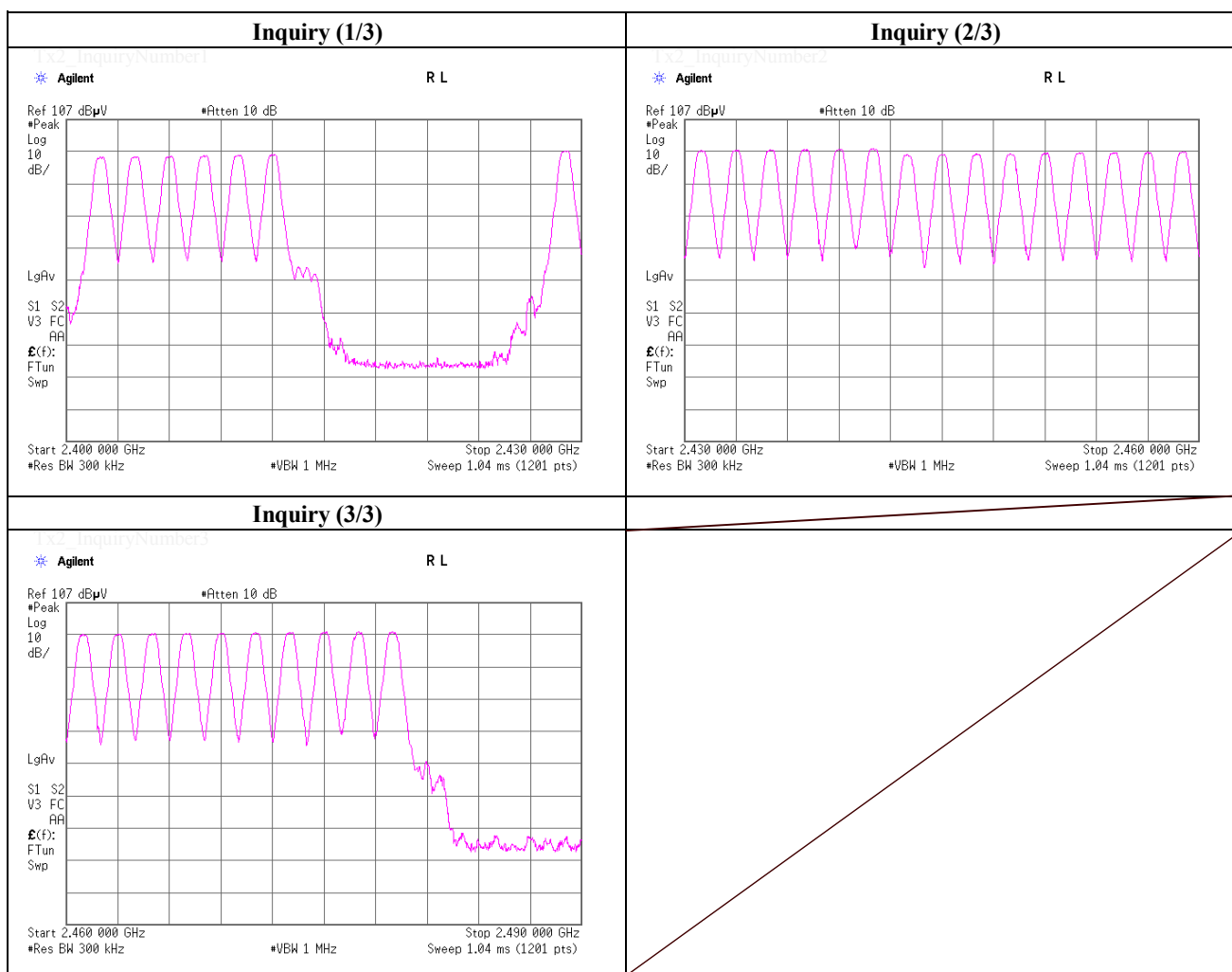
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Number of Hopping Frequency

Test place	UL Kashima, Inc.	No.1 Measurement Room
Date	November 11, 2014	
Temperature / Humidity	23 deg.C , 41 %RH	
Engineer	Kazuhiro Ando	
Mode	Tx, Bluetooth, Inquiry	

Mode	Number of Channel [times]	Limit [times]
Inquiry	32	>= 15



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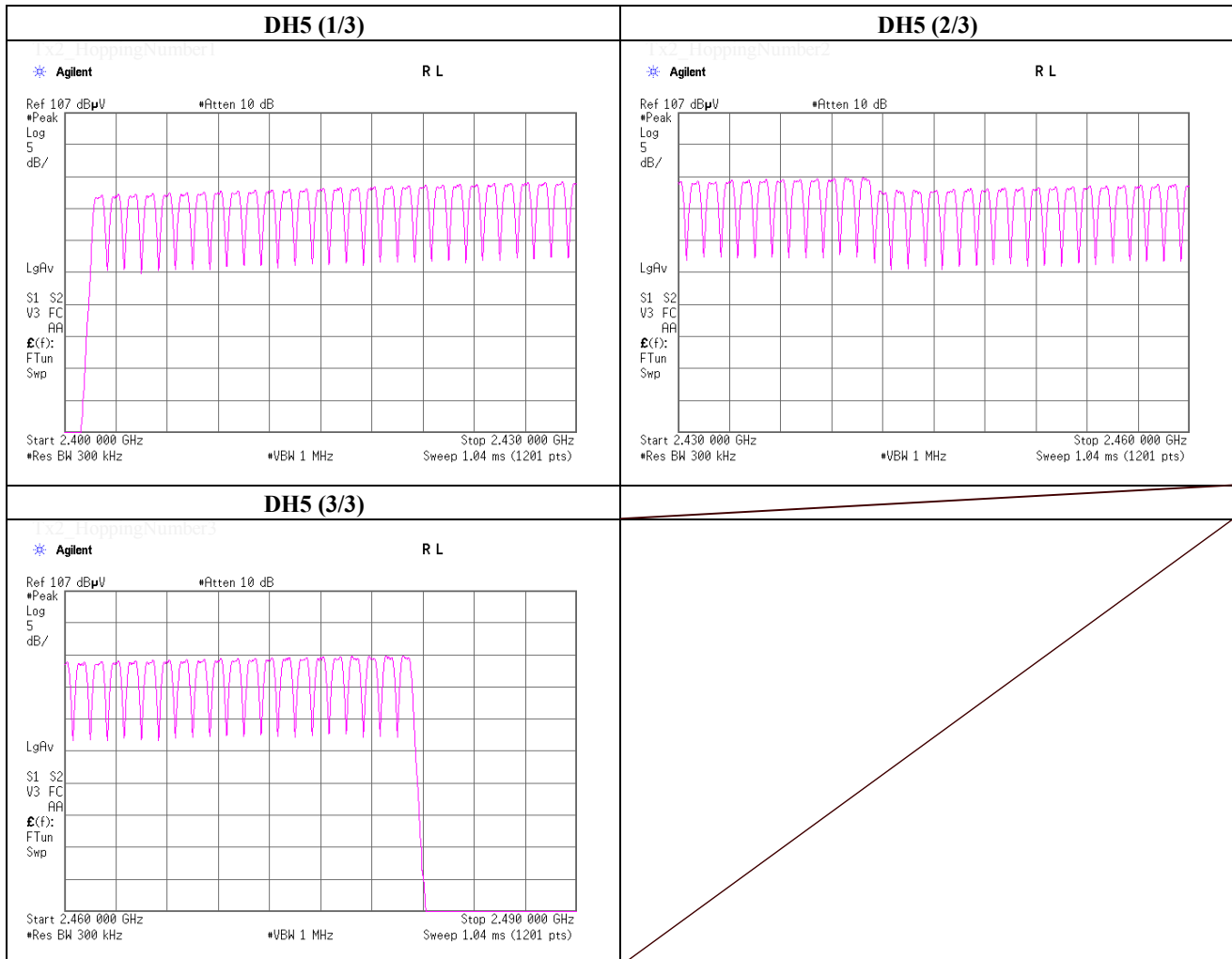
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Number of Hopping Frequency

Test place	UL Kashima, Inc.	No.1 Measurement Room
Date	November 11, 2014	
Temperature / Humidity	23 deg.C , 41 %RH	
Engineer	Kazuhiro Ando	
Mode	Tx, Bluetooth, BDR, PRBS9	

Mode	Number of Channel [times]	Limit [times]
DH5	79	>= 15

* Test was not performed at AFH mode whose number of hopping channel is 20 channels because this Bluetooth radio is in compliance of Bluetooth Specification.



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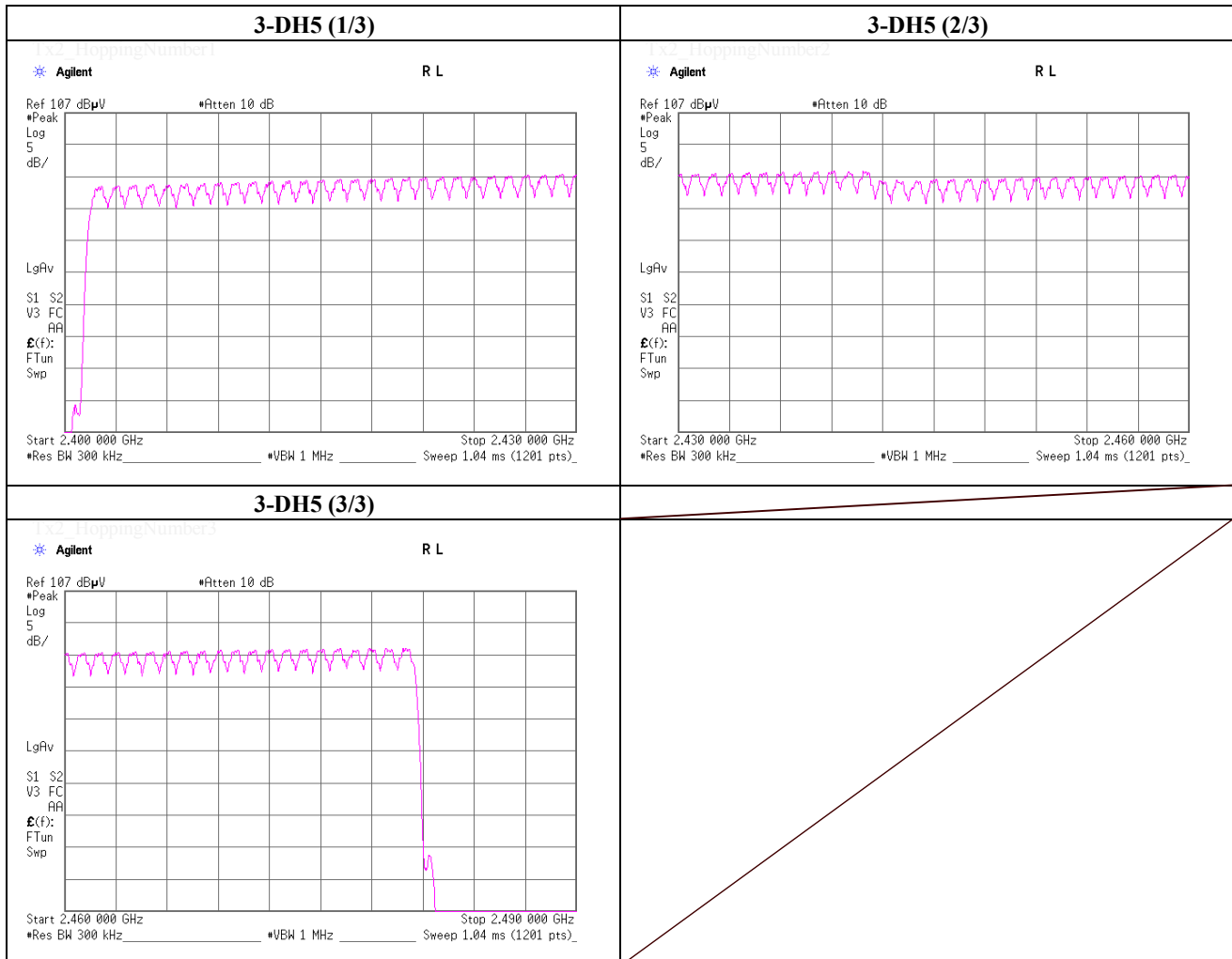
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Number of Hopping Frequency

Test place	UL Kashima, Inc.	No.1 Measurement Room
Date	November 11, 2014	
Temperature / Humidity	23 deg.C , 41 %RH	
Engineer	Kazuhiro Ando	
Mode	Tx, Bluetooth, EDR, PRBS9	

Mode	Number of Channel [times]	Limit [times]
3-DH5	79	>= 15

* Test was not performed at AFH mode whose number of hopping channel is 20 channels because this Bluetooth radio is in compliance of Bluetooth Specification.



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Dwell Time

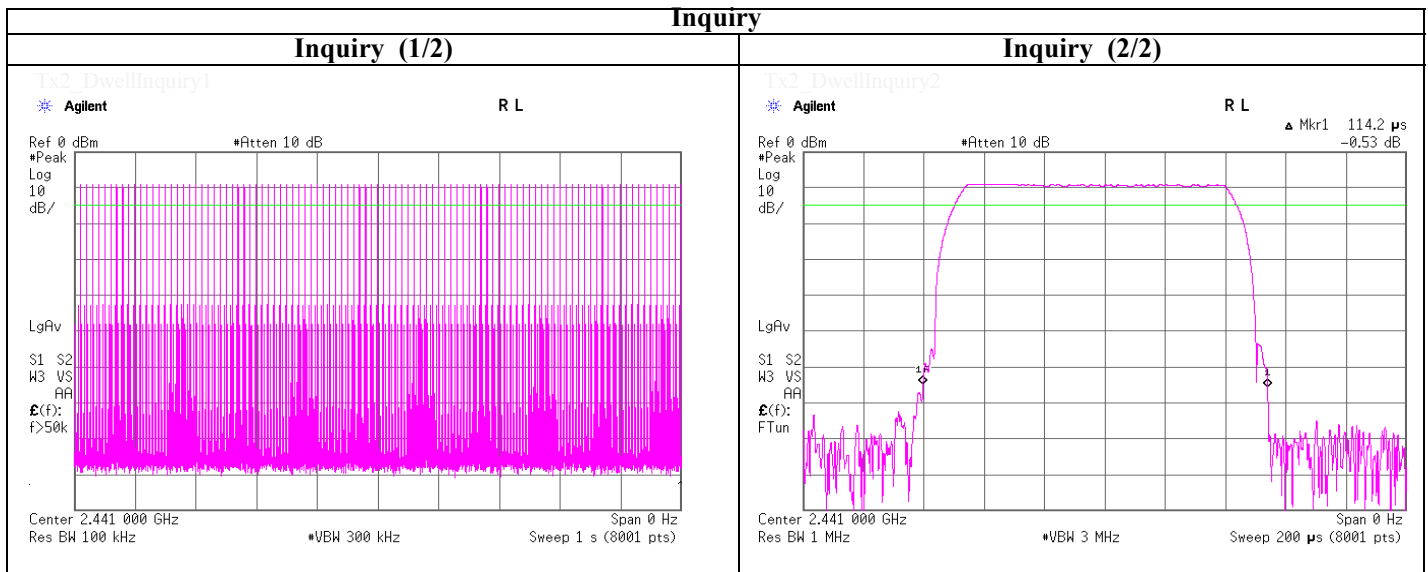
Test place	UL Kashima, Inc.	No.1 Measurement Room
Date	November 11, 2014	
Temperature / Humidity	23 deg.C , 41 %RH	
Engineer	Kazuhiro Ando	
Mode	Tx, Bluetooth, PRBS9	

Mode	Number of transmission in a 31.6 (79 Hopping x 0.4) / 12.8 (32 Hopping x 0.4) second period		Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	51.0	/ 5.0 sec. x 31.6 sec. = 323 times	0.411	133	400
DH3	26.0	/ 5.0 sec. x 31.6 sec. = 165 times	1.669	275	400
DH5	17.0	/ 5.0 sec. x 31.6 sec. = 108 times	2.916	315	400
3-DH1	51.0	/ 5.0 sec. x 31.6 sec. = 323 times	0.434	140	400
3-DH3	26.0	/ 5.0 sec. x 31.6 sec. = 165 times	1.684	278	400
3-DH5	17.0	/ 5.0 sec. x 31.6 sec. = 108 times	2.937	317	400
Inquiry	100.0	/ 1.0 sec. x 12.8 sec. = 1280 times	0.114	146	400

Sample Calculation

Result = Number of transmission x Length of transmission time

- * This device complies with the Bluetooth protocol for FHSS operation, employing a pseudo random channel selection and hopping rate to ensure that the occupancy time in $N \times 0.4s$, where N is the number of channels being used in the hopping sequence ($20 \leq N \leq 79$), is always less than 0.4s regardless of packet size.
This is confirmed in the test report for $N=79$.



UL Kashima, Inc.

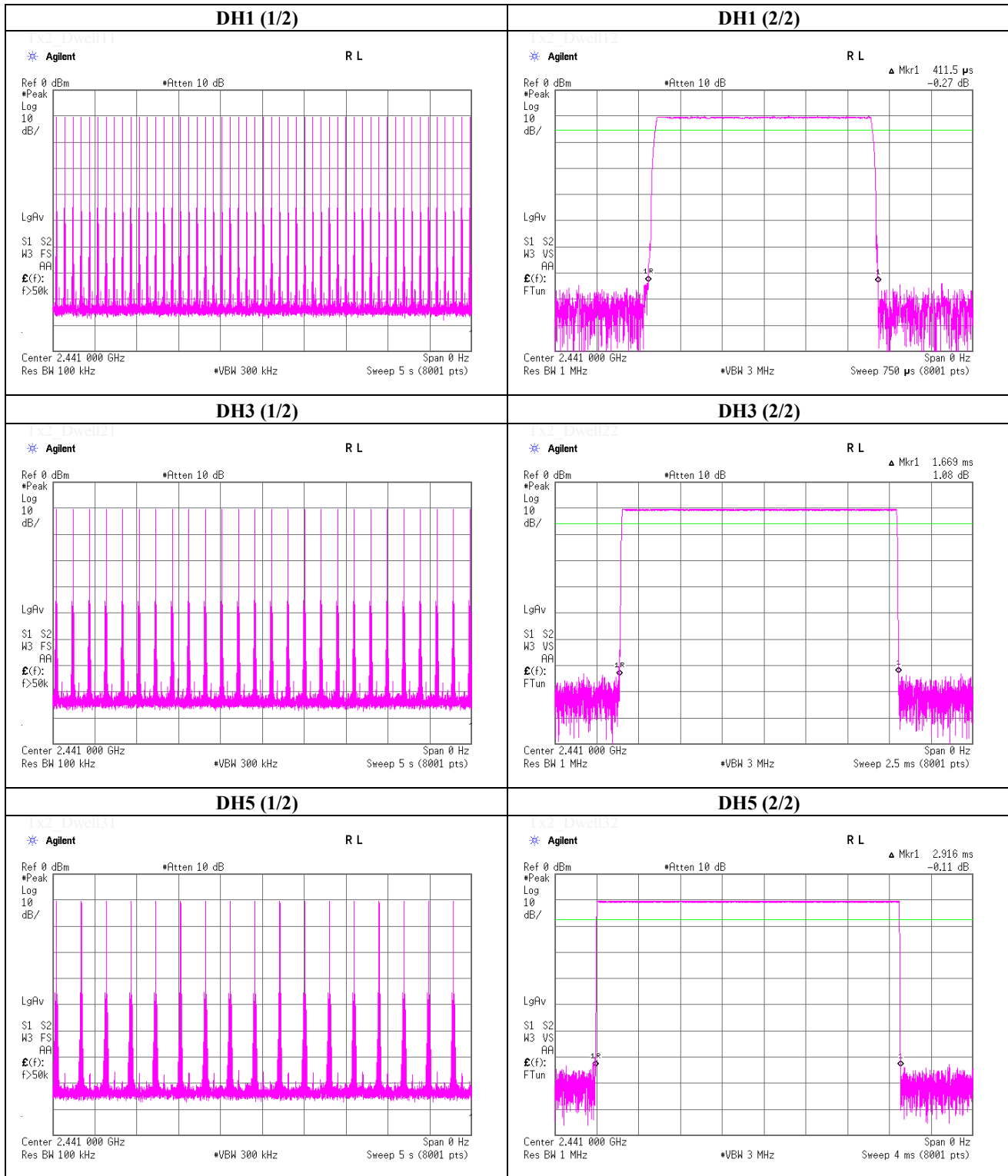
1614 Mushihata, Katori-shi, Chiba-ken 289-0341 JAPAN

Telephone : +81 478 82 0963

Facsimile : +81 478 82 3373

Dwell time

Tx, Bluetooth, BDR, PRBS9



UL Kashima, Inc.

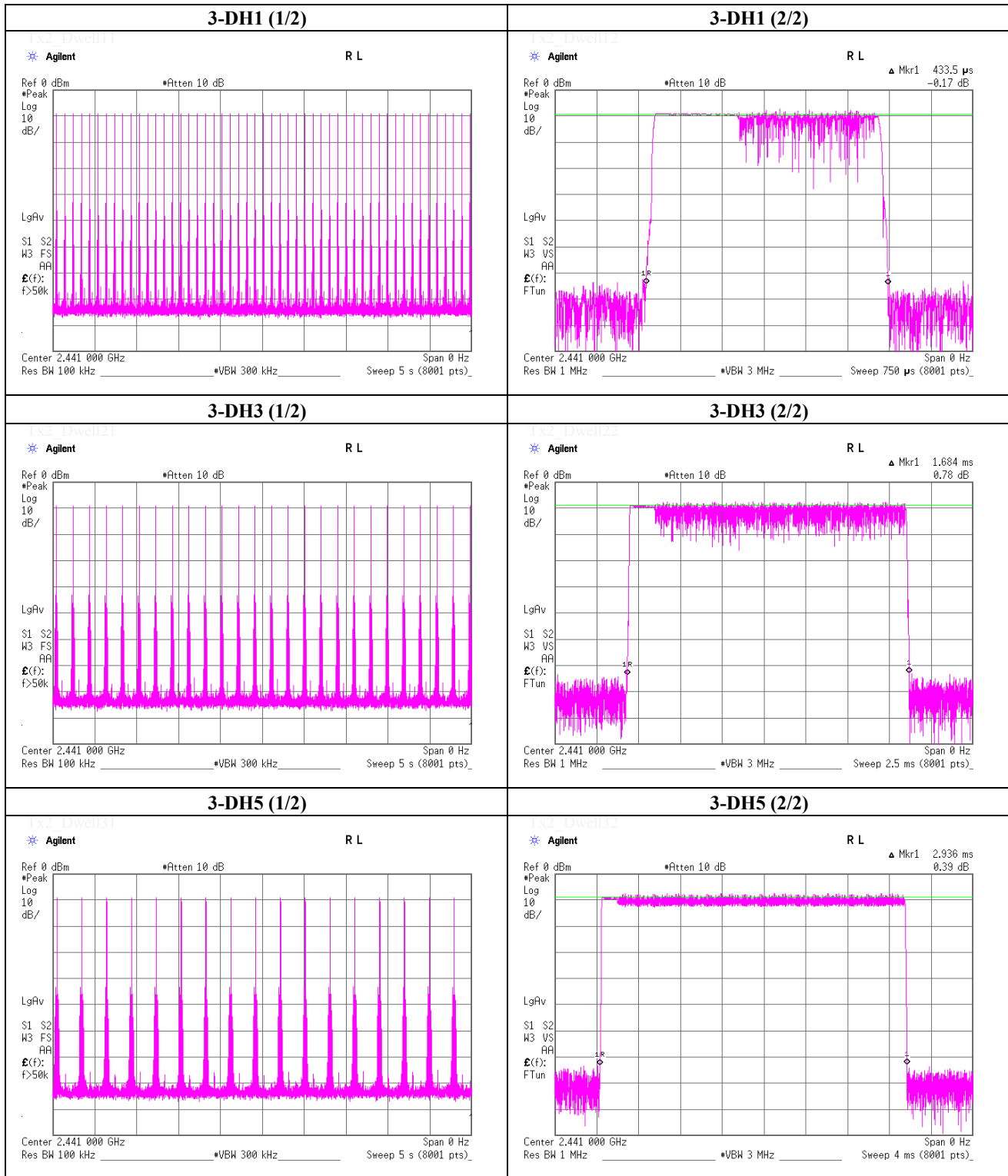
1614 Mushihata, Katori-shi, Chiba-ken 289-0341 JAPAN

Telephone : +81 478 82 0963

Facsimile : +81 478 82 3373

Dwell time

Tx, Bluetooth, EDR, PRBS9



UL Kashima, Inc.

1614 Mushihata, Katori-shi, Chiba-ken 289-0341 JAPAN

Telephone : +81 478 82 0963

Facsimile : +81 478 82 3373

Maximum Peak Conducted Output Power (Conducted)

Test place	UL Kashima, Inc.	No.1 Measurement Room
Date	November 11, 2014	
Temperature / Humidity	23 deg.C , 41 %RH	
Engineer	Kazuhiro Ando	
Mode	Tx, Bluetooth	

(* P/M: Power Meter with power sensor)

	Freq.	P/M (Peak) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
DH5	2402.0	-12.37	1.17	10.07	-1.13	0.77	20.97	125	22.10
DH5	2441.0	-9.69	1.18	10.07	1.56	1.43	20.97	125	19.41
DH5	2480.0	-9.74	1.18	10.07	1.51	1.42	20.97	125	19.46
2-DH5	2402.0	-9.52	1.17	10.07	1.72	1.49	20.97	125	19.25
2-DH5	2441.0	-7.13	1.18	10.07	4.12	2.58	20.97	125	16.85
2-DH5	2480.0	-6.95	1.18	10.07	4.30	2.69	20.97	125	16.67
3-DH5	2402.0	-8.88	1.17	10.07	2.36	1.72	20.97	125	18.61
3-DH5	2441.0	-6.49	1.18	10.07	4.76	2.99	20.97	125	16.21
3-DH5	2480.0	-6.37	1.18	10.07	4.88	3.08	20.97	125	16.09
Inquiry	Hopping	-8.60	1.18	10.07	2.65	1.84	20.97	125	18.32

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss

UL Kashima, Inc.

1614 Mushihata, Katori-shi, Chiba-ken 289-0341 JAPAN

Telephone : +81 478 82 0963

Facsimile : +81 478 82 3373

Average Output Power (Conducted) **(Reference data for SAR testing)**

Test place	UL Kashima, Inc.	No.1 Measurement Room
Date	November 11, 2014	
Temperature / Humidity	23 deg.C , 41 %RH	
Engineer	Kazuhiro Ando	
Mode	Tx, Bluetooth	

(* P/M: Power Meter with power sensor)

	Freq. [MHz]	P/M (AV) Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result	
					[dBm]	[mW]
DH5	2402.0	-13.33	1.17	10.07	-2.09	0.62
DH5	2441.0	-10.47	1.18	10.07	0.78	1.20
DH5	2480.0	-10.47	1.18	10.07	0.78	1.20
2-DH5	2402.0	-12.81	1.17	10.07	-1.57	0.70
2-DH5	2441.0	-10.40	1.18	10.07	0.85	1.22
2-DH5	2480.0	-10.26	1.18	10.07	0.99	1.26
3-DH5	2402.0	-12.80	1.17	10.07	-1.56	0.70
3-DH5	2441.0	-10.42	1.18	10.07	0.83	1.21
3-DH5	2480.0	-10.28	1.18	10.07	0.97	1.25
Inquiry	Hopping	-9.32	1.18	10.07	1.93	1.56

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss

UL Kashima, Inc.

1614 Mushihata, Katori-shi, Chiba-ken 289-0341 JAPAN

Telephone : +81 478 82 0963

Facsimile : +81 478 82 3373

DATA OF CONDUCTED EMISSION TEST

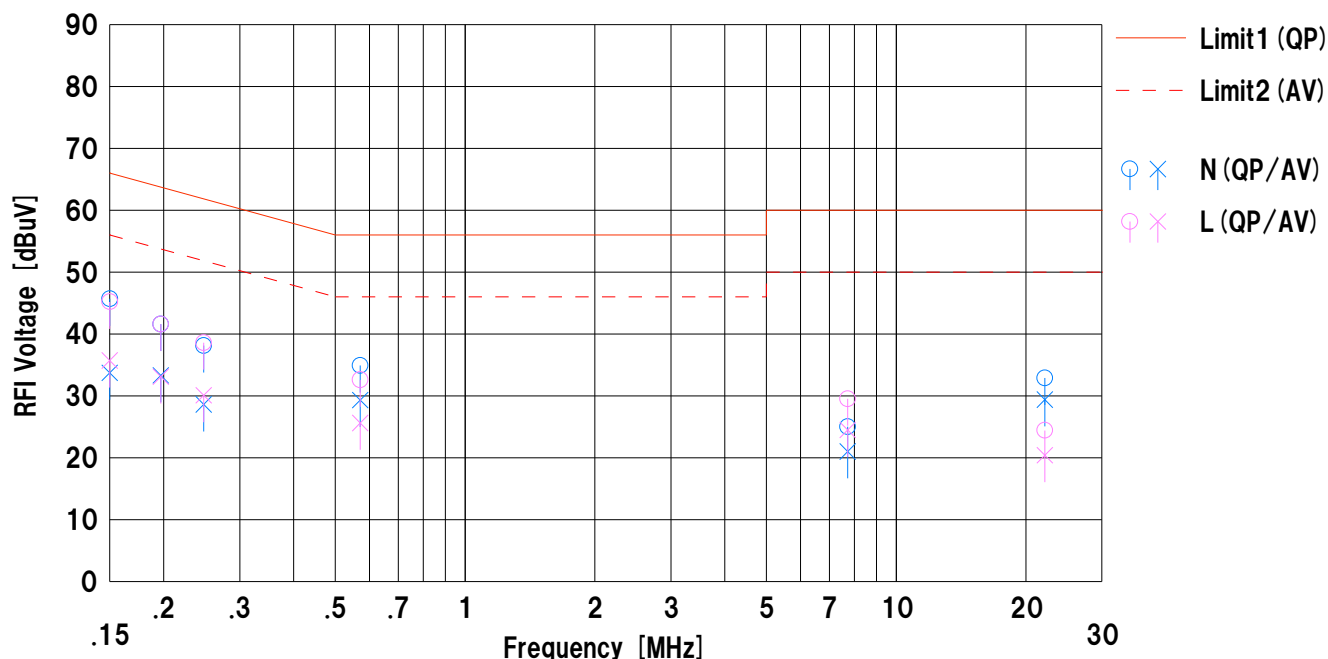
UL Kashima, Inc. No.2 Test Site
Date : 2014/11/18

Company : Sony Corporation
Kind of EUT : Smart B-Trainer
Model No. : SSE-BTR 1
Serial No. : 002
Remarks :

Mode : Tx, BT BDR, 2402MHz
Report No. : 10559364M-A-R1
Power : AC120V/60Hz (AC Adapter)
Temp./Humi. : 23deg.C / 45%RH

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

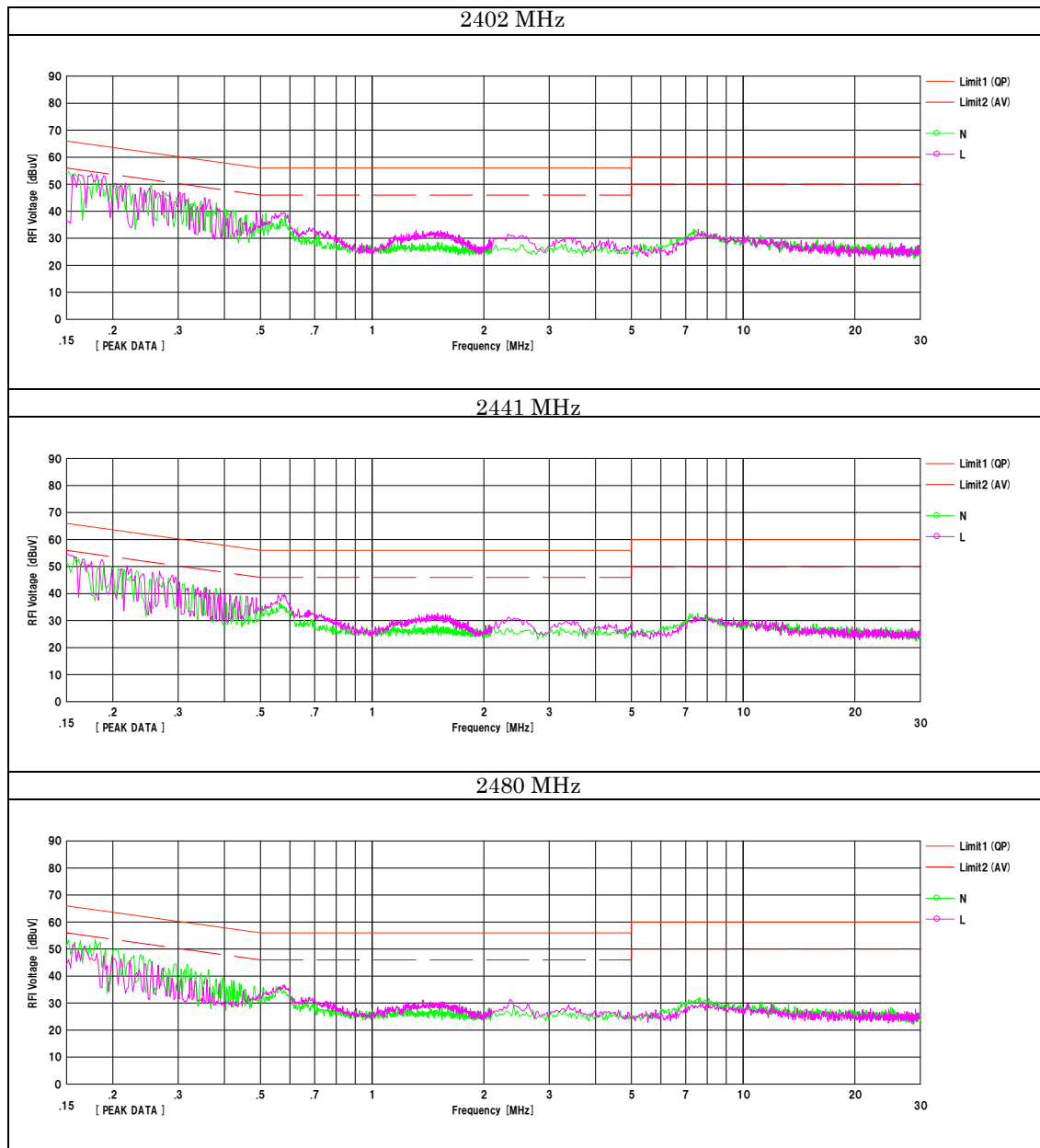
Tested by : Atsushi Ishige



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.15000	36.0	24.0	9.7	45.7	33.7	66.0	56.0	20.3	22.3	N	
2	0.19693	32.0	23.7	9.6	41.6	33.3	63.7	53.7	22.1	20.4	N	
3	0.24745	28.5	19.0	9.6	38.1	28.6	61.8	51.8	23.7	23.2	N	
4	0.57110	25.3	19.7	9.6	34.9	29.3	56.0	46.0	21.1	16.7	N	
5	7.71755	15.0	11.0	10.0	25.0	21.0	60.0	50.0	35.0	29.0	N	
6	22.12000	22.5	19.0	10.4	32.9	29.4	60.0	50.0	27.1	20.6	N	
7	0.15000	35.5	26.0	9.7	45.2	35.7	66.0	56.0	20.8	20.3	L	
8	0.19693	32.0	23.5	9.6	41.6	33.1	63.7	53.7	22.1	20.6	L	
9	0.24745	29.0	20.5	9.6	38.6	30.1	61.8	51.8	23.2	21.7	L	
10	0.57110	23.0	16.0	9.6	32.6	25.6	56.0	46.0	23.4	20.4	L	
11	7.71755	19.5	14.5	10.0	29.5	24.5	60.0	50.0	30.5	25.5	L	
12	22.12000	14.0	10.0	10.4	24.4	20.4	60.0	50.0	35.6	29.6	L	

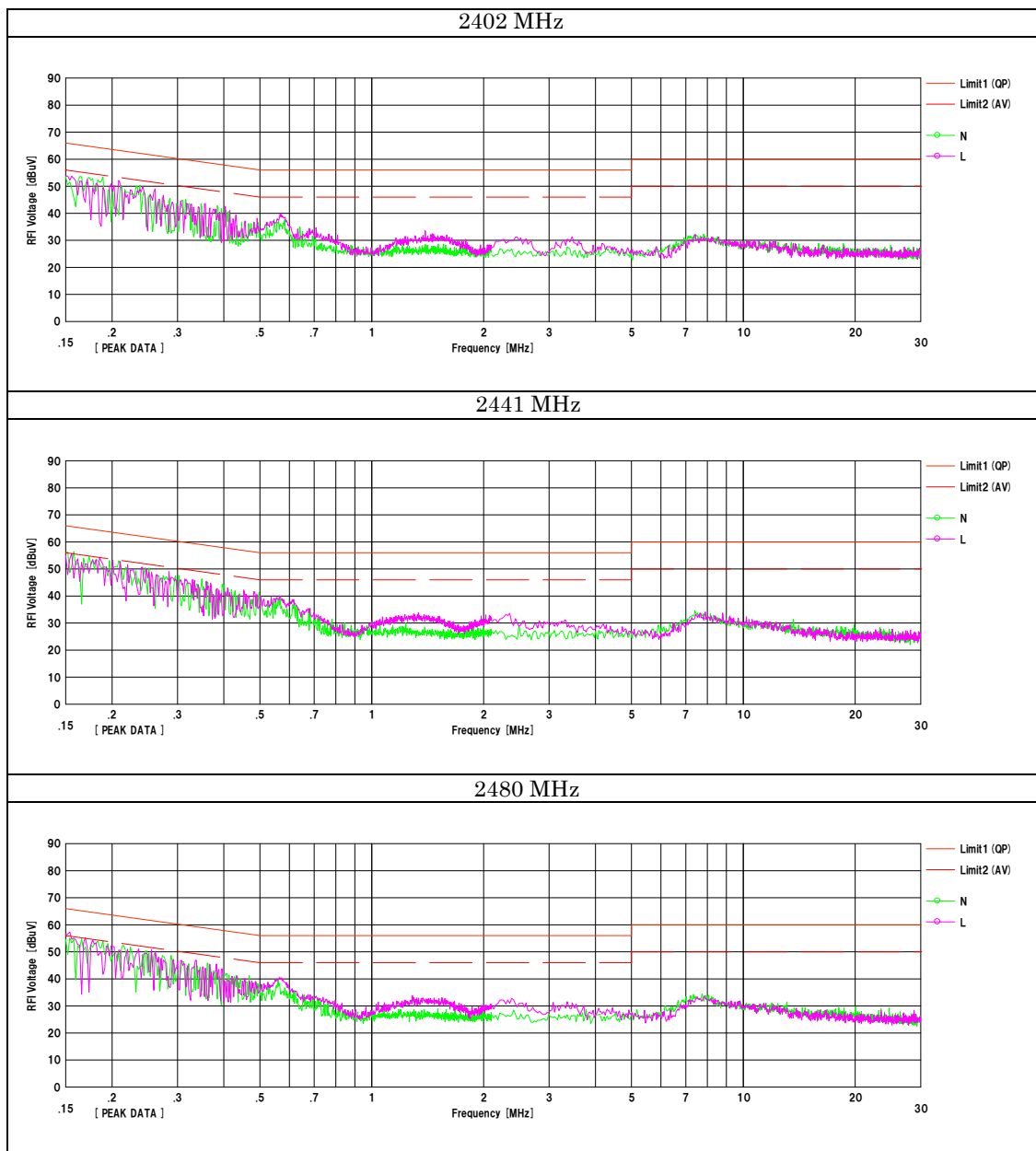
Conducted Emission

Test Place	UL Kashima, Inc. No.2 Test Site
Report No.	10559364M-A-R1
Tempature/Humidity	2014/11/18
Engineer	23deg.C/45% RH
Mode	Tx DH5



Conducted Emission

Test Place	UL Kashima, Inc. No.2 Test Site
Report No.	10559364M-A-R1
Tempature/Humidity	2014/11/18
Engineer	23deg.C/45% RH
Mode	Tx 3DH5



Radiated Emission

Test place No.11 Semi Anechoic Chamber
Date November 10, 2014 November 11, 2014 November 12, 2014
Temperature / Humidity 22 deg.C, 41 %RH 22 deg.C, 50 %RH 22 deg.C, 41 %RH
Engineer Makoto.Ebato Makoto.Ebato Makoto.Ebato
Mode Tx, 2402 MHz
 Tx, Bluetooth, BDR, PRBS9

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	33.286	QP	34.2	12.8	6.9	32.2	21.7	40.0	18.3	299	0	
Hori.	250.506	QP	41.4	11.7	8.7	32.0	29.8	46.0	16.2	100	355	
Hori.	432.009	QP	35.9	16.2	9.7	32.0	29.8	46.0	16.2	238	207	
Hori.	2390.000	PK	43.6	27.6	14.0	38.5	46.7	73.9	27.2	100	0	
Hori.	4804.000	PK	54.3	31.3	6.0	39.6	52.0	73.9	21.9	100	33	
Hori.	2390.000	AV	32.4	27.6	14.0	38.5	35.5	53.9	18.4	100	0	
Hori.	4804.000	AV	49.5	31.3	6.0	39.6	47.2	53.9	6.7	100	33	
Vert.	40.353	QP	27.3	12.9	7.0	32.2	15.0	40.0	25.0	100	139	
Vert.	94.513	QP	30.7	8.3	7.6	32.2	14.4	43.5	29.1	209	0	
Vert.	432.009	QP	39.6	16.2	9.7	32.0	33.5	46.0	12.5	112	188	
Vert.	2390.000	PK	42.7	27.6	14.0	38.5	45.8	73.9	28.1	100	0	
Vert.	4804.000	PK	53.0	31.3	6.0	39.6	50.7	73.9	23.2	100	310	
Vert.	2390.000	AV	32.4	27.6	14.0	38.5	35.5	53.9	18.4	100	0	
Vert.	4804.000	AV	47.4	31.3	6.0	39.6	45.1	53.9	8.8	100	310	

Result = Reading + Ant.Fac. + Loss (Cable+Attenuator+Filter)-Distance factor(above 13GHz)) - Gain(Amplifier)

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	80.9	27.5	14.0	38.5	83.9	-	-	
Hori.	2400.000	PK	36.3	27.5	14.0	38.5	39.3	63.9	24.6	
Vert.	2402.000	PK	80.5	27.5	14.0	38.5	83.5	-	-	
Vert.	2400.000	PK	35.5	27.5	14.0	38.5	38.5	63.5	25.0	

Result = Reading + Ant.Fac. + Loss (Cable+Attenuator) - Gain(Amplifier)

Radiated Emission

Test place No.11 Semi Anechoic Chamber
Date November 10, 2014 November 11, 2014 November 12, 2014
Temperature / Humidity 22 deg.C, 41 %RH 22 deg.C, 50 %RH 22 deg.C, 41 %RH
Engineer Makoto.Ebato Makoto.Ebato Makoto.Ebato
Mode Tx, 2441 MHz
 Tx, Bluetooth, BDR, PRBS9

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	33.286	QP	33.7	12.8	6.9	32.2	21.2	40.0	18.8	314	5	
Hori.	252.006	QP	40.9	11.7	8.7	32.0	29.3	46.0	16.7	100	0	
Hori.	432.010	QP	36.3	16.2	9.7	32.0	30.2	46.0	15.8	229	214	
Hori.	4882.000	PK	53.2	31.2	6.0	39.6	50.8	73.9	23.1	100	31	
Hori.	4882.000	AV	48.6	31.2	6.0	39.6	46.2	53.9	7.7	100	31	
Vert.	39.424	QP	30.4	12.9	7.0	32.2	18.1	40.0	21.9	100	148	
Vert.	150.872	QP	24.3	13.4	8.1	32.1	13.7	43.5	29.8	100	355	
Vert.	432.010	QP	39.8	16.2	9.7	32.0	33.7	46.0	12.3	119	341	
Vert.	4882.000	PK	54.7	31.2	6.0	39.6	52.3	73.9	21.6	100	271	
Vert.	4882.000	AV	50.1	31.2	6.0	39.6	47.7	53.9	6.2	100	271	

Result = Reading + Ant.Fac. + Loss (Cable+Attenuator+Filter)(below 18GHz)-Distance factor(above 13GHz)) - Gain(Amplifier)
Distance factor : 13GHz -40GHz : $20\log(3.0\text{m}/1.0\text{m}) = 9.5\text{dB}$

Radiated Emission

Test place No.11 Semi Anechoic Chamber
Date November 10, 2014 November 11, 2014 November 12, 2014
Temperature / Humidity 22 deg.C, 41 %RH 22 deg.C, 50 %RH 22 deg.C, 41 %RH
Engineer Makoto.Ebato Makoto.Ebato Makoto.Ebato
Mode Tx, 2480 MHz
 Tx, Bluetooth, BDR, PRBS9

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	32.760	QP	34.1	12.8	6.9	32.2	21.6	40.0	18.4	305	206	
Hori.	252.005	QP	42.5	11.7	8.7	32.0	30.9	46.0	15.1	100	355	
Hori.	432.009	QP	36.3	16.2	9.7	32.0	30.2	46.0	15.8	231	204	
Hori.	2483.500	PK	48.5	27.5	14.1	38.5	51.6	73.9	22.3	100	57	
Hori.	4960.000	PK	55.6	31.5	6.1	39.6	53.6	73.9	20.3	100	32	
Hori.	2483.500	AV	37.7	27.5	14.1	38.5	40.8	53.9	13.1	100	57	
Hori.	4960.000	AV	51.0	31.5	6.1	39.6	49.0	53.9	4.9	100	32	
Vert.	39.424	QP	29.5	12.9	7.0	32.2	17.2	40.0	22.8	100	45	
Vert.	147.556	QP	27.7	13.3	8.0	32.1	16.9	43.5	26.6	100	0	
Vert.	432.009	QP	39.7	16.2	9.7	32.0	33.6	46.0	12.4	118	205	
Vert.	2483.500	PK	47.7	27.5	14.1	38.5	50.8	73.9	23.1	100	69	
Vert.	4960.000	PK	56.4	31.5	6.1	39.6	54.4	73.9	19.5	100	272	
Vert.	2483.500	AV	38.1	27.5	14.1	38.5	41.2	53.9	12.7	100	69	
Vert.	4960.000	AV	52.5	31.5	6.1	39.6	50.5	53.9	3.4	100	272	

Result = Reading + Ant.Fac. + Loss (Cable+Attenuator+Filter)(below 18GHz)-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Radiated Emission

Test place No.11 Semi Anechoic Chamber
 Date November 10, 2014 November 11, 2014 November 12, 2014
 Temperature / Humidity 22 deg.C, 41 %RH 22 deg.C, 50 %RH 22 deg.C, 41 %RH
 Engineer Makoto.Ebato Makoto.Ebato Makoto.Ebato
 Mode Tx, 2402 MHz
 Tx, Bluetooth, EDR, PRBS9

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	32.600	QP	35.4	12.9	6.9	32.2	23.0	40.0	17.0	303	73	
Hori.	255.006	QP	38.2	11.8	8.7	32.0	26.7	46.0	19.3	100	0	
Hori.	438.010	QP	34.2	16.3	9.7	32.0	28.2	46.0	17.8	248	247	
Hori.	2390.000	PK	43.5	27.6	14.0	38.5	46.6	73.9	27.3	100	0	
Hori.	4804.000	PK	54.5	31.3	6.0	39.6	52.2	73.9	21.7	100	29	
Hori.	2390.000	AV	33.2	27.6	14.0	38.5	36.3	53.9	17.6	100	0	
Hori.	4804.000	AV	46.4	31.3	6.0	39.6	44.1	53.9	9.8	100	29	
Vert.	40.341	QP	29.0	12.9	7.0	32.2	16.7	40.0	23.3	100	200	
Vert.	147.545	QP	28.2	13.3	8.0	32.1	17.4	43.5	26.1	103	0	
Vert.	438.009	QP	39.4	16.3	9.7	32.0	33.4	46.0	12.6	118	356	
Vert.	2390.000	PK	41.2	27.6	14.0	38.5	44.3	73.9	29.6	100	0	
Vert.	4804.000	PK	56.1	31.3	6.0	39.6	53.8	73.9	20.1	100	267	
Vert.	2390.000	AV	33.2	27.6	14.0	38.5	36.3	53.9	17.6	100	0	
Vert.	4804.000	AV	48.2	31.3	6.0	39.6	45.9	53.9	8.0	100	267	

Result = Reading + Ant.Fac. + Loss (Cable+Attenuator+Filter)(below 18GHz)-Distance factor(above 13GHz)) - Gain(Amplifier)

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	87.8	27.5	14.0	38.5	90.8	-	-	
Hori.	2400.000	PK	37.3	27.5	14.0	38.5	40.3	70.8	30.5	
Vert.	2402.000	PK	82.5	27.5	14.0	38.5	85.5	-	-	
Vert.	2400.000	PK	34.1	27.5	14.0	38.5	37.1	65.5	28.4	

Result = Reading + Ant.Fac. + Loss (Cable+Attenuator) - Gain(Amplifier)

Radiated Emission

Test place No.11 Semi Anechoic Chamber
Date November 10, 2014 November 11, 2014 November 12, 2014
Temperature / Humidity 22 deg.C, 41 %RH 22 deg.C, 50 %RH 22 deg.C, 41 %RH
Engineer Makoto.Ebato Makoto.Ebato Makoto.Ebato
Mode Tx, 2441 MHz
 Tx, Bluetooth, EDR, PRBS9

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	32.761	QP	35.3	12.8	6.9	32.2	22.8	40.0	17.2	308	0	
Hori.	39.425	QP	27.5	12.9	7.0	32.2	15.2	40.0	24.8	100	50	
Hori.	253.506	QP	38.0	11.8	8.7	32.0	26.5	46.0	19.5	100	357	
Hori.	438.010	QP	34.0	16.3	9.7	32.0	28.0	46.0	18.0	100	229	
Hori.	4882.000	PK	53.5	31.2	6.0	39.6	51.1	73.9	22.8	100	294	
Hori.	4882.000	AV	45.7	31.2	6.0	39.6	43.3	53.9	10.6	100	294	
Vert.	41.448	QP	30.4	13.0	7.0	32.2	18.2	40.0	21.8	100	202	
Vert.	147.557	QP	29.1	13.3	8.0	32.1	18.3	43.5	25.2	270	0	
Vert.	438.010	QP	39.2	16.3	9.7	32.0	33.2	46.0	12.8	114	188	
Vert.	4882.000	PK	53.2	31.2	6.0	39.6	50.8	73.9	23.1	100	265	
Vert.	4882.000	AV	45.9	31.2	6.0	39.6	43.5	53.9	10.4	100	265	

Result = Reading + Ant.Fac. + Loss (Cable+Attenuator+Filter)(below 18GHz)-Distance factor(above 13GHz)) - Gain(Amplifier)
Distance factor : 13GHz -40GHz : $20\log(3.0\text{m}/1.0\text{m}) = 9.5\text{dB}$

Radiated Emission

Test place	No.11 Semi Anechoic Chamber		
Date	November 10, 2014	November 11, 2014	November 12, 2014
Temperature / Humidity	22 deg.C, 41 %RH	22 deg.C, 50 %RH	22 deg.C, 41 %RH
Engineer	Makoto.Ebato	Makoto.Ebato	Makoto.Ebato
Mode	Tx, 2480 MHz Tx, Bluetooth, EDR, PRBS9		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	32.760	QP	34.2	12.8	6.9	32.2	21.7	40.0	18.3	302	0	
Hori.	255.006	QP	38.2	11.8	8.7	32.0	26.7	46.0	19.3	100	0	
Hori.	438.010	QP	34.1	16.3	9.7	32.0	28.1	46.0	17.9	238	243	
Hori.	2483.500	PK	45.3	27.5	14.1	38.5	48.4	73.9	25.5	107	53	
Hori.	4960.000	PK	53.4	31.5	6.1	39.6	51.4	73.9	22.5	100	32	
Hori.	2483.500	AV	35.8	27.5	14.1	38.5	38.9	53.9	15.0	107	53	
Hori.	4960.000	AV	46.3	31.5	6.1	39.6	44.3	53.9	9.6	100	32	
Vert.	39.425	QP	31.9	12.9	7.0	32.2	19.6	40.0	20.4	100	53	
Vert.	147.558	QP	29.5	13.3	8.0	32.1	18.7	43.5	24.8	271	61	
Vert.	438.010	QP	39.2	16.3	9.7	32.0	33.2	46.0	12.8	118	196	
Vert.	2483.500	PK	44.6	27.5	14.1	38.5	47.7	73.9	26.2	100	236	
Vert.	4960.000	PK	54.8	31.5	6.1	39.6	52.8	73.9	21.1	100	271	
Vert.	2483.500	AV	34.3	27.5	14.1	38.5	37.4	53.9	16.5	100	236	
Vert.	4960.000	AV	47.7	31.5	6.1	39.6	45.7	53.9	8.2	100	271	

Result = Reading + Ant.Fac. + Loss (Cable+Attenuator+Filter)(below 18GHz)-Distance factor(above 13GHz)) - Gain(Amplifier)

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

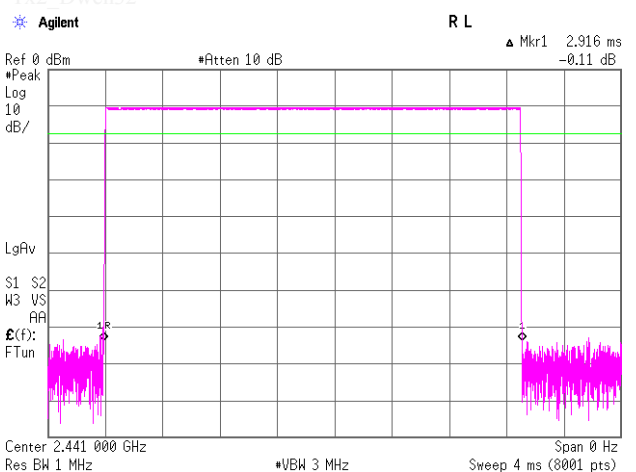
Dwell time factor Calculation chart

Dwell time factor Calculation	
Tx, Bluetooth, EDR, PRBS9	
Worst 100ms Dwell time factor =$20\log((2.937 \times 2)/100) = -24.62\text{dB}$ 1x2_duty2 ON time of some channel during 100ms: Twice This is the worst case in hopping sequence of Bluetooth.	1cycle On time : 2.937ms

VBW (Average) setting

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

Dwell time factor Calculation chart

Dwell time factor Calculation Tx, Bluetooth, BDR, PRBS9	
Worst 100ms Dwell time factor =$20\log((2.916 \times 2)/100) = -24.68\text{dB}$ 1x2_duty2 ON time of some channel during 100ms: Twice This is the worst case in hopping sequence of Bluetooth.	1cycle On time : 2.916ms 

VBW (Average) setting

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

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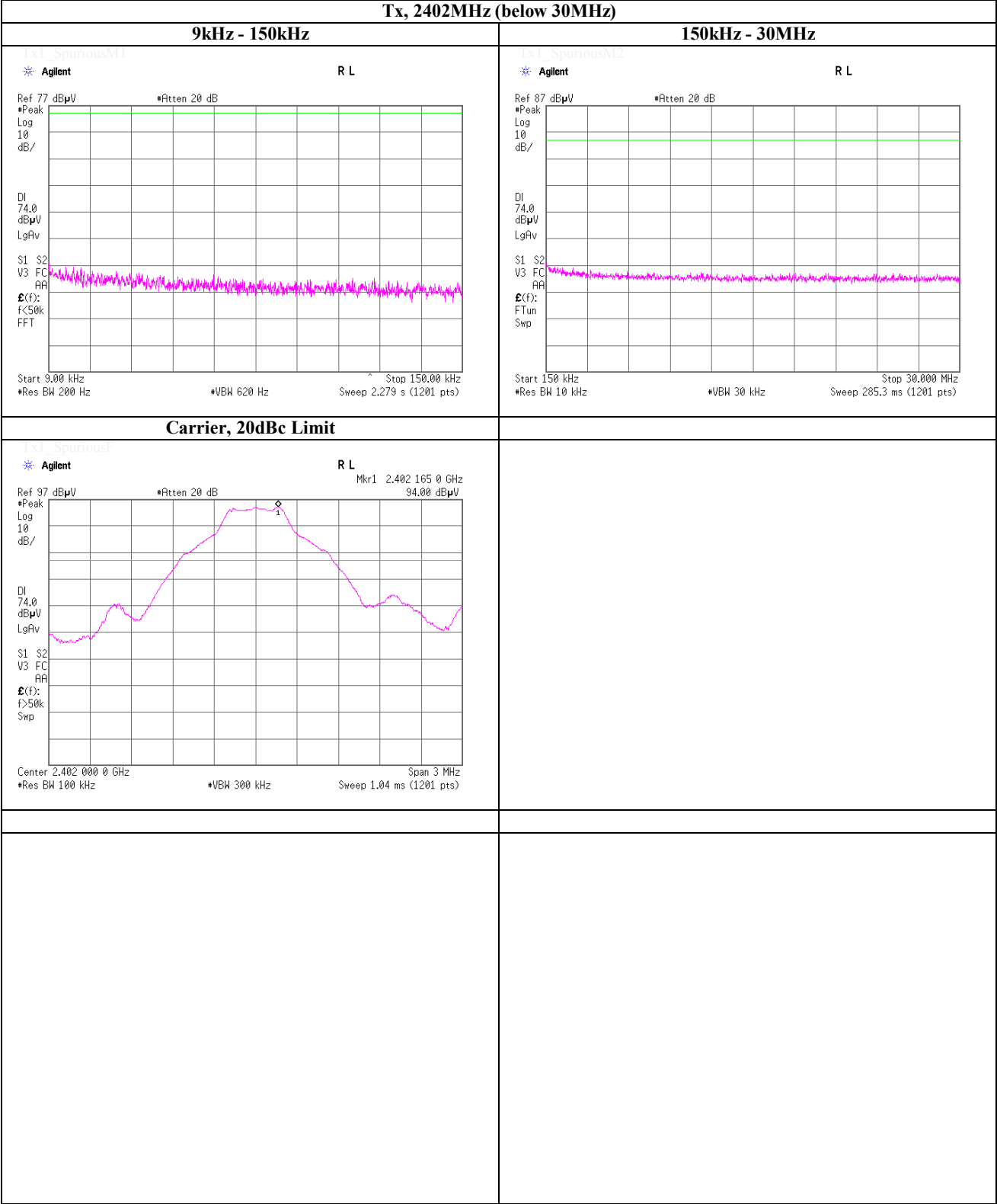
Telephone : +81 478 82 0963

Facsimile : +81 478 82 3373

Spurious emission (Conducted)

Tx, Bluetooth, BDR, PRBS9

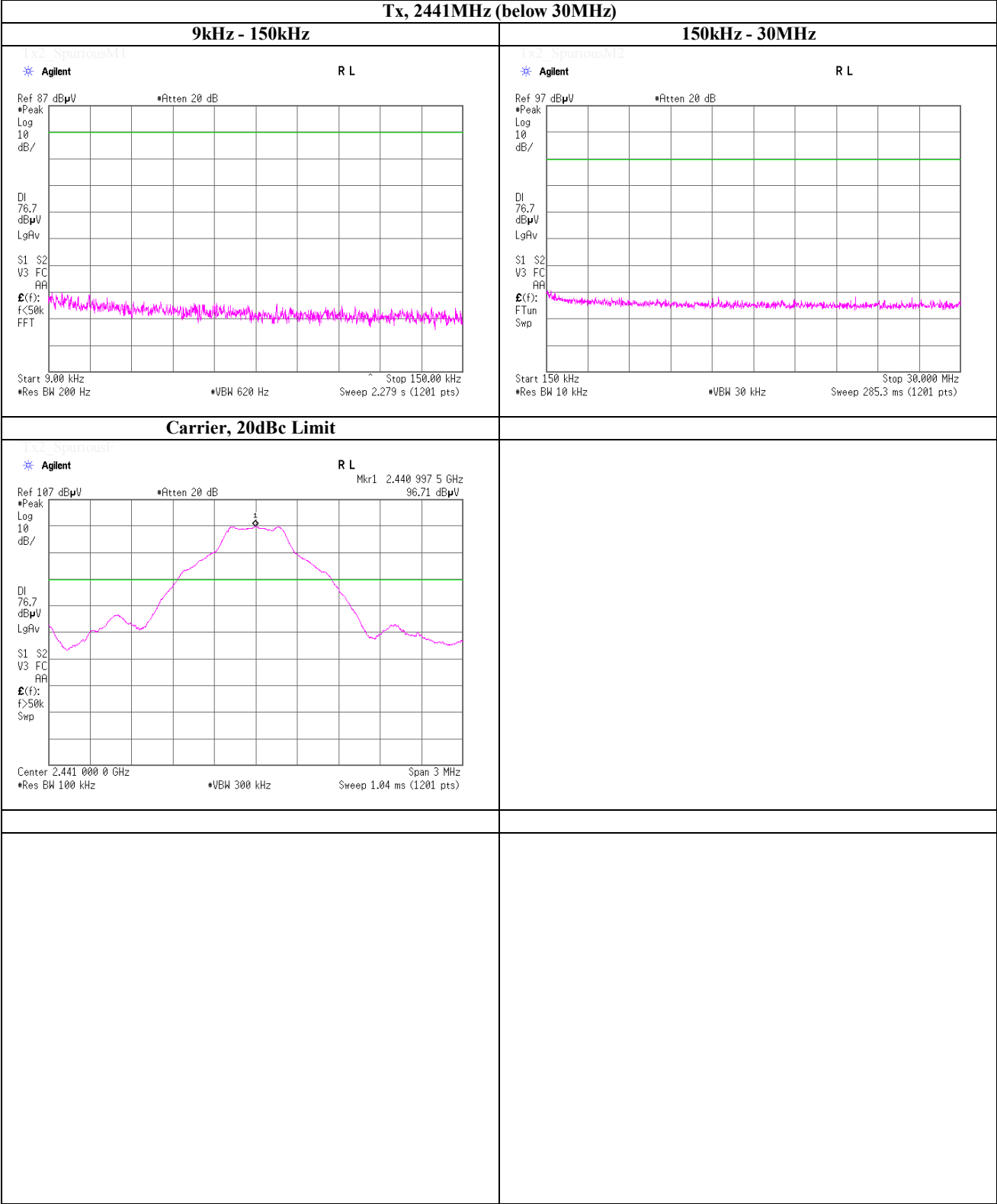
Tx, 2402MHz (below 30MHz)



Spurious emission (Conducted)

Tx, Bluetooth, BDR, PRBS9

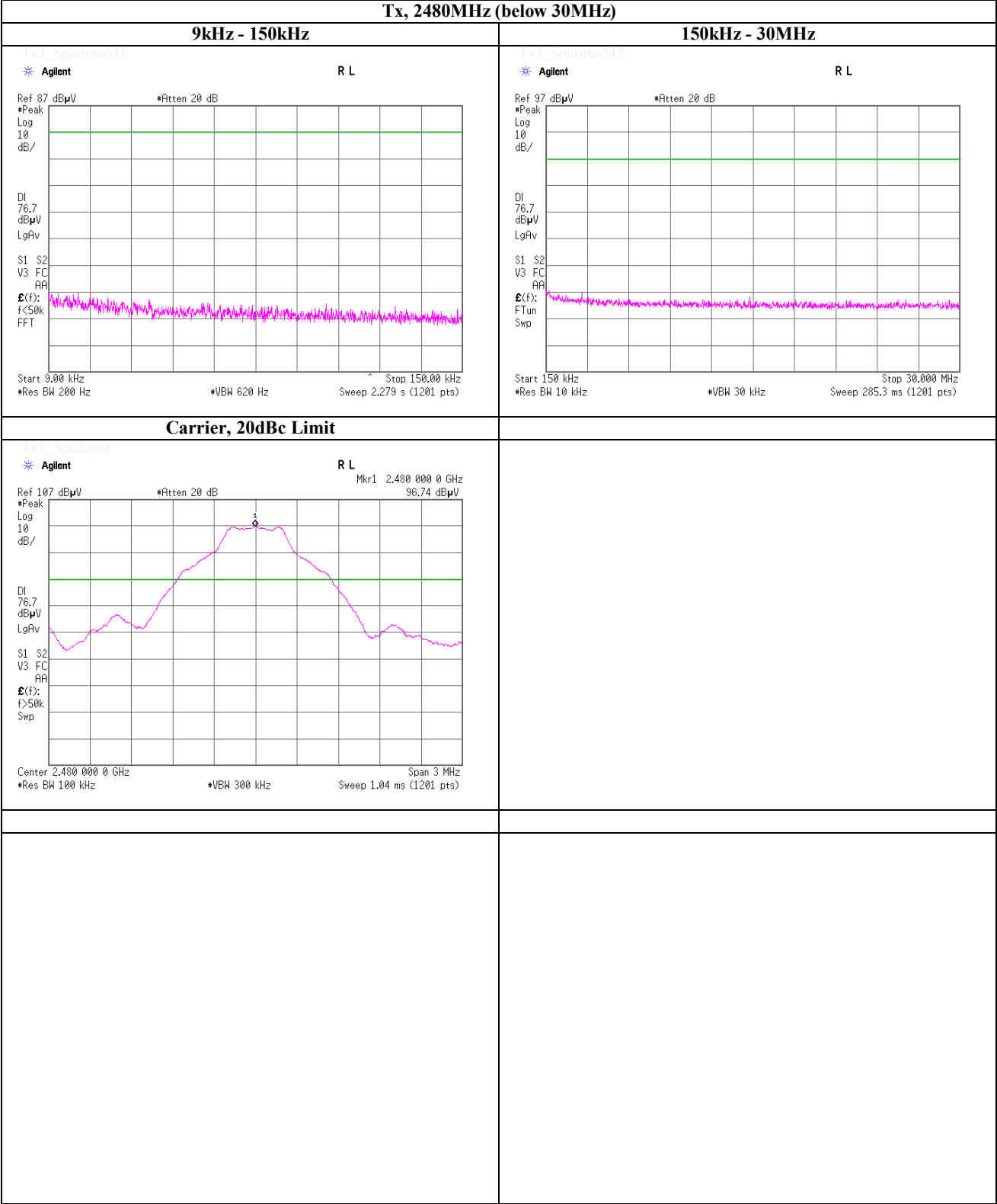
Tx, 2441MHz (below 30MHz)



Spurious emission (Conducted)

Tx, Bluetooth, BDR, PRBS9

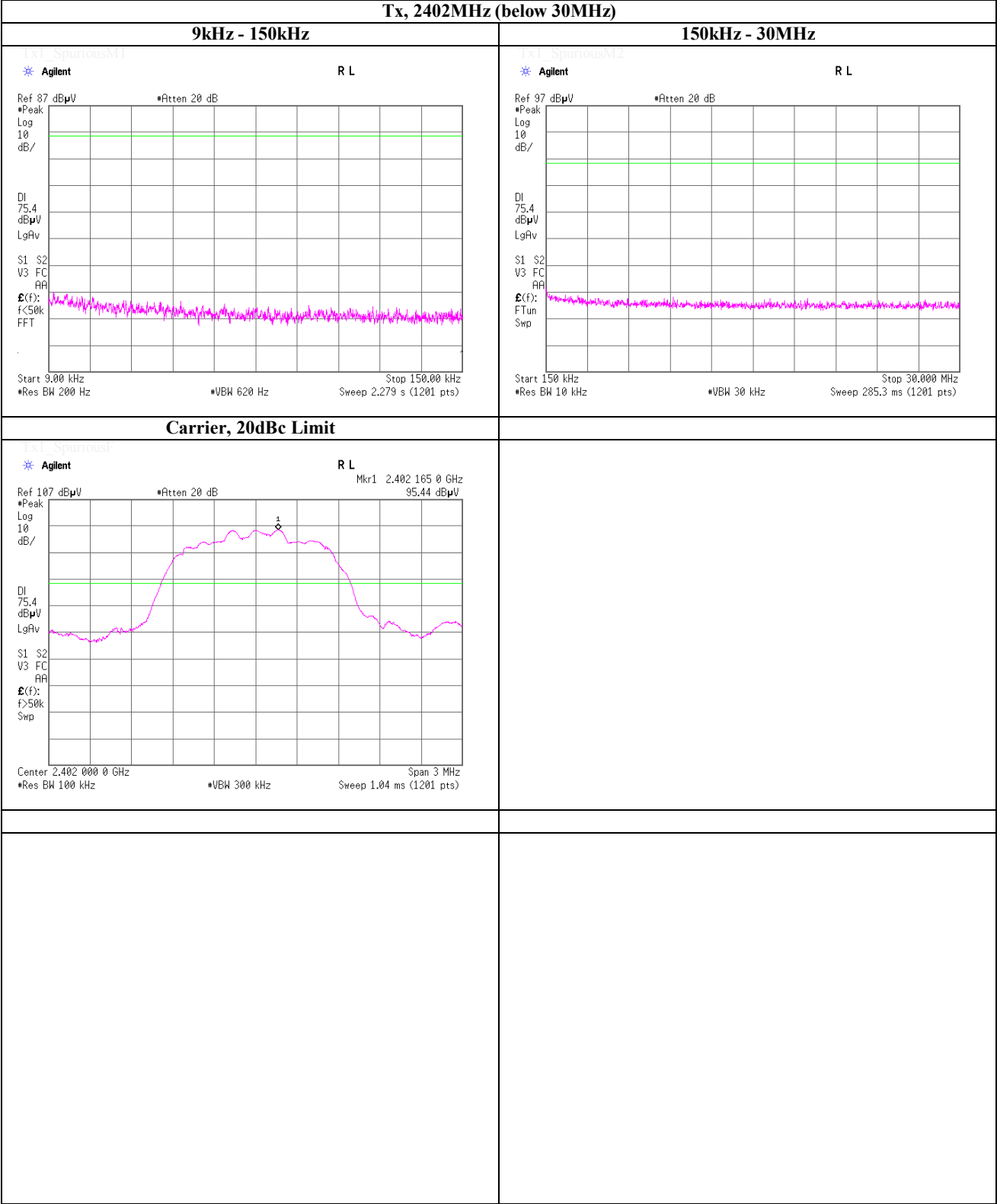
Tx, 2480MHz (below 30MHz)



Spurious emission (Conducted)

Tx, Bluetooth, EDR, PRBS9

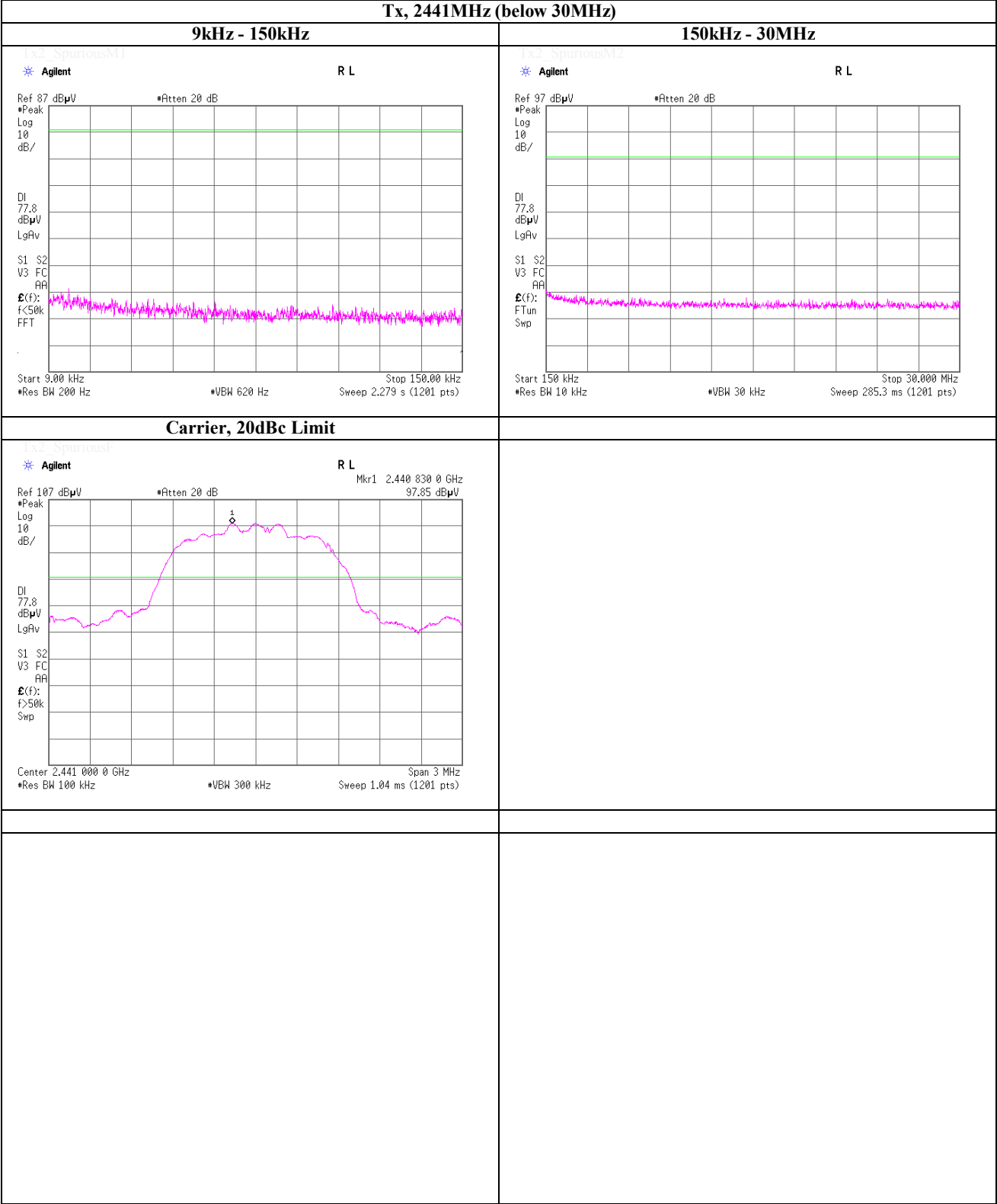
Tx, 2402MHz (below 30MHz)



Spurious emission (Conducted)

Tx, Bluetooth, EDR, PRBS9

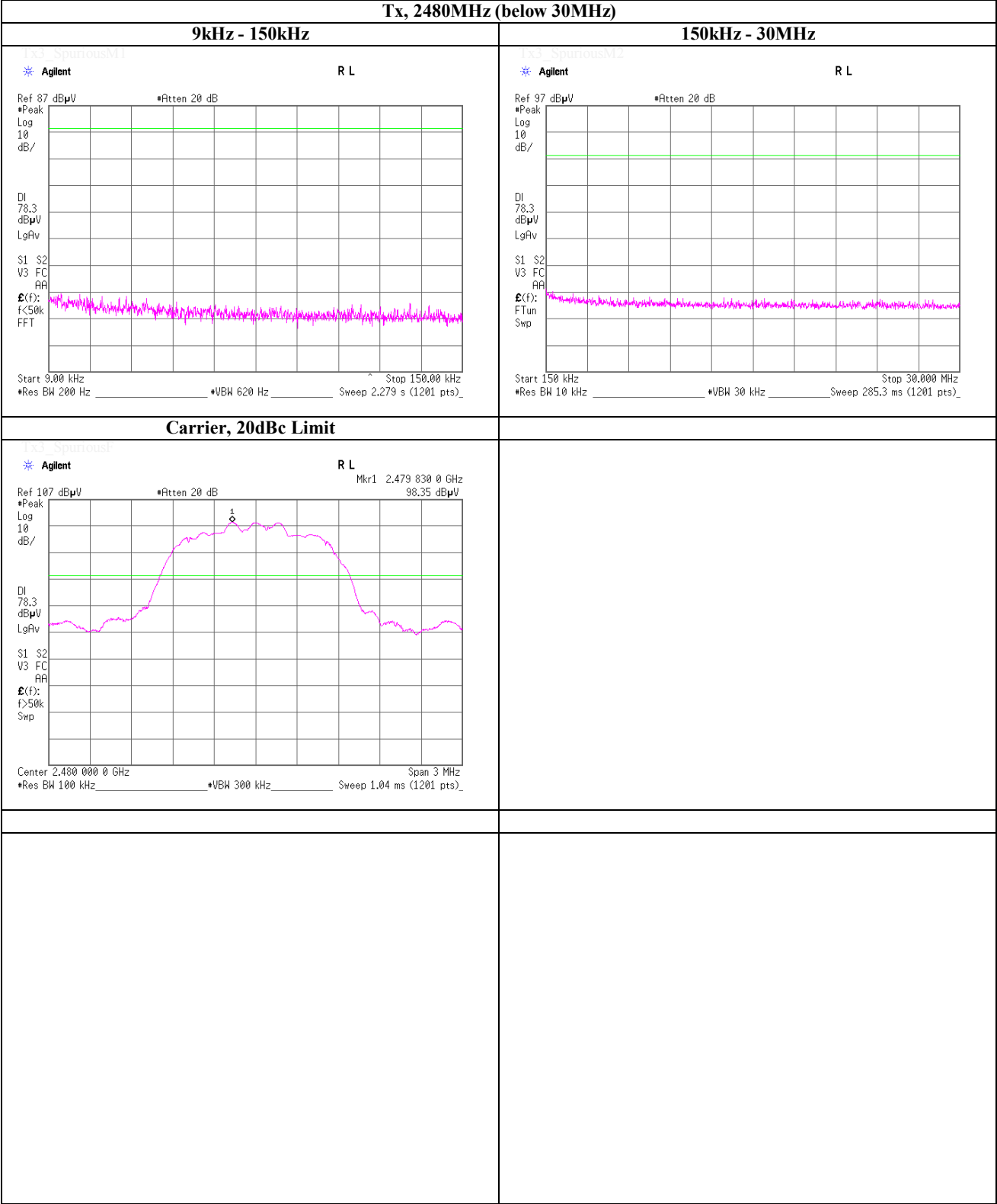
Tx, 2441MHz (below 30MHz)



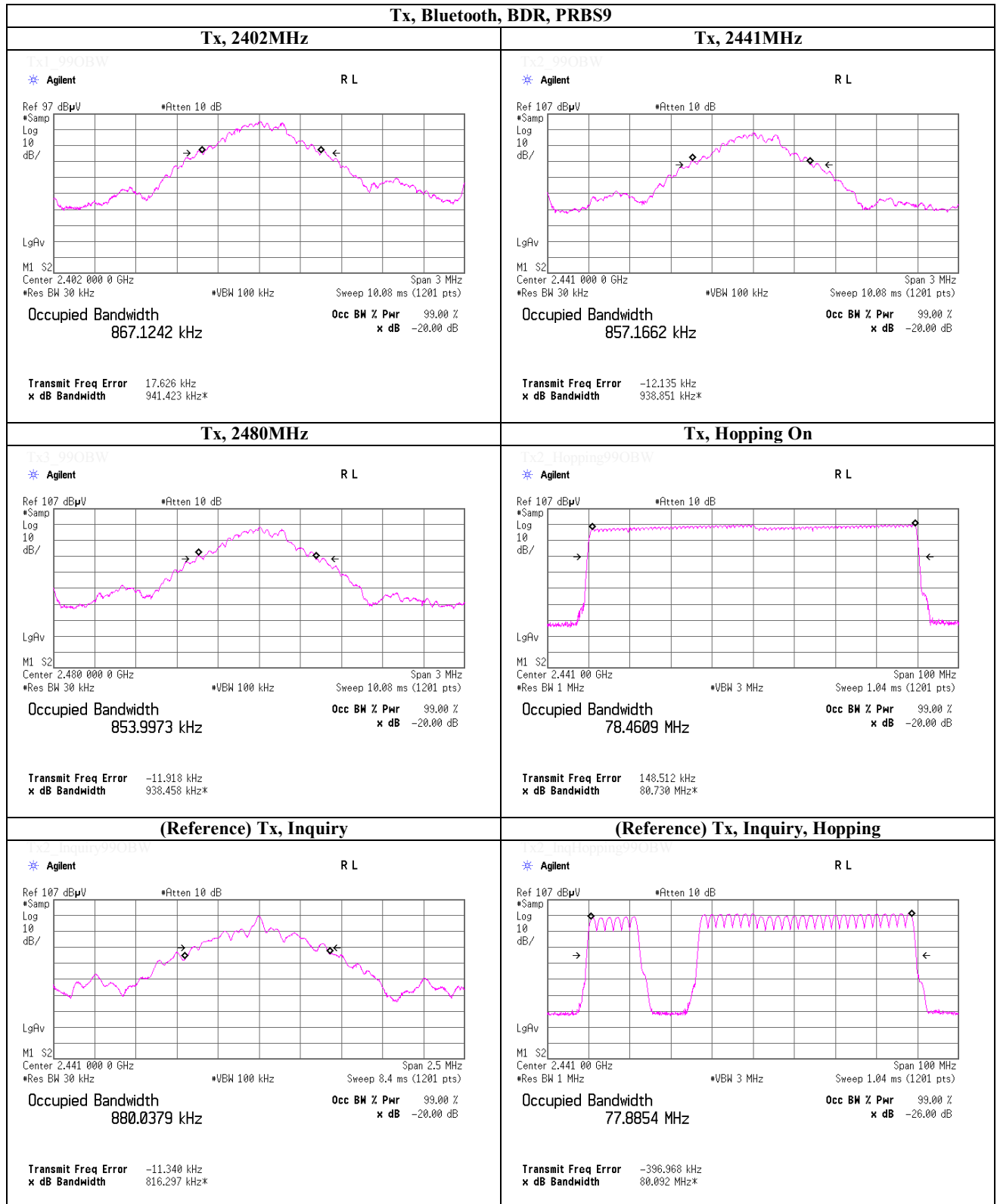
Spurious emission (Conducted)

Tx, Bluetooth, EDR, PRBS9

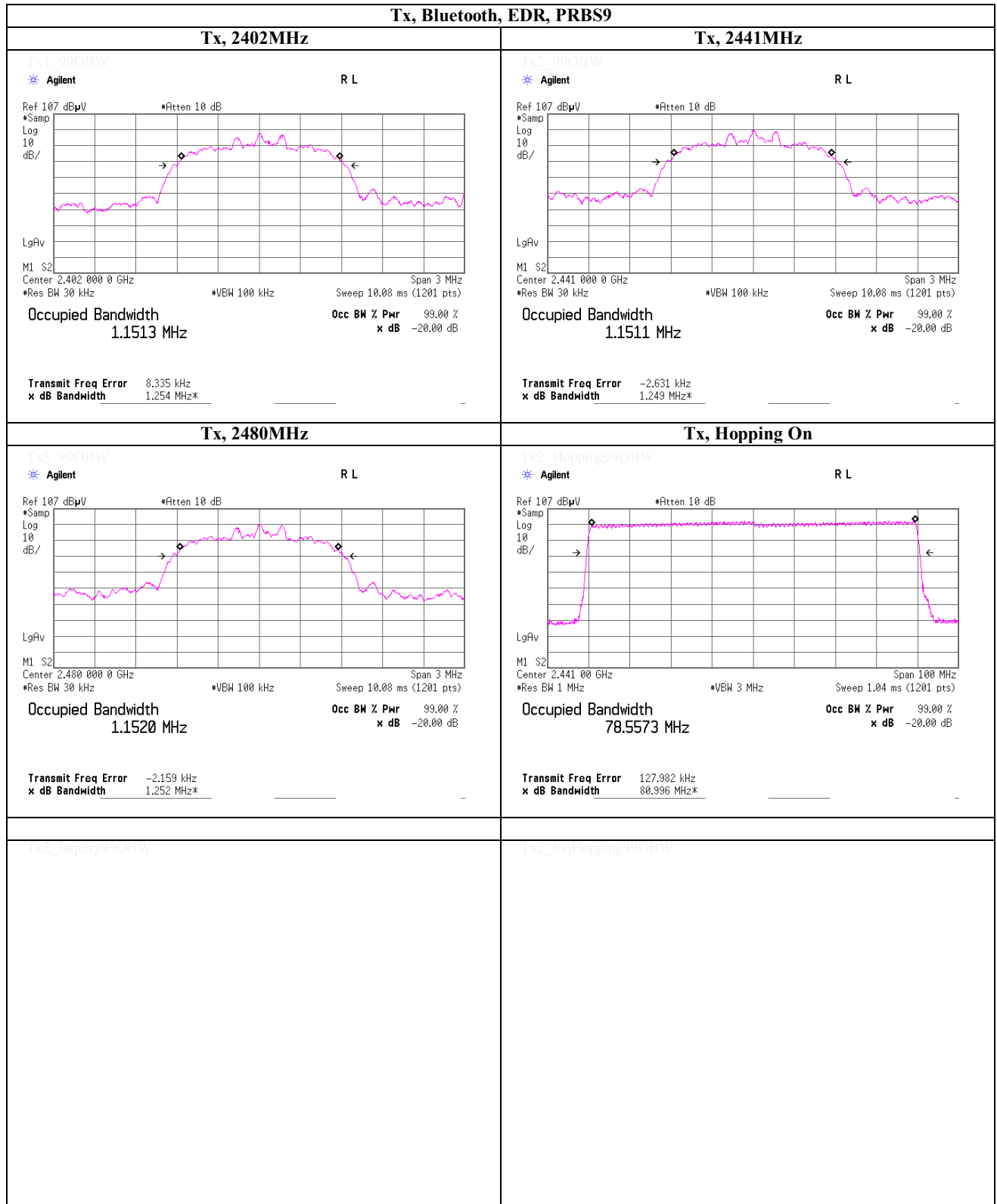
Tx, 2480MHz (below 30MHz)



99% Occupied Bandwidth



99% Occupied Bandwidth



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Appendix 3: Test instruments

No.2 Test site (Conducted Emission)

Instrument	Manufacturer	Model	Internal Code	Cal. Date	Due Date
Test Receiver	Rohde & Schwarz	ESCS30	RCV04	2014/10/02	2015/10/31
AMN (for EUT)	Rohde & Schwarz	ENV216	LSN26	2014/08/28	2015/08/31
Spectrum Analyzer	Hewlett Packard	8568A	SPR04	2014/10/11	2015/10/31
Coaxial Cable	Fujikura	5D-2W	2CSL	2014/07/22	2015/07/31
Test Software	TSJ	TEPTO-DV	Ver.2.5.0113	N/A	

No.11 Test site (Radiated emission)

Instrument	Manufacturer	Model	Internal Code	Cal. Date	Due Date
Test Receiver	Rohde & Schwarz	ESCI	RCV09	2014/09/03	2015/09/30
Spectrum Analyzer	Agilent	N9030A	SPR24	2014/05/20	2015/05/31
Logbicon Antenna	Schwarzbeck	VULB 9168	LGBC06	2014/04/25	2015/04/30
Horn Antenna	Schwarzbeck	BBHA9120D	MWH13	2014/07/12	2015/07/31
Horn Antenna	TOYO	DRH07	DRH07	2014/05/26	2015/05/31
Pre-Amplifier	Sonoma Instrument	310N	PRA16	2014/05/23	2015/05/31
Pre-Amplifier	TOYO	TPA0118-36	PRA18	2014/07/14	2015/07/31
Attenuator	Weinschel	54A-10	FAT72	2014/05/23	2015/05/31
Highpass Filter	Micro-Tronics	HPM50111-02	HPF03	2014/05/23	2015/05/31
Coaxial Cable	Fujikura	5D-2W	11R10m	2014/05/23	2015/05/31
Micro Wave Cable	Junkosha	MWX241	WLC06-1m	2014/05/23	2015/05/31
Micro Wave Cable	Junkosha	MWX221	WLC07-8m	2014/05/23	2015/05/31
Micro Wave Cable	SUHNER	SUCOFLEX104	WLC09-5.5m	2014/07/17	2015/07/31
Test Software	TSJ	TEPTO-DV	Ver.2.5.0113	N/A	

No.1 Measurement Room (Antenna terminal conducted test)

Instrument	Manufacturer	Model	Internal Code	Cal. Date	Due Date
Spectrum Analyzer	Agilent	E4448A	SPR25	2014/05/19	2015/05/31
Power Meter	Agilent	8990B	PWM18	2014/05/14	2015/05/31
Power Sensor	Agilent	N1923A	PWS33	2014/06/26	2015/06/30
Attenuator	Weinschel	54A-10	FAT73	2014/05/23	2015/05/31
Coaxial Cable	Junkosha	MWX241	WLC06-1m	2014/05/23	2015/05/31