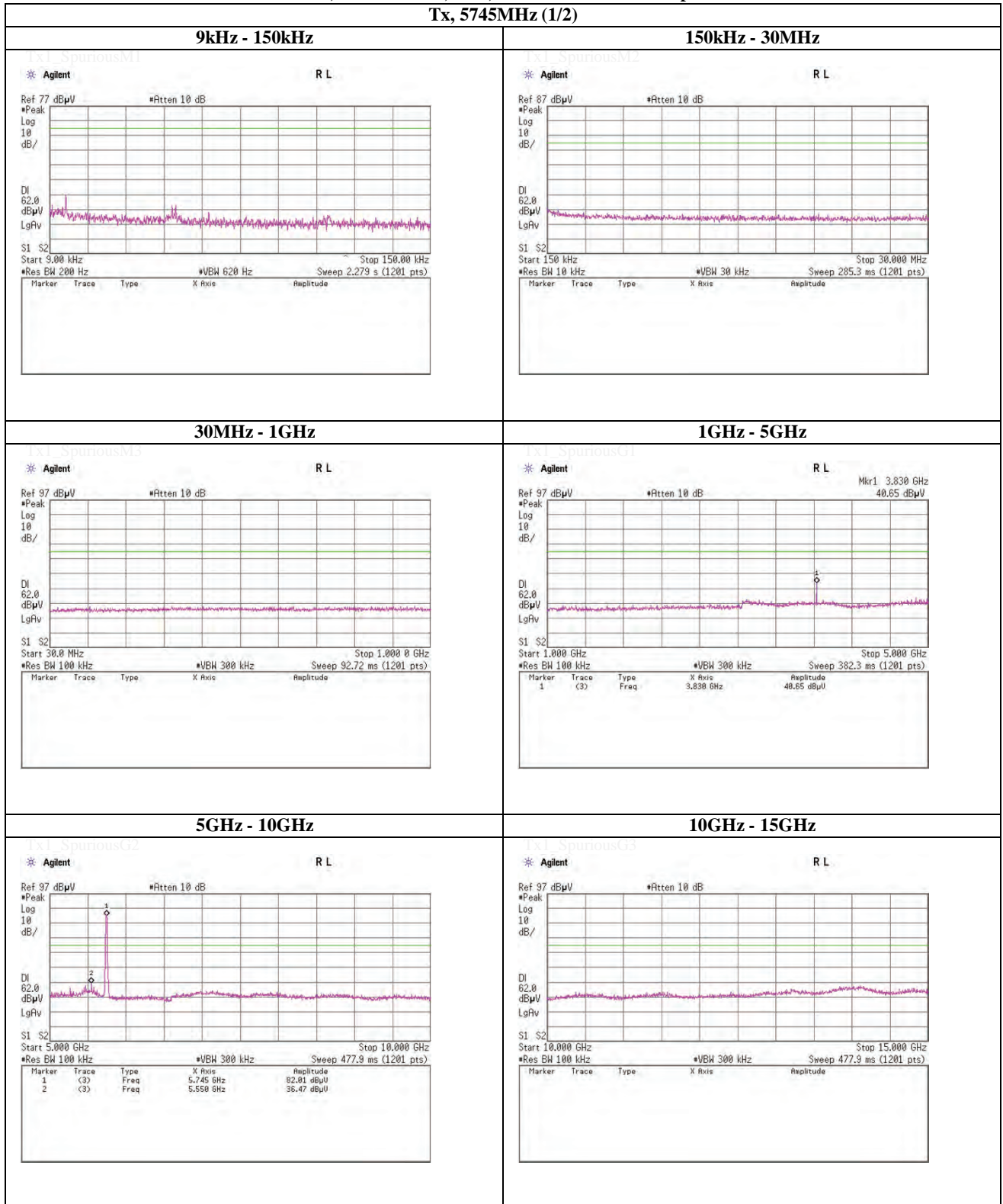


**Spurious emission (Conducted)**  
**Tx, IEEE802.11a, PN9, worst data mode 24Mbps**

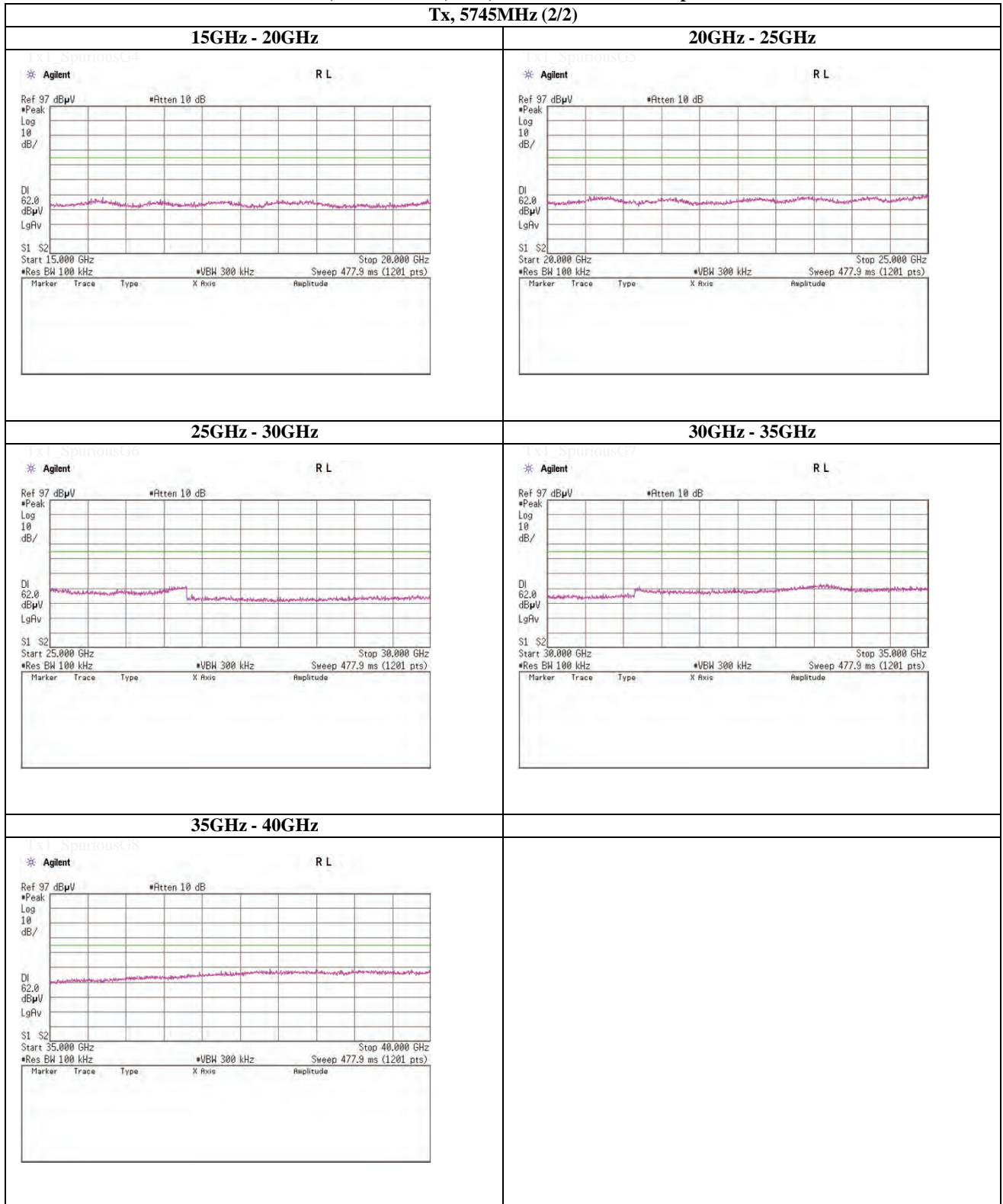
**Tx, 5745MHz (1/2)**



**UL Japan, Inc.**  
**Shonan EMC Lab.**  
 1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN  
 Telephone : +81 463 50 6400  
 Facsimile : +81 463 50 6401

**Spurious emission (Conducted)**  
**Tx, IEEE802.11a, PN9, worst data mode 24Mbps**

**Tx, 5745MHz (2/2)**



**UL Japan, Inc.**

**Shonan EMC Lab.**

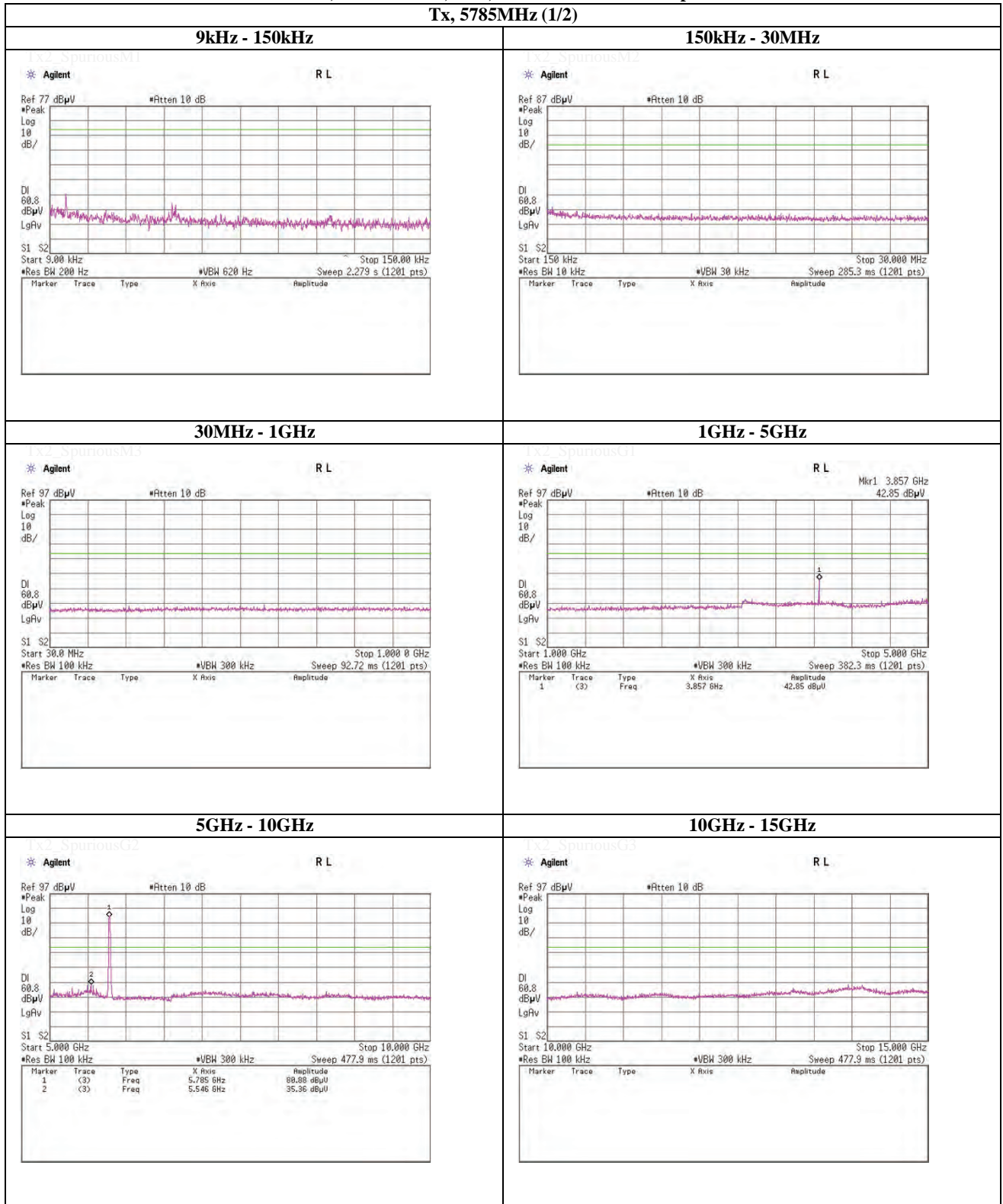
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

**Spurious emission (Conducted)**  
**Tx, IEEE802.11a, PN9, worst data mode 24Mbps**

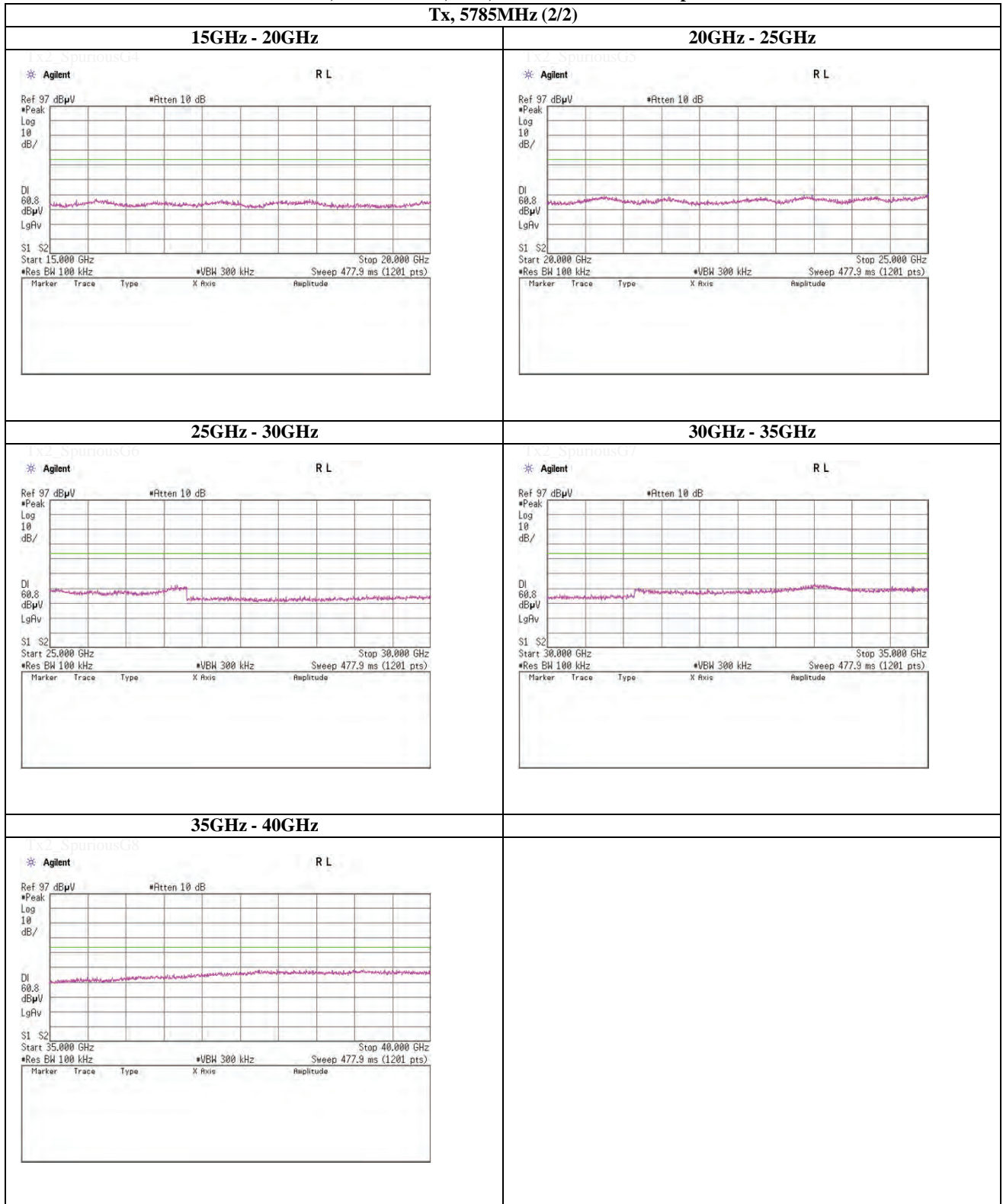
**Tx, 5785MHz (1/2)**



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**Spurious emission (Conducted)**  
**Tx, IEEE802.11a, PN9, worst data mode 24Mbps**

**Tx, 5785MHz (2/2)**



**UL Japan, Inc.**

**Shonan EMC Lab.**

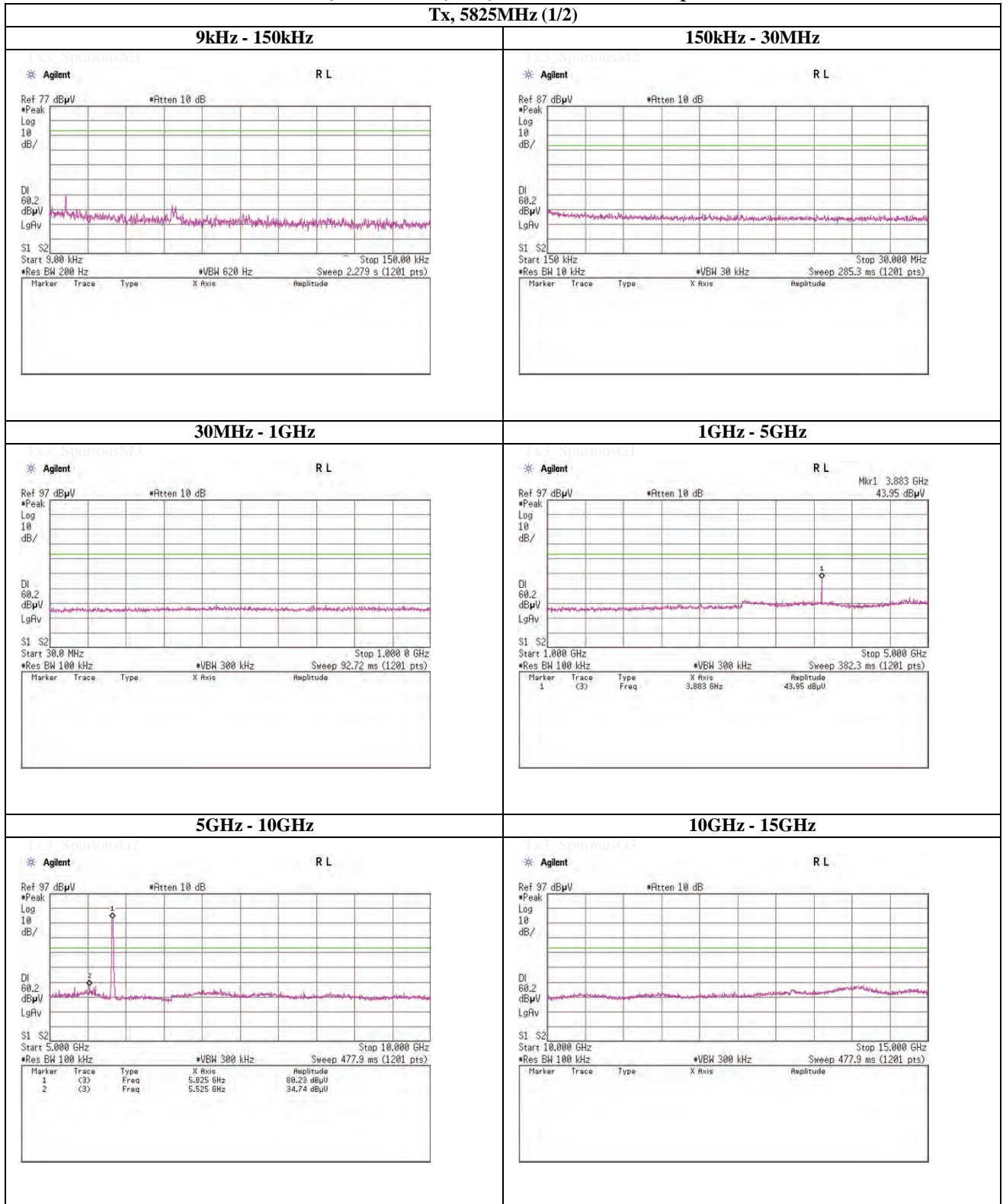
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

**Spurious emission (Conducted)**  
**Tx, IEEE802.11a, PN9, worst data mode 24Mbps**

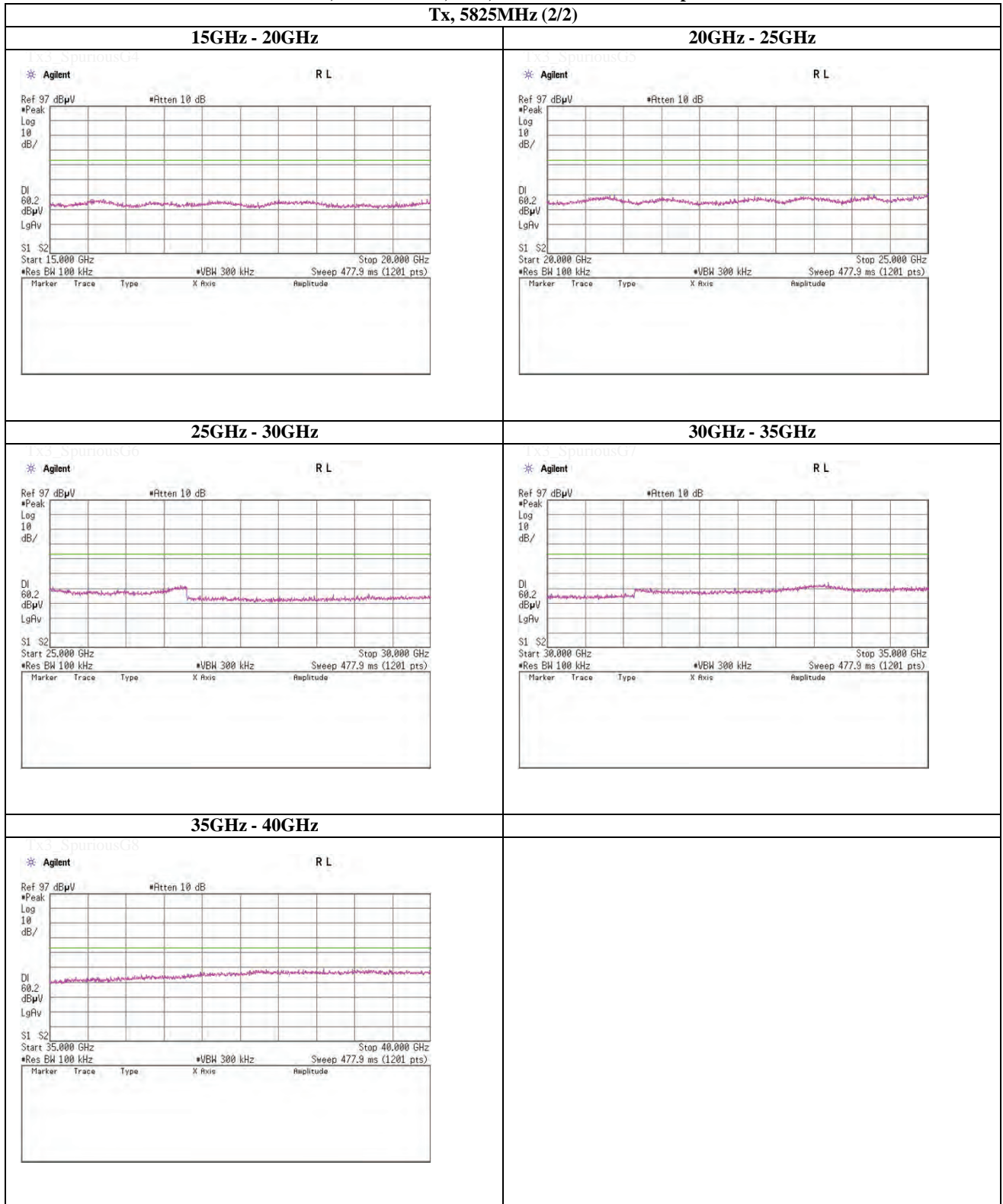
**Tx, 5825MHz (1/2)**



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**Spurious emission (Conducted)**  
**Tx, IEEE802.11a, PN9, worst data mode 24Mbps**

**Tx, 5825MHz (2/2)**



**UL Japan, Inc.**

**Shonan EMC Lab.**

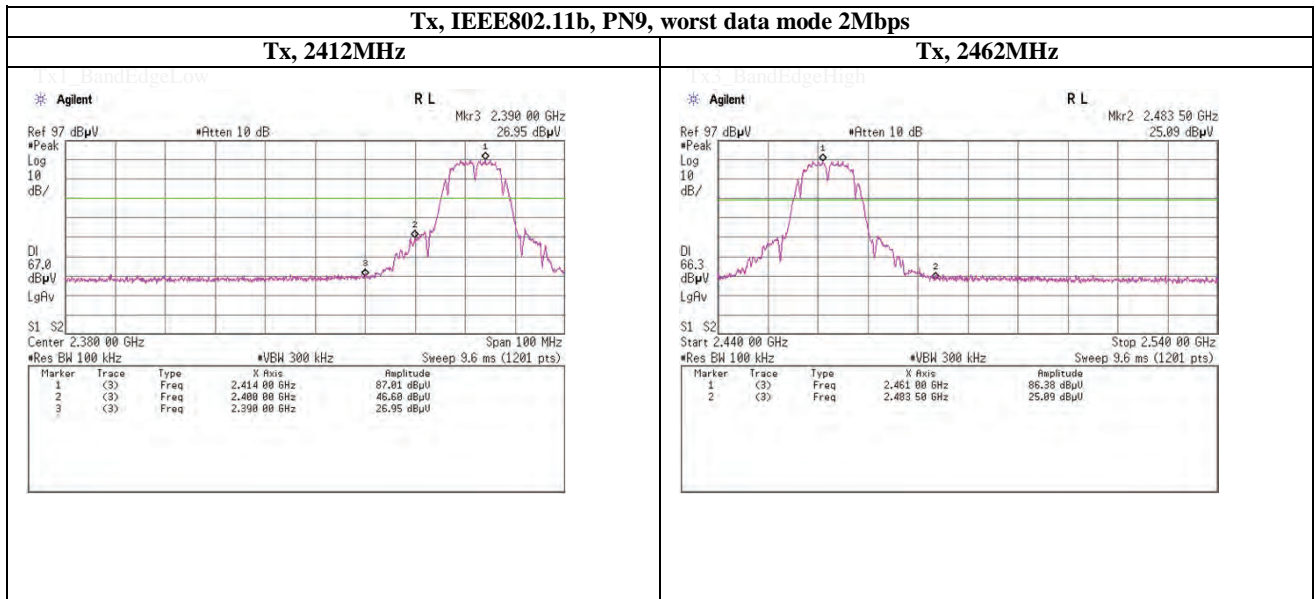
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

## Spurious emission (Conducted)

### Band Edge compliance



**UL Japan, Inc.**

**Shonan EMC Lab.**

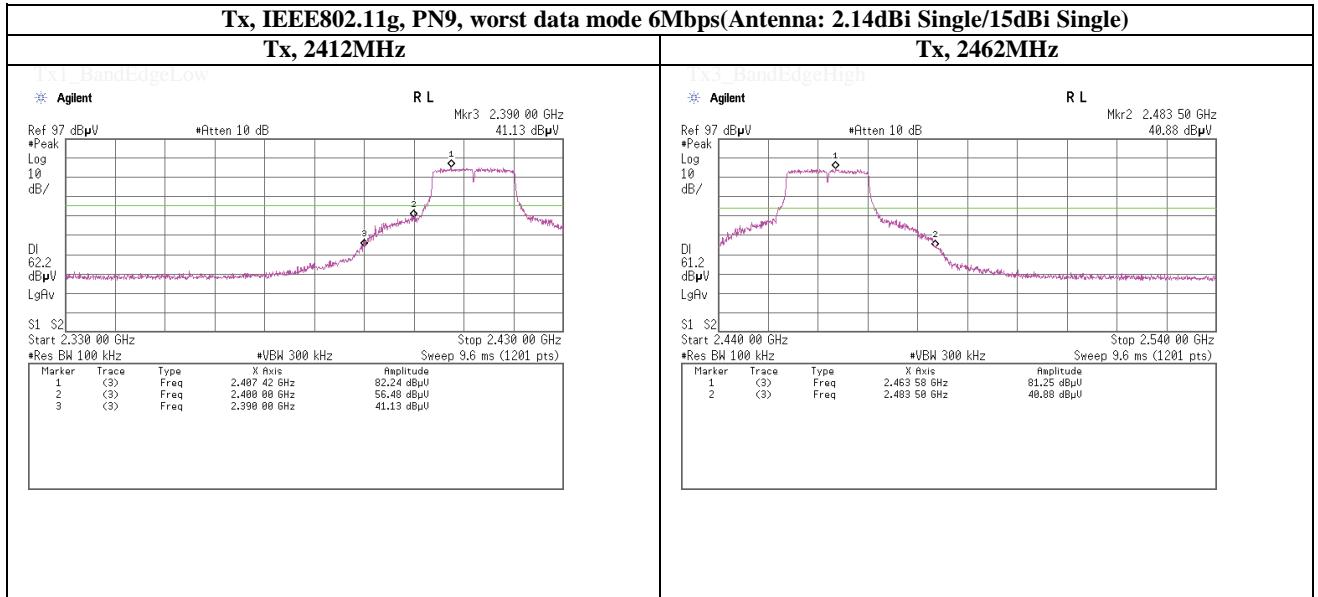
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

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Facsimile : +81 463 50 6401

## Spurious emission (Conducted)

### Band Edge compliance



**UL Japan, Inc.**

**Shonan EMC Lab.**

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

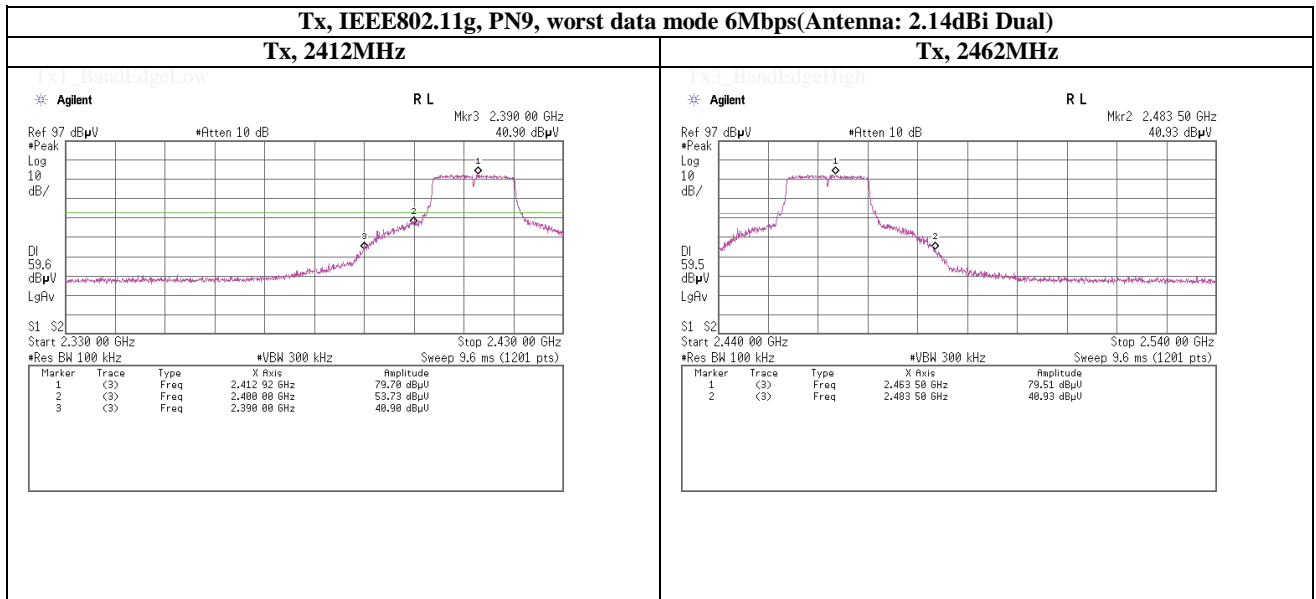
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401



## Spurious emission (Conducted)

### Band Edge compliance



**UL Japan, Inc.**

**Shonan EMC Lab.**

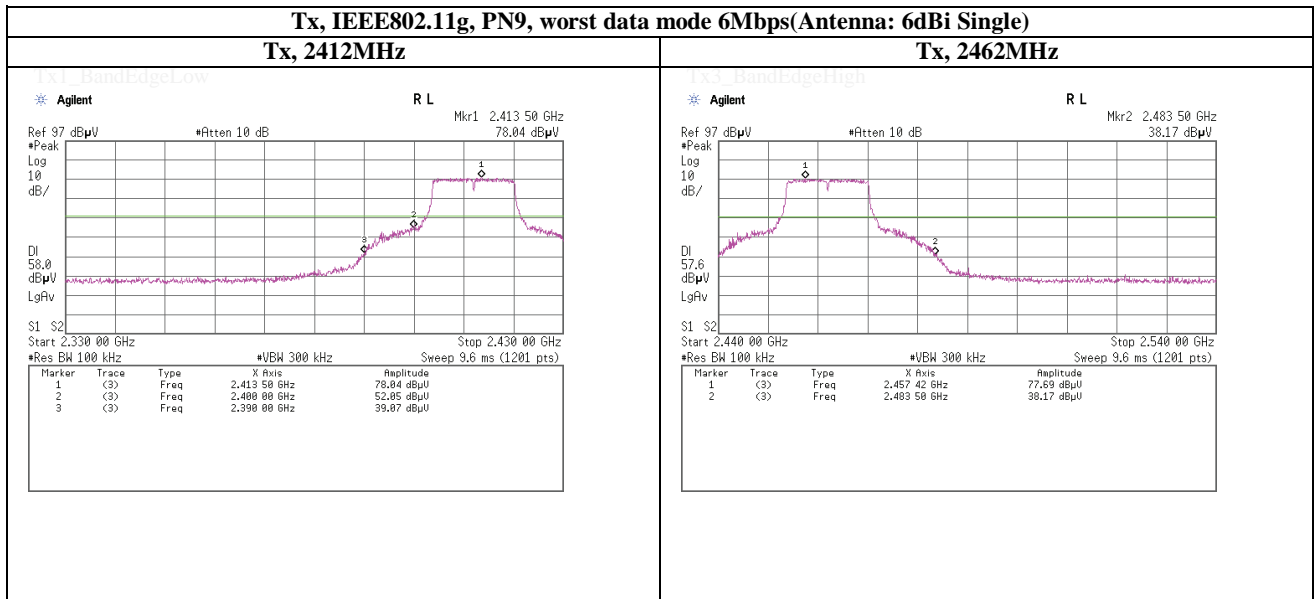
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

## Spurious emission (Conducted)

### Band Edge compliance



**UL Japan, Inc.**

**Shonan EMC Lab.**

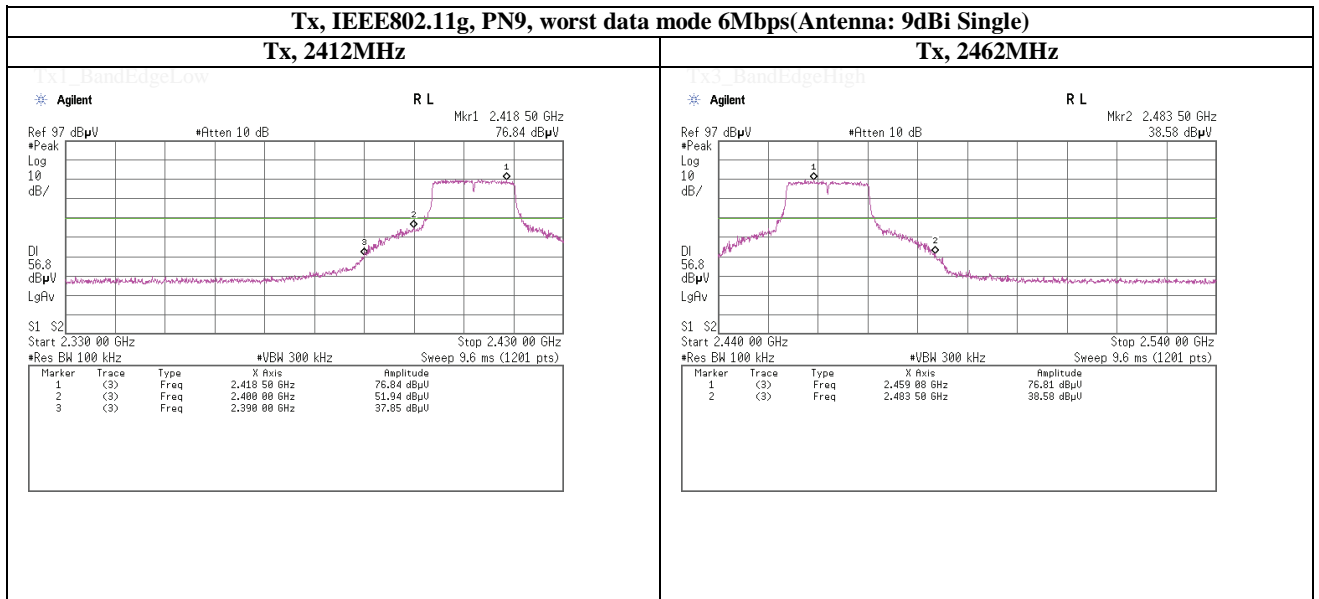
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

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## Spurious emission (Conducted)

### Band Edge compliance



**UL Japan, Inc.**

**Shonan EMC Lab.**

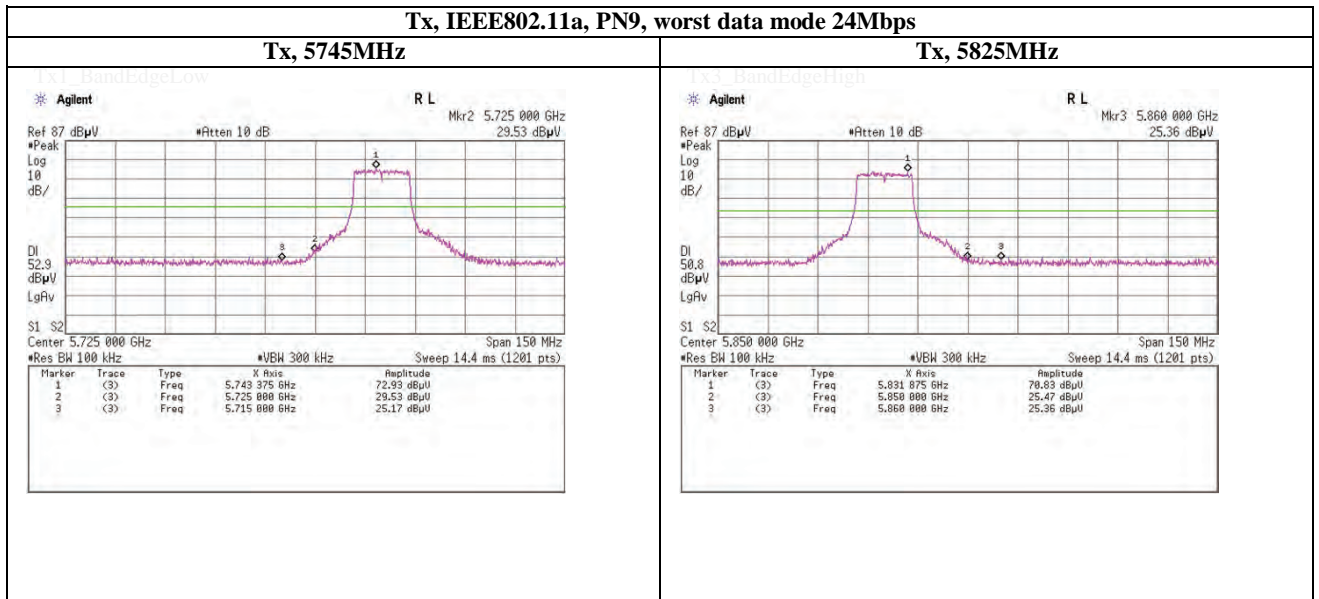
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

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## Spurious emission (Conducted)

### Band Edge compliance



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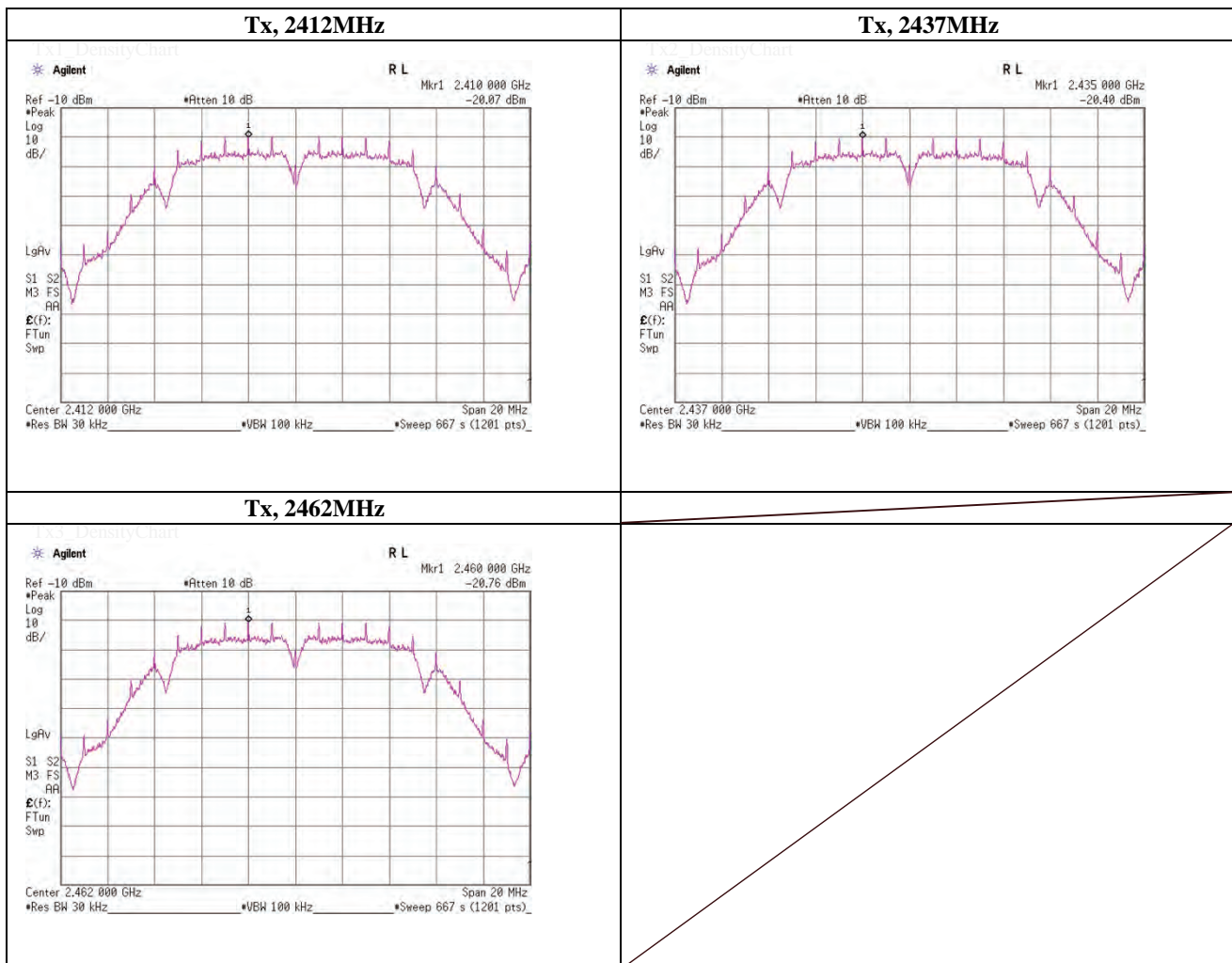
### Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	May 23, 2012	
Temperature / Humidity	23deg.C , 45%RH	
Engineer	Makoto Hosaka	
Mode	Tx, IEEE802.11b, PN9, worst data mode 2Mbps	

Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.0000	2410.00	-20.07	2.76	20.22	2.91	8.00	5.09
2437.0000	2435.00	-20.40	2.76	20.22	2.58	8.00	5.42
2462.0000	2460.00	-20.76	2.77	20.22	2.23	8.00	5.77

Sample Calculation:

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



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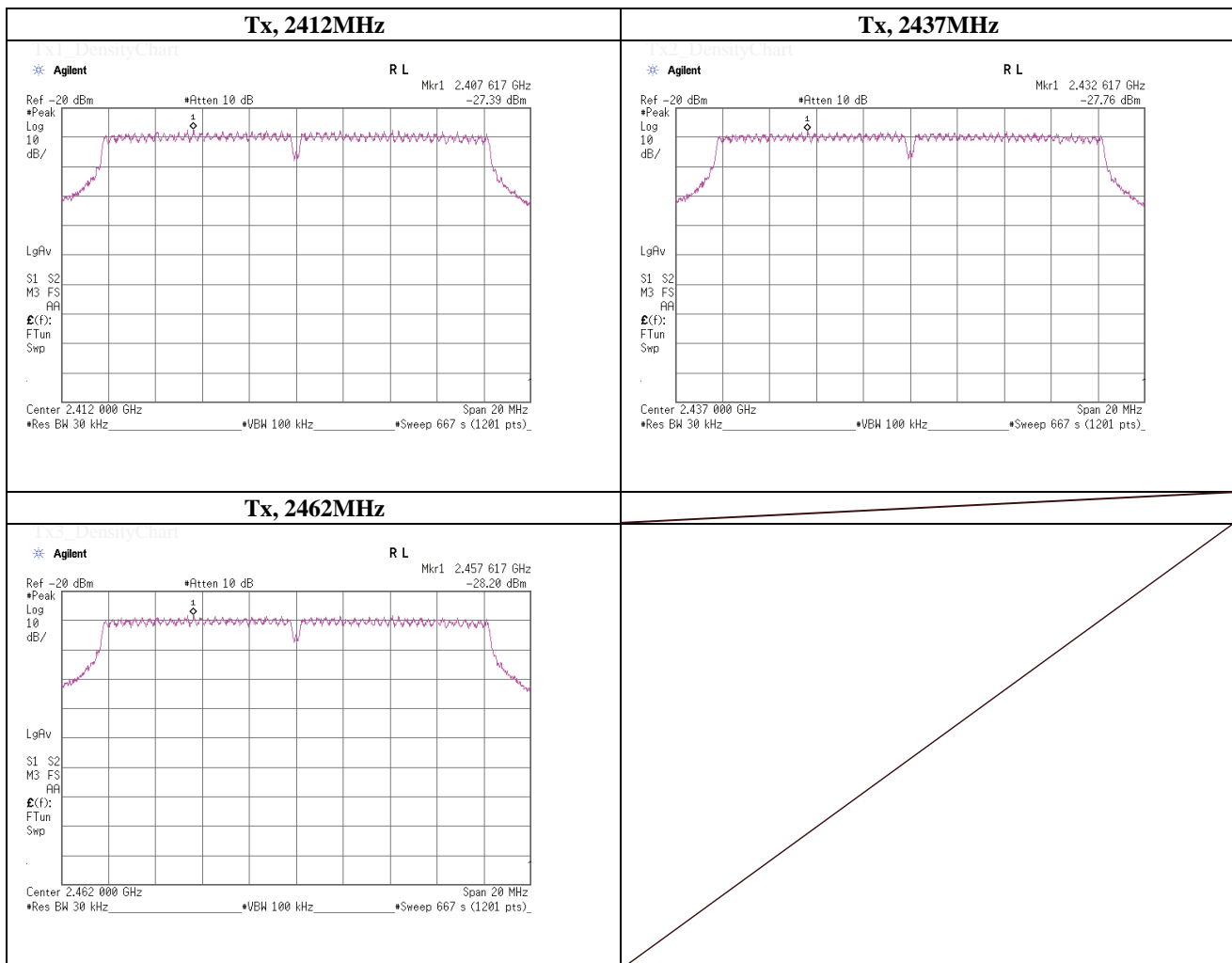
### Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	May 23, 2012	
Temperature / Humidity	23deg.C , 45%RH	
Engineer	Makoto Hosaka	
Mode	Tx, IEEE802.11g, PN9, worst data mode 6Mbps	Antenna: 2.14dBi Single, 15dBi Single

Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.0000	2407.62	-27.39	2.76	20.22	-4.41	8.00	12.41
2437.0000	2432.62	-27.77	2.76	20.22	-4.79	8.00	12.79
2462.0000	2457.62	-28.20	2.77	20.22	-5.21	8.00	13.21

Sample Calculation:

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



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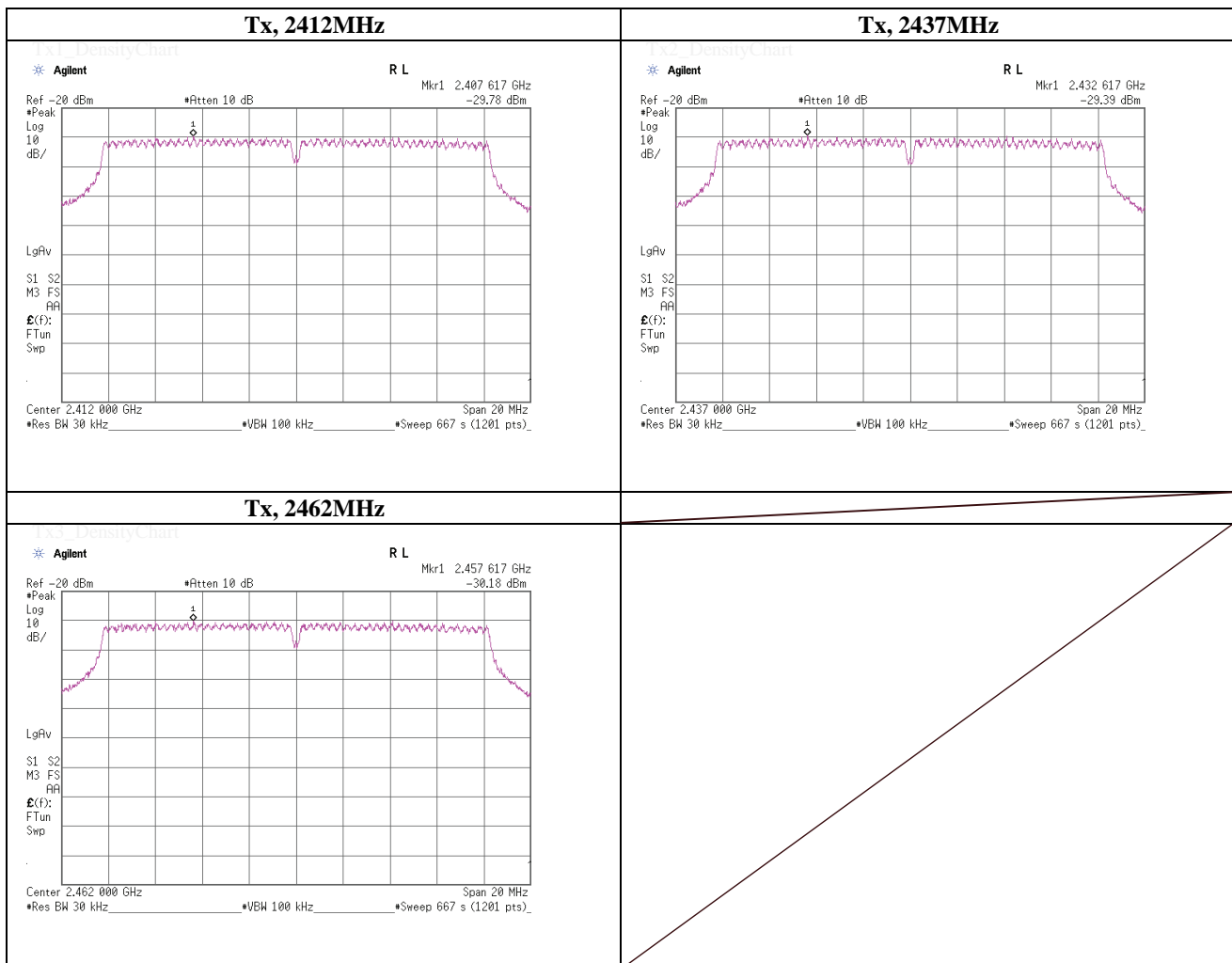
### Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	July 25, 2012	
Temperature / Humidity	25deg.C , 53%RH	
Engineer	Shinichi Takano	
Mode	Tx, IEEE802.11g, PN9, worst data mode 6Mbps	Antenna: 2.14dBi Dual

Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.0000	2407.62	-29.78	2.76	20.22	-6.80	8.00	14.80
2437.0000	2432.62	-29.39	2.76	20.22	-6.41	8.00	14.41
2462.0000	2457.62	-30.18	2.77	20.22	-7.19	8.00	15.19

Sample Calculation:

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



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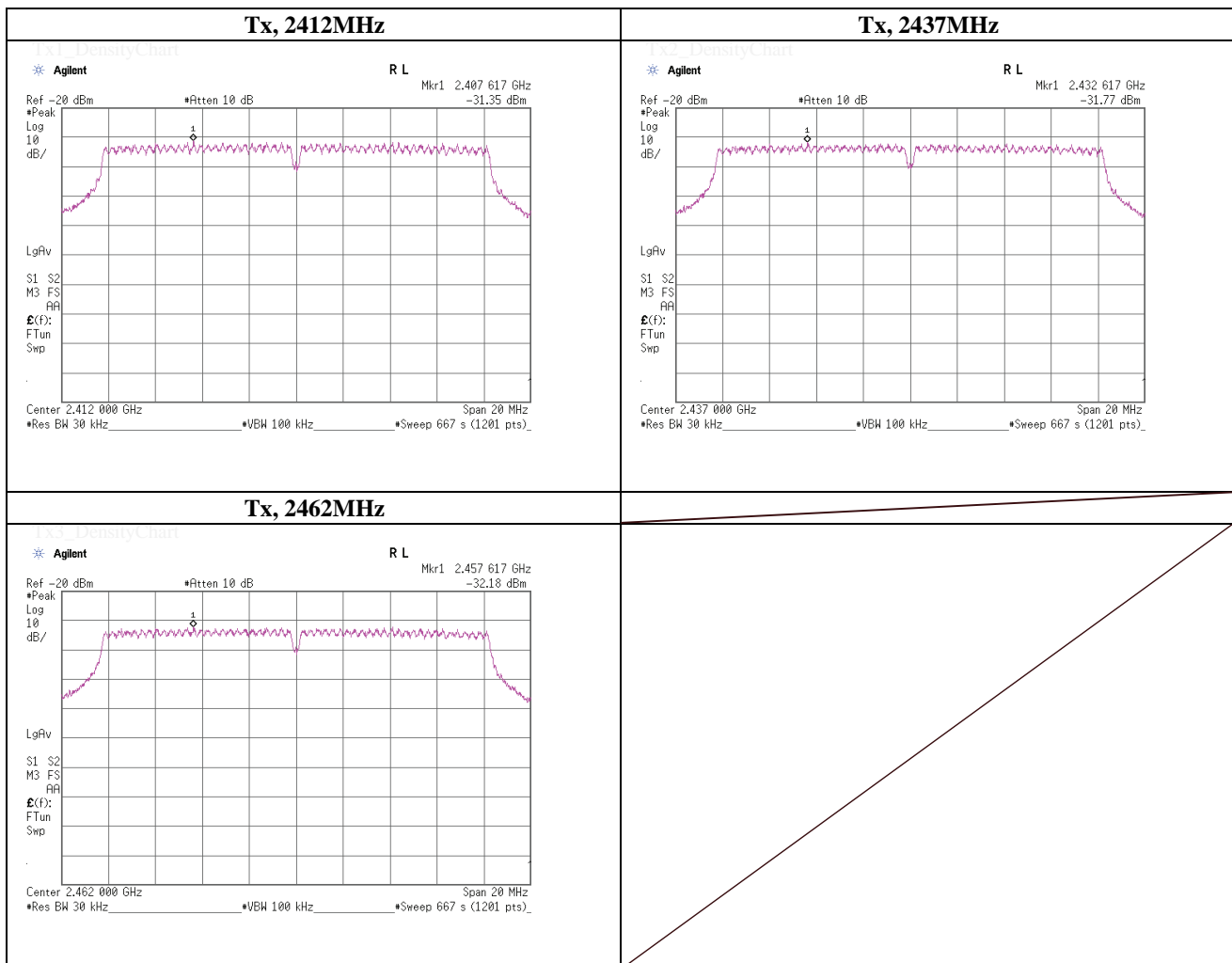
### Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	July 25, 2012	
Temperature / Humidity	25deg.C , 53%RH	
Engineer	Shinichi Takano	
Mode	Tx, IEEE802.11g, PN9, worst data mode 6Mbps	Antenna: 6dBi Single

Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.0000	2407.62	-31.35	2.76	20.22	-8.37	8.00	16.37
2437.0000	2432.62	-31.77	2.76	20.22	-8.79	8.00	16.79
2462.0000	2457.62	-32.18	2.77	20.22	-9.19	8.00	17.19

Sample Calculation:

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



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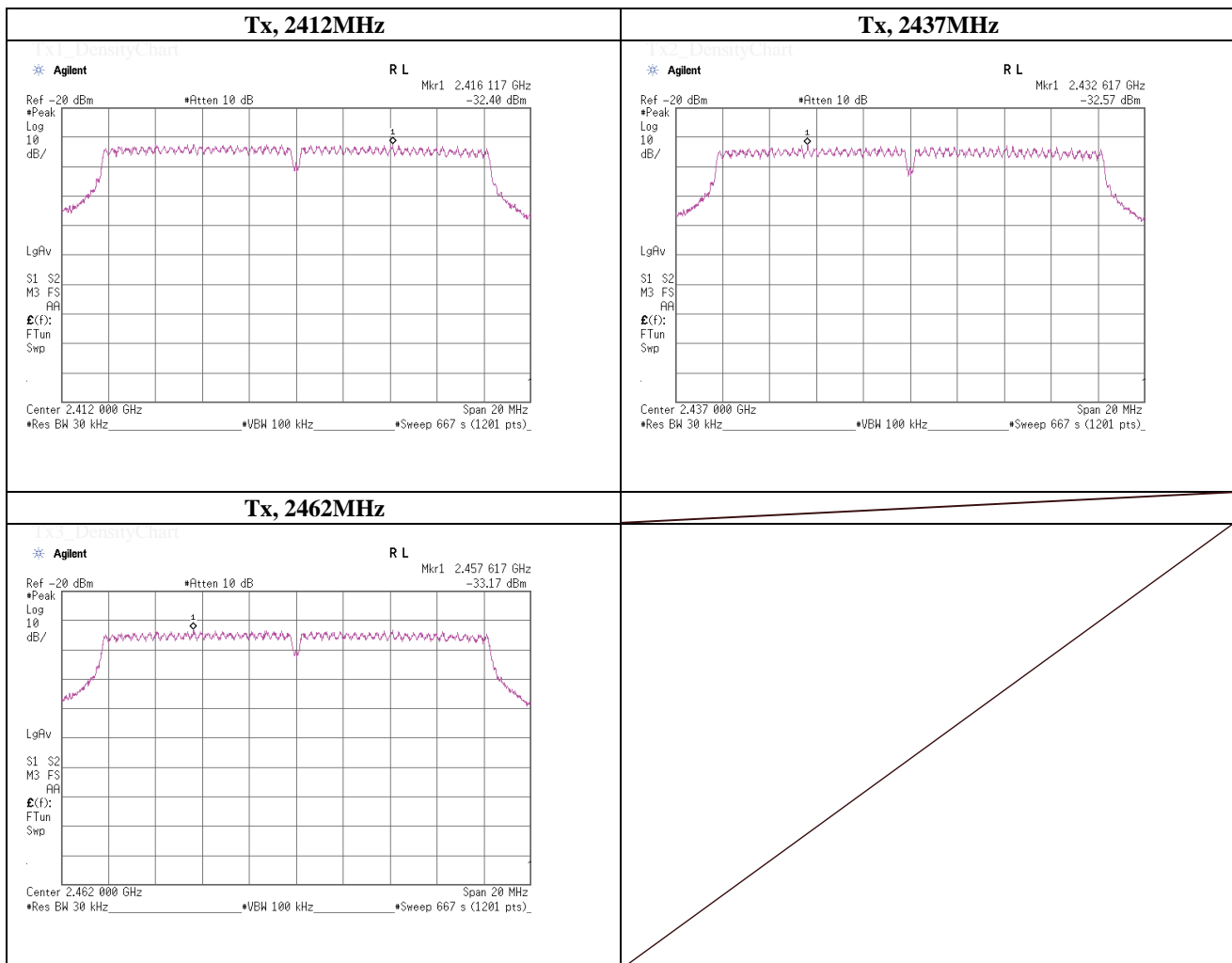
### Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	July 25, 2012	
Temperature / Humidity	25deg.C , 53%RH	
Engineer	Shinichi Takano	
Mode	Tx, IEEE802.11g, PN9, worst data mode 6Mbps	Antenna: 9dBi Single

Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.0000	2416.12	-32.40	2.76	20.22	-9.42	8.00	17.42
2437.0000	2432.62	-32.57	2.76	20.22	-9.59	8.00	17.59
2462.0000	2457.62	-33.17	2.77	20.22	-10.18	8.00	18.18

Sample Calculation:

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



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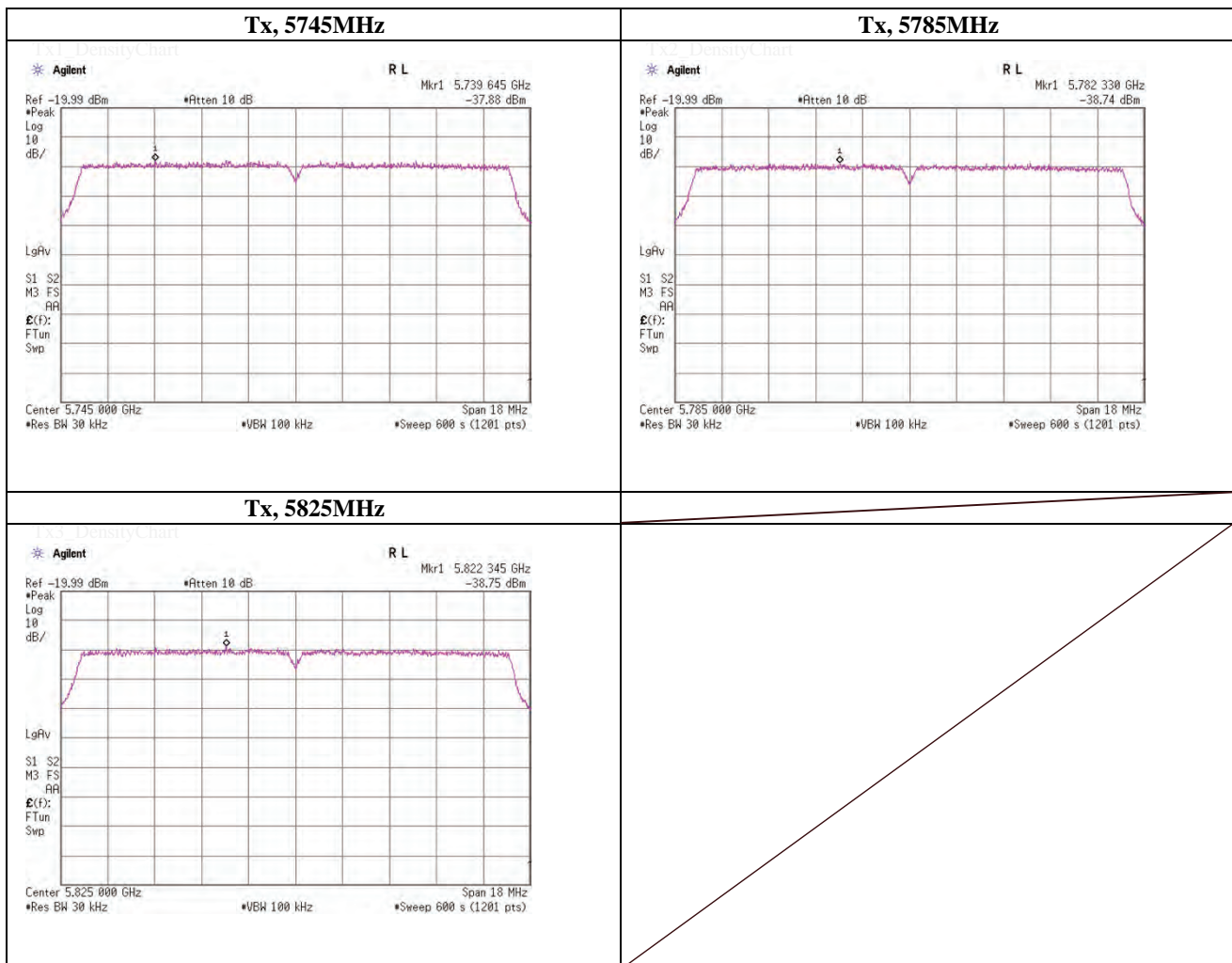
## Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	May 23, 2012	
Temperature / Humidity	23deg.C , 45%RH	
Engineer	Makoto Hosaka	
Mode	Tx, IEEE802.11a, PN9, worst data mode 24Mbps	

Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
5745.0000	5739.65	-37.88	3.48	20.18	-14.22	8.00	22.22
5785.0000	5782.33	-38.74	3.49	20.18	-15.07	8.00	23.07
5825.0000	5822.35	-38.75	3.50	20.18	-15.07	8.00	23.07

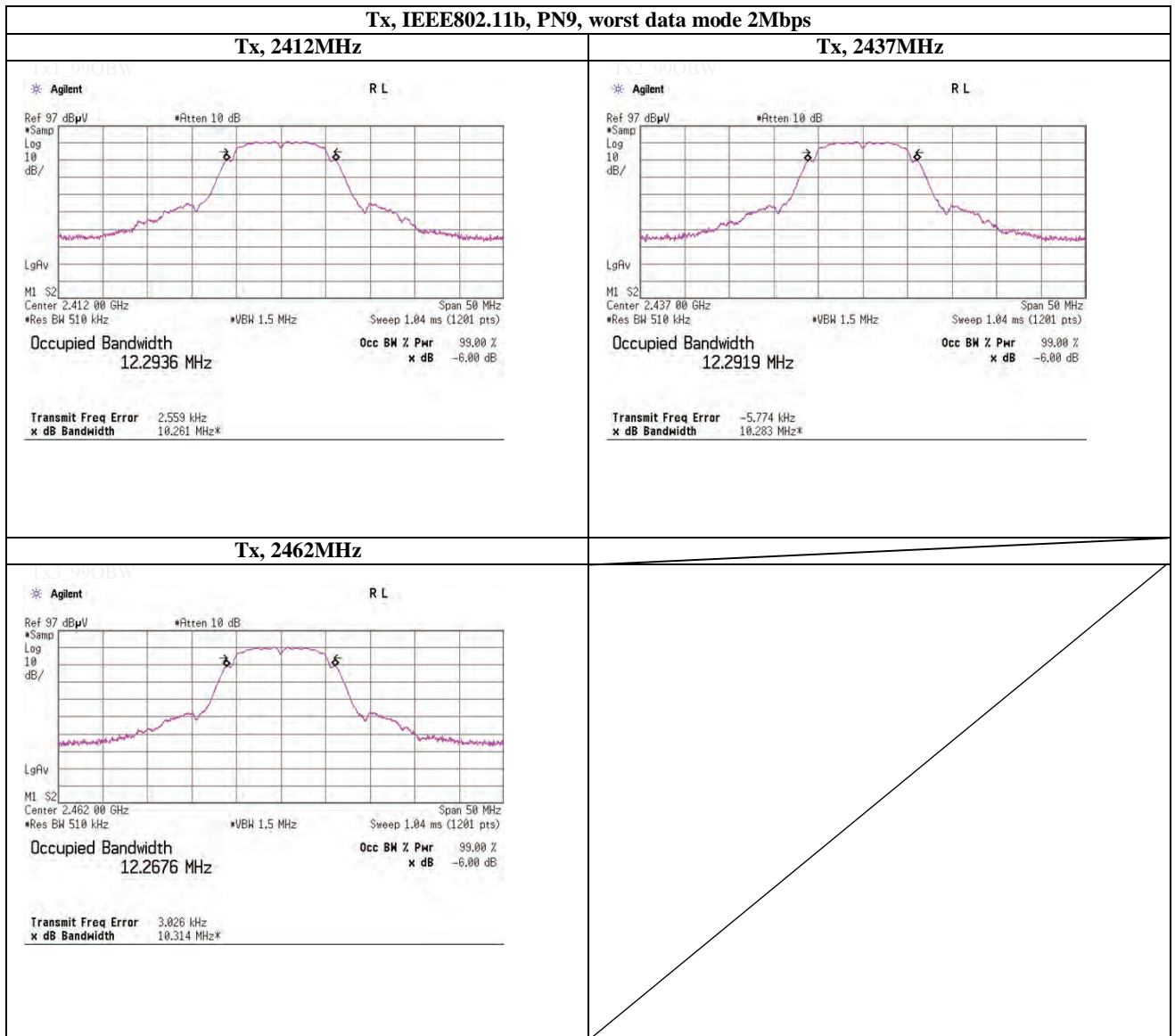
Sample Calculation:

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



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### 99% Occupied Bandwidth



**UL Japan, Inc.**

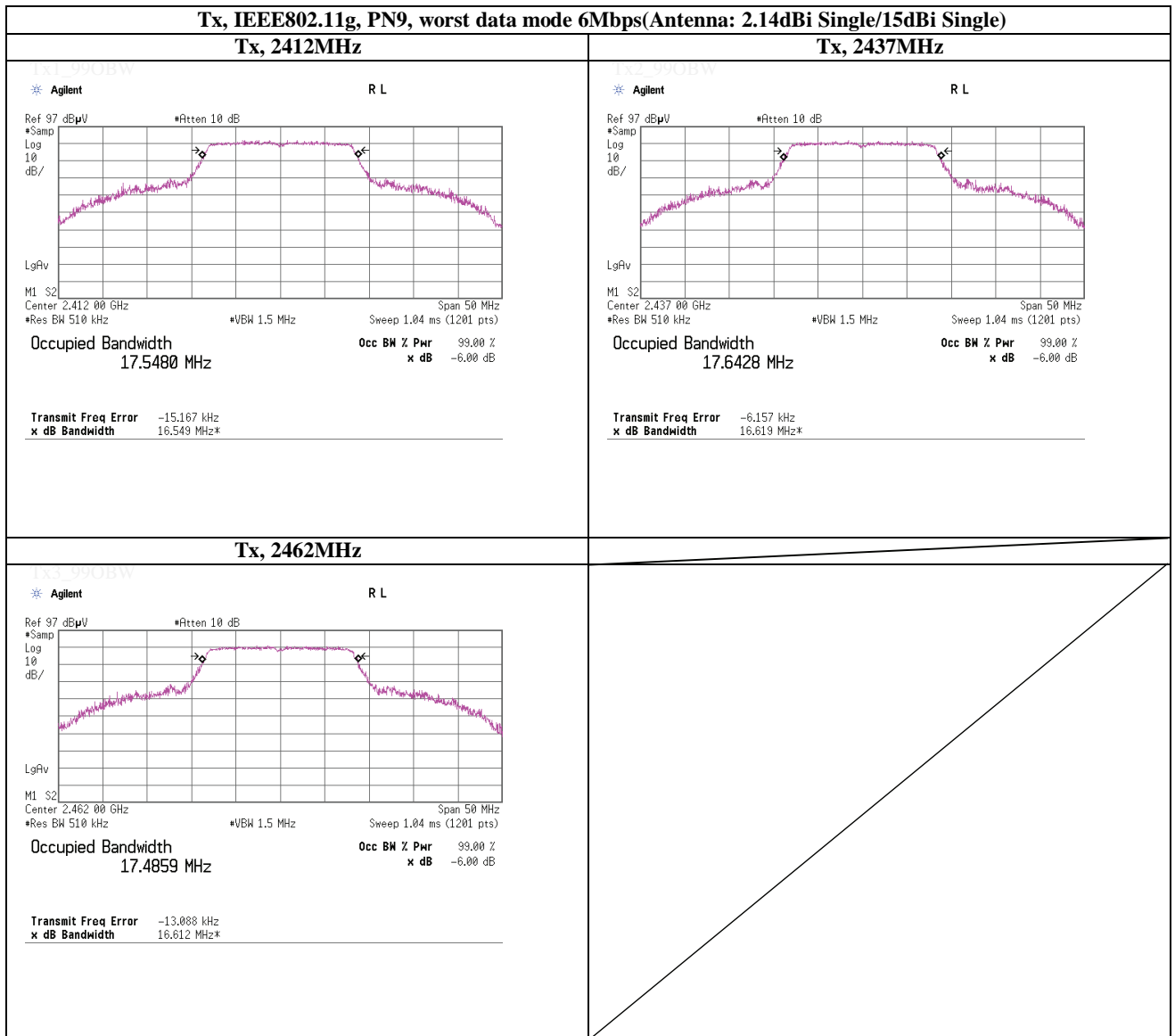
**Shonan EMC Lab.**

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### 99% Occupied Bandwidth



**UL Japan, Inc.**

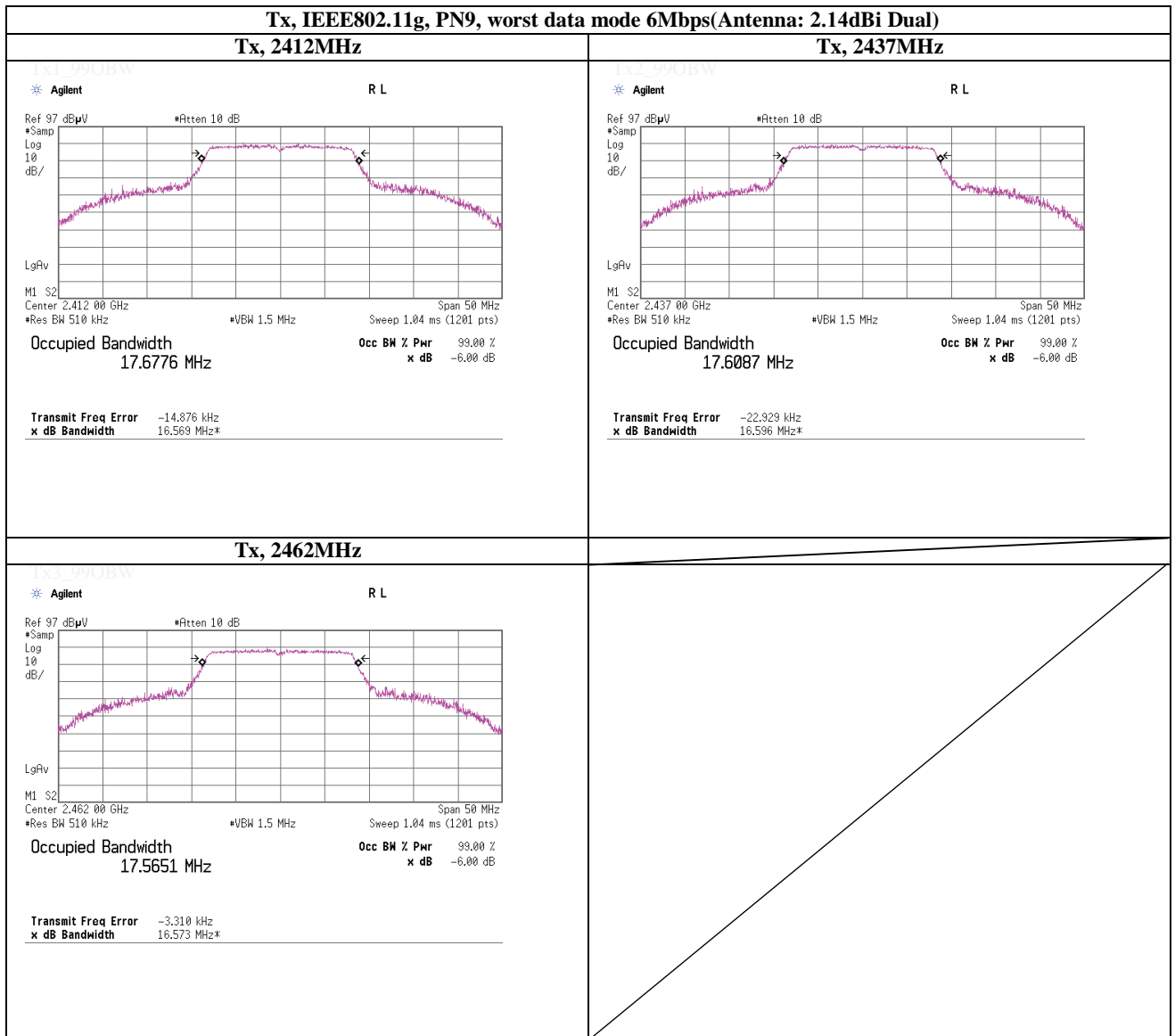
**Shonan EMC Lab.**

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### 99% Occupied Bandwidth



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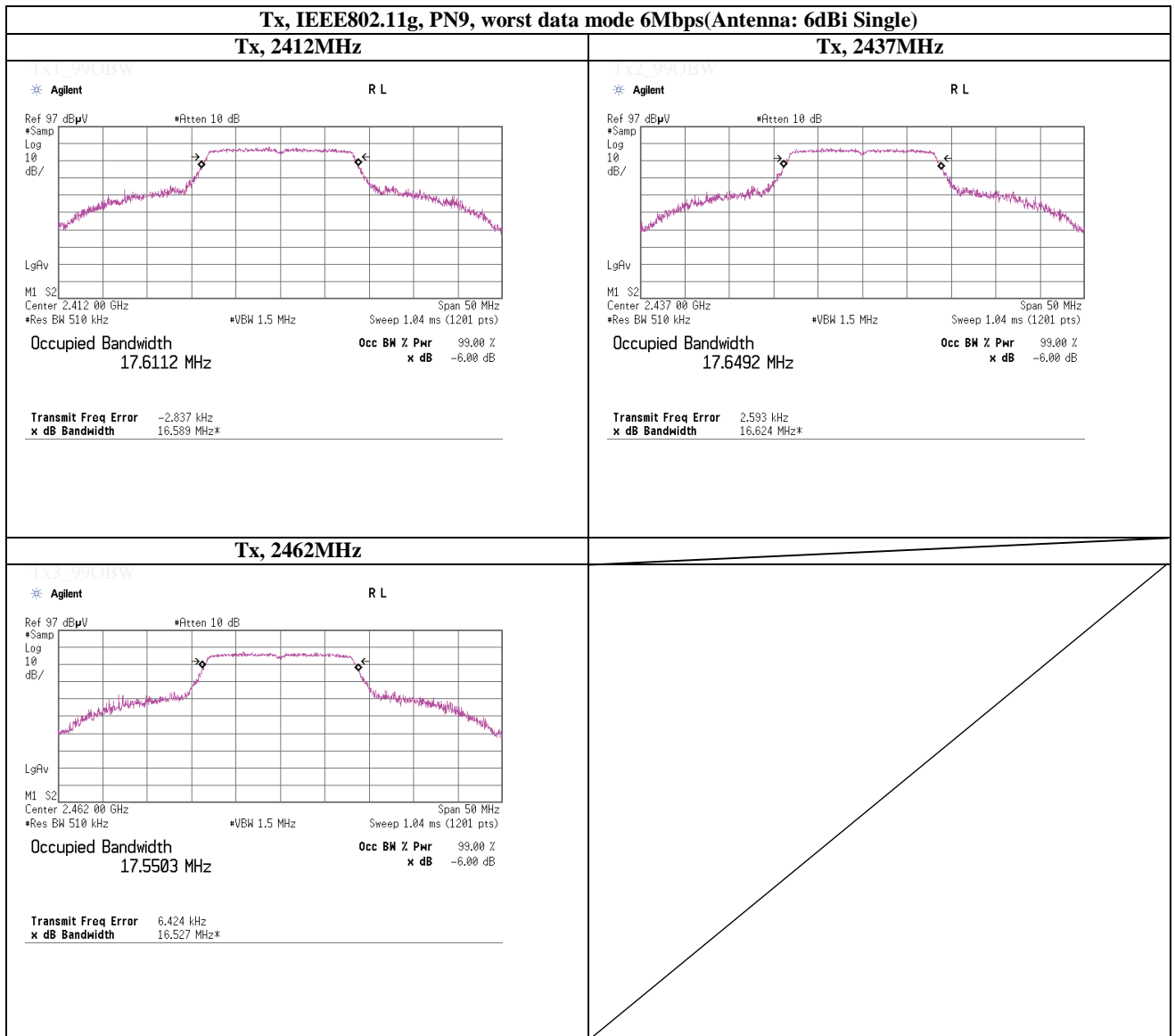
**Shonan EMC Lab.**

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### 99% Occupied Bandwidth



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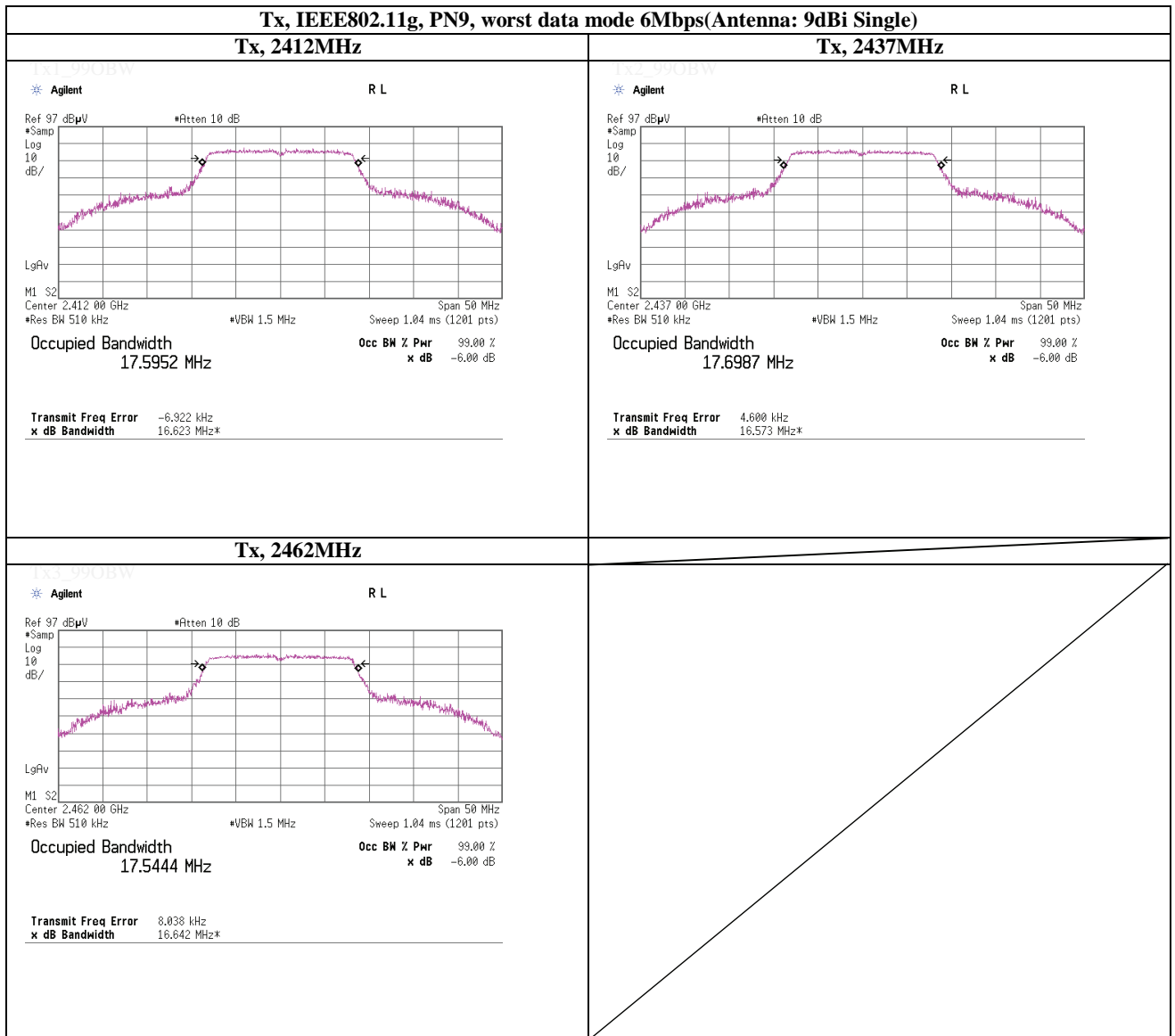
**Shonan EMC Lab.**

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### 99% Occupied Bandwidth



**UL Japan, Inc.**

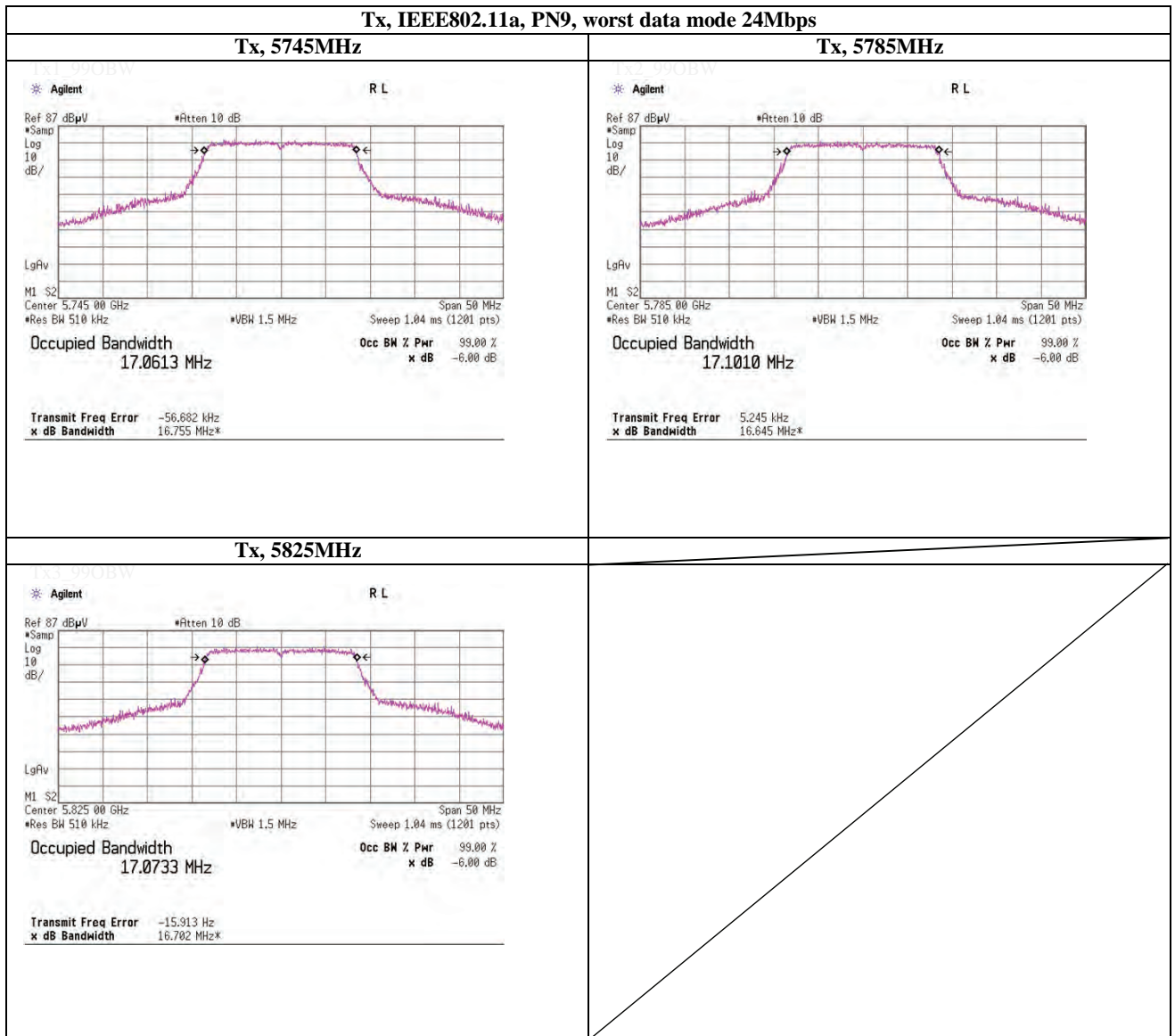
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### 99% Occupied Bandwidth



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**APPENDIX 2**  
**Test Instruments**

**EMI test equipment (1/2)**

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SSA-03	Spectrum Analyzer	Agilent	E4448A	MY48250152	RE/AT	2011/12/05 * 12
SPM-06	Power Meter	Anritsu	ML2495A	0850009	AT	2012/04/19 * 12
SPSS-03	Power sensor	Anritsu	MA2411B	0917063	AT	2012/04/19 * 12
SAT20-05	Attenuator	Weinschel Corp.	54A-20	Y5649	AT	2011/11/09 * 12
SCC-G14	Coaxial Cable	Suhner	SUCOFLEX 102	31600/2	AT	2012/03/12 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2012/03/26 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	AT	2012/03/16 * 12
SAF-04	Pre Amplifier	TOYO Corporation	TPA0118-36	1440489	RE	2012/03/12 * 12
SCC-G01	Coaxial Cable	Suhner	SUCOFLEX 104A	46497/4A	RE	2012/04/10 * 12
SCC-G21	Coaxial Cable	Suhner	SUCOFLEX 104	296169/4	RE	2012/05/22 * 12
SHA-01	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-725	RE	2011/08/11 * 12
SOS-01	Humidity Indicator	A&D	AD-5681	4062555	RE	2012/02/06 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE	2012/03/16 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	RE	2012/02/16 * 12
SJM-12	Measure	PROMART	SEN1935	-	RE/CE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE, CE,RFI,MF)	-	RE/CE	
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	RE	2011/12/27 * 12
SAT10-06	Attenuator	Agilent	8493C-010	74865	RE	2011/12/27 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2011/12/27 * 12
SFL-03	Highpass Filter	MICRO-TRONICS	HPM50112	028	RE	2011/12/27 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2012/03/30 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2012/03/12 * 12
SCC-G17	Coaxial Cable	Suhner	SUCOFLEX 104A	46291/4A	RE	2012/03/12 * 12
SAF-01	Pre Amplifier	SONOMA	310N	290211	RE	2012/02/10 * 12
SAT6-05	Attenuator	JFW	50HF-006N	-	RE	2012/02/10 * 12
SAT3-04	Attenuator	JFW	50HF-003N	-	RE	2012/02/10 * 12
SBA-01	Biconical Antenna	Schwarzbeck	BBA9106	91032664	RE	2011/10/15 * 12
SCC-A1/A3/A5/A7/A8/A13/SRSE-01	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/N S4906	-/0901-269(RF Selector)	RE	2012/04/10 * 12
SCC-A2/A4/A6/A7/A8/A13/SRSE-01	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/N S4906	-/0901-269(RF Selector)	RE	2012/04/10 * 12

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

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

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

Test Item :

CE: Conducted emission ,

RE: Radiated emission ,

AT: Antenna terminal conducted

**APPENDIX 2**  
**Test Instruments**

**EMI test equipment (2/2)**

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SLA-01	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0888	RE	2011/11/23 * 12
STR-01	Test Receiver	Rohde & Schwarz	ESU40	100093	RE/CE	2011/10/22 * 12
SAEC-01(NSA)	Semi-Anechoic Chamber	TDK	SAEC-01(NSA)	1	RE	2011/09/01 * 12
SCC-A12/A13/S RSE-01	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE /NS4906	-/0901-269( RF Selector)	CE	2012/04/10 * 12
SLS-01	LISN	Rohde & Schwarz	ENV216	100511	CE	2012/02/20 * 12
SAT3-06	Attenuator	JFW	50HF-003N	-	CE	2012/02/17 * 12
SOS-02	Humidity Indicator	A&D	AD-5681	4063343	CE	2012/03/26 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2012/03/30 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2012/03/12 * 12
SCC-G17	Coaxial Cable	Suhner	SUCOFLEX 104A	46291/4A	RE	2012/03/12 * 12
SHA-06	Horn Antenna	ETS LINDGREN	3160-10	LM3459	RE	2012/03/30 * 12
SAF-10	Pre Amplifier	TOYO Corporation	HAP26-40W	00000010	RE	2012/03/12 * 12
SCC-G19	Coaxial Cable	Suhner	SUCOFLEX 102A	1188/2A	RE	2012/03/12 * 12
SAF-05	Pre Amplifier	TOYO Corporation	TPA0118-36	1440490	RE	2012/03/12 * 12
SCC-G02	Coaxial Cable	Suhner	SUCOFLEX 104A	46498/4A	RE	2012/04/10 * 12
SCC-G22	Coaxial Cable	Suhner	SUCOFLEX 104	296199/4	RE	2012/05/22 * 12
SHA-02	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-726	RE	2011/08/28 * 12
SOS-03	Humidity Indicator	A&D	AD-5681	4063325	RE	2012/02/06 * 12
SJM-02	Measure	KOMELON	KMC-36	-	RE	-
SAT20-01	Attenuator(above1GHz)	Agilent	8493C-020	74889	RE	2011/12/27 * 12

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

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

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

CE: Conducted emission ,

RE: Radiated emission ,

AT: Antenna terminal conducted