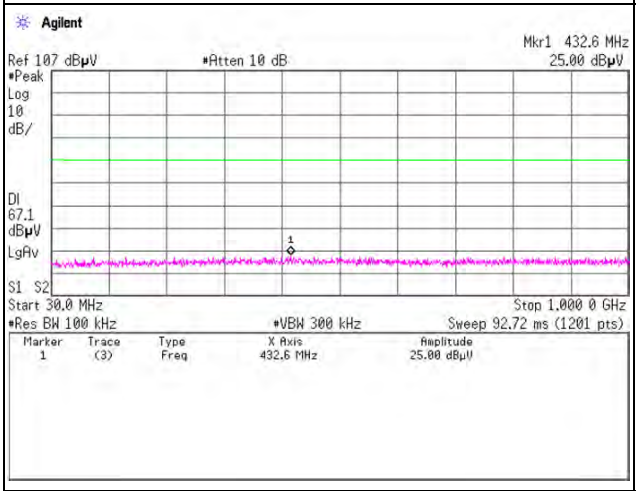
Spurious emission (Conducted)

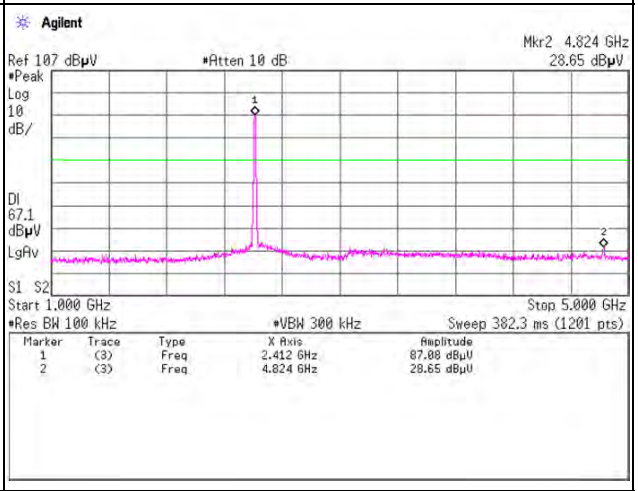
IEEE802.11b, 11Mbps, PN9

Tx 2412MHz

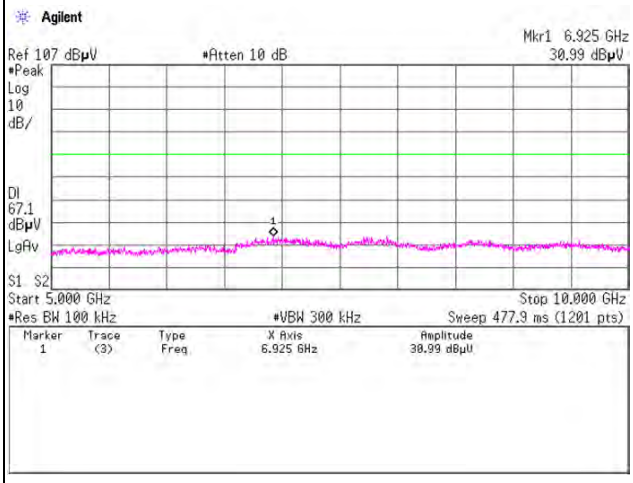
30MHz - 1GHz



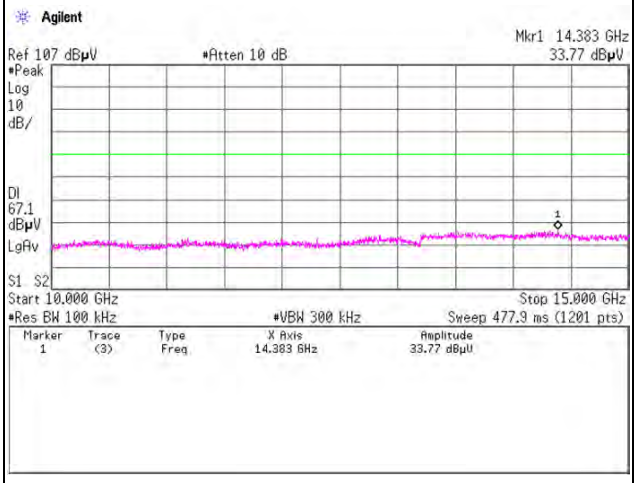
1GHz - 5GHz



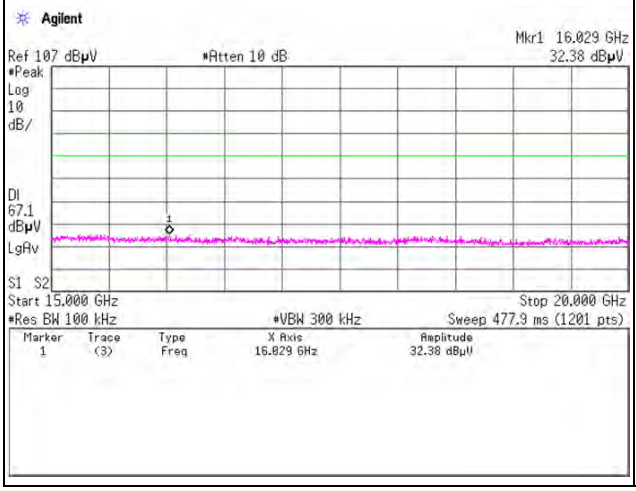
5GHz - 10GHz



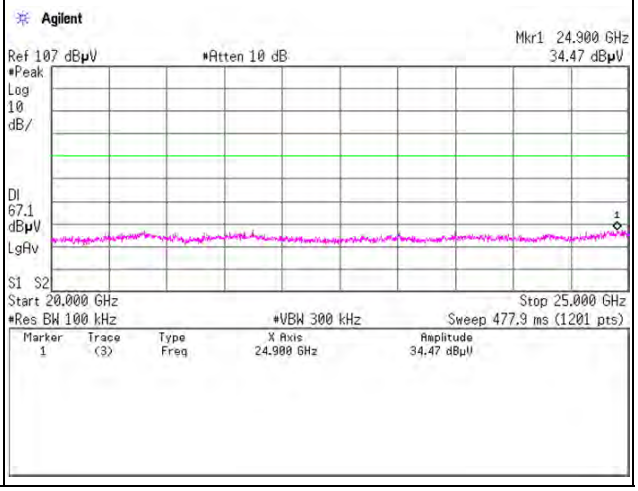
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



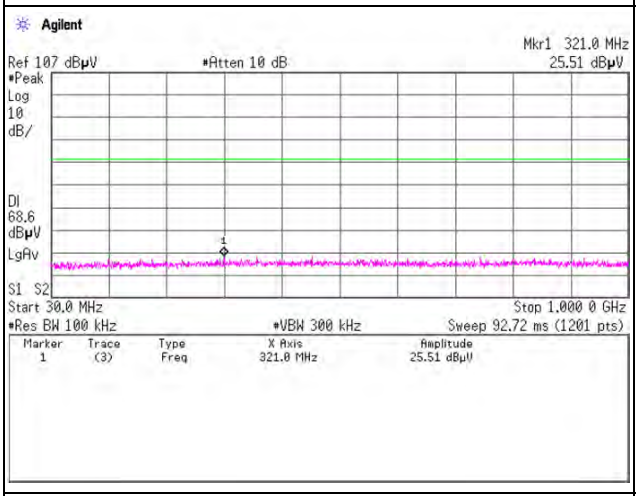
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

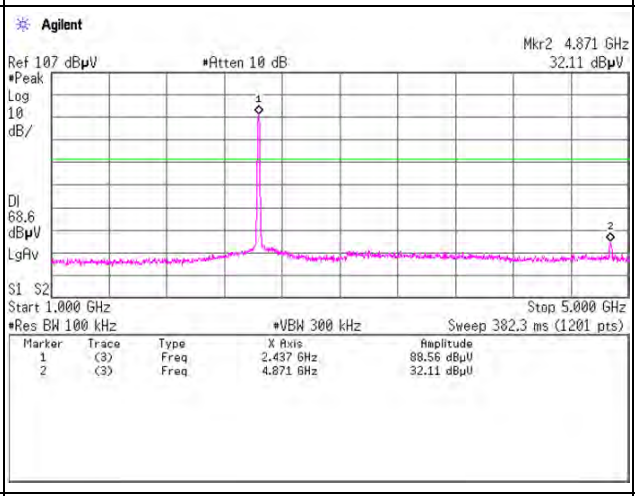
IEEE802.11b, 11Mbps, PN9

Tx 2437MHz

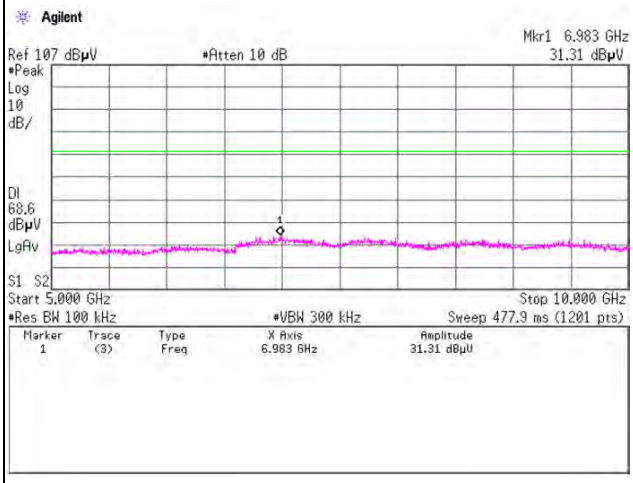
30MHz - 1GHz



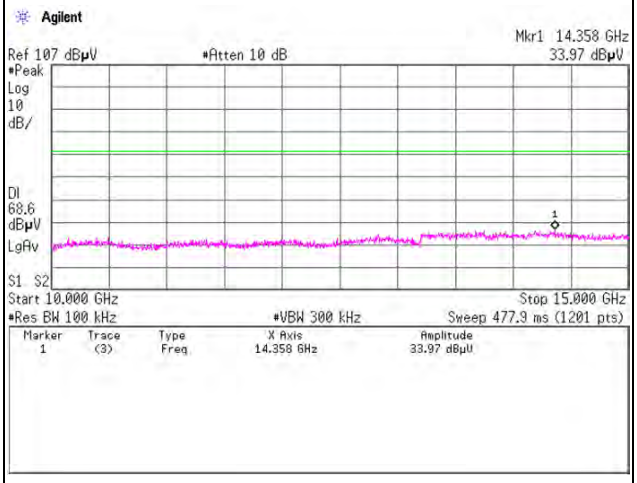
1GHz - 5GHz



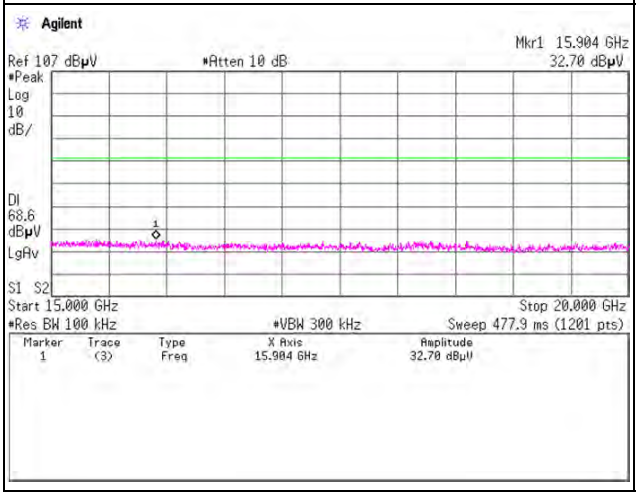
5GHz - 10GHz



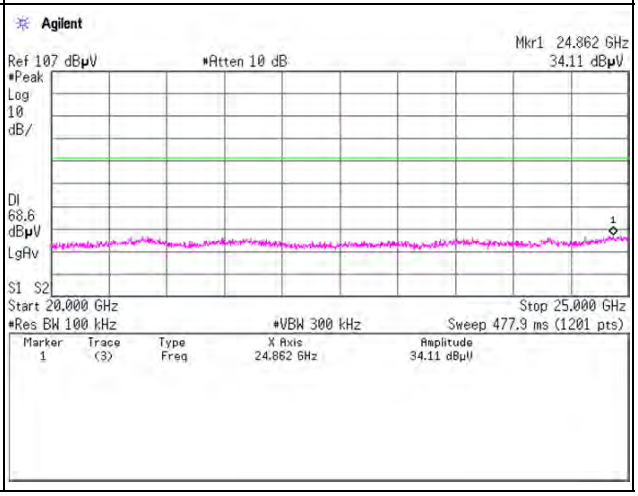
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz

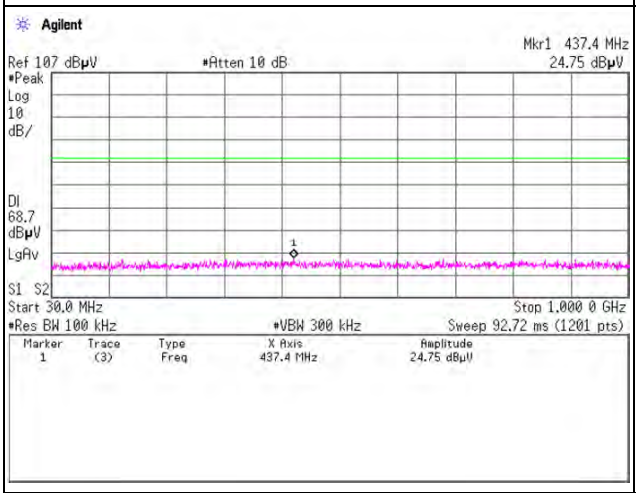


Spurious emission (Conducted)

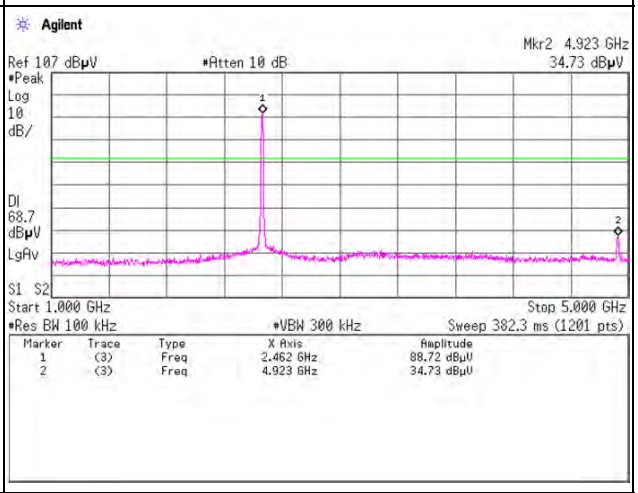
IEEE802.11b, 11Mbps, PN9

Tx 2462MHz

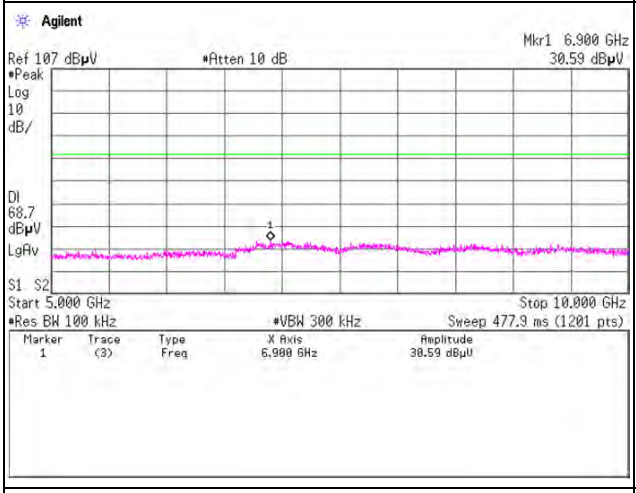
30MHz - 1GHz



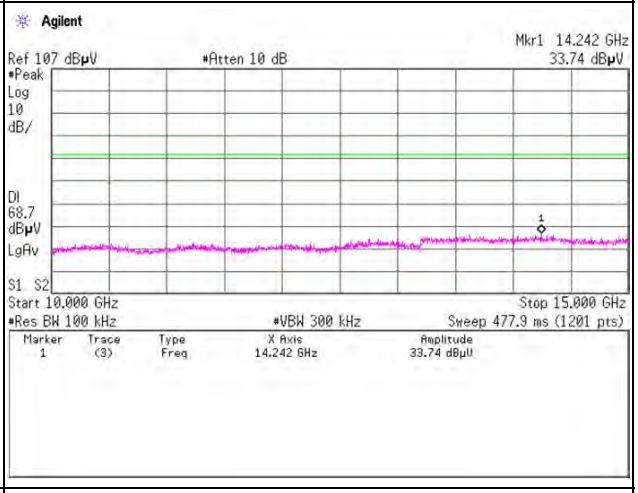
1GHz - 5GHz



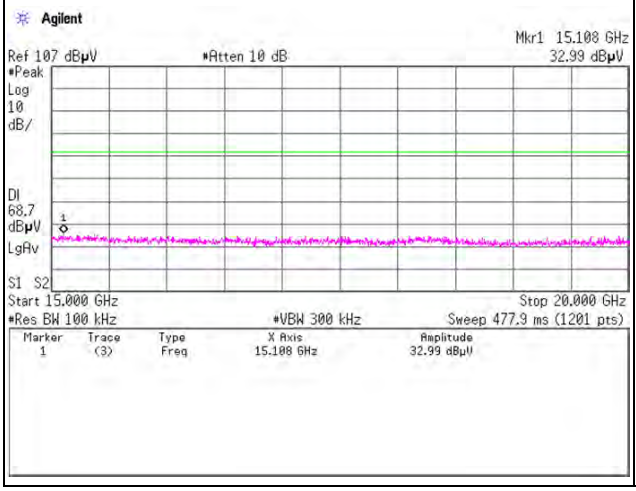
5GHz - 10GHz



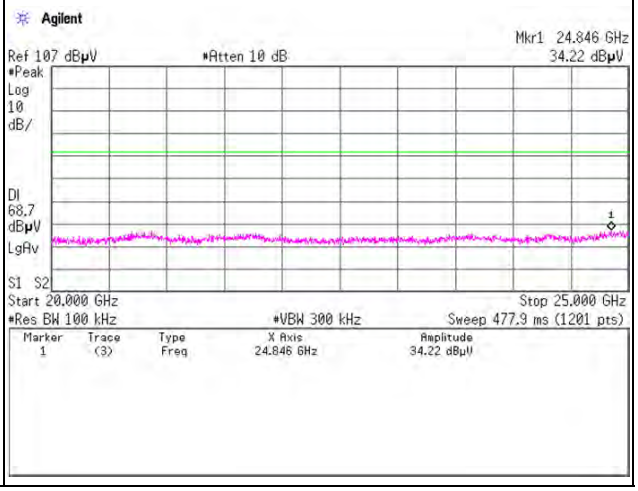
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz

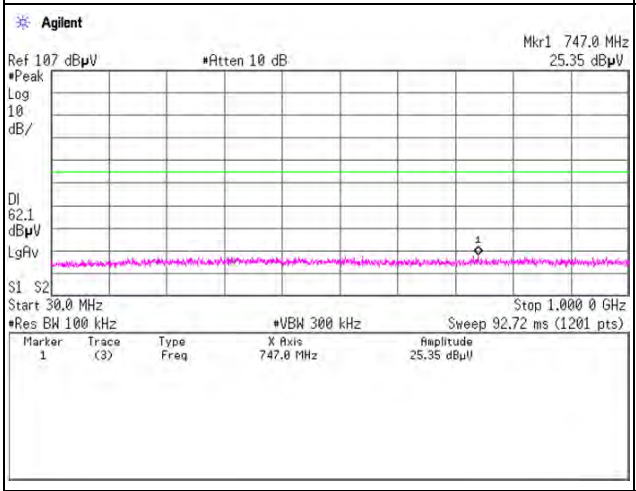


Spurious emission (Conducted)

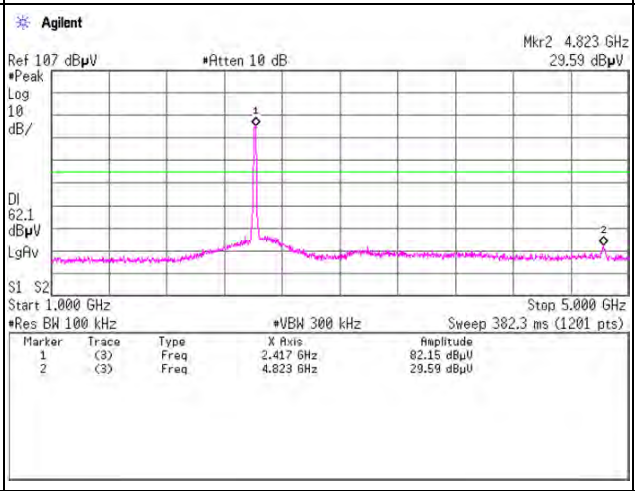
IEEE802.11g, 12Mbps, PN9

Tx 2412MHz

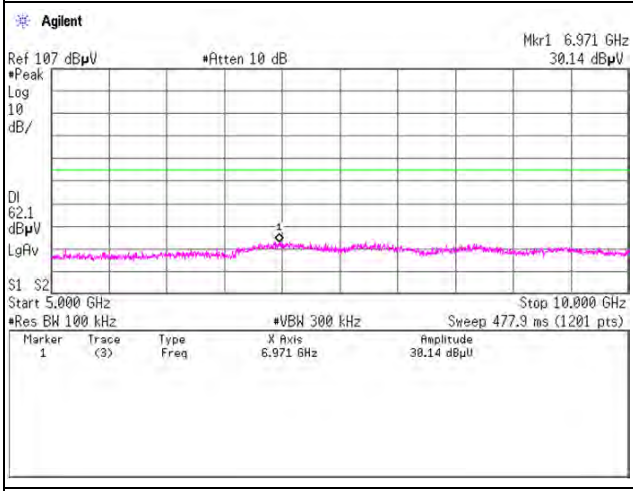
30MHz - 1GHz



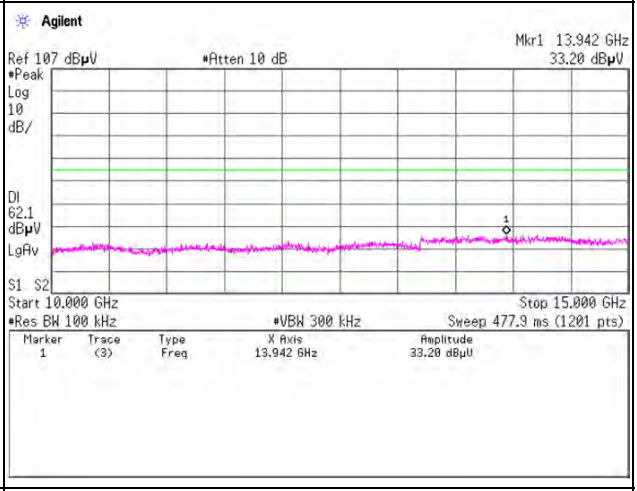
1GHz - 5GHz



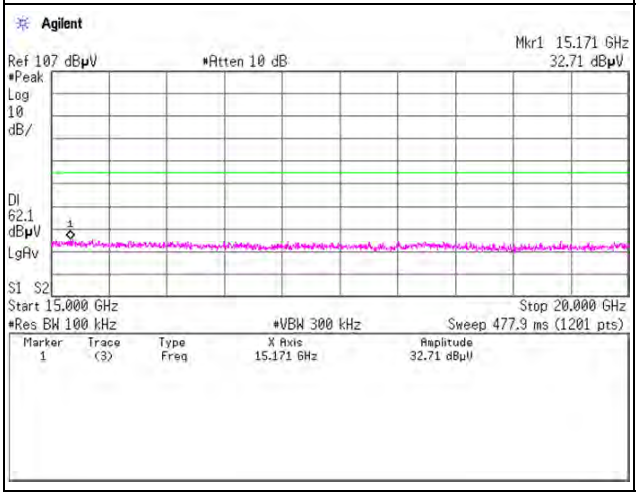
5GHz - 10GHz



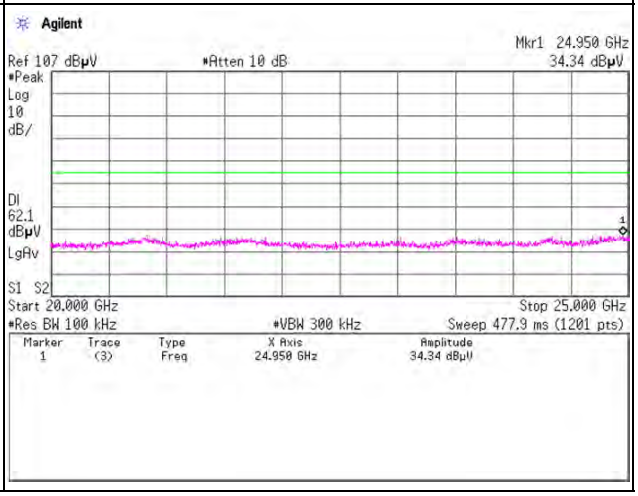
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



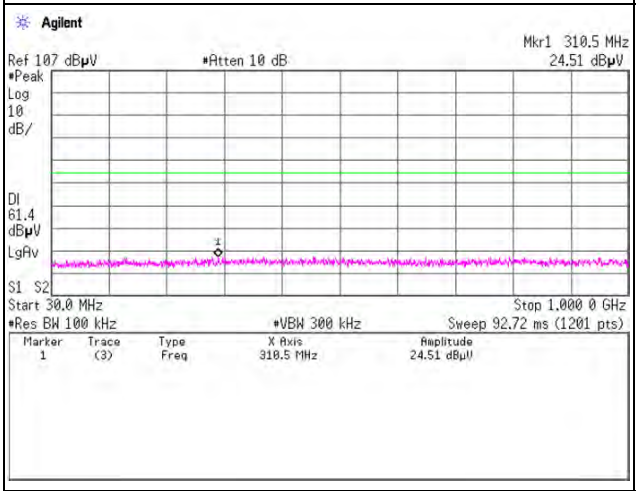
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

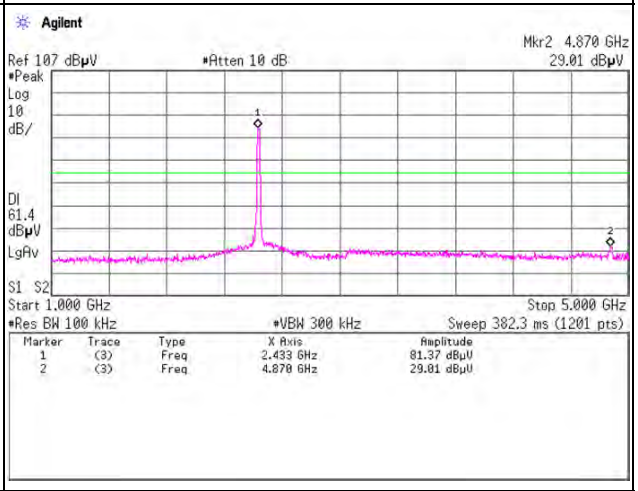
IEEE802.11g, 12Mbps, PN9

Tx 2437MHz

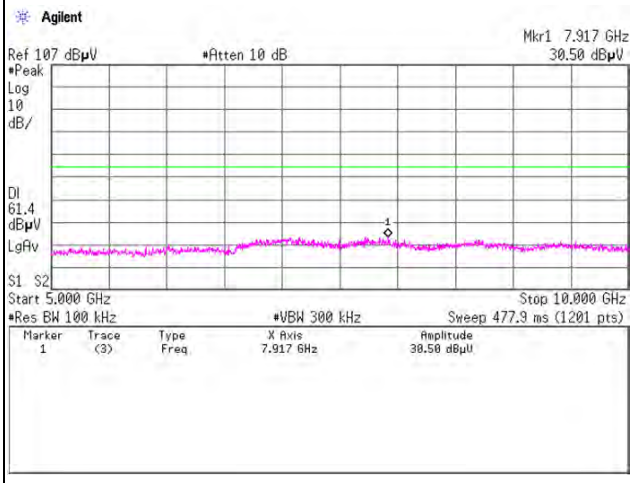
30MHz - 1GHz



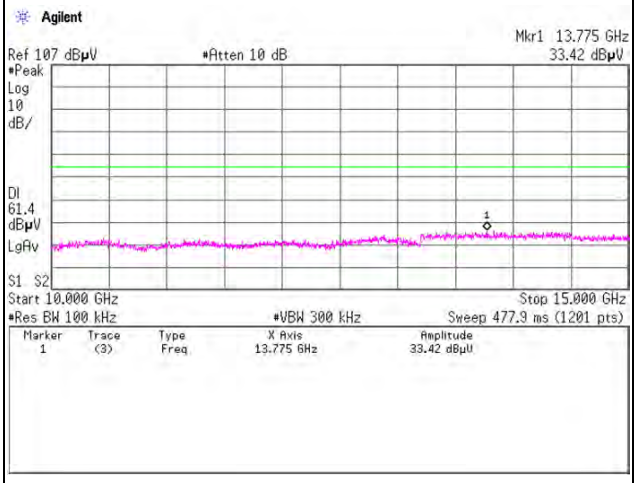
1GHz - 5GHz



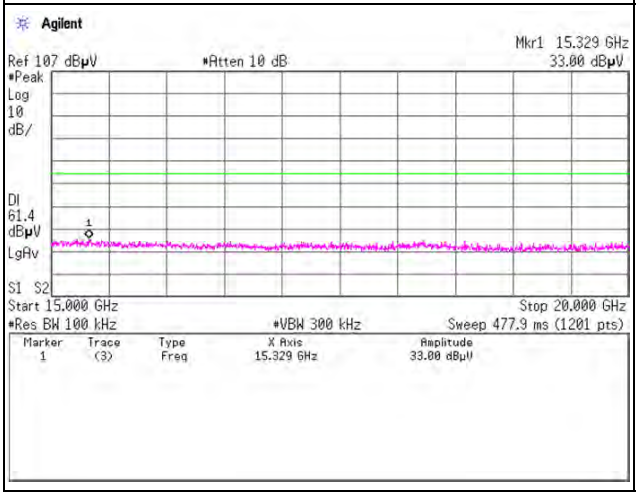
5GHz - 10GHz



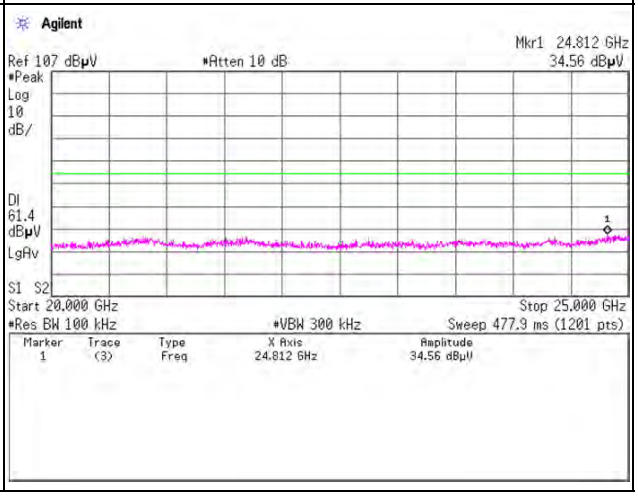
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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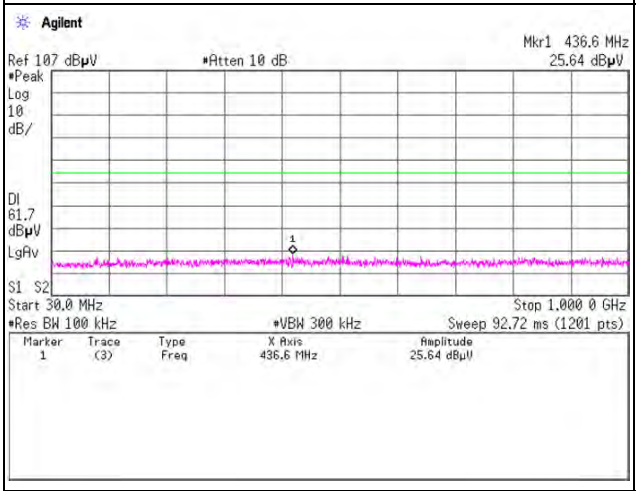
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

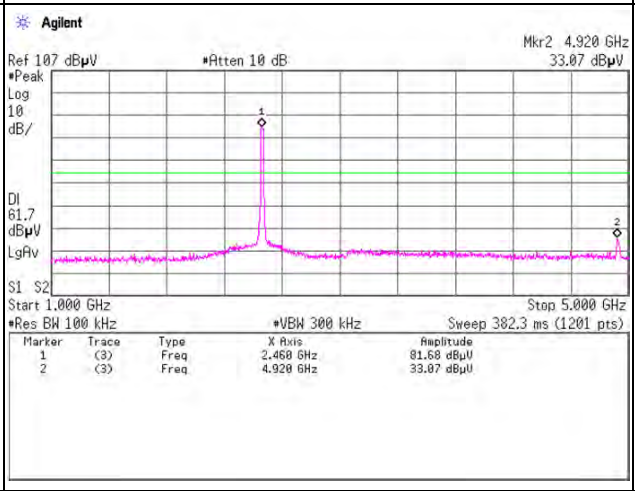
IEEE802.11g, 12Mbps, PN9

Tx 2462MHz

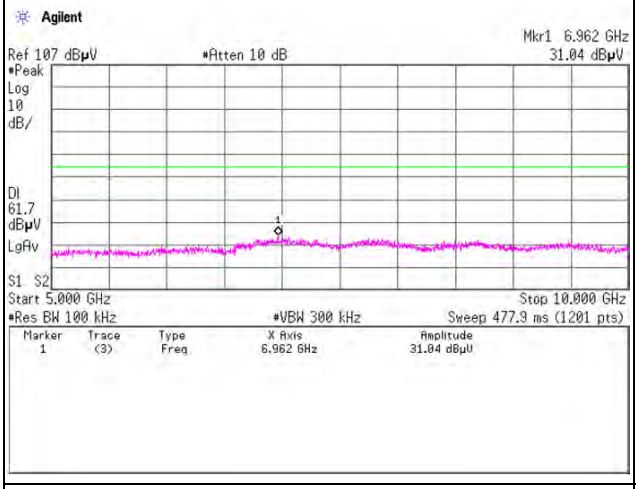
30MHz - 1GHz



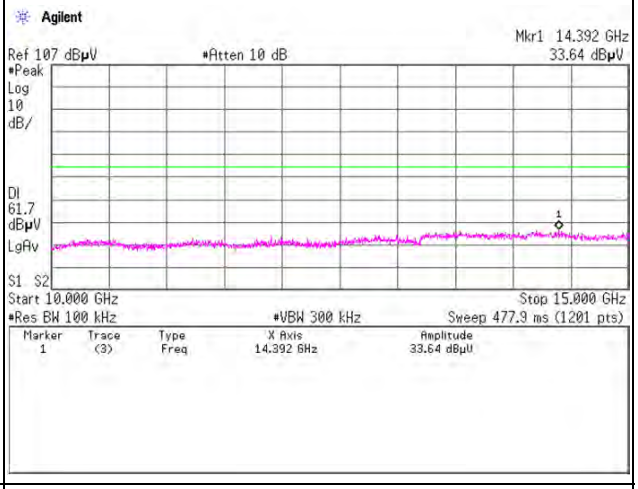
1GHz - 5GHz



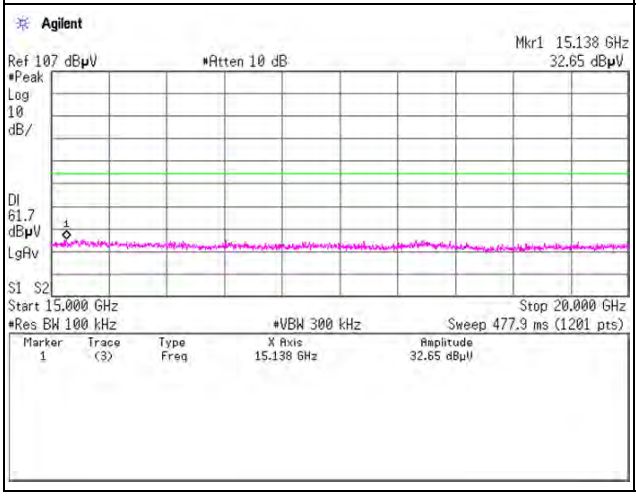
5GHz - 10GHz



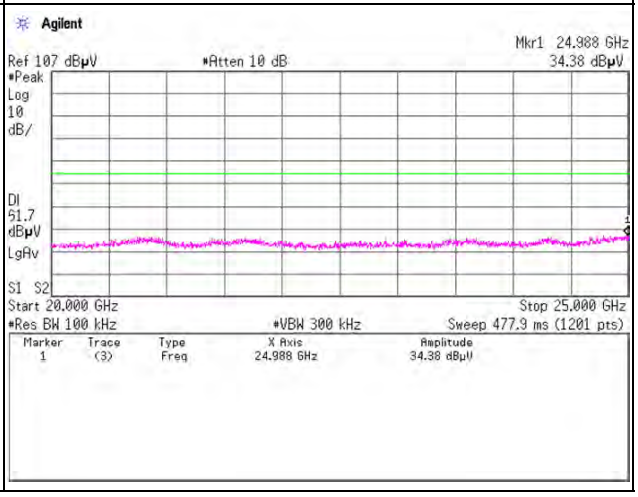
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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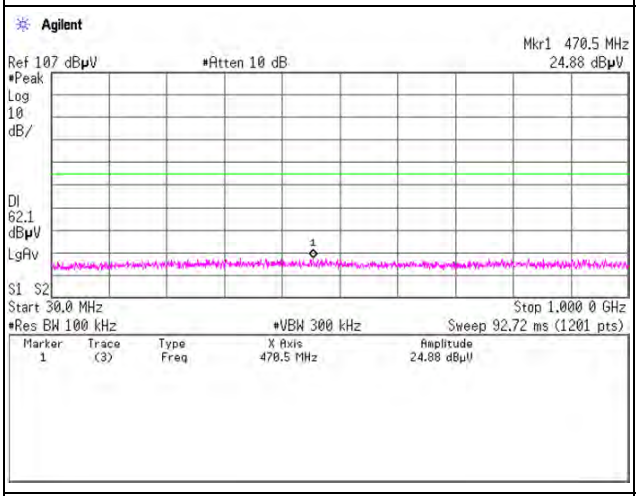
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

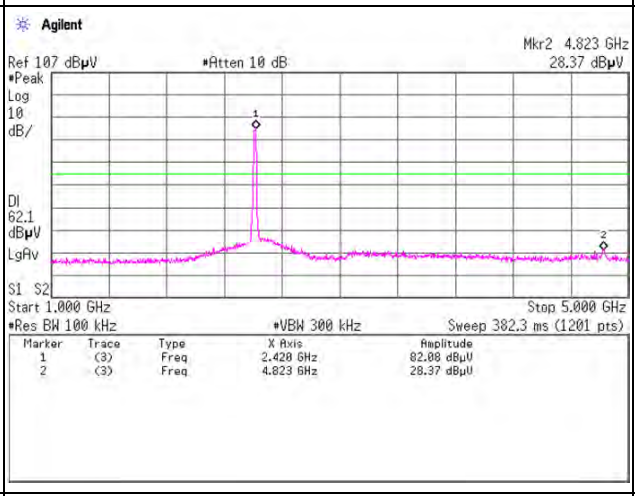
IEEE802.11n (20MHz)(SISO), MCS2, PN9

Tx 2412MHz

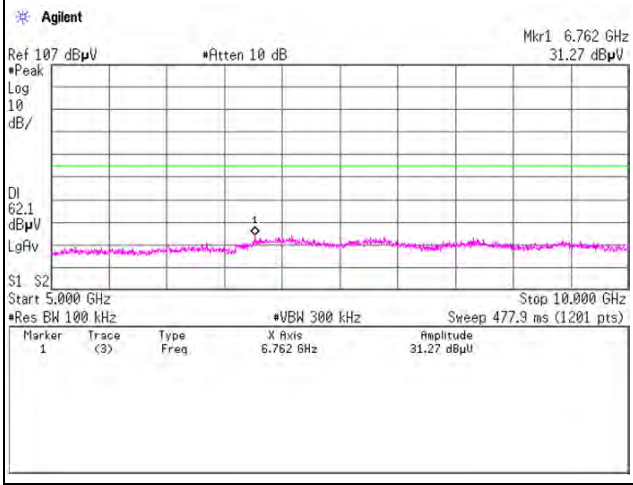
30MHz - 1GHz



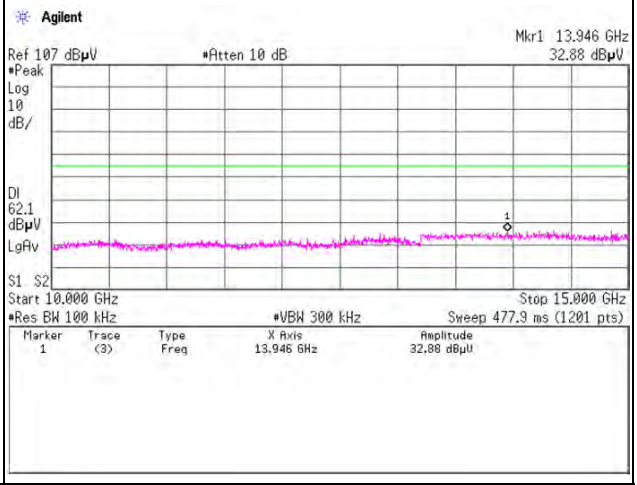
1GHz - 5GHz



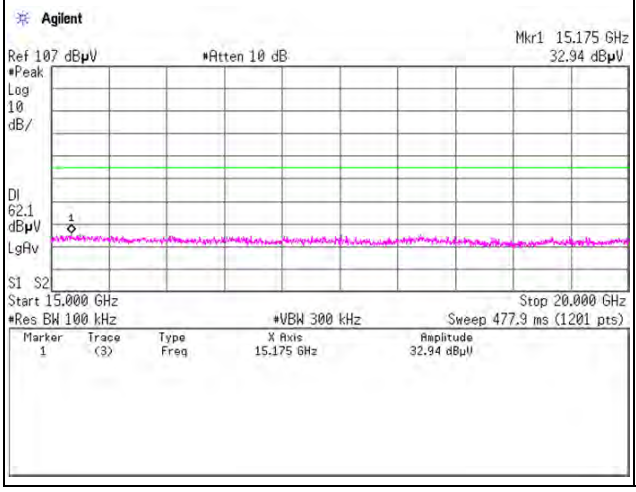
5GHz - 10GHz



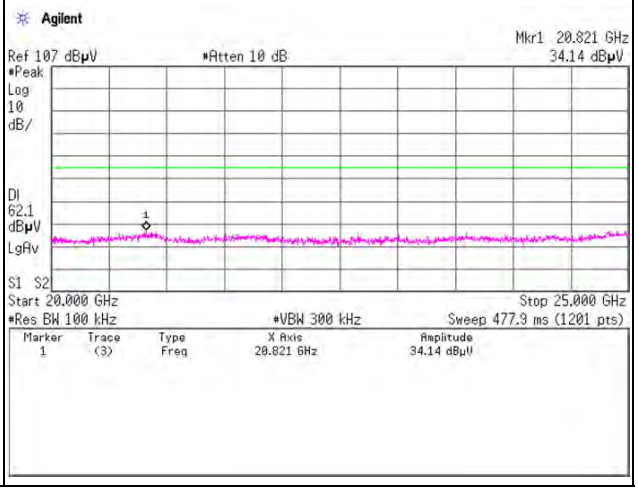
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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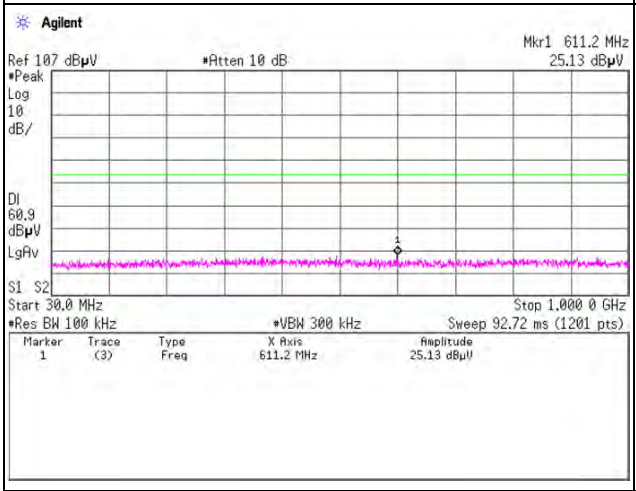
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

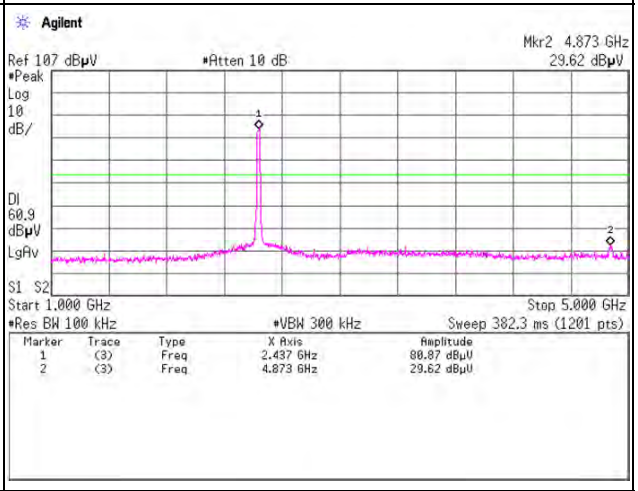
IEEE802.11n (20MHz)(SISO), MCS2, PN9

Tx 2437MHz

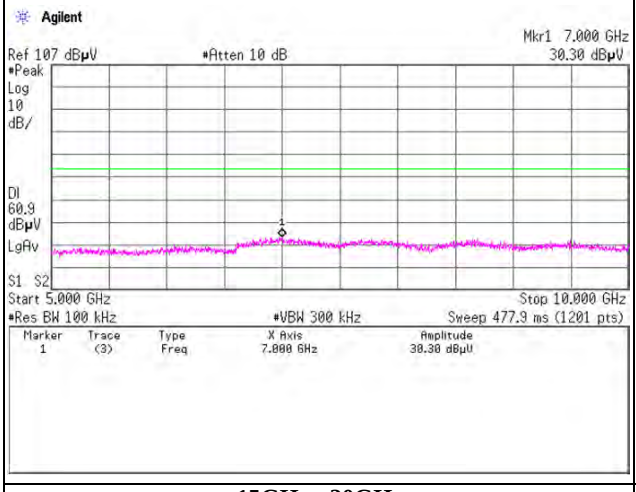
30MHz - 1GHz



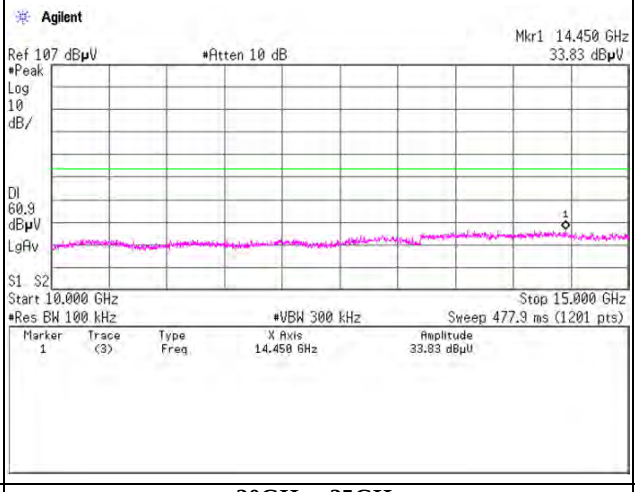
1GHz - 5GHz



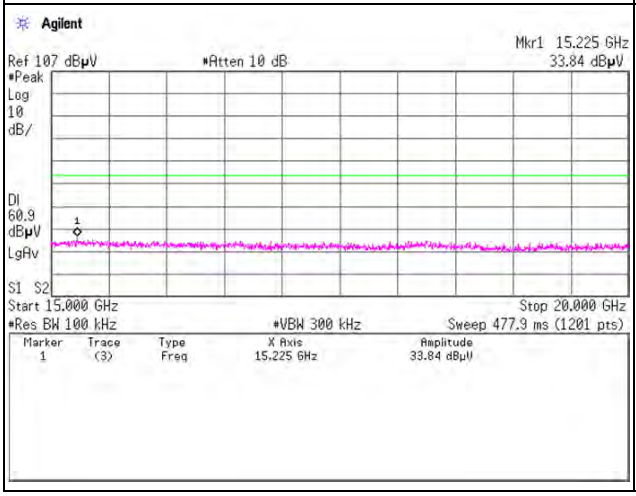
5GHz - 10GHz



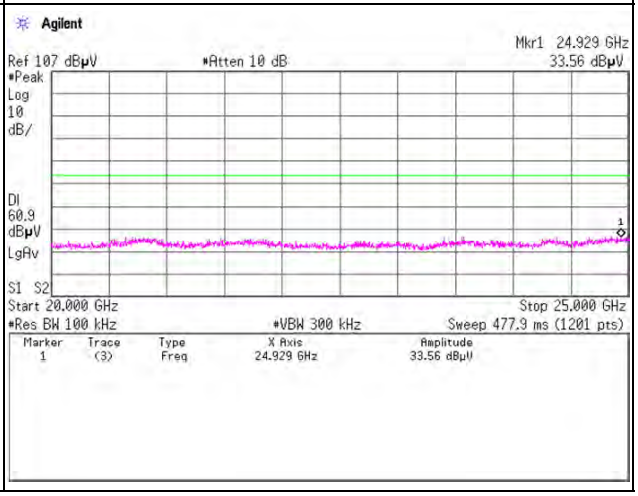
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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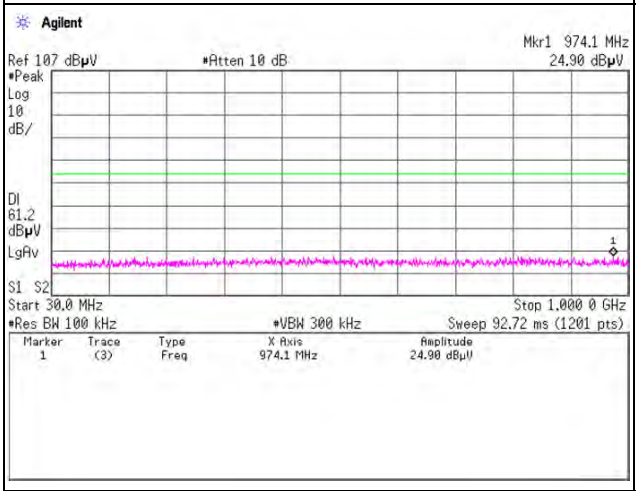
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

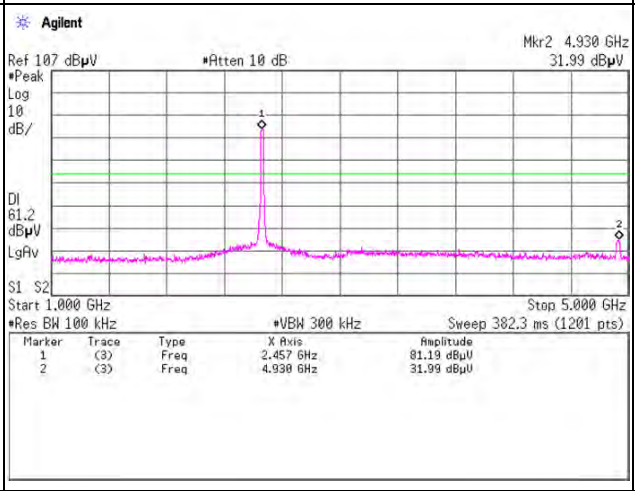
IEEE802.11n (20MHz)(SISO), MCS2, PN9

Tx 2462MHz

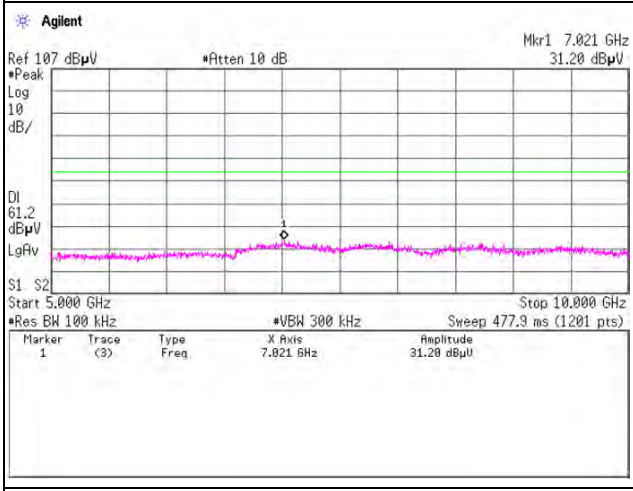
30MHz - 1GHz



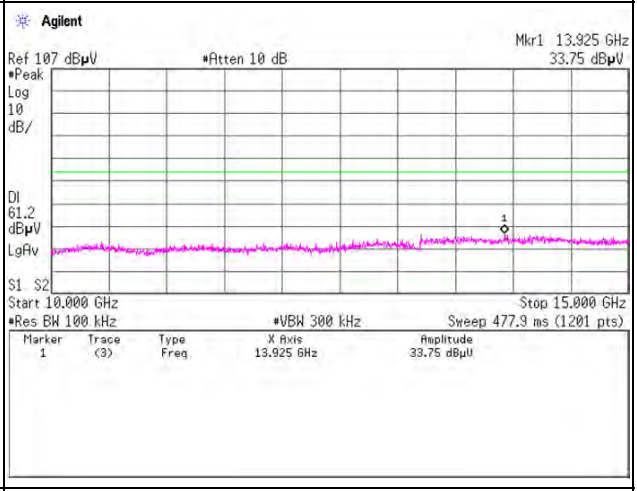
1GHz - 5GHz



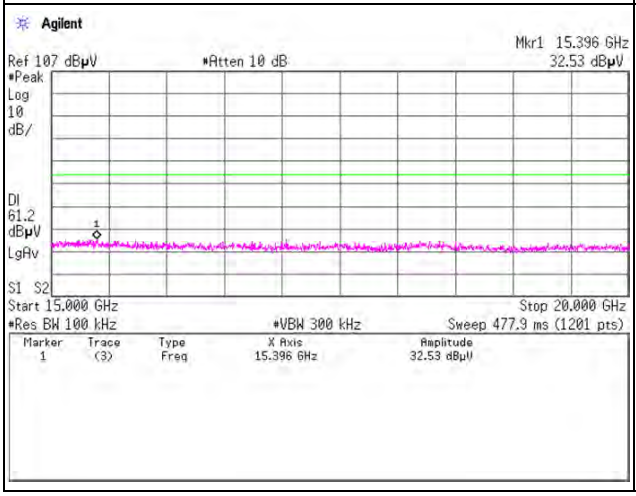
5GHz - 10GHz



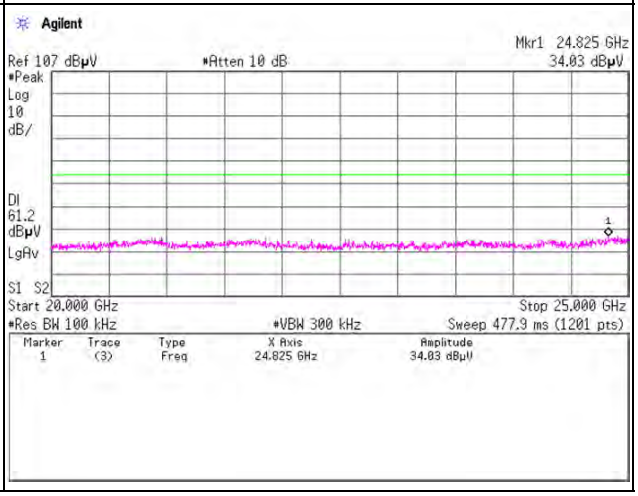
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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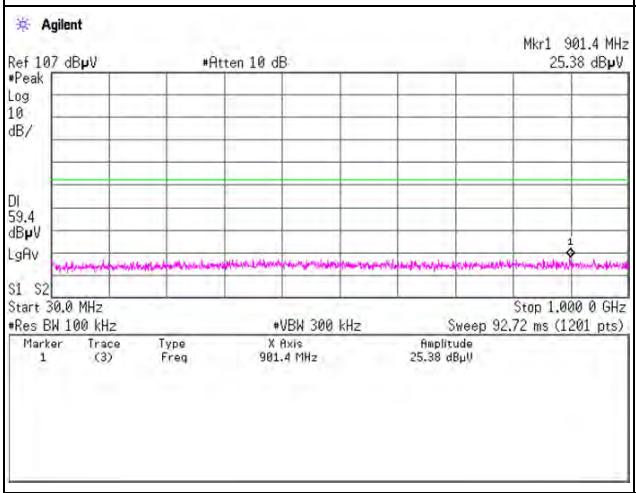
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

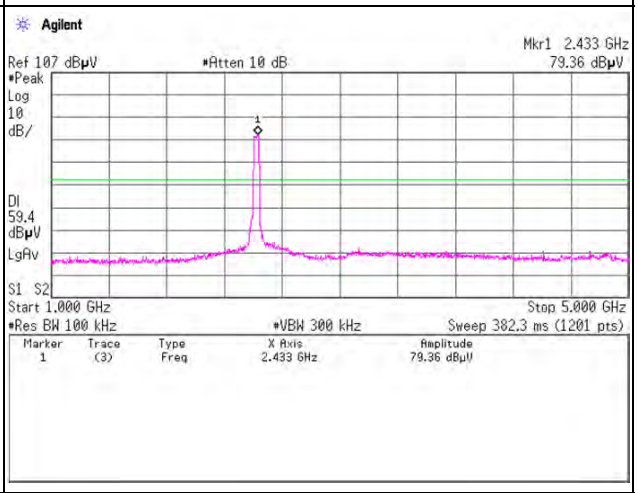
IEEE802.11n (40MHz)(SISO), MCS3, PN9

Tx 2422MHz

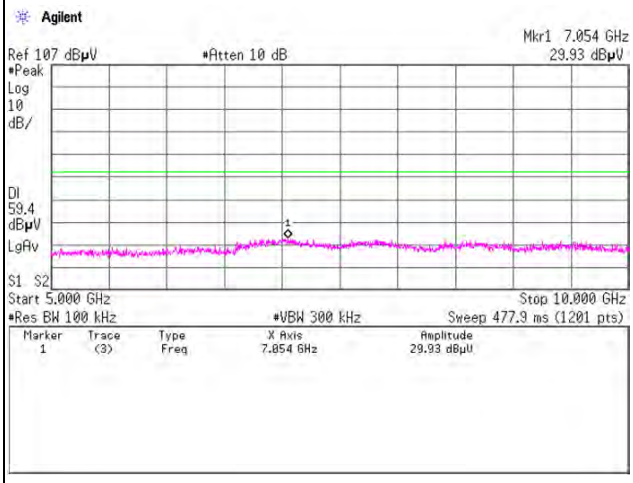
30MHz - 1GHz



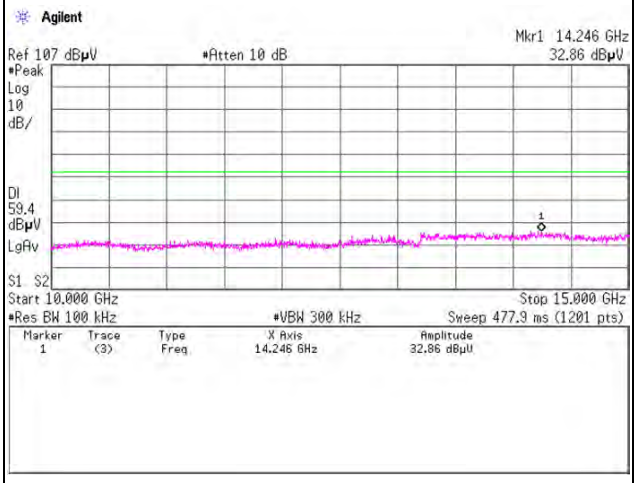
1GHz - 5GHz



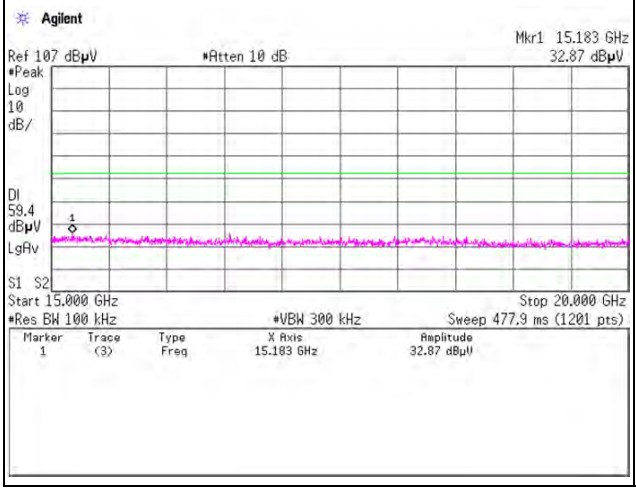
5GHz - 10GHz



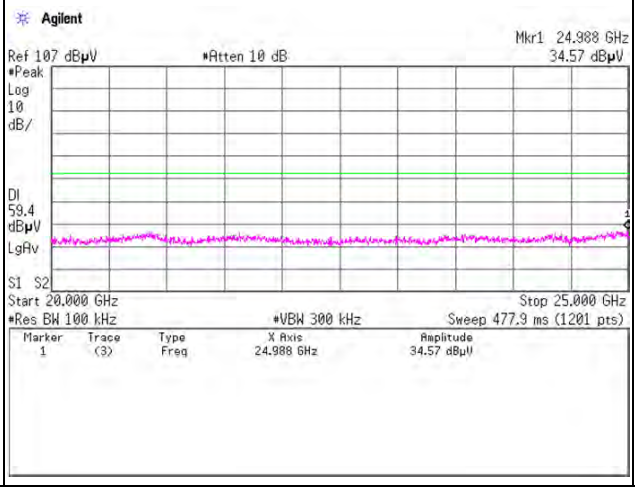
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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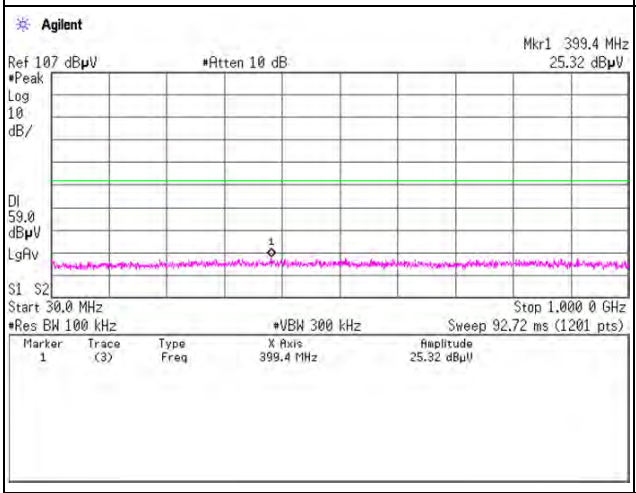
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

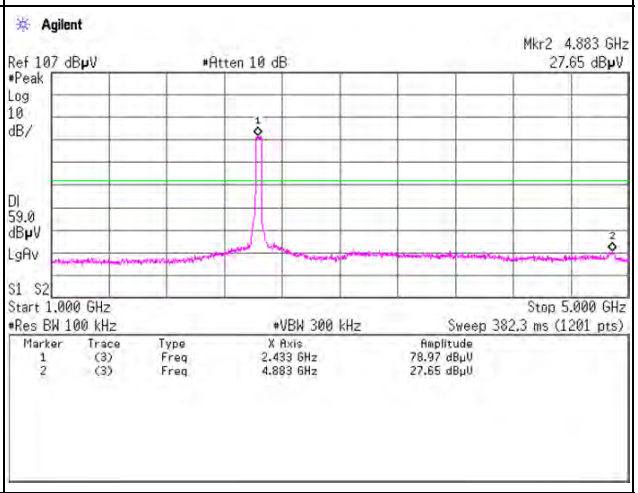
IEEE802.11n (40MHz)(SISO), MCS3, PN9

Tx 2437MHz

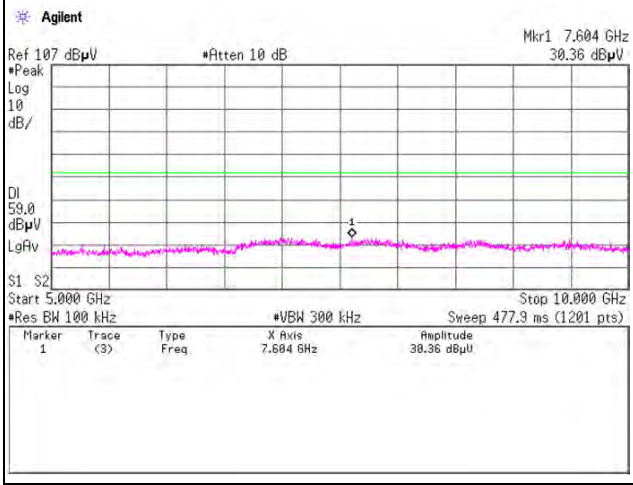
30MHz - 1GHz



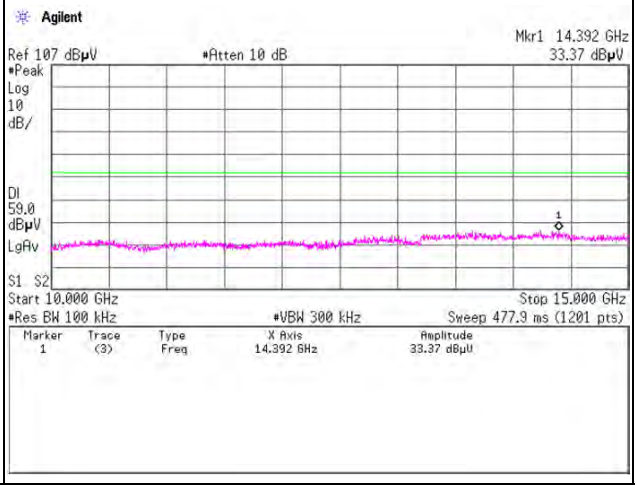
1GHz - 5GHz



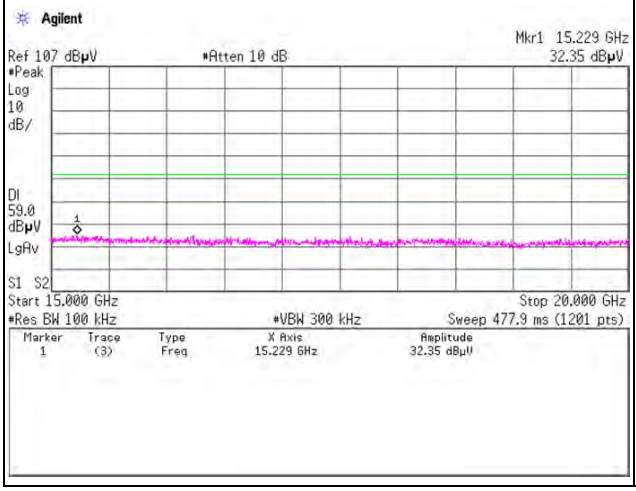
5GHz - 10GHz



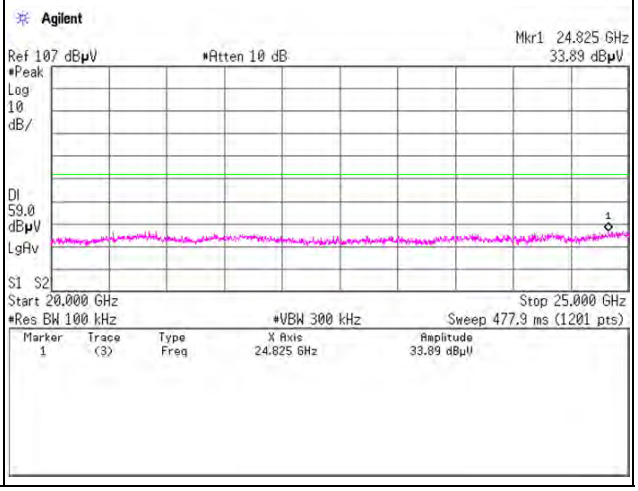
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
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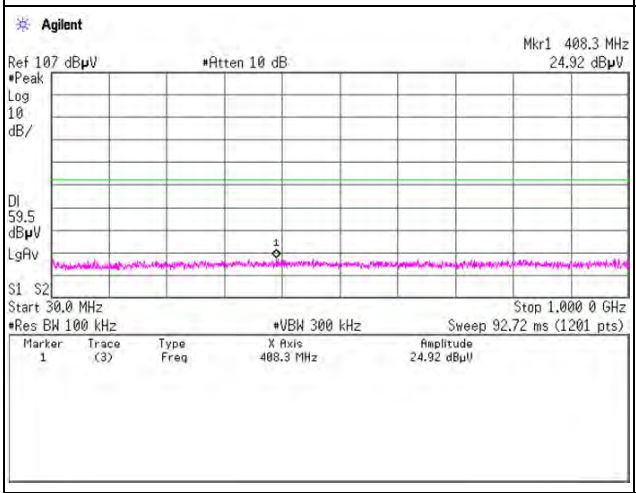
Spurious emission (Conducted)

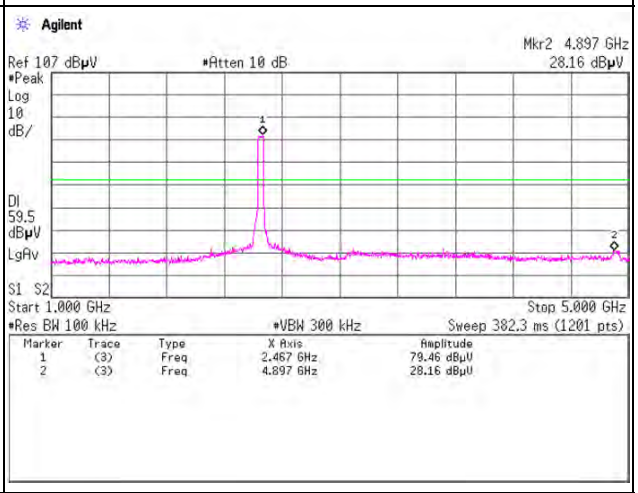
IEEE802.11n (40MHz)(SISO), MCS3, PN9

Tx 2452MHz

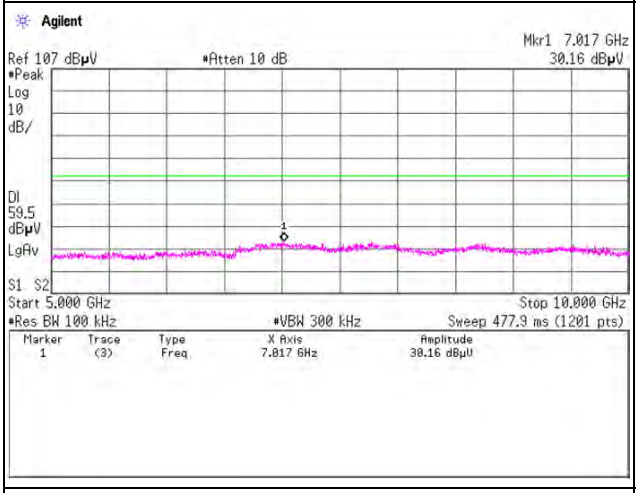
30MHz - 1GHz



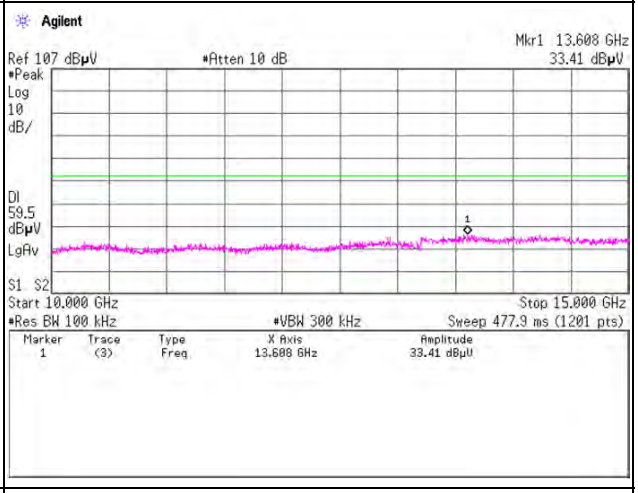
1GHz - 5GHz



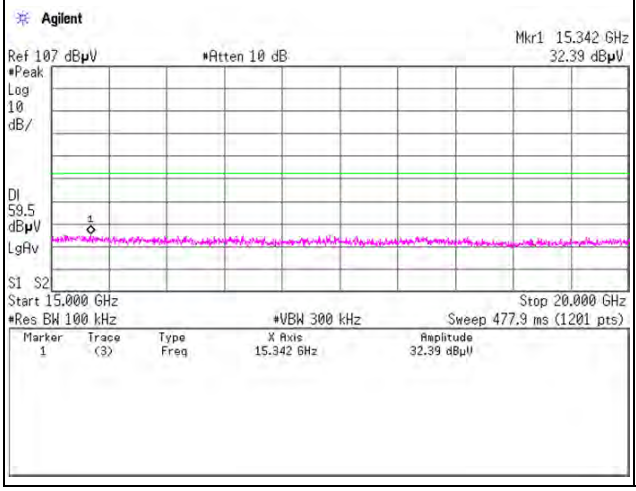
5GHz - 10GHz



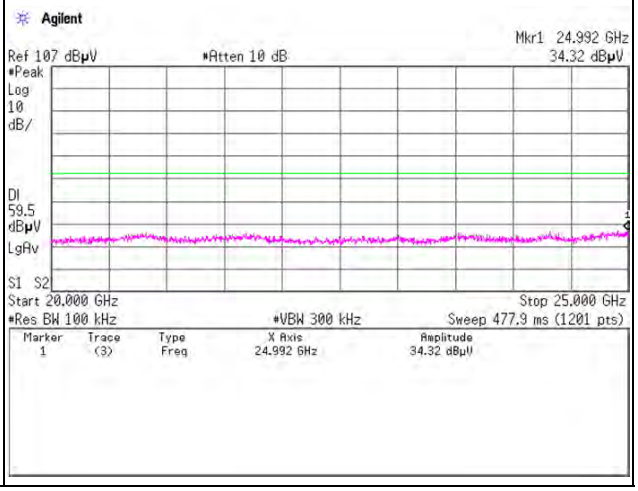
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



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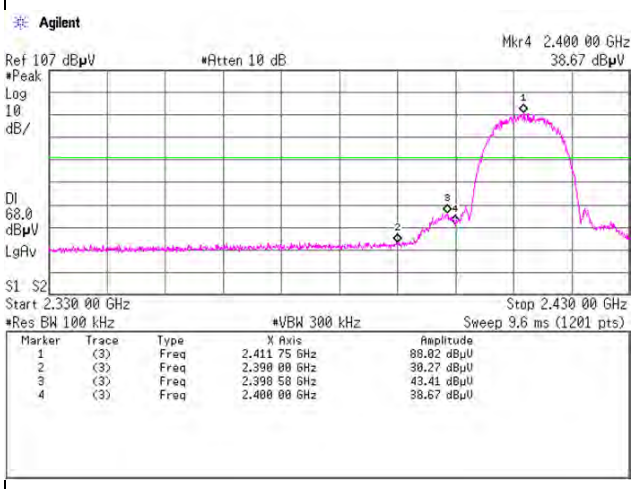
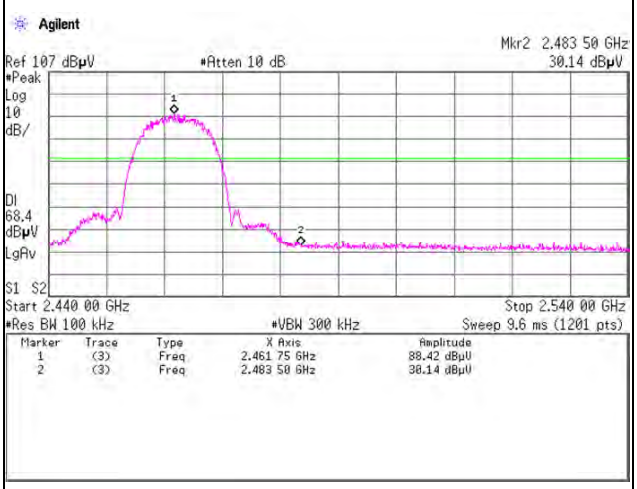
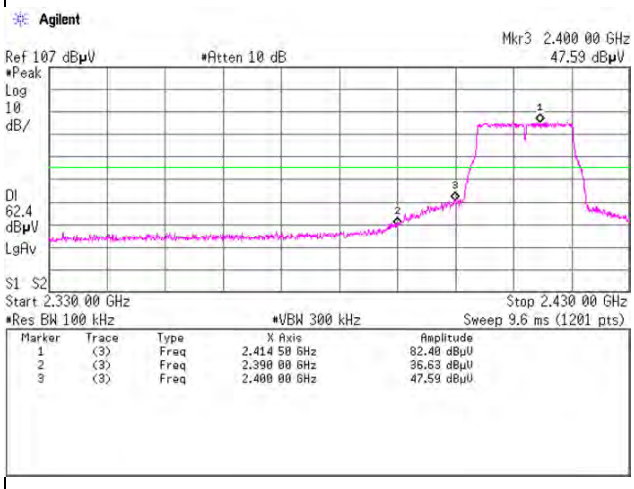
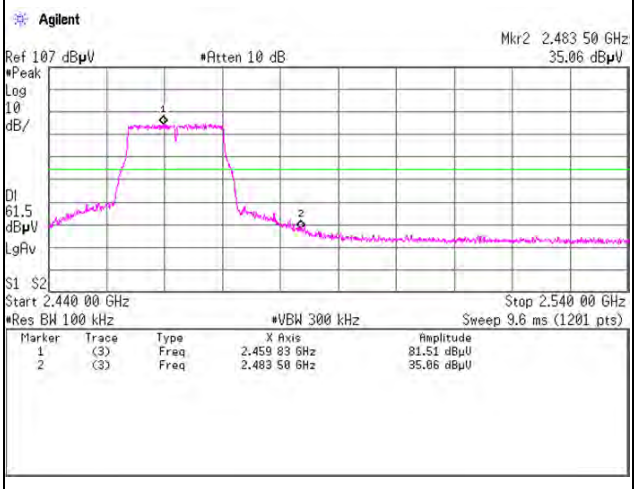
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

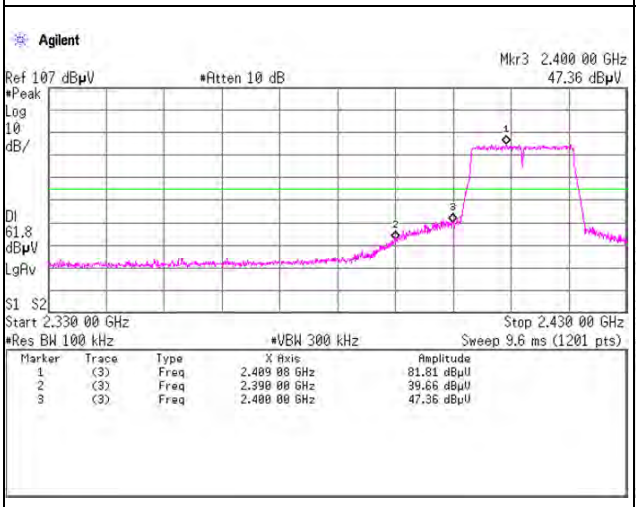
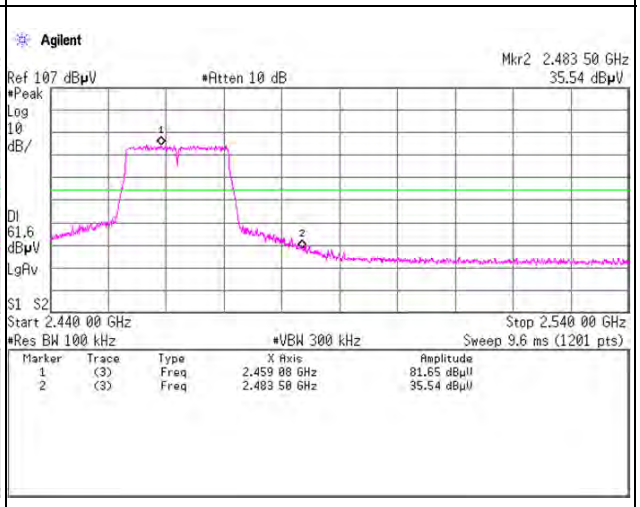
Band Edge compliance

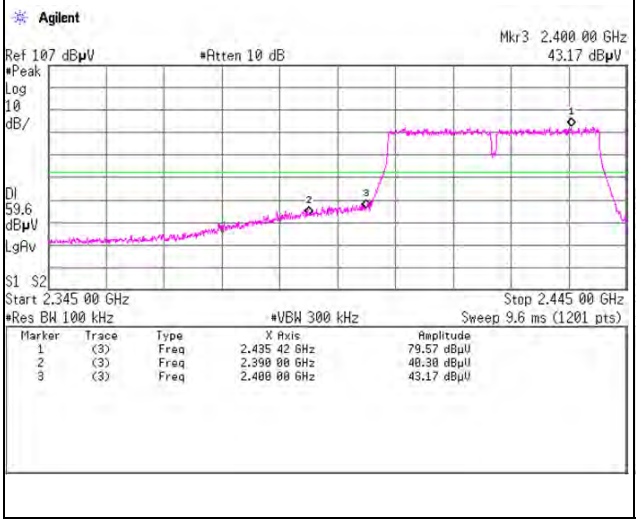
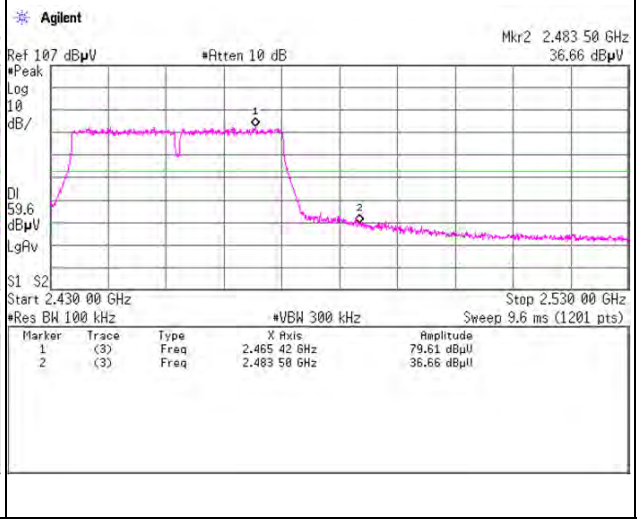
IEEE802.11b, 11Mbps, PN9	
Tx 2412MHz	**Tx 2462MHz**
	

IEEE802.11g, 12Mbps, PN9	
Tx 2412MHz	**Tx 2462MHz**
	

Spurious emission (Conducted)

Band Edge compliance

IEEE802.11n (20MHz)(SISO), MCS2, PN9	
Tx 2412MHz	**Tx 2462MHz**
	

IEEE802.11n (40MHz)(SISO), MCS3, PN9	
Tx 2422MHz	**Tx 2452MHz**
	

Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.5 Shielded Room
Date	2010/11/15	
Temperature / Humidity	24deg.C. , 37%	
Engineer	Tatsuya Arai	
Mode	Tx	

[IEEE802.11b, 11Mbps, PN9]

Ch. Freq. [MHz]	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	2410.72	-23.72	1.75	20.16	-1.81	8.00	9.81
2437	2435.72	-23.53	1.75	20.16	-1.62	8.00	9.62
2462	2460.72	-23.38	1.75	20.16	-1.47	8.00	9.47

[IEEE802.11g, 12Mbps, PN9]

Ch. Freq. [MHz]	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	2408.87	-27.90	1.75	20.16	-5.99	8.00	13.99
2437	2433.87	-28.77	1.75	20.16	-6.86	8.00	14.86
2462	2460.12	-28.16	1.75	20.16	-6.25	8.00	14.25

[IEEE802.11n (20MHz)(SISO), MCS2, PN9]

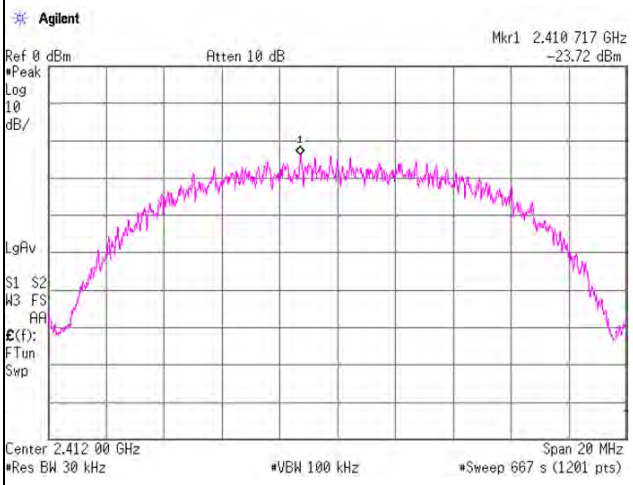
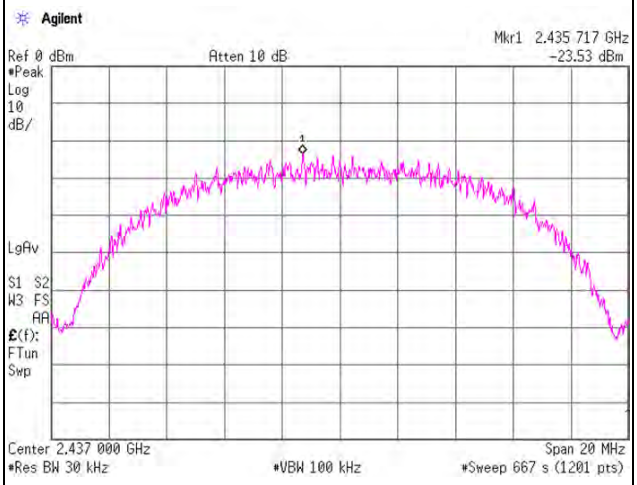
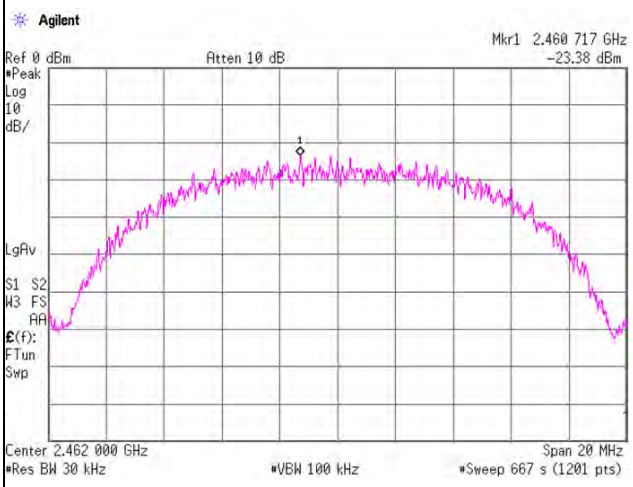
Ch. Freq. [MHz]	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	2412.62	-27.43	1.75	20.16	-5.52	8.00	13.52
2437	2437.62	-28.63	1.75	20.16	-6.72	8.00	14.72
2462	2462.62	-28.40	1.75	20.16	-6.49	8.00	14.49

[IEEE802.11n (40MHz)(SISO), MCS3, PN9]

Ch. Freq. [MHz]	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2422	2439.20	-31.51	1.75	20.16	-9.60	8.00	17.60
2437	2454.20	-31.59	1.75	20.16	-9.68	8.00	17.68
2452	2447.93	-31.48	1.75	20.16	-9.57	8.00	17.57

Sample Calculation:
Result = Reading + Cable Loss (supplied by customer) + Atten. Loss

Power Density

IEEE802.11b, 11Mbps, PN9	
Tx 2412MHz	**Tx 2437MHz**
	
Tx 2462MHz	
	

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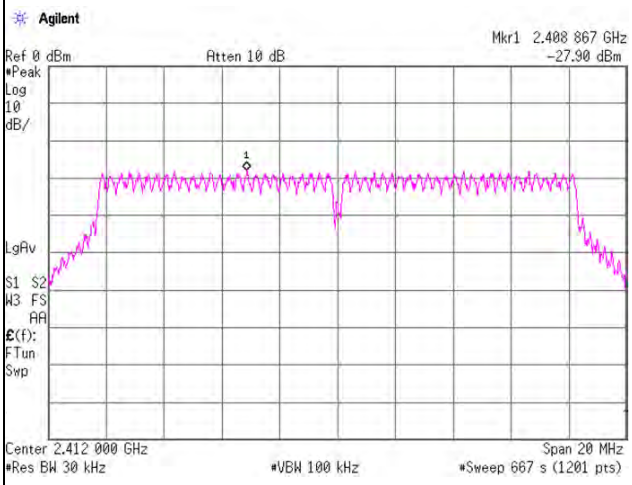
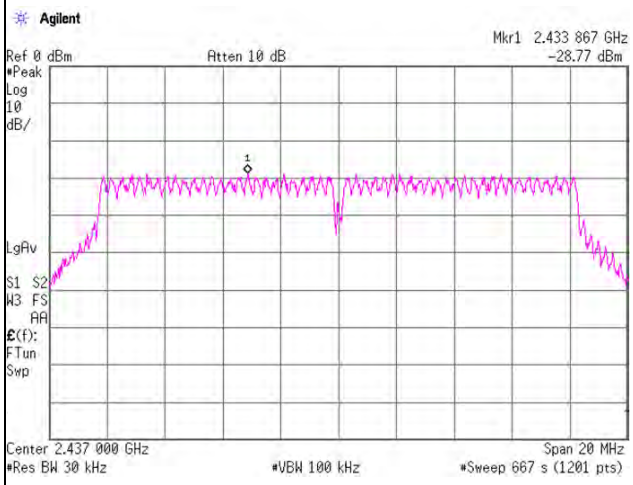
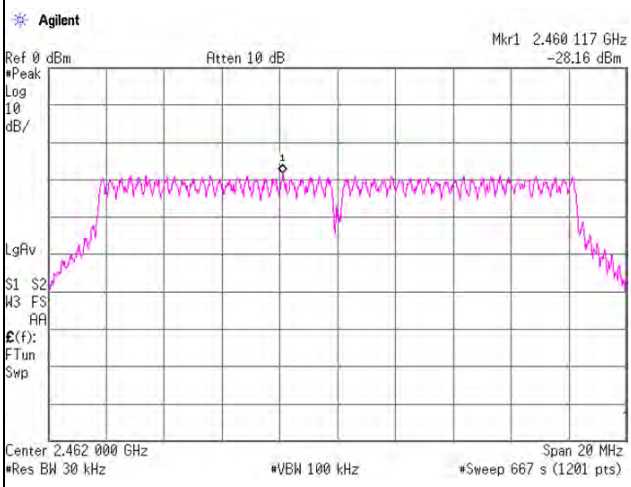
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Power Density

IEEE802.11g, 12Mbps, PN9	
Tx 2412MHz	**Tx 2437MHz**
	
Tx 2462MHz	
	

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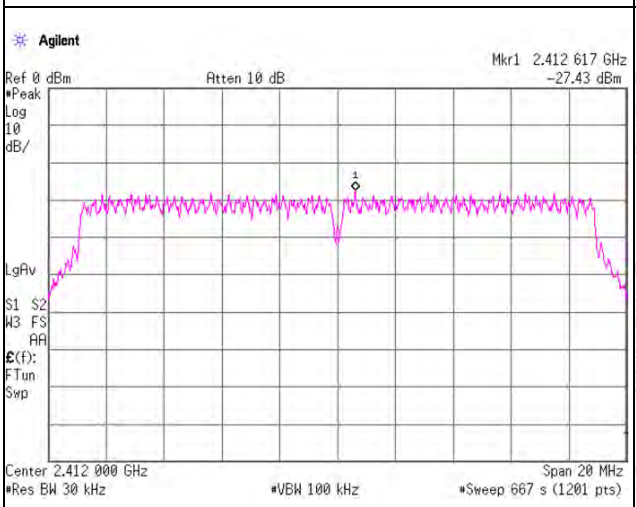
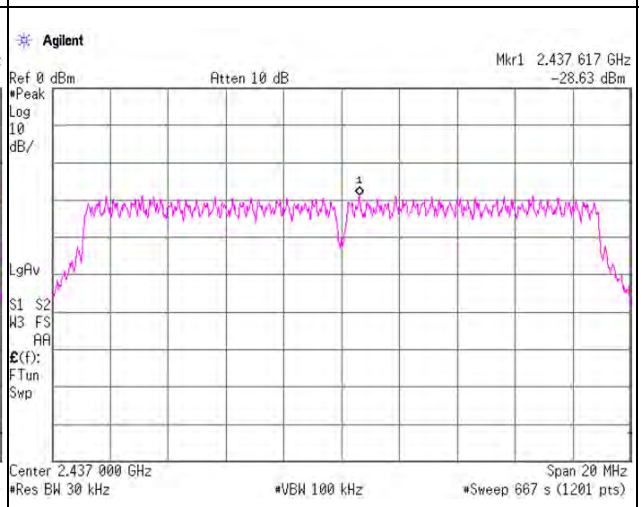
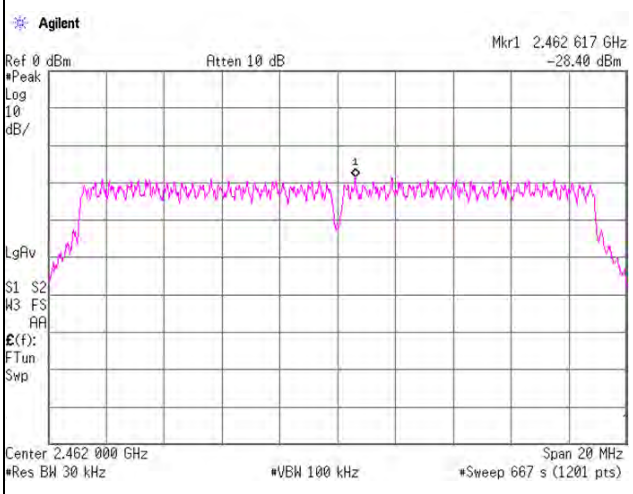
Power Density

IEEE802.11n (20MHz)(SISO), MCS2, PN9	
Tx 2412MHz	**Tx 2437MHz**
	
Tx 2462MHz	
	

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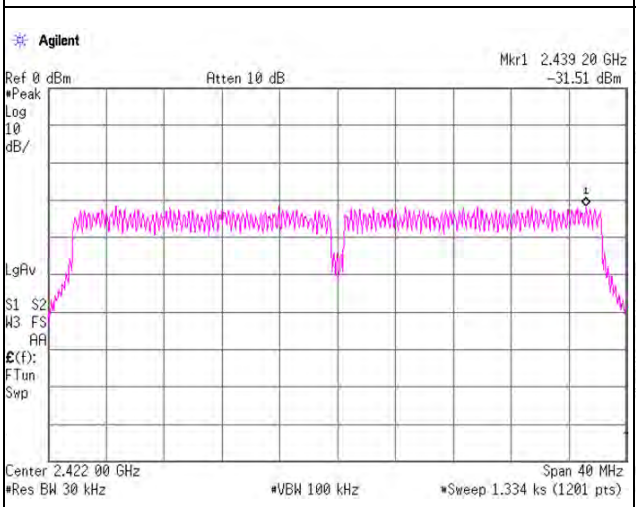
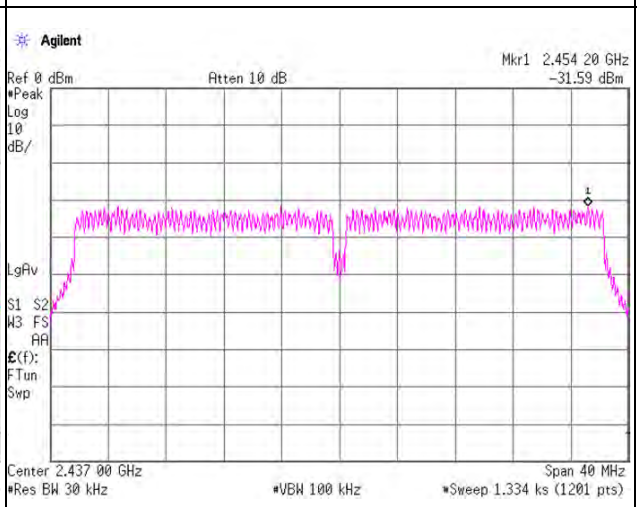
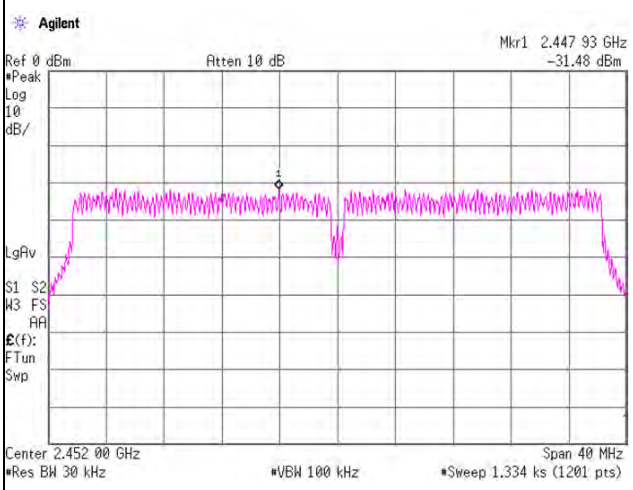
Power Density

IEEE802.11n (40MHz)(SISO), MCS3, PN9	
Tx 2422MHz	Tx 2437MHz
	
Tx 2452MHz	
	

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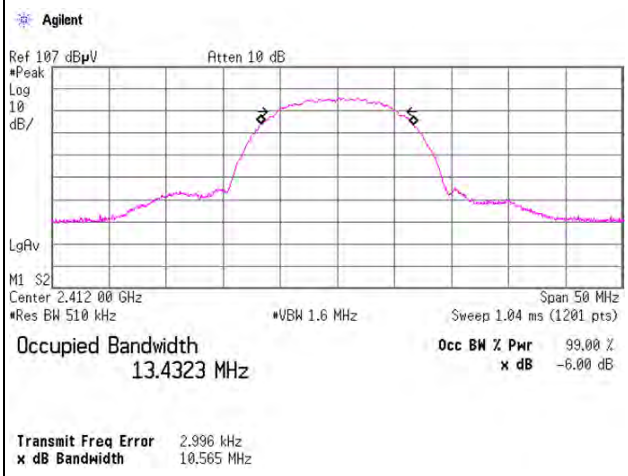
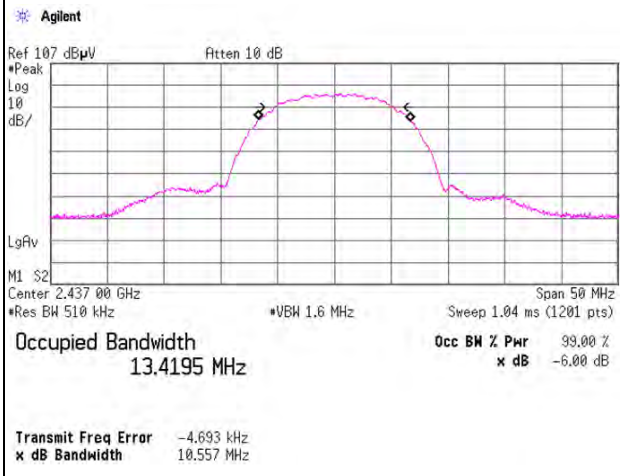
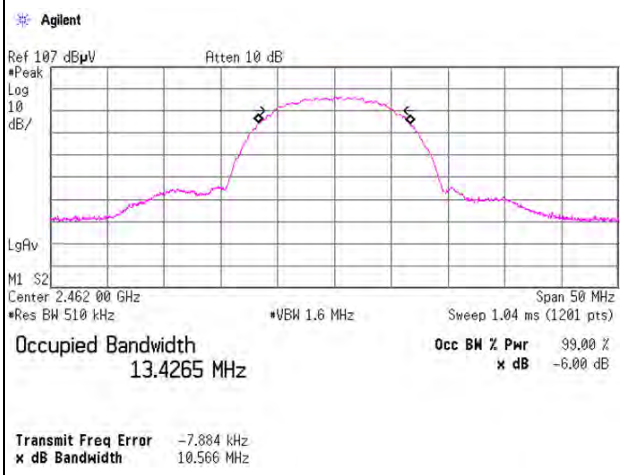
99% Occupied Bandwidth

IEEE802.11b, 11Mbps, PN9	
Tx 2412MHz	**Tx 2437MHz**
	
Tx 2462MHz	
	

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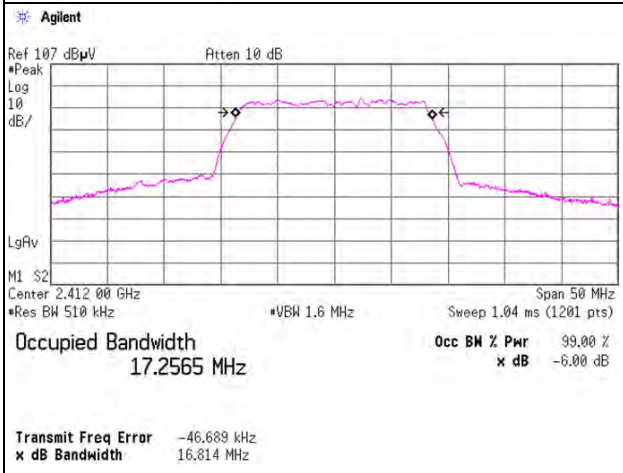
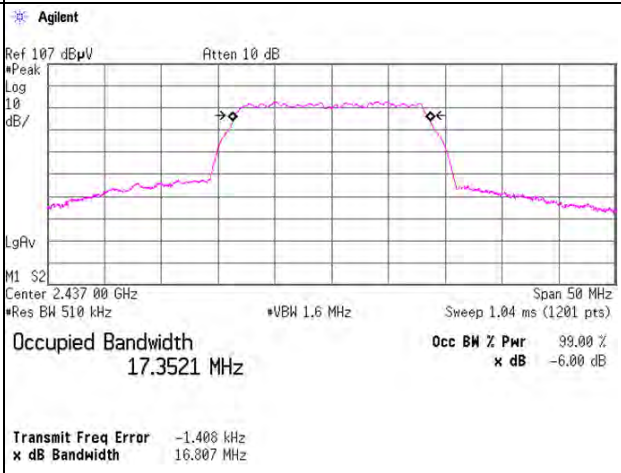
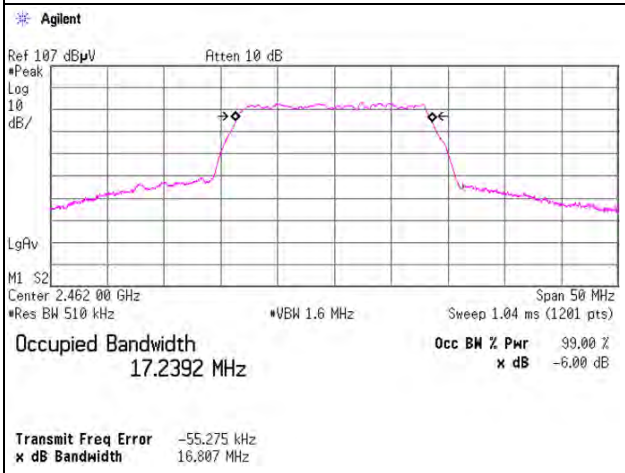
99% Occupied Bandwidth

IEEE802.11g, 12Mbps, PN9	
Tx 2412MHz	**Tx 2437MHz**
	
Tx 2462MHz	
	

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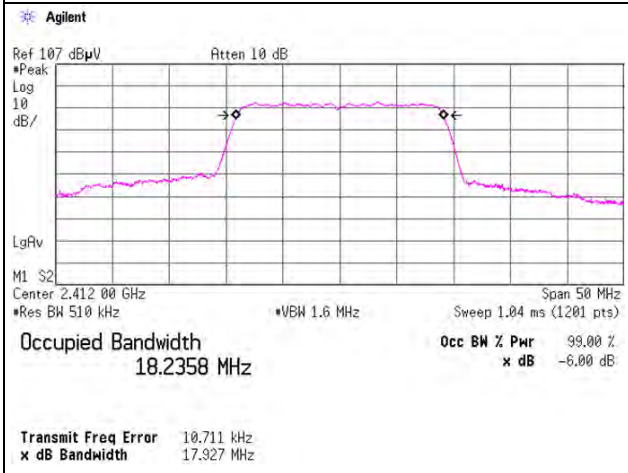
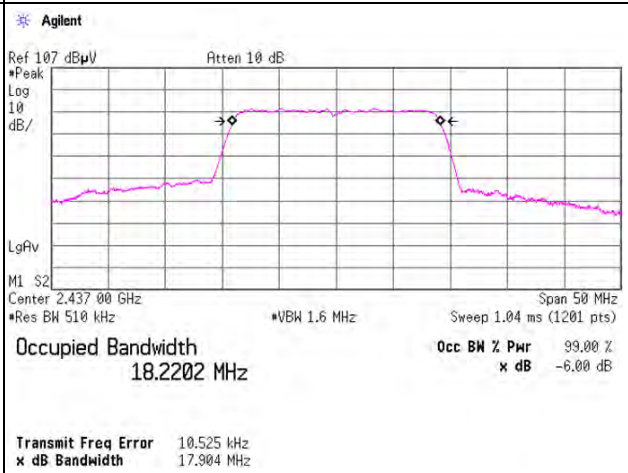
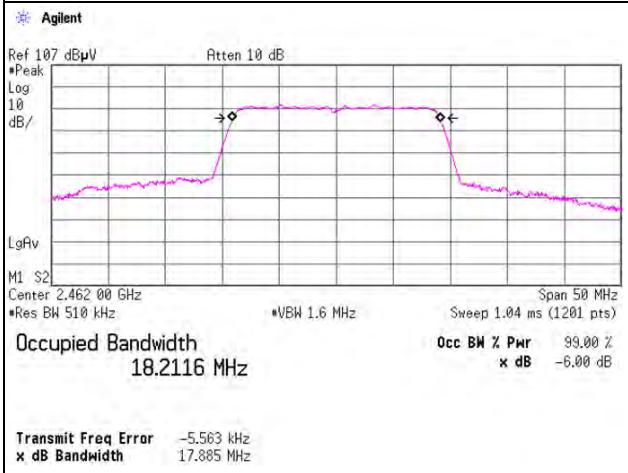
99% Occupied Bandwidth

IEEE802.11n (20MHz)(SISO), MCS2, PN9	
Tx 2412MHz	**Tx 2437MHz**
	
Tx 2462MHz	
	

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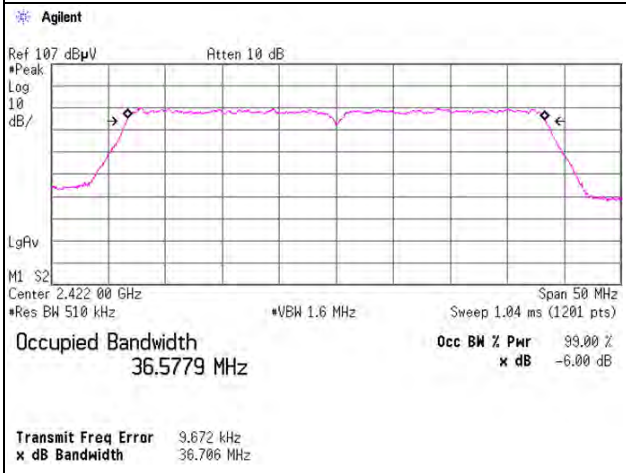
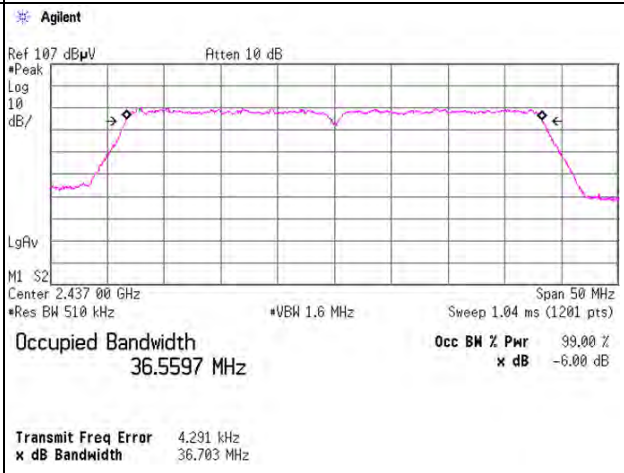
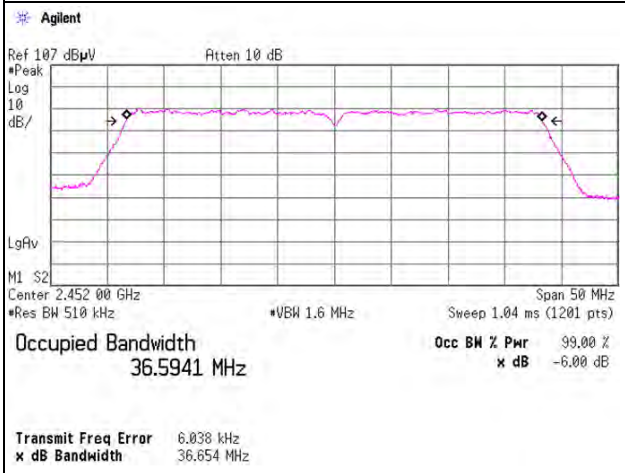
99% Occupied Bandwidth

IEEE802.11n (40MHz)(SISO), MCS3, PN9	
Tx 2422MHz	Tx 2437MHz
	
Tx 2452MHz	
	

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

APPENDIX 3:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No.	Serial No.	Test Item	Calibration Date *
SPM-06	Power Meter	Anritsu	ML2495A	850009	AT	2010/04/01 * 12
SPSS-03	Power sensor	Anritsu	MA2411B	917063	AT	2010/04/01 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	AT	2010/06/22 * 12
SCC-G13	Coaxial Cable	Suhner	SUCOFLEX 102	31599/2	AT	2010/03/09 * 12
SAT20-01	Attenuator(above1GHz)	Agilent	8493C-020	74889	AT	2010/03/05 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2010/02/17 * 12
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2010/03/09 * 12
SCC-G03	Coaxial Cable	Suhner	SUCOFLEX 104A	46499/4A	RE	2010/04/16 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2010/05/27 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2010/08/17 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2010/02/09 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	RE	2010/01/27 * 12
SJM-10	Measure	PROMART	SEN1935	-	RE/CE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV	-	RE/CE	-
SAT10-04	Attenuator(above1GHz)	Agilent	8493C-010	74863	RE	2010/03/05 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	51	RE	2009/12/04 * 12
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	RE/CE	2010/07/21 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	CE	2010/02/17 * 12
SLS-05	LISN	Rohde & Schwarz	ENV216	100516	CE	2010/02/19 * 12
SCC-C9/C10/SRSE-	Coaxial Cable&RF	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-271(RF Selector)	CE	2010/04/02 * 12
SAT3-06	Attenuator	JFW	50HF-003N	-	CE	2010/02/06 * 12
SHA-04	Horn Antenna	ETS LINDGREN	460451	LM3640	RE	2010/03/29 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	19	RE	2010/03/02 * 12
SCC-G17	Coaxial Cable	Suhner	SUCOFLEX 104A	46291/4A	RE	2010/03/02 * 12
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE	2010/02/06 * 12
SAT6-03	Attenuator	JFW	50HF-006N	-	RE	2010/02/06 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE	2010/10/15 * 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	2010/04/02 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0901	RE	2010/10/15 * 12
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2010/09/13 * 12

The expiration date of the calibration is the end of the expired month.
All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

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:
CE: Conducted Emission
RE: Radiated Emission
AT: Antenna Terminal Conducted test

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