



TEST REPORT

Report Number : A-002-15-C

Date of Issue: 22 July 2015

FCC Rules and Regulations Part 15 Subpart E Unlicensed NII devices.

This test report is to certify that the device was tested according to the requirements of the above.
The results of this report should not be construed to imply compliance of devices other than the sample tested.
Without the laboratory approval by the documents, this report should not be copied in part.

1. Applicant

Company Name : TAIYO YUDEN CO.,LTD.
Mailing Address : 8-1, Sakae-cho, Takasaki-shi, Gunma, 370-8522, Japan

2. Identification of Tested Device

Type of Device : Transmitter
FCC ID : RYYWYSAAVDXB-E
Device Name : Wireless Module
Model Number : WYSAAVDXB-E
Serial Number : 01
Trade Name : EPSON
Type of Test : ☐ Production ☐ Pre-production ☒ Prototype

3. Test Items

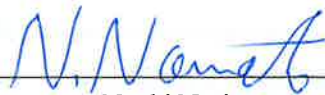
AC Power Line Conducted Emission	☒ Pass	☐ Fail	☐ N/A
Emission Bandwidth	☒ Pass	☐ Fail	☐ N/A
Maximum Conducted Output Power	☒ Pass	☐ Fail	☐ N/A
Peak Power Spectral Density	☒ Pass	☐ Fail	☐ N/A
Spurious Emission	☒ Pass	☐ Fail	☐ N/A
U-NII Detection Bandwidth	☐ Pass	☐ Fail	☒ N/A (*1)
Channel Availability Check Time	☐ Pass	☐ Fail	☒ N/A (*1)
Channel Closing Transmission Time	☒ Pass	☐ Fail	☐ N/A
Channel Move Time	☒ Pass	☐ Fail	☐ N/A
Non-Occupancy Period	☐ Pass	☐ Fail	☒ N/A (*1)
Statistical Performance Check	☐ Pass	☐ Fail	☒ N/A (*1)

Refer the below reason(s) with respect to the decision and justification not to test.

(*1) EUT Specifications (*2) Request of Applicant (*3) According to Test Plan

KEC Electronic Industry Development Center Testing Division
3-2-2, Hikari-dai, Seika-cho, Soraku-gun, Kyoto 619-0237 Japan

Test Engineer(s)


Naoki Norimoto



Approved by

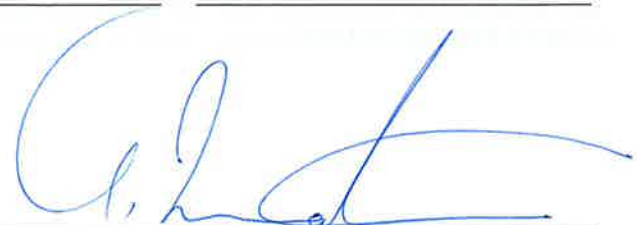
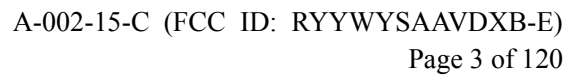

Ikuya Minematsu / Group Manager

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[illegible]

1. LABORATORY INFORMATION

1.1. Laboratory Accreditation

The KEC has been accredited by the following organizations based on their criteria for testing laboratory (ISO/IEC 17025).

- | | |
|---|----------------------------------|
| (1) Japan Accreditation Board for Conformity Assessment (JAB) | : Accreditation Number: RTL02810 |
| (2) Voluntary EMC Laboratory Accreditation Center Inc. (VLAC) | : Accreditation Number: VLAC-005 |

1.2. Test Facility

All tests described in this report were performed by:

Name: KEC Electronic Industry Development Center
Testing Division

Address: 3-2-2, Hikari-dai, Seika-cho, Soraku-gun, Kyoto 619-0237 Japan

Anechoic Chamber	:	☐ No.1	☐ No.2	☐ No.3	☐ No.6	☐ No.7
		☐ No.8	☐ No.9	☐ No.10	☒ No.11	☐ No.12
Shielded Room	:	☐ No.1	☐ No.7	☐ No.8	☒ No.9	☐ No.10
Harmonic Current Meas. Room	:	☐				

This test facility has been filed with the FCC under the criteria of ANSI C63.4-2009.

Registered Test Site Number : 174872

1.3. Measurement Uncertainty

The result of a measurement is only an approximation or estimate of the value of a specific quantity.
And thus the measurand is complete only when a statement of uncertainty is given.
KEC quotes Measurement Uncertainty (U) as follows.

Conducted Disturbance at Mains Port (150kHz-30MHz)	+3.1 / -3.7 dB
Conducted Disturbance at Mains Port (9kHz-30MHz)	+3.4 / -4.3 dB
Conducted Disturbance at Telecommunication Ports ISN method (None-Shield type)	+2.5 / -2.9 dB
Conducted Disturbance at Telecommunication Ports ISN method (Shield type)	+2.4 / -2.6 dB
Conducted Disturbance at Telecommunication Ports Current Probe method	+2.3 / -2.8 dB
Conducted Disturbance at Telecommunication Ports 150Ω Load voltage method	+1.9 / -2.5 dB
Conducted Disturbance at Telecommunication Ports None Invasive method	+2.8 / -3.8 dB
Conducted Disturbance at Lead Terminals and Additional Terminals	+1.7 / -2.4 dB
Disturbance Power (30MHz -300MHz)	+3.3 / -3.4 dB
Radiated Disturbance at Frequency Range from 9kHz up to 30MHz 60cm Loop Antenna method	+3.7 / -4.4 dB
Radiated Disturbance at Frequency Range from 9kHz up to 30MHz LLA method	+2.2 / -2.8 dB
Radiated Disturbance at Frequency Range from 30MHz up to 300MHz 3m method	+3.4 / -3.3 dB
Radiated Disturbance at Frequency Range from 300MHz up to 1GHz 3m method	+3.4 / -3.6 dB
Radiated Disturbance at Frequency Range from 30MHz up to 300MHz 10m method	+3.2 / -3.9 dB
Radiated Disturbance at Frequency Range from 300MHz up to 1GHz 10m method	+3.6 / -4.5 dB
Radiated Disturbance at Frequency Range from 30MHz up to 1GHz 10m method (Hybrid Antenna used measurement)	+4.1 / -4.4 dB
Radiated Disturbance at Frequency Range from 1GHz up to 6GHz 3m method	+4.7 / -6.2 dB
Radiated Disturbance at Frequency Range from 6GHz up to 26.5GHz 3m method	+4.5 / -5.0 dB
Peak Conducted Output Power Measurement	+1.0 / -1.0 dB
Harmonics Currents Emissions	+/- 6.5 %
Voltage Change, Voltage Fluctuations and Flicker	+/- 2.3 %

Expiration Date : 2015/9/30

The above values are calculated as Expanded Uncertainty (k=2 [95%]).

[Note]

If the measured result is below the specification limit and a margin is less than the above measurement uncertainty, it is impossible to determine compliance at a level of confidence of 95%. However, the measured result indicates high probability that the tested device complies with the specification limit.

2. GENERAL INFORMATION

2.1. Product Description

(1) Technical Specifications

- Wireless LAN + Bluetooth : IEEE802.11a/b/g/n + Bluetooth3.0
- Transmit speed : 11/5.5/2/1 Mbps(11b),
54/48/36/24/18/12/9/6Mbps(11a/g),
72.2 ~ 6.5 Mbps (11n20), 150 ~ 13.5 Mbps (11n40)
- Type of Modulation : DSSS(11b), OFDM(11a/g/n)
FHSS(Bluetooth)
- Frequency of Operation : 2412-2462MHz(11b/g/n)
5180-5825MHz(11a/n)
2402-2480MHz(Bluetooth)
- Bandwidth : 20MHz(11a/b/g/n20)
40MHz(11n40)
79MHz(Bluetooth)
- Channel Number : 1 to 11ch (11b/g/n),
36 to 64ch, 100 to 140ch, 149 to 165ch(11a/n),
0 to 78ch (Bluetooth)
- Antenna Type : Monopole Antenna
- Antenna Gain : 2.1dBi(2.4GHz), 2.4dBi(5GHz)
- Tx Output Power : 12dBm (Typ.) (11a/b/g/n), 0dBm (Typ.) (Bluetooth)
- Operating temperature range : -30 to 85 deg.C.
- DFS Related Operating Mode : Client without radar detection

(2) Maximum Oscillators Frequency

- Crystal oscillator : 38.4MHz

(3) Software Version

- LABTOOL (Exclude Adaptivity, DFS) : 1.0.7.38
- Iperf (Adaptivity, DFS) : 2.0.5

(4) Firmware Version

- : 1.0.7.40 (Exclude Adaptivity, DFS)
- : 14.66.35.p46 (Adaptivity, DFS)

(5) Interface and Provide Terminal

- SD_DATA 0~3 : SDIO data
- SD_CLK : SDIO Clock
- SD_CMD : SDIO Command
- VIO : Digital I/O Power Supply
- VDD3.3 : Power Supply
- PDn : Power Down
- PCM_CLK : PCM Clock
- PCM_SYNC : PCM Sync
- PCM_DOUT : PCM Data Output
- PCM_DIN : PCM Data Input
- GND : GND

(6) Rated Power Supply

- : DC 3.0 to 3.6V (Test for DC 3.3V)



3. TESTED SYSTEM

3.1. Reference Rule and Specification

(1) Reference Rule and Regulation	: FCC Rule Part 15 Subpart E, Unlicensed National Information Infrastructure Devices
	☒ Section 15.205 ☒ Section 15.207 ☒ Section 15.209 ☒ Section 15.407 (a)(1) ☒ Section 15.407 (a)(2) ☒ Section 15.407 (a)(3) ☒ Section 15.407 (b)(1) ☒ Section 15.407 (b)(2) ☒ Section 15.407 (b)(3) ☒ Section 15.407 (b)(4) ☒ Section 15.407 (e) ☐ Section 15.407 (h)(1) ☒ Section 15.407 (h)(2)
(2) Test Procedure	: ANSI C63.4-2009 KDB Publication No.789033 D02 General UNII Test Procedures New Rules v01 KDB Publication No. 905462 D02 UNII DFS Compliance Procedures New Rules v01r02

3.2. Date of Test

Receipt of Test Sample : 14 April 2015
Condition of Test Sample : ☒ Damage is not found on the set.
☐ Damage is found on the set. (Details are described in this report)

Test Completed on : 2 June 2015
Condition of Test Sample : ☒ Damage is not found on the set.
☐ Damage is found on the set. (Details are described in this report)

3.3. Deviation of Standard

☒ without deviation, ☐ with deviation (details are found inside of this report)

3.4. Test Mode

Test Item	Operating Mode	Test Frequency	Parameter Setting of Power
AC Power Line Conducted Emission	11a/11n-20 Tx	5180MHz / 5200MHz / 5240MHz 5260MHz / 5300MHz / 5320MHz 5500MHz / 5580MHz / 5700MHz 5745MHz / 5785MHz / 5825MHz	12
	11n-40 Tx	5190MHz / 5230MHz / 5270MHz 5310MHz / 5510MHz / 5550MHz 5670MHz / 5755MHz / 5795MHz	
6dB, 26dB Emission Bandwidth	11a/11n-20 Tx	5180MHz / 5200MHz / 5240MHz 5260MHz / 5300MHz / 5320MHz 5500MHz / 5580MHz / 5700MHz 5745MHz / 5785MHz / 5825MHz	12
	11n-40 Tx	5190MHz / 5230MHz / 5270MHz 5310MHz / 5510MHz / 5550MHz 5670MHz / 5755MHz / 5795MHz	
Maximum Conducted Output Power	11a/11n-20 Tx	5180MHz / 5200MHz / 5240MHz 5260MHz / 5300MHz / 5320MHz 5500MHz / 5580MHz / 5700MHz 5745MHz / 5785MHz / 5825MHz	12
	11n-40 Tx	5190MHz / 5230MHz / 5270MHz 5310MHz / 5510MHz / 5550MHz 5670MHz / 5755MHz / 5795MHz	
Peak Power Spectral Density	11a/11n-20 Tx	5180MHz / 5200MHz / 5240MHz 5260MHz / 5300MHz / 5320MHz 5500MHz / 5580MHz / 5700MHz 5745MHz / 5785MHz / 5825MHz	12
	11n-40 Tx	5190MHz / 5230MHz / 5270MHz 5310MHz / 5510MHz / 5550MHz 5670MHz / 5755MHz / 5795MHz	
Spurious Emissions / Restricted Band Edges (Radiated / Conducted) (*1)	11a/11n-20 Tx	5180MHz / 5200MHz / 5240MHz 5260MHz / 5300MHz / 5320MHz 5500MHz / 5580MHz / 5700MHz 5745MHz / 5785MHz / 5825MHz	12
	11n-40 Tx	5190MHz / 5230MHz / 5270MHz 5310MHz / 5510MHz / 5550MHz 5670MHz / 5755MHz / 5795MHz	
In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time	11n-40 Tx	5550MHz	-

Worst Data Rate/MCS		
Operating Mode	Data Rate/MCS	Worst Data Rate/MCS
11a	6-54 Mbps	54 Mbps
11n-20	MCS 0-7	MCS 0
11n-40	MCS 0-7	MCS 6

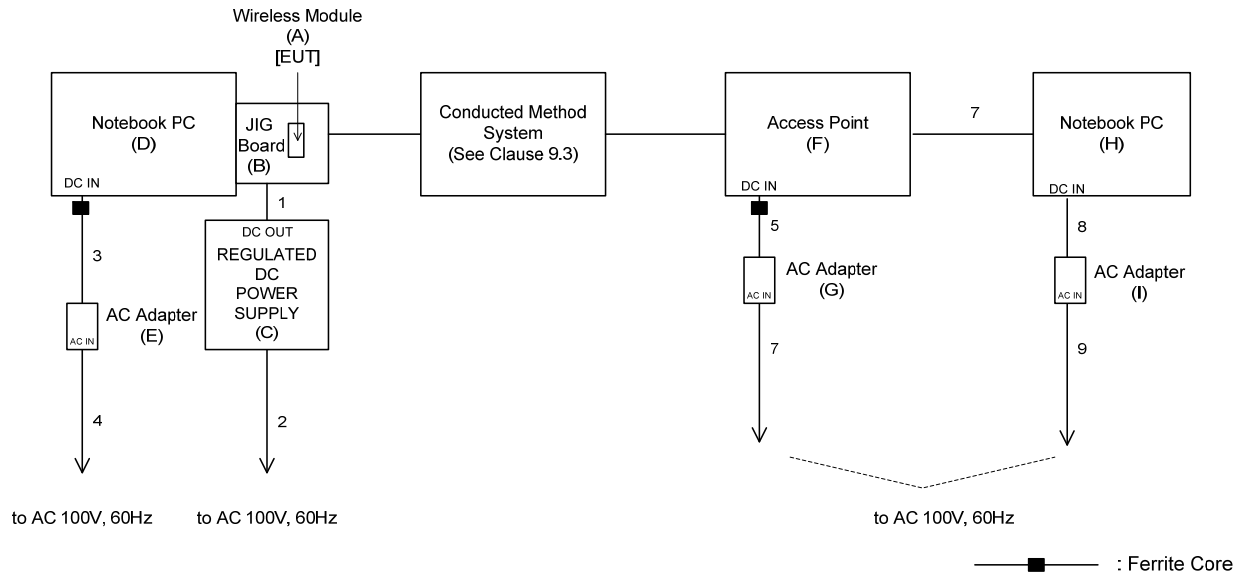
[Note]

- (1) The test program was prepared by the applicant.
- (2) Parameter Setting of Power was Maximum Power Setting, and it was determined by the applicant.
- (3) The spurious emissions data of the each modes were checked in three orthogonal axes, and the data of the producing the maximum emissions were reported at each frequency.
- (4) Worst Data Rate/MCS was determined by the check of RF output power.
- (5) AC Power Line Conducted Emission were checked in each modes and test frequencies, and the final measurement was performed in 11a 5180MHz.

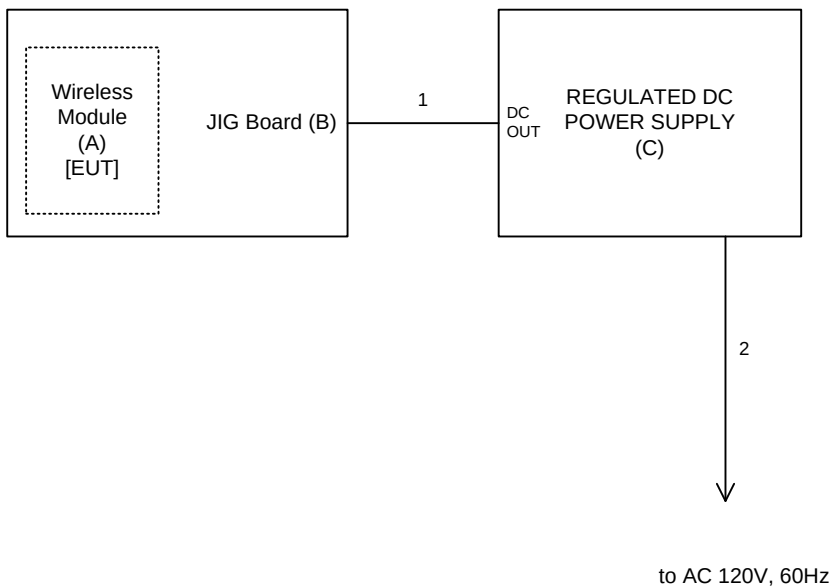
(*1) Radiated measurement : above 30MHz, Conducted measurement : below 30MHz.

3.5. Block Diagram of TEST System

(1) DFS



(2) Excluding the DFS test



3.6. List of Test System

No.	Device Name	Model Number	Serial Number	Trade Name	Note
A	Wireless Module	WYSAAVDXB-E	01	EPSON	EUT
B	JIG Board	-	-	-	
C	REGULATED DC POWER SUPPLY	PAB18-3A	46023104	KIKUSUI	
D	Notebook PC	PP04X	CN-0JF242-48643	DELL	
E	AC Adapter	LA65NS0-00	CN-0DF263-71615-676-5E15	DELL	
F	Access Point	AIR-SAP2602E	FGL1812X4LX	cisco	FCC ID: LDK102080
G	AC Adapter	AA25480L	ALD0628G18W	cisco	
H	Notebook PC	PALX190DK	45117453H	TOSHIBA	
I	AC Adapter	ADP-60FB	0141 J 0011358	TOSHIBA	

[Note]

(1): Option of EUT

3.7. List of Cables

No.	Cable Name	Shielded (Y/N)	Length (m)	Note
1	DC Power Cord	N	1.8	
2	AC Power Cord	N	1.0	(1), (4)
3	DC Power Cord	N	1.8	with ferrite core (1-turn ×1)
4	AC Power Cord	N	1.8	(4)
5	DC Power Cord	N	1.8	with ferrite core (1-turn ×1)
6	AC Power Cord	N	2.4	(3)
7	LAN Cable	N	1.0	
8	DC Power Cord	N	1.9	
9	AC Power Cord	N	1.8	(4)

[Note]

(1): Undetachable cable type

(2): Accessories cable of EUT

(3): 3-wires type, earth plug is grounded.

(4): 2-wires type

4. AC POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1. Test Procedure

- (1) The EUT is placed in accordance with ANSI C63.4.
- (2) The EUT is activated as to simulate a worst data rate.
- (3) Connect the EUT's AC power cord to one Line Impedance Stabilization Network (LISN).
- (4) Any other power cord of other equipment is connected to a LISN different from the LISN used for the EUT.
- (5) Connect the spectrum analyzer (*1) to the measuring port of the LISN for the EUT, using a calibrated coaxial cable.
- (6) To find out the maximum emission of the configuration of the EUT System, the operation mode and the position of the cables are changed, then preliminary conducted measurement are performed.
- (7) The spectrums are scanned from 150kHz to 30MHz and collect the six highest emissions minimum on the spectrum analyzer relative to the limits in the whole range.
- (8) The test receiver (*2) is connected to the LISN for the EUT, and the six highest emissions minimum recorded above are measured.

[Note]

(*1) Spectrum Analyzer Set Up Conditions

Frequency range	: 150kHz – 30MHz
Resolution bandwidth	: 10kHz
Video bandwidth	: 1MHz
Detector	: Peak

(*2) Test Receiver Set Up Conditions

Detector function	: Quasi – Peak / Average (if necessary)
IF bandwidth	: 10kHz

4.2. Test Software List

KEC No.	Software Name	Version	Manufacture
TF-088	TEPTO Conducted emission automatic measurement	2.3.0320	TSJ
TF-110	Junction sheet	1.6H	KEC



4.3. Test Results

11a 5180MHz

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading				Maximum RF Voltage		Limit		Margin for Limit	
		Q-Peak		Average		Q-Peak (dBμV)	Average (dBμV)	Q-Peak (dBμV)	Average (dBμV)	Q-Peak (dB)	Average (dB)
		Va (dBμV)	Vb (dBμV)	Va (dBμV)	Vb (dBμV)						
0.150	10.4	<0.0	<0.0	<0.0	<0.0	<10.4	<10.4	66.0	56.0	>55.6	>45.6
0.203	10.3	18.0	17.2	14.3	13.9	28.3	24.6	63.5	53.5	35.2	28.9
0.340	10.2	4.8	3.2	1.6	0.1	15.0	11.8	59.2	49.2	44.2	37.4
5.000	10.4	<0.0	<0.0	<0.0	<0.0	<10.4	<10.4	56.0	46.0	>45.6	>35.6
20.000	11.0	<0.0	<0.0	<0.0	<0.0	<11.0	<11.0	60.0	50.0	>49.0	>39.0
30.000	11.4	<0.0	<0.0	<0.0	<0.0	<11.4	<11.4	60.0	50.0	>48.6	>38.6

[Note]

Correction Factor includes the LISN Factor, cable loss and attenuator loss.

[Calculation method]

Maximum RF Voltage (dBμV)

= Meter Reading (at maximum level of Va or Vb) (dBμV) + Correction Factor (dB)

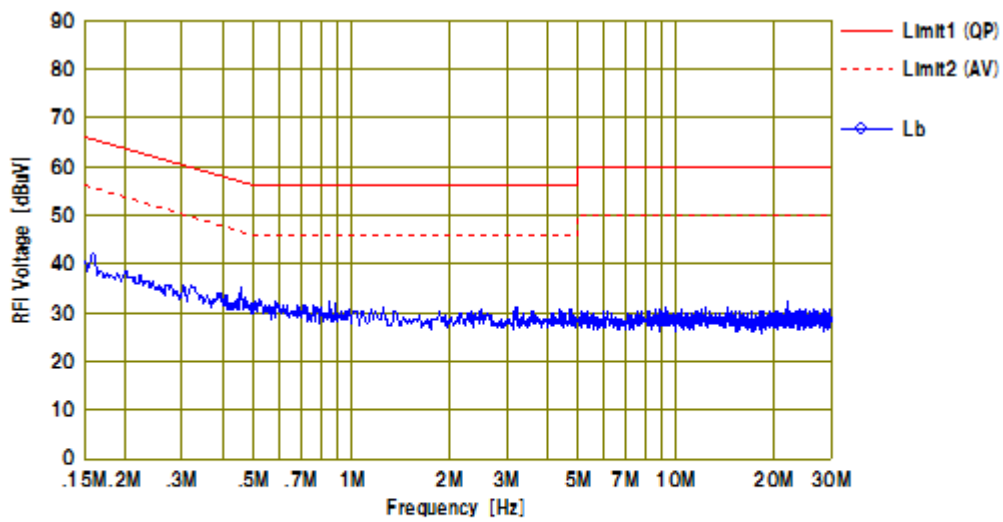
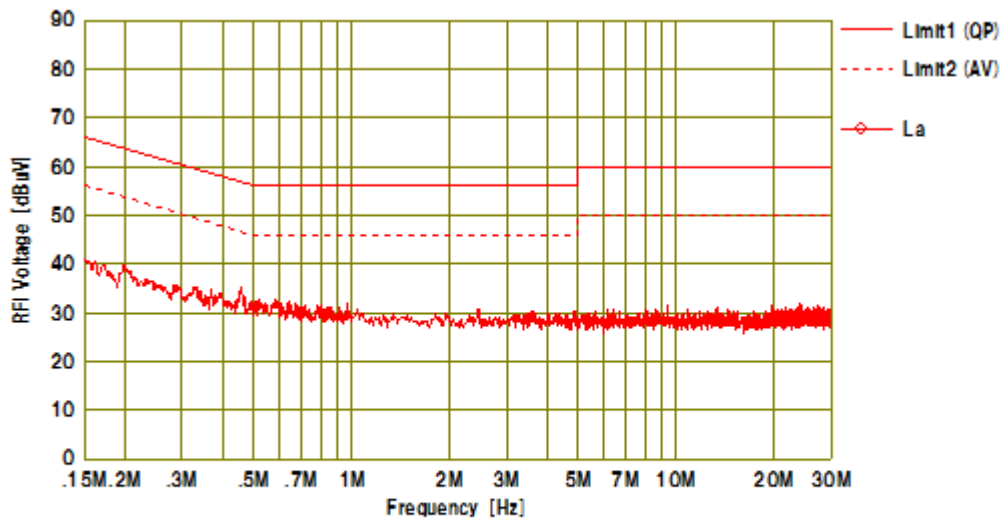
At the next page, the result of exploratory conducted emission measurement by using the spectrum analyzer is shown by the spectrum chart.

Tested Date	Environment	
	Temperature	Humidity
4 May 2015	24 °C	40 %



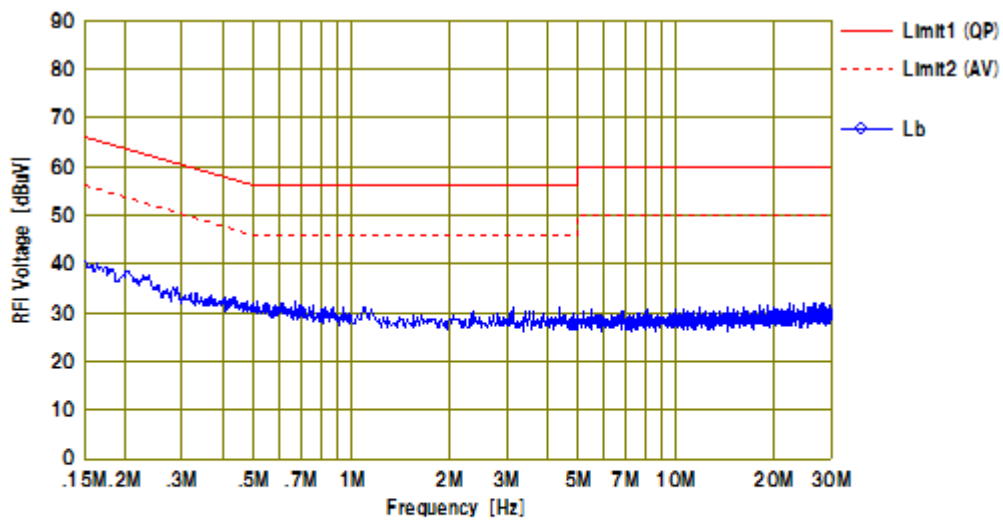
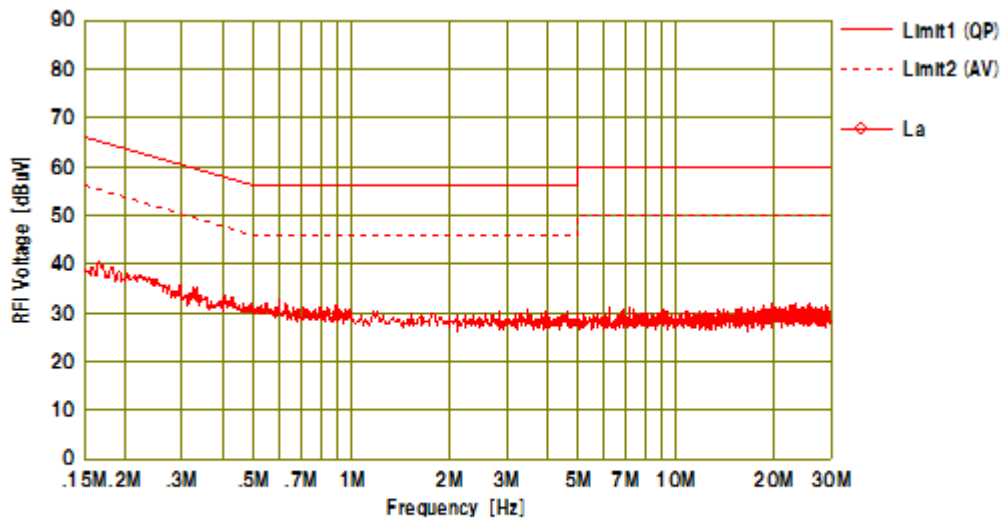
Test Results in Graph

11a 5180MHz



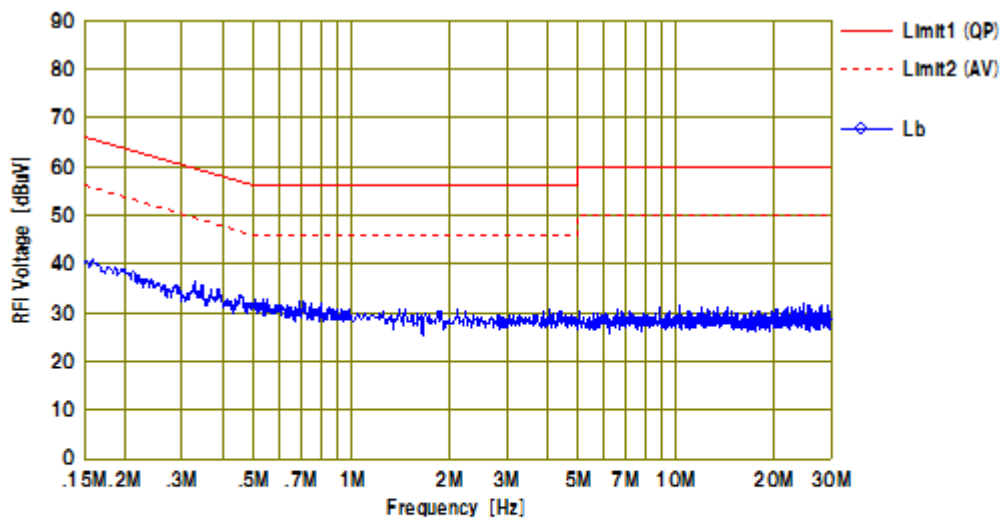
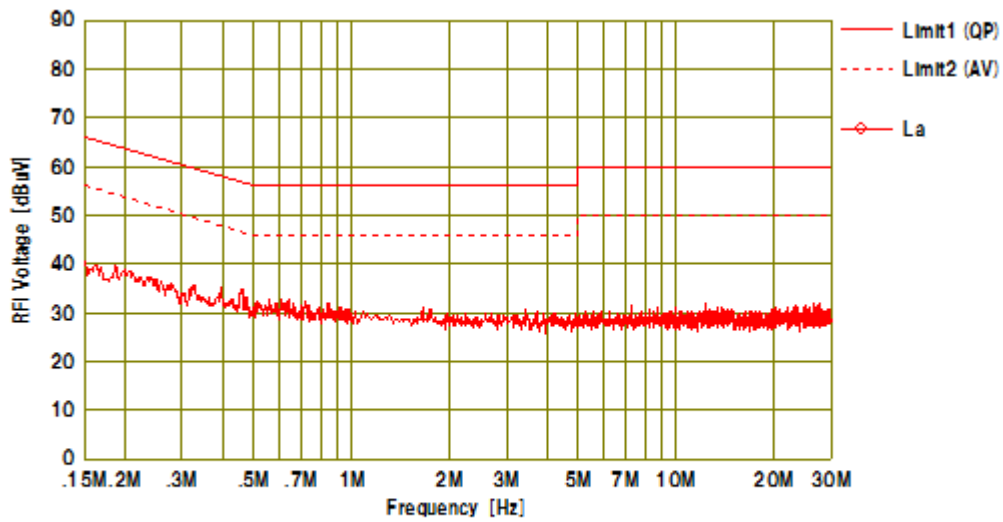


11a 5200MHz



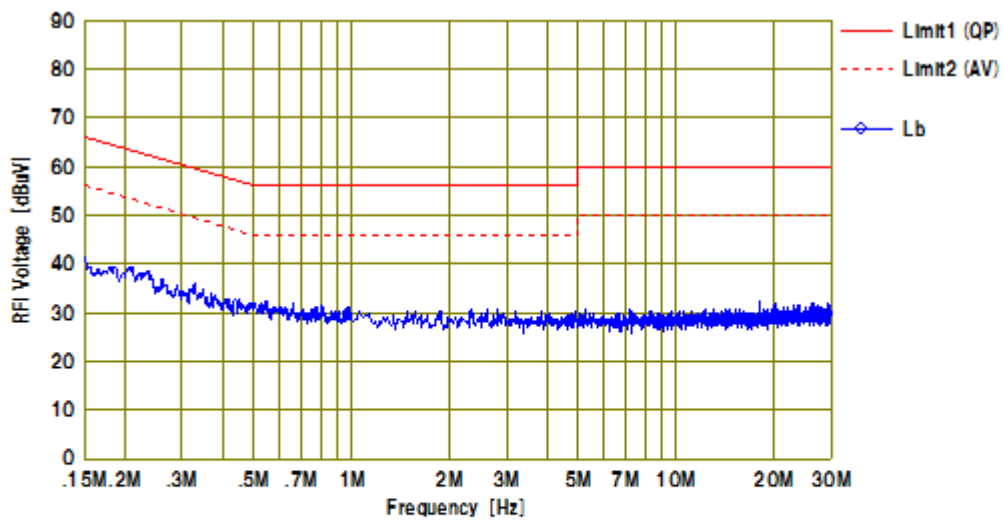
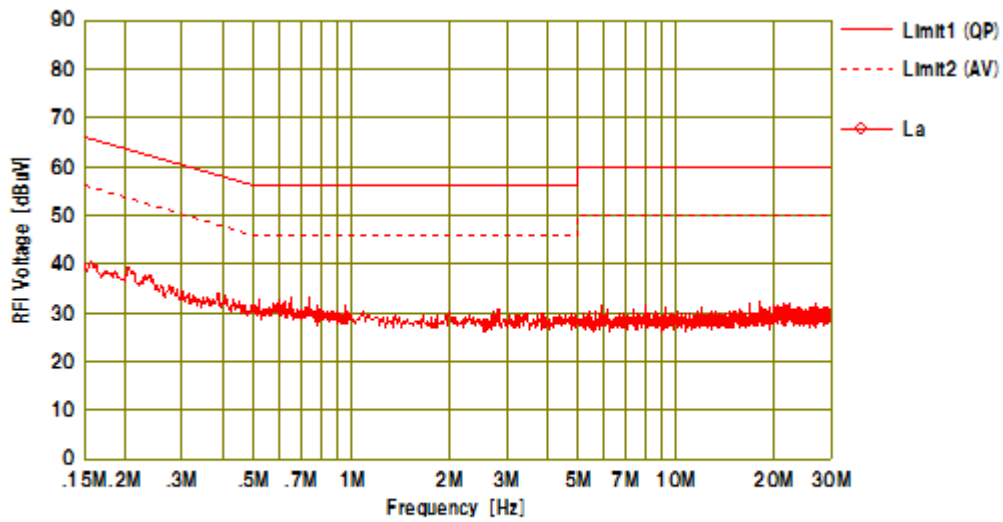


11a 5240MHz



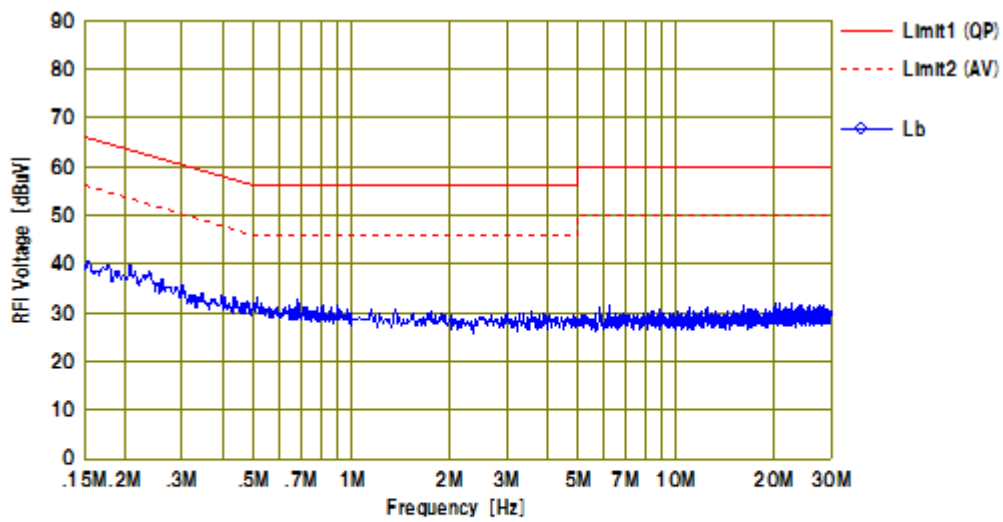
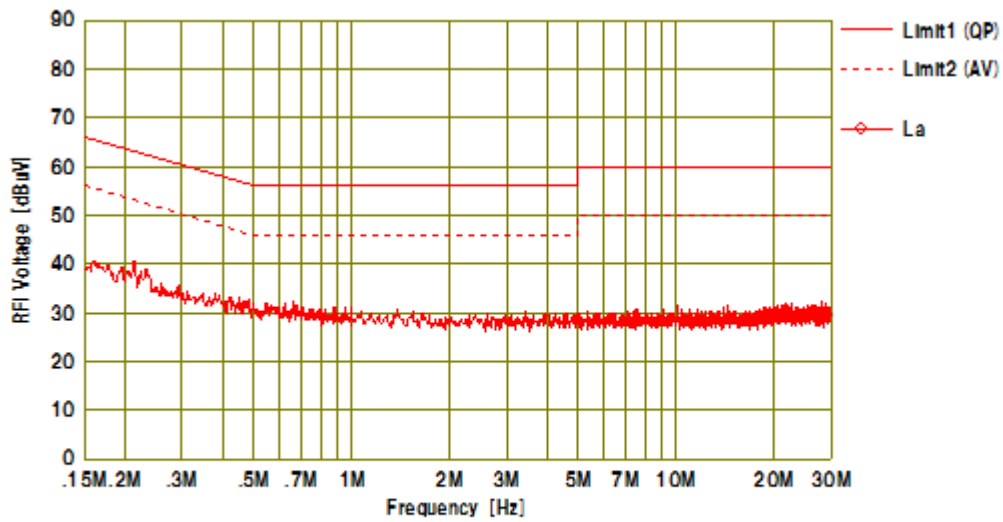


11a 5260MHz



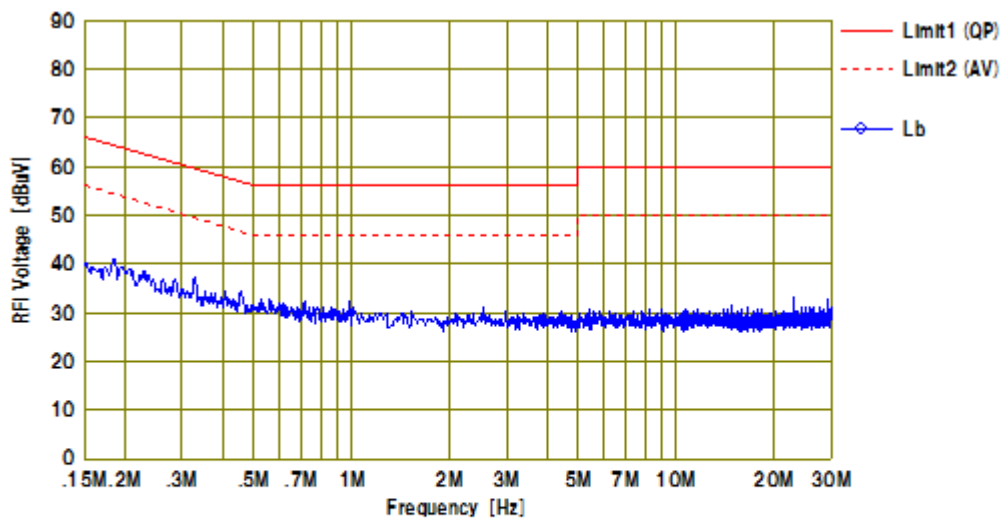
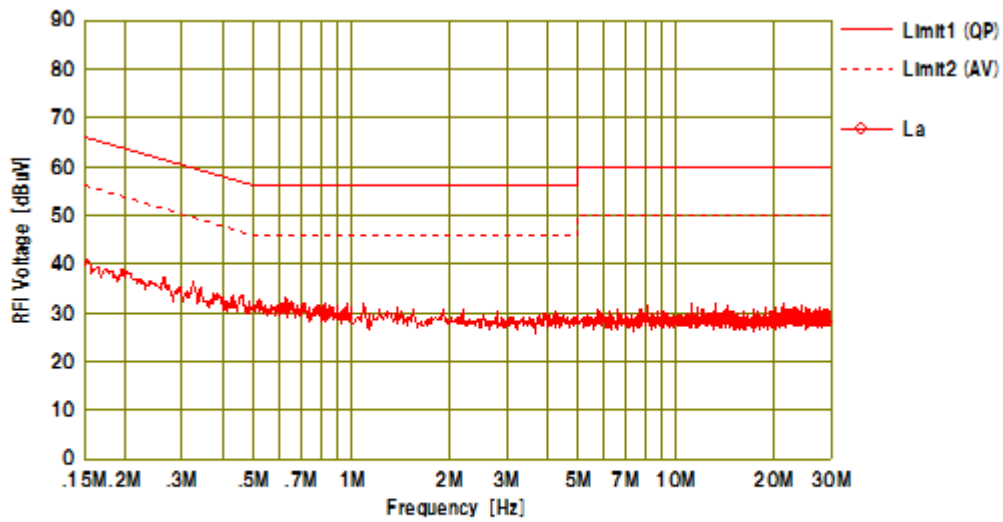


11a 5300MHz



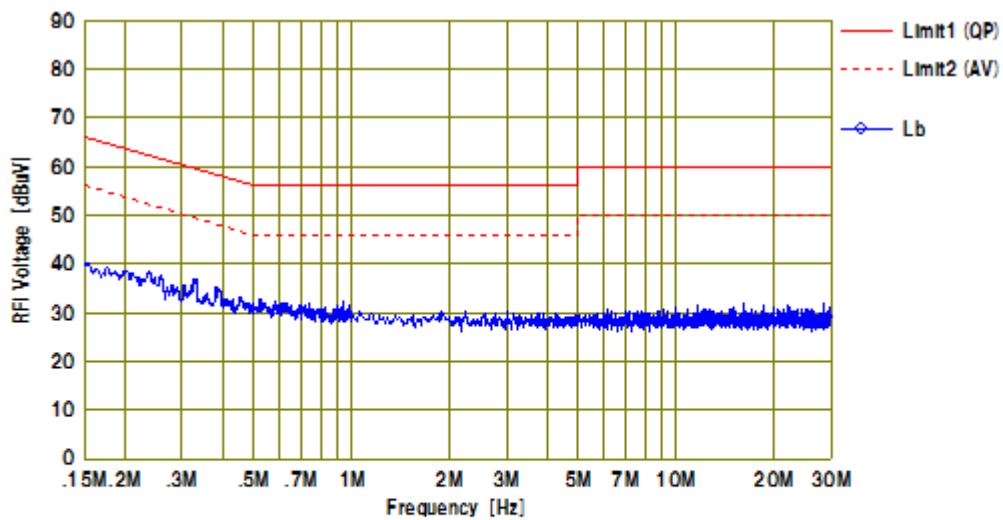
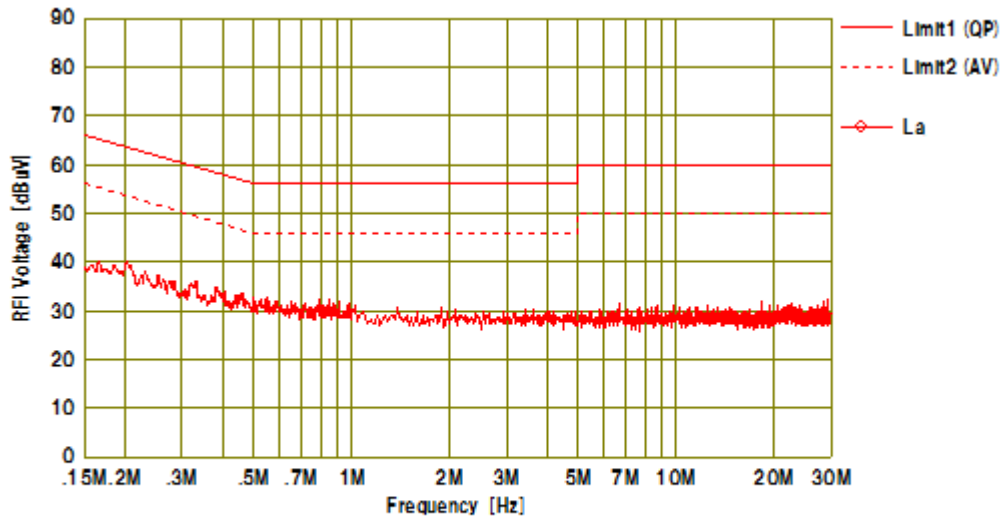


11a 5320MHz



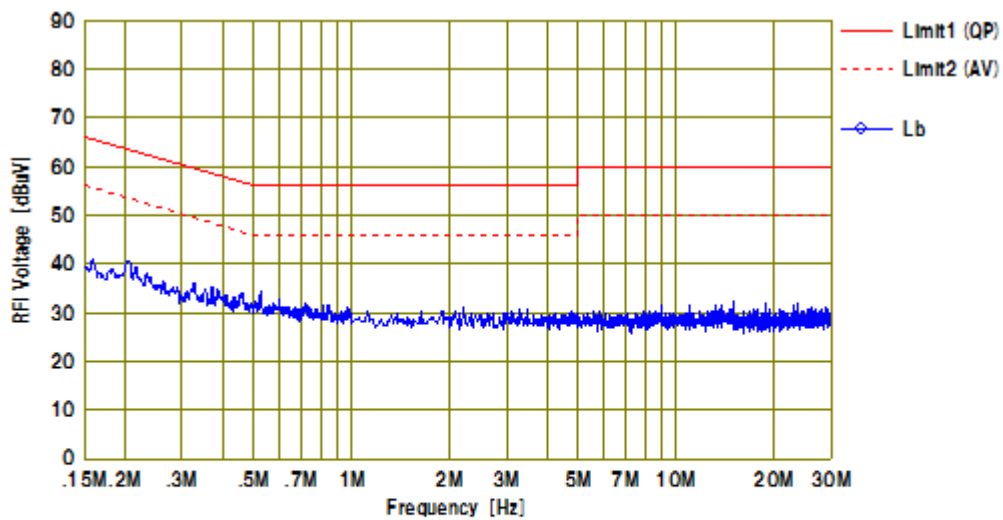
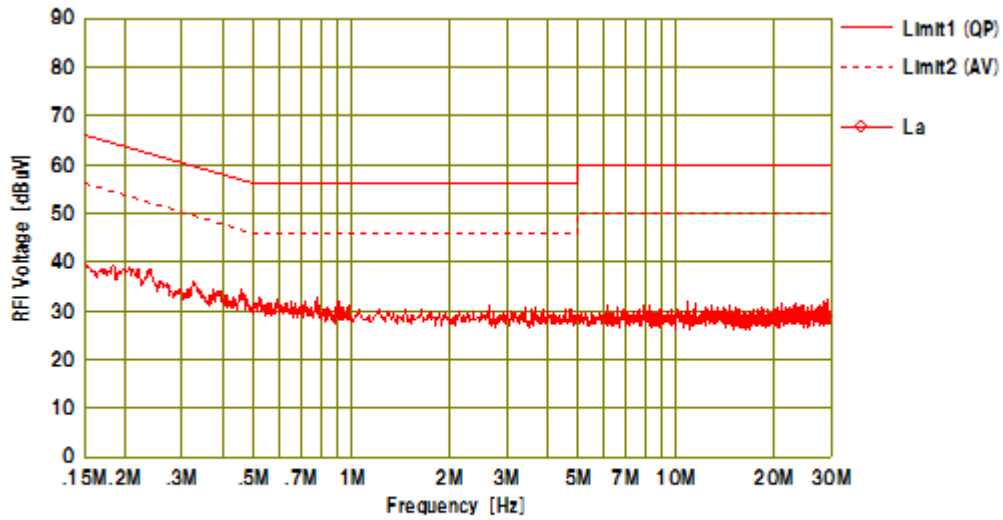


11a 5500MHz



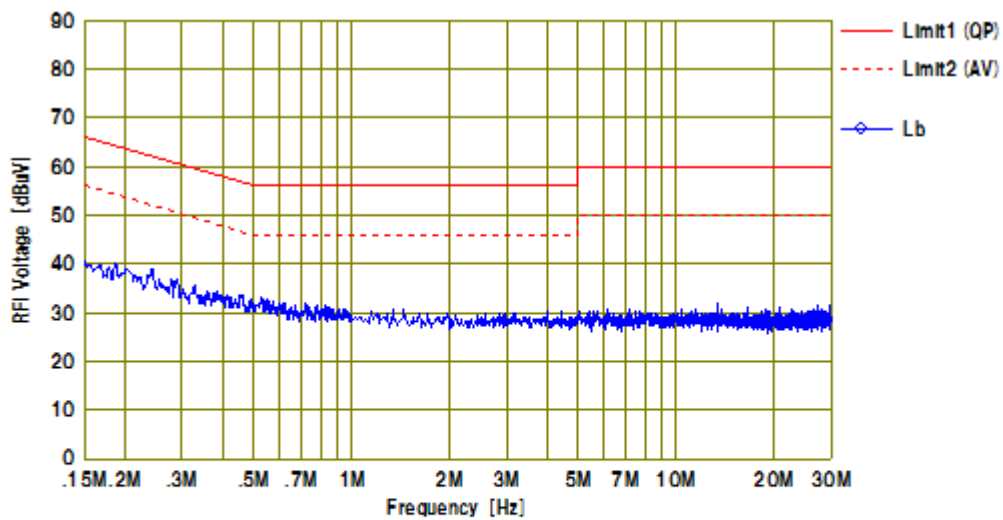
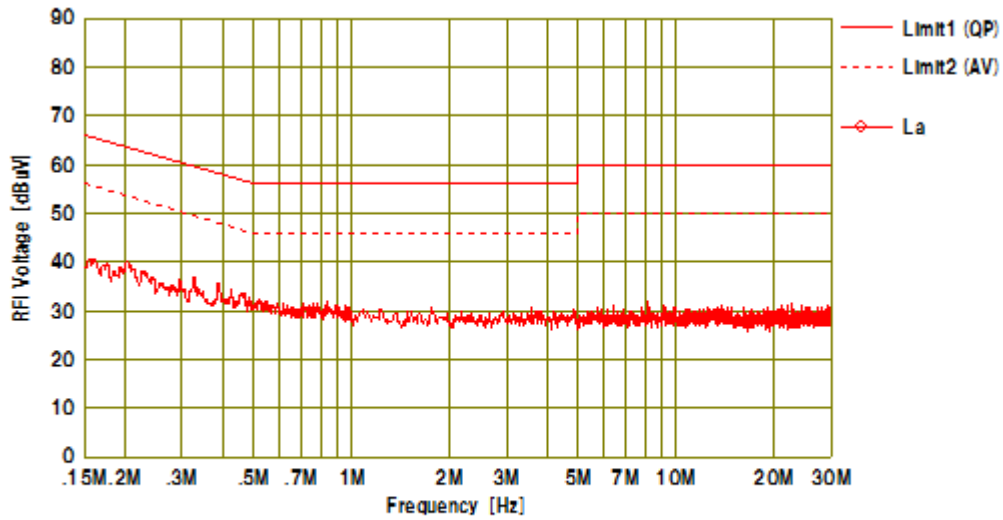


11a 5580MHz



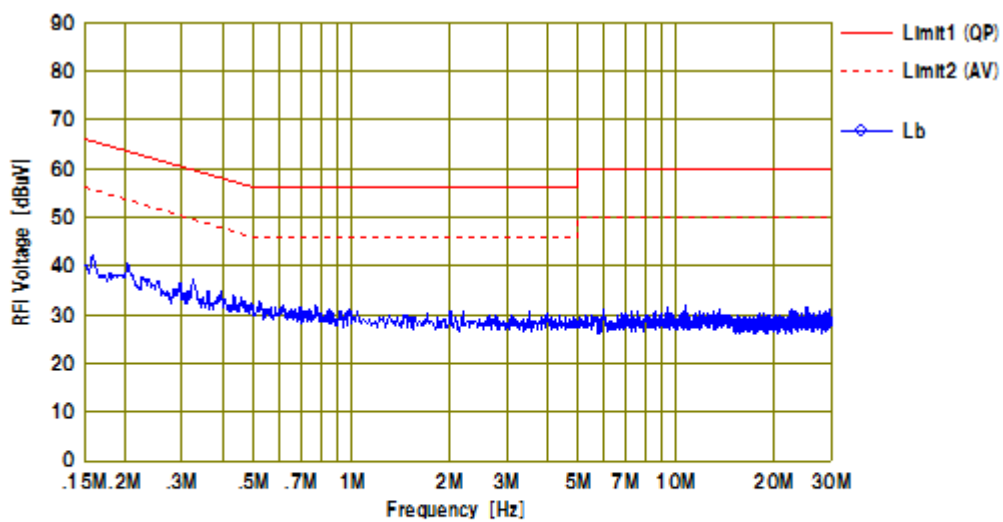
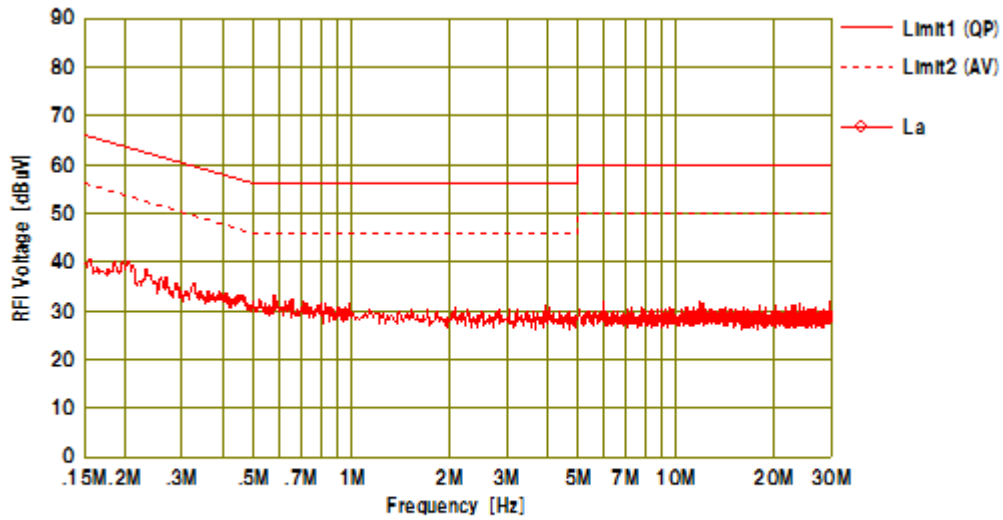


11a 5700MHz



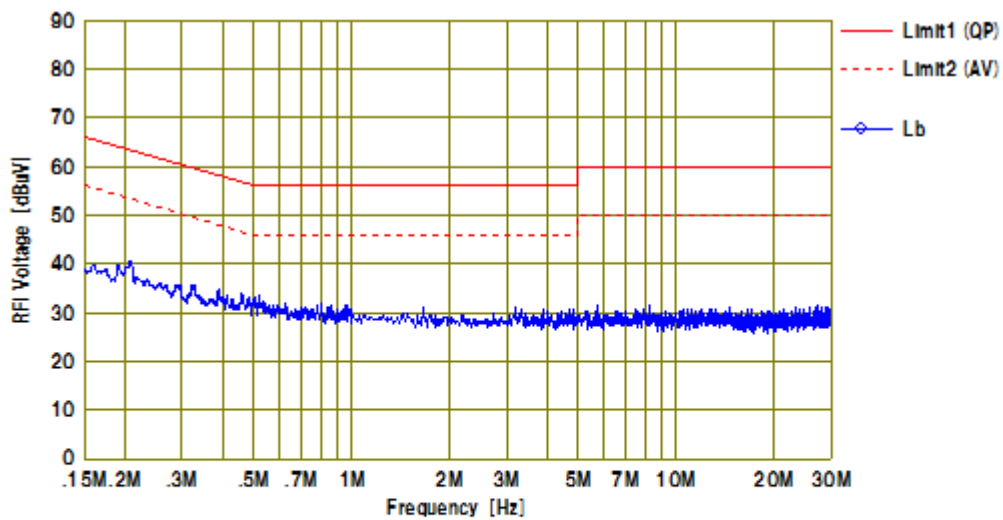
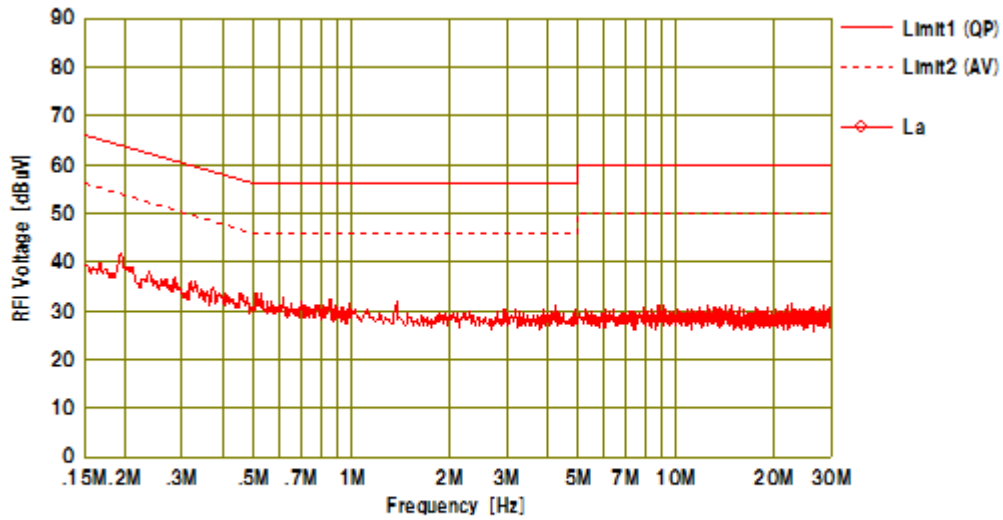


11a 5745 MHz



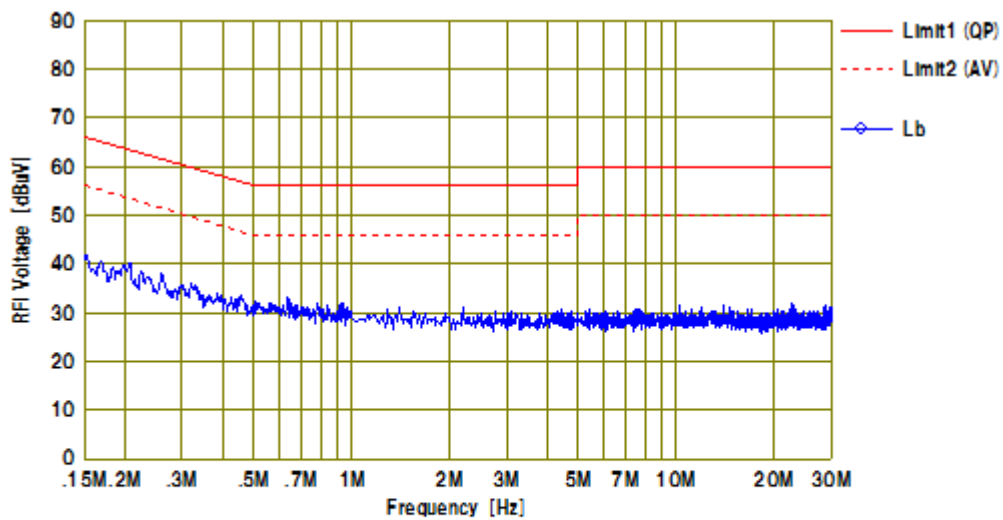
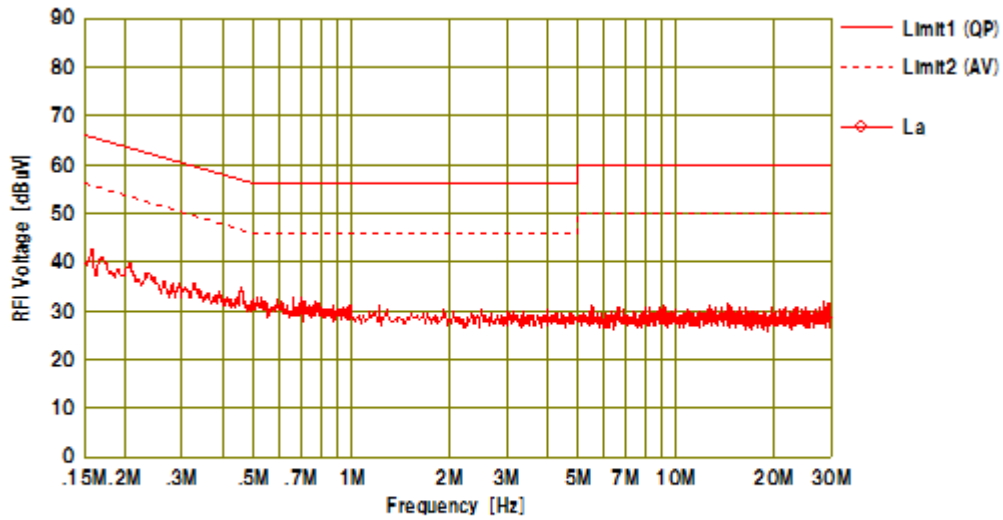


11a 5785MHz



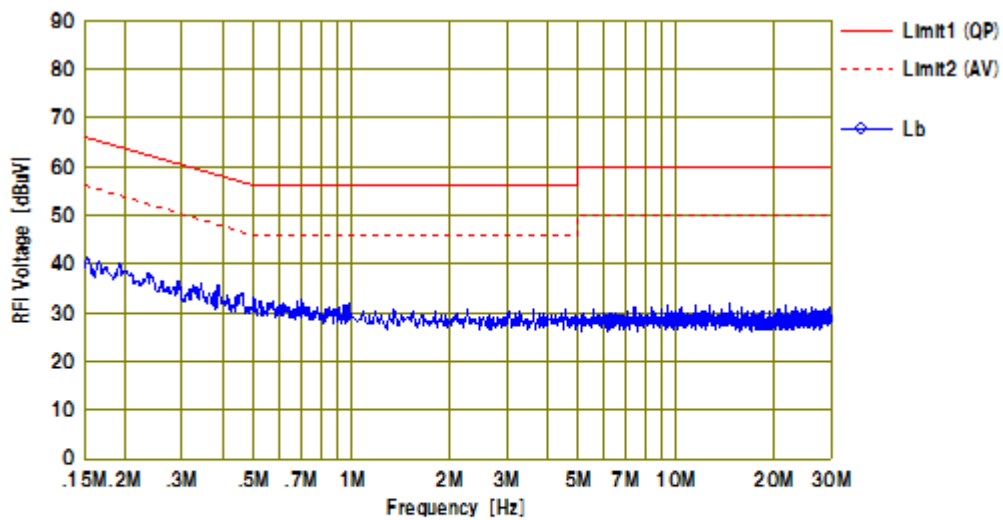
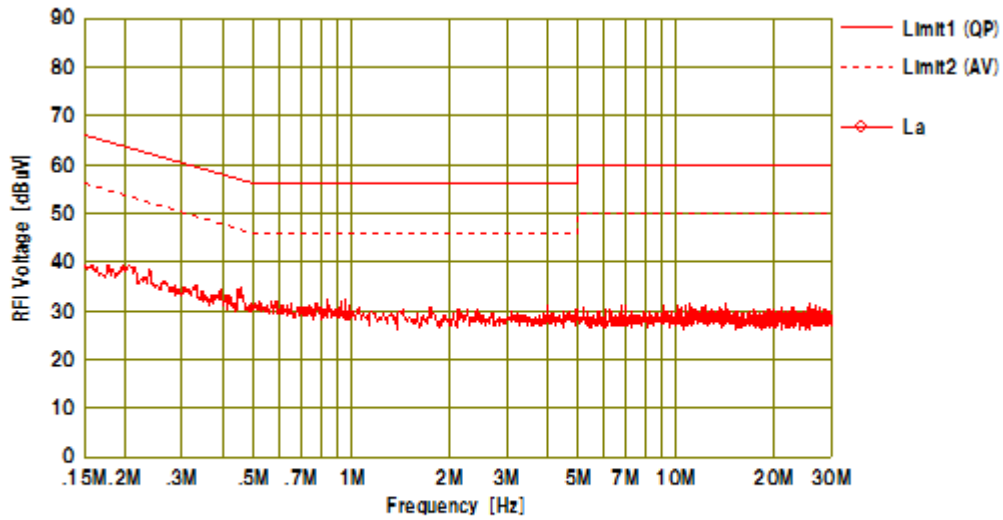


11a 5825MHz



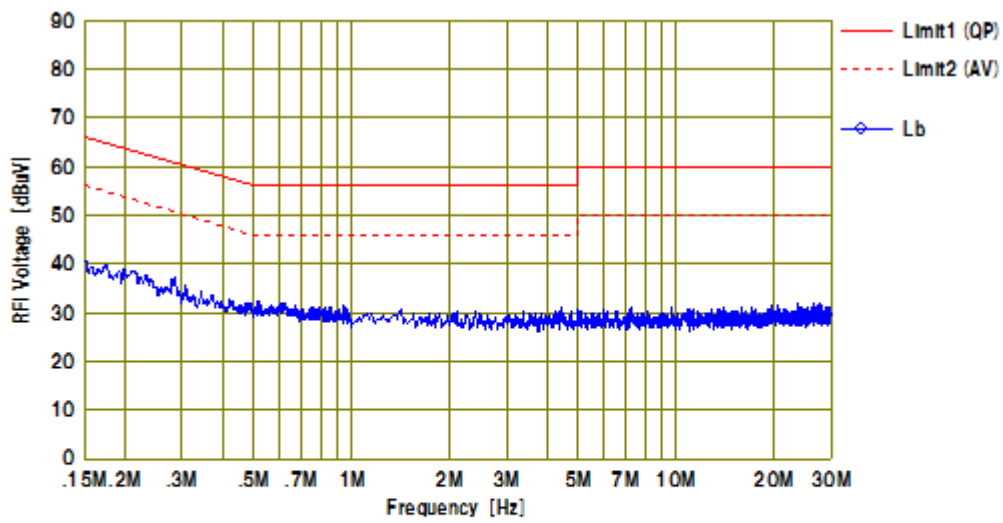
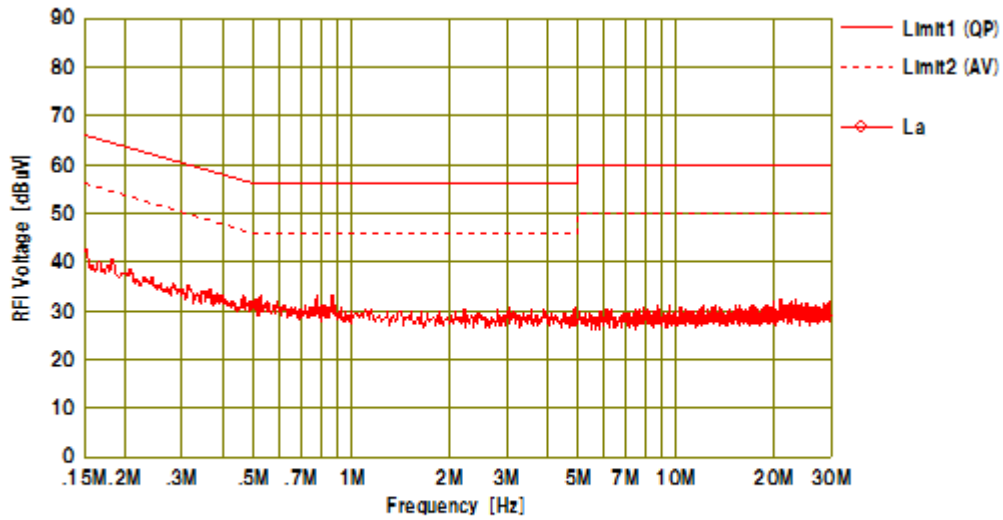


11n-20 5180MHz

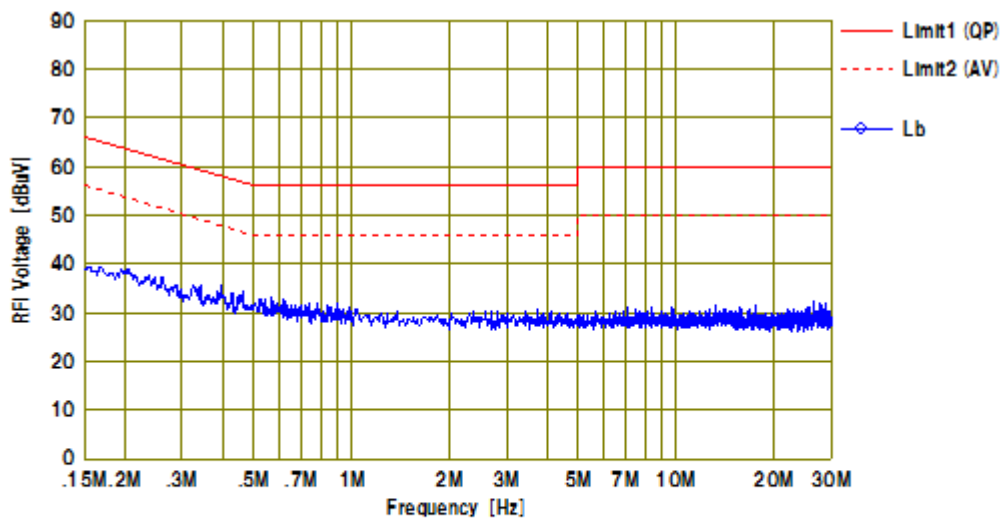
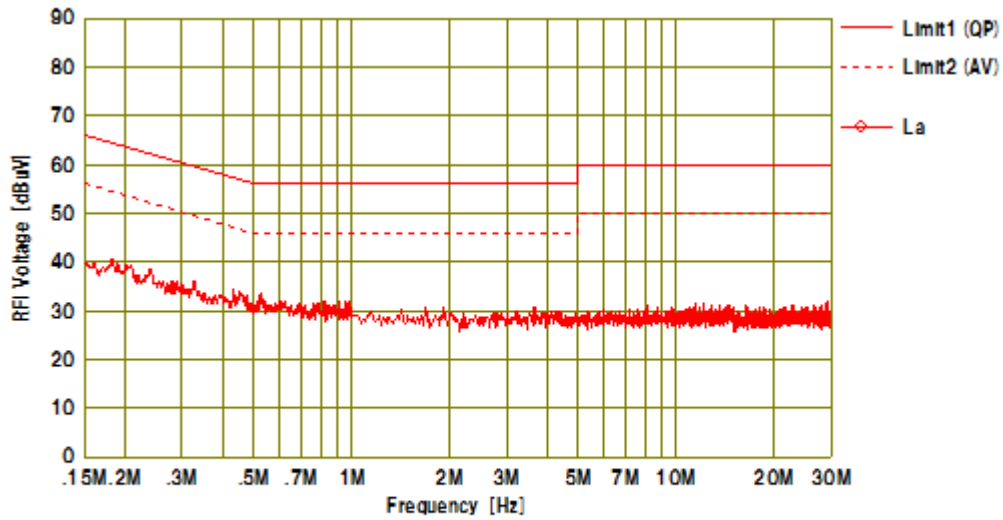




11n-20 5200MHz

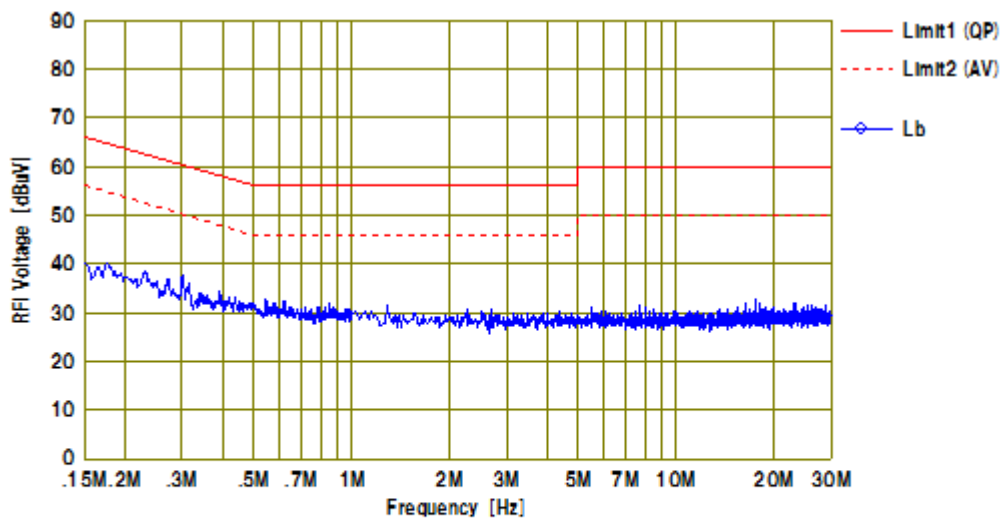
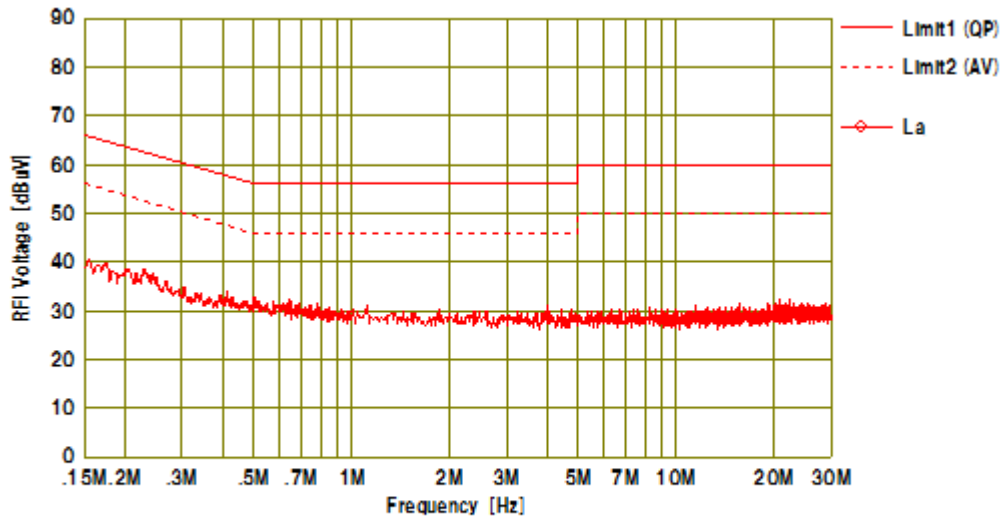


11n-20 5240MHz



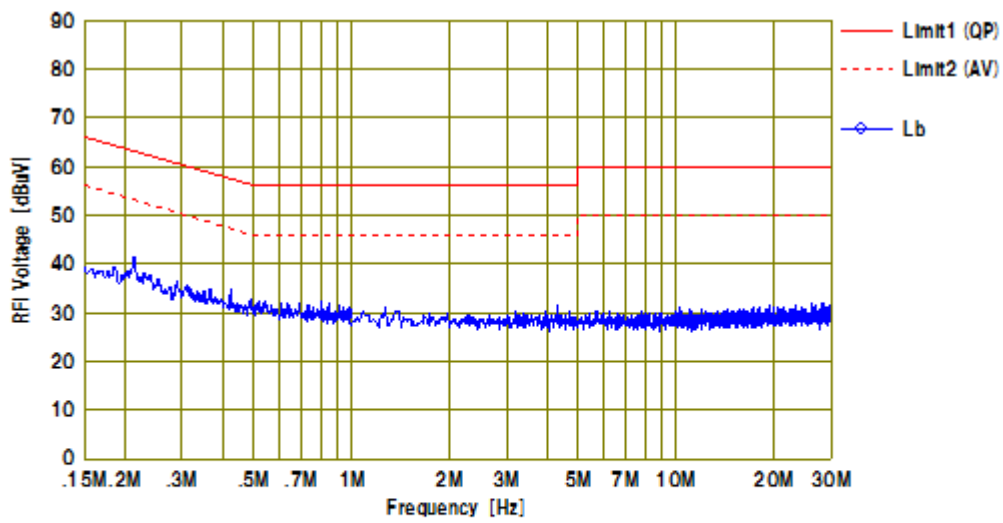
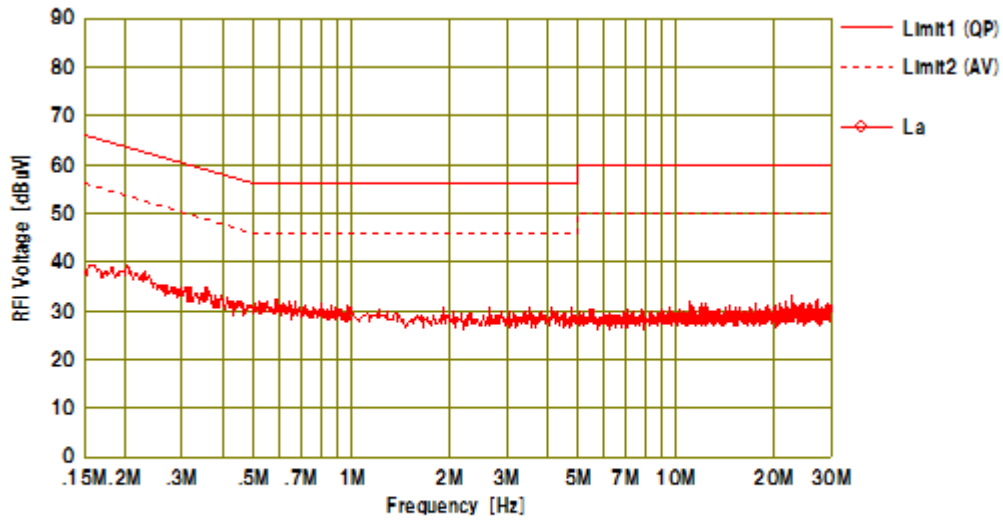


11n-20 5260MHz



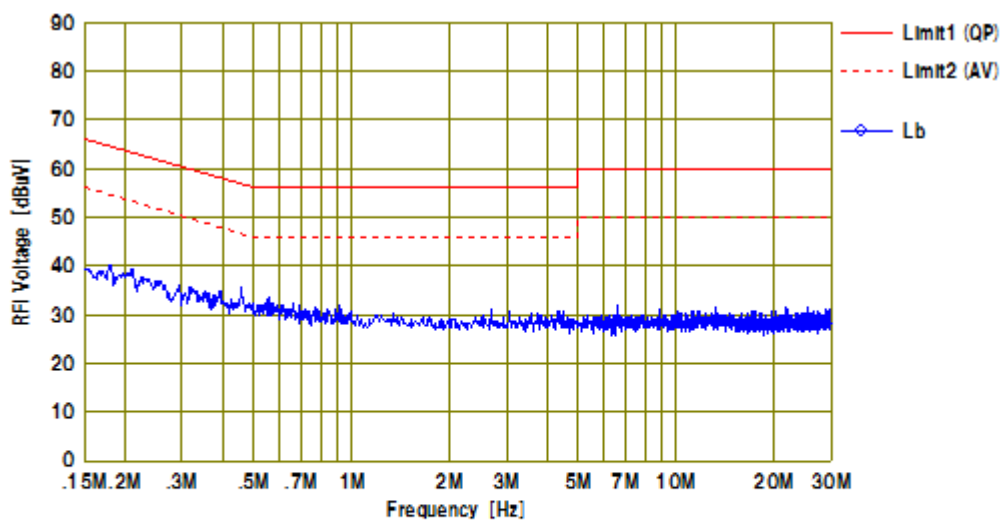
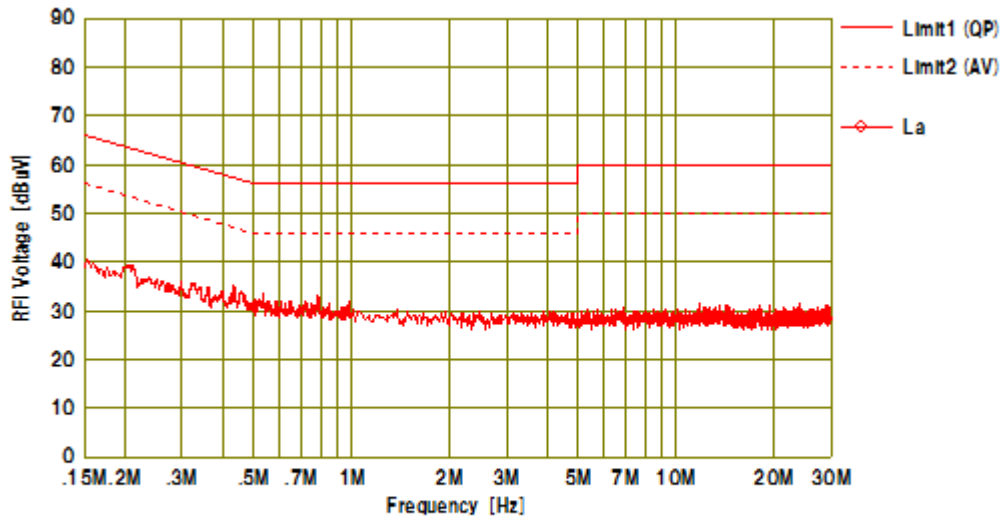


11n-20 5300MHz



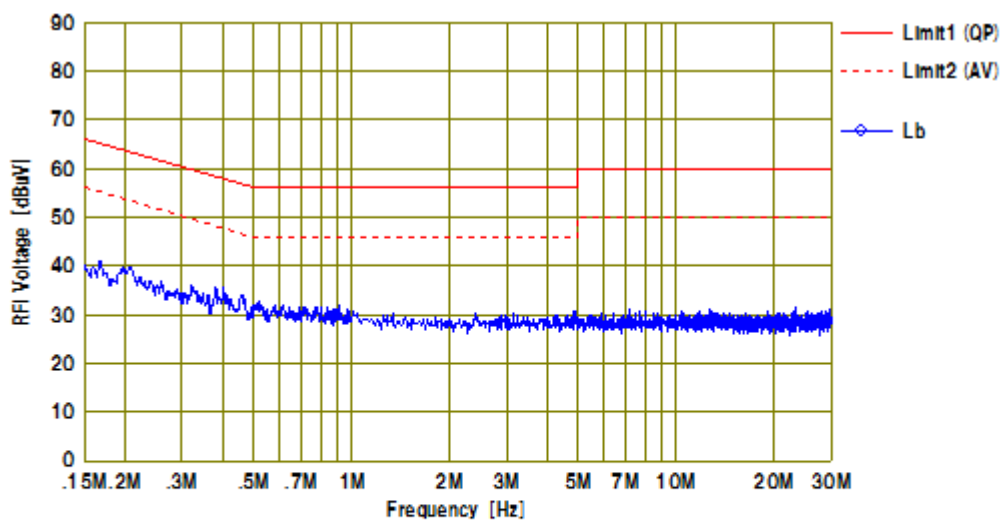
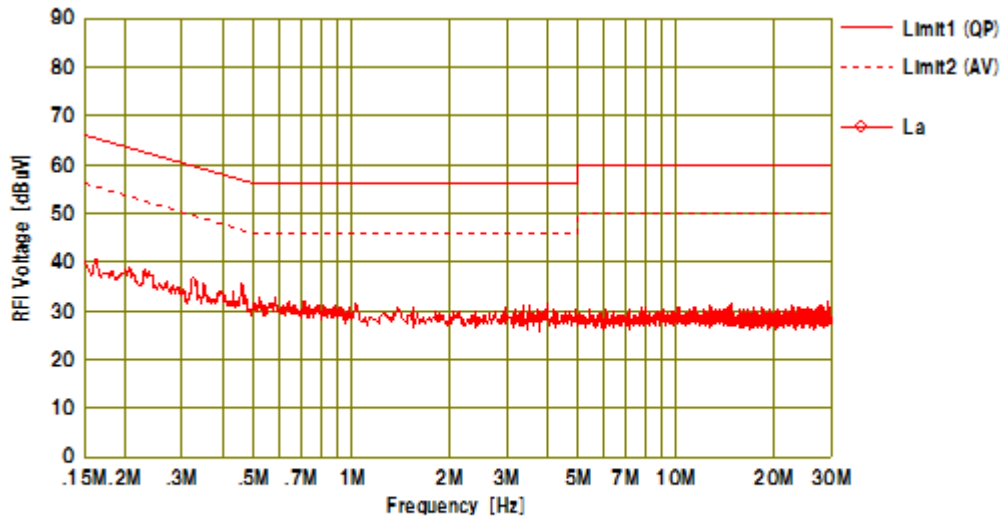


11n-20 5320MHz



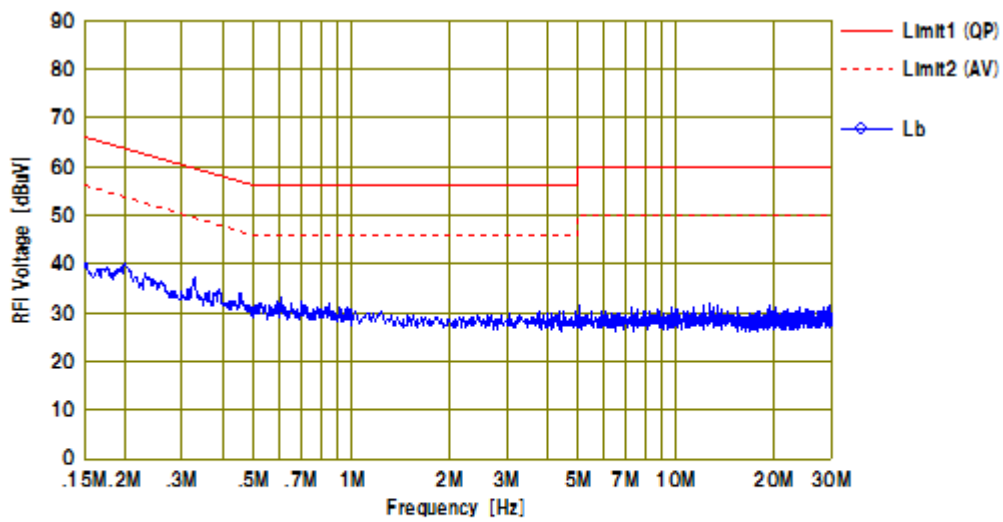
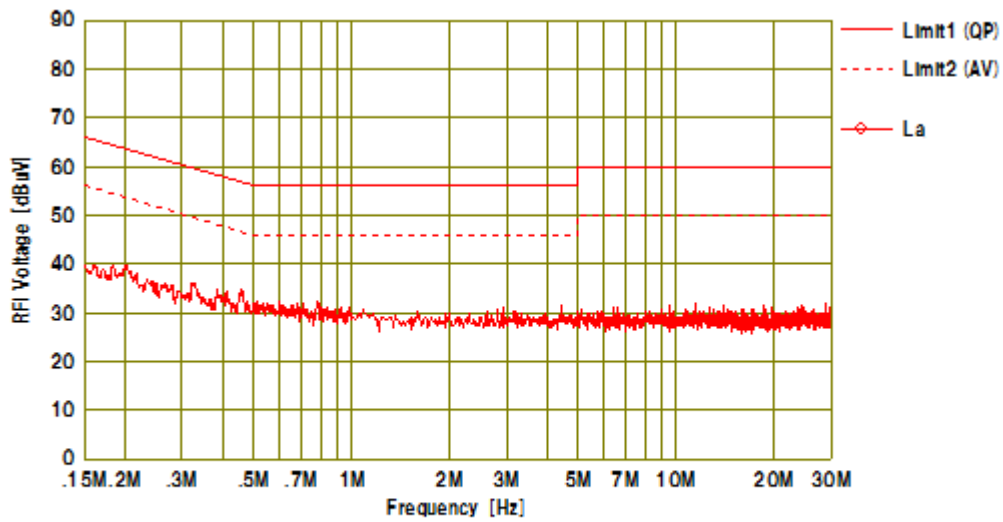


11n-20 5500MHz



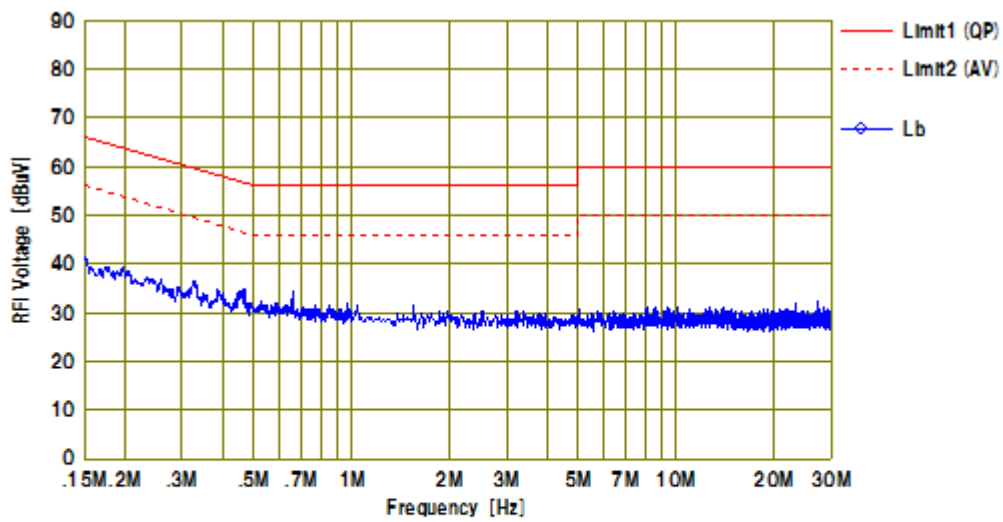
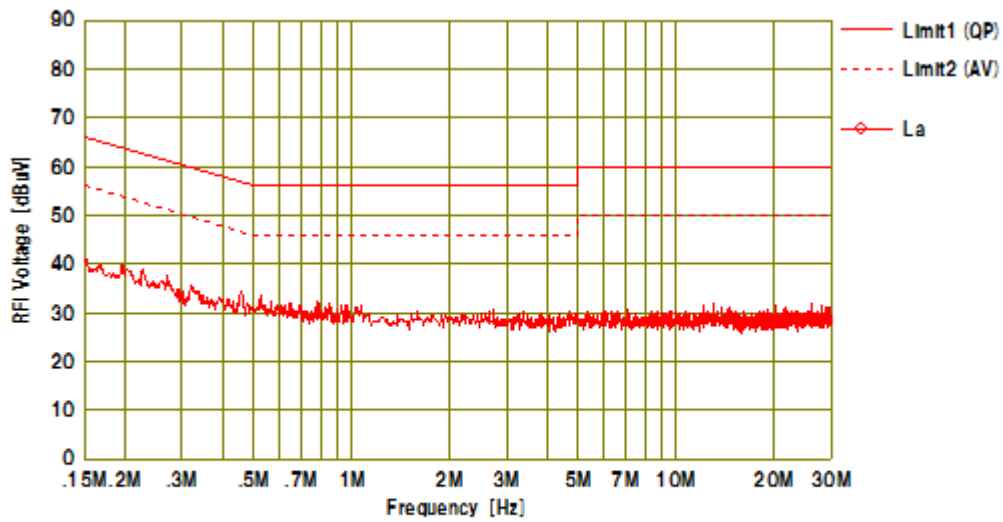


11n-20 5580MHz

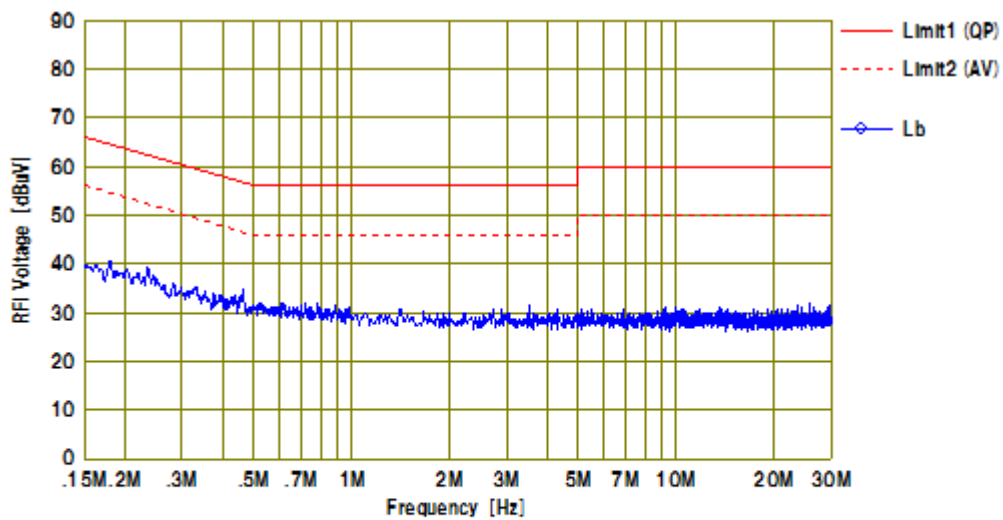
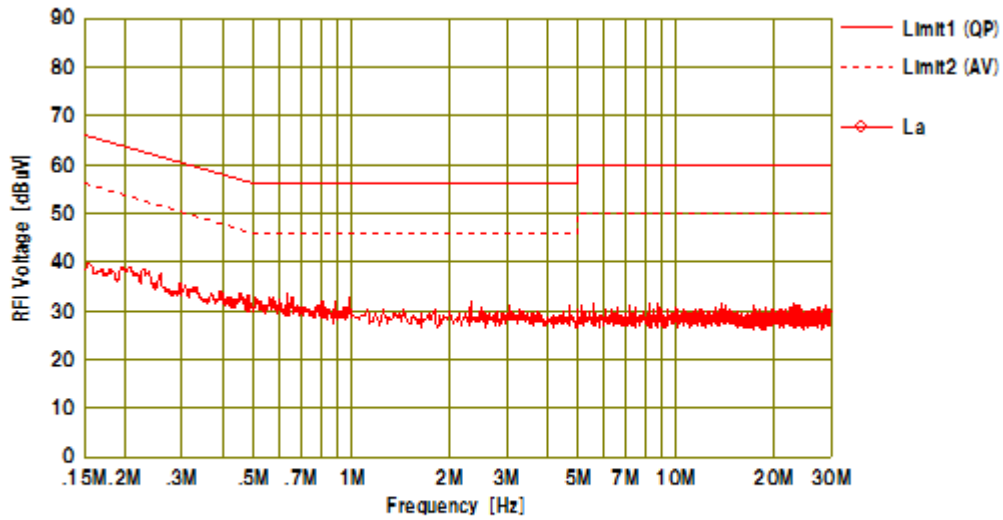




11n-20 5700MHz

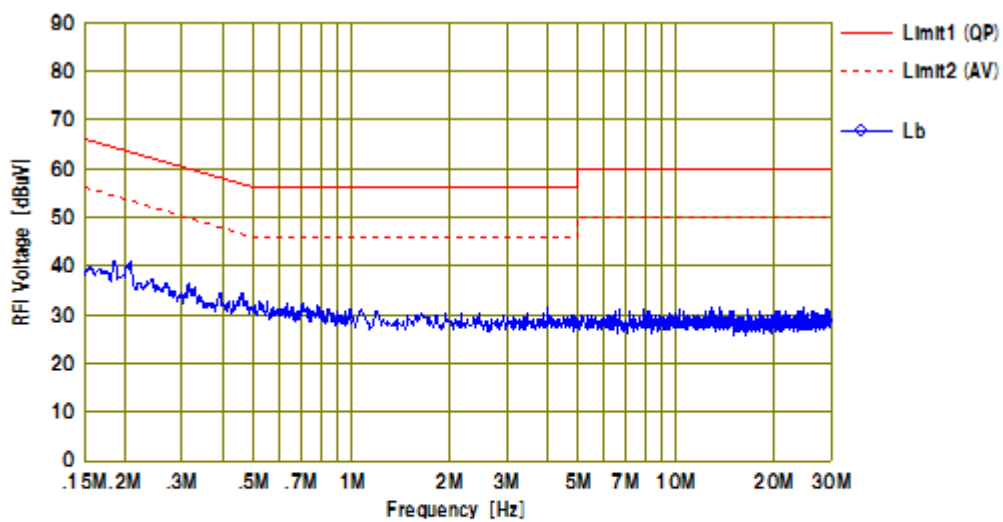
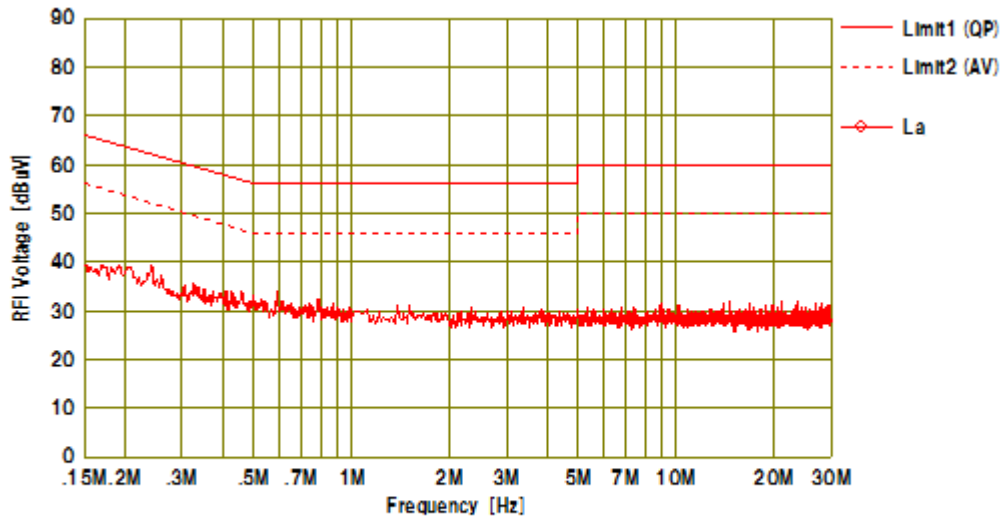


11n-20 5745MHz

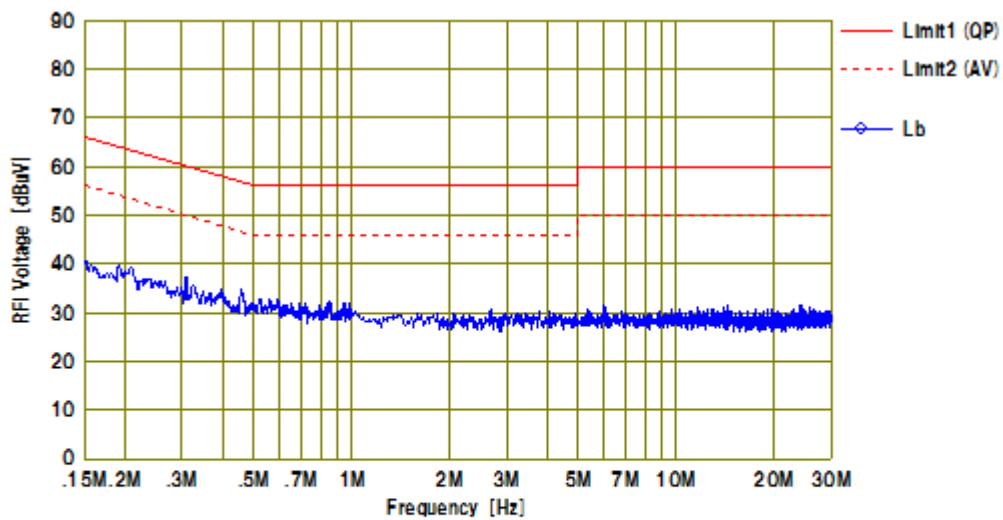
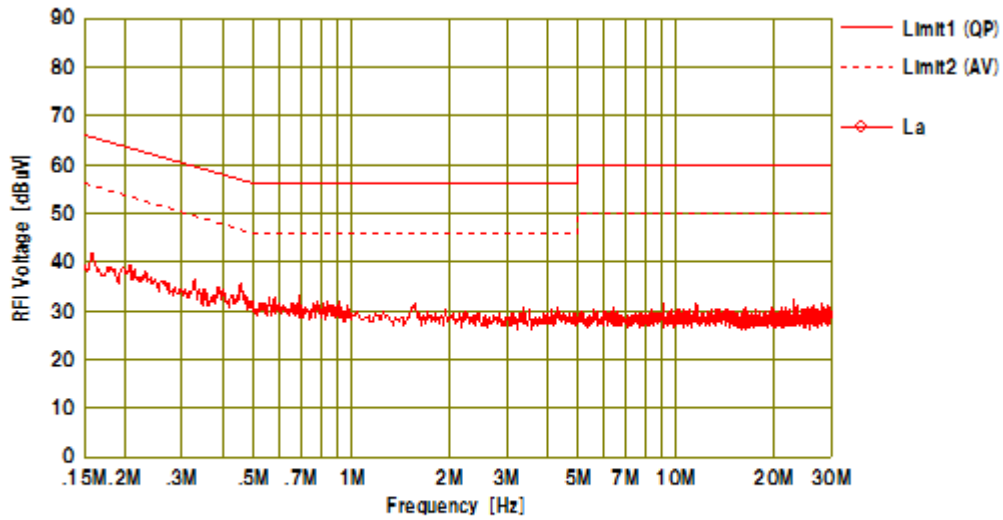




11n-20 5785MHz

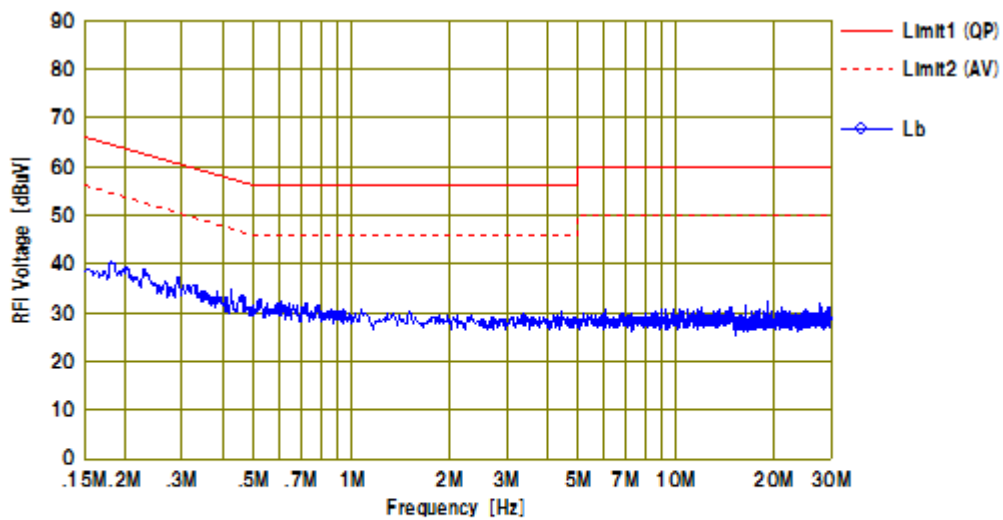
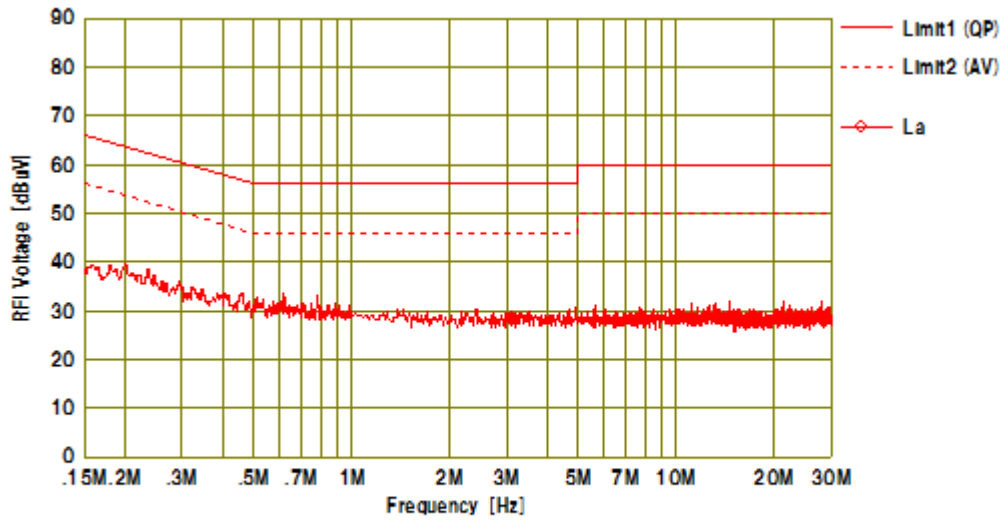


11n-20 5825MHz



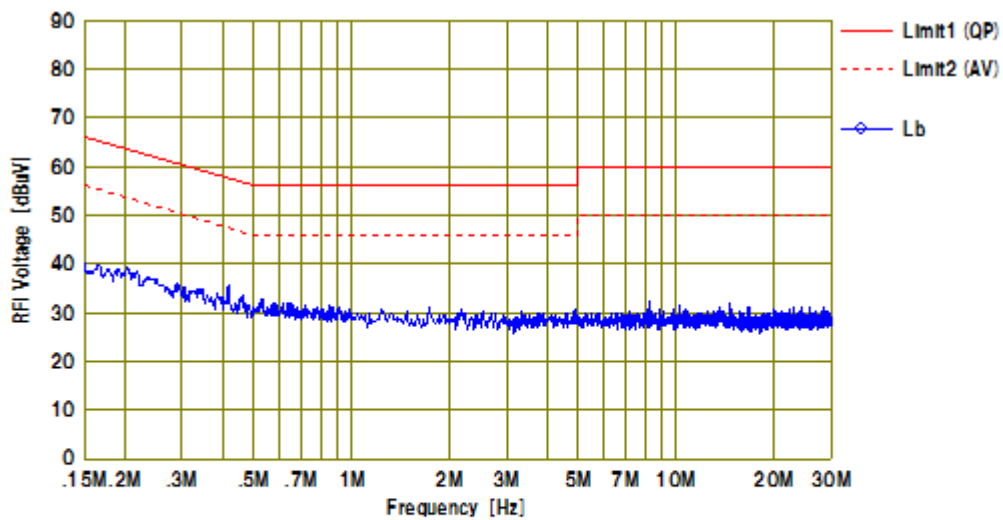
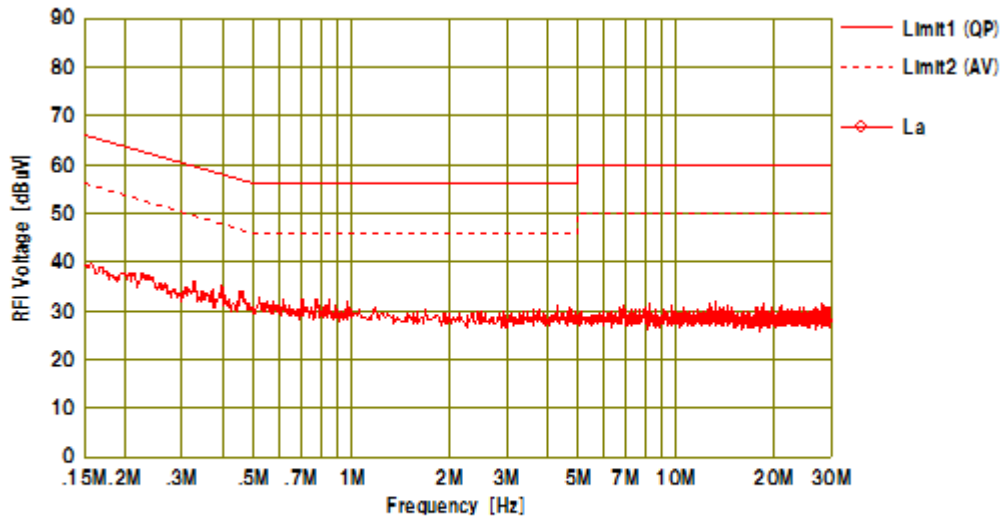


11n-40 5190MHz



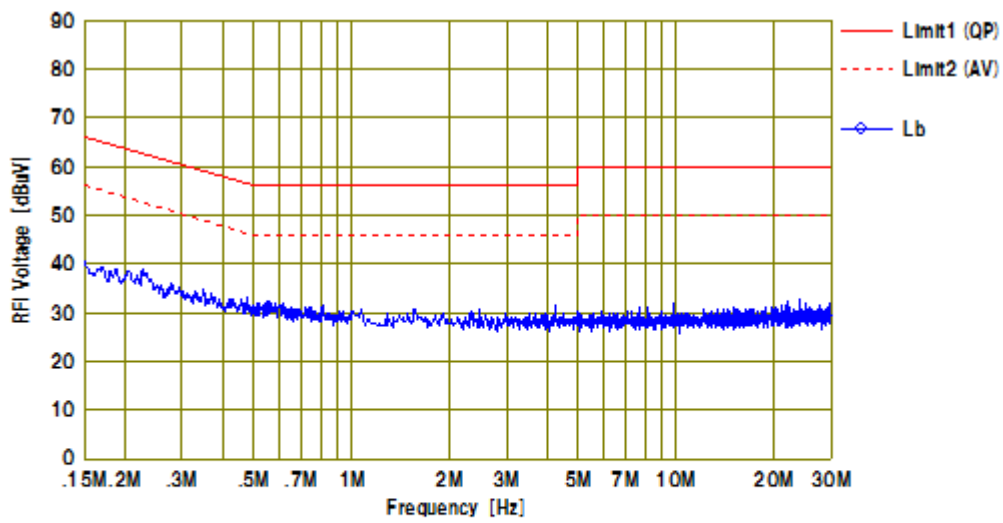
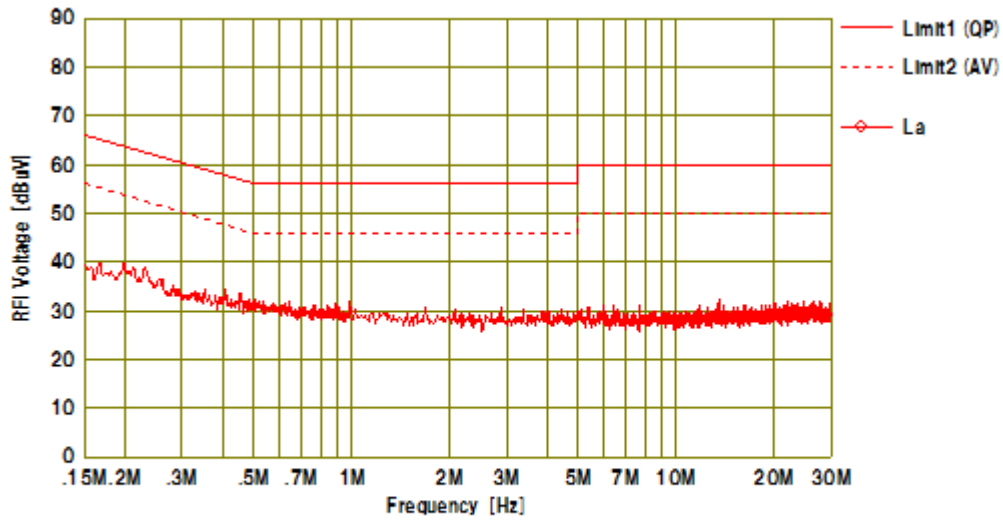


11n-40 5230MHz



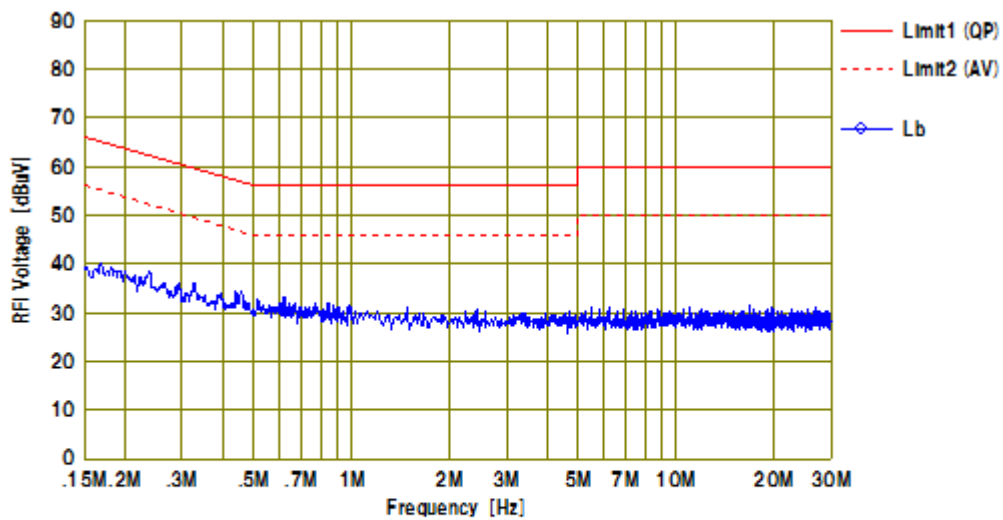
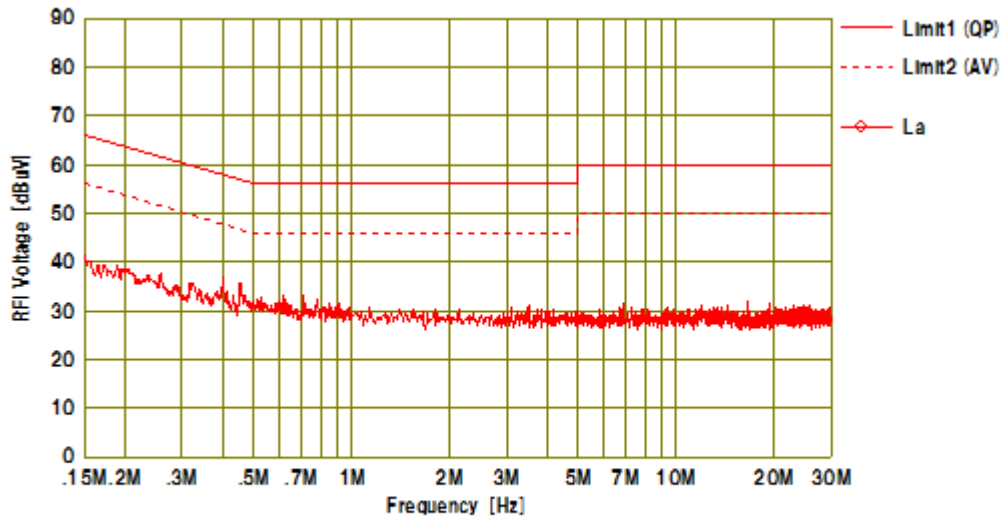


11n-40 5270MHz



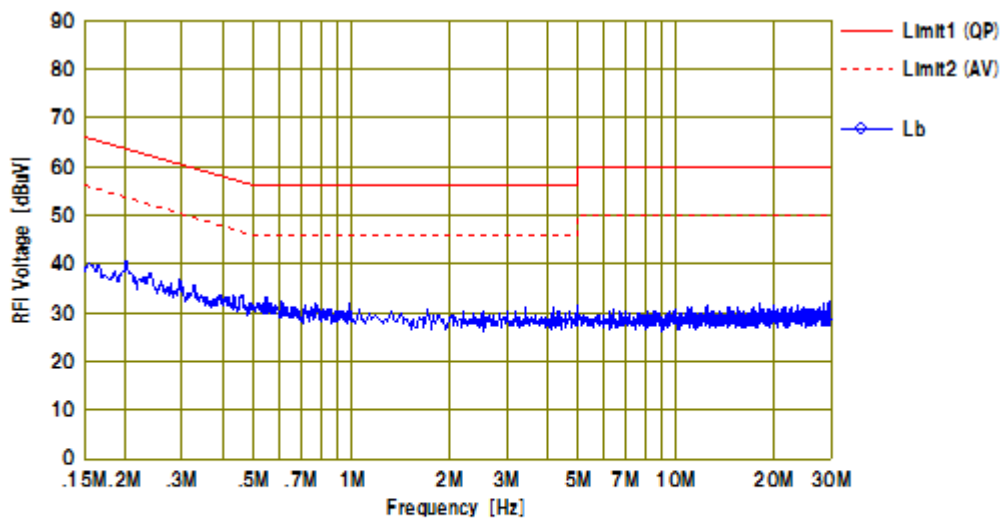
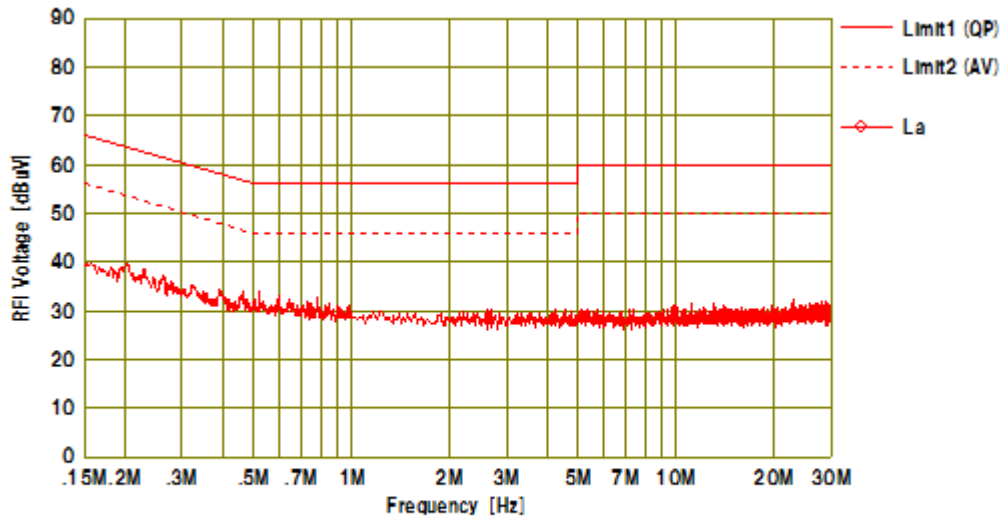


11n-40 5310MHz



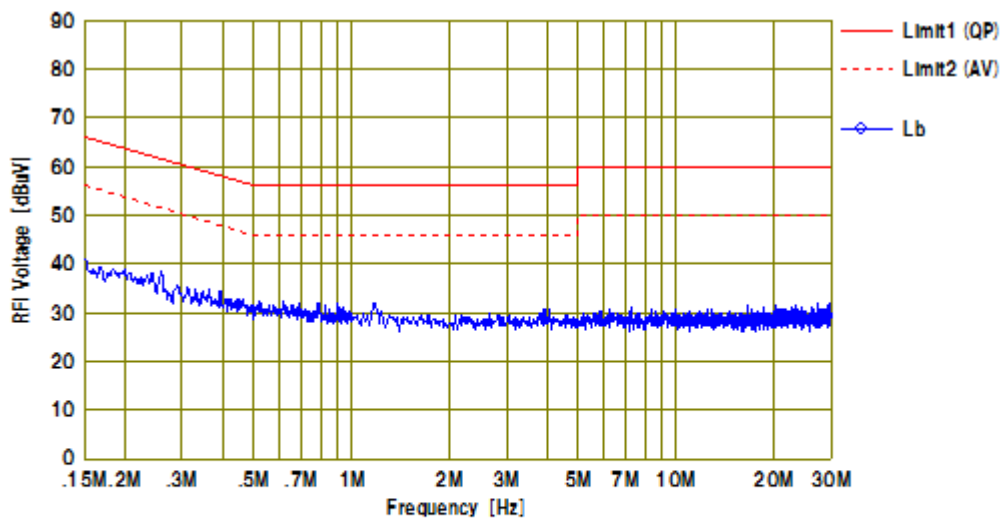
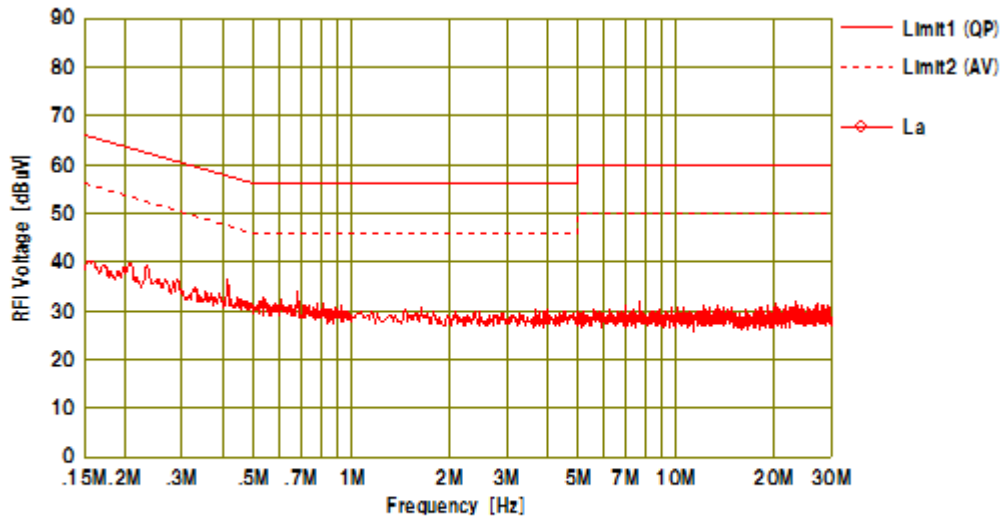


11n-40 5510MHz



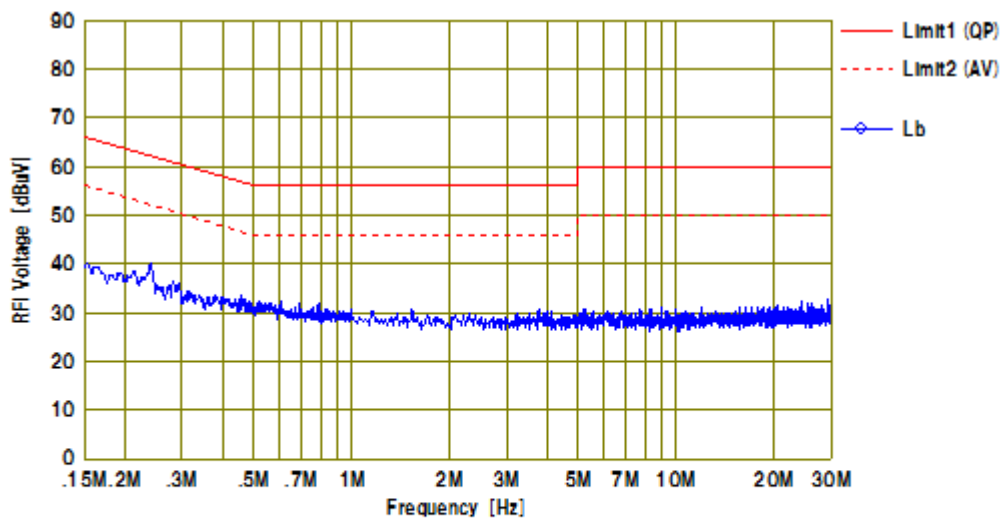
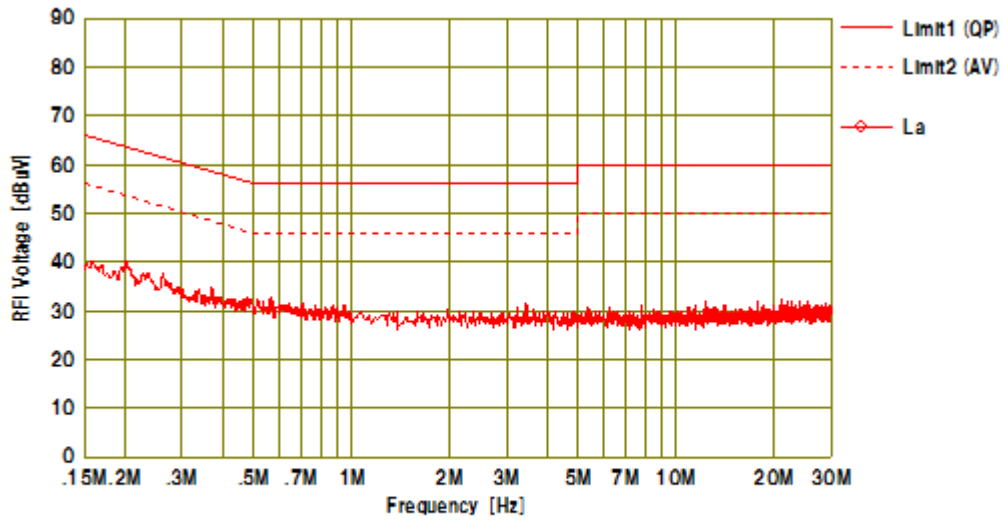


11n-40 5550MHz



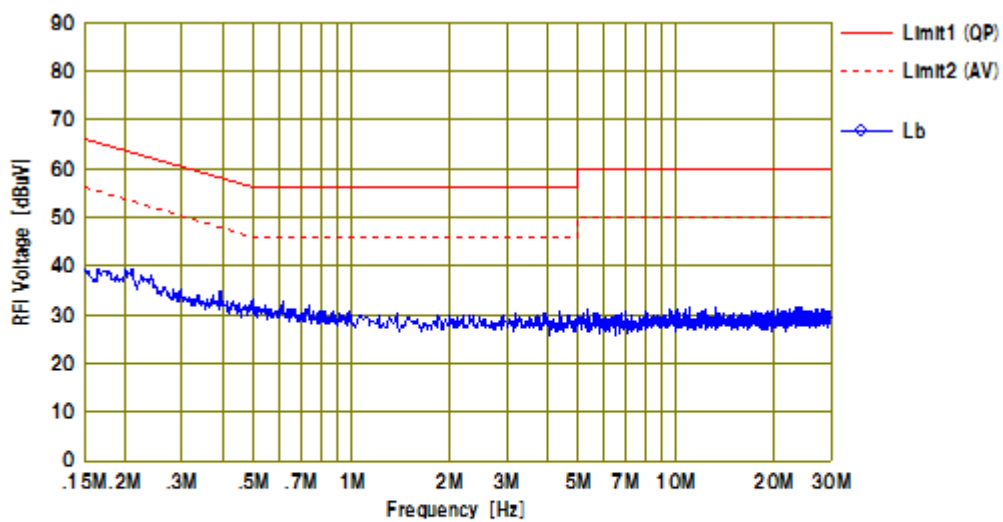
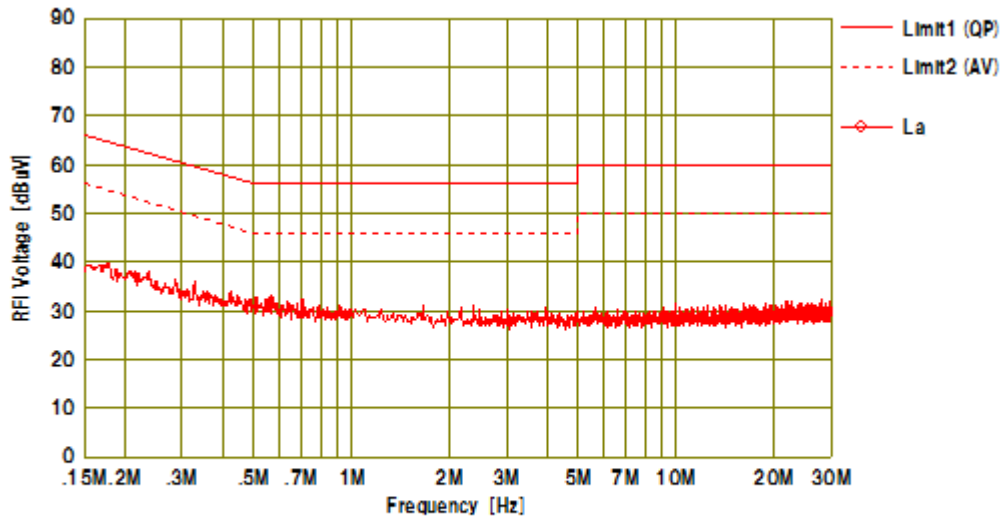


11n-40 5670MHz



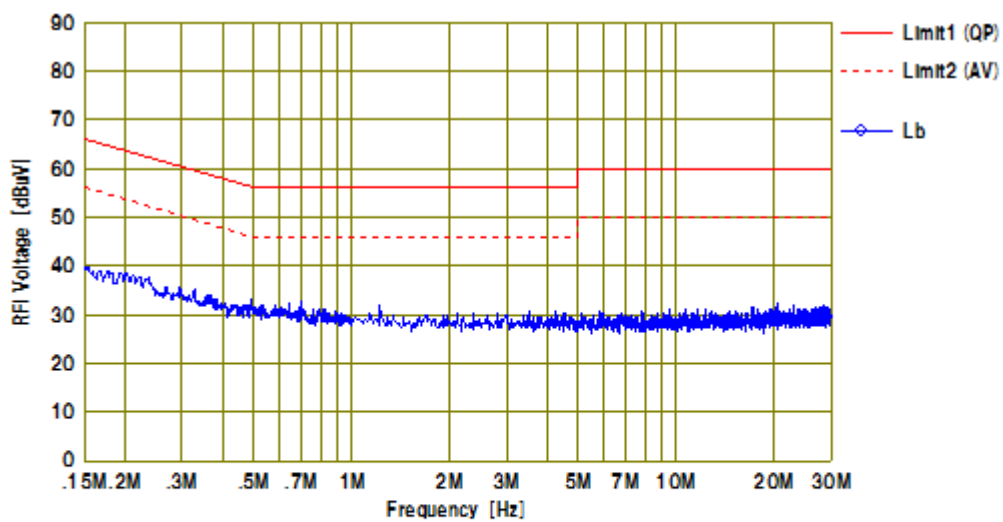
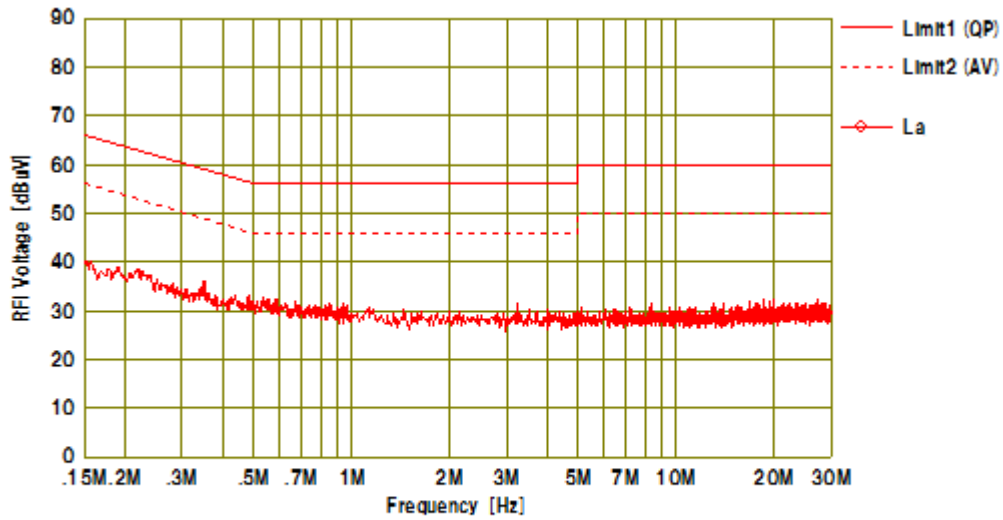


11n-40 5755MHz





11n-40 5795MHz



5. EMISSION BANDWIDTH

5.1. Test Procedure

- (1) Connect the EUT RF output port to spectrum analyzer (*1) via calibrated coaxial cable and suitable attenuator (if necessary).
- (2) Activates the EUT System and execute the software prepared for test, if necessary.
- (3) To find out the worst condition, the transmitting data rate of EUT is changed.
- (4) 26dB and 6dB Bandwidth is measured using the function of spectrum analyzer.

[Note]

(*1) Spectrum Analyzer Set Up Conditions (26dB Bandwidth)

Resolution bandwidth	: approximately 1% of the emission bandwidth
Video bandwidth	: >RBW
Detector function	: Peak
x dB	: -26dB

Spectrum Analyzer Set Up Conditions (6dB Bandwidth)

Resolution bandwidth	: 100kHz
Video bandwidth	: $\geq 3 \times \text{RBW}$
Detector function	: Peak
x dB	: -6dB



5.2. Test Results of 26dB Emission Bandwidth

11a

Measured Frequency (MHz)	26dB Bandwidth (MHz)	99% OBW Bandwidth (MHz)
5180	20.01	16.78
5200	19.95	16.76
5240	19.99	16.77
5260	19.94	16.76
5300	20.02	16.76
5320	19.91	16.78
5500	19.96	16.78
5580	20.01	16.74
5700	19.76	16.74
5745	20.03	16.74
5785	20.01	16.75
5825	19.86	16.77

11n-20

Measured Frequency (MHz)	26dB Bandwidth (MHz)	99% OBW Bandwidth (MHz)
5180	20.58	17.95
5200	20.51	17.91
5240	20.52	17.93
5260	20.44	17.93
5300	20.45	17.92
5320	20.34	17.93
5500	20.39	17.93
5580	20.45	17.95
5700	20.43	17.92
5745	20.39	17.96
5785	20.45	17.95
5825	20.43	17.90

11n-40

Measured Frequency (MHz)	26dB Bandwidth (MHz)	99% OBW Bandwidth (MHz)
5190	40.79	36.50
5230	40.65	36.54
5270	40.75	36.54
5310	40.69	36.48
5510	40.91	36.50
5550	40.88	36.46
5670	40.88	36.52
5755	40.59	36.53
5795	41.01	36.58

[Note]

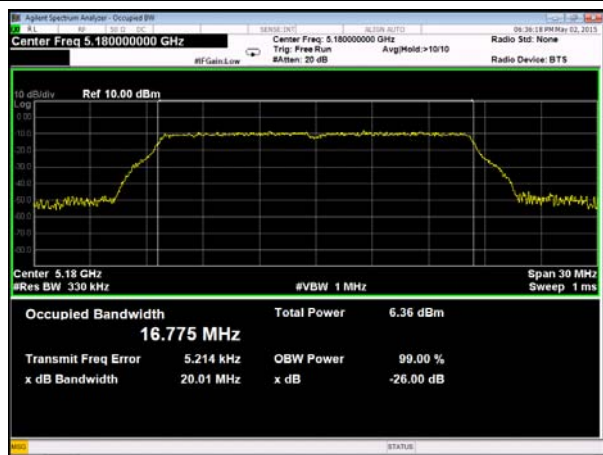
See next page figure.

Tested Date	Environment	
	Temperature	Humidity
2 May 2015	22 °C	35 %

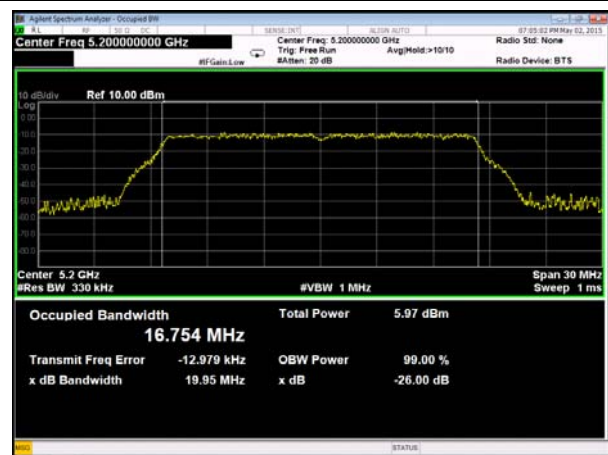


11a

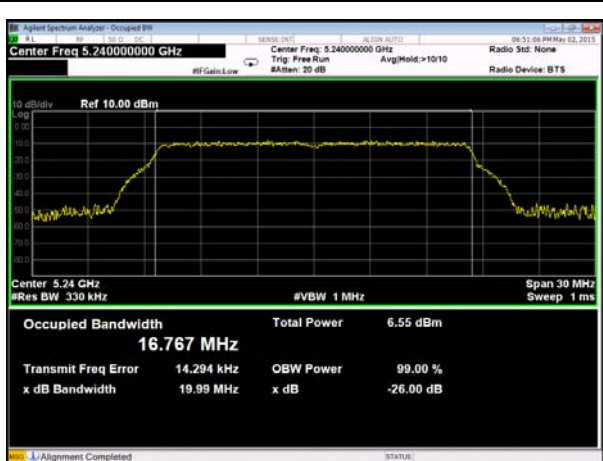
5180MHz



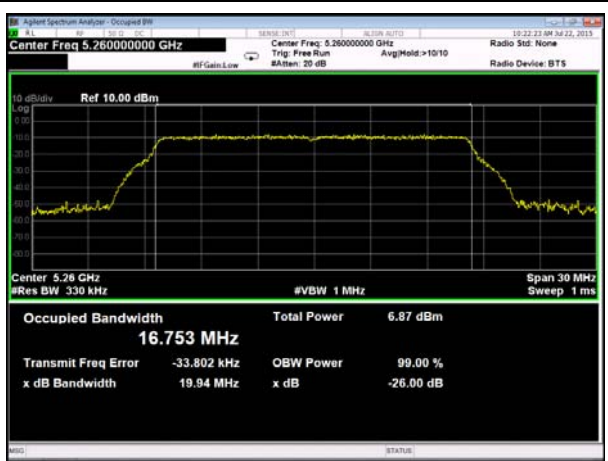
5200MHz



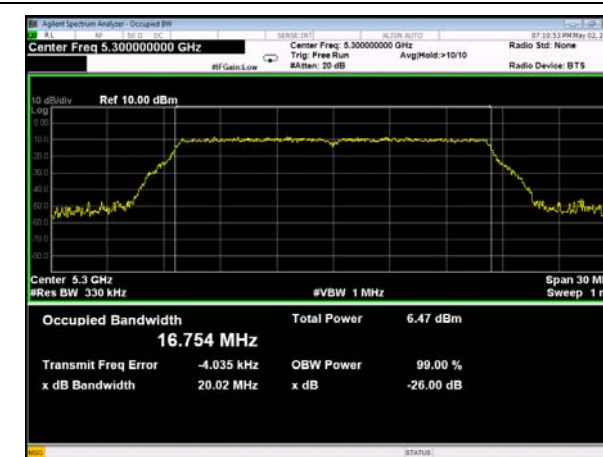
5240MHz



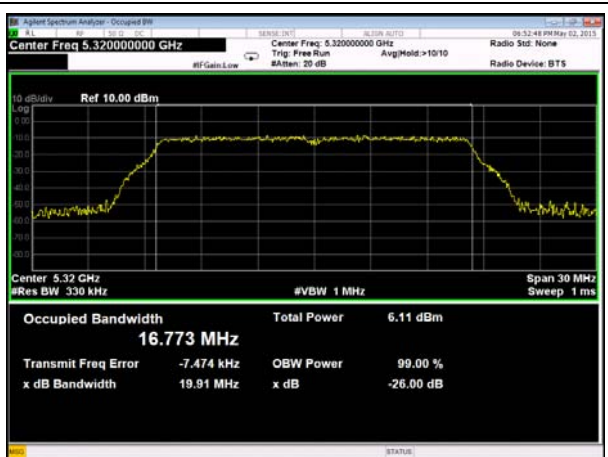
5260MHz



5300MHz



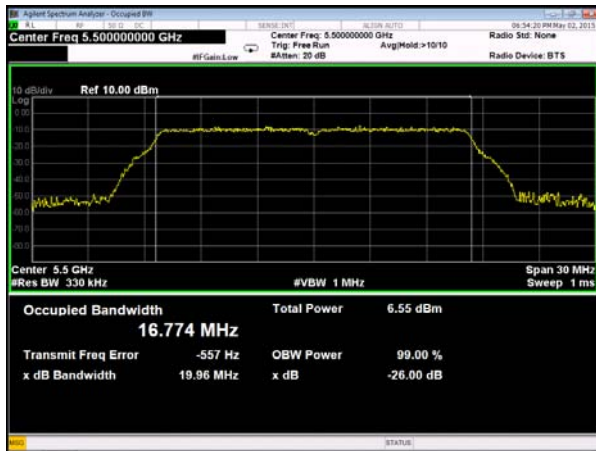
5320MHz



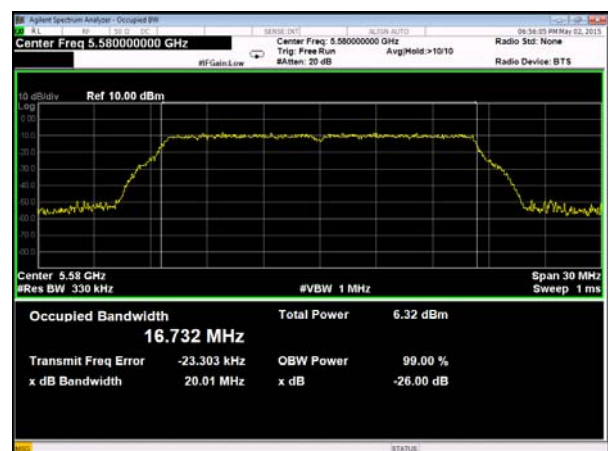


11a

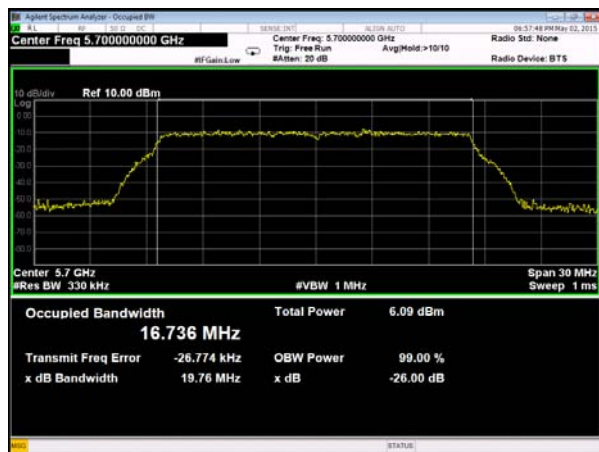
5500MHz



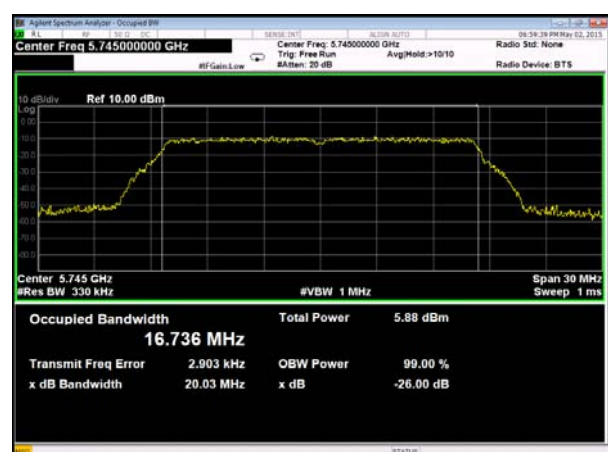
5580MHz



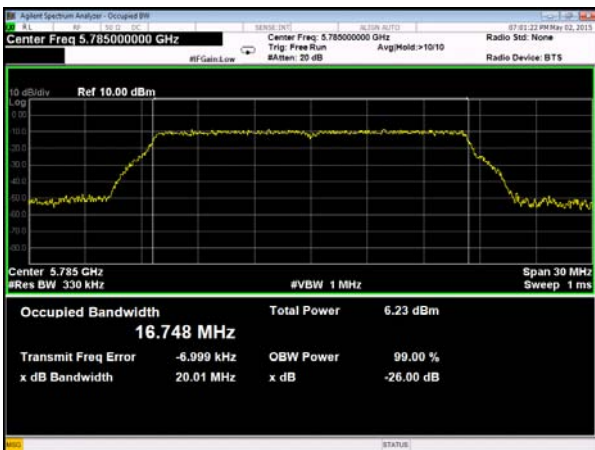
5700MHz



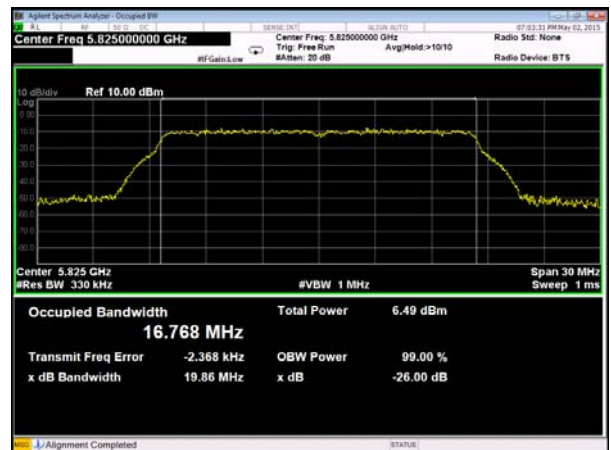
5745MHz



5785MHz



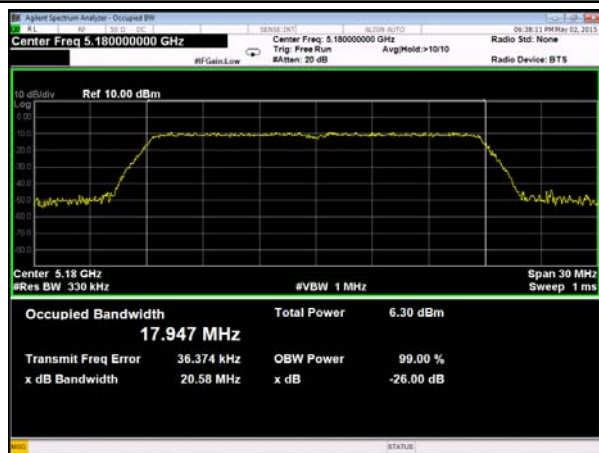
5825MHz



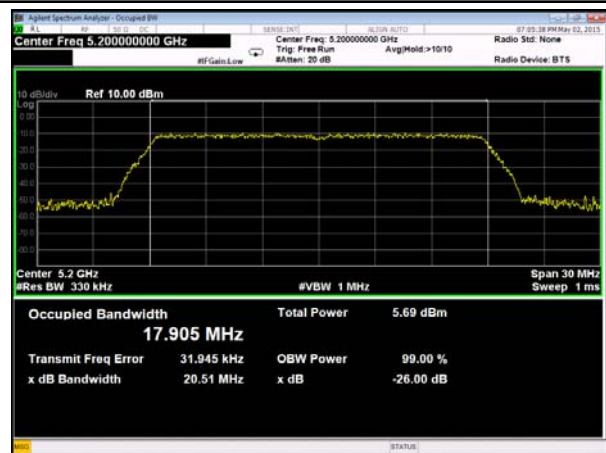


11n-20

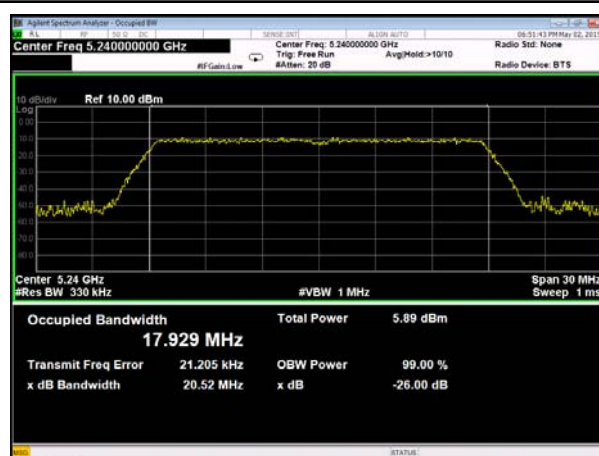
5180MHz



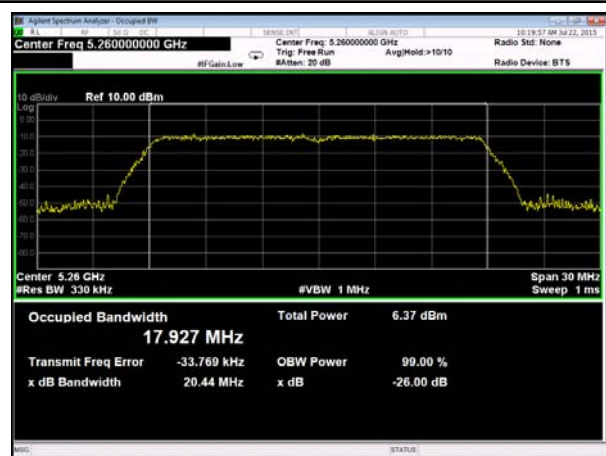
5200MHz



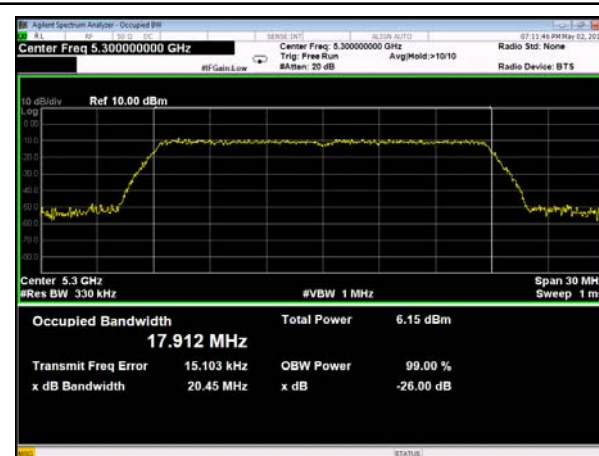
5240MHz



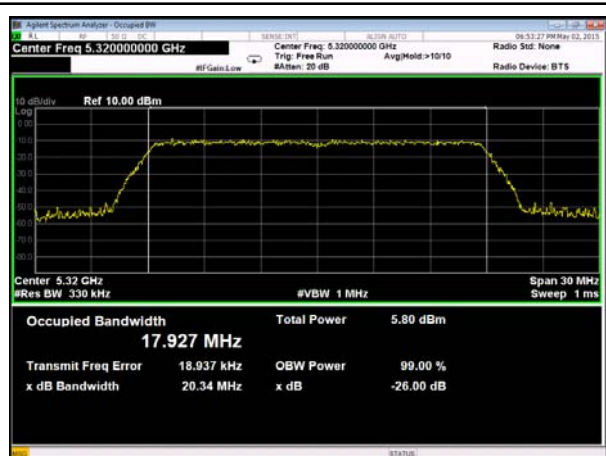
5260MHz



5300MHz



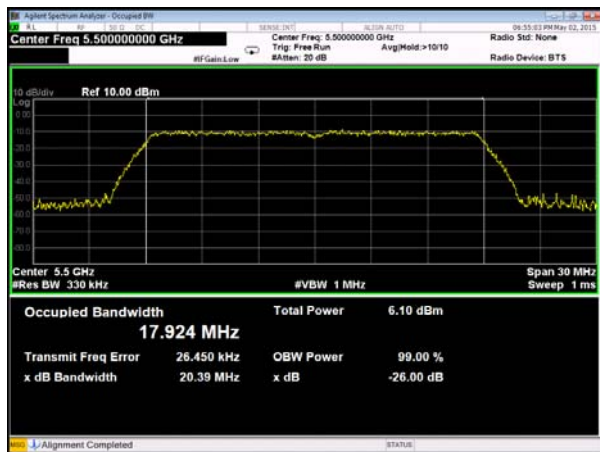
5320MHz



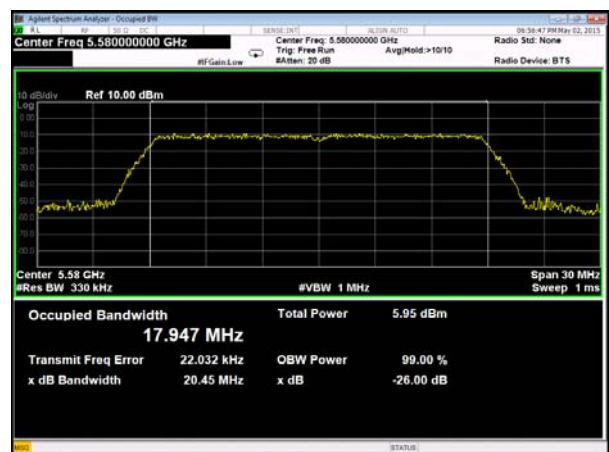


11n-20

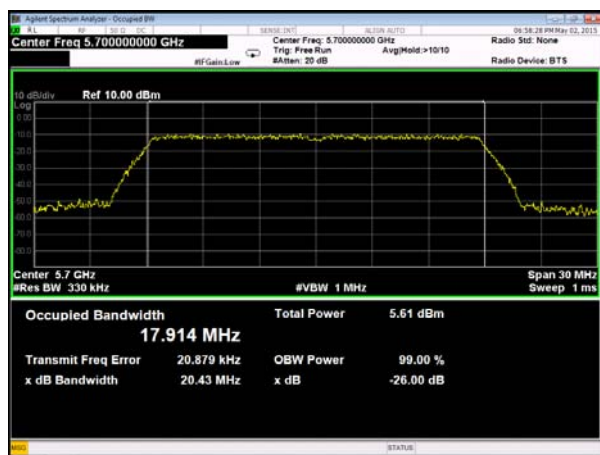
5500MHz



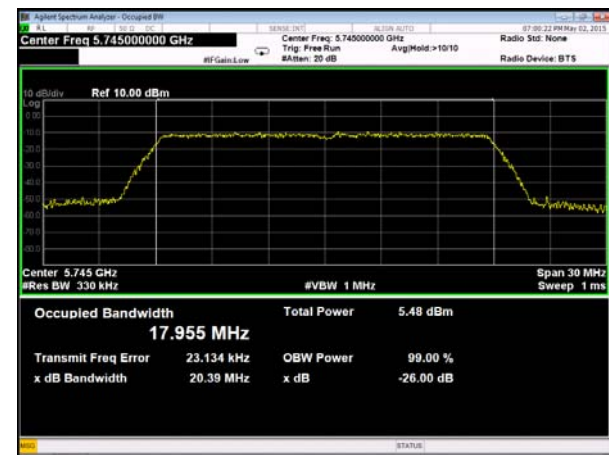
5580MHz



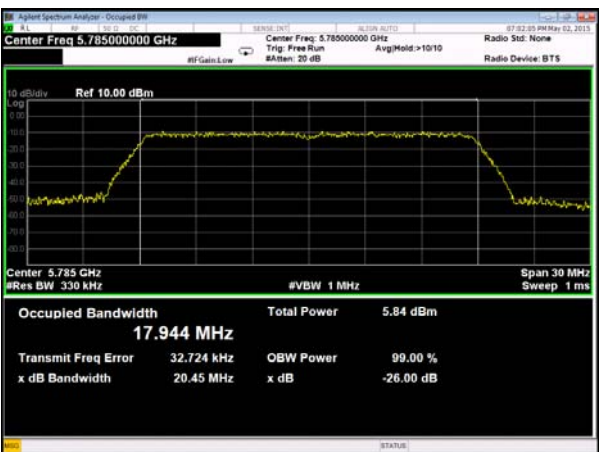
5700MHz



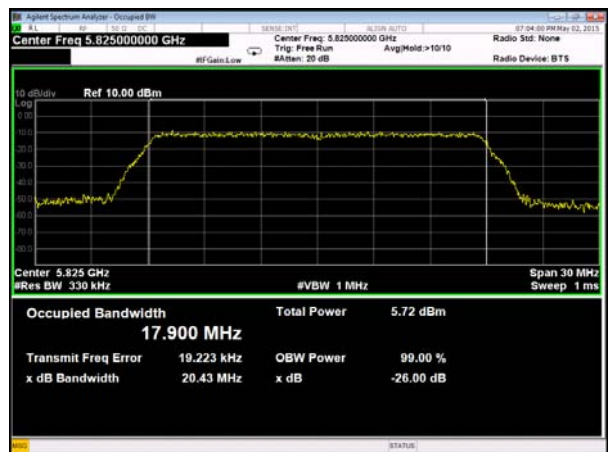
5745MHz



5785MHz



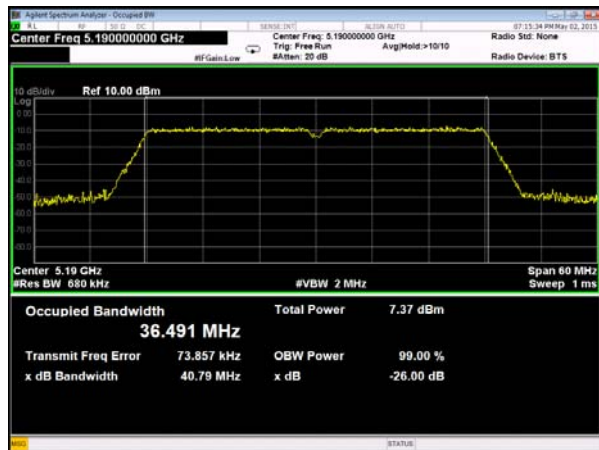
5825MHz



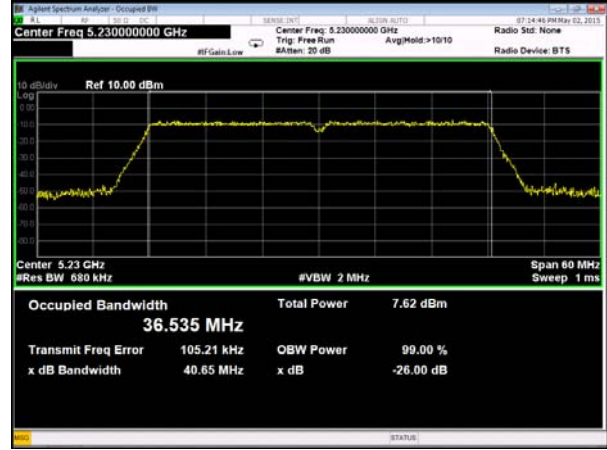


11n-40

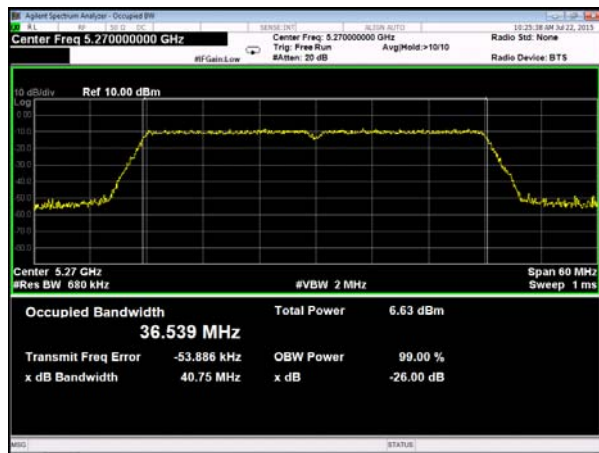
5190MHz



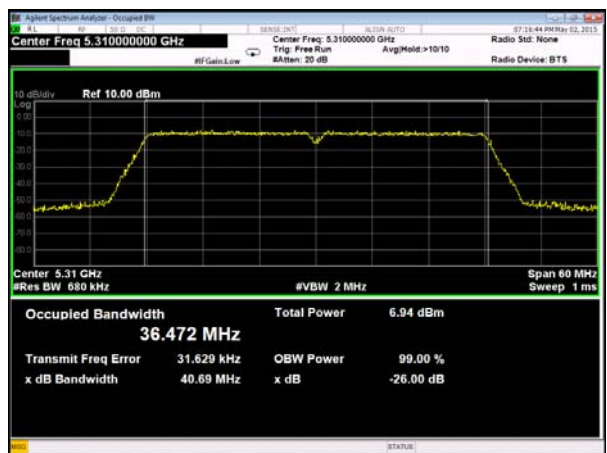
5230MHz



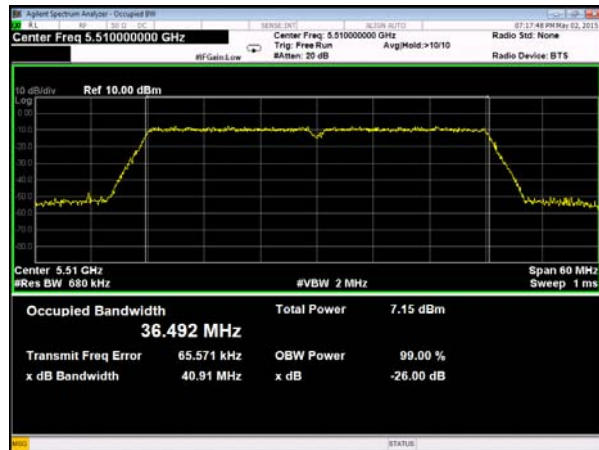
5270MHz



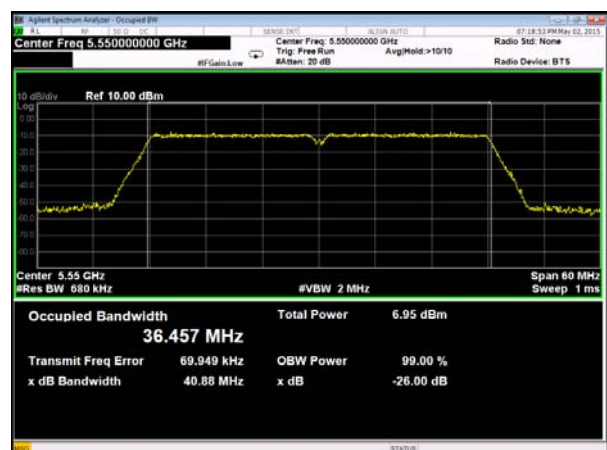
5310MHz



5510MHz



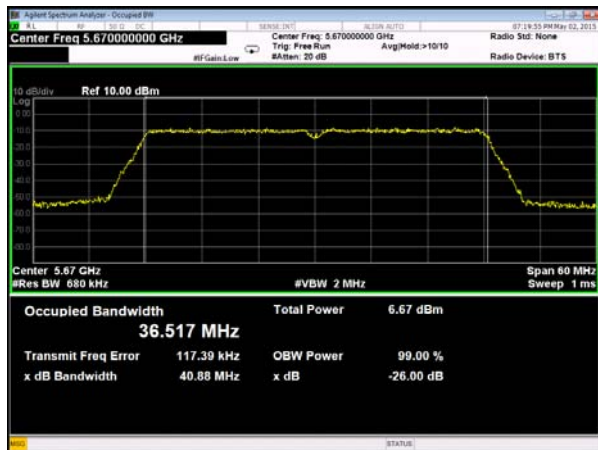
5550MHz



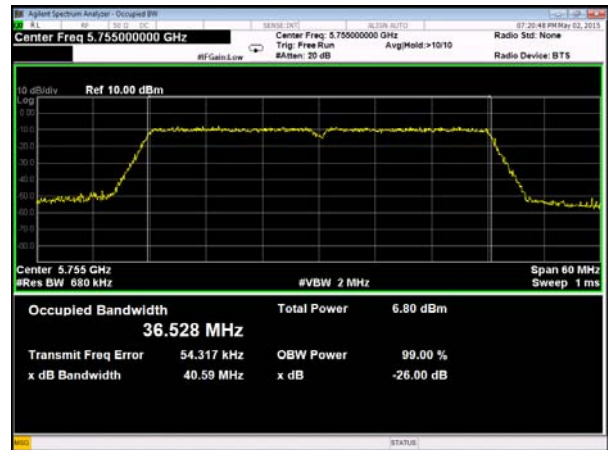


11n-40

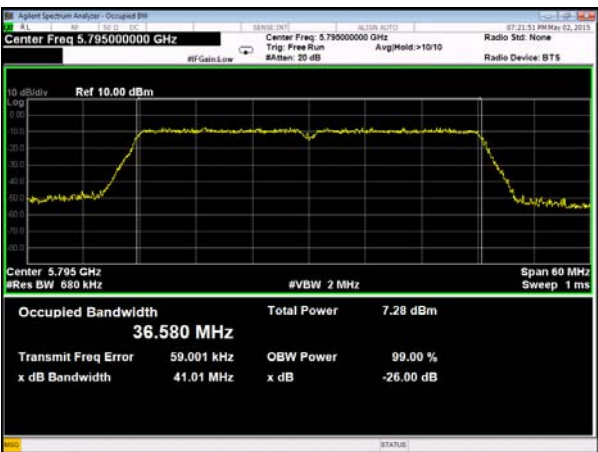
5670MHz



5755MHz



5795MHz





5.3. Test Results of 6dB Emission Bandwidth

11a

Measured Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
5745	16.57	≥ 0.50
5785	16.60	≥ 0.50
5825	16.58	≥ 0.50

11n-20

Measured Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
5745	17.85	≥ 0.50
5785	17.84	≥ 0.50
5825	17.84	≥ 0.50

11n-40

Measured Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
5755	36.58	≥ 0.50
5795	36.60	≥ 0.50

[Note]

See next page figure.

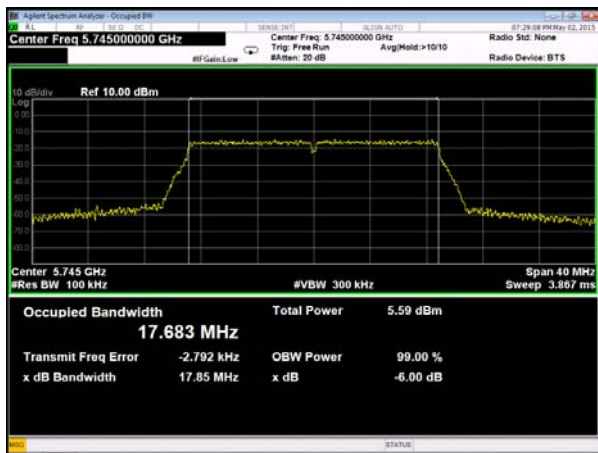
Tested Date	Environment	
	Temperature	Humidity
2 May 2015	22 °C	35 %



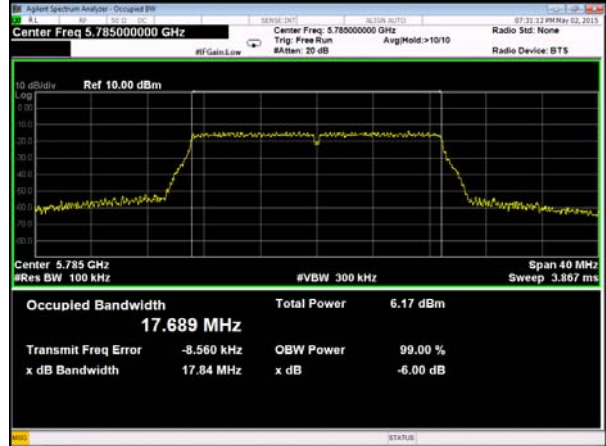


11n-20

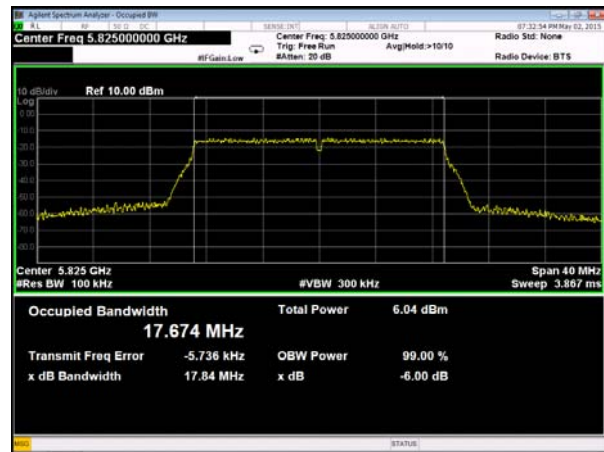
5745MHz



5785MHz

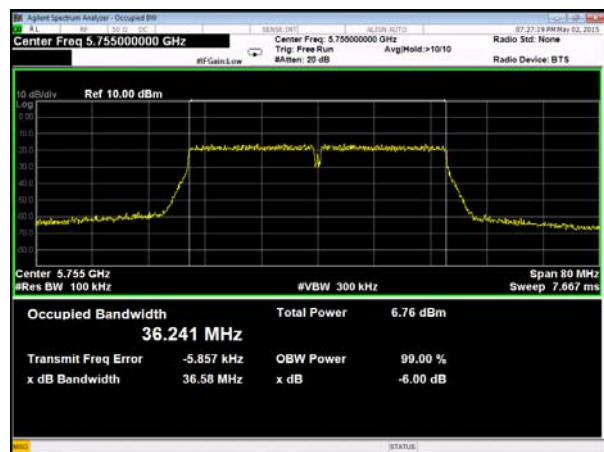


5825MHz

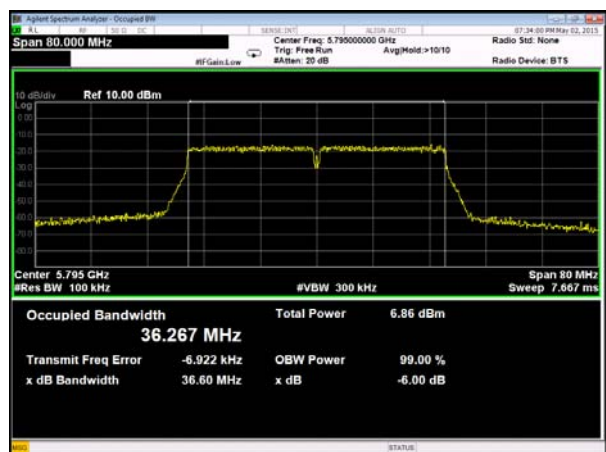


11n-40

5755MHz



5795MHz





6. MAXIMUM PEAK OUTPUT POWER

6.1. Test Procedure

- (1) Connect the EUT RF output port to wideband power meter via calibrated coaxial cable and suitable attenuator (if necessary).
- (2) Activates the EUT System and execute the software prepared for test, if necessary.
- (3) To find out the worst condition, the transmitting data rate of EUT is changed.
- (4) If the transmitter does not transmit continuously, measure the duty cycle, x , of the transmitter output signal.
- (5) Measure the average power of the transmitter.
- (6) Adjust the measurement in dBm by adding $10 \log(1/x)$ where x is the duty cycle.



6.2. Test Results

11a

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Output Power (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	10.60	0.41	0.00	11.01	23.97	12.96
5200	10.60	0.75	0.00	11.35	23.97	12.62
5240	10.60	0.74	0.00	11.34	23.97	12.63
5260	10.60	0.66	0.00	11.26	23.97	12.71
5300	10.60	0.96	0.00	11.56	23.97	12.41
5320	10.60	0.75	0.00	11.35	23.97	12.62
5500	10.60	0.85	0.00	11.45	23.97	12.52
5580	10.60	0.63	0.00	11.23	23.97	12.74
5700	10.60	0.36	0.00	10.96	23.95	12.99
5745	10.60	0.65	0.00	11.25	30.00	18.75
5785	10.60	1.02	0.00	11.62	30.00	18.38
5825	10.60	0.97	0.00	11.57	30.00	18.43

11n-20

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Output Power (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	10.60	0.44	0.00	11.04	23.97	12.93
5200	10.60	0.57	0.00	11.17	23.97	12.80
5240	10.60	0.76	0.00	11.36	23.97	12.61
5260	10.60	0.52	0.00	11.12	23.97	12.85
5300	10.60	0.90	0.00	11.50	23.97	12.47
5320	10.60	0.71	0.00	11.31	23.97	12.66
5500	10.60	0.84	0.00	11.44	23.97	12.53
5580	10.60	0.73	0.00	11.33	23.97	12.64
5700	10.60	0.39	0.00	10.99	23.97	12.98
5745	10.60	0.58	0.00	11.18	30.00	18.82
5785	10.60	0.97	0.00	11.57	30.00	18.43
5825	10.60	0.95	0.00	11.55	30.00	18.45

11n-40

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conducted Output Power (dBm)	Limit (dBm)	Margin for Limit (dB)
5190	10.60	0.35	0.00	10.95	23.97	13.02
5230	10.60	0.24	0.00	10.84	23.97	13.13
5270	10.60	0.30	0.00	10.90	23.97	13.07
5310	10.60	0.33	0.00	10.93	23.97	13.04
5510	10.60	0.40	0.00	11.00	23.97	12.97
5550	10.60	0.26	0.00	10.86	23.97	13.11
5670	10.60	0.03	0.00	10.63	23.97	13.34
5755	10.60	0.32	0.00	10.92	30.00	19.08
5795	10.60	0.71	0.00	11.31	30.00	18.69

[Note]

- (1) Correction Factor includes the cable loss and attenuator loss.
 (2) Limit of 5.25-5.35 GHz and 5.47-5.725 GHz bands
 : the lesser value of 250mw (23.97dBm) and 11dBm + 10log(26dB Emission Bandwidth (*1))
 (*) 26dB Emission Bandwidth See 46 page.

[Calculation method]

Conducted Output Power (dBm)
 = Meter Reading (dBm) + Correction Factor (dB) + Duty Cycle Factor (dB) (*)
 (*) See next page

Tested Date	Environment	
	Temperature	Humidity
2 May 2015	22 °C	35 %



Duty Cycle



	11a	11n-20	11n-40
Tx on	-	-	-
Tx on + Tx off	-	-	-
Duty Cycle	1.00	1.00	1.00
Duty Cycle Factor (dB)	0.00	0.00	0.00

[Calculation method]

$$\text{Duty Cycle} = (\text{Tx on}) / (\text{Tx on} + \text{Tx off})$$

$$\text{Duty Cycle Factor (dB)} = 10\text{Log} (1/\text{Duty Cycle})$$

7. POWER SPECTRAL DENSITY

7.1. Test Procedure

- (1) Connect the EUT RF output port to spectrum analyzer (*1) via calibrated coaxial cable and suitable attenuator (if necessary).
- (2) Activates the EUT System and execute the software prepared for test, if necessary.
- (3) To find out the worst condition, the transmitting data rate of EUT is changed.
- (4) If the transmitter does not transmit continuously, measure the duty cycle, x , of the transmitter output signal.
- (5) Record the spectral density perform peak search using the spectrum analyzer.
- (6) Adjust the measurement in dBm by adding $10 \log(1/x)$ where x is the duty cycle.

[Note]

(*1) Spectrum Analyzer Set Up Conditions

Resolution bandwidth : 1MHz
Video bandwidth : $\geq 3 \times \text{RBW}$
Detector function : RMS

Spectrum Analyzer Set Up Conditions (operating in the band 5.725-5.85GHz)

Resolution bandwidth : 470kHz
Video bandwidth : $\geq 3 \times \text{RBW}$
Detector function : RMS



7.2. Test Results

11a

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Maximum Power Spectral Density (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	11.40	-12.29	0.00	-	-0.89	11.00	11.89
5200	11.40	-10.95	0.00	-	0.45	11.00	10.55
5240	11.40	-10.53	0.00	-	0.87	11.00	10.13
5260	11.40	-10.95	0.00	-	0.45	11.00	10.55
5300	11.40	-10.97	0.00	-	0.43	11.00	10.57
5320	11.40	-11.30	0.00	-	0.10	11.00	10.90
5500	11.40	-11.07	0.00	-	0.33	11.00	10.67
5580	11.40	-11.77	0.00	-	-0.37	11.00	11.37
5700	11.40	-10.89	0.00	-	0.51	11.00	10.49
5745	11.40	-14.56	0.00	0.27	-2.89	30.00	32.89
5785	11.40	-14.07	0.00	0.27	-2.40	30.00	32.40
5825	11.40	-14.18	0.00	0.27	-2.51	30.00	32.51

11n-20

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Maximum Power Spectral Density (dBm)	Limit (dBm)	Margin for Limit (dB)
5180	11.40	-11.71	0.00	-	-0.31	11.00	11.31
5200	11.40	-11.93	0.00	-	-0.53	11.00	11.53
5240	11.40	-11.68	0.00	-	-0.28	11.00	11.28
5260	11.40	-11.36	0.00	-	0.04	11.00	10.96
5300	11.40	-11.63	0.00	-	-0.23	11.00	11.23
5320	11.40	-12.19	0.00	-	-0.79	11.00	11.79
5500	11.40	-11.76	0.00	-	-0.36	11.00	11.36
5580	11.40	-12.19	0.00	-	-0.79	11.00	11.79
5700	11.40	-11.63	0.00	-	-0.23	11.00	11.23
5745	11.40	-14.55	0.00	0.27	-2.88	30.00	32.88
5785	11.40	-14.36	0.00	0.27	-2.69	30.00	32.69
5825	11.40	-14.57	0.00	0.27	-2.90	30.00	32.90

11n-40

Measured Frequency (MHz)	Correction Factor (dB)	Meter Reading (dBm)	Duty Cycle Factor (dB)	Conversion Factor RBW(470kHz to 500kHz) (dB)	Maximum Power Spectral Density (dBm)	Limit (dBm)	Margin for Limit (dB)
5190	11.40	-14.83	0.00	-	-3.43	11.00	14.43
5230	11.40	-14.35	0.00	-	-2.95	11.00	13.95
5270	11.40	-14.50	0.00	-	-3.10	11.00	14.10
5310	11.40	-14.69	0.00	-	-3.29	11.00	14.29
5510	11.40	-14.89	0.00	-	-3.49	11.00	14.49
5550	11.40	-15.19	0.00	-	-3.79	11.00	14.79
5670	11.40	-15.13	0.00	-	-3.73	11.00	14.73
5755	11.40	-18.00	0.00	0.27	-6.33	30.00	36.33
5795	11.40	-17.60	0.00	0.27	-5.93	30.00	35.93

[Note]

- (1) Correction Factor includes the cable loss and attenuator loss.
 (2) See next page figure.

[Calculation method]

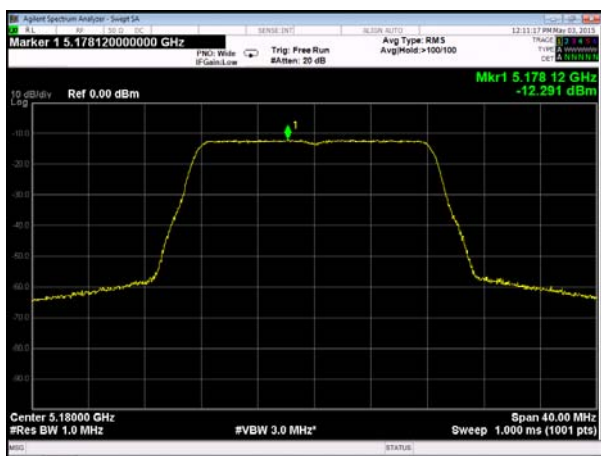
Maximum Power Spectral Density (dBm)
 = Meter Reading (dBm) + Correction Factor (dB) + Duty Cycle Factor (dB) (*) + Conversion Factor (dB)
 (*) See page 58.

Tested Date	Environment	
	Temperature	Humidity
2 May 2015	22 °C	35 %

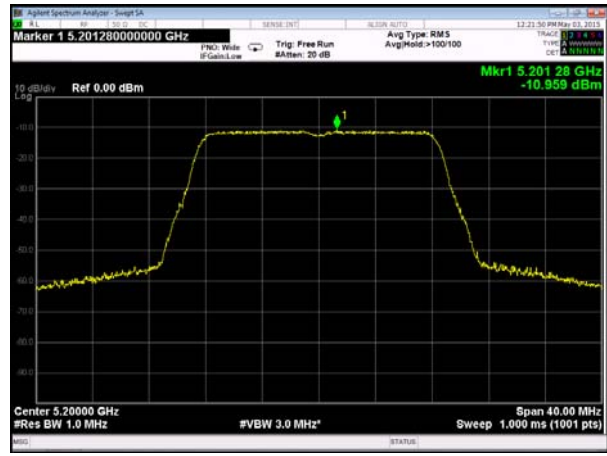


11a

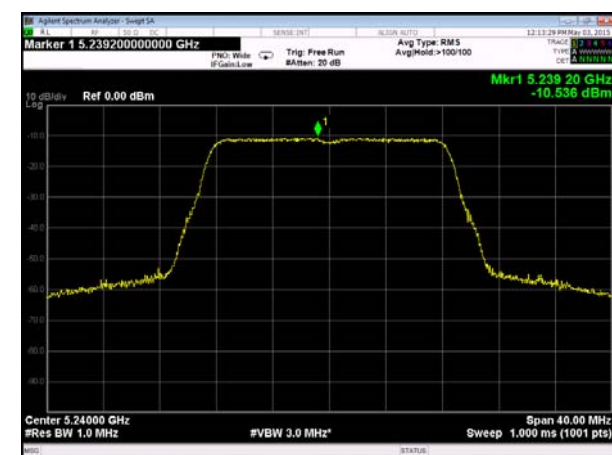
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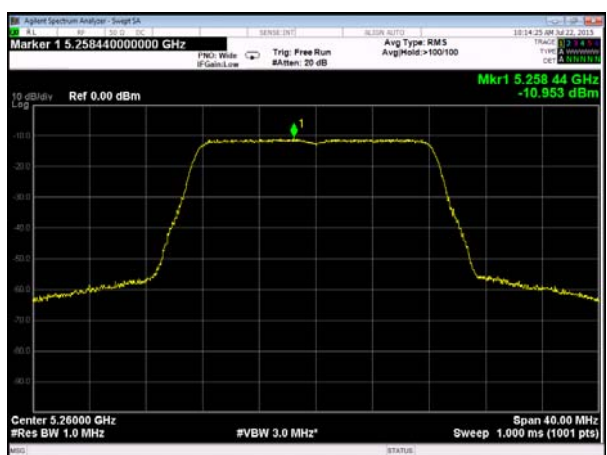
5200MHz



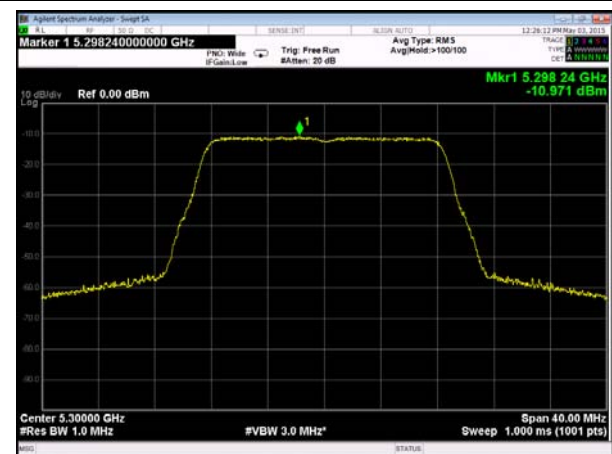
5240MHz



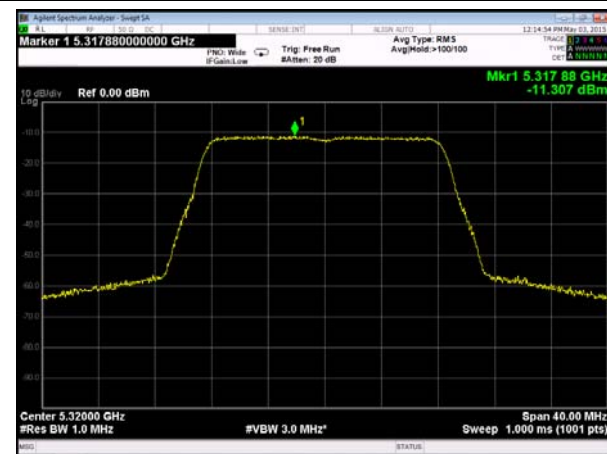
5260MHz



5300MHz



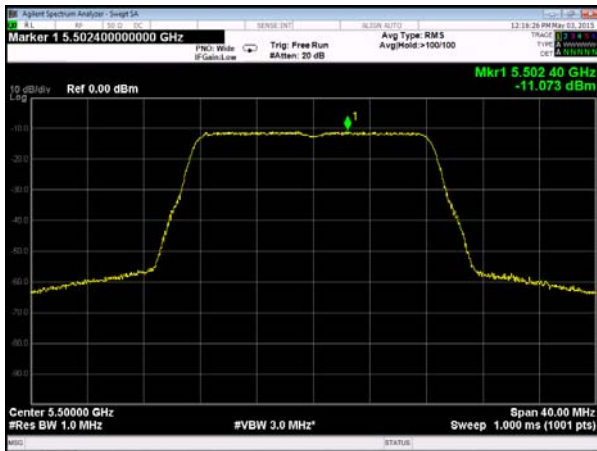
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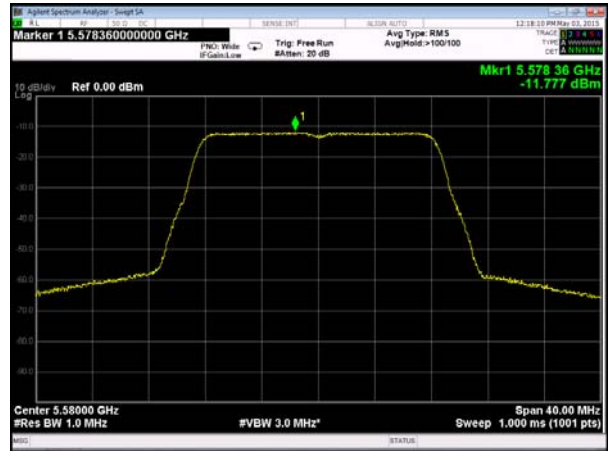


11a

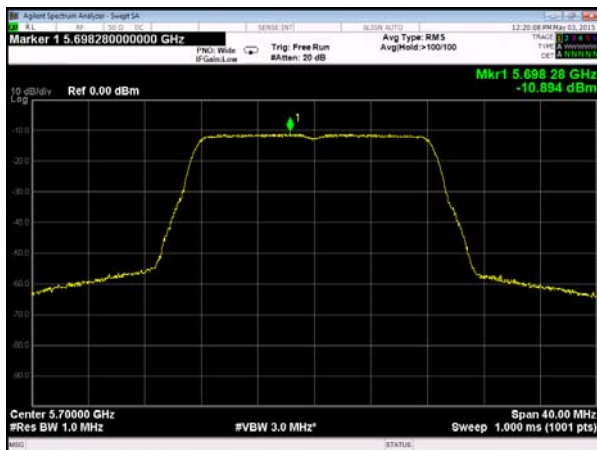
5500MHz



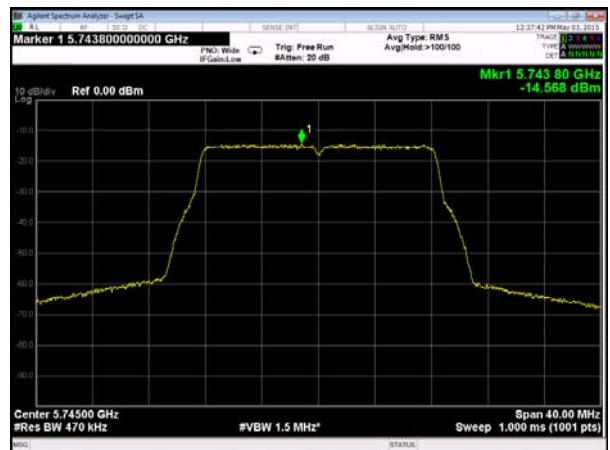
5580MHz



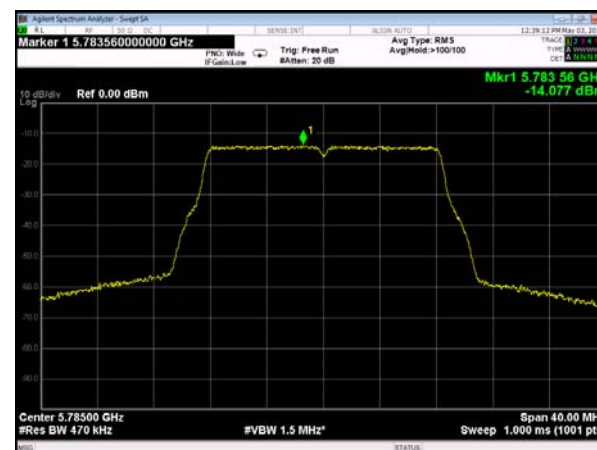
5700MHz



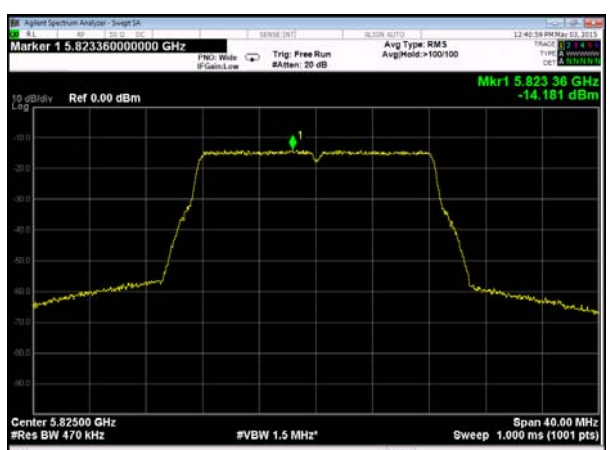
5745MHz



5785MHz



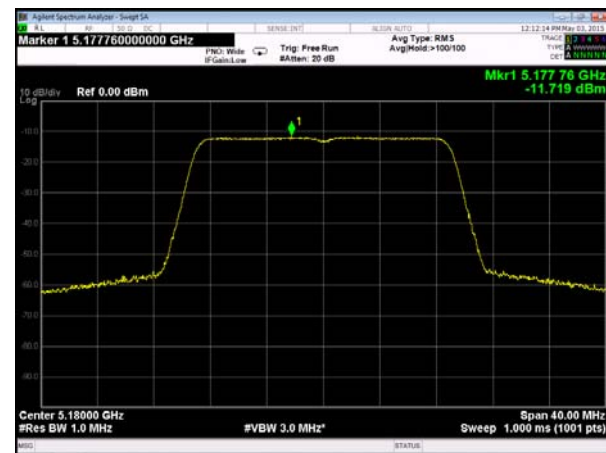
5825MHz



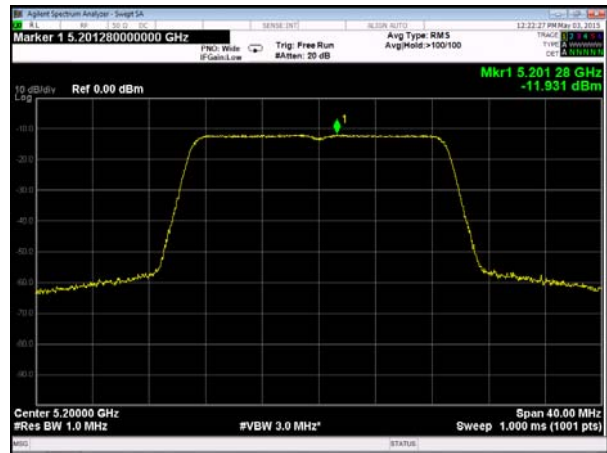


11n-20

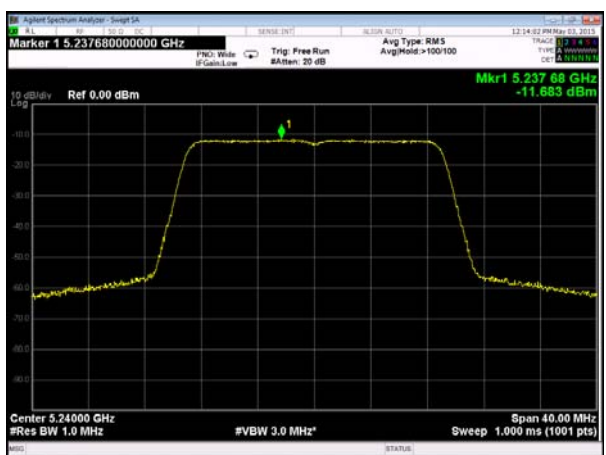
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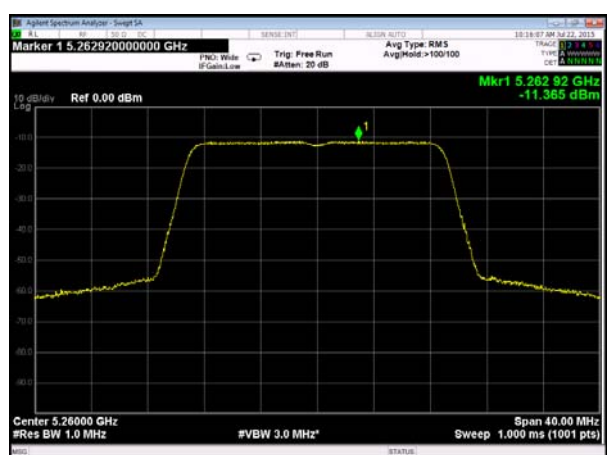
5200MHz



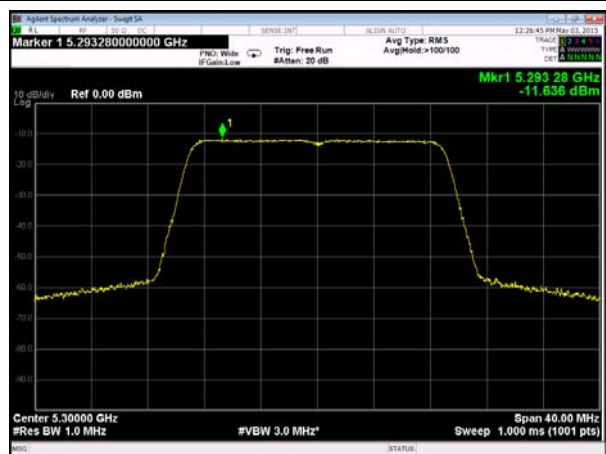
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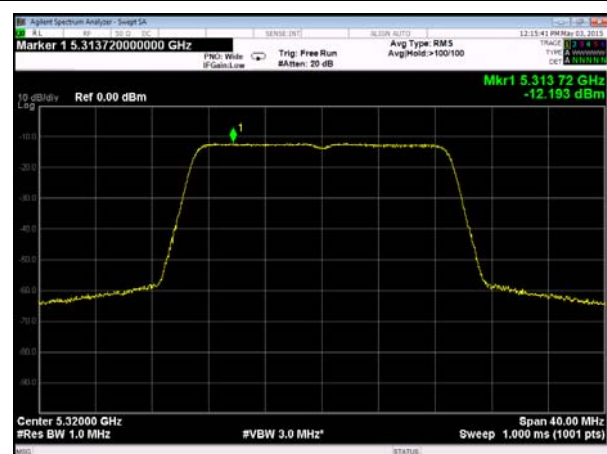
5260MHz



5300MHz



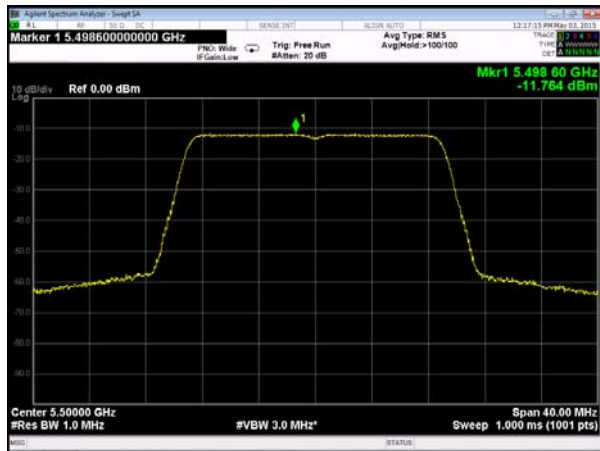
5320MHz



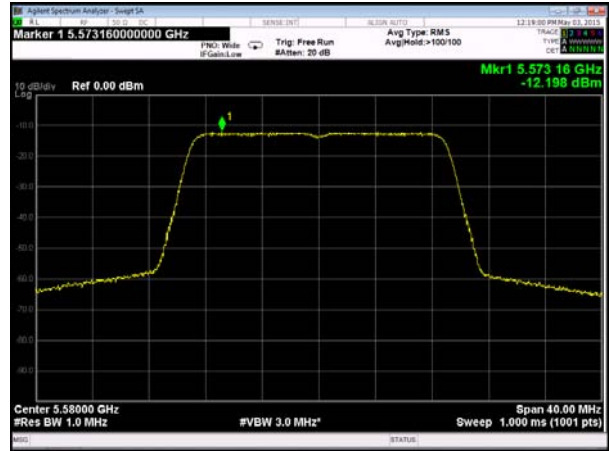


11n-20

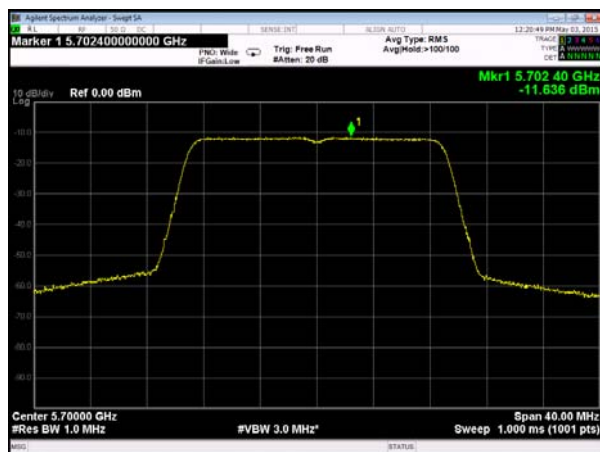
5500MHz



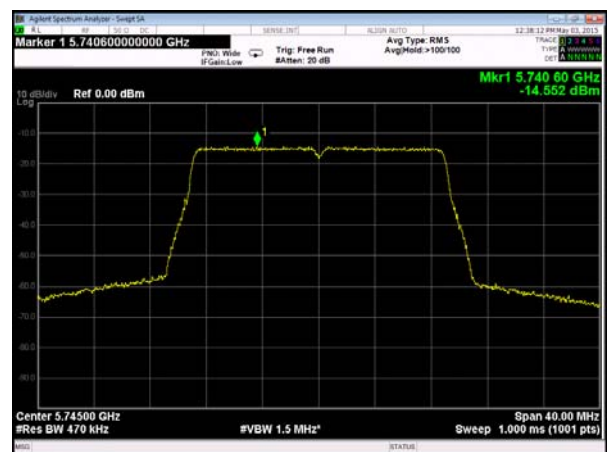
5580MHz



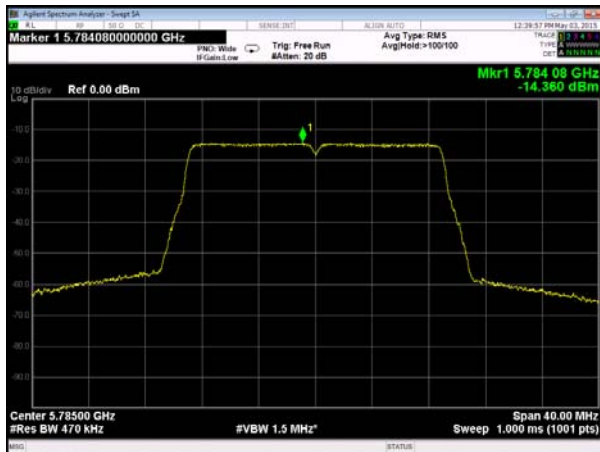
5700MHz



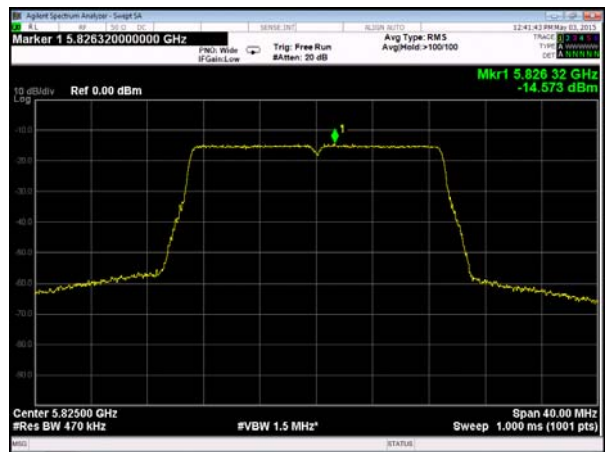
5745MHz



5785MHz



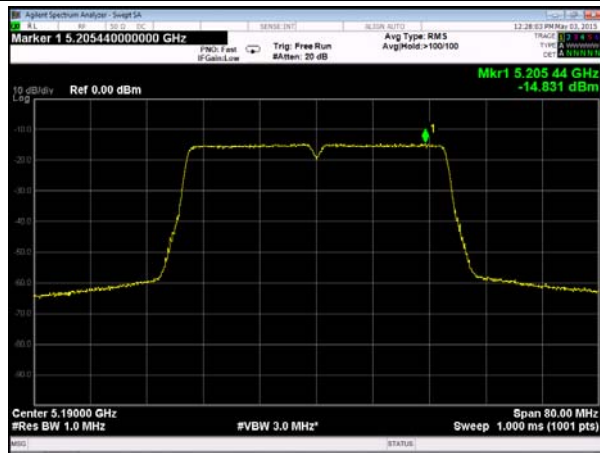
5825MHz



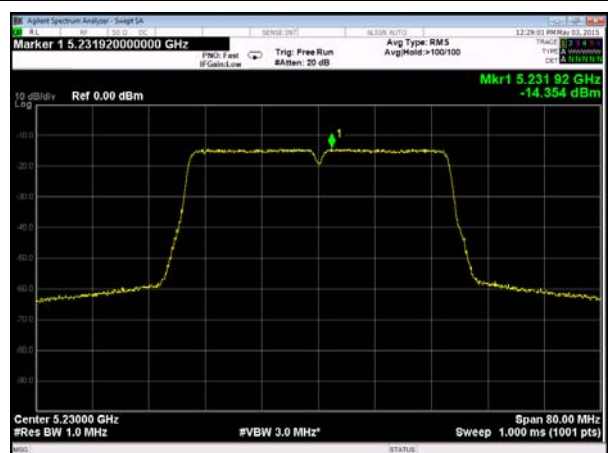


11n-40

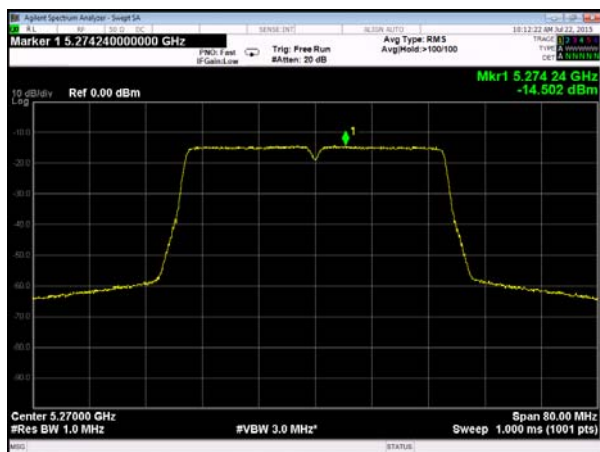
5190MHz



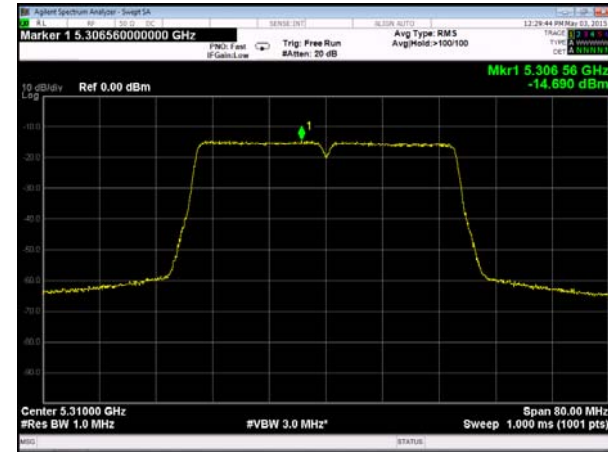
5230MHz



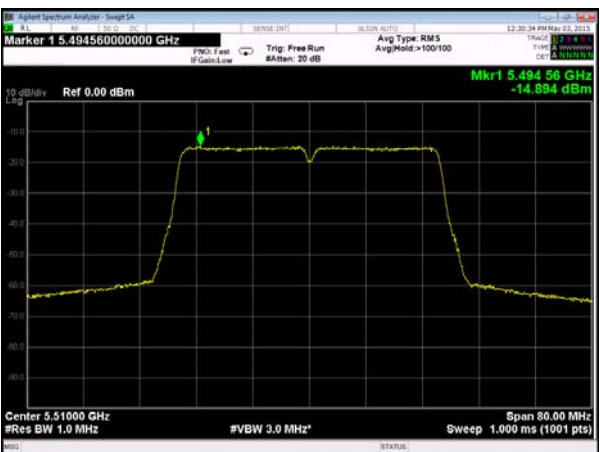
5270MHz



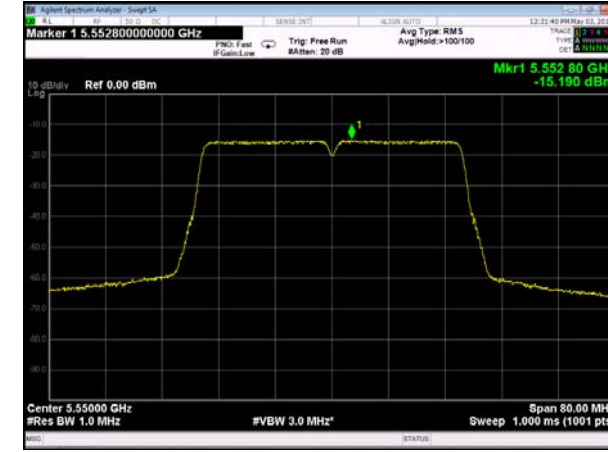
5310MHz

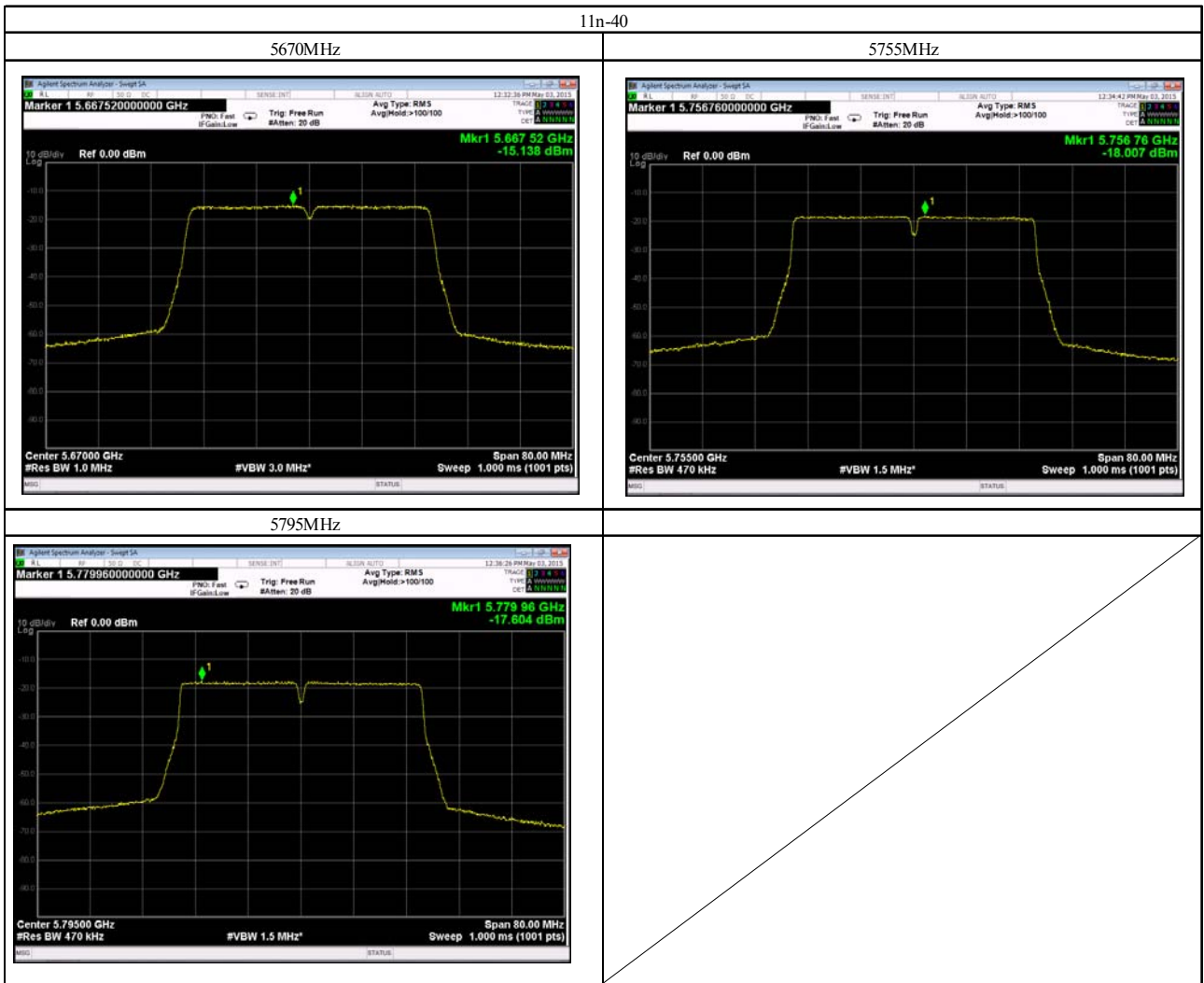


5510MHz



5550MHz





8. SPURIOUS EMISSION

8.1. Test Procedure

Radiated measurement

(1)

The EUT is placed in accordance with ANSI C63.4.

(2)

The EUT is activated as to simulate an worst datarate.

(3)

To find out the maximum emission of the configuration of the EUT System, the position of the cables are changed, then preliminary radiated measurement are performed using the spectrum analyzer ,the broad band antenna and the horn antenna.

(4)

The spectrums are scanned from 30MHz to 1GHz, and collect the highest emissions on the spectrum analyzer (*1) relative to the limits in the whole range.

In the frequency above 1GHz, it is performed using the spectrum analyzer (*1) and the horn antenna.

(5)

The highest emissions are measured at the specified distance using the test receiver (*2) and the broad band antenna or the tuned dipole. In the frequency above 1GHz, the measurements are performed by Bore-sight method using the spectrum analyzer (*3) and the horn antenna (*4).

Conducted measurement

(1)

Connect the EUT RF output port to the spectrum analyzer (*5) via calibrated coaxial cable and suitable attenuator (if necessary).

(2)

The EUT is activated as to simulate an worst data rate.

[Note]

(*1)

Spectrum Analyzer Set Up Conditions (Pre-measurement)

Frequency range

: 30MHz – 1GHz / 1GHz – Upper frequency of measurement range

Resolution bandwidth

: 100kHz / 1MHz

Detector function

: Peak

(*2)

Test Receiver Set Up Conditions

Detector function

: Quasi – Peak

IF bandwidth

: 120kHz

(*3)

Peak measurement Set Up Conditions

Resolution bandwidth

: 1MHz

Video bandwidth

: 3 x RBW

Detector function

: Peak

Trace

: Max Hold

Average measurement Set Up Conditions

Resolution bandwidth

: 1MHz

Video bandwidth

: 10Hz

Detector function

: Peak

Trace

: Max Hold

Y axis

: Linear

(*4)

Cover Area of Horn Antenna (3dB Beamwidth)

Frequency [GHz]	Cover Area [m] at distance 3m	Cover Area [m] at distance 1m
1.0-6.0	1.89	-
5.8-12.4	0.63	0.21
12.4-40.0	0.47	0.16

(*5)

Spectrum Analyzer Set Up Conditions

Frequency range

: 9kHz – 150kHz / 150kHz – 30MHz

Resolution bandwidth

: 300Hz / 10kHz

Video bandwidth

: 3 x RBW

Detector function

: Peak

8.2. Test Software List

KEC No.	Software Name	Version	Manufacture
TF-059	TEPTO Radiated emission automatic measurement	2.3.0321	TSJ
TF-110	Junction sheet	1.6H	KEC



8.3. Test Results

11a 5180MHz

below 1GHz

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1 m to 3 m	Maximum Field Strength	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization				
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5150.00	9.6	44.0	44.0	-	53.6	74.0	20.4
15540.00	8.6	<45.0	<45.0	9.5	<44.1	74.0	>29.9
Average measurement							
5150.00	9.6	32.5	32.0	-	42.1	54.0	11.9
15540.00	8.6	<35.0	<35.0	9.5	<34.1	54.0	>19.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
6906.50	-2.0	58.9	61.1	-	59.1	-36.1	-27.0	9.1
10360.00	3.0	<45.0	<45.0	-	<48.0	<-47.2	-27.0	>20.2



11a 5200MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
15600.00	8.6	<45.0	<45.0	9.5	<44.1	74.0	>29.9
Average measurement							
15600.00	8.6	<35.0	<35.0	9.5	<34.1	54.0	>19.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
6933.00	-1.9	59.1	58.3	-	57.2	-38.0	-27.0	11.0
10400.00	3.0	<45.0	<45.0	-	<48.0	<-47.2	-27.0	>20.2



11a 5240MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
15720.00	8.7	<45.0	<45.0	9.5	<44.2	74.0	>29.8
Average measurement							
15720.00	8.7	<35.0	<35.0	9.5	<34.2	54.0	>19.8

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
6986.00	-1.8	59.0	57.0	-	57.2	-38.0	-27.0	11.0
10480.00	3.2	<45.0	<45.0	-	<48.2	<-47.0	-27.0	>20.0



11a 5260MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
15780.00	8.7	<45.0	<45.0	9.5	<44.2	74.0	>29.8
Average measurement							
15780.00	8.7	<35.0	<35.0	9.5	<34.2	54.0	>19.8

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
7014.00	1.2	55.1	54.2	-	56.3	-38.9	-27.0	11.9
10520.00	3.2	<45.0	<45.0	-	<48.2	<-47.0	-27.0	>20.0



11a 5300MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
10600.00	3.5	<45.0	<45.0	-	<48.5	74.0	>25.5
15900.00	8.7	<45.0	<45.0	-	<53.7	74.0	>20.3
Average measurement							
10600.00	3.5	<35.0	<35.0	-	<38.5	54.0	>15.5
15900.00	8.7	<35.0	<35.0	-	<43.7	54.0	>10.3

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
7066.00	-1.7	57.0	59.2	-	57.5	-37.7	-27.0	10.7



11a 5320MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5350.00	9.8	43.5	43.1	-	53.3	74.0	20.7
10640.00	3.5	<45.0	<45.0	-	<48.5	74.0	>25.5
15960.00	8.7	<45.0	<45.0	9.5	<44.2	74.0	>29.8
Average measurement							
5350.00	9.8	31.5	31.9	-	41.7	54.0	12.3
10640.00	3.5	<35.0	<35.0	-	<38.5	54.0	>15.5
15960.00	8.7	<35.0	<35.0	9.5	<34.2	54.0	>19.8

above 1GHz Outside of the restricted band

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1 m to 3 m	Maximum Field Strength	EIRP	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization					
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBm)	(dBμV/m)	(dB)
Peak measurement								
7093.00	-1.7	57.2	55.9	-	55.5	-39.7	-27.0	12.7



11a 5500MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5460.00	9.9	43.8	43.8	-	53.7	74.0	20.3
7333.00	-1.4	51.1	52.0	-	50.6	74.0	23.4
11000.00	4.1	<45.0	<45.0	-	<49.1	74.0	>24.9
Average measurement							
5460.00	9.9	31.5	31.9	-	41.8	54.0	12.2
7333.00	-1.4	48.0	49.2	-	47.8	54.0	6.2
11000.00	4.1	<35.0	<35.0	-	<39.1	54.0	>14.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
5470.00	9.8	43.3	43.6	-	53.4	-41.8	-27.0	14.8
16500.00	9.6	<45.0	<45.0	9.5	<45.1	<-50.1	-27.0	>23.1



11a 5580MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7439.00	-1.3	50.0	49.3	-	48.7	74.0	25.3
11160.00	4.4	<45.0	<45.0	-	<49.4	74.0	>24.6
Average measurement							
7439.00	-1.3	45.3	45.2	-	44.0	54.0	10.0
11160.00	4.4	<35.0	<35.0	-	<39.4	54.0	>14.6

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
16740.00	10.0	<45.0	<45.0	9.5	<45.5	<-49.7	-27.0	>22.7



11a 5700MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7599.00	-1.2	45.4	48.7	-	47.5	74.0	26.5
11400.00	4.9	<45.0	<45.0	-	<49.9	74.0	>24.1
Average measurement							
7599.00	-1.2	35.6	43.4	-	42.2	54.0	11.8
11400.00	4.9	<35.0	<35.0	-	<39.9	54.0	>14.1

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
5725.00	9.4	44.8	44.0	-	54.2	-41.0	-27.0	14.0
17100.00	10.6	<45.0	<45.0	9.5	<46.1	<-49.1	-27.0	>22.1



11a 5745MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7659.00	-1.1	47.7	44.1	-	46.6	74.0	27.4
11490.00	4.9	<45.0	<45.0	-	<49.9	74.0	>24.1
Average measurement							
7659.00	-1.1	39.8	34.2	-	38.7	54.0	15.3
11490.00	4.9	<35.0	<35.0	-	<39.9	54.0	>14.1

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
5715.00	9.4	43.5	43.8	-	53.2	-42.0	-27.0	15.0
5725.00	9.4	48.9	52.0	-	61.4	-33.8	-17.0	16.8
17235.00	10.8	<45.0	<45.0	9.5	<46.3	<-48.9	-27.0	>21.9



11a 5785MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7713.00	-0.9	47.4	46.6	-	46.5	74.0	27.5
11570.00	5.2	<45.0	<45.0	-	<50.2	74.0	>23.8
Average measurement							
7713.00	-0.9	39.2	37.7	-	38.3	54.0	15.7
11570.00	5.2	<35.0	<35.0	-	<40.2	54.0	>13.8

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
17355.00	11.0	<45.0	<45.0	9.5	<56.0	<-48.7	-27.0	>21.7



11a 5825MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7766.00	-0.9	47.2	46.3	-	46.3	74.0	27.7
11650.00	5.2	<45.0	<45.0	-	<50.2	74.0	>23.8
Average measurement							
7766.00	-0.9	38.5	37.8	-	37.6	54.0	16.4
11650.00	5.2	<35.0	<35.0	-	<40.2	54.0	>13.8

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
5850.00	9.8	44.1	43.7	-	53.9	-41.3	-17.0	24.3
5860.00	9.9	43.4	43.8	-	53.7	-41.5	-27.0	14.5
17475.00	11.3	<45.0	<45.0	9.5	<46.8	<-48.4	-27.0	>21.4



11n-20 5180MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5150.00	9.6	43.4	43.7	-	53.3	74.0	20.7
15540.00	8.6	<45.0	<45.0	9.5	<44.1	74.0	>29.9
Average measurement							
5150.00	9.6	31.8	32.0	-	41.6	54.0	12.4
15540.00	8.6	<35.0	<35.0	9.5	<34.1	54.0	>19.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
6906.50	-2.0	58.6	60.8	-	58.8	-36.4	-27.0	9.4
10360.00	3.0	<45.0	<45.0	-	<48.0	<-47.2	-27.0	>20.2



11n-20 5200MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
15600.00	8.6	<45.0	<45.0	9.5	<44.1	74.0	>29.9
Average measurement							
15600.00	8.6	<35.0	<35.0	9.5	<34.1	54.0	>19.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
6933.00	-1.9	58.9	58.2	-	57.0	-38.2	-27.0	11.2
10400.00	3.0	<45.0	<45.0	-	<48.0	<-47.2	-27.0	>20.2



11n-20 5240MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
15720.00	8.7	<45.0	<45.0	9.5	<44.2	74.0	>29.8
Average measurement							
15720.00	8.7	<35.0	<35.0	9.5	<34.2	54.0	>19.8

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
6986.00	-1.8	59.0	57.0	-	57.2	-38.0	-27.0	11.0
10480.00	3.2	<45.0	<45.0	-	<48.2	<-47.0	-27.0	>20.0



11n-20 5260MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
15780.00	8.7	<45.0	<45.0	9.5	<44.2	74.0	>29.8
Average measurement							
15780.00	8.7	<35.0	<35.0	9.5	<34.2	54.0	>19.8

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
7014.00	1.2	54.9	53.6	-	56.1	-39.1	-27.0	12.1
10520.00	3.2	<45.0	<45.0	-	<48.2	<-47.0	-27.0	>20.0



11n-20 5300MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
10600.00	3.5	<45.0	<45.0	-	<48.5	74.0	>25.5
15900.00	8.7	<45.0	<45.0	-	<53.7	74.0	>20.3
Average measurement							
10600.00	3.5	<35.0	<35.0	-	<38.5	54.0	>15.5
15900.00	8.7	<35.0	<35.0	-	<43.7	54.0	>10.3

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
7066.00	-1.7	56.3	59.2	-	57.5	-37.7	-27.0	10.7



11n-20 5320MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5350.00	9.8	44.5	43.3	-	54.3	74.0	19.7
10640.00	3.5	<45.0	<45.0	-	<48.5	74.0	>25.5
15960.00	8.7	<45.0	<45.0	9.5	<44.2	74.0	>29.8
Average measurement							
5350.00	9.8	31.5	31.8	-	41.6	54.0	12.4
10640.00	3.5	<35.0	<35.0	-	<38.5	54.0	>15.5
15960.00	8.7	<35.0	<35.0	9.5	<34.2	54.0	>19.8

above 1GHz Outside of the restricted band

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1 m to 3 m	Maximum Field Strength	EIRP	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization					
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBm)	(dBμV/m)	(dB)
Peak measurement								
7093.00	-1.7	57.3	56.4	-	55.6	-39.6	-27.0	12.6



11n-20 5500MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5460.00	9.9	43.4	43.5	-	53.4	74.0	20.6
7333.00	-1.4	51.0	52.0	-	50.6	74.0	23.4
11000.00	4.1	<45.0	<45.0	-	<49.1	74.0	>24.9
Average measurement							
5460.00	9.9	31.2	31.6	-	41.5	54.0	12.5
7333.00	-1.4	48.0	49.5	-	48.1	54.0	5.9
11000.00	4.1	<35.0	<35.0	-	<39.1	54.0	>14.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
5470.00	9.8	43.8	43.6	-	53.6	-41.6	-27.0	14.6
16500.00	9.6	<45.0	<45.0	9.5	<45.1	<-50.1	-27.0	>23.1



11n-20 5580MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7439.00	-1.3	49.4	49.3	-	48.1	74.0	25.9
11160.00	4.4	<45.0	<45.0	-	<49.4	74.0	>24.6
Average measurement							
7439.00	-1.3	45.3	45.1	-	44.0	54.0	10.0
11160.00	4.4	<35.0	<35.0	-	<39.4	54.0	>14.6

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
16740.00	10.0	<45.0	<45.0	9.5	<45.5	<-49.7	-27.0	>22.7



11n-20 5700MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7599.00	-1.2	47.6	48.2	-	47.0	74.0	27.0
11400.00	4.9	<45.0	<45.0	-	<49.9	74.0	>24.1
Average measurement							
7599.00	-1.2	41.1	43.4	-	42.2	54.0	11.8
11400.00	4.9	<35.0	<35.0	-	<39.9	54.0	>14.1

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
5725.00	9.4	43.2	44.2	-	53.6	-41.6	-27.0	14.6
17100.00	10.6	<45.0	<45.0	9.5	<46.1	<-49.1	-27.0	>22.1



11n-20 5745MHz

below 1GHz

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1m to 3m	Maximum Field Strength	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization				
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7659.00	-1.1	47.5	46.4	-	46.4	74.0	27.6
11490.00	4.9	<45.0	<45.0	-	<49.9	74.0	>24.1
Average measurement							
7659.00	-1.1	39.7	38.0	-	38.6	54.0	15.4
11490.00	4.9	<35.0	<35.0	-	<39.9	54.0	>14.1

above 1GHz Outside of the restricted band

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1 m to 3 m	Maximum Field Strength	EIRP	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization					
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBm)	(dBm)	(dB)
Peak measurement								
5715.00	9.4	43.5	43.9	-	53.3	-41.9	-27.0	14.9
5725.00	9.4	50.1	53.9	-	63.3	-31.9	-17.0	14.9
17235.00	10.8	<45.0	<45.0	9.5	<46.3	<-48.9	-27.0	>21.9



11n-20 5785MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7713.00	-0.9	47.1	46.4	-	46.2	74.0	27.8
11570.00	5.2	<45.0	<45.0	-	<50.2	74.0	>23.8
Average measurement							
7713.00	-0.9	39.4	38.0	-	38.5	54.0	15.5
11570.00	5.2	<35.0	<35.0	-	<40.2	54.0	>13.8

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
17355.00	11.0	<45.0	<45.0	9.5	<56.0	<-48.7	-27.0	>21.7



11n-20 5825MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7766.00	-0.9	46.5	46.8	-	45.9	74.0	28.1
11650.00	5.2	<45.0	<45.0	-	<50.2	74.0	>23.8
Average measurement							
7766.00	-0.9	38.6	37.8	-	37.7	54.0	16.3
11650.00	5.2	<35.0	<35.0	-	<40.2	54.0	>13.8

above 1GHz Outside of the restricted band

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1 m to 3 m	Maximum Field Strength	EIRP	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization					
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBm)	(dBm)	(dB)
Peak measurement								
5850.00	9.8	43.5	45.1	-	54.9	-40.3	-17.0	23.3
5860.00	9.9	43.0	44.0	-	53.9	-41.3	-27.0	14.3
17475.00	11.3	<45.0	<45.0	9.5	<46.8	<-48.4	-27.0	>21.4



11n-40 5190MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.8	7.2	-	31.6	46.0	14.4
880.00	26.1	5.3	3.4	-	31.4	46.0	14.6
960.00	27.2	6.4	5.3	-	33.6	46.0	12.4

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5150.00	9.6	44.6	43.8	-	54.2	74.0	19.8
15570.00	8.6	<45.0	<45.0	9.5	<44.1	74.0	>29.9
Average measurement							
5150.00	9.6	32.1	32.3	-	41.9	54.0	12.1
15570.00	8.6	<35.0	<35.0	9.5	<34.1	54.0	>19.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
6919.00	-1.9	58.8	59.8	-	57.9	-37.3	-27.0	10.3
10380.00	3.0	<45.0	<45.0	-	<48.0	<-47.2	-27.0	>20.2



11n-40 5230MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.8	7.2	-	31.6	46.0	14.4
880.00	26.1	5.3	3.4	-	31.4	46.0	14.6
960.00	27.2	6.4	5.3	-	33.6	46.0	12.4

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
15690.00	8.6	<45.0	<45.0	9.5	<44.1	74.0	>29.9
Average measurement							
15690.00	8.6	<35.0	<35.0	9.5	<34.1	54.0	>19.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
6973.00	-1.8	55.2	57.2	-	55.4	-39.8	-27.0	12.8
10460.00	3.2	<45.0	<45.0	-	<48.2	<-47.0	-27.0	>20.0



11n-40 5270MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.8	7.2	-	31.6	46.0	14.4
880.00	26.1	5.3	3.4	-	31.4	46.0	14.6
960.00	27.2	6.4	5.3	-	33.6	46.0	12.4

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
15690.00	8.6	<45.0	<45.0	9.5	<44.1	74.0	>29.9
Average measurement							
15690.00	8.6	<35.0	<35.0	9.5	<34.1	54.0	>19.9

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
7026.60	1.2	54.9	53.6	-	56.1	-39.1	-27.0	12.1
10460.00	3.2	<45.0	<45.0	-	<48.2	<-47.0	-27.0	>20.0



11n-40 5310MHz

below 1GHz

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1m to 3m	Maximum Field Strength	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization				
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Quasi-Peak measurement							
720.00	23.8	7.8	7.2	-	31.6	46.0	14.4
880.00	26.1	5.3	3.4	-	31.4	46.0	14.6
960.00	27.2	6.4	5.3	-	33.6	46.0	12.4

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5350.00	9.8	43.4	44.3	-	54.1	74.0	19.9
10620.00	3.5	<45.0	<45.0	-	<48.5	74.0	>25.5
15930.00	8.7	<45.0	<45.0	9.5	<44.2	74.0	>29.8
Average measurement							
5350.00	9.8	32.5	32.2	-	42.3	54.0	11.7
10620.00	3.5	<35.0	<35.0	-	<38.5	54.0	>15.5
15930.00	8.7	<35.0	<35.0	9.5	<34.2	54.0	>19.8

above 1GHz Outside of the restricted band

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1 m to 3 m	Maximum Field Strength	EIRP	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization					
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBm)	(dBm)	(dB)
Peak measurement								
7079.00	-1.7	56.9	56.2	-	55.2	-40.0	-27.0	13.0



11n-40 5510MHz

below 1GHz

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1m to 3m	Maximum Field Strength	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization				
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Quasi-Peak measurement							
720.00	23.8	7.8	7.2	-	31.6	46.0	14.4
880.00	26.1	5.3	3.4	-	31.4	46.0	14.6
960.00	27.2	6.4	5.3	-	33.6	46.0	12.4

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
5460.00	9.9	43.3	44.0	-	53.9	74.0	20.1
7346.00	-1.4	50.3	49.7	-	48.9	74.0	25.1
11020.00	4.2	<45.0	<45.0	-	<49.2	74.0	>24.8
Average measurement							
5460.00	9.9	31.3	31.6	-	41.5	54.0	12.5
7346.00	-1.4	47.0	45.1	-	45.6	54.0	8.4
11020.00	4.2	<35.0	<35.0	-	<39.2	54.0	>14.8

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
5470.00	9.8	43.2	44.8	-	54.6	-40.6	-27.0	13.6
16530.00	9.6	<45.0	<45.0	9.5	<45.1	<-50.1	-27.0	>23.1



11n-40 5550MHz

below 1GHz

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1m to 3m	Maximum Field Strength	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization				
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
Quasi-Peak measurement							
720.00	23.8	7.8	7.2	-	31.6	46.0	14.4
880.00	26.1	5.3	3.4	-	31.4	46.0	14.6
960.00	27.2	6.4	5.3	-	33.6	46.0	12.4

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7400.00	-1.3	49.8	49.6	-	48.5	74.0	25.5
11100.00	4.3	<45.0	<45.0	-	<49.3	74.0	>24.7
Average measurement							
7400.00	-1.3	46.1	45.8	-	44.8	54.0	9.2
11100.00	4.3	<35.0	<35.0	-	<39.3	54.0	>14.7

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
16650.00	9.9	<45.0	<45.0	9.5	<45.4	<-49.8	-27.0	>22.8



11n-40 5670MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.7	8.0	-	31.8	46.0	14.2
880.00	26.1	7.2	5.9	-	33.3	46.0	12.7
960.00	27.2	6.3	5.4	-	33.5	46.0	12.5

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7560.00	-1.2	47.4	47.2	-	46.2	74.0	27.8
11340.00	4.8	<45.0	<45.0	-	<49.8	74.0	>24.2
Average measurement							
7560.00	-1.2	41.8	41.5	-	40.6	54.0	13.4
11340.00	4.8	<35.0	<35.0	-	<39.8	54.0	>14.2

above 1GHz Outside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1 m to 3 m (dB)	Maximum Field Strength (dBμV/m)	EIRP (dBm)	Limit (dBm)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)					
Peak measurement								
5725.00	9.4	43.3	43.5	-	52.9	-42.3	-27.0	15.3
17010.00	10.4	<45.0	<45.0	9.5	<45.9	<-49.3	-27.0	>22.3



11n-40 5755MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.8	7.2	-	31.6	46.0	14.4
880.00	26.1	5.3	3.4	-	31.4	46.0	14.6
960.00	27.2	6.4	5.3	-	33.6	46.0	12.4

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7673.00	-1.0	46.7	46.8	-	45.8	74.0	28.2
11510.00	4.9	<45.0	<45.0	-	<49.9	74.0	>24.1
Average measurement							
7673.00	-1.0	39.1	39.2	-	38.2	54.0	15.8
11510.00	4.9	<35.0	<35.0	-	<39.9	54.0	>14.1

above 1GHz Outside of the restricted band

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1m to 3m	Maximum Field Strength	EIRP	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization					
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBm)	(dBm)	(dB)
Peak measurement								
5715.00	9.4	44.5	47.7	-	57.1	-38.1	-27.0	11.1
5725.00	9.4	47.8	51.5	-	60.9	-34.3	-17.0	17.3
17265.00	10.8	<45.0	<45.0	9.5	<46.3	<-48.9	-27.0	>21.9



11n-40 5795MHz

below 1GHz

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Quasi-Peak measurement							
720.00	23.8	7.8	7.2	-	31.6	46.0	14.4
880.00	26.1	5.3	3.4	-	31.4	46.0	14.6
960.00	27.2	6.4	5.3	-	33.6	46.0	12.4

above 1GHz Inside of the restricted band

Measured Frequency (MHz)	Correction Factor (dB/m)	Meter Reading		Distance Factor from 1m to 3m (dB)	Maximum Field Strength (dBμV/m)	Limit (dBμV/m)	Margin for Limit (dB)
		Horizontal Polarization (dBμV)	Vertical Polarization (dBμV)				
Peak measurement							
7726.00	-0.9	46.5	46.9	-	46.0	74.0	28.0
11590.00	5.2	<45.0	<45.0	-	<50.2	74.0	>23.8
Average measurement							
7726.00	-0.9	39.3	38.6	-	38.4	54.0	15.6
11590.00	5.2	<35.0	<35.0	-	<40.2	54.0	>13.8

above 1GHz Outside of the restricted band

Measured Frequency	Correction Factor	Meter Reading		Distance Factor from 1 m to 3 m	Maximum Field Strength	EIRP	Limit	Margin for Limit
		Horizontal Polarization	Vertical Polarization					
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dB)	(dBμV/m)	(dBm)	(dBm)	(dB)
Peak measurement								
5850.00	9.8	42.9	43.1	-	52.9	-42.3	-17.0	25.3
5860.00	9.9	43.5	43.3	-	53.4	-41.8	-27.0	14.8
17385.00	11.1	<45.0	<45.0	9.5	<46.6	<-48.6	-27.0	>21.6

[Note]

- (1) ☐ Correction Factor includes the antenna factor, cable loss, attenuator loss and pre-amplifier gain.
☒ Correction Factor includes the cable loss and attenuator loss.
Above 1000MHz, the antenna factor includes the cable loss, pre-amplifier gain and attenuator loss (if necessary).

- (2) * mark in Measured Frequency : Measured with the tuned dipole antenna.
no mark in Measured Frequency : Measured with the broadband antenna.

- (3) Upper Frequency : ☒ Transmitter Frequency (TX): TX < 10GHz
☐ 1GHz ☐ 10th harmonic of the highest frequency / ☒ Up to 40GHz
☐ Transmitter Frequency (TX): 10GHz ≤ TX < 30GHz
☐ 10th harmonic of the highest frequency / ☐ Up to 100GHz
☐ Transmitter Frequency (TX): 30GHz ≤ TX
☐ 10th harmonic of the highest frequency / ☐ Up to 200GHz

The emissions were checked to the upper frequency, and the lower emissions than the listed emissions in the above tables were omitted.

- (4) Measurement Distance : <below 1GHz> ☒ 3m ☐ 10m
<above 1GHz> ☒ 3m ☐ 10m
<above 12.4GHz> 1m

- (5) Bore-sight method setting: horn antenna orientation was center of Turn Table

[Calculation method]

Maximum Field Strength (dBμV/m)

= Meter Reading (at maximum level of Horizontal or Vertical) (dBμV) + Correction Factor (dB/m) – Distance factor (*)

- (*) Applied for Radiated Emission Measurement (above 12.4GHz) only.
Distance factor : 20 × log10 (3m/1m) = 9.5dB

Field Strength to EIRP conversion calculation

$$EIRP = ((E \times d)^2) / 30$$

E is the field strength in V/m;

d is the measurement distance in meters;

EIRP is the equivalent isotropically radiated power in watts.

$$EIRP(dBm) = E(dBμV/m) + 20 \times \log(d(meter)) - 104.77$$

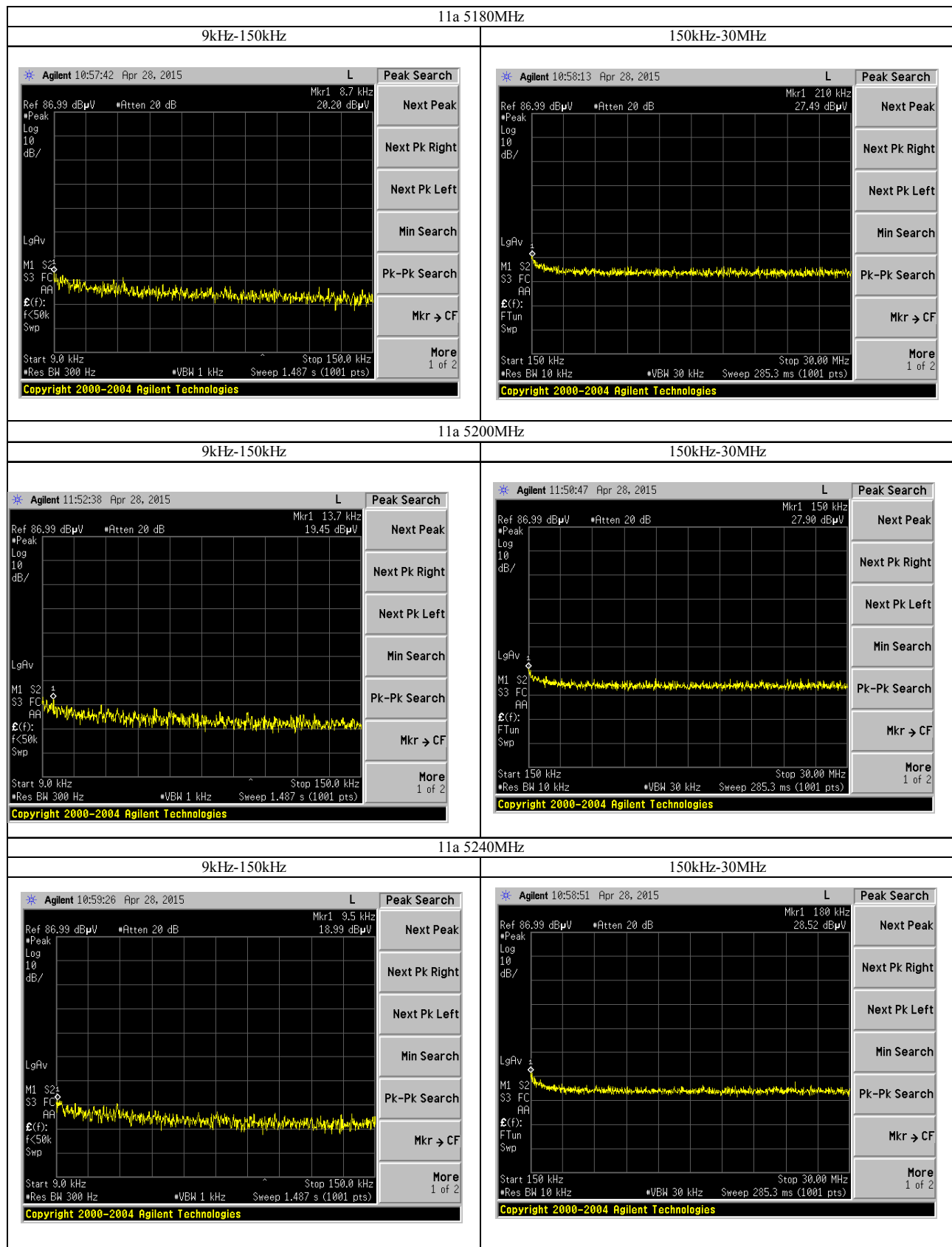
d is 3 meter:

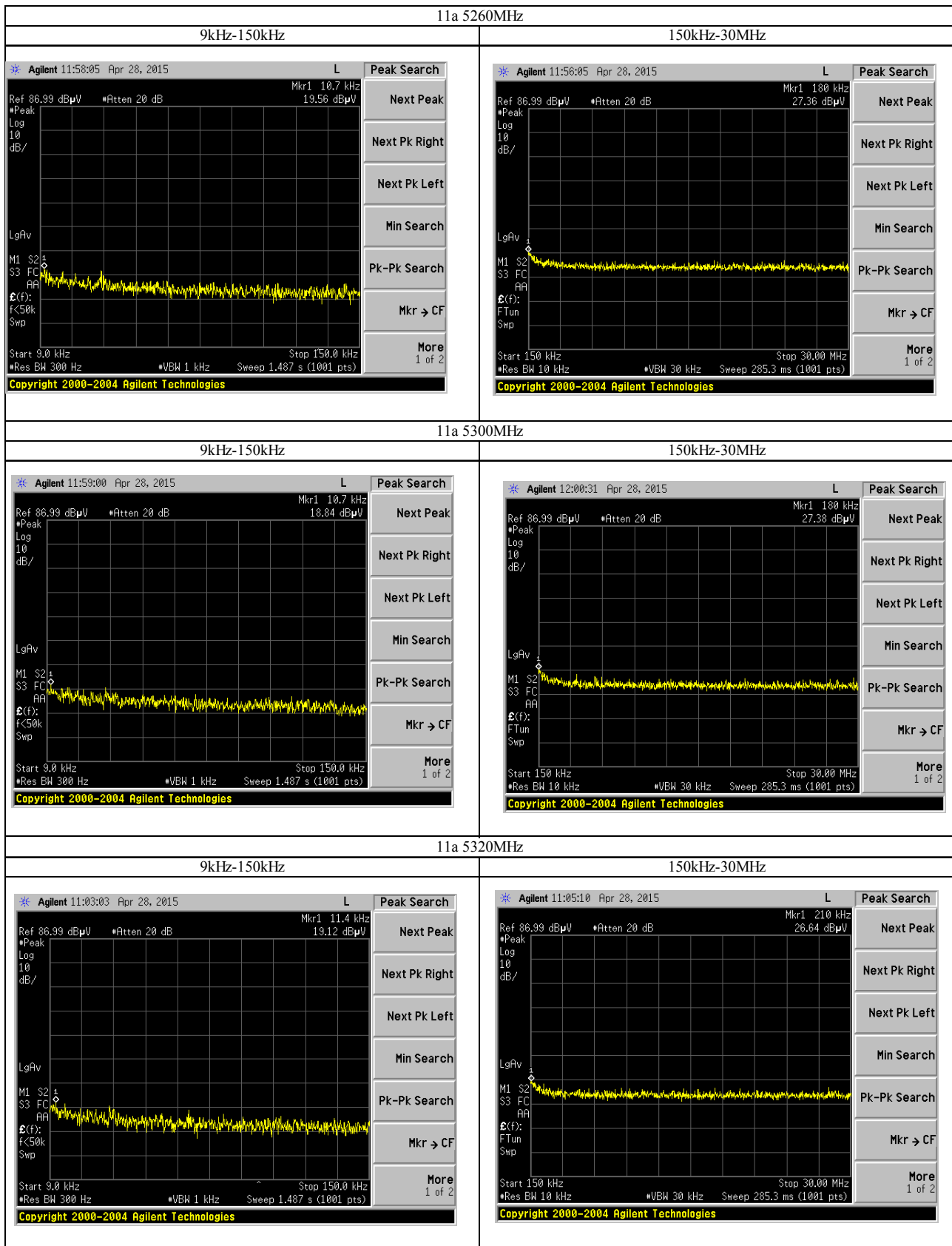
$$EIRP(dBm) = E(dBμV/m) - 95.2$$

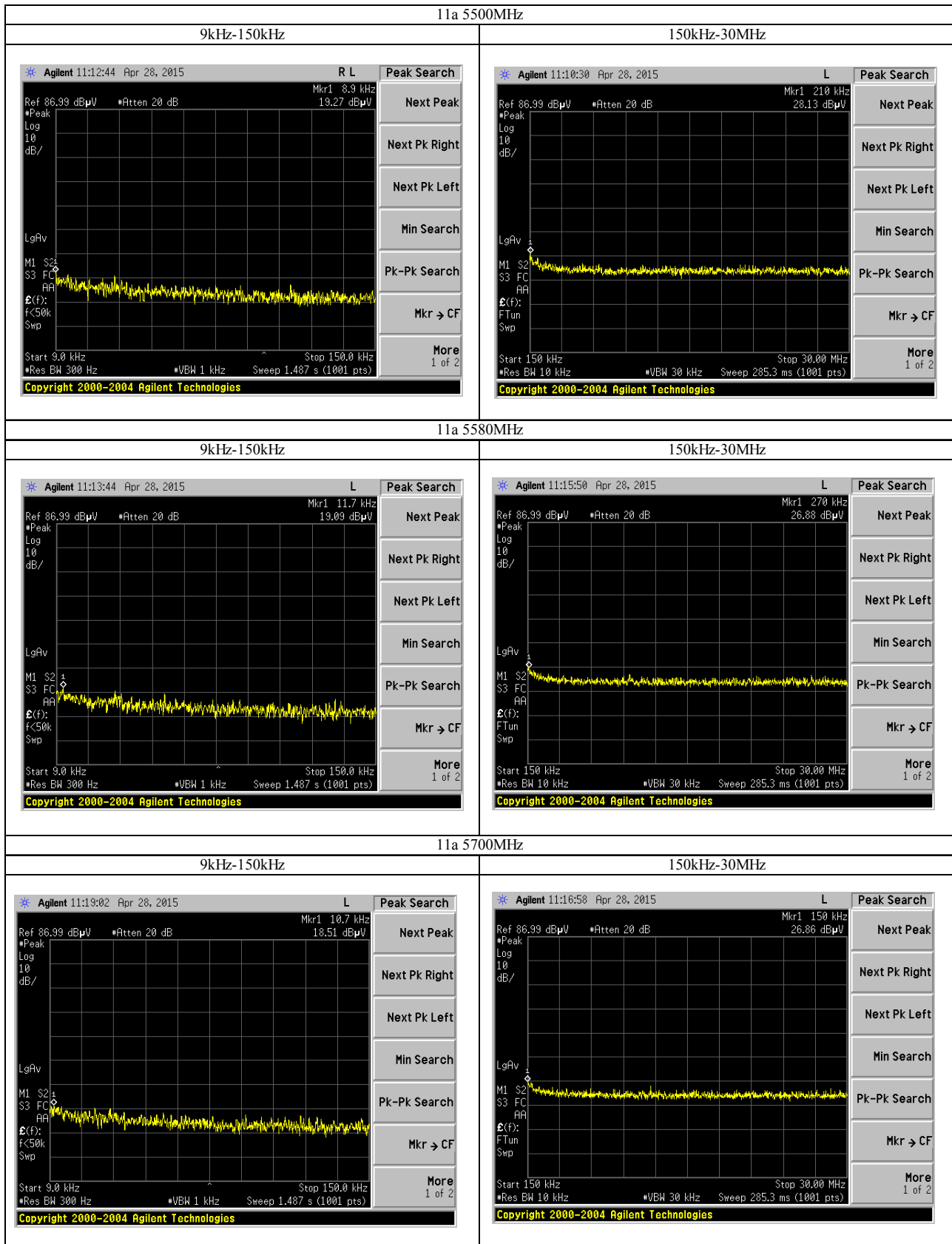
Tested Date	Environment	
	Temperature	Humidity
30 April 2015	22°C	37 %

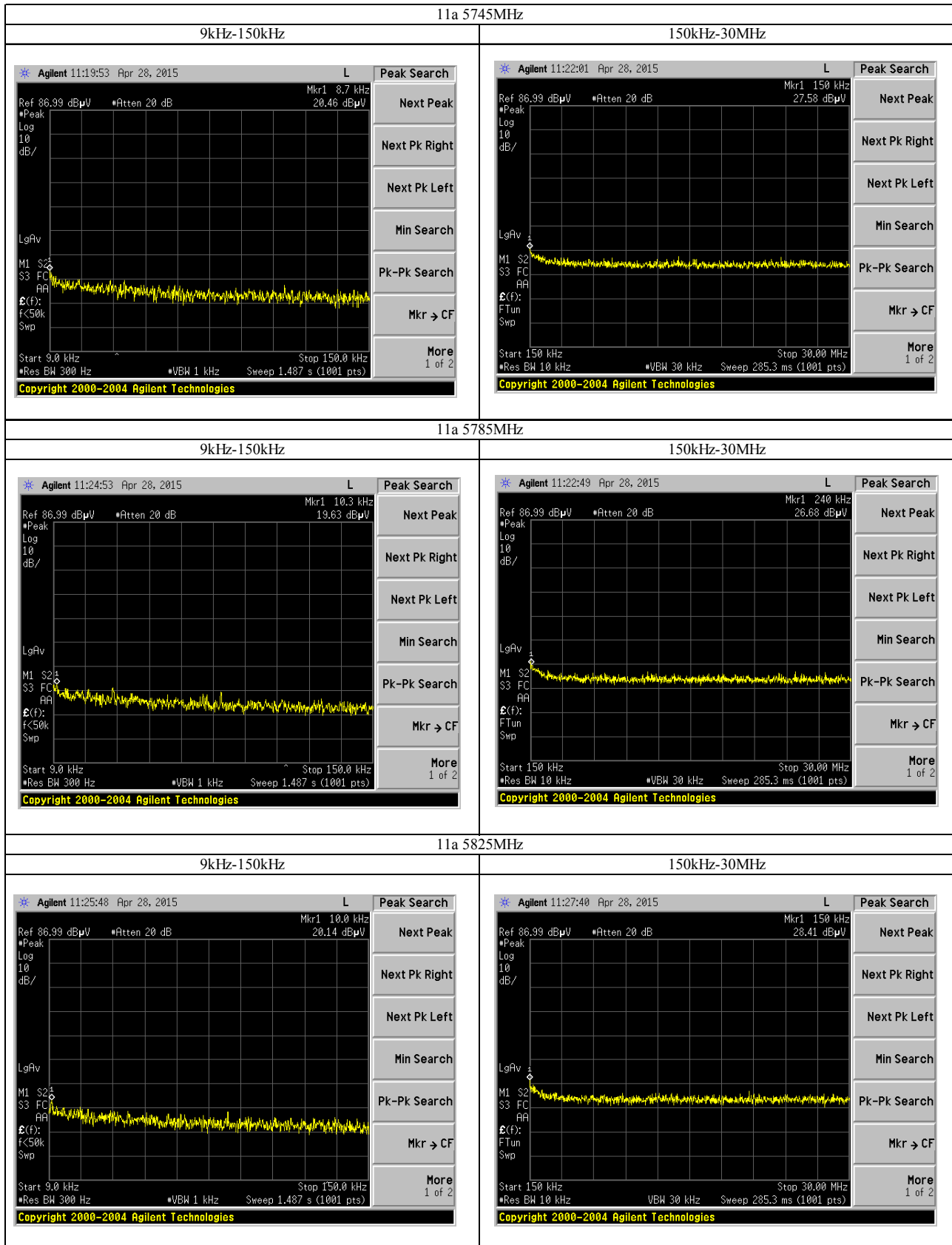


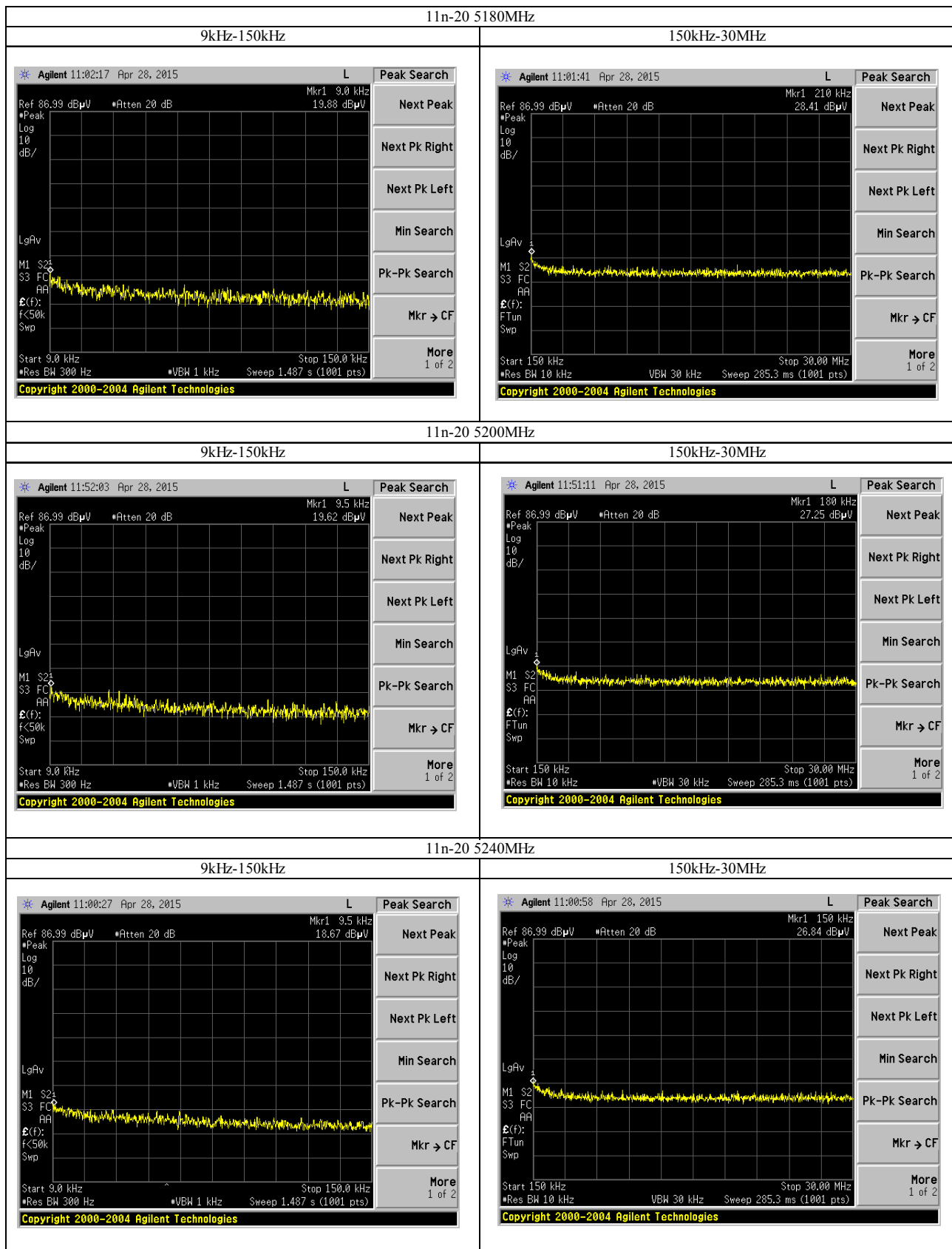
Conducted measurement

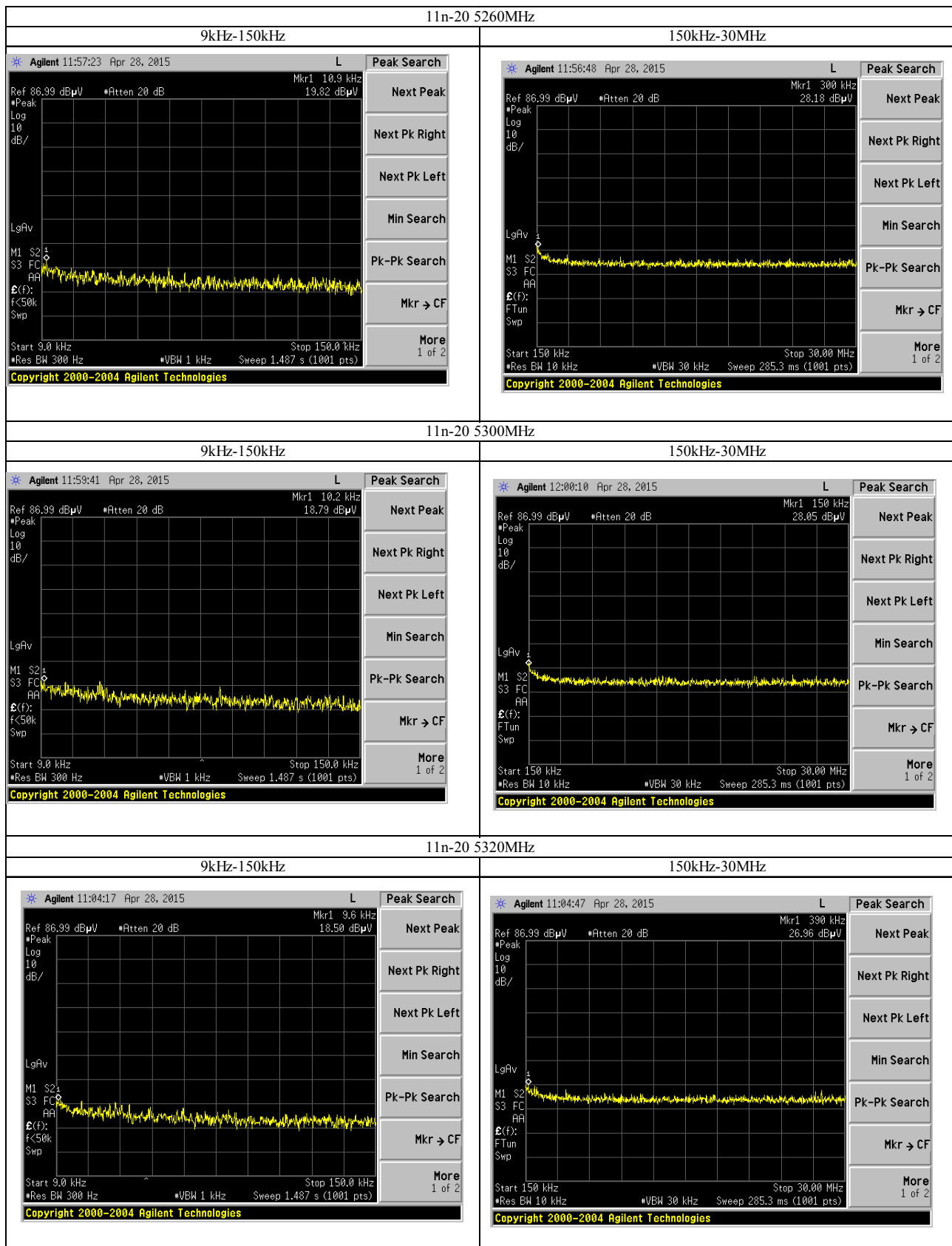


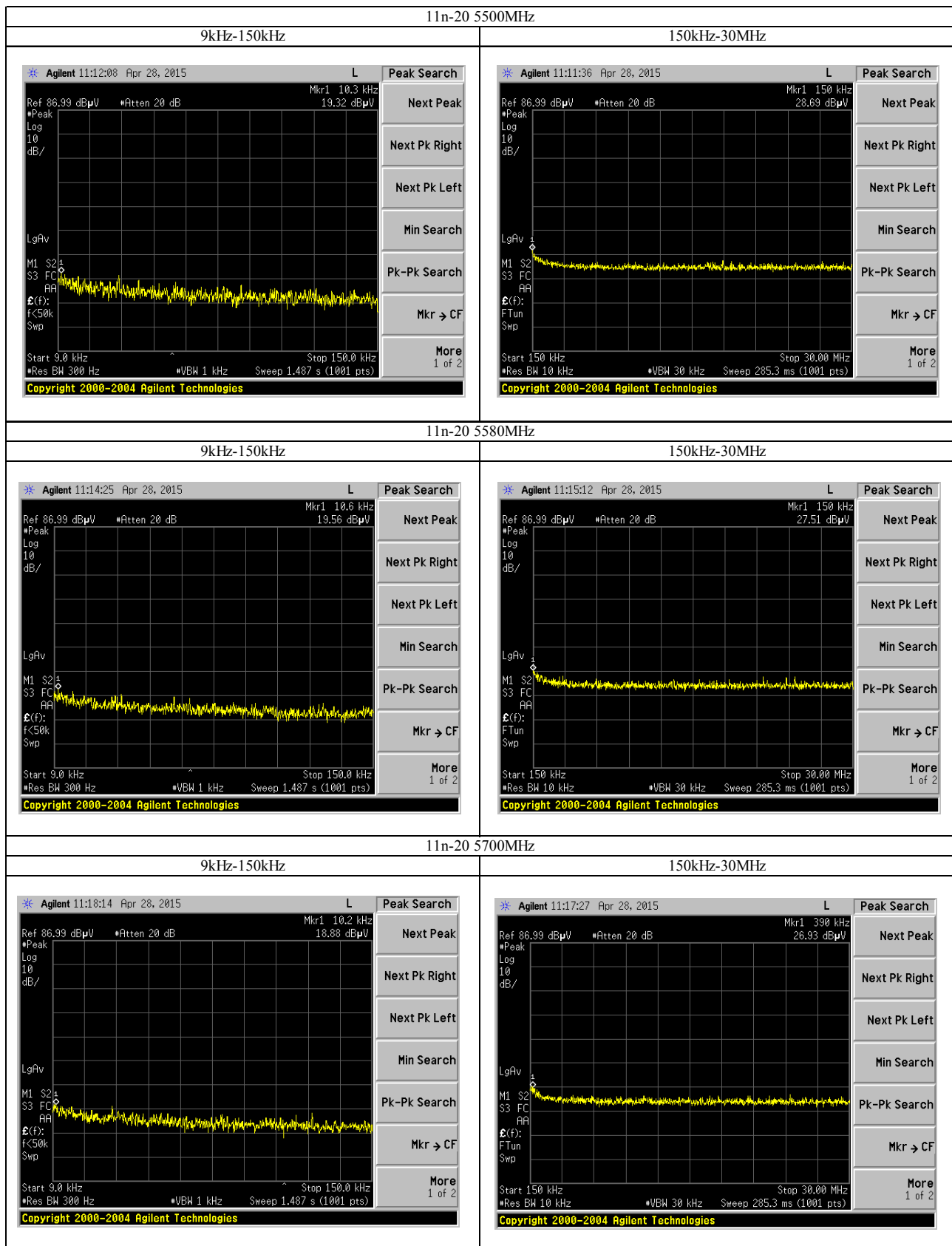


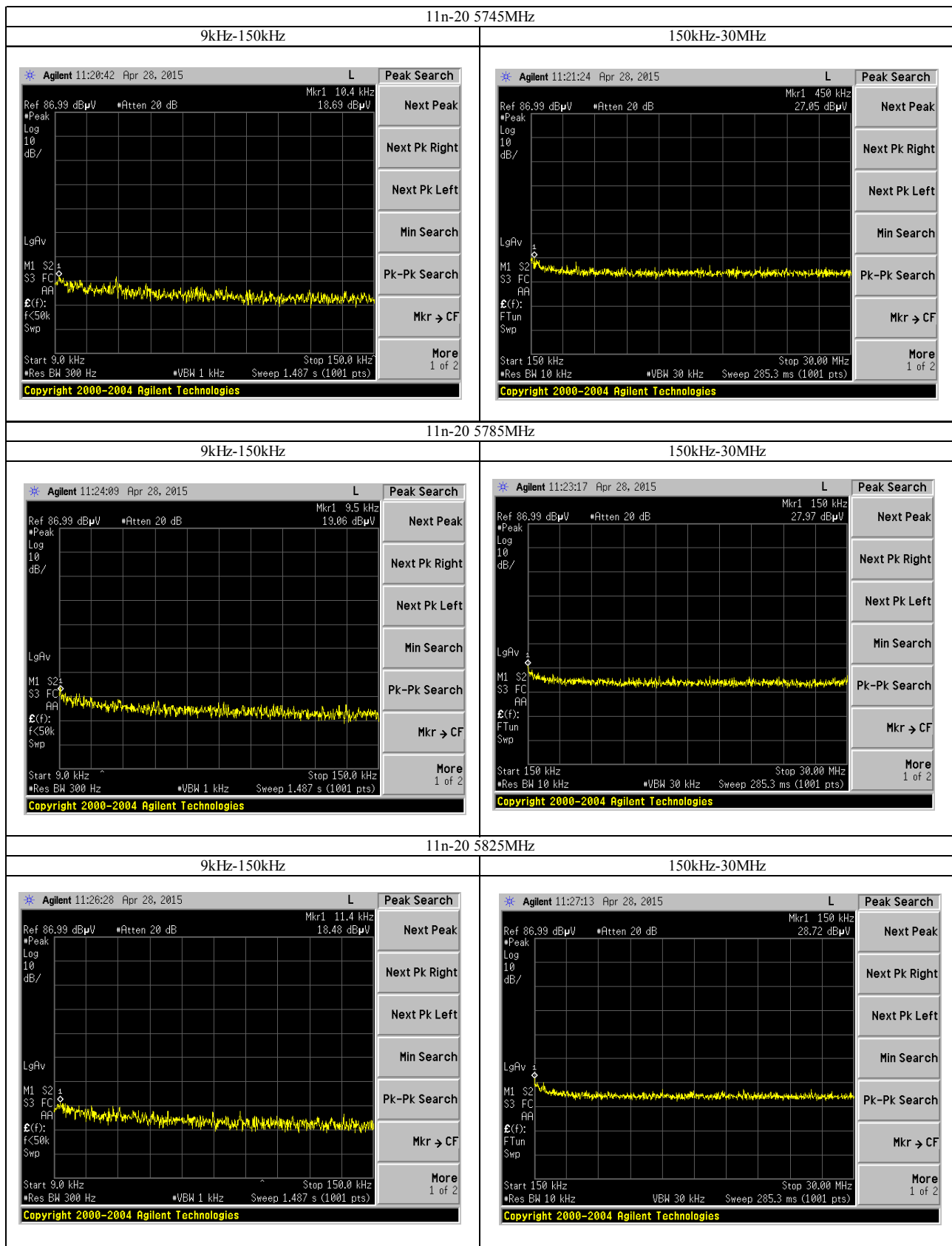


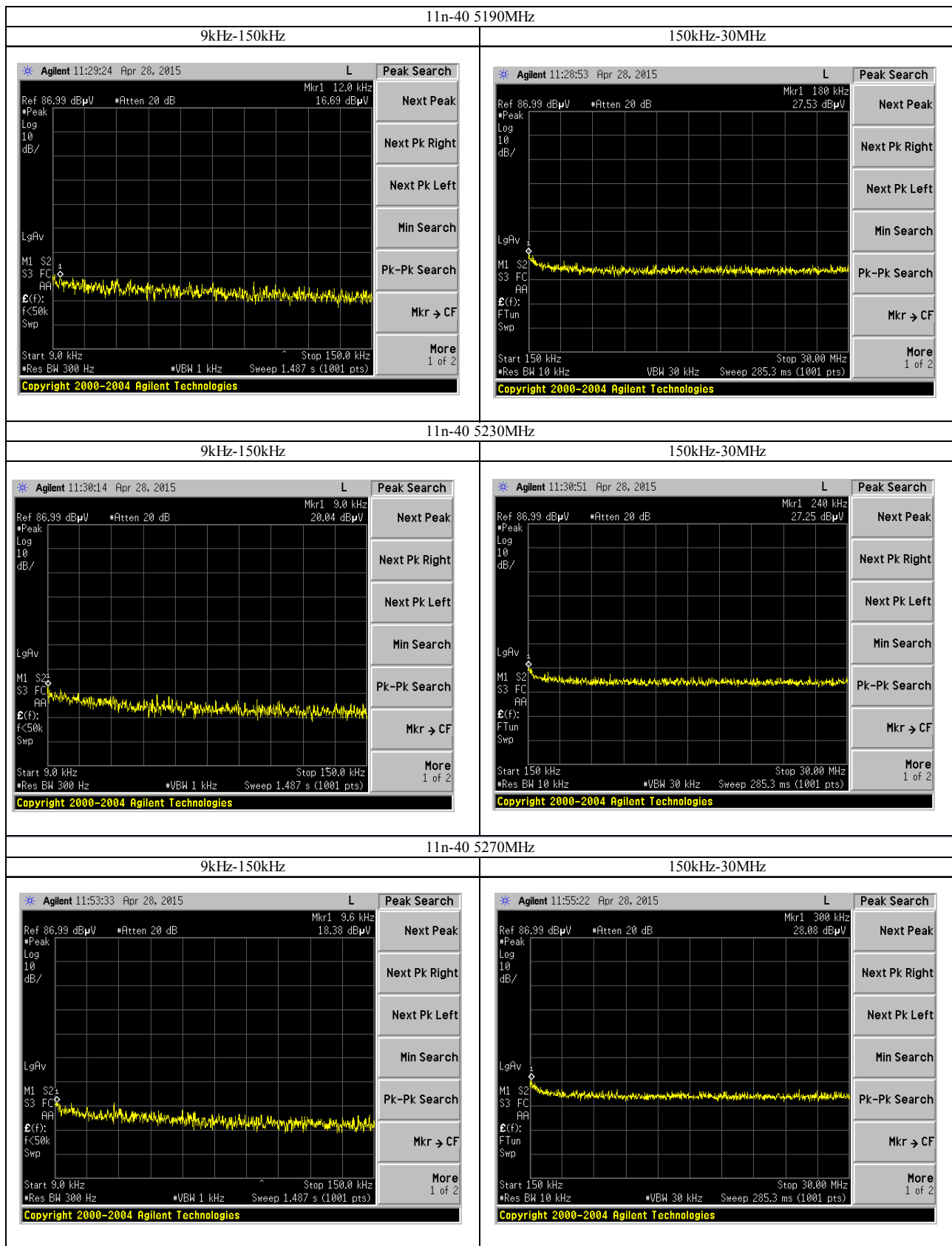


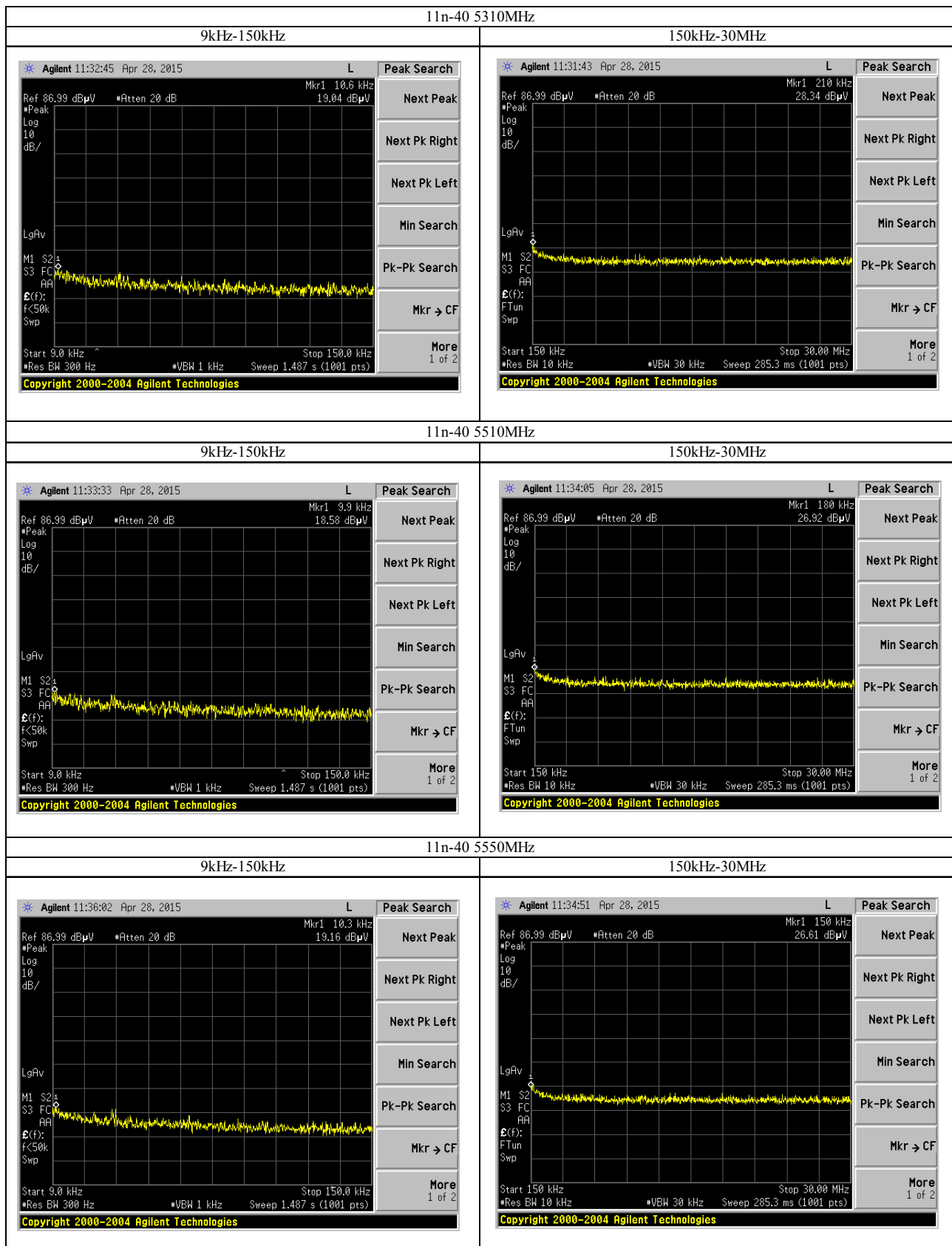


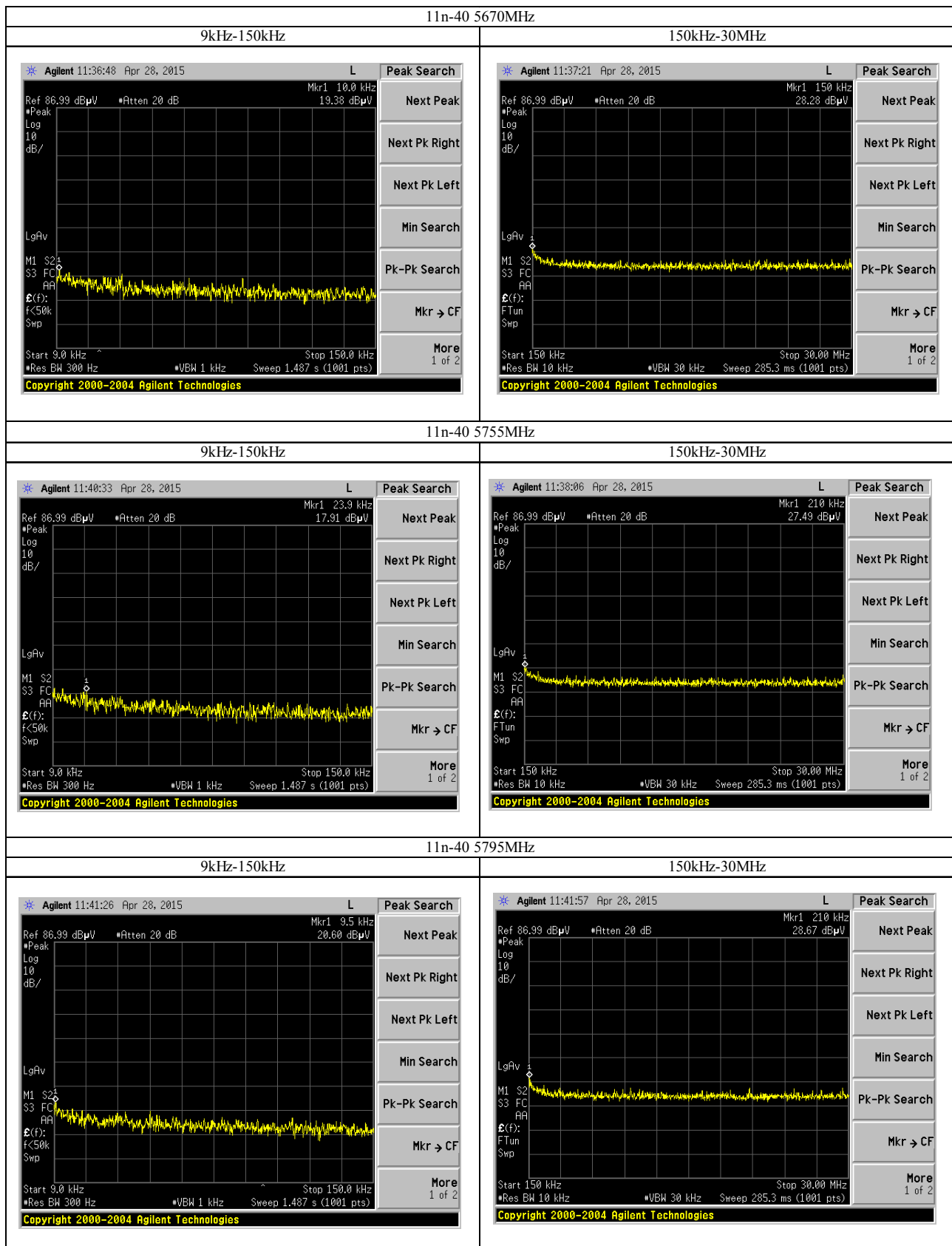














9. IN-SERVICE MONITORING FOR CHANNEL MOVE TIME, CHANNEL CLOSING TRANSMISSION TIME

9.1. DFS related operating mode

☐ Master
☐ Client with radar detection
☒ Client without radar detection

9.2. DFS Requirement

Table 1 : DFS Detection Thresholds for Master Devices and Client Devices With Radar Detection

Maximum Transmit Power	Value (See Notes 1,2,and 3)
EIRP $\geq$ 200 milliwatt	-64 dBm
EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
EIRP < 200 milliwatt that do not meet the power spectral density requirement	-64 dBm
Note 1 : This is the level at the input of the receiver assuming a 0 dBi receive antenna.	
Note 2 : Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.	
Note 3 : EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	

Table 2 : DFS Response Requirement Values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. See Note 3.
Note 1 : Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.	
Note 2 : The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.	
Note 3 : During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

Table 3 : Short Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in Table 5a	Roundup $\{(1/360) * (19 * 10^6 / \text{PRI}_{\mu\text{sec}})\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 μsec, with a minimum increment of 1 μsec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Type 1-4)				80%	120
Note 1 : Short Pulse Radar Type 0 should be used for the detection bandwidth test, channel move time, and channel closing time tests.					

Table 4 : Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chip Width (MHz)	PRI (μsec)	Number of Pulses per Burst	Number of Burst	Minimum Percentage of Successful Detection	Minimum Number of Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

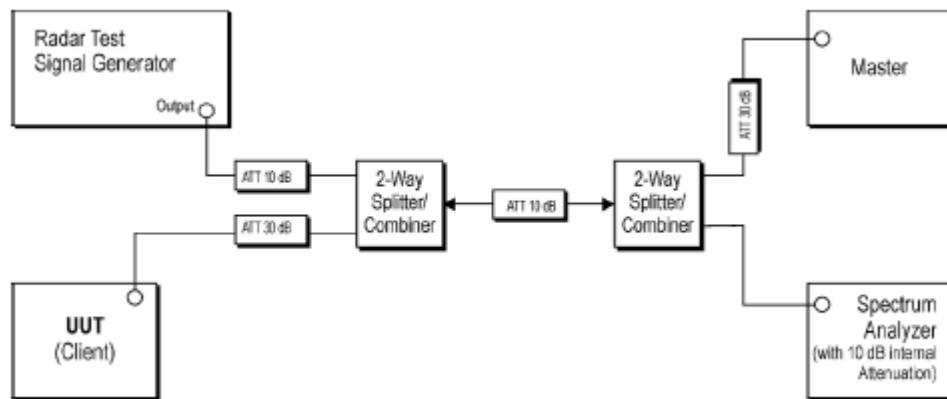
Table 5 : Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulse per Hop (kHz)	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Number of Trials
6	1	333	9	0.333	300	70%	30

9.3. Test Procedure

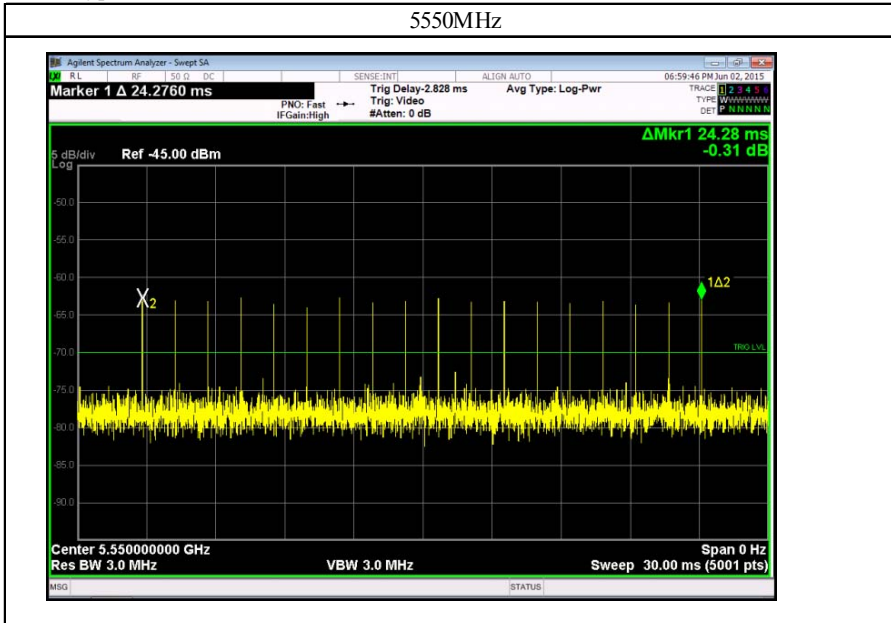
- (1) Configure the EUT for normal transmissions with a channel loading of approximately 17% or greater.
- (2) Refer as KDB Publication No. 905462 D02 UNII DFS Compliance Procedures New Rules v01r02.

[Test setup]

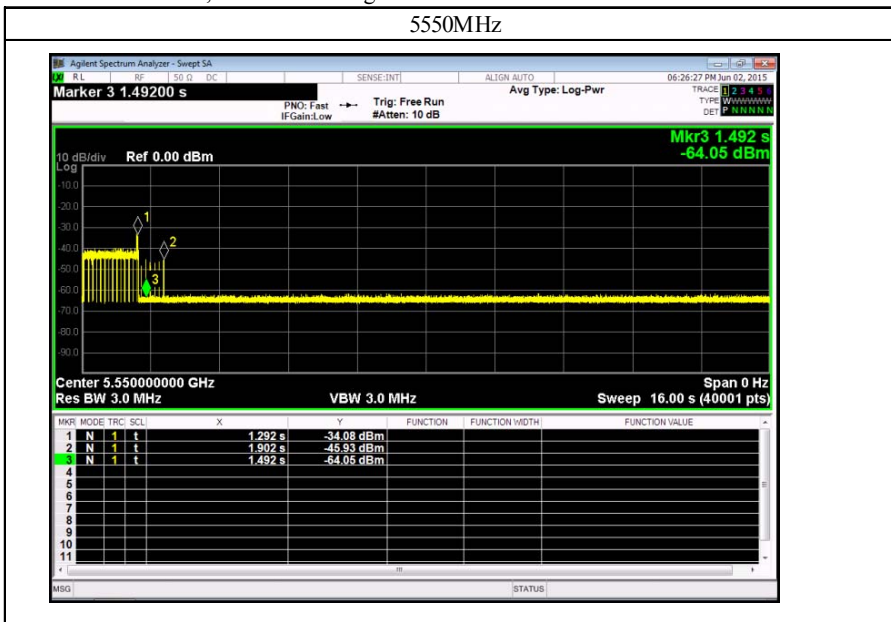


The rated output power of the Master unit is $\geq 200\text{mW}$. Therefore the required interference threshold level is -64dBm . After correction for antenna gain and procedural adjustments, the required conducted threshold at the antenna port is $-64 + 1 + 0 = -63.0\text{dBm}$ (threshold level + additional 1dB + antenna gain)

Radar Type 0



Channel Move Time, Channel Closing Transmission Time



Channel Move Time

Test Item	Unit	Measurement Time	Limit	Result
Channel Move Time	[sec]	0.610	10	Pass
Channel Closing Transmission Time	[msec]	0.002	60	Pass

[Note]

Marker1 : End of Burst
 Marker2 : End of Transmission
 Marker3 : End of Burst + 200ms

**[Calculation method]**

Channel Move Time = End of Transmission - End of Burst = 1.902 - 1.292sec

Channel Closing Transmission Time is calculated from (End of Burst + 200ms)
to (End of Burst + 10sec)

Channel Closing Transmission Time

= (Number of analyzer bins showing transmission) × (dwell time per bin)

Tested Date	Environment	
	Temperature	Humidity
2 June 2015	22 °C	42 %



10. TEST EQUIPMENT

• Conducted Emission

KEC No.	Equipment	Manufacturer	Model No.	Last Cal.	Next Cal.
AT-144	Low Power Attenuator	HUBER+SUHNER	6810.01.A	2014/09	2015/09
FL-107	LISN	KYORITSU	KNW-407	2014/09	2015/09
FS-083	Test Receiver	ROHDE & SCHWARZ	ESHS10	2014/12	2015/12
FS-103	Test Receiver	Schwarzbeck	FCKL1528	2014/12	2015/12
MM-252	RF Relay Matrix	TSJ	RFM-E121	2014/09	2015/09
SA-049	Spectrum Analyzer	Agilent	E4403B	2014/11	2015/11

• Emission Bandwidth

• Peak Power Spectral Density

KEC No.	Equipment	Manufacturer	Model No.	Last Cal.	Next Cal.
AT-148	Fixed Attenuator	Anritsu	41KC-10	2015/05	2016/05
SA-065	Signal Analyzer	Agilent	N9030A	2014/11	2015/11

• Maximum Conducted Output Power

KEC No.	Equipment	Manufacturer	Model No.	Last Cal.	Next Cal.
AT-148	Fixed Attenuator	Anritsu	41KC-10	2015/05	2016/05
VV-061	Power Meter	Agilent	N1912A	2014/05	2015/06
VV-061-1	Wideband Power Sensor	Agilent	N1921A	2014/05	2015/06

• Spurious Emission (Radiated)

KEC No.	Equipment	Manufacturer	Model No.	Last Cal.	Next Cal.
AM-053	Pre-Amplifier	HP	8449B	2015/04	2016/04
AM-098	Pre-Amplifier	SONOMA	SONOMA 310N	2015/04	2016/04
AM-118	Xa Band Pre Amplifier	MITEQ	TTA1840-35-HG	2014/10	2015/04
AN-104	Std. Gain Horn Antenna	Scientific-Atlanta	12-5.8	2015/04	2017/04
AN-107	Std. Gain Horn Antenna	Scientific-Atlanta	12A-18	2013/12	2015/12
AN-109	Std. Gain Horn Antenna	Scientific-Atlanta	12A-26	2013/12	2015/12
AN-145	Std. Gain Horn Antenna	Scientific-Atlanta	12-12	2015/04	2017/04
AN-210	Std. Gain Horn Antenna	Scientific-Atlanta	12-8.2	2015/04	2017/04
AN-220	LPDA Antenna	Schwarzbeck	UHALP 9108A	2015/04	2016/04
AN-296	Biconical Antenna	Schwarzbeck	VHBB9124	2015/04	2016/04
AN-298	DRG Horn Antenna	Schwarzbeck	BBHA9120LF(A)	2015/04	2016/04
AT-148	Fixed Attenuator	Anritsu	41KC-10	2015/05	2016/05
AT-158	Fixed Attenuator	Anritsu	MP721B	2015/04	2016/04
FL-223	Band-stop Filter	TOYO	9BRM5250/T600	2015/04	2016/04
FL-224	Band-stop Filter	TOYO	6BRM5600/T700	2015/04	2016/04
FS-099	Test Receiver	ROHDE & SCHWARZ	ESS	2014/12	2015/11
MM-302	RF Selector	TOYO	NS4900	2015/04	2016/04
SA-052	Spectrum Analyzer	Agilent	E4446A	2014/10	2015/10
SA-058	Spectrum Analyzer	Agilent	N9010A	2015/04	2016/04



• Spurious Emission (Conducted)

KEC No.	Equipment	Manufacturer	Model No.	Last Cal.	Next Cal.
AT-148	Fixed Attenuator	Anritsu	41KC-10	2015/05	2016/05
SA-052	Spectrum Analyzer	Agilent	E4446A	2014/10	2015/10

• Channel Closing Transmission Time/ Channel Move Time

KEC No.	Equipment	Manufacturer	Model No.	Last Cal.	Next Cal.
AT-148	Fixed Attenuator	Anritsu	41KC-10	2015/05	2016/05
AT-152	Precision Fixed Attenuator	Anritsu	43KC-6	2015/05	2016/05
AT-154	Precision Fixed Attenuator	Anritsu	43KC-20	2015/05	2016/05
AT-170	Step Attenuator	Agilent	8495B	2014/11	2015/11
MM-325	Power Splitter	Mini-Circuits	ZFRSC-123-S+	2014/11	2015/11
MM-326	Power Splitter	Mini-Circuits	ZFRSC-123-S+	2014/11	2015/11
SA-065	Signal Analyzer	Agilent	N9030A	2014/11	2015/11
SG-069	Vector Signal Generator	Agilent	N5182B	2014/08	2015/08

Note : (*1) We check the performance, before using this device.

The overall program of calibration and verification of equipment is designed and operated so as to ensure that measurements made by KEC are traceable to national standards of measurement or equivalent abroad.



APPENDIX A (DECLARATION OF COMPLIANCE TO MAXIMUM PERMISSIBLE EXPOSURE LIMITS FOR HUMANS)

The Model WYSAAVDXB-E with 5150-5850MHz transmitter complies with Maximum permissible exposure limits for humans as called out in §1.1310. It is exempt from Maximum Permissible Exposure based on its operating frequency, and power density $0.01\text{mW}/\text{cm}^2$.

Calculation formula :

$$S = PG / 4\pi D^2$$

S : power density (W/m^2)

P : peak output power (W)

G : antenna gain (isotropic)

D : measurement distance (m)

Where :

P = 11.62dBm at 5785 MHz, 11a (see 50 page)

G = 2.4dBi

D = 0.2m

Therefore :

$$S(\text{W} / \text{m}^2) = \frac{10^{\frac{11.62}{10}} \times 10^{-3} \times 10^{\frac{2.4}{10}}}{4 \times \pi \times 0.2 \times 0.2} = 0.050$$

$$S \doteq 0.005 (\text{mW}/\text{cm}^2)$$

This would be less than $1\text{mW}/\text{cm}^2$ when the separation distance between the user and the device's radiating element is less than 20cm.