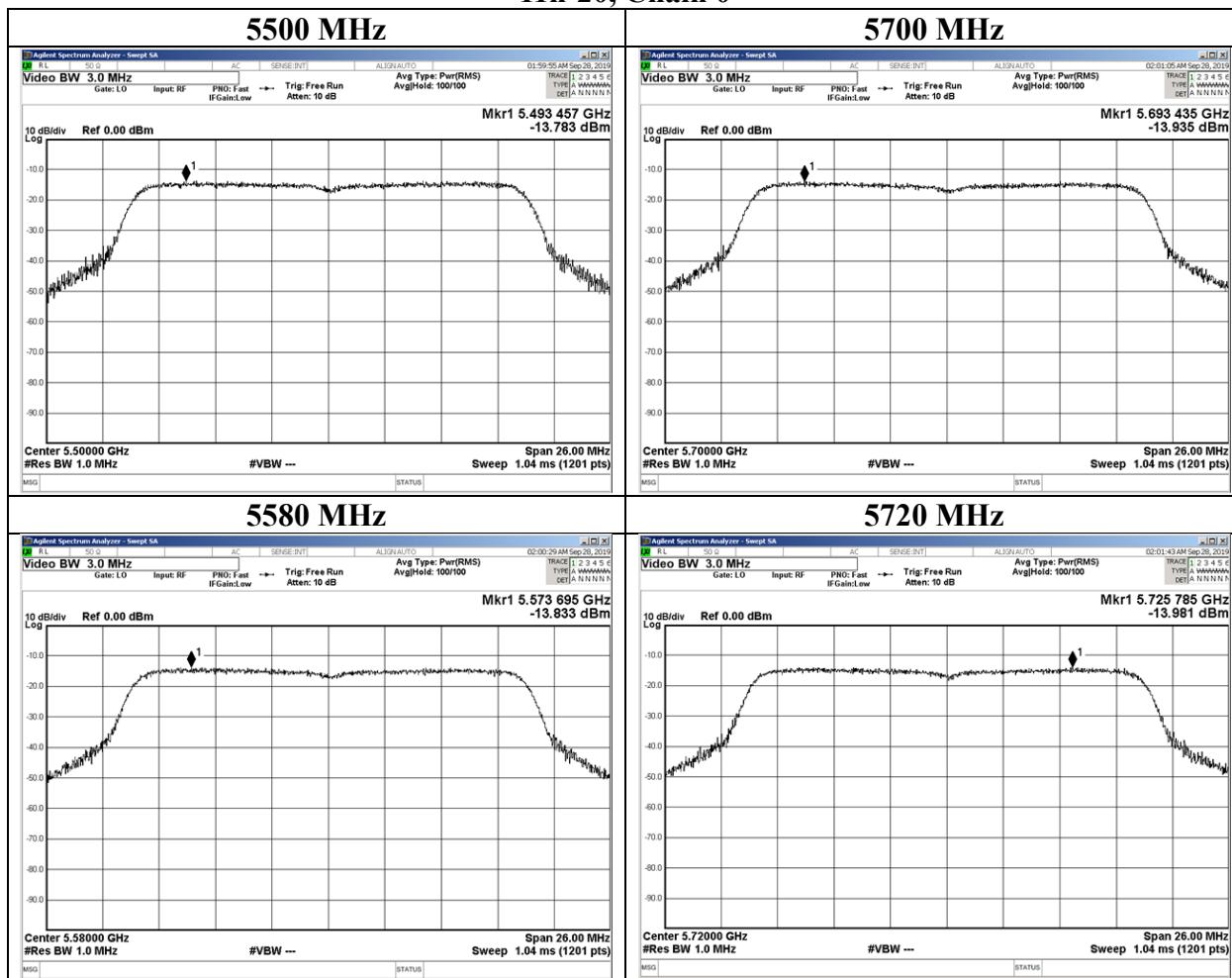


Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (CDD), (serial no. A-7)

11n-20, Chain 0



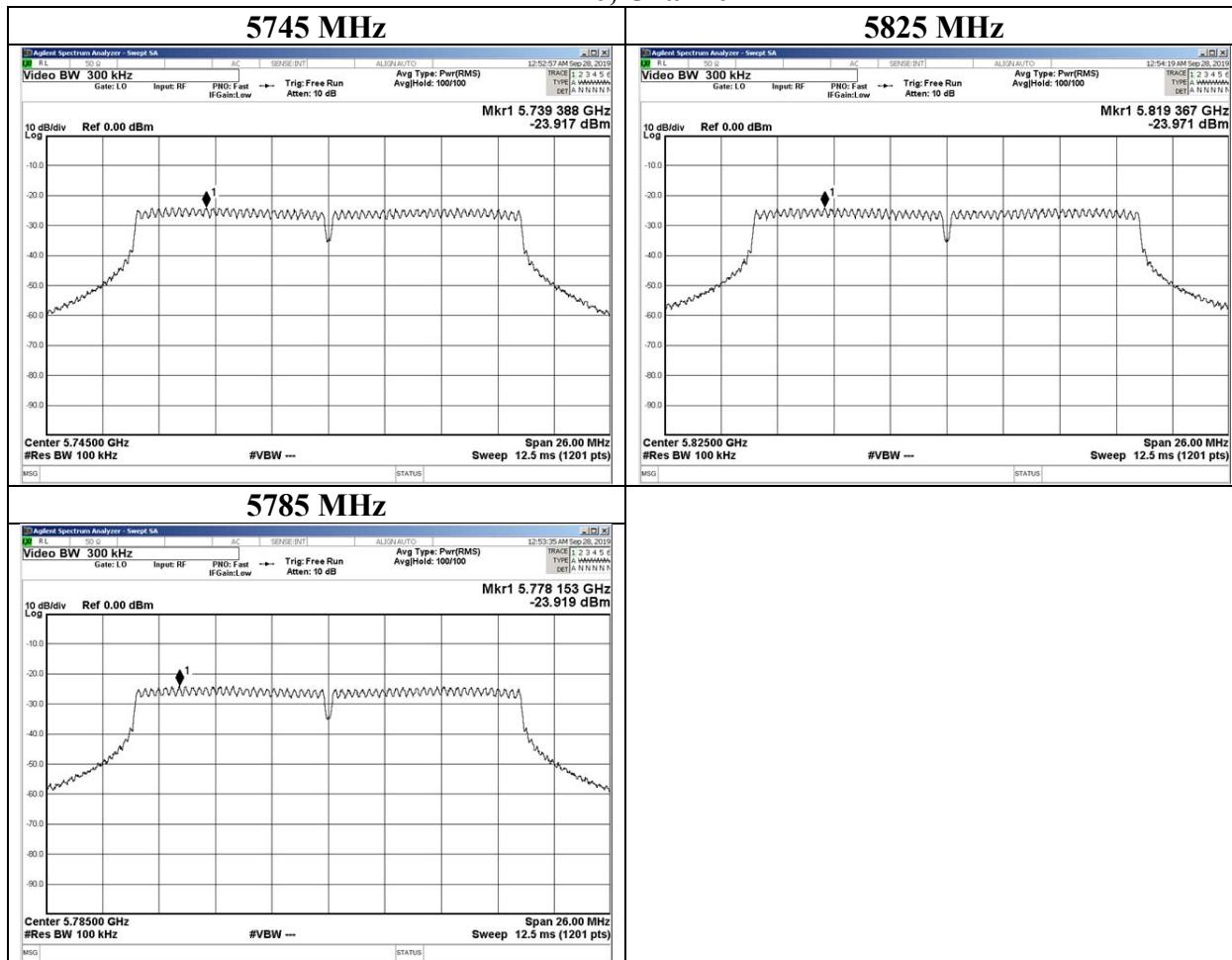
UL Japan, Inc.
Shonan EMC Lab.

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

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (CDD), (serial no. A-7)

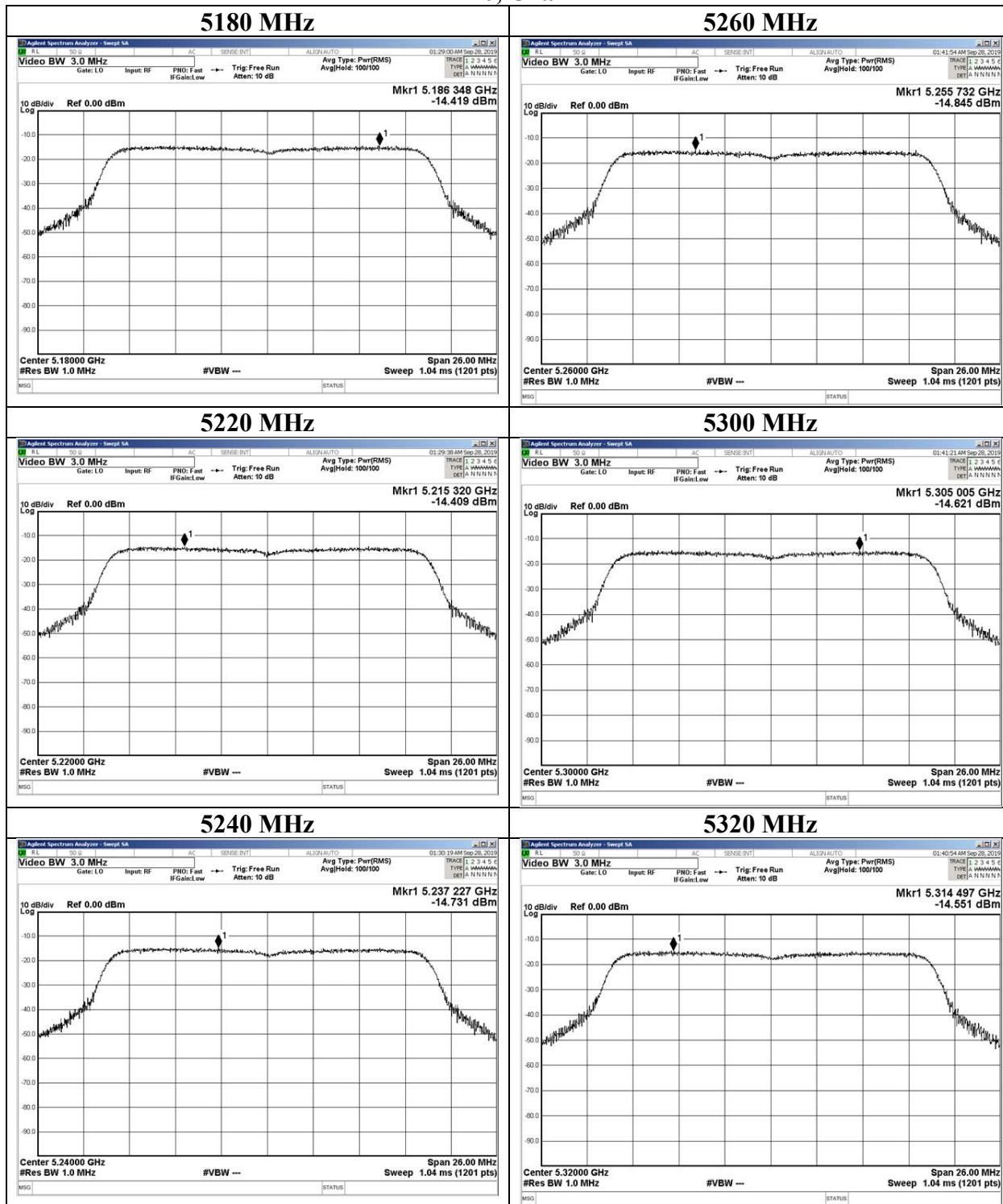
11n-20, Chain 0



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (CDD), (serial no. A-7)

11n-20, Chain 1



UL Japan, Inc.

Shonan EMC Lab.

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

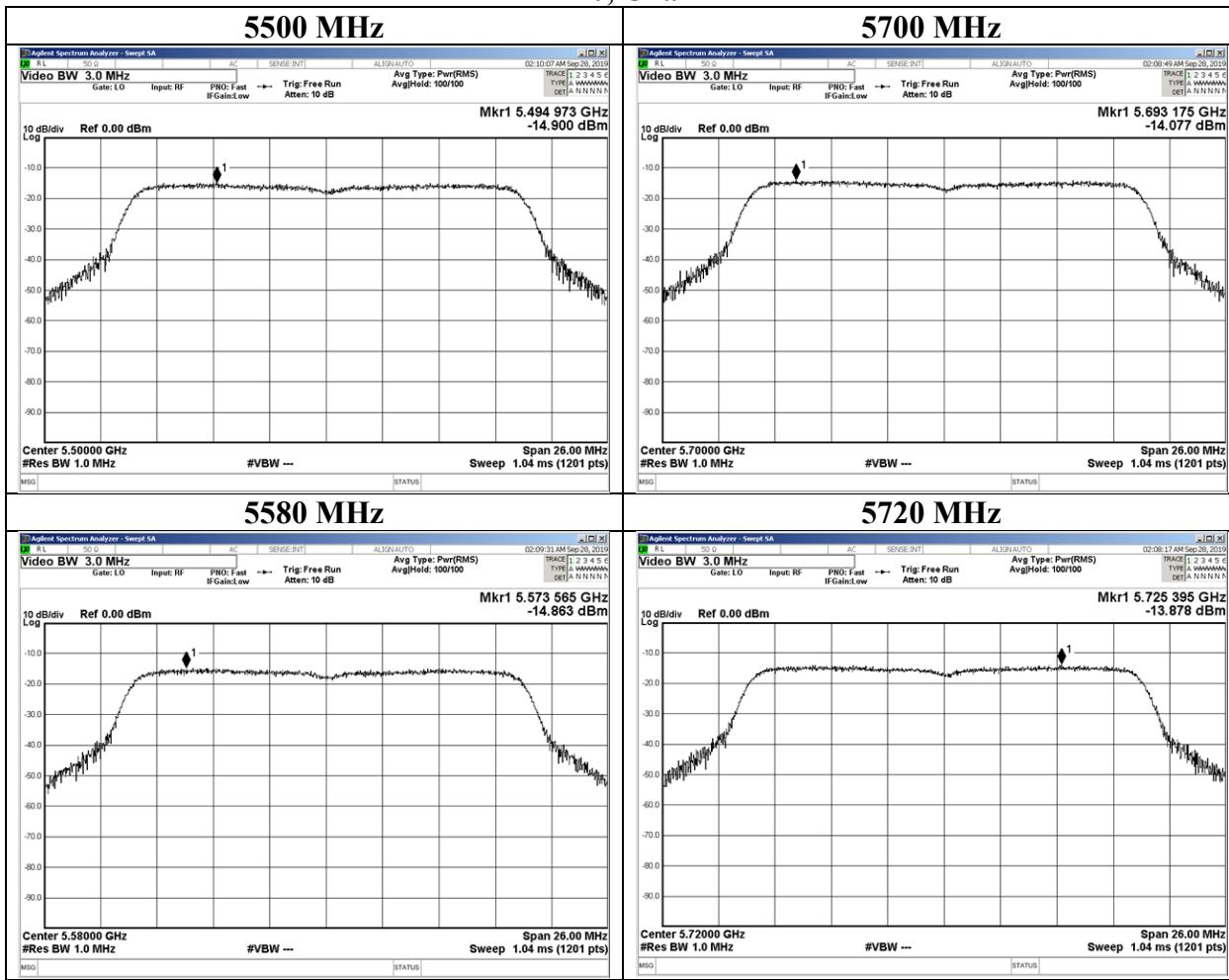
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (CDD), (serial no. A-7)

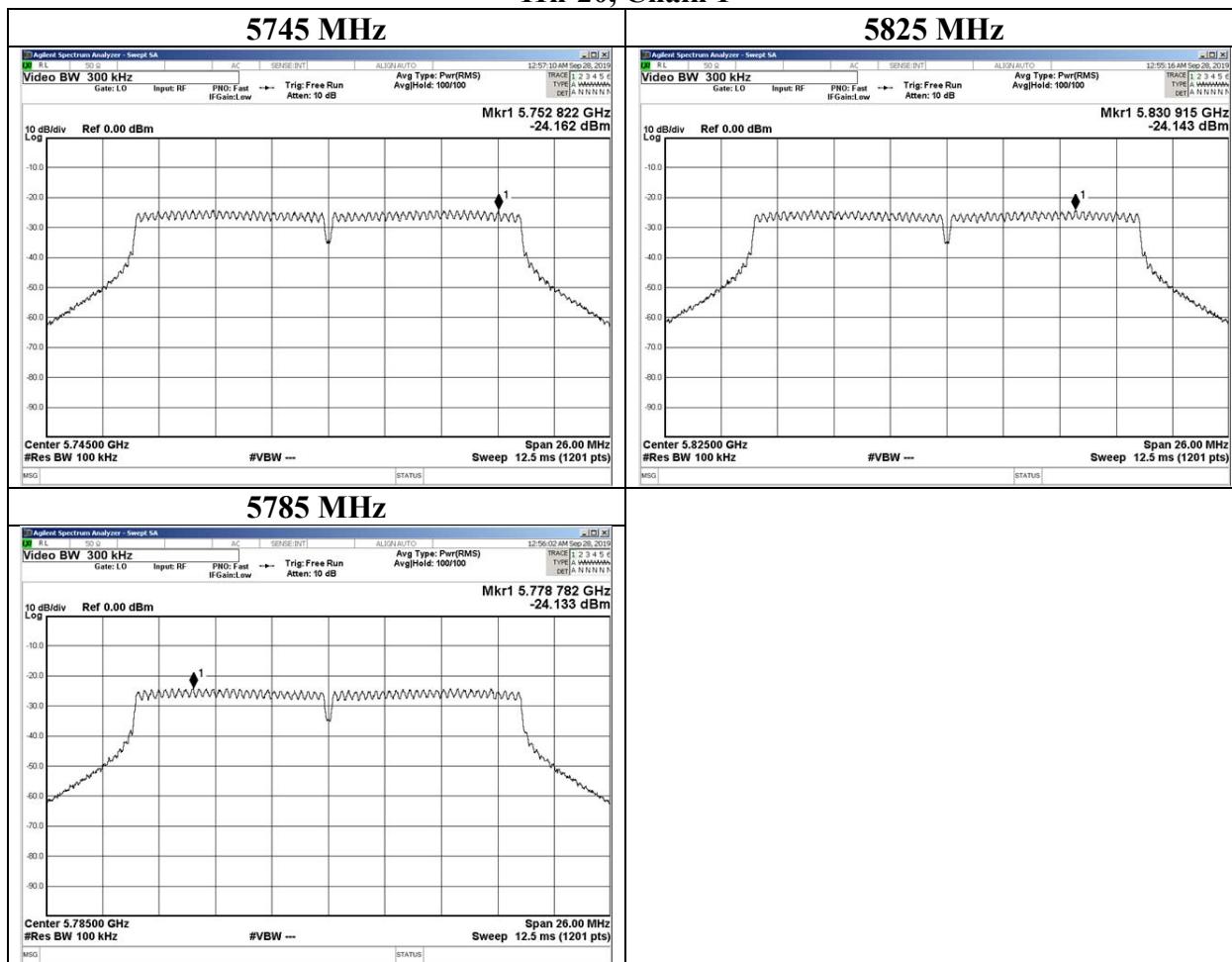
11n-20, Chain 1



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (CDD), (serial no. A-7)

11n-20, Chain 1



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 20, 2019
 Temperature / Humidity 25 deg. C / 50 % RH
 Engineer Kenichi Adachi
 Mode Tx, 11n-20 (CDD), (serial no. B-5)

Tested Frequency [MHz]	CDD					Applied limit: 15.407, mobile and portable client device							
	PSD (Conducted)					PSD (e.i.r.p.)							
	Antenna Chain 0 [mW/MHz]	Antenna Chain 1 [mW/MHz]	Sum [mW/MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]	Antenna Chain 0 [mW/MHz]	Antenna Chain 1 [mW/MHz]	Sum [mW/MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]	
5180	0.99	0.94	1.93	2.86	11.00	8.14	3.13	2.97	6.09	7.85	17.00	9.15	
5220	0.94	1.03	1.97	2.94	11.00	8.06	2.98	3.24	6.21	7.93	17.00	9.07	
5240	0.93	1.10	2.03	3.07	11.00	7.93	2.93	3.47	6.40	8.06	17.00	8.94	
5260	0.98	0.99	1.97	2.94	11.00	8.06	3.08	3.13	6.21	7.93	17.00	9.07	
5300	0.98	1.06	2.04	3.09	11.00	7.91	3.09	3.33	6.43	8.08	17.00	8.92	
5320	0.97	1.06	2.03	3.08	11.00	7.92	3.07	3.35	6.42	8.07	17.00	8.93	
5500	0.95	1.21	2.16	3.35	11.00	7.65	3.00	3.82	6.82	8.34	17.00	8.66	
5580	1.12	1.16	2.27	3.57	11.00	7.43	3.52	3.65	7.17	8.56	17.00	8.44	
5700	0.99	1.13	2.12	3.26	11.00	7.74	3.11	3.57	6.68	8.25	17.00	8.75	
5720	0.96	1.09	2.05	3.12	11.00	7.88	3.04	3.43	6.47	8.11	17.00	8.89	
5745	0.56	0.56	1.12	0.48	30.00	29.52	1.75	1.77	3.52	5.47	36.00	30.53	
5785	0.56	0.56	1.12	0.50	30.00	29.50	1.77	1.76	3.54	5.49	36.00	30.51	
5825	0.53	0.56	1.09	0.36	30.00	29.64	1.67	1.75	3.43	5.35	36.00	30.65	

Tested Frequency [MHz]	Chain 0						Chain 1							
	Duty Factor [dB]	RBW Correction Factor [dB]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]	PSD Reading [dB]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5180	0.00	0.00	-13.85	3.91	9.90	4.99	-0.04	4.95	-15.14	4.66	10.21	4.99	-0.27	4.72
5220	0.00	0.00	-14.08	3.92	9.91	4.99	-0.25	4.74	-14.77	4.67	10.21	4.99	0.11	5.10
5240	0.00	0.00	-14.16	3.93	9.91	4.99	-0.32	4.67	-14.49	4.69	10.21	4.99	0.41	5.40
5260	0.00	0.00	-13.95	3.94	9.91	4.99	-0.10	4.89	-14.95	4.70	10.21	4.99	-0.04	4.95
5300	0.00	0.00	-13.95	3.95	9.91	4.99	-0.09	4.90	-14.68	4.71	10.21	4.99	0.24	5.23
5320	0.00	0.00	-13.98	3.95	9.91	4.99	-0.12	4.87	-14.67	4.72	10.21	4.99	0.26	5.25
5500	0.00	0.00	-14.14	4.00	9.92	4.99	-0.22	4.77	-14.19	4.80	10.22	4.99	0.83	5.82
5580	0.00	0.00	-13.44	4.01	9.91	4.99	0.48	5.47	-14.40	4.81	10.22	4.99	0.63	5.62
5700	0.00	0.00	-13.85	3.89	9.90	4.99	-0.06	4.93	-14.41	4.72	10.23	4.99	0.54	5.53
5720	0.00	0.00	-13.95	3.89	9.90	4.99	-0.16	4.83	-14.60	4.73	10.23	4.99	0.36	5.35
5745	0.00	6.99	-23.34	3.90	9.90	4.99	-2.55	2.44	-24.46	4.73	10.23	4.99	-2.51	2.48
5785	0.00	6.99	-23.29	3.91	9.89	4.99	-2.50	2.49	-24.50	4.74	10.24	4.99	-2.53	2.46
5825	0.00	6.99	-23.55	3.92	9.89	4.99	-2.75	2.24	-24.53	4.75	10.24	4.99	-2.55	2.44

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = $10 * \log(\text{Specified bandwidth} / \text{Measured bandwidth})$

PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor

PSD Result (e.i.r.p.) = Conducted PSD Result + Directional Gain

Directional Gain = G ANT + Array Gain

G ANT = Set equal to the gain of the antenna having the highest gain

Array Gain = $10 \log(N \text{ ANT} / N \text{ SS})$ dB.

N ANT = number of transmit antennas = 2

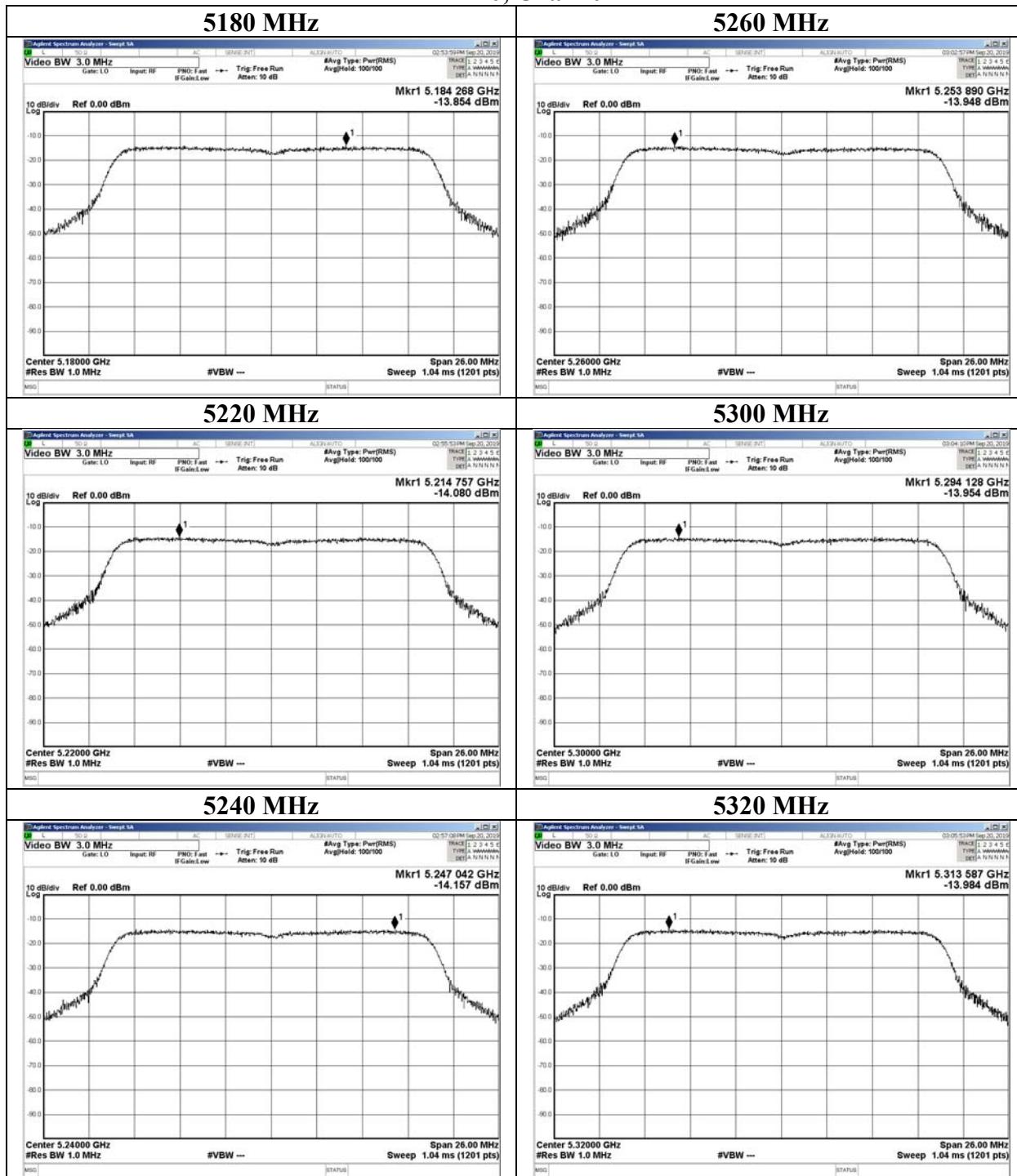
N SS = number of spatial streams = 1

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (W52 for FCC)

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 20, 2019
 Temperature / Humidity 25 deg. C / 50 % RH
 Engineer Kenichi Adachi
 Mode Tx, 11n-20 (CDD), (serial no. B-5)

11n-20, Chain 0



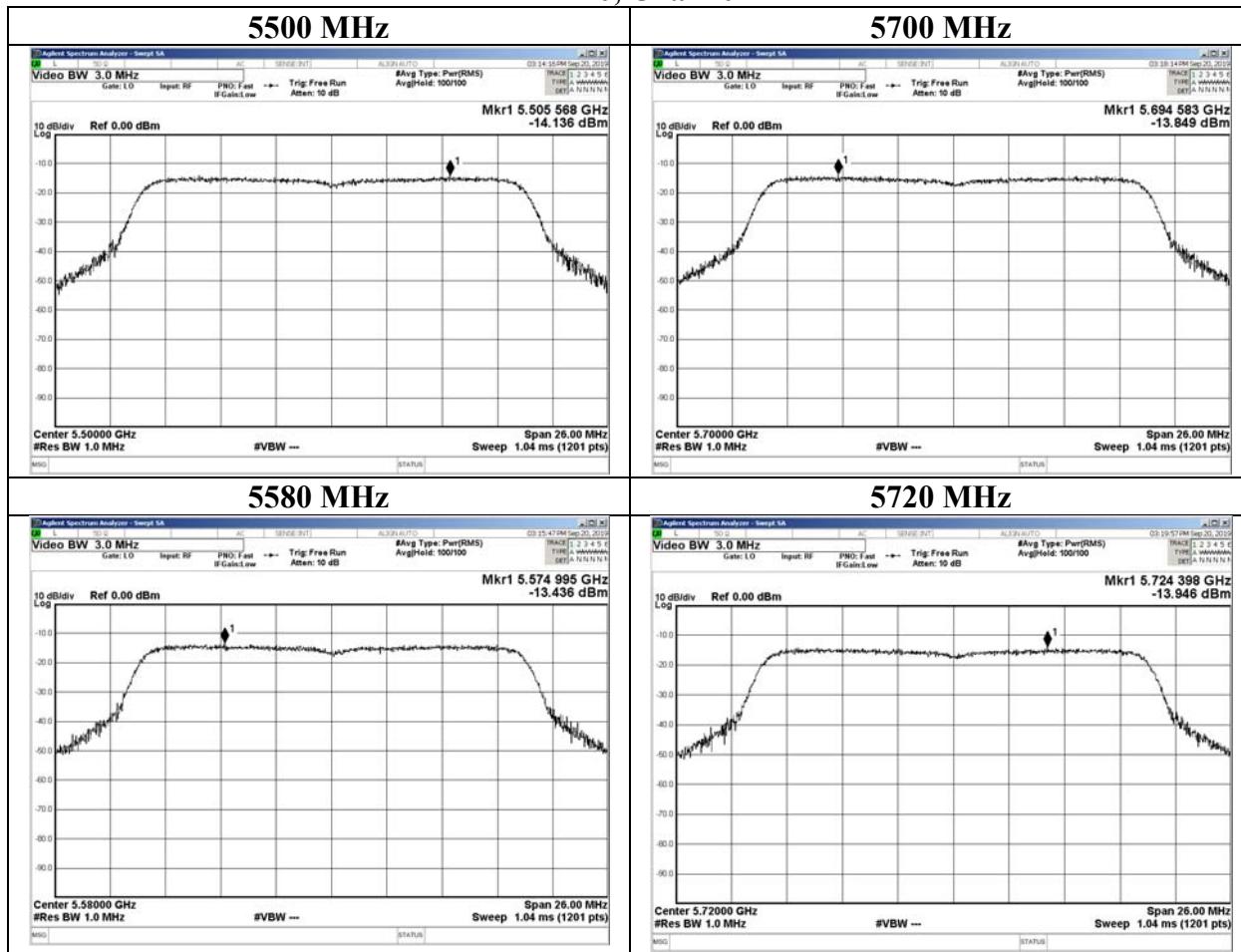
UL Japan, Inc.
Shonan EMC Lab.

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

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 20, 2019
 Temperature / Humidity 25 deg. C / 50 % RH
 Engineer Kenichi Adachi
 Mode Tx, 11n-20 (CDD), (serial no. B-5)

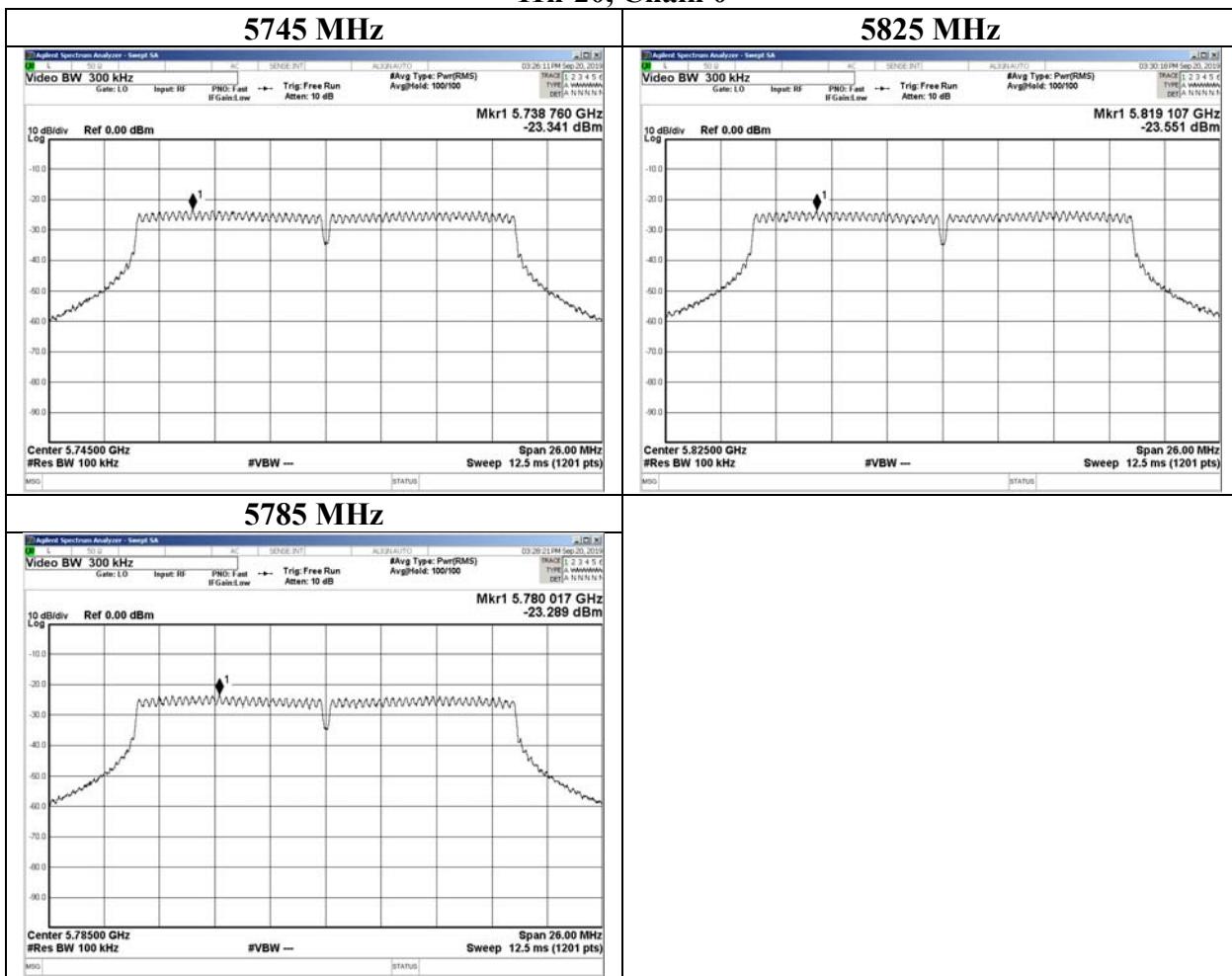
11n-20, Chain 0



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 20, 2019
 Temperature / Humidity 25 deg. C / 50 % RH
 Engineer Kenichi Adachi
 Mode Tx, 11n-20 (CDD), (serial no. B-5)

11n-20, Chain 0



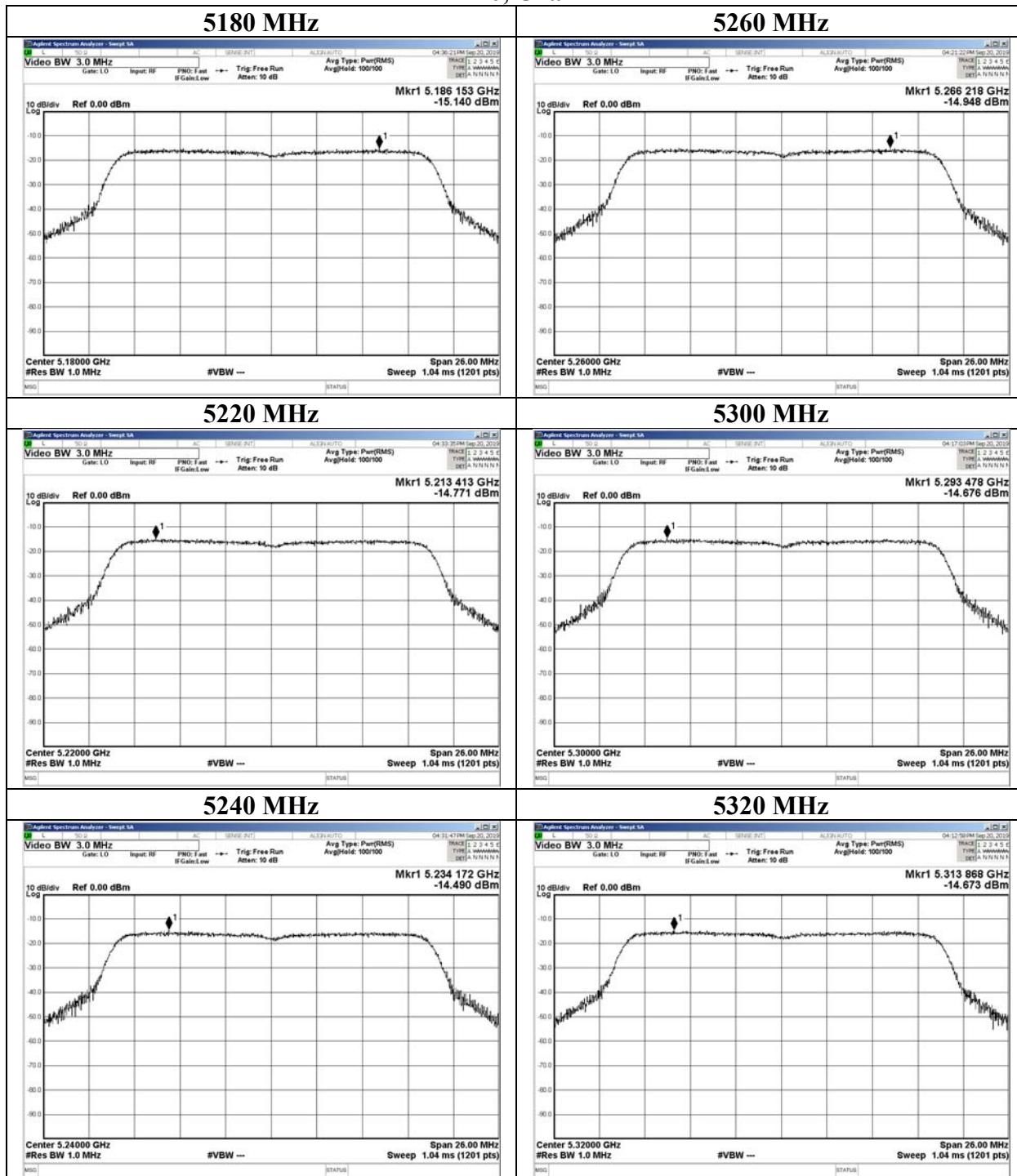
**UL Japan, Inc.
Shonan EMC Lab.**

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

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 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 20, 2019
 Temperature / Humidity 25 deg. C / 50 % RH
 Engineer Kenichi Adachi
 Mode Tx, 11n-20 (CDD), (serial no. B-5)

11n-20, Chain 1



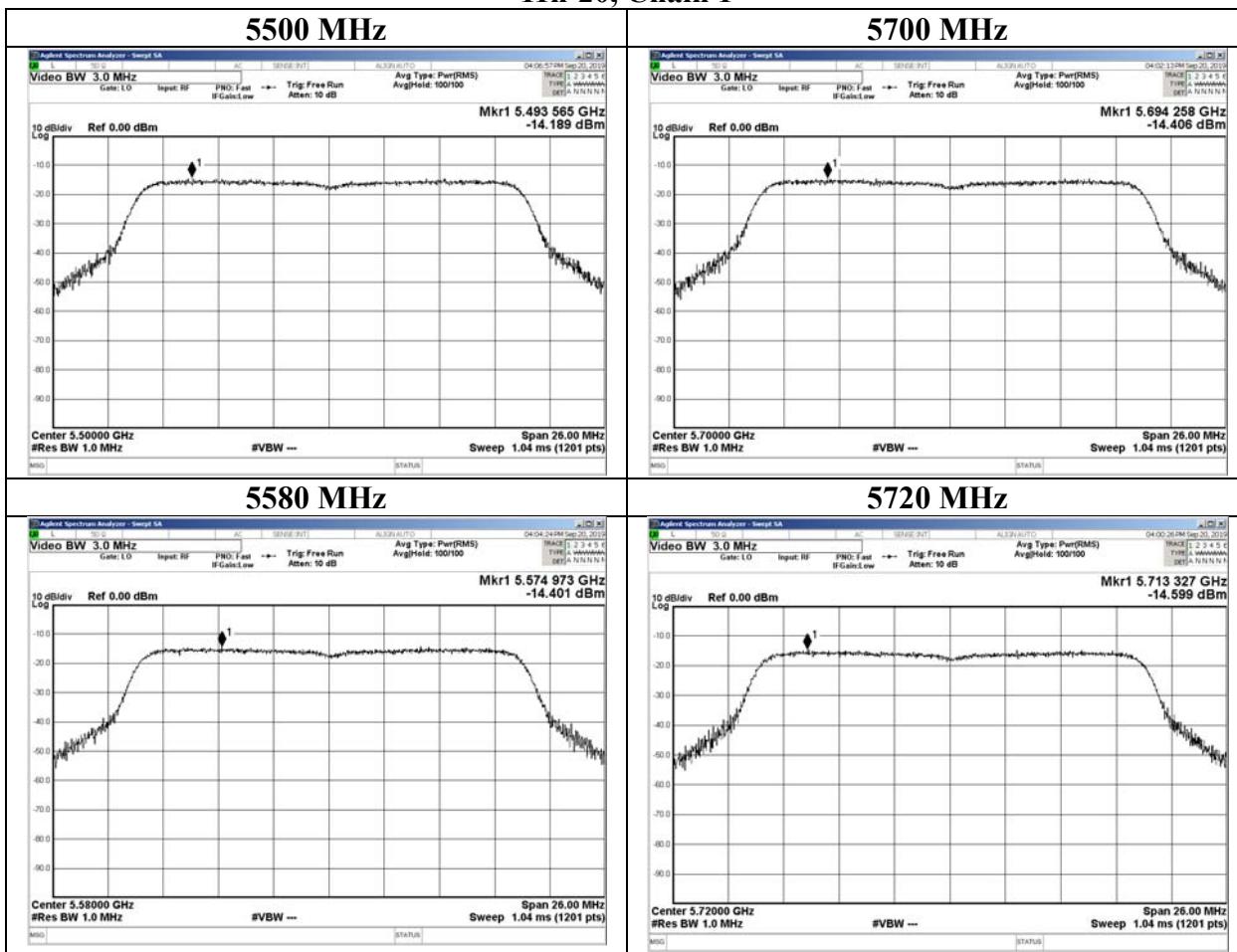
**UL Japan, Inc.
Shonan EMC Lab.**

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Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 20, 2019
 Temperature / Humidity 25 deg. C / 50 % RH
 Engineer Kenichi Adachi
 Mode Tx, 11n-20 (CDD), (serial no. B-5)

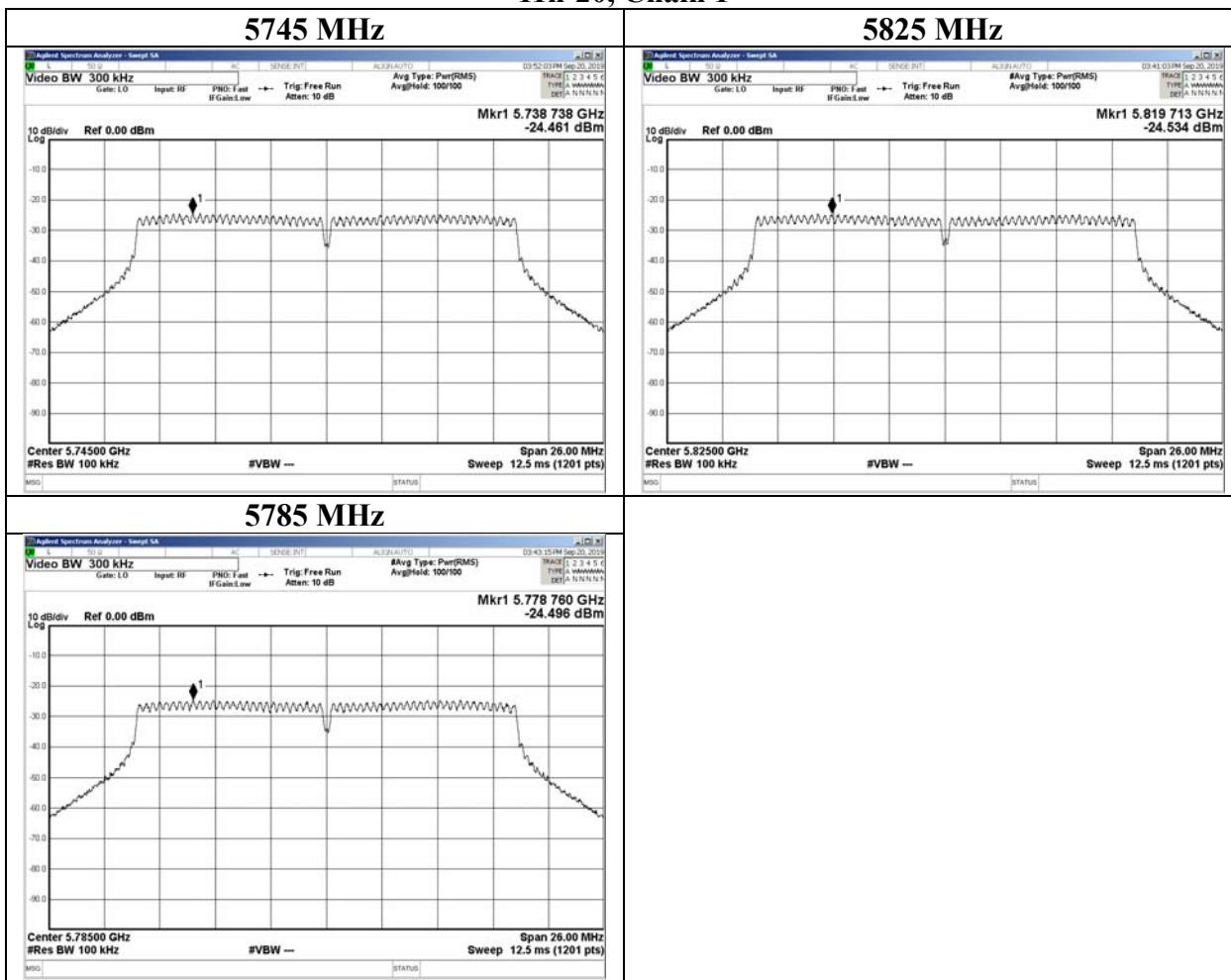
11n-20, Chain 1



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 20, 2019
 eTemperature / Humidity 25 deg. C / 50 % RH
 Engineer Kenichi Adachi
 Mode Tx, 11n-20 (CDD), (serial no. B-5)

11n-20, Chain 1



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (MIMO), (serial no. A-7)

Tested Frequency [MHz]	MIMO					Applied limit: 15.407, mobile and portable client device						
	PSD (Conducted)					PSD (e.i.r.p.)						
	Antenna Chain 0 [mW/MHz]	Antenna Chain 1 [mW/MHz]	Sum [mW/MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]	Antenna Chain 0 [mW/MHz]	Antenna Chain 1 [mW/MHz]	Sum [mW/MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
5180	0.93	1.01	1.93	2.86	11.00	8.14	1.18	1.28	2.46	3.90	17.00	13.10
5220	0.86	0.97	1.83	2.64	11.00	8.36	1.10	1.23	2.33	3.68	17.00	13.32
5240	0.85	1.02	1.88	2.73	11.00	8.27	1.08	1.30	2.38	3.77	17.00	13.23
5260	0.89	0.96	1.85	2.68	11.00	8.32	1.14	1.22	2.35	3.72	17.00	13.28
5300	0.89	0.92	1.80	2.56	11.00	8.44	1.12	1.17	2.29	3.60	17.00	13.40
5320	0.89	0.95	1.84	2.64	11.00	8.36	1.13	1.21	2.33	3.68	17.00	13.32
5500	1.03	1.00	2.03	3.08	11.00	7.92	1.30	1.28	2.58	4.12	17.00	12.88
5580	1.04	0.96	2.00	3.02	11.00	7.98	1.32	1.22	2.55	4.06	17.00	12.94
5700	0.97	1.10	2.07	3.16	11.00	7.84	1.24	1.40	2.63	4.20	17.00	12.80
5720	0.98	1.03	2.01	3.04	11.00	7.96	1.25	1.31	2.56	4.08	17.00	12.92
5745	0.46	0.57	1.03	0.13	30.00	29.87	0.58	0.72	1.31	1.17	36.00	34.83
5785	0.49	0.54	1.03	0.11	30.00	29.89	0.62	0.69	1.30	1.15	36.00	34.85
5825	0.47	0.52	0.99	-0.05	30.00	30.05	0.60	0.66	1.26	0.99	36.00	35.01

Tested Frequency [MHz]	Chain 0						Chain 1							
	Duty Factor [dB]	RBW Correction Factor [dB]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5180	0.00	0.00	-14.13	3.91	9.90	1.04	-0.32	0.72	-14.20	4.01	10.21	1.04	0.02	1.06
5220	0.00	0.00	-14.46	3.92	9.91	1.04	-0.63	0.41	-14.36	4.02	10.21	1.04	-0.13	0.91
5240	0.00	0.00	-14.54	3.93	9.91	1.04	-0.70	0.35	-14.15	4.04	10.21	1.04	0.10	1.14
5260	0.00	0.00	-14.33	3.94	9.91	1.04	-0.48	0.56	-14.44	4.05	10.21	1.04	-0.18	0.86
5300	0.00	0.00	-14.39	3.95	9.91	1.04	-0.53	0.51	-14.63	4.06	10.21	1.04	-0.36	0.68
5320	0.00	0.00	-14.39	3.95	9.91	1.04	-0.53	0.51	-14.50	4.07	10.21	1.04	-0.21	0.83
5500	0.00	0.00	-13.81	4.00	9.92	1.04	0.11	1.15	-14.35	4.15	10.22	1.04	0.02	1.06
5580	0.00	0.00	-13.74	4.01	9.91	1.04	0.18	1.22	-14.55	4.16	10.22	1.04	-0.17	0.87
5700	0.00	0.00	-13.90	3.89	9.90	1.04	-0.11	0.93	-13.89	4.07	10.23	1.04	0.41	1.45
5720	0.00	0.00	-13.87	3.89	9.90	1.04	-0.08	0.96	-14.18	4.08	10.23	1.04	0.13	1.17
5745	0.00	6.99	-24.16	3.90	9.90	1.04	-3.37	-2.33	-23.74	4.08	10.23	1.04	-2.44	-1.40
5785	0.00	6.99	-23.93	3.91	9.89	1.04	-3.14	-2.10	-24.00	4.09	10.24	1.04	-2.68	-1.64
5825	0.00	6.99	-24.08	3.92	9.89	1.04	-3.28	-2.24	-24.18	4.10	10.24	1.04	-2.85	-1.81

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = $10 * \log(\text{Specified bandwidth} / \text{Measured bandwidth})$

PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor

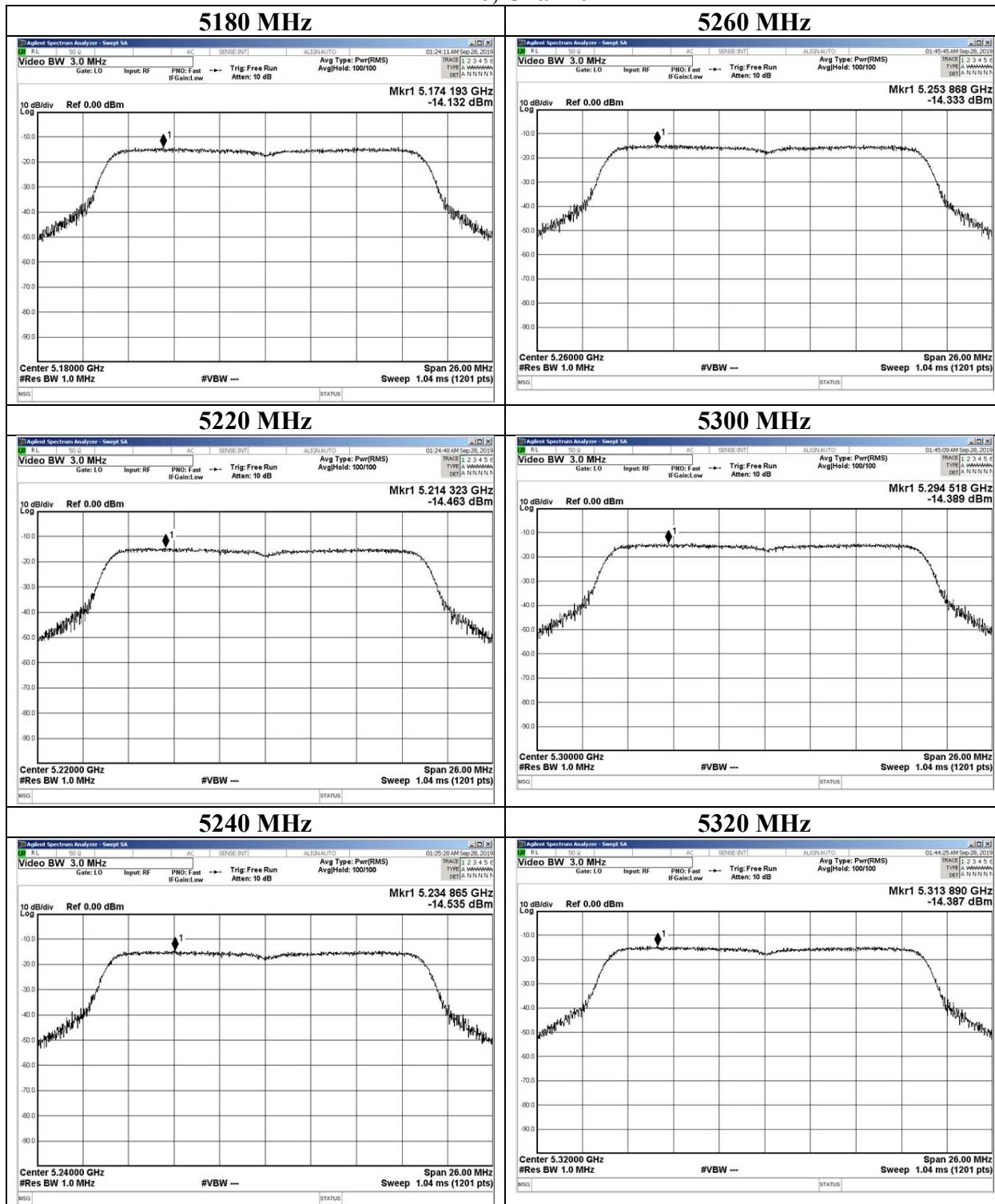
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (W52 for FCC)

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (MIMO), (serial no. A-7)

11n-20, Chain 0



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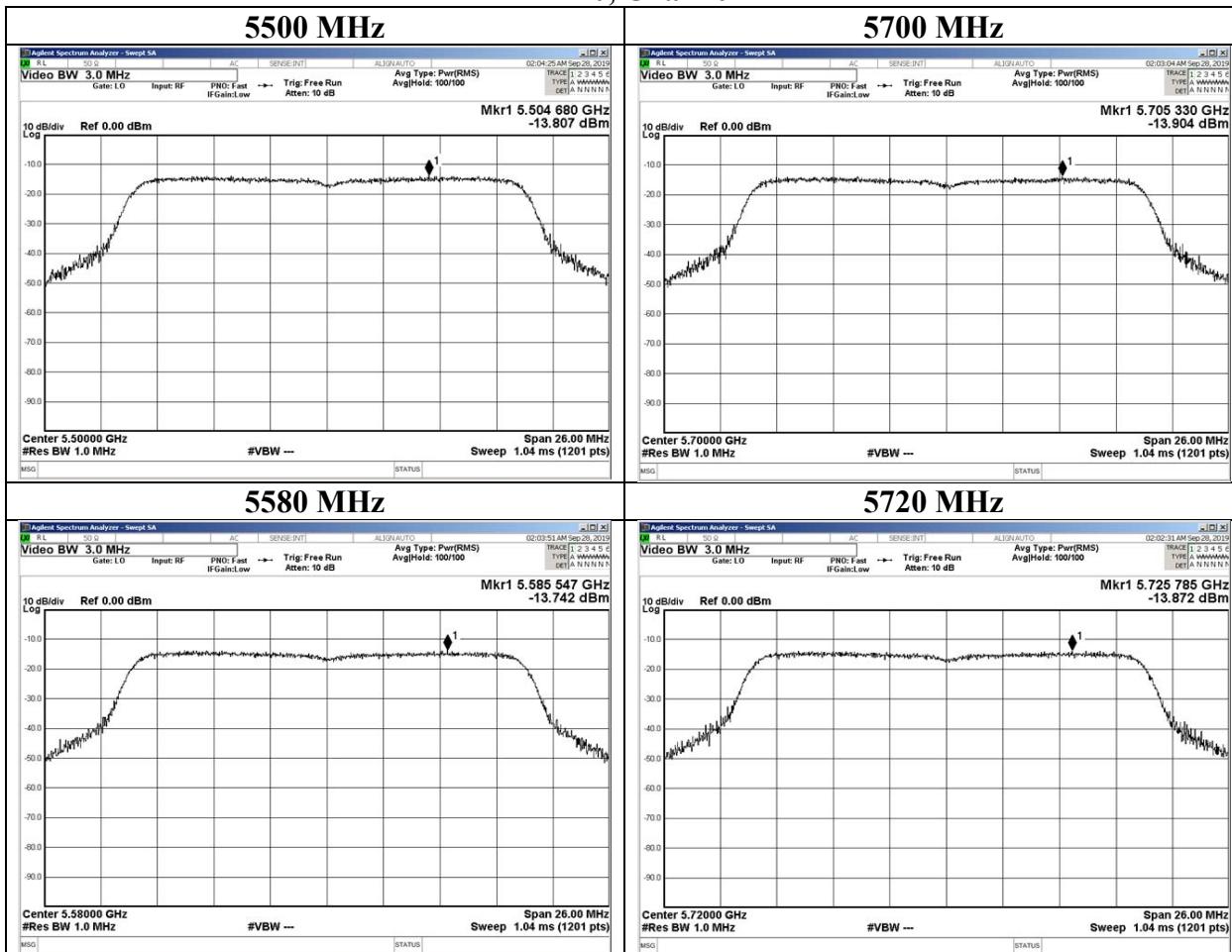
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (MIMO), (serial no. A-7)

11n-20, Chain 0



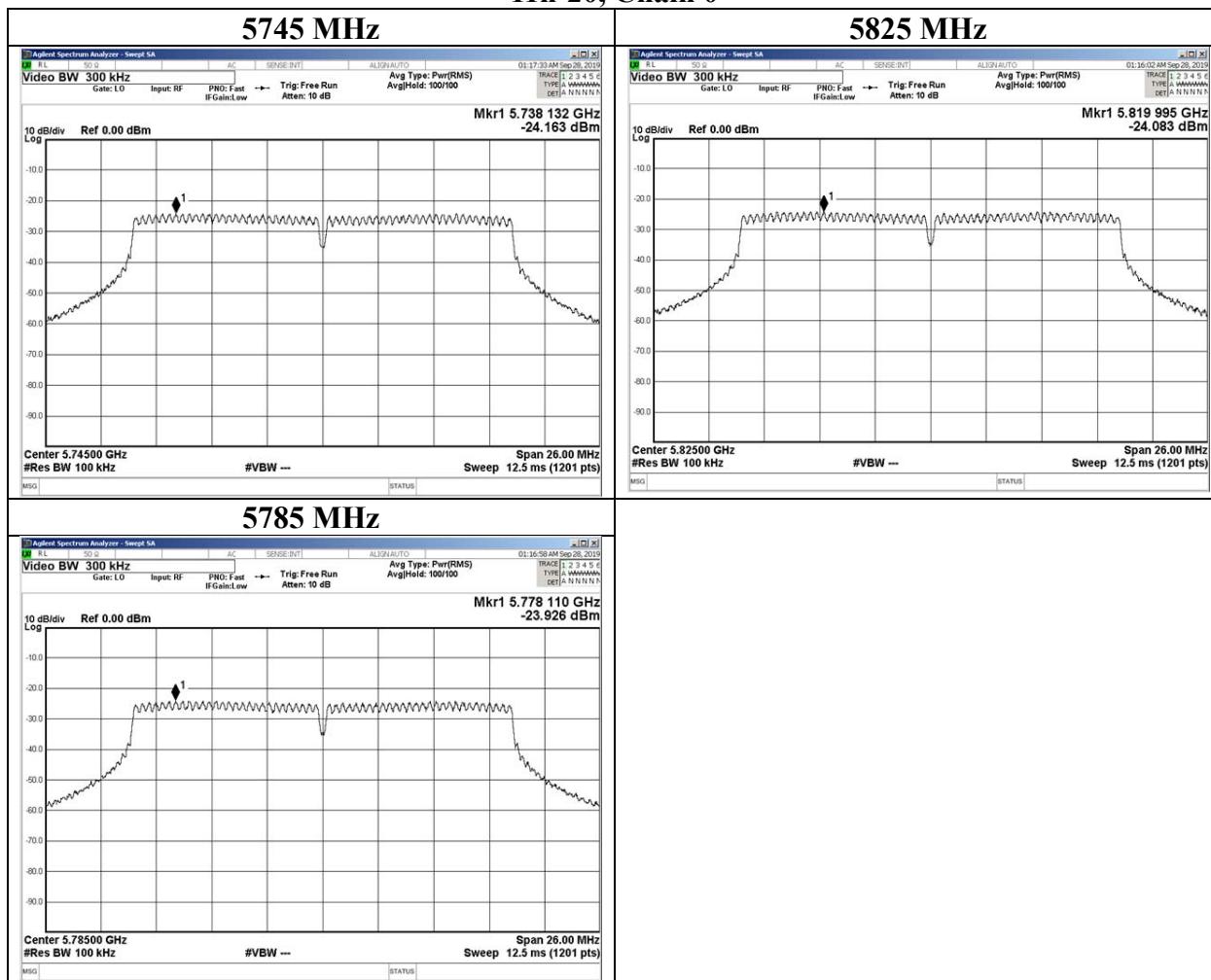
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Shonan EMC Lab.**

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Maximum Power Spectral Density

Report No.	13004393S-E-R2
Test place	Shonan EMC Lab. No.3 Shielded Room
Date	September 27, 2019
Temperature / Humidity	26 deg. C / 42 % RH
Engineer	Takahiro Kawakami
Mode	Tx, 11n-20 (MIMO), (serial no. A-7)

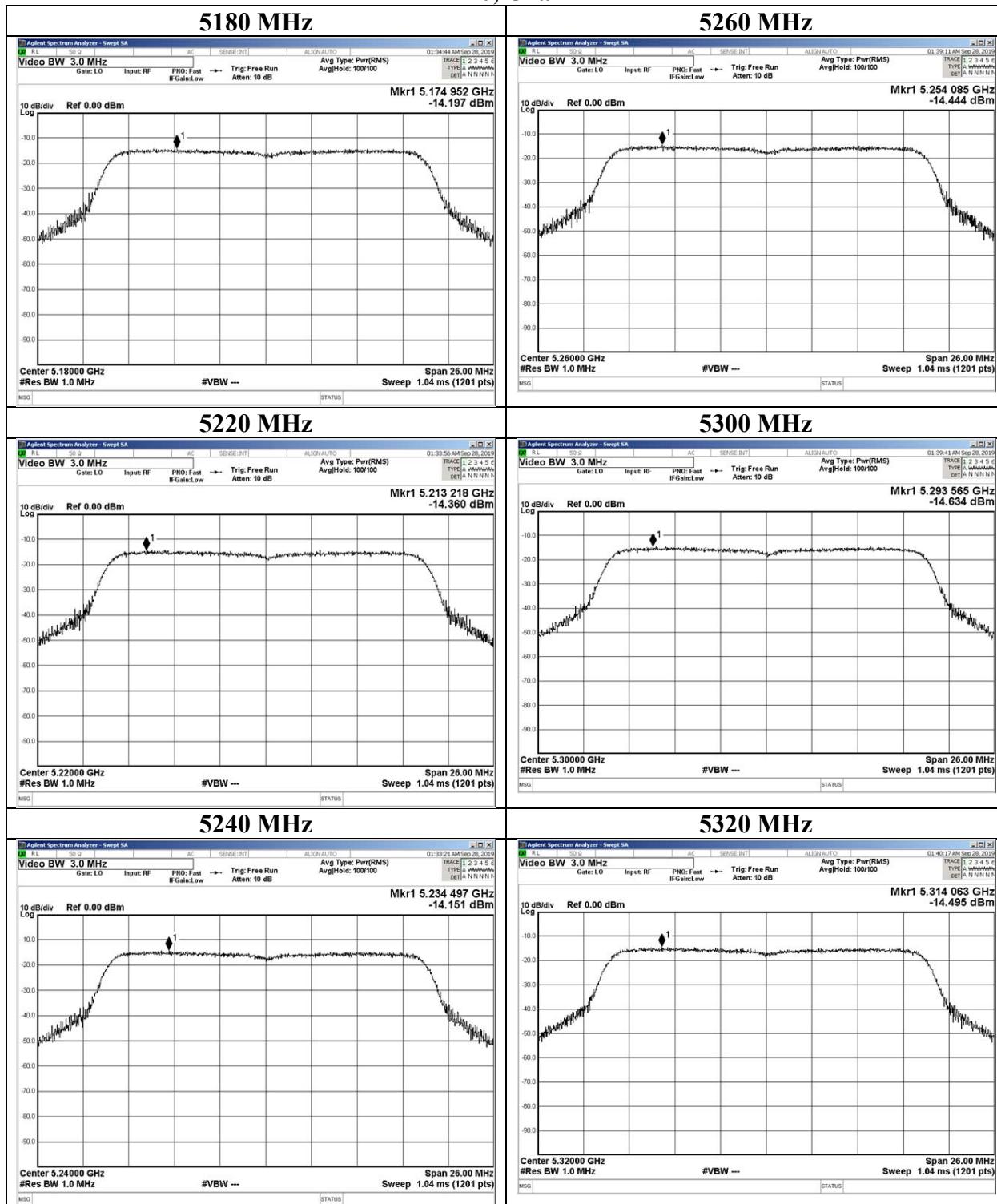
11n-20, Chain 0



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (MIMO), (serial no. A-7)

11n-20, Chain 1



UL Japan, Inc.

Shonan EMC Lab.

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

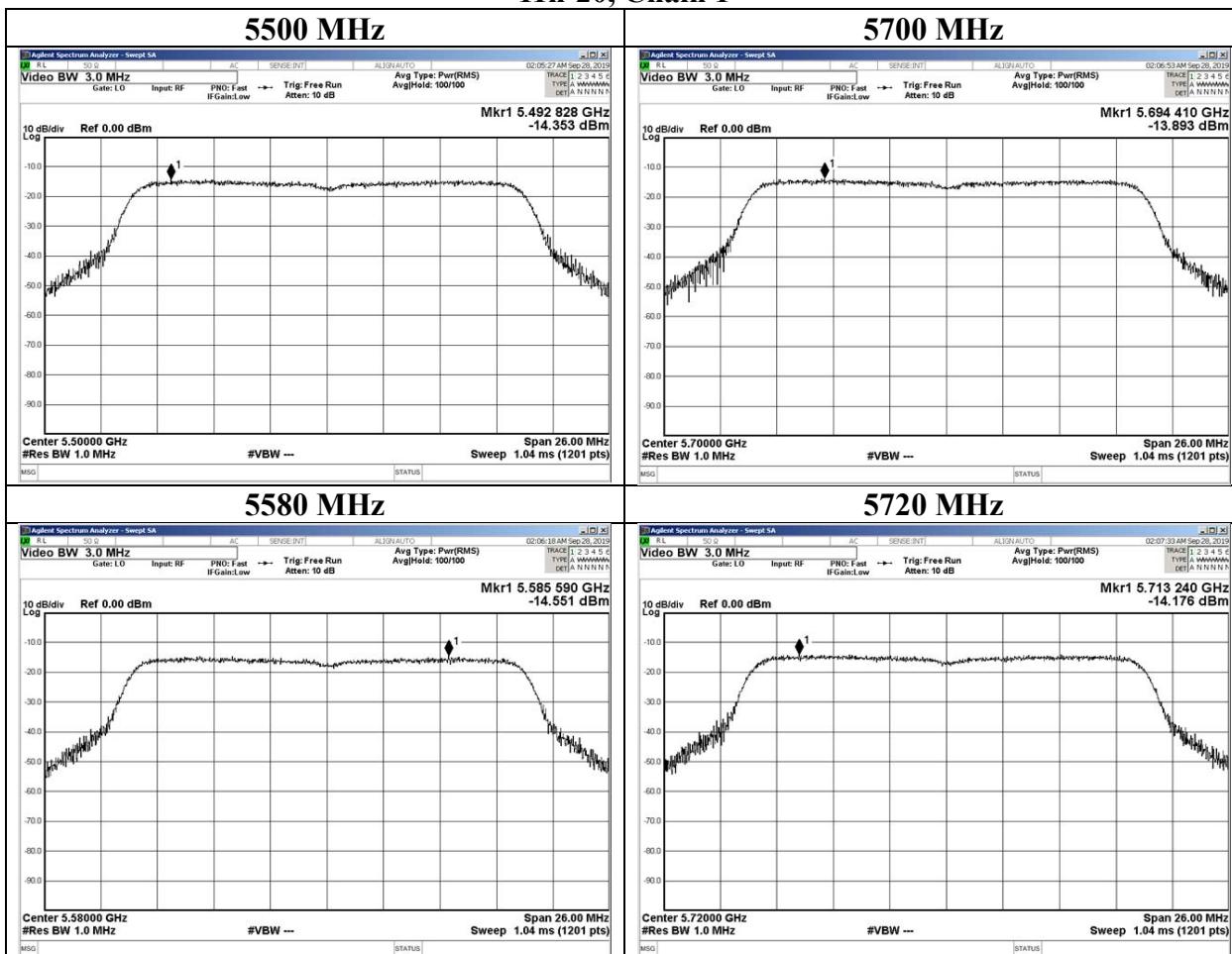
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Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (MIMO), (serial no. A-7)

11n-20, Chain 1



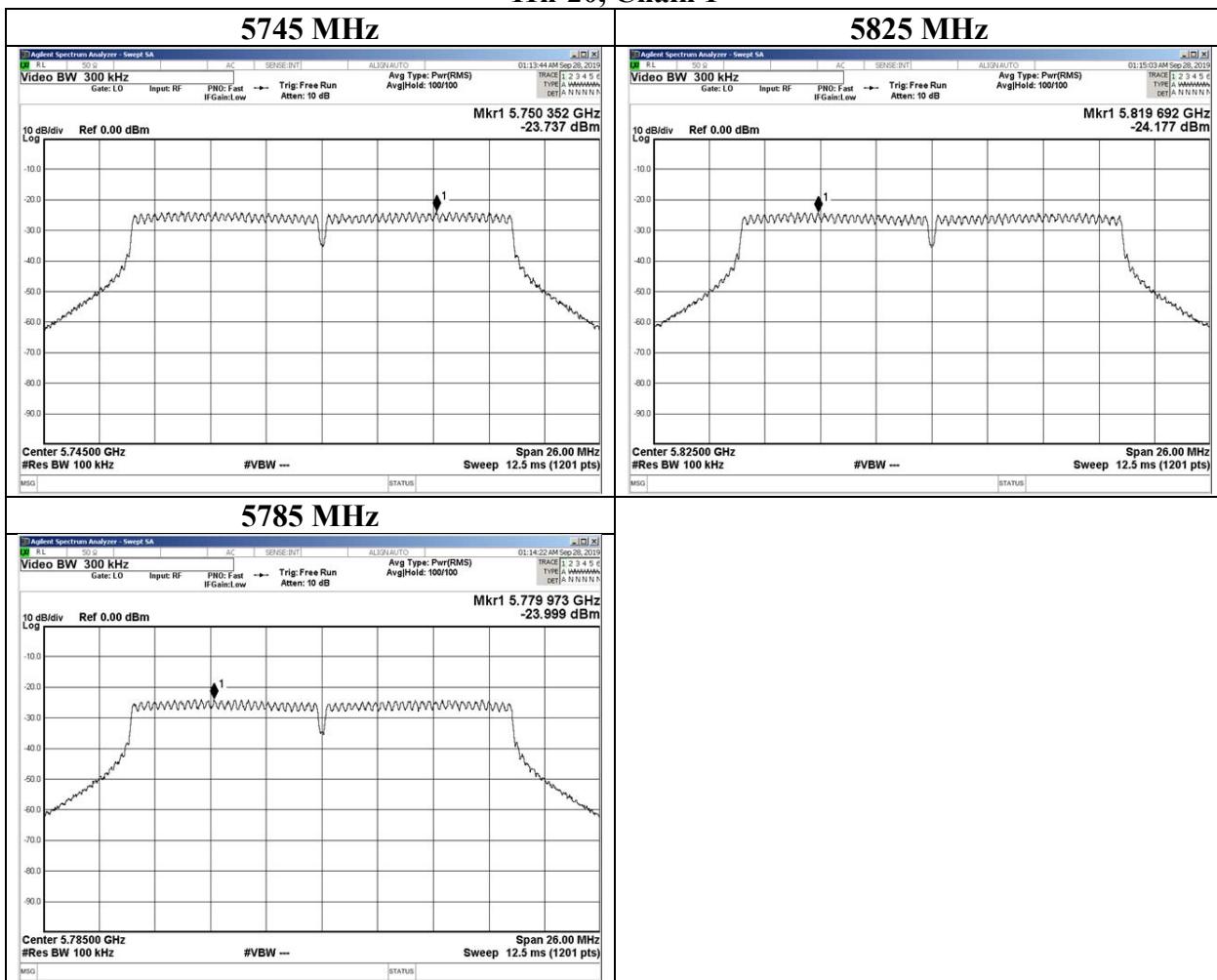
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Maximum Power Spectral Density

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 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Takahiro Kawakami
 Mode Tx, 11n-20 (MIMO), (serial no. A-7)

11n-20, Chain 1



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Kazuya Noda
 Mode Tx, 11n-20 (MIMO), (serial no. B-5)

Tested Frequency [MHz]	MIMO					Applied limit: 15.407, mobile and portable client device						
	PSD (Conducted)					PSD (e.i.r.p.)						
	Antenna Chain 0 [mW/MHz]	Antenna Chain 1 [mW/MHz]	Sum [mW/MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]	Antenna Chain 0 [mW/MHz]	Antenna Chain 1 [mW/MHz]	Sum [mW/MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
5180	0.73	0.87	1.61	2.06	11.00	8.94	0.93	1.38	2.31	3.64	17.00	13.36
5220	0.79	0.95	1.73	2.38	11.00	8.62	1.00	1.49	2.49	3.96	17.00	13.04
5240	0.79	0.93	1.72	2.35	11.00	8.65	1.00	1.47	2.47	3.92	17.00	13.08
5260	0.94	0.97	1.90	2.80	11.00	8.20	1.19	1.52	2.72	4.34	17.00	12.66
5300	0.87	0.99	1.86	2.69	11.00	8.31	1.10	1.57	2.67	4.26	17.00	12.74
5320	0.95	1.12	2.07	3.17	11.00	7.83	1.21	1.77	2.98	4.74	17.00	12.26
5500	0.99	1.13	2.12	3.25	11.00	7.75	1.26	1.78	3.03	4.82	17.00	12.18
5580	1.05	1.12	2.17	3.37	11.00	7.63	1.34	1.76	3.10	4.92	17.00	12.08
5700	0.88	1.05	1.94	2.87	11.00	8.13	1.12	1.66	2.79	4.45	17.00	12.55
5720	0.93	1.05	1.98	2.96	11.00	8.04	1.18	1.66	2.83	4.52	17.00	12.48
5745	0.52	0.54	1.07	0.28	30.00	29.72	0.67	0.86	1.52	1.82	36.00	34.18
5785	0.51	0.55	1.06	0.25	30.00	29.75	0.65	0.87	1.52	1.80	36.00	34.20
5825	0.52	0.55	1.07	0.27	30.00	29.73	0.66	0.86	1.52	1.82	36.00	34.18

Tested Frequency [MHz]	Chain 0						Chain 1							
	Duty Factor [dB]	RBW Correction Factor [dB]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5180	0.00	0.00	-15.15	3.91	9.90	1.04	-1.34	-0.30	-15.45	4.66	10.21	1.98	-0.58	1.40
5220	0.00	0.00	-14.88	3.92	9.91	1.04	-1.05	0.00	-15.12	4.67	10.21	1.98	-0.24	1.74
5240	0.00	0.00	-14.87	3.93	9.91	1.04	-1.03	0.01	-15.22	4.69	10.21	1.98	-0.32	1.66
5260	0.00	0.00	-14.13	3.94	9.91	1.04	-0.28	0.76	-15.06	4.70	10.21	1.98	-0.15	1.83
5300	0.00	0.00	-14.49	3.95	9.91	1.04	-0.63	0.41	-14.95	4.71	10.21	1.98	-0.03	1.95
5320	0.00	0.00	-14.07	3.95	9.91	1.04	-0.21	0.83	-14.43	4.72	10.21	1.98	0.50	2.48
5500	0.00	0.00	-13.97	4.00	9.92	1.04	-0.05	0.99	-14.50	4.80	10.22	1.98	0.52	2.50
5580	0.00	0.00	-13.69	4.01	9.91	1.04	0.23	1.27	-14.55	4.81	10.22	1.98	0.49	2.47
5700	0.00	0.00	-14.33	3.89	9.90	1.04	-0.54	0.50	-14.72	4.72	10.23	1.98	0.23	2.21
5720	0.00	0.00	-14.12	3.89	9.90	1.04	-0.33	0.71	-14.75	4.73	10.23	1.98	0.21	2.19
5745	0.00	6.99	-23.60	3.90	9.90	1.04	-2.81	-1.77	-24.60	4.73	10.23	1.98	-2.65	-0.67
5785	0.00	6.99	-23.73	3.91	9.89	1.04	-2.94	-1.90	-24.56	4.74	10.24	1.98	-2.59	-0.61
5825	0.00	6.99	-23.64	3.92	9.89	1.04	-2.84	-1.80	-24.61	4.75	10.24	1.98	-2.63	-0.65

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = $10 * \log(\text{Specified bandwidth} / \text{Measured bandwidth})$

PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor

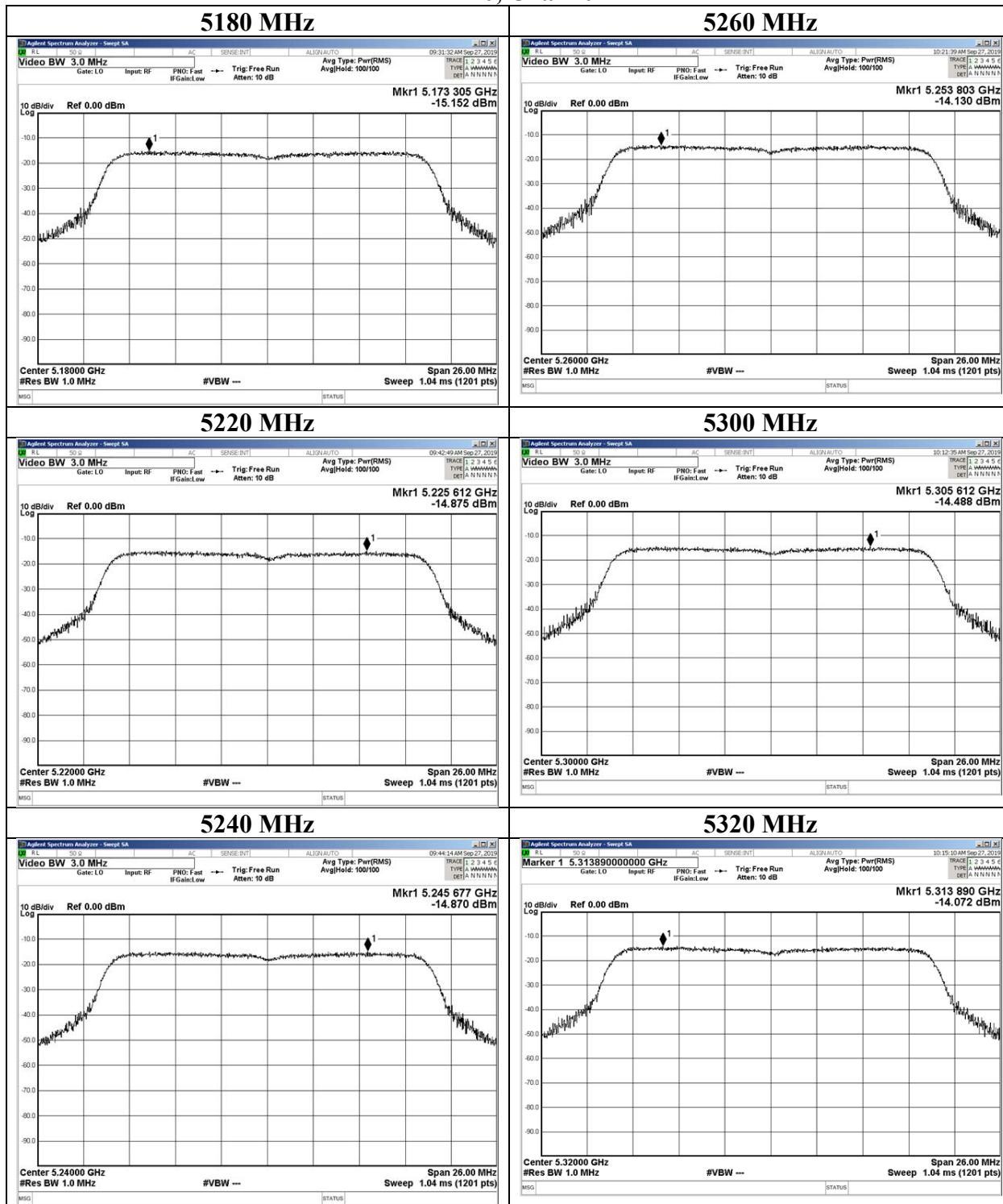
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (W52 for FCC)

Maximum Power Spectral Density

Report No.	13004393S-E-R2
Test place	Shonan EMC Lab. No.3 Shielded Room
Date	September 27, 2019
Temperature / Humidity	26 deg. C / 42 % RH
Engineer	Kazuya Noda
Mode	Tx, 11n-20 (MIMO), (serial no. B-5)

11n-20, Chain 0



UL Japan, Inc.

Shonan EMC Lab.

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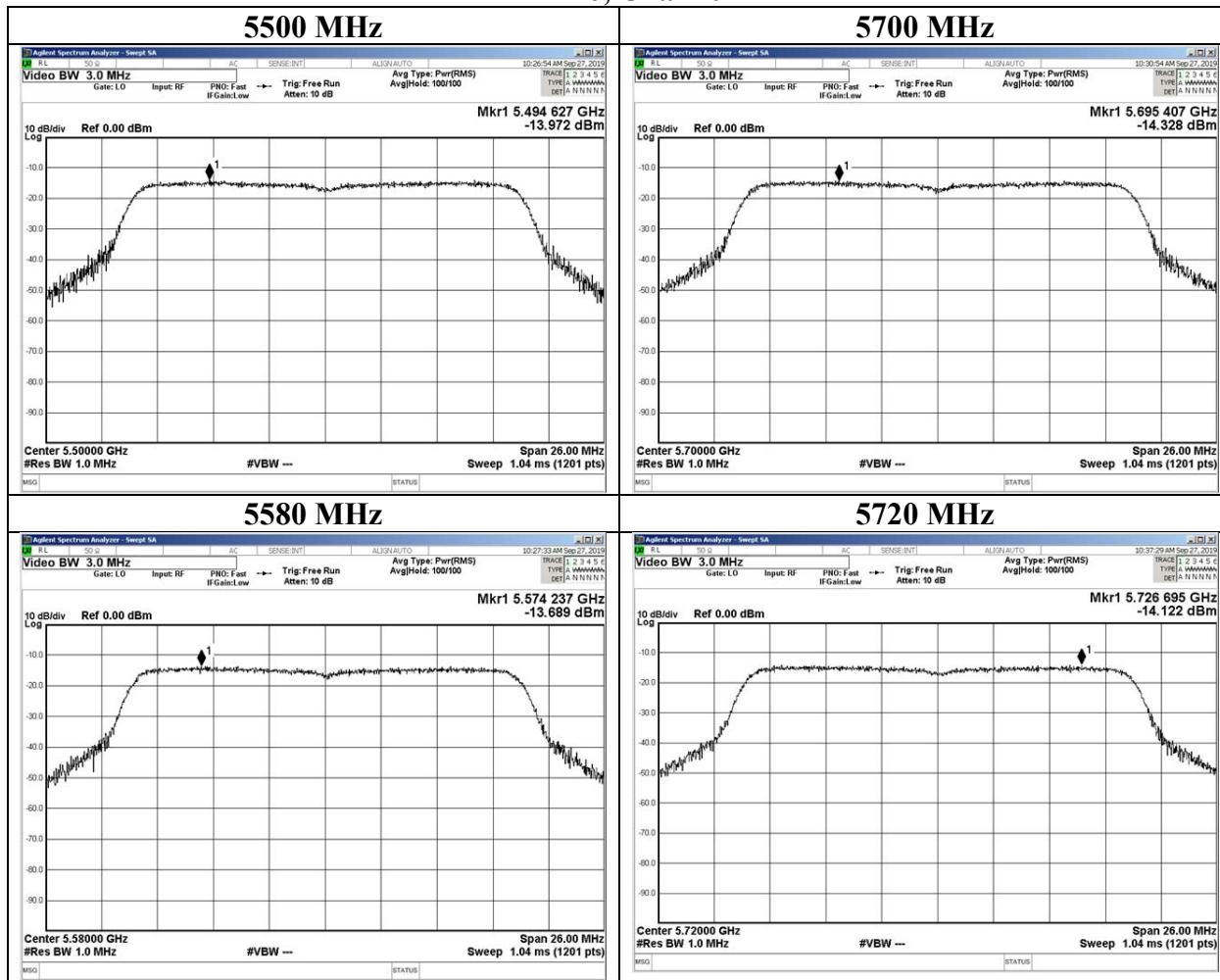
Telephone : +81 463 50 6400

Faxsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Kazuya Noda
 Mode Tx, 11n-20 (MIMO), (serial no. B-5)

11n-20, Chain 0



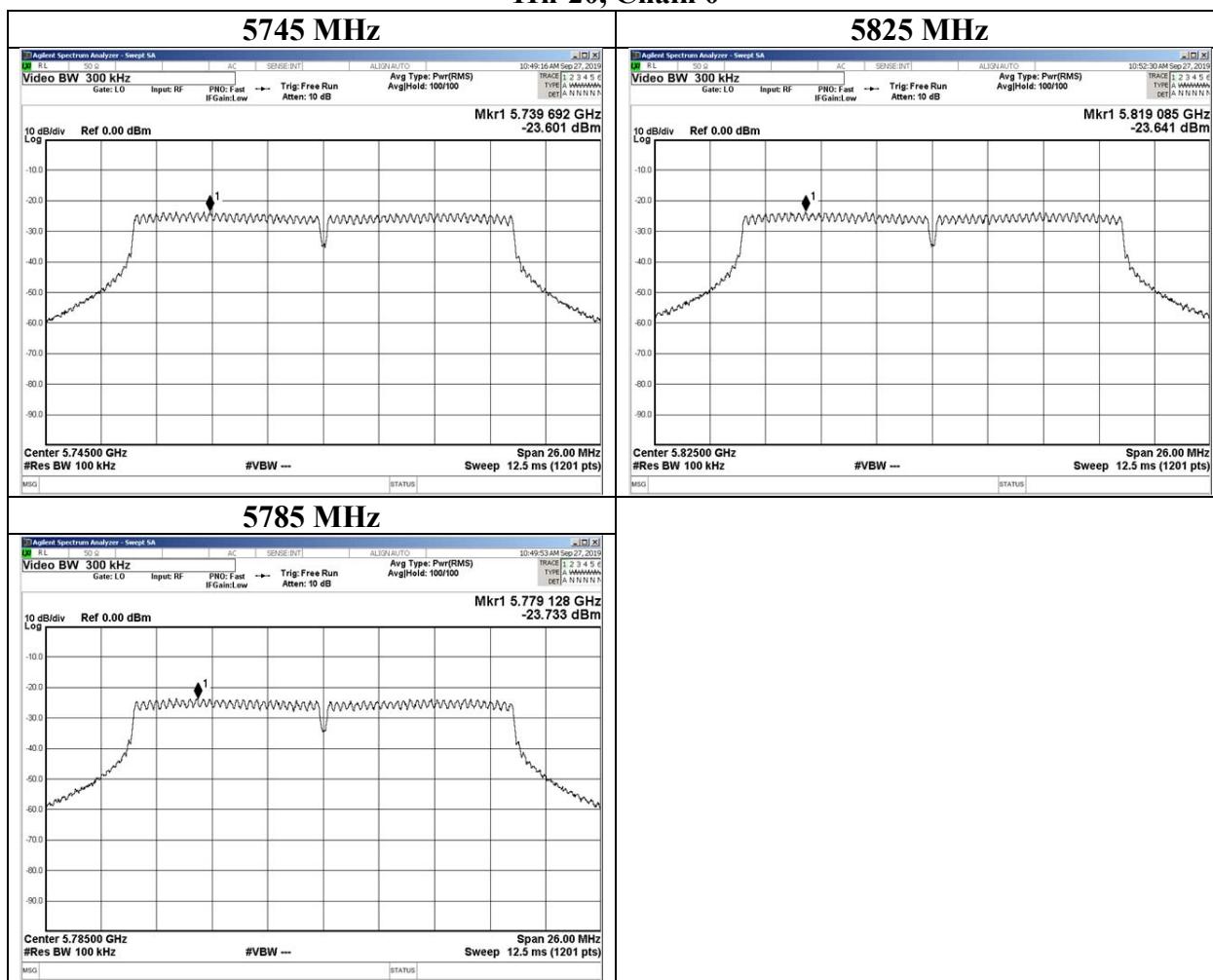
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 Telephone : +81 463 50 6400
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Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Kazuya Noda
 Mode Tx, 11n-20 (MIMO), (serial no. B-5)

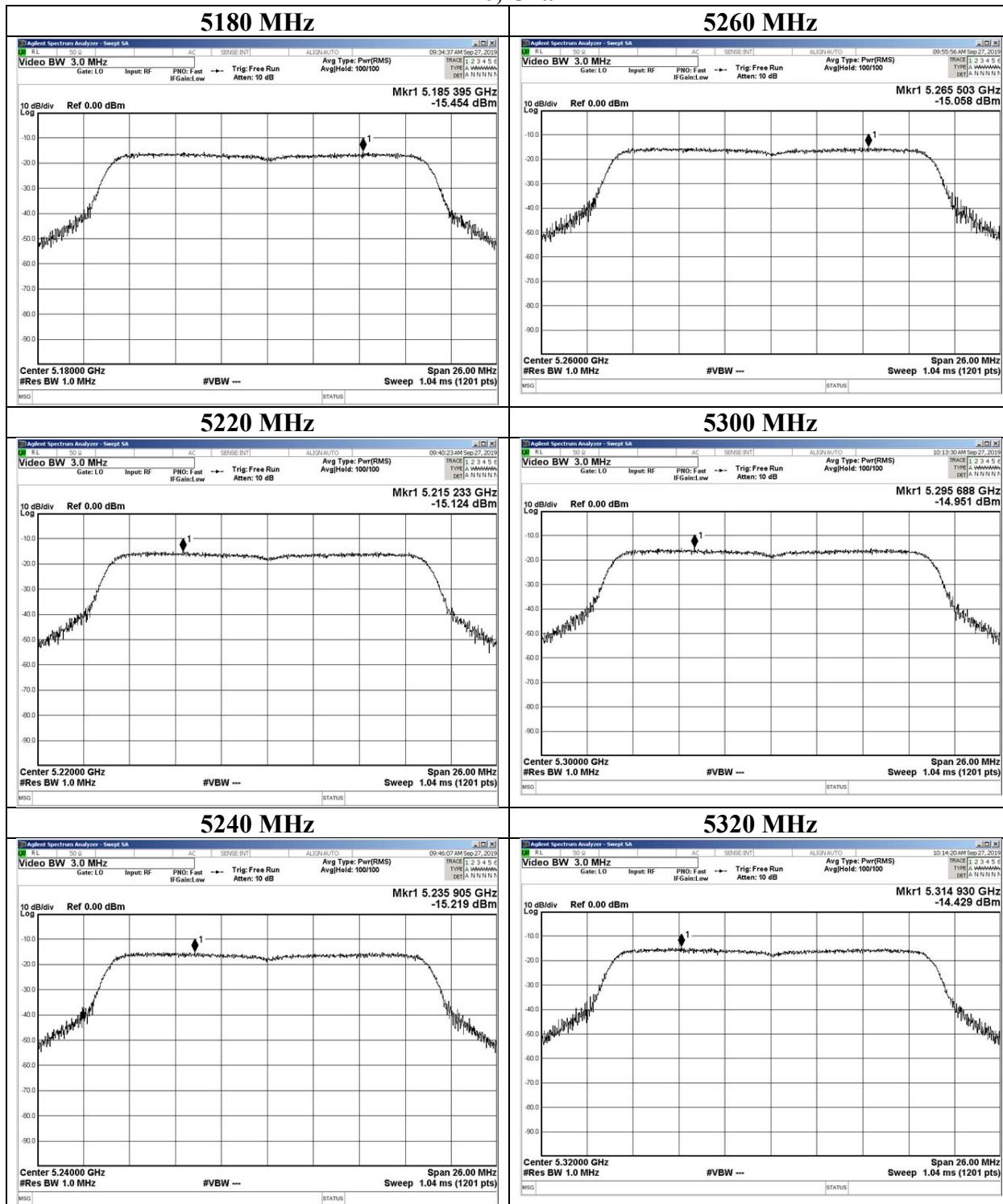
11n-20, Chain 0



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Kazuya Noda
 Mode Tx, 11n-20 (MIMO), (serial no. B-5)

11n-20, Chain 1



UL Japan, Inc.

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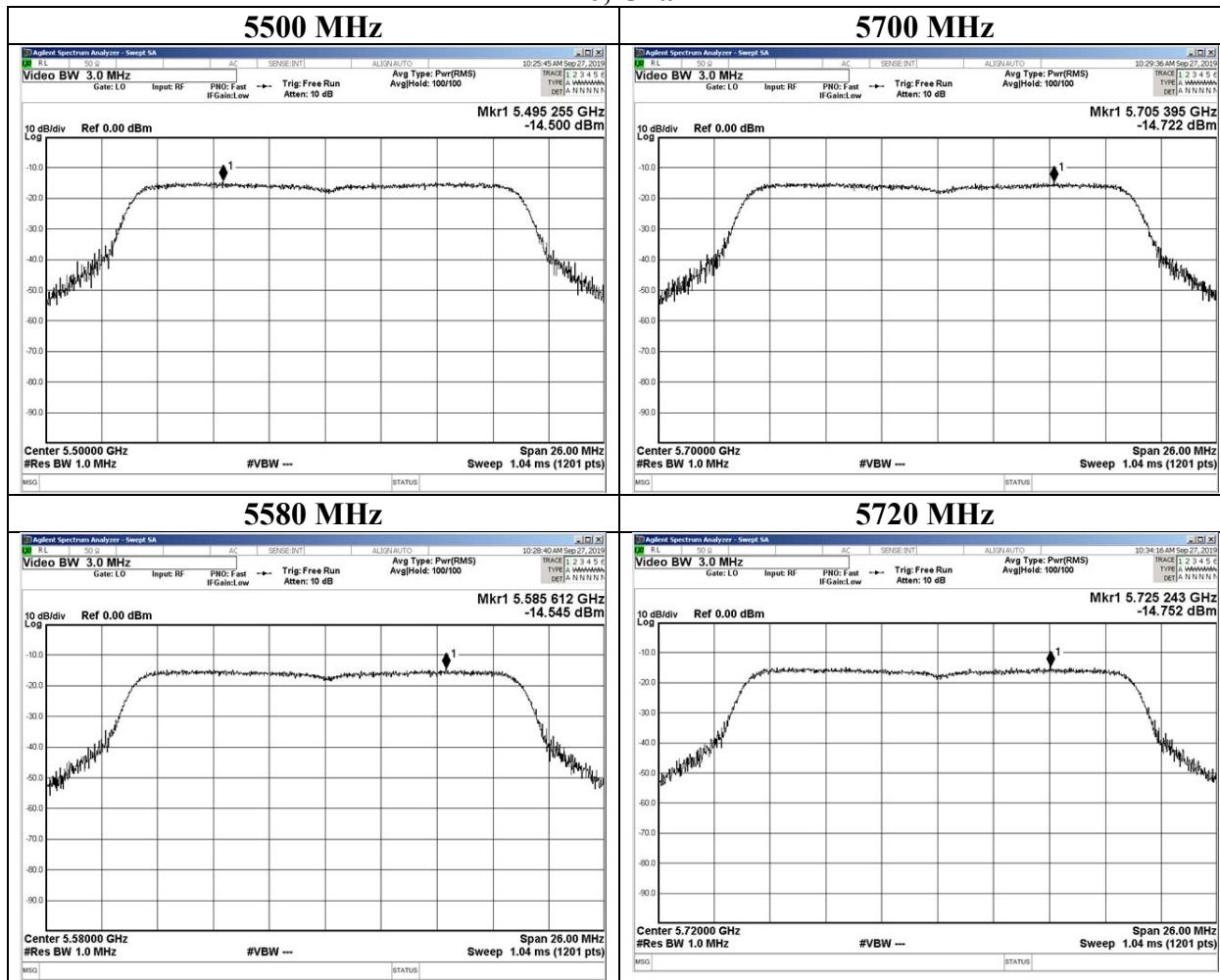
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Kazuya Noda
 Mode Tx, 11n-20 (MIMO), (serial no. B-5)

11n-20, Chain 1



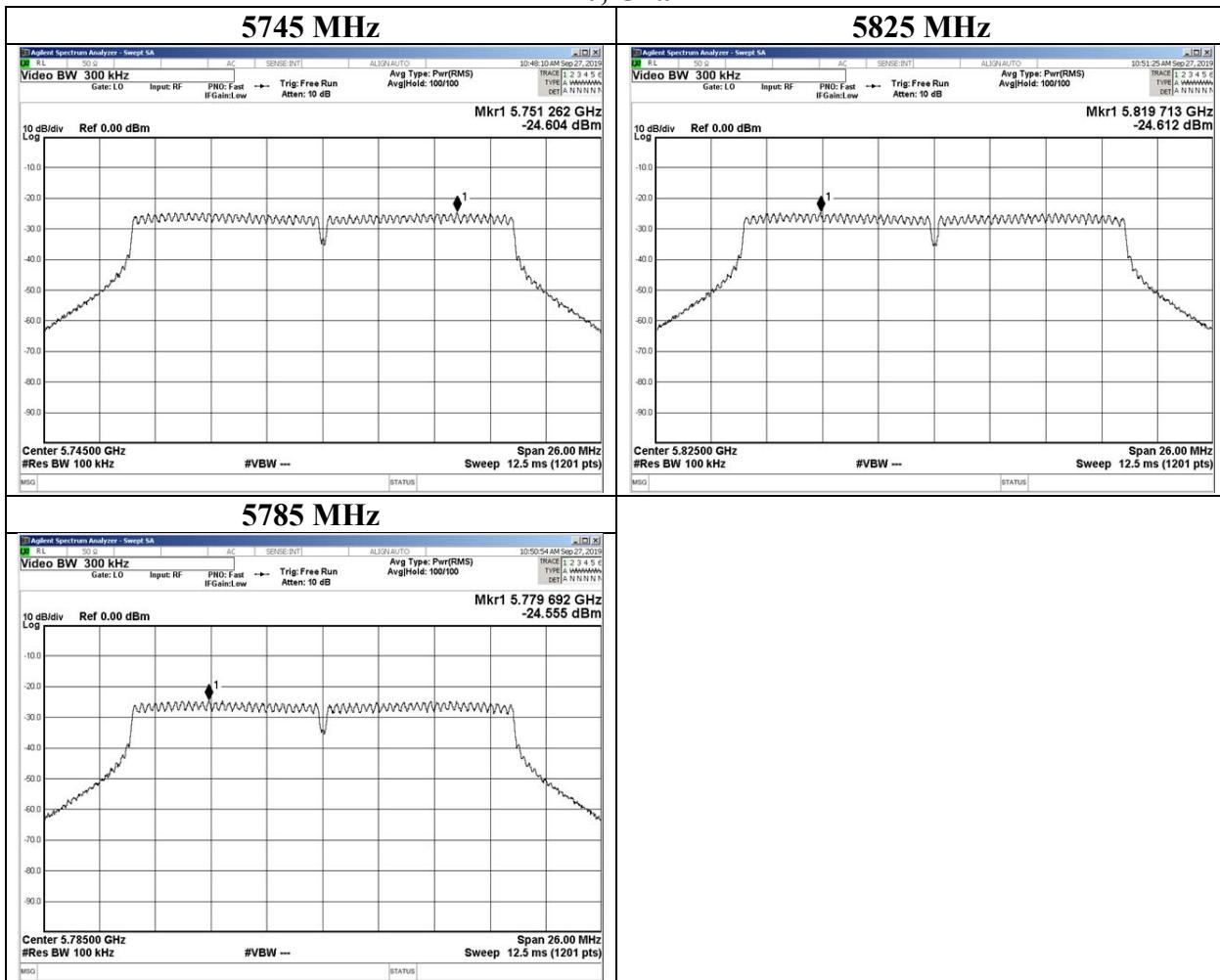
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Shonan EMC Lab.**

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 Telephone : +81 463 50 6400
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Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 27, 2019
 Temperature / Humidity 26 deg. C / 42 % RH
 Engineer Kazuya Noda
 Mode Tx, 11n-20 (MIMO), (serial no. B-5)

11n-20, Chain 1



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 28, 2019
 Temperature / Humidity 24 deg. C / 50 % RH
 Engineer Kazuya Noda
 Mode Tx, 11ac-20 (CDD), (serial no. A-7)

Tested Frequency [MHz]	CDD					Applied limit: 15.407, mobile and portable client device						
	PSD (Conducted)					PSD (e.i.r.p.)						
	Antenna Chain 0 [mW/MHz]	Antenna Chain 1 [mW/MHz]	Sum [mW/MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]	Antenna Chain 0 [mW/MHz]	Antenna Chain 1 [mW/MHz]	Sum [mW/MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
5180	0.88	1.00	1.87	2.73	11.00	8.27	2.23	2.54	4.76	6.78	17.00	10.22
5220	0.96	0.97	1.93	2.85	11.00	8.15	2.44	2.45	4.89	6.90	17.00	10.10
5240	0.83	0.87	1.69	2.29	11.00	8.71	2.10	2.21	4.31	6.34	17.00	10.66
5260	0.93	0.80	1.74	2.40	11.00	8.60	2.37	2.04	4.41	6.45	17.00	10.55
5300	0.91	0.89	1.80	2.56	11.00	8.44	2.31	2.27	4.58	6.61	17.00	10.39
5320	0.89	0.91	1.80	2.54	11.00	8.46	2.26	2.30	4.57	6.59	17.00	10.41
5500	1.02	1.01	2.03	3.08	11.00	7.92	2.59	2.58	5.16	7.13	17.00	9.87
5580	0.96	0.89	1.85	2.67	11.00	8.33	2.44	2.25	4.70	6.72	17.00	10.28
5700	1.01	1.14	2.15	3.33	11.00	7.67	2.57	2.90	5.47	7.38	17.00	9.62
5720	0.99	1.05	2.04	3.11	11.00	7.89	2.52	2.67	5.20	7.16	17.00	9.84
5745	0.48	0.52	1.00	0.02	30.00	29.98	1.23	1.33	2.55	4.07	36.00	31.93
5785	0.47	0.51	0.98	-0.07	30.00	30.07	1.20	1.30	2.50	3.98	36.00	32.02
5825	0.48	0.54	1.03	0.11	30.00	29.89	1.22	1.38	2.61	4.16	36.00	31.84

Tested Frequency [MHz]	Chain 0						Chain 1							
	Duty Factor [dB]	RBW Correction Factor [dB]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]	PSD Reading [dB]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5180	0.00	0.00	-14.38	3.91	9.90	4.05	-0.57	3.48	-14.23	4.01	10.21	4.05	-0.01	4.04
5220	0.00	0.00	-14.01	3.92	9.91	4.05	-0.18	3.87	-14.38	4.02	10.21	4.05	-0.15	3.90
5240	0.00	0.00	-14.67	3.93	9.91	4.05	-0.83	3.22	-14.86	4.04	10.21	4.05	-0.61	3.44
5260	0.00	0.00	-14.15	3.94	9.91	4.05	-0.30	3.75	-15.21	4.05	10.21	4.05	-0.95	3.10
5300	0.00	0.00	-14.27	3.95	9.91	4.05	-0.41	3.64	-14.77	4.06	10.21	4.05	-0.50	3.55
5320	0.00	0.00	-14.36	3.95	9.91	4.05	-0.50	3.55	-14.71	4.07	10.21	4.05	-0.43	3.62
5500	0.00	0.00	-13.84	4.00	9.92	4.05	0.08	4.13	-14.31	4.15	10.22	4.05	0.06	4.11
5580	0.00	0.00	-14.09	4.01	9.91	4.05	-0.17	3.88	-14.90	4.16	10.22	4.05	-0.52	3.53
5700	0.00	0.00	-13.75	3.89	9.90	4.05	0.05	4.10	-13.72	4.07	10.23	4.05	0.58	4.63
5720	0.00	0.00	-13.82	3.89	9.90	4.05	-0.03	4.02	-14.09	4.08	10.23	4.05	0.22	4.27
5745	0.00	6.99	-23.96	3.90	9.90	4.05	-3.17	0.88	-24.12	4.08	10.23	4.05	-2.82	1.23
5785	0.00	6.99	-24.06	3.91	9.89	4.05	-3.27	0.78	-24.22	4.09	10.24	4.05	-2.90	1.15
5825	0.00	6.99	-23.97	3.92	9.89	4.05	-3.17	0.88	-23.97	4.10	10.24	4.05	-2.64	1.41

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = $10 * \log(\text{Specified bandwidth} / \text{Measured bandwidth})$

PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor

PSD Result (e.i.r.p.) = Conducted PSD Result + Directional Gain

Directional Gain = G ANT + Array Gain

G ANT = Set equal to the gain of the antenna having the highest gain

Array Gain = $10 \log(N \text{ ANT} / N \text{ SS})$ dB.

N ANT = number of transmit antennas = 2

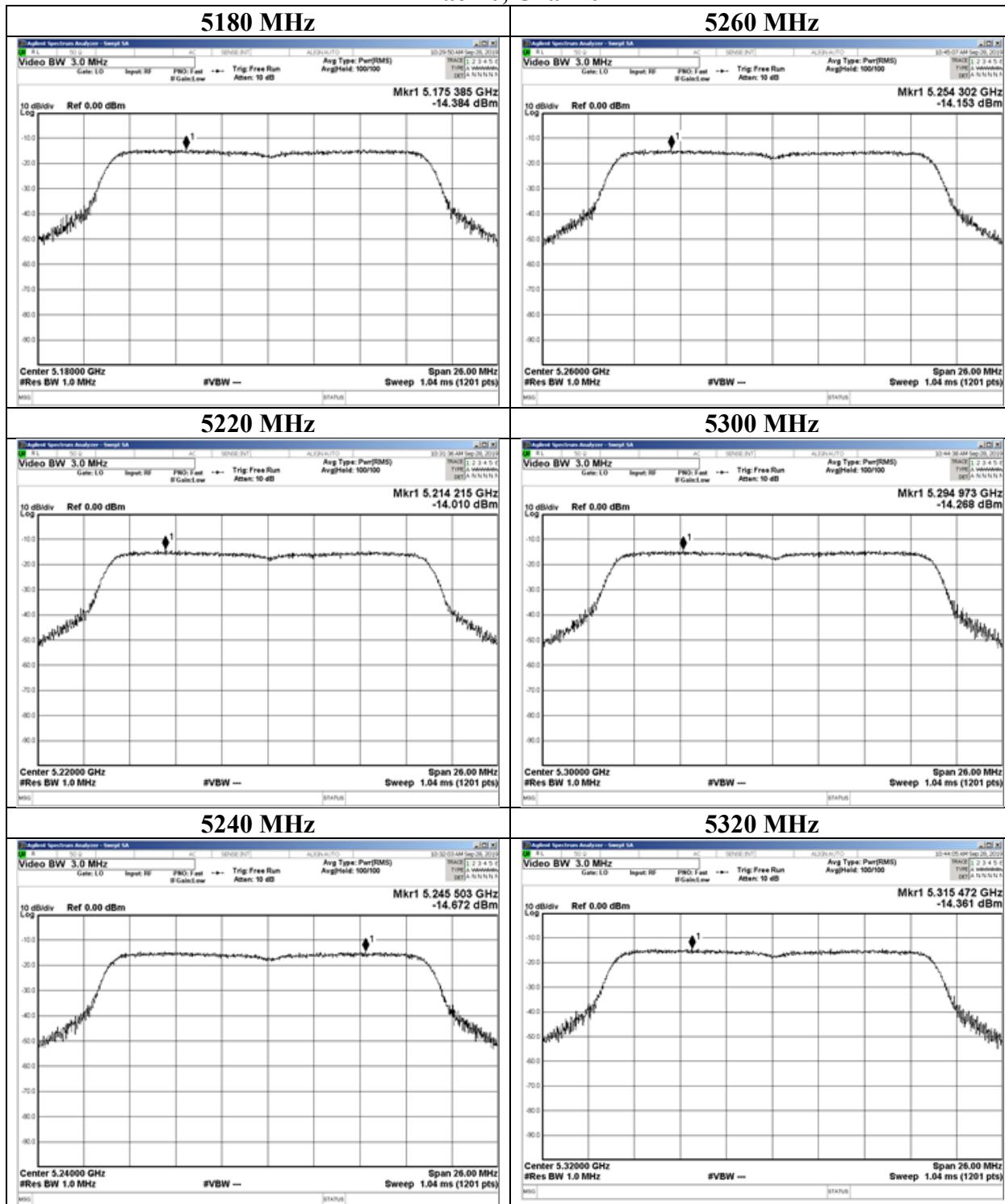
N SS = number of spatial streams = 1

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (W52 for FCC)

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 28, 2019
 Temperature / Humidity 24 deg. C / 50 % RH
 Engineer Kazuya Noda
 Mode Tx, 11ac-20 (CDD), (serial no. A-7)

11ac-20, Chain 0



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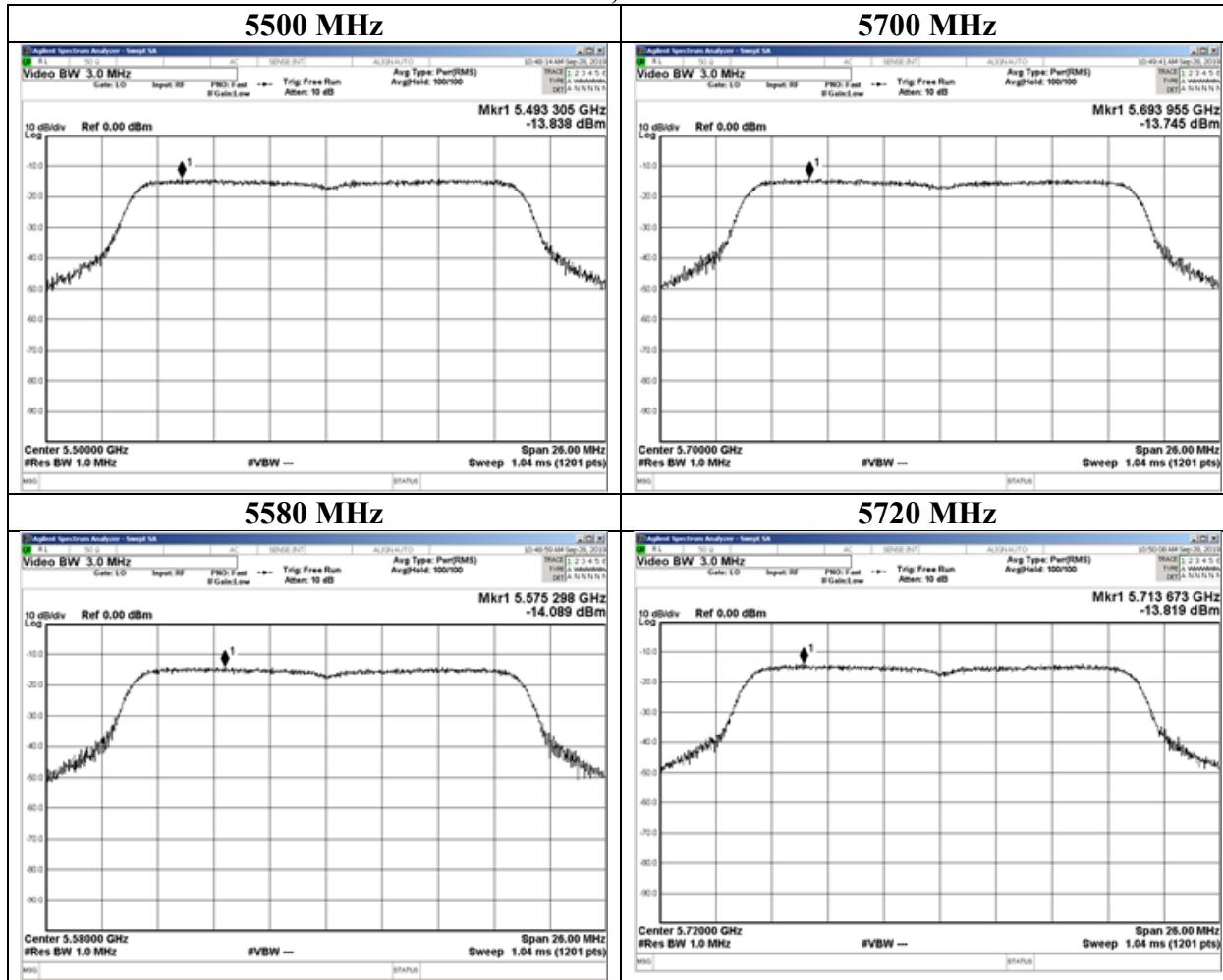
Telephone : +81 463 50 6400

Faxsimile : +81 463 50 6401

Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 28, 2019
 Temperature / Humidity 24 deg. C / 50 % RH
 Engineer Kazuya Noda
 Mode Tx, 11ac-20 (CDD), (serial no. A-7)

11ac-20, Chain 0



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Shonan EMC Lab.

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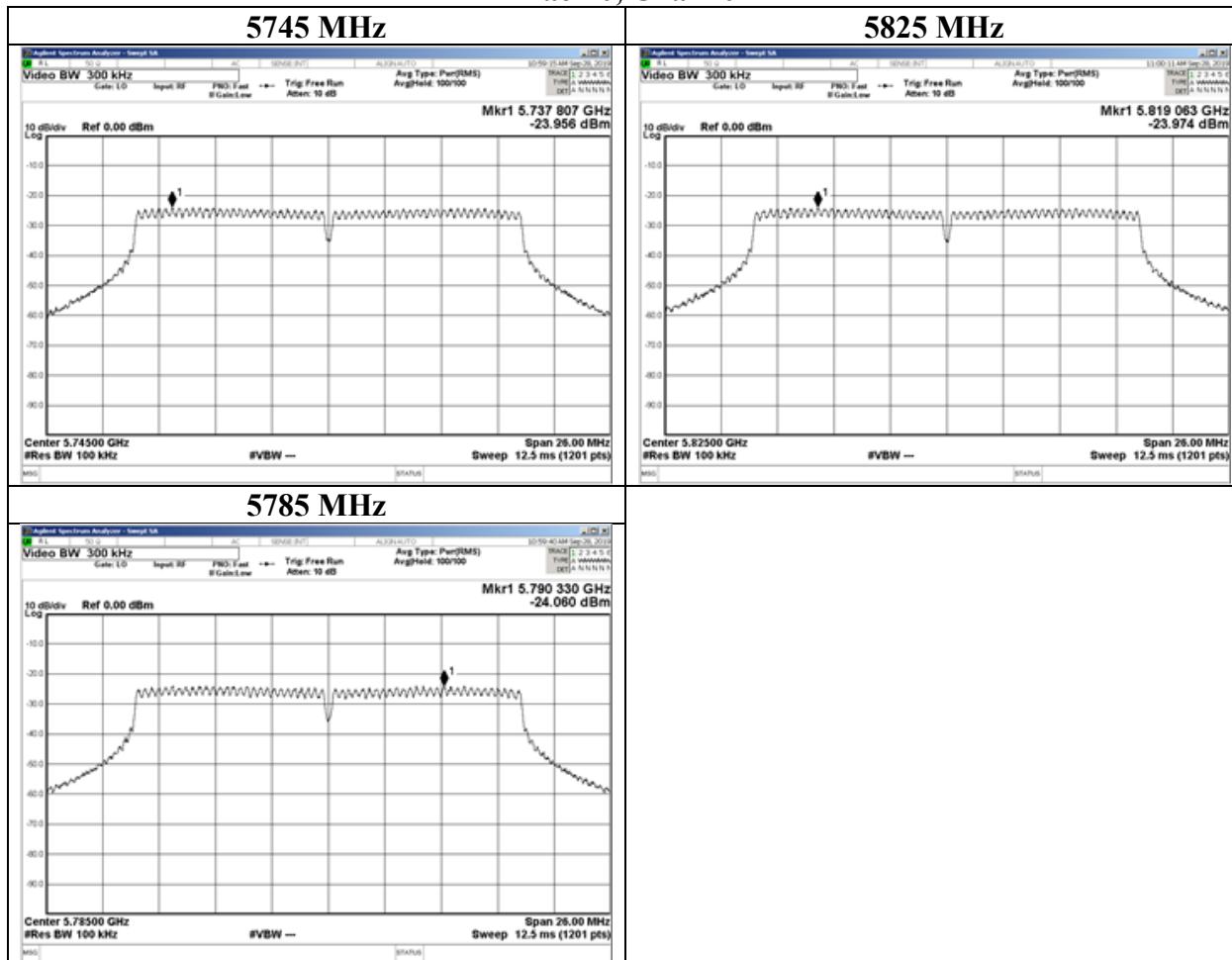
Telephone : +81 463 50 6400

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Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 28, 2019
 Temperature / Humidity 24 deg. C / 50 % RH
 Engineer Kazuya Noda
 Mode Tx, 11ac-20 (CDD), (serial no. A-7)

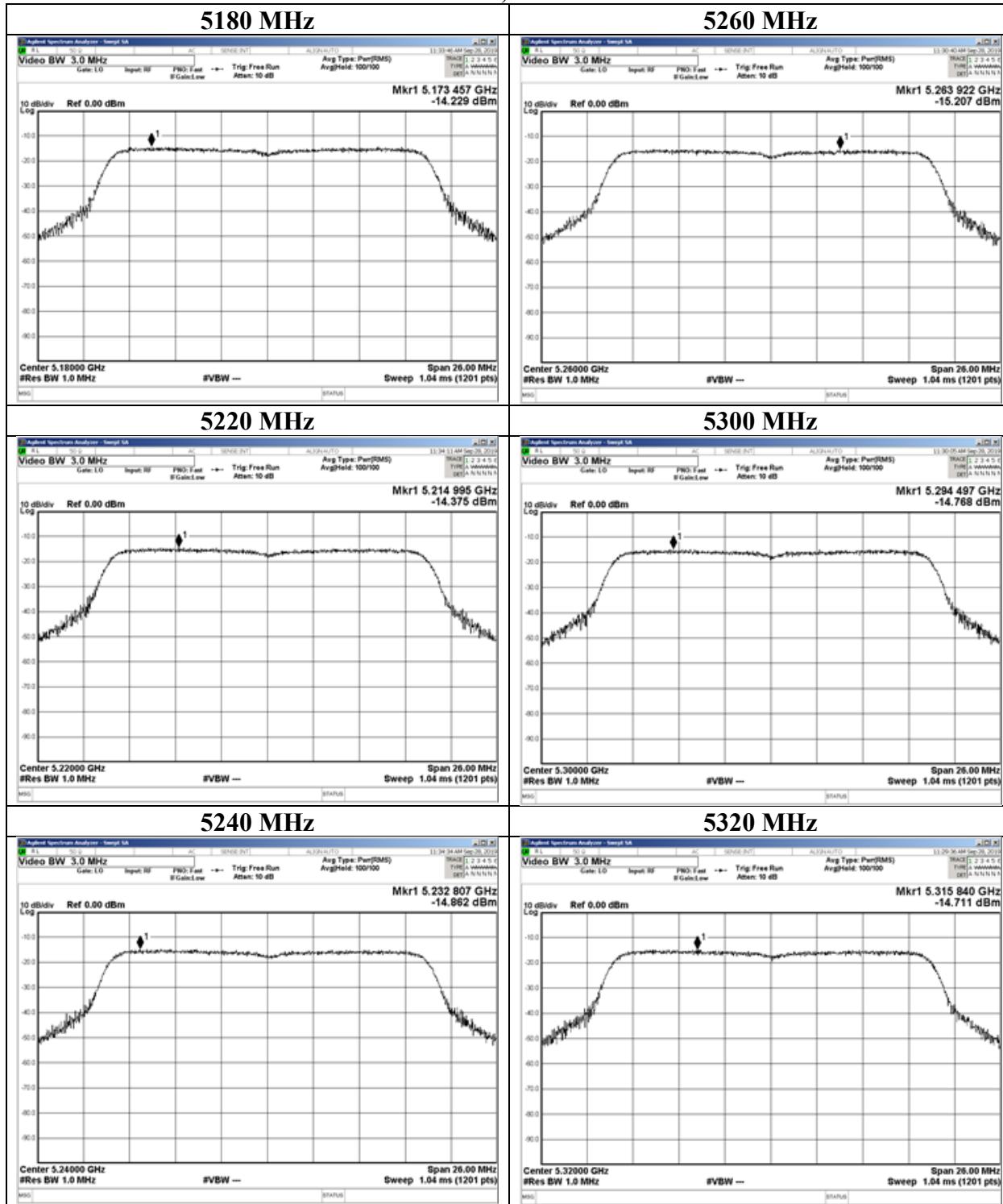
11ac-20, Chain 0



Maximum Power Spectral Density

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab. No.3 Shielded Room
 Date September 28, 2019
 Temperature / Humidity 24 deg. C / 50 % RH
 Engineer Kazuya Noda
 Mode Tx, 11ac-20 (CDD), (serial no. A-7)

11ac-20, Chain 1



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Maximum Power Spectral Density

Report No. 13004393S-E-R2
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 Date September 28, 2019
 Temperature / Humidity 24 deg. C / 50 % RH
 Engineer Kazuya Noda
 Mode Tx, 11ac-20 (CDD), (serial no. A-7)

11ac-20, Chain 1

