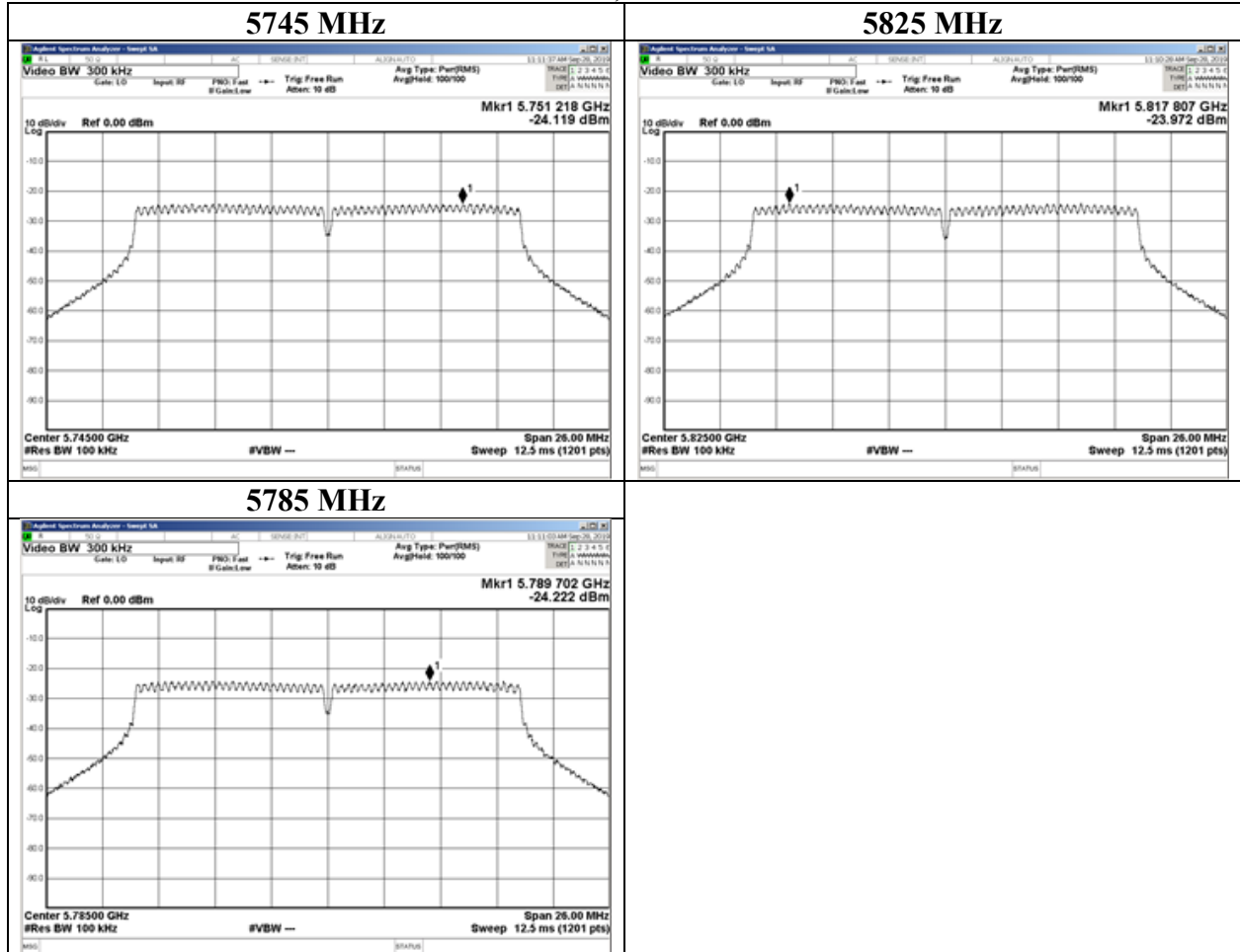


Maximum Power Spectral Density

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



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 27, 2019
Temperature / Humidity 26 deg. C / 42 % RH
Engineer Kazuya Noda
Mode Tx, 11ac-20 (CDD), (serial no. B-5)

Chain 0+1 CDD Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]	Antenna			Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
	Chain 0 [mW/MHz]	Chain 1 [mW/MHz]	Sum [mW/MHz]				Chain 0 [mW/MHz]	Chain 1 [mW/MHz]	Sum [mW/MHz]			
5180	0.91	0.94	1.84	2.66	11.00	8.34	2.87	2.95	5.82	7.65	17.00	9.35
5220	0.93	1.05	1.98	2.96	11.00	8.04	2.93	3.31	6.24	7.95	17.00	9.05
5240	0.95	0.95	1.89	2.77	11.00	8.23	2.99	2.98	5.97	7.76	17.00	9.24
5260	0.96	1.03	1.99	3.00	11.00	8.00	3.04	3.25	6.29	7.99	17.00	9.01
5300	0.97	1.04	2.01	3.03	11.00	7.97	3.05	3.29	6.33	8.02	17.00	8.98
5320	0.92	1.07	1.99	3.00	11.00	8.00	2.91	3.38	6.29	7.99	17.00	9.01
5500	0.98	1.13	2.11	3.23	11.00	7.77	3.08	3.56	6.64	8.22	17.00	8.78
5580	1.07	1.12	2.19	3.40	11.00	7.60	3.39	3.52	6.90	8.39	17.00	8.61
5700	0.91	1.02	1.93	2.85	11.00	8.15	2.87	3.22	6.08	7.84	17.00	9.16
5720	0.94	1.00	1.94	2.87	11.00	8.13	2.95	3.16	6.11	7.86	17.00	9.14
5745	0.52	0.55	1.07	0.28	30.00	29.72	1.64	1.73	3.37	5.27	36.00	30.73
5785	0.39	0.57	0.96	-0.16	30.00	30.16	1.25	1.80	3.04	4.83	36.00	31.17
5825	0.52	0.54	1.06	0.25	30.00	29.75	1.63	1.72	3.34	5.24	36.00	30.76

Tested Frequency [MHz]	Duty Factor [dB]	RBW Correction Factor [dB]	Chain 0					Chain 1						
			PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result		PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result	
							Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]					Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5180	0.00	0.00	-14.23	3.91	9.90	4.99	-0.42	4.57	-15.16	4.66	10.21	4.99	-0.29	4.70
5220	0.00	0.00	-14.15	3.92	9.91	4.99	-0.32	4.67	-14.67	4.67	10.21	4.99	0.21	5.20
5240	0.00	0.00	-14.07	3.93	9.91	4.99	-0.23	4.76	-15.14	4.69	10.21	4.99	-0.24	4.75
5260	0.00	0.00	-14.01	3.94	9.91	4.99	-0.16	4.83	-14.78	4.70	10.21	4.99	0.13	5.12
5300	0.00	0.00	-14.01	3.95	9.91	4.99	-0.15	4.84	-14.74	4.71	10.21	4.99	0.18	5.17
5320	0.00	0.00	-14.21	3.95	9.91	4.99	-0.35	4.64	-14.63	4.72	10.21	4.99	0.30	5.29
5500	0.00	0.00	-14.03	4.00	9.92	4.99	-0.11	4.88	-14.49	4.80	10.22	4.99	0.53	5.52
5580	0.00	0.00	-13.61	4.01	9.91	4.99	0.31	5.30	-14.56	4.81	10.22	4.99	0.47	5.46
5700	0.00	0.00	-14.21	3.89	9.90	4.99	-0.42	4.57	-14.87	4.72	10.23	4.99	0.08	5.07
5720	0.00	0.00	-14.08	3.89	9.90	4.99	-0.29	4.70	-14.95	4.73	10.23	4.99	0.01	5.00
5745	0.00	6.99	-23.64	3.90	9.90	4.99	-2.85	2.14	-24.56	4.73	10.23	4.99	-2.61	2.38
5785	0.00	6.99	-24.83	3.91	9.89	4.99	-4.04	0.95	-24.41	4.74	10.24	4.99	-2.44	2.55
5825	0.00	6.99	-23.68	3.92	9.89	4.99	-2.88	2.11	-24.62	4.75	10.24	4.99	-2.64	2.35

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 (Specified bandwidth / 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 ANT/N SS) dB.

N ANT = number of transmit antennas = 2

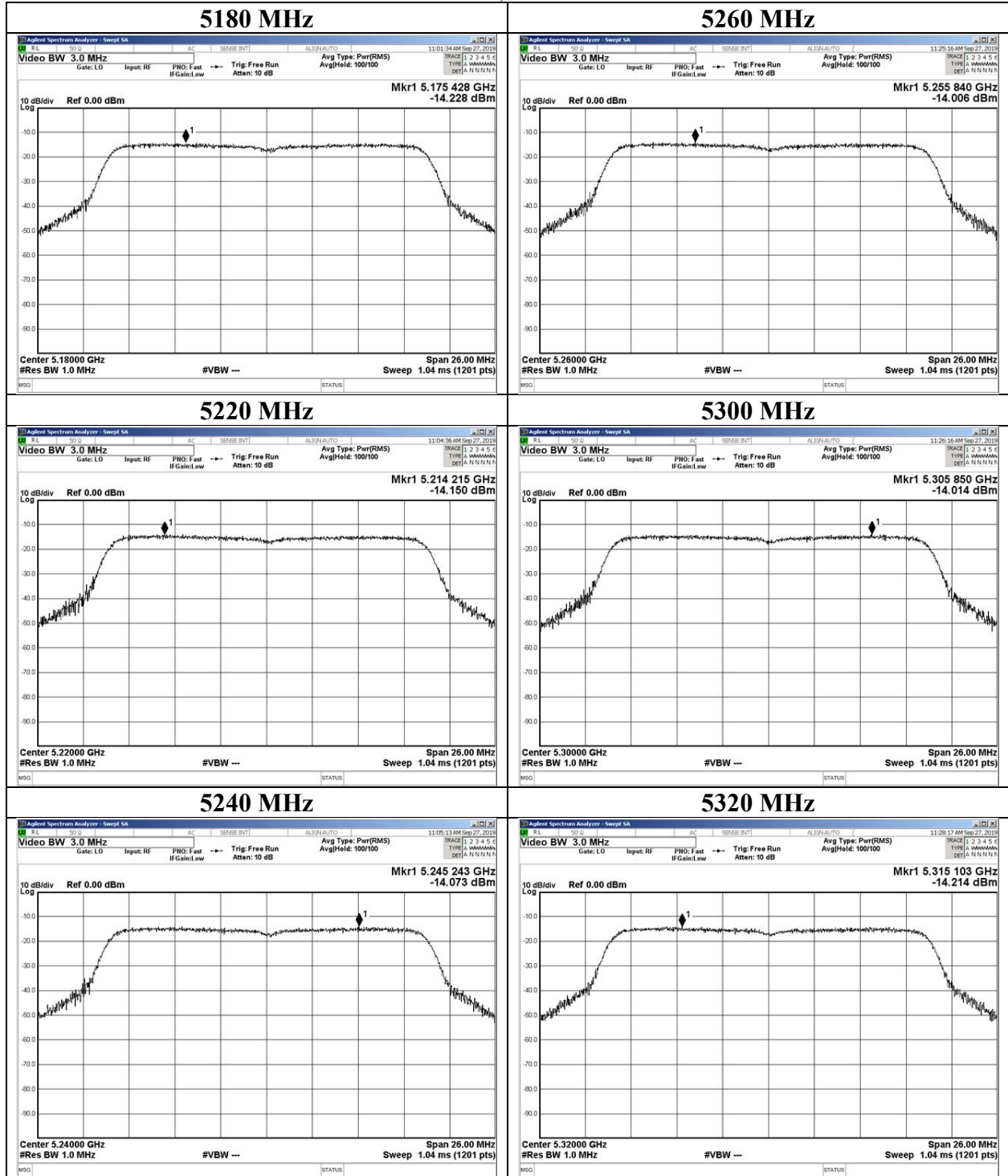
N SS = number of spatial streams = 1

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 27, 2019
Temperature / Humidity 26 deg. C / 42 % RH
Engineer Kazuya Noda
Mode Tx, 11ac-20 (CDD), (serial no. B-5)

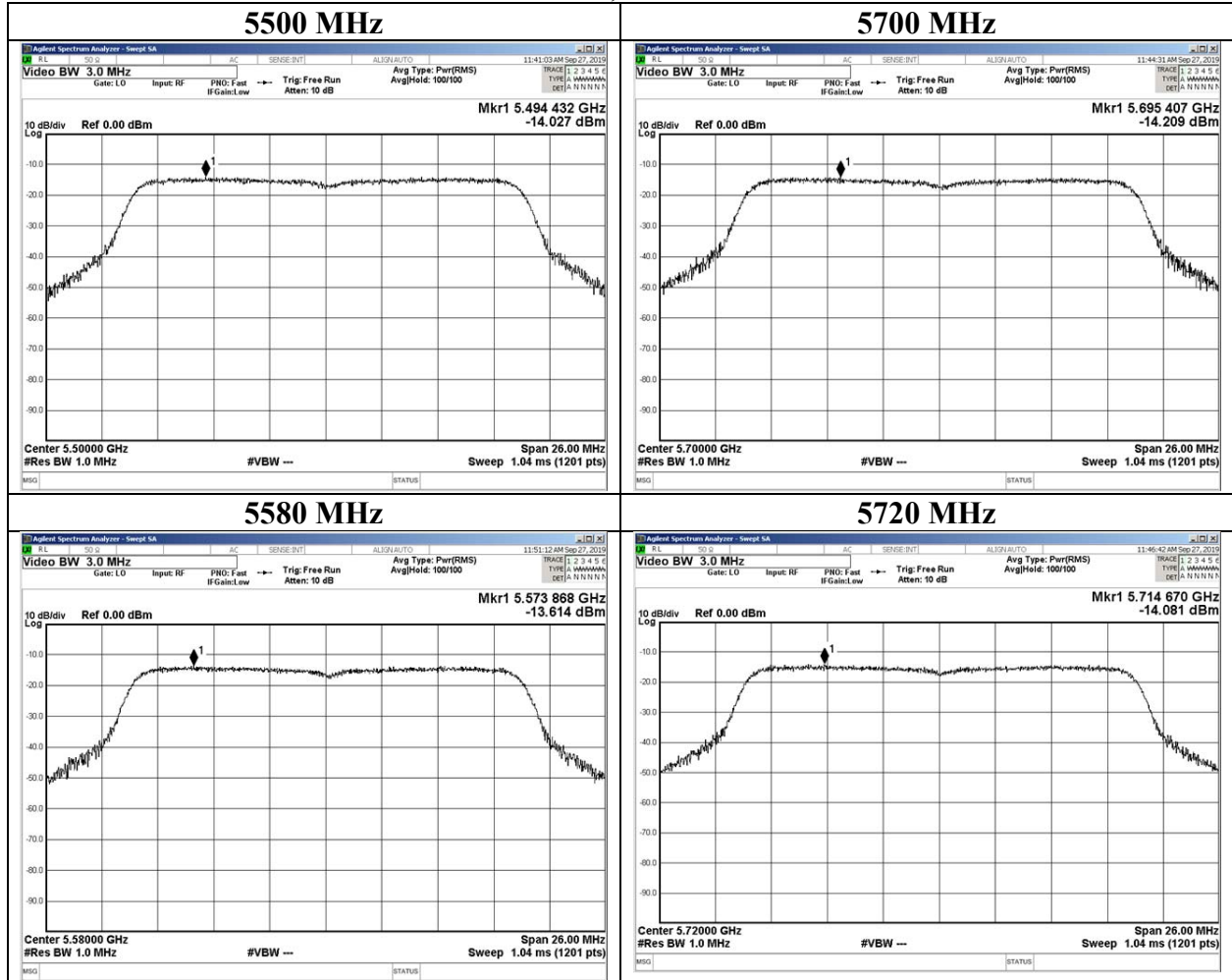
11ac-20, Chain 0



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, 11ac-20 (CDD), (serial no. B-5)

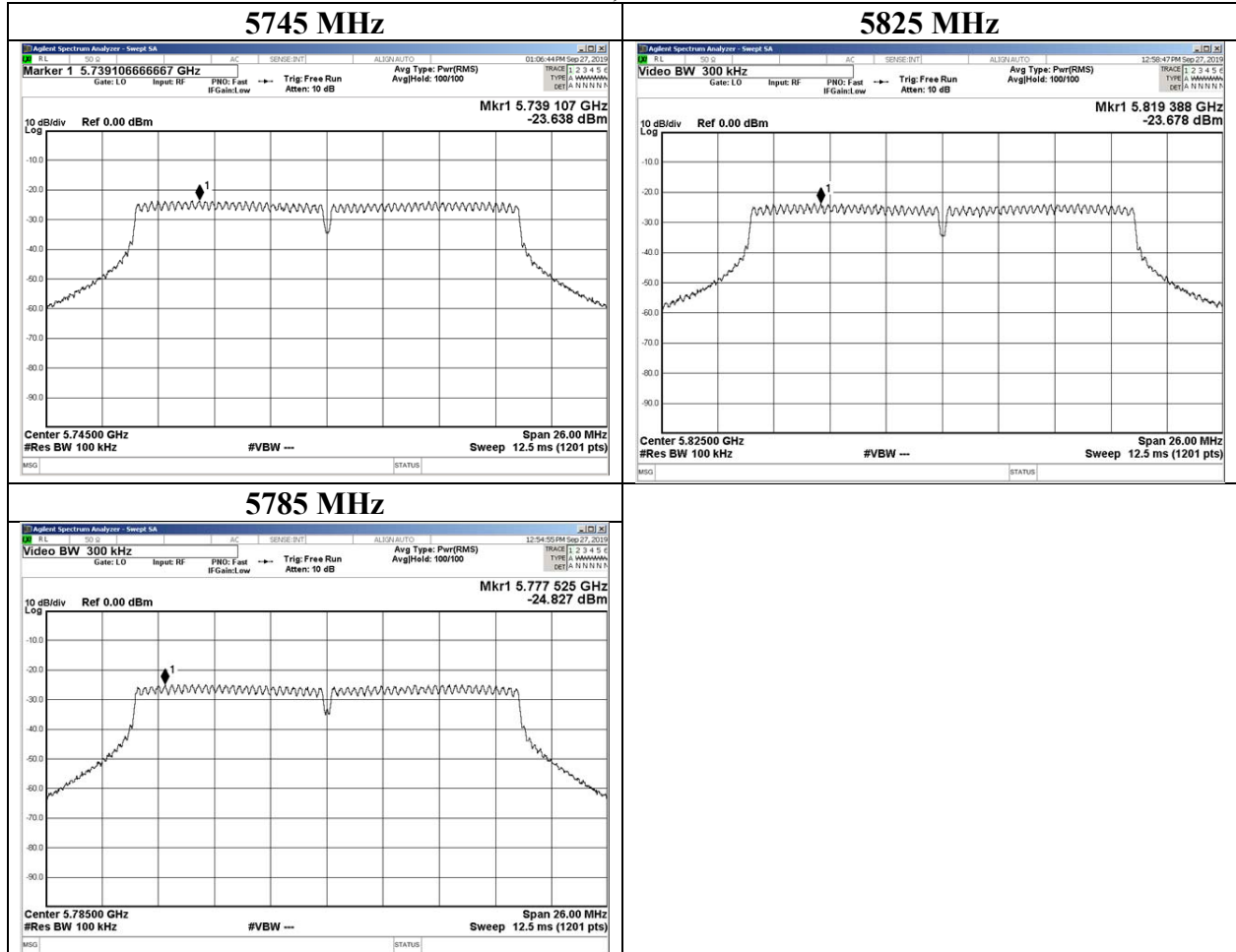
11ac-20, Chain 0



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, 11ac-20 (CDD), (serial no. B-5)

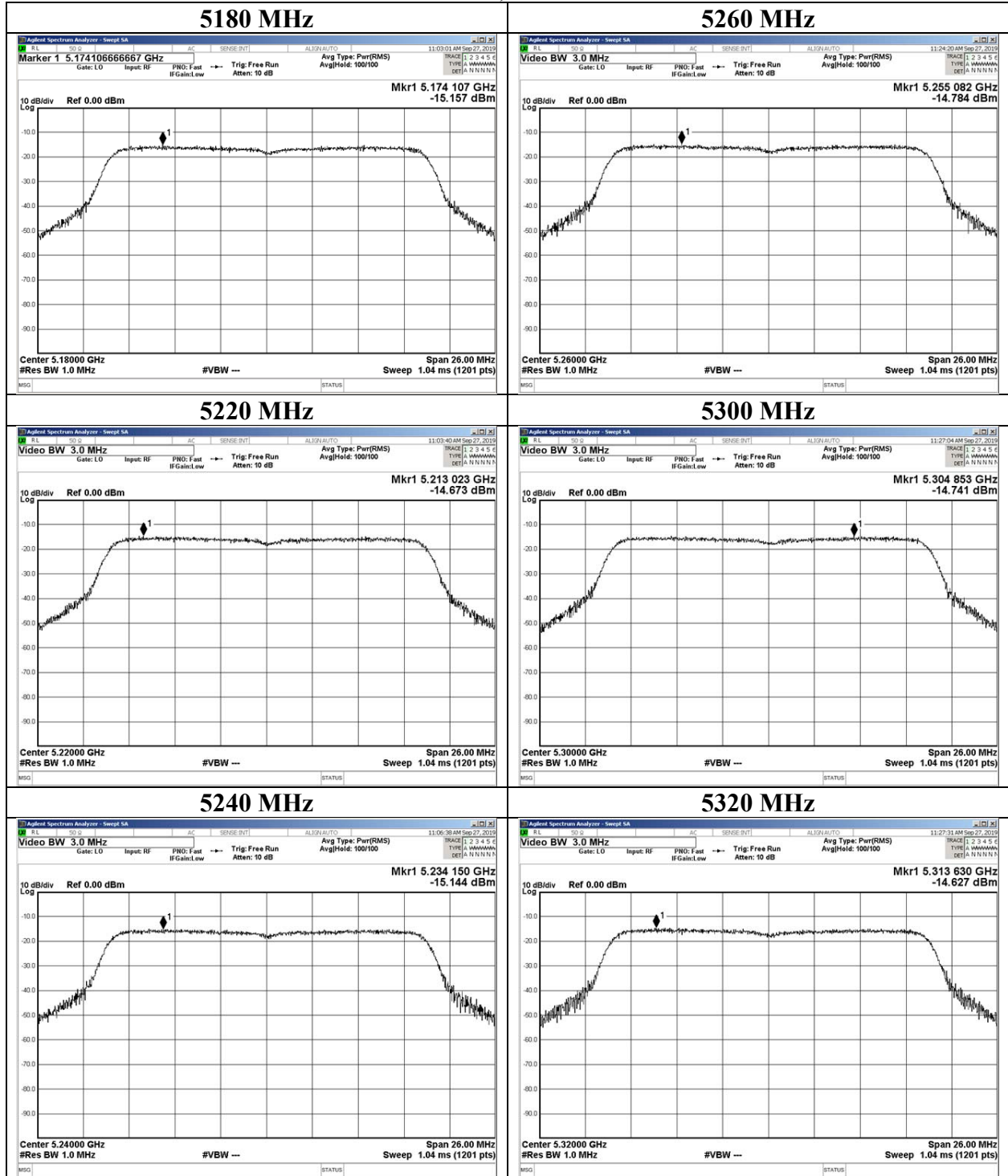
11ac-20, Chain 0



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, 11ac-20 (CDD), (serial no. B-5)

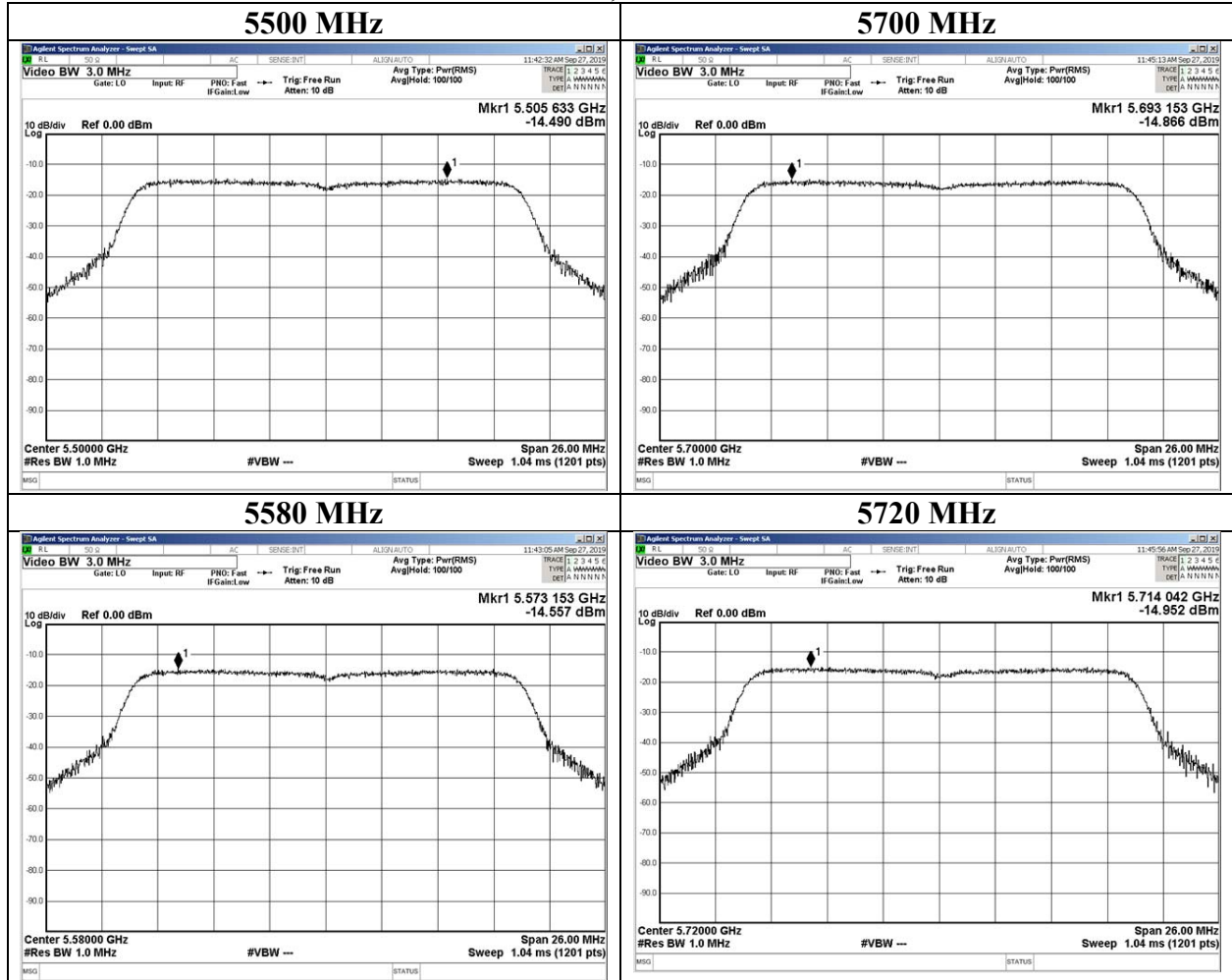
11ac-20, Chain 1



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, 11ac-20 (CDD), (serial no. B-5)

11ac-20, Chain 1



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Shonan EMC Lab.

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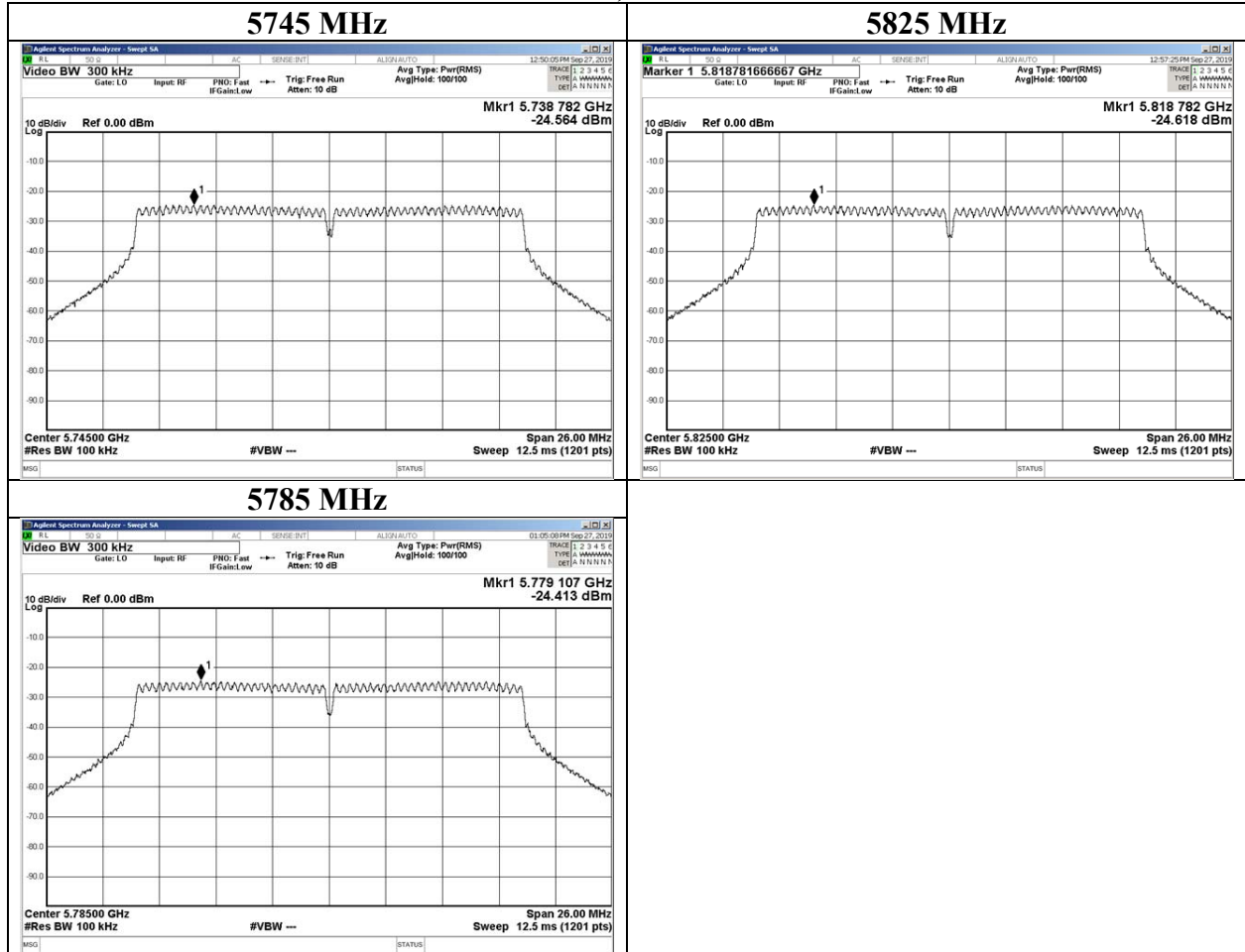
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Facsimile : +81 463 50 6401

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, 11ac-20 (CDD), (serial no. B-5)

11ac-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 (MIMO), (serial no. A-7)

Chain 0+1 MIMO Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	Chain 0	Chain 1	Sum				Chain 0	Chain 1	Sum			
[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	
5180	0.91	1.06	1.97	2.94	11.00	8.06	1.16	1.35	2.50	3.98	17.00	13.02
5220	0.89	0.94	1.84	2.64	11.00	8.36	1.14	1.20	2.33	3.68	17.00	13.32
5240	0.88	0.96	1.84	2.64	11.00	8.36	1.12	1.22	2.34	3.68	17.00	13.32
5260	0.84	0.87	1.72	2.35	11.00	8.65	1.07	1.11	2.18	3.39	17.00	13.61
5300	0.93	0.90	1.83	2.63	11.00	8.37	1.18	1.15	2.33	3.67	17.00	13.33
5320	0.91	0.93	1.84	2.65	11.00	8.35	1.16	1.18	2.34	3.69	17.00	13.31
5500	1.02	1.01	2.03	3.07	11.00	7.93	1.30	1.28	2.57	4.11	17.00	12.89
5580	0.94	0.90	1.84	2.66	11.00	8.34	1.20	1.14	2.34	3.70	17.00	13.30
5700	1.00	1.11	2.11	3.23	11.00	7.77	1.27	1.41	2.68	4.27	17.00	12.73
5720	0.93	1.15	2.08	3.17	11.00	7.83	1.18	1.46	2.64	4.21	17.00	12.79
5745	0.46	0.61	1.07	0.29	30.00	29.71	0.59	0.77	1.36	1.33	36.00	34.67
5785	0.49	0.56	1.05	0.21	30.00	29.79	0.62	0.71	1.33	1.25	36.00	34.75
5825	0.46	0.53	0.99	-0.05	30.00	30.05	0.58	0.68	1.26	0.99	36.00	35.01

Tested Frequency [MHz]	Duty Factor [dB]	RBW Correction Factor [dB]	Chain 0					PSD Result		Chain 1					PSD Result	
			PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Cond.	e.i.r.p.	Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Cond.	e.i.r.p.		
															[dBm/MHz]	[dB]
5180	0.00	0.00	-14.22	3.91	9.90	1.04	-0.41	0.63	-13.97	4.01	10.21	1.04	0.25	1.29		
5220	0.00	0.00	-14.32	3.92	9.91	1.04	-0.49	0.55	-14.48	4.02	10.21	1.04	-0.25	0.79		
5240	0.00	0.00	-14.40	3.93	9.91	1.04	-0.56	0.48	-14.43	4.04	10.21	1.04	-0.18	0.86		
5260	0.00	0.00	-14.58	3.94	9.91	1.04	-0.73	0.31	-14.85	4.05	10.21	1.04	-0.59	0.45		
5300	0.00	0.00	-14.18	3.95	9.91	1.04	-0.32	0.72	-14.72	4.06	10.21	1.04	-0.45	0.59		
5320	0.00	0.00	-14.27	3.95	9.91	1.04	-0.41	0.63	-14.59	4.07	10.21	1.04	-0.31	0.73		
5500	0.00	0.00	-13.83	4.00	9.92	1.04	0.09	1.13	-14.35	4.15	10.22	1.04	0.02	1.06		
5580	0.00	0.00	-14.18	4.01	9.91	1.04	-0.26	0.78	-14.83	4.16	10.22	1.04	-0.45	0.59		
5700	0.00	0.00	-13.79	3.89	9.90	1.04	0.00	1.04	-13.86	4.07	10.23	1.04	0.44	1.48		
5720	0.00	0.00	-14.10	3.89	9.90	1.04	-0.31	0.73	-13.72	4.08	10.23	1.04	0.59	1.63		
5745	0.00	6.99	-24.15	3.90	9.90	1.04	-3.36	-2.32	-23.47	4.08	10.23	1.04	-2.17	-1.13		
5785	0.00	6.99	-23.88	3.91	9.89	1.04	-3.09	-2.05	-23.84	4.09	10.24	1.04	-2.52	-1.48		
5825	0.00	6.99	-24.21	3.92	9.89	1.04	-3.41	-2.37	-24.06	4.10	10.24	1.04	-2.73	-1.69		

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

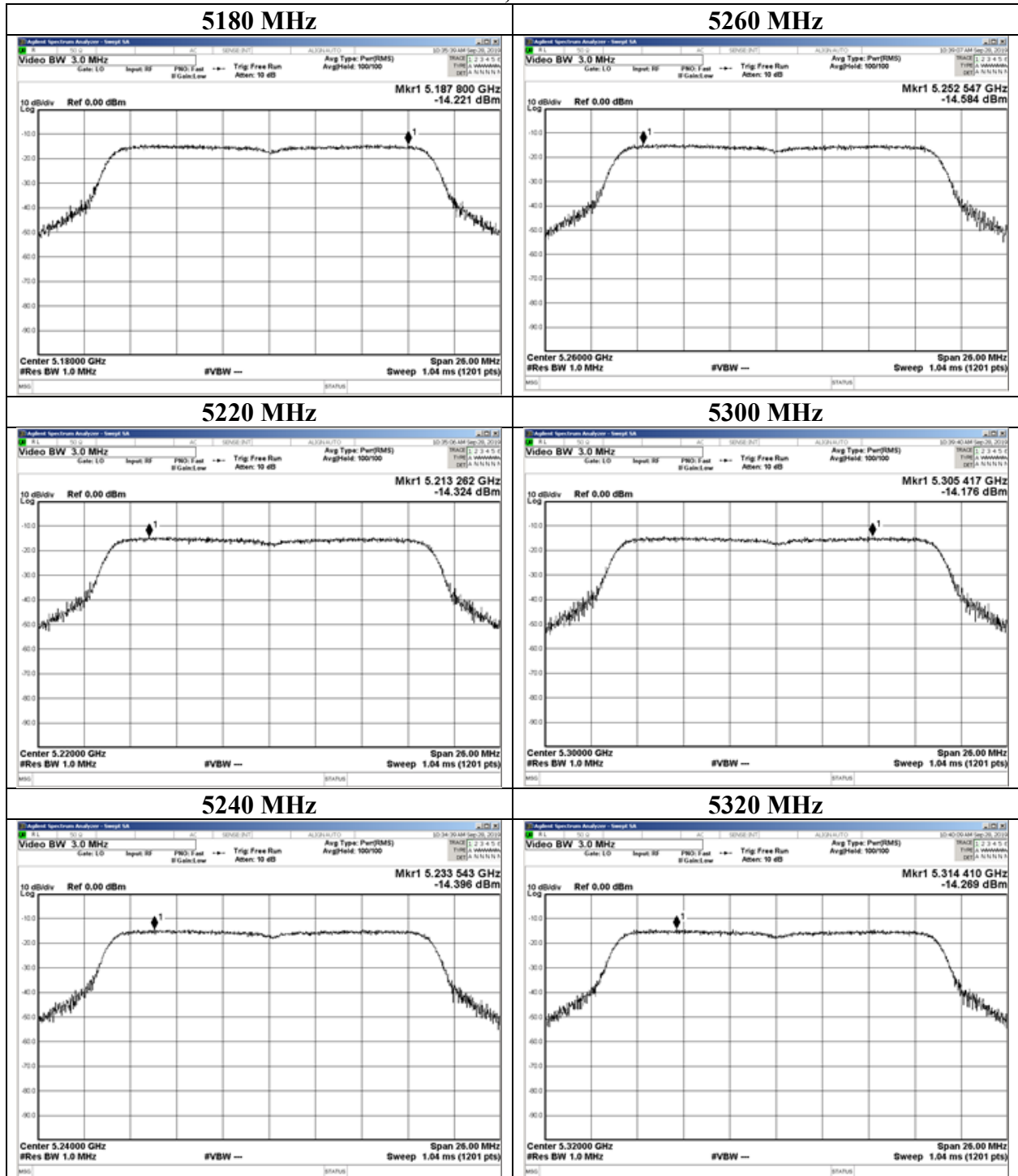
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

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 28, 2019
Temperature / Humidity	24 deg. C / 50 % RH
Engineer	Kazuya Noda
Mode	Tx, 11ac-20 (MIMO), (serial no. A-7)

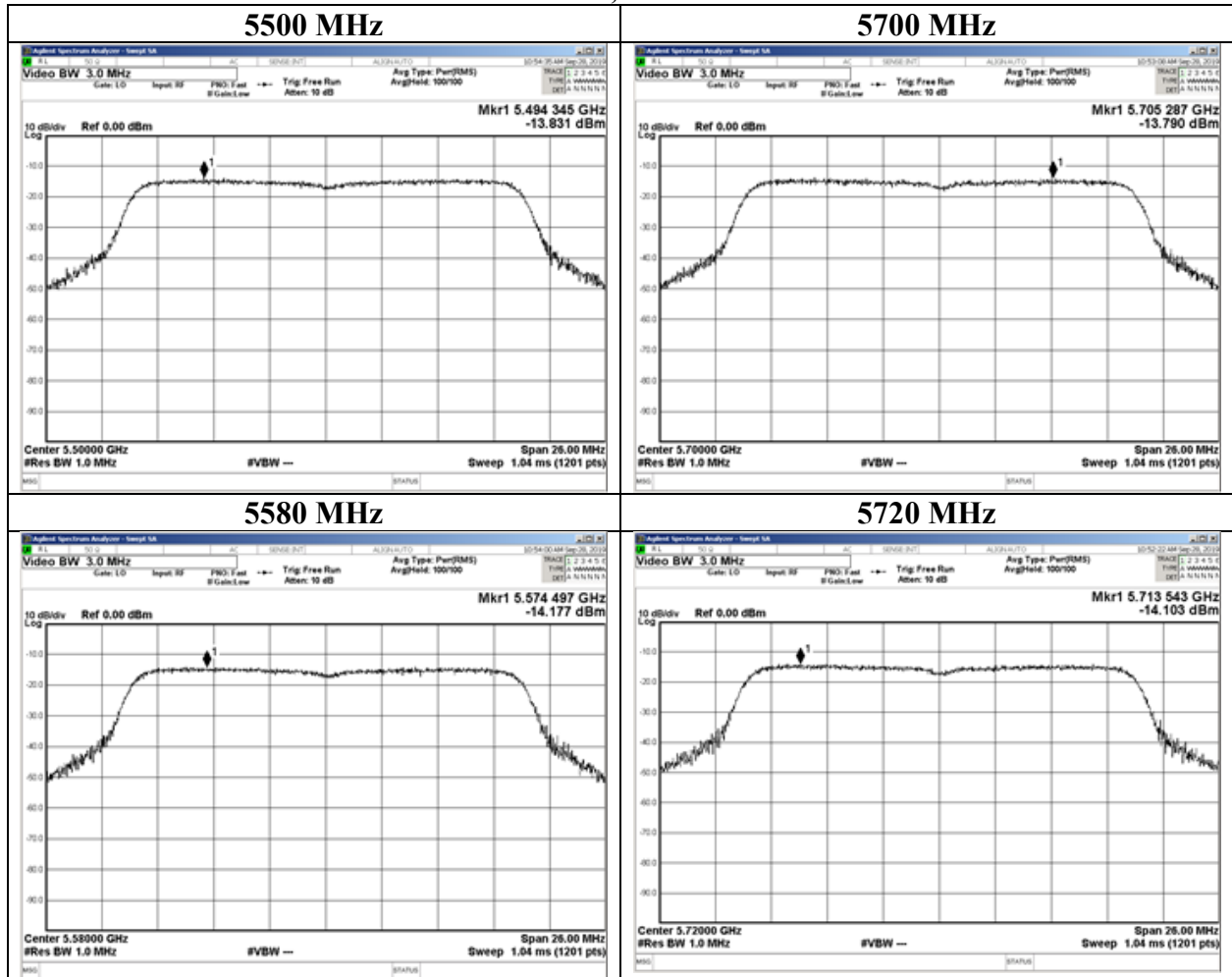
11ac-20, Chain 0



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 (MIMO), (serial no. A-7)

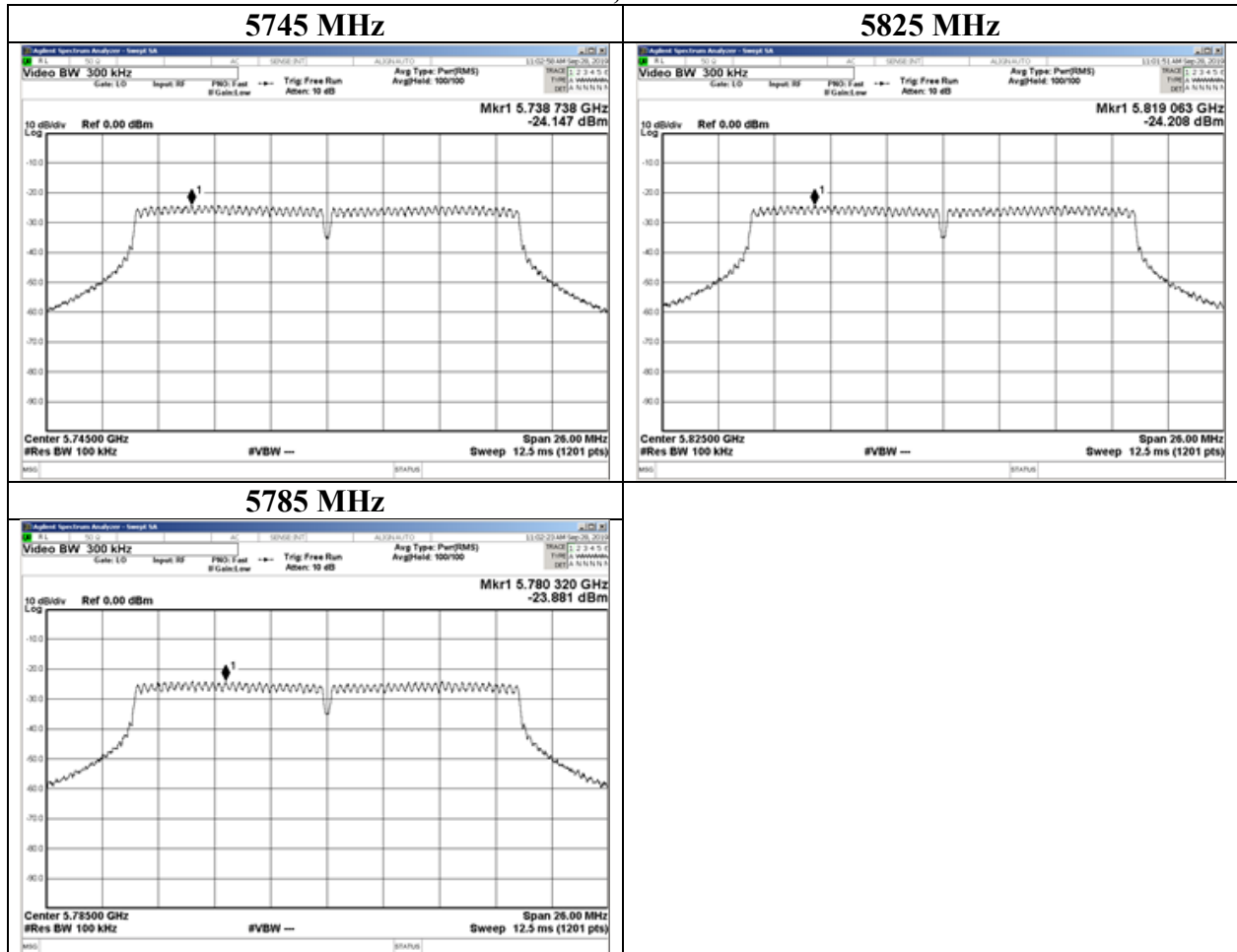
11ac-20, Chain 0



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 (MIMO), (serial no. A-7)

11ac-20, Chain 0



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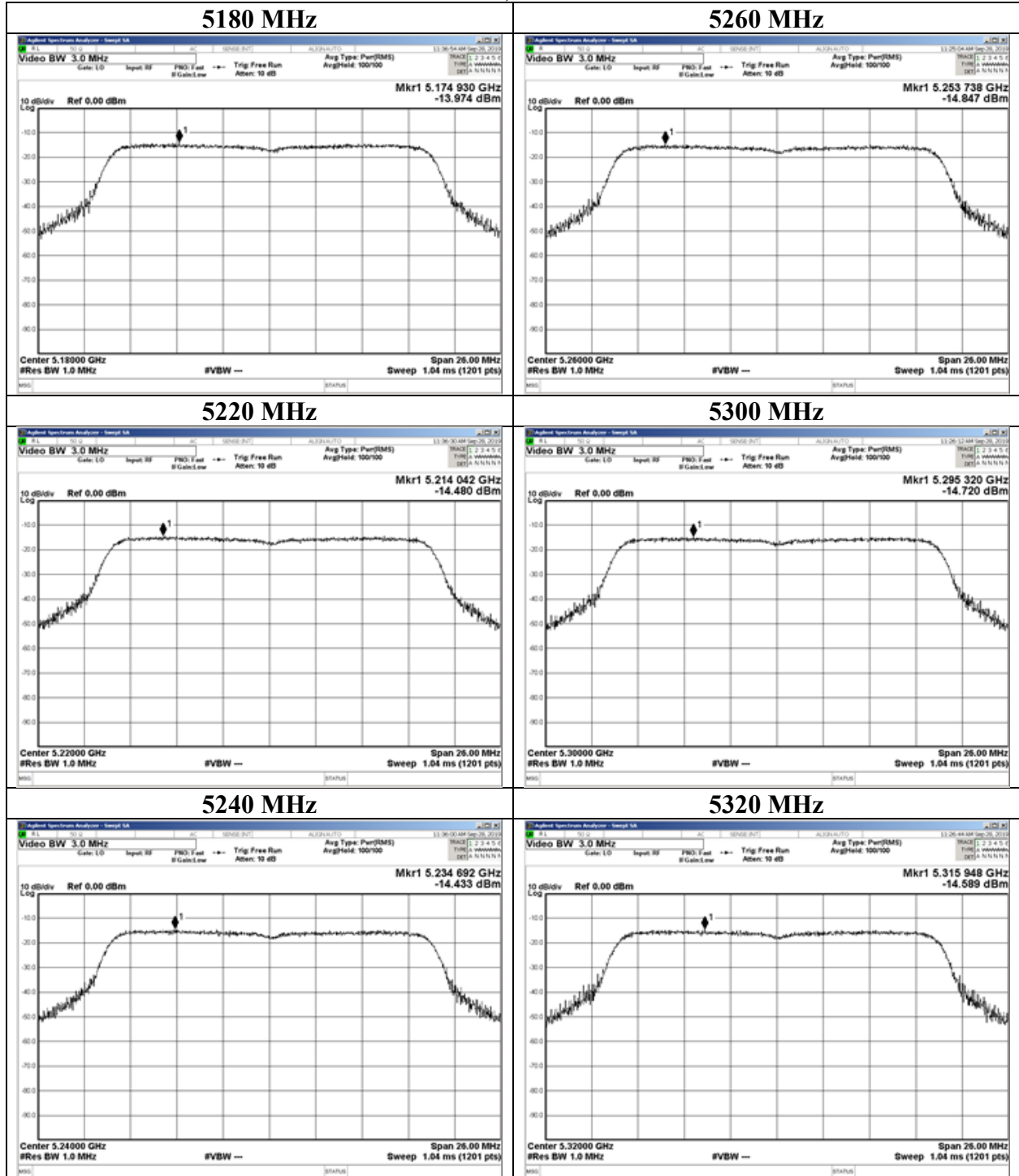
Telephone : +81 463 50 6400

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Maximum Power Spectral Density

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

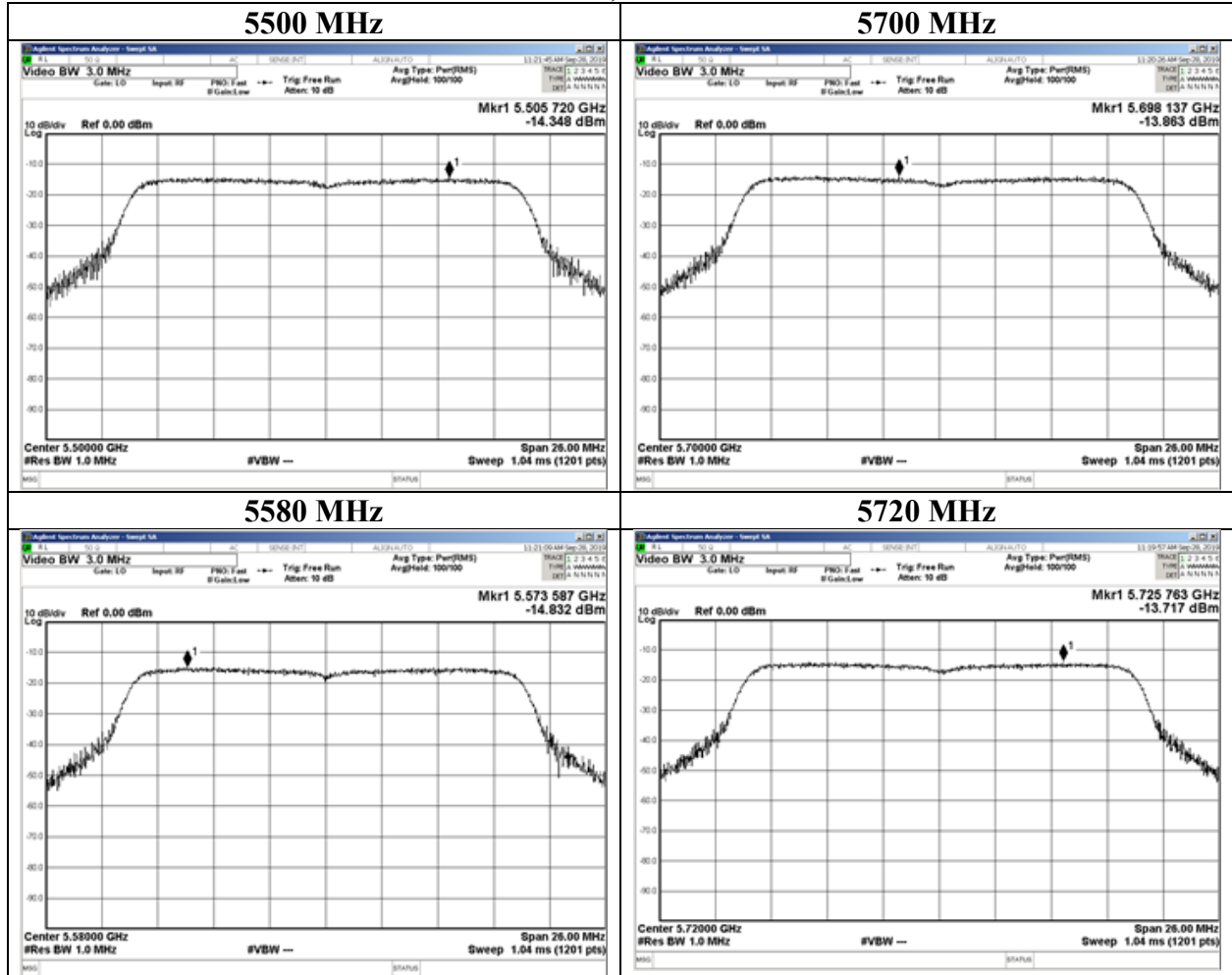
11ac-20, Chain 1



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 (MIMO), (serial no. A-7)

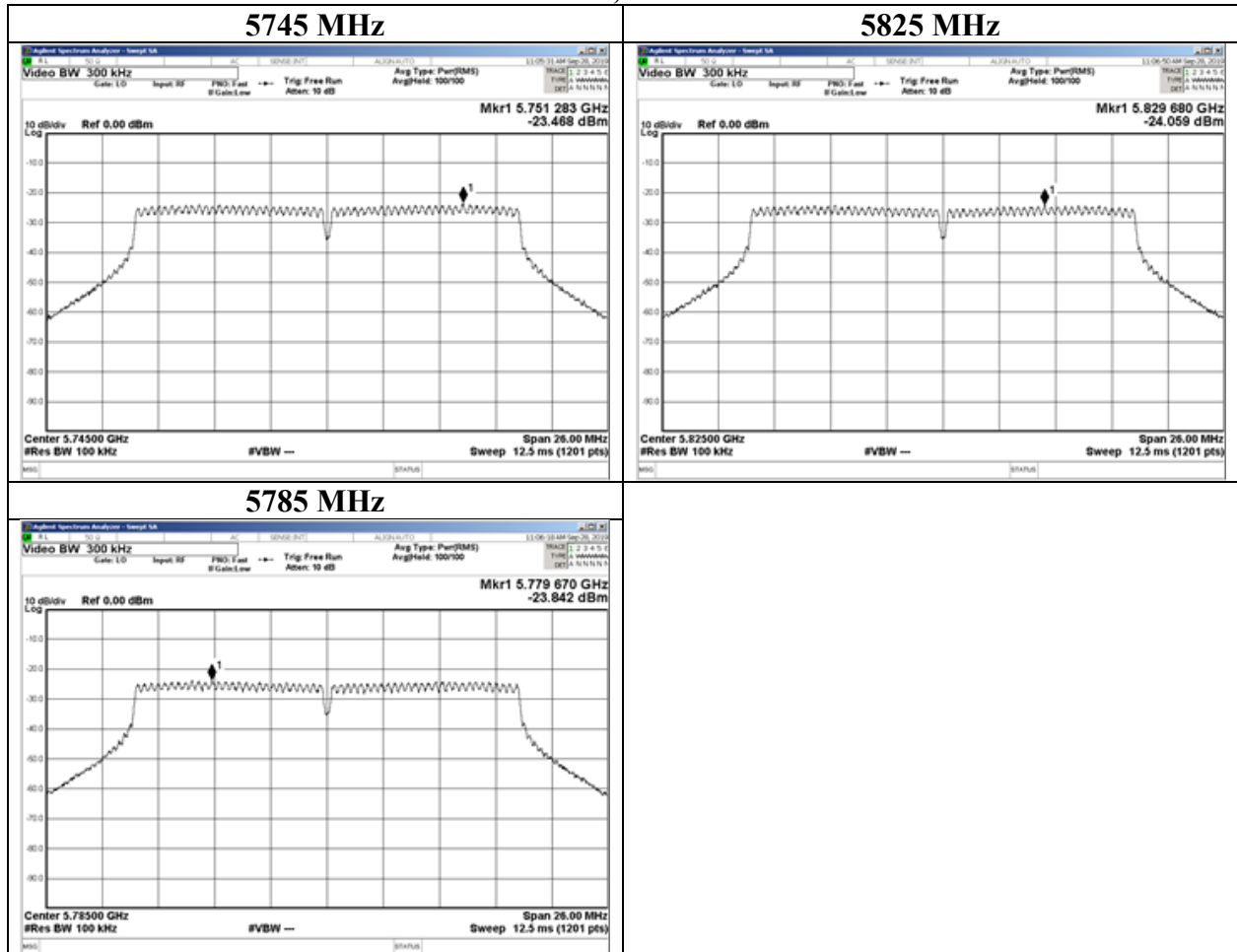
11ac-20, Chain 1



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 (MIMO), (serial no. A-7)

11ac-20, Chain 1



UL Japan, Inc.

Shonan EMC Lab.

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

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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, 11ac-20 (MIMO), (serial no. B-5)

Chain 0+1 MIMO Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]	Antenna			Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
	Chain 0 [mW/MHz]	Chain 1 [mW/MHz]	Sum [mW/MHz]				Chain 0 [mW/MHz]	Chain 1 [mW/MHz]	Sum [mW/MHz]			
5180	0.90	0.97	1.88	2.73	11.00	8.27	1.15	1.53	2.68	4.28	17.00	12.72
5220	0.94	1.04	1.98	2.96	11.00	8.04	1.19	1.64	2.83	4.52	17.00	12.48
5240	0.96	1.06	2.01	3.04	11.00	7.96	1.22	1.67	2.88	4.60	17.00	12.40
5260	0.95	1.02	1.97	2.95	11.00	8.05	1.21	1.61	2.82	4.50	17.00	12.50
5300	0.89	0.96	1.86	2.68	11.00	8.32	1.14	1.52	2.65	4.24	17.00	12.76
5320	0.92	1.07	1.99	2.99	11.00	8.01	1.17	1.68	2.85	4.56	17.00	12.44
5500	0.91	1.14	2.05	3.11	11.00	7.89	1.15	1.80	2.95	4.70	17.00	12.30
5580	1.04	1.17	2.21	3.44	11.00	7.56	1.32	1.84	3.16	5.00	17.00	12.00
5700	0.89	1.01	1.90	2.79	11.00	8.21	1.13	1.60	2.72	4.35	17.00	12.65
5720	0.95	1.01	1.96	2.92	11.00	8.08	1.21	1.59	2.80	4.47	17.00	12.53
5745	0.53	0.57	1.10	0.43	30.00	29.57	0.68	0.90	1.58	1.98	36.00	34.02
5785	0.53	0.56	1.09	0.37	30.00	29.63	0.68	0.88	1.55	1.91	36.00	34.09
5825	0.53	0.56	1.09	0.37	30.00	29.63	0.68	0.88	1.55	1.92	36.00	34.08

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		PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result	
							Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]					Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5180	0.00	0.00	-14.25	3.91	9.90	1.04	-0.44	0.60	-14.99	4.66	10.21	1.98	-0.12	1.86
5220	0.00	0.00	-14.10	3.92	9.91	1.04	-0.27	0.77	-14.72	4.67	10.21	1.98	0.16	2.14
5240	0.00	0.00	-14.03	3.93	9.91	1.04	-0.19	0.85	-14.66	4.69	10.21	1.98	0.24	2.22
5260	0.00	0.00	-14.08	3.94	9.91	1.04	-0.23	0.81	-14.82	4.70	10.21	1.98	0.09	2.07
5300	0.00	0.00	-14.35	3.95	9.91	1.04	-0.49	0.55	-15.09	4.71	10.21	1.98	-0.17	1.81
5320	0.00	0.00	-14.21	3.95	9.91	1.04	-0.35	0.69	-14.65	4.72	10.21	1.98	0.28	2.26
5500	0.00	0.00	-14.35	4.00	9.92	1.04	-0.43	0.61	-14.44	4.80	10.22	1.98	0.58	2.56
5580	0.00	0.00	-13.74	4.01	9.91	1.04	0.18	1.22	-14.36	4.81	10.22	1.98	0.67	2.65
5700	0.00	0.00	-14.31	3.89	9.90	1.04	-0.52	0.52	-14.90	4.72	10.23	1.98	0.06	2.04
5720	0.00	0.00	-14.01	3.89	9.90	1.04	-0.22	0.82	-14.92	4.73	10.23	1.98	0.04	2.02
5745	0.00	6.99	-23.51	3.90	9.90	1.04	-2.72	-1.68	-24.39	4.73	10.23	1.98	-2.44	-0.46
5785	0.00	6.99	-23.54	3.91	9.89	1.04	-2.75	-1.71	-24.51	4.74	10.24	1.98	-2.54	-0.56
5825	0.00	6.99	-23.53	3.92	9.89	1.04	-2.73	-1.69	-24.53	4.75	10.24	1.98	-2.55	-0.57

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 (Specified bandwidth / Measured bandwidth)

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

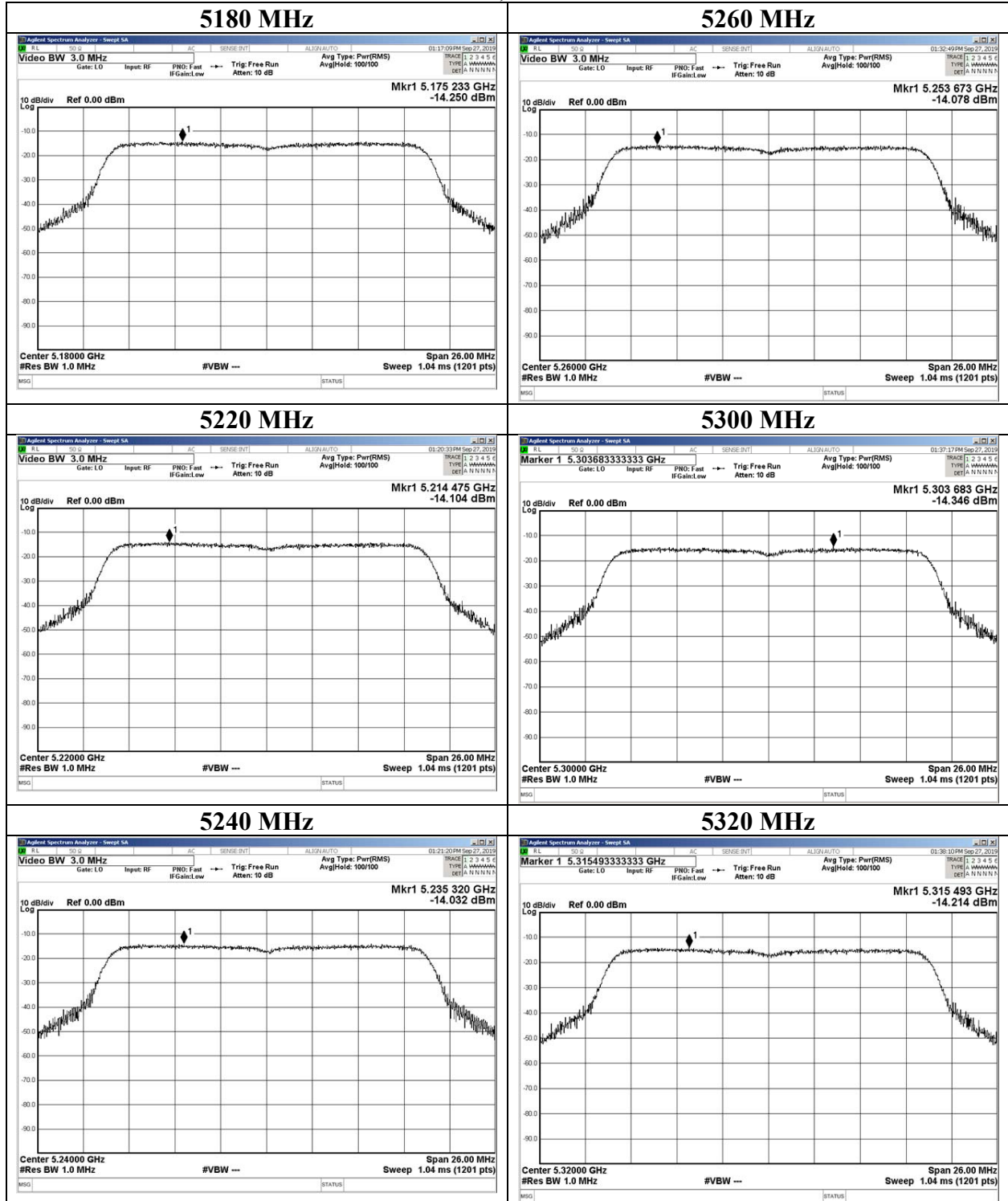
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

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, 11ac-20 (MIMO), (serial no. B-5)

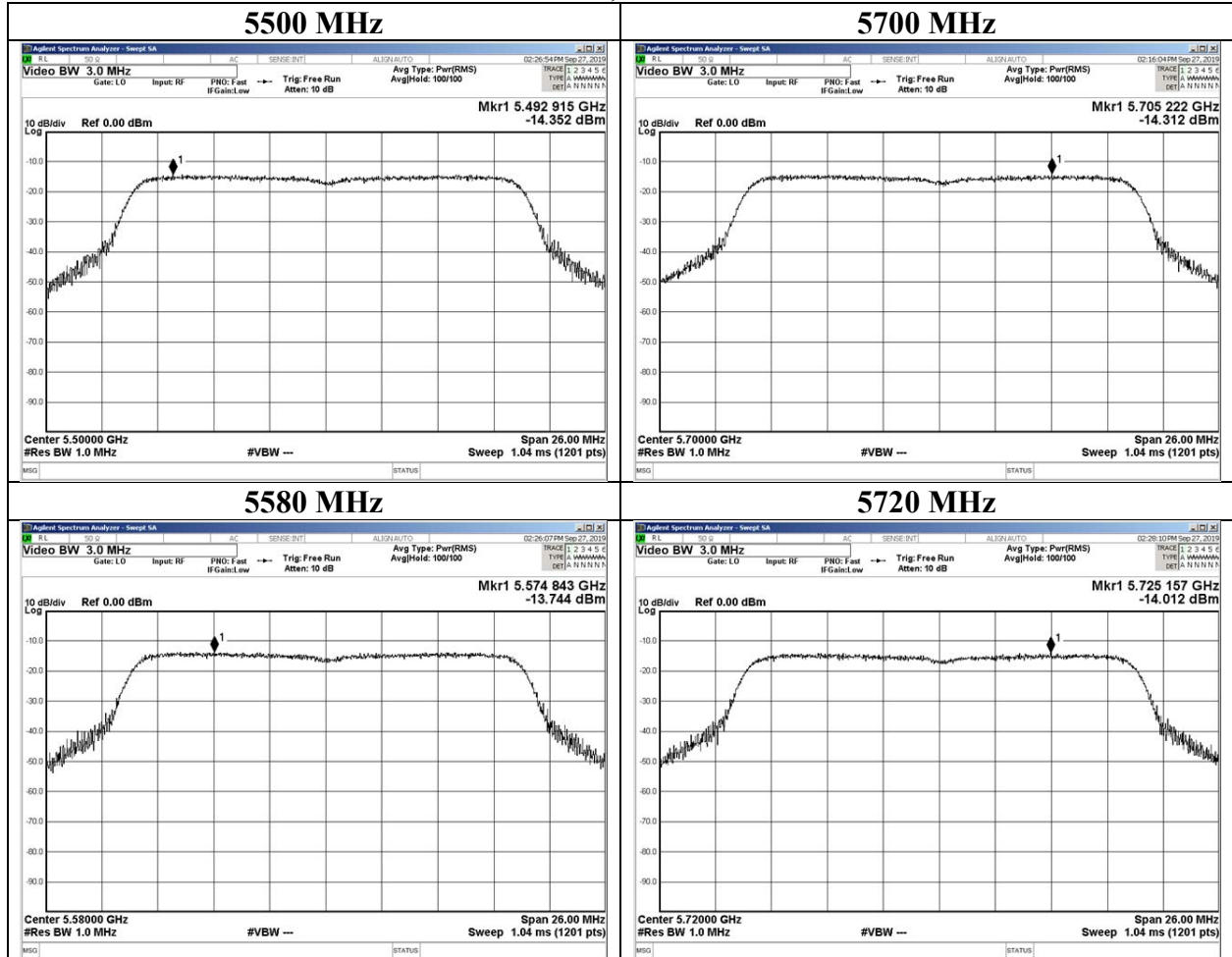
11ac-20, Chain 0



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, 11ac-20 (MIMO), (serial no. B-5)

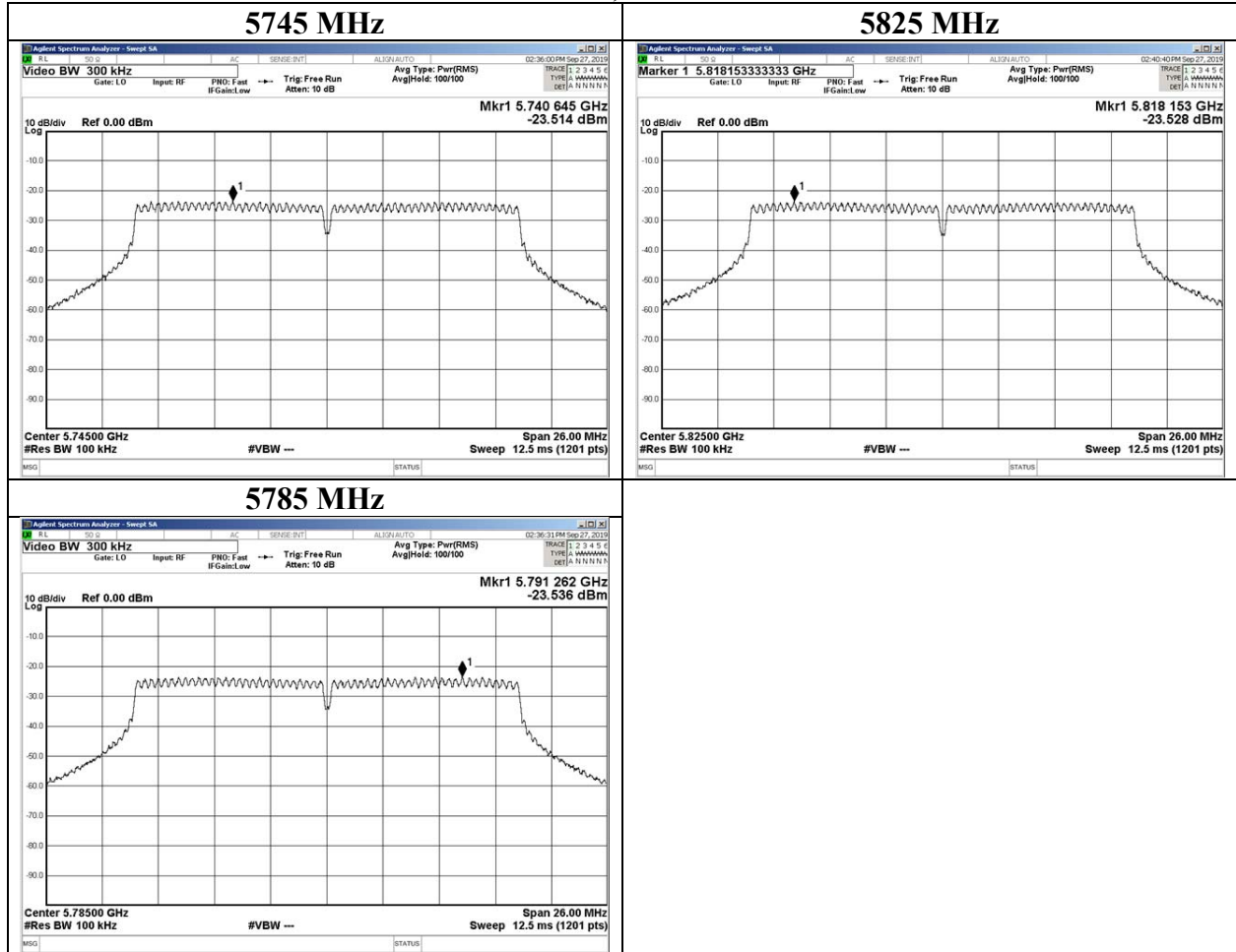
11ac-20, Chain 0



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, 11ac-20 (MIMO), (serial no. B-5)

11ac-20, Chain 0



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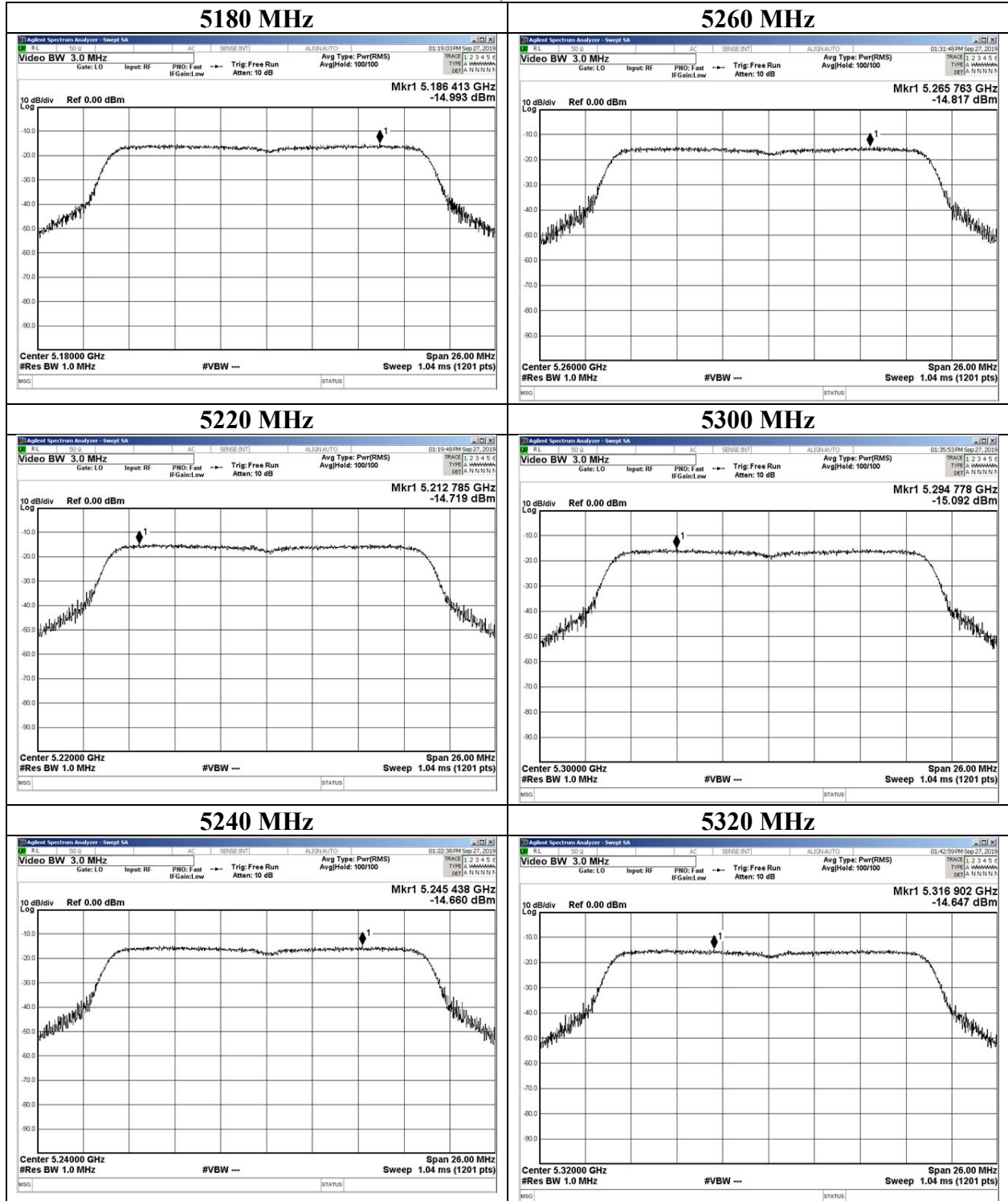
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Maximum Power Spectral Density

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, 11ac-20 (MIMO), (serial no. B-5)

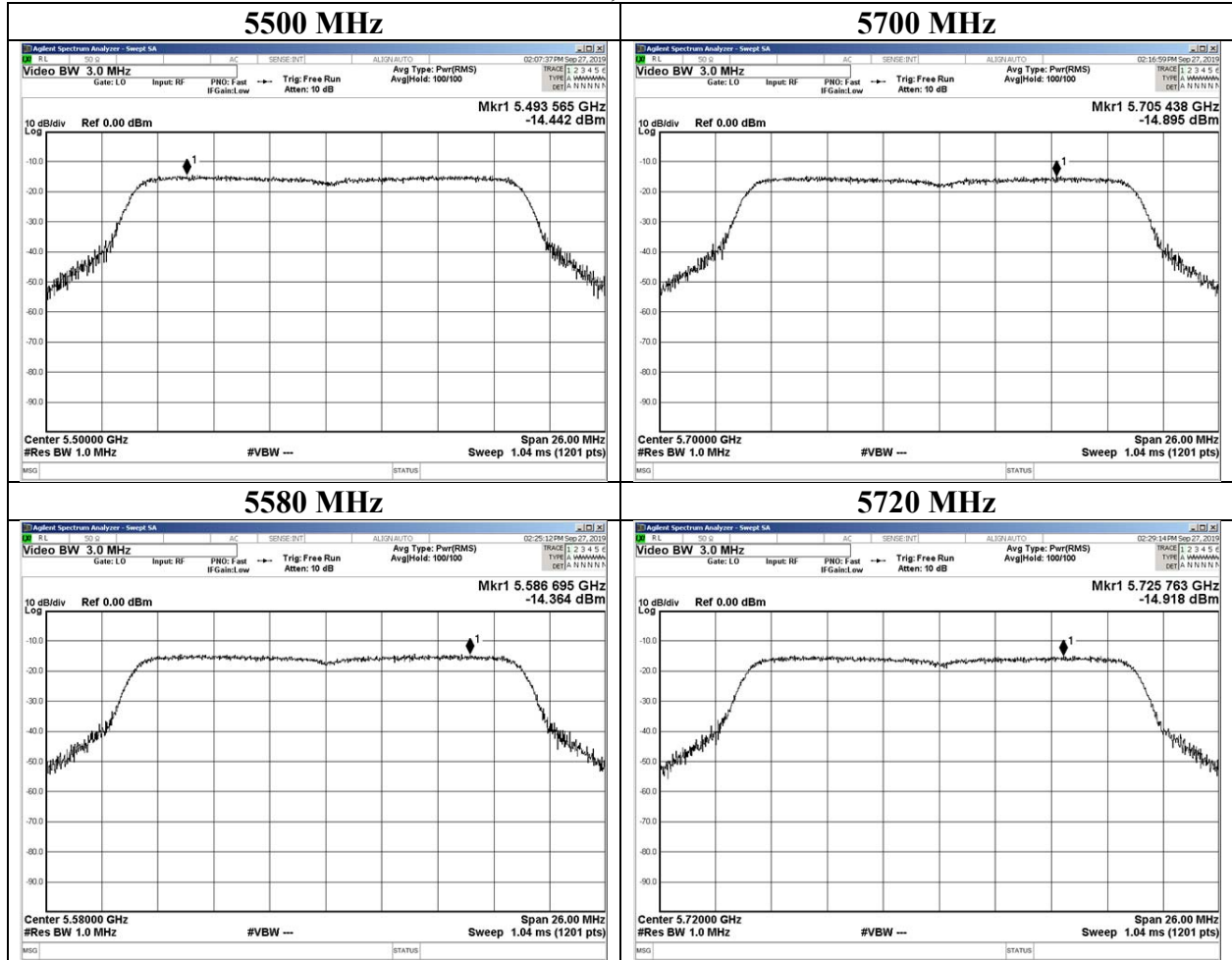
11ac-20, Chain 1



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, 11ac-20 (MIMO), (serial no. B-5)

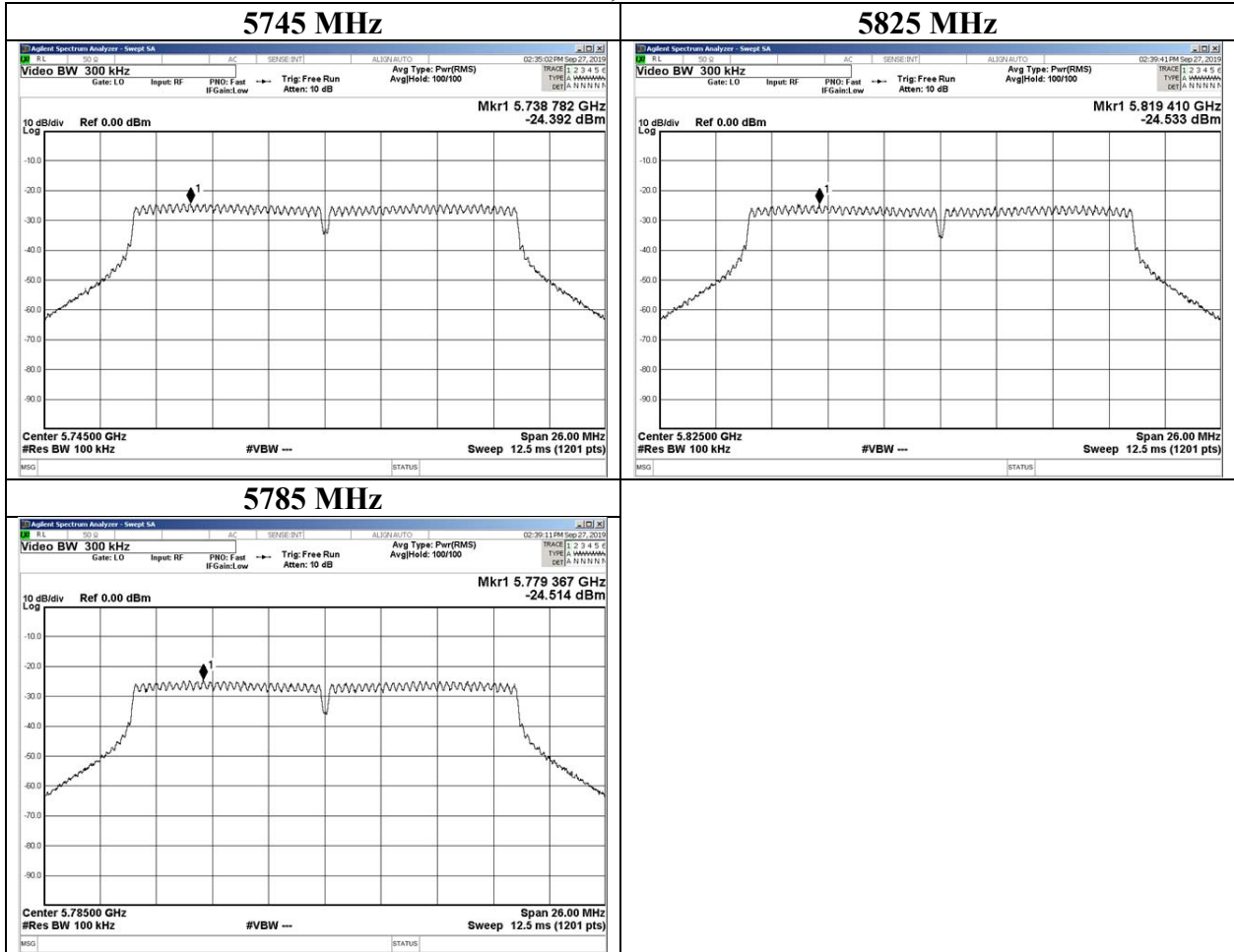
11ac-20, Chain 1



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, 11ac-20 (MIMO), (serial no. B-5)

11ac-20, Chain 1



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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, 11n-40 (CDD), (serial no. A-7)

Chain 0+1 CDD Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]	Antenna			Result [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
	Chain 0 [mW/MHz]	Chain 1 [mW/MHz]	Sum [mW/MHz]				Chain 0 [mW/MHz]	Chain 1 [mW/MHz]	Sum [mW/MHz]			
5190	0.54	0.51	1.05	0.21	11.00	10.79	1.37	1.29	2.67	4.26	17.00	12.74
5230	0.52	0.49	1.01	0.03	11.00	10.97	1.32	1.24	2.56	4.08	17.00	12.92
5270	0.49	0.45	0.94	-0.29	11.00	11.29	1.24	1.14	2.38	3.76	17.00	13.24
5310	0.51	0.49	1.01	0.03	11.00	10.97	1.30	1.26	2.56	4.08	17.00	12.92
5510	0.58	0.58	1.16	0.65	11.00	10.35	1.47	1.48	2.95	4.70	17.00	12.30
5550	0.54	0.53	1.07	0.29	11.00	10.71	1.38	1.34	2.72	4.34	17.00	12.66
5670	0.46	0.54	1.00	0.00	11.00	11.00	1.17	1.37	2.54	4.05	17.00	12.95
5710	0.48	0.47	0.96	-0.20	11.00	11.20	1.22	1.20	2.43	3.85	17.00	13.15
5755	0.23	0.27	0.50	-3.03	30.00	33.03	0.58	0.69	1.27	1.02	36.00	34.98
5795	0.27	0.29	0.55	-2.58	30.00	32.58	0.68	0.73	1.40	1.47	36.00	34.53

Tested Frequency [MHz]	Duty Factor [dB]	RBW Correction Factor [dB]	Chain 0					Chain 1						
			PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result		PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result	
							Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]					Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5190	0.00	0.00	-16.49	3.92	9.90	4.05	-2.67	1.38	-17.16	4.02	10.21	4.05	-2.93	1.12
5230	0.00	0.00	-16.70	3.93	9.91	4.05	-2.86	1.19	-17.35	4.03	10.21	4.05	-3.11	0.94
5270	0.00	0.00	-16.96	3.94	9.91	4.05	-3.11	0.94	-17.76	4.05	10.21	4.05	-3.50	0.55
5310	0.00	0.00	-16.76	3.95	9.91	4.05	-2.90	1.15	-17.33	4.06	10.21	4.05	-3.06	0.99
5510	0.00	0.00	-16.30	4.00	9.92	4.05	-2.38	1.67	-16.71	4.15	10.22	4.05	-2.34	1.71
5550	0.00	0.00	-16.57	4.00	9.91	4.05	-2.66	1.39	-17.15	4.15	10.22	4.05	-2.78	1.27
5670	0.00	0.00	-17.21	3.95	9.90	4.05	-3.36	0.69	-17.04	4.12	10.23	4.05	-2.69	1.36
5710	0.00	0.00	-16.96	3.89	9.90	4.05	-3.17	0.88	-17.56	4.08	10.23	4.05	-3.25	0.80
5755	0.00	6.99	-27.23	3.90	9.90	4.05	-6.44	-2.39	-26.99	4.09	10.24	4.05	-5.67	-1.62
5795	0.00	6.99	-26.53	3.91	9.89	4.05	-5.74	-1.69	-26.76	4.09	10.24	4.05	-5.44	-1.39

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

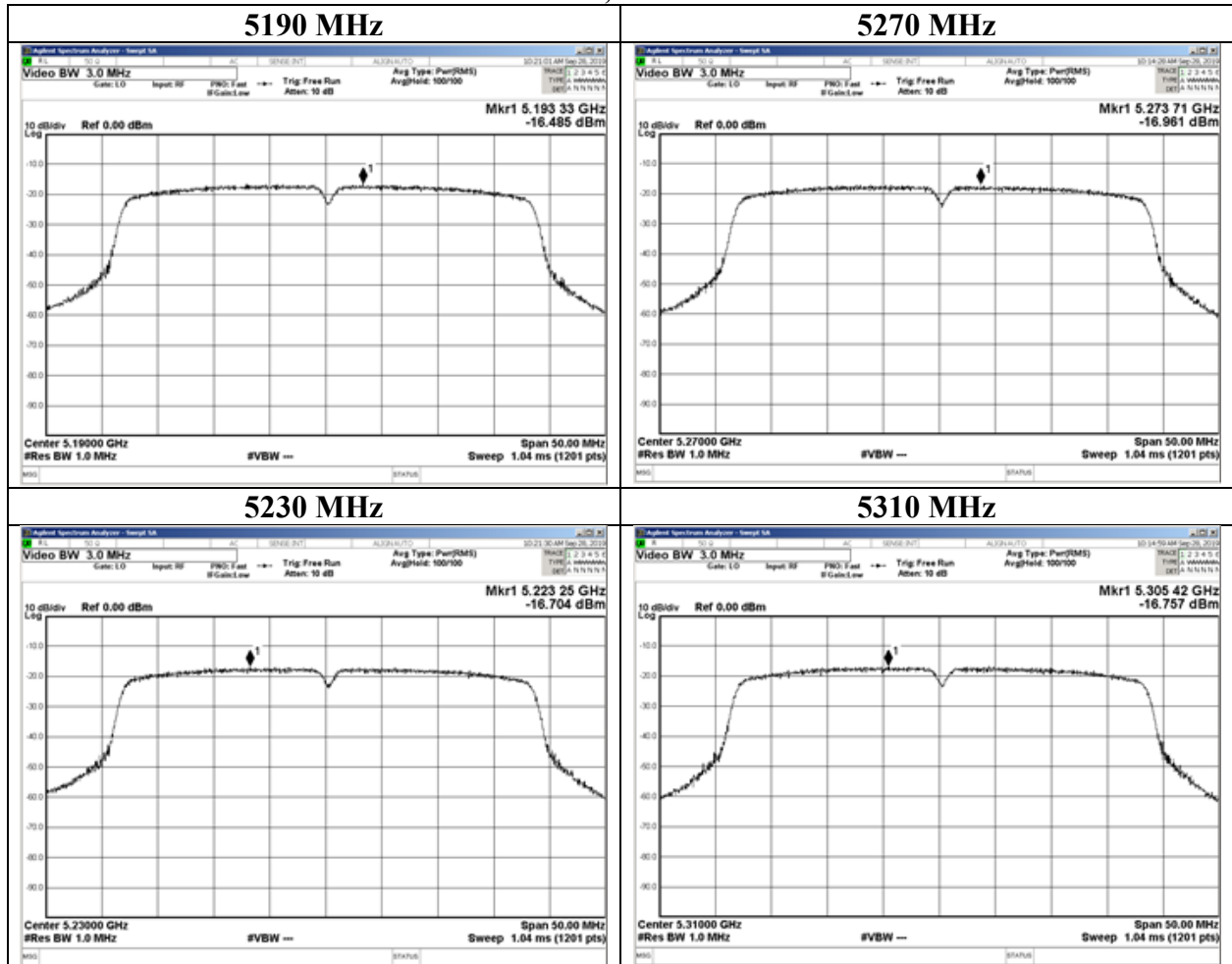
N SS = number of spatial streams = 1

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, 11n-40 (CDD), (serial no. A-7)

11n-40, Chain 0



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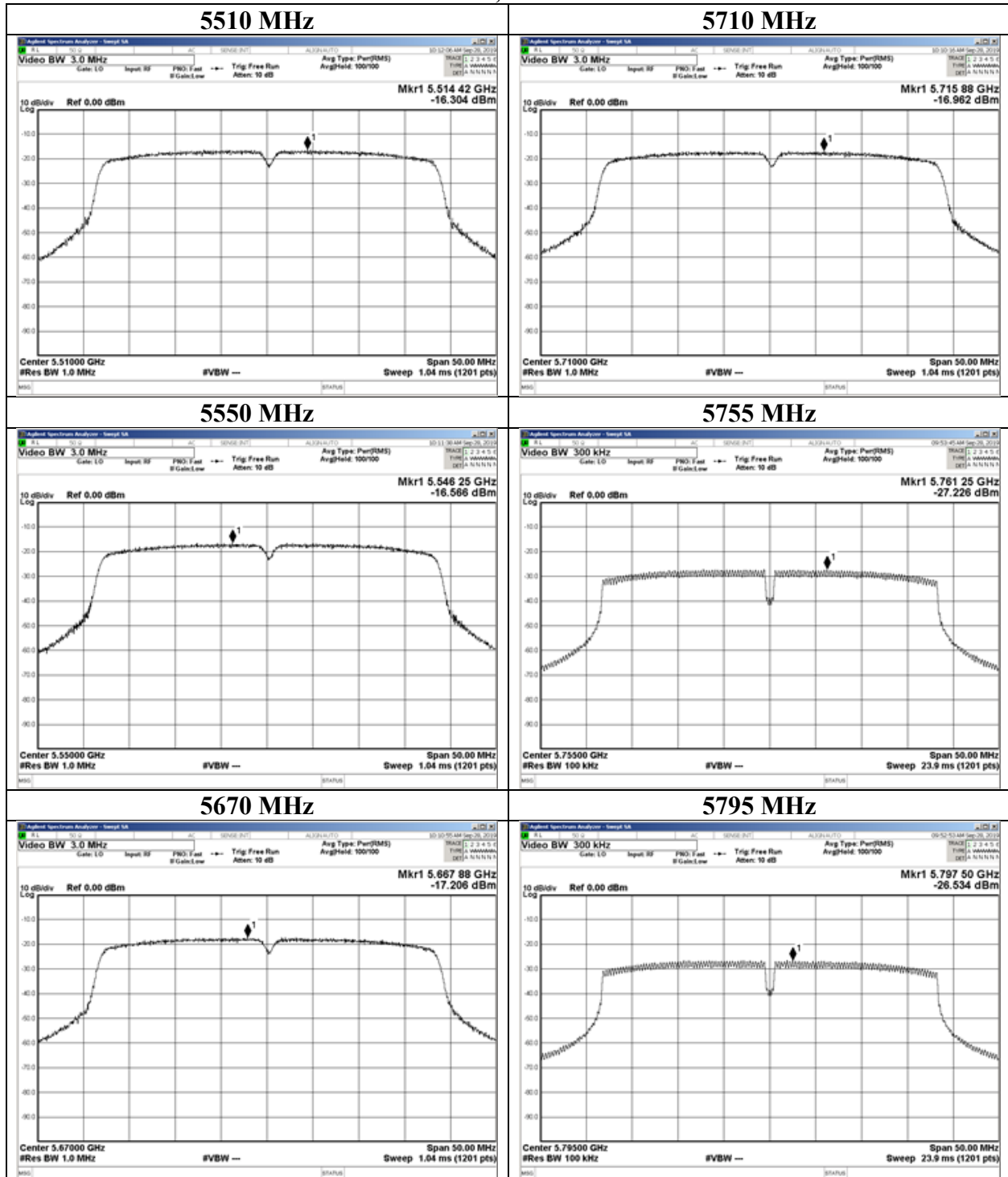
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Maximum Power Spectral Density

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, 11n-40 (CDD), (serial no. A-7)

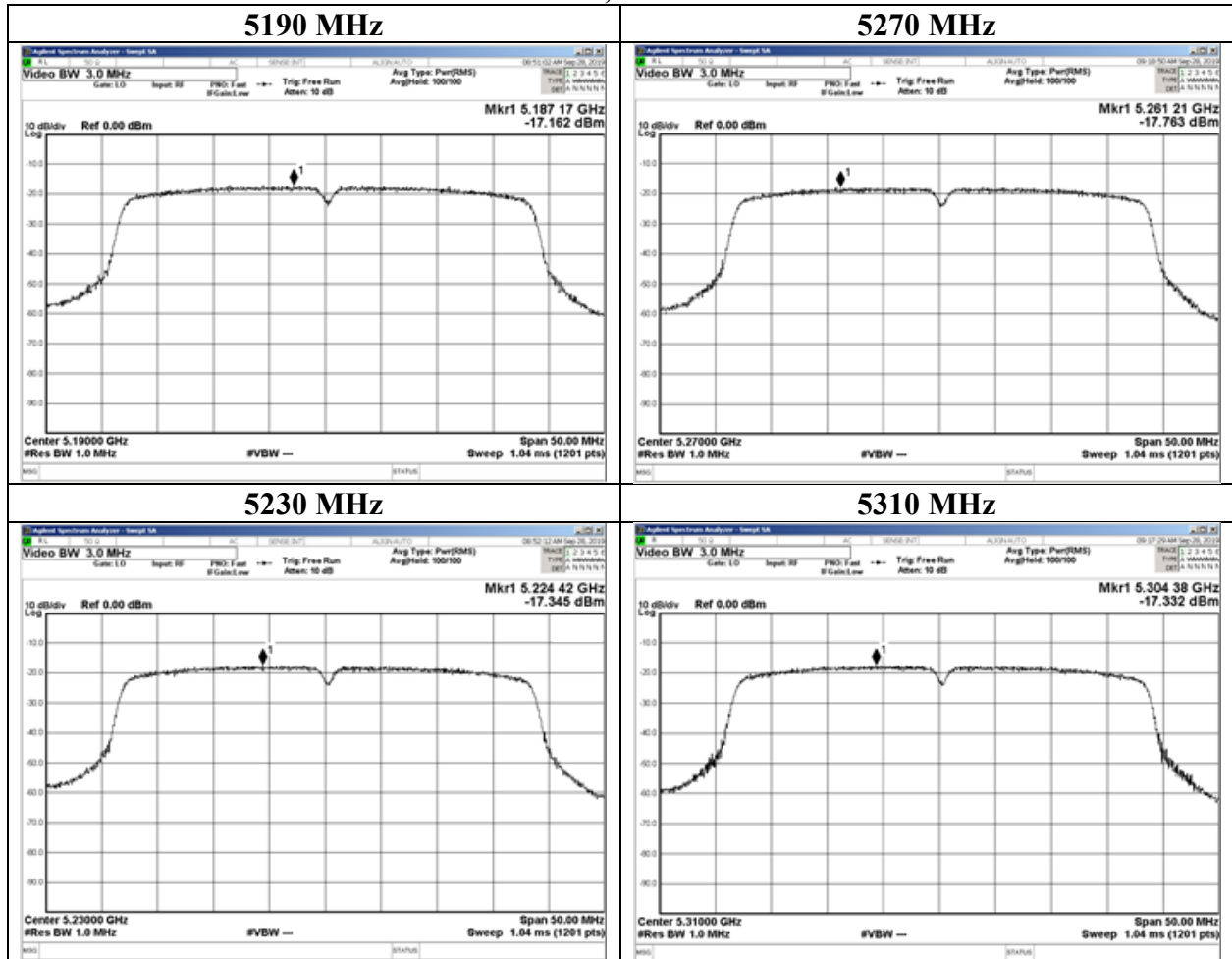
11n-40, Chain 0



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, 11n-40 (CDD), (serial no. A-7)

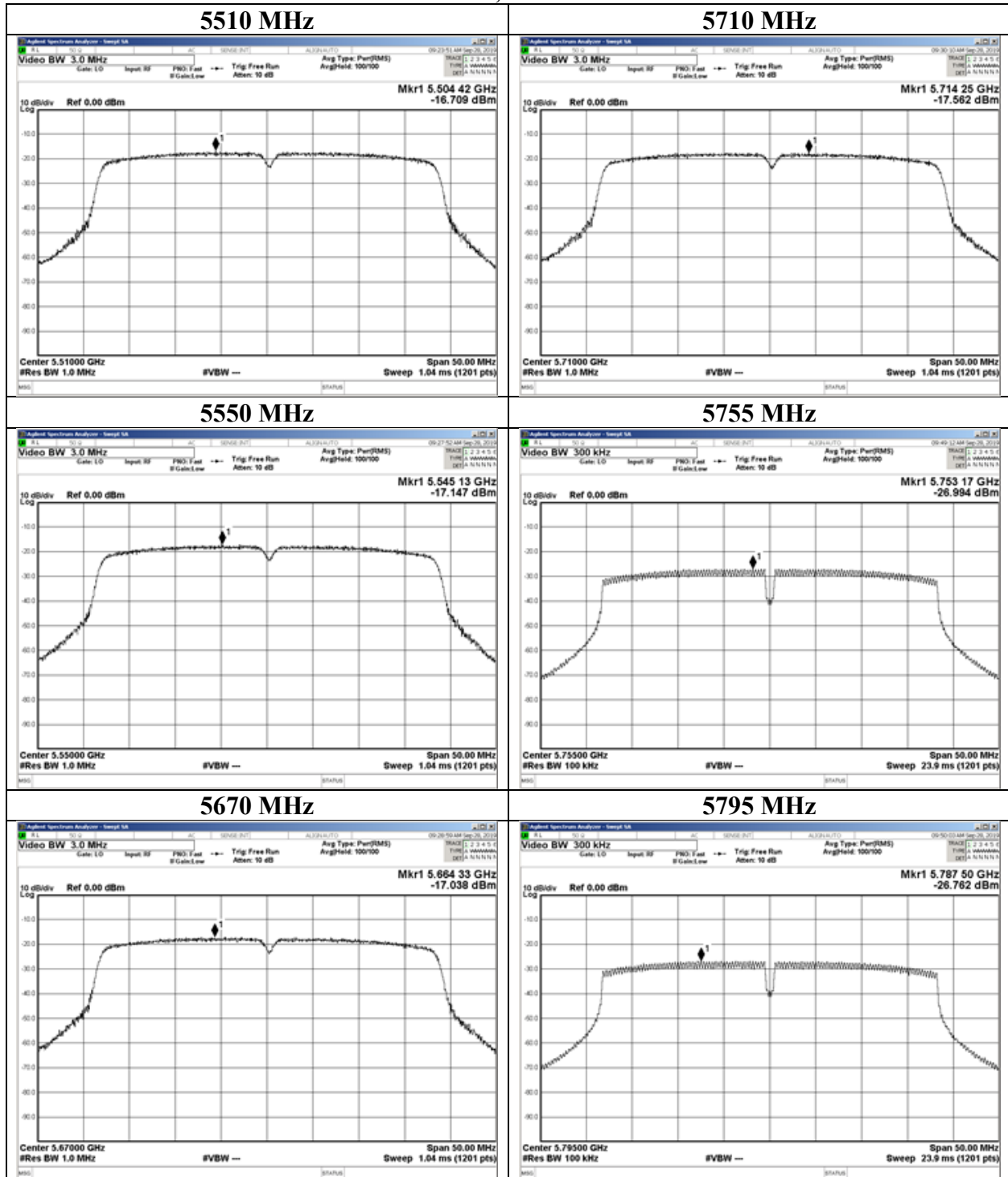
11n-40, Chain 1



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, 11n-40 (CDD), (serial no. A-7)

11n-40, 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-40 (CDD), (serial no. B-5)

Chain 0+1		CDD		Applied limit: 15.407, mobile and portable client device									
Tested Frequency [MHz]	PSD (Conducted)						PSD (e.i.r.p.)						
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin	
	Chain 0 [mW/MHz]	Chain 1 [mW/MHz]	Sum [mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	Chain 0 [mW/MHz]	Chain 1 [mW/MHz]	Sum [mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	
5190	0.52	0.52	1.04	0.18	11.00	10.82	1.63	1.66	3.29	5.17	17.00	11.83	
5230	0.48	0.47	0.95	-0.21	11.00	11.21	1.51	1.49	3.01	4.78	17.00	12.22	
5270	0.44	0.46	0.89	-0.48	11.00	11.48	1.38	1.45	2.82	4.51	17.00	12.49	
5310	0.47	0.50	0.97	-0.15	11.00	11.15	1.47	1.57	3.05	4.84	17.00	12.16	
5510	0.48	0.52	1.01	0.02	11.00	10.98	1.52	1.65	3.17	5.01	17.00	11.99	
5550	0.52	0.53	1.05	0.22	11.00	10.78	1.66	1.67	3.32	5.21	17.00	11.79	
5670	0.50	0.54	1.04	0.16	11.00	10.84	1.57	1.70	3.27	5.15	17.00	11.85	
5710	0.47	0.53	1.00	0.02	11.00	10.98	1.49	1.67	3.17	5.01	17.00	11.99	
5755	0.27	0.28	0.55	-2.58	30.00	32.58	0.85	0.89	1.74	2.41	36.00	33.59	
5795	0.27	0.27	0.55	-2.62	30.00	32.62	0.87	0.86	1.72	2.37	36.00	33.63	

Tested Frequency [MHz]	Duty Factor [dB]	RBW Correction Factor [dB]	Chain 0					PSD Result		Chain 1				
			PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Directional Gain [dBi]	PSD Result Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5190	0.00	0.00	-16.68	3.92	9.90	4.99	-2.86	2.13	-17.68	4.67	10.21	4.99	-2.80	2.19
5230	0.00	0.00	-17.03	3.93	9.91	4.99	-3.19	1.80	-18.14	4.68	10.21	4.99	-3.25	1.75
5270	0.00	0.00	-17.45	3.94	9.91	4.99	-3.60	1.39	-18.30	4.70	10.21	4.99	-3.39	1.60
5310	0.00	0.00	-17.17	3.95	9.91	4.99	-3.31	1.68	-17.94	4.71	10.21	4.99	-3.02	1.97
5510	0.00	0.00	-17.08	4.00	9.92	4.99	-3.16	1.83	-17.84	4.80	10.22	4.99	-2.82	2.17
5550	0.00	0.00	-16.71	4.00	9.91	4.99	-2.80	2.19	-17.80	4.80	10.22	4.99	-2.78	2.21
5670	0.00	0.00	-16.87	3.95	9.90	4.99	-3.02	1.97	-17.69	4.77	10.23	4.99	-2.69	2.30
5710	0.00	0.00	-17.03	3.89	9.90	4.99	-3.24	1.75	-17.72	4.73	10.23	4.99	-2.76	2.23
5755	0.00	6.99	-26.49	3.90	9.90	4.99	-5.70	-0.71	-27.45	4.74	10.24	4.99	-5.48	-0.49
5795	0.00	6.99	-26.40	3.91	9.89	4.99	-5.61	-0.62	-27.63	4.74	10.24	4.99	-5.66	-0.66

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

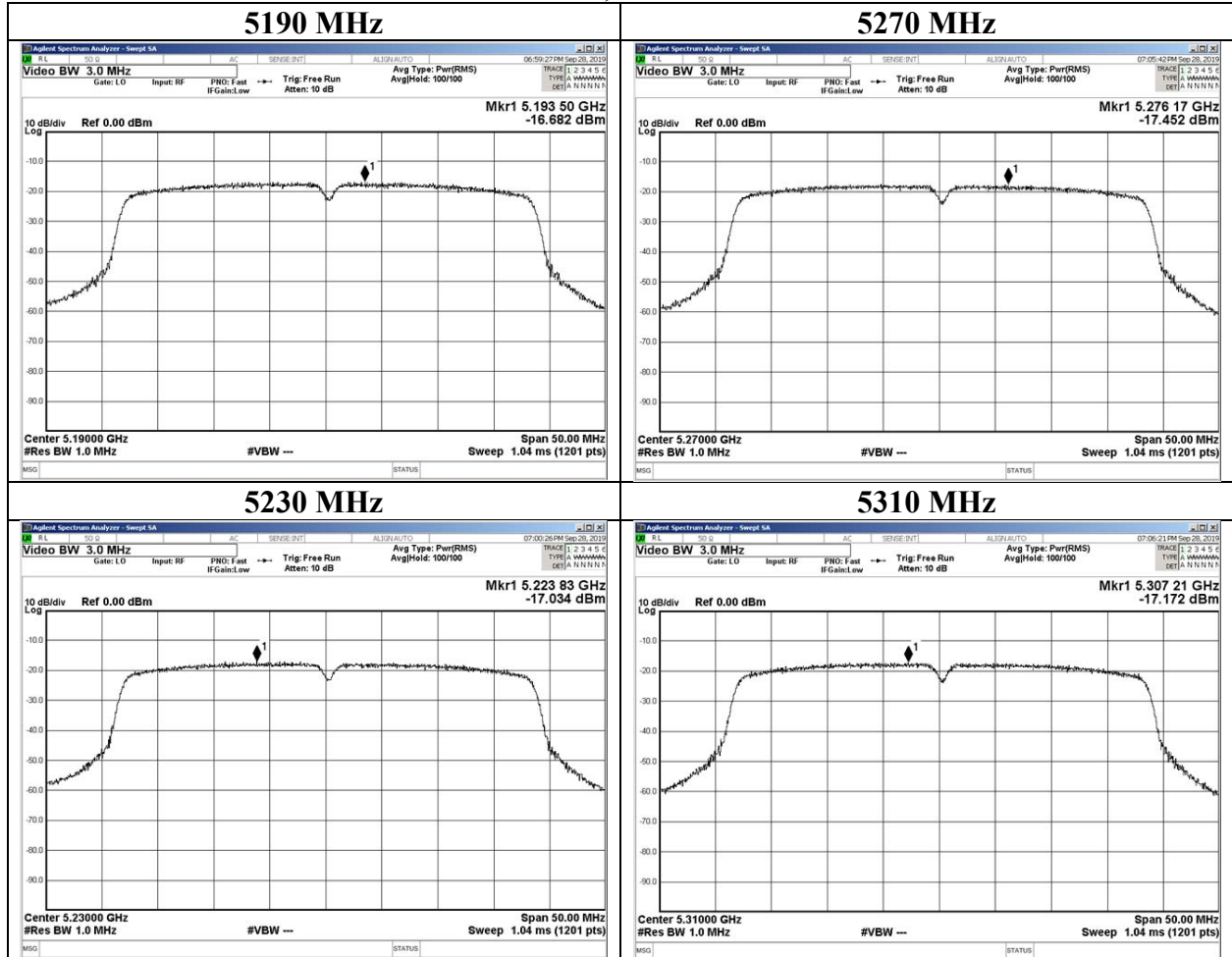
N SS = number of spatial streams = 1

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 27, 2019
Temperature / Humidity	26 deg. C / 42 % RH
Engineer	Kazuya Noda
Mode	Tx, 11n-40 (CDD), (serial no. B-5)

11n-40, Chain 0



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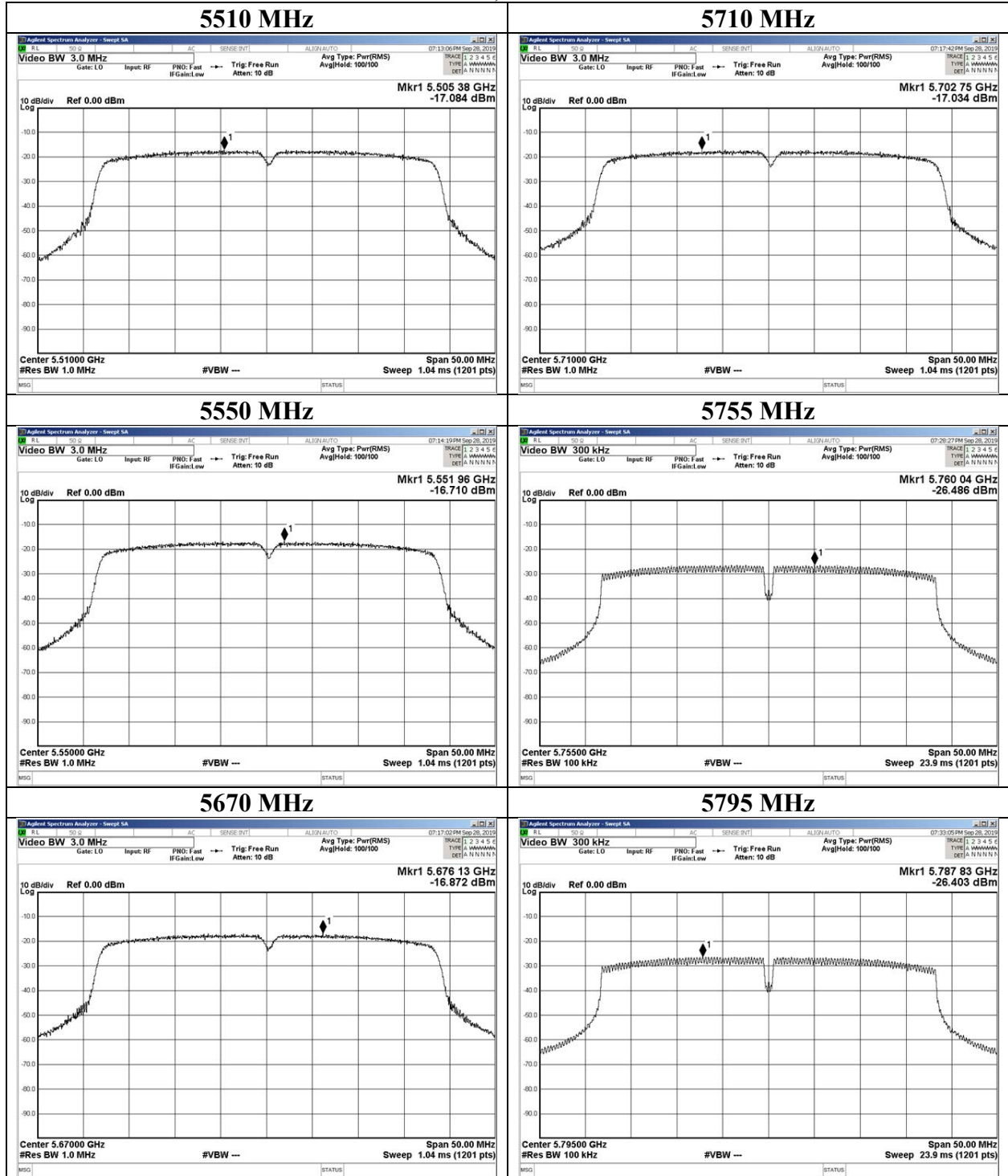
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Facsimile : +81 463 50 6401

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-40 (CDD), (serial no. B-5)

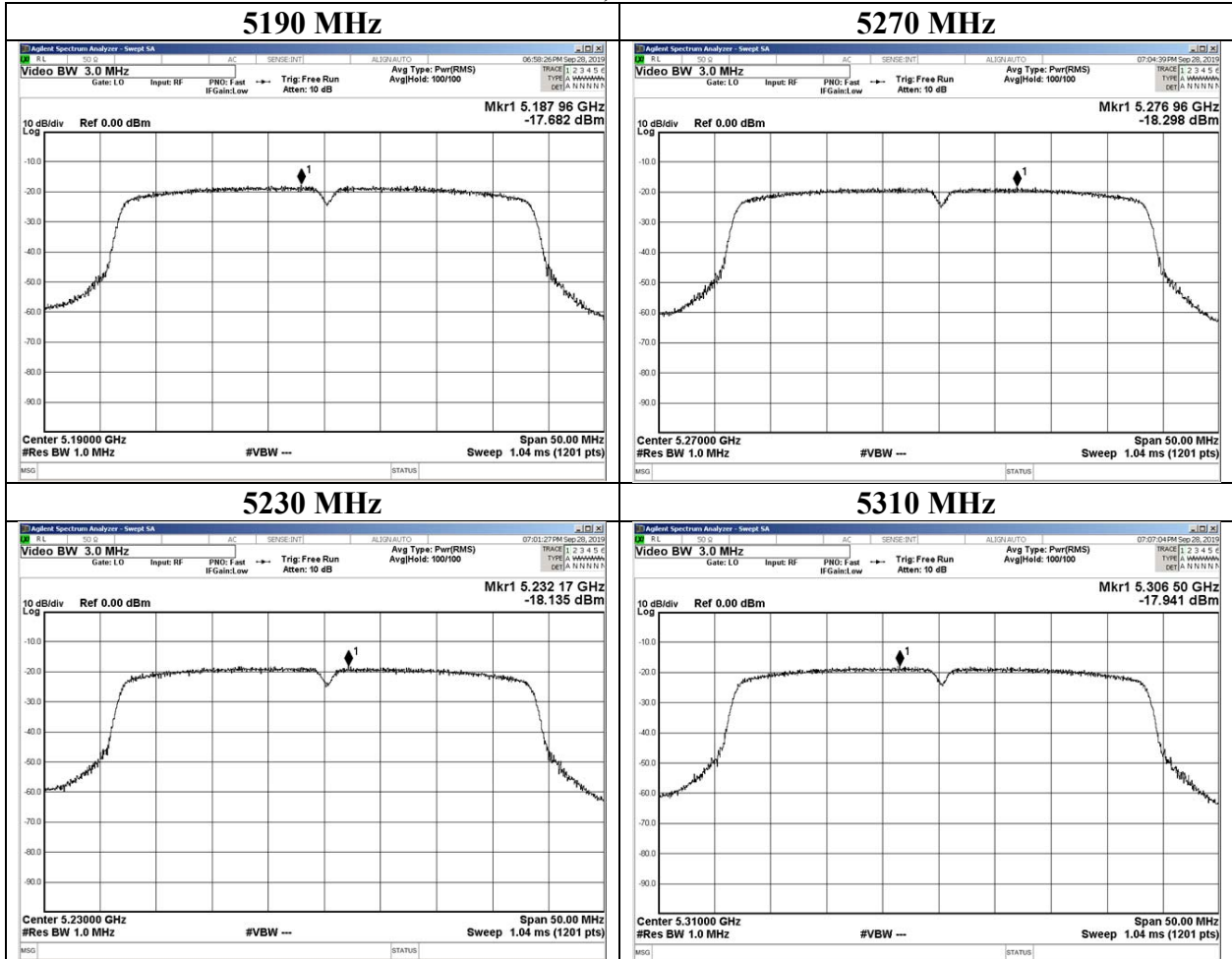
11n-40, Chain 0



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-40 (CDD), (serial no. B-5)

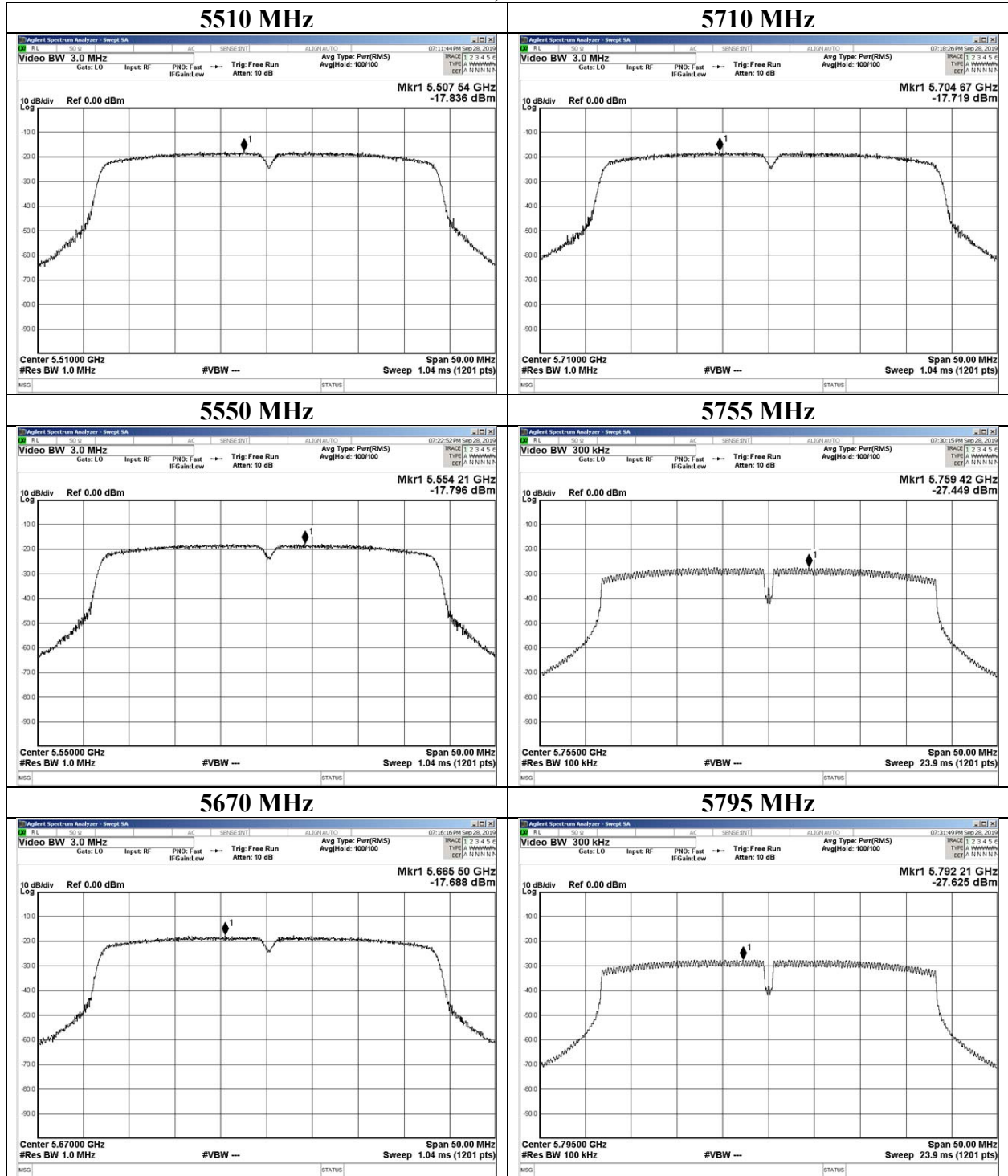
11n-40, Chain 1



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-40 (CDD), (serial no. B-5)

11n-40, 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, 11n-40 (MIMO), (serial no. A-7)

Chain 0+1 MIMO Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	Chain 0	Chain 1	Sum				Chain 0	Chain 1	Sum			
[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	
5190	0.48	0.42	0.90	-0.45	11.00	11.45	0.61	0.54	1.15	0.59	17.00	16.41
5230	0.50	0.50	1.00	0.00	11.00	11.00	0.63	0.64	1.27	1.04	17.00	15.96
5270	0.50	0.47	0.96	-0.16	11.00	11.16	0.63	0.59	1.22	0.88	17.00	16.12
5310	0.52	0.46	0.99	-0.06	11.00	11.06	0.66	0.59	1.25	0.98	17.00	16.02
5510	0.54	0.54	1.08	0.34	11.00	10.66	0.68	0.69	1.37	1.38	17.00	15.62
5550	0.52	0.51	1.04	0.16	11.00	10.84	0.67	0.65	1.32	1.20	17.00	15.80
5670	0.46	0.52	0.98	-0.08	11.00	11.08	0.58	0.67	1.25	0.96	17.00	16.04
5710	0.50	0.47	0.97	-0.14	11.00	11.14	0.63	0.60	1.23	0.90	17.00	16.10
5755	0.22	0.27	0.49	-3.05	30.00	33.05	0.28	0.35	0.63	-2.01	36.00	38.01
5795	0.25	0.28	0.54	-2.69	30.00	32.69	0.32	0.36	0.68	-1.65	36.00	37.65

Tested Frequency [MHz]	Duty Factor [dB]	RBW Correction Factor [dB]	Chain 0					Chain 1						
			PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result		PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result	
							Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]					Cond. [dBm/MHz]	e.i.r.p. [dBm/MHz]
5190	0.00	0.00	-17.01	3.92	9.90	1.04	-3.19	-2.15	-17.97	4.02	10.21	1.04	-3.74	-2.70
5230	0.00	0.00	-16.89	3.93	9.91	1.04	-3.05	-2.01	-17.21	4.03	10.21	1.04	-2.97	-1.93
5270	0.00	0.00	-16.88	3.94	9.91	1.04	-3.03	-1.99	-17.58	4.05	10.21	1.04	-3.32	-2.28
5310	0.00	0.00	-16.69	3.95	9.91	1.04	-2.83	-1.79	-17.60	4.06	10.21	1.04	-3.33	-2.29
5510	0.00	0.00	-16.63	4.00	9.92	1.04	-2.71	-1.67	-17.01	4.15	10.22	1.04	-2.64	-1.60
5550	0.00	0.00	-16.72	4.00	9.91	1.04	-2.81	-1.77	-17.27	4.15	10.22	1.04	-2.90	-1.86
5670	0.00	0.00	-17.25	3.95	9.90	1.04	-3.40	-2.36	-17.16	4.12	10.23	1.04	-2.81	-1.77
5710	0.00	0.00	-16.80	3.89	9.90	1.04	-3.01	-1.97	-17.60	4.08	10.23	1.04	-3.29	-2.25
5755	0.00	6.99	-27.30	3.90	9.90	1.04	-6.51	-5.47	-26.98	4.09	10.24	1.04	-5.66	-4.62
5795	0.00	6.99	-26.73	3.91	9.89	1.04	-5.94	-4.90	-26.79	4.09	10.24	1.04	-5.47	-4.43

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 (Specified bandwidth / 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)