

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, 11ac-80 (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.)					Margin [dB]	
		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]	
5210	0.26	0.23	0.49	-3.08	11.00	14.08	0.33	0.37	0.70	-1.57	17.00	18.57	
5290	0.22	0.21	0.43	-3.65	11.00	14.65	0.28	0.34	0.61	-2.12	17.00	19.12	
5530	0.24	0.24	0.48	-3.21	11.00	14.21	0.30	0.38	0.68	-1.68	17.00	18.68	
5610	0.25	0.25	0.50	-3.00	11.00	14.00	0.32	0.39	0.71	-1.47	17.00	18.47	
5690	0.25	0.28	0.53	-2.73	11.00	13.73	0.32	0.45	0.76	-1.17	17.00	18.17	
5775	0.13	0.14	0.27	-5.74	30.00	35.74	0.17	0.22	0.38	-4.19	36.00	40.19	

Chain 0						Chain 1								
Tested Frequency [MHz]	Duty Factor	RBW Correction Factor [dB]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result Cond.	e.i.r.p. [dBm/MHz]	PSD Reading [dBm/MHz]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	PSD Result Cond.	e.i.r.p. [dBm/MHz]
5210	0.00	0.00	-19.71	3.92	9.90	1.04	-5.89	-4.85	-21.18	4.67	10.21	1.98	-6.30	-4.32
5290	0.00	0.00	-20.46	3.94	9.91	1.04	-6.61	-5.57	-21.64	4.71	10.21	1.98	-6.72	-4.74
5530	0.00	0.00	-20.14	4.00	9.91	1.04	-6.23	-5.19	-21.24	4.80	10.22	1.98	-6.22	-4.24
5610	0.00	0.00	-19.85	3.94	9.91	1.04	-6.00	-4.96	-21.01	4.76	10.23	1.98	-6.02	-4.04
5690	0.00	0.00	-19.86	3.95	9.90	1.04	-6.01	-4.97	-20.50	4.78	10.23	1.98	-5.49	-3.51
5775	0.00	6.99	-29.65	3.91	9.89	1.04	-8.86	-7.82	-30.62	4.74	10.24	1.98	-8.65	-6.67

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

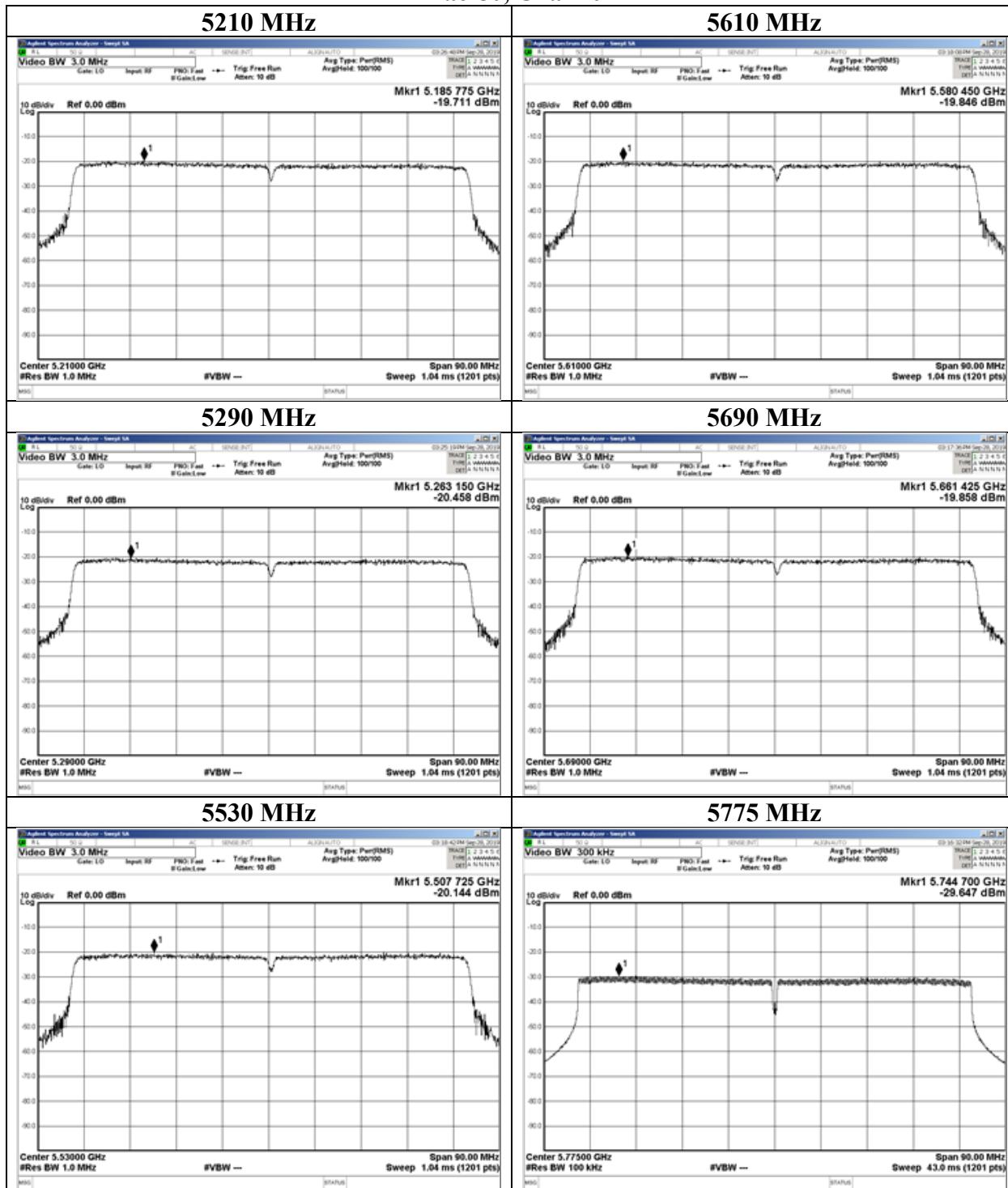
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

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

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 Mode Tx, 11ac-80 (MIMO), (serial no. B-5)

11ac-80, Chain 0



UL Japan, Inc.

Shonan EMC Lab.

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

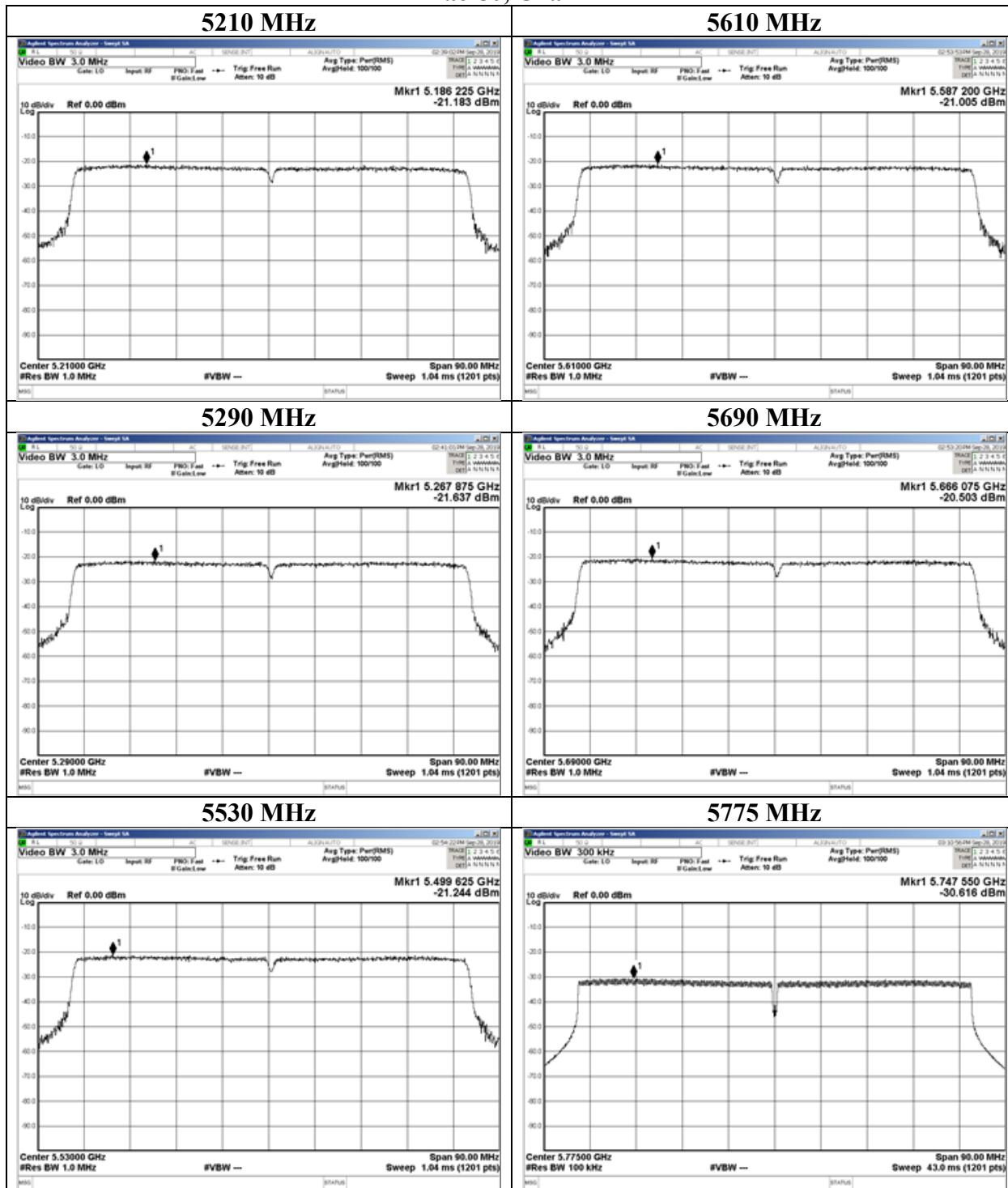
Telephone : +81 463 50 6400

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11ac-80, Chain 1



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Radiated Spurious Emission

Report No.	13004393S-E-R2	Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3		3		3		3
Date	September 6, 2019		September 10, 2019		September 12, 2019		September 14, 2019
Temperature / Humidity	24 deg. C / 61 % RH		23 deg.C / 55 %RH		24 deg.C / 54 %RH		25 deg.C / 51 %RH
Engineer	Makoto Hosaka (1 GHz – 6.4 GHz)		Kazuya Noda (6.4 G – 13 GHz)		Kazuya Noda (13 GHz – 18 GHz)		Takahiro Kawakami (18 GHz – 26.5 GHz)
Mode	Tx, 11n-20 (MIMO), 5180 MHz, (EUT serial no. A-7)						Toshinori Yamada (26.5 GHz – 40 GHz)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	51.52	32.26	16.25	43.04	2.15	59.14	73.9	14.8	132	341	-
Hori.	15540.000	PK	48.12	39.48	11.75	40.79	-9.54	49.02	73.9	24.9	255	276	-
Hori.	5150.000	AV	39.15	32.26	16.25	43.04	2.15	46.77	53.9	7.1	132	341	VBW: 1 kHz
Hori.	15540.000	AV	37.20	39.48	11.75	40.79	-9.54	38.10	53.9	15.8	255	276	VBW: 1 kHz
Vert.	5150.000	PK	52.27	32.26	16.25	43.04	2.15	59.89	73.9	14.0	275	204	-
Vert.	15540.000	PK	49.03	39.48	11.75	40.79	-9.54	49.93	73.9	24.0	203	215	-
Vert.	5150.000	AV	39.54	32.26	16.25	43.04	2.15	47.16	53.9	6.7	275	204	VBW: 1 kHz
Vert.	15540.000	AV	37.65	39.48	11.75	40.79	-9.54	38.55	53.9	15.4	203	215	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)/below 18 GHz) - Gain(Ampfifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10360.000	PK	49.51	39.20	9.16	42.69	2.15	57.33	-37.89	-27.0	10.9	159	93	-
Vert.	10360.000	PK	49.49	39.20	9.16	42.69	2.15	57.31	-37.91	-27.0	10.9	244	144	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)/below 18 GHz) - Gain(Ampfifier) + Distance factor

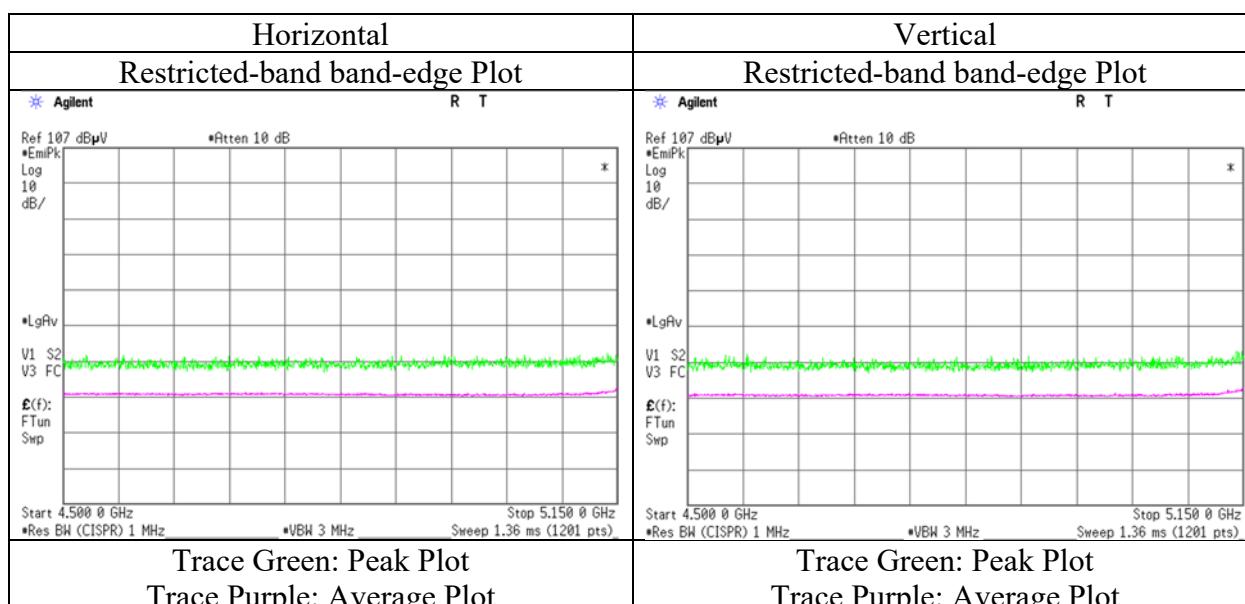
Result(EIRP[dBm])= $10^{\ast}\text{LOG}\left(\{\{10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)\} * 10^{\wedge}(-6) * \text{Distance};3[\text{m}]\}^2\right) / 30 * 10^{\wedge}3\right)$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

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Radiated Spurious Emission

Report No.	13004393S-E-R2						
Test place	Shonan EMC Lab.						
Semi Anechoic Chamber (No.)	3	3	3	3	3	3	3
Date	September 10, 2019	September 12, 2019	September 14, 2019	September 14, 2019	September 15, 2019	September 15, 2019	September 15, 2019
Temperature / Humidity	23 deg.C / 55 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH	24 deg.C / 63 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Kazuya Noda	Takahiro Kawakami	Takahiro Kawakami	Toshinori Yamada	Toshinori Yamada	Toshinori Yamada
Mode	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)	(26.5 GHz – 40 GHz)	(26.5 GHz – 40 GHz)
	Tx, 11n-20 (MIMO), 5240 MHz, (EUT serial no. A-7)						

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15720.000	PK	47.74	38.80	11.73	40.60	-9.54	48.13	73.9	25.8	253	278	-
Hori.	15720.000	AV	36.26	38.80	11.73	40.60	-9.54	36.65	53.9	17.3	253	278	VBW: 1 kHz
Vert.	15720.000	PK	48.24	38.80	11.73	40.60	-9.54	48.63	73.9	25.3	208	211	-
Vert.	15720.000	AV	36.82	38.80	11.73	40.60	-9.54	37.21	53.9	16.7	208	211	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10480.000	PK	49.29	39.56	9.19	42.66	2.15	57.53	-37.69	-27.0	10.7	162	95	-
Vert.	10480.000	PK	48.34	39.56	9.19	42.66	2.15	56.58	-38.64	-27.0	11.6	228	143	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^4 \cdot \log((10^4 \cdot \text{Electric Field Strength [dBuV/m]} / 20) * 10^{(-6)} * \text{Distance:3[m]}^2) / 30 * 10^3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

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Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 6, 2019	September 10, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 61 % RH	23 deg.C / 55 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Makoto Hosaka (1 GHz – 6.4 GHz)	Kazuya Noda (6.4 G – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshinori Yamada (26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5320 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	51.06	31.98	16.29	43.21	2.15	58.27	73.9	15.6	104	342	-
Hori.	10640.000	PK	49.07	39.66	9.24	42.67	2.15	57.45	73.9	16.5	152	93	-
Hori.	15960.000	PK	48.48	38.21	11.70	40.34	-9.54	48.51	73.9	25.4	144	237	-
Hori.	5350.000	AV	38.74	31.98	16.29	43.21	2.15	45.95	53.9	8.0	104	342	VBW: 1 kHz
Hori.	10640.000	AV	37.88	39.66	9.24	42.67	2.15	46.26	53.9	7.6	152	93	VBW: 1 kHz
Hori.	15960.000	AV	36.17	38.21	11.70	40.34	-9.54	36.20	53.9	17.7	144	237	VBW: 1 kHz
Vert.	5350.000	PK	52.39	31.98	16.29	43.21	2.15	59.60	73.9	14.3	261	204	-
Vert.	10640.000	PK	49.81	39.66	9.24	42.67	2.15	58.19	73.9	15.7	223	145	-
Vert.	15960.000	PK	47.95	38.21	11.70	40.34	-9.54	47.98	73.9	25.9	214	207	-
Vert.	5350.000	AV	38.70	31.98	16.29	43.21	2.15	45.91	53.9	8.0	261	204	VBW: 1 kHz
Vert.	10640.000	AV	37.91	39.66	9.24	42.67	2.15	46.29	53.9	7.6	223	145	VBW: 1 kHz
Vert.	15960.000	AV	36.08	38.21	11.70	40.34	-9.54	36.11	53.9	17.8	214	207	VBW: 1 kHz

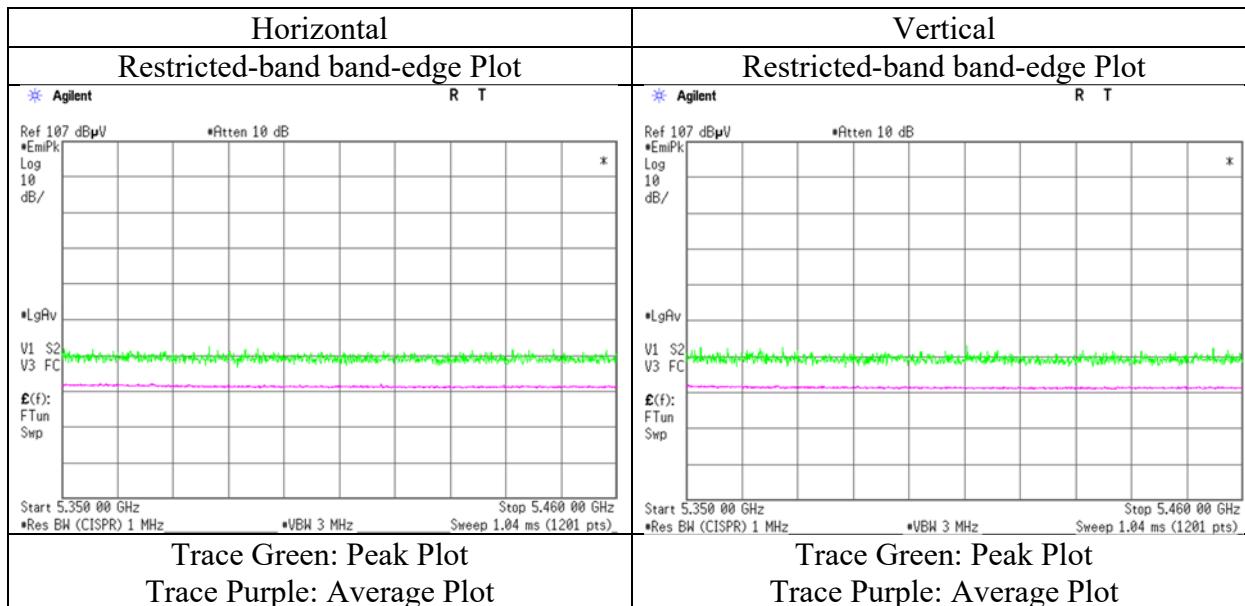
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Ampifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5180 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

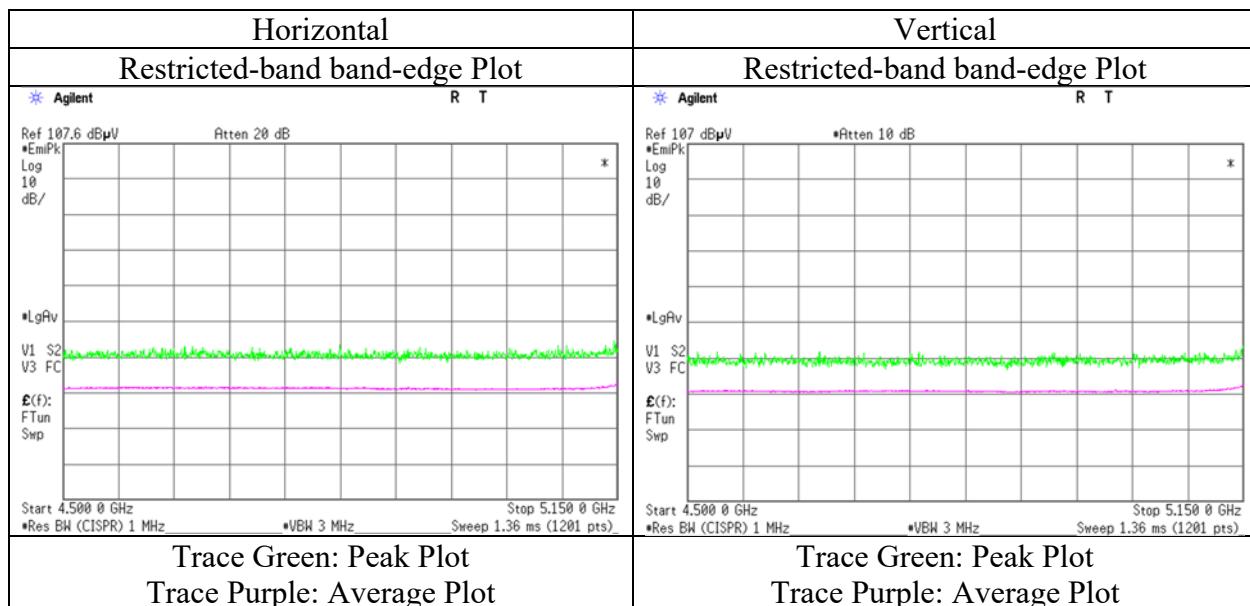
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	55.09	32.26	16.25	43.04	2.15	62.71	73.9	11.1	128	336	-
Hori.	5150.000	AV	39.18	32.26	16.25	43.04	2.15	46.80	53.9	7.1	128	336	VBW: 510Hz
Vert.	5150.000	PK	55.65	32.26	16.25	43.04	2.15	63.27	73.9	10.6	246	181	-
Vert.	5150.000	AV	39.34	32.26	16.25	43.04	2.15	46.96	53.9	6.9	246	181	VBW: 510Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

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Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



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 Final result of restricted band edge was shown in tabular data.

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 Semi Anechoic Chamber No.3
 Date September 6, 2019
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 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5320 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

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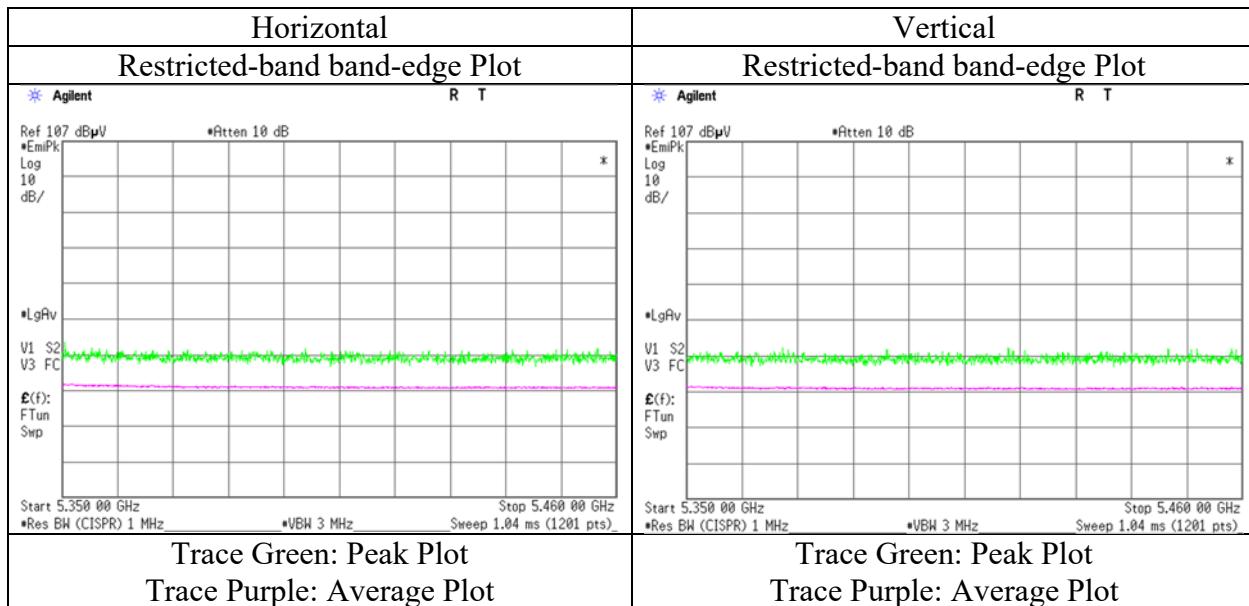
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	52.98	31.98	16.29	43.21	2.15	60.19	73.9	13.7	156	336	
Hori.	5350.000	AV	38.47	31.98	16.29	43.21	2.15	45.68	53.9	8.2	156	336	VBW: 510Hz
Vert.	5350.000	PK	51.36	31.98	16.29	43.21	2.15	58.57	73.9	15.3	260	205	
Vert.	5350.000	AV	38.19	31.98	16.29	43.21	2.15	45.40	53.9	8.5	260	205	VBW: 510Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

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Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5180 MHz, with 3DH5 hopping (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

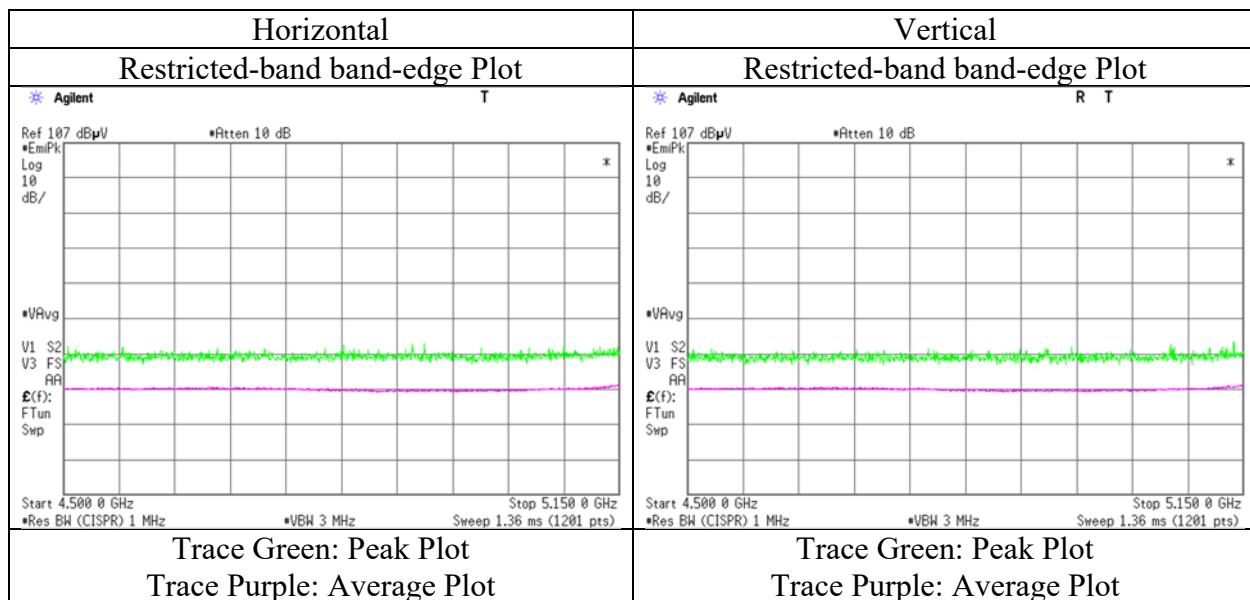
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	53.69	32.26	16.34	43.04	2.14	61.39	73.9	12.5	146	341	-
Hori.	5150.000	AV	38.81	32.26	16.34	43.04	2.14	46.51	53.9	7.3	146	341	VBW: 510 Hz
Vert.	5150.000	PK	54.22	32.26	16.34	43.04	2.14	61.92	73.9	11.9	239	339	-
Vert.	5150.000	AV	38.71	32.26	16.34	43.04	2.14	46.41	53.9	7.4	239	339	VBW: 510 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



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Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5320 MHz, with 3DH5 hopping (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

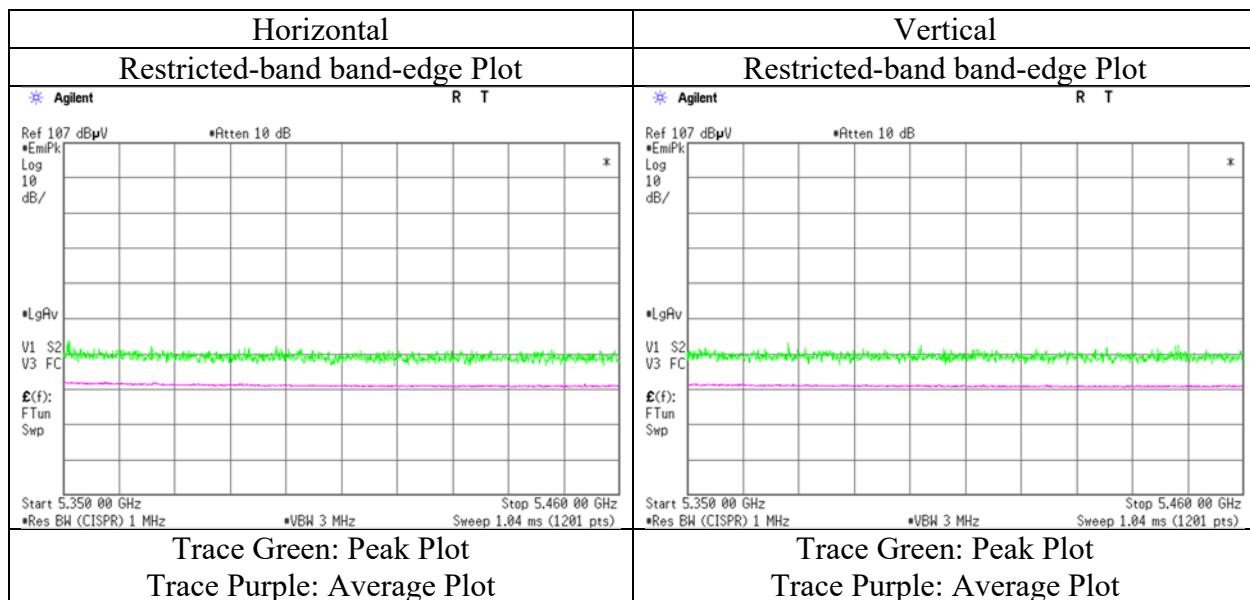
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	52.59	31.98	16.41	43.21	2.14	59.91	73.9	13.9	115	341	-
Hori.	5350.000	AV	38.82	31.98	16.41	43.21	2.14	46.14	53.9	7.7	115	341	VBW: 510 Hz
Vert.	5350.000	PK	50.69	31.98	16.41	43.21	2.14	58.01	73.9	15.8	209	340	-
Vert.	5350.000	AV	38.04	31.98	16.41	43.21	2.14	45.36	53.9	8.5	209	340	VBW: 510 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5180 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15540.000	PK	49.42	39.48	11.75	40.79	-9.54	50.32	73.9	23.5	167	254-	
Hori.	15540.000	AV	38.02	39.48	11.75	40.79	-9.54	38.92	53.9	14.9	167	254-	VBW: 1 kHz
Vert.	15540.000	PK	49.06	39.48	11.75	40.79	-9.54	49.96	73.9	23.9	171	249-	
Vert.	15540.000	AV	38.78	39.48	11.75	40.79	-9.54	39.68	53.9	14.2	171	249-	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10360.000	PK	48.72	39.20	9.16	42.69	2.04	56.43	-38.79	-27.0	11.8	138	346-	
Vert.	10360.000	PK	48.87	39.20	9.16	42.69	2.04	56.58	-38.64	-27.0	11.6	106	90-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log((\{(\{10^{\log(\text{Electric Field Strength [dBuV/m] / 20)} * 10^{-6}) * \text{Distance:3[m]} \})^2\} / 30) * 10^3)}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5240 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15720.000	PK	48.04	38.80	11.73	40.60	-9.54	48.43	73.9	25.5	153	236	-
Hori.	15720.000	AV	36.74	38.80	11.73	40.60	-9.54	37.13	53.9	16.8	153	236	VBW: 1 kHz
Vert.	15720.000	PK	47.86	38.80	11.73	40.60	-9.54	48.25	73.9	25.7	162	259	-
Vert.	15720.000	AV	37.37	38.80	11.73	40.60	-9.54	37.76	53.9	16.1	162	259	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10480.000	PK	48.98	39.56	9.19	42.66	2.04	57.11	-38.11	-27.0	11.1	108	343	-
Vert.	10480.000	PK	49.19	39.56	9.19	42.66	2.04	57.32	-37.90	-27.0	10.9	121	92	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log((\{10^{\log(\text{Electric Field Strength [dBuV/m] / 20)} * 10^{-6} * \text{Distance:3[m]}^2\}) / 30) * 10^3)}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda (1 GHz – 13 GHz)	Hiromasa Sato (13 GHz – 18 GHz)	Toshinori Yamada (18 GHz – 26.5 GHz)	Takahiro Kawakami (26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5320 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10640.000	PK	49.03	39.66	9.24	42.67	2.04	57.30	73.9	16.6	313	342	-
Hori.	15960.000	PK	47.75	38.21	11.70	40.34	-9.54	47.78	73.9	26.1	159	236	-
Hori.	10640.000	AV	37.31	39.66	9.24	42.67	2.04	45.58	53.9	8.3	313	342	VBW : 1 kHz
Hori.	15960.000	AV	36.93	38.21	11.70	40.34	-9.54	36.96	53.9	16.9	159	236	VBW : 1 kHz
Vert.	10640.000	PK	49.68	39.66	9.24	42.67	2.04	57.95	73.9	16.0	105	99	-
Vert.	15960.000	PK	47.83	38.21	11.70	40.34	-9.54	47.86	73.9	26.0	150	225	-
Vert.	10640.000	AV	37.56	39.66	9.24	42.67	2.04	45.83	53.9	8.1	105	99	VBW: 1 kHz
Vert.	15960.000	AV	37.76	38.21	11.70	40.34	-9.54	37.79	53.9	16.1	150	225	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Ampifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 22, 2019
 Temperature / Humidity 24 deg. C / 59 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5180 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

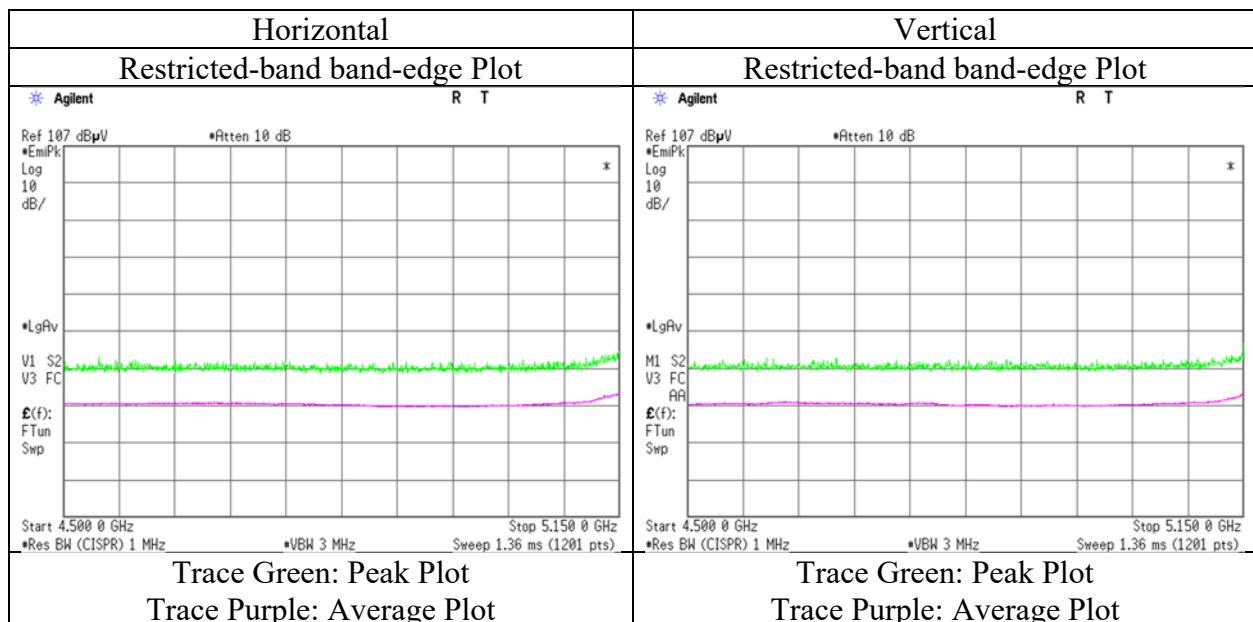
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	51.21	32.26	16.34	43.04	2.04	58.81	73.9	15.0	102	176	-
Hori.	5150.000	AV	40.64	32.26	16.34	43.04	2.04	48.24	53.9	5.6	102	176	VBW: 510 Hz
Vert.	5150.000	PK	55.49	32.26	16.34	43.04	2.04	63.09	73.9	10.8	271	175	-
Vert.	5150.000	AV	40.96	32.26	16.34	43.04	2.04	48.56	53.9	5.3	271	175	VBW: 510 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5320 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

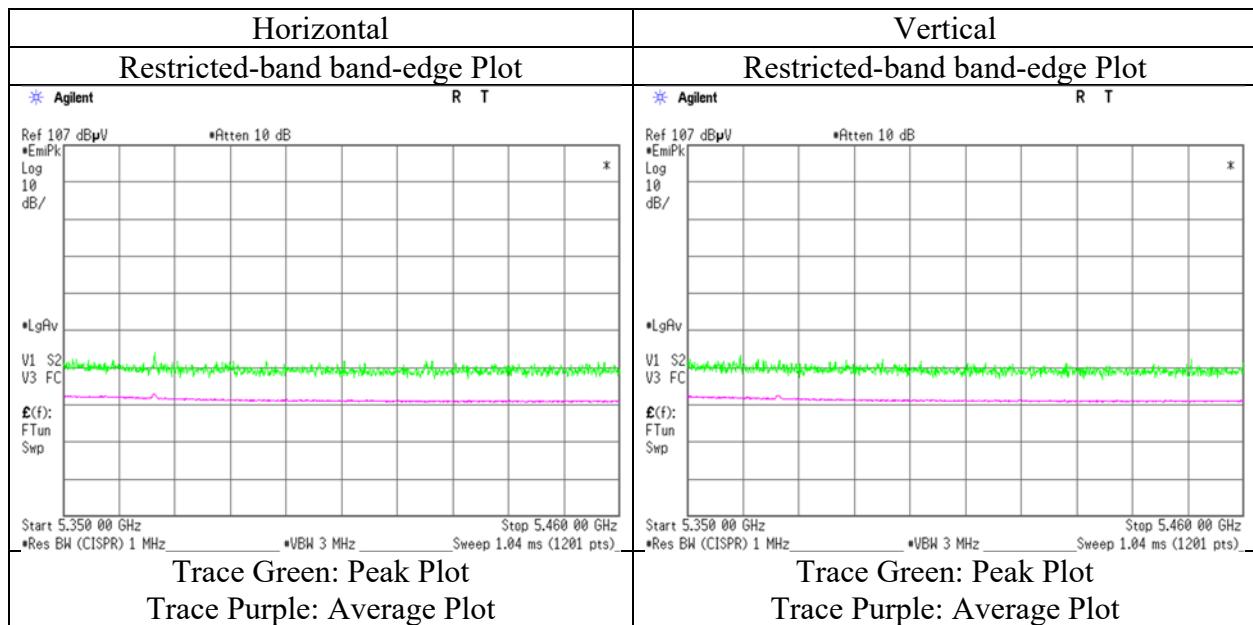
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	51.03	31.98	16.29	43.21	2.15	58.24	73.9	15.6	132	143	-
Hori.	5367.970	PK	52.16	32.03	16.29	43.22	2.15	59.41	73.9	14.4	132	143	-
Hori.	5350.000	AV	39.16	31.98	16.29	43.21	2.15	46.37	53.9	7.5	132	143	VBW: 510 Hz
Hori.	5367.970	AV	39.91	32.03	16.29	43.22	2.15	47.16	53.9	6.7	132	143	VBW: 510 Hz
Vert.	5350.000	PK	52.47	31.98	16.29	43.21	2.15	59.68	73.9	14.2	127	208	-
Vert.	5367.970	PK	51.20	32.03	16.29	43.22	2.15	58.45	73.9	15.4	127	208	-
Vert.	5350.000	AV	39.01	31.98	16.29	43.21	2.15	46.22	53.9	7.6	127	208	VBW: 510 Hz
Vert.	5367.970	AV	39.34	32.03	16.29	43.22	2.15	46.59	53.9	7.3	127	208	VBW: 510 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 21, 2019
 Temperature / Humidity 25 deg. C / 52 % RH
 Engineer Takahiro Kawakami
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5180 MHz, with 3DH5 hopping (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

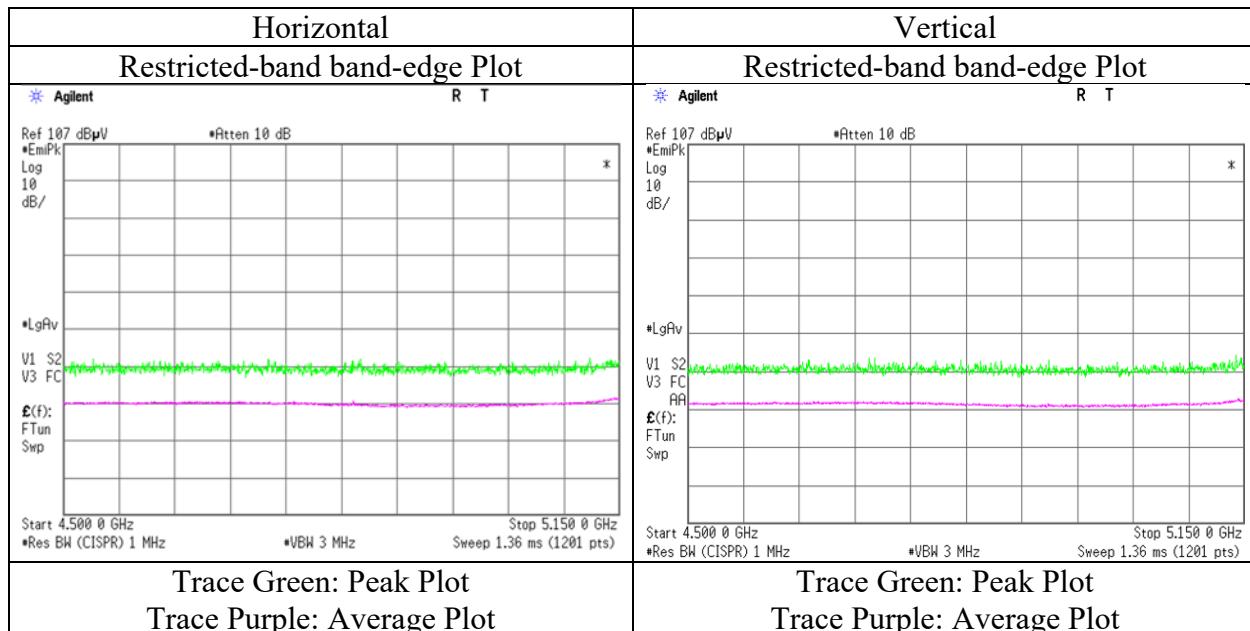
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	52.57	32.26	16.34	43.04	2.04	60.17	73.9	13.7	150	141	-
Hori.	5150.000	AV	39.26	32.26	16.34	43.04	2.04	46.86	53.9	7.0	150	141	VBW: 510 Hz
Vert.	5150.000	PK	52.37	32.26	16.34	43.04	2.04	59.97	73.9	13.9	196	208	-
Vert.	5150.000	AV	38.60	32.26	16.34	43.04	2.04	46.20	53.9	7.7	196	208	VBW: 510 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber (No.)	3	3	3
Date	September 19, 2019	September 21, 2019	September 19, 2019
Temperature / Humidity	23 deg.C / 62 %RH	25 deg. C / 52 % RH	23 deg.C / 62 %RH
Engineer	Takahiro Suzuki	Takahiro Kawakami	Takahiro Suzuki
	(30 MHz – 1 GHz)	(1 GHz – 13 GHz)	(13 GHz – 40 GHz)
Mode	Tx, 11n-20 (CDD), 5320 MHz, with 3DH5 hopping (EUT serial no. B-5)		

(below 1GHz and above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	151.292	QP	35.79	14.72	7.85	32.12	0.00	26.24	43.5	17.2	223	106	-
Hori.	221.885	QP	43.08	11.02	8.22	32.04	0.00	30.28	46.0	15.7	162	23	-
Hori.	239.869	QP	43.92	11.31	8.35	32.02	0.00	31.56	46.0	14.4	116	177	-
Hori.	696.027	QP	35.36	19.28	10.35	31.87	0.00	33.12	46.0	12.8	156	25	-
Hori.	720.015	QP	34.08	19.75	10.44	31.83	0.00	32.44	46.0	13.5	111	132	-
Hori.	5350.000	PK	52.41	31.98	16.29	43.21	2.04	59.51	73.9	14.3	100	1	-
Hori.	10640.000	PK	49.30	39.66	9.24	42.67	2.04	57.57	73.9	16.3	150	355	-
Hori.	15960.000	PK	46.68	38.21	11.70	40.34	-9.54	46.71	73.9	27.1	134	25	-
Hori.	5350.000	AV	39.34	31.98	16.29	43.21	2.04	46.44	53.9	7.4	100	1	VBW: 510 Hz
Hori.	10640.000	AV	36.79	39.66	9.24	42.67	2.04	45.06	53.9	8.8	150	355	VBW: 510 Hz
Hori.	15960.000	AV	33.76	38.21	11.70	40.34	-9.54	33.79	53.9	20.1	134	25	VBW: 510 Hz
Vert.	94.483	QP	43.35	9.01	7.50	32.15	0.00	27.71	43.5	15.7	114	153	-
Vert.	155.568	QP	42.26	14.86	7.89	32.11	0.00	32.90	43.5	10.6	100	162	-
Vert.	684.077	QP	35.69	19.25	10.31	31.89	0.00	33.36	46.0	12.6	100	325	-
Vert.	713.959	QP	34.39	19.62	10.42	31.84	0.00	32.59	46.0	13.4	100	354	-
Vert.	920.633	QP	26.18	21.67	11.08	30.90	0.00	28.03	46.0	17.9	100	147	-
Vert.	5350.000	PK	51.53	31.98	16.29	43.21	2.04	58.63	73.9	15.2	100	0	-
Vert.	10640.000	PK	49.61	39.66	9.24	42.67	2.04	57.88	73.9	16.0	167	352	-
Vert.	15960.000	PK	47.89	38.21	11.70	40.34	-9.54	47.92	73.9	25.9	168	64	-
Vert.	5350.000	AV	39.27	31.98	16.29	43.21	2.04	46.37	53.9	7.5	100	0	VBW: 510 Hz
Vert.	10640.000	AV	36.86	39.66	9.24	42.67	2.04	45.13	53.9	8.7	167	352	VBW: 510 Hz
Vert.	15960.000	AV	35.11	38.21	11.70	40.34	-9.54	35.14	53.9	18.7	168	64	VBW: 510 Hz

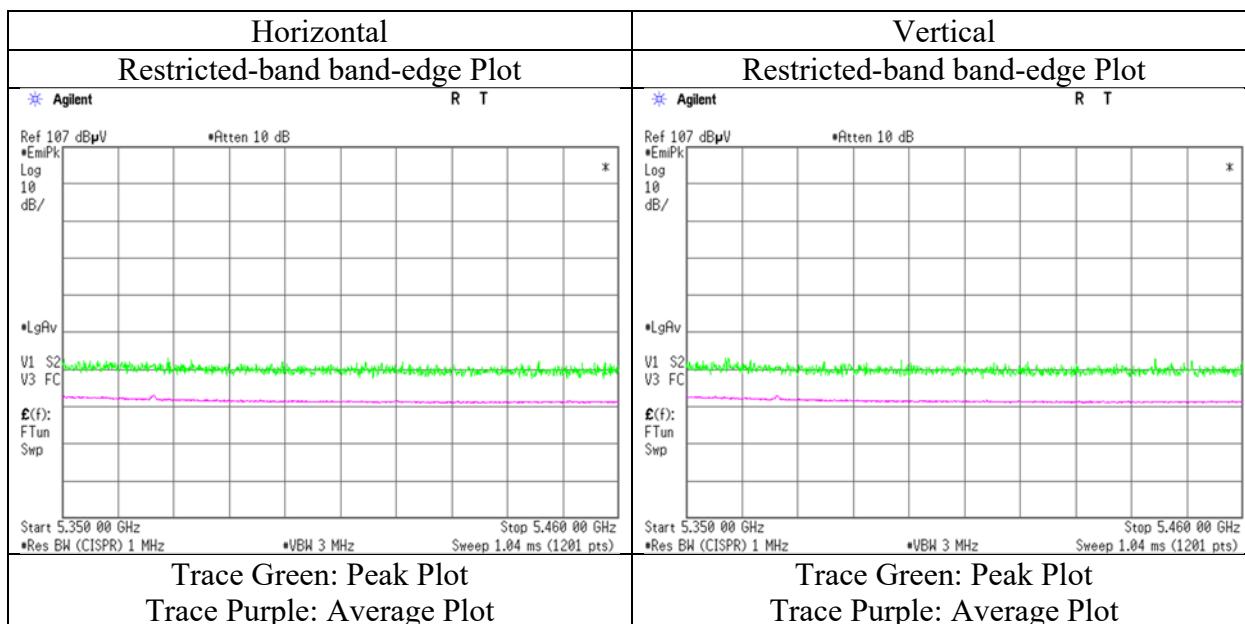
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2						
Test place	Shonan EMC Lab.						
Semi Anechoic Chamber (No.)	3	3	3	3	3	3	3
Date	September 19, 2019	September 5, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019	
Temperature / Humidity	23 deg. C / 64 % RH	25 deg. C / 65 % RH	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH	
Engineer	Takahiro Suzuki (30 MHz – 1 GHz)	Makoto Hosaka (1 GHz – 6.4 GHz)	Takahiro Kawakami (6.4 G – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshinori Yamada (26.5 GHz – 40 GHz)	
Mode	Tx, 11ac-40 (MIMO), 5190 MHz, (EUT serial no. A-7)						

(below 1GHz and above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	152.642	QP	37.18	14.79	7.86	32.12	0.00	27.71	43.5	15.7	208	78-	
Hori.	226.200	QP	42.07	11.03	8.25	32.04	0.00	29.31	46.0	16.6	100	186-	
Hori.	239.961	QP	43.12	11.31	8.35	32.02	0.00	30.76	46.0	15.2	100	233-	
Hori.	707.963	QP	36.86	19.51	10.40	31.85	0.00	34.92	46.0	11.0	132	1-	
Hori.	719.913	QP	36.08	19.75	10.44	31.83	0.00	34.44	46.0	11.5	128	329-	
Hori.	929.522	QP	32.93	21.65	11.10	30.82	0.00	34.86	46.0	11.1	100	304-	
Hori.	5150.000	PK	55.37	32.26	16.25	43.04	2.15	62.99	73.9	10.9	107	341-	
Hori.	15570.000	PK	47.79	39.39	11.76	40.76	-9.54	48.64	73.9	25.2	263	271-	
Hori.	5150.000	AV	42.59	32.26	16.25	43.04	2.15	50.21	53.9	3.6	107	341	VBW: 130 Hz
Hori.	15570.000	AV	36.41	39.39	11.76	40.76	-9.54	37.26	53.9	16.6	263	271	VBW: 130 Hz
Vert.	107.250	QP	45.72	11.33	7.30	32.15	0.00	32.20	43.5	11.3	100	132-	
Vert.	165.657	QP	40.84	15.29	7.92	32.10	0.00	31.95	43.5	11.5	100	336-	
Vert.	714.000	QP	35.37	19.62	10.42	31.84	0.00	33.57	46.0	12.4	100	356-	
Vert.	720.010	QP	36.18	19.75	10.44	31.83	0.00	34.54	46.0	11.4	100	349-	
Vert.	5150.000	PK	55.90	32.26	16.25	43.04	2.15	63.52	73.9	10.3	220	186-	
Vert.	15570.000	PK	48.32	39.39	11.76	40.76	-9.54	49.17	73.9	24.7	215	177-	
Vert.	5150.000	AV	42.89	32.26	16.25	43.04	2.15	50.51	53.9	3.3	220	186	VBW: 130 Hz
Vert.	15570.000	AV	36.78	39.39	11.76	40.76	-9.54	37.63	53.9	16.2	215	177	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB

13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10380.000	PK	48.68	39.29	9.17	42.68	2.15	56.61	-38.61	-27.0	11.6	137	336-	
Vert.	10380.000	PK	48.23	39.29	9.17	42.68	2.15	56.16	-39.06	-27.0	12.1	145	334-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({{10}^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance:3[m]}^2) / 30) * 10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

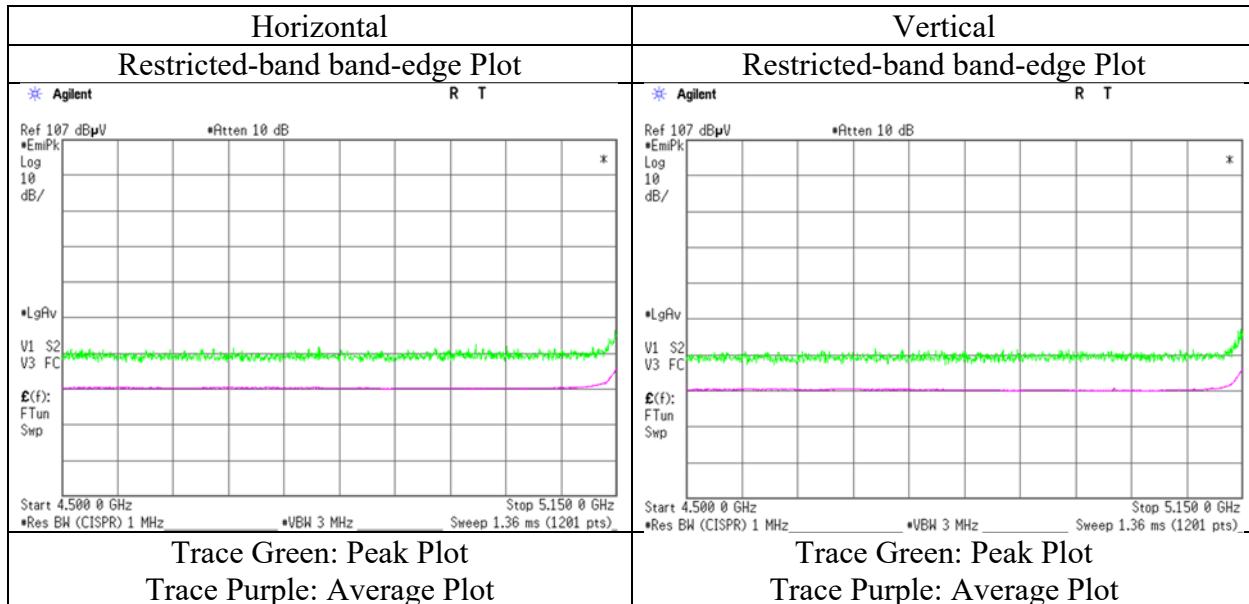
*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB

13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber (No.) 3
 Date September 5, 2019
 Temperature / Humidity 25 deg. C / 65 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (MIMO), 5190 MHz, (EUT serial no. A-7)



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2									
Test place	Shonan EMC Lab.									
Semi Anechoic Chamber (No)	3	3	3	3	3	3	3	3	3	3
Date	September 11, 2019	September 12, 2019	September 14, 2019	September 14, 2019	September 14, 2019	September 14, 2019	September 14, 2019	September 14, 2019	September 15, 2019	September 15, 2019
Temperature / Humidity	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH					
Engineer	Takahiro Kawakami	Kazuya Noda	Takahiro Kawakami	Takahiro Kawakami	Toshinori Yamada					
Mode	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)					
	Tx, 11ac-40 (MIMO), 5230 MHz, (EUT serial no. A-7)									

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15690.000	PK	47.55	38.91	11.74	40.63	-9.54	48.03	73.9	25.8	239	274-	
Hori.	15690.000	AV	36.10	38.91	11.74	40.63	-9.54	36.58	53.9	17.3	239	274-	VBW: 130 Hz
Vert.	15690.000	PK	47.96	38.91	11.74	40.63	-9.54	48.44	73.9	25.4	209	208-	
Vert.	15690.000	AV	36.43	38.91	11.74	40.63	-9.54	36.91	53.9	16.9	209	208-	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10460.000	PK	49.45	39.54	9.20	42.67	2.15	57.67	-37.55	-27.0	10.6	160	1-	
Vert.	10460.000	PK	50.83	39.54	9.20	42.67	2.15	59.05	-36.17	-27.0	9.2	123	0-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log(\frac{10^{(Electric\ Field\ Strength\ [dBuV/m]/20)} * 10^{-6} * Distance[m]^2}{30}) + 10^3}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 5, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	25 deg. C / 65 % RH	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Makoto Hosaka (1 GHz – 6.4 GHz)	Takahiro Kawakami (6.4 G – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshinori Yamada (26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5310 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	52.30	31.98	16.29	43.21	2.15	59.51	73.9	14.3	100	338	-
Hori.	10620.000	PK	48.24	39.64	9.23	42.67	2.15	56.59	73.9	17.3	136	305	-
Hori.	15930.000	PK	46.78	38.25	11.69	40.37	-9.54	46.81	73.9	27.0	216	239	-
Hori.	5350.000	AV	39.38	31.98	16.29	43.21	2.15	46.59	53.9	7.3	100	338	VBW: 130 Hz
Hori.	10620.000	AV	36.72	39.64	9.23	42.67	2.15	45.07	53.9	8.8	136	305	VBW: 130 Hz
Hori.	15930.000	AV	35.74	38.25	11.69	40.37	-9.54	35.77	53.9	18.1	216	239	VBW: 130 Hz
Vert.	5350.000	PK	51.71	31.98	16.29	43.21	2.15	58.92	73.9	14.9	213	185	-
Vert.	10620.000	PK	49.85	39.64	9.23	42.67	2.15	58.20	73.9	15.7	150	0	-
Vert.	15930.000	PK	47.53	38.25	11.69	40.37	-9.54	47.56	73.9	26.3	194	222	-
Vert.	5350.000	AV	39.67	31.98	16.29	43.21	2.15	46.88	53.9	7.0	213	185	VBW: 130 Hz
Vert.	10620.000	AV	36.91	39.64	9.23	42.67	2.15	45.26	53.9	8.6	150	0	VBW: 130 Hz
Vert.	15930.000	AV	35.94	38.25	11.69	40.37	-9.54	35.97	53.9	17.9	194	222	VBW: 130 Hz

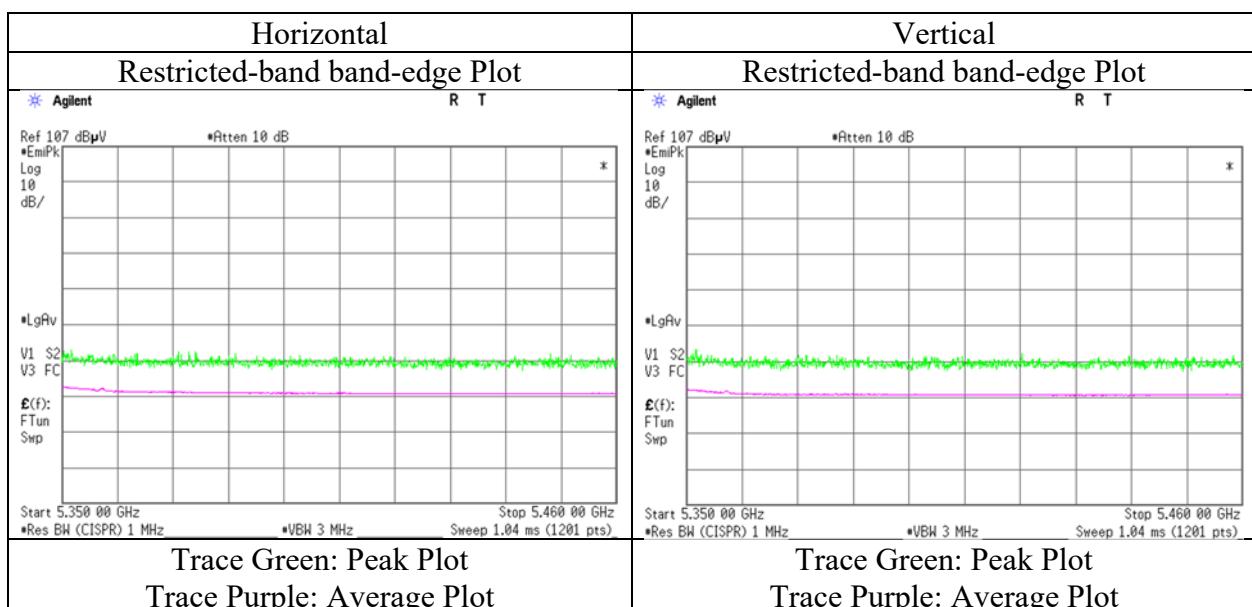
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5190 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

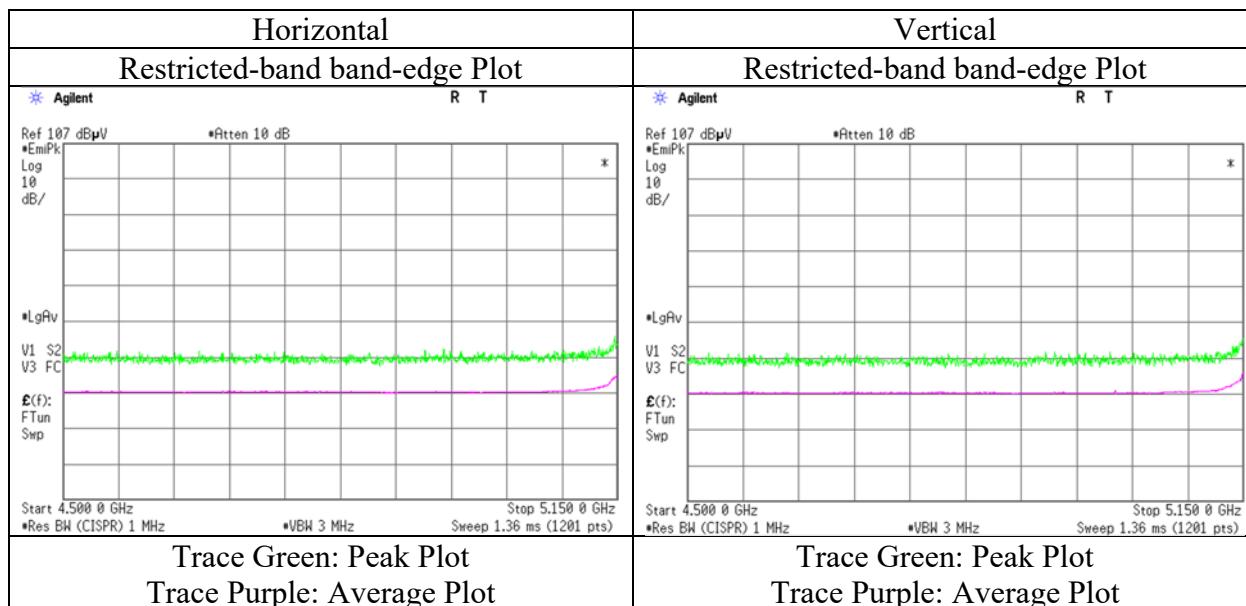
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	58.61	32.26	16.25	43.04	2.15	66.23	73.9	7.6	156	340	-
Hori.	5150.000	AV	41.75	32.26	16.25	43.04	2.15	49.37	53.9	4.5	156	340	VBW: 100 Hz
Vert.	5150.000	PK	59.37	32.26	16.25	43.04	2.15	66.99	73.9	6.9	273	206	-
Vert.	5150.000	AV	42.97	32.26	16.25	43.04	2.15	50.59	53.9	3.3	273	206	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5310 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

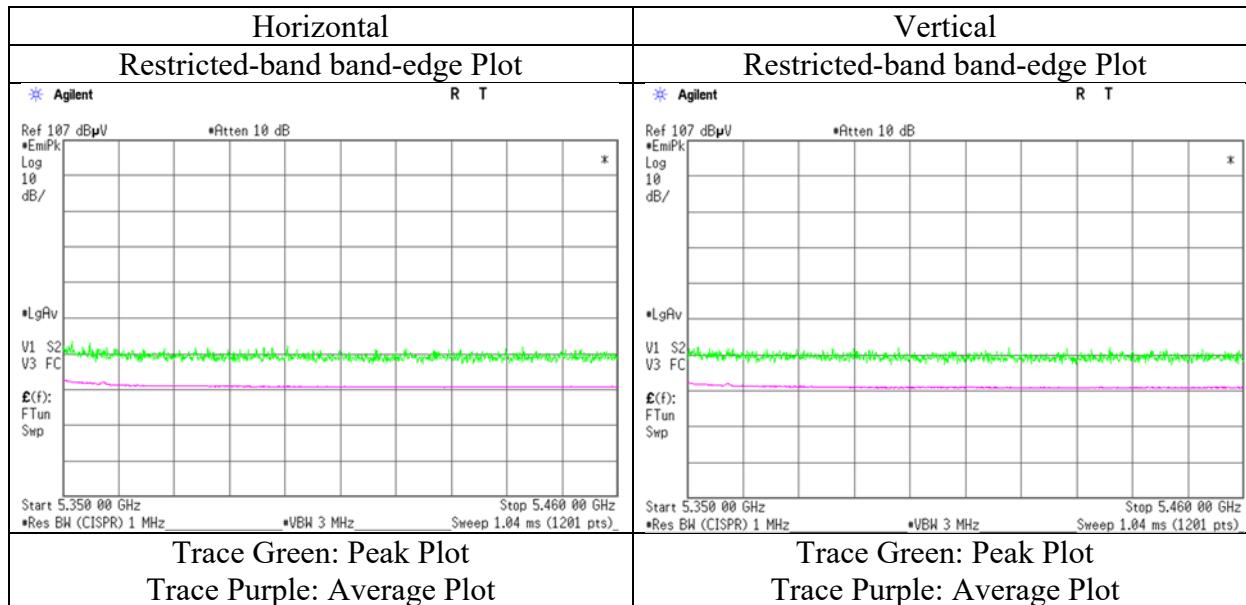
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	57.18	31.98	16.29	43.21	2.15	64.39	73.9	9.5	164	334	-
Hori.	5350.000	AV	39.25	31.98	16.29	43.21	2.15	46.46	53.9	7.4	164	334	VBW: 100 Hz
Vert.	5350.000	PK	57.17	31.98	16.29	43.21	2.15	64.38	73.9	9.5	221	179	-
Vert.	5350.000	AV	39.04	31.98	16.29	43.21	2.15	46.25	53.9	7.6	221	179	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

UL Japan, Inc.

Shonan EMC Lab.

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Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 19, 2019	September 20, 2019	September 21, 2019	September 19, 2019
Temperature / Humidity	23 deg.C / 62 %RH	22 deg.C / 64 %RH	25 deg.C / 52 %RH	23 deg.C / 62 %RH
Engineer	Takahiro Suzuki (30 MHz – 1 GHz)	Makoto Hosaka (1 GHz – 6.4 GHz)	Takahiro Kawakami (6.4 GHz – 13 GHz)	Takahiro Suzuki (13 GHz – 40 GHz)
Mode	Tx, 11ac-40 (CDD), 5190 MHz, with 3DH5 hopping (EUT serial no. A-7)			

(below 1GHz and above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	155.546	QP	35.82	14.86	7.89	32.11	0.00	26.46	43.5	17.0	223	100-	
Hori.	233.912	QP	43.34	11.17	8.31	32.03	0.00	30.79	46.0	15.2	162	93-	
Hori.	239.899	QP	44.18	11.31	8.35	32.02	0.00	31.82	46.0	14.1	123	226-	
Hori.	695.944	QP	36.87	19.28	10.35	31.87	0.00	34.63	46.0	11.3	148	5-	
Hori.	707.958	QP	33.86	19.51	10.40	31.85	0.00	31.92	46.0	14.0	122	30-	
Hori.	929.407	QP	30.17	21.65	11.10	30.83	0.00	32.09	46.0	13.9	100	2-	
Hori.	5150.000	PK	56.97	32.26	16.34	43.04	2.14	64.67	73.9	9.2	159	327-	
Hori.	15570.000	PK	45.03	39.39	11.76	40.76	-9.54	45.88	73.9	28.0	125	87-	
Hori.	5150.000	AV	41.82	32.26	16.34	43.04	2.14	49.52	53.9	4.3	159	327	VBW: 100 Hz
Hori.	15570.000	AV	33.23	39.39	11.76	40.76	-9.54	34.08	53.9	19.8	125	87	VBW: 100 Hz
Vert.	94.520	QP	44.05	9.01	7.50	32.15	0.00	28.41	43.5	15.0	100	186-	
Vert.	166.251	QP	40.04	15.31	7.92	32.10	0.00	31.17	43.5	12.3	100	8-	
Vert.	677.898	QP	36.48	19.29	10.29	31.90	0.00	34.16	46.0	11.8	100	164-	
Vert.	713.952	QP	36.03	19.62	10.42	31.84	0.00	34.23	46.0	11.7	100	164-	
Vert.	5150.000	PK	54.99	32.26	16.34	43.04	2.14	62.69	73.9	11.2	199	340-	
Vert.	15570.000	PK	44.42	39.39	11.76	40.76	-9.54	45.27	73.9	28.6	109	118-	
Vert.	5150.000	AV	41.83	32.26	16.34	43.04	2.14	49.53	53.9	4.3	199	340	VBW: 100 Hz
Vert.	15570.000	AV	33.12	39.39	11.76	40.76	-9.54	33.97	53.9	19.9	109	118	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Ampriifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10380.000	PK	49.46	39.29	9.17	42.68	2.15	57.39	-37.83	-27.0	10.8	160	349-	
Vert.	10380.000	PK	49.65	39.29	9.17	42.68	2.15	57.58	-37.64	-27.0	10.6	167	352-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Ampriifier) + Distance factor

Result(EIRP[dBm])= $10^{\star}\text{LOG}\left(\left(\left\{10^{\star}\text{Electric Field Strength [dBuV/m]}/20\right\} * 10^{\star}(-6) * \text{Distance}[3\text{m}]^2\right\}/30\right) * 10^3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

UL Japan, Inc.

Shonan EMC Lab.

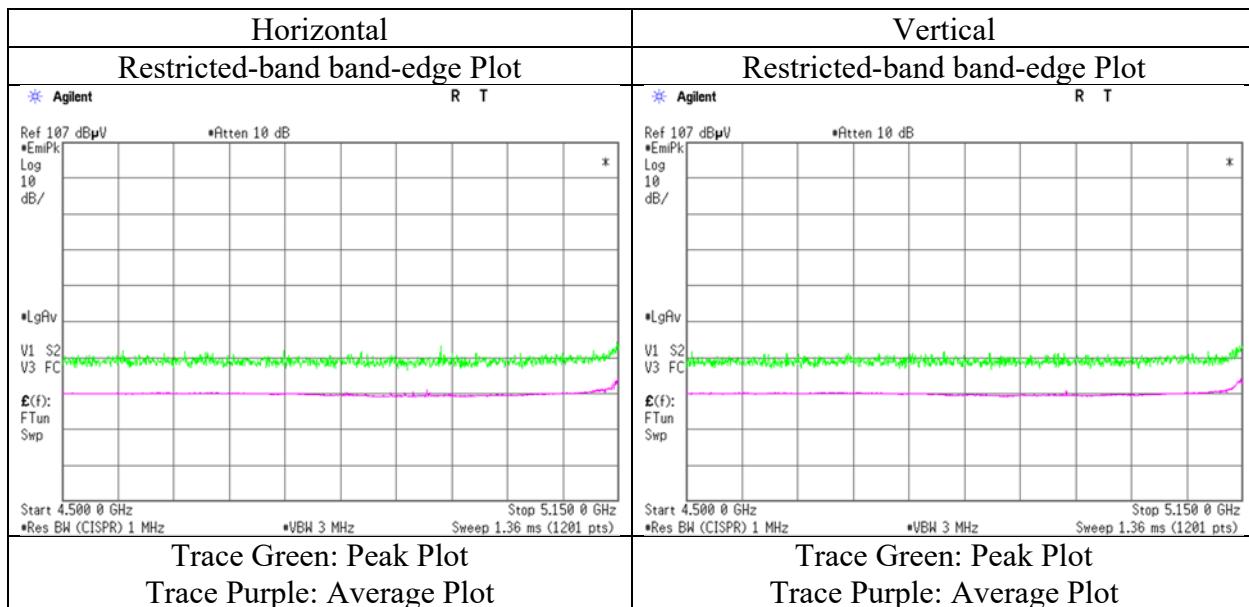
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5190 MHz, with 3DH5 hopping (EUT serial no. A-7)



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5310 MHz, with 3DH5 hopping (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

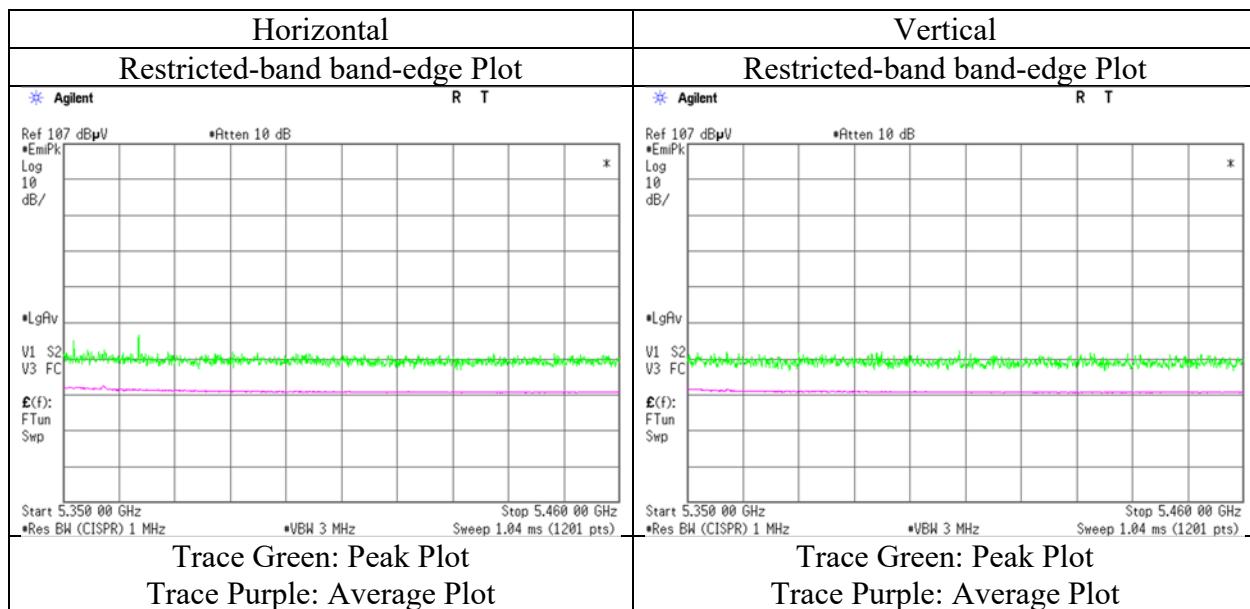
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	56.15	31.98	16.41	43.21	2.14	63.47	73.9	10.4	121	339	-
Hori.	5350.000	AV	38.69	31.98	16.41	43.21	2.14	46.01	53.9	7.8	121	339	VBW: 100 Hz
Vert.	5350.000	PK	54.11	31.98	16.41	43.21	2.14	61.43	73.9	12.4	110	355	-
Vert.	5350.000	AV	38.16	31.98	16.41	43.21	2.14	45.48	53.9	8.4	110	355	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda (1 GHz – 13 GHz)	Hiromasa Sato (13 GHz – 18 GHz)	Toshinori Yamada (18 GHz – 26.5 GHz)	Takahiro Kawakami (26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5190 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15570.000	PK	47.41	39.39	11.76	40.76	-9.54	48.26	73.9	25.6	217	183	-
Hori.	15570.000	AV	36.03	39.39	11.76	40.76	-9.54	36.88	53.9	17.0	217	183	VBW: 130 Hz
Vert.	15570.000	PK	47.92	39.39	11.76	40.76	-9.54	48.77	73.9	25.1	166	277	-
Vert.	15570.000	AV	36.91	39.39	11.76	40.76	-9.54	37.76	53.9	16.1	166	277	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10380.000	PK	48.76	39.29	9.17	42.68	2.04	56.58	-38.64	-27.0	11.6	144	346	-
Vert.	10380.000	PK	48.76	39.29	9.17	42.68	2.04	56.58	-38.64	-27.0	11.6	136	108	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log((10^{\log(\text{Electric Field Strength [dBuV/m]}/20)} * 10^{-6} * \text{Distance:3[m]})^2)/30)} * 10^3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5230 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15690.000	PK	47.54	38.91	11.74	40.63	-9.54	48.02	73.9	25.8	179	276-	
Hori.	15690.000	AV	36.95	38.91	11.74	40.63	-9.54	37.43	53.9	16.4	179	276	VBW: 130 Hz
Vert.	15690.000	PK	47.71	38.91	11.74	40.63	-9.54	48.19	73.9	25.7	198	129-	
Vert.	15690.000	AV	36.13	38.91	11.74	40.63	-9.54	36.61	53.9	17.2	198	129	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10460.000	PK	48.49	39.54	9.20	42.67	2.04	56.60	-38.62	-27.0	11.6	122	345-	
Vert.	10460.000	PK	49.12	39.54	9.20	42.67	2.04	57.23	-37.99	-27.0	11.0	113	101-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log((\{(\{10^{\log(\text{Electric Field Strength [dBuV/m] / 20)} * 10^{-6}) * \text{Distance:3[m]})^2\} / 30) * 10^3)}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5310 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10620.000	PK	48.46	39.64	9.23	42.67	2.04	56.70	73.9	17.2	270	345	-
Hori.	15930.000	PK	48.23	38.25	11.69	40.37	-9.54	48.26	73.9	25.6	150	238	-
Hori.	10620.000	AV	37.11	39.64	9.23	42.67	2.04	45.35	53.9	8.5	270	345	VBW: 130 Hz
Hori.	15930.000	AV	35.43	38.25	11.69	40.37	-9.54	35.46	53.9	18.4	150	238	VBW: 130 Hz
Vert.	10620.000	PK	49.24	39.64	9.23	42.67	2.04	57.48	73.9	16.4	103	101	-
Vert.	15930.000	PK	46.70	38.25	11.69	40.37	-9.54	46.73	73.9	27.1	157	254	-
Vert.	10620.000	AV	37.45	39.64	9.23	42.67	2.04	45.69	53.9	8.2	103	101	VBW: 130 Hz
Vert.	15930.000	AV	35.21	38.25	11.69	40.37	-9.54	35.24	53.9	18.6	157	254	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5190 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

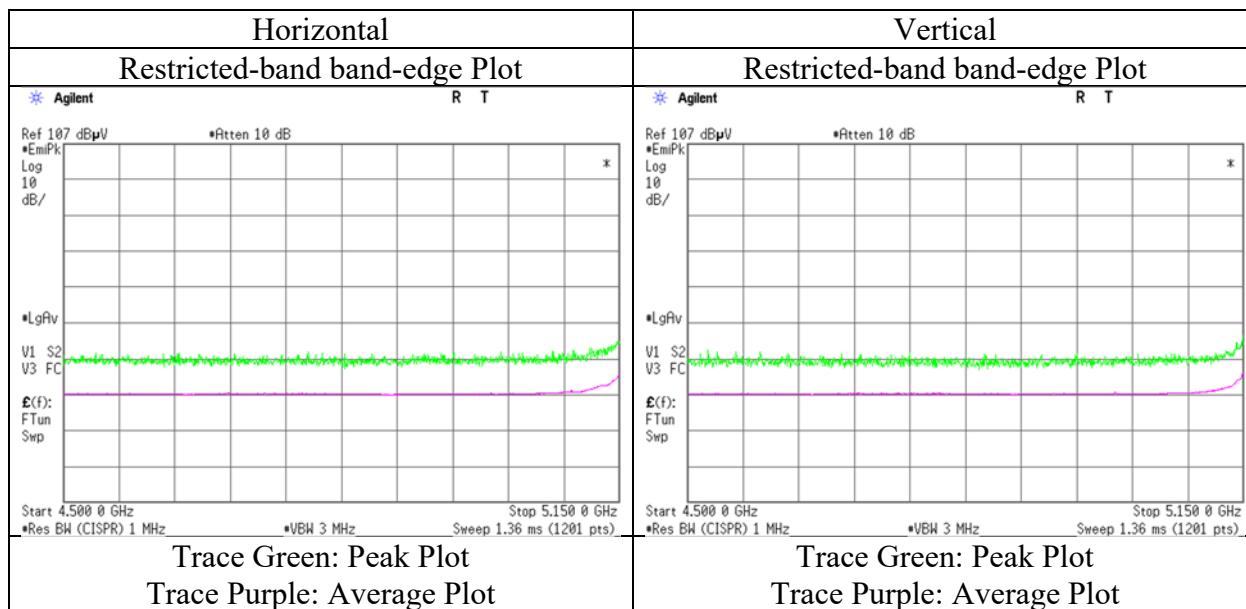
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	58.73	32.26	16.25	43.04	2.04	66.24	73.9	7.6	170	143	-
Hori.	5150.000	AV	42.67	32.26	16.25	43.04	2.04	50.18	53.9	3.7	170	143	VBW: 100 Hz
Vert.	5150.000	PK	59.15	32.26	16.25	43.04	2.04	66.66	73.9	7.2	183	177	-
Vert.	5150.000	AV	43.21	32.26	16.25	43.04	2.04	50.72	53.9	3.1	183	177	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5310 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

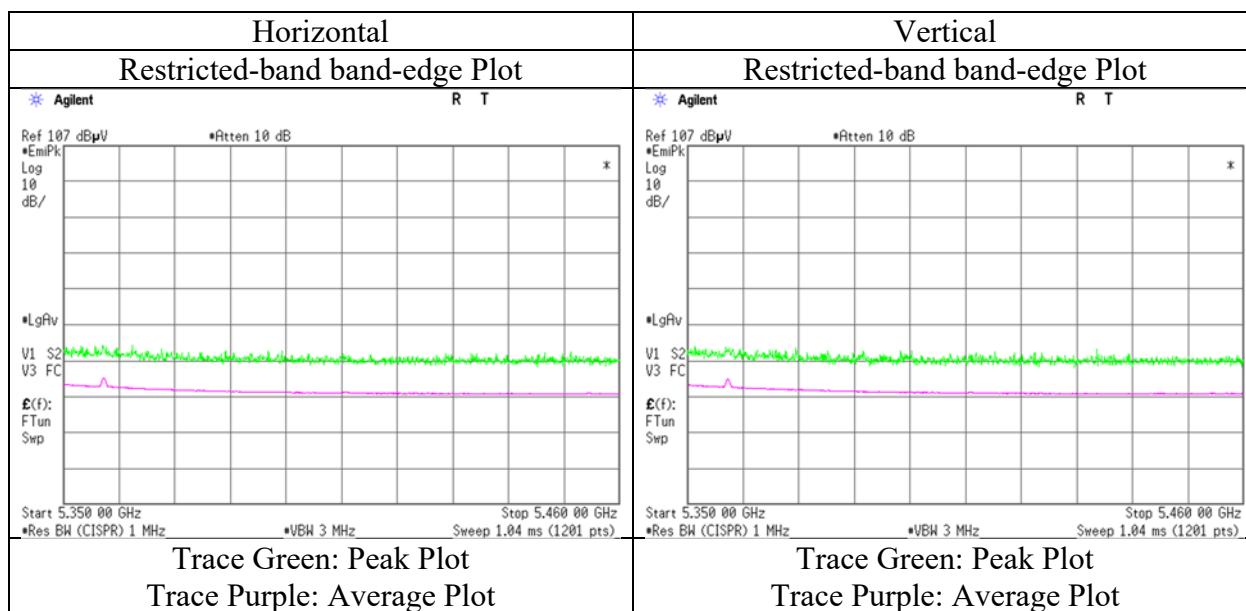
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hor.	5350.000	PK	58.48	31.98	16.29	43.21	2.04	65.58	73.9	8.3	154	142	-
Hor.	5357.992	PK	56.53	32.00	16.29	43.21	2.04	63.65	73.9	10.2	154	142	-
Hor.	5350.000	AV	39.92	31.98	16.29	43.21	2.04	47.02	53.9	6.8	154	142	VBW: 100 Hz
Hor.	5357.992	AV	42.20	32.00	16.29	43.21	2.04	49.32	53.9	4.5	154	142	VBW: 100 Hz
Vert.	5350.000	PK	58.87	31.98	16.29	43.21	2.04	65.97	73.9	7.9	104	177	-
Vert.	5358.022	PK	56.89	32.00	16.29	43.21	2.04	64.01	73.9	9.8	104	177	-
Vert.	5350.000	AV	39.88	31.98	16.29	43.21	2.04	46.98	53.9	6.9	104	177	VBW: 100 Hz
Vert.	5358.022	AV	41.72	32.00	16.29	43.21	2.04	48.84	53.9	5.0	104	177	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 12, 2019
 Temperature / Humidity 21 deg. C / 58 % RH
 Engineer Takahiro Suzuki
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5190 MHz, with 3DH5 hopping (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

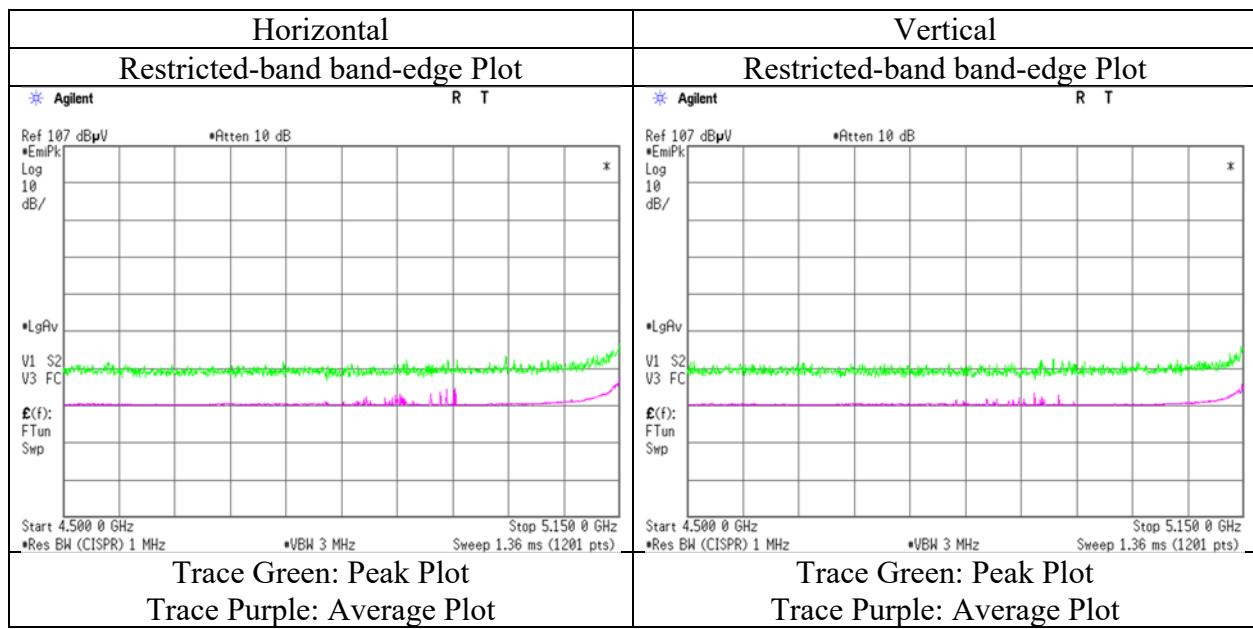
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	59.94	32.26	16.25	43.04	2.04	67.45	73.9	6.4	100	351	-
Hori.	5150.000	AV	43.82	32.26	16.25	43.04	2.04	51.33	53.9	2.5	100	351	VBW: 100 Hz
Vert.	5150.000	PK	58.66	32.26	16.25	43.04	2.04	66.17	73.9	7.7	182	1	-
Vert.	5150.000	AV	42.98	32.26	16.25	43.04	2.04	50.49	53.9	3.4	182	1	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 12, 2019
 Temperature / Humidity 21 deg. C / 58 % RH
 Engineer Takahiro Suzuki
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5310 MHz, with 3DH5 hopping (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

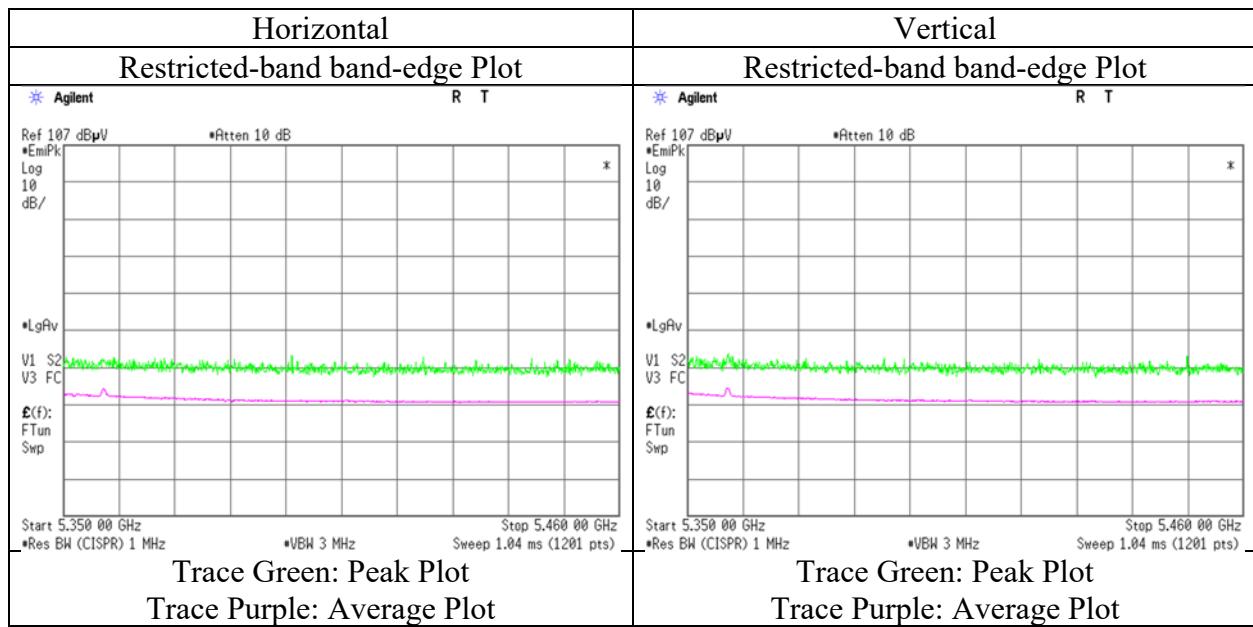
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	58.85	31.98	16.29	43.21	2.04	65.95	73.9	7.9	103	354	-
Hori.	5357.992	PK	56.61	32.00	16.29	43.21	2.04	63.73	73.9	10.1	103	354	-
Hori.	5350.000	AV	39.50	31.98	16.29	43.21	2.04	46.60	53.9	7.3	103	354	VBW: 100 Hz
Hori.	5357.992	AV	41.95	32.00	16.29	43.21	2.04	49.07	53.9	4.8	103	354	VBW: 100 Hz
Vert.	5350.000	PK	59.95	31.98	16.29	43.21	2.04	67.05	73.9	6.8	131	354	-
Vert.	5358.022	PK	54.19	32.00	16.29	43.21	2.04	61.31	73.9	12.5	131	354	-
Vert.	5350.000	AV	39.90	31.98	16.29	43.21	2.04	47.00	53.9	6.9	131	354	VBW: 100 Hz
Vert.	5358.022	AV	41.41	32.00	16.29	43.21	2.04	48.53	53.9	5.3	131	354	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 5, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	25 deg. C / 65 % RH	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Takahiro Kawakami	Kazuya Noda	Takahiro Kawakami	Toshinori Yamada
	(1 GHz – 6.4 GHz)	(6.4 G – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-80 (MIMO), 5210 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	56.70	32.26	16.25	43.04	2.15	64.32	73.9	9.5	103	342	-
Hori.	15630.000	PK	48.28	39.17	11.74	40.69	-9.54	48.96	73.9	24.9	251	221	-
Hori.	5150.000	AV	43.72	32.26	16.25	43.04	2.15	51.34	53.9	2.5	103	342	VBW: 270 Hz
Hori.	15630.000	AV	36.45	39.17	11.74	40.69	-9.54	37.13	53.9	16.7	251	221	VBW: 270 Hz
Vert.	5150.000	PK	55.73	32.26	16.25	43.04	2.15	63.35	73.9	10.5	163	327	-
Vert.	15630.000	PK	48.49	39.17	11.74	40.69	-9.54	49.17	73.9	24.7	233	224	-
Vert.	5150.000	AV	43.74	32.26	16.25	43.04	2.15	51.36	53.9	2.5	163	327	VBW: 270 Hz
Vert.	15630.000	AV	36.42	39.17	11.74	40.69	-9.54	37.10	53.9	16.8	233	224	VBW: 270 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)/below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10420.000	PK	47.77	39.45	9.18	42.68	2.15	55.87	-39.35	-27.0	12.4	148	285	-
Vert.	10420.000	PK	48.79	39.45	9.18	42.68	2.15	56.89	-38.33	-27.0	11.3	139	0	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)/below 18 GHz)) - Gain(Amplifier) + Distance factor

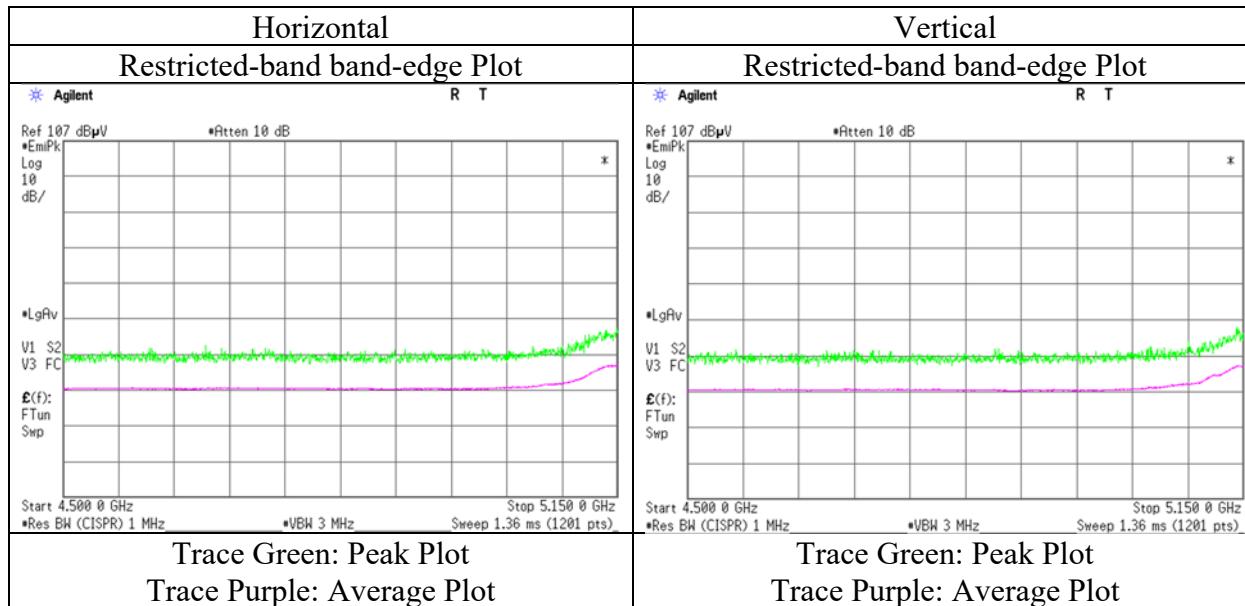
Result(EIRP[dBm])= $10^6 \cdot \log(10 \cdot \text{Electric Field Strength [dBuV/m]} / 20) \cdot 10^{-6} \cdot \text{Distance}_{3[\text{m}]}^2 \cdot 2 / 30 \cdot 10^3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

UL Japan, Inc.

Shonan EMC Lab.

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

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Radiated Spurious Emission

Report No.	13004393S-E-R2	Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3	3	
Date	September 5, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019		
Temperature / Humidity	25 deg. C / 65 % RH	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH		
Engineer	Kazuya Noda (1 GHz – 6.4 GHz)	Takahiro Kawakami (6.4 G – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshihori Yamada (26.5 GHz – 40 GHz)		
Mode	Tx, 11ac-80 (MIMO), 5290 MHz, (EUT serial no. A-7)						

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	52.67	31.98	16.29	43.21	2.15	59.88	73.9	14.0	114	339	-
Hori.	15870.000	PK	47.33	38.35	11.71	40.44	-9.54	47.41	73.9	26.4	214	236	-
Hori.	5350.000	AV	39.31	31.98	16.29	43.21	2.15	46.52	53.9	7.3	114	339	VBW: 270 Hz
Hori.	15870.000	AV	35.84	38.35	11.71	40.44	-9.54	35.92	53.9	17.9	214	236	VBW: 270 Hz
Vert.	5350.000	PK	52.94	31.98	16.29	43.21	2.15	60.15	73.9	13.7	176	334	-
Vert.	15870.000	PK	47.41	38.35	11.71	40.44	-9.54	47.49	73.9	26.4	199	224	-
Vert.	5350.000	AV	39.22	31.98	16.29	43.21	2.15	46.43	53.9	7.4	176	334	VBW: 270 Hz
Vert.	15870.000	AV	36.04	38.35	11.71	40.44	-9.54	36.12	53.9	17.7	199	224	VBW: 270 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amp) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10580.000	PK	47.60	39.65	9.23	42.67	2.15	55.96	-39.26	-27.0	12.3	100	0	-
Vert.	10580.000	PK	47.65	39.65	9.23	42.67	2.15	56.01	-39.21	-27.0	12.2	100	0	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amp) + Distance factor

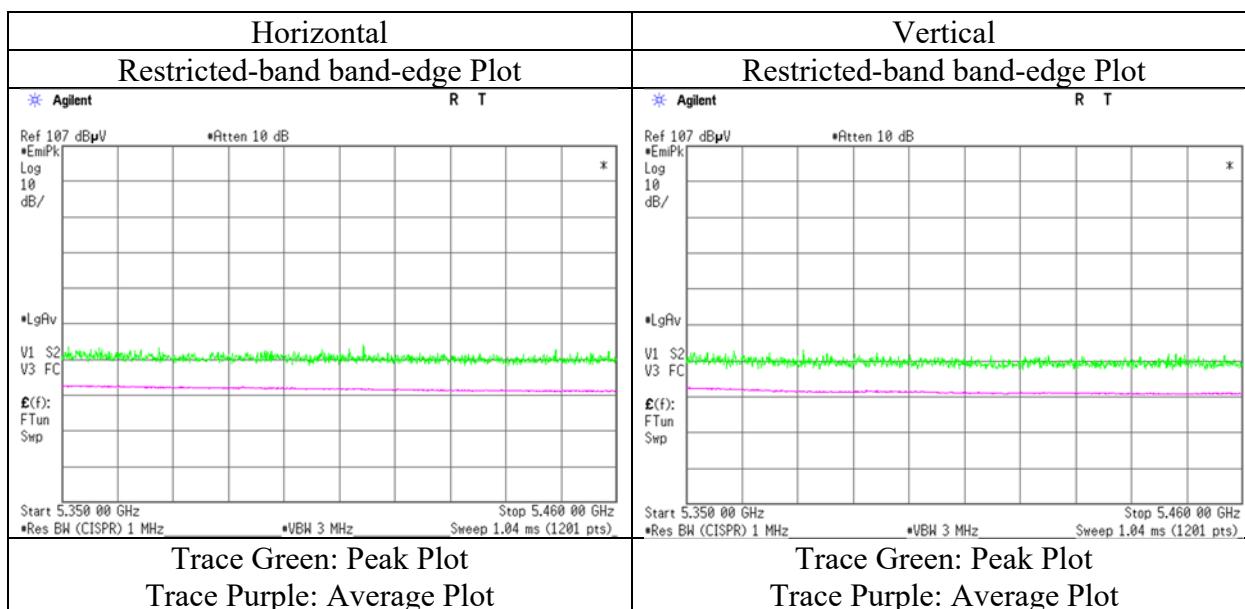
Result(EIRP[dBm])= $10^6 \cdot \log((10^{\text{EIRP}/10} \cdot \text{EIRP}) \cdot (10^{\text{Gain}/10} \cdot \text{Gain}) \cdot (10^{\text{Loss}/10} \cdot \text{Loss}))$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

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Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 5, 2019
 Temperature / Humidity 25 deg. C / 65 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5210 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

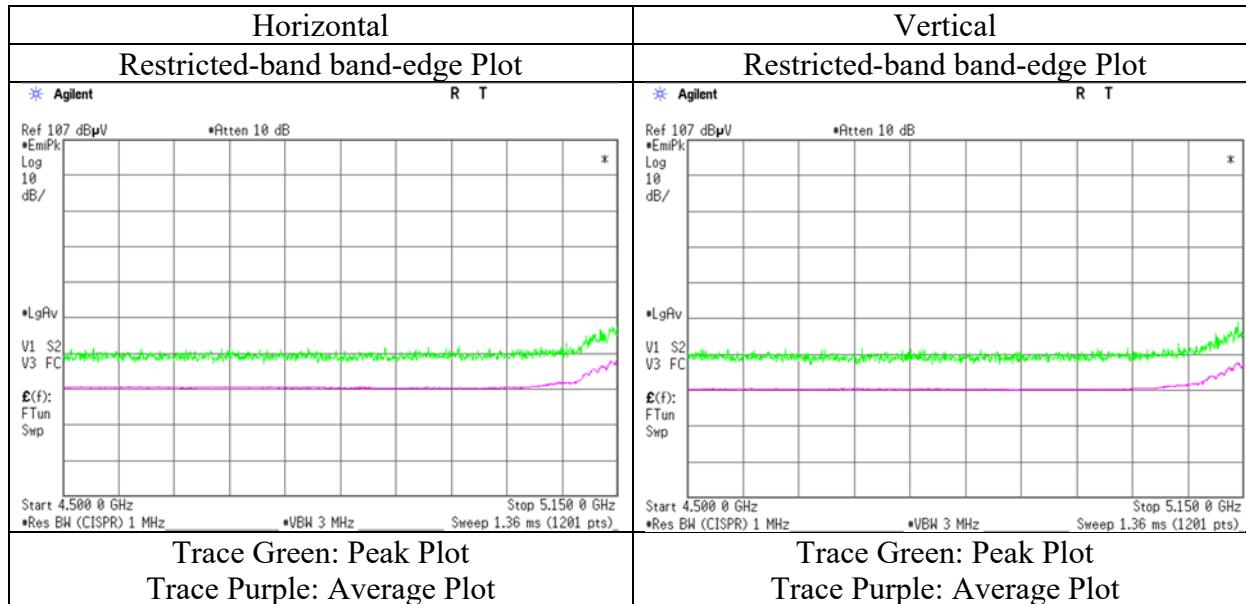
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5143.000	PK	56.20	32.27	16.25	43.04	2.15	63.83	73.9	10.0	197	345	-
Hori.	5150.000	PK	58.20	32.26	16.25	43.04	2.15	65.82	73.9	8.0	197	345	
Hori.	5143.000	AV	44.34	32.27	16.25	43.04	2.15	51.97	53.9	1.9	197	345	VBW: 120 Hz
Hori.	5150.000	AV	45.05	32.26	16.25	43.04	2.15	52.67	53.9	1.2	197	345	VBW: 120 Hz
Vert.	5143.000	PK	56.33	32.27	16.25	43.04	2.15	63.96	73.9	9.9	220	337	-
Vert.	5150.000	PK	56.22	32.26	16.25	43.04	2.15	63.84	73.9	10.0	220	337	-
Vert.	5143.000	AV	44.34	32.27	16.25	43.04	2.15	51.97	53.9	1.9	220	337	VBW: 120 Hz
Vert.	5150.000	AV	43.94	32.26	16.25	43.04	2.15	51.56	53.9	2.3	220	337	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 5, 2019
 Temperature / Humidity 25 deg. C / 65 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5290 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

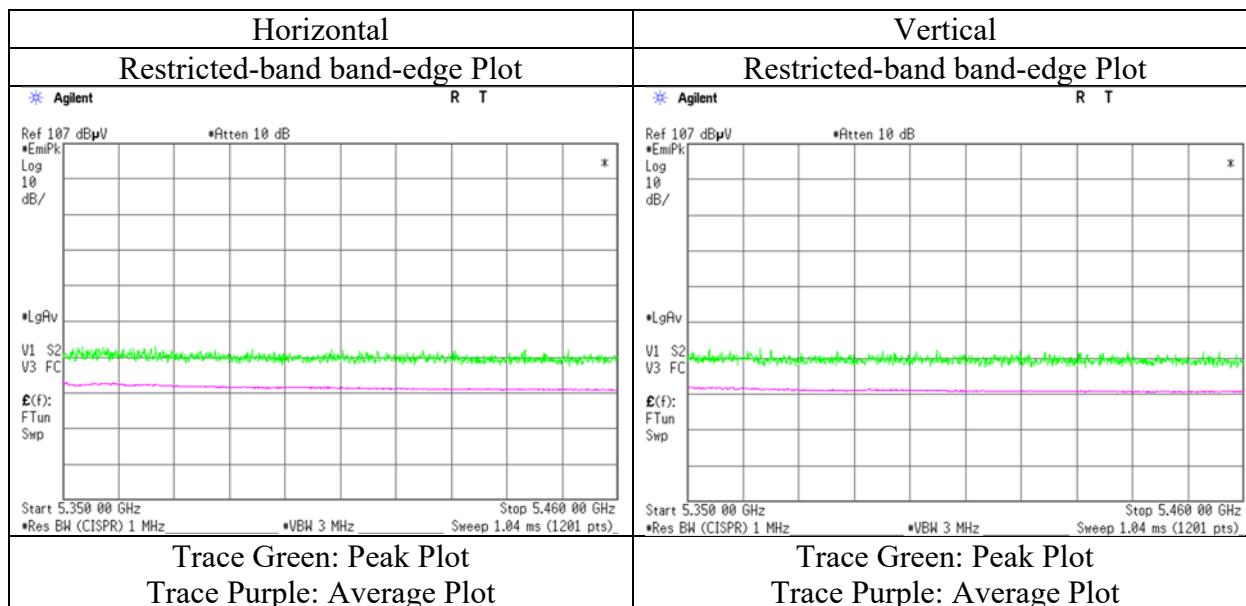
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	51.97	31.98	16.29	43.21	2.15	59.18	73.9	14.7	147	340	-
Hori.	5350.000	AV	39.45	31.98	16.29	43.21	2.15	46.66	53.9	7.2	147	340	VBW: 120 Hz
Vert.	5350.000	PK	50.37	31.98	16.29	43.21	2.15	57.58	73.9	16.3	127	335	-
Vert.	5350.000	AV	38.47	31.98	16.29	43.21	2.15	45.68	53.9	8.2	127	335	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5210 MHz, with 3DH5 hopping (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

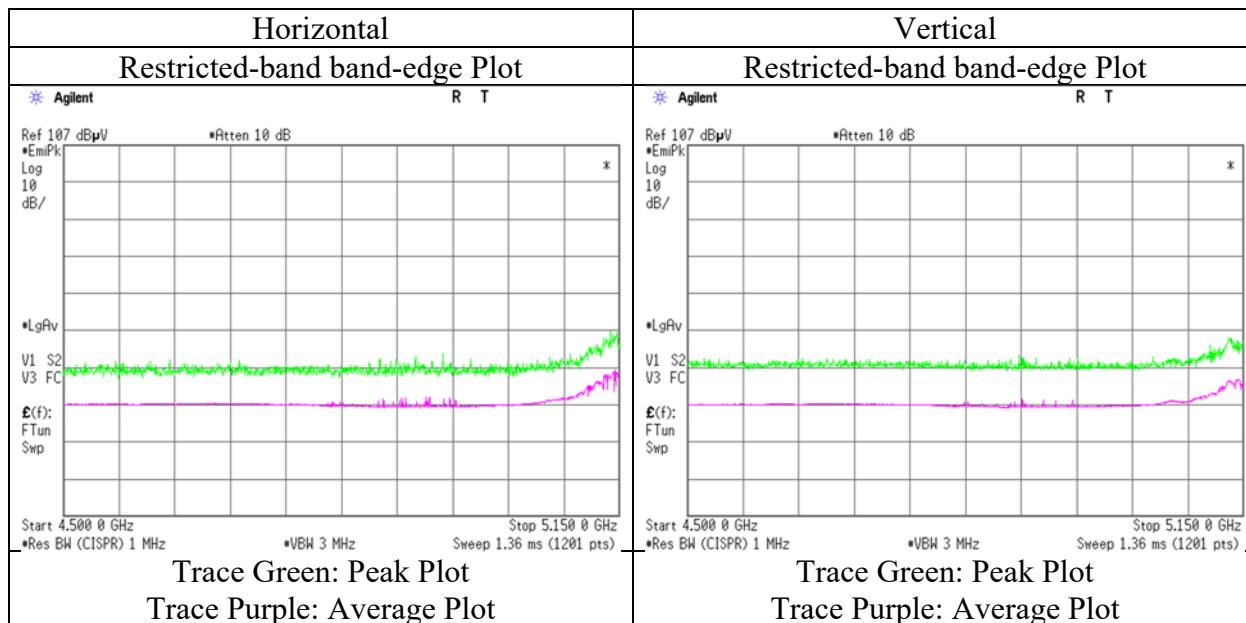
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5142.583	PK	58.50	32.27	16.34	43.04	2.14	66.21	73.9	7.6	189	341	-
Hori.	5150.000	PK	57.08	32.26	16.34	43.04	2.14	64.78	73.9	9.1	189	341	-
Hori.	5142.583	AV	45.05	32.27	16.34	43.04	2.14	52.76	53.9	1.1	189	341	VBW: 120 Hz
Hori.	5150.000	AV	44.21	32.26	16.34	43.04	2.14	51.91	53.9	1.9	189	341	VBW: 120 Hz
Vert.	5142.583	PK	55.99	32.27	16.34	43.04	2.14	63.70	73.9	10.2	227	339	-
Vert.	5150.000	PK	56.34	32.26	16.34	43.04	2.14	64.04	73.9	9.8	227	339	-
Vert.	5142.583	AV	43.81	32.27	16.34	43.04	2.14	51.52	53.9	2.3	227	339	VBW: 120 Hz
Vert.	5150.000	AV	43.06	32.26	16.34	43.04	2.14	50.76	53.9	3.1	227	339	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5290 MHz, with 3DH5 hopping (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

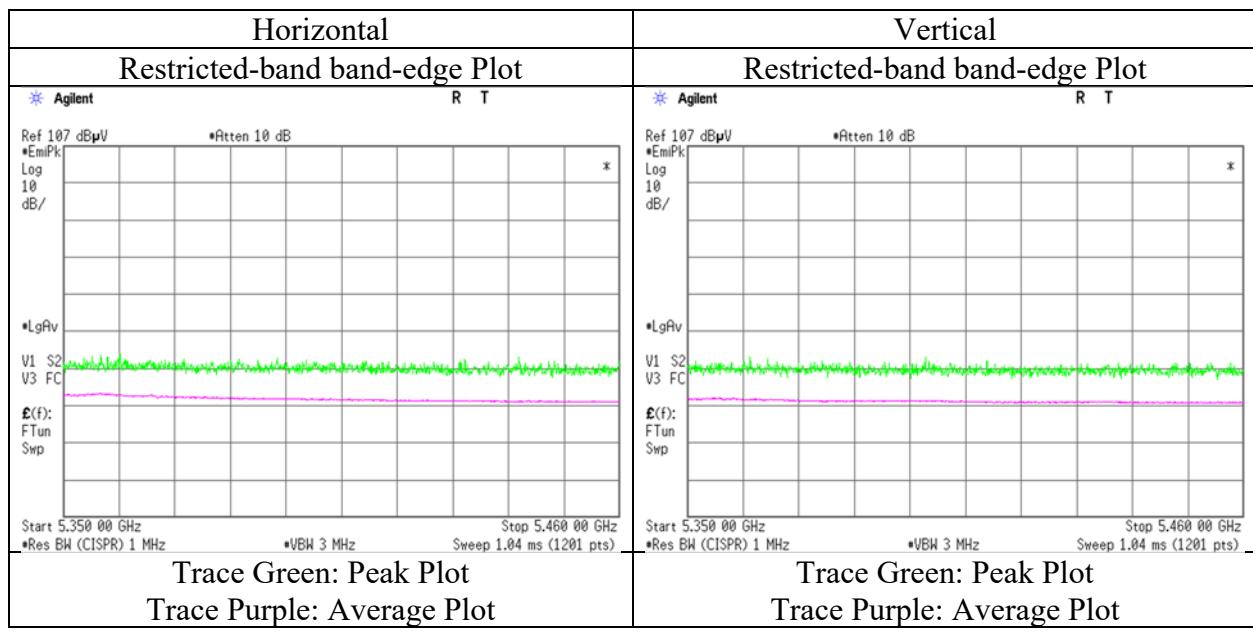
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	52.64	31.98	16.41	43.21	2.14	59.96	73.9	13.9	145	329	-
Hori.	5350.000	AV	39.76	31.98	16.41	43.21	2.14	47.08	53.9	6.8	145	329	VBW: 120 Hz
Vert.	5350.000	PK	50.84	31.98	16.41	43.21	2.14	58.16	73.9	15.7	231	340	-
Vert.	5350.000	AV	38.40	31.98	16.41	43.21	2.14	45.72	53.9	8.1	231	340	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2									
Test place	Shonan EMC Lab.									
Semi Anechoic Chamber (No.)	3	3	3	3	3	3	3	3	3	3
Date	September 11, 2019		September 13, 2019		September 14, 2019		September 15, 2019			
Temperature / Humidity	24 deg. C / 51 % RH		25 deg.C / 50 %RH		25 deg.C / 51 %RH		24 deg.C / 63 %RH			
Engineer	Kazuya Noda		Hiromasa Sato		Toshinori Yamada		Takahiro Kawakami			
	(1 GHz – 13 GHz)		(13 GHz – 18 GHz)		(18 GHz – 26.5 GHz)		(26.5 GHz – 40 GHz)			
Mode	Tx, 11ac-80 (MIMO), 5210 MHz, (EUT serial no. B-5)									

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15630.000	PK	47.80	39.17	11.74	40.69	-9.54	48.48	73.9	25.4	167	236	-
Hori.	15630.000	AV	36.09	39.17	11.74	40.69	-9.54	36.77	53.9	17.1	167	236	VBW: 270 Hz
Vert.	15630.000	PK	47.35	39.17	11.74	40.69	-9.54	48.03	73.9	25.8	178	203	-
Vert.	15630.000	AV	36.02	39.17	11.74	40.69	-9.54	36.70	53.9	17.2	178	203	VBW: 270 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10420.000	PK	48.47	39.45	9.18	42.68	2.04	56.46	-38.76	-27.0	11.8	127	345	-
Vert.	10420.000	PK	48.57	39.45	9.18	42.68	2.04	56.56	-38.66	-27.0	11.7	117	91	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log(\text{Electric Field Strength [dBuV/m]}/20) * 10^{(-6)} * \text{Distance:3[m]}^2 / 30} * 10^3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2						
Test place	Shonan EMC Lab.						
Semi Anechoic Chamber (No.)	3	3	3	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 14, 2019	September 15, 2019	September 15, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH	24 deg.C / 63 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Toshinori Yamada	Takahiro Kawakami	Takahiro Kawakami	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)	(26.5 GHz – 40 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-80 (MIMO), 5290 MHz, (EUT serial no. B-5)						

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15870.000	PK	46.90	38.35	11.71	40.44	-9.54	46.98	73.9	26.9	173	237	-
Hori.	15870.000	AV	36.27	38.35	11.71	40.44	-9.54	36.35	53.9	17.5	173	237	VBW: 270 Hz
Vert.	15870.000	PK	46.97	38.35	11.71	40.44	-9.54	47.05	73.9	26.8	195	255	-
Vert.	15870.000	AV	36.28	38.35	11.71	40.44	-9.54	36.36	53.9	17.5	195	255	VBW: 270 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10580.000	PK	48.72	39.65	9.23	42.67	2.04	56.97	-38.25	-27.0	11.3	171	342	-
Vert.	10580.000	PK	48.20	39.65	9.23	42.67	2.04	56.45	-38.77	-27.0	11.8	113	107	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log(\frac{10}{18})} \cdot (\frac{10}{18}) \cdot (-6) \cdot \log(\frac{3}{30}) \cdot 10^3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 5, 2019
 Temperature / Humidity 25 deg. C / 65 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5210 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

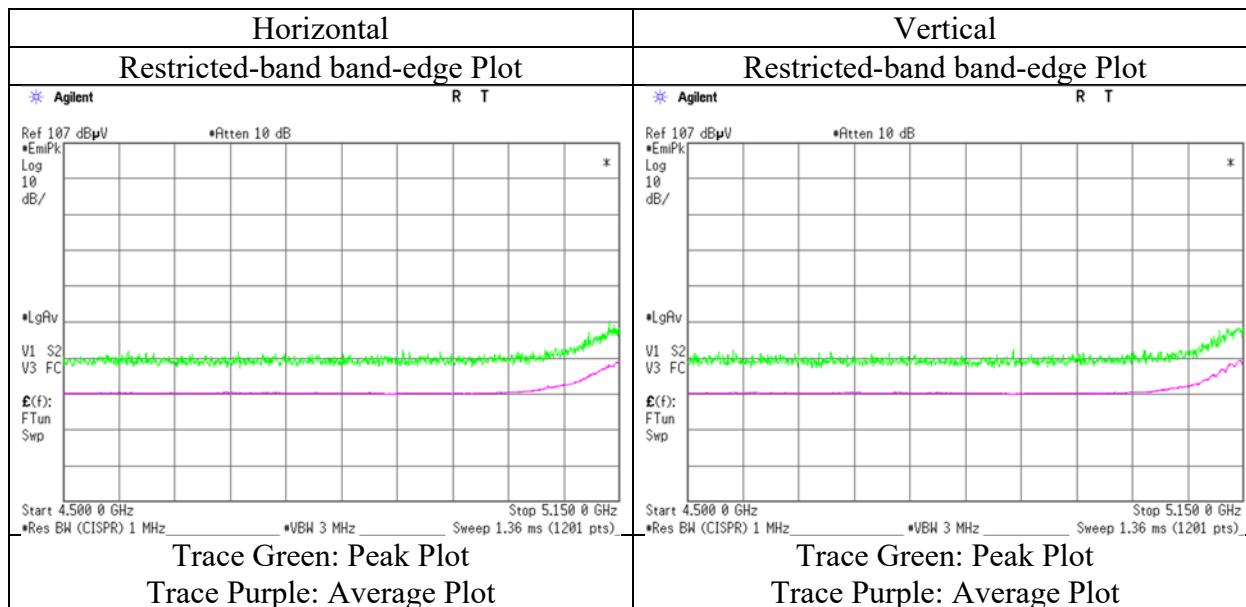
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5144.500	PK	57.18	32.27	16.25	43.04	2.15	64.81	73.9	9.0	109	173	-
	5150.000	PK	57.46	32.26	16.25	43.04	2.15	65.08	73.9	8.8	109	173	-
Hori.	5144.500	AV	45.08	32.27	16.25	43.04	2.15	52.71	53.9	1.1	109	173	VBW: 120 Hz
	5150.000	AV	45.25	32.26	16.25	43.04	2.15	52.87	53.9	1.0	109	173	VBW: 120 Hz
Vert.	5144.500	PK	58.81	32.27	16.25	43.04	2.15	66.44	73.9	7.4	183	185	-
	5150.000	PK	57.41	32.26	16.25	43.04	2.15	65.03	73.9	8.8	183	185	-
Vert.	5144.500	AV	45.53	32.27	16.25	43.04	2.15	53.16	53.9	0.7	183	185	VBW: 120 Hz
	5150.000	AV	44.70	32.26	16.25	43.04	2.15	52.32	53.9	1.5	183	185	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 5, 2019
 Temperature / Humidity 25 deg. C / 65 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5290 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

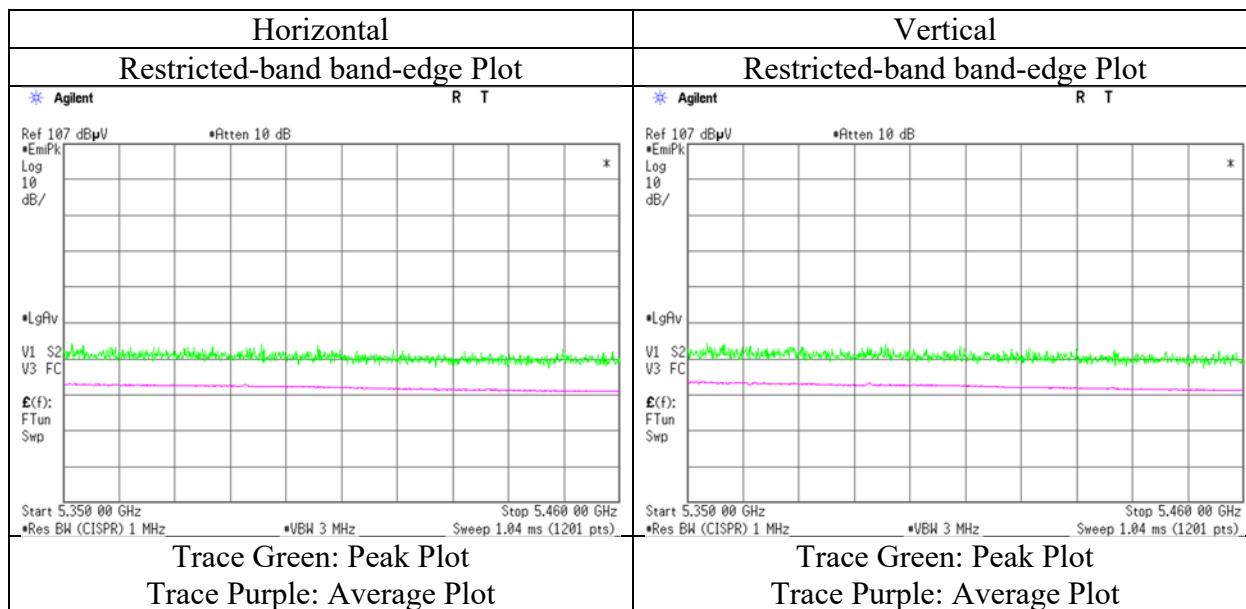
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	51.91	31.98	16.29	43.21	2.15	59.12	73.9	14.7	143	139	-
Hori.	5350.000	AV	39.70	31.98	16.29	43.21	2.15	46.91	53.9	6.9	143	139	VBW: 120 Hz
Vert.	5350.000	PK	54.31	31.98	16.29	43.21	2.15	61.52	73.9	12.3	238	198	-
Vert.	5350.000	AV	40.17	31.98	16.29	43.21	2.15	47.38	53.9	6.5	238	198	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 21, 2019
 Temperature / Humidity 25 deg. C / 52 % RH
 Engineer Takahiro Kawakami
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5210 MHz, with 3DH5 hopping (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

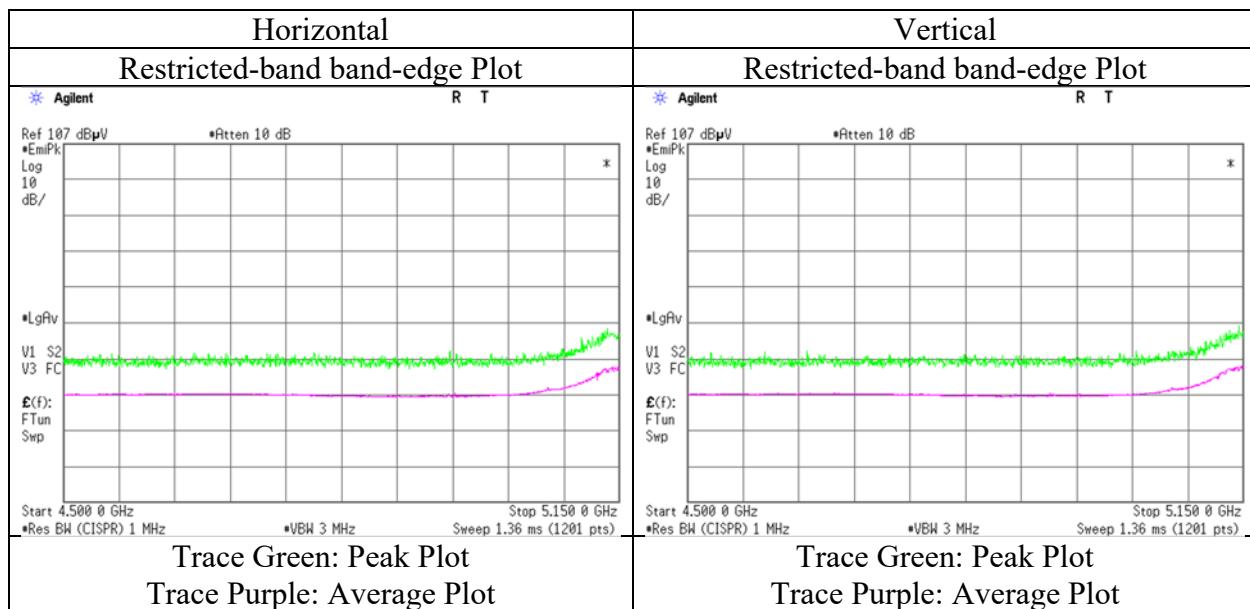
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	57.30	32.26	16.34	43.04	2.04	64.90	73.9	9.0	165	174-	
Hori.	5150.000	AV	44.76	32.26	16.34	43.04	2.04	52.36	53.9	1.5	165	174	VBW: 120 Hz
Vert.	5150.000	PK	55.89	32.26	16.34	43.04	2.04	63.49	73.9	10.4	295	202-	
Vert.	5150.000	AV	43.56	32.26	16.34	43.04	2.04	51.16	53.9	2.7	295	202	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 21, 2019
 Temperature / Humidity 25 deg. C / 52 % RH
 Engineer Takahiro Kawakami
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5290 MHz, with 3DH5 hopping (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

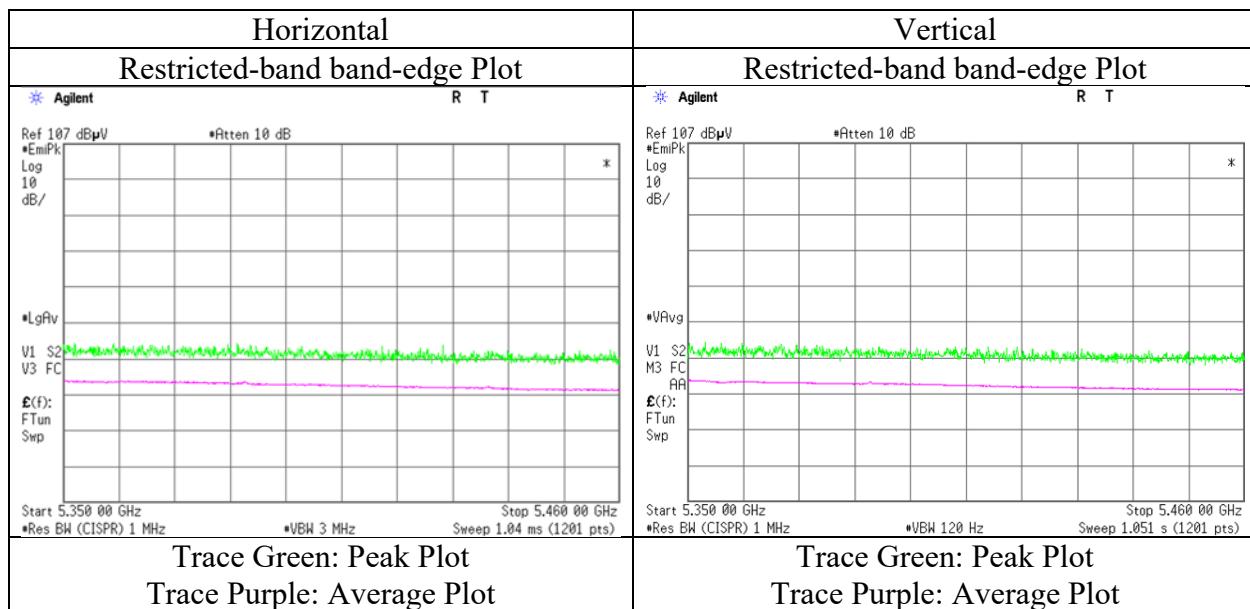
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	51.28	31.98	16.41	43.21	2.04	58.50	73.9	15.4	172	176	-
Hori.	5350.000	AV	40.42	31.98	16.41	43.21	2.04	47.64	53.9	6.2	172	176	VBW: 120 Hz
Vert.	5350.000	PK	54.15	31.98	16.41	43.21	2.04	61.37	73.9	12.5	264	178	-
Vert.	5350.000	AV	40.25	31.98	16.41	43.21	2.04	47.47	53.9	6.4	264	178	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 6, 2019	September 10, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 61 % RH	23 deg.C / 55 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Makoto Hosaka (1 GHz – 6.4 GHz)	Kazuya Noda (6.4 GHz – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshinori Yamada (26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5500 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	50.81	32.32	16.32	43.30	2.15	58.30	73.9	15.6	125	344	-
Hori.	11000.000	PK	48.89	40.38	9.36	42.70	2.15	58.08	73.9	15.8	155	88	-
Hori.	5460.000	AV	38.81	32.32	16.32	43.30	2.15	46.30	53.9	7.6	125	344	VBW: 1 kHz
Hori.	11000.000	AV	37.55	40.38	9.36	42.70	2.15	46.74	53.9	7.1	155	88	VBW: 1 kHz
Vert.	5460.000	PK	50.03	32.32	16.32	43.30	2.15	57.52	73.9	16.3	108	256	-
Vert.	11000.000	PK	48.78	40.38	9.36	42.70	2.15	57.97	73.9	15.9	229	145	-
Vert.	5460.000	AV	38.53	32.32	16.32	43.30	2.15	46.02	53.9	7.8	108	256	VBW: 1 kHz
Vert.	11000.000	AV	37.58	40.38	9.36	42.70	2.15	46.77	53.9	7.1	229	145	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log(3.84 m / 3.0 m) = 2.15 dB

13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	55.47	32.34	16.33	43.31	2.15	62.98	-32.24	-27.0	5.2	125	344	-
Hori.	16500.000	PK	46.65	39.24	12.48	40.44	-9.54	48.39	-46.83	-27.0	19.8	268	91	-
Vert.	5470.000	PK	51.74	32.34	16.33	43.31	2.15	59.25	-35.97	-27.0	9.0	108	256	-
Vert.	16500.000	PK	46.81	39.24	12.48	40.44	-9.54	48.55	-46.67	-27.0	19.7	224	165	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

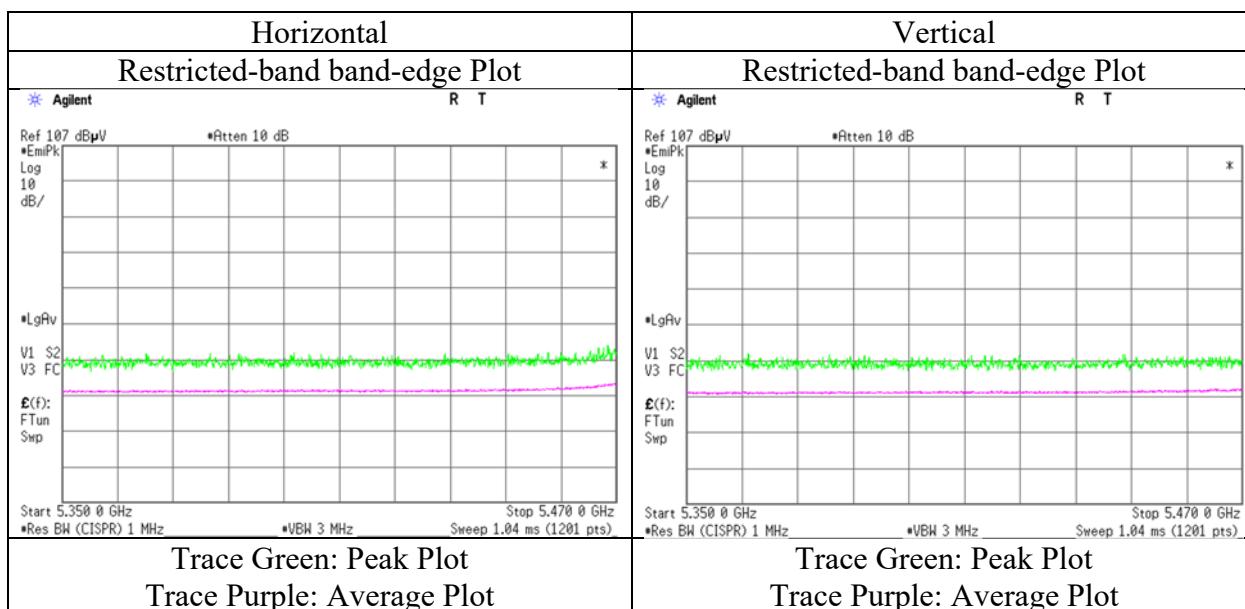
Result(EIRP[dBm])=10*LOG (({10^(Electric Field Strength [dBuV/m] / 20)} * 10^(-6) * Distance[3[m]] ^ 2) / 30) * 10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log(3.84 m / 3.0 m) = 2.15 dB

13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.54 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

UL Japan, Inc.

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Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 11, 2019	September 10, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	22 deg.C / 53 %RH	23 deg.C / 55 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Takahiro Kawakami (1 GHz – 6.4 GHz)	Kazuya Noda (6.4 GHz – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshinori Yamada (26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5580 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11160.000	PK	48.79	39.92	9.53	42.67	2.15	57.72	73.9	16.1	111	114	-
Hori.	11160.000	AV	37.56	39.92	9.53	42.67	2.15	46.49	53.9	7.4	111	114	VBW: 1 kHz
Vert.	11160.000	PK	48.83	39.92	9.53	42.67	2.15	57.76	73.9	16.1	147	144	-
Vert.	11160.000	AV	37.85	39.92	9.53	42.67	2.15	46.78	53.9	7.1	147	144	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Ampriifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16740.000	PK	46.87	39.38	12.43	40.40	-9.54	48.74	-46.48	-27.0	19.5	268	318	-
Vert.	16740.000	PK	46.70	39.38	12.43	40.40	-9.54	48.57	-46.65	-27.0	19.7	225	248	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Ampriifier) + Distance factor

Result(EIRP[dBm])= $10^{\log((\{10^{\log(\text{Electric Field Strength [dBuV/m]}/20)} * 10^{-6} * \text{Distance}[m])^2)/30)} * 10^{3}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

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Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 6, 2019	September 10, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 61 % RH	23 deg.C / 55 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Makoto Hosaka (1 GHz – 6.4 GHz)	Kazuya Noda (6.4 G – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshinori Yamada (26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5700 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11400.000	PK	49.26	39.95	9.78	42.62	2.15	58.52	73.9	15.4	119	82	-
Hori.	11400.000	AV	37.76	39.95	9.78	42.62	2.15	47.02	53.9	6.9	119	82	VBW: 1 kHz
Vert.	11400.000	PK	49.05	39.95	9.78	42.62	2.15	58.31	73.9	15.6	241	141	-
Vert.	11400.000	AV	37.67	39.95	9.78	42.62	2.15	46.93	53.9	7.0	241	141	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	54.88	32.68	16.55	43.33	2.15	62.93	-32.29	-27.0	5.3	112	329	-
Hori.	17100.000	PK	46.73	40.33	12.36	40.32	-9.54	49.56	-45.66	-27.0	18.7	253	123	-
Vert.	5725.000	PK	53.43	32.68	16.55	43.33	2.15	61.48	-33.74	-27.0	6.7	105	253	-
Vert.	17100.000	PK	46.19	40.33	12.36	40.32	-9.54	49.02	-46.20	-27.0	19.2	215	359	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

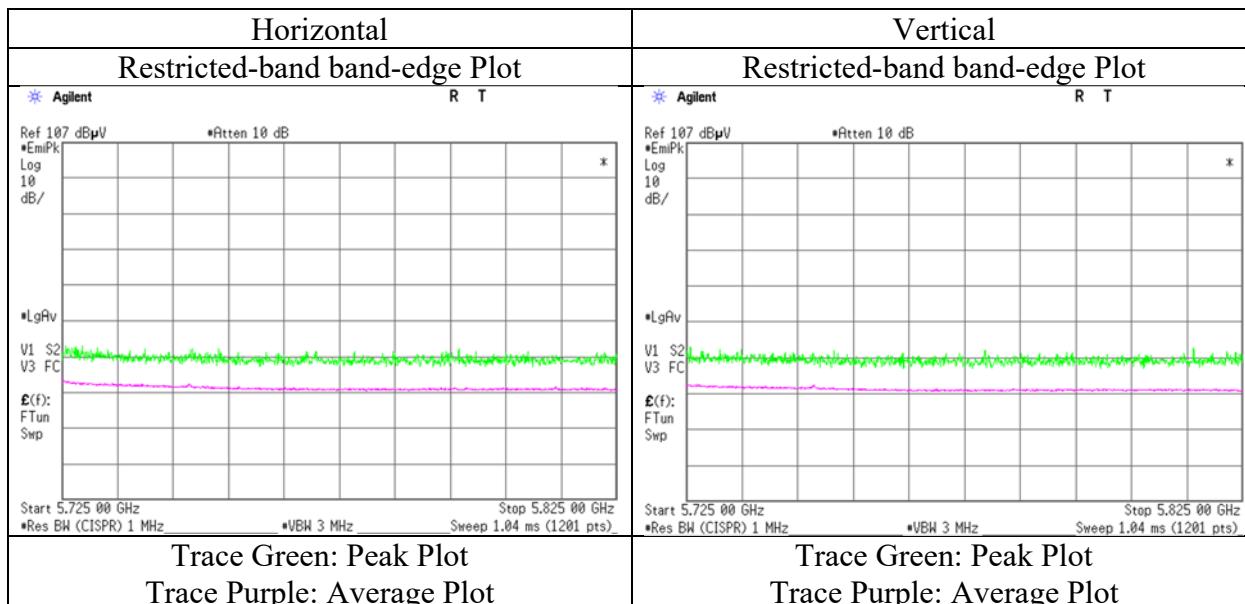
Result(EIRP[dBm])= $10^{\log(\frac{10^{\frac{1}{10}(\text{Electric Field Strength [dBuV/m]} / 20)} * 10^{(-6)} * \text{Distance:3[m]}}{30}) * 10^3)}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

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Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5500 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	50.31	32.32	16.32	43.30	2.15	57.80	73.9	16.1	166	-	
Hori.	5460.000	AV	38.33	32.32	16.32	43.30	2.15	45.82	53.9	8.0	166	-	VBW: 510Hz
Vert.	5460.000	PK	50.07	32.32	16.32	43.30	2.15	57.56	73.9	16.3	109	-	
Vert.	5460.000	AV	38.09	32.32	16.32	43.30	2.15	45.58	53.9	8.3	109	-	VBW: 510Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	55.04	32.34	16.33	43.31	2.15	62.55	-32.67	-32.67	-27.0	5.6	166	339	-
Vert.	5470.000	PK	52.25	32.34	16.33	43.31	2.15	59.76	-35.46	-35.46	-27.0	8.4	109	256	-

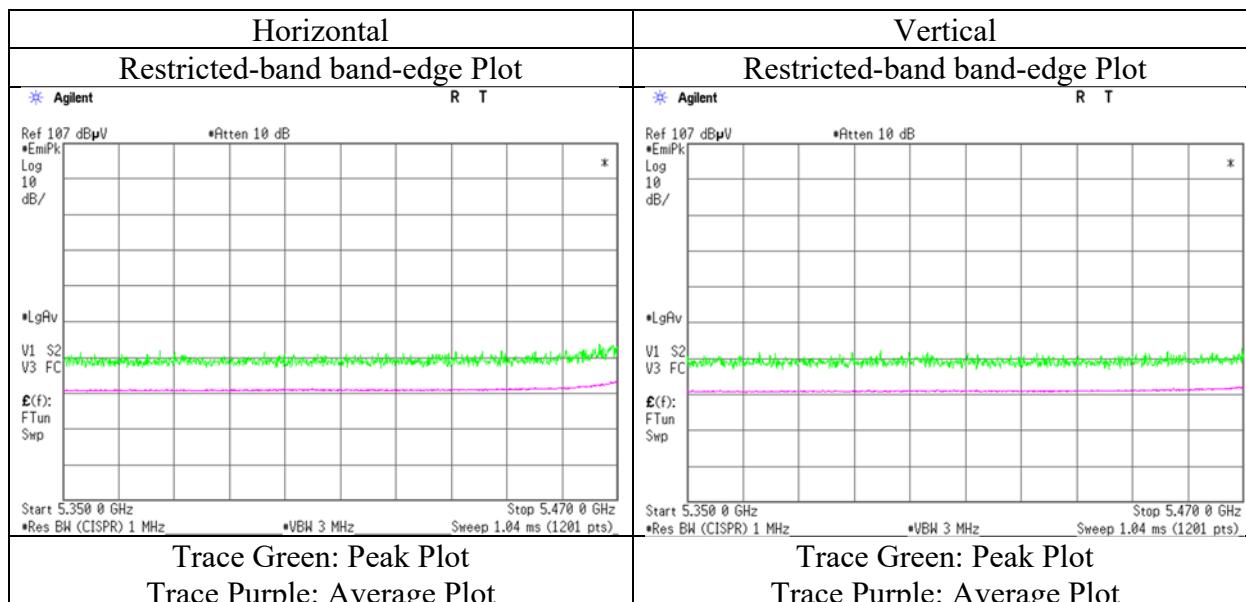
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^4 \cdot \text{LOG} \left(\left(10^4 \cdot \text{Electric Field Strength [dBuV/m]} / 20 \right) \cdot 10^{-6} \cdot \text{Distance[m]}^2 \right) / 30 \cdot 10^3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.3
Date	September 6, 2019
Temperature / Humidity	24 deg. C / 61 % RH
Engineer	Makoto Hosaka (1 GHz – 6.4 GHz)
Mode	Tx, 11n-20 (CDD), 5700 MHz, (EUT serial no. A-7)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	55.72	32.68	16.55	43.33	2.15	63.77	-31.45	-27.0	4.4	119	340	-
Vert.	5725.000	PK	53.43	32.68	16.55	43.33	2.15	61.48	-33.74	-27.0	6.7	148	271	-

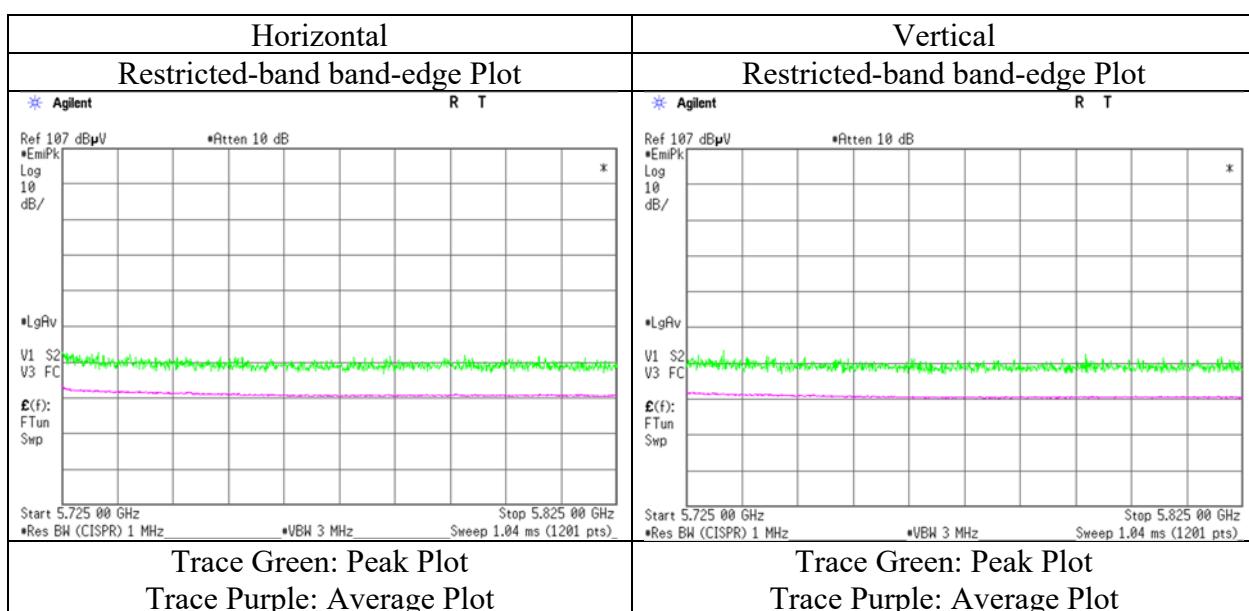
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance;3[m] } ^ 2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5500 MHz, with 3DH5 hopping (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	51.15	32.32	16.47	43.30	2.14	58.78	73.9	15.1	110	348	-
Hori.	5460.000	AV	38.54	32.32	16.47	43.30	2.14	46.17	53.9	7.7	110	348	VBW: 510 Hz
Vert.	5460.000	PK	50.63	32.32	16.47	43.30	2.14	58.26	73.9	15.6	101	332	-
Vert.	5460.000	AV	38.04	32.32	16.47	43.30	2.14	45.67	53.9	8.2	101	332	VBW: 510 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amp) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	56.46	32.34	16.47	43.31	2.14	64.10	-31.12	-27.0	4.1	110	348	-
Vert.	5470.000	PK	53.34	32.34	16.47	43.31	2.14	60.98	-34.24	-27.0	7.2	101	332	-

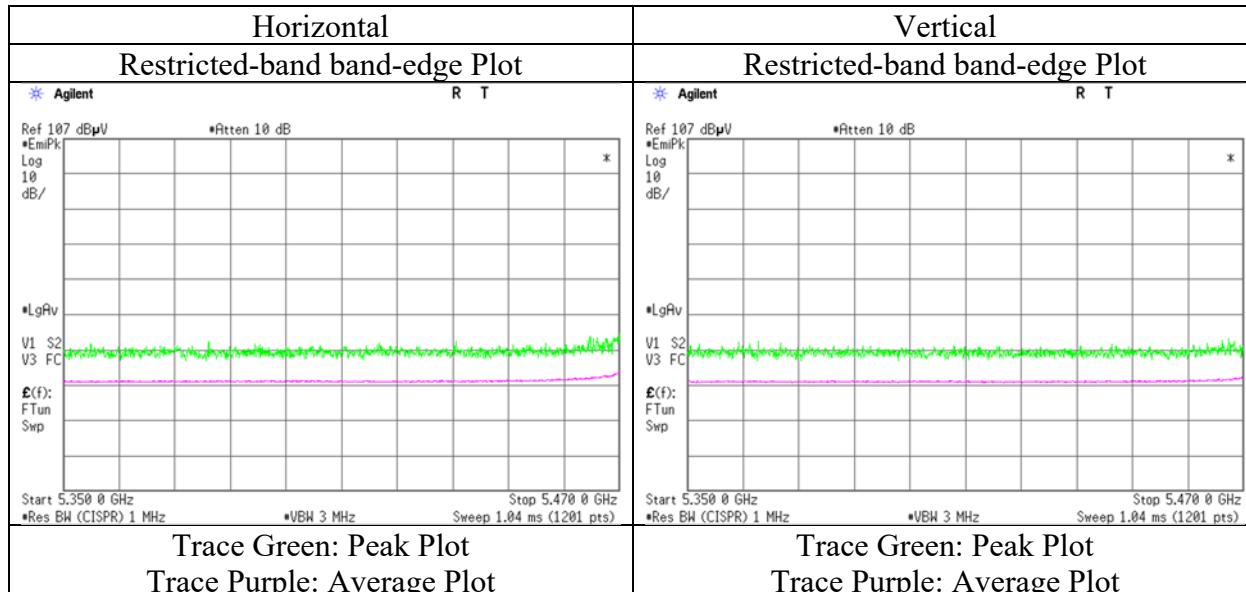
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amp) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance[m] }^2) / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5700 MHz, with 3DH5 hopping (EUT serial no. A-7)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	50.68	32.68	16.59	43.33	2.04	58.66	-36.56	-27.0	9.5	188	352	-
Vert.	5725.000	PK	50.91	32.68	16.59	43.33	2.04	58.89	-36.33	-27.0	9.3	231	220	-

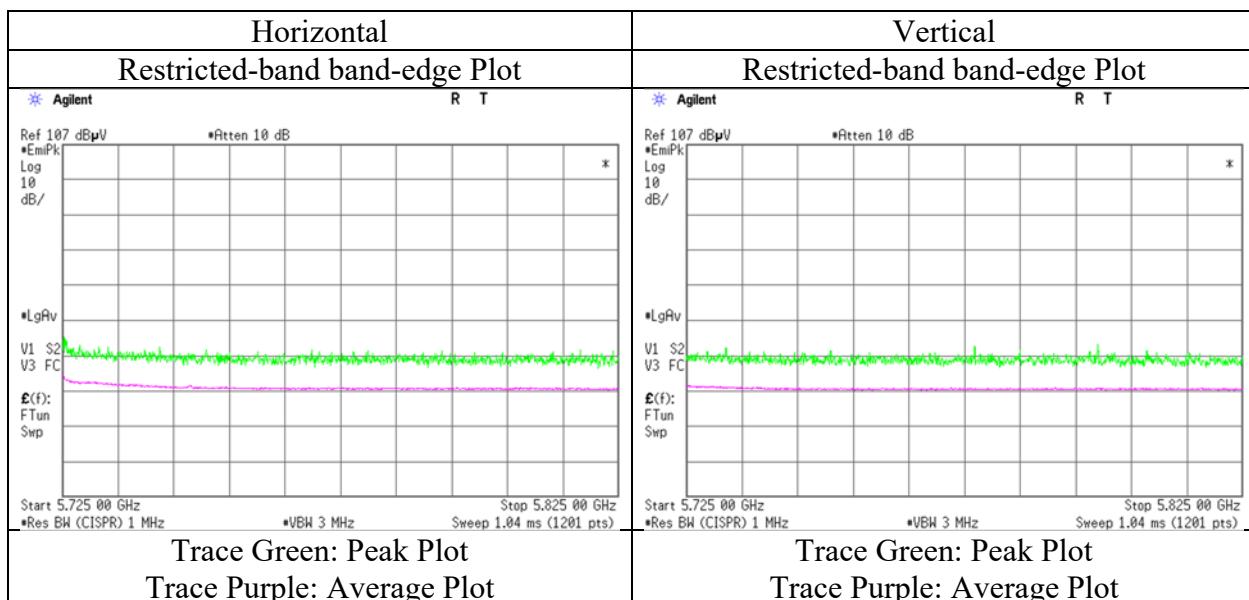
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance;3[m] }^2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5500 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11000.000	PK	48.82	40.38	9.36	42.70	2.04	57.90	73.9	16.0	277	338	-
Hori.	11000.000	AV	37.22	40.38	9.36	42.70	2.04	46.30	53.9	7.6	277	338	VBW: 1 kHz
Vert.	11000.000	PK	49.45	40.38	9.36	42.70	2.04	58.53	73.9	15.3	231	167	-
Vert.	11000.000	AV	37.55	40.38	9.36	42.70	2.04	46.63	53.9	7.2	231	167	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16500.000	PK	47.75	39.24	12.48	40.44	-9.54	49.49	-45.73	-27.0	18.7	205	278	-
Vert.	16500.000	PK	47.78	39.24	12.48	40.44	-9.54	49.52	-45.70	-27.0	18.7	182	211	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log((\{10^{\log(\text{Electric Field Strength [dBuV/m]} / 20)} * 10^{-6} * \text{Distance:3[m]}^2\})^2 / 30) * 10^3}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 20, 2019	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg.C / 58 %RH	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Takahiro Suzuki	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(30 MHz – 1 GHz)	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5580 MHz, (EUT serial no. B-5)				

(below 1GHz and above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	151.500	QP	35.66	14.73	7.85	32.12	0.00	26.12	43.5	17.3	225	116-	
Hori.	221.948	QP	43.19	11.02	8.22	32.04	0.00	30.39	46.0	15.6	160	358-	
Hori.	239.848	QP	43.68	11.31	8.35	32.02	0.00	31.32	46.0	14.6	121	1-	
Hori.	695.901	QP	36.04	19.28	10.35	31.87	0.00	33.80	46.0	12.2	155	13-	
Hori.	719.973	QP	34.02	19.75	10.44	31.83	0.00	32.38	46.0	13.6	118	181-	
Hori.	11160.000	PK	48.92	39.92	9.53	42.67	2.04	57.74	73.9	16.1	108	11-	
Hori.	11160.000	AV	37.41	39.92	9.53	42.67	2.04	46.23	53.9	7.6	108	11	VBW: 1 kHz
Vert.	94.363	QP	43.56	8.99	7.51	32.15	0.00	27.91	43.5	15.5	116	298-	
Vert.	157.143	QP	42.06	14.95	7.90	32.11	0.00	32.80	43.5	10.7	100	164-	
Vert.	695.942	QP	36.13	19.28	10.35	31.87	0.00	33.89	46.0	12.1	100	358-	
Vert.	707.923	QP	35.00	19.51	10.40	31.85	0.00	33.06	46.0	12.9	100	1-	
Vert.	927.300	QP	26.32	21.69	11.10	30.84	0.00	28.27	46.0	17.7	100	357-	
Vert.	11160.000	PK	49.10	39.92	9.53	42.67	2.04	57.92	73.9	15.9	186	206-	
Vert.	11160.000	AV	37.76	39.92	9.53	42.67	2.04	46.58	53.9	7.3	186	206	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16740.000	PK	46.64	39.38	12.43	40.40	-9.54	48.51	-46.71	-27.0	19.7	192	334-	
Vert.	16740.000	PK	46.95	39.38	12.43	40.40	-9.54	48.82	-46.40	-27.0	19.4	183	199-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor

Result(EIRP[dBm])=10*LOG (($\{10^4 \text{ (Electric Field Strength [dBuV/m] / 20)} * 10^{-6} * \text{Distance:3[m]}^2\} / 30$) * 10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

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Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5700 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11400.000	PK	48.54	39.95	9.78	42.62	2.04	57.69	73.9	16.2	195	301	-
Hori.	11400.000	AV	37.35	39.95	9.78	42.62	2.04	46.50	53.9	7.4	195	301	VBW: 1 kHz
Vert.	11400.000	PK	49.02	39.95	9.78	42.62	2.04	58.17	73.9	15.7	176	101	-
Vert.	11400.000	AV	37.52	39.95	9.78	42.62	2.04	46.67	53.9	7.2	176	101	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	17100.000	PK	47.29	40.33	12.36	40.32	-9.54	50.12	-45.10	-27.0	18.1	221	264	-
Vert.	17100.000	PK	47.01	40.33	12.36	40.32	-9.54	49.84	-45.38	-27.0	18.4	207	337	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log(\frac{10^{\frac{Reading}{Ant.Fac.}}}{10^{\frac{Loss}{Gain}}}) - 20 \log(\frac{Distance}{3}) + 10^{\log(10^{\frac{Margin}{2}})}}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 22, 2019
 Temperature / Humidity 24 deg. C / 59 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5500 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)														
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark	
Hori.	5460.000	PK	50.23	32.32	16.47	43.30	2.04	57.76	73.9	16.1	103	177	-	
Hori.	5460.000	AV	38.32	32.32	16.47	43.30	2.04	45.85	53.9	8.0	103	177	VBW: 510 Hz	
Vert.	5460.000	PK	51.65	32.32	16.47	43.30	2.04	59.18	73.9	14.7	272	174	-	
Vert.	5460.000	AV	39.39	32.32	16.47	43.30	2.04	46.92	53.9	6.9	272	174	VBW: 510 Hz	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)														
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	50.86	32.34	16.47	43.31	2.04	58.40	-36.82	-27.0	9.8	103	177	-
Vert.	5470.000	PK	52.76	32.34	16.47	43.31	2.04	60.30	-34.92	-27.0	7.9	272	174	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance[m] }^2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 22, 2019
 Temperature / Humidity 24 deg. C / 59 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5700 MHz, (EUT serial no. B-5)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	49.89	32.68	16.59	43.33	2.04	57.87	-37.35	-27.0	10.3	103	169	-
Vert.	5725.000	PK	50.53	32.68	16.59	43.33	2.04	58.51	-36.71	-27.0	9.7	182	182	-

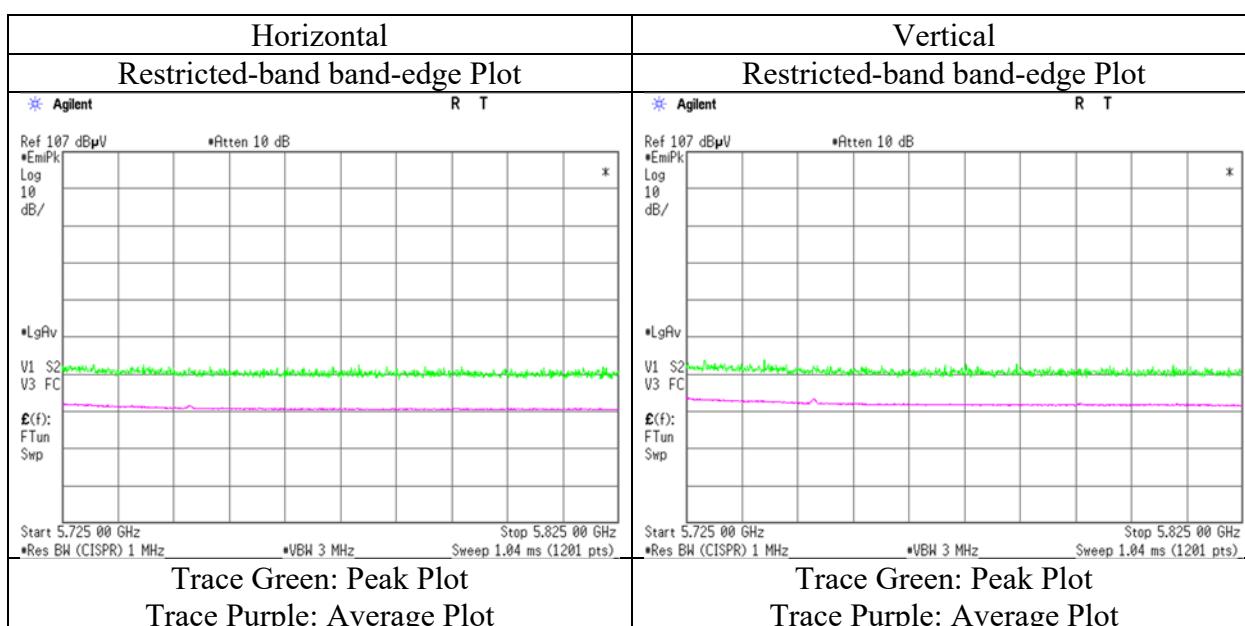
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance;3[m] }^2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 21, 2019
 Temperature / Humidity 25 deg. C / 52 % RH
 Engineer Takahiro Kawakami
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5500 MHz, with 3DH5 hopping (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)														
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark	
Hori.	5460.000	PK	50.58	32.32	16.47	43.30	2.04	58.11	73.9	15.7	153	172	-	
Hori.	5460.000	AV	38.81	32.32	16.47	43.30	2.04	46.34	53.9	7.5	153	172	VBW: 510 Hz	
Vert.	5460.000	PK	51.06	32.32	16.47	43.30	2.04	58.59	73.9	15.3	249	192	-	
Vert.	5460.000	AV	38.69	32.32	16.47	43.30	2.04	46.22	53.9	7.6	249	192	VBW: 510 Hz	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)														
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	51.40	32.34	16.47	43.31	2.04	58.94	-36.28	-27.0	9.2	153	172	-
Vert.	5470.000	PK	51.29	32.34	16.47	43.31	2.04	58.83	-36.39	-27.0	9.3	249	192	-

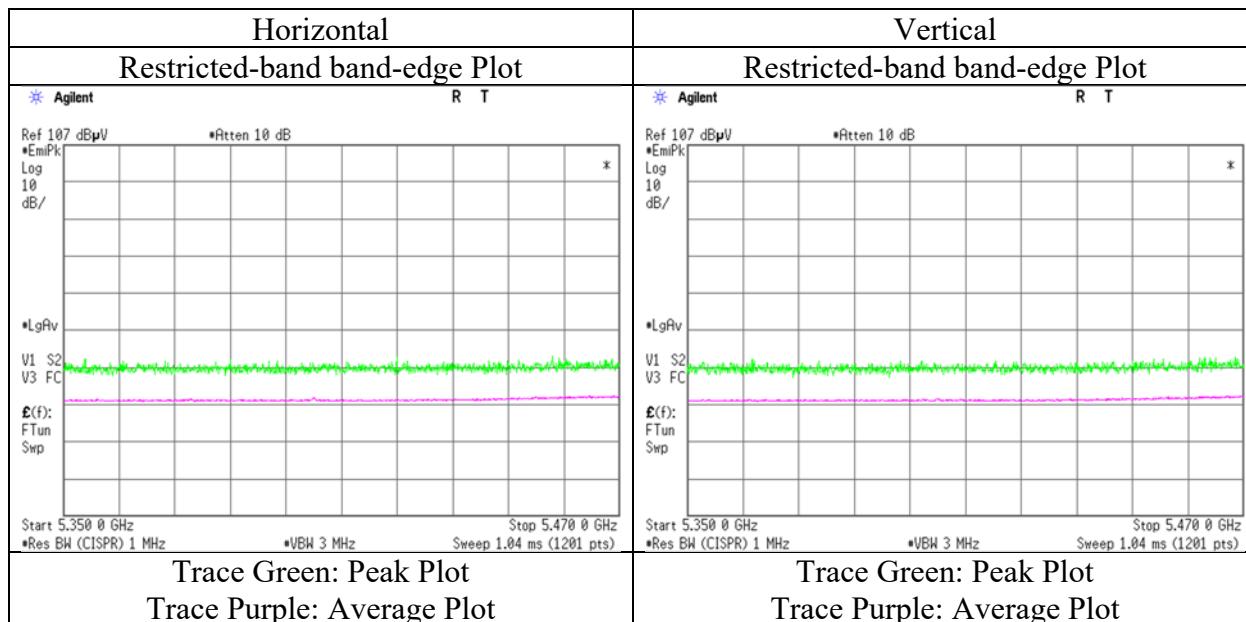
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\ast}\text{LOG}((\{\cdot10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance[m]})^2\} / 30) * 10^{\wedge}3$)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 21, 2019
 Temperature / Humidity 25 deg. C / 52 % RH
 Engineer Takahiro Kawakami
 (1 GHz – 6.4 GHz)
 Mode Tx, 11n-20 (CDD), 5700 MHz, with 3DH5 hopping (EUT serial no. B-5)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	50.68	32.68	16.59	43.33	2.04	58.66	-36.56	-27.0	9.5	188	352	-
Vert.	5725.000	PK	50.91	32.68	16.59	43.33	2.04	58.89	-36.33	-27.0	9.3	231	220	-

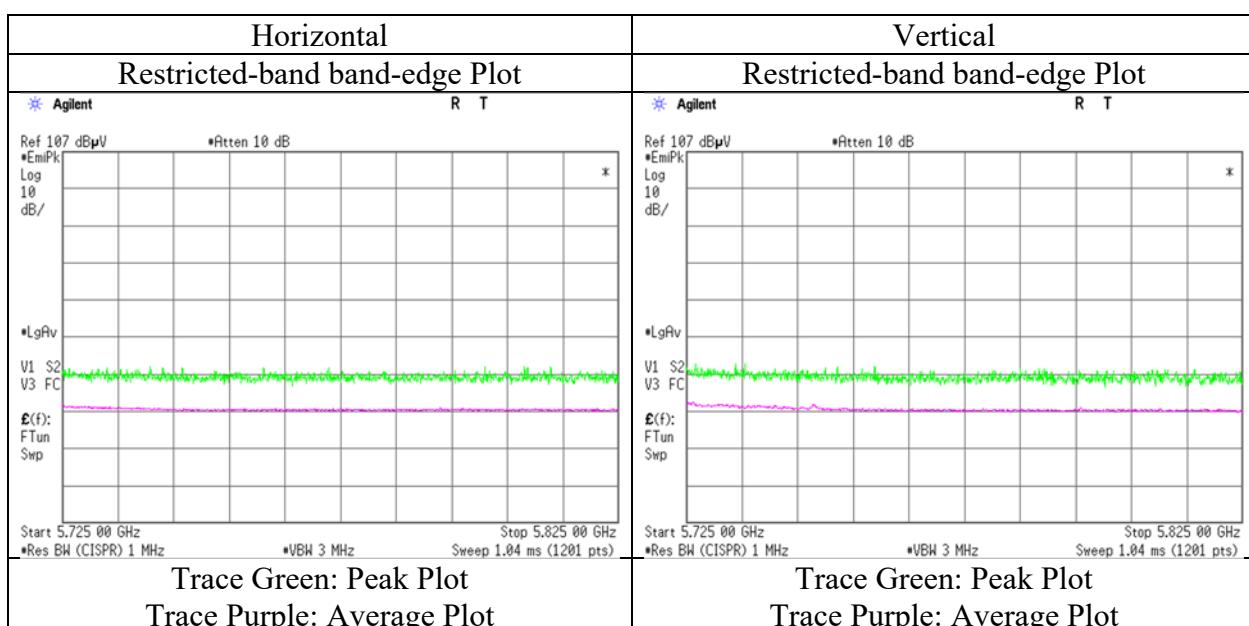
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance;3[m] }^2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 6, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 61 % RH	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Takahiro Kawakami	Kazuya Noda	Takahiro Kawakami	Toshinori Yamada
	(1 GHz – 6.4 GHz)	(6.4 G – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5510 MHz, (serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	53.56	32.32	16.32	43.30	2.15	61.05	73.9	12.8	106	335	-
Hori.	11020.000	PK	48.73	40.34	9.38	42.70	2.15	57.90	73.9	16.0	100	0	-
Hori.	5460.000	AV	39.09	32.32	16.32	43.30	2.15	46.58	53.9	7.3	106	335	VBW: 130 Hz
Hori.	11020.000	AV	36.45	40.34	9.38	42.70	2.15	45.62	53.9	8.2	100	0	VBW: 130 Hz
Vert.	5460.000	PK	49.70	32.32	16.32	43.30	2.15	57.19	73.9	16.7	150	330	-
Vert.	11020.000	PK	48.73	40.34	9.38	42.70	2.15	57.90	73.9	16.0	100	0	-
Vert.	5460.000	AV	37.87	32.32	16.32	43.30	2.15	45.36	53.9	8.5	150	330	VBW: 130 Hz
Vert.	11020.000	AV	36.36	40.34	9.38	42.70	2.15	45.53	53.9	8.3	100	0	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	58.87	32.34	16.33	43.31	2.15	66.38	-28.84	-27.0	1.8	106	335	-
Hori.	16530.000	PK	46.63	39.26	12.48	40.43	-9.54	48.40	-46.82	-27.0	19.8	268	101	-
Vert.	5470.000	PK	53.85	32.34	16.33	43.31	2.15	61.36	-33.86	-27.0	6.8	150	330	-
Vert.	16530.000	PK	46.88	39.26	12.48	40.43	-9.54	48.65	-46.57	-27.0	19.6	203	220	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

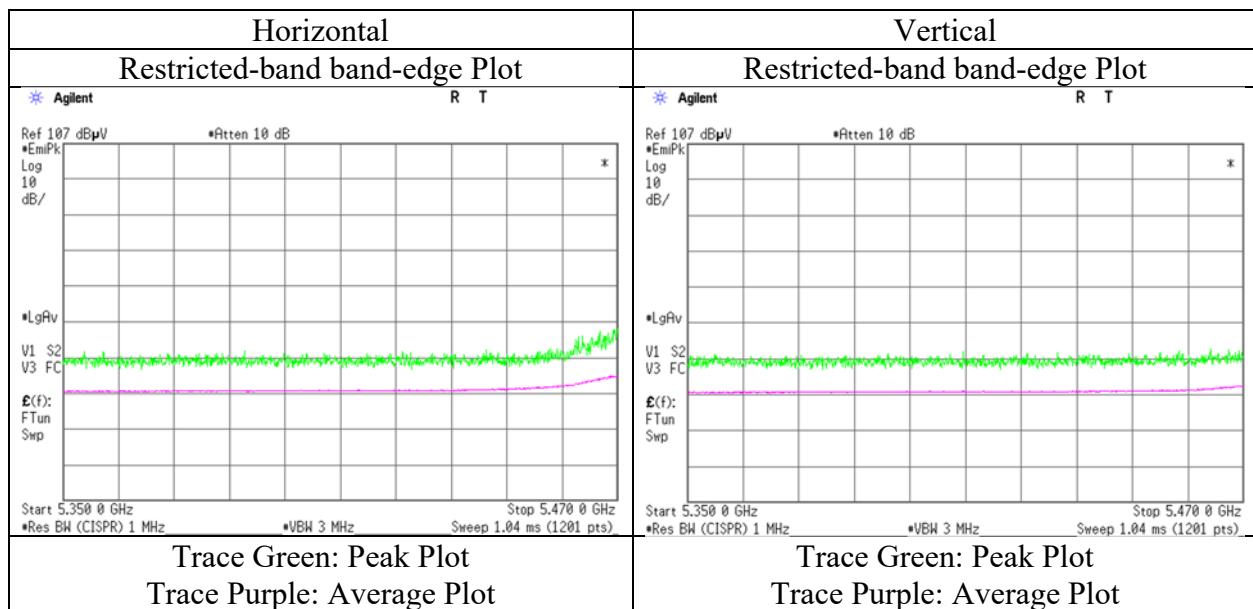
Result(EIRP[dBm])= $10^{\log(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{(-6)} * \text{Distance[3[m]}^2 / 30)}$ *10³

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

UL Japan, Inc.

Shonan EMC Lab.

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Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Takahiro Kawakami (1 GHz – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshinori Yamada (26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5550 MHz, (EUT serial no. A-7)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11100.000	PK	48.88	40.12	9.48	42.68	2.15	57.95	73.9	15.9	133	357	-
Hori.	11100.000	AV	36.61	40.12	9.48	42.68	2.15	45.68	53.9	8.2	133	357	VBW: 130 Hz
Vert.	11100.000	PK	48.23	40.12	9.48	42.68	2.15	57.30	73.9	16.6	150	54	-
Vert.	11100.000	AV	36.58	40.12	9.48	42.68	2.15	45.65	53.9	8.2	150	54	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Ampriifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16650.000	PK	46.32	39.24	12.45	40.41	-9.54	48.06	-47.16	-27.0	20.2	221	87	-
Vert.	16650.000	PK	46.93	39.24	12.45	40.41	-9.54	48.67	-46.55	-27.0	19.6	231	302	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Ampriifier) + Distance factor

Result(EIRP[dBm])= $10^{\ast}\text{LOG}((\{\ 10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)\ * 10^{\wedge}(-6)\ * \text{Distance};3[\text{m}]\)^{\wedge}2\ \}/\ 30)\ *10^{\wedge}3)$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

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Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 6, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 61 % RH	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Takahiro Kawakami	Kazuya Noda	Takahiro Kawakami	Toshinori Yamada
	(1 GHz – 6.4 GHz)	(6.4 G – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5670 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11340.000	PK	48.43	39.83	9.73	42.63	2.15	57.51	73.9	16.3	155	75	-
Hori.	11340.000	AV	37.26	39.83	9.73	42.63	2.15	46.34	53.9	7.5	155	75	VBW: 130 Hz
Vert.	11340.000	PK	48.47	39.83	9.73	42.63	2.15	57.55	73.9	16.3	147	98	-
Vert.	11340.000	AV	37.18	39.83	9.73	42.63	2.15	46.26	53.9	7.6	147	98	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	17010.000	PK	45.42	40.24	12.37	40.35	-9.54	48.14	-47.08	-27.00	20.1	249	92	-
Vert.	17010.000	PK	45.65	40.24	12.37	40.35	-9.54	48.37	-46.85	-27.00	19.9	248	339	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

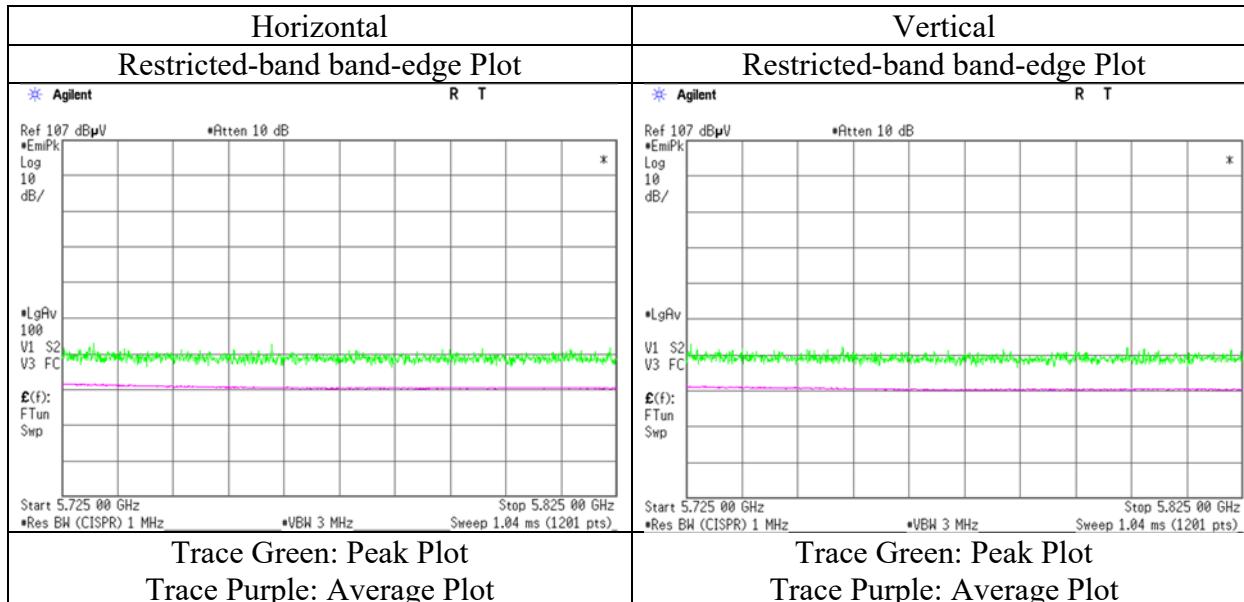
Result(EIRP[dBm])= $10^{\star}\text{LOG}((\{\cdot10^{\star}\text{ Electric Field Strength [dBuV/m]} / 20\} * 10^{\star}(-6) * \text{Distance};3[\text{m}]) ^ 2 / 30) * 10^{\star}3$)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

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Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5510 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	54.41	32.32	16.32	43.30	2.15	61.90	73.9	12.0	116	340	-
Hori.	5460.000	AV	38.04	32.32	16.32	43.30	2.15	45.53	53.9	8.3	116	340	VBW: 100 Hz
Vert.	5460.000	PK	54.34	32.32	16.32	43.30	2.15	61.83	73.9	12.0	230	180	-
Vert.	5460.000	AV	37.98	32.32	16.32	43.30	2.15	45.47	53.9	8.4	230	180	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	58.76	32.34	16.33	43.31	2.15	66.27	-28.95	-27.0	1.9	116	340	-
Vert.	5470.000	PK	58.48	32.34	16.33	43.31	2.15	65.99	-29.23	-27.0	2.2	230	180	-

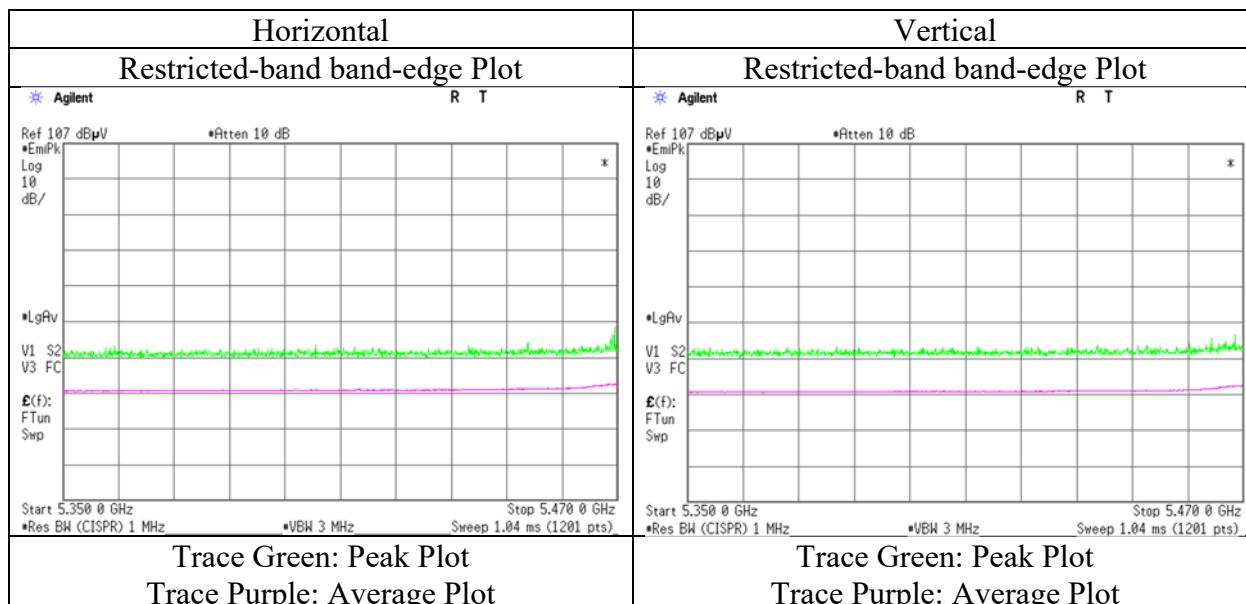
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^4 \cdot LOG \left(\frac{\text{Electric Field Strength [dBuV/m]} / 20}{10^{-6} \cdot \text{Distance[m]}^2} \right) / 30 \cdot 10^3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5670 MHz, (EUT serial no. A-7)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBm]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	56.49	32.68	16.55	43.33	2.15	64.54	-30.68	-27.0	3.6	110	341	-
Vert.	5725.000	PK	54.48	32.68	16.55	43.33	2.15	62.53	-32.69	-27.0	5.6	201	196	-

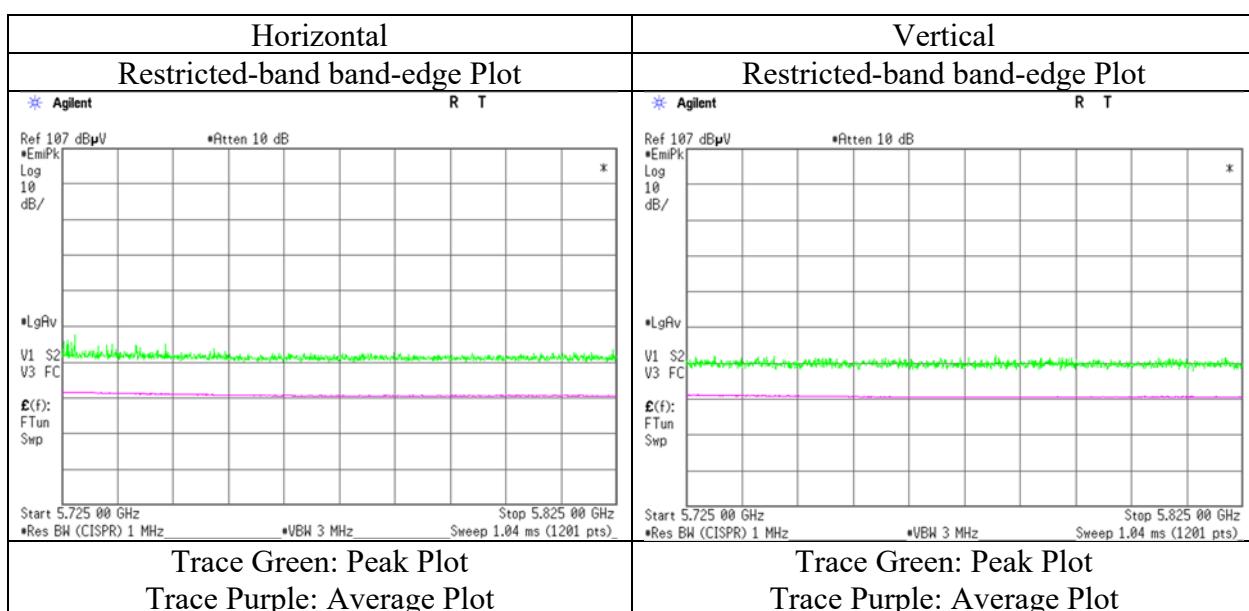
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance;3[m] }^2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5510 MHz, with 3DH5 hopping (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	51.93	32.32	16.47	43.30	2.14	59.56	73.9	14.3	117	334-	
Hori.	5460.000	AV	38.03	32.32	16.47	43.30	2.14	45.66	53.9	8.2	117	334	VBW: 100 Hz
Vert.	5460.000	PK	51.28	32.32	16.47	43.30	2.14	58.91	73.9	14.9	103	264-	
Vert.	5460.000	AV	37.66	32.32	16.47	43.30	2.14	45.29	53.9	8.6	103	264	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	56.96	32.34	16.47	43.31	2.14	64.60	-30.62	-27.0	3.6	117	334-	
Vert.	5470.000	PK	51.40	32.34	16.47	43.31	2.14	59.04	-36.18	-27.0	9.1	103	264-	

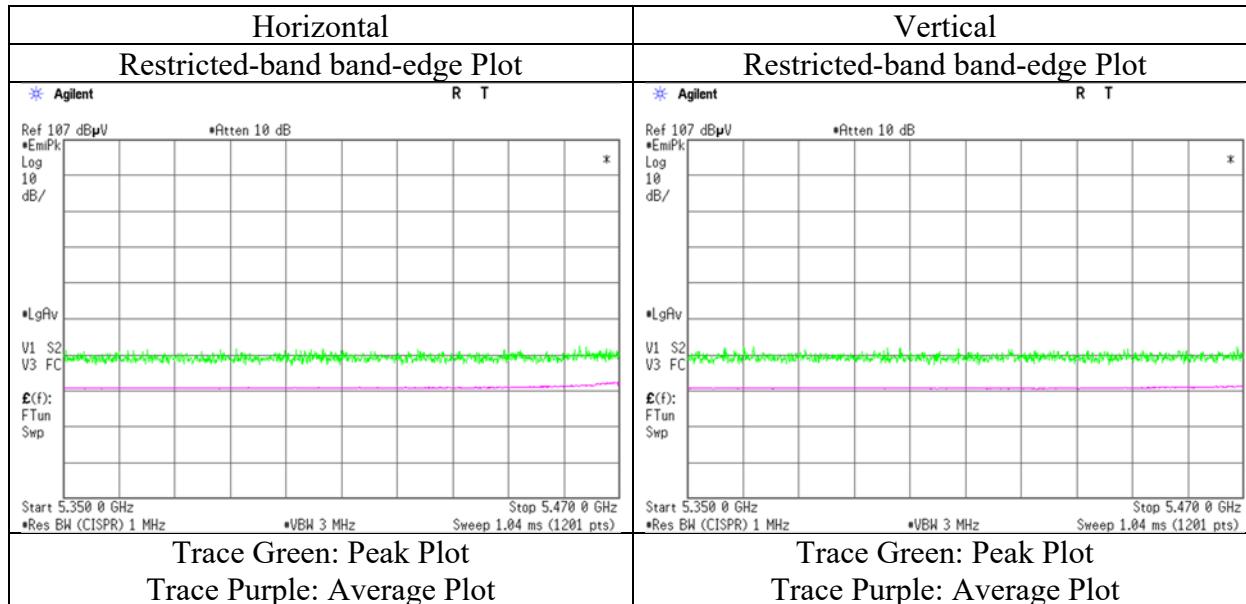
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\ast}\text{LOG}((\{\cdot10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance[m]}\}^2 / 30) * 10^{\wedge}3)$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5670 MHz, with 3DH5 hopping (EUT serial no. A-7)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	56.89	32.68	16.59	43.33	2.14	64.97	-30.25	-27.0	3.2	110	330	-
Vert.	5725.000	PK	49.20	32.68	16.59	43.33	2.14	57.28	-37.94	-27.0	10.9	153	348	-

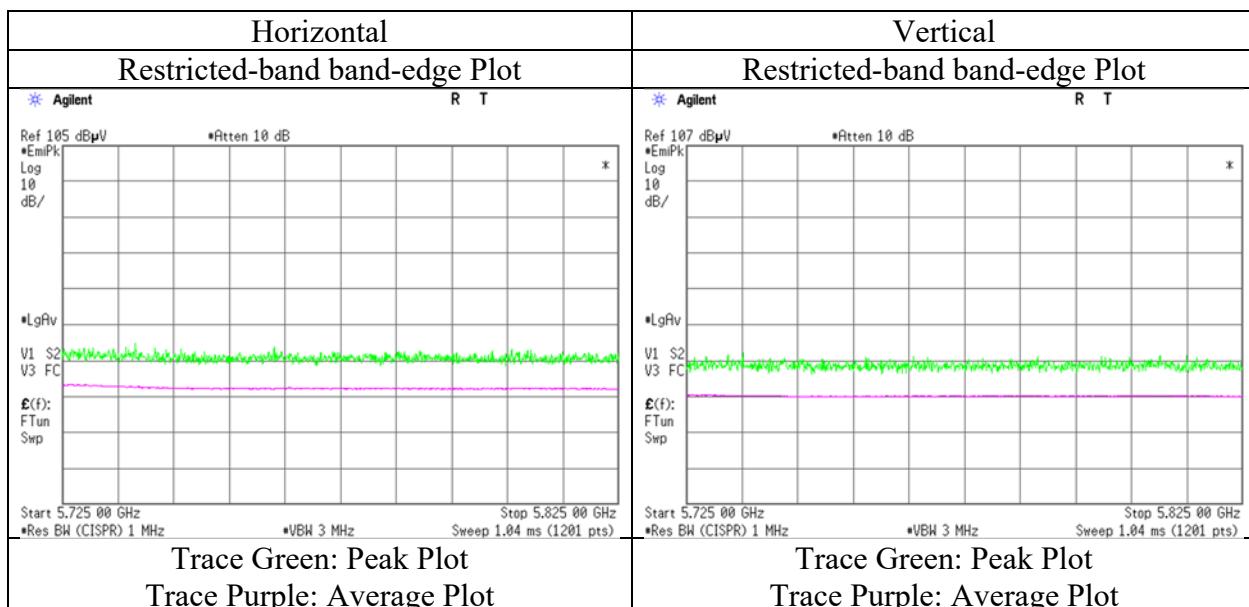
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10 ^(-6) * Distance;3[m] } ^ 2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda (1 GHz – 13 GHz)	Hiromasa Sato (13 GHz – 18 GHz)	Toshinori Yamada (18 GHz – 26.5 GHz)	Takahiro Kawakami (26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5510 MHz, (serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11020.000	PK	48.43	40.34	9.38	42.70	2.04	57.49	73.9	16.4	129	309	-
Hori.	11020.000	AV	36.93	40.34	9.38	42.70	2.04	45.99	53.9	7.9	129	309	VBW: 130 Hz
Vert.	11020.000	PK	47.95	40.34	9.38	42.70	2.04	57.01	73.9	16.9	137	41	-
Vert.	11020.000	AV	36.87	40.34	9.38	42.70	2.04	45.93	53.9	8.0	137	41	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16530.000	PK	47.74	39.26	12.48	40.43	-9.54	49.51	-45.71	-27.0	18.7	196	247	-
Vert.	16530.000	PK	46.81	39.26	12.48	40.43	-9.54	48.58	-46.64	-27.0	19.6	163	224	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log(\frac{(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{-6} * \text{Distance:3[m]}^2}{30}) * 10^3}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5550 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11100.000	PK	48.53	40.12	9.48	42.68	2.04	57.49	73.9	16.4	119	344	-
Hori.	11100.000	AV	37.12	40.12	9.48	42.68	2.04	46.08	53.9	7.8	119	344	VBW: 130 Hz
Vert.	11100.000	PK	48.27	40.12	9.48	42.68	2.04	57.23	73.9	16.6	214	157	-
Vert.	11100.000	AV	37.33	40.12	9.48	42.68	2.04	46.29	53.9	7.6	214	157	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16650.000	PK	47.10	39.24	12.45	40.41	-9.54	48.84	-46.38	-27.0	19.4	194	302	-
Vert.	16650.000	PK	46.34	39.24	12.45	40.41	-9.54	48.08	-47.14	-27.0	20.1	157	260	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log((10^{\log(\text{Electric Field Strength [dBuV/m]}/20)} * 10^{-6} * \text{Distance:3[m]})^2)/30)}$ * 10^3

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5670 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11340.000	PK	48.81	39.83	9.73	42.63	2.04	57.78	73.9	16.1	133	344	-
Hori.	11340.000	AV	36.91	39.83	9.73	42.63	2.04	45.88	53.9	8.0	133	344	VBW: 130 Hz
Vert.	11340.000	PK	48.84	39.83	9.73	42.63	2.04	57.81	73.9	16.0	194	102	-
Vert.	11340.000	AV	37.11	39.83	9.73	42.63	2.04	46.08	53.9	7.8	194	102	VBW: 130 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	17010.000	PK	46.58	40.24	12.37	40.35	-9.54	49.30	-45.92	-27.0	18.9	155	218	-
Vert.	17010.000	PK	46.97	40.24	12.37	40.35	-9.54	49.69	-45.53	-27.0	18.5	213	290	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log((\{(\{10^{\log(\text{Electric Field Strength [dBuV/m] / 20)} * 10^{-6}) * \text{Distance:3[m]})^2\} / 30) * 10^3)}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5510 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	53.74	32.32	16.32	43.30	2.04	61.12	73.9	12.7	148	139	-
Hori.	5460.000	AV	38.39	32.32	16.32	43.30	2.04	45.77	53.9	8.1	148	139	VBW: 100 Hz
Vert.	5460.000	PK	54.35	32.32	16.32	43.30	2.04	61.73	73.9	12.1	105	181	-
Vert.	5460.000	AV	38.70	32.32	16.32	43.30	2.04	46.08	53.9	7.8	105	181	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	57.21	32.34	16.33	43.31	2.04	64.61	-30.61	-27.0	3.6	148	139	-
Vert.	5470.000	PK	58.62	32.34	16.33	43.31	2.04	66.02	-29.20	-27.0	2.2	105	181	-

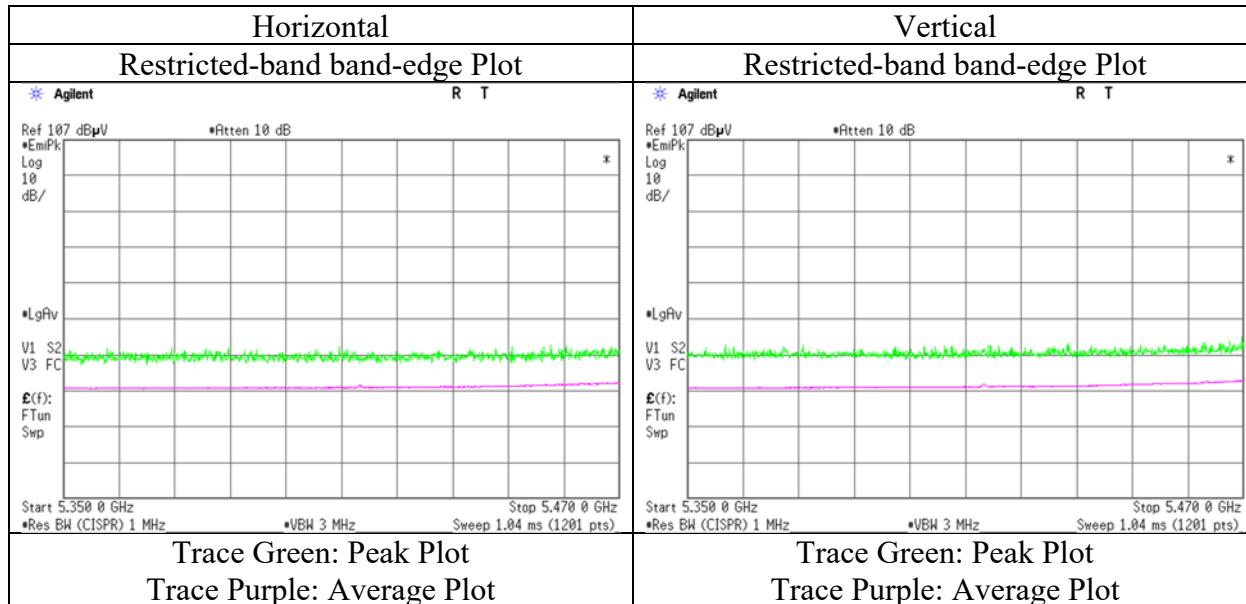
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\ast}\text{LOG}((\{\cdot10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance[m]})^2\} / 30) * 10^{\wedge}3$)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 6, 2019
 Temperature / Humidity 24 deg. C / 61 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5670 MHz, (EUT serial no. B-5)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	54.83	32.68	16.55	43.33	2.04	62.77	-32.45	-27.0	5.4	133	353	-
Vert.	5725.000	PK	55.39	32.68	16.55	43.33	2.04	63.33	-31.89	-27.0	4.8	161	198	-

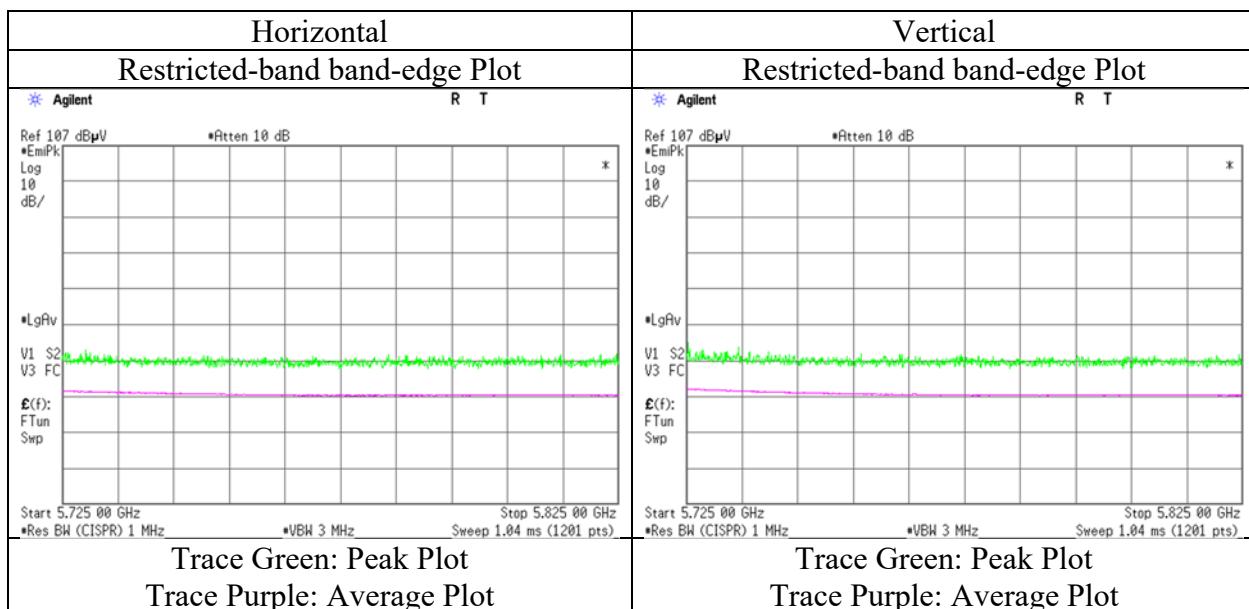
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10 ^(-6) * Distance;3[m] } ^ 2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 21, 2019
 Temperature / Humidity 25 deg. C / 52 % RH
 Engineer Takahiro Kawakami
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5510 MHz, with 3DH5 hopping (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)													
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	54.13	32.32	16.47	43.30	2.04	61.66	73.9	12.2	100	177	-
Hori.	5460.000	AV	39.03	32.32	16.47	43.30	2.04	46.56	53.9	7.3	100	177	VBW: 100 Hz
Vert.	5460.000	PK	52.02	32.32	16.47	43.30	2.04	59.55	73.9	14.3	190	206	-
Vert.	5460.000	AV	38.74	32.32	16.47	43.30	2.04	46.27	53.9	7.6	190	206	VBW: 100 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)														
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	53.23	32.34	16.47	43.31	2.04	60.77	-34.45	-27.0	7.4	100	177	-
Vert.	5470.000	PK	51.82	32.34	16.47	43.31	2.04	59.36	-35.86	-27.0	8.8	190	206	-

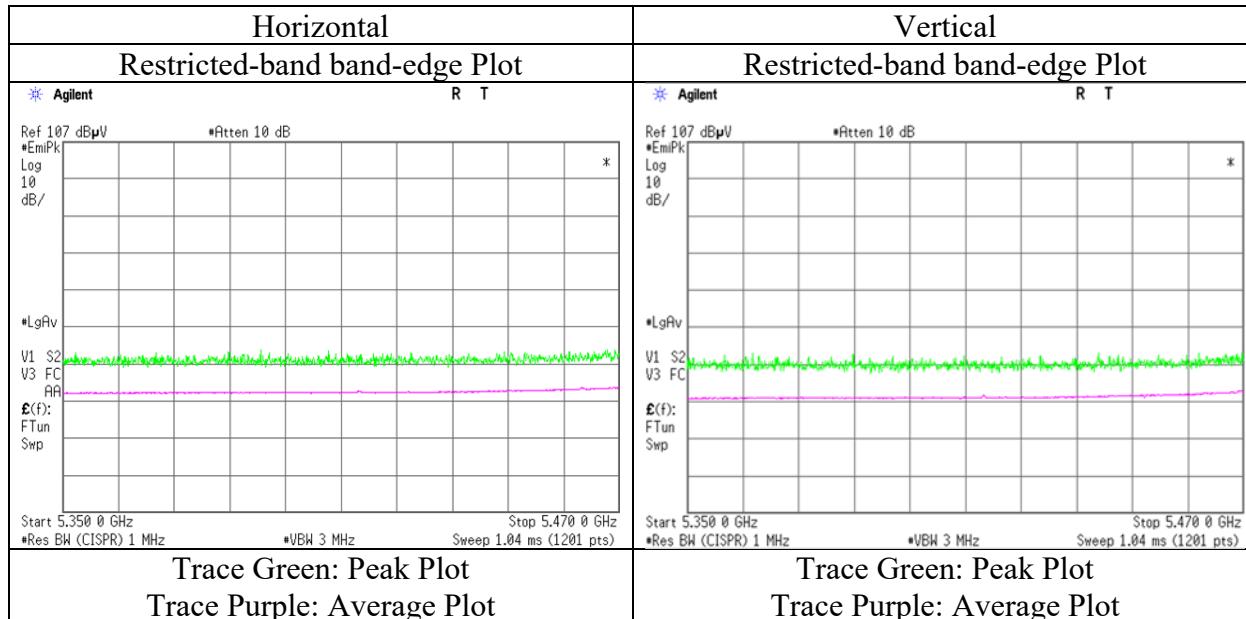
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance[m] }^2 / 30) * 10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 21, 2019
 Temperature / Humidity 25 deg. C / 52 % RH
 Engineer Takahiro Kawakami
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-40 (CDD), 5670 MHz, with 3DH5 hopping (EUT serial no. B-5)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	51.86	32.68	16.59	43.33	2.04	59.84	-35.38	-27.0	8.3	100	164	-
Vert.	5725.000	PK	52.13	32.68	16.59	43.33	2.04	60.11	-35.11	-27.0	8.1	200	204	-

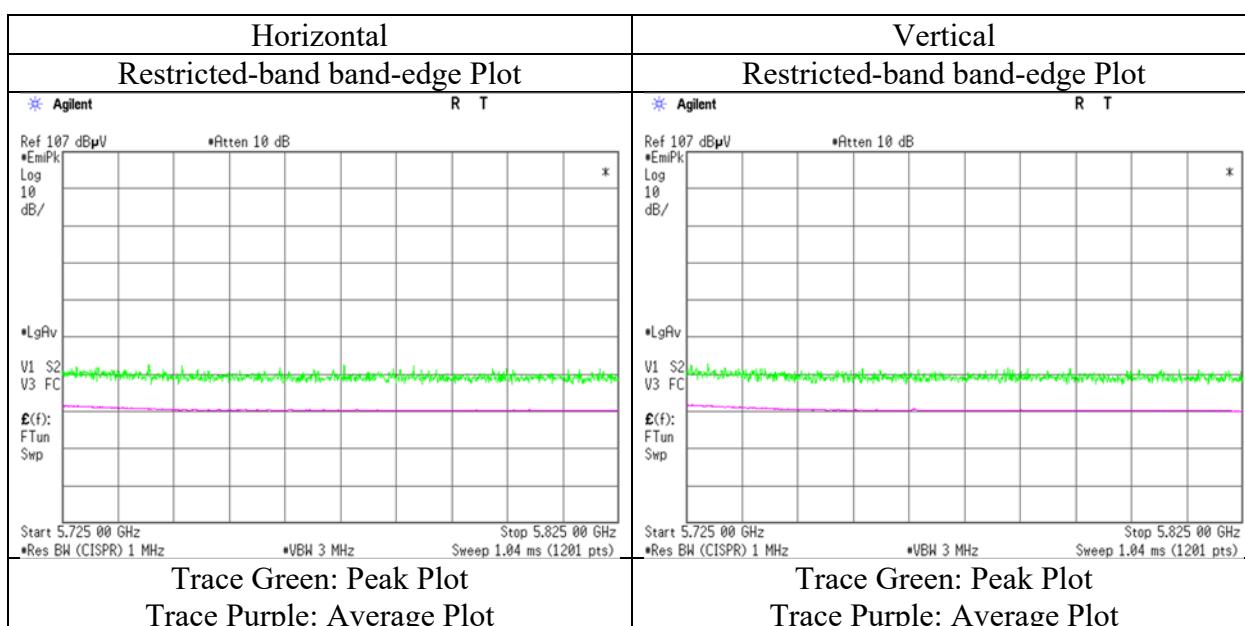
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance;3[m] } ^ 2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 5, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	25 deg. C / 65 % RH	22 deg.C / 53 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Takahiro Kawakami	Kazuya Noda	Takahiro Kawakami	Toshinori Yamada
	(1 GHz – 6.4 GHz)	(6.4 G – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-80 (MIMO), 5530 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	54.53	32.32	16.32	43.30	2.15	62.02	73.9	11.8	108	334-	
Hori.	11060.000	PK	47.86	40.24	9.42	42.69	2.15	56.98	73.9	16.9	144	0-	
Hori.	5460.000	AV	39.81	32.32	16.32	43.30	2.15	47.30	53.9	6.6	108	334	VBW: 270 Hz
Hori.	11060.000	AV	36.52	40.24	9.42	42.69	2.15	45.64	53.9	8.2	144	0	VBW: 270 Hz
Vert.	5460.000	PK	52.04	32.32	16.32	43.30	2.15	59.53	73.9	14.3	108	258-	
Vert.	11060.000	PK	47.68	40.24	9.42	42.69	2.15	56.80	73.9	17.1	154	96-	
Vert.	5460.000	AV	39.23	32.32	16.32	43.30	2.15	46.72	53.9	7.1	108	258	VBW: 270 Hz
Vert.	11060.000	AV	36.60	40.24	9.42	42.69	2.15	45.72	53.9	8.1	154	96	VBW: 270 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	55.16	32.34	16.33	43.31	2.15	62.67	-32.55	-27.0	5.5	108	334-	
Hori.	16590.000	PK	46.66	39.22	12.47	40.42	-9.54	48.39	-46.83	-27.0	19.8	185	86-	
Vert.	5470.000	PK	51.62	32.34	16.33	43.31	2.15	59.13	-36.09	-27.0	9.0	108	258-	
Vert.	16590.000	PK	46.81	39.22	12.47	40.42	-9.54	48.54	-46.68	-27.00	19.7	214	206-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

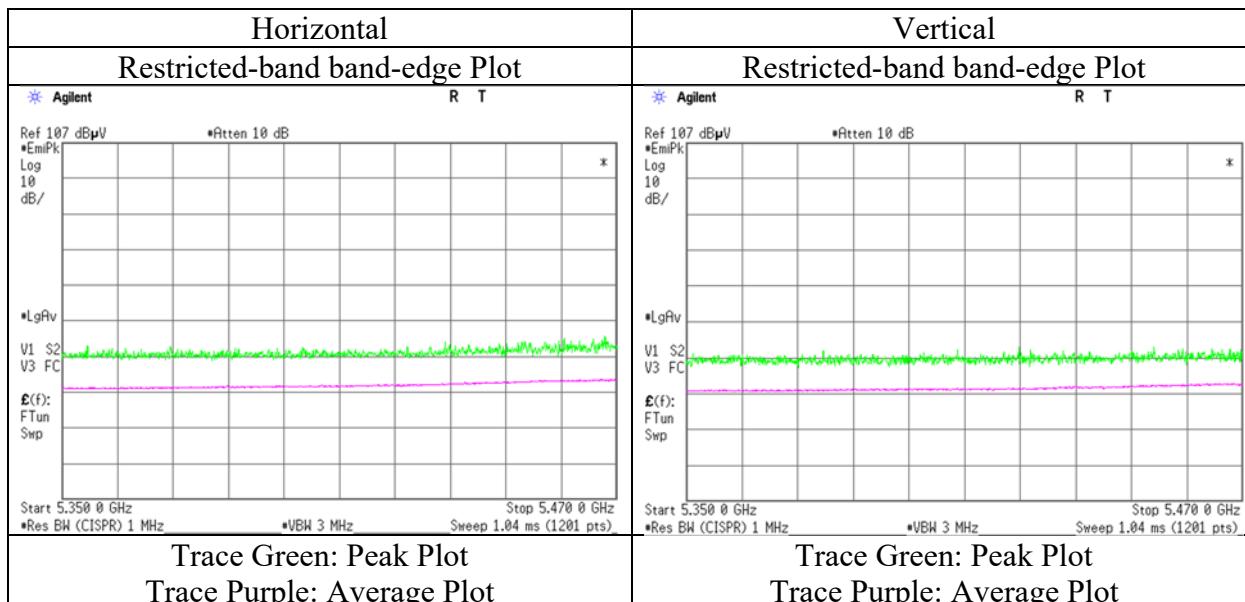
ResRlt(EIRP[dBm])= $10^{\frac{1}{10}} \cdot \log \left(\left(\frac{10^{\frac{1}{10}} \cdot (\text{Electric Field Strength [dBuV/m]} / 20) \cdot 10^{-6} \cdot \text{Distance}^3[\text{m}]^2}{30} \right) \cdot 10^3 \right)$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

UL Japan, Inc.

Shonan EMC Lab.

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Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 5, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	25 deg. C / 65 % RH	24 deg.C / 51 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda (1 GHz – 6.4 GHz)	Kazuya Noda (6.4 G – 13 GHz)	Kazuya Noda (13 GHz – 18 GHz)	Takahiro Kawakami (18 GHz – 26.5 GHz)	Toshinori Yamada (26.5 GHz – 40 GHz)
Mode	Tx, 11ac-80 (MIMO), 5610 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11220.000	PK	48.82	39.82	9.60	42.66	2.15	57.73	73.9	16.1	201	81-	
Hori.	11220.000	AV	37.31	39.82	9.60	42.66	2.15	46.22	53.9	7.6	201	81	VBW: 270 Hz
Vert.	11220.000	PK	49.07	39.82	9.60	42.66	2.15	57.98	73.9	15.9	355	219-	
Vert.	11220.000	AV	38.06	39.82	9.60	42.66	2.15	46.97	53.9	6.9	355	219	VBW: 270 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	51.59	32.68	16.55	43.33	2.15	59.64	-35.58	-27.0	8.5	118	342-	
Hori.	16830.000	PK	45.98	39.63	12.41	40.38	-9.54	48.10	-47.12	-27.0	20.1	244	84-	
Vert.	5725.000	PK	49.91	32.68	16.55	43.33	2.15	57.96	-37.26	-27.0	10.2	104	257-	
Vert.	16830.000	PK	46.24	39.63	12.41	40.38	-9.54	48.36	-46.86	-27.0	19.9	222	357-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

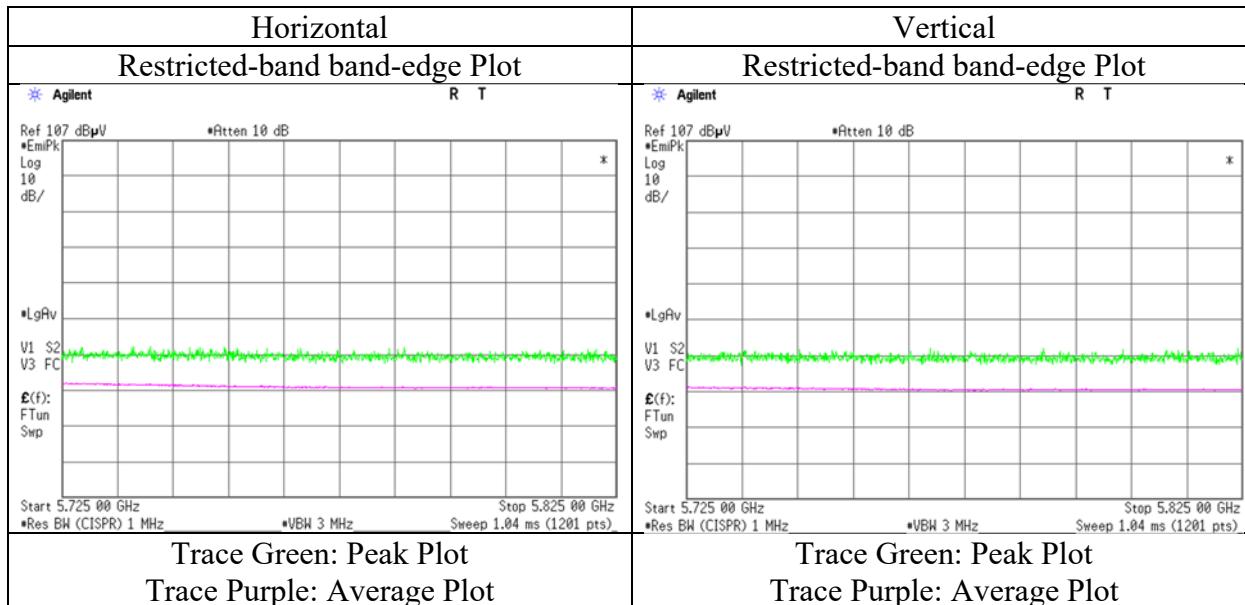
Result(EIRP[dBm])= $10^{\log(\frac{10^{\frac{1}{10}(Reading+Ant.Fac.+Loss)}-(-10\log(Distance))}{10})}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.

Final result of restricted band edge was shown in tabular data.

UL Japan, Inc.

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Radiated Spurious Emission

Report No.	13004393S-E-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.3
Date	September 5, 2019
Temperature / Humidity	25 deg. C / 65 % RH
Engineer	Kazuya Noda (1 GHz – 6.4 GHz)
Mode	Tx, 11ac-80 (CDD), 5530 MHz, (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	54.41	32.32	16.32	43.30	2.15	61.90	73.9	12.0	116	340	-
Hori.	5460.000	AV	38.04	32.32	16.32	43.30	2.15	45.53	53.9	8.3	116	340	VBW: 120 Hz
Vert.	5460.000	PK	54.34	32.32	16.32	43.30	2.15	61.83	73.9	12.0	230	180	-
Vert.	5460.000	AV	37.98	32.32	16.32	43.30	2.15	45.47	53.9	8.4	230	180	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5466.200	PK	57.73	32.33	16.32	43.30	2.15	65.23	-29.99	-27.0	2.9	115	341	-
Hori.	5470.000	PK	60.04	32.34	16.33	43.31	2.15	67.55	-27.67	-27.0	0.6	115	341	-
Vert.	5466.200	PK	53.85	32.33	16.32	43.30	2.15	61.35	-33.87	-27.0	6.8	177	329	-
Vert.	5470.000	PK	56.28	32.34	16.33	43.31	2.15	63.79	-31.43	-27.0	4.4	177	329	-

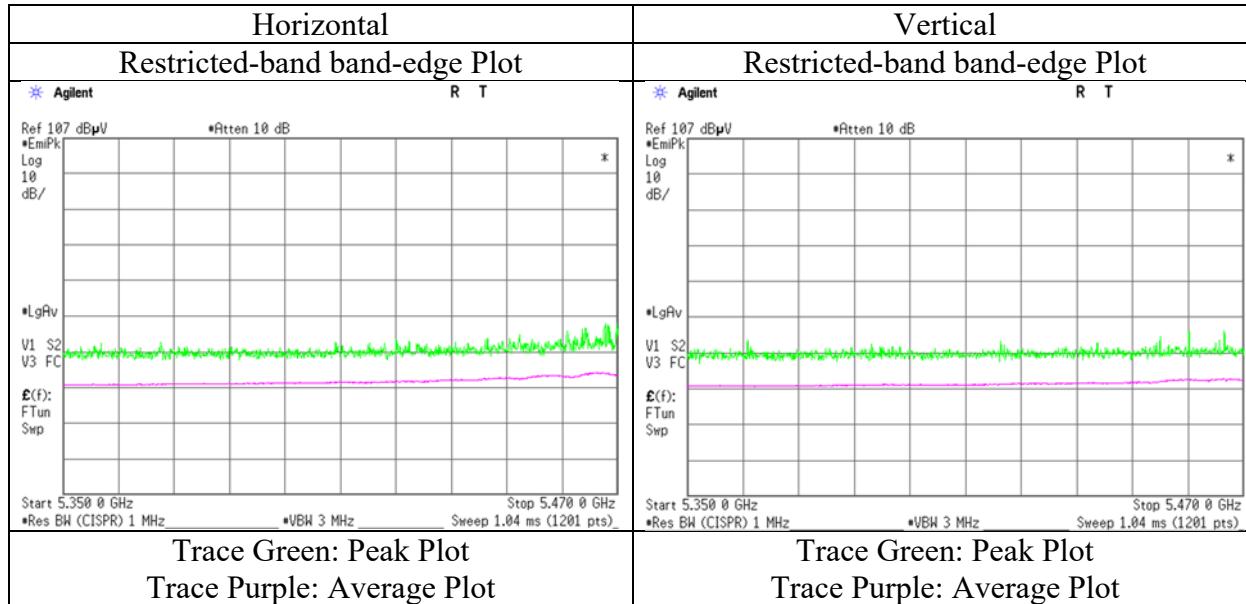
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\ast}\text{LOG}(((10^{\ast}(\text{Electric Field Strength [dBuV/m]}/20)^{\ast}10^{\ast}(-6)^{\ast}\text{Distance:3[m]})^{\ast}2}/30)^{\ast}10^{\ast}3)$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 5, 2019
 Temperature / Humidity 25 deg. C / 65 % RH
 Engineer Kazuya Noda
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5610 MHz, (EUT serial no. A-7)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	50.46	32.68	16.55	43.33	2.15	58.51	-36.71	-27.0	9.7	159	326	-
Vert.	5725.000	PK	50.33	32.68	16.55	43.33	2.15	58.38	-36.84	-27.0	9.8	107	251	-

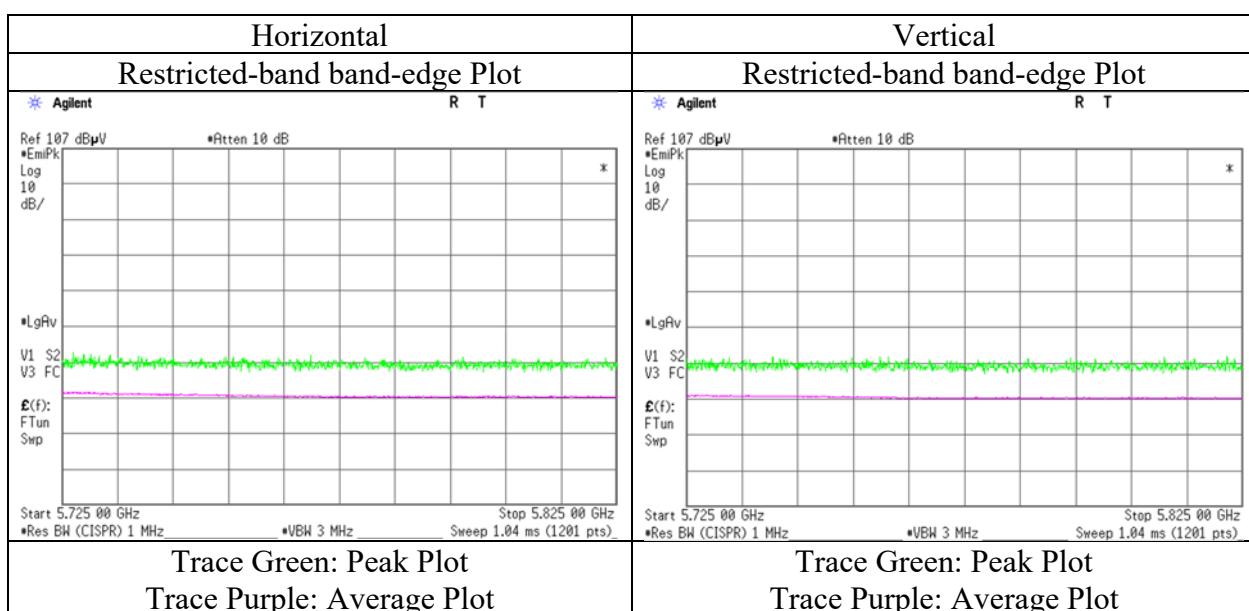
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance;3[m] }^2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5530 MHz, with 3DH5 hopping (EUT serial no. A-7)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)														
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark	
Hori.	5460.000	PK	56.88	32.32	16.47	43.30	2.14	64.51	73.9	9.3	153	335	-	
Hori.	5460.000	AV	39.72	32.32	16.47	43.30	2.14	47.35	53.9	6.5	153	335	VBW: 120 Hz	
Vert.	5460.000	PK	53.80	32.32	16.47	43.30	2.14	61.43	73.9	12.4	174	331	-	
Vert.	5460.000	AV	39.10	32.32	16.47	43.30	2.14	46.73	53.9	7.1	174	331	VBW: 120 Hz	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Ampifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)														
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	59.57	32.34	16.47	43.31	2.14	67.21	-28.01	-27.0	1.0	153	335	-
Vert.	5470.000	PK	55.35	32.34	16.47	43.31	2.14	62.99	-32.23	-27.0	5.2	174	331	-

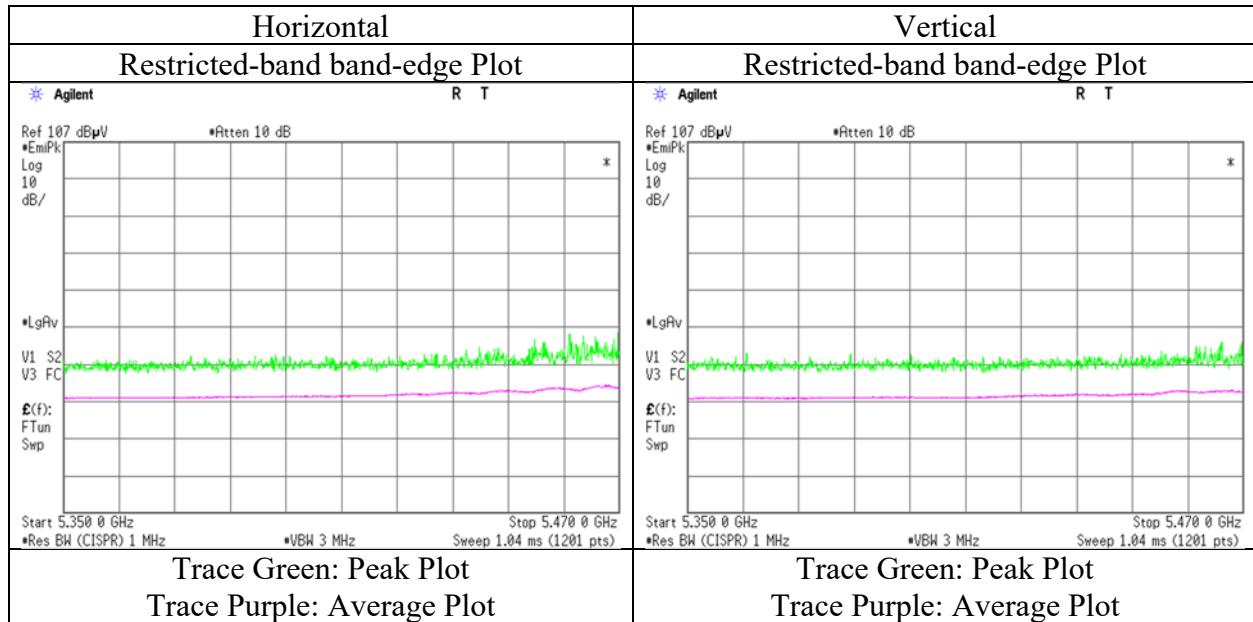
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Ampifier) + Distance factor

Result(EIRP[dBm])= $10^{\ast}\text{LOG}((\{\cdot 10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance[m]})^2\} / 30) * 10^{\wedge}3$)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

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Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 20, 2019
 Temperature / Humidity 22 deg. C / 64 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5610 MHz, with 3DH5 hopping (EUT serial no. A-7)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	50.15	32.68	16.59	43.33	2.14	58.23	-36.99	-27.0	9.9	165	337	-
Vert.	5725.000	PK	48.51	32.68	16.59	43.33	2.14	56.59	-38.63	-27.0	11.6	147	270	-

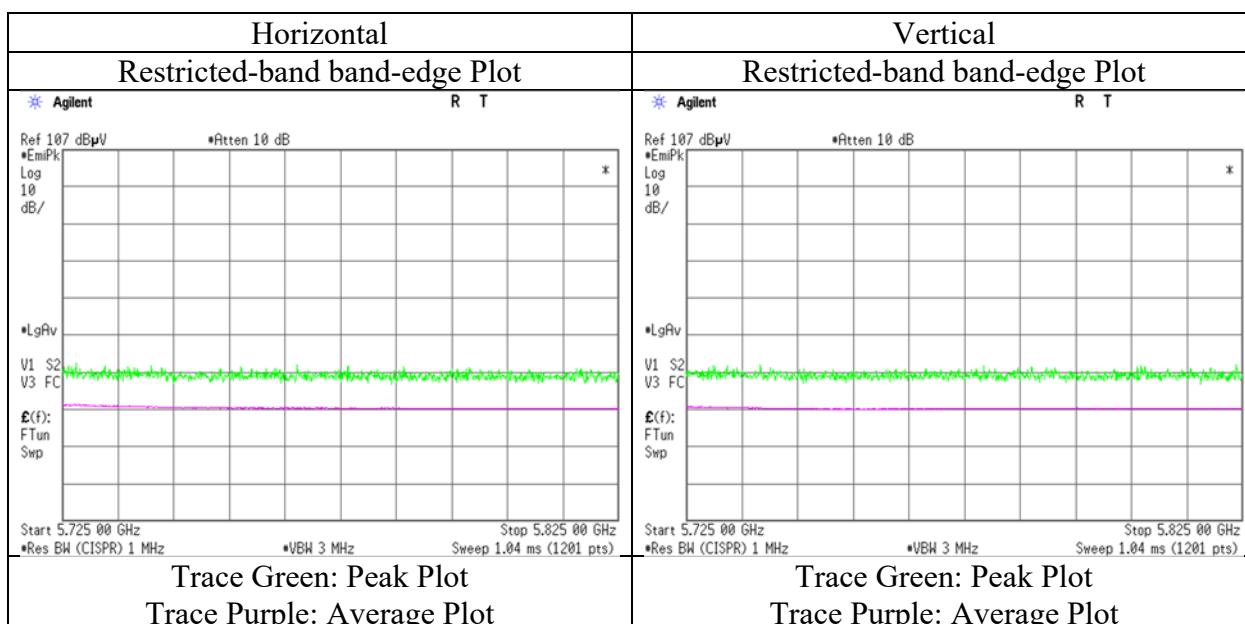
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10^(-6) * Distance;3[m] }^2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.84 m / 3.0 m) = 2.15 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2						
Test place	Shonan EMC Lab.						
Semi Anechoic Chamber (No.)	3	3	3	3	3	3	3
Date	September 11, 2019		September 13, 2019		September 14, 2019		September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH		25 deg.C / 50 %RH		25 deg.C / 51 %RH		24 deg.C / 63 %RH
Engineer	Kazuya Noda		Hiromasa Sato		Toshinori Yamada		Takahiro Kawakami
	(1 GHz – 13 GHz)		(13 GHz – 18 GHz)		(18 GHz – 26.5 GHz)		(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-80 (MIMO), 5530 MHz, (EUT serial no. B-5)						

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11060.000	PK	48.35	40.24	9.42	42.69	2.04	57.36	73.9	16.5	127	14-	
Hori.	11060.000	AV	37.03	40.24	9.42	42.69	2.04	46.04	53.9	7.9	127	14	VBW: 270 Hz
Vert.	11060.000	PK	48.61	40.24	9.42	42.69	2.04	57.62	73.9	16.3	219	202-	
Vert.	11060.000	AV	37.31	40.24	9.42	42.69	2.04	46.32	53.9	7.6	219	202	VBW: 270 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16590.000	PK	46.82	39.22	12.47	40.42	-9.54	48.55	-46.67	-27.0	19.7	197	208-	
Vert.	16590.000	PK	46.68	39.22	12.47	40.42	-9.54	48.41	-46.81	-27.0	19.8	188	200-	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\ast}\text{LOG}((\{\ 10^{\ast}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\ast}(-6) * \text{Distance:3[m]})^{\ast}2\} / 30) * 10^{\ast}3)$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 11, 2019	September 13, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	24 deg. C / 51 % RH	25 deg.C / 50 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Kazuya Noda	Hiromasa Sato	Toshinori Yamada	Takahiro Kawakami
	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)	(26.5 GHz – 40 GHz)
Mode	Tx, 11ac-80 (MIMO), 5610 MHz, (EUT serial no. B-5)			

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11220.000	PK	48.48	39.82	9.60	42.66	2.04	57.28	73.9	16.6	368	335	-
Hori.	11220.000	AV	37.10	39.82	9.60	42.66	2.04	45.90	53.9	8.0	368	335	VBW: 270 Hz
Vert.	11220.000	PK	49.05	39.82	9.60	42.66	2.04	57.85	73.9	16.0	274	204	-
Vert.	11220.000	AV	37.58	39.82	9.60	42.66	2.04	46.38	53.9	7.5	274	204	VBW: 270 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16830.000	PK	46.24	39.63	12.41	40.38	-9.54	48.36	-46.86	-27.0	19.9	177	294	-
Vert.	16830.000	PK	46.95	39.63	12.41	40.38	-9.54	49.07	-46.15	-27.0	19.2	155	255	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\log(\frac{10^{\frac{1}{2}}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{-6} * \text{Distance:3[m]}^2}{30}) * 10^3}$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 5, 2019
 Temperature / Humidity 25 deg. C / 65 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5530 MHz, (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	53.93	32.32	16.32	43.30	2.15	61.42	73.9	12.4	104	167	-
Hori.	5460.000	AV	41.76	32.32	16.32	43.30	2.15	49.25	53.9	4.6	104	167	VBW: 120 Hz
Vert.	5460.000	PK	53.64	32.32	16.32	43.30	2.15	61.13	73.9	12.7	161	187	-
Vert.	5460.000	AV	41.30	32.32	16.32	43.30	2.15	48.79	53.9	5.1	161	187	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	57.21	32.34	16.33	43.31	2.04	64.61	-30.61	-27.0	3.6	148	139	-
Vert.	5470.000	PK	58.62	32.34	16.33	43.31	2.04	66.02	-29.20	-27.0	2.2	105	181	-

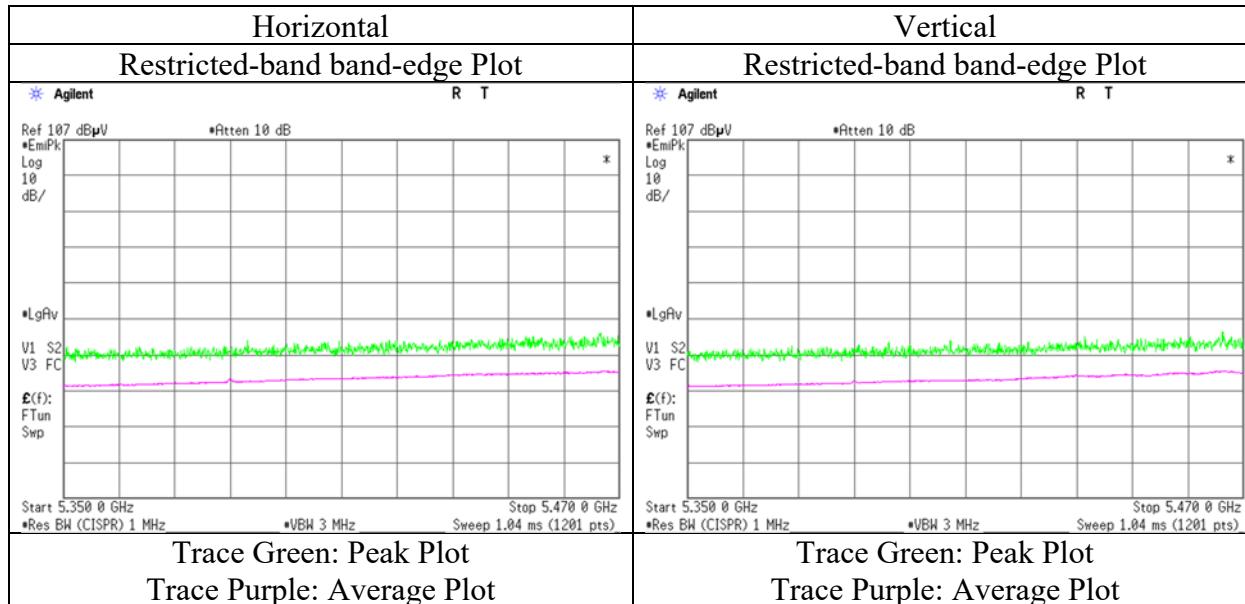
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\star}\text{LOG}((\{10^{\star}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\star}(-6) * \text{Distance[m]})^2\} / 30) * 10^{\star}3$)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 5, 2019
 Temperature / Humidity 25 deg. C / 65 % RH
 Engineer Makoto Hosaka
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5610 MHz, (EUT serial no. B-5)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	50.04	32.68	16.55	43.33	2.15	58.09	-37.13	-27.0	10.1	102	160	-
Vert.	5725.000	PK	50.99	32.68	16.55	43.33	2.15	59.04	-36.18	-27.0	9.1	149	238	-

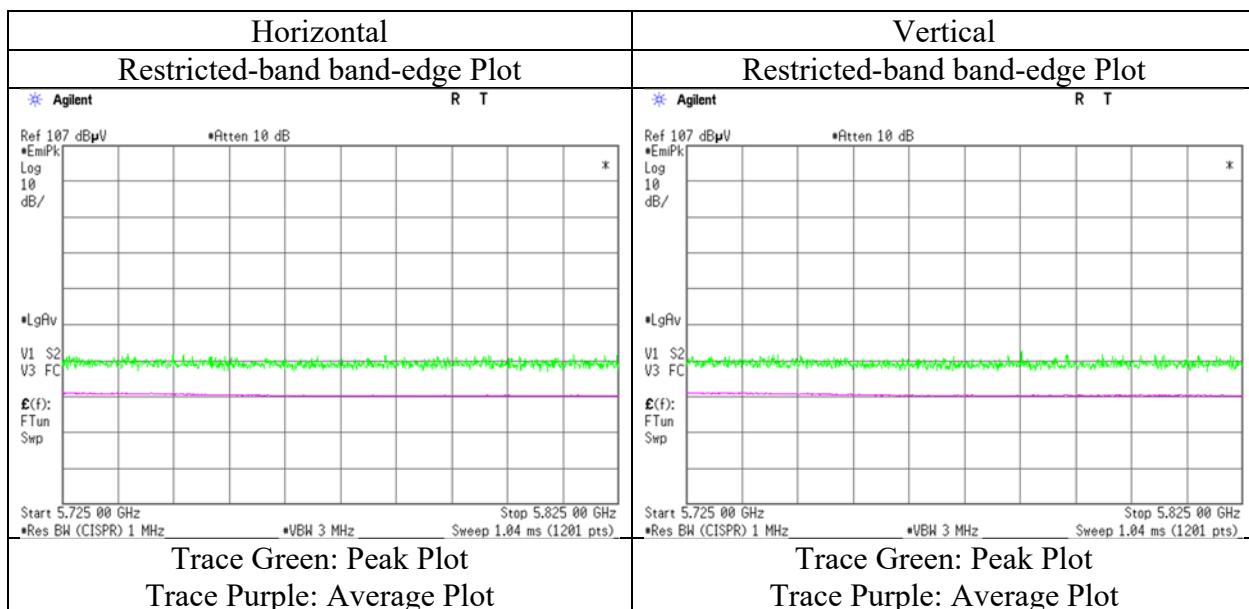
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10 ^(-6) * Distance;3[m] } ^ 2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.3
Date	September 21, 2019
Temperature / Humidity	25 deg. C / 52 % RH
Engineer	Takahiro Kawakami (1 GHz – 6.4 GHz)
Mode	Tx, 11ac-80 (CDD), 5530 MHz, with 3DH5 hopping (EUT serial no. B-5)

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	53.45	32.32	16.47	43.30	2.04	60.98	73.9	12.9	119	173	-
Hori.	5460.000	AV	41.15	32.32	16.47	43.30	2.04	48.68	53.9	5.2	119	173	VBW: 120 Hz
Vert.	5460.000	PK	54.74	32.32	16.47	43.30	2.04	62.27	73.9	11.6	167	190	-
Vert.	5460.000	AV	41.67	32.32	16.47	43.30	2.04	49.20	53.9	4.7	167	190	VBW: 120 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	53.64	32.34	16.47	43.31	2.04	61.18	-34.04	-27.0	7.0	119	173	-
Vert.	5470.000	PK	55.68	32.34	16.47	43.31	2.04	63.22	-32.00	-27.0	5.0	167	190	-

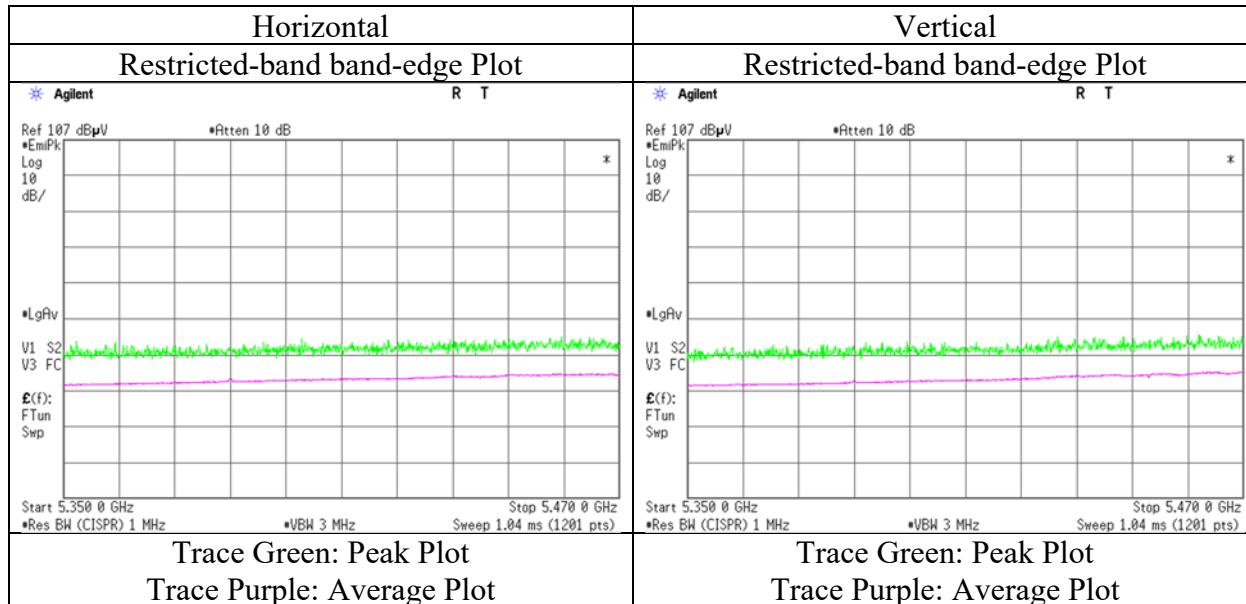
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])= $10^{\ast}\text{LOG}((\{\cdot10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance[m]})^2\} / 30) * 10^{\wedge}3$)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.79 \text{ m} / 3.0 \text{ m}) = 2.04 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

UL Japan, Inc.

Shonan EMC Lab.

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Radiated Spurious Emission

Report No. 13004393S-E-R2
 Test place Shonan EMC Lab.
 Semi Anechoic Chamber No.3
 Date September 21, 2019
 Temperature / Humidity 25 deg. C / 52 % RH
 Engineer Takahiro Kawakami
 (1 GHz – 6.4 GHz)
 Mode Tx, 11ac-80 (CDD), 5610 MHz, with 3DH5 hopping (EUT serial no. B-5)

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac.	Loss [dB/m]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	51.19	32.68	16.59	43.33	2.04	59.17	-36.05	-27.0	9.0	113	158	-
Vert.	5725.000	PK	51.15	32.68	16.59	43.33	2.04	59.13	-36.09	-27.0	9.0	190	219	-

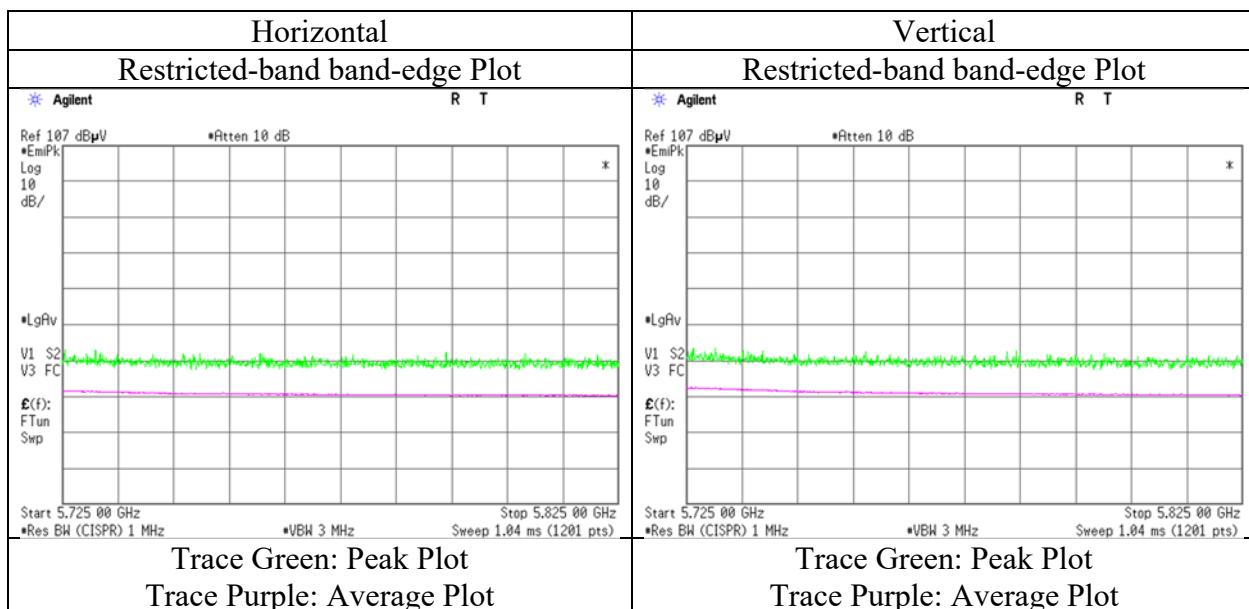
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m] / 20) * 10 ^(-6) * Distance;3[m] } ^ 2 } / 30) *10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.79 m / 3.0 m) = 2.04 dB



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
 Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2									
Test place	Shonan EMC Lab.									
Semi Anechoic Chamber (No.)	3	3	3	3	3	3	3	3	3	3
Date	September 7, 2019	September 10, 2019	September 12, 2019	September 14, 2019						
Temperature / Humidity	23 deg. C / 58 % RH	23 deg.C / 55 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	Kazuya Noda	Kazuya Noda	Kazuya Noda	Takahiro Kawakami	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz) (26.5 GHz – 40 GHz)
Engineer										
Mode	(Tx, 11n-20 (MIMO), 5745 MHz, (EUT serial no. A-7))									

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11490.000	PK	48.68	40.08	9.90	42.60	2.15	58.21	73.9	15.6	110	108	-
Hori.	11490.000	AV	37.73	40.08	9.90	42.60	2.15	47.26	53.9	6.6	110	108	VBW: 1 kHz
Vert.	11490.000	PK	48.55	40.08	9.90	42.60	2.15	58.08	73.9	15.8	115	144	-
Vert.	11490.000	AV	37.39	40.08	9.90	42.60	2.15	46.92	53.9	6.9	115	144	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	49.84	32.46	16.47	43.33	2.15	57.59	-37.63	-27.0	10.6	113	339	-
Hori.	5700.000	PK	50.23	32.61	16.53	43.33	2.15	58.19	-37.03	10.0	47.0	113	339	-
Hori.	5720.000	PK	54.32	32.66	16.54	43.33	2.15	62.34	-32.88	15.6	48.4	113	339	-
Hori.	5725.000	PK	60.74	32.68	16.55	43.33	2.15	68.79	-26.43	27.0	53.4	113	339	-
Hori.	17235.000	PK	46.65	40.77	12.36	40.29	-9.54	49.95	-45.27	-27.0	18.3	219	92	-
Vert.	5650.000	PK	49.42	32.46	16.47	43.33	2.15	57.17	-38.05	-27.0	11.0	101	260	-
Vert.	5700.000	PK	49.79	32.61	16.53	43.33	2.15	57.75	-37.47	10.0	47.4	101	260	-
Vert.	5720.000	PK	52.72	32.66	16.54	43.33	2.15	60.74	-34.48	15.6	50.0	101	260	-
Vert.	5725.000	PK	55.44	32.68	16.55	43.33	2.15	63.49	-31.73	27.0	58.7	101	260	-
Vert.	17235.000	PK	46.70	40.77	12.36	40.29	-9.54	50.00	-45.22	-27.0	18.2	217	351	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

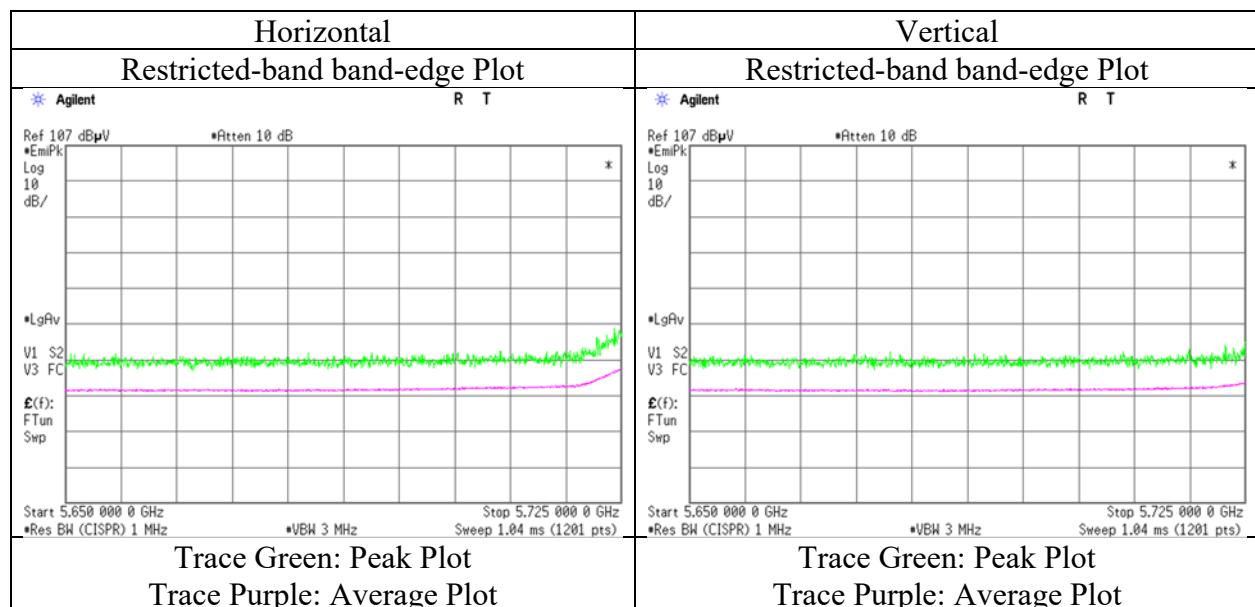
Result(EIRP[dBm])= $10 * \text{LOG} (\{\{ 10 ^ \wedge (\text{Electric Field Strength [dBuV/m]} / 20) * 10 ^ \wedge (-6) * \text{Distance:3[m]} \} ^ \wedge 2\} / 30) * 10 ^ \wedge 3$

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : $20\log(3.84 \text{ m} / 3.0 \text{ m}) = 2.15 \text{ dB}$

13 GHz - 40 GHz : $20\log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 11, 2019	September 10, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	22 deg.C / 53 %RH	23 deg.C / 55 %RH	24 deg.C / 54 %RH	25 deg.C / 51 %RH	24 deg.C / 63 %RH
Engineer	Takahiro Kawakami	Kazuya Noda	Kazuya Noda	Takahiro Kawakami	Toshinori Yamada
	(1 GHz - 6.4 GHz)	(6.4 G - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5785 MHz, (EUT serial no. A-7)				

(above 1GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11570.000	PK	48.41	39.96	9.91	42.56	2.15	57.87	73.9	16.0	114	108	-
Hori.	11570.000	AV	37.43	39.96	9.91	42.56	2.15	46.89	53.9	7.0	114	108	VBW: 1 kHz
Vert.	11570.000	PK	48.53	39.96	9.91	42.56	2.15	57.99	73.9	15.9	132	48	-
Vert.	11570.000	AV	37.27	39.96	9.91	42.56	2.15	46.73	53.9	7.1	132	48	VBW: 1 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log(3.84 m / 3.0 m) = 2.15 dB

13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	17355.000	PK	46.49	41.40	12.34	40.26	-9.54	50.43	-44.79	-27.0	17.8	249	69	-
Vert.	17355.000	PK	46.66	41.40	12.34	40.26	-9.54	50.60	-44.62	-27.0	17.6	203	328	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result(EIRP[dBm])=10*LOG (({ 10^(Electric Field Strength [dBuV/m]/20) * 10^(-6) * Distance[3[m]]^2 } / 30) * 10^3)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log(3.84 m / 3.0 m) = 2.15 dB

13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.54 dB

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