

Radiated Spurious Emission

Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 7, 2019	September 10, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	23 deg. C / 58 % RH	23 deg. C / 55 % RH	24 deg. C / 54 % RH	25 deg. C / 51 % RH	24 deg. C / 63 % RH
Engineer	Kazuya Noda	Kazuya Noda	Kazuya Noda	Takahiro Kawakami	Toshinori Yamada
	(1 GHz - 6.4 GHz)	(6.4 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx, 11n-20 (MIMO), 5825 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.	11650.000	PK	49.12	39.69	9.91	42.51	2.15	58.36	73.9	15.5	120	84	-
Hori.	11650.000	AV	37.42	39.69	9.91	42.51	2.15	46.66	53.9	7.2	120	84	VBW: 1 kHz
Vert.	11650.000	PK	48.89	39.69	9.91	42.51	2.15	58.13	73.9	15.7	116	142	-
Vert.	11650.000	AV	37.32	39.69	9.91	42.51	2.15	46.56	53.9	7.3	116	142	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.	5850.000	PK	53.97	33.02	16.68	43.34	2.15	62.48	-32.74	27.0	59.7	110	338	-
Hori.	5855.000	PK	50.85	33.03	16.68	43.34	2.15	59.37	-35.85	15.6	51.4	110	338	-
Hori.	5875.000	PK	50.28	33.08	16.70	43.34	2.15	58.87	-36.35	10.0	46.3	110	338	-
Hori.	5925.000	PK	49.73	33.18	16.74	43.34	2.15	58.46	-36.76	-27.0	9.7	110	338	-
Hori.	17475.000	PK	46.16	42.24	12.34	40.23	-9.54	50.97	-44.25	-27.0	17.3	252	94	-
Vert.	5850.000	PK	50.15	33.02	16.68	43.34	2.15	58.66	-36.56	27.0	63.5	100	255	-
Vert.	5855.000	PK	49.87	33.03	16.68	43.34	2.15	58.39	-36.83	15.6	52.4	100	255	-
Vert.	5875.000	PK	49.48	33.08	16.70	43.34	2.15	58.07	-37.15	10.0	47.1	100	255	-
Vert.	5925.000	PK	49.37	33.18	16.74	43.34	2.15	58.10	-37.12	-27.0	10.1	100	255	-
Vert.	17475.000	PK	46.46	42.24	12.34	40.23	-9.54	51.27	-43.95	-27.00	17.0	218	2	-

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

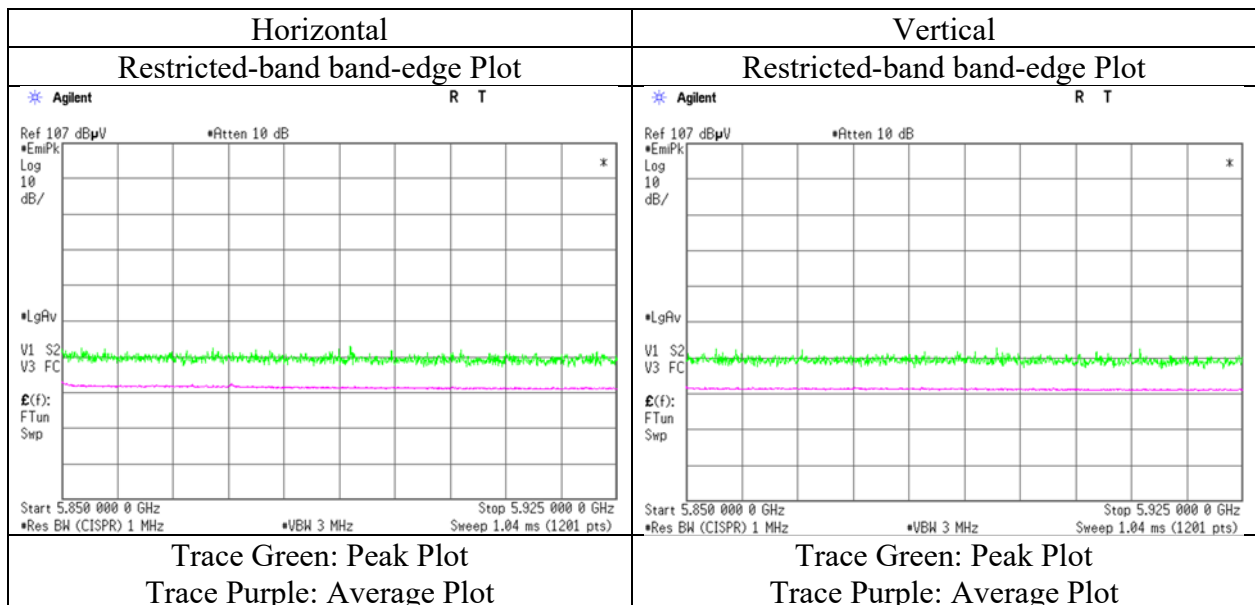
Result(EIRP[dBm])=10*LOG (({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m] } ^ 2) / 30) *10^3

*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 : $20\log(3.84\text{ m} / 3.0\text{ m}) = 2.15\text{ dB}$

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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Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13004393S-E-R2
Test place Shonan EMC Lab.
Semi Anechoic Chamber No.3
Date September 7, 2019
Temperature / Humidity 23 deg. C / 58 % RH
Engineer Kazuya Noda
(1 GHz – 6.4 GHz)
Mode Tx, 11n-20 (CDD), 5745 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.	5650.000	PK	49.86	32.46	16.47	43.33	2.15	57.61	-37.61	-27.0	10.6	104	341	-
Hori.	5700.000	PK	50.13	32.61	16.53	43.33	2.15	58.09	-37.13	10.0	47.1	104	341	-
Hori.	5720.000	PK	54.54	32.66	16.54	43.33	2.15	62.56	-32.66	15.6	48.2	104	341	-
Hori.	5725.000	PK	62.96	32.68	16.55	43.33	2.15	71.01	-24.21	27.0	51.2	104	341	-
Vert.	5650.000	PK	49.84	32.46	16.47	43.33	2.15	57.59	-37.63	-27.0	10.6	100	254	-
Vert.	5700.000	PK	50.49	32.61	16.53	43.33	2.15	58.45	-36.77	10.0	46.7	100	254	-
Vert.	5720.000	PK	52.68	32.66	16.54	43.33	2.15	60.70	-34.52	15.6	50.1	100	254	-
Vert.	5725.000	PK	57.86	32.68	16.55	43.33	2.15	65.91	-29.31	27.0	56.3	100	254	-

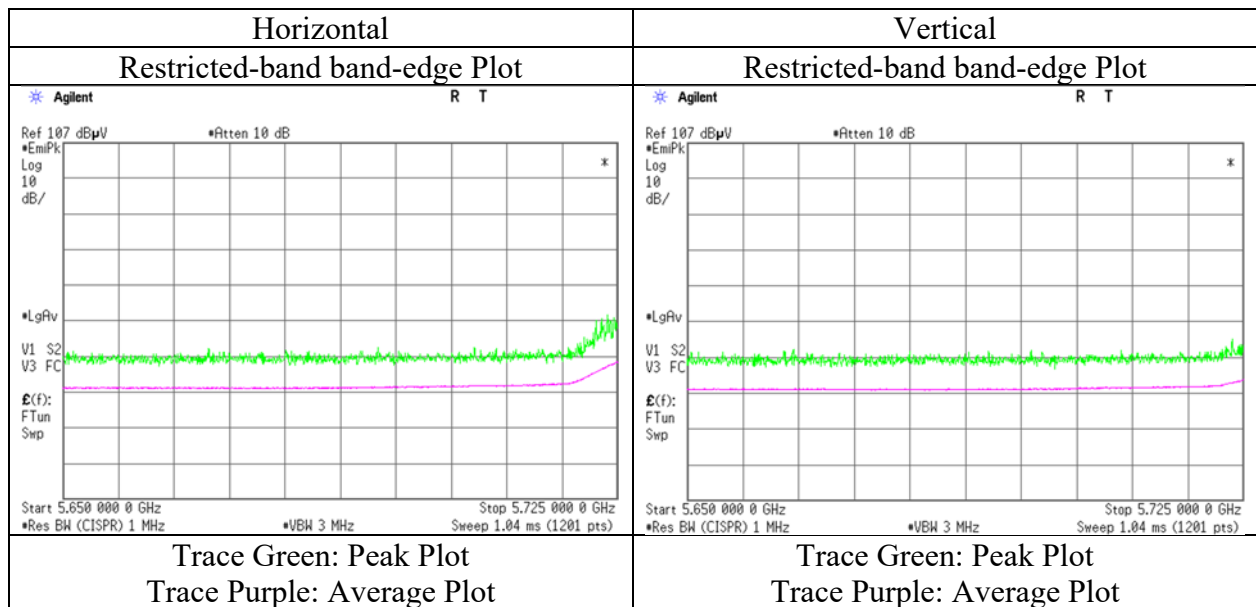
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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 7, 2019
Temperature / Humidity 23 deg. C / 58 % RH
Engineer Kazuya Noda
(1 GHz – 6.4 GHz)
Mode Tx, 11n-20 (CDD), 5825 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.	5850.000	PK	56.19	33.02	16.68	43.34	2.15	64.70	-30.52	27.0	57.5	110	338	-
Hori.	5855.000	PK	50.51	33.03	16.68	43.34	2.15	59.03	-36.19	15.6	51.7	110	338	-
Hori.	5872.952	PK	51.08	33.07	16.70	43.34	2.15	59.66	-35.56	10.5	46.0	110	338	-
Hori.	5875.000	PK	50.29	33.08	16.70	43.34	2.15	58.88	-36.34	10.0	46.3	110	338	-
Hori.	5925.000	PK	49.85	33.18	16.74	43.34	2.15	58.58	-36.64	-27.0	9.6	110	338	-
Vert.	5850.000	PK	51.64	33.02	16.68	43.34	2.15	60.15	-35.07	27.0	62.0	151	248	-
Vert.	5855.000	PK	49.73	33.03	16.68	43.34	2.15	58.25	-36.97	15.6	52.5	151	248	-
Vert.	5872.952	PK	50.21	33.07	16.70	43.34	2.15	58.79	-36.43	10.5	46.9	151	248	-
Vert.	5875.000	PK	49.49	33.08	16.70	43.34	2.15	58.08	-37.14	10.0	47.1	151	248	-
Vert.	5925.000	PK	49.03	33.18	16.74	43.34	2.15	57.76	-37.46	-27.0	10.4	151	248	-

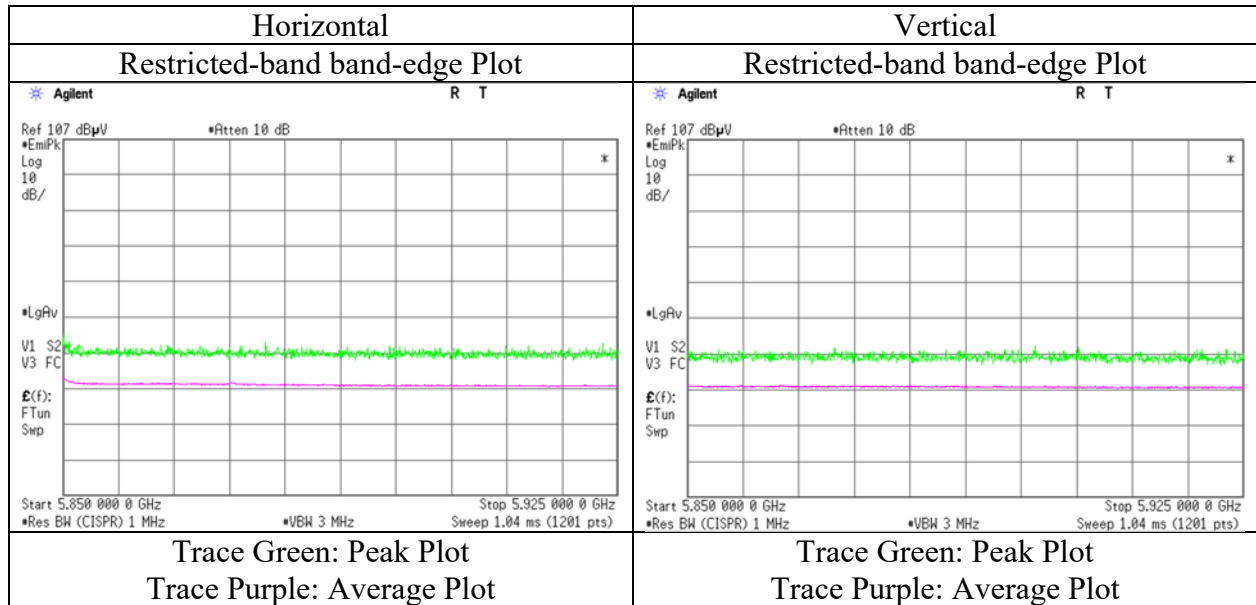
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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), 5745 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.	5650.000	PK	49.28	32.46	16.55	43.33	2.04	57.00	-38.22	-27.0	11.2	121	339	-
Hori.	5700.000	PK	50.43	32.61	16.58	43.33	2.04	58.33	-36.89	10.0	46.8	121	339	-
Hori.	5720.000	PK	51.09	32.66	16.58	43.33	2.04	59.04	-36.18	15.6	51.7	121	339	-
Hori.	5725.000	PK	58.42	32.68	16.59	43.33	2.04	66.40	-28.82	27.0	55.8	121	339	-
Vert.	5650.000	PK	49.15	32.46	16.55	43.33	2.04	56.87	-38.35	-27.0	11.3	217	202	-
Vert.	5700.000	PK	49.81	32.61	16.58	43.33	2.04	57.71	-37.51	10.0	47.5	217	202	-
Vert.	5720.000	PK	50.92	32.66	16.58	43.33	2.04	58.87	-36.35	15.6	51.9	217	202	-
Vert.	5725.000	PK	55.85	32.68	16.59	43.33	2.04	63.83	-31.39	27.0	58.3	217	202	-

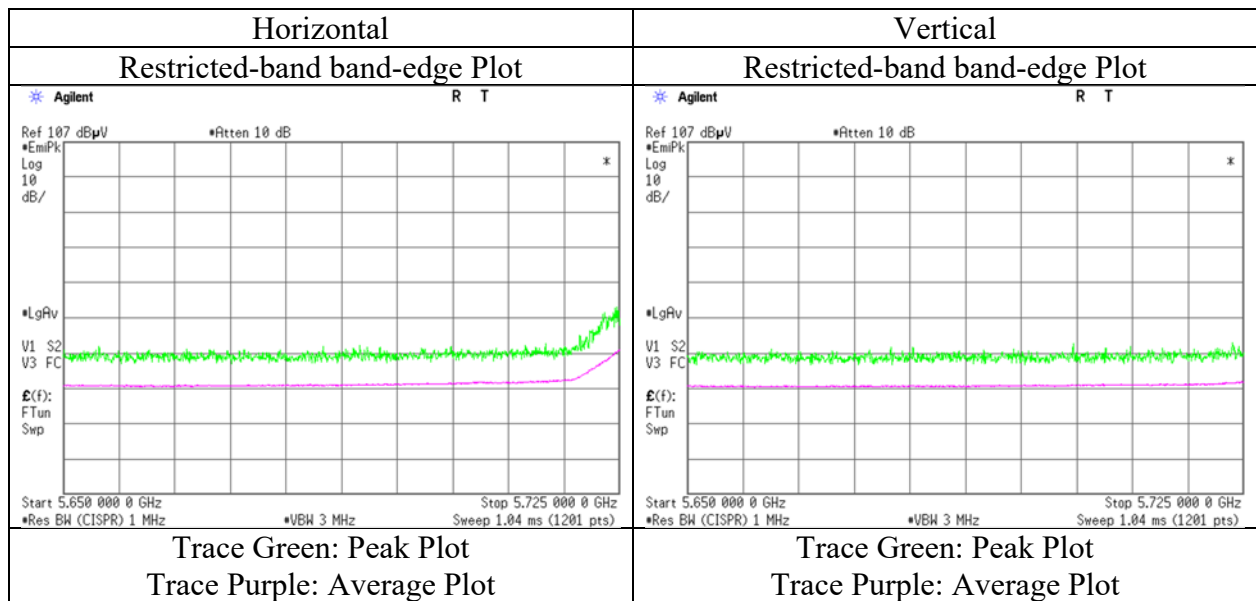
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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), 5825 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.	5850.000	PK	53.02	33.02	16.66	43.34	2.04	61.40	-33.82	27.00	60.8	100	344	-
Hori.	5855.000	PK	49.49	33.03	16.66	43.34	2.04	57.88	-37.34	15.60	52.9	100	344	-
Hori.	5875.000	PK	49.19	33.08	16.67	43.34	2.04	57.64	-37.58	10.00	47.5	100	344	-
Hori.	5925.000	PK	49.52	33.18	16.69	43.34	2.04	58.09	-37.13	-27.00	10.1	100	344	-
Vert.	5850.000	PK	51.24	33.02	16.66	43.34	2.04	59.62	-35.60	27.00	62.6	210	207	-
Vert.	5855.000	PK	50.05	33.03	16.66	43.34	2.04	58.44	-36.78	15.60	52.3	210	207	-
Vert.	5875.000	PK	50.07	33.08	16.67	43.34	2.04	58.52	-36.70	10.00	46.7	210	207	-
Vert.	5925.000	PK	49.56	33.18	16.69	43.34	2.04	58.13	-37.09	-27.00	10.0	210	207	-

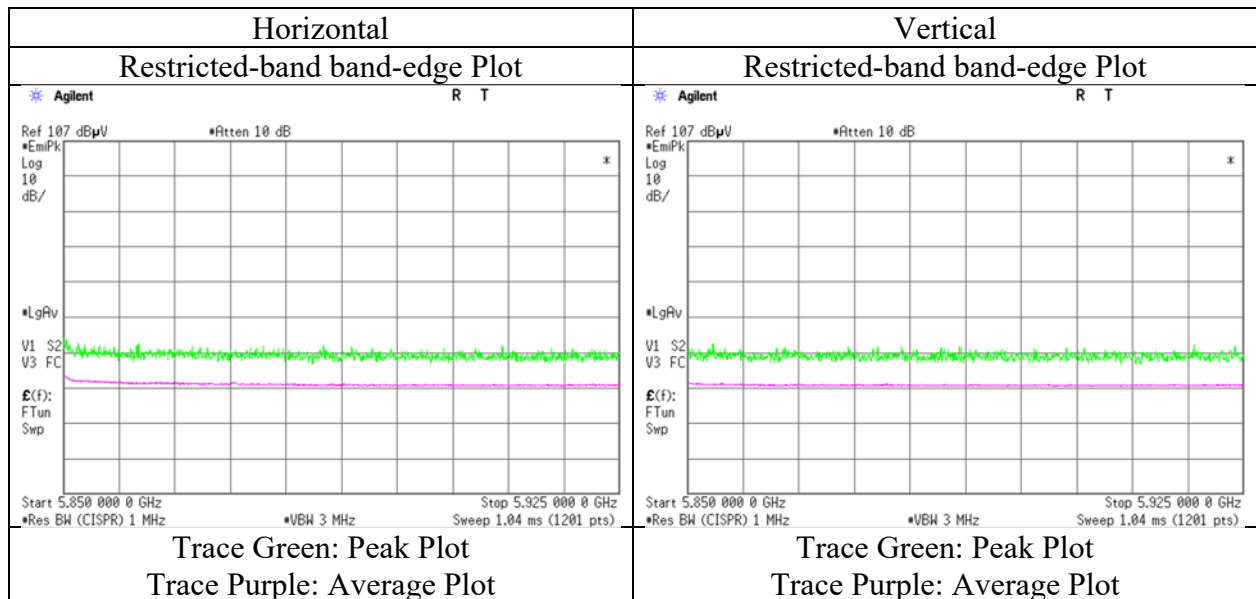
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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.

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Radiated Spurious Emission

Report No. 13004393S-E-R2
Test place Shonan EMC Lab.
Semi Anechoic Chamber (No.) 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), 5745 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.	11490.000	PK	49.51	40.08	9.90	42.60	2.04	58.93	73.9	14.9	126	290	-
Hori.	11490.000	AV	37.44	40.08	9.90	42.60	2.04	46.86	53.9	7.0	126	290	VBW: 1 kHz
Vert.	11490.000	PK	49.39	40.08	9.90	42.60	2.04	58.81	73.9	15.0	128	90	-
Vert.	11490.000	AV	37.53	40.08	9.90	42.60	2.04	46.95	53.9	6.9	128	90	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.	17235.000	PK	47.26	40.77	12.36	40.29	-9.54	50.56	-44.66	-27.0	17.7	182	214	-
Vert.	17235.000	PK	47.28	40.77	12.36	40.29	-9.54	50.58	-44.64	-27.0	17.6	169	222	-

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

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

*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	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), 5785 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.	11570.000	PK	48.26	39.96	9.91	42.56	2.04	57.61	73.9	16.3	126	292	-
Hori.	11570.000	AV	37.16	39.96	9.91	42.56	2.04	46.51	53.9	7.4	126	292	VBW: 1 kHz
Vert.	11570.000	PK	48.61	39.96	9.91	42.56	2.04	57.96	73.9	15.9	137	91	-
Vert.	11570.000	AV	37.21	39.96	9.91	42.56	2.04	46.56	53.9	7.3	137	91	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.	17355.000	PK	46.87	41.40	12.34	40.26	-9.54	50.81	-44.41	-27.0	17.4	165	148	-
Vert.	17355.000	PK	47.16	41.40	12.34	40.26	-9.54	51.10	-44.12	-27.0	17.1	193	218	-

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

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

*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 : $20\log(3.79\text{ m} / 3.0\text{ m}) = 2.04\text{ dB}$

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), 5825 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.	11650.000	PK	48.53	39.69	9.91	42.51	2.04	57.66	73.9	16.2	163	291	-
Hori.	11650.000	AV	37.36	39.69	9.91	42.51	2.04	46.49	53.9	7.4	163	291	VBW: 1 kHz
Vert.	11650.000	PK	48.96	39.69	9.91	42.51	2.04	58.09	73.9	15.8	203	90	-
Vert.	11650.000	AV	37.53	39.69	9.91	42.51	2.04	46.66	53.9	7.2	203	90	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.	17475.000	PK	46.48	42.24	12.34	40.23	-9.54	51.29	-43.93	-27.0	16.9	162	249	-
Vert.	17475.000	PK	46.35	42.24	12.34	40.23	-9.54	51.16	-44.06	-27.0	17.1	157	251	-

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

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

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

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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), 5745 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.	5650.000	PK	49.39	32.46	16.55	43.33	2.04	57.11	-38.11	-27.0	11.1	102	169	-
Hori.	5696.951	PK	49.44	32.60	16.58	43.33	2.04	57.33	-37.89	7.7	45.6	102	169	-
Hori.	5700.000	PK	49.42	32.61	16.58	43.33	2.04	57.32	-37.90	10.0	47.9	102	169	-
Hori.	5720.000	PK	49.84	32.66	16.58	43.33	2.04	57.79	-37.43	15.6	53.0	102	169	-
Hori.	5725.000	PK	58.33	32.68	16.59	43.33	2.04	66.31	-28.91	27.0	55.9	102	169	-
Vert.	5650.000	PK	49.64	32.46	16.55	43.33	2.04	57.36	-37.86	-27.0	10.8	185	209	-
Vert.	5696.951	PK	49.66	32.60	16.58	43.33	2.04	57.55	-37.67	7.7	45.4	185	209	-
Vert.	5700.000	PK	49.65	32.61	16.58	43.33	2.04	57.55	-37.67	10.0	47.6	185	209	-
Vert.	5720.000	PK	49.75	32.66	16.58	43.33	2.04	57.70	-37.52	15.6	53.1	185	209	-
Vert.	5725.000	PK	54.06	32.68	16.59	43.33	2.04	62.04	-33.18	27.0	60.1	185	209	-

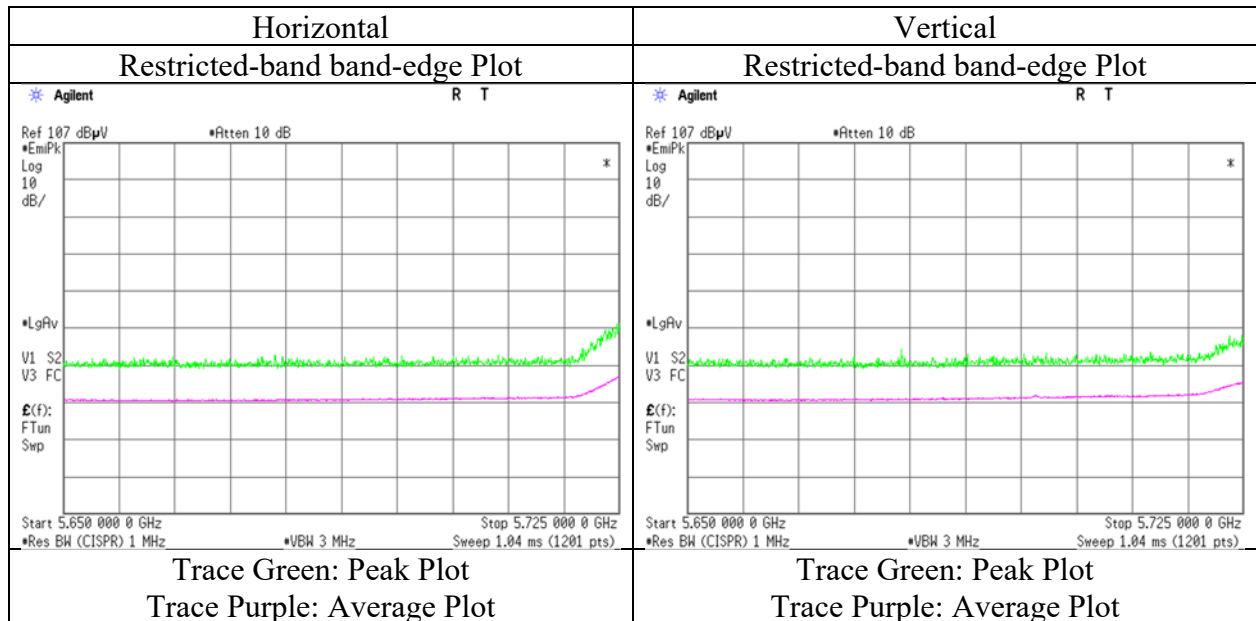
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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.

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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), 5825 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.	5850.000	PK	52.02	33.02	16.66	43.34	2.04	60.40	-34.82	27.0	61.8	103	168	-
Hori.	5855.000	PK	49.48	33.03	16.66	43.34	2.04	57.87	-37.35	15.6	52.9	103	168	-
Hori.	5873.073	PK	49.52	33.07	16.67	43.34	2.04	57.96	-37.26	11.4	48.6	103	168	-
Hori.	5875.000	PK	49.42	33.08	16.67	43.34	2.04	57.87	-37.35	10.0	47.3	103	168	-
Hori.	5925.000	PK	49.05	33.18	16.69	43.34	2.04	57.62	-37.60	-27.0	10.6	103	168	-
Vert.	5850.000	PK	50.09	33.02	16.66	43.34	2.04	58.47	-36.75	27.0	63.7	197	206	-
Vert.	5855.000	PK	49.44	33.03	16.66	43.34	2.04	57.83	-37.39	15.6	52.9	197	206	-
Vert.	5873.073	PK	49.48	33.07	16.67	43.34	2.04	57.92	-37.30	11.4	48.7	197	206	-
Vert.	5875.000	PK	49.24	33.08	16.67	43.34	2.04	57.69	-37.53	10.0	47.5	197	206	-
Vert.	5925.000	PK	49.06	33.18	16.69	43.34	2.04	57.63	-37.59	-27.0	10.5	197	206	-

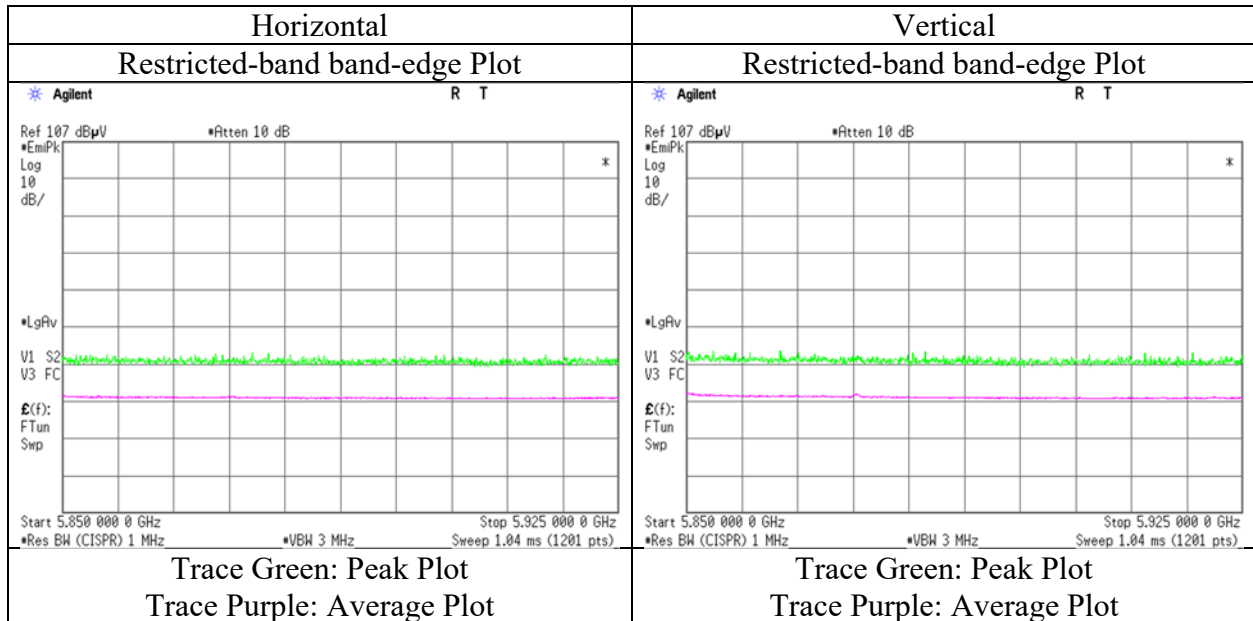
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

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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, 11n-20 (CDD), 5745 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.	5650.000	PK	49.28	32.46	16.55	43.33	2.04	57.00	-38.22	-27.0	11.2	121	339	-
Hori.	5700.000	PK	50.43	32.61	16.58	43.33	2.04	58.33	-36.89	10.0	46.8	121	339	-
Hori.	5720.000	PK	51.09	32.66	16.58	43.33	2.04	59.04	-36.18	15.6	51.7	121	339	-
Hori.	5725.000	PK	58.42	32.68	16.59	43.33	2.04	66.40	-28.82	27.0	55.8	121	339	-
Vert.	5650.000	PK	49.15	32.46	16.55	43.33	2.04	56.87	-38.35	-27.0	11.3	217	202	-
Vert.	5700.000	PK	49.81	32.61	16.58	43.33	2.04	57.71	-37.51	10.0	47.5	217	202	-
Vert.	5720.000	PK	50.92	32.66	16.58	43.33	2.04	58.87	-36.35	15.6	51.9	217	202	-
Vert.	5725.000	PK	55.85	32.68	16.59	43.33	2.04	63.83	-31.39	27.0	58.3	217	202	-

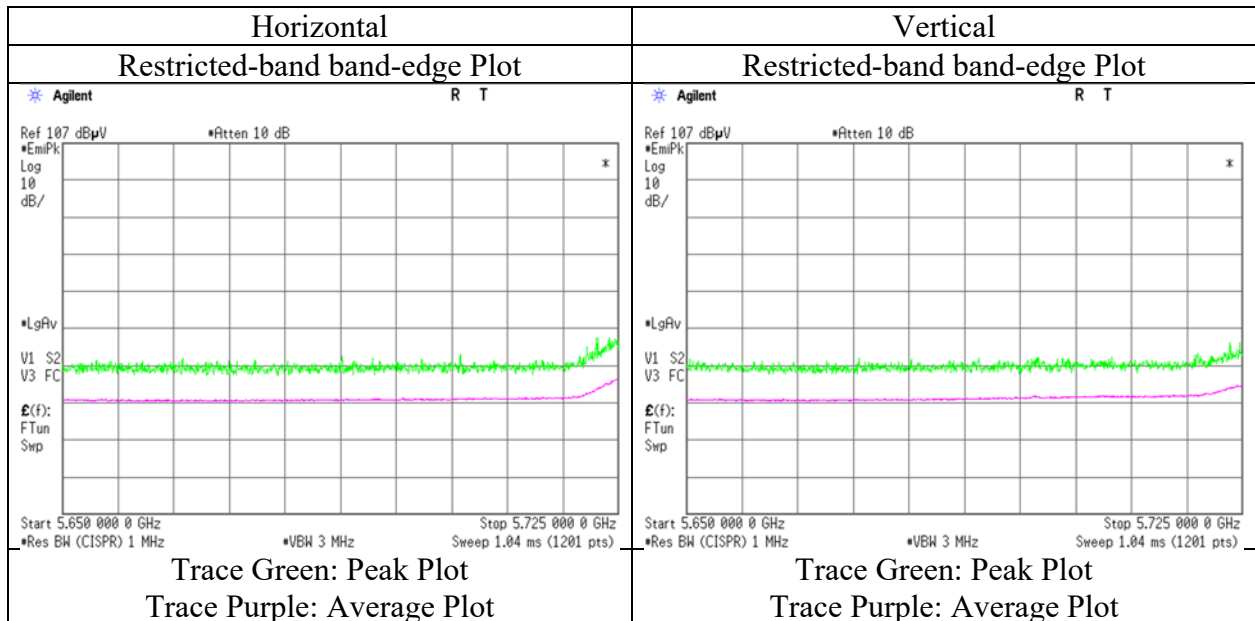
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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.

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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, 11n-20 (CDD), 5825 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.	5850.000	PK	53.02	33.02	16.66	43.34	2.04	61.40	-33.82	27.0	60.8	100	344	-
Hori.	5855.000	PK	49.49	33.03	16.66	43.34	2.04	57.88	-37.34	15.6	52.9	100	344	-
Hori.	5875.000	PK	49.19	33.08	16.67	43.34	2.04	57.64	-37.58	10.0	47.5	100	344	-
Hori.	5925.000	PK	49.52	33.18	16.69	43.34	2.04	58.09	-37.13	-27.0	10.1	100	344	-
Vert.	5850.000	PK	51.24	33.02	16.66	43.34	2.04	59.62	-35.60	27.0	62.6	210	207	-
Vert.	5855.000	PK	50.05	33.03	16.66	43.34	2.04	58.44	-36.78	15.6	52.3	210	207	-
Vert.	5875.000	PK	50.07	33.08	16.67	43.34	2.04	58.52	-36.70	10.0	46.7	210	207	-
Vert.	5925.000	PK	49.56	33.18	16.69	43.34	2.04	58.13	-37.09	-27.0	10.0	210	207	-

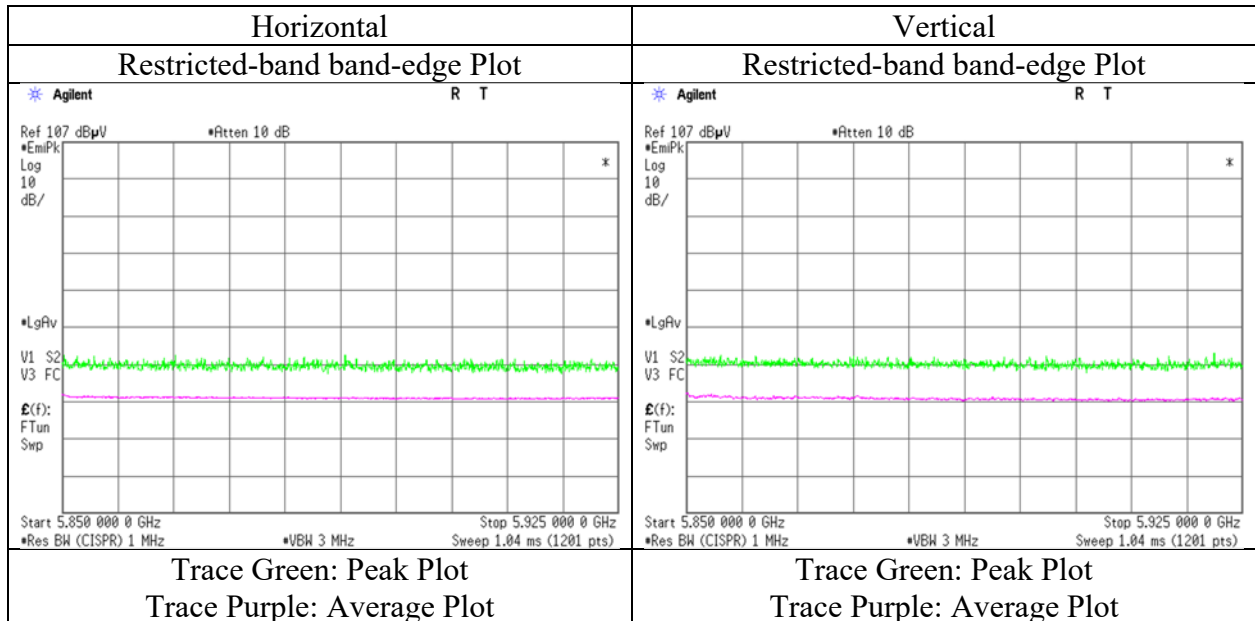
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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 this 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 7, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	23 deg.C / 58 %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)	Toshinori Yamada (26.5 GHz – 40 GHz)
Mode	Tx, 11ac-40 (MIMO), 5755 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.	11510.000	PK	48.19	40.07	9.90	42.59	2.15	57.72	73.9	16.1	151	339	-
Hori.	11510.000	AV	36.60	40.07	9.90	42.59	2.15	46.13	53.9	7.7	151	339	VBW: 130 Hz
Vert.	11510.000	PK	47.81	40.07	9.90	42.59	2.15	57.34	73.9	16.5	140	0	-
Vert.	11510.000	AV	36.48	40.07	9.90	42.59	2.15	46.01	53.9	7.8	140	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.	5650.000	PK	51.19	32.46	16.47	43.33	2.15	58.94	-36.28	-27.0	9.2	115	339	-
Hori.	5700.000	PK	51.30	32.61	16.53	43.33	2.15	59.26	-35.96	10.0	45.9	115	339	-
Hori.	5720.000	PK	57.82	32.66	16.54	43.33	2.15	65.84	-29.38	15.6	44.9	115	339	-
Hori.	5725.000	PK	58.65	32.68	16.55	43.33	2.15	66.70	-28.52	27.0	55.5	115	339	-
Hori.	17265.000	PK	47.13	40.92	12.36	40.28	-9.54	50.59	-44.63	-27.0	17.6	240	93	-
Vert.	5650.000	PK	49.35	32.46	16.47	43.33	2.15	57.10	-38.12	-27.0	11.1	147	258	-
Vert.	5700.000	PK	50.71	32.61	16.53	43.33	2.15	58.67	-36.55	10.0	46.5	147	258	-
Vert.	5720.000	PK	55.58	32.66	16.54	43.33	2.15	63.60	-31.62	15.6	47.2	147	258	-
Vert.	5725.000	PK	55.64	32.68	16.55	43.33	2.15	63.69	-31.53	27.0	58.5	147	258	-
Vert.	17265.000	PK	46.62	40.92	12.36	40.28	-9.54	50.08	-45.14	-27.00	18.1	212	354	-

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

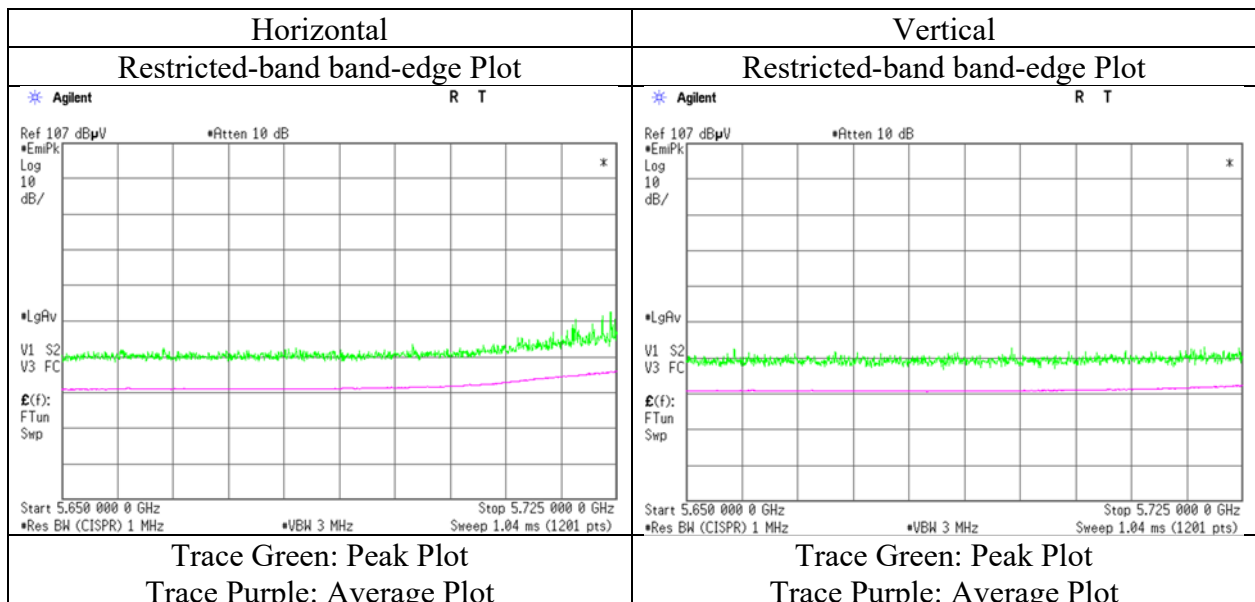
Result(EIRP[dBm])= $10 \cdot \log((\{10^{\frac{1}{2}} \cdot (\text{Electric Field Strength [dBuV/m]} / 20) \cdot 10^{(-6)} \cdot \text{Distance:3[m]}^2\} / 30) \cdot 10^{(-3)})$

*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.

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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 7, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	23 deg.C / 58 % 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
Mode	(1 GHz – 6.4 GHz) (6.4 G – 13 GHz) (13 GHz – 18 GHz) (18 GHz – 26.5 GHz) (26.5 GHz – 40 GHz)				
	Tx, 11ac-40 (MIMO), 5795 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.	11590.000	PK	49.38	39.90	9.91	42.55	2.15	58.79	73.9	15.1	137	98	-
Hori.	11590.000	AV	37.22	39.90	9.91	42.55	2.15	46.63	53.9	7.3	137	98	VBW: 130 Hz
Vert.	11590.000	PK	48.61	39.90	9.91	42.55	2.15	58.02	73.9	15.9	100	351	-
Vert.	11590.000	AV	36.89	39.90	9.91	42.55	2.15	46.30	53.9	7.6	100	351	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.	5850.000	PK	50.69	33.02	16.68	43.34	2.15	59.20	-36.02	27.0	63.0	102	329	-
Hori.	5855.000	PK	50.58	33.03	16.68	43.34	2.15	59.10	-36.12	15.6	51.7	102	329	-
Hori.	5875.000	PK	50.55	33.08	16.70	43.34	2.15	59.14	-36.08	10.0	46.1	102	329	-
Hori.	5925.000	PK	50.01	33.18	16.74	43.34	2.15	58.74	-36.48	-27.0	9.5	102	329	-
Hori.	17385.000	PK	46.88	41.59	12.35	40.25	-9.54	51.03	-44.19	-27.0	17.2	231	91	-
Vert.	5850.000	PK	50.41	33.02	16.68	43.34	2.15	58.92	-36.30	27.0	63.3	126	279	-
Vert.	5855.000	PK	50.13	33.03	16.68	43.34	2.15	58.65	-36.57	15.6	52.2	126	279	-
Vert.	5875.000	PK	50.37	33.08	16.70	43.34	2.15	58.96	-36.26	10.0	46.3	126	279	-
Vert.	5925.000	PK	49.96	33.18	16.74	43.34	2.15	58.69	-36.53	-27.0	9.5	126	279	-
Vert.	17385.000	PK	46.52	41.59	12.35	40.25	-9.54	50.67	-44.55	-27.00	17.6	216	357	-

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

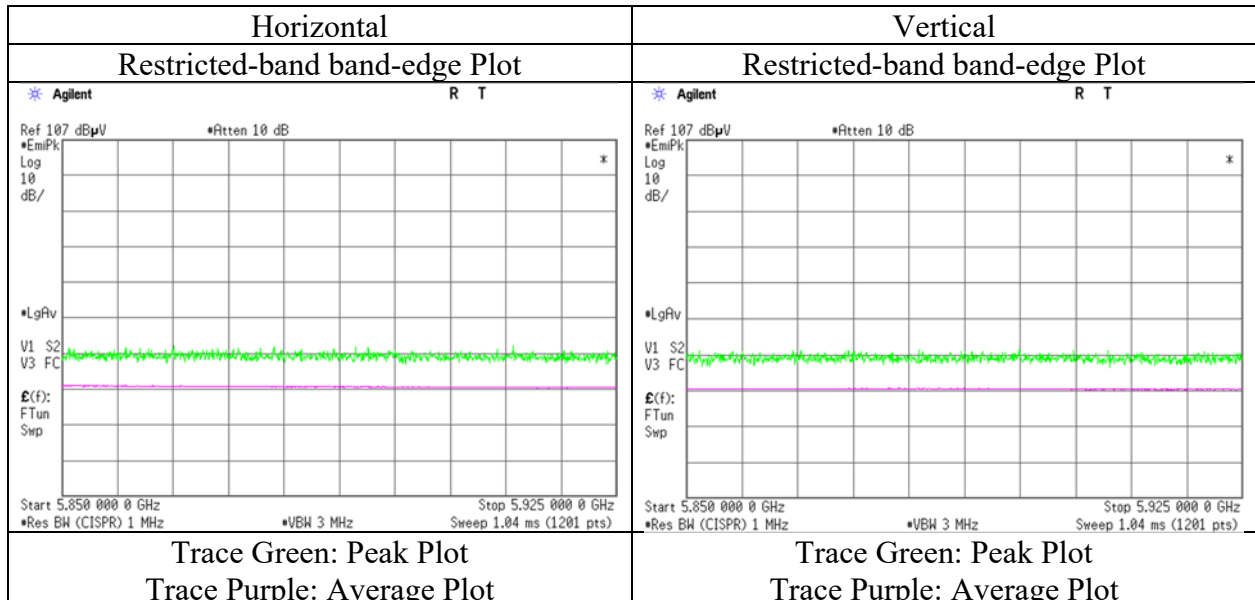
Result(EIRP[dBm])=10*LOG (({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m]) ^ 2 } / 30) *10^3)

*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 : $20\log(3.84\text{ m} / 3.0\text{ m}) = 2.15\text{ dB}$

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
Date September 6, 2019
Temperature / Humidity 24 deg. C / 61 % RH
Engineer Kazuya Noda
(1 GHz – 6.4 GHz)
Mode Tx, 11ac-40 (CDD), 5755 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.	5650.000	PK	51.32	32.46	16.47	43.33	2.15	59.07	-36.15	-27.0	9.1	115	339	-
Hori.	5700.000	PK	55.84	32.61	16.53	43.33	2.15	63.80	-31.42	10.0	41.4	115	339	-
Hori.	5720.000	PK	61.72	32.66	16.54	43.33	2.15	69.74	-25.48	15.6	41.0	115	339	-
Hori.	5725.000	PK	62.17	32.68	16.55	43.33	2.15	70.22	-25.00	27.0	52.0	115	339	-
Vert.	5650.000	PK	50.59	32.46	16.47	43.33	2.15	58.34	-36.88	-27.0	9.8	103	254	-
Vert.	5700.000	PK	52.14	32.61	16.53	43.33	2.15	60.10	-35.12	10.0	45.1	103	254	-
Vert.	5720.000	PK	57.79	32.66	16.54	43.33	2.15	65.81	-29.41	15.6	45.0	103	254	-
Vert.	5725.000	PK	58.04	32.68	16.55	43.33	2.15	66.09	-29.13	27.0	56.1	103	254	-

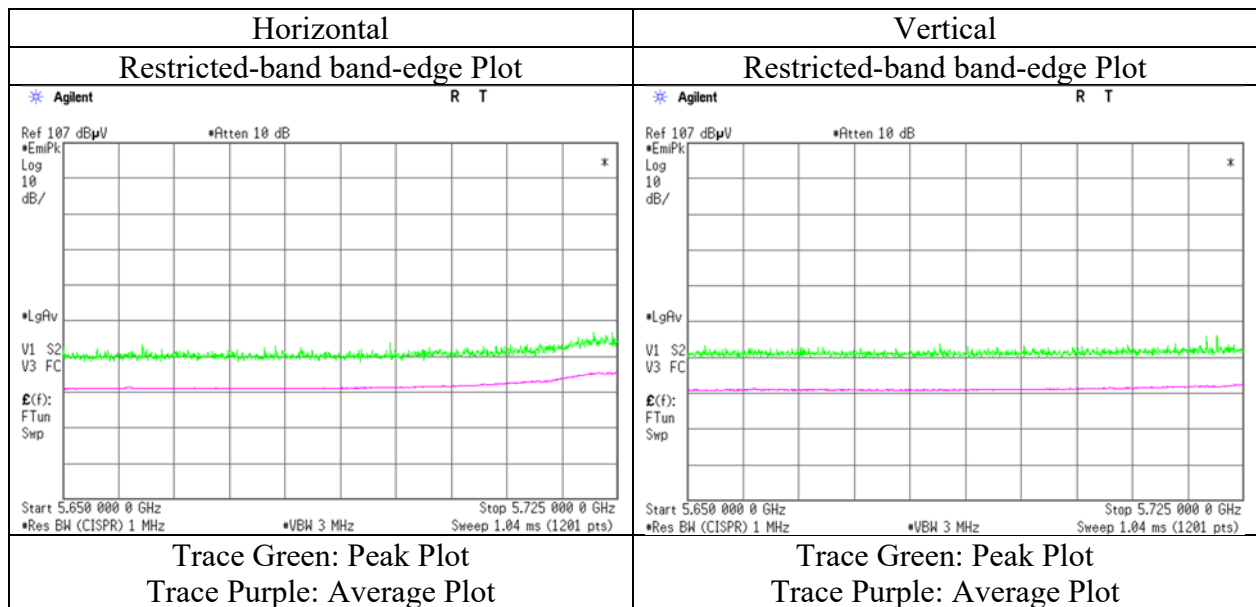
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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 7, 2019
Temperature / Humidity 23 deg. C / 58 % RH
Engineer Kazuya Noda
(1 GHz – 6.4 GHz)
Mode Tx, 11ac-40 (CDD), 5795 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.	5850.000	PK	55.89	33.02	16.68	43.34	2.15	64.40	-30.82	27.0	57.8	124	350	-
Hori.	5855.000	PK	54.03	33.03	16.68	43.34	2.15	62.55	-32.67	15.6	48.2	124	350	-
Hori.	5875.000	PK	53.05	33.08	16.70	43.34	2.15	61.64	-33.58	10.0	43.5	124	350	-
Hori.	5925.000	PK	50.38	33.18	16.74	43.34	2.15	59.11	-36.11	-27.0	9.1	124	350	-
Vert.	5850.000	PK	52.88	33.02	16.68	43.34	2.15	61.39	-33.83	27.0	60.8	104	253	-
Vert.	5855.000	PK	51.56	33.03	16.68	43.34	2.15	60.08	-35.14	15.6	50.7	104	253	-
Vert.	5875.000	PK	50.47	33.08	16.70	43.34	2.15	59.06	-36.16	10.0	46.1	104	253	-
Vert.	5925.000	PK	50.28	33.18	16.74	43.34	2.15	59.01	-36.21	-27.0	9.2	104	253	-

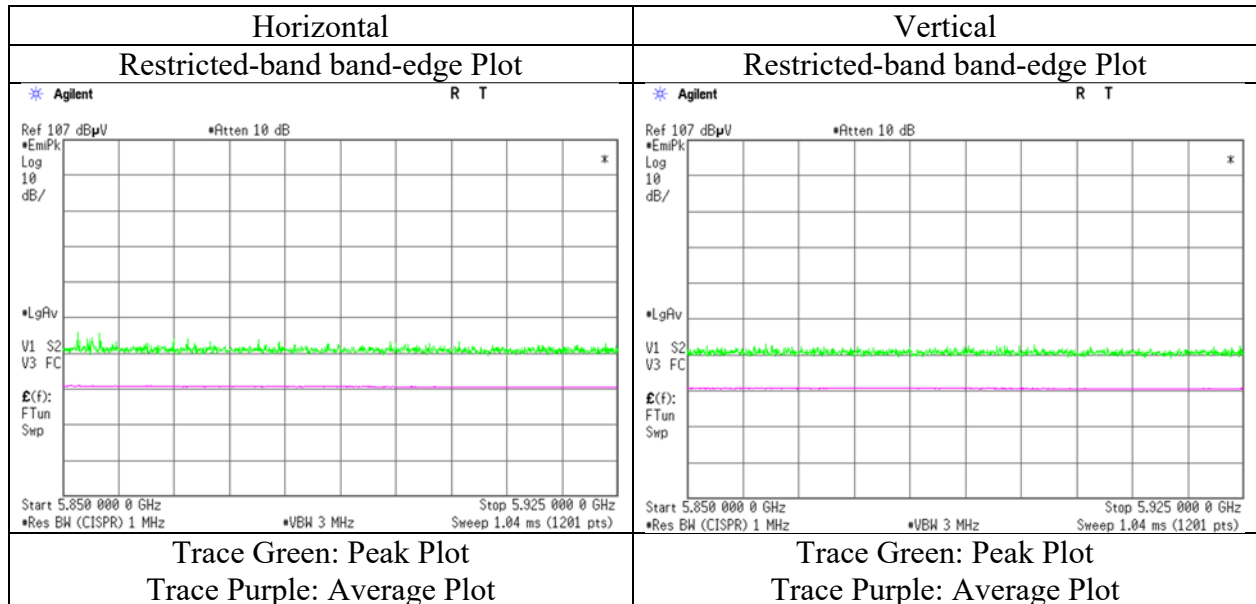
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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.

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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), 5755 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.	5650.000	PK	49.88	32.46	16.55	43.33	2.14	57.70	-37.52	-27.0	10.5	114	337	-
Hori.	5700.000	PK	52.59	32.61	16.58	43.33	2.14	60.59	-34.63	10.0	44.6	114	337	-
Hori.	5720.000	PK	59.46	32.66	16.58	43.33	2.14	67.51	-27.71	15.6	43.3	114	337	-
Hori.	5725.000	PK	59.83	32.68	16.59	43.33	2.14	67.91	-27.31	27.0	54.3	114	337	-
Vert.	5650.000	PK	49.03	32.46	16.55	43.33	2.14	56.85	-38.37	-27.0	11.3	154	285	-
Vert.	5700.000	PK	49.45	32.61	16.58	43.33	2.14	57.45	-37.77	10.0	47.7	154	285	-
Vert.	5720.000	PK	52.71	32.66	16.58	43.33	2.14	60.76	-34.46	15.6	50.0	154	285	-
Vert.	5725.000	PK	53.19	32.68	16.59	43.33	2.14	61.27	-33.95	27.0	60.9	154	285	-

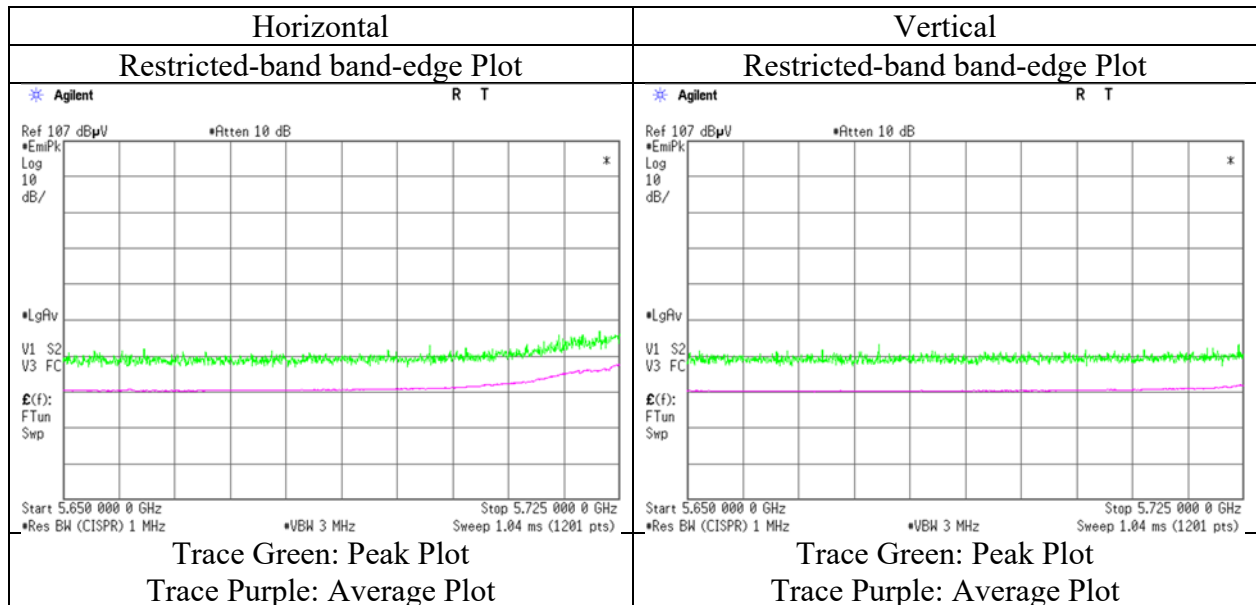
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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), 5795 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.	5850.000	PK	55.58	33.02	16.66	43.34	2.14	64.06	-31.16	27.0	58.1	142	343	-
Hori.	5855.000	PK	53.14	33.03	16.66	43.34	2.14	61.63	-33.59	15.6	49.1	142	343	-
Hori.	5875.000	PK	50.96	33.08	16.67	43.34	2.14	59.51	-35.71	10.0	45.7	142	343	-
Hori.	5925.000	PK	50.75	33.18	16.69	43.34	2.14	59.42	-35.80	-27.0	8.8	142	343	-
Vert.	5850.000	PK	50.53	33.02	16.66	43.34	2.14	59.01	-36.21	27.0	63.2	157	273	-
Vert.	5855.000	PK	50.29	33.03	16.66	43.34	2.14	58.78	-36.44	15.6	52.0	157	273	-
Vert.	5875.000	PK	49.45	33.08	16.67	43.34	2.14	58.00	-37.22	10.0	47.2	157	273	-
Vert.	5925.000	PK	49.72	33.18	16.69	43.34	2.14	58.39	-36.83	-27.0	9.8	157	273	-

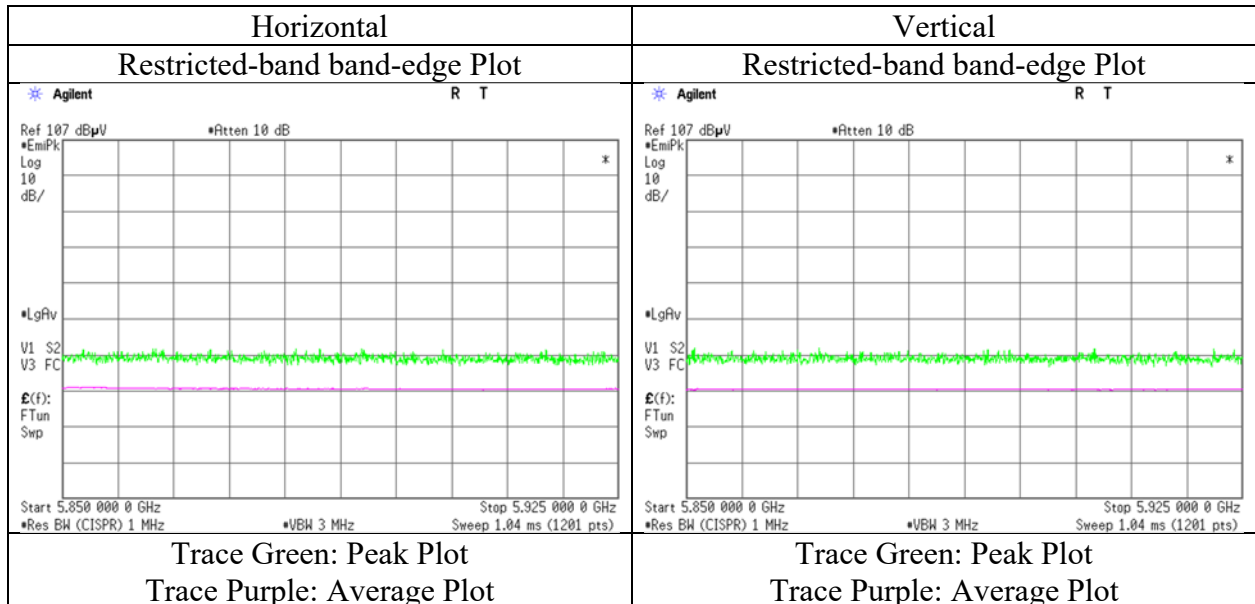
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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, 11ac-40 (MIMO), 5755 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.	11510.000	PK	48.69	40.07	9.90	42.59	2.04	58.11	73.9	15.7	156	299	-
Hori.	11510.000	AV	36.75	40.07	9.90	42.59	2.04	46.17	53.9	7.7	156	299	VBW: 130 Hz
Vert.	11510.000	PK	49.02	40.07	9.90	42.59	2.04	58.44	73.9	15.4	154	91	-
Vert.	11510.000	AV	36.83	40.07	9.90	42.59	2.04	46.25	53.9	7.6	154	91	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.	17265.000	PK	47.27	40.92	12.36	40.28	-9.54	50.73	-44.49	-27.0	17.5	196	248	-
Vert.	17265.000	PK	47.82	40.92	12.36	40.28	-9.54	51.28	-43.94	-27.0	16.9	205	351	-

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

Result(EIRP[dBm]) = $10 \cdot \log \left(\left(\left(10^{\frac{\text{Result [dBuV/m]} + 30}{20}} \right) \cdot \left(\frac{\text{Distance [m]}}{3} \right)^2 \right) \cdot \left(\frac{1}{30} \right) \right) \cdot 10^3$

*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	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), 5795 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.	11590.000	PK	48.82	39.90	9.91	42.55	2.04	58.12	73.9	15.7	131	8	-
Hori.	11590.000	AV	36.66	39.90	9.91	42.55	2.04	45.96	53.9	7.9	131	8	VBW: 130 Hz
Vert.	11590.000	PK	48.21	39.90	9.91	42.55	2.04	57.51	73.9	16.3	140	243	-
Vert.	11590.000	AV	36.68	39.90	9.91	42.55	2.04	45.98	53.9	7.9	140	243	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.	17385.000	PK	46.68	41.59	12.35	40.25	-9.54	50.83	-44.39	-27.0	17.4	179	215	-
Vert.	17385.000	PK	47.11	41.59	12.35	40.25	-9.54	51.26	-43.96	-27.0	17.0	158	206	-

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

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

*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 : $20\log(3.79\text{ m} / 3.0\text{ m}) = 2.04\text{ dB}$

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
Date September 7, 2019
Temperature / Humidity 23 deg. C / 58 % RH
Engineer Kazuya Noda
(1 GHz – 6.4 GHz)
Mode Tx, 11ac-40 (CDD), 5755 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.	5650.000	PK	50.89	32.46	16.47	43.33	2.04	58.53	-36.69	-27.0	9.6	154	348	-
Hori.	5700.000	PK	52.81	32.61	16.53	43.33	2.04	60.66	-34.56	10.0	44.5	154	348	-
Hori.	5720.000	PK	58.97	32.66	16.54	43.33	2.04	66.88	-28.34	15.6	43.9	154	348	-
Hori.	5725.000	PK	59.49	32.68	16.55	43.33	2.04	67.43	-27.79	27.0	54.7	154	348	-
Vert.	5650.000	PK	50.36	32.46	16.47	43.33	2.04	58.00	-37.22	-27.0	10.2	178	201	-
Vert.	5700.000	PK	54.15	32.61	16.53	43.33	2.04	62.00	-33.22	10.0	43.2	178	201	-
Vert.	5706.977	PK	54.71	32.62	16.53	43.33	2.04	62.57	-32.65	11.9	44.5	178	201	-
Vert.	5720.000	PK	59.03	32.66	16.54	43.33	2.04	66.94	-28.28	15.6	43.8	178	201	-
Vert.	5725.000	PK	59.63	32.68	16.55	43.33	2.04	67.57	-27.65	27.0	54.6	178	201	-

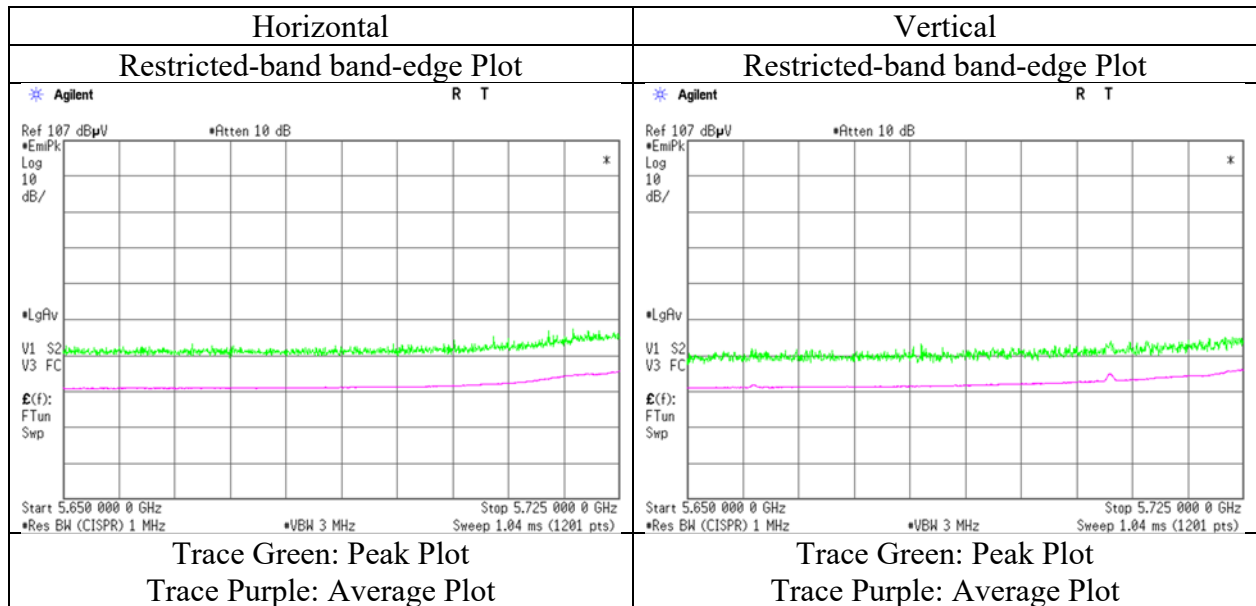
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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.

UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13004393S-E-R2
Test place Shonan EMC Lab.
Semi Anechoic Chamber No.3
Date September 7, 2019
Temperature / Humidity 23 deg. C / 58 % RH
Engineer Kazuya Noda
(1 GHz – 6.4 GHz)
Mode Tx, 11ac-40 (CDD), 5795 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.	5850.000	PK	53.21	33.02	16.68	43.34	2.04	61.61	-33.61	27.0	60.6	126	352	-
Hori.	5855.000	PK	52.56	33.03	16.68	43.34	2.04	60.97	-34.25	15.6	49.8	126	352	-
Hori.	5875.000	PK	51.34	33.08	16.70	43.34	2.04	59.82	-35.40	10.0	45.4	126	352	-
Hori.	5925.000	PK	49.84	33.18	16.74	43.34	2.04	58.46	-36.76	-27.0	9.7	126	352	-
Vert.	5850.000	PK	55.12	33.02	16.68	43.34	2.04	63.52	-31.70	27.0	58.7	175	199	-
Vert.	5855.000	PK	53.56	33.03	16.68	43.34	2.04	61.97	-33.25	15.6	48.8	175	199	-
Vert.	5875.000	PK	52.28	33.08	16.70	43.34	2.04	60.76	-34.46	10.0	44.4	175	199	-
Vert.	5925.000	PK	49.92	33.18	16.74	43.34	2.04	58.54	-36.68	-27.0	9.6	175	199	-

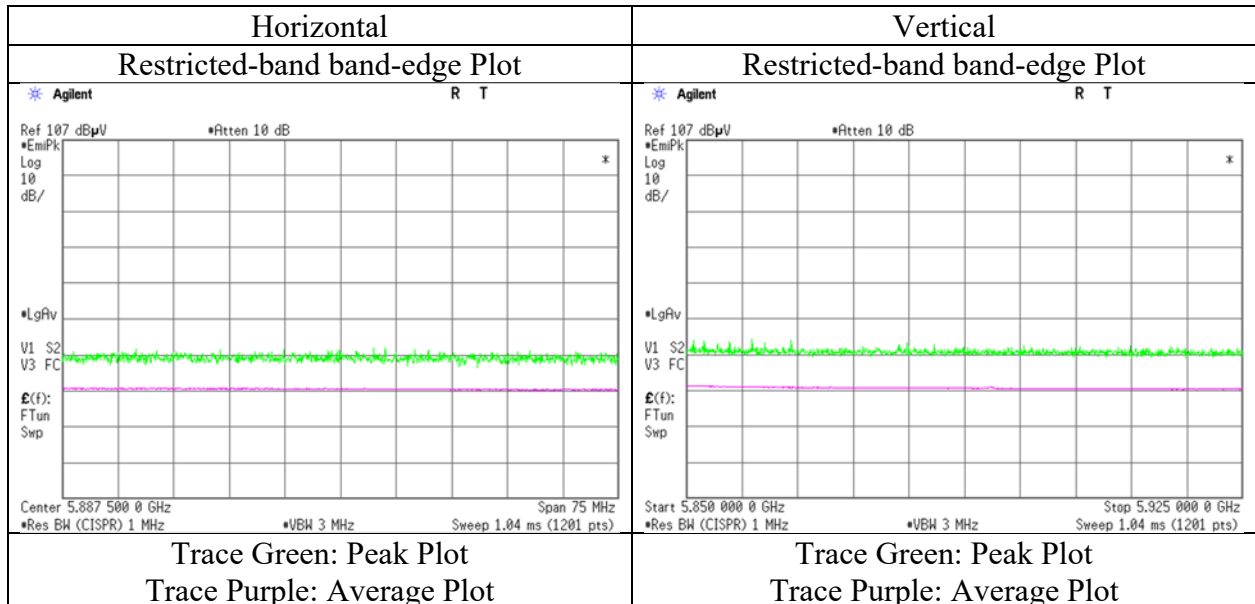
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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.

UL Japan, Inc.

Shonan EMC Lab.

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Facsimile : +81 463 50 6401

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), 5755 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.	5650.000	PK	48.84	32.46	16.55	43.33	2.04	56.56	-38.66	-27.0	11.6	156	345	-
Hori.	5700.000	PK	51.28	32.61	16.58	43.33	2.04	59.18	-36.04	10.0	46.0	156	345	-
Hori.	5720.000	PK	54.42	32.66	16.58	43.33	2.04	62.37	-32.85	15.6	48.4	156	345	-
Hori.	5725.000	PK	55.06	32.68	16.59	43.33	2.04	63.04	-32.18	27.0	59.1	156	345	-
Vert.	5650.000	PK	49.54	32.46	16.55	43.33	2.04	57.26	-37.96	-27.0	10.9	218	217	-
Vert.	5700.000	PK	52.00	32.61	16.58	43.33	2.04	59.90	-35.32	10.0	45.3	218	217	-
Vert.	5720.000	PK	58.12	32.66	16.58	43.33	2.04	66.07	-29.15	15.6	44.7	218	217	-
Vert.	5725.000	PK	58.87	32.68	16.59	43.33	2.04	66.85	-28.37	27.0	55.3	218	217	-

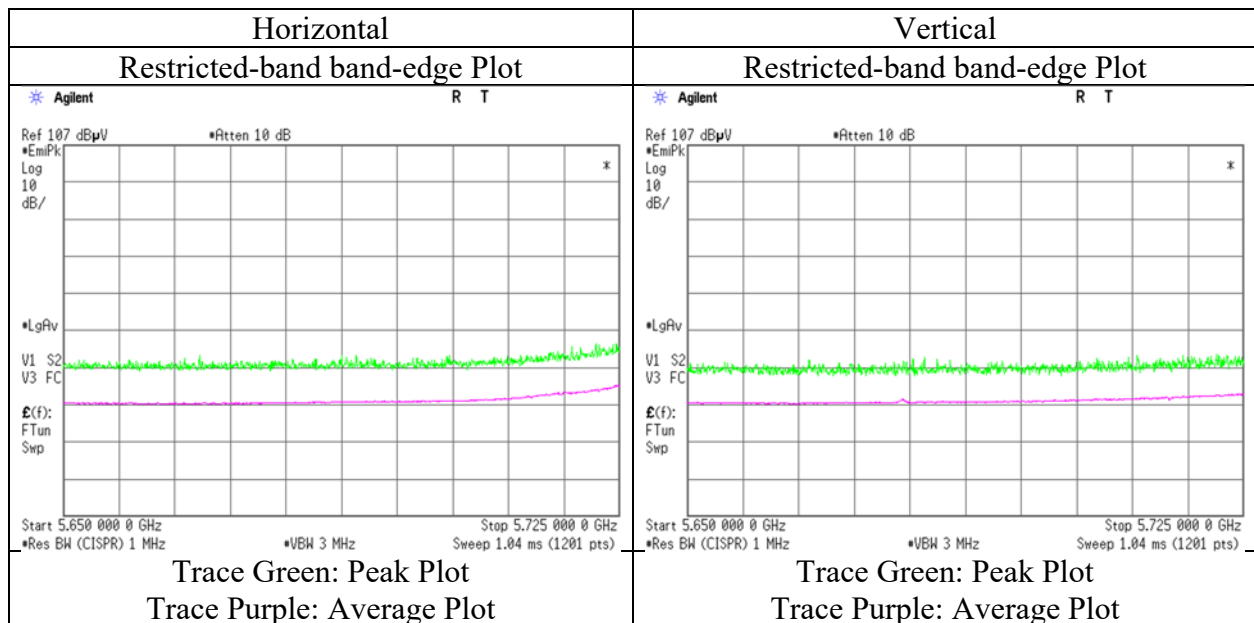
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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), 5795 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.	5850.000	PK	49.91	33.02	16.66	43.34	2.04	58.29	-36.93	27.0	63.9	122	344	-
Hori.	5855.000	PK	50.22	33.03	16.66	43.34	2.04	58.61	-36.61	15.6	52.2	122	344	-
Hori.	5875.000	PK	50.15	33.08	16.67	43.34	2.04	58.60	-36.62	10.0	46.6	122	344	-
Hori.	5925.000	PK	50.12	33.18	16.69	43.34	2.04	58.69	-36.53	-27.0	9.5	122	344	-
Vert.	5850.000	PK	50.61	33.02	16.66	43.34	2.04	58.99	-36.23	27.0	63.2	127	241	-
Vert.	5855.000	PK	50.02	33.03	16.66	43.34	2.04	58.41	-36.81	15.6	52.4	127	241	-
Vert.	5875.000	PK	50.96	33.08	16.67	43.34	2.04	59.41	-35.81	10.0	45.8	127	241	-
Vert.	5925.000	PK	49.25	33.18	16.69	43.34	2.04	57.82	-37.40	-27.0	10.4	127	241	-

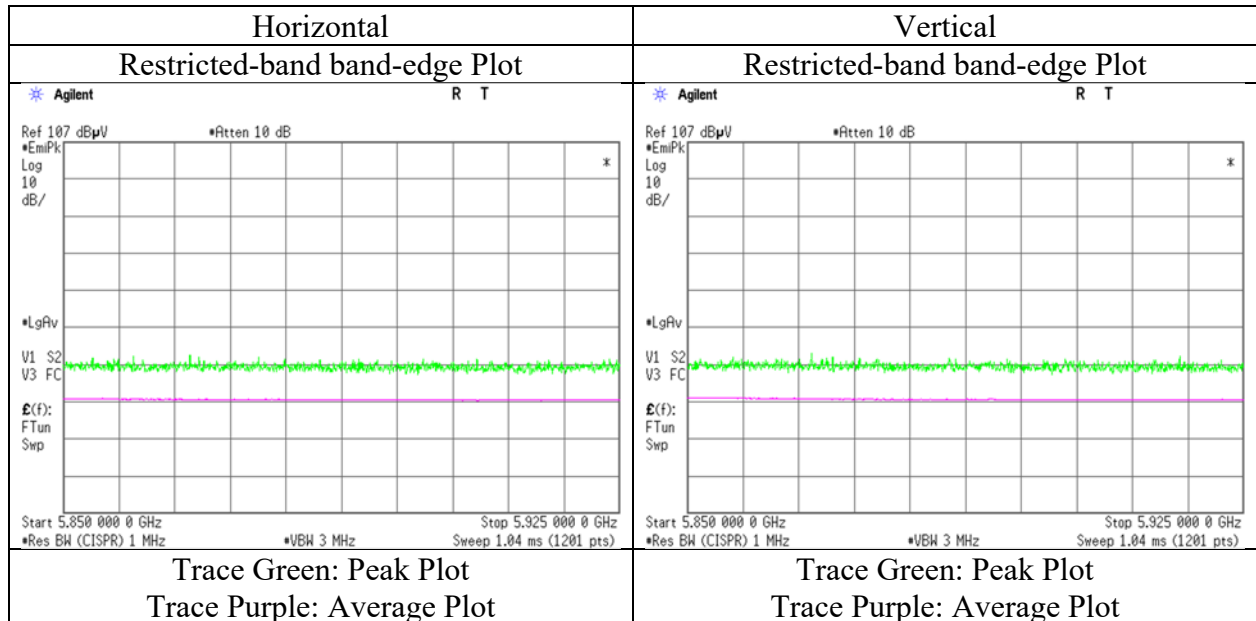
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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.

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 7, 2019 September 11, 2019 September 12, 2019 September 14, 2019 September 15, 2019
Temperature / Humidity 23 deg.C / 58 % RH 24 deg.C / 51 %RH 24 deg.C / 54 %RH 25 deg.C / 51 %RH 24 deg.C / 63 %RH
Engineer Kazuya Noda 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, 11ac-80 (MIMO), 5775 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.	11550.000	PK	48.67	40.01	9.90	42.57	2.15	58.16	73.9	15.7	112	107	-
Hori.	11550.000	AV	37.03	40.01	9.90	42.57	2.15	46.52	53.9	7.3	112	107	VBW: 270 Hz
Vert.	11550.000	PK	48.83	40.01	9.90	42.57	2.15	58.32	73.9	15.5	398	220	-
Vert.	11550.000	AV	37.36	40.01	9.90	42.57	2.15	46.85	53.9	7.0	398	220	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 : 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.	5650.000	PK	50.93	32.46	16.47	43.33	2.15	58.68	-36.54	-27.0	9.5	116	339	-
Hori.	5700.000	PK	53.55	32.61	16.53	43.33	2.15	61.51	-33.71	10.0	43.7	116	339	-
Hori.	5720.000	PK	58.94	32.66	16.54	43.33	2.15	66.96	-28.26	15.6	43.8	116	339	-
Hori.	5725.000	PK	62.07	32.68	16.55	43.33	2.15	70.12	-25.10	27.0	52.1	116	339	-
Hori.	5850.000	PK	52.48	33.02	16.68	43.34	2.15	60.99	-34.23	27.0	61.2	116	339	-
Hori.	5855.000	PK	52.04	33.03	16.68	43.34	2.15	60.56	-34.66	15.6	50.2	116	339	-
Hori.	5875.000	PK	50.55	33.08	16.70	43.34	2.15	59.14	-36.08	10.0	46.0	116	339	-
Hori.	5925.000	PK	49.72	33.18	16.74	43.34	2.15	58.45	-36.77	-27.0	9.7	116	339	-
Hori.	17325.000	PK	46.49	41.23	12.35	40.27	-9.54	50.26	-44.96	-27.0	18.0	245	82	-
Vert.	5650.000	PK	50.62	32.46	16.47	43.33	2.15	58.37	-36.85	-27.0	9.8	100	254	-
Vert.	5700.000	PK	51.57	32.61	16.53	43.33	2.15	59.53	-35.69	10.0	45.6	100	254	-
Vert.	5720.000	PK	54.43	32.66	16.54	43.33	2.15	62.45	-32.77	15.6	48.3	100	254	-
Vert.	5725.000	PK	57.08	32.68	16.55	43.33	2.15	65.13	-30.09	27.0	57.0	100	254	-
Vert.	5850.000	PK	50.84	33.02	16.68	43.34	2.15	59.35	-35.87	27.0	62.8	100	254	-
Vert.	5855.000	PK	50.73	33.03	16.68	43.34	2.15	59.25	-35.97	15.6	51.5	100	254	-
Vert.	5875.000	PK	50.30	33.08	16.70	43.34	2.15	58.89	-36.33	10.0	46.3	100	254	-
Vert.	5925.000	PK	49.92	33.18	16.74	43.34	2.15	58.65	-36.57	-27.0	9.5	100	254	-
Vert.	17325.000	PK	46.64	41.23	12.35	40.27	-9.54	50.41	-44.81	-27.0	17.8	190	329	-

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)

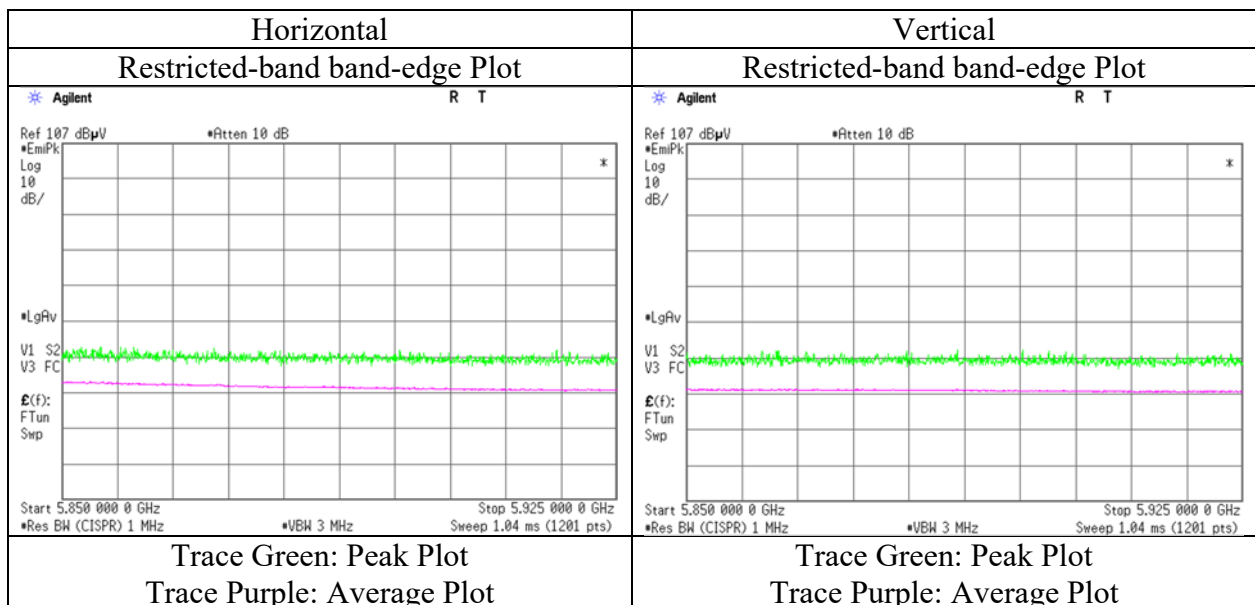
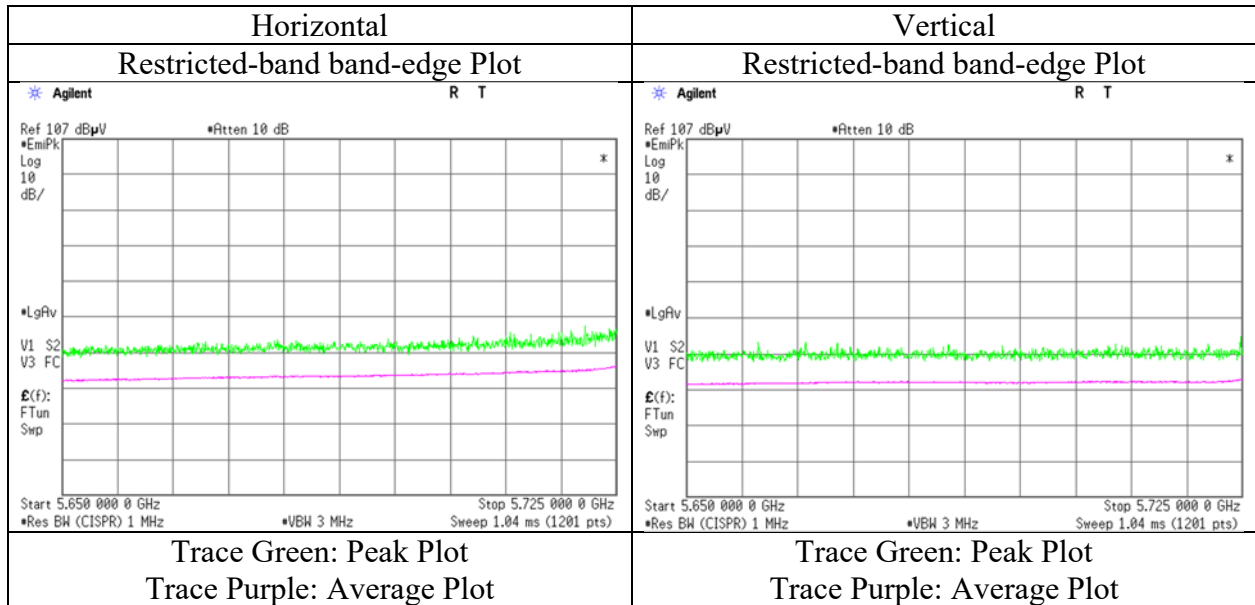
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*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 7, 2019
Temperature / Humidity	23 deg. C / 58 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx, 11ac-80 (MIMO), 5775 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
Date September 7, 2019
Temperature / Humidity 23 deg. C / 58 % RH
Engineer Kazuya Noda
(1 GHz – 6.4 GHz)
Mode Tx, 11ac-80 (CDD), 5775 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.	5650.000	PK	51.58	32.46	16.47	43.33	2.15	59.33	-35.89	-27.0	8.8	103	341	-
Hori.	5700.000	PK	55.18	32.61	16.53	43.33	2.15	63.14	-32.08	10.0	42.0	103	341	-
Hori.	5720.000	PK	58.68	32.66	16.54	43.33	2.15	66.70	-28.52	15.6	44.1	103	341	-
Hori.	5725.000	PK	61.49	32.68	16.55	43.33	2.15	69.54	-25.68	27.0	52.6	103	341	-
Hori.	5850.000	PK	54.42	33.02	16.68	43.34	2.15	62.93	-32.29	27.0	59.2	103	341	-
Hori.	5855.000	PK	54.41	33.03	16.68	43.34	2.15	62.93	-32.29	15.6	47.8	103	341	-
Hori.	5875.000	PK	51.46	33.08	16.70	43.34	2.15	60.05	-35.17	10.0	45.1	103	341	-
Hori.	5925.000	PK	49.92	33.18	16.74	43.34	2.15	58.65	-36.57	-27.0	9.5	103	341	-
Vert.	5650.000	PK	50.33	32.46	16.47	43.33	2.15	58.08	-37.14	-27.0	10.1	102	253	-
Vert.	5700.000	PK	51.53	32.61	16.53	43.33	2.15	59.49	-35.73	10.0	45.7	102	253	-
Vert.	5720.000	PK	55.73	32.66	16.54	43.33	2.15	63.75	-31.47	15.6	47.0	102	253	-
Vert.	5725.000	PK	58.16	32.68	16.55	43.33	2.15	66.21	-29.01	27.0	56.0	102	253	-
Vert.	5850.000	PK	52.54	33.02	16.68	43.34	2.15	61.05	-34.17	27.0	61.1	102	253	-
Vert.	5855.000	PK	51.87	33.03	16.68	43.34	2.15	60.39	-34.83	15.6	50.4	102	253	-
Vert.	5875.000	PK	50.58	33.08	16.70	43.34	2.15	59.17	-36.05	10.0	46.0	102	253	-
Vert.	5925.000	PK	49.67	33.18	16.74	43.34	2.15	58.40	-36.82	-27.0	9.8	102	253	-

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

UL Japan, Inc.

Shonan EMC Lab.

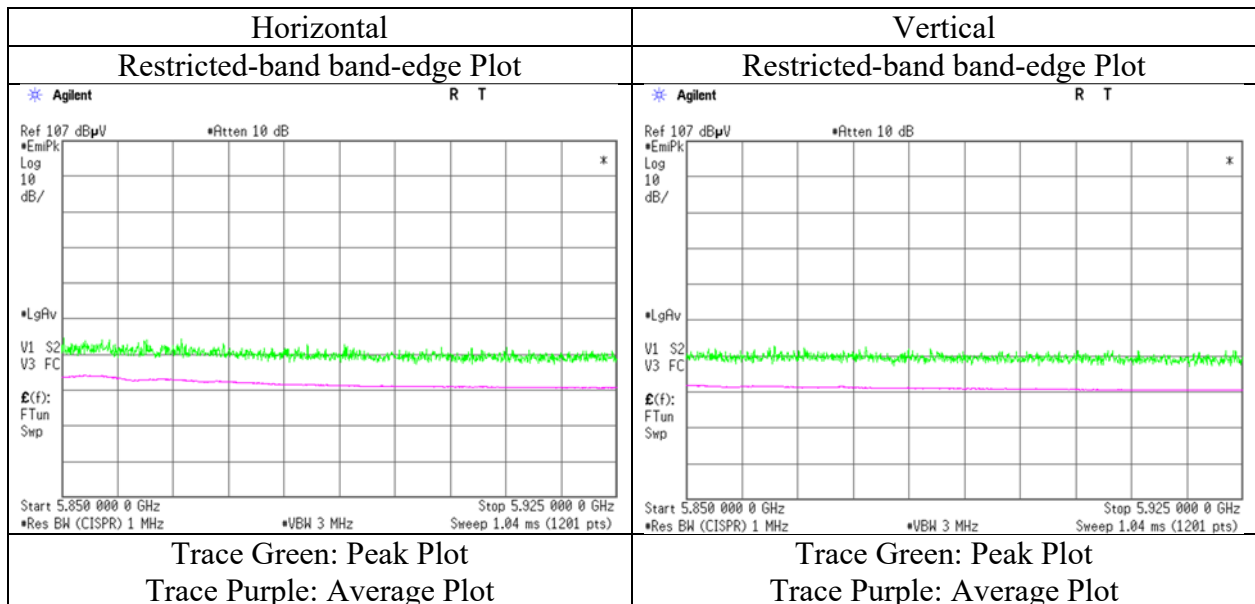
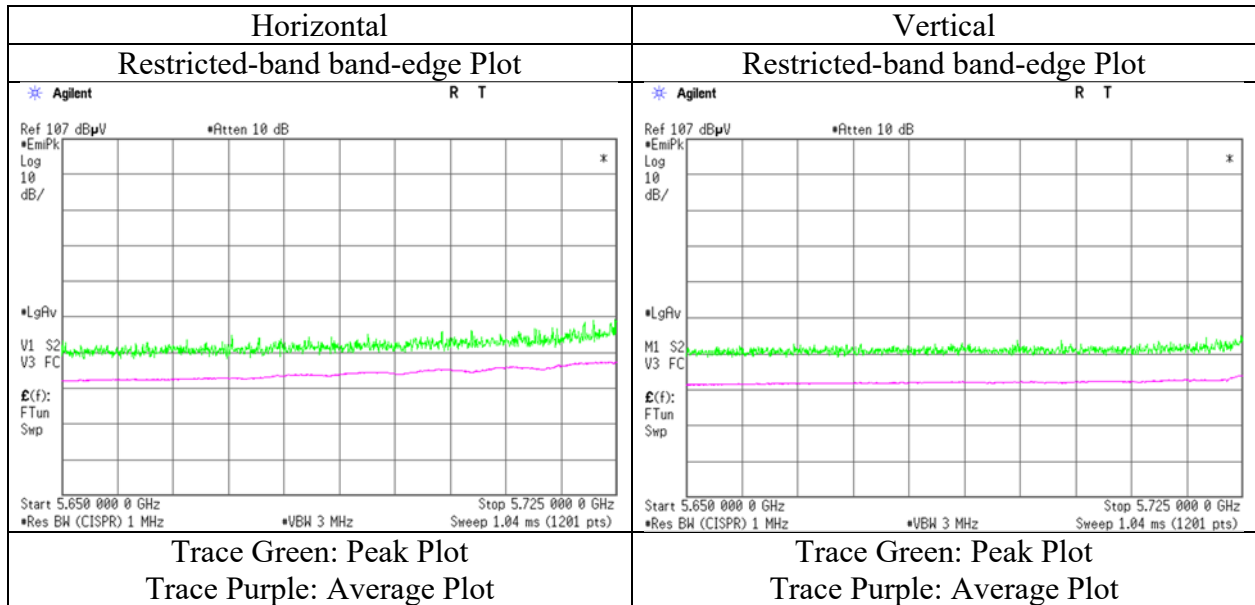
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Radiated Spurious Emission

Report No.	13004393S-E-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.3
Date	September 7, 2019
Temperature / Humidity	23 deg. C / 58 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx, 11ac-80 (CDD), 5775 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.

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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), 5775 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.	5650.000	PK	50.68	32.46	16.55	43.33	2.14	58.50	-36.72	-27.0	9.7	145	336	-
Hori.	5700.000	PK	55.90	32.61	16.58	43.33	2.14	63.90	-31.32	10.0	41.3	145	336	-
Hori.	5720.000	PK	61.23	32.66	16.58	43.33	2.14	69.28	-25.94	15.6	41.5	145	336	-
Hori.	5725.000	PK	63.08	32.68	16.59	43.33	2.14	71.16	-24.06	27.0	51.0	145	336	-
Hori.	5850.000	PK	56.71	33.02	16.66	43.34	2.14	65.19	-30.03	27.0	57.0	145	336	-
Hori.	5855.000	PK	54.68	33.03	16.66	43.34	2.14	63.17	-32.05	15.6	47.6	145	336	-
Hori.	5875.000	PK	51.13	33.08	16.67	43.34	2.14	59.68	-35.54	10.0	45.5	145	336	-
Hori.	5925.000	PK	49.96	33.18	16.69	43.34	2.14	58.63	-36.59	-27.0	9.5	145	336	-
Vert.	5650.000	PK	50.46	32.46	16.55	43.33	2.14	58.28	-36.94	-27.0	9.9	123	263	-
Vert.	5700.000	PK	50.68	32.61	16.58	43.33	2.14	58.68	-36.54	10.0	46.5	123	263	-
Vert.	5720.000	PK	53.31	32.66	16.58	43.33	2.14	61.36	-33.86	15.6	49.4	123	263	-
Vert.	5725.000	PK	55.03	32.68	16.59	43.33	2.14	63.11	-32.11	27.0	59.1	123	263	-
Vert.	5850.000	PK	52.00	33.02	16.66	43.34	2.14	60.48	-34.74	27.0	61.7	123	263	-
Vert.	5855.000	PK	51.51	33.03	16.66	43.34	2.14	60.00	-35.22	15.6	50.8	123	263	-
Vert.	5875.000	PK	50.05	33.08	16.67	43.34	2.14	58.60	-36.62	10.0	46.6	123	263	-
Vert.	5925.000	PK	50.01	33.18	16.69	43.34	2.14	58.68	-36.54	-27.0	9.5	123	263	-

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

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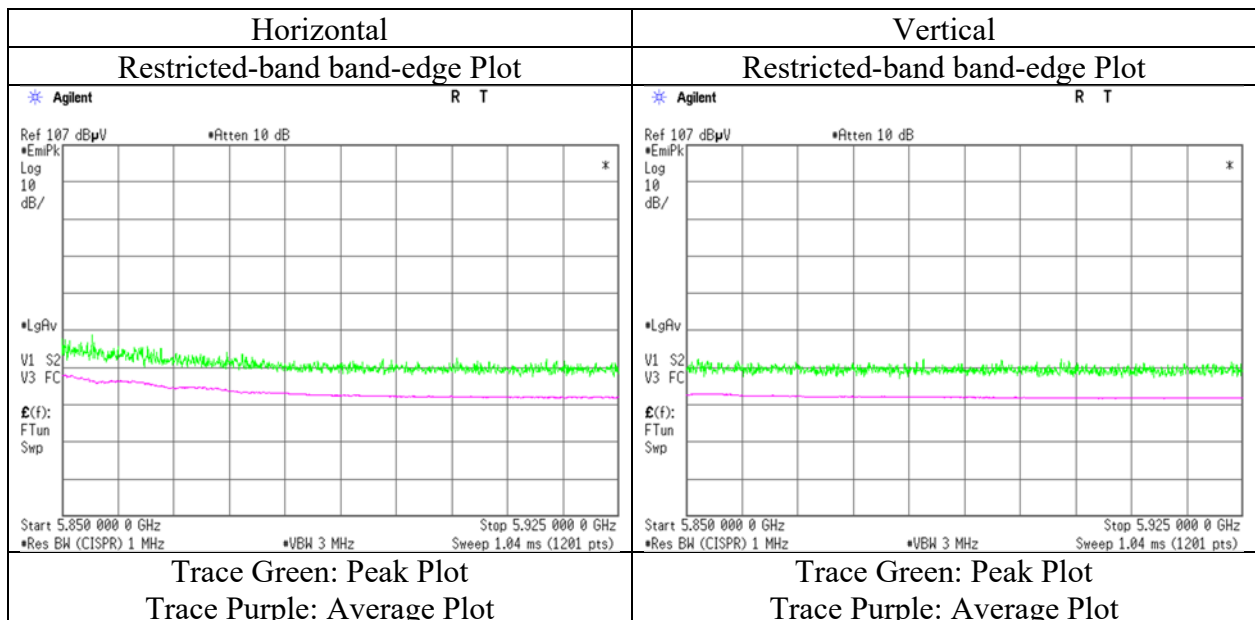
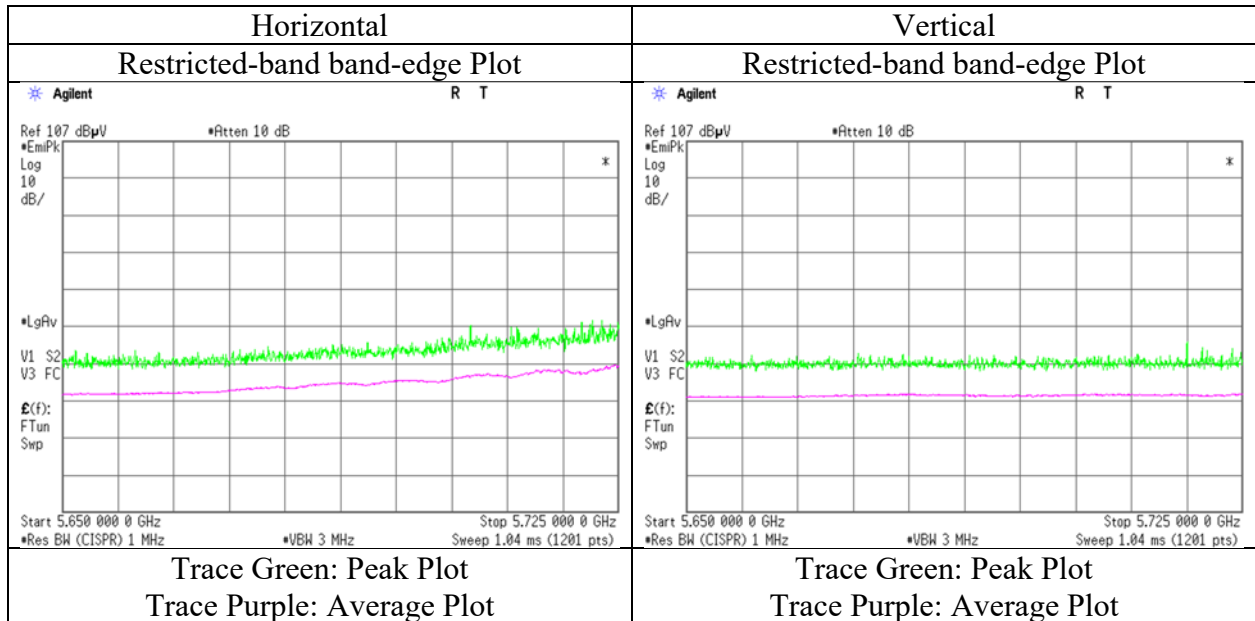
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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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-80 (CDD), 5775 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.

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
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), 5775 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.	11550.000	PK	48.17	40.01	9.90	42.57	2.04	57.55	73.9	16.3	145	289	-
Hori.	11550.000	AV	36.73	40.01	9.90	42.57	2.04	46.11	53.9	7.7	145	289	VBW: 270 Hz
Vert.	11550.000	PK	48.51	40.01	9.90	42.57	2.04	57.89	73.9	16.0	143	89	-
Vert.	11550.000	AV	36.69	40.01	9.90	42.57	2.04	46.07	53.9	7.8	143	89	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.	17325.000	PK	47.11	41.23	12.35	40.27	-9.54	50.88	-44.34	-27.0	17.3	154	212	-
Vert.	17325.000	PK	46.83	41.23	12.35	40.27	-9.54	50.60	-44.62	-27.0	17.6	166	301	-

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 : $20\log(3.79\text{ m} / 3.0\text{ m}) = 2.04\text{ dB}$
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 7, 2019
Temperature / Humidity 23 deg. C / 58 % RH
Engineer Kazuya Noda
(1 GHz – 6.4 GHz)
Mode Tx, 11ac-80 (CDD), 5775 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.	5650.000	PK	51.15	32.46	16.47	43.33	2.04	58.79	-36.43	-27.0	9.4	109	341	-
Hori.	5700.000	PK	53.76	32.61	16.53	43.33	2.04	61.61	-33.61	10.0	43.6	109	341	-
Hori.	5720.000	PK	57.96	32.66	16.54	43.33	2.04	65.87	-29.35	15.6	44.9	109	341	-
Hori.	5725.000	PK	61.48	32.68	16.55	43.33	2.04	69.42	-25.80	27.0	52.8	109	341	-
Hori.	5850.000	PK	53.83	33.02	16.68	43.34	2.04	62.23	-32.99	27.0	59.9	109	341	-
Hori.	5855.000	PK	52.85	33.03	16.68	43.34	2.04	61.26	-33.96	15.6	49.5	109	341	-
Hori.	5875.000	PK	51.54	33.08	16.70	43.34	2.04	60.02	-35.20	10.0	45.2	109	341	-
Hori.	5925.000	PK	50.01	33.18	16.74	43.34	2.04	58.63	-36.59	-27.0	9.5	109	341	-
Vert.	5650.000	PK	52.04	32.46	16.47	43.33	2.04	59.68	-35.54	-27.0	8.5	203	216	-
Vert.	5720.000	PK	56.85	32.66	16.54	43.33	2.04	64.76	-30.46	15.6	46.0	203	216	-
Vert.	5725.000	PK	59.94	32.68	16.55	43.33	2.04	67.88	-27.34	27.0	54.3	203	216	-
Vert.	5850.000	PK	52.23	33.02	16.68	43.34	2.04	60.63	-34.59	27.0	61.5	203	216	-
Vert.	5855.000	PK	51.68	33.03	16.68	43.34	2.04	60.09	-35.13	15.6	50.7	203	216	-
Vert.	5875.000	PK	51.34	33.08	16.70	43.34	2.04	59.82	-35.40	10.0	45.4	203	216	-
Vert.	5925.000	PK	50.18	33.18	16.74	43.34	2.04	58.80	-36.42	-27.0	9.4	203	216	-

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

UL Japan, Inc.

Shonan EMC Lab.

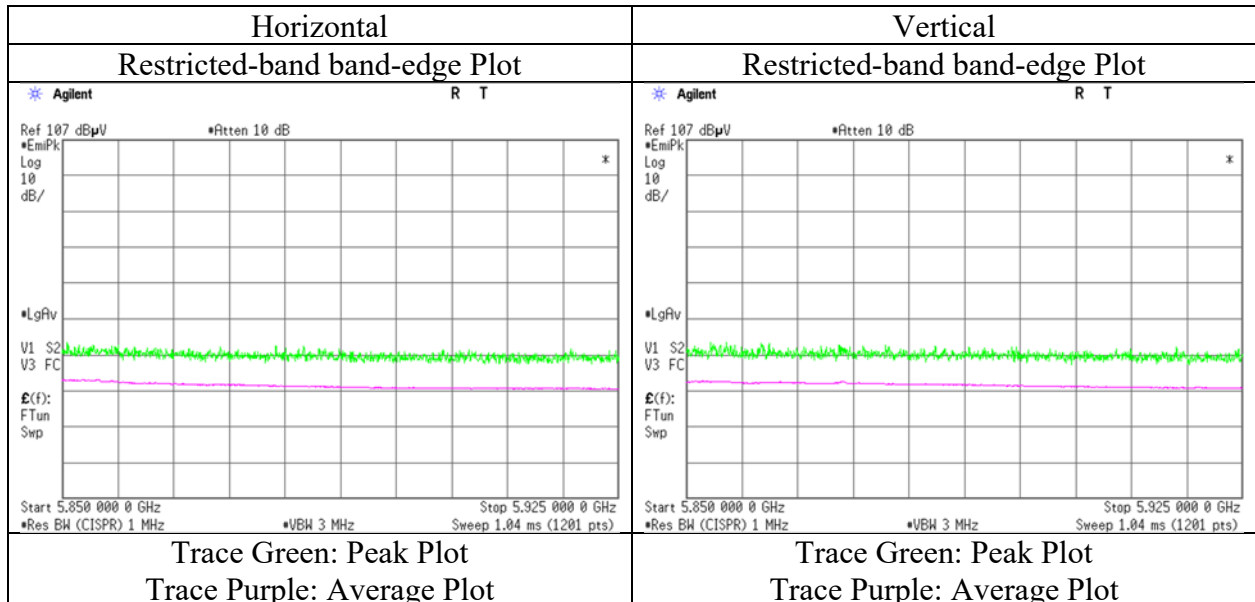
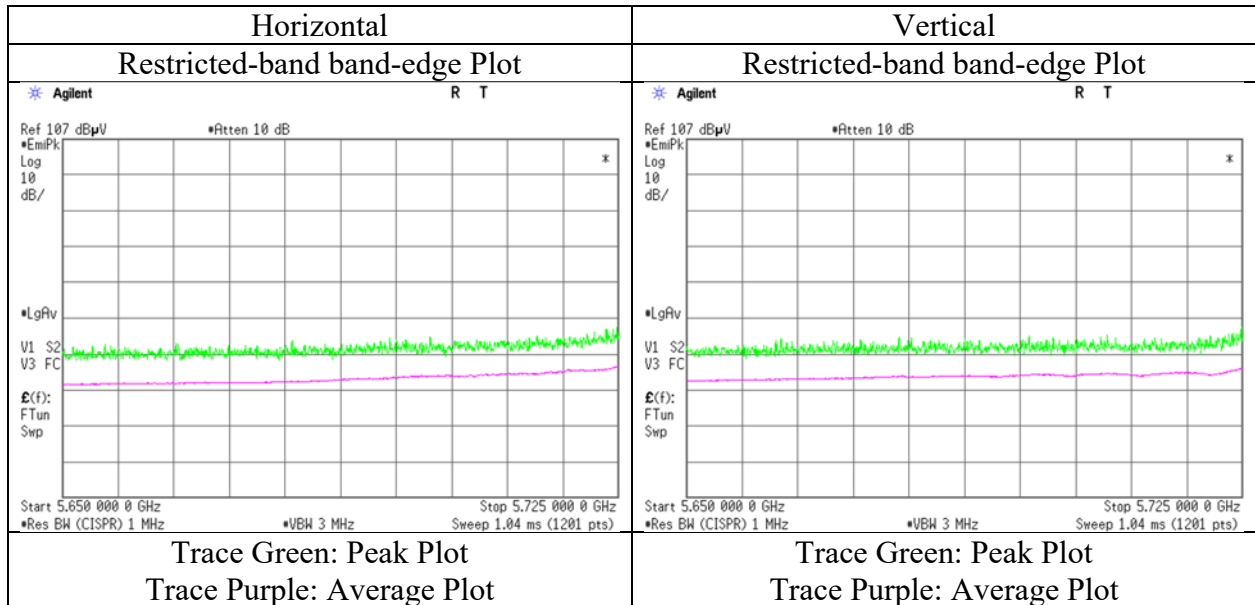
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Radiated Spurious Emission

Report No.	13004393S-E-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.3
Date	September 7, 2019
Temperature / Humidity	23 deg. C / 58 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx, 11ac-80 (CDD), 5775 MHz, (EUT serial no. B-5)



* 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), 5775 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.	5650.000	PK	50.74	32.46	16.55	43.33	2.04	58.46	-36.76	-27.0	9.7	188	344	-
Hori.	5700.000	PK	52.58	32.61	16.58	43.33	2.04	60.48	-34.74	10.0	44.7	188	344	-
Hori.	5720.000	PK	54.70	32.66	16.58	43.33	2.04	62.65	-32.57	15.6	48.1	188	344	-
Hori.	5725.000	PK	57.23	32.68	16.59	43.33	2.04	65.21	-30.01	27.0	57.0	188	344	-
Hori.	5850.000	PK	51.43	33.02	16.66	43.34	2.04	59.81	-35.41	27.0	62.4	188	344	-
Hori.	5855.000	PK	51.22	33.03	16.66	43.34	2.04	59.61	-35.61	15.6	51.2	188	344	-
Hori.	5875.000	PK	50.23	33.08	16.67	43.34	2.04	58.68	-36.54	10.0	46.5	188	344	-
Hori.	5925.000	PK	50.22	33.18	16.69	43.34	2.04	58.79	-36.43	-27.0	9.4	188	344	-
Vert.	5650.000	PK	52.02	32.46	16.55	43.33	2.04	59.74	-35.48	-27.0	8.4	207	217	-
Vert.	5700.000	PK	53.06	32.61	16.58	43.33	2.04	60.96	-34.26	10.0	44.2	207	217	-
Vert.	5720.000	PK	56.82	32.66	16.58	43.33	2.04	64.77	-30.45	15.6	46.0	207	217	-
Vert.	5725.000	PK	61.15	32.68	16.59	43.33	2.04	69.13	-26.09	27.0	53.0	207	217	-
Vert.	5850.000	PK	52.40	33.02	16.66	43.34	2.04	60.78	-34.44	27.0	61.4	207	217	-
Vert.	5855.000	PK	51.65	33.03	16.66	43.34	2.04	60.04	-35.18	15.6	50.7	207	217	-
Vert.	5875.000	PK	51.22	33.08	16.67	43.34	2.04	59.67	-35.55	10.0	45.5	207	217	-
Vert.	5925.000	PK	50.50	33.18	16.69	43.34	2.04	59.07	-36.15	-27.0	9.1	207	217	-

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

UL Japan, Inc.

Shonan EMC Lab.

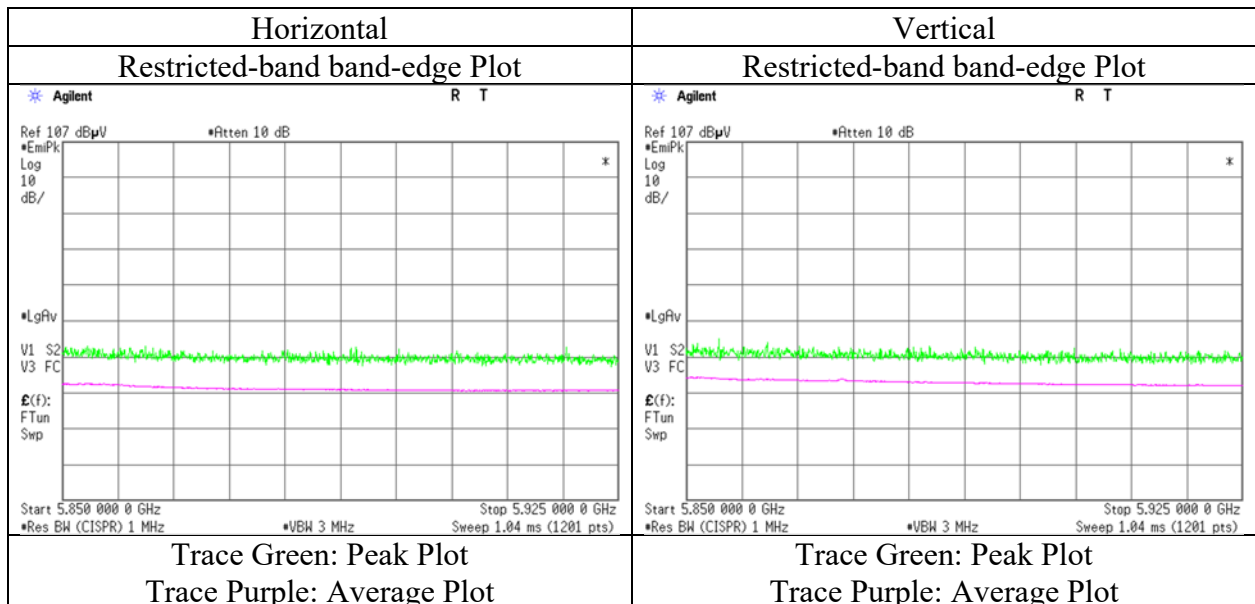
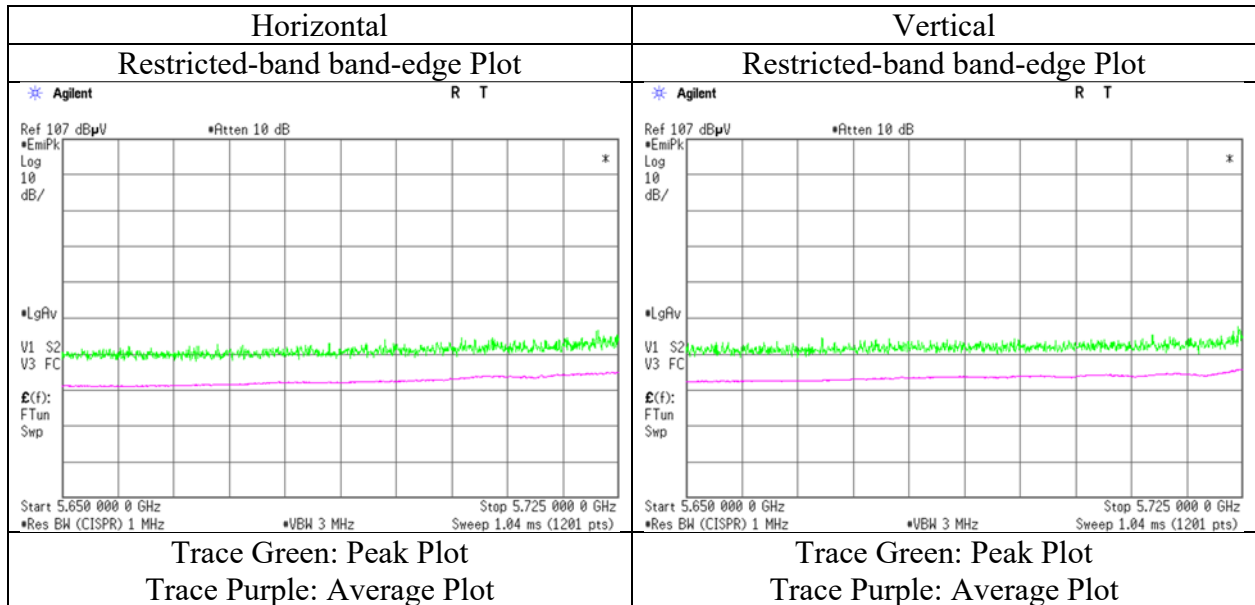
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Radiated Spurious Emission

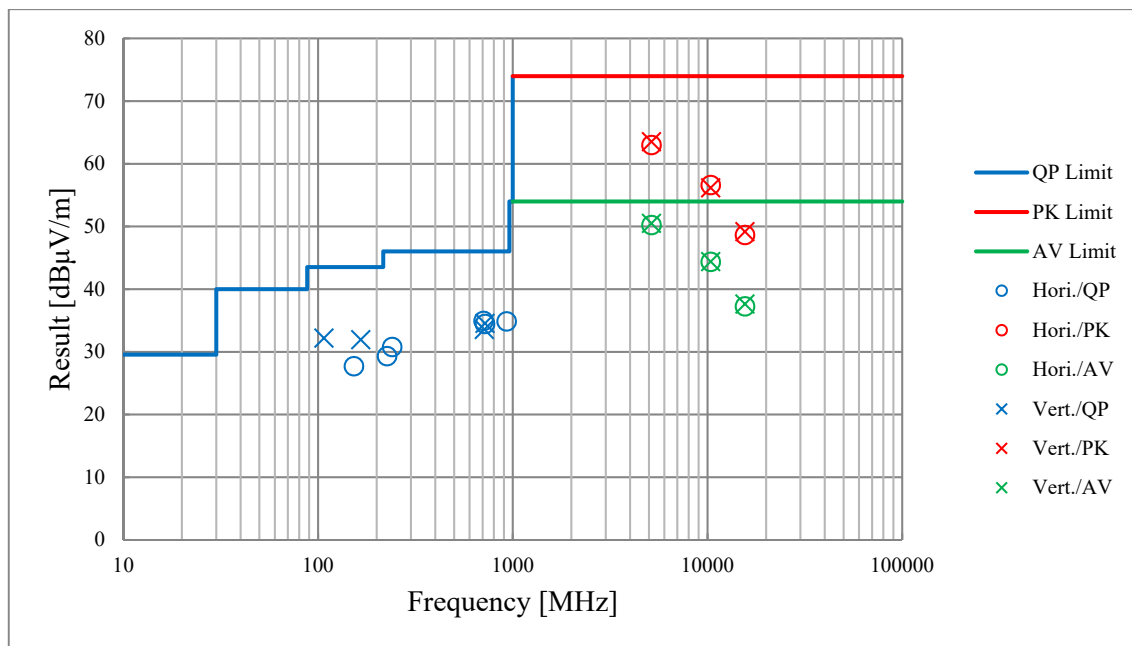
Report No.	13004393S-E-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.3
Date	September 21, 2019
Temperature / Humidity	25 deg. C / 52 % RH
Engineer	Takahiro Kawakami
	(1 GHz – 6.4 GHz)
Mode	Tx, 11ac-80 (CDD), 5775 MHz, with 3DH5 hopping (EUT serial no. B-5)



* 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 (Plot data, Worst case)

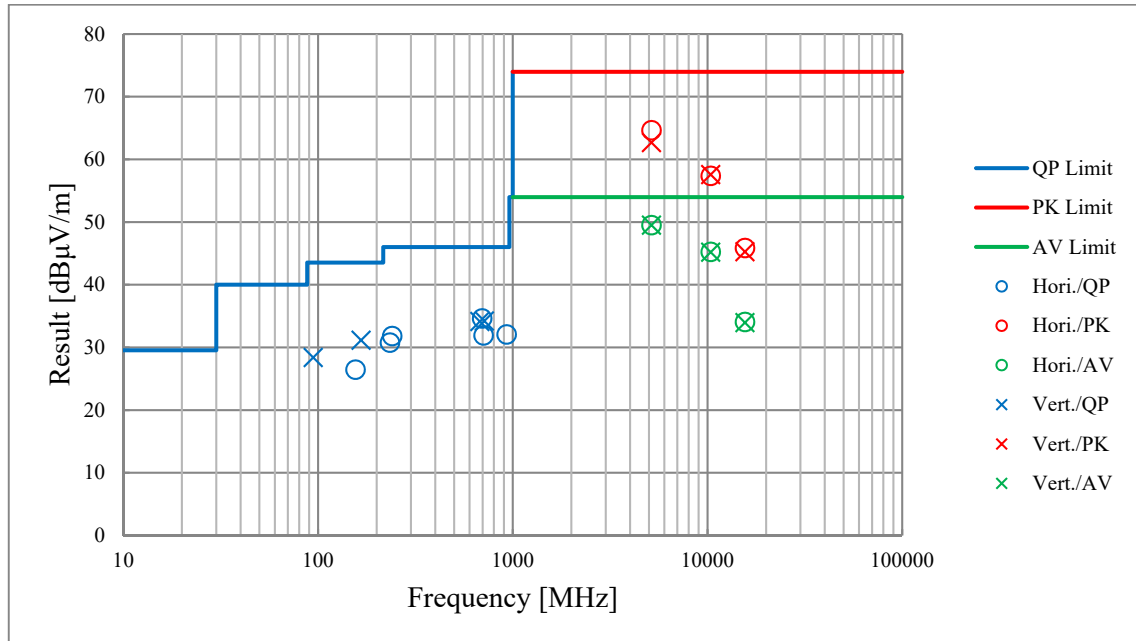
Report No.	13004393S-E-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber (No.)	3	3	3	3	3
Date	September 5, 2019	September 11, 2019	September 12, 2019	September 14, 2019	September 15, 2019
Temperature / Humidity	25 deg. C / 65 % RH	22 deg. C / 53 %RH	24 deg. C / 54 %RH	25 deg. C / 51 %RH	24 deg. C / 63 %RH
Engineer	Makoto Hosaka	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), 5190 MHz, (serial no. A-7)				



*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Radiated Spurious Emission
(Plot data, Worst case)

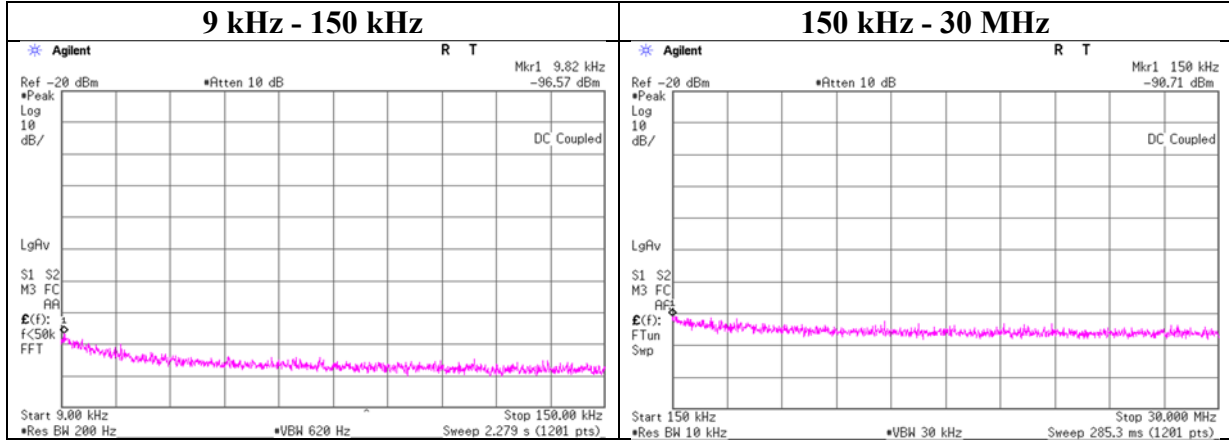
Report No.	13004393S-E-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber (No.)	3	3	3	3
Date	September 19, 2019	September 20, 2019	September 21, 2019	September 19, 2019
Temperature / Humidity	23 deg.C / 62 %RH	22 deg.C / 64 %RH	25 deg.C / 52 %RH	23 deg.C / 62 %RH
Engineer	Takahiro Suzuki	Makoto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



*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

Report No. 13004393S-E-R2
Test place Shonan EMC Lab. No.3 Shielded Room
Date September 13, 2019
Temperature / Humidity 25 deg. C / 52 % RH
Engineer Kenichi Adachi
Mode Tx, 11ac-40 (MIMO),5190 MHz (serial no. A-7)



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator [dB]	Antenna Gain* [dBi]	N (Number of Output)	EIRP [dBm]	Distance [m]	Ground bounce [dB]	E (field strength) [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
9.82	-96.6	0.63	9.8	2.0	2	-81.1	300	6.0	-19.9	47.7	67.6	-
150.00	-90.7	0.63	9.8	2.0	2	-75.3	300	6.0	-14.0	24.0	38.0	-

$$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log (\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$$

$$\text{EIRP [dBm]} = \text{Reading [dBm]} + \text{Cable loss [dB]} + \text{Attenuator Loss [dB]} + \text{Antenna gain [dBi]} + 10 * \log (N)$$

N: Number of output

*2.0 dBi was applied to the test result based on KDB 789033 since antenna gain was less than 2.0 dBi.

APPENDIX 2: Test instruments

Test Instruments (1/2)

Local ID	Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Due Date	Calibration Interval (Month)
SAT10-13	AT	151610	Attenuator	Weinschel Corp.	54A-10	81626	2019/3/27	2020/3/31	12
SAT10-15	AT	160493	Attenuator	Weinschel Corp.	54A-10	83406	2018/12/6	2019/12/30	12
SCC-G13	AT	145166	Coaxial Cable	Suhner	SUCOFLEX 102	31599/2	2018/12/25	2019/12/31	12
SCC-G14	AT	145175	Coaxial Cable	Suhner	SUCOFLEX 102	31600/2	2018/12/25	2019/12/31	12
SCC-H14	AT	144995	Microwave cable	RS Pro	R-132G7210 100CO	-	2019/4/16	2020/4/30	12
SCC-H15	AT	144996	Microwave cable	RS Pro	R-132G7210 100CO	-	2019/4/16	2020/4/30	12
SOS-16	AT	167990	Humidity Indicator	CUSTOM	CTH-202	708Q08R	2019/1/11	2020/1/31	12
SPM-07	AT	146247	Power Meter	AGILENT	8990B	MY510027 2	2019/7/16	2020/7/31	12
SPM-13	AT	169910	Power Meter	EMC Instruments Corporation	8990B	MY510004 48	2019/3/6	2020/3/31	12
SPSS-04	AT	146310	Power sensor	AGILENT	N1923A	MY532600 9	2019/7/16	2020/7/31	12
SPSS-05	AT	146311	Power sensor	AGILENT	N1923A	MY534900 8	2019/7/16	2020/7/31	12
SPSS-06	AT	169911	Power sensor	EMC Instruments Corporation	N1923A	MY572700 04	2019/3/6	2020/3/31	12
SPSS-07	AT	169912	Power sensor	EMC Instruments Corporation	N1923A	MY572900 05	2019/3/6	2020/3/31	12
SRENT-15	AT	160899	Spectrum Analyzer	AGILENT (KEYSIGHT)	E4440A	MY461855 16	2019/1/21	2020/1/31	12
SSA-01	AT	146223	Spectrum Analyzer	AGILENT	N9010A-526	MY480314 82	2019/4/23	2020/4/30	12
STS-04	AT	146211	Digital Hitester	HIOKI	3805-50	80997827	2019/4/2	2020/4/30	12
STR-08	AT,CE, RE	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2018/11/28	2019/11/30	12
SAT3-10	CE	144960	Attenuator	JFW	50HF-003N	-	2019/8/6	2020/8/31	12
SCC-C6/C7/C8/C10/SRSE-03	CE	145034	Coaxial Cable&RF Selector	Suhner/Fujikura /Suhner/Suhner/ TOYO	141PE/12DSF A/141PE/141 PE/NS4906	-/0901-271(RF Selector)	2019/4/19	2020/4/30	12
SLS-01	CE	145538	LISN	Rohde & Schwarz	ENV216	100511	2019/2/19	2020/2/29	12
SLS-05	CE	145542	LISN	Rohde & Schwarz	ENV216	100516	2019/2/19	2020/2/29	12
SOS-06	CE	146294	Humidity Indicator	A&D	AD-5681	4062118	2018/12/5	2019/12/31	12
STM-05	CE	145762	Terminator	TME	CT-01 BP	-	2018/12/25	2019/12/31	12
COTS-SEMI-5	CE,RE	170932	EMI Software	TSJ	TEPTO-DV3(RE,CE, ME,PE)	-	-	-	-
KJM-02	CE,RE	146432	Measure	TAJIMA	GL19-55	-	-	-	-
STS-03	CE,RE	146210	Digital Hitester	HIOKI	3805-50	80997823	2019/10/1	2020/10/31	12

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Test Instruments (2/2)

Local ID	Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Due Date	Calibration Interval (Month)
KSA-08	RE	145089	Spectrum Analyzer	AGILENT	E4446A	MY46180525	2018/10/7	2019/10/31	12
SAEC-03(NSA)	RE	145565	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	2019/4/8	2020/4/30	12
SAEC-03(SVSWR)	RE	145566	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	2019/5/3	2020/5/31	12
SAF-03	RE	145126	Pre Amplifier	SONOMA	310N	290213	2019/2/5	2020/2/29	12
SAF-08	RE	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2019/3/5	2020/3/31	12
SAF-06	RE	145005	Pre Amplifier	Toyo Corporation	TPA0118-36	1440491	2019/2/8	2020/2/29	12
SAF-10	RE	145129	Pre Amplifier	Toyo Corporation	HAP26-40W	10	2019/3/22	2020/3/31	12
SAT10-06	RE	145137	Attenuator	AGILENT	8493C-010	74865	2018/11/25	2019/11/30	12
SAT6-13	RE	167094	Attenuator	JFW	50HF-006N	-	2019/2/5	2020/2/29	12
SBA-03	RE	145023	Biconical Antenna	Schwarzbeck	BBA9106	91032666	2019/5/7	2020/5/31	12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	RE	145171	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/TOYO	8D2W/12DSF A/141PE/141PE/141PE/141P	-/0901-271(RF Selector)	2019/4/19	2020/4/30	12
SCC-G40	RE	166491	Coaxial Cable	Junkosha	MWX221-01000NFSN MS/B	1612S005	2019/1/25	2020/1/31	12
SCC-G43	RE	156380	Coaxial Cable	HUBER+SUNER	SUCOFLEX_104 E	SN MY 13406/4E	2019/7/3	2020/7/31	12
SCC-G45	RE	168301	Coaxial Cable	HUBER+SUNER	SUCOFLEX 102 E	800137/2E A	2019/3/26	2020/3/31	12
SCC-G57	RE	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2019/5/16	2020/5/31	12
SCC-G58	RE	183047	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	800287/4A	2019/7/23	2020/7/31	12
SHA-03	RE	145501	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	2019/6/26	2020/6/30	12
SHA-04	RE	145512	Horn Antenna	ETS LINDGREN	3160-09	00094868	2019/6/26	2020/6/30	12
SHA-06	RE	145514	Horn Antenna	ETS LINDGREN	3160-10	00092383	2019/6/26	2020/6/30	12
SLA-07	RE	145529	Logperiodic Antenna	Schwarzbeck	VUSLP9111B	196	2019/5/7	2020/5/31	12
SOS-05	RE	146293	Humidity Indicator	A&D	AD-5681	4062518	2018/10/25	2019/10/31	12

*Hyphens for Last Calibration Date, Calibration Due Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

The expiration date of the calibration is the end of the expired month.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test item:

CE: Conducted Emission

RE: Radiated Emission

AT: Antenna Terminal Conducted test

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