

Radiated Spurious Emission

Report No.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 17, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	22 deg.C, 43 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-20 5180 MHz		

(above 1 GHz 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	57.30	32.12	16.41	43.11	2.28	65.00	73.9	8.9	106	359	-
Hori.	15540.000	PK	46.75	39.60	12.67	39.13	-9.54	50.35	73.9	23.5	150	0	-
Hori.	5150.000	AV	43.10	32.12	16.41	43.11	2.28	50.80	53.9	3.1	106	359	VBW:4.3 kHz
Hori.	15540.000	AV	35.22	39.60	12.67	39.13	-9.54	38.82	53.9	15.0	150	0	VBW:4.3 kHz
Vert.	5150.000	PK	51.36	32.12	16.41	43.11	2.28	59.06	73.9	14.8	251	322	-
Vert.	15540.000	PK	46.37	39.60	12.67	39.13	-9.54	49.97	73.9	23.9	150	0	-
Vert.	5150.000	AV	39.46	32.12	16.41	43.11	2.28	47.16	53.9	6.7	251	322	VBW:4.3 kHz
Vert.	15540.000	AV	35.35	39.60	12.67	39.13	-9.54	38.95	53.9	14.9	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

(Calculation) (above 1 GHz 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	44.58	36.57	9.99	39.88	-9.54	41.72	-53.51	-27.0	26.5	150	0	-
Vert.	10360.000	PK	44.35	36.57	9.99	39.88	-9.54	41.49	-53.74	-27.0	26.7	150	0	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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Shonan EMC Lab.

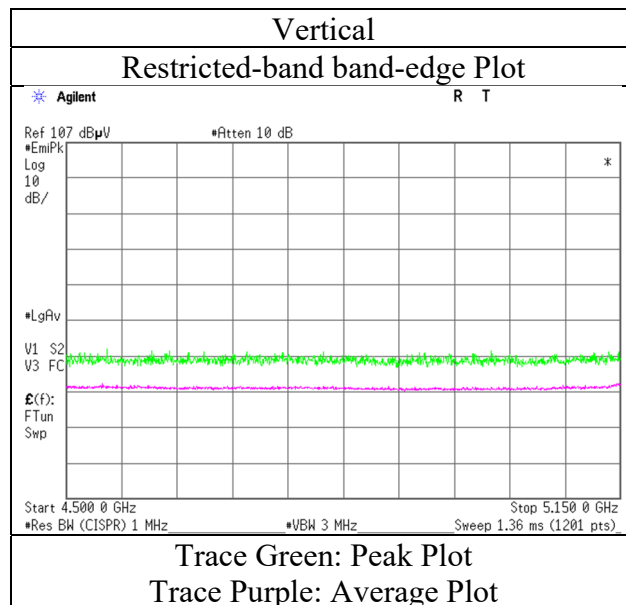
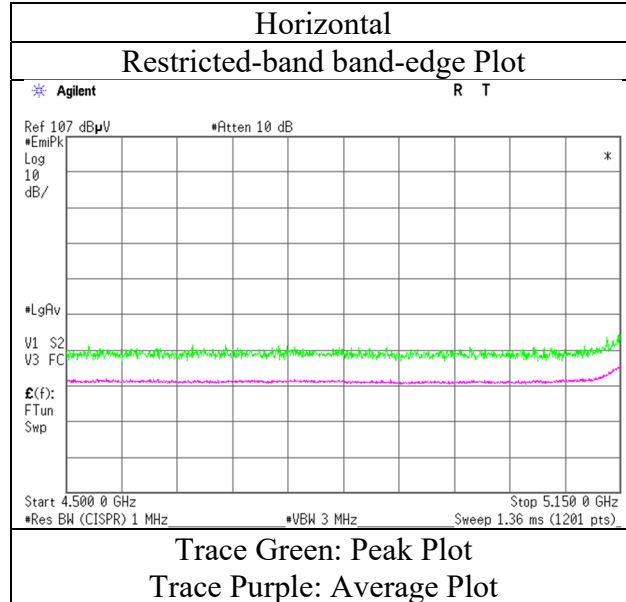
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 17, 2020
Temperature / Humidity 22 deg.C, 43 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-20 5180 MHz



* 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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Shonan EMC Lab.

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Radiated Spurious Emission

Report No.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara (1 GHz -6.4 GHz)	Makoto Hosaka (6.4 GHz -18 GHz)	Yosuke Murakami (18 GHz -40 GHz)
Mode	Tx 11n-20 5240 MHz		

(above 1 GHz 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	45.60	39.85	12.65	39.37	-9.54	49.19	73.9	24.7	150	0	-
Hori.	15720.000	AV	35.54	39.85	12.65	39.37	-9.54	39.13	53.9	14.7	150	0	VBW:4.3 kHz
Vert.	15720.000	PK	46.45	39.85	12.65	39.37	-9.54	50.04	73.9	23.8	150	0	-
Vert.	15720.000	AV	35.35	39.85	12.65	39.37	-9.54	38.94	53.9	14.9	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	44.99	36.73	10.03	40.11	-9.54	42.10	-53.13	-27.0	26.1	150	0	-
Vert.	10480.000	PK	43.97	36.73	10.03	40.11	-9.54	41.08	-54.15	-27.0	27.1	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

Radiated Spurious Emission

Report No.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 17, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	22 deg.C, 43 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-20 5320 MHz		

(above 1 GHz 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	57.88	31.83	16.55	43.33	2.28	65.21	73.9	8.6	107	357	-
Hori.	10640.000	PK	45.94	37.39	10.12	40.02	-9.54	43.89	73.9	30.0	150	0	-
Hori.	15960.000	PK	45.34	40.19	12.62	39.70	-9.54	48.91	73.9	24.9	150	0	-
Hori.	5350.000	AV	43.66	31.83	16.55	43.33	2.28	50.99	53.9	2.9	107	357	VBW:4.3 kHz
Hori.	10640.000	AV	34.79	37.39	10.12	40.02	-9.54	32.74	53.9	21.1	150	0	VBW:4.3 kHz
Hori.	15960.000	AV	35.00	40.19	12.62	39.70	-9.54	38.57	53.9	15.3	150	0	VBW:4.3 kHz
Vert.	5350.000	PK	50.70	31.83	16.55	43.33	2.28	58.03	73.9	15.8	264	320	-
Vert.	10640.000	PK	45.33	37.39	10.12	40.02	-9.54	43.28	73.9	30.6	150	0	-
Vert.	15960.000	PK	45.05	40.19	12.62	39.70	-9.54	48.62	73.9	25.2	150	0	-
Vert.	5350.000	AV	39.24	31.83	16.55	43.33	2.28	46.57	53.9	7.3	264	320	VBW:4.3 kHz
Vert.	10640.000	AV	34.64	37.39	10.12	40.02	-9.54	32.59	53.9	21.3	150	0	VBW:4.3 kHz
Vert.	15960.000	AV	35.07	40.19	12.62	39.70	-9.54	38.64	53.9	15.2	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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Shonan EMC Lab.

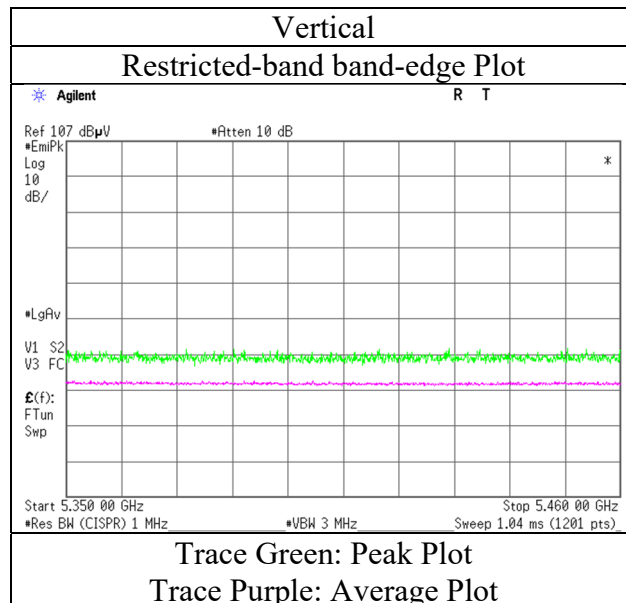
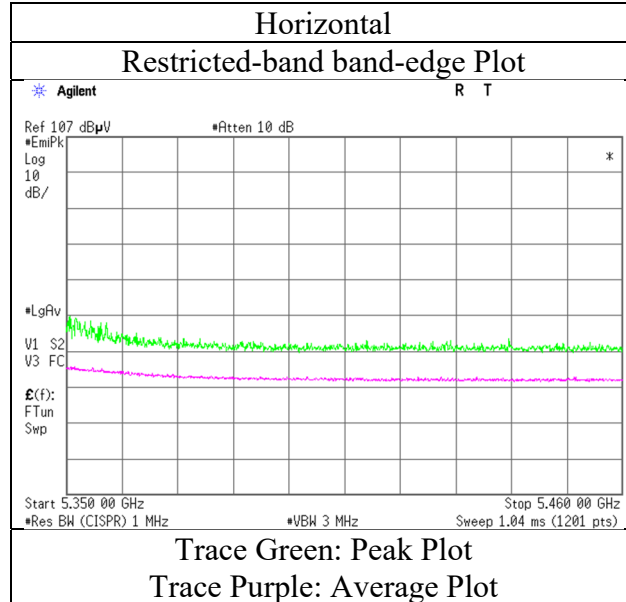
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Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 17, 2020
Temperature / Humidity 22 deg.C, 43 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-20 5320 MHz



* 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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 17, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	22 deg.C, 43 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-20 5500 MHz		

(above 1 GHz 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	52.42	32.30	16.63	43.45	2.28	60.18	73.9	13.7	102	1	-
Hori.	11000.000	PK	44.15	37.63	10.32	39.68	-9.54	42.88	73.9	31.0	150	0	-
Hori.	5460.000	AV	42.11	32.30	16.63	43.45	2.28	49.87	53.9	4.0	102	1	VBW:4.3 kHz
Hori.	11000.000	AV	35.99	37.63	10.32	39.68	-9.54	34.72	53.9	19.1	150	0	VBW:4.3 kHz
Vert.	5460.000	PK	49.81	32.30	16.63	43.45	2.28	57.57	73.9	16.3	307	301	-
Vert.	11000.000	PK	44.74	37.63	10.32	39.68	-9.54	43.47	73.9	30.4	150	0	-
Vert.	5460.000	AV	39.27	32.30	16.63	43.45	2.28	47.03	53.9	6.8	307	301	VBW:4.3 kHz
Vert.	11000.000	AV	35.32	37.63	10.32	39.68	-9.54	34.05	53.9	19.8	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

(Calculation) (above 1 GHz 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	55.62	32.33	16.63	43.46	2.28	63.40	-31.83	-27.0	4.8	102	1	-
Hori.	16500.000	PK	47.40	40.10	13.34	40.47	-9.54	50.83	-44.40	-27.0	17.4	150	0	-
Vert.	5470.000	PK	50.13	32.33	16.63	43.46	2.28	57.91	-37.32	-27.0	10.3	307	301	-
Vert.	16500.000	PK	46.42	40.10	13.34	40.47	-9.54	49.85	-45.38	-27.0	18.3	150	0	-

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)

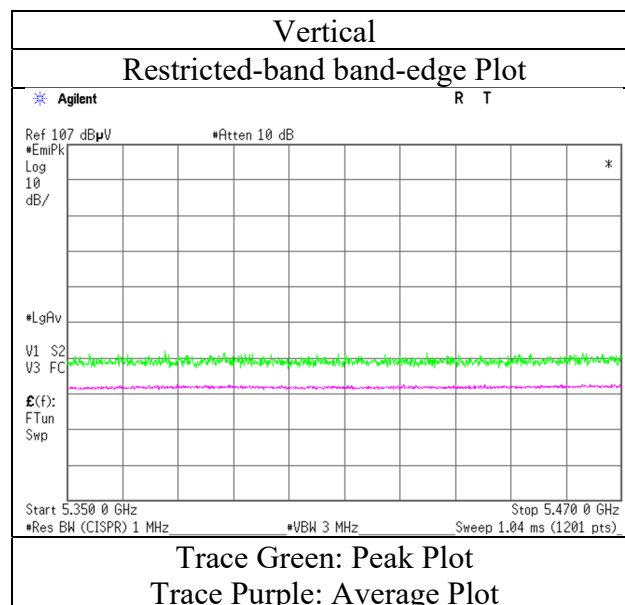
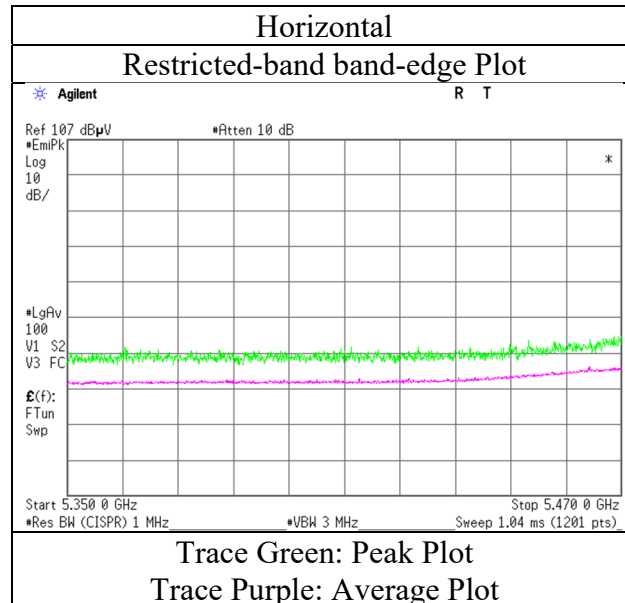
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Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 17, 2020
Temperature / Humidity 22 deg.C, 43 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-20 5500 MHz



* 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.	13554183S-I-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	1	3	1	1
Date	Nov 27, 2020	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	20 deg.C, 46 %RH	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yosuke Murakami	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(30 MHz -1 GHz)	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-20 5580 MHz			

(below 1 GHz and above 1 GHz 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.	811.004	QP	39.92	20.82	9.24	31.96	0.00	38.02	46.0	7.9	107	26	-
Hori.	840.001	QP	37.94	21.27	9.38	31.79	0.00	36.80	46.0	9.2	100	304	-
Hori.	860.157	QP	38.32	21.71	9.47	31.68	0.00	37.82	46.0	8.1	100	21	-
Hori.	909.307	QP	36.51	22.07	9.67	31.42	0.00	36.83	46.0	9.1	100	15	-
Hori.	933.885	QP	35.92	21.98	9.76	31.24	0.00	36.42	46.0	9.5	100	14	-
Hori.	958.460	QP	36.46	22.16	9.85	31.03	0.00	37.44	46.0	8.5	100	12	-
Hori.	11160.000	PK	43.86	37.52	10.39	39.61	-9.54	42.62	73.9	31.2	150	0	-
Hori.	11160.000	AV	34.58	37.52	10.39	39.61	-9.54	33.34	53.9	20.5	150	0	VBW:4.3 kHz
Vert.	38.338	QP	35.57	15.47	7.23	31.83	0.00	26.44	40.0	13.5	100	0	-
Vert.	47.192	QP	45.47	12.20	7.43	31.83	0.00	33.27	40.0	6.7	100	258	-
Vert.	66.492	QP	41.05	6.99	7.31	31.83	0.00	23.52	40.0	16.4	100	271	-
Vert.	136.782	QP	34.57	14.32	8.53	31.79	0.00	25.63	43.5	17.8	100	237	-
Vert.	169.267	QP	35.75	15.55	8.96	31.78	0.00	28.48	43.5	15.0	100	182	-
Vert.	840.004	QP	32.61	21.27	9.38	31.79	0.00	31.47	46.0	14.5	191	4	-
Vert.	860.159	QP	32.88	21.71	9.47	31.68	0.00	32.38	46.0	13.6	186	330	-
Vert.	958.458	QP	31.84	22.16	9.85	31.03	0.00	32.82	46.0	13.1	107	176	-
Vert.	11160.000	PK	43.15	37.52	10.39	39.61	-9.54	41.91	73.9	31.9	150	0	-
Vert.	11160.000	AV	34.30	37.52	10.39	39.61	-9.54	33.06	53.9	20.8	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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(Calculation) (above 1 GHz 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	44.26	39.75	13.40	40.11	-9.54	47.76	-47.47	-27.0	20.4	150	0	-
Vert.	16740.000	PK	44.65	39.75	13.40	40.11	-9.54	48.15	-47.08	-27.0	20.0	150	0	-

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)

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Temperature / Humidity	22 deg.C, 43 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara (1 GHz -6.4 GHz)	Makoto Hosaka (6.4 GHz -18 GHz)	Yosuke Murakami (18 GHz -40 GHz)
Mode	Tx 11n-20 5700 MHz		

(above 1 GHz 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	44.33	38.10	10.53	39.50	-9.54	43.92	73.9	29.9	150	0	-
Hori.	11400.000	AV	34.95	38.10	10.53	39.50	-9.54	34.54	53.9	19.3	150	0	VBW:4.3 kHz
Vert.	11400.000	PK	43.21	38.10	10.53	39.50	-9.54	42.80	73.9	31.1	150	0	-
Vert.	11400.000	AV	35.20	38.10	10.53	39.50	-9.54	34.79	53.9	19.1	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	55.20	32.68	16.81	43.44	2.28	63.53	-31.70	-27.0	4.7	108	2	-
Hori.	17100.000	PK	43.72	39.90	13.51	39.41	-9.54	48.18	-47.05	-27.0	20.0	150	0	-
Vert.	5725.000	PK	49.59	32.68	16.81	43.44	2.28	57.92	-37.31	-27.0	10.3	342	293	-
Vert.	17100.000	PK	44.40	39.90	13.51	39.41	-9.54	48.86	-46.37	-27.0	19.3	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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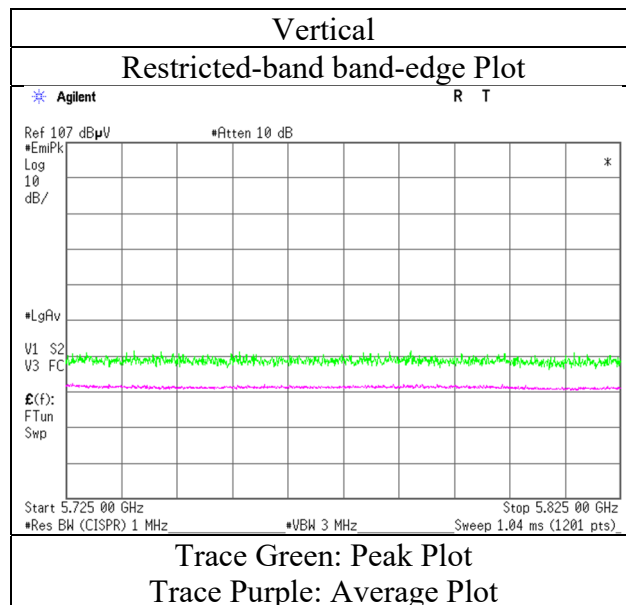
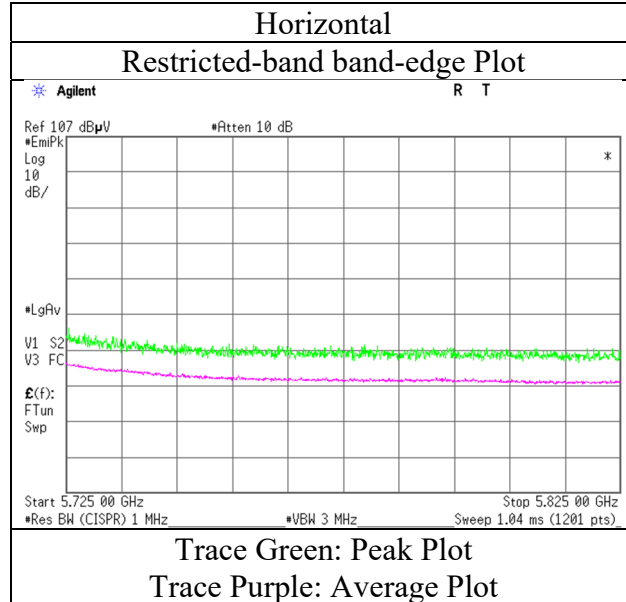
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 17, 2020
Temperature / Humidity 22 deg.C, 43 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-20 5700 MHz



* 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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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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-20 5745 MHz		

(above 1 GHz 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	44.75	38.26	10.58	39.46	-9.54	44.59	73.9	29.3	150	0	-
Hori.	11490.000	AV	35.41	38.26	10.58	39.46	-9.54	35.25	53.9	18.6	150	0	VBW:4.3 kHz
Vert.	11490.000	PK	44.45	38.26	10.58	39.46	-9.54	44.29	73.9	29.6	150	0	-
Vert.	11490.000	AV	35.24	38.26	10.58	39.46	-9.54	35.08	53.9	18.8	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	49.52	32.49	16.76	43.46	2.28	57.59	-37.64	-27.0	10.6	101	357	-
Hori.	5700.000	PK	51.18	32.60	16.79	43.45	2.28	59.40	-35.83	10.0	45.8	101	357	-
Hori.	5720.000	PK	54.12	32.66	16.80	43.44	2.28	62.42	-32.81	15.6	48.4	101	357	-
Hori.	5725.000	PK	55.54	32.68	16.81	43.44	2.28	63.87	-31.36	27.0	58.3	101	357	-
Hori.	17235.000	PK	44.25	40.18	13.57	39.01	-9.54	49.45	-45.78	-27.0	18.7	150	0	-
Vert.	5650.000	PK	49.44	32.49	16.76	43.46	2.28	57.51	-37.72	-27.0	10.7	225	297	-
Vert.	5700.000	PK	49.66	32.60	16.79	43.45	2.28	57.88	-37.35	10.0	47.3	225	297	-
Vert.	5720.000	PK	50.05	32.66	16.80	43.44	2.28	58.35	-36.88	15.6	52.4	225	297	-
Vert.	5725.000	PK	49.65	32.68	16.81	43.44	2.28	57.98	-37.25	27.0	64.2	225	297	-
Vert.	17235.000	PK	44.19	40.18	13.57	39.01	-9.54	49.39	-45.84	-27.0	18.8	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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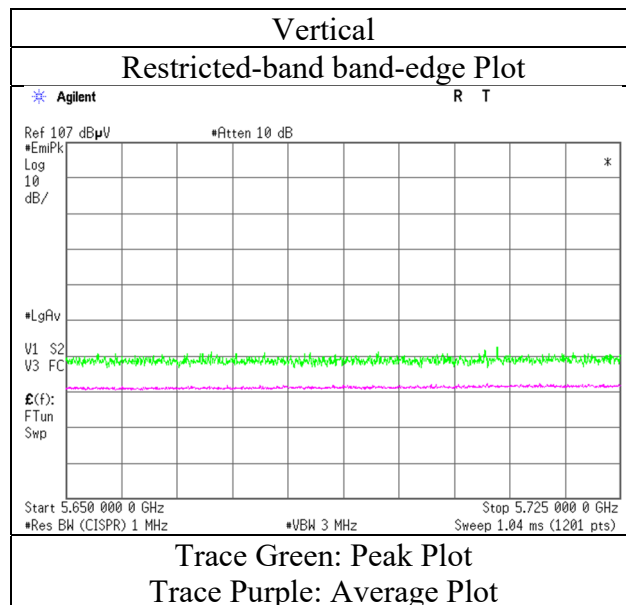
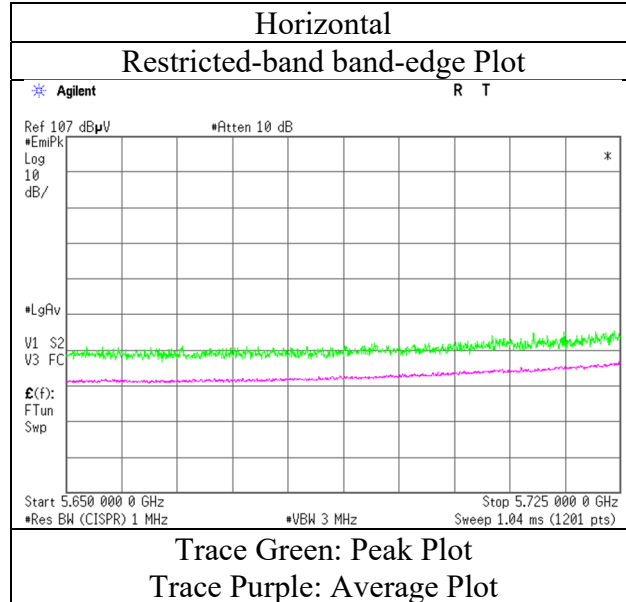
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 19, 2020
Temperature / Humidity 23 deg.C, 51 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-20 5745 MHz



* 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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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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-20 5785 MHz		

(above 1 GHz 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	44.85	38.31	10.62	39.41	-9.54	44.83	73.9	29.0	150	0	-
Hori.	11570.000	AV	35.83	38.31	10.62	39.41	-9.54	35.81	53.9	18.0	150	0	VBW:4.3 kHz
Vert.	11570.000	PK	44.86	38.31	10.62	39.41	-9.54	44.84	73.9	29.0	150	0	-
Vert.	11570.000	AV	35.86	38.31	10.62	39.41	-9.54	35.84	53.9	18.0	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	44.96	40.39	13.61	38.65	-9.54	50.77	-44.46	-27.0	17.4	150	0	-
Vert.	17355.000	PK	45.79	40.39	13.61	38.65	-9.54	51.60	-43.63	-27.0	16.6	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-20 5825 MHz		

(above 1 GHz 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	44.48	38.35	10.68	39.34	-9.54	44.63	73.9	29.2	150	0	-
Hori.	11650.000	AV	35.80	38.35	10.68	39.34	-9.54	35.95	53.9	17.9	150	0	VBW:4.3 kHz
Vert.	11650.000	PK	44.34	38.35	10.68	39.34	-9.54	44.49	73.9	29.4	150	0	-
Vert.	11650.000	AV	34.97	38.35	10.68	39.34	-9.54	35.12	53.9	18.7	150	0	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

(Calculation) (above 1 GHz 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	53.26	33.07	16.88	43.41	2.28	62.08	-33.15	27.0	60.1	101	4	-
Hori.	5855.000	PK	49.77	33.08	16.88	43.41	2.28	58.60	-36.63	15.6	52.2	101	4	-
Hori.	5875.000	PK	49.45	33.12	16.92	43.41	2.28	58.36	-36.87	10.0	46.8	101	4	-
Hori.	5925.000	PK	49.46	33.21	16.94	43.40	2.28	58.49	-36.74	-27.0	9.7	101	4	-
Hori.	17475.000	PK	44.73	40.51	13.66	38.29	-9.54	51.07	-44.16	-27.0	17.1	150	0	-
Vert.	5850.000	PK	49.16	33.07	16.88	43.41	2.28	57.98	-37.25	27.0	64.2	255	294	-
Vert.	5855.000	PK	49.52	33.08	16.88	43.41	2.28	58.35	-36.88	15.6	52.4	255	294	-
Vert.	5875.000	PK	50.02	33.12	16.92	43.41	2.28	58.93	-36.30	10.0	46.3	255	294	-
Vert.	5925.000	PK	49.06	33.21	16.94	43.40	2.28	58.09	-37.14	-27.0	10.1	255	294	-
Vert.	17475.000	PK	44.81	40.51	13.66	38.29	-9.54	51.15	-44.08	-27.0	17.0	150	0	-

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)

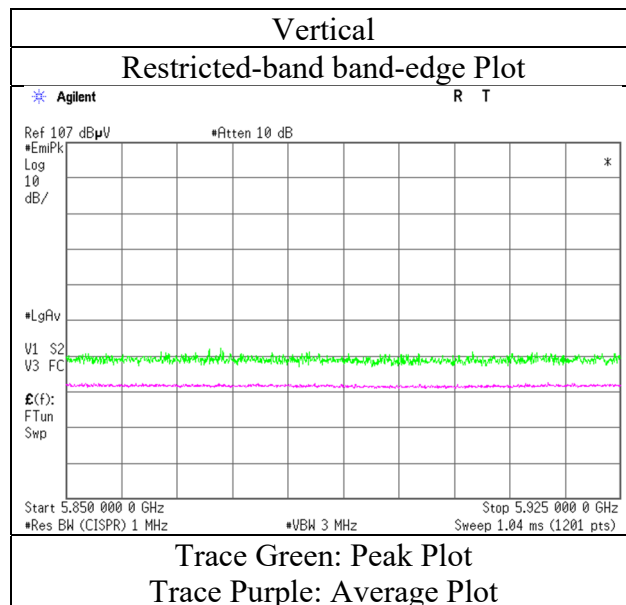
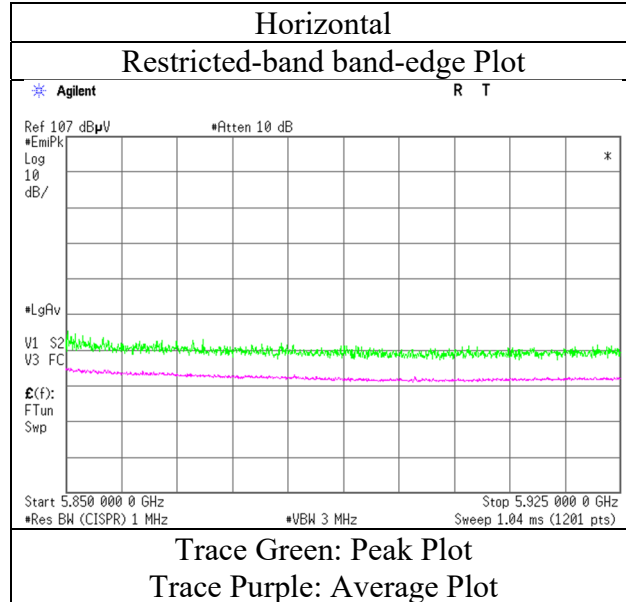
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 19, 2020
Temperature / Humidity 23 deg.C, 51 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-20 5825 MHz



* 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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 17, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	22 deg.C, 43 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-40 5190 MHz		

(above 1 GHz 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	55.91	32.12	16.41	43.11	2.28	63.61	73.9	10.2	100	357	-
Hori.	15570.000	PK	46.86	39.68	12.66	39.17	-9.54	50.49	73.9	23.4	150	0	-
Hori.	5150.000	AV	42.21	32.12	16.41	43.11	2.28	49.91	53.9	3.9	100	357	VBW:3 kHz
Hori.	15570.000	AV	36.40	39.68	12.66	39.17	-9.54	40.03	53.9	13.8	150	0	VBW:3 kHz
Vert.	5150.000	PK	50.62	32.12	16.41	43.11	2.28	58.32	73.9	15.5	314	318	-
Vert.	15570.000	PK	46.01	39.68	12.66	39.17	-9.54	49.64	73.9	24.2	150	0	-
Vert.	5150.000	AV	39.11	32.12	16.41	43.11	2.28	46.81	53.9	7.0	314	318	VBW:3 kHz
Vert.	15570.000	AV	36.37	39.68	12.66	39.17	-9.54	40.00	53.9	13.9	150	0	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

(Calculation) (above 1 GHz 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	44.05	36.57	10.01	39.92	-9.54	41.17	-54.06	-27.0	27.0	150	0	-
Vert.	10380.000	PK	43.82	36.57	10.01	39.92	-9.54	40.94	-54.29	-27.0	27.2	150	0	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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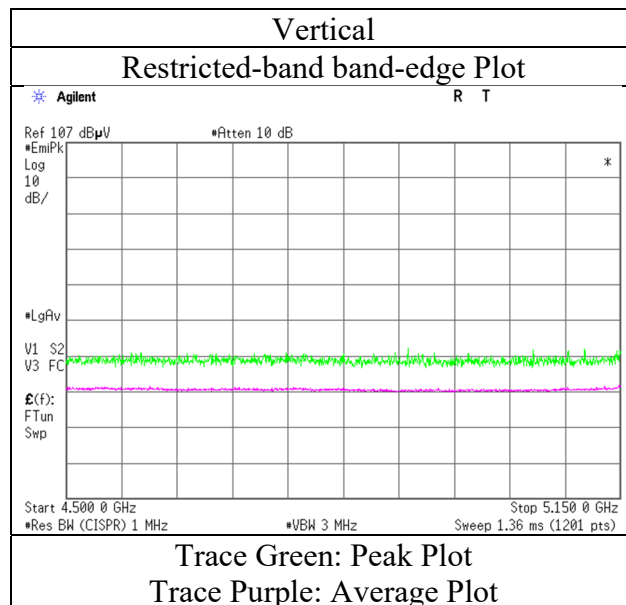
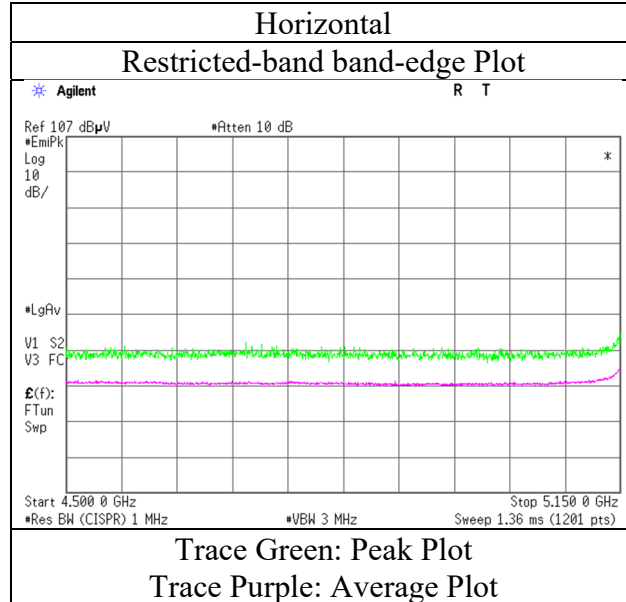
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	Nov 17, 2020
Temperature / Humidity	22 deg.C, 43 %RH
Engineer	Yusuke Tanikawara
Mode	Tx 11n-40 5190 MHz



* 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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara (1 GHz -6.4 GHz)	Makoto Hosaka (6.4 GHz -18 GHz)	Yosuke Murakami (18 GHz -40 GHz)
Mode	Tx 11n-40 5230 MHz		

(above 1 GHz 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	45.07	39.82	12.65	39.33	-9.54	48.67	73.9	25.2	150	0	-
Hori.	15690.000	AV	36.32	39.82	12.65	39.33	-9.54	39.92	53.9	13.9	150	0	VBW:3 kHz
Vert.	15690.000	PK	45.46	39.82	12.65	39.33	-9.54	49.06	73.9	24.8	150	0	-
Vert.	15690.000	AV	36.11	39.82	12.65	39.33	-9.54	39.71	53.9	14.1	150	0	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	44.06	36.69	10.03	40.07	-9.54	41.17	-54.06	-27.0	27.0	150	0	-
Vert.	10460.000	PK	44.81	36.69	10.03	40.07	-9.54	41.92	-53.31	-27.0	26.3	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

10 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

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -18 GHz)	(18 GHz -40 GHz)
Mode	Tx 11n-40 5310 MHz		

(above 1 GHz 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	60.36	31.83	16.55	43.33	2.28	67.69	73.9	6.2	102	2	-
Hori.	10620.000	PK	45.21	37.30	10.11	40.04	-9.54	43.04	73.9	30.8	150	0	-
Hori.	15930.000	PK	44.78	40.17	12.63	39.66	-9.54	48.38	73.9	25.5	150	0	-
Hori.	5350.000	AV	45.95	31.83	16.55	43.33	2.28	53.28	53.9	0.6	102	2	VBW:3 kHz
Hori.	10620.000	AV	35.49	37.30	10.11	40.04	-9.54	33.32	53.9	20.5	150	0	VBW:3 kHz
Hori.	15930.000	AV	35.86	40.17	12.63	39.66	-9.54	39.46	53.9	14.4	150	0	VBW:3 kHz
Vert.	5350.000	PK	52.84	31.83	16.55	43.33	2.28	60.17	73.9	13.7	315	311	-
Vert.	10620.000	PK	45.30	37.30	10.11	40.04	-9.54	43.13	73.9	30.7	150	0	-
Vert.	15930.000	PK	45.62	40.17	12.63	39.66	-9.54	49.22	73.9	24.6	150	0	-
Vert.	5350.000	AV	39.83	31.83	16.55	43.33	2.28	47.16	53.9	6.7	315	311	VBW:3 kHz
Vert.	10620.000	AV	35.47	37.30	10.11	40.04	-9.54	33.30	53.9	20.6	150	0	VBW:3 kHz
Vert.	15930.000	AV	35.87	40.17	12.63	39.66	-9.54	39.47	53.9	14.4	150	0	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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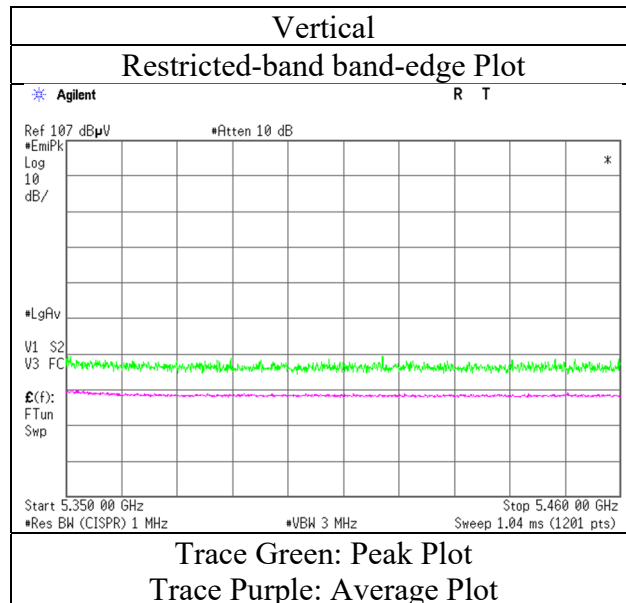
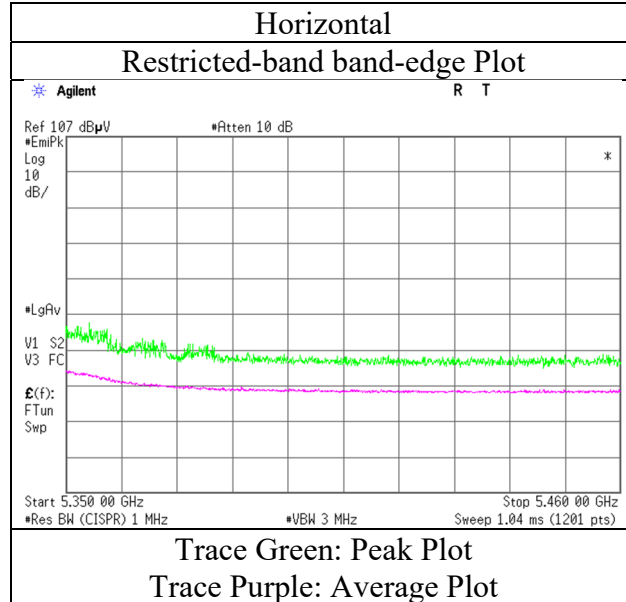
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	Nov 19, 2020
Temperature / Humidity	23 deg.C, 51 %RH
Engineer	Yusuke Tanikawara
Mode	Tx 11n-40 5310 MHz



* 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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 17, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	22 deg.C, 43 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -10 GHz)	(10 GHz -40 GHz)
Mode	Tx 11n-40 5510 MHz		

(above 1 GHz 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	53.30	32.30	16.63	43.45	2.28	61.06	73.9	12.8	100	1	-
Hori.	11020.000	PK	45.64	37.58	10.33	39.67	-9.54	44.34	73.9	29.5	150	0	-
Hori.	5460.000	AV	40.44	32.30	16.63	43.45	2.28	48.20	53.9	5.7	100	1	VBW:3 kHz
Hori.	11020.000	AV	35.80	37.58	10.33	39.67	-9.54	34.50	53.9	19.4	150	0	VBW:3 kHz
Vert.	5460.000	PK	49.96	32.30	16.63	43.45	2.28	57.72	73.9	16.1	116	62	-
Vert.	11020.000	PK	46.56	37.58	10.33	39.67	-9.54	45.26	73.9	28.6	150	0	-
Vert.	5460.000	AV	38.73	32.30	16.63	43.45	2.28	46.49	53.9	7.4	116	62	VBW:3 kHz
Vert.	11020.000	AV	35.87	37.58	10.33	39.67	-9.54	34.57	53.9	19.3	150	0	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

(Calculation) (above 1 GHz 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	57.90	32.33	16.63	43.46	2.28	65.68	-29.55	-27.0	2.5	100	1	-
Hori.	16530.000	PK	44.65	40.05	13.35	40.42	-9.54	48.09	-47.14	-27.0	20.1	150	0	-
Vert.	5470.000	PK	49.91	32.33	16.63	43.46	2.28	57.69	-37.54	-27.0	10.5	116	62	-
Vert.	16530.000	PK	44.52	40.05	13.35	40.42	-9.54	47.96	-47.27	-27.0	20.2	150	0	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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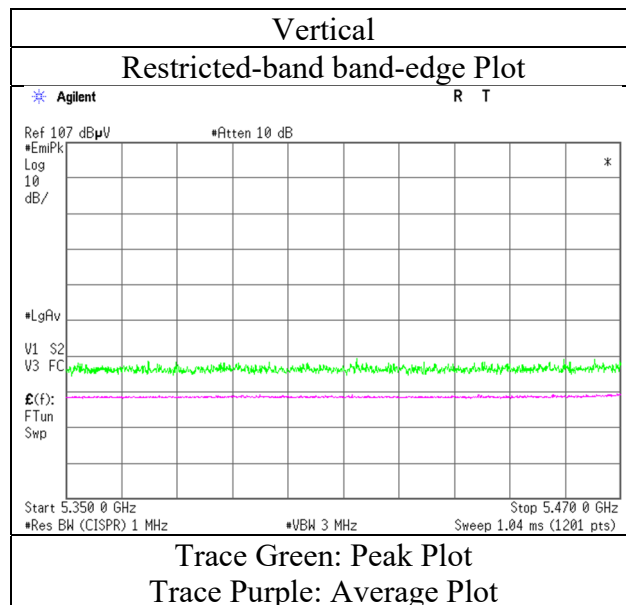
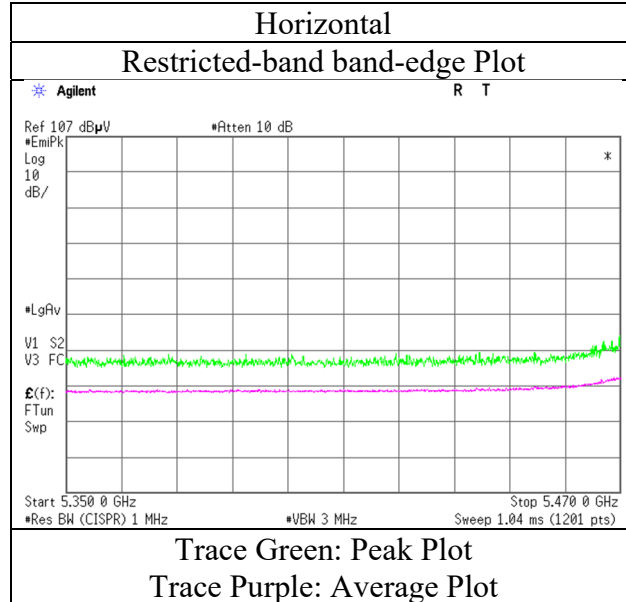
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 17, 2020
Temperature / Humidity 22 deg.C, 43 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-40 5510 MHz



* 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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara (1 GHz -6.4 GHz)	Makoto Hosaka (6.4 GHz -10 GHz)	Yosuke Murakami (10 GHz -40 GHz)
Mode	Tx 11n-40 5550 MHz		

(above 1 GHz 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	46.91	37.49	10.37	39.64	-9.54	45.59	73.9	28.3	150	0	-
Hori.	11100.000	AV	36.30	37.49	10.37	39.64	-9.54	34.98	53.9	18.9	150	0	VBW:3 kHz
Vert.	11100.000	PK	46.90	37.49	10.37	39.64	-9.54	45.58	73.9	28.3	150	0	-
Vert.	11100.000	AV	36.19	37.49	10.37	39.64	-9.54	34.87	53.9	19.0	150	0	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	44.15	39.86	13.38	40.24	-9.54	47.61	-47.62	-27.0	20.6	150	0	-
Vert.	16650.000	PK	44.08	39.86	13.38	40.24	-9.54	47.54	-47.69	-27.0	20.6	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

Radiated Spurious Emission

Report No.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 17, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	22 deg.C, 43 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -10 GHz)	(10 GHz -40 GHz)
Mode	Tx 11n-40 5670 MHz		

(above 1 GHz 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	45.31	37.97	10.51	39.53	-9.54	44.72	73.9	29.1	150	0	-
Hori.	11340.000	AV	35.51	37.97	10.51	39.53	-9.54	34.92	53.9	18.9	150	0	VBW:3 kHz
Vert.	11340.000	PK	45.64	37.97	10.51	39.53	-9.54	45.05	73.9	28.8	150	0	-
Vert.	11340.000	AV	35.36	37.97	10.51	39.53	-9.54	34.77	53.9	19.1	150	0	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	54.57	32.68	16.81	43.44	2.28	62.90	-32.33	-27.0	5.3	119	1	-
Hori.	17010.000	PK	45.39	39.75	13.48	39.68	-9.54	49.40	-45.83	-27.0	18.8	150	0	-
Vert.	5725.000	PK	49.41	32.68	16.81	43.44	2.28	57.74	-37.49	-27.0	10.4	315	297	-
Vert.	17010.000	PK	45.13	39.75	13.48	39.68	-9.54	49.14	-46.09	-27.0	19.0	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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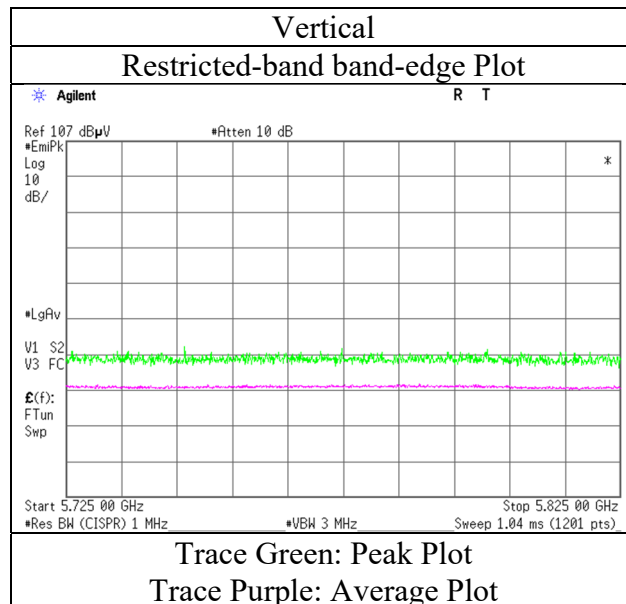
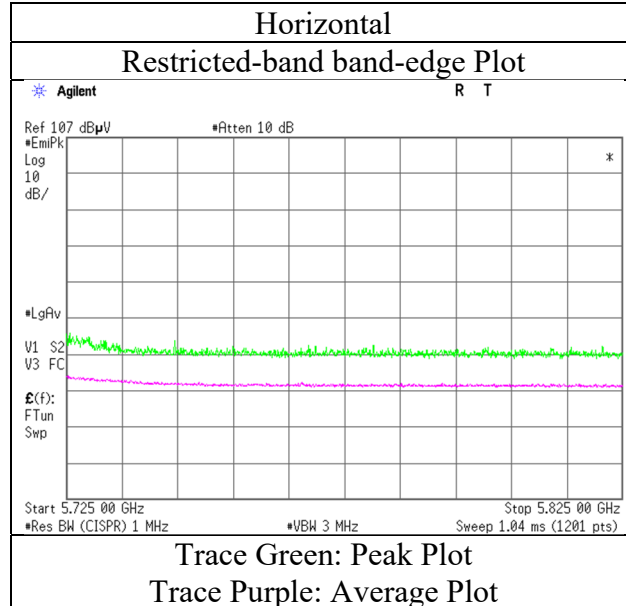
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 17, 2020
Temperature / Humidity 22 deg.C, 43 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-40 5670 MHz



* 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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara	Makoto Hosaka	Yosuke Murakami
	(1 GHz -6.4 GHz)	(6.4 GHz -10 GHz)	(10 GHz -40 GHz)
Mode	Tx 11n-40 5755 MHz		

(above 1 GHz 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	44.75	38.27	10.58	39.45	-9.54	44.61	73.9	29.2	150	0	-
Hori.	11510.000	AV	34.55	38.27	10.58	39.45	-9.54	34.41	53.9	19.4	150	0	VBW:3 kHz
Vert.	11510.000	PK	45.29	38.27	10.58	39.45	-9.54	45.15	73.9	28.7	150	0	-
Vert.	11510.000	AV	34.45	38.27	10.58	39.45	-9.54	34.31	53.9	19.5	150	0	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

(Calculation) (above 1 GHz 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	49.47	32.49	16.76	43.46	2.28	57.54	-37.69	-27.0	10.6	111	3	-
Hori.	5700.000	PK	53.07	32.60	16.79	43.45	2.28	61.29	-33.94	10.0	43.9	111	3	-
Hori.	5720.000	PK	60.05	32.66	16.80	43.44	2.28	68.35	-26.88	15.6	42.4	111	3	-
Hori.	5725.000	PK	57.87	32.68	16.81	43.44	2.28	66.20	-29.03	27.0	56.0	111	3	-
Hori.	17265.000	PK	44.16	40.22	13.57	38.92	-9.54	49.49	-45.74	-27.0	18.7	150	0	-
Vert.	5650.000	PK	49.97	32.49	16.76	43.46	2.28	58.04	-37.19	-27.0	10.1	279	293	-
Vert.	5700.000	PK	49.37	32.60	16.79	43.45	2.28	57.59	-37.64	10.0	47.6	279	293	-
Vert.	5720.000	PK	53.07	32.66	16.80	43.44	2.28	61.37	-33.86	15.6	49.4	279	293	-
Vert.	5725.000	PK	51.74	32.68	16.81	43.44	2.28	60.07	-35.16	27.0	62.1	279	293	-
Vert.	17265.000	PK	43.86	40.22	13.57	38.92	-9.54	49.19	-46.04	-27.0	19.0	150	0	-

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)

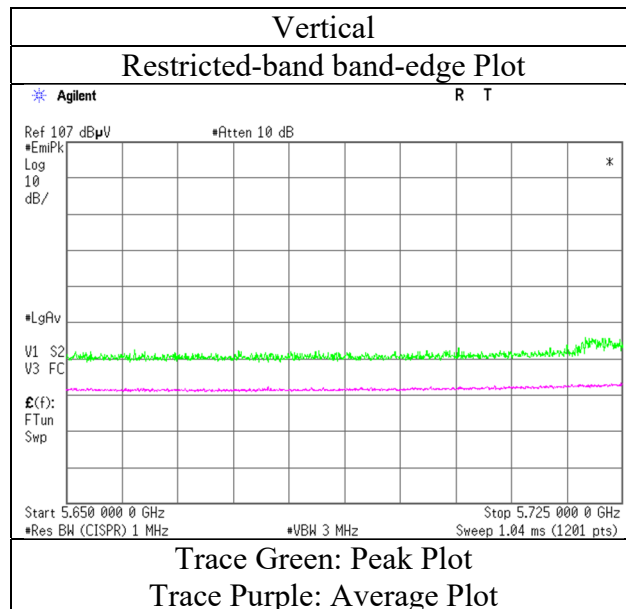
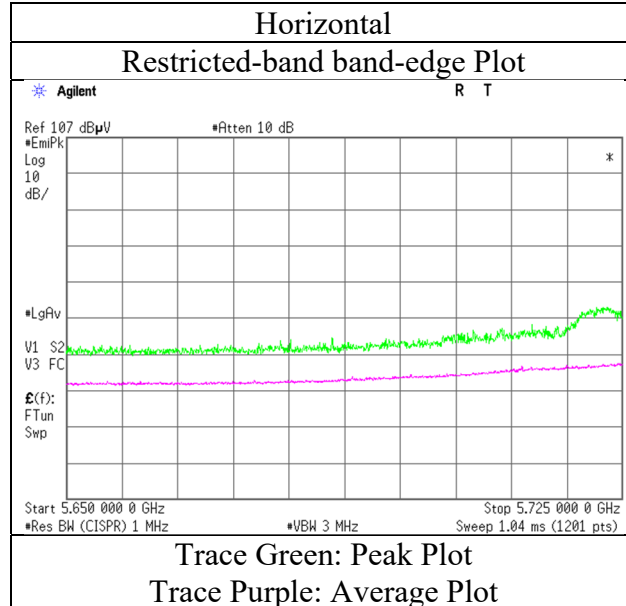
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 19, 2020
Temperature / Humidity 23 deg.C, 51 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-40 5755 MHz



* 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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	3	1	1
Date	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yusuke Tanikawara (1 GHz -6.4 GHz)	Makoto Hosaka (6.4 GHz -10 GHz)	Yosuke Murakami (10 GHz -40 GHz)
Mode	Tx 11n-40 5795 MHz		

(above 1 GHz 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	44.18	38.33	10.64	39.39	-9.54	44.22	73.9	29.6	150	0	-
Hori.	11590.000	AV	33.83	38.33	10.64	39.39	-9.54	33.87	53.9	20.0	150	0	VBW:3 kHz
Vert.	11590.000	PK	44.28	38.33	10.64	39.39	-9.54	44.32	73.9	29.5	150	0	-
Vert.	11590.000	AV	33.74	38.33	10.64	39.39	-9.54	33.78	53.9	20.1	150	0	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

(Calculation) (above 1 GHz 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	52.62	33.07	16.88	43.41	2.28	61.44	-33.79	27.0	60.7	101	1	-
Hori.	5855.000	PK	52.37	33.08	16.88	43.41	2.28	61.20	-34.03	15.6	49.6	101	1	-
Hori.	5875.000	PK	49.91	33.12	16.92	43.41	2.28	58.82	-36.41	10.0	46.4	101	1	-
Hori.	5925.000	PK	49.68	33.21	16.94	43.40	2.28	58.71	-36.52	-27.0	9.5	101	1	-
Hori.	17385.000	PK	44.02	40.41	13.63	38.56	-9.54	49.96	-45.27	-27.0	18.2	150	0	-
Vert.	5850.000	PK	49.82	33.07	16.88	43.41	2.28	58.64	-36.59	27.0	63.5	274	295	-
Vert.	5855.000	PK	49.65	33.08	16.88	43.41	2.28	58.48	-36.75	15.6	52.3	274	295	-
Vert.	5875.000	PK	50.17	33.12	16.92	43.41	2.28	59.08	-36.15	10.0	46.1	274	295	-
Vert.	5925.000	PK	50.37	33.21	16.94	43.40	2.28	59.40	-35.83	-27.0	8.8	274	295	-
Vert.	17385.000	PK	44.17	40.41	13.63	38.56	-9.54	50.11	-45.12	-27.0	18.1	150	0	-

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)

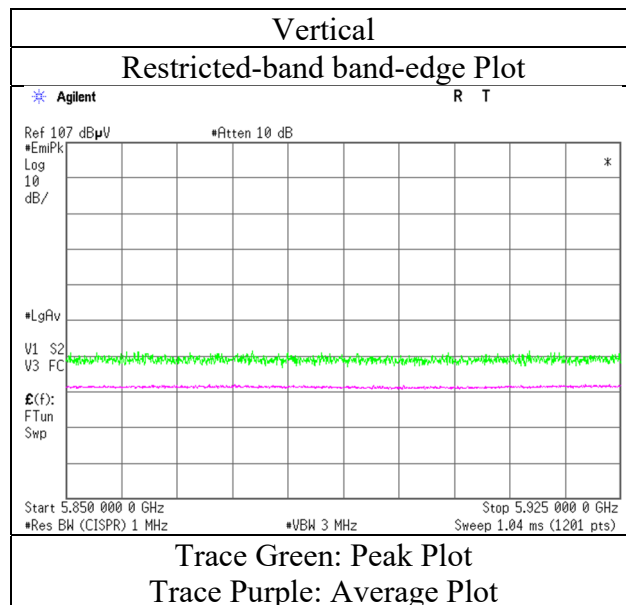
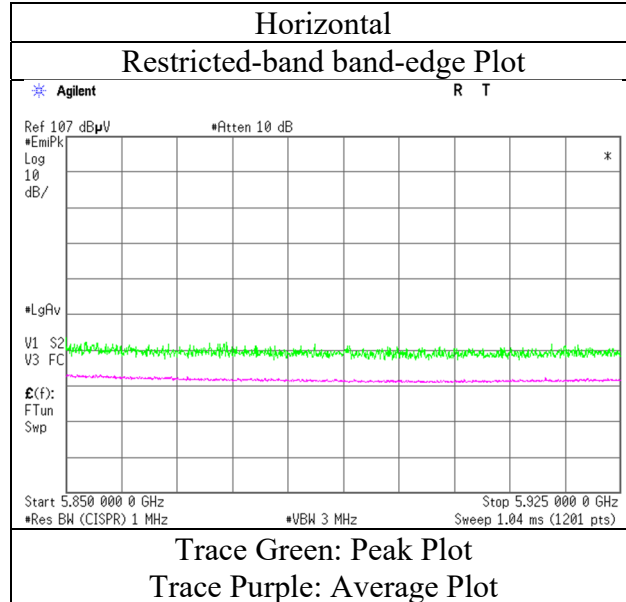
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 3
Date Nov 19, 2020
Temperature / Humidity 23 deg.C, 51 %RH
Engineer Yusuke Tanikawara
Mode Tx 11n-40 5795 MHz



* 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.

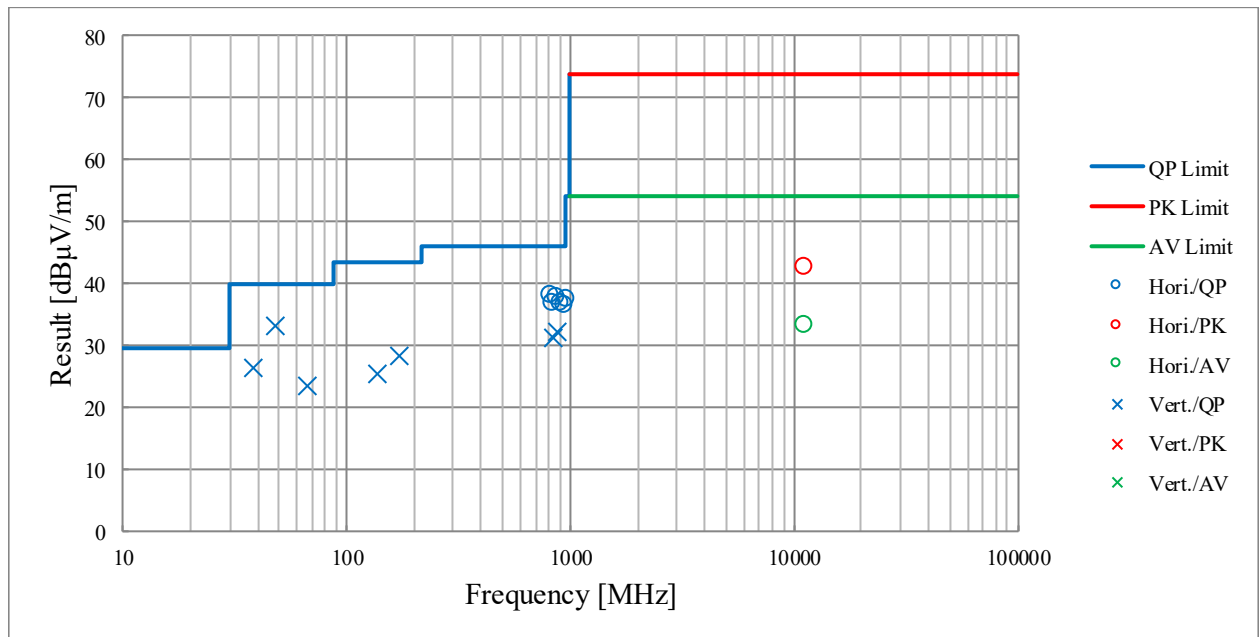
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission (Plot data, Worst case)

Report No.	13554183S-I-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	1	3	1	1
Date	Nov 27, 2020	Nov 19, 2020	Nov 20, 2020	Nov 21, 2020
Temperature / Humidity	20 deg.C, 46 %RH	23 deg.C, 51 %RH	23 deg.C, 63 %RH	22 deg.C, 65 %RH
Engineer	Yosuke Murakami (30 MHz -1 GHz)	Yusuke Tanikawara (1 GHz -6.4 GHz)	Makoto Hosaka (6.4 GHz -18 GHz)	Yosuke Murakami (18 GHz -40 GHz)
Mode	Tx 11n-20 5580 MHz			



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

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11a 5180 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	50.90	32.25	17.45	39.72	2.28	63.16	73.9	10.7	105	359	-
Hori.	5150.000	AV	38.74	32.25	17.45	39.72	2.28	51.00	53.9	2.9	105	359	VBW:1.5 kHz
Vert.	5150.000	PK	47.40	32.25	17.45	39.72	2.28	59.66	73.9	14.2	336	307	-
Vert.	5150.000	AV	35.56	32.25	17.45	39.72	2.28	47.82	53.9	6.0	336	307	VBW:1.5 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 20 dB).

Distance factor : 1 GHz - 10 GHz: $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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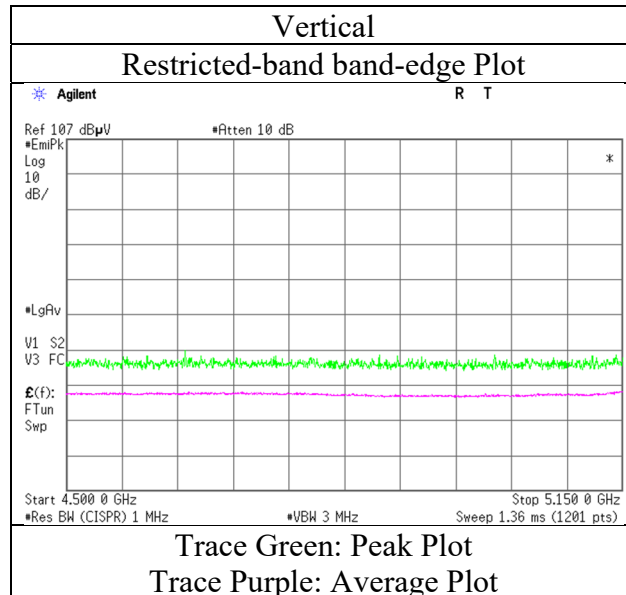
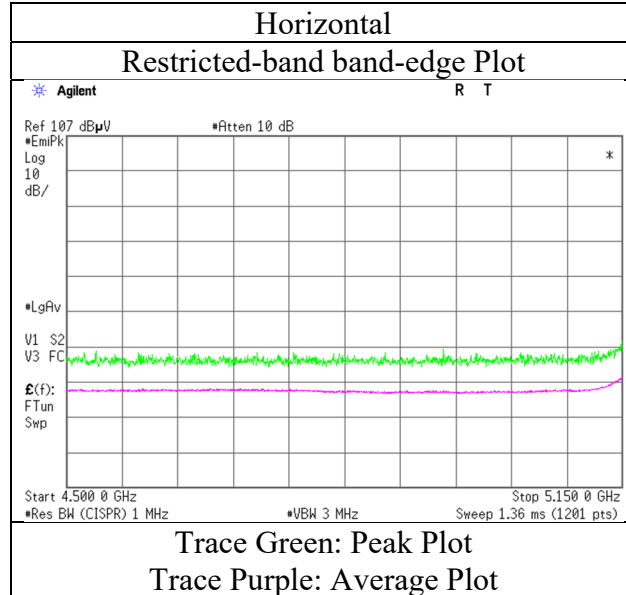
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
Mode Tx 11a with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11a 5320 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	49.58	31.99	17.62	39.74	2.28	61.73	73.9	12.1	104	359	-
Hori.	5350.000	AV	37.56	31.99	17.62	39.74	2.28	49.71	53.9	4.1	104	359	VBW:1.5 kHz
Vert.	5350.000	PK	47.37	31.99	17.62	39.74	2.28	59.52	73.9	14.3	338	320	-
Vert.	5350.000	AV	35.28	31.99	17.62	39.74	2.28	47.43	53.9	6.4	338	320	VBW:1.5 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

UL Japan, Inc.

Shonan EMC Lab.

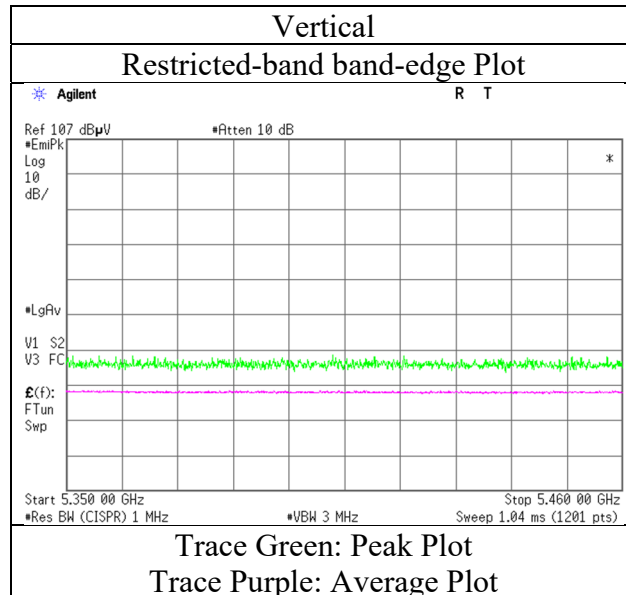
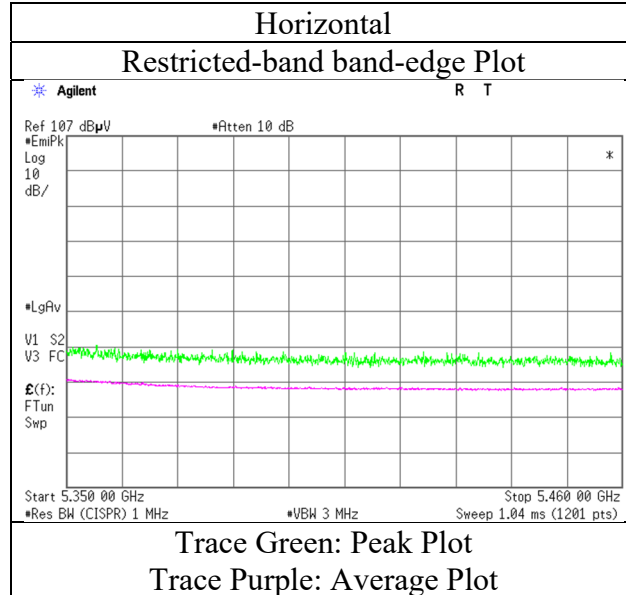
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11a 5320 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11a 5500 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	48.25	32.22	17.72	39.75	2.28	60.72	73.9	13.1	104	358	-
Hori.	5460.000	AV	37.19	32.22	17.72	39.75	2.28	49.66	53.9	4.2	104	358	VBW:1.5 kHz
Vert.	5460.000	PK	47.70	32.22	17.72	39.75	2.28	60.17	73.9	13.7	351	297	-
Vert.	5460.000	AV	35.13	32.22	17.72	39.75	2.28	47.60	53.9	6.3	351	297	VBW:1.5 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	50.14	32.24	17.72	39.75	2.28	62.63	-32.60	-27.0	5.6	104	358	-
Vert.	5470.000	PK	46.94	32.24	17.72	39.75	2.28	59.43	-35.80	-27.0	8.8	351	297	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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Shonan EMC Lab.

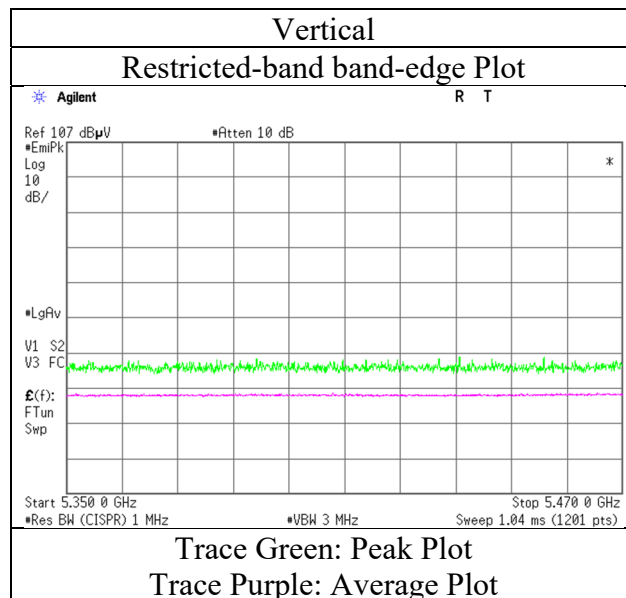
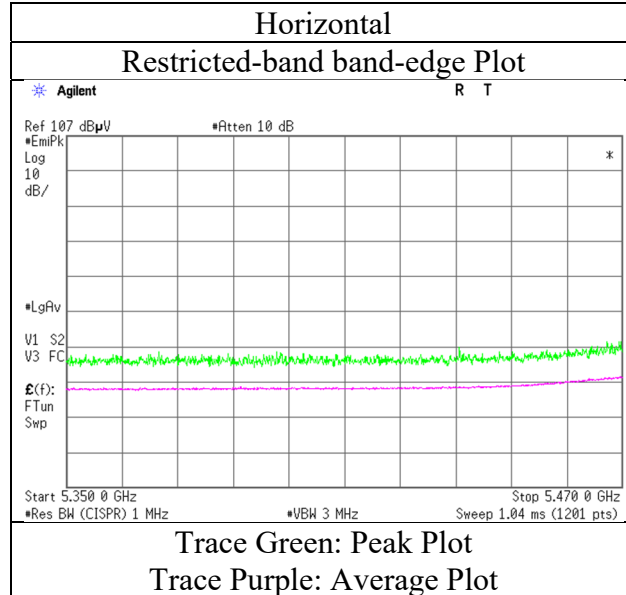
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11a 5500 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11a 5700 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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	49.36	32.64	17.89	39.92	2.28	62.25	-32.98	-27.0	5.9	103	359	-
Vert.	5725.000	PK	46.05	32.64	17.89	39.92	2.28	58.94	-36.29	-27.0	9.2	255	300	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

UL Japan, Inc.

Shonan EMC Lab.

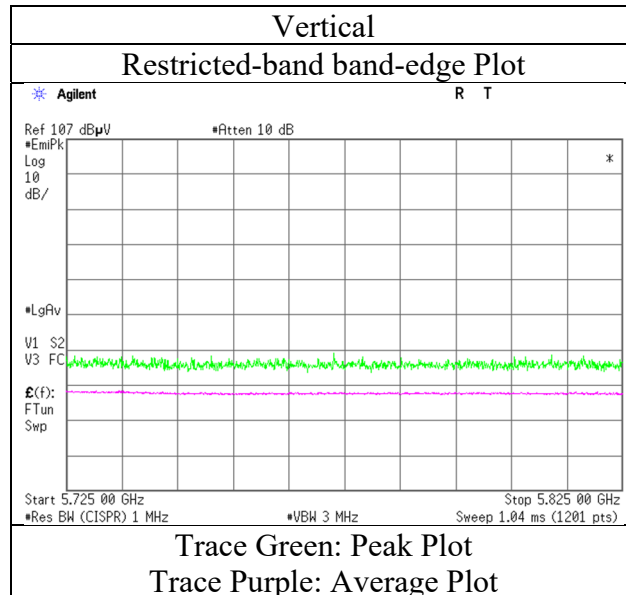
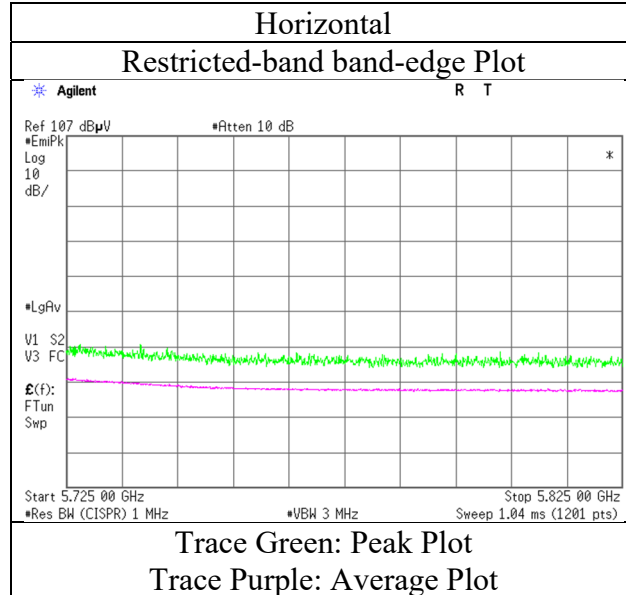
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11a 5700 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11a 5745 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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	47.00	32.44	17.84	39.86	2.28	59.70	-35.53	-27.0	8.5	104	359	-
Hori.	5700.000	PK	48.26	32.56	17.87	39.90	2.28	61.07	-34.16	10.0	44.1	104	359	-
Hori.	5720.000	PK	49.78	32.62	17.88	39.92	2.28	62.64	-32.59	15.6	48.1	104	359	-
Hori.	5725.000	PK	50.90	32.64	17.89	39.92	2.28	63.79	-31.44	27.0	58.4	104	359	-
Vert.	5650.000	PK	46.28	32.44	17.84	39.86	2.28	58.98	-36.25	-27.0	9.2	311	295	-
Vert.	5700.000	PK	46.68	32.56	17.87	39.90	2.28	59.49	-35.74	10.0	45.7	311	295	-
Vert.	5720.000	PK	46.58	32.62	17.88	39.92	2.28	59.44	-35.79	15.6	51.3	311	295	-
Vert.	5725.000	PK	46.79	32.64	17.89	39.92	2.28	59.68	-35.55	27.0	62.5	311	295	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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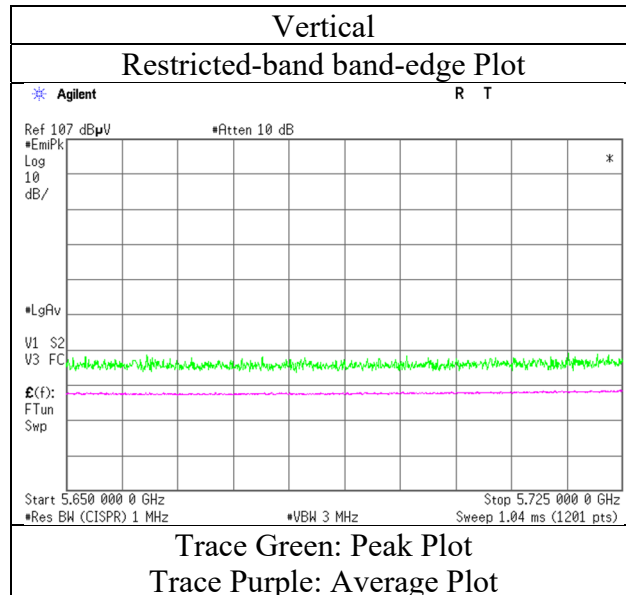
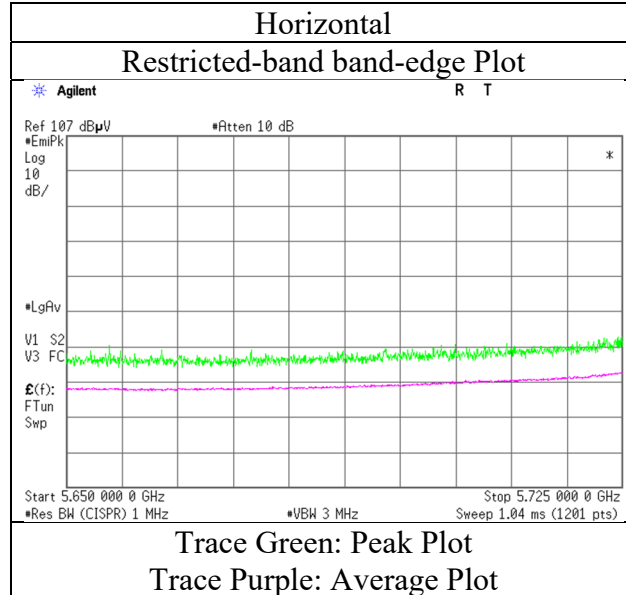
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Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11a 5745 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11a 5825 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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	48.08	32.91	17.96	40.02	2.28	61.21	-34.02	27.0	61.0	102	356	-
Hori.	5855.000	PK	47.95	32.92	17.96	40.02	2.28	61.09	-34.14	15.6	49.7	102	356	-
Hori.	5875.000	PK	46.93	32.95	17.99	40.04	2.28	60.11	-35.12	10.0	45.1	102	356	-
Hori.	5925.000	PK	46.47	32.99	18.01	40.07	2.28	59.68	-35.55	-27.0	8.5	102	356	-
Vert.	5850.000	PK	46.33	32.91	17.96	40.02	2.28	59.46	-35.77	27.0	62.7	275	298	-
Vert.	5855.000	PK	46.20	32.92	17.96	40.02	2.28	59.34	-35.89	15.6	51.4	275	298	-
Vert.	5875.000	PK	46.22	32.95	17.99	40.04	2.28	59.40	-35.83	10.0	45.8	275	298	-
Vert.	5925.000	PK	46.36	32.99	18.01	40.07	2.28	59.57	-35.66	-27.0	8.6	275	298	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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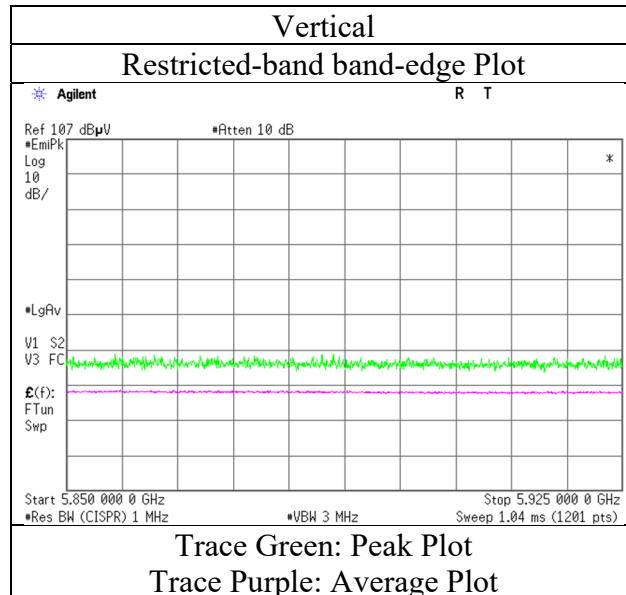
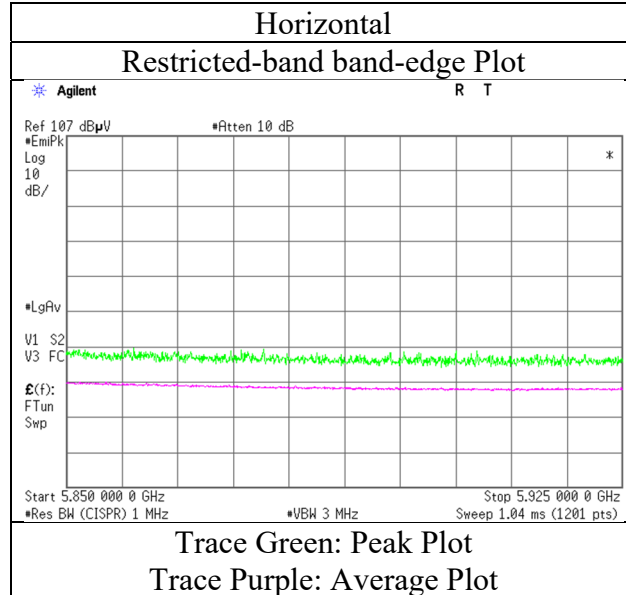
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Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
Mode Tx 11a 5825 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11n-20 5180 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	49.38	32.25	17.45	39.72	2.28	61.64	73.9	12.2	105	359	-
Hori.	5150.000	AV	38.51	32.25	17.45	39.72	2.28	50.77	53.9	3.1	105	359	VBW:4.3 kHz
Vert.	5150.000	PK	47.03	32.25	17.45	39.72	2.28	59.29	73.9	14.6	318	316	-
Vert.	5150.000	AV	36.23	32.25	17.45	39.72	2.28	48.49	53.9	5.4	318	316	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz: $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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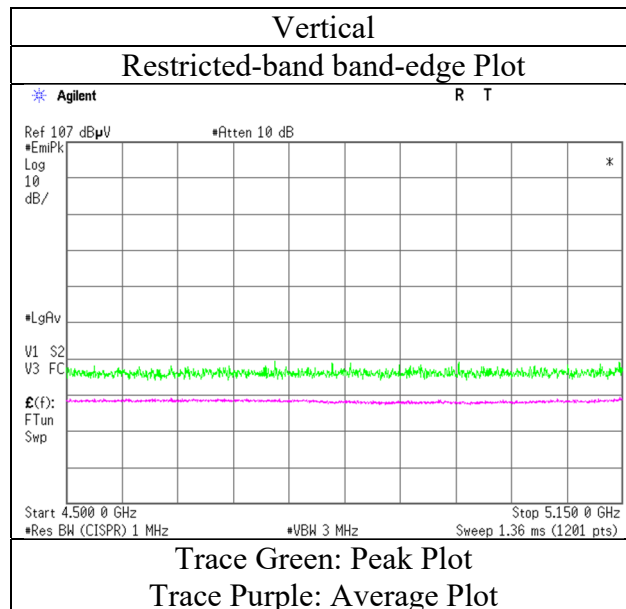
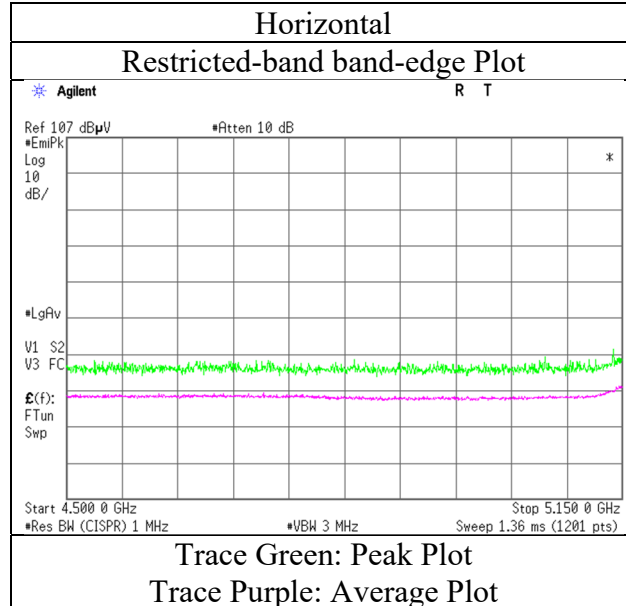
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11n-20 5180 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
	(1 GHz -6.4 GHz)
Mode	Tx 11n-20 5320 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	51.33	31.99	17.62	39.74	2.28	63.48	73.9	10.4	104	358	-
Hori.	5350.000	AV	39.48	31.99	17.62	39.74	2.28	51.63	53.9	2.2	104	358	VBW:4.3 kHz
Vert.	5350.000	PK	46.61	31.99	17.62	39.74	2.28	58.76	73.9	15.1	397	310	-
Vert.	5350.000	AV	35.83	31.99	17.62	39.74	2.28	47.98	53.9	5.9	397	310	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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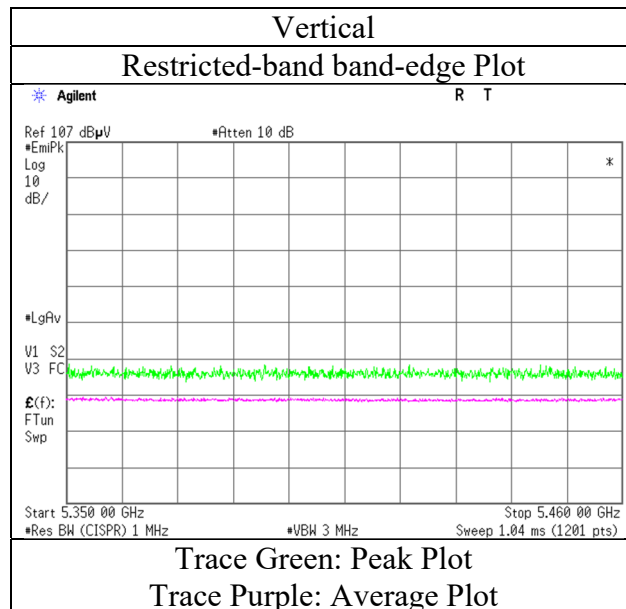
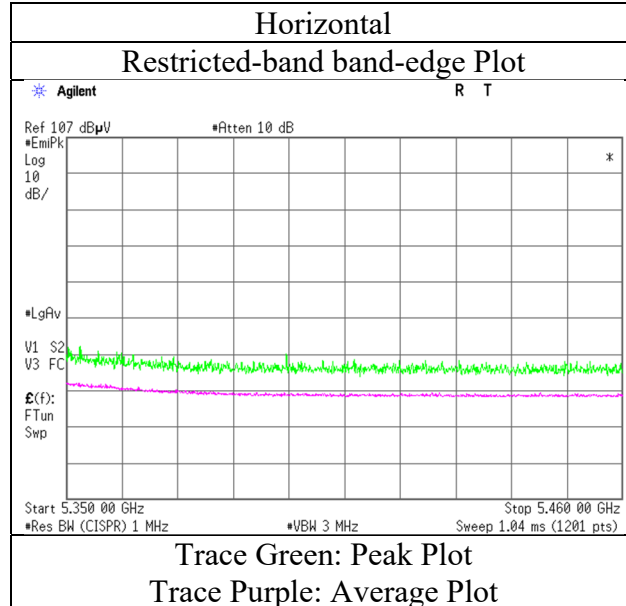
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11n-20 5320 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11n-20 5500 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	49.53	32.22	17.72	39.75	2.28	62.00	73.9	11.9	103	356	-
Hori.	5460.000	AV	38.47	32.22	17.72	39.75	2.28	50.94	53.9	2.9	103	356	VBW:4.3 kHz
Vert.	5460.000	PK	47.18	32.22	17.72	39.75	2.28	59.65	73.9	14.2	334	301	-
Vert.	5460.000	AV	36.15	32.22	17.72	39.75	2.28	48.62	53.9	5.2	334	301	VBW:4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	52.25	32.24	17.72	39.75	2.28	64.74	-30.49	-27.0	3.4	103	356	-
Vert.	5470.000	PK	46.76	32.24	17.72	39.75	2.28	59.25	-35.98	-27.0	8.9	334	301	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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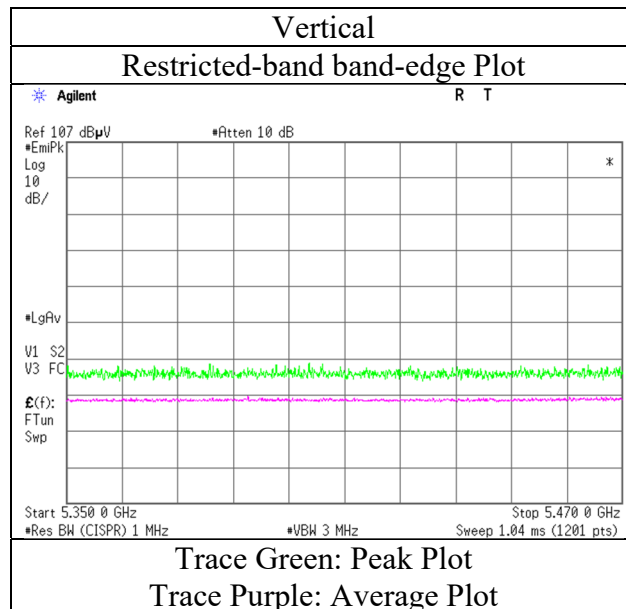
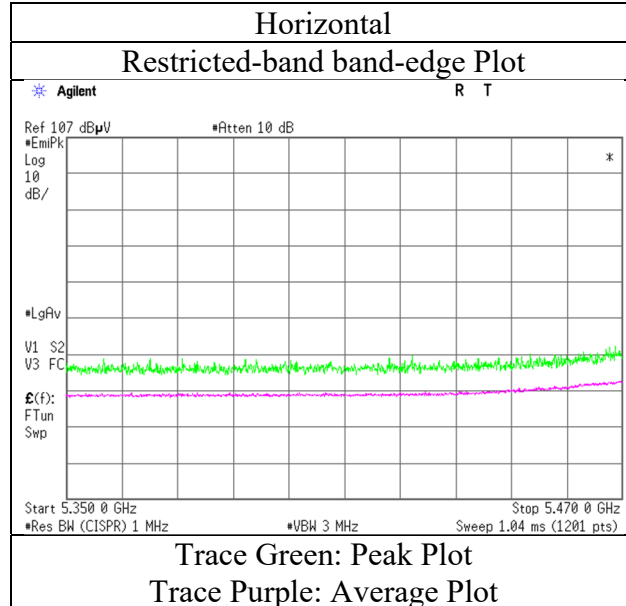
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11n-20 5500 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1 1 1
Date November 27, 2020 November 25, 2020 November 26, 2020
Temperature / Humidity 20 deg.C, 46 %RH 20 deg.C, 46 %RH 21 deg.C, 48 %RH
Engineer Yosuke Murakami Yosuke Murakami Yosuke Murakami
(30 MHz -1 GHz) (1 GHz -10 GHz) (10 GHz -40 GHz)
Mode Tx 11n-20 5580 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(below 1 GHz and above 1 GHz 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.	811.005	QP	40.08	20.82	9.24	31.96	0.00	38.18	46.0	7.8	103	26	-
Hori.	840.001	QP	37.55	21.27	9.38	31.79	0.00	36.41	46.0	9.5	104	315	-
Hori.	860.156	QP	38.37	21.71	9.47	31.68	0.00	37.87	46.0	8.1	100	18	-
Hori.	909.307	QP	36.53	22.07	9.67	31.42	0.00	36.85	46.0	9.1	100	11	-
Hori.	933.883	QP	36.57	21.98	9.76	31.24	0.00	37.07	46.0	8.9	100	14	-
Hori.	958.462	QP	36.96	22.16	9.85	31.03	0.00	37.94	46.0	8.0	100	14	-
Hori.	11160.000	PK	46.21	37.52	10.39	39.61	-9.54	44.97	73.9	28.9	150	0	-
Hori.	11160.000	AV	36.25	37.52	10.39	39.61	-9.54	35.01	53.9	18.8	150	0	VBW :4.3 kHz
Vert.	38.576	QP	35.49	15.38	7.24	31.83	0.00	26.28	40.0	13.7	100	358	-
Vert.	48.266	QP	45.51	11.80	7.44	31.83	0.00	32.92	40.0	7.0	100	203	-
Vert.	66.337	QP	41.60	7.01	7.30	31.83	0.00	24.08	40.0	15.9	100	261	-
Vert.	137.638	QP	34.87	14.36	8.55	31.79	0.00	25.99	43.5	17.5	100	238	-
Vert.	169.762	QP	35.68	15.58	8.96	31.78	0.00	28.44	43.5	15.0	100	174	-
Vert.	860.153	QP	32.53	21.71	9.47	31.68	0.00	32.03	46.0	13.9	183	328	-
Vert.	958.461	QP	31.27	22.16	9.85	31.03	0.00	32.25	46.0	13.7	103	186	-
Vert.	11160.000	PK	46.46	37.52	10.39	39.61	-9.54	45.22	73.9	28.6	150	0	-
Vert.	11160.000	AV	36.34	37.52	10.39	39.61	-9.54	35.10	53.9	18.8	150	0	VBW :4.3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

(Calculation) (above 1 GHz 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	44.93	39.75	13.40	40.11	-9.54	48.43	-46.80	-27.0	19.8	150	0	-
Vert.	16740.000	PK	46.08	39.75	13.40	40.11	-9.54	49.58	-45.65	-27.0	18.6	150	0	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11n-20 5700 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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.]
Hori.	5725.000	PK	49.34	32.64	17.89	39.92	2.28	62.23	-33.00	-27.0	6.0	102	359
Vert.	5725.000	PK	47.82	32.64	17.89	39.92	2.28	60.71	-34.52	-27.0	7.5	242	293

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)

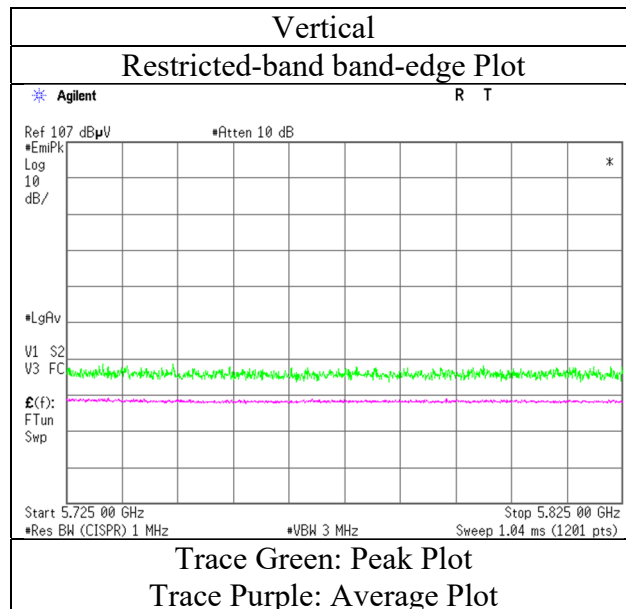
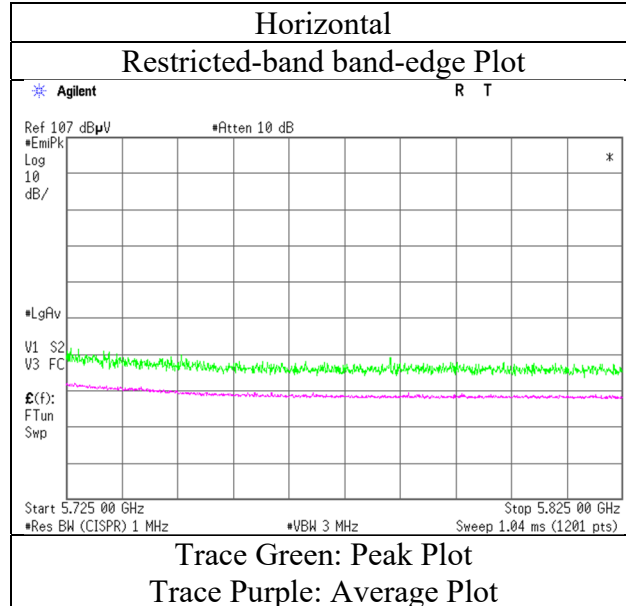
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11n-20 5700 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11n-20 5745 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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	45.79	32.44	17.84	39.86	2.28	58.49	-36.74	-27.0	9.7	101	358	-
Hori.	5700.000	PK	48.15	32.56	17.87	39.90	2.28	60.96	-34.27	10.0	44.2	101	358	-
Hori.	5720.000	PK	49.17	32.62	17.88	39.92	2.28	62.03	-33.20	15.6	48.8	101	358	-
Hori.	5725.000	PK	51.37	32.64	17.89	39.92	2.28	64.26	-30.97	27.0	57.9	101	358	-
Vert.	5650.000	PK	45.80	32.44	17.84	39.86	2.28	58.50	-36.73	-27.0	9.7	358	301	-
Vert.	5700.000	PK	45.71	32.56	17.87	39.90	2.28	58.52	-36.71	10.0	46.7	358	301	-
Vert.	5720.000	PK	46.47	32.62	17.88	39.92	2.28	59.33	-35.90	15.6	51.5	358	301	-
Vert.	5725.000	PK	46.80	32.64	17.89	39.92	2.28	59.69	-35.54	27.0	62.5	358	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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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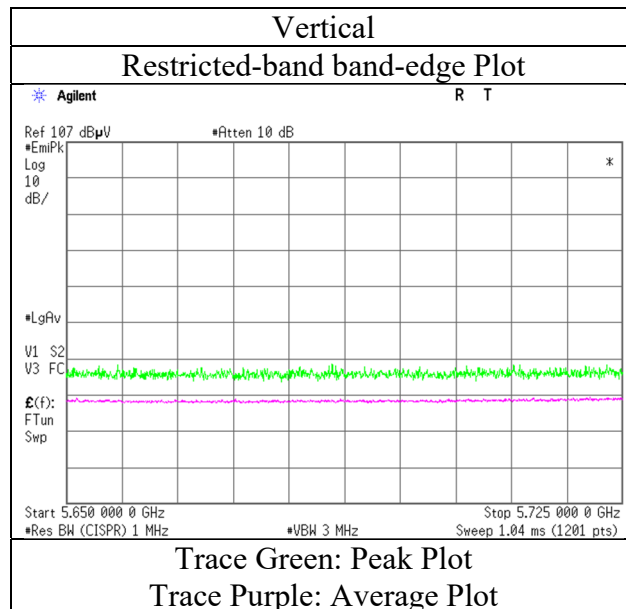
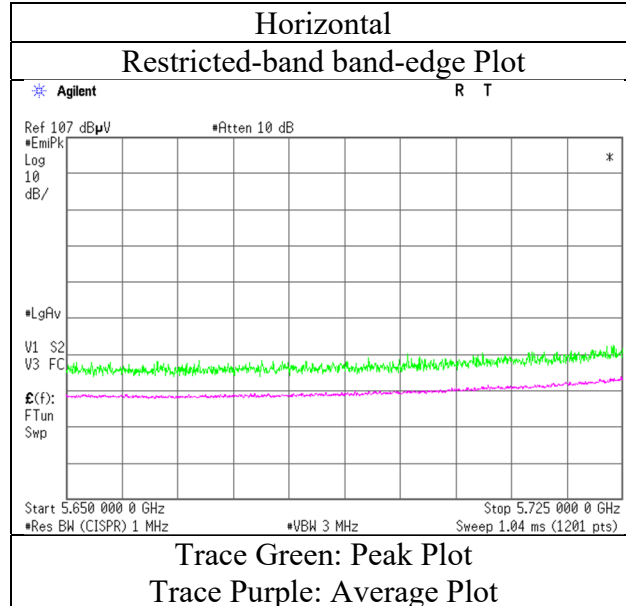
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Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
Mode Tx 11n-20 5745 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



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

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Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11n-20 5825 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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	50.75	32.91	17.96	40.02	2.28	63.88	-31.35	27.0	58.3	103	359	-
Hori.	5855.000	PK	48.33	32.92	17.96	40.02	2.28	61.47	-33.76	15.6	49.3	103	359	-
Hori.	5875.000	PK	47.27	32.95	17.99	40.04	2.28	60.45	-34.78	10.0	44.7	103	359	-
Hori.	5925.000	PK	46.25	32.99	18.01	40.07	2.28	59.46	-35.77	-27.0	8.7	103	359	-
Vert.	5850.000	PK	46.20	32.91	17.96	40.02	2.28	59.33	-35.90	27.0	62.9	352	289	-
Vert.	5855.000	PK	47.20	32.92	17.96	40.02	2.28	60.34	-34.89	15.6	50.4	352	289	-
Vert.	5875.000	PK	46.35	32.95	17.99	40.04	2.28	59.53	-35.70	10.0	45.7	352	289	-
Vert.	5925.000	PK	45.76	32.99	18.01	40.07	2.28	58.97	-36.26	-27.0	9.2	352	289	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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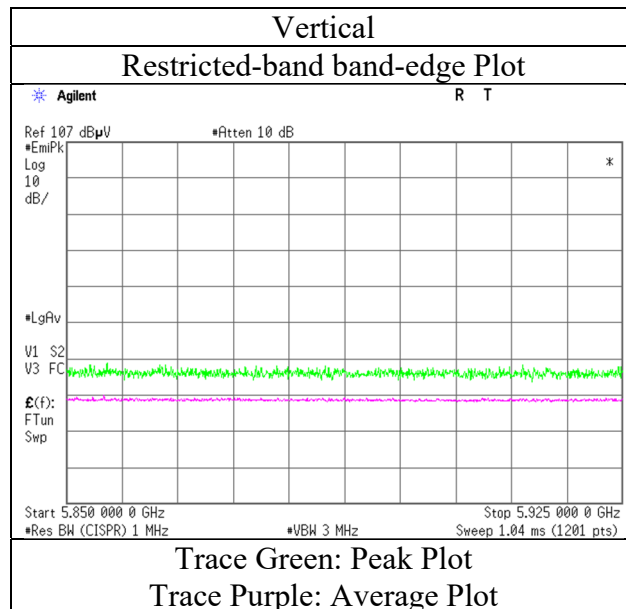
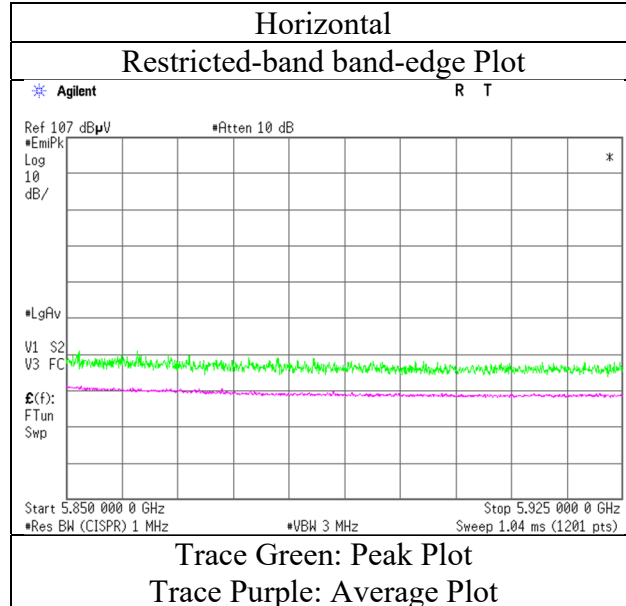
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 23, 2020
Temperature / Humidity	23 deg.C, 54 %RH
Engineer	Toshinori Yamada
Mode	Tx 11n-20 5825 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 23, 2020
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Toshinori Yamada
(1 GHz -6.4 GHz)
Mode Tx 11n-40 5190 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	52.22	32.25	17.45	39.72	2.28	64.48	73.9	9.4	102	358	-
Hori.	5150.000	AV	38.51	32.25	17.45	39.72	2.28	50.77	53.9	3.1	102	358	VBW:3 kHz
Vert.	5150.000	PK	47.16	32.25	17.45	39.72	2.28	59.42	73.9	14.4	357	314	-
Vert.	5150.000	AV	36.14	32.25	17.45	39.72	2.28	48.40	53.9	5.5	357	314	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz: $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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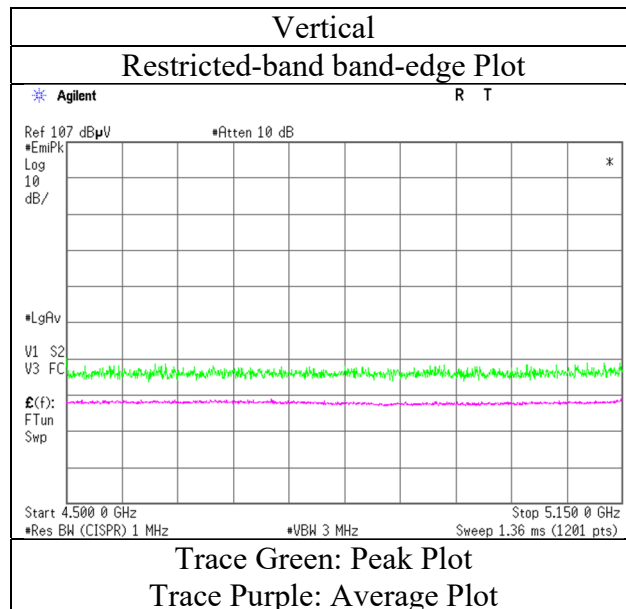
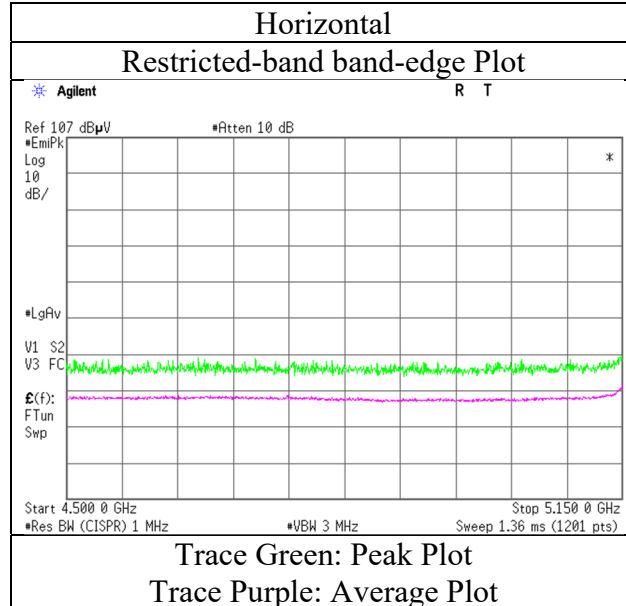
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Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 24, 2020
Temperature / Humidity	21 deg.C, 41 %RH
Engineer	Yosuke Murakami
Mode	Tx 11n-40 5190 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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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Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 24, 2020
Temperature / Humidity 21 deg.C, 41 %RH
Engineer Yosuke Murakami
(1 GHz -6.4 GHz)
Mode Tx 11n-40 5310 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	55.44	31.99	17.62	39.74	2.28	67.59	73.9	6.3	104	356	-
Hori.	5350.000	AV	41.33	31.99	17.62	39.74	2.28	53.48	53.9	0.4	104	356	VBW:3 kHz
Vert.	5350.000	PK	48.08	31.99	17.62	39.74	2.28	60.23	73.9	13.6	355	316	-
Vert.	5350.000	AV	36.38	31.99	17.62	39.74	2.28	48.53	53.9	5.3	355	316	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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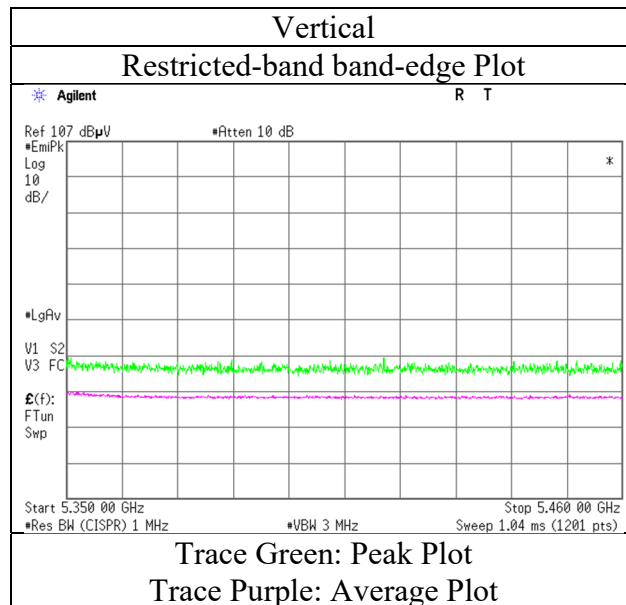
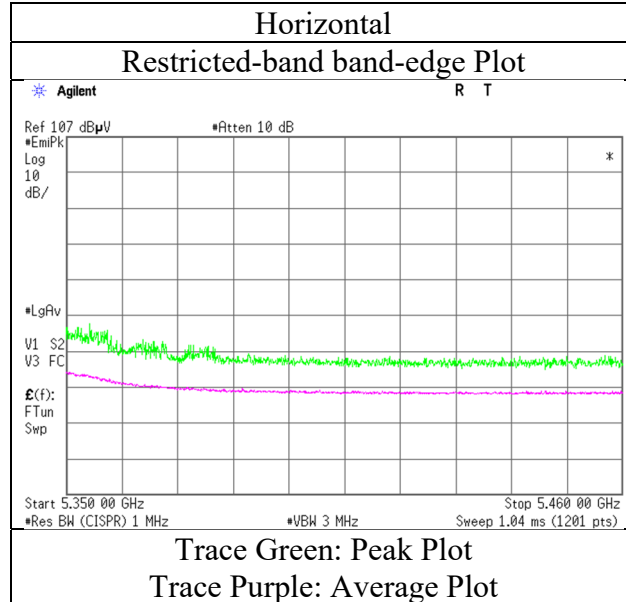
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Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 24, 2020
Temperature / Humidity	21 deg.C, 41 %RH
Engineer	Yosuke Murakami
Mode	Tx 11n-40 5310 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 24, 2020
Temperature / Humidity 21 deg.C, 41 %RH
Engineer Yosuke Murakami
(1 GHz -6.4 GHz)
Mode Tx 11n-40 5510 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(above 1 GHz 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	47.06	32.22	17.72	39.75	2.28	59.53	73.9	14.3	102	355	-
Hori.	5460.000	AV	36.81	32.22	17.72	39.75	2.28	49.28	53.9	4.6	102	355	VBW:3 kHz
Vert.	5460.000	PK	46.02	32.22	17.72	39.75	2.28	58.49	73.9	15.4	388	39	-
Vert.	5460.000	AV	35.46	32.22	17.72	39.75	2.28	47.93	53.9	5.9	388	39	VBW:3 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 20 dB).

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

(Calculation) (above 1 GHz 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	50.40	32.24	17.72	39.75	2.28	62.89	-32.34	-27.0	5.3	102	355	-
Vert.	5470.000	PK	46.66	32.24	17.72	39.75	2.28	59.15	-36.08	-27.0	9.0	388	39	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

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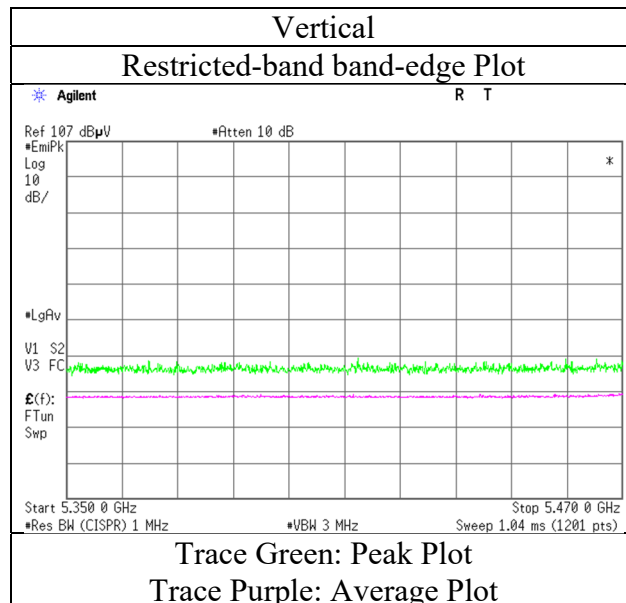
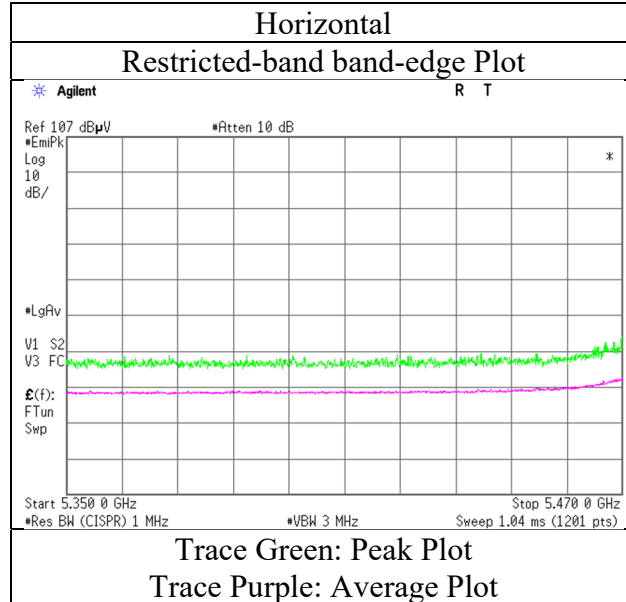
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 24, 2020
Temperature / Humidity	21 deg.C, 41 %RH
Engineer	Yosuke Murakami
Mode	Tx 11n-40 5510 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 25, 2020
Temperature / Humidity	20 deg.C, 46 %RH
Engineer	Yosuke Murakami
	(1 GHz -6.4 GHz)
Mode	Tx 11n-40 5670 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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	52.72	32.64	17.89	39.92	2.28	65.61	-29.62	-27.0	2.6	108	356	-
Vert.	5725.000	PK	46.08	32.64	17.89	39.92	2.28	58.97	-36.26	-27.0	9.2	193	233	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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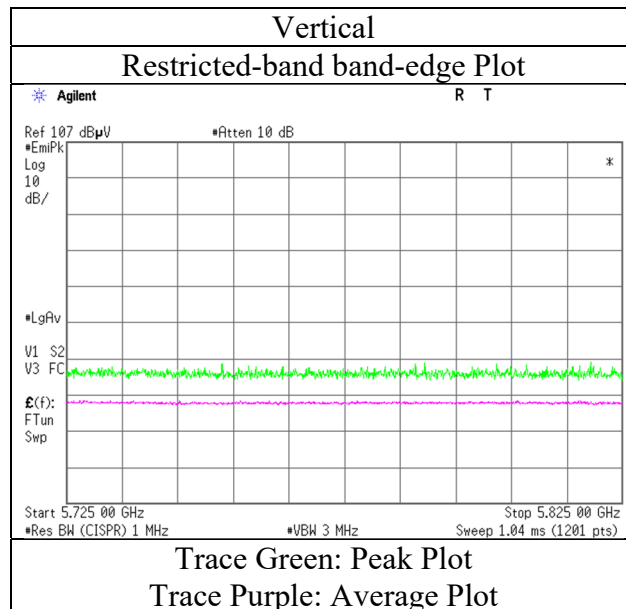
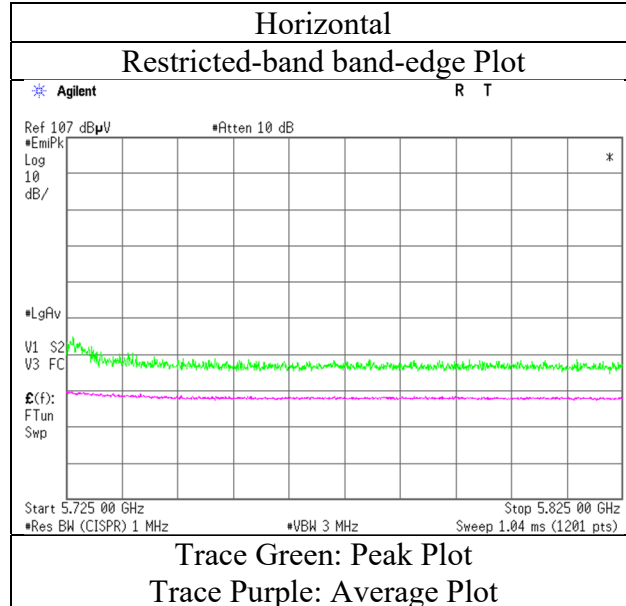
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Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 25, 2020
Temperature / Humidity	20 deg.C, 46 %RH
Engineer	Yosuke Murakami
Mode	Tx 11n-40 5670 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 25, 2020
Temperature / Humidity 20 deg.C, 46 %RH
Engineer Yosuke Murakami
(1 GHz -6.4 GHz)
Mode Tx 11n-40 5755 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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	45.22	32.44	17.84	39.86	2.28	57.92	-37.31	-27.0	10.3	100	5	-
Hori.	5700.000	PK	48.05	32.56	17.87	39.90	2.28	60.86	-34.37	10.0	44.3	100	5	-
Hori.	5720.000	PK	55.91	32.62	17.88	39.92	2.28	68.77	-26.46	15.6	42.0	100	5	-
Hori.	5725.000	PK	54.95	32.64	17.89	39.92	2.28	67.84	-27.39	27.0	54.3	100	5	-
Vert.	5650.000	PK	44.74	32.44	17.84	39.86	2.28	57.44	-37.79	-27.0	10.7	276	299	-
Vert.	5700.000	PK	45.31	32.56	17.87	39.90	2.28	58.12	-37.11	10.0	47.1	276	299	-
Vert.	5720.000	PK	48.43	32.62	17.88	39.92	2.28	61.29	-33.94	15.6	49.5	276	299	-
Vert.	5725.000	PK	46.46	32.64	17.89	39.92	2.28	59.35	-35.88	27.0	62.8	276	299	-

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 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

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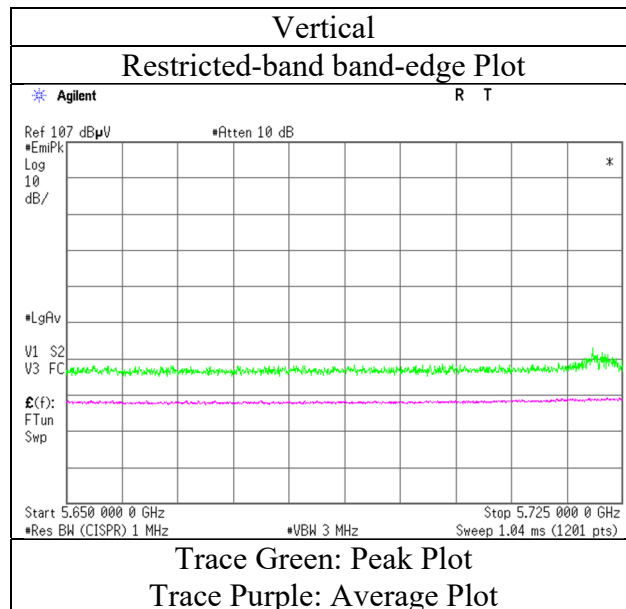
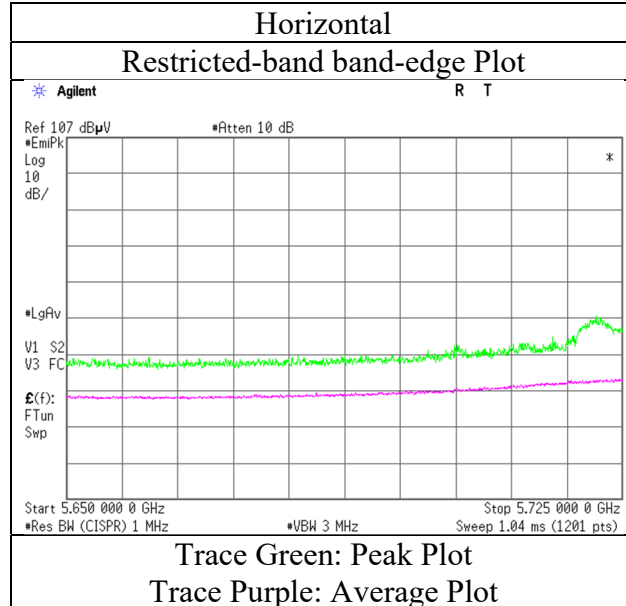
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Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 25, 2020
Temperature / Humidity	20 deg.C, 46 %RH
Engineer	Yosuke Murakami
Mode	Tx 11n-40 5755 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 25, 2020
Temperature / Humidity 20 deg.C, 46 %RH
Engineer Yosuke Murakami
(1 GHz -6.4 GHz)
Mode Tx 11n-40 5795 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5

(Calculation) (above 1 GHz 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	47.03	32.91	17.96	40.02	2.28	60.16	-35.07	27.0	62.0	100	3	-
Hori.	5855.000	PK	46.44	32.92	17.96	40.02	2.28	59.58	-35.65	15.6	51.2	100	3	-
Hori.	5875.000	PK	46.44	32.95	17.99	40.04	2.28	59.62	-35.61	10.0	45.6	100	3	-
Hori.	5925.000	PK	45.48	32.99	18.01	40.07	2.28	58.69	-36.54	-27.0	9.5	100	3	-
Vert.	5850.000	PK	45.54	32.91	17.96	40.02	2.28	58.67	-36.56	27.0	63.5	289	297	-
Vert.	5855.000	PK	45.36	32.92	17.96	40.02	2.28	58.50	-36.73	15.6	52.3	289	297	-
Vert.	5875.000	PK	45.64	32.95	17.99	40.04	2.28	58.82	-36.41	10.0	46.4	289	297	-
Vert.	5925.000	PK	45.04	32.99	18.01	40.07	2.28	58.25	-36.98	-27.0	9.9	289	297	-

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)

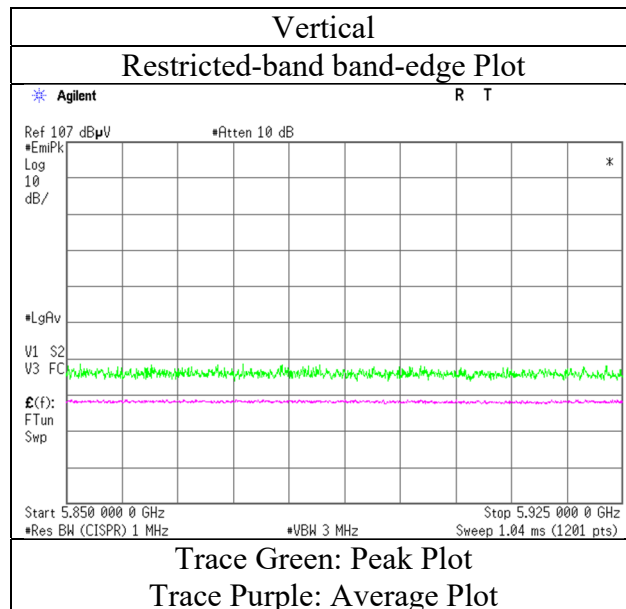
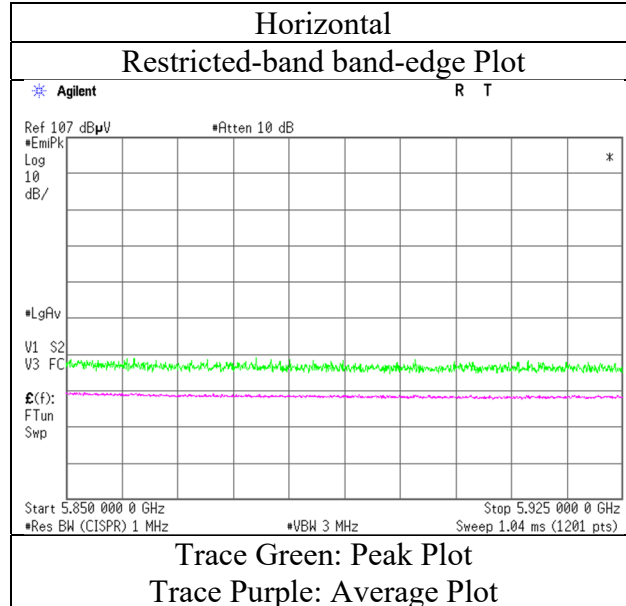
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

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

Radiated Spurious Emission

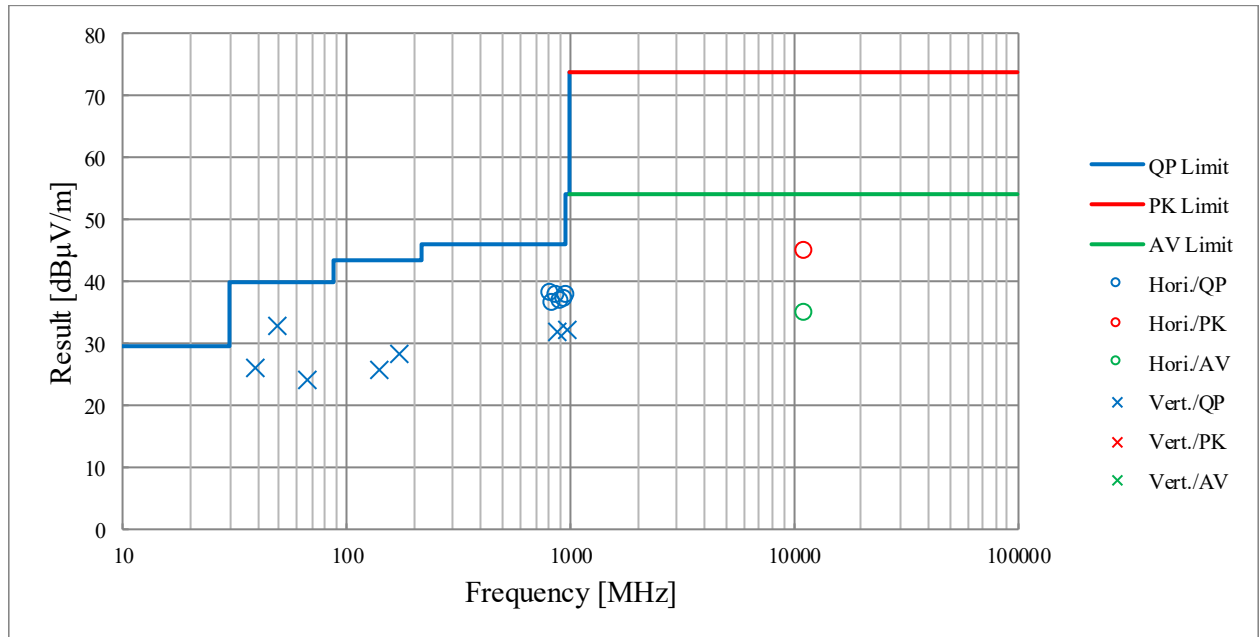
Report No.	13554183S-I-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	1
Date	November 25, 2020
Temperature / Humidity	20 deg.C, 46 %RH
Engineer	Yosuke Murakami
Mode	Tx 11n-40 5795 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5



* 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.	13554183S-I-R1		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	1	1	1
Date	November 27, 2020	November 25, 2020	November 26, 2020
Temperature / Humidity	20 deg.C, 46 %RH	20 deg.C, 46 %RH	21 deg.C, 48 %RH
Engineer	Yosuke Murakami	Yosuke Murakami	Yosuke Murakami
	(30 MHz -1 GHz)	(1 GHz -10 GHz)	(10 GHz -40 GHz)
Mode	Tx 11n-20 5580 MHz with Module A 11n-20 2437 MHz and Module A BT Hopping On 3DH5		



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

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 22, 2020
Temperature / Humidity 24 deg.C, 52 %RH
Engineer Hiromasa Sato
(1 GHz -6.4 GHz)
Mode Tx 11a 5180 MHz with Module A 11n-20 2437 MHz and Module A BT LE 2M 2402 MHz

(above 1 GHz 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	47.79	32.25	17.45	39.72	2.28	60.05	73.9	13.8	393	359	-
Hori.	5150.000	AV	37.17	32.25	17.45	39.72	2.28	49.43	53.9	4.4	393	359	VBW:1.5 kHz
Vert.	5150.000	PK	46.07	32.25	17.45	39.72	2.28	58.33	73.9	15.5	383	284	-
Vert.	5150.000	AV	34.97	32.25	17.45	39.72	2.28	47.23	53.9	6.6	383	284	VBW:1.5 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 20 dB).

Distance factor : 1 GHz - 10 GHz: $20\log(3.90\text{ m} / 3.0\text{ m}) = 2.28\text{ dB}$

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

UL Japan, Inc.

Shonan EMC Lab.

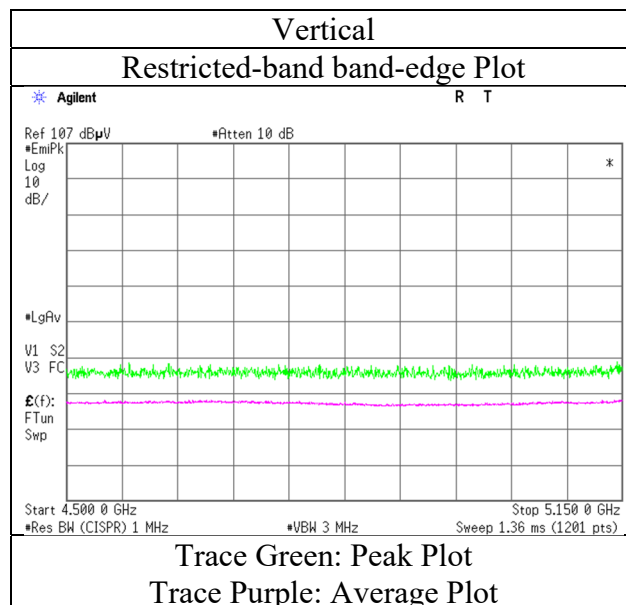
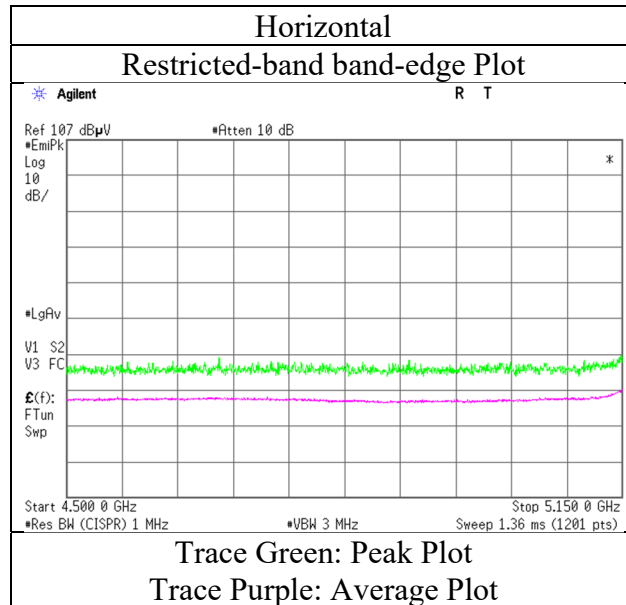
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission

Report No. 13554183S-I-R1
Test place Shonan EMC Lab.
Semi Anechoic Chamber 1
Date November 22, 2020
Temperature / Humidity 24 deg.C, 52 %RH
Engineer Hiromasa Sato
Mode Tx 11a 5180 MHz with Module A 11n-20 2437 MHz and Module A BT LE 2M 2402 MHz



* 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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