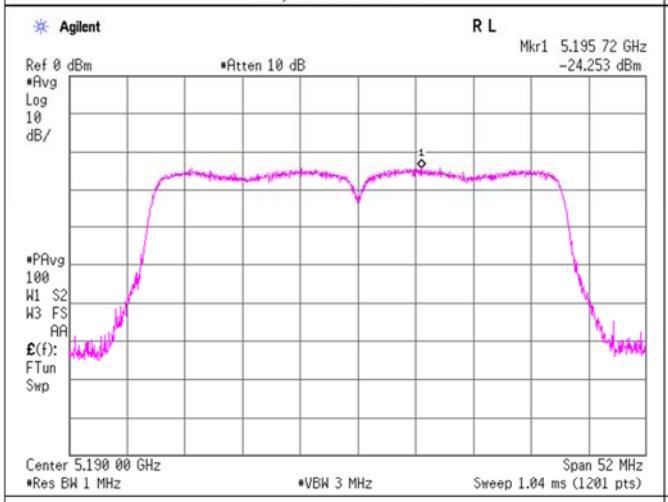
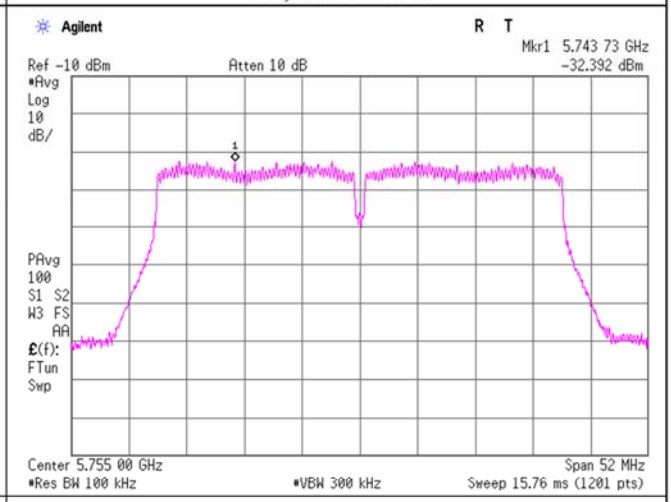
Maximum Power Spectral Density

11n-40 MIMO, RF1

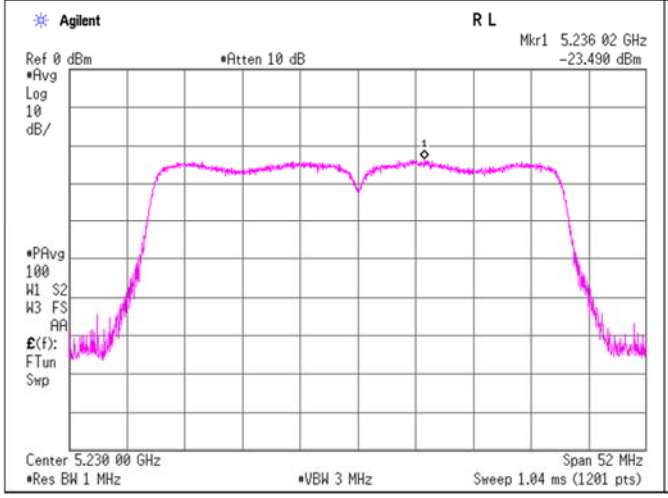
Tx, 5190 MHz



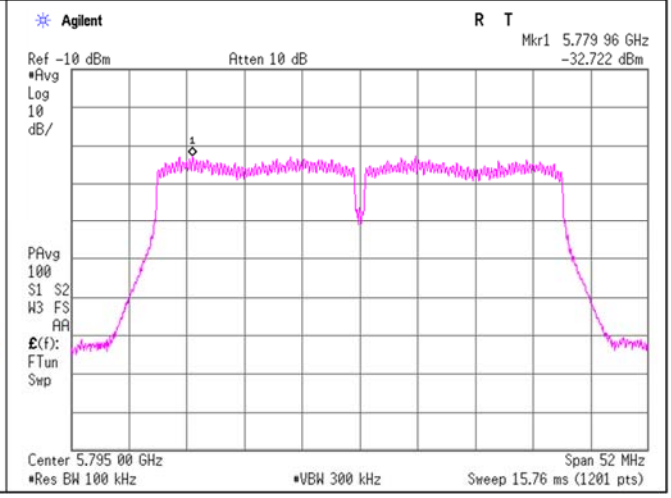
Tx, 5755 MHz



Tx, 5230 MHz



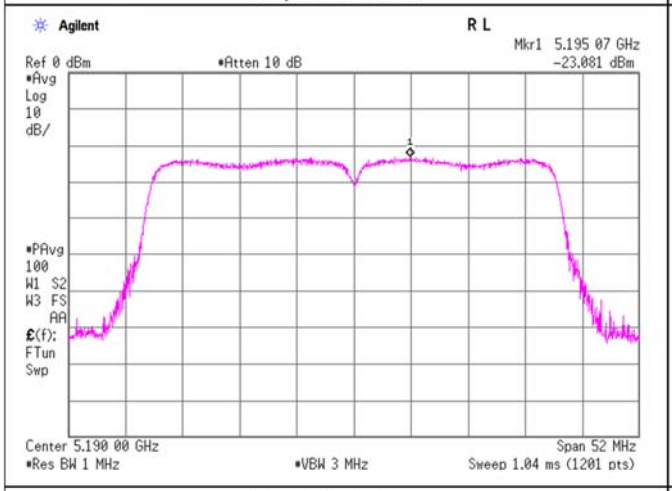
Tx, 5795 MHz



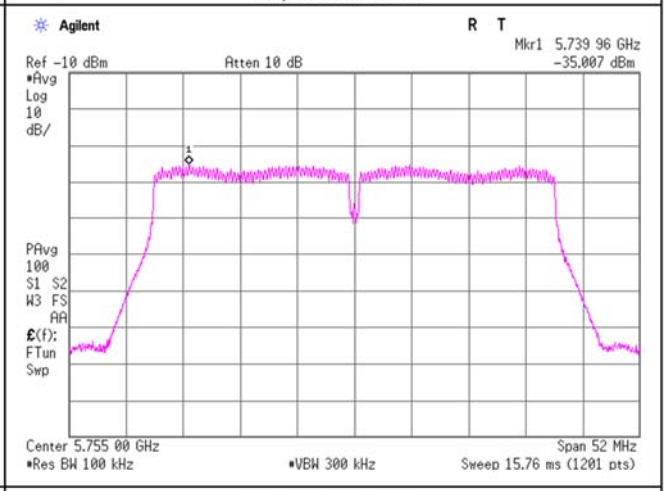
Maximum Power Spectral Density

11ac-40 SISO, RF0

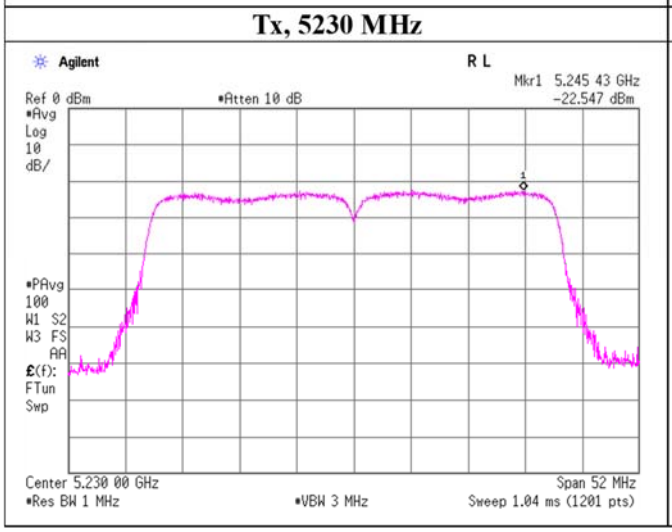
Tx, 5190 MHz



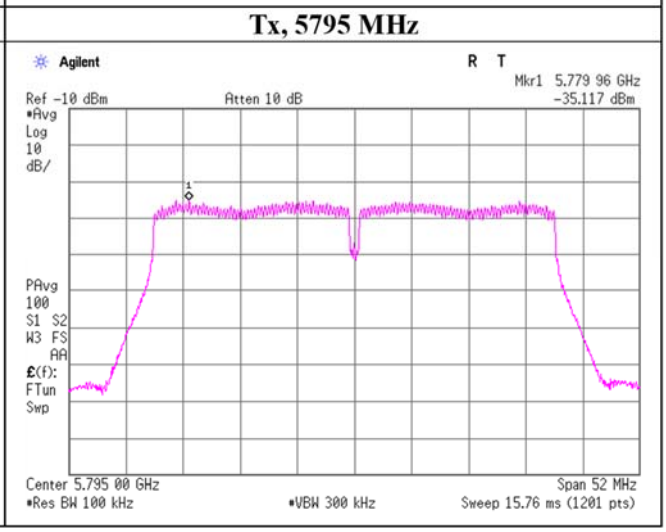
Tx, 5755 MHz



Tx, 5230 MHz



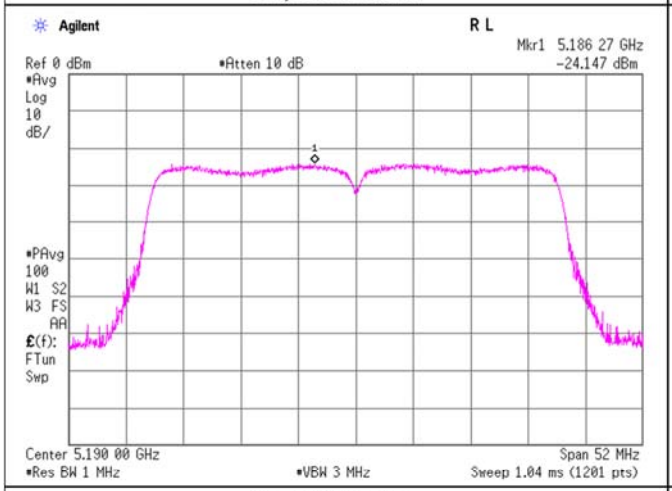
Tx, 5795 MHz



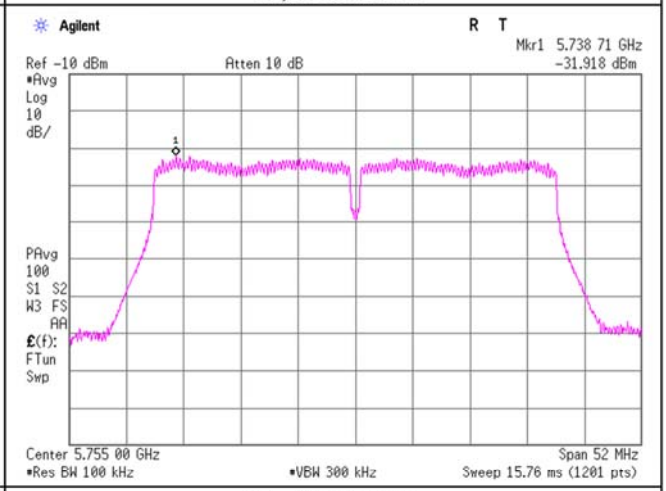
Maximum Power Spectral Density

11ac-40 SISO, RF1

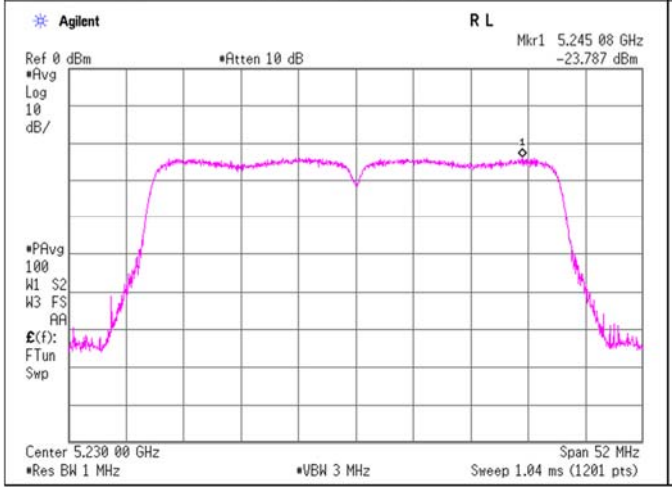
Tx, 5190 MHz



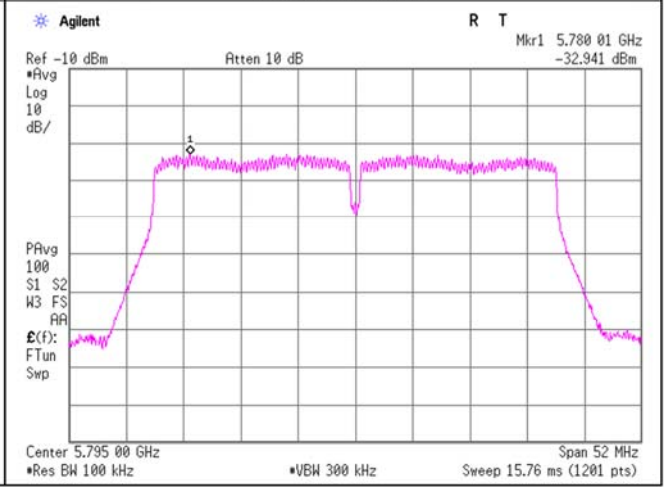
Tx, 5755 MHz



Tx, 5230 MHz



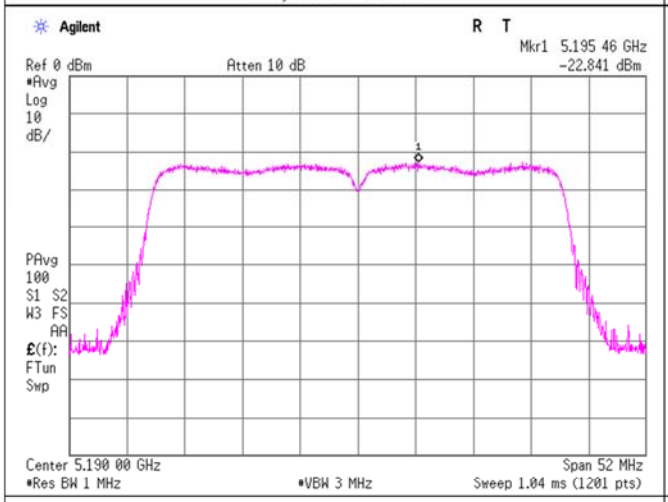
Tx, 5795 MHz



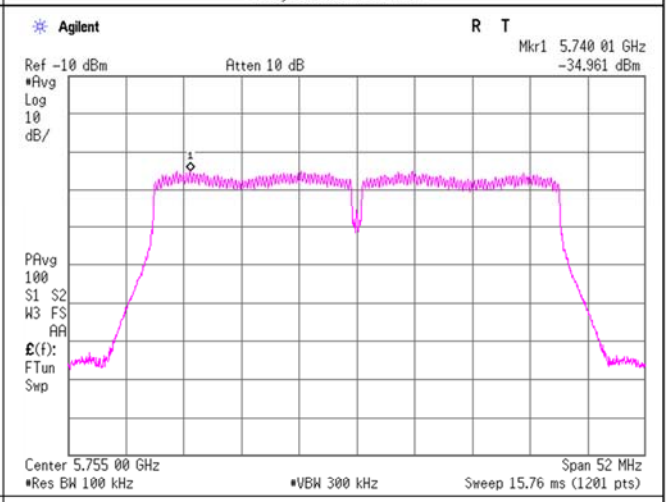
Maximum Power Spectral Density

11ac-40 CDD, RF0

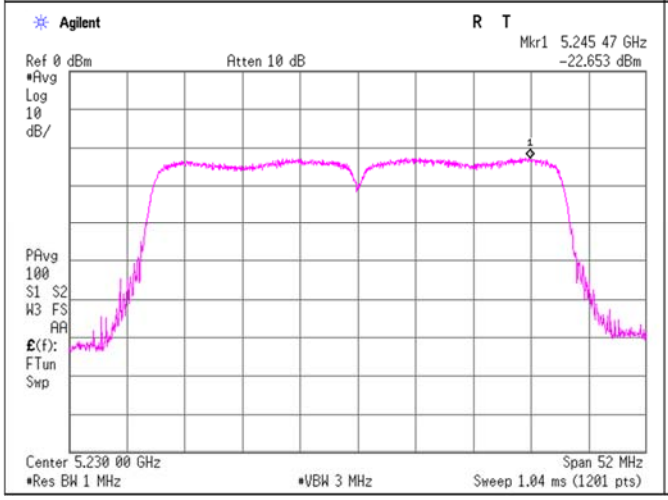
Tx, 5190 MHz



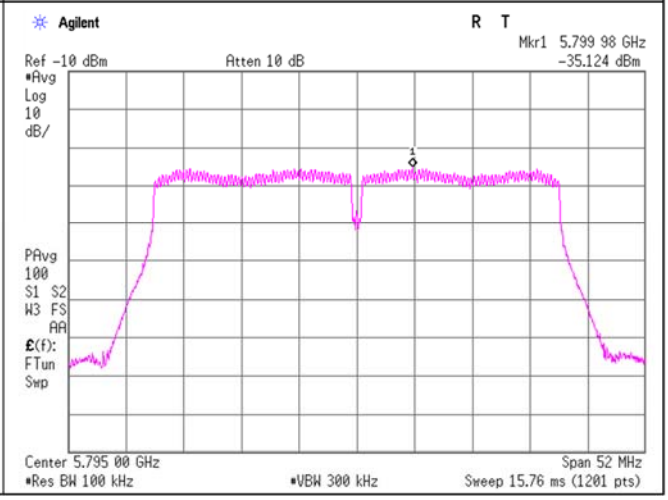
Tx, 5755 MHz



Tx, 5230 MHz



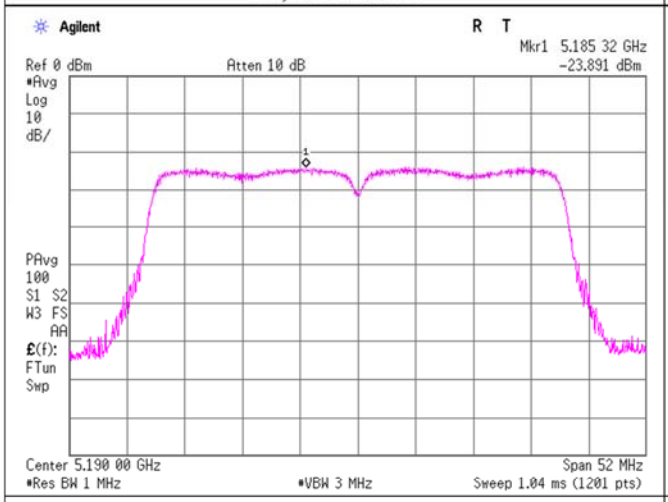
Tx, 5795 MHz



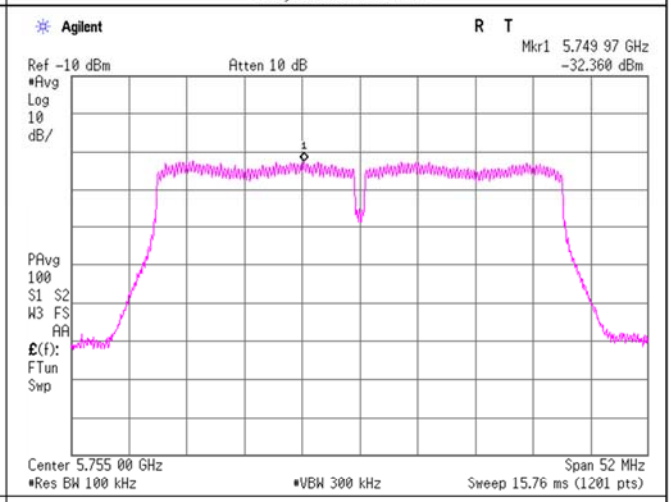
Maximum Power Spectral Density

11ac-40 CDD, RF1

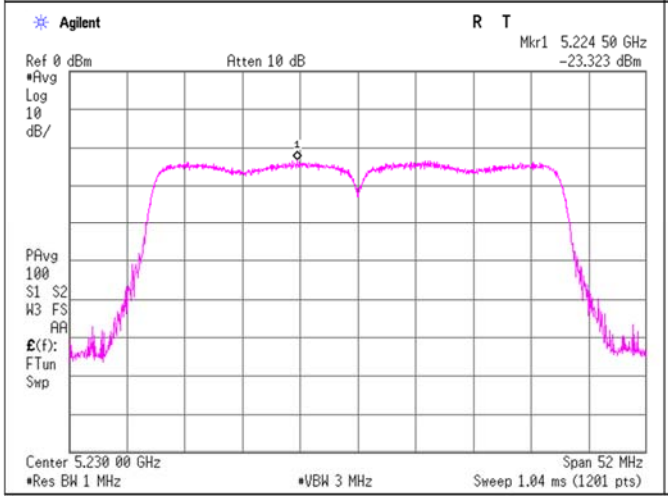
Tx, 5190 MHz



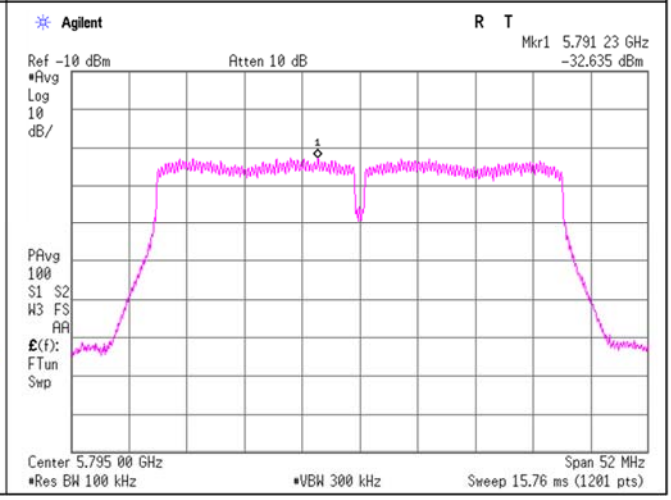
Tx, 5755 MHz



Tx, 5230 MHz



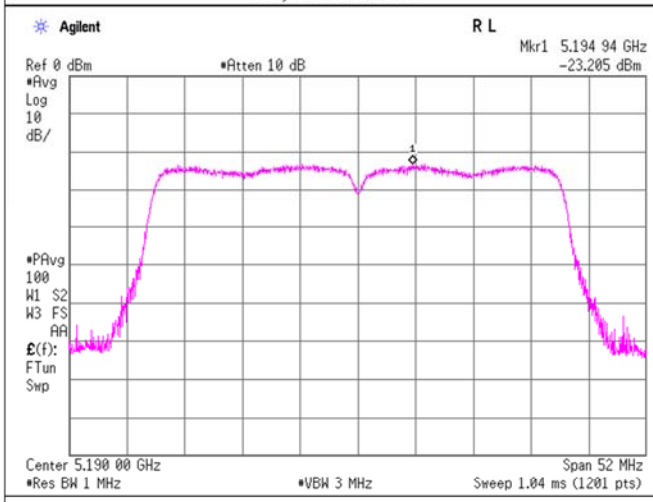
Tx, 5795 MHz



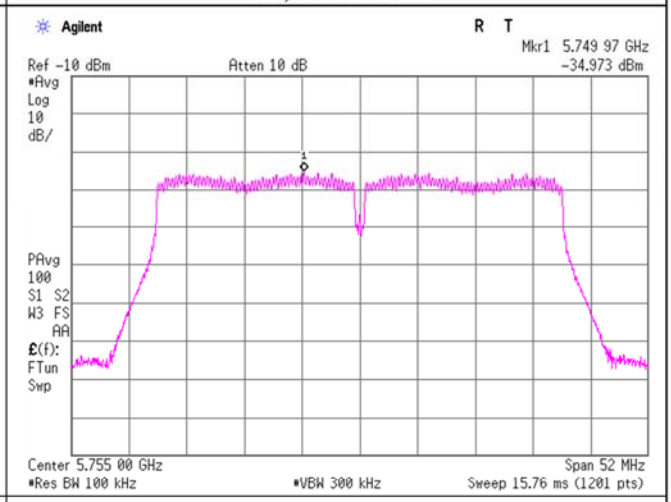
Maximum Power Spectral Density

11ac-40 MIMO, RF0

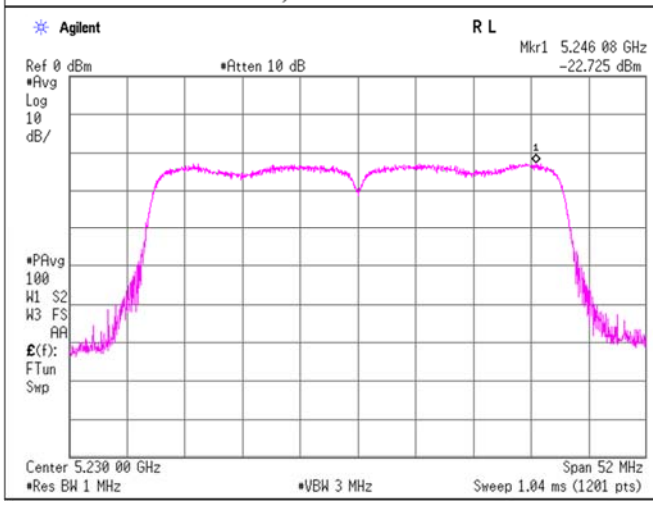
Tx, 5190 MHz



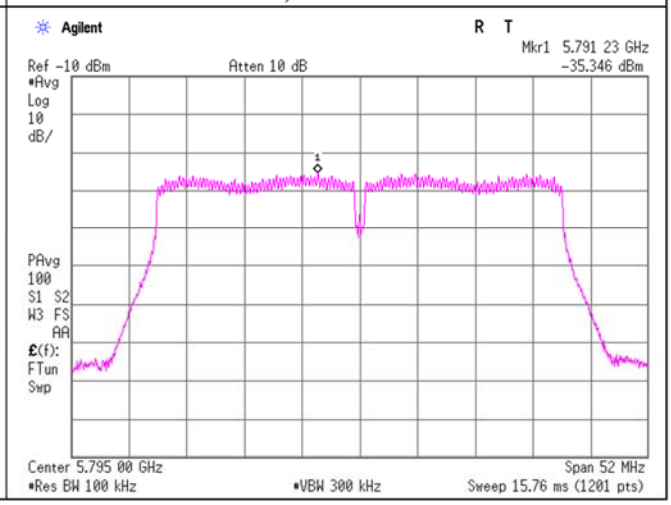
Tx, 5755 MHz



Tx, 5230 MHz



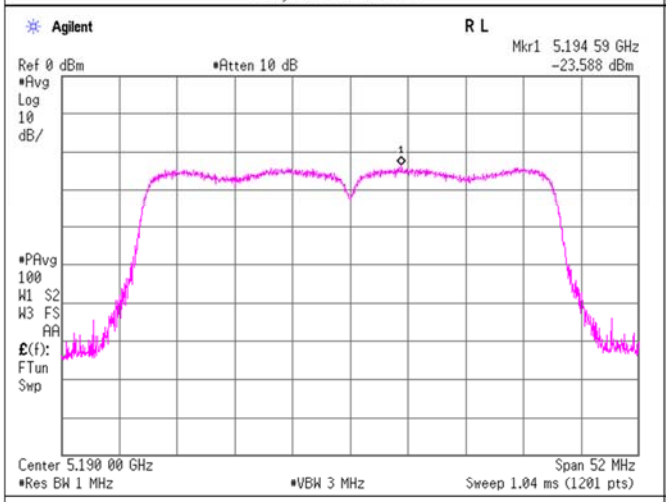
Tx, 5795 MHz



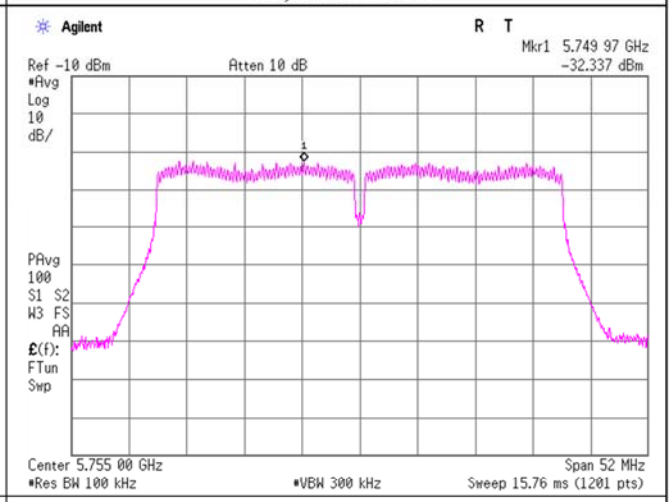
Maximum Power Spectral Density

11ac-40 MIMO, RF1

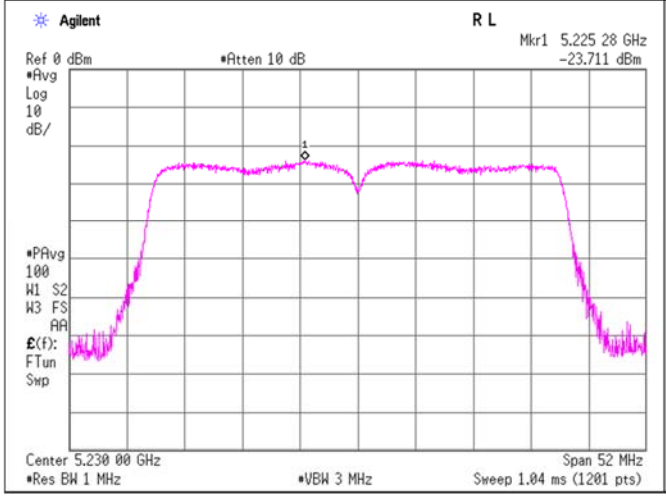
Tx, 5190 MHz



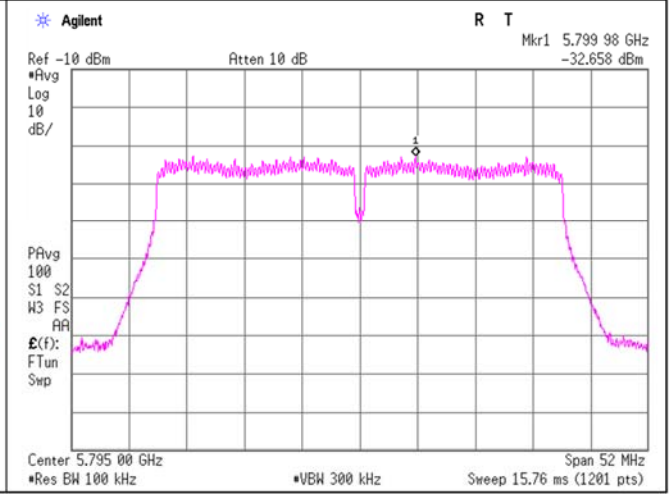
Tx, 5755 MHz



Tx, 5230 MHz



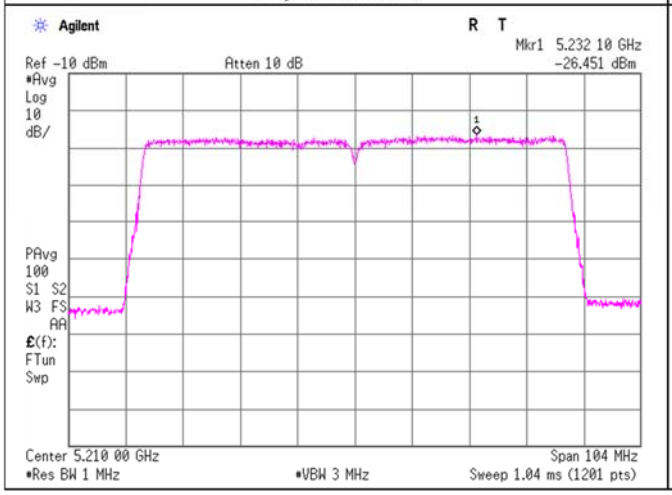
Tx, 5795 MHz



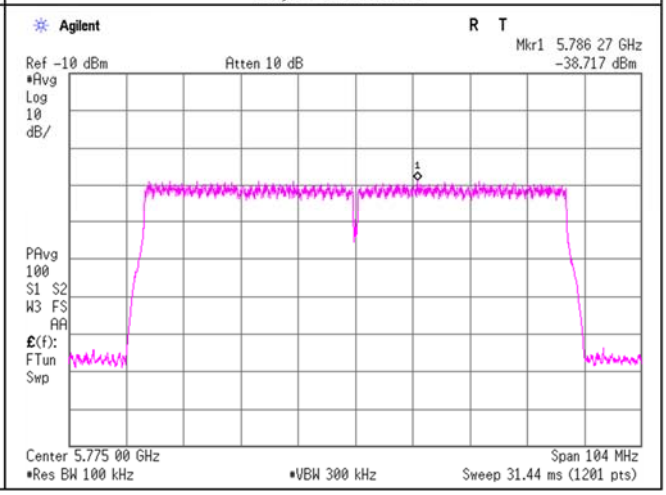
Maximum Power Spectral Density

11ac-80 SISO, RF0

Tx, 5210 MHz

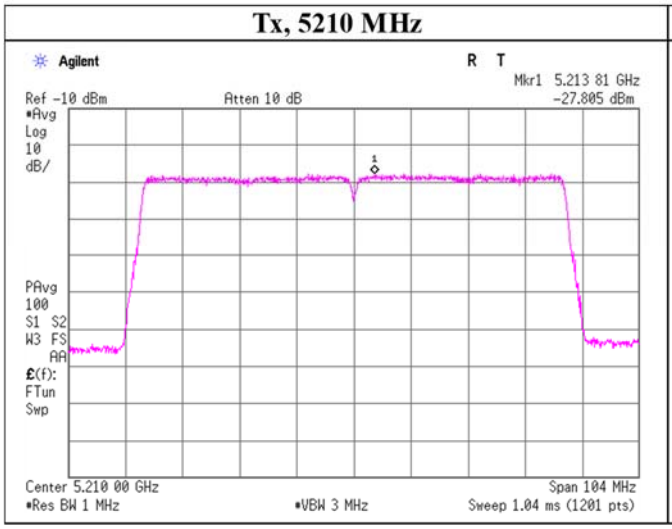


Tx, 5775 MHz

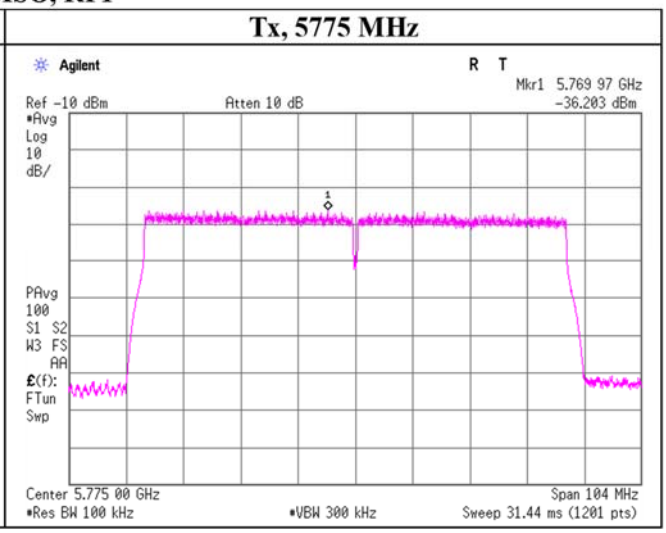


11ac-80 SISO, RF1

Tx, 5210 MHz



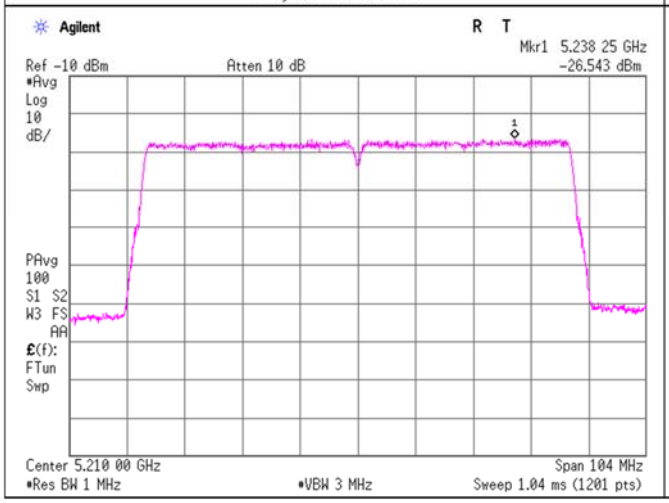
Tx, 5775 MHz



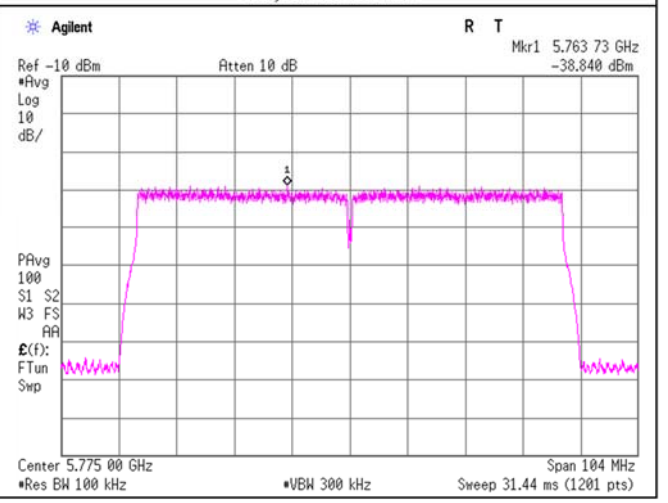
Maximum Power Spectral Density

11ac-80 CDD, RF0

Tx, 5210 MHz

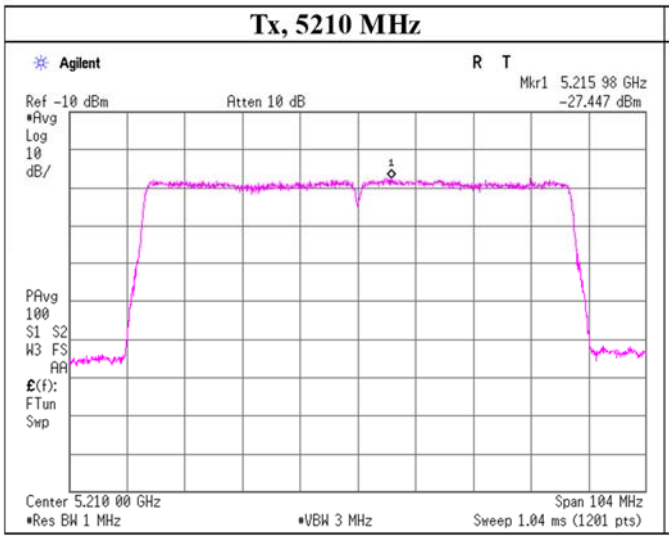


Tx, 5775 MHz

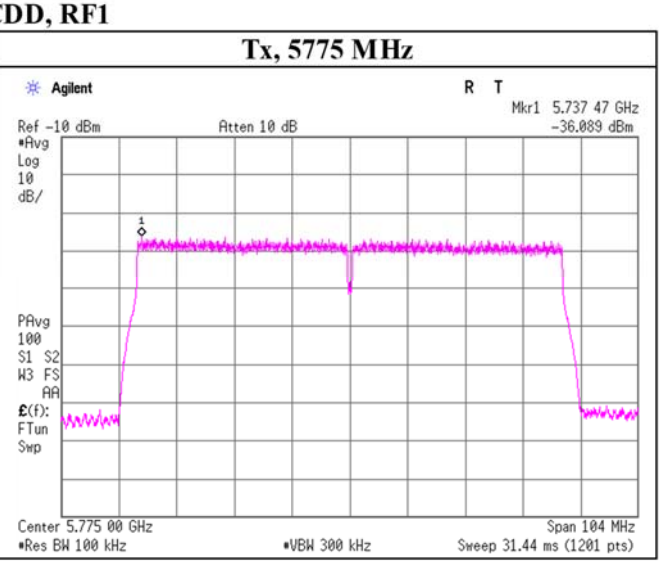


11ac-80 CDD, RF1

Tx, 5210 MHz



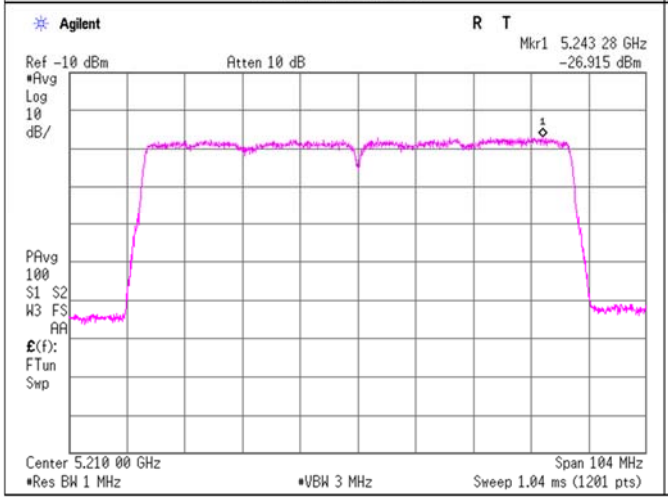
Tx, 5775 MHz



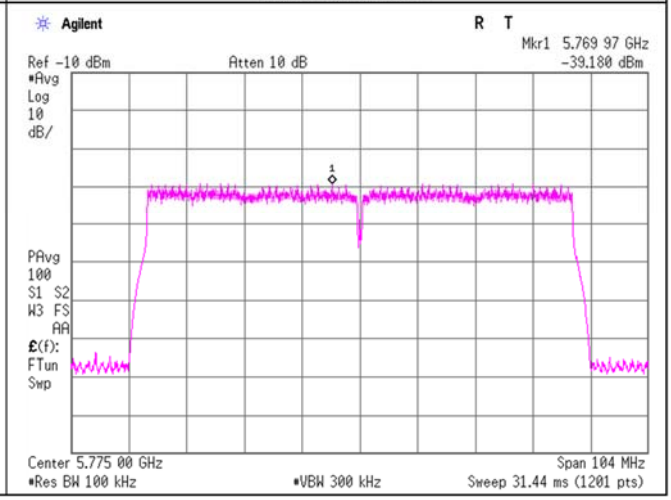
Maximum Power Spectral Density

11ac-80 MIMO, RF0

Tx, 5210 MHz

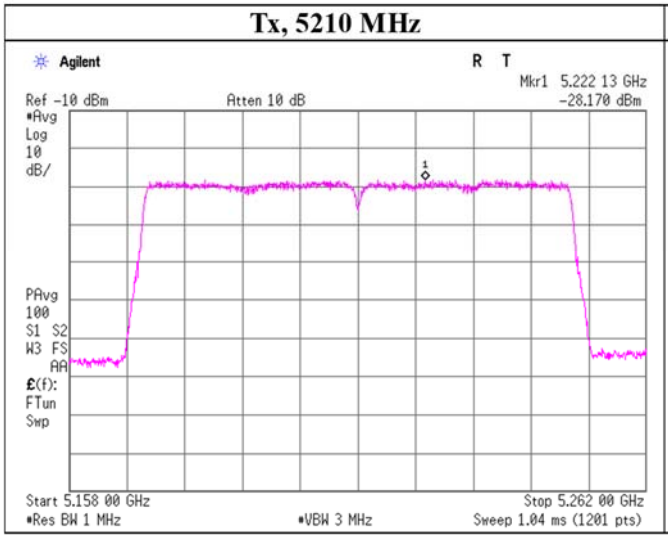


Tx, 5775 MHz

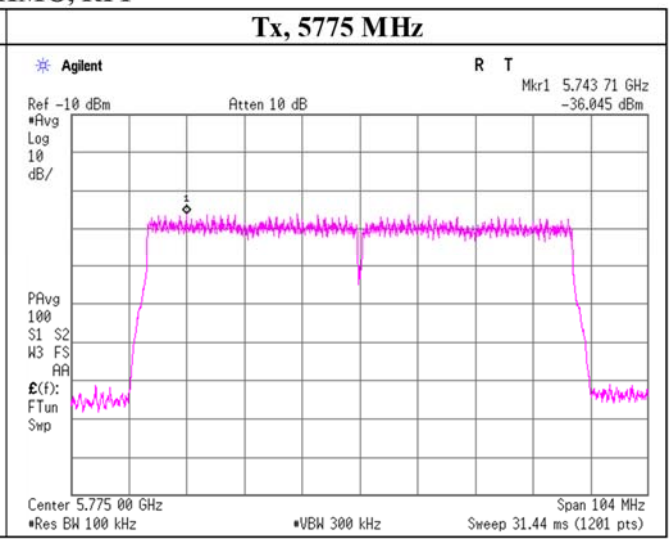


11ac-80 MIMO, RF1

Tx, 5210 MHz



Tx, 5775 MHz



Radiated Spurious Emission

Report No.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 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	44.45	32.34	16.14	38.63	2.10	56.40	73.9	17.5	220	29	-
Hori.	15540.000	PK	44.12	39.51	11.39	37.21	-9.54	48.27	73.9	25.6	150	0	-
Hori.	5150.000	AV	33.60	32.34	16.14	38.63	2.10	45.55	53.9	8.3	220	29	VBW: 820 Hz
Hori.	15540.000	AV	32.07	39.51	11.39	37.21	-9.54	36.22	53.9	17.6	150	0	VBW: 820 Hz
Vert.	5150.000	PK	44.74	32.34	16.14	38.63	2.10	56.69	73.9	17.2	183	100	-
Vert.	15540.000	PK	44.08	39.51	11.39	37.21	-9.54	48.23	73.9	25.6	150	0	-
Vert.	5150.000	AV	33.68	32.34	16.14	38.63	2.10	45.63	53.9	**8.2**	183	100	VBW: 820 Hz
Vert.	15540.000	AV	32.43	39.51	11.39	37.21	-9.54	36.58	53.9	17.3	150	0	VBW: 820 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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	47.61	36.35	9.03	40.03	-9.54	43.42	-51.81	-27.00	24.8	150	0	–
Vert.	10360.000	PK	48.31	36.35	9.03	40.03	-9.54	44.12	-51.11	-27.00	24.1	150	0	–

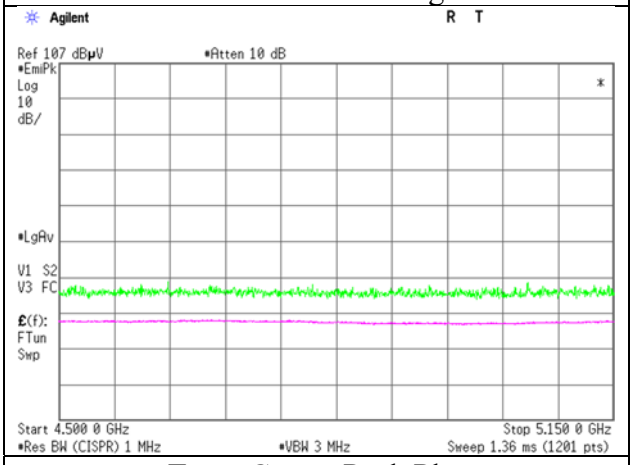
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
	(1 GHz - 10 GHz)
Mode	Tx 11ac-20 CDD 5180 MHz

Horizontal

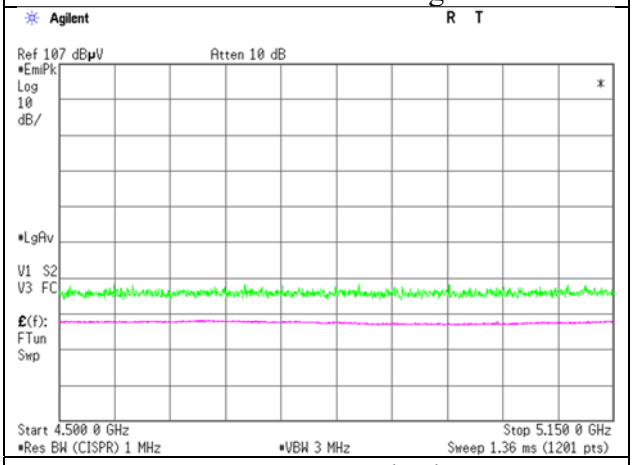
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 5220 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.	15660.000	PK	44.22	39.68	11.40	37.23	-9.54	48.53	73.9	25.3	150	0	-
Hori.	15660.000	AV	32.23	39.68	11.40	37.23	-9.54	36.54	53.9	**17.3**	150	0	VBW: 820 Hz
Vert.	15660.000	PK	43.70	39.68	11.40	37.23	-9.54	48.01	73.9	25.8	150	0	-
Vert.	15660.000	AV	32.22	39.68	11.40	37.23	-9.54	36.53	53.9	**17.3**	150	0	VBW: 820 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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.	10440.000	PK	48.22	36.47	9.07	40.16	-9.54	44.06	-51.17	-27.00	24.1	150	0	–
Vert.	10440.000	PK	48.41	36.47	9.07	40.16	-9.54	44.25	-50.98	-27.00	23.9	150	0	–

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + 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 (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	No.3	No.2	No.2	No.2
Date	August 28, 2020	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	24 deg. C / 62 % RH	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Matsuzawa	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(30 MHz - 1000 MHz)	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 5240 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.	175.003	QP	40.50	15.73	7.81	32.06	0.00	31.98	43.5	11.5	190	9	-
Hori.	184.299	QP	34.30	16.14	7.79	32.06	0.00	26.17	43.5	17.3	246	341	-
Hori.	214.745	QP	42.40	11.23	8.06	32.03	0.00	29.66	43.5	13.8	158	344	-
Hori.	240.003	QP	49.30	11.57	8.20	32.00	0.00	37.07	46.0	8.9	130	334	-
Hori.	425.007	QP	43.10	16.06	9.12	31.94	0.00	36.34	46.0	9.6	100	352	-
Hori.	520.120	QP	41.60	17.67	9.49	31.95	0.00	36.81	46.0	9.1	198	57	-
Hori.	747.642	QP	37.80	20.15	10.33	31.74	0.00	36.54	46.0	9.4	100	38	-
Hori.	871.153	QP	38.70	22.01	10.73	31.20	0.00	40.24	46.0	**5.7**	107	275	-
Hori.	5350.000	PK	45.65	32.06	16.28	38.74	2.10	57.35	73.9	16.5	118	123	-
Hori.	15720.000	PK	43.85	39.76	11.40	37.24	-9.54	48.23	73.9	25.6	150	0	-
Hori.	5350.000	AV	33.96	32.06	16.28	38.74	2.10	45.66	53.9	8.2	118	123	VBW: 820 Hz
Hori.	15720.000	AV	32.46	39.76	11.40	37.24	-9.54	36.84	53.9	17.0	150	0	VBW: 820 Hz
Vert.	56.944	QP	35.40	8.94	6.65	32.16	0.00	18.83	40.0	21.1	100	251	-
Vert.	520.101	QP	40.50	17.67	9.49	31.95	0.00	35.71	46.0	10.2	182	43	-
Vert.	745.236	QP	36.60	20.13	10.32	31.75	0.00	35.30	46.0	10.7	153	144	-
Vert.	5350.000	PK	44.62	32.06	16.28	38.74	2.10	56.32	73.9	17.5	195	99	-
Vert.	15720.000	PK	43.72	39.76	11.40	37.24	-9.54	48.10	73.9	25.8	150	0	-
Vert.	5350.000	AV	33.95	32.06	16.28	38.74	2.10	45.65	53.9	8.2	195	99	VBW: 820 Hz
Vert.	15720.000	AV	32.37	39.76	11.40	37.24	-9.54	36.75	53.9	17.1	150	0	VBW: 820 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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.	10480.000	PK	47.63	36.57	9.07	40.22	-9.54	43.51	-51.72	-27.00	24.7	150	0	–
Vert.	10480.000	PK	47.35	36.57	9.07	40.22	-9.54	43.23	-52.00	-27.00	25.0	150	0	–

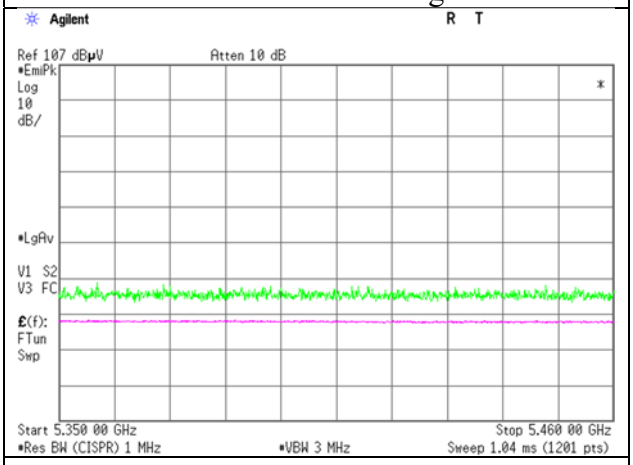
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-20 CDD 5240 MHz

Horizontal

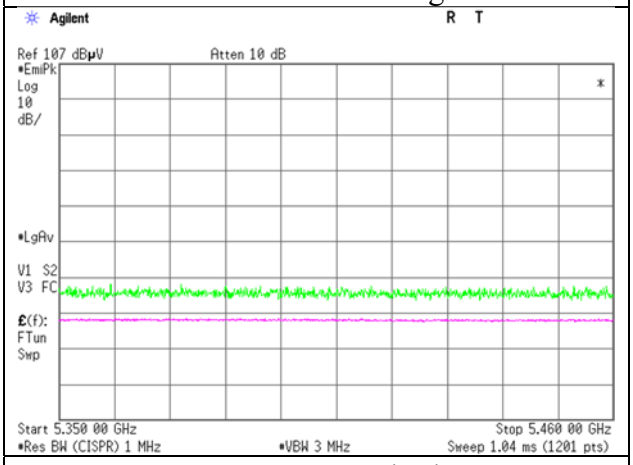
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 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	44.94	37.98	9.55	40.08	-9.54	42.85	73.9	31.0	150	0	-
Hori.	11490.000	AV	33.87	37.98	9.55	40.08	-9.54	31.78	53.9	22.1	150	0	VBW: 820 Hz
Vert.	11490.000	PK	45.30	37.98	9.55	40.08	-9.54	43.21	73.9	30.6	150	0	-
Vert.	11490.000	AV	33.84	37.98	9.55	40.08	-9.54	31.75	53.9	22.1	150	0	VBW: 820 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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	44.28	32.64	16.45	38.91	2.10	56.56	-38.67	-27.00	11.6	363	19	–
Hori.	5700.000	PK	45.46	32.71	16.48	38.93	2.10	57.82	-37.41	10.00	47.4	363	19	–
Hori.	5720.000	PK	45.25	32.75	16.49	38.94	2.10	57.65	-37.58	15.60	53.1	363	19	–
Hori.	5725.000	PK	46.64	32.77	16.50	38.94	2.10	59.07	-36.16	27.00	63.1	363	19	–
Hori.	17235.000	PK	43.14	39.94	12.28	37.25	-9.54	48.57	-46.66	-27.00	19.6	150	0	–
Vert.	5650.000	PK	44.54	32.64	16.45	38.91	2.10	56.82	-38.41	-27.00	**11.4**	124	105	–
Vert.	5700.000	PK	44.20	32.71	16.48	38.93	2.10	56.56	-38.67	10.00	48.6	124	105	–
Vert.	5720.000	PK	44.79	32.75	16.49	38.94	2.10	57.19	-38.04	15.60	53.6	124	105	–
Vert.	5725.000	PK	47.89	32.77	16.50	38.94	2.10	60.32	-34.91	27.00	61.9	124	105	–
Vert.	17235.000	PK	42.94	39.94	12.28	37.25	-9.54	48.37	-46.86	-27.00	19.8	150	0	–

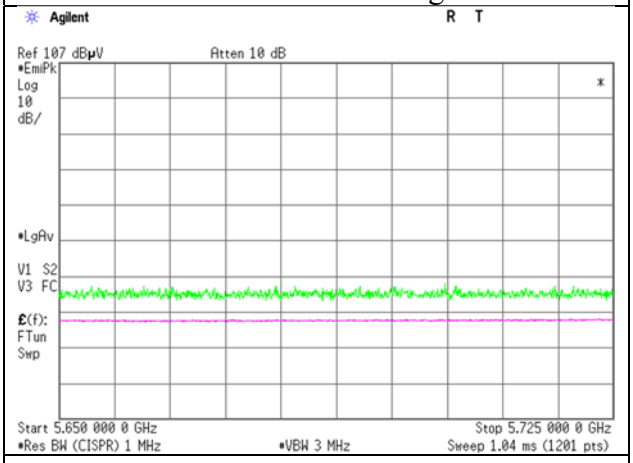
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-20 CDD 5745 MHz

Horizontal

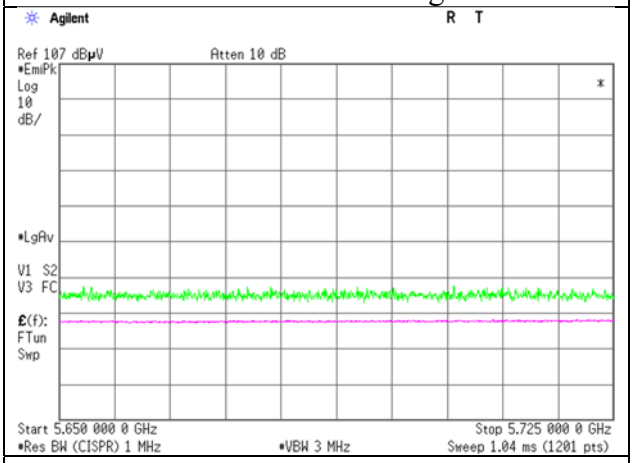
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 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	44.61	38.06	9.59	40.13	-9.54	42.59	73.9	31.3	150	0	-
Hori.	11570.000	AV	33.64	38.06	9.59	40.13	-9.54	31.62	53.9	22.2	150	0	VBW: 820 Hz
Vert.	11570.000	PK	44.41	38.06	9.59	40.13	-9.54	42.39	73.9	31.5	150	0	-
Vert.	11570.000	AV	33.46	38.06	9.59	40.13	-9.54	31.44	53.9	22.4	150	0	VBW: 820 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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.	17355.000	PK	43.66	40.15	12.33	37.31	-9.54	49.29	-45.94	-27.00	**18.9**	150	0	–
Vert.	17355.000	PK	43.54	40.15	12.33	37.31	-9.54	49.17	-46.06	-27.00	19.0	150	0	–

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + 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 (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 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	44.67	38.11	9.64	40.19	-9.54	42.69	73.9	31.2	150	0	-
Hori.	11650.000	AV	33.31	38.11	9.64	40.19	-9.54	31.33	53.9	22.5	150	0	VBW: 820 Hz
Vert.	11650.000	PK	44.05	38.11	9.64	40.19	-9.54	42.07	73.9	31.8	150	0	-
Vert.	11650.000	AV	33.18	38.11	9.64	40.19	-9.54	31.20	53.9	22.7	150	0	VBW: 820 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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	44.83	33.11	16.59	39.01	2.10	57.62	-37.61	27.00	64.6	219	24	–
Hori.	5855.000	PK	44.54	33.12	16.59	39.01	2.10	57.34	-37.89	15.60	53.4	219	24	–
Hori.	5875.000	PK	44.80	33.16	16.61	39.02	2.10	57.65	-37.58	10.00	47.5	219	24	–
Hori.	5925.000	PK	45.12	33.23	16.64	39.04	2.10	58.05	-37.18	-27.00	**10.1**	219	24	–
Hori.	17475.000	PK	44.94	40.25	12.35	37.37	-9.54	50.63	-44.60	-27.00	17.6	150	0	–
Vert.	5850.000	PK	44.88	33.11	16.59	39.01	2.10	57.67	-37.56	27.00	64.5	122	108	–
Vert.	5855.000	PK	44.91	33.12	16.59	39.01	2.10	57.71	-37.52	15.60	53.1	122	108	–
Vert.	5875.000	PK	44.66	33.16	16.61	39.02	2.10	57.51	-37.72	10.00	47.7	122	108	–
Vert.	5925.000	PK	44.81	33.23	16.64	39.04	2.10	57.74	-37.49	-27.00	10.4	122	108	–
Vert.	17475.000	PK	44.16	40.25	12.35	37.37	-9.54	49.85	-45.38	-27.00	18.3	150	0	–

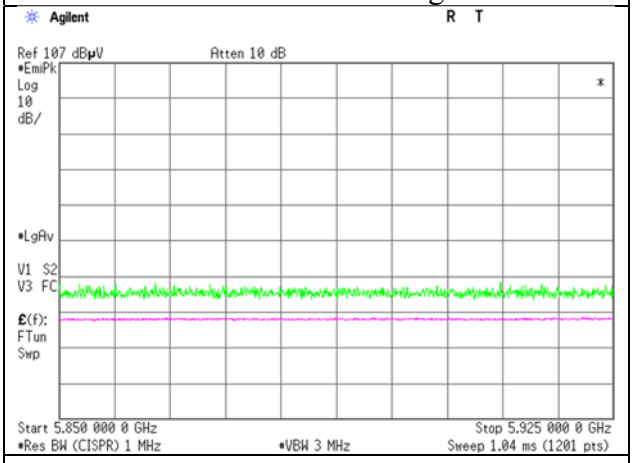
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-20 CDD 5825 MHz

Horizontal

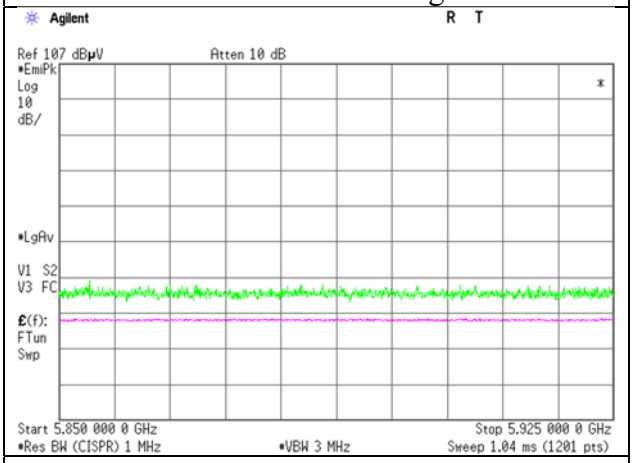
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-40 CDD 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	45.91	32.34	16.14	38.63	2.10	57.86	73.9	16.0	100	199	-
Hori.	15570.000	PK	43.21	39.57	11.39	37.22	-9.54	47.41	73.9	26.4	150	0	-
Hori.	5150.000	AV	34.06	32.34	16.14	38.63	2.10	46.01	53.9	**7.8**	100	199	VBW: 1.6 kHz
Hori.	15570.000	AV	33.03	39.57	11.39	37.22	-9.54	37.23	53.9	16.6	150	0	VBW: 1.6 kHz
Vert.	5150.000	PK	45.21	32.34	16.14	38.63	2.10	57.16	73.9	16.7	184	193	-
Vert.	15570.000	PK	43.02	39.57	11.39	37.22	-9.54	47.22	73.9	26.6	150	0	-
Vert.	5150.000	AV	32.75	32.34	16.14	38.63	2.10	44.70	53.9	9.2	184	193	VBW: 1.6 kHz
Vert.	15570.000	AV	32.79	39.57	11.39	37.22	-9.54	36.99	53.9	16.9	150	0	VBW: 1.6 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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	47.99	36.36	9.04	40.06	-9.54	43.79	-51.44	-27.00	24.4	150	0	–
Vert.	10380.000	PK	47.98	36.36	9.04	40.06	-9.54	43.78	-51.45	-27.00	24.4	150	0	–

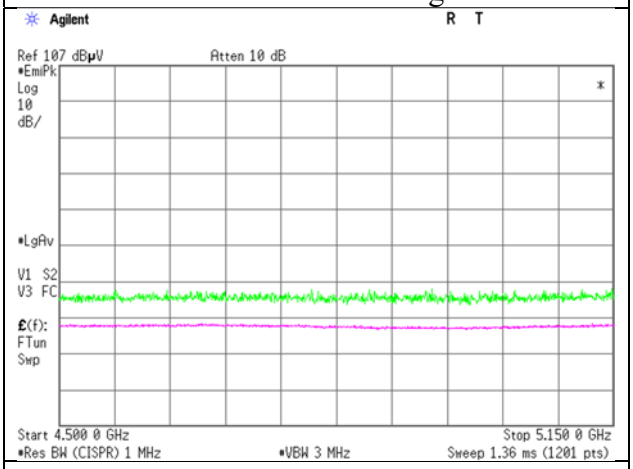
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-40 CDD 5190 MHz

Horizontal

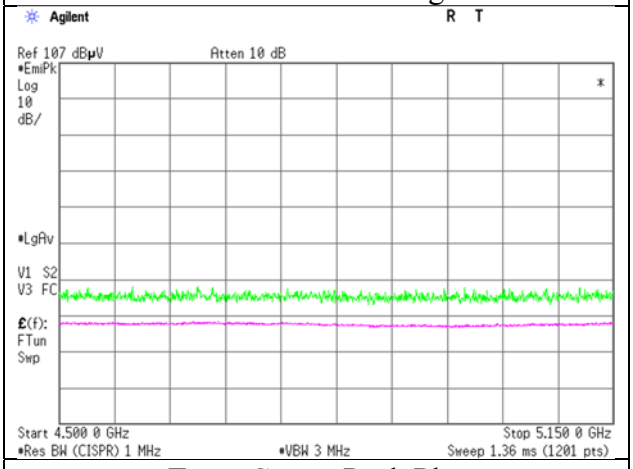
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-40 CDD 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.	5350.000	PK	45.29	32.06	16.27	38.74	2.10	56.98	73.9	16.9	178	5	-
Hori.	15690.000	PK	43.50	39.74	11.40	37.23	-9.54	47.87	73.9	26.0	150	0	-
Hori.	5350.000	AV	34.13	32.06	16.27	38.74	2.10	45.82	53.9	8.0	178	5	VBW: 1.6 kHz
Hori.	15690.000	AV	32.88	39.74	11.40	37.23	-9.54	37.25	53.9	16.6	150	0	VBW: 1.6 kHz
Vert.	5350.000	PK	45.36	32.06	16.27	38.74	2.10	57.05	73.9	16.8	178	95	-
Vert.	15690.000	PK	43.67	39.74	11.40	37.23	-9.54	48.04	73.9	25.8	150	0	-
Vert.	5350.000	AV	34.27	32.06	16.27	38.74	2.10	45.96	53.9	**7.9**	178	95	VBW: 1.6 kHz
Vert.	15690.000	AV	32.72	39.74	11.40	37.23	-9.54	37.09	53.9	16.8	150	0	VBW: 1.6 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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.	10460.000	PK	47.87	36.52	9.06	40.19	-9.54	43.72	-51.51	-27.00	24.5	150	0	–
Vert.	10460.000	PK	47.81	36.52	9.06	40.19	-9.54	43.66	-51.57	-27.00	24.5	150	0	–

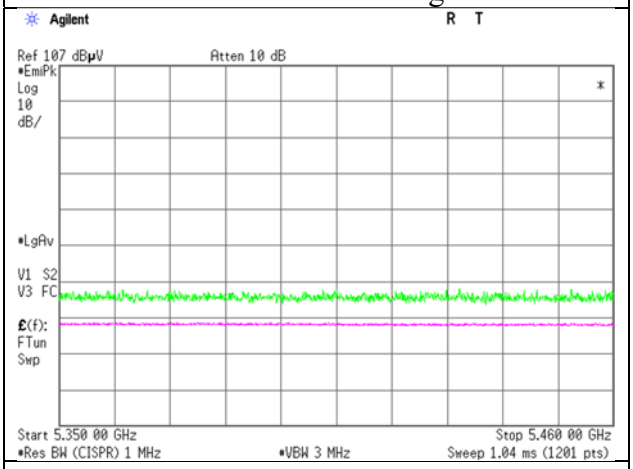
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-40 CDD 5230 MHz

Horizontal

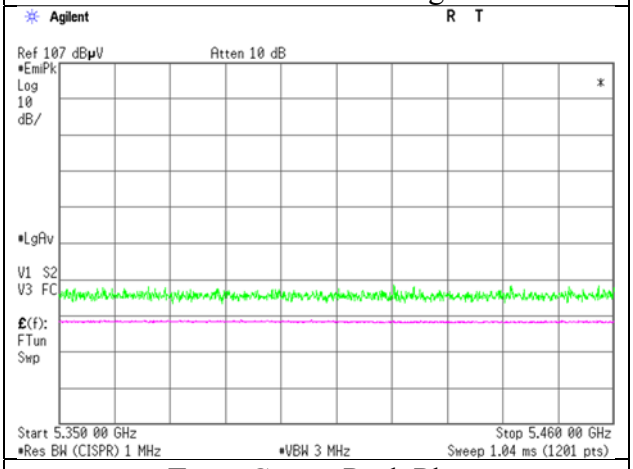
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-40 CDD 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	45.28	38.00	9.55	40.09	-9.54	43.20	73.9	30.7	150	0	-
Hori.	11510.000	AV	34.27	38.00	9.55	40.09	-9.54	32.19	53.9	21.7	150	0	VBW: 1.6 kHz
Vert.	11510.000	PK	45.52	38.00	9.55	40.09	-9.54	43.44	73.9	30.4	150	0	-
Vert.	11510.000	AV	34.41	38.00	9.55	40.09	-9.54	32.33	53.9	21.5	150	0	VBW: 1.6 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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	44.74	32.64	16.45	38.91	2.10	57.02	-38.21	-27.00	11.2	224	103	-
Hori.	5700.000	PK	45.50	32.71	16.48	38.93	2.10	57.86	-37.37	10.00	47.3	224	103	-
Hori.	5720.000	PK	48.93	32.75	16.49	38.94	2.10	61.33	-33.90	15.60	49.5	224	103	-
Hori.	5725.000	PK	50.75	32.77	16.50	38.94	2.10	63.18	-32.05	27.00	59.0	224	103	-
Hori.	17265.000	PK	43.84	39.99	12.30	37.26	-9.54	49.33	-45.90	-27.00	18.9	150	0	-
Vert.	5650.000	PK	44.85	32.64	16.45	38.91	2.10	57.13	-38.10	-27.00	**11.1**	111	95	-
Vert.	5700.000	PK	45.77	32.71	16.48	38.93	2.10	58.13	-37.10	10.00	47.1	111	95	-
Vert.	5720.000	PK	46.61	32.75	16.49	38.94	2.10	59.01	-36.22	15.60	51.8	111	95	-
Vert.	5725.000	PK	49.58	32.77	16.50	38.94	2.10	62.01	-33.22	27.00	60.2	111	95	-
Vert.	17265.000	PK	43.02	39.99	12.30	37.26	-9.54	48.51	-46.72	-27.00	19.7	150	0	-

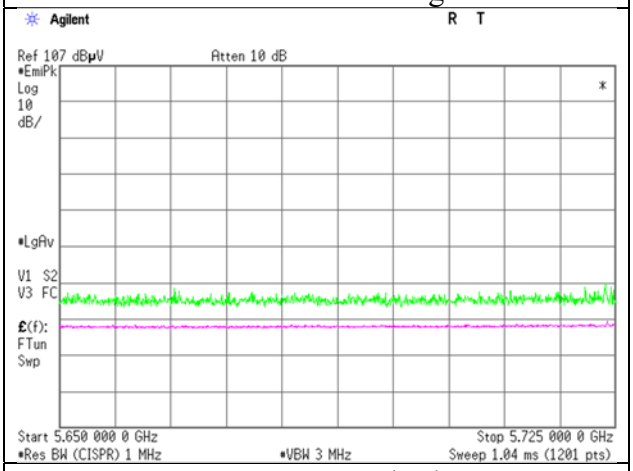
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-40 CDD 5755 MHz

Horizontal

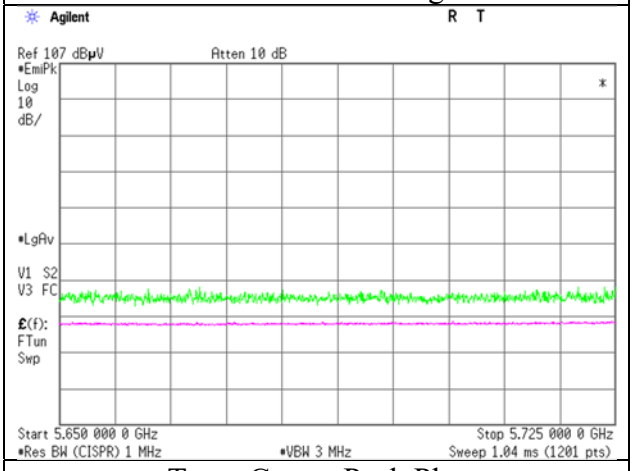
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-40 CDD 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	44.42	38.08	9.60	40.15	-9.54	42.41	73.9	31.4	150	0	-
Hori.	11590.000	AV	34.13	38.08	9.60	40.15	-9.54	32.12	53.9	21.7	150	0	VBW: 1.6 kHz
Vert.	11590.000	PK	44.76	38.08	9.60	40.15	-9.54	42.75	73.9	31.1	150	0	-
Vert.	11590.000	AV	33.85	38.08	9.60	40.15	-9.54	31.84	53.9	22.0	150	0	VBW: 1.6 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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	45.39	33.11	16.59	39.01	2.10	58.18	-37.05	27.00	64.0	227	17	–
Hori.	5855.000	PK	44.98	33.12	16.59	39.01	2.10	57.78	-37.45	15.60	53.0	227	17	–
Hori.	5875.000	PK	44.96	33.16	16.61	39.02	2.10	57.81	-37.42	10.00	47.4	227	17	–
Hori.	5925.000	PK	45.51	33.23	16.64	39.04	2.10	58.44	-36.79	-27.00	**9.7**	227	17	–
Hori.	17385.000	PK	43.72	40.18	12.33	37.32	-9.54	49.37	-45.86	-27.00	18.8	150	0	–
Vert.	5850.000	PK	45.10	33.11	16.59	39.01	2.10	57.89	-37.34	27.00	64.3	119	104	–
Vert.	5855.000	PK	44.67	33.12	16.59	39.01	2.10	57.47	-37.76	15.60	53.3	119	104	–
Vert.	5875.000	PK	44.81	33.16	16.61	39.02	2.10	57.66	-37.57	10.00	47.5	119	104	–
Vert.	5925.000	PK	44.63	33.23	16.64	39.04	2.10	57.56	-37.67	-27.00	10.6	119	104	–
Vert.	17385.000	PK	44.10	40.18	12.33	37.32	-9.54	49.75	-45.48	-27.00	18.4	150	0	–

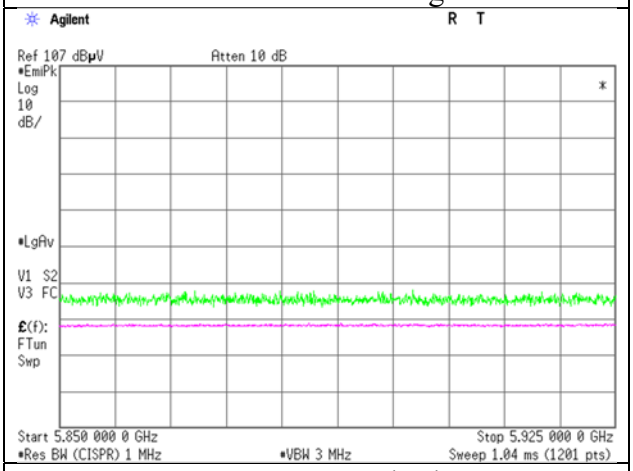
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-40 CDD 5795 MHz

Horizontal

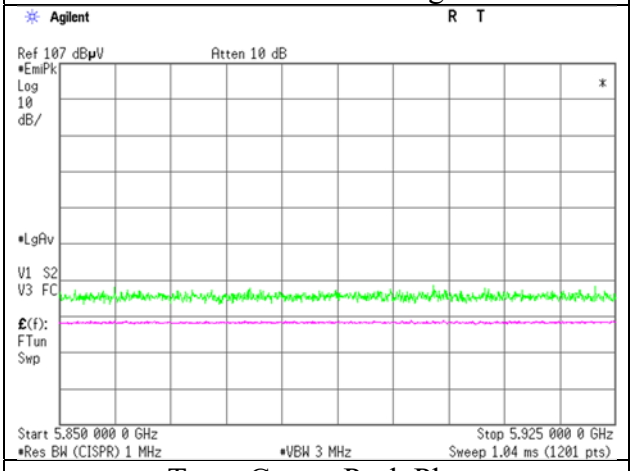
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-80 CDD 5210 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	45.80	32.34	16.14	38.63	2.10	57.75	73.9	16.1	115	121	-
Hori.	5350.000	PK	45.91	32.06	16.27	38.74	2.10	57.60	73.9	16.3	115	121	-
Hori.	15630.000	PK	43.51	39.61	11.40	37.23	-9.54	47.75	73.9	26.1	150	0	-
Hori.	5150.000	AV	35.22	32.34	16.14	38.63	2.10	47.17	53.9	**6.7**	115	121	VBW: 3.3 kHz
Hori.	5350.000	AV	34.96	32.06	16.27	38.74	2.10	46.65	53.9	7.2	115	121	VBW: 3.3 kHz
Hori.	15630.000	AV	33.26	39.61	11.40	37.23	-9.54	37.50	53.9	16.4	150	0	VBW: 3.3 kHz
Vert.	5150.000	PK	46.05	32.34	16.14	38.63	2.10	58.00	73.9	15.9	196	89	-
Vert.	5350.000	PK	46.69	32.06	16.27	38.74	2.10	58.38	73.9	15.5	196	89	-
Vert.	15630.000	PK	43.14	39.61	11.40	37.23	-9.54	47.38	73.9	26.5	150	0	-
Vert.	5150.000	AV	34.94	32.34	16.14	38.63	2.10	46.89	53.9	7.0	196	89	VBW: 3.3 kHz
Vert.	5350.000	AV	34.98	32.06	16.27	38.74	2.10	46.67	53.9	7.2	196	89	VBW: 3.3 kHz
Vert.	15630.000	AV	33.39	39.61	11.40	37.23	-9.54	37.63	53.9	16.2	150	0	VBW: 3.3 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

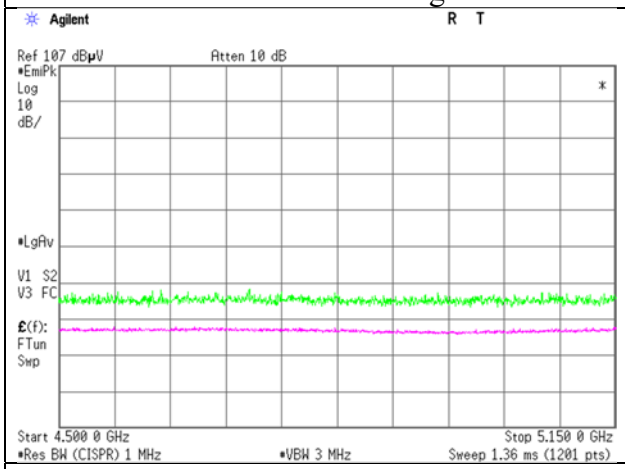
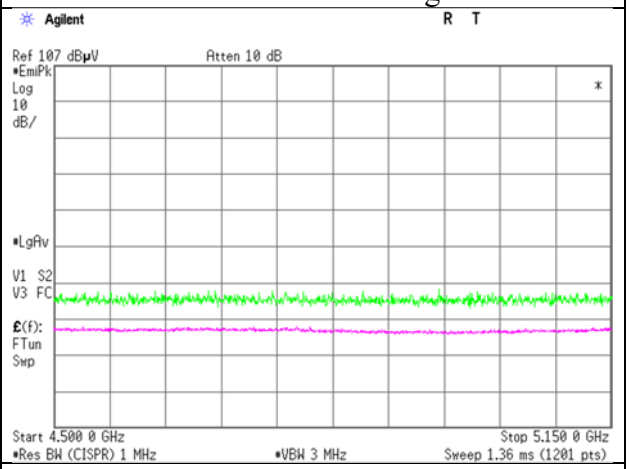
(* PK: Peak, AV: Average, QP: Quasi-Peak)

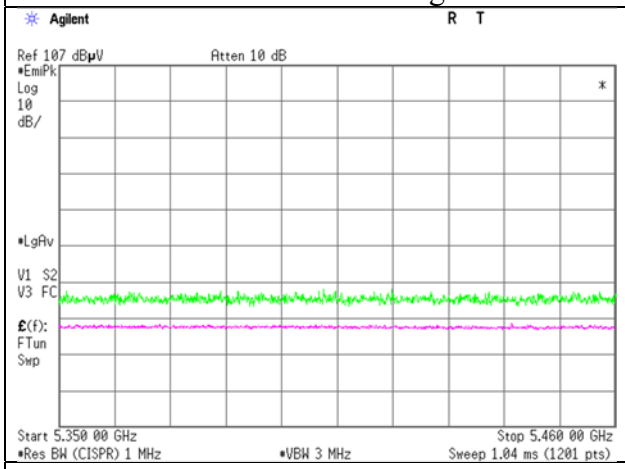
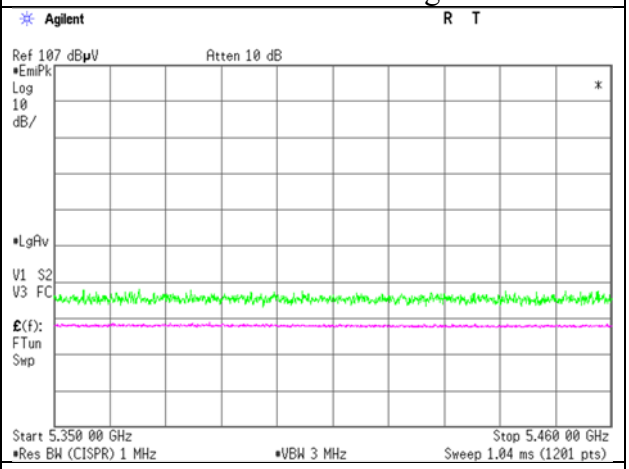
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10420.000	PK	48.53	36.43	9.06	40.13	-9.54	44.35	-50.88	-27.00	23.8	150	0	–
Vert.	10420.000	PK	47.96	36.43	9.06	40.13	-9.54	43.78	-51.45	-27.00	24.4	150	0	–

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + 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 (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-80 CDD 5210 MHz

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

* 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.	13462774S-C-R2		
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-80 CDD 5775 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.	11550.000	PK	44.80	38.03	9.58	40.12	-9.54	42.75	73.9	31.1	150	0	-
Hori.	11550.000	AV	34.88	38.03	9.58	40.12	-9.54	32.83	53.9	21.0	150	0	VBW: 3.3 kHz
Vert.	11550.000	PK	44.37	38.03	9.58	40.12	-9.54	42.32	73.9	31.5	150	0	-
Vert.	11550.000	AV	34.79	38.03	9.58	40.12	-9.54	32.74	53.9	21.1	150	0	VBW: 3.3 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

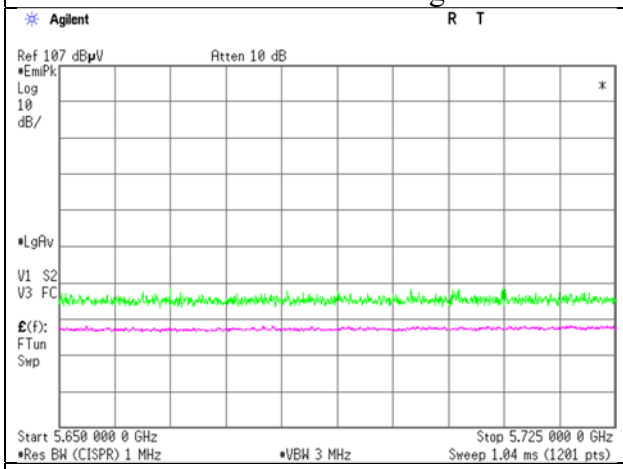
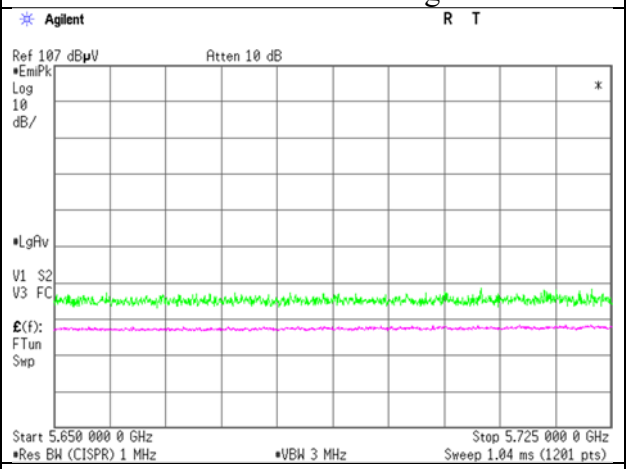
(* PK: Peak, AV: Average, QP: Quasi-Peak)

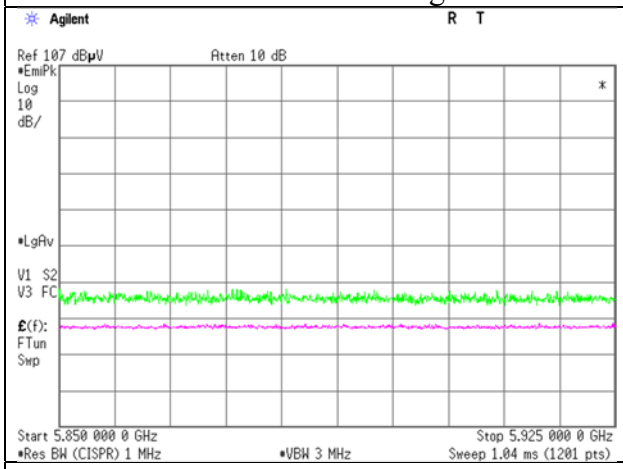
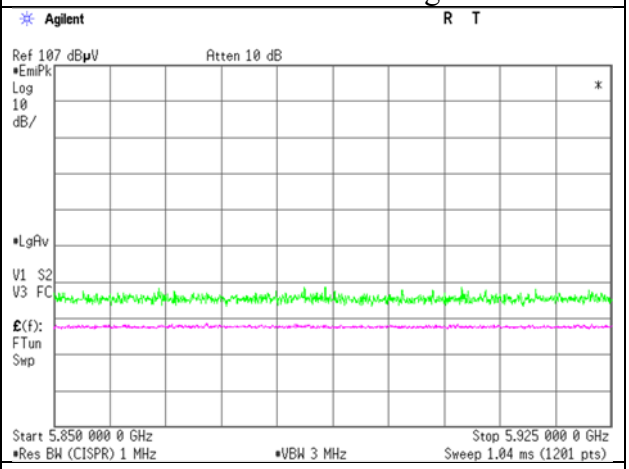
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	46.03	32.64	16.45	38.91	2.10	58.31	-36.92	-27.00	9.9	251	101	–
Hori.	5700.000	PK	45.46	32.71	16.48	38.93	2.10	57.82	-37.41	10.00	47.4	251	101	–
Hori.	5720.000	PK	46.18	32.75	16.49	38.94	2.10	58.58	-36.65	15.60	52.2	251	101	–
Hori.	5725.000	PK	45.71	32.77	16.50	38.94	2.10	58.14	-37.09	27.00	64.0	251	101	–
Hori.	5850.000	PK	46.03	33.11	16.59	39.01	2.10	58.82	-36.41	27.00	63.4	251	101	–
Hori.	5855.000	PK	45.87	33.12	16.59	39.01	2.10	58.67	-36.56	15.60	52.1	251	101	–
Hori.	5875.000	PK	45.78	33.16	16.61	39.02	2.10	58.63	-36.60	10.00	46.6	251	101	–
Hori.	5925.000	PK	45.44	33.23	16.64	39.04	2.10	58.37	-36.86	-27.00	9.8	251	101	–
Hori.	17325.000	PK	43.69	40.11	12.32	37.29	-9.54	49.29	-45.94	-27.00	18.9	150	0	–
Vert.	5650.000	PK	45.86	32.64	16.45	38.91	2.10	58.14	-37.09	-27.00	10.0	124	106	–
Vert.	5700.000	PK	46.31	32.71	16.48	38.93	2.10	58.67	-36.56	10.00	46.5	124	106	–
Vert.	5720.000	PK	45.88	32.75	16.49	38.94	2.10	58.28	-36.95	15.60	52.5	124	106	–
Vert.	5725.000	PK	45.30	32.77	16.50	38.94	2.10	57.73	-37.50	27.00	64.5	124	106	–
Vert.	5850.000	PK	45.58	33.11	16.59	39.01	2.10	58.37	-36.86	27.00	63.8	124	106	–
Vert.	5855.000	PK	45.82	33.12	16.59	39.01	2.10	58.62	-36.61	15.60	52.2	124	106	–
Vert.	5875.000	PK	45.89	33.16	16.61	39.02	2.10	58.74	-36.49	10.00	46.4	124	106	–
Vert.	5925.000	PK	46.39	33.23	16.64	39.04	2.10	59.32	-35.91	-27.00	**8.9**	124	106	–
Vert.	17325.000	PK	44.59	40.11	12.32	37.29	-9.54	50.19	-45.04	-27.00	18.0	150	0	–

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + 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 (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-80 CDD 5775 MHz

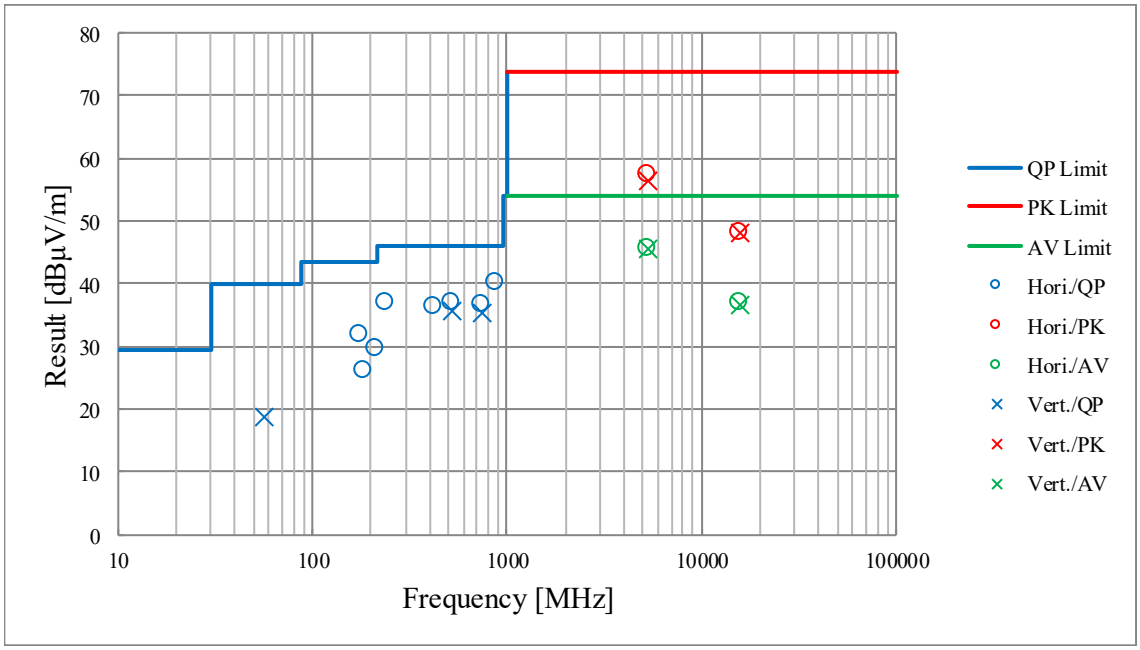
Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

* 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.	13462774S-C-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	No.3	No.2	No.2	No.2
Date	August 28, 2020	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	24 deg. C / 62 % RH	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Matsuzawa (30 MHz - 1000 MHz)	Yosuke Murakami (1 GHz - 10 GHz)	Kazuya Noda (10 GHz - 18 GHz)	Yosuke Murakami (18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 5240 MHz			



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

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-20 CDD 5180 MHz with 11n-20 2437 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	44.94	32.34	16.66	38.63	2.10	57.41	73.9	16.4	170	38	-
Hori.	5150.000	AV	33.81	32.34	16.66	38.63	2.10	46.28	53.9	**7.6**	170	38	VBW: 820 Hz
Vert.	5150.000	PK	45.36	32.34	16.66	38.63	2.10	57.83	73.9	16.0	153	86	-
Vert.	5150.000	AV	33.54	32.34	16.66	38.63	2.10	46.01	53.9	7.8	153	86	VBW: 820 Hz

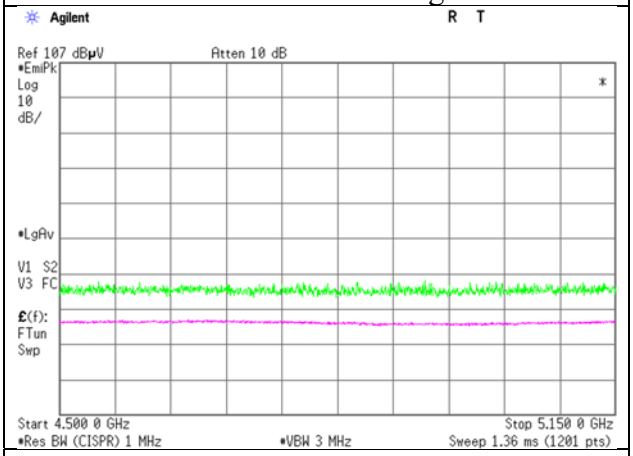
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-20 CDD 5180 MHz with 11n-20 2437 MHz

Horizontal

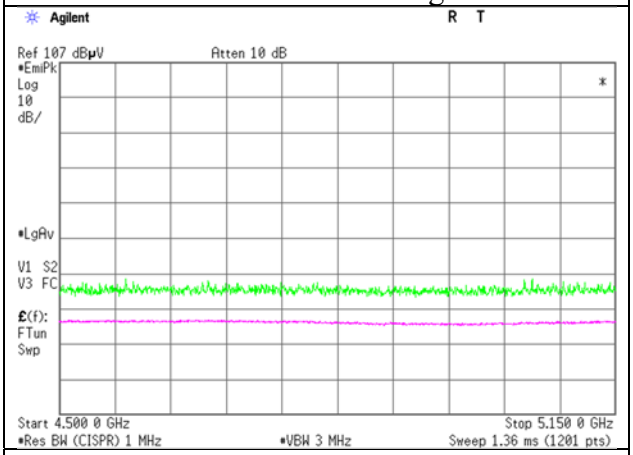
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	No.3	No.2	No.2	No.2
Date	August 30, 2020	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 64 % RH	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Kazuya Noda	Yosuke Murakami
	(30 MHz - 1000 MHz)	(1 GHz – 6.4 GHz)	(6.4 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 5240 MHz with 11n-20 2437 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.	175.002	QP	40.35	15.73	7.81	32.06	0.00	31.83	43.5	11.6	191	9	-
Hori.	184.319	QP	32.79	16.14	7.79	32.06	0.00	24.66	43.5	18.8	183	345	-
Hori.	214.870	QP	41.95	11.22	8.06	32.03	0.00	29.20	43.5	14.3	154	343	-
Hori.	240.005	QP	48.84	11.57	8.20	32.00	0.00	36.61	46.0	9.3	143	342	-
Hori.	425.012	QP	42.69	16.06	9.12	31.94	0.00	35.93	46.0	10.0	100	2	-
Hori.	519.745	QP	42.00	17.68	9.49	31.95	0.00	37.22	46.0	8.7	100	53	-
Hori.	789.043	QP	36.00	20.65	10.46	31.68	0.00	35.43	46.0	10.5	100	8	-
Hori.	870.136	QP	36.76	21.98	10.73	31.21	0.00	38.26	46.0	**7.7**	107	270	-
Hori.	5350.000	PK	46.30	32.06	16.78	38.74	2.10	58.50	73.9	15.4	117	122	-
Hori.	15720.000	PK	43.84	39.76	11.40	37.24	-9.54	48.22	73.9	25.6	150	0	-
Hori.	5350.000	AV	33.89	32.06	16.78	38.74	2.10	46.09	53.9	7.8	117	122	VBW: 820 Hz
Hori.	15720.000	AV	32.42	39.76	11.40	37.24	-9.54	36.80	53.9	17.1	150	0	VBW: 820 Hz
Vert.	57.102	QP	37.27	8.90	6.65	32.16	0.00	20.66	40.0	19.3	100	275	-
Vert.	84.006	QP	41.02	7.00	7.57	32.15	0.00	23.44	40.0	16.5	100	251	-
Vert.	519.750	QP	38.97	17.67	9.49	31.95	0.00	34.18	46.0	11.8	111	89	-
Vert.	745.116	QP	34.90	20.13	10.32	31.75	0.00	33.60	46.0	12.4	154	145	-
Vert.	870.110	QP	34.74	21.98	10.73	31.21	0.00	36.24	46.0	9.7	135	13	-
Vert.	5350.000	PK	45.28	32.06	16.78	38.74	2.10	57.48	73.9	16.4	310	122	-
Vert.	15720.000	PK	43.09	39.76	11.40	37.24	-9.54	47.47	73.9	26.4	150	0	-
Vert.	5350.000	AV	33.82	32.06	16.78	38.74	2.10	46.02	53.9	7.8	310	122	VBW: 820 Hz
Vert.	15720.000	AV	32.71	39.76	11.40	37.24	-9.54	37.09	53.9	16.8	150	0	VBW: 820 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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.	10480.000	PK	47.01	36.57	9.07	40.22	-9.54	42.89	-52.34	-27.00	25.3	150	0	–
Vert.	10480.000	PK	47.37	36.57	9.07	40.22	-9.54	43.25	-51.98	-27.00	24.9	150	0	–

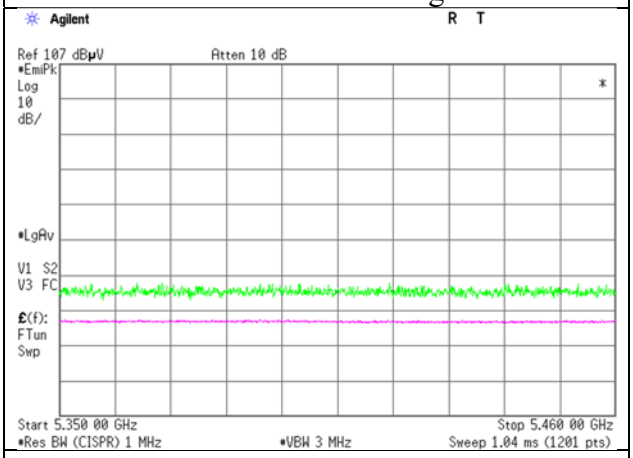
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-20 CDD 5240 MHz with 11n-20 2437 MHz

Horizontal

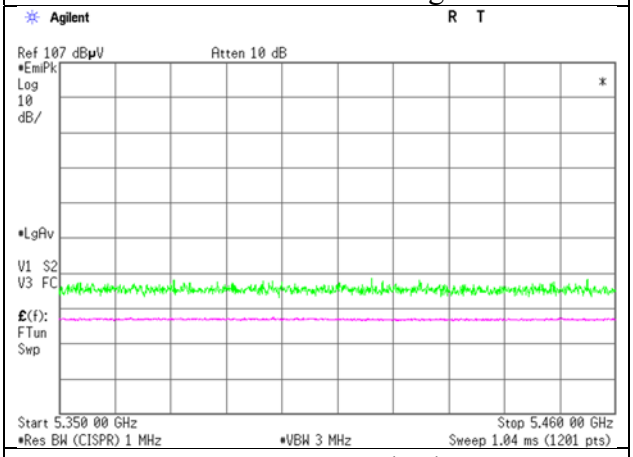
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-20 CDD 5745 MHz with 11n-20 2437 MHz

(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	45.36	32.64	16.96	38.91	2.10	58.15	-37.08	-27.00	10.0	224	100	–
Hori.	5700.000	PK	45.54	32.71	16.99	38.93	2.10	58.41	-36.82	10.00	46.8	224	100	–
Hori.	5720.000	PK	46.24	32.75	17.00	38.94	2.10	59.15	-36.08	15.60	51.6	224	100	–
Hori.	5725.000	PK	49.25	32.77	17.01	38.94	2.10	62.19	-33.04	27.00	60.0	224	100	–
Vert.	5650.000	PK	45.61	32.64	16.96	38.91	2.10	58.40	-36.83	-27.00	**9.8**	124	106	–
Vert.	5700.000	PK	45.33	32.71	16.99	38.93	2.10	58.20	-37.03	10.00	47.0	124	106	–
Vert.	5720.000	PK	45.65	32.75	17.00	38.94	2.10	58.56	-36.67	15.60	52.2	124	106	–
Vert.	5725.000	PK	48.16	32.77	17.01	38.94	2.10	61.10	-34.13	27.00	61.1	124	106	–

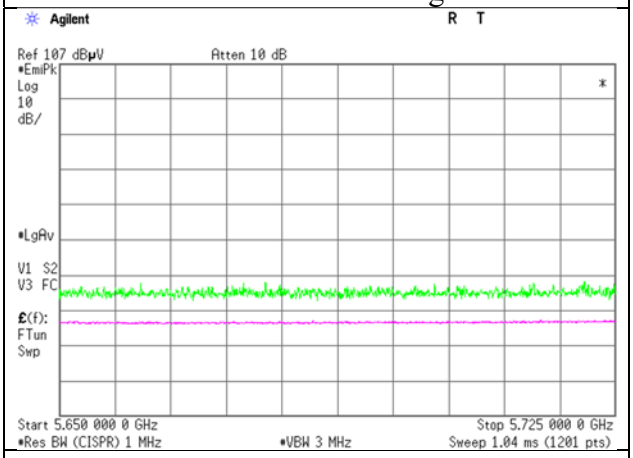
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-20 CDD 5745 MHz with 11n-20 2437 MHz

Horizontal

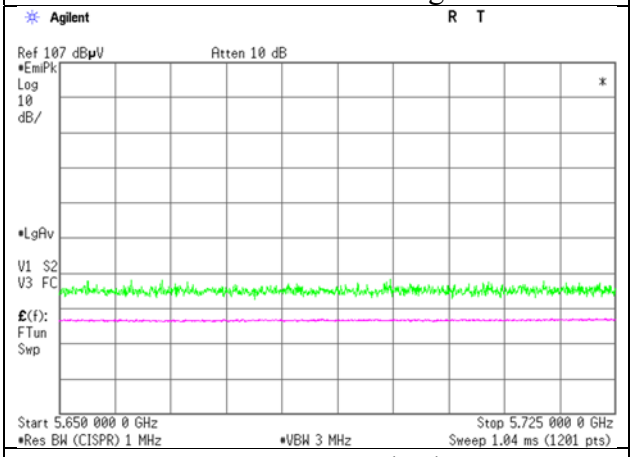
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-20 CDD 5825 MHz with 11n-20 2437 MHz

(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	45.03	33.11	17.10	39.01	2.10	58.33	-36.90	27.00	63.9	230	14	–
Hori.	5855.000	PK	45.09	33.12	17.10	39.01	2.10	58.40	-36.83	15.60	52.4	230	14	–
Hori.	5875.000	PK	45.07	33.16	17.12	39.02	2.10	58.43	-36.80	10.00	46.8	230	14	–
Hori.	5925.000	PK	45.64	33.23	17.15	39.04	2.10	59.08	-36.15	-27.00	9.1	230	14	–
Vert.	5850.000	PK	45.73	33.11	17.10	39.01	2.10	59.03	-36.20	27.00	63.2	150	106	–
Vert.	5855.000	PK	45.25	33.12	17.10	39.01	2.10	58.56	-36.67	15.60	52.2	150	106	–
Vert.	5875.000	PK	45.46	33.16	17.12	39.02	2.10	58.82	-36.41	10.00	46.4	150	106	–
Vert.	5925.000	PK	45.71	33.23	17.15	39.04	2.10	59.15	-36.08	-27.00	**9.0**	150	106	–

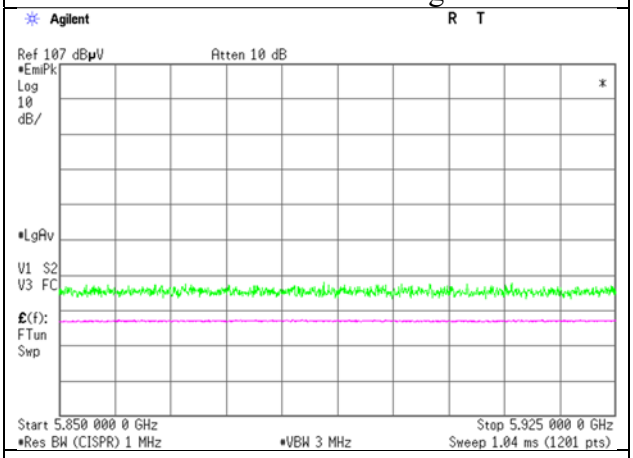
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-20 CDD 5825 MHz with 11n-20 2437 MHz

Horizontal

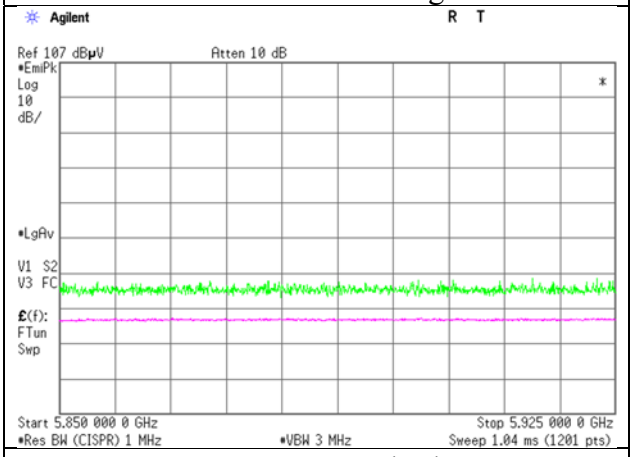
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-40 CDD 5190 MHz with 11n-20 2437 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	46.23	32.34	16.66	38.63	2.10	58.70	73.9	15.2	120	121	-
Hori.	5150.000	AV	34.11	32.34	16.66	38.63	2.10	46.58	53.9	**7.3**	120	121	-
Vert.	5150.000	PK	44.62	32.34	16.66	38.63	2.10	57.09	73.9	16.8	155	85	-
Vert.	5150.000	AV	34.10	32.34	16.66	38.63	2.10	46.57	53.9	**7.3**	155	85	-

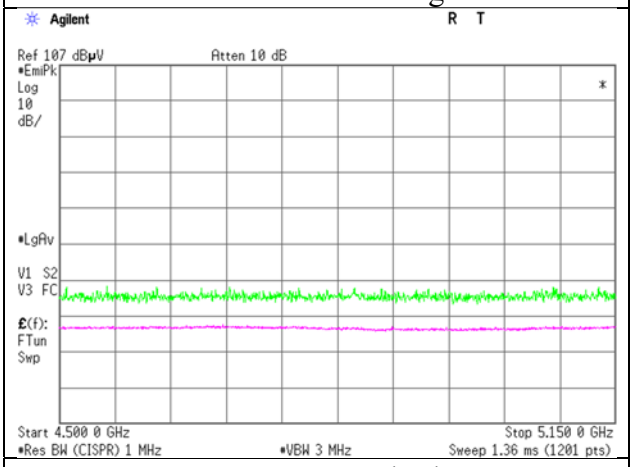
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-40 CDD 5190 MHz with 11n-20 2437 MHz

Horizontal

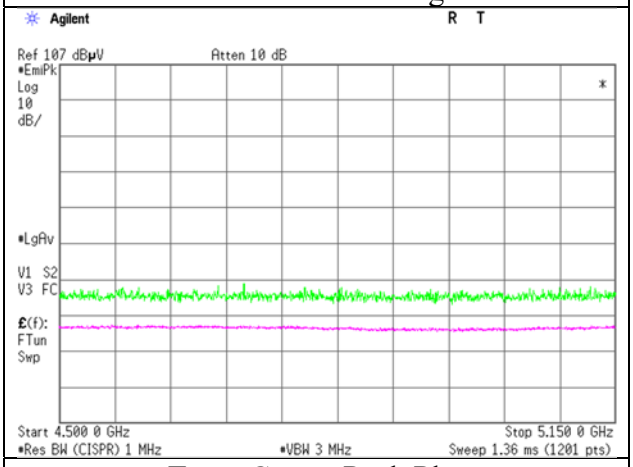
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-40 CDD 5230 MHz with 11n-20 2437 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	46.24	32.06	16.78	38.74	2.10	58.44	73.9	15.4	117	123	-
Hori.	5350.000	AV	34.38	32.06	16.78	38.74	2.10	46.58	53.9	7.3	117	123	VBW: 1.6 kHz
Vert.	5350.000	PK	45.80	32.06	16.78	38.74	2.10	58.00	73.9	15.9	236	96	-
Vert.	5350.000	AV	34.84	32.06	16.78	38.74	2.10	47.04	53.9	**6.8**	236	96	VBW: 1.6 kHz

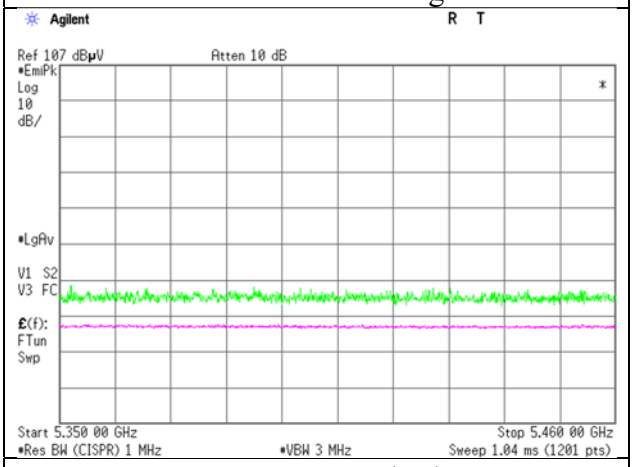
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-40 CDD 5230 MHz with 11n-20 2437 MHz

Horizontal

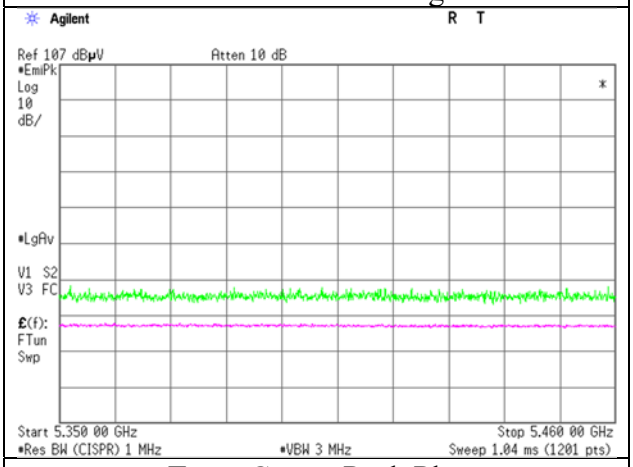
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-40 CDD 5755 MHz with 11n-20 2437 MHz

(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	46.11	32.64	16.96	38.91	2.10	58.90	-36.33	-27.00	**9.3**	175	101	–
Hori.	5700.000	PK	45.61	32.71	16.99	38.93	2.10	58.48	-36.75	10.00	46.7	175	101	–
Hori.	5720.000	PK	47.24	32.75	17.00	38.94	2.10	60.15	-35.08	15.60	50.6	175	101	–
Hori.	5725.000	PK	51.19	32.77	17.01	38.94	2.10	64.13	-31.10	27.00	58.1	175	101	–
Vert.	5650.000	PK	45.67	32.64	16.96	38.91	2.10	58.46	-36.77	-27.00	9.7	125	105	–
Vert.	5700.000	PK	45.43	32.71	16.99	38.93	2.10	58.30	-36.93	10.00	46.9	125	105	–
Vert.	5720.000	PK	47.56	32.75	17.00	38.94	2.10	60.47	-34.76	15.60	50.3	125	105	–
Vert.	5725.000	PK	49.58	32.77	17.01	38.94	2.10	62.52	-32.71	27.00	59.7	125	105	–

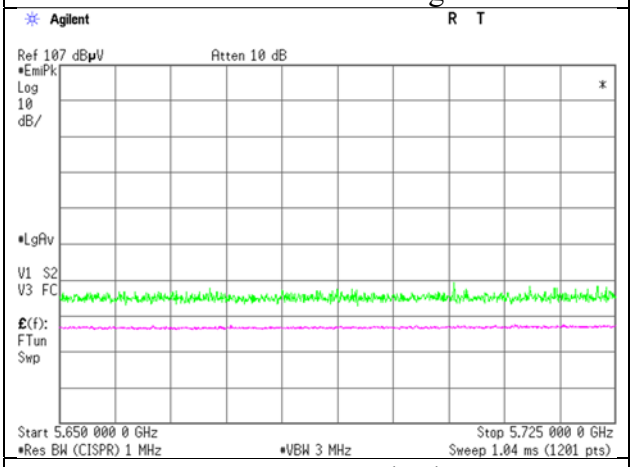
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-40 CDD 5755 MHz with 11n-20 2437 MHz

Horizontal

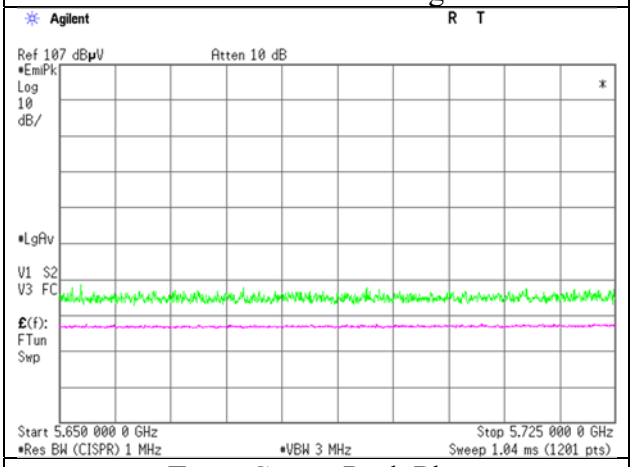
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-40 CDD 5795 MHz with 11n-20 2437 MHz

(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	46.11	33.11	17.10	39.01	2.10	59.41	-35.82	27.00	62.8	228	98	–
Hori.	5855.000	PK	45.98	33.12	17.10	39.01	2.10	59.29	-35.94	15.60	51.5	228	98	–
Hori.	5875.000	PK	45.35	33.16	17.12	39.02	2.10	58.71	-36.52	10.00	46.5	228	98	–
Hori.	5925.000	PK	45.85	33.23	17.15	39.04	2.10	59.29	-35.94	-27.00	8.9	228	98	–
Vert.	5850.000	PK	45.20	33.11	17.10	39.01	2.10	58.50	-36.73	27.00	63.7	116	104	–
Vert.	5855.000	PK	45.53	33.12	17.10	39.01	2.10	58.84	-36.39	15.60	51.9	116	104	–
Vert.	5875.000	PK	45.43	33.16	17.12	39.02	2.10	58.79	-36.44	10.00	46.4	116	104	–
Vert.	5925.000	PK	46.11	33.23	17.15	39.04	2.10	59.55	-35.68	-27.00	**8.6**	116	104	–

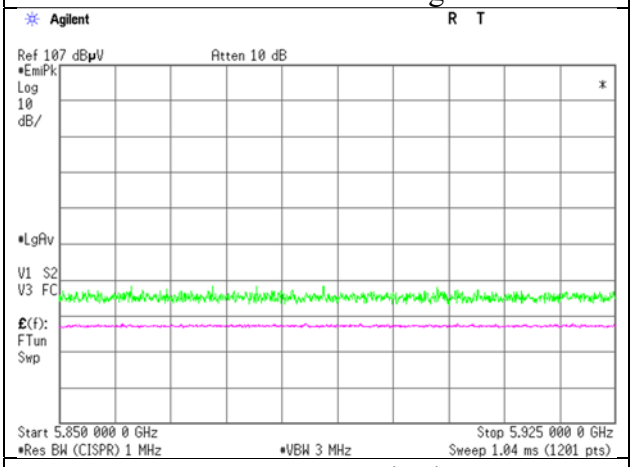
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-40 CDD 5795 MHz with 11n-20 2437 MHz

Horizontal

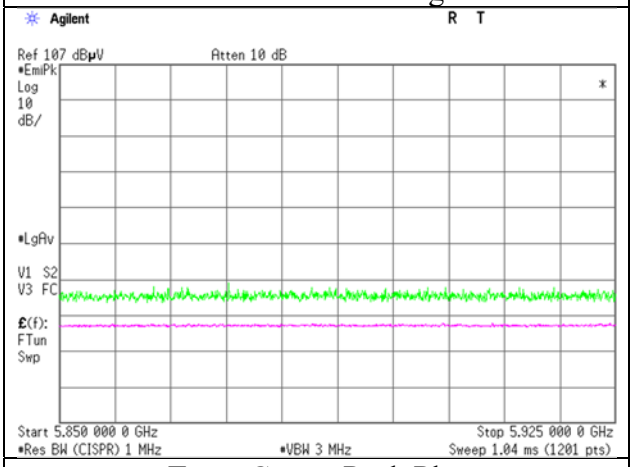
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-80 CDD 5210 MHz with 11n-20 2437 MHz

(above 1 GHz Inside of the restricted band)

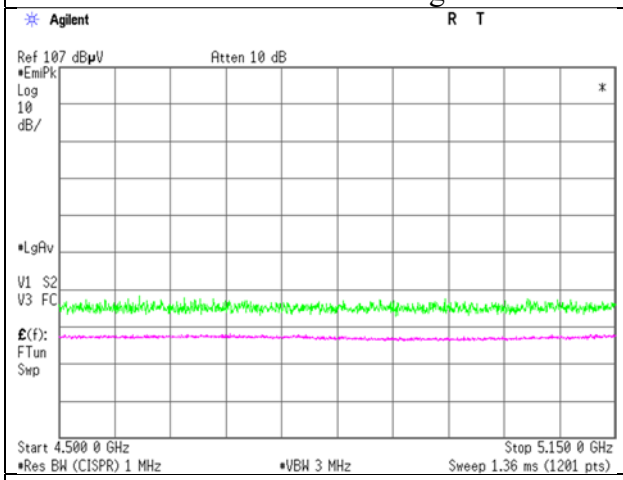
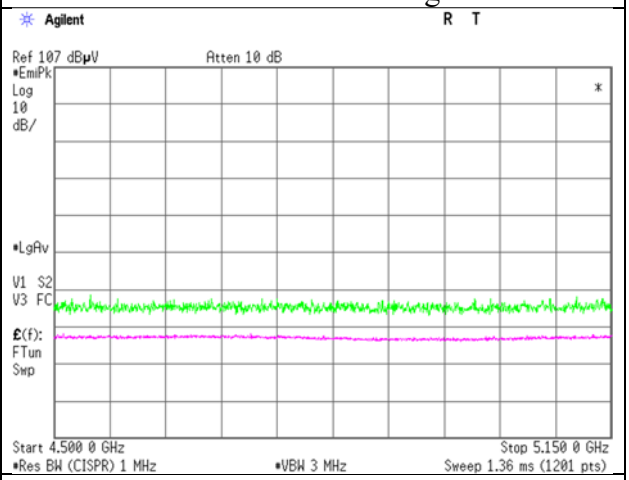
(* PK: Peak, AV: Average, QP: Quasi-Peak)

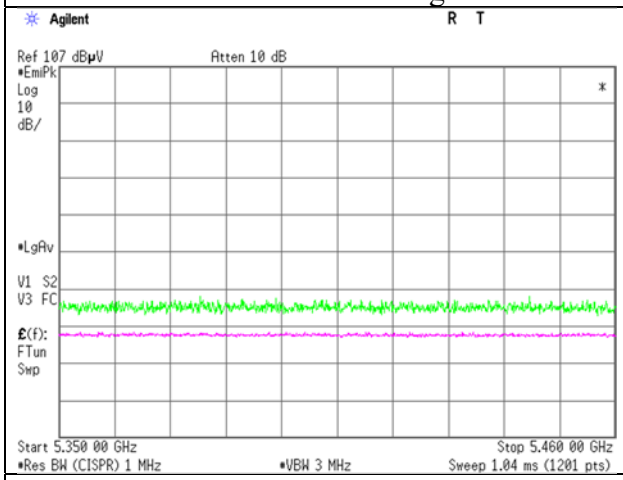
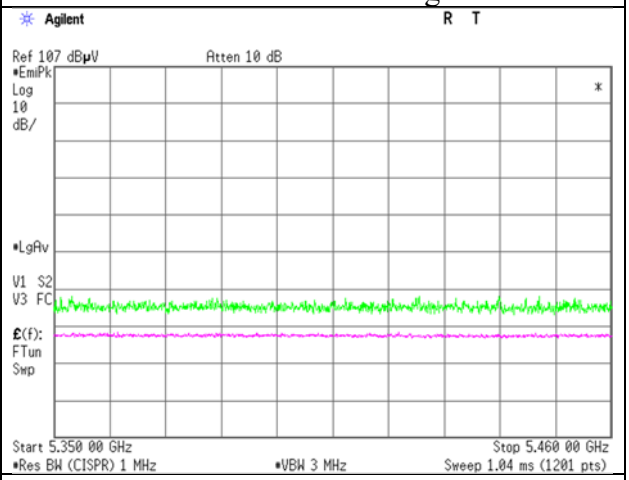
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	46.16	32.34	16.66	38.63	2.10	58.63	73.9	15.2	224	35	-
Hori.	5350.000	PK	47.30	32.06	16.78	38.74	2.10	59.50	73.9	14.4	224	35	-
Hori.	5150.000	AV	34.71	32.34	16.66	38.63	2.10	47.18	53.9	6.7	224	35	VBW: 3.3 kHz
Hori.	5350.000	AV	35.05	32.06	16.78	38.74	2.10	47.25	53.9	6.6	224	35	VBW: 3.3 kHz
Vert.	5150.000	PK	45.84	32.34	16.66	38.63	2.10	58.31	73.9	15.5	181	95	-
Vert.	5350.000	PK	46.13	32.06	16.78	38.74	2.10	58.33	73.9	15.5	181	95	-
Vert.	5150.000	AV	35.00	32.34	16.66	38.63	2.10	47.47	53.9	**6.4**	181	95	VBW: 3.3 kHz
Vert.	5350.000	AV	35.03	32.06	16.78	38.74	2.10	47.23	53.9	6.6	181	95	VBW: 3.3 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-80 CDD 5210 MHz with 11n-20 2437 MHz

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-80 CDD 5775 MHz with 11n-20 2437 MHz

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

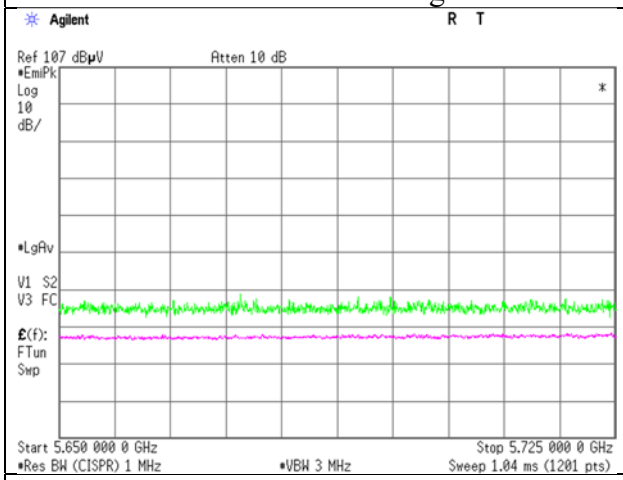
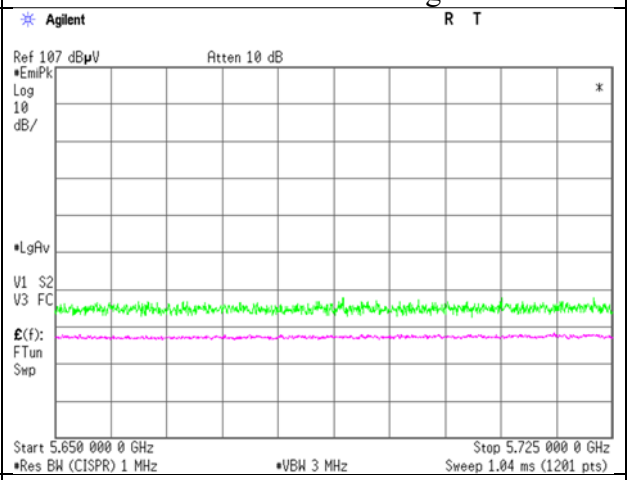
(* PK: Peak, AV: Average, QP: Quasi-Peak)

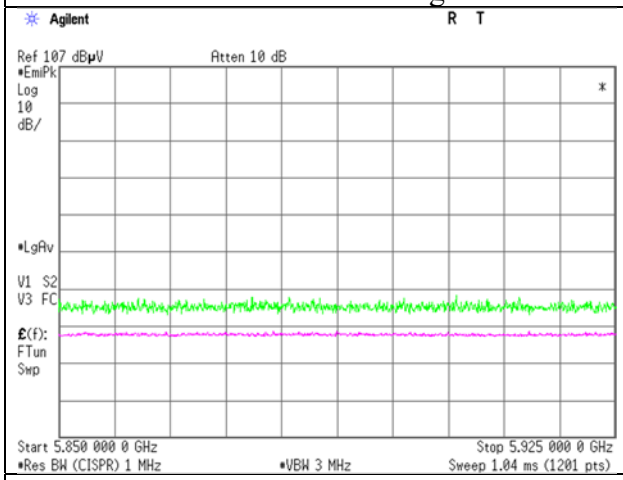
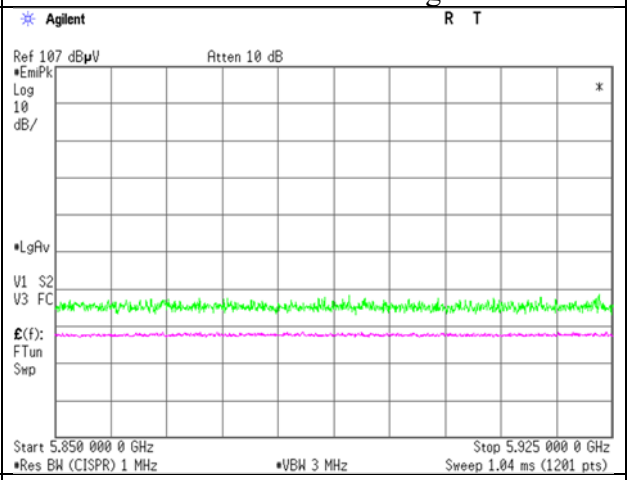
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	45.94	32.64	16.96	38.91	2.10	58.73	-36.50	-27.00	9.5	222	98	–
Hori.	5700.000	PK	46.06	32.71	16.99	38.93	2.10	58.93	-36.30	10.00	46.3	222	98	–
Hori.	5720.000	PK	45.70	32.75	17.00	38.94	2.10	58.61	-36.62	15.60	52.2	222	98	–
Hori.	5725.000	PK	46.31	32.77	17.01	38.94	2.10	59.25	-35.98	27.00	62.9	222	98	–
Hori.	5850.000	PK	46.08	33.11	17.10	39.01	2.10	59.38	-35.85	27.00	62.8	222	98	–
Hori.	5855.000	PK	45.54	33.12	17.10	39.01	2.10	58.85	-36.38	15.60	51.9	222	98	–
Hori.	5875.000	PK	45.73	33.16	17.12	39.02	2.10	59.09	-36.14	10.00	46.1	222	98	–
Hori.	5925.000	PK	45.95	33.23	17.15	39.04	2.10	59.39	-35.84	-27.00	**8.8**	222	98	–
Vert.	5650.000	PK	45.63	32.64	16.96	38.91	2.10	58.42	-36.81	-27.00	9.8	122	104	–
Vert.	5700.000	PK	46.02	32.71	16.99	38.93	2.10	58.89	-36.34	10.00	46.3	122	104	–
Vert.	5720.000	PK	45.57	32.75	17.00	38.94	2.10	58.48	-36.75	15.60	52.3	122	104	–
Vert.	5725.000	PK	45.68	32.77	17.01	38.94	2.10	58.62	-36.61	27.00	63.6	122	104	–
Vert.	5850.000	PK	45.81	33.11	17.10	39.01	2.10	59.11	-36.12	27.00	63.1	122	104	–
Vert.	5855.000	PK	45.62	33.12	17.10	39.01	2.10	58.93	-36.30	15.60	51.9	122	104	–
Vert.	5875.000	PK	45.45	33.16	17.12	39.02	2.10	58.81	-36.42	10.00	46.4	122	104	–
Vert.	5925.000	PK	45.85	33.23	17.15	39.04	2.10	59.29	-35.94	-27.00	8.9	122	104	–

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + 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 (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 2, 2020
Temperature / Humidity	25 deg. C / 68 % RH
Engineer	Kazuya Noda
Mode	Tx 11ac-80 CDD 5775 MHz with 11n-20 2437 MHz

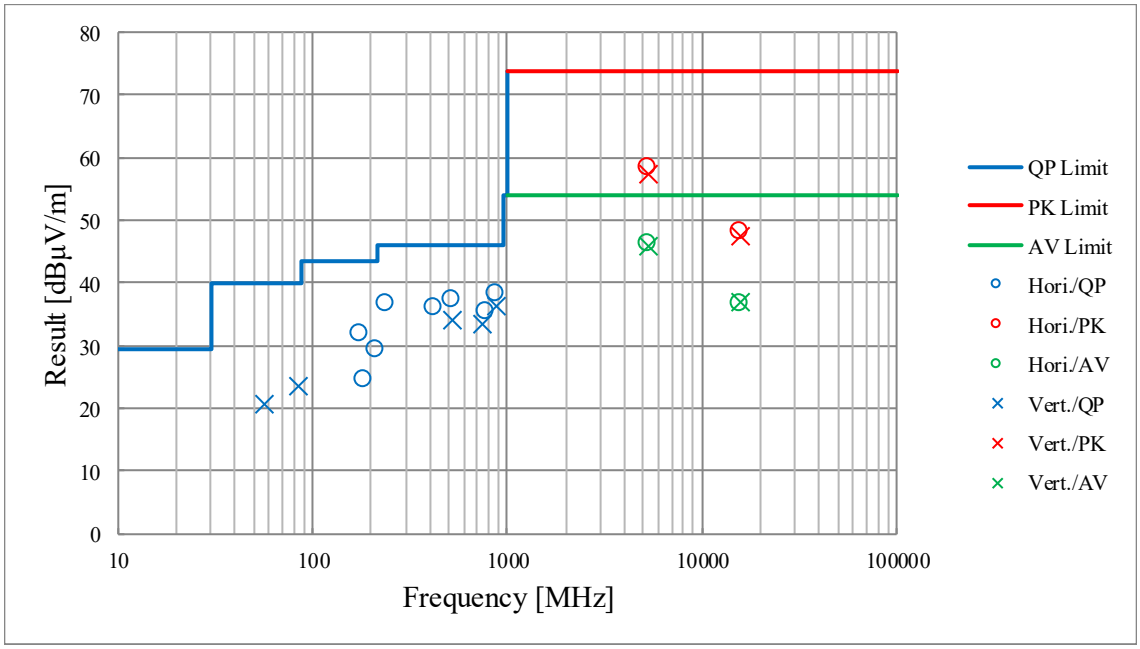
Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

* 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.	13462774S-C-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	No.3	No.2	No.2	No.2
Date	August 30, 2020	September 2, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 64 % RH	25 deg. C / 68 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Kazuya Noda	Kazuya Noda	Yosuke Murakami
	(30 MHz - 1000 MHz)	(1 GHz – 6.4 GHz)	(6.4 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 5240 MHz with 11n-20 2437 MHz			



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

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-20 CDD 5180 MHz with BT Hopping On DH5

(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	44.31	32.34	16.66	38.63	2.10	56.78	73.9	17.1	117	123	-
Hori.	5150.000	AV	33.83	32.34	16.66	38.63	2.10	46.30	53.9	**7.6**	117	123	VBW: 820 Hz
Vert.	5150.000	PK	45.38	32.34	16.66	38.63	2.10	57.85	73.9	16.0	180	191	-
Vert.	5150.000	AV	33.80	32.34	16.66	38.63	2.10	46.27	53.9	**7.6**	180	191	VBW: 820 Hz

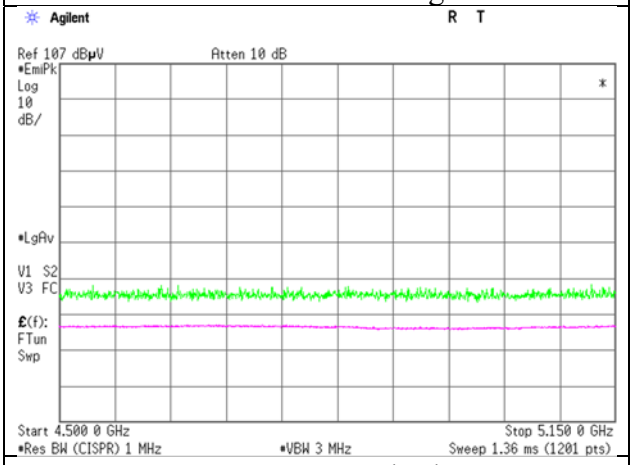
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-20 CDD 5180 MHz with BT Hopping On DH5

Horizontal

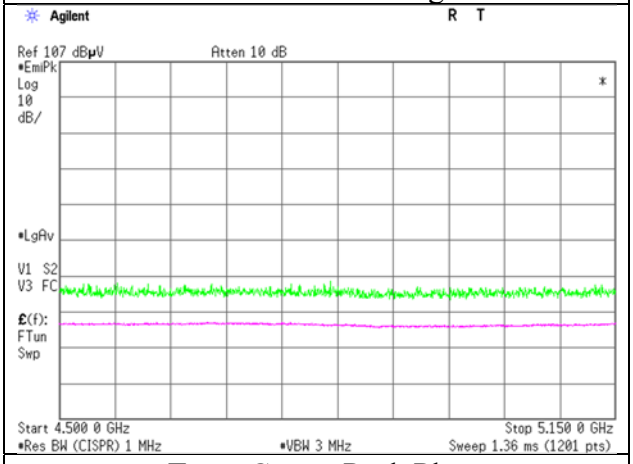
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	No.3	No.2	No.2	No.2
Date	August 30, 2020	September 3, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 64 % RH	25 deg. C / 70 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(30 MHz - 1000 MHz)	(1 GHz – 6.4 GHz)	(6.4 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 5240 MHz with BT Hopping On DH5			

(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.	175.004	QP	41.70	15.73	7.81	32.06	0.00	33.18	43.5	10.3	190	358	-
Hori.	184.313	QP	33.41	16.14	7.79	32.06	0.00	25.28	43.5	18.2	181	347	-
Hori.	214.731	QP	41.97	11.23	8.06	32.03	0.00	29.23	43.5	14.2	155	354	-
Hori.	240.007	QP	49.12	11.57	8.20	32.00	0.00	36.89	46.0	9.1	138	339	-
Hori.	425.011	QP	42.78	16.06	9.12	31.94	0.00	36.02	46.0	9.9	100	0	-
Hori.	496.523	QP	31.30	17.72	9.40	31.92	0.00	26.50	46.0	19.5	280	0	-
Hori.	520.035	QP	41.69	17.67	9.49	31.95	0.00	36.90	46.0	9.1	100	54	-
Hori.	792.229	QP	36.31	20.70	10.47	31.67	0.00	35.81	46.0	10.1	100	5	-
Hori.	870.636	QP	36.88	22.00	10.73	31.21	0.00	38.40	46.0	7.6	110	275	-
Hori.	5350.000	PK	45.17	32.06	16.78	38.74	2.10	57.37	73.9	16.5	113	122	-
Hori.	15720.000	PK	43.50	39.76	11.40	37.24	-9.54	47.88	73.9	26.0	150	0	-
Hori.	5350.000	AV	34.08	32.06	16.78	38.74	2.10	46.28	53.9	7.6	113	122	VBW: 820 Hz
Hori.	15720.000	AV	32.52	39.76	11.40	37.24	-9.54	36.90	53.9	17.0	150	0	VBW: 820 Hz
Vert.	57.099	QP	37.28	8.90	6.65	32.16	0.00	20.67	40.0	19.3	100	270	-
Vert.	519.987	QP	39.63	17.67	9.49	31.95	0.00	34.84	46.0	11.1	176	46	-
Vert.	741.835	QP	35.47	20.11	10.31	31.76	0.00	34.13	46.0	11.8	153	146	-
Vert.	870.337	QP	34.31	21.99	10.73	31.21	0.00	35.82	46.0	10.1	138	10	-
Vert.	5350.000	PK	44.96	32.06	16.78	38.74	2.10	57.16	73.9	16.7	158	193	-
Vert.	15720.000	PK	43.33	39.76	11.40	37.24	-9.54	47.71	73.9	26.1	150	0	-
Vert.	5350.000	AV	34.13	32.06	16.78	38.74	2.10	46.33	53.9	**7.5**	158	193	VBW: 820 Hz
Vert.	15720.000	AV	32.55	39.76	11.40	37.24	-9.54	36.93	53.9	16.9	150	0	VBW: 820 Hz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 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.	10480.000	PK	46.80	36.57	9.07	40.22	-9.54	42.68	-52.55	-27.00	25.5	150	0	–
Vert.	10480.000	PK	47.44	36.57	9.07	40.22	-9.54	43.32	-51.91	-27.00	24.9	150	0	–

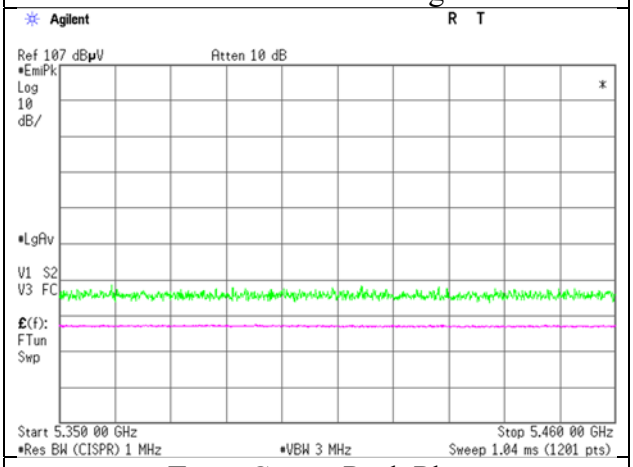
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-20 CDD 5240 MHz with BT Hopping On DH5

Horizontal

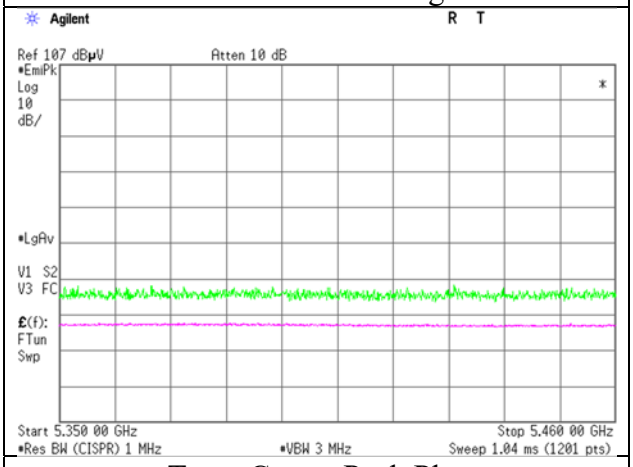
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-20 CDD 5745 MHz with BT Hopping On DH5

(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	44.98	32.64	16.96	38.91	2.10	57.77	-37.46	-27.00	**10.4**	175	99	–
Hori.	5700.000	PK	44.93	32.71	16.99	38.93	2.10	57.80	-37.43	10.00	47.4	175	99	–
Hori.	5720.000	PK	45.25	32.75	17.00	38.94	2.10	58.16	-37.07	15.60	52.6	175	99	–
Hori.	5725.000	PK	48.35	32.77	17.01	38.94	2.10	61.29	-33.94	27.00	60.9	175	99	–
Vert.	5650.000	PK	44.93	32.64	16.96	38.91	2.10	57.72	-37.51	-27.00	10.5	123	105	–
Vert.	5700.000	PK	44.74	32.71	16.99	38.93	2.10	57.61	-37.62	10.00	47.6	123	105	–
Vert.	5720.000	PK	45.10	32.75	17.00	38.94	2.10	58.01	-37.22	15.60	52.8	123	105	–
Vert.	5725.000	PK	46.94	32.77	17.01	38.94	2.10	59.88	-35.35	27.00	62.3	123	105	–

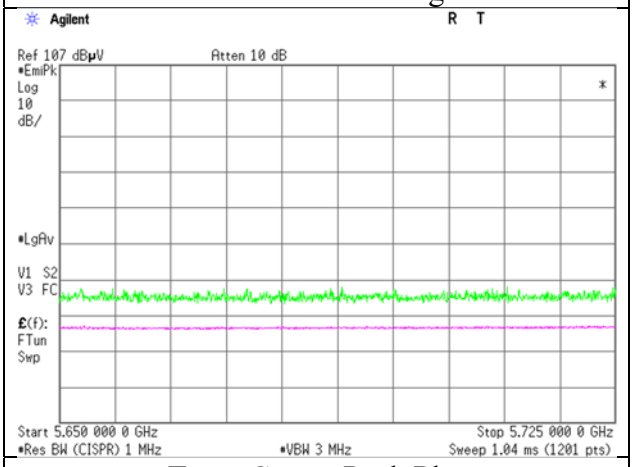
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-20 CDD 5745 MHz with BT Hopping On DH5

Horizontal

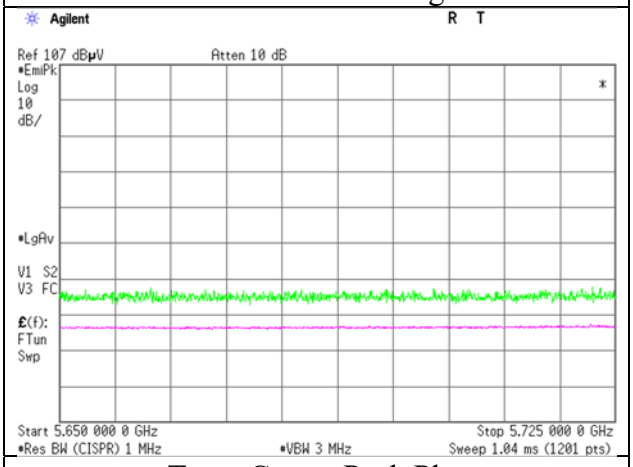
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-20 CDD 5825 MHz with BT Hopping On DH5

(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	44.50	33.11	17.10	39.01	2.10	57.80	-37.43	27.00	64.4	197	101	–
Hori.	5855.000	PK	44.60	33.12	17.10	39.01	2.10	57.91	-37.32	15.60	52.9	197	101	–
Hori.	5875.000	PK	44.82	33.16	17.12	39.02	2.10	58.18	-37.05	10.00	47.0	197	101	–
Hori.	5925.000	PK	44.47	33.23	17.15	39.04	2.10	57.91	-37.32	-27.00	10.3	197	101	–
Vert.	5850.000	PK	45.32	33.11	17.10	39.01	2.10	58.62	-36.61	27.00	63.6	148	106	–
Vert.	5855.000	PK	45.40	33.12	17.10	39.01	2.10	58.71	-36.52	15.60	52.1	148	106	–
Vert.	5875.000	PK	45.14	33.16	17.12	39.02	2.10	58.50	-36.73	10.00	46.7	148	106	–
Vert.	5925.000	PK	45.09	33.23	17.15	39.04	2.10	58.53	-36.70	-27.00	**9.7**	148	106	–

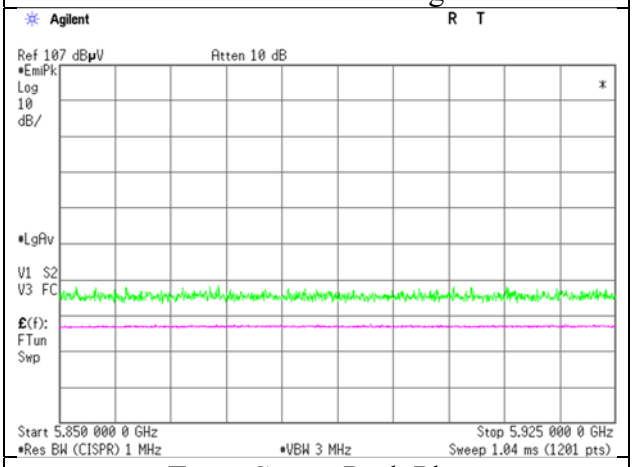
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-20 CDD 5825 MHz with BT Hopping On DH5

Horizontal

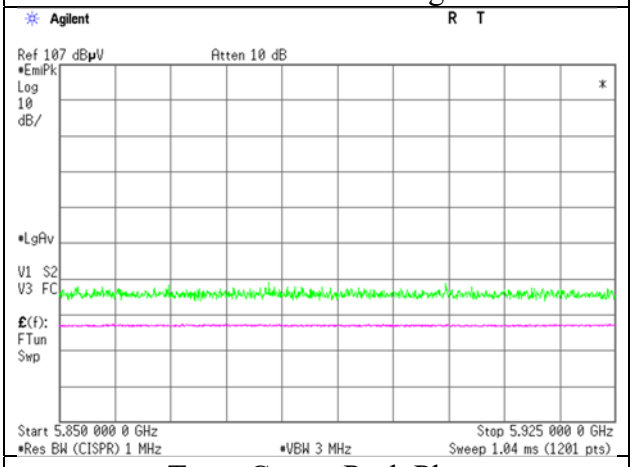
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-40 CDD 5190 MHz with BT Hopping On DH5

(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	45.97	32.34	16.66	38.63	2.10	58.44	73.9	15.4	113	123	-
Hori.	5150.000	AV	34.13	32.34	16.66	38.63	2.10	46.60	53.9	**7.3**	113	123	VBW: 1.6 kHz
Vert.	5150.000	PK	44.82	32.34	16.66	38.63	2.10	57.29	73.9	16.6	194	194	-
Vert.	5150.000	AV	34.07	32.34	16.66	38.63	2.10	46.54	53.9	**7.3**	194	194	VBW: 1.6 kHz

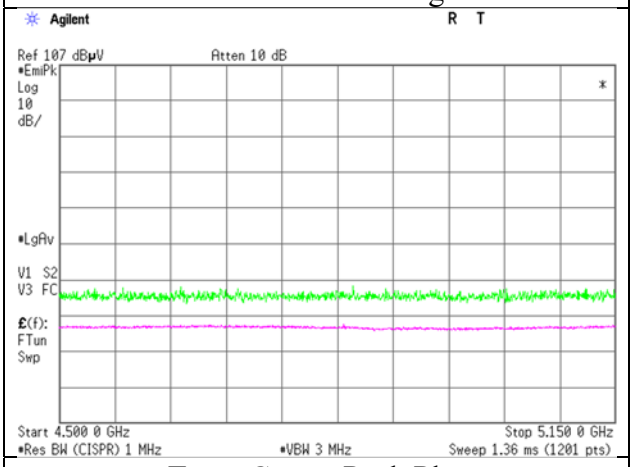
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-40 CDD 5190 MHz with BT Hopping On DH5

Horizontal

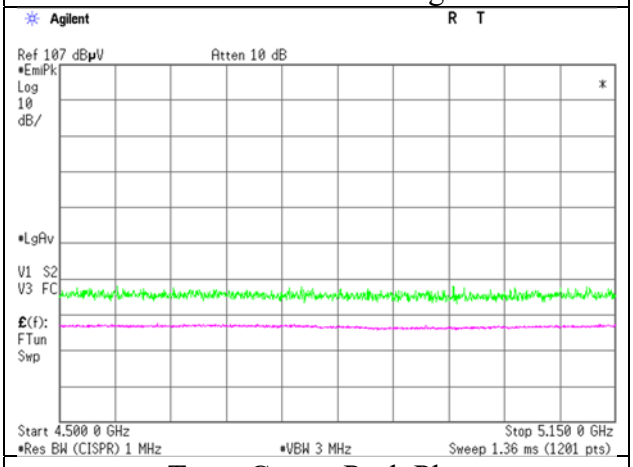
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-40 CDD 5230 MHz with BT Hopping On DH5

(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	44.72	32.06	16.78	38.74	2.10	56.92	73.9	16.9	142	123	-
Hori.	5350.000	AV	34.18	32.06	16.78	38.74	2.10	46.38	53.9	7.5	142	123	VBW: 1.6 kHz
Vert.	5350.000	PK	45.03	32.06	16.78	38.74	2.10	57.23	73.9	16.6	156	186	-
Vert.	5350.000	AV	34.41	32.06	16.78	38.74	2.10	46.61	53.9	**7.2**	156	186	VBW: 1.6 kHz

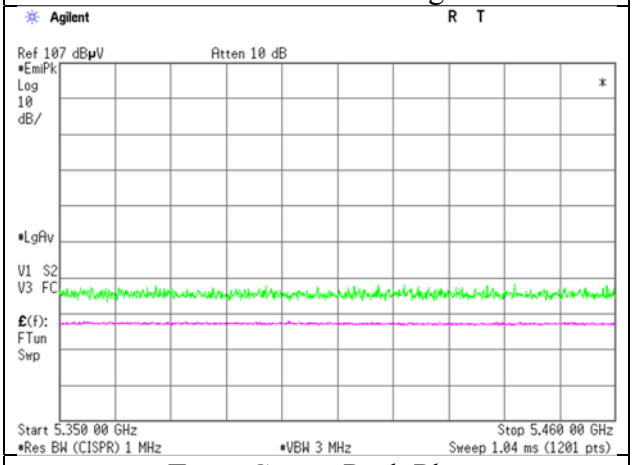
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-40 CDD 5230 MHz with BT Hopping On DH5

Horizontal

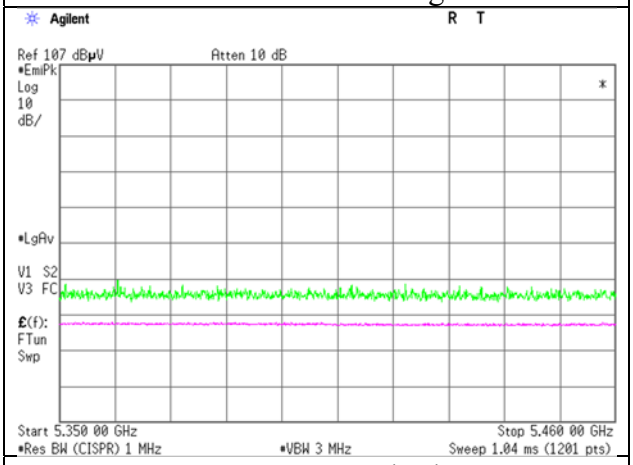
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-40 CDD 5755 MHz with BT Hopping On DH5

(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	44.67	32.64	16.96	38.91	2.10	57.46	-37.77	-27.00	**10.7**	228	103	–
Hori.	5700.000	PK	44.78	32.71	16.99	38.93	2.10	57.65	-37.58	10.00	47.5	228	103	–
Hori.	5720.000	PK	45.65	32.75	17.00	38.94	2.10	58.56	-36.67	15.60	52.2	228	103	–
Hori.	5725.000	PK	49.83	32.77	17.01	38.94	2.10	62.77	-32.46	27.00	59.4	228	103	–
Vert.	5650.000	PK	44.48	32.64	16.96	38.91	2.10	57.27	-37.96	-27.00	10.9	122	104	–
Vert.	5700.000	PK	45.09	32.71	16.99	38.93	2.10	57.96	-37.27	10.00	47.2	122	104	–
Vert.	5720.000	PK	45.72	32.75	17.00	38.94	2.10	58.63	-36.60	15.60	52.2	122	104	–
Vert.	5725.000	PK	47.46	32.77	17.01	38.94	2.10	60.40	-34.83	27.00	61.8	122	104	–

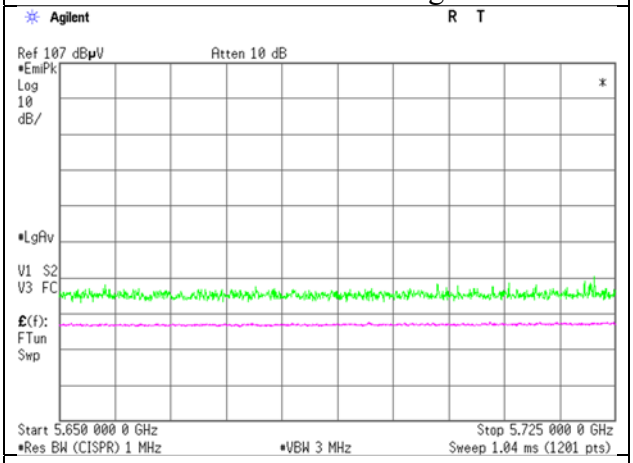
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-40 CDD 5755 MHz with BT Hopping On DH5

Horizontal

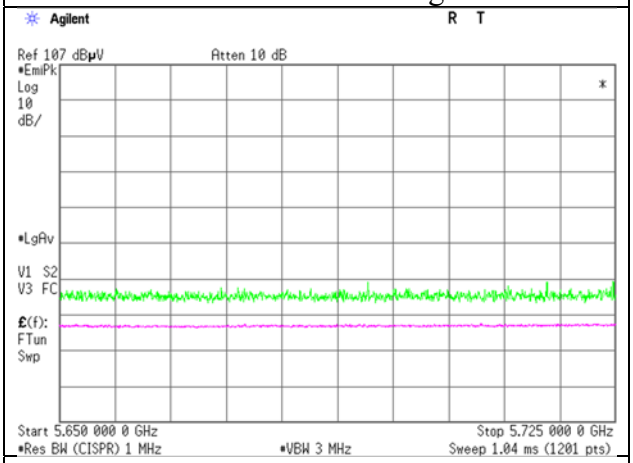
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-40 CDD 5795 MHz with BT Hopping On DH5

(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	44.60	33.11	17.10	39.01	2.10	57.90	-37.33	27.00	64.3	225	132	–
Hori.	5855.000	PK	44.92	33.12	17.10	39.01	2.10	58.23	-37.00	15.60	52.6	225	132	–
Hori.	5875.000	PK	44.68	33.16	17.12	39.02	2.10	58.04	-37.19	10.00	47.1	225	132	–
Hori.	5925.000	PK	45.00	33.23	17.15	39.04	2.10	58.44	-36.79	-27.00	**9.7**	225	132	–
Vert.	5850.000	PK	44.71	33.11	17.10	39.01	2.10	58.01	-37.22	27.00	64.2	142	106	–
Vert.	5855.000	PK	44.74	33.12	17.10	39.01	2.10	58.05	-37.18	15.60	52.7	142	106	–
Vert.	5875.000	PK	44.85	33.16	17.12	39.02	2.10	58.21	-37.02	10.00	47.0	142	106	–
Vert.	5925.000	PK	44.55	33.23	17.15	39.04	2.10	57.99	-37.24	-27.00	10.2	142	106	–

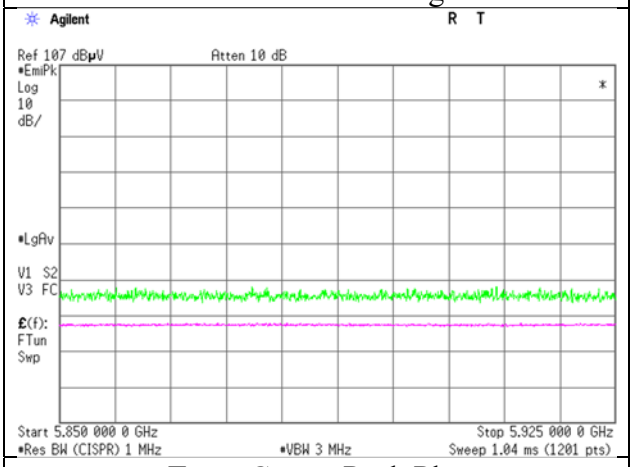
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-40 CDD 5795 MHz with BT Hopping On DH5

Horizontal

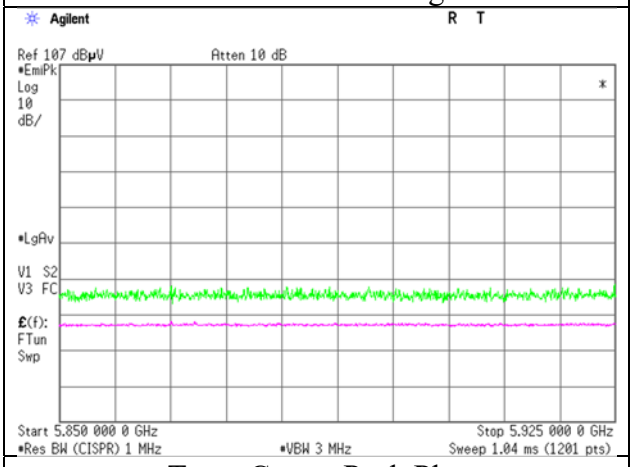
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-80 CDD 5210 MHz with BT Hopping On DH5

(above 1 GHz Inside of the restricted band)

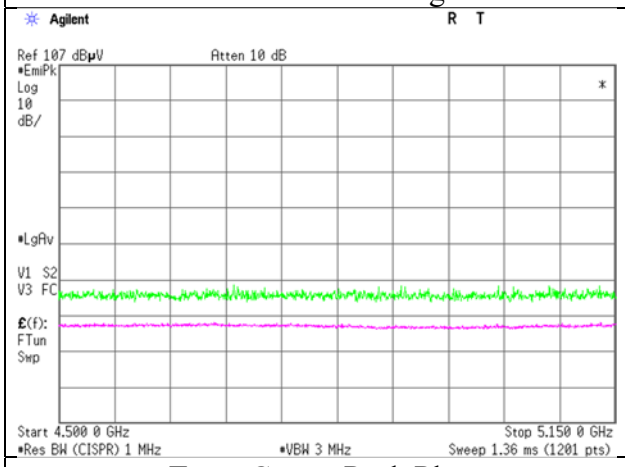
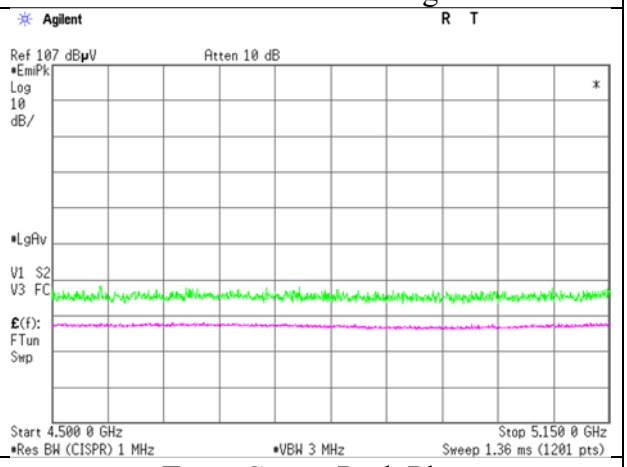
(* PK: Peak, AV: Average, QP: Quasi-Peak)

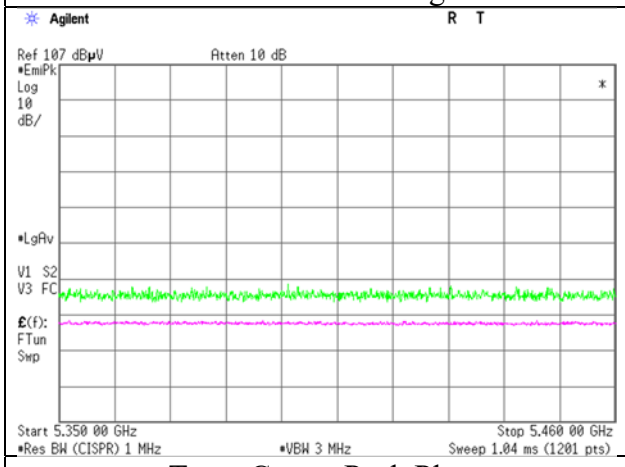
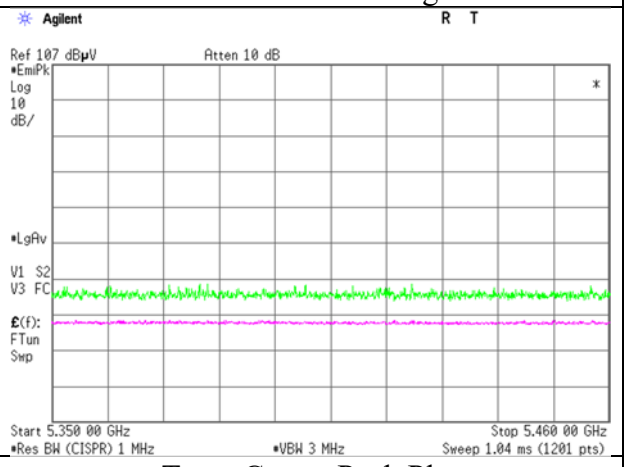
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	44.07	32.34	16.66	38.63	2.10	56.54	73.9	17.3	115	122	-
Hori.	5350.000	PK	44.78	32.06	16.78	38.74	2.10	56.98	73.9	16.9	115	122	-
Hori.	5150.000	AV	34.48	32.34	16.66	38.63	2.10	46.95	53.9	6.9	115	122	VBW: 3.3 kHz
Hori.	5350.000	AV	34.84	32.06	16.78	38.74	2.10	47.04	53.9	6.8	115	122	VBW: 3.3 kHz
Vert.	5150.000	PK	44.82	32.34	16.66	38.63	2.10	57.29	73.9	16.6	179	93	-
Vert.	5350.000	PK	44.71	32.06	16.78	38.74	2.10	56.91	73.9	16.9	179	93	-
Vert.	5150.000	AV	34.68	32.34	16.66	38.63	2.10	47.15	53.9	**6.7**	179	93	VBW: 3.3 kHz
Vert.	5350.000	AV	34.78	32.06	16.78	38.74	2.10	46.98	53.9	6.9	179	93	VBW: 3.3 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-80 CDD 5210 MHz with BT Hopping On DH5

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

* 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.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
	(1 GHz – 6.4 GHz)
Mode	Tx 11ac-80 CDD 5775 MHz with BT Hopping On DH5

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

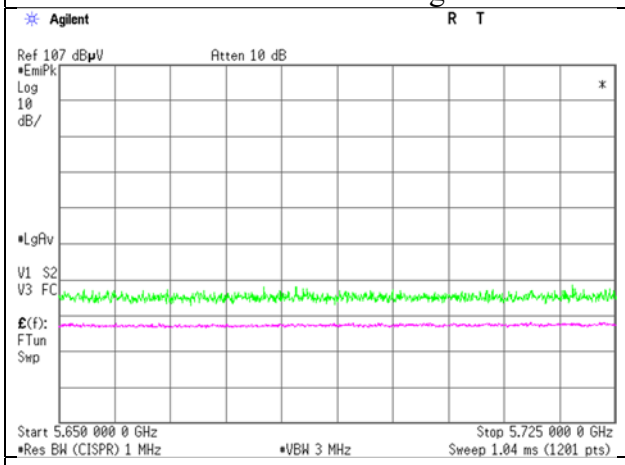
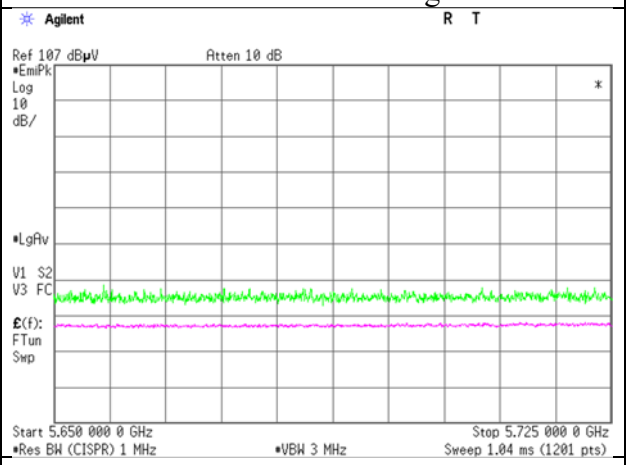
(* PK: Peak, AV: Average, QP: Quasi-Peak)

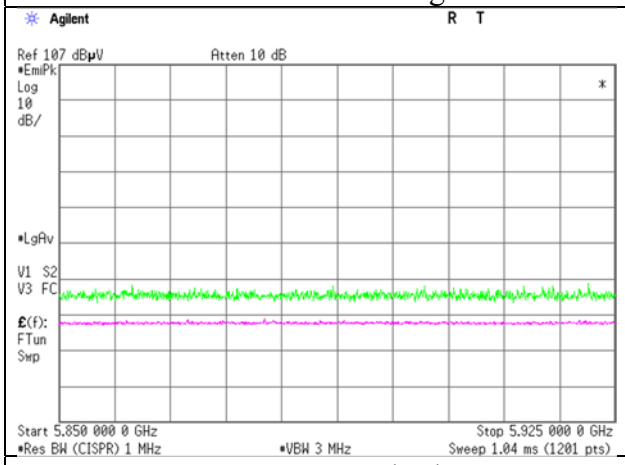
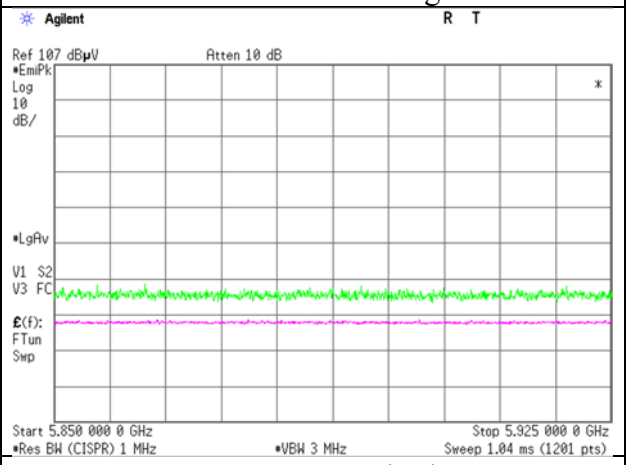
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	44.19	32.64	16.96	38.91	2.10	56.98	-38.25	-27.00	11.2	200	101	–
Hori.	5700.000	PK	44.73	32.71	16.99	38.93	2.10	57.60	-37.63	10.00	47.6	200	101	–
Hori.	5720.000	PK	44.81	32.75	17.00	38.94	2.10	57.72	-37.51	15.60	53.1	200	101	–
Hori.	5725.000	PK	44.62	32.77	17.01	38.94	2.10	57.56	-37.67	27.00	64.6	200	101	–
Hori.	5850.000	PK	45.88	33.11	17.10	39.01	2.10	59.18	-36.05	27.00	63.0	200	101	–
Hori.	5855.000	PK	44.70	33.12	17.10	39.01	2.10	58.01	-37.22	15.60	52.8	200	101	–
Hori.	5875.000	PK	44.73	33.16	17.12	39.02	2.10	58.09	-37.14	10.00	47.1	200	101	–
Hori.	5925.000	PK	44.93	33.23	17.15	39.04	2.10	58.37	-36.86	-27.00	**9.8**	200	101	–
Vert.	5650.000	PK	44.55	32.64	16.96	38.91	2.10	57.34	-37.89	-27.00	10.8	126	106	–
Vert.	5700.000	PK	44.21	32.71	16.99	38.93	2.10	57.08	-38.15	10.00	48.1	126	106	–
Vert.	5720.000	PK	44.15	32.75	17.00	38.94	2.10	57.06	-38.17	15.60	53.7	126	106	–
Vert.	5725.000	PK	44.90	32.77	17.01	38.94	2.10	57.84	-37.39	27.00	64.3	126	106	–
Vert.	5850.000	PK	44.35	33.11	17.10	39.01	2.10	57.65	-37.58	27.00	64.5	126	106	–
Vert.	5855.000	PK	44.95	33.12	17.10	39.01	2.10	58.26	-36.97	15.60	52.5	126	106	–
Vert.	5875.000	PK	44.96	33.16	17.12	39.02	2.10	58.32	-36.91	10.00	46.9	126	106	–
Vert.	5925.000	PK	44.52	33.23	17.15	39.04	2.10	57.96	-37.27	-27.00	10.2	126	106	–

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + 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 (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 3, 2020
Temperature / Humidity	25 deg. C / 70 % RH
Engineer	Yosuke Murakami
Mode	Tx 11ac-80 CDD 5775 MHz with BT Hopping On DH5

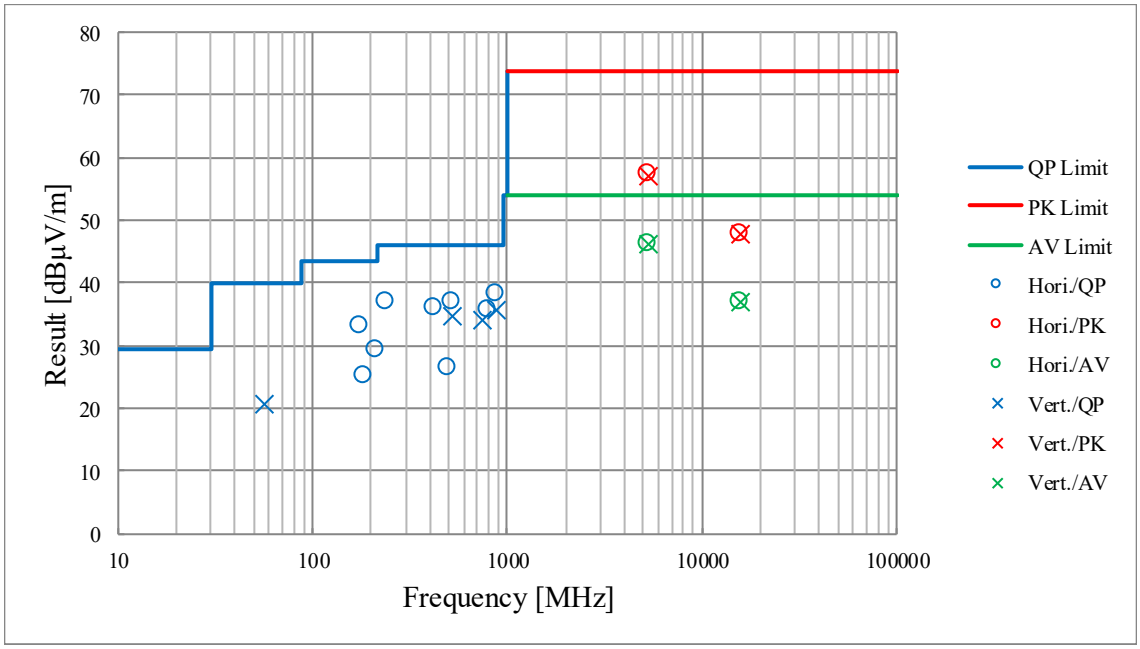
Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

* 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.	13462774S-C-R2			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	No.3	No.2	No.2	No.2
Date	August 30, 2020	September 3, 2020	September 3, 2020	September 4, 2020
Temperature / Humidity	25 deg. C / 64 % RH	25 deg. C / 70 % RH	22 deg. C / 65 % RH	24 deg. C / 67 % RH
Engineer	Yosuke Murakami	Yosuke Murakami	Kazuya Noda	Yosuke Murakami
	(30 MHz - 1000 MHz)	(1 GHz – 6.4 GHz)	(6.4 GHz - 18 GHz)	(18 GHz - 40 GHz)
Mode	Tx 11ac-20 CDD 5240 MHz with BT Hopping On DH5			



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

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	November 11, 2020
Temperature / Humidity	22 deg. C / 32 % RH
Engineer	Kazuya Noda
	(1 GHz – 10 GHz)
Mode	Tx 11ac-80 CDD 5210 MHz with 11n-20 2437 MHz BT Hopping On DH5

(above 1 GHz Inside of the restricted band)

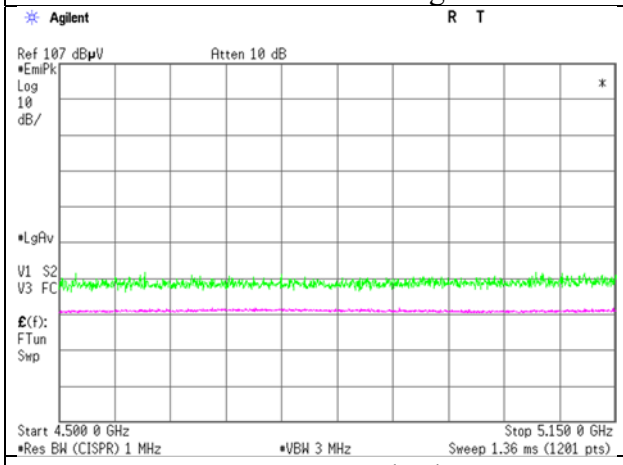
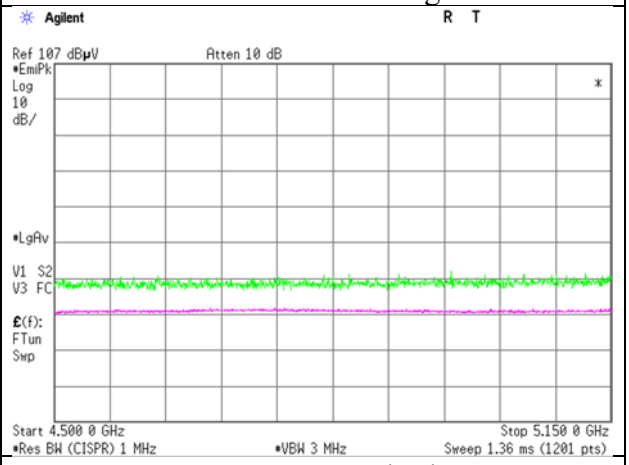
(* PK: Peak, AV: Average, QP: Quasi-Peak)

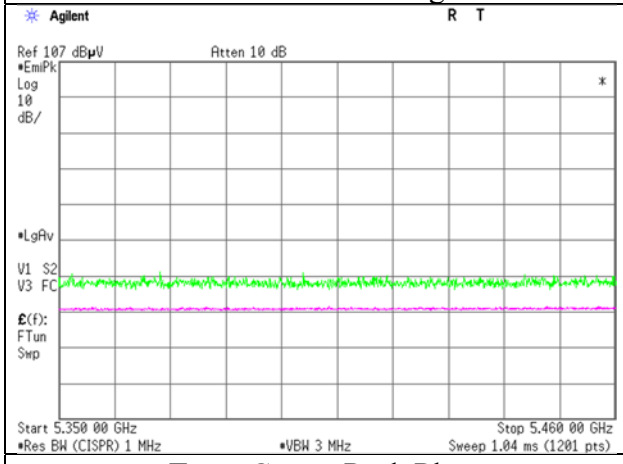
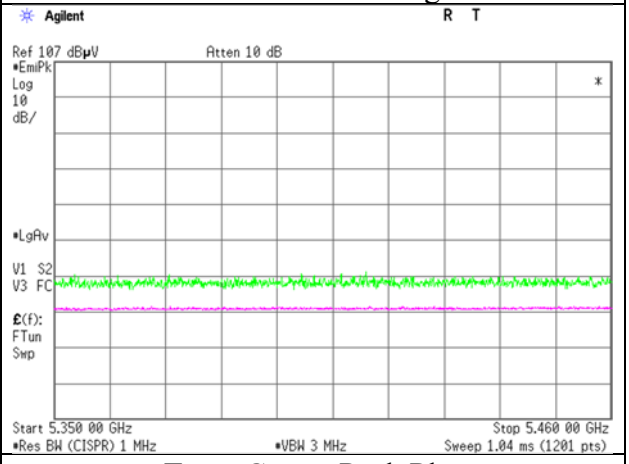
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	50.16	32.12	17.10	43.11	2.10	58.37	73.9	15.5	226	43	-
Hori.	5350.000	PK	50.59	31.83	17.26	43.33	2.10	58.45	73.9	15.4	226	43	-
Hori.	5150.000	AV	38.56	32.12	17.10	43.11	2.10	46.77	53.9	**7.1**	226	43	VBW : 3.3 kHz
Hori.	5350.000	AV	38.64	31.83	17.26	43.33	2.10	46.50	53.9	7.4	226	43	VBW : 3.3 kHz
Vert.	5150.000	PK	49.53	32.12	17.10	43.11	2.10	57.74	73.9	16.1	368	313	-
Vert.	5350.000	PK	49.63	31.83	17.26	43.33	2.10	57.49	73.9	16.4	368	313	-
Vert.	5150.000	AV	38.53	32.12	17.10	43.11	2.10	46.74	53.9	**7.1**	368	313	VBW : 3.3 kHz
Vert.	5350.000	AV	38.68	31.83	17.26	43.33	2.10	46.54	53.9	7.3	368	313	VBW : 3.3 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 (3.82 m / 3.0 m) = 2.10 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	No.2
Date	November 11, 2020
Temperature / Humidity	22 deg. C / 32 % RH
Engineer	Kazuya Noda
	(1 GHz – 10 GHz)
Mode	Tx 11ac-80 CDD 5210 MHz with 11n-20 2437 MHz BT Hopping On DH5

Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

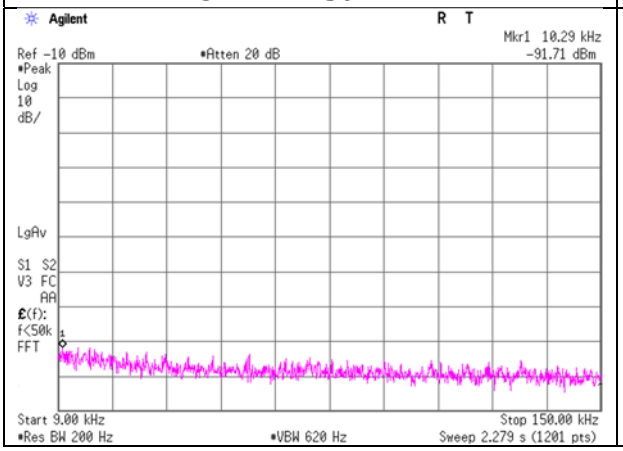
Horizontal	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	Trace Green: Peak Plot Trace Purple: Average Plot

* 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.

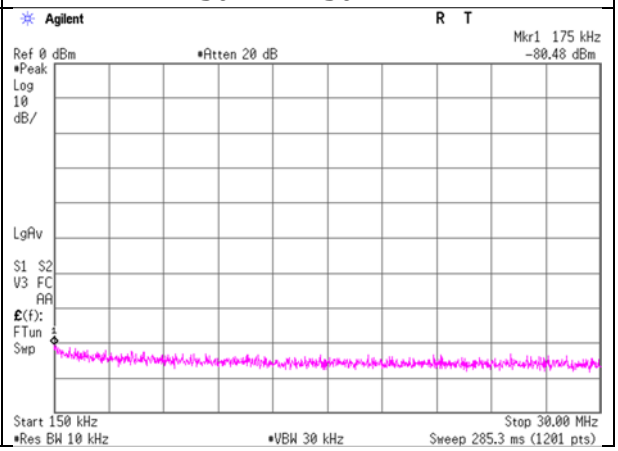
Conducted Spurious Emission

Report No.	13462774S-C-R2
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	September 9, 2020
Temperature / Humidity	24 deg. C / 57 % RH
Engineer	Shiro Kobayashi
Mode	Tx 11ac-20 CDD 5240 MHz, RF0

9 kHz - 150 kHz



150 kHz - 30 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator [dB]	Antenna Gain* [dBi]	N (Number of Output)	EIRP [dBm]	Distance [m]	Ground bounce [dB]	E (field strength) [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
10.29	-91.71	0.01	9.73	2.0	2	-77.0	300	6.0	-15.7	47.3	63.0	-
175.00	-80.48	0.01	9.73	2.0	2	-65.7	300	6.0	-4.5	22.7	27.2	-

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

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

N: Number of output

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

APPENDIX 2: Test instruments

Test equipment [1/2]

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	KTS-07	145111	Digital Tester	SANWA	PC500	7019232	2019/10/01	12
AT	SAT10-14	154591	Attenuator	Weinschel Corp.	54A-10	81595	2020/04/01	12
AT	SAT10-16	160494	Attenuator	Weinschel Corp.	54A-10	83420	2019/12/12	12
AT	SCC-G14	145175	Coaxial Cable	Suhner	SUCOFLEX 102	31600/2	2019/12/12	12
AT	SCC-G66	196947	Coaxial Cable	HUBER+SUNER	SUCOFLEX 102	803478/2	2020/03/10	12
AT	SCC-G67	196949	Coaxial Cable	HUBER+SUNER	SUCOFLEX 102	803480/2	2020/03/10	12
AT	SOS-19	175823	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/19	12
AT	SPM-07	146247	Power Meter	Keysight Technologies Inc	8990B	MY5100272	2020/05/27	12
AT	SPSS-04	146310	Power sensor	Keysight Technologies Inc	N1923A	MY5326009	2020/05/27	12
AT	SPSS-05	146311	Power sensor	Keysight Technologies Inc	N1923A	MY5349008	2020/05/27	12
AT	SRENT-15	160899	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46185516	2020/01/15	12
AT	STM-G6	146207	Terminator	JFW	50T-128	-	2019/11/05	12
AT	STS-05	146212	Digital Hitester	Hioki	3805-50	80997828	2019/10/01	12
AT,RE	SSA-02	145800	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY48250106	2020/04/16	12
RE	COTS-SEMI-5	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	-	-	-
RE	KJM-02	146432	Measure	TAJIMA	GL19-55	-	-	-
RE	SAEC-02(SVSWR)	145598	Semi-Anechoic Chamber	TDK	SAEC-02(SVSWR)	2	2020/05/07	12
RE	SAEC-03(NSA)	145565	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	2020/04/12	12
RE	SAF-03	145126	Pre Amplifier	SONOMA	310N	290213	2020/02/19	12
RE	SAF-05	145128	Pre Amplifier	Toyo Corporation	TPA0118-36	1440490	2020/06/03	12
RE	SAF-08	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2020/03/03	12
RE	SAF-10	145129	Pre Amplifier	Toyo Corporation	HAP26-40W	10	2020/03/03	12
RE	SAT10-05	145136	Attenuator(above1GHz)	Keysight Technologies Inc	8493C-010	74864	2019/11/06	12
RE	SAT6-13	167094	Attenuator	JFW	50HF-006N	-	2020/02/21	12
RE	SBA-03	145023	Biconical Antenna	Schwarzbeck Mess - Elektronik	BBA9106	91032666	2020/05/17	12
RE	SCC-C1/C2/C3/C4/C5/C10/SRSE-03	145171	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	2020/04/12	12
RE	SCC-G15	145176	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	2020/03/04	12
RE	SCC-G41	151617	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	1612S006	2020/01/08	12
RE	SCC-G50	178573	Coaxial Cable	HUBER+SUNER	SUCOFLEX_104_E	MY13407/4E	2020/03/09	12
RE	SCC-G51	178572	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	800288 /4A	2020/03/09	12
RE	SCC-G57	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2020/05/12	12
RE	SCC-G69	200009	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	575617/4	2020/07/07	12
RE	SFL-03	145377	Highpass Filter	MICRO-TRONICS	HPM50112	28	2019/11/06	12

Test equipment [2/2]

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	SHA-02	145384	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA9120D	9120D-726	2020/06/15	12
RE	SHA-04	145512	Horn Antenna	ETS LINDGREN	3160-09	00094868	2020/06/15	12
RE	SHA-06	145514	Horn Antenna	ETS LINDGREN	3160-10	00092383	2020/07/16	12
RE	SHA-09	194684	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA 9120 C	695	2020/02/17	12
RE	SJM-09	145336	Measure	PROMART	SEN1935	-	-	-
RE	SLA-07	145529	Logperiodic Antenna	Schwarzbeck Mess - Elektronik	VUSLP9111B	196	2020/05/17	12
RE	SOS-21	191838	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/12	12
RE	SOS-23	191840	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/12	12
RE	STR-08	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2019/11/22	12
RE	STS-02	145793	Digital Hitester	Hioki	3805-50	80997819	2020/04/09	12
RE	STS-03	146210	Digital Hitester	Hioki	3805-50	80997823	2019/10/01	12
RE	KSA-08	145089	Spectrum Analyzer	Keysight Technologies Inc	E4446A	MY46180525	2019/11/05	12
RE	SAEC-03(SVSWR)	145566	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	2020/05/11	12
RE	SCC-G40	166491	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	1612S005	2020/01/08	12
RE	SCC-G43	156380	Coaxial Cable	HUBER+SUNER	SUCOFLEX_104_E	SN MY 13406/4E	2020/06/04	12
RE	SCC-G58	183047	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	800287/4A	2020/06/04	12
RE	SFL-02	145301	Highpass Filter	MICRO-TRONICS	HPM50111	51	2020/10/05	12
RE	SHA-03	145501	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA9120D	9120D-739	2020/06/15	12

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

The expiration date of the calibration is the end of the expired month.
As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

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

Test item:

RE: Radiated Emission
AT: Antenna Terminal Conducted test