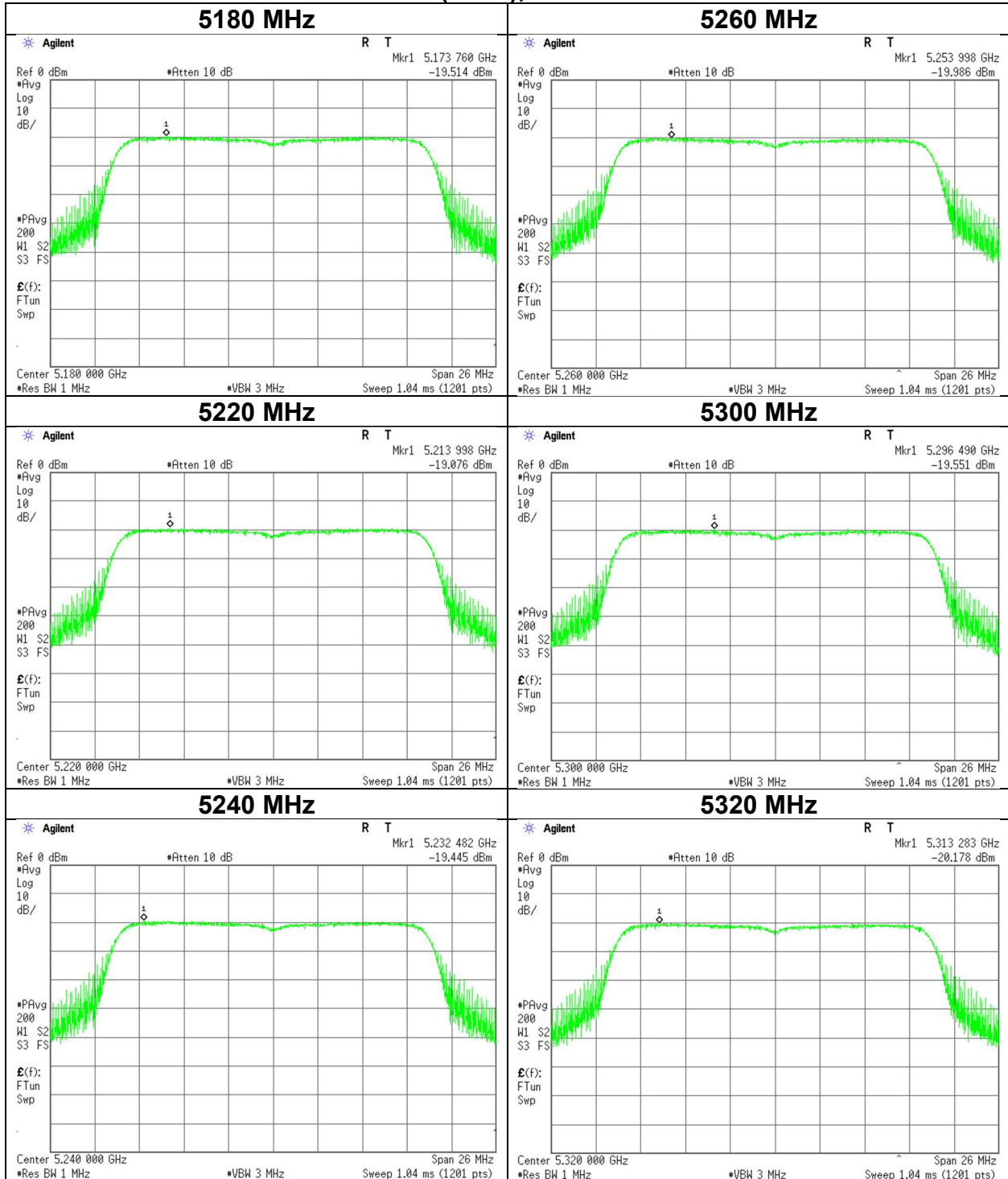


Maximum Power Spectral Density

Test place
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab. No.5 Shielded Room
November 17, 2023
25 deg. C / 51 % RH
Kouki Yamada
Tx 11n-20 (SISO)

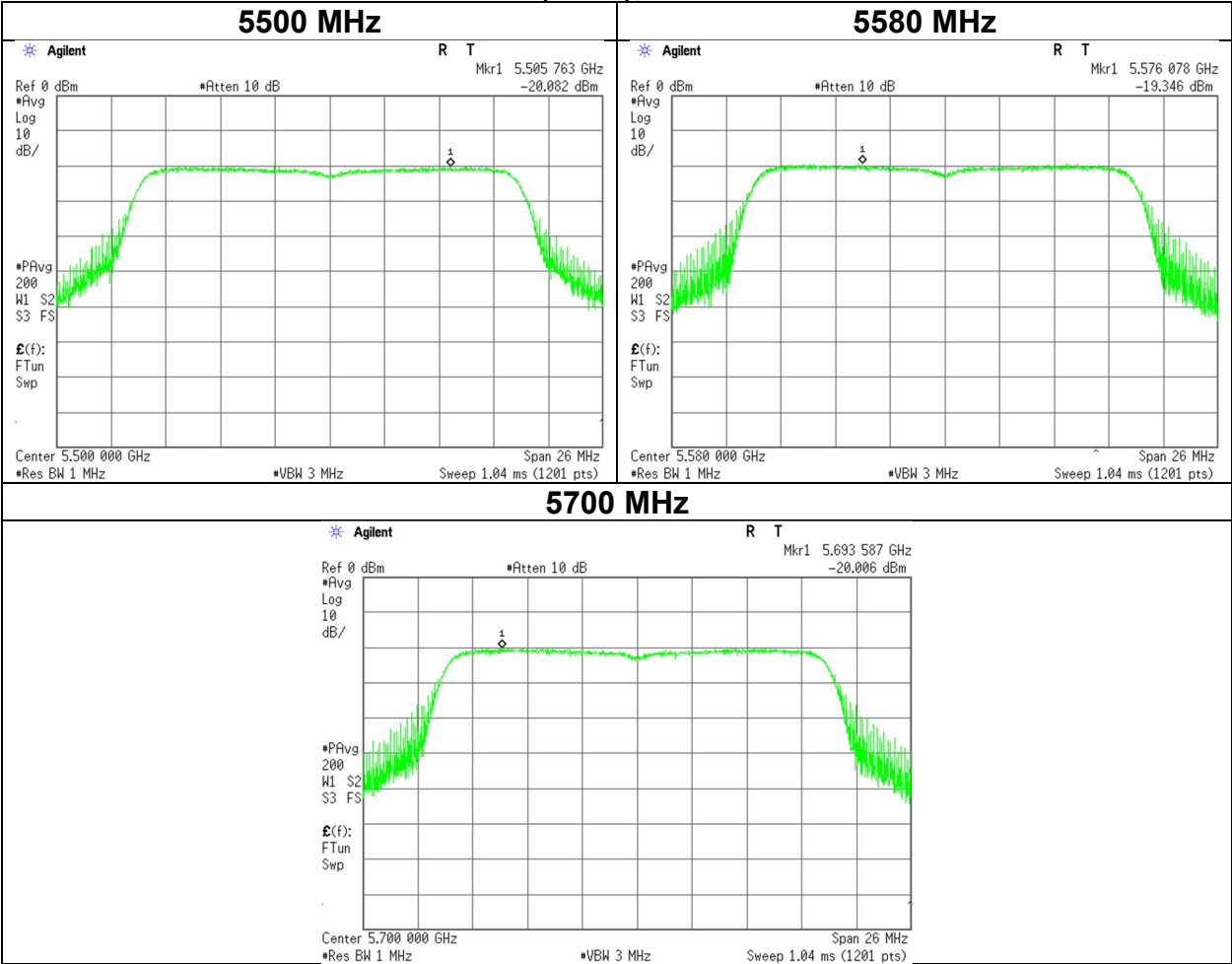
11n-20(SISO), Antenna 1



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	November 17, 2023
Temperature / Humidity	25 deg. C / 51 % RH
Engineer	Kouki Yamada
Mode	Tx 11n-20 (SISO)

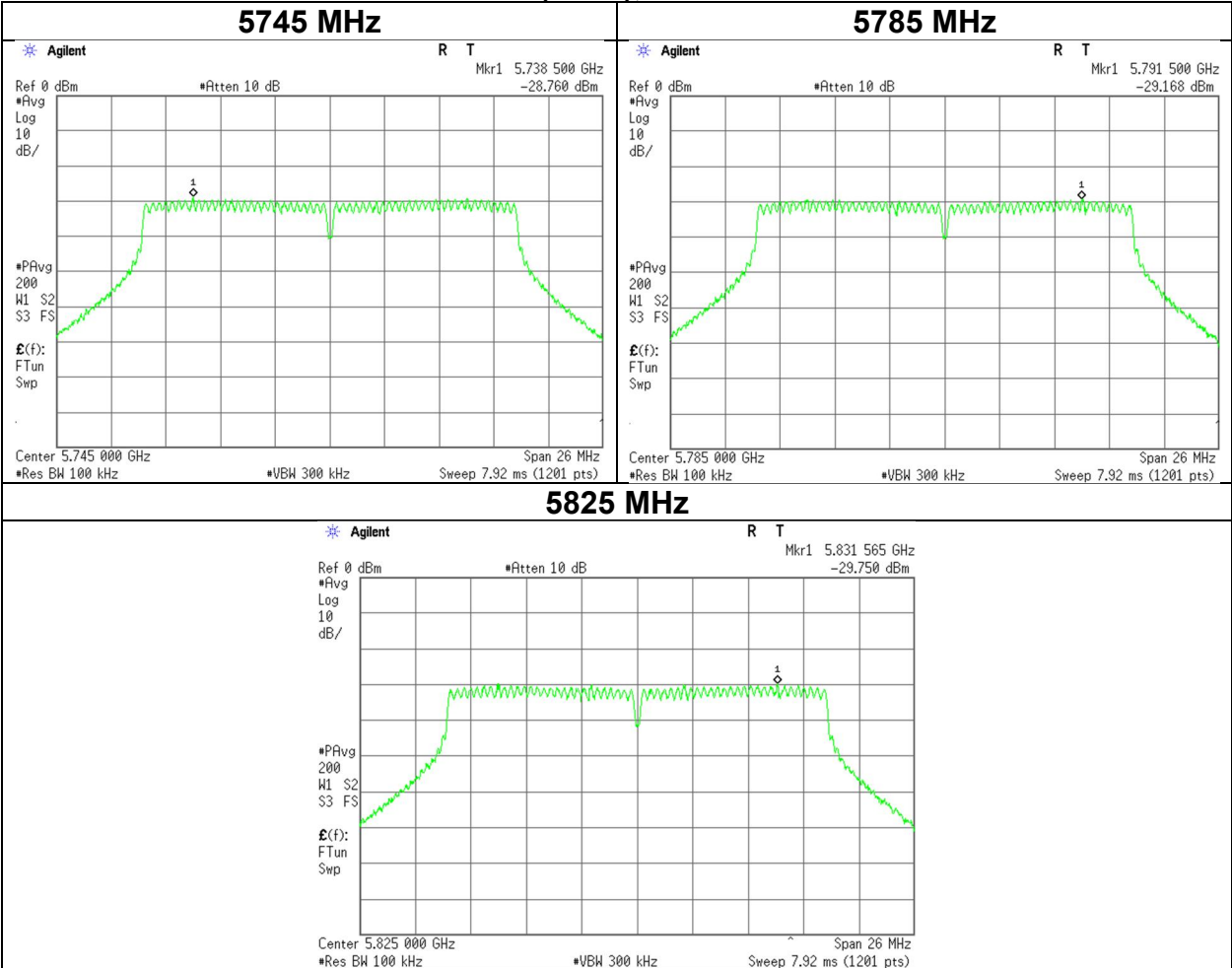
11n-20 (SISO), Antenna 1



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	November 17, 2023
Temperature / Humidity	25 deg. C / 51 % RH
Engineer	Kouki Yamada
Mode	Tx 11n-20 (SISO)

11n-20 (SISO), Antenna 1

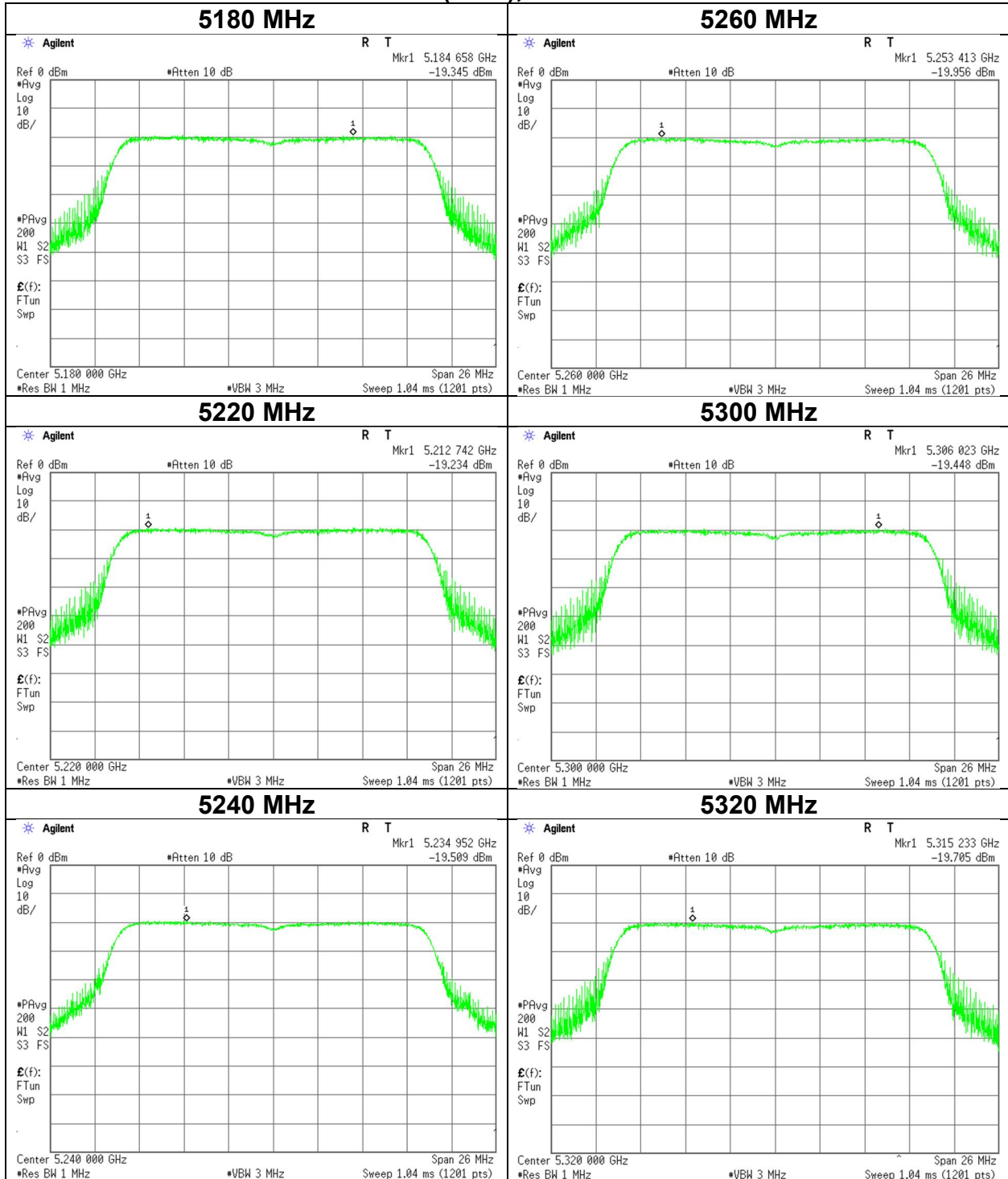


Maximum Power Spectral Density

Test place
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab. No.5 Shielded Room
November 17, 2023
25 deg. C / 51 % RH
Kouki Yamada
Tx 11n-20 (SDM)

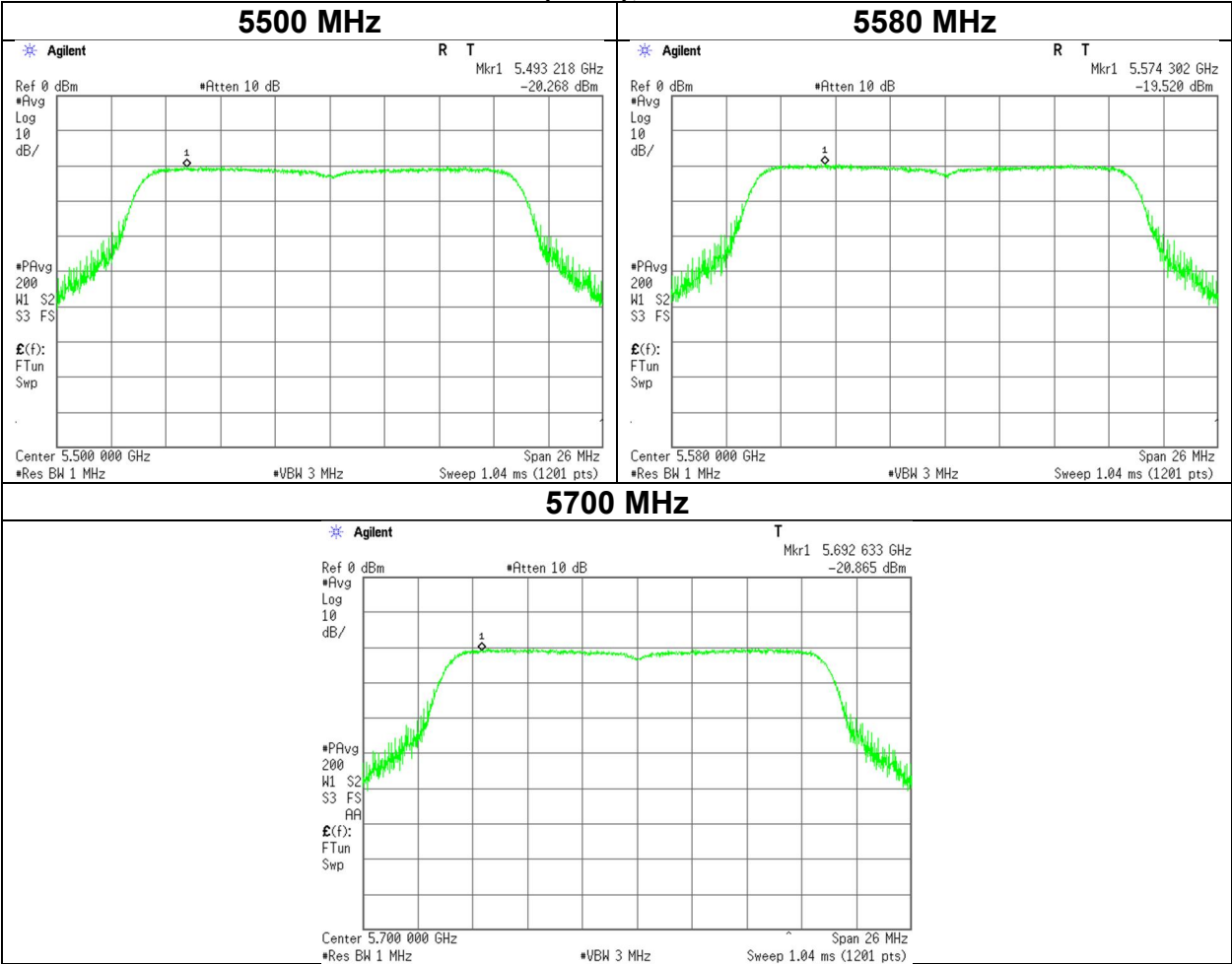
11n-20(SDM), Antenna 1



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	November 17, 2023
Temperature / Humidity	25 deg. C / 51 % RH
Engineer	Kouki Yamada
Mode	Tx 11n-20 (SDM)

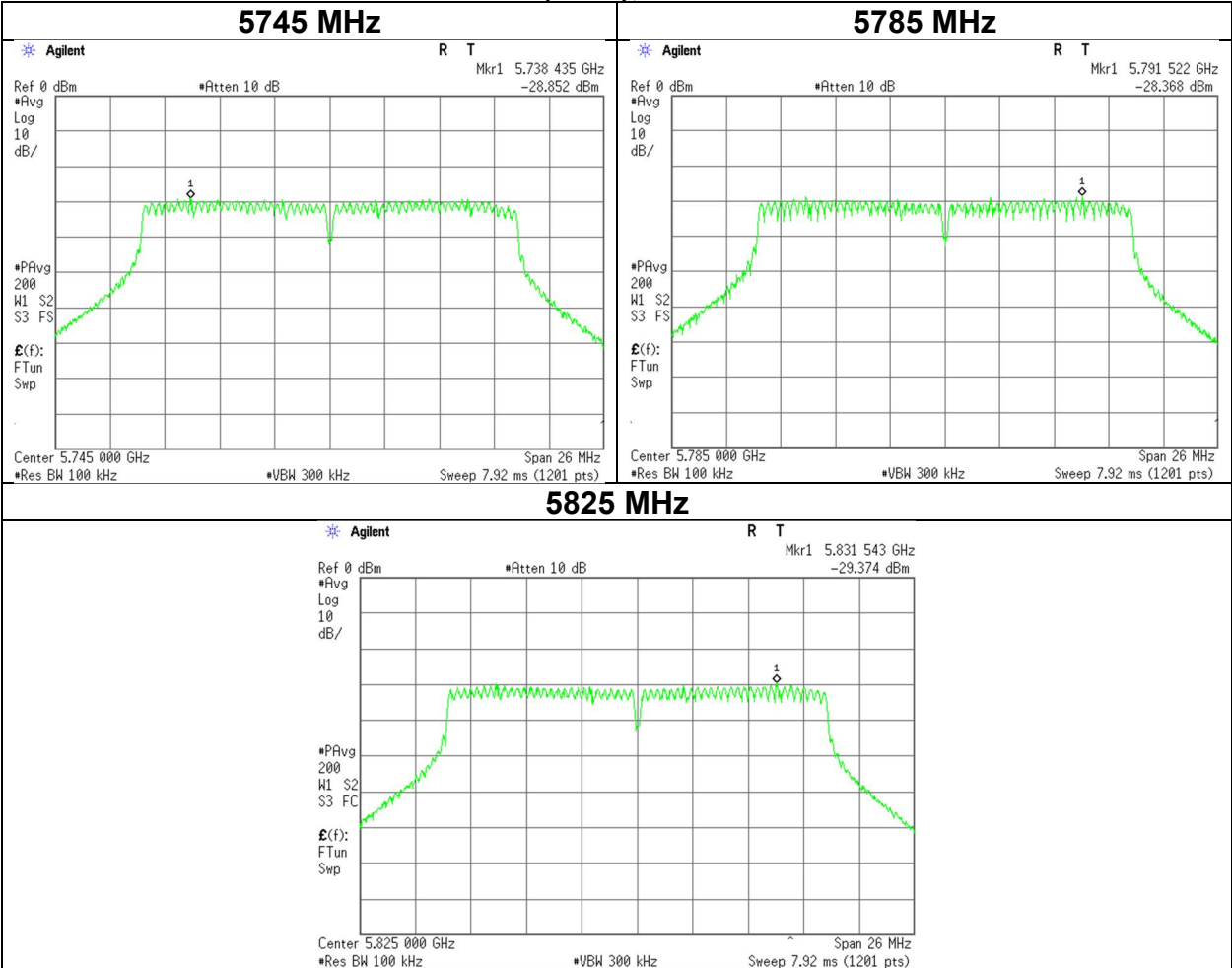
11n-20 (SDM), Antenna 1



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	November 17, 2023
Temperature / Humidity	25 deg. C / 51 % RH
Engineer	Kouki Yamada
Mode	Tx 11n-20 (SDM)

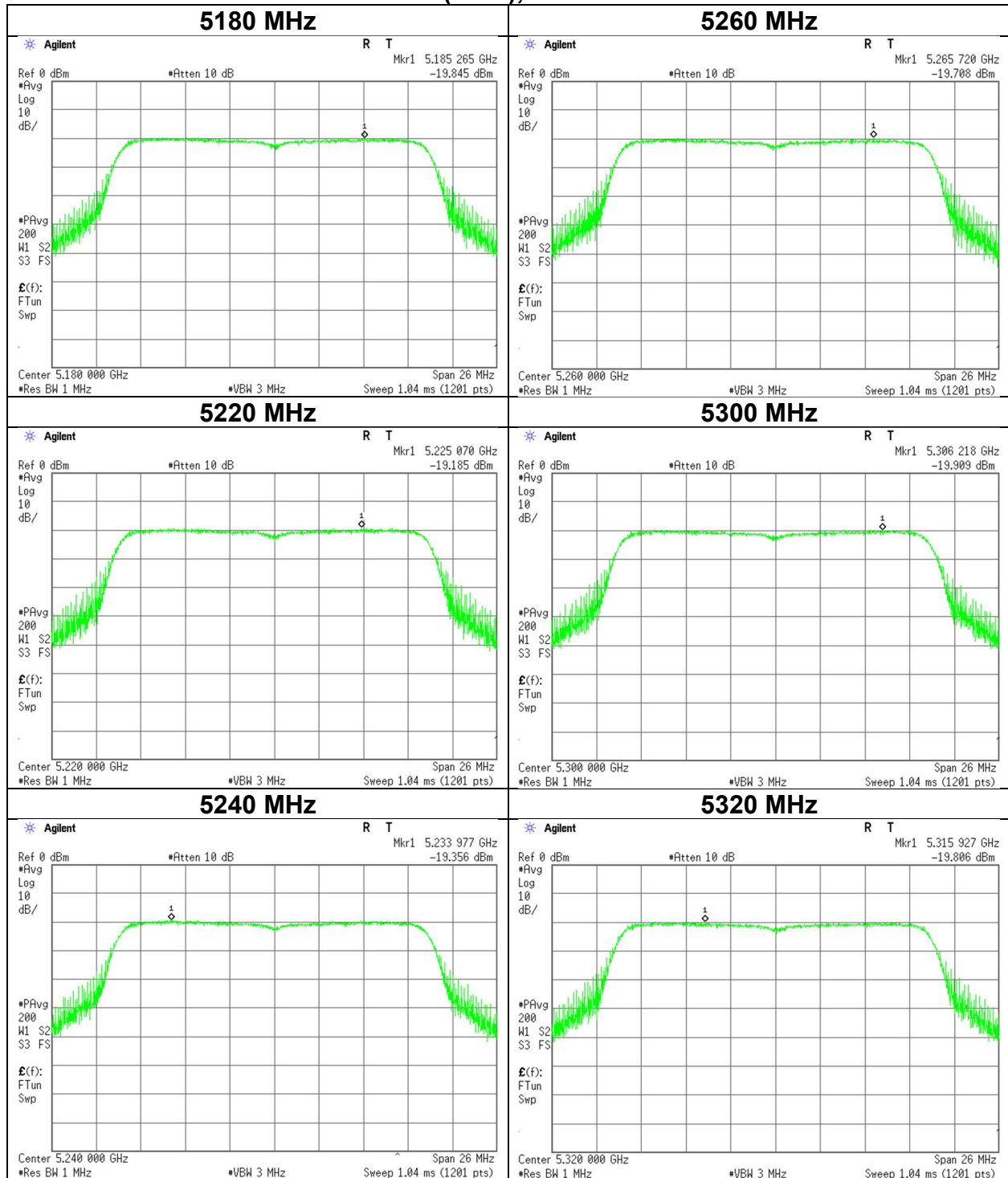
11n-20 (SDM), Antenna 1



Maximum Power Spectral Density

Shonan EMC Lab. No.5 Shielded Room
November 17, 2023
25 deg. C / 51 % RH
Kouki Yamada
Tx 11n-20 (SDM)

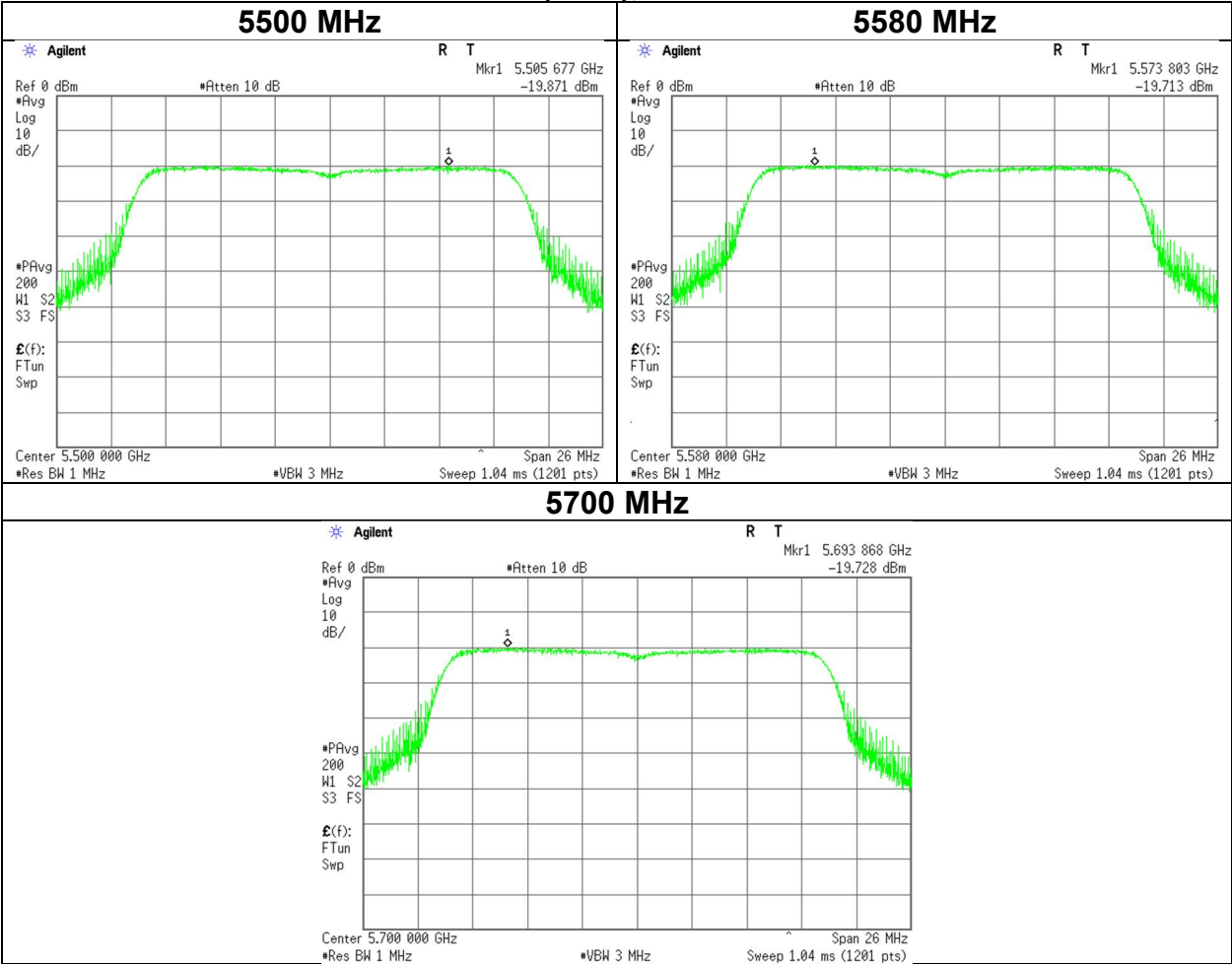
11n-20(SDM), Antenna 2



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	November 17, 2023
Temperature / Humidity	25 deg. C / 51 % RH
Engineer	Kouki Yamada
Mode	Tx 11n-20 (SDM)

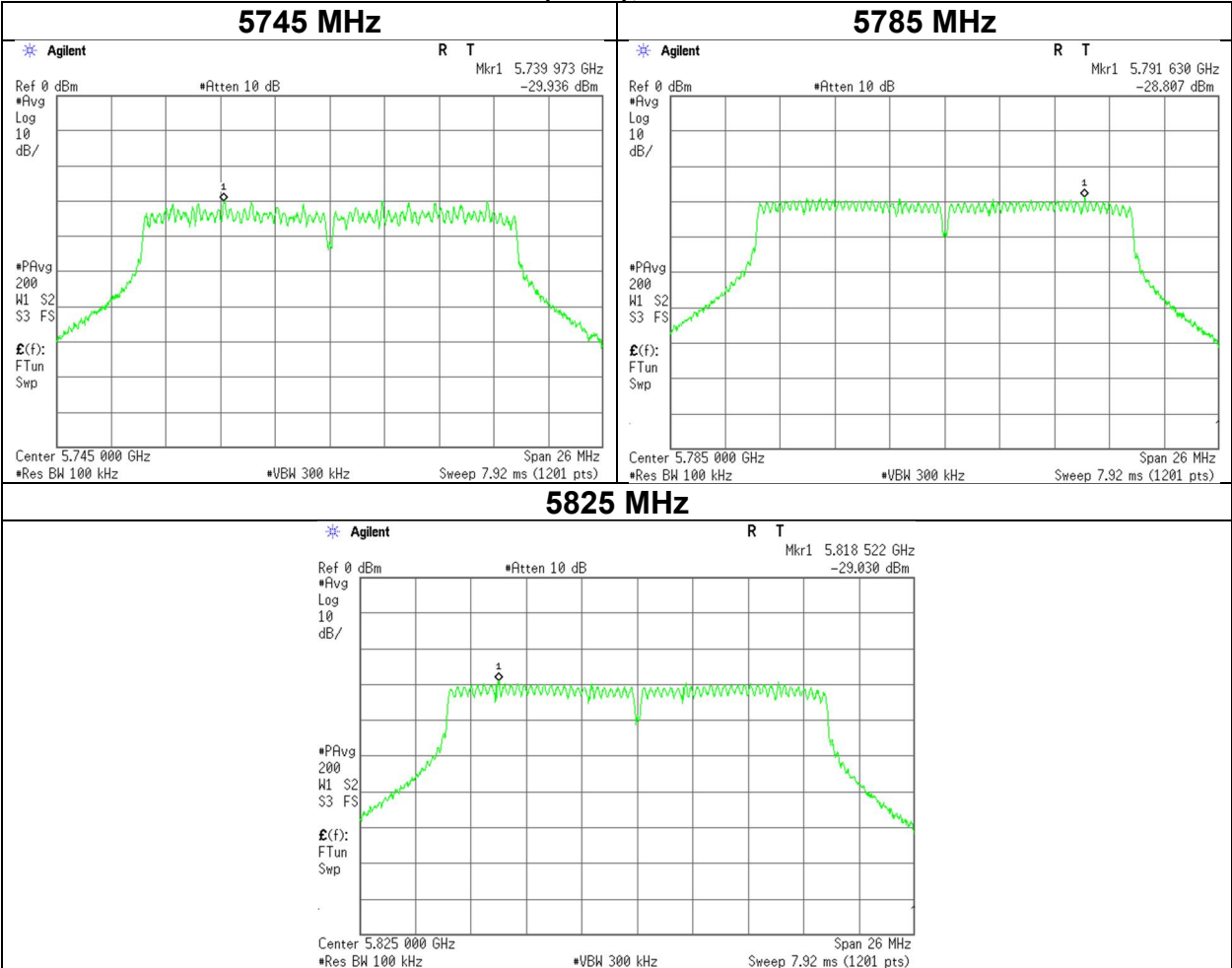
11n-20 (SDM), Antenna 2



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	November 17, 2023
Temperature / Humidity	25 deg. C / 51 % RH
Engineer	Kouki Yamada
Mode	Tx 11n-20 (SDM)

11n-20 (SDM), Antenna 2



Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz) Tx 11a 5180 MHz	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)

(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	51.81	32.16	16.78	43.07	1.83	59.51	73.9	14.3	138	106	-
Hori.	15540.000	PK	47.26	39.48	11.88	40.53	-9.54	48.55	73.9	25.3	150	0	-
Hori.	5150.000	AV	37.58	32.16	16.78	43.07	1.83	45.28	53.9	8.6	138	106	VBW:1 kHz
Hori.	15540.000	AV	33.08	39.48	11.88	40.53	-9.54	34.37	53.9	19.5	150	0	VBW:1 kHz, Floor noise
Vert.	5150.000	PK	50.86	32.16	16.78	43.07	1.83	58.56	73.9	15.3	210	168	-
Vert.	15540.000	PK	47.30	39.48	11.88	40.53	-9.54	48.59	73.9	25.3	150	0	-
Vert.	5150.000	AV	37.43	32.16	16.78	43.07	1.83	45.13	53.9	8.7	210	168	VBW:1 kHz
Vert.	15540.000	AV	33.19	39.48	11.88	40.53	-9.54	34.48	53.9	19.4	150	0	VBW:1 kHz, Floor noise

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10360.000	PK	49.58	36.36	9.56	42.84	-9.54	43.12	-52.11	-27.0	25.1	150	0	-
Vert.	10360.000	PK	49.67	36.36	9.56	42.84	-9.54	43.21	-52.02	-27.0	25.0	150	0	-

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

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

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

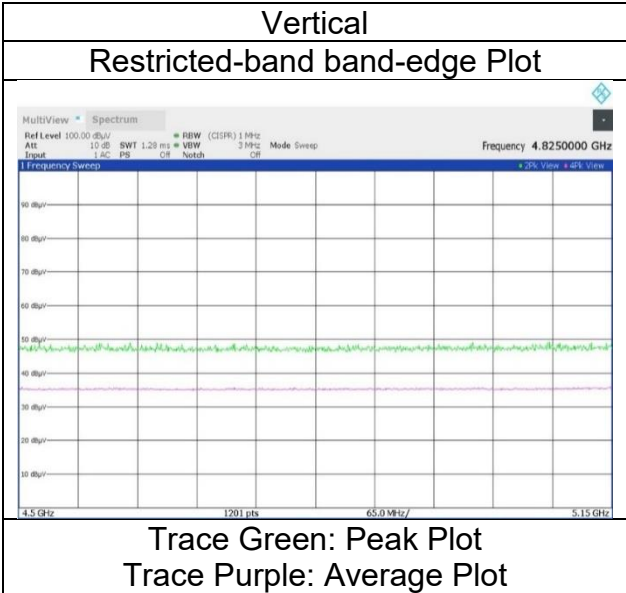
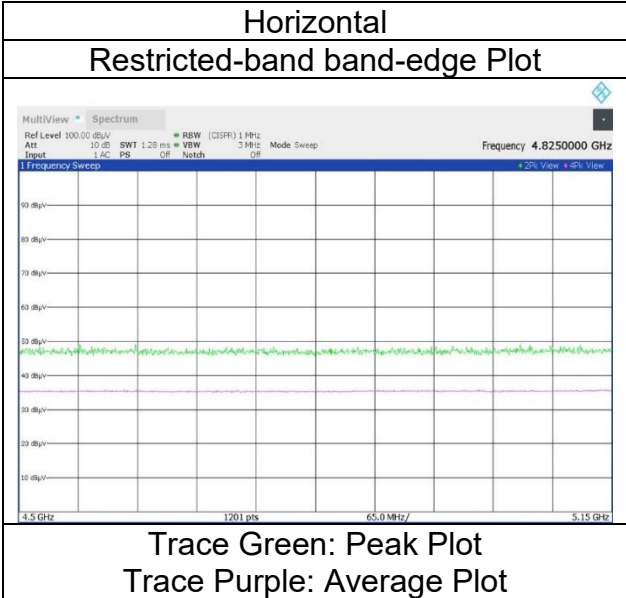
Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 11, 2023
22 deg.C, 44 %RH
Hiromasa Sato
Tx 11a 5180 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5240 MHz			

(above 1 GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15720.000	PK	47.23	39.63	11.82	40.56	-9.54	48.58	73.9	25.3	150	0	-
Hori.	15720.000	AV	33.39	39.63	11.82	40.56	-9.54	34.74	53.9	19.1	150	0	VBW:1 kHz, Floor noise
Vert.	15720.000	PK	46.97	39.63	11.82	40.56	-9.54	48.32	73.9	25.5	150	0	-
Vert.	15720.000	AV	33.45	39.63	11.82	40.56	-9.54	34.80	53.9	19.1	150	0	VBW:1 kHz, Floor noise

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10480.000	PK	49.06	36.51	9.62	42.84	-9.54	42.81	-52.42	-27.0	25.4	150	0	-
Vert.	10480.000	PK	49.02	36.51	9.62	42.84	-9.54	42.77	-52.46	-27.0	25.4	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5320 MHz			

(above 1 GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	51.92	31.98	16.91	43.30	1.83	59.34	73.9	14.5	104	105	-
Hori.	10640.000	PK	48.59	37.12	9.68	42.86	-9.54	42.99	73.9	30.9	150	0	-
Hori.	15960.000	PK	47.21	40.08	11.74	40.60	-9.54	48.89	73.9	25.0	150	0	-
Hori.	5350.000	AV	37.57	31.98	16.91	43.30	1.83	44.99	53.9	8.9	104	105	VBW:1 kHz
Hori.	10640.000	AV	35.11	37.12	9.68	42.86	-9.54	29.51	53.9	24.3	150	0	VBW:1 kHz, Floor noise
Hori.	15960.000	AV	33.30	40.08	11.74	40.60	-9.54	34.98	53.9	18.9	150	0	VBW:1 kHz, Floor noise
Vert.	5350.000	PK	51.21	31.98	16.91	43.30	1.83	58.63	73.9	15.2	204	167	-
Vert.	10640.000	PK	48.57	37.12	9.68	42.86	-9.54	42.97	73.9	30.9	150	0	-
Vert.	15960.000	PK	47.65	40.08	11.74	40.60	-9.54	49.33	73.9	24.5	150	0	-
Vert.	5350.000	AV	37.58	31.98	16.91	43.30	1.83	45.00	53.9	8.9	204	167	VBW:1 kHz
Vert.	10640.000	AV	35.19	37.12	9.68	42.86	-9.54	29.59	53.9	24.3	150	0	VBW:1 kHz, Floor noise
Vert.	15960.000	AV	33.16	40.08	11.74	40.60	-9.54	34.84	53.9	19.0	150	0	VBW:1 kHz, Floor noise

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).

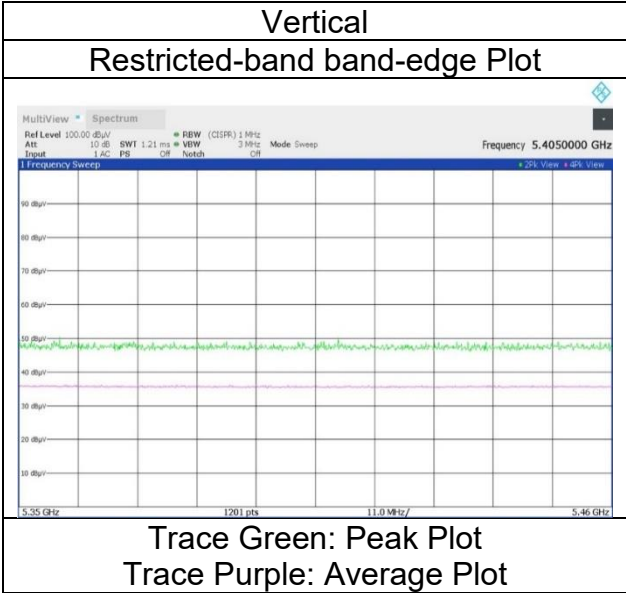
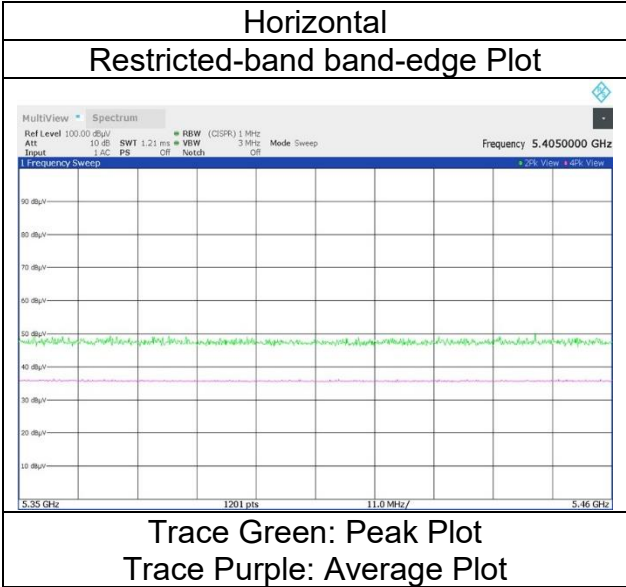
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 11, 2023
22 deg.C, 44 %RH
Hiromasa Sato
Tx 11a 5320 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz) Tx 11a 5500 MHz	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)

(above 1 GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	51.61	32.24	16.98	43.42	1.83	59.24	73.9	14.6	105	91	-
Hori.	11000.000	PK	49.08	37.58	9.81	42.90	-9.54	44.03	73.9	29.8	150	0	-
Hori.	5460.000	AV	37.88	32.24	16.98	43.42	1.83	45.51	53.9	8.3	105	91	VBW:1 kHz
Hori.	11000.000	AV	35.61	37.58	9.81	42.90	-9.54	30.56	53.9	23.3	150	0	VBW:1 kHz, Floor noise
Vert.	5460.000	PK	51.79	32.24	16.98	43.42	1.83	59.42	73.9	14.4	233	165	-
Vert.	11000.000	PK	48.93	37.58	9.81	42.90	-9.54	43.88	73.9	30.0	150	0	-
Vert.	5460.000	AV	38.03	32.24	16.98	43.42	1.83	45.66	53.9	8.2	233	165	VBW:1 kHz
Vert.	11000.000	AV	35.57	37.58	9.81	42.90	-9.54	30.52	53.9	23.3	150	0	VBW:1 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 dB

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	50.62	32.25	16.99	43.44	1.83	58.25	-36.98	-27.0	9.9	105	91	-
Hori.	16500.000	PK	47.32	40.19	12.25	40.65	-9.54	49.57	-45.66	-27.0	18.6	150	0	-
Vert.	5470.000	PK	51.17	32.25	16.99	43.44	1.83	58.80	-36.43	-27.0	9.4	233	165	-
Vert.	16500.000	PK	47.36	40.19	12.25	40.65	-9.54	49.61	-45.62	-27.0	18.6	150	0	-

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

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

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

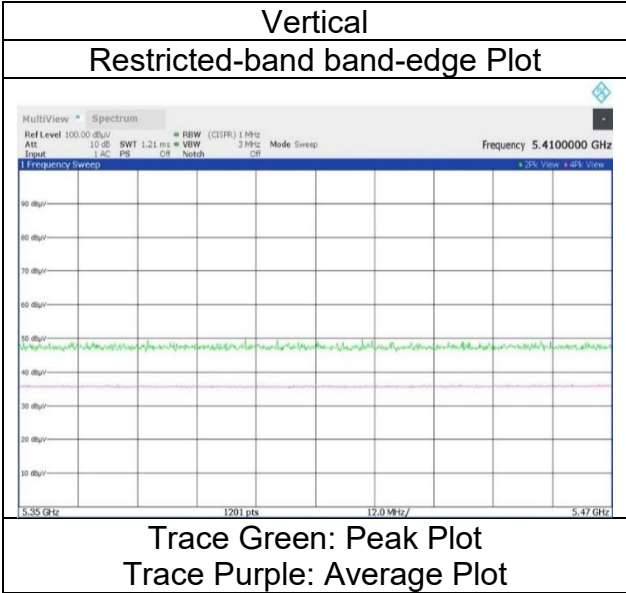
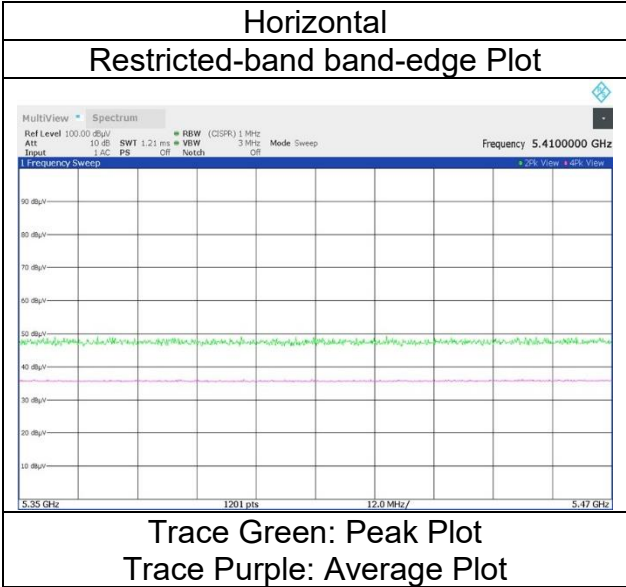
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 11, 2023
22 deg.C, 44 %RH
Hiromasa Sato
Tx 11a 5500 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5580 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.	11160.000	PK	48.18	37.72	9.89	42.80	-9.54	43.45	73.9	30.4	150	0	-
Hori.	11160.000	AV	34.86	37.72	9.89	42.80	-9.54	30.13	53.9	23.7	150	0	VBW:1 kHz, Floor noise
Vert.	11160.000	PK	48.90	37.72	9.89	42.80	-9.54	44.17	73.9	29.7	150	0	-
Vert.	11160.000	AV	34.70	37.72	9.89	42.80	-9.54	29.97	53.9	23.9	150	0	VBW:1 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 dB

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16740.000	PK	47.14	39.61	12.36	40.57	-9.54	49.00	-46.23	-27.0	19.2	150	0	-
Vert.	16740.000	PK	47.06	39.61	12.36	40.57	-9.54	48.92	-46.31	-27.0	19.3	150	0	-

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

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (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 (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5700 MHz			

(above 1 GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11400.000	PK	49.33	38.26	10.01	42.64	-9.54	45.42	73.9	28.4	150	0	-
Hori.	11400.000	AV	35.25	38.26	10.01	42.64	-9.54	31.34	53.9	22.5	150	0	VBW:1 kHz, Floor noise
Vert.	11400.000	PK	49.15	38.26	10.01	42.64	-9.54	45.24	73.9	28.6	150	0	-
Vert.	11400.000	AV	35.21	38.26	10.01	42.64	-9.54	31.30	53.9	22.6	150	0	VBW:1 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 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.	5725.000	PK	50.98	32.63	17.14	43.42	1.83	59.16	-36.07	-27.0	9.0	102	100	-
Hori.	17100.000	PK	46.81	39.85	12.57	40.42	-9.54	49.27	-45.96	-27.0	18.9	150	0	-
Vert.	5725.000	PK	51.45	32.63	17.14	43.42	1.83	59.63	-35.60	-27.0	8.5	193	201	-
Vert.	17100.000	PK	47.03	39.85	12.57	40.42	-9.54	49.49	-45.74	-27.0	18.7	150	0	-

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

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

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

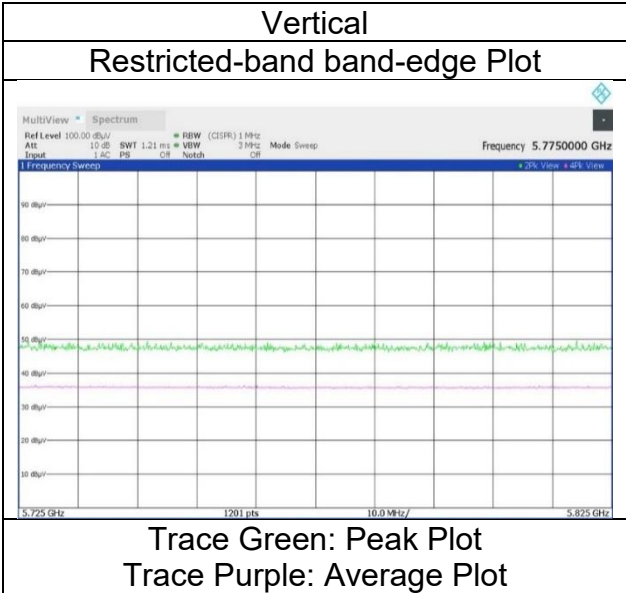
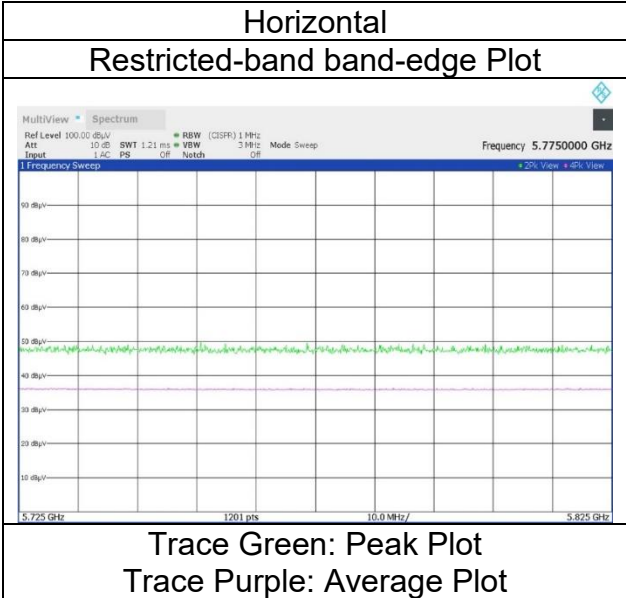
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 11, 2023
22 deg.C, 44 %RH
Hiromasa Sato
Tx 11a 5700 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 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	48.44	38.32	10.06	42.59	-9.54	44.69	73.9	29.2	150	0	-
Hori.	11490.000	AV	35.11	38.32	10.06	42.59	-9.54	31.36	53.9	22.5	150	0	VBW:1 kHz, Floor noise
Vert.	11490.000	PK	48.80	38.32	10.06	42.59	-9.54	45.05	73.9	28.8	150	0	-
Vert.	11490.000	AV	34.87	38.32	10.06	42.59	-9.54	31.12	53.9	22.7	150	0	VBW:1 kHz, Floor noise

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	51.21	32.44	17.10	43.44	1.83	59.14	-36.09	-27.0	9.0	104	99	-
Hori.	5700.000	PK	51.08	32.56	17.12	43.43	1.83	59.16	-36.07	10.0	46.0	104	99	-
Hori.	5720.000	PK	51.04	32.61	17.13	43.42	1.83	59.19	-36.04	15.6	51.6	104	99	-
Hori.	5725.000	PK	52.74	32.63	17.14	43.42	1.83	60.92	-34.31	27.0	61.3	104	99	-
Hori.	17235.000	PK	46.78	40.07	12.66	40.33	-9.54	49.64	-45.59	-27.0	18.5	150	0	-
Vert.	5650.000	PK	50.57	32.44	17.10	43.44	1.83	58.50	-36.73	-27.0	9.7	197	161	-
Vert.	5700.000	PK	51.93	32.56	17.12	43.43	1.83	60.01	-35.22	10.0	45.2	197	161	-
Vert.	5720.000	PK	51.92	32.61	17.13	43.42	1.83	60.07	-35.16	15.6	50.7	197	161	-
Vert.	5725.000	PK	52.38	32.63	17.14	43.42	1.83	60.56	-34.67	27.0	61.6	197	161	-
Vert.	17235.000	PK	46.36	40.07	12.66	40.33	-9.54	49.22	-46.01	-27.0	19.0	150	0	-

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

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

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

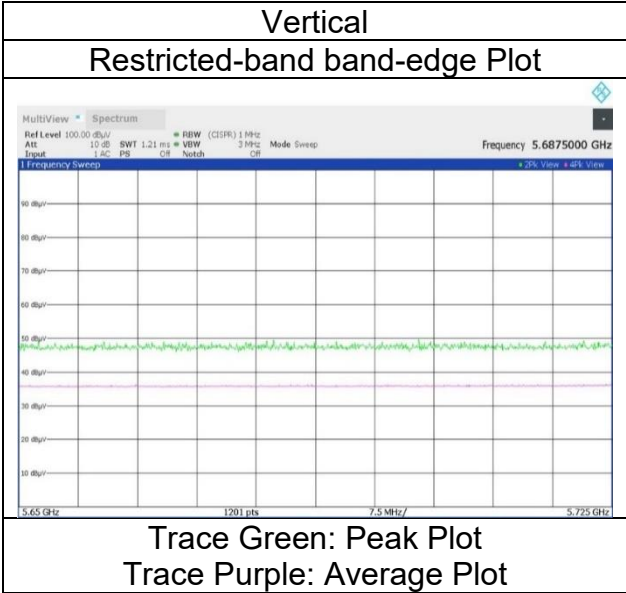
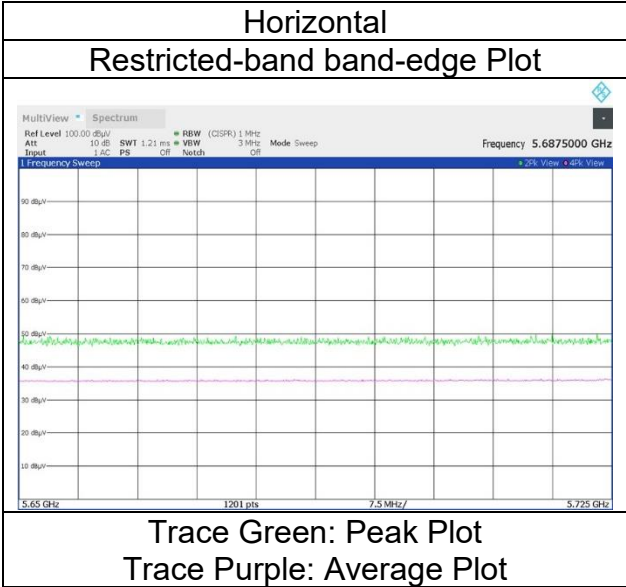
Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 11, 2023
22 deg.C, 44 %RH
Hiromasa Sato
Tx 11a 5745 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 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	48.33	38.33	10.10	42.55	-9.54	44.67	73.9	29.2	150	0	-
Hori.	11570.000	AV	34.84	38.33	10.10	42.55	-9.54	31.18	53.9	22.7	150	0	VBW:1 kHz, Floor noise
Vert.	11570.000	PK	48.70	38.33	10.10	42.55	-9.54	45.04	73.9	28.8	150	0	-
Vert.	11570.000	AV	34.75	38.33	10.10	42.55	-9.54	31.09	53.9	22.8	150	0	VBW:1 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 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	46.66	40.18	12.75	40.26	-9.54	49.79	-45.44	-27.0	18.4	150	0	-
Vert.	17355.000	PK	45.92	40.18	12.75	40.26	-9.54	49.05	-46.18	-27.0	19.1	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 11, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 44 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 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	49.01	38.33	10.15	42.51	-9.54	45.44	73.9	28.4	150	0	-
Hori.	11650.000	AV	35.24	38.33	10.15	42.51	-9.54	31.67	53.9	22.2	150	0	VBW:1 kHz, Floor noise
Vert.	11650.000	PK	49.05	38.33	10.15	42.51	-9.54	45.48	73.9	28.4	150	0	-
Vert.	11650.000	AV	35.17	38.33	10.15	42.51	-9.54	31.60	53.9	22.3	150	0	VBW:1 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 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	51.21	32.94	17.21	43.39	1.83	59.80	-35.43	27.0	62.4	106	108	-
Hori.	5855.000	PK	50.83	32.95	17.21	43.39	1.83	59.43	-35.80	15.6	51.4	106	108	-
Hori.	5875.000	PK	50.90	32.98	17.25	43.39	1.83	59.57	-35.66	10.0	45.6	106	108	-
Hori.	5925.000	PK	50.79	33.06	17.27	43.38	1.83	59.57	-35.66	-27.0	8.6	106	108	-
Hori.	17475.000	PK	47.16	40.28	12.84	40.18	-9.54	50.56	-44.67	-27.0	17.6	150	0	-
Vert.	5850.000	PK	50.93	32.94	17.21	43.39	1.83	59.52	-35.71	27.0	62.7	203	151	-
Vert.	5855.000	PK	51.38	32.95	17.21	43.39	1.83	59.98	-35.25	15.6	50.8	203	151	-
Vert.	5875.000	PK	50.79	32.98	17.25	43.39	1.83	59.46	-35.77	10.0	45.7	203	151	-
Vert.	5925.000	PK	50.98	33.06	17.27	43.38	1.83	59.76	-35.47	-27.0	8.4	203	151	-
Vert.	17475.000	PK	46.18	40.28	12.84	40.18	-9.54	49.58	-45.65	-27.0	18.6	150	0	-

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

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

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

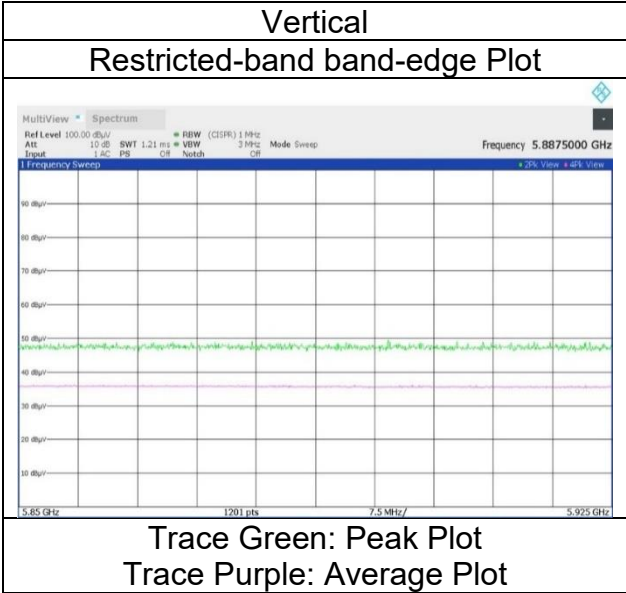
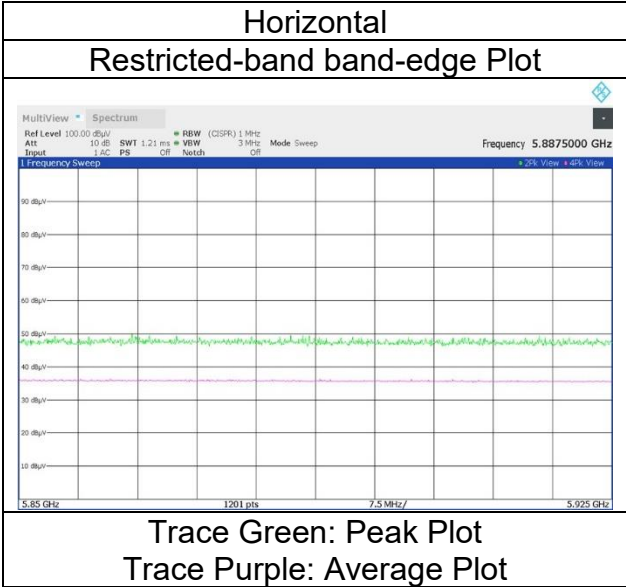
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 11, 2023
22 deg.C, 44 %RH
Hiromasa Sato
Tx 11a 5825 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz) Tx 11n-20 5180 MHz (SDM)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)

(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	51.61	32.16	16.78	43.07	1.83	59.31	73.9	14.5	140	116	-
Hori.	15540.000	PK	46.51	39.48	11.88	40.53	-9.54	47.80	73.9	26.1	150	0	-
Hori.	5150.000	AV	38.71	32.16	16.78	43.07	1.83	46.41	53.9	7.4	140	116	VBW:10 kHz
Hori.	15540.000	AV	35.55	39.48	11.88	40.53	-9.54	36.84	53.9	17.0	150	0	VBW:10 kHz Floor noise
Vert.	5150.000	PK	51.29	32.16	16.78	43.07	1.83	58.99	73.9	14.9	165	175	-
Vert.	15540.000	PK	47.04	39.48	11.88	40.53	-9.54	48.33	73.9	25.5	150	0	-
Vert.	5150.000	AV	38.34	32.16	16.78	43.07	1.83	46.04	53.9	7.8	165	175	VBW:10 kHz
Vert.	15540.000	AV	35.45	39.48	11.88	40.53	-9.54	36.74	53.9	17.1	150	0	VBW:10 kHz Floor noise

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 (3.70 m / 3.0 m) = 1.83 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	49.50	36.36	9.56	42.84	-9.54	43.04	-52.19	-27.0	25.1	150	0	-
Vert.	10360.000	PK	49.65	36.36	9.56	42.84	-9.54	43.19	-52.04	-27.0	25.0	150	0	-

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

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

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

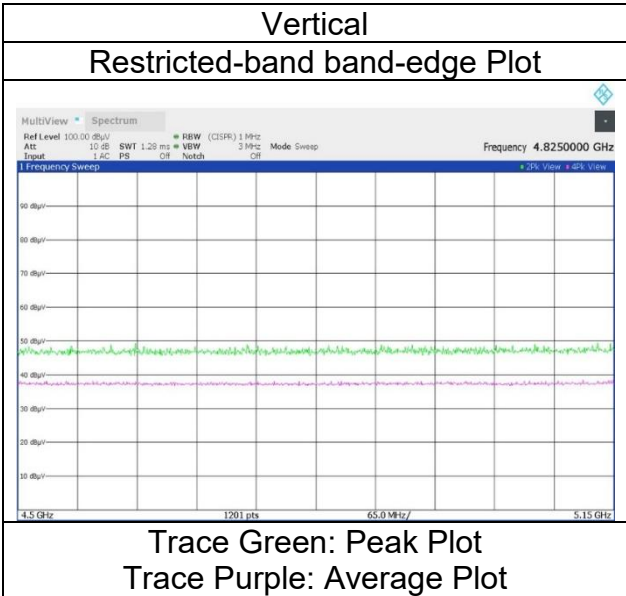
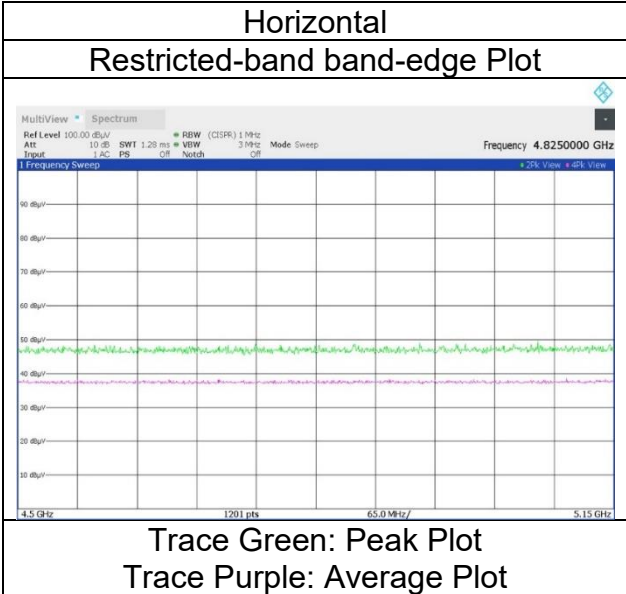
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 13, 2023
22 deg.C, 40 %RH
Hiromasa Sato
Tx 11n-20 5180 MHz (SDM)



* 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

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC1
Date June 21, 2024
Temperature / Humidity 23 deg.C, 54 %RH
Engineer Hiromasa Sato
 (30 MHz to 1 GHz)
Mode Tx 11n-20 5220 MHz (SDM)

(below 1 GHz)

(* 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.	450.000	QP	35.72	16.01	7.66	31.93	0.00	27.46	46.0	18.5	154	170	-
Hori.	550.001	QP	34.90	17.70	8.24	32.06	0.00	28.78	46.0	17.2	121	271	-
Hori.	650.000	QP	29.85	19.53	8.75	32.13	0.00	26.00	46.0	20.0	100	4	-
Hori.	750.000	QP	32.65	20.42	9.29	32.07	0.00	30.29	46.0	15.7	100	2	-
Hori.	850.002	QP	29.32	21.64	9.86	31.75	0.00	29.07	46.0	16.9	151	208	-
Hori.	900.001	QP	29.06	22.19	10.09	31.49	0.00	29.85	46.0	16.1	117	325	-
Vert.	350.001	QP	30.53	13.78	6.99	31.80	0.00	19.50	46.0	26.5	100	197	-
Vert.	450.001	QP	33.50	16.01	7.66	31.93	0.00	25.24	46.0	20.7	134	59	-
Vert.	550.001	QP	31.73	17.70	8.24	32.06	0.00	25.61	46.0	20.3	143	95	-
Vert.	749.999	QP	31.54	20.42	9.29	32.07	0.00	29.18	46.0	16.8	101	356	-
Vert.	850.001	QP	30.28	21.64	9.86	31.75	0.00	30.03	46.0	15.9	100	63	-
Vert.	899.999	QP	32.11	22.19	10.09	31.49	0.00	32.90	46.0	13.1	142	29	-

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).

Radiated Spurious Emission

Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5240 MHz (SDM)				

(above 1 GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15720.000	PK	47.20	39.63	11.82	40.56	-9.54	48.55	73.9	25.3	150	0	-
Hori.	15720.000	AV	35.93	39.63	11.82	40.56	-9.54	37.28	53.9	16.6	150	0	VBW:10 kHz, Floor noise
Vert.	15720.000	PK	46.89	39.63	11.82	40.56	-9.54	48.24	73.9	25.6	150	0	-
Vert.	15720.000	AV	35.62	39.63	11.82	40.56	-9.54	36.97	53.9	16.9	150	0	VBW:10 kHz, Floor noise

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10480.000	PK	49.40	36.51	9.62	42.84	-9.54	43.15	-52.08	-27.0	25.0	150	0	-
Vert.	10480.000	PK	49.31	36.51	9.62	42.84	-9.54	43.06	-52.17	-27.0	25.1	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz) Tx 11n-20 5320 MHz (SDM)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)

(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	50.25	31.98	16.91	43.30	1.83	57.67	73.9	16.2	150	108	-
Hori.	10640.000	PK	49.22	37.12	9.68	42.86	-9.54	43.62	73.9	30.2	150	0	-
Hori.	15960.000	PK	46.29	40.08	11.74	40.60	-9.54	47.97	73.9	25.9	150	0	-
Hori.	5350.000	AV	38.47	31.98	16.91	43.30	1.83	45.89	53.9	8.0	150	108	VBW:10 kHz
Hori.	10640.000	AV	38.13	37.12	9.68	42.86	-9.54	32.53	53.9	21.3	150	0	VBW:10 kHz, Floor noise
Hori.	15960.000	AV	35.47	40.08	11.74	40.60	-9.54	37.15	53.9	16.7	150	0	VBW:10 kHz, Floor noise
Vert.	5350.000	PK	50.82	31.98	16.91	43.30	1.83	58.24	73.9	15.6	174	163	-
Vert.	10640.000	PK	48.68	37.12	9.68	42.86	-9.54	43.08	73.9	30.8	150	0	-
Vert.	15960.000	PK	46.18	40.08	11.74	40.60	-9.54	47.86	73.9	26.0	150	0	-
Vert.	5350.000	AV	37.56	31.98	16.91	43.30	1.83	44.98	53.9	8.9	174	163	VBW:10 kHz
Vert.	10640.000	AV	38.30	37.12	9.68	42.86	-9.54	32.70	53.9	21.2	150	0	VBW:10 kHz, Floor noise
Vert.	15960.000	AV	35.37	40.08	11.74	40.60	-9.54	37.05	53.9	16.8	150	0	VBW:10 kHz, Floor noise

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

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

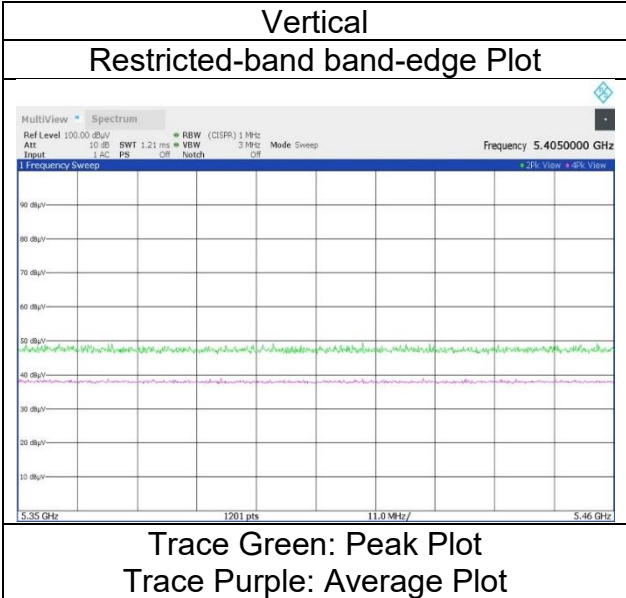
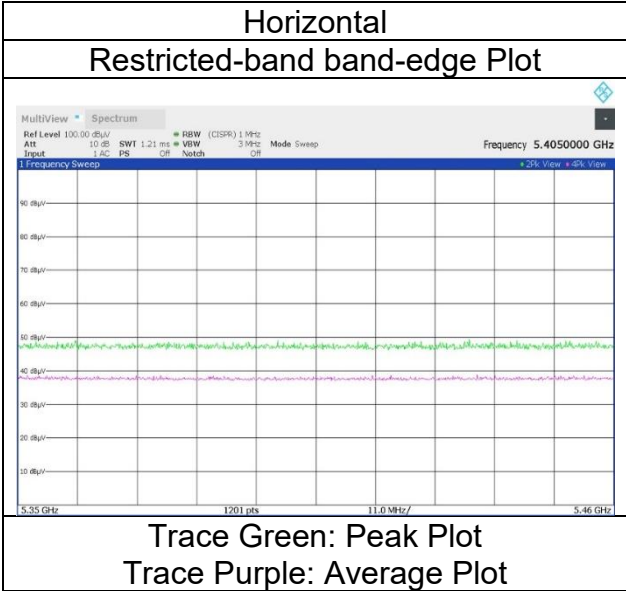
Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 13, 2023
22 deg.C, 40 %RH
Hiromasa Sato
Tx 11n-20 5320 MHz (SDM)



* 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

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5500 MHz (SDM)			

(above 1 GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5460.000	PK	49.77	32.24	16.98	43.42	1.83	57.40	73.9	16.5	136	107	-
Hori.	11000.000	PK	49.14	37.58	9.81	42.90	-9.54	44.09	73.9	29.8	150	0	-
Hori.	5460.000	AV	39.01	32.24	16.98	43.42	1.83	46.64	53.9	7.2	136	107	VBW:10 kHz
Hori.	11000.000	AV	38.12	37.58	9.81	42.90	-9.54	33.07	53.9	20.8	150	0	VBW:10 kHz, Floor noise
Vert.	5460.000	PK	49.99	32.24	16.98	43.42	1.83	57.62	73.9	16.2	172	147	-
Vert.	11000.000	PK	50.03	37.58	9.81	42.90	-9.54	44.98	73.9	28.9	150	0	-
Vert.	5460.000	AV	38.57	32.24	16.98	43.42	1.83	46.20	53.9	7.7	172	147	VBW:10 kHz
Vert.	11000.000	AV	38.00	37.58	9.81	42.90	-9.54	32.95	53.9	20.9	150	0	VBW:10 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 dB

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	49.90	32.25	16.99	43.44	1.83	57.53	-37.70	-27.0	10.7	136	107	-
Hori.	16500.000	PK	47.24	40.19	12.25	40.65	-9.54	49.49	-45.74	-27.0	18.7	150	0	-
Vert.	5470.000	PK	50.12	32.25	16.99	43.44	1.83	57.75	-37.48	-27.0	10.4	172	147	-
Vert.	16500.000	PK	46.82	40.19	12.25	40.65	-9.54	49.07	-46.16	-27.0	19.1	150	0	-

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

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

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

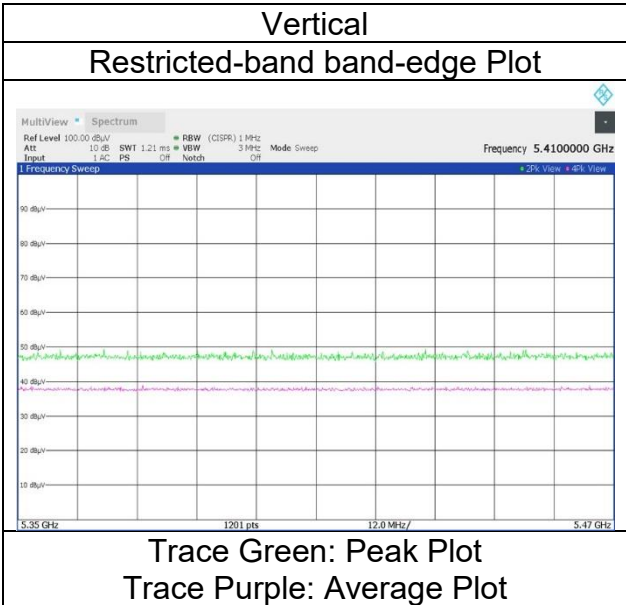
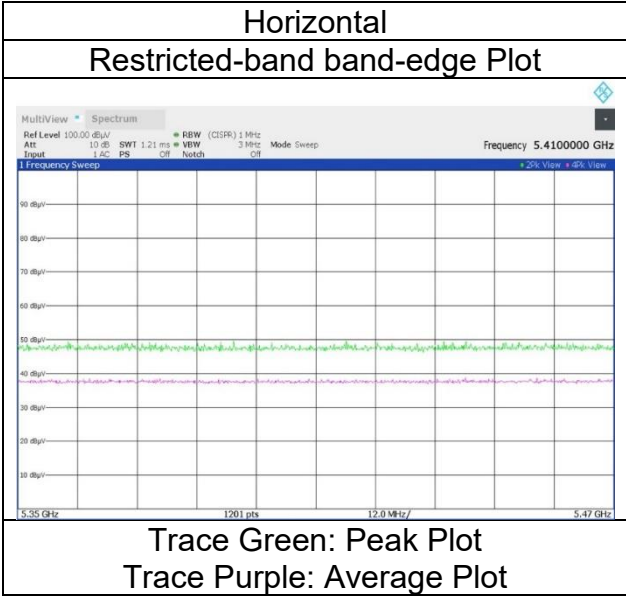
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 13, 2023
22 deg.C, 40 %RH
Hiromasa Sato
Tx 11n-20 5500 MHz (SDM)



* 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

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz) Tx 11n-20 5580 MHz (SDM)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)

(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.	11160.000	PK	48.60	37.72	9.89	42.80	-9.54	43.87	73.9	30.0	150	0	-
Hori.	11160.000	AV	37.56	37.72	9.89	42.80	-9.54	32.83	53.9	21.0	150	0	VBW:10 kHz, Floor noise
Vert.	11160.000	PK	48.90	37.72	9.89	42.80	-9.54	44.17	73.9	29.7	150	0	-
Vert.	11160.000	AV	37.51	37.72	9.89	42.80	-9.54	32.78	53.9	21.1	150	0	VBW:10 kHz, Floor noise

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16740.000	PK	46.95	39.61	12.36	40.57	-9.54	48.81	-46.42	-27.0	19.4	150	0	-
Vert.	16740.000	PK	47.21	39.61	12.36	40.57	-9.54	49.07	-46.16	-27.0	19.1	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
	Tx 11n-20 5700 MHz (SDM)			

(above 1 GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	11400.000	PK	49.39	38.26	10.01	42.64	-9.54	45.48	73.9	28.4	150	0	-
Hori.	11400.000	AV	37.93	38.26	10.01	42.64	-9.54	34.02	53.9	19.8	150	0	VBW:10 kHz, Floor noise
Vert.	11400.000	PK	49.34	38.26	10.01	42.64	-9.54	45.43	73.9	28.4	150	0	-
Vert.	11400.000	AV	38.06	38.26	10.01	42.64	-9.54	34.15	53.9	19.7	150	0	VBW:10 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 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.	5725.000	PK	49.84	32.63	17.14	43.42	1.83	58.02	-37.21	-27.0	10.2	226	103	-
Hori.	17100.000	PK	46.73	39.85	12.57	40.42	-9.54	49.19	-46.04	-27.0	19.0	150	0	-
Vert.	5725.000	PK	49.93	32.63	17.14	43.42	1.83	58.11	-37.12	-27.0	10.1	168	98	-
Vert.	17100.000	PK	46.73	39.85	12.57	40.42	-9.54	49.19	-46.04	-27.0	19.0	150	0	-

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

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

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

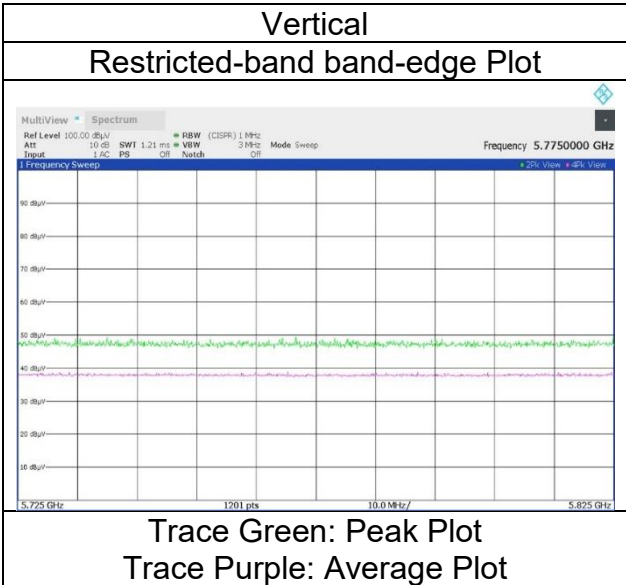
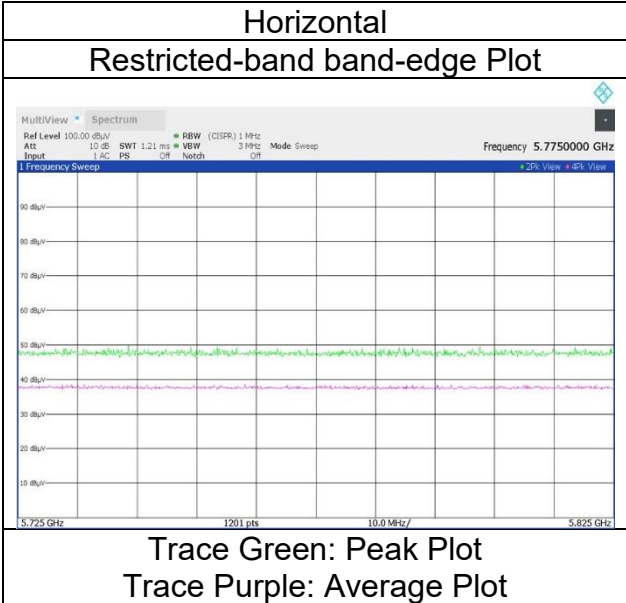
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 13, 2023
22 deg.C, 40 %RH
Hiromasa Sato
Tx 11n-20 5700 MHz (SDM)



* 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

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz) Tx 11n-20 5745 MHz (SDM)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)

(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	48.81	38.32	10.06	42.59	-9.54	45.06	73.9	28.8	150	0	-
Hori.	11490.000	AV	37.82	38.32	10.06	42.59	-9.54	34.07	53.9	19.8	150	0	VBW:10 kHz, Floor noise
Vert.	11490.000	PK	48.66	38.32	10.06	42.59	-9.54	44.91	73.9	28.9	150	0	-
Vert.	11490.000	AV	37.84	38.32	10.06	42.59	-9.54	34.09	53.9	19.8	150	0	VBW:10 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 dB

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	49.58	32.44	17.10	43.44	1.83	57.51	-37.72	-27.0	10.7	198	106	-
Hori.	5700.000	PK	49.98	32.56	17.12	43.43	1.83	58.06	-37.17	10.0	47.1	198	106	-
Hori.	5720.000	PK	50.00	32.61	17.13	43.42	1.83	58.15	-37.08	15.6	52.6	198	106	-
Hori.	5725.000	PK	50.32	32.63	17.14	43.42	1.83	58.50	-36.73	27.0	63.7	198	106	-
Hori.	17235.000	PK	46.33	40.07	12.66	40.33	-9.54	49.19	-46.04	-27.0	19.0	150	0	-
Vert.	5650.000	PK	49.94	32.44	17.10	43.44	1.83	57.87	-37.36	-27.0	10.3	148	101	-
Vert.	5700.000	PK	50.22	32.56	17.12	43.43	1.83	58.30	-36.93	10.0	46.9	148	101	-
Vert.	5720.000	PK	50.39	32.61	17.13	43.42	1.83	58.54	-36.69	15.6	52.2	148	101	-
Vert.	5725.000	PK	50.45	32.63	17.14	43.42	1.83	58.63	-36.60	27.0	63.6	148	101	-
Vert.	17235.000	PK	46.82	40.07	12.66	40.33	-9.54	49.68	-45.55	-27.0	18.5	150	0	-

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

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

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

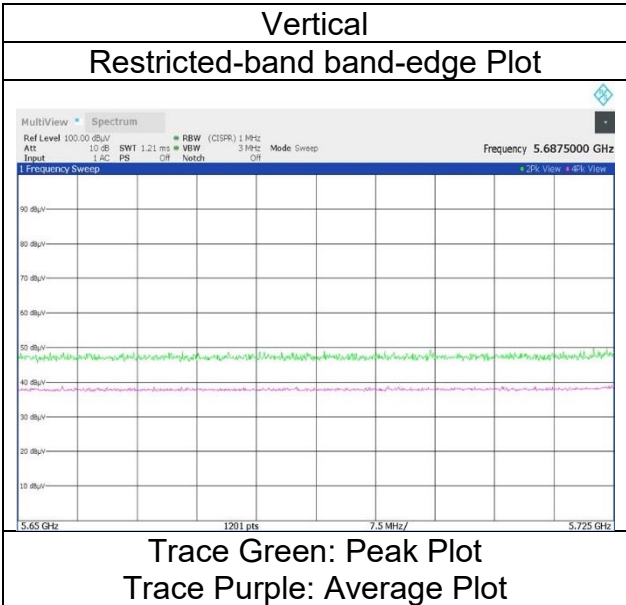
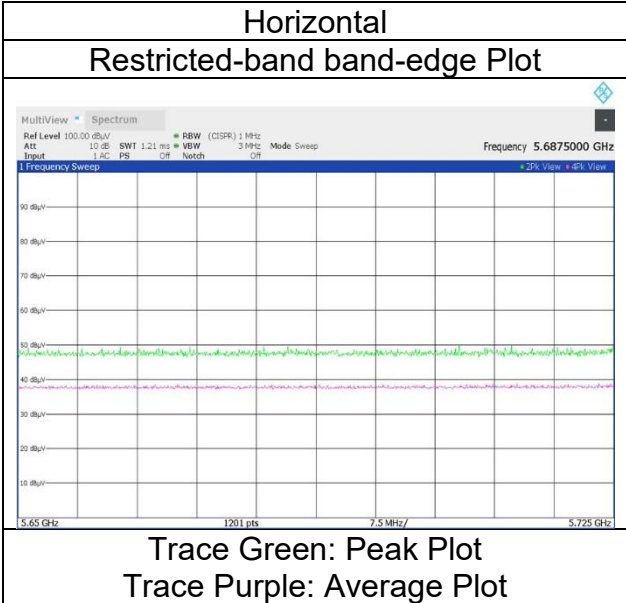
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC3
November 13, 2023
22 deg.C, 40 %RH
Hiromasa Sato
Tx 11n-20 5745 MHz (SDM)



* 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

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz) Tx 11n-20 5785 MHz (SDM)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)

(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	48.94	38.33	10.10	42.55	-9.54	45.28	73.9	28.6	150	0	-
Hori.	11570.000	AV	37.59	38.33	10.10	42.55	-9.54	33.93	53.9	19.9	150	0	VBW:10 kHz, Floor noise
Vert.	11570.000	PK	48.69	38.33	10.10	42.55	-9.54	45.03	73.9	28.8	150	0	-
Vert.	11570.000	AV	37.74	38.33	10.10	42.55	-9.54	34.08	53.9	19.8	150	0	VBW:10 kHz, Floor noise

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	17355.000	PK	46.82	40.18	12.75	40.26	-9.54	49.95	-45.28	-27.0	18.2	150	0	-
Vert.	17355.000	PK	46.22	40.18	12.75	40.26	-9.54	49.35	-45.88	-27.0	18.8	150	0	-

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

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

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.70\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC3	SAC3	SAC3	SAC3
Date	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
	Tx 11n-20 5825 MHz (SDM)			

(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	48.76	38.33	10.15	42.51	-9.54	45.19	73.9	28.7	150	0	-
Hori.	11650.000	AV	38.04	38.33	10.15	42.51	-9.54	34.47	53.9	19.4	150	0	VBW:10 kHz, Floor noise
Vert.	11650.000	PK	48.88	38.33	10.15	42.51	-9.54	45.31	73.9	28.5	150	0	-
Vert.	11650.000	AV	37.96	38.33	10.15	42.51	-9.54	34.39	53.9	19.5	150	0	VBW:10 kHz, Floor noise

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 (3.70 m / 3.0 m) = 1.83 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	49.54	32.94	17.21	43.39	1.83	58.13	-37.10	27.0	64.1	232	107	-
Hori.	5855.000	PK	49.87	32.95	17.21	43.39	1.83	58.47	-36.76	15.6	52.3	232	107	-
Hori.	5875.000	PK	49.74	32.98	17.25	43.39	1.83	58.41	-36.82	10.0	46.8	232	107	-
Hori.	5925.000	PK	49.69	33.06	17.27	43.38	1.83	58.47	-36.76	-27.0	9.7	232	107	-
Hori.	17475.000	PK	46.87	40.28	12.84	40.18	-9.54	50.27	-44.96	-27.0	17.9	150	0	-
Vert.	5850.000	PK	50.17	32.94	17.21	43.39	1.83	58.76	-36.47	27.0	63.4	145	92	-
Vert.	5855.000	PK	50.55	32.95	17.21	43.39	1.83	59.15	-36.08	15.6	51.6	145	92	-
Vert.	5875.000	PK	50.59	32.98	17.25	43.39	1.83	59.26	-35.97	10.0	45.9	145	92	-
Vert.	5925.000	PK	50.18	33.06	17.27	43.38	1.83	58.96	-36.27	-27.0	9.2	145	92	-
Vert.	17475.000	PK	46.57	40.28	12.84	40.18	-9.54	49.97	-45.26	-27.0	18.2	150	0	-

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

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

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

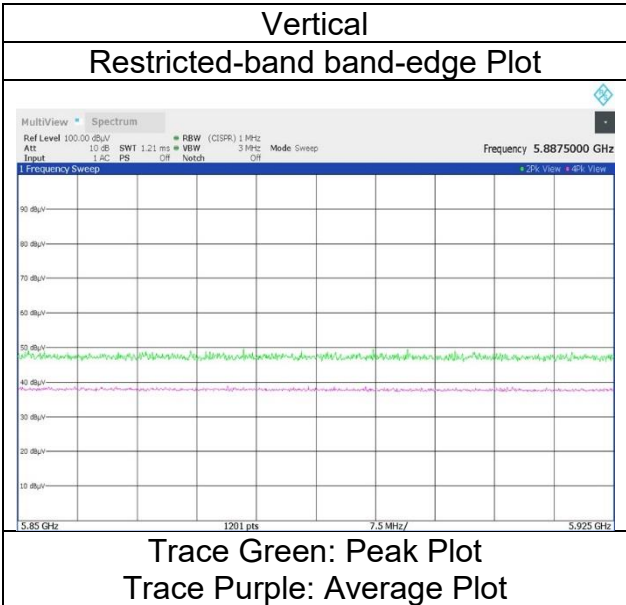
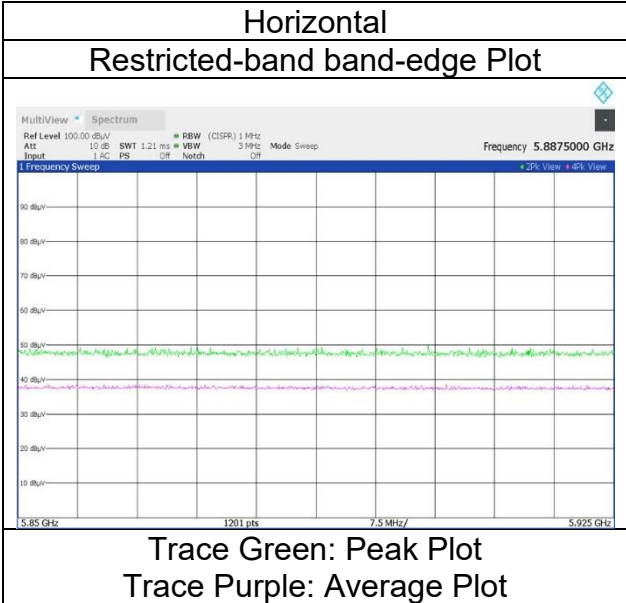
Distance factor : 1 GHz - 10 GHz : 20log (3.70 m / 3.0 m) = 1.83 dB

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

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

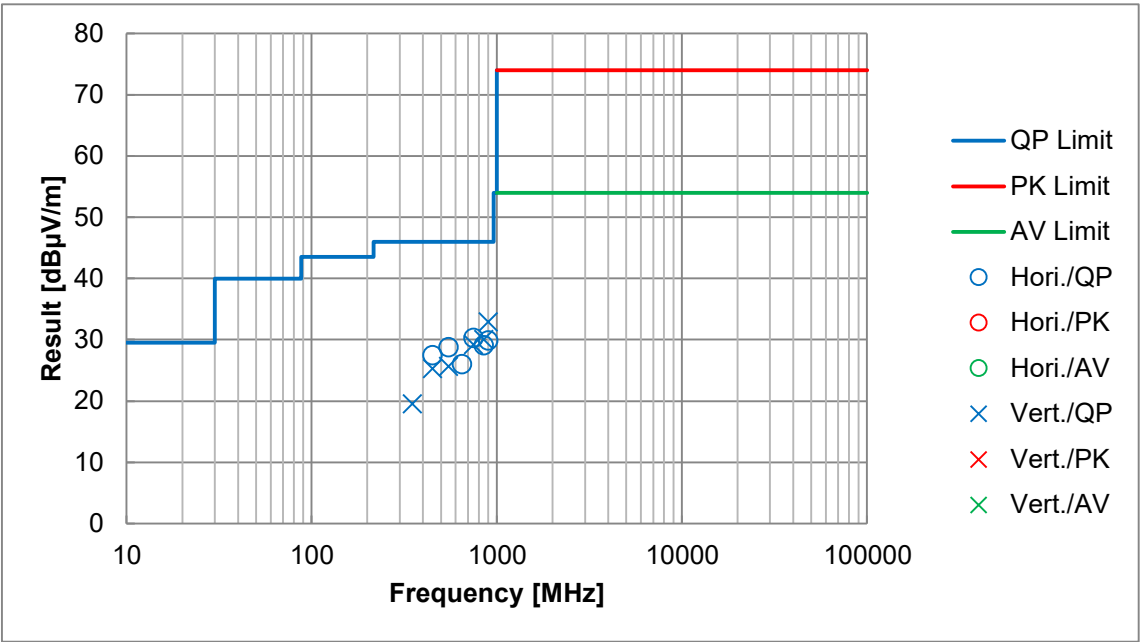
Shonan EMC Lab.
SAC3
November 13, 2023
22 deg.C, 40 %RH
Hiromasa Sato
Tx 11n-20 5825 MHz (SDM)



* 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 mode for Maximum Conducted Output Power)

Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	SAC1	SAC3	SAC3	SAC3	SAC3
Date	June 21, 2024	November 13, 2023	November 14, 2023	November 15, 2023	November 16, 2023
Temperature / Humidity	23 deg.C, 54 %RH	22 deg.C, 40 %RH	22 deg.C, 35 %RH	22 deg.C, 38 %RH	22 deg.C, 38 %RH
Engineer	Hiromasa Sato	Hiromasa Sato	Kouki Yamada	Makoto Hosaka	Hiromasa Sato
Mode	(30 MHz to 1 GHz) Tx 11n-20 5220 MHz (SDM)	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)



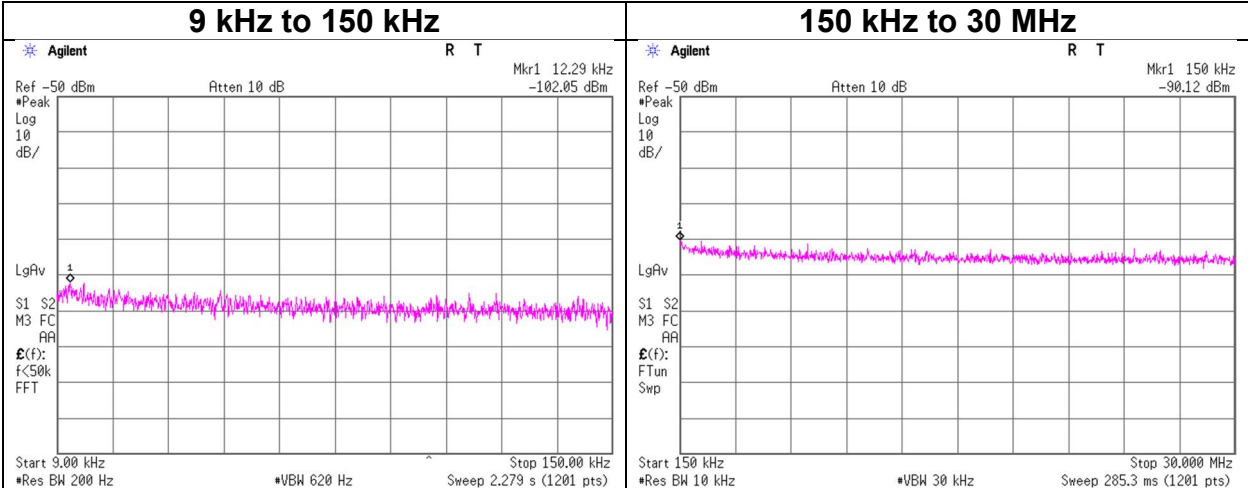
*These plots data contain sufficient number to show the trend of characteristic features for EUT.

*Above 1 GHz, the description of the measurement data was omitted,
since no signal was detected or had enough margin.

Conducted Spurious Emission

Test place
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab. No.1 Shielded Room
June 21, 2024
27 deg. C / 57 % RH
Hiromasa Sato
Tx 11n-20 5220 MHz (SDM)



Frequency	Reading	Cable Loss	Attenuator	Antenna Gain*	N	EIRP	Distance	Ground bounce	E	Limit	Margin	Remark
[kHz]	[dBm]	[dB]	[dB]	[dBi]	(Number of Output)	[dBm]	[m]	[dB]	(field strength) [dBuV/m]	[dBuV/m]	[dB]	
12.29	-102.05	1.61	9.87	2.0	2	-85.6	300	6.0	-24.3	45.8	70.1	-
150.0	-90.12	1.62	9.87	2.0	2	-73.6	300	6.0	-12.4	24.0	36.4	-

$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log (\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$
 $\text{EIRP[dBm]} = \text{Reading [dBm]} + \text{Cable loss [dB]} + \text{Attenuator Loss [dB]} + \text{Antenna gain [dBi]} + 10 * \log (N)$
N: Number of output
*2.0 dBi was applied to the test result based on KDB 789033 since antenna gain was less than 2.0 dBi.

APPENDIX 2: Test Instruments

Test Equipment

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	145801	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY48250152	2023/09/23	12
AT	160899	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46185516	2022/12/09	12 *1)
AT	169910	Power Meter	Keysight Technologies Inc	8990B	MY51000448	2023/09/28	12
AT	169911	Power sensor	Keysight Technologies Inc	N1923A	MY57270004	2023/09/28	12
AT	169912	Power sensor	Keysight Technologies Inc	N1923A	MY57290005	2023/09/28	12
AT	175823	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/01	12
AT	179108	Coaxial Cable	Junkosha	MWX241-03000KMSKMS/B	1901Q033-R	2023/04/05	12 *1)
AT	179109	Coaxial Cable	Junkosha	MWX241-03000KMSKMS/B	1901Q034-R	2023/04/05	12 *1)
AT	191845	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/07	12
AT	204923	Terminator	Weinschel - API Technologies Corp	M1459A	110101	2023/02/10	12 *1)
AT	204925	Attenuator	Weinschel Corp.	54A-10	109970	2023/02/10	12 *1)
AT	204926	Attenuator	Weinschel Corp.	54A-10	109971	2023/02/10	12 *1)
AT	235604	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY45300743	2023/05/18	12 *1)
AT	145800	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY48250106	2024/03/25	12
AT	167990	Thermo-Hygrometer	CUSTOM. Inc	CTH-202	708Q08R	2023/08/01	12
AT	179108	Coaxial Cable	Junkosha	MWX241-03000KMSKMS/B	1901Q033-R	2024/04/09	12
AT	242066	Attenuator	Weinschel Corp.	54A-10	120521	2023/11/02	12
RE	144892	Attenuator	Keysight Technologies Inc	8490D 010	6036	2023/10/12	12
RE	144938	Highpass Filter	Micro-Tronics	HPM50112	7	2023/10/11	12
RE	145005	Pre Amplifier	Toyo Corporation	TPA0118-36	1440491	2023/02/02	12 *1)
RE	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2023/03/03	12 *1)
RE	145129	Pre Amplifier	Toyo Corporation	HAP26-40W	10	2023/08/22	12 *1)
RE	145176	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	2023/08/23	12 *1)
RE	145501	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	9120D-739	2023/03/27	12 *1)
RE	145512	Horn Antenna	ETS-Lindgren	3160-09	00094868	2023/06/12	12 *1)
RE	145566	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	2023/05/14	12 *1)
RE	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2023/08/25	12
RE	156380	Coaxial Cable	Huber+Suhner	SUCOFLEX 104_E	SN MY 13406/4E	2023/05/19	12 *1)
RE	167094	Attenuator	JFW	50HF-006N	-	2023/02/09	12 *1)
RE	168300	Coaxial Cable	Huber+Suhner	SUCOFLEX 104	800375/4A	2022/11/10	12 *1)
RE	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	-	-	-
RE	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2023/03/03	12 *1)
RE	194685	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA 9120 C	711	2023/03/27	12 *1)
RE	145514	Horn Antenna	ETS-Lindgren	3160-09	00094868	2023/06/12	12 *1)
RE	200010	Coaxial Cable	Huber+Suhner	SUCOFLEX 104	575618/4	2023/06/06	12 *1)
RE	144959	Attenuator	JFW	50HF-003N	-	2023/08/22	12
RE	144967	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	2024/04/01	12
RE	144968	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	2024/04/01	12
RE	145161	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	BBA9106	91032664	2024/04/10	12
RE	145529	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	196	2024/05/10	12
RE	145597	Semi-Anechoic Chamber	TDK	SAEC-01(NSA)	1	2024/04/16	12
RE	145790	Test Receiver	Rohde & Schwarz	ESU40	100093	2024/04/19	12
RE	145792	Digital Hitester	HIOKI E.E. CORPORATION	3805-50	80997812	2023/09/25	12
RE	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	Ver 3.1.0546	-	-
RE	191837	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/03	12
RE	207279	Tape Measure	ASKUL	-	-	-	-

*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:

AT: Antenna Terminal Conducted test

RE: Radiated Emission