

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1 WAC1 WAC1 WAC1
Date August 10, 2024 August 14, 2024 August 16, 2024 August 20, 2024
Temperature / Humidity 22 deg. C / 55 % RH 22 deg. C / 41 % RH 24 deg. C / 54 % RH 24 deg. C / 59 % RH
Engineer Takahiro Suzuki Akihiro Oda Akihiro Oda Yuta Shiba
(1 GHz to 2.8 GHz) (2.8 GHz to 10 GHz) (10 GHz to 18 GHz) (18 GHz to 26.5 GHz)
Mode Tx 11b 2412 MHz

(* 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.	2390.000	PK	47.68	27.85	-28.23	-	2.26	49.56	73.9	24.3	142	349	-
Hori.	4824.000	PK	46.69	32.07	-35.74	-	2.26	45.28	73.9	28.6	166	271	-
Hori.	7236.000	PK	44.78	36.38	-34.07	-	2.26	49.35	73.9	24.5	150	92	-
Hori.	9648.000	PK	46.05	37.93	-31.62	-	2.26	54.62	73.9	19.2	150	0	-
Hori.	2390.000	AV	35.45	27.85	-28.23	-	2.26	37.33	53.9	16.5	142	349	-
Hori.	4824.000	AV	35.04	32.07	-35.74	-	2.26	33.63	53.9	20.2	166	271	-
Hori.	7236.000	AV	35.11	36.38	-34.07	-	2.26	39.68	53.9	14.2	150	92	-
Hori.	9648.000	AV	34.63	37.93	-31.62	-	2.26	43.20	53.9	10.7	150	0	floor noise
Vert.	2390.000	PK	46.79	27.85	-28.23	-	2.26	48.67	73.9	25.2	136	27	-
Vert.	4824.000	PK	46.96	32.07	-35.74	-	2.26	45.55	73.9	28.3	192	41	-
Vert.	7236.000	PK	46.28	36.38	-34.07	-	2.26	50.85	73.9	23.0	150	184	-
Vert.	9648.000	PK	46.73	37.93	-31.62	-	2.26	55.30	73.9	18.6	150	0	-
Vert.	2390.000	AV	35.85	27.85	-28.23	-	2.26	37.73	53.9	16.1	136	27	-
Vert.	4824.000	AV	35.97	32.07	-35.74	-	2.26	34.56	53.9	19.3	192	41	-
Vert.	7236.000	AV	34.87	36.38	-34.07	-	2.26	39.44	53.9	14.4	150	184	-
Vert.	9648.000	AV	33.87	37.93	-31.62	-	2.26	42.44	53.9	11.4	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)- Gain(Amplifier)) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2412.000	PK	87.29	27.89	-28.23	-	2.26	89.21	-	-	Carrier
Hori.	2400.000	PK	38.25	27.89	-28.22	-	2.26	40.18	69.2	29.0	-
Vert.	2412.000	PK	90.57	27.89	-28.23	-	2.26	92.49	-	-	Carrier
Vert.	2400.000	PK	40.75	27.89	-28.22	-	2.26	42.68	72.4	29.7	-

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

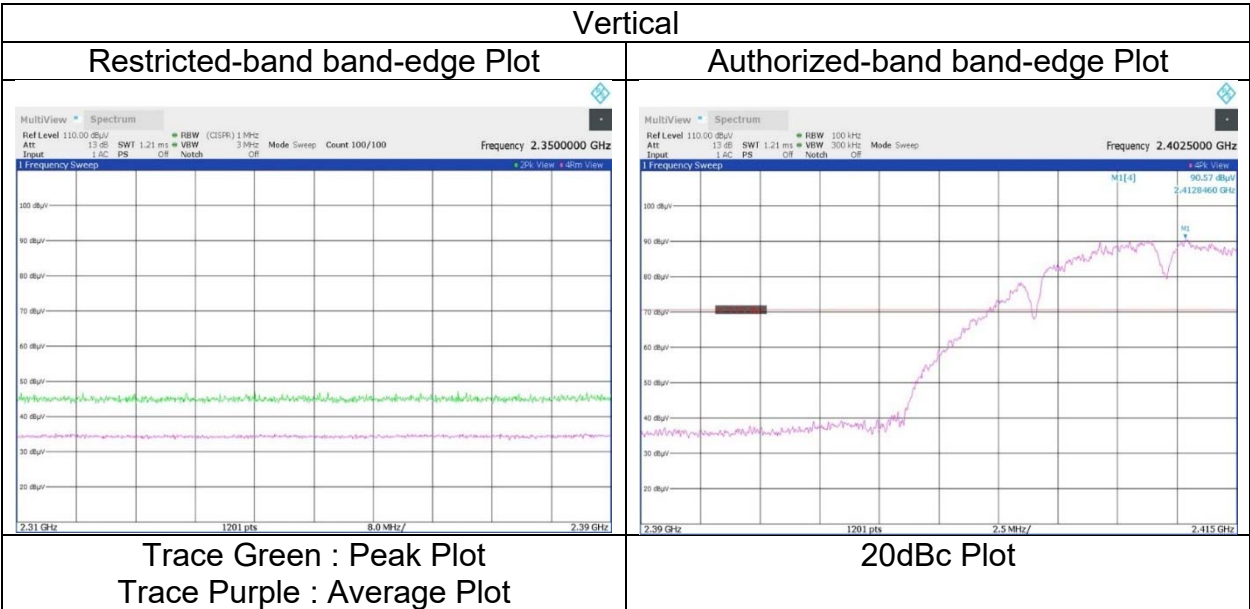
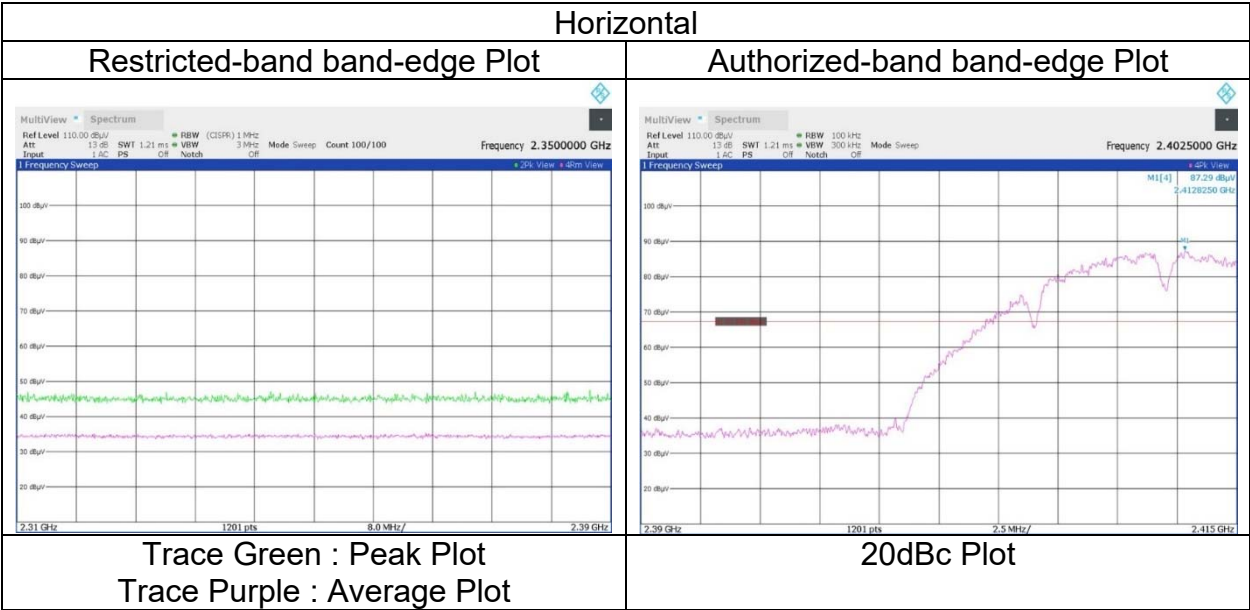
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)- Gain(Amplifier)) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1
Date August 10, 2024
Temperature / Humidity 22 deg. C / 55 % RH
Engineer Takahiro Suzuki
 (1 GHz to 2.8 GHz)
Mode Tx 11b 2412 MHz



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

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1 WAC1 WAC1 WAC1
Date August 10, 2024 August 14, 2024 August 16, 2024 August 20, 2024
Temperature / Humidity 23 deg. C / 52 % RH 22 deg. C / 41 % RH 24 deg. C / 54 % RH 24 deg. C / 59 % RH
Engineer Yosuke Murakami Akihiro Oda Akihiro Oda Yuta Shiba
 (1 GHz to 2.8 GHz) (2.8 GHz to 10 GHz) (10 GHz to 18 GHz) (18 GHz to 26.5 GHz)
Mode Tx 11b 2437 MHz

(* 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.	4874.000	PK	46.50	32.30	-35.80	-	2.26	45.26	73.9	28.6	177	278	-
Hori.	7311.000	PK	46.33	36.61	-33.94	-	2.26	51.26	73.9	22.6	150	334	-
Hori.	9748.000	PK	46.29	37.93	-31.51	-	2.26	54.97	73.9	18.9	150	0	-
Hori.	4874.000	AV	35.24	32.30	-35.80	-	2.26	34.00	53.9	19.9	177	278	-
Hori.	7311.000	AV	35.24	36.61	-33.94	-	2.26	40.17	53.9	13.7	150	334	-
Hori.	9748.000	AV	34.38	37.93	-31.51	-	2.26	43.06	53.9	10.8	150	0	floor noise
Vert.	4874.000	PK	46.16	32.30	-35.80	-	2.26	44.92	73.9	28.9	219	197	-
Vert.	7311.000	PK	46.66	36.61	-33.94	-	2.26	51.59	73.9	22.3	150	333	-
Vert.	9748.000	PK	46.83	37.93	-31.51	-	2.26	55.51	73.9	18.3	150	0	-
Vert.	4874.000	AV	35.12	32.30	-35.80	-	2.26	33.88	53.9	20.0	219	197	-
Vert.	7311.000	AV	35.23	36.61	-33.94	-	2.26	40.16	53.9	13.7	150	333	-
Vert.	9748.000	AV	33.93	37.93	-31.51	-	2.26	42.61	53.9	11.2	150	0	floor noise

1 GHz to 18 GHz: Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)- Gain(Amplifier)) + Distance factor
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 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	WAC1	WAC1	WAC1	WAC1
Date	August 10, 2024	August 14, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	22 deg. C / 55 % RH	22 deg. C / 41 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Takahiro Suzuki	Akihiro Oda	Akihiro Oda	Yuta Shiba
	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx 11b 2462 MHz			

(* 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.	2483.500	PK	47.54	27.96	-28.18	-	2.26	49.58	73.9	24.3	127	354	-
Hori.	4924.000	PK	46.66	32.55	-35.84	-	2.26	45.63	73.9	28.2	131	79	-
Hori.	7386.000	PK	46.45	36.71	-33.79	-	2.26	51.63	73.9	22.2	150	331	-
Hori.	9848.000	PK	46.41	37.92	-31.39	-	2.26	55.20	73.9	18.7	150	0	-
Hori.	2483.500	AV	35.85	27.96	-28.18	-	2.26	37.89	53.9	16.0	127	354	-
Hori.	4924.000	AV	35.43	32.55	-35.84	-	2.26	34.40	53.9	19.5	131	79	-
Hori.	7386.000	AV	34.71	36.71	-33.79	-	2.26	39.89	53.9	14.0	150	331	-
Hori.	9848.000	AV	34.55	37.92	-31.39	-	2.26	43.34	53.9	10.5	150	0	floor noise
Vert.	2483.500	PK	48.81	27.96	-28.18	-	2.26	50.85	73.9	23.0	153	334	-
Vert.	4924.000	PK	47.08	32.55	-35.84	-	2.26	46.05	73.9	27.8	131	269	-
Vert.	7386.000	PK	46.73	36.71	-33.79	-	2.26	51.91	73.9	21.9	150	40	-
Vert.	9848.000	PK	47.10	37.92	-31.39	-	2.26	55.89	73.9	18.0	150	0	-
Vert.	2483.500	AV	35.69	27.96	-28.18	-	2.26	37.73	53.9	16.1	153	334	-
Vert.	4924.000	AV	34.85	32.55	-35.84	-	2.26	33.82	53.9	20.0	131	269	-
Vert.	7386.000	AV	34.69	36.71	-33.79	-	2.26	39.87	53.9	14.0	150	40	-
Vert.	9848.000	AV	34.54	37.92	-31.39	-	2.26	43.33	53.9	10.5	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz: $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

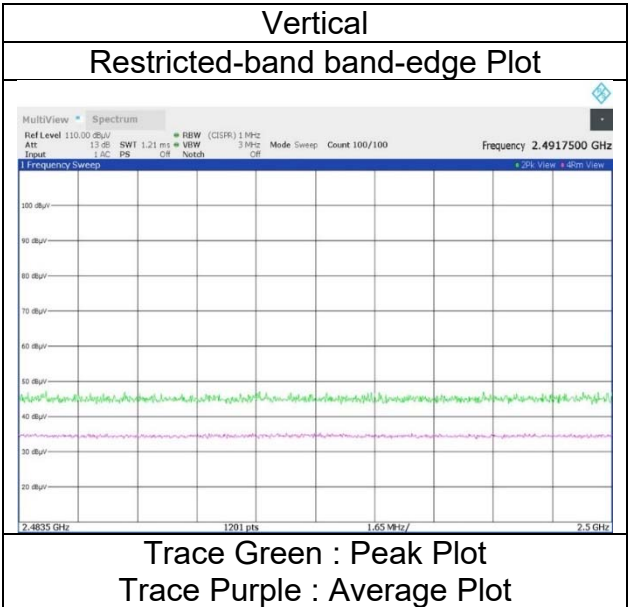
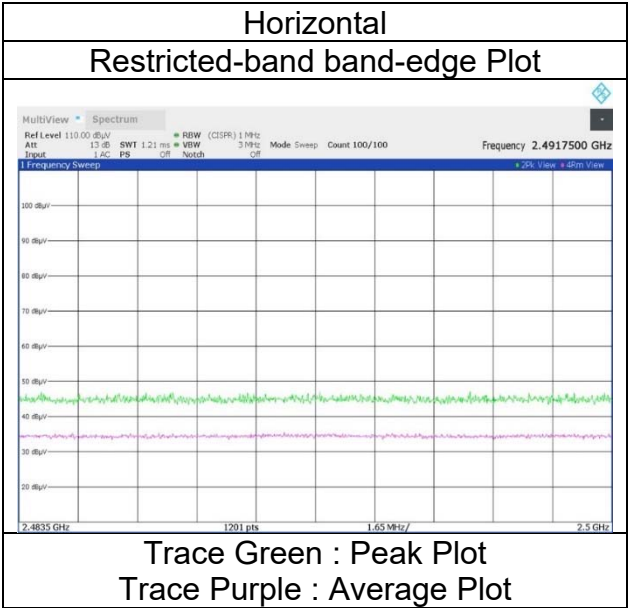
10 GHz - 40 GHz: $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Shonan EMC Lab.
WAC1
August 10, 2024
22 deg. C / 55 % RH
Takahiro Suzuki
(1 GHz to 2.8 GHz)
Tx 11b 2462 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	WAC2	WAC1	WAC1	WAC1	WAC1
Date	September 2, 2024	August 10, 2024	August 14, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	23 deg. C / 51 % RH	22 deg. C / 55 % RH	22 deg. C / 41 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Yuta Shiba	Takahiro Suzuki	Akihiro Oda	Akihiro Oda	Yuta Shiba
	(Below 1 GHz)	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx 11ax-20 OFDM 2412 MHz				

(* 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.	57.104	QP	44.60	9.62	6.43	33.12	0.00	27.53	40.0	12.4	400	359	-
Hori.	193.521	QP	43.10	14.18	7.19	33.07	0.00	31.40	43.5	12.1	168	22	-
Hori.	207.051	QP	42.70	11.40	7.25	33.04	0.00	28.31	43.5	15.1	165	19	-
Hori.	253.595	QP	46.90	11.98	7.40	32.91	0.00	33.37	46.0	12.6	133	25	-
Hori.	266.884	QP	44.90	12.69	7.44	32.89	0.00	32.14	46.0	13.8	112	28	-
Hori.	312.483	QP	37.90	14.00	7.58	32.79	0.00	26.69	46.0	19.3	108	92	-
Hori.	408.691	QP	43.70	16.02	7.86	32.50	0.00	35.08	46.0	10.9	100	351	-
Hori.	793.224	QP	35.40	20.81	8.74	30.98	0.00	33.97	46.0	12.0	151	97	-
Hori.	2390.000	PK	55.12	27.85	-28.23	-	2.26	57.00	73.9	16.9	163	347	-
Hori.	4824.000	PK	46.40	32.07	-35.74	-	2.26	44.99	73.9	28.9	133	33	-
Hori.	7236.000	PK	45.55	36.38	-34.07	-	2.26	50.12	73.9	23.7	150	92	-
Hori.	9648.000	PK	45.46	37.93	-31.62	-	2.26	54.03	73.9	19.8	150	114	-
Hori.	2390.000	AV	36.97	27.85	-28.23	-	2.26	38.85	53.9	15.0	163	347	-
Hori.	4824.000	AV	35.49	32.07	-35.74	-	2.26	34.08	53.9	19.8	133	33	-
Hori.	7236.000	AV	34.67	36.38	-34.07	-	2.26	39.24	53.9	14.6	150	92	-
Hori.	9648.000	AV	34.23	37.93	-31.62	-	2.26	42.80	53.9	11.1	150	114	floor noise
Vert.	402.254	QP	38.40	15.91	7.85	32.51	0.00	29.65	46.0	16.3	136	179	-
Vert.	793.219	QP	32.80	20.81	8.74	30.98	0.00	31.37	46.0	14.6	148	178	-
Vert.	2390.000	PK	54.20	27.85	-28.23	-	2.26	56.08	73.9	17.8	152	343	-
Vert.	4824.000	PK	46.02	32.07	-35.74	-	2.26	44.61	73.9	29.2	241	13	-
Vert.	7236.000	PK	46.27	36.38	-34.07	-	2.26	50.84	73.9	23.0	150	233	-
Vert.	9648.000	PK	45.29	37.93	-31.62	-	2.26	53.86	73.9	20.0	150	196	-
Vert.	2390.000	AV	37.26	27.85	-28.23	-	2.26	39.14	53.9	14.7	152	343	-
Vert.	4824.000	AV	35.00	32.07	-35.74	-	2.26	33.59	53.9	20.3	241	13	-
Vert.	7236.000	AV	34.47	36.38	-34.07	-	2.26	39.04	53.9	14.8	150	233	-
Vert.	9648.000	AV	34.23	37.93	-31.62	-	2.26	42.80	53.9	11.1	150	196	floor noise

1 GHz to 18 GHz Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)- Gain(Amplifier)) + Distance factor
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

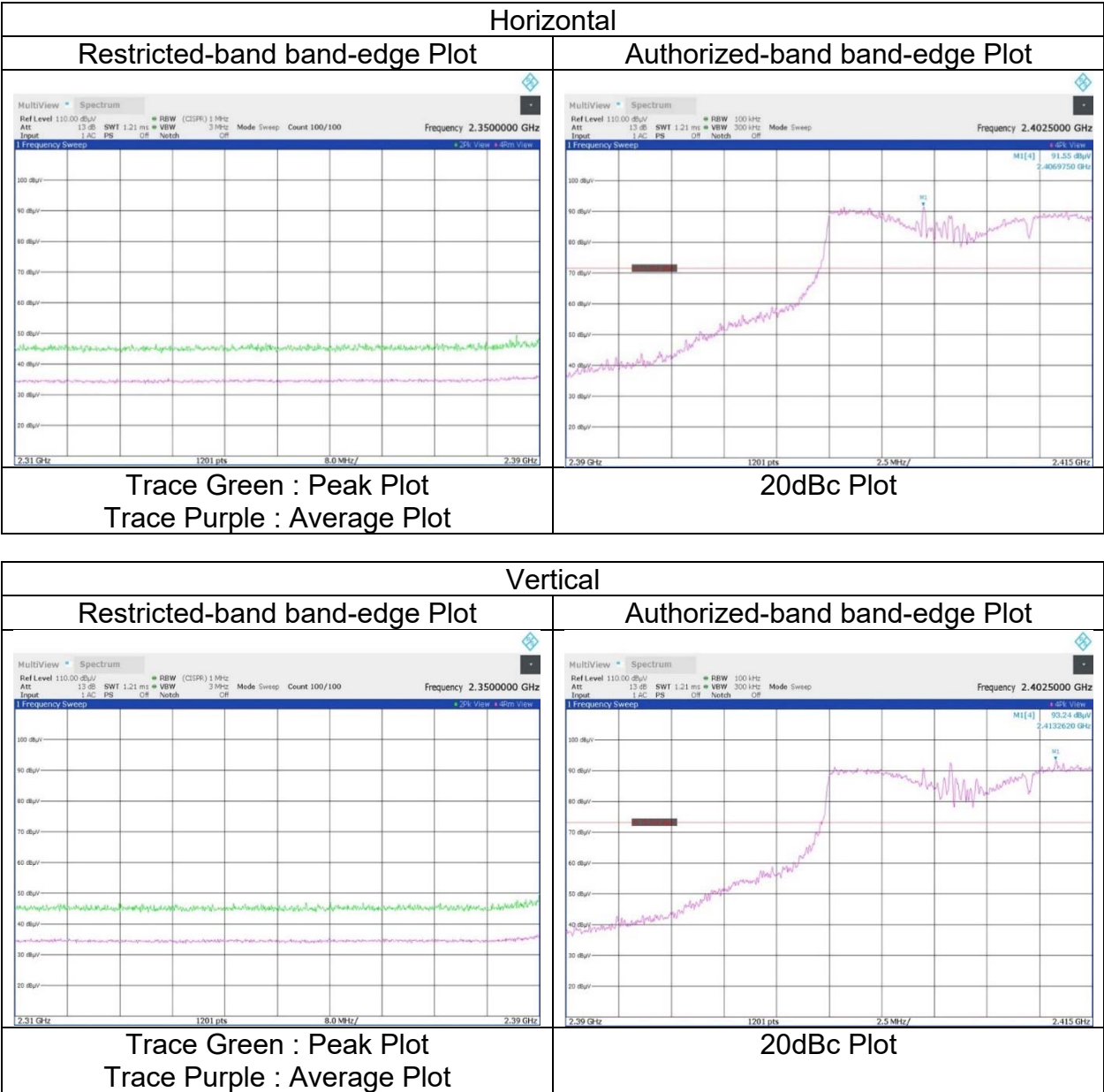
20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2412.000	PK	91.55	27.89	-28.23	-	2.26	93.47	-	-	Carrier
Hori.	2400.000	PK	57.66	27.89	-28.22	-	2.26	59.59	73.4	13.8	-
Vert.	2412.000	PK	93.24	27.89	-28.23	-	2.26	95.16	-	-	Carrier
Vert.	2400.000	PK	58.27	27.89	-28.22	-	2.26	60.20	75.1	14.9	-

1 GHz to 18 GHz Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)- Gain(Amplifier)) + Distance factor
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 10, 2024
Temperature / Humidity	22 deg. C / 55 % RH
Engineer	Takahiro Suzuki
	(1 GHz to 2.8 GHz)
Mode	Tx 11ax-20 OFDM 2412 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	WAC1	WAC1	WAC1	WAC1
Date	August 10, 2024	August 14, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	22 deg. C / 55 % RH	22 deg. C / 41 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Takahiro Suzuki	Akihiro Oda	Akihiro Oda	Yuta Shiba
	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx 11ax-20 OFDM 2437 MHz			

(* 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.	4874.000	PK	47.11	32.30	-35.80	-	2.26	45.87	73.9	28.0	211	219	-
Hori.	7311.000	PK	45.93	36.61	-33.94	-	2.26	50.86	73.9	23.0	150	54	-
Hori.	9748.000	PK	46.53	37.93	-31.51	-	2.26	55.21	73.9	18.6	150	0	-
Hori.	4874.000	AV	35.41	32.30	-35.80	-	2.26	34.17	53.9	19.7	211	219	-
Hori.	7311.000	AV	35.29	36.61	-33.94	-	2.26	40.22	53.9	13.6	150	54	-
Hori.	9748.000	AV	34.33	37.93	-31.51	-	2.26	43.01	53.9	10.8	150	0	floor noise
Vert.	4874.000	PK	46.28	32.30	-35.80	-	2.26	45.04	73.9	28.8	222	243	-
Vert.	7311.000	PK	46.72	36.61	-33.94	-	2.26	51.65	73.9	22.2	150	10	-
Vert.	9748.000	PK	46.99	37.93	-31.51	-	2.26	55.67	73.9	18.2	150	0	-
Vert.	4874.000	AV	35.55	32.30	-35.80	-	2.26	34.31	53.9	19.5	222	243	-
Vert.	7311.000	AV	35.37	36.61	-33.94	-	2.26	40.30	53.9	13.6	150	10	-
Vert.	9748.000	AV	34.21	37.93	-31.51	-	2.26	42.89	53.9	11.0	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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 WAC1 WAC1 WAC1 WAC1
Date August 10, 2024 August 14, 2024 August 16, 2024 August 20, 2024
Temperature / Humidity 22 deg. C / 55 % RH 22 deg. C / 41 % RH 24 deg. C / 54 % RH 24 deg. C / 59 % RH
Engineer Takahiro Suzuki Akihiro Oda Akihiro Oda Yuta Shiba
(1 GHz to 2.8 GHz) (2.8 GHz to 10 GHz) (10 GHz to 18 GHz) (18 GHz to 26.5 GHz)
Mode Tx 11ax-20 OFDM 2462 MHz

(* 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.	2483.500	PK	52.65	27.96	-28.18	-	2.26	54.69	73.9	19.2	139	36	-
Hori.	4924.000	PK	46.92	32.55	-35.84	-	2.26	45.89	73.9	28.0	198	335	-
Hori.	7386.000	PK	46.21	36.71	-33.79	-	2.26	51.39	73.9	22.5	150	303	-
Hori.	9848.000	PK	46.77	37.92	-31.39	-	2.26	55.56	73.9	18.3	150	0	-
Hori.	2483.500	AV	36.94	27.96	-28.18	-	2.26	38.98	53.9	14.9	139	36	-
Hori.	4924.000	AV	35.33	32.55	-35.84	-	2.26	34.30	53.9	19.6	198	335	-
Hori.	7386.000	AV	35.72	36.71	-33.79	-	2.26	40.90	53.9	13.0	150	303	-
Hori.	9848.000	AV	35.02	37.92	-31.39	-	2.26	43.81	53.9	10.0	150	0	floor noise
Vert.	2483.500	PK	59.71	27.96	-28.18	-	2.26	61.75	73.9	12.1	139	345	-
Vert.	4924.000	PK	45.99	32.55	-35.84	-	2.26	44.96	73.9	28.9	209	327	-
Vert.	7386.000	PK	47.01	36.71	-33.79	-	2.26	52.19	73.9	21.7	150	308	-
Vert.	9848.000	PK	45.88	37.92	-31.39	-	2.26	54.67	73.9	19.2	150	0	-
Vert.	2483.500	AV	39.35	27.96	-28.18	-	2.26	41.39	53.9	12.5	139	345	-
Vert.	4924.000	AV	35.43	32.55	-35.84	-	2.26	34.40	53.9	19.5	209	327	-
Vert.	7386.000	AV	35.26	36.71	-33.79	-	2.26	40.44	53.9	13.4	150	308	-
Vert.	9848.000	AV	34.43	37.92	-31.39	-	2.26	43.22	53.9	10.6	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

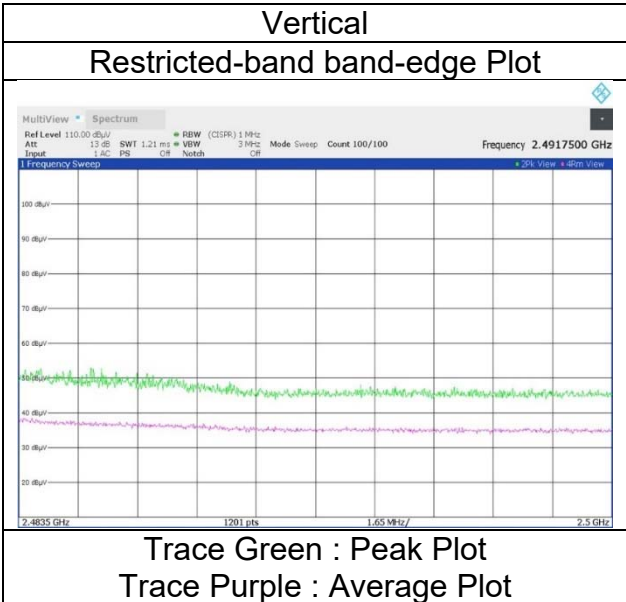
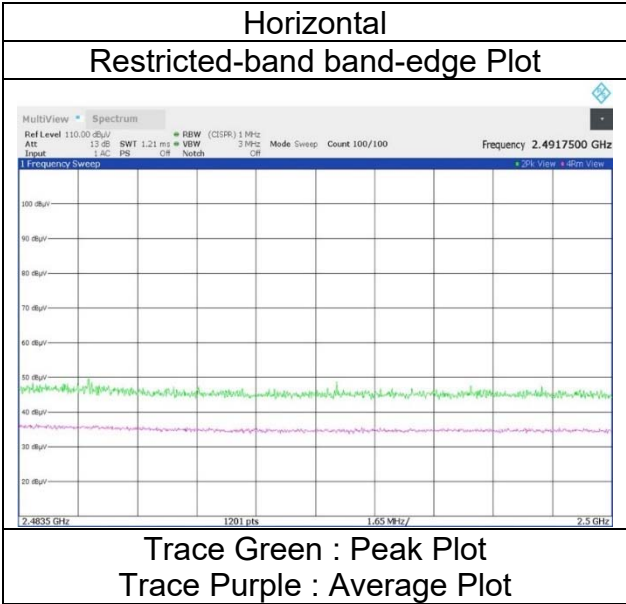
10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Shonan EMC Lab.
WAC1
August 10, 2024
22 deg. C / 55 % RH
Takahiro Suzuki
(1 GHz to 2.8 GHz)
Tx 11ax-20 OFDM 2412 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	WAC1	WAC1	WAC1
Date	August 10, 2024	August 15, 2024	August 16, 2024
Temperature / Humidity	22 deg. C / 55 % RH	27 deg. C / 51 % RH	24 deg. C / 54 % RH
Engineer	Takahiro Suzuki	Yuta Shiba	Akihiro Oda
	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)
Mode	Tx 11ax-20 OFDMA 2412 MHz, 26-tone RU Index 0		

(* 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.	2390.000	PK	48.37	27.85	-28.23	-	2.26	50.25	73.9	23.6	146	352	-
Hori.	2390.000	AV	35.32	27.85	-28.23	-	2.26	37.20	53.9	16.7	146	352	-
Vert.	2390.000	PK	48.18	27.85	-28.23	-	2.26	50.06	73.9	23.8	279	359	-
Vert.	2390.000	AV	35.57	27.85	-28.23	-	2.26	37.45	53.9	16.4	279	359	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2412.000	PK	94.89	27.89	-28.23	-	2.26	96.81	-	-	Carrier
Hori.	2400.000	PK	57.27	27.89	-28.22	-	2.26	59.20	76.8	17.6	-
Vert.	2412.000	PK	97.41	27.89	-28.23	-	2.26	99.33	-	-	Carrier
Vert.	2400.000	PK	58.89	27.89	-28.22	-	2.26	60.82	79.3	18.4	-

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

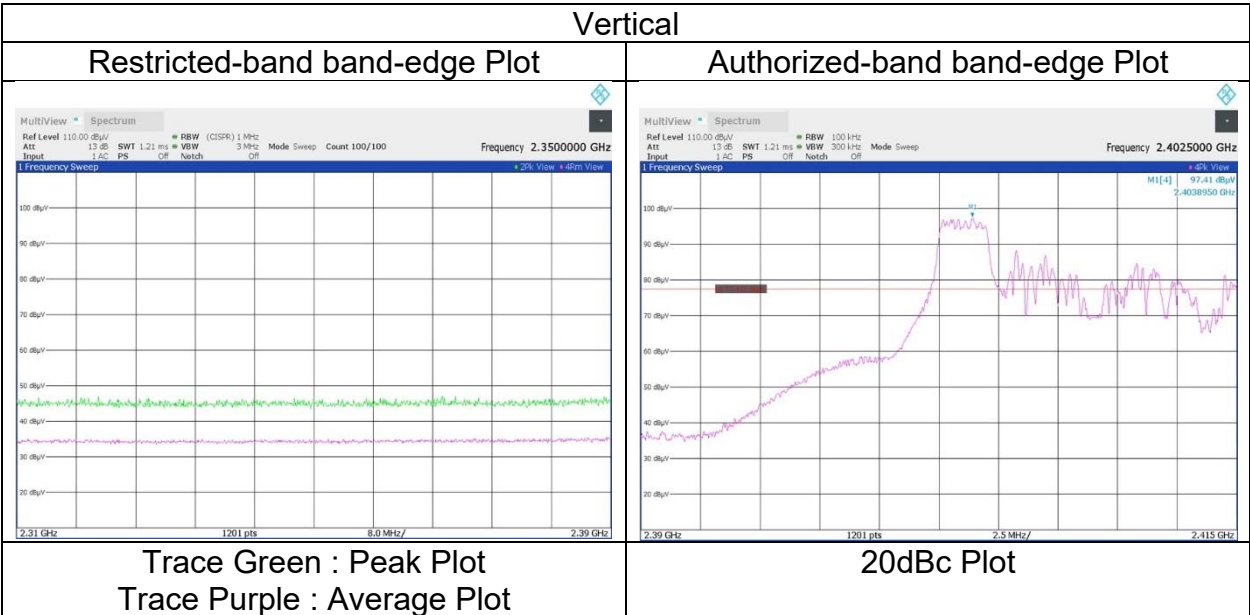
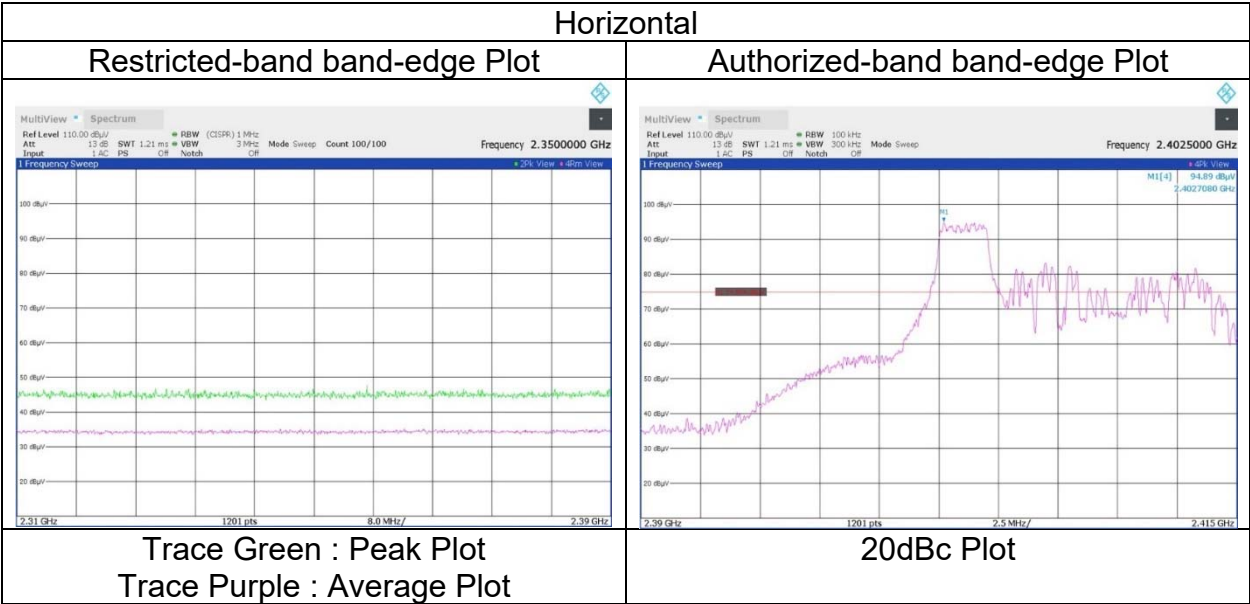
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 10, 2024
Temperature / Humidity	22 deg. C / 55 % RH
Engineer	Takahiro Suzuki
	(1 GHz to 2.8 GHz)
Mode	Tx 11ax-20 OFDMA 2412 MHz, 26-tone RU Index 0



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

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1
Date August 10, 2024
Temperature / Humidity 22 deg. C / 55 % RH
Engineer Takahiro Suzuki
 (1 GHz to 2.8 GHz)
Mode Tx 11ax-20 OFDMA 2462 MHz, 26-tone RU Index 8

(* 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.	2483.500	PK	48.53	27.96	-28.18	-	2.26	50.57	73.9	23.3	125	1	-
Hori.	2483.500	AV	35.69	27.96	-28.18	-	2.26	37.73	53.9	16.1	125	1	-
Vert.	2483.500	PK	48.90	27.96	-28.18	-	2.26	50.94	73.9	22.9	139	338	-
Vert.	2483.500	AV	35.48	27.96	-28.18	-	2.26	37.52	53.9	16.3	139	338	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

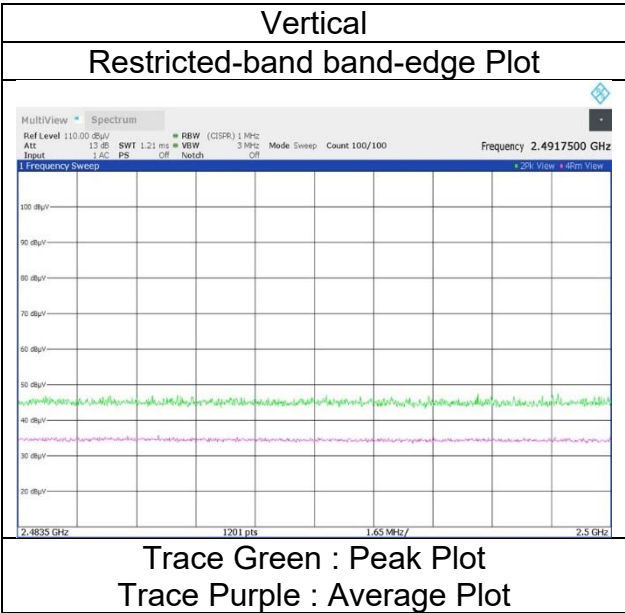
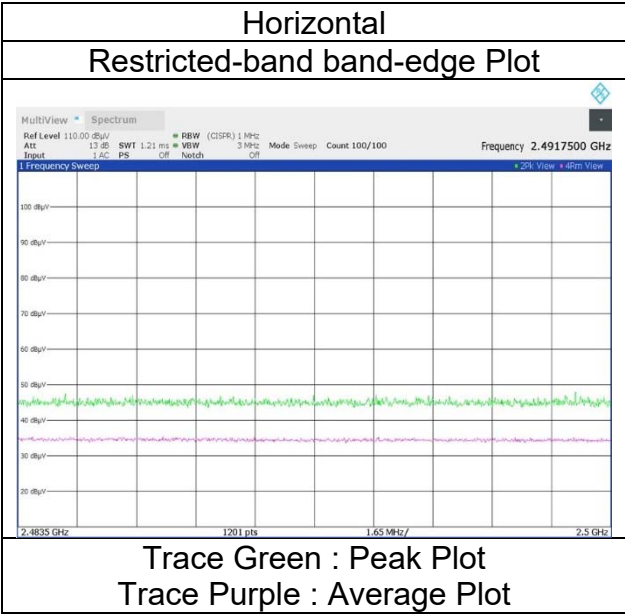
10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Shonan EMC Lab.
WAC1
August 10, 2024
22 deg. C / 55 % RH
Takahiro Suzuki
(1 GHz to 2.8 GHz)
Tx 11ax-20 OFDMA 2462 MHz, 26-tone RU Index 8



* 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 WAC1
Date August 10, 2024
Temperature / Humidity 22 deg. C / 55 % RH
Engineer Takahiro Suzuki
 (1 GHz to 2.8 GHz)
Mode Tx 11ax-20 OFDMA 2412 MHz, 52-tone RU Index 37

(* 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.	2390.000	PK	48.57	27.85	-28.23	-	2.26	50.45	73.9	23.4	150	354	-
Hori.	2390.000	AV	35.95	27.85	-28.23	-	2.26	37.83	53.9	16.0	150	354	-
Vert.	2390.000	PK	48.99	27.85	-28.23	-	2.26	50.87	73.9	23.0	283	1	-
Vert.	2390.000	AV	36.07	27.85	-28.23	-	2.26	37.95	53.9	15.9	283	1	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2412.000	PK	95.28	27.89	-28.23	-	2.26	97.20	-	-	Carrier
Hori.	2400.000	PK	60.76	27.89	-28.22	-	2.26	62.69	77.2	14.5	-
Vert.	2412.000	PK	96.43	27.89	-28.23	-	2.26	98.35	-	-	Carrier
Vert.	2400.000	PK	62.31	27.89	-28.22	-	2.26	64.24	78.3	14.0	-

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

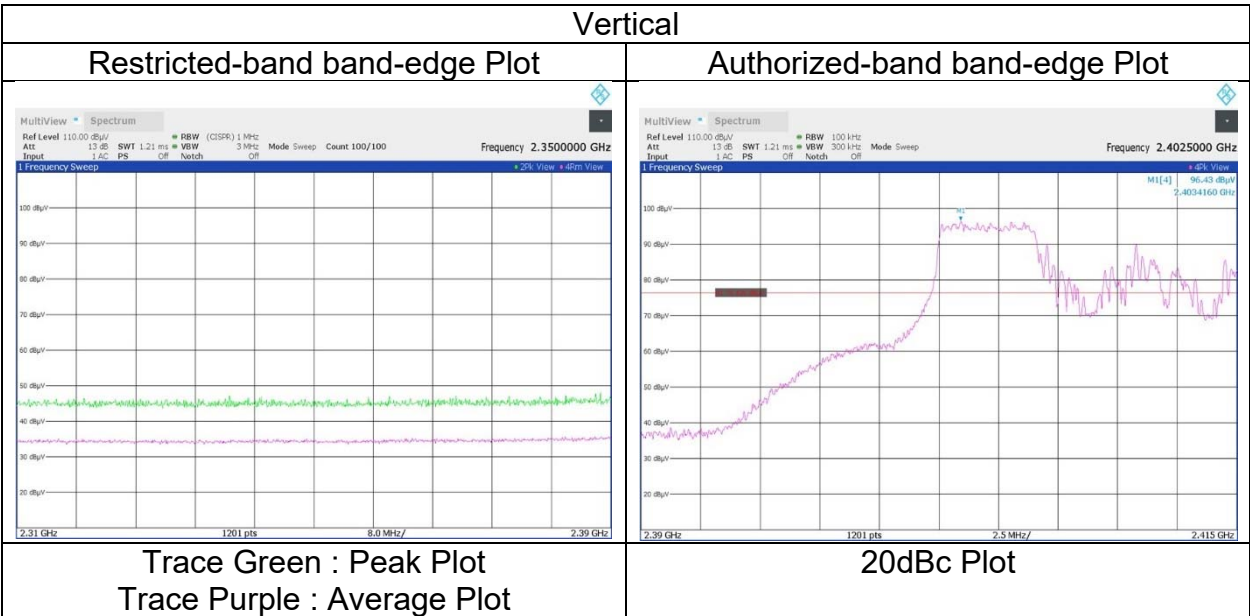
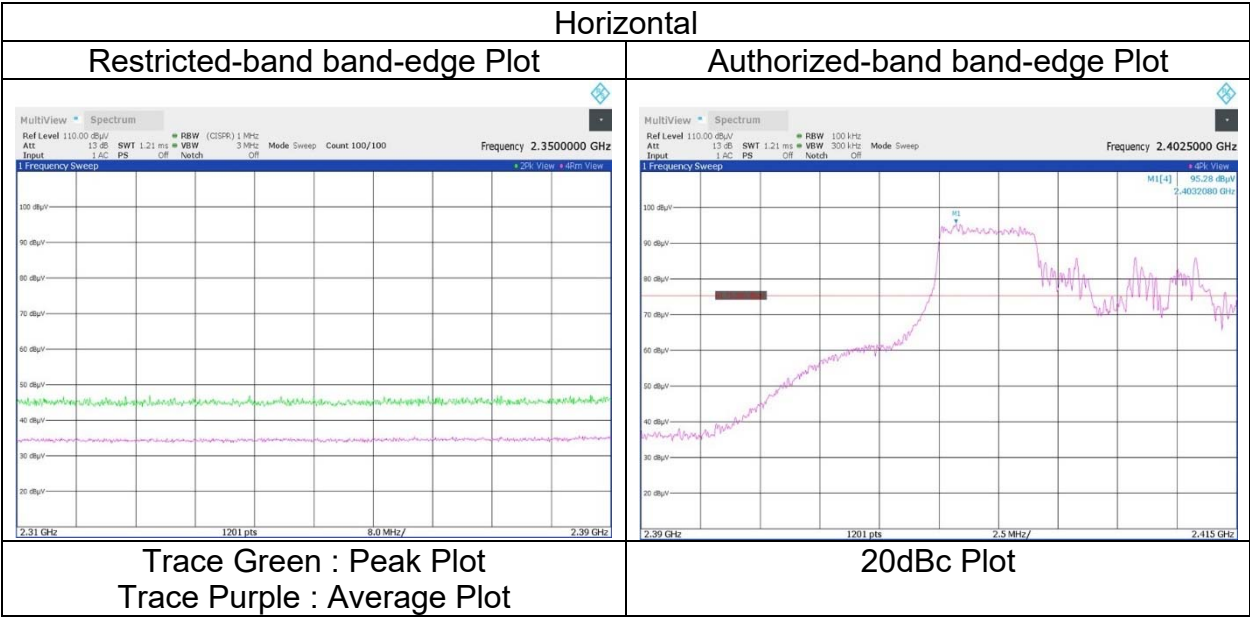
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 10, 2024
Temperature / Humidity	22 deg. C / 55 % RH
Engineer	Takahiro Suzuki
	(1 GHz to 2.8 GHz)
Mode	Tx 11ax-20 OFDMA 2412 MHz, 52-tone RU Index 37



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

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1
Date August 12, 2024
Temperature / Humidity 22 deg. C / 53 % RH
Engineer Takahiro Suzuki
 (1 GHz to 2.8 GHz)
Mode Tx 11ax-20 OFDMA 2462 MHz, 52-tone RU Index 40

(* 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.	2483.500	PK	49.08	27.96	-28.18	-	2.26	51.12	73.9	22.7	141	4	-
Hori.	2483.500	AV	36.20	27.96	-28.18	-	2.26	38.24	53.9	15.6	141	4	-
Vert.	2483.500	PK	49.00	27.96	-28.18	-	2.26	51.04	73.9	22.8	203	257	-
Vert.	2483.500	AV	36.48	27.96	-28.18	-	2.26	38.52	53.9	15.3	203	257	-

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

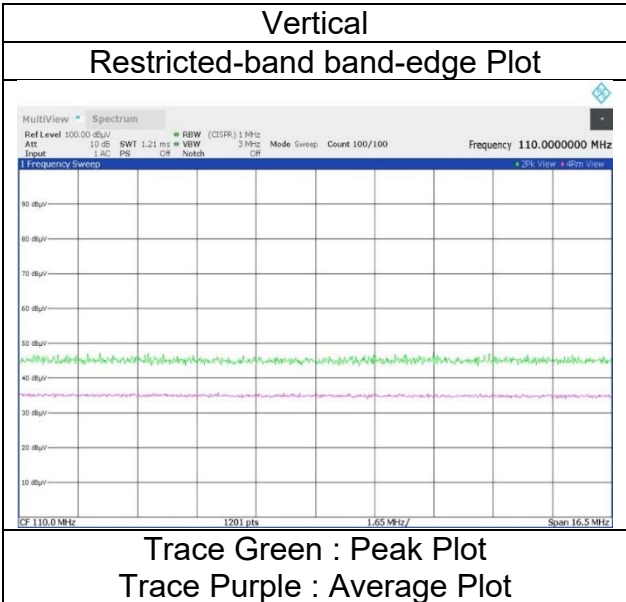
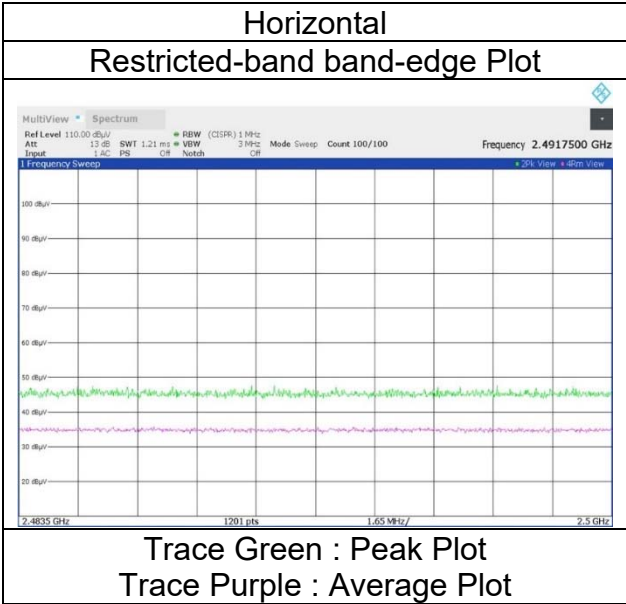
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 12, 2024
Temperature / Humidity	22 deg. C / 53 % RH
Engineer	Takahiro Suzuki
	(1 GHz to 2.8 GHz)
Mode	Tx 11ax-20 OFDMA 2462 MHz, 52-tone RU Index 40



* 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	WAC1	WAC1	WAC1	WAC1
Date	August 12, 2024	August 15, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	22 deg. C / 53 % RH	27 deg. C / 51 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Takahiro Suzuki	Yuta Shiba	Akihiro Oda	Yuta Shiba
	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx 11ax-20 OFDMA 2412 MHz, 106-tone RU Index 53			

(* 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.	2390.000	PK	49.55	27.85	-28.23	-	2.26	51.43	73.9	22.4	111	356	-
Hori.	2390.000	AV	36.34	27.85	-28.23	-	2.26	38.22	53.9	15.6	111	356	-
Vert.	2390.000	PK	47.10	27.85	-28.23	-	2.26	48.98	73.9	24.9	177	359	-
Vert.	2390.000	AV	36.38	27.85	-28.23	-	2.26	38.26	53.9	15.6	177	359	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2412.000	PK	94.15	27.89	-28.23	-	2.26	96.07	-	-	Carrier
Hori.	2400.000	PK	64.22	27.89	-28.22	-	2.26	66.15	76.0	9.8	-
Vert.	2412.000	PK	95.29	27.89	-28.23	-	2.26	97.21	-	-	Carrier
Vert.	2400.000	PK	64.74	27.89	-28.22	-	2.26	66.67	77.2	10.5	-

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

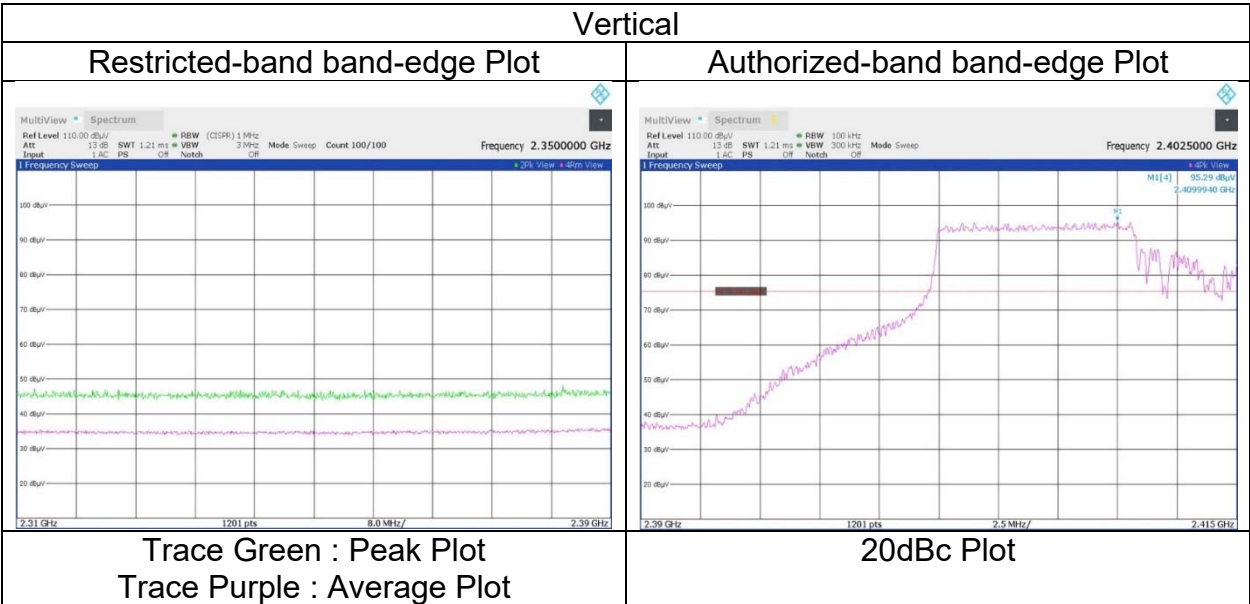
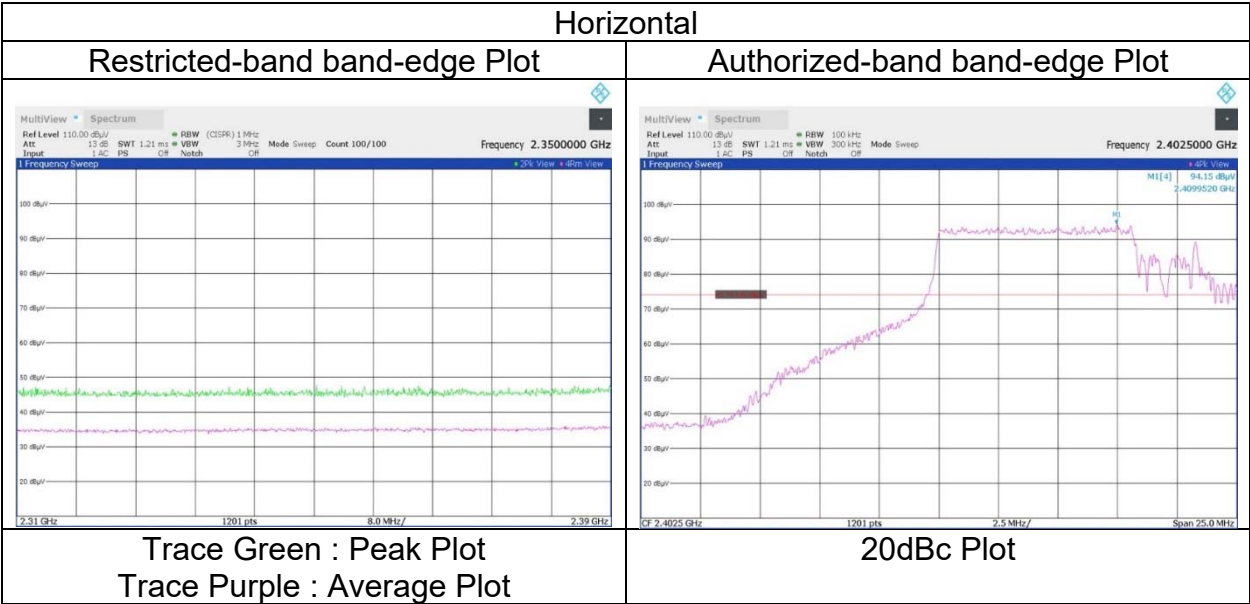
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 12, 2024
Temperature / Humidity	22 deg. C / 53 % RH
Engineer	Takahiro Suzuki
	(1 GHz to 2.8 GHz)
Mode	Tx 11ax-20 OFDMA 2412 MHz, 106-tone RU Index 53



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	WAC1	WAC1	WAC1	WAC1
Date	August 12, 2024	August 15, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	22 deg. C / 53 % RH	27 deg. C / 51 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Takahiro Suzuki	Yuta Shiba	Akihiro Oda	Yuta Shiba
	(1 GHz to 10 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx 11ax-20 OFDMA 2462 MHz, 106-tone RU Index 54			

(* 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.	2483.500	PK	50.91	27.96	-28.18	-	2.26	52.95	73.9	20.9	133	4	-
Hori.	2483.500	AV	36.95	27.96	-28.18	-	2.26	38.99	53.9	14.9	133	4	-
Vert.	2483.500	PK	63.89	27.96	-28.18	-	2.26	65.93	73.9	7.9	201	357	-
Vert.	2483.500	AV	38.06	27.96	-28.18	-	2.26	40.10	53.9	13.8	201	357	-

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

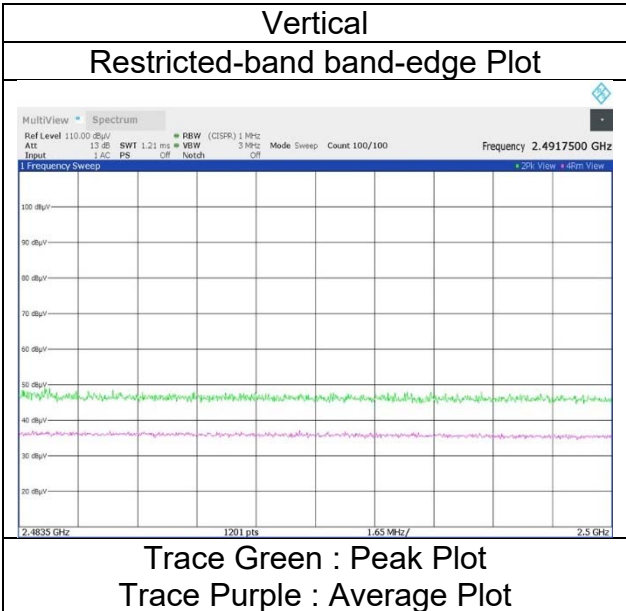
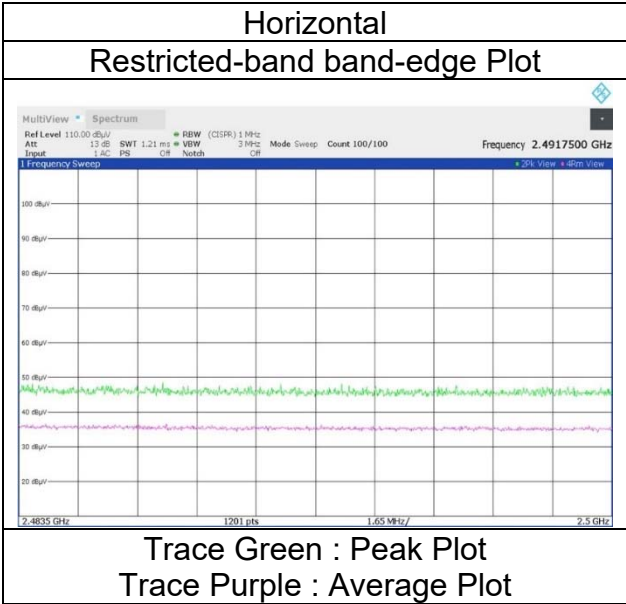
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 12, 2024
Temperature / Humidity	22 deg. C / 53 % RH
Engineer	Takahiro Suzuki
	(1 GHz to 2.8 GHz)
Mode	Tx 11ax-20 OFDMA 2462 MHz, 106-tone RU Index 54



* 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 WAC1
Date August 12, 2024
Temperature / Humidity 22 deg. C / 53 % RH
Engineer Takahiro Suzuki
 (1 GHz to 2.8 GHz)
Mode Tx 11ax-20 OFDMA 2412 MHz, 242-tone RU Index 61

(* 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.	2390.000	PK	54.72	27.85	-28.23	-	2.26	56.60	73.9	17.3	118	348	-
Hori.	2390.000	AV	38.99	27.85	-28.23	-	2.26	40.87	53.9	13.0	118	348	-
Vert.	2390.000	PK	56.35	27.85	-28.23	-	2.26	58.23	73.9	15.6	160	355	-
Vert.	2390.000	AV	40.10	27.85	-28.23	-	2.26	41.98	53.9	11.9	160	355	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2412.000	PK	91.04	27.89	-28.23	-	2.26	92.96	-	-	Carrier
Hori.	2400.000	PK	58.68	27.89	-28.22	-	2.26	60.61	72.9	12.2	-
Vert.	2412.000	PK	93.50	27.89	-28.23	-	2.26	93.16	-	-	Carrier
Vert.	2400.000	PK	59.59	27.89	-28.22	-	2.26	61.52	73.1	11.5	-

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

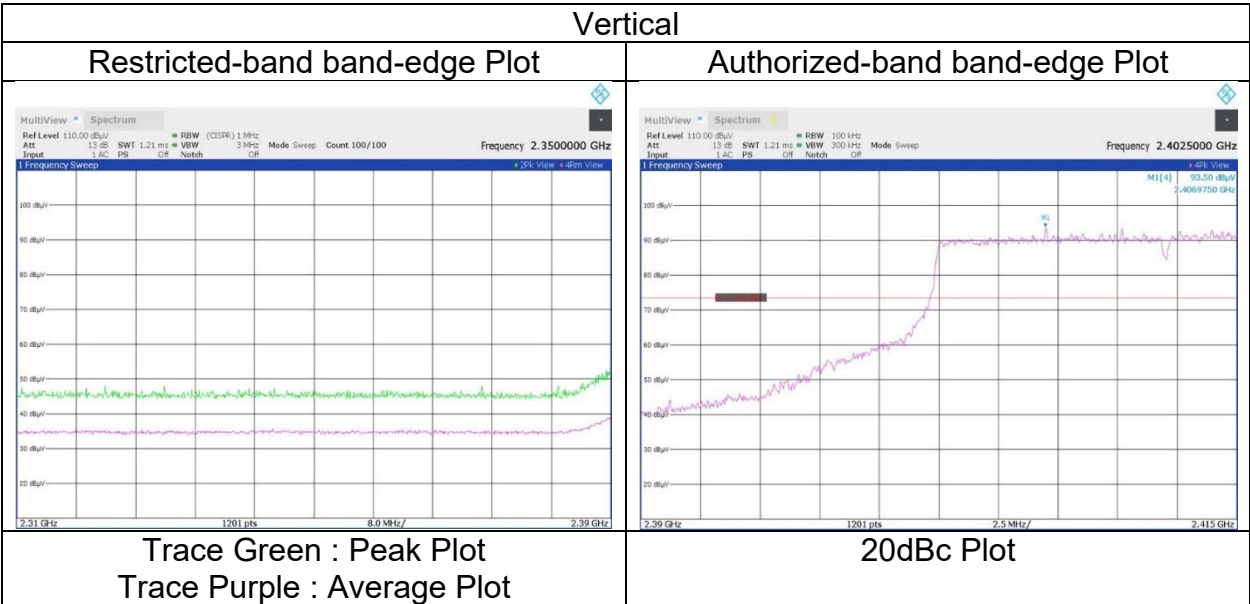
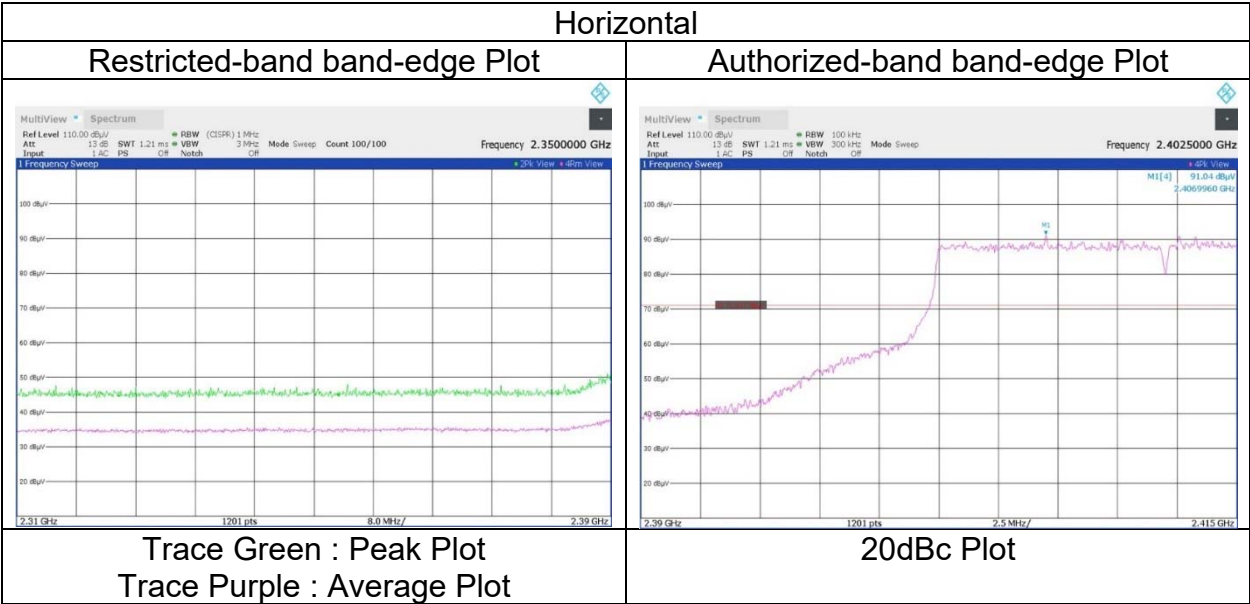
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 12, 2024
Temperature / Humidity	22 deg. C / 53 % RH
Engineer	Takahiro Suzuki
	(1 GHz to 2.8 GHz)
Mode	Tx 11ax-20 OFDMA 2412 MHz, 242-tone RU Index 61



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

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1
Date August 12, 2024
Temperature / Humidity 22 deg. C / 53 % RH
Engineer Takahiro Suzuki
 (1 GHz to 2.8 GHz)
Mode Tx 11ax-20 OFDMA 2462 MHz, 242-tone RU Index 61

(* 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.	2483.500	PK	58.59	27.96	-28.18	-	2.26	60.63	73.9	13.2	136	3	-
Hori.	2483.500	AV	42.58	27.96	-28.18	-	2.26	44.62	53.9	9.2	136	3	-
Vert.	2483.500	PK	60.48	27.96	-28.18	-	2.26	62.52	73.9	11.3	111	357	-
Vert.	2483.500	AV	44.81	27.96	-28.18	-	2.26	46.85	53.9	7.0	111	357	-

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

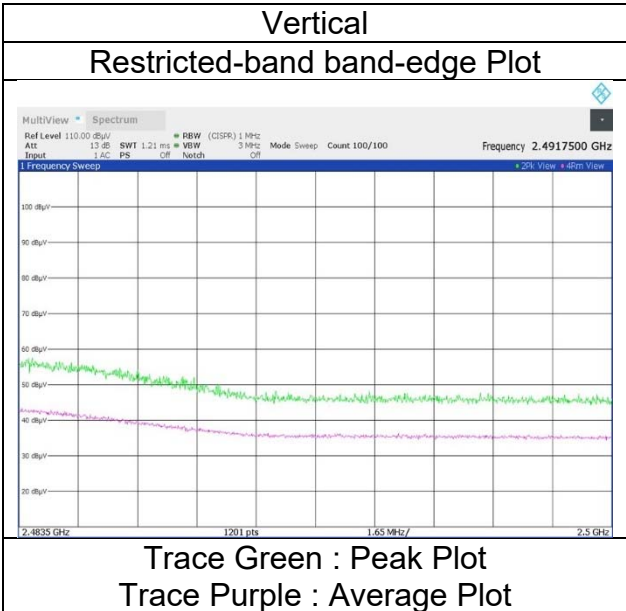
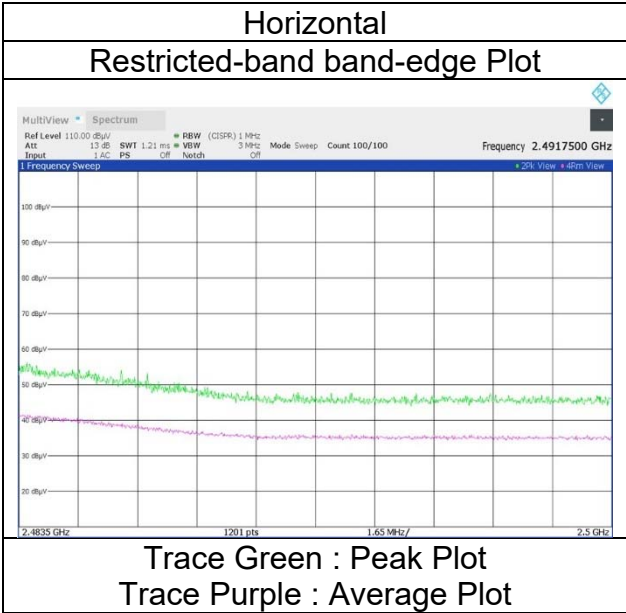
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 12, 2024
Temperature / Humidity	22 deg. C / 53 % RH
Engineer	Takahiro Suzuki
	(1 GHz to 2.8 GHz)
Mode	Tx 11ax-20 OFDMA 2462 MHz, 242-tone RU Index 61



* 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 WAC1 WAC1 WAC1 WAC1
Date August 21, 2024 August 15, 2024 August 16, 2024 August 20, 2024
Temperature / Humidity 25 deg. C / 50 % RH 27 deg. C / 51 % RH 24 deg. C / 54 % RH 24 deg. C / 59 % RH
Engineer Yuta Shiba Yuta Shiba Akihiro Oda Yuta Shiba
(1 GHz to 2.8 GHz) (2.8 GHz to 10 GHz) (10 GHz to 18 GHz) (18 GHz to 26.5 GHz)
Mode Tx BT LE 1M-PHY 2402 MHz

(* 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.	2353.997	PK	47.07	27.75	-28.25	-	2.26	48.83	73.9	25.0	100	338	-
Hori.	2378.043	PK	46.98	27.83	-28.24	-	2.26	48.83	73.9	25.0	100	338	-
Hori.	2390.000	PK	48.43	27.85	-28.23	-	2.26	50.31	73.9	23.5	100	338	-
Hori.	2529.861	PK	50.12	27.87	-28.14	-	2.26	52.11	73.9	21.7	121	355	-
Hori.	2786.000	PK	49.26	27.63	-27.87	-	2.26	51.28	73.9	22.6	103	1	-
Hori.	4804.000	PK	46.68	31.97	-35.72	-	2.26	45.19	73.9	28.7	155	313	-
Hori.	7206.000	PK	46.36	36.23	-34.12	-	2.26	50.73	73.9	23.1	150	0	-
Hori.	9608.000	PK	45.41	37.93	-31.67	-	2.26	53.93	73.9	19.9	150	0	-
Hori.	7206.000	AV	34.71	36.23	-34.12	-	2.26	39.08	53.9	14.8	150	0	floor noise
Hori.	9608.000	AV	34.23	37.93	-31.67	-	2.26	42.75	53.9	11.1	150	0	floor noise
Vert.	2353.997	PK	48.78	27.75	-28.25	-	2.26	50.54	73.9	23.3	109	6	-
Vert.	2378.043	PK	47.18	27.83	-28.24	-	2.26	49.03	73.9	24.8	109	6	-
Vert.	2390.000	PK	48.16	27.85	-28.23	-	2.26	50.04	73.9	23.8	109	6	-
Vert.	2529.861	PK	50.05	27.87	-28.14	-	2.26	52.04	73.9	21.8	118	349	-
Vert.	2786.000	PK	48.90	27.63	-27.87	-	2.26	50.92	73.9	22.9	142	20	-
Vert.	4804.000	PK	46.64	31.97	-35.72	-	2.26	45.15	73.9	28.7	170	4	-
Vert.	7206.000	PK	46.58	36.23	-34.12	-	2.26	50.95	73.9	22.9	150	0	-
Vert.	9608.000	PK	45.52	37.93	-31.67	-	2.26	54.04	73.9	19.8	150	0	-
Vert.	7206.000	AV	34.80	36.23	-34.12	-	2.26	39.17	53.9	14.7	150	0	floor noise
Vert.	9608.000	AV	34.35	37.93	-31.67	-	2.26	42.87	53.9	11.0	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Average measurement value with duty factor

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2353.997	AV	36.60	27.75	-28.25	-	3.74	2.26	42.10	53.9	11.8	*2)
Hori.	2378.043	AV	36.25	27.83	-28.24	-	3.74	2.26	41.84	53.9	12.0	*2)
Hori.	2390.000	AV	35.38	27.85	-28.23	-	3.74	2.26	41.00	53.9	12.9	*1)
Hori.	2529.861	AV	39.84	27.87	-28.14	-	3.74	2.26	45.57	53.9	8.3	*2)
Hori.	2786.000	AV	37.87	27.63	-27.87	-	3.74	2.26	43.63	53.9	10.2	*2)
Hori.	4804.000	AV	34.22	31.97	-35.72	-	3.74	2.26	36.47	53.9	17.4	-
Vert.	2353.997	AV	36.86	27.75	-28.25	-	3.74	2.26	42.36	53.9	11.5	*2)
Vert.	2378.043	AV	36.72	27.83	-28.24	-	3.74	2.26	42.31	53.9	11.5	*2)
Vert.	2390.000	AV	35.59	27.85	-28.23	-	3.74	2.26	41.21	53.9	12.6	*1)
Vert.	2529.861	AV	40.03	27.87	-28.14	-	3.74	2.26	45.76	53.9	8.1	*2)
Vert.	2786.000	AV	36.82	27.63	-27.87	-	3.74	2.26	42.58	53.9	11.3	*2)
Vert.	4804.000	AV	34.80	31.97	-35.72	-	3.74	2.26	37.05	53.9	16.8	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor + Duty Factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

Duty factor refer to "Burst rate confirmation" sheet.

*1) Not out of band emission (Leakage Power)

*2) This noise has the same duty cycle as the carrier.

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2402.000	PK	91.52	27.89	-28.22	-	2.26	93.45	-	-	Carrier
Hori.	2400.000	PK	38.20	27.89	-28.22	-	2.26	40.13	73.4	33.2	-
Vert.	2402.000	PK	95.13	27.89	-28.22	-	2.26	97.06	-	-	Carrier
Vert.	2400.000	PK	39.28	27.89	-28.22	-	2.26	41.21	77.0	35.7	-

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

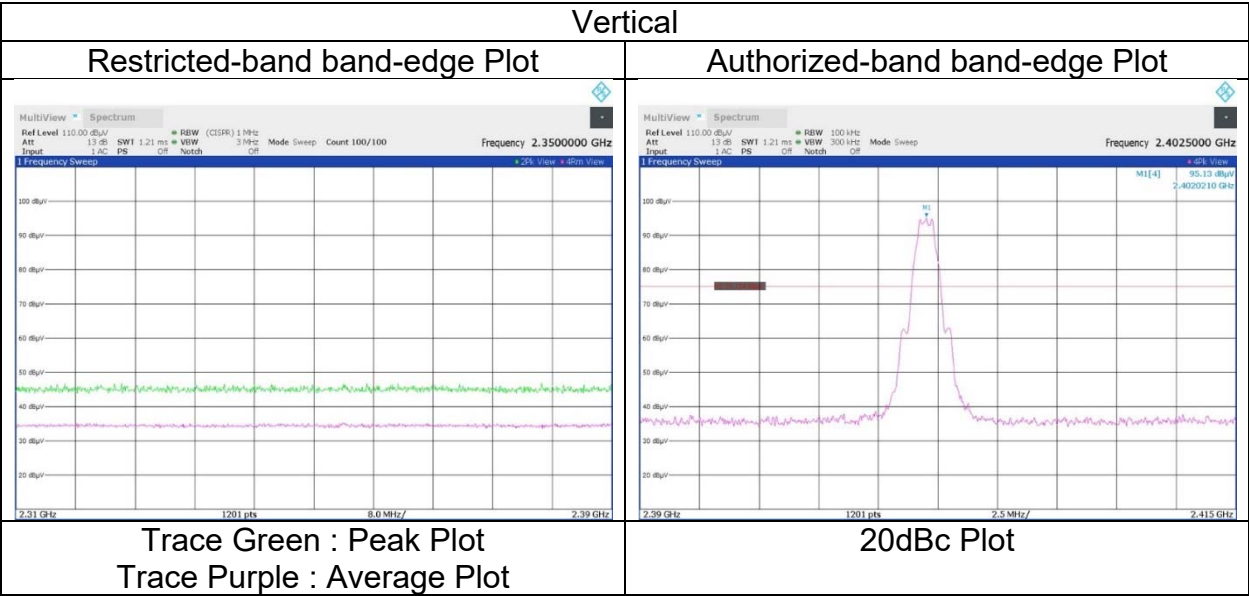
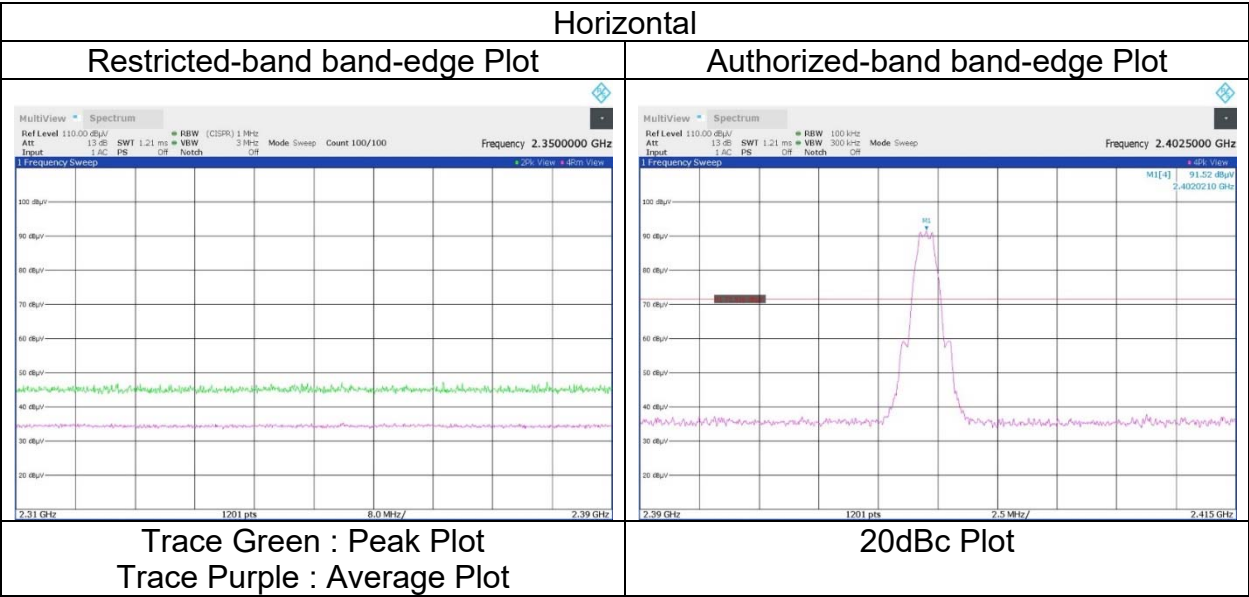
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor + Duty Factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 21, 2024
Temperature / Humidity	25 deg. C / 50 % RH
Engineer	Yuta Shiba
	(1 GHz to 2.8 GHz)
Mode	Tx BT LE 1M-PHY/2402 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	WAC1	WAC1	WAC1	WAC1
Date	August 10, 2024	August 15, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	22 deg. C / 55 % RH	27 deg. C / 51 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Takahiro Suzuki	Yuta Shiba	Akihiro Oda	Yuta Shiba
	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx BT LE 1M-PHY 2440 MHz			

(* 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.	2824.000	PK	49.25	27.89	-36.03	-	2.26	43.37	73.9	30.5	236	10	-
Hori.	4880.000	PK	46.71	32.33	-35.80	-	2.26	45.50	73.9	28.4	140	309	-
Hori.	7320.000	PK	47.07	36.62	-33.90	-	2.26	52.05	73.9	21.8	150	169	-
Hori.	9760.000	PK	45.17	37.93	-31.50	-	2.26	53.86	73.9	20.0	150	146	-
Hori.	7320.000	AV	34.93	36.62	-33.90	-	2.26	39.91	53.9	13.9	150	169	floor noise
Hori.	9760.000	AV	34.22	37.93	-31.50	-	2.26	42.91	53.9	10.9	150	146	floor noise
Vert.	2824.000	PK	50.59	27.89	-36.03	-	2.26	44.71	73.9	29.1	150	351	-
Vert.	4880.000	PK	46.20	32.33	-35.80	-	2.26	44.99	73.9	28.9	180	40	-
Vert.	7320.000	PK	46.33	36.62	-33.90	-	2.26	51.31	73.9	22.5	150	0	-
Vert.	9760.000	PK	46.02	37.93	-31.50	-	2.26	54.71	73.9	19.1	150	0	-
Vert.	7320.000	AV	35.00	36.62	-33.90	-	2.26	39.98	53.9	13.9	150	0	floor noise
Vert.	9760.000	AV	34.15	37.93	-31.50	-	2.26	42.84	53.9	11.0	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Average measurement value with duty factor

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2824.000	AV	40.13	27.89	-36.03	-	3.74	2.26	37.99	53.9	15.9	*1)
Hori.	4880.000	AV	34.86	32.33	-35.80	-	3.74	2.26	37.39	53.9	16.5	-
Vert.	2824.000	AV	41.05	27.89	-36.03	-	3.74	2.26	38.91	53.9	14.9	*1)
Vert.	4880.000	AV	35.31	32.33	-35.80	-	3.74	2.26	37.84	53.9	16.0	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

Duty factor refer to "Burst rate confirmation" sheet.

*1) This noise has the same duty cycle as the carrier.

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1 WAC1 WAC1 WAC1
Date August 10, 2024 August 15, 2024 August 16, 2024 August 20, 2024
Temperature / Humidity 22 deg. C / 55 % RH 27 deg. C / 51 % RH 24 deg. C / 54 % RH 24 deg. C / 59 % RH
Engineer Takahiro Suzuki Yuta Shiba Akihiro Oda Yuta Shiba
(1 GHz to 2.8 GHz) (2.8 GHz to 10 GHz) (10 GHz to 18 GHz) (18 GHz to 26.5 GHz)
Mode Tx BT LE 1M-PHY 2480 MHz

(* 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.	2483.500	PK	49.75	27.96	-28.18	-	2.26	51.79	73.9	22.1	121	345	-
Hori.	2864.000	PK	48.50	28.22	-36.12	-	2.26	42.86	73.9	31.0	230	11	-
Hori.	4960.000	PK	46.48	32.62	-35.89	-	2.26	45.47	73.9	28.4	163	315	-
Hori.	7440.000	PK	45.77	36.69	-33.68	-	2.26	51.04	73.9	22.8	150	28	-
Hori.	9920.000	PK	45.58	37.93	-31.31	-	2.26	54.46	73.9	19.4	150	226	-
Hori.	7440.000	AV	34.15	36.69	-33.68	-	2.26	39.42	53.9	14.4	150	28	floor noise
Hori.	9920.000	AV	33.36	37.93	-31.31	-	2.26	42.24	53.9	11.6	150	226	floor noise
Vert.	2483.500	PK	49.31	27.96	-28.18	-	2.26	51.35	73.9	22.5	140	333	-
Vert.	2864.000	PK	49.89	28.22	-36.12	-	2.26	44.25	73.9	29.6	149	352	-
Vert.	4960.000	PK	46.37	32.62	-35.89	-	2.26	45.36	73.9	28.5	169	12	-
Vert.	7440.000	PK	46.49	36.69	-33.68	-	2.26	51.76	73.9	22.1	150	0	-
Vert.	9920.000	PK	45.30	37.93	-31.31	-	2.26	54.18	73.9	19.7	150	0	-
Vert.	7440.000	AV	34.10	36.69	-33.68	-	2.26	39.37	53.9	14.5	150	0	floor noise
Vert.	9920.000	AV	33.29	37.93	-31.31	-	2.26	42.17	53.9	11.7	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Average measurement value with duty factor

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2483.500	AV	36.44	27.96	-28.18	-	3.74	2.26	42.22	53.9	11.6	*1)
Hori.	2864.000	AV	38.87	28.22	-36.12	-	3.74	2.26	36.97	53.9	16.9	*2)
Hori.	4960.000	AV	34.59	32.62	-35.89	-	3.74	2.26	37.32	53.9	16.5	-
Vert.	2483.500	AV	36.95	27.96	-28.18	-	3.74	2.26	42.73	53.9	11.1	*1)
Vert.	2864.000	AV	40.36	28.22	-36.12	-	3.74	2.26	38.46	53.9	15.4	*2)
Vert.	4960.000	AV	34.36	32.62	-35.89	-	3.74	2.26	37.09	53.9	16.8	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

Duty factor refer to "Burst rate confirmation" sheet.

*1) Not out of band emission (Leakage Power)

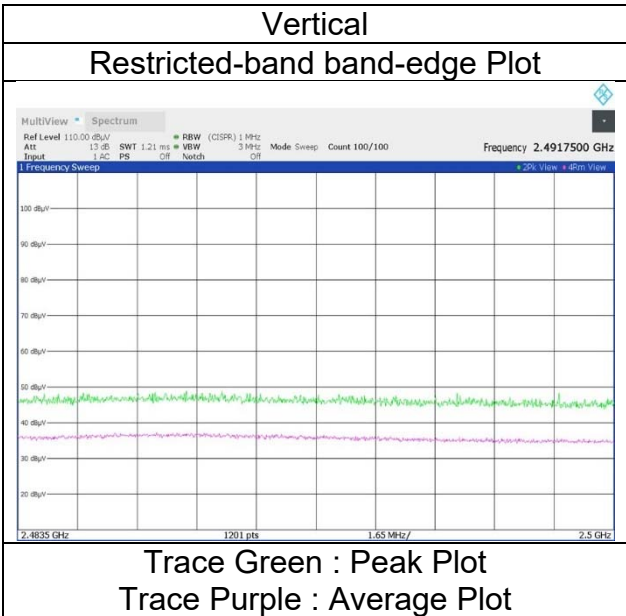
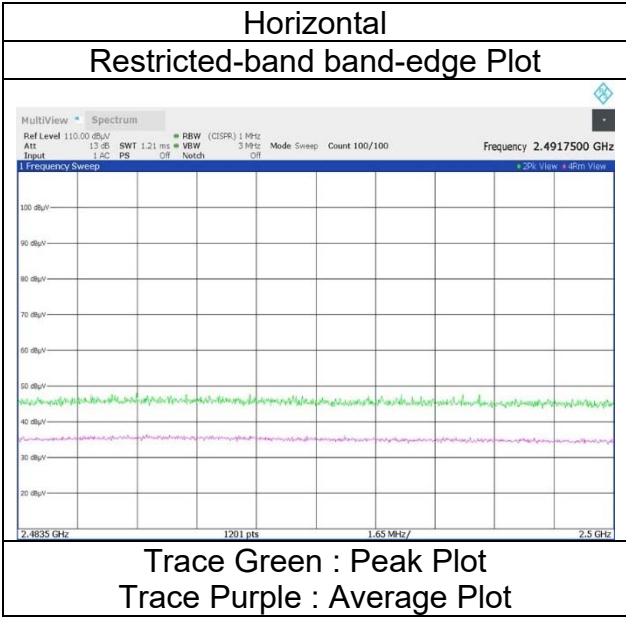
*2) This noise has the same duty cycle as the carrier.

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Shonan EMC Lab.
WAC1
August 10, 2024
22 deg. C / 55 % RH
Takahiro Suzuki
(1 GHz to 2.8 GHz)
Tx BT LE 1M-PHY 2480 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	WAC2	WAC1	WAC1	WAC1	WAC1
Date	September 2, 2024	August 21, 2024	August 15, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	23 deg. C / 51 % RH	25 deg. C / 50 % RH	27 deg. C / 51 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Yuta Shiba (Below 1 GHz)	Yuta Shiba (1 GHz to 2.8 GHz)	Yuta Shiba (2.8 GHz to 10 GHz)	Akihiro Oda (10 GHz to 18 GHz)	Yuta Shiba (18 GHz to 26.5 GHz)
Mode	Tx BT LE 2M-PHY 2402 MHz				

(* 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.	57.102	QP	45.00	9.62	6.43	33.12	0.00	27.93	40.0	12.0	400	347	-
Hori.	193.166	QP	42.80	14.14	7.19	33.07	0.00	31.06	43.5	12.4	169	7	-
Hori.	207.561	QP	42.30	11.38	7.25	33.04	0.00	27.89	43.5	15.6	171	15	-
Hori.	251.201	QP	46.40	11.90	7.39	32.92	0.00	32.77	46.0	13.2	125	16	-
Hori.	266.277	QP	45.20	12.66	7.44	32.89	0.00	32.41	46.0	13.5	116	32	-
Hori.	410.115	QP	43.10	16.04	7.86	32.49	0.00	34.51	46.0	11.4	100	349	-
Hori.	793.218	QP	35.00	20.81	8.74	30.98	0.00	33.57	46.0	12.4	148	98	-
Hori.	2390.000	PK	47.54	27.85	-28.23	-	2.26	49.42	73.9	24.4	110	6	-
Hori.	2529.861	PK	50.03	27.87	-28.14	-	2.26	52.02	73.9	21.8	122	353	-
Hori.	2786.000	PK	49.26	27.63	-27.87	-	2.26	51.28	73.9	22.6	104	359	-
Hori.	4804.000	PK	46.68	31.97	-35.72	-	2.26	45.19	73.9	28.7	150	0	-
Hori.	7206.000	PK	46.81	36.23	-34.12	-	2.26	51.18	73.9	22.7	150	0	-
Hori.	9608.000	PK	45.71	37.93	-31.67	-	2.26	54.23	73.9	19.6	150	0	-
Hori.	4804.000	AV	32.90	31.97	-35.72	-	2.26	31.41	53.9	22.4	150	0	floor noise
Hori.	7206.000	AV	34.60	36.23	-34.12	-	2.26	38.97	53.9	14.9	150	0	floor noise
Hori.	9608.000	AV	34.11	37.93	-31.67	-	2.26	42.63	53.9	11.2	150	0	floor noise
Vert.	400.516	QP	38.40	15.86	7.84	32.51	0.00	29.59	46.0	16.4	133	170	-
Vert.	793.215	QP	33.00	20.81	8.74	30.98	0.00	31.57	46.0	14.4	152	176	-
Vert.	2390.000	PK	47.87	27.85	-28.23	-	2.26	49.75	73.9	24.1	214	331	-
Vert.	2529.861	PK	49.97	27.87	-28.14	-	2.26	51.96	73.9	21.9	120	351	-
Vert.	2786.000	PK	48.12	27.63	-27.87	-	2.26	50.14	73.9	23.7	143	21	-
Vert.	4804.000	PK	46.74	31.97	-35.72	-	2.26	45.25	73.9	28.6	150	0	-
Vert.	7206.000	PK	46.61	36.23	-34.12	-	2.26	50.98	73.9	22.9	150	0	-
Vert.	9608.000	PK	45.81	37.93	-31.67	-	2.26	54.33	73.9	19.5	150	0	-
Vert.	4804.000	AV	33.02	31.97	-35.72	-	2.26	31.53	53.9	22.3	150	0	floor noise
Vert.	7206.000	AV	34.77	36.23	-34.12	-	2.26	39.14	53.9	14.7	150	0	floor noise
Vert.	9608.000	AV	34.50	37.93	-31.67	-	2.26	43.02	53.9	10.8	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Average measurement value with duty factor

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2390.000	AV	35.85	27.85	-28.23	-	9.08	2.26	46.81	53.9	7.0	*1)
Hori.	2529.861	AV	39.76	27.87	-28.14	-	9.08	2.26	50.83	53.9	3.0	*2)
Hori.	2786.000	AV	36.63	27.63	-27.87	-	9.08	2.26	47.73	53.9	6.1	*2)
Vert.	2390.000	AV	35.38	27.85	-28.23	-	9.08	2.26	46.34	53.9	7.5	*1)
Vert.	2529.861	AV	40.00	27.87	-28.14	-	9.08	2.26	51.07	53.9	2.8	*2)
Vert.	2786.000	AV	36.45	27.63	-27.87	-	9.08	2.26	47.55	53.9	6.3	*2)

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

Duty factor refer to "Burst rate confirmation" sheet.

*1) Not out of band emission (Leakage Power)

*2) This noise has the same duty cycle as the carrier.

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2402.000	PK	91.50	27.89	-28.22	-	2.26	93.43	-	-	Carrier
Hori.	2400.000	PK	47.98	27.89	-28.22	-	2.26	49.91	73.4	23.4	-
Vert.	2402.000	PK	95.16	27.89	-28.22	-	2.26	97.09	-	-	Carrier
Vert.	2400.000	PK	51.07	27.89	-28.22	-	2.26	53.00	77.0	24.0	-

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

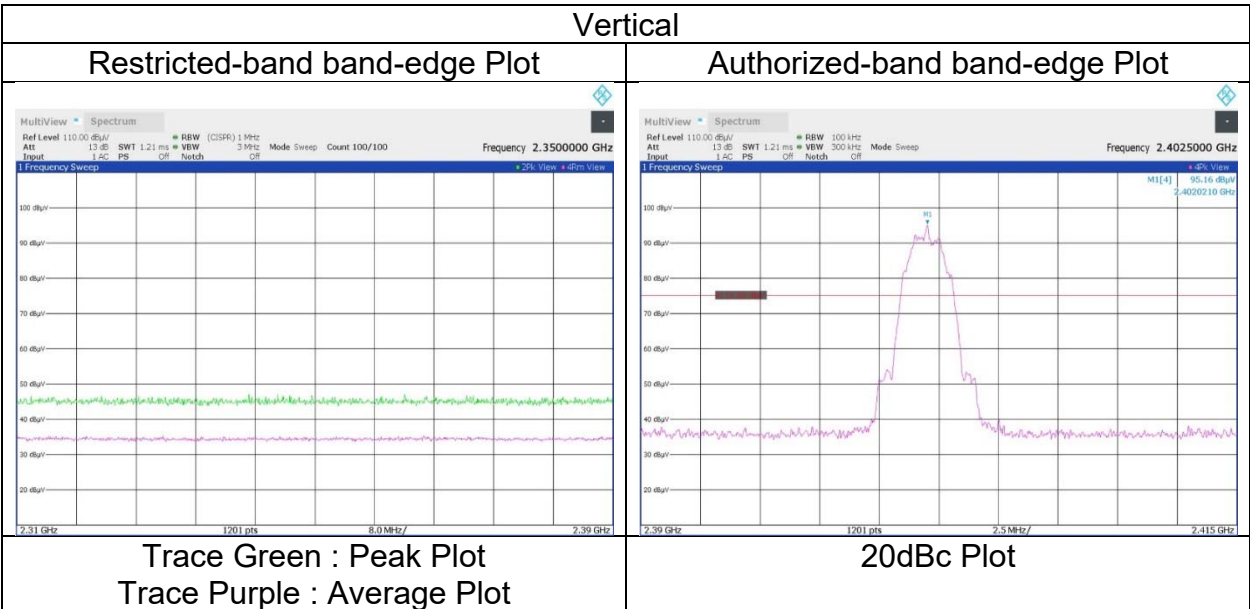
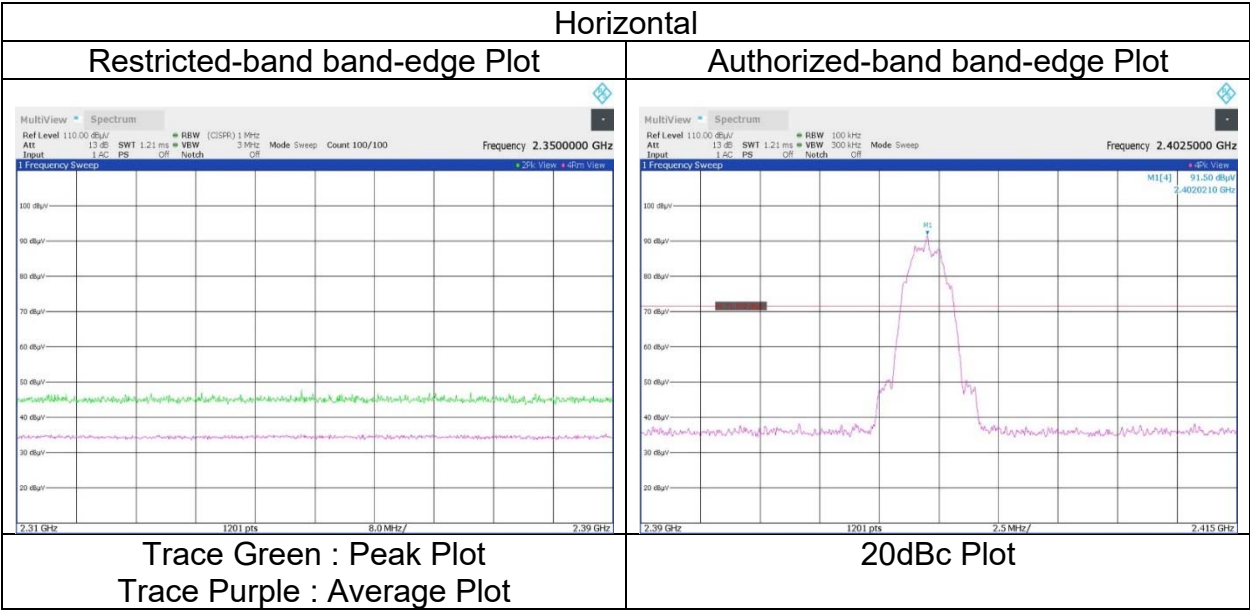
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 21, 2024
Temperature / Humidity	25 deg. C / 50 % RH
Engineer	Yuta Shiba
	(1 GHz to 2.8 GHz)
Mode	Tx BT LE 2M-PHY 2402 MHz



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	WAC1	WAC1	WAC1	WAC1
Date	August 10, 2024	August 15, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	22 deg. C / 55 % RH	27 deg. C / 51 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Takahiro Suzuki	Yuta Shiba	Akihiro Oda	Yuta Shiba
	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx BT LE 2M-PHY 2440 MHz			

(* 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.	2824.000	PK	48.38	27.89	-36.03	-	2.26	42.50	73.9	31.4	146	1	-
Hori.	4880.000	PK	46.91	32.33	-35.80	-	2.26	45.70	73.9	28.2	150	0	-
Hori.	7320.000	PK	46.32	36.62	-33.90	-	2.26	51.30	73.9	22.6	150	0	-
Hori.	9760.000	PK	45.22	37.93	-31.50	-	2.26	53.91	73.9	19.9	150	0	-
Hori.	4880.000	AV	34.59	32.33	-35.80	-	2.26	33.38	53.9	20.5	150	0	floor noise
Hori.	7320.000	AV	33.46	36.62	-33.90	-	2.26	38.44	53.9	15.4	150	0	floor noise
Hori.	9760.000	AV	33.32	37.93	-31.50	-	2.26	42.01	53.9	11.8	150	0	floor noise
Vert.	2824.000	PK	49.31	27.89	-36.03	-	2.26	43.43	73.9	30.4	120	17	-
Vert.	4880.000	PK	46.28	32.33	-35.80	-	2.26	45.07	73.9	28.8	150	0	-
Vert.	7320.000	PK	45.77	36.62	-33.90	-	2.26	50.75	73.9	23.1	150	0	-
Vert.	9760.000	PK	45.18	37.93	-31.50	-	2.26	53.87	73.9	20.0	150	0	-
Vert.	4880.000	AV	34.02	32.33	-35.80	-	2.26	32.81	53.9	21.0	150	0	floor noise
Vert.	7320.000	AV	33.77	36.62	-33.90	-	2.26	38.75	53.9	15.1	150	0	floor noise
Vert.	9760.000	AV	33.24	37.93	-31.50	-	2.26	41.93	53.9	11.9	150	0	floor noise

1 GHz to 18 GHz: Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)- Gain(Amplifier)) + Distance factor
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz: 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz: 20log (1.0 m / 3.0 m) = -9.54 dB

Average measurement value with duty factor

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2824.000	AV	36.38	27.89	-36.03	-	9.08	2.26	39.58	53.9	14.3	*1)
Vert.	2824.000	AV	36.83	27.89	-36.03	-	9.08	2.26	40.03	53.9	13.8	*1)

1 GHz to 18 GHz: Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)- Gain(Amplifier)) + Distance factor
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz: 20log (3.89 m / 3.0 m) = 2.26 dB
Duty factor refer to "Burst rate confirmation" sheet.
*1) This noise has the same duty cycle as the carrier.

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1 WAC1 WAC1 WAC1
Date August 21, 2024 August 15, 2024 August 16, 2024 August 20, 2024
Temperature / Humidity 25 deg. C / 50 % RH 27 deg. C / 51 % RH 24 deg. C / 54 % RH 24 deg. C / 59 % RH
Engineer Yuta Shiba Yuta Shiba Akihiro Oda Yuta Shiba
(1 GHz to 2.8 GHz) (2.8 GHz to 10 GHz) (10 GHz to 18 GHz) (18 GHz to 26.5 GHz)
Mode Tx BT LE 2M-PHY 2480 MHz

(* 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.	2483.500	PK	47.32	27.96	-28.18	-	2.26	49.36	73.9	24.5	152	350	-
Hori.	2864.000	PK	48.38	28.22	-36.12	-	2.26	42.74	73.9	31.1	140	358	-
Hori.	4960.000	PK	45.65	32.62	-35.89	-	2.26	44.64	73.9	29.2	150	0	-
Hori.	7440.000	PK	46.22	36.69	-33.68	-	2.26	51.49	73.9	22.4	150	0	-
Hori.	9920.000	PK	45.57	37.93	-31.31	-	2.26	54.45	73.9	19.4	150	0	-
Hori.	4960.000	AV	34.04	32.62	-35.89	-	2.26	33.03	53.9	20.8	150	0	floor noise
Hori.	7440.000	AV	34.19	36.69	-33.68	-	2.26	39.46	53.9	14.4	150	0	floor noise
Hori.	9920.000	AV	33.31	37.93	-31.31	-	2.26	42.19	53.9	11.7	150	0	floor noise
Vert.	2483.500	PK	48.31	27.96	-28.18	-	2.26	50.35	73.9	23.5	214	330	-
Vert.	2864.000	PK	49.88	28.22	-36.12	-	2.26	44.24	73.9	29.6	120	11	-
Vert.	4960.000	PK	46.72	32.62	-35.89	-	2.26	45.71	73.9	28.1	150	14	-
Vert.	7440.000	PK	45.97	36.69	-33.68	-	2.26	51.24	73.9	22.6	150	0	-
Vert.	9920.000	PK	45.23	37.93	-31.31	-	2.26	54.11	73.9	19.7	150	0	-
Vert.	4960.000	AV	34.18	32.62	-35.89	-	2.26	33.17	53.9	20.7	150	14	floor noise
Vert.	7440.000	AV	34.27	36.69	-33.68	-	2.26	39.54	53.9	14.3	150	0	floor noise
Vert.	9920.000	AV	33.30	37.93	-31.31	-	2.26	42.18	53.9	11.7	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

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

Average measurement value with duty factor

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2483.500	AV	35.60	27.96	-28.18	-	9.08	2.26	46.72	53.9	7.1	*1)
Hori.	2864.000	AV	37.59	28.22	-36.12	-	9.08	2.26	41.03	53.9	12.8	*2)
Vert.	2483.500	AV	37.61	27.96	-28.18	-	9.08	2.26	48.73	53.9	5.1	*1)
Vert.	2864.000	AV	36.93	28.22	-36.12	-	9.08	2.26	40.37	53.9	13.5	*2)

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : $20\log(3.89\text{ m} / 3.0\text{ m}) = 2.26\text{ dB}$

Duty factor refer to "Burst rate confirmation" sheet.

*1) Not out of band emission (Leakage Power)

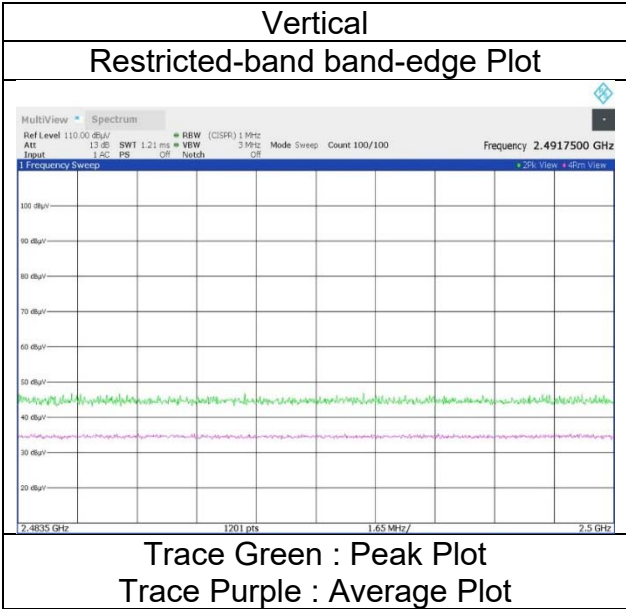
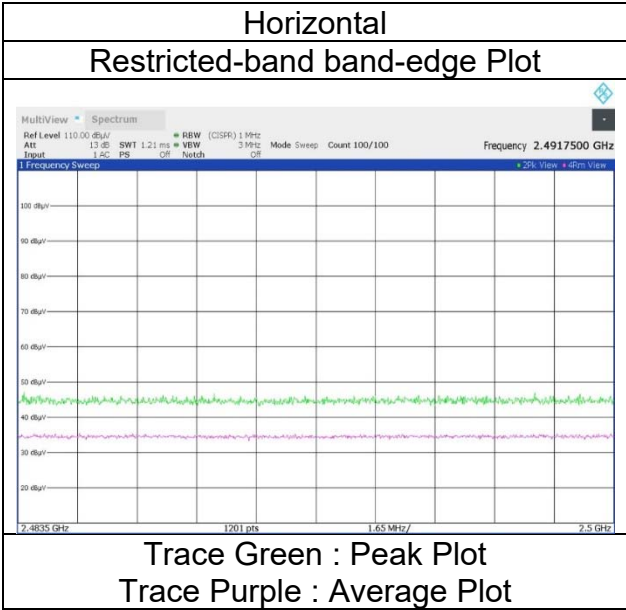
*2) This noise has the same duty cycle as the carrier.

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

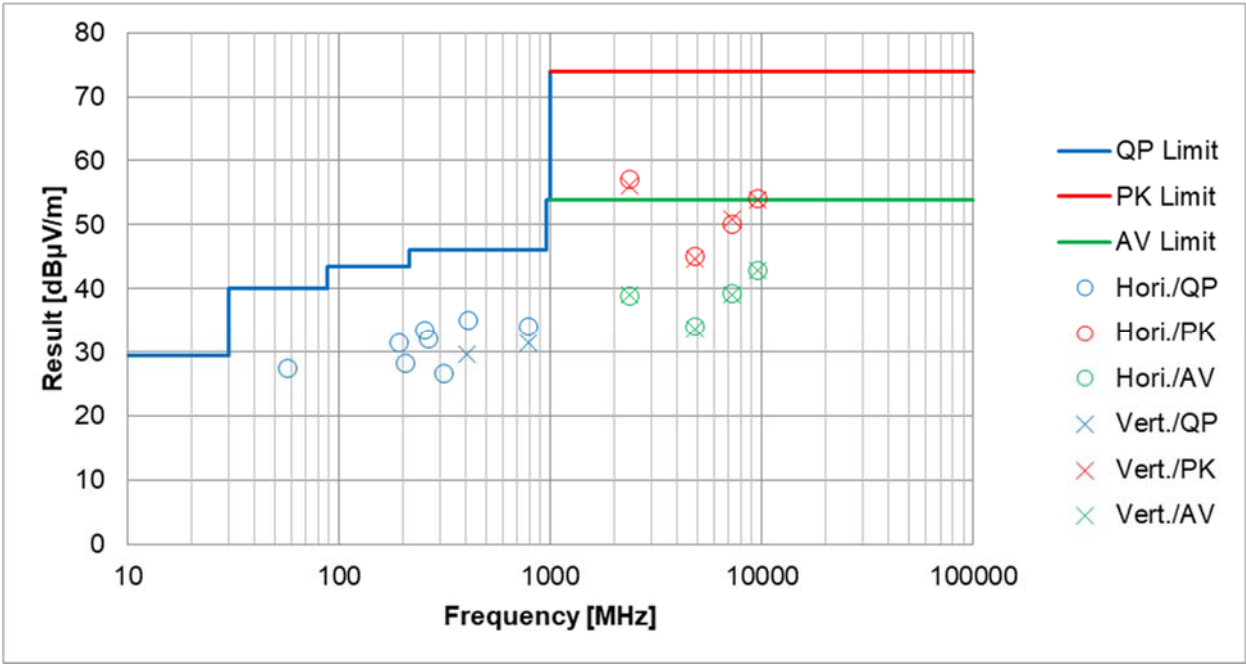
Shonan EMC Lab.
WAC1
August 21, 2024
25 deg. C / 50 % RH
Yuta Shiba
(1 GHz to 2.8 GHz)
Tx BT LE 2M-PHY 2480 MHz



* 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
(Plot data, Worst case mode for Maximum Peak Output Power)

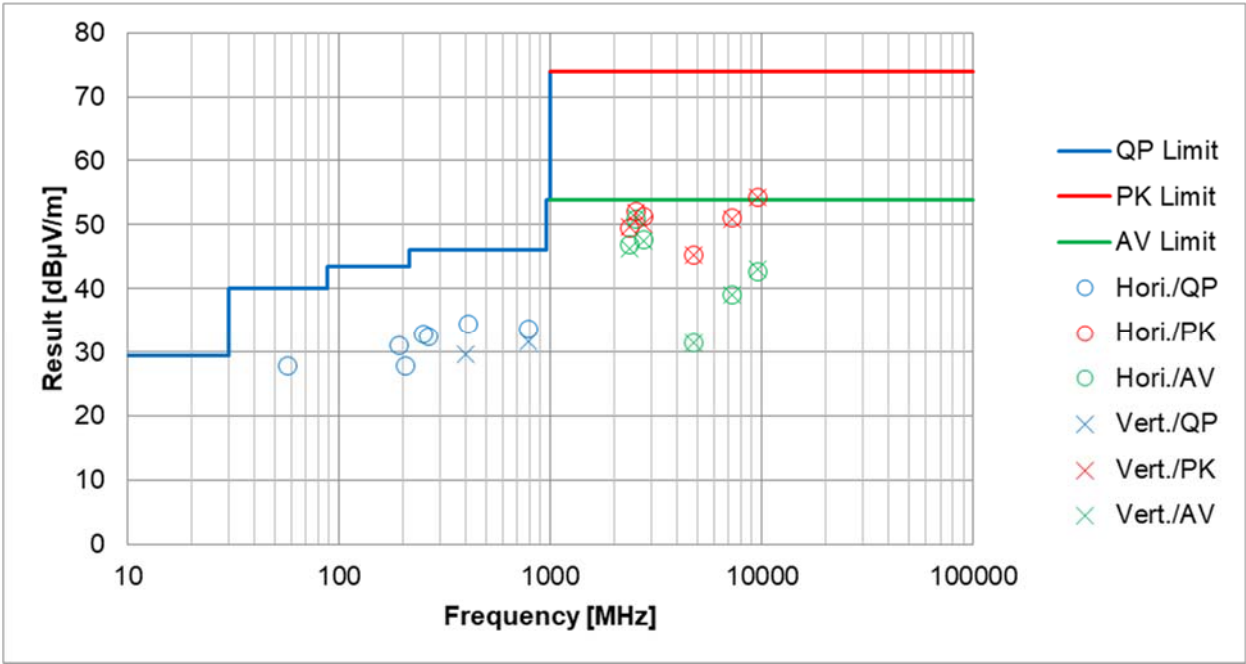
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	WAC2	WAC1	WAC1	WAC1	WAC1
Date	September 2, 2024	August 10, 2024	August 14, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	23 deg. C / 51 % RH	22 deg. C / 55 % RH	22 deg. C / 41 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Yuta Shiba	Takahiro Suzuki	Akihiro Oda	Akihiro Oda	Yuta Shiba
	(Below 1 GHz)	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx 11ax-20 OFDM 2412 MHz				



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

Radiated Spurious Emission
(Plot data, Worst case mode for Maximum Peak Output Power)

Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	WAC2	WAC1	WAC1	WAC1	WAC1
Date	September 2, 2024	August 21, 2024	August 15, 2024	August 16, 2024	August 20, 2024
Temperature / Humidity	23 deg. C / 51 % RH	25 deg. C / 50 % RH	27 deg. C / 51 % RH	24 deg. C / 54 % RH	24 deg. C / 59 % RH
Engineer	Yuta Shiba	Yuta Shiba	Yuta Shiba	Akihiro Oda	Yuta Shiba
	(Below 1 GHz)	(1 GHz to 2.8 GHz)	(2.8 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)
Mode	Tx BT LE 2M-PHY 2402 MHz				



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

Radiated Spurious Emission

Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	WAC2	WAC1	WAC1
Date	September 2, 2024	August 21, 2024	August 22, 2024
Temperature / Humidity	23 deg. C / 51 % RH	25 deg. C / 50 % RH	25 deg. C / 56 % RH
Engineer	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(Below 1 GHz)	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx 11ax-20 OFDM 2412 MHz with Tx 11ax-20 OFDM 5825 MHz		

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

Polarity	Frequency [MHz]	Detector	(11): Peak, Av. Average, Gr. - Good, Bad)										Remark
			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]	
Hori.	57.138	QP	43.60	9.62	6.43	33.12	0.00	26.53	40.0	13.4	400	340	-
Hori.	192.892	QP	42.70	14.12	7.19	33.07	0.00	30.94	43.5	12.5	174	15	-
Hori.	207.584	QP	41.30	11.38	7.25	33.04	0.00	26.89	43.5	16.6	155	19	-
Hori.	215.925	QP	42.50	11.24	7.28	33.02	0.00	28.00	43.5	15.5	155	112	-
Hori.	256.078	QP	45.50	12.08	7.41	32.91	0.00	32.08	46.0	13.9	130	25	-
Hori.	264.667	QP	45.10	12.56	7.43	32.89	0.00	32.20	46.0	13.8	126	16	-
Hori.	409.134	QP	43.20	16.03	7.86	32.50	0.00	34.59	46.0	11.4	100	355	-
Hori.	793.214	QP	36.90	20.81	8.74	30.98	0.00	35.47	46.0	10.5	152	70	-
Hori.	825.595	QP	31.70	20.99	8.79	30.83	0.00	30.65	46.0	15.3	115	347	-
Hori.	2390.000	PK	52.89	27.85	-28.23	-	2.26	54.77	73.9	19.1	101	22	-
Hori.	4824.000	PK	46.23	32.07	-35.74	-	2.26	44.82	73.9	29.0	117	332	-
Hori.	7236.000	PK	45.72	36.38	-34.07	-	2.26	50.29	73.9	23.6	292	16	-
Hori.	9648.000	PK	45.83	37.93	-31.62	-	2.26	54.40	73.9	19.5	150	0	-
Hori.	2390.000	AV	36.49	27.85	-28.23	-	2.26	38.37	53.9	15.5	101	22	-
Hori.	4824.000	AV	34.78	32.07	-35.74	-	2.26	33.37	53.9	20.5	117	332	-
Hori.	7236.000	AV	34.82	36.38	-34.07	-	2.26	39.39	53.9	14.5	292	16	-
Hori.	9648.000	AV	34.58	37.93	-31.62	-	2.26	43.15	53.9	10.7	150	0	floor noise
Vert.	409.147	QP	38.20	16.03	7.86	32.50	0.00	29.59	46.0	16.4	135	182	-
Vert.	793.222	QP	32.50	20.81	8.74	30.98	0.00	31.07	46.0	14.9	149	190	-
Vert.	2390.000	PK	55.93	27.85	-28.23	-	2.26	57.81	73.9	16.0	208	333	-
Vert.	4824.000	PK	47.52	32.07	-35.74	-	2.26	46.11	73.9	27.7	254	25	-
Vert.	7236.000	PK	45.86	36.38	-34.07	-	2.26	50.43	73.9	23.4	276	29	-
Vert.	9648.000	PK	45.03	37.93	-31.62	-	2.26	53.60	73.9	20.3	150	0	-
Vert.	2390.000	AV	39.36	27.85	-28.23	-	2.26	41.24	53.9	12.6	208	333	-
Vert.	4824.000	AV	34.33	32.07	-35.74	-	2.26	32.92	53.9	20.9	254	25	-
Vert.	7236.000	AV	35.00	36.38	-34.07	-	2.26	39.57	53.9	14.3	276	29	-
Vert.	9648.000	AV	34.50	37.93	-31.62	-	2.26	43.07	53.9	10.8	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz: $20 \log (3.89 \text{ m} / 3.0 \text{ m}) = 2.26 \text{ dB}$

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

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.		2412.000	PK	92.39	27.89	-28.23	-	2.26	94.31	-	-	Carrier
Hori.		2400.000	PK	59.70	27.89	-28.22	-	2.26	61.63	74.3	12.6	-
Vert.		2412.000	PK	94.37	27.89	-28.23	-	2.26	96.29	-	-	Carrier
Vert.		2400.000	PK	61.09	27.89	-28.22	-	2.26	63.02	76.2	13.1	-

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

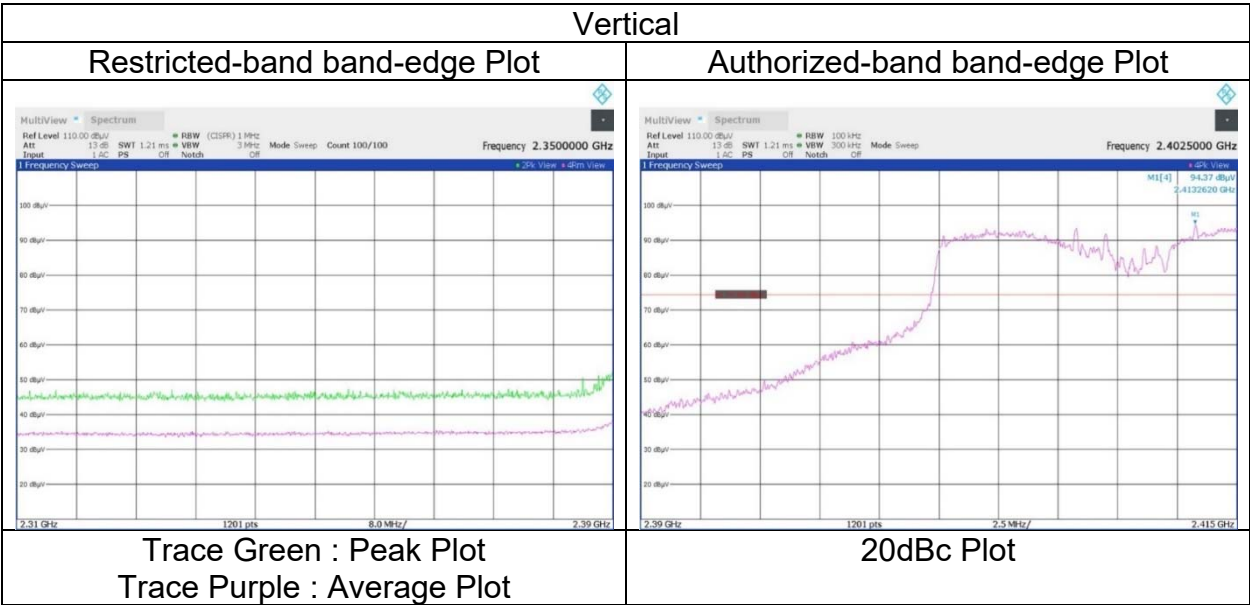
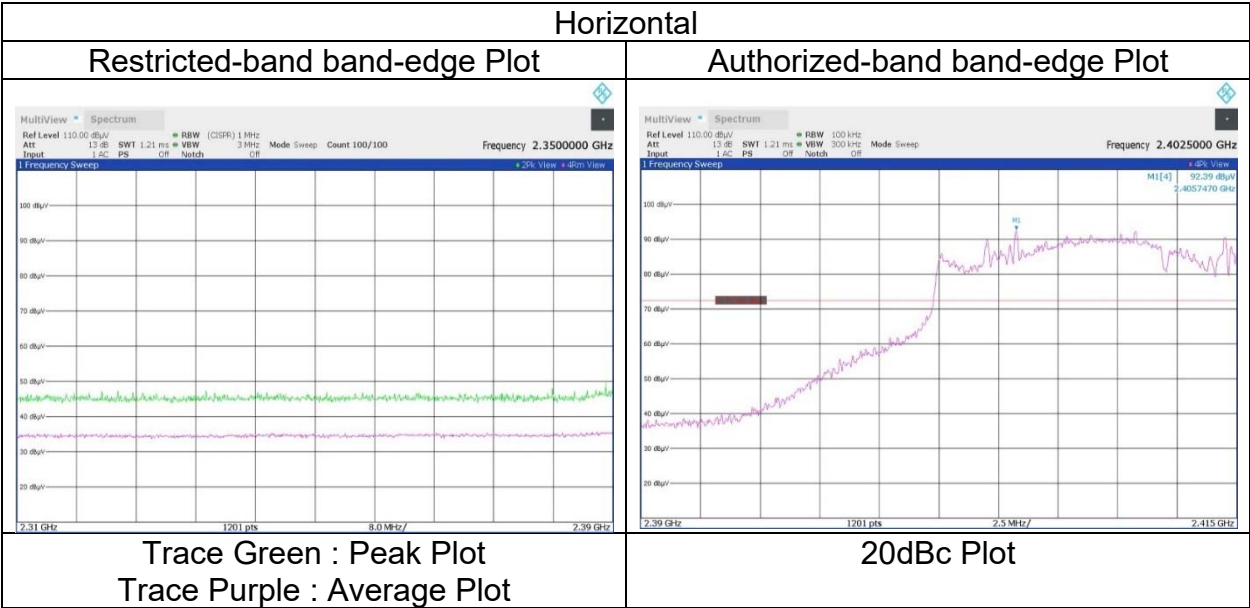
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz: $20 \log (3.89 \text{ m} / 3.0 \text{ m}) = 2.26 \text{ dB}$

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

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 21, 2024
Temperature / Humidity	25 deg. C / 50 % RH
Engineer	Yuta Shiba
	(1 GHz to 10 GHz)
Mode	Tx 11ax-20 OFDM 2412 MHz with Tx 11ax-20 OFDM 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	WAC2	WAC1	WAC1
Date	September 3, 2024	August 21, 2024	August 22, 2024
Temperature / Humidity	23 deg. C / 51 % RH	25 deg. C / 50 % RH	25 deg. C / 56 % RH
Engineer	Shiro Kobayashi	Yuta Shiba	Yosuke Murakami
	(Below 1 GHz)	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx BT LE 2M-PHY 2402 MHz with Tx 11ax-20 OFDM 5825 MHz		

(* 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.	53.772	QP	45.30	9.79	6.45	33.09	0.00	28.45	40.0	11.5	400	133	-
Hori.	193.189	QP	41.10	14.15	7.19	33.07	0.00	29.37	43.5	14.1	176	28	-
Hori.	213.843	QP	41.70	11.26	7.27	33.02	0.00	27.21	43.5	16.2	163	117	-
Hori.	238.985	QP	43.10	11.63	7.35	32.95	0.00	29.13	46.0	16.8	149	11	-
Hori.	253.317	QP	44.40	11.97	7.40	32.91	0.00	30.86	46.0	15.1	125	22	-
Hori.	264.550	QP	43.20	12.55	7.43	32.89	0.00	30.29	46.0	15.7	115	36	-
Hori.	403.801	QP	45.20	15.94	7.85	32.50	0.00	36.49	46.0	9.5	100	351	-
Hori.	793.224	QP	34.80	20.81	8.74	30.98	0.00	33.37	46.0	12.6	152	128	-
Hori.	860.242	QP	25.80	21.91	8.82	30.66	0.00	25.87	46.0	20.1	100	339	-
Hori.	2390.000	PK	46.58	27.85	-28.23	-	2.26	48.46	73.9	25.4	153	341	-
Hori.	2529.838	PK	47.34	27.87	-28.14	-	2.26	49.33	73.9	24.5	104	344	-
Hori.	2785.891	PK	47.58	27.63	-27.87	-	2.26	49.60	73.9	24.3	125	10	-
Hori.	4804.000	PK	48.06	31.97	-35.72	-	2.26	46.57	73.9	27.3	251	308	-
Hori.	7206.000	PK	46.27	36.23	-34.12	-	2.26	50.64	73.9	23.2	150	0	-
Hori.	9608.000	PK	44.96	37.93	-31.67	-	2.26	53.48	73.9	20.4	150	0	-
Hori.	7206.000	AV	34.80	36.23	-34.12	-	2.26	39.17	53.9	14.7	150	0	floor noise
Hori.	9608.000	AV	33.97	37.93	-31.67	-	2.26	42.49	53.9	11.4	150	0	floor noise
Vert.	192.848	QP	38.50	14.11	7.19	33.07	0.00	26.73	43.5	16.7	100	133	-
Vert.	408.813	QP	39.20	16.03	7.86	32.50	0.00	30.59	46.0	15.4	121	165	-
Vert.	793.219	QP	35.00	20.81	8.74	30.98	0.00	33.57	46.0	12.4	154	175	-
Vert.	2390.000	PK	46.74	27.85	-28.23	-	2.26	48.62	73.9	25.2	213	330	-
Vert.	2529.905	PK	48.02	27.87	-28.14	-	2.26	50.01	73.9	23.8	135	32	-
Vert.	2786.341	PK	47.40	27.63	-27.87	-	2.26	49.42	73.9	24.4	133	342	-
Vert.	4804.000	PK	47.57	31.97	-35.72	-	2.26	46.08	73.9	27.8	169	336	-
Vert.	7206.000	PK	46.74	36.23	-34.12	-	2.26	51.11	73.9	22.7	150	0	-
Vert.	9608.000	PK	45.40	37.93	-31.67	-	2.26	53.92	73.9	19.9	150	0	-
Vert.	7206.000	AV	34.78	36.23	-34.12	-	2.26	39.15	53.9	14.7	150	0	floor noise
Vert.	9608.000	AV	34.20	37.93	-31.67	-	2.26	42.72	53.9	11.1	150	0	floor noise

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Average measurement value with duty factor

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2390.000	AV	36.35	27.85	-28.23	-	9.08	2.26	47.31	53.9	6.5	*1)
Hori.	2529.838	AV	35.69	27.87	-28.14	-	9.08	2.26	46.76	53.9	7.1	*2)
Hori.	2785.891	AV	36.15	27.63	-27.87	-	9.08	2.26	47.25	53.9	6.6	*2)
Hori.	4804.000	AV	36.52	31.97	-35.72	-	9.08	2.26	44.11	53.9	9.7	-
Vert.	2390.000	AV	36.16	27.85	-28.23	-	9.08	2.26	47.12	53.9	6.7	*1)
Vert.	2529.905	AV	37.54	27.87	-28.14	-	9.08	2.26	48.61	53.9	5.2	*2)
Vert.	2786.341	AV	37.26	27.63	-27.87	-	9.08	2.26	48.36	53.9	5.5	*2)
Vert.	4804.000	AV	34.91	31.97	-35.72	-	9.08	2.26	42.50	53.9	11.4	-

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

Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

Duty factor refer to "Burst rate confirmation" sheet.

*1) Not out of band emission (Leakage Power)

*2) This noise has the same duty cycle as the carrier.

20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

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]	Remark
Hori.	2402.000	PK	90.63	27.89	-28.22	-	2.26	92.56	-	-	Carrier
Hori.	2400.000	PK	47.19	27.89	-28.22	-	2.26	49.12	72.5	23.3	-
Vert.	2402.000	PK	94.77	27.89	-28.22	-	2.26	96.70	-	-	Carrier
Vert.	2400.000	PK	50.86	27.89	-28.22	-	2.26	52.79	76.7	23.9	-

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

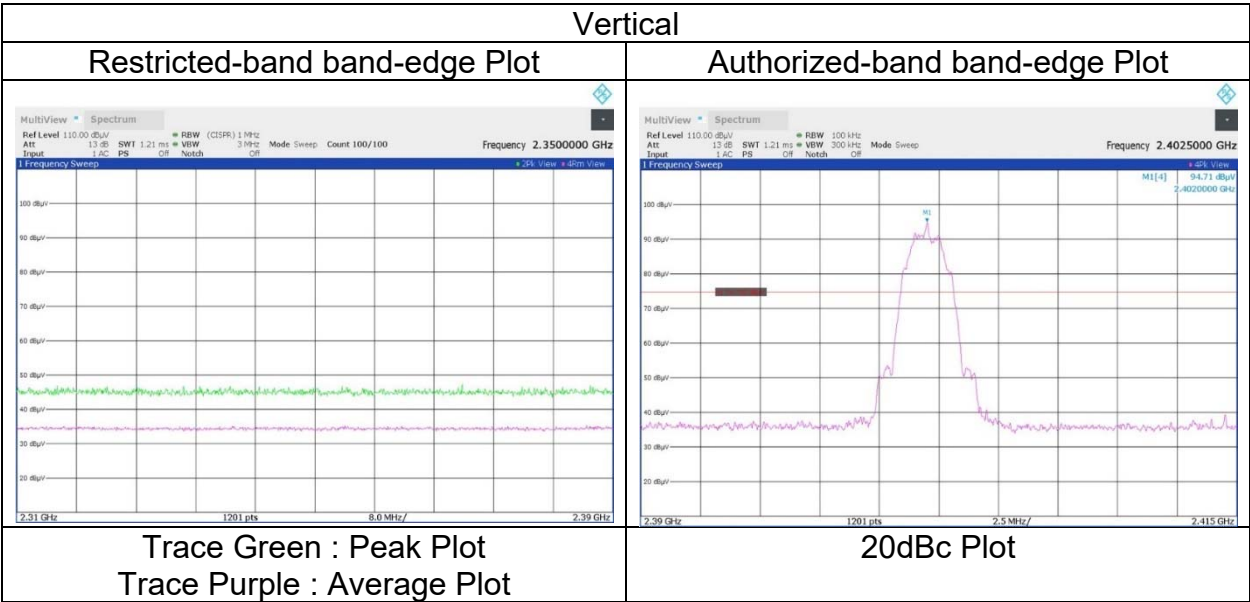
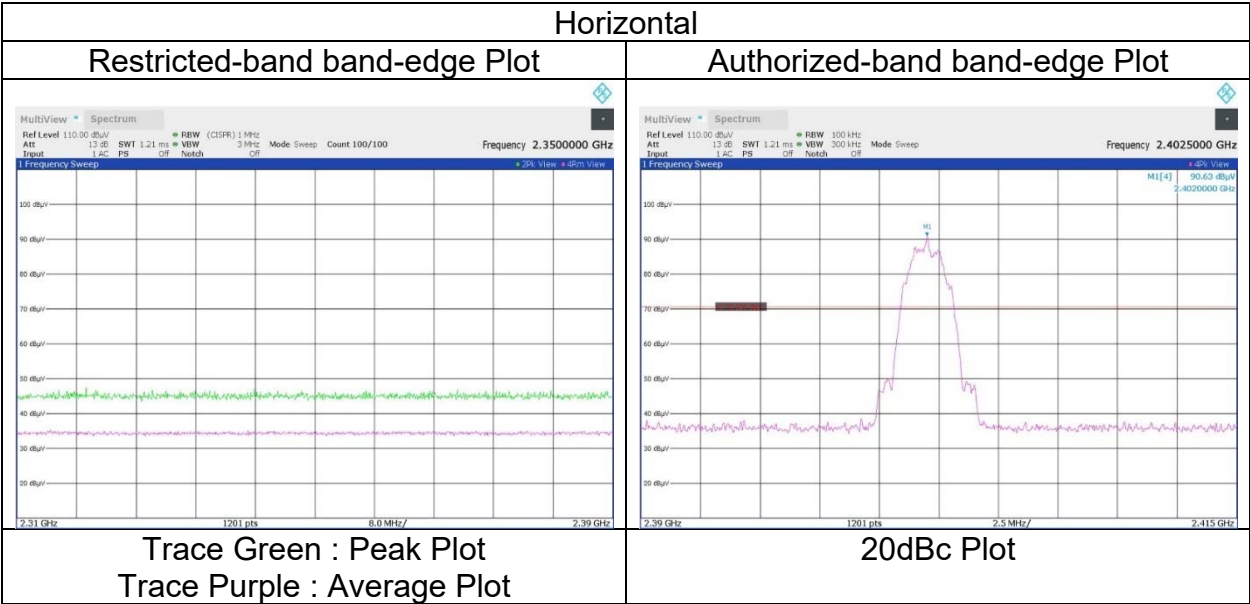
Other bands : Result = Reading + Ant.Fac + Loss (Cable+(Attenuator or Filter)(below 18 GHz) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB

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

Radiated Spurious Emission
(Reference Plot for band-edge)

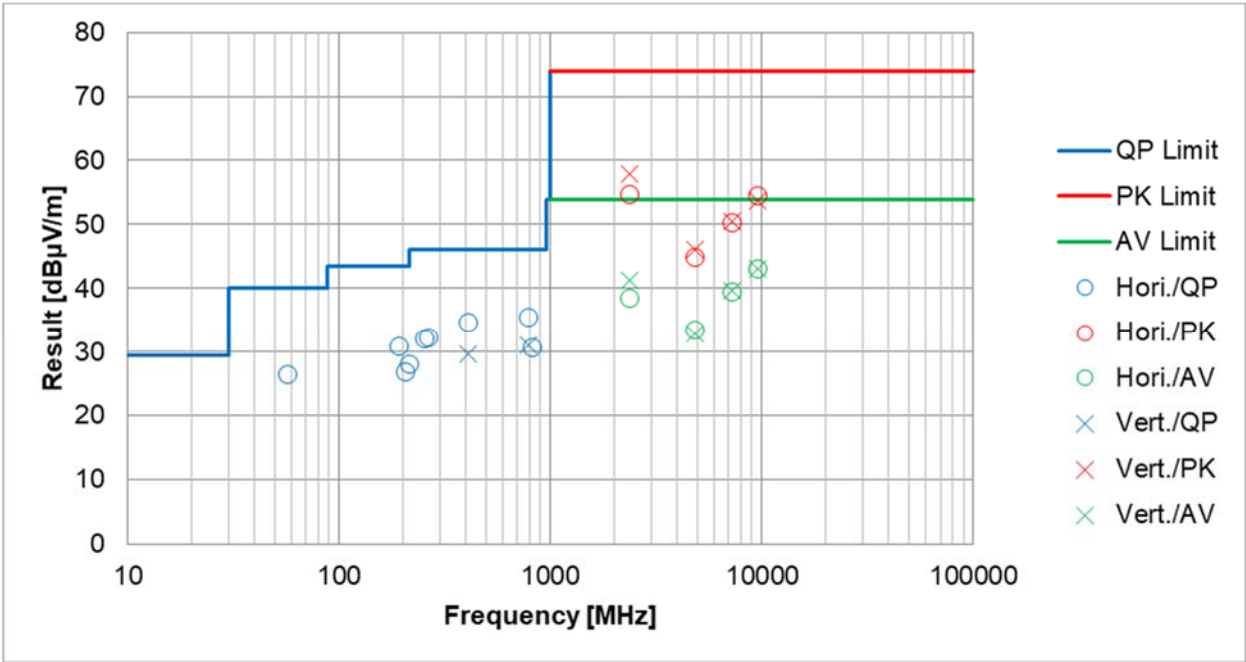
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	August 21, 2024
Temperature / Humidity	25 deg. C / 50 % RH
Engineer	Yuta Shiba
	(1 GHz to 10 GHz)
Mode	Tx BT LE 2M-PHY 2402 MHz with Tx 11ax-20 OFDM 5825 MHz



* 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
(Plot data, Worst case mode for Maximum Peak Output Power)

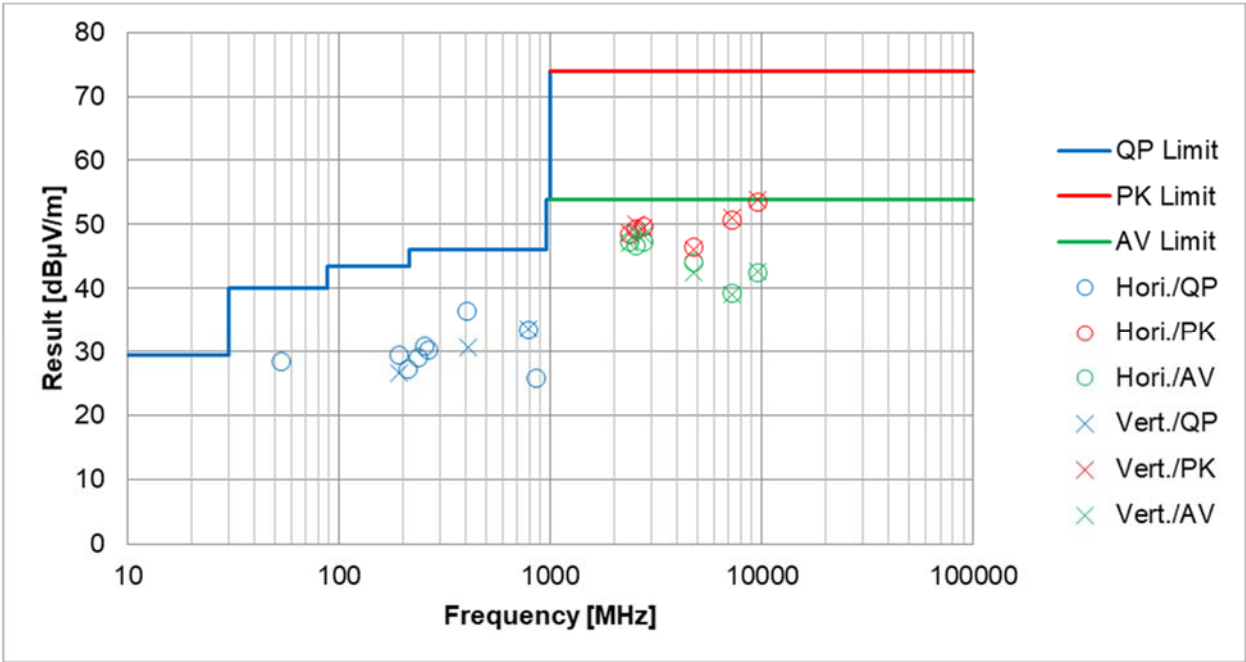
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	WAC2	WAC1	WAC1
Date	September 2, 2024	August 21, 2024	August 22, 2024
Temperature / Humidity	23 deg. C / 51 % RH	25 deg. C / 50 % RH	25 deg. C / 56 % RH
Engineer	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(Below 1 GHz)	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx 11ax-20 OFDM 2412 MHz with Tx 11ax-20 OFDM 5825 MHz		



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

Radiated Spurious Emission
(Plot data, Worst case mode for Maximum Peak Output Power)

Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	WAC2	WAC1	WAC1
Date	September 3, 2024	August 21, 2024	August 22, 2024
Temperature / Humidity	23 deg. C / 51 % RH	25 deg. C / 50 % RH	25 deg. C / 56 % RH
Engineer	Shiro Kobayashi	Yuta Shiba	Yosuke Murakami
	(Below 1 GHz)	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx BT LE 2M-PHY 2402 MHz with Tx 11ax-20 OFDM 5825 MHz		

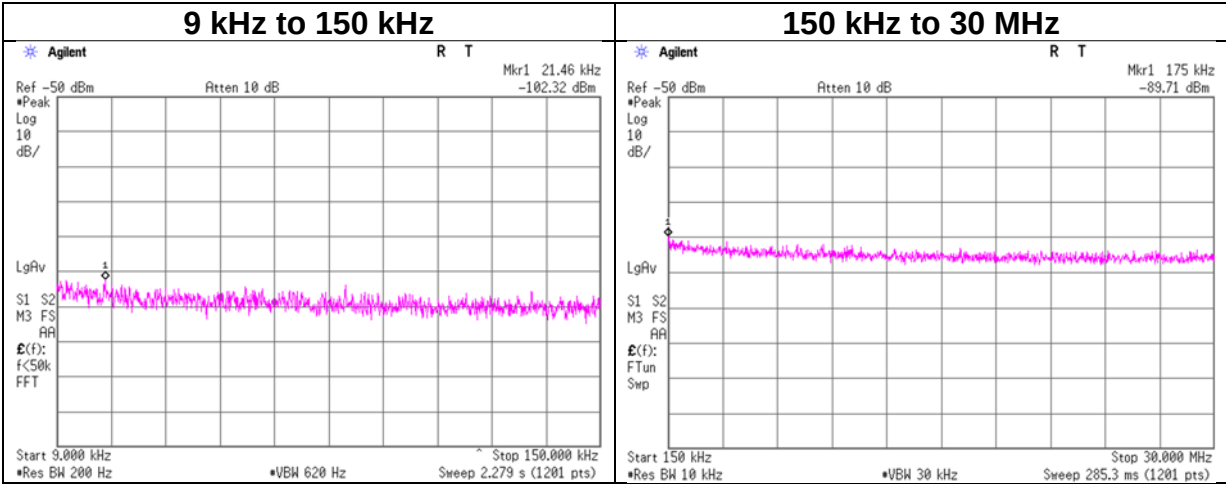


*These plots data contain sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

Test place
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab. No.5 Shielded Room
May 27, 2024
24 deg. C / 36 % RH
Shiro Kobayashi
Tx 11ax-20 OFDM 2412 MHz

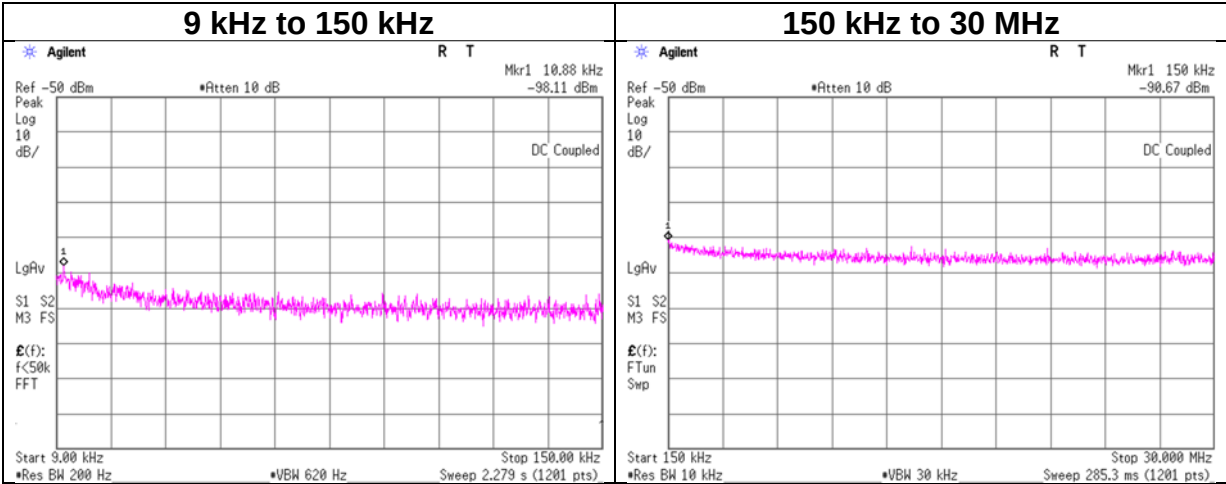


Frequency	Reading	Cable	Attenuator	Antenna	N	EIRP	Distance	Ground	E	Limit	Margin	Remark
[kHz]	[dBm]	Loss	Loss	Gain	(Number	[dBm]	[m]	bounce	(field strength)	[dBuV/m]	[dB]	
		[dB]	[dB]	[dBi]	of Output)			[dB]	[dBuV/m]			
21.46	-102.32	1.11	9.85	4.0	2	-84.3	300	6.0	-23.1	40.9	64.0	-
175.00	-89.71	1.20	9.86	4.0	2	-71.6	300	6.0	-10.4	22.7	33.1	-

$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log (\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$
 $\text{EIRP[dBm]} = \text{Reading [dBm]} + \text{Cable loss [dB]} + \text{Attenuator Loss [dB]} + \text{Antenna gain [dBi]} + 10 * \log (N)$
N: Number of output

Conducted Spurious Emission

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 7, 2024
Temperature / Humidity 26 deg. C / 37 % RH
Engineer Miku Ikudome
Mode Tx BT LE, 2M-PHY, 2402 MHz



Frequency	Reading	Cable	Attenuator	Antenna	N	EIRP	Distance	Ground	E	Limit	Margin	Remark
[kHz]	[dBm]	Loss	Loss	Gain	(Number	[dBm]	[m]	bounce	(field strength)	[dBuV/m]	[dB]	
		[dB]	[dB]	[dBi]	of Output)			[dB]	[dBuV/m]			
10.88	-98.11	1.11	9.90	4.0	1	-83.1	300	6.0	-21.8	46.8	68.6	-
150.00	-90.67	1.11	9.90	4.0	1	-75.7	300	6.0	-14.4	24.0	38.4	-

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

Power Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 21, 2024
Temperature / Humidity 26 deg. C / 44 % RH
Engineer Kouki Yamada
Mode Tx 11b

1st + 2nd

Tested Frequency	1st Result	2nd Result	Result		Limit	Margin
[MHz]	[mW / 3 kHz]	[mW / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	0.05	0.06	0.11	-9.62	8.00	17.62
2437	0.05	0.06	0.11	-9.61	8.00	17.61
2462	0.05	0.06	0.11	-9.52	8.00	17.52

Sample Calculation:

Result = 1st + 2nd

1st

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]	[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	-25.09	2.35	9.95	-12.79	0.05	8.00	20.79
2437	-25.31	2.36	9.95	-13.00	0.05	8.00	21.00
2462	-25.17	2.37	9.95	-12.85	0.05	8.00	20.85

2nd

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]	[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	-24.74	2.35	9.91	-12.48	0.06	8.00	20.48
2437	-24.54	2.35	9.91	-12.28	0.06	8.00	20.28
2462	-24.51	2.36	9.91	-12.24	0.06	8.00	20.24

Sample Calculation:

PSD: Power Spectral Density

PSD (Conducted) Result = Reading + Cable Loss (including the Cable(s) customer supplied) + Atten. Loss

Power Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 21, 2024
Temperature / Humidity 26 deg. C / 44 % RH
Engineer Kouki Yamada
Mode Tx 11g

1st + 2nd

Tested Frequency	1st Result	2nd Result	Result		Limit	Margin
[MHz]	[mW / 3 kHz]	[mW / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	0.03	0.03	0.05	-12.67	8.00	20.67
2437	0.03	0.03	0.06	-12.50	8.00	20.50
2462	0.03	0.03	0.05	-12.63	8.00	20.63

Sample Calculation:

Result = 1st + 2nd

1st

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]	[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	-28.05	2.35	9.95	-15.75	0.03	8.00	23.75
2437	-28.32	2.36	9.95	-16.01	0.03	8.00	24.01
2462	-28.05	2.37	9.95	-15.73	0.03	8.00	23.73

2nd

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]	[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	-27.86	2.35	9.91	-15.60	0.03	8.00	23.60
2437	-27.32	2.35	9.91	-15.05	0.03	8.00	23.05
2462	-27.83	2.36	9.91	-15.56	0.03	8.00	23.56

Sample Calculation:

PSD: Power Spectral Density

PSD (Conducted) Result = Reading + Cable Loss (including the Cable(s) customer supplied) + Atten. Loss

Power Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 21, 2024
Temperature / Humidity 26 deg. C / 44 % RH
Engineer Kouki Yamada
Mode Tx 11n-20 (CDD)

1st + 2nd

Tested Frequency	1st Result	2nd Result	Result		Limit	Margin
[MHz]	[mW / 3 kHz]	[mW / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	0.02	0.03	0.05	-12.87	8.00	20.87
2437	0.02	0.03	0.06	-12.52	8.00	20.52
2462	0.03	0.03	0.05	-12.83	8.00	20.83

Sample Calculation:

Result = 1st + 2nd

1st

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]	[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	-28.94	2.35	9.95	-16.63	0.02	8.00	24.63
2437	-28.33	2.36	9.95	-16.02	0.02	8.00	24.02
2462	-28.28	2.37	9.95	-15.96	0.03	8.00	23.96

2nd

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]	[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	-27.49	2.35	9.91	-15.24	0.03	8.00	23.24
2437	-27.35	2.35	9.91	-15.09	0.03	8.00	23.09
2462	-27.98	2.36	9.91	-15.71	0.03	8.00	23.71

Sample Calculation:

PSD: Power Spectral Density

PSD (Conducted) Result = Reading + Cable Loss (including the Cable(s) customer supplied) + Atten. Loss

Power Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 21, 2024
Temperature / Humidity 26 deg. C / 44 % RH
Engineer Kouki Yamada
Mode Tx 11ax-20 OFDM (CDD)

1st + 2nd

Tested Frequency	1st Result	2nd Result	Result		Limit	Margin
[MHz]	[mW / 3 kHz]	[mW / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	0.02	0.02	0.05	-13.04	8.00	21.04
2437	0.03	0.03	0.05	-12.73	8.00	20.73
2462	0.02	0.03	0.05	-13.23	8.00	21.23

Sample Calculation:

Result = 1st + 2nd

1st

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]	[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	-28.32	2.35	9.95	-16.02	0.02	8.00	24.02
2437	-28.27	2.36	9.95	-15.96	0.03	8.00	23.96
2462	-29.01	2.37	9.95	-16.69	0.02	8.00	24.69

2nd

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]	[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	-28.34	2.35	9.91	-16.08	0.02	8.00	24.08
2437	-27.80	2.35	9.91	-15.54	0.03	8.00	23.54
2462	-28.10	2.36	9.91	-15.83	0.03	8.00	23.83

Sample Calculation:

PSD: Power Spectral Density

PSD (Conducted) Result = Reading + Cable Loss (including the Cable(s) customer supplied) + Atten. Loss

Power Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 21, 2024 May 22, 2024
Temperature / Humidity 26 deg. C / 44 % RH 26 deg. C / 41 % RH
Engineer Kouki Yamada Takayuki Kobayashi
Mode Tx 11ax-20 OFDMA (CDD) 26-tone RU

1st + 2nd

Tested Frequency	RU Index	1st Result	2nd Result	Result		Limit	Margin
[MHz]		[mW / 3 kHz]	[mW / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	0	0.04	0.04	0.09	-10.70	8.00	18.70
	4	0.04	0.04	0.08	-10.94	8.00	18.94
	8	0.03	0.05	0.08	-10.88	8.00	18.88
2437	0	0.03	0.05	0.08	-11.02	8.00	19.02
	4	0.04	0.04	0.08	-10.87	8.00	18.87
	8	0.03	0.05	0.09	-10.54	8.00	18.54
2462	0	0.04	0.05	0.09	-10.55	8.00	18.55
	4	0.03	0.03	0.06	-11.87	8.00	19.87
	8	0.03	0.03	0.06	-12.15	8.00	20.15

Sample Calculation:
Result = 1st + 2nd

1st

Tested Frequency	RU Index	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]		[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	0	-26.25	2.35	9.95	-13.94	0.04	8.00	21.94
	4	-26.67	2.35	9.95	-14.37	0.04	8.00	22.37
	8	-27.44	2.35	9.95	-15.14	0.03	8.00	23.14
2437	0	-27.25	2.36	9.95	-14.95	0.03	8.00	22.95
	4	-26.50	2.36	9.95	-14.19	0.04	8.00	22.19
	8	-27.00	2.36	9.95	-14.69	0.03	8.00	22.69
2462	0	-26.07	2.37	9.95	-13.76	0.04	8.00	21.76
	4	-27.28	2.37	9.95	-14.96	0.03	8.00	22.96
	8	-27.94	2.37	9.95	-15.63	0.03	8.00	23.63

2nd

Tested Frequency	RU Index	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]		[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	0	-25.75	2.35	9.91	-13.49	0.04	8.00	21.49
	4	-25.83	2.35	9.91	-13.57	0.04	8.00	21.57
	8	-25.17	2.35	9.91	-12.91	0.05	8.00	20.91
2437	0	-25.53	2.35	9.91	-13.27	0.05	8.00	21.27
	4	-25.86	2.35	9.91	-13.60	0.04	8.00	21.60
	8	-24.91	2.35	9.91	-12.65	0.05	8.00	20.65
2462	0	-25.64	2.36	9.91	-13.37	0.05	8.00	21.37
	4	-27.08	2.36	9.91	-14.81	0.03	8.00	22.81
	8	-27.02	2.36	9.91	-14.75	0.03	8.00	22.75

Sample Calculation:
PSD: Power Spectral Density
PSD (Conducted) Result = Reading + Cable Loss (including the Cable(s) customer supplied) + Atten. Loss

Power Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 21, 2024 May 22, 2024
Temperature / Humidity 26 deg. C / 44 % RH 26 deg. C / 41 % RH
Engineer Kouki Yamada Takayuki Kobayashi
Mode Tx 11ax-20 OFDMA (CDD) 52-tone RU

1st + 2nd

Tested Frequency	RU Index	1st Result	2nd Result	Result		Limit	Margin
[MHz]		[mW / 3 kHz]	[mW / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	37	0.04	0.05	0.10	-10.11	8.00	18.11
	38	0.04	0.05	0.09	-10.62	8.00	18.62
	40	0.05	0.06	0.10	-9.90	8.00	17.90
2437	37	0.04	0.06	0.10	-10.07	8.00	18.07
	38	0.03	0.05	0.08	-10.74	8.00	18.74
	40	0.03	0.05	0.08	-10.77	8.00	18.77
2462	37	0.04	0.06	0.10	-10.01	8.00	18.01
	38	0.04	0.05	0.09	-10.53	8.00	18.53
	40	0.03	0.05	0.08	-10.89	8.00	18.89

Sample Calculation:
Result = 1st + 2nd

1st

Tested Frequency	RU Index	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]		[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	37	-25.79	2.35	9.95	-13.49	0.04	8.00	21.49
	38	-26.43	2.35	9.95	-14.13	0.04	8.00	22.13
	40	-25.75	2.35	9.95	-13.45	0.05	8.00	21.45
2437	37	-26.10	2.36	9.95	-13.79	0.04	8.00	21.79
	38	-27.00	2.36	9.95	-14.69	0.03	8.00	22.69
	40	-27.12	2.36	9.95	-14.81	0.03	8.00	22.81
2462	37	-26.49	2.37	9.95	-14.17	0.04	8.00	22.17
	38	-26.11	2.37	9.95	-13.79	0.04	8.00	21.79
	40	-26.89	2.37	9.95	-14.57	0.03	8.00	22.57

2nd

Tested Frequency	RU Index	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]		[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	37	-25.04	2.35	9.91	-12.78	0.05	8.00	20.78
	38	-25.44	2.35	9.91	-13.19	0.05	8.00	21.19
	40	-24.69	2.35	9.91	-12.43	0.06	8.00	20.43
2437	37	-24.73	2.35	9.91	-12.46	0.06	8.00	20.46
	38	-25.24	2.35	9.91	-12.98	0.05	8.00	20.98
	40	-25.21	2.35	9.91	-12.95	0.05	8.00	20.95
2462	37	-24.38	2.36	9.91	-12.11	0.06	8.00	20.11
	38	-25.57	2.36	9.91	-13.30	0.05	8.00	21.30
	40	-25.59	2.36	9.91	-13.32	0.05	8.00	21.32

Sample Calculation:
PSD: Power Spectral Density
PSD (Conducted) Result = Reading + Cable Loss (including the Cable(s) customer supplied) + Atten. Loss

Power Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 21, 2024 May 22, 2024
Temperature / Humidity 26 deg. C / 44 % RH 26 deg. C / 41 % RH
Engineer Kouki Yamada Takayuki Kobayashi
Mode Tx 11ax-20 OFDMA (CDD) 106-tone RU

1st + 2nd

Tested Frequency	RU Index	1st Result	2nd Result	Result		Limit	Margin
[MHz]		[mW / 3 kHz]	[mW / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	53	0.06	0.06	0.13	-8.98	8.00	16.98
	54	0.05	0.07	0.12	-9.31	8.00	17.31
2437	53	0.05	0.07	0.11	-9.42	8.00	17.42
	54	0.05	0.06	0.11	-9.72	8.00	17.72
2462	53	0.05	0.07	0.12	-9.33	8.00	17.33
	54	0.04	0.06	0.10	-9.87	8.00	17.87

Sample Calculation:
Result = 1st + 2nd

1st

Tested Frequency	RU Index	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]		[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	53	-24.33	2.35	9.95	-12.02	0.06	8.00	20.02
	54	-25.72	2.35	9.95	-13.42	0.05	8.00	21.42
2437	53	-25.46	2.36	9.95	-13.15	0.05	8.00	21.15
	54	-25.69	2.36	9.95	-13.38	0.05	8.00	21.38
2462	53	-25.32	2.37	9.95	-13.00	0.05	8.00	21.00
	54	-25.79	2.37	9.95	-13.48	0.04	8.00	21.48

2nd

Tested Frequency	RU Index	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]		[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	53	-24.22	2.35	9.91	-11.96	0.06	8.00	19.96
	54	-23.69	2.35	9.91	-11.44	0.07	8.00	19.44
2437	53	-24.08	2.35	9.91	-11.82	0.07	8.00	19.82
	54	-24.42	2.35	9.91	-12.15	0.06	8.00	20.15
2462	53	-24.03	2.36	9.91	-11.76	0.07	8.00	19.76
	54	-24.63	2.36	9.91	-12.36	0.06	8.00	20.36

Sample Calculation:
PSD: Power Spectral Density
PSD (Conducted) Result = Reading + Cable Loss (including the Cable(s) customer supplied) + Atten. Loss

Power Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date May 21, 2024 May 22, 2024
Temperature / Humidity 26 deg. C / 44 % RH 26 deg. C / 41 % RH
Engineer Kouki Yamada Takayuki Kobayashi
Mode Tx 11ax-20 OFDMA (CDD) 242-tone RU

1st + 2nd

Tested Frequency	RU Index	1st Result	2nd Result	Result		Limit	Margin
[MHz]		[mW / 3 kHz]	[mW / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	61	0.02	0.03	0.05	-12.88	8.00	20.88
2437	61	0.02	0.03	0.05	-13.22	8.00	21.22
2462	61	0.02	0.03	0.05	-13.33	8.00	21.33

Sample Calculation:

Result = 1st + 2nd

1st

Tested Frequency	RU Index	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]		[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	61	-28.86	2.35	9.95	-16.55	0.02	8.00	24.55
2437	61	-29.60	2.36	9.95	-17.29	0.02	8.00	25.29
2462	61	-29.11	2.37	9.95	-16.80	0.02	8.00	24.80

2nd

Tested Frequency	RU Index	PSD Reading	Cable Loss	Atten. Loss	Result		Limit	Margin
[MHz]		[dBm / 3 kHz]	[dB]	[dB]	[dBm / 3 kHz]	[mW / 3 kHz]	[dBm / 3 kHz]	[dB]
2412	61	-27.58	2.35	9.91	-15.32	0.03	8.00	23.32
2437	61	-27.65	2.35	9.91	-15.38	0.03	8.00	23.38
2462	61	-28.21	2.36	9.91	-15.94	0.03	8.00	23.94

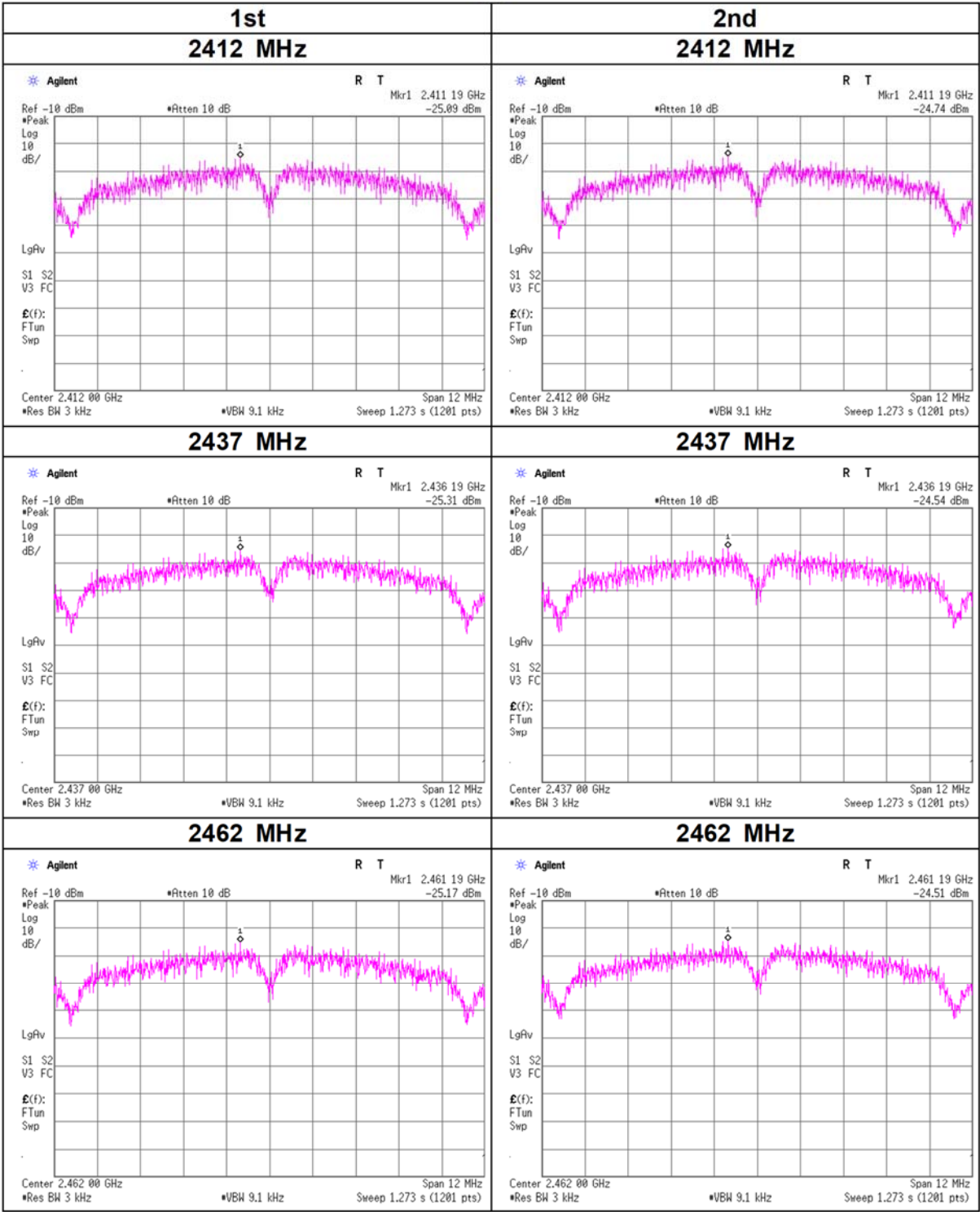
Sample Calculation:

PSD: Power Spectral Density

PSD (Conducted) Result = Reading + Cable Loss (including the Cable(s) customer supplied) + Atten. Loss

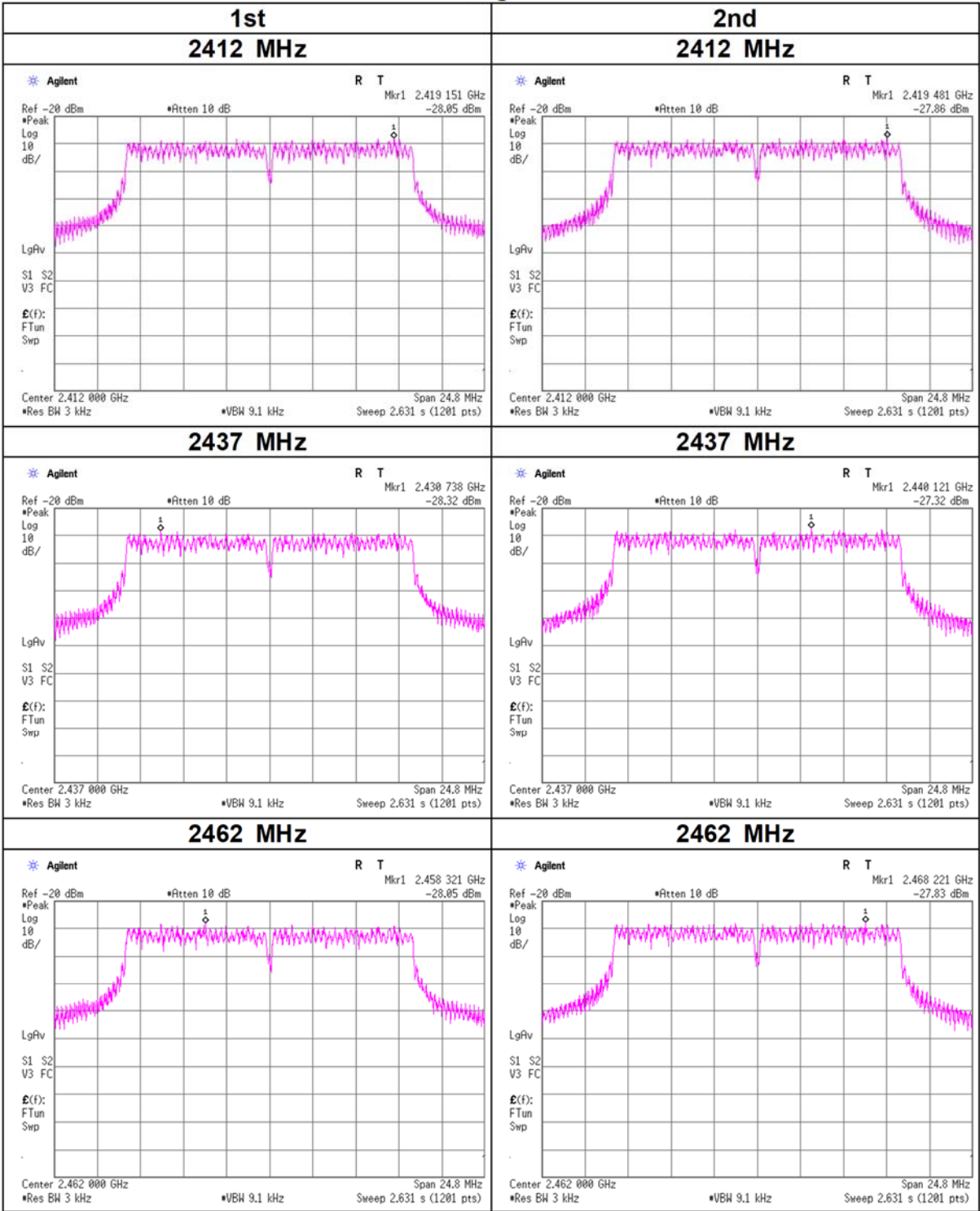
Power Density

11b



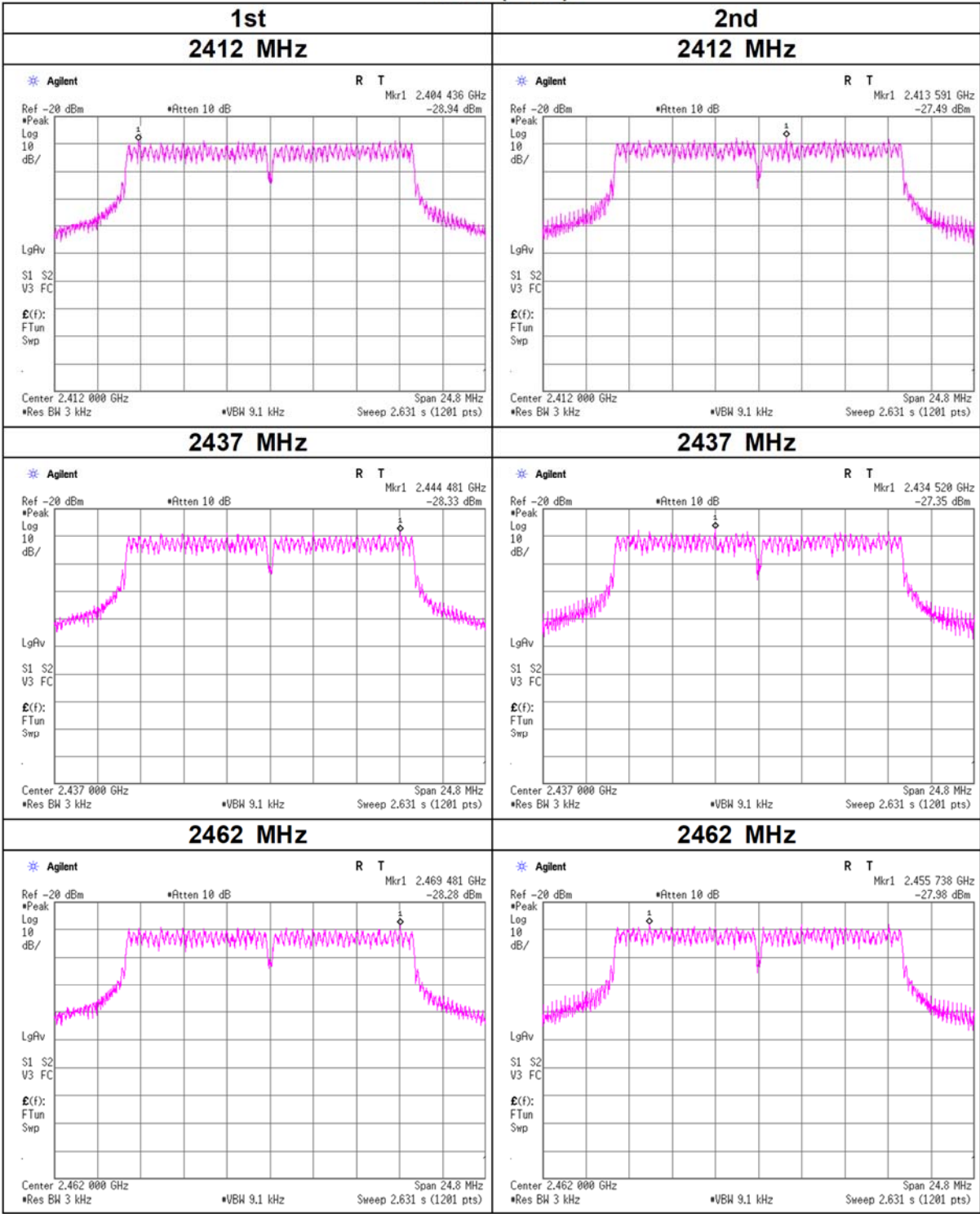
Power Density

11g



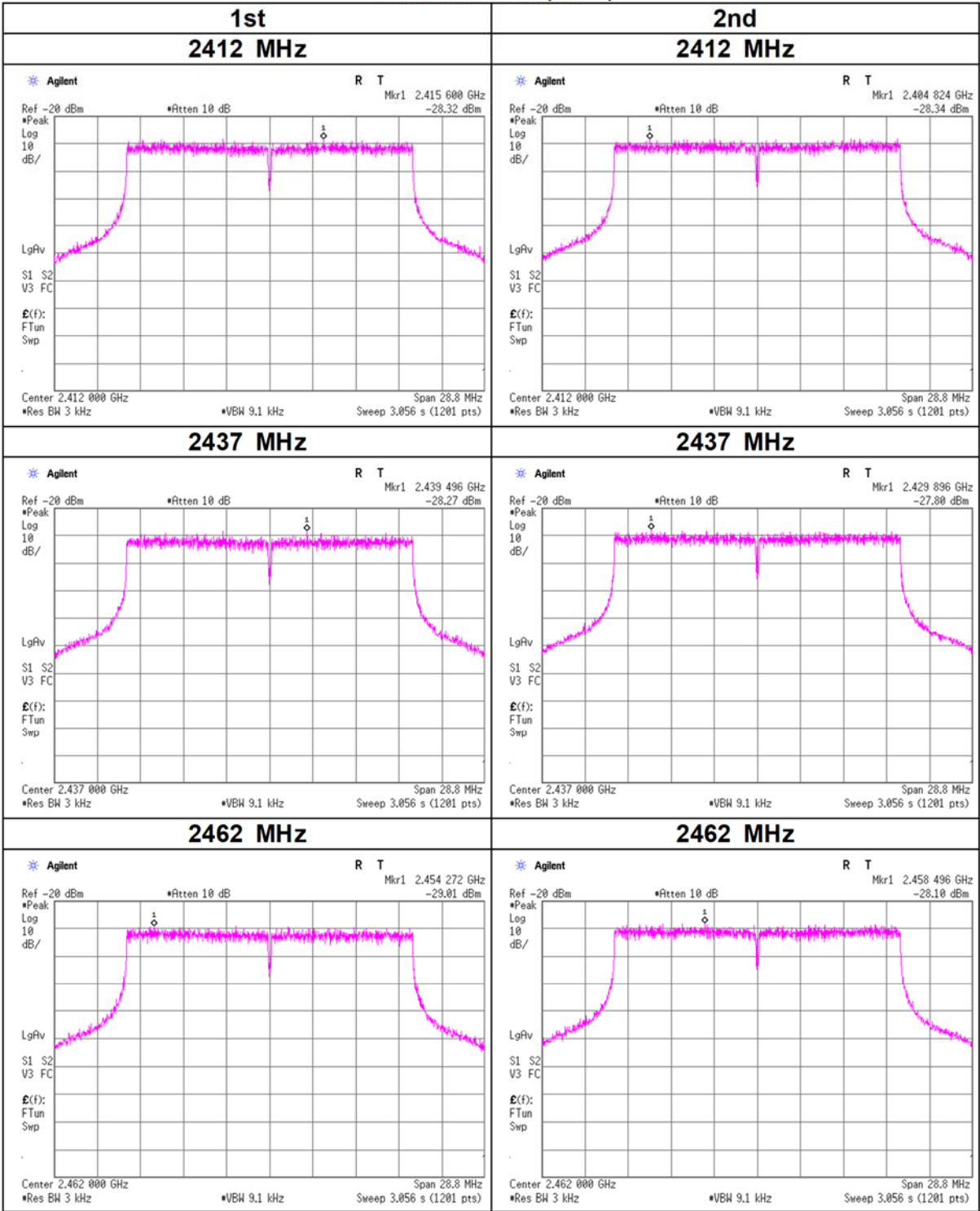
Power Density

11n-20 (CDD)



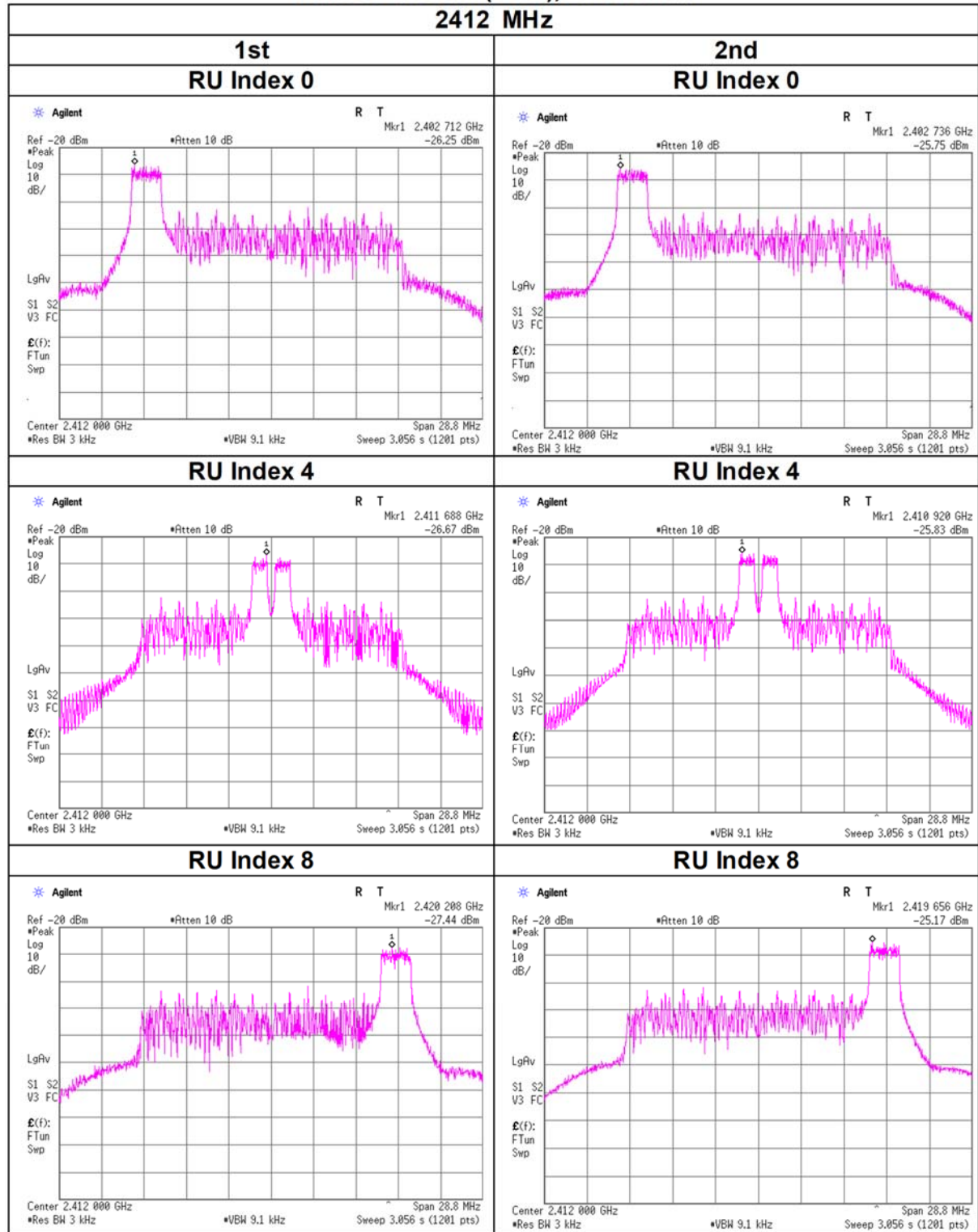
Power Density

11ax-20 OFDM (CDD)



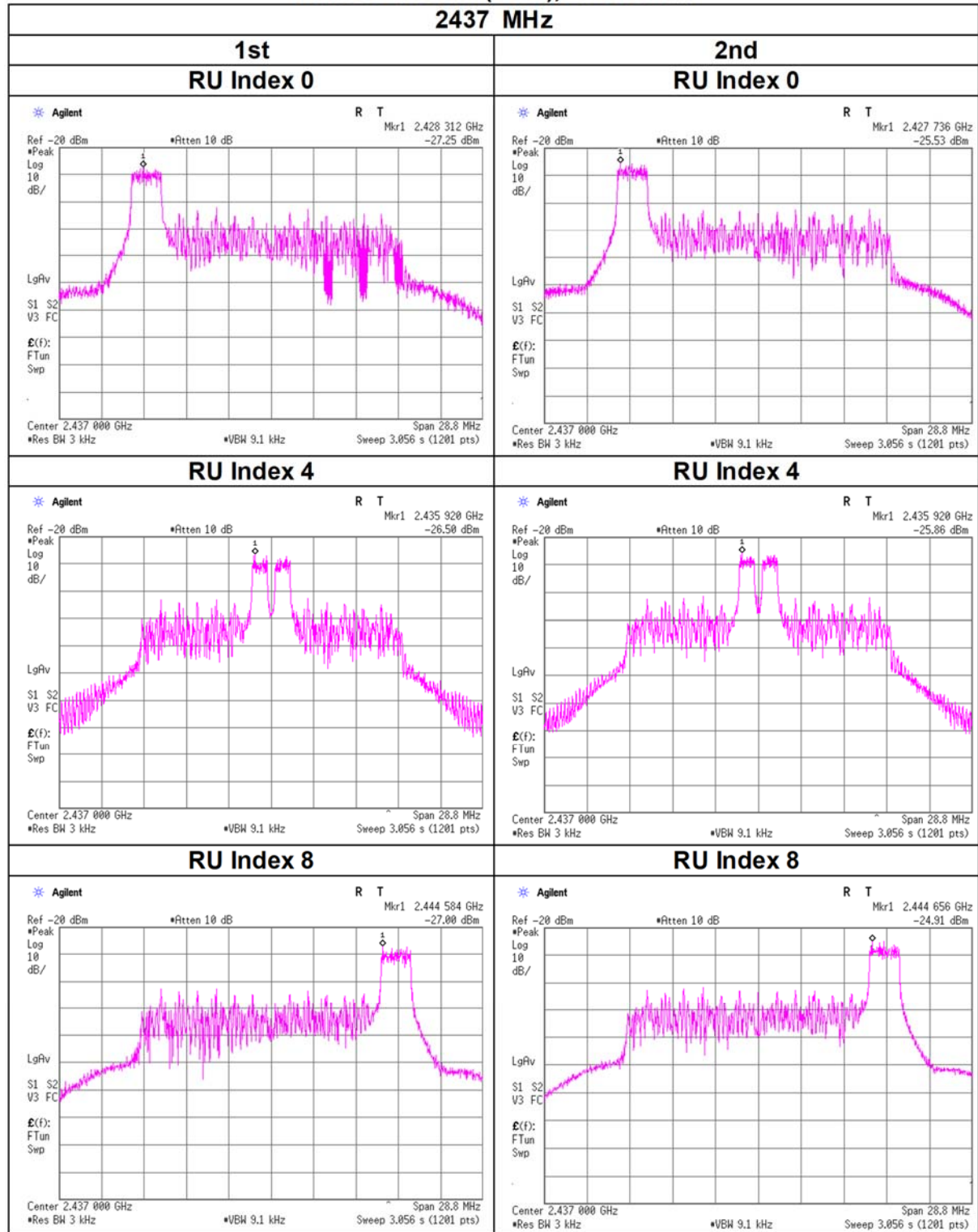
Power Density

11ax-20 OFDMA (CDD), 26-tone RU



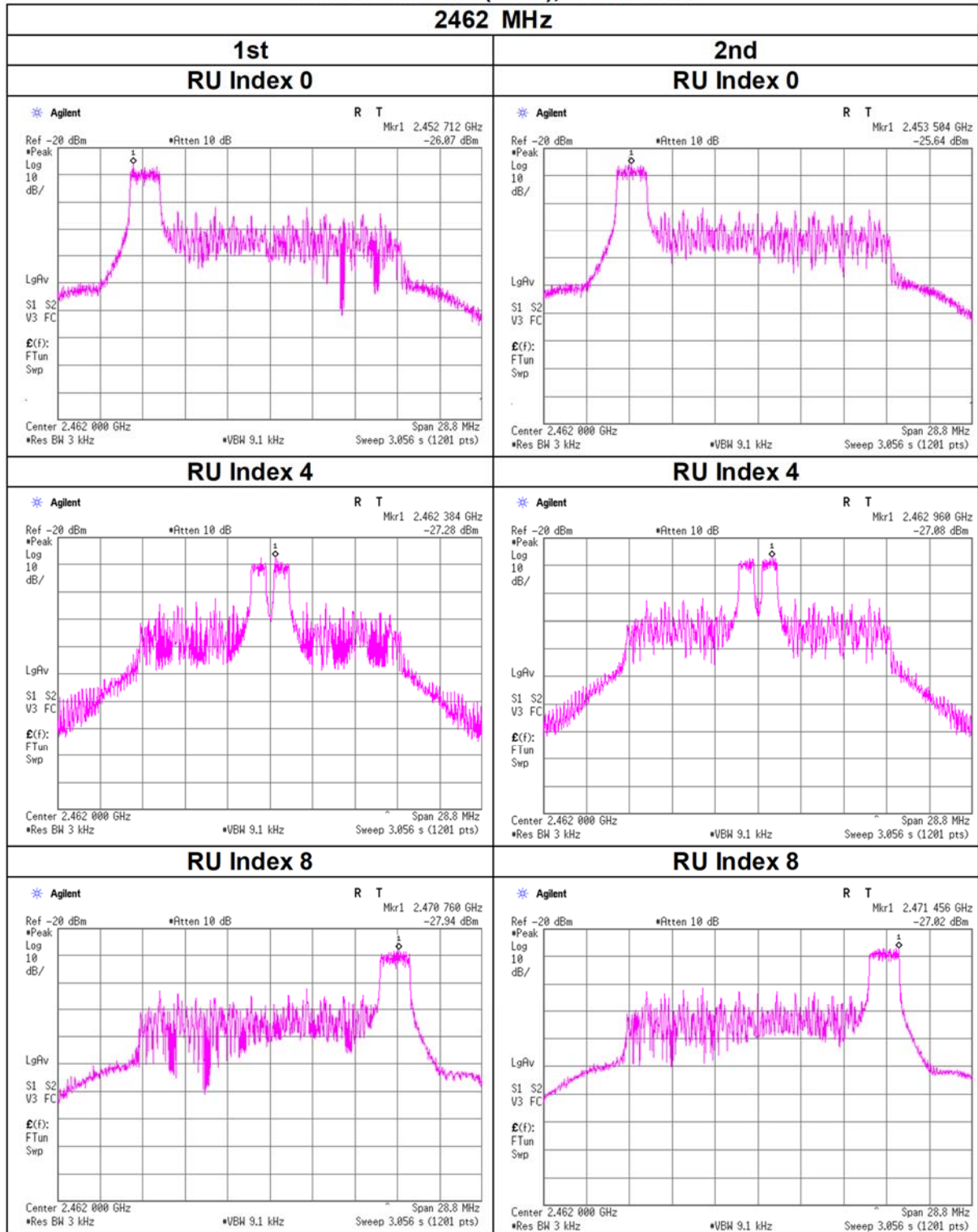
Power Density

11ax-20 OFDMA (CDD), 26-tone RU



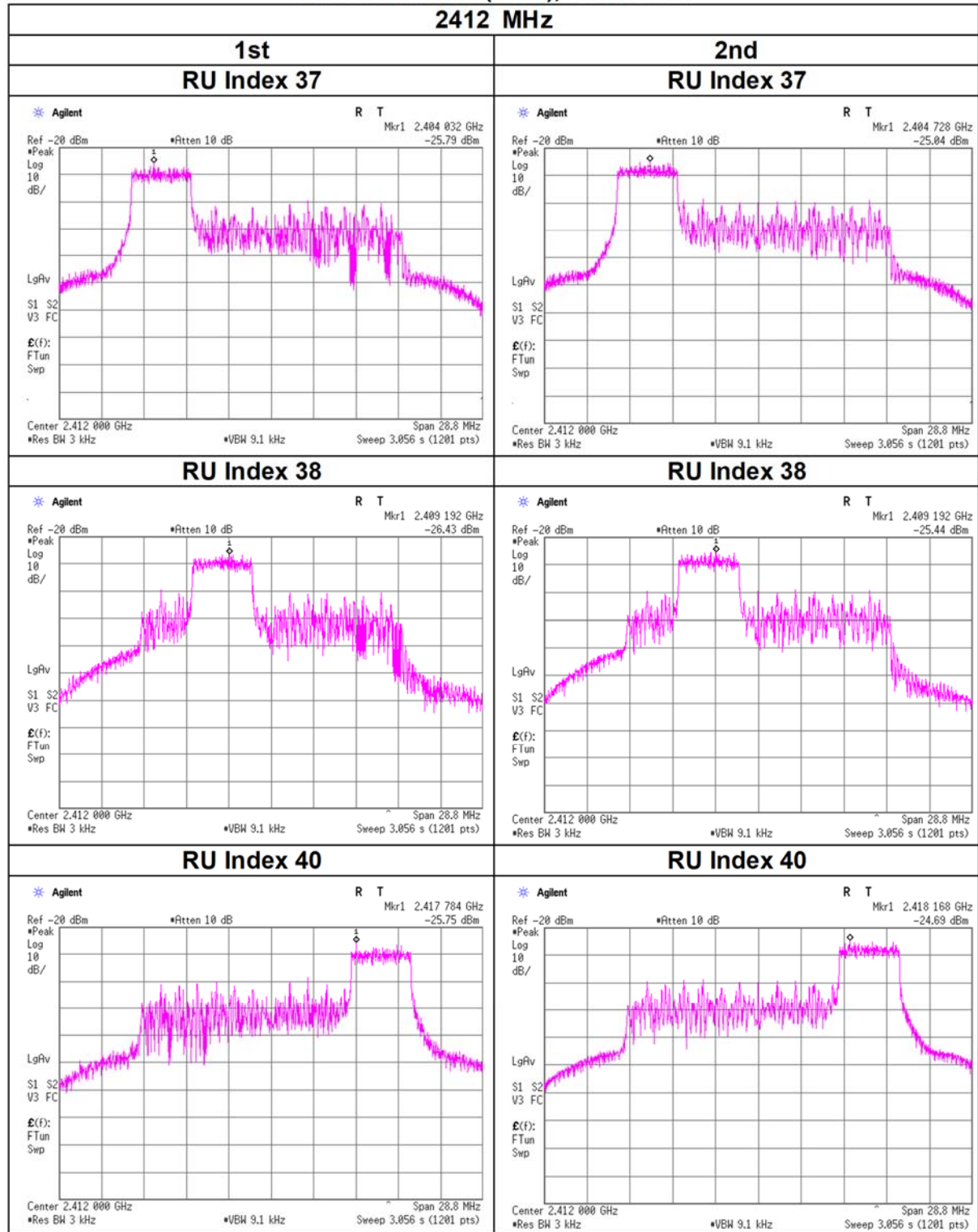
Power Density

11ax-20 OFDMA (CDD), 26-tone RU



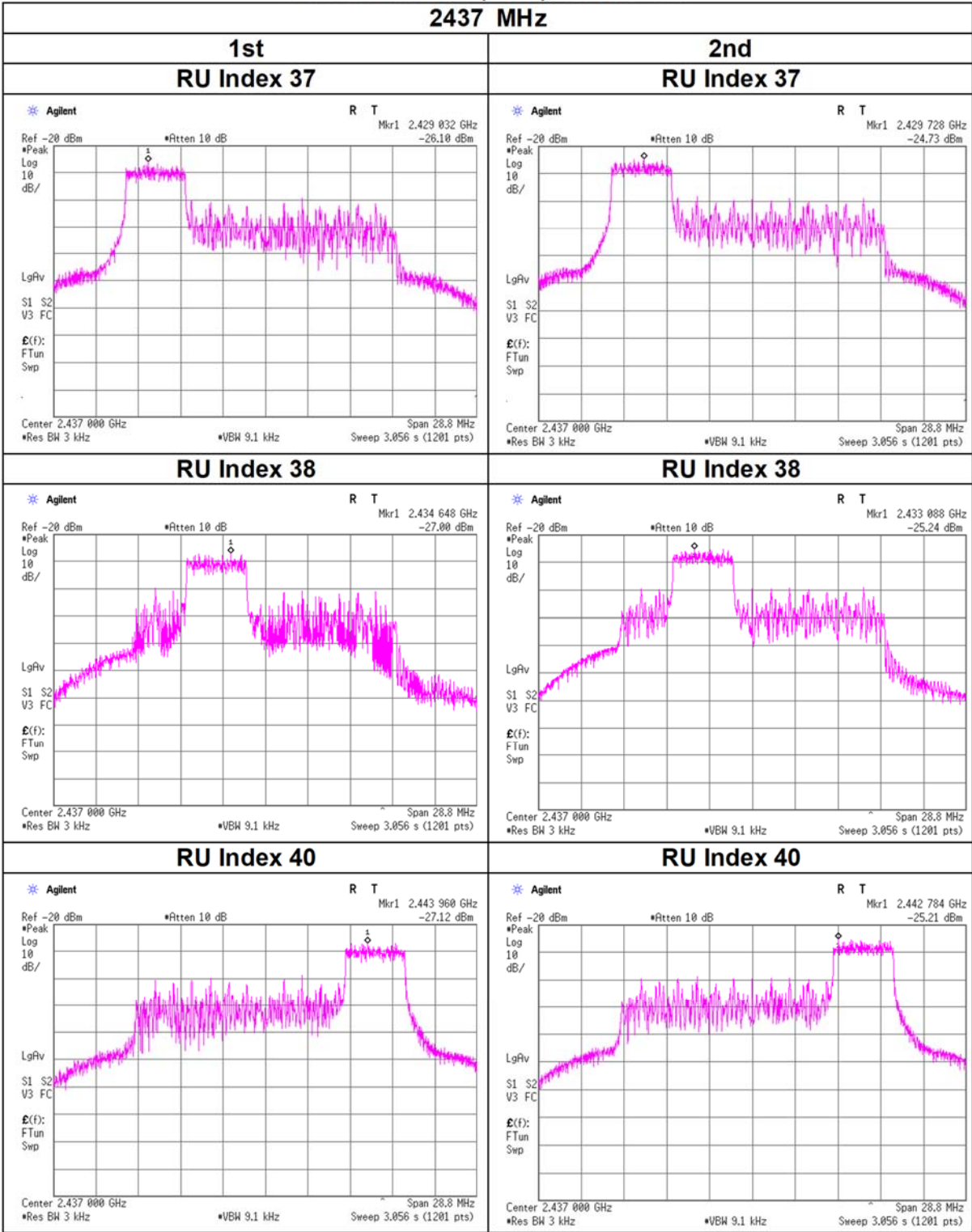
Power Density

11ax-20 OFDMA (CDD), 52-tone RU



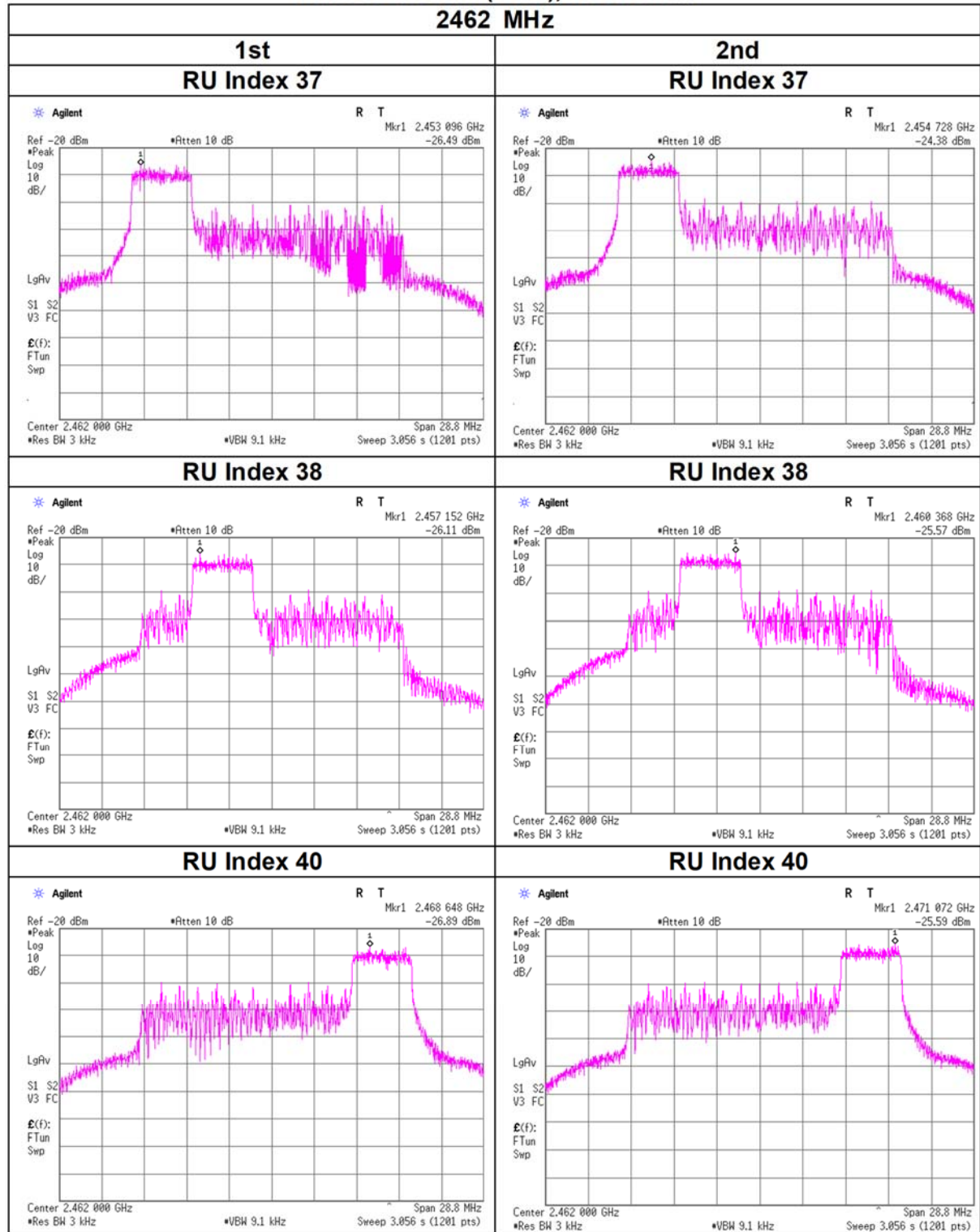
Power Density

11ax-20 OFDMA (CDD), 52-tone RU



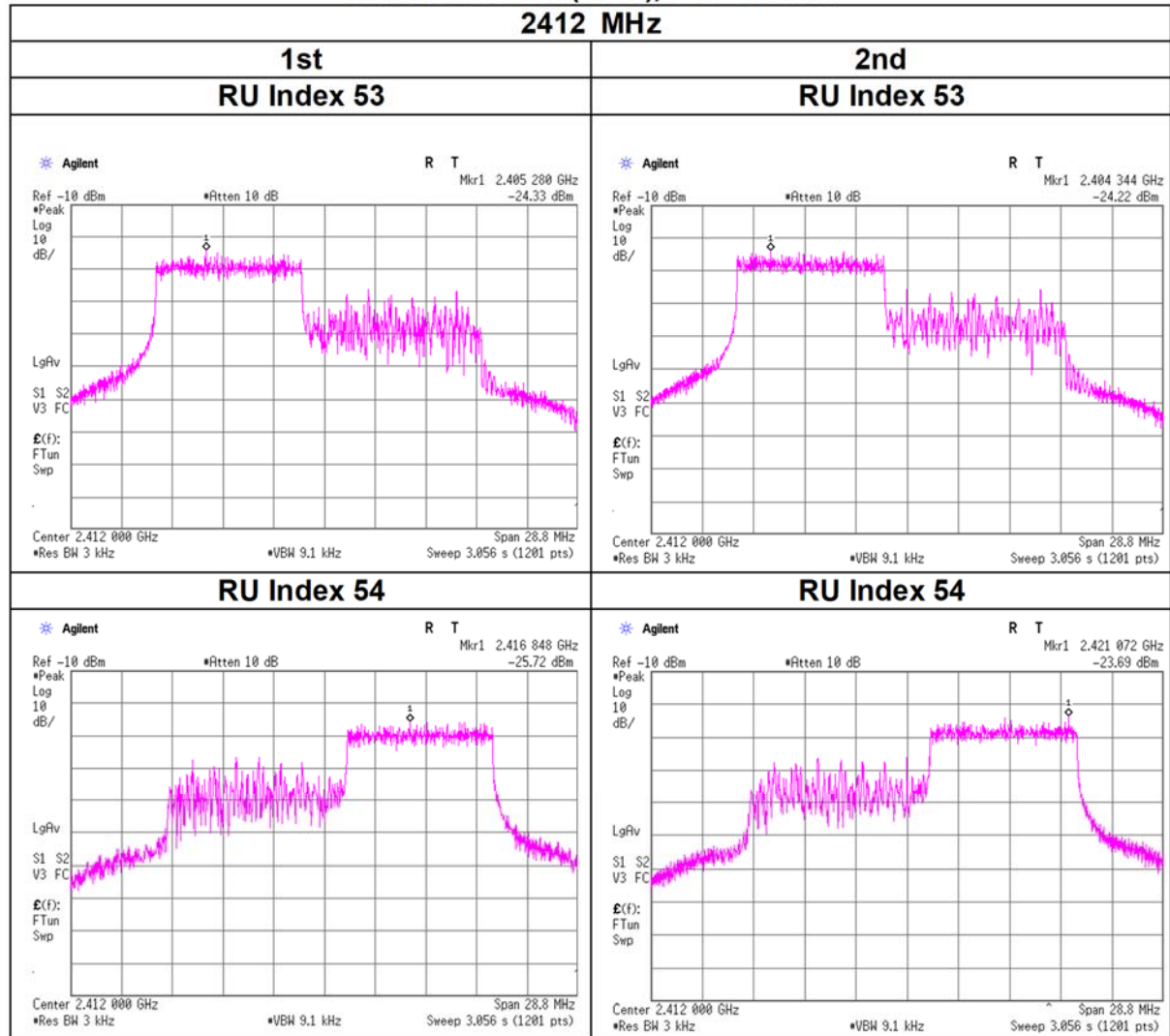
Power Density

11ax-20 OFDMA (CDD), 52-tone RU



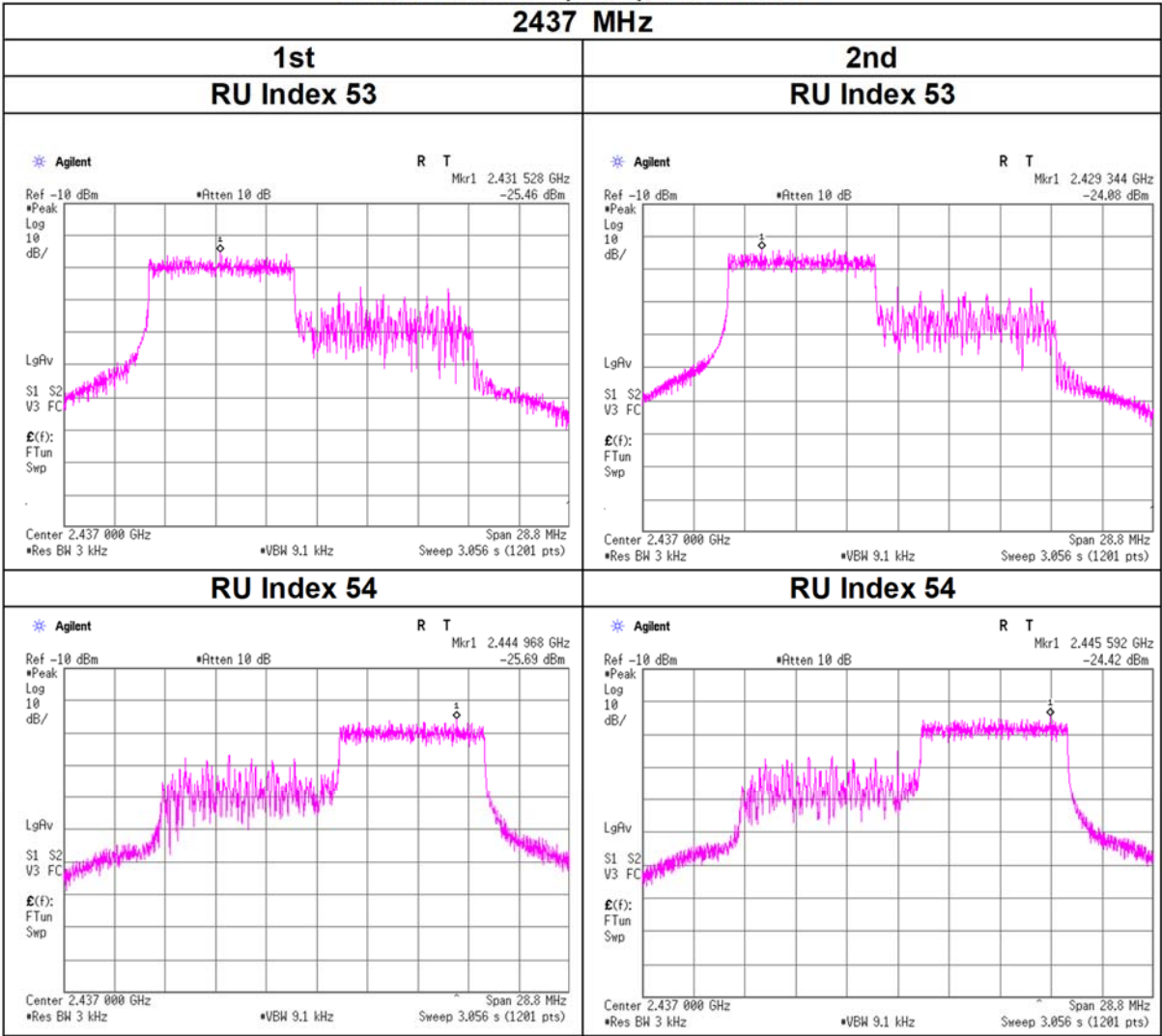
Power Density

11ax-20 OFDMA (CDD), 106-tone RU



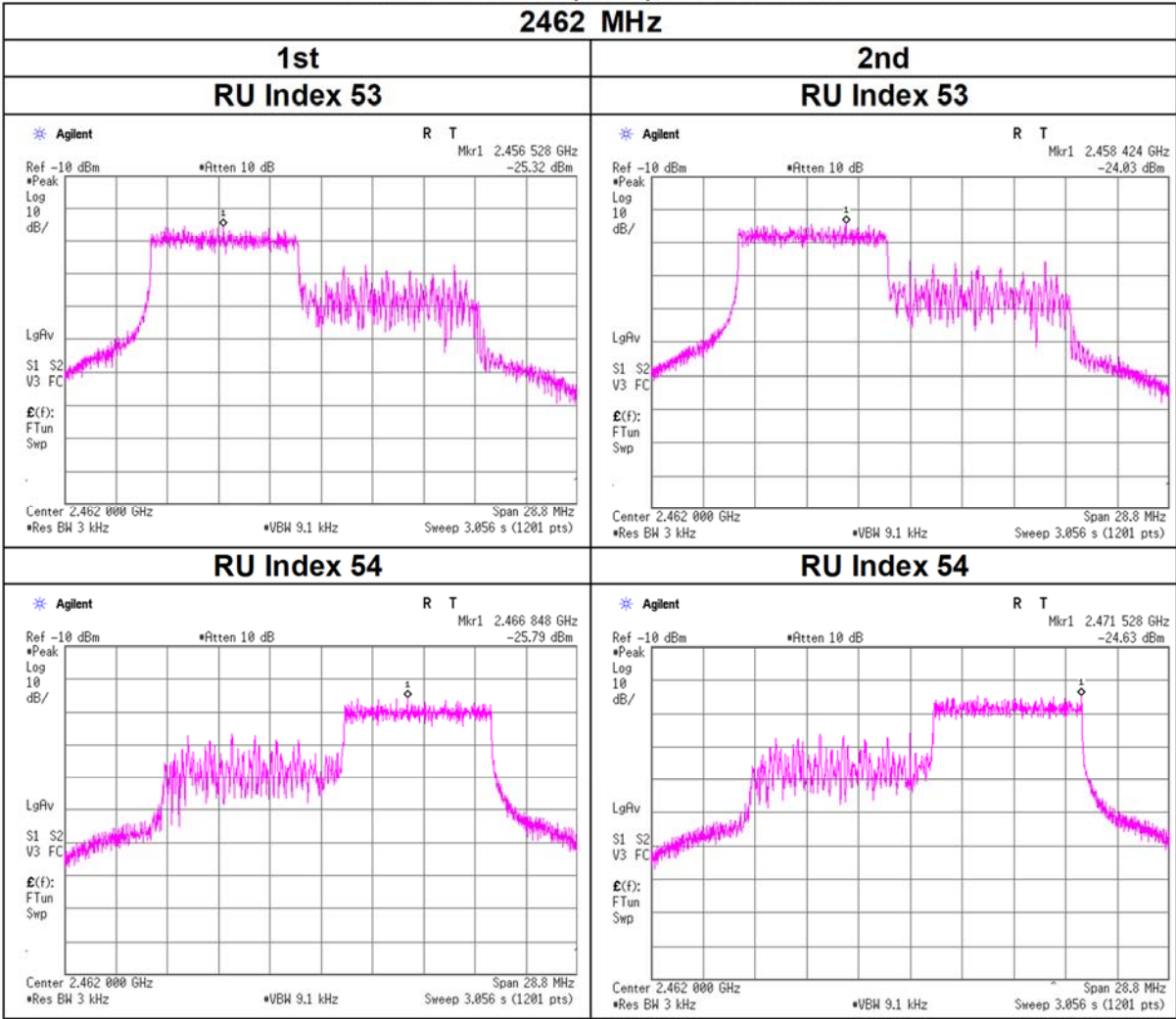
Power Density

11ax-20 OFDMA (CDD), 106-tone RU
2437 MHz



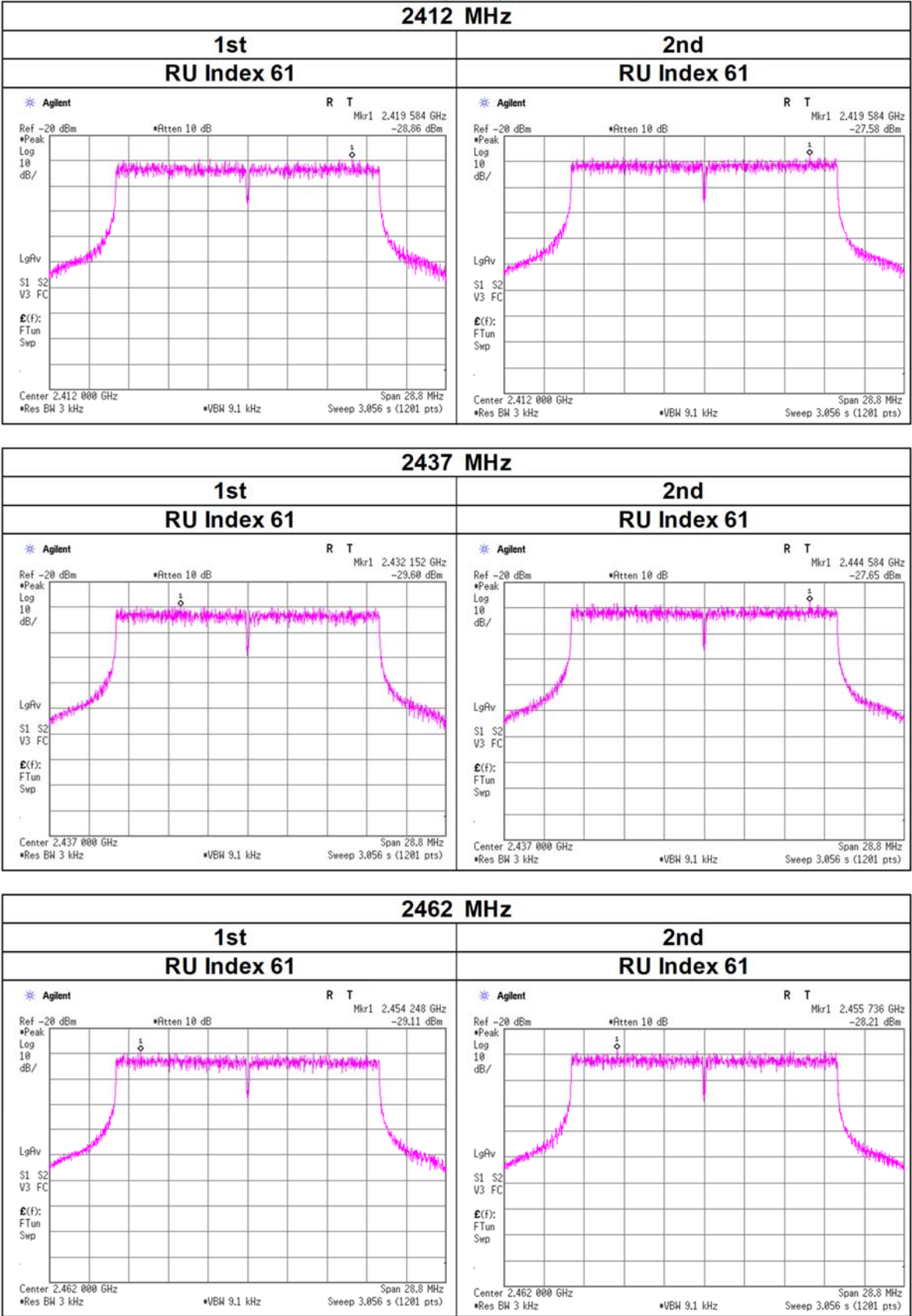
Power Density

11ax-20 OFDMA (CDD), 106-tone RU



Power Density

11ax-20 OFDMA (CDD), 242-tone RU



Power Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	May 7, 2024
Temperature / Humidity	26 deg. C / 37 % RH
Engineer	Miku Ikudome
Mode	Tx BT LE

BT LE 1M-PHY

Frequency	Measured Frequency	Reading	Cable Loss	Atten. Loss	Result	Limit	Margin
[MHz]	[MHz]	[dBm/3 kHz]	[dB]	[dB]	[dBm/3 kHz]	[dBm/3 kHz]	[dB]
2402	2401.989	-22.82	2.35	9.95	-10.52	8.00	18.52
2440	2439.989	-23.14	2.36	9.95	-10.83	8.00	18.83
2480	2479.989	-23.05	2.37	9.95	-10.73	8.00	18.73

BT LE 2M-PHY

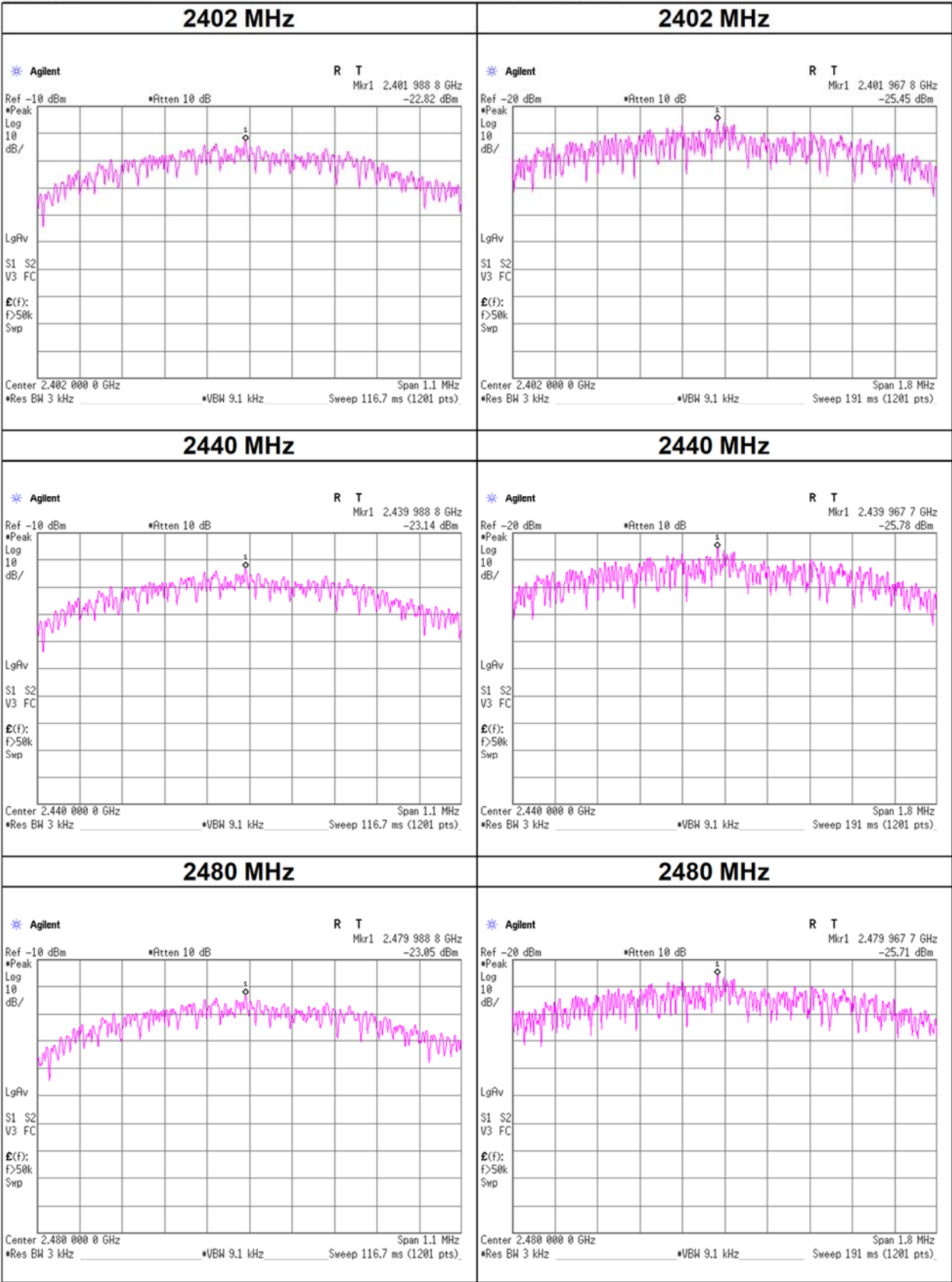
Frequency	Measured Frequency	Reading	Cable Loss	Atten. Loss	Result	Limit	Margin
[MHz]	[MHz]	[dBm/3 kHz]	[dB]	[dB]	[dBm/3 kHz]	[dBm/3 kHz]	[dB]
2402	2401.968	-25.45	2.35	9.95	-13.15	8.00	21.15
2440	2439.968	-25.78	2.36	9.95	-13.47	8.00	21.47
2480	2479.968	-25.71	2.37	9.95	-13.39	8.00	21.39

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

Power Density

BT LE 1M-PHY

BT LE 2M-PHY



APPENDIX 2: Test Instruments

Test Equipment [1/2]

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	145089	Spectrum Analyzer	Keysight Technologies Inc	E4446A	MY46180525	2023/12/13	12
AT	145111	Digital Tester	SANWA	PC500	7019232	2023/09/25	12
AT	145800	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY48250106	2024/03/25	12
AT	146212	Digital Hitester	HIOKI E.E. CORPORATION	3805-50	80997828	2023/09/25	12
AT	160899	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46185516	2023/12/29	12
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	191845	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/07 *1)	12
AT	196947	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	803478/2	2024/03/07	12
AT	196949	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	803480/2	2024/03/07	12
AT	242067	Attenuator	Weinschel Corp.	54A-10	120523	2023/11/02	12
AT	242068	Attenuator	Weinschel Corp.	54A-10	120524	2023/11/02	12
AT	242077	Terminator	Weinschel - API Technologies Corp	M1459A	121108	2023/11/17	12
RE	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2024/08/21	12
RE	145176	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	2024/08/21	12
RE	145512	Horn Antenna	ETS-Lindgren	3160-09	00094868	2024/06/20	12
RE	145528	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	195	2024/04/10	12
RE	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	Ver 3.1.0546	-	-
RE	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2024/03/05	12
RE	199783	Attenuator	JFW	50HF-006N	-	2024/06/14	12
RE	207280	Tape Measure	ASKUL	-	-	-	-
RE	207281	Tape Measure	ASKUL	-	-	-	-
RE	235267	Test Receiver	Rohde & Schwarz	ESW44	103018	2024/03/05	12
RE	235268	Test Receiver	Rohde & Schwarz	ESW44	103212	2023/12/26	12
RE	235639	DIGITAL MULTIMETER	HIOKI E.E. CORPORATION	DT4261	230313156	2024/05/29	12
RE	235640	DIGITAL MULTIMETER	HIOKI E.E. CORPORATION	DT4261	230313157	2024/05/29	12
RE	235735	Thermo-Hygrometer	CUSTOM. Inc	CTH-230	-	2024/04/28	12
RE	235738	Thermo-Hygrometer	CUSTOM. Inc	CTH-230	-	2024/04/28	12
RE	236615	Semi-Anechoic Chamber	TDK	SWAC-02(NSA)	2	2024/05/10	12
RE	236616	Semi-Anechoic Chamber	TDK	SWAC-01(SVSWR)	1	2024/06/04	12

Test Equipment [2/2]

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	236686	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA 9120 C	787	2024/04/19	12
RE	236708	Coaxial Cable	Hayashi-Repic co., Ltd.	NMS079B-GL310C-SMS117B-2m	47256-02-03	2024/05/09	12
RE	236724	Coaxial Cable	Hayashi-Repic co., Ltd.	SF106(HUBER+SUHNER)/LMR400UF/GL310C/GL310C	2000430/47753-2/47256-01-04/47256-01-02	2024/05/10	12
RE	236769	Horn Antenna	AINFO Inc.	LB-8180-NF	2030013000111	2024/04/19	12
RE	236967	Pre Amplifier	TSJ (Techno Science Japan)	MLA-9K01-L01	23050010	2024/06/14	12
RE	237784	RF RELAY MATRIX with preamplifier	TSJ (Techno Science Japan)	RFM-E221261R	07795	2023/11/01	12
RE	239643	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	2306S021	2024/08/20	12
RE	239787	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHBB 9124+BBA9106	01908	2024/08/10	12
RE	243209	Coaxial Cable	Hayashi-Repic co., Ltd.	SMS13-13A26-NFS13-1.0m	49190-01-01	2023/12/20	12
RE	243687	Coaxial Cable	Hayashi-Repic co., Ltd.	NMS079B-GL310C-NMS079B-6.0m	49373-01-01	2023/12/28	12
RE	243689	Coaxial Cable	Huber+Suhner	GL310C(Hayashi-Repic)/SF106/SF106	49373-01-01/2000781/2001160	2023/12/28	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.

The expiration*1) This test equipment was used for the tests before the expiration date of the calibration.

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