

2.6 Transmitter Radiated Spurious Emissions

Test setup

Test setup was implemented according to the method of ANSI C63.10 clause 6.

Test procedure

Measurement procedures were implemented according to the method of ANSI C63.10 clauses 6.

The test receiver is set as below

[9 - 150 kHz]
RBW: 200 Hz, Detector: QP

[150 kHz - 30 MHz]
RBW: 9 kHz, Detector: QP

[30 - 1000 MHz]
RBW: 120 kHz, Detector: QP

[above 1000 MHz]
RBW: 1 MHz, Detector: Ave/PK

Applicable rule and limitation

Except as shown in paragraph 15.205 (d) of this section, only spurious emissions are permitted in any of the frequency bands listed (FCC 15.205 / RSS-Gen 8.10)

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in FCC 15.209 / RSS-Gen 8.9. At frequencies equal to or less than 1000 MHz, compliance with the limits in FCC 15.209 / RSS-Gen 8.9 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions.

FCC 15.209: Field strength limits below 30 MHz

Frequency [MHz]	Field Strength [μ V/m]	Measurement Distance [m]
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

RSS-Gen 8.9: Field strength limits below 30 MHz

Frequency	Field Strength [μ A/m]	Measurement Distance [m]
9 – 490 kHz	6.37/F(kHz)	300
490 – 1705 kHz	63.7/F(kHz)	30
1.705 – 30.0 MHz	0.08	30

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Extrapolation factor of 3m test distance (ANSI C63.10-2013 6.4.4)

Frequency [MHz]	D ($\lambda/2\pi$) [m]	D (Limit) [m]	Extrapolation Factor
0.009	5305.16	300	80.00
0.159	300.29	300	80.00
0.160	298.42	300	79.95
0.490	97.44	300	70.23
0.490	97.44	30	40.00
1.591	30.01	30	40.00
1.592	29.99	30	40.00
10.000	4.77	30	24.04
13.560	3.52	30	21.39
15.910	3.00	30	20.00
30.000	1.59	30	20.00

FCC 15.209 / RSS-Gen 8.9: Field strength limits above 30 MHz

Frequency [MHz]	Field Strength [$\mu\text{V}/\text{m}$]	Measurement Distance [m]	Field Strength [$\text{dB}\mu\text{V}/\text{m}$]
30 – 88	100	3	40.0
88 – 216	150	3	43.5
216 – 960	200	3	46.0
Above 960	500	3	53.9

In the emission table above, the tighter limit applies at the band edges.

The emission limits shown in the above table are based on measurements employing a quasi-peak detector.

Test results - Complied with requirement

Test equipment used (refer to List of utilized test equipment)

AC01	BA10	BRF12	CL31	CL35	CL36	CL71	CL80
DH07	HPF11	LP05	PR15	PR16	SH01	SH05	TR10

Test software used

EMI1 Ver. 6.1

Calculation method

The Correction Factor and Result are calculated as followings.

Correction Factor [dB/m] = Ant. Factor [dB/m] + Loss [dB] – Gain [dB]

Result [$\text{dB}\mu\text{V}/\text{m}$] = Reading [$\text{dB}\mu\text{V}$] + Correction Factor [dB/m]

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Test Data (9 kHz - 30MHz)

Test site: Yokohama Laboratory
 Measurement distance: 3 m

Operating frequency: 2402MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

Operating frequency: 2442MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

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Operating frequency: 2480MHz
Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

Operating frequency: 2402MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

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Operating frequency: 2442MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

Operating frequency: 2480MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Z-plane]

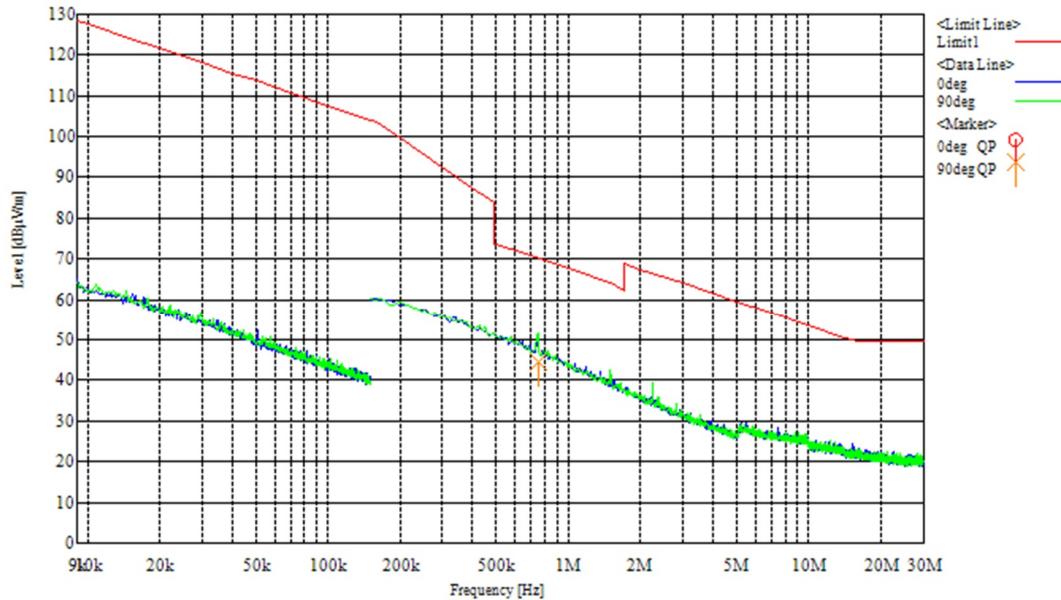
No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

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[Chart (2442MHz, 1Mbps, Y-plane)]



Tested Date: June 2, 2021
Humidity: 62 %

Temperature: 22 deg. C
Atmos. Press: 1016 hPa

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Test Data (30 - 1000MHz)

Test site: Yokohama Laboratory
Measurement distance: 3 m

Operating frequency: 2402MHz
Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.208	40.1	11.5	6.9	30.0	28.5	43.5	15.0	Hori.
2	151.097	38.2	11.2	7.0	30.0	26.4	43.5	17.1	Hori.
3	166.976	37.4	9.8	7.1	30.0	24.3	43.5	19.2	Hori.
4	182.968	38.5	8.8	7.2	30.0	24.5	43.5	19.0	Hori.
5	189.064	27.4	8.7	7.2	30.0	13.3	43.5	30.2	Hori.
6	198.878	39.0	8.8	7.2	30.0	25.0	43.5	18.5	Hori.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.128	40.4	11.5	6.9	30.0	28.8	43.5	14.7	Hori.
2	151.193	37.2	11.2	7.0	30.0	25.4	43.5	18.1	Hori.
3	188.288	27.1	8.7	7.2	30.0	13.0	43.5	30.5	Hori.
4	192.026	34.5	8.7	7.2	30.0	20.4	43.5	23.1	Hori.
5	195.562	28.4	8.8	7.2	30.0	14.4	43.5	29.1	Hori.
6	135.173	36.4	11.5	6.9	30.0	24.8	43.5	18.7	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.218	32.3	11.5	6.9	30.0	20.7	43.5	22.8	Hori.
2	189.355	25.5	8.7	7.2	30.0	11.4	43.5	32.1	Hori.
3	191.586	26.8	8.7	7.2	30.0	12.7	43.5	30.8	Hori.
4	195.271	27.5	8.8	7.2	30.0	13.5	43.5	30.0	Hori.
5	198.747	32.2	8.8	7.2	30.0	18.2	43.5	25.3	Hori.
6	135.233	34.2	11.5	6.9	30.0	22.6	43.5	20.9	Vert.

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Operating frequency: 2442MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	119.352	35.8	11.4	6.9	30.1	24.0	43.5	19.5	Hori.
2	135.234	40.0	11.5	6.9	30.0	28.4	43.5	15.1	Hori.
3	151.137	36.9	11.2	7.0	30.0	25.1	43.5	18.4	Hori.
4	167.047	37.1	9.8	7.1	30.0	24.0	43.5	19.5	Hori.
5	183.006	38.2	8.8	7.2	30.0	24.2	43.5	19.3	Hori.
6	198.860	40.7	8.8	7.2	30.0	26.7	43.5	16.8	Hori.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.330	41.1	11.5	6.9	30.0	29.5	43.5	14.0	Hori.
2	151.184	37.3	11.2	7.0	30.0	25.5	43.5	18.0	Hori.
3	183.229	38.4	8.8	7.2	30.0	24.4	43.5	19.1	Hori.
4	190.810	27.8	8.7	7.2	30.0	13.7	43.5	29.8	Hori.
5	195.368	29.3	8.8	7.2	30.0	15.3	43.5	28.2	Hori.
6	198.882	41.5	8.8	7.2	30.0	27.5	43.5	16.0	Hori.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	193.041	27.3	8.7	7.2	30.0	13.2	43.5	30.3	Hori.
2	195.174	28.3	8.8	7.2	30.0	14.3	43.5	29.2	Hori.
3	198.472	29.6	8.8	7.2	30.0	15.6	43.5	27.9	Hori.
4	198.919	32.1	8.8	7.2	30.0	18.1	43.5	25.4	Hori.
5	199.345	31.6	8.8	7.2	30.0	17.6	43.5	25.9	Hori.
6	135.336	34.2	11.5	6.9	30.0	22.6	43.5	20.9	Vert.

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Operating frequency: 2480MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	119.333	35.7	11.4	6.9	30.1	23.9	43.5	19.6	Hori.
2	135.257	39.9	11.5	6.9	30.0	28.3	43.5	15.2	Hori.
3	151.213	37.9	11.2	7.0	30.0	26.1	43.5	17.4	Hori.
4	167.133	37.0	9.8	7.1	30.0	23.9	43.5	19.6	Hori.
5	182.880	37.9	8.8	7.2	30.0	23.9	43.5	19.6	Hori.
6	198.928	40.0	8.8	7.2	30.0	26.0	43.5	17.5	Hori.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	119.470	35.2	11.4	6.9	30.1	23.4	43.5	20.1	Hori.
2	135.292	40.8	11.5	6.9	30.0	29.2	43.5	14.3	Hori.
3	151.130	37.1	11.2	7.0	30.0	25.3	43.5	18.2	Hori.
4	183.051	37.8	8.8	7.2	30.0	23.8	43.5	19.7	Hori.
5	198.763	40.9	8.8	7.2	30.0	26.9	43.5	16.6	Hori.
6	135.171	35.4	11.5	6.9	30.0	23.8	43.5	19.7	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.246	33.0	11.5	6.9	30.0	21.4	43.5	22.1	Hori.
2	192.459	28.5	8.7	7.2	30.0	14.4	43.5	29.1	Hori.
3	193.914	27.6	8.8	7.2	30.0	13.6	43.5	29.9	Hori.
4	199.022	33.1	8.8	7.2	30.0	19.1	43.5	24.4	Hori.
5	202.352	27.3	8.9	7.2	30.0	13.4	43.5	30.1	Hori.
6	135.265	33.5	11.5	6.9	30.0	21.9	43.5	21.6	Vert.

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Operating frequency: 2402MHz
 Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	119.304	35.6	11.4	6.9	30.1	23.8	43.5	19.7	Hori.
2	135.177	39.5	11.5	6.9	30.0	27.9	43.5	15.6	Hori.
3	150.885	37.4	11.2	7.0	30.0	25.6	43.5	17.9	Hori.
4	166.853	36.7	9.8	7.1	30.0	23.6	43.5	19.9	Hori.
5	183.005	36.6	8.8	7.2	30.0	22.6	43.5	20.9	Hori.
6	198.825	40.5	8.8	7.2	30.0	26.5	43.5	17.0	Hori.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.220	41.1	11.5	6.9	30.0	29.5	43.5	14.0	Hori.
2	151.124	37.3	11.2	7.0	30.0	25.5	43.5	18.0	Hori.
3	167.121	36.0	9.8	7.1	30.0	22.9	43.5	20.6	Hori.
4	182.934	37.6	8.8	7.2	30.0	23.6	43.5	19.9	Hori.
5	198.922	38.8	8.8	7.2	30.0	24.8	43.5	18.7	Hori.
6	135.305	36.1	11.5	6.9	30.0	24.5	43.5	19.0	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	199.012	34.6	8.8	7.2	30.0	20.6	43.5	22.9	Hori.
2	206.134	30.5	9.0	7.2	30.0	16.7	43.5	26.8	Hori.
3	215.000	33.7	8.8	7.3	30.0	19.8	43.5	23.7	Hori.
4	975.170	27.7	24.8	9.3	30.1	31.7	53.9	22.2	Hori.
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-	-	-	-	-	-	-	-	-	-

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Operating frequency: 2442MHz
 Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.285	39.9	11.5	6.9	30.0	28.3	43.5	15.2	Hori.
2	151.177	38.0	11.2	7.0	30.0	26.2	43.5	17.3	Hori.
3	167.084	36.7	9.8	7.1	30.0	23.6	43.5	19.9	Hori.
4	182.974	37.5	8.8	7.2	30.0	23.5	43.5	20.0	Hori.
5	199.015	40.4	8.8	7.2	30.0	26.4	43.5	17.1	Hori.
6	199.121	40.3	8.8	7.2	30.0	26.3	43.5	17.2	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	119.562	35.1	11.3	6.9	30.1	23.2	43.5	20.3	Hori.
2	135.213	40.8	11.5	6.9	30.0	29.2	43.5	14.3	Hori.
3	151.085	36.7	11.2	7.0	30.0	24.9	43.5	18.6	Hori.
4	183.340	37.7	8.8	7.2	30.0	23.7	43.5	19.8	Hori.
5	198.877	40.7	8.8	7.2	30.0	26.7	43.5	16.8	Hori.
6	980.117	27.6	24.6	9.4	30.1	31.5	53.9	22.4	Hori.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.460	33.3	11.5	6.9	30.0	21.7	43.5	21.8	Hori.
2	199.302	33.4	8.8	7.2	30.0	19.4	43.5	24.1	Hori.
3	944.909	24.5	24.7	9.3	30.2	28.3	46.0	17.7	Hori.
4	960.719	24.2	25.2	9.3	30.2	28.5	53.9	25.4	Hori.
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-

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Operating frequency: 2480MHz
 Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.201	39.8	11.5	6.9	30.0	28.2	43.5	15.3	Hori.
2	151.167	37.7	11.2	7.0	30.0	25.9	43.5	17.6	Hori.
3	167.137	36.7	9.8	7.1	30.0	23.6	43.5	19.9	Hori.
4	182.947	37.7	8.8	7.2	30.0	23.7	43.5	19.8	Hori.
5	199.114	40.5	8.8	7.2	30.0	26.5	43.5	17.0	Hori.
6	772.003	27.6	22.1	8.9	30.2	28.4	46.0	17.6	Hori.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	119.226	35.1	11.4	6.9	30.1	23.3	43.5	20.2	Hori.
2	135.308	41.2	11.5	6.9	30.0	29.6	43.5	13.9	Hori.
3	151.048	37.2	11.2	7.0	30.0	25.4	43.5	18.1	Hori.
4	183.018	37.8	8.8	7.2	30.0	23.8	43.5	19.7	Hori.
5	198.941	41.0	8.8	7.2	30.0	27.0	43.5	16.5	Hori.
6	198.746	40.6	8.8	7.2	30.0	26.6	43.5	16.9	Vert.

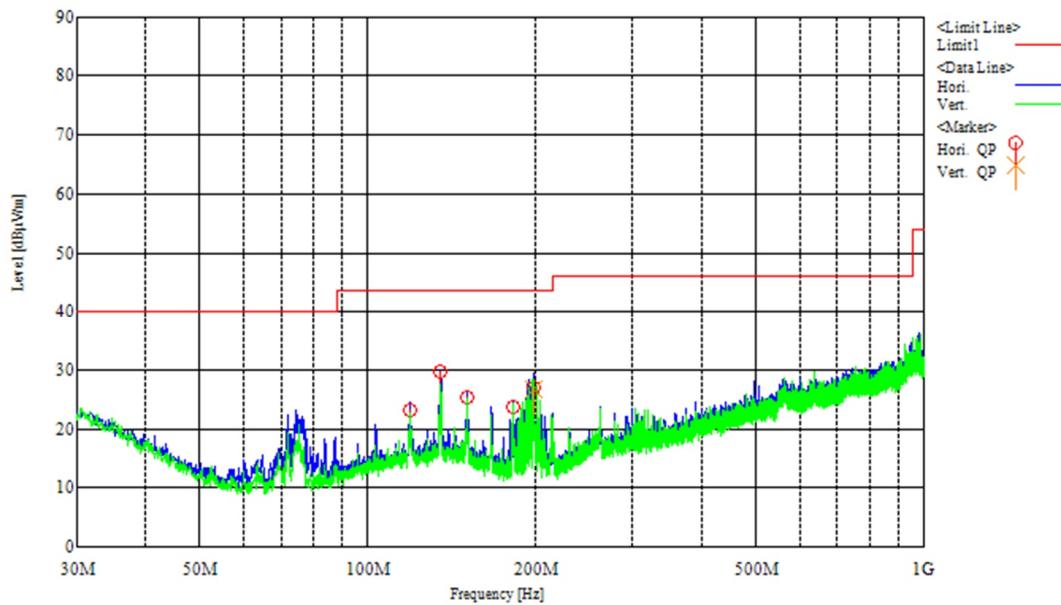
[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.208	32.9	11.5	6.9	30.0	21.3	43.5	22.2	Hori.
2	199.135	33.4	8.8	7.2	30.0	19.4	43.5	24.1	Hori.
3	203.899	27.4	8.9	7.2	30.0	13.5	43.5	30.0	Hori.
4	214.942	33.4	8.8	7.3	30.0	19.5	43.5	24.0	Hori.
5	135.385	33.0	11.5	6.9	30.0	21.4	43.5	22.1	Vert.
-	-	-	-	-	-	-	-	-	-

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[Chart (2480MHz, 2Mbps, Y-plane)]



Tested Date: May 31, 2021
Humidity: 59 %

Temperature: 17 deg. C
Atmos. Press: 1010 hPa

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Test Data (1-18GHz)

Test site: Yokohama Laboratory
 Measurement distance: 3 m

Operating frequency: 2402MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4803.535	48.2	38.7	4.7	52.9	43.4	73.9	53.9	21.0	10.5	Hori.
2	4803.535	45.1	34.5	4.7	49.8	39.2	73.9	53.9	24.1	14.7	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4803.539	46.2	35.8	4.7	50.9	40.5	73.9	53.9	23.0	13.4	Hori.
2	4803.541	46.4	36.5	4.7	51.1	41.2	73.9	53.9	22.8	12.7	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4803.542	47.4	37.3	4.7	52.1	42.0	73.9	53.9	21.8	11.9	Hori.
2	4803.541	46.1	35.3	4.7	50.8	40.0	73.9	53.9	23.1	13.9	Vert.

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Operating frequency: 2442MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4883.541	47.4	37.3	5.3	52.7	42.6	73.9	53.9	21.2	11.3	Hori.
2	4883.541	45.1	33.7	5.3	50.4	39.0	73.9	53.9	23.5	14.9	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4883.545	45.2	34.3	5.3	50.5	39.6	73.9	53.9	23.4	14.3	Hori.
2	4883.541	45.3	34.8	5.3	50.6	40.1	73.9	53.9	23.3	13.8	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4883.545	46.3	35.3	5.3	51.6	40.6	73.9	53.9	22.3	13.3	Hori.
2	4883.543	46.4	35.3	5.3	51.7	40.6	73.9	53.9	22.2	13.3	Vert.

Operating frequency: 2480MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4959.541	45.1	33.7	5.5	50.6	39.2	73.9	53.9	23.3	14.7	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4959.542	44.2	32.4	5.5	49.7	37.9	73.9	53.9	24.2	16.0	Hori.
2	4959.544	44.3	32.1	5.5	49.8	37.6	73.9	53.9	24.1	16.3	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4959.539	44.8	33.3	5.5	50.3	38.8	73.9	53.9	23.6	15.1	Hori.
2	4959.538	45.2	33.4	5.5	50.7	38.9	73.9	53.9	23.2	15.0	Vert.

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Operating frequency: 2402MHz
 Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4803.042	47.8	37.6	4.7	52.5	42.3	73.9	53.9	21.4	11.6	Hori.
2	4803.043	44.4	32.4	4.7	49.1	37.1	73.9	53.9	24.8	16.8	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4803.040	45.8	34.1	4.7	50.5	38.8	73.9	53.9	23.4	15.1	Hori.
2	4803.043	45.6	34.0	4.7	50.3	38.7	73.9	53.9	23.6	15.2	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4803.043	46.1	34.3	4.7	50.8	39.0	73.9	53.9	23.1	14.9	Hori.
2	4803.042	46.2	34.2	4.7	50.9	38.9	73.9	53.9	23.0	15.0	Vert.

Operating frequency: 2442MHz
 Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4883.042	47.0	36.2	5.3	52.3	41.5	73.9	53.9	21.6	12.4	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4883.042	45.6	33.9	5.3	50.9	39.2	73.9	53.9	23.0	14.7	Hori.
2	4883.039	46.0	32.9	5.3	51.3	38.2	73.9	53.9	22.6	15.7	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4883.041	46.1	34.1	5.3	51.4	39.4	73.9	53.9	22.5	14.5	Hori.
2	4883.042	46.0	34.4	5.3	51.3	39.7	73.9	53.9	22.6	14.2	Vert.

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Operating frequency: 2480MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4959.039	45.3	32.9	5.5	50.8	38.4	73.9	53.9	23.1	15.5	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

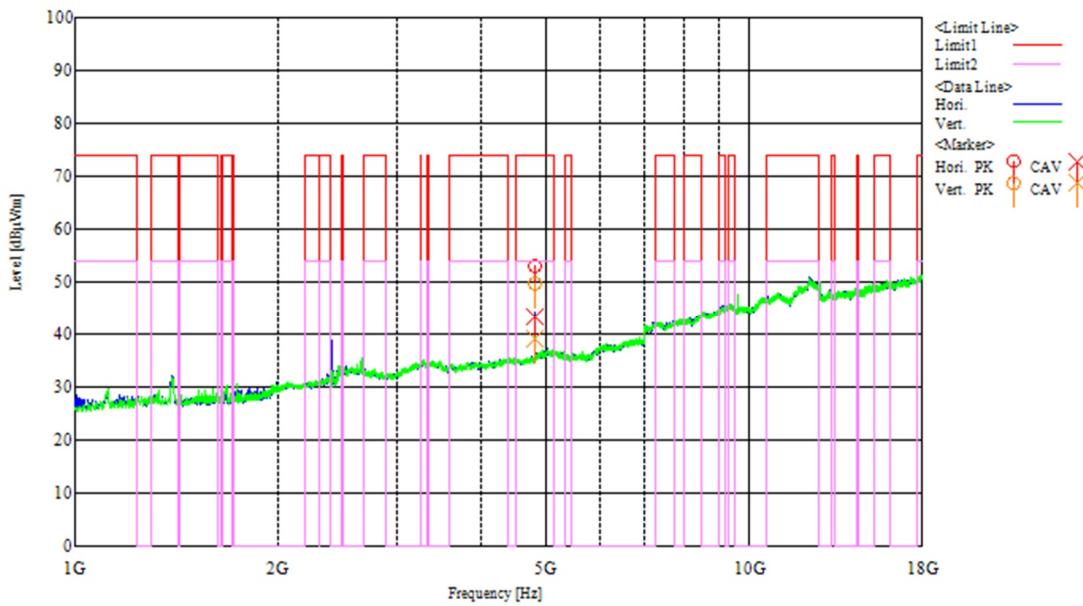
[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	4959.036	44.9	32.3	5.5	50.4	37.8	73.9	53.9	23.5	16.1	Hori.
2	4959.044	44.8	32.4	5.5	50.3	37.9	73.9	53.9	23.6	16.0	Vert.

[Chart (2402MHz, 1Mbps, X-plane)]



Tested Date: May 27, 2021
Humidity: 55 %

Temperature: 21 deg. C
Atmos. Press: 1000 hPa

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Test Data (18-25GHz)

Test site: Yokohama Laboratory
Measurement distance: 3 m

Operating frequency: 2402MHz
Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	19214.145	44.9	32.8	14.2	59.1	47.0	73.9	53.9	14.8	6.9	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	19214.148	43.9	31.5	14.2	58.1	45.7	73.9	53.9	15.8	8.2	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

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Operating frequency: 2442MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	19534.146	46.3	33.4	13.7	60.0	47.1	73.9	53.9	13.9	6.8	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

Operating frequency: 2480MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	19838.146	44.9	32.6	13.4	58.3	46.0	73.9	53.9	15.6	7.9	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	19838.148	43.7	31.2	13.4	57.1	44.6	73.9	53.9	16.8	9.3	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

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Operating frequency: 2402MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	19212.143	44.3	31.7	14.2	58.5	45.9	73.9	53.9	15.4	8.0	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

Operating frequency: 2442MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	19532.143	45.4	32.3	13.7	59.1	46.0	73.9	53.9	14.8	7.9	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

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Operating frequency: 2480MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Y-plane]

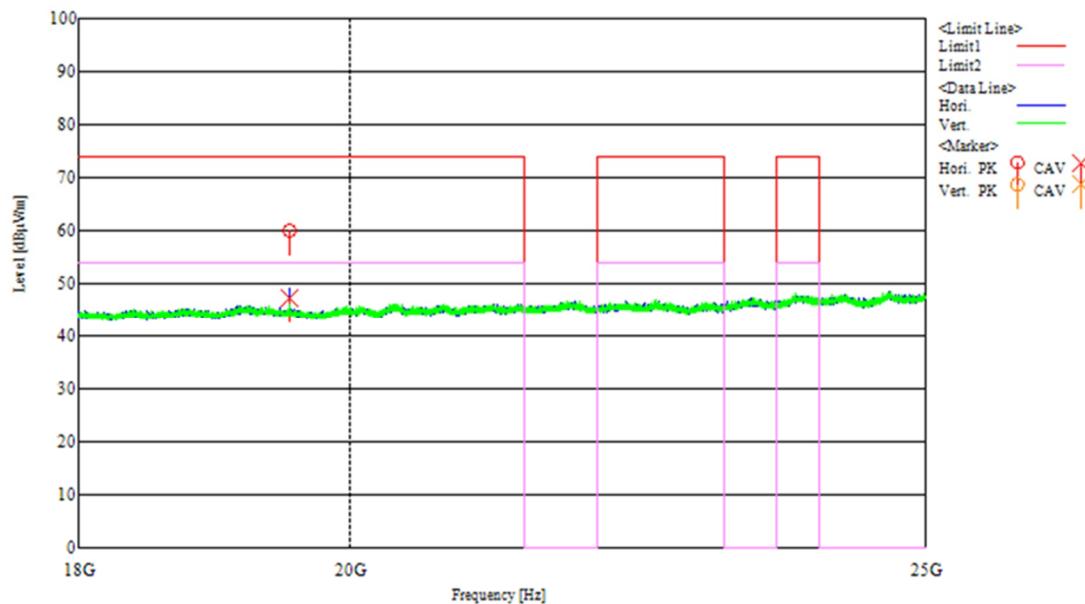
No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	19836.148	44.4	31.8	13.4	57.8	45.2	73.9	53.9	16.1	8.7	Hori.
-	-	-	-	-	-	-	-	-	-	-	-

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
-	-	-	-	-	-	-	-	-	-	-	-

There are no spurious emissions greater than noise floor or 20dB below the limit.

[Chart (2442MHz, 1Mbps, Y-plane)]



Tested Date: May 28, 2021
Humidity: 67 %

Temperature: 19 deg. C
Atmos. Press: 1002 hPa

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Restricted bandedge measurement

Test site: Yokohama Laboratory
 Measurement distance: 3 m

Operating frequency: 2402MHz
 Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2390.000	43.9	30.3	7.2	51.1	37.5	73.9	53.9	22.8	16.4	Hori.
2	2390.000	43.3	30.3	7.2	50.5	37.5	73.9	53.9	23.4	16.4	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2390.000	43.1	30.2	7.2	50.3	37.4	73.9	53.9	23.6	16.5	Hori.
2	2390.000	44.4	30.2	7.2	51.6	37.4	73.9	53.9	22.3	16.5	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2390.000	43.8	30.2	7.2	51.0	37.4	73.9	53.9	22.9	16.5	Hori.
2	2390.000	44.0	30.2	7.2	51.2	37.4	73.9	53.9	22.7	16.5	Vert.

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Operating frequency: 2402MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2390.000	43.7	30.2	7.2	50.9	37.4	73.9	53.9	23.0	16.5	Hori.
2	2390.000	43.1	30.2	7.2	50.3	37.4	73.9	53.9	23.6	16.5	Vert.

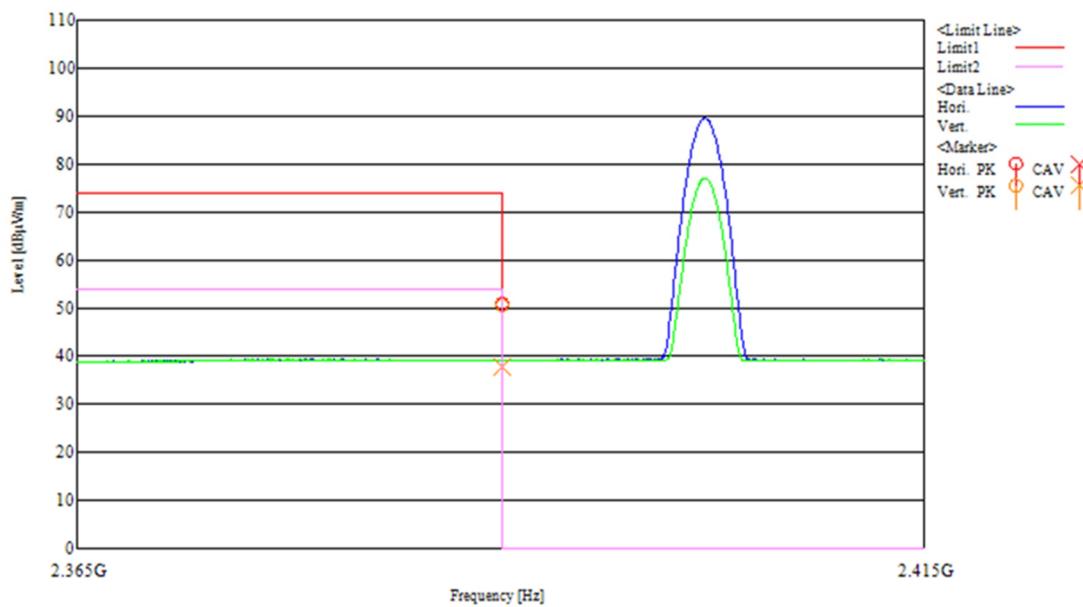
[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2390.000	43.9	30.2	7.2	51.1	37.4	73.9	53.9	22.8	16.5	Hori.
2	2390.000	44.2	30.2	7.2	51.4	37.4	73.9	53.9	22.5	16.5	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2390.000	43.3	30.2	7.2	50.5	37.4	73.9	53.9	23.4	16.5	Hori.
2	2390.000	43.8	30.2	7.2	51.0	37.4	73.9	53.9	22.9	16.5	Vert.

[Chart (2402MHz, 1Mbps, X-plane)]



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Operating frequency: 2480MHz
Data rate: 1Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2483.500	43.6	30.4	7.9	51.5	38.3	73.9	53.9	22.4	15.6	Hori.
2	2483.500	43.7	30.3	7.9	51.6	38.2	73.9	53.9	22.3	15.7	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2483.500	44.3	30.8	7.9	52.2	38.7	73.9	53.9	21.7	15.2	Hori.
2	2483.500	44.7	30.5	7.9	52.6	38.4	73.9	53.9	21.3	15.5	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2483.500	44.2	30.8	7.9	52.1	38.7	73.9	53.9	21.8	15.2	Hori.
2	2483.500	44.6	30.8	7.9	52.5	38.7	73.9	53.9	21.4	15.2	Vert.

Operating frequency: 2480MHz
Data rate: 2Mbps

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2483.500	45.6	31.3	7.9	53.5	39.2	73.9	53.9	20.4	14.7	Hori.
2	2483.500	43.5	30.3	7.9	51.4	38.2	73.9	53.9	22.5	15.7	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2483.500	44.7	31.4	7.9	52.6	39.3	73.9	53.9	21.3	14.6	Hori.
2	2483.500	44.7	31.2	7.9	52.6	39.1	73.9	53.9	21.3	14.8	Vert.

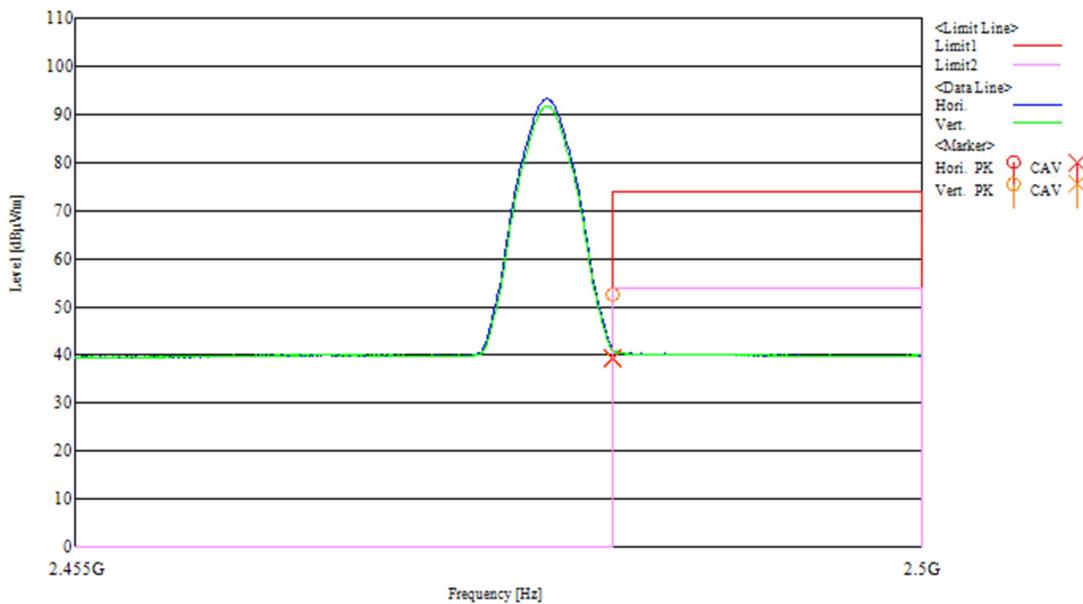
[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2483.500	44.6	31.1	7.9	52.5	39.0	73.9	53.9	21.4	14.9	Hori.
2	2483.500	45.0	31.3	7.9	52.9	39.2	73.9	53.9	21.0	14.7	Vert.

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[Chart (2480MHz, 2Mbps, Y-plane)]



Tested Date: May 27, 2021
Humidity: 55 %

Temperature: 21 deg. C
Atmos. Press: 1000 hPa

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2.7 AC power line conducted emissions

Test setup

Test setup was implemented according to the method of ANSI C63.10 clause 6.2.

Test procedure

Measurement procedures were implemented according to the method of ANSI C63.10 clause 6.2.

Applicable rule and limitation

FCC 15.207 / RSS-Gen 8.8: AC power line conducted emissions limits

Frequency of Emission [MHz]	Conducted emissions Limit [dB μ V]	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency. The lower limit applies at the band edges.

Test equipment used (refer to List of utilized test equipment)

TR09	CL72	LN13
------	------	------

Test software used

EMI1 Ver. 6.1

Calculation method

The Correction Factor and Result are calculated as followings.

$$\begin{aligned} \text{Correction Factor [dB]} &= \text{ISN Factor [dB]} + \text{Loss [dB]} \\ \text{Result [dB}\mu\text{V]} &= \text{Reading [dB}\mu\text{V]} + \text{Correction Factor [dB]} \end{aligned}$$

Test results - Complied with requirement

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Test Data

Test site: Yokohama Laboratory

[Operating mode: 2402MHz, 1Mbps]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	0.15493	27.7	16.1	10.3	38.0	26.4	65.7	55.7	27.7	29.3	Va
2	3.80618	25.8	18.9	10.2	36.0	29.1	56.0	46.0	20.0	16.9	Va
3	14.38943	30.9	20.9	10.4	41.3	31.3	60.0	50.0	18.7	18.7	Va
4	2.87194	20.6	12.2	10.1	30.7	22.3	56.0	46.0	25.3	23.7	Vb
5	3.79632	24.3	18.4	10.2	34.5	28.6	56.0	46.0	21.5	17.4	Vb
6	14.03201	30.1	20.3	10.4	40.5	30.7	60.0	50.0	19.5	19.3	Vb

[Operating mode: 2442MHz, 1Mbps]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	2.62851	17.9	10.4	10.1	28.0	20.5	56.0	46.0	28.0	25.5	Va
2	3.83082	23.5	17.8	10.2	33.7	28.0	56.0	46.0	22.3	18.0	Va
3	15.09254	29.4	19.7	10.4	39.8	30.1	60.0	50.0	20.2	19.9	Va
4	2.79112	17.5	9.8	10.1	27.6	19.9	56.0	46.0	28.4	26.1	Vb
5	3.84067	22.6	16.9	10.2	32.8	27.1	56.0	46.0	23.2	18.9	Vb
6	15.12256	27.6	17.4	10.4	38.0	27.8	60.0	50.0	22.0	22.2	Vb

[Operating mode: 2480MHz, 1Mbps]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	0.20420	28.0	19.5	10.2	38.2	29.7	63.4	53.4	25.2	23.7	Va
2	3.80125	22.9	17.1	10.2	33.1	27.3	56.0	46.0	22.9	18.7	Va
3	14.92246	28.0	19.0	10.4	38.4	29.4	60.0	50.0	21.6	20.6	Va
4	2.71228	17.9	9.2	10.1	28.0	19.3	56.0	46.0	28.0	26.7	Vb
5	3.79632	21.0	15.3	10.2	31.2	25.5	56.0	46.0	24.8	20.5	Vb
6	15.50291	34.7	24.1	10.4	45.1	34.5	60.0	50.0	14.9	15.5	Vb

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[Operating mode: 2402MHz, 2Mbps]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	0.46536	18.6	12.4	10.1	28.7	22.5	56.6	46.6	27.9	24.1	Va
2	3.84560	17.6	8.7	10.2	27.8	18.9	56.0	46.0	28.2	27.1	Va
3	15.52328	23.3	14.2	10.4	33.7	24.6	60.0	50.0	26.3	25.4	Va
4	0.15493	32.6	20.4	10.3	42.9	30.7	65.7	55.7	22.8	25.0	Vb
5	3.68299	18.1	10.4	10.2	28.3	20.6	56.0	46.0	27.7	25.4	Vb
6	14.60228	24.7	13.3	10.4	35.1	23.7	60.0	50.0	24.9	26.3	Vb

[Operating mode: 2442MHz, 2Mbps]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	0.19927	25.2	13.4	10.2	35.4	23.6	63.6	53.6	28.2	30.0	Va
2	3.68299	19.0	11.1	10.2	29.2	21.3	56.0	46.0	26.8	24.7	Va
3	14.42221	23.8	14.8	10.4	34.2	25.2	60.0	50.0	25.8	24.8	Va
4	0.15493	35.0	20.6	10.3	45.3	30.9	65.7	55.7	20.4	24.8	Vb
5	3.74212	18.6	11.3	10.2	28.8	21.5	56.0	46.0	27.2	24.5	Vb
6	15.25263	23.3	13.2	10.4	33.7	23.6	60.0	50.0	26.3	26.4	Vb

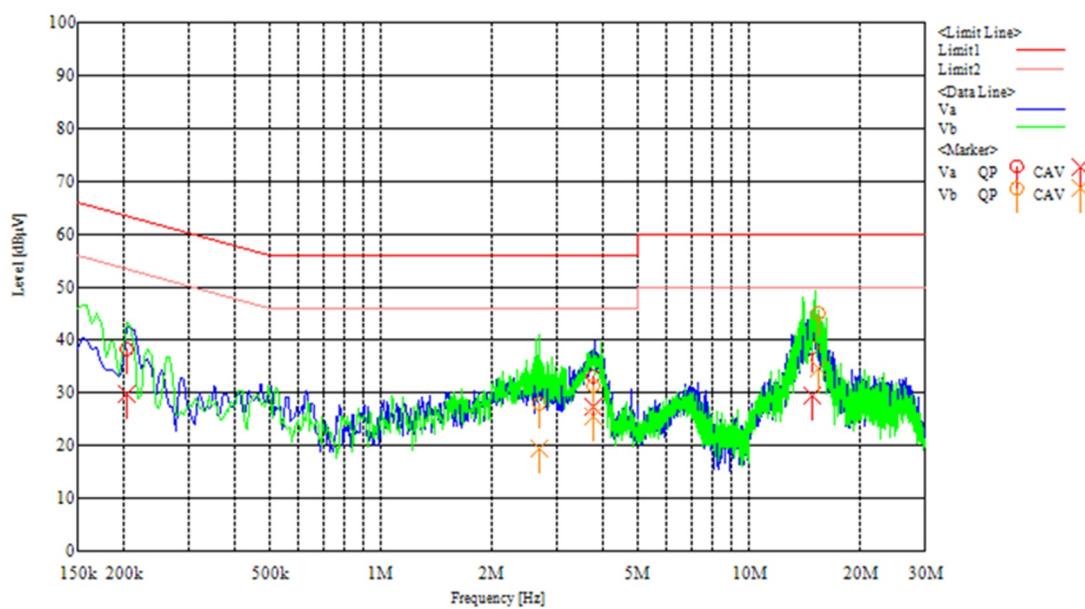
[Operating mode: 2480MHz, 2Mbps]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	0.19435	24.5	14.4	10.2	34.7	24.6	63.8	53.8	29.1	29.2	Va
2	3.63372	17.1	9.0	10.2	27.3	19.2	56.0	46.0	28.7	26.8	Va
3	14.17208	23.3	14.7	10.4	33.7	25.1	60.0	50.0	26.3	24.9	Va
4	0.15493	34.9	21.3	10.3	45.2	31.6	65.7	55.7	20.5	24.1	Vb
5	3.16068	18.9	9.7	10.2	29.1	19.9	56.0	46.0	26.9	26.1	Vb
6	15.06230	27.3	17.3	10.4	37.7	27.7	60.0	50.0	22.3	22.3	Vb

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[Chart (2480MHz, 1Mbps)]



Tested Date: June 2, 2021
Humidity: 62 %

Temperature: 22 deg. C
Atmos. Press: 1016 hPa

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SCC Japan Inc.

3-5-22, Kitayamada, Tsuruhama, Yokohama, 224-0021, Japan

3-5-23, Kitayamata, Isuzuki-ku, Yokohama
t +81(0) 45 550 3520 f +81(0) 45 583 7506

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IPI : www.sasgroup.jp

2.8 Radiated emissions (Receiver)

Test setup

Test setup was implemented according to the method of ANSI C63.4 clause 6 “General requirements for EUT equipment arrangements and operation”, clause 8.2 and Annex H.3 “Radiated emission measurements setup”.

Test procedure

Measurement procedures were implemented according to the method of ANSI C63.4 clauses 8.2.

The EUT is place on a non-conducted table which is 0.8 m height from a ground plane and the measurement antenna to EUT distance is 3 meters. The turn table is rotated for 360 degrees to determine the maximum emission level.

The antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

The spectrum analyzer and receiver are set to the followings;

RBW=100 kHz (up to 1000 MHz) or 1 MHz (above 1000 MHz)

VBW= 300 kHz (up to 1000 MHz) or 3 MHz (above 1000 MHz)

Final measurement is carried out with a receiver RBW of 120 kHz (up to 1000 MHz), or 1 MHz (above 1000 MHz).

Applicable rule and limitation

RSS-Gen 7.3: Radiated emissions limits

Frequency [MHz]	Field Strength [μ V/m]	Measurement Distance [m]	Field Strength [dB μ V/m]
30 – 88	100	3	40.0
88 – 216	150	3	43.5
216 – 960	200	3	46.0
Above 960	500	3	53.9

In the emission table above, the tighter limit applies at the band edges.

The emission limits shown in the above table are based on measurements employing a QP detector (up to 1000 MHz) or AVE/PEAK detector (above 1000 MHz).

Test results - Complied with requirement

Test equipment used (refer to List of utilized test equipment)

AC01	BA10	CL35	CL36	CL71	CL80	DH07	PR15
PR16	TR10	-	-	-	-	-	-

Test software used

EMI1 Ver. 6.1

Calculation method

The Correction Factor and Result are calculated as followings.

$$\text{Correction Factor [dB/m]} = \text{Ant. Factor [dB/m]} + \text{Loss [dB]} - \text{Gain [dB]}$$

$$\text{Result [dB}\mu\text{V/m]} = \text{Reading [dB}\mu\text{V]} + \text{Correction Factor [dB/m]}$$

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Test Data (below 1GHz)

Test site: Yokohama Laboratory
 Measurement distance: 3 m

Operating frequency: 2402MHz

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.557	39.6	11.5	7.0	30.0	28.1	43.5	15.4	Hori.
2	151.217	38.0	11.2	7.0	30.0	26.2	43.5	17.3	Hori.
3	199.124	40.4	8.8	7.2	30.0	26.4	43.5	17.1	Hori.
4	836.007	28.3	22.6	9.1	30.5	29.5	46.0	16.5	Hori.
5	856.006	27.7	23.2	9.1	30.5	29.5	46.0	16.5	Hori.
6	868.007	27.8	23.1	9.1	30.5	29.5	46.0	16.5	Hori.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	119.363	35.1	11.4	6.9	30.1	23.3	43.5	20.2	Hori.
2	135.388	41.1	11.5	6.9	30.0	29.5	43.5	14.0	Hori.
3	151.221	37.1	11.2	7.0	30.0	25.3	43.5	18.2	Hori.
4	183.043	37.7	8.8	7.2	30.0	23.7	43.5	19.8	Hori.
5	199.132	40.6	8.8	7.2	30.0	26.6	43.5	16.9	Hori.
6	499.142	23.3	17.9	8.3	29.5	20.0	46.0	26.0	Hori.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	79.659	24.3	7.2	6.7	30.2	8.0	40.0	32.0	Hori.
2	135.193	33.0	11.5	6.9	30.0	21.4	43.5	22.1	Hori.
3	201.479	29.7	8.9	7.2	30.0	15.8	43.5	27.7	Hori.
4	498.657	23.4	17.9	8.3	29.5	20.1	46.0	25.9	Hori.
5	135.350	31.3	11.5	6.9	30.0	19.7	43.5	23.8	Vert.
-	-	-	-	-	-	-	-	-	-

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Operating frequency: 2442MHz

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.184	40.3	11.5	6.9	30.0	28.7	43.5	14.8	Hori.
2	151.232	38.1	11.2	7.0	30.0	26.3	43.5	17.2	Hori.
3	182.950	38.0	8.8	7.2	30.0	24.0	43.5	19.5	Hori.
4	199.004	40.3	8.8	7.2	30.0	26.3	43.5	17.2	Hori.
5	952.463	23.7	25.0	9.3	30.2	27.8	46.0	18.2	Hori.
6	993.405	25.6	24.2	9.4	30.1	29.1	53.9	24.8	Hori.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	135.230	41.1	11.5	6.9	30.0	29.5	43.5	14.0	Hori.
2	151.387	36.8	11.2	7.0	30.0	25.0	43.5	18.5	Hori.
3	167.196	35.9	9.8	7.1	30.0	22.8	43.5	20.7	Hori.
4	183.133	37.8	8.8	7.2	30.0	23.8	43.5	19.7	Hori.
5	199.189	41.1	8.8	7.2	30.0	27.1	43.5	16.4	Hori.
6	135.347	36.0	11.5	6.9	30.0	24.4	43.5	19.1	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	72.002	38.0	6.5	6.6	30.2	20.9	40.0	19.1	Hori.
2	76.816	39.0	6.8	6.6	30.2	22.2	40.0	17.8	Hori.
3	135.059	32.0	11.5	6.9	30.0	20.4	43.5	23.1	Hori.
4	198.934	34.4	8.8	7.2	30.0	20.4	43.5	23.1	Hori.
5	937.150	24.4	24.2	9.3	30.3	27.6	46.0	18.4	Hori.
6	981.960	27.8	24.5	9.4	30.1	31.6	53.9	22.3	Hori.

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Operating frequency: 2480MHz

[X-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	72.004	40.8	6.5	6.6	30.2	23.7	40.0	16.3	Hori.
2	74.646	38.5	6.7	6.6	30.2	21.6	40.0	18.4	Hori.
3	135.481	40.4	11.5	6.9	30.0	28.8	43.5	14.7	Hori.
4	151.154	38.3	11.2	7.0	30.0	26.5	43.5	17.0	Hori.
5	199.144	40.5	8.8	7.2	30.0	26.5	43.5	17.0	Hori.
6	980.796	28.0	24.6	9.4	30.1	31.9	53.9	22.0	Hori.

[Y-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	72.011	40.3	6.5	6.6	30.2	23.2	40.0	16.8	Hori.
2	76.652	39.6	6.8	6.6	30.2	22.8	40.0	17.2	Hori.
3	135.277	41.3	11.5	6.9	30.0	29.7	43.5	13.8	Hori.
4	151.236	37.3	11.2	7.0	30.0	25.5	43.5	18.0	Hori.
5	199.008	41.1	8.8	7.2	30.0	27.1	43.5	16.4	Hori.
6	972.746	27.4	24.9	9.3	30.1	31.5	53.9	22.4	Hori.

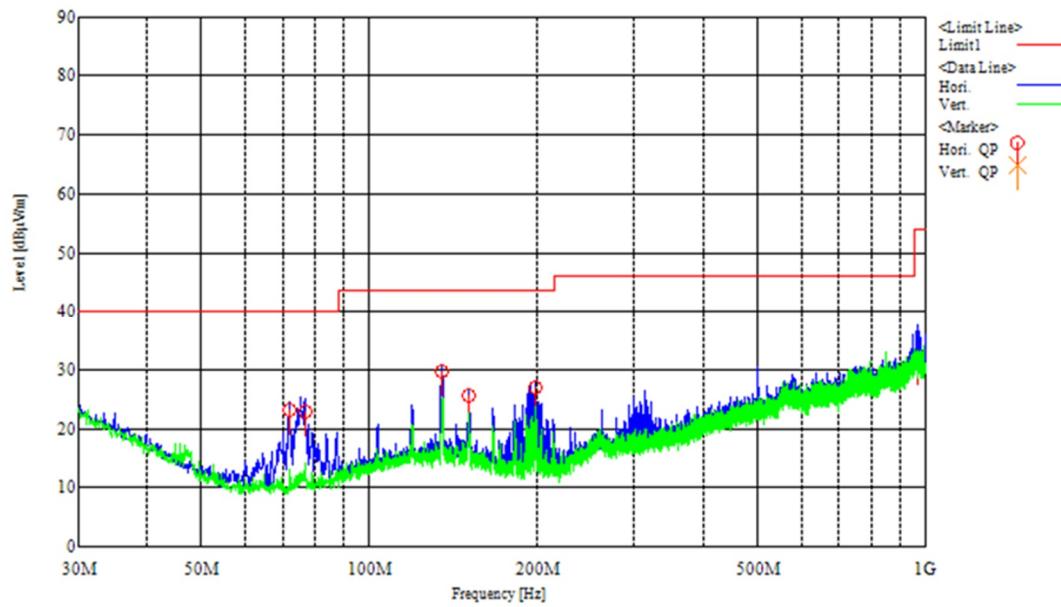
[Z-plane]

No.	Frequency [MHz]	Reading [dB μ V]	Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Ant.
1	76.752	38.4	6.8	6.6	30.2	21.6	40.0	18.4	Hori.
2	135.432	33.6	11.5	6.9	30.0	22.0	43.5	21.5	Hori.
3	199.021	33.2	8.8	7.2	30.0	19.2	43.5	24.3	Hori.
4	214.896	33.0	8.8	7.3	30.0	19.1	43.5	24.4	Hori.
5	973.910	27.8	24.9	9.3	30.1	31.9	53.9	22.0	Hori.
6	135.333	31.1	11.5	6.9	30.0	19.5	43.5	24.0	Vert.

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[Chart (2480MHz, Y-plane)]



Tested Date: May 31, 2021
Humidity: 59 %

Temperature: 17 deg. C
Atmos. Press: 1010 hPa

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Test Data (Above 1000MHz)

Test site: Yokohama Laboratory
Measurement distance: 3 m

Operating frequency: 2402MHz

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	1921.613	47.2	40.6	-5.2	42.0	35.4	73.9	53.9	31.9	18.5	Hori.
2	5305.385	46.0	26.8	5.0	51.0	31.8	73.9	53.9	22.9	22.1	Hori.
3	5316.784	47.1	26.6	4.9	52.0	31.5	73.9	53.9	21.9	22.4	Vert.
4	5331.184	48.2	26.7	4.8	53.0	31.5	73.9	53.9	20.9	22.4	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2665.467	57.7	29.5	-1.2	56.5	28.3	73.9	53.9	17.4	25.6	Hori.
2	5337.783	43.7	26.7	4.8	48.5	31.5	73.9	53.9	25.4	22.4	Hori.
3	1622.387	48.4	30.2	-6.4	42.0	23.8	73.9	53.9	31.9	30.1	Vert.
4	2662.517	52.5	29.0	-1.2	51.3	27.8	73.9	53.9	22.6	26.1	Vert.
5	5335.983	46.7	26.8	4.8	51.5	31.6	73.9	53.9	22.4	22.3	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	1921.617	48.3	42.5	-5.2	43.1	37.3	73.9	53.9	30.8	16.6	Hori.
2	2659.517	54.6	28.9	-1.2	53.4	27.7	73.9	53.9	20.5	26.2	Hori.
3	1847.758	46.1	29.8	-5.8	40.3	24.0	73.9	53.9	33.6	29.9	Vert.
4	2657.717	52.3	29.2	-1.2	51.1	28.0	73.9	53.9	22.8	25.9	Vert.
5	5304.185	48.4	27.1	5.0	53.4	32.1	73.9	53.9	20.5	21.8	Vert.

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Operating frequency: 2442MHz

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	1953.632	47.2	40.1	-4.8	42.4	35.3	73.9	53.9	31.5	18.6	Hori.
2	5315.584	42.7	26.5	4.9	47.6	31.4	73.9	53.9	26.3	22.5	Hori.
3	1396.007	53.3	37.4	-6.3	47.0	31.1	73.9	53.9	26.9	22.8	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	1392.460	54.5	38.1	-6.3	48.2	31.8	73.9	53.9	25.7	22.1	Vert.
2	2651.127	47.6	28.6	-1.1	46.5	27.5	73.9	53.9	27.4	26.4	Vert.
3	5320.875	45.8	26.9	4.9	50.7	31.8	73.9	53.9	23.2	22.1	Vert.

[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	1953.615	48.3	41.9	-4.8	43.5	37.1	73.9	53.9	30.4	16.8	Hori.
2	2659.517	53.9	29.0	-1.2	52.7	27.8	73.9	53.9	21.2	26.1	Hori.
3	5302.985	42.2	26.8	5.0	47.2	31.8	73.9	53.9	26.7	22.1	Hori.
4	1953.615	47.5	37.4	-4.8	42.7	32.6	73.9	53.9	31.2	21.3	Vert.
5	2661.317	53.7	29.2	-1.2	52.5	28.0	73.9	53.9	21.4	25.9	Vert.
6	5317.984	47.3	26.6	4.9	52.2	31.5	73.9	53.9	21.7	22.4	Vert.

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Operating frequency: 2480MHz

[X-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	1984.010	46.5	38.8	-4.2	42.3	34.6	73.9	53.9	31.6	19.3	Hori.
2	2661.317	52.6	29.1	-1.2	51.4	27.9	73.9	53.9	22.5	26.0	Hori.
3	5306.584	47.9	26.9	4.9	52.8	31.8	73.9	53.9	21.1	22.1	Vert.

[Y-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	2681.061	45.4	30.0	-1.3	44.1	28.7	73.9	53.9	29.8	25.2	Hori.
2	1390.560	51.9	35.1	-6.3	45.6	28.8	73.9	53.9	28.3	25.1	Vert.
3	2655.317	53.2	28.8	-1.2	52.0	27.6	73.9	53.9	21.9	26.3	Vert.
4	5326.384	46.4	26.7	4.9	51.3	31.6	73.9	53.9	22.6	22.3	Vert.

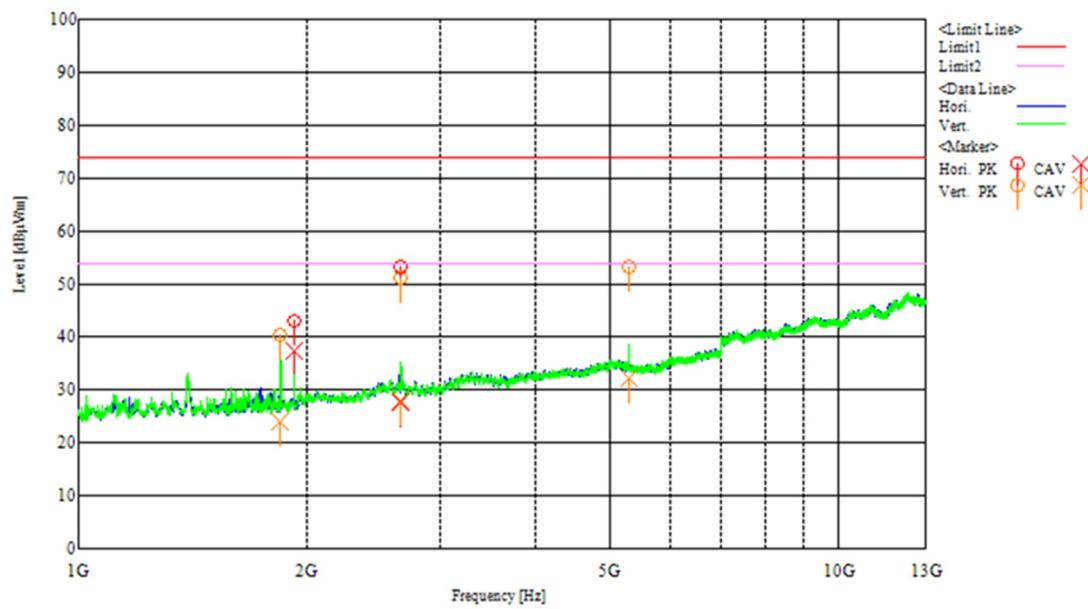
[Z-plane]

No.	Frequency [MHz]	Reading PK [dB μ V]	Reading Ave [dB μ V]	C.Factor [dB]	Result PK [dB μ V/m]	Result Ave [dB μ V/m]	Limit PK [dB μ V/m]	Limit Ave [dB μ V/m]	Margin PK [dB]	Margin Ave [dB]	Ant.
1	1984.017	47.4	40.6	-4.2	43.2	36.4	73.9	53.9	30.7	17.5	Hori.
2	2657.717	55.7	28.8	-1.2	54.5	27.6	73.9	53.9	19.4	26.3	Hori.
3	5323.984	46.2	26.7	4.9	51.1	31.6	73.9	53.9	22.8	22.3	Vert.

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[Chart (2402MHz, Z-plane)]



Tested Date: May 28, 2021
Humidity: 67 %

Temperature: 19 deg. C
Atmos. Press: 1002 hPa

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SGS Japan Inc. 3-523, Kitayamata, Tsuzuki-ku, Yokohama 224-0021, Japan
t +81(0) 45 550 3520 f +81(0) 45 592 7506 URL: www.sgsgroup.jp

2.9 AC power line conducted emissions (Receiver)

Test setup

Test setup was implemented according to the method of ANSI C63.4 clause 6 “General requirements for EUT equipment arrangements and operation” and Annex H.1 “AC power line conducted emission measurements setup”.

Test procedure

Measurement procedures were implemented according to the method of ANSI C63.4 clauses 7, clause 13.1.3 and Annex H.2 “AC power line conducted emission measurements”.

Exploratory measurements were used the spectrum analyzer to identify the frequency of the emission that has the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable positions, and with a typical system equipment configuration and arrangement.

Final ac power line conducted emission measurements were performed based on the exploratory tests.

The EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit are selected for the final measurement.

When the measurement value is greater than average limitation the average detection measurements were performed.

Applicable rule and limitation

RSS-Gen 7.2: AC power line conducted emissions limits

Frequency of Emission [MHz]	Conducted emissions Limit [dB μ V]	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency. The lower limit applies at the band edges.

Test equipment used (refer to List of utilized test equipment)

TR09	CL72	LN13
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Test software used

EMI1 Ver. 6.1

Calculation method

The Correction Factor and Result are calculated as followings.

$$\begin{aligned} \text{Correction Factor [dB]} &= \text{ISN Factor [dB]} + \text{Loss [dB]} \\ \text{Result [dB}\mu\text{V]} &= \text{Reading [dB}\mu\text{V]} + \text{Correction Factor [dB]} \end{aligned}$$

Test results - Complied with requirement

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Test Data

Test site: Yokohama Laboratory

[Operating mode: 2402MHz]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	0.15985	31.8	17.8	10.3	42.1	28.1	65.5	55.5	23.4	27.4	Va
2	3.76676	18.6	11.3	10.2	28.8	21.5	56.0	46.0	27.2	24.5	Va
3	14.91030	24.5	15.3	10.4	34.9	25.7	60.0	50.0	25.1	24.3	Va
4	0.45550	18.2	12.0	10.1	28.3	22.1	56.8	46.8	28.5	24.7	Vb
5	3.80618	19.5	11.3	10.2	29.7	21.5	56.0	46.0	26.3	24.5	Vb
6	14.81240	22.2	12.5	10.4	32.6	22.9	60.0	50.0	27.4	27.1	Vb

[Operating mode: 2442MHz]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	0.15493	33.6	20.7	10.3	43.9	31.0	65.7	55.7	21.8	24.7	Va
2	3.65835	18.9	11.5	10.2	29.1	21.7	56.0	46.0	26.9	24.3	Va
3	14.65736	23.5	14.9	10.4	33.9	25.3	60.0	50.0	26.1	24.7	Va
4	0.16971	32.4	21.1	10.3	42.7	31.4	65.0	55.0	22.3	23.6	Vb
5	3.73719	18.5	10.4	10.2	28.7	20.6	56.0	46.0	27.3	25.4	Vb
6	15.11731	22.5	12.6	10.4	32.9	23.0	60.0	50.0	27.1	27.0	Vb

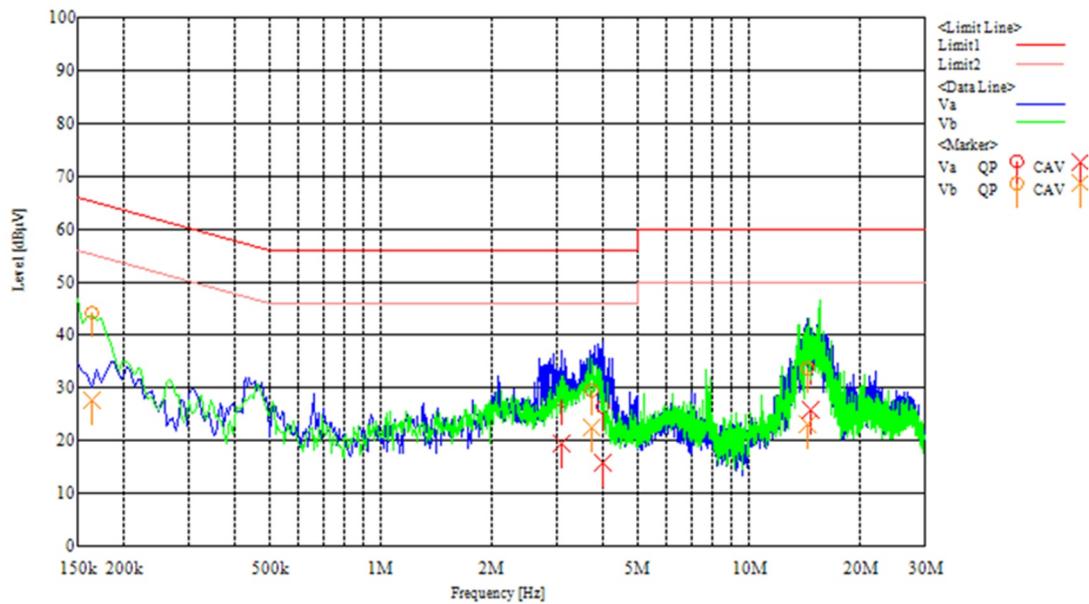
[Operating mode: 2480MHz]

No.	Frequency [MHz]	Reading		C.F. [dB]	Result		Limit		Margin		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
1	3.11141	17.3	9.2	10.2	27.5	19.4	56.0	46.0	28.5	26.6	Va
2	4.02299	16.2	5.6	10.2	26.4	15.8	56.0	46.0	29.6	30.2	Va
3	14.77757	24.6	15.3	10.4	35.0	25.7	60.0	50.0	25.0	24.3	Va
4	0.16478	33.8	17.2	10.3	44.1	27.5	65.2	55.2	21.1	27.7	Vb
5	3.74212	19.1	12.2	10.2	29.3	22.4	56.0	46.0	26.7	23.6	Vb
6	14.48166	23.2	12.6	10.4	33.6	23.0	60.0	50.0	26.4	27.0	Vb

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[Chart (2480MHz)]



Tested Date: June 2, 2021
Humidity: 62 %

Temperature: 22 deg. C
Atmos. Press: 1016 hPa

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4 List of utilized test equipment / calibration

RFT ID No.	Kind of Equipment and Precision	Manufacturer	Model No.	Serial Number	Calibration Date	Calibrated until
AC11(EM)	Anechoic Chamber	TDK	-	-	2020/08/11	2021/08/31
AC11(EG)	Anechoic Chamber	TDK	-	-	2020/08/1	2021/08/31
BA10	Biological Antenna	TESEQ	CBL6111D	32342	2020/06/24	2021/06/30
BRF12	Band Reject Filter (2400MHz)	M-City	BRF2440-01	RF0012-02	2021/03/08	2022/03/31
CL31	RF Cable 1 m	Junkosha	MWX221	1303S118	2021/01/27	2022/01/31
CL35	RF Cable 2 m	Junkosha	MWX221	1502S020	2021/03/09	2022/03/31
CL36	RF Cable 2 m	Junkosha	MWX221	1502S021	2021/03/09	2022/03/31
CL80	RF Cable 8 m	HUBER&SUHNER	SUCOFLEX104PE	MY3792/4PE	2021/03/10	2022/03/31
CL71	RF Cable for RE	RFT	-	-	2021/01/18	2022/01/31
CL72	RF Cable for CE	RFT	-	-	2021/01/18	2022/01/31
DH07	DRG Horn Antenna	A.H. Systems	SAS-571	1939	2021/02/27	2023/02/28
HPF11	High Pass Filter (3500MHz)	Wainwright	WHNX6-2765-3500-26500-40CC	2	2021/05/12	2022/05/31
LN13	LISN	Kyoritsu	KNW-407F	8-2003-3	2020/07/21	2021/07/31
LP05	Loop Antenna	ETS-Lindgren	6502	00143302	2021/03/09	2022/03/31
PR15	Pre. Amplifier	Anritsu	MH648A	6201156141	2020/06/25	2021/06/30
PR16	Pre. Amplifier (1-26G)	Agilent Technologies	8449B	3008A01538	2021/03/09	2022/03/31
SH01	Standard Horn Antenna (18-26G)	A.H. Systems	SAS-572	208	2020/07/04	2022/07/31
SH05	Standard Horn Antenna (12-18G)	A.H. Systems	SAS-586	214	2020/07/23	2022/07/31
TR09	Test Receiver (F/W: 4.43 SP3)	Rohde & Schwarz	ESU8	100386	2020/06/23	2021/06/30
TR10	Test Receiver (F/W: 2.26)	Rohde & Schwarz	ESR26	101313	2021/03/22	2022/03/31

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

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