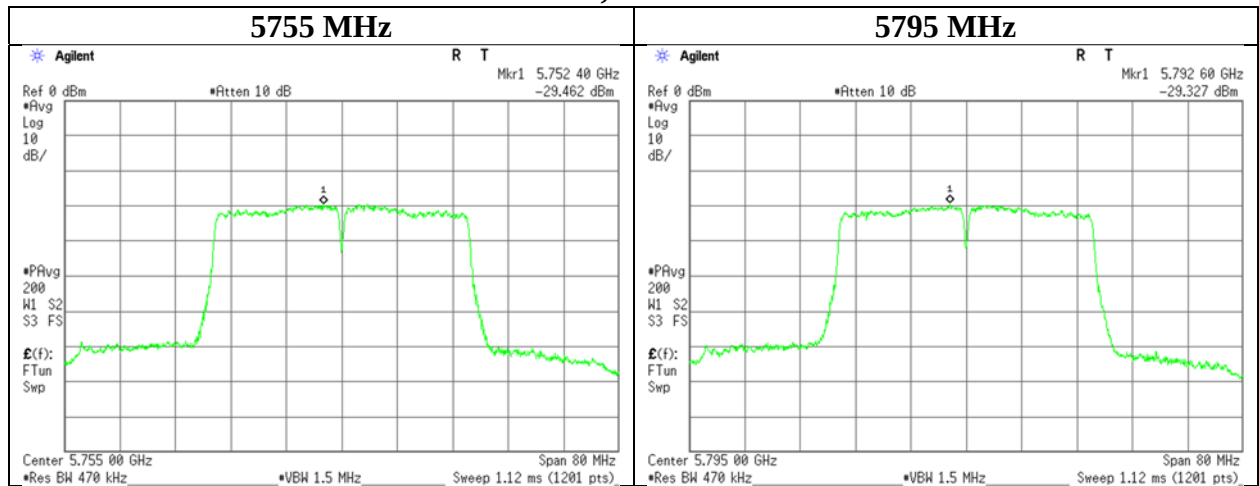


Maximum Power Spectral Density

Report No. 13395143H
Test place Ise EMC Lab. No.4 Measurement Room
Date June 16, 2020
Temperature / Humidity 22 deg. C / 52 % RH
Engineer Junki Nagatomi
Mode Tx 11n-40

11n-40, Antenna 1



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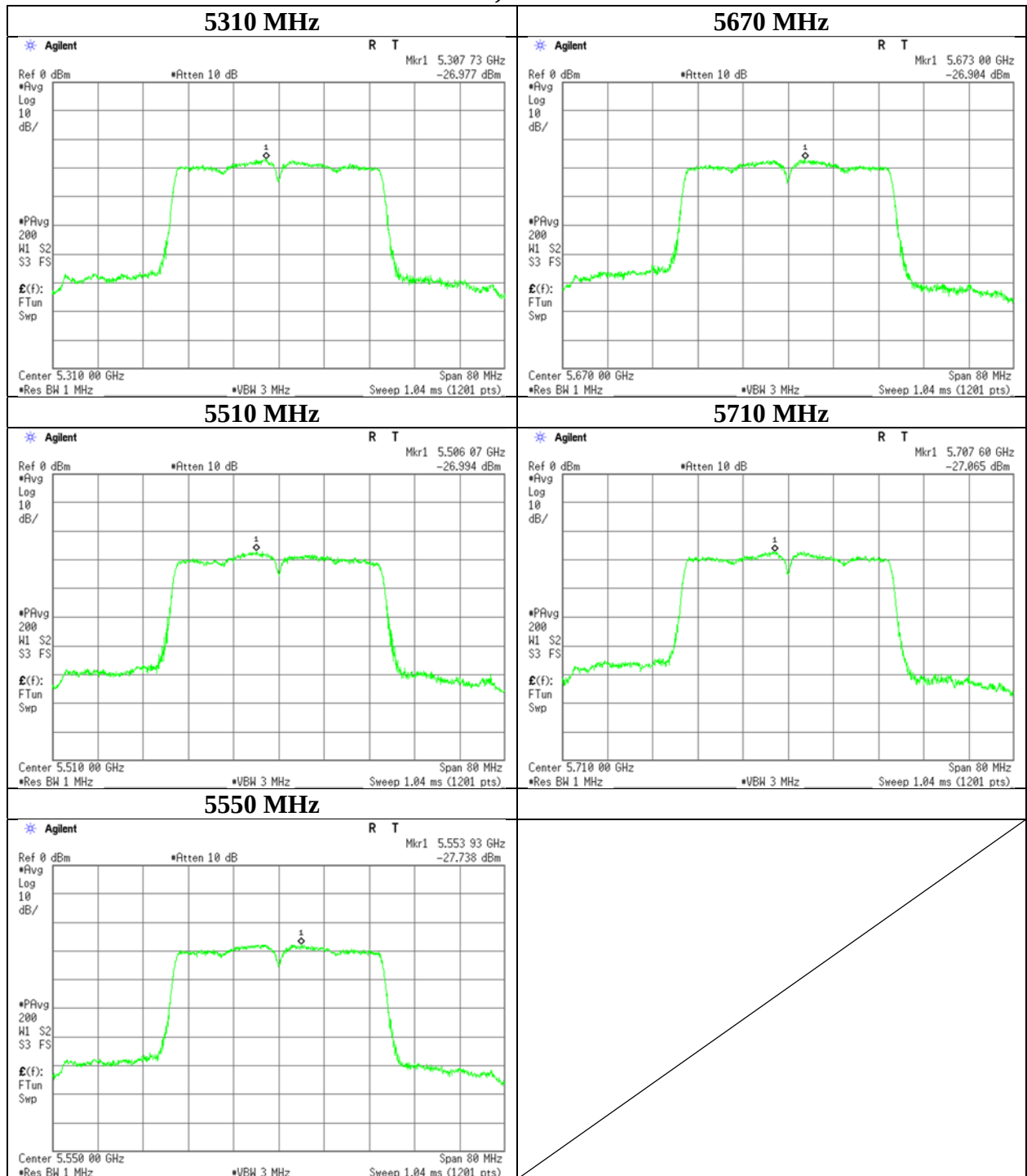
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

Report No. 13395143H
Test place Ise EMC Lab. No.4 Measurement Room
Date June 16, 2020
Temperature / Humidity 22 deg. C / 52 % RH
Engineer Junki Nagatomi
Mode Tx 11ac-40

11ac-40, Antenna 1



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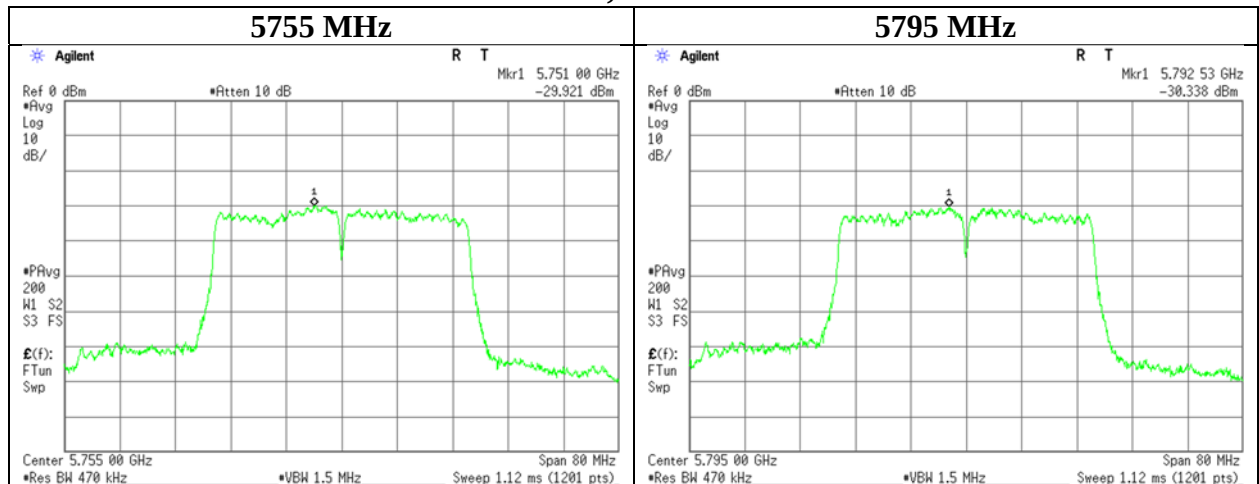
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

Report No. 13395143H
Test place Ise EMC Lab. No.4 Measurement Room
Date June 16, 2020
Temperature / Humidity 22 deg. C / 52 % RH
Engineer Junki Nagatomi
Mode Tx 11ac-40

11ac-40, Antenna 1



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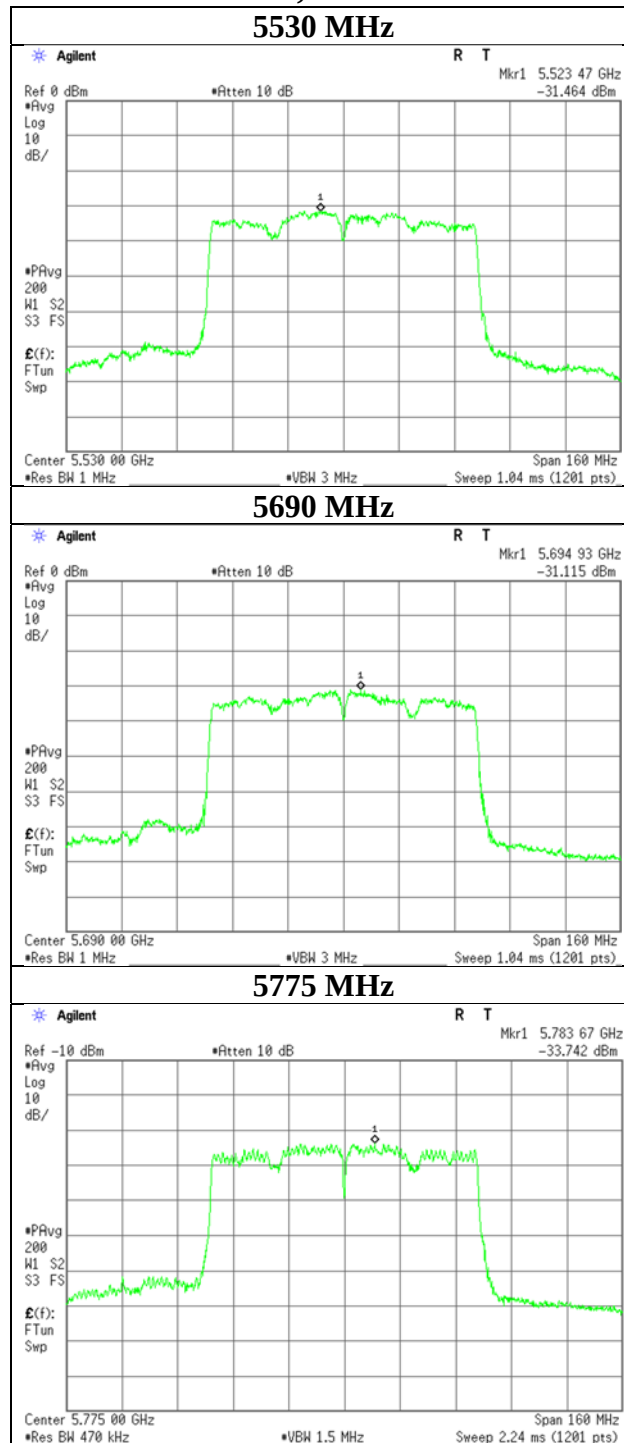
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Maximum Power Spectral Density

Report No. 13395143H
Test place Ise EMC Lab. No.4 Measurement Room
Date June 16, 2020
Temperature / Humidity 22 deg. C / 52 % RH
Engineer Junki Nagatomi
Mode Tx 11ac-80

11ac-80, Antenna 1



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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	September 19, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 66 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Junki Nagatomi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-20 5280 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5150.000	PK	41.0	32.4	5.9	31.3	-	48.1	68.2	20.1	
Hori.	5250.000	PK	54.5	31.7	6.0	31.3	-	60.8	68.2	7.4	
Hori.	10560.000	PK	42.4	39.9	-2.4	33.2	-	46.6	73.9	27.3	Floor noise
Hori.	15840.000	PK	44.3	37.8	-1.2	32.9	-	48.0	68.2	20.3	Floor noise
Hori.	5150.000	AV	32.2	32.4	5.9	31.3	2.2	41.5	53.9	12.4	*1)
Hori.	15840.000	AV	35.3	37.8	-1.2	32.9	-	39.0	53.9	14.9	Floor noise
Vert.	5150.000	PK	41.2	32.4	5.9	31.3	-	48.3	73.9	25.6	
Vert.	5250.000	PK	54.8	31.7	6.0	31.3	-	61.1	68.2	7.1	
Vert.	10560.000	PK	43.9	39.9	-2.4	33.2	-	48.1	73.9	25.8	Floor noise
Vert.	15840.000	PK	42.9	37.8	-1.2	32.9	-	46.6	73.9	27.3	Floor noise
Vert.	5150.000	AV	32.3	32.4	5.9	31.3	2.2	41.6	53.9	12.3	*1)
Vert.	15840.000	AV	35.3	37.8	-1.2	32.9	-	39.0	53.9	14.9	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

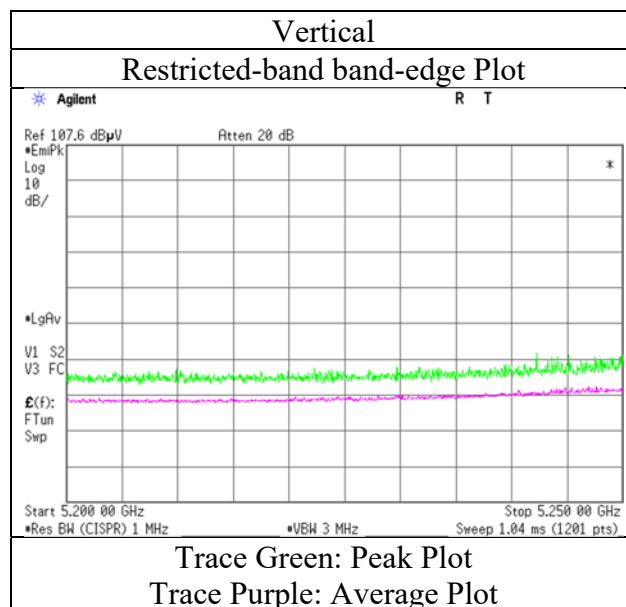
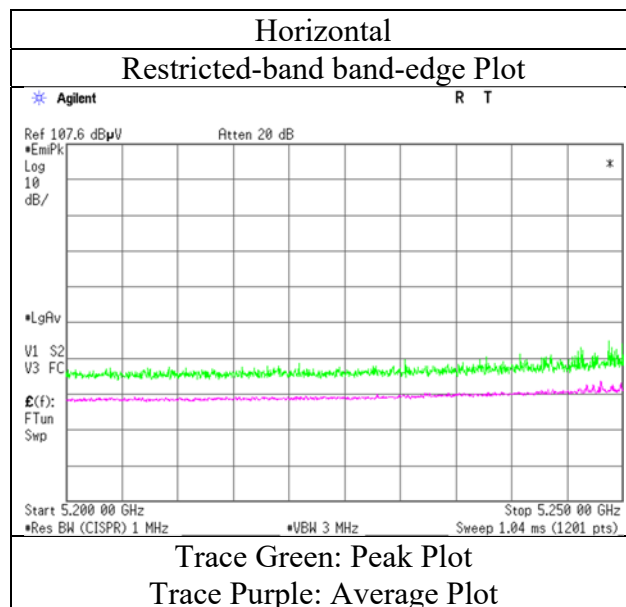
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	September 19, 2020
Temperature / Humidity	23 deg. C / 66 % RH
Engineer	Junki Nagatomi
Mode	Tx 11ac-20 5280 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-20 5300 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	10600.000	PK	42.9	39.9	-2.4	33.2	-	47.1	68.2	21.1	Floor noise
Hori.	15900.000	PK	44.0	37.4	-1.1	32.9	-	47.3	73.9	26.6	Floor noise
Hori.	15900.000	AV	35.4	37.4	-1.1	32.9	-	38.7	53.9	15.2	Floor noise
Vert.	10600.000	PK	42.7	39.9	-2.4	33.2	-	46.9	68.2	21.3	Floor noise
Vert.	15900.000	PK	43.5	37.4	-1.1	32.9	-	46.8	73.9	27.1	Floor noise
Vert.	15900.000	AV	35.4	37.4	-1.1	32.9	-	38.7	53.9	15.2	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-20 5320 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5350.000	PK	53.7	31.8	6.0	31.3	-	60.2	73.9	13.7	
Hori.	10640.000	PK	42.7	39.7	-2.4	33.2	-	46.8	68.2	21.5	Floor noise
Hori.	15960.000	PK	43.8	37.8	-1.1	33.0	-	47.5	73.9	26.5	Floor noise
Hori.	5350.000	AV	37.9	31.8	6.0	31.3	2.2	46.5	53.9	7.4	*1)
Hori.	15960.000	AV	35.3	37.8	-1.1	33.0	-	39.0	53.9	14.9	Floor noise
Vert.	5350.000	PK	52.4	31.8	6.0	31.3	-	58.9	73.9	15.0	
Vert.	10640.000	PK	43.8	39.7	-2.4	33.2	-	47.8	68.2	20.4	Floor noise
Vert.	15960.000	PK	42.6	37.8	-1.1	33.0	-	46.3	73.9	27.6	Floor noise
Vert.	5350.000	AV	40.6	31.8	6.0	31.3	2.2	49.3	53.9	4.7	*1)
Vert.	15960.000	AV	35.3	37.8	-1.1	33.0	-	39.0	53.9	14.9	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

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

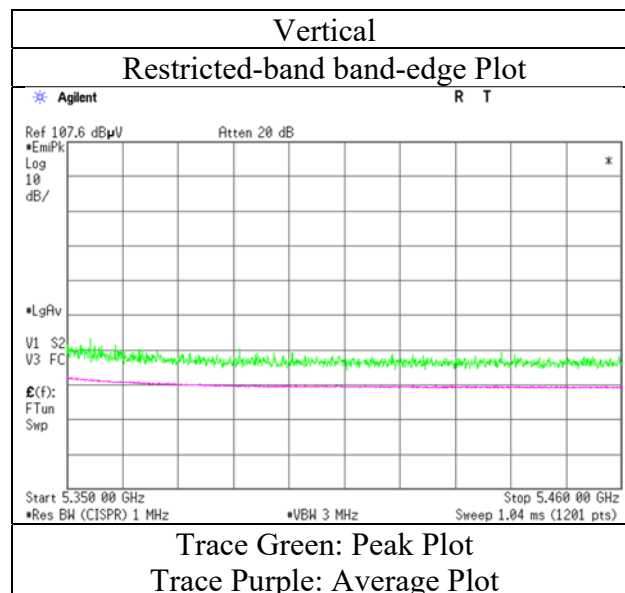
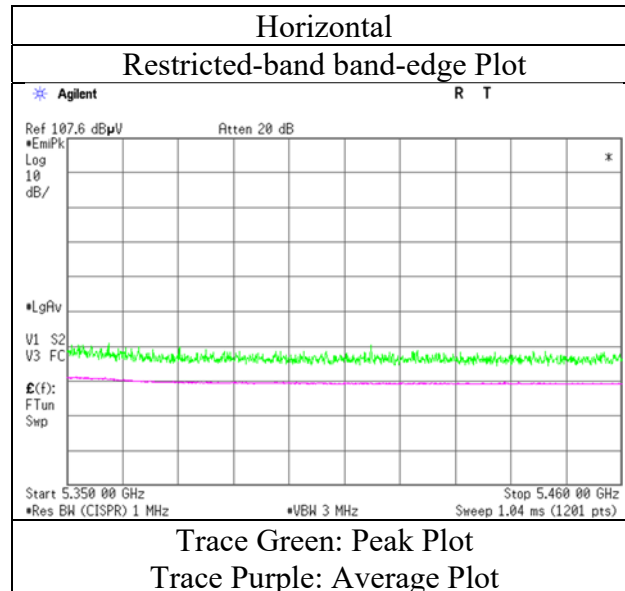
Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$

10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-20 5320 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-20 5500 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5460.000	PK	48.5	32.1	6.0	31.3	-	55.3	68.2	13.0	
Hori.	5470.000	PK	49.3	32.1	6.0	31.3	-	56.1	68.2	12.1	
Hori.	11000.000	PK	43.2	40.0	-2.2	33.4	-	47.6	73.9	26.4	Floor noise
Hori.	16500.000	PK	44.4	40.4	-1.0	32.8	-	51.0	68.2	17.2	Floor noise
Hori.	5460.000	AV	35.9	32.1	6.0	31.3	2.2	44.8	53.9	9.1	*1)
Hori.	11000.000	AV	34.5	40.0	-2.2	33.4	-	38.9	53.9	15.1	Floor noise
Vert.	5460.000	PK	47.9	32.1	6.0	31.3	-	54.6	68.2	13.6	
Vert.	5470.000	PK	48.2	32.1	6.0	31.3	-	55.0	68.2	13.2	
Vert.	11000.000	PK	42.8	40.0	-2.2	33.4	-	47.2	73.9	26.8	Floor noise
Vert.	16500.000	PK	44.0	40.4	-1.0	32.8	-	50.6	68.2	17.6	Floor noise
Vert.	5460.000	AV	35.4	32.1	6.0	31.3	2.2	44.3	53.9	9.6	*1)
Vert.	11000.000	AV	34.5	40.0	-2.2	33.4	-	38.9	53.9	15.1	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

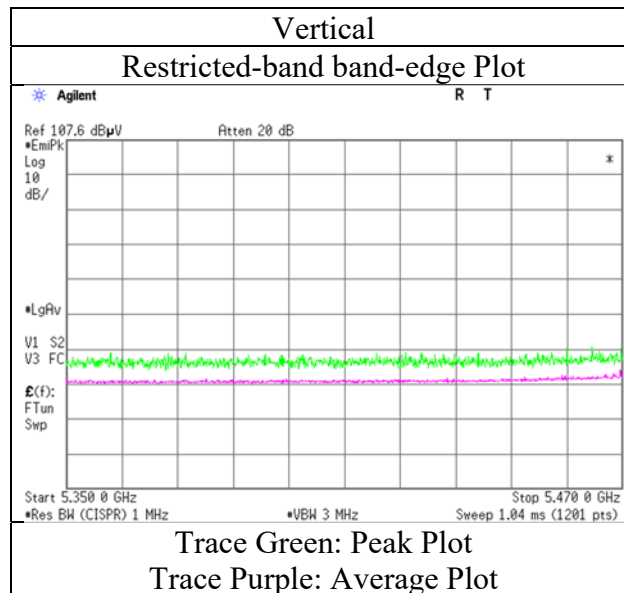
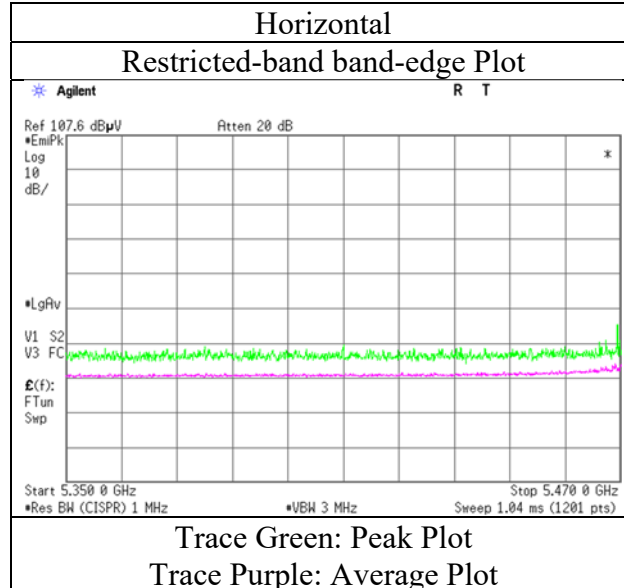
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-20 5500 MHz



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

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Radiated Spurious Emission

Report No.	13395143H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	June 16, 2020 (Day)	June 17, 2020	June 16, 2020 (Night)	June 18, 2020
Temperature / Humidity	22 deg. C / 60 % RH	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Junki Nagatomi	Takafumi Noguchi	Takafumi Noguchi	Junki Nagatomi
	(Below 1 GHz)	(1 GHz - 10 GHz)	(18 GHz - 40 GHz)	(10 GHz - 18 GHz)
Mode	Tx 11ac-20 5580 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	528.011	QP	34.8	17.6	11.1	31.9	-	31.6	46.0	14.4	
Hori.	672.004	QP	35.9	19.5	11.8	32.1	-	35.2	46.0	10.9	
Hori.	720.006	QP	34.8	20.1	12.0	32.0	-	34.9	46.0	11.1	
Hori.	816.006	QP	42.4	20.9	12.5	31.5	-	44.3	46.0	1.7	
Hori.	864.003	QP	34.6	21.6	12.7	31.3	-	37.6	46.0	8.4	
Hori.	912.012	QP	37.8	22.0	12.9	31.0	-	41.7	46.0	4.4	
Hori.	11160.000	PK	43.8	39.6	-2.2	33.4	-	47.9	73.9	26.1	Floor noise
Hori.	16740.000	PK	44.1	39.8	-1.0	32.7	-	50.3	68.2	18.0	Floor noise
Hori.	11160.000	AV	34.9	39.6	-2.2	33.4	-	38.9	53.9	15.0	Floor noise
Vert.	528.011	QP	35.5	17.6	11.1	31.9	-	32.3	46.0	13.7	
Vert.	672.004	QP	35.7	19.5	11.8	32.1	-	35.0	46.0	11.1	
Vert.	720.006	QP	33.1	20.1	12.0	32.0	-	33.2	46.0	12.8	
Vert.	816.006	QP	38.1	20.9	12.5	31.5	-	40.0	46.0	6.0	
Vert.	864.003	QP	31.8	21.6	12.7	31.3	-	34.8	46.0	11.2	
Vert.	912.012	QP	35.4	22.0	12.9	31.0	-	39.3	46.0	6.8	
Vert.	11160.000	PK	44.6	39.6	-2.2	33.4	-	48.6	73.9	25.3	Floor noise
Vert.	16740.000	PK	43.8	39.8	-1.0	32.7	-	49.9	68.2	18.3	Floor noise
Vert.	11160.000	AV	34.9	39.6	-2.2	33.4	-	38.9	53.9	15.0	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-20 5700 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	3800.839	PK	43.7	29.5	5.4	31.4	-	47.2	73.9	26.7	
Hori.	5725.000	PK	53.4	32.5	6.1	31.4	-	68.2	73.9	5.7	
Hori.	11400.000	PK	43.9	40.0	-2.2	33.3	-	48.3	73.9	25.6	Floor noise
Hori.	17100.000	PK	44.4	41.2	-0.8	32.7	-	52.1	68.2	16.1	Floor noise
Hori.	3800.839	AV	35.3	29.5	5.4	31.4	-	38.8	53.9	15.1	
Hori.	5725.000	AV	33.8	32.5	6.1	31.4	2.2	43.2	53.9	10.7	*1)
Hori.	11400.000	AV	34.5	40.0	-2.2	33.3	-	39.0	53.9	14.9	Floor noise
Vert.	3800.839	PK	42.9	29.5	5.4	31.4	-	46.4	73.9	27.5	
Vert.	5725.000	PK	54.5	32.5	6.1	31.4	-	68.2	73.9	5.7	
Vert.	11400.000	PK	44.5	40.0	-2.2	33.3	-	48.9	73.9	25.0	Floor noise
Vert.	17100.000	PK	43.2	41.2	-0.8	32.7	-	50.8	68.2	17.4	Floor noise
Vert.	3800.839	AV	34.4	29.5	5.4	31.4	-	37.8	53.9	16.1	
Vert.	5725.000	AV	39.8	32.5	6.1	31.4	2.2	49.2	53.9	4.7	*1)
Vert.	11400.000	AV	34.5	40.0	-2.2	33.3	-	39.0	53.9	14.9	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

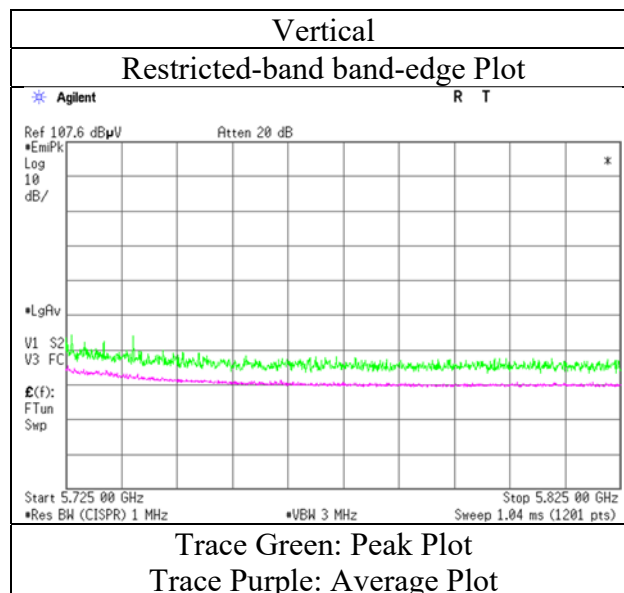
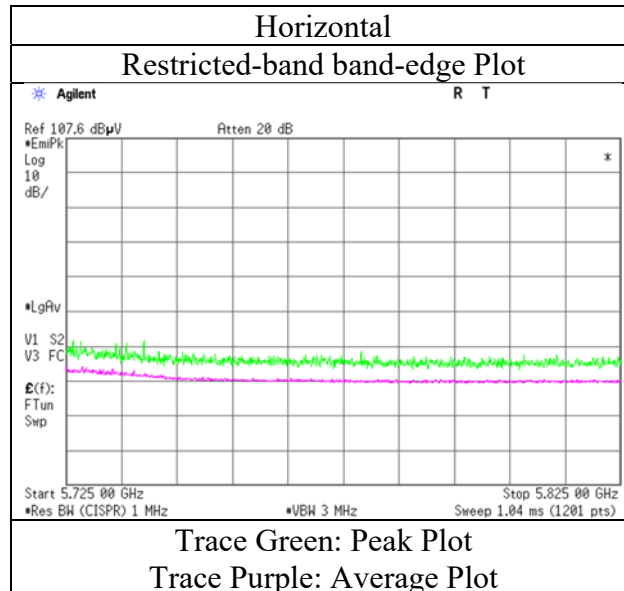
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 5700 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-20 5745 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5650.000	PK	41.2	32.3	6.1	31.4	-	48.2	68.2	20.0	
Hori.	5700.000	PK	44.6	32.4	6.1	31.4	-	51.7	105.2	53.5	
Hori.	5720.000	PK	58.1	32.4	6.1	31.4	-	65.3	110.8	45.5	
Hori.	5725.000	PK	57.8	32.5	6.1	31.4	-	65.0	122.2	57.2	
Hori.	11490.000	PK	42.9	39.9	-2.3	33.3	-	47.2	73.9	26.7	Floor noise
Hori.	17235.000	PK	44.2	41.4	-0.8	32.7	-	52.0	68.2	16.2	Floor noise
Hori.	11490.000	AV	34.4	39.9	-2.3	33.3	-	38.7	53.9	15.2	Floor noise
Vert.	5650.000	PK	41.8	32.3	6.1	31.4	-	48.8	68.2	19.4	
Vert.	5700.000	PK	45.2	32.4	6.1	31.4	-	52.3	105.2	52.9	
Vert.	5720.000	PK	54.9	32.4	6.1	31.4	-	62.0	110.8	48.8	
Vert.	5725.000	PK	58.4	32.5	6.1	31.4	-	65.7	122.2	56.6	
Vert.	11490.000	PK	43.4	39.9	-2.3	33.3	-	47.8	73.9	26.2	Floor noise
Vert.	17235.000	PK	43.9	41.4	-0.8	32.7	-	51.7	68.2	16.5	Floor noise
Vert.	11490.000	AV	34.4	39.9	-2.3	33.3	-	38.7	53.9	15.2	Floor noise

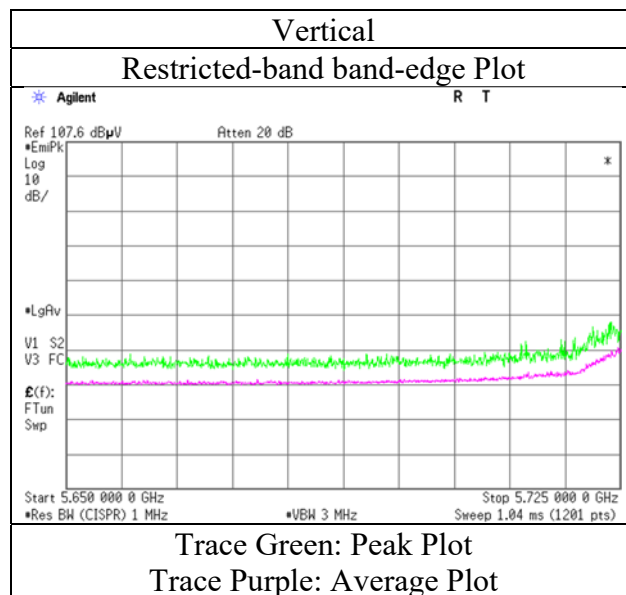
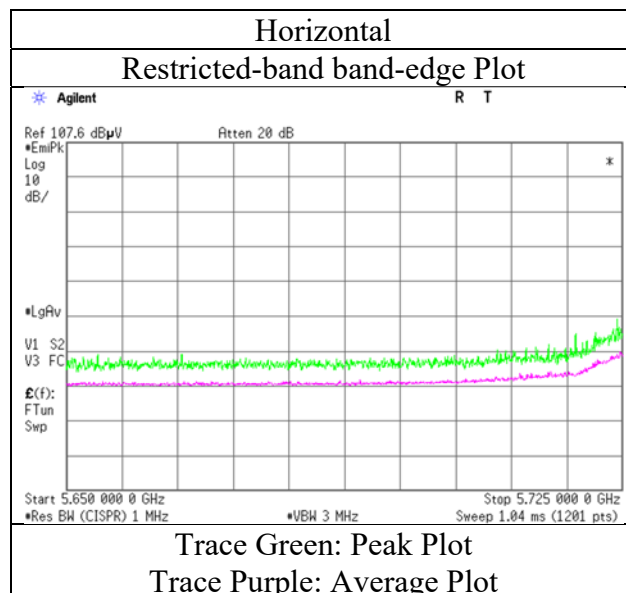
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-20 5745 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-20 5785 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11570.000	PK	43.0	39.7	-2.3	33.3	-	47.2	73.9	26.7	Floor noise
Hori.	17355.000	PK	44.0	42.4	-0.7	32.8	-	52.9	68.2	15.3	Floor noise
Hori.	11570.000	AV	34.3	39.7	-2.3	33.3	-	38.5	53.9	15.4	Floor noise
Vert.	11570.000	PK	42.5	39.7	-2.3	33.3	-	46.8	73.9	27.2	Floor noise
Vert.	17355.000	PK	44.3	42.4	-0.7	32.8	-	53.2	68.2	15.0	Floor noise
Vert.	11570.000	AV	34.3	39.7	-2.3	33.3	-	38.5	53.9	15.4	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor:	1 GHz - 10 GHz	$20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
	10 GHz - 40 GHz	$20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-20 5825 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	3881.751	PK	43.0	29.8	5.5	31.4	-	46.8	73.9	27.1	
Hori.	5850.000	PK	53.8	32.7	6.2	31.4	-	61.3	122.2	60.9	
Hori.	5855.000	PK	51.6	32.7	6.2	31.4	-	59.0	110.8	51.8	
Hori.	5875.000	PK	42.5	32.8	6.2	31.4	-	50.0	105.2	55.2	
Hori.	5925.000	PK	41.6	32.9	6.2	31.4	-	49.3	68.2	18.9	
Hori.	11650.000	PK	42.7	39.3	-2.3	33.3	-	46.5	73.9	27.4	Floor noise
Hori.	17475.000	PK	44.0	43.4	-0.7	32.8	-	53.8	68.2	14.4	Floor noise
Hori.	3881.751	AV	37.2	29.8	5.5	31.4	-	41.1	53.9	12.9	
Hori.	11650.000	AV	34.6	39.3	-2.3	33.3	-	38.3	53.9	15.6	Floor noise
Vert.	3881.751	PK	42.1	29.8	5.5	31.4	-	46.0	73.9	28.0	
Vert.	5850.000	PK	52.1	32.7	6.2	31.4	-	59.5	122.2	62.7	
Vert.	5855.000	PK	51.2	32.7	6.2	31.4	-	58.6	110.8	52.2	
Vert.	5875.000	PK	42.6	32.8	6.2	31.4	-	50.1	105.2	55.1	
Vert.	5925.000	PK	40.7	32.9	6.2	31.4	-	48.3	68.2	19.9	
Vert.	11650.000	PK	43.3	39.3	-2.3	33.3	-	47.0	73.9	26.9	Floor noise
Vert.	17475.000	PK	44.0	43.4	-0.7	32.8	-	53.9	68.2	14.3	Floor noise
Vert.	3881.751	AV	35.9	29.8	5.5	31.4	-	39.8	53.9	14.1	
Vert.	11650.000	AV	34.6	39.3	-2.3	33.3	-	38.3	53.9	15.6	Floor noise

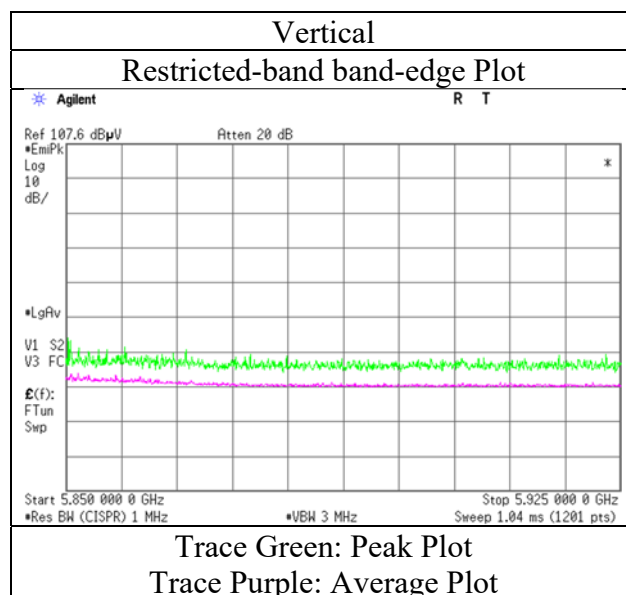
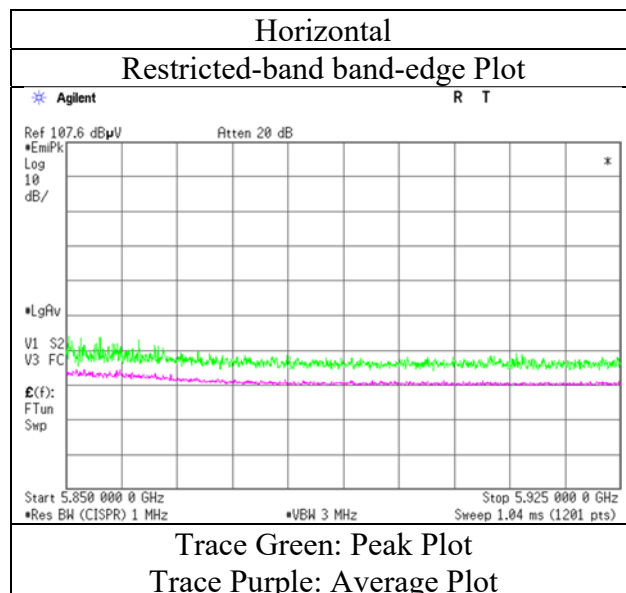
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-20 5825 MHz



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

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Radiated Spurious Emission

Report No.	13395143H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020	September 19, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH	23 deg. C / 66 % RH
Engineer	Takafumi Noguchi	Takafumi Noguchi	Junki Nagatomi	Junki Nagatomi
	(1 GHz - 10 GHz)	(18 GHz - 40 GHz)	(10 GHz - 18 GHz)	(1 GHz - 10 GHz)
Mode	Tx 11ac-40 5310 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5150.000	PK	41.7	32.4	5.9	31.3	-	48.8	73.9	25.2	Floor noise
Hori.	5250.000	PK	45.1	31.7	6.0	31.3	-	51.5	68.2	16.7	
Hori.	5350.000	PK	56.2	31.8	6.0	31.3	-	62.7	73.9	11.2	
Hori.	10620.000	PK	42.6	39.8	-2.4	33.2	-	46.7	73.9	27.2	
Hori.	15930.000	PK	43.8	37.6	-1.1	32.9	-	47.3	73.9	26.6	
Hori.	5150.000	AV	32.1	32.4	5.9	31.3	3.0	42.2	53.9	11.8	*1)
Hori.	5350.000	AV	42.3	31.8	6.0	31.3	3.0	51.8	53.9	2.1	*1)
Hori.	10620.000	AV	34.4	39.8	-2.4	33.2	-	38.5	53.9	15.4	Floor noise
Hori.	15930.000	AV	35.4	37.6	-1.1	32.9	-	38.9	53.9	15.0	Floor noise
Vert.	5150.000	PK	41.2	32.4	5.9	31.3	-	48.2	73.9	25.7	Floor noise
Vert.	5250.000	PK	47.5	31.7	6.0	31.3	-	53.9	68.2	14.3	
Vert.	5350.000	PK	57.6	31.8	6.0	31.3	-	64.1	73.9	9.8	
Vert.	10620.000	PK	42.4	39.8	-2.4	33.2	-	46.6	73.9	27.3	
Vert.	15930.000	PK	44.6	37.6	-1.1	32.9	-	48.2	73.9	25.7	
Vert.	5150.000	AV	32.2	32.4	5.9	31.3	3.0	42.3	53.9	11.6	*1)
Vert.	5350.000	AV	44.1	31.8	6.0	31.3	3.0	53.6	53.9	0.3	*1)
Vert.	10620.000	AV	34.4	39.8	-2.4	33.2	-	38.5	53.9	15.4	Floor noise
Vert.	15930.000	AV	35.4	37.6	-1.1	32.9	-	38.9	53.9	15.0	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

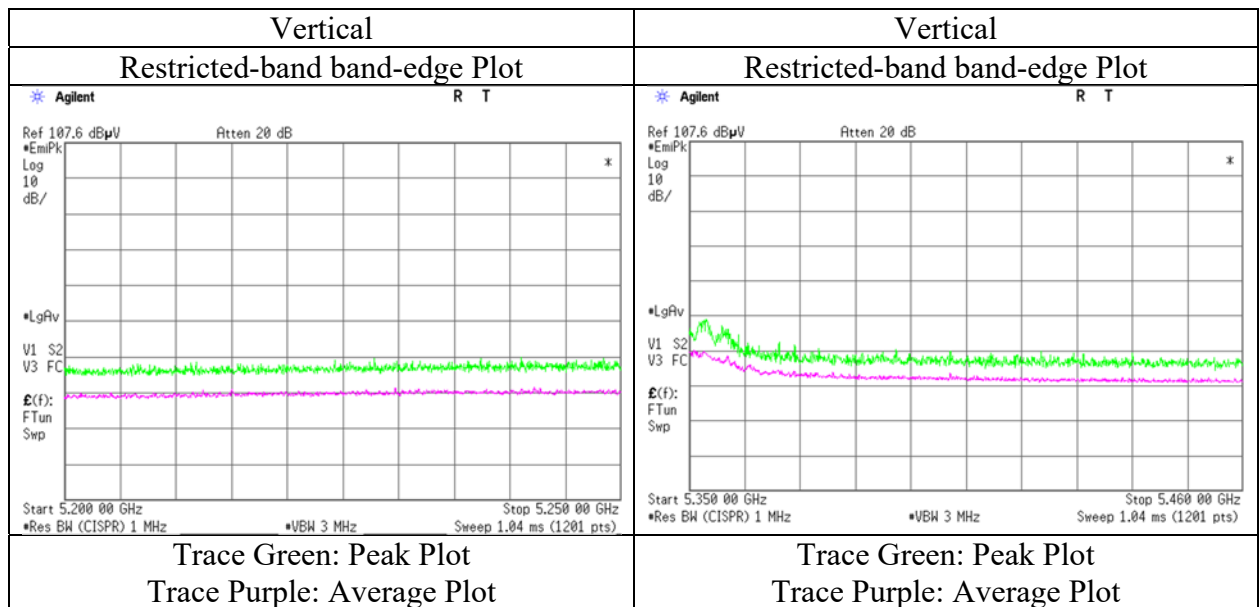
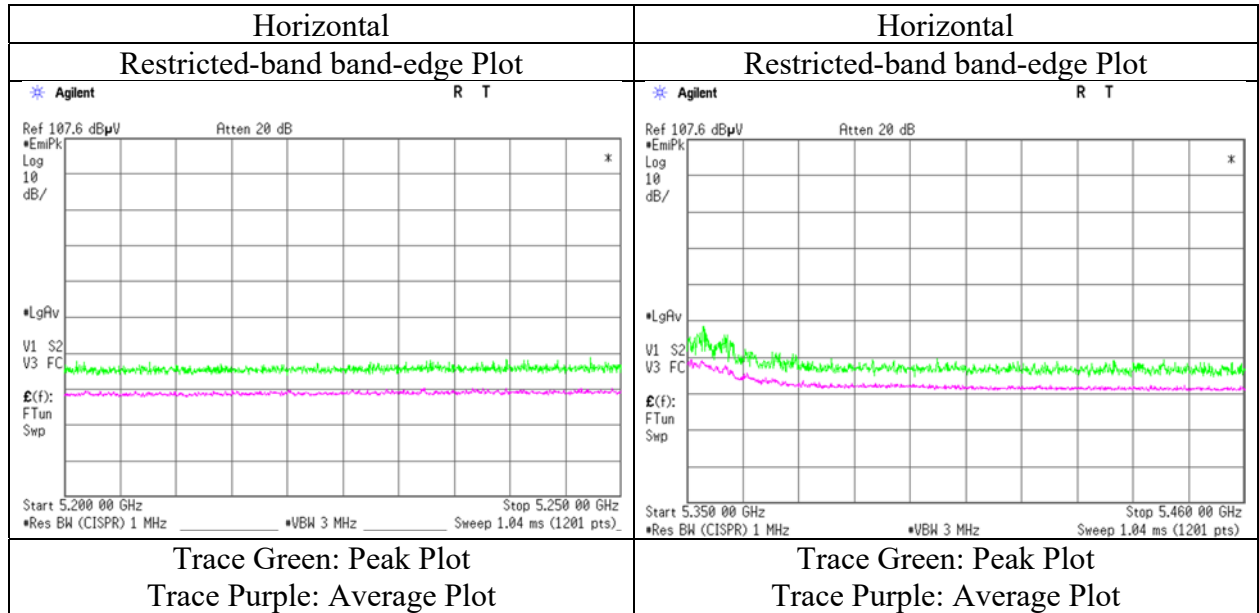
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (3.95 m / 3.0 m) = 2.39 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	13395143H	
Test place	Ise EMC Lab.	No.4
Semi Anechoic Chamber	No.4	
Date	June 17, 2020	September 19, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 66 % RH
Engineer	Takafumi Noguchi	Junki Nagatomi
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)
Mode	Tx 11ac-40 5310 MHz	



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-40 5510 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5460.000	PK	45.8	32.1	6.0	31.3	-	52.6	68.2	15.6	
Hori.	5470.000	PK	51.5	32.1	6.0	31.3	-	58.3	68.2	9.9	
Hori.	11020.000	PK	43.0	39.9	-2.2	33.4	-	47.3	73.9	26.6	Floor noise
Hori.	16530.000	PK	44.3	39.2	-1.0	32.8	-	49.7	68.2	18.5	Floor noise
Hori.	5460.000	AV	35.4	32.1	6.0	31.3	3.0	45.1	53.9	8.8	*1)
Hori.	11020.000	AV	34.6	39.9	-2.2	33.4	-	38.9	53.9	15.0	Floor noise
Vert.	5460.000	PK	48.0	32.1	6.0	31.3	-	54.7	68.2	13.5	
Vert.	5470.000	PK	53.5	32.1	6.0	31.3	-	60.3	68.2	7.9	
Vert.	11020.000	PK	44.3	39.9	-2.2	33.4	-	48.7	73.9	25.2	Floor noise
Vert.	16530.000	PK	44.4	39.2	-1.0	32.8	-	49.8	68.2	18.4	Floor noise
Vert.	5460.000	AV	36.7	32.1	6.0	31.3	3.0	46.4	53.9	7.5	*1)
Vert.	11020.000	AV	34.6	39.9	-2.2	33.4	-	38.9	53.9	15.0	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

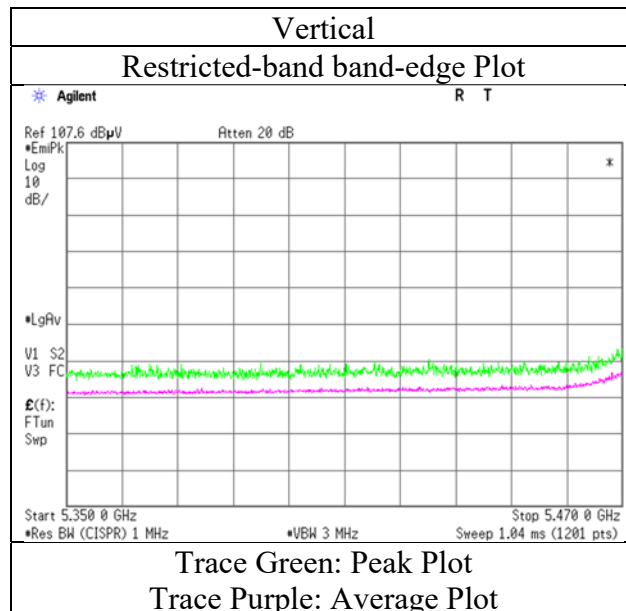
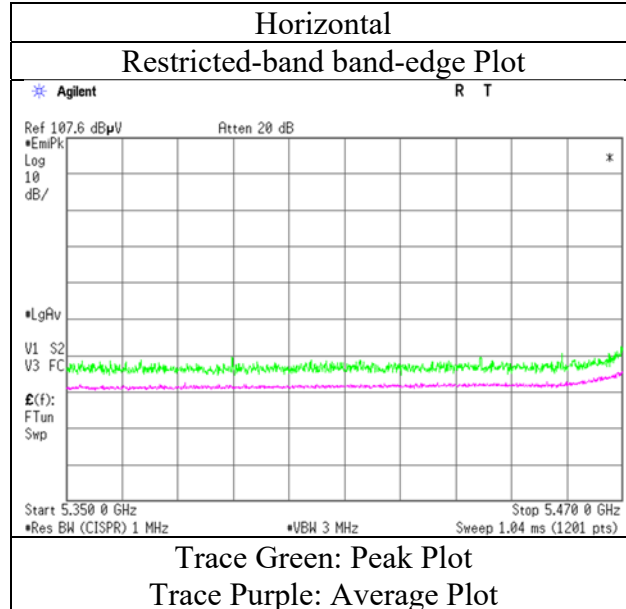
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-40 5510 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi	Takafumi Noguchi	Junki Nagatomi
	(1 GHz - 10 GHz)	(18 GHz - 40 GHz)	(10 GHz - 18 GHz)
Mode	Tx 11ac-40 5550 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11100.000	PK	43.6	39.7	-2.2	33.4	-	47.7	73.9	26.2	Floor noise
Hori.	16650.000	PK	43.8	38.9	-1.0	32.8	-	49.0	68.2	19.2	Floor noise
Hori.	11100.000	AV	34.7	39.7	-2.2	33.4	-	38.8	53.9	15.1	Floor noise
Vert.	11100.000	PK	44.1	39.7	-2.2	33.4	-	48.2	73.9	25.7	Floor noise
Vert.	16650.000	PK	43.2	38.9	-1.0	32.8	-	48.4	68.2	19.8	Floor noise
Vert.	11100.000	AV	34.7	39.7	-2.2	33.4	-	38.8	53.9	15.1	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-40 5670 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	3779.966	PK	42.7	29.4	5.4	31.4	-	46.0	73.9	27.9	
Hori.	5725.000	PK	44.6	32.5	6.1	31.4	-	51.8	68.2	16.4	
Hori.	11340.000	PK	43.6	39.7	-2.2	33.3	-	47.8	73.9	26.1	Floor noise
Hori.	17010.000	PK	43.7	41.0	-0.9	32.7	-	51.2	68.2	17.0	Floor noise
Hori.	3779.966	AV	35.6	29.4	5.4	31.4	-	38.9	53.9	15.0	
Hori.	5725.000	AV	35.1	32.5	6.1	31.4	3.0	45.3	53.9	8.6	*1)
Hori.	11340.000	AV	35.0	39.7	-2.2	33.3	-	39.2	53.9	14.7	Floor noise
Vert.	3779.966	PK	43.5	29.4	5.4	31.4	-	46.8	73.9	27.1	
Vert.	5725.000	PK	44.7	32.5	6.1	31.4	-	51.9	68.2	16.3	
Vert.	11340.000	PK	44.4	39.7	-2.2	33.3	-	48.6	73.9	25.4	Floor noise
Vert.	17010.000	PK	43.7	41.0	-0.9	32.7	-	51.2	68.2	17.0	Floor noise
Vert.	3779.966	AV	34.5	29.4	5.4	31.4	-	37.9	53.9	16.0	
Vert.	5725.000	AV	34.9	32.5	6.1	31.4	3.0	45.1	53.9	8.8	*1)
Vert.	11340.000	AV	35.0	39.7	-2.2	33.3	-	39.2	53.9	14.7	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

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

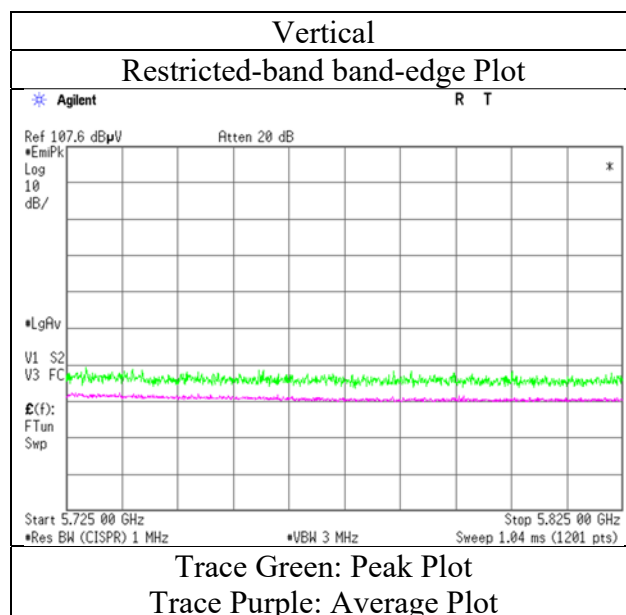
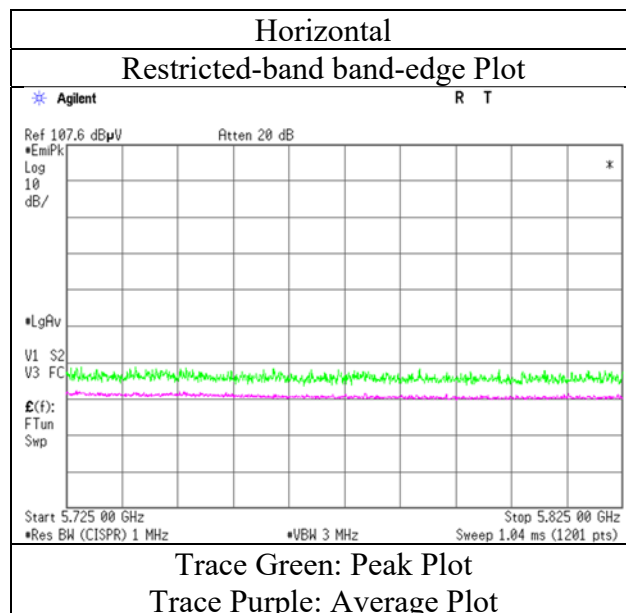
Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$

10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-40 5670 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-40 5755 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5650.000	PK	42.8	32.3	6.1	31.4	-	49.8	68.2	18.4	
Hori.	5700.000	PK	49.1	32.4	6.1	31.4	-	56.2	105.2	49.0	
Hori.	5720.000	PK	56.2	32.4	6.1	31.4	-	63.3	110.8	47.5	
Hori.	5725.000	PK	57.6	32.5	6.1	31.4	-	64.8	122.2	57.4	
Hori.	11510.000	PK	43.0	39.9	-2.2	33.3	-	47.3	73.9	26.6	Floor noise
Hori.	17265.000	PK	44.0	41.5	-0.8	32.8	-	52.0	68.2	16.2	Floor noise
Hori.	11510.000	AV	34.3	39.9	-2.2	33.3	-	38.7	53.9	15.2	Floor noise
Vert.	5650.000	PK	41.9	32.3	6.1	31.4	-	49.0	68.2	19.3	
Vert.	5700.000	PK	47.4	32.4	6.1	31.4	-	54.5	105.2	50.7	
Vert.	5720.000	PK	56.7	32.4	6.1	31.4	-	63.9	110.8	46.9	
Vert.	5725.000	PK	57.2	32.5	6.1	31.4	-	64.4	122.2	57.8	
Vert.	11510.000	PK	43.3	39.9	-2.2	33.3	-	47.7	73.9	26.2	Floor noise
Vert.	17265.000	PK	43.8	41.5	-0.8	32.8	-	51.8	68.2	16.4	Floor noise
Vert.	11510.000	AV	34.3	39.9	-2.2	33.3	-	38.7	53.9	15.2	Floor noise

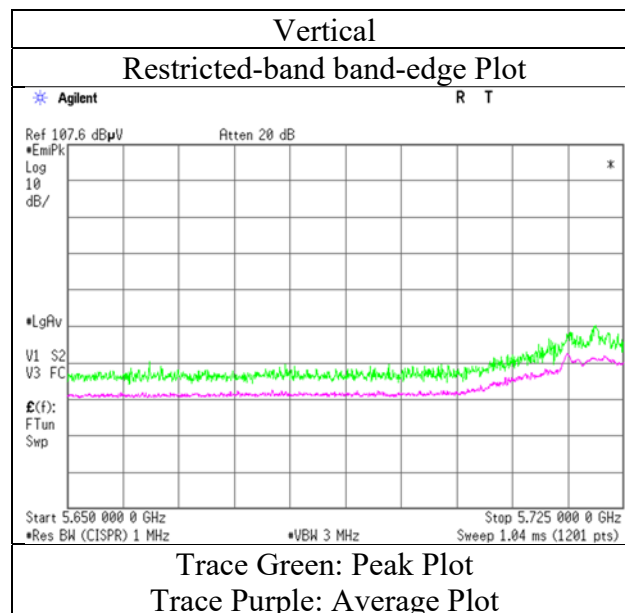
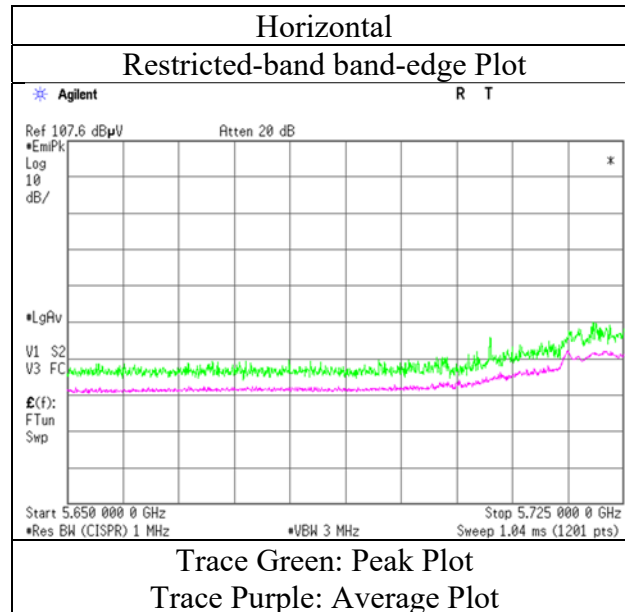
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-40 5755 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-40 5795 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	3863.306	PK	42.9	29.8	5.4	31.4	-	46.7	73.9	27.2	
Hori.	5850.000	PK	45.7	32.7	6.2	31.4	-	53.2	122.2	69.1	
Hori.	5855.000	PK	44.6	32.7	6.2	31.4	-	52.1	110.8	58.8	
Hori.	5895.000	PK	42.4	32.8	6.2	31.4	-	49.9	90.4	40.5	
Hori.	5925.000	PK	41.6	32.9	6.2	31.4	-	49.2	68.2	19.0	
Hori.	11590.000	PK	43.2	39.6	-2.2	33.3	-	47.3	73.9	26.6	Floor noise
Hori.	17385.000	PK	44.1	42.5	-0.7	32.8	-	53.1	68.2	15.1	Floor noise
Hori.	3863.306	AV	36.8	29.8	5.4	31.4	-	40.6	53.9	13.3	
Hori.	11590.000	AV	34.6	39.6	-2.2	33.3	-	38.7	53.9	15.2	Floor noise
Vert.	3863.306	PK	42.4	29.8	5.4	31.4	-	46.2	73.9	27.7	
Vert.	5850.000	PK	46.3	32.7	6.2	31.4	-	53.8	122.2	68.4	
Vert.	5855.000	PK	45.1	32.7	6.2	31.4	-	52.6	110.8	58.3	
Vert.	5895.000	PK	41.8	32.8	6.2	31.4	-	49.4	90.4	41.0	
Vert.	5925.000	PK	41.5	32.9	6.2	31.4	-	49.1	68.2	19.1	
Vert.	11590.000	PK	43.1	39.6	-2.2	33.3	-	47.3	73.9	26.7	Floor noise
Vert.	17385.000	PK	44.0	42.5	-0.7	32.8	-	53.0	68.2	15.2	Floor noise
Vert.	3863.306	AV	36.1	29.8	5.4	31.4	-	39.8	53.9	14.1	
Vert.	11590.000	AV	34.6	39.6	-2.2	33.3	-	38.7	53.9	15.2	Floor noise

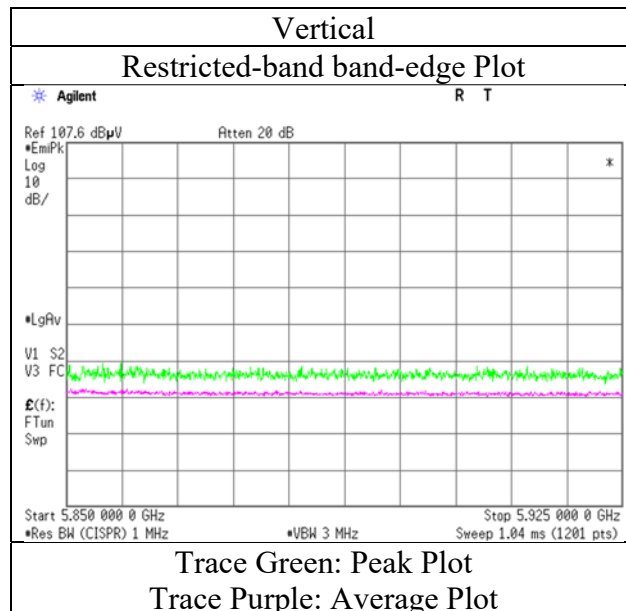
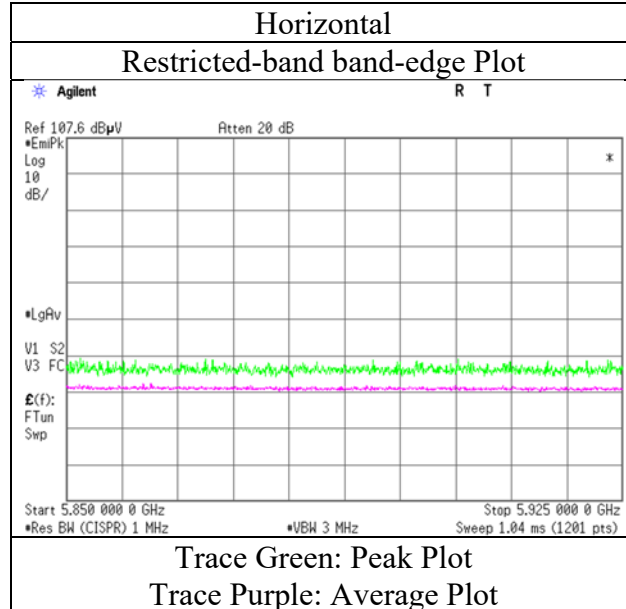
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-40 5795 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-80 5530 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5460.000	PK	49.3	32.1	6.0	31.3	-	56.0	73.9	17.9	
Hori.	5470.000	PK	49.4	32.1	6.0	31.3	-	56.2	73.9	17.7	
Hori.	11060.000	PK	43.2	39.8	-2.2	33.4	-	47.4	73.9	26.5	Floor noise
Hori.	16590.000	PK	44.6	40.2	-1.0	32.8	-	51.0	68.2	17.2	Floor noise
Hori.	5460.000	AV	37.4	32.1	6.0	31.3	3.6	47.7	53.9	6.2	*1)
Hori.	11060.000	AV	34.7	39.8	-2.2	33.4	-	38.9	53.9	15.0	Floor noise
Vert.	5460.000	PK	50.2	32.1	6.0	31.3	-	57.0	73.9	16.9	
Vert.	5470.000	PK	51.6	32.1	6.0	31.3	-	58.4	73.9	15.5	
Vert.	11060.000	PK	44.0	39.8	-2.2	33.4	-	48.2	73.9	25.7	Floor noise
Vert.	16590.000	PK	44.4	40.2	-1.0	32.8	-	50.8	68.2	17.4	Floor noise
Vert.	5460.000	AV	38.2	32.1	6.0	31.3	3.6	48.5	53.9	5.4	*1)
Vert.	11060.000	AV	34.7	39.8	-2.2	33.4	-	38.9	53.9	15.0	Floor noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

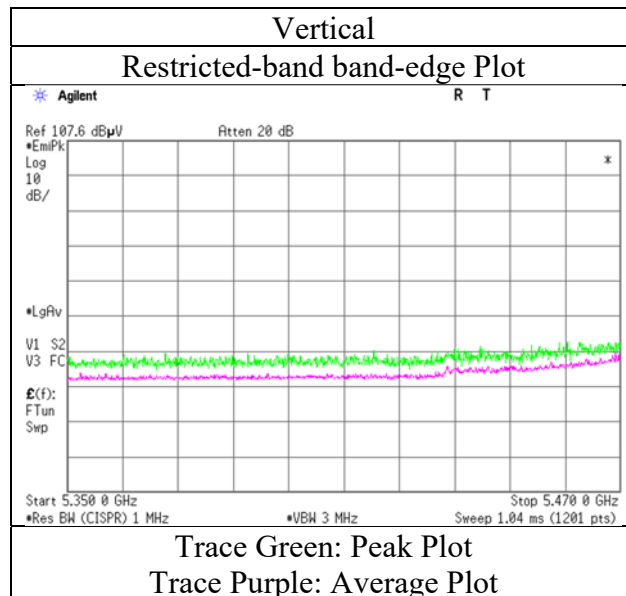
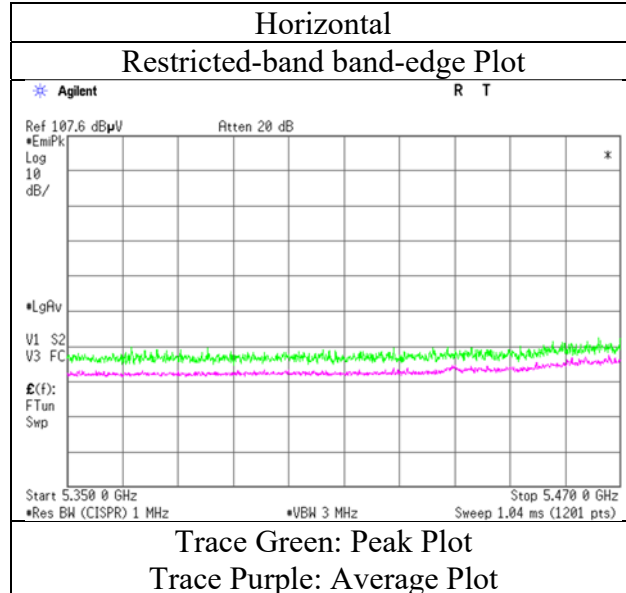
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-80 5530 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-80 5690 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	11380.000	PK	43.2	39.9	-2.2	33.3	-	47.5	73.9	26.4	Floor noise
Hori.	17070.000	PK	44.7	40.6	-0.9	32.7	-	51.8	68.2	16.4	Floor noise
Hori.	11380.000	AV	34.8	39.9	-2.2	33.3	-	39.1	53.9	14.8	Floor noise
Vert.	11380.000	PK	43.2	39.9	-2.2	33.3	-	47.6	73.9	26.4	Floor noise
Vert.	17070.000	PK	45.1	40.6	-0.9	32.7	-	52.1	68.2	16.1	Floor noise
Vert.	11380.000	AV	34.8	39.9	-2.2	33.3	-	39.1	53.9	14.8	Floor noise

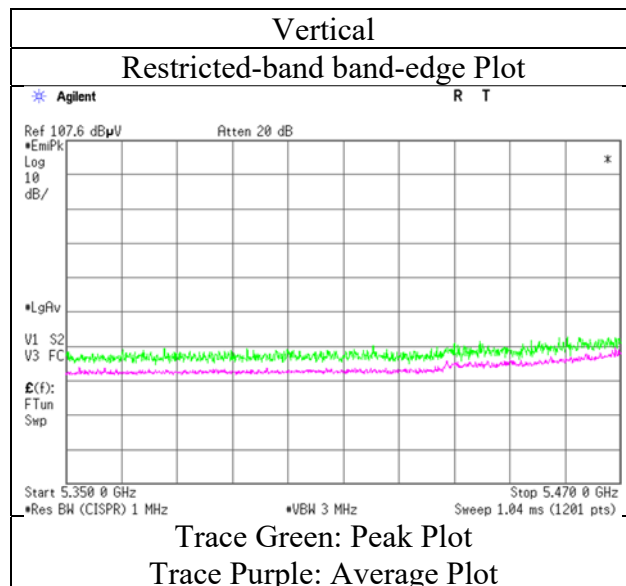
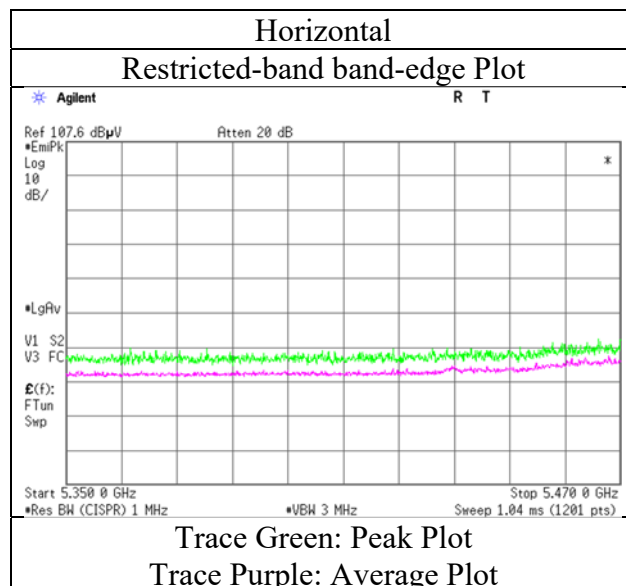
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor:	1 GHz - 10 GHz	$20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
	10 GHz - 40 GHz	$20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-80 5690 MHz



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

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Radiated Spurious Emission

Report No.	13395143H		
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.4	No.4	No.4
Date	June 17, 2020	June 16, 2020	June 18, 2020
Temperature / Humidity	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takafumi Noguchi (18 GHz - 40 GHz)	Junki Nagatomi (10 GHz - 18 GHz)
Mode	Tx 11ac-80 5775 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	5650.000	PK	44.0	32.3	6.1	31.4	-	51.1	68.2	17.2	
Hori.	5700.000	PK	49.5	32.4	6.1	31.4	-	56.6	105.2	48.6	
Hori.	5720.000	PK	55.0	32.4	6.1	31.4	-	62.2	110.8	48.6	
Hori.	5725.000	PK	54.3	32.5	6.1	31.4	-	61.5	122.2	60.7	
Hori.	5850.000	PK	46.5	32.7	6.2	31.4	-	53.9	122.2	68.3	
Hori.	5855.000	PK	44.8	32.7	6.2	31.4	-	52.2	110.8	58.6	
Hori.	5875.000	PK	44.7	32.8	6.2	31.4	-	52.2	105.2	53.0	
Hori.	5925.000	PK	43.1	32.9	6.2	31.4	-	50.7	68.2	17.5	
Hori.	11550.000	PK	42.9	39.8	-2.2	33.3	-	47.2	73.9	26.7	Floor noise
Hori.	17325.000	PK	44.4	42.1	-0.7	32.8	-	53.0	68.2	15.2	Floor noise
Hori.	11550.000	AV	34.1	39.8	-2.2	33.3	-	38.4	53.9	15.5	Floor noise
Vert.	5650.000	PK	43.3	32.3	6.1	31.4	-	50.3	68.2	17.9	
Vert.	5700.000	PK	47.6	32.4	6.1	31.4	-	54.7	105.2	50.5	
Vert.	5720.000	PK	53.7	32.4	6.1	31.4	-	60.8	110.8	50.0	
Vert.	5725.000	PK	55.6	32.5	6.1	31.4	-	62.8	122.2	59.4	
Vert.	5850.000	PK	44.7	32.7	6.2	31.4	-	52.2	122.2	70.0	
Vert.	5855.000	PK	43.9	32.7	6.2	31.4	-	51.3	110.8	59.5	
Vert.	5875.000	PK	43.5	32.8	6.2	31.4	-	51.0	105.2	54.2	
Vert.	5925.000	PK	42.8	32.9	6.2	31.4	-	50.4	68.2	17.8	
Vert.	11550.000	PK	42.4	39.8	-2.2	33.3	-	46.7	73.9	27.2	Floor noise
Vert.	17325.000	PK	44.1	42.1	-0.7	32.8	-	52.7	68.2	15.5	Floor noise
Vert.	11550.000	AV	34.1	39.8	-2.2	33.3	-	38.4	53.9	15.5	Floor noise

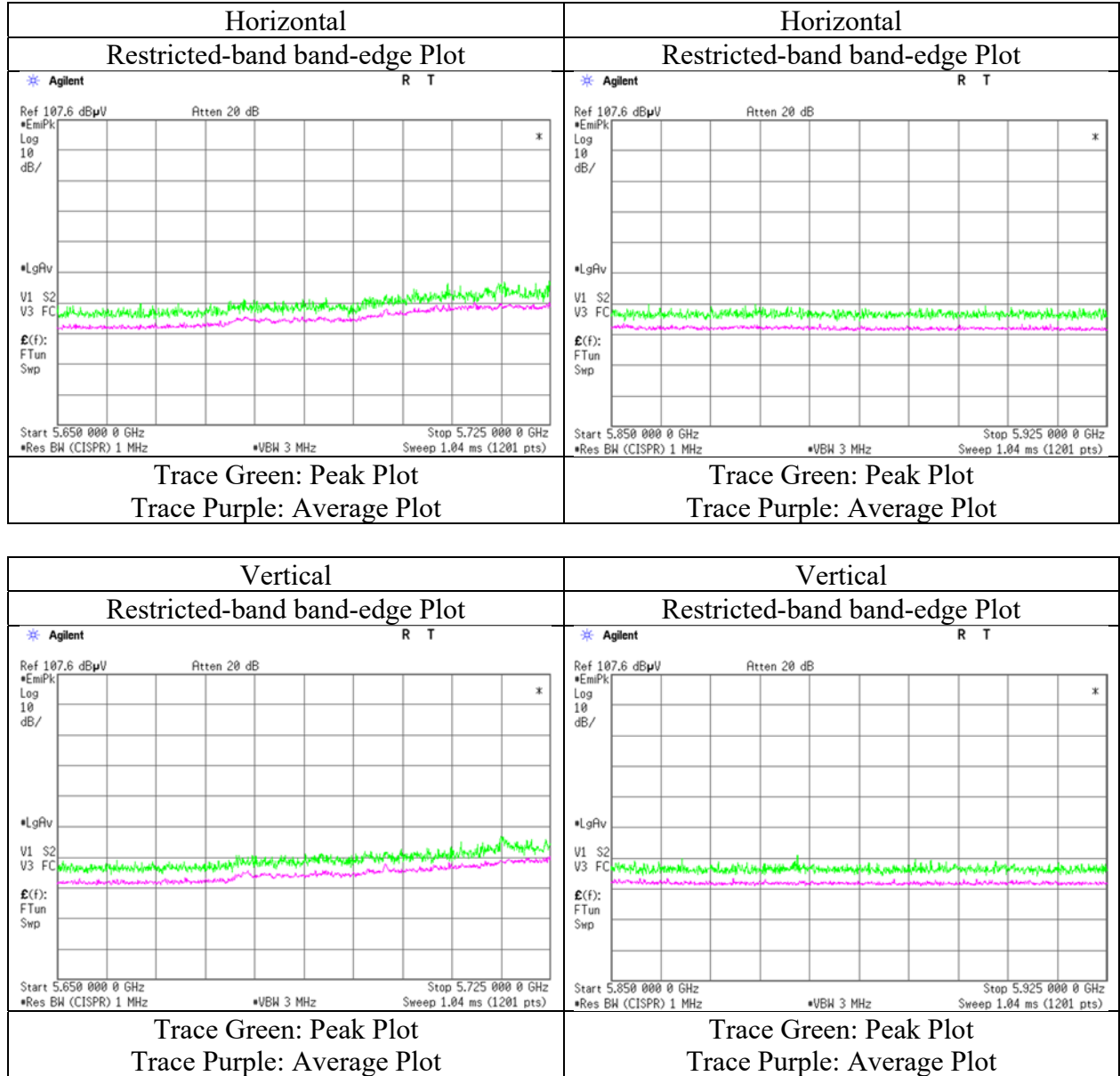
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

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

Distance factor: 1 GHz - 10 GHz $20\log(3.95\text{ m} / 3.0\text{ m}) = 2.39\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	June 17, 2020
Temperature / Humidity	23 deg. C / 55 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ac-80 5775 MHz



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

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Ise EMC Lab.

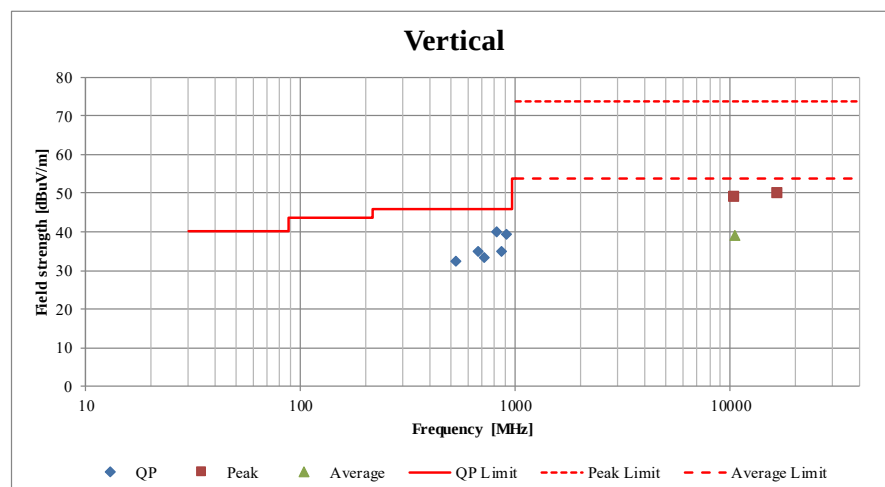
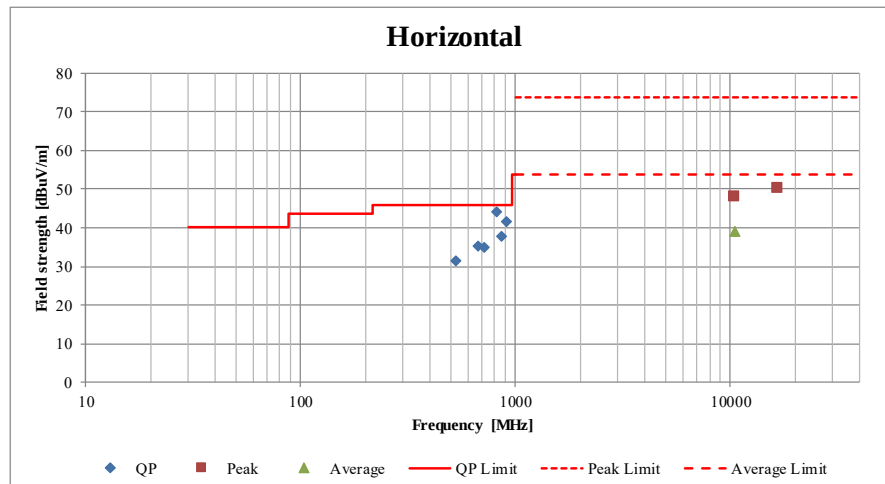
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Radiated Spurious Emission (Plot data, Worst case)

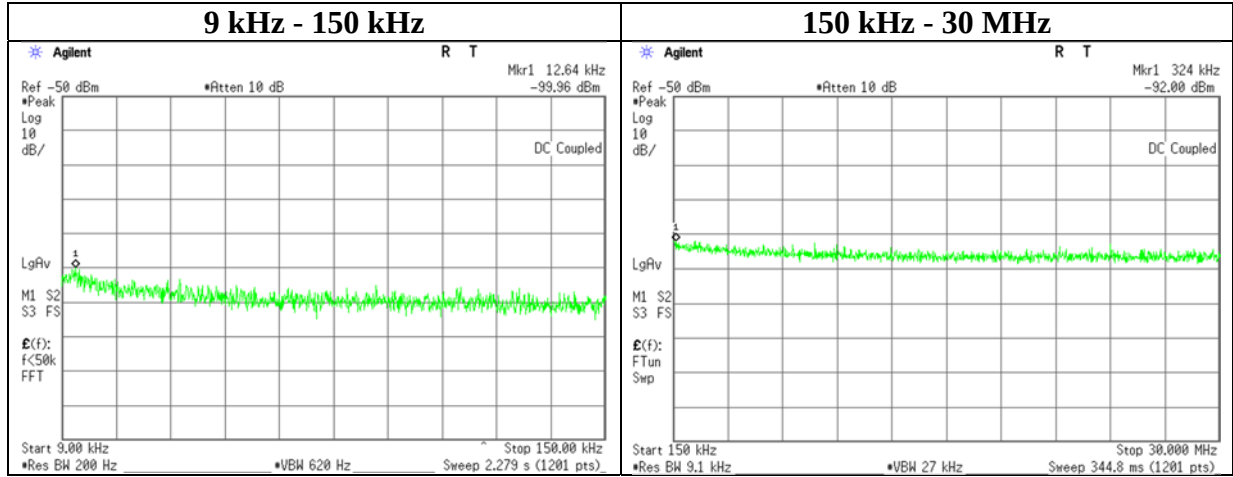
Report No.	13395143H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	June 16, 2020 (Day)	June 17, 2020	June 16, 2020 (Night)	June 18, 2020
Temperature / Humidity	22 deg. C / 60 % RH	23 deg. C / 55 % RH	23 deg. C / 59 % RH	23 deg. C / 59 % RH
Engineer	Junki Nagatomi	Takafumi Noguchi	Takafumi Noguchi	Junki Nagatomi
	(Below 1 GHz)	(1 GHz - 10 GHz)	(18 GHz - 40 GHz)	(10 GHz - 18 GHz)
Mode	Tx 11ac-20 5580 MHz			



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

Conducted Spurious Emission

Report No.	13395143H
Test place	Ise EMC Lab. No.4 Measurement Room
Date	June 16, 2020
Temperature / Humidity	22 deg. C / 52 % RH
Engineer	Junki Nagatomi
Mode	Tx 11ac-20 5580 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator [dB]	Antenna Gain [dBi]	N (Number of Output)	EIRP [dBm]	Distance [m]	Ground bounce [dB]	E (field strength) [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
12.64	-100.0	1.50	9.9	4.0	1	-84.6	300	6.0	-23.3	45.5	68.8	
324.00	-92.0	1.50	9.9	4.0	1	-76.7	300	6.0	-15.4	17.3	32.7	

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

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

N: Number of output

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APPENDIX 2: Test instruments

Test equipment used on June 8 to 18, 2020 (1/2)

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	MOS-29	141568	Thermo-Hygrometer	CUSTOM	CTH-201	2901	2020/01/07	12
AT	MAT-20	141173	Attenuator(10dB)(above 1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-110	-	2019/12/09	12
AT	MPM-16	141812	Power Meter	Keysight Technologies Inc	8990B	MY51000271	2019/08/02	12
AT	MPSE-23	141835	Power sensor	Keysight Technologies Inc	N1923A	MY54070004	2019/08/02	12
AT	MRENT-130	141855	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46187750	2019/11/19	12
AT	MAT-21	141174	Attenuator(20dB)(above 1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-120	901247	2020/01/07	12
AT	MAT-10	141156	Attenuator(10dB)	Weinschel Corp	2	BL1173	2019/11/07	12
CE	MAEC-02	142004	AC2_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	2020/05/26	24
CE	MOS-41	192300	Thermo-Hygrometer	CUSTOM	CTH-201	0013	2019/12/19	12
CE	MMM-01	141542	Digital Tester	Fluke Corporation	FLUKE 26-3	78030611	2019/08/20	12
CE	MJM-27	142228	Measure	KOMELON	KMC-36	-	-	-
CE	MLS-23	141357	LISN(AMN)	Schwarzbeck Mess - Elektronik	NSLK8127	8127-729	2019/07/05	12
CE	MCC-13	141222	Coaxial Cable	Fujikura,HP,Mini-Circuits,Fujikura	3D-2W(12m)/5D-2W(5m)/5D-2W(0.8m)/5D-2W(1m)	-	2020/02/25	12
CE	MAT-67	141248	Attenuator	JFW Industries, Inc.	50FP-013H2 N	-	2019/12/02	12
CE	MTR-03	141942	Test Receiver	Rohde & Schwarz	ESCI	100300	2019/08/08	12
CE	MSA-16	141903	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46186390	2020/02/06	12
RE	MPA-14	141583	Pre Amplifier	SONOMA INSTRUMENT	310	260833	2020/02/18	12
RE	MTR-10	141951	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	2020/03/10	12
RE	MCC-50	141397	Coaxial Cable	UL Japan	-	-	2020/03/24	12
RE	MAT-34	141331	Attenuator(6dB)	TME	UFA-01	-	2020/02/05	12
RE	MBA-05	141425	Biconical Antenna	Schwarzbeck Mess - Elektronik	VHA9103+BBA9106	1302	2019/08/24	12
RE	MLA-23	141267	Logperiodic Antenna(200-1000MHz)	Schwarzbeck Mess - Elektronik	VUSLP9111B	9111B-192	2019/08/24	12
RE	MAEC-04	142011	AC4_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	2020/05/25	24
RE	COTS-MEMI-02	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	MOS-15	141562	Thermo-Hygrometer	CUSTOM	CTH-201	0010	2020/01/07	12
RE	MPA-12	141581	MicroWave System Amplifier	Keysight Technologies Inc	83017A	650	2019/10/16	12

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Test equipment used on June 8 to 18, 2020 (2/2)

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	MCC-246	199563	Microwave Cable	HUBER+SUNER	SF126E/11PC35/11PC35/1000M,5000M	537061/126E / 537072/126E	2020/06/11	12
RE	MHA-17	141506	Horn Antenna 15-40GHz	Schwarzbeck Mess - Elektronik	BBHA9170	BBHA9170307	2019/10/08	12
RE	MHA-29	141517	Horn Antenna 26.5-40GHz	ETS LINDGREN	3160-10	152399	2019/09/19	12
RE	MCC-224	160324	Coaxial Cable	Huber+Suhner	SUCOFLEX 102A	MY009/2A	2019/11/22	12
RE	MPA-22	141588	Pre Amplifier	MITEQ, Inc	AMF-6F-2600400-33-8P / AMF-4F-2600400-33-8P	1871355 / 1871328	2019/09/27	12
RE	MSA-04	141885	Spectrum Analyzer	Keysight Technologies Inc	E4448A	US44300523	2019/11/21	12
RE	MAEC-04-SVSWR	142017	AC4 Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	2019/04/04	24
RE	MHF-23	141294	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCC	603	2020/01/06	12
RE	MCC-178	141227	Microwave Cable	Junkosha	MMX221-00500DMSDMS	1502S305	2020/03/18	12

Test equipment used on September 19, 2020

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	MMM-10	141545	DIGITAL HiTESTER	Hioki	3805	51201148	2020/01/06	12
RE	MJM-26	142227	Measure	KOMELON	KMC-36	-	-	-
RE	MSA-14	141901	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY48250080	2019/10/06	12
RE	MHA-21	141508	Horn Antenna 1-18GHz	Schwarzbeck Mess - Elektronik	BBHA9120D	557	2020/05/22	12

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

The expiration date of the calibration is the end of the expired month.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

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

Test item:

CE: Conducted Emission test

RE: Radiated Emission test

AT: Antenna Terminal Conducted test

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