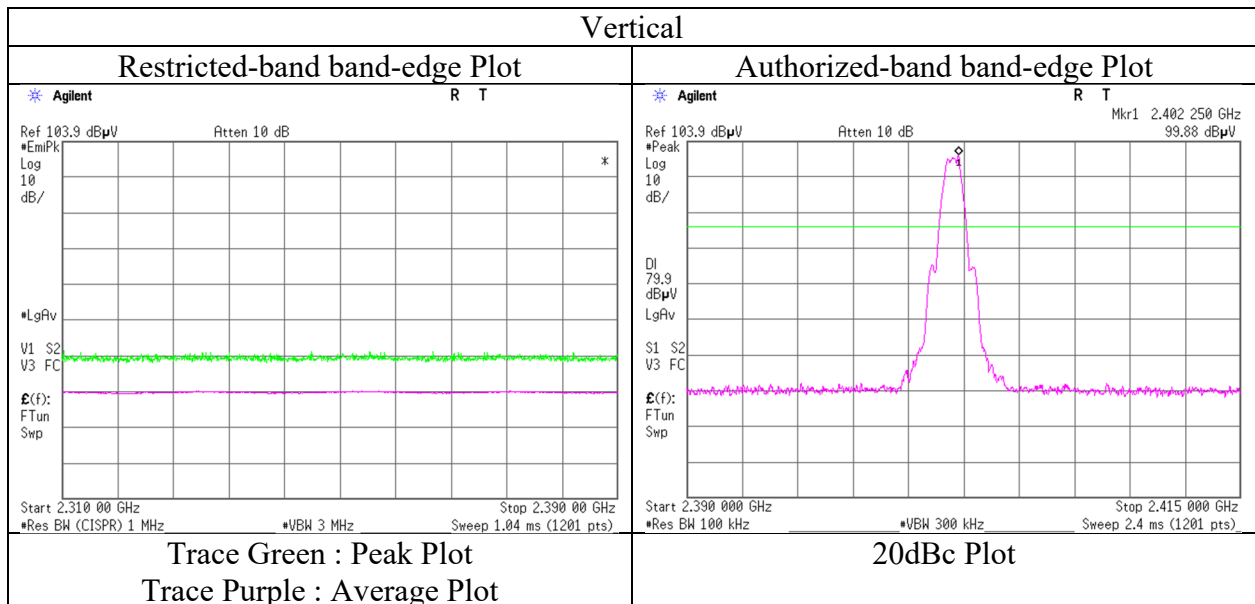
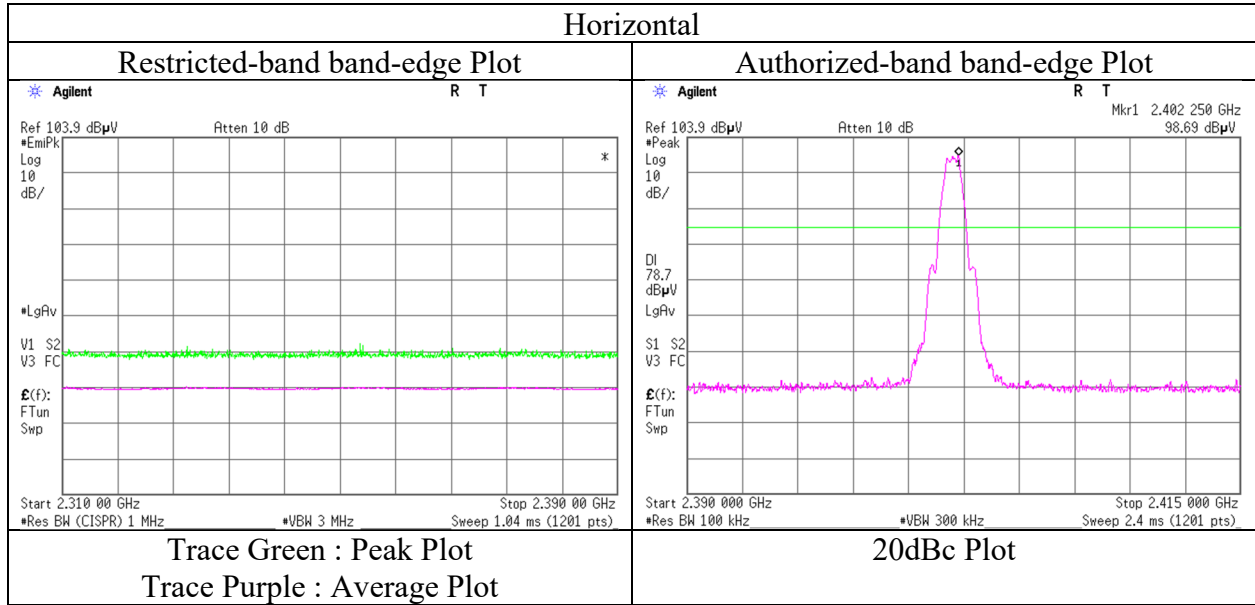


**Radiated Spurious Emission**  
**(Reference Plot for band-edge)**  
(BT1)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	January 25, 2022
Temperature / Humidity	25 deg. C / 47 % RH
Engineer	Yuichiro Yamazaki
	(1 GHz -10 GHz)
Mode	Tx BT LE 2402 MHz 1M-PHY



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

## Radiated Spurious Emission (BT1)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2440 MHz 1M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	4880.0	43.8	34.2	31.5	6.2	33.8	-	47.8	38.1	73.9	53.9	26.1	15.8	Floor noise
Hori.	7320.0	43.9	34.6	36.0	7.2	33.6	-	53.5	44.2	73.9	53.9	20.4	9.8	Floor noise
Hori.	9760.0	45.4	34.8	39.1	8.0	34.2	-	58.2	47.6	73.9	53.9	15.7	6.3	Floor noise
Vert.	4880.0	44.0	34.2	31.5	6.2	33.8	-	48.0	38.2	73.9	53.9	25.9	15.7	Floor noise
Vert.	7320.0	44.1	34.6	36.0	7.2	33.6	-	53.7	44.2	73.9	53.9	20.2	9.7	Floor noise
Vert.	9760.0	45.4	34.8	39.1	8.0	34.2	-	58.2	47.7	73.9	53.9	15.7	6.2	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

Distance factor:      1 GHz - 10 GHz       $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$   
                                  10 GHz - 26.5 GHz       $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

## Radiated Spurious Emission (BT1)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2480 MHz 1M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	2483.5	46.2	35.7	27.5	4.3	34.6	0.7	43.4	33.6	73.9	53.9	30.5	20.3	*1)
Hori.	4960.0	43.3	34.2	31.6	6.2	33.8	-	47.3	38.2	73.9	53.9	26.6	15.7	Floor noise
Hori.	7440.0	43.3	34.2	36.2	7.2	33.7	-	53.0	43.9	73.9	53.9	20.9	10.0	Floor noise
Hori.	9920.0	45.0	35.0	39.0	8.1	34.3	-	57.9	47.8	73.9	53.9	16.0	6.1	Floor noise
Vert.	2483.5	46.3	35.7	27.5	4.3	34.6	0.7	43.5	33.6	73.9	53.9	30.4	20.3	*1)
Vert.	4960.0	43.8	34.3	31.6	6.2	33.8	-	47.8	38.3	73.9	53.9	26.1	15.6	Floor noise
Vert.	7440.0	43.8	34.3	36.2	7.2	33.7	-	53.5	44.1	73.9	53.9	20.4	9.8	Floor noise
Vert.	9920.0	45.6	35.0	39.0	8.1	34.3	-	58.4	47.9	73.9	53.9	15.5	6.0	Floor noise

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

Result (AV)= 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).

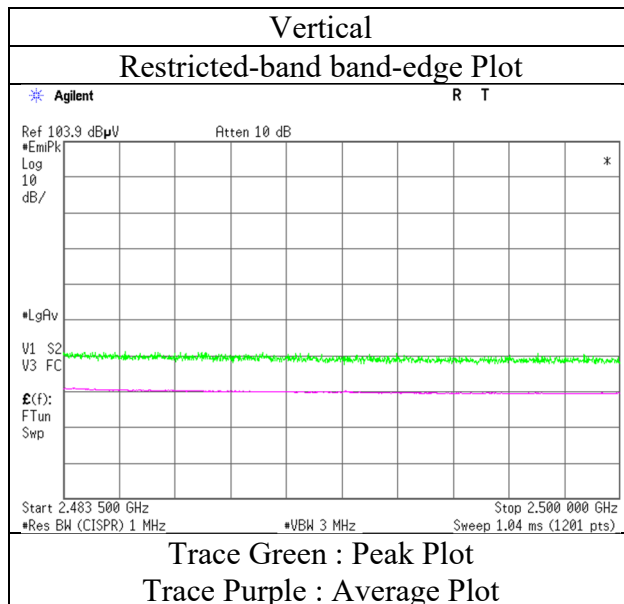
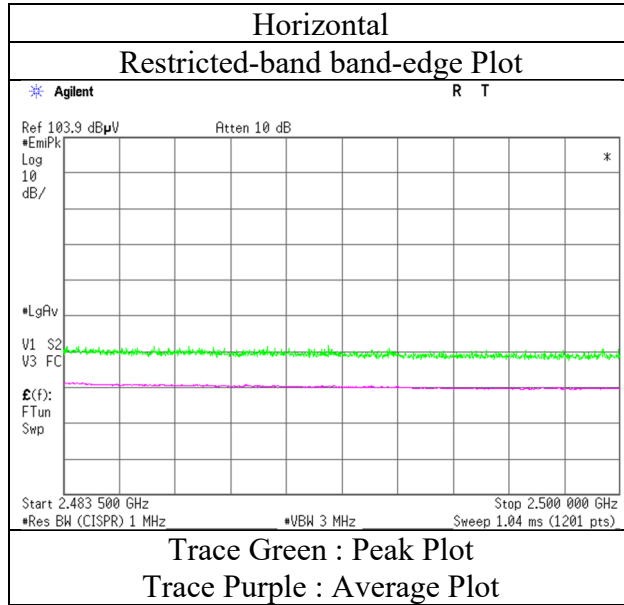
\*QP detector was used up to 1GHz.

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

Distance factor:      1 GHz - 10 GHz       $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$   
                                  10 GHz - 26.5 GHz       $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

**Radiated Spurious Emission**  
**(Reference Plot for band-edge)**  
(BT1)

Test place                    Ise EMC Lab.  
Semi Anechoic Chamber    No.2  
Date                         January 25, 2022  
Temperature / Humidity     25 deg. C / 47 % RH  
Engineer                    Yuichiro Yamazaki  
                                  (1 GHz -10 GHz)  
Mode                         Tx BT LE 2480 MHz 1M-PHY



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

## Radiated Spurious Emission (BT1)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2402 MHz 2M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	2390.0	45.2	34.4	27.6	4.3	34.6	2.4	42.5	34.1	73.9	53.9	31.4	19.9	*1)
Hori.	4804.0	43.9	34.2	31.5	6.2	33.7	-	47.9	38.2	73.9	53.9	26.0	15.8	Floor noise
Hori.	7206.0	43.9	34.6	35.9	7.1	33.6	-	53.4	44.0	73.9	53.9	20.6	9.9	Floor noise
Hori.	9608.0	45.1	35.2	38.7	8.0	34.2	-	57.7	47.7	73.9	53.9	16.2	6.2	Floor noise
Vert.	2390.0	46.8	34.6	27.6	4.3	34.6	2.4	44.0	34.2	73.9	53.9	29.9	19.7	*1)
Vert.	4804.0	44.0	34.2	31.5	6.2	33.7	-	48.0	38.2	73.9	53.9	25.9	15.7	Floor noise
Vert.	7206.0	44.1	34.6	35.9	7.1	33.6	-	53.5	44.0	73.9	53.9	20.4	9.9	Floor noise
Vert.	9608.0	45.3	35.2	38.7	8.0	34.2	-	57.8	47.7	73.9	53.9	16.1	6.2	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

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

### 20dBc Data Sheet

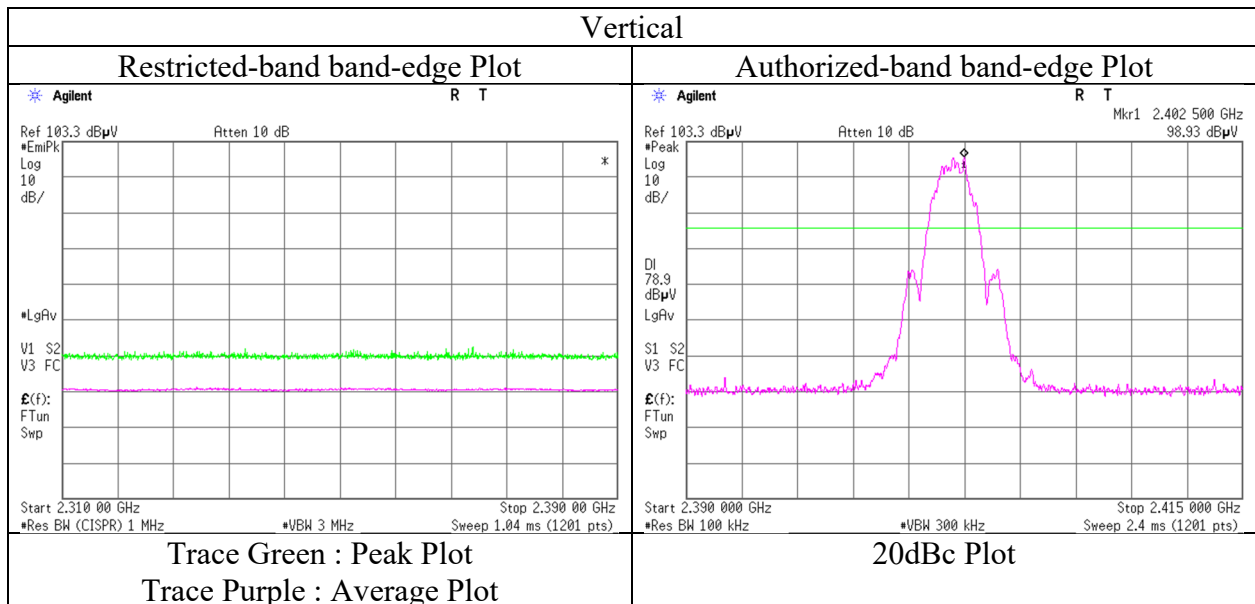
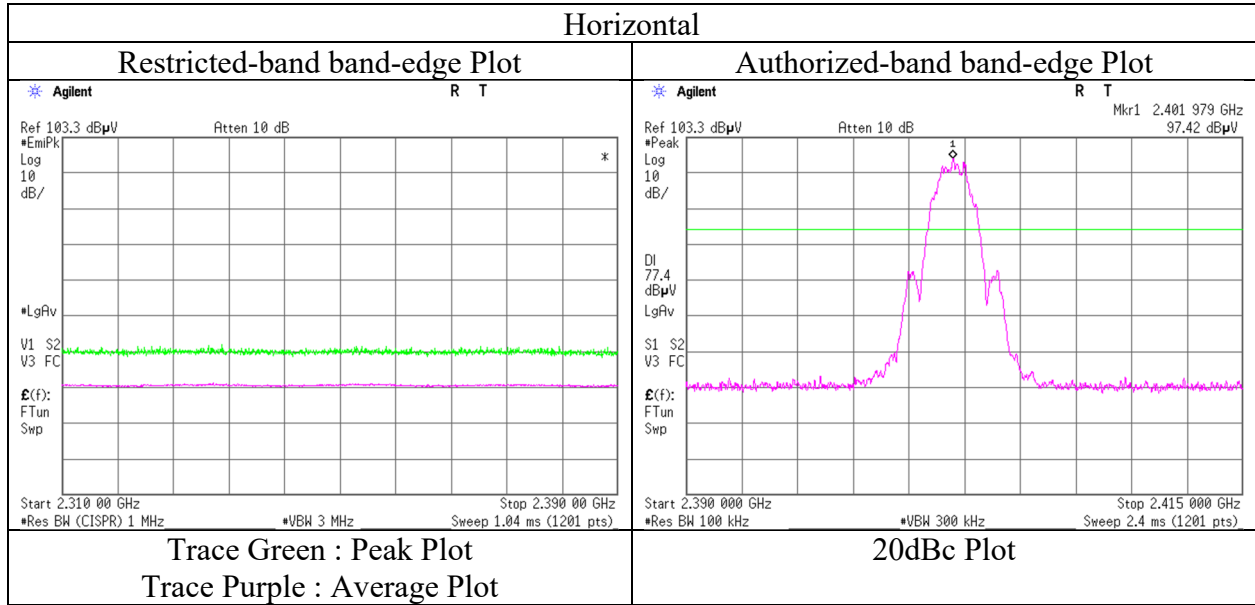
Polarity	Frequency	Reading (PK)	Ant Factor	Loss	Gain	Result	Limit	Margin	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori.	2402.0	97.4	27.6	4.3	34.6	94.7	-	-	Carrier
Hori.	2400.0	66.0	27.6	4.3	34.6	63.2	74.7	11.4	
Vert.	2402.0	98.9	27.6	4.3	34.6	96.2	-	-	Carrier
Vert.	2400.0	67.4	27.6	4.3	34.6	64.6	76.2	11.5	

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

Distance factor:  
 1 GHz - 10 GHz       $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$   
 10 GHz - 26.5 GHz     $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

## Radiated Spurious Emission (Reference Plot for band-edge) (BT1)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	January 25, 2022
Temperature / Humidity	25 deg. C / 47 % RH
Engineer	Yuichiro Yamazaki (1 GHz -10 GHz)
Mode	Tx BT LE 2402 MHz 2M-PHY



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

## Radiated Spurious Emission (BT1)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2440 MHz 2M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	4880.0	43.8	34.1	31.5	6.2	33.8	-	47.8	38.1	73.9	53.9	26.2	15.8	Floor noise
Hori.	7320.0	43.9	34.6	36.0	7.2	33.6	-	53.5	44.2	73.9	53.9	20.4	9.7	Floor noise
Hori.	9760.0	45.4	34.8	39.1	8.0	34.2	-	58.2	47.7	73.9	53.9	15.7	6.3	Floor noise
Vert.	4880.0	44.0	34.2	31.5	6.2	33.8	-	48.0	38.2	73.9	53.9	25.9	15.7	Floor noise
Vert.	7320.0	44.1	34.6	36.0	7.2	33.6	-	53.7	44.2	73.9	53.9	20.2	9.8	Floor noise
Vert.	9760.0	45.4	34.8	39.1	8.0	34.2	-	58.2	47.7	73.9	53.9	15.7	6.2	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

Distance factor:      1 GHz - 10 GHz             $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$   
                                  10 GHz - 26.5 GHz         $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

## Radiated Spurious Emission (BT1)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2480 MHz 2M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	2483.5	48.8	39.6	27.5	4.3	34.6	2.4	46.0	39.2	73.9	53.9	27.9	14.7	*1)
Hori.	4960.0	43.2	34.1	31.6	6.2	33.8	-	47.3	38.2	73.9	53.9	26.6	15.7	Floor noise
Hori.	7440.0	43.3	34.2	36.2	7.2	33.7	-	53.0	43.9	73.9	53.9	20.9	10.0	Floor noise
Hori.	9920.0	45.0	35.0	39.0	8.1	34.3	-	57.9	47.8	73.9	53.9	16.0	6.1	Floor noise
Vert.	2483.5	49.2	40.2	27.5	4.3	34.6	2.4	46.5	39.8	73.9	53.9	27.5	14.1	*1)
Vert.	4960.0	43.8	34.3	31.6	6.2	33.8	-	47.8	38.3	73.9	53.9	26.1	15.6	Floor noise
Vert.	7440.0	43.8	34.3	36.2	7.2	33.7	-	53.5	44.0	73.9	53.9	20.4	9.9	Floor noise
Vert.	9920.0	45.6	35.0	39.0	8.1	34.3	-	58.4	47.9	73.9	53.9	15.5	6.1	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

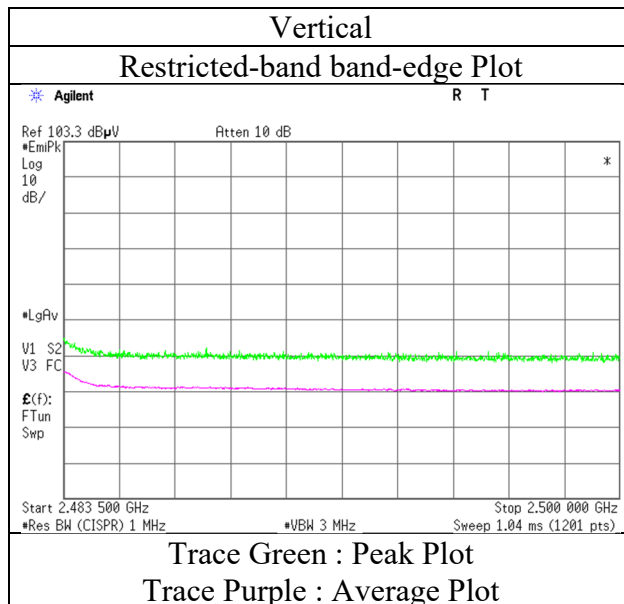
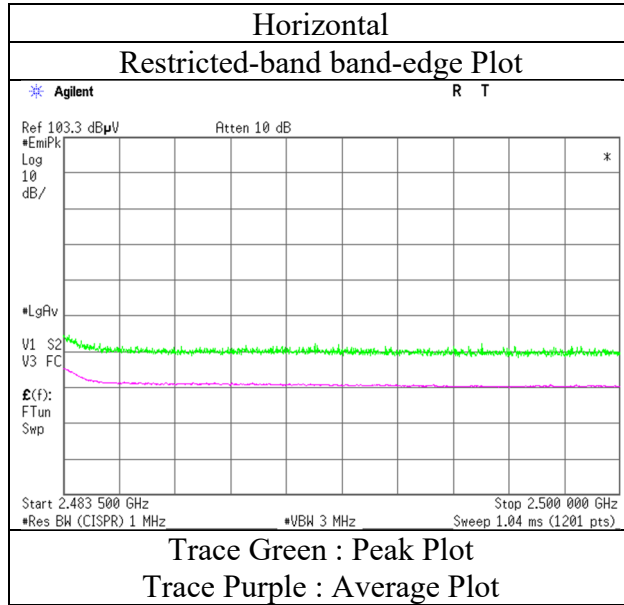
\*1) Not Out of Band emission(Leakage Power)

Distance factor:      1 GHz - 10 GHz       $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$   
                                  10 GHz - 26.5 GHz       $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$



**Radiated Spurious Emission**  
**(Reference Plot for band-edge)**  
(BT1)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	January 25, 2022
Temperature / Humidity	25 deg. C / 47 % RH
Engineer	Yuichiro Yamazaki (1 GHz -10 GHz)
Mode	Tx BT LE 2480 MHz 2M-PHY



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

## Radiated Spurious Emission (BT2)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2402 MHz 1M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	2390.0	52.6	35.2	27.6	4.3	34.6	0.7	49.9	33.2	73.9	53.9	24.1	20.8	*1)
Hori.	4804.0	43.9	34.1	31.5	6.2	33.7	-	47.9	38.1	73.9	53.9	26.0	15.8	Floor noise
Hori.	7206.0	43.9	34.5	35.9	7.1	33.6	-	53.4	44.0	73.9	53.9	20.6	9.9	Floor noise
Hori.	9608.0	45.1	35.2	38.7	8.0	34.2	-	57.7	47.7	73.9	53.9	16.2	6.2	Floor noise
Vert.	2390.0	48.8	34.8	27.6	4.3	34.6	0.7	46.1	32.7	73.9	53.9	27.8	21.2	*1)
Vert.	4804.0	44.0	34.2	31.5	6.2	33.7	-	48.0	38.2	73.9	53.9	25.9	15.7	Floor noise
Vert.	7206.0	44.1	34.6	35.9	7.1	33.6	-	53.5	44.0	73.9	53.9	20.4	9.9	Floor noise
Vert.	9608.0	45.3	35.2	38.7	8.0	34.2	-	57.8	47.7	73.9	53.9	16.1	6.2	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

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

### 20dBc Data Sheet

Polarity	Frequency	Reading (PK)	Ant Factor	Loss	Gain	Result	Limit	Margin	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori.	2402.0	98.1	27.6	4.3	34.6	95.3	-	-	Carrier
Hori.	2400.0	37.1	27.6	4.3	34.6	34.4	75.3	41.0	
Vert.	2402.0	99.6	27.6	4.3	34.6	96.8	-	-	Carrier
Vert.	2400.0	42.4	27.6	4.3	34.6	39.7	76.8	37.1	

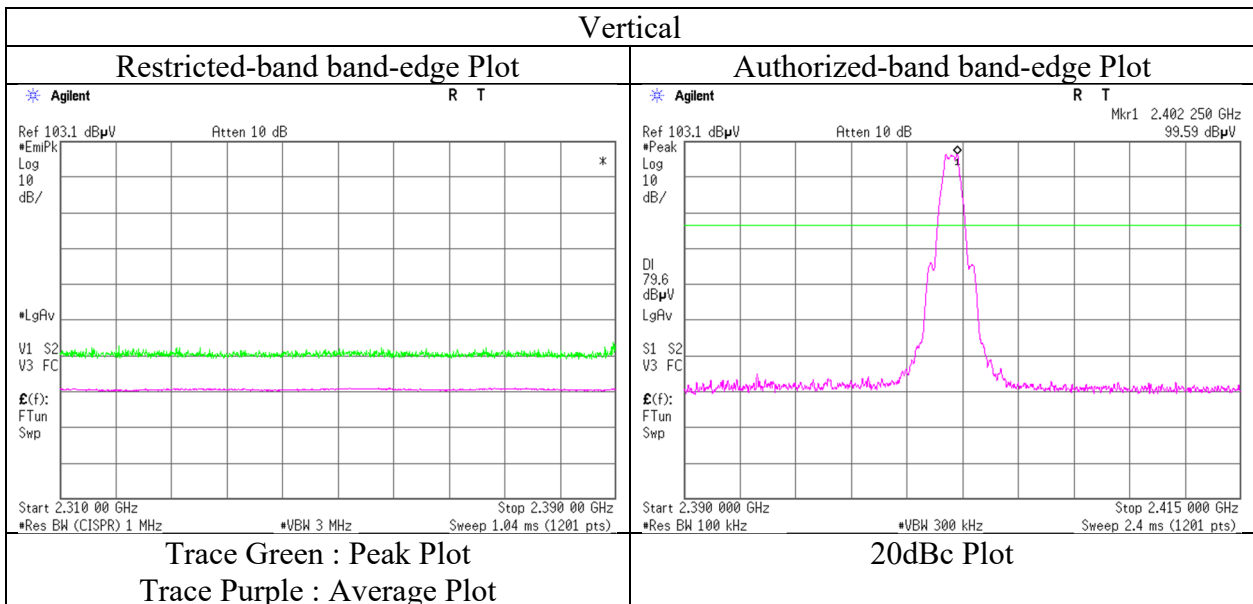
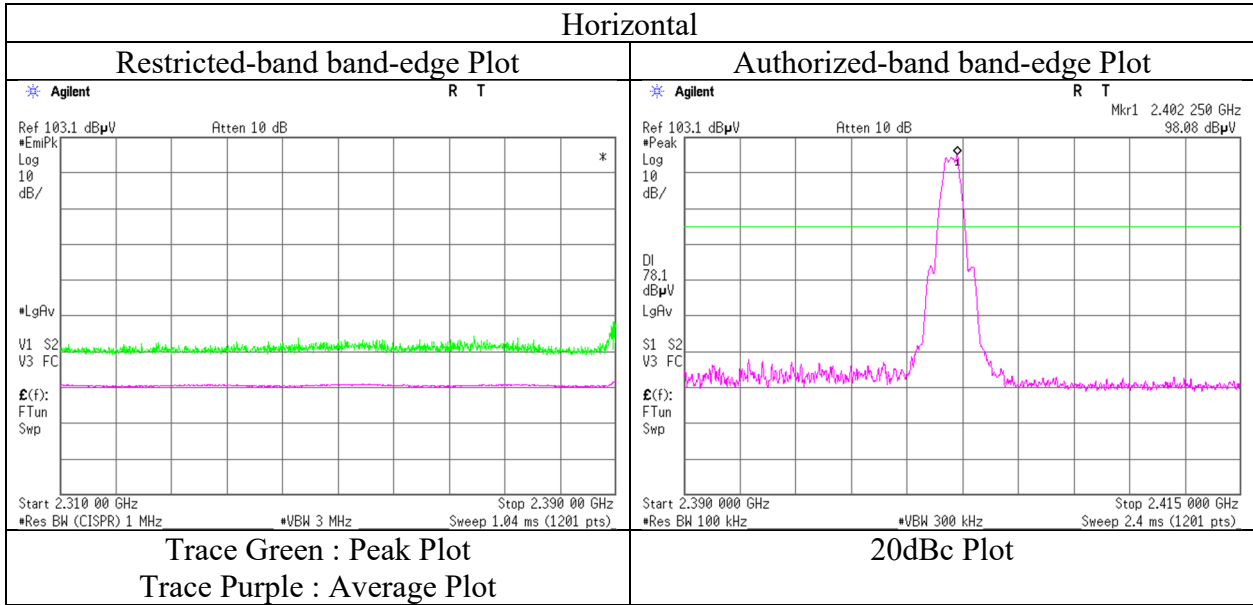
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

Distance factor: 1 GHz - 10 GHz       $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$

10 GHz - 26.5 GHz       $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

## Radiated Spurious Emission (Reference Plot for band-edge) (BT2)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	January 25, 2022
Temperature / Humidity	25 deg. C / 47 % RH
Engineer	Yuichiro Yamazaki
	(1 GHz -10 GHz)
Mode	Tx BT LE 2402 MHz 1M-PHY



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

## Radiated Spurious Emission (BT2)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2440 MHz 1M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	4880.0	43.8	34.2	31.5	6.2	33.8	-	47.8	38.1	73.9	53.9	26.2	15.8	Floor noise
Hori.	7320.0	44.0	34.6	36.0	7.2	33.6	-	53.6	44.2	73.9	53.9	20.3	9.7	Floor noise
Hori.	9760.0	45.4	34.8	39.1	8.0	34.2	-	58.2	47.7	73.9	53.9	15.7	6.3	Floor noise
Vert.	4880.0	44.0	34.2	31.5	6.2	33.8	-	48.0	38.2	73.9	53.9	25.9	15.7	Floor noise
Vert.	7320.0	44.1	34.6	36.0	7.2	33.6	-	53.7	44.2	73.9	53.9	20.2	9.7	Floor noise
Vert.	9760.0	45.4	34.8	39.1	8.0	34.2	-	58.2	47.7	73.9	53.9	15.7	6.2	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

Distance factor:      1 GHz - 10 GHz             $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$   
                                  10 GHz - 26.5 GHz         $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

## Radiated Spurious Emission (BT2)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2480 MHz 1M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	2483.5	45.8	35.4	27.5	4.3	34.6	0.7	43.1	33.3	73.9	53.9	30.8	20.6	*1)
Hori.	4960.0	43.2	34.1	31.6	6.2	33.8	-	47.3	38.2	73.9	53.9	26.6	15.7	Floor noise
Hori.	7440.0	43.3	34.2	36.2	7.2	33.7	-	53.0	43.9	73.9	53.9	20.9	10.0	Floor noise
Hori.	9920.0	45.0	34.9	39.0	8.1	34.3	-	57.9	47.8	73.9	53.9	16.0	6.1	Floor noise
Vert.	2483.5	46.4	35.7	27.5	4.3	34.6	0.7	43.6	33.6	73.9	53.9	30.3	20.3	*1)
Vert.	2489.3	48.3	35.4	27.5	4.3	34.6	0.7	45.6	33.3	73.9	53.9	28.3	20.6	*2)
Vert.	4960.0	43.7	34.3	31.6	6.2	33.8	-	47.8	38.3	73.9	53.9	26.2	15.6	Floor noise
Vert.	7440.0	43.8	34.3	36.2	7.2	33.7	-	53.5	44.0	73.9	53.9	20.4	9.9	Floor noise
Vert.	9920.0	45.6	35.0	39.0	8.1	34.3	-	58.4	47.9	73.9	53.9	15.5	6.1	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

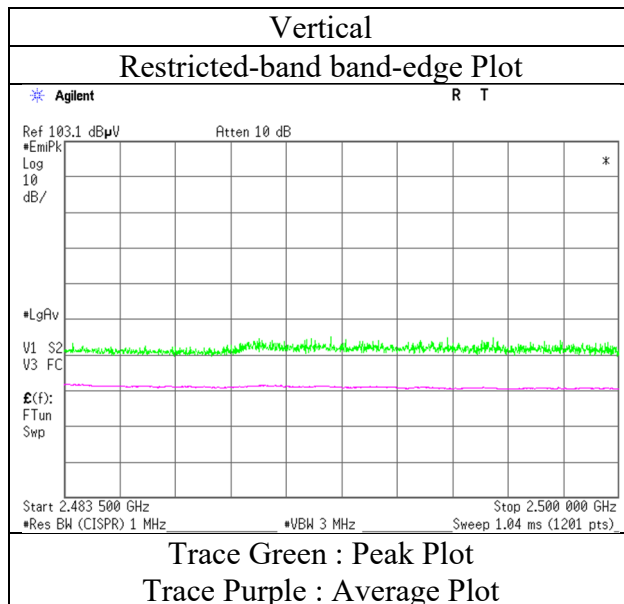
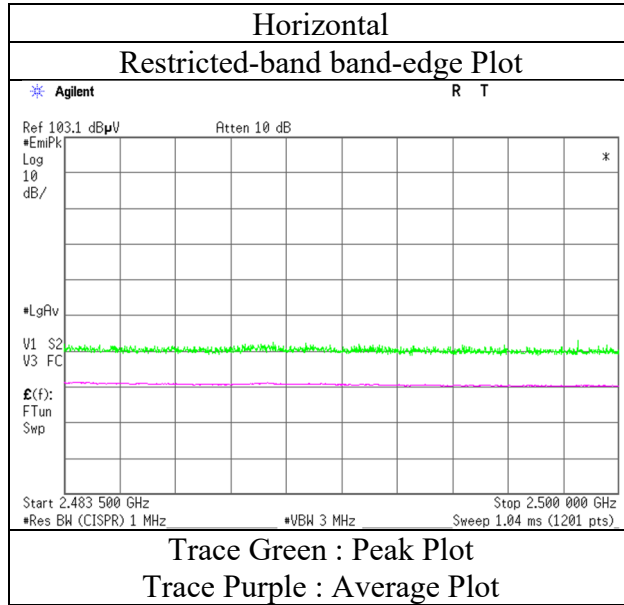
\*1) Not Out of Band emission(Leakage Power)

\*2) Noise synchronized with duty of carrier frequency

Distance factor:      1 GHz - 10 GHz       $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$   
                              10 GHz - 26.5 GHz       $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

**Radiated Spurious Emission**  
**(Reference Plot for band-edge)**  
**(BT2)**

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	January 25, 2022
Temperature / Humidity	25 deg. C / 47 % RH
Engineer	Yuichiro Yamazaki
	(1 GHz -10 GHz)
Mode	Tx BT LE 2480 MHz 1M-PHY



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

## Radiated Spurious Emission (BT2)

Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	January 25, 2022	February 1, 2022	February 3, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH	23 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki	Junya Okuno
	(1 GHz -10 GHz)	(Above 10 GHz)	(Below 1 GHz)
Mode	Tx BT LE 2402 MHz 2M-PHY		

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	119.5	27.4	-	12.9	7.6	28.3	-	19.6	-	43.5	-	23.9	-	
Hori.	125.9	25.4	-	13.5	7.6	28.2	-	18.3	-	43.5	-	25.2	-	
Hori.	175.4	26.9	-	15.8	8.0	28.0	-	22.7	-	43.5	-	20.8	-	
Hori.	326.7	29.0	-	15.2	9.0	27.8	-	25.4	-	46.0	-	20.6	-	
Hori.	393.2	27.0	-	16.0	9.5	28.4	-	24.2	-	46.0	-	21.8	-	
Hori.	852.1	27.0	-	21.7	11.0	28.9	-	30.8	-	46.0	-	15.2	-	
Hori.	2390.0	53.4	35.2	27.6	4.3	34.6	2.4	50.7	34.8	73.9	53.9	23.2	19.1	*1)
Hori.	4804.0	43.9	34.1	31.5	6.2	33.7	-	47.9	38.1	73.9	53.9	26.0	15.8	Floor noise
Hori.	7206.0	43.9	34.5	35.9	7.1	33.6	-	53.4	44.0	73.9	53.9	20.5	9.9	Floor noise
Hori.	9608.0	45.1	35.2	38.7	8.0	34.2	-	57.7	47.7	73.9	53.9	16.2	6.2	Floor noise
Vert.	36.6	27.4	-	16.4	6.8	28.5	-	22.1	-	40.0	-	17.9	-	
Vert.	47.4	32.9	-	12.3	6.9	28.4	-	23.7	-	40.0	-	16.3	-	
Vert.	119.5	31.3	-	12.9	7.6	28.3	-	23.5	-	43.5	-	20.0	-	
Vert.	326.4	27.8	-	15.2	9.0	27.8	-	24.2	-	46.0	-	21.8	-	
Vert.	654.2	30.1	-	19.4	10.3	29.2	-	30.6	-	46.0	-	15.4	-	
Vert.	852.1	24.8	-	21.7	11.0	28.9	-	28.6	-	46.0	-	17.4	-	
Vert.	2390.0	49.7	34.6	27.6	4.3	34.6	2.4	47.0	34.3	73.9	53.9	26.9	19.6	*1)
Vert.	4804.0	44.0	34.2	31.5	6.2	33.7	-	48.0	38.2	73.9	53.9	25.9	15.7	Floor noise
Vert.	7206.0	44.1	34.6	35.9	7.1	33.6	-	53.5	44.0	73.9	53.9	20.4	9.9	Floor noise
Vert.	9608.0	45.3	35.2	38.7	8.0	34.2	-	57.8	47.7	73.9	53.9	16.1	6.2	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

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

### 20dBc Data Sheet

Polarity	Frequency	Reading (PK)	Ant Factor	Loss	Gain	Result	Limit	Margin	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori.	2402.0	96.6	27.6	4.3	34.6	93.9	-	-	Carrier
Hori.	2400.0	65.2	27.6	4.3	34.6	62.5	73.9	11.4	
Vert.	2402.0	98.4	27.6	4.3	34.6	95.6	-	-	Carrier
Vert.	2400.0	67.6	27.6	4.3	34.6	64.9	75.6	10.7	

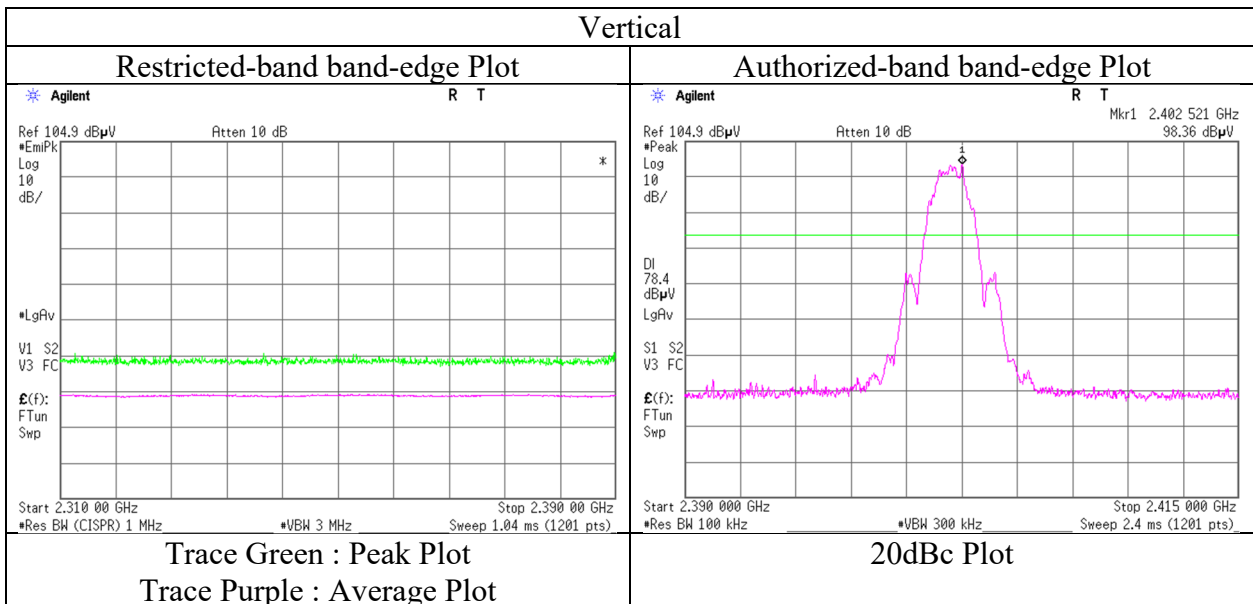
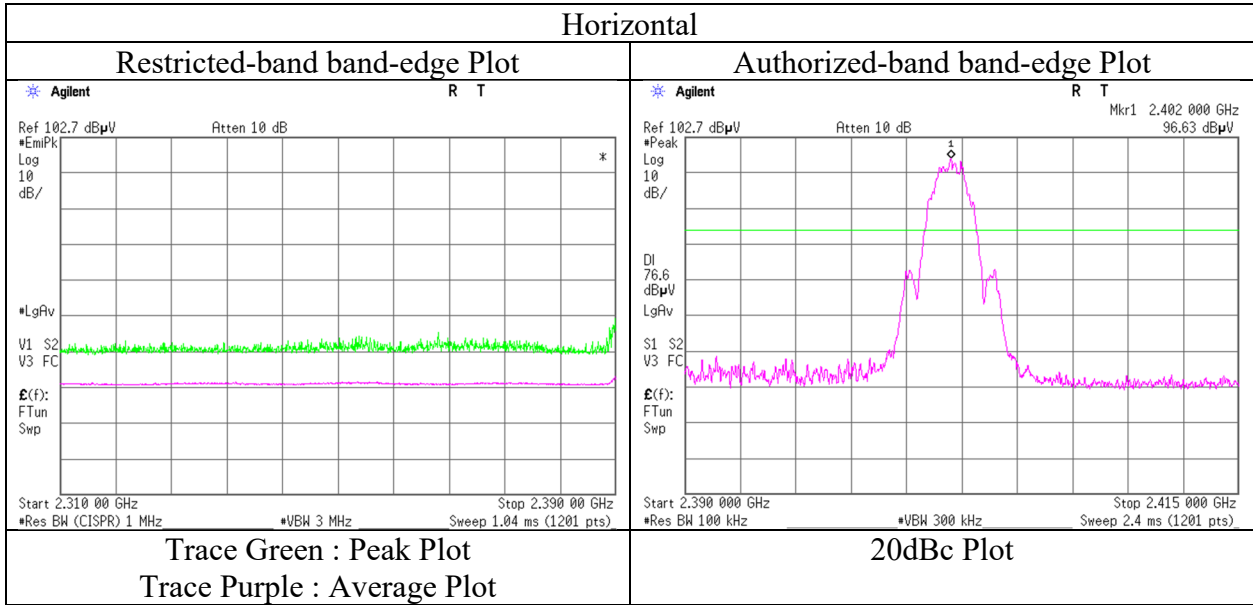
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

Distance factor: 1 GHz - 10 GHz      20log(3.7 m / 3.0 m) = 1.83 dB

10 GHz - 26.5 GHz      20log(1.0 m / 3.0 m) = -9.5 dB

**Radiated Spurious Emission**  
**(Reference Plot for band-edge)**  
**(BT2)**

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	January 25, 2022
Temperature / Humidity	25 deg. C / 47 % RH
Engineer	Yuichiro Yamazaki
	(1 GHz -10 GHz)
Mode	Tx BT LE 2402 MHz 2M-PHY



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



## Radiated Spurious Emission (BT2)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz -10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2440 MHz 2M-PHY	

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	4880.0	43.8	34.1	31.5	6.2	33.8	-	47.7	38.1	73.9	53.9	26.2	15.8	Floor noise
Hori.	7320.0	44.0	34.6	36.0	7.2	33.6	-	53.6	44.2	73.9	53.9	20.3	9.8	Floor noise
Hori.	9760.0	45.4	34.8	39.1	8.0	34.2	-	58.3	47.7	73.9	53.9	15.7	6.2	Floor noise
Vert.	4880.0	44.0	34.2	31.5	6.2	33.8	-	48.0	38.2	73.9	53.9	25.9	15.7	Floor noise
Vert.	7320.0	44.1	34.6	36.0	7.2	33.6	-	53.7	44.2	73.9	53.9	20.2	9.7	Floor noise
Vert.	9760.0	45.4	34.8	39.1	8.0	34.2	-	58.2	47.7	73.9	53.9	15.7	6.2	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

Distance factor:      1 GHz - 10 GHz       $20\log(3.7\text{ m} / 3.0\text{ m}) = 1.83\text{ dB}$   
                                  10 GHz - 26.5 GHz       $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

## Radiated Spurious Emission (BT2)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.2	No.2
Date	January 25, 2022	February 1, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki
	(1 GHz - 10 GHz)	(Above 10 GHz)
Mode	Tx BT LE 2480 MHz 2M-PHY	

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	2483.5	47.9	38.5	27.5	4.3	34.6	2.4	45.1	38.1	73.9	53.9	28.8	15.8	*1)
Hori.	2489.2	47.0	35.5	27.5	4.3	34.6	2.4	44.3	35.1	73.9	53.9	29.6	18.8	*2)
Hori.	4960.0	43.3	34.2	31.6	6.2	33.8	-	47.3	38.2	73.9	53.9	26.6	15.7	Floor noise
Hori.	7440.0	43.3	34.2	36.2	7.2	33.7	-	53.0	43.9	73.9	53.9	20.9	10.0	Floor noise
Hori.	9920.0	45.0	35.0	39.0	8.1	34.3	-	57.9	47.8	73.9	53.9	16.0	6.1	Floor noise
Vert.	2483.5	49.2	39.8	27.5	4.3	34.6	2.4	46.4	39.4	73.9	53.9	27.5	14.5	*1)
Vert.	4960.0	43.7	34.3	31.6	6.2	33.8	-	47.8	38.3	73.9	53.9	26.1	15.6	Floor noise
Vert.	7440.0	43.8	34.3	36.2	7.2	33.7	-	53.5	44.1	73.9	53.9	20.4	9.8	Floor noise
Vert.	9920.0	45.6	35.0	39.0	8.1	34.3	-	58.4	47.9	73.9	53.9	15.5	6.1	Floor noise

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

Result (AV) = 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).

\*QP detector was used up to 1GHz.

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

\*2) Noise synchronized with duty of carrier frequency

Distance factor:	1 GHz - 10 GHz	20log(3.7 m / 3.0 m) = 1.83 dB
	10 GHz - 26.5 GHz	20log(1.0 m / 3.0 m) = -9.5 dB



## Radiated Spurious Emission (WLAN + BT1)

Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	February 7, 2022	February 8, 2022	February 9, 2022
Temperature / Humidity	22 deg. C / 42 % RH	22 deg. C / 44 % RH	23 deg. C / 43 % RH
Engineer	Junya Okuno	Junya Okuno	Junya Okuno
Mode	(Below 1 GHz)	(1 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
	Tx BT LE 2M-PHY 2402 MHz + 11ax-20 OFDM 5260 MHz		

Polarity	Frequency	Reading (QP / PK)	Reading (AV)	Ant. Factor	Loss	Gain	Duty Factor	Result (QP / PK)	Result (AV)	Limit (QP / PK)	Limit (AV)	Margin (QP / PK)	Margin (AV)	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	
Hori.	333.4	40.2	-	15.4	9.1	27.8	-	36.8	-	46.0	-	9.2	-	
Hori.	440.9	34.7	-	16.6	9.6	28.7	-	32.2	-	46.0	-	13.9	-	
Hori.	549.7	38.6	-	18.0	9.9	29.2	-	37.3	-	46.0	-	8.7	-	
Hori.	686.5	37.8	-	19.8	10.4	29.2	-	38.8	-	46.0	-	7.2	-	
Hori.	816.7	33.5	-	21.0	10.9	29.0	-	36.4	-	46.0	-	9.6	-	
Hori.	959.2	31.6	-	22.2	11.4	28.6	-	36.5	-	46.0	-	9.5	-	
Hori.	2390.0	45.6	35.3	27.6	4.7	35.1	2.4	42.9	34.9	73.9	53.9	31.0	19.0	*1)
Hori.	4804.0	42.4	33.8	31.5	7.0	34.4	-	46.5	37.9	73.9	53.9	27.4	16.0	Floor noise
Hori.	7206.0	43.7	34.7	35.9	8.4	34.4	-	53.7	44.7	73.9	53.9	20.2	9.3	Floor noise
Hori.	9608.0	44.6	34.9	38.7	8.9	35.0	-	57.3	47.5	73.9	53.9	16.7	6.4	Floor noise
Vert.	47.6	38.3	-	12.2	6.9	28.4	-	29.0	-	40.0	-	11.0	-	
Vert.	78.7	40.8	-	6.8	7.3	28.4	-	26.5	-	40.0	-	13.5	-	
Vert.	184.3	35.7	-	16.3	8.1	28.0	-	32.0	-	43.5	-	11.5	-	
Vert.	528.0	37.7	-	17.9	9.8	29.1	-	36.3	-	46.0	-	9.7	-	
Vert.	686.4	35.2	-	19.8	10.4	29.2	-	36.2	-	46.0	-	9.8	-	
Vert.	813.7	32.0	-	21.0	10.9	29.0	-	34.9	-	46.0	-	11.1	-	
Vert.	2390.0	44.3	35.2	27.6	4.7	35.1	2.4	41.5	34.9	73.9	53.9	32.4	19.0	*1)
Vert.	4804.0	42.4	33.8	31.5	7.0	34.4	-	46.6	38.0	73.9	53.9	27.3	15.9	Floor noise
Vert.	7206.0	43.7	34.7	35.9	8.4	34.4	-	53.6	44.6	73.9	53.9	20.3	9.3	Floor noise
Vert.	9608.0	44.5	34.8	38.7	8.9	35.0	-	57.2	47.5	73.9	53.9	16.7	6.4	Floor noise

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

Result (AV)= 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).

\*QP detector was used up to 1GHz.

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

### 20dBc Data Sheet

Polarity	Frequency	Reading (PK)	Ant Factor	Loss	Gain	Result	Limit	Margin	Remark
[Hori/Vert]	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori.	2402.0	99.1	27.6	4.7	35.1	96.3	-	-	Carrier
Hori.	2400.0	67.0	27.6	4.7	35.1	64.3	76.3	12.1	
Vert.	2402.0	97.8	27.6	4.7	35.1	95.1	-	-	Carrier
Vert.	2400.0	65.7	27.6	4.7	35.1	62.9	75.1	12.1	

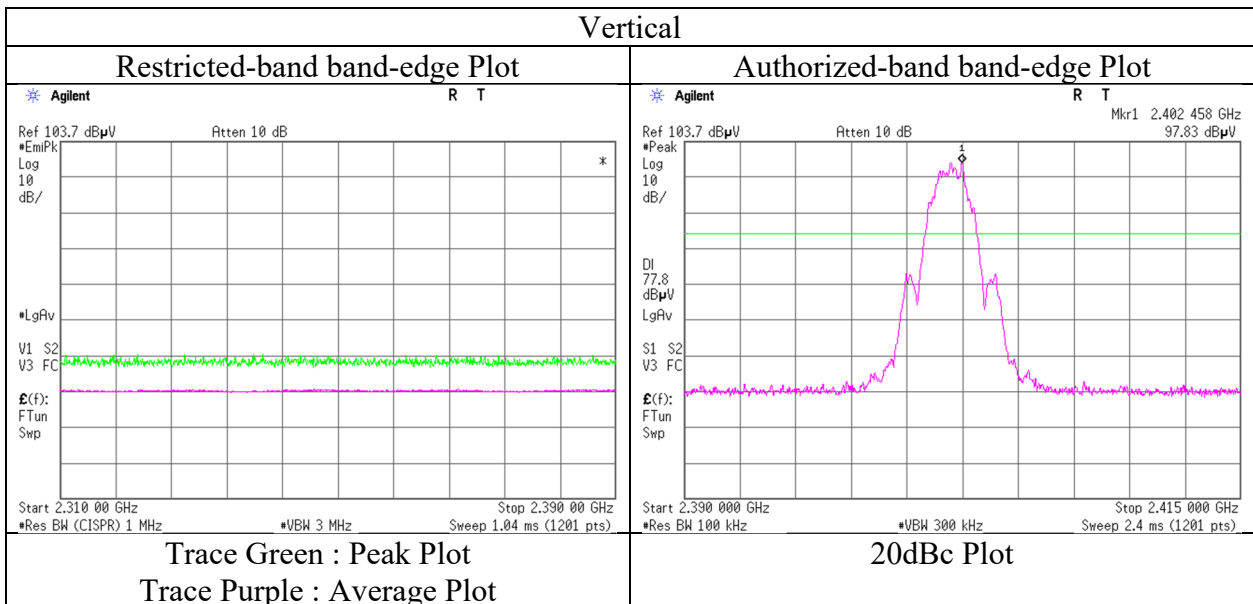
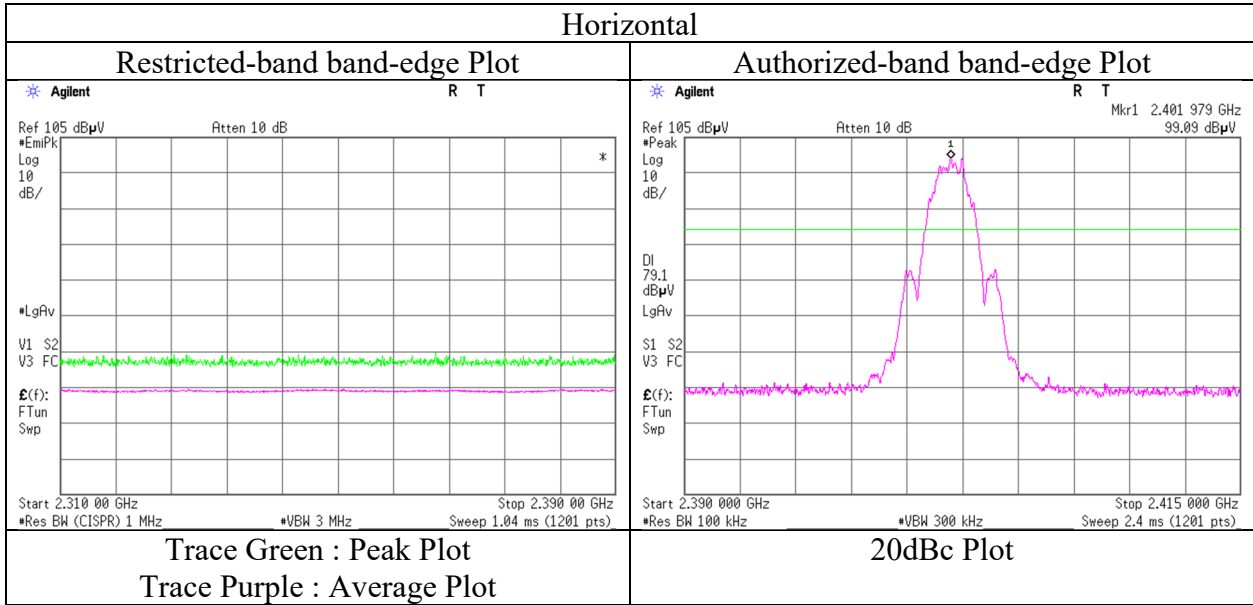
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)

Distance factor: 1 GHz - 10 GHz      20log(3.65 m / 3.0 m) = 1.71 dB

10 GHz - 26.5 GHz      20log(1.0 m / 3.0 m) = -9.5 dB

**Radiated Spurious Emission**  
**(Reference Plot for band-edge)**  
**(WLAN + BT1)**

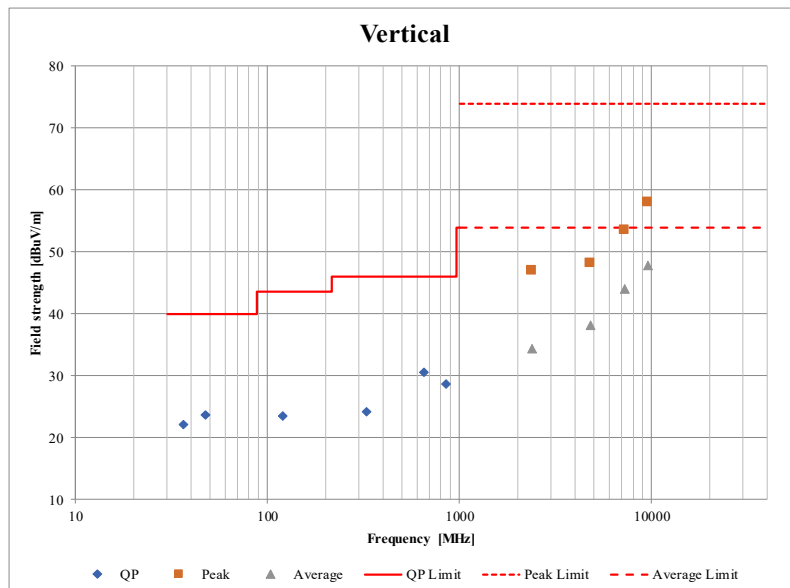
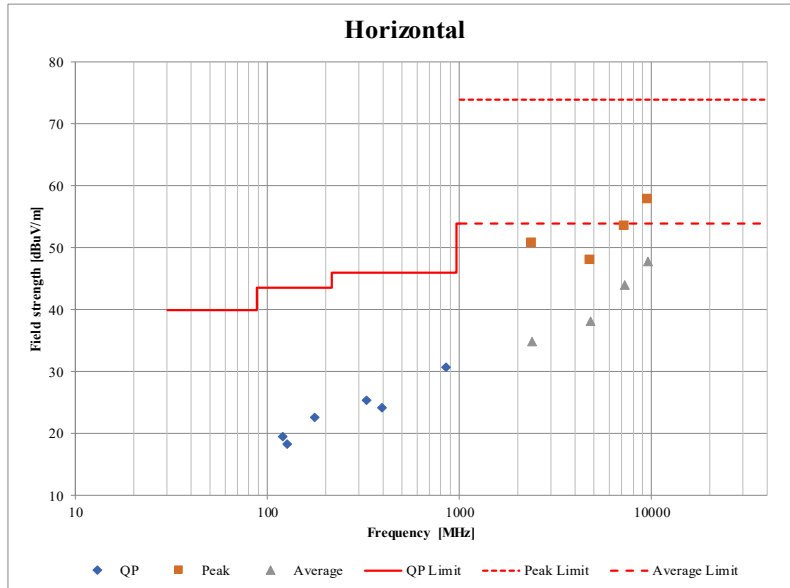
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	February 8, 2022
Temperature / Humidity	22 deg. C / 44 % RH
Engineer	Junya Okuno
	(1 GHz - 10 GHz)
Mode	Tx BT LE 2M-PHY 2402 MHz + 11ax-20 OFDM 5260 MHz



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

**Radiated Spurious Emission**  
**(Plot data, Worst case mode for Maximum Peak Output Power)**  
**(BT2)**

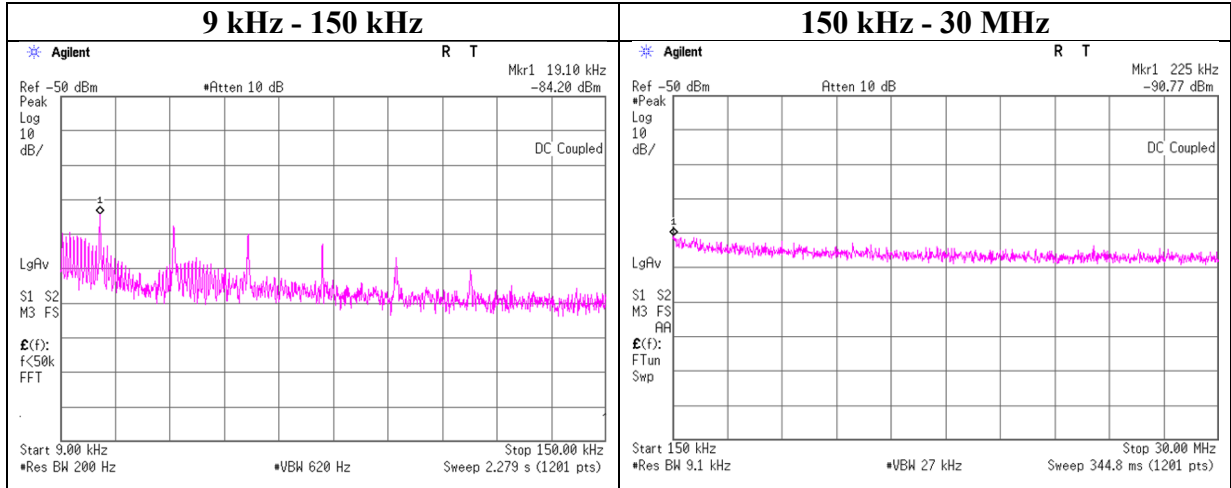
Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.2	No.2	No.2
Date	January 25, 2022	February 1, 2022	February 3, 2022
Temperature / Humidity	25 deg. C / 47 % RH	21 deg. C / 45 % RH	23 deg. C / 45 % RH
Engineer	Yuichiro Yamazaki	Yuichiro Yamazaki	Junya Okuno
	(1 GHz -10 GHz)	(Above 10 GHz)	(Below 1 GHz)
Mode	Tx BT LE 2402 MHz 2M-PHY		



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

## Conducted Spurious Emission (WLAN)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	January 28, 2022
Temperature / Humidity	24 deg. C / 30 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ax-20 (OFDM) 2412 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
19.10	-84.2	0.52	9.8	8.0	2	-62.8	300	6.0	-1.6	41.9	43.5	
225.00	-90.8	0.52	9.8	8.0	2	-69.4	300	6.0	-8.1	20.5	28.6	

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

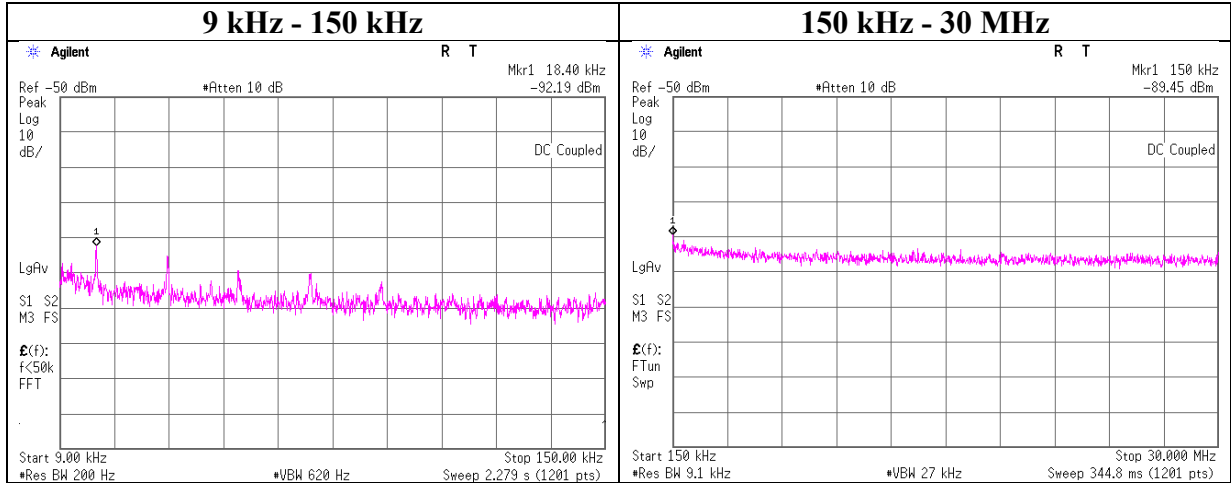
$$\text{EIRP[dBm]} = \text{Reading [dBm]} + \text{Cable loss [dB]} + \text{Attenuator Loss [dB]} + \text{Antenna gain [dBi]} + 10 * \log(N)$$

N: Number of output

\*The worst antenna gain was applied.

## Conducted Spurious Emission (BT1)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 1M-PHY 2402 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-92.2	0.65	9.8	5.8	1	-75.9	300	6.0	-14.6	42.3	56.9	
150.00	-89.5	0.65	9.8	5.8	1	-73.2	300	6.0	-11.9	24.0	35.9	

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

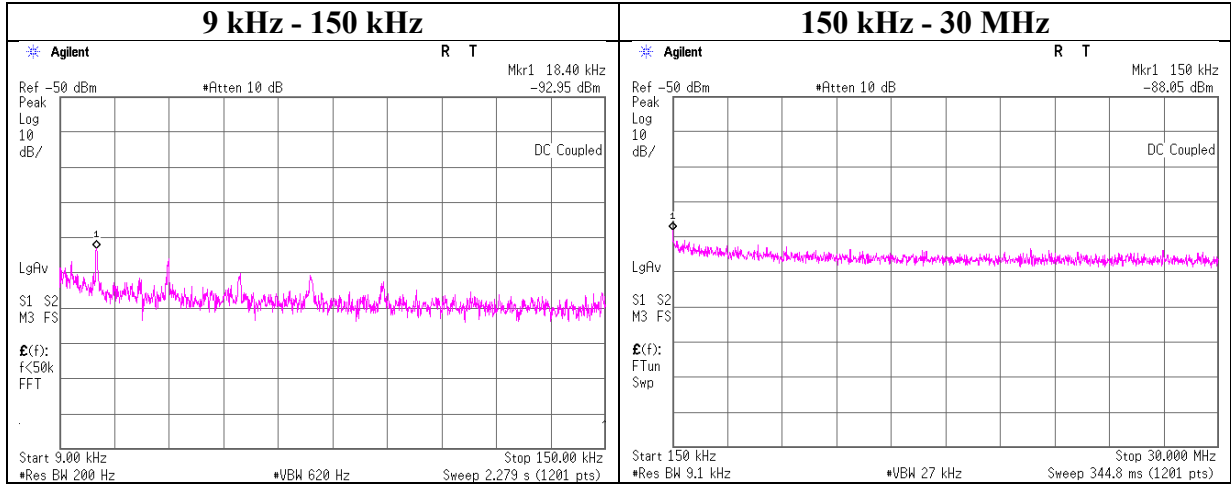
$\text{EIRP[dBm]} = \text{Reading [dBm]} + \text{Cable loss [dB]} + \text{Attenuator Loss [dB]} + \text{Antenna gain [dBi]} + 10 * \log(N)$

N: Number of output



## Conducted Spurious Emission (BT1)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 1M-PHY 2440 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-93.0	0.65	9.8	5.8	1	-76.7	300	6.0	-15.4	42.3	57.7	
150.00	-88.1	0.65	9.8	5.8	1	-71.8	300	6.0	-10.5	24.0	34.5	

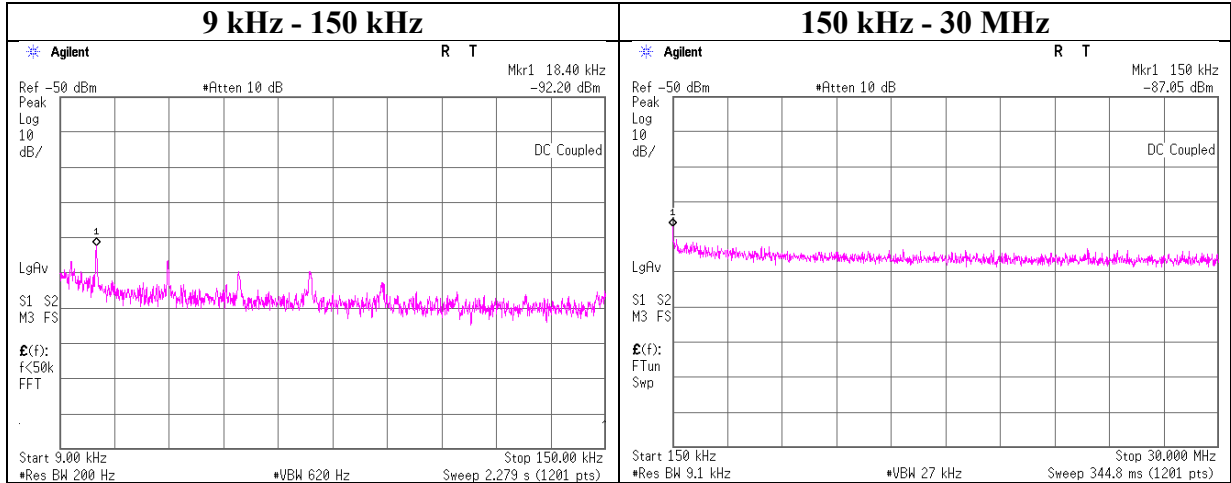
$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$

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

N: Number of output

## Conducted Spurious Emission (BT1)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 1M-PHY 2480 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-92.2	0.65	9.8	5.8	1	-75.9	300	6.0	-14.7	42.3	57.0	
150.00	-87.1	0.65	9.8	5.8	1	-70.8	300	6.0	-9.5	24.0	33.5	

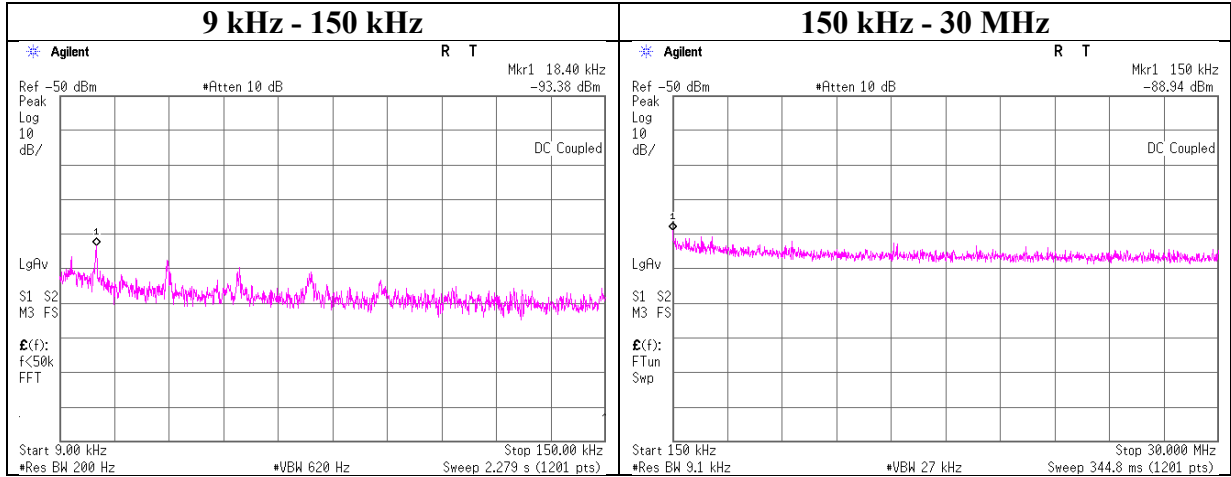
$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$

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

N: Number of output

## Conducted Spurious Emission (BT1)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 2M-PHY 2402 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-93.4	0.65	9.8	5.8	1	-77.1	300	6.0	-15.8	42.3	58.1	
150.00	-88.9	0.65	9.8	5.8	1	-72.7	300	6.0	-11.4	24.0	35.4	

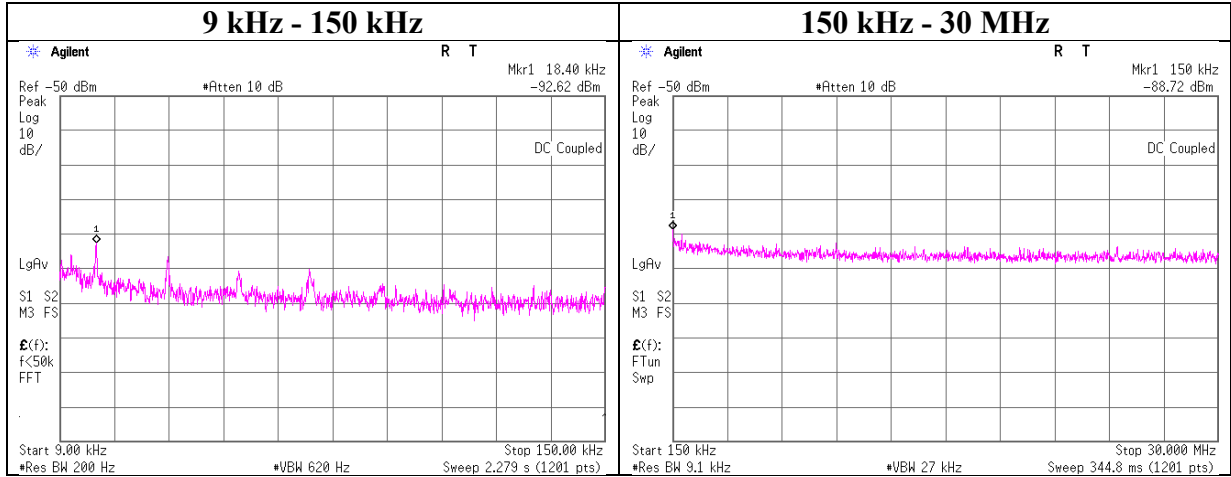
$$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$$

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

N: Number of output

## Conducted Spurious Emission (BT1)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 2M-PHY 2440 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-92.6	0.65	9.8	5.8	1	-76.3	300	6.0	-15.1	42.3	57.4	
150.00	-88.7	0.65	9.8	5.8	1	-72.4	300	6.0	-11.2	24.0	35.2	

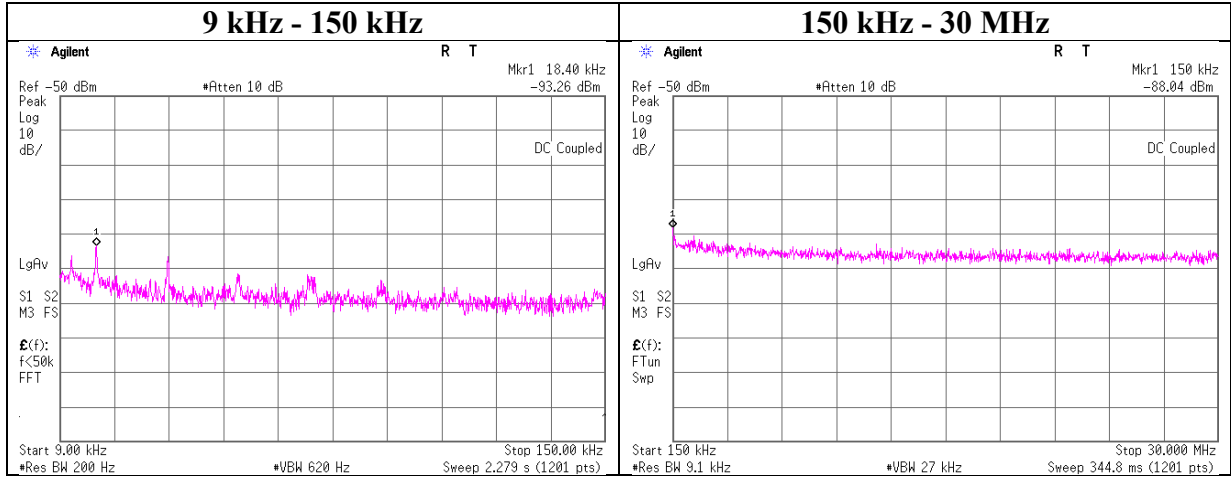
$$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$$

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

N: Number of output

## Conducted Spurious Emission (BT1)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 2M-PHY 2480 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-93.3	0.65	9.8	5.8	1	-77.0	300	6.0	-15.7	42.3	58.0	
150.00	-88.0	0.65	9.8	5.8	1	-71.8	300	6.0	-10.5	24.0	34.5	

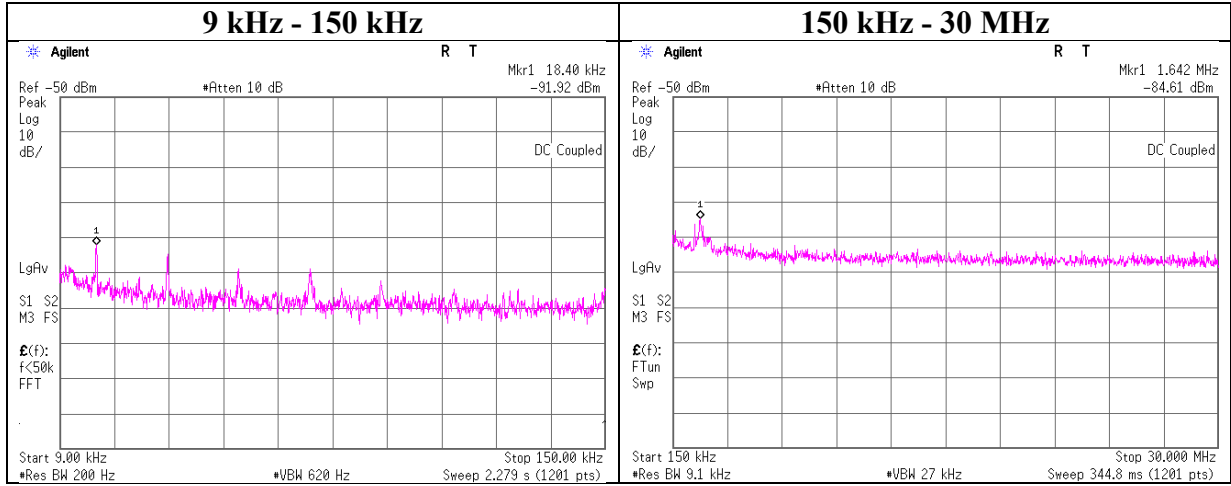
$$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$$

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

N: Number of output

## Conducted Spurious Emission (BT2)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 1M-PHY 2402 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-91.9	0.60	9.8	5.8	1	-75.8	300	6.0	-14.5	42.3	56.8	
1642.00	-84.6	0.60	9.8	5.8	1	-68.5	30	6.0	12.8	23.2	10.4	

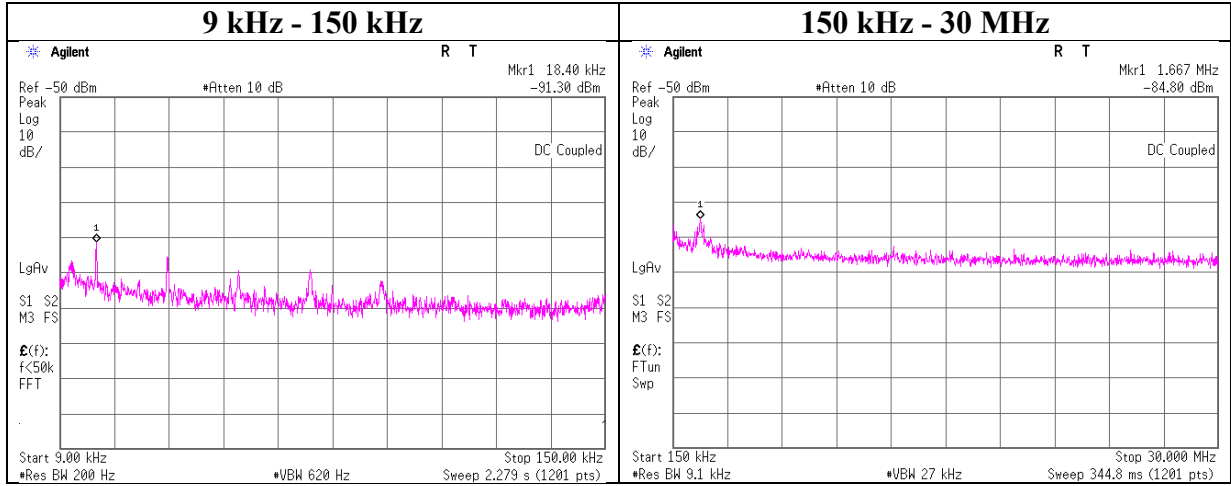
$$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$$

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

N: Number of output

## Conducted Spurious Emission (BT2)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 1M-PHY 2440 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-91.3	0.60	9.8	5.8	1	-75.2	300	6.0	-13.9	42.3	56.2	
1667.00	-84.8	0.60	9.8	5.8	1	-68.7	30	6.0	12.6	23.1	10.5	

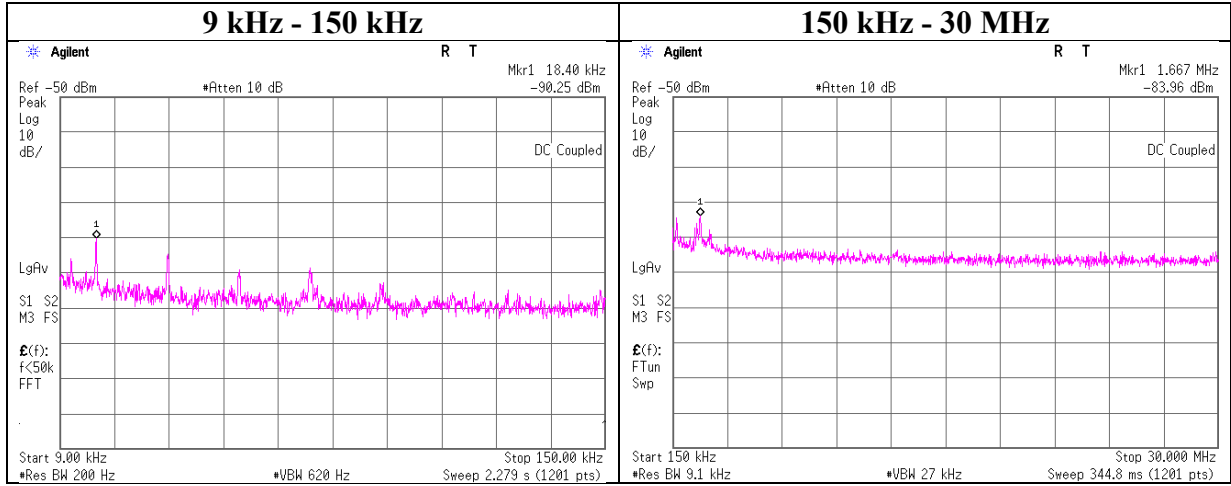
$$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$$

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

N: Number of output

## Conducted Spurious Emission (BT2)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 1M-PHY 2480 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-90.3	0.60	9.8	5.8	1	-74.1	300	6.0	-12.8	42.3	55.1	
1667.00	-84.0	0.60	9.8	5.8	1	-67.8	30	6.0	13.4	23.1	9.7	

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

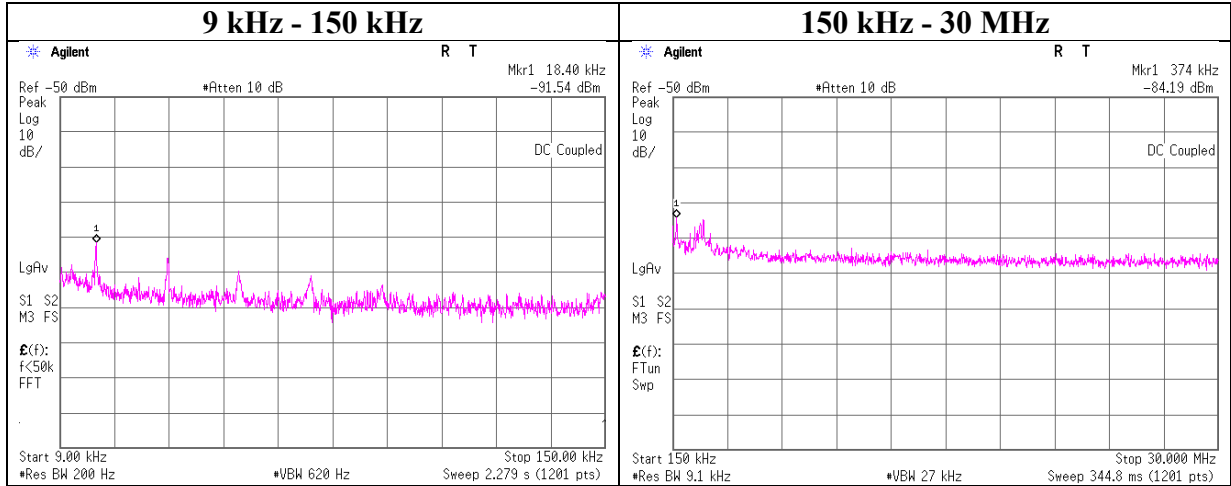
$\text{EIRP [dBm]} = \text{Reading [dBm]} + \text{Cable loss [dB]} + \text{Attenuator Loss [dB]} + \text{Antenna gain [dBi]} + 10 * \log(N)$

N: Number of output



## Conducted Spurious Emission (BT2)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 2M-PHY 2402 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-91.5	0.60	9.8	5.8	1	-75.4	300	6.0	-14.1	42.3	56.4	
374.00	-84.2	0.60	9.8	5.8	1	-68.0	300	6.0	-6.8	16.1	22.9	

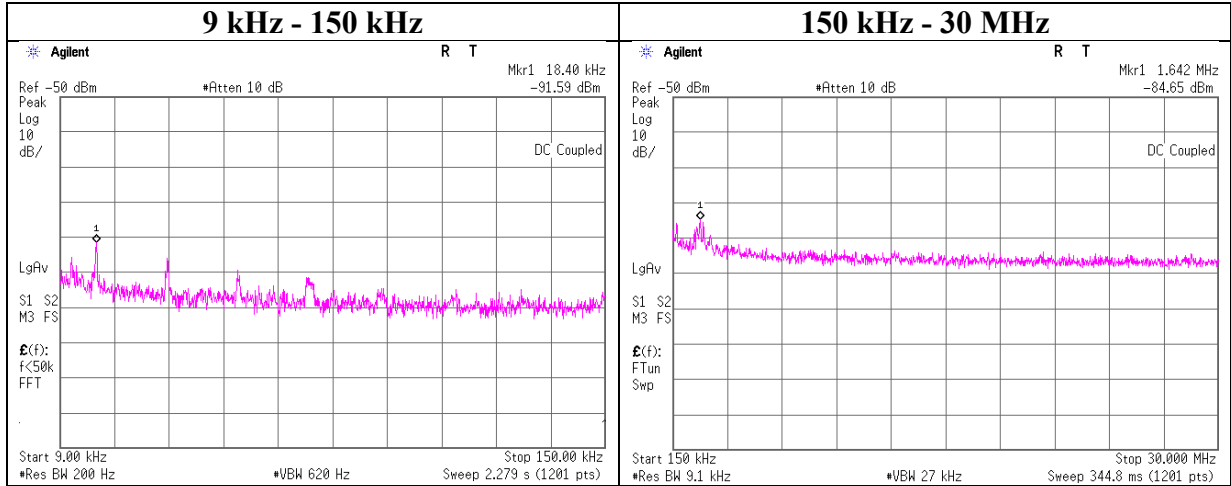
$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$

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

N: Number of output

## Conducted Spurious Emission (BT2)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 2M-PHY 2440 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-91.6	0.60	9.8	5.8	1	-75.4	300	6.0	-14.2	42.3	56.5	
1642.00	-84.7	0.60	9.8	5.8	1	-68.5	30	6.0	12.8	23.2	10.4	

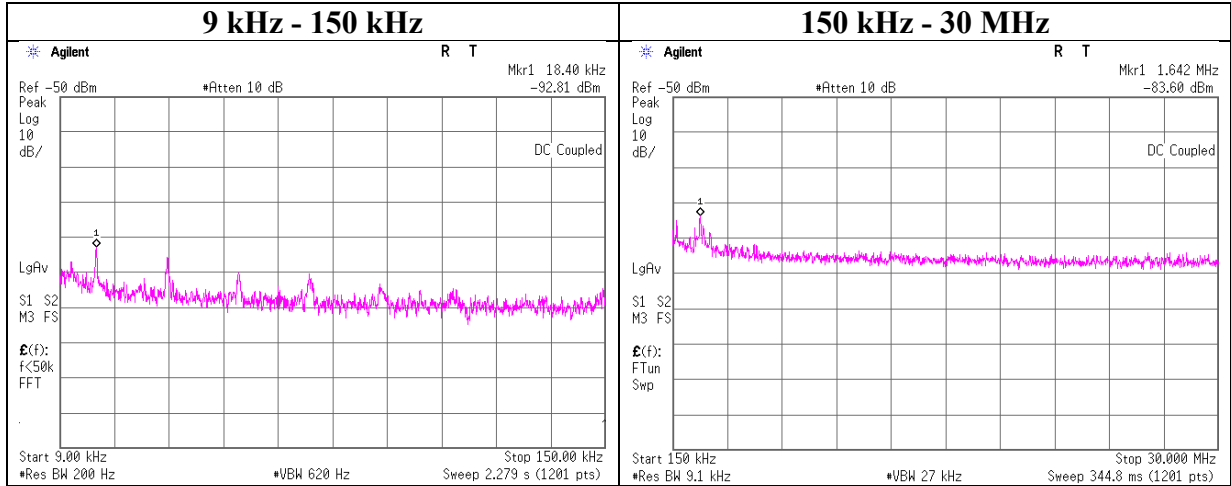
$$E \text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8 \text{ [dBuV/m]}$$

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

N: Number of output

## Conducted Spurious Emission (BT2)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx BT LE 2M-PHY 2480 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [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
18.40	-92.8	0.60	9.8	5.8	1	-76.7	300	6.0	-15.4	42.3	57.7	
1642.00	-83.6	0.60	9.8	5.8	1	-67.5	30	6.0	13.8	23.2	9.4	

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

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

N: Number of output

**Power Density**  
**(WLAN)**

Test place                    Ise EMC Lab. No.8 Measurement Room  
Date                            January 28, 2022  
Temperature / Humidity      24 deg. C / 30 % RH  
Engineer                      Takafumi Noguchi  
Mode                            Tx 11b

Antenna 1 + Antenna 2

Freq. [MHz]	Antenna 1 Result [mW]	Antenna 2 Result [mW]	Result		Limit [dBm / 3 kHz]	Margin [dB]
			[dBm / 3 kHz]	[mW / 3 kHz]		
2412	0.041	0.043	-10.77	0.084	8.00	18.77
2437	0.037	0.048	-10.72	0.085	8.00	18.72
2462	0.036	0.042	-11.05	0.079	8.00	19.05

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-24.43	0.60	9.98	-13.85	0.041	8.00	21.85
2437	-24.89	0.60	9.98	-14.31	0.037	8.00	22.31
2462	-25.00	0.60	9.98	-14.42	0.036	8.00	22.42

Antenna 2

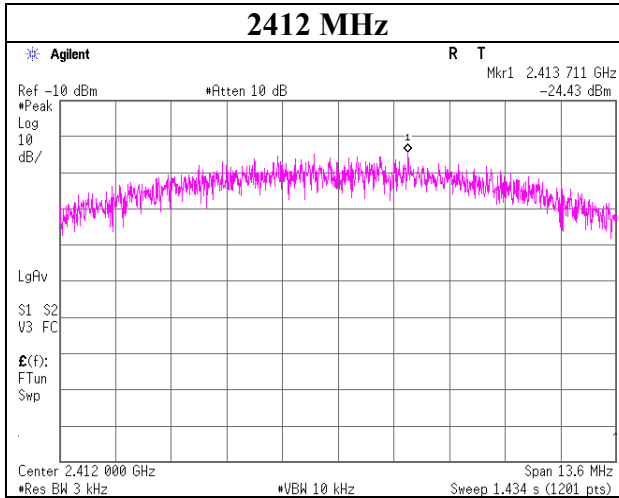
Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-24.21	0.52	9.98	-13.71	0.043	8.00	21.71
2437	-23.72	0.52	9.98	-13.22	0.048	8.00	21.22
2462	-24.23	0.52	9.98	-13.73	0.042	8.00	21.73

Sample Calculation:

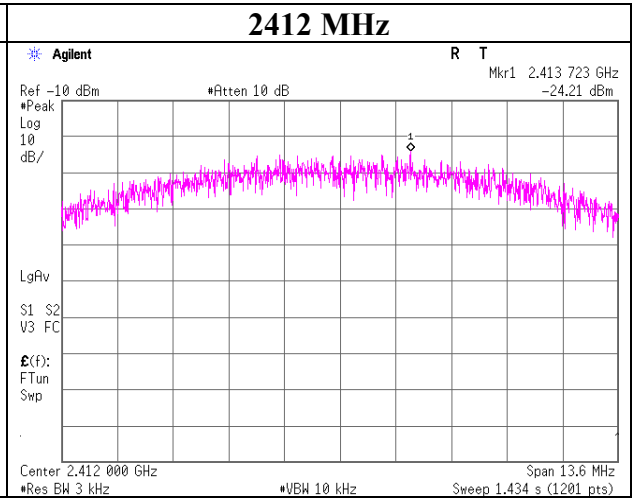
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

**Power Density**  
(WLAN)

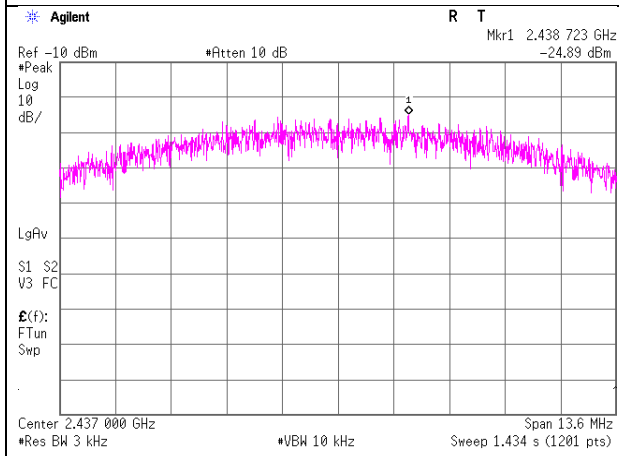
**11b Antenna 1**  
**2412 MHz**



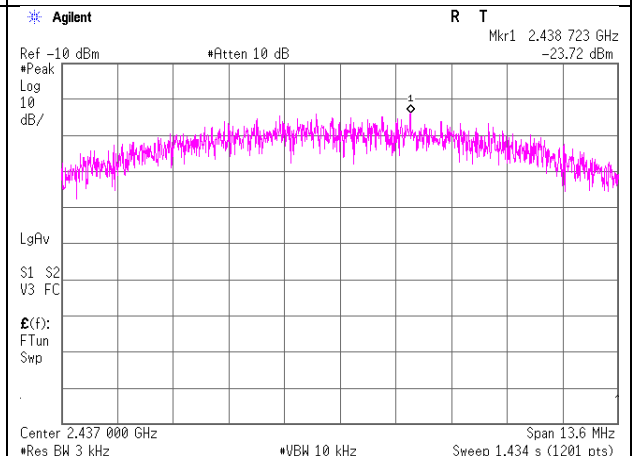
**11b Antenna 2**  
**2412 MHz**



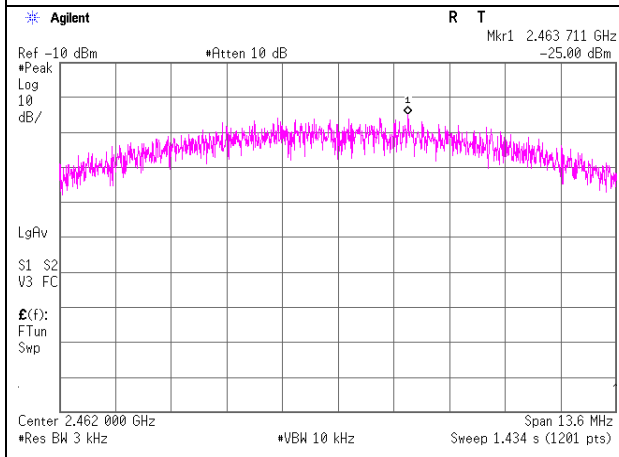
**2437 MHz**



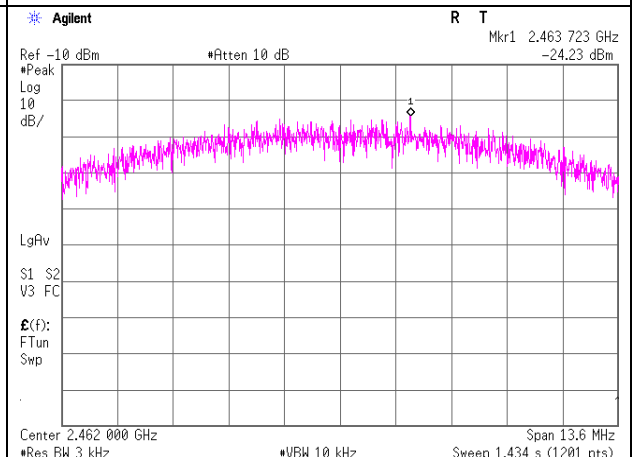
**2437 MHz**



**2462 MHz**



**2462 MHz**



**Power Density**  
**(WLAN)**

Test place	Ise EMC Lab. No.8 Measurement Room
Date	January 28, 2022
Temperature / Humidity	24 deg. C / 30 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11g

Antenna 1 + Antenna 2

Freq. [MHz]	Antenna 1 Result [mW]	Antenna 2 Result [mW]	Result		Limit [dBm / 3 kHz]	Margin [dB]
			[dBm / 3 kHz]	[mW / 3 kHz]		
2412	0.013	0.015	-15.49	0.028	8.00	23.49
2437	0.015	0.017	-14.91	0.032	8.00	22.91
2462	0.014	0.018	-14.97	0.032	8.00	22.97

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-29.52	0.60	9.98	-18.94	0.013	8.00	26.94
2437	-28.75	0.60	9.98	-18.17	0.015	8.00	26.17
2462	-29.21	0.60	9.98	-18.63	0.014	8.00	26.63

Antenna 2

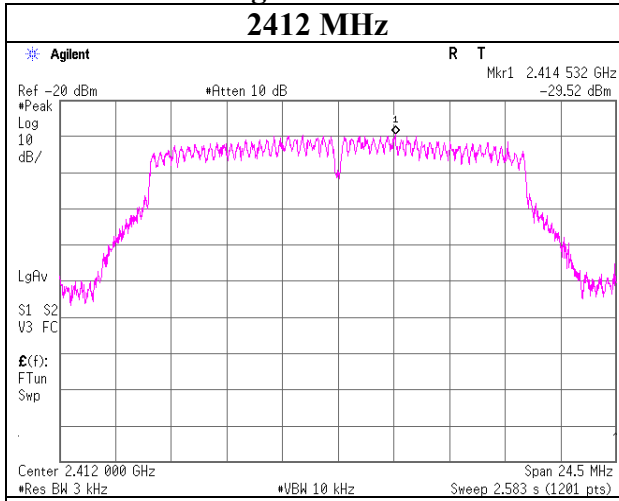
Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-28.60	0.52	9.98	-18.10	0.015	8.00	26.10
2437	-28.18	0.52	9.98	-17.68	0.017	8.00	25.68
2462	-27.91	0.52	9.98	-17.41	0.018	8.00	25.41

Sample Calculation:

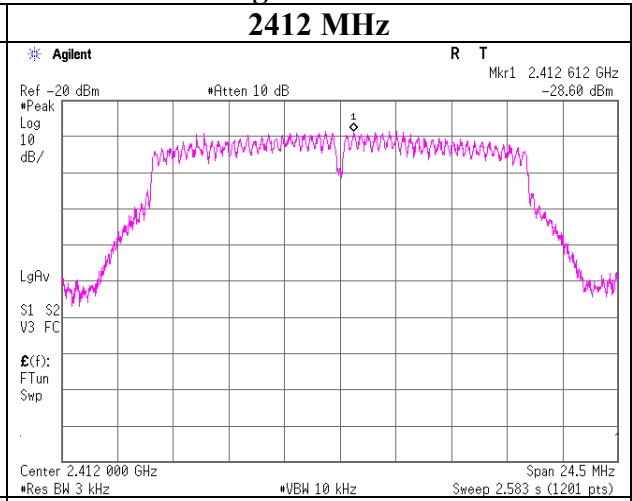
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

**Power Density**  
**(WLAN)**

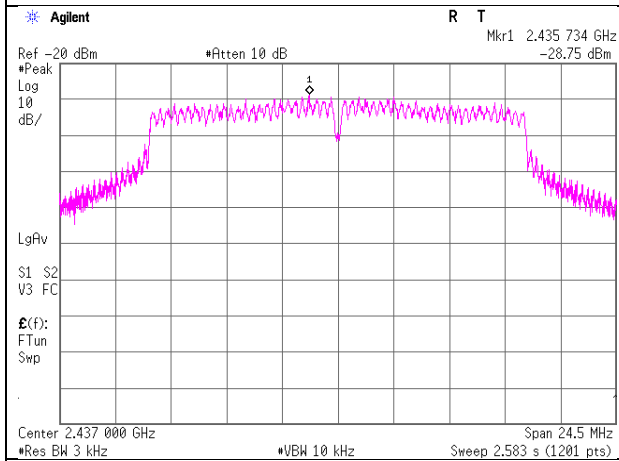
**11g Antenna 1**  
**2412 MHz**



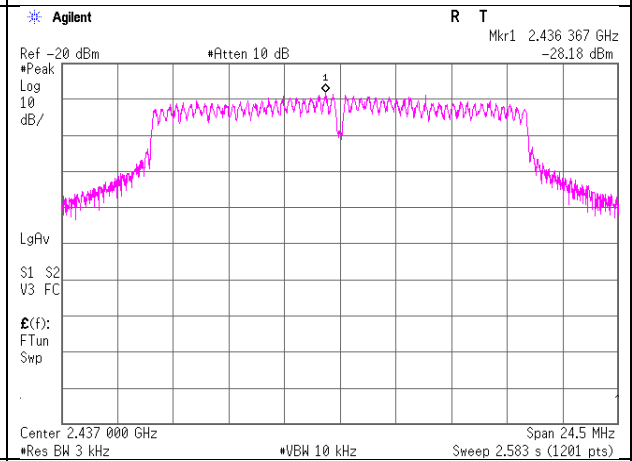
**11g Antenna 2**  
**2412 MHz**



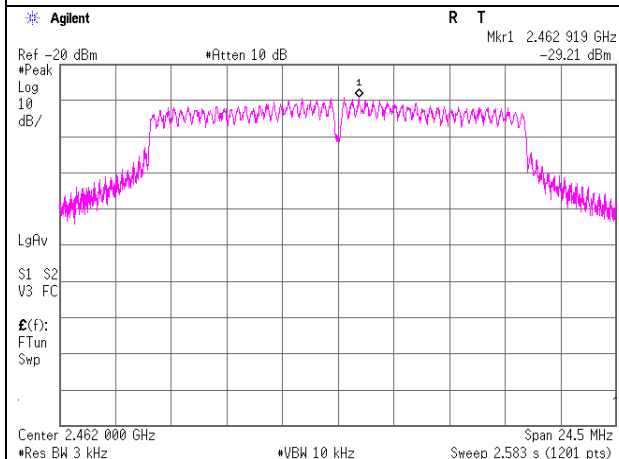
**2437 MHz**



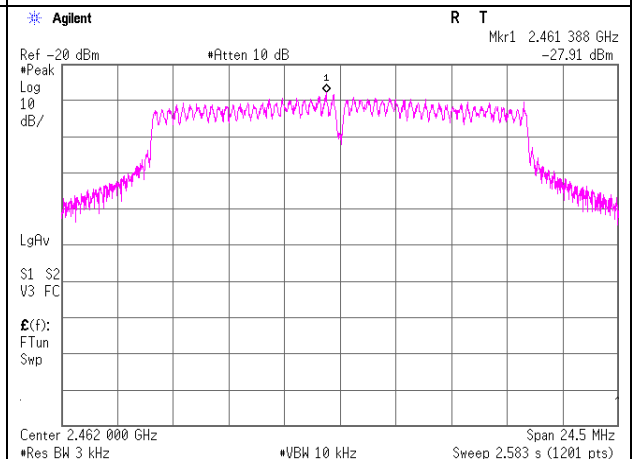
**2437 MHz**



**2462 MHz**



**2462 MHz**



**Power Density**  
**(WLAN)**

Test place	Ise EMC Lab. No.8 Measurement Room
Date	January 28, 2022
Temperature / Humidity	24 deg. C / 30 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11n-20

Antenna 1 + Antenna 2

Freq. [MHz]	Antenna 1	Antenna 2	Result		Limit [dBm / 3 kHz]	Margin [dB]
	Result [mW]	Result [mW]	[dBm / 3 kHz]	[mW / 3 kHz]		
2412	0.055	0.139	-7.12	0.194	8.00	15.12
2437	0.050	0.158	-6.82	0.208	8.00	14.82
2462	0.051	0.153	-6.89	0.205	8.00	14.89

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-23.15	0.60	9.98	-12.57	0.055	8.00	20.57
2437	-23.59	0.60	9.98	-13.01	0.050	8.00	21.01
2462	-23.49	0.60	9.98	-12.91	0.051	8.00	20.91

Antenna 2

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-19.08	0.52	9.98	-8.58	0.139	8.00	16.58
2437	-18.52	0.52	9.98	-8.02	0.158	8.00	16.02
2462	-18.64	0.52	9.98	-8.14	0.153	8.00	16.14

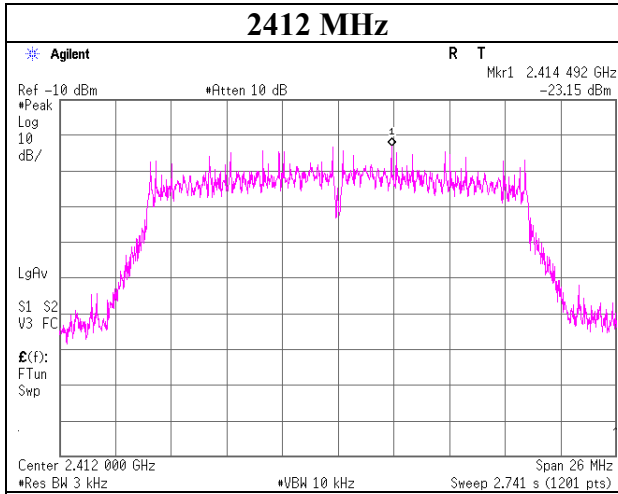
Sample Calculation:

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

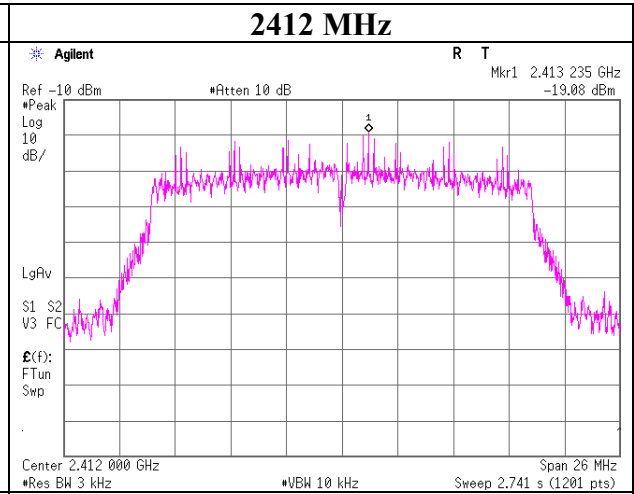


### Power Density (WLAN)

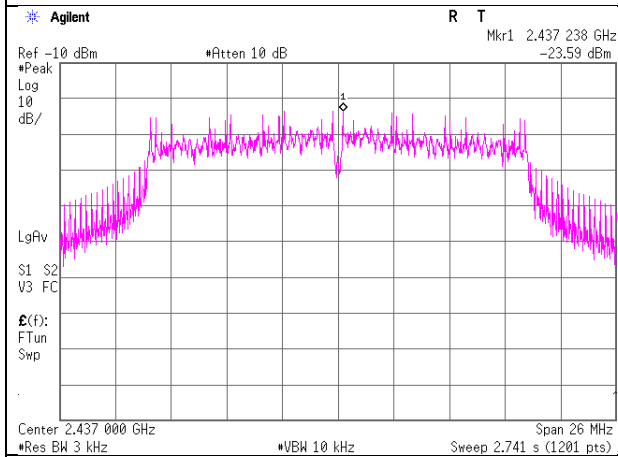
11n-20 Antenna 1  
2412 MHz



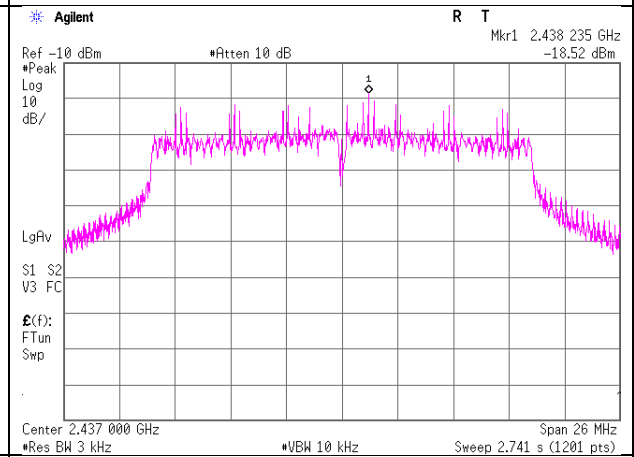
11n-20 Antenna 2  
2412 MHz



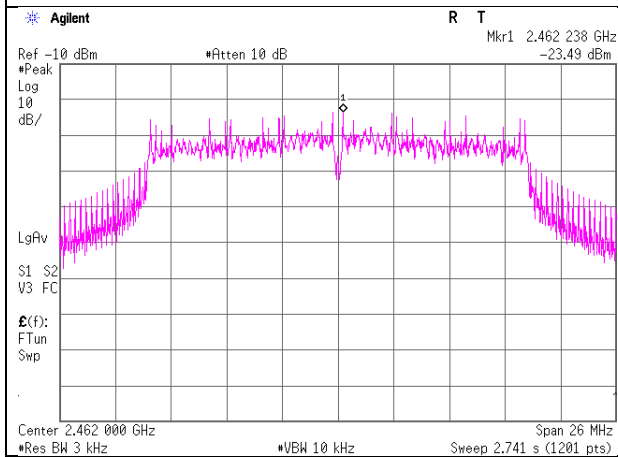
2437 MHz



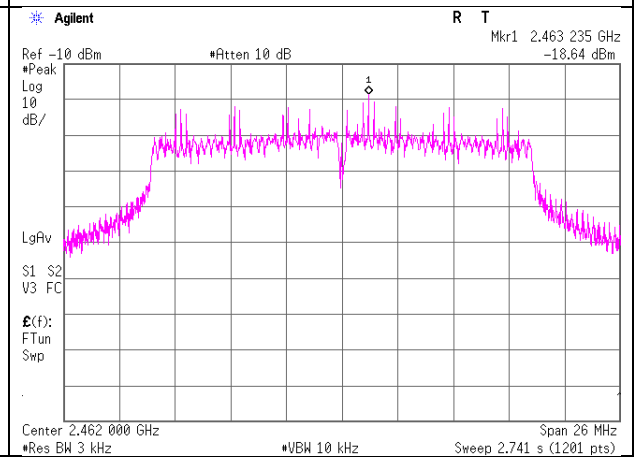
2437 MHz



2462 MHz



2462 MHz



**Power Density**  
**(WLAN)**

Test place	Ise EMC Lab. No.8 Measurement Room
Date	January 28, 2022
Temperature / Humidity	24 deg. C / 30 % RH
Engineer	Takafumi Noguchi
Mode	Tx 11ax-20 (OFDM)

Antenna 1 + Antenna 2

Freq. [MHz]	Antenna 1	Antenna 2	Result		Limit [dBm / 3 kHz]	Margin [dB]
	Result [mW]	Result [mW]	[dBm / 3 kHz]	[mW / 3 kHz]		
2412	0.019	0.022	-13.85	0.041	8.00	21.85
2437	0.021	0.022	-13.69	0.043	8.00	21.69
2462	0.016	0.021	-14.30	0.037	8.00	22.30

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-27.70	0.60	9.98	-17.12	0.019	8.00	25.12
2437	-27.38	0.60	9.98	-16.80	0.021	8.00	24.80
2462	-28.53	0.60	9.98	-17.95	0.016	8.00	25.95

Antenna 2

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-27.12	0.52	9.98	-16.62	0.022	8.00	24.62
2437	-27.10	0.52	9.98	-16.60	0.022	8.00	24.60
2462	-27.25	0.52	9.98	-16.75	0.021	8.00	24.75

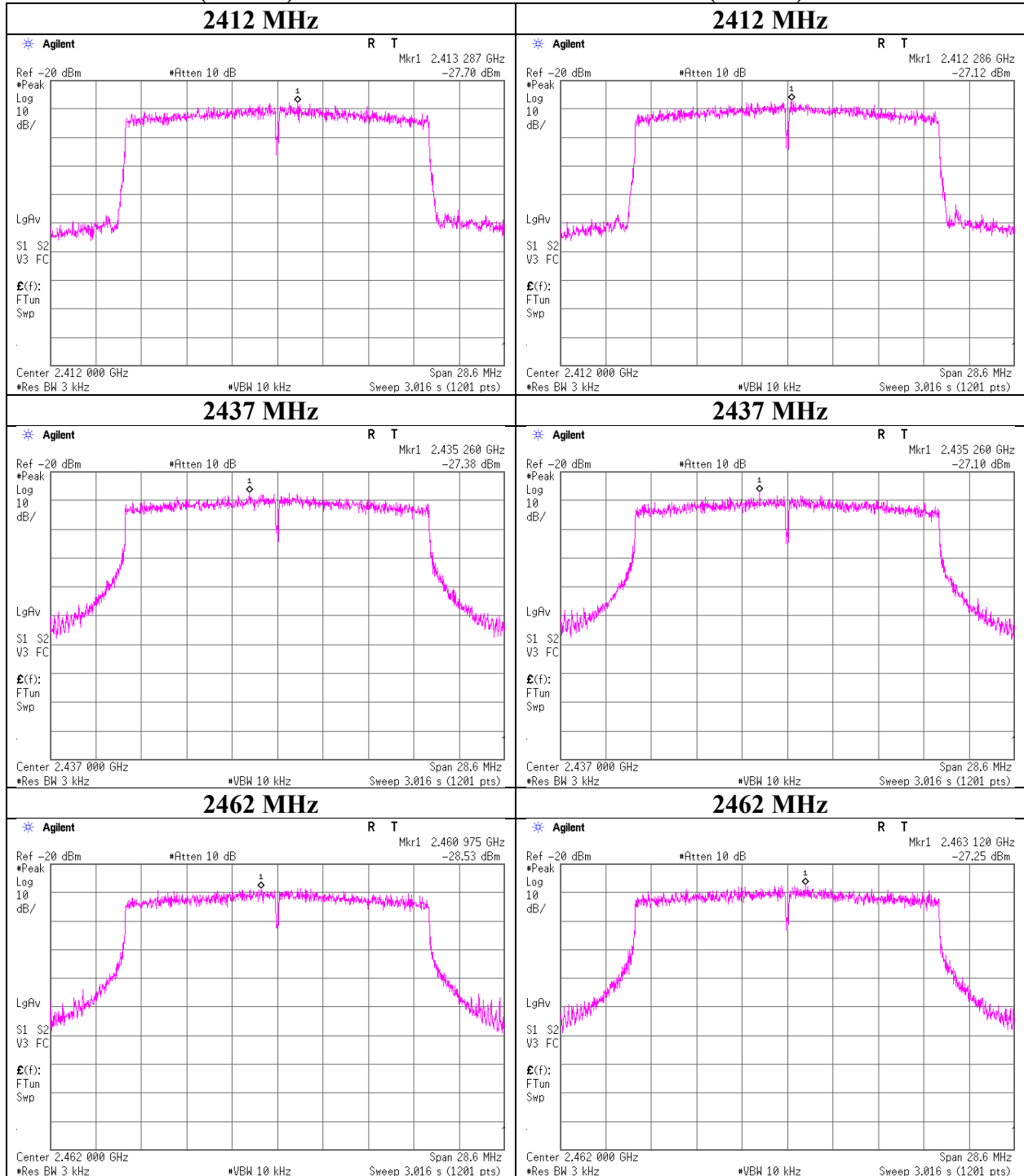
Sample Calculation:

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

**Power Density**  
**(WLAN)**

**11ax-20 (OFDM) Antenna 1**

**11ax-20 (OFDM) Antenna 2**



**Power Density**  
(WLAN)

Test place Ise EMC Lab. No.8 Measurement Room  
Date February 1, 2022  
Temperature / Humidity 22 deg. C / 35 % RH  
Engineer Ken Fujita  
Mode Tx 11ax-20 (26-tone RU)

Antenna 1 + Antenna 2

RU Type	Freq. [MHz]	RU Index	Antenna 1	Antenna 2	Result		Limit [dBm / 3 kHz]	Margin [dB]
			Result [mW]	Result [mW]	[dBm / 3 kHz]	[mW / 3 kHz]		
26-tone RU	2412	0	0.016	0.019	-14.62	0.034	8.00	22.62
		4	0.016	0.023	-13.99	0.040	8.00	21.99
		8	0.021	0.017	-14.19	0.038	8.00	22.19
	2437	0	0.022	0.018	-13.95	0.040	8.00	21.95
		4	0.019	0.018	-14.28	0.037	8.00	22.28
		8	0.016	0.018	-14.70	0.034	8.00	22.70
	2462	0	0.015	0.018	-14.82	0.033	8.00	22.82
		4	0.016	0.019	-14.50	0.036	8.00	22.50
		8	0.015	0.024	-14.08	0.039	8.00	22.08

Sample Calculation:

Result = Antenna 1 + Antenna 2

Antenna 1

RU Type	Freq. [MHz]	RU Index	Reading	Cable	Atten.	Result		Limit [dBm / 3 kHz]	Margin [dB]
			[dBm]	Loss [dB]	Loss [dB]	[dBm / 3 kHz]	[mW / 3 kHz]		
26-tone RU	2412	0	-28.65	0.60	10.04	-18.01	0.016	8.00	26.01
		4	-28.48	0.60	10.04	-17.84	0.016	8.00	25.84
		8	-27.35	0.60	10.04	-16.71	0.021	8.00	24.71
	2437	0	-27.12	0.60	10.04	-16.48	0.022	8.00	24.48
		4	-27.80	0.60	10.04	-17.16	0.019	8.00	25.16
		8	-28.66	0.60	10.04	-18.02	0.016	8.00	26.02
	2462	0	-28.91	0.60	10.04	-18.27	0.015	8.00	26.27
		4	-28.56	0.60	10.04	-17.92	0.016	8.00	25.92
		8	-28.83	0.60	10.04	-18.19	0.015	8.00	26.19

Antenna 2

RU Type	Freq. [MHz]	RU Index	Reading	Cable	Atten.	Result		Limit [dBm / 3 kHz]	Margin [dB]
			[dBm]	Loss [dB]	Loss [dB]	[dBm / 3 kHz]	[mW / 3 kHz]		
26-tone RU	2412	0	-27.85	0.52	10.04	-17.29	0.019	8.00	25.29
		4	-26.86	0.52	10.04	-16.30	0.023	8.00	24.30
		8	-28.32	0.52	10.04	-17.76	0.017	8.00	25.76
	2437	0	-28.07	0.52	10.04	-17.51	0.018	8.00	25.51
		4	-27.98	0.52	10.04	-17.42	0.018	8.00	25.42
		8	-27.99	0.52	10.04	-17.43	0.018	8.00	25.43
	2462	0	-27.99	0.52	10.04	-17.43	0.018	8.00	25.43
		4	-27.69	0.52	10.04	-17.13	0.019	8.00	25.13
		8	-26.78	0.52	10.04	-16.22	0.024	8.00	24.22

Sample Calculation:

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

\*The equipment and cables were not used for factor 0 dB of the data sheets.

**Power Density**  
(WLAN)

11ax-20 26-tone RU 2412 MHz

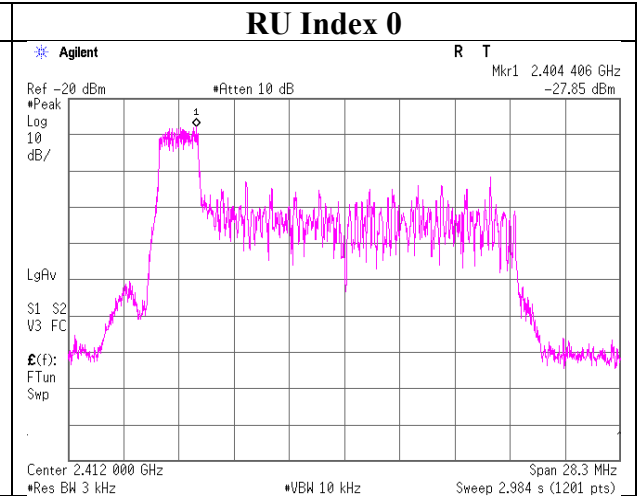
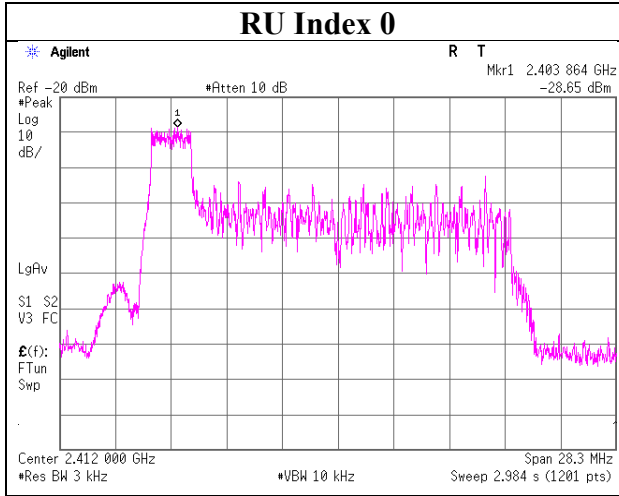
11ax-20 26-tone RU 2412 MHz

Antenna 1

Antenna 2

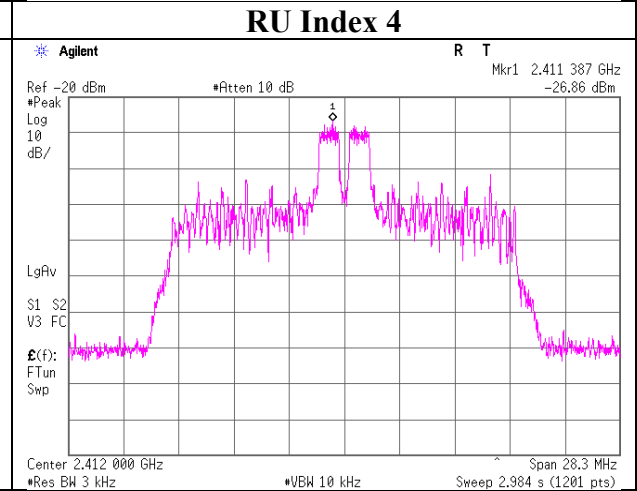
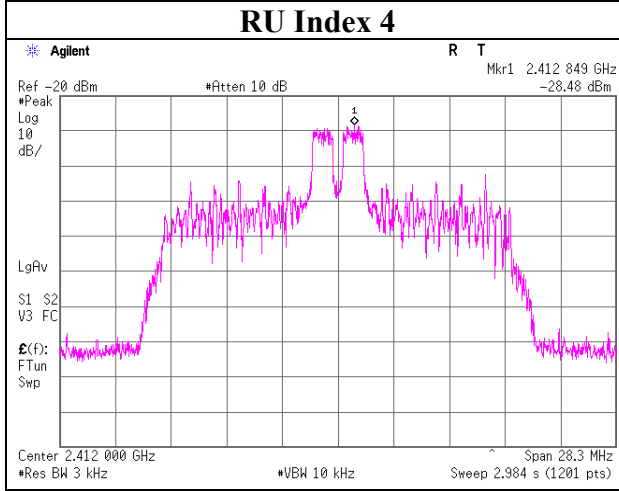
RU Index 0

RU Index 0



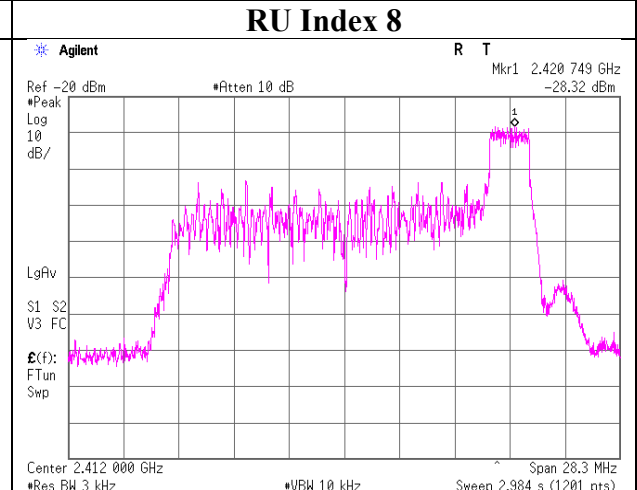
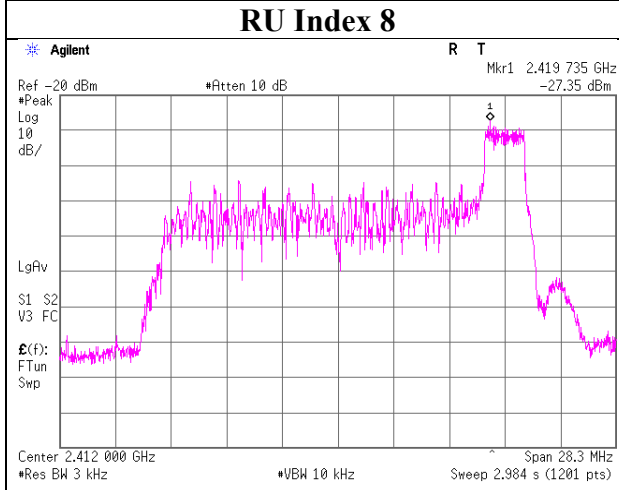
RU Index 4

RU Index 4



RU Index 8

RU Index 8



**Power Density**  
**(WLAN)**

11ax-20 26-tone RU 2437 MHz

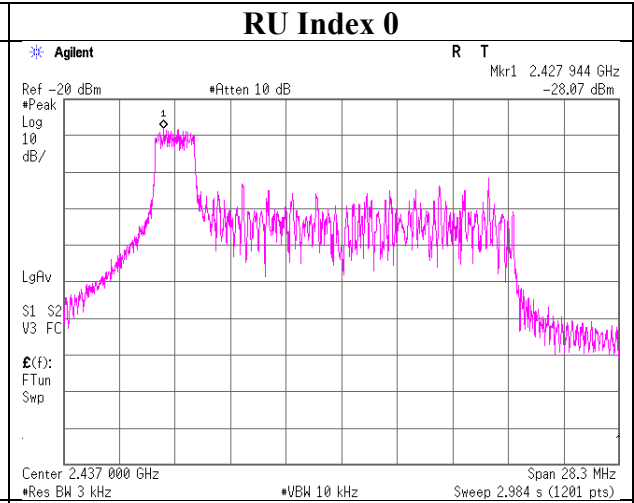
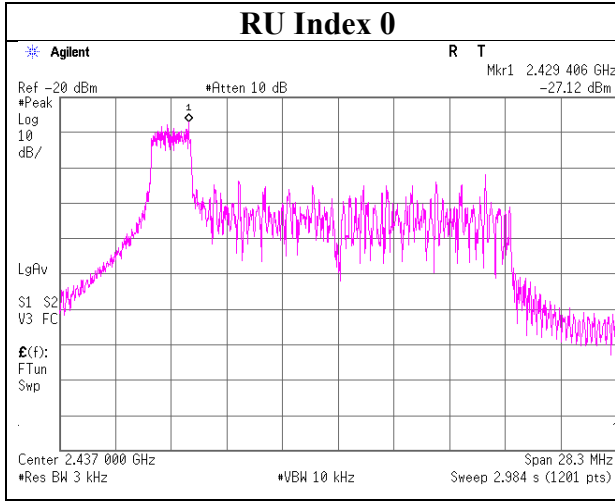
11ax-20 26-tone RU 2437 MHz

Antenna 1

Antenna 2

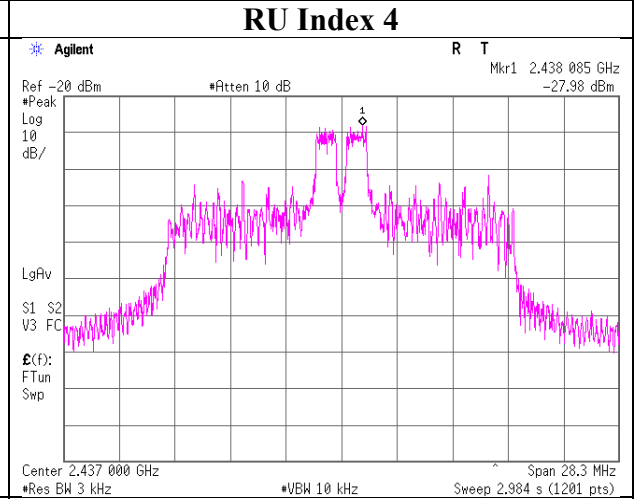
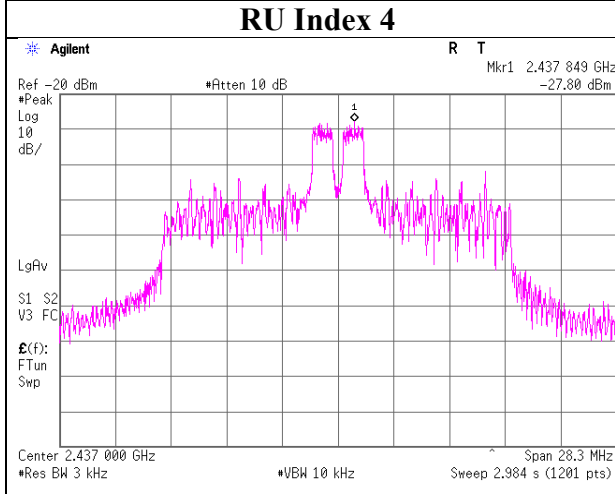
RU Index 0

RU Index 0



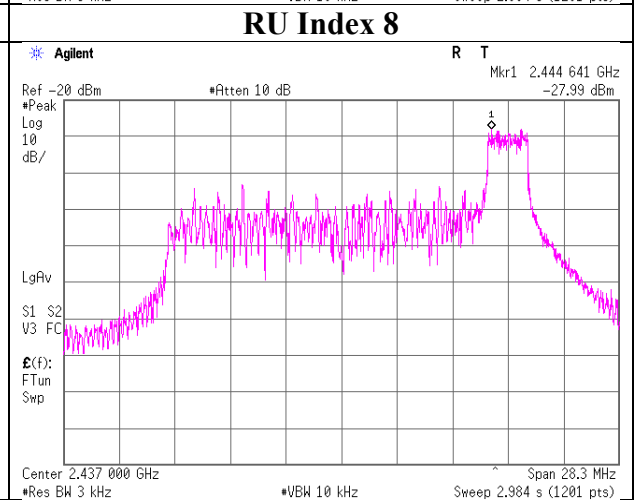
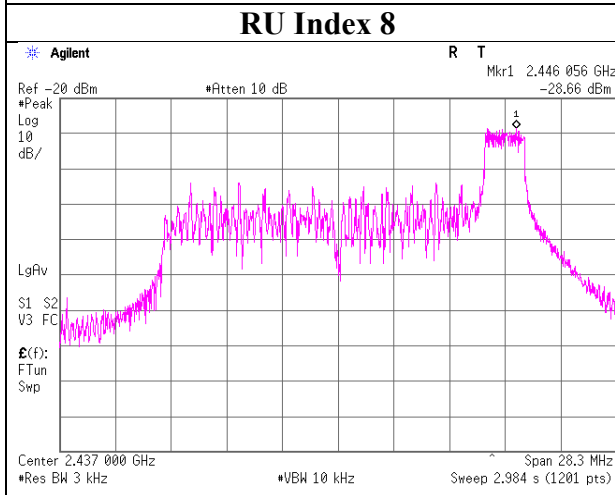
RU Index 4

RU Index 4



RU Index 8

RU Index 8



**Power Density**  
**(WLAN)**

11ax-20 26-tone RU 2462 MHz

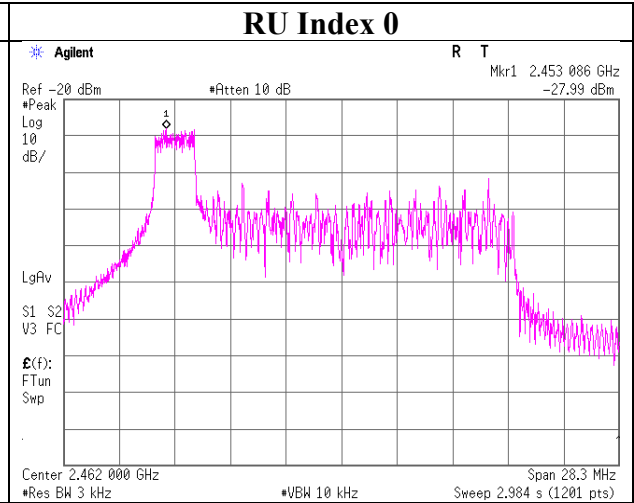
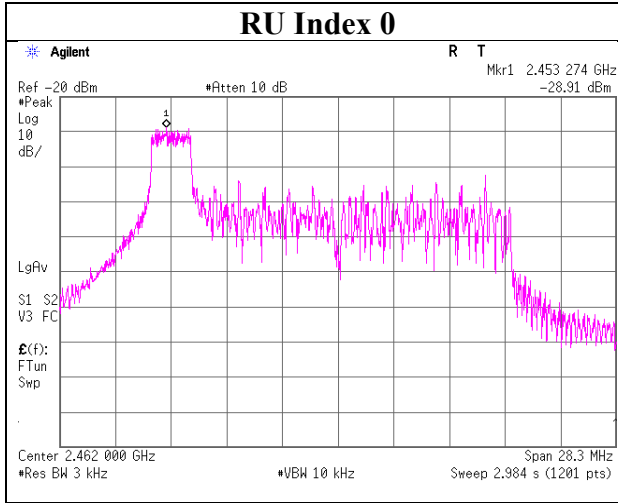
11ax-20 26-tone RU 2462 MHz

**Antenna 1**

**Antenna 2**

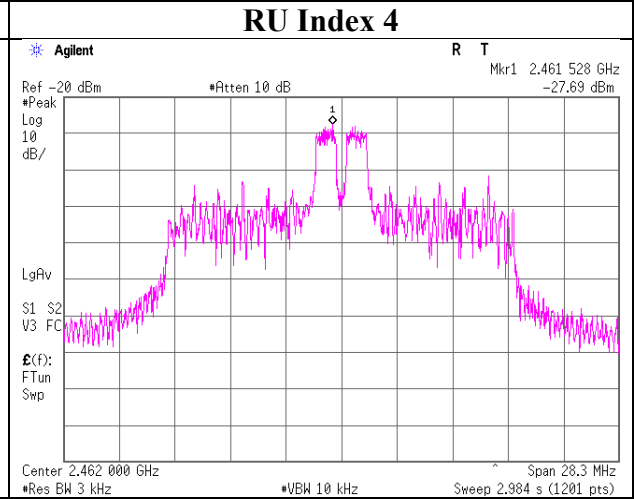
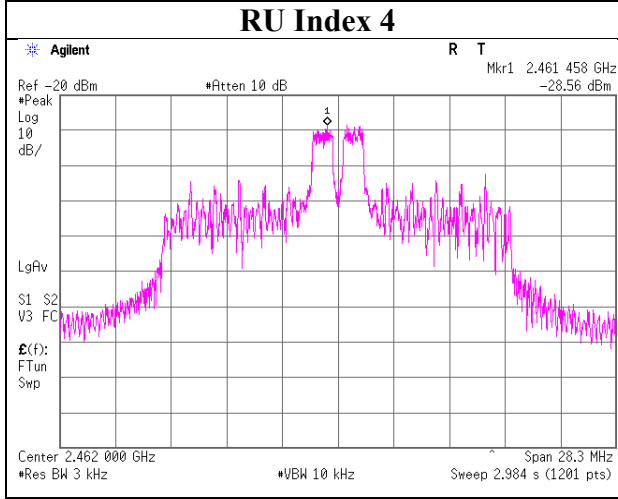
**RU Index 0**

**RU Index 0**



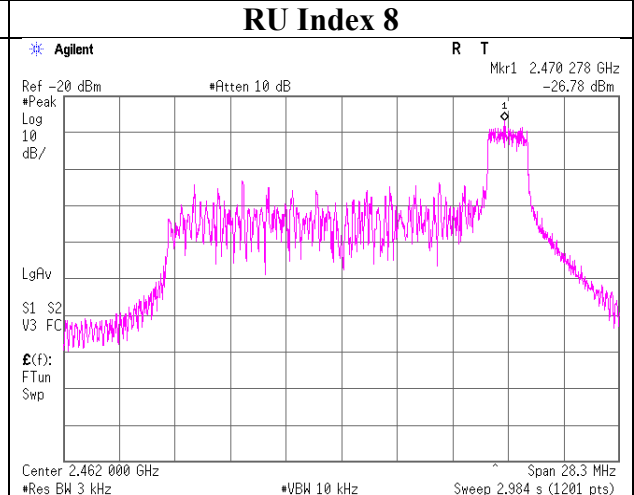
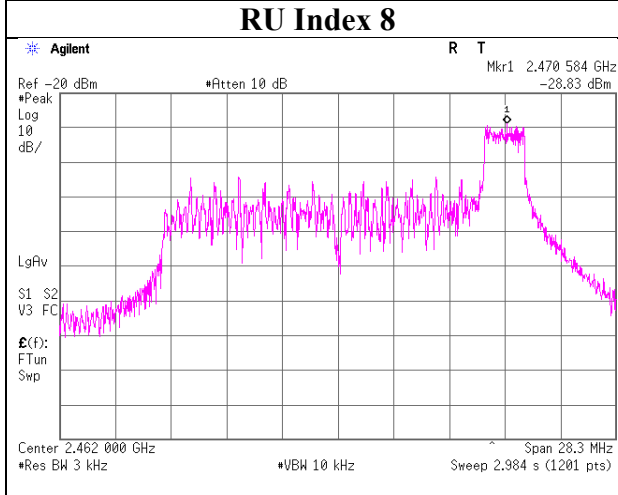
**RU Index 4**

**RU Index 4**



**RU Index 8**

**RU Index 8**



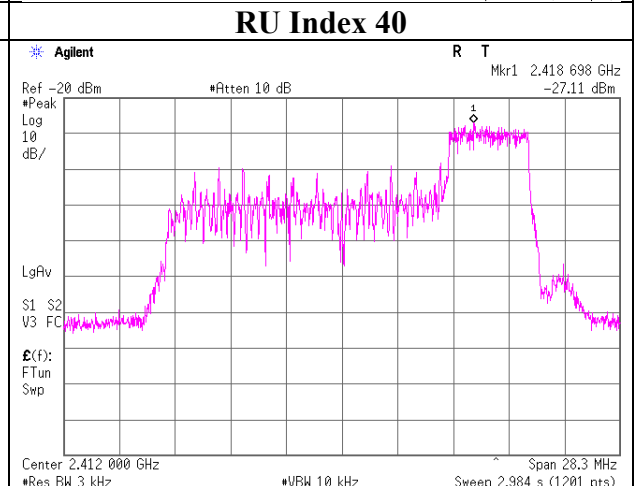
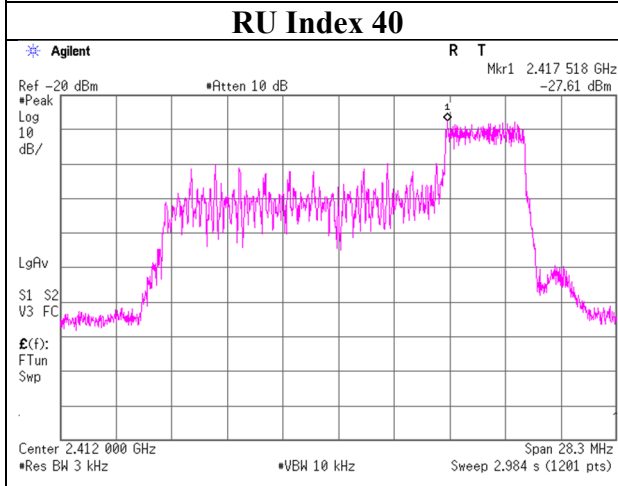
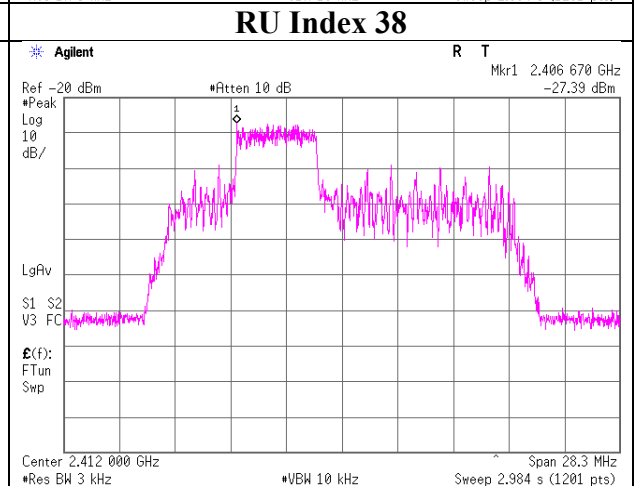
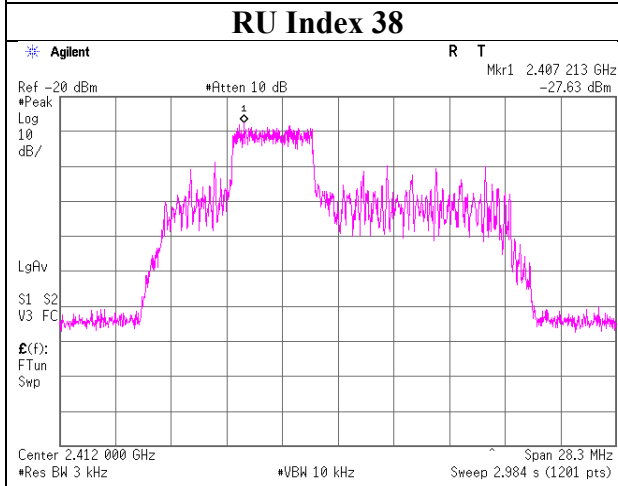
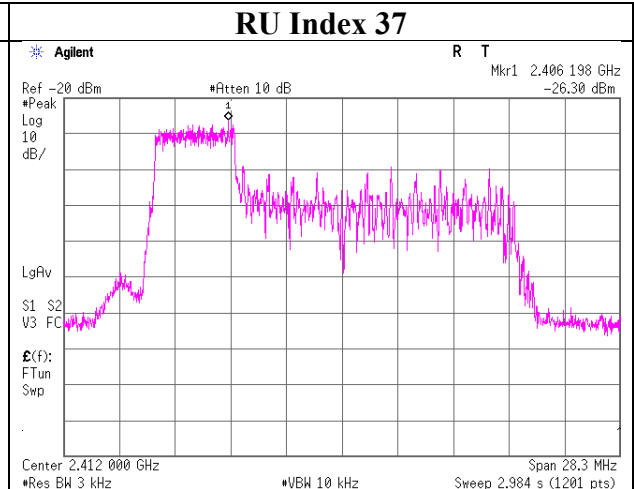
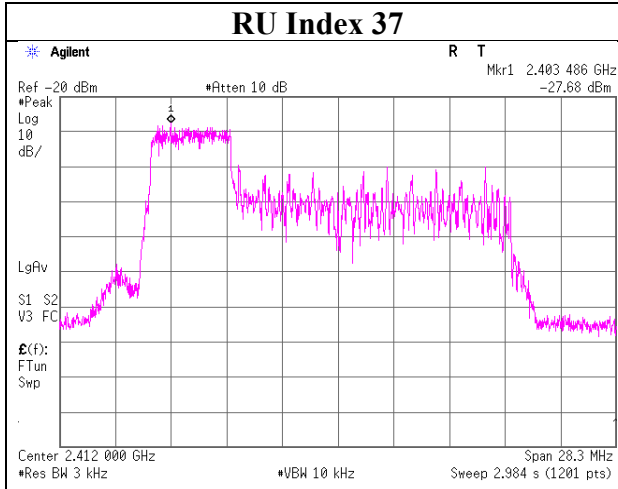




**Power Density**  
(WLAN)

**11ax-20 52-tone RU 2412 MHz**  
**Antenna 1**

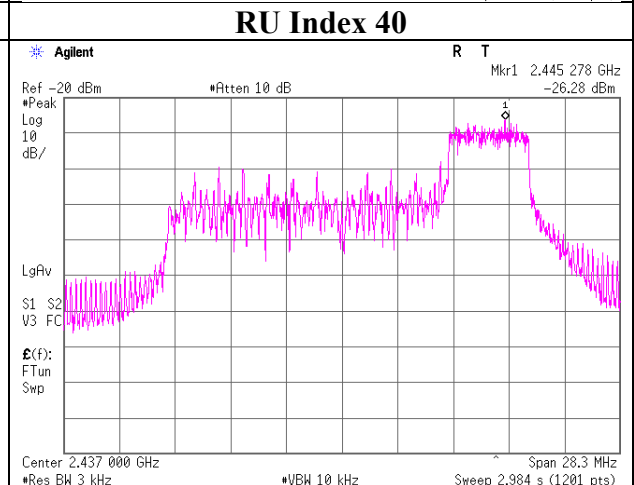
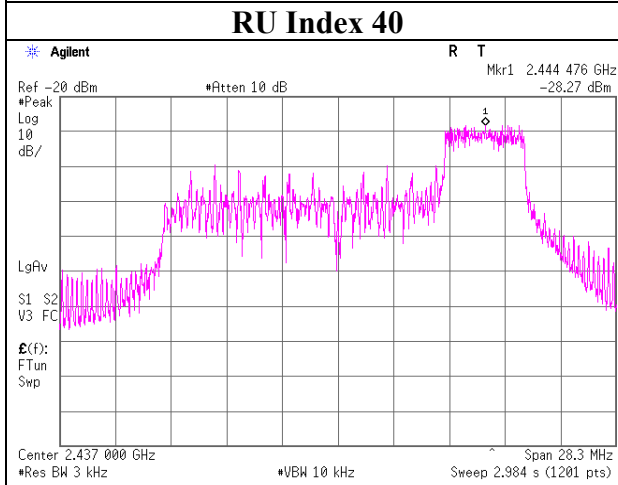
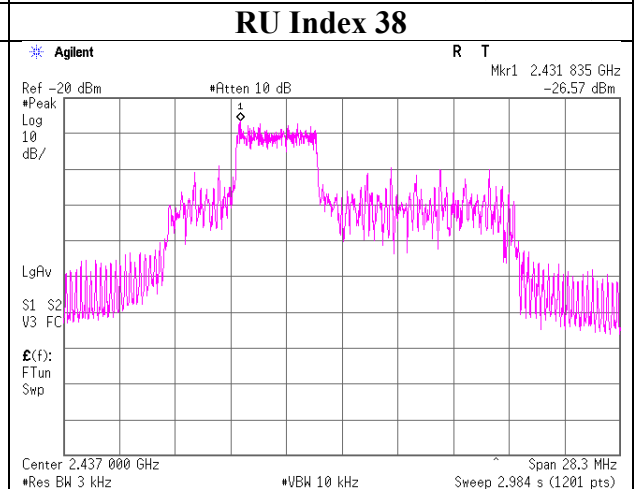
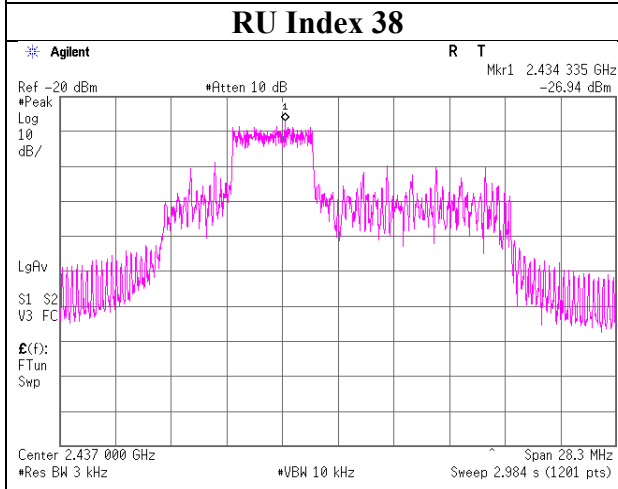
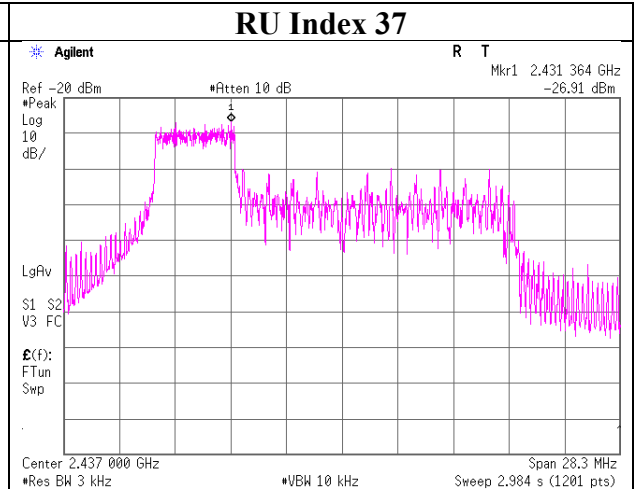
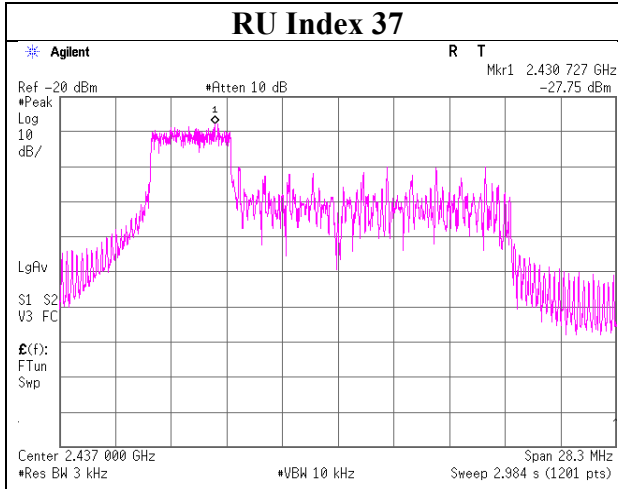
**11ax-20 52-tone RU 2412 MHz**  
**Antenna 2**



**Power Density**  
(WLAN)

**11ax-20 52-tone RU 2437 MHz**  
**Antenna 1**

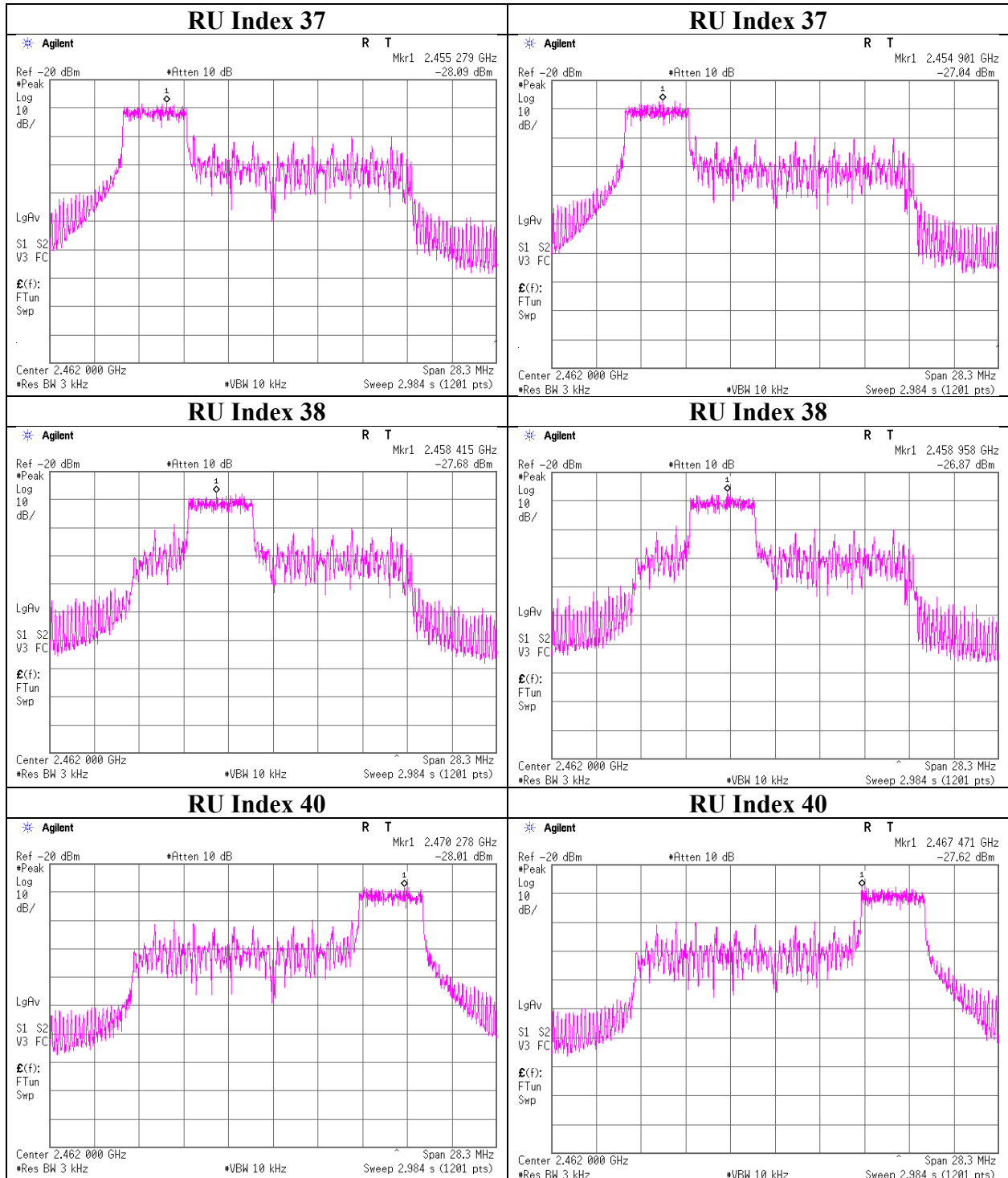
**11ax-20 52-tone RU 2437 MHz**  
**Antenna 2**



**Power Density**  
(WLAN)

**11ax-20 52-tone RU 2462 MHz**  
**Antenna 1**

**11ax-20 52-tone RU 2462 MHz**  
**Antenna 2**

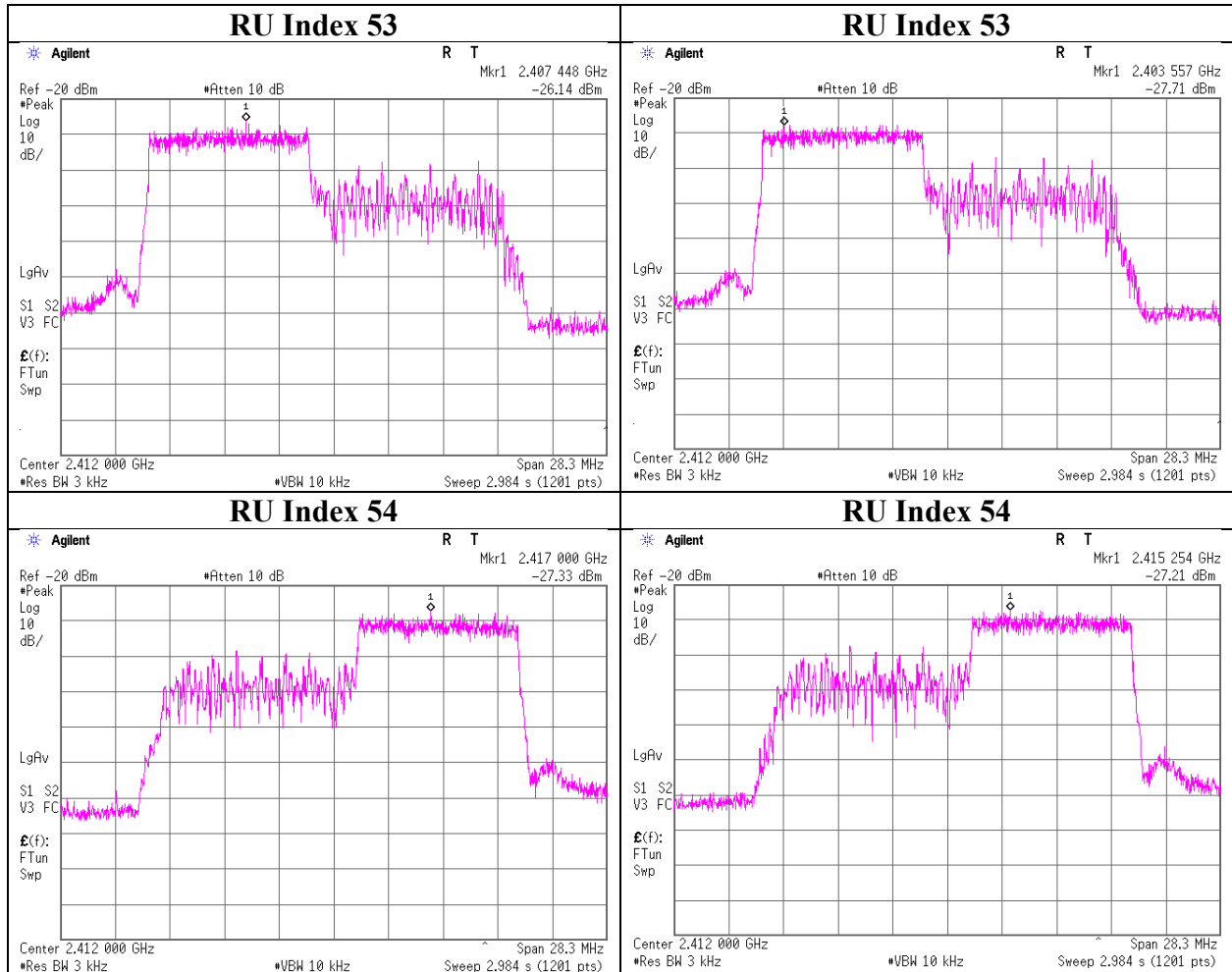




**Power Density**  
**(WLAN)**

**11ax-20 106-tone RU 2412 MHz**  
**Antenna 1**

**11ax-20 106-tone RU 2412 MHz**  
**Antenna 2**

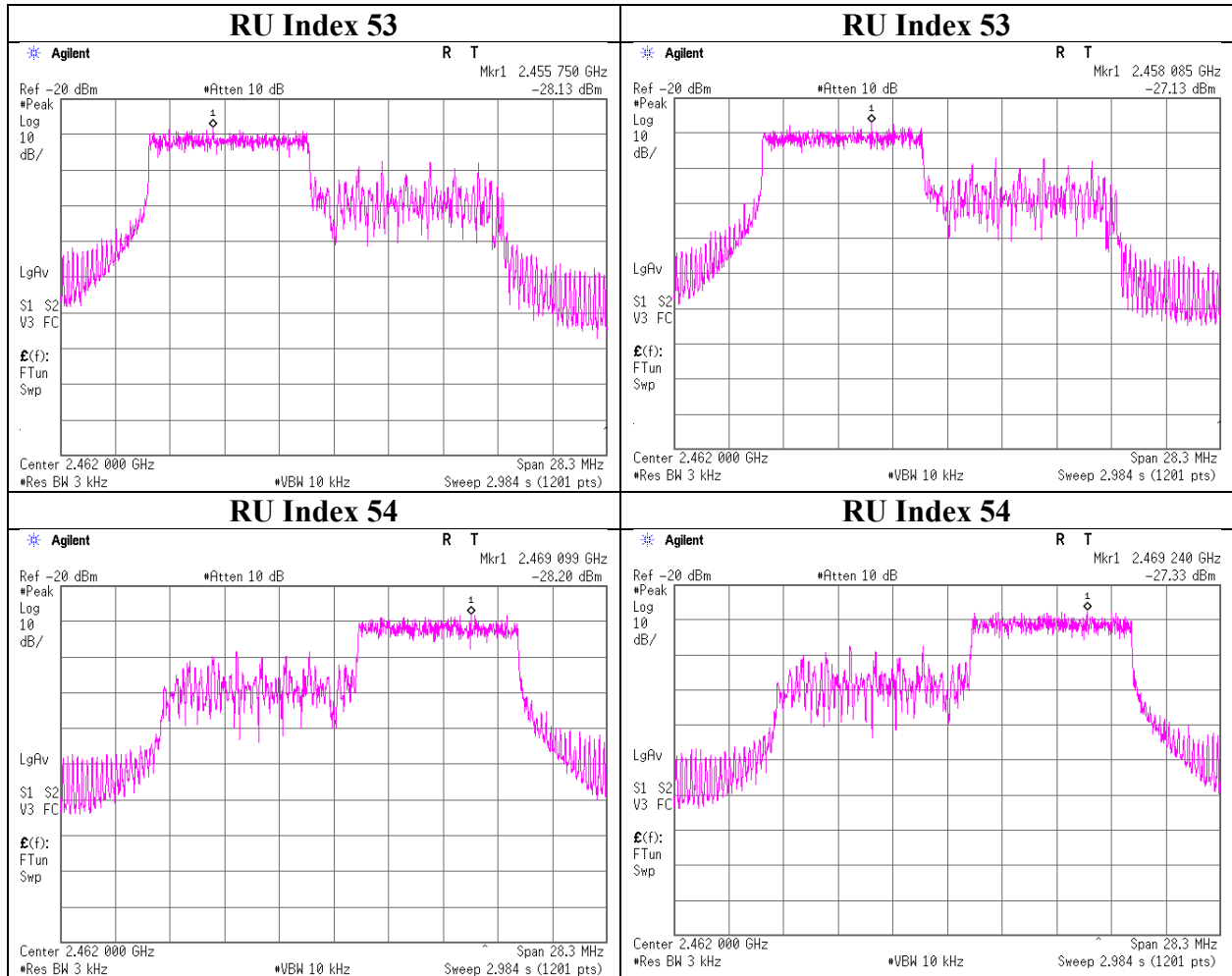




**Power Density**  
(WLAN)

**11ax-20 106-tone RU 2462 MHz**  
**Antenna 1**

**11ax-20 106-tone RU 2462 MHz**  
**Antenna 2**



**Power Density**  
(WLAN)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	February 1, 2022
Temperature / Humidity	22 deg. C / 35 % RH
Engineer	Ken Fujita
Mode	Tx 11ax-20 (242-tone RU)

Antenna 1 + Antenna 2

Freq. [MHz]	Antenna 1 Result [mW]	Antenna 2 Result [mW]	Result		Limit [dBm / 3 kHz]	Margin [dB]
			[dBm / 3 kHz]	[mW / 3 kHz]		
2412	0.018	0.020	-14.18	0.038	8.00	22.18
2437	0.017	0.025	-13.76	0.042	8.00	21.76
2462	0.018	0.026	-13.56	0.044	8.00	21.56

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-28.09	0.60	10.04	-17.45	0.018	8.00	25.45
2437	-28.29	0.60	10.04	-17.65	0.017	8.00	25.65
2462	-28.07	0.60	10.04	-17.43	0.018	8.00	25.43

Antenna 2

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit [dBm / 3 kHz]	Margin [dB]
				[dBm / 3 kHz]	[mW / 3 kHz]		
2412	-27.51	0.52	10.04	-16.95	0.020	8.00	24.95
2437	-26.60	0.52	10.04	-16.04	0.025	8.00	24.04
2462	-26.41	0.52	10.04	-15.85	0.026	8.00	23.85

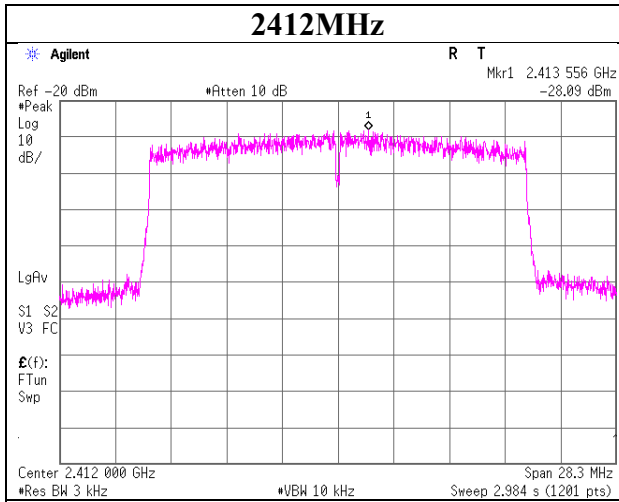
Sample Calculation:

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

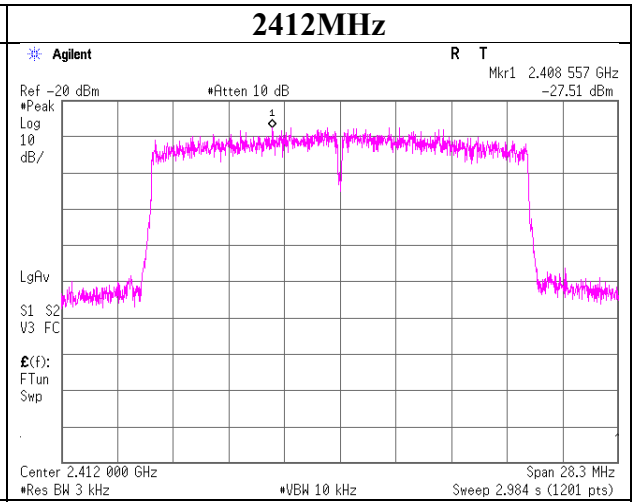


**Power Density**  
(WLAN)

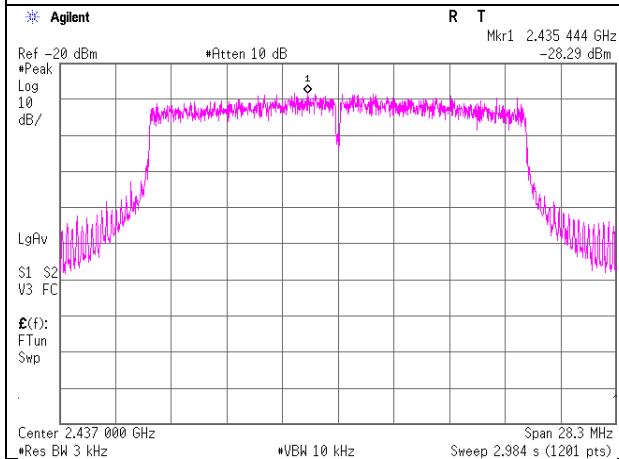
**11ax-20 (242-tone RU)**  
**Antenna 1**  
**2412MHz**



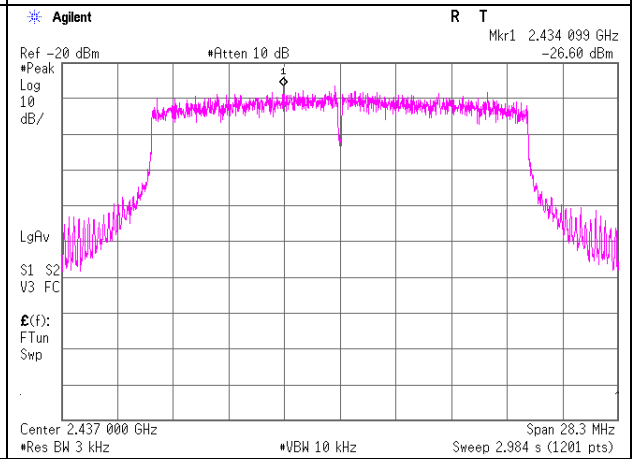
**11ax-20 (242-tone RU)**  
**Antenna 2**  
**2412MHz**



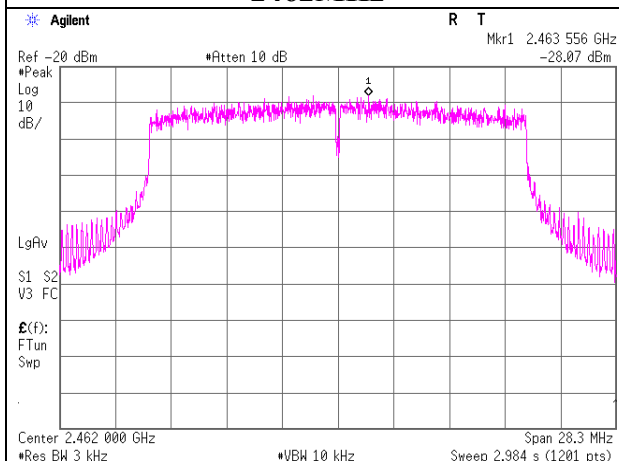
**2437MHz**



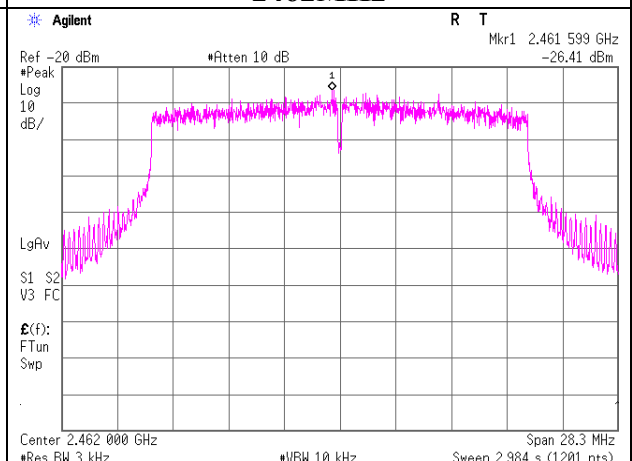
**2437MHz**



**2462MHz**



**2462MHz**



**Power Density**  
(BT1 / BT2)

Test place	Ise EMC Lab. No.8 Measurement Room
Date	January 31, 2022
Temperature / Humidity	20 deg. C / 38 % RH
Engineer	Ken Fujita
Mode	Tx BT LE

**BT1**

Mode	Freq.	Reading	Cable Loss	Atten. Loss	Result	Limit	Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
1M-PHY	2402	-25.28	0.65	10.04	-14.59	8.00	22.59
	2440	-25.36	0.65	10.04	-14.67	8.00	22.67
	2480	-25.43	0.65	10.04	-14.74	8.00	22.74
2M-PHY	2402	-27.60	0.65	10.04	-16.91	8.00	24.91
	2440	-27.74	0.65	10.04	-17.05	8.00	25.05
	2480	-27.89	0.65	10.04	-17.20	8.00	25.20

**BT2**

Mode	Freq.	Reading	Cable Loss	Atten. Loss	Result	Limit	Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm / 3 kHz]	[dBm / 3 kHz]	[dB]
1M-PHY	2402	-24.89	0.60	10.04	-14.25	8.00	22.25
	2440	-25.36	0.60	10.04	-14.72	8.00	22.72
	2480	-25.37	0.60	10.04	-14.73	8.00	22.73
2M-PHY	2402	-27.28	0.60	10.04	-16.64	8.00	24.64
	2440	-27.61	0.60	10.04	-16.97	8.00	24.97
	2480	-28.01	0.60	10.04	-17.37	8.00	25.37

Sample Calculation:

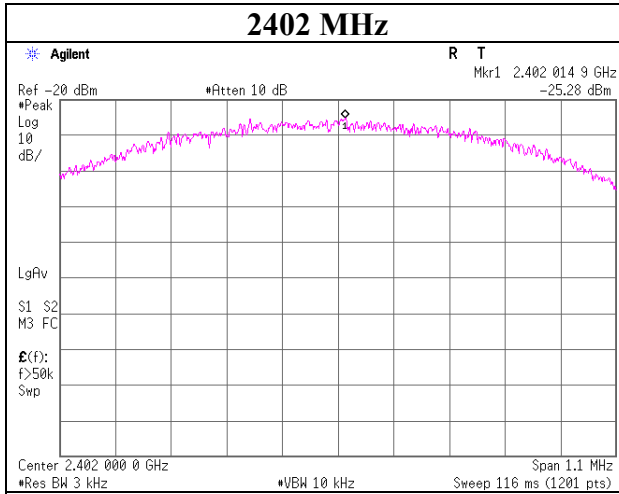
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

\*The equipment and cables were not used for factor 0 dB of the data sheets.

### Power Density (BT1)

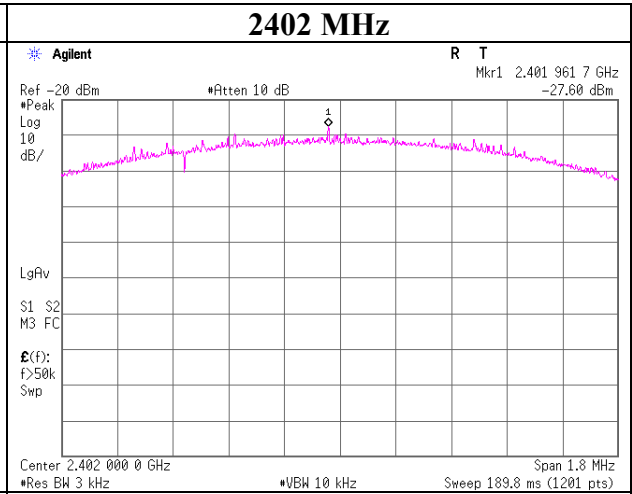
#### BT LE 1M-PHY

#### 2402 MHz

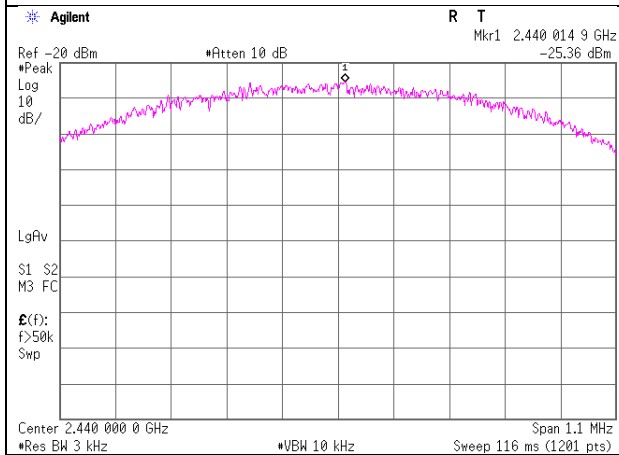


#### BT LE 2M-PHY

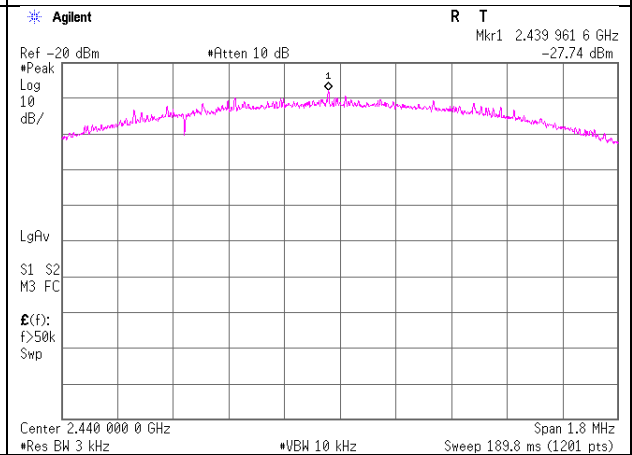
#### 2402 MHz



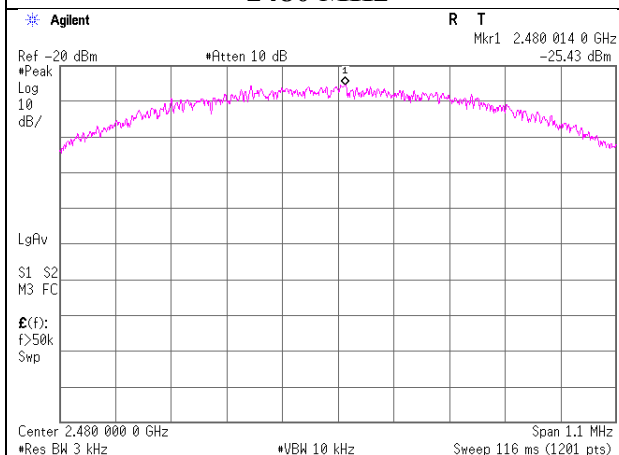
#### 2440 MHz



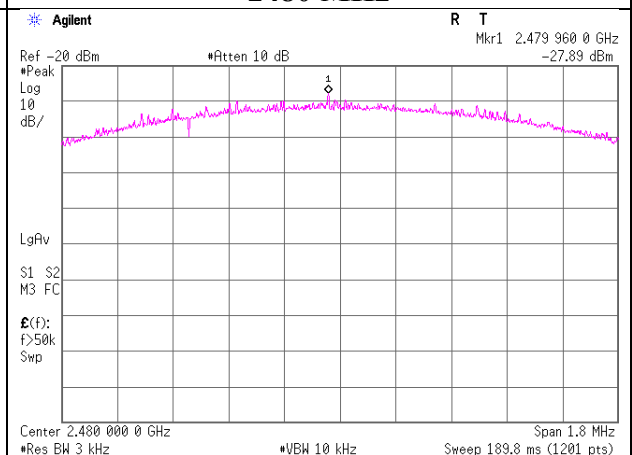
#### 2440 MHz



#### 2480 MHz

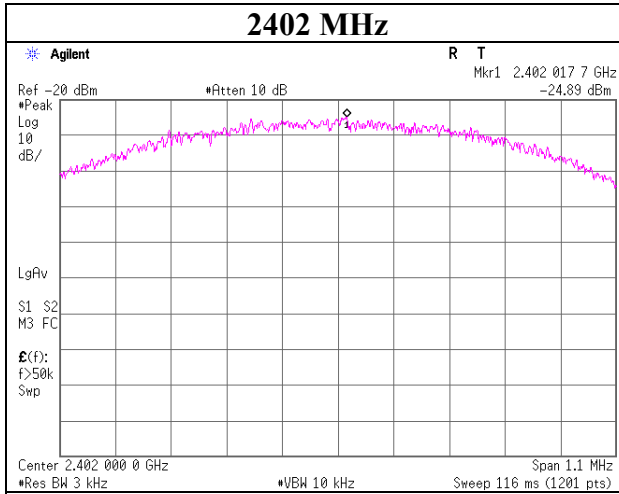


#### 2480 MHz

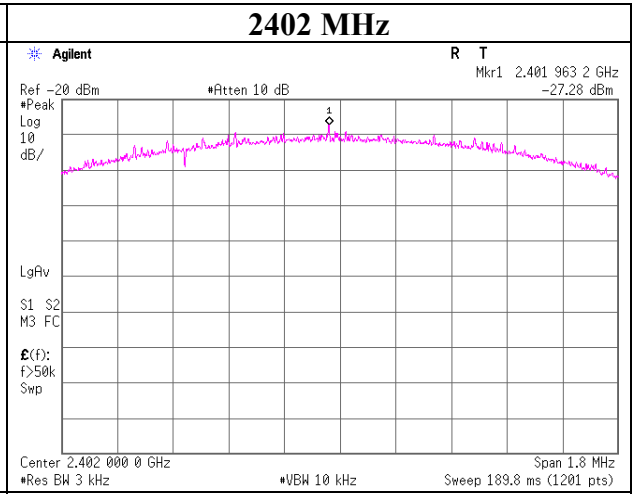


### Power Density (BT2)

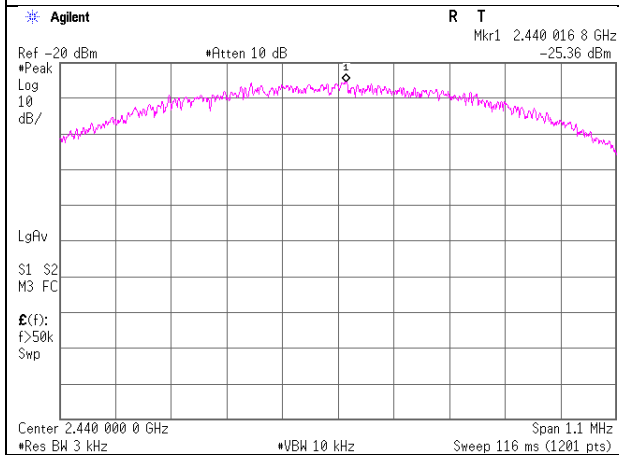
**BT LE 1M-PHY**  
**2402 MHz**



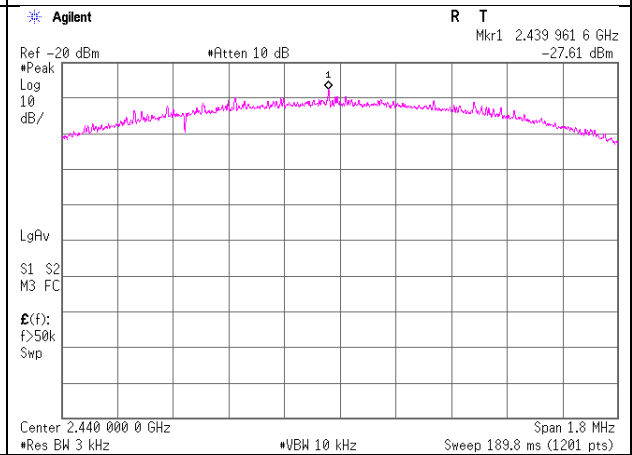
**BT LE 2M-PHY**  
**2402 MHz**



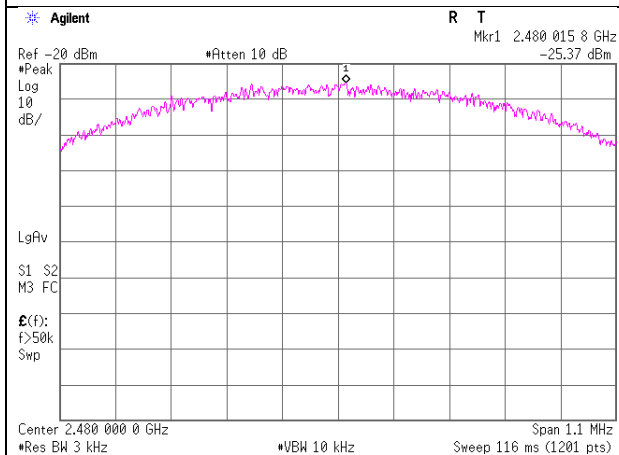
**2440 MHz**



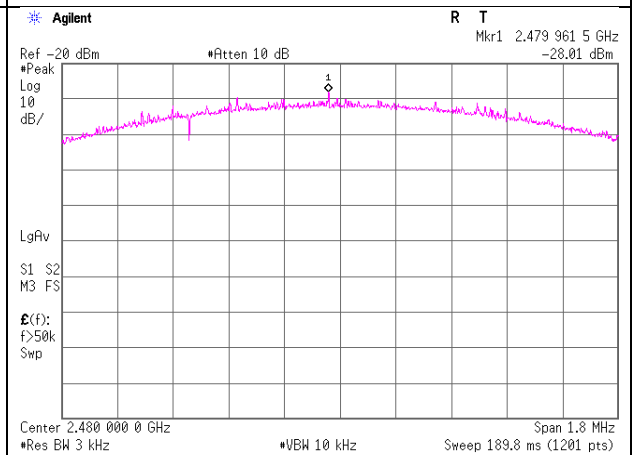
**2440 MHz**



**2480 MHz**



**2480 MHz**



## APPENDIX 2: Test Instruments

### Test equipment (1/2)

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
CE	MAEC-03	142008	AC3_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	05/22/2020	24
CE	MOS-13	141554	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	1301	01/10/2022	12
CE	MMM-08	141532	DIGITAL HiTESTER	HIOKI E.E. CORPORATION	3805	51201197	01/16/2022	12
CE	MJM-16	142183	Measure	KOMELON	KMC-36	-	-	-
CE	COTS-MEMI-02	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
CE	MLS-24	141358	LISN(AMN)	Schwarzbeck Mess-Elektronik OHG	NSLK8127	8127-730	07/18/2022	12
CE	MTR-03	141942	Test Receiver	Rohde & Schwarz	ESCI	100300	08/05/2021	12
CE	MAT-67	141248	Attenuator	JFW Industries, Inc.	50FP-013H2 N	-	12/17/2021	12
CE	MCC-112	141216	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W/SFM14/sucoform141-PE/421-010/RFM-E321(SW)	-/00640	07/19/2021	12
CE	MSA-16	141903	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46186390	01/07/2022	12
RE	MOS-41	192300	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	0013	12/19/2021	12
RE	MMM-01	141542	Digital Tester	Fluke Corporation	FLUKE 26-3	78030611	08/10/2021	12
RE	MJM-27	142228	Measure	KOMELON	KMC-36	-	-	-
RE	COTS-MEMI-02	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	MAEC-02-SVSWR	142006	AC2_Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-06902	04/09/2021	24
RE	MHA-06	141512	Horn Antenna 1-18GHz	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	254	10/21/2021	12
RE	MCC-218	141394	Microwave Cable	Junkosha	MWX221	1607S141(1 m) / 1608S264(5 m)	09/30/2021	12
RE	MPA-10	141579	Pre Amplifier	Keysight Technologies Inc	8449B	3008A02142	02/18/2021	12
RE	MHF-06	141404	High Pass Filter 3.5-24GHz	TOKIMEC	TF323DCA	601	05/18/2021	12
RE	MSA-04	141885	Spectrum Analyzer	Keysight Technologies Inc	E4448A	US44300523	11/10/2021	12
RE	MHF-26	141296	High Pass Filter 3.5-18.0GHz	UL Japan	HPF SELECTOR	002	09/30/2021	12
RE	MAEC-02	142004	AC2_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	05/26/2020	24
RE	MHF-16	141406	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCA	7001	09/30/2021	12
RE	MCC-176	141279	Microwave Cable	Junkosha	MMX221-00500DMSDMS	1502S303	03/01/2021	12
RE	MHA-16	141513	Horn Antenna 15-40GHz	Schwarzbeck Mess-Elektronik OHG	BBHA9170	BBHA9170306	06/07/2021	12
RE	MAT-07	141203	Attenuator(6dB)	Weinschel Corp	2	BK7970	11/09/2021	12
RE	MBA-08	141427	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103B+ BBA9106	08031	07/10/2021	12
RE	MCC-12	141317	Coaxial Cable	UL Japan, Inc.	-	-	09/06/2021	12
RE	MLA-21	141265	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-190	07/10/2021	12
RE	MPA-24	141594	Pre Amplifier	Keysight Technologies Inc	8447D	2944A10150	02/18/2021	12
RE	MTR-08	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	08/05/2021	12
RE	MHF-25	141232	High Pass Filter 3.5-18.0GHz	UL Japan	HPF SELECTOR	001	09/30/2021	12

**Test equipment (2/2)**

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	MAT-26	141244	Attenuator(10dB)	Weinschel - API Technologies Corp	WA8-10-34	A198	02/24/2021	12
AT	MOS-28	141567	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	0008	01/10/2022	12
AT	MMM-17	141557	DIGITAL HiTESTER	HIOKI E.E. CORPORATION	3805	70900530	01/16/2022	12
AT	MSA-13	141900	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46185823	09/30/2021	12
AT	MAT-10	141156	Attenuator(10dB)	Weinschel Corp	2	BL1173	11/09/2021	12
AT	MTA-67	184339	SMA Terminator Plug (50 Ohms)	Amphenol	132360	-	-	-
AT	MTA-68	184335	SMA Terminator Plug (50 Ohms)	Amphenol	132360	-	-	-
AT	MTA-69	184336	SMA Terminator Plug (50 Ohms)	Amphenol	132360	-	-	-
AT	MRENT-130	141855	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46187750	11/28/2021	12
AT	MAT-58	141334	Attenuator(10dB)	Suhner	6810.19.A	-	12/08/2021	12
AT	MPM-16	141812	Power Meter	Keysight Technologies Inc	8990B	MY51000271	08/11/2021	12
AT	MPSE-23	141835	Power sensor	Keysight Technologies Inc	N1923A	MY54070004	08/11/2021	12
AT	MAT-23	141361	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	04/07/2021	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**  
                          **RE: Radiated Emission**  
                          **AT: Antenna Terminal Conducted**