# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.10 |
| Date | March 19, 2024 |
| Temperature / Humidity | 20 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5530 MHz with BT Hopping On 3DH5 |

## (above 1 GHz Inside of the restricted band)

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5460.000 | PK | 52.21 | 33.22 | 15.22 | 45.68 | 3.31 | 58.28 | 73.9 | 15.6 | 400 | 57 | |
| Hori. | 5460.000 | AV | 41.46 | 33.22 | 15.22 | 45.68 | 3.31 | 47.53 | 53.9 | **6.3** | 400 | 57 | VBW: 4.3 kHz |
| Vert. | 5460.000 | PK | 52.13 | 33.22 | 15.22 | 45.68 | 3.31 | 58.20 | 73.9 | 15.7 | 377 | 7 | |
| Vert. | 5460.000 | AV | 41.25 | 33.22 | 15.22 | 45.68 | 3.31 | 47.32 | 53.9 | 6.5 | 377 | 7 | VBW: 4.3 kHz |

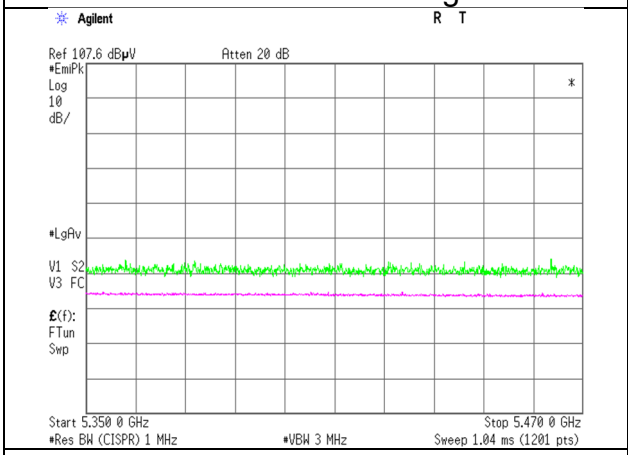
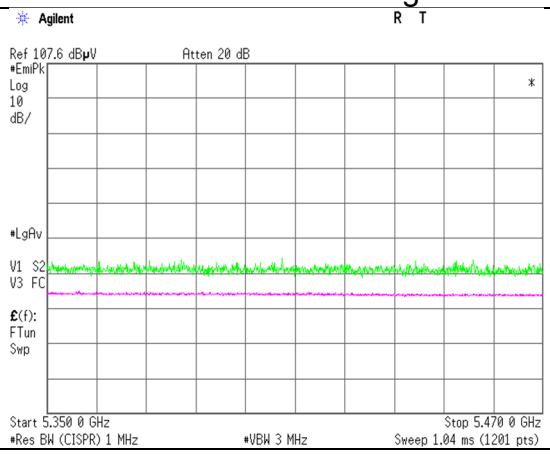
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (4.39 m / 3.0 m) = 3.31 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5470.000 | PK | 51.87 | 33.25 | 15.22 | 45.68 | 3.31 | 57.97 | -37.25 | -27.0 | 10.2 | 400 | 57 | |
| Vert. | 5470.000 | PK | 52.26 | 33.25 | 15.22 | 45.68 | 3.31 | 58.36 | -36.86 | -27.0 | 9.8 | 377 | 7 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (4.39 m / 3.0 m) = 3.31 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

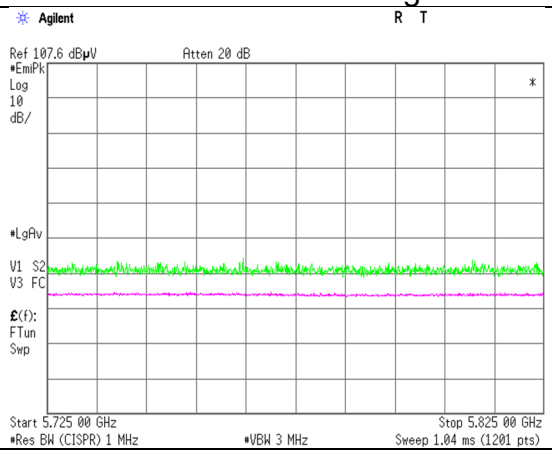
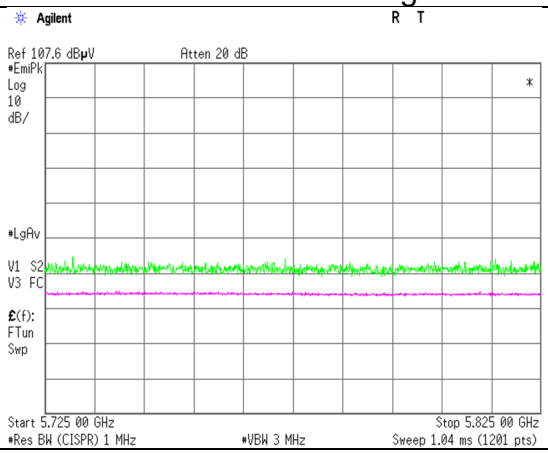
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.10 |
| Date | March 19, 2024 |
| Temperature / Humidity | 20 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5610 MHz with BT Hopping On 3DH5 |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5725.000 | PK | 51.73 | 33.69 | 15.38 | 45.70 | 3.31 | 58.41 | -36.81 | -27.0 | 9.8 | 388 | 65 | |
| Vert. | 5725.000 | PK | 52.06 | 33.69 | 15.38 | 45.70 | 3.31 | 58.74 | -36.48 | -27.0 | **9.4** | 386 | 5 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (4.39 m / 3.0 m) = 3.31 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.10 |
| Date | March 19, 2024 |
| Temperature / Humidity | 20 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5775 MHz with BT Hopping On 3DH5 |

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

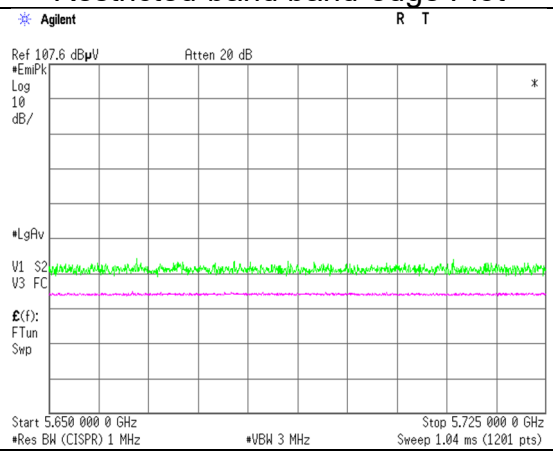
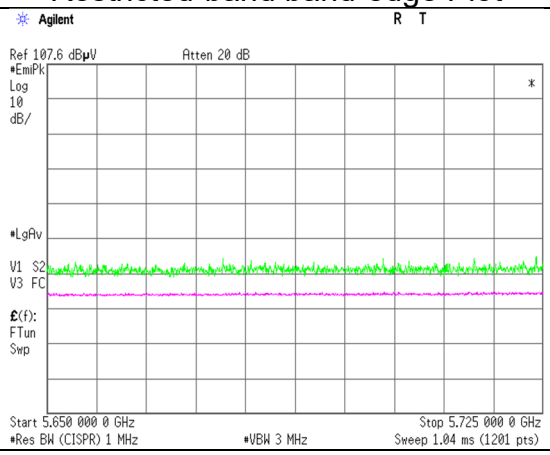
(* PK: Peak, AV: Average, QP: Quasi-Peak)

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5650.000 | PK | 52.08 | 33.51 | 15.35 | 45.73 | 3.31 | 58.52 | -36.70 | -27.0 | 9.7 | 400 | 64 | |
| Hori. | 5700.000 | PK | 52.86 | 33.61 | 15.37 | 45.72 | 3.31 | 59.43 | -35.79 | 10.0 | 45.7 | 400 | 64 | |
| Hori. | 5720.000 | PK | 52.48 | 33.67 | 15.38 | 45.70 | 3.31 | 59.14 | -36.08 | 15.6 | 51.6 | 400 | 64 | |
| Hori. | 5725.000 | PK | 53.00 | 33.69 | 15.38 | 45.70 | 3.31 | 59.68 | -35.54 | 27.0 | 62.5 | 400 | 64 | |
| Hori. | 5850.000 | PK | 49.64 | 34.23 | 15.45 | 45.53 | 3.31 | 57.10 | -38.12 | 27.0 | 65.1 | 400 | 64 | |
| Hori. | 5855.000 | PK | 50.41 | 34.26 | 15.45 | 45.52 | 3.31 | 57.91 | -37.31 | 15.6 | 52.9 | 400 | 64 | |
| Hori. | 5875.000 | PK | 50.30 | 34.38 | 15.47 | 45.50 | 3.31 | 57.96 | -37.26 | 10.0 | 47.2 | 400 | 64 | |
| Hori. | 5925.000 | PK | 51.12 | 34.67 | 15.50 | 45.46 | 3.31 | 59.14 | -36.08 | -27.0 | 9.0 | 400 | 64 | |
| Vert. | 5650.000 | PK | 51.73 | 33.51 | 15.35 | 45.73 | 3.31 | 58.17 | -37.05 | -27.0 | 10.0 | 383 | 355 | |
| Vert. | 5700.000 | PK | 52.05 | 33.61 | 15.37 | 45.72 | 3.31 | 58.62 | -36.60 | 10.0 | 46.6 | 383 | 355 | |
| Vert. | 5720.000 | PK | 52.59 | 33.67 | 15.38 | 45.70 | 3.31 | 59.25 | -35.97 | 15.6 | 51.5 | 383 | 355 | |
| Vert. | 5725.000 | PK | 55.84 | 33.69 | 15.38 | 45.70 | 3.31 | 62.52 | -32.70 | 27.0 | 59.7 | 383 | 355 | |
| Vert. | 5850.000 | PK | 50.05 | 34.23 | 15.45 | 45.53 | 3.31 | 57.51 | -37.71 | 27.0 | 64.7 | 383 | 355 | |
| Vert. | 5855.000 | PK | 50.35 | 34.26 | 15.45 | 45.52 | 3.31 | 57.85 | -37.37 | 15.6 | 52.9 | 383 | 355 | |
| Vert. | 5875.000 | PK | 50.69 | 34.38 | 15.47 | 45.50 | 3.31 | 58.35 | -36.87 | 10.0 | 46.8 | 383 | 355 | |
| Vert. | 5925.000 | PK | 51.41 | 34.67 | 15.50 | 45.46 | 3.31 | 59.43 | -35.79 | -27.0 | **8.7** | 383 | 355 | |

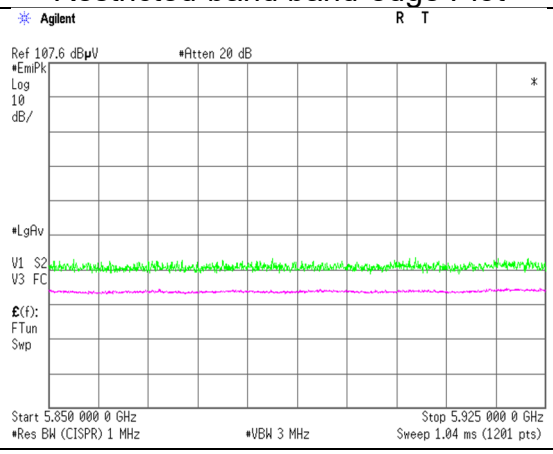
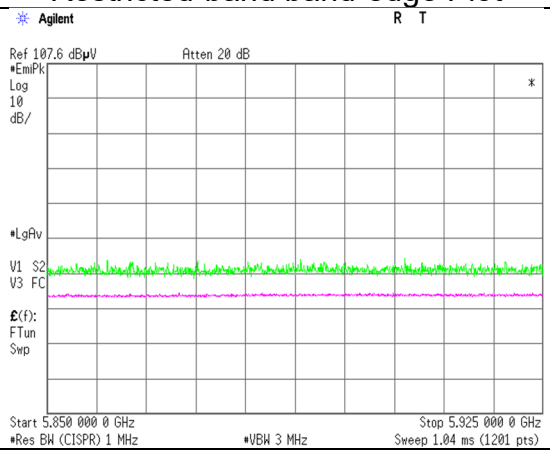
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (4.39 m / 3.0 m) = 3.31 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.10 |
| Date | March 19, 2024 |
| Temperature / Humidity | 20 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5775 MHz with BT Hopping On 3DH5 |

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



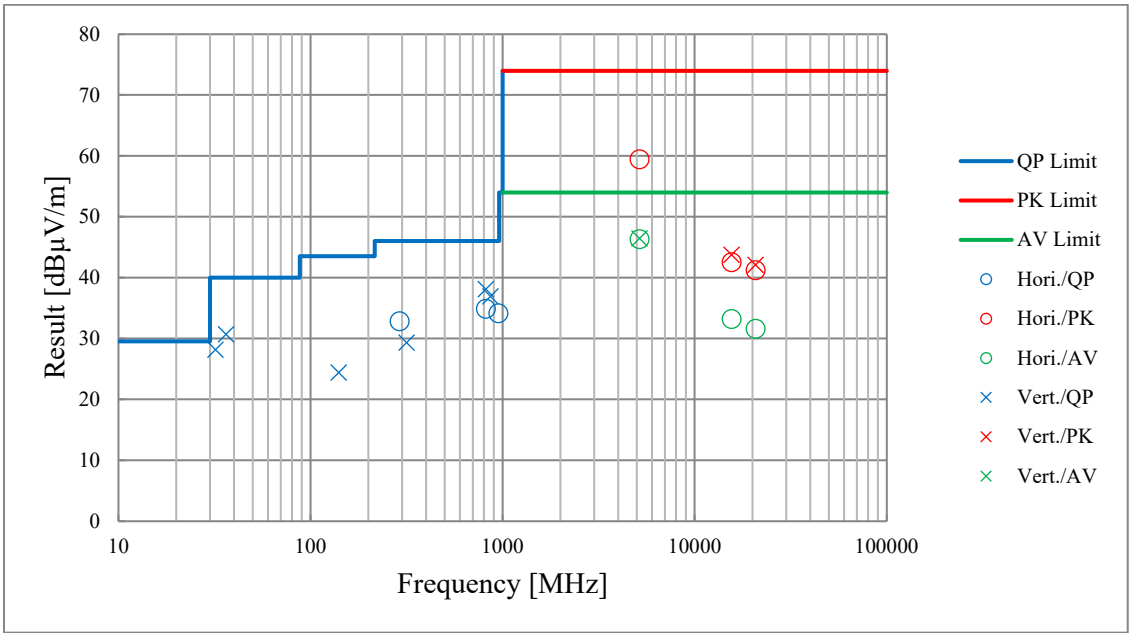
| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

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

| | | | | | | |
|---|---|---|---|---|---|---|
| Test place | Kashima EMC Lab. | | | | | |
| Semi Anechoic Chamber | No.11 | No.10 | No.10 | No.11 | No.11 | No.11 |
| Date | March 13, 2024 | March 18, 2024 | March 18, 2024 | March 12, 2024 | March 12, 2024 | March 12, 2024 |
| Temperature / Humidity | 20 deg. C / 38 % RH | 21 deg. C / 42 % RH | 21 deg. C / 42 % RH | 18 deg. C / 41 % RH | 18 deg. C / 41 % RH | 18 deg. C / 41 % RH |
| Engineer | Kazuhiro Ando (30 MHz to 1 GHz) | Hiromitsu Tanabe (1 GHz to 6.4 GHz) | Hiromitsu Tanabe (6.4 GHz to 10 GHz) | Kazuhiro Ando (10 GHz to 18 GHz) | Kazuhiro Ando (18 GHz to 26.5 GHz) | Kazuhiro Ando (26.5 GHz to 40 GHz) |
| Mode | Tx 11a 5180 MHz with BT Hopping On 3DH5 | | | | | |




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

# Radiated Spurious Emission

| | | | | | | |
|---|---|---|---|---|---|---|
| Test place | Kashima EMC Lab. | | | | | |
| Semi Anechoic Chamber | No.11 | No.11 | No.11 | No.11 | No.11 | No.11 |
| Date | February 23, 2024 | February 16, 2024 | February 22, 2024 | February 22, 2024 | February 22, 2024 | February 23, 2024 |
| Temperature / Humidity | 19 deg. C / 42 % RH | 23 deg. C / 39 % RH | 20 deg. C / 41 % RH | 20 deg. C / 41 % RH | 20 deg. C / 41 % RH | 19 deg. C / 42 % RH |
| Engineer | Hiromitsu Tanabe (30 MHz to 1 GHz) | Hiromitsu Tanabe (1 GHz to 6.4 GHz) | Hiromitsu Tanabe (6.4 GHz to 10 GHz) | Hiromitsu Tanabe (10 GHz to 18 GHz) | Hiromitsu Tanabe (18 GHz to 26.5 GHz) | Hiromitsu Tanabe (26.5 GHz to 40 GHz) |
| Mode | Tx 11a 5180 MHz with BT LE 2M-PHY 2440 MHz | | | | | |

## (below 1 GHz and above 1 GHz Inside of the restricted band)

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 318.299 | QP | 44.00 | 13.99 | 7.71 | 31.94 | 0.00 | 33.76 | 46.0 | 12.2 | 148 | 305 | |
| Hori. | 947.831 | QP | 30.30 | 23.96 | 10.06 | 30.96 | 0.00 | 33.36 | 46.0 | 12.6 | 152 | 214 | |
| Hori. | 5150.000 | PK | 52.53 | 32.60 | 15.04 | 45.81 | 2.26 | 56.62 | 73.9 | 17.2 | 400 | 22 | |
| Hori. | 15540.000 | PK | 45.49 | 38.35 | 9.99 | 41.97 | -9.54 | 42.32 | 73.9 | 31.5 | 150 | 0 | Floor noise |
| Hori. | 20720.000 | PK | 44.59 | -3.86 | 10.43 | 0.00 | -9.54 | 41.62 | 73.9 | 32.2 | 150 | 188 | *1) |
| Hori. | 5150.000 | AV | 41.12 | 32.60 | 15.04 | 45.81 | 2.26 | 45.21 | 53.9 | 8.6 | 400 | 22 | VBW:2.2 kHz |
| Hori. | 15540.000 | AV | 35.68 | 38.35 | 9.99 | 41.97 | -9.54 | 32.51 | 53.9 | 21.3 | 150 | 0 | Floor noise |
| Hori. | 20720.000 | AV | 34.81 | -3.86 | 10.43 | 0.00 | -9.54 | 31.84 | 53.9 | 22.0 | 150 | 188 | VBW:2.2 kHz,*1) |
| Vert. | 31.855 | QP | 42.90 | 12.55 | 5.68 | 32.18 | 0.00 | 28.95 | 40.0 | 11.0 | 100 | 0 | |
| Vert. | 36.270 | QP | 45.90 | 12.91 | 5.74 | 32.17 | 0.00 | 32.38 | 40.0 | **7.6** | 100 | 256 | |
| Vert. | 170.000 | QP | 37.60 | 12.87 | 6.89 | 32.06 | 0.00 | 25.30 | 43.5 | 18.2 | 100 | 180 | |
| Vert. | 314.486 | QP | 41.70 | 13.90 | 7.69 | 31.94 | 0.00 | 31.35 | 46.0 | 14.6 | 100 | 166 | |
| Vert. | 816.000 | QP | 37.60 | 22.62 | 9.63 | 31.75 | 0.00 | 38.10 | 46.0 | 7.9 | 141 | 196 | |
| Vert. | 947.594 | QP | 29.40 | 23.95 | 10.06 | 30.96 | 0.00 | 32.45 | 46.0 | 13.5 | 156 | 302 | |
| Vert. | 5150.000 | PK | 52.98 | 32.60 | 15.04 | 45.81 | 2.26 | 57.07 | 73.9 | 16.8 | 291 | 0 | |
| Vert. | 15540.000 | PK | 46.39 | 38.35 | 9.99 | 41.97 | -9.54 | 43.22 | 73.9 | 30.6 | 150 | 0 | Floor noise |
| Vert. | 20720.000 | PK | 44.86 | -3.86 | 10.43 | 0.00 | -9.54 | 41.89 | 73.9 | 32.0 | 177 | 354 | *1) |
| Vert. | 5150.000 | AV | 41.50 | 32.60 | 15.04 | 45.81 | 2.26 | 45.59 | 53.9 | 8.3 | 291 | 0 | VBW:2.2 kHz |
| Vert. | 15540.000 | AV | 35.61 | 38.35 | 9.99 | 41.97 | -9.54 | 32.44 | 53.9 | 21.4 | 150 | 0 | Floor noise |
| Vert. | 20720.000 | AV | 35.87 | -3.86 | 10.43 | 0.00 | -9.54 | 32.90 | 53.9 | 21.0 | 177 | 354 | VBW:2.2 kHz,*1) |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
*1) Antenna factor includes amprifier gain

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 10360.000 | PK | 49.02 | 38.52 | 8.08 | 43.12 | -9.54 | 42.96 | -52.26 | -27.0 | 25.2 | 256 | 50 | |
| Vert. | 10360.000 | PK | 48.31 | 38.52 | 8.08 | 43.12 | -9.54 | 42.25 | -52.97 | -27.0 | 25.9 | 255 | 355 | |

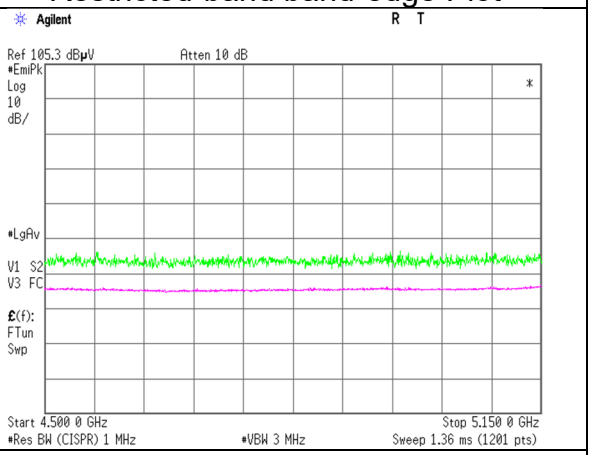
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11a 5180 MHz with BT LE 2M-PHY 2440 MHz |

Horizontal

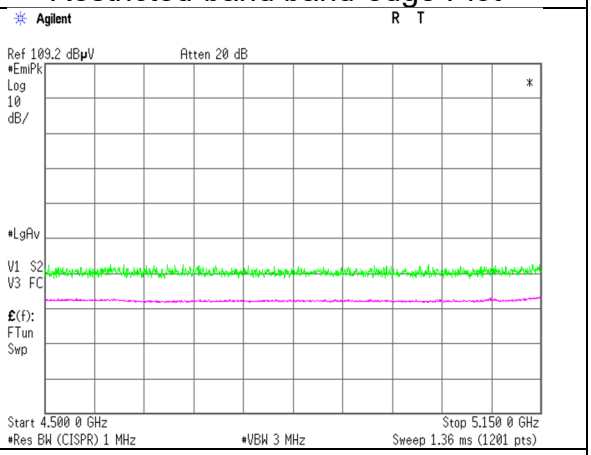
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

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

# Radiated Spurious Emission

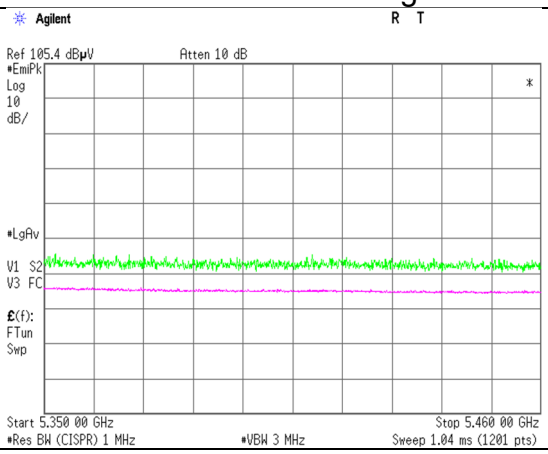
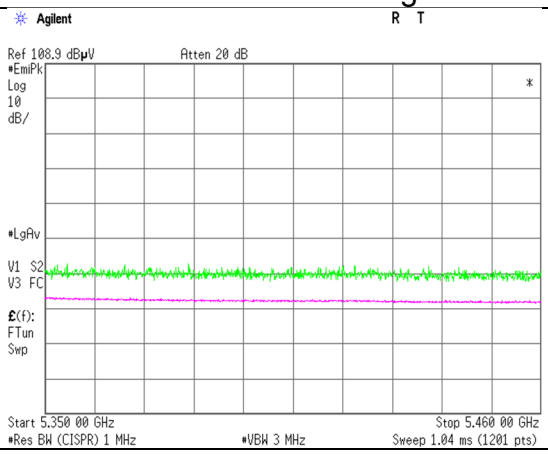
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11a 5320 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5350.000 | PK | 51.86 | 32.99 | 15.16 | 45.75 | 2.26 | 56.52 | 73.9 | 17.3 | 400 | 20 | |
| Hori. | 5350.000 | AV | 40.13 | 32.99 | 15.16 | 45.75 | 2.26 | 44.79 | 53.9 | 9.1 | 400 | 20 | VBW:2.2 kHz |
| Vert. | 5350.000 | PK | 51.89 | 32.99 | 15.16 | 45.75 | 2.26 | 56.55 | 73.9 | 17.3 | 306 | 0 | |
| Vert. | 5350.000 | AV | 40.47 | 32.99 | 15.16 | 45.75 | 2.26 | 45.13 | 53.9 | **8.7** | 306 | 0 | VBW:2.2 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |





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

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11a 5500 MHz with BT LE 2M-PHY 2440 MHz |

## (above 1 GHz Inside of the restricted band)

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5460.000 | PK | 53.36 | 33.14 | 15.22 | 45.68 | 2.26 | 58.30 | 73.9 | 15.6 | 400 | 23 | |
| Hori. | 5460.000 | AV | 40.87 | 33.14 | 15.22 | 45.68 | 2.26 | 45.81 | 53.9 | 8.0 | 400 | 23 | VBW:2.2 kHz |
| Vert. | 5460.000 | PK | 52.47 | 33.14 | 15.22 | 45.68 | 2.26 | 57.41 | 73.9 | 16.4 | 363 | 6 | |
| Vert. | 5460.000 | AV | 41.25 | 33.14 | 15.22 | 45.68 | 2.26 | 46.19 | 53.9 | **7.7** | 363 | 6 | VBW:2.2 kHz |

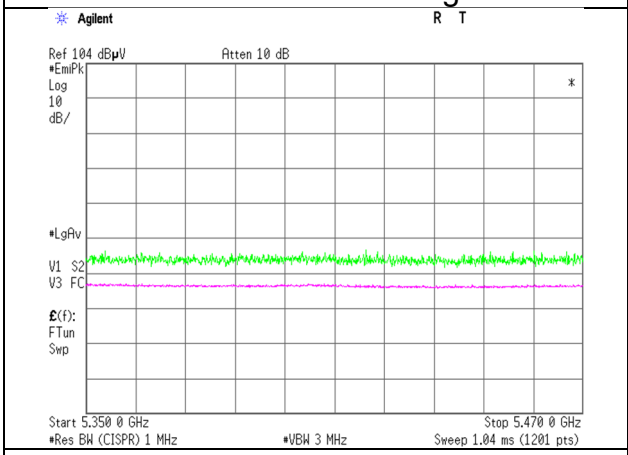
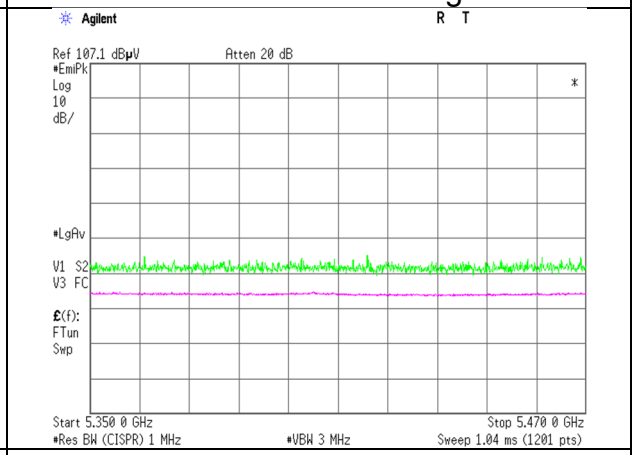
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5470.000 | PK | 52.87 | 33.17 | 15.23 | 45.68 | 2.26 | 57.85 | -37.37 | -27.0 | 10.3 | 400 | 23 | |
| Vert. | 5470.000 | PK | 53.16 | 33.17 | 15.23 | 45.68 | 2.26 | 58.14 | -37.08 | -27.0 | 10.0 | 363 | 6 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |





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

# Radiated Spurious Emission

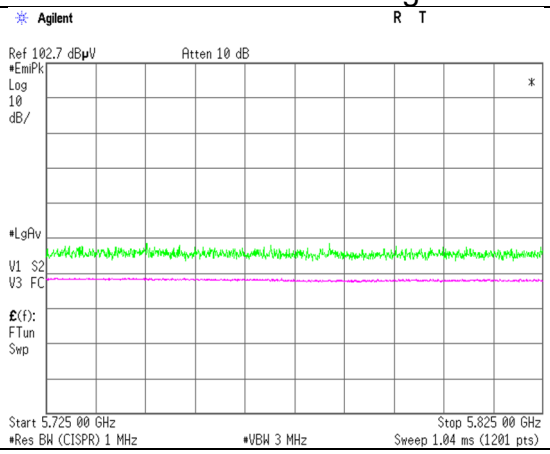
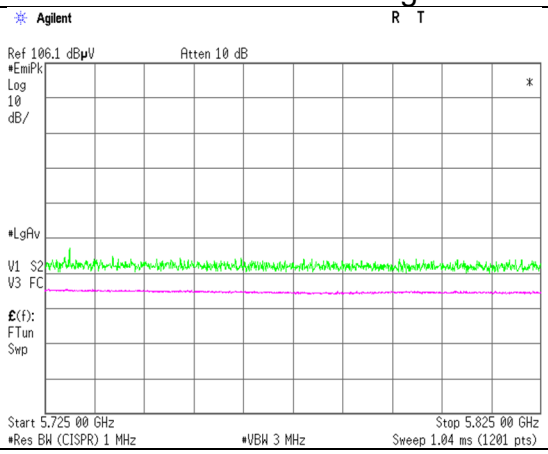
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11a 5700 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5725.000 | PK | 52.73 | 33.64 | 15.39 | 45.70 | 2.26 | 58.32 | -36.90 | -27.0 | 9.9 | 400 | 0 | |
| Vert. | 5725.000 | PK | 53.36 | 33.64 | 15.39 | 45.70 | 2.26 | 58.95 | -36.27 | -27.0 | **9.2** | 376 | 347 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |





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

# Radiated Spurious Emission

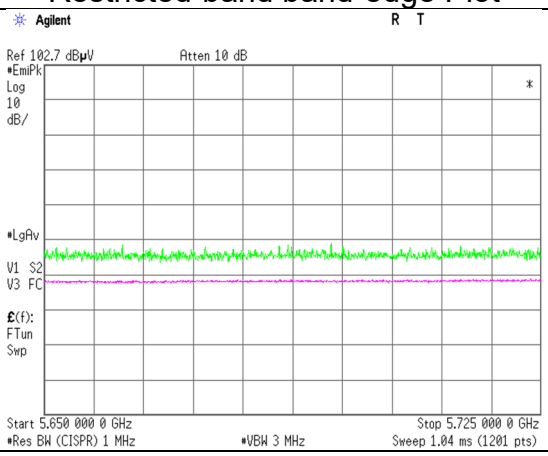
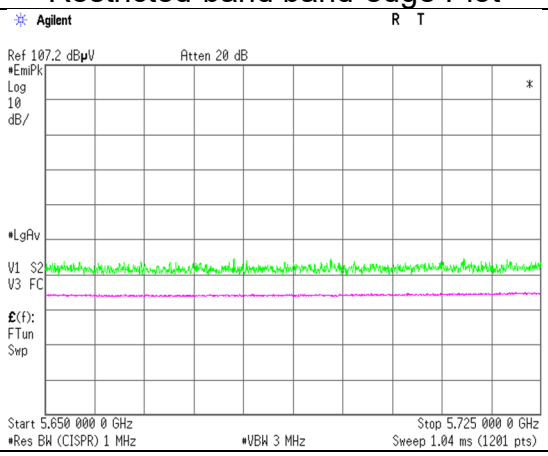
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11a 5745 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5650.000 | PK | 52.09 | 33.39 | 15.34 | 45.73 | 2.26 | 57.35 | -37.87 | -27.0 | **10.8** | 400 | 0 | |
| Hori. | 5700.000 | PK | 53.55 | 33.53 | 15.37 | 45.72 | 2.26 | 58.99 | -36.23 | 10.0 | 46.2 | 400 | 0 | |
| Hori. | 5720.000 | PK | 52.41 | 33.61 | 15.38 | 45.70 | 2.26 | 57.96 | -37.26 | 15.6 | 52.8 | 400 | 0 | |
| Hori. | 5725.000 | PK | 53.22 | 33.64 | 15.39 | 45.70 | 2.26 | 58.81 | -36.41 | 27.0 | 63.4 | 400 | 0 | |
| Vert. | 5650.000 | PK | 52.14 | 33.39 | 15.34 | 45.73 | 2.26 | 57.40 | -37.82 | -27.0 | **10.8** | 352 | 352 | |
| Vert. | 5700.000 | PK | 52.55 | 33.53 | 15.37 | 45.72 | 2.26 | 57.99 | -37.23 | 10.0 | 47.2 | 352 | 352 | |
| Vert. | 5720.000 | PK | 53.26 | 33.61 | 15.38 | 45.70 | 2.26 | 58.81 | -36.41 | 15.6 | 52.0 | 352 | 352 | |
| Vert. | 5725.000 | PK | 53.21 | 33.64 | 15.39 | 45.70 | 2.26 | 58.80 | -36.42 | 27.0 | 63.4 | 352 | 352 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |





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

# Radiated Spurious Emission

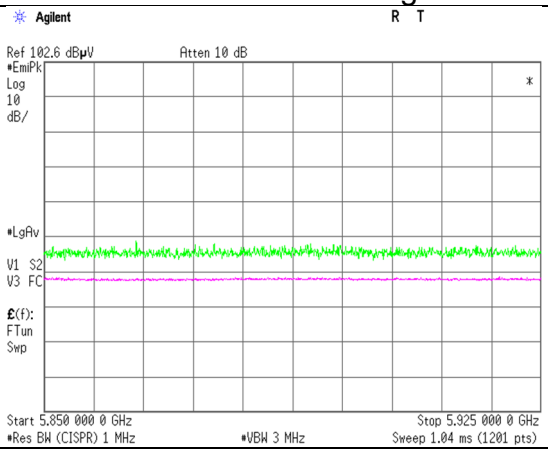
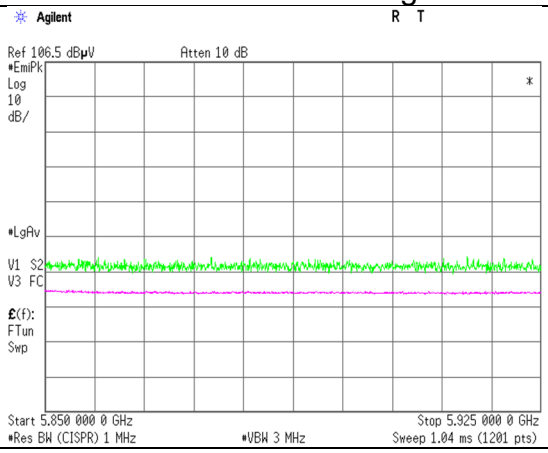
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11a 5825 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5850.000 | PK | 50.33 | 34.18 | 15.46 | 45.53 | 2.26 | 56.70 | -38.52 | 27.0 | 65.5 | 400 | 55 | |
| Hori. | 5855.000 | PK | 50.47 | 34.22 | 15.46 | 45.52 | 2.26 | 56.89 | -38.33 | 15.6 | 53.9 | 400 | 55 | |
| Hori. | 5875.000 | PK | 50.54 | 34.36 | 15.48 | 45.50 | 2.26 | 57.14 | -38.08 | 10.0 | 48.0 | 400 | 55 | |
| Hori. | 5925.000 | PK | 52.13 | 34.65 | 15.51 | 45.46 | 2.26 | 59.09 | -36.13 | -27.0 | 9.1 | 400 | 55 | |
| Vert. | 5850.000 | PK | 50.87 | 34.18 | 15.46 | 45.53 | 2.26 | 57.24 | -37.98 | 27.0 | 64.9 | 352 | 0 | |
| Vert. | 5855.000 | PK | 50.88 | 34.22 | 15.46 | 45.52 | 2.26 | 57.30 | -37.92 | 15.6 | 53.5 | 352 | 0 | |
| Vert. | 5875.000 | PK | 50.52 | 34.36 | 15.48 | 45.50 | 2.26 | 57.12 | -38.10 | 10.0 | 48.1 | 352 | 0 | |
| Vert. | 5925.000 | PK | 53.08 | 34.65 | 15.51 | 45.46 | 2.26 | 60.04 | -35.18 | -27.0 | **8.1** | 352 | 0 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |





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

# Radiated Spurious Emission

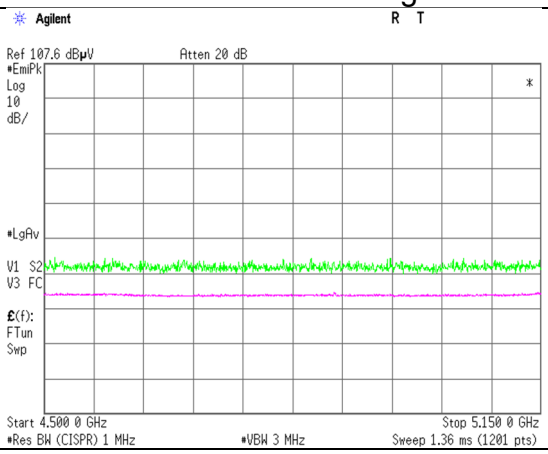
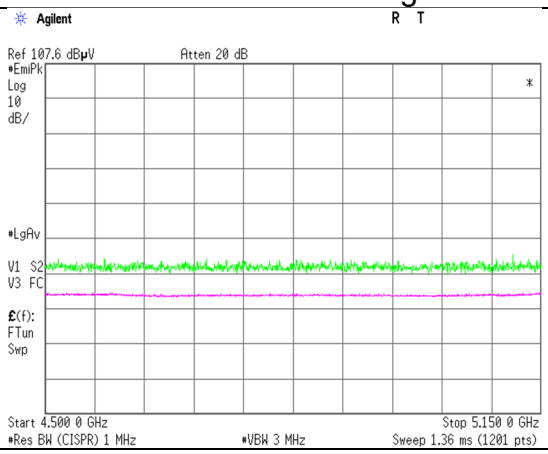
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-20 5180 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5150.000 | PK | 52.21 | 32.60 | 15.04 | 45.81 | 2.26 | 56.30 | 73.9 | 17.6 | 400 | 49 | |
| Hori. | 5150.000 | AV | 40.97 | 32.60 | 15.04 | 45.81 | 2.26 | 45.06 | 53.9 | 8.8 | 400 | 49 | VBW: 2.4 kHz |
| Vert. | 5150.000 | PK | 53.07 | 32.60 | 15.04 | 45.81 | 2.26 | 57.16 | 73.9 | 16.7 | 322 | 0 | |
| Vert. | 5150.000 | AV | 41.03 | 32.60 | 15.04 | 45.81 | 2.26 | 45.12 | 53.9 | **8.7** | 322 | 0 | VBW: 2.4 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

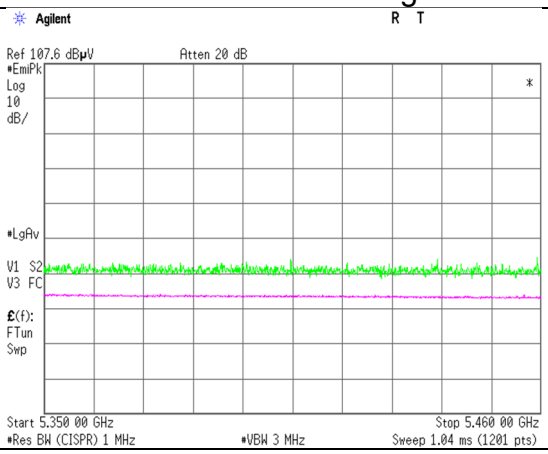
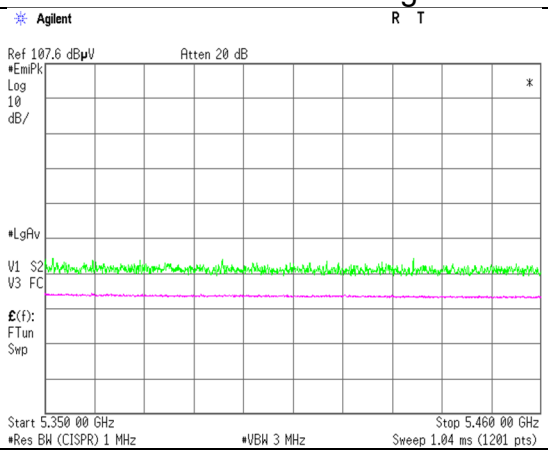
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-20 5320 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5350.000 | PK | 51.52 | 32.99 | 15.16 | 45.75 | 2.26 | 56.18 | 73.9 | 17.7 | 400 | 33 | |
| Hori. | 5350.000 | AV | 39.71 | 32.99 | 15.16 | 45.75 | 2.26 | 44.37 | 53.9 | 9.5 | 400 | 33 | VBW: 2.4 kHz |
| Vert. | 5350.000 | PK | 51.80 | 32.99 | 15.16 | 45.75 | 2.26 | 56.46 | 73.9 | 17.4 | 325 | 0 | |
| Vert. | 5350.000 | AV | 39.77 | 32.99 | 15.16 | 45.75 | 2.26 | 44.43 | 53.9 | **9.4** | 325 | 0 | VBW: 2.4 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-20 5500 MHz with BT LE 2M-PHY 2440 MHz |

## (above 1 GHz Inside of the restricted band)

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5460.000 | PK | 51.45 | 33.14 | 15.22 | 45.68 | 2.26 | 56.39 | 73.9 | 17.5 | 400 | 55 | |
| Hori. | 5460.000 | AV | 40.59 | 33.14 | 15.22 | 45.68 | 2.26 | 45.53 | 53.9 | 8.3 | 400 | 55 | VBW: 2.4 kHz |
| Vert. | 5460.000 | PK | 52.40 | 33.14 | 15.22 | 45.68 | 2.26 | 57.34 | 73.9 | 16.5 | 357 | 5 | |
| Vert. | 5460.000 | AV | 40.87 | 33.14 | 15.22 | 45.68 | 2.26 | 45.81 | 53.9 | **8.0** | 357 | 5 | VBW: 2.4 kHz |

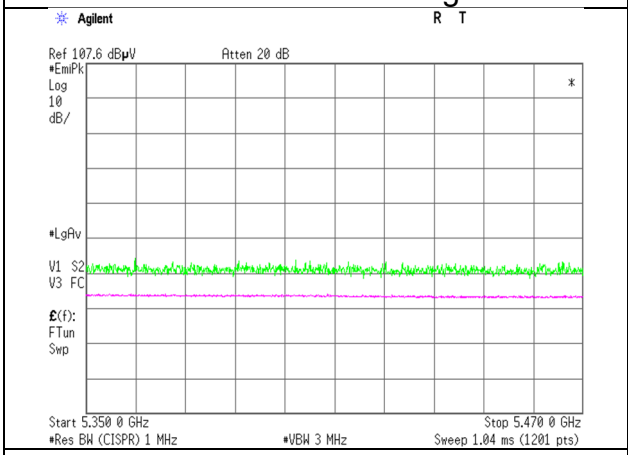
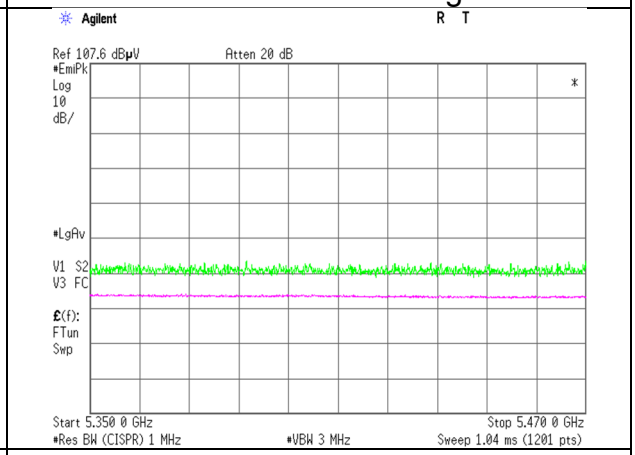
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5470.000 | PK | 51.58 | 33.17 | 15.23 | 45.68 | 2.26 | 56.56 | -38.66 | -27.0 | 11.6 | 400 | 55 | |
| Vert. | 5470.000 | PK | 52.78 | 33.17 | 15.23 | 45.68 | 2.26 | 57.76 | -37.46 | -27.0 | 10.4 | 357 | 5 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

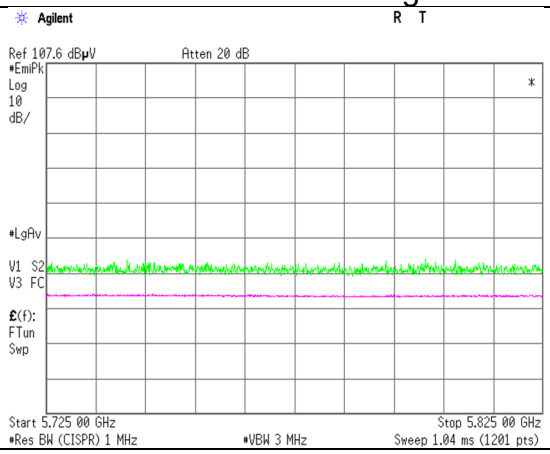
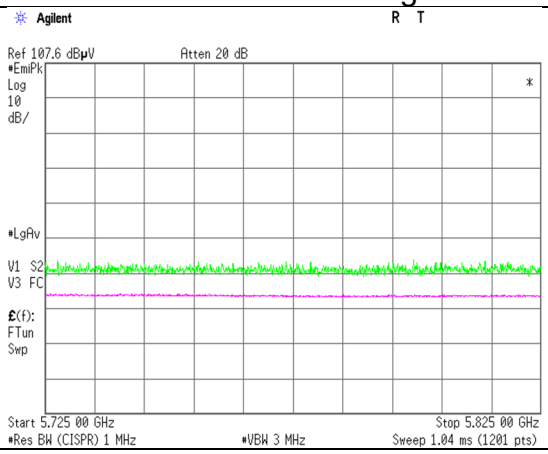
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-20 5700 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5725.000 | PK | 53.06 | 33.64 | 15.39 | 45.70 | 2.26 | 58.65 | -36.57 | -27.0 | **9.5** | 400 | 0 | |
| Vert. | 5725.000 | PK | 52.53 | 33.64 | 15.39 | 45.70 | 2.26 | 58.12 | -37.10 | -27.0 | 10.1 | 362 | 344 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

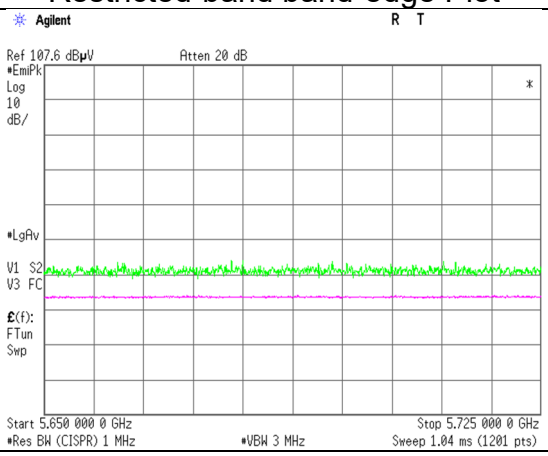
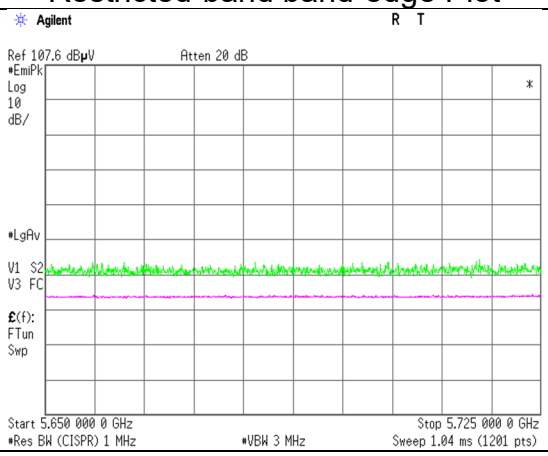
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 16, 2024 |
| Temperature / Humidity | 23 deg. C / 39 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-20 5745 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5650.000 | PK | 51.68 | 33.39 | 15.34 | 45.73 | 2.26 | 56.94 | -38.28 | -27.0 | 11.2 | 400 | 0 | |
| Hori. | 5700.000 | PK | 52.61 | 33.53 | 15.37 | 45.72 | 2.26 | 58.05 | -37.17 | 10.0 | 47.1 | 400 | 0 | |
| Hori. | 5720.000 | PK | 52.36 | 33.61 | 15.38 | 45.70 | 2.26 | 57.91 | -37.31 | 15.6 | 52.9 | 400 | 0 | |
| Hori. | 5725.000 | PK | 52.35 | 33.64 | 15.39 | 45.70 | 2.26 | 57.94 | -37.28 | 27.0 | 64.2 | 400 | 0 | |
| Vert. | 5650.000 | PK | 52.52 | 33.39 | 15.34 | 45.73 | 2.26 | 57.78 | -37.44 | -27.0 | **10.4** | 351 | 0 | |
| Vert. | 5700.000 | PK | 52.88 | 33.53 | 15.37 | 45.72 | 2.26 | 58.32 | -36.90 | 10.0 | 46.9 | 351 | 0 | |
| Vert. | 5720.000 | PK | 52.79 | 33.61 | 15.38 | 45.70 | 2.26 | 58.34 | -36.88 | 15.6 | 52.4 | 351 | 0 | |
| Vert. | 5725.000 | PK | 52.88 | 33.64 | 15.39 | 45.70 | 2.26 | 58.47 | -36.75 | 27.0 | 63.7 | 351 | 0 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

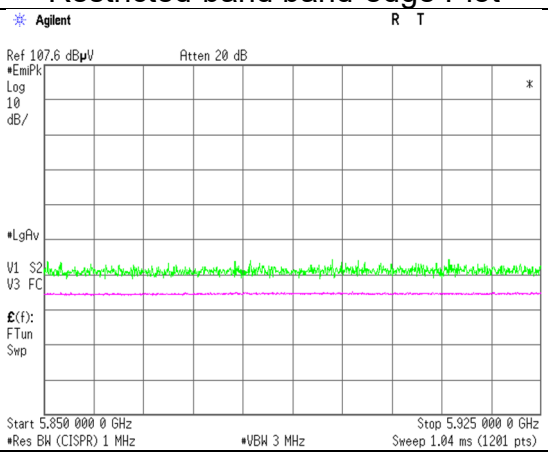
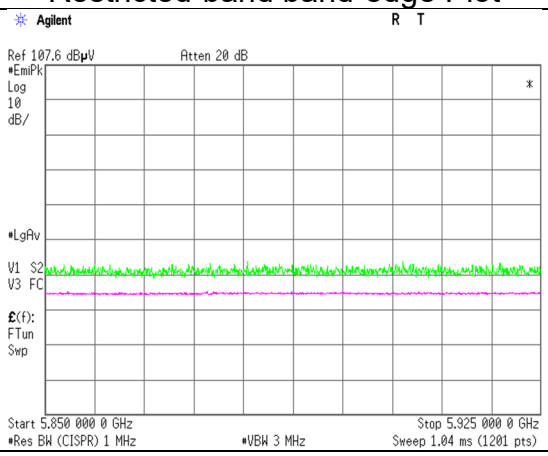
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-20 5825 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5850.000 | PK | 50.20 | 34.18 | 15.46 | 45.53 | 2.26 | 56.57 | -38.65 | 27.0 | 65.6 | 369 | 79 | |
| Hori. | 5855.000 | PK | 50.31 | 34.22 | 15.46 | 45.52 | 2.26 | 56.73 | -38.49 | 15.6 | 54.0 | 369 | 79 | |
| Hori. | 5875.000 | PK | 50.96 | 34.36 | 15.48 | 45.50 | 2.26 | 57.56 | -37.66 | 10.0 | 47.6 | 369 | 79 | |
| Hori. | 5925.000 | PK | 52.13 | 34.65 | 15.51 | 45.46 | 2.26 | 59.09 | -36.13 | -27.0 | **9.1** | 369 | 79 | |
| Vert. | 5850.000 | PK | 50.45 | 34.18 | 15.46 | 45.53 | 2.26 | 56.82 | -38.40 | 27.0 | 65.4 | 331 | 330 | |
| Vert. | 5855.000 | PK | 50.35 | 34.22 | 15.46 | 45.52 | 2.26 | 56.77 | -38.45 | 15.6 | 54.0 | 331 | 330 | |
| Vert. | 5875.000 | PK | 50.72 | 34.36 | 15.48 | 45.50 | 2.26 | 57.32 | -37.90 | 10.0 | 47.9 | 331 | 330 | |
| Vert. | 5925.000 | PK | 51.79 | 34.65 | 15.51 | 45.46 | 2.26 | 58.75 | -36.47 | -27.0 | 9.4 | 331 | 330 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

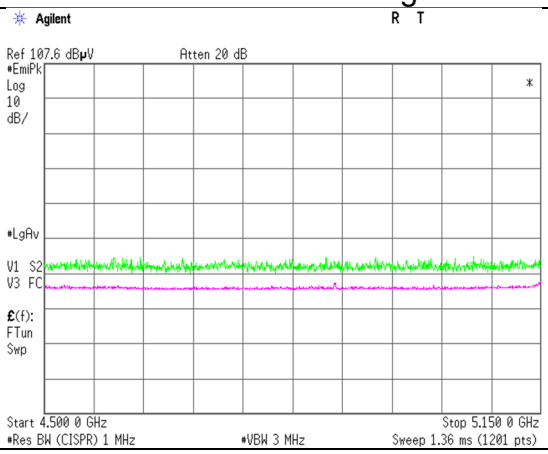
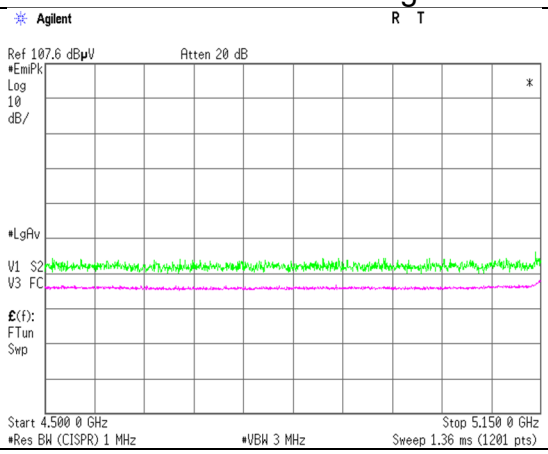
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11n-40 5190 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5150.000 | PK | 52.90 | 32.60 | 15.04 | 45.81 | 2.26 | 56.99 | 73.9 | 16.9 | 325 | 58 | |
| Hori. | 5150.000 | AV | 43.08 | 32.60 | 15.04 | 45.81 | 2.26 | 47.17 | 53.9 | 6.7 | 325 | 58 | VBW: 5.6 kHz |
| Vert. | 5150.000 | PK | 53.90 | 32.60 | 15.04 | 45.81 | 2.26 | 57.99 | 73.9 | 15.9 | 343 | 0 | |
| Vert. | 5150.000 | AV | 43.66 | 32.60 | 15.04 | 45.81 | 2.26 | 47.75 | 53.9 | **6.1** | 343 | 0 | VBW: 5.6 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

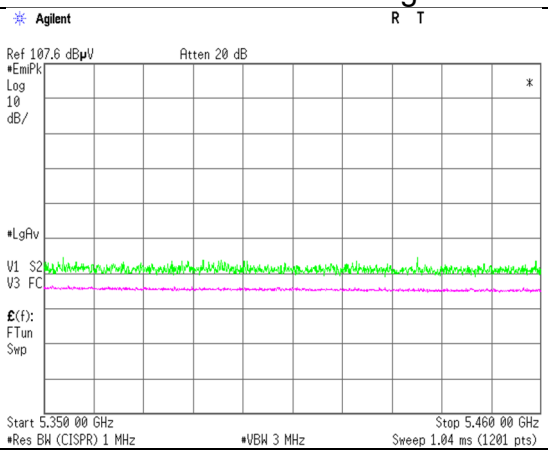
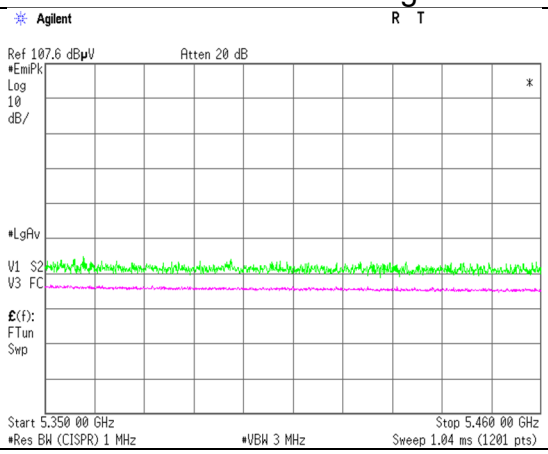
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11n-40 5310 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5350.000 | PK | 51.51 | 32.99 | 15.16 | 45.75 | 2.26 | 56.17 | 73.9 | 17.7 | 389 | 74 | |
| Hori. | 5350.000 | AV | 41.10 | 32.99 | 15.16 | 45.75 | 2.26 | 45.76 | 53.9 | 8.1 | 389 | 74 | VBW: 5.6 kHz |
| Vert. | 5350.000 | PK | 51.14 | 32.99 | 15.16 | 45.75 | 2.26 | 55.80 | 73.9 | 18.1 | 277 | 0 | |
| Vert. | 5350.000 | AV | 41.19 | 32.99 | 15.16 | 45.75 | 2.26 | 45.85 | 53.9 | **8.0** | 277 | 0 | VBW: 5.6 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11n-40 5510 MHz with BT LE 2M-PHY 2440 MHz |

## (above 1 GHz Inside of the restricted band)

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5460.000 | PK | 51.65 | 33.14 | 15.22 | 45.68 | 2.26 | 56.59 | 73.9 | 17.3 | 256 | 75 | |
| Hori. | 5460.000 | AV | 41.67 | 33.14 | 15.22 | 45.68 | 2.26 | 46.61 | 53.9 | 7.2 | 256 | 75 | VBW: 5.6 kHz |
| Vert. | 5460.000 | PK | 52.32 | 33.14 | 15.22 | 45.68 | 2.26 | 57.26 | 73.9 | 16.6 | 356 | 6 | |
| Vert. | 5460.000 | AV | 41.79 | 33.14 | 15.22 | 45.68 | 2.26 | 46.73 | 53.9 | **7.1** | 356 | 6 | VBW: 5.6 kHz |

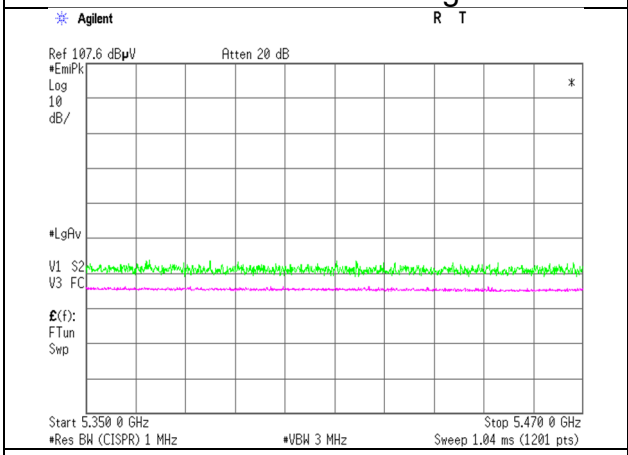
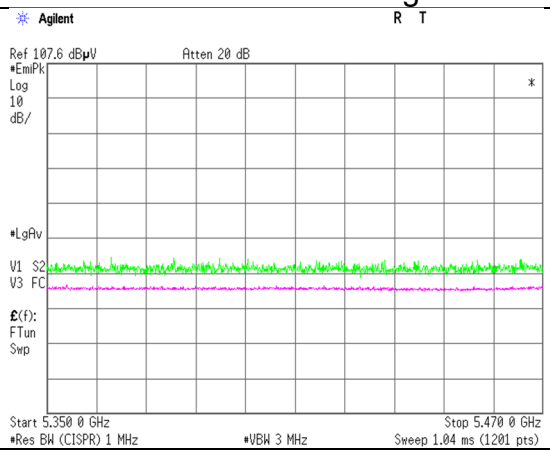
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5470.000 | PK | 52.06 | 33.17 | 15.23 | 45.68 | 2.26 | 57.04 | -38.18 | -27.0 | 11.1 | 256 | 75 | |
| Vert. | 5470.000 | PK | 53.02 | 33.17 | 15.23 | 45.68 | 2.26 | 58.00 | -37.22 | -27.0 | 10.2 | 356 | 6 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

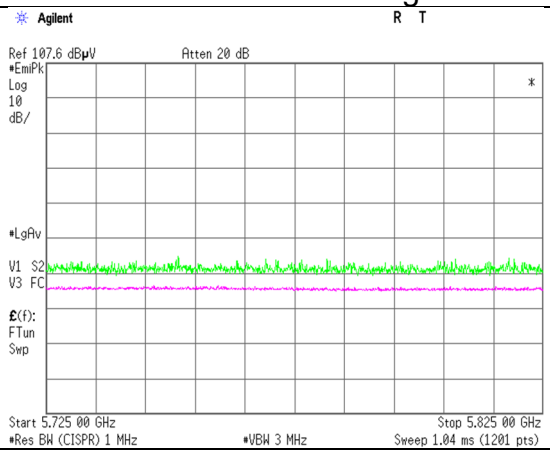
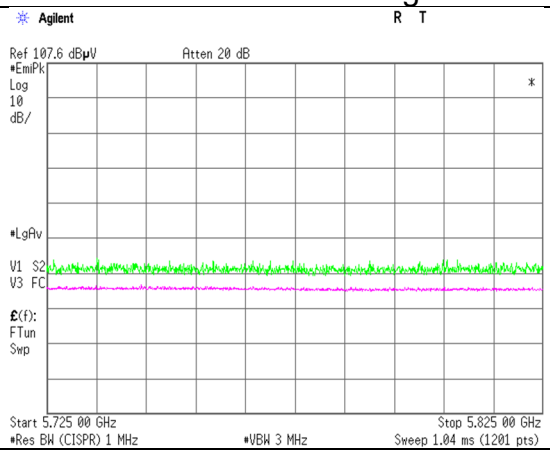
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11n-40 5670 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5725.000 | PK | 52.10 | 33.64 | 15.39 | 45.70 | 2.26 | 57.69 | -37.53 | -27.0 | 10.5 | 400 | 0 | |
| Vert. | 5725.000 | PK | 52.31 | 33.64 | 15.39 | 45.70 | 2.26 | 57.90 | -37.32 | -27.0 | **10.3** | 364 | 344 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

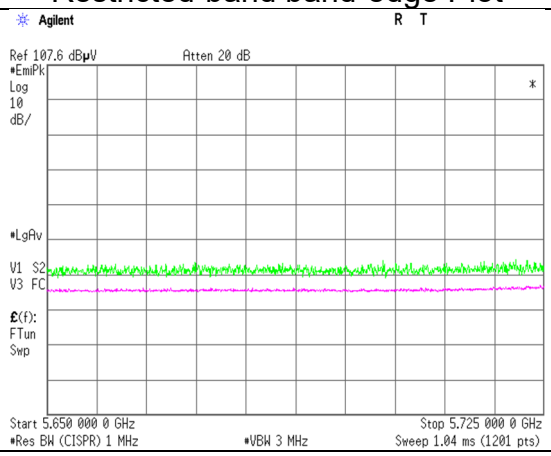
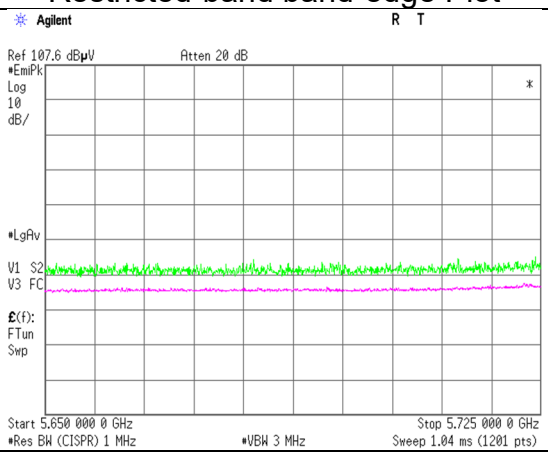
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11n-40 5755 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5650.000 | PK | 52.66 | 33.39 | 15.34 | 45.73 | 2.26 | 57.92 | -37.30 | -27.0 | **10.3** | 218 | 0 | |
| Hori. | 5700.000 | PK | 52.97 | 33.53 | 15.37 | 45.72 | 2.26 | 58.41 | -36.81 | 10.0 | 46.8 | 218 | 0 | |
| Hori. | 5720.000 | PK | 52.34 | 33.61 | 15.38 | 45.70 | 2.26 | 57.89 | -37.33 | 15.6 | 52.9 | 218 | 0 | |
| Hori. | 5725.000 | PK | 52.54 | 33.64 | 15.39 | 45.70 | 2.26 | 58.13 | -37.09 | 27.0 | 64.0 | 218 | 0 | |
| Vert. | 5650.000 | PK | 52.14 | 33.39 | 15.34 | 45.73 | 2.26 | 57.40 | -37.82 | -27.0 | 10.8 | 365 | 0 | |
| Vert. | 5700.000 | PK | 52.82 | 33.53 | 15.37 | 45.72 | 2.26 | 58.26 | -36.96 | 10.0 | 46.9 | 365 | 0 | |
| Vert. | 5720.000 | PK | 53.16 | 33.61 | 15.38 | 45.70 | 2.26 | 58.71 | -36.51 | 15.6 | 52.1 | 365 | 0 | |
| Vert. | 5725.000 | PK | 53.95 | 33.64 | 15.39 | 45.70 | 2.26 | 59.54 | -35.68 | 27.0 | 62.6 | 365 | 0 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

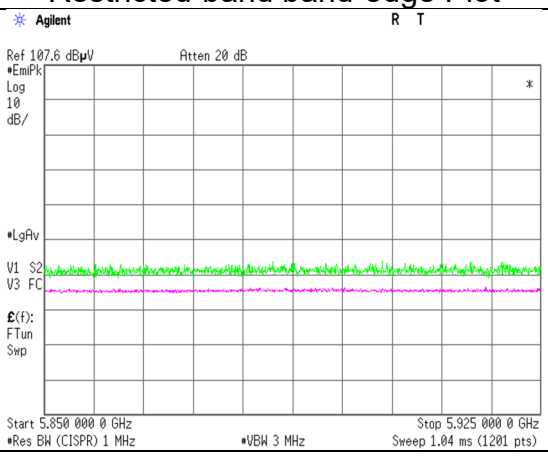
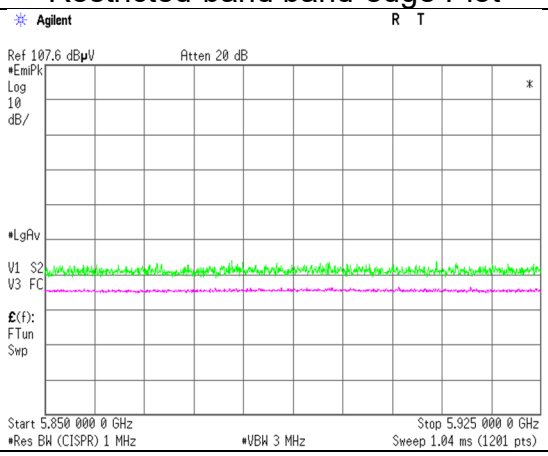
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11n-40 5795 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5850.000 | PK | 50.80 | 34.18 | 15.46 | 45.53 | 2.26 | 57.17 | -38.05 | 27.0 | 65.0 | 220 | 82 | |
| Hori. | 5855.000 | PK | 50.42 | 34.22 | 15.46 | 45.52 | 2.26 | 56.84 | -38.38 | 15.6 | 53.9 | 220 | 82 | |
| Hori. | 5875.000 | PK | 50.31 | 34.36 | 15.48 | 45.50 | 2.26 | 56.91 | -38.31 | 10.0 | 48.3 | 220 | 82 | |
| Hori. | 5925.000 | PK | 51.66 | 34.65 | 15.51 | 45.46 | 2.26 | 58.62 | -36.60 | -27.0 | **9.6** | 220 | 82 | |
| Vert. | 5850.000 | PK | 50.84 | 34.18 | 15.46 | 45.53 | 2.26 | 57.21 | -38.01 | 27.0 | 65.0 | 324 | 353 | |
| Vert. | 5855.000 | PK | 50.71 | 34.22 | 15.46 | 45.52 | 2.26 | 57.13 | -38.09 | 15.6 | 53.6 | 324 | 353 | |
| Vert. | 5875.000 | PK | 51.08 | 34.36 | 15.48 | 45.50 | 2.26 | 57.68 | -37.54 | 10.0 | 47.5 | 324 | 353 | |
| Vert. | 5925.000 | PK | 51.10 | 34.65 | 15.51 | 45.46 | 2.26 | 58.06 | -37.16 | -27.0 | 10.1 | 324 | 353 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

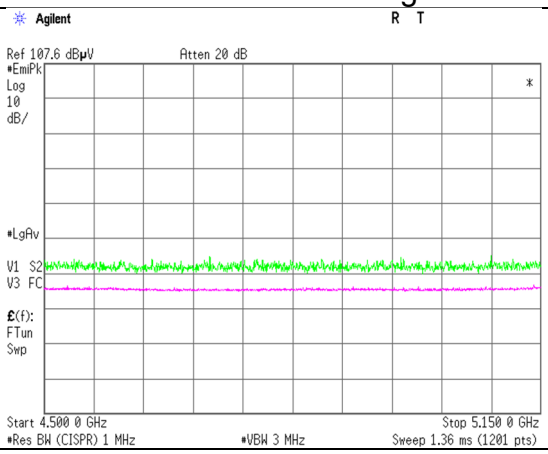
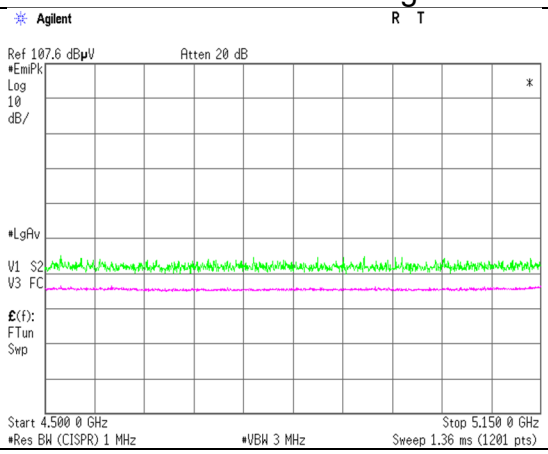
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-40 5190 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5150.000 | PK | 52.42 | 32.60 | 15.04 | 45.81 | 2.26 | 56.51 | 73.9 | 17.3 | 338 | 353 | |
| Hori. | 5150.000 | AV | 41.43 | 32.60 | 15.04 | 45.81 | 2.26 | 45.52 | 53.9 | 8.3 | 338 | 353 | VBW: 4.3 kHz |
| Vert. | 5150.000 | PK | 52.28 | 32.60 | 15.04 | 45.81 | 2.26 | 56.37 | 73.9 | 17.5 | 304 | 0 | |
| Vert. | 5150.000 | AV | 41.84 | 32.60 | 15.04 | 45.81 | 2.26 | 45.93 | 53.9 | **7.9** | 304 | 0 | VBW: 4.3 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

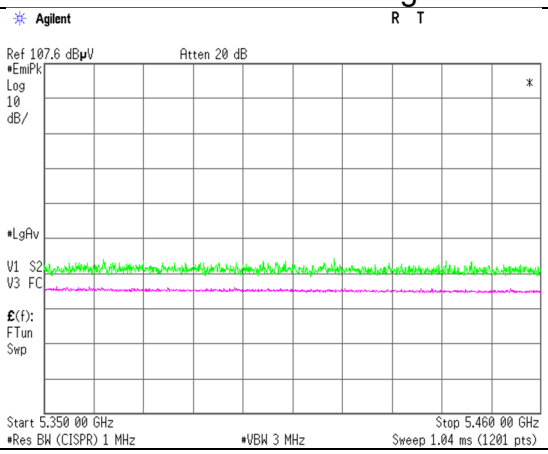
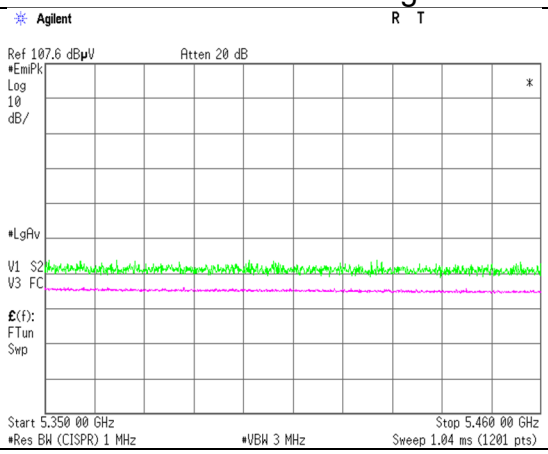
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-40 5310 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5350.000 | PK | 50.62 | 32.99 | 15.16 | 45.75 | 2.26 | 55.28 | 73.9 | 18.6 | 389 | 73 | |
| Hori. | 5350.000 | AV | 40.44 | 32.99 | 15.16 | 45.75 | 2.26 | 45.10 | 53.9 | **8.8** | 389 | 73 | VBW: 4.3 kHz |
| Vert. | 5350.000 | PK | 50.60 | 32.99 | 15.16 | 45.75 | 2.26 | 55.26 | 73.9 | 18.6 | 310 | 0 | |
| Vert. | 5350.000 | AV | 40.38 | 32.99 | 15.16 | 45.75 | 2.26 | 45.04 | 53.9 | **8.8** | 310 | 0 | VBW: 4.3 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-40 5510 MHz with BT LE 2M-PHY 2440 MHz |

## (above 1 GHz Inside of the restricted band)

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5460.000 | PK | 52.33 | 33.14 | 15.22 | 45.68 | 2.26 | 57.27 | 73.9 | 16.6 | 209 | 78 | |
| Hori. | 5460.000 | AV | 41.44 | 33.14 | 15.22 | 45.68 | 2.26 | 46.38 | 53.9 | **7.5** | 209 | 78 | VBW: 4.3 kHz |
| Vert. | 5460.000 | PK | 51.65 | 33.14 | 15.22 | 45.68 | 2.26 | 56.59 | 73.9 | 17.3 | 374 | 336 | |
| Vert. | 5460.000 | AV | 41.29 | 33.14 | 15.22 | 45.68 | 2.26 | 46.23 | 53.9 | 7.6 | 374 | 336 | VBW: 4.3 kHz |

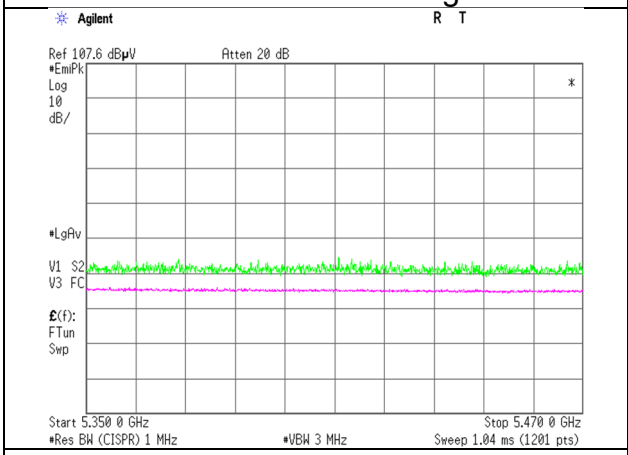
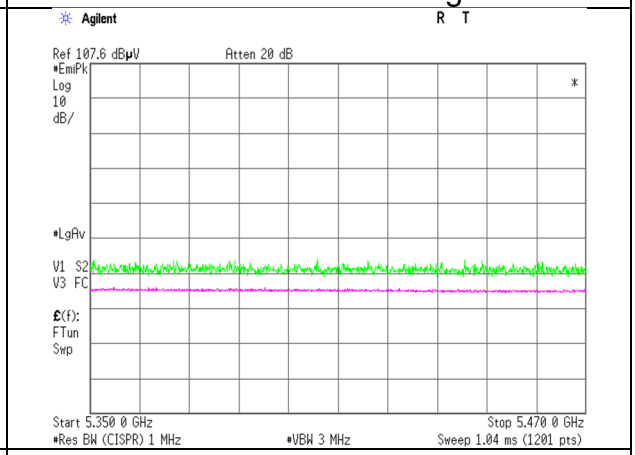
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5470.000 | PK | 52.82 | 33.17 | 15.23 | 45.68 | 2.26 | 57.80 | -37.42 | -27.0 | 10.4 | 209 | 78 | |
| Vert. | 5470.000 | PK | 51.96 | 33.17 | 15.23 | 45.68 | 2.26 | 56.94 | -38.28 | -27.0 | 11.2 | 374 | 336 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

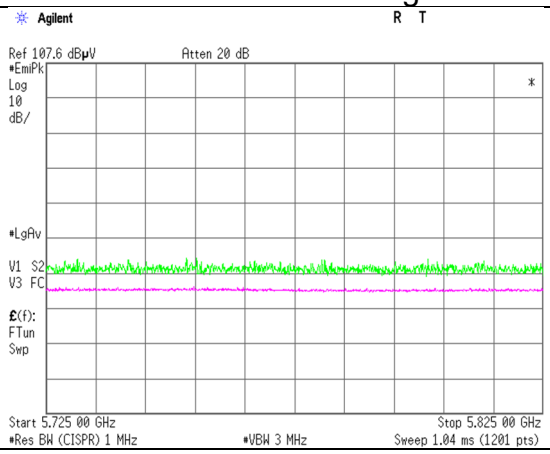
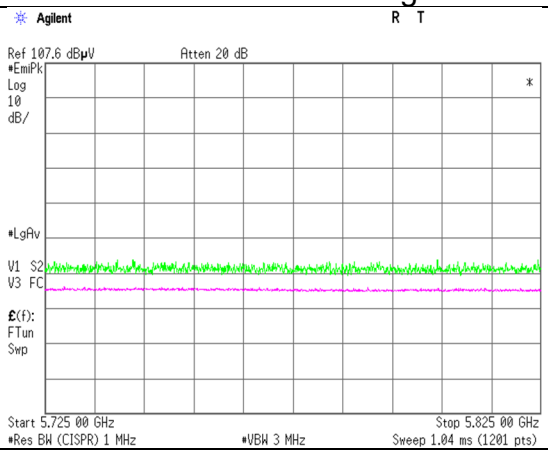
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 19, 2024 |
| Temperature / Humidity | 21 deg. C / 41 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-40 5670 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5725.000 | PK | 51.57 | 33.64 | 15.39 | 45.70 | 2.26 | 57.16 | -38.06 | -27.0 | **11.0** | 230 | 79 | |
| Vert. | 5725.000 | PK | 51.40 | 33.64 | 15.39 | 45.70 | 2.26 | 56.99 | -38.23 | -27.0 | 11.2 | 324 | 7 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

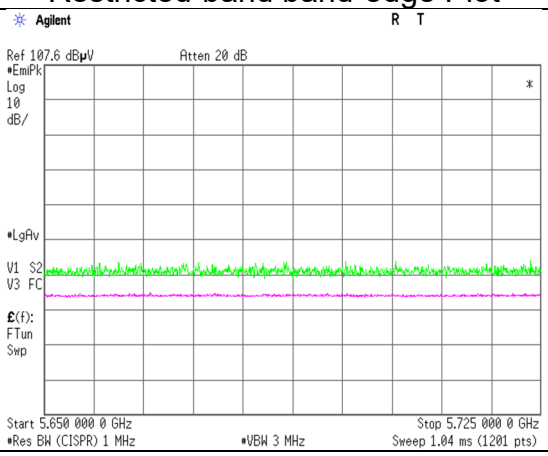
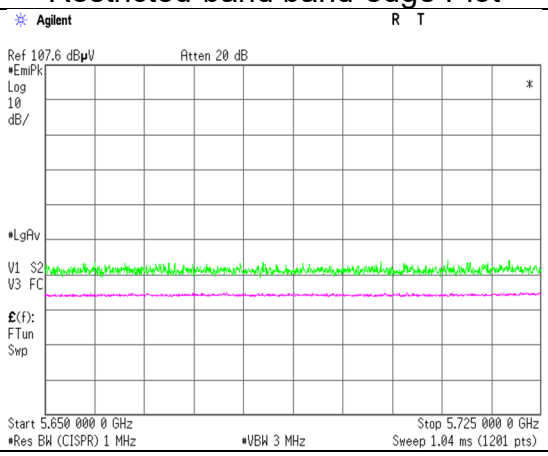
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 20, 2024 |
| Temperature / Humidity | 21 deg. C / 53 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-40 5755 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5650.000 | PK | 51.79 | 33.39 | 15.34 | 45.73 | 2.26 | 57.05 | -38.17 | -27.0 | **11.1** | 231 | 83 | |
| Hori. | 5700.000 | PK | 51.87 | 33.53 | 15.37 | 45.72 | 2.26 | 57.31 | -37.91 | 10.0 | 47.9 | 231 | 83 | |
| Hori. | 5720.000 | PK | 51.62 | 33.61 | 15.38 | 45.70 | 2.26 | 57.17 | -38.05 | 15.6 | 53.6 | 231 | 83 | |
| Hori. | 5725.000 | PK | 52.18 | 33.64 | 15.39 | 45.70 | 2.26 | 57.77 | -37.45 | 27.0 | 64.4 | 231 | 83 | |
| Vert. | 5650.000 | PK | 51.63 | 33.39 | 15.34 | 45.73 | 2.26 | 56.89 | -38.33 | -27.0 | 11.3 | 368 | 352 | |
| Vert. | 5700.000 | PK | 51.82 | 33.53 | 15.37 | 45.72 | 2.26 | 57.26 | -37.96 | 10.0 | 47.9 | 368 | 352 | |
| Vert. | 5720.000 | PK | 52.33 | 33.61 | 15.38 | 45.70 | 2.26 | 57.88 | -37.34 | 15.6 | 52.9 | 368 | 352 | |
| Vert. | 5725.000 | PK | 52.79 | 33.64 | 15.39 | 45.70 | 2.26 | 58.38 | -36.84 | 27.0 | 63.8 | 368 | 352 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

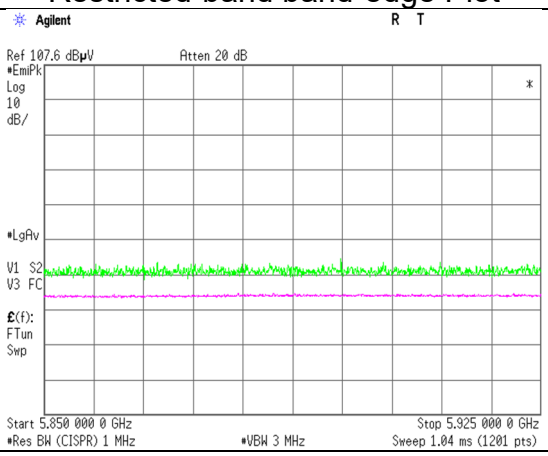
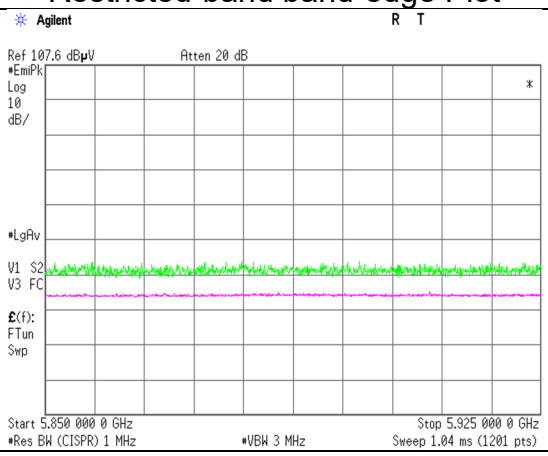
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 20, 2024 |
| Temperature / Humidity | 21 deg. C / 53 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-40 5795 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5850.000 | PK | 49.92 | 34.18 | 15.46 | 45.53 | 2.26 | 56.29 | -38.93 | 27.0 | 65.9 | 229 | 83 | |
| Hori. | 5855.000 | PK | 49.47 | 34.22 | 15.46 | 45.52 | 2.26 | 55.89 | -39.33 | 15.6 | 54.9 | 229 | 83 | |
| Hori. | 5875.000 | PK | 49.65 | 34.36 | 15.48 | 45.50 | 2.26 | 56.25 | -38.97 | 10.0 | 48.9 | 229 | 83 | |
| Hori. | 5925.000 | PK | 50.86 | 34.65 | 15.51 | 45.46 | 2.26 | 57.82 | -37.40 | -27.0 | 10.4 | 229 | 83 | |
| Vert. | 5850.000 | PK | 49.96 | 34.18 | 15.46 | 45.53 | 2.26 | 56.33 | -38.89 | 27.0 | 65.8 | 339 | 359 | |
| Vert. | 5855.000 | PK | 49.71 | 34.22 | 15.46 | 45.52 | 2.26 | 56.13 | -39.09 | 15.6 | 54.6 | 339 | 359 | |
| Vert. | 5875.000 | PK | 49.73 | 34.36 | 15.48 | 45.50 | 2.26 | 56.33 | -38.89 | 10.0 | 48.8 | 339 | 359 | |
| Vert. | 5925.000 | PK | 51.02 | 34.65 | 15.51 | 45.46 | 2.26 | 57.98 | -37.24 | -27.0 | **10.2** | 339 | 359 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

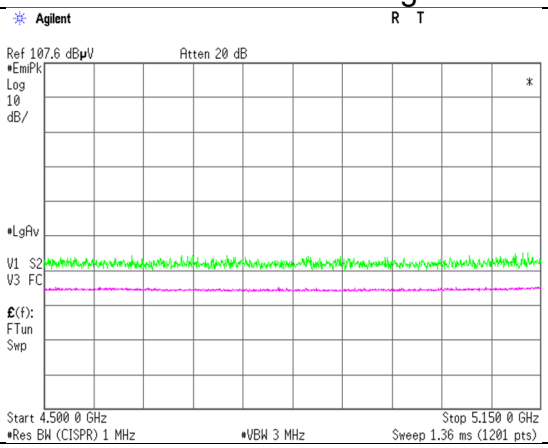
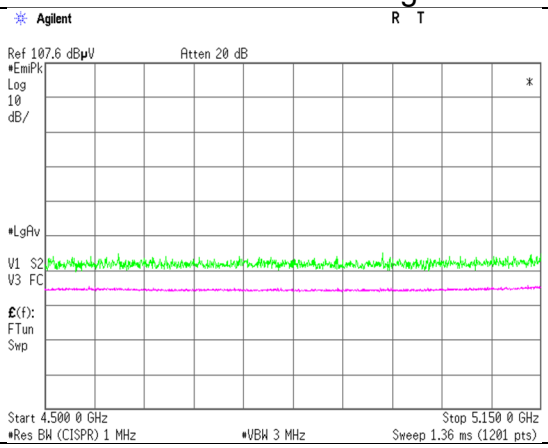
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 20, 2024 |
| Temperature / Humidity | 21 deg. C / 53 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5210 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5150.000 | PK | 51.61 | 32.60 | 15.04 | 45.81 | 2.26 | 55.70 | 73.9 | 18.2 | 236 | 351 | |
| Hori. | 5150.000 | AV | 41.52 | 32.60 | 15.04 | 45.81 | 2.26 | 45.61 | 53.9 | 8.2 | 236 | 351 | VBW: 4.3 kHz |
| Vert. | 5150.000 | PK | 52.21 | 32.60 | 15.04 | 45.81 | 2.26 | 56.30 | 73.9 | 17.6 | 205 | 4 | |
| Vert. | 5150.000 | AV | 41.70 | 32.60 | 15.04 | 45.81 | 2.26 | 45.79 | 53.9 | **8.1** | 205 | 4 | VBW: 4.3 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

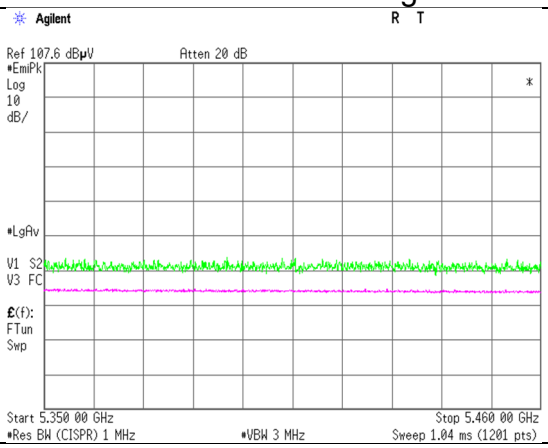
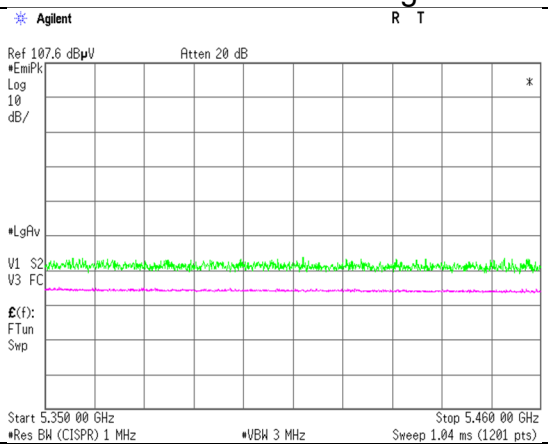
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 20, 2024 |
| Temperature / Humidity | 21 deg. C / 53 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5290 MHz with BT LE 2M-PHY 2440 MHz |

**(above 1 GHz Inside of the restricted band)**

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5350.000 | PK | 50.41 | 32.99 | 15.16 | 45.75 | 2.26 | 55.07 | 73.9 | 18.8 | 316 | 350 | |
| Hori. | 5350.000 | AV | 40.32 | 32.99 | 15.16 | 45.75 | 2.26 | 44.98 | 53.9 | 8.9 | 316 | 350 | VBW: 4.3 kHz |
| Vert. | 5350.000 | PK | 50.96 | 32.99 | 15.16 | 45.75 | 2.26 | 55.62 | 73.9 | 18.2 | 279 | 5 | |
| Vert. | 5350.000 | AV | 40.43 | 32.99 | 15.16 | 45.75 | 2.26 | 45.09 | 53.9 | **8.8** | 279 | 5 | VBW: 4.3 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 20, 2024 |
| Temperature / Humidity | 21 deg. C / 53 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5530 MHz with BT LE 2M-PHY 2440 MHz |

## (above 1 GHz Inside of the restricted band)

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5460.000 | PK | 52.53 | 33.14 | 15.22 | 45.68 | 2.26 | 57.47 | 73.9 | 16.4 | 250 | 332 | |
| Hori. | 5460.000 | AV | 41.50 | 33.14 | 15.22 | 45.68 | 2.26 | 46.44 | 53.9 | 7.4 | 250 | 332 | VBW: 4.3 kHz |
| Vert. | 5460.000 | PK | 51.75 | 33.14 | 15.22 | 45.68 | 2.26 | 56.69 | 73.9 | 17.2 | 356 | 340 | |
| Vert. | 5460.000 | AV | 41.73 | 33.14 | 15.22 | 45.68 | 2.26 | 46.67 | 53.9 | **7.2** | 356 | 340 | VBW: 4.3 kHz |

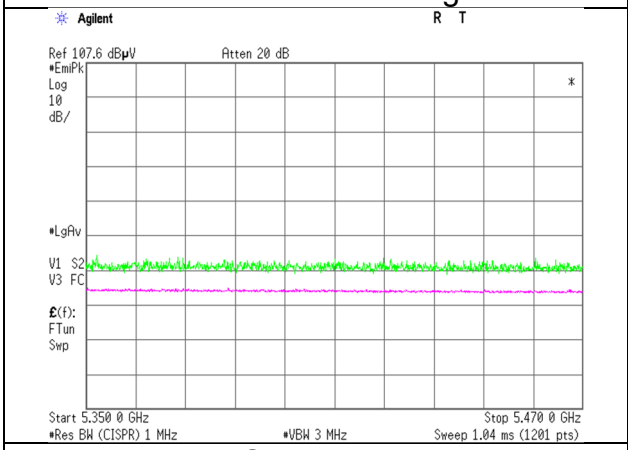
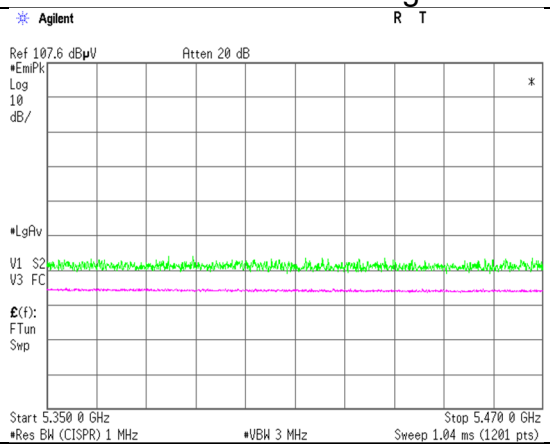
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5470.000 | PK | 52.47 | 33.17 | 15.23 | 45.68 | 2.26 | 57.45 | -37.77 | -27.0 | 10.7 | 250 | 332 | |
| Vert. | 5470.000 | PK | 52.19 | 33.17 | 15.23 | 45.68 | 2.26 | 57.17 | -38.05 | -27.0 | 11.0 | 356 | 340 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

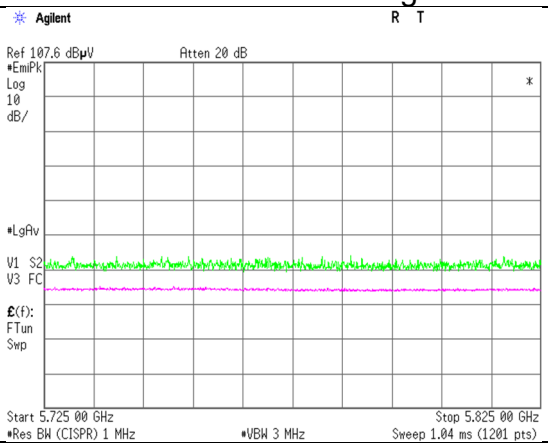
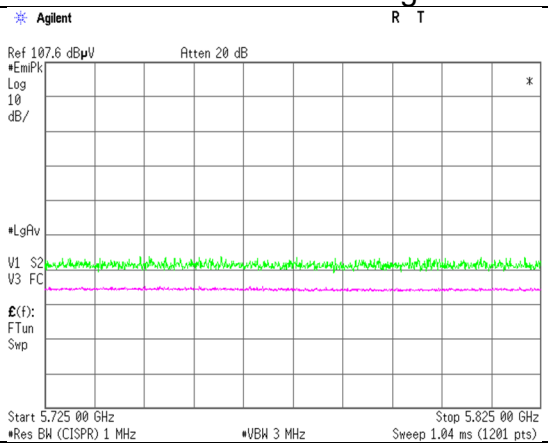
| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 20, 2024 |
| Temperature / Humidity | 21 deg. C / 53 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5610 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5725.000 | PK | 51.53 | 33.64 | 15.39 | 45.70 | 2.26 | 57.12 | -38.10 | -27.0 | 11.1 | 227 | 334 | |
| Vert. | 5725.000 | PK | 51.91 | 33.64 | 15.39 | 45.70 | 2.26 | 57.50 | -37.72 | -27.0 | **10.7** | 389 | 11 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

| Horizontal | Vertical |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |



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

# Radiated Spurious Emission

| | |
|---|---|
| Test place | Kashima EMC Lab. |
| Semi Anechoic Chamber | No.11 |
| Date | February 20, 2024 |
| Temperature / Humidity | 21 deg. C / 53 % RH |
| Engineer | Hiromitsu Tanabe<br>(1 GHz to 6.4 GHz) |
| Mode | Tx 11ac-80 5775 MHz with BT LE 2M-PHY 2440 MHz |

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

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

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5650.000 | PK | 51.65 | 33.39 | 15.34 | 45.73 | 2.26 | 56.91 | -38.31 | -27.0 | 11.3 | 237 | 79 | |
| Hori. | 5700.000 | PK | 51.92 | 33.53 | 15.37 | 45.72 | 2.26 | 57.36 | -37.86 | 10.0 | 47.8 | 237 | 79 | |
| Hori. | 5720.000 | PK | 51.71 | 33.61 | 15.38 | 45.70 | 2.26 | 57.26 | -37.96 | 15.6 | 53.5 | 237 | 79 | |
| Hori. | 5725.000 | PK | 54.12 | 33.64 | 15.39 | 45.70 | 2.26 | 59.71 | -35.51 | 27.0 | 62.5 | 237 | 79 | |
| Hori. | 5850.000 | PK | 50.58 | 34.18 | 15.46 | 45.53 | 2.26 | 56.95 | -38.27 | 27.0 | 65.2 | 237 | 79 | |
| Hori. | 5855.000 | PK | 50.07 | 34.22 | 15.46 | 45.52 | 2.26 | 56.49 | -38.73 | 15.6 | 54.3 | 237 | 79 | |
| Hori. | 5875.000 | PK | 50.63 | 34.36 | 15.48 | 45.50 | 2.26 | 57.23 | -37.99 | 10.0 | 47.9 | 237 | 79 | |
| Hori. | 5925.000 | PK | 51.11 | 34.65 | 15.51 | 45.46 | 2.26 | 58.07 | -37.15 | -27.0 | 10.1 | 237 | 79 | |
| Vert. | 5650.000 | PK | 52.09 | 33.39 | 15.34 | 45.73 | 2.26 | 57.35 | -37.87 | -27.0 | 10.8 | 330 | 352 | |
| Vert. | 5700.000 | PK | 52.13 | 33.53 | 15.37 | 45.72 | 2.26 | 57.57 | -37.65 | 10.0 | 47.6 | 330 | 352 | |
| Vert. | 5720.000 | PK | 52.82 | 33.61 | 15.38 | 45.70 | 2.26 | 58.37 | -36.85 | 15.6 | 52.4 | 330 | 352 | |
| Vert. | 5725.000 | PK | 56.52 | 33.64 | 15.39 | 45.70 | 2.26 | 62.11 | -33.11 | 27.0 | 60.1 | 330 | 352 | |
| Vert. | 5850.000 | PK | 50.51 | 34.18 | 15.46 | 45.53 | 2.26 | 56.88 | -38.34 | 27.0 | 65.3 | 330 | 352 | |
| Vert. | 5855.000 | PK | 50.07 | 34.22 | 15.46 | 45.52 | 2.26 | 56.49 | -38.73 | 15.6 | 54.3 | 330 | 352 | |
| Vert. | 5875.000 | PK | 50.52 | 34.36 | 15.48 | 45.50 | 2.26 | 57.12 | -38.10 | 10.0 | 48.1 | 330 | 352 | |
| Vert. | 5925.000 | PK | 52.20 | 34.65 | 15.51 | 45.46 | 2.26 | 59.16 | -36.06 | -27.0 | **9.0** | 330 | 352 | |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ( (10 ^ (Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance : 3 [m] ) ^ 2 / 30 * 10 ^ 3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).
Distance factor : 1 GHz - 10 GHz : 20log (3.89 m / 3.0 m) = 2.26 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB