# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5180 MHz |

**(above 1GHz 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 | 52.37 | 32.01 | 16.48 | 44.63 | 2.33 | 58.56 | 73.97 | 15.4 | 161 | 265 | |
| Hori. | 5150.000 | AV | 39.02 | 32.01 | 16.48 | 44.63 | 2.33 | 45.21 | 53.97 | **8.7** | 161 | 265 | VBW: 10 Hz |
| Vert. | 5150.000 | PK | 52.42 | 32.01 | 16.48 | 44.63 | 2.33 | 58.61 | 73.97 | 15.3 | 130 | 288 | |
| Vert. | 5150.000 | AV | 38.84 | 32.01 | 16.48 | 44.63 | 2.33 | 45.03 | 53.97 | 8.9 | 130 | 288 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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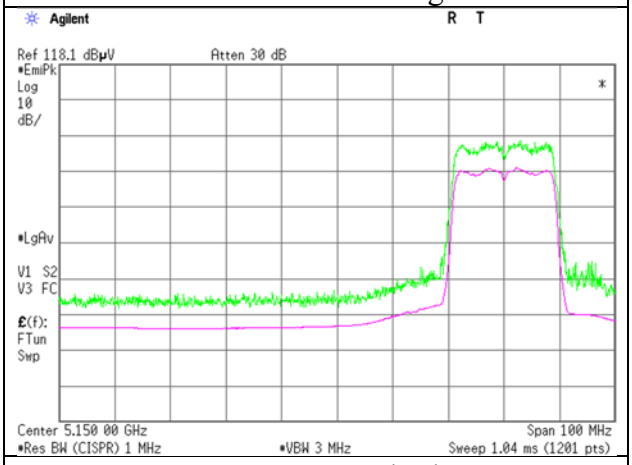
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5180 MHz |

Horizontal

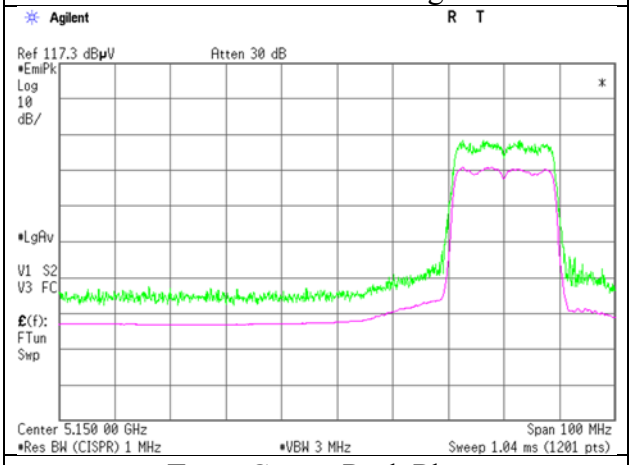
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

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| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5320 MHz |

**(above 1GHz 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 | 51.37 | 32.09 | 16.39 | 44.79 | 2.33 | 57.39 | 73.97 | 16.5 | 166 | 265 | |
| Hori. | 5350.000 | AV | 39.08 | 32.09 | 16.39 | 44.79 | 2.33 | 45.10 | 53.97 | 8.8 | 166 | 265 | VBW: 10 Hz |
| Vert. | 5350.000 | PK | 51.48 | 32.09 | 16.39 | 44.79 | 2.33 | 57.50 | 73.97 | 16.4 | 136 | 290 | |
| Vert. | 5350.000 | AV | 39.43 | 32.09 | 16.39 | 44.79 | 2.33 | 45.45 | 53.97 | **8.5** | 136 | 290 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

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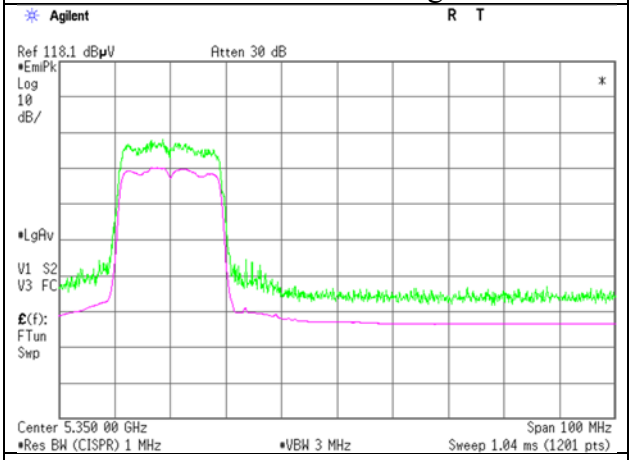
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5320 MHz |

Horizontal

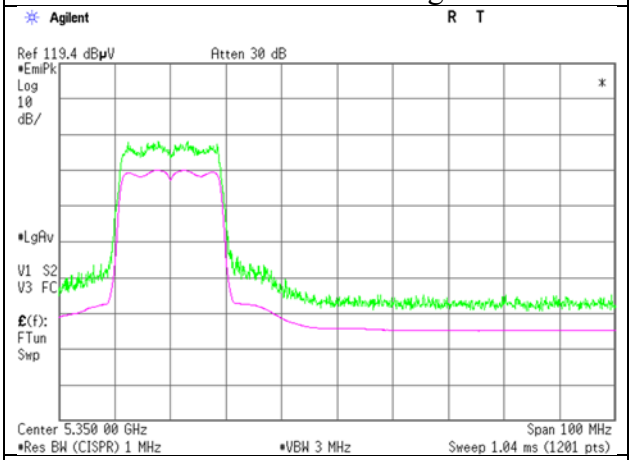
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

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| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5500 MHz |

## (above 1GHz 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 | 50.71 | 32.14 | 16.36 | 44.87 | 2.33 | 56.67 | 73.97 | 17.3 | 162 | 257 | |
| Hori. | 5460.000 | AV | 37.97 | 32.14 | 16.36 | 44.87 | 2.33 | 43.93 | 53.97 | **10.0** | 162 | 257 | VBW: 10 Hz |
| Vert. | 5460.000 | PK | 50.18 | 32.14 | 16.36 | 44.87 | 2.33 | 56.14 | 73.97 | 17.8 | 127 | 307 | |
| Vert. | 5460.000 | AV | 37.95 | 32.14 | 16.36 | 44.87 | 2.33 | 43.91 | 53.97 | **10.0** | 127 | 307 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 54.37 | 32.15 | 16.35 | 44.88 | 2.33 | 60.32 | -34.88 | -27.00 | 7.9 | 162 | 257 | |
| Vert. | 5470.000 | PK | 54.91 | 32.15 | 16.35 | 44.88 | 2.33 | 60.86 | -34.34 | -27.00 | **7.3** | 127 | 307 | |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(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 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

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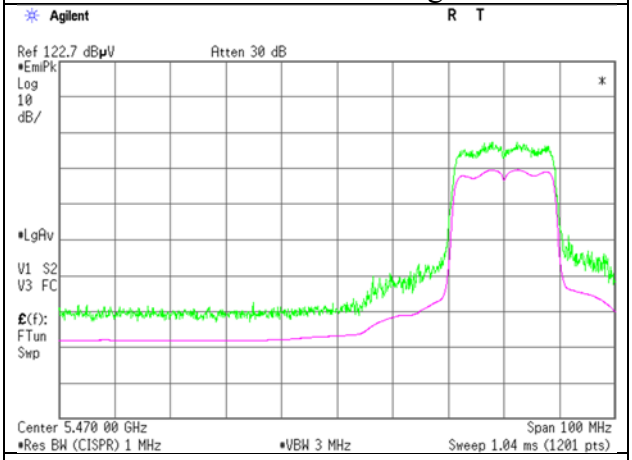
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5500 MHz |

Horizontal

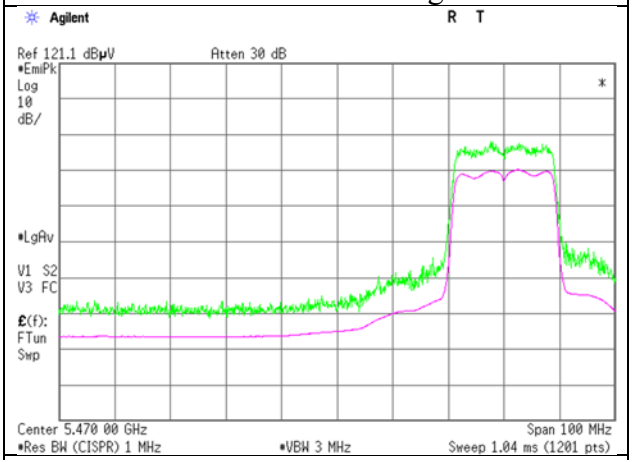
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

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| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5700 MHz |

## (Calculation) (above 1GHz 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 | 59.75 | 32.53 | 16.59 | 44.87 | 2.33 | 66.33 | -28.87 | -27.00 | **1.9** | 142 | 260 | |
| Vert. | 5725.000 | PK | 57.99 | 32.53 | 16.59 | 44.87 | 2.33 | 64.57 | -30.63 | -27.00 | 3.6 | 114 | 310 | |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(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 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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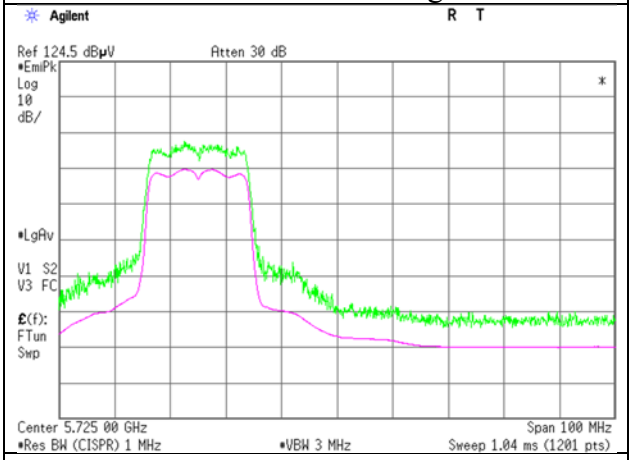
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5700 MHz |

Horizontal

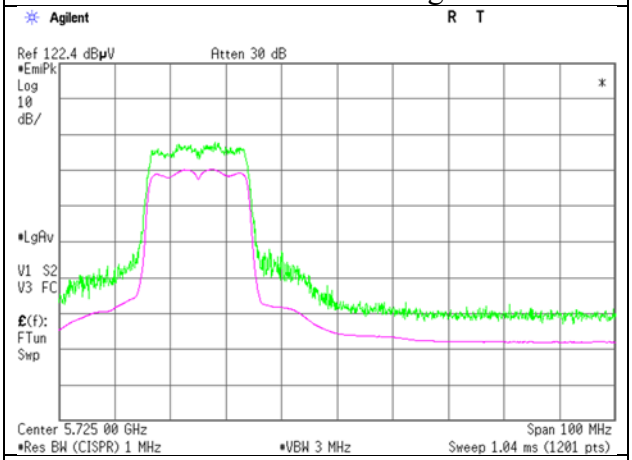
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

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| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5745 MHz |

**(Calculation) (above 1GHz 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 | 49.00 | 32.41 | 16.50 | 44.88 | 2.33 | 55.36 | -39.84 | -27.00 | 12.8 | 142 | 244 | |
| Hori. | 5700.000 | PK | 51.46 | 32.49 | 16.56 | 44.88 | 2.33 | 57.96 | -37.24 | 10.00 | 47.2 | 142 | 244 | |
| Hori. | 5720.000 | PK | 60.74 | 32.53 | 16.59 | 44.87 | 2.33 | 67.32 | -27.88 | 15.60 | 43.5 | 142 | 244 | |
| Hori. | 5725.000 | PK | 65.13 | 32.53 | 16.59 | 44.87 | 2.33 | 71.71 | -23.49 | 27.00 | 50.5 | 142 | 244 | |
| Vert. | 5650.000 | PK | 49.21 | 32.41 | 16.50 | 44.88 | 2.33 | 55.57 | -39.63 | -27.00 | **12.6** | 156 | 234 | |
| Vert. | 5700.000 | PK | 50.35 | 32.49 | 16.56 | 44.88 | 2.33 | 56.85 | -38.35 | 10.00 | 48.4 | 156 | 234 | |
| Vert. | 5720.000 | PK | 59.91 | 32.53 | 16.59 | 44.87 | 2.33 | 66.49 | -28.71 | 15.60 | 44.3 | 156 | 234 | |
| Vert. | 5725.000 | PK | 65.54 | 32.53 | 16.59 | 44.87 | 2.33 | 72.12 | -23.08 | 27.00 | 50.1 | 156 | 234 | |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(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 20dB).
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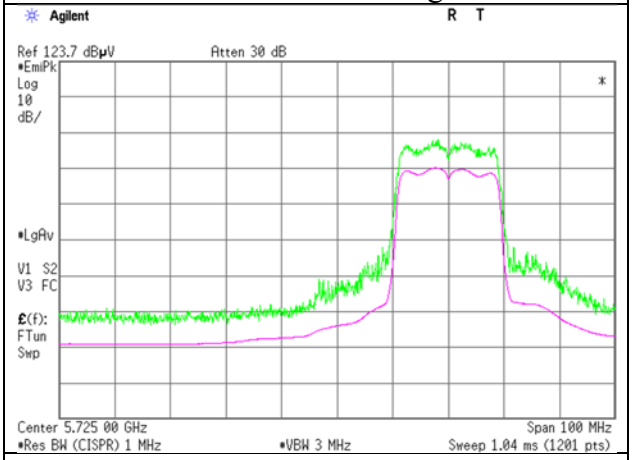
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5745 MHz |

Horizontal

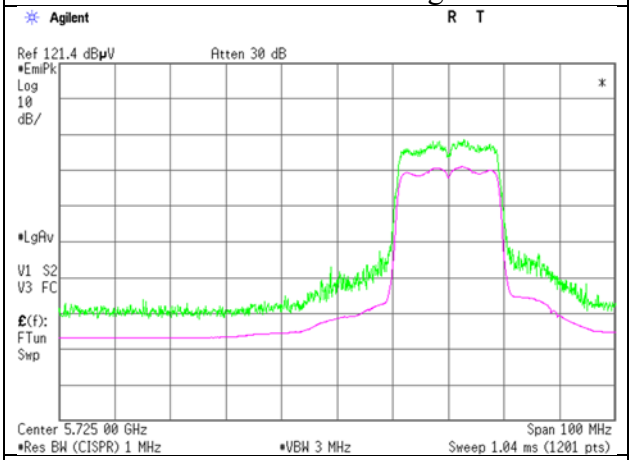
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
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| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5825 MHz |

**(Calculation) (above 1GHz 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 | 59.76 | 32.74 | 16.73 | 44.86 | 2.33 | 66.70 | -28.50 | 27.00 | 55.5 | 133 | 247 | |
| Hori. | 5855.000 | PK | 56.88 | 32.75 | 16.73 | 44.86 | 2.33 | 63.83 | -31.37 | 15.60 | 47.0 | 133 | 247 | |
| Hori. | 5875.000 | PK | 50.42 | 32.78 | 16.76 | 44.86 | 2.33 | 57.43 | -37.77 | 10.00 | 47.8 | 133 | 247 | |
| Hori. | 5925.000 | PK | 49.75 | 32.87 | 16.80 | 44.85 | 2.33 | 56.90 | -38.30 | -27.00 | **11.3** | 133 | 247 | |
| Vert. | 5850.000 | PK | 58.77 | 32.74 | 16.73 | 44.86 | 2.33 | 65.71 | -29.49 | 27.00 | 56.5 | 123 | 228 | |
| Vert. | 5855.000 | PK | 55.33 | 32.75 | 16.73 | 44.86 | 2.33 | 62.28 | -32.92 | 15.60 | 48.5 | 123 | 228 | |
| Vert. | 5875.000 | PK | 49.29 | 32.78 | 16.76 | 44.86 | 2.33 | 56.30 | -38.90 | 10.00 | 48.9 | 123 | 228 | |
| Vert. | 5925.000 | PK | 49.53 | 32.87 | 16.80 | 44.85 | 2.33 | 56.68 | -38.52 | -27.00 | 11.5 | 123 | 228 | |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(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 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
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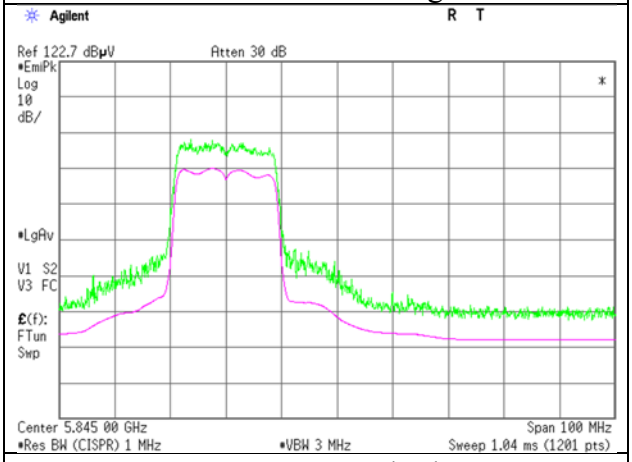
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-20 5825 MHz |

Horizontal

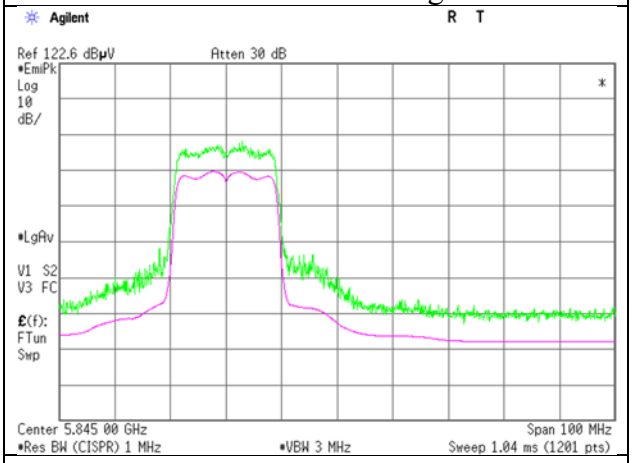
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

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| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5190 MHz |

**(above 1GHz 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 | 51.87 | 32.01 | 16.48 | 44.63 | 2.33 | 58.06 | 73.97 | 15.9 | 130 | 252 | |
| Hori. | 5150.000 | AV | 41.09 | 32.01 | 16.48 | 44.63 | 2.33 | 47.28 | 53.97 | 6.6 | 130 | 252 | VBW: 3.6 kHz |
| Vert. | 5150.000 | PK | 52.38 | 32.01 | 16.48 | 44.63 | 2.33 | 58.57 | 73.97 | 15.4 | 162 | 289 | |
| Vert. | 5150.000 | AV | 41.39 | 32.01 | 16.48 | 44.63 | 2.33 | 47.58 | 53.97 | **6.3** | 162 | 289 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

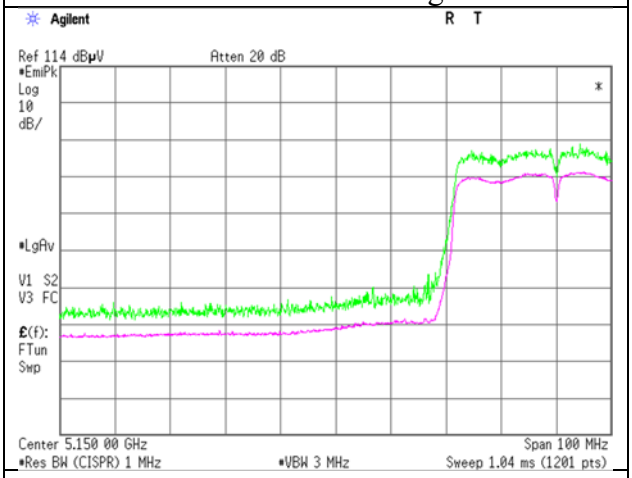
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5190 MHz |

Horizontal

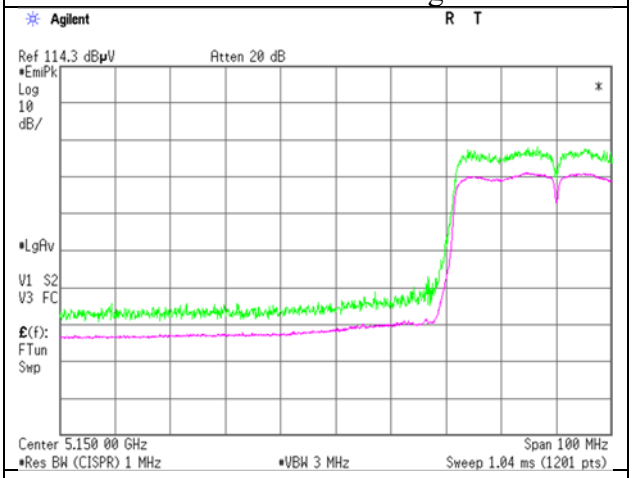
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | | | | |
|---|---|---|---|---|
| Report No. | 12193629S-C-R2 | | | |
| Test place | Shonan EMC Lab. | | | |
| Semi Anechoic Chamber | 3 | 3 | 3 | 3 |
| Date | March 25, 2018 | March 31, 2018 | April 1, 2018 | April 2, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH | 22 deg. C / 30 % RH | 22 deg. C / 30 % RH | 24 deg. C / 42 % RH |
| Engineer | Shiro Kobayashi | Hiroyuki Morikawa | Shiro Kobayashi | Shiro Kobayashi |
| | (1 GHz - 13 GHz) | (13 GHz - 18 GHz) | (18 GHz – 26.5 GHz) | (26.5 GHz – 40 GHz) |
| Antenna | 1001932FT | | | |
| Mode | Tx 11n-40 5230 MHz | | | |

**(above 1GHz 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. | 10460.000 | PK | 48.72 | 39.84 | 9.43 | 43.55 | 2.33 | 56.77 | 73.97 | 17.2 | 191 | 259 | |
| Hori. | 15690.000 | PK | 47.40 | 39.61 | 11.71 | 42.13 | -9.54 | 47.05 | 73.90 | 26.8 | 150 | 0 | |
| Hori. | 20920.000 | PK | 56.28 | 39.78 | 12.75 | 46.99 | -9.54 | 52.28 | 73.90 | 21.6 | 152 | 66 | |
| Hori. | 26150.000 | PK | 40.56 | 39.98 | 14.52 | 47.65 | -9.54 | 37.87 | 73.90 | 36.0 | 150 | 1 | |
| Hori. | 10460.000 | AV | 37.82 | 39.84 | 9.43 | 43.55 | 2.33 | 45.87 | 53.97 | 8.1 | 191 | 259 | VBW:3.6 kHz |
| Hori. | 15690.000 | AV | 37.56 | 39.61 | 11.71 | 42.13 | -9.54 | 37.21 | 53.90 | 16.6 | 150 | 0 | VBW:3.6 kHz |
| Hori. | 20920.000 | AV | 55.26 | 39.78 | 12.75 | 46.99 | -9.54 | 51.26 | 53.90 | **2.6** | 152 | 66 | VBW:3.6 kHz |
| Hori. | 26150.000 | AV | 29.19 | 39.98 | 14.52 | 47.65 | -9.54 | 26.50 | 53.90 | 27.4 | 150 | 1 | VBW:3.6 kHz |
| Vert. | 10460.000 | PK | 48.93 | 39.84 | 9.43 | 43.55 | 2.33 | 56.98 | 73.97 | 16.9 | 227 | 132 | |
| Vert. | 15690.000 | PK | 46.77 | 39.61 | 11.71 | 42.13 | -9.54 | 46.42 | 73.90 | 27.4 | 150 | 0 | |
| Vert. | 20920.000 | PK | 55.41 | 39.78 | 12.75 | 46.99 | -9.54 | 51.41 | 73.90 | 22.4 | 139 | 14 | |
| Vert. | 26150.000 | PK | 39.91 | 39.98 | 14.52 | 47.65 | -9.54 | 37.22 | 73.90 | 36.6 | 150 | 1 | |
| Vert. | 10460.000 | AV | 38.02 | 39.84 | 9.43 | 43.55 | 2.33 | 46.07 | 53.97 | 7.9 | 227 | 132 | VBW:3.6 kHz |
| Vert. | 15690.000 | AV | 37.79 | 39.61 | 11.71 | 42.13 | -9.54 | 37.44 | 53.90 | 16.4 | 150 | 0 | VBW:3.6 kHz |
| Vert. | 20920.000 | AV | 54.03 | 39.78 | 12.75 | 46.99 | -9.54 | 50.03 | 53.90 | 3.8 | 139 | 14 | VBW:3.6 kHz |
| Vert. | 26150.000 | AV | 29.71 | 39.98 | 14.52 | 47.65 | -9.54 | 27.02 | 53.90 | 26.8 | 150 | 1 | VBW:3.6 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*This mode was performed only band edges measurement.
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5310 MHz |

**(above 1GHz 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 | 52.07 | 32.09 | 16.39 | 44.79 | 2.33 | 58.09 | 73.97 | 15.8 | 119 | 272 | |
| Hori. | 5350.000 | AV | 40.52 | 32.09 | 16.39 | 44.79 | 2.33 | 46.54 | 53.97 | **7.4** | 119 | 272 | VBW: 3.6 kHz |
| Vert. | 5350.000 | PK | 51.78 | 32.09 | 16.39 | 44.79 | 2.33 | 57.80 | 73.97 | 16.1 | 128 | 292 | |
| Vert. | 5350.000 | AV | 40.45 | 32.09 | 16.39 | 44.79 | 2.33 | 46.47 | 53.97 | 7.5 | 128 | 292 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

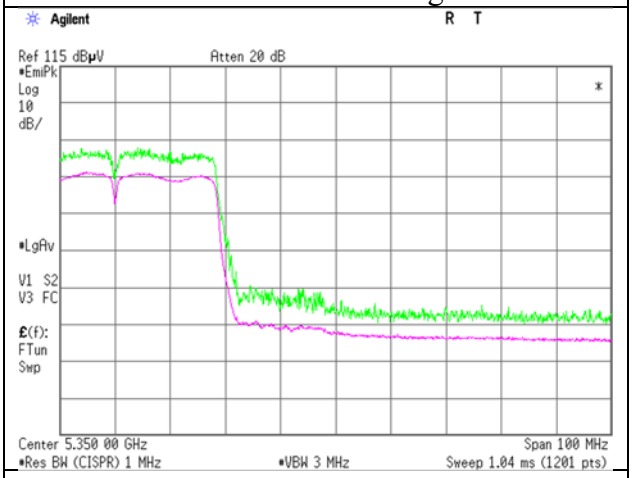
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5310 MHz |

Horizontal

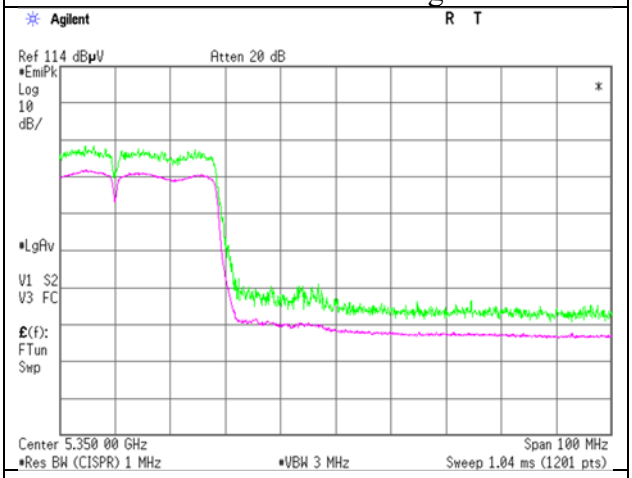
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5510 MHz |

## (above 1GHz 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 | 53.39 | 32.14 | 16.36 | 44.87 | 2.33 | 59.35 | 73.97 | 14.6 | 117 | 257 | |
| Hori. | 5460.000 | AV | 41.44 | 32.14 | 16.36 | 44.87 | 2.33 | 47.40 | 53.97 | **6.5** | 117 | 257 | VBW: 3.6 kHz |
| Vert. | 5460.000 | PK | 52.36 | 32.14 | 16.36 | 44.87 | 2.33 | 58.32 | 73.97 | 15.6 | 176 | 246 | |
| Vert. | 5460.000 | AV | 40.56 | 32.14 | 16.36 | 44.87 | 2.33 | 46.52 | 53.97 | 7.4 | 176 | 246 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 57.51 | 32.15 | 16.35 | 44.88 | 2.33 | 63.46 | -31.74 | -27.00 | **4.7** | 117 | 257 | |
| Vert. | 5470.000 | PK | 56.73 | 32.15 | 16.35 | 44.88 | 2.33 | 62.68 | -32.52 | -27.00 | 5.5 | 176 | 246 | |

*This mode was performed only band edges measurement.

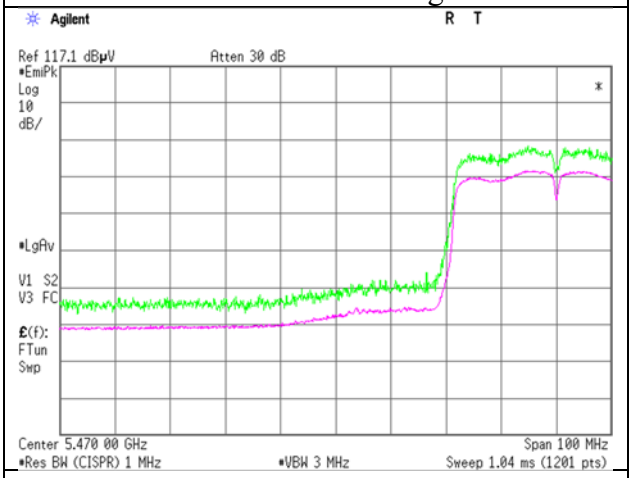
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5510 MHz |

Horizontal

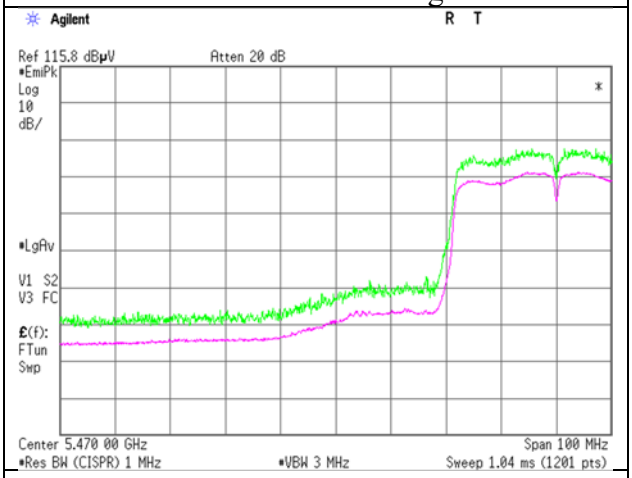
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5670 MHz |

## (Calculation) (above 1GHz 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 | 51.85 | 32.53 | 16.59 | 44.87 | 2.33 | 58.43 | -36.77 | -27.00 | **9.8** | 148 | 263 | |
| Vert. | 5725.000 | PK | 50.87 | 32.53 | 16.59 | 44.87 | 2.33 | 57.45 | -37.75 | -27.00 | 10.8 | 108 | 233 | |

*This mode was performed only band edges measurement.

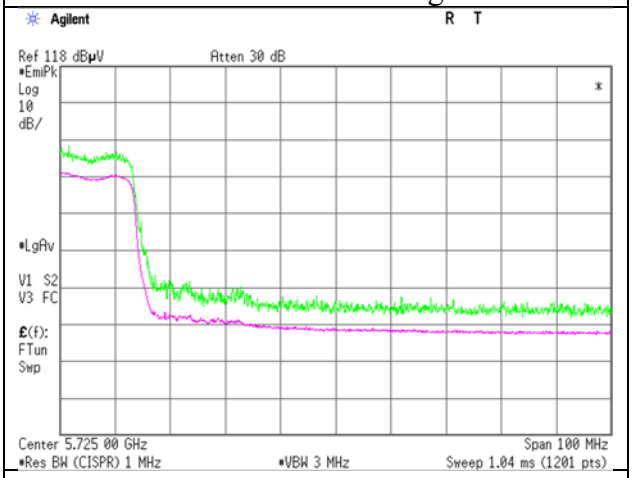
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 25, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Shiro Kobayashi |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5670 MHz |

Horizontal

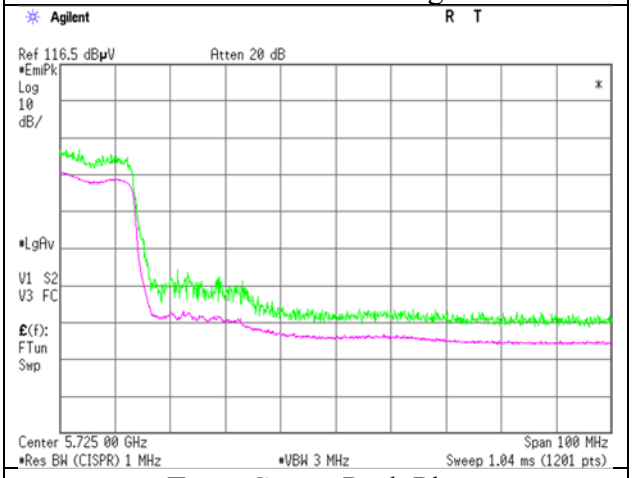
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5755 MHz |

## (Calculation) (above 1GHz 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 | 49.24 | 32.41 | 16.50 | 44.88 | 2.33 | 55.60 | -39.60 | -27.00 | 12.6 | 143 | 261 | |
| Hori. | 5700.000 | PK | 53.11 | 32.49 | 16.56 | 44.88 | 2.33 | 59.61 | -35.59 | 10.00 | 45.6 | 143 | 261 | |
| Hori. | 5720.000 | PK | 67.68 | 32.53 | 16.59 | 44.87 | 2.33 | 74.26 | -20.94 | 15.60 | 36.5 | 143 | 261 | |
| Hori. | 5725.000 | PK | 66.65 | 32.53 | 16.59 | 44.87 | 2.33 | 73.23 | -21.97 | 27.00 | 49.0 | 143 | 261 | |
| Vert. | 5650.000 | PK | 49.41 | 32.41 | 16.50 | 44.88 | 2.33 | 55.77 | -39.43 | -27.00 | **12.4** | 126 | 311 | |
| Vert. | 5700.000 | PK | 52.54 | 32.49 | 16.56 | 44.88 | 2.33 | 59.04 | -36.16 | 10.00 | 46.2 | 126 | 311 | |
| Vert. | 5720.000 | PK | 66.53 | 32.53 | 16.59 | 44.87 | 2.33 | 73.11 | -22.09 | 15.60 | 37.7 | 126 | 311 | |
| Vert. | 5725.000 | PK | 65.42 | 32.53 | 16.59 | 44.87 | 2.33 | 72.00 | -23.20 | 27.00 | 50.2 | 126 | 311 | |

*This mode was performed only band edges measurement.

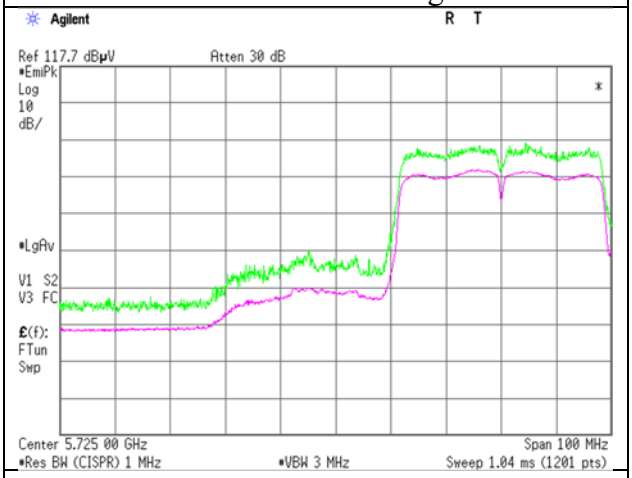
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5755 MHz |

Horizontal

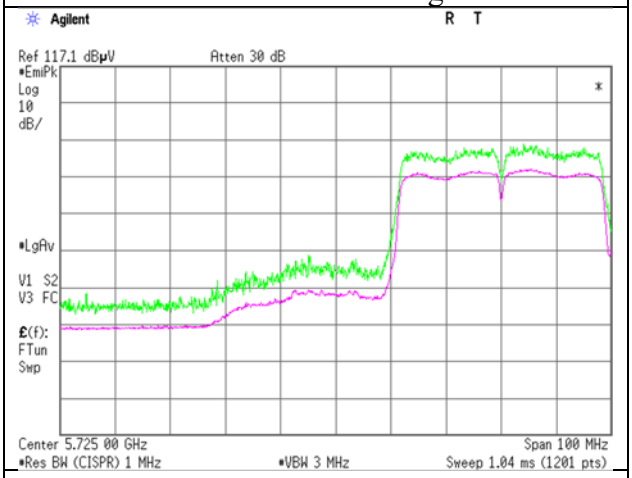
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5795 MHz |

## (Calculation) (above 1GHz 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 | 50.96 | 32.74 | 16.73 | 44.86 | 2.33 | 57.90 | -37.30 | 27.00 | 64.3 | 118 | 261 | |
| Hori. | 5855.000 | PK | 51.38 | 32.75 | 16.73 | 44.86 | 2.33 | 58.33 | -36.87 | 15.60 | 52.5 | 118 | 261 | |
| Hori. | 5875.000 | PK | 49.84 | 32.78 | 16.76 | 44.86 | 2.33 | 56.85 | -38.35 | 10.00 | 48.4 | 118 | 261 | |
| Hori. | 5925.000 | PK | 49.93 | 32.87 | 16.80 | 44.85 | 2.33 | 57.08 | -38.12 | -27.00 | **11.1** | 118 | 261 | |
| Vert. | 5850.000 | PK | 49.91 | 32.74 | 16.73 | 44.86 | 2.33 | 56.85 | -38.35 | 27.00 | 65.4 | 121 | 306 | |
| Vert. | 5855.000 | PK | 50.55 | 32.75 | 16.73 | 44.86 | 2.33 | 57.50 | -37.70 | 15.60 | 53.3 | 121 | 306 | |
| Vert. | 5875.000 | PK | 50.17 | 32.78 | 16.76 | 44.86 | 2.33 | 57.18 | -38.02 | 10.00 | 48.0 | 121 | 306 | |
| Vert. | 5925.000 | PK | 49.83 | 32.87 | 16.80 | 44.85 | 2.33 | 56.98 | -38.22 | -27.00 | 11.2 | 121 | 306 | |

*This mode was performed only band edges measurement.

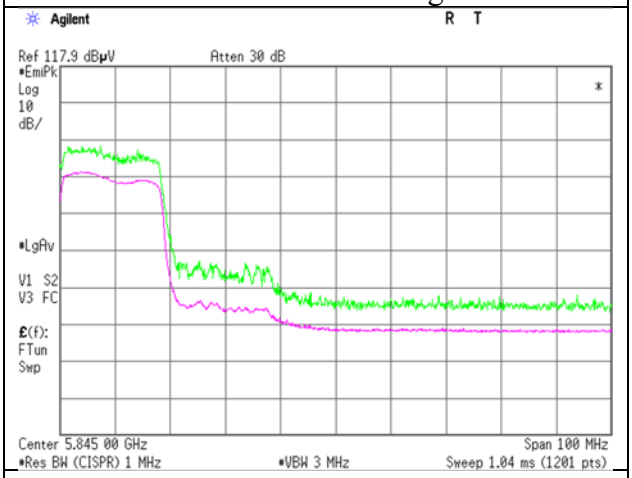
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11n-40 5795 MHz |

Horizontal

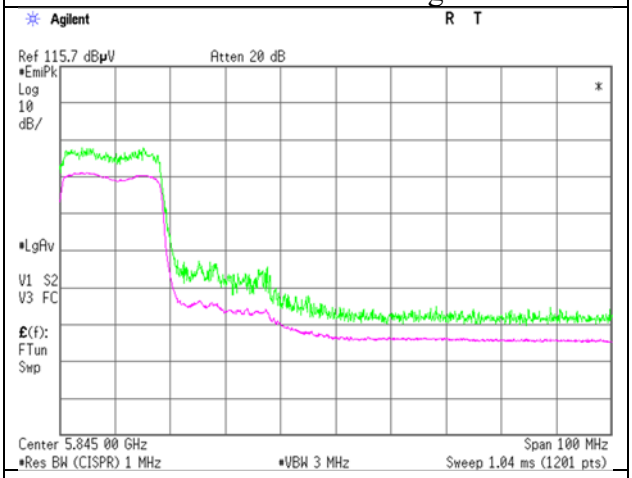
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5190 MHz |

**(above 1GHz 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 | 53.79 | 32.01 | 16.48 | 44.63 | 2.33 | 59.98 | 73.97 | 13.9 | 126 | 241 | |
| Hori. | 5150.000 | AV | 41.65 | 32.01 | 16.48 | 44.63 | 2.33 | 47.84 | 53.97 | **6.1** | 126 | 241 | VBW: 3 kHz |
| Vert. | 5150.000 | PK | 54.13 | 32.01 | 16.48 | 44.63 | 2.33 | 60.32 | 73.97 | 13.6 | 128 | 288 | |
| Vert. | 5150.000 | AV | 41.32 | 32.01 | 16.48 | 44.63 | 2.33 | 47.51 | 53.97 | 6.4 | 128 | 288 | VBW: 3 kHz |

*This mode was performed only band edges measurement.

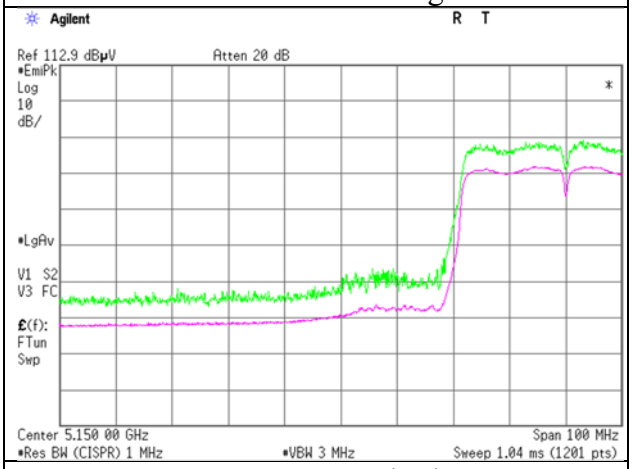
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5190 MHz |

Horizontal

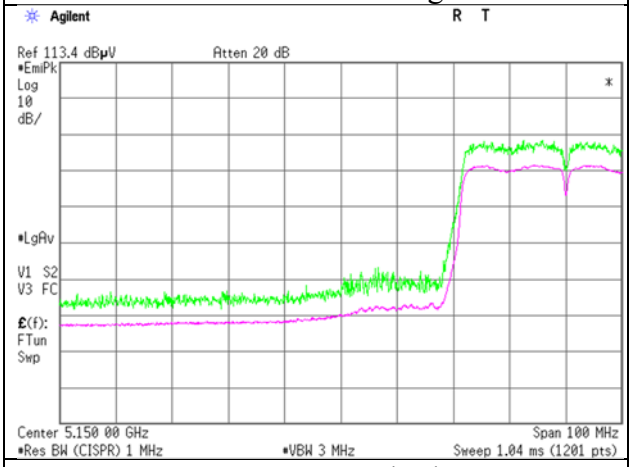
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5310 MHz |

**(above 1GHz 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 | 54.02 | 32.09 | 16.39 | 44.79 | 2.33 | 60.04 | 73.97 | 13.9 | 141 | 232 | |
| Hori. | 5350.000 | AV | 40.75 | 32.09 | 16.39 | 44.79 | 2.33 | 46.77 | 53.97 | 7.2 | 141 | 232 | VBW: 3 kHz |
| Vert. | 5350.000 | PK | 53.39 | 32.09 | 16.39 | 44.79 | 2.33 | 59.41 | 73.97 | 14.5 | 123 | 256 | |
| Vert. | 5350.000 | AV | 41.98 | 32.09 | 16.39 | 44.79 | 2.33 | 48.00 | 53.97 | **5.9** | 123 | 256 | VBW: 3 kHz |

*This mode was performed only band edges measurement.

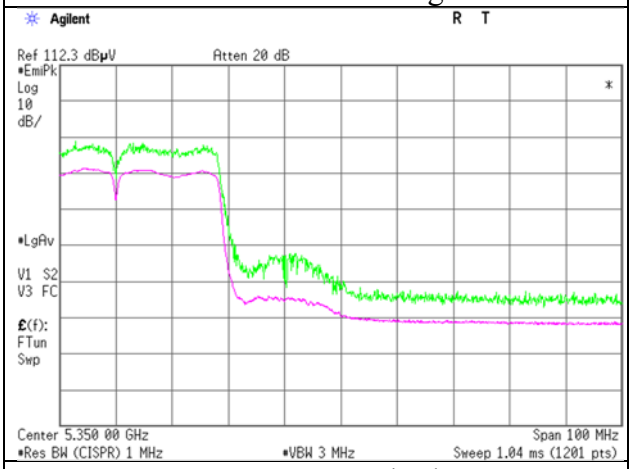
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5310 MHz |

Horizontal

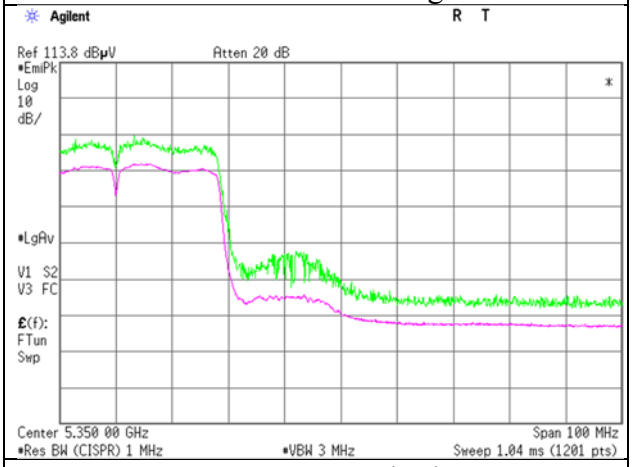
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5510 MHz |

## (above 1GHz 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 | 51.24 | 32.14 | 16.36 | 44.87 | 2.33 | 57.20 | 73.97 | 16.7 | 106 | 255 | |
| Hori. | 5460.000 | AV | 40.06 | 32.14 | 16.36 | 44.87 | 2.33 | 46.02 | 53.97 | **7.9** | 106 | 255 | VBW: 3 kHz |
| Vert. | 5460.000 | PK | 52.06 | 32.14 | 16.36 | 44.87 | 2.33 | 58.02 | 73.97 | 15.9 | 136 | 235 | |
| Vert. | 5460.000 | AV | 39.92 | 32.14 | 16.36 | 44.87 | 2.33 | 45.88 | 53.97 | 8.0 | 136 | 235 | VBW: 3 kHz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 57.57 | 32.15 | 16.35 | 44.88 | 2.33 | 63.52 | -31.68 | -27.00 | **4.7** | 106 | 255 | |
| Vert. | 5470.000 | PK | 57.12 | 32.15 | 16.35 | 44.88 | 2.33 | 63.07 | -32.13 | -27.00 | 5.1 | 136 | 235 | |

*This mode was performed only band edges measurement.

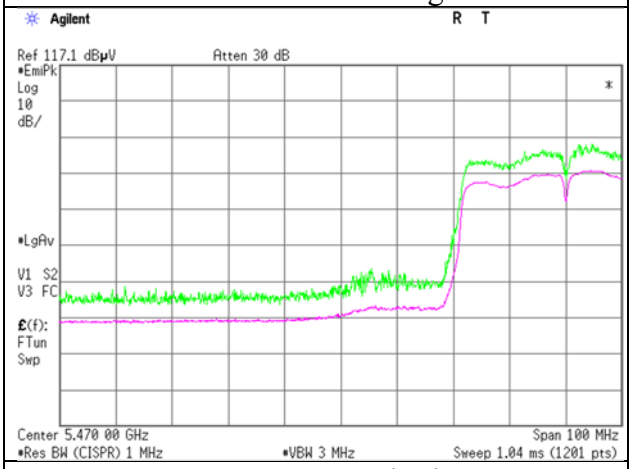
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5510 MHz |

Horizontal

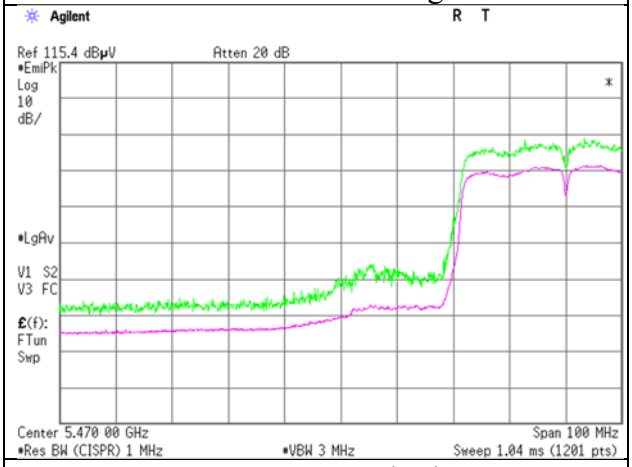
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5670 MHz |

## (Calculation) (above 1GHz 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 | 52.81 | 32.53 | 16.59 | 44.87 | 2.33 | 59.39 | -35.81 | -27.00 | **8.8** | 149 | 249 | |
| Vert. | 5725.000 | PK | 52.70 | 32.53 | 16.59 | 44.87 | 2.33 | 59.28 | -35.92 | -27.00 | 8.9 | 118 | 242 | |

*This mode was performed only band edges measurement.

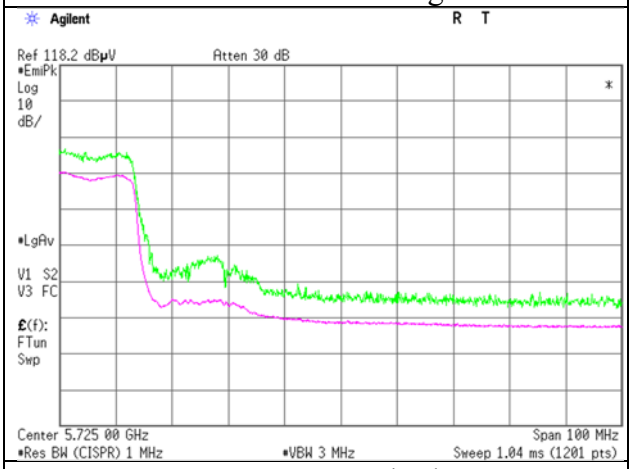
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5670 MHz |

Horizontal

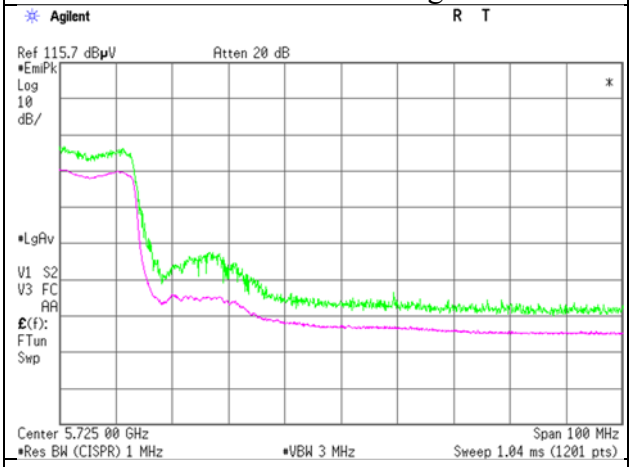
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5755 MHz |

## (Calculation) (above 1GHz 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 | 49.15 | 32.41 | 16.50 | 44.88 | 2.33 | 55.51 | -39.69 | -27.00 | **12.7** | 119 | 260 | |
| Hori. | 5700.000 | PK | 52.40 | 32.49 | 16.56 | 44.88 | 2.33 | 58.90 | -36.30 | 10.00 | 46.3 | 119 | 260 | |
| Hori. | 5720.000 | PK | 60.33 | 32.53 | 16.59 | 44.87 | 2.33 | 66.91 | -28.29 | 15.60 | 43.9 | 119 | 260 | |
| Hori. | 5725.000 | PK | 61.21 | 32.53 | 16.59 | 44.87 | 2.33 | 67.79 | -27.41 | 27.00 | 54.4 | 119 | 260 | |
| Vert. | 5650.000 | PK | 48.97 | 32.41 | 16.50 | 44.88 | 2.33 | 55.33 | -39.87 | -27.00 | 12.9 | 133 | 228 | |
| Vert. | 5700.000 | PK | 52.17 | 32.49 | 16.56 | 44.88 | 2.33 | 58.67 | -36.53 | 10.00 | 46.5 | 133 | 228 | |
| Vert. | 5720.000 | PK | 58.38 | 32.53 | 16.59 | 44.87 | 2.33 | 64.96 | -30.24 | 15.60 | 45.8 | 133 | 228 | |
| Vert. | 5725.000 | PK | 60.37 | 32.53 | 16.59 | 44.87 | 2.33 | 66.95 | -28.25 | 27.00 | 55.3 | 133 | 228 | |

*This mode was performed only band edges measurement.

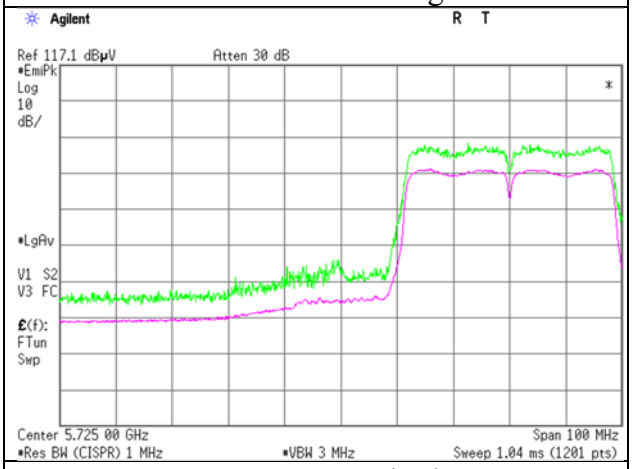
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5755 MHz |

Horizontal

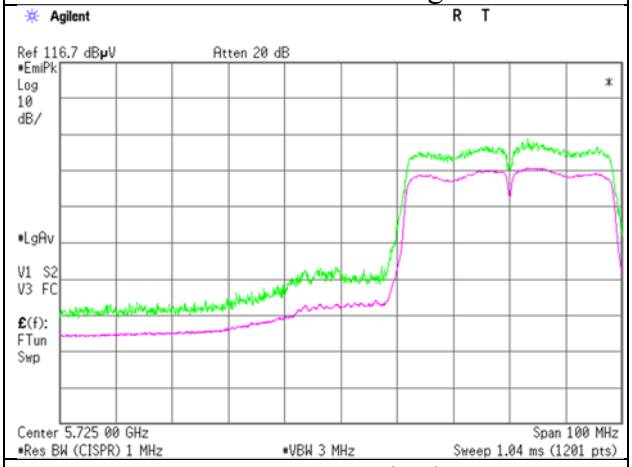
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5795 MHz |

**(Calculation) (above 1GHz 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 | 52.49 | 32.74 | 16.73 | 44.86 | 2.33 | 59.43 | -35.77 | 27.00 | 62.8 | 149 | 259 | |
| Hori. | 5855.000 | PK | 51.13 | 32.75 | 16.73 | 44.86 | 2.33 | 58.08 | -37.12 | 15.60 | 52.7 | 149 | 259 | |
| Hori. | 5875.000 | PK | 49.70 | 32.78 | 16.76 | 44.86 | 2.33 | 56.71 | -38.49 | 10.00 | 48.5 | 149 | 259 | |
| Hori. | 5925.000 | PK | 50.15 | 32.87 | 16.80 | 44.85 | 2.33 | 57.30 | -37.90 | -27.00 | 10.9 | 149 | 259 | |
| Vert. | 5850.000 | PK | 56.35 | 32.74 | 16.73 | 44.86 | 2.33 | 63.29 | -31.91 | 27.00 | 58.9 | 144 | 316 | |
| Vert. | 5855.000 | PK | 54.65 | 32.75 | 16.73 | 44.86 | 2.33 | 61.60 | -33.60 | 15.60 | 49.2 | 144 | 316 | |
| Vert. | 5875.000 | PK | 51.75 | 32.78 | 16.76 | 44.86 | 2.33 | 58.76 | -36.44 | 10.00 | 46.4 | 144 | 316 | |
| Vert. | 5925.000 | PK | 50.35 | 32.87 | 16.80 | 44.85 | 2.33 | 57.50 | -37.70 | -27.00 | **10.7** | 144 | 316 | |

*This mode was performed only band edges measurement.

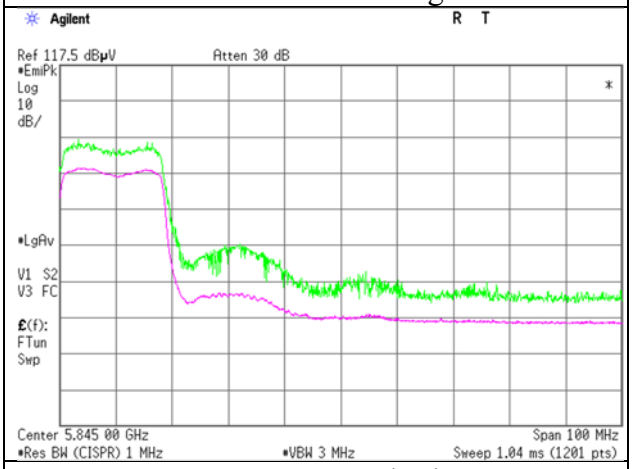
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-40 5795 MHz |

Horizontal

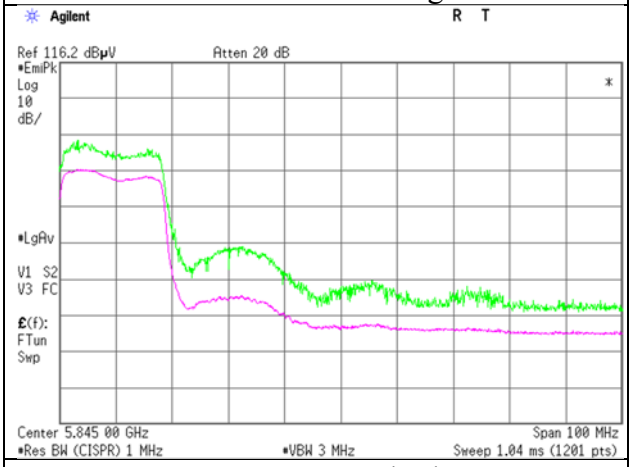
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | | | | |
|---|---|---|---|---|
| Report No. | 12193629S-C-R2 | | | |
| Test place | Shonan EMC Lab. | | | |
| Semi Anechoic Chamber | 3 | 3 | 3 | 3 |
| Date | March 26, 2018 | March 31, 2018 | April 1, 2018 | April 2, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH | 22 deg. C / 30 % RH | 22 deg. C / 30 % RH | 24 deg. C / 42 % RH |
| Engineer | Yosuke Ishikawa (1 GHz - 13 GHz) | Hiroyuki Morikawa (13 GHz - 18 GHz) | Shiro Kobayashi (18 GHz – 26.5 GHz) | Shiro Kobayashi (26.5 GHz – 40 GHz) |
| Antenna | 1001932FT | | | |
| Mode | Tx 11ac-80 5210 MHz | | | |

**(above 1GHz 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 | 54.14 | 32.01 | 16.48 | 44.63 | 2.33 | 60.33 | 73.97 | 13.6 | 139 | 252 | |
| Hori. | 10420.000 | PK | 48.11 | 39.78 | 9.40 | 43.58 | 2.33 | 56.04 | 73.97 | 17.9 | 182 | 256 | |
| Hori. | 15630.000 | PK | 48.21 | 39.86 | 11.68 | 42.12 | -9.54 | 48.09 | 73.90 | 25.8 | 150 | 0 | |
| Hori. | 20840.000 | PK | 55.99 | 39.80 | 12.72 | 47.13 | -9.54 | 51.84 | 73.90 | 22.0 | 148 | 77 | |
| Hori. | 26050.000 | PK | 39.45 | 39.99 | 14.54 | 47.60 | -9.54 | 36.84 | 73.90 | 37.0 | 150 | 1 | |
| Hori. | 5150.000 | AV | 40.51 | 32.01 | 16.48 | 44.63 | 2.33 | 46.70 | 53.97 | 7.2 | 139 | 252 | VBW: 10 Hz |
| Hori. | 10420.000 | AV | 36.06 | 39.78 | 9.40 | 43.58 | 2.33 | 43.99 | 53.97 | 9.9 | 182 | 256 | VBW: 10 Hz |
| Hori. | 15630.000 | AV | 37.85 | 39.86 | 11.68 | 42.12 | -9.54 | 37.73 | 53.90 | 16.1 | 150 | 0 | VBW: 10 Hz |
| Hori. | 20840.000 | AV | 54.98 | 39.80 | 12.72 | 47.13 | -9.54 | 50.83 | 53.90 | **3.0** | 148 | 77 | VBW: 10 Hz |
| Hori. | 26050.000 | AV | 27.27 | 39.99 | 14.54 | 47.60 | -9.54 | 24.66 | 53.90 | 29.2 | 150 | 1 | VBW: 10 Hz |
| Vert. | 5150.000 | PK | 52.78 | 32.01 | 16.48 | 44.63 | 2.33 | 58.97 | 73.97 | 15.0 | 140 | 301 | |
| Vert. | 10420.000 | PK | 48.51 | 39.78 | 9.40 | 43.58 | 2.33 | 56.44 | 73.97 | 17.5 | 136 | 258 | |
| Vert. | 15630.000 | PK | 47.95 | 39.86 | 11.68 | 42.12 | -9.54 | 47.83 | 73.90 | 26.0 | 150 | 0 | |
| Vert. | 20840.000 | PK | 55.51 | 39.80 | 12.72 | 47.13 | -9.54 | 51.36 | 73.90 | 22.5 | 141 | 19 | |
| Vert. | 26050.000 | PK | 39.65 | 39.99 | 14.54 | 47.60 | -9.54 | 37.04 | 73.90 | 36.8 | 150 | 1 | |
| Vert. | 5150.000 | AV | 39.58 | 32.01 | 16.48 | 44.63 | 2.33 | 45.77 | 53.97 | 8.2 | 140 | 301 | VBW: 10 Hz |
| Vert. | 10420.000 | AV | 36.19 | 39.78 | 9.40 | 43.58 | 2.33 | 44.12 | 53.97 | 9.8 | 136 | 258 | VBW: 10 Hz |
| Vert. | 15630.000 | AV | 37.75 | 39.86 | 11.68 | 42.12 | -9.54 | 37.63 | 53.90 | 16.2 | 150 | 0 | VBW: 10 Hz |
| Vert. | 20840.000 | AV | 54.39 | 39.80 | 12.72 | 47.13 | -9.54 | 50.24 | 53.90 | 3.6 | 141 | 19 | VBW: 10 Hz |
| Vert. | 26050.000 | AV | 27.30 | 39.99 | 14.54 | 47.60 | -9.54 | 24.69 | 53.90 | 29.2 | 150 | 1 | VBW: 10 Hz |

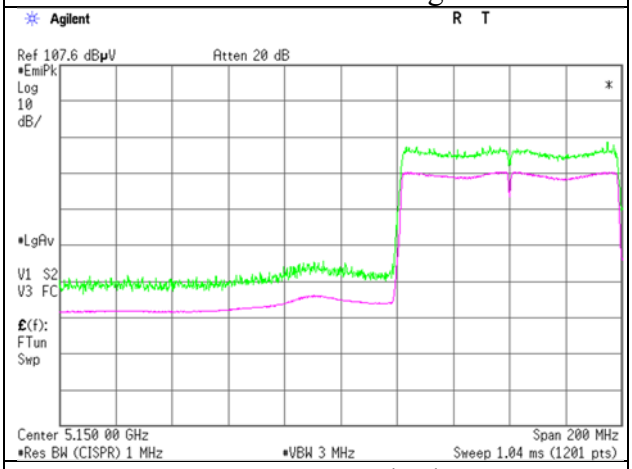
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz - 13 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5210 MHz |

Horizontal

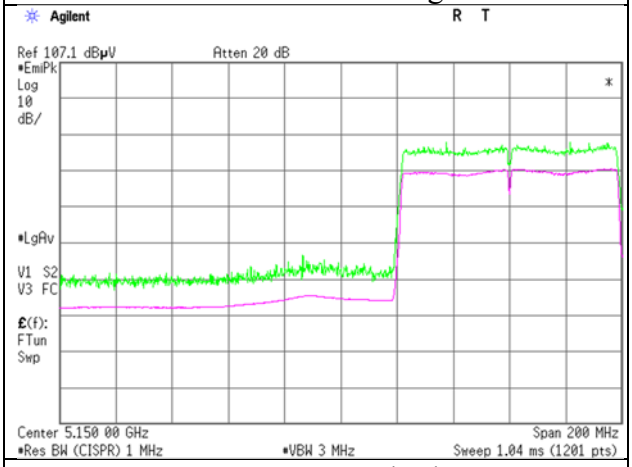
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5290 MHz |

**(above 1GHz 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 | 32.09 | 16.39 | 44.79 | 2.33 | 57.53 | 73.97 | 16.4 | 166 | 260 | |
| Hori. | 5350.000 | AV | 38.60 | 32.09 | 16.39 | 44.79 | 2.33 | 44.62 | 53.97 | 9.3 | 166 | 260 | VBW: 10 Hz |
| Vert. | 5350.000 | PK | 52.34 | 32.09 | 16.39 | 44.79 | 2.33 | 58.36 | 73.97 | 15.6 | 166 | 260 | |
| Vert. | 5350.000 | AV | 38.79 | 32.09 | 16.39 | 44.79 | 2.33 | 44.81 | 53.97 | **9.1** | 166 | 260 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

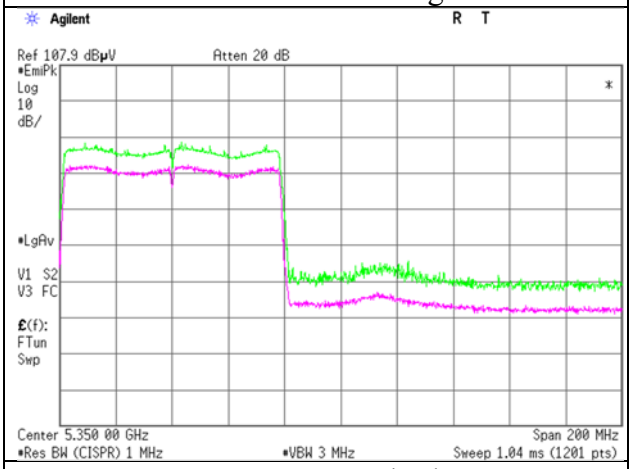
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5290 MHz |

Horizontal

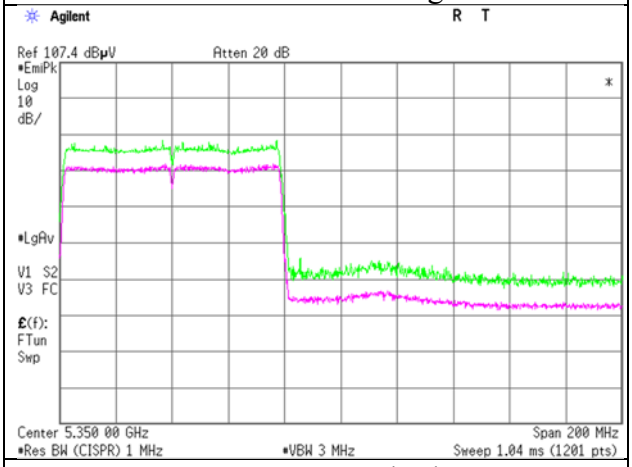
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5530 MHz |

## (above 1GHz 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 | 62.32 | 32.14 | 16.36 | 44.87 | 2.33 | 68.28 | 73.97 | 5.6 | 148 | 259 | |
| Hori. | 5460.000 | AV | 46.98 | 32.14 | 16.36 | 44.87 | 2.33 | 52.94 | 53.97 | **1.0** | 148 | 259 | VBW: 10 Hz |
| Vert. | 5460.000 | PK | 59.25 | 32.14 | 16.36 | 44.87 | 2.33 | 65.21 | 73.97 | 8.7 | 160 | 304 | |
| Vert. | 5460.000 | AV | 44.34 | 32.14 | 16.36 | 44.87 | 2.33 | 50.30 | 53.97 | 3.6 | 160 | 304 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 60.35 | 32.15 | 16.35 | 44.88 | 2.33 | 66.30 | -28.90 | -27.00 | **1.9** | 148 | 259 | |
| Vert. | 5470.000 | PK | 57.07 | 32.15 | 16.35 | 44.88 | 2.33 | 63.02 | -32.18 | -27.00 | 5.2 | 160 | 304 | |

*This mode was performed only band edges measurement.

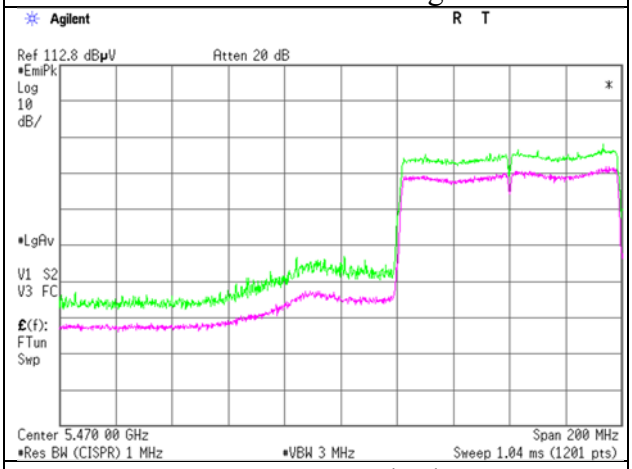
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 26, 2018 |
| Temperature / Humidity | 21 deg. C / 32 % RH |
| Engineer | Yosuke Ishikawa<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5530 MHz |

Horizontal

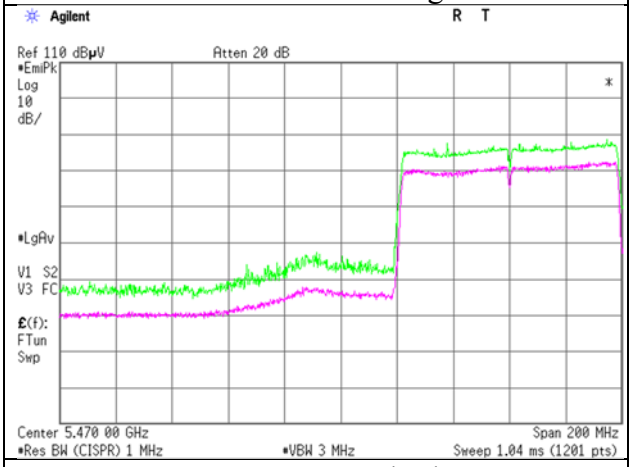
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5610 MHz |

## (Calculation) (above 1GHz 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 | 49.22 | 32.53 | 16.59 | 44.87 | 2.33 | 55.80 | -39.40 | -27.00 | 12.4 | 105 | 263 | |
| Vert. | 5725.000 | PK | 49.80 | 32.53 | 16.59 | 44.87 | 2.33 | 56.38 | -38.82 | -27.00 | **11.8** | 108 | 199 | |

*This mode was performed only band edges measurement.

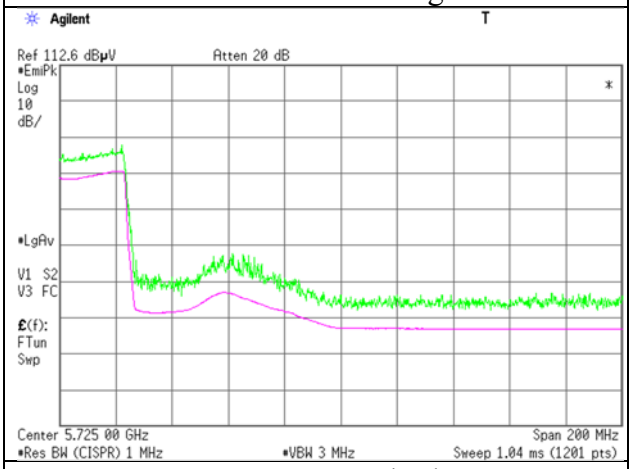
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5610 MHz |

Horizontal

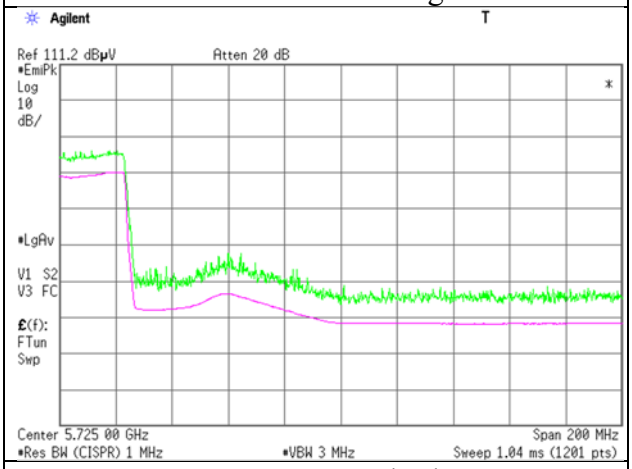
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5775 MHz |

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

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

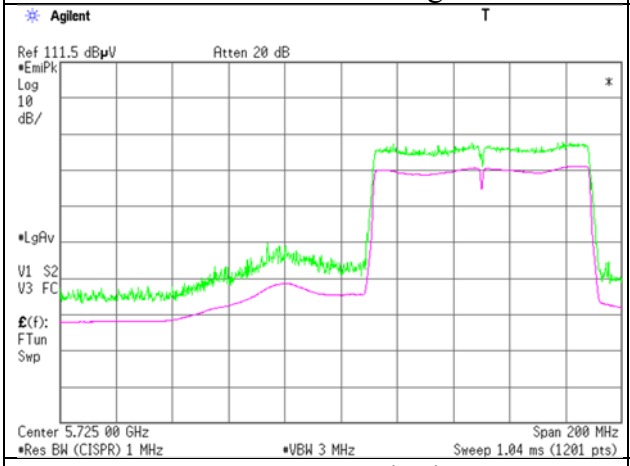
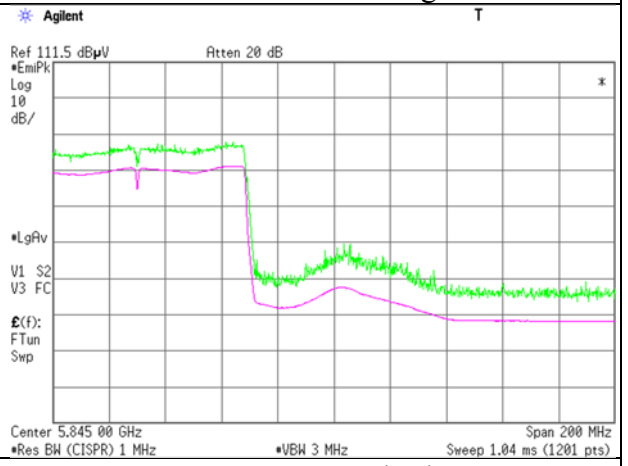
| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5650.000 | PK | 49.00 | 32.41 | 16.50 | 44.88 | 2.33 | 55.36 | -39.84 | -27.00 | 12.8 | 137 | 250 | |
| Hori. | 5700.000 | PK | 61.13 | 32.49 | 16.56 | 44.88 | 2.33 | 67.63 | -27.57 | 10.00 | 37.6 | 137 | 250 | |
| Hori. | 5720.000 | PK | 58.03 | 32.53 | 16.59 | 44.87 | 2.33 | 64.61 | -30.59 | 15.60 | 46.2 | 137 | 250 | |
| Hori. | 5725.000 | PK | 59.20 | 32.53 | 16.59 | 44.87 | 2.33 | 65.78 | -29.42 | 27.00 | 56.4 | 137 | 250 | |
| Hori. | 5850.000 | PK | 63.63 | 32.74 | 16.73 | 44.86 | 2.33 | 70.57 | -24.63 | 27.00 | 51.6 | 137 | 250 | |
| Hori. | 5855.000 | PK | 61.35 | 32.75 | 16.73 | 44.86 | 2.33 | 68.30 | -26.90 | 15.60 | 42.5 | 137 | 250 | |
| Hori. | 5875.000 | PK | 55.27 | 32.78 | 16.76 | 44.86 | 2.33 | 62.28 | -32.92 | 10.00 | 42.9 | 137 | 250 | |
| Hori. | 5925.000 | PK | 48.64 | 32.87 | 16.80 | 44.85 | 2.33 | 55.79 | -39.41 | -27.00 | 12.4 | 137 | 250 | |
| Vert. | 5650.000 | PK | 49.30 | 32.41 | 16.50 | 44.88 | 2.33 | 55.66 | -39.54 | -27.00 | 12.5 | 128 | 137 | |
| Vert. | 5700.000 | PK | 59.81 | 32.49 | 16.56 | 44.88 | 2.33 | 66.31 | -28.89 | 10.00 | 38.9 | 128 | 137 | |
| Vert. | 5720.000 | PK | 57.87 | 32.53 | 16.59 | 44.87 | 2.33 | 64.45 | -30.75 | 15.60 | 46.4 | 128 | 137 | |
| Vert. | 5725.000 | PK | 57.44 | 32.53 | 16.59 | 44.87 | 2.33 | 64.02 | -31.18 | 27.00 | 58.2 | 128 | 137 | |
| Vert. | 5850.000 | PK | 62.69 | 32.74 | 16.73 | 44.86 | 2.33 | 69.63 | -25.57 | 27.00 | 52.6 | 128 | 137 | |
| Vert. | 5855.000 | PK | 60.37 | 32.75 | 16.73 | 44.86 | 2.33 | 67.32 | -27.88 | 15.60 | 43.5 | 128 | 137 | |
| Vert. | 5875.000 | PK | 53.93 | 32.78 | 16.76 | 44.86 | 2.33 | 60.94 | -34.26 | 10.00 | 44.3 | 128 | 137 | |
| Vert. | 5925.000 | PK | 48.76 | 32.87 | 16.80 | 44.85 | 2.33 | 55.91 | -39.29 | -27.00 | **12.3** | 128 | 137 | |

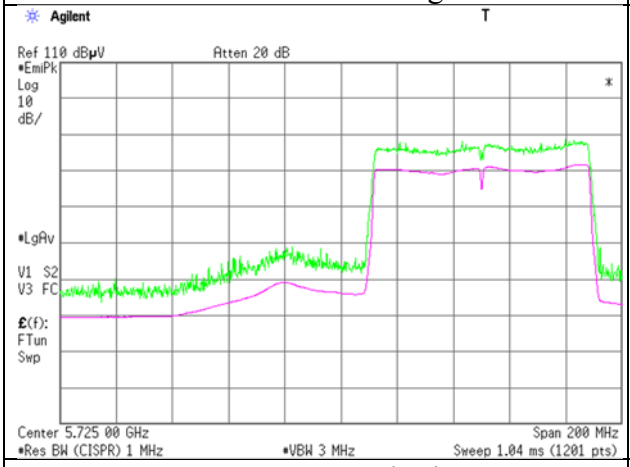
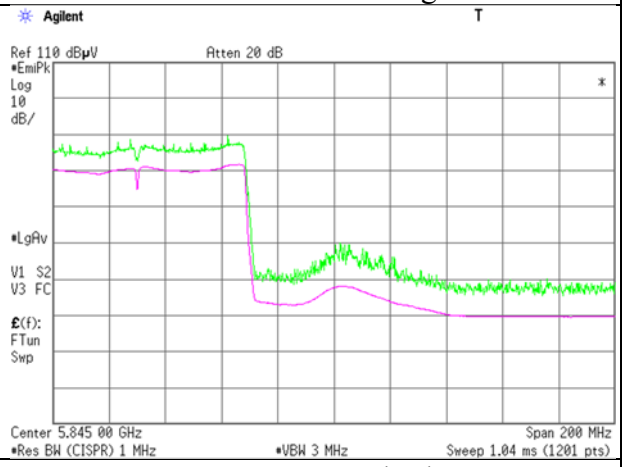
*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(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 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.92 m / 3.0 m) = 2.33 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa<br>(1 GHz – 6.4 GHz) |
| Antenna | 1001932FT |
| Mode | Tx 11ac-80 5775 MHz |

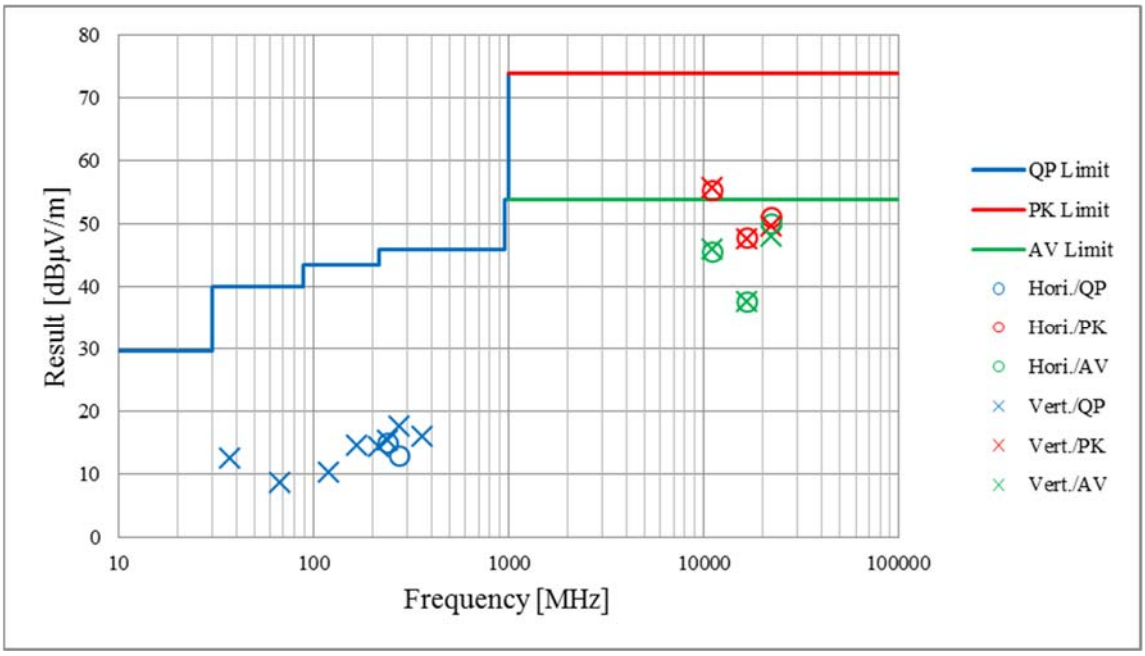
| Horizontal | Horizontal |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |

| Vertical | 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 |

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission
## (Plot data, Worst case)

| | | | | | |
|---|---|---|---|---|---|
| Report No. | 12193629S-C-R2 | | | | |
| Test place | Shonan EMC Lab. | | | | |
| Semi Anechoic Chamber | 3 | 3 | 3 | 3 | 3 |
| Date | April 4, 2018 | March 24, 2018 | March 30, 2018 | April 1, 2018 | April 2, 2018 |
| Temperature / Humidity | 20 deg. C / 57 % RH | 22 deg. C / 34 % RH | 23 deg. C / 29 % RH | 22 deg. C / 30 % RH | 24 deg. C / 42 % RH |
| Engineer | Shiro Kobayashi (30 MHz - 1 GHz) | Yosuke Ishikawa (1 GHz - 13 GHz) | Yosuke Ishikawa (13 GHz - 18 GHz) | Shiro Kobayashi (18 GHz – 26.5 GHz) | Shiro Kobayashi (26.5 GHz – 40 GHz) |
| Antenna | 1001932FT | | | | |
| Mode | Tx 11a 5580 MHz | | | | |




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

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5180 MHz |

**(above 1GHz 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 | 51.20 | 32.01 | 16.48 | 44.63 | 2.39 | 57.45 | 73.97 | 16.5 | 149 | 34 | |
| Hori. | 5150.000 | AV | 41.89 | 32.01 | 16.48 | 44.63 | 2.39 | 48.14 | 53.97 | **5.8** | 149 | 34 | VBW: 3.6 kHz |
| Vert. | 5150.000 | PK | 50.97 | 32.01 | 16.48 | 44.63 | 2.39 | 57.22 | 73.97 | 16.7 | 117 | 99 | |
| Vert. | 5150.000 | AV | 41.22 | 32.01 | 16.48 | 44.63 | 2.39 | 47.47 | 53.97 | 6.5 | 117 | 99 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

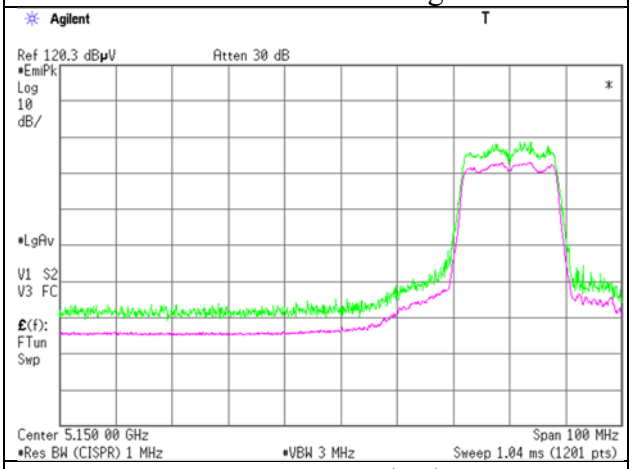
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5180 MHz |

Horizontal

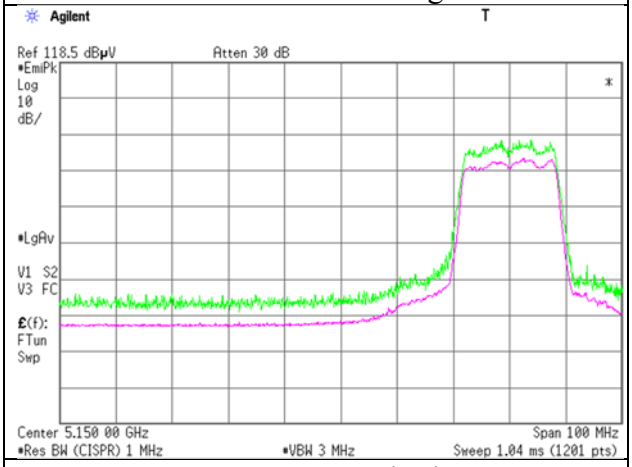
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5320 MHz |

**(above 1GHz 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 | 50.79 | 32.09 | 16.39 | 44.79 | 2.39 | 56.87 | 73.97 | 17.1 | 147 | 23 | |
| Hori. | 5350.000 | AV | 41.61 | 32.09 | 16.39 | 44.79 | 2.39 | 47.69 | 53.97 | 6.2 | 147 | 23 | VBW: 3.6 kHz |
| Vert. | 5350.000 | PK | 53.67 | 32.09 | 16.39 | 44.79 | 2.39 | 59.75 | 73.97 | 14.2 | 141 | 88 | |
| Vert. | 5350.000 | AV | 42.09 | 32.09 | 16.39 | 44.79 | 2.39 | 48.17 | 53.97 | **5.8** | 141 | 88 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

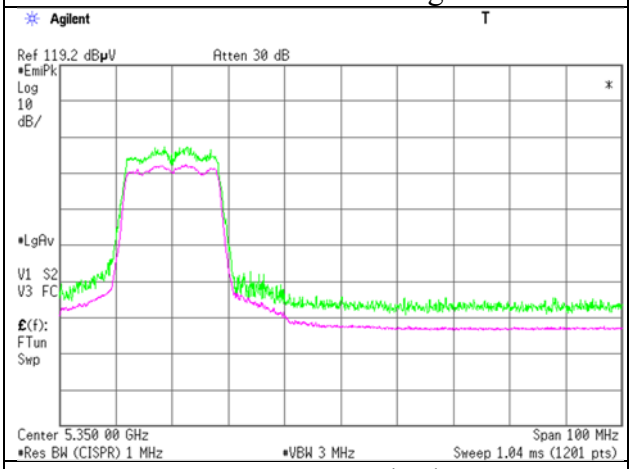
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5320 MHz |

Horizontal

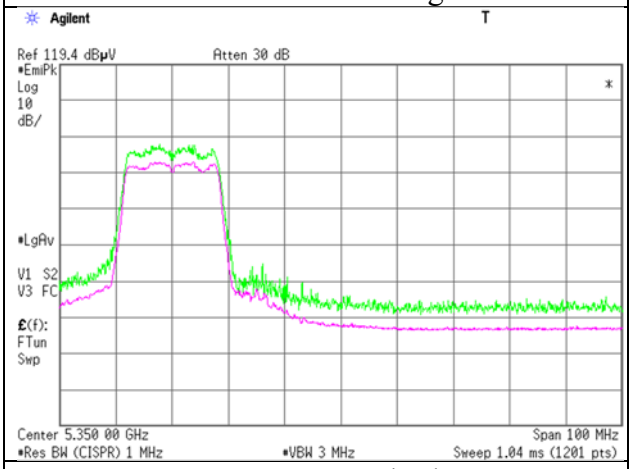
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5500 MHz |

## (above 1GHz 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 | 48.74 | 32.14 | 16.36 | 44.87 | 2.39 | 54.76 | 73.97 | 19.2 | 132 | 22 | |
| Hori. | 5460.000 | AV | 39.38 | 32.14 | 16.36 | 44.87 | 2.39 | 45.40 | 53.97 | **8.5** | 132 | 22 | VBW: 3.6 kHz |
| Vert. | 5460.000 | PK | 49.69 | 32.14 | 16.36 | 44.87 | 2.39 | 55.71 | 73.97 | 18.2 | 106 | 75 | |
| Vert. | 5460.000 | AV | 39.21 | 32.14 | 16.36 | 44.87 | 2.39 | 45.23 | 53.97 | 8.7 | 106 | 75 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 52.02 | 32.15 | 16.35 | 44.88 | 2.39 | 58.03 | -37.17 | -27.00 | 10.2 | 132 | 22 | |
| Vert. | 5470.000 | PK | 53.53 | 32.15 | 16.35 | 44.88 | 2.39 | 59.54 | -35.66 | -27.00 | **8.7** | 106 | 75 | |

*This mode was performed only band edges measurement.

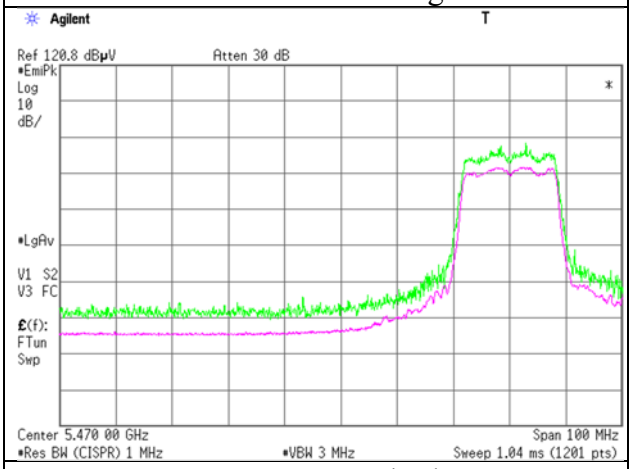
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5500 MHz |

Horizontal

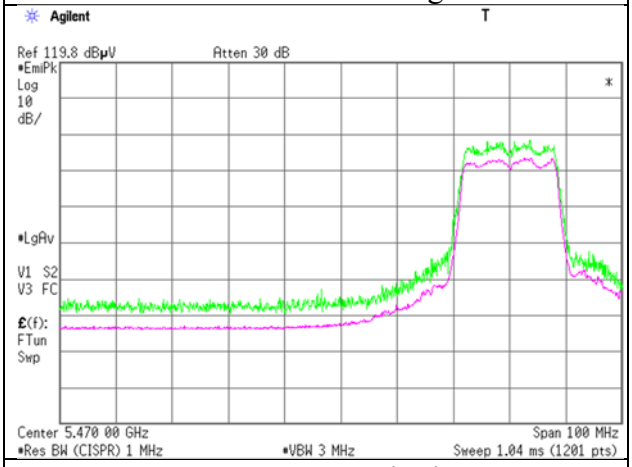
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | | | | | |
|---|---|---|---|---|---|
| Report No. | 12193629S-C-R2 | | | | |
| Test place | Shonan EMC Lab. | | | | |
| Semi Anechoic Chamber | 3 | 3 | 3 | 3 | 3 |
| Date | April 4, 2018 | March 27, 2018 | March 30, 2018 | April 1, 2018 | April 2, 2018 |
| Temperature / Humidity | 20 deg. C / 57 % RH | 22 deg. C / 35 % RH | 23 deg. C / 29 % RH | 22 deg. C / 30 % RH | 24 deg. C / 42 % RH |
| Engineer | Shiro Kobayashi | Hiroyuki Morikawa | Yosuke Ishikawa | Shiro Kobayashi | Shiro Kobayashi |
| | (30 MHz - 1 GHz) | (1 GHz - 13 GHz) | (13 GHz - 18 GHz) | (18 GHz – 26.5 GHz) | (26.5 GHz – 40 GHz) |
| Antenna | AH104N2450D1 | | | | |
| Mode | Tx 11a 5580 MHz | | | | |

**(below 1GHz and above 1GHz 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. | 239.998 | QP | 26.77 | 11.57 | 8.38 | 32.03 | 0.00 | 14.69 | 46.00 | 31.3 | 211 | 193 | |
| Hori. | 480.000 | QP | 21.96 | 17.05 | 9.56 | 31.96 | 0.00 | 16.61 | 46.00 | 29.3 | 100 | 0 | |
| Hori. | 11160.000 | PK | 48.37 | 40.12 | 10.10 | 43.61 | 2.39 | 57.37 | 73.97 | 16.6 | 99 | 1 | |
| Hori. | 16740.000 | PK | 49.76 | 39.68 | 12.42 | 41.87 | -9.54 | 50.45 | 73.90 | 23.4 | 156 | 156 | |
| Hori. | 22320.000 | PK | 56.15 | 39.97 | 13.24 | 47.87 | -9.54 | 51.95 | 73.90 | 21.9 | 142 | 252 | |
| Hori. | 11160.000 | AV | 40.90 | 40.12 | 10.10 | 43.61 | 2.39 | 49.90 | 53.97 | 4.0 | 99 | 1 | VBW: 3.6 kHz |
| Hori. | 16740.000 | AV | 39.39 | 39.68 | 12.42 | 41.87 | -9.54 | 40.08 | 53.90 | 13.8 | 156 | 156 | VBW: 3.6 kHz |
| Hori. | 22320.000 | AV | 55.01 | 39.97 | 13.24 | 47.87 | -9.54 | 50.81 | 53.90 | **3.0** | 142 | 252 | VBW: 3.6 kHz |
| Vert. | 37.400 | QP | 22.84 | 15.13 | 6.77 | 32.20 | 0.00 | 12.54 | 40.00 | 27.4 | 100 | 0 | |
| Vert. | 68.125 | QP | 27.37 | 6.50 | 6.83 | 32.18 | 0.00 | 8.52 | 40.00 | 31.4 | 100 | 264 | |
| Vert. | 120.000 | QP | 22.96 | 12.97 | 7.40 | 32.14 | 0.00 | 11.19 | 43.50 | 32.3 | 100 | 69 | |
| Vert. | 168.000 | QP | 23.40 | 15.54 | 8.03 | 32.10 | 0.00 | 14.87 | 43.50 | 28.6 | 100 | 176 | |
| Vert. | 239.998 | QP | 27.38 | 11.57 | 8.38 | 32.03 | 0.00 | 15.30 | 46.00 | 30.7 | 215 | 336 | |
| Vert. | 262.323 | QP | 25.48 | 12.01 | 8.52 | 32.01 | 0.00 | 14.00 | 46.00 | 32.0 | 138 | 72 | |
| Vert. | 359.997 | QP | 22.42 | 14.57 | 9.03 | 31.95 | 0.00 | 14.07 | 46.00 | 31.9 | 108 | 218 | |
| Vert. | 480.000 | QP | 21.88 | 17.05 | 9.56 | 31.96 | 0.00 | 16.53 | 46.00 | 29.4 | 100 | 0 | |
| Vert. | 11160.000 | PK | 48.53 | 40.12 | 10.10 | 43.61 | 2.39 | 57.53 | 73.97 | 16.4 | 100 | 359 | |
| Vert. | 16740.000 | PK | 47.47 | 39.68 | 12.42 | 41.87 | -9.54 | 48.16 | 73.90 | 25.7 | 150 | 348 | |
| Vert. | 22320.000 | PK | 52.63 | 39.97 | 13.24 | 47.87 | -9.54 | 48.43 | 73.90 | 25.4 | 159 | 169 | |
| Vert. | 11160.000 | AV | 40.29 | 40.12 | 10.10 | 43.61 | 2.39 | 49.29 | 53.97 | 4.6 | 100 | 359 | VBW: 3.6 kHz |
| Vert. | 16740.000 | AV | 37.47 | 39.68 | 12.42 | 41.87 | -9.54 | 38.16 | 53.90 | 15.7 | 150 | 348 | VBW: 3.6 kHz |
| Vert. | 22320.000 | AV | 50.47 | 39.97 | 13.24 | 47.87 | -9.54 | 46.27 | 53.90 | 7.6 | 159 | 169 | VBW: 3.6 kHz |

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

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

Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB

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

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5700 MHz |

## (Calculation) (above 1GHz 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 | 53.69 | 32.53 | 16.59 | 44.87 | 2.39 | 60.33 | -34.87 | -27.00 | **7.9** | 149 | 29 | |
| Vert. | 5725.000 | PK | 53.61 | 32.53 | 16.59 | 44.87 | 2.39 | 60.25 | -34.95 | -27.00 | 8.0 | 126 | 90 | |

*This mode was performed only band edges measurement.

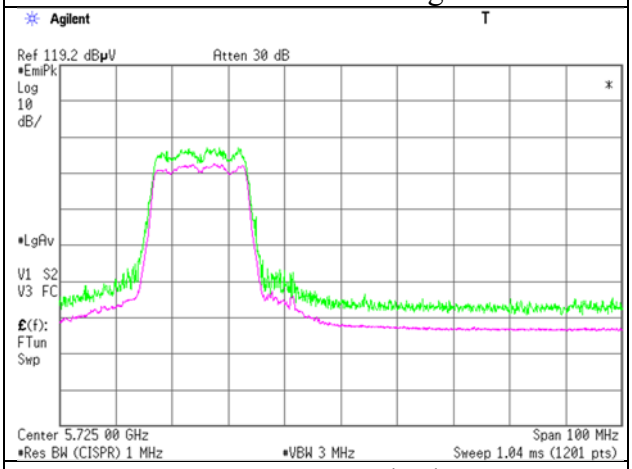
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5700 MHz |

Horizontal

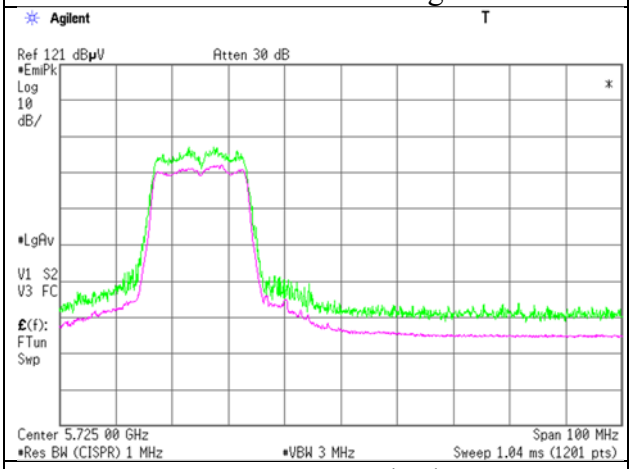
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5745 MHz |

## (Calculation) (above 1GHz 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 | 48.59 | 32.41 | 16.50 | 44.88 | 2.39 | 55.01 | -40.19 | -27.00 | 13.2 | 100 | 27 | |
| Hori. | 5700.000 | PK | 49.29 | 32.49 | 16.56 | 44.88 | 2.39 | 55.85 | -39.35 | 10.00 | 49.4 | 100 | 27 | |
| Hori. | 5720.000 | PK | 58.74 | 32.53 | 16.59 | 44.87 | 2.39 | 65.38 | -29.82 | 15.60 | 45.4 | 100 | 27 | |
| Hori. | 5725.000 | PK | 63.60 | 32.53 | 16.59 | 44.87 | 2.39 | 70.24 | -24.96 | 27.00 | 52.0 | 100 | 27 | |
| Vert. | 5650.000 | PK | 49.31 | 32.41 | 16.50 | 44.88 | 2.39 | 55.73 | -39.47 | -27.00 | **12.5** | 130 | 46 | |
| Vert. | 5700.000 | PK | 49.16 | 32.49 | 16.56 | 44.88 | 2.39 | 55.72 | -39.48 | 10.00 | 49.5 | 130 | 46 | |
| Vert. | 5720.000 | PK | 57.67 | 32.53 | 16.59 | 44.87 | 2.39 | 64.31 | -30.89 | 15.60 | 46.5 | 130 | 46 | |
| Vert. | 5725.000 | PK | 62.43 | 32.53 | 16.59 | 44.87 | 2.39 | 69.07 | -26.13 | 27.00 | 53.1 | 130 | 46 | |

*This mode was performed only band edges measurement.

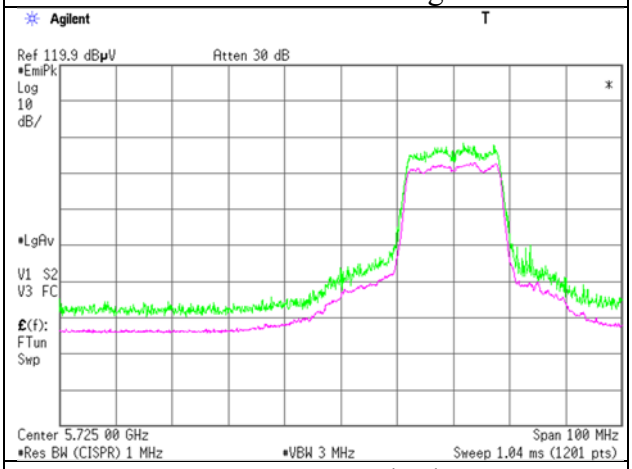
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5745 MHz |

Horizontal

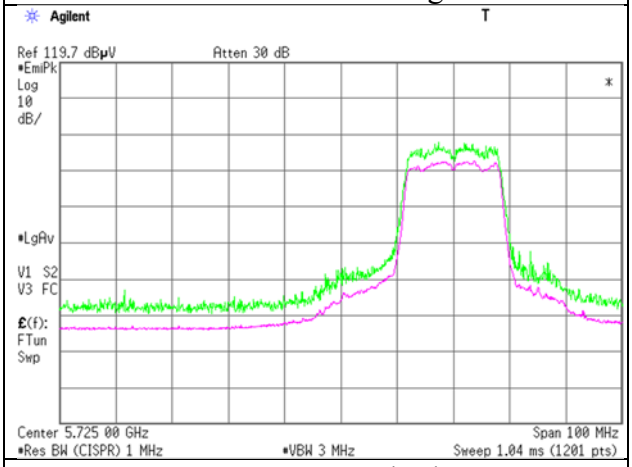
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5825 MHz |

## (Calculation) (above 1GHz 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 | 55.81 | 32.74 | 16.73 | 44.86 | 2.39 | 62.81 | -32.39 | 27.00 | 59.4 | 116 | 30 | |
| Hori. | 5855.000 | PK | 53.32 | 32.75 | 16.73 | 44.86 | 2.39 | 60.33 | -34.87 | 15.60 | 50.5 | 116 | 30 | |
| Hori. | 5875.000 | PK | 50.09 | 32.78 | 16.76 | 44.86 | 2.39 | 57.16 | -38.04 | 10.00 | 48.0 | 116 | 30 | |
| Hori. | 5925.000 | PK | 49.08 | 32.87 | 16.80 | 44.85 | 2.39 | 56.29 | -38.91 | -27.00 | 11.9 | 116 | 30 | |
| Vert. | 5850.000 | PK | 54.82 | 32.74 | 16.73 | 44.86 | 2.39 | 61.82 | -33.38 | 27.00 | 60.4 | 148 | 64 | |
| Vert. | 5855.000 | PK | 52.35 | 32.75 | 16.73 | 44.86 | 2.39 | 59.36 | -35.84 | 15.60 | 51.4 | 148 | 64 | |
| Vert. | 5875.000 | PK | 49.91 | 32.78 | 16.76 | 44.86 | 2.39 | 56.98 | -38.22 | 10.00 | 48.2 | 148 | 64 | |
| Vert. | 5925.000 | PK | 49.92 | 32.87 | 16.80 | 44.85 | 2.39 | 57.13 | -38.07 | -27.00 | **11.1** | 148 | 64 | |

*This mode was performed only band edges measurement.

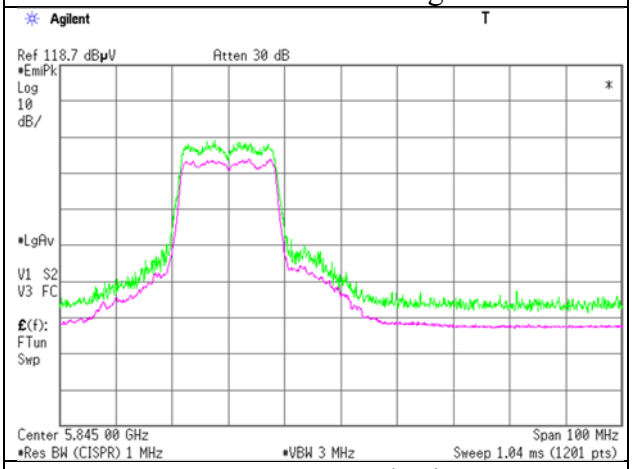
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 27, 2018 |
| Temperature / Humidity | 22 deg. C / 35 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11a 5825 MHz |

Horizontal

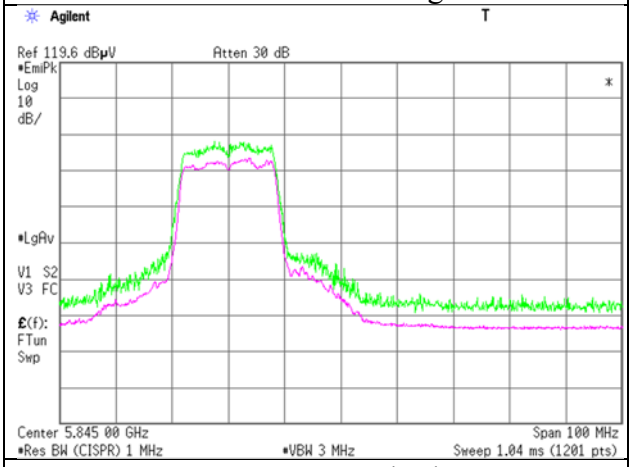
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5180 MHz |

**(above 1GHz 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 | 32.01 | 16.48 | 44.63 | 2.39 | 58.67 | 73.97 | 15.3 | 153 | 36 | |
| Hori. | 5150.000 | AV | 38.88 | 32.01 | 16.48 | 44.63 | 2.39 | 45.13 | 53.97 | **8.8** | 153 | 36 | VBW: 10 Hz |
| Vert. | 5150.000 | PK | 52.94 | 32.01 | 16.48 | 44.63 | 2.39 | 59.19 | 73.97 | 14.7 | 111 | 278 | |
| Vert. | 5150.000 | AV | 38.80 | 32.01 | 16.48 | 44.63 | 2.39 | 45.05 | 53.97 | 8.9 | 111 | 278 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

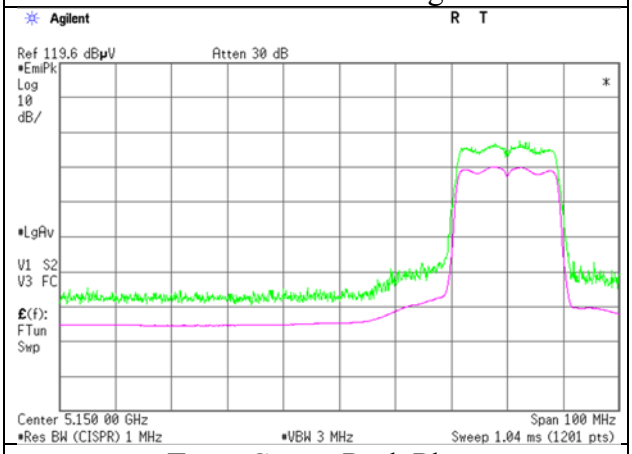
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5180 MHz |

Horizontal

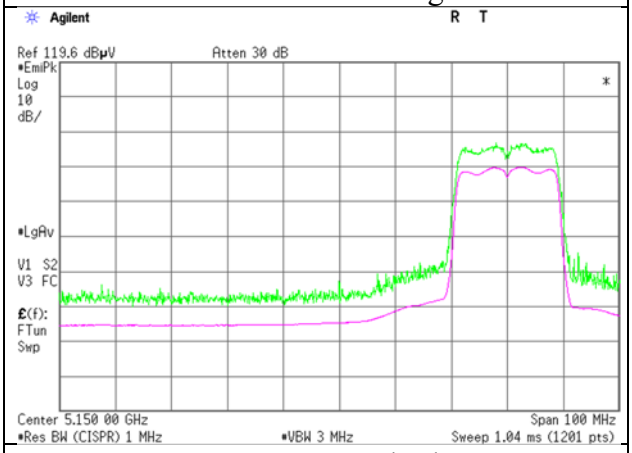
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5320 MHz |

**(above 1GHz 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 | 53.13 | 32.09 | 16.39 | 44.79 | 2.39 | 59.21 | 73.97 | 14.7 | 152 | 34 | |
| Hori. | 5350.000 | AV | 39.94 | 32.09 | 16.39 | 44.79 | 2.39 | 46.02 | 53.97 | 7.9 | 152 | 34 | VBW: 10 Hz |
| Vert. | 5350.000 | PK | 52.48 | 32.09 | 16.39 | 44.79 | 2.39 | 58.56 | 73.97 | 15.4 | 125 | 96 | |
| Vert. | 5350.000 | AV | 40.72 | 32.09 | 16.39 | 44.79 | 2.39 | 46.80 | 53.97 | **7.1** | 125 | 96 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

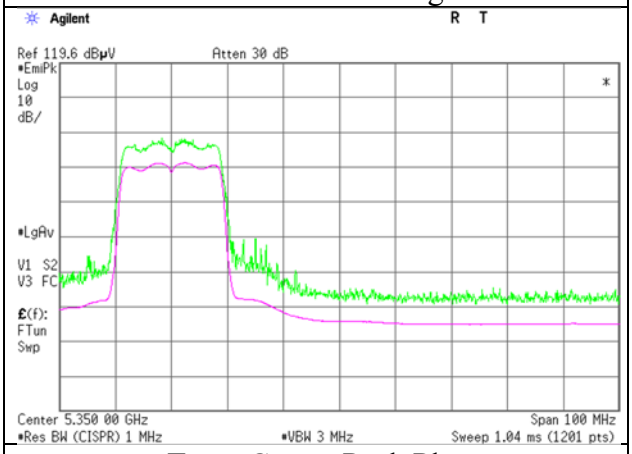
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5320 MHz |

Horizontal

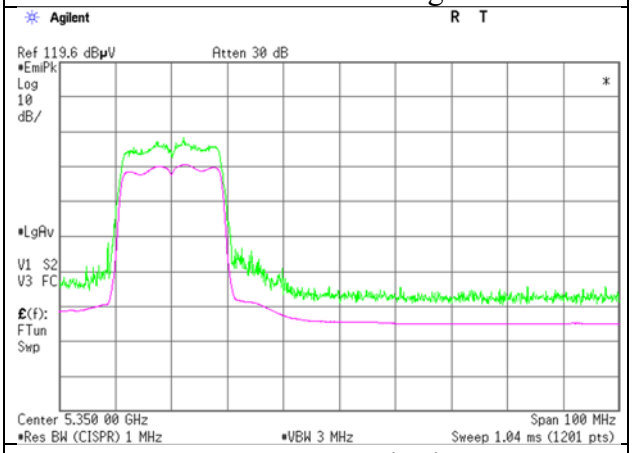
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5500 MHz |

## (above 1GHz 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 | 49.53 | 32.14 | 16.36 | 44.87 | 2.39 | 55.55 | 73.97 | 18.4 | 105 | 38 | |
| Hori. | 5460.000 | AV | 37.45 | 32.14 | 16.36 | 44.87 | 2.39 | 43.47 | 53.97 | **10.5** | 105 | 38 | VBW: 10 Hz |
| Vert. | 5460.000 | PK | 49.39 | 32.14 | 16.36 | 44.87 | 2.39 | 55.41 | 73.97 | 18.5 | 135 | 88 | |
| Vert. | 5460.000 | AV | 37.20 | 32.14 | 16.36 | 44.87 | 2.39 | 43.22 | 53.97 | 10.7 | 135 | 88 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 52.41 | 32.15 | 16.35 | 44.88 | 2.39 | 58.42 | -36.78 | -27.00 | **9.8** | 105 | 38 | |
| Vert. | 5470.000 | PK | 52.04 | 32.15 | 16.35 | 44.88 | 2.39 | 58.05 | -37.15 | -27.00 | 10.2 | 135 | 88 | |

*This mode was performed only band edges measurement.

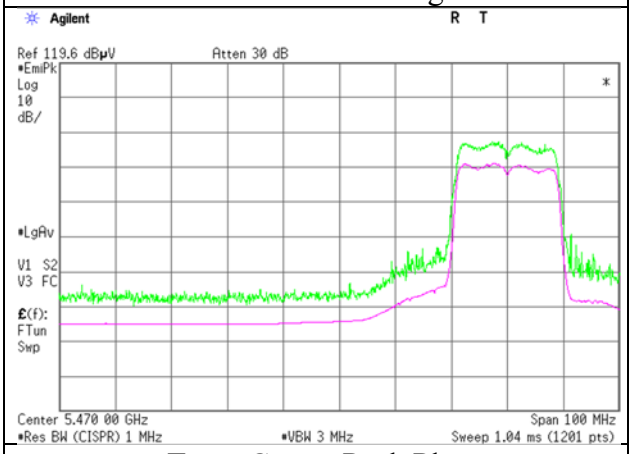
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5500 MHz |

Horizontal

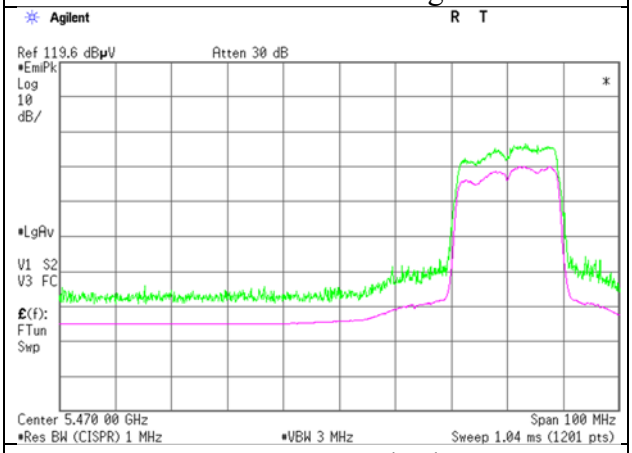
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5700 MHz |

## (Calculation) (above 1GHz 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 | 54.62 | 32.53 | 16.59 | 44.87 | 2.39 | 61.26 | -33.94 | -27.00 | **6.9** | 107 | 41 | |
| Vert. | 5725.000 | PK | 54.38 | 32.53 | 16.59 | 44.87 | 2.39 | 61.02 | -34.18 | -27.00 | 7.2 | 146 | 84 | |

*This mode was performed only band edges measurement.

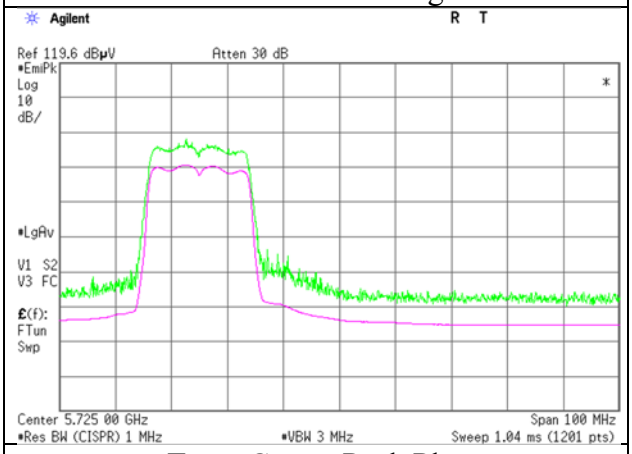
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5700 MHz |

Horizontal

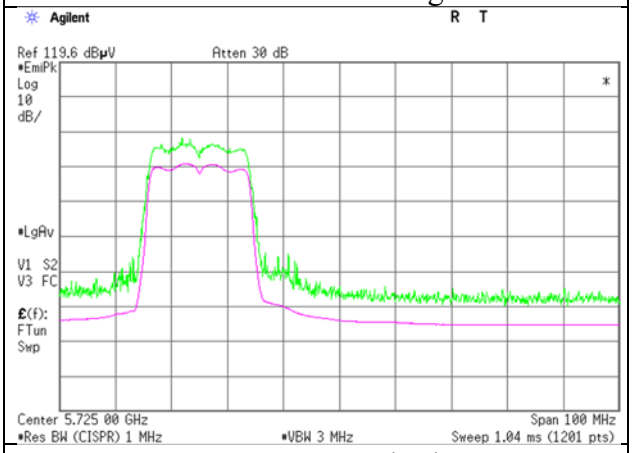
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5745 MHz |

## (Calculation) (above 1GHz 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 | 49.21 | 32.41 | 16.50 | 44.88 | 2.39 | 55.63 | -39.57 | -27.00 | **12.6** | 153 | 31 | |
| Hori. | 5700.000 | PK | 49.69 | 32.49 | 16.56 | 44.88 | 2.39 | 56.25 | -38.95 | 10.00 | 49.0 | 153 | 31 | |
| Hori. | 5720.000 | PK | 57.89 | 32.53 | 16.59 | 44.87 | 2.39 | 64.53 | -30.67 | 15.60 | 46.3 | 153 | 31 | |
| Hori. | 5725.000 | PK | 62.97 | 32.53 | 16.59 | 44.87 | 2.39 | 69.61 | -25.59 | 27.00 | 52.6 | 153 | 31 | |
| Vert. | 5650.000 | PK | 49.03 | 32.41 | 16.50 | 44.88 | 2.39 | 55.45 | -39.75 | -27.00 | 12.8 | 150 | 87 | |
| Vert. | 5700.000 | PK | 50.12 | 32.49 | 16.56 | 44.88 | 2.39 | 56.68 | -38.52 | 10.00 | 48.5 | 150 | 87 | |
| Vert. | 5720.000 | PK | 57.52 | 32.53 | 16.59 | 44.87 | 2.39 | 64.16 | -31.04 | 15.60 | 46.6 | 150 | 87 | |
| Vert. | 5725.000 | PK | 62.74 | 32.53 | 16.59 | 44.87 | 2.39 | 69.38 | -25.82 | 27.00 | 52.8 | 150 | 87 | |

*This mode was performed only band edges measurement.

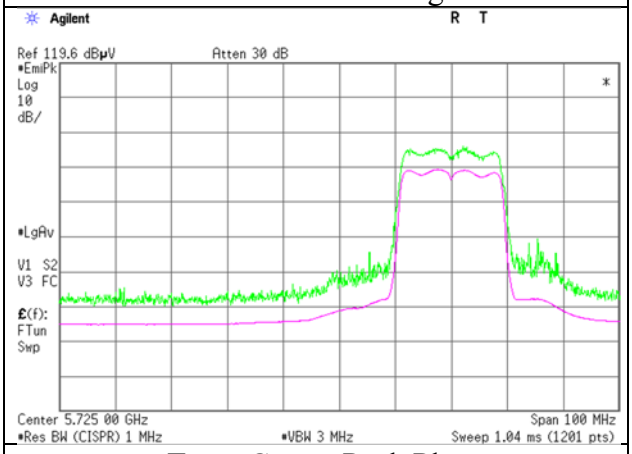
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5745 MHz |

Horizontal

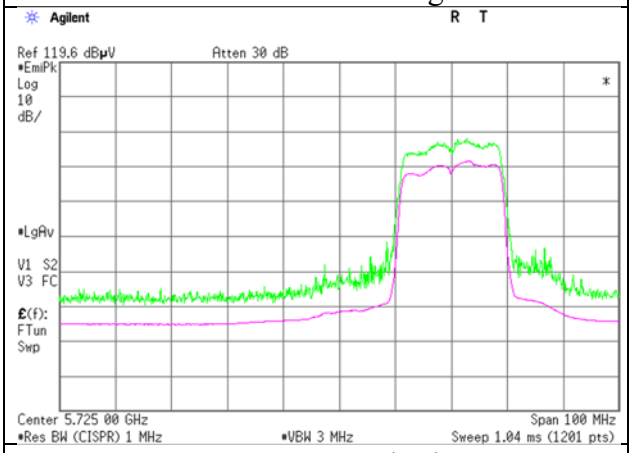
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5825 MHz |

## (Calculation) (above 1GHz 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 | 56.49 | 32.74 | 16.73 | 44.86 | 2.39 | 63.49 | -31.71 | 27.00 | 58.7 | 183 | 31 | |
| Hori. | 5855.000 | PK | 53.20 | 32.75 | 16.73 | 44.86 | 2.39 | 60.21 | -34.99 | 15.60 | 50.6 | 183 | 31 | |
| Hori. | 5875.000 | PK | 49.56 | 32.78 | 16.76 | 44.86 | 2.39 | 56.63 | -38.57 | 10.00 | 48.6 | 183 | 31 | |
| Hori. | 5925.000 | PK | 49.65 | 32.87 | 16.80 | 44.85 | 2.39 | 56.86 | -38.34 | -27.00 | **11.3** | 183 | 31 | |
| Vert. | 5850.000 | PK | 53.25 | 32.74 | 16.73 | 44.86 | 2.39 | 60.25 | -34.95 | 27.00 | 62.0 | 114 | 116 | |
| Vert. | 5855.000 | PK | 52.54 | 32.75 | 16.73 | 44.86 | 2.39 | 59.55 | -35.65 | 15.60 | 51.3 | 114 | 116 | |
| Vert. | 5875.000 | PK | 49.97 | 32.78 | 16.76 | 44.86 | 2.39 | 57.04 | -38.16 | 10.00 | 48.2 | 114 | 116 | |
| Vert. | 5925.000 | PK | 49.32 | 32.87 | 16.80 | 44.85 | 2.39 | 56.53 | -38.67 | -27.00 | 11.7 | 114 | 116 | |

*This mode was performed only band edges measurement.

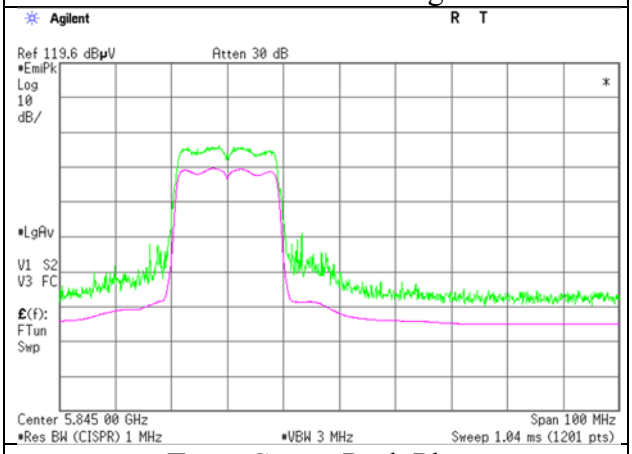
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-20 5825 MHz |

Horizontal

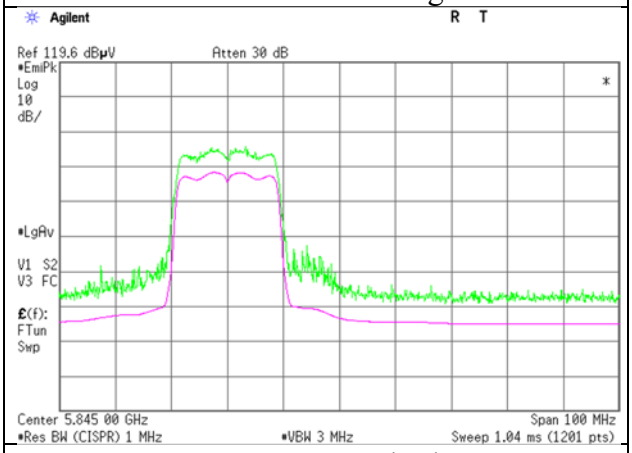
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5180 MHz |

**(above 1GHz 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 | 52.11 | 32.01 | 16.48 | 44.63 | 2.39 | 58.36 | 73.97 | 15.6 | 151 | 33 | |
| Hori. | 5150.000 | AV | 38.92 | 32.01 | 16.48 | 44.63 | 2.39 | 45.17 | 53.97 | 8.8 | 151 | 33 | VBW: 10 Hz |
| Vert. | 5150.000 | PK | 52.05 | 32.01 | 16.48 | 44.63 | 2.39 | 58.30 | 73.97 | 15.6 | 210 | 82 | |
| Vert. | 5150.000 | AV | 39.13 | 32.01 | 16.48 | 44.63 | 2.39 | 45.38 | 53.97 | **8.5** | 210 | 82 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

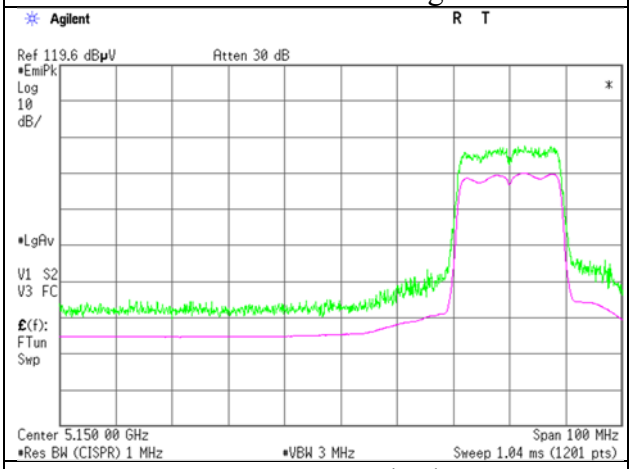
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5180 MHz |

Horizontal

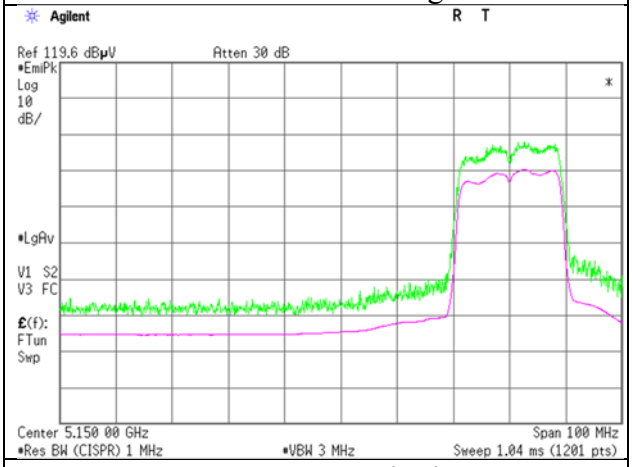
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5320 MHz |

**(above 1GHz 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 | 52.48 | 32.09 | 16.39 | 44.79 | 2.39 | 58.56 | 73.97 | 15.4 | 151 | 38 | |
| Hori. | 5350.000 | AV | 39.28 | 32.09 | 16.39 | 44.79 | 2.39 | 45.36 | 53.97 | **8.6** | 151 | 38 | VBW: 10 Hz |
| Vert. | 5350.000 | PK | 53.14 | 32.09 | 16.39 | 44.79 | 2.39 | 59.22 | 73.97 | 14.7 | 132 | 98 | |
| Vert. | 5350.000 | AV | 37.59 | 32.09 | 16.39 | 44.79 | 2.39 | 43.67 | 53.97 | 10.3 | 132 | 98 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

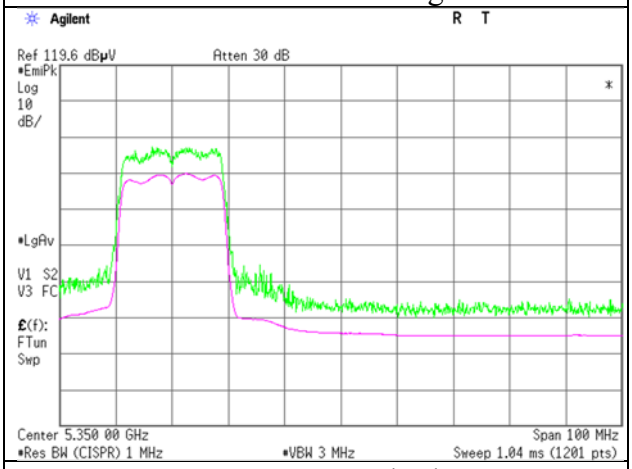
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5320 MHz |

Horizontal

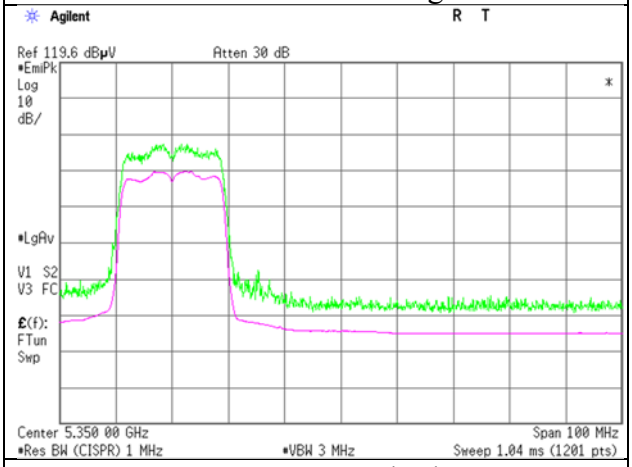
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5500 MHz |

## (above 1GHz 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 | 49.97 | 32.14 | 16.36 | 44.87 | 2.39 | 55.99 | 73.97 | 17.9 | 174 | 38 | |
| Hori. | 5460.000 | AV | 37.21 | 32.14 | 16.36 | 44.87 | 2.39 | 43.23 | 53.97 | **10.7** | 174 | 38 | VBW: 10 Hz |
| Vert. | 5460.000 | PK | 50.07 | 32.14 | 16.36 | 44.87 | 2.39 | 56.09 | 73.97 | 17.8 | 113 | 86 | |
| Vert. | 5460.000 | AV | 37.19 | 32.14 | 16.36 | 44.87 | 2.39 | 43.21 | 53.97 | **10.7** | 113 | 86 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 53.82 | 32.15 | 16.35 | 44.88 | 2.39 | 59.83 | -35.37 | -27.00 | **8.4** | 174 | 38 | |
| Vert. | 5470.000 | PK | 53.54 | 32.15 | 16.35 | 44.88 | 2.39 | 59.55 | -35.65 | -27.00 | 8.7 | 113 | 86 | |

*This mode was performed only band edges measurement.

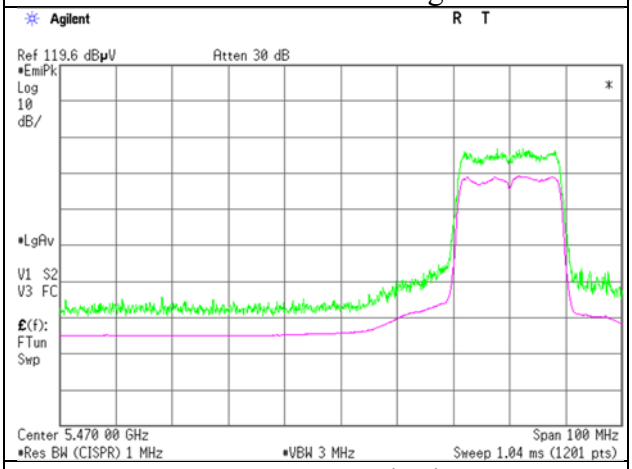
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5500 MHz |

Horizontal

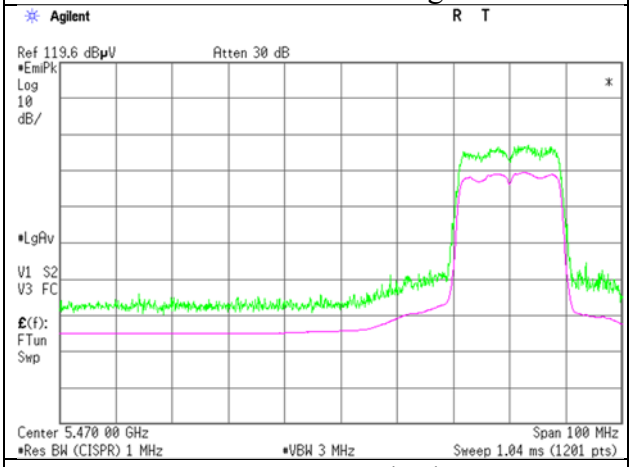
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5700 MHz |

## (Calculation) (above 1GHz 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 | 54.12 | 32.53 | 16.59 | 44.87 | 2.39 | 60.76 | -34.44 | -27.00 | **7.4** | 107 | 29 | |
| Vert. | 5725.000 | PK | 54.16 | 32.53 | 16.59 | 44.87 | 2.39 | 60.80 | -34.40 | -27.00 | **7.4** | 149 | 93 | |

*This mode was performed only band edges measurement.

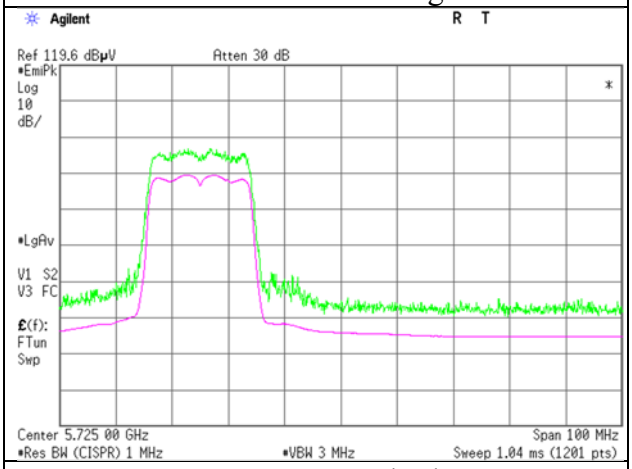
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5700 MHz |

Horizontal

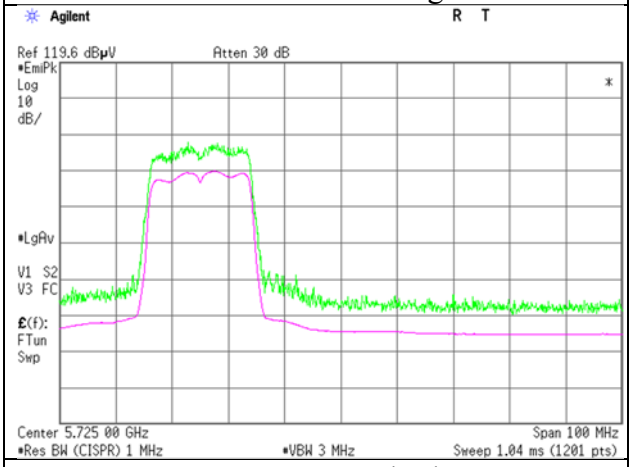
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5745 MHz |

## (Calculation) (above 1GHz 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 | 48.93 | 32.41 | 16.50 | 44.88 | 2.39 | 55.35 | -39.85 | -27.00 | 12.9 | 149 | 29 | |
| Hori. | 5700.000 | PK | 50.07 | 32.49 | 16.56 | 44.88 | 2.39 | 56.63 | -38.57 | 10.00 | 48.6 | 149 | 29 | |
| Hori. | 5720.000 | PK | 58.01 | 32.53 | 16.59 | 44.87 | 2.39 | 64.65 | -30.55 | 15.60 | 46.2 | 149 | 29 | |
| Hori. | 5725.000 | PK | 63.33 | 32.53 | 16.59 | 44.87 | 2.39 | 69.97 | -25.23 | 27.00 | 52.2 | 149 | 29 | |
| Vert. | 5650.000 | PK | 49.23 | 32.41 | 16.50 | 44.88 | 2.39 | 55.65 | -39.55 | -27.00 | **12.6** | 143 | 104 | |
| Vert. | 5700.000 | PK | 50.21 | 32.49 | 16.56 | 44.88 | 2.39 | 56.77 | -38.43 | 10.00 | 48.4 | 143 | 104 | |
| Vert. | 5720.000 | PK | 58.43 | 32.53 | 16.59 | 44.87 | 2.39 | 65.07 | -30.13 | 15.60 | 45.7 | 143 | 104 | |
| Vert. | 5725.000 | PK | 63.42 | 32.53 | 16.59 | 44.87 | 2.39 | 70.06 | -25.14 | 27.00 | 52.1 | 143 | 104 | |

*This mode was performed only band edges measurement.

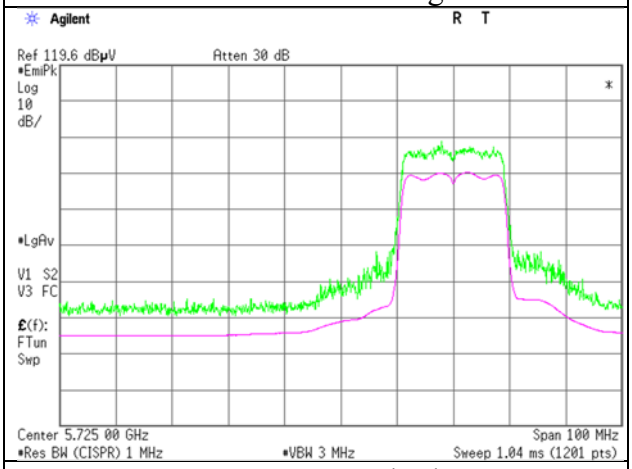
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5745 MHz |

Horizontal

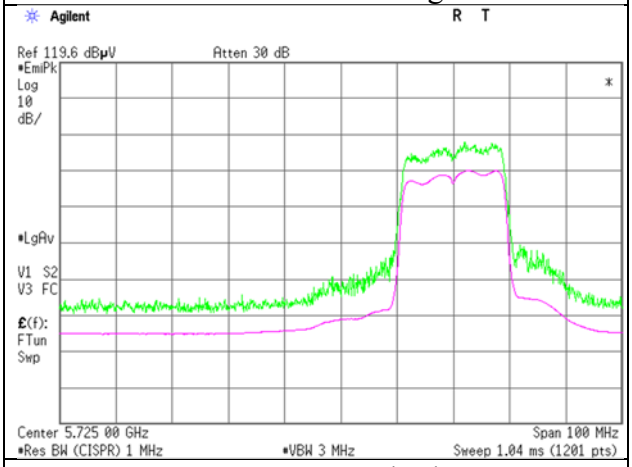
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5825 MHz |

## (Calculation) (above 1GHz 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 | 54.67 | 32.74 | 16.73 | 44.86 | 2.39 | 61.67 | -33.53 | 27.00 | 60.5 | 152 | 30 | |
| Hori. | 5855.000 | PK | 52.63 | 32.75 | 16.73 | 44.86 | 2.39 | 59.64 | -35.56 | 15.60 | 51.2 | 152 | 30 | |
| Hori. | 5875.000 | PK | 50.68 | 32.78 | 16.76 | 44.86 | 2.39 | 57.75 | -37.45 | 10.00 | 47.5 | 152 | 30 | |
| Hori. | 5925.000 | PK | 49.89 | 32.87 | 16.80 | 44.85 | 2.39 | 57.10 | -38.10 | -27.00 | **11.1** | 152 | 30 | |
| Vert. | 5850.000 | PK | 55.14 | 32.74 | 16.73 | 44.86 | 2.39 | 62.14 | -33.06 | 27.00 | 60.1 | 144 | 289 | |
| Vert. | 5855.000 | PK | 53.01 | 32.75 | 16.73 | 44.86 | 2.39 | 60.02 | -35.18 | 15.60 | 50.8 | 144 | 289 | |
| Vert. | 5875.000 | PK | 49.68 | 32.78 | 16.76 | 44.86 | 2.39 | 56.75 | -38.45 | 10.00 | 48.5 | 144 | 289 | |
| Vert. | 5925.000 | PK | 49.26 | 32.87 | 16.80 | 44.85 | 2.39 | 56.47 | -38.73 | -27.00 | 11.7 | 144 | 289 | |

*This mode was performed only band edges measurement.

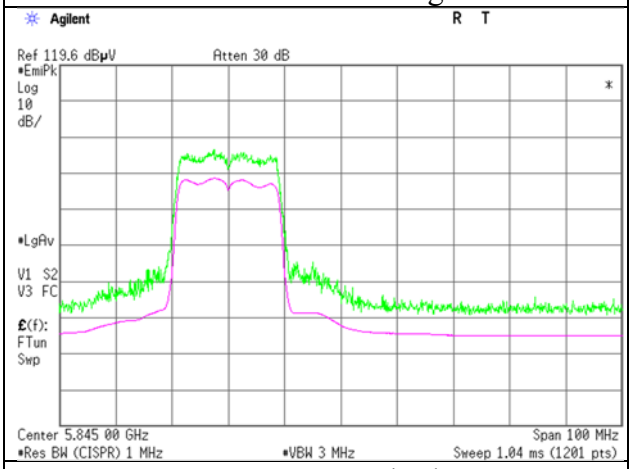
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 23 deg. C / 36 % RH |
| Engineer | Hiroyuki Morikawa |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-20 5825 MHz |

Horizontal

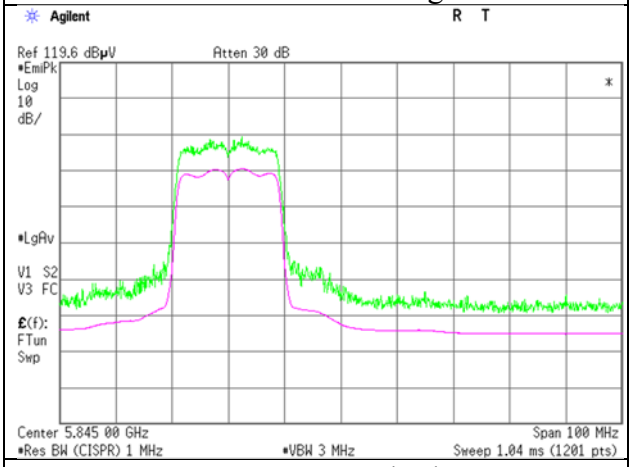
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5190 MHz |

**(above 1GHz 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 | 53.77 | 32.01 | 16.48 | 44.63 | 2.39 | 60.02 | 73.97 | 13.9 | 157 | 38 | |
| Hori. | 5150.000 | AV | 42.34 | 32.01 | 16.48 | 44.63 | 2.39 | 48.59 | 53.97 | **5.3** | 157 | 38 | VBW: 3.6 kHz |
| Vert. | 5150.000 | PK | 52.82 | 32.01 | 16.48 | 44.63 | 2.39 | 59.07 | 73.97 | 14.9 | 132 | 110 | |
| Vert. | 5150.000 | AV | 41.44 | 32.01 | 16.48 | 44.63 | 2.39 | 47.69 | 53.97 | 6.2 | 132 | 110 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

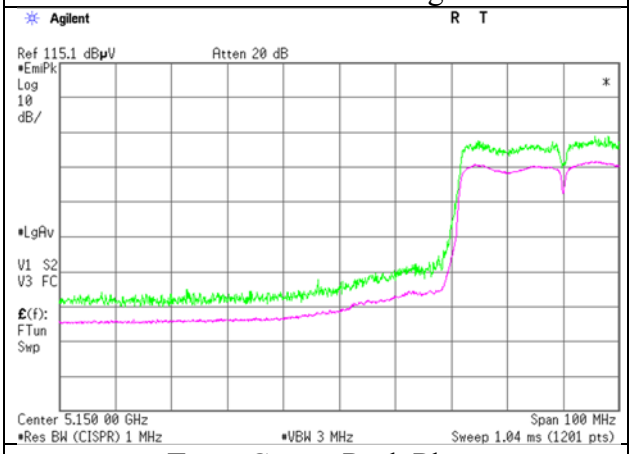
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5190 MHz |

Horizontal

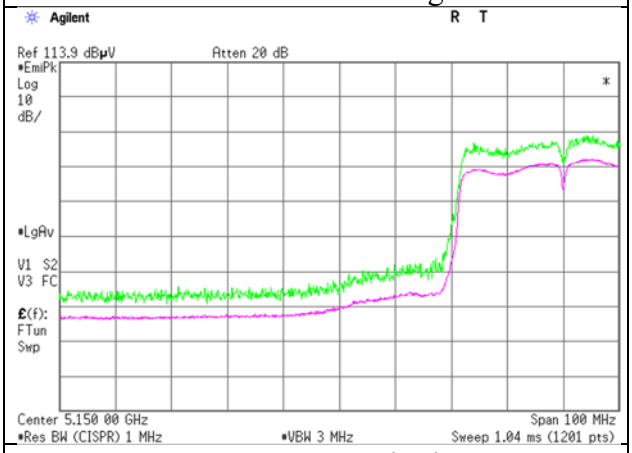
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | | | | |
|---|---|---|---|---|
| Report No. | 12193629S-C-R2 | | | |
| Test place | Shonan EMC Lab. | | | |
| Semi Anechoic Chamber | 3 | 3 | 3 | 3 |
| Date | March 28, 2018 | March 30, 2018 | April 1, 2018 | April 2, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH | 23 deg. C / 29 % RH | 22 deg. C / 30 % RH | 24 deg. C / 42 % RH |
| Engineer | Kazuya Noda | Yosuke Ishikawa | Shiro Kobayashi | Shiro Kobayashi |
| | (1 GHz - 13 GHz) | (13 GHz - 18 GHz) | (18 GHz – 26.5 GHz) | (26.5 GHz – 40 GHz) |
| Antenna | AH104N2450D1 | | | |
| Mode | Tx 11n-40 5230 MHz | | | |

**(above 1GHz 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. | 10460.000 | PK | 47.75 | 39.84 | 9.43 | 43.55 | 2.39 | 55.86 | 73.97 | 18.1 | 151 | 338 | |
| Hori. | 15690.000 | PK | 48.95 | 39.61 | 11.71 | 42.13 | -9.54 | 48.60 | 73.90 | 25.3 | 158 | 153 | |
| Hori. | 20920.000 | PK | 56.63 | 39.78 | 12.75 | 46.99 | -9.54 | 52.63 | 73.90 | 21.2 | 137 | 257 | |
| Hori. | 26150.000 | PK | 40.54 | 39.98 | 14.52 | 47.65 | -9.54 | 37.85 | 73.90 | 36.0 | 150 | 1 | |
| Hori. | 10460.000 | AV | 37.91 | 39.84 | 9.43 | 43.55 | 2.39 | 46.02 | 53.97 | 7.9 | 151 | 338 | VBW:3.6 kHz |
| Hori. | 15690.000 | AV | 38.90 | 39.61 | 11.71 | 42.13 | -9.54 | 38.55 | 53.90 | 15.3 | 158 | 153 | VBW:3.6 kHz |
| Hori. | 20920.000 | AV | 55.67 | 39.78 | 12.75 | 46.99 | -9.54 | 51.67 | 53.90 | **2.2** | 137 | 257 | VBW:3.6 kHz |
| Hori. | 26150.000 | AV | 29.52 | 39.98 | 14.52 | 47.65 | -9.54 | 26.83 | 53.90 | 27.0 | 150 | 1 | VBW:3.6 kHz |
| Vert. | 10460.000 | PK | 48.14 | 39.84 | 9.43 | 43.55 | 2.39 | 56.25 | 73.97 | 17.7 | 125 | 13 | |
| Vert. | 15690.000 | PK | 48.22 | 39.61 | 11.71 | 42.13 | -9.54 | 47.87 | 73.90 | 26.0 | 151 | 345 | |
| Vert. | 20920.000 | PK | 56.54 | 39.78 | 12.75 | 46.99 | -9.54 | 52.54 | 73.90 | 21.3 | 160 | 157 | |
| Vert. | 26150.000 | PK | 40.36 | 39.98 | 14.52 | 47.65 | -9.54 | 37.67 | 73.90 | 36.2 | 150 | 1 | |
| Vert. | 10460.000 | AV | 38.15 | 39.84 | 9.43 | 43.55 | 2.39 | 46.26 | 53.97 | 7.7 | 125 | 13 | VBW:3.6 kHz |
| Vert. | 15690.000 | AV | 37.82 | 39.61 | 11.71 | 42.13 | -9.54 | 37.47 | 53.90 | 16.4 | 151 | 345 | VBW:3.6 kHz |
| Vert. | 20920.000 | AV | 55.58 | 39.78 | 12.75 | 46.99 | -9.54 | 51.58 | 53.90 | 2.3 | 160 | 157 | VBW:3.6 kHz |
| Vert. | 26150.000 | AV | 29.29 | 39.98 | 14.52 | 47.65 | -9.54 | 26.60 | 53.90 | 27.3 | 150 | 1 | VBW:3.6 kHz |

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*This mode was performed only band edges measurement.
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5310 MHz |

**(above 1GHz 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 | 55.43 | 32.09 | 16.39 | 44.79 | 2.39 | 61.51 | 73.97 | 12.4 | 147 | 36 | |
| Hori. | 5350.000 | AV | 42.64 | 32.09 | 16.39 | 44.79 | 2.39 | 48.72 | 53.97 | **5.2** | 147 | 36 | VBW: 3.6 kHz |
| Vert. | 5350.000 | PK | 53.41 | 32.09 | 16.39 | 44.79 | 2.39 | 59.49 | 73.97 | 14.4 | 126 | 105 | |
| Vert. | 5350.000 | AV | 40.21 | 32.09 | 16.39 | 44.79 | 2.39 | 46.29 | 53.97 | 7.6 | 126 | 105 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

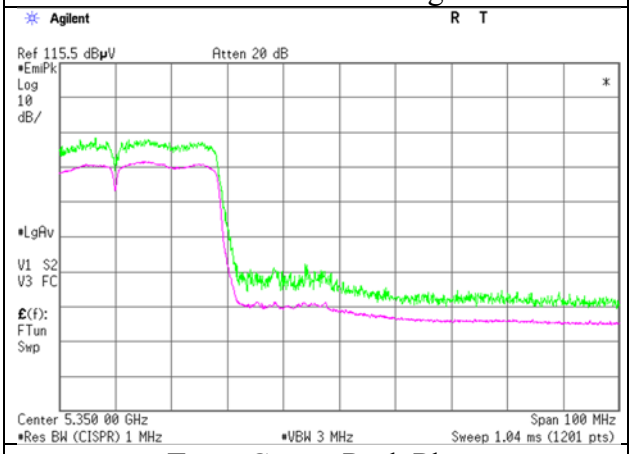
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5310 MHz |

Horizontal

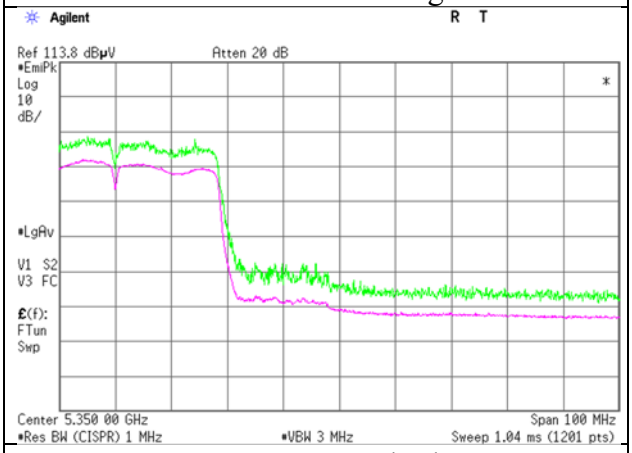
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5510 MHz |

## (above 1GHz 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 | 52.09 | 32.14 | 16.36 | 44.87 | 2.39 | 58.11 | 73.97 | 15.8 | 184 | 41 | |
| Hori. | 5460.000 | AV | 40.99 | 32.14 | 16.36 | 44.87 | 2.39 | 47.01 | 53.97 | **6.9** | 184 | 41 | VBW: 3.6 kHz |
| Vert. | 5460.000 | PK | 50.62 | 32.14 | 16.36 | 44.87 | 2.39 | 56.64 | 73.97 | 17.3 | 131 | 103 | |
| Vert. | 5460.000 | AV | 39.72 | 32.14 | 16.36 | 44.87 | 2.39 | 45.74 | 53.97 | 8.2 | 131 | 103 | VBW: 3.6 kHz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 53.47 | 32.15 | 16.35 | 44.88 | 2.39 | 59.48 | -35.72 | -27.00 | **8.7** | 184 | 41 | |
| Vert. | 5470.000 | PK | 53.02 | 32.15 | 16.35 | 44.88 | 2.39 | 59.03 | -36.17 | -27.00 | 9.2 | 131 | 103 | |

*This mode was performed only band edges measurement.

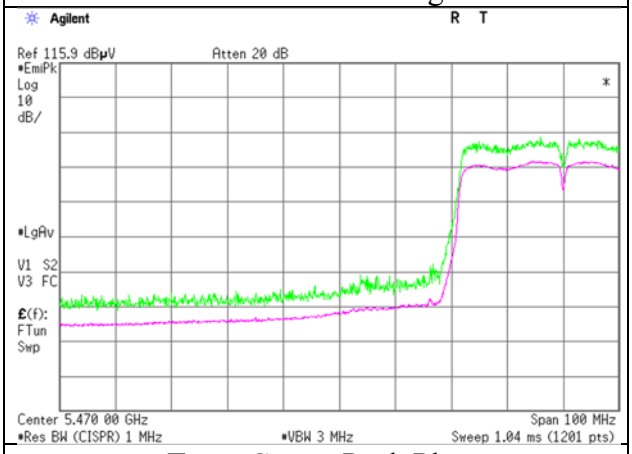
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5510 MHz |

Horizontal

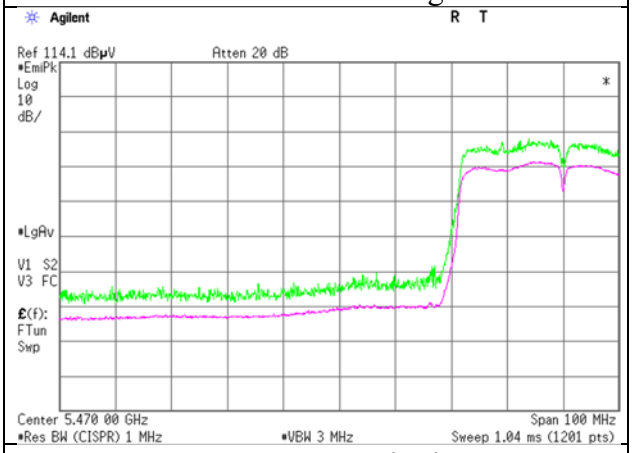
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5670 MHz |

## (Calculation) (above 1GHz 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 | 50.74 | 32.53 | 16.59 | 44.87 | 2.39 | 57.38 | -37.82 | -27.00 | 10.8 | 148 | 41 | |
| Vert. | 5725.000 | PK | 51.23 | 32.53 | 16.59 | 44.87 | 2.39 | 57.87 | -37.33 | -27.00 | **10.3** | 149 | 82 | |

*This mode was performed only band edges measurement.

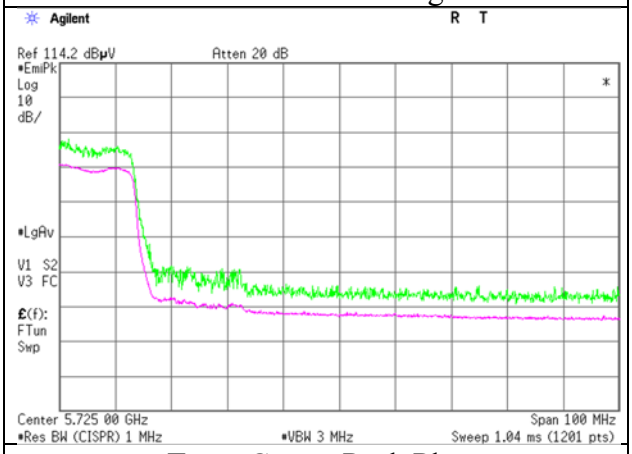
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5670 MHz |

Horizontal

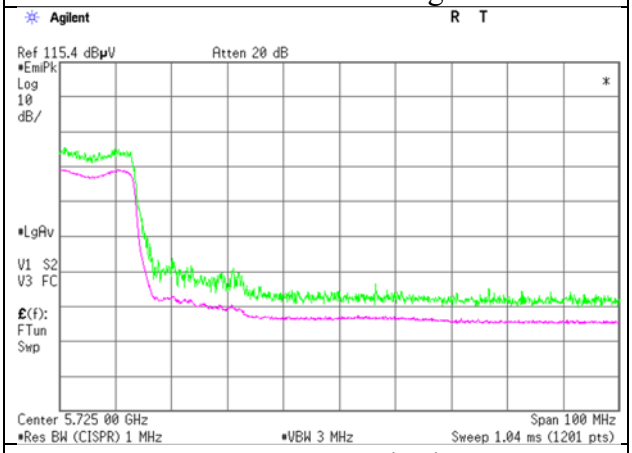
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5755 MHz |

**(Calculation) (above 1GHz 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 | 50.21 | 32.41 | 16.50 | 44.88 | 2.39 | 56.63 | -38.57 | -27.00 | **11.6** | 157 | 33 | |
| Hori. | 5700.000 | PK | 51.56 | 32.49 | 16.56 | 44.88 | 2.39 | 58.12 | -37.08 | 10.00 | 47.1 | 157 | 33 | |
| Hori. | 5720.000 | PK | 56.58 | 32.53 | 16.59 | 44.87 | 2.39 | 63.22 | -31.98 | 15.60 | 47.6 | 157 | 33 | |
| Hori. | 5725.000 | PK | 56.44 | 32.53 | 16.59 | 44.87 | 2.39 | 63.08 | -32.12 | 27.00 | 59.1 | 157 | 33 | |
| Vert. | 5650.000 | PK | 49.46 | 32.41 | 16.50 | 44.88 | 2.39 | 55.88 | -39.32 | -27.00 | 12.3 | 148 | 92 | |
| Vert. | 5700.000 | PK | 50.41 | 32.49 | 16.56 | 44.88 | 2.39 | 56.97 | -38.23 | 10.00 | 48.2 | 148 | 92 | |
| Vert. | 5720.000 | PK | 55.73 | 32.53 | 16.59 | 44.87 | 2.39 | 62.37 | -32.83 | 15.60 | 48.4 | 148 | 92 | |
| Vert. | 5725.000 | PK | 56.35 | 32.53 | 16.59 | 44.87 | 2.39 | 62.99 | -32.21 | 27.00 | 59.2 | 148 | 92 | |

*This mode was performed only band edges measurement.

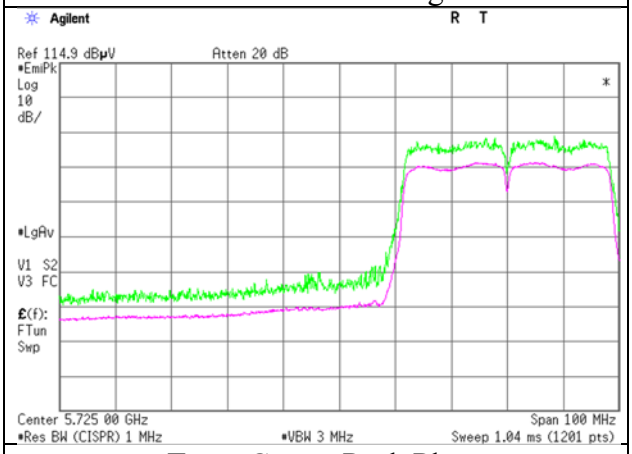
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5755 MHz |

Horizontal

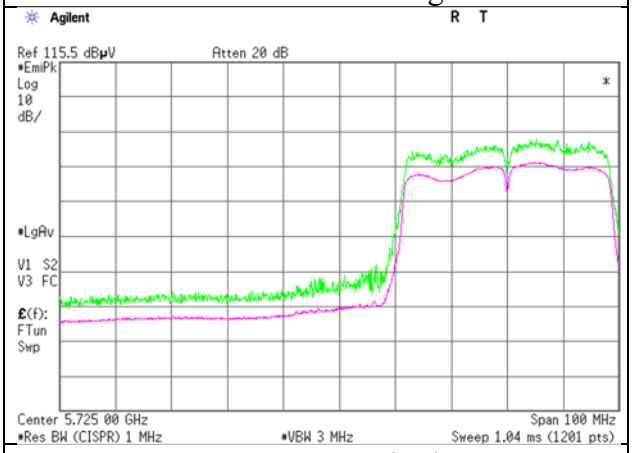
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5795 MHz |

## (Calculation) (above 1GHz 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 | 50.49 | 32.74 | 16.73 | 44.86 | 2.39 | 57.49 | -37.71 | 27.00 | 64.7 | 148 | 32 | |
| Hori. | 5855.000 | PK | 50.02 | 32.75 | 16.73 | 44.86 | 2.39 | 57.03 | -38.17 | 15.60 | 53.8 | 148 | 32 | |
| Hori. | 5875.000 | PK | 49.93 | 32.78 | 16.76 | 44.86 | 2.39 | 57.00 | -38.20 | 10.00 | 48.2 | 148 | 32 | |
| Hori. | 5925.000 | PK | 49.38 | 32.87 | 16.80 | 44.85 | 2.39 | 56.59 | -38.61 | -27.00 | **11.6** | 148 | 32 | |
| Vert. | 5850.000 | PK | 50.42 | 32.74 | 16.73 | 44.86 | 2.39 | 57.42 | -37.78 | 27.00 | 64.8 | 146 | 91 | |
| Vert. | 5855.000 | PK | 50.12 | 32.75 | 16.73 | 44.86 | 2.39 | 57.13 | -38.07 | 15.60 | 53.7 | 146 | 91 | |
| Vert. | 5875.000 | PK | 49.93 | 32.78 | 16.76 | 44.86 | 2.39 | 57.00 | -38.20 | 10.00 | 48.2 | 146 | 91 | |
| Vert. | 5925.000 | PK | 49.36 | 32.87 | 16.80 | 44.85 | 2.39 | 56.57 | -38.63 | -27.00 | **11.6** | 146 | 91 | |

*This mode was performed only band edges measurement.

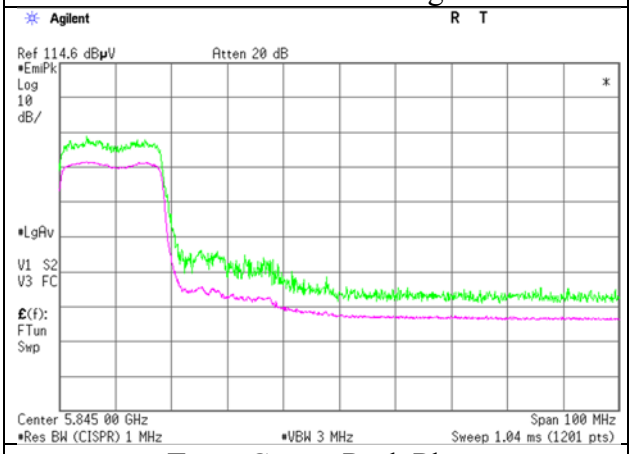
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11n-40 5795 MHz |

Horizontal

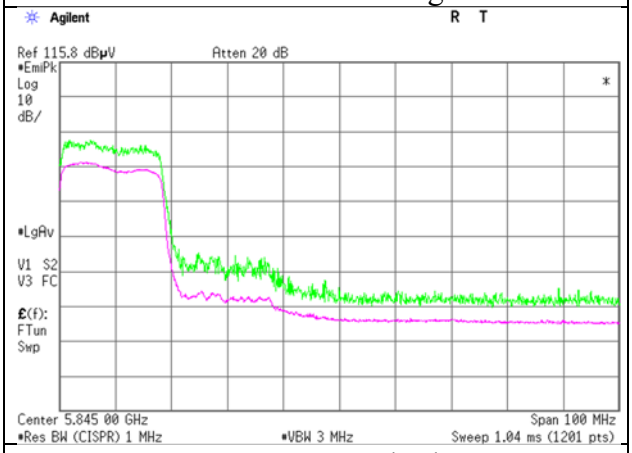
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5190 MHz |

**(above 1GHz 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 | 54.70 | 32.01 | 16.48 | 44.63 | 2.39 | 60.95 | 73.97 | 13.0 | 147 | 33 | |
| Hori. | 5150.000 | AV | 42.23 | 32.01 | 16.48 | 44.63 | 2.39 | 48.48 | 53.97 | **5.4** | 147 | 33 | VBW: 3 kHz |
| Vert. | 5150.000 | PK | 53.95 | 32.01 | 16.48 | 44.63 | 2.39 | 60.20 | 73.97 | 13.7 | 104 | 257 | |
| Vert. | 5150.000 | AV | 42.15 | 32.01 | 16.48 | 44.63 | 2.39 | 48.40 | 53.97 | 5.5 | 104 | 257 | VBW: 3 kHz |

*This mode was performed only band edges measurement.

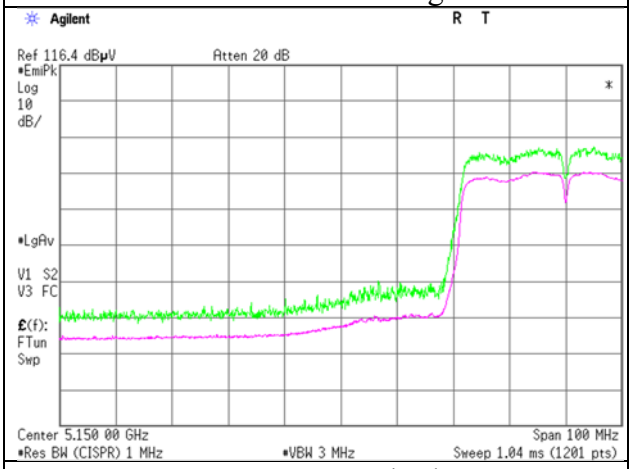
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5190 MHz |

Horizontal

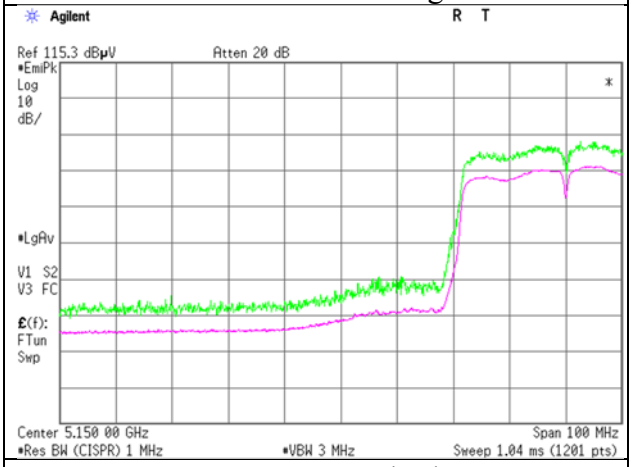
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5310 MHz |

**(above 1GHz 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 | 55.89 | 32.09 | 16.39 | 44.79 | 2.39 | 61.97 | 73.97 | 12.0 | 154 | 38 | |
| Hori. | 5350.000 | AV | 42.63 | 32.09 | 16.39 | 44.79 | 2.39 | 48.71 | 53.97 | **5.2** | 154 | 38 | VBW: 3 kHz |
| Vert. | 5350.000 | PK | 55.08 | 32.09 | 16.39 | 44.79 | 2.39 | 61.16 | 73.97 | 12.8 | 134 | 247 | |
| Vert. | 5350.000 | AV | 41.52 | 32.09 | 16.39 | 44.79 | 2.39 | 47.60 | 53.97 | 6.3 | 134 | 247 | VBW: 3 kHz |

*This mode was performed only band edges measurement.

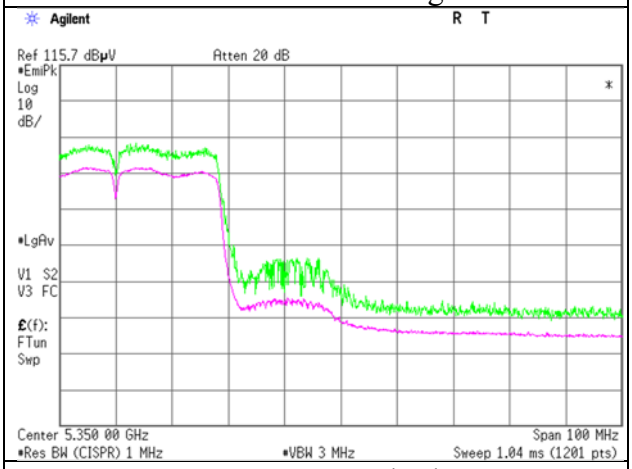
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5310 MHz |

Horizontal

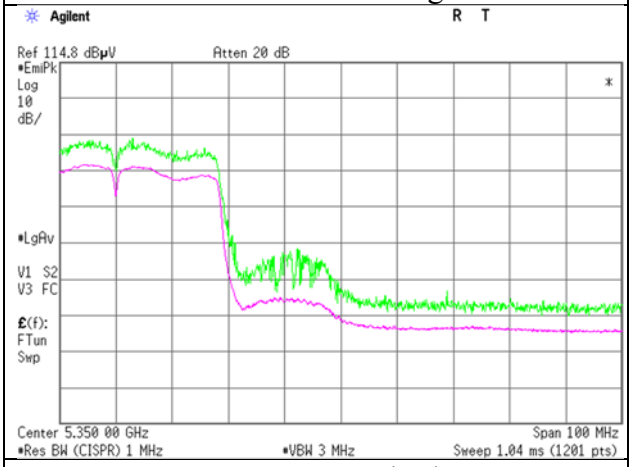
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5510 MHz |

## (above 1GHz 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 | 50.70 | 32.14 | 16.36 | 44.87 | 2.39 | 56.72 | 73.97 | 17.2 | 158 | 27 | |
| Hori. | 5460.000 | AV | 39.69 | 32.14 | 16.36 | 44.87 | 2.39 | 45.71 | 53.97 | **8.2** | 158 | 27 | VBW: 3 kHz |
| Vert. | 5460.000 | PK | 50.43 | 32.14 | 16.36 | 44.87 | 2.39 | 56.45 | 73.97 | 17.5 | 128 | 95 | |
| Vert. | 5460.000 | AV | 39.40 | 32.14 | 16.36 | 44.87 | 2.39 | 45.42 | 53.97 | 8.5 | 128 | 95 | VBW: 3 kHz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 54.88 | 32.15 | 16.35 | 44.88 | 2.39 | 60.89 | -34.31 | -27.00 | 7.3 | 158 | 27 | |
| Vert. | 5470.000 | PK | 55.14 | 32.15 | 16.35 | 44.88 | 2.39 | 61.15 | -34.05 | -27.00 | **7.1** | 128 | 95 | |

*This mode was performed only band edges measurement.

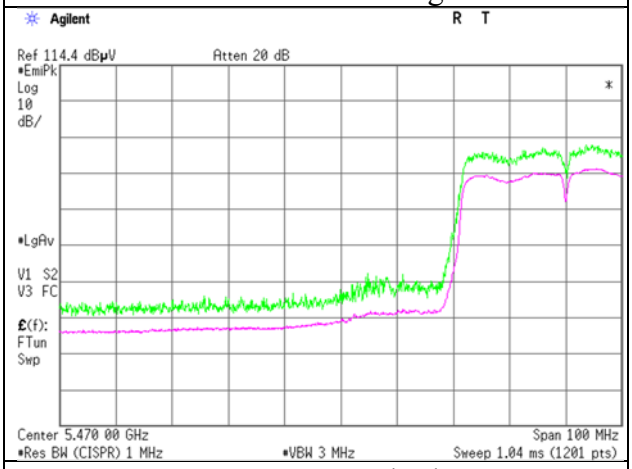
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5510 MHz |

Horizontal

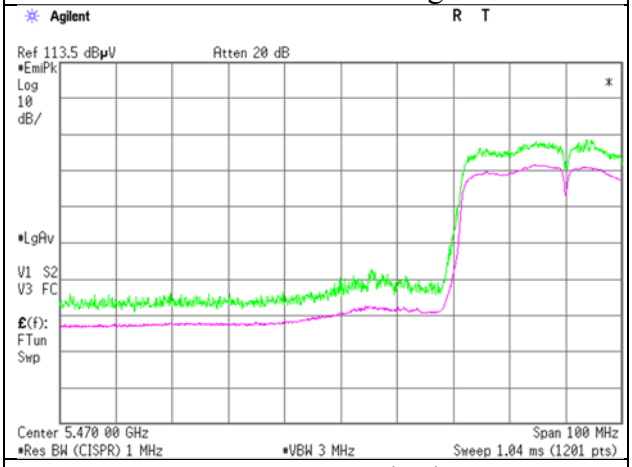
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5670 MHz |

## (Calculation) (above 1GHz 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 | 51.64 | 32.53 | 16.59 | 44.87 | 2.39 | 58.28 | -36.92 | -27.00 | **9.9** | 142 | 38 | |
| Vert. | 5725.000 | PK | 50.96 | 32.53 | 16.59 | 44.87 | 2.39 | 57.60 | -37.60 | -27.00 | 10.6 | 149 | 110 | |

*This mode was performed only band edges measurement.

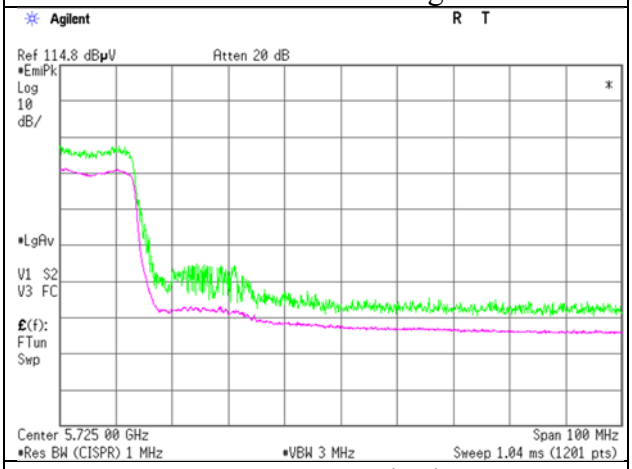
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 28, 2018 |
| Temperature / Humidity | 25 deg. C / 37 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5670 MHz |

Horizontal

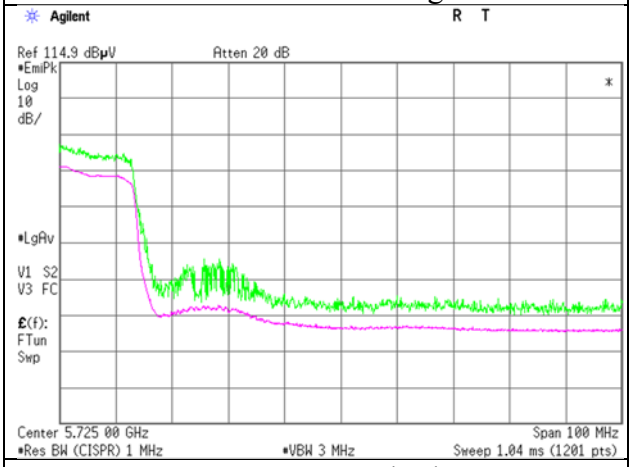
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5755 MHz |

## (Calculation) (above 1GHz 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 | 49.91 | 32.41 | 16.50 | 44.88 | 2.39 | 56.33 | -38.87 | -27.00 | **11.9** | 154 | 34 | |
| Hori. | 5700.000 | PK | 51.41 | 32.49 | 16.56 | 44.88 | 2.39 | 57.97 | -37.23 | 10.00 | 47.2 | 154 | 34 | |
| Hori. | 5720.000 | PK | 59.78 | 32.53 | 16.59 | 44.87 | 2.39 | 66.42 | -28.78 | 15.60 | 44.4 | 154 | 34 | |
| Hori. | 5725.000 | PK | 59.06 | 32.53 | 16.59 | 44.87 | 2.39 | 65.70 | -29.50 | 27.00 | 56.5 | 154 | 34 | |
| Vert. | 5650.000 | PK | 49.61 | 32.41 | 16.50 | 44.88 | 2.39 | 56.03 | -39.17 | -27.00 | 12.2 | 126 | 118 | |
| Vert. | 5700.000 | PK | 51.94 | 32.49 | 16.56 | 44.88 | 2.39 | 58.50 | -36.70 | 10.00 | 46.7 | 126 | 118 | |
| Vert. | 5720.000 | PK | 59.94 | 32.53 | 16.59 | 44.87 | 2.39 | 66.58 | -28.62 | 15.60 | 44.2 | 126 | 118 | |
| Vert. | 5725.000 | PK | 60.13 | 32.53 | 16.59 | 44.87 | 2.39 | 66.77 | -28.43 | 27.00 | 55.4 | 126 | 118 | |

*This mode was performed only band edges measurement.

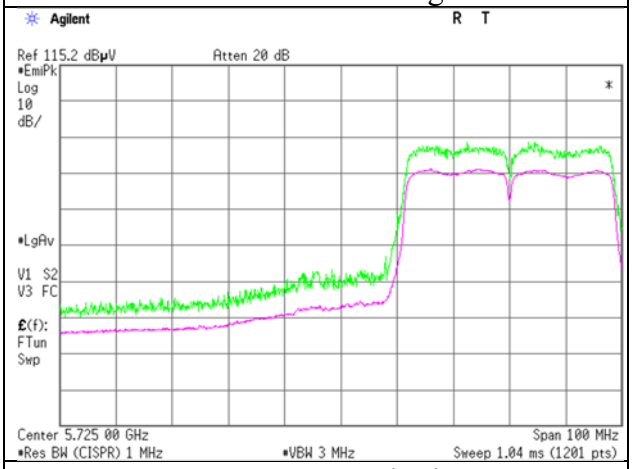
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5755 MHz |

Horizontal

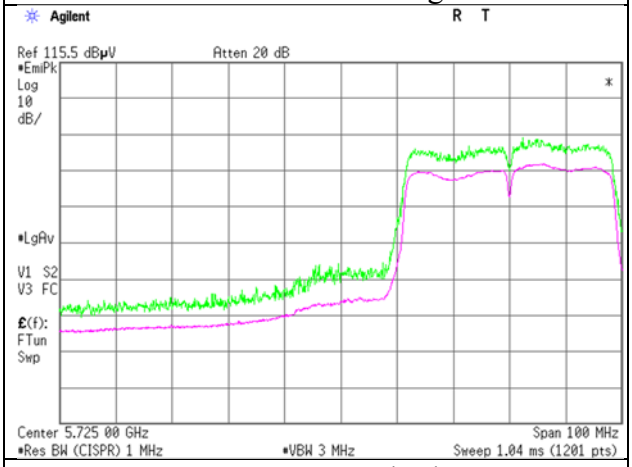
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5795 MHz |

## (Calculation) (above 1GHz 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 | 51.07 | 32.74 | 16.73 | 44.86 | 2.39 | 58.07 | -37.13 | 27.00 | 64.1 | 146 | 33 | |
| Hori. | 5855.000 | PK | 50.32 | 32.75 | 16.73 | 44.86 | 2.39 | 57.33 | -37.87 | 15.60 | 53.5 | 146 | 33 | |
| Hori. | 5875.000 | PK | 49.91 | 32.78 | 16.76 | 44.86 | 2.39 | 56.98 | -38.22 | 10.00 | 48.2 | 146 | 33 | |
| Hori. | 5925.000 | PK | 49.45 | 32.87 | 16.80 | 44.85 | 2.39 | 56.66 | -38.54 | -27.00 | **11.5** | 146 | 33 | |
| Vert. | 5850.000 | PK | 50.36 | 32.74 | 16.73 | 44.86 | 2.39 | 57.36 | -37.84 | 27.00 | 64.8 | 147 | 114 | |
| Vert. | 5855.000 | PK | 50.04 | 32.75 | 16.73 | 44.86 | 2.39 | 57.05 | -38.15 | 15.60 | 53.8 | 147 | 114 | |
| Vert. | 5875.000 | PK | 49.98 | 32.78 | 16.76 | 44.86 | 2.39 | 57.05 | -38.15 | 10.00 | 48.2 | 147 | 114 | |
| Vert. | 5925.000 | PK | 49.53 | 32.87 | 16.80 | 44.85 | 2.39 | 56.74 | -38.46 | -27.00 | **11.5** | 147 | 114 | |

*This mode was performed only band edges measurement.

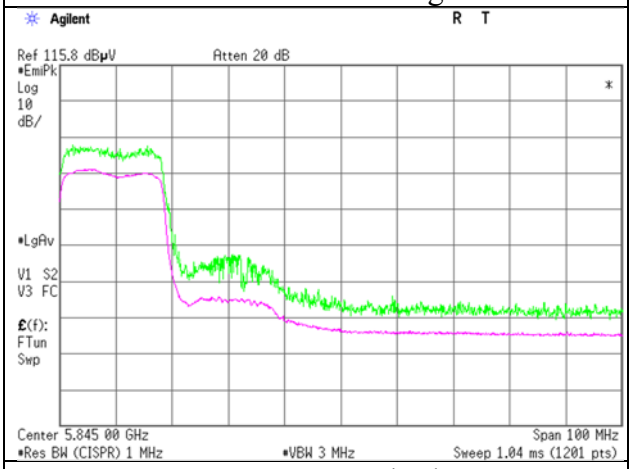
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-40 5795 MHz |

Horizontal

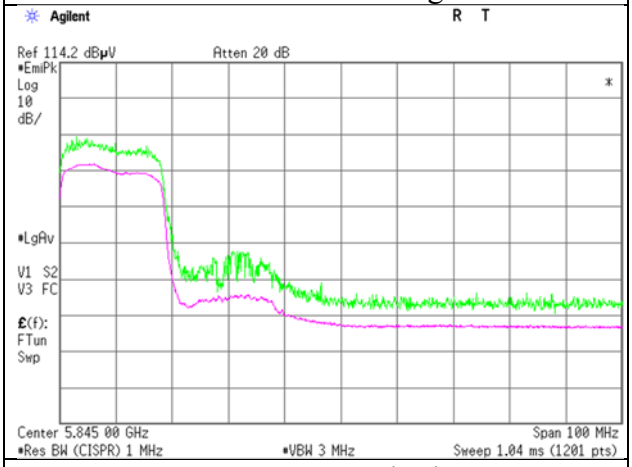
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | | | | |
|---|---|---|---|---|
| Report No. | 12193629S-C-R2 | | | |
| Test place | Shonan EMC Lab. | | | |
| Semi Anechoic Chamber | 3 | 3 | 3 | 3 |
| Date | March 29, 2018 | March 30, 2018 | April 1, 2018 | April 2, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH | 23 deg. C / 29 % RH | 22 deg. C / 30 % RH | 24 deg. C / 42 % RH |
| Engineer | Kazuya Noda | Yosuke Ishikawa | Shiro Kobayashi | Shiro Kobayashi |
| | (1 GHz - 13 GHz) | (13 GHz - 18 GHz) | (18 GHz – 26.5 GHz) | (26.5 GHz – 40 GHz) |
| Antenna | AH104N2450D1 | | | |
| Mode | Tx 11ac-80 5210 MHz | | | |

**(above 1GHz 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 | 54.27 | 32.01 | 16.48 | 44.63 | 2.39 | 60.52 | 73.97 | 13.4 | 145 | 41 | |
| Hori. | 10420.000 | PK | 48.51 | 39.78 | 9.40 | 43.58 | 2.39 | 56.50 | 73.97 | 17.4 | 235 | 311 | |
| Hori. | 15630.000 | PK | 47.84 | 39.86 | 11.68 | 42.12 | -9.54 | 47.72 | 73.90 | 26.1 | 157 | 151 | |
| Hori. | 20840.000 | PK | 56.60 | 39.80 | 12.72 | 47.13 | -9.54 | 52.45 | 73.90 | 21.4 | 134 | 257 | |
| Hori. | 26050.000 | PK | 39.61 | 39.99 | 14.54 | 47.60 | -9.54 | 37.00 | 73.90 | 36.9 | 150 | 1 | |
| Hori. | 5150.000 | AV | 40.79 | 32.01 | 16.48 | 44.63 | 2.39 | 47.04 | 53.97 | 6.9 | 145 | 41 | VBW: 10 Hz |
| Hori. | 10420.000 | AV | 36.29 | 39.78 | 9.40 | 43.58 | 2.39 | 44.28 | 53.97 | 9.6 | 235 | 311 | VBW: 10 Hz |
| Hori. | 15630.000 | AV | 36.82 | 39.86 | 11.68 | 42.12 | -9.54 | 36.70 | 53.90 | 17.2 | 157 | 151 | VBW: 10 Hz |
| Hori. | 20840.000 | AV | 55.75 | 39.80 | 12.72 | 47.13 | -9.54 | 51.60 | 53.90 | 2.3 | 134 | 257 | VBW: 10 Hz |
| Hori. | 26050.000 | AV | 27.25 | 39.99 | 14.54 | 47.60 | -9.54 | 24.64 | 53.90 | 29.2 | 150 | 1 | VBW: 10 Hz |
| Vert. | 5150.000 | PK | 51.73 | 32.01 | 16.48 | 44.63 | 2.39 | 57.98 | 73.97 | 15.9 | 140 | 84 | |
| Vert. | 10420.000 | PK | 48.48 | 39.78 | 9.40 | 43.58 | 2.39 | 56.47 | 73.97 | 17.5 | 100 | 11 | |
| Vert. | 15630.000 | PK | 47.79 | 39.86 | 11.68 | 42.12 | -9.54 | 47.67 | 73.90 | 26.2 | 152 | 342 | |
| Vert. | 20840.000 | PK | 56.97 | 39.80 | 12.72 | 47.13 | -9.54 | 52.82 | 73.90 | 21.0 | 135 | 163 | |
| Vert. | 26050.000 | PK | 39.33 | 39.99 | 14.54 | 47.60 | -9.54 | 36.72 | 73.90 | 37.1 | 150 | 1 | |
| Vert. | 5150.000 | AV | 37.24 | 32.01 | 16.48 | 44.63 | 2.39 | 43.49 | 53.97 | 10.4 | 140 | 84 | VBW: 10 Hz |
| Vert. | 10420.000 | AV | 36.51 | 39.78 | 9.40 | 43.58 | 2.39 | 44.50 | 53.97 | 9.4 | 100 | 11 | VBW: 10 Hz |
| Vert. | 15630.000 | AV | 36.69 | 39.86 | 11.68 | 42.12 | -9.54 | 36.57 | 53.90 | 17.3 | 152 | 342 | VBW: 10 Hz |
| Vert. | 20840.000 | AV | 56.21 | 39.80 | 12.72 | 47.13 | -9.54 | 52.06 | 53.90 | **1.8** | 135 | 163 | VBW: 10 Hz |
| Vert. | 26050.000 | AV | 27.19 | 39.99 | 14.54 | 47.60 | -9.54 | 24.58 | 53.90 | 29.3 | 150 | 1 | VBW: 10 Hz |

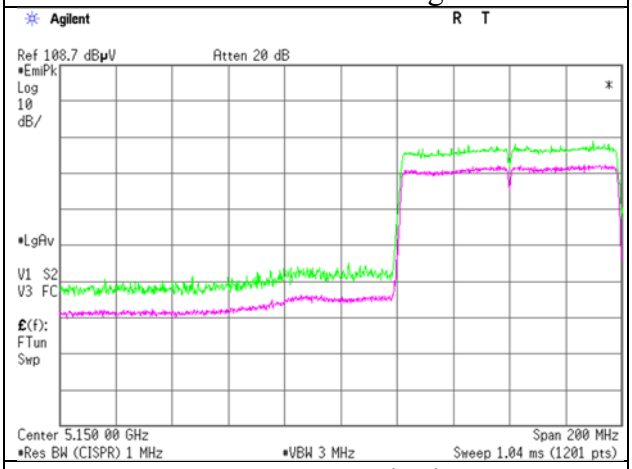
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz - 13 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5210 MHz |

Horizontal

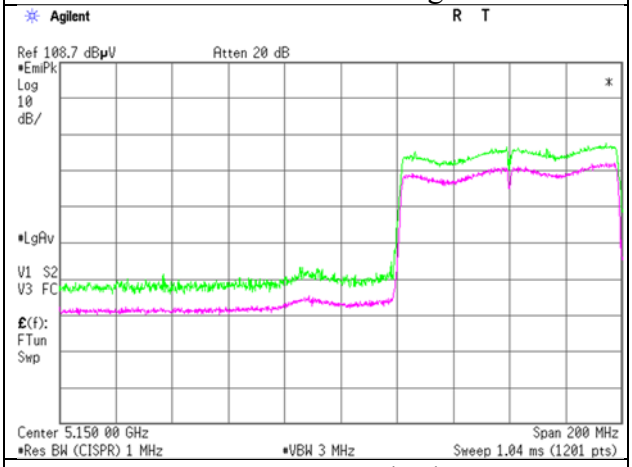
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5290 MHz |

**(above 1GHz 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 | 54.35 | 32.09 | 16.39 | 44.79 | 2.39 | 60.43 | 73.97 | 13.5 | 142 | 38 | |
| Hori. | 5350.000 | AV | 39.47 | 32.09 | 16.39 | 44.79 | 2.39 | 45.55 | 53.97 | 8.4 | 142 | 38 | VBW: 10 Hz |
| Vert. | 5350.000 | PK | 55.09 | 32.09 | 16.39 | 44.79 | 2.39 | 61.17 | 73.97 | 12.8 | 139 | 253 | |
| Vert. | 5350.000 | AV | 39.95 | 32.09 | 16.39 | 44.79 | 2.39 | 46.03 | 53.97 | **7.9** | 139 | 253 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

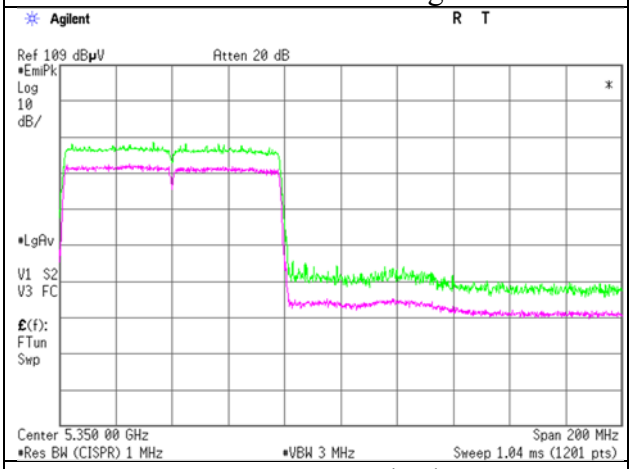
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5290 MHz |

Horizontal

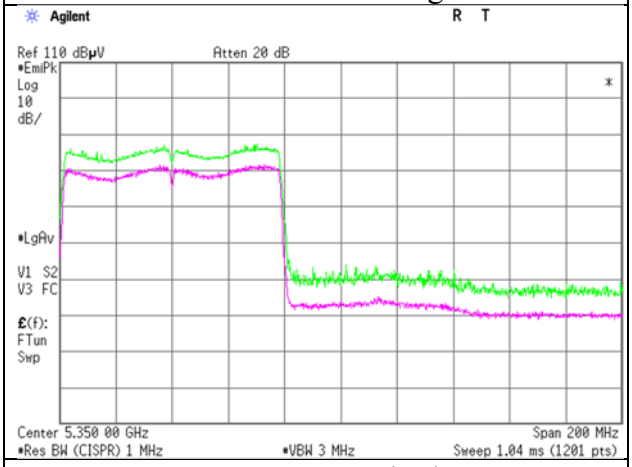
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5530 MHz |

## (above 1GHz 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 | 56.46 | 32.14 | 16.36 | 44.87 | 2.39 | 62.48 | 73.97 | 11.4 | 143 | 45 | |
| Hori. | 5460.000 | AV | 41.12 | 32.14 | 16.36 | 44.87 | 2.39 | 47.14 | 53.97 | **6.8** | 143 | 45 | VBW: 10 Hz |
| Vert. | 5460.000 | PK | 55.43 | 32.14 | 16.36 | 44.87 | 2.39 | 61.45 | 73.97 | 12.5 | 125 | 102 | |
| Vert. | 5460.000 | AV | 41.05 | 32.14 | 16.36 | 44.87 | 2.39 | 47.07 | 53.97 | 6.9 | 125 | 102 | VBW: 10 Hz |

*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

## (Calculation) (above 1GHz 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 | 54.09 | 32.15 | 16.35 | 44.88 | 2.39 | 60.10 | -35.10 | -27.00 | **8.1** | 143 | 45 | |
| Vert. | 5470.000 | PK | 52.47 | 32.15 | 16.35 | 44.88 | 2.39 | 58.48 | -36.72 | -27.00 | 9.7 | 125 | 102 | |

*This mode was performed only band edges measurement.

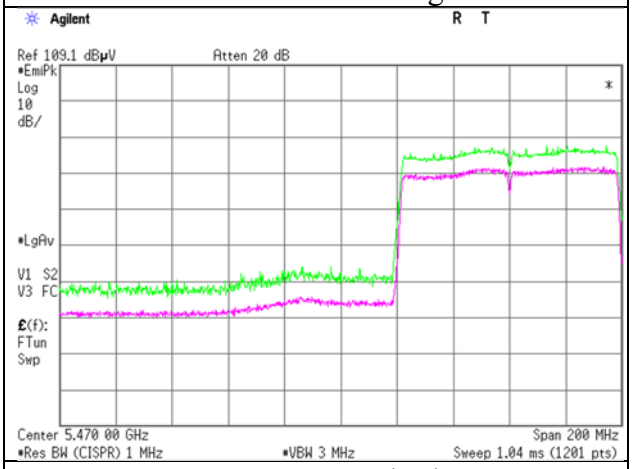
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5530 MHz |

Horizontal

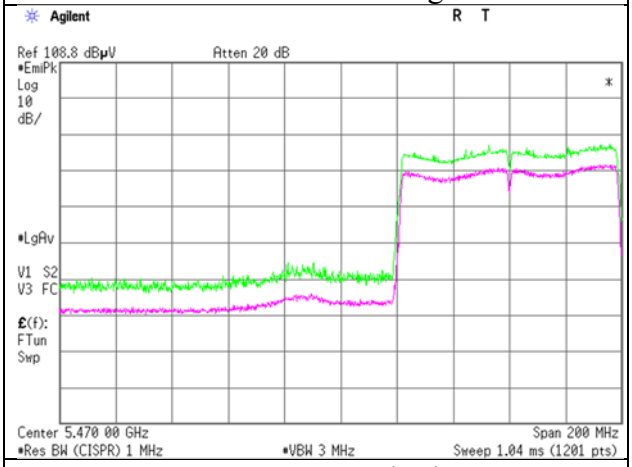
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5610 MHz |

## (Calculation) (above 1GHz 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 | 54.09 | 32.15 | 16.35 | 44.88 | 2.39 | 60.10 | -35.10 | -27.00 | **8.1** | 143 | 45 | |
| Vert. | 5470.000 | PK | 52.47 | 32.15 | 16.35 | 44.88 | 2.39 | 58.48 | -36.72 | -27.00 | 9.7 | 125 | 102 | |

*This mode was performed only band edges measurement.

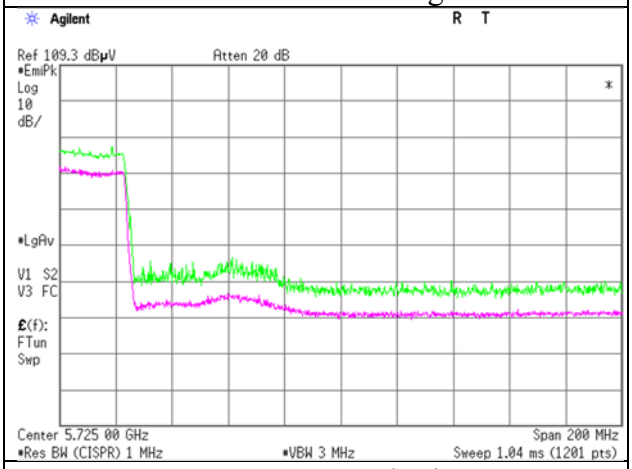
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ ( Electric Field Strength [dBuV/m] / 20 ) * 10 ^ (-6) * Distance:3[m] ) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5610 MHz |

Horizontal

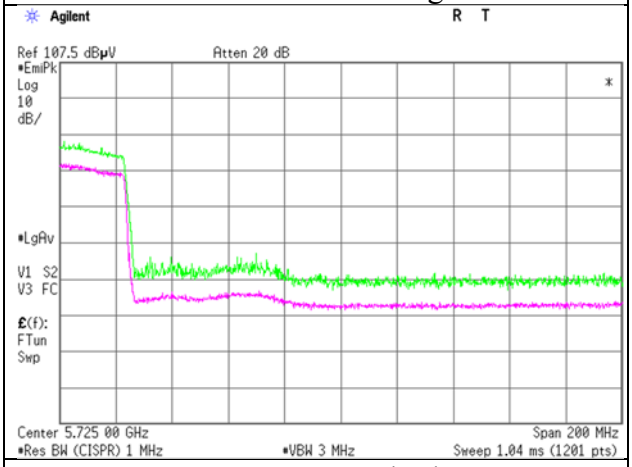
Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot




Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5775 MHz |

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

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

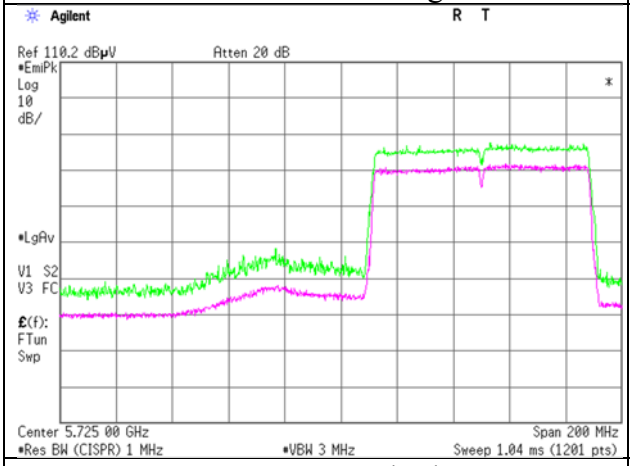
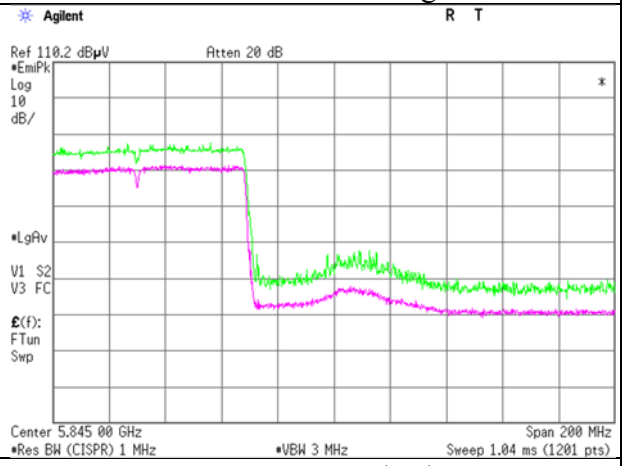
| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Result (EIRP) [dBm] | Limit [dBm] | Margin [dB] | Height [cm] | Angle [deg.] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hori. | 5650.000 | PK | 49.92 | 32.41 | 16.50 | 44.88 | 2.39 | 56.34 | -38.86 | -27.00 | 11.9 | 149 | 35 | |
| Hori. | 5700.000 | PK | 58.85 | 32.49 | 16.56 | 44.88 | 2.39 | 65.41 | -29.79 | 10.00 | 39.8 | 149 | 35 | |
| Hori. | 5720.000 | PK | 56.81 | 32.53 | 16.59 | 44.87 | 2.39 | 63.45 | -31.75 | 15.60 | 47.4 | 149 | 35 | |
| Hori. | 5725.000 | PK | 57.08 | 32.53 | 16.59 | 44.87 | 2.39 | 63.72 | -31.48 | 27.00 | 58.5 | 149 | 35 | |
| Hori. | 5850.000 | PK | 60.98 | 32.74 | 16.73 | 44.86 | 2.39 | 67.98 | -27.22 | 27.00 | 54.2 | 149 | 35 | |
| Hori. | 5855.000 | PK | 59.66 | 32.75 | 16.73 | 44.86 | 2.39 | 66.67 | -28.53 | 15.60 | 44.1 | 149 | 35 | |
| Hori. | 5875.000 | PK | 53.36 | 32.78 | 16.76 | 44.86 | 2.39 | 60.43 | -34.77 | 10.00 | 44.8 | 149 | 35 | |
| Hori. | 5925.000 | PK | 49.91 | 32.87 | 16.80 | 44.85 | 2.39 | 57.12 | -38.08 | -27.00 | **11.1** | 149 | 35 | |
| Vert. | 5650.000 | PK | 48.82 | 32.41 | 16.50 | 44.88 | 2.39 | 55.24 | -39.96 | -27.00 | 13.0 | 121 | 110 | |
| Vert. | 5700.000 | PK | 57.99 | 32.49 | 16.56 | 44.88 | 2.39 | 64.55 | -30.65 | 10.00 | 40.7 | 121 | 110 | |
| Vert. | 5720.000 | PK | 55.17 | 32.53 | 16.59 | 44.87 | 2.39 | 61.81 | -33.39 | 15.60 | 49.0 | 121 | 110 | |
| Vert. | 5725.000 | PK | 55.67 | 32.53 | 16.59 | 44.87 | 2.39 | 62.31 | -32.89 | 27.00 | 59.9 | 121 | 110 | |
| Vert. | 5850.000 | PK | 57.71 | 32.74 | 16.73 | 44.86 | 2.39 | 64.71 | -30.49 | 27.00 | 57.5 | 121 | 110 | |
| Vert. | 5855.000 | PK | 57.68 | 32.75 | 16.73 | 44.86 | 2.39 | 64.69 | -30.51 | 15.60 | 46.1 | 121 | 110 | |
| Vert. | 5875.000 | PK | 52.67 | 32.78 | 16.76 | 44.86 | 2.39 | 59.74 | -35.46 | 10.00 | 45.5 | 121 | 110 | |
| Vert. | 5925.000 | PK | 49.23 | 32.87 | 16.80 | 44.85 | 2.39 | 56.44 | -38.76 | -27.00 | 11.8 | 121 | 110 | |

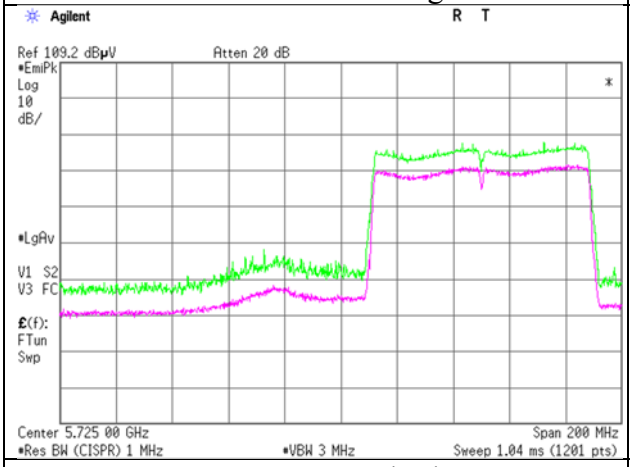
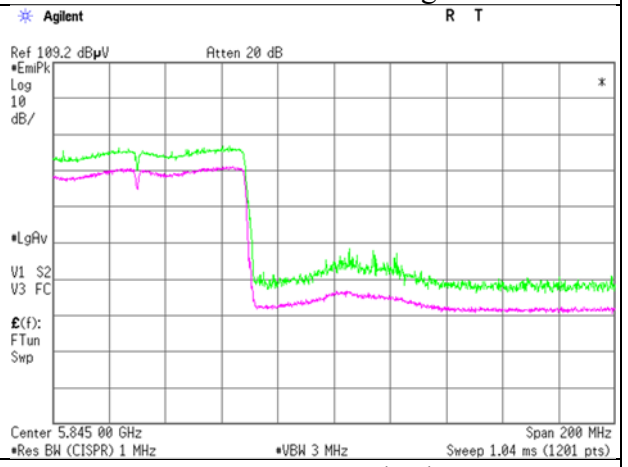
*This mode was performed only band edges measurement.

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(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 20dB).
Distance factor : 1 GHz - 13 GHz : 20log (3.95 m / 3.0 m) = 2.39 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

# Radiated Spurious Emission

| | |
|---|---|
| Report No. | 12193629S-C-R2 |
| Test place | Shonan EMC Lab. |
| Semi Anechoic Chamber | 3 |
| Date | March 29, 2018 |
| Temperature / Humidity | 23 deg. C / 35 % RH |
| Engineer | Kazuya Noda |
| | (1 GHz – 6.4 GHz) |
| Antenna | AH104N2450D1 |
| Mode | Tx 11ac-80 5775 MHz |

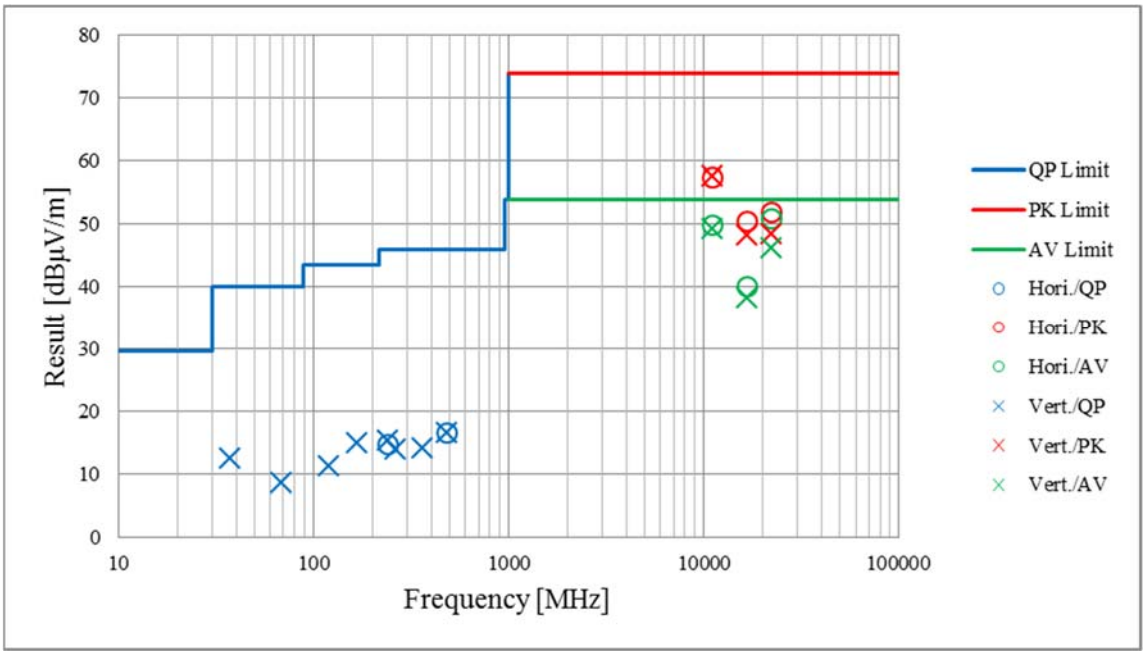
| Horizontal | Horizontal |
|---|---|
| Restricted-band band-edge Plot | Restricted-band band-edge Plot |
|  |  |
| Trace Green: Peak Plot<br>Trace Purple: Average Plot | Trace Green: Peak Plot<br>Trace Purple: Average Plot |

| Vertical | 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 |

* Final result of restricted band edge was shown in tabular data.

# Radiated Spurious Emission
## (Plot data, Worst case)

| | | | | | |
|---|---|---|---|---|---|
| Report No. | 12193629S-C-R2 | | | | |
| Test place | Shonan EMC Lab. | | | | |
| Semi Anechoic Chamber | 3 | 3 | 3 | 3 | 3 |
| Date | April 4, 2018 | March 27, 2018 | March 30, 2018 | April 1, 2018 | April 2, 2018 |
| Temperature / Humidity | 20 deg. C / 57 % RH | 22 deg. C / 35 % RH | 23 deg. C / 29 % RH | 22 deg. C / 30 % RH | 24 deg. C / 42 % RH |
| Engineer | Shiro Kobayashi (30 MHz - 1 GHz) | Hiroyuki Morikawa (1 GHz - 13 GHz) | Yosuke Ishikawa (13 GHz - 18 GHz) | Shiro Kobayashi (18 GHz – 26.5 GHz) | Shiro Kobayashi (26.5 GHz – 40 GHz) |
| Antenna | AH104N2450D1 | | | | |
| Mode | Tx 11a 5580 MHz | | | | |

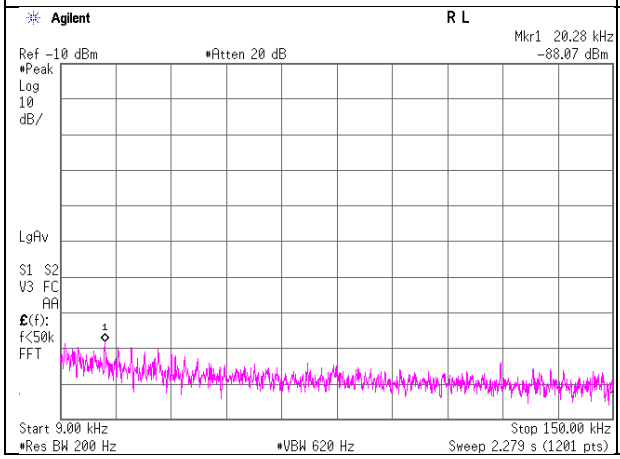



*These plots data contains sufficient number to show the trend of characteristic features for EUT.

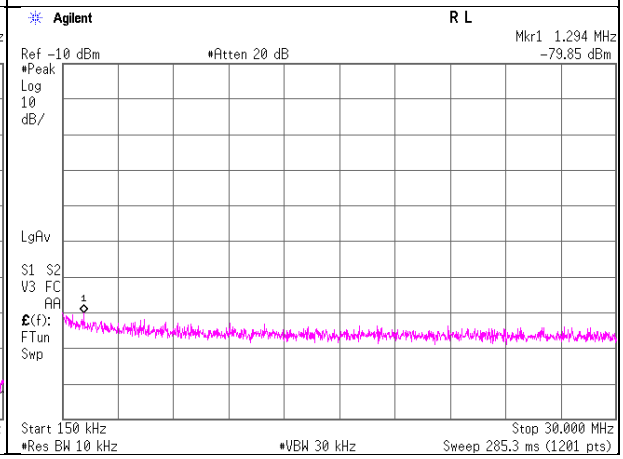
# Conducted Spurious Emission

| | |
|---|---|
| Test place | Shonan EMC Lab. No.5 Shielded Room |
| Report No. | 12193629S-C-R2 |
| Date | April 3, 2018 |
| Temperature / Humidity | 24 deg. C / 30 % RH |
| Engineer | Shiro Kobayashi |
| Mode | Tx 11a 5580 MHz |

## 9 kHz - 150 kHz




## 150 kHz - 30 MHz




| Frequency [kHz] | Reading [dBm] | Cable Loss [dB] | Attenuator [dB] | Antenna Gain* [dBi] | N (Number of Output) | EIRP [dBm] | Distance [m] | Ground bounce [dB] | E (field strength) [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20.28 | -88.1 | 0.01 | 9.8 | 4.5 | 1 | -73.8 | 300 | 6.0 | -12.5 | 41.4 | 53.9 | |
| 1294.00 | -79.9 | 0.02 | 9.8 | 4.5 | 1 | -65.5 | 30 | 6.0 | 15.7 | 25.3 | 9.6 | |

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

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

N: Number of output

# APPENDIX 2: Test instruments

**Test Instruments (1/2)**

| Control No. | Instrument | Manufacturer | Model No | Serial No | Test Item | Calibration Date * Interval(month) |
|---|---|---|---|---|---|---|
| SRENT-09 | Spectrum Analyzer | Agilent | E4440A | MY46186392 | AT | 2017/11/08 * 12 |
| SPM-07 | Power Meter | Agilent | 8990B | MY5100272 | AT | 2017/05/01 * 12 |
| SPSS-04 | Power sensor | Agilent | N1923A | MY5326009 | AT | 2017/05/01 * 12 |
| SAT10-16 | Attenuator | Weinschel Corp. | 54A-10 | 83420 | AT | 2017/12/08 * 12 |
| SCC-G12 | Coaxial Cable | Suhner | SUCOFLEX 102 | 30790/2 | AT | 2018/03/19 * 12 |
| SOS-13 | Humidity Indicator | Custom | CTH-202 | Q.C.17 | AT | 2017/12/21 * 12 |
| KTS-08 | Digital Tester | SANWA | PC500 | 7019224 | AT | 2018/03/05 * 12 |
| SSA-03 | Spectrum Analyzer | Agilent | E4448A | MY48250152 | AT | 2017/08/20 * 12 |
| STS-05 | Digital Hitester | Hioki | 3805-50 | 080997828 | AT | 2017/10/16 * 12 |
| SOS-09 | Humidity Indicator | A&D | AD-5681 | 4061484 | AT | 2017/12/21 * 12 |
| SAF-06 | Pre Amplifier | TOYO Corporation | TPA0118-36 | 2046104 | RE | 2017/09/22 * 12 |
| SCC-G06 | Coaxial Cable | Junkosha | J12J102207-00 | MAY-23-16-091 | RE | 2017/06/13 * 12 |
| SCC-G23 | Coaxial Cable | Suhner | SUCOFLEX 104 | 297342/4 | RE | 2017/05/08 * 12 |
| SHA-03 | Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-739 | RE | 2017/08/23 * 12 |
| SOS-05 | Humidity Indicator | A&D | AD-5681 | 4062518 | RE | 2017/10/30 * 12 |
| KSA-08 | Spectrum Analyzer | Agilent | E4446A | MY46180525 | RE | 2017/10/10 * 12 |
| SJM-02 | Measure | KOMELON | KMC-36 | - | RE,CE | - |
| SAEC-03(SVSWR) | Semi-Anechoic Chamber | TDK | SAEC-03(SVSWR) | 3 | RE | 2017/07/17 * 12 |
| COTS-SEMI-1 | EMI Software | TSJ | TEPTO-DV(RE, CE,RFI,MF) | - | RE,CE | - |
| STS-03 | Digital Hitester | Hioki | 3805-50 | 080997823 | RE,CE | 2017/10/16 * 12 |
| SAT10-06 | Attenuator | Agilent | 8493C-010 | 74865 | RE | 2017/11/22 * 12 |
| SFL-03 | Highpass Filter | MICRO-TRONICS | HPM50112 | 028 | RE | 2017/11/16 * 12 |
| SCC-G40 | Coaxial Cable | Junkosha | MWX221-01000 NFSNMS/B | 1612S005 | RE | 2018/01/29 * 12 |
| SAEC-03(NSA) | Semi-Anechoic Chamber | TDK | SAEC-03(NSA) | 3 | RE | 2017/06/11 * 12 |
| SHA-04 | Horn Antenna | ETS LINDGREN | 3160-09 | LM9861 | RE | 2017/07/11 * 12 |
| SAF-08 | Pre Amplifier | TOYO Corporation | HAP18-26W | 00000019 | RE | 2018/03/27 * 12 |
| SCC-G33 | Coaxial Cable | Junkosha | MWX241-01000 KMSKMS | - | RE | 2017/04/20 * 12 |
| SCC-G45 | Coaxial Cable | HUBER+SUHNER | SUCOFLEX 102 E | 800137/2EA | RE | 2018/03/28 * 12 |
| SHA-06 | Horn Antenna | ETS LINDGREN | 3160-10 | LM3459 | RE | 2018/03/22 * 12 |
| SAF-10 | Pre Amplifier | TOYO Corporation | HAP26-40W | 00000010 | RE | 2018/03/27 * 12 |
| STR-08 | Test Receiver | Rohde & Schwarz | ESW44 | 101581 | RE,CE | 2017/11/24 * 12 |
| SBA-03 | Biconical Antenna | Schwarzbeck | BBA9106 | 91032666 | RE | 2017/10/02 * 12 |
| SLA-07 | Logperiodic Antenna | Schwarzbeck | VUSLP9111B | 196 | RE | 2018/01/30 * 12 |
| SAT6-08 | Attenuator | HIROSE ELECTRIC CO.,LTD. | AT-406(40) | - | RE | 2017/08/24 * 12 |
| SCC-C1/C2/C3/C4/C5/C10/SRSE-03 | Coaxial Cable&RF Selector | Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO | 8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906 | -/0901-271(RF Selector) | RE | 2017/04/07 * 12 |
| SAF-03 | Pre Amplifier | SONOMA | 310N | 290213 | RE | 2018/02/16 * 12 |

**Test Instruments (2/2)**

| Control No. | Instrument | Manufacturer | Model No | Serial No | Test Item | Calibration Date * Interval(month) |
|---|---|---|---|---|---|---|
| SCC-C9/C10/SR SE-03 | Coaxial Cable&RF Selector | Suhner/Suhner/TOYO | RG223U/141PE/ NS4906 | -/0901-271(RF Selector) | CE | 2018/04/09 * 12 |
| SLS-05 | LISN | Rohde & Schwarz | ENV216 | 100516 | CE | 2018/02/26 * 12 |
| SAT3-10 | Attenuator | JFW | 50HF-003N | - | CE | 2017/08/24 * 12 |
| SOS-06 | Humidity Indicator | A&D | AD-5681 | 4062118 | CE | 2017/12/21 * 12 |
| STM-05 | Terminator | TME | CT-01 BP | - | CE | 2017/12/14 * 12 |
| SLS-04 | LISN | Rohde & Schwarz | ENV216 | 100514 | CE | 2018/02/27 * 12 |

**The expiration date of the calibration is the end of the expired month.**
**All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.**

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

**Test item:**

**CE: Conducted Emission**
**RE: Radiated Emission**
**AT: Antenna Terminal Conducted test**