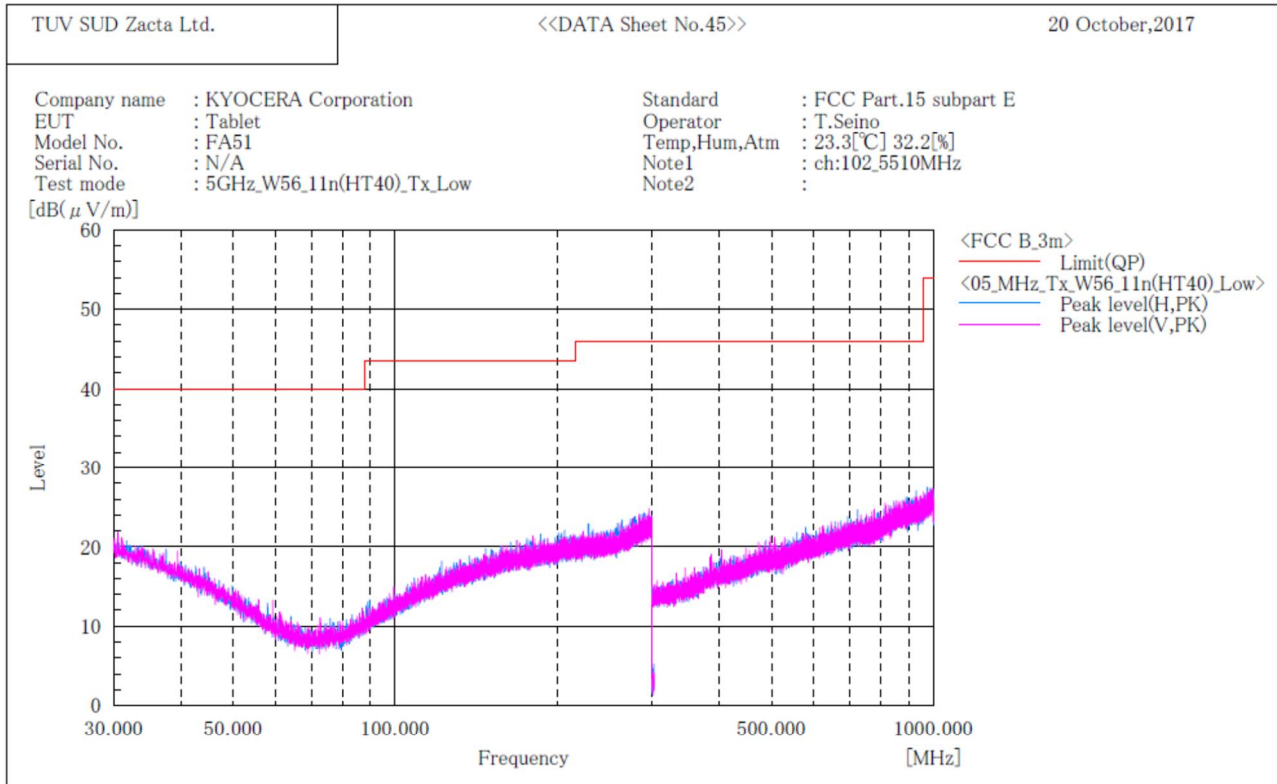


**[11n(HT40)]**  
**W56 / Channel Low**  
**BELOW 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

**Note:**

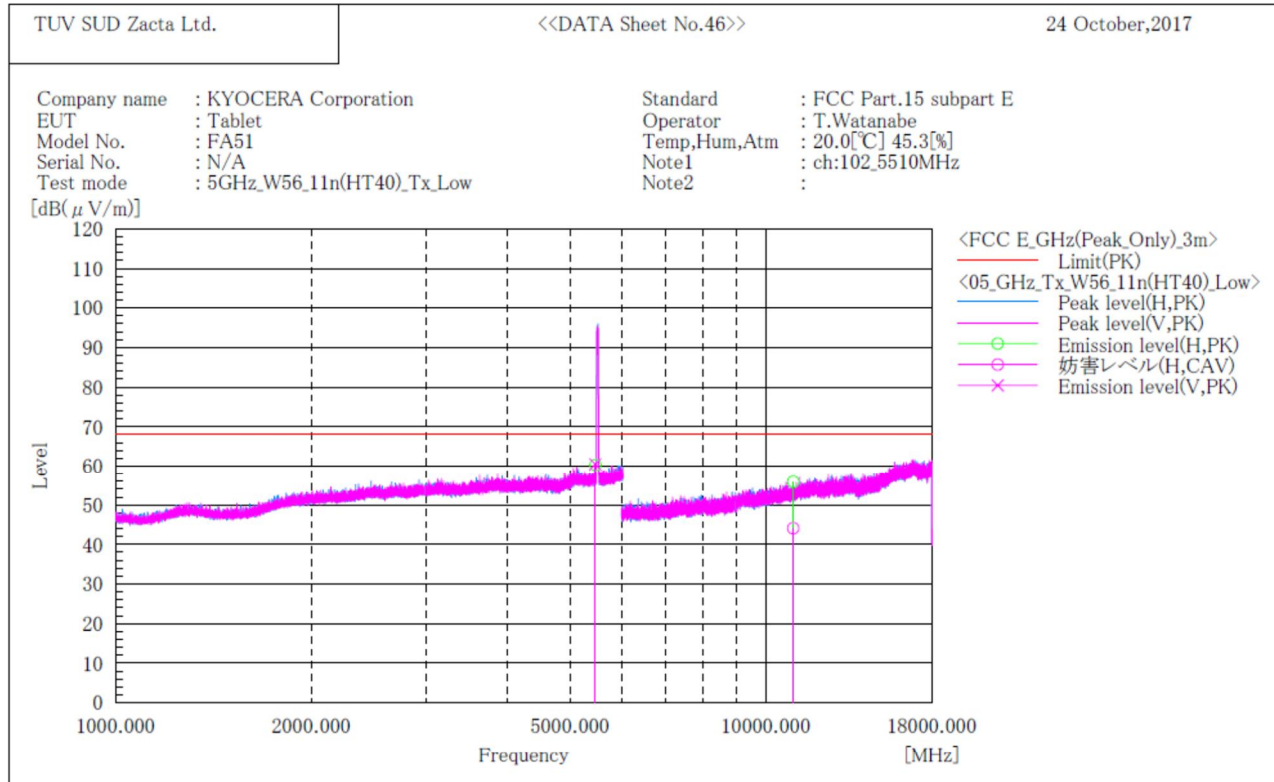
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



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**[11n(HT40)]**  
**W56 / Channel Low**  
**ABOVE 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



## Final Result

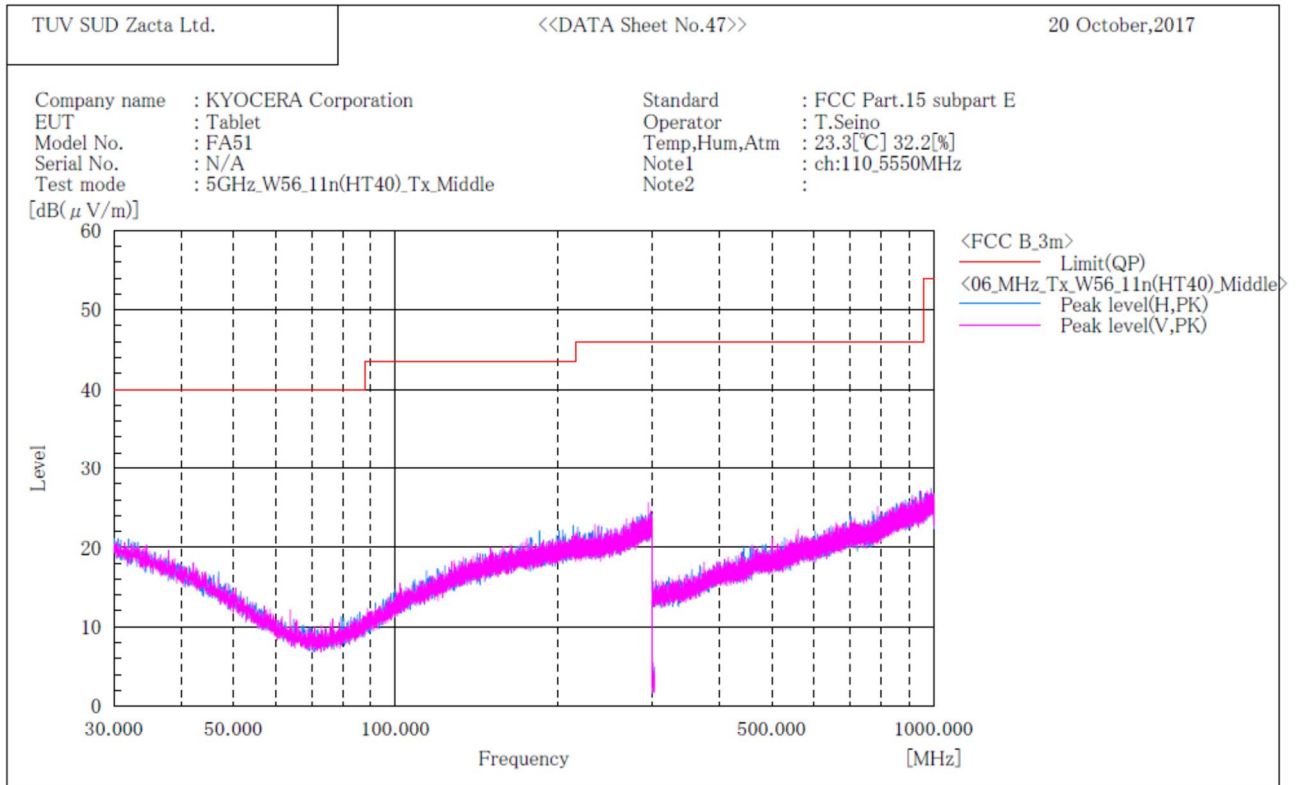
| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Result CAV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [°] |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|----------------|-----------------|-------------|-----------|
| 1   | 5469.420        | H   | 50.1                | -----                | 10.2          | 60.3                 | -----                 | 68.2                | 7.9            | -----           | 128.0       | 203.0     |
| 2   | 5465.380        | V   | 50.3                | -----                | 10.2          | 60.5                 | -----                 | 68.2                | 7.7            | -----           | 170.0       | 267.0     |
| 3   | 11020.000       | H   | 45.3                | 33.5                 | 10.6          | 55.9                 | 44.1                  | 74.0                | 18.1           | 9.9             | 173.0       | 74.0      |

## Note:

- Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
- No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

**[11n(HT40)]**  
**W56 / Channel Middle**  
**BELOW 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

**Note:**

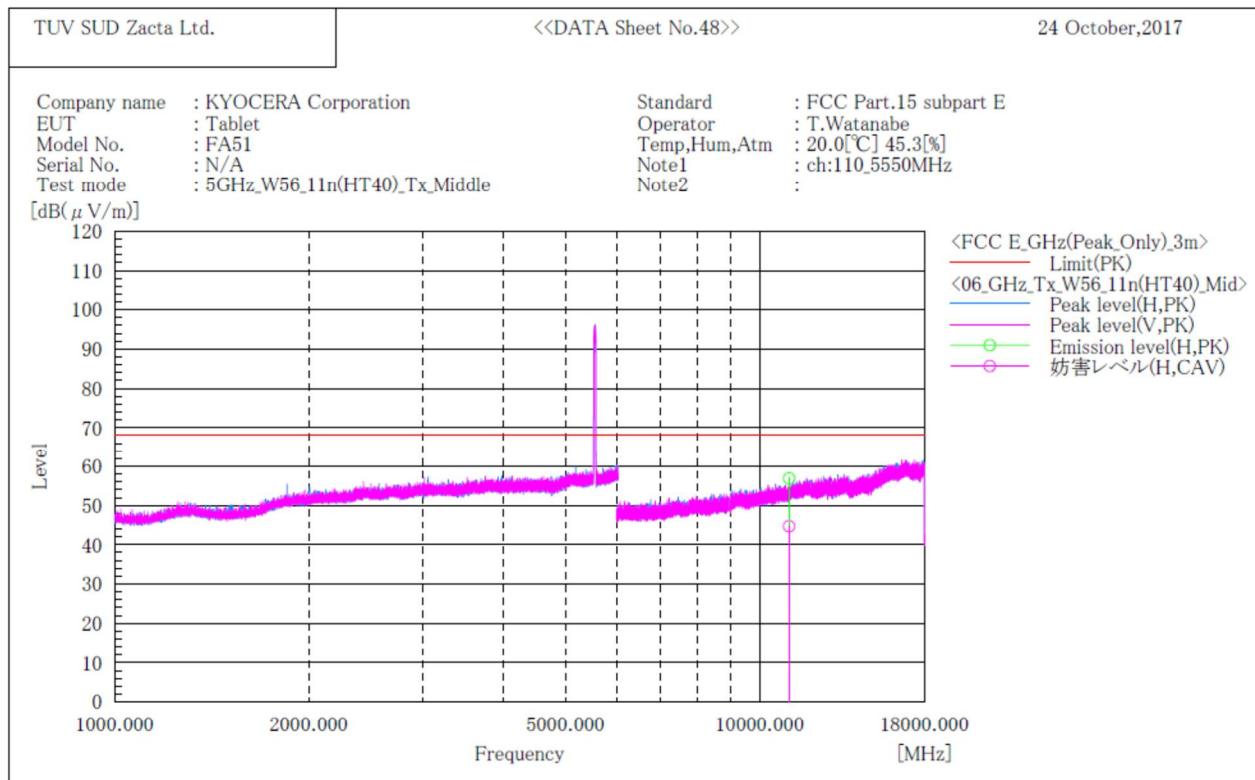
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



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**[11n(HT40)]**  
**W56 / Channel Middle**  
**ABOVE 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



## Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading CAV [dB(μV)] | c. f [dB(1/m)] | Result PK [dB(μV/m)] | Result CAV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [°] |
|-----|-----------------|-----|---------------------|----------------------|----------------|----------------------|-----------------------|---------------------|----------------|-----------------|-------------|-----------|
| 1   | 11100.000       | H   | 46.1                | 33.9                 | 10.8           | 56.9                 | 44.7                  | 74.0                | 17.1           | 9.3             | 155.0       | 246.0     |

## Note:

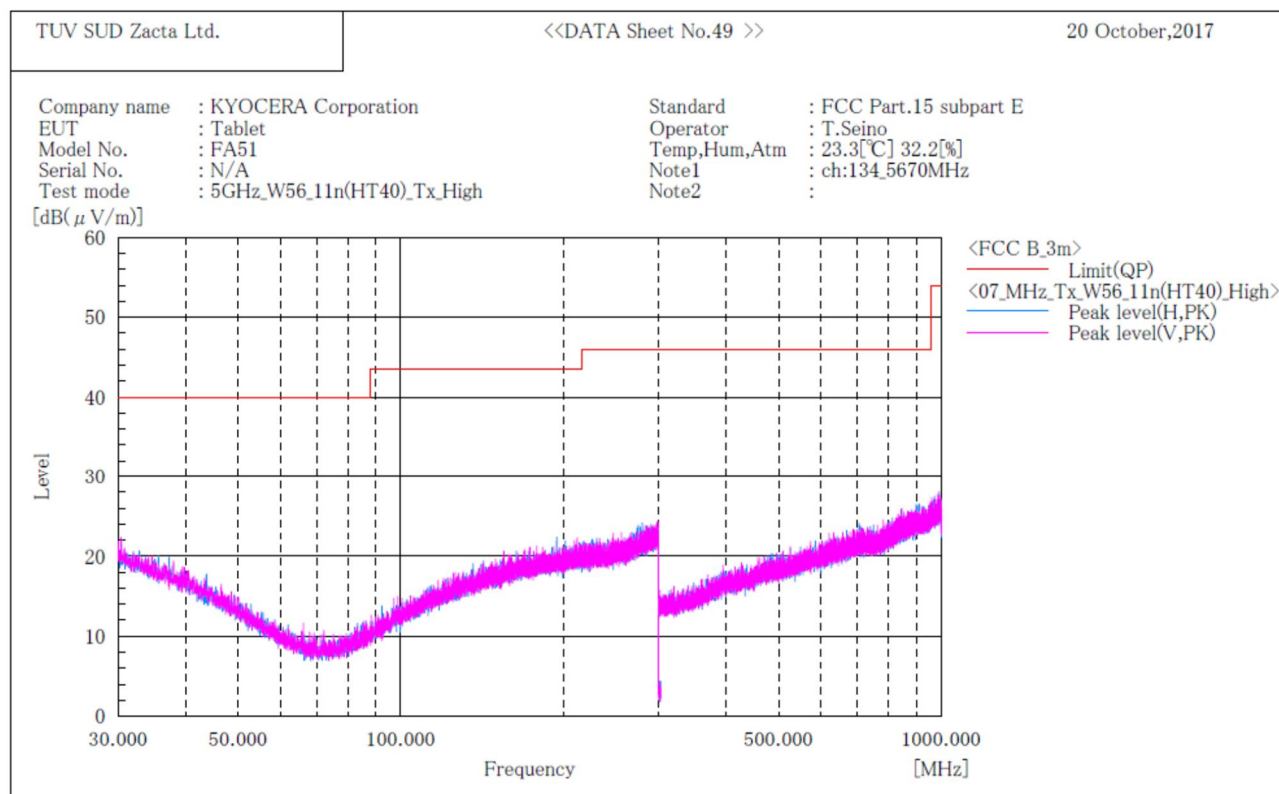
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



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**[11n(HT40)]**  
**W56 / Channel High**  
**BELOW 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

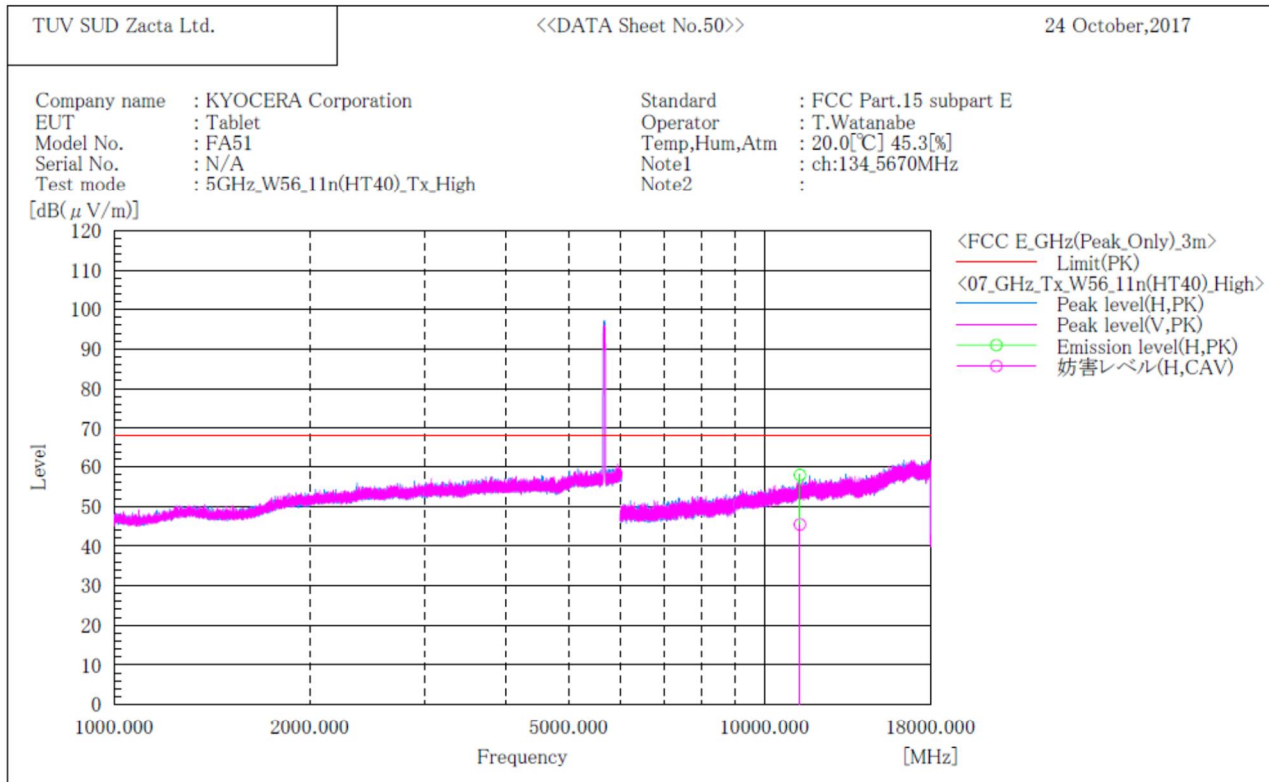
| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [° ]  |

**Note:**

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**[11n(HT40)]**  
**W56 / Channel High**  
**ABOVE 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



Final Result

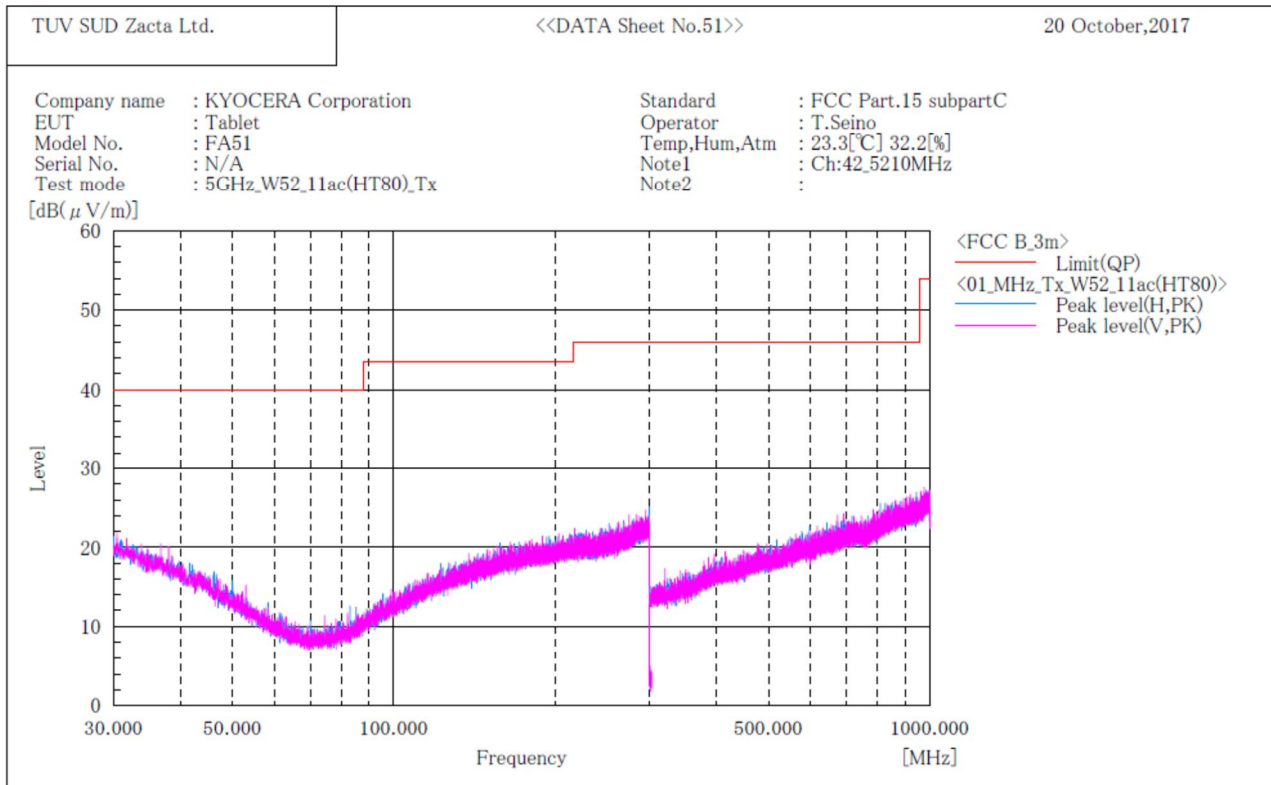
| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Result CAV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [°] |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|----------------|-----------------|-------------|-----------|
| 1   | 11340.000       | H   | 46.8                | 34.3                 | 11.1          | 57.9                 | 45.4                  | 74.0                | 16.1           | 8.6             | 138.0       | 124.0     |

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

**[11n(HT80)]**  
**W52**  
**BELOW 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

**Note:**

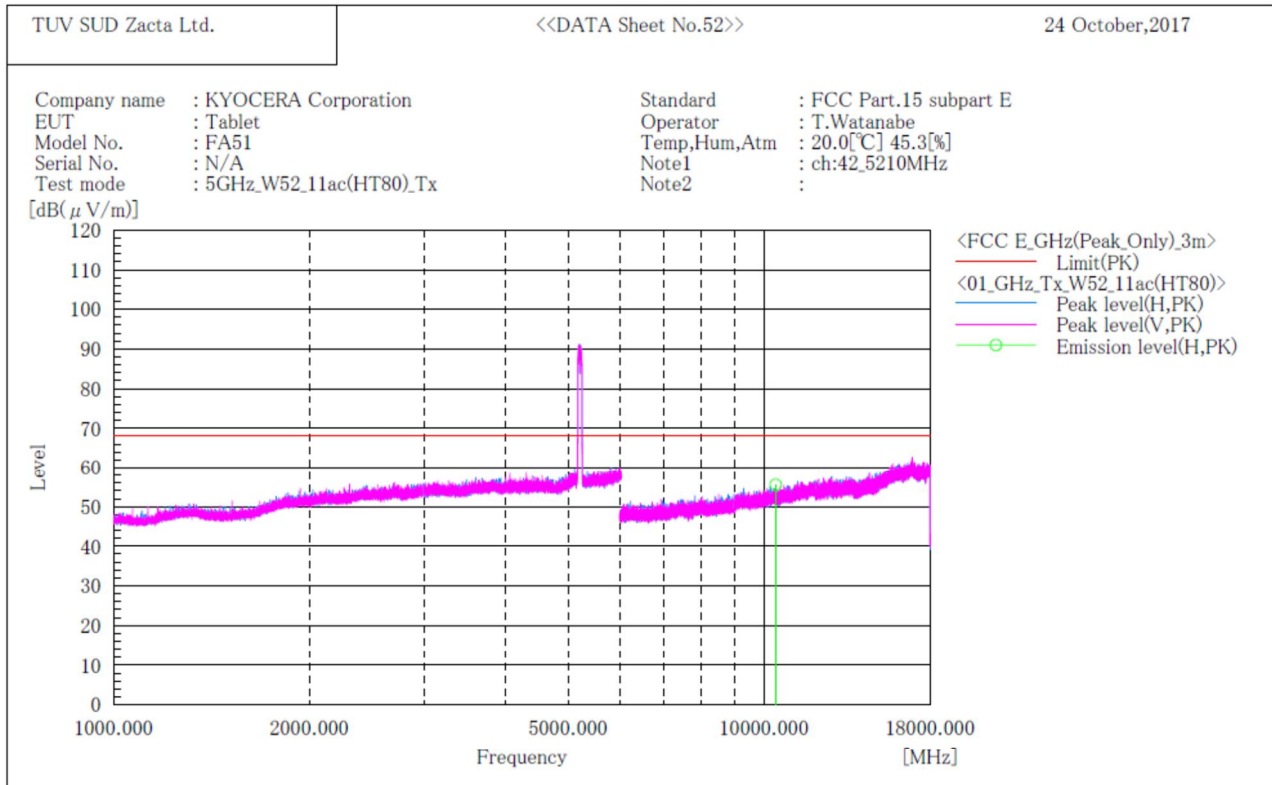
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



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**[11n(HT80)]**  
**W52**  
**ABOVE 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin PK [dB] | Height [cm] | Angle [°] |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-----------|
| 1   | 10420.000       | H   | 45.6                | 9.9           | 55.5                 | 68.2                | 12.7           | 159.0       | 233.0     |

**Note:**

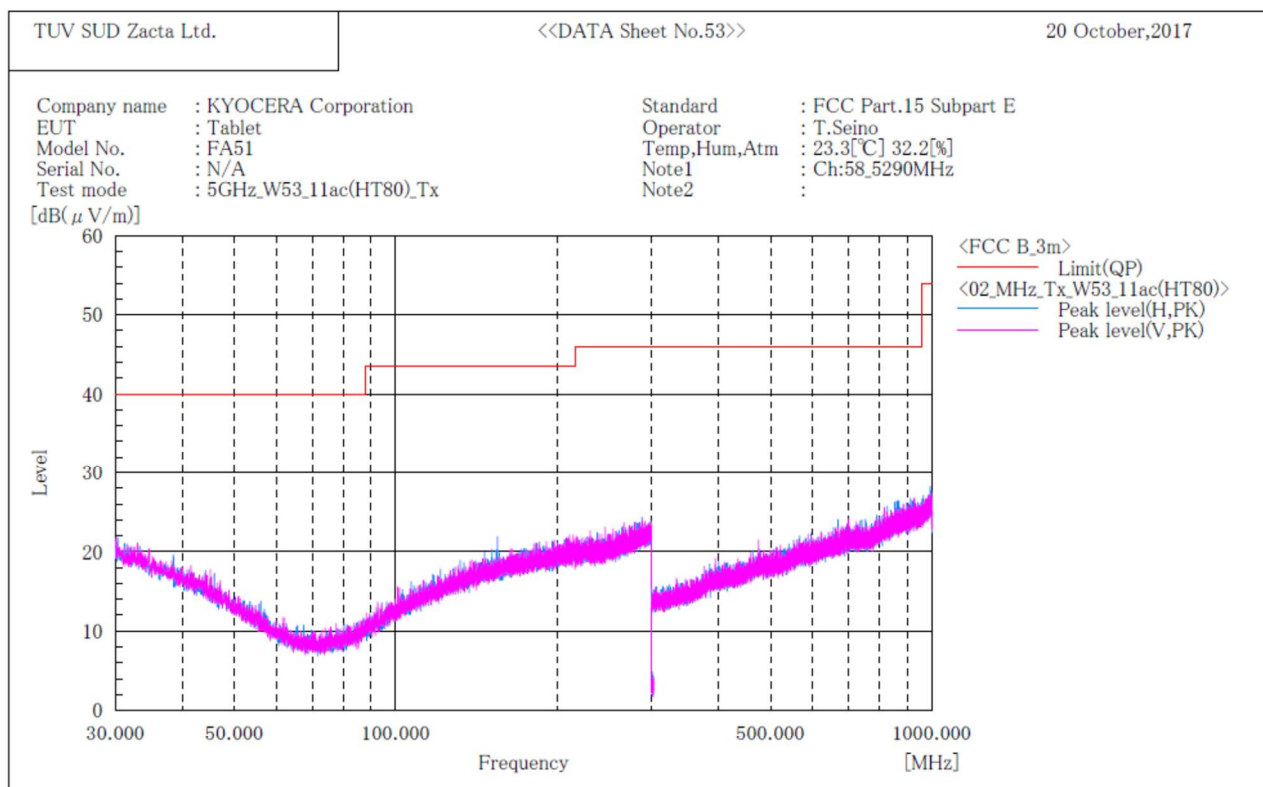
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



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**[11n(HT80)]**  
**W53**  
**BELOW 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

**Note:**

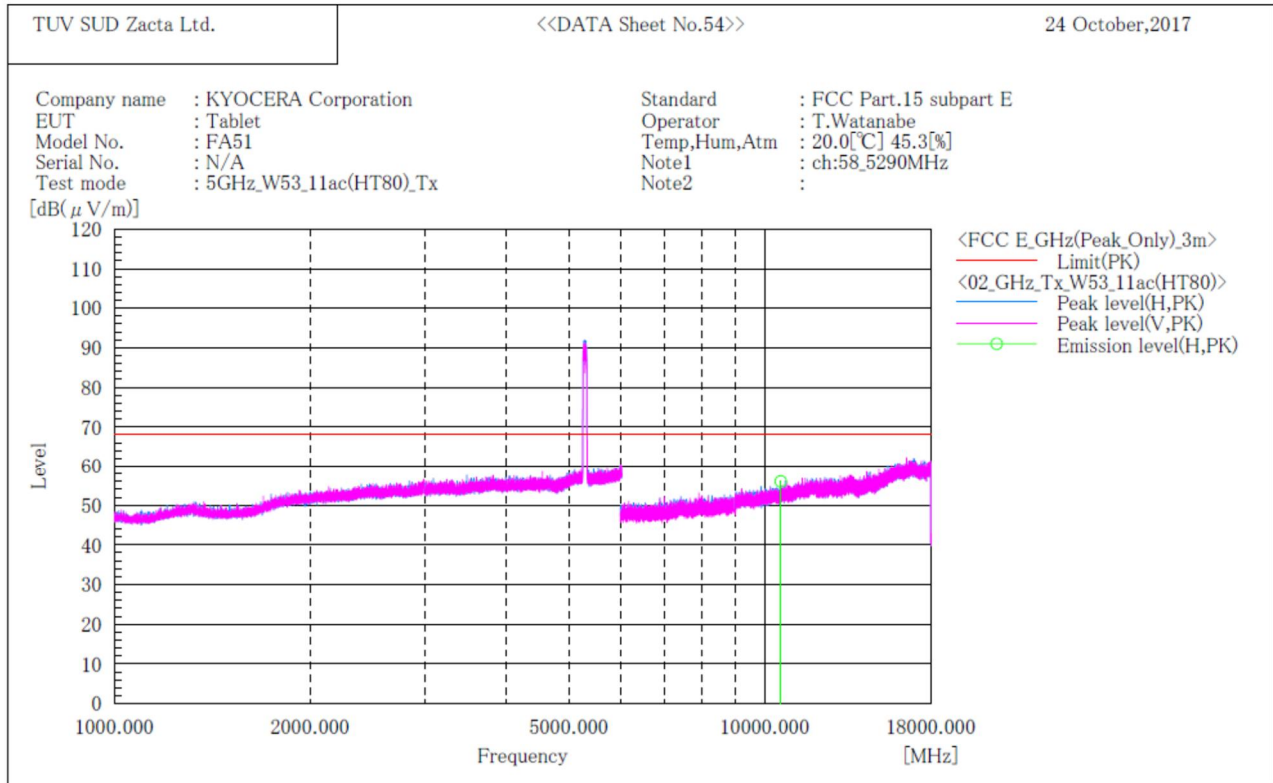
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



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**[11n(HT80)]**  
**W53**  
**ABOVE 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin PK [dB] | Height [cm] | Angle [°] |
|-----|-----------------|-----|---------------------|---------------|----------------------|---------------------|----------------|-------------|-----------|
| 1   | 10580.000       | H   | 45.9                | 10.1          | 56.0                 | 68.2                | 12.2           | 151.0       | 62.0      |

**Note:**

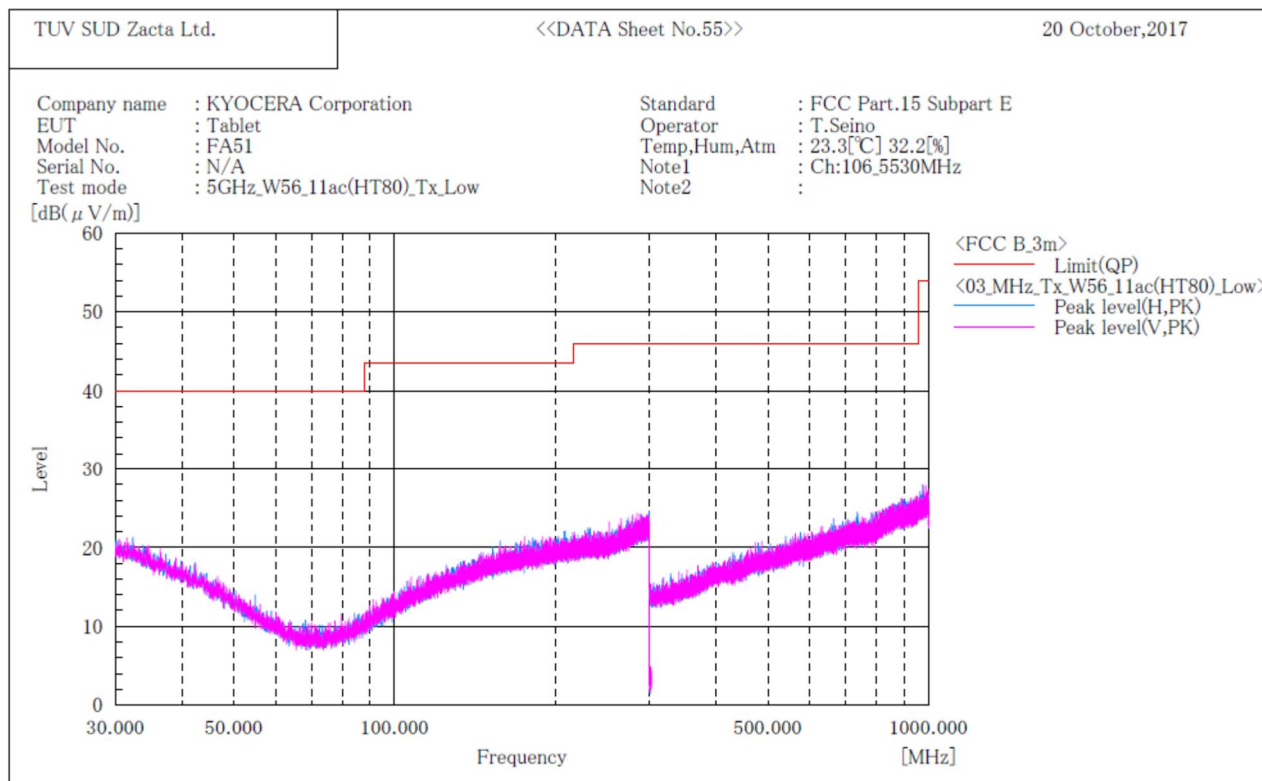
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



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**[11n(HT80)]**  
**W56 / Channel Low**  
**BELOW 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

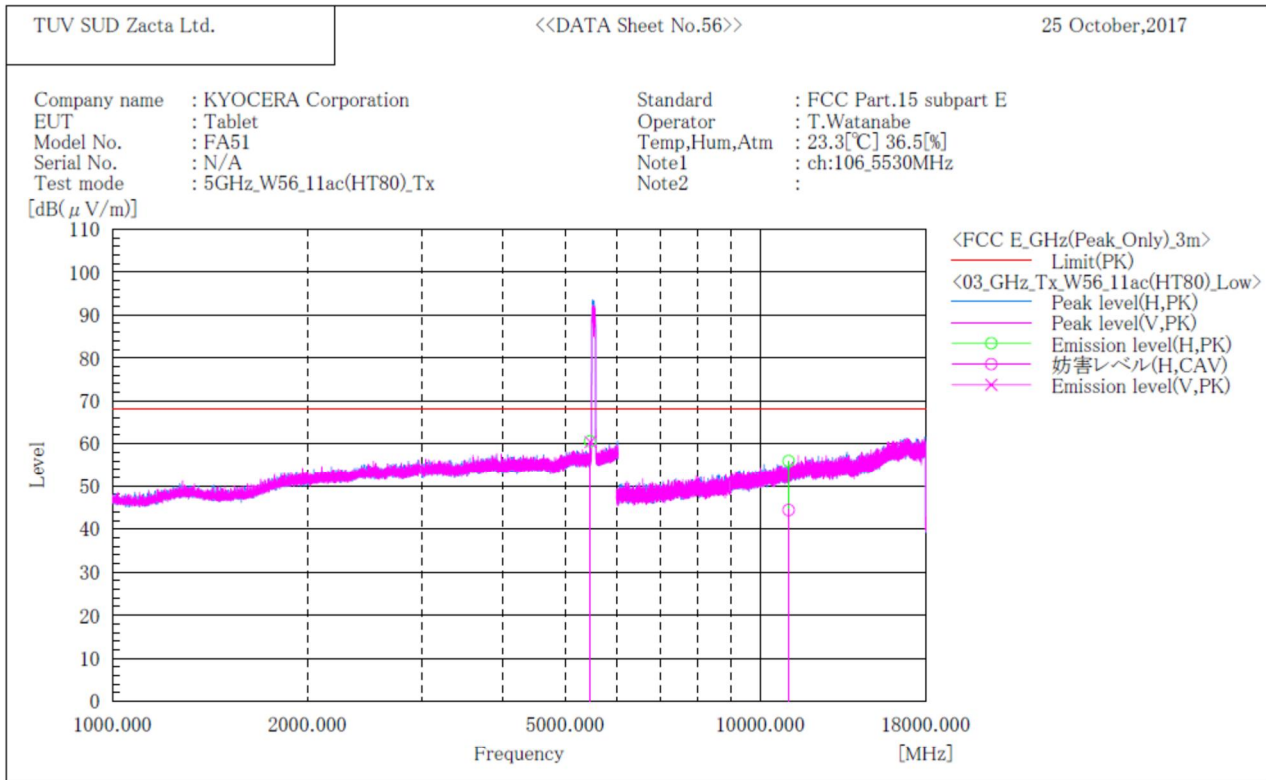
| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [° ]  |

**Note:**

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**[11n(HT80)]**  
**W56 / Channel Low**  
**ABOVE 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Result CAV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [°] |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|----------------|-----------------|-------------|-----------|
| 1   | 5462.090        | H   | 50.4                | -----                | 10.2          | 60.6                 | -----                 | 68.2                | 7.6            | -----           | 139.0       | 248.0     |
| 2   | 5467.870        | V   | 50.2                | -----                | 10.2          | 60.4                 | -----                 | 68.2                | 7.8            | -----           | 170.0       | 268.0     |
| 3   | 11060.000       | H   | 45.3                | 33.7                 | 10.7          | 56.0                 | 44.4                  | 74.0                | 18.0           | 9.6             | 168.0       | 82.0      |

Note:

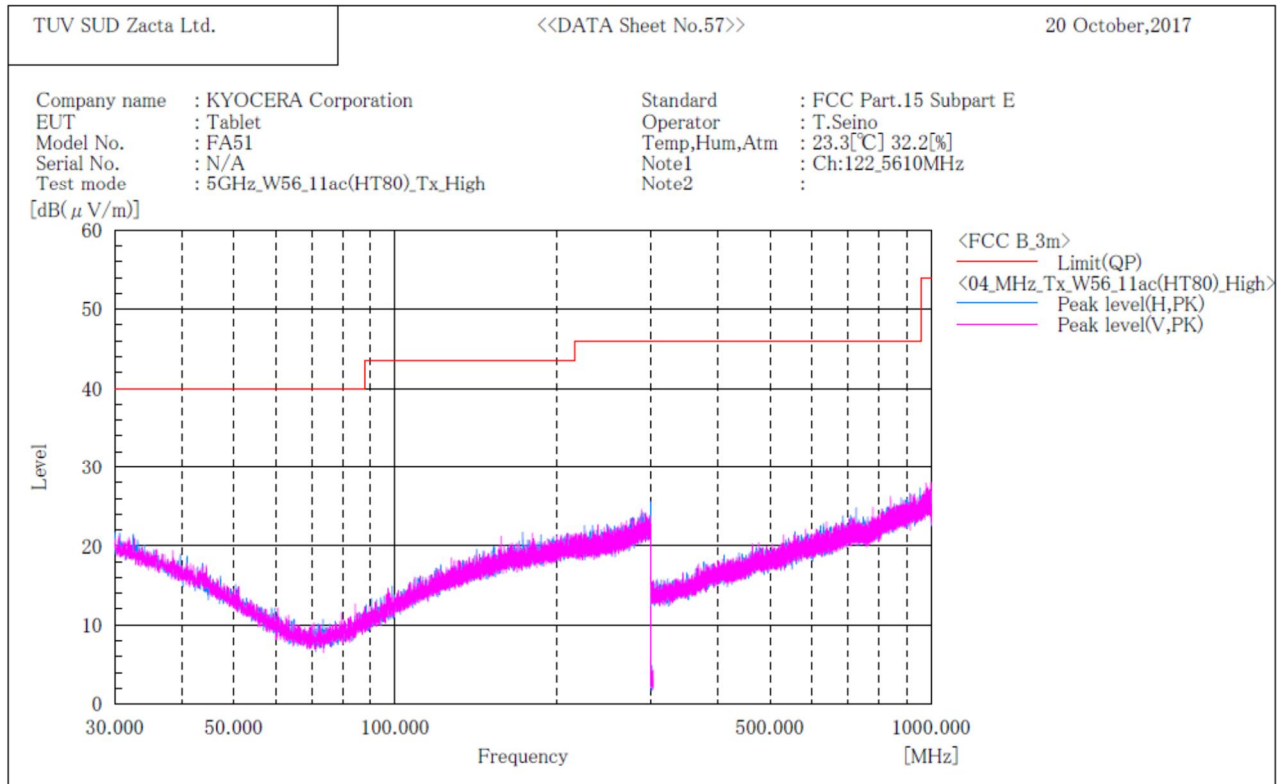
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.



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**[11n(HT80)]**  
**W56 / Channel High**  
**BELOW 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

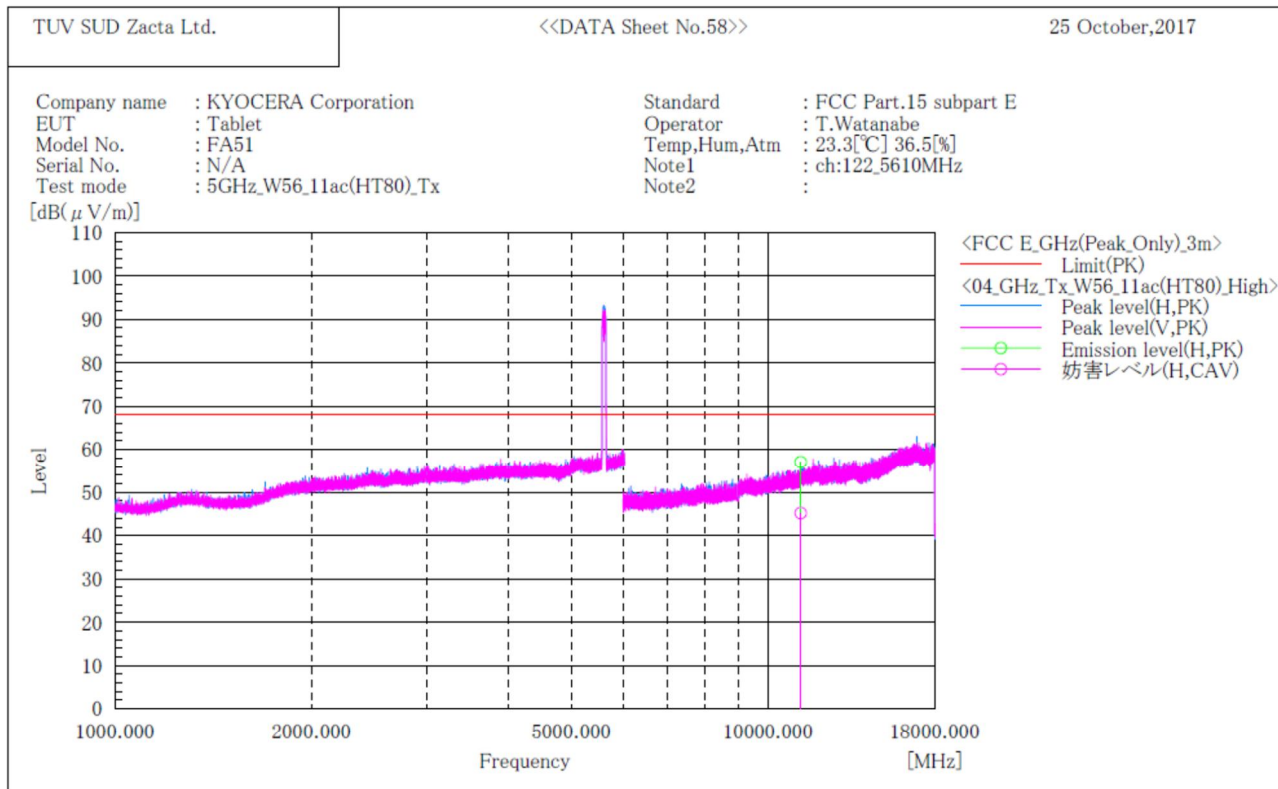
| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

**Note:**

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.

**[11n(HT80)]**  
**W56 / Channel High**  
**ABOVE 1GHz**

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
 [ 3m Semi-anechoic chamber ]



**Final Result**

| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Result CAV [dB(μV/m)] | Limit PK [dB(μV/m)] | Margin PK [dB] | Margin CAV [dB] | Height [cm] | Angle [°] |
|-----|-----------------|-----|---------------------|----------------------|---------------|----------------------|-----------------------|---------------------|----------------|-----------------|-------------|-----------|
| 1   | 11220.000       | H   | 46.1                | 34.2                 | 11.0          | 57.1                 | 45.2                  | 74.0                | 16.9           | 8.8             | 175.0       | 294.0     |

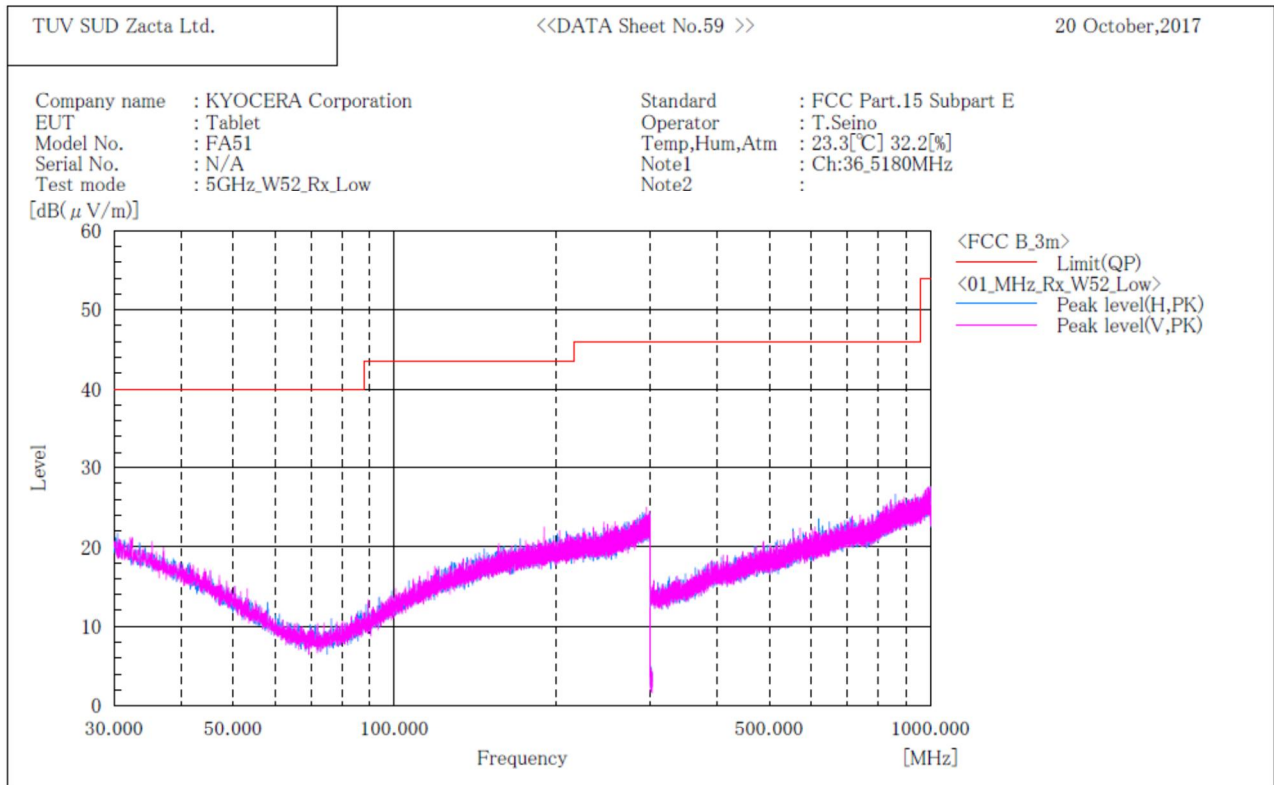
**Note:**

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 40GHz at the 3 meters distance.

### 7.4.4.2 Receive mode

#### W52 / Channel Low BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



#### Final Result

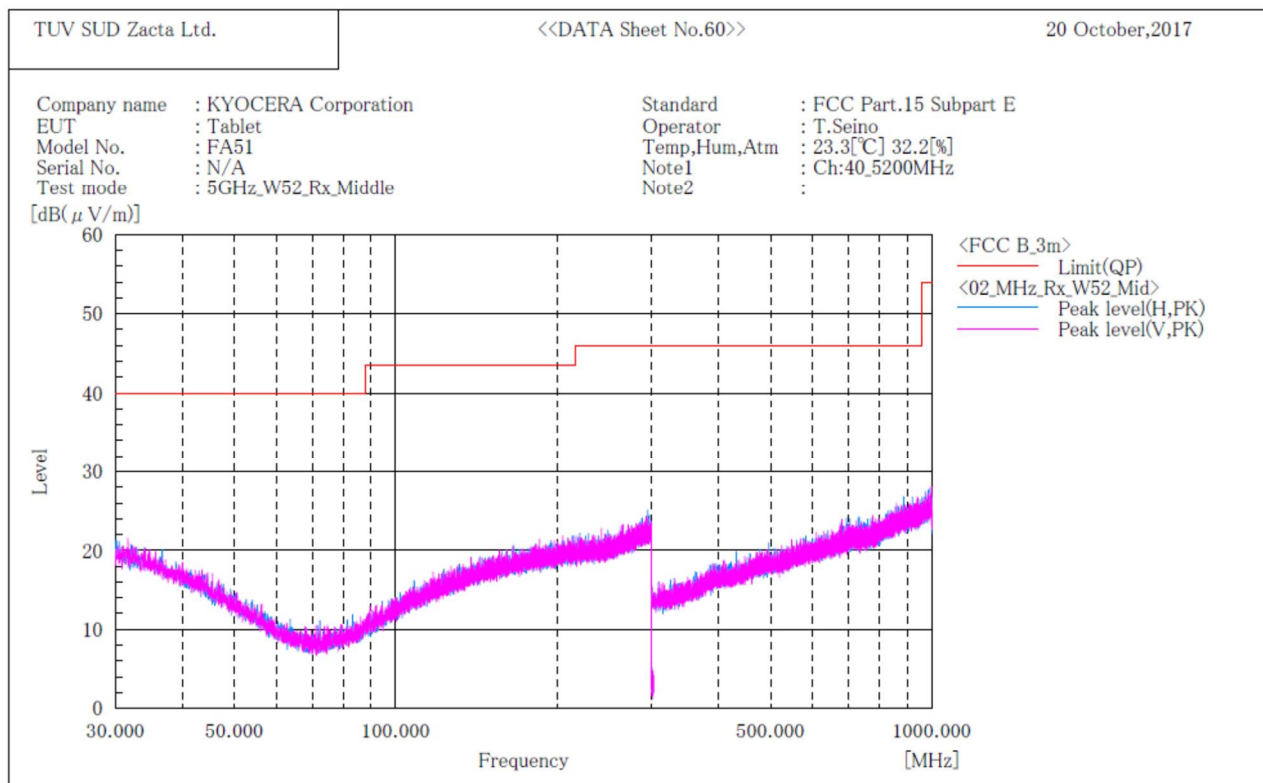
| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

#### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

# W52 / Channel Middle BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



## Final Result

| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

## Note:

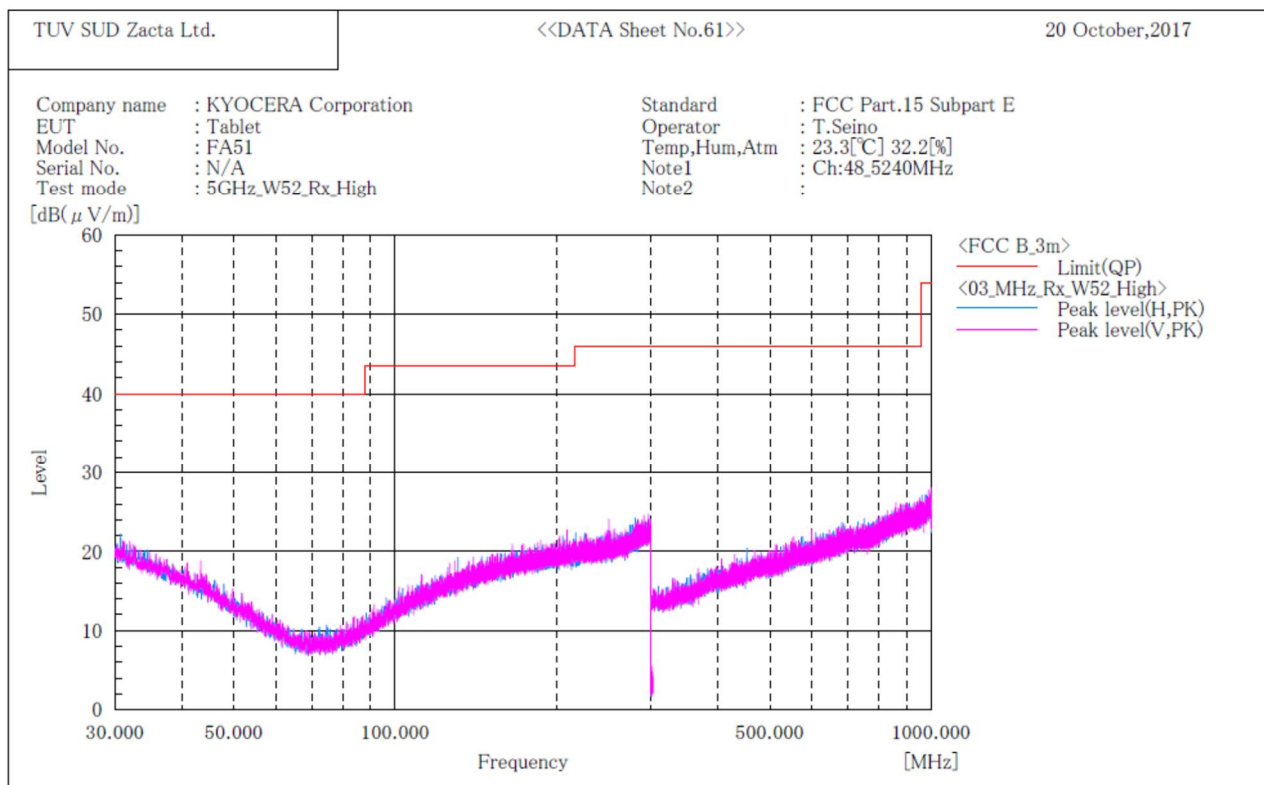
- Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



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## W52 / Channel High BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



### Final Result

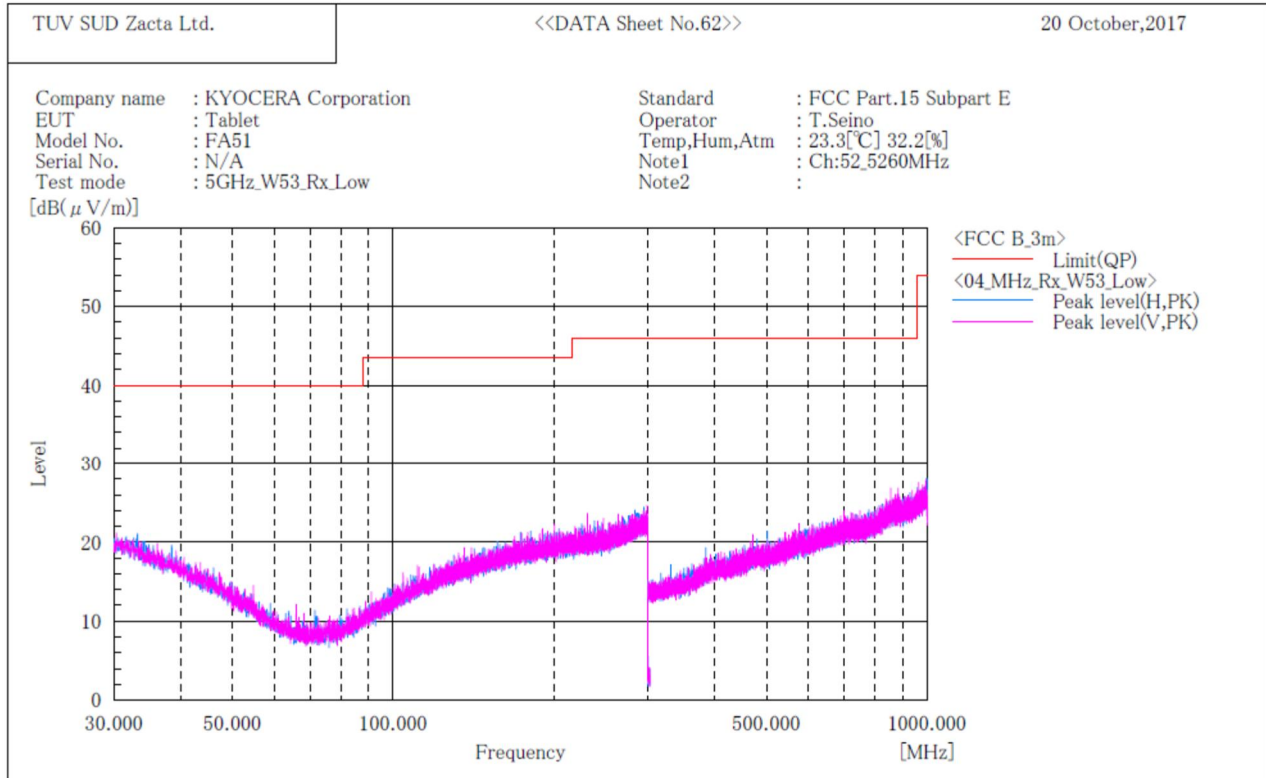
| No. | Frequency (P) | c. f      | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

## W53 / Channel Low BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



### Final Result

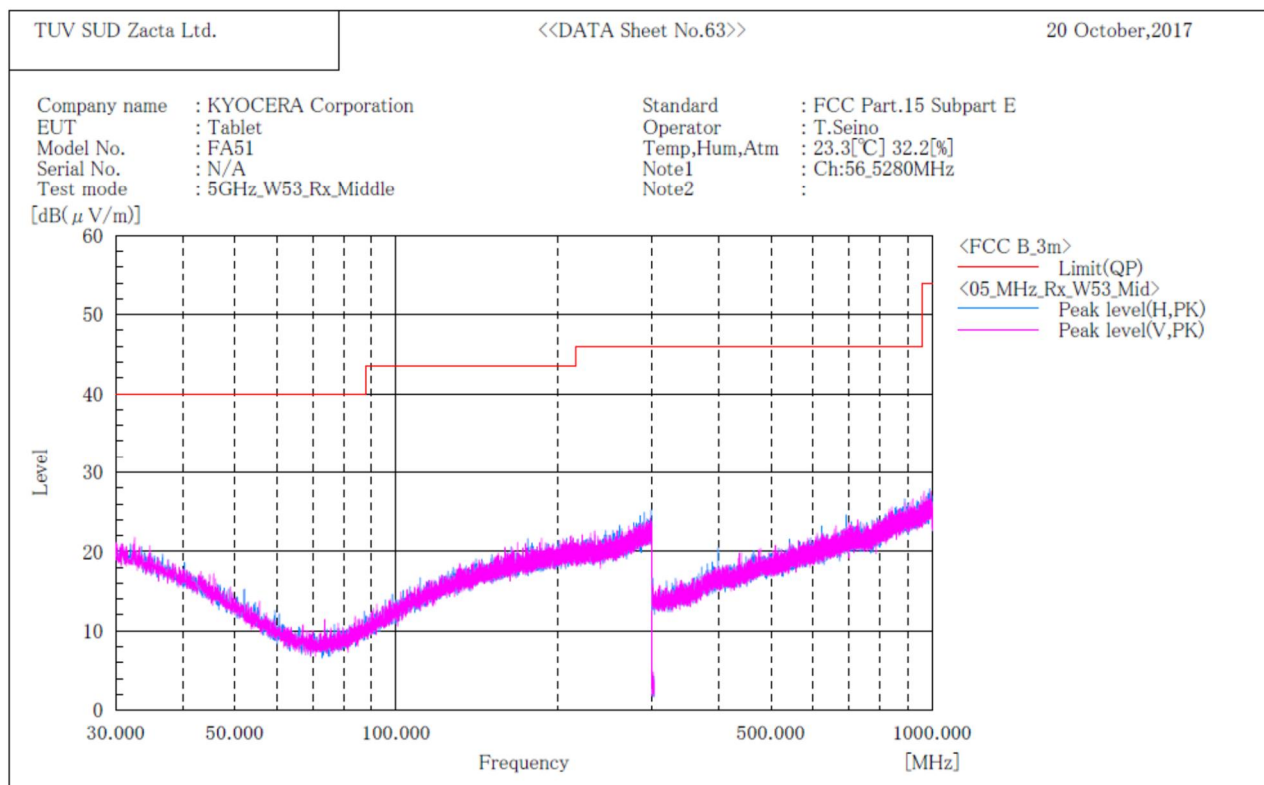
| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

# W53 / Channel Middle BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



## Final Result

| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

## Note:

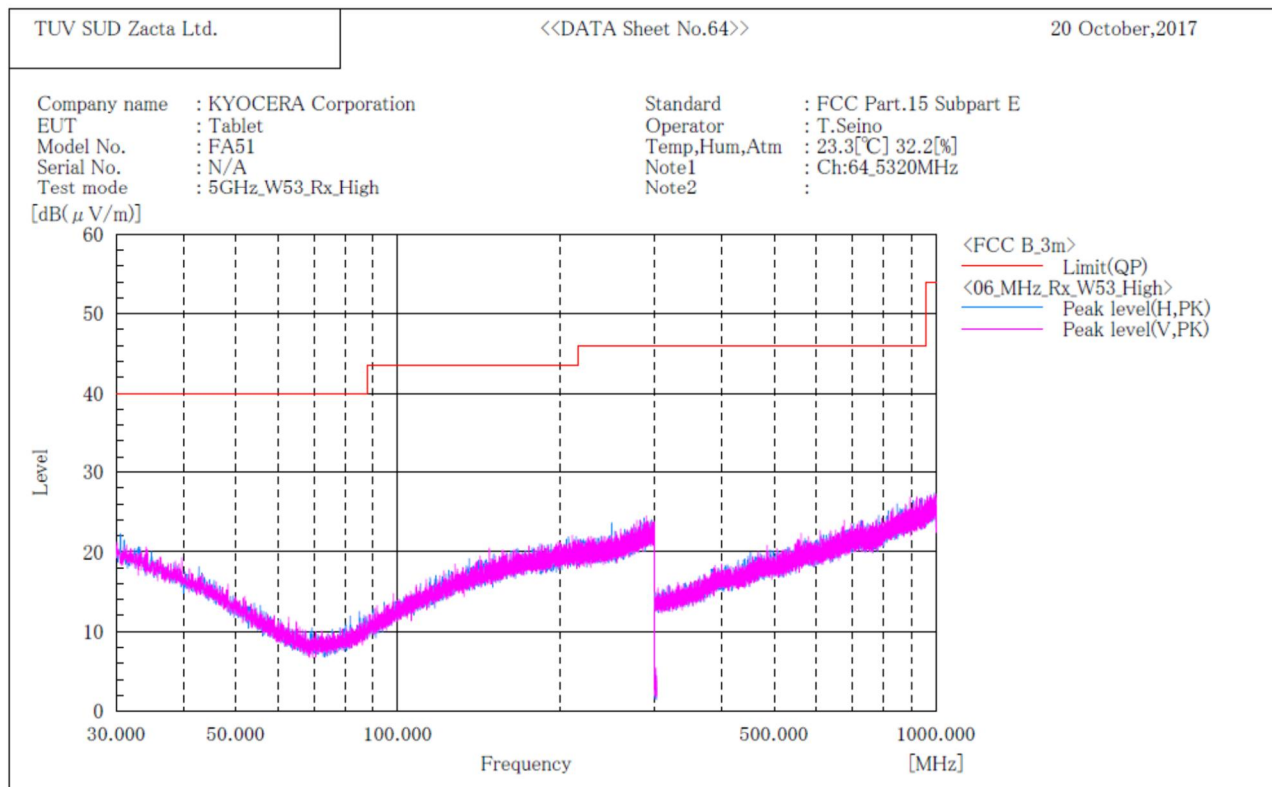
- Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



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## W53 / Channel High BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



### Final Result

| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

### Note:

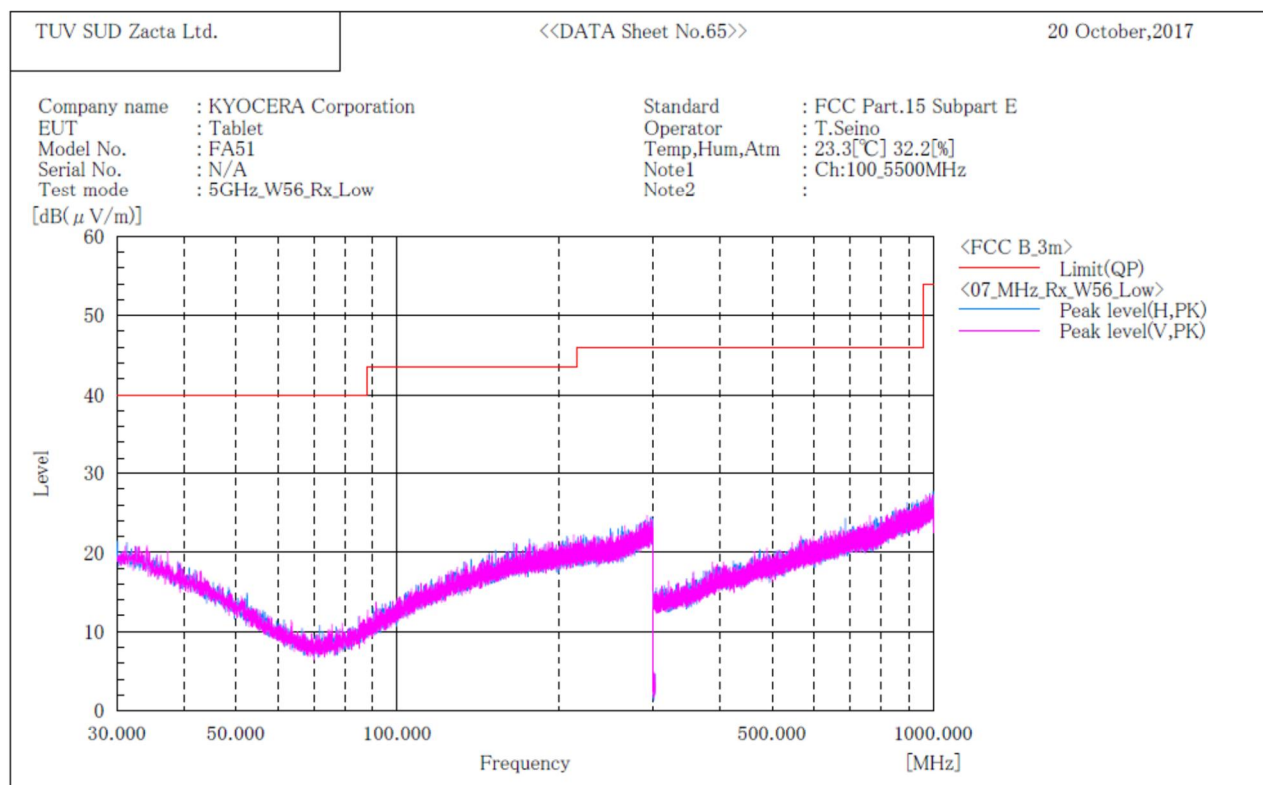
1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



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## W56 / Channel Low BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



### Final Result

| No. | Frequency (P) | c. f      | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

### Note:

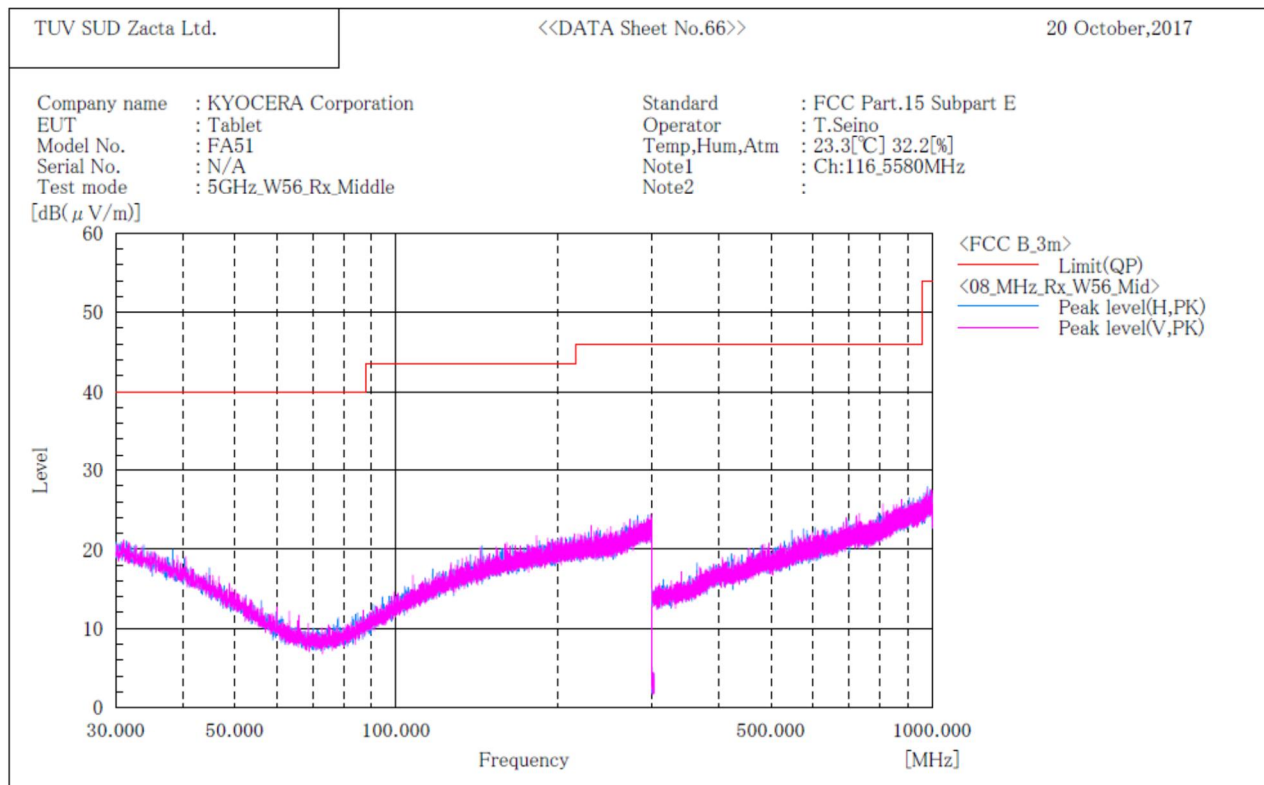
- Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.



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## W56 / Channel Middle BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



### Final Result

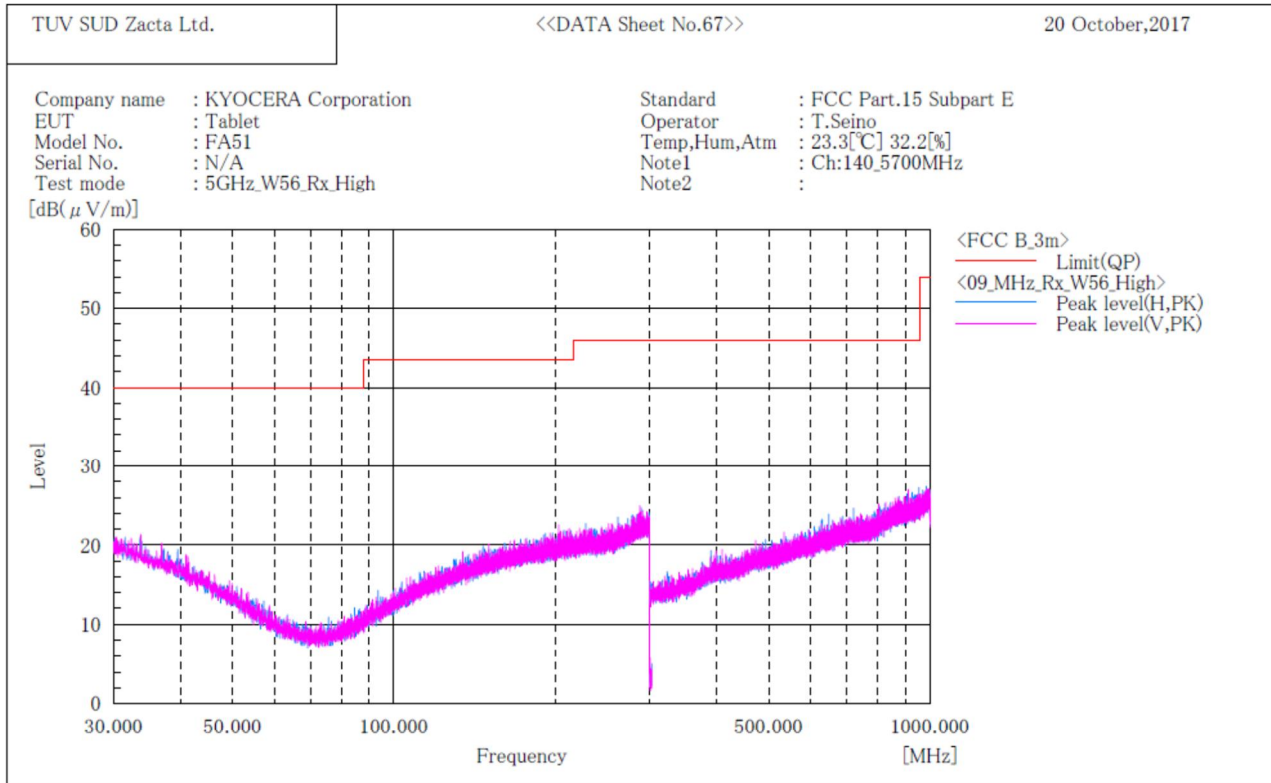
| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

# W56 / Channel High BELOW 1GHz

\*\*\*\*\* RADIATED EMISSION \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



## Final Result

| No. | Frequency (P) | c.f       | Height | Angle |
|-----|---------------|-----------|--------|-------|
|     | [MHz]         | [dB(1/m)] | [cm]   | [°]   |

### Note:

- Emission Level (Margin) = Limit - [Reading + Factor ( Antenna + Cable – Amp)]
- No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 40GHz at the 3 meters distance.

## 8. Frequency Stability

### 8.1 Measurement procedure [FCC 15.407(g)]

The EUT was placed inside of a constant temperature chamber as the temperature in the chamber was varied between  $-30^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$ . The temperature was incremented by  $10^{\circ}\text{C}$  intervals and the unit was allowed to stabilize at each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

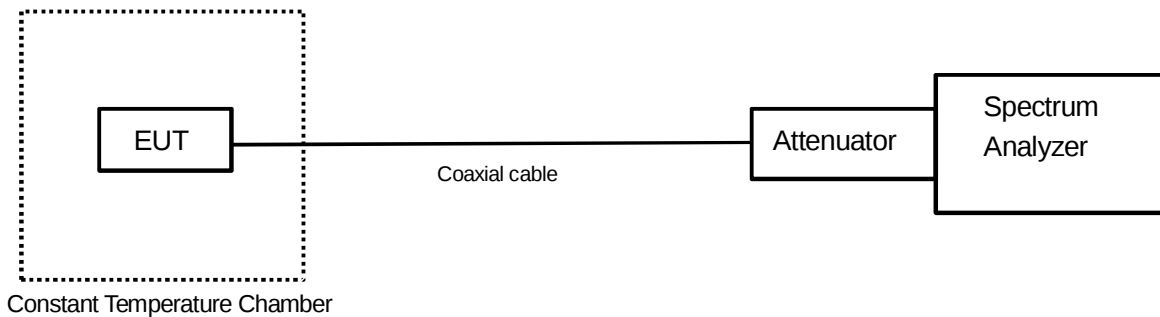
The EUT was set to operate with the following conditions.

- 5.2GHz Band, 5.3GHz Band, 5.6GHz Band

The test mode of EUT is as follows.

- Tx mode

- Test configuration



### 8.2 Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified.

### 8.3 Measurement result

Date : October 19, 2017  
 Temperature : 21.9 [°C]  
 Humidity : 60.1 [%]  
 Test place : Shielded room No.4

Test engineer : Chiaki Kanno

Date : October 20, 2017  
 Temperature : 20.5 [°C]  
 Humidity : 56.2 [%]  
 Test place : Shielded room No.4

Test engineer : Chiaki Kanno

#### [Channel: 36 (5180MHz)]

| Power Supply | Temperature | Measurements<br>Frequency<br>(startup) | Frequency<br>Tolerance<br>(startup) | Measurements<br>Frequency<br>(2mins) | Frequency<br>Tolerance<br>(2mins) | Measurements<br>Frequency<br>(5mins) | Frequency<br>Tolerance<br>(5mins) | Measurements<br>Frequency<br>(10mins) | Frequency<br>Tolerance<br>(10mins) |
|--------------|-------------|----------------------------------------|-------------------------------------|--------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|------------------------------------|
| [V]          | [°C]        | [Hz]                                   | [ppm]                               | [Hz]                                 | [ppm]                             | [Hz]                                 | [ppm]                             | [Hz]                                  | [ppm]                              |
| 3.80         | 25(Ref.)    | 5180018039                             | 0.00000000                          | 5180002185                           | -3.06060710                       | 5180010021                           | -1.54787106                       | 5180016843                            | -0.23088723                        |
|              | 60          | 5179992249                             | -4.97874714                         | 5179995717                           | -4.30925140                       | 5179972502                           | -8.79089603                       | 5179991721                            | -5.08067729                        |
|              | 50          | 5179983405                             | -6.68607710                         | 5179973110                           | -8.67352192                       | 5179984869                           | -6.40345260                       | 5179984810                            | -6.41484253                        |
|              | 40          | 5180003603                             | -2.78686288                         | 5180002128                           | -3.07161092                       | 5179993160                           | -4.80287903                       | 5179999923                            | -3.49728512                        |
|              | 30          | 5179998190                             | -3.83183994                         | 5179987062                           | -5.98009500                       | 5179989684                           | -5.47391916                       | 5179993013                            | -4.83125731                        |
|              | 20          | 5180006954                             | -2.13995394                         | 5180010370                           | -1.48049677                       | 5180012204                           | -1.12644395                       | 5180019205                            | 0.22509574                         |
|              | 10          | 5180010222                             | -1.50906810                         | 5179997422                           | -3.98010197                       | 5180027803                           | 1.88493552                        | 5180019358                            | 0.25463232                         |
|              | 0           | 5180016183                             | -0.35829991                         | 5180040785                           | 4.39110440                        | 5180024358                           | 1.21987992                        | 5180037780                            | 3.81099059                         |
|              | -10         | 5180016951                             | -0.21003788                         | 5180036678                           | 3.59825002                        | 5180022600                           | 0.88049886                        | 5180038839                            | 4.01543003                         |
|              | -20         | 5180023278                             | 1.01138644                          | 5180025249                           | 1.39188704                        | 5180037478                           | 3.75268963                        | 5180015729                            | -0.44594439                        |
|              | -30         | 5180006988                             | -2.13339025                         | 5180001921                           | -3.11157218                       | 5180015187                           | -0.55057723                       | 5180016460                            | -0.30482519                        |
| 3.42         | 25          | 5180008419                             | -1.85713639                         | 5180003873                           | -2.73473951                       | 5180011838                           | -1.19710008                       | 5179987067                            | -5.97912976                        |
| 4.18         | 25          | 5180000807                             | -3.32662934                         | 5180009353                           | -1.67682814                       | 5180015902                           | -0.41254683                       | 5180004629                            | -2.58879407                        |



Zacta

**[Channel: 64 (5320MHz)]**

| Power Supply | Temperature | Measurements<br>Frequency<br>(startup) | Frequency<br>Tolerance<br>(startup) | Measurements<br>Frequency<br>(2mins) | Frequency<br>Tolerance<br>(2mins) | Measurements<br>Frequency<br>(5mins) | Frequency<br>Tolerance<br>(5mins) | Measurements<br>Frequency<br>(10mins) | Frequency<br>Tolerance<br>(10mins) |
|--------------|-------------|----------------------------------------|-------------------------------------|--------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|------------------------------------|
| [V]          | [°C]        | [Hz]                                   | [ppm]                               | [Hz]                                 | [ppm]                             | [Hz]                                 | [ppm]                             | [Hz]                                  | [ppm]                              |
| 3.80         | 25(Ref.)    | 5320021274                             | 0.00000000                          | 5320008021                           | -2.49115545                       | 5320025900                           | 0.86954539                        | 5320023345                            | 0.38928416                         |
|              | 60          | 5319990352                             | -5.81238277                         | 5319997099                           | -4.54415476                       | 5320021737                           | 0.08702973                        | 5319976852                            | -8.34996661                        |
|              | 50          | 5320008554                             | -2.39096788                         | 5319993812                           | -5.16200943                       | 5320002296                           | -3.56727897                       | 5320006267                            | -2.82085338                        |
|              | 40          | 5320000490                             | -3.90675129                         | 5320000547                           | -3.89603705                       | 5320005146                           | -3.03156682                       | 5319993275                            | -5.26294888                        |
|              | 30          | 5319997236                             | -4.51840298                         | 5320008754                           | -2.35337405                       | 5320000450                           | -3.91427006                       | 5320005443                            | -2.97573998                        |
|              | 20          | 5320012618                             | -1.62706116                         | 5320014683                           | -1.23890482                       | 5320037920                           | 3.12893486                        | 5320022703                            | 0.26860795                         |
|              | 10          | 5320007748                             | -2.54247104                         | 5320011552                           | -1.82743630                       | 5320010735                           | -1.98100712                       | 5320031815                            | 1.98138305                         |
|              | 0           | 5320007773                             | -2.53777181                         | 5320027145                           | 1.10356702                        | 5320038497                           | 3.23739307                        | 5320022368                            | 0.20563828                         |
|              | -10         | 5320034299                             | 2.44829848                          | 5320027342                           | 1.14059694                        | 5320031198                           | 1.86540607                        | 5320022444                            | 0.21992393                         |
|              | -20         | 5320028134                             | 1.28946853                          | 5320021434                           | 0.03007507                        | 5320041323                           | 3.76859395                        | 5320021442                            | 0.03157882                         |
|              | -30         | 5320017847                             | -0.64417036                         | 5320025326                           | 0.76165109                        | 5320021732                           | 0.08608988                        | 5320011215                            | -1.89078191                        |
| 3.42         | 25          | 5320000011                             | -3.99678853                         | 5320009046                           | -2.29848705                       | 5320014677                           | -1.24003264                       | 5320004876                            | -3.08231850                        |
| 4.18         | 25          | 5320014653                             | -1.24454390                         | 5319973594                           | -8.96237018                       | 5320000234                           | -3.95487140                       | 5319995248                            | -4.89208570                        |

**[Channel: 140 (5700MHz)]**

| Power Supply | Temperature | Measurements<br>Frequency<br>(startup) | Frequency<br>Tolerance<br>(startup) | Measurements<br>Frequency<br>(2mins) | Frequency<br>Tolerance<br>(2mins) | Measurements<br>Frequency<br>(5mins) | Frequency<br>Tolerance<br>(5mins) | Measurements<br>Frequency<br>(10mins) | Frequency<br>Tolerance<br>(10mins) |
|--------------|-------------|----------------------------------------|-------------------------------------|--------------------------------------|-----------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|------------------------------------|
| [V]          | [°C]        | [Hz]                                   | [ppm]                               | [Hz]                                 | [ppm]                             | [Hz]                                 | [ppm]                             | [Hz]                                  | [ppm]                              |
| 3.80         | 25(Ref.)    | 5699994662                             | 0.00000000                          | 5699984245                           | -1.82754557                       | 5699993936                           | -0.12736854                       | 5699982892                            | -2.06491421                        |
|              | 60          | 5699991490                             | -0.55649175                         | 5700006703                           | 2.11245812                        | 5699989325                           | -0.93631667                       | 5699998390                            | 0.65403570                         |
|              | 50          | 5700003148                             | 1.48877332                          | 5699989493                           | -0.90684295                       | 5699991867                           | -0.49035134                       | 5699980289                            | -2.52158131                        |
|              | 40          | 5699996413                             | 0.30719327                          | 5699984704                           | -1.74701918                       | 5700000802                           | 1.07719399                        | 5699981116                            | -2.37649345                        |
|              | 30          | 5699989319                             | -0.93736930                         | 5699971993                           | -3.97702127                       | 5700003045                           | 1.47070313                        | 5700000696                            | 1.05859748                         |
|              | 20          | 5699993291                             | -0.24052654                         | 5700004574                           | 1.73894900                        | 5700004662                           | 1.75438761                        | 5699996964                            | 0.40386003                         |
|              | 10          | 5700026583                             | 5.60018068                          | 5700001880                           | 1.26631698                        | 5700011763                           | 3.00017825                        | 5700008531                            | 2.43316017                         |
|              | 0           | 5700012711                             | 3.16649419                          | 5700030188                           | 6.23263742                        | 5700027964                           | 5.84246161                        | 5700033318                            | 6.78176074                         |
|              | -10         | 5700029429                             | 6.09947940                          | 5700033928                           | 6.88877838                        | 5700025378                           | 5.38877698                        | 5700025895                            | 5.47947882                         |
|              | -20         | 5700031108                             | 6.39404108                          | 5700029256                           | 6.06912849                        | 5700010020                           | 2.69438849                        | 5700037698                            | 7.55018251                         |
|              | -30         | 5699985045                             | -1.68719456                         | 5700012348                           | 3.10280992                        | 5700017427                           | 3.99386339                        | 5700019675                            | 4.38824972                         |
| 3.42         | 25          | 5699989777                             | -0.85701835                         | 5700000896                           | 1.09368523                        | 5700006610                           | 2.09614231                        | 5700011506                            | 2.95509049                         |
| 4.18         | 25          | 5699985825                             | -1.55035233                         | 5699999111                           | 0.78052705                        | 5699999646                           | 0.87438678                        | 5699994145                            | -0.09070184                        |

## 9. AC Power Line Conducted Emissions

### 9.1 Measurement procedure [FCC 15.207]

Test was applied by following conditions.

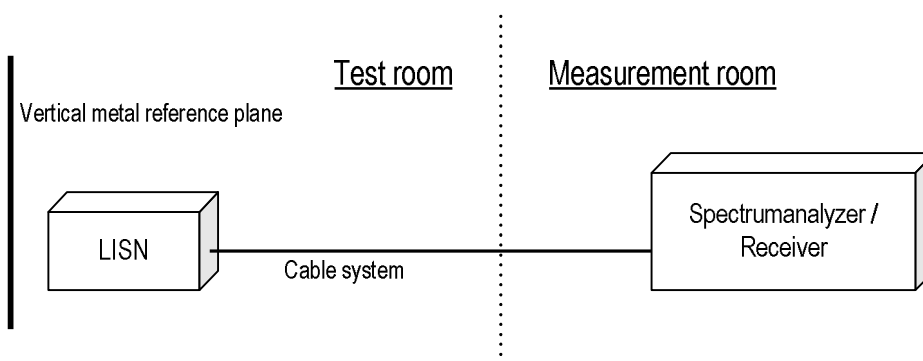
|                                |                                           |
|--------------------------------|-------------------------------------------|
| Test method                    | : ANSI C63.10                             |
| Frequency range                | : 0.15MHz to 30MHz                        |
| Test place                     | : 3m Semi-anechoic chamber                |
| EUT was placed on              | : FRP table / (W)2.0m × (D)1.0m × (H)0.8m |
| Vertical Metal Reference Plane | : (W)2.0m × (H)2.0m 0.4m away from EUT    |
| Test receiver setting          |                                           |
| - Detector                     | : Quasi-peak, Average                     |
| - Bandwidth                    | : 9kHz                                    |

EUT and peripherals are connected to 50Ω/50μH Line Impedance Stabilization Network (LISN) which are connected to reference ground plane, and are placed 80cm away from EUT. Excess of AC power cable is bundled in center.

LISN for peripheral is terminated in 50Ω.

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Maximum emission configuration is determined by manipulating the EUT, peripherals, interconnecting cables. Then, emission measurements are performed with test receiver in above setting to each current-carrying conductor of the mains port. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits.

- Test configuration



### 9.2 Calculation method

Emission level = Reading + (LISN. factor + Cable system loss)

Margin = Limit – Emission level

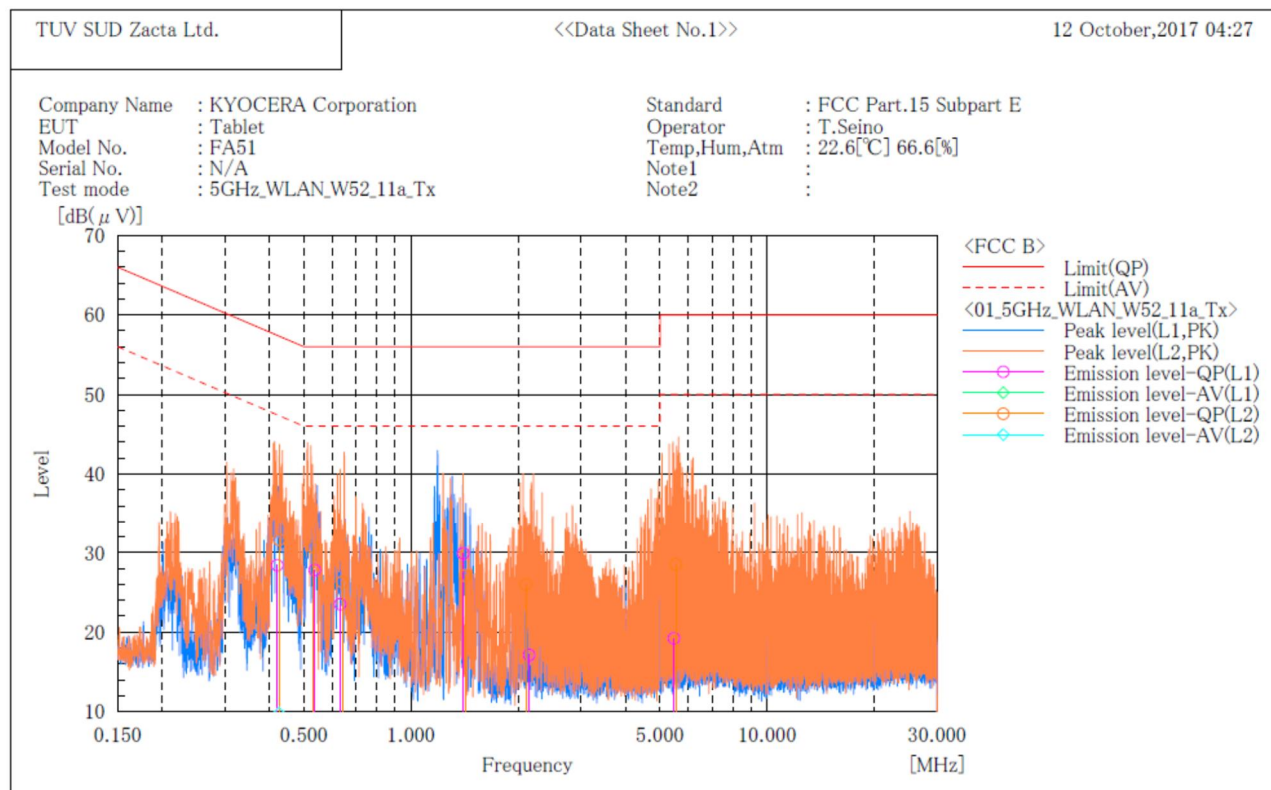
### 9.3 Limit

| Frequency<br>[MHz] | Limit     |           |
|--------------------|-----------|-----------|
|                    | QP [dBuV] | AV [dBuV] |
| 0.15-0.5           | 66-56*    | 56-46*    |
| 0.5-5              | 56        | 46        |
| 5-30               | 60        | 50        |

\*: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

## 9.4 Test data

\*\*\*\*\* CONDUCTED EMISSION at MAINS PORT \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



## Final Result

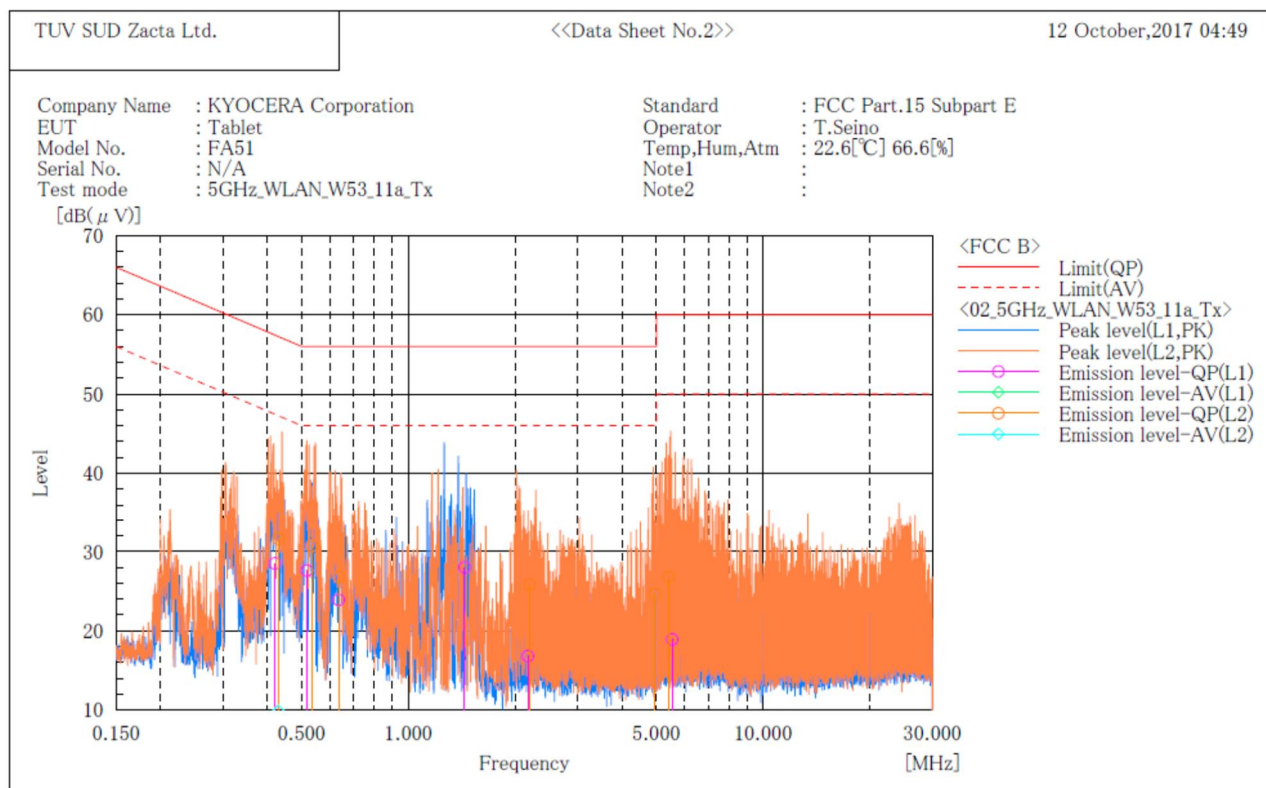
## --- L1 Phase ---

| No. | Frequency | Reading<br>QP | Reading<br>AV | c. f | Result<br>QP | Result<br>AV | Limit<br>QP | Limit<br>AV | Margin<br>QP | Margin<br>AV |
|-----|-----------|---------------|---------------|------|--------------|--------------|-------------|-------------|--------------|--------------|
|     | [MHz]     | [dB(μV)]      | [dB(μV)]      | [dB] | [dB(μV)]     | [dB(μV)]     | [dB(μV)]    | [dB(μV)]    | [dB]         | [dB]         |
| 1   | 0.421     | 18.0          | -1.6          | 10.4 | 28.4         | 8.8          | 57.4        | 47.4        | 29.0         | 38.6         |
| 2   | 0.536     | 17.4          | -2.2          | 10.4 | 27.8         | 8.2          | 56.0        | 46.0        | 28.2         | 37.8         |
| 3   | 0.632     | 13.1          | -2.8          | 10.4 | 23.5         | 7.6          | 56.0        | 46.0        | 32.5         | 38.4         |
| 4   | 1.402     | 19.5          | -1.9          | 10.4 | 29.9         | 8.5          | 56.0        | 46.0        | 26.1         | 37.5         |
| 5   | 2.146     | 6.6           | -4.3          | 10.5 | 17.1         | 6.2          | 56.0        | 46.0        | 38.9         | 39.8         |
| 6   | 5.467     | 8.5           | -4.4          | 10.7 | 19.2         | 6.3          | 60.0        | 50.0        | 40.8         | 43.7         |

## --- L2 Phase ---

| No. | Frequency | Reading<br>QP | Reading<br>AV | c. f | Result<br>QP | Result<br>AV | Limit<br>QP | Limit<br>AV | Margin<br>QP | Margin<br>AV |
|-----|-----------|---------------|---------------|------|--------------|--------------|-------------|-------------|--------------|--------------|
|     | [MHz]     | [dB(μV)]      | [dB(μV)]      | [dB] | [dB(μV)]     | [dB(μV)]     | [dB(μV)]    | [dB(μV)]    | [dB]         | [dB]         |
| 1   | 0.426     | 21.2          | -0.6          | 10.4 | 31.6         | 9.8          | 57.3        | 47.3        | 25.7         | 37.5         |
| 2   | 0.530     | 20.3          | -1.3          | 10.4 | 30.7         | 9.1          | 56.0        | 46.0        | 25.3         | 36.9         |
| 3   | 0.641     | 15.9          | -2.2          | 10.4 | 26.3         | 8.2          | 56.0        | 46.0        | 29.7         | 37.8         |
| 4   | 1.420     | 16.7          | -2.5          | 10.4 | 27.1         | 7.9          | 56.0        | 46.0        | 28.9         | 38.1         |
| 5   | 2.100     | 15.5          | -3.0          | 10.5 | 26.0         | 7.5          | 56.0        | 46.0        | 30.0         | 38.5         |
| 6   | 5.541     | 17.8          | -3.1          | 10.7 | 28.5         | 7.6          | 60.0        | 50.0        | 31.5         | 42.4         |

\*\*\*\*\* CONDUCTED EMISSION at MAINS PORT \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



## Final Result

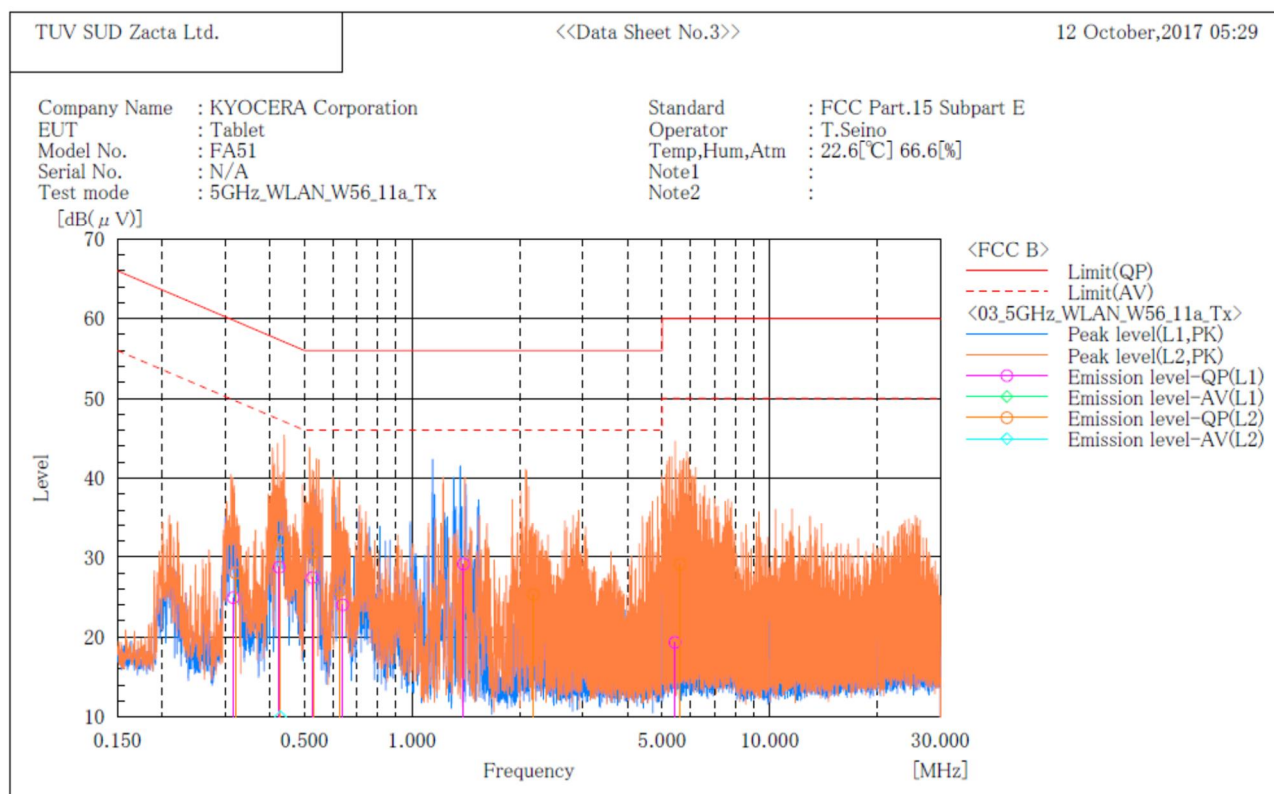
## --- L1 Phase ---

| No. | Frequency [MHz] | Reading QP [dB(μV)] | Reading AV [dB(μV)] | c. f [dB] | Result QP [dB(μV)] | Result AV [dB(μV)] | Limit QP [dB(μV)] | Limit AV [dB(μV)] | Margin QP [dB] | Margin AV [dB] |
|-----|-----------------|---------------------|---------------------|-----------|--------------------|--------------------|-------------------|-------------------|----------------|----------------|
| 1   | 0.420           | 18.1                | -1.5                | 10.4      | 28.5               | 8.9                | 57.4              | 47.4              | 28.9           | 38.5           |
| 2   | 0.517           | 17.2                | -2.2                | 10.4      | 27.6               | 8.2                | 56.0              | 46.0              | 28.4           | 37.8           |
| 3   | 0.636           | 13.5                | -2.8                | 10.4      | 23.9               | 7.6                | 56.0              | 46.0              | 32.1           | 38.4           |
| 4   | 1.439           | 17.6                | -2.2                | 10.4      | 28.0               | 8.2                | 56.0              | 46.0              | 28.0           | 37.8           |
| 5   | 2.171           | 6.3                 | -4.6                | 10.5      | 16.8               | 5.9                | 56.0              | 46.0              | 39.2           | 40.1           |
| 6   | 5.542           | 8.2                 | -4.4                | 10.7      | 18.9               | 6.3                | 60.0              | 50.0              | 41.1           | 43.7           |

## --- L2 Phase ---

| No. | Frequency [MHz] | Reading QP [dB(μV)] | Reading AV [dB(μV)] | c. f [dB] | Result QP [dB(μV)] | Result AV [dB(μV)] | Limit QP [dB(μV)] | Limit AV [dB(μV)] | Margin QP [dB] | Margin AV [dB] |
|-----|-----------------|---------------------|---------------------|-----------|--------------------|--------------------|-------------------|-------------------|----------------|----------------|
| 1   | 0.430           | 21.2                | -0.5                | 10.4      | 31.6               | 9.9                | 57.3              | 47.3              | 25.7           | 37.4           |
| 2   | 0.534           | 20.3                | -1.5                | 10.4      | 30.7               | 8.9                | 56.0              | 46.0              | 25.3           | 37.1           |
| 3   | 0.637           | 16.4                | -2.2                | 10.4      | 26.8               | 8.2                | 56.0              | 46.0              | 29.2           | 37.8           |
| 4   | 2.194           | 15.3                | -3.3                | 10.5      | 25.8               | 7.2                | 56.0              | 46.0              | 30.2           | 38.8           |
| 5   | 4.952           | 13.9                | -3.9                | 10.7      | 24.6               | 6.8                | 56.0              | 46.0              | 31.4           | 39.2           |
| 6   | 5.412           | 16.1                | -3.3                | 10.7      | 26.8               | 7.4                | 60.0              | 50.0              | 33.2           | 42.6           |

\*\*\*\*\* CONDUCTED EMISSION at MAINS PORT \*\*\*\*\*  
[ 3m Semi-anechoic chamber ]



## Final Result

## --- L1 Phase ---

| No. | Frequency [MHz] | Reading QP [dB(μV)] | Reading AV [dB(μV)] | c. f [dB] | Result QP [dB(μV)] | Result AV [dB(μV)] | Limit QP [dB(μV)] | Limit AV [dB(μV)] | Margin QP [dB] | Margin AV [dB] |
|-----|-----------------|---------------------|---------------------|-----------|--------------------|--------------------|-------------------|-------------------|----------------|----------------|
| 1   | 0.316           | 14.5                | -2.0                | 10.4      | 24.9               | 8.4                | 59.8              | 49.8              | 34.9           | 41.4           |
| 2   | 0.425           | 18.3                | -1.4                | 10.4      | 28.7               | 9.0                | 57.3              | 47.3              | 28.6           | 38.3           |
| 3   | 0.526           | 17.0                | -2.2                | 10.4      | 27.4               | 8.2                | 56.0              | 46.0              | 28.6           | 37.8           |
| 4   | 0.639           | 13.6                | -2.8                | 10.4      | 24.0               | 7.6                | 56.0              | 46.0              | 32.0           | 38.4           |
| 5   | 1.392           | 18.7                | -2.0                | 10.4      | 29.1               | 8.4                | 56.0              | 46.0              | 26.9           | 37.6           |
| 6   | 5.431           | 8.6                 | -4.4                | 10.7      | 19.3               | 6.3                | 60.0              | 50.0              | 40.7           | 43.7           |

## --- L2 Phase ---

| No. | Frequency [MHz] | Reading QP [dB(μV)] | Reading AV [dB(μV)] | c. f [dB] | Result QP [dB(μV)] | Result AV [dB(μV)] | Limit QP [dB(μV)] | Limit AV [dB(μV)] | Margin QP [dB] | Margin AV [dB] |
|-----|-----------------|---------------------|---------------------|-----------|--------------------|--------------------|-------------------|-------------------|----------------|----------------|
| 1   | 0.321           | 17.6                | -1.3                | 10.4      | 28.0               | 9.1                | 59.7              | 49.7              | 31.7           | 40.6           |
| 2   | 0.428           | 21.7                | -0.4                | 10.4      | 32.1               | 10.0               | 57.3              | 47.3              | 25.2           | 37.3           |
| 3   | 0.532           | 20.2                | -1.4                | 10.4      | 30.6               | 9.0                | 56.0              | 46.0              | 25.4           | 37.0           |
| 4   | 0.628           | 15.4                | -2.3                | 10.4      | 25.8               | 8.1                | 56.0              | 46.0              | 30.2           | 37.9           |
| 5   | 2.181           | 14.8                | -3.0                | 10.5      | 25.3               | 7.5                | 56.0              | 46.0              | 30.7           | 38.5           |
| 6   | 5.609           | 18.4                | -3.2                | 10.7      | 29.1               | 7.5                | 60.0              | 50.0              | 30.9           | 42.5           |

## 10. Duty Cycle

### 10.1 Measurement procedure

#### [KDB 789033 D02, Section B, Zero-Span Spectrum Analyzer Method]

The duty cycle is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;

- RBW=8MHz, VBW=8MHz, Span=0Hz, Sweep=Auto, Detector=Peak, Trace mode=Single

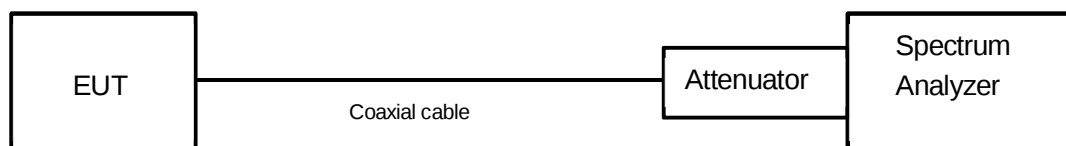
The EUT was set to operate with following conditions.

- 5.2GHz Band, 5.3GHz Band, 5.6GHz Band

The test mode of EUT is as follows.

- Tx mode

- Test configuration



### 10.2 Limit

None

### 10.3 Measurement result

Date : October 17, 2017  
Temperature : 22.3 [°C]  
Humidity : 42.4 [%]  
Test place : Shielded room No.4

Test engineer : Chiaki Kanno

| Mode    | Channel | Frequency (MHz) | Duty Cycle  |                 |       |       | DCF (dB)<br>10log(1/x) | DCF (dB)<br>20log(1/x) |
|---------|---------|-----------------|-------------|-----------------|-------|-------|------------------------|------------------------|
|         |         |                 | On Time(ms) | On+Off Time(ms) | X     | 1/T   |                        |                        |
| 802.11a | 36      | 5180            | 1.364       | 1.372           | 0.994 | 733.1 | 0.025                  | 0.051                  |
|         | 40      | 5200            |             |                 |       |       |                        |                        |
|         | 48      | 5240            |             |                 |       |       |                        |                        |
|         | 52      | 5260            | 1.364       | 1.372           | 0.994 | 733.1 | 0.025                  | 0.051                  |
|         | 56      | 5280            |             |                 |       |       |                        |                        |
|         | 64      | 5320            |             |                 |       |       |                        |                        |
|         | 100     | 5500            | 1.364       | 1.372           | 0.994 | 733.1 | 0.025                  | 0.051                  |
|         | 116     | 5580            |             |                 |       |       |                        |                        |
|         | 140     | 5700            |             |                 |       |       |                        |                        |

Note: X = On time / (On + Off time)

| Mode               | Channel | Frequency (MHz) | Duty Cycle  |                 |       |       | DCF (dB)<br>10log(1/x) | DCF (dB)<br>20log(1/x) |
|--------------------|---------|-----------------|-------------|-----------------|-------|-------|------------------------|------------------------|
|                    |         |                 | On Time(ms) | On+Off Time(ms) | X     | 1/T   |                        |                        |
| 802.11n<br>(20MHz) | 36      | 5180            | 1.276       | 1.284           | 0.994 | 783.7 | 0.027                  | 0.054                  |
|                    | 40      | 5200            |             |                 |       |       |                        |                        |
|                    | 48      | 5240            |             |                 |       |       |                        |                        |
|                    | 52      | 5260            | 1.274       | 1.284           | 0.992 | 784.9 | 0.034                  | 0.068                  |
|                    | 56      | 5280            |             |                 |       |       |                        |                        |
|                    | 64      | 5320            |             |                 |       |       |                        |                        |
|                    | 100     | 5500            | 1.276       | 1.284           | 0.992 | 784.9 | 0.034                  | 0.068                  |
|                    | 116     | 5580            |             |                 |       |       |                        |                        |
|                    | 140     | 5700            |             |                 |       |       |                        |                        |

Note: X = On time / (On + Off time)

| Mode               | Channel | Frequency (MHz) | Duty Cycle  |                 |       |        | DCF (dB)<br>10log(1/x) | DCF (dB)<br>20log(1/x) |
|--------------------|---------|-----------------|-------------|-----------------|-------|--------|------------------------|------------------------|
|                    |         |                 | On Time(ms) | On+Off Time(ms) | X     | 1/T    |                        |                        |
| 802.11n<br>(40MHz) | 38      | 5190            | 0.636       | 0.645           | 0.986 | 1572.3 | 0.061                  | 0.122                  |
|                    | 46      | 5230            |             |                 |       |        |                        |                        |
|                    | 54      | 5270            | 0.636       | 0.646           | 0.985 | 1572.3 | 0.068                  | 0.136                  |
|                    | 62      | 5310            |             |                 |       |        |                        |                        |
|                    | 102     | 5510            | 0.636       | 0.645           | 0.986 | 1572.3 | 0.061                  | 0.122                  |
|                    | 110     | 5550            |             |                 |       |        |                        |                        |
|                    | 134     | 5670            |             |                 |       |        |                        |                        |

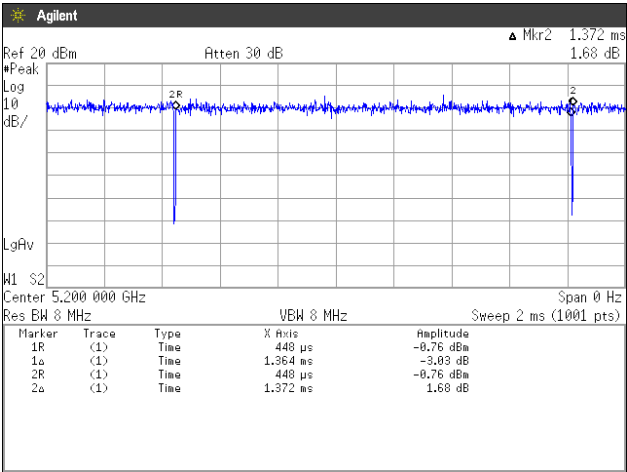
Note: X = On time / (On + Off time)

| Mode                | Channel | Frequency (MHz) | Duty Cycle  |                 |       |        | DCF (dB)<br>10log(1/x) | DCF (dB)<br>20log(1/x) |
|---------------------|---------|-----------------|-------------|-----------------|-------|--------|------------------------|------------------------|
|                     |         |                 | On Time(ms) | On+Off Time(ms) | X     | 1/T    |                        |                        |
| 802.11ac<br>(80MHz) | 42      | 5210            | 0.2475      | 0.2579          | 0.960 | 4040.4 | 0.179                  | 0.358                  |
|                     | 58      | 5290            | 0.2475      | 0.2579          | 0.960 | 4040.4 | 0.179                  | 0.358                  |
|                     | 106     | 5530            | 0.2475      | 0.2579          | 0.960 | 4040.4 | 0.179                  | 0.358                  |
|                     | 122     | 5610            | 0.2480      | 0.2579          | 0.962 | 4032.3 | 0.170                  | 0.340                  |

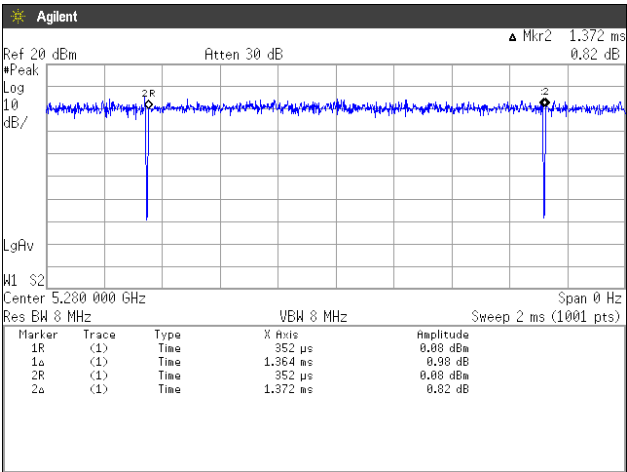
Note: X = On time / (On + Off time)

10.4 Trace data  
[IEEE802.11a]

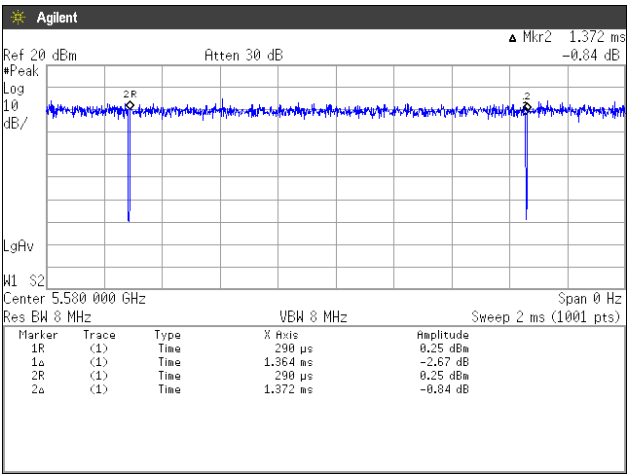
Channel: 40



Channel: 56

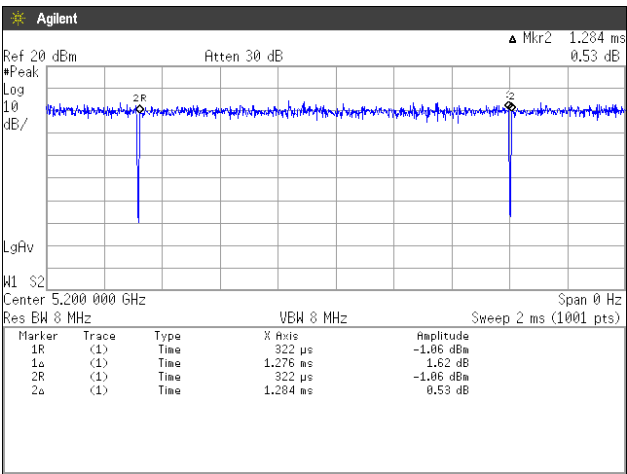


Channel: 116

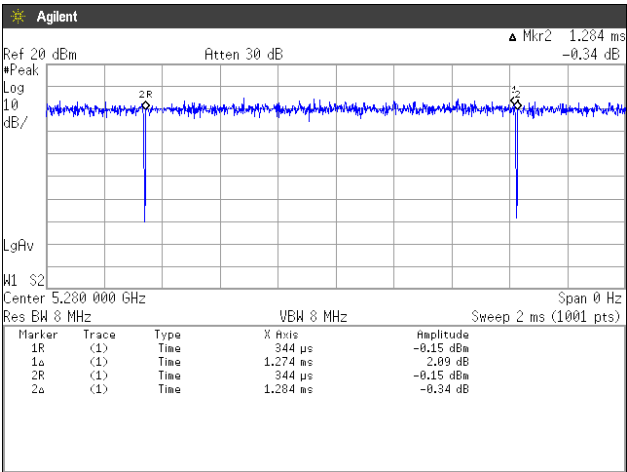


[IEEE802.11n (HT20)]

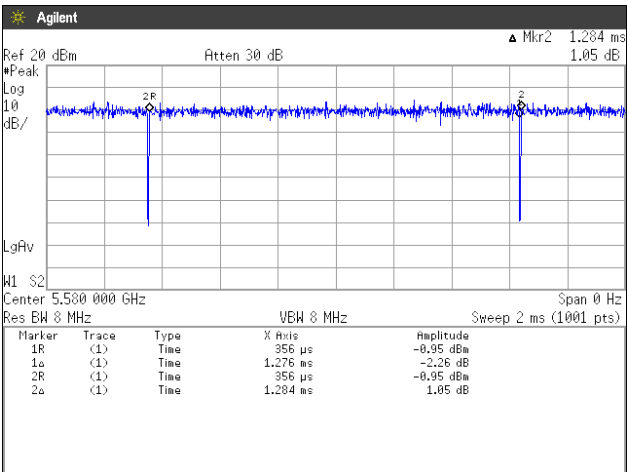
Channel: 40



Channel: 56

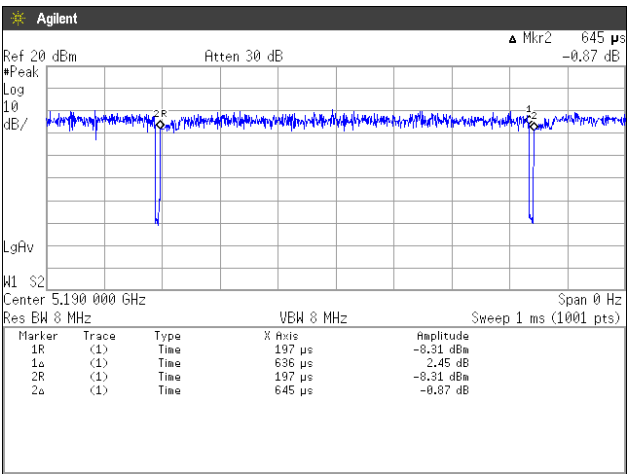


Channel: 116

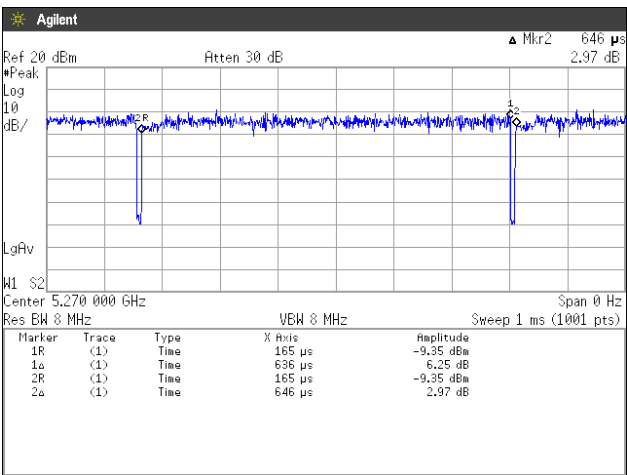


[IEEE802.11n (HT40)]

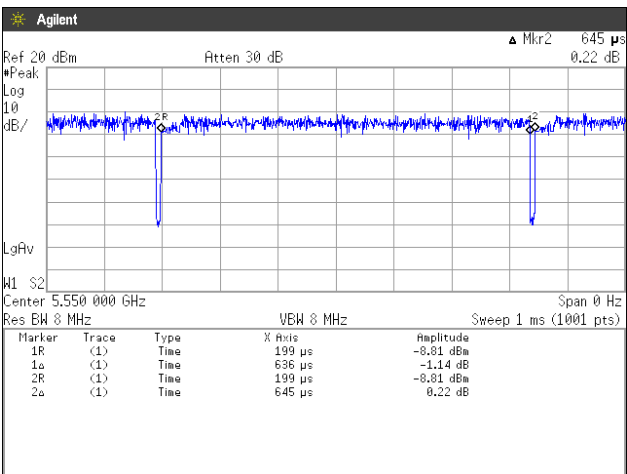
Channel: 38



Channel: 54

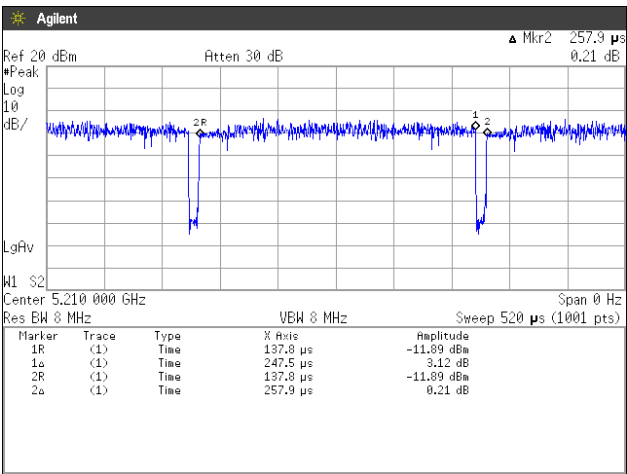


Channel: 110

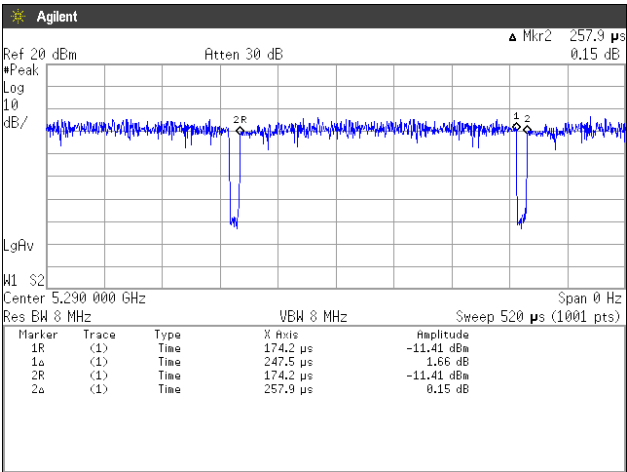


[IEEE802.11ac (HT80)]

Channel: 42

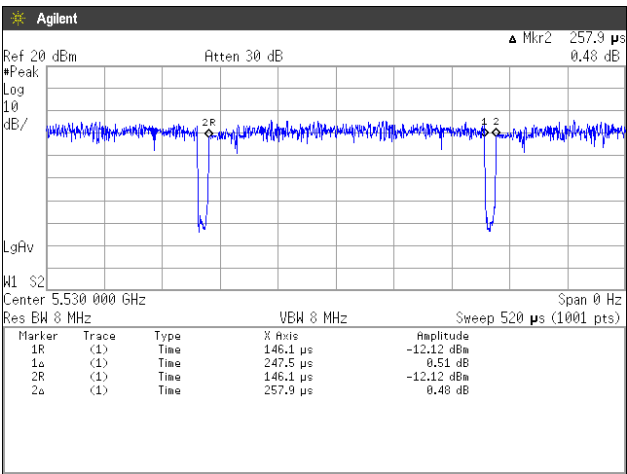


Channel: 58

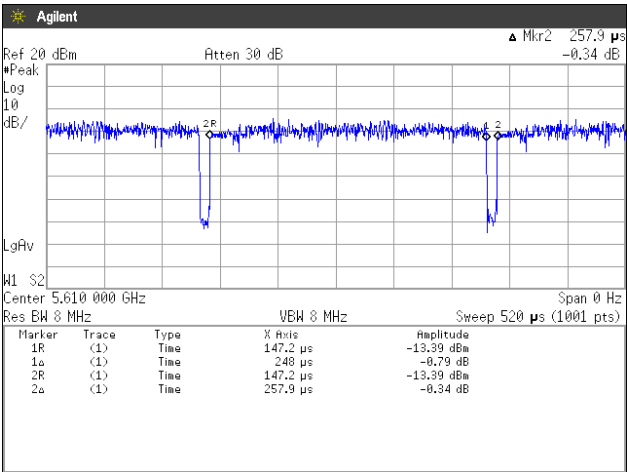


[IEEE802.11ac (HT80)]

Channel: 106



Channel: 122





Zacta

## ***11. Antenna requirement***

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According to FCC section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The antenna is a special antenna mounted inside of the EUT. Therefore, the EUT complies with the antenna requirement of FCC section 15.203.

## 12. Uncertainty of measurement

Expanded uncertainties stated are calculated with a coverage Factor  $k=2$ .

Please note that these results are not taken into account when determining compliance or non-compliance with test result.

| Test item                                | Measurement uncertainty |
|------------------------------------------|-------------------------|
| Conducted emission, AMN (9kHz – 150kHz)  | $\pm 3.8\text{dB}$      |
| Conducted emission, AMN (150kHz – 30MHz) | $\pm 3.3\text{dB}$      |
| Radiated emission (9kHz – 30MHz)         | $\pm 3.0\text{dB}$      |
| Radiated emission (30MHz – 1000MHz)      | $\pm 4.7\text{dB}$      |
| Radiated emission (1GHz – 6GHz)          | $\pm 4.9\text{dB}$      |
| Radiated emission (6GHz – 26GHz)         | $\pm 5.2\text{dB}$      |

### 13. Laboratory Information

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#### 1. Location

Name: Yonezawa Testing Center  
 Address: 5-4149-7, Hachimanpara, Yonezawa-shi, Yamagata, 992-1128 Japan  
 Phone: +81-238-28-2881  
 Fax: +81-238-28-2888

#### 2. Accreditation and Registration

- 1) VLAC  
Accreditation No.: VLAC-013
- 2) NVLAP  
LAB CODE: 200306-0
- 3) BSMI  
Laboratory Code: SL2-IN-E-6018, SL2-A1-E-6018

#### 4) Industry Canada

| Site number | Facility                       | Expiration date |
|-------------|--------------------------------|-----------------|
| 4224A-4     | 3m Semi-anechoic chamber       | 2017-12-03      |
| 4224A-5     | 10m Semi-anechoic chamber No.1 | 2017-12-03      |
| 4224A-6     | 10m Semi-anechoic chamber No.2 | 2019-12-14      |

#### 5) VCCI Council

| Registration number | Expiration date |
|---------------------|-----------------|
| A-0166              | 2019-07-03      |

## Appendix A. Test equipment

### Antenna port conducted test

| Equipment                        | Company              | Model No. | Serial No. | Cal. Due      | Cal. Date     |
|----------------------------------|----------------------|-----------|------------|---------------|---------------|
| Spectrum analyzer                | Agilent Technologies | E4440A    | US44302655 | Jun. 30, 2018 | Jun. 28, 2017 |
| Attenuator                       | Weinschel            | 56-10     | J4993      | Nov. 30, 2017 | Nov. 1, 2016  |
| Temperature and humidity chamber | ESPEC                | PL1KP     | 14007261   | Jan. 31, 2018 | Jan. 20, 2017 |

### Radiated emission

| Equipment                   | Company              | Model No.         | Serial No.      | Cal. Due      | Cal. Date     |
|-----------------------------|----------------------|-------------------|-----------------|---------------|---------------|
| EMI Receiver                | ROHDE&SCHWARZ        | ESCI              | 100765          | Sep. 30, 2018 | Sep. 13, 2017 |
| Spectrum analyzer           | Agilent Technologies | E4447A            | MY46180188      | Mar. 31, 2018 | Mar. 15, 2017 |
| Preamplifier                | ANRITSU              | MH648A            | M96057          | Feb. 28, 2018 | Feb. 1, 2017  |
| Loop antenna                | ROHDE&SCHWARZ        | HFH2-Z2           | 100515          | Feb. 28, 2018 | Feb. 17, 2017 |
| Attenuator                  | TDC                  | TAT-43B-06        | N/A(S209)       | May 31, 2018  | May 23, 2017  |
| Biconical antenna           | Schwarzbeck          | VHA9103/BBA9106   | 2155            | Jul. 31, 2018 | Jul. 18, 2017 |
| Log periodic antenna        | Schwarzbeck          | UHALP9108A        | 0560            | Jul. 31, 2018 | Jul. 18, 2017 |
| Attenuator                  | TME                  | CFA-01NPJ-6       | N/A(S275)       | Feb. 28, 2018 | Feb. 3, 2017  |
| Attenuator                  | TME                  | CFA-01NPJ-3       | N/A(S272)       | Feb. 28, 2018 | Feb. 2, 2017  |
| Preamplifier                | TSJ                  | MLA-100M18-B02-40 | 1929118         | Feb. 28, 2018 | Feb. 3, 2017  |
| Attenuator                  | AEROFLEX             | 26A-10            | 081217-08       | May 31, 2018  | May 24, 2017  |
| Double ridged guide antenna | ETS LINDGREN         | 3117              | 00052315        | Feb. 28, 2018 | Feb. 23, 2017 |
| Attenuator                  | Agilent Technologies | 8491B             | MY39268633      | Feb. 28, 2018 | Feb. 2, 2017  |
| Broad-Band Horn Antenna     | Schwarzbeck          | BBHA9170          | BBHA9170189     | Jun. 30, 2018 | Jun. 7, 2017  |
| Double ridged guide antenna | A.H.Systems Inc.     | SAS-574           | 469             | Aug. 31, 2018 | Aug. 8, 2017  |
| Preamplifier                | TSJ                  | MLA-1840-B03-35   | 1240332         | Aug. 31, 2018 | Aug. 8, 2017  |
| Notch filter                | Micro-Tronics        | BRM50716          | 006             | Jul. 31, 2018 | Jul. 20, 2017 |
| Microwave cable             | HUBER+SUHNER         | SUCOFLEX104/9m    | MY30037/4       | Feb. 28, 2018 | Feb. 3, 2017  |
|                             |                      | SUCOFLEX104/1m    | my24610/4       | Feb. 28, 2018 | Feb. 3, 2017  |
|                             |                      | SUCOFLEX104/8m    | SN MY30031/4    | Feb. 28, 2018 | Feb. 2, 2017  |
|                             |                      | SUCOFLEX104/1.5m  | MY32976/4       | Dec. 31, 2017 | Dec. 2, 2016  |
|                             |                      | SUCOFLEX104/1.5m  | MY19309/4       | Feb. 28, 2018 | Feb. 3, 2017  |
|                             |                      | SUCOFLEX104/7m    | 41625/6         | Feb. 28, 2018 | Feb. 3, 2017  |
| PC                          | DELL                 | DIMENSION E521    | 75465BX         | N/A           | N/A           |
| Software                    | TOYO Corporation     | EP5/RE-AJ         | 0611193/V5.6.0  | N/A           | N/A           |
| Absorber                    | RIKEN                | PFP30             | N/A             | N/A           | N/A           |
| 3m Semi an-echoic Chamber   | TOKIN                | N/A               | N/A(9002-NSA)   | May 31, 2018  | May 30, 2017  |
| 3m Semi an-echoic Chamber   | TOKIN                | N/A               | N/A(9002-SVSWR) | May 31, 2018  | May 31, 2017  |

### Conducted emission at mains port

| Equipment                                    | Company                         | Model No.   | Serial No.      | Cal. Due      | Cal. Date     |
|----------------------------------------------|---------------------------------|-------------|-----------------|---------------|---------------|
| EMI Receiver                                 | ROHDE&SCHWARZ                   | ESCI        | 100765          | Sep. 30, 2018 | Sep. 13, 2017 |
| Attenuator                                   | HUBER+SUHNER                    | 6810.01.A   | N/A (S411)      | Feb. 28, 2018 | Feb. 2, 2017  |
| Line impedance stabilization network for EUT | Kyoritsu Electrical Works, Ltd. | KNW-407F2   | 12-17-110-2     | Apr. 30, 2018 | Apr. 25, 2017 |
| Coaxial cable                                | FUJIKURA                        | 5D-2W/4m    | N/A (S350)      | Feb. 28, 2018 | Feb. 2, 2017  |
| Coaxial cable                                | FUJIKURA                        | 5D-2W/1m    | N/A (S193)      | Feb. 28, 2018 | Feb. 3, 2017  |
| Coaxial cable                                | HUBER+SUHNER                    | RG214/U/10m | N/A (S194)      | Feb. 28, 2018 | Feb. 3, 2017  |
| PC                                           | DELL                            | DIMENSION   | 75465BX         | N/A           | N/A           |
| Software                                     | TOYO Corporation                | EP5/CE-AJ   | 0611193/V5.4.11 | N/A           | N/A           |

\*: The calibrations of the above equipment are traceable to NIST or equivalent standards of the reference organizations.