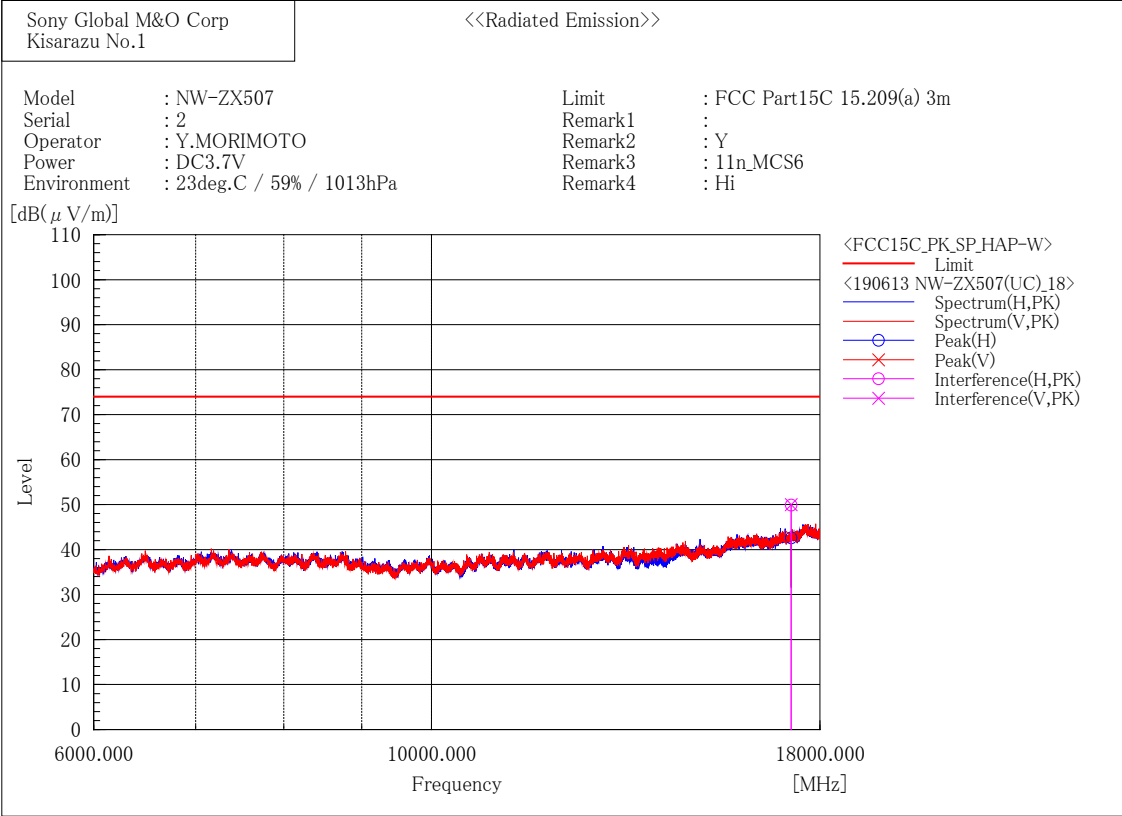


[ 802.11n (HT20)/ 2462 MHz ]



Final Result

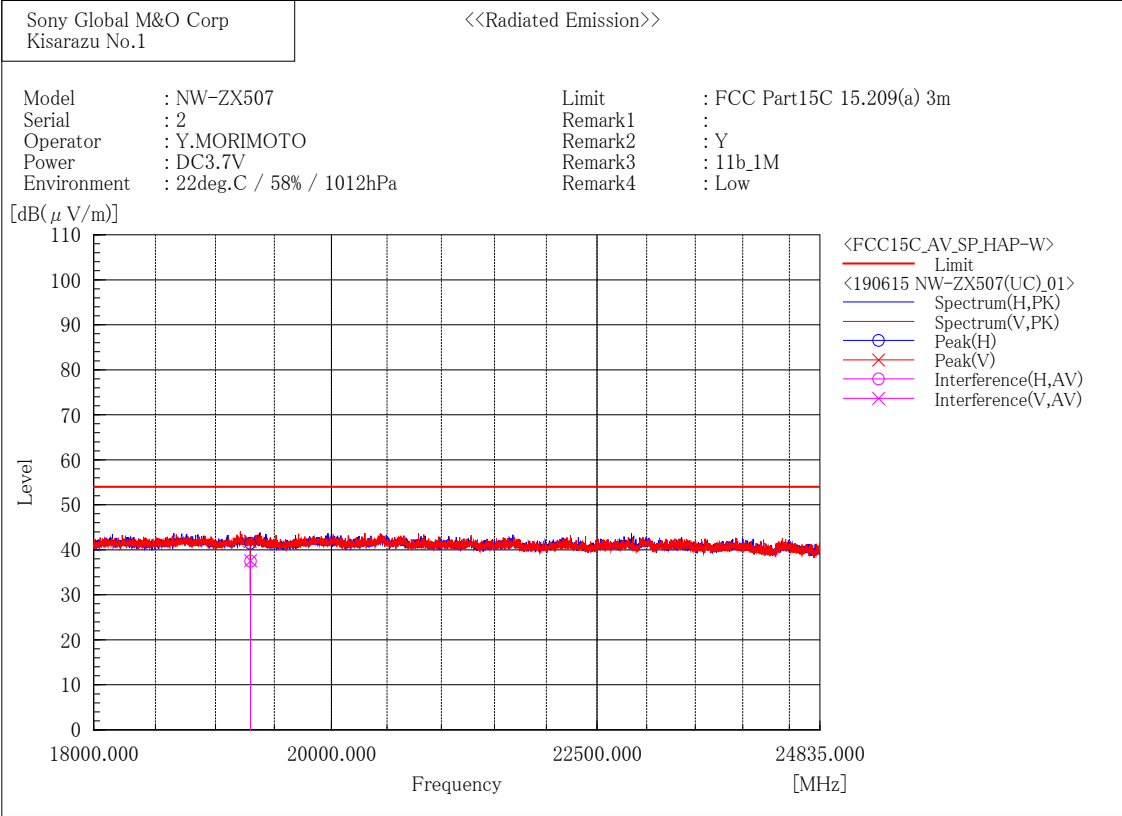
--- Horizontal Polarization (PK)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c. f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|-------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 17234.000          | 45.2                | 4.7               | 49.9                 | 74.0                | 24.1           | 226.5          | 137.4        |

--- Vertical Polarization (PK)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c. f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|-------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 17234.000          | 45.3                | 4.7               | 50.0                 | 74.0                | 24.0           | 152.6          | 18.1         |

18 GHz to 26.5 GHz  
[ 802.11b/ 2412 MHz ]



Final Result

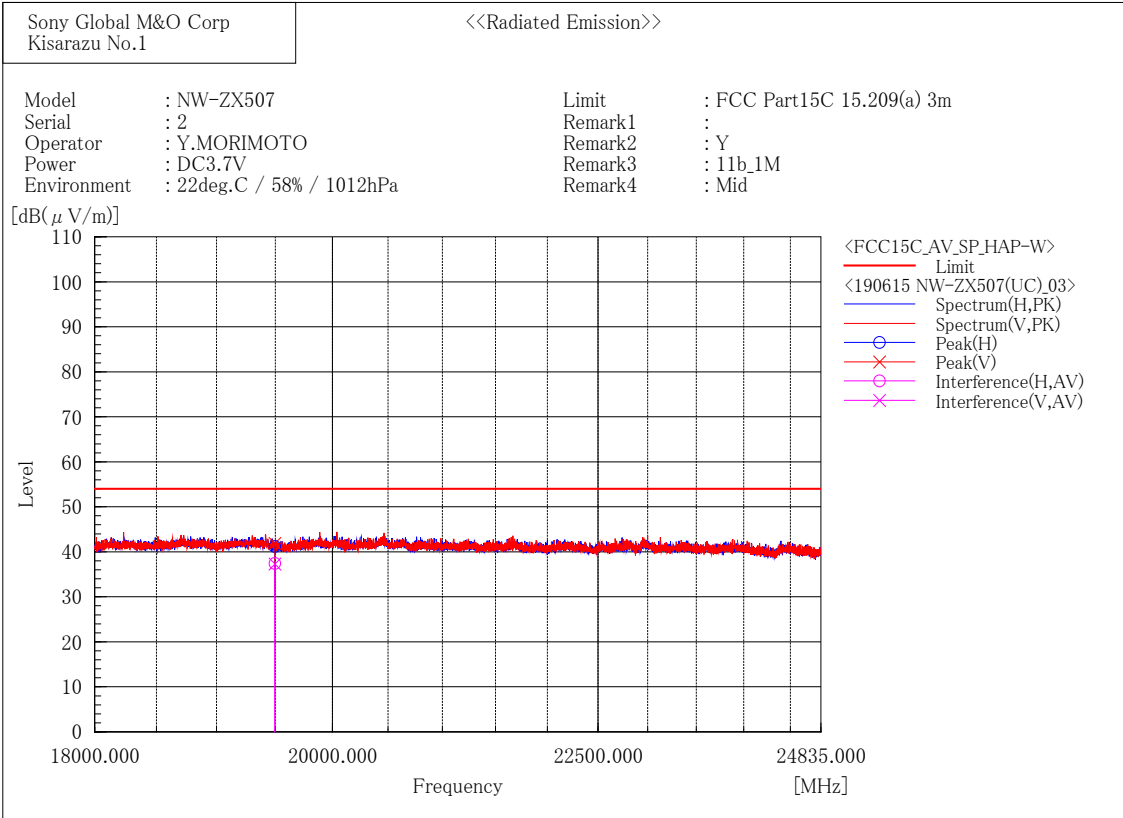
--- Horizontal Polarization (AV)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19296.000          | 46.0                | -8.5             | 37.5                 | 54.0                | 16.5           | 138.4          | 242.2        |

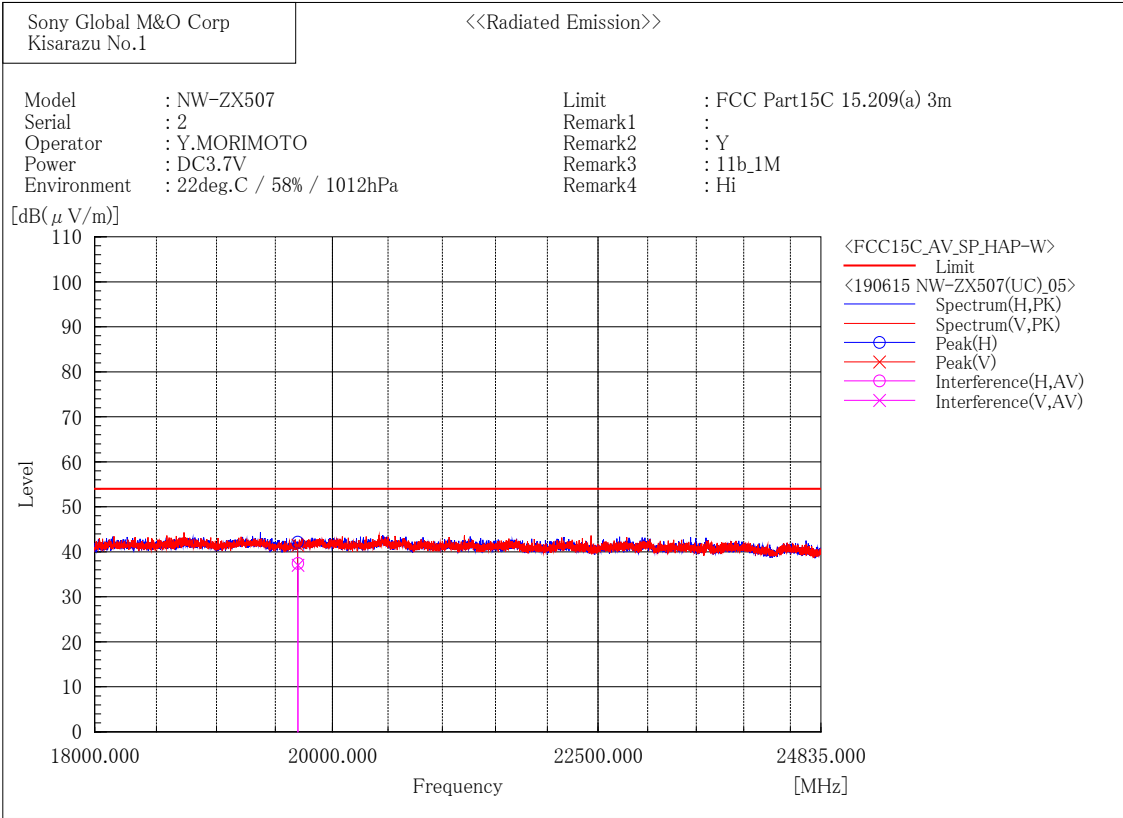
--- Vertical Polarization (AV)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19296.000          | 46.1                | -8.5             | 37.6                 | 54.0                | 16.4           | 320.0          | 240.1        |

[ 802.11b/ 2437 MHz ]



[ 802.11b/ 2462 MHz ]



Final Result

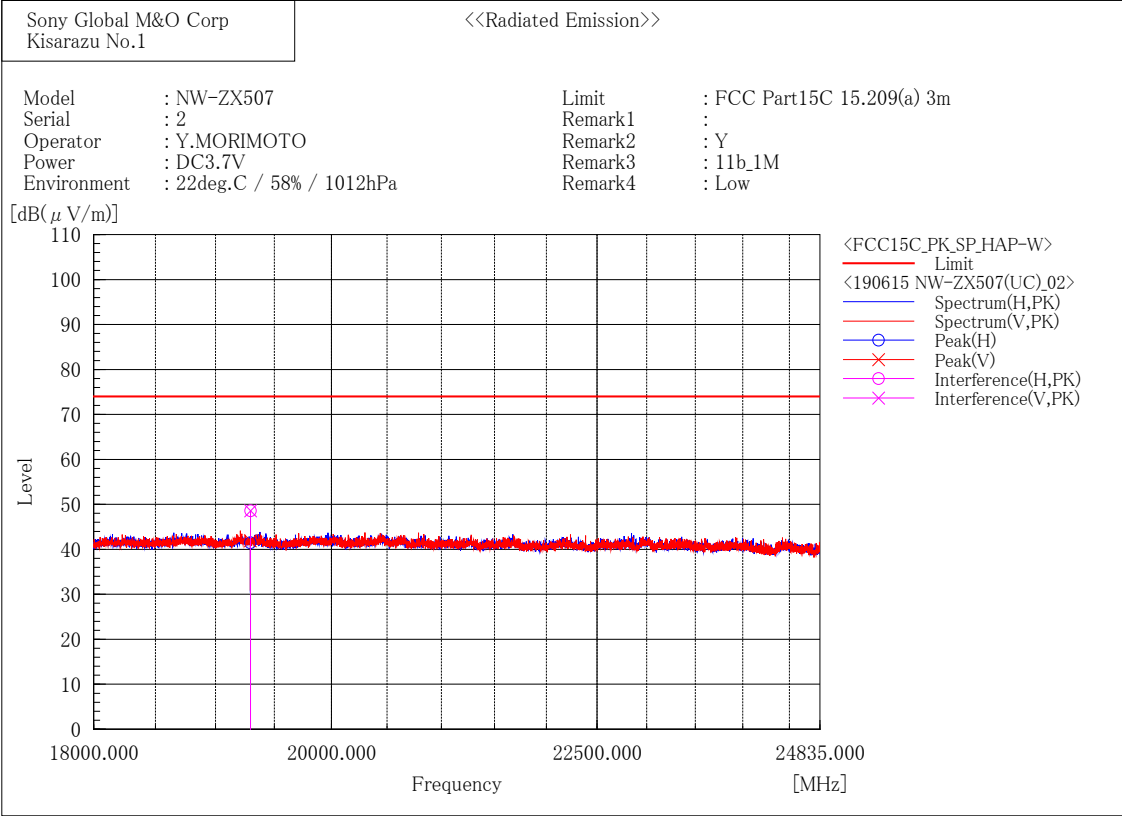
--- Horizontal Polarization (AV)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19696.000          | 45.9                | -8.5             | 37.4                 | 54.0                | 16.6           | 376.4          | 327.4        |

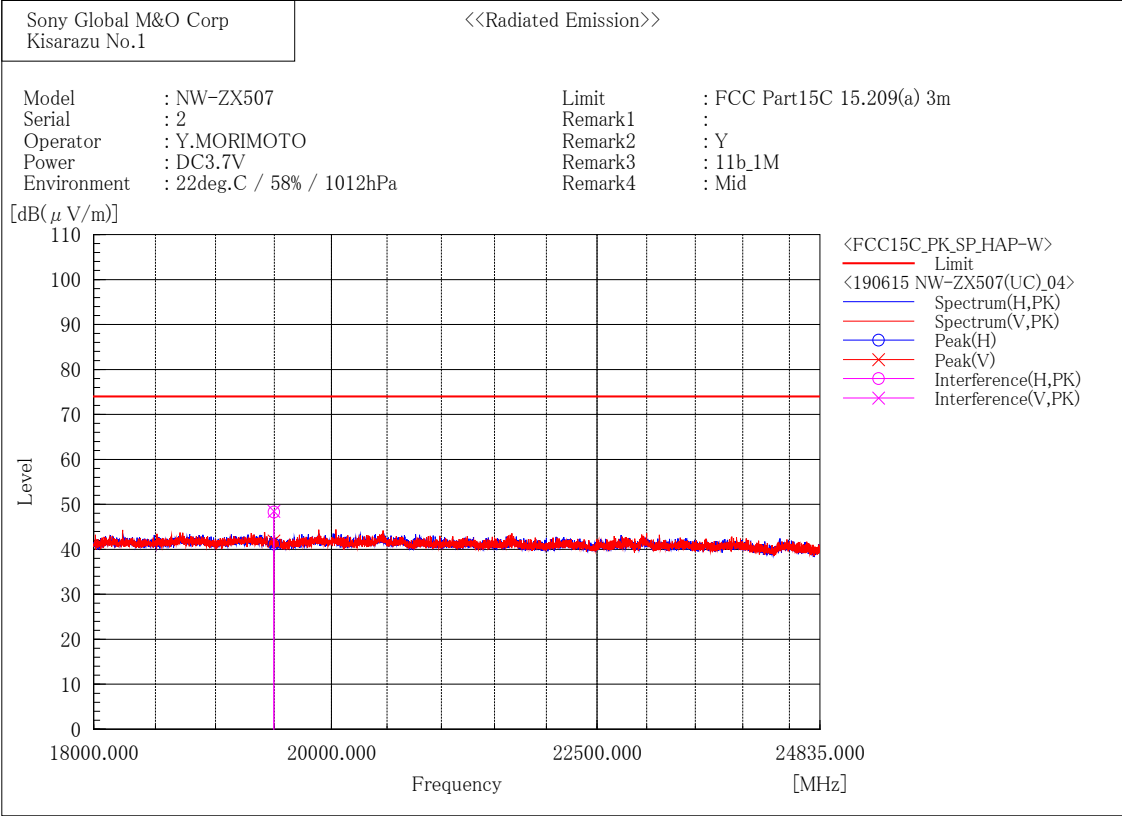
--- Vertical Polarization (AV)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19696.000          | 45.5                | -8.5             | 37.0                 | 54.0                | 17.0           | 100.0          | 117.4        |

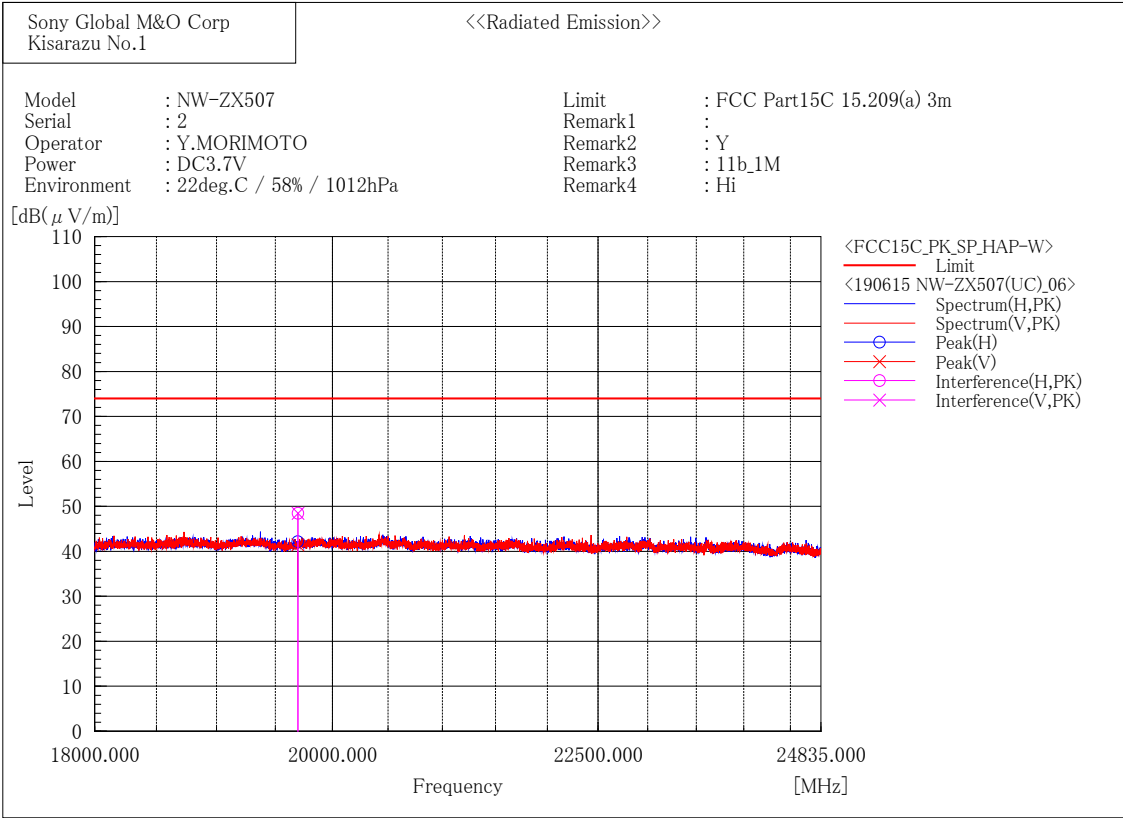
[ 802.11b/ 2412 MHz ]



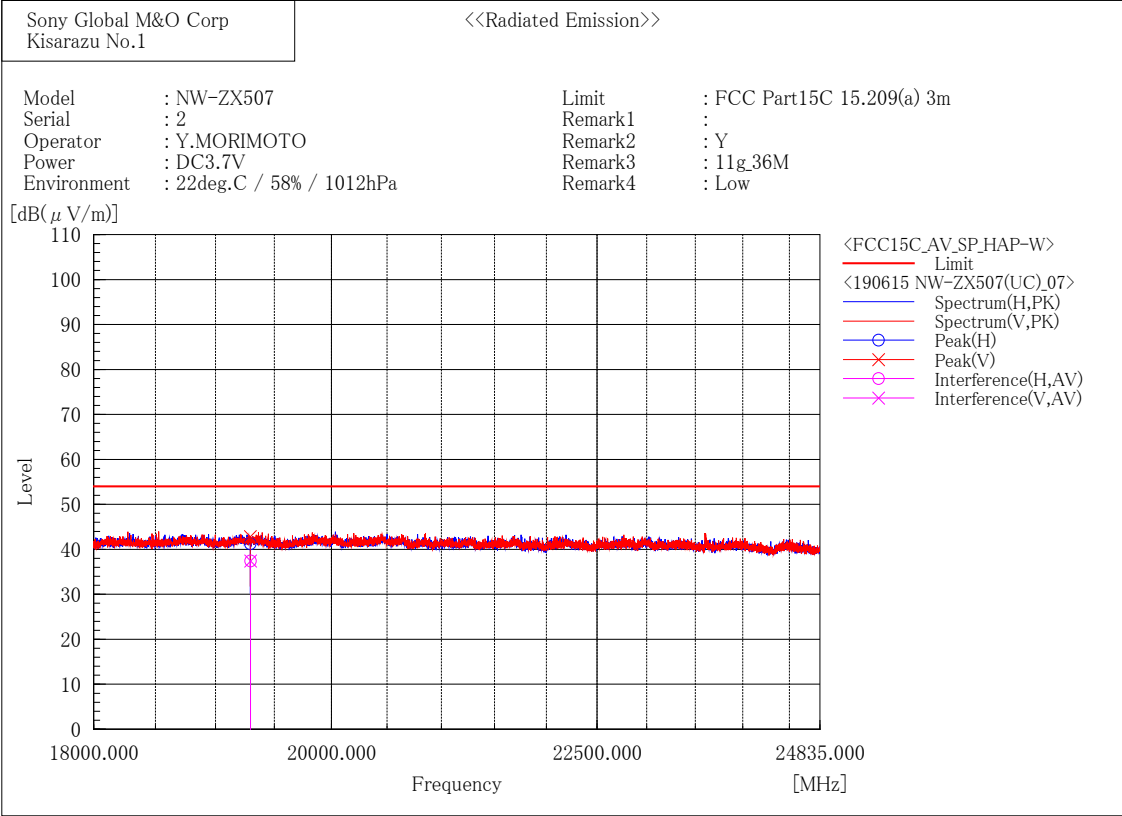
[ 802.11b/ 2437 MHz ]



[ 802.11b/ 2462 MHz ]



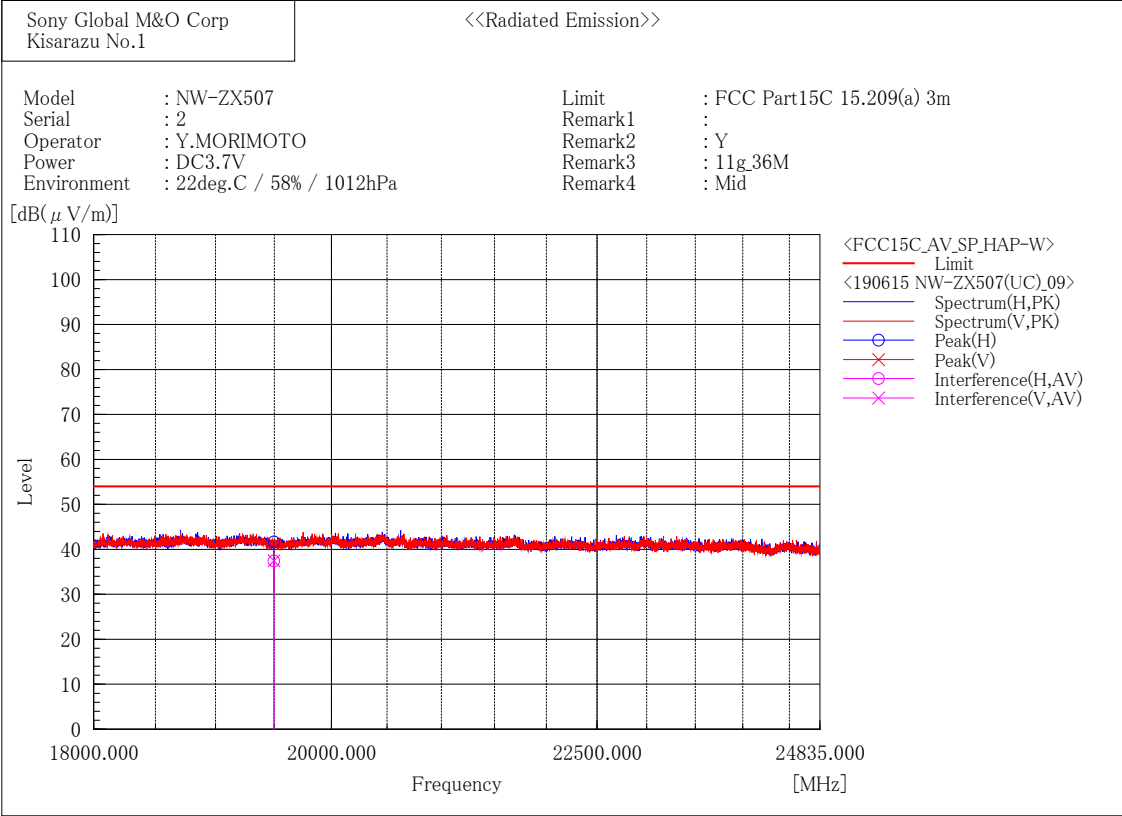
[ 802.11g/ 2412 MHz ]



Final Result

|                                     |           |          |           |            |            |        |        |       |
|-------------------------------------|-----------|----------|-----------|------------|------------|--------|--------|-------|
| --- Horizontal Polarization (AV)--- |           |          |           |            |            |        |        |       |
| No.                                 | Frequency | Reading  | c. f      | Result     | Limit      | Margin | Height | Angle |
|                                     | [MHz]     | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB]   | [cm]   | [°]   |
| 1                                   | 19296.000 | 45.9     | -8.5      | 37.4       | 54.0       | 16.6   | 228.9  | 48.1  |
| --- Vertical Polarization (AV)---   |           |          |           |            |            |        |        |       |
| No.                                 | Frequency | Reading  | c. f      | Result     | Limit      | Margin | Height | Angle |
|                                     | [MHz]     | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB]   | [cm]   | [°]   |
| 1                                   | 19296.000 | 45.9     | -8.5      | 37.4       | 54.0       | 16.6   | 126.1  | 100.1 |

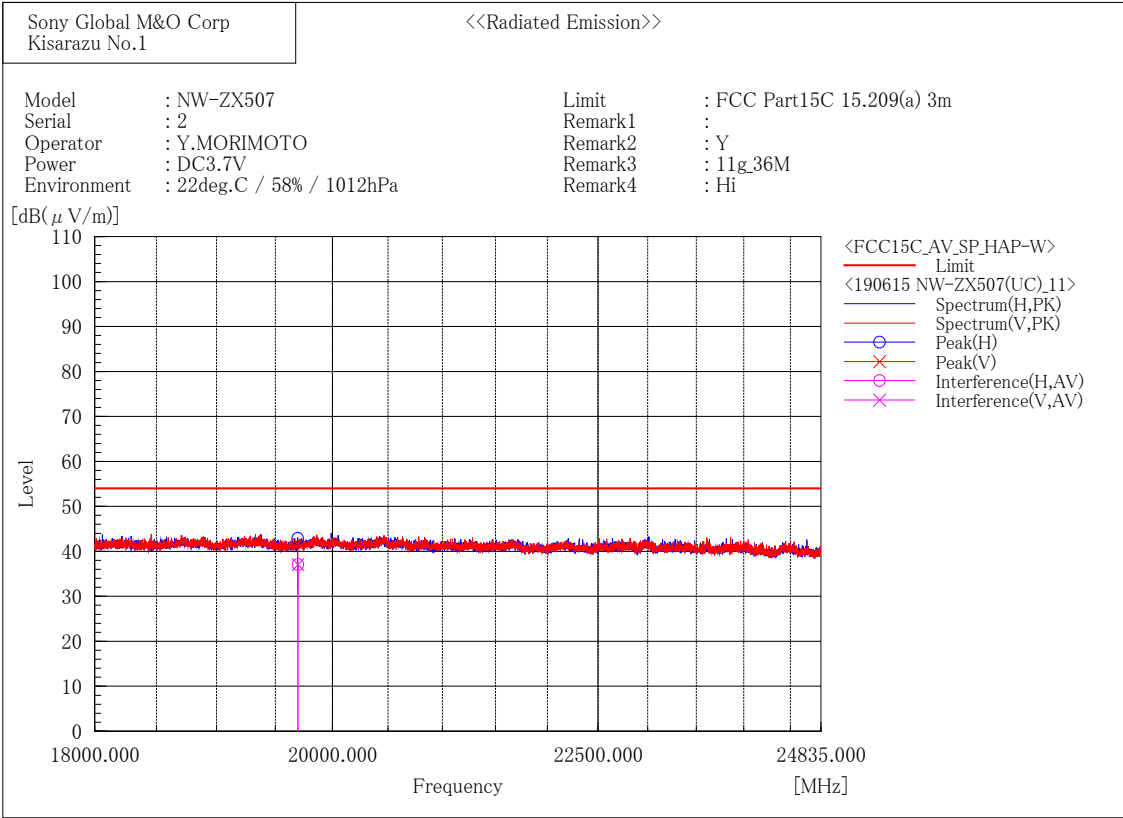
[ 802.11g/ 2437 MHz ]



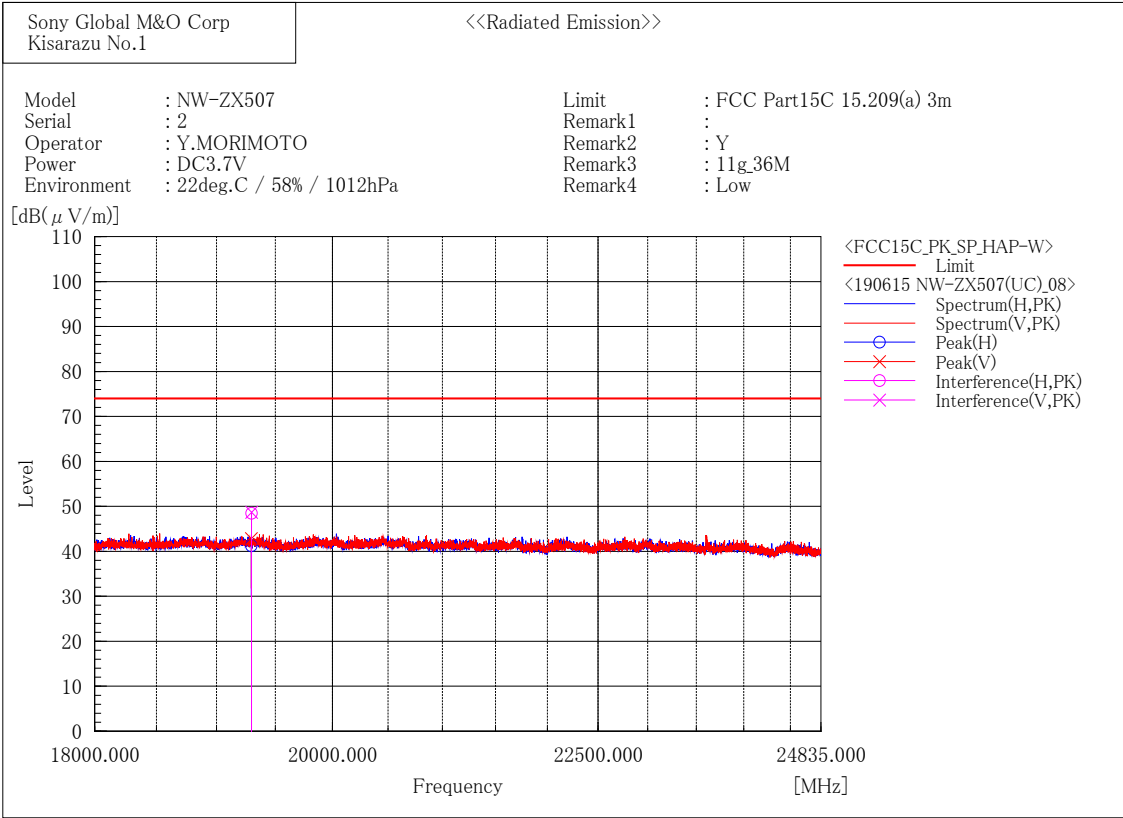
Final Result

|                                     |                 |                  |                |                   |                  |             |             |           |
|-------------------------------------|-----------------|------------------|----------------|-------------------|------------------|-------------|-------------|-----------|
| --- Horizontal Polarization (AV)--- |                 |                  |                |                   |                  |             |             |           |
| No.                                 | Frequency [MHz] | Reading [dB(μV)] | c. f [dB(1/m)] | Result [dB(μV/m)] | Limit [dB(μV/m)] | Margin [dB] | Height [cm] | Angle [°] |
| 1                                   | 19496.000       | 46.0             | -8.6           | 37.4              | 54.0             | 16.6        | 207.3       | 245.2     |
| --- Vertical Polarization (AV)---   |                 |                  |                |                   |                  |             |             |           |
| No.                                 | Frequency [MHz] | Reading [dB(μV)] | c. f [dB(1/m)] | Result [dB(μV/m)] | Limit [dB(μV/m)] | Margin [dB] | Height [cm] | Angle [°] |
| 1                                   | 19496.000       | 46.1             | -8.6           | 37.5              | 54.0             | 16.5        | 197.3       | 343.8     |

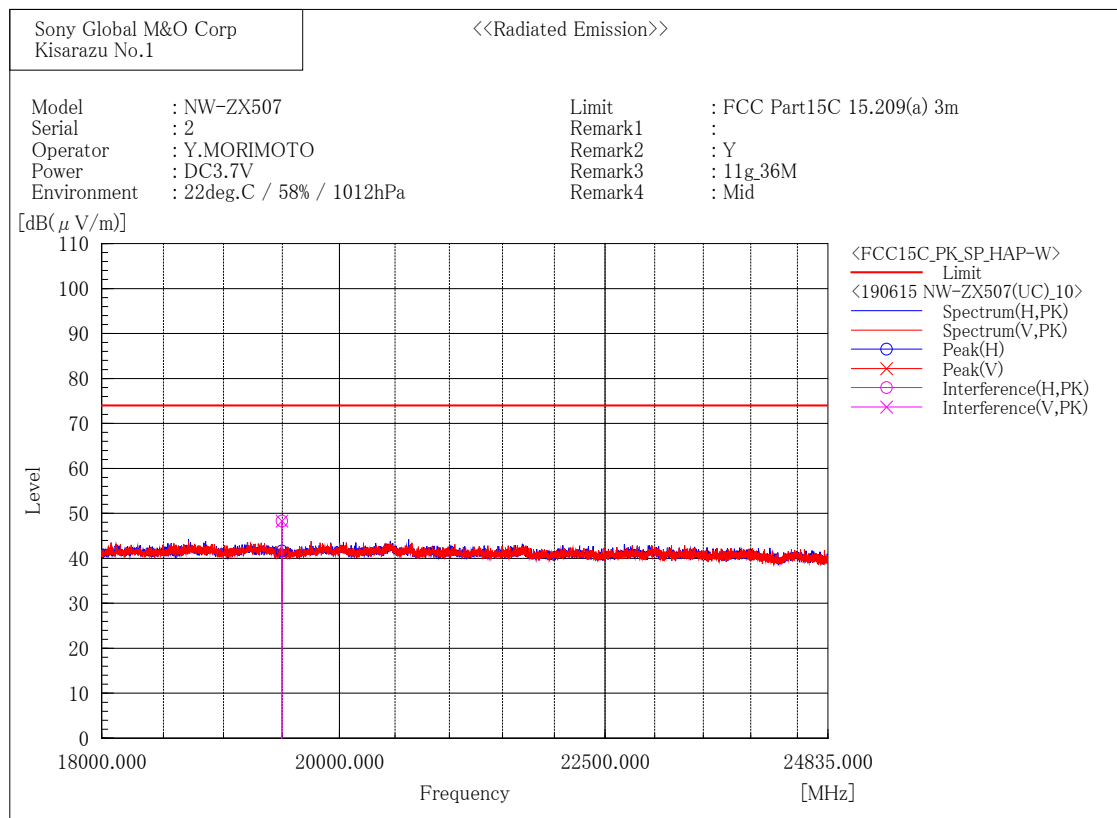
[ 802.11g/ 2462 MHz ]



[ 802.11g/ 2412 MHz ]



[ 802.11g/ 2437 MHz ]



## Final Result

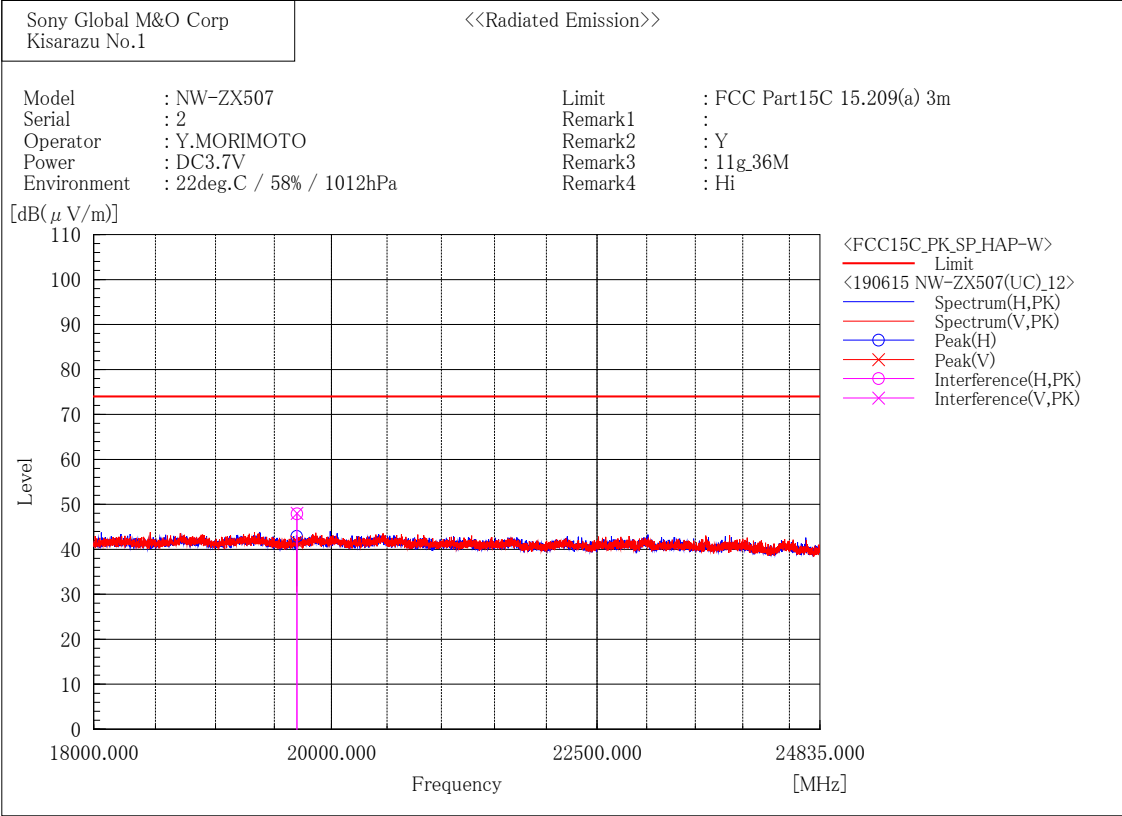
## --- Horizontal Polarization (PK)---

| No. | Frequency [MHz] | Reading [dB( $\mu$ V)] | c. f [dB(1/m)] | Result [dB( $\mu$ V/m)] | Limit [dB( $\mu$ V/m)] | Margin [dB] | Height [cm] | Angle [°] |
|-----|-----------------|------------------------|----------------|-------------------------|------------------------|-------------|-------------|-----------|
| 1   | 19496.000       | 56.9                   | -8.6           | 48.3                    | 74.0                   | 25.7        | 207.3       | 247.3     |

## --- Vertical Polarization (PK)---

| No. | Frequency [MHz] | Reading [dB( $\mu$ V)] | c. f [dB(1/m)] | Result [dB( $\mu$ V/m)] | Limit [dB( $\mu$ V/m)] | Margin [dB] | Height [cm] | Angle [°] |
|-----|-----------------|------------------------|----------------|-------------------------|------------------------|-------------|-------------|-----------|
| 1   | 19496.000       | 56.9                   | -8.6           | 48.3                    | 74.0                   | 25.7        | 197.3       | 343.8     |

[ 802.11g/ 2462 MHz ]



Final Result

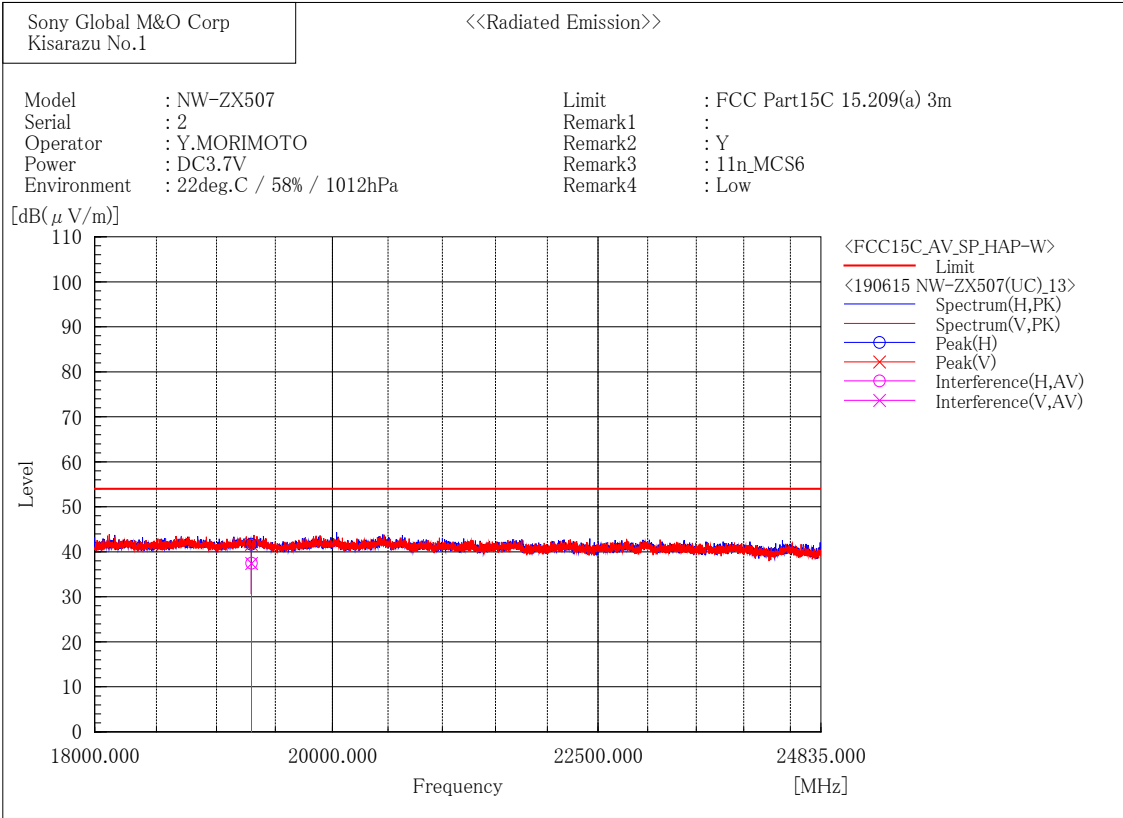
--- Horizontal Polarization (PK)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19696.000          | 56.4                | -8.5             | 47.9                 | 74.0                | 26.1           | 175.0          | 249.0        |

--- Vertical Polarization (PK)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19696.000          | 56.5                | -8.5             | 48.0                 | 74.0                | 26.0           | 202.6          | 332.2        |

[ 802.11n (HT20)/ 2412 MHz ]



Final Result

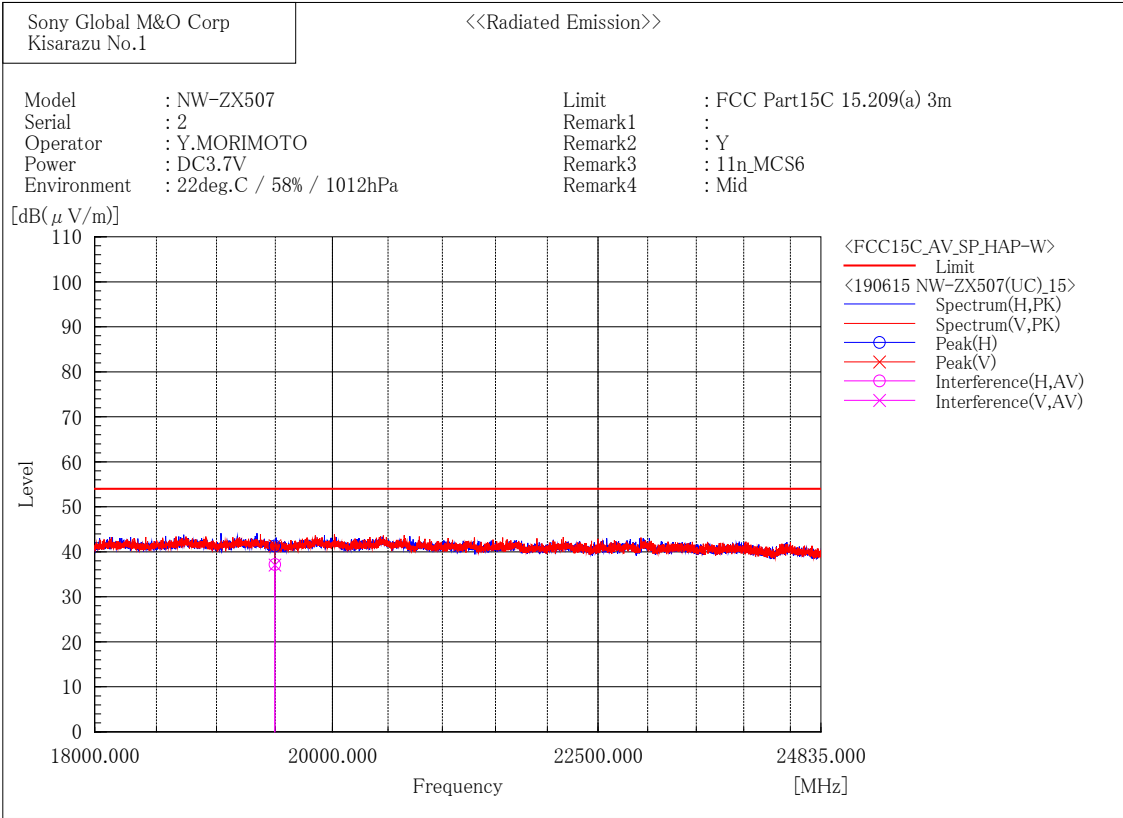
--- Horizontal Polarization (AV)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19296.000          | 46.0                | -8.5             | 37.5                 | 54.0                | 16.5           | 131.9          | 160.8        |

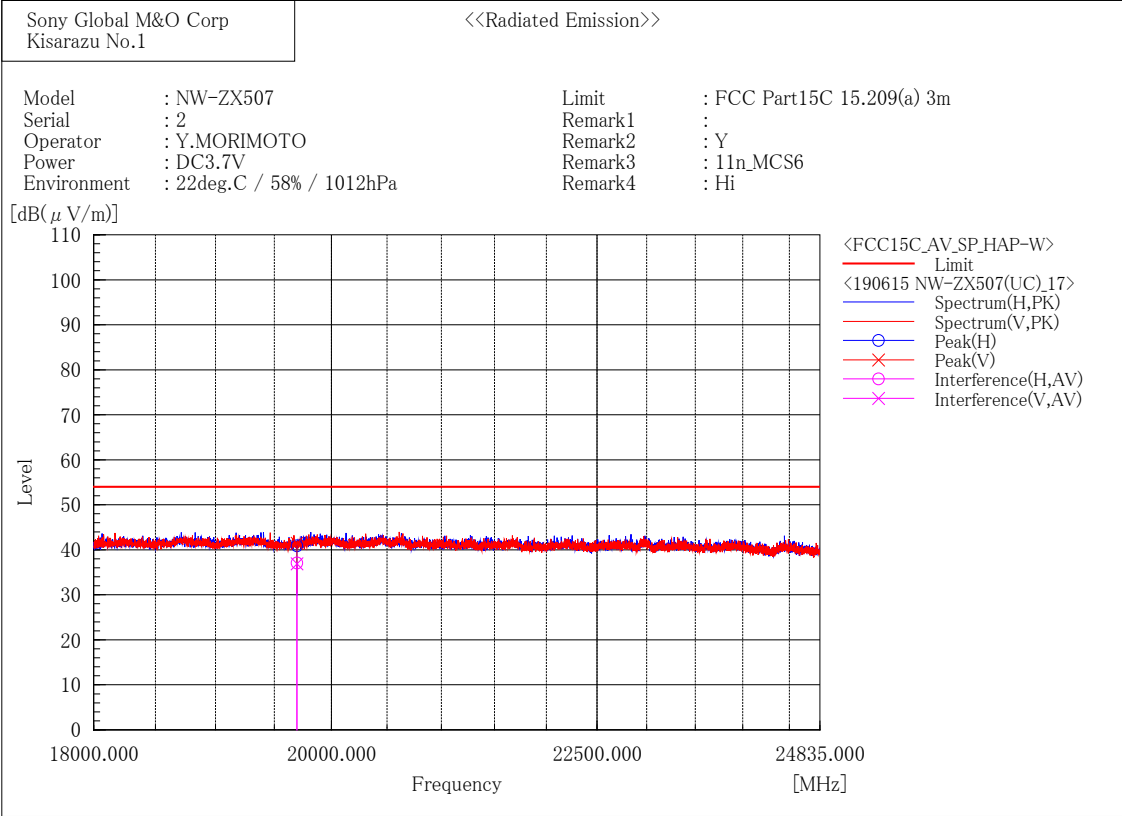
--- Vertical Polarization (AV)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19296.000          | 45.9                | -8.5             | 37.4                 | 54.0                | 16.6           | 136.5          | 139.6        |

[ 802.11n (HT20)/ 2437 MHz ]



[ 802.11n (HT20)/ 2462 MHz ]



Final Result

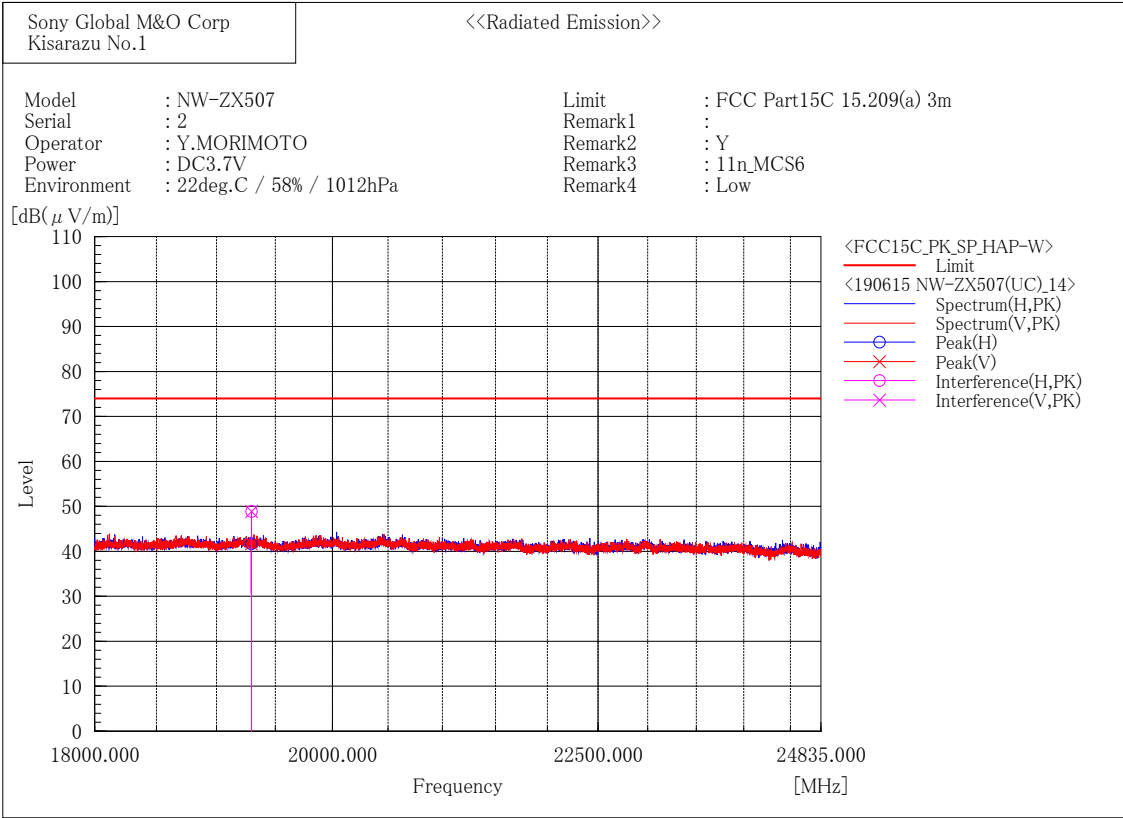
--- Horizontal Polarization (AV)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19696.000          | 45.6                | -8.5             | 37.1                 | 54.0                | 16.9           | 350.1          | 177.5        |

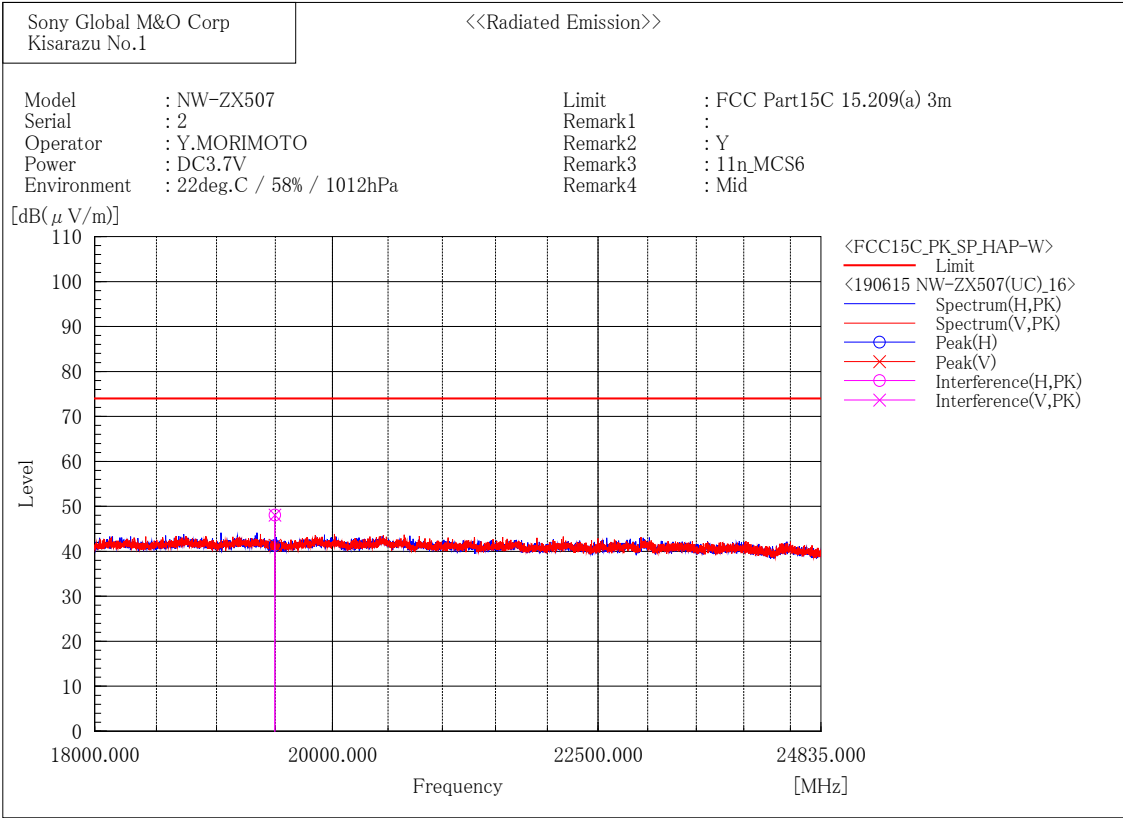
--- Vertical Polarization (AV)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c.f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19696.000          | 45.4                | -8.5             | 36.9                 | 54.0                | 17.1           | 228.9          | 339.2        |

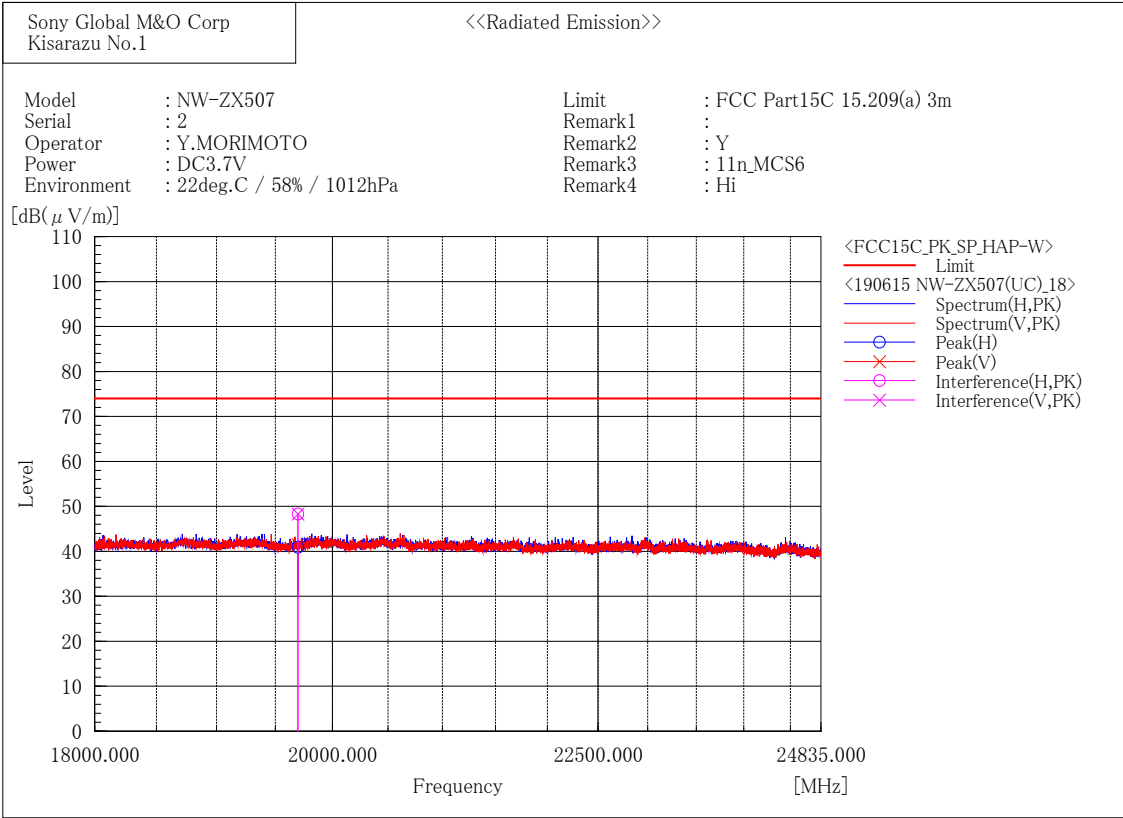
[ 802.11n (HT20)/ 2412 MHz ]



[ 802.11n (HT20)/ 2437 MHz ]



[ 802.11n (HT20)/ 2462 MHz ]



Final Result

--- Horizontal Polarization (PK)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c. f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|-------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19696.000          | 56.8                | -8.5              | 48.3                 | 74.0                | 25.7           | 350.1          | 179.5        |

--- Vertical Polarization (PK)---

| No. | Frequency<br>[MHz] | Reading<br>[dB(μV)] | c. f<br>[dB(1/m)] | Result<br>[dB(μV/m)] | Limit<br>[dB(μV/m)] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[°] |
|-----|--------------------|---------------------|-------------------|----------------------|---------------------|----------------|----------------|--------------|
| 1   | 19696.000          | 56.8                | -8.5              | 48.3                 | 74.0                | 25.7           | 228.9          | 339.2        |

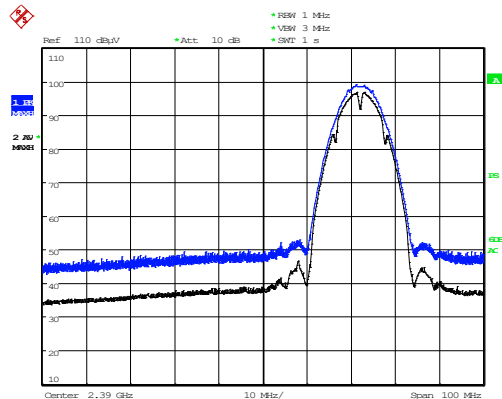
### 2.4 GHz Restricted-Band Edge (Plot data)

These plot data show peak (trace blue) and average (trace black) spectrum for worst case emissions in the restricted-band edges. (Restricted band edges: below 2390 MHz and above 2483.5 MHz)

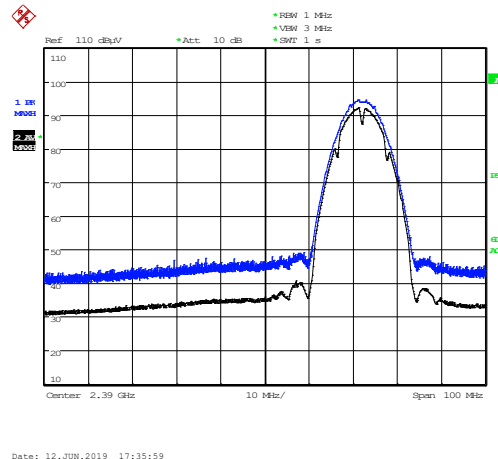
The result of the final radiated spurious emissions measurement refers in previous pages.

[ 802.11b/ 2412 MHz ]

Horizontal

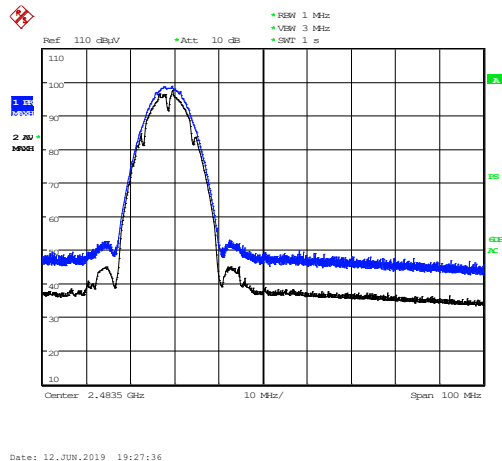


Vertical

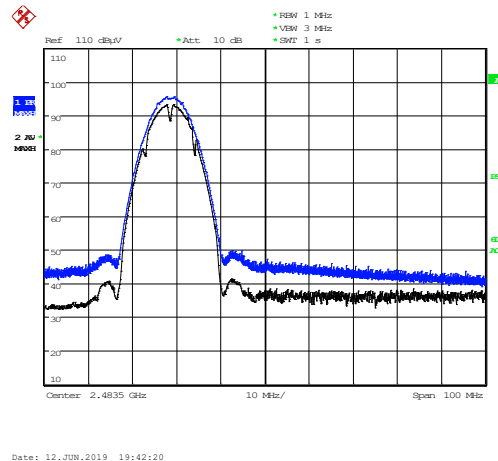


[ 802.11b/ 2462 MHz ]

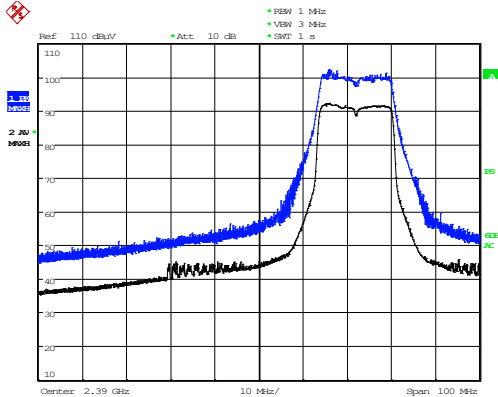
Horizontal



Vertical

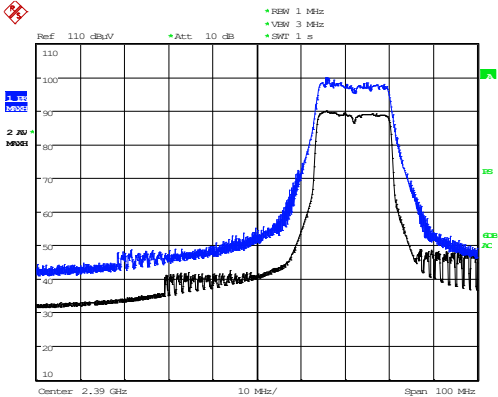


[ 802.11g/ 2412 MHz ]  
Horizontal



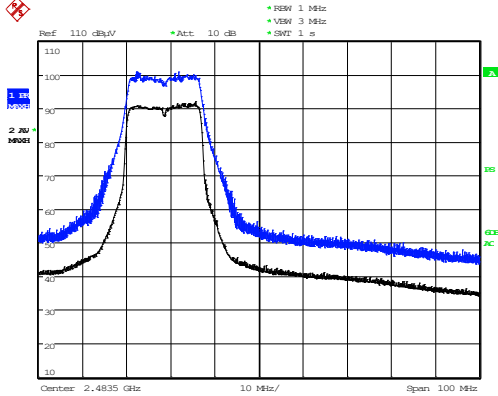
Date: 13.JUN.2019 12:31:07

Vertical



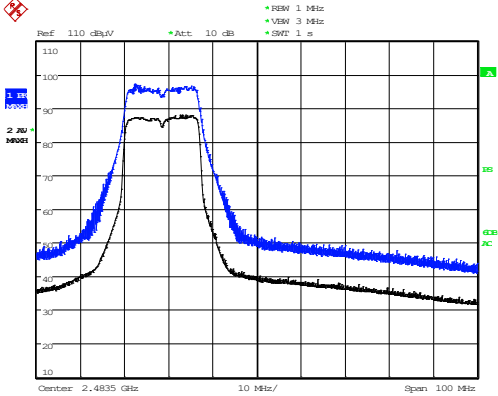
Date: 13.JUN.2019 12:39:01

[ 802.11g/ 2462 MHz ]  
Horizontal



Date: 13.JUN.2019 15:18:17

Vertical



Date: 13.JUN.2019 15:27:15

Horizontal



Vertical



Horizontal



Vertical

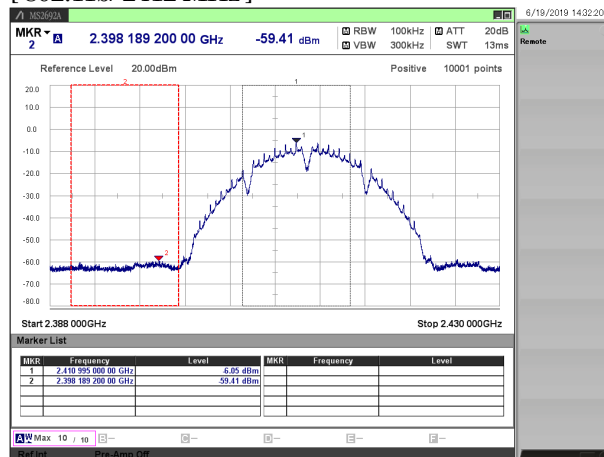


### 3.6. Conducted Spurious Emissions for Band Edge

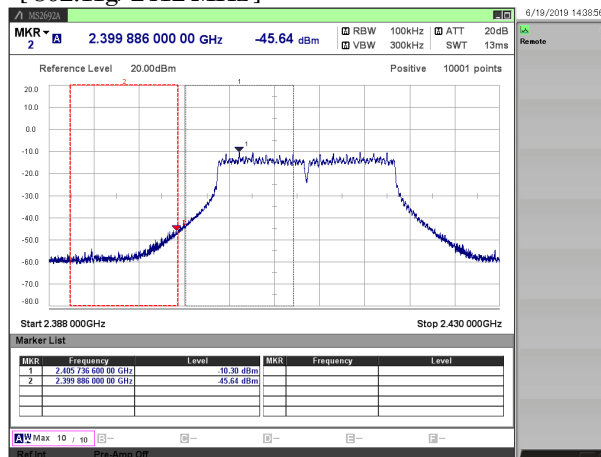
- 1) Ambient temperature : 21.5 deg.C
- 2) Relative humidity : 52.5 %
- 3) Date of measurement : June 19, 2019
- 4) Measured by : H.WAKI
- 5) Operating mode : Transmitting mode

| Mode       | Rate [Mbps] | Channel [MHz] | Frequency [MHz] | Reading(PK) [dBm] | C.F. [dB] | Result [dBm] | Limit [dBm] | Margin [dB] |
|------------|-------------|---------------|-----------------|-------------------|-----------|--------------|-------------|-------------|
| 11b        | 1           | 2412          | 2411.00         | -6.05             | 10.98     | 4.93         | -           | -           |
|            |             |               | 2398.19         | -59.41            | 10.98     | -48.43       | -15.07      | 33.36       |
| 11g        | 36          | 2412          | 2405.74         | -10.30            | 10.98     | 0.68         | -           | -           |
|            |             |               | 2399.89         | -45.64            | 10.98     | -34.66       | -19.32      | 15.34       |
| 11n (HT20) | MCS6        | 2412          | 2405.74         | -10.33            | 10.98     | 0.65         | -           | -           |
|            |             |               | 2399.94         | -44.24            | 10.98     | -33.26       | -19.35      | 13.91       |

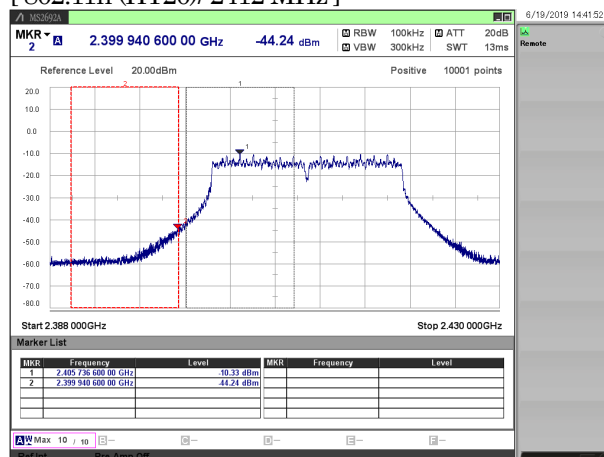
[ 802.11b/ 2412 MHz ]



[ 802.11g/ 2412 MHz ]



[ 802.11n (HT20)/ 2412 MHz ]



## 4. Method of Calculation

### 4.1. AC Power-line Conducted Emissions

Method of calculation : Software  
Software Name : EP5/ CE  
Software Version : Ver5.0.0

Test Result [ dBuV ] = Meter Reading [ dBuV ] + C.F. [ dB ]

Note (a) Meter Reading : Reading of the EMI test receiver.  
(b) C.F. : System Loss + Correction Factor of LISN

### 4.2. Maximum Conducted Output Power

Method of calculation : Software  
Software Name : SW-0302  
Software Version : Ver.4

Test Result (PK) [ dBm ] = Meter Reading [ dBm ] + C.F. [ dB ]

Note (a) Meter Reading : Reading of the power meter  
(b) C.F. : System Cable Loss + EUT Cable Loss

### 4.3. Power Spectral Density

Method of calculation : Software  
Software Name : SW-0302  
Software Version : Ver.4

Test Result [ dBm ] = Meter Reading [ dBm ] + C.F. [ dB ]

Note (a) Meter Reading : Reading of the spectrum analyzer  
(b) C.F. : System Cable Loss + EUT Cable Loss

#### 4.4. Radiated Spurious Emissions

Method of calculation : Software  
Software Name : V-Scan  
Software Version : Ver.4.0.30

Test Result [ dBuV/ m ] = Meter Reading [ dBuV ] + C.F. [ dB/ m ]

Note (a) Meter Reading : Reading of the EMI test receiver or the spectrum analyzer.  
(b) C.F. : ☒ Antenna Factor (including Balun Loss) + System GainLoss  
: ☐ Antenna Factor (including Balun Loss) + System GainLoss + 20 log (3 m/ 10 m)

#### 4.5. Conducted Spurious Emissions for Band Edge

Method of calculation : Software  
Software Name : SW-0302  
Software Version : Ver.4

Test Result [ dBm ] = Meter Reading [ dBm ] + C.F. [ dB ]

Note (a) Meter Reading : Reading of the spectrum analyzer.  
(b) C.F. : System Cable Loss + EUT Cable Loss

## 5. List of Test Equipment

All test results are traceable to the national and/ or international standards.

### 5.1. AC Power-line Conducted Emissions

|   | Ctrl.# | Equipment                  | Model No. | Serial No.   | Manufacturer     | Cal.Interval | Last Cal. |
|---|--------|----------------------------|-----------|--------------|------------------|--------------|-----------|
| x | CS0015 | EMC-CE Cable System 1      | -         | -            | -                | 12 months    | 18.11.04  |
| x | M0663  | 6dB Attenuator             | 6806.01A  | -            | HUBER+SUHNER     | 12 months    | 18.11.04  |
| x | M0569  | HIGH FREQUENCY FUSE        | MP612A    | -            | Anritsu          | 12 months    | 18.11.04  |
| x | M0130  | RF Selector                | NS4902SR  | 109001       | Toyo Corporation | 12 months    | 18.11.04  |
| x | M0605  | LISNAMN                    | ENV216    | 101305       | Rohde & Schwarz  | 12 months    | 18.10.01  |
| x | M5062  | Scientific Ambient Monitor | 0560 6220 | 39515563/802 | testo            | 12 months    | 18.07.17  |
| x | M0515  | EMI Receiver               | ESCI      | 100606       | Rohde & Schwarz  | 12 months    | 18.10.01  |
| x | M5080  | Temperature Meter          | 608-H2    | 41476135     | testo            | 12 months    | 18.10.18  |

### 5.2. Antenna-port Conducted Measurements

|   | Ctrl.# | Equipment         | Model No.    | Serial No. | Manufacturer         | Cal.Interval | Last Cal. |
|---|--------|-------------------|--------------|------------|----------------------|--------------|-----------|
| - | W0140  | Spectrum Analyzer | FSU26        | 200717     | Rohde & Schwarz      | 12 months    | 18.09.01  |
| x | W0100  | Spectrum Analyzer | MS2692A      | 6201338954 | Anritsu              | 12 months    | 19.05.19  |
| x | W0101  | Signal Analyzer   | MS2692A      | 6201338955 | Anritsu              | 12 months    | 19.05.19  |
| x | W0110  | 10dB Attenuator   | 6610-SK-50-1 | 0002       | Huber + Suhner       | 12 months    | 18.09.01  |
| x | W0006  | Power Meter       | N1911A       | MY50000295 | Agilent Technologies | 12 months    | 18.10.06  |
| x | W0007  | Power Sensor      | N1922A       | MY50180022 | Agilent Technologies | 12 months    | 18.10.06  |
| x | W0029  | 10dB Attenuator   | 8493C        | 76549      | Agilent Technologies | 12 months    | 18.09.01  |
| - | WC0002 | RF Cable          | SUCOFLEX 102 | 34124/2    | HUBER + SUHNER       | 12 months    | 18.09.01  |
| - | WC0003 | RF Cable          | SUCOFLEX 102 | 34127/2    | HUBER + SUHNER       | 12 months    | 18.09.01  |
| x | WC0004 | RF Cable          | SUCOFLEX 102 | 34288/2    | HUBER + SUHNER       | 12 months    | 18.09.01  |
| - | WC0005 | RF Cable          | SUCOFLEX 102 | 34287/2    | HUBER + SUHNER       | 12 months    | 18.09.01  |
| - | WC0006 | RF Cable          | SUCOFLEX 102 | 34289/2    | HUBER + SUHNER       | 12 months    | 18.09.01  |
| - | WC0007 | RF Cable          | SUCOFLEX 102 | 34286/2    | HUBER + SUHNER       | 12 months    | 18.09.01  |
| x | M0720  | Thermometer       | TH-321       | 140036     | AS ONE               | 12 months    | 18.07.20  |

### 5.3. Radiated Spurious Emissions

|   | Ctrl.#      | Equipment             | Model No.   | Serial No.  | Manufacturer         | Cal.Interval | Last Cal. |
|---|-------------|-----------------------|-------------|-------------|----------------------|--------------|-----------|
| x | M0486       | EMI Receiver          | ESU40       | -           | Rohde & Schwarz      | 12 months    | 18.10.01  |
| x | M0686       | EMI Receiver          | N9038A      | MY52260113  | Agilent Technologies | 12 months    | 18.11.13  |
| x | A0073       | Loop Antenna          | HFH2-Z2     | 100171      | Rohde & Schwarz      | 12 months    | 18.12.10  |
| x | A0089       | Biconical Antenna     | BBA9106     | VHA91032835 | Schwarzbeck          | 12 months    | 18.12.03  |
| x | A0088       | Log periodic Antenna  | UHALP9108A1 | 0649        | Schwarzbeck          | 12 months    | 18.12.03  |
| x | A0064       | Horn Antenna          | BBHA9120D   | 746         | Schwarzbeck          | 12 months    | 18.11.04  |
| x | A0078       | Horn Antenna          | HAP06-18W   | 00000070    | Toyo Corporation     | 12 months    | 18.11.04  |
| - | A0058       | Horn Antenna          | HAP18-26W   | 00000016    | Toyo Corporation     | 12 months    | 18.12.01  |
| x | CS0017      | N-RE Cable System 1   | -           | -           | -                    | 12 months    | 18.11.04  |
| x | CS0018      | N-RE Cable System 2   | -           | -           | -                    | 12 months    | 18.11.04  |
| x | CS0045      | N-3m EMF Cable System | -           | -           | -                    | 12 months    | 18.11.04  |
| x | CS0074/0075 | N-RE Cable SYSTEM 4   | -           | -           | -                    | 12 months    | 18.11.04  |
| x | M0126       | Step Attenuator       | 8494H       | 3837M01144  | Agilent Technologies | 12 months    | 18.11.04  |
| x | M0752       | Pre Amplifier         | 310N        | 320621      | SONOMA INSTRUMENT    | 12 months    | 18.11.04  |
| x | M0128       | 3dB Attenuator        | 8491A       | 53541       | Agilent Technologies | 12 months    | 18.11.04  |
| x | M0609       | 3dB Attenuator        | 8491B       | MY39265960  | Agilent Technologies | 12 months    | 18.11.04  |
| x | M0737       | GHz Filter Box        | FB-G1       | 001         | Sony EMCS            | 12 months    | 18.11.04  |
| x | M5079       | Temperature Meter     | 608-H2      | 41475953    | testo                | 12 months    | 18.10.18  |
| x | RA5002      | Horn Antenna          | HAP18-26W   | 00000011    | Toyo Corporation     | 12 months    | 19.05.14  |

About calibration interval

Valid until the end of the month listed in "Cal. Int." column.