

| 承認 | 検認 | 検認 | 担当 |
|------------------------|----|----|------------------------|
| 技術 '24. 12.04 高瀬 | | | 技術 '24. 12.04 武田 |

技適基準適合証明用アンテナ特性資料

Antenna Characteristics Document for Technical Regulations Conformity Certification

T18-029-1102
T18-029-1103

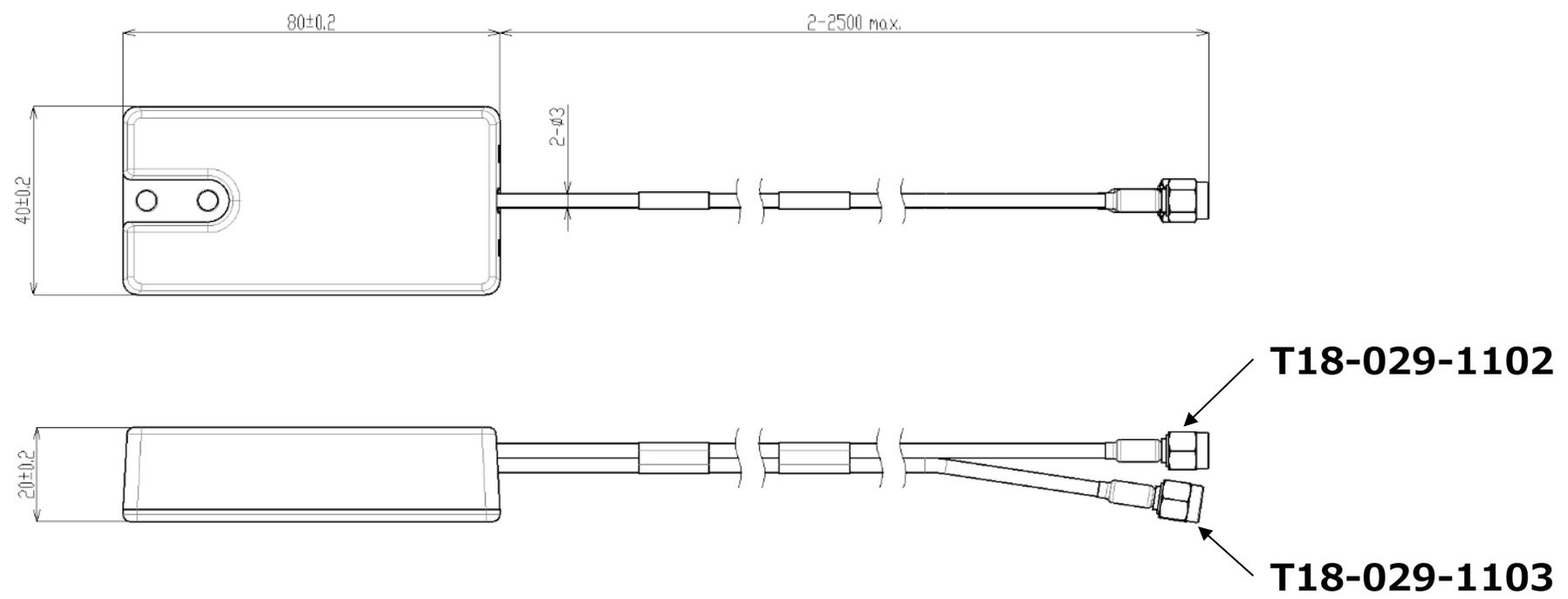
04 DECEMBER, 2024
Staf Corporation
Electric Group

Address: Staf Bldg. 2-6-12 Shin-Yokohama, Kohoku-ku,
Yokohama-shi, Kanagawa-ken, Japan

1.仕様 Specification

| 項目 | 記載内容 |
|---------------------------------|---|
| メーカー名 Manufacturer | スタッフ株式会社 Staf Corporation |
| 品名 (製品名称) Product Name | アンテナ Antenna |
| 技適申請番号 Application Number | T18-029-1102 T18-029-1103 |
| 測定周波数 Frequency | 617~5850[MHz] |
| アンテナ型式 Antenna Type | Dipole Antenna ($\lambda/2$) |
| 最大絶対利得 Maximum Absolute Gain | 617~5850[MHz]:3[dBi]以下 617~5850[MHz]:3[dBi] or less ※但し、B41(2496~2690[MHz])に限り、4[dBi]以下 詳細はグラフ参照のこと ※However, for B41 (2496~2690[MHz]), 4[dBi] or less See graph for details |
| インピーダンス Impedance | 50 Ω |
| コネクタ形状 Connector Type | SMA |

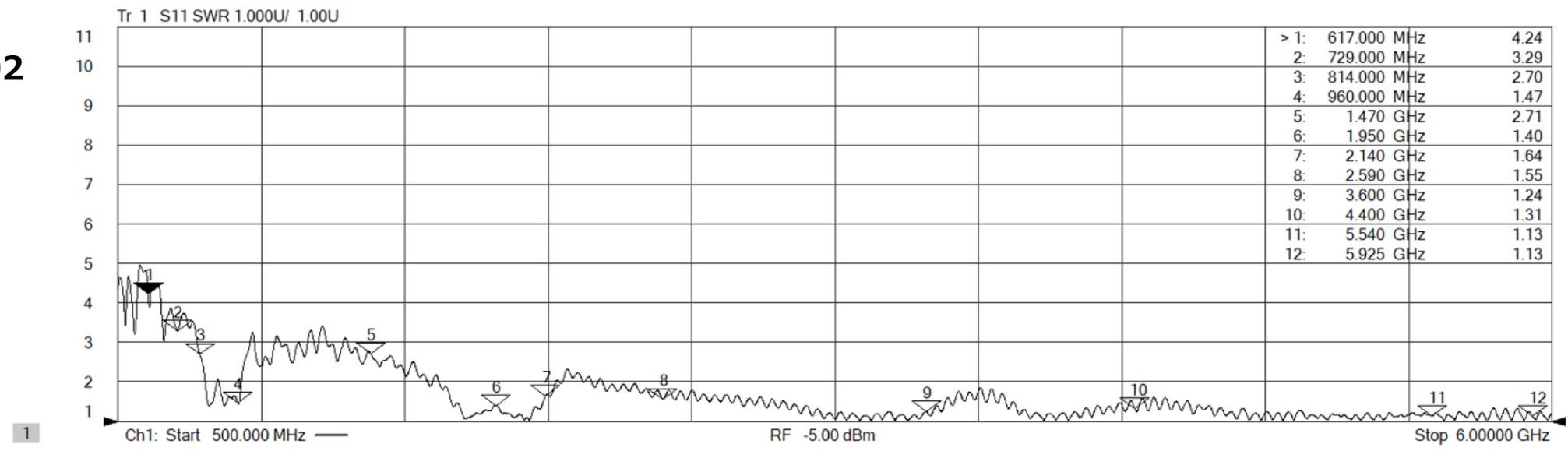
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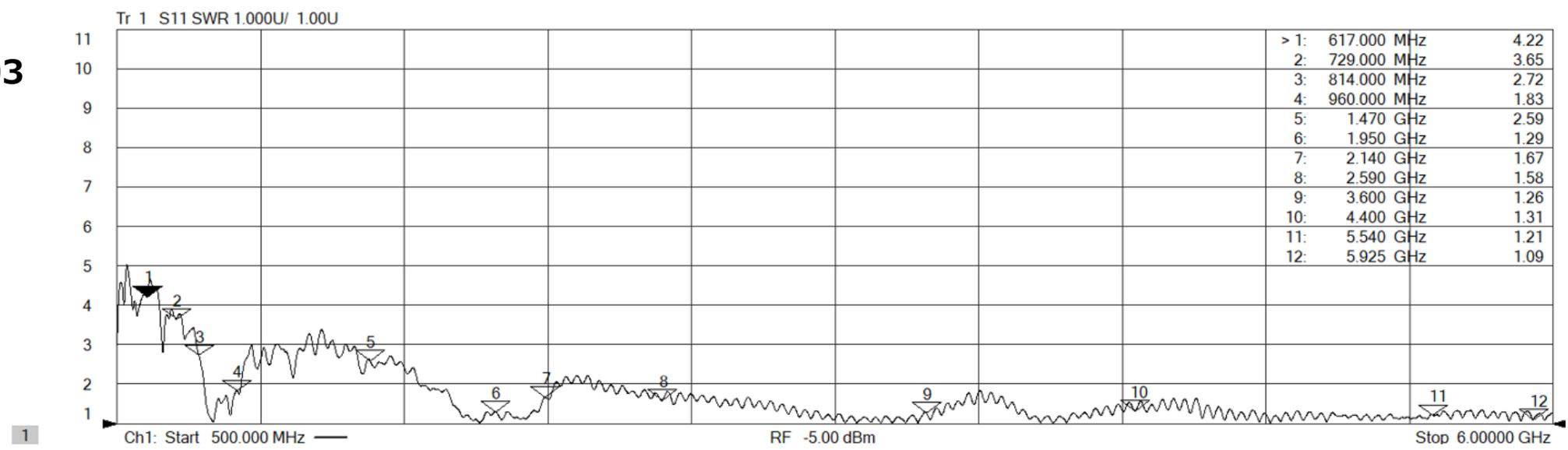
単位:mm
Unit:mm

3.VSWR

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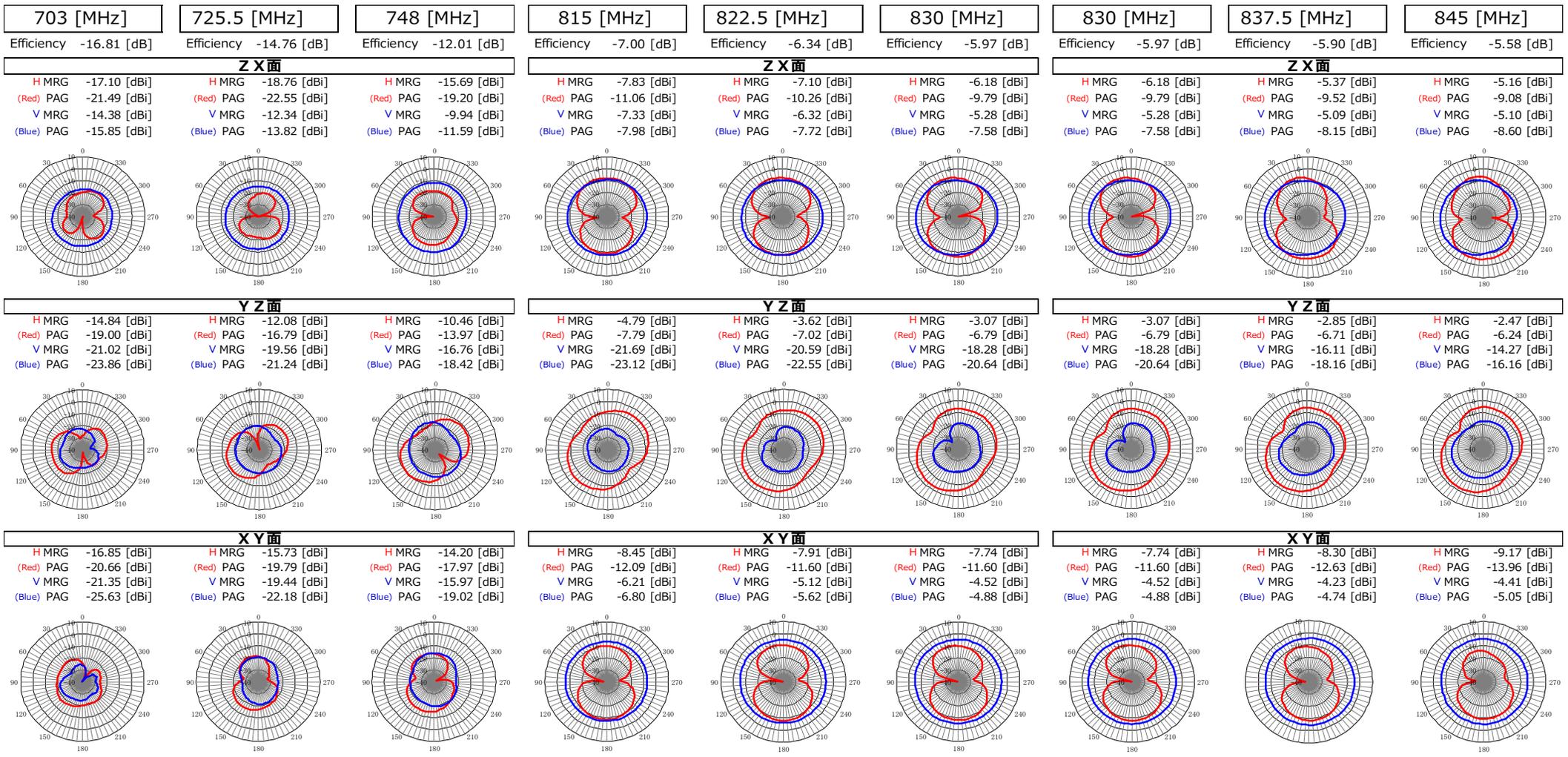
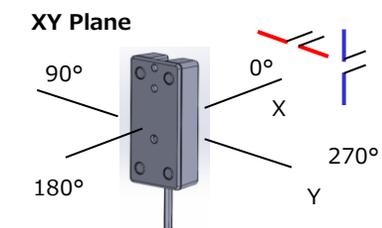
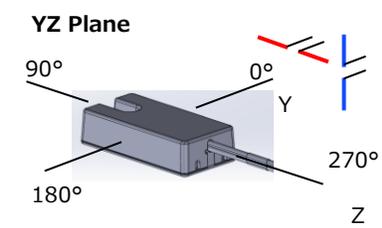
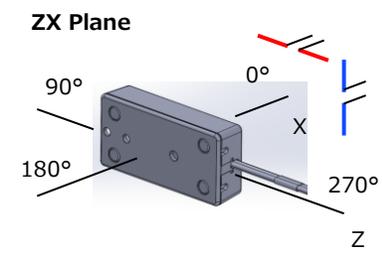
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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— 水平偏波 Horizontal Polarized Wave MRG = 最大利得 Maximum Absolute Gain
— 垂直偏波 Vertical Polarized Wave PAG = 平均利得 Pattern Average Gain

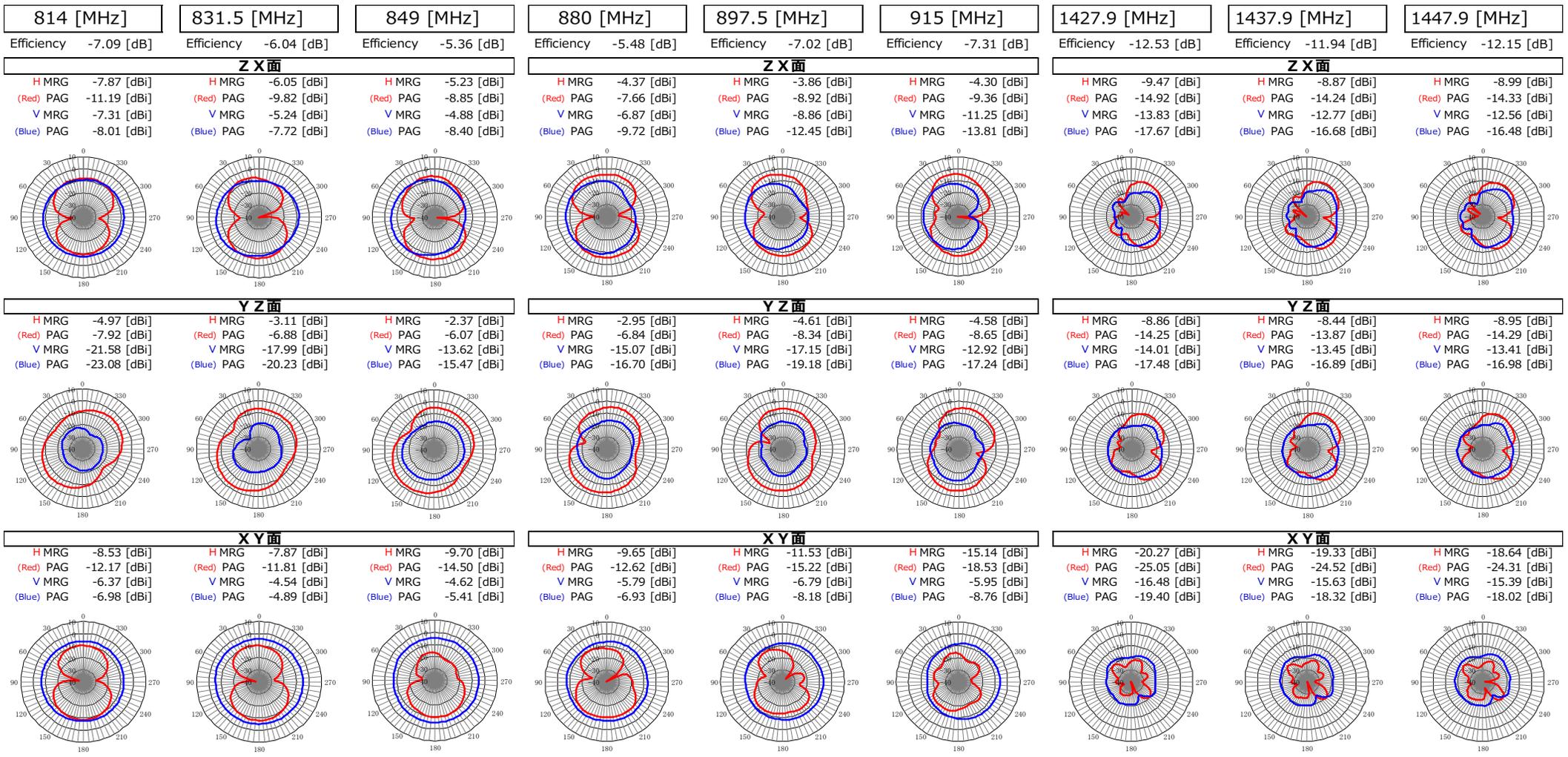
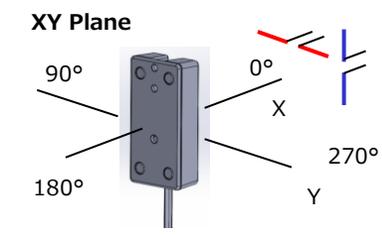
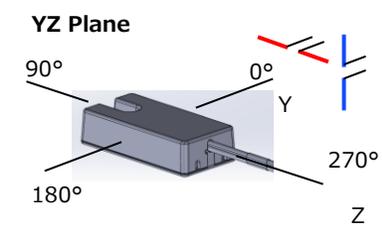
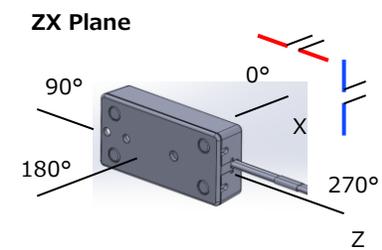
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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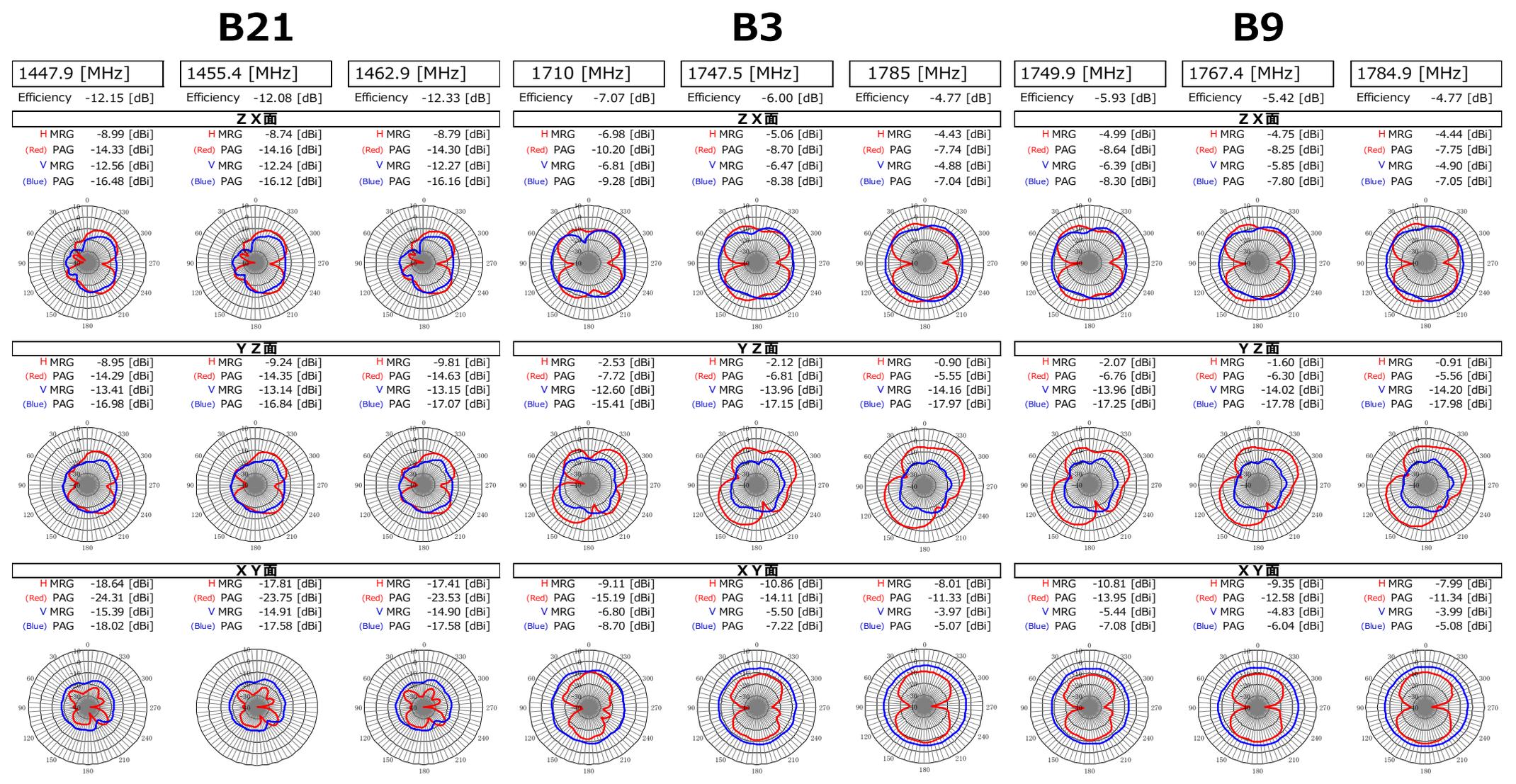
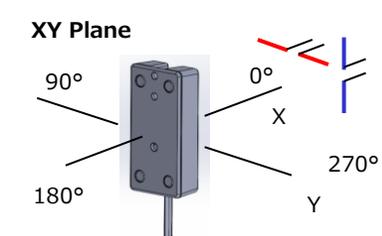
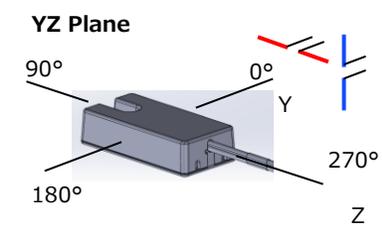
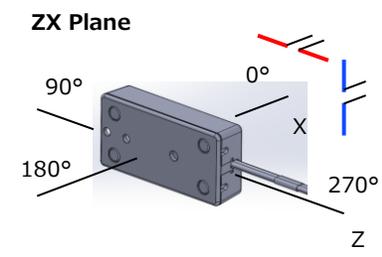
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4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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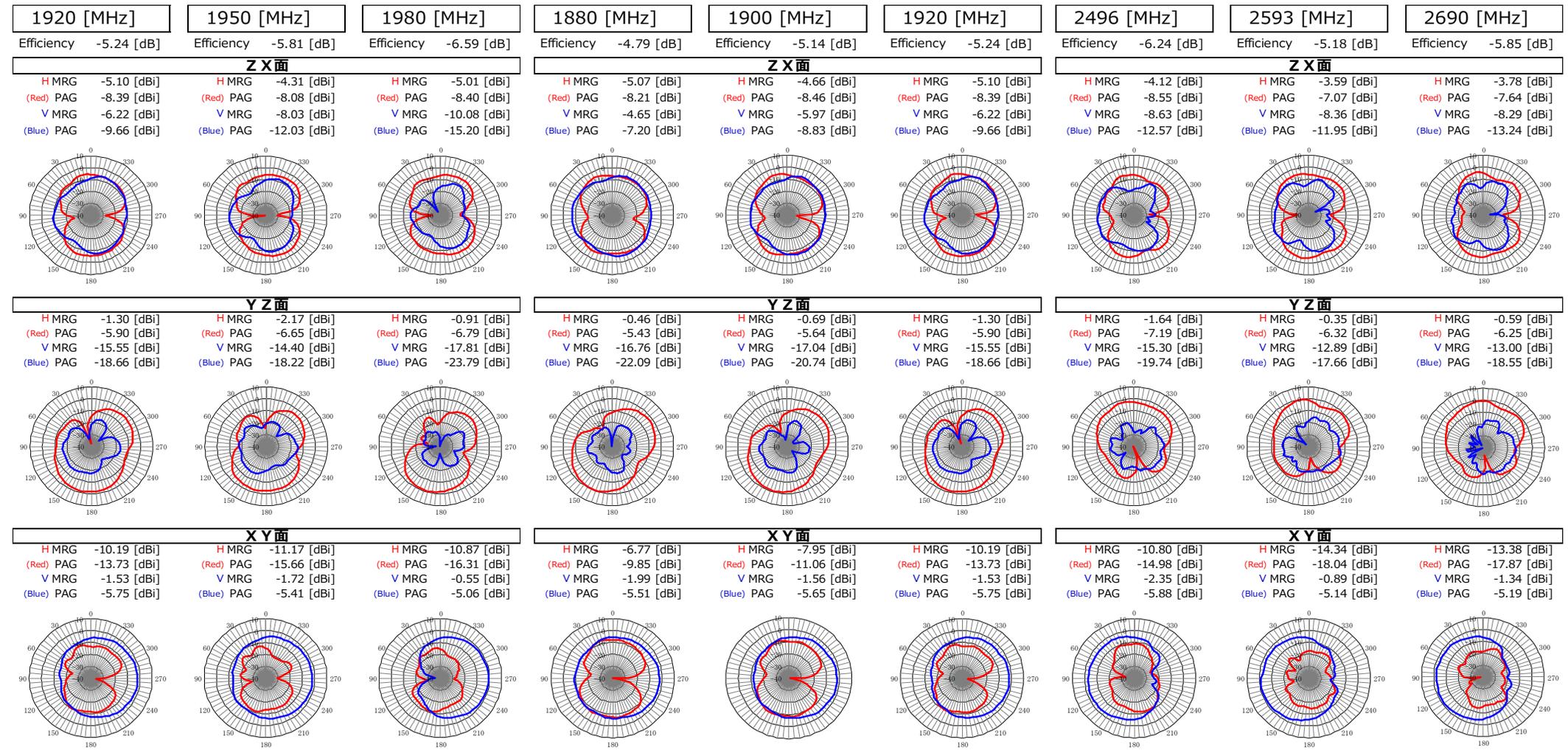
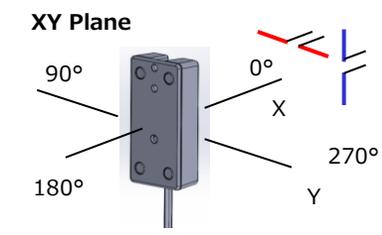
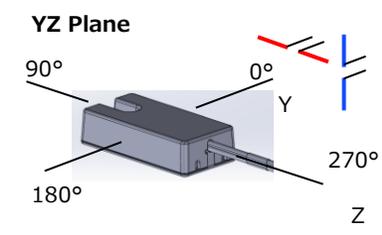
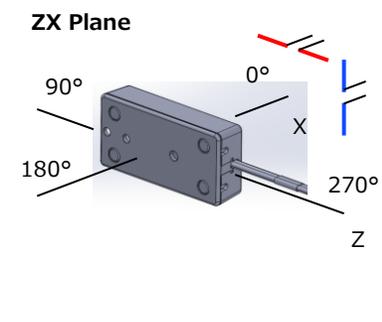
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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— 水平偏波 Horizontal Polarized Wave MRG = 最大利得 Maximum Absolute Gain
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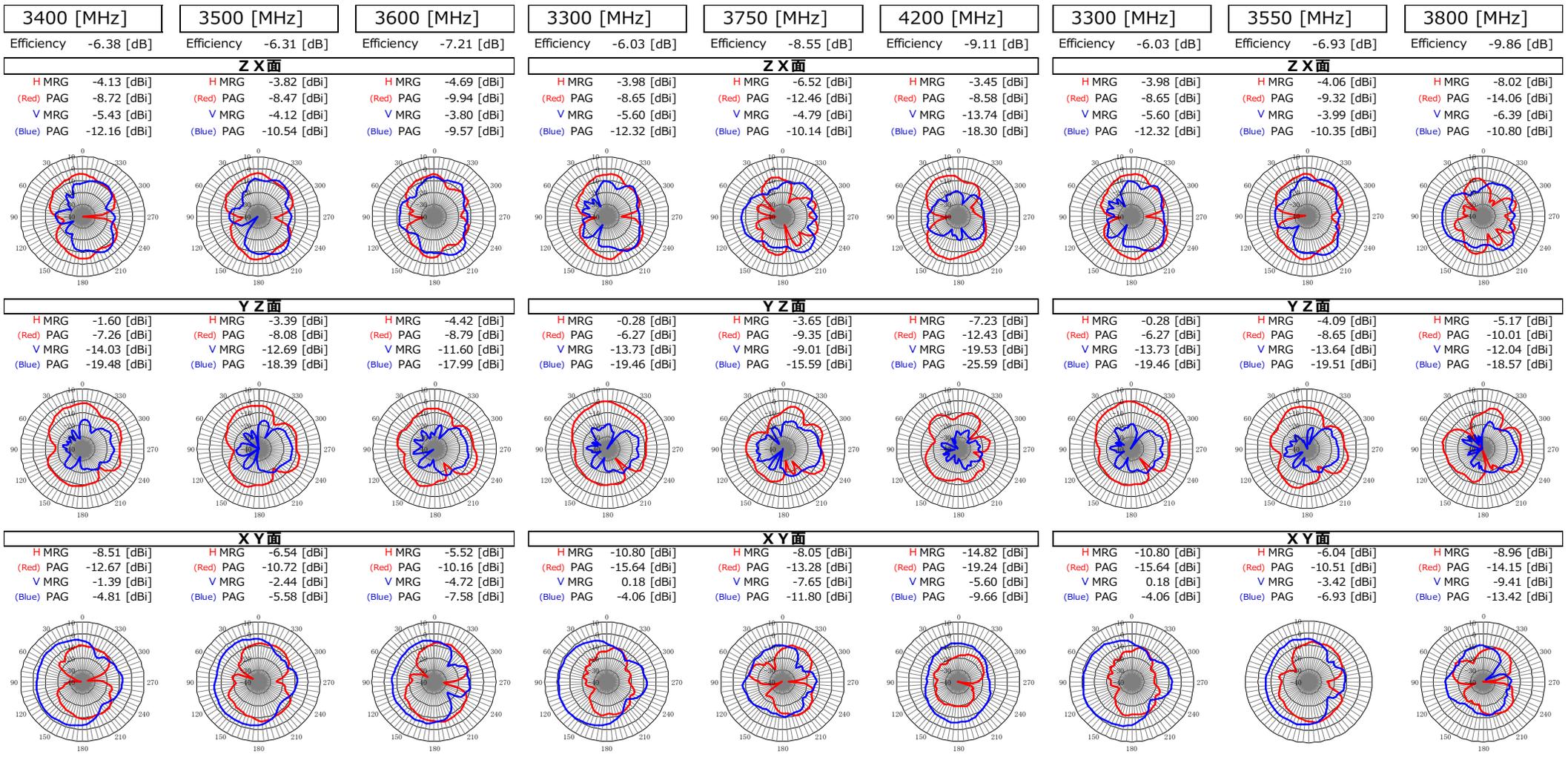
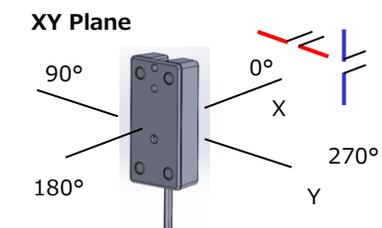
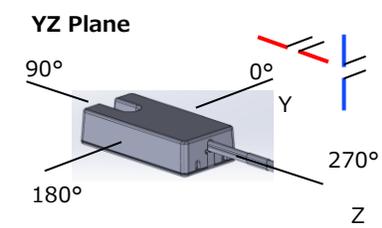
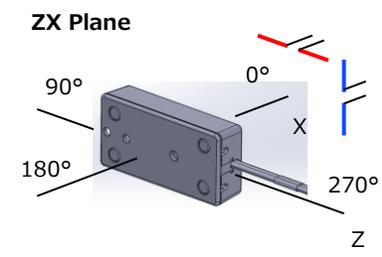
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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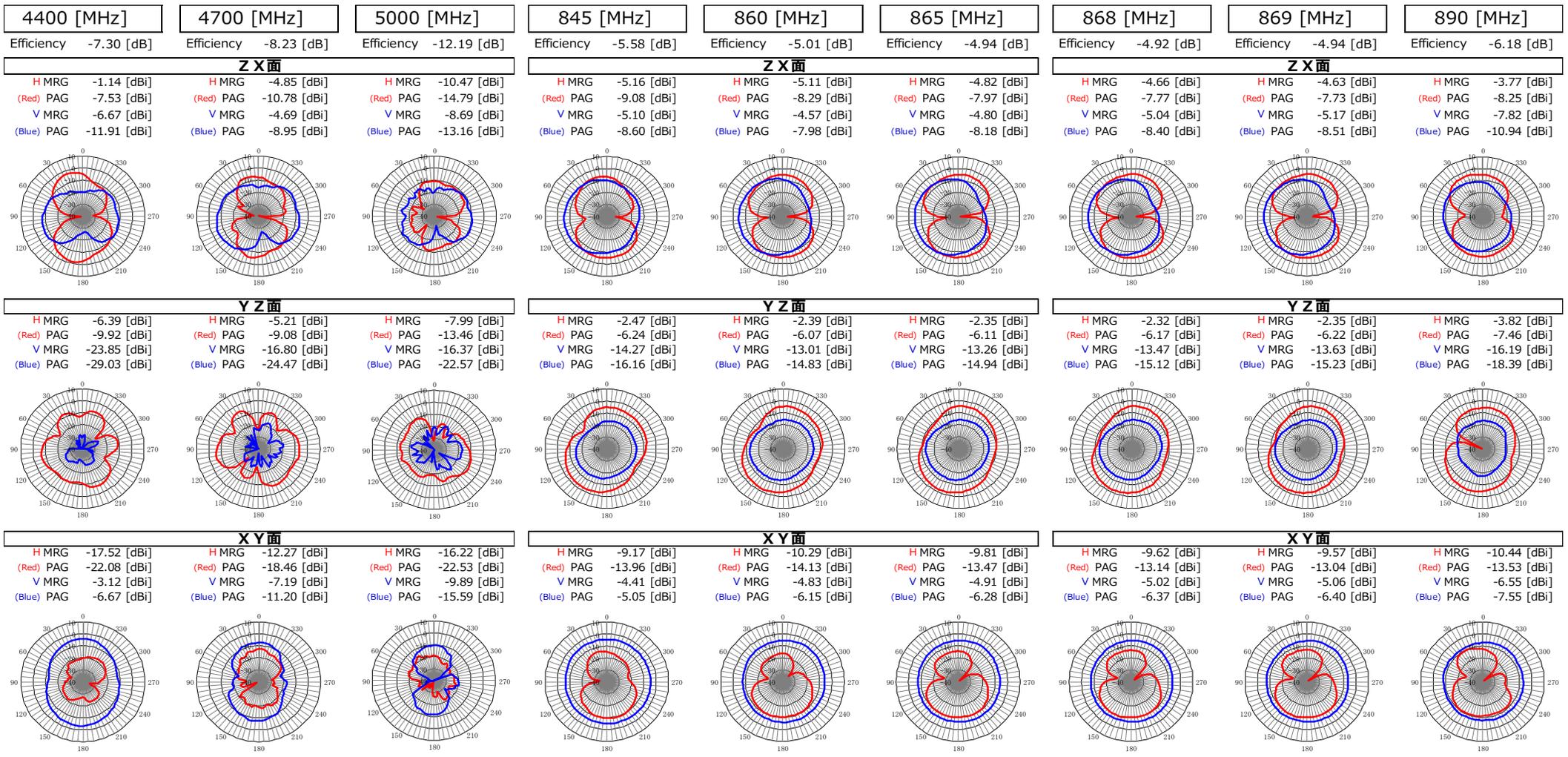
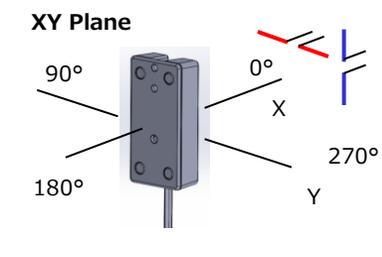
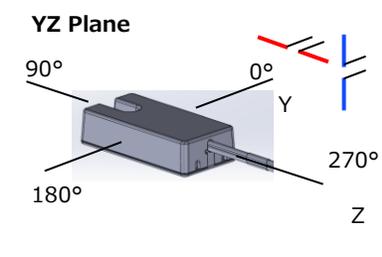
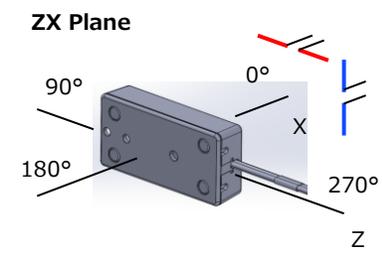
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4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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Sub-GHz Band



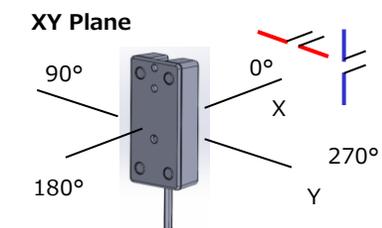
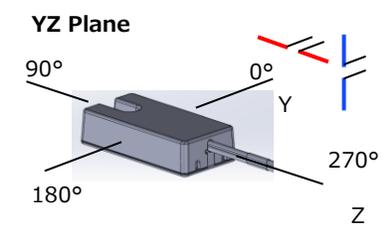
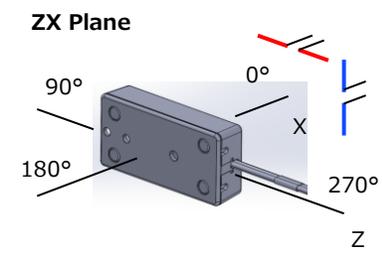
— 水平偏波 Horizontal Polarized Wave
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MRG = 最大利得 Maximum Absolute Gain
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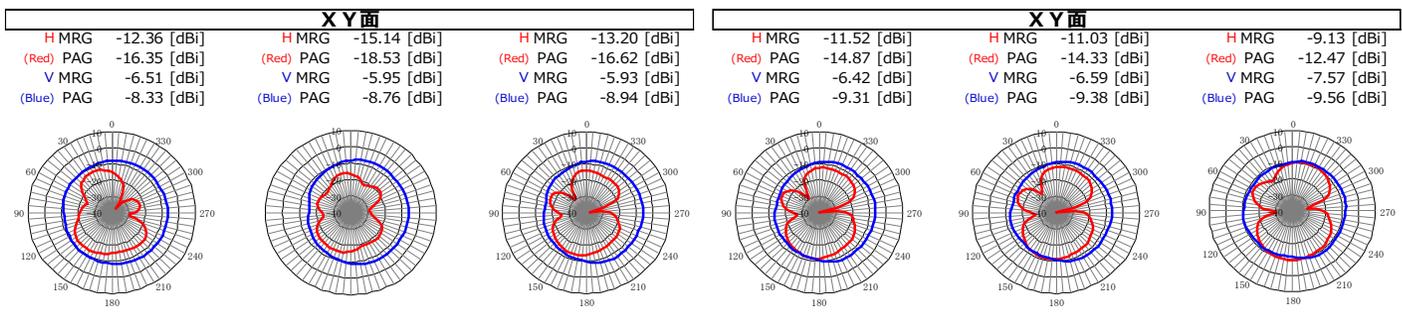
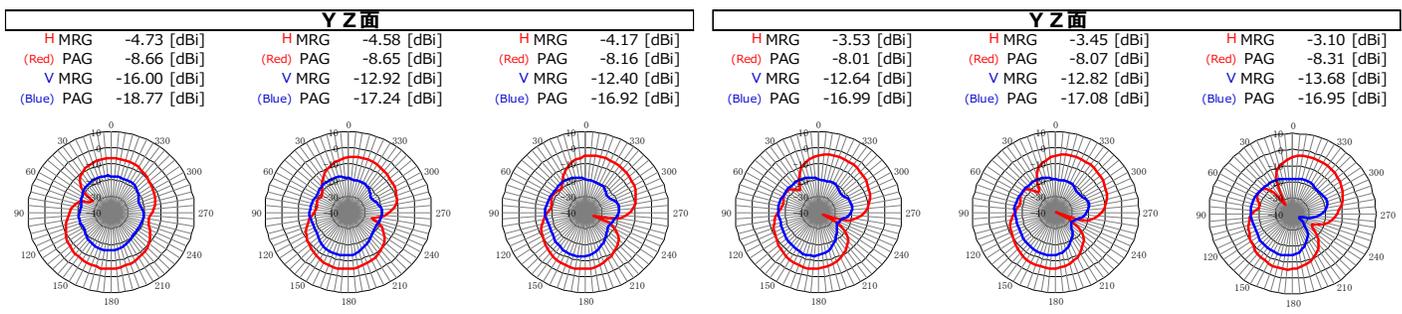
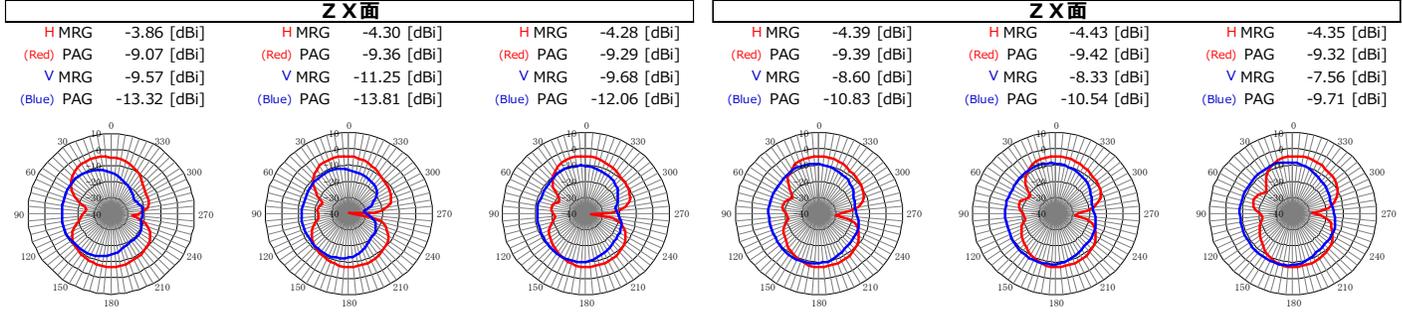
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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Sub-GHz Band



| 902 [MHz] | 915 [MHz] | 922 [MHz] | 928 [MHz] | 930 [MHz] | 940 [MHz] |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Efficiency -7.27 [dB] | Efficiency -7.31 [dB] | Efficiency -6.85 [dB] | Efficiency -6.64 [dB] | Efficiency -6.62 [dB] | Efficiency -6.48 [dB] |



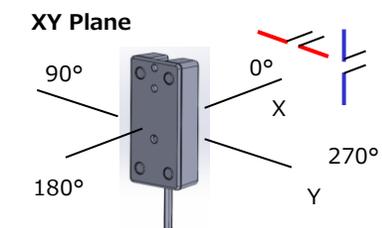
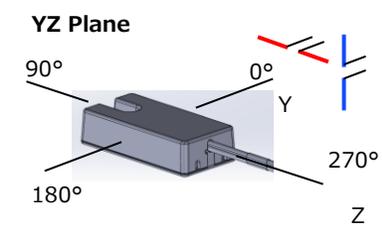
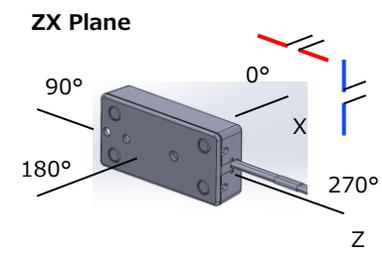
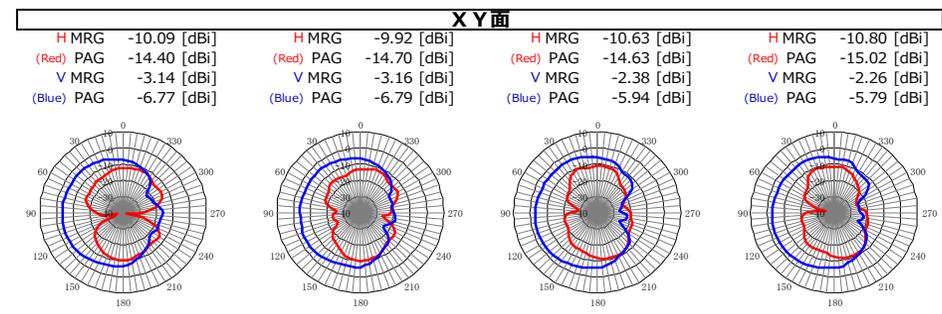
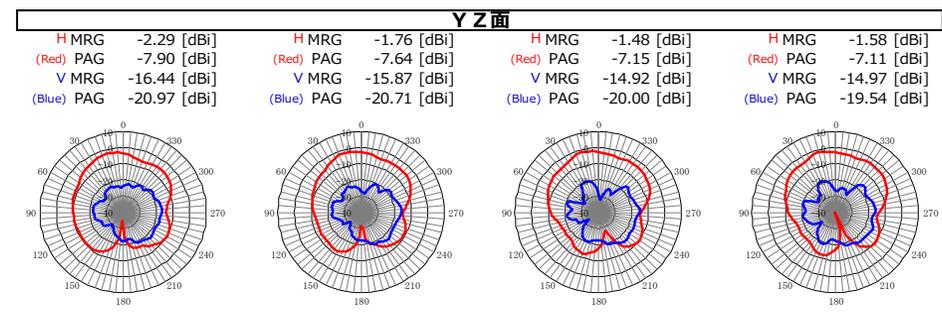
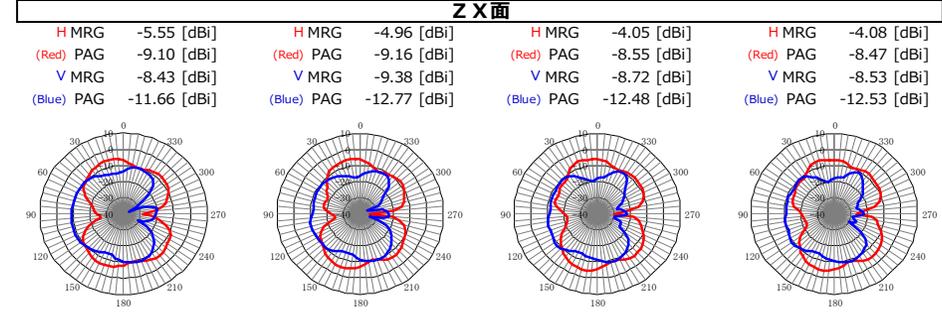
— 水平偏波 Horizontal Polarized Wave MRG = 最大利得 Maximum Absolute Gain
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4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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2.4GHz Band (Wi-Fi , etc.)

| 2400 [MHz] | 2442 [MHz] | 2483.5 [MHz] | 2500 [MHz] |
|-----------------------|-----------------------|-----------------------|-----------------------|
| Efficiency -6.71 [dB] | Efficiency -6.52 [dB] | Efficiency -6.24 [dB] | Efficiency -6.14 [dB] |



— 水平偏波 Horizontal Polarized Wave
 — 垂直偏波 Vertical Polarized Wave

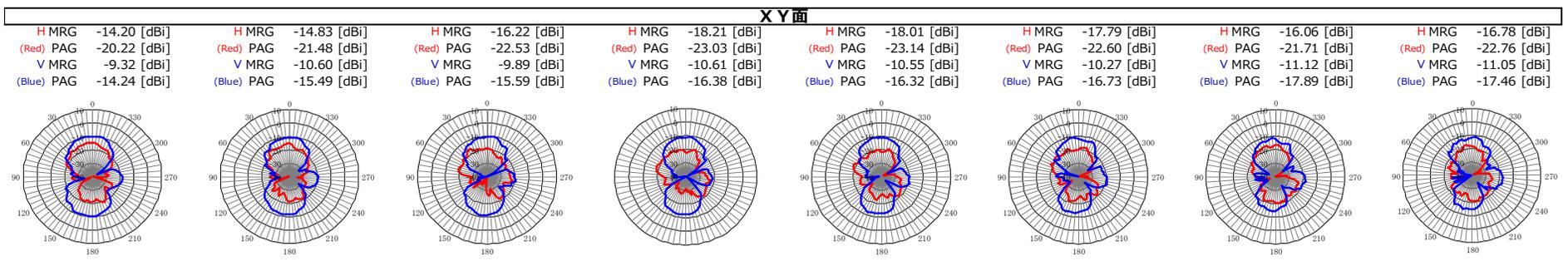
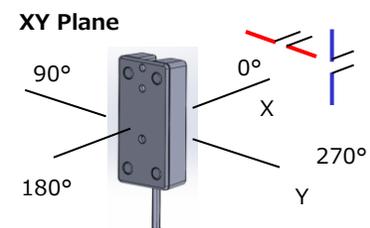
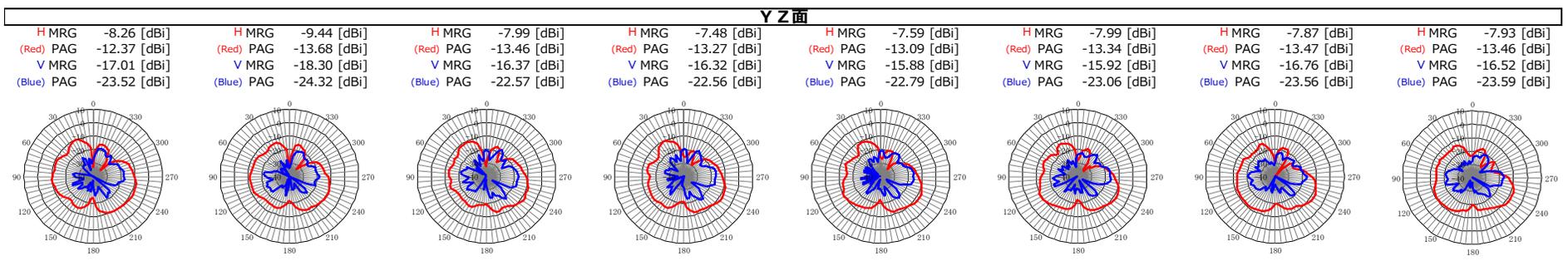
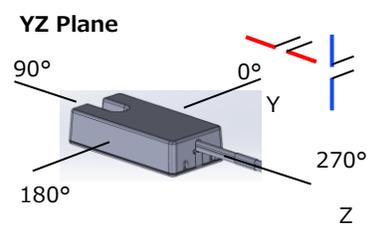
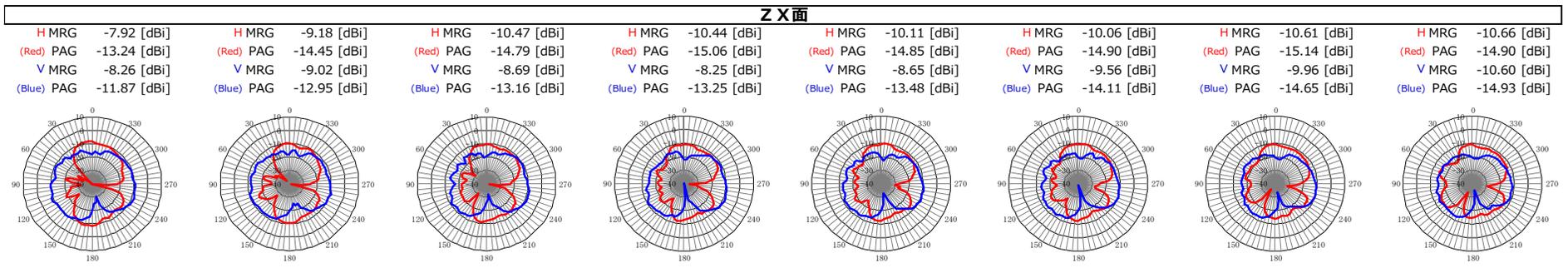
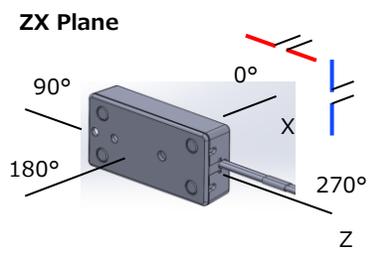
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4.利得・指向性特性 Gain and Radiation Pattern Characteristics

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5GHz Band (Wi-Fi , etc.)

| 4900 [MHz] | 4950 [MHz] | 5000 [MHz] | 5030 [MHz] | 5060.5 [MHz] | 5091 [MHz] | 5150 [MHz] | 5200 [MHz] |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Efficiency -10.85 [dB] | Efficiency -12.07 [dB] | Efficiency -12.19 [dB] | Efficiency -12.14 [dB] | Efficiency -12.22 [dB] | Efficiency -12.49 [dB] | Efficiency -12.71 [dB] | Efficiency -12.80 [dB] |



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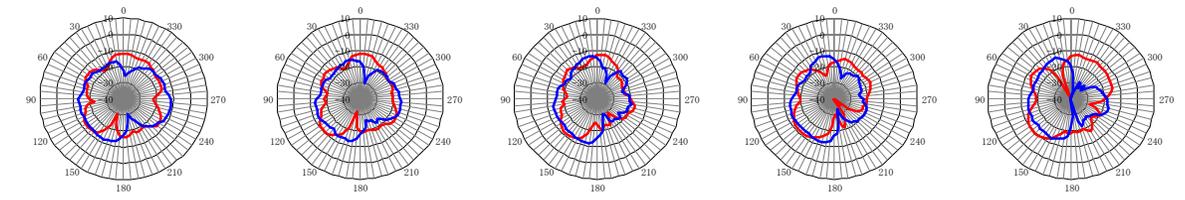
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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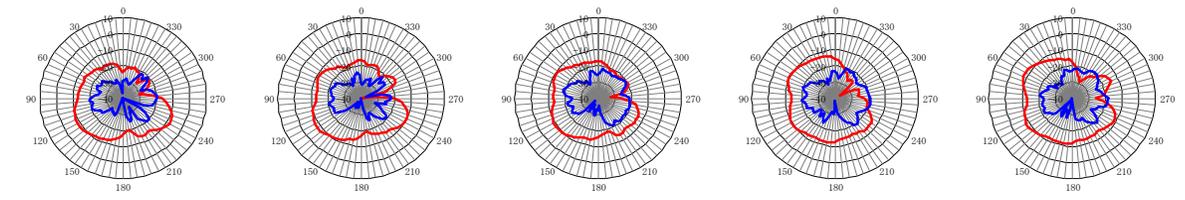
5GHz Band (Wi-Fi , etc.)

| 5350 [MHz] | 5500 [MHz] | 5650 [MHz] | 5750 [MHz] | 5850 [MHz] |
|------------------------|------------------------|------------------------|------------------------|------------------------|
| Efficiency -13.15 [dB] | Efficiency -13.47 [dB] | Efficiency -13.94 [dB] | Efficiency -13.62 [dB] | Efficiency -12.72 [dB] |

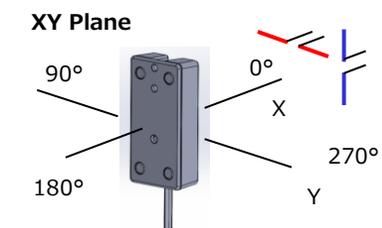
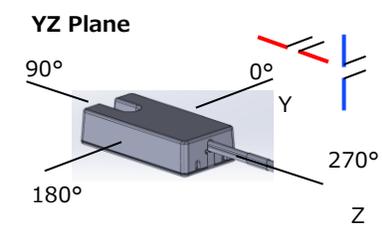
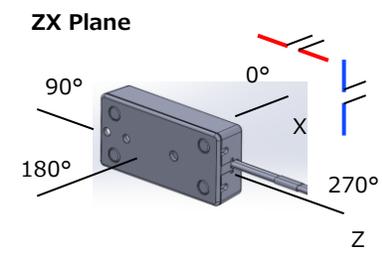
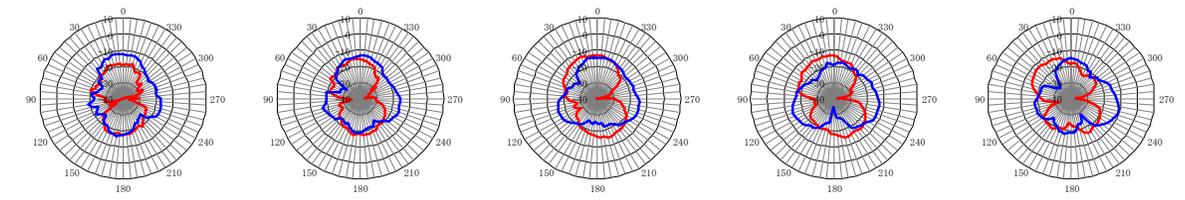
| Z X 面 | | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| H MRG -11.65 [dBi] | H MRG -10.69 [dBi] | H MRG -11.41 [dBi] | H MRG -11.23 [dBi] | H MRG -9.06 [dBi] |
| (Red) PAG -15.54 [dBi] | (Red) PAG -15.77 [dBi] | (Red) PAG -16.84 [dBi] | (Red) PAG -16.70 [dBi] | (Red) PAG -14.75 [dBi] |
| V MRG -11.08 [dBi] | V MRG -12.22 [dBi] | V MRG -11.77 [dBi] | V MRG -12.23 [dBi] | V MRG -12.63 [dBi] |
| (Blue) PAG -15.01 [dBi] | (Blue) PAG -16.29 [dBi] | (Blue) PAG -16.47 [dBi] | (Blue) PAG -16.44 [dBi] | (Blue) PAG -16.90 [dBi] |



| Y Z 面 | | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| H MRG -8.04 [dBi] | H MRG -7.63 [dBi] | H MRG -8.78 [dBi] | H MRG -9.69 [dBi] | H MRG -7.61 [dBi] |
| (Red) PAG -13.30 [dBi] | (Red) PAG -13.25 [dBi] | (Red) PAG -14.10 [dBi] | (Red) PAG -13.73 [dBi] | (Red) PAG -12.45 [dBi] |
| V MRG -19.40 [dBi] | V MRG -19.67 [dBi] | V MRG -18.70 [dBi] | V MRG -18.08 [dBi] | V MRG -18.00 [dBi] |
| (Blue) PAG -24.27 [dBi] | (Blue) PAG -25.23 [dBi] | (Blue) PAG -23.15 [dBi] | (Blue) PAG -22.74 [dBi] | (Blue) PAG -22.72 [dBi] |



| X Y 面 | | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| H MRG -16.79 [dBi] | H MRG -14.83 [dBi] | H MRG -12.43 [dBi] | H MRG -12.81 [dBi] | H MRG -12.46 [dBi] |
| (Red) PAG -21.35 [dBi] | (Red) PAG -20.20 [dBi] | (Red) PAG -17.54 [dBi] | (Red) PAG -17.71 [dBi] | (Red) PAG -18.35 [dBi] |
| V MRG -11.65 [dBi] | V MRG -12.69 [dBi] | V MRG -13.89 [dBi] | V MRG -12.64 [dBi] | V MRG -10.33 [dBi] |
| (Blue) PAG -17.62 [dBi] | (Blue) PAG -17.76 [dBi] | (Blue) PAG -17.51 [dBi] | (Blue) PAG -17.13 [dBi] | (Blue) PAG -17.01 [dBi] |



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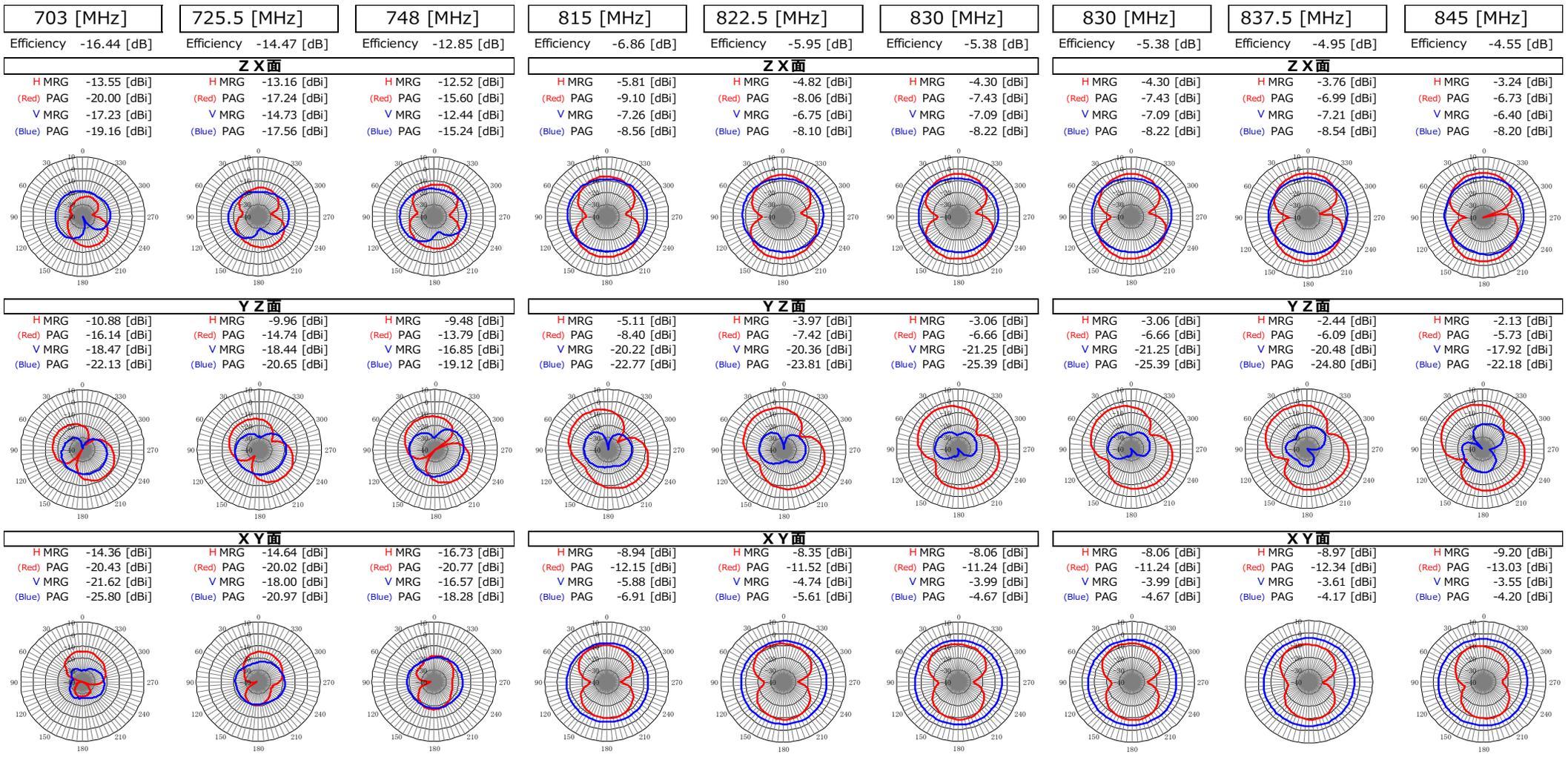
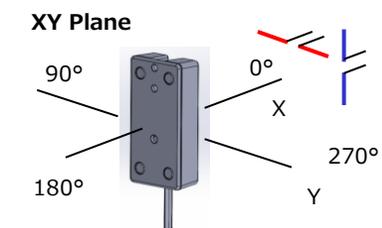
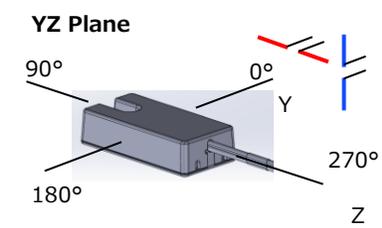
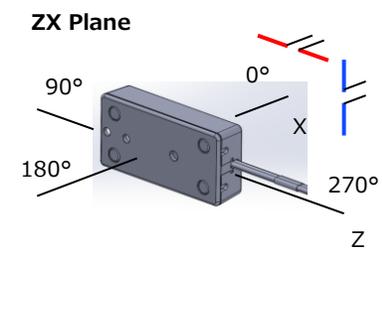
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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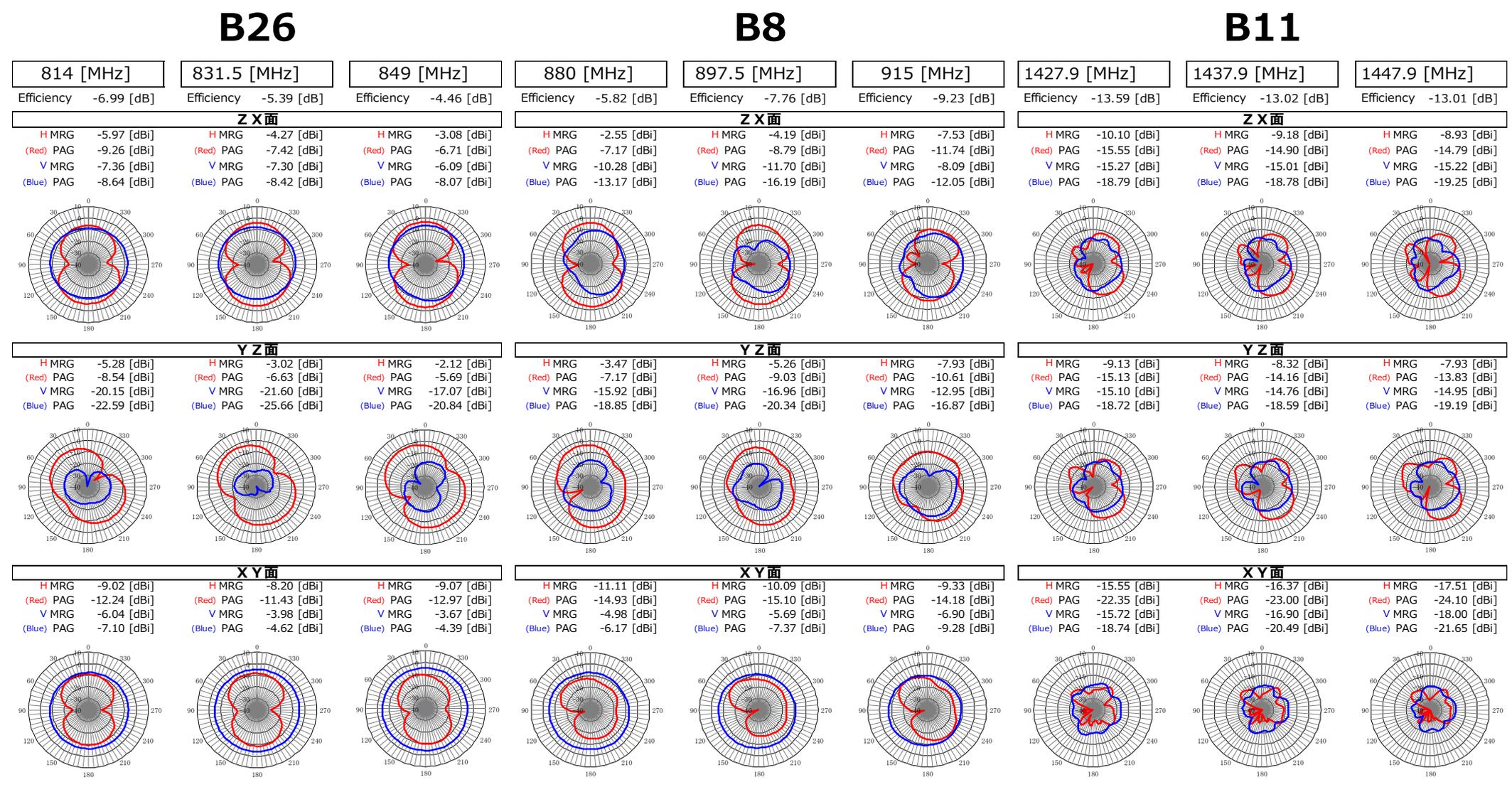
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4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

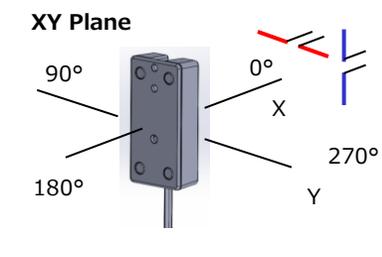
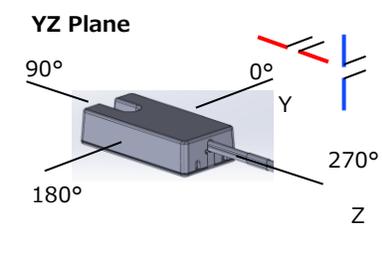
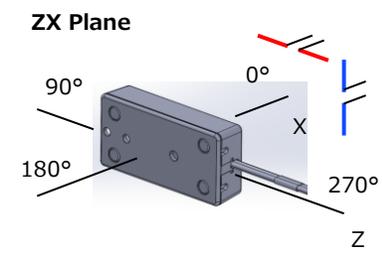
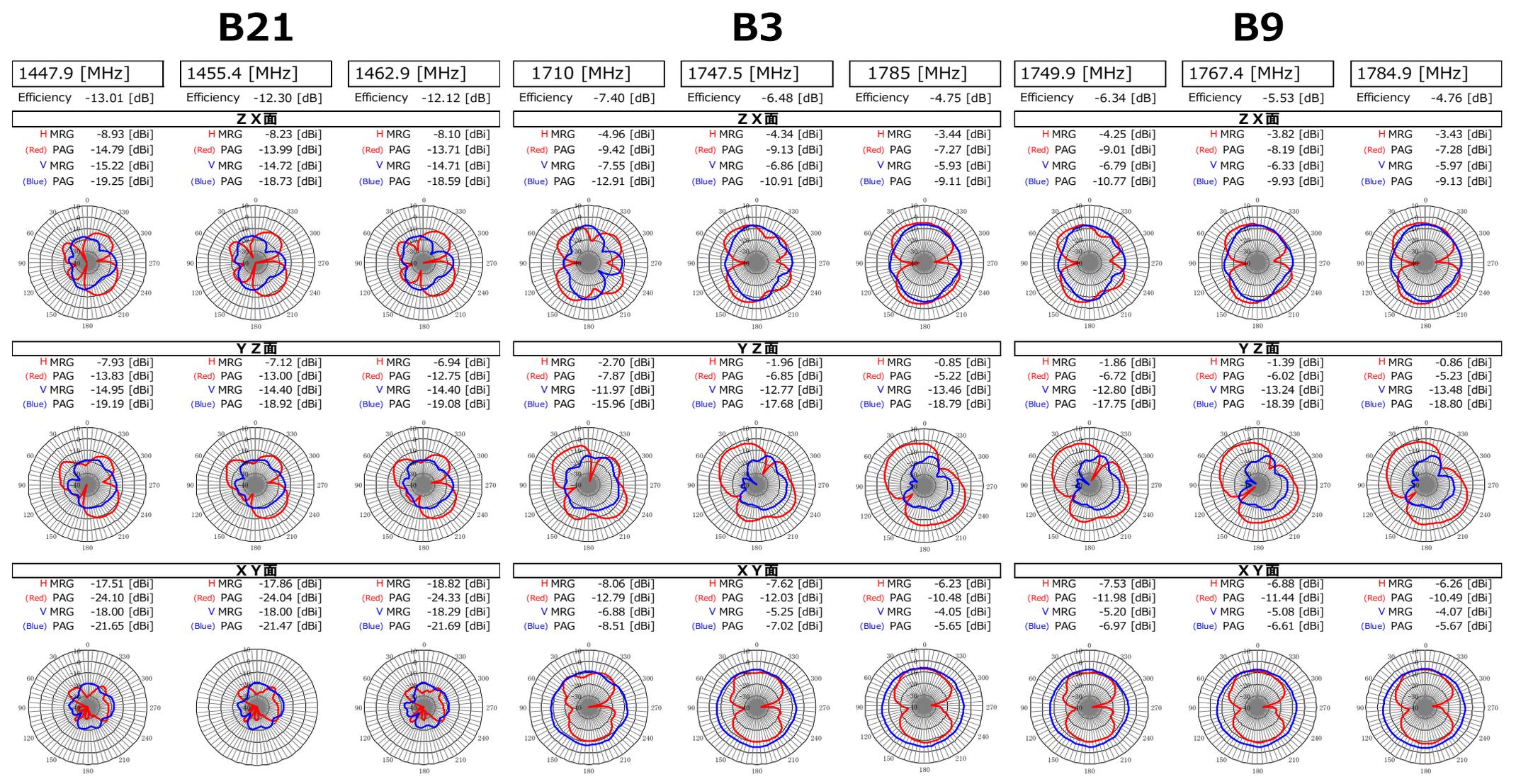
T18-029-1103



— 水平偏波 Horizontal Polarized Wave MRG = 最大利得 Maximum Absolute Gain
— 垂直偏波 Vertical Polarized Wave PAG = 平均利得 Pattern Average Gain

4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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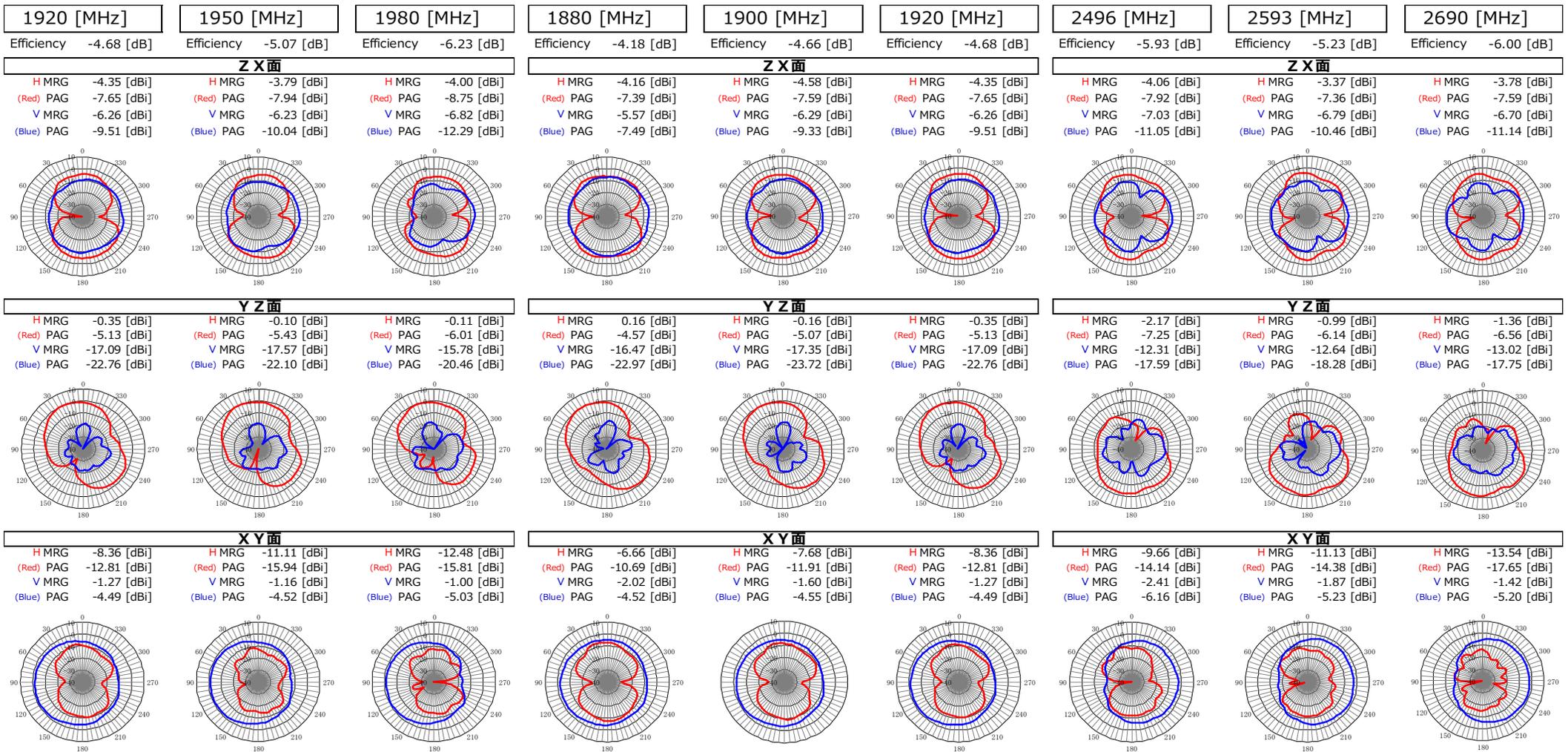
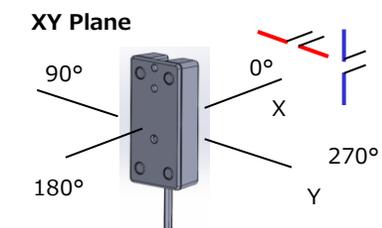
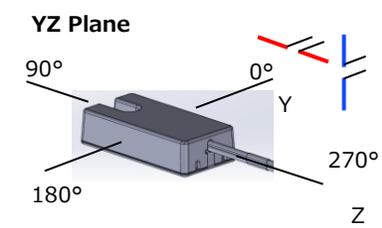
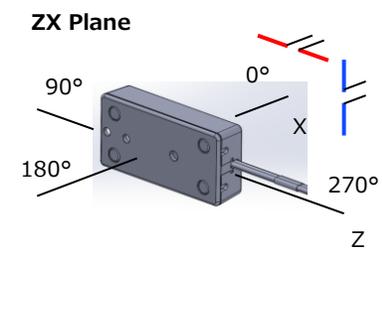
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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B1

B39

B41



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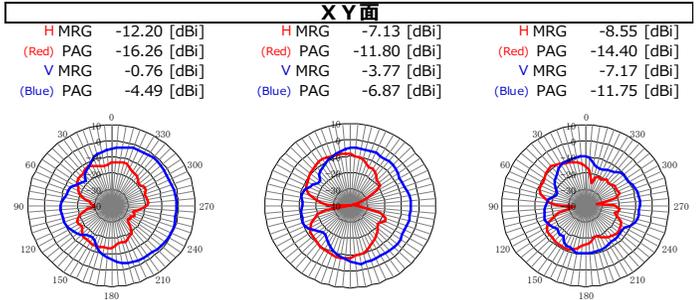
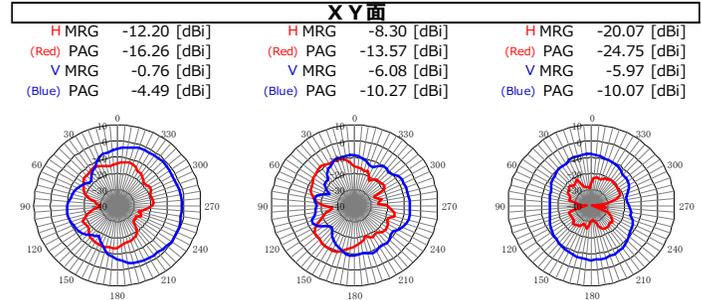
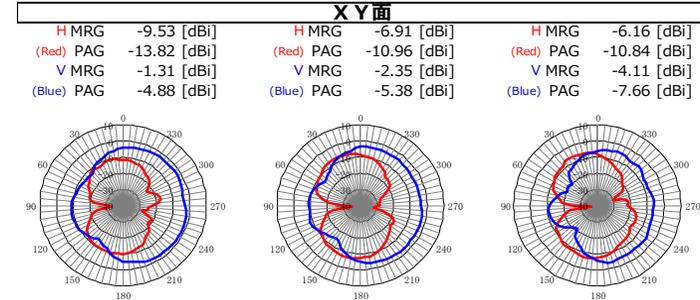
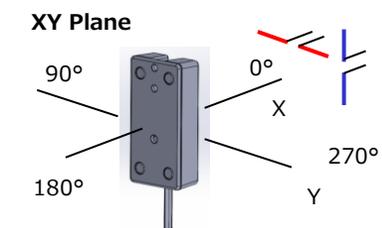
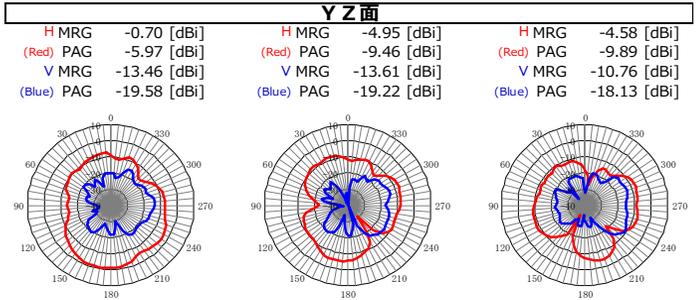
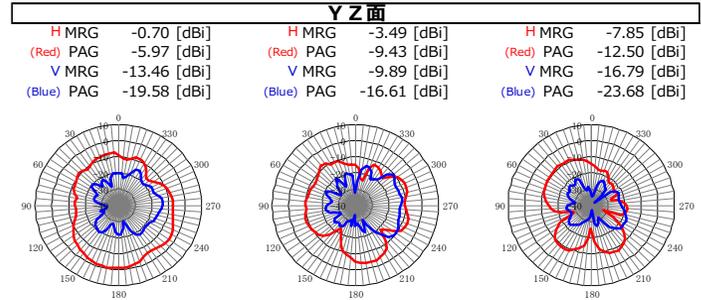
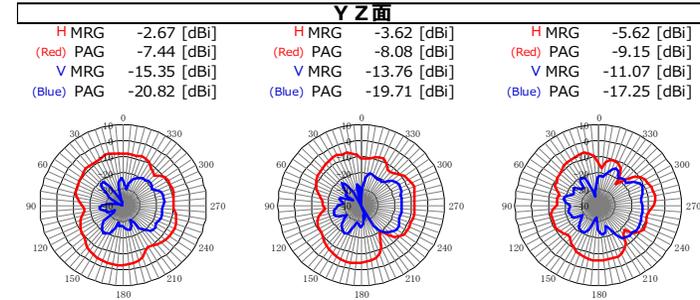
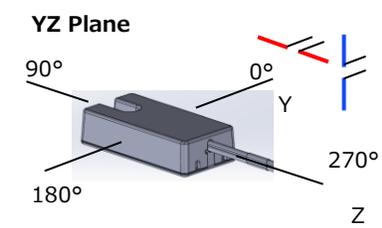
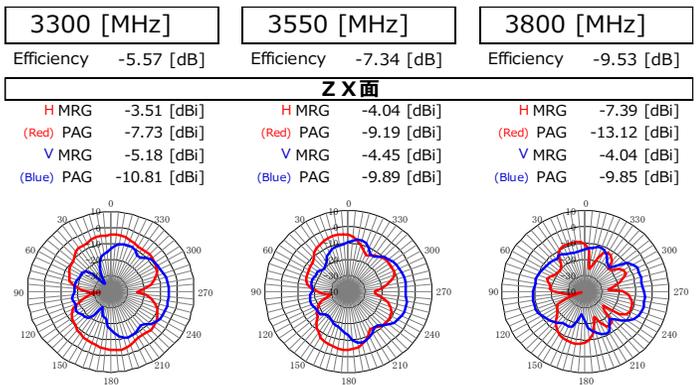
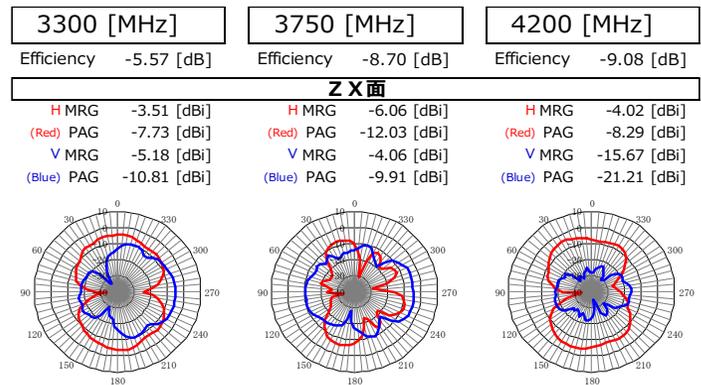
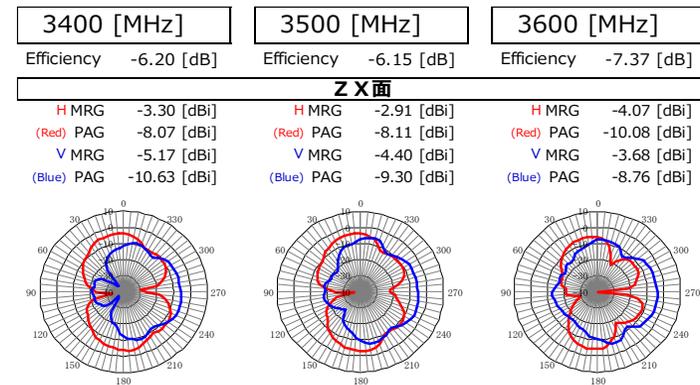
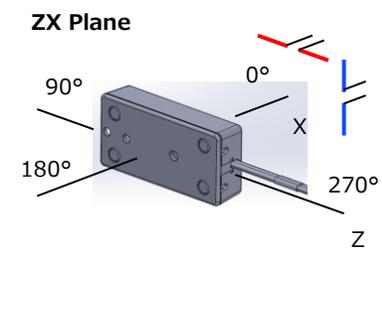
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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B42

n77

n78



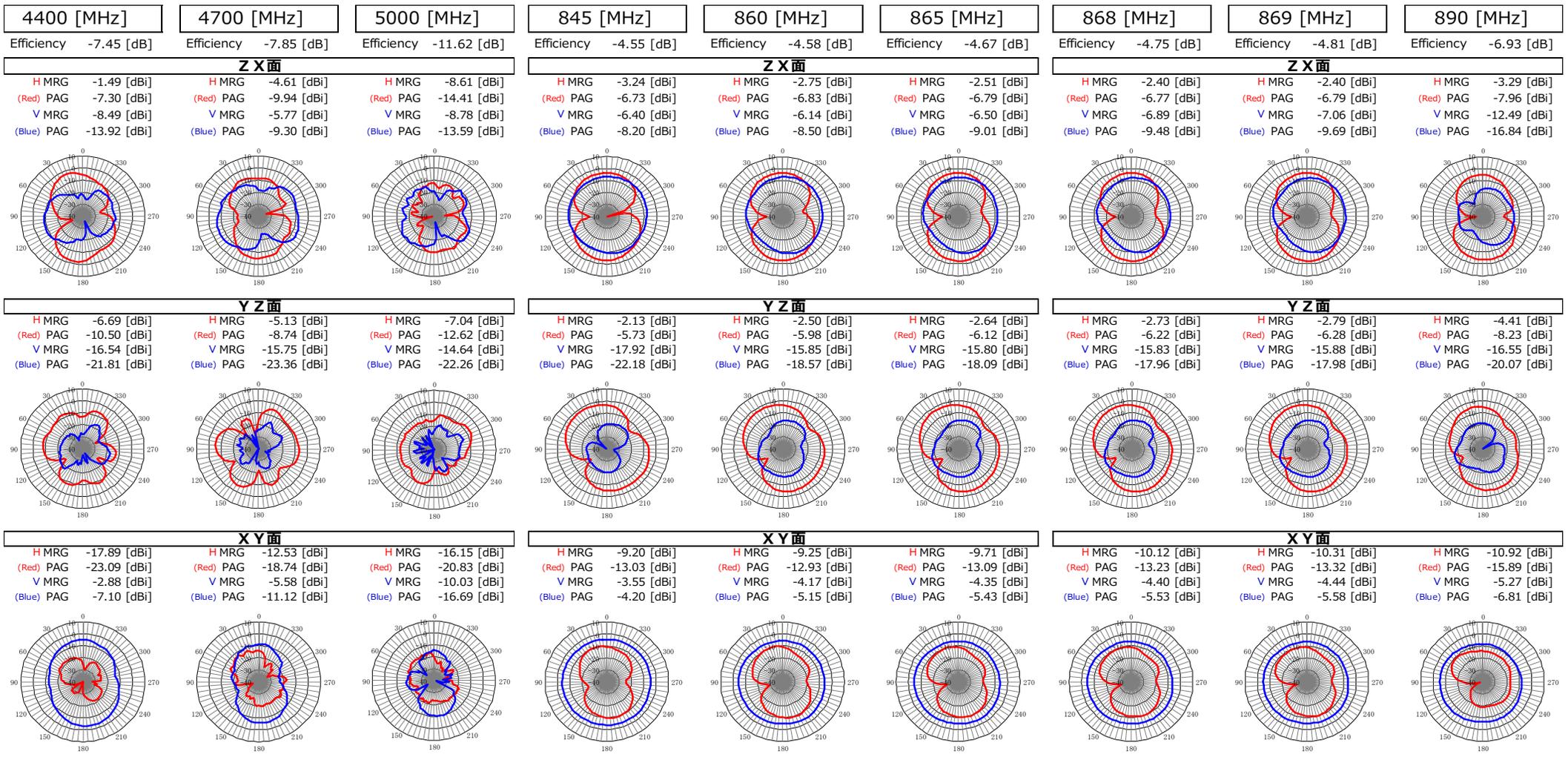
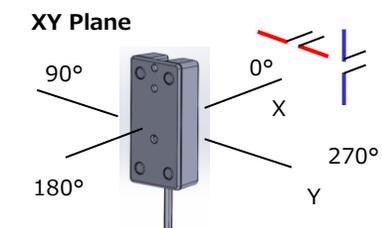
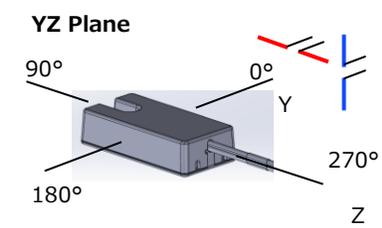
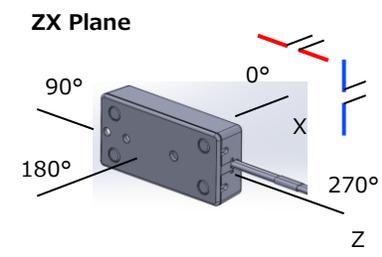
— 水平偏波 Horizontal Polarized Wave MRG = 最大利得 Maximum Absolute Gain
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4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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n79

Sub-GHz Band

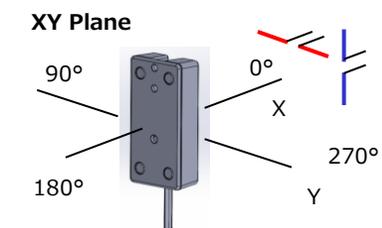
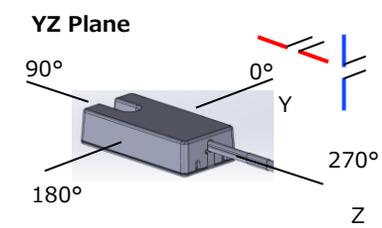
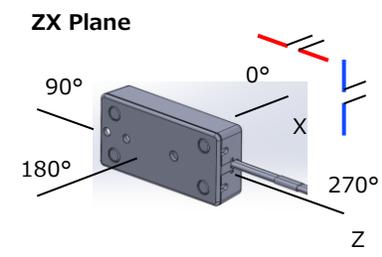


— 水平偏波 Horizontal Polarized Wave MRG = 最大利得 Maximum Absolute Gain
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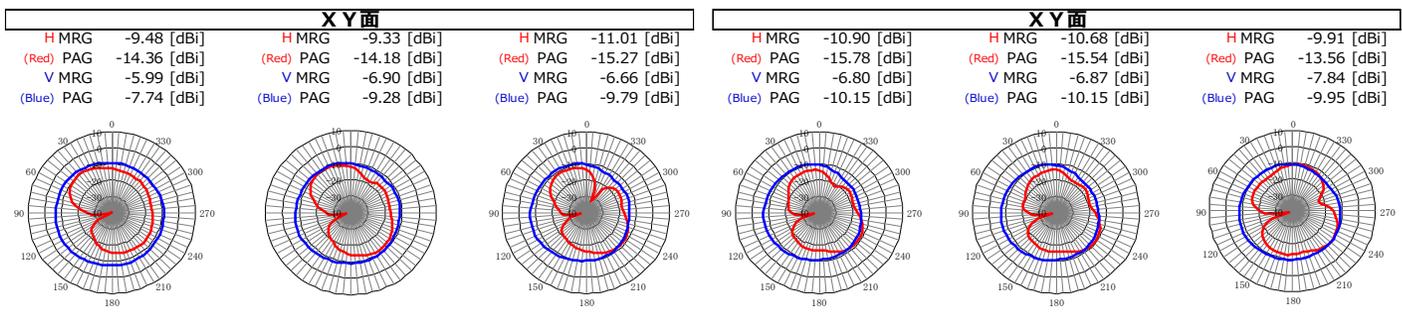
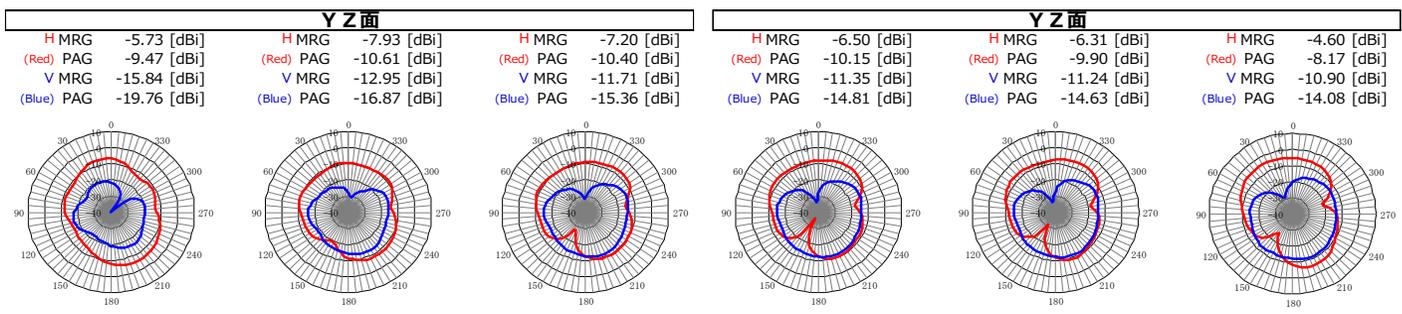
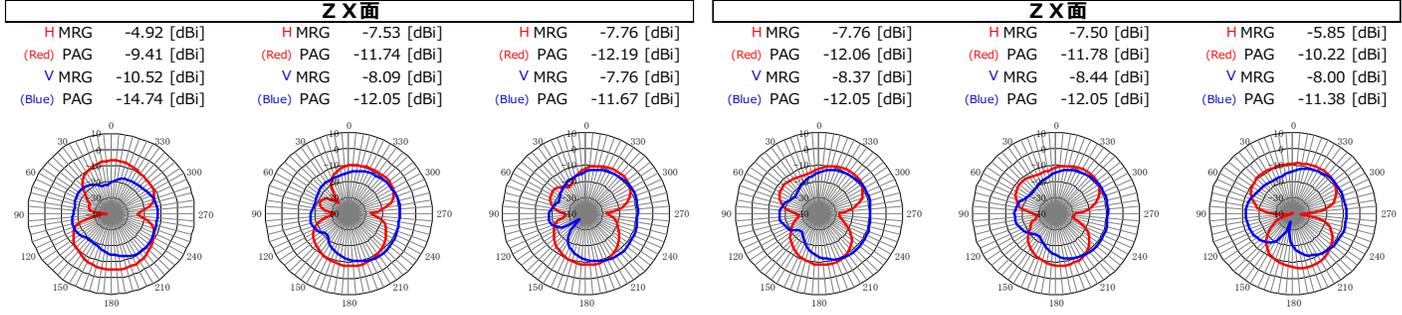
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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Sub-GHz Band



| 902 [MHz] | 915 [MHz] | 922 [MHz] | 928 [MHz] | 930 [MHz] | 940 [MHz] |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Efficiency -8.20 [dB] | Efficiency -9.23 [dB] | Efficiency -9.07 [dB] | Efficiency -8.92 [dB] | Efficiency -8.70 [dB] | Efficiency -7.25 [dB] |



— 水平偏波 Horizontal Polarized Wave
— 垂直偏波 Vertical Polarized Wave
 MRG = 最大利得 Maximum Absolute Gain
 PAG = 平均利得 Pattern Average Gain

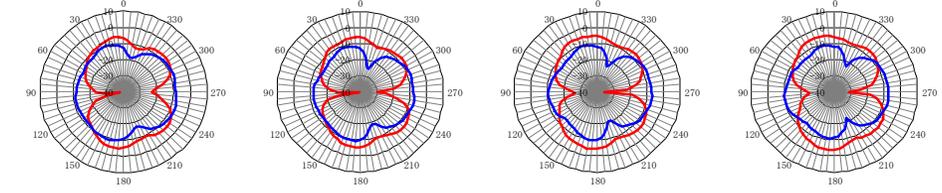
4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

T18-029-1103

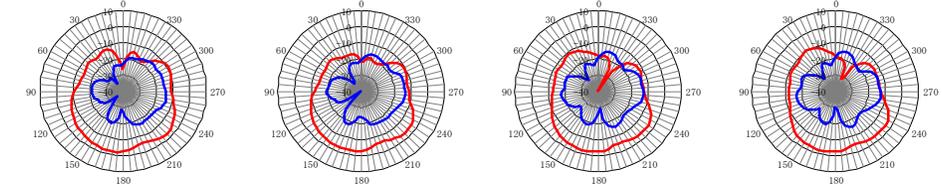
2.4GHz Band (Wi-Fi , etc.)

| 2400 [MHz] | 2442 [MHz] | 2483.5 [MHz] | 2500 [MHz] |
|-----------------------|-----------------------|-----------------------|-----------------------|
| Efficiency -6.15 [dB] | Efficiency -6.33 [dB] | Efficiency -6.03 [dB] | Efficiency -5.88 [dB] |

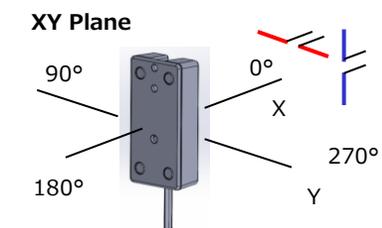
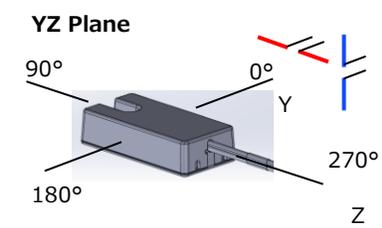
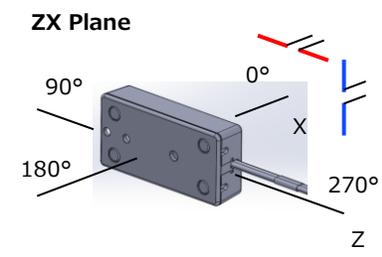
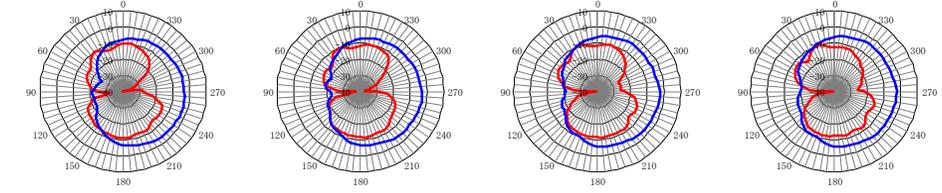
| Z X面 | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|
| H MRG -4.76 [dBi] | H MRG -5.17 [dBi] | H MRG -4.26 [dBi] | H MRG -4.01 [dBi] |
| (Red) PAG -9.04 [dBi] | (Red) PAG -9.05 [dBi] | (Red) PAG -8.09 [dBi] | (Red) PAG -7.89 [dBi] |
| V MRG -7.37 [dBi] | V MRG -7.37 [dBi] | V MRG -6.92 [dBi] | V MRG -7.07 [dBi] |
| (Blue) PAG -10.62 [dBi] | (Blue) PAG -11.11 [dBi] | (Blue) PAG -10.96 [dBi] | (Blue) PAG -11.04 [dBi] |



| Y Z面 | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|
| H MRG -1.75 [dBi] | H MRG -2.44 [dBi] | H MRG -2.19 [dBi] | H MRG -2.14 [dBi] |
| (Red) PAG -6.97 [dBi] | (Red) PAG -7.39 [dBi] | (Red) PAG -7.28 [dBi] | (Red) PAG -7.22 [dBi] |
| V MRG -13.70 [dBi] | V MRG -13.44 [dBi] | V MRG -12.57 [dBi] | V MRG -12.30 [dBi] |
| (Blue) PAG -18.68 [dBi] | (Blue) PAG -18.35 [dBi] | (Blue) PAG -17.67 [dBi] | (Blue) PAG -17.58 [dBi] |



| X Y面 | | | |
|------------------------|------------------------|------------------------|------------------------|
| H MRG -9.97 [dBi] | H MRG -10.24 [dBi] | H MRG -9.32 [dBi] | H MRG -9.80 [dBi] |
| (Red) PAG -13.99 [dBi] | (Red) PAG -14.24 [dBi] | (Red) PAG -13.73 [dBi] | (Red) PAG -14.27 [dBi] |
| V MRG -2.65 [dBi] | V MRG -2.77 [dBi] | V MRG -2.36 [dBi] | V MRG -2.46 [dBi] |
| (Blue) PAG -6.85 [dBi] | (Blue) PAG -6.98 [dBi] | (Blue) PAG -6.21 [dBi] | (Blue) PAG -6.18 [dBi] |



— 水平偏波 Horizontal Polarized Wave
 — 垂直偏波 Vertical Polarized Wave

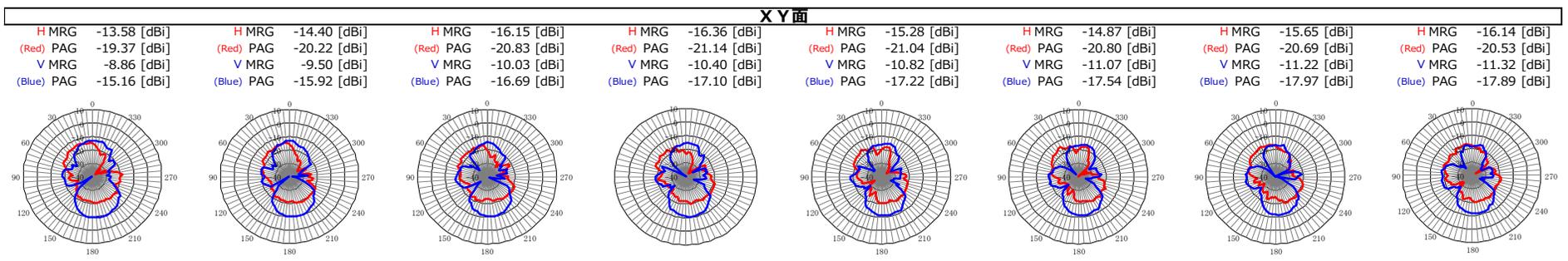
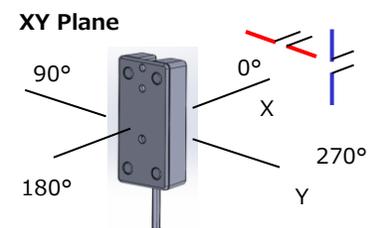
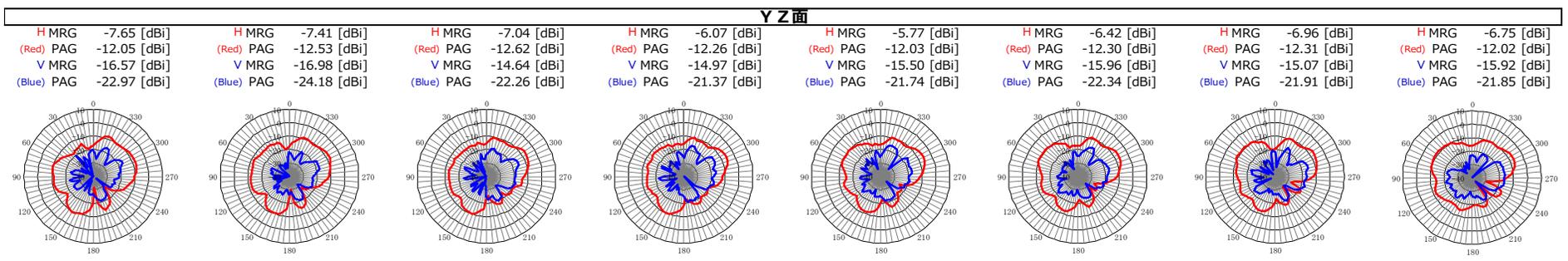
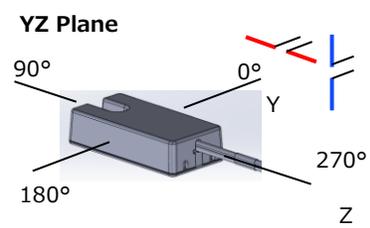
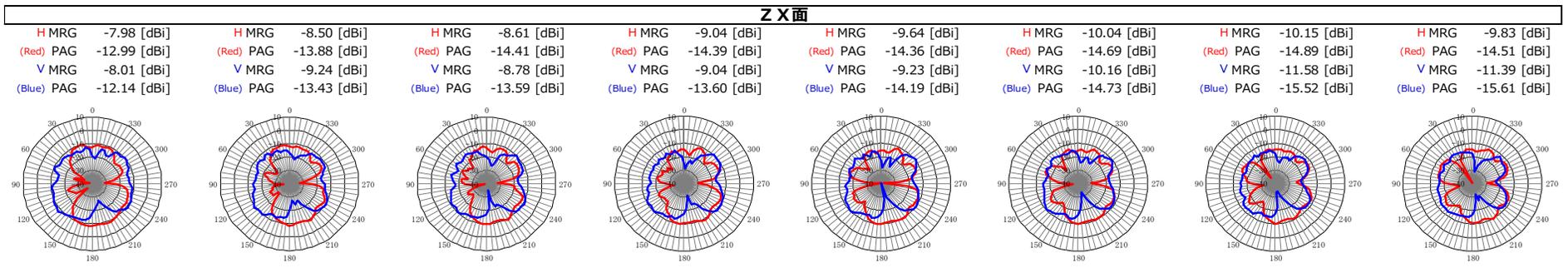
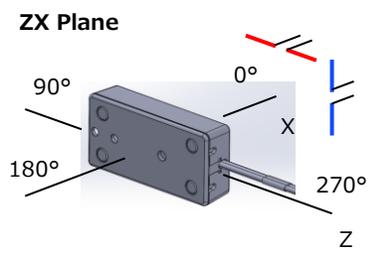
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 PAG = 平均利得 Pattern Average Gain

4.利得・指向性特性 Gain and Radiation Pattern Characteristics

T18-029-1103

5GHz Band (Wi-Fi , etc.)

| 4900 [MHz] | 4950 [MHz] | 5000 [MHz] | 5030 [MHz] | 5060.5 [MHz] | 5091 [MHz] | 5150 [MHz] | 5200 [MHz] |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Efficiency -10.54 [dB] | Efficiency -11.32 [dB] | Efficiency -11.62 [dB] | Efficiency -11.43 [dB] | Efficiency -11.62 [dB] | Efficiency -11.93 [dB] | Efficiency -12.09 [dB] | Efficiency -11.96 [dB] |



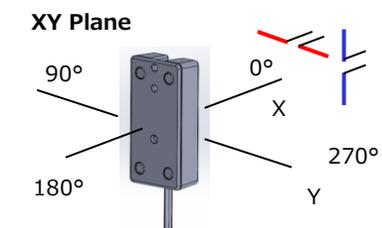
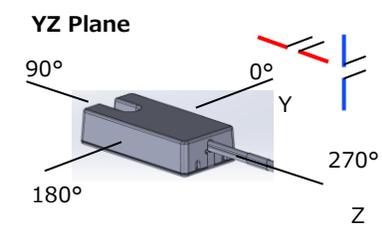
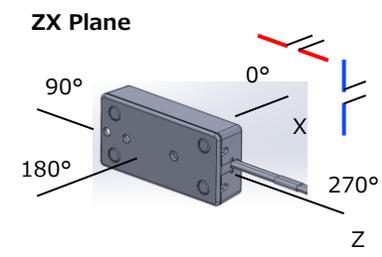
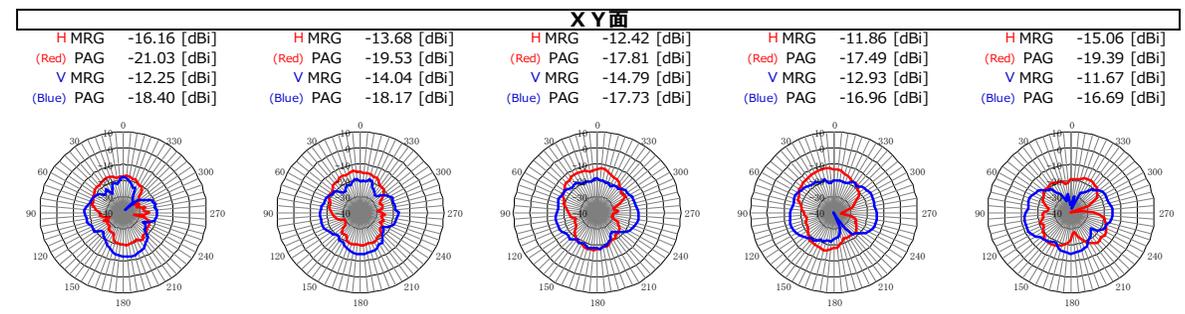
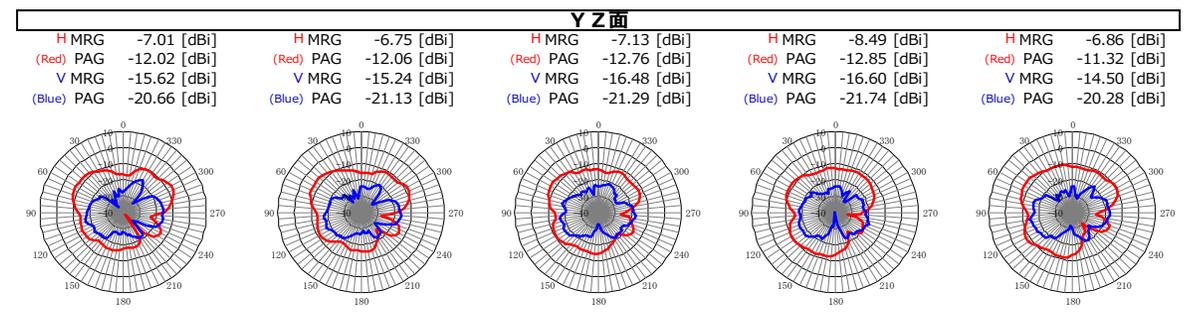
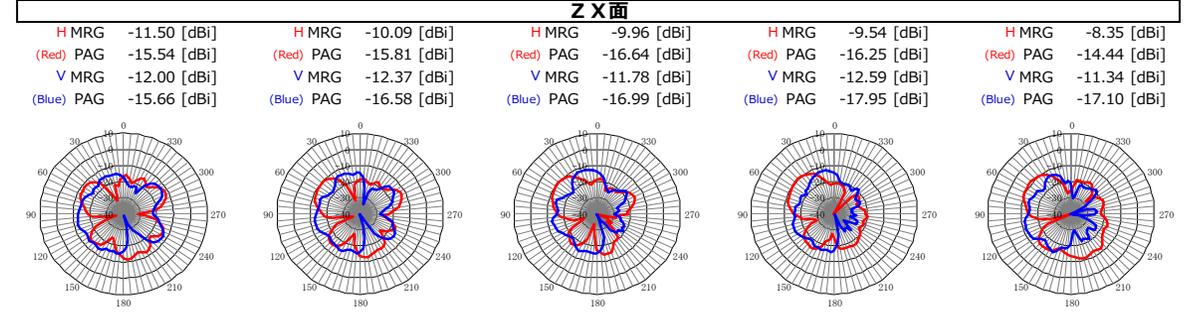
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4. 利得・指向性特性 Gain and Radiation Pattern Characteristics

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5GHz Band (Wi-Fi , etc.)

| 5350 [MHz] | 5500 [MHz] | 5650 [MHz] | 5750 [MHz] | 5850 [MHz] |
|------------------------|------------------------|------------------------|------------------------|------------------------|
| Efficiency -12.48 [dB] | Efficiency -12.88 [dB] | Efficiency -13.41 [dB] | Efficiency -13.31 [dB] | Efficiency -11.97 [dB] |



— 水平偏波 Horizontal Polarized Wave MRG = 最大利得 Maximum Absolute Gain
— 垂直偏波 Vertical Polarized Wave PAG = 平均利得 Pattern Average Gain

5.最大利得・放射効率 Maximum Absolute Gain and Efficiency

T18-029-1102

| Frequency(MHz) | 600 | 617 | 630 | 634.5 | 652 | 660 | 663 | 680.5 | 698 | 699 | 703 | 704 | 707.5 | 710 | 716 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Absolute Gain(dBi) | -12.66 | -12.54 | -11.09 | -11.09 | -10.25 | -9.92 | -10.62 | -11.46 | -14.88 | -14.82 | -14.38 | -14.35 | -13.79 | -13.28 | -13.17 |
| Efficiency(dB) | -16.19 | -15.06 | -13.86 | -14.06 | -13.27 | -12.84 | -13.81 | -15.28 | -17.02 | -16.99 | -16.81 | -16.73 | -16.29 | -16.02 | -15.87 |

| Frequency(MHz) | 725.5 | 729 | 734 | 737.5 | 740 | 746 | 748 | 751 | 756 | 758 | 763 | 768 | 777 | 780.5 | 782 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -12.08 | -11.66 | -11.24 | -10.93 | -10.70 | -10.08 | -9.94 | -9.71 | -9.29 | -9.18 | -8.90 | -8.86 | -7.64 | -7.47 | -7.41 |
| Efficiency(dB) | -14.76 | -14.38 | -13.91 | -13.49 | -13.06 | -12.16 | -12.01 | -11.72 | -11.20 | -11.03 | -10.62 | -10.44 | -9.64 | -9.61 | -9.59 |

| Frequency(MHz) | 787 | 788 | 791 | 793 | 798 | 803 | 806 | 814 | 815 | 821 | 822.5 | 824 | 830 | 831.5 | 832 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -7.19 | -7.13 | -6.91 | -6.67 | -6.12 | -6.14 | -5.85 | -4.97 | -4.79 | -3.83 | -3.62 | -3.43 | -3.07 | -3.11 | -3.13 |
| Efficiency(dB) | -9.42 | -9.38 | -9.14 | -8.88 | -8.31 | -8.29 | -7.96 | -7.09 | -7.00 | -6.47 | -6.34 | -6.20 | -5.97 | -6.04 | -6.05 |

| Frequency(MHz) | 836.5 | 837.5 | 845 | 847 | 849 | 859 | 860 | 862 | 865 | 867.5 | 868 | 869 | 875 | 876.5 | 880 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -2.96 | -2.85 | -2.47 | -2.41 | -2.37 | -2.39 | -2.39 | -2.40 | -2.35 | -2.32 | -2.32 | -2.35 | -2.63 | -2.68 | -2.95 |
| Efficiency(dB) | -5.97 | -5.90 | -5.58 | -5.47 | -5.36 | -5.02 | -5.01 | -4.99 | -4.94 | -4.92 | -4.92 | -4.94 | -5.16 | -5.17 | -5.48 |

| Frequency(MHz) | 881.5 | 882.5 | 890 | 894 | 897.5 | 900 | 902 | 915 | 922 | 925 | 928 | 930 | 940 | 942.5 | 960 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -3.06 | -3.15 | -3.77 | -3.84 | -3.86 | -3.43 | -3.86 | -4.30 | -4.17 | -3.77 | -3.53 | -3.45 | -3.10 | -3.11 | -4.08 |
| Efficiency(dB) | -5.56 | -5.62 | -6.18 | -6.70 | -7.02 | -6.85 | -7.27 | -7.31 | -6.85 | -6.71 | -6.64 | -6.62 | -6.48 | -6.52 | -7.13 |

| Frequency(MHz) | 1176.5 | 1227.6 | 1246.0 | 1278.8 | 1427.9 | 1437.9 | 1440.0 | 1447.9 | 1455.4 | 1462.9 | 1475.9 | 1485.9 | 1495.9 | 1503.4 | 1510.9 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Absolute Gain(dBi) | -10.00 | -16.30 | -17.21 | -14.02 | -8.86 | -8.44 | -8.29 | -8.95 | -8.74 | -8.79 | -8.68 | -8.64 | -8.44 | -8.70 | -8.11 |
| Efficiency(dB) | -13.69 | -19.20 | -21.32 | -18.39 | -12.53 | -11.94 | -11.90 | -12.15 | -12.08 | -12.33 | -12.05 | -11.83 | -11.63 | -11.91 | -11.49 |

| Frequency(MHz) | 1575.42 | 1602 | 1710 | 1732.5 | 1740 | 1745 | 1747.5 | 1749.9 | 1755 | 1767.4 | 1780 | 1784.9 | 1785 | 1805 | 1842.5 |
|----------------------------|---------|--------|-------|--------|-------|-------|--------|--------|-------|--------|-------|--------|-------|-------|--------|
| Maximum Absolute Gain(dBi) | -7.14 | -7.26 | -2.53 | -2.44 | -1.96 | -2.12 | -2.12 | -2.07 | -1.84 | -1.60 | -1.14 | -0.91 | -0.90 | -0.69 | -0.53 |
| Efficiency(dB) | -10.38 | -10.41 | -7.07 | -6.38 | -5.76 | -6.00 | -6.00 | -5.93 | -5.67 | -5.42 | -5.00 | -4.77 | -4.77 | -4.57 | -4.36 |

5.最大利得・放射効率 Maximum Absolute Gain and Efficiency

T18-029-1102

| Frequency(MHz) | 1844.9 | 1850 | 1862.4 | 1879.9 | 1880 | 1882.5 | 1900 | 1910 | 1915 | 1920 | 1930 | 1950 | 1960 | 1962.5 | 1980 |
|----------------------------|--------|-------|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Maximum Absolute Gain(dBi) | -0.53 | -0.51 | -0.53 | -0.45 | -0.46 | -0.44 | -0.69 | -0.94 | -1.12 | -1.30 | -1.57 | -1.72 | -1.44 | -1.38 | -0.55 |
| Efficiency(dB) | -4.40 | -4.47 | -4.62 | -4.79 | -4.79 | -4.80 | -5.14 | -5.16 | -5.19 | -5.24 | -5.30 | -5.81 | -6.31 | -6.43 | -6.59 |

| Frequency(MHz) | 1990 | 1995 | 2010 | 2025 | 2110 | 2132.5 | 2140 | 2155 | 2170 | 2200 | 2300 | 2305 | 2310 | 2315 | 2350 |
|----------------------------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -0.64 | -0.75 | -0.54 | -0.75 | -1.46 | -1.94 | -1.95 | -2.45 | -2.27 | -2.69 | -2.81 | -2.62 | -2.64 | -2.36 | -1.75 |
| Efficiency(dB) | -6.70 | -6.78 | -6.50 | -6.42 | -6.00 | -5.96 | -6.08 | -6.30 | -6.58 | -7.04 | -7.26 | -7.18 | -7.30 | -7.12 | -6.63 |

| Frequency(MHz) | 2355 | 2360 | 2400 | 2442 | 2450 | 2483.5 | 2496 | 2500 | 2535 | 2570 | 2593 | 2595 | 2600 | 2620 | 2655 |
|----------------------------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -1.75 | -1.80 | -2.29 | -1.76 | -0.58 | -1.48 | -1.64 | -1.58 | -1.41 | -0.97 | -0.35 | -0.36 | 0.10 | -0.38 | -0.49 |
| Efficiency(dB) | -6.59 | -6.60 | -6.71 | -6.52 | -5.83 | -6.24 | -6.24 | -6.14 | -6.14 | -5.69 | -5.18 | -5.19 | -4.81 | -5.45 | -5.45 |

| Frequency(MHz) | 2690 | 2917.5 | 3300 | 3400 | 3500 | 3550 | 3600 | 3625 | 3700 | 3750 | 3800 | 4200 | 4400 | 4700 | 4900 |
|----------------------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Maximum Absolute Gain(dBi) | -0.59 | 0.01 | 0.18 | -1.39 | -2.44 | -3.42 | -3.80 | -4.03 | -3.64 | -3.65 | -5.17 | -3.45 | -1.14 | -4.69 | -7.92 |
| Efficiency(dB) | -5.85 | -5.47 | -6.03 | -6.38 | -6.31 | -6.93 | -7.21 | -7.42 | -8.33 | -8.55 | -9.86 | -9.11 | -7.30 | -8.23 | -10.85 |

| Frequency(MHz) | 4950 | 5000 | 5030 | 5060.5 | 5091 | 5150 | 5200 | 5350 | 5500 | 5650 | 5750 | 5850 | 5925 | 6000 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Absolute Gain(dBi) | -9.02 | -7.99 | -7.48 | -7.59 | -7.99 | -7.87 | -7.93 | -8.04 | -7.63 | -8.78 | -9.69 | -7.61 | -8.70 | -7.73 |
| Efficiency(dB) | -12.07 | -12.19 | -12.14 | -12.22 | -12.49 | -12.71 | -12.80 | -13.15 | -13.47 | -13.94 | -13.62 | -12.72 | -12.64 | -11.87 |

5.最大利得・放射効率 Maximum Absolute Gain and Efficiency

T18-029-1103

| Frequency(MHz) | 600 | 617 | 630 | 634.5 | 652 | 660 | 663 | 680.5 | 698 | 699 | 703 | 704 | 707.5 | 710 | 716 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Absolute Gain(dBi) | -13.23 | -11.29 | -12.73 | -14.93 | -14.53 | -13.71 | -14.17 | -11.87 | -10.92 | -10.93 | -10.88 | -10.82 | -10.60 | -10.48 | -10.56 |
| Efficiency(dB) | -15.17 | -14.16 | -16.34 | -19.00 | -19.57 | -18.25 | -18.75 | -16.55 | -16.46 | -16.47 | -16.44 | -16.39 | -16.04 | -15.82 | -15.64 |

| Frequency(MHz) | 725.5 | 729 | 734 | 737.5 | 740 | 746 | 748 | 751 | 756 | 758 | 763 | 768 | 777 | 780.5 | 782 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Absolute Gain(dBi) | -9.96 | -9.85 | -9.87 | -9.80 | -9.69 | -9.46 | -9.48 | -9.25 | -8.73 | -8.53 | -8.06 | -7.90 | -7.13 | -7.15 | -7.15 |
| Efficiency(dB) | -14.47 | -14.16 | -13.84 | -13.56 | -13.29 | -12.90 | -12.85 | -12.66 | -12.24 | -12.08 | -11.71 | -11.48 | -10.50 | -10.36 | -10.28 |

| Frequency(MHz) | 787 | 788 | 791 | 793 | 798 | 803 | 806 | 814 | 815 | 821 | 822.5 | 824 | 830 | 831.5 | 832 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -7.03 | -7.00 | -6.86 | -6.67 | -6.37 | -6.55 | -6.30 | -5.28 | -5.11 | -4.20 | -3.97 | -3.74 | -3.06 | -3.02 | -3.01 |
| Efficiency(dB) | -9.93 | -9.86 | -9.57 | -9.29 | -8.74 | -8.59 | -8.14 | -6.99 | -6.86 | -6.12 | -5.95 | -5.76 | -5.38 | -5.39 | -5.39 |

| Frequency(MHz) | 836.5 | 837.5 | 845 | 847 | 849 | 859 | 860 | 862 | 865 | 867.5 | 868 | 869 | 875 | 876.5 | 880 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -2.56 | -2.44 | -2.13 | -2.11 | -2.12 | -2.45 | -2.50 | -2.57 | -2.51 | -2.41 | -2.40 | -2.40 | -2.43 | -2.40 | -2.55 |
| Efficiency(dB) | -5.07 | -4.95 | -4.55 | -4.49 | -4.46 | -4.56 | -4.58 | -4.63 | -4.67 | -4.73 | -4.75 | -4.81 | -5.27 | -5.34 | -5.82 |

| Frequency(MHz) | 881.5 | 882.5 | 890 | 894 | 897.5 | 900 | 902 | 915 | 922 | 925 | 928 | 930 | 940 | 942.5 | 960 |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -2.63 | -2.68 | -3.29 | -3.77 | -4.19 | -4.15 | -4.92 | -6.90 | -6.66 | -6.68 | -6.50 | -6.31 | -4.60 | -4.27 | -4.23 |
| Efficiency(dB) | -5.97 | -6.07 | -6.93 | -7.42 | -7.76 | -7.70 | -8.20 | -9.23 | -9.07 | -9.03 | -8.92 | -8.70 | -7.25 | -7.06 | -7.61 |

| Frequency(MHz) | 1176.5 | 1227.6 | 1246.0 | 1278.8 | 1427.9 | 1437.9 | 1440.0 | 1447.9 | 1455.4 | 1462.9 | 1475.9 | 1485.9 | 1495.9 | 1503.4 | 1510.9 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Absolute Gain(dBi) | -8.46 | -14.88 | -18.59 | -15.00 | -9.13 | -8.32 | -8.02 | -7.93 | -7.12 | -6.94 | -5.97 | -5.57 | -5.73 | -6.42 | -6.38 |
| Efficiency(dB) | -12.52 | -19.07 | -22.83 | -18.89 | -13.59 | -13.02 | -12.95 | -13.01 | -12.30 | -12.12 | -10.99 | -10.57 | -10.64 | -10.97 | -10.51 |

| Frequency(MHz) | 1575.42 | 1602 | 1710 | 1732.5 | 1740 | 1745 | 1747.5 | 1749.9 | 1755 | 1767.4 | 1780 | 1784.9 | 1785 | 1805 | 1842.5 |
|----------------------------|---------|--------|-------|--------|-------|-------|--------|--------|-------|--------|-------|--------|-------|-------|--------|
| Maximum Absolute Gain(dBi) | -6.33 | -6.51 | -2.70 | -2.38 | -1.89 | -2.00 | -1.96 | -1.86 | -1.69 | -1.39 | -1.14 | -0.86 | -0.85 | -0.54 | 0.13 |
| Efficiency(dB) | -10.68 | -10.60 | -7.40 | -6.91 | -6.36 | -6.55 | -6.48 | -6.34 | -6.06 | -5.53 | -5.09 | -4.76 | -4.75 | -4.32 | -4.01 |

5.最大利得・放射効率 Maximum Absolute Gain and Efficiency

T18-029-1103

| Frequency(MHz) | 1844.9 | 1850 | 1862.4 | 1879.9 | 1880 | 1882.5 | 1900 | 1910 | 1915 | 1920 | 1930 | 1950 | 1960 | 1962.5 | 1980 |
|----------------------------|--------|-------|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Maximum Absolute Gain(dBi) | 0.13 | 0.15 | 0.13 | 0.17 | 0.16 | 0.17 | -0.16 | -0.23 | -0.31 | -0.35 | -0.22 | -0.10 | -0.20 | -0.21 | -0.11 |
| Efficiency(dB) | -4.02 | -3.98 | -3.99 | -4.19 | -4.18 | -4.23 | -4.66 | -4.62 | -4.65 | -4.68 | -4.65 | -5.07 | -5.64 | -5.76 | -6.23 |

| Frequency(MHz) | 1990 | 1995 | 2010 | 2025 | 2110 | 2132.5 | 2140 | 2155 | 2170 | 2200 | 2300 | 2305 | 2310 | 2315 | 2350 |
|----------------------------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -0.39 | -0.59 | -0.51 | -0.20 | -1.01 | -2.13 | -2.15 | -1.82 | -2.40 | -3.24 | -2.01 | -2.02 | -2.09 | -1.89 | -1.58 |
| Efficiency(dB) | -6.58 | -6.73 | -6.66 | -6.42 | -6.04 | -6.36 | -6.46 | -6.46 | -6.91 | -6.78 | -6.80 | -6.82 | -6.86 | -6.63 | -6.32 |

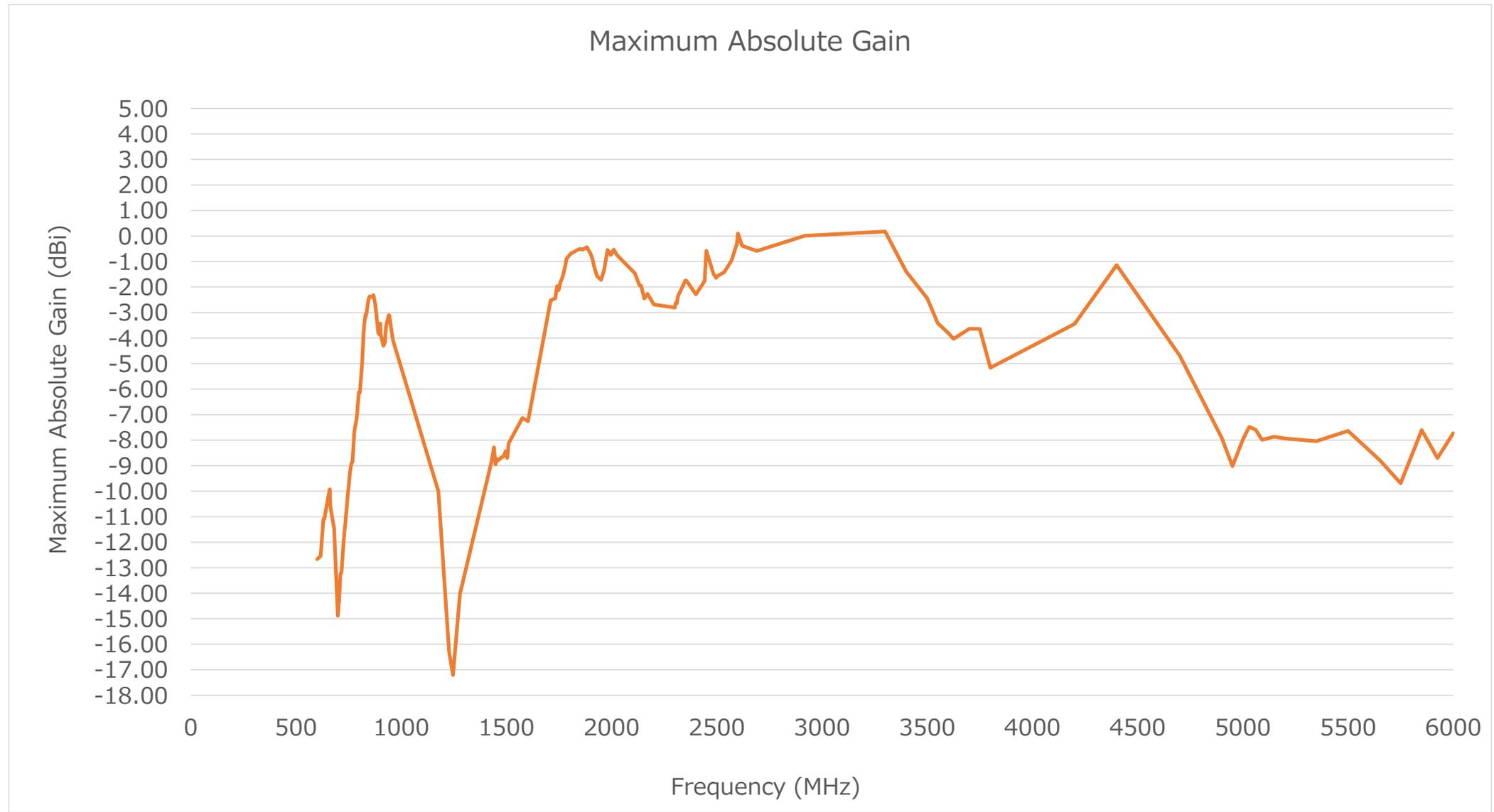
| Frequency(MHz) | 2355 | 2360 | 2400 | 2442 | 2450 | 2483.5 | 2496 | 2500 | 2535 | 2570 | 2593 | 2595 | 2600 | 2620 | 2655 |
|----------------------------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Maximum Absolute Gain(dBi) | -1.59 | -1.67 | -1.75 | -2.44 | -1.26 | -2.19 | -2.17 | -2.14 | -2.04 | -1.08 | -0.99 | -1.01 | -0.65 | -1.30 | -1.76 |
| Efficiency(dB) | -6.28 | -6.33 | -6.15 | -6.33 | -5.54 | -6.03 | -5.93 | -5.88 | -5.73 | -5.25 | -5.23 | -5.26 | -4.93 | -5.58 | -5.80 |

| Frequency(MHz) | 2690 | 2917.5 | 3300 | 3400 | 3500 | 3550 | 3600 | 3625 | 3700 | 3750 | 3800 | 4200 | 4400 | 4700 | 4900 |
|----------------------------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Maximum Absolute Gain(dBi) | -1.36 | -0.69 | -0.70 | -1.31 | -2.35 | -3.77 | -3.68 | -3.77 | -3.59 | -3.49 | -4.04 | -4.02 | -1.49 | -4.61 | -7.65 |
| Efficiency(dB) | -6.00 | -5.39 | -5.57 | -6.20 | -6.15 | -7.34 | -7.37 | -7.95 | -8.11 | -8.70 | -9.53 | -9.08 | -7.45 | -7.85 | -10.54 |

| Frequency(MHz) | 4950 | 5000 | 5030 | 5060.5 | 5091 | 5150 | 5200 | 5350 | 5500 | 5650 | 5750 | 5850 | 5925 | 6000 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Maximum Absolute Gain(dBi) | -7.41 | -7.04 | -6.07 | -5.77 | -6.42 | -6.96 | -6.75 | -7.01 | -6.75 | -7.13 | -8.49 | -6.86 | -6.46 | -6.45 |
| Efficiency(dB) | -11.32 | -11.62 | -11.43 | -11.62 | -11.93 | -12.09 | -11.96 | -12.48 | -12.88 | -13.41 | -13.31 | -11.97 | -12.12 | -11.17 |

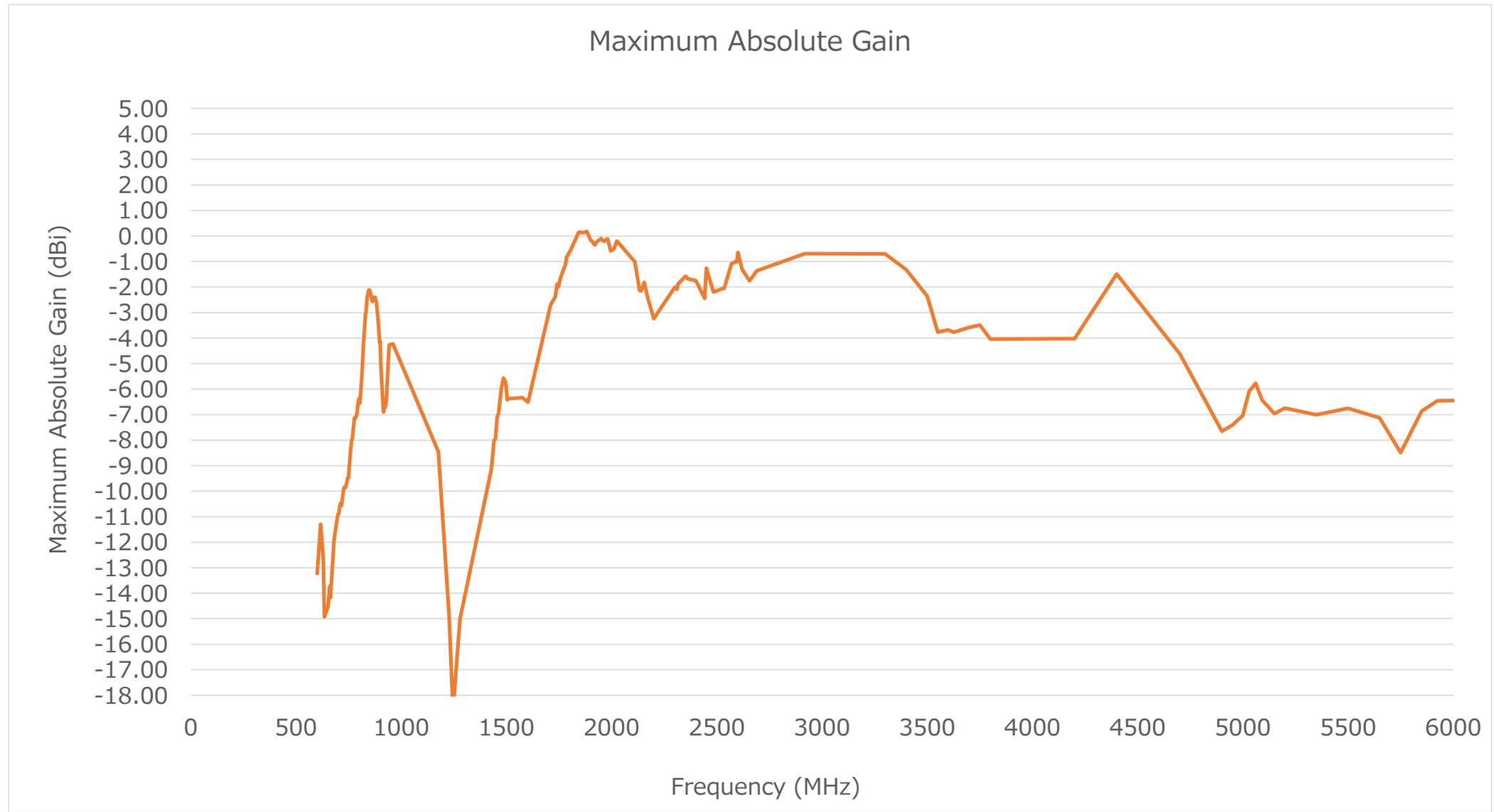
6.最大利得 Maximum Absolute Gain

T18-029-1102



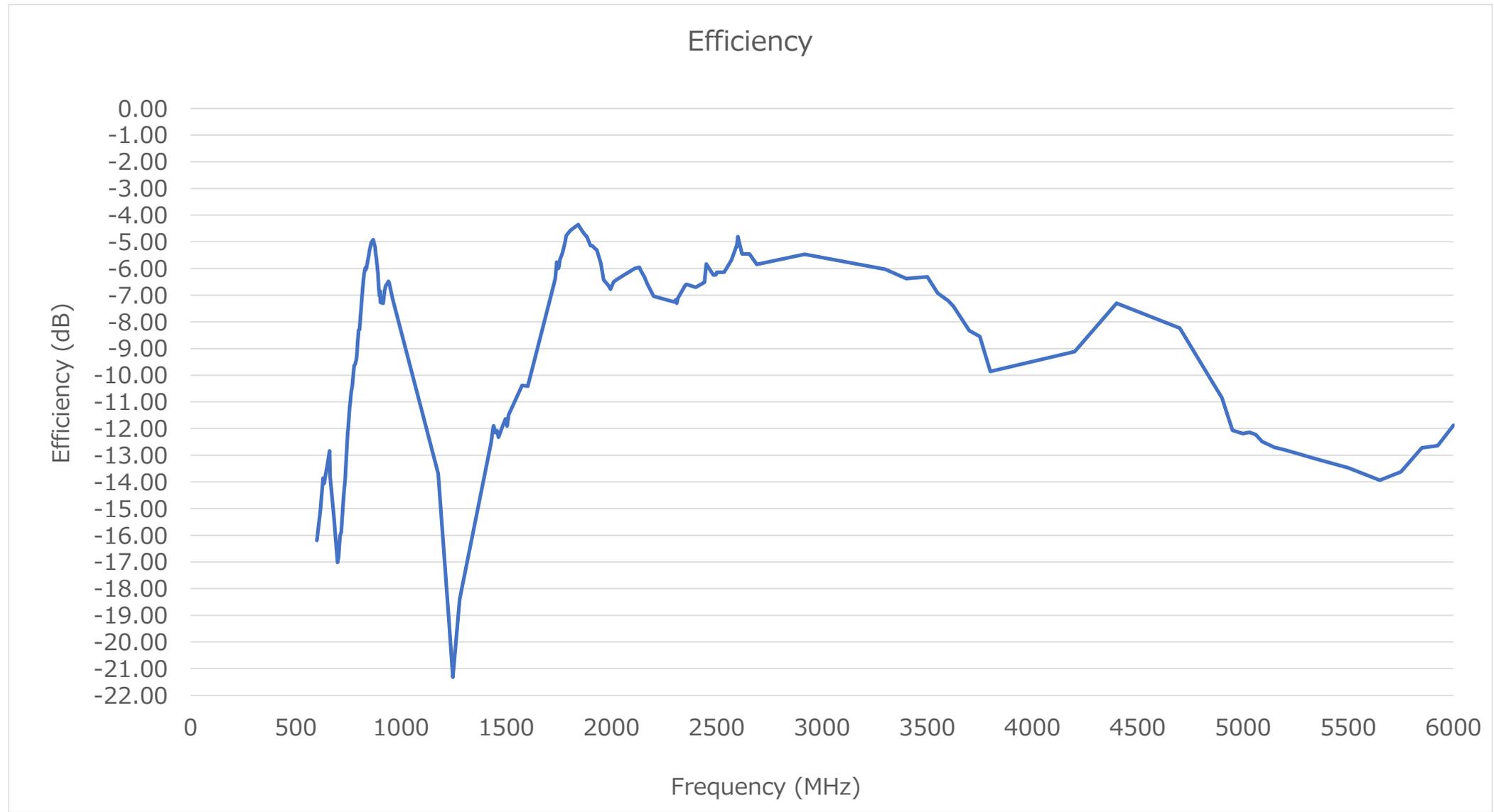
6.最大利得 Maximum Absolute Gain

T18-029-1103



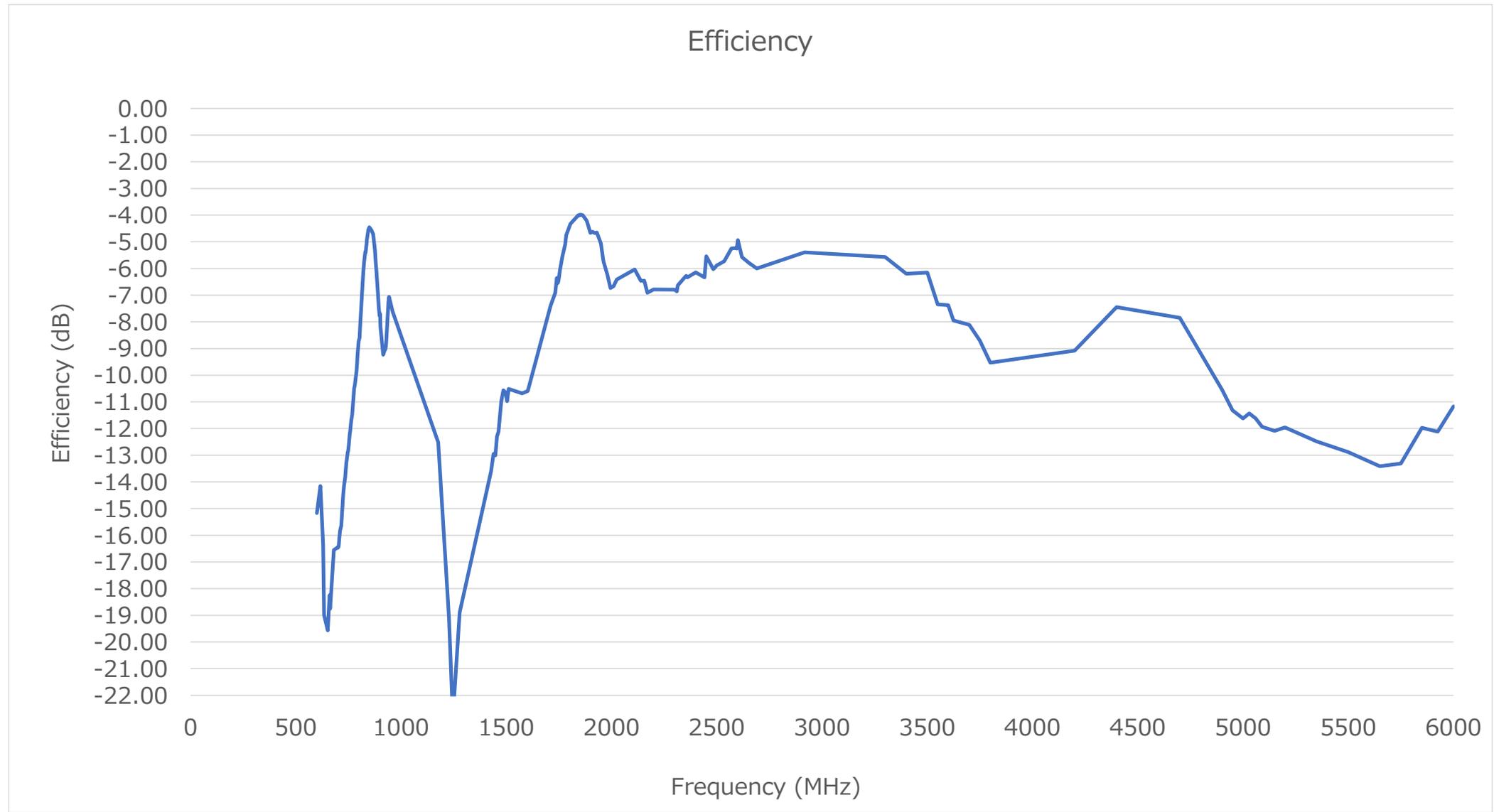
7.放射効率 Efficiency

T18-029-1103



7.放射効率 Efficiency

T18-029-1103



8. 来歴 Revision History

| 日付 Date | 変更前 Before Change | 変更後 After Change | 氏名 Name |
|------------|--|-------------------------------|------------|
| 2018/10/12 | Frequency : 1710~2170[MHz] | Frequency : 1428~2170[MHz] | Takeda |
| 2019/07/26 | P3 : 技適申請番号追加 (P3:Add Application Number) | | Takeda |
| 2020/07/30 | P10 : 測定周波数修正 (Fix Frequency) 2130MHz削除、1920MHz追加 (Delete 2130MHz , Add 1920MHz) | | Takeda |
| 2024/12/04 | 測定周波数変更 (Frequency Change) | | Takeda |
| | | | |
| | | | |