

**FIT Hon Teng Limited**  
鴻騰六零八八精密科技股份有限公司

# EE37 Antenna Test Report

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**belkin**

**VOLTAIRA**

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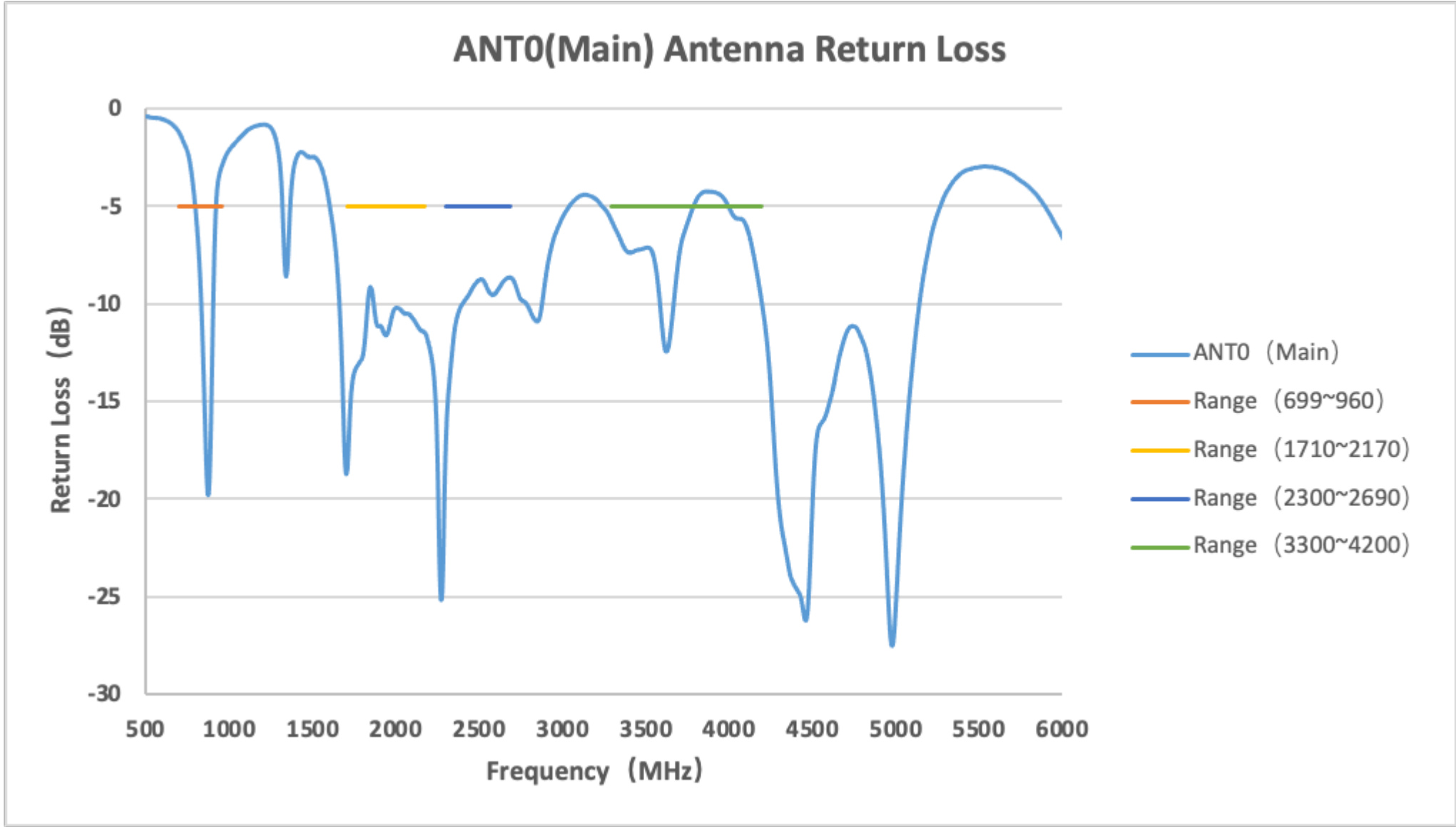
# Antenna Configuration & Frequency Information

| Antenna            | Description                       | RF Bands                                                                                                 | Frequency Range(MHz)                     |
|--------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------|
| Ant 0<br>(Main)    | LB DRx<br>MHB TRx<br>UHB DRx MIMO | UMTS: FDD I, FDD V, FDD VIII;<br>LTE: B1, B3, B4, B5, B7, B8, B12, B18,<br>B19, B28, B38, B40, B41, B42; | 699~960; 1710~2170; 2300~2690; 3300~4200 |
| Ant 1<br>(MIMO1)   | MHB DRx MIMO<br>UHB DRx           | LTE: B1, B3, B4, B7, B38, B40, B41, B42;                                                                 | 1710~2170; 2300~2690; 3300~4200          |
| Ant 2<br>(MIMO2)   | MHB PRx MIMO<br>UHB TRx           | LTE: B1, B3, B4, B7, B38, B40, B41, B42;                                                                 | 1710~2170; 2300~2690; 3300~4200          |
| Ant 3<br>(AUX)     | LB TRx<br>MHB DRx<br>UHB PRx MIMO | UMTS: FDD I, FDD V, FDD VIII;<br>LTE: B1, B3, B4, B5, B7, B8, B12, B18,<br>B19, B28, B38, B40, B41, B42; | 699~960; 1710~2170; 2300~2690; 3300~4200 |
| Ant 4<br>(Wi-Fi 1) | Wi-Fi Chain 0<br>(2.4G)           | Wi-Fi 2.4G;                                                                                              | 2400~2500;                               |
| Ant 5<br>(Wi-Fi 2) | Wi-Fi Chain 1<br>(2.4G)           | Wi-Fi 2.4G;                                                                                              | 2400~2500;                               |

■ Antenna Type: FPC Antenna.

# Antenna Test Result

■ S-Parameter: Main Antenna.



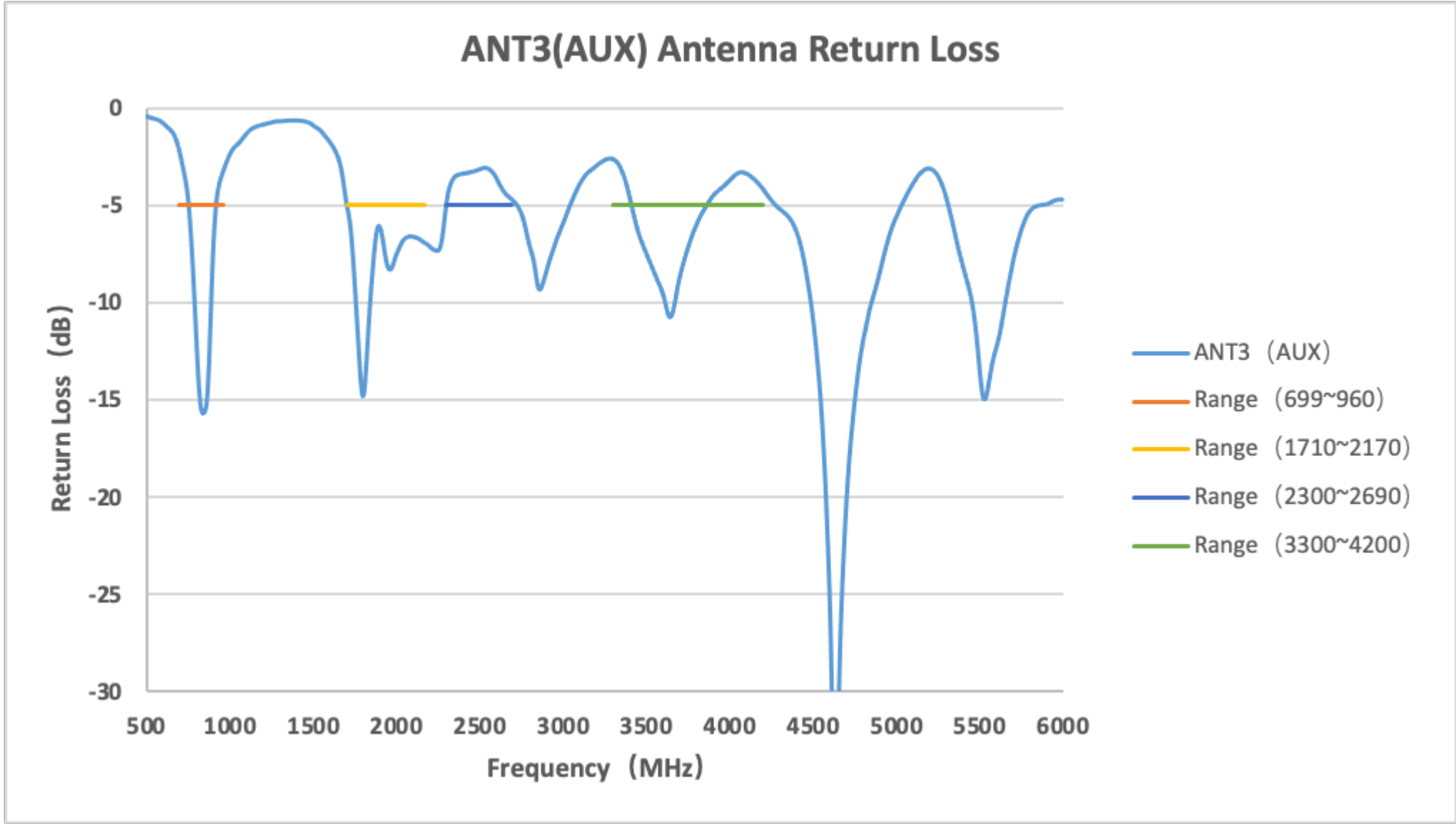
# Antenna Test Result

## ■ Efficiency: Main Antenna

| ANT0(Main) Antenna Efficiency |            |            |           |           |            |            |           |           |            |            |           |           |            |            |           |
|-------------------------------|------------|------------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|-----------|
| Frequency                     | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain |
| ( MHz )                       | ( dB )     | ( % )      | (dBi)     | ( MHz )   | ( dB )     | ( % )      | (dBi)     | ( MHz )   | ( dB )     | ( % )      | (dBi)     | ( MHz )   | ( dB )     | ( % )      | (dBi)     |
| LB                            |            |            |           | MB        |            |            |           | HB        |            |            |           | UHB       |            |            |           |
| 690                           | -6.56      | 22.06      | -2.74     | 1710      | -2.43      | 57.15      | 1.84      | 2300      | -2.97      | 50.41      | 1.41      | 3300      | -5.65      | 27.24      | -0.84     |
| 700                           | -6.24      | 23.75      | -2.66     | 1730      | -2.23      | 59.85      | 2.18      | 2320      | -3.49      | 44.77      | 0.93      | 3330      | -5.87      | 25.90      | -0.87     |
| 710                           | -6.17      | 24.16      | -2.67     | 1750      | -2.15      | 60.95      | 2.57      | 2340      | -3.62      | 43.49      | 0.81      | 3360      | -5.63      | 27.38      | -0.55     |
| 720                           | -5.64      | 27.29      | -2.24     | 1770      | -2.30      | 58.90      | 2.55      | 2360      | -3.64      | 43.23      | 1.38      | 3390      | -4.81      | 33.05      | 0.15      |
| 730                           | -5.33      | 29.34      | -1.77     | 1790      | -2.33      | 58.49      | 2.63      | 2380      | -3.56      | 44.06      | 1.48      | 3420      | -4.28      | 37.33      | 0.61      |
| 740                           | -5.04      | 31.33      | -1.48     | 1810      | -2.04      | 62.53      | 2.59      | 2400      | -3.89      | 40.86      | 1.24      | 3450      | -4.92      | 32.18      | -0.34     |
| 750                           | -4.95      | 32.02      | -1.63     | 1830      | -2.44      | 57.01      | 1.93      |           |            |            |           | 3480      | -4.21      | 37.93      | 0.81      |
| 760                           | -4.78      | 33.23      | -1.25     | 1850      | -2.98      | 50.34      | 0.25      | 2490      | -3.14      | 48.48      | 1.52      | 3510      | -3.07      | 49.29      | 2.69      |
| 770                           | -4.82      | 32.95      | -1.61     | 1870      | -2.70      | 53.69      | 0.84      | 2510      | -2.67      | 54.11      | 2.13      | 3540      | -3.44      | 45.29      | 2.71      |
| 780                           | -4.65      | 34.30      | -1.62     | 1890      | -2.41      | 57.40      | 1.15      | 2530      | -2.00      | 63.09      | 2.27      | 3570      | -3.15      | 48.39      | 2.98      |
| 790                           | -4.51      | 35.43      | -1.33     | 1910      | -2.19      | 60.35      | 1.84      | 2550      | -1.96      | 63.68      | 2.49      | 3600      | -2.87      | 51.70      | 2.75      |
| 800                           | -4.29      | 37.26      | -0.87     | 1930      | -2.22      | 59.98      | 1.68      | 2570      | -2.50      | 56.28      | 2.44      | 3630      | -3.13      | 48.65      | 1.82      |
| 810                           | -4.37      | 36.57      | -0.99     | 1950      | -2.08      | 61.92      | 1.73      | 2590      | -2.54      | 55.72      | 2.22      | 3660      | -2.91      | 51.16      | 1.84      |
| 820                           | -4.05      | 39.39      | -0.36     | 1970      | -1.96      | 63.61      | 1.64      | 2610      | -2.46      | 56.79      | 2.22      | 3690      | -3.03      | 49.82      | 1.75      |
| 830                           | -3.90      | 40.77      | -0.51     | 1990      | -1.97      | 63.56      | 1.80      | 2630      | -2.45      | 56.89      | 1.75      | 3720      | -3.56      | 44.11      | 0.90      |
| 840                           | -4.12      | 38.73      | -0.51     | 2010      | -2.17      | 60.71      | 1.55      | 2650      | -2.89      | 51.44      | 1.39      | 3750      | -3.49      | 44.81      | 1.00      |
| 850                           | -4.25      | 37.62      | -0.98     | 2030      | -2.53      | 55.83      | 1.18      | 2670      | -3.34      | 46.38      | 1.01      | 3780      | -3.22      | 47.63      | 1.41      |
| 860                           | -4.50      | 35.46      | -0.78     | 2050      | -2.62      | 54.73      | 1.31      | 2690      | -3.32      | 46.52      | 1.00      | 3810      | -2.89      | 51.43      | 1.93      |
| 870                           | -4.60      | 34.68      | -1.24     | 2070      | -2.10      | 61.61      | 2.16      |           |            |            |           | 3840      | -2.65      | 54.37      | 2.22      |
| 880                           | -4.54      | 35.17      | -1.38     | 2090      | -2.14      | 61.03      | 2.10      |           |            |            |           | 3870      | -3.06      | 49.43      | 1.63      |
| 890                           | -4.31      | 37.05      | -0.86     | 2110      | -2.45      | 56.84      | 1.63      |           |            |            |           | 3900      | -3.15      | 48.39      | 1.41      |
| 900                           | -3.79      | 41.80      | 0.37      | 2130      | -2.73      | 53.39      | 1.25      |           |            |            |           | 3930      | -3.82      | 41.50      | 0.68      |
| 910                           | -3.24      | 47.38      | 0.64      | 2150      | -2.62      | 54.70      | 1.39      |           |            |            |           | 3960      | -3.97      | 40.10      | 0.67      |
| 920                           | -2.90      | 51.31      | 0.99      | 2170      | -2.37      | 57.91      | 1.69      |           |            |            |           | 3990      | -3.72      | 42.50      | 1.05      |
| 930                           | -2.69      | 53.89      | 1.30      |           |            |            |           |           |            |            |           | 4020      | -3.87      | 41.06      | 0.90      |
| 940                           | -2.83      | 52.07      | 0.92      |           |            |            |           |           |            |            |           | 4050      | -3.98      | 39.99      | 0.63      |
| 950                           | -3.11      | 48.81      | 0.67      |           |            |            |           |           |            |            |           | 4080      | -3.36      | 46.14      | 1.22      |
| 960                           | -3.51      | 44.54      | 0.33      |           |            |            |           |           |            |            |           | 4110      | -3.45      | 45.17      | 1.12      |
|                               |            |            |           |           |            |            |           |           |            |            |           | 4140      | -3.54      | 44.22      | 1.16      |
|                               |            |            |           |           |            |            |           |           |            |            |           | 4170      | -4.04      | 39.46      | 0.75      |
|                               |            |            |           |           |            |            |           |           |            |            |           | 4200      | -4.38      | 36.45      | 0.46      |

# Antenna Test Result

■ S-Parameter: AUX Antenna



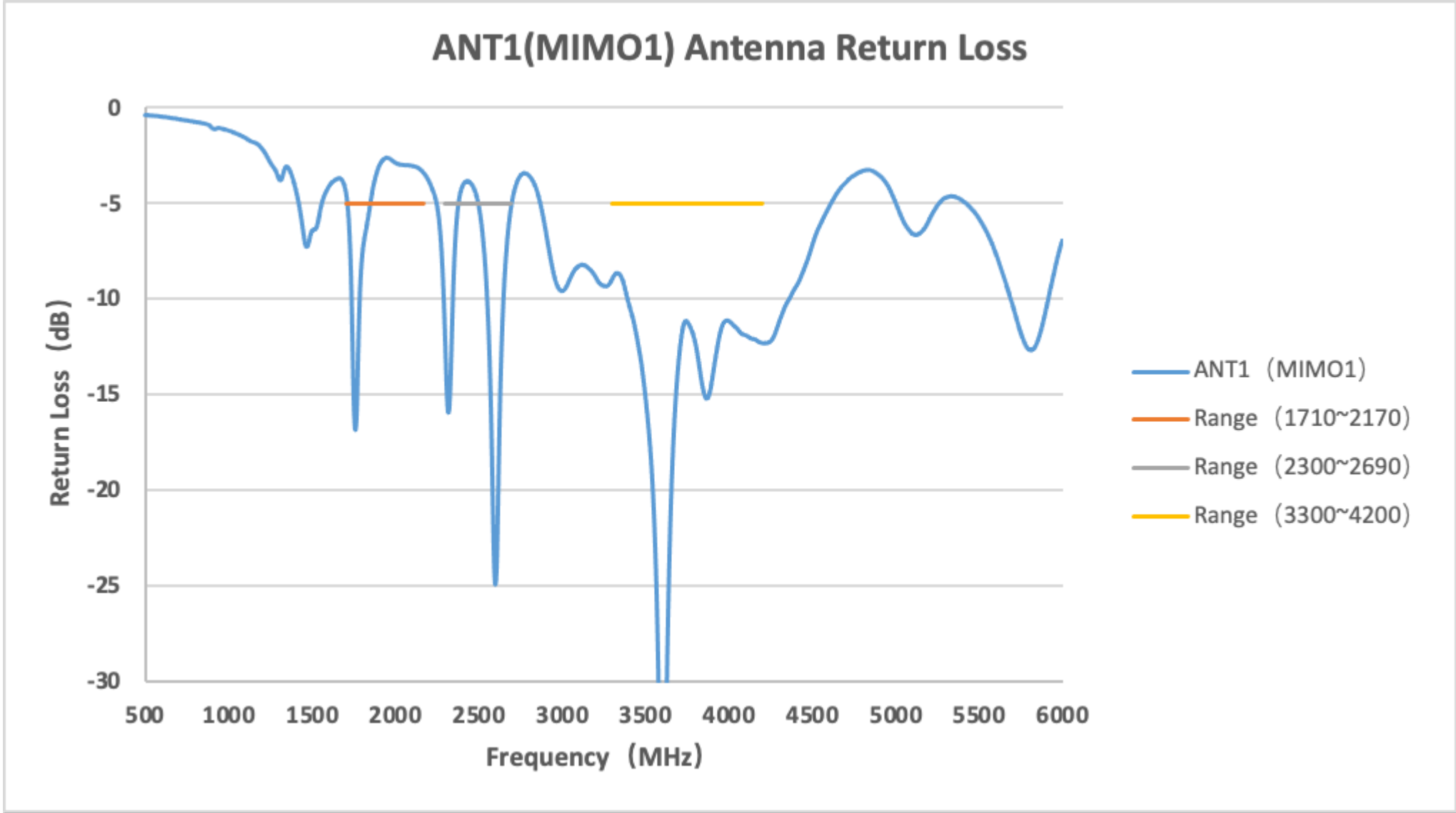
# Antenna Test Result

## ■ Efficiency: AUX Antenna

| ANT3(AUX) Antenna Efficiency |            |            |           |           |            |            |           |           |            |            |           |           |            |            |           |
|------------------------------|------------|------------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|-----------|
| Frequency                    | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain |
| ( MHz )                      | ( dB )     | ( % )      | (dBi)     | ( MHz )   | ( dB )     | ( % )      | (dBi)     | ( MHz )   | ( dB )     | ( % )      | (dBi)     | ( MHz )   | ( dB )     | ( % )      | (dBi)     |
| LB                           |            |            |           | MB        |            |            |           | HB        |            |            |           | UHB       |            |            |           |
| 690                          | -8.01      | 15.81      | -4.35     | 1710      | -2.76      | 52.95      | 1.61      | 2300      | -4.63      | 34.42      | -0.18     | 3300      | -6.15      | 24.27      | -0.29     |
| 700                          | -8.10      | 15.50      | -4.11     | 1730      | -2.41      | 57.45      | 1.19      | 2320      | -5.26      | 29.81      | -1.54     | 3330      | -5.21      | 30.13      | 0.76      |
| 710                          | -8.00      | 15.85      | -4.07     | 1750      | -2.85      | 51.83      | 0.38      | 2340      | -5.16      | 30.48      | -1.25     | 3360      | -4.08      | 39.08      | 1.84      |
| 720                          | -8.09      | 15.54      | -3.93     | 1770      | -3.06      | 49.46      | 1.06      | 2360      | -4.80      | 33.14      | -0.75     | 3390      | -3.06      | 49.43      | 2.50      |
| 730                          | -7.86      | 16.35      | -4.03     | 1790      | -3.18      | 48.13      | 1.84      | 2380      | -4.81      | 33.02      | -0.39     | 3420      | -3.07      | 49.32      | 2.16      |
| 740                          | -7.52      | 17.69      | -3.59     | 1810      | -3.76      | 42.07      | 1.32      | 2400      | -5.45      | 28.50      | -1.14     | 3450      | -3.40      | 45.71      | 1.76      |
| 750                          | -7.04      | 19.75      | -3.23     | 1830      | -4.87      | 32.58      | -1.29     |           |            |            |           | 3480      | -3.48      | 44.87      | 1.88      |
| 760                          | -6.49      | 22.43      | -2.53     | 1850      | -5.93      | 25.50      | -3.35     | 2490      | -5.45      | 28.51      | -0.02     | 3510      | -4.05      | 39.36      | 1.59      |
| 770                          | -5.88      | 25.81      | -1.91     | 1870      | -5.36      | 29.10      | -2.39     | 2510      | -5.89      | 25.77      | -0.51     | 3540      | -3.90      | 40.74      | 1.73      |
| 780                          | -5.27      | 29.74      | -1.05     | 1890      | -4.16      | 38.36      | -0.76     | 2530      | -5.71      | 26.87      | -0.67     | 3570      | -3.97      | 40.09      | 1.69      |
| 790                          | -4.71      | 33.77      | -0.70     | 1910      | -3.56      | 44.10      | -0.09     | 2550      | -5.91      | 25.67      | -1.14     | 3600      | -4.39      | 36.39      | 1.10      |
| 800                          | -4.34      | 36.79      | -0.49     | 1930      | -3.62      | 43.45      | -0.15     | 2570      | -6.52      | 22.27      | -1.05     | 3630      | -4.29      | 37.24      | 1.28      |
| 810                          | -4.22      | 37.84      | 0.00      | 1950      | -3.68      | 42.81      | -0.51     | 2590      | -6.61      | 21.84      | -1.53     | 3660      | -4.19      | 38.11      | 1.24      |
| 820                          | -4.23      | 37.75      | 0.16      | 1970      | -3.41      | 45.65      | -0.08     | 2610      | -6.37      | 23.08      | -1.27     | 3690      | -4.42      | 36.14      | 0.77      |
| 830                          | -3.72      | 42.44      | 0.52      | 1990      | -3.06      | 49.40      | 0.83      | 2630      | -5.86      | 25.92      | -0.99     | 3720      | -4.60      | 34.67      | 0.38      |
| 840                          | -3.10      | 48.98      | 1.54      | 2010      | -3.37      | 46.06      | 0.34      | 2650      | -5.61      | 27.51      | -0.98     | 3750      | -4.67      | 34.12      | -0.02     |
| 850                          | -2.75      | 53.11      | 2.00      | 2030      | -3.86      | 41.13      | -0.45     | 2670      | -5.37      | 29.04      | -0.92     | 3780      | -4.79      | 33.19      | -0.17     |
| 860                          | -2.47      | 56.67      | 2.35      | 2050      | -4.16      | 38.35      | -0.76     | 2690      | -4.88      | 32.51      | -0.62     | 3810      | -4.51      | 35.40      | 0.29      |
| 870                          | -2.32      | 58.63      | 2.44      | 2070      | -3.70      | 42.70      | -0.17     |           |            |            |           | 3840      | -4.70      | 33.88      | 0.40      |
| 880                          | -2.44      | 57.05      | 2.24      | 2090      | -3.51      | 44.53      | 0.02      |           |            |            |           | 3870      | -4.82      | 32.96      | 0.54      |
| 890                          | -2.65      | 54.27      | 2.10      | 2110      | -3.70      | 42.65      | -0.25     |           |            |            |           | 3900      | -5.79      | 26.36      | -0.14     |
| 900                          | -2.98      | 50.32      | 1.87      | 2130      | -3.74      | 42.27      | -0.28     |           |            |            |           | 3930      | -5.86      | 25.94      | -0.02     |
| 910                          | -3.27      | 47.12      | 1.38      | 2150      | -3.68      | 42.88      | -0.29     |           |            |            |           | 3960      | -5.53      | 27.99      | 0.64      |
| 920                          | -3.54      | 44.22      | 1.36      | 2170      | -3.48      | 44.86      | 0.05      |           |            |            |           | 3990      | -5.86      | 25.94      | 0.77      |
| 930                          | -4.02      | 39.67      | 0.57      |           |            |            |           |           |            |            |           | 4020      | -6.20      | 23.99      | 0.51      |
| 940                          | -4.55      | 35.06      | -0.09     |           |            |            |           |           |            |            |           | 4050      | -5.78      | 26.42      | 1.08      |
| 950                          | -5.28      | 29.63      | -0.47     |           |            |            |           |           |            |            |           | 4080      | -5.46      | 28.44      | 1.13      |
| 960                          | -6.12      | 24.43      | -1.83     |           |            |            |           |           |            |            |           | 4110      | -5.08      | 31.05      | 1.31      |
|                              |            |            |           |           |            |            |           |           |            |            |           | 4140      | -5.02      | 31.48      | 1.35      |
|                              |            |            |           |           |            |            |           |           |            |            |           | 4170      | -5.27      | 29.72      | 0.68      |
|                              |            |            |           |           |            |            |           |           |            |            |           | 4200      | -4.76      | 33.42      | 0.86      |

# Antenna Test Result

■ S-Parameter: MIMO1 Antenna



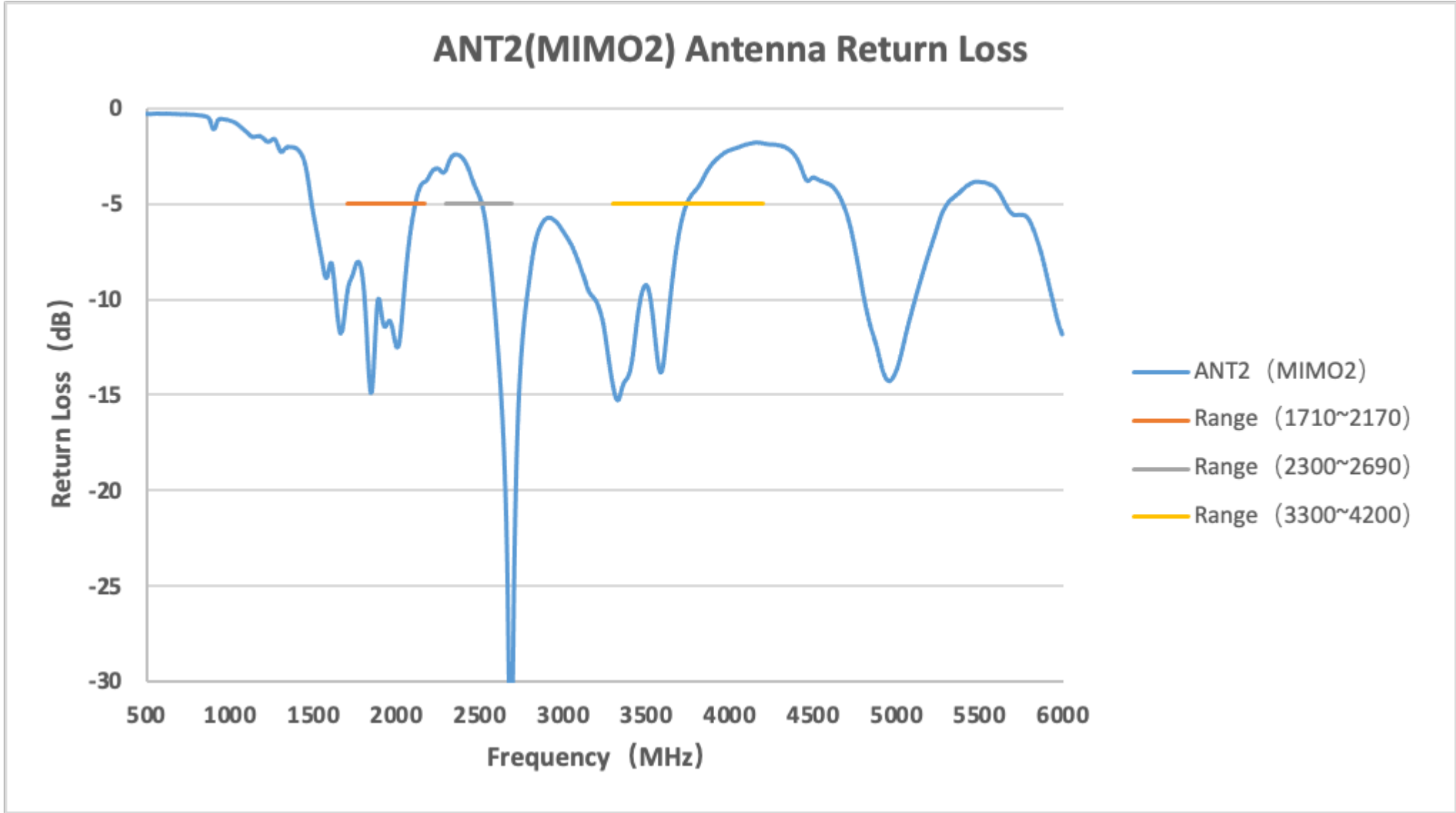
# Antenna Test Result

## ■ Efficiency: MIMO1 Antenna

| ANT1(MIMO1) Antenna Efficiency |            |            |           |           |            |            |           |           |            |            |           |
|--------------------------------|------------|------------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|-----------|
| Frequency                      | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain |
| (MHz)                          | (dB)       | (%)        | (dBi)     | (MHz)     | (dB)       | (%)        | (dBi)     | (MHz)     | (dB)       | (%)        | (dBi)     |
| MB                             |            |            |           | HB        |            |            |           | UHB       |            |            |           |
| 1710                           | -4.49      | 35.59      | 1.15      | 2300      | -4.44      | 35.98      | -0.20     | 3300      | -2.67      | 54.08      | 2.16      |
| 1730                           | -4.94      | 32.08      | -0.24     | 2320      | -3.85      | 41.18      | 0.63      | 3330      | -3.00      | 50.12      | 1.87      |
| 1750                           | -5.77      | 26.46      | -1.86     | 2340      | -4.02      | 39.65      | 0.67      | 3360      | -3.73      | 42.36      | 1.08      |
| 1770                           | -5.97      | 25.27      | -0.87     | 2360      | -4.06      | 39.28      | 0.65      | 3390      | -3.55      | 44.16      | 1.11      |
| 1790                           | -4.52      | 35.34      | -0.10     | 2380      | -4.75      | 33.49      | -0.05     | 3420      | -2.70      | 53.70      | 1.87      |
| 1810                           | -3.49      | 44.76      | 0.47      | 2400      | -6.29      | 23.48      | -1.95     | 3450      | -2.72      | 53.46      | 1.49      |
| 1830                           | -3.43      | 45.40      | 1.03      |           |            |            |           | 3480      | -2.82      | 52.24      | 1.43      |
| 1850                           | -4.14      | 38.52      | 1.13      | 2490      | -6.50      | 22.38      | -1.84     | 3510      | -2.59      | 55.08      | 1.63      |
| 1870                           | -5.28      | 29.66      | -0.33     | 2510      | -5.46      | 28.45      | -0.52     | 3540      | -3.19      | 47.97      | 1.14      |
| 1890                           | -6.31      | 23.41      | -1.07     | 2530      | -4.97      | 31.87      | 0.24      | 3570      | -3.27      | 47.10      | 1.30      |
| 1910                           | -7.10      | 19.49      | -1.59     | 2550      | -4.41      | 36.24      | 0.65      | 3600      | -3.55      | 44.16      | 1.02      |
| 1930                           | -7.59      | 17.40      | -1.83     | 2570      | -3.64      | 43.25      | 1.68      | 3630      | -3.94      | 40.36      | 0.52      |
| 1950                           | -7.96      | 16.01      | -2.27     | 2590      | -3.24      | 47.37      | 1.97      | 3660      | -3.86      | 41.11      | 0.29      |
| 1970                           | -8.09      | 15.54      | -2.57     | 2610      | -3.54      | 44.21      | 1.29      | 3690      | -3.87      | 41.02      | 1.07      |
| 1990                           | -8.20      | 15.15      | -2.79     | 2630      | -4.51      | 35.41      | 0.08      | 3720      | -3.89      | 40.83      | 1.33      |
| 2010                           | -8.14      | 15.36      | -2.43     | 2650      | -5.23      | 30.00      | -1.10     | 3750      | -3.32      | 46.56      | 1.54      |
| 2030                           | -8.17      | 15.25      | -2.73     | 2670      | -6.29      | 23.47      | -1.74     | 3780      | -3.16      | 48.31      | 1.30      |
| 2050                           | -8.33      | 14.70      | -3.30     | 2690      | -7.75      | 16.78      | -2.91     | 3810      | -3.13      | 48.64      | 0.91      |
| 2070                           | -8.14      | 15.36      | -3.18     |           |            |            |           | 3840      | -3.11      | 48.87      | 0.83      |
| 2090                           | -7.59      | 17.41      | -2.69     |           |            |            |           | 3870      | -3.49      | 44.77      | 0.37      |
| 2110                           | -7.62      | 17.30      | -1.71     |           |            |            |           | 3900      | -3.60      | 43.65      | 0.40      |
| 2130                           | -6.84      | 20.70      | -0.71     |           |            |            |           | 3930      | -4.28      | 37.33      | -0.39     |
| 2150                           | -6.28      | 23.57      | -0.43     |           |            |            |           | 3960      | -4.37      | 36.56      | -0.74     |
| 2170                           | -5.12      | 30.78      | 0.82      |           |            |            |           | 3990      | -4.19      | 38.11      | -0.63     |
|                                |            |            |           |           |            |            |           | 4020      | -4.57      | 34.91      | -0.81     |
|                                |            |            |           |           |            |            |           | 4050      | -4.92      | 32.21      | -1.11     |
|                                |            |            |           |           |            |            |           | 4080      | -4.51      | 35.40      | -0.84     |
|                                |            |            |           |           |            |            |           | 4110      | -4.54      | 35.16      | -0.83     |
|                                |            |            |           |           |            |            |           | 4140      | -4.52      | 35.32      | -0.89     |
|                                |            |            |           |           |            |            |           | 4170      | -4.93      | 32.14      | -1.19     |
|                                |            |            |           |           |            |            |           | 4200      | -5.47      | 28.38      | -1.49     |

# Antenna Test Result

■ S-Parameter: MIMO2 Antenna



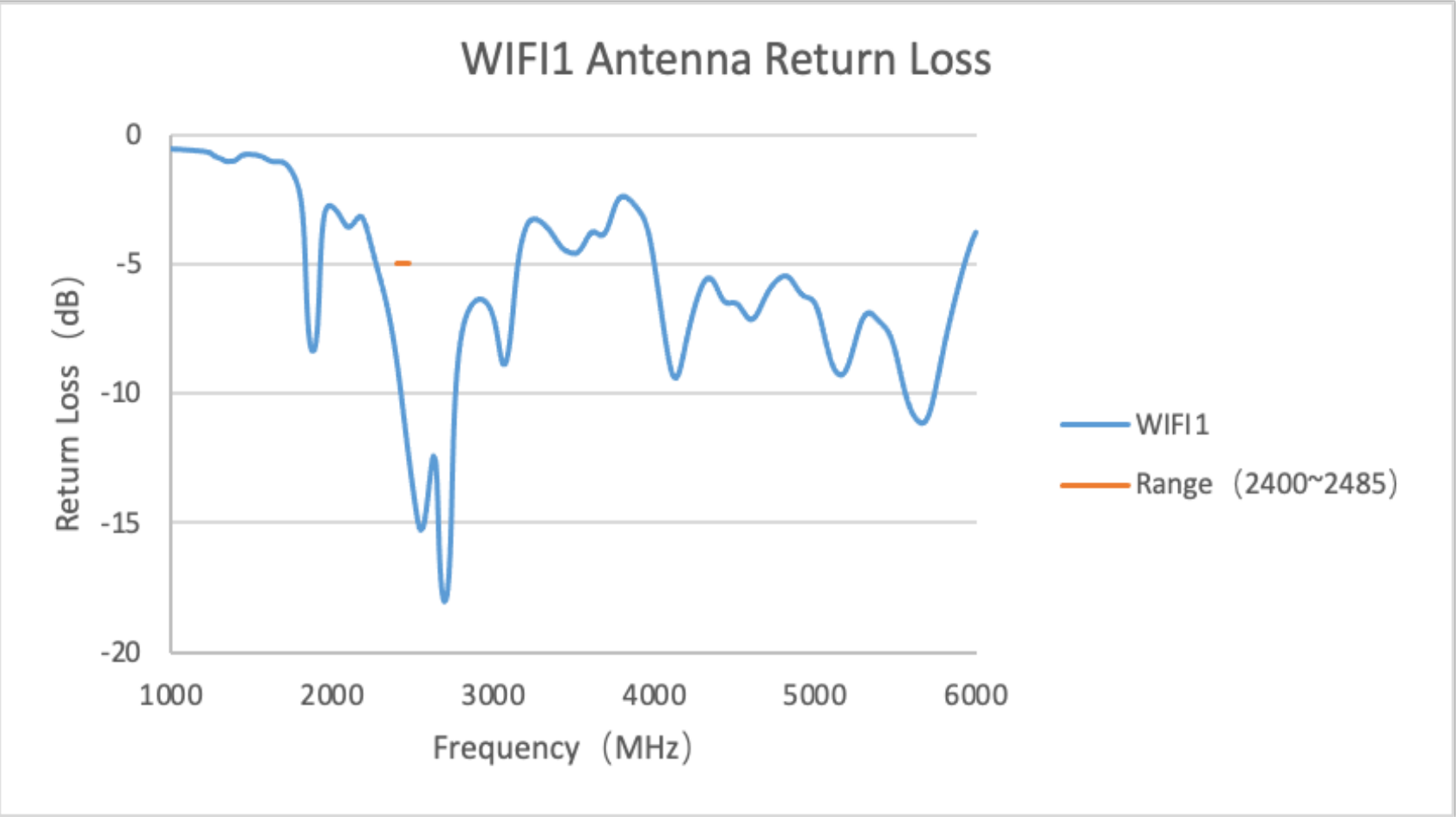
# Antenna Test Result

## ■ Efficiency: MIMO2 Antenna

| ANT2(MIMO2) Antenna Efficiency |            |            |           |           |            |            |           |           |            |            |           |
|--------------------------------|------------|------------|-----------|-----------|------------|------------|-----------|-----------|------------|------------|-----------|
| Frequency                      | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain | Frequency | Efficiency | Efficiency | Peak Gain |
| (MHz)                          | (dB)       | (%)        | (dBi)     | (MHz)     | (dB)       | (%)        | (dBi)     | (MHz)     | (dB)       | (%)        | (dBi)     |
| MB                             |            |            |           | HB        |            |            |           | UHB       |            |            |           |
| 1710                           | -2.35      | 58.19      | 2.44      | 2300      | -6.49      | 22.44      | -1.93     | 3300      | -2.62      | 54.70      | 2.16      |
| 1730                           | -2.24      | 59.74      | 2.11      | 2320      | -5.72      | 26.77      | -1.32     | 3330      | -3.27      | 47.10      | 1.36      |
| 1750                           | -2.53      | 55.90      | 1.86      | 2340      | -5.22      | 30.06      | -0.61     | 3360      | -3.84      | 41.30      | 0.87      |
| 1770                           | -2.84      | 52.05      | 1.96      | 2360      | -5.31      | 29.44      | -0.79     | 3390      | -3.46      | 45.08      | 0.84      |
| 1790                           | -2.65      | 54.27      | 2.38      | 2380      | -5.16      | 30.46      | -0.30     | 3420      | -2.73      | 53.33      | 1.57      |
| 1810                           | -2.16      | 60.79      | 2.87      | 2400      | -4.73      | 33.68      | -0.03     | 3450      | -2.73      | 53.33      | 1.50      |
| 1830                           | -2.08      | 61.88      | 2.72      |           |            |            |           | 3480      | -2.46      | 56.75      | 2.07      |
| 1850                           | -2.45      | 56.95      | 2.08      | 2490      | -3.83      | 41.39      | 1.96      | 3510      | -2.08      | 61.94      | 2.54      |
| 1870                           | -2.47      | 56.58      | 1.89      | 2510      | -3.51      | 44.52      | 1.80      | 3540      | -2.83      | 52.12      | 1.76      |
| 1890                           | -2.11      | 61.58      | 2.39      | 2530      | -3.04      | 49.64      | 2.72      | 3570      | -3.07      | 49.32      | 1.57      |
| 1910                           | -1.78      | 66.37      | 2.52      | 2550      | -2.91      | 51.19      | 2.75      | 3600      | -3.32      | 46.56      | 1.28      |
| 1930                           | -1.99      | 63.26      | 2.31      | 2570      | -3.21      | 47.76      | 2.37      | 3630      | -3.70      | 42.66      | 1.07      |
| 1950                           | -2.14      | 61.14      | 1.81      | 2590      | -3.39      | 45.81      | 2.39      | 3660      | -3.59      | 43.75      | 1.15      |
| 1970                           | -1.90      | 64.57      | 1.92      | 2610      | -3.40      | 45.69      | 1.66      | 3690      | -3.70      | 42.66      | 1.17      |
| 1990                           | -1.60      | 69.15      | 2.33      | 2630      | -3.53      | 44.32      | 1.68      | 3720      | -4.47      | 35.73      | 0.58      |
| 2010                           | -1.90      | 64.54      | 2.03      | 2650      | -3.90      | 40.72      | 1.35      | 3750      | -4.59      | 34.75      | 0.64      |
| 2030                           | -2.50      | 56.29      | 1.46      | 2670      | -4.14      | 38.52      | 1.13      | 3780      | -4.53      | 35.24      | 0.68      |
| 2050                           | -2.87      | 51.70      | 0.77      | 2690      | -3.90      | 40.70      | 1.28      | 3810      | -4.37      | 36.56      | 0.95      |
| 2070                           | -2.63      | 54.57      | 1.30      |           |            |            |           | 3840      | -4.47      | 35.73      | 0.97      |
| 2090                           | -2.85      | 51.90      | 1.30      |           |            |            |           | 3870      | -4.67      | 34.12      | 0.85      |
| 2110                           | -3.30      | 46.81      | 0.78      |           |            |            |           | 3900      | -4.86      | 32.66      | 0.72      |
| 2130                           | -3.72      | 42.49      | 0.19      |           |            |            |           | 3930      | -5.18      | 30.34      | 0.26      |
| 2150                           | -3.91      | 40.67      | 0.37      |           |            |            |           | 3960      | -5.21      | 30.13      | 0.42      |
| 2170                           | -4.25      | 37.62      | 0.08      |           |            |            |           | 3990      | -5.12      | 30.76      | 0.40      |
|                                |            |            |           |           |            |            |           | 4020      | -5.58      | 27.67      | -0.21     |
|                                |            |            |           |           |            |            |           | 4050      | -6.15      | 24.27      | -0.96     |
|                                |            |            |           |           |            |            |           | 4080      | -5.83      | 26.12      | -0.87     |
|                                |            |            |           |           |            |            |           | 4110      | -5.96      | 25.35      | -1.18     |
|                                |            |            |           |           |            |            |           | 4140      | -5.78      | 26.42      | -1.01     |
|                                |            |            |           |           |            |            |           | 4170      | -6.20      | 23.99      | -1.53     |
|                                |            |            |           |           |            |            |           | 4200      | -6.86      | 20.61      | -1.86     |

# Antenna Test Result

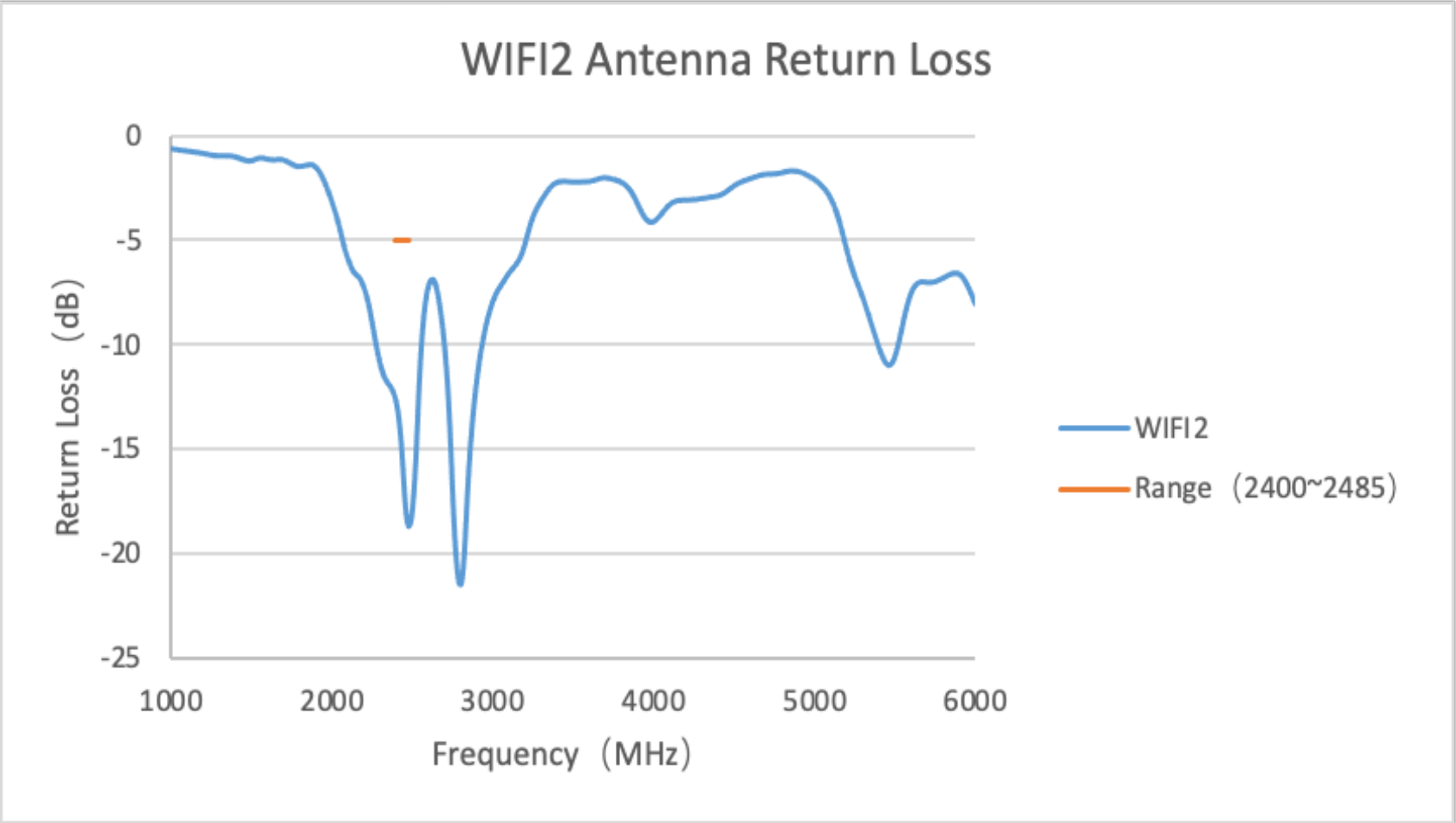
■ Wi-Fi1 Antenna S-Parameter & Efficiency.



| WIFI1 Antenna Efficiency |            |            |           |
|--------------------------|------------|------------|-----------|
| Frequency                | Efficiency | Efficiency | Peak Gain |
| (MHz)                    | (dB)       | (%)        | (dBi)     |
| 2.4G Band                |            |            |           |
| 2400                     | -3.36      | 46.13      | 1.36      |
| 2420                     | -3.20      | 47.86      | 1.26      |
| 2440                     | -2.83      | 52.12      | 1.63      |
| 2460                     | -2.67      | 54.08      | 1.88      |
| 2480                     | -2.49      | 56.36      | 2.21      |
| 2500                     | -2.81      | 52.36      | 1.95      |

# Antenna Test Result

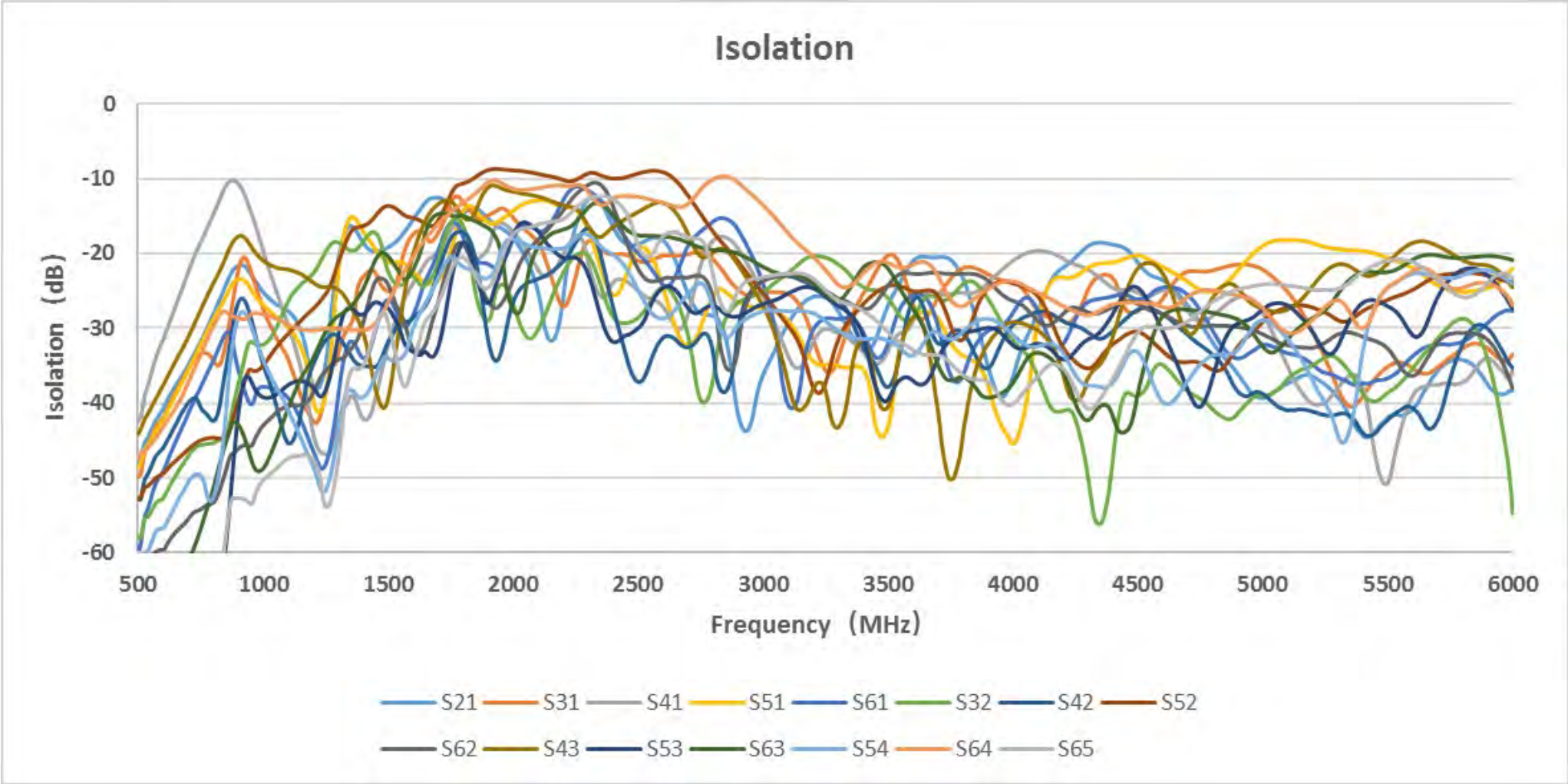
■ Wi-Fi2 Antenna S-Parameter & Efficiency.



| WIFI2 Antenna Efficiency |            |            |           |
|--------------------------|------------|------------|-----------|
| Frequency                | Efficiency | Efficiency | Peak Gain |
| (MHz)                    | (dB)       | (%)        | (dBi)     |
| 2.4G Band                |            |            |           |
| 2400                     | -3.19      | 47.97      | 1.39      |
| 2420                     | -3.28      | 46.99      | 1.31      |
| 2440                     | -3.30      | 46.77      | 1.28      |
| 2460                     | -3.33      | 46.45      | 1.23      |
| 2480                     | -3.40      | 45.71      | 1.16      |
| 2500                     | -3.65      | 43.15      | 0.54      |

# Antenna Test Result

■ Isolation.



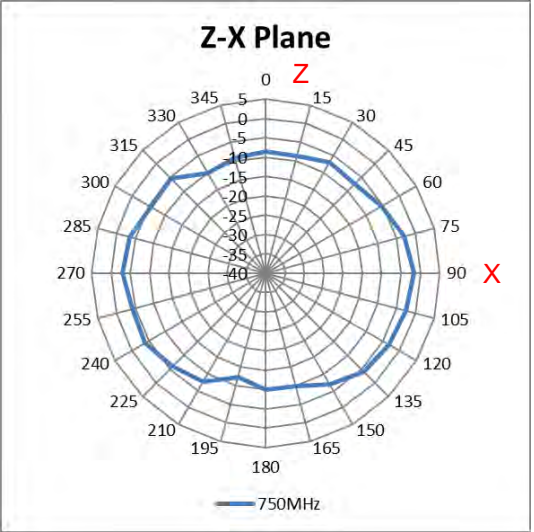
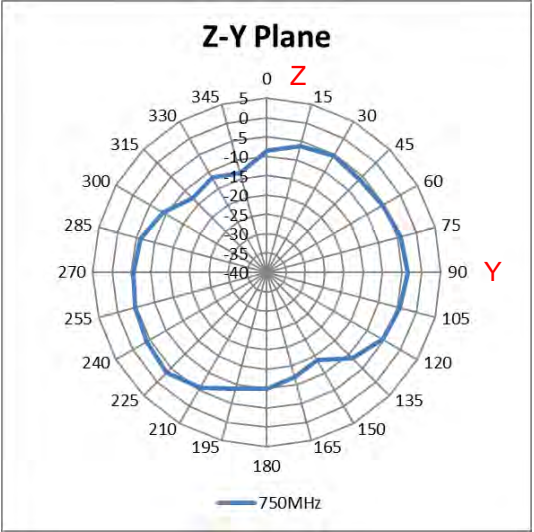
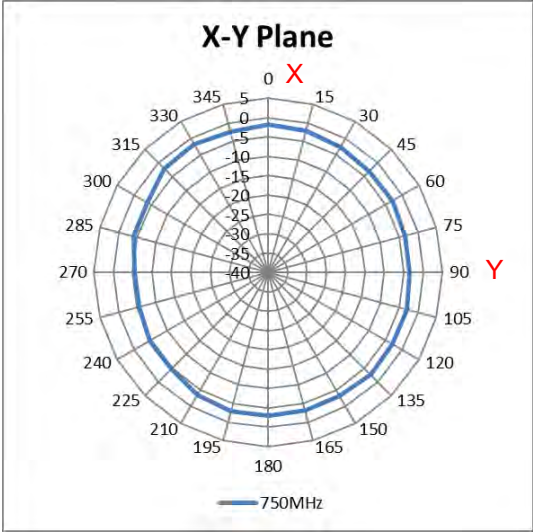
S11: Ant0 (Main)  
S22: Ant3 (AUX)

S33: Ant1 (MIMO1)  
S44: Ant2 (MIMO2)

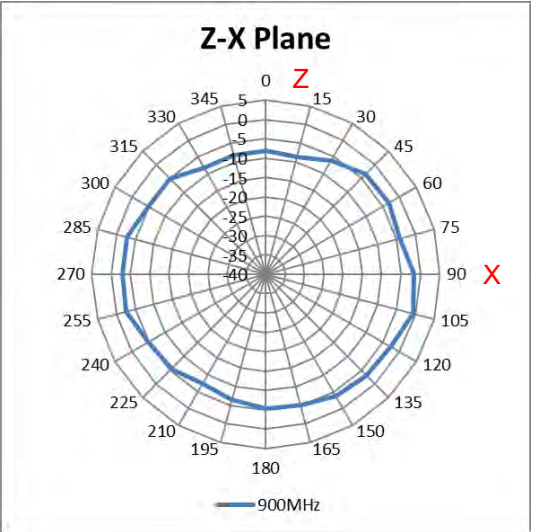
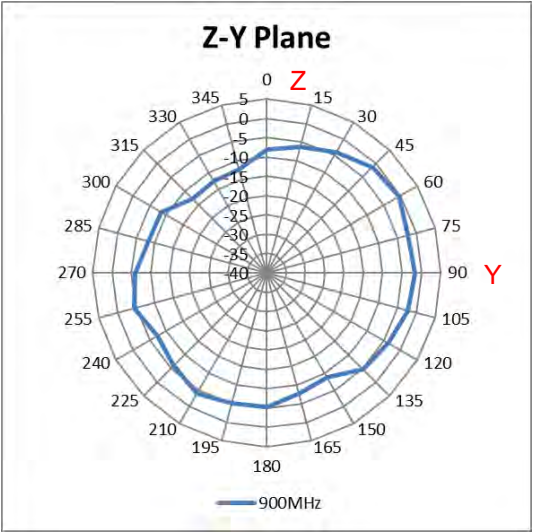
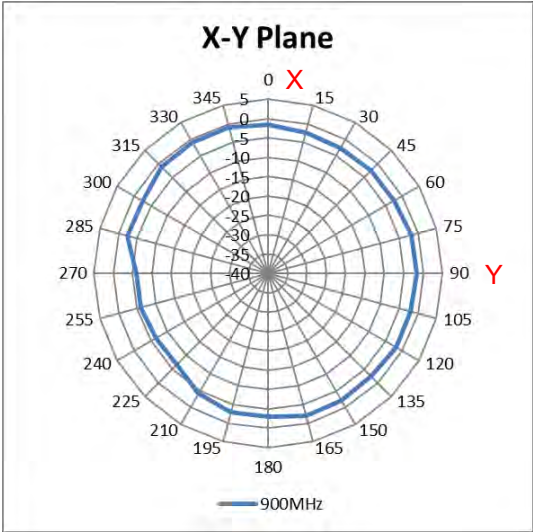
S55: Ant4 (Wi-Fi1)  
S66: Ant5 (Wi-Fi2)

# 2D Radiation Pattern

- Main Antenna
- LB\_750MHz

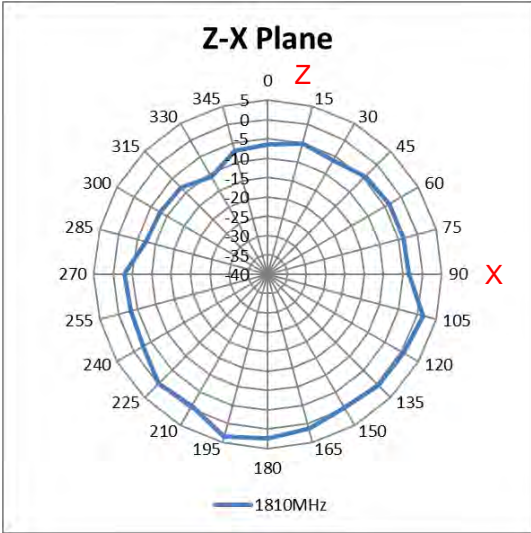
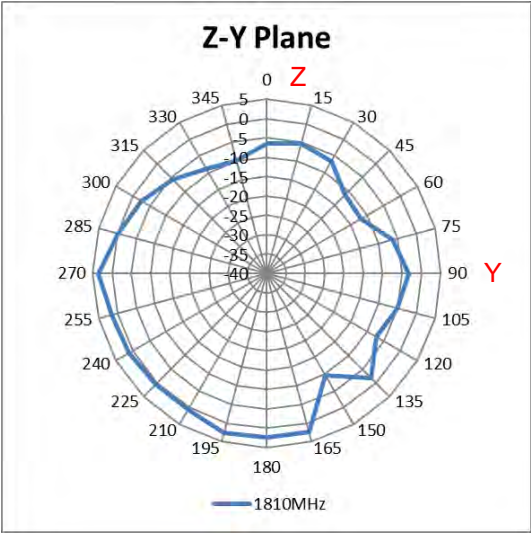
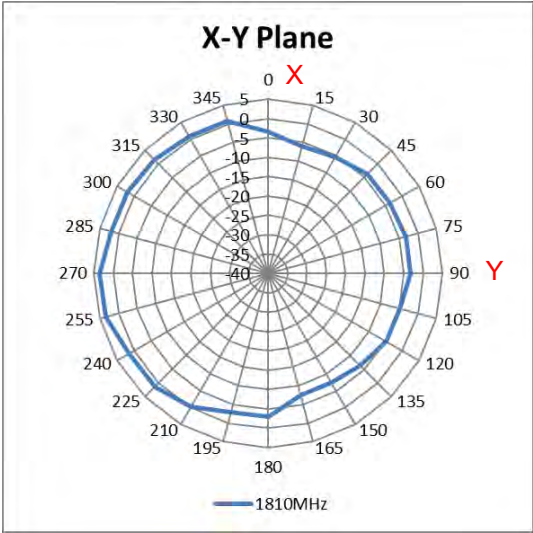


- LB\_900MHz

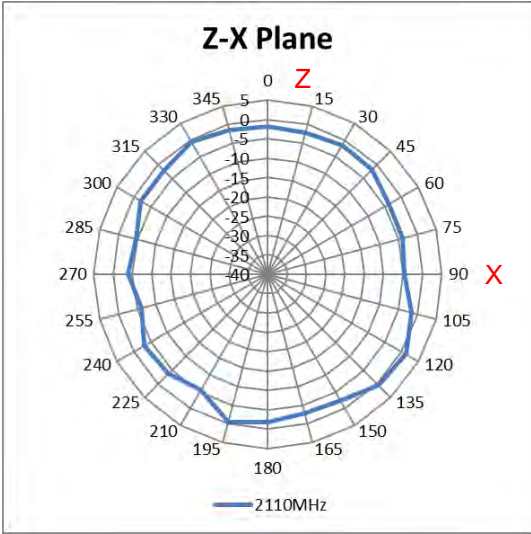
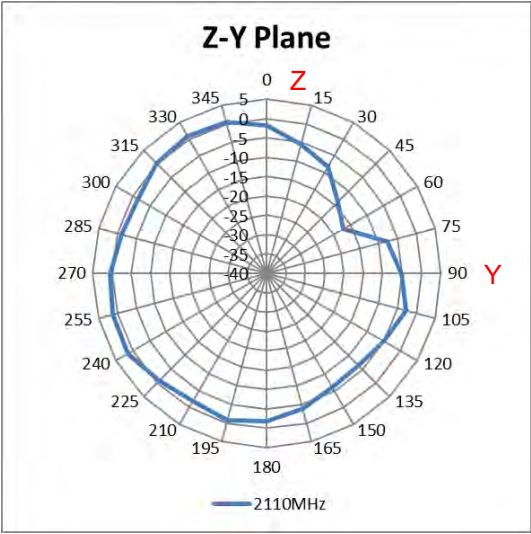
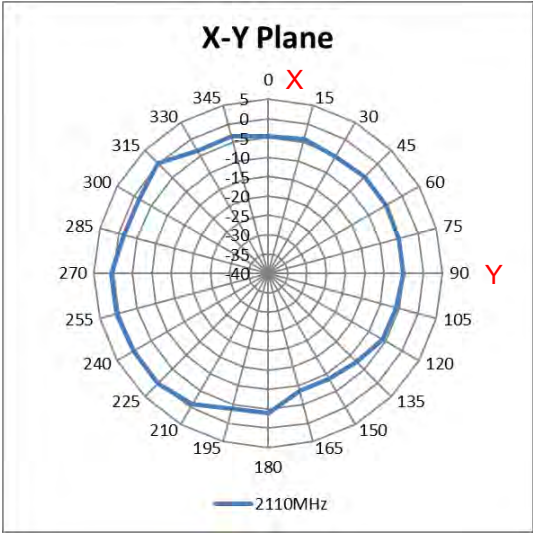


# 2D Radiation Pattern

- Main Antenna
- MB\_1810MHz

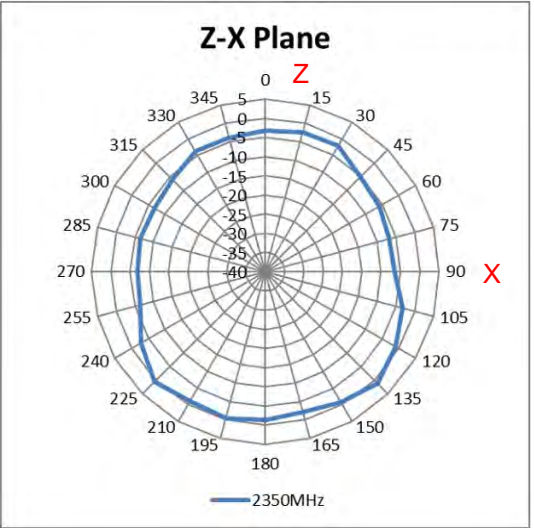
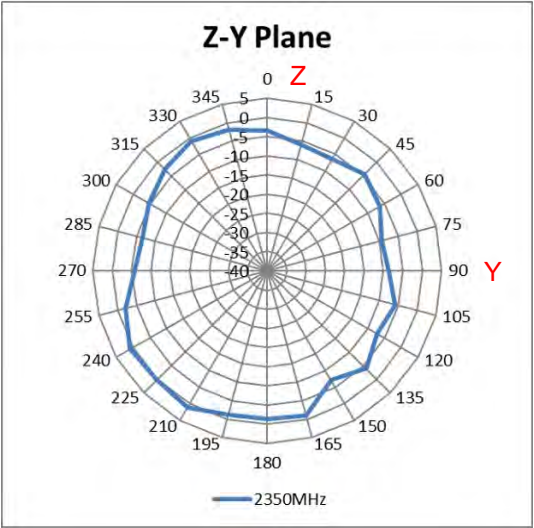
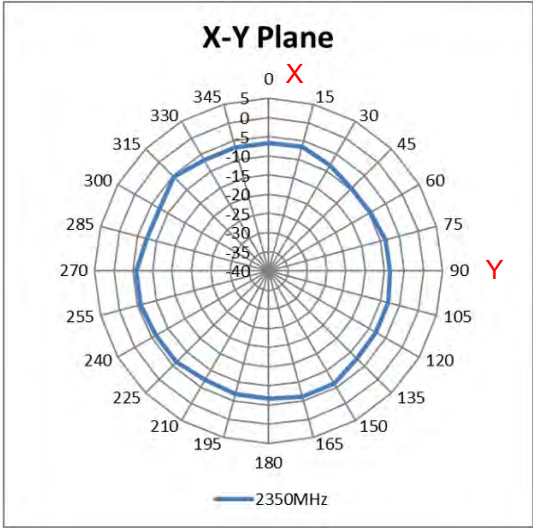


- MB\_2110MHz

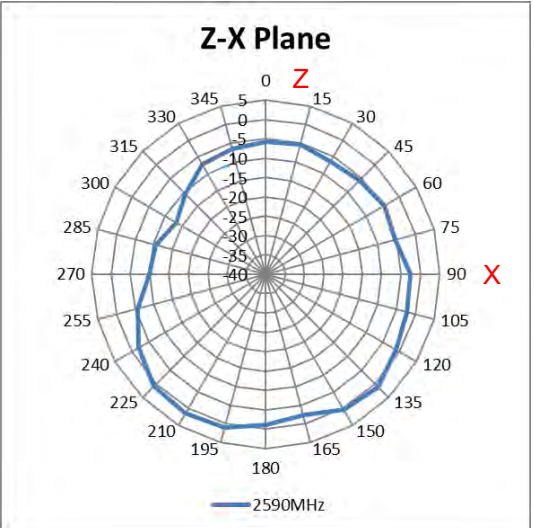
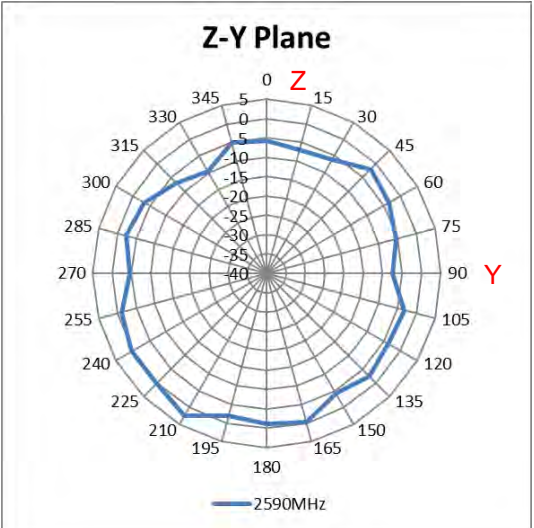
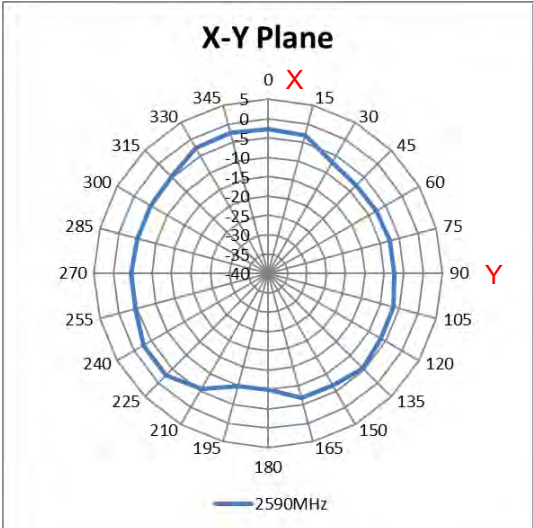


# 2D Radiation Pattern

- Main Antenna
- HB\_2350MHz

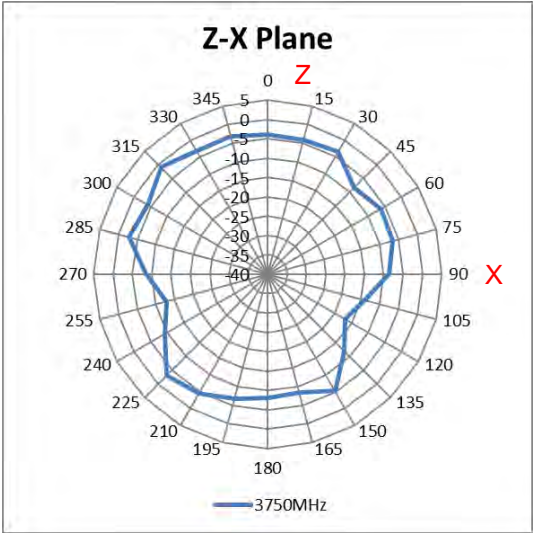
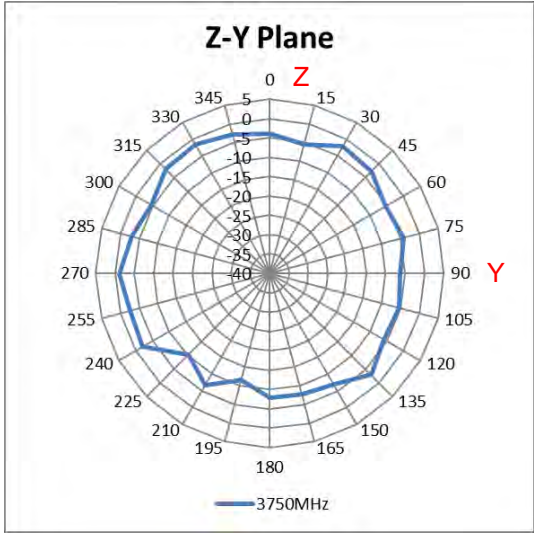
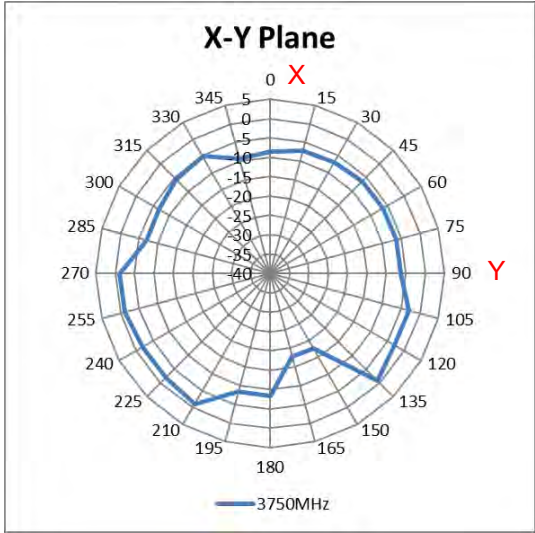


- HB\_2590MHz



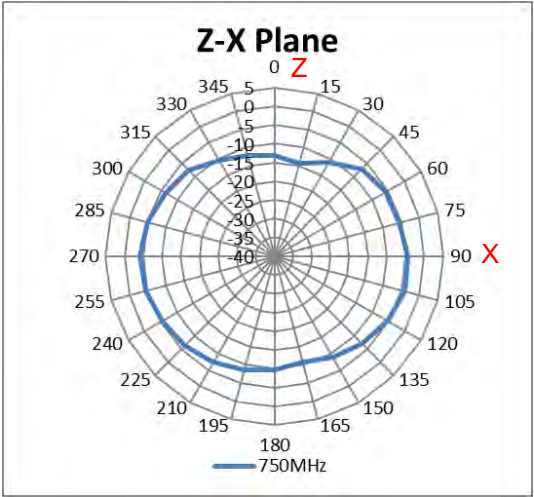
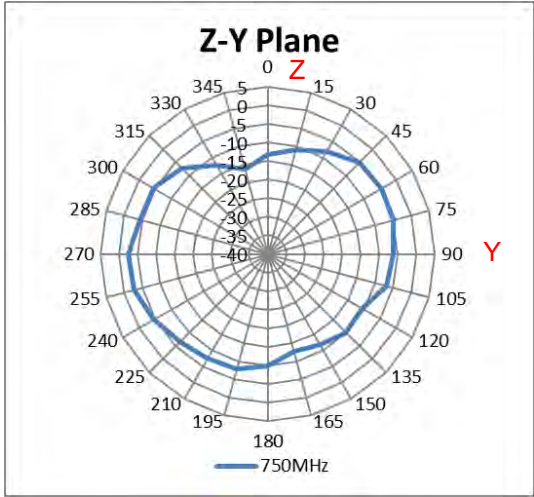
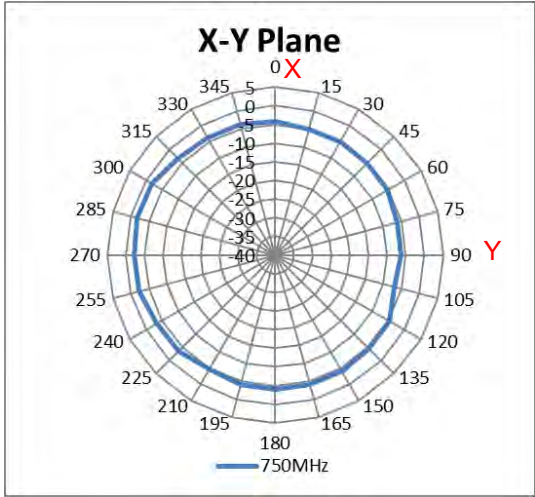
# 2D Radiation Pattern

- Main Antenna
- UHB\_3750MHz

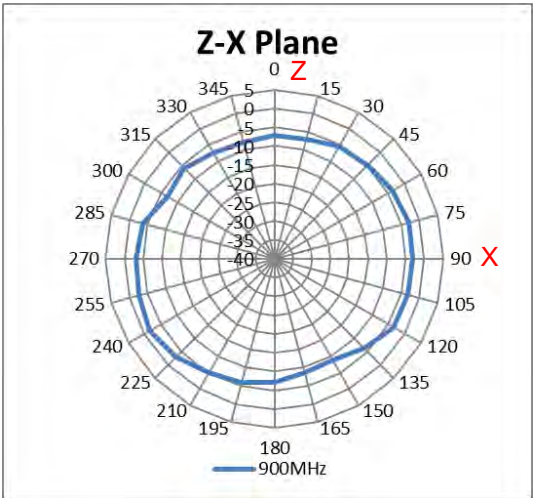
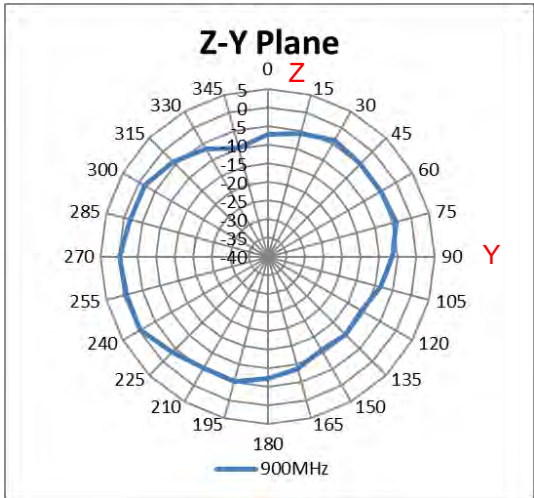
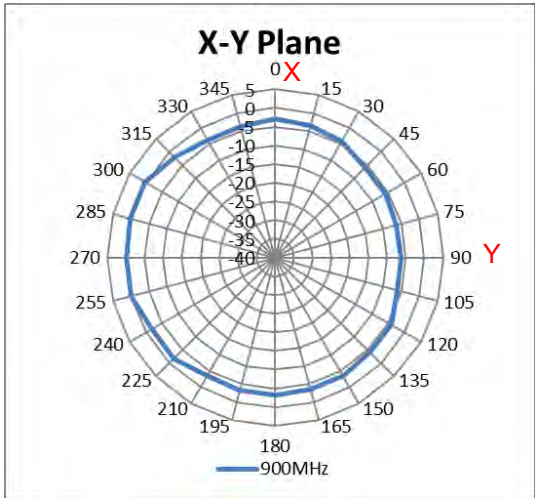


# 2D Radiation Pattern

- AUX Antenna
- LB\_750MHz

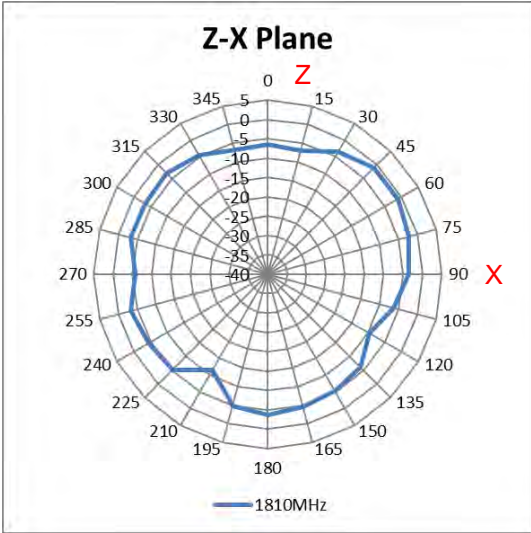
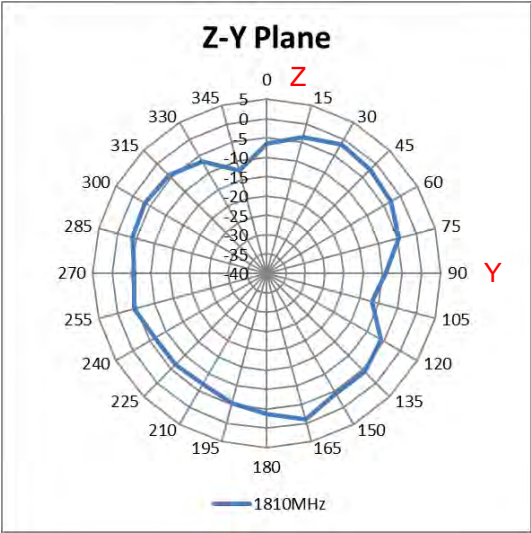
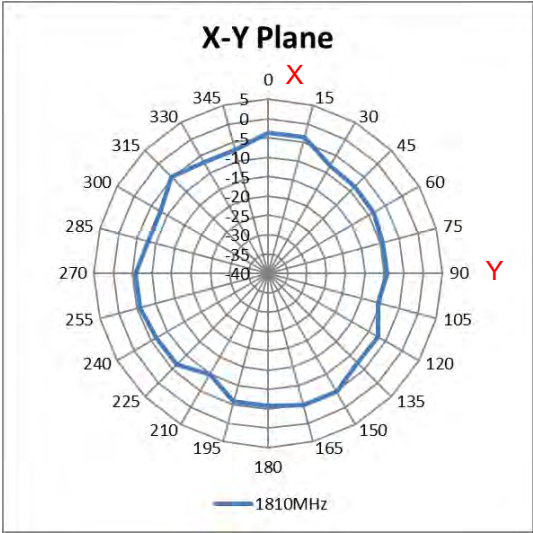


- LB\_900MHz

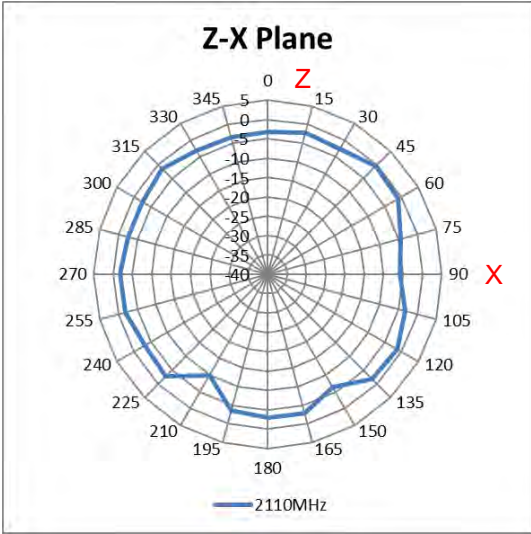
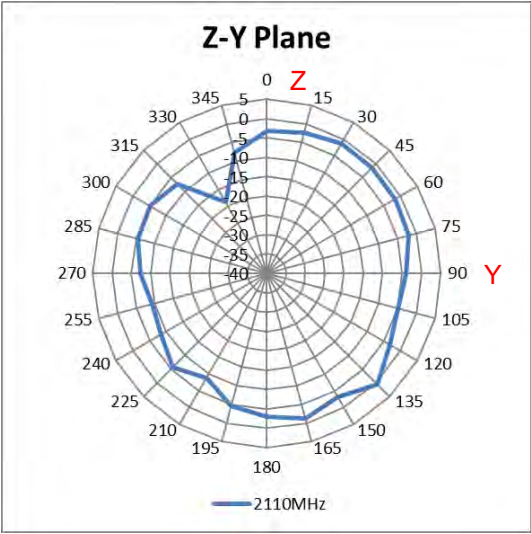
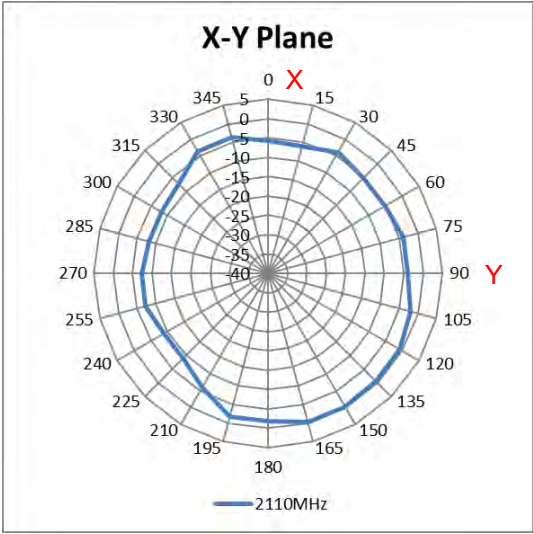


# 2D Radiation Pattern

- AUX Antenna
- MB\_1810MHz

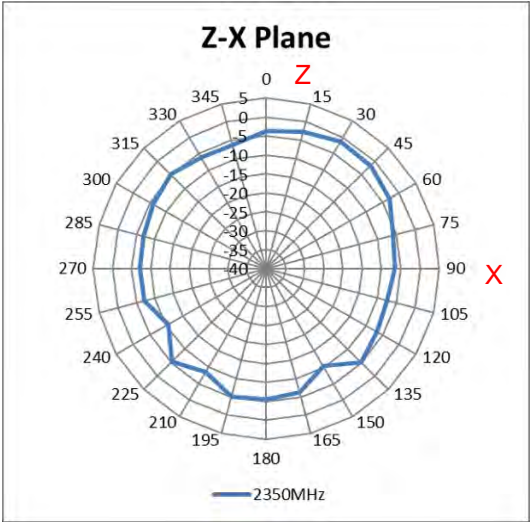
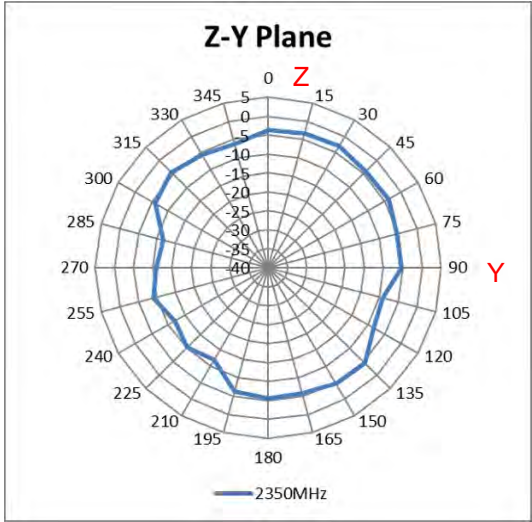
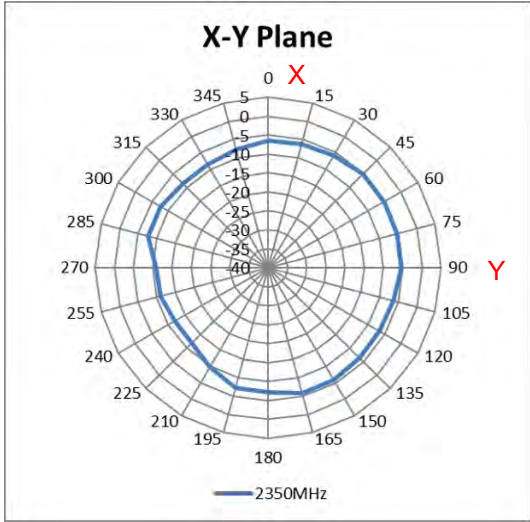


- MB\_2110MHz

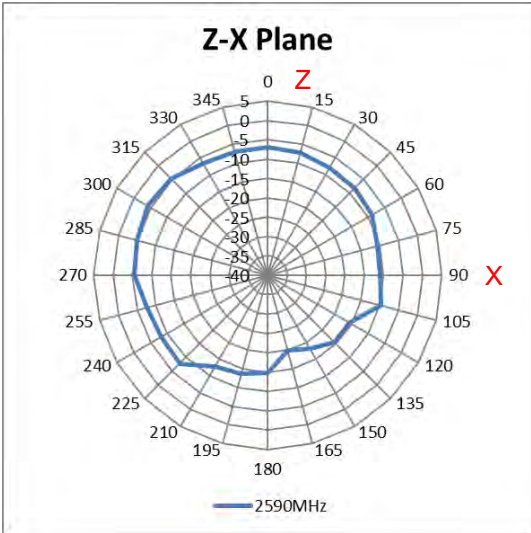
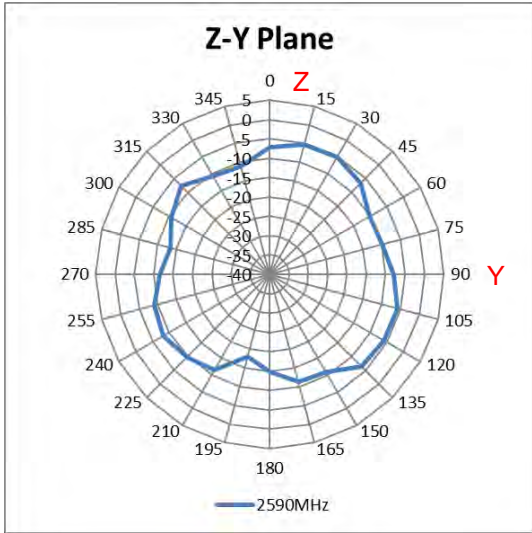
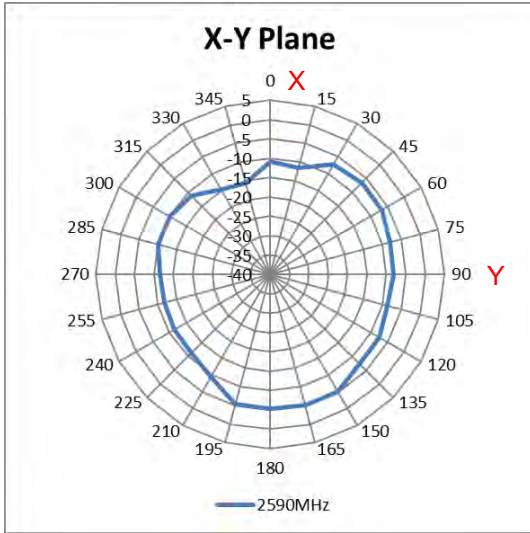


# 2D Radiation Pattern

- AUX Antenna
- HB\_2350MHz

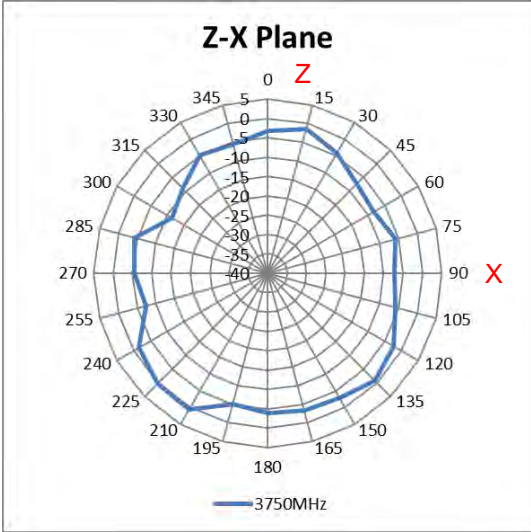
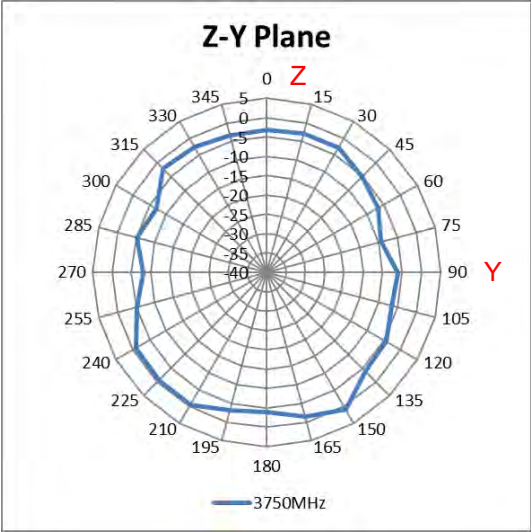
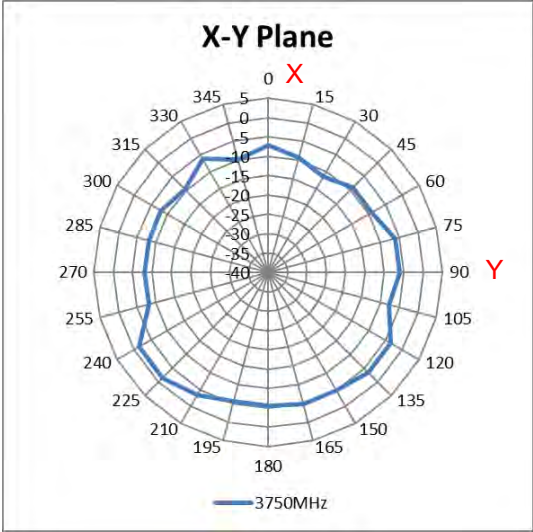


- HB\_2590MHz



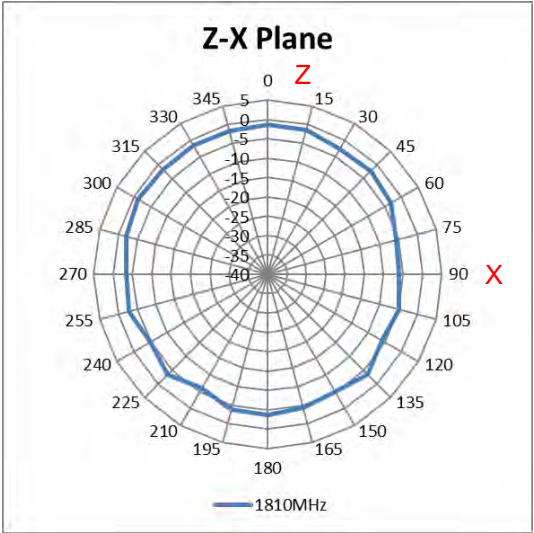
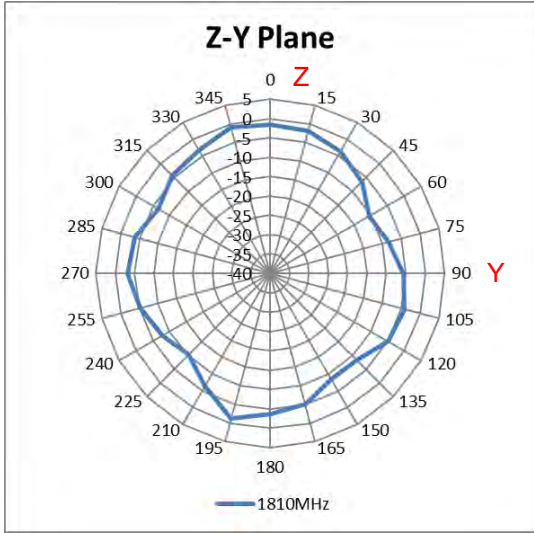
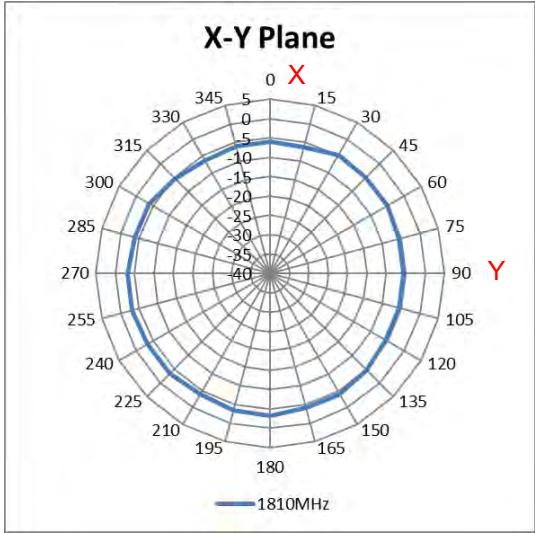
# 2D Radiation Pattern

- AUX Antenna
- UHB\_3750MHz

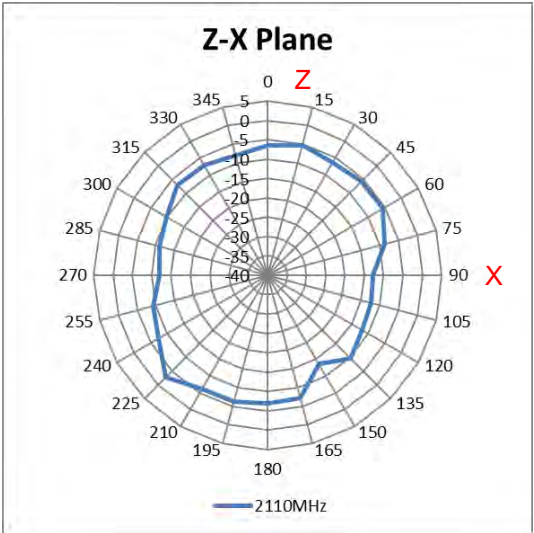
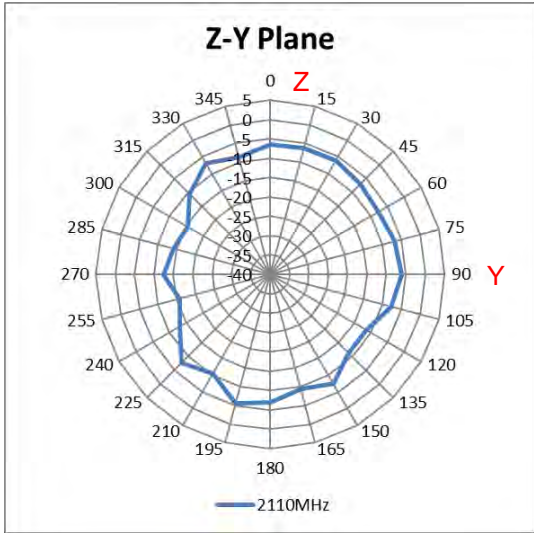
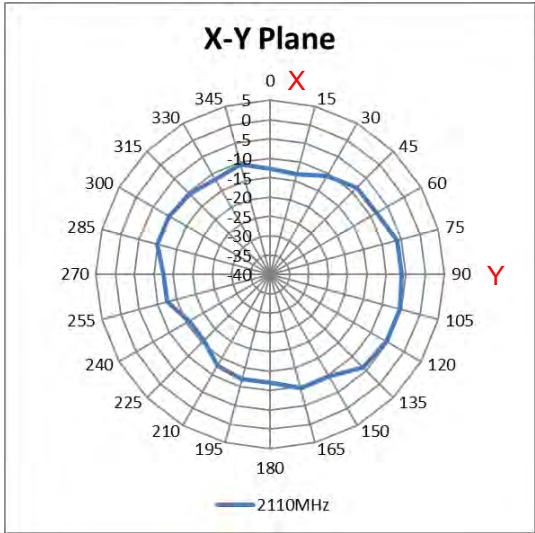


# 2D Radiation Pattern

- MIMO1 Antenna
- MB\_1810MHz

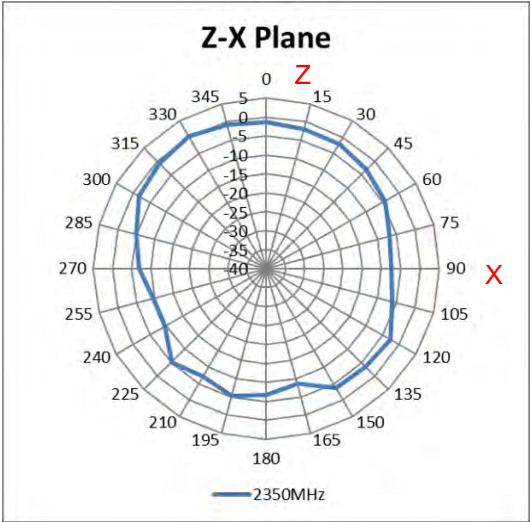
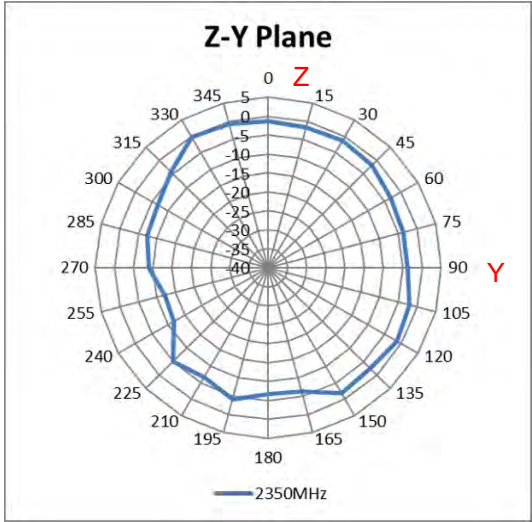
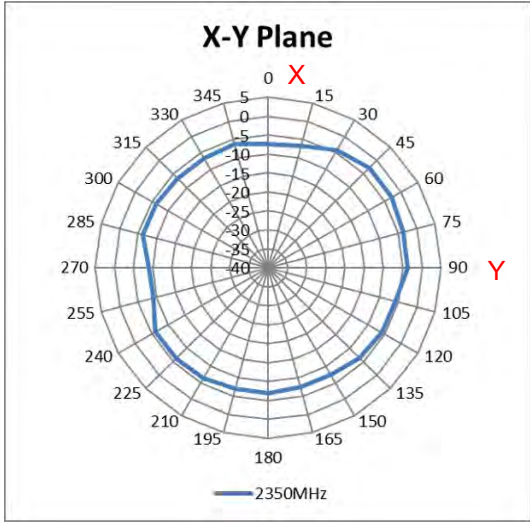


- MB\_2110MHz

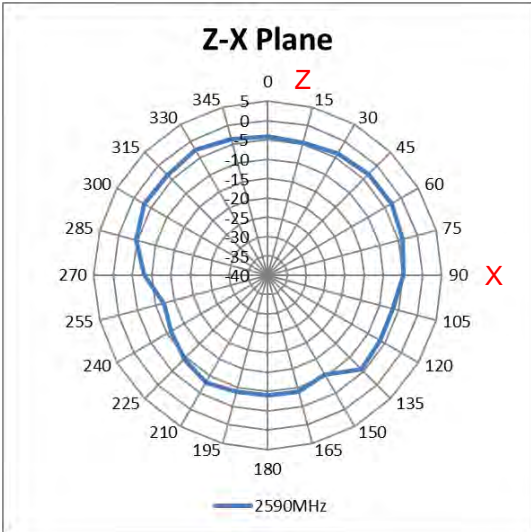
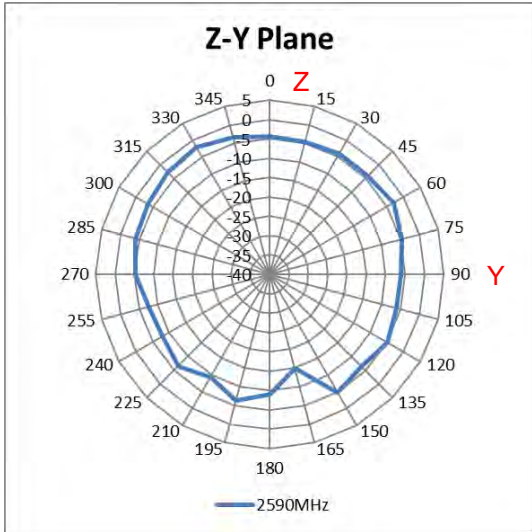
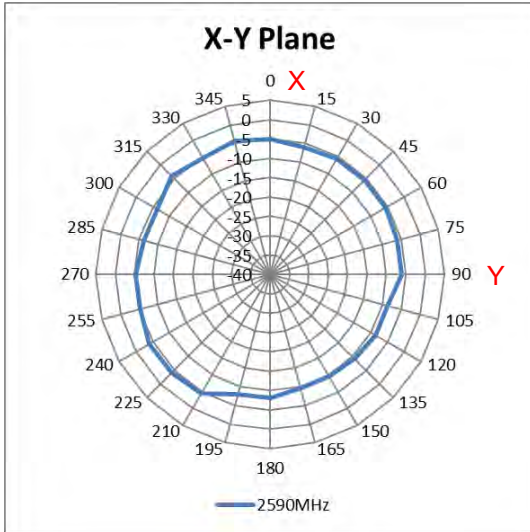


# 2D Radiation Pattern

- MIMO1 Antenna
- HB\_2350MHz

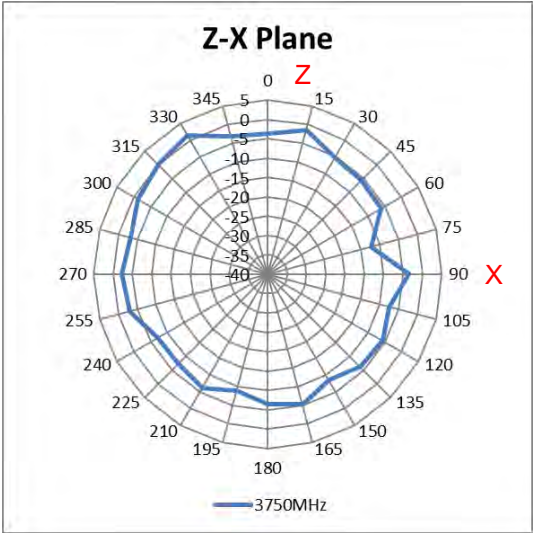
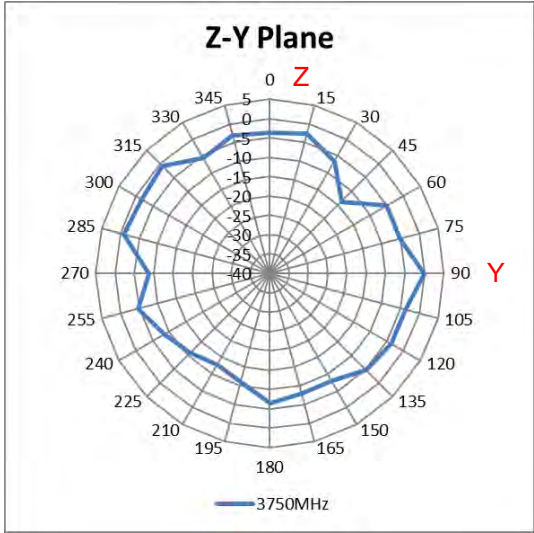
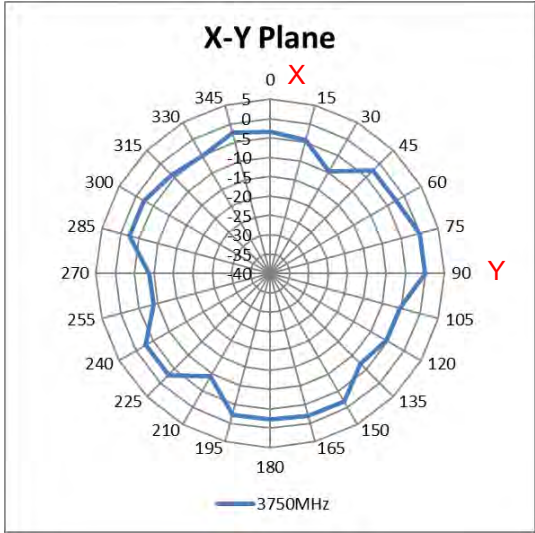


- HB\_2590MHz



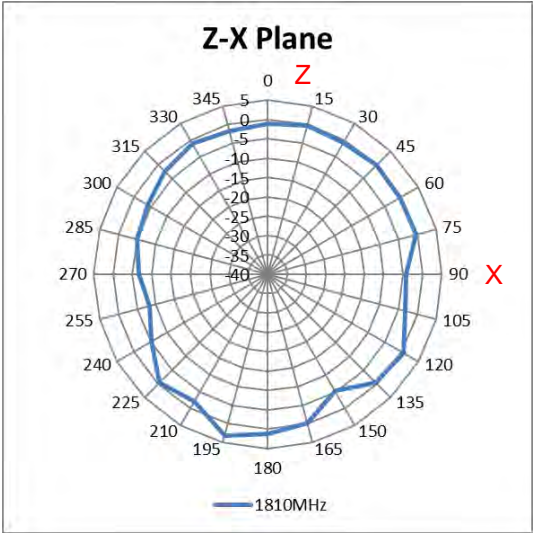
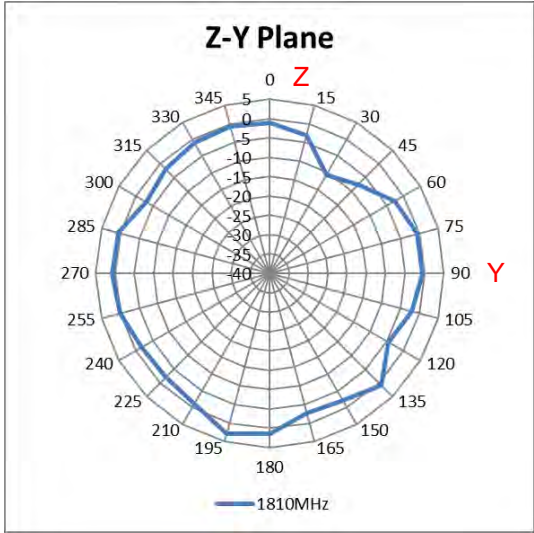
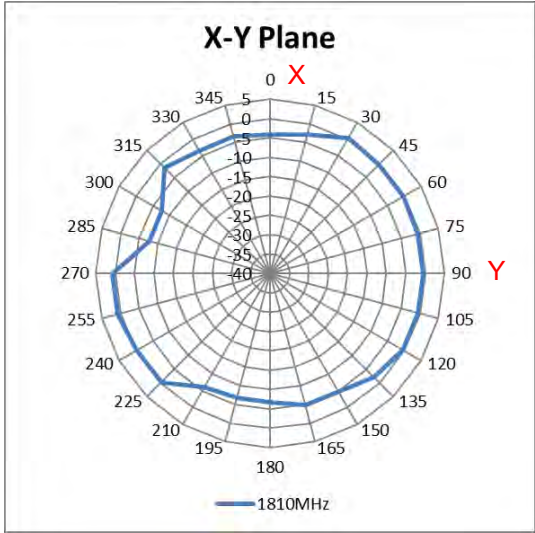
# 2D Radiation Pattern

- MIMO1 Antenna
- UHB\_3750MHz

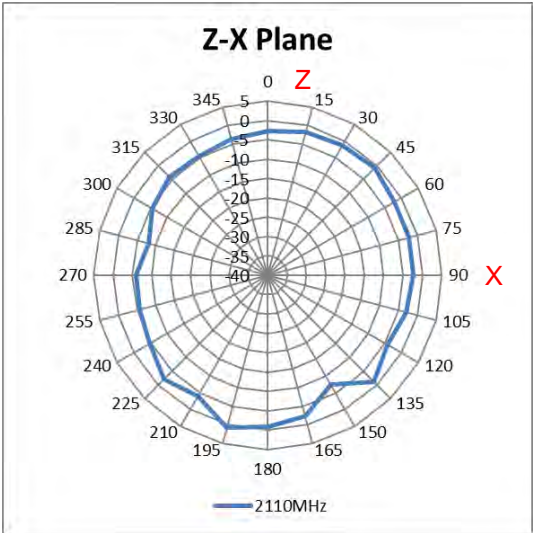
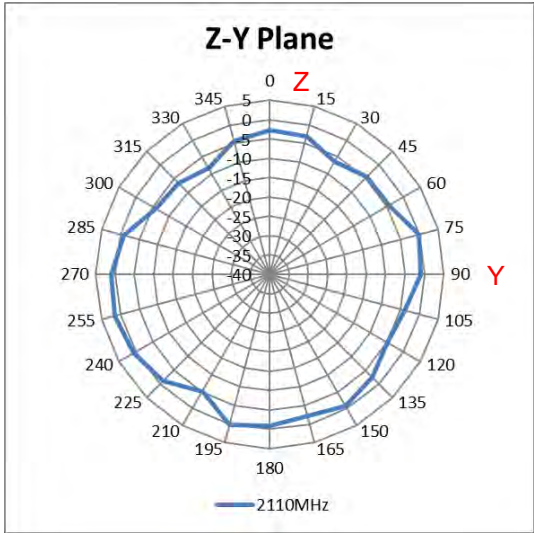
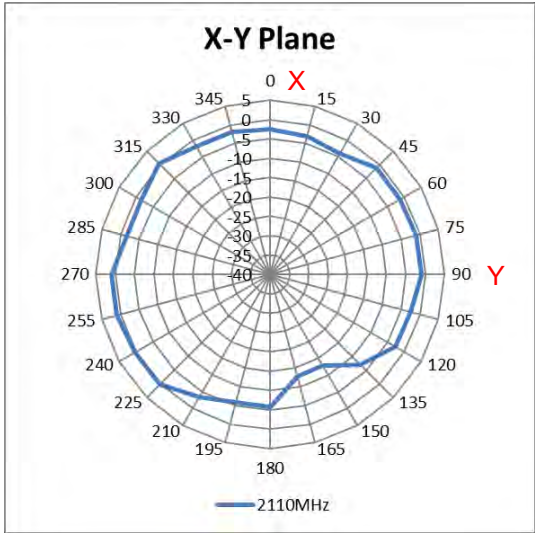


# 2D Radiation Pattern

- MIMO2 Antenna
- MB\_1810MHz

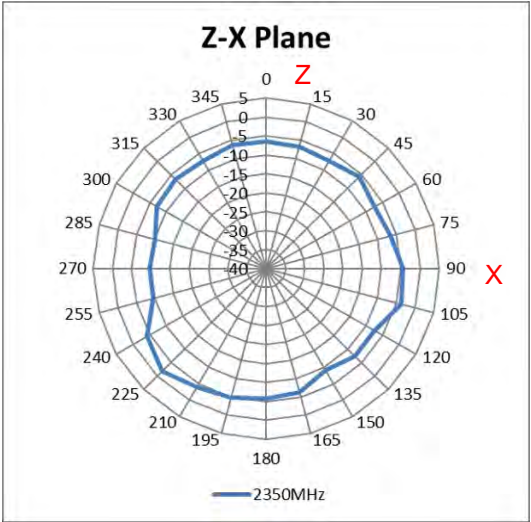
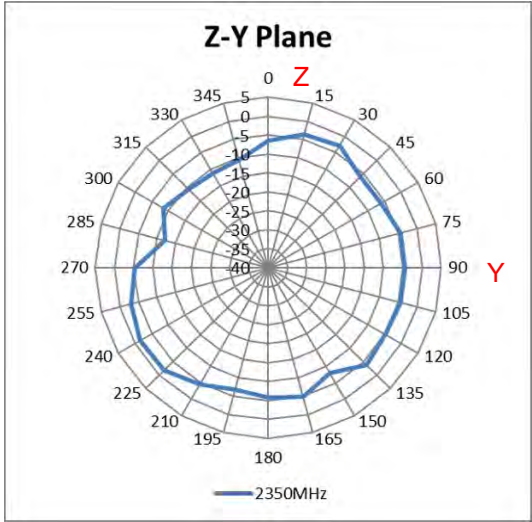
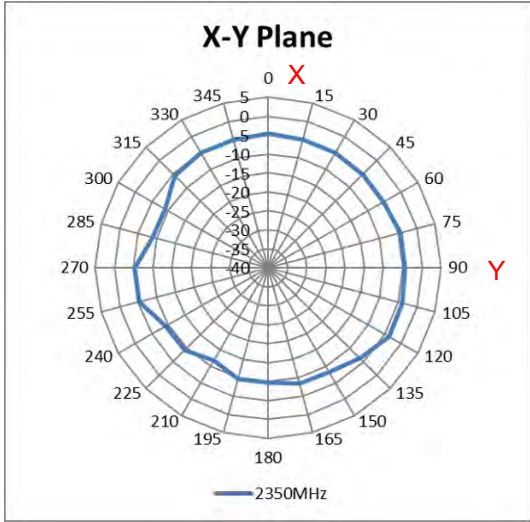


- MB\_2110MHz

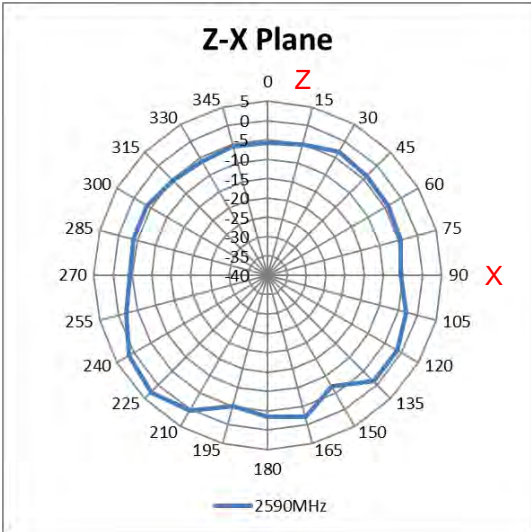
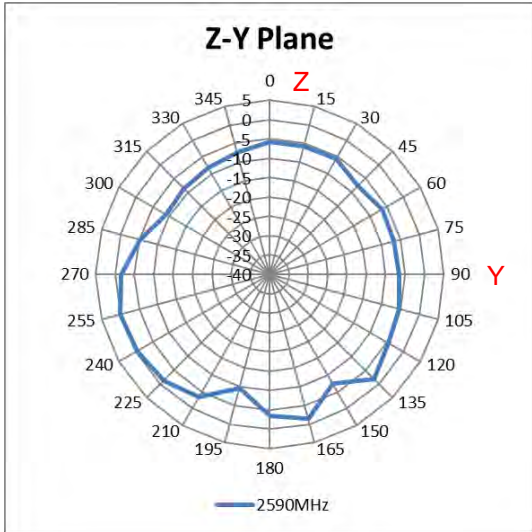
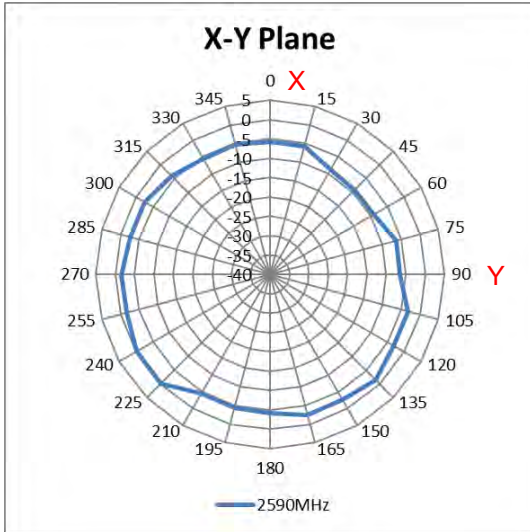


# 2D Radiation Pattern

- MIMO2 Antenna
- HB\_2350MHz

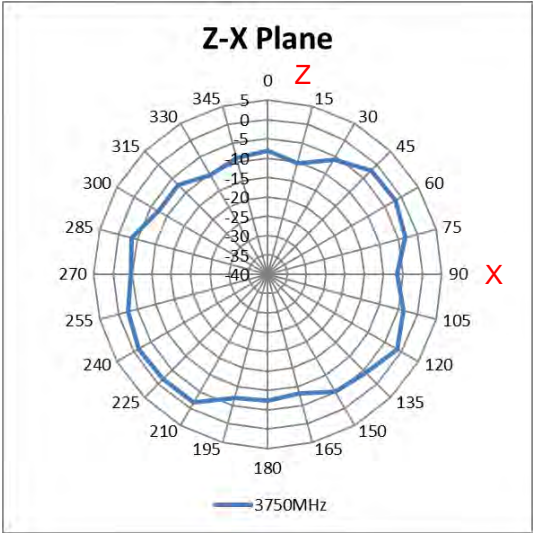
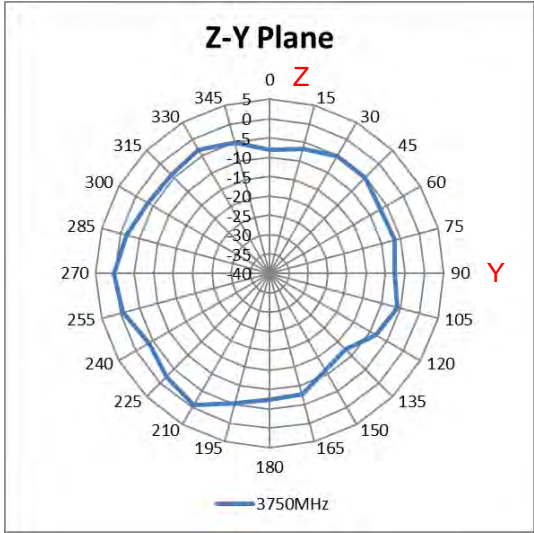
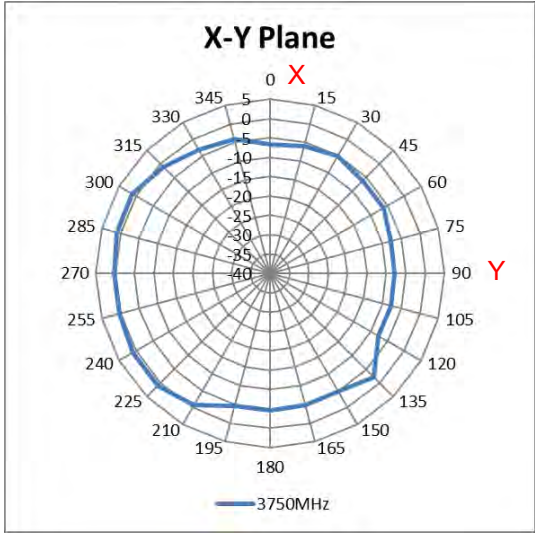


- HB\_2590MHz



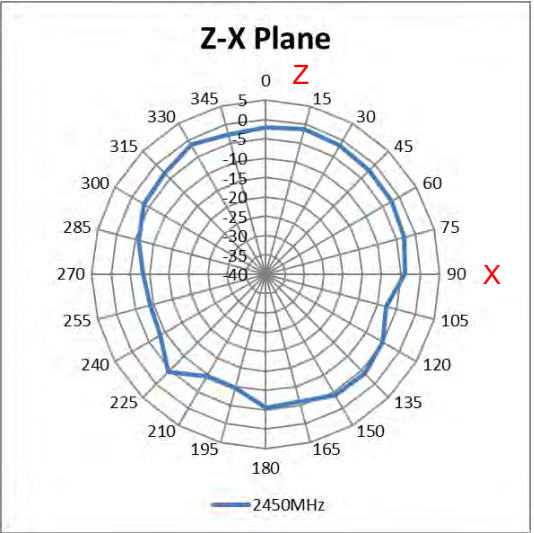
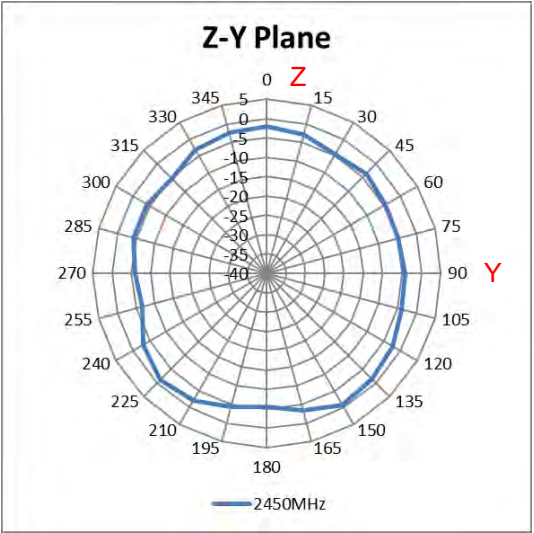
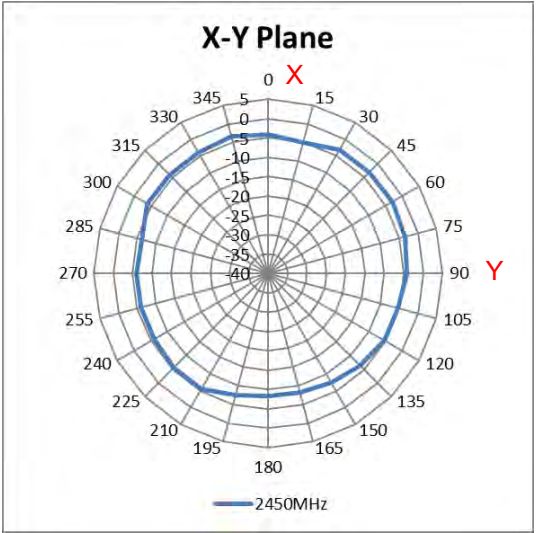
# 2D Radiation Pattern

- MIMO2 Antenna
- UHB\_3750MHz

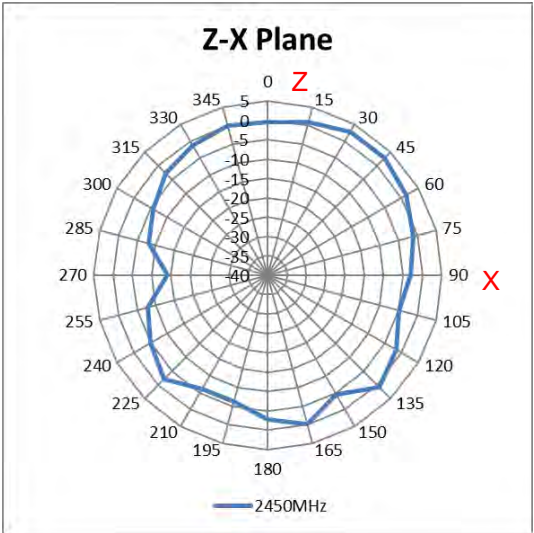
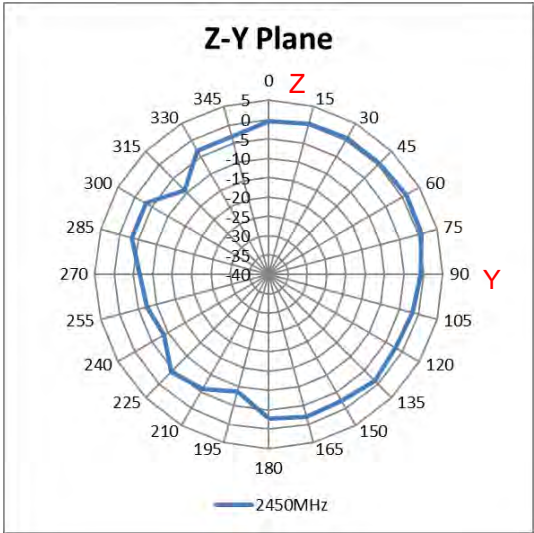
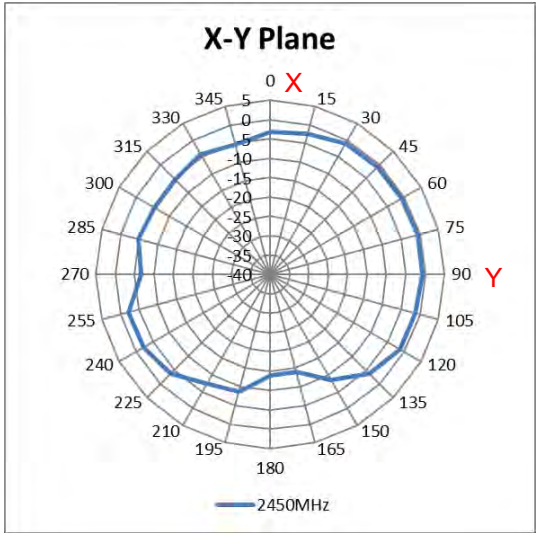


# 2D Radiation Pattern

- Wi-Fi Antenna
- Wi-Fi1 2.4G Band\_2450MHz

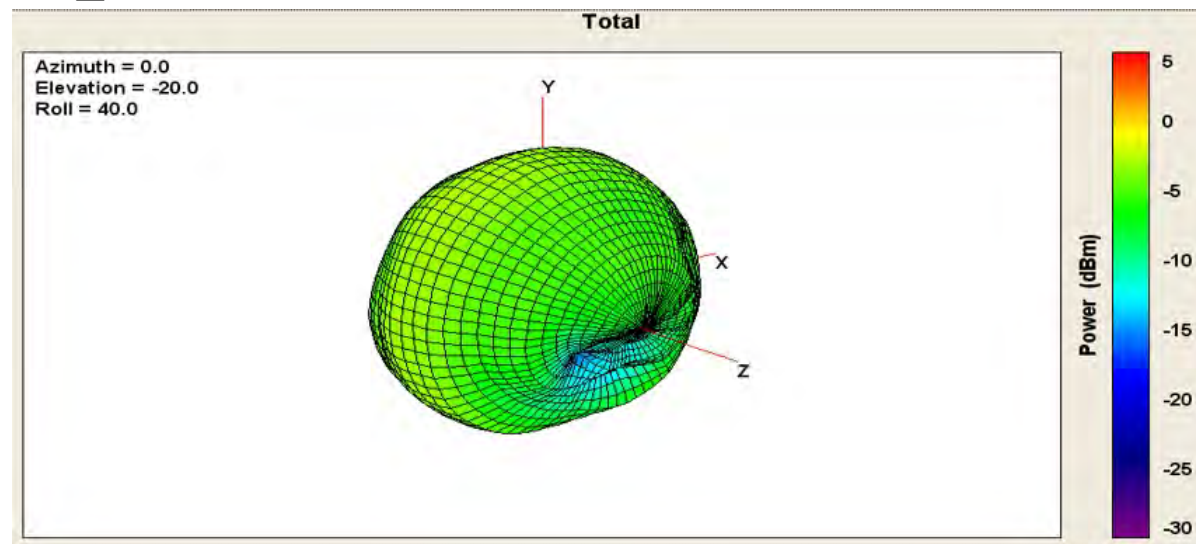


- Wi-Fi2 2.4G Band\_2450MHz

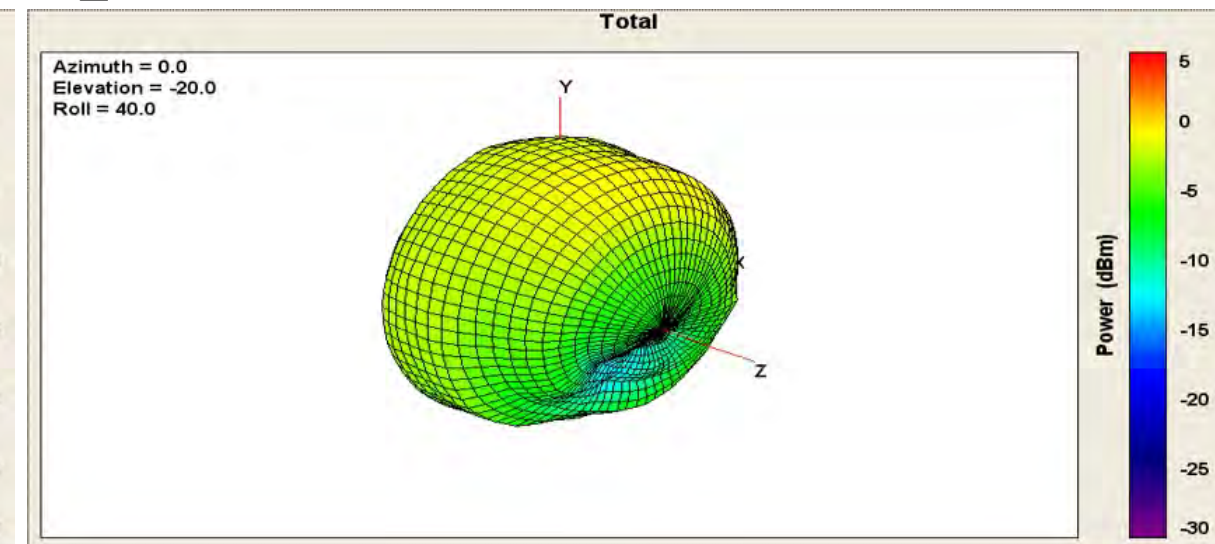


# 3D Radiation Pattern

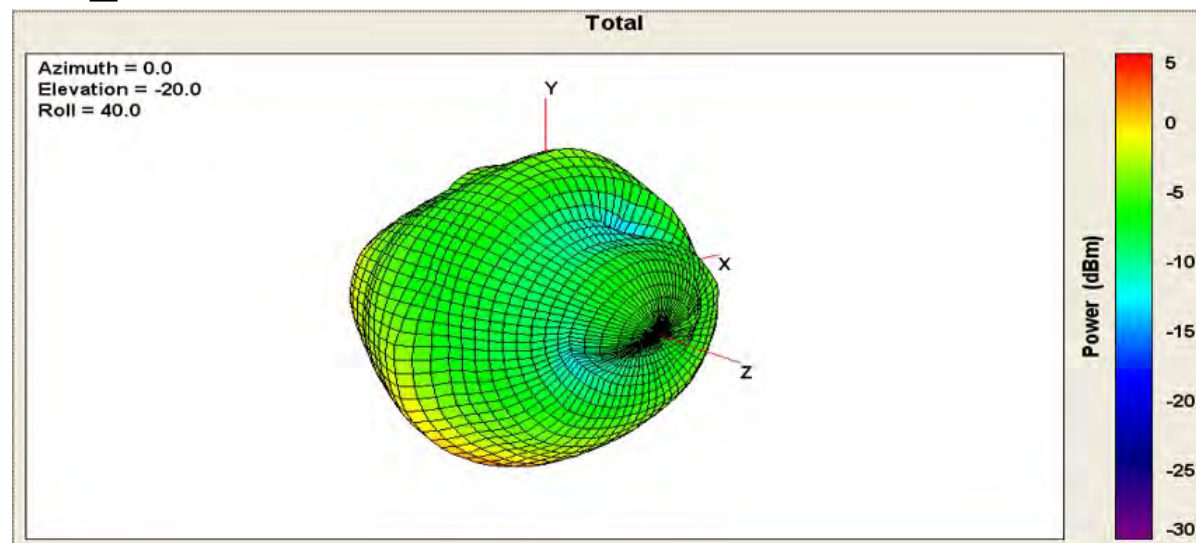
- Main Antenna
- LB\_750MHz



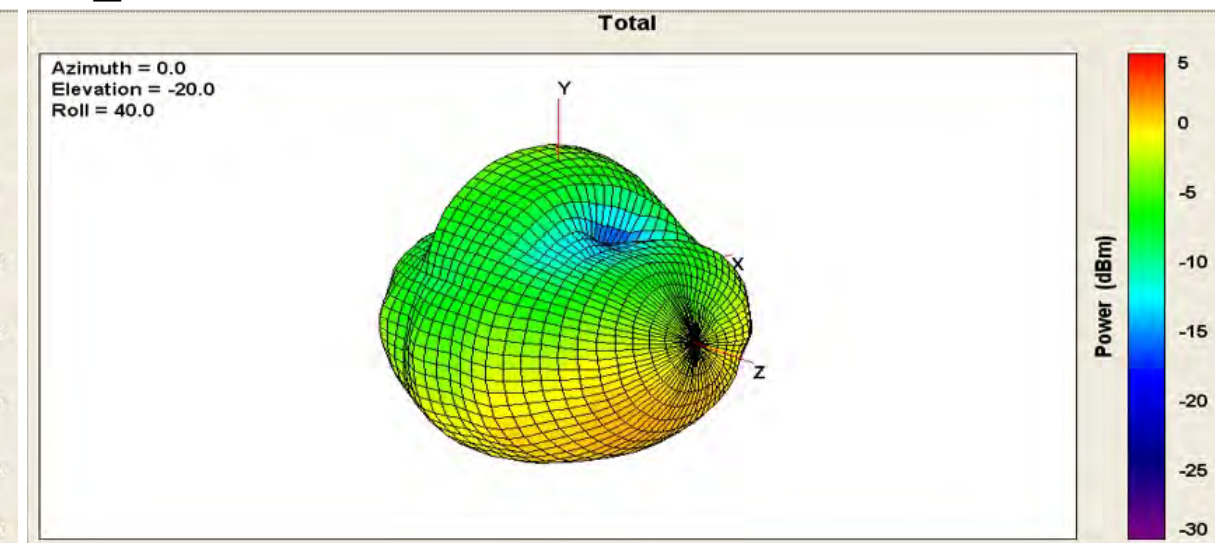
LB\_900MHz



- MB\_1810MHz

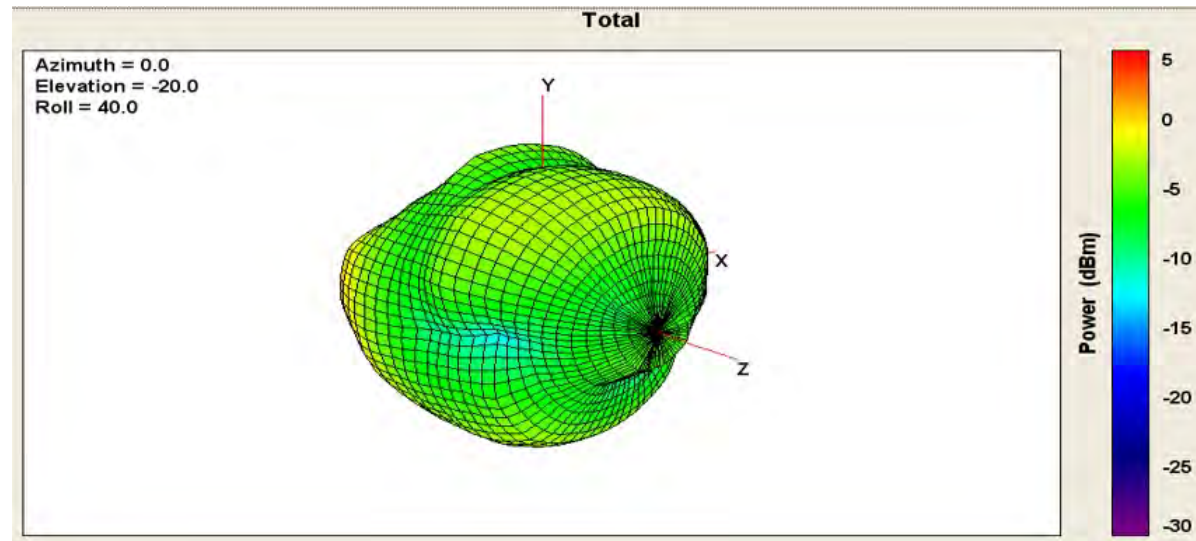


MB\_2110MHz

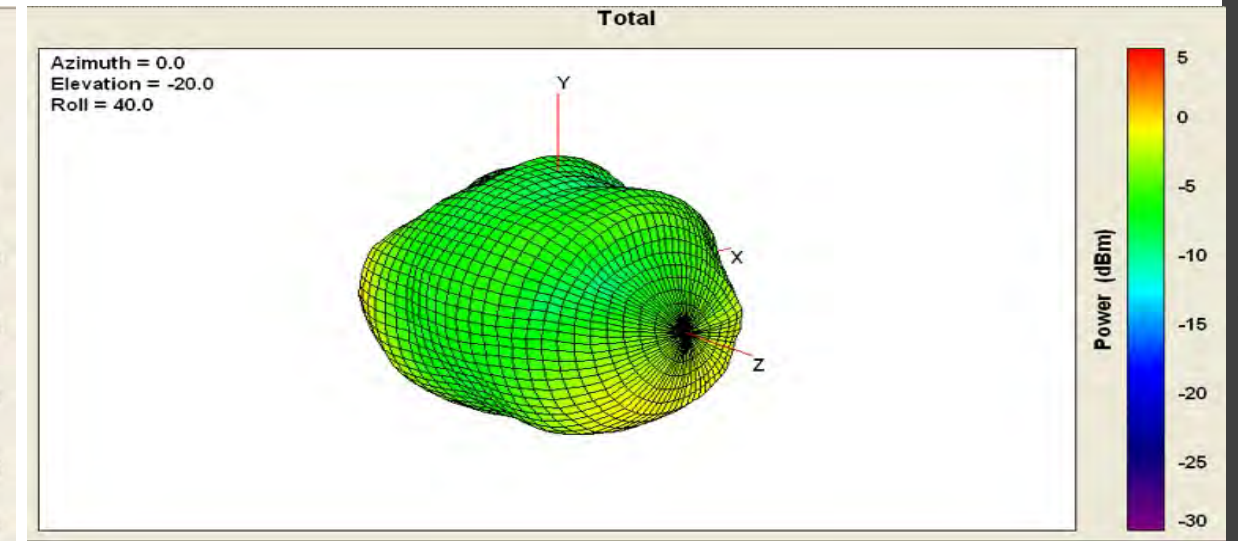


# 3D Radiation Pattern

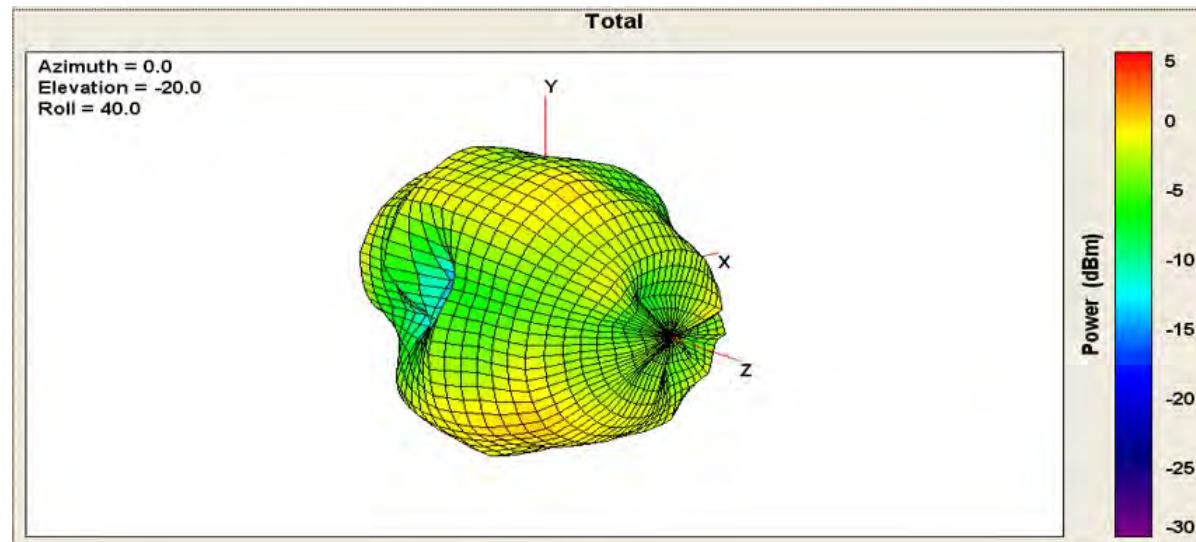
- Main Antenna
- HB\_2590MHz



HB\_2350MHz



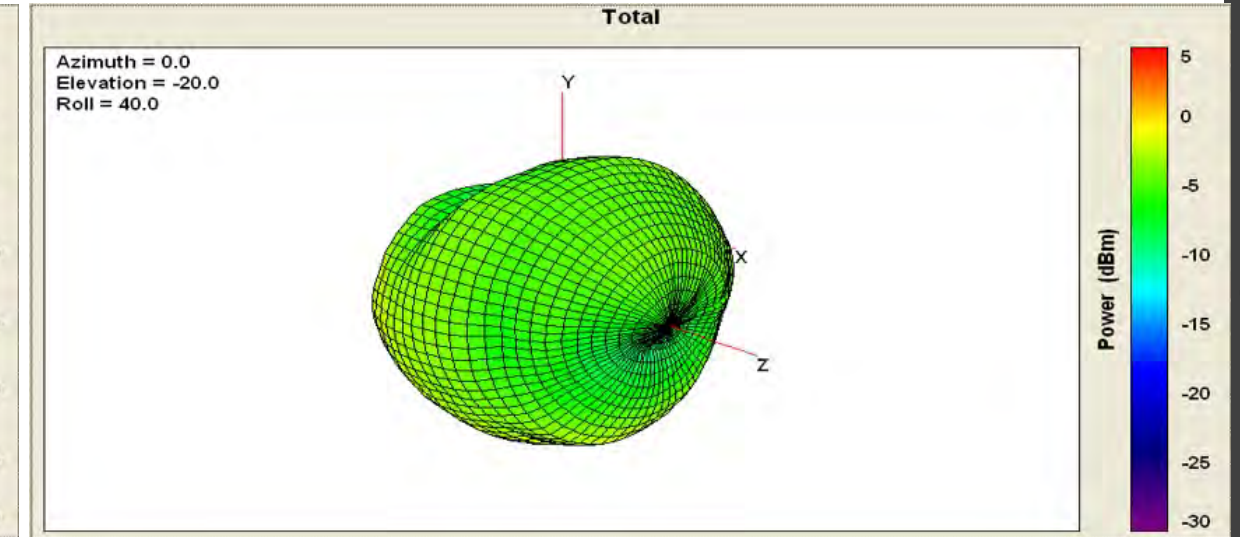
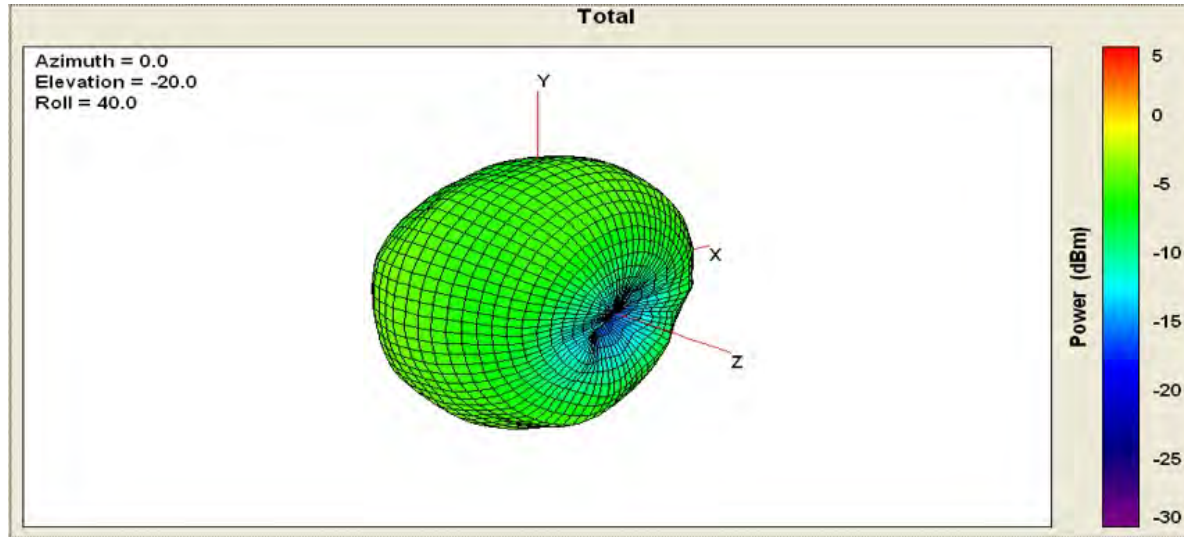
- UHB\_3750MHz



# 3D Radiation Pattern

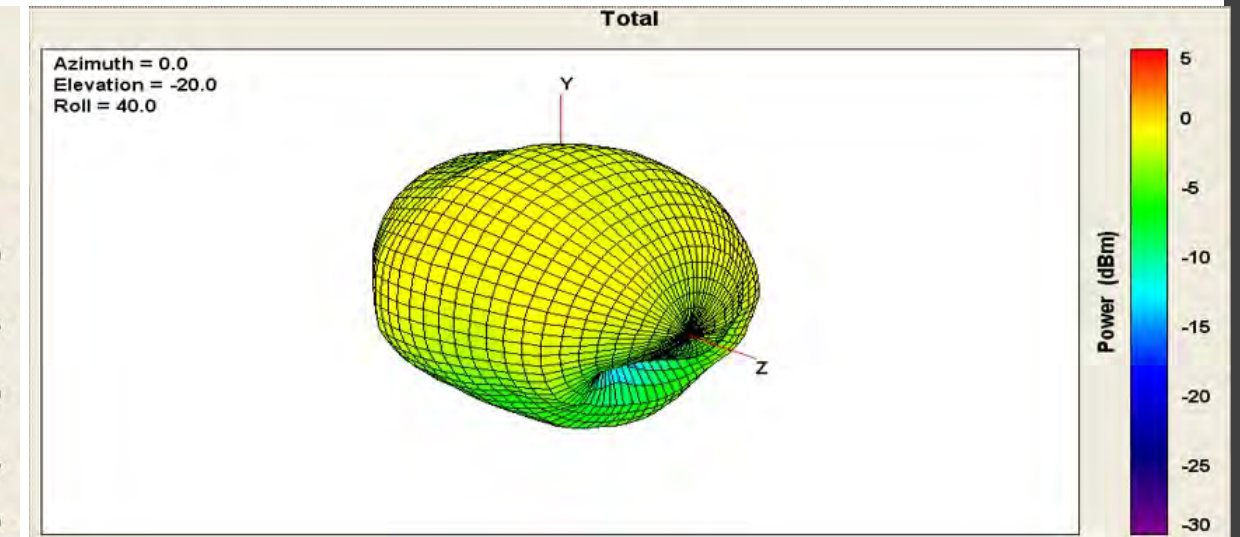
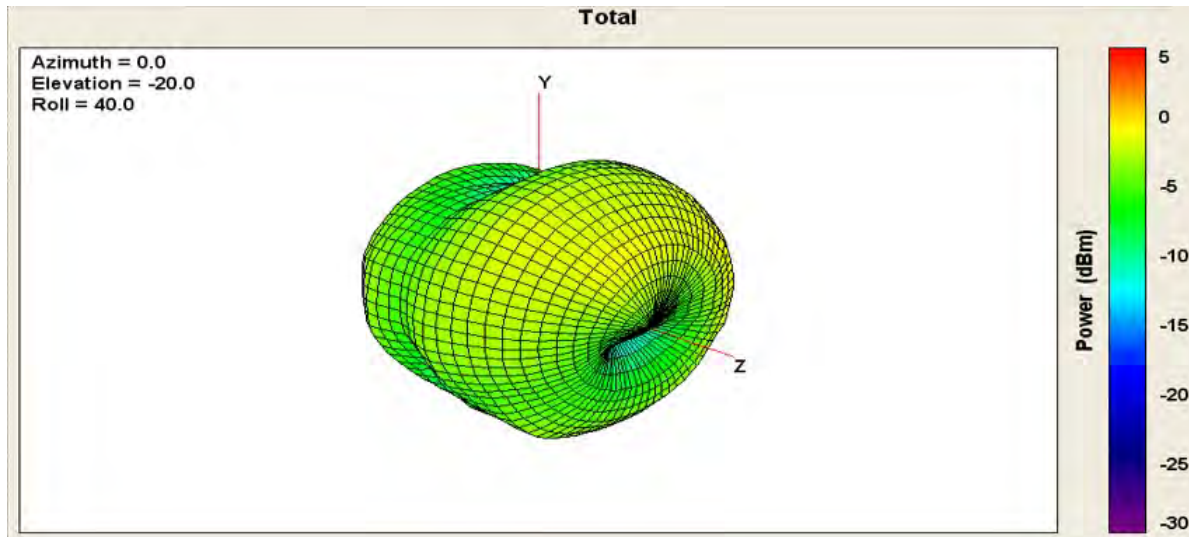
- AUX Antenna
- LB\_750MHz

LB\_900MHz



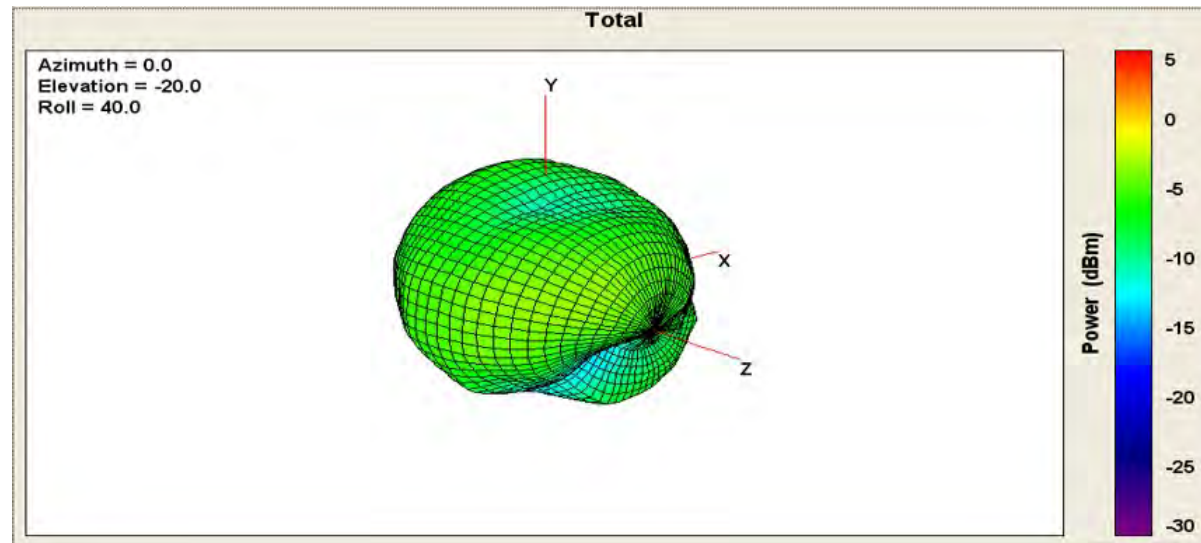
- MB\_1810MHz

MB\_2110MHz

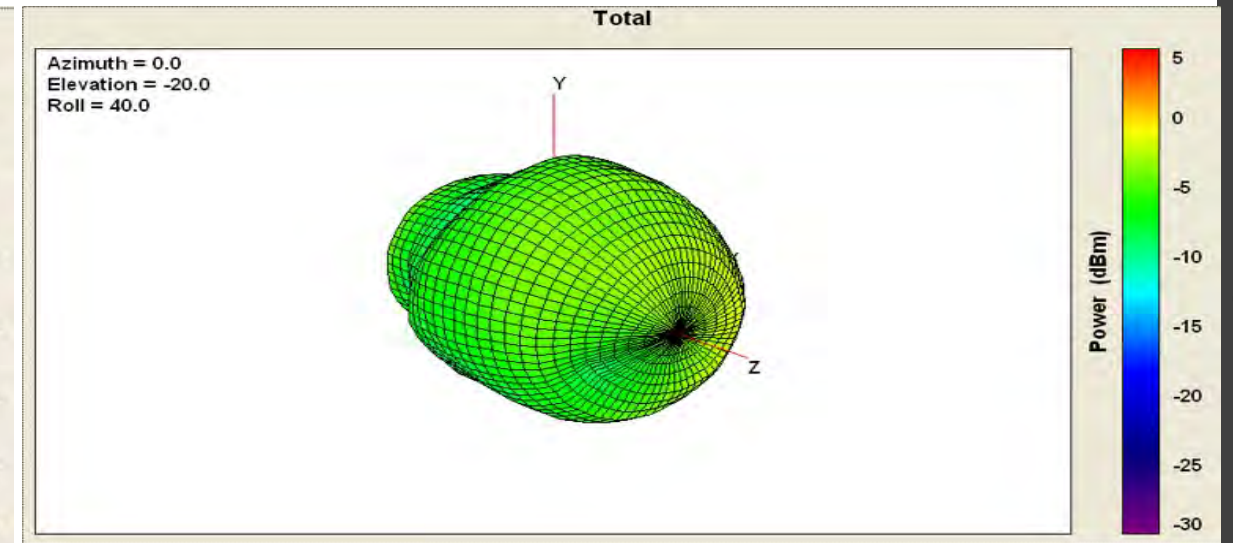


# 3D Radiation Pattern

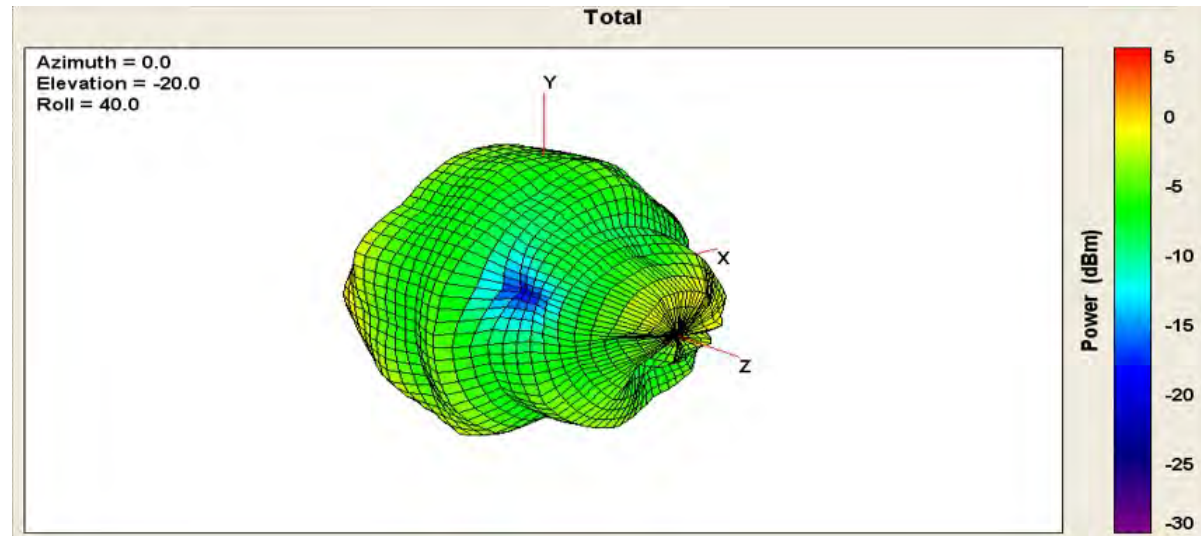
- AUX Antenna
- HB\_2590MHz



HB\_2350MHz

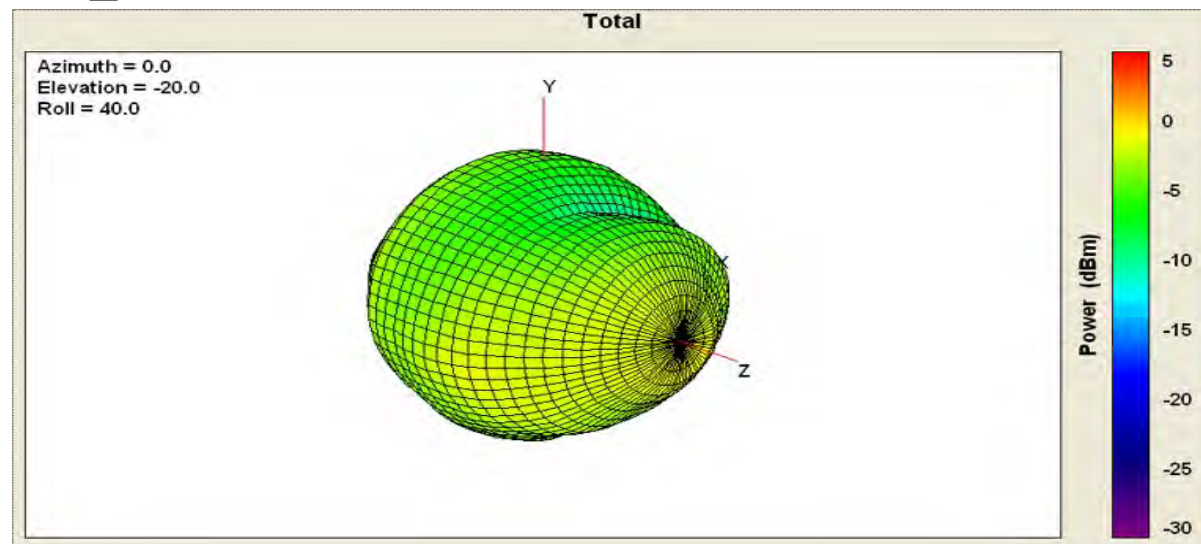


- UHB\_3750MHz

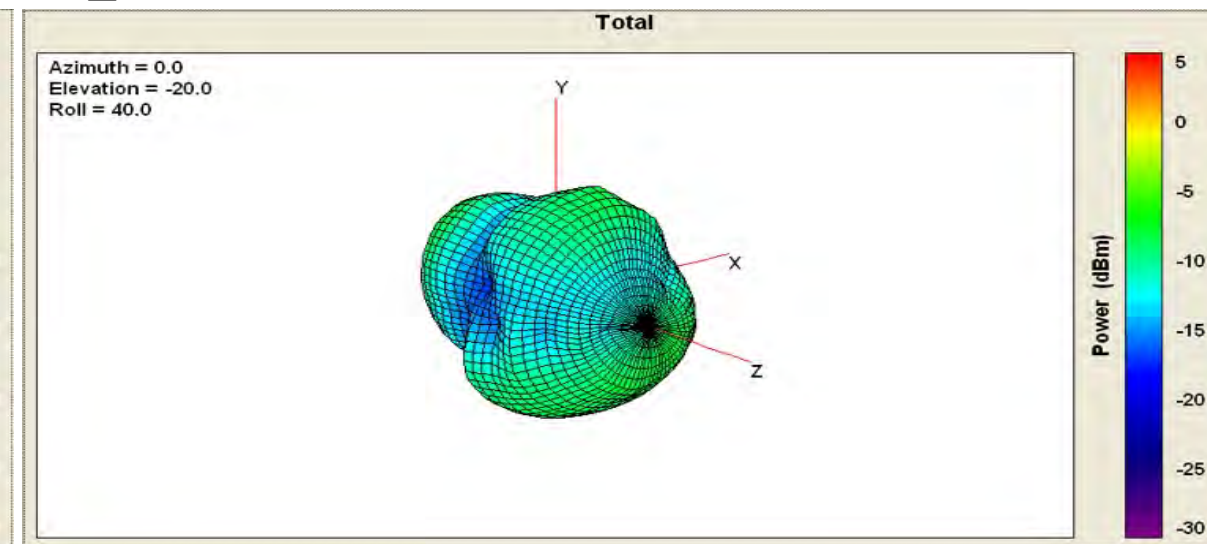


# 3D Radiation Pattern

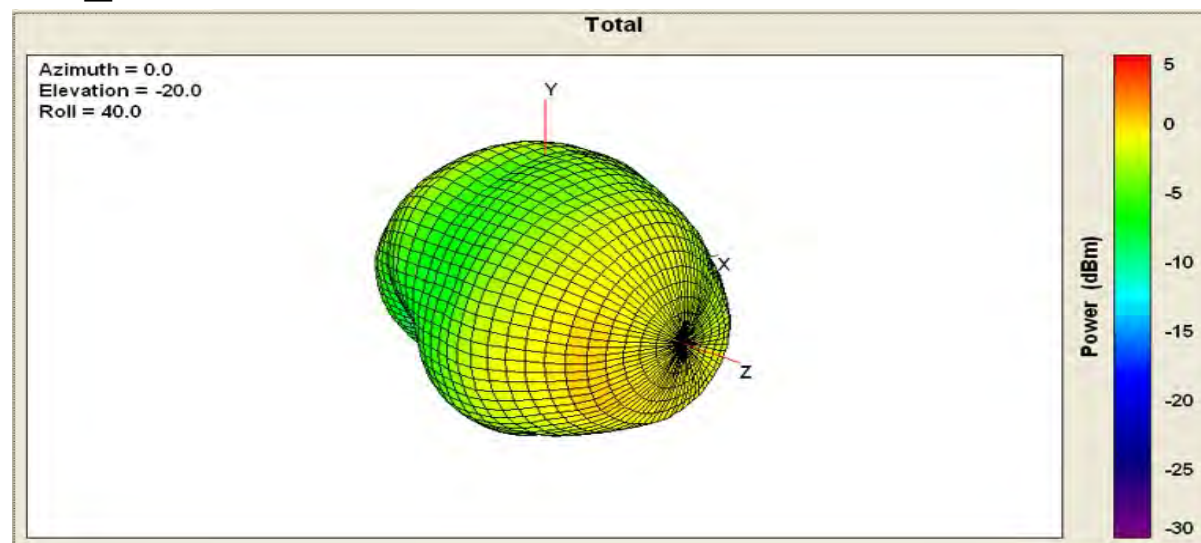
- MIMO1 Antenna
- MB\_1810MHz



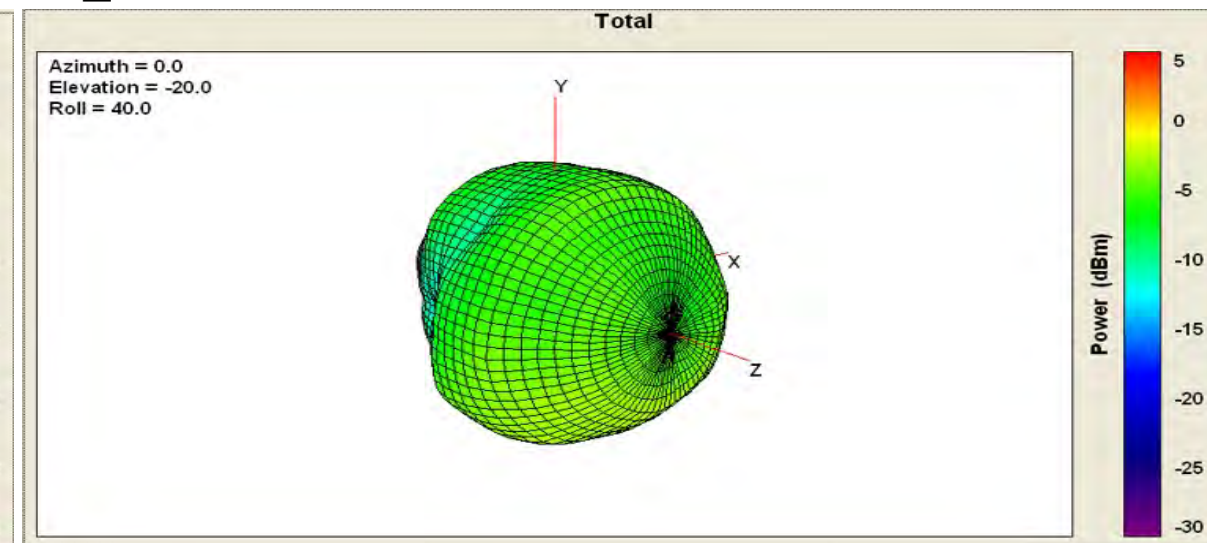
MB\_2110MHz



- HB\_2350MHz

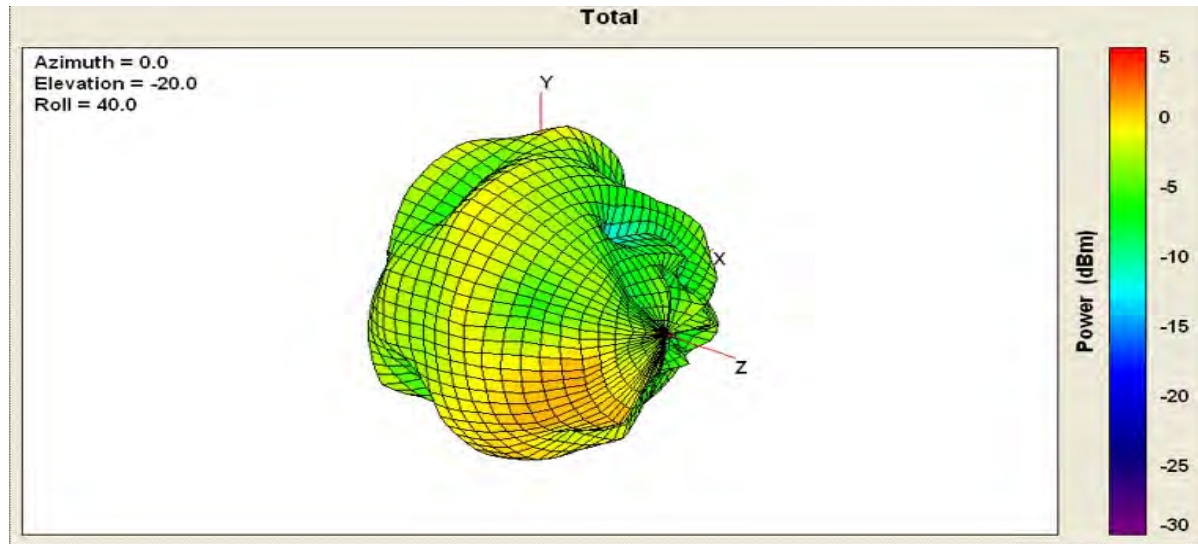


HB\_2590MHz



# 3D Radiation Pattern

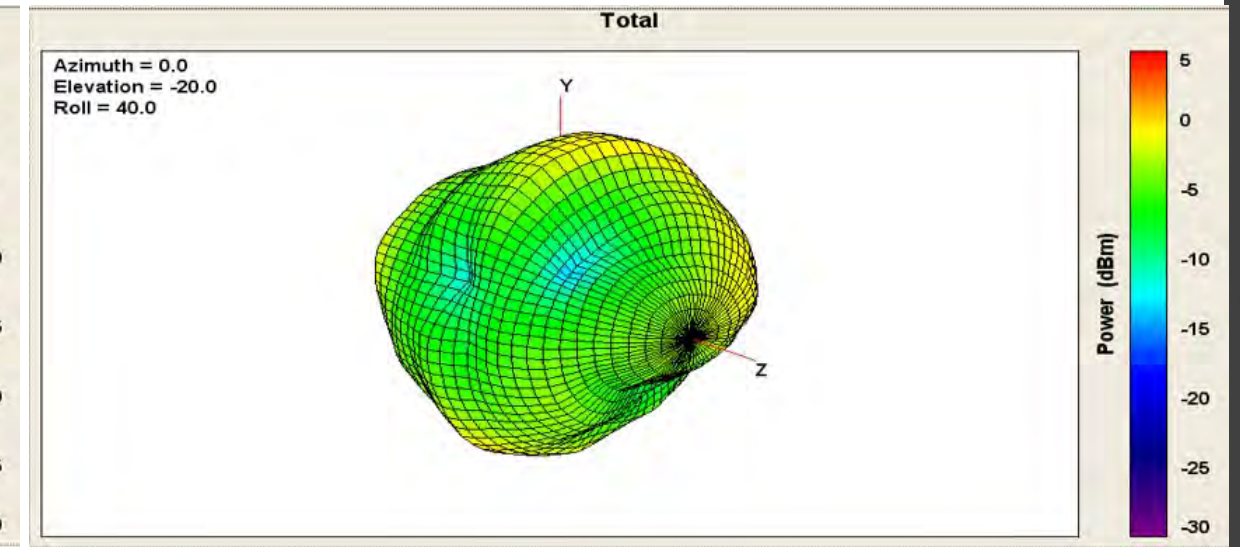
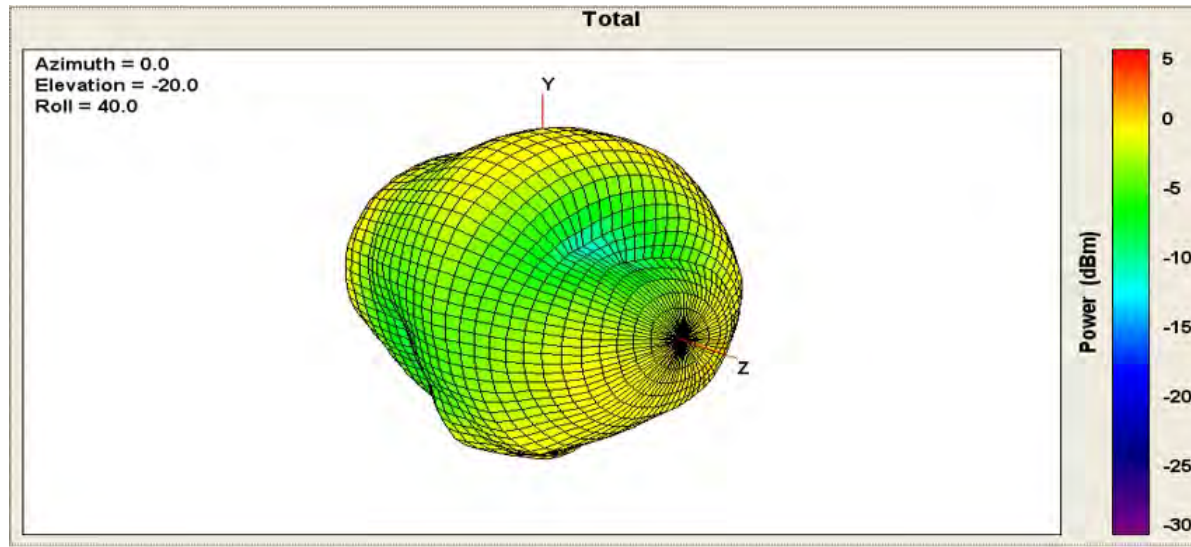
- MIMO1 Antenna
- UHB\_3750MHz



# 3D Radiation Pattern

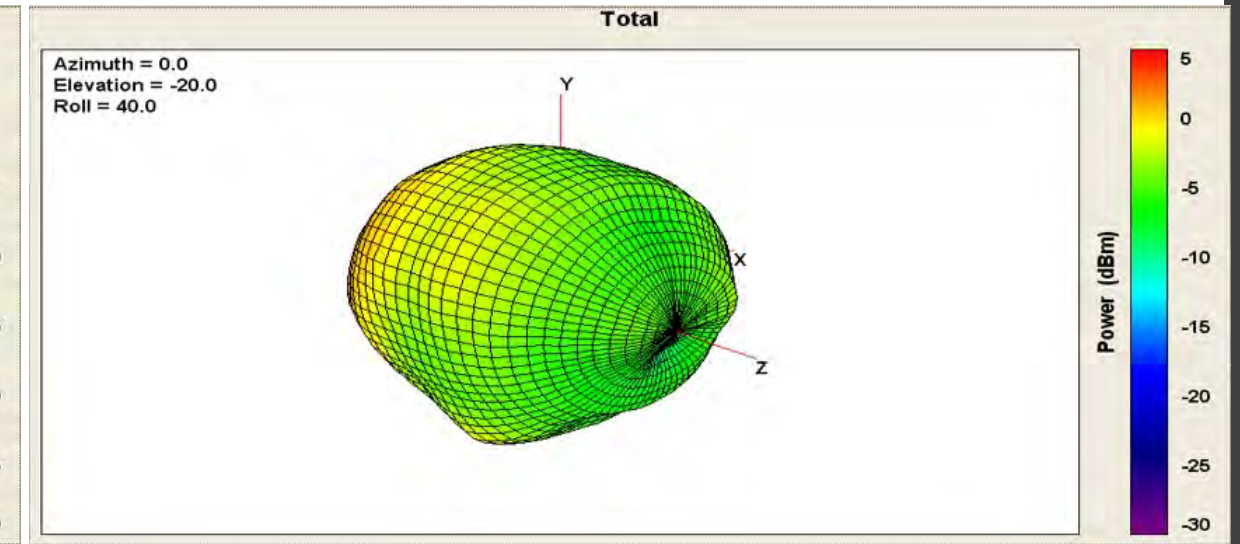
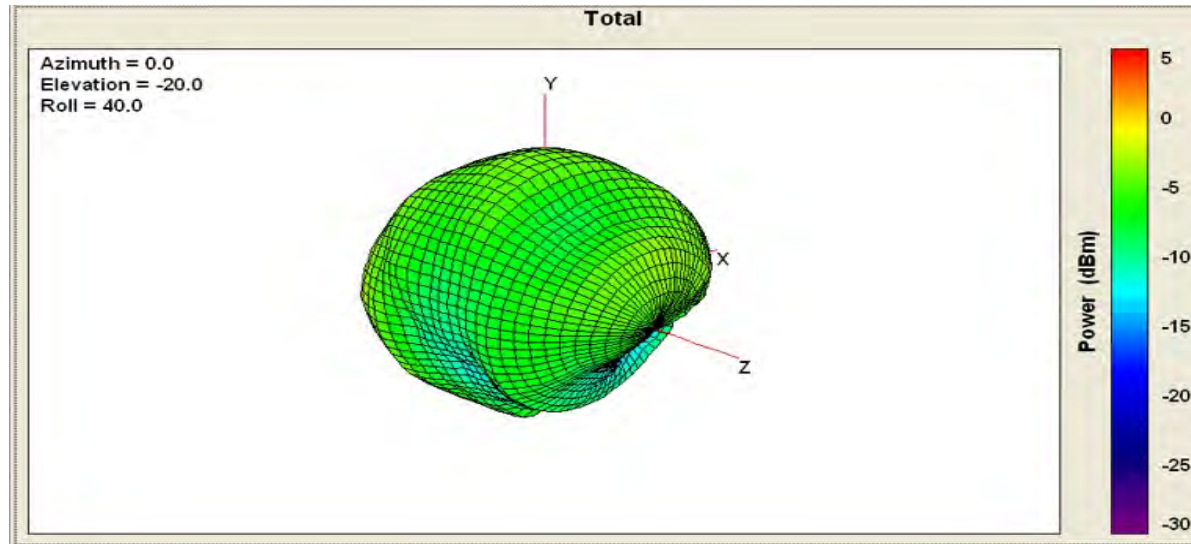
- MIMO2 Antenna
- MB\_1810MHz

MB\_2110MHz



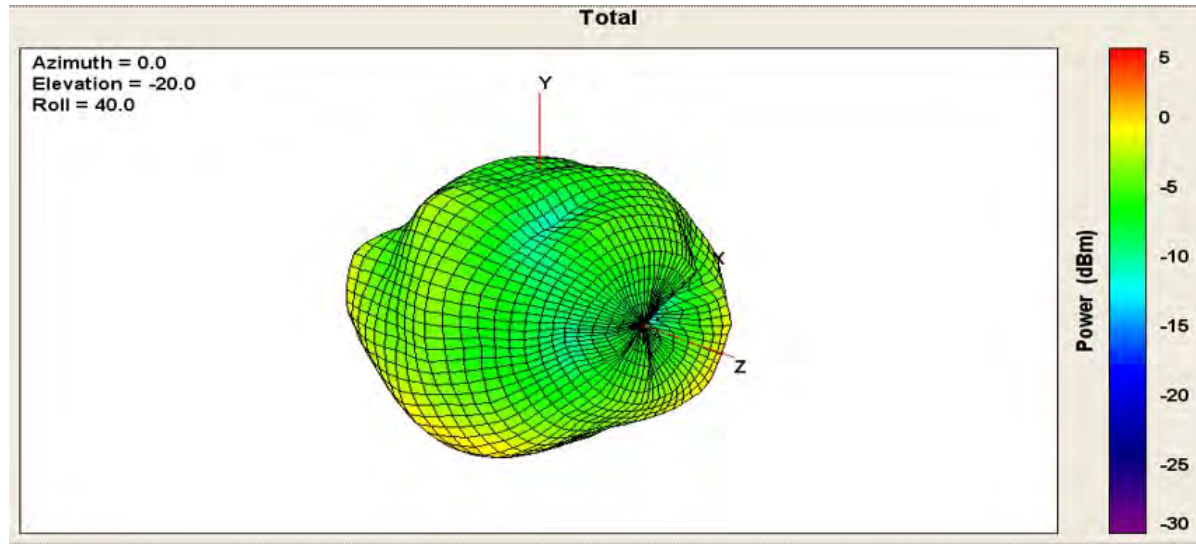
- HB\_2350MHz

HB\_2590MHz



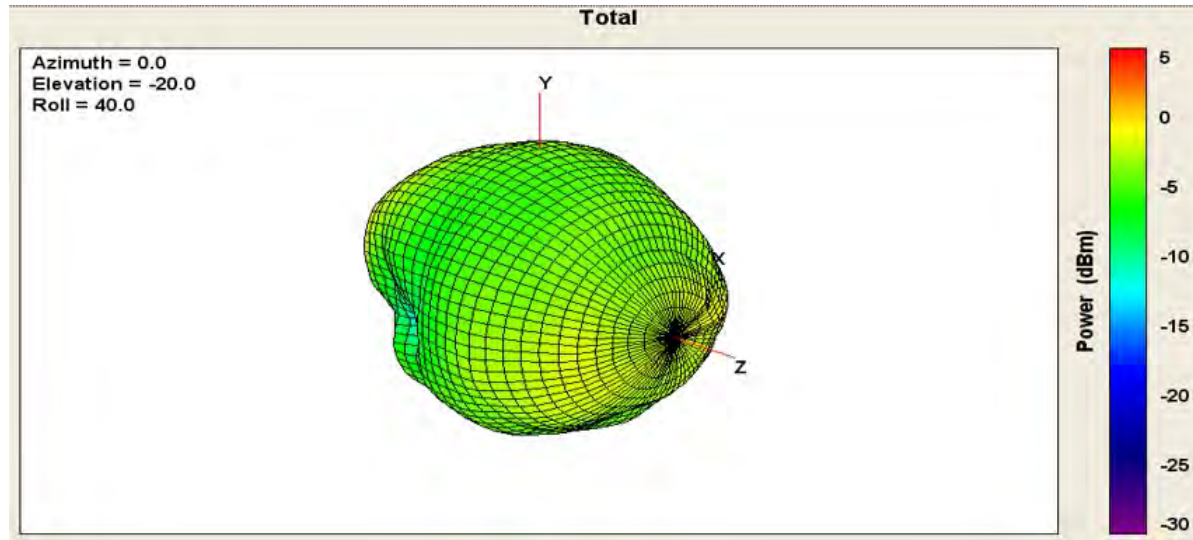
# 3D Radiation Pattern

- MIMO2 Antenna
- UHB\_3750MHz

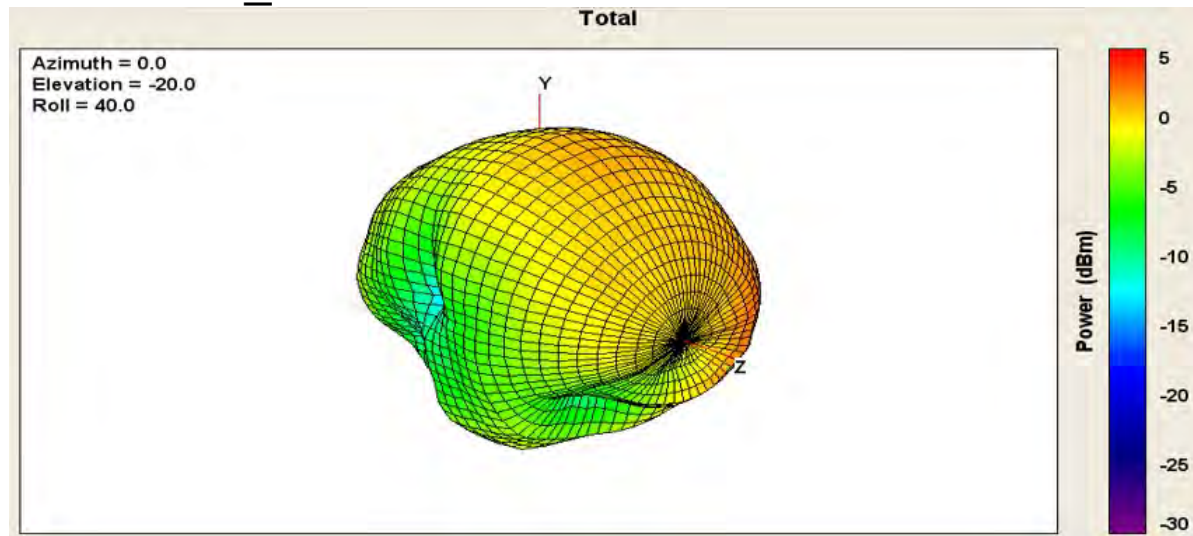


# 3D Radiation Pattern

- Wi-Fi1 Antenna
- 2.4G Band\_2450MHz



- Wi-Fi2 Antenna
- 2.4G Band\_2450MHz



# Summary

| Antenna                     | LB<br>(699~960MHz) | MB<br>(1710~2170MHz) | HB<br>(2300~2690MHz) | UHB<br>(3300~4200MHz) | Wi-Fi 2.4G Band<br>(2400~2500MHz) |
|-----------------------------|--------------------|----------------------|----------------------|-----------------------|-----------------------------------|
| Ant0 (Main)<br>Efficiency   | > -6.24 dB         | > -2.98 dB           | > -3.89dB            | > -5.87 dB            | N/A                               |
| Ant1 (MIMO1)<br>Efficiency  | N/A                | > -8.33 dB           | > -7.75 dB           | > -5.47 dB            | N/A                               |
| Ant2 (MIMO2)<br>Efficiency  | N/A                | > -4.25 dB           | > -6.49 dB           | > -6.86 dB            | N/A                               |
| Ant3 (AUX)<br>Efficiency    | > -8.1 dB          | > -5.93 dB           | > -6.61 dB           | > -6.2 dB             | N/A                               |
| Ant4 (Wi-Fi1)<br>Efficiency | N/A                |                      |                      |                       | > -3.36 dB                        |
| Ant5 (Wi-Fi2)<br>Efficiency | N/A                |                      |                      |                       | > -3.65 dB                        |
| Isolation                   | < -8.7 dB          |                      |                      |                       |                                   |

# Thank you



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VOLTAIR

Foxconn Interconnect Technology Limited (Incorporated in the Cayman Islands and carrying on business in Hong Kong as FIT Hon Teng Limited)

鴻騰精密科技股份有限公司 (於開曼群島成立，並以鴻騰六零八八精密科技股份有限公司於香港經營業務)