

# Phase error sensitivity in stacked yagis on 432 MHz

SM6FHZ 2016-09-21

# Configuration 1

- Start

Farfield Calculation of Antenna Arrays

Activate farfield array

Rectangular array     Edit antenna list

Rectangular array

Direction:            X                            Y                            Z

Number:            2                            2                            1

Spaceshift:        850                            880                            0

Phaseshift:        0                            0                            0

Update Antenna List

Antenna list

No.	X	Y	Z	Amplitude	Phase
1	-425.000	-440.000	0.000	1.00	0.00
2	-425.000	440.000	0.000	1.00	0.00
3	425.000	-440.000	0.000	1.00	0.00
4	425.000	440.000	0.000	1.00	0.00

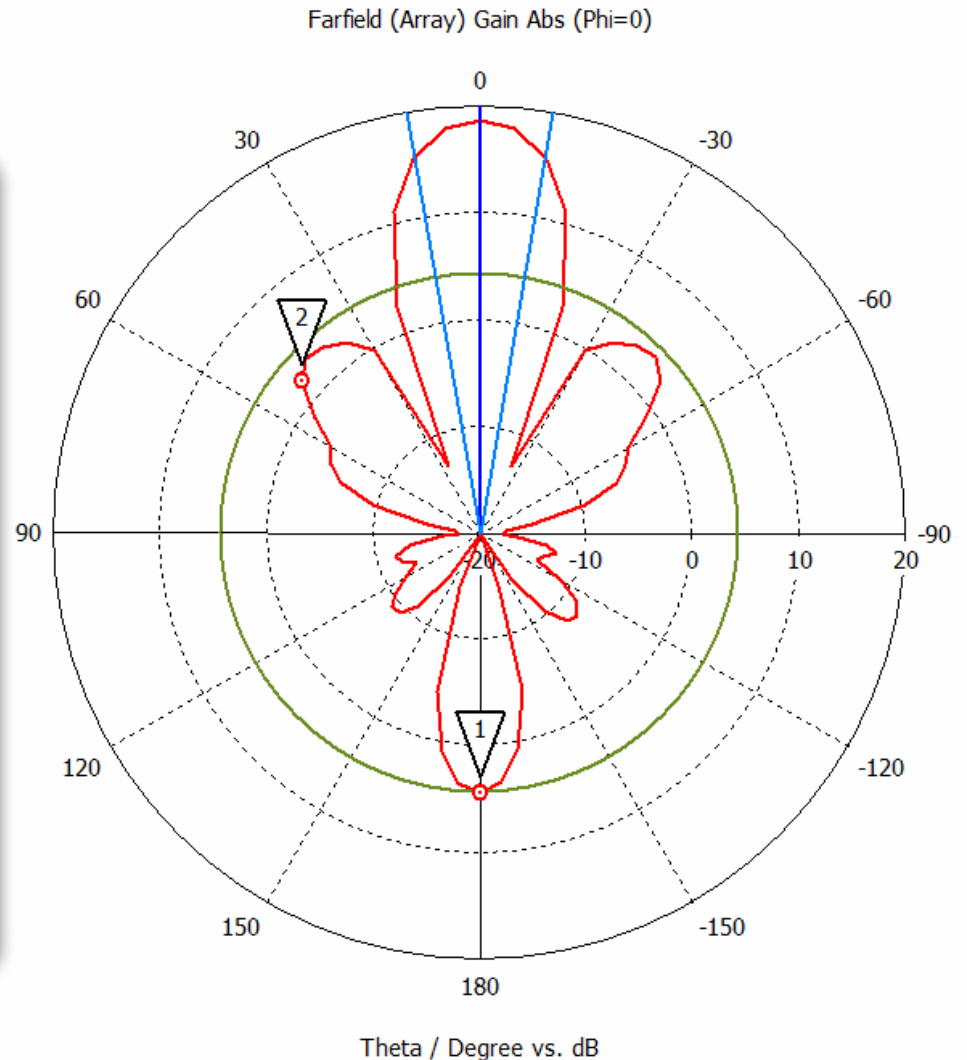
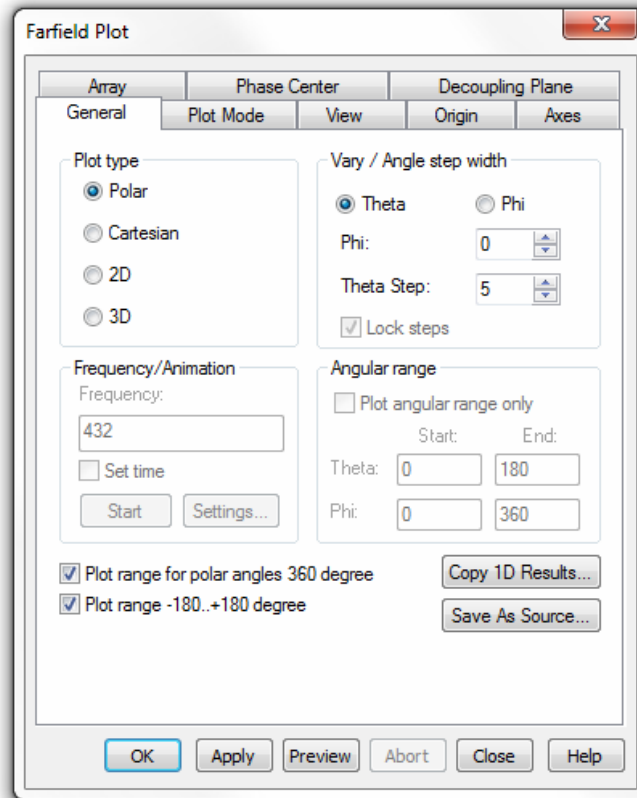
Modify...    Add...    Delete

# The four yagi array in real

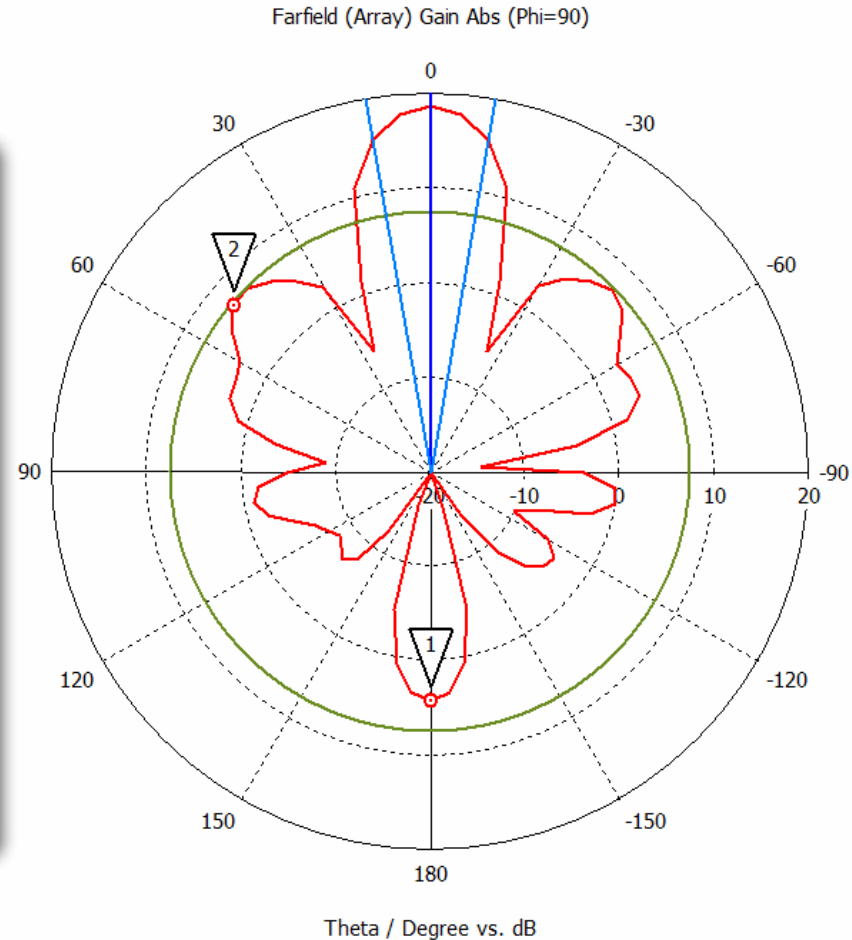
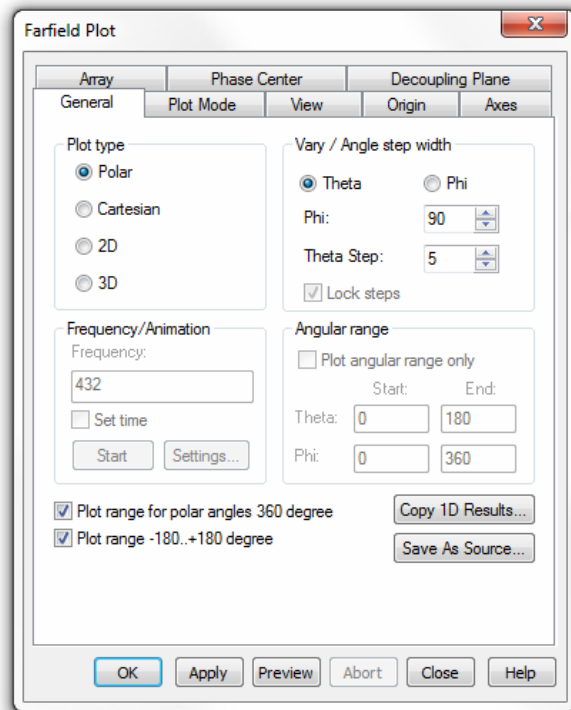


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# E-plane (Az) pattern with no phase errors

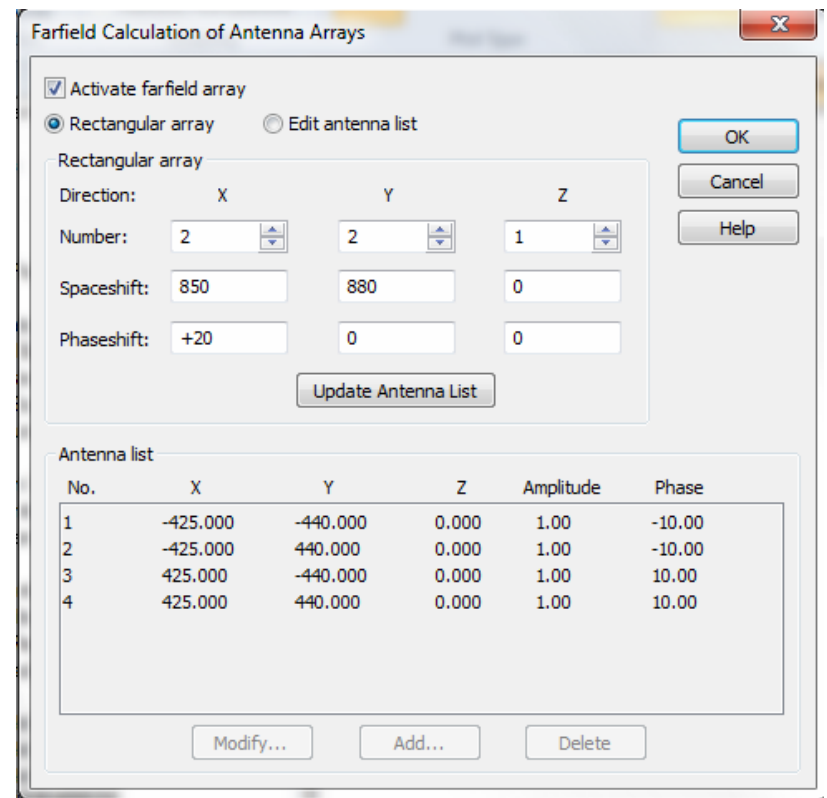


# H-plane (EI) pattern with no phase errors

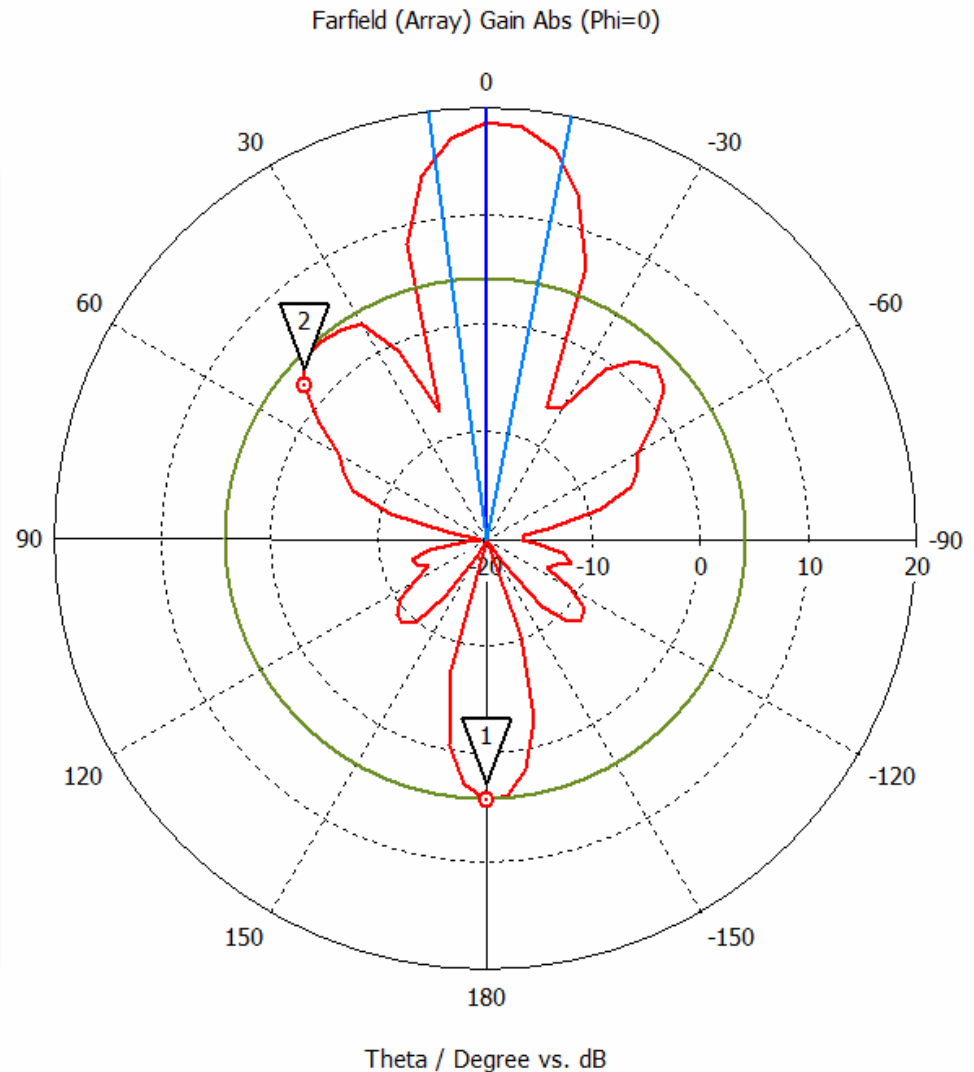
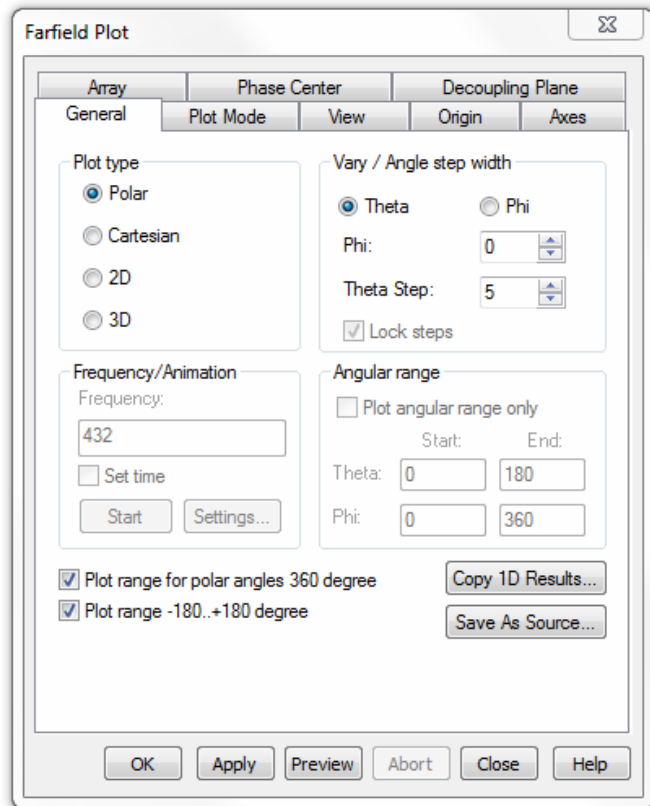


# Configuration2

- 20 deg phase error in az

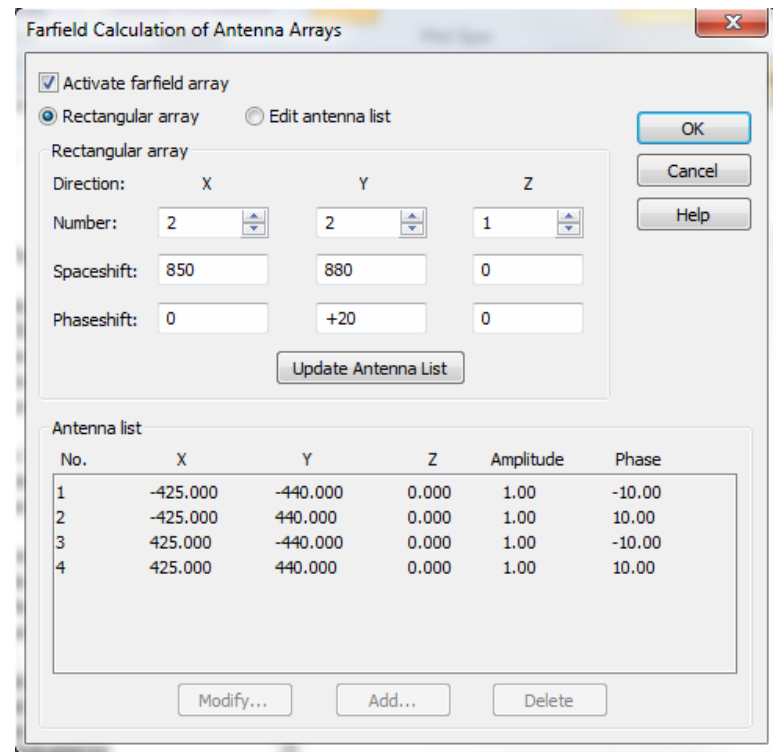


# E-plane pattern with 20 deg phase error in Az



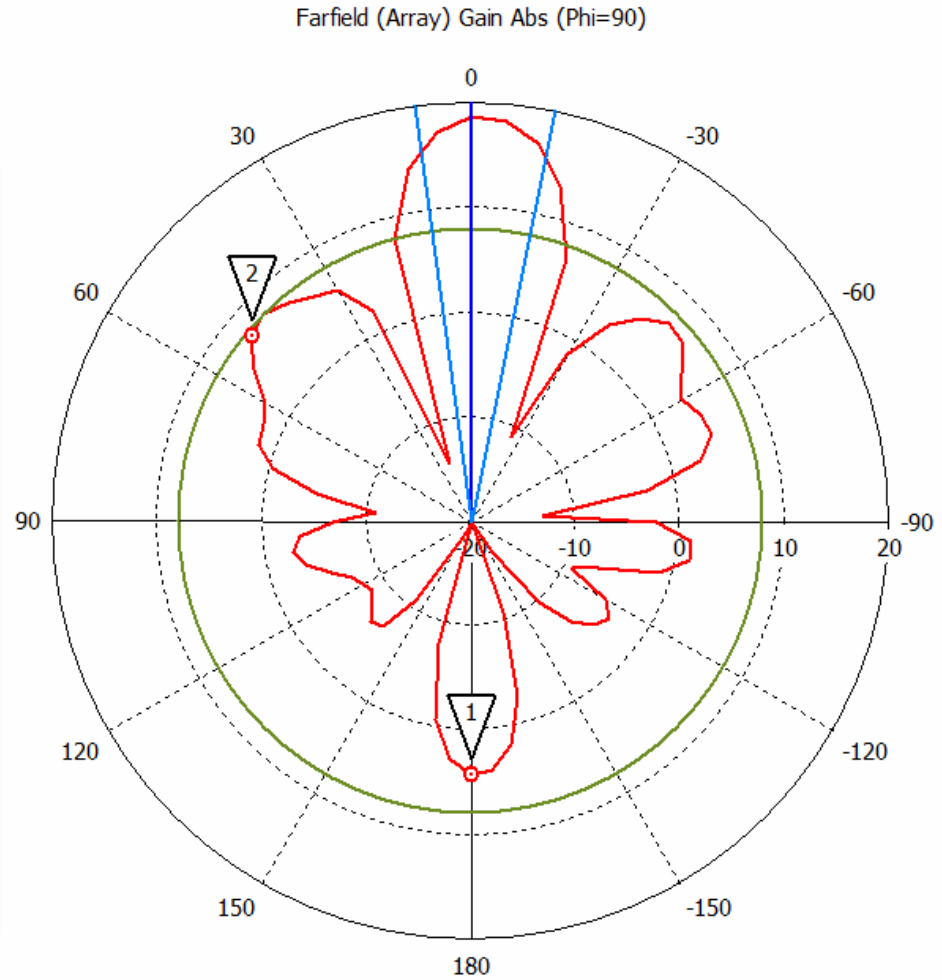
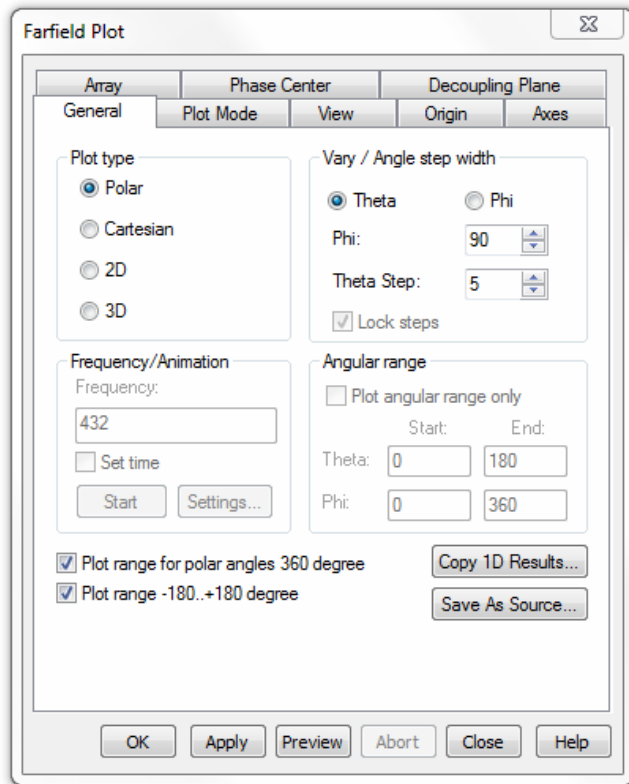
# Configuration3

- 20 deg phase error in el





# H-plane pattern with 20 deg phase error in EI



# Configuration4

- 45 deg phase error in az

Farfield Calculation of Antenna Arrays

Activate farfield array

Rectangular array  Edit antenna list

Rectangular array

Direction: X Y Z

Number: 2 2 1

Spaceshift: 850 880 0

Phaseshift: +45 0 0

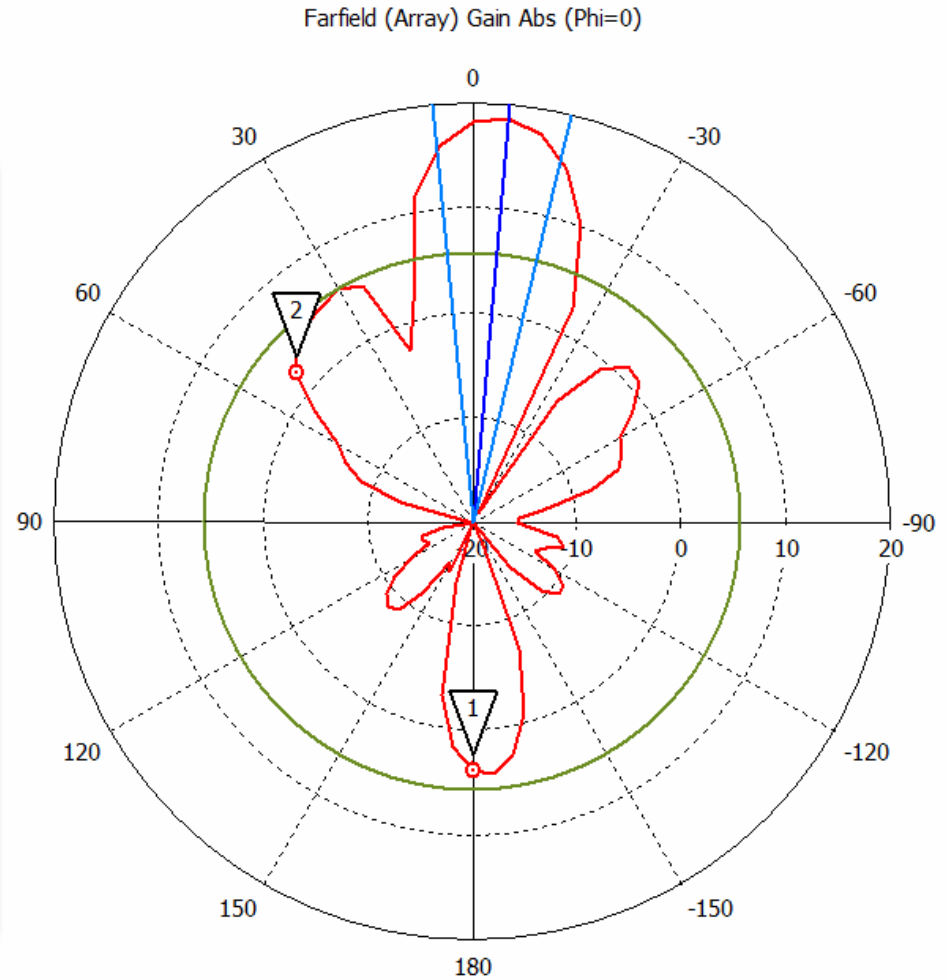
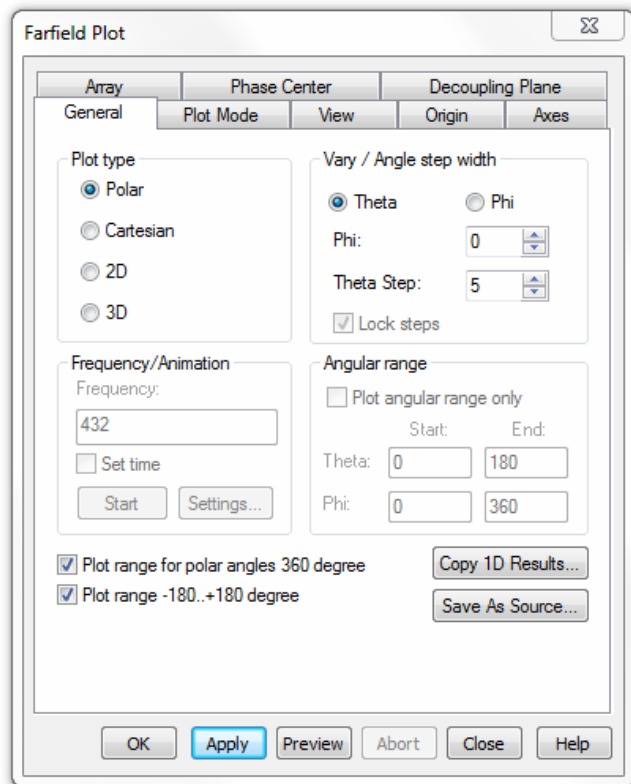
Update Antenna List

Antenna list

No.	X	Y	Z	Amplitude	Phase
1	-425.000	-440.000	0.000	1.00	-22.50
2	-425.000	440.000	0.000	1.00	-22.50
3	425.000	-440.000	0.000	1.00	22.50
4	425.000	440.000	0.000	1.00	22.50

Modify... Add... Delete

# E-plane pattern with 45 deg phase error in Az



Theta / Degree vs. dB

# Configuration5

- 45 deg phase error in el

Farfield Calculation of Antenna Arrays

Activate farfield array

Rectangular array  Edit antenna list

Rectangular array

Direction: X Y Z

Number: 2 2 1

Spaceshift: 850 880 0

Phaseshift: 0 +45 0

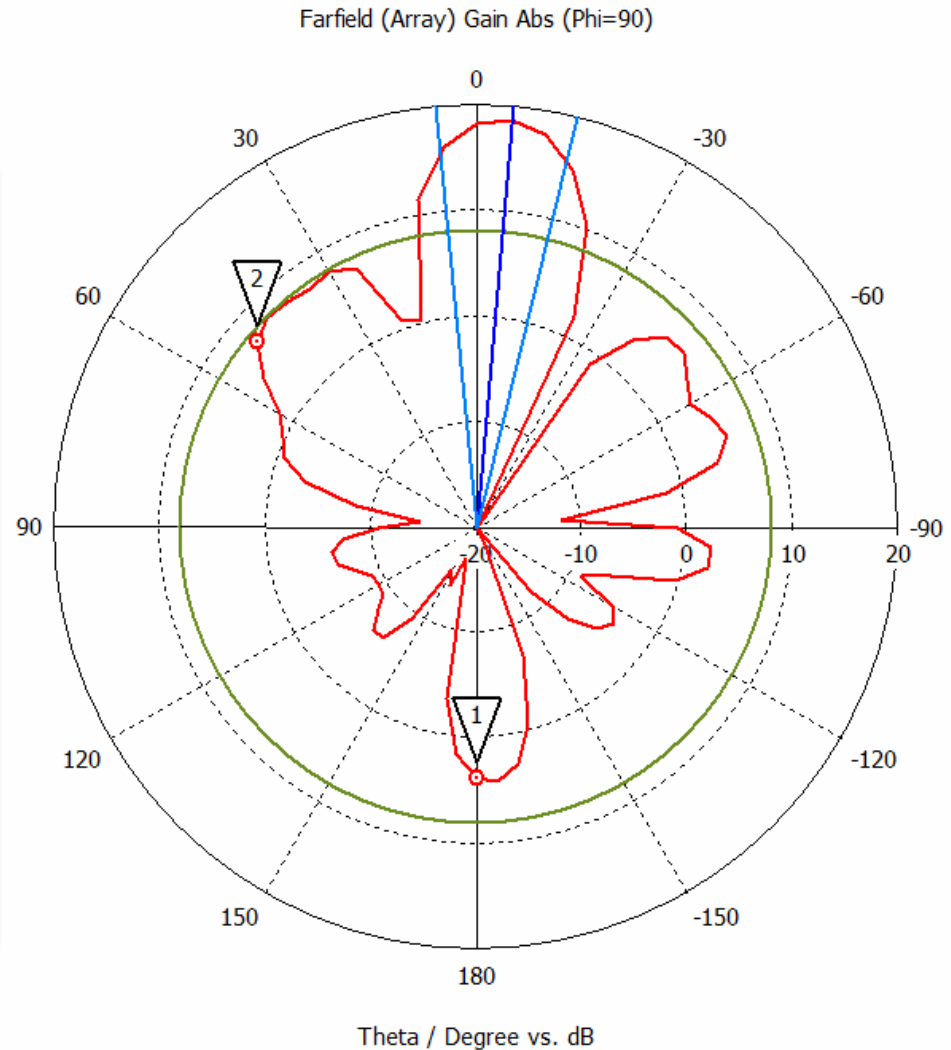
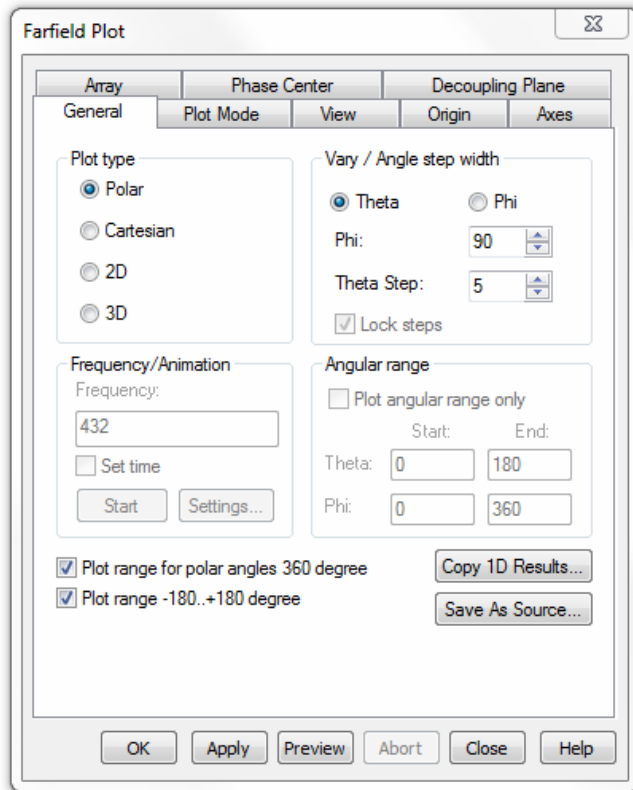
Update Antenna List

Antenna list

No.	X	Y	Z	Amplitude	Phase
1	-425.000	-440.000	0.000	1.00	-22.50
2	-425.000	440.000	0.000	1.00	22.50
3	425.000	-440.000	0.000	1.00	-22.50
4	425.000	440.000	0.000	1.00	22.50

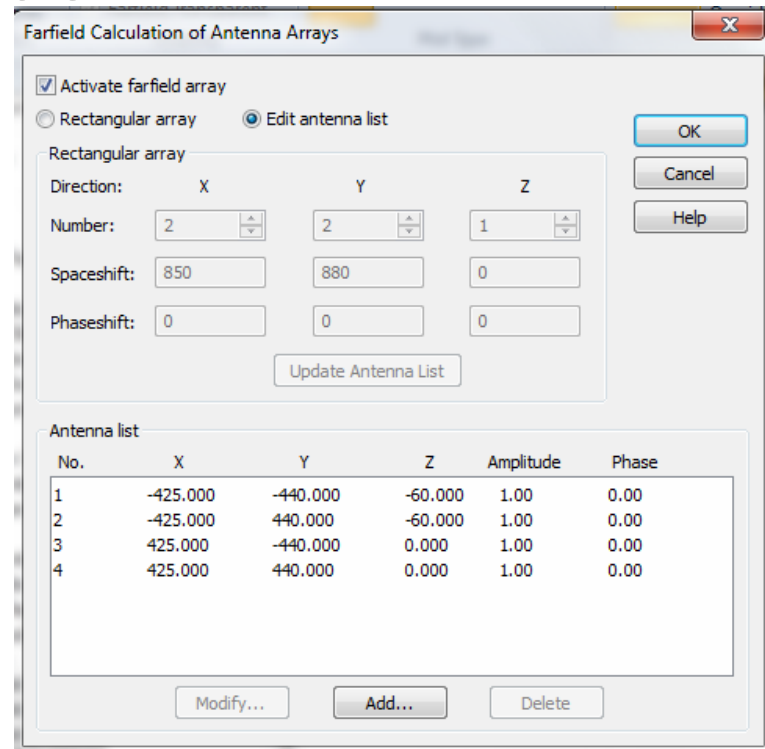
Modify... Add... Delete

# H-plane pattern with 45 deg phase error in EI



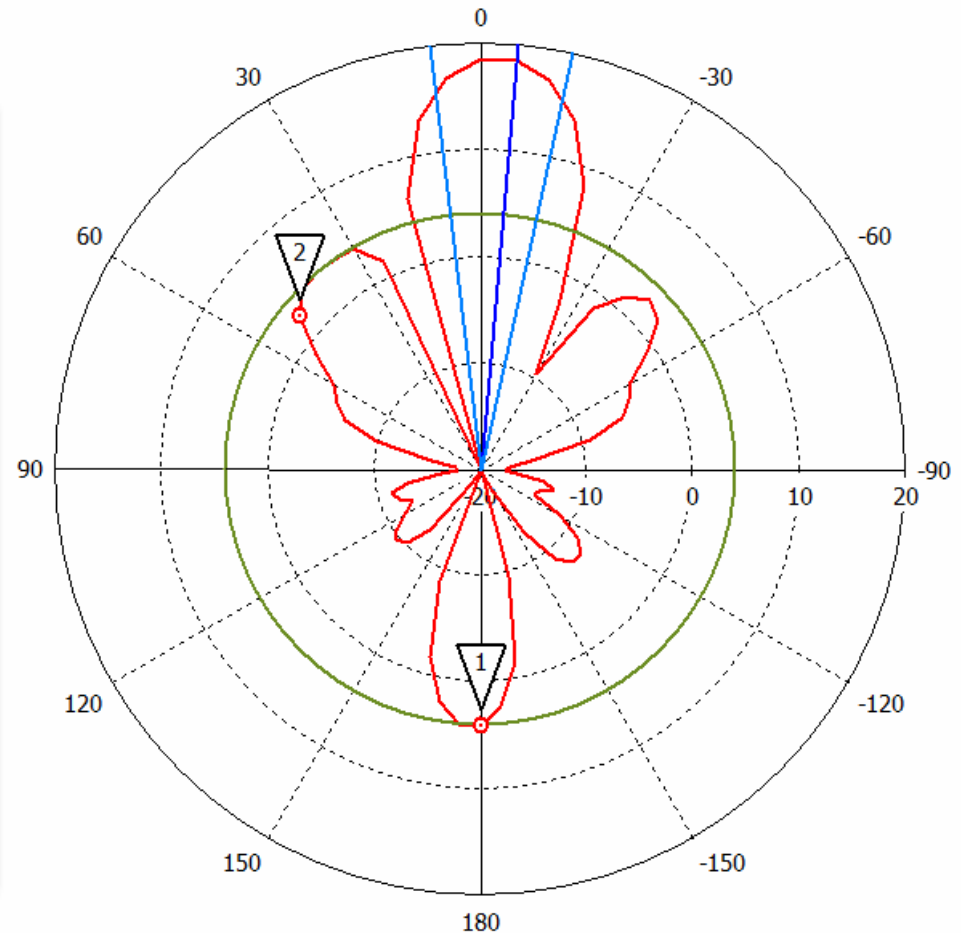
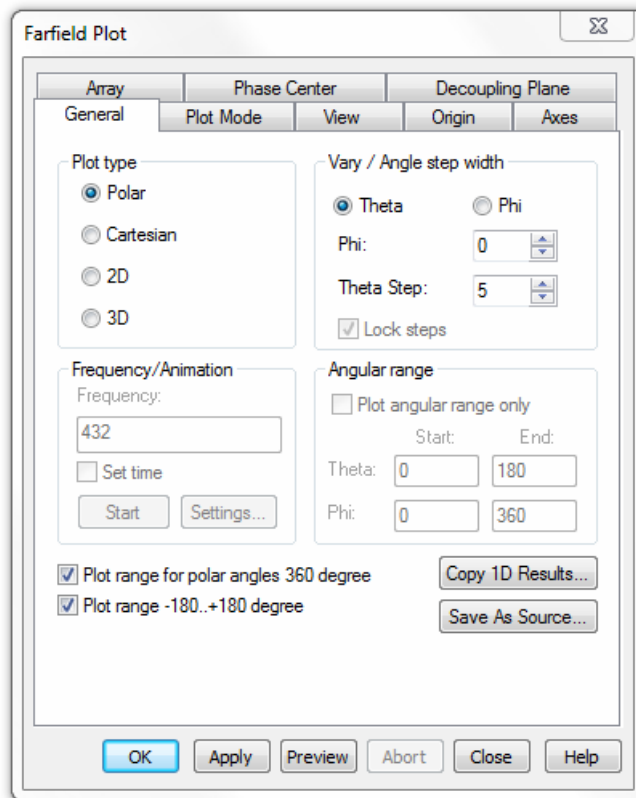
# Configuration6

- Minus 60 mm ( $0.086 \lambda$ ) offset in Z-direction for the 2 left antennas



# E-plane pattern with -60 mm (0.086 $\lambda$ ) offset in Z-direction for the 2 left antennas

Farfield (Array) Gain Abs (Phi=0)



Theta / Degree vs. dB