

Radio approval 80GHZ-T-C
Antennas for TLPR applications

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03. January 2018

Distribution list: KMTKI RF Sensors

Document Type: Report

Revision history	Issue	Date	Issued by	Modification
	0.1	2017-08-21	C. Ouzounis	Created
	0.2	2017-10-25	C. Ouzounis	Updated antenna list
	0.3	2018-01-03	C. Ouzounis	Differentiation between HART and FF/PA devices

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1 Purpose

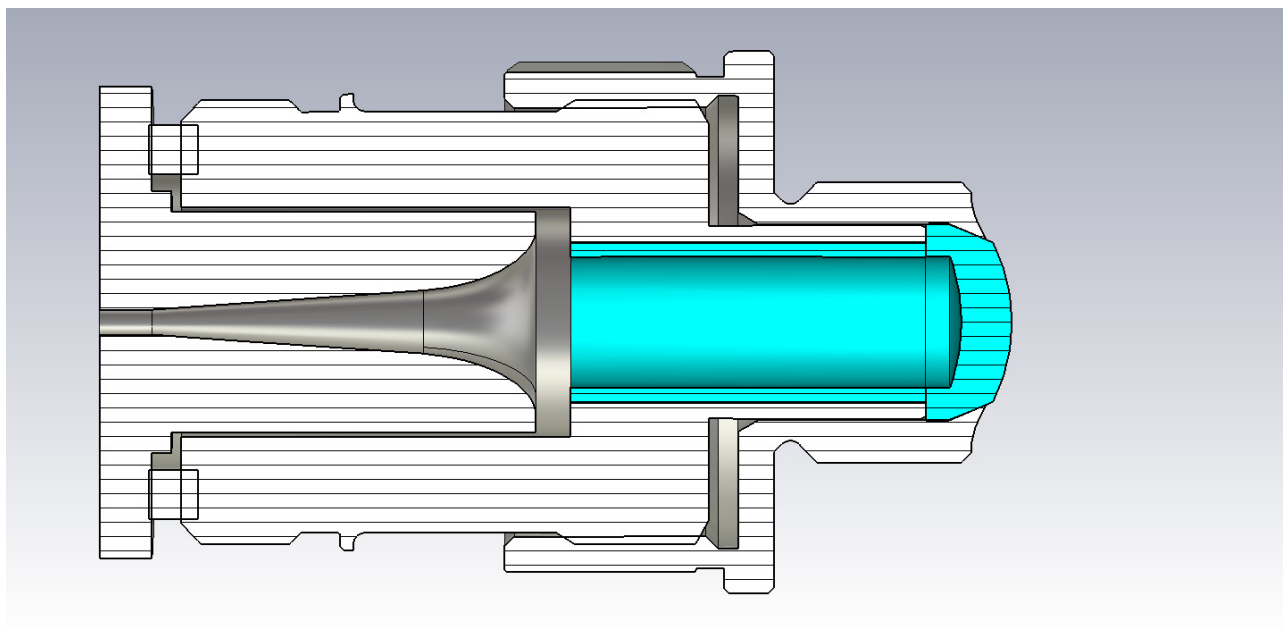
In the following measurements several characteristics of antennas have been performed, like

- Radiation pattern in E-plane and H-plane
- Main lobe magnitude
- Angular width (3 dB)

The antenna list is valid for HART devices (PMN: "OPTIWAVE x500 series") and FF/PA devices (PMN: "OPTIWAVE x500 FF-PA series").

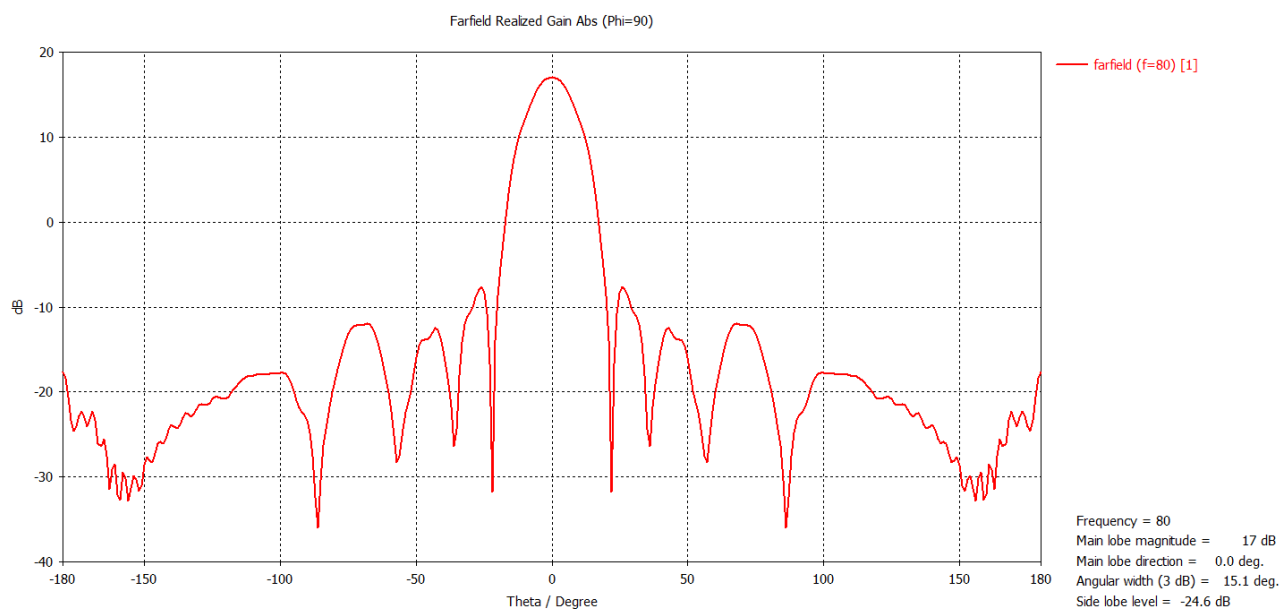
2 Antenna characteristics

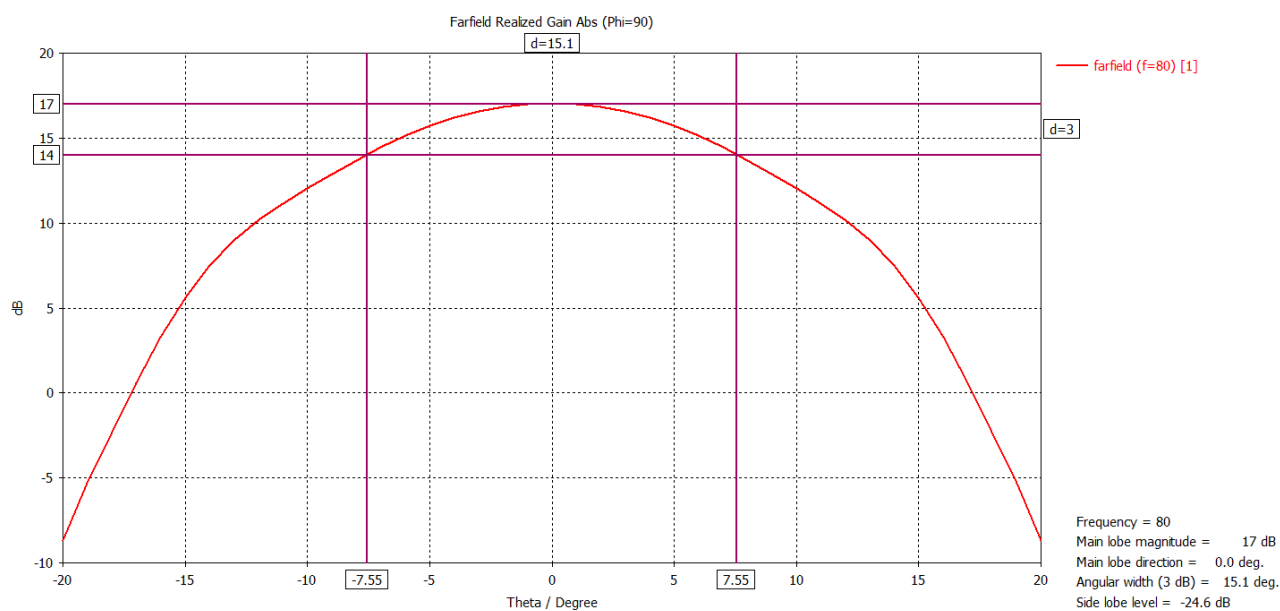
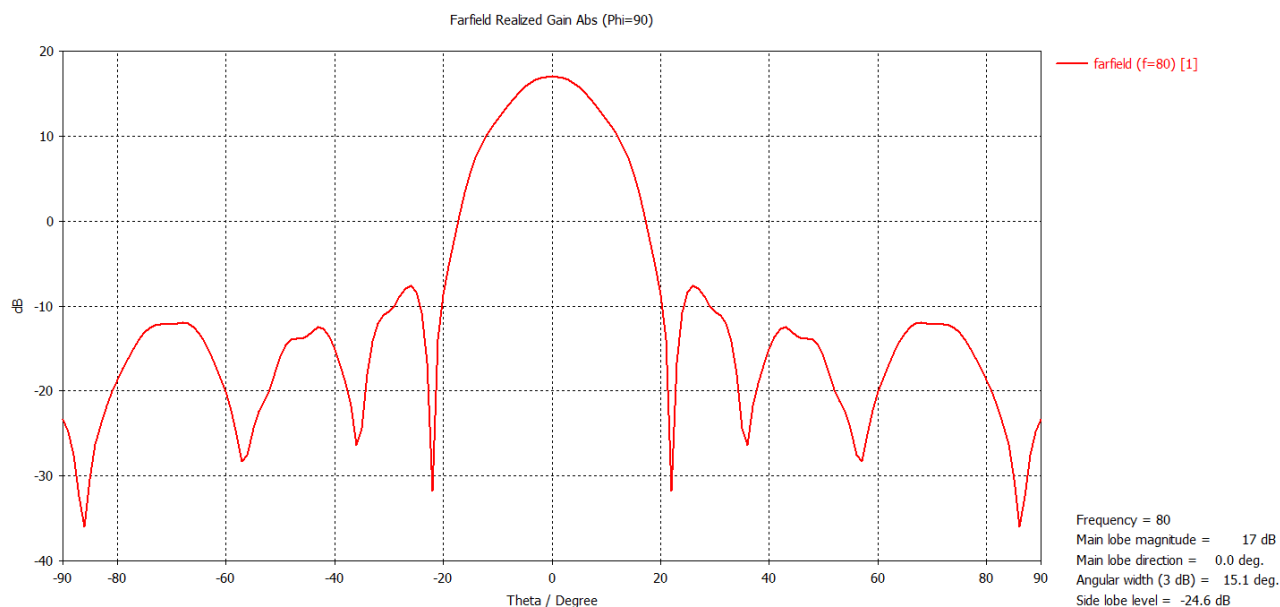
2.1 PEEK / DN20 (3/4") Lens



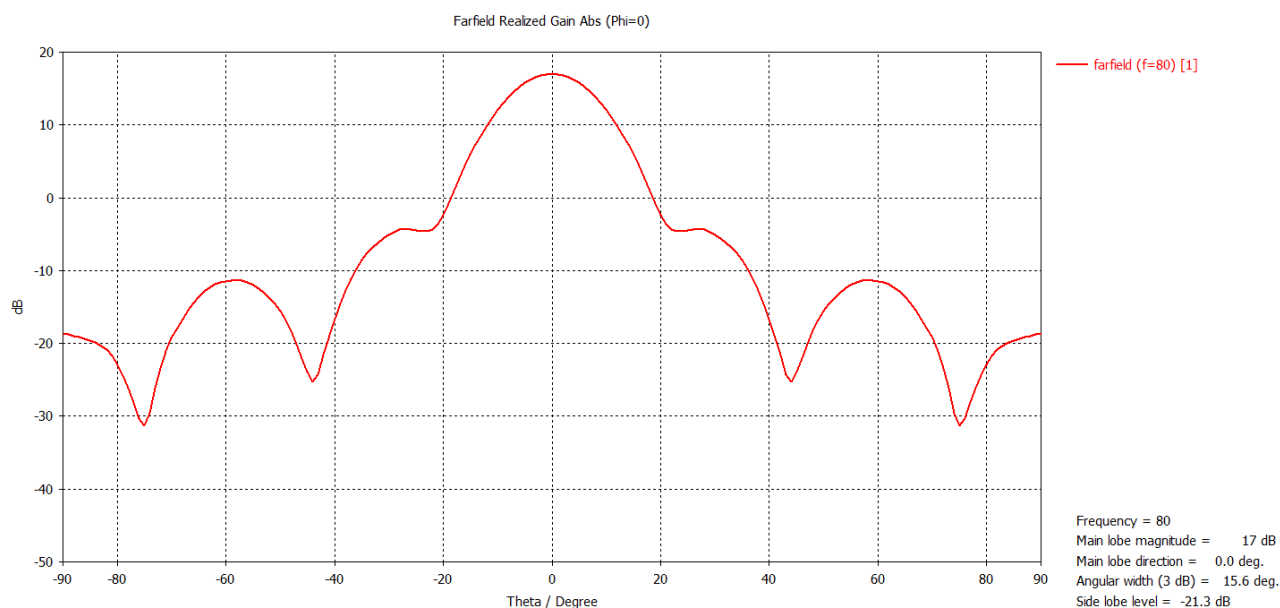
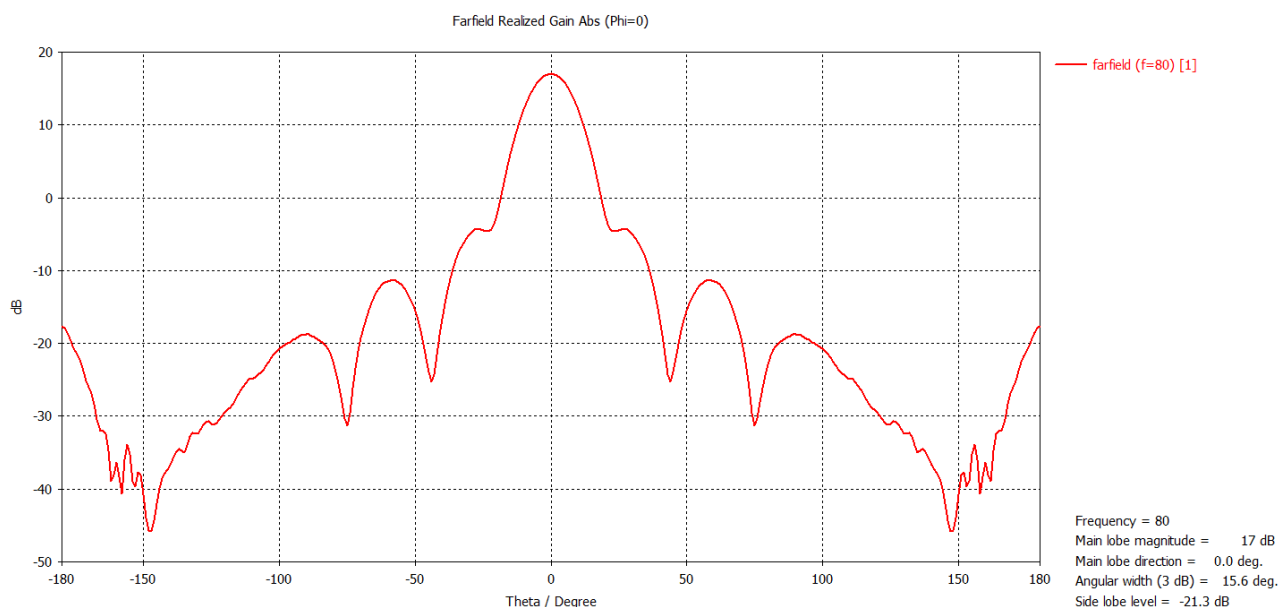
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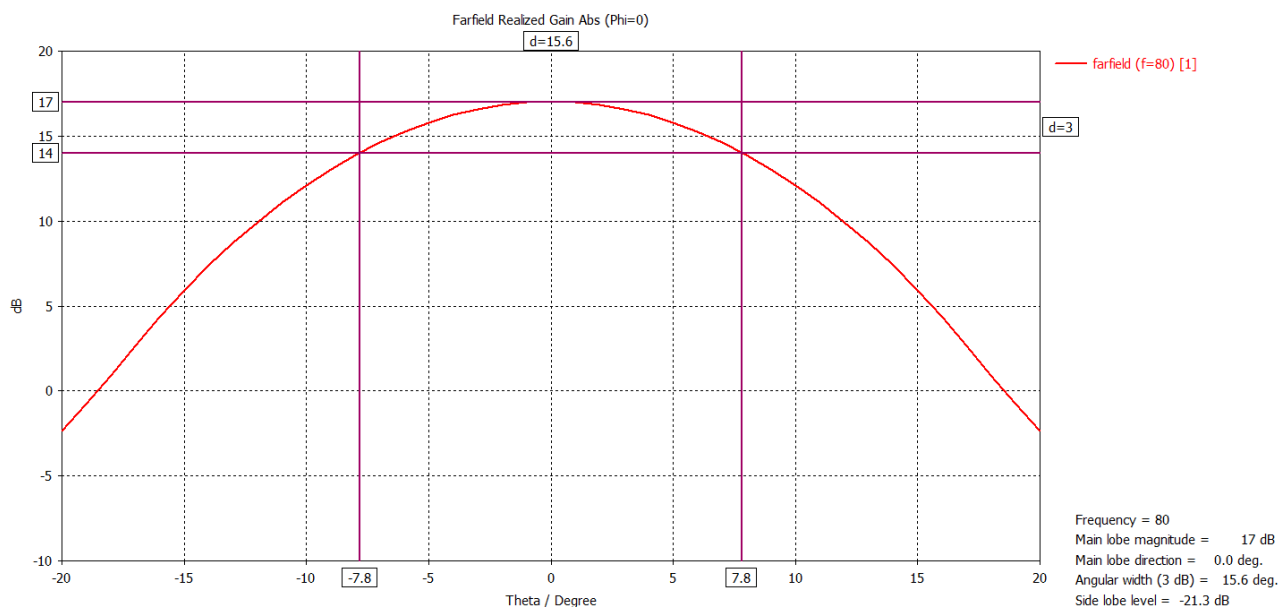
2.1.1 Radiation pattern in E-plane



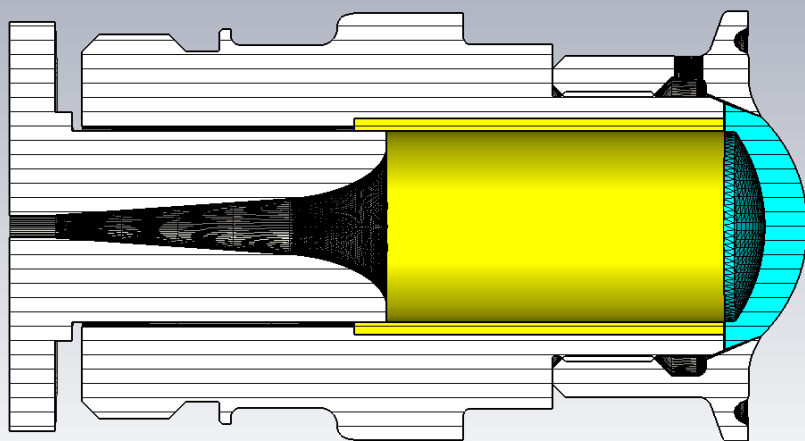


2.1.2 Radiation pattern in H-plane

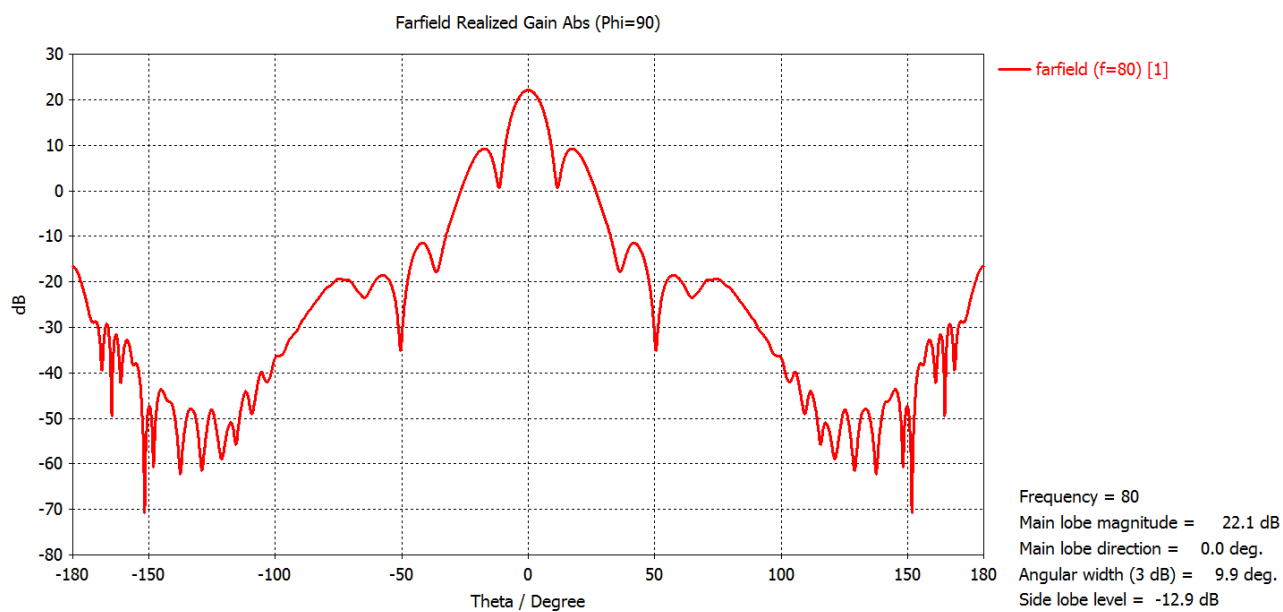


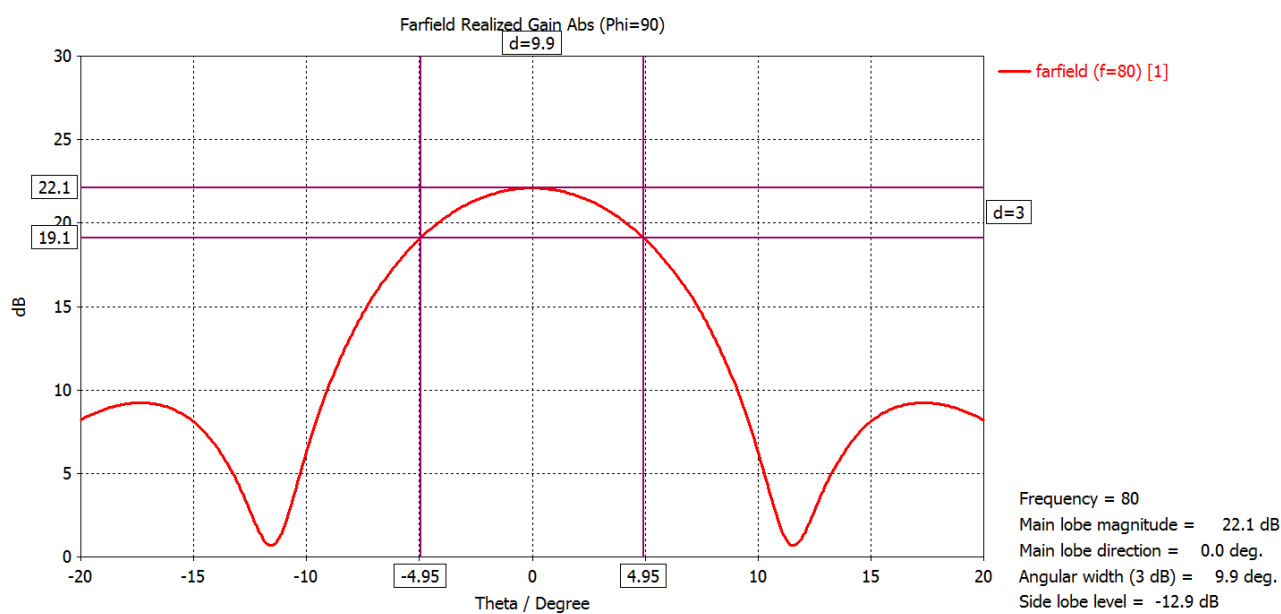
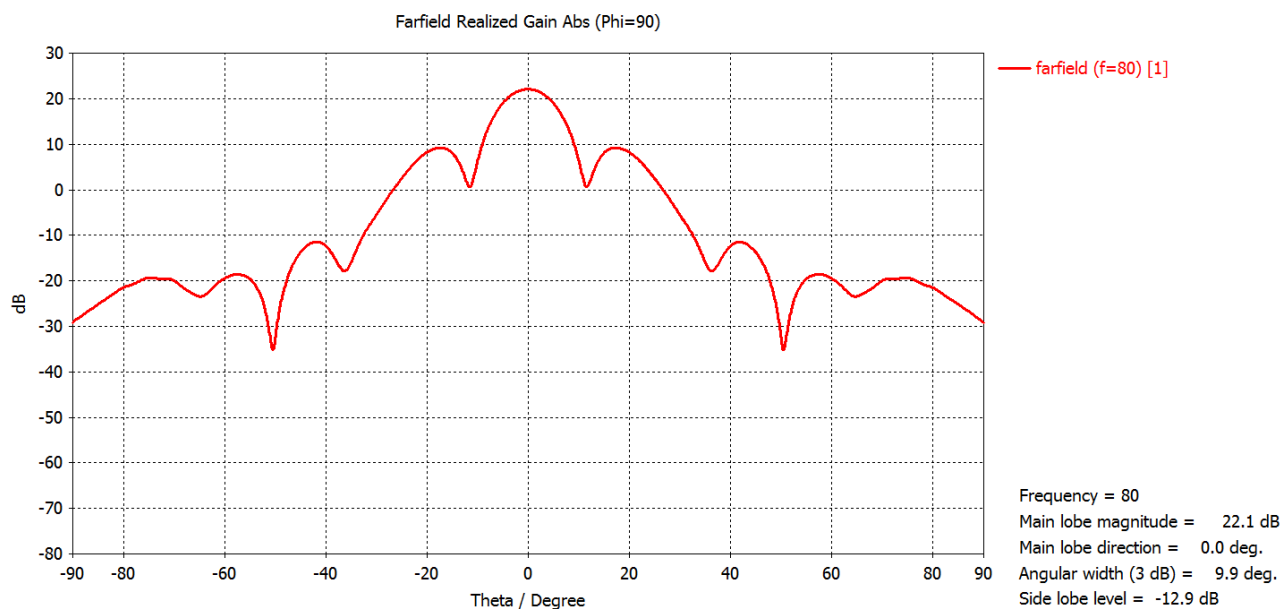


2.2 PEEK / DN25 (1") Lens

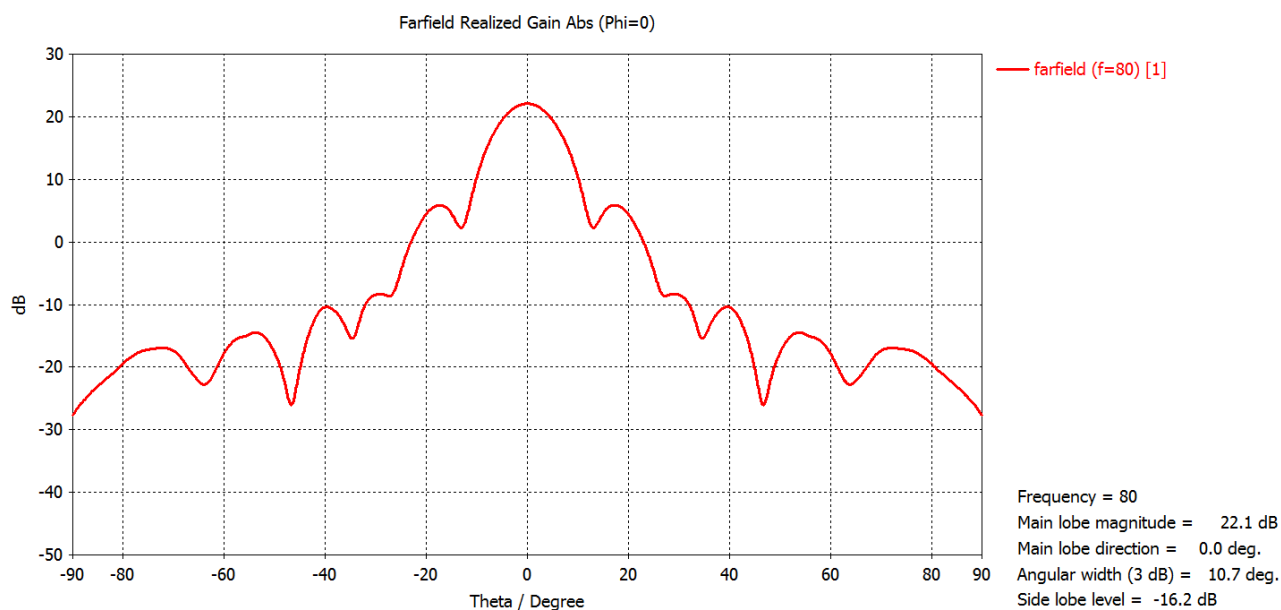
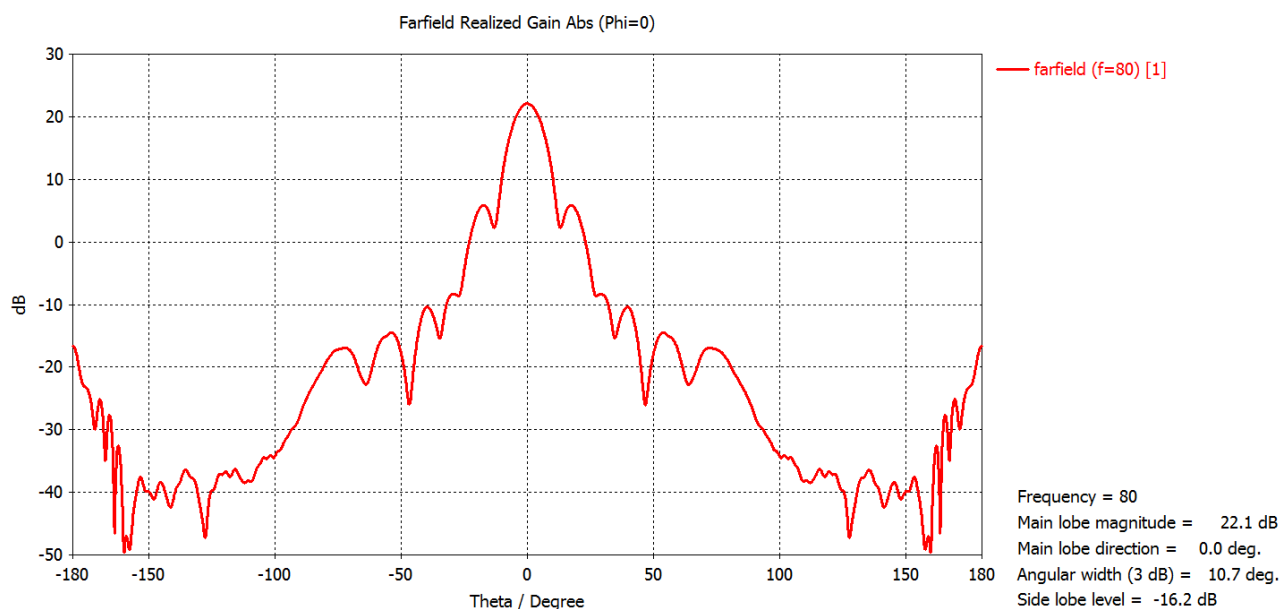


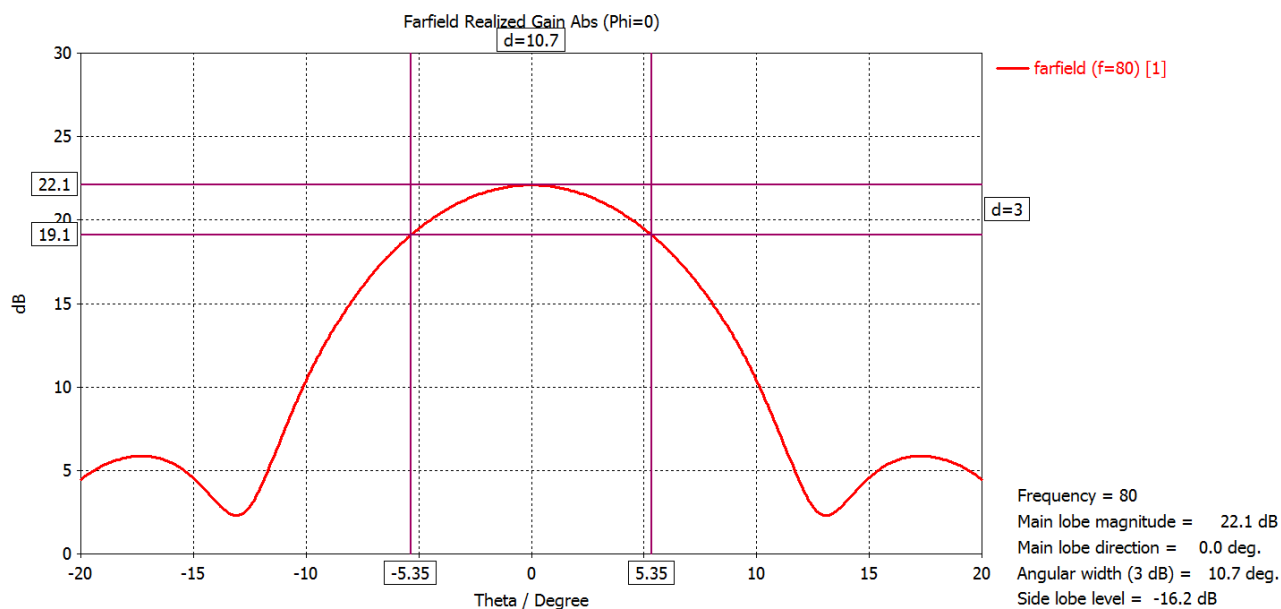
2.2.1 Radiation pattern in E-plane



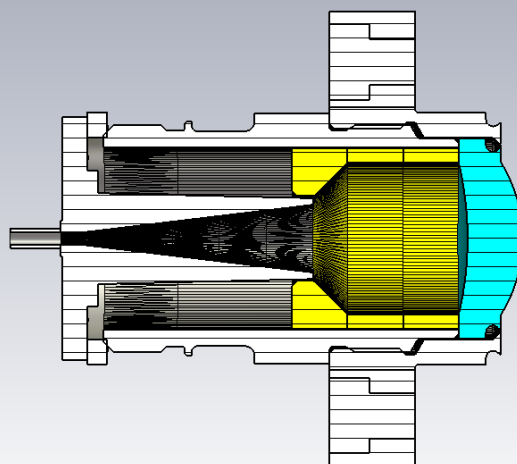


2.2.2 Radiation pattern in H-plane

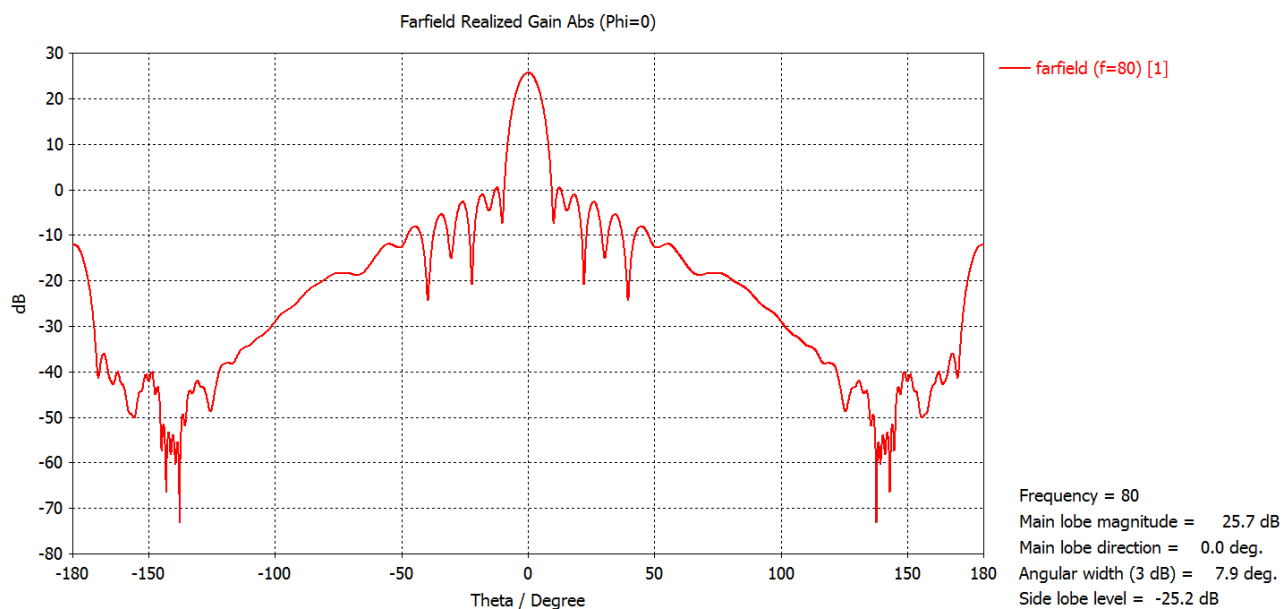


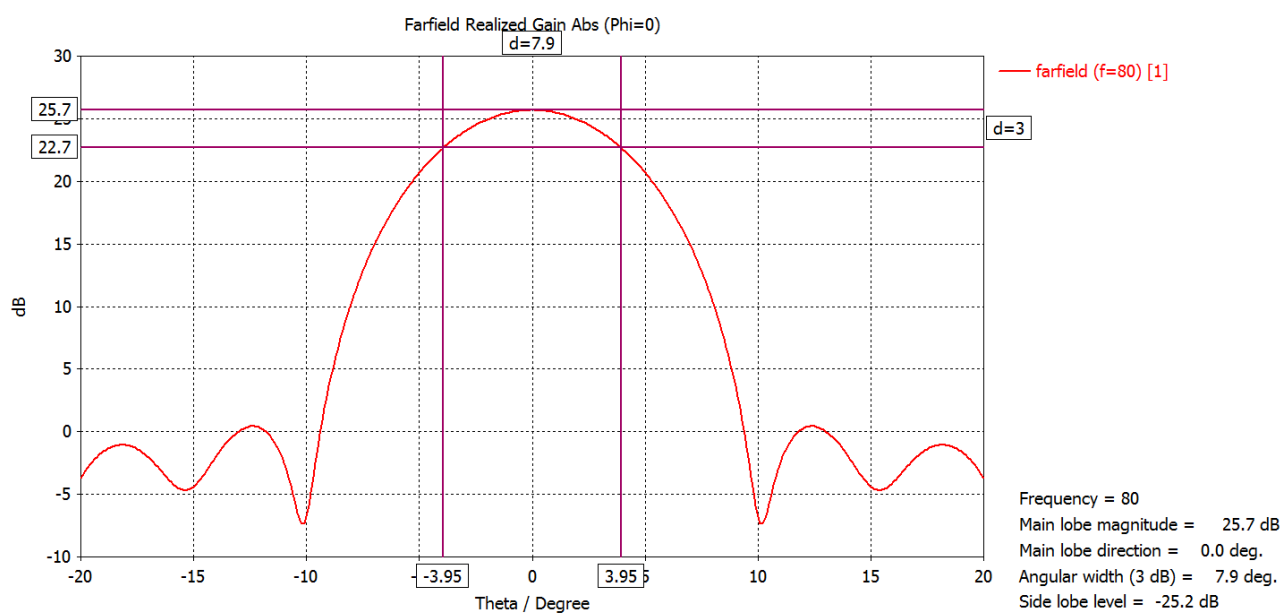
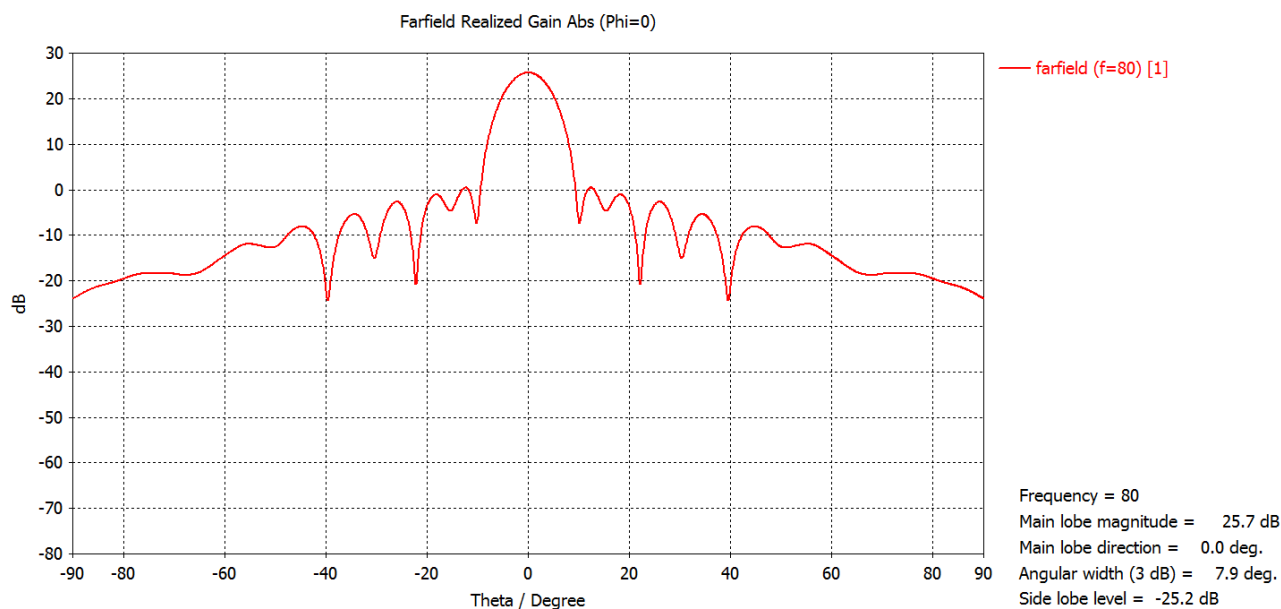


2.3 PEEK / DN40 (1½") Lens

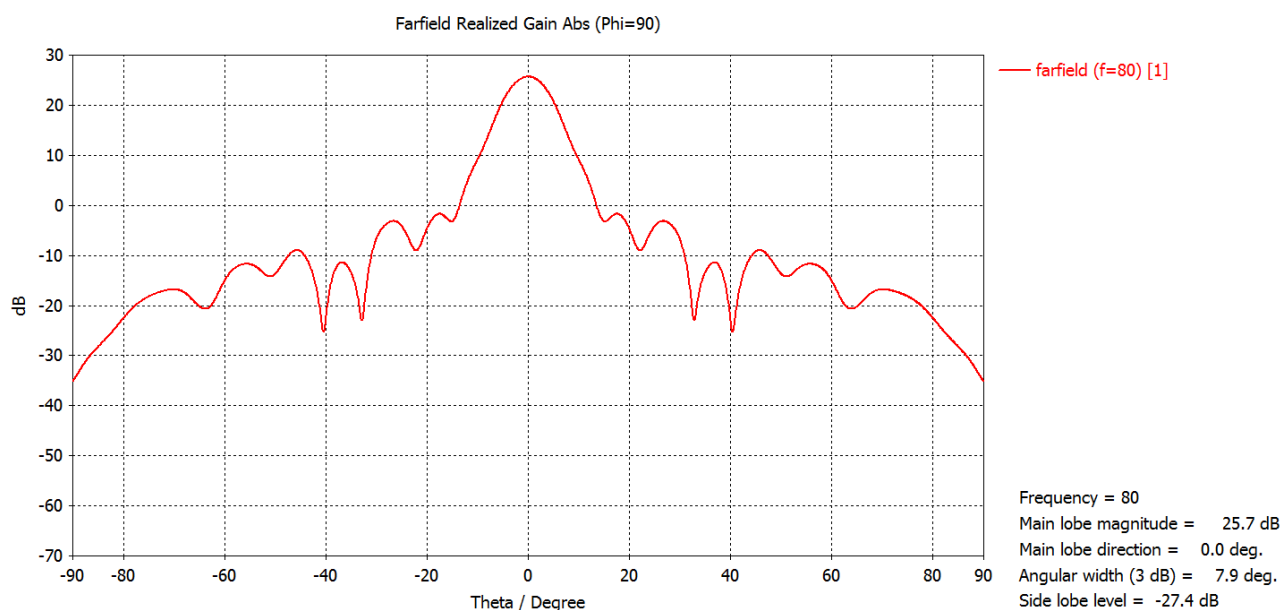
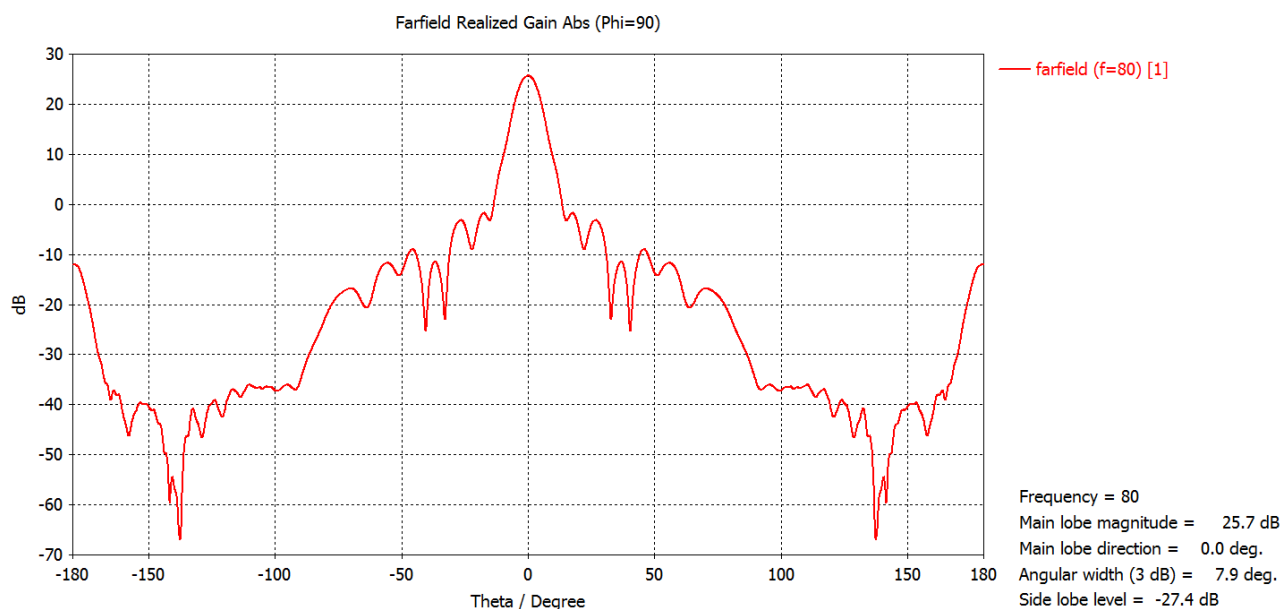


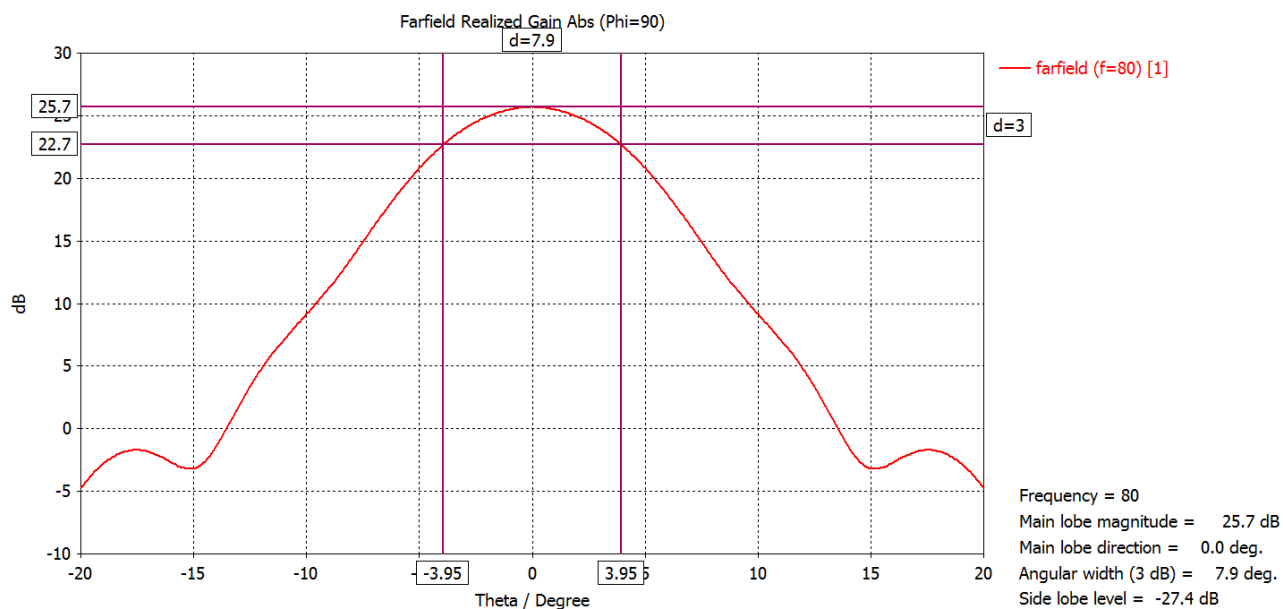
2.3.1 Radiation pattern in E-plane



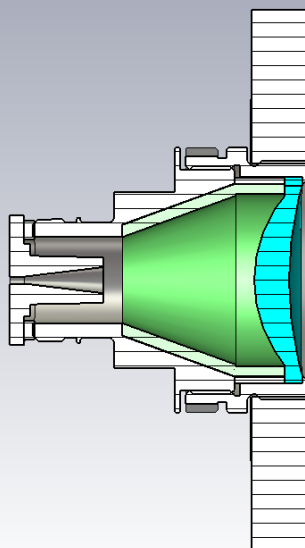


2.3.2 Radiation pattern in H-plane

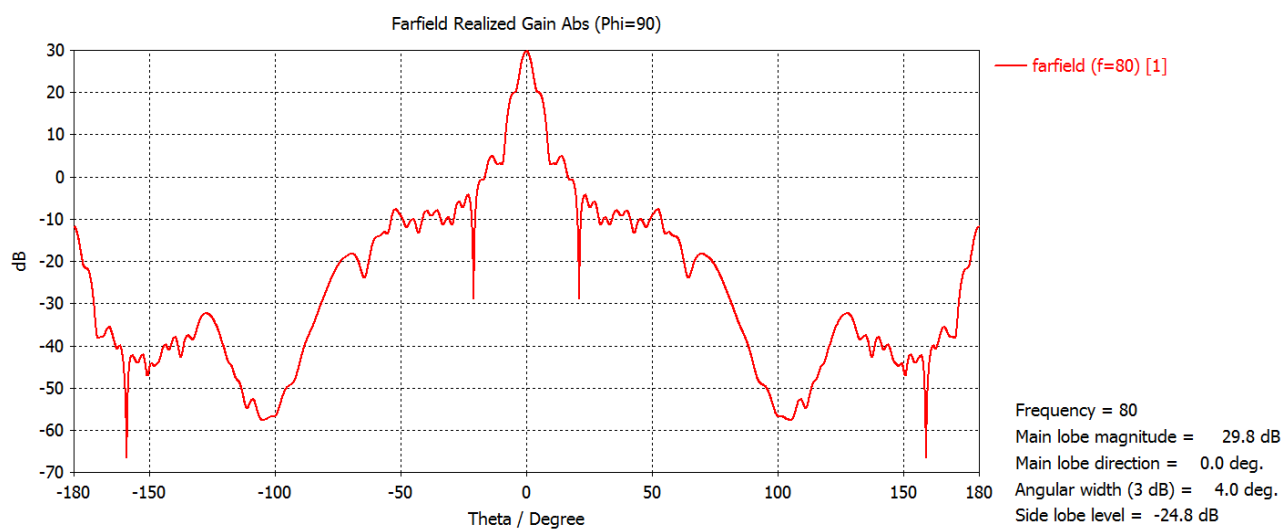


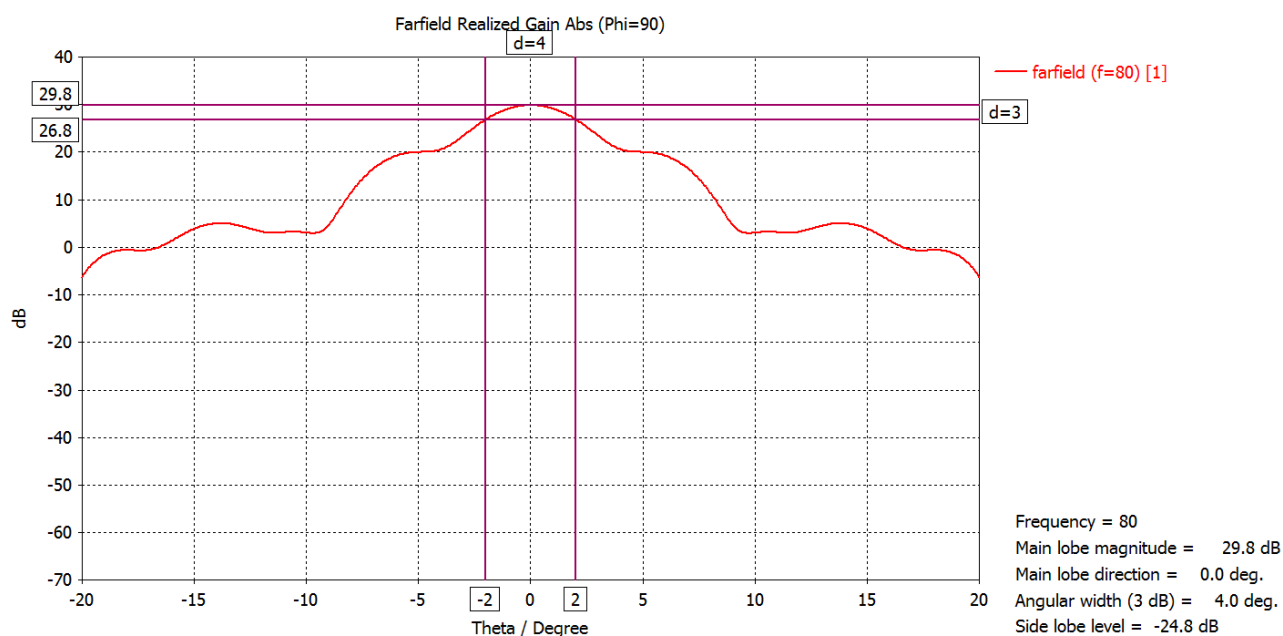
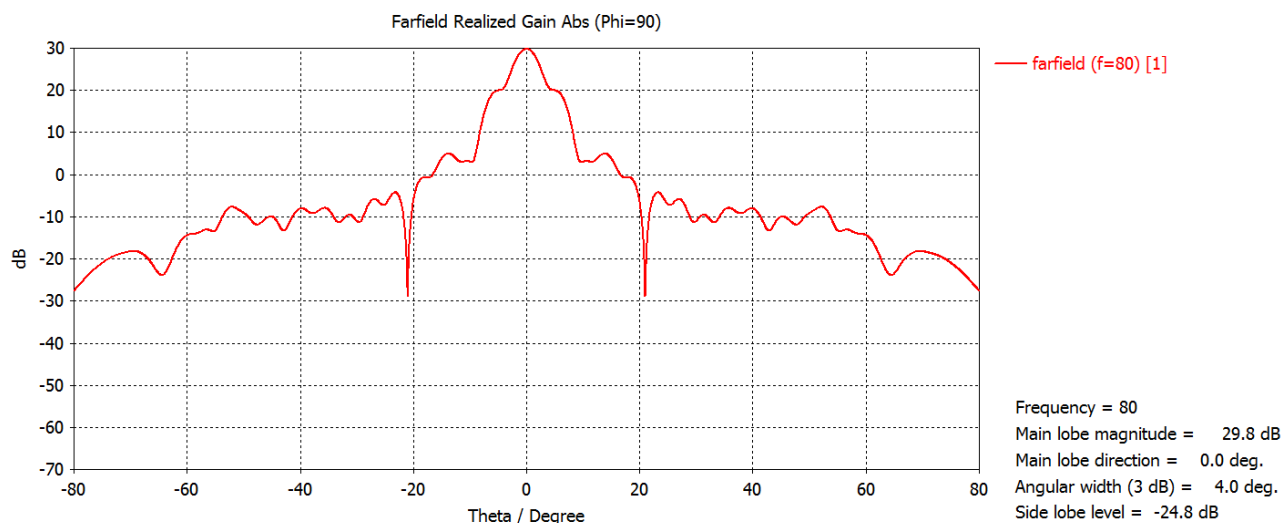


2.4 PEEK / DN70 (2 $\frac{3}{4}$ ") Lens

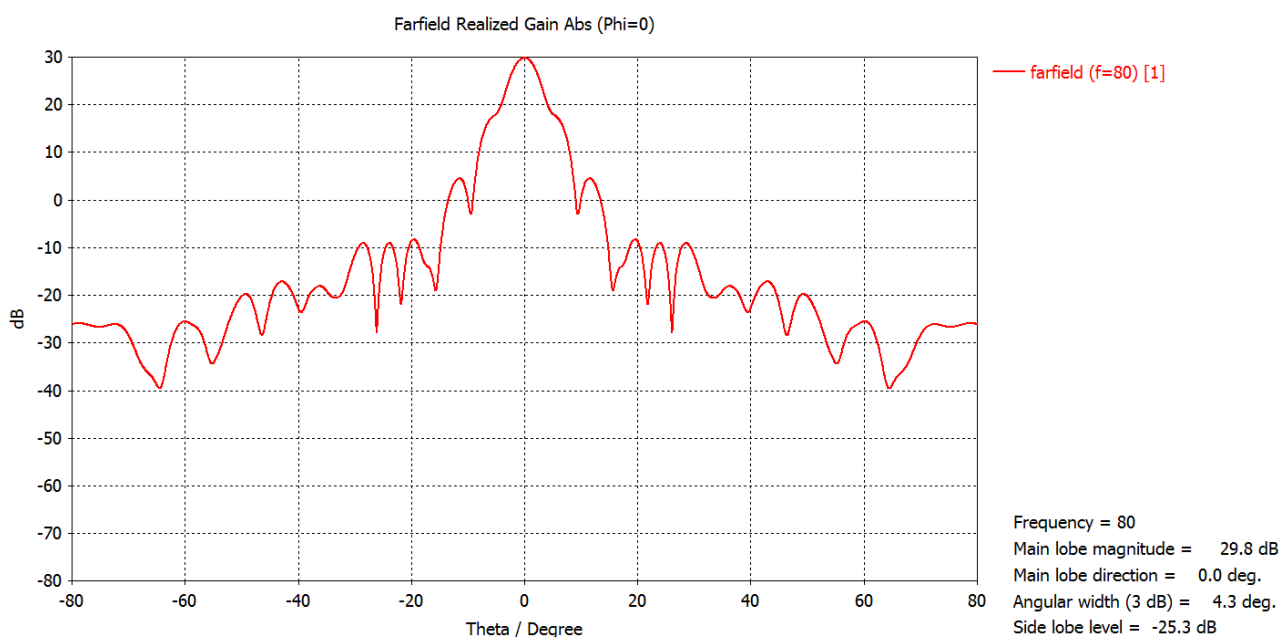
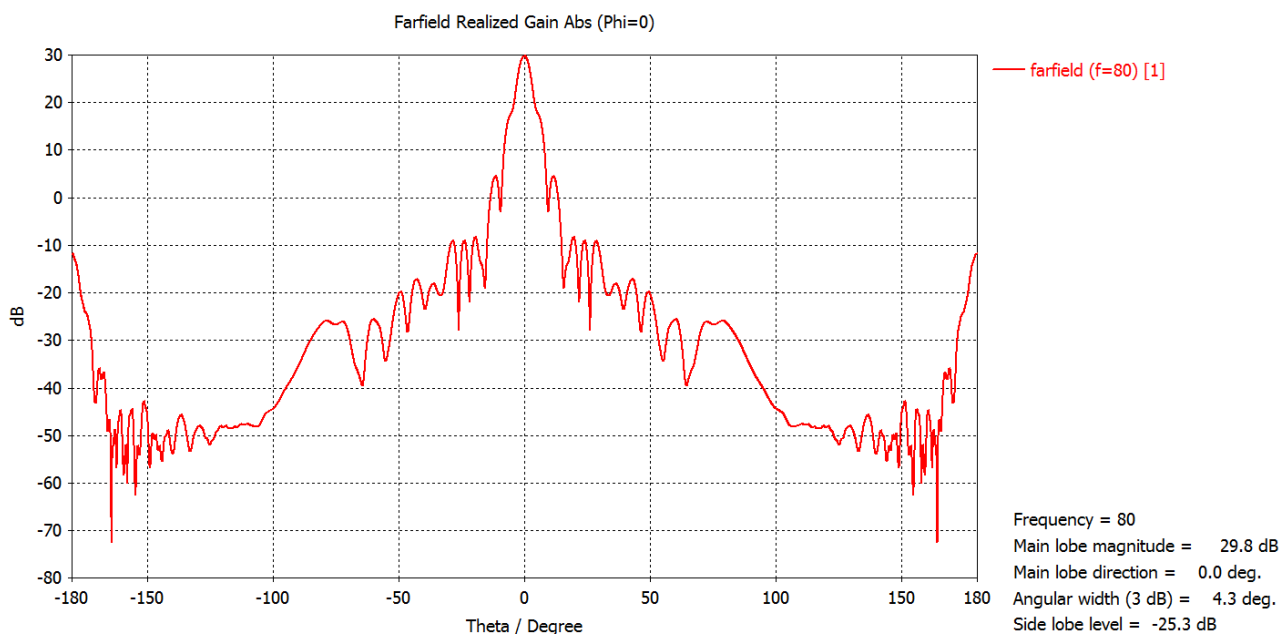


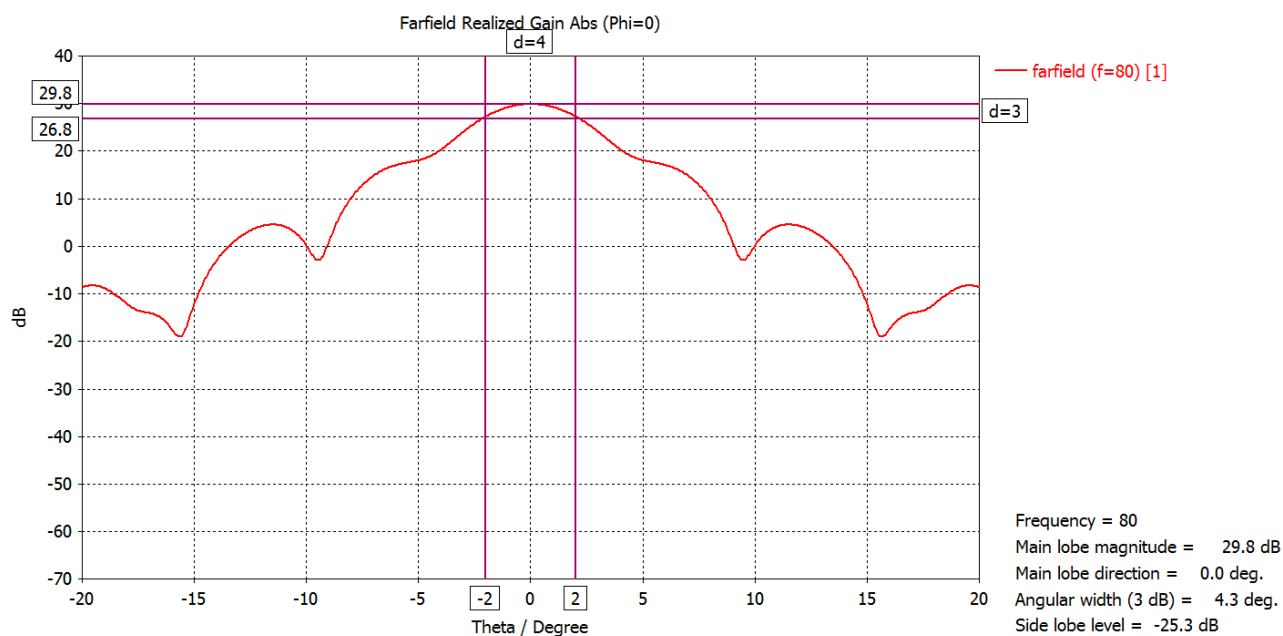
2.4.1 Radiation pattern in E-plane





2.4.2 Radiation pattern in H-plane





2.5 TLPR antenna overview

Type	Gain [dB]	Angular width E- / H-plane [°]
PEEK / DN20 ($\frac{3}{4}$ ") Lens	17.0	15.1 / 15.6
PEEK / DN25 (1") Lens	22.1	9.9 / 10.7
PEEK / DN40 ($1\frac{1}{2}$ ") Lens	25.7	7.9 / 7.9
PEEK / DN70 ($2\frac{3}{4}$ ") Lens	29.8	4.0 / 4.3