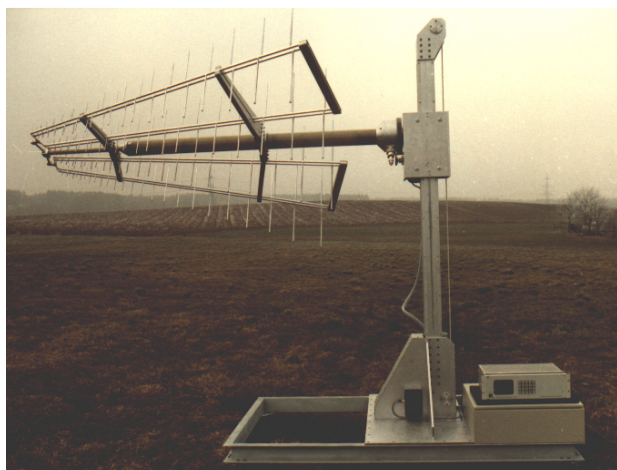


## Log. Periodic Antenna Array

### S23011-4

220 – 2000 MHz



The antenna type S23011-4 is made up of four log. periodic antennas which are connected at the feed point in parallel. The antenna system was especially designed for application in EMC susceptibility testing. The antenna is constructed for indoor use. Polarization and height can be manually adjusted. The antenna is installed on a dolly with rollers for ease in positioning. As an option the height and polarization adjustment can be done remotely controlled via fiber optic link.

#### Technical Data

<b>Electrical</b>	Frequency range	220 - 2000 MHz
	Gain in free space	typ. 12 dBi
	Polarization	linear, adjustable 0 - 90°
	Nominal input impedance	50 Ω
	VSWR	1.8 : 1 (typ.) 2.5 : 1 (max.)
	RF input power	2 kW (220 - 400 MHz) 1 kW (400 - 1000 MHz) 0.3 kW (1000 - 2000 MHz)
<b>Mechanical</b>	RF connector	13-30 socket
	Dimensions	approx. 3.3 x 1.2 x 2.7 m (L x W x H)
	Weight	290 kg
	Height adjustment	1.3 – 2 m
<b>Options</b>	Polarization adjustment	0° to 90° (manual or remote)
	Elevation adjustment	0° to -40° (manual or remote)
	Height adjustment	1 to 4 m (manual or remote)

For remote operation a remote control unit S42050 series is required

**Mechanical Data**

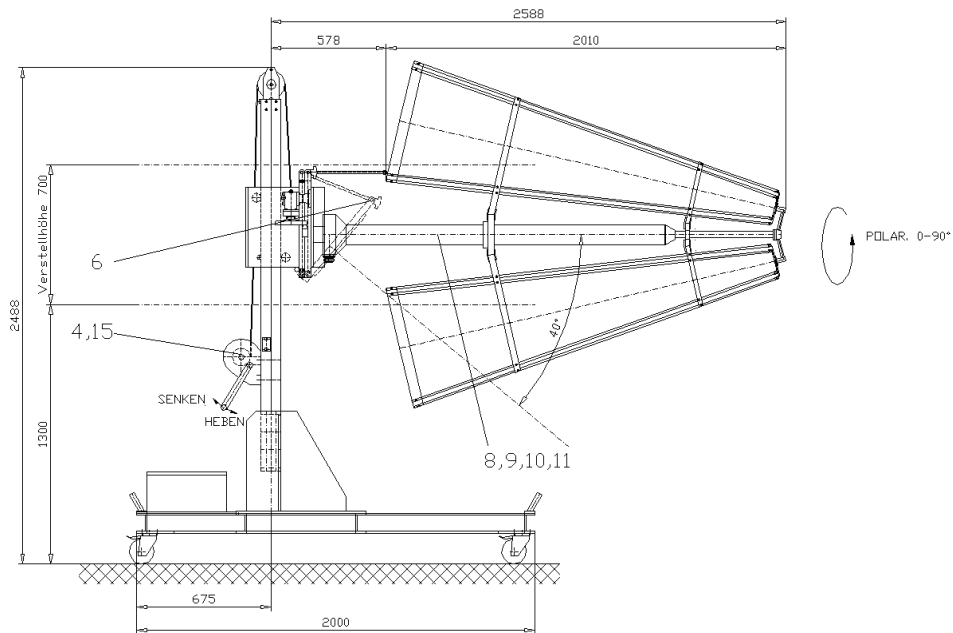


Figure 1: Side view with main dimensions

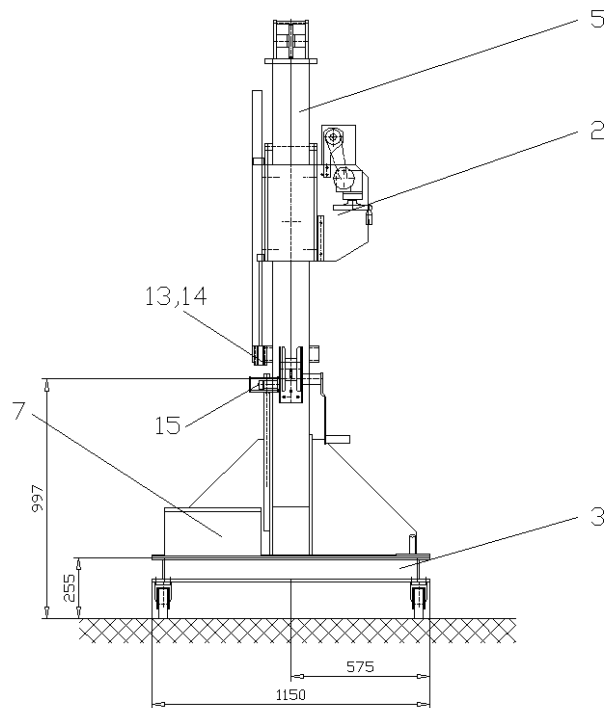


Figure 2: Back view with main dimensions

Electrical Data

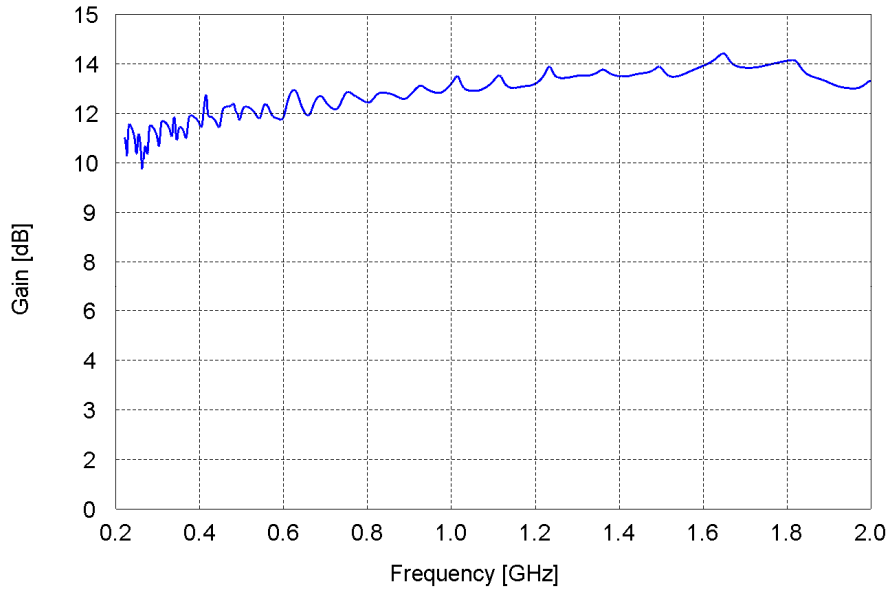


Figure 3: Antenna gain

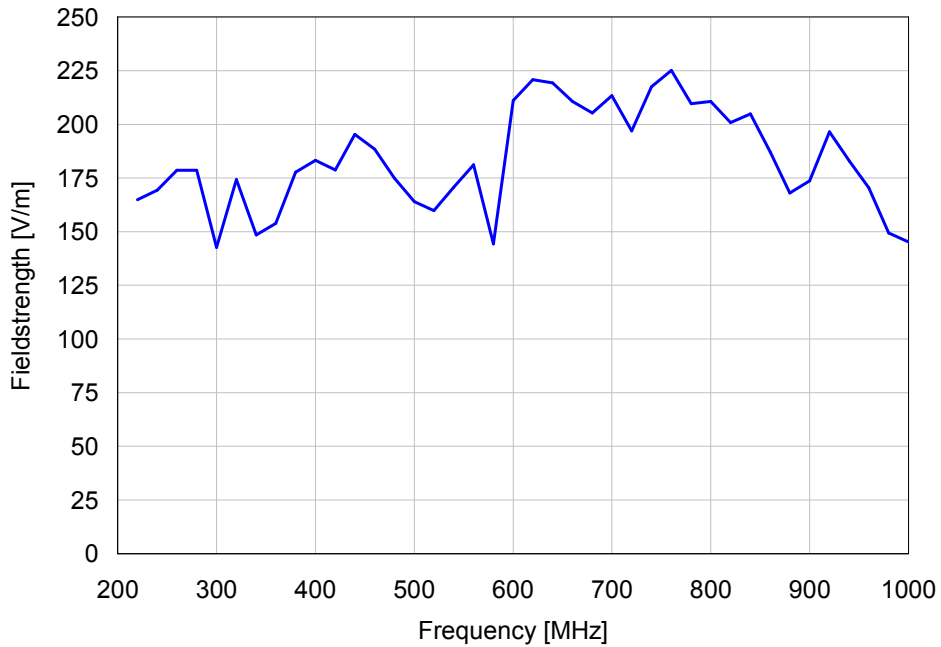
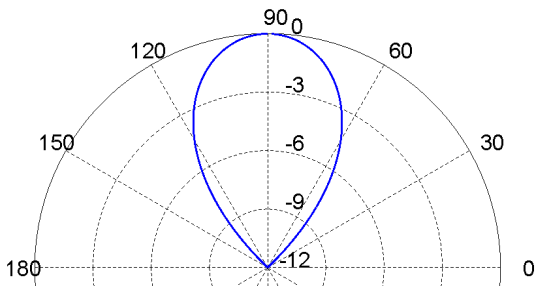
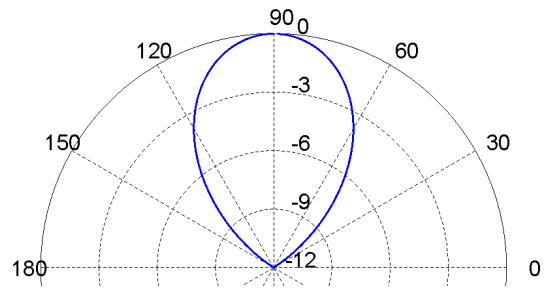


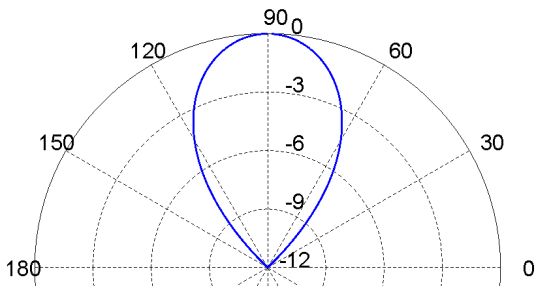
Figure 4: Measured fieldstrength with vertical polarization in 2 m distance with 400 W



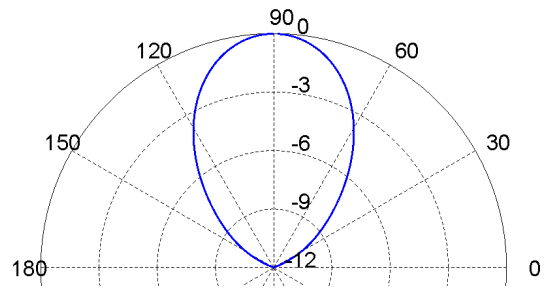
E-plane radiation pattern at 220 MHz



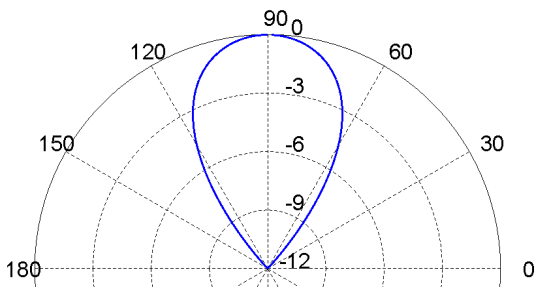
H-plane radiation pattern at 220 MHz



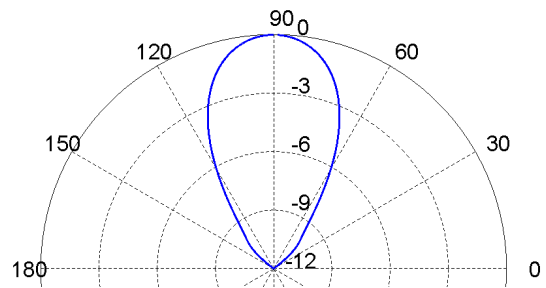
E-plane radiation pattern at 300 MHz



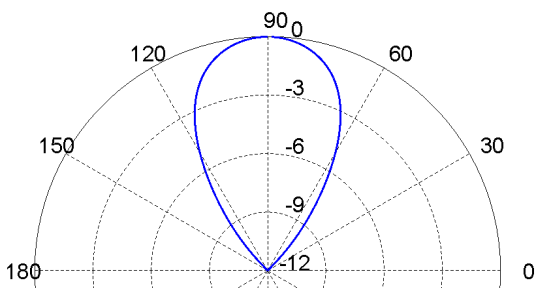
H-plane radiation pattern at 300 MHz



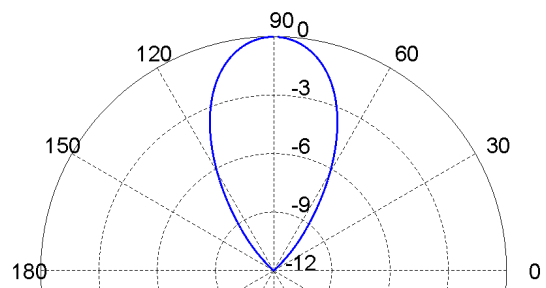
E-plane radiation pattern at 500 MHz



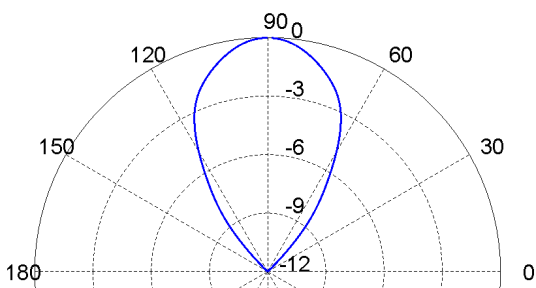
H-plane radiation pattern at 500 MHz



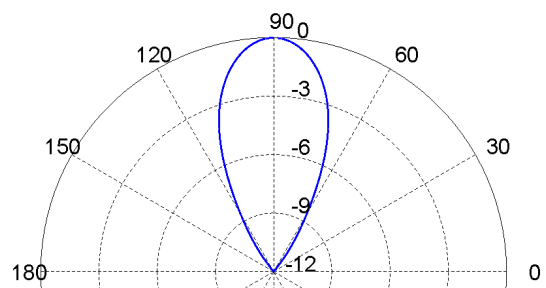
E-plane radiation pattern at 700 MHz



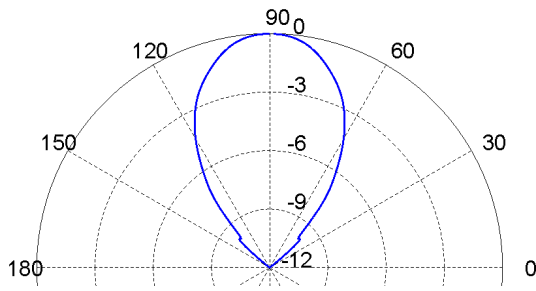
H-plane radiation pattern at 700 MHz



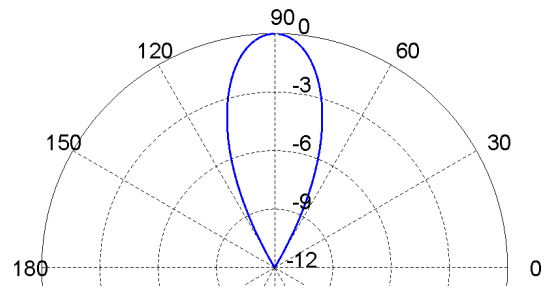
E-plane radiation pattern at 1000 MHz



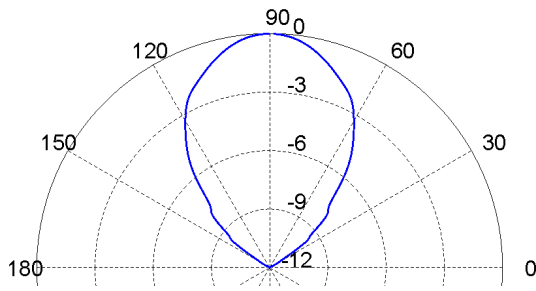
H-plane radiation pattern at 1000 MHz



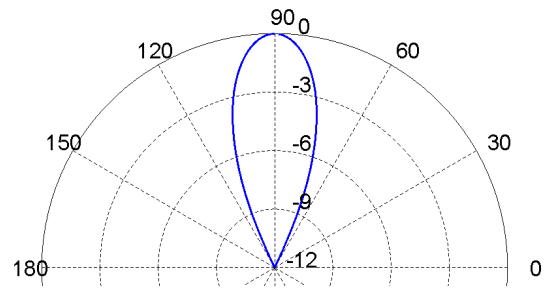
E-plane radiation pattern at 1500 MHz



H-plane radiation pattern at 1500 MHz



E-plane radiation pattern at 2000 MHz



H-plane radiation pattern at 2000 MHz

Figure 5: Normalized radiation patterns

Measured field uniformity for the log.-periodic antenna array S23011-4 measured at 2 m distance with vertical antenna polarization. The covered area has dimensions of 1.75m (H) x 2.25m (W). Antenna height is 1.6m. All measured values are given in dB relative to the beam center. The frequencies investigated are 220 MHz (1st value), 1000 MHz (2nd value) and 2000 MHz (3rd value).

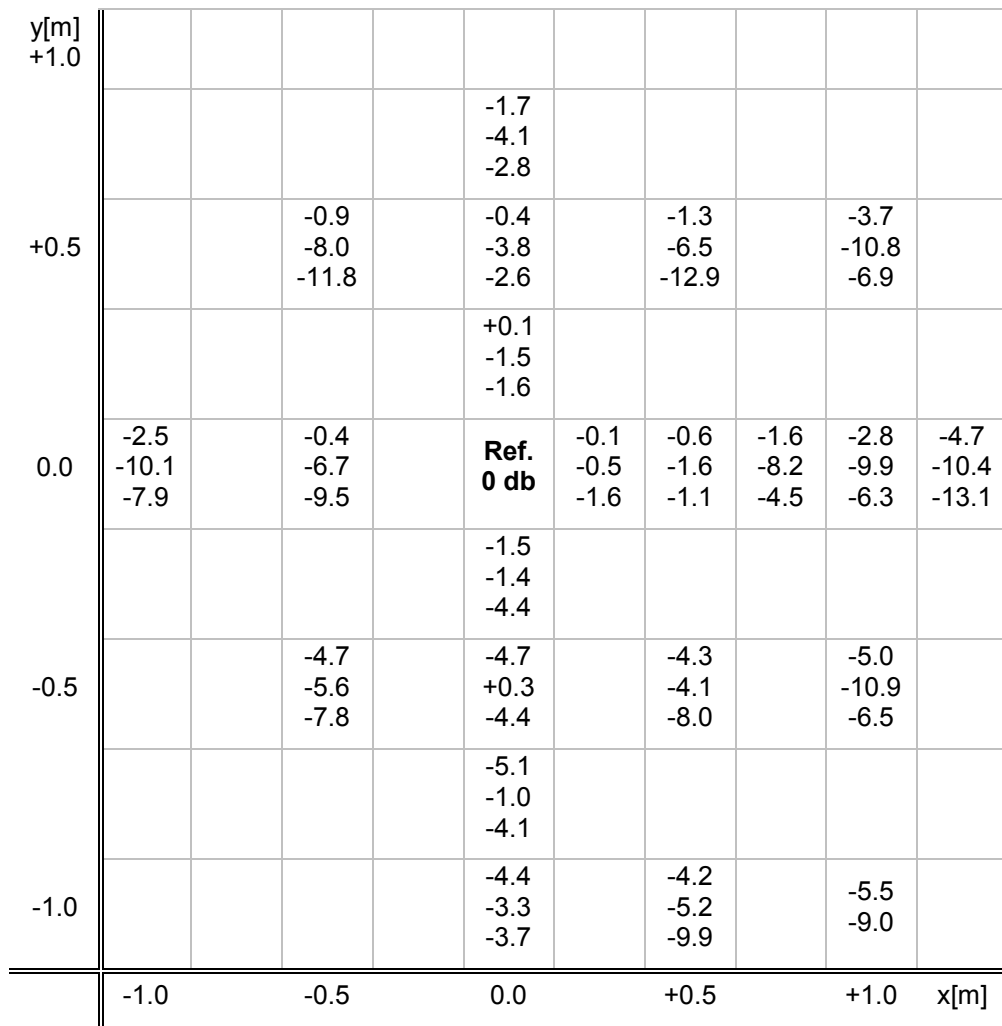
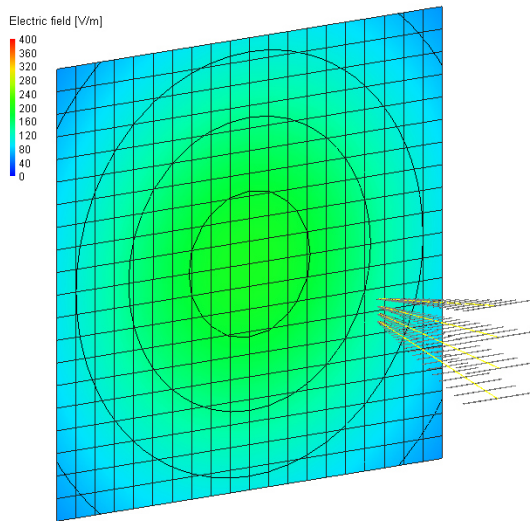
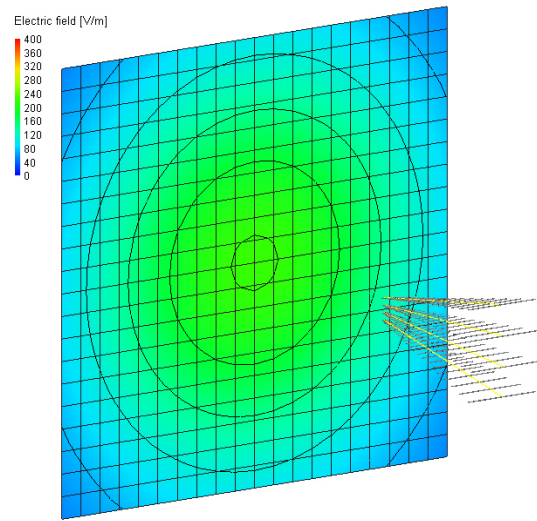


Figure 6: Measured field uniformity at 2 m distance

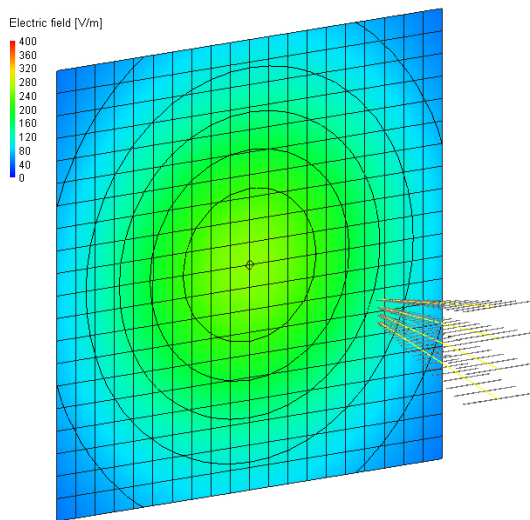
Simulated electric field uniformity for the log.-periodic antenna array S23011-4 at 2 m distance with horizontal antenna polarization. The antenna was placed in free space without ground influences. The input power was considered to be 1000 W. The covered area has the dimension 4 m x 4 m. The grid-distance is 0.2 m.



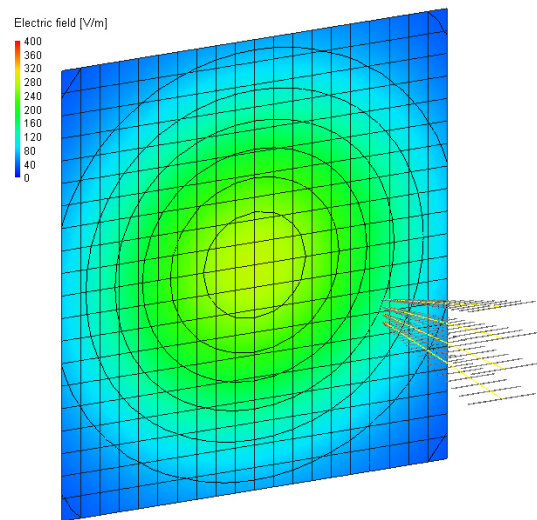
220 MHz



300 MHz

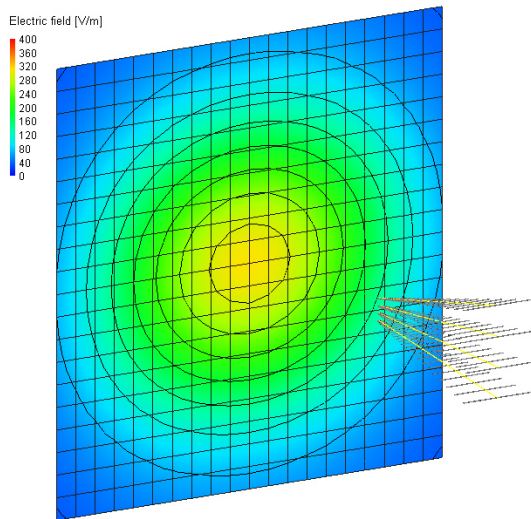


400 MHz

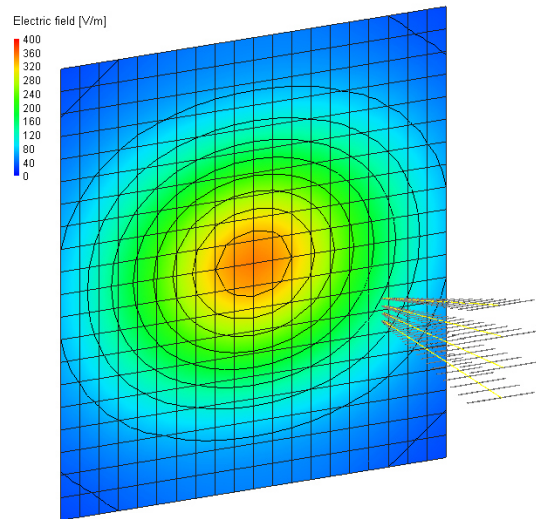


500 MHz

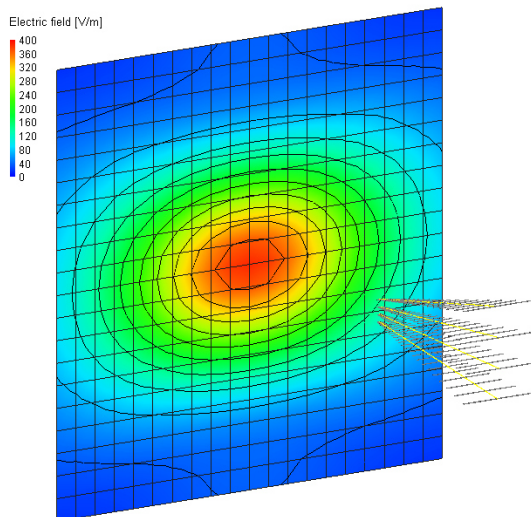




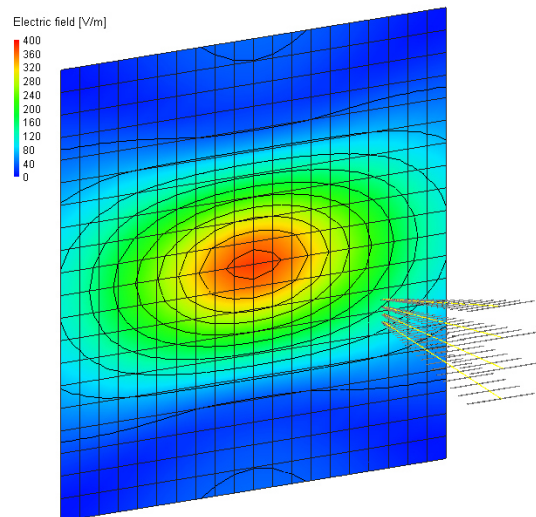
700 MHz



1000 MHz



1500 MHz



2000 MHz

Figure 7: Field distribution at 2 m distance for 1 kW input power