

Antenna Types

Electrical Engineering

Five antenna families, their radiation patterns and their typical jobs.

Pattern shape is usually what decides the family.

Antenna	Pattern	Typical use
Half-wave dipole	Doughnut, broadside	Reference, VHF and UHF
Monopole over ground	Half a dipole pattern	Vehicles, handsets
Yagi-Uda	Directional, moderate gain	TV, point to point
Patch, microstrip	Hemispherical, low profile	GPS, phones, arrays
Parabolic dish	Pencil beam, high gain	Satellite, radar links

Physical size scales with wavelength, so a low-frequency antenna is either large or inefficient. There is no way around it.