Ultra Wideband Patch Antennas

Scope: Design of ultra-wideband (UWB) microstrip patch antennas offering more than 50% impedance bandwidth was investigated. A coplanar capacitive coupling feed scheme was explored and its behavior was analyzed using equivalent circuits. Several variants for the antenna geometry were studied.

- A coplanar capacitive coupling scheme developed for suspended microstrip patch antennas for ultra wide bandwidth (impedance bandwidth > 50%).
- Antenna has good gain vs frequency characteristics
- The scheme worked similarly for different patch shapes. Antenna impedance characteristics analyzed using an equivalent circuit model.
- An approach is developed for antennas with symmetrical radiation patterns. Linear phase response characteristics verified.
- Wideband antennas and wide axial ratio bandwidth (AR<3dB) developed (8% axial ratio bandwidth).