

# Reconfigurable Rotated-T Slot Antenna for Cognitive Radio Systems

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**Abstract**—A novel reconfigurable slot antenna for the upper ultra wideband frequency range is presented. The antenna can operate at any of eight adjacent sub-bands in the 6.0–10.6 GHz frequency band, and is configured by means of seven PIN diode switches. At each of its sub-bands, the antenna provides a nearly omnidirectional radiation pattern in the horizontal plane, with predominantly vertical polarization.

**Index Terms**—Multiband antennas, PIN diode switches, reconfigurable antennas, slot antennas, switchable antennas.

[7], a reconfigurable slot antenna that facilitates five-band operation in the upper part of ultra wideband (UWB) frequency range of 6.0–10.6 GHz is described. The proposed antenna in [7] is shaped similarly to a conventional printed inverted-F antenna (IFA), though its monopole is longer and shorted to the ground plane. In this way, a slot-type radiating structure is formed. Switching from one sub-band to another in the antenna of [7] is effected electronically by five integrated PIN diode switches. Four of the PIN diodes are divided into two pairs of back-to-back connected diodes, and each of these pairs is connected in