



Wideband Planar (HDTV) Antenna

Conventional TV antenna performance is often inadequate for High Definition or Digital Television reception due to a lack of a direct “line of sight” path between the transmitter and receiver. In cases where there is not a direct, obstacle-free path, the television reception will often suffer from "multipath" problems, which occur when multiple reflected “copies” of the desired signal are present at the receiver input. In traditional Analog television receivers, multipath effects tend to cause a gradual degradation in audio and video quality, creating effects such as “ghosting”, while in the case of Digital television receivers, multipath effects often cause excessive digital data errors, resulting in audio dropouts, display pixilation, or the abrupt loss of all audio and video output.

Due to a high degree of directionality and shielding of the back side of the active element by a ground plane, planar antennas typically offer superior performance in multipath environments. Previous planar designs tended to exhibit relatively narrow frequency bandwidth characteristics, but through the use of a unique feed structure, the HDTV/DTV planar antenna (first generation prototype shown above) provides exceptional bandwidth characteristics.

This Patented technique is currently in use by several other project applications at the Information and Telecommunication Technology Center (ITTC) of the University of Kansas.