

ANTENNA FOR MULTIPATH SATELLITE COMMUNICATION LINKS

ABSTRACT OF THE DISCLOSURE

An antenna (70) includes a first sub-structure (72) having a major plane that is oriented at a first angle (for example, 90°) with respect to an axis (normal) that is perpendicular to the surface of the earth. The antenna also includes a plurality (for example six) of second sub-structures (74) individual ones of which have a local major plane that is disposed at a second angle (for example, 45°) to the major plane of the first sub-structure. Each of the plurality of sub-structures have an outwardly pointing normal from the local major plane that is oriented at a third angle (for example, 60°) around the axis from an outwardly pointing normal of an adjacent one of the sub-structures. The outwardly pointing normal of each of the plurality of sub-structures is disposed so as to point away from the axis. At least one antenna element (76) is supported by the first sub-structure and by each of the plurality of second sub-structures. Antenna elements of the first sub-structure and at least some of the plurality of second sub-structures enable a spread spectrum communication between a terminal (13) and at least one low earth orbit satellite (12) over a range of elevation angles of the low earth orbit satellite.