DETECTION OF WEAK SIGNALS OF UNKNOWN PARAMETERS

ABSTRACT

An antenna system for at least one of Elint and Sigint, configured to detect weak electro-magnetic signals, comprises an antenna and a feed manifold, which comprises a plurality of feeds located on a focal surface of the antenna. The antenna is configured to function as a two-dimensional focusing element, having spherical symmetry. The system is configured such that a planar wave-front associated with a electro-magnetic signal, that is impinging on the antenna, is focused by the antenna to a feed, situated at a distance from the antenna corresponding to a focal distance of the antenna along a propagation vector of the wave-front. The spatial field of view of the antenna system is based on a number of feeds and the spacing between feeds. This produces, for each feed, a respective high-gain beam, with direction along the line connecting the center of the spherical symmetry and the feed.

Fig. 2