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(1 of 1)

United States Patent
Bloy

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Active high density multi-element directional antenna system

Abstract

Active high density multi-element antenna system [DS] for radiolocation of RF target radiation has a processor-controlled antenna array [CAA] having rings [R1, R2, R3] concentric about a central axis to define arcuate sectors $S_{sub.n}$ about the central axis, each ring having adjacent p.c. boards [PC1, PC2, PC3] with PIN diode-switched antenna elements within sectors. The rings provide three rings [E1, E2, E3] of discrete dipolar elements, defining electrically isolated antenna units [AS_{sub.m}], each radial to the central axis, of quasi-log-periodic configuration. Antenna units are switched in rotational sequence about the central axis to provide narrow beam signal selectivity, directionally rotatable about the central axis. An array control system [ACS] is operated, as under microprocessor control [34], by a host system [HS] to cause RF scanning. PIN diode switching is used on printed circuit boards within the array. Amplitude and phase comparison modes are used.

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