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(71) Applicant (for all designated States except US): **Plextek Limited** [GB/GB]; London Road, Great Chesterford Essex CB10 1NY (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **PEARSON, Graham** [GB/GB]; c/o Plextek Limited, London Road, Great Chesterford Essex CB10 1NY (GB). **GREENDALE, Steve** [GB/GB]; c/o Plextek Limited, London Road, Great Chesterford Essex CB10 1NY (GB). **SPREADBURY,**

David [GB/GB]; c/o Plextek Limited, London Road, Great Chesterford Essex CB10 1NY (GB).

(74) Agents: **MCCANN, Heather** et al.; Fairfax House, 15 Fulwood Place, London Greater London WC1V 6HU (GB).

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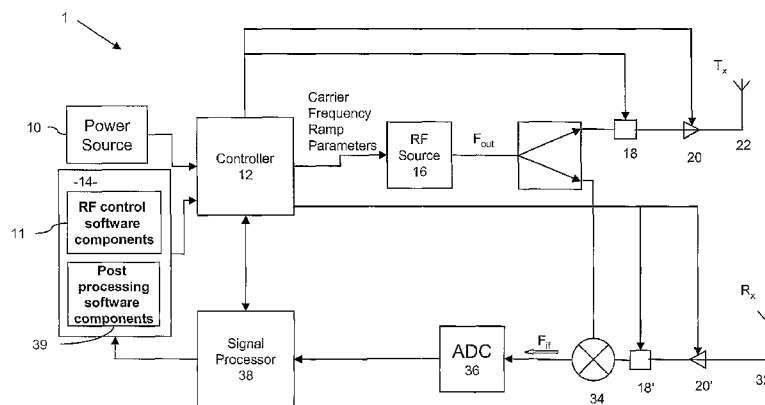
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(54) Title: RADAR SYSTEM



(57) Abstract: Embodiments of the invention are concerned with a radar system, and relates specifically to scanning radar systems that are suitable for detecting and monitoring ground-based targets. In one aspect, the radar system is embodied as a scanning radar system comprising a frequency generator, a frequency scanning antenna, and a receiver arranged to process signals received from a target so as to identify a Doppler frequency associated with the target, wherein the frequency generator is arranged to generate a plurality of sets of signals, each set having a different characteristic frequency, the frequency generator comprising a digital synthesiser arranged to modulate a continuous wave signal of a given characteristic frequency by a sequence of modulation of patterns whereby to generate a said set of signals, and wherein the frequency scanning antenna is arranged to cooperate with the frequency generator so as to transceive radiation over a region having an angular extent dependent on the said generated frequencies. Embodiments of the invention thus combine digital synthesiser techniques, which are capable of precise frequency generation and control, with passive frequency scanning and Doppler processing techniques. This enables accurate control of range and of scan rates, and enables optimisation of range cell size for factors such as slow and fast target detection and Signal to Noise ratio, and thus enables detection of targets located at distances considerably farther away than is possible with known systems having similar power requirements.

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