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(54) **SYSTEM AND METHOD FOR CALIBRATING A SIGNAL DETECTION THRESHOLD CIRCUIT**

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(57) **ABSTRACT**

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The system and method for calibrating a signal detection threshold circuit is used in a radio frequency (RF) receiver, such as a in an early warning radar (EWR) system, in which a signal detection threshold circuit rejects signals below a predetermined threshold setting and prevents noise signals from causing false alarms. The system and method include setting an initial threshold setting and receiving noise signals in one or more channels. A threshold comparison circuit rejects noise signals below the threshold setting, and a pulse repetition frequency (PRF) detection circuit detects noise pulses above the threshold setting and determines the PRF. An automatic threshold determiner and setter determines whether the PRF has reached a predetermined frequency (e.g., 400 kHz) and lowers the threshold setting until the predetermined frequency is reached. When the predetermined frequency is reached the threshold setting is stored as a noise measurement. The process is repeated until a plurality of noise measurements are made in each signal channel, and the average value of the noise measurements are used to determine the calibrated threshold setting. A calibration indicator provides an indication of whether each of the signal channels has been properly calibrated.

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(58) **Field of Search** 702/107, 106, 702/69, 190, 191, 193, 195, FOR 107, FOR 164, FOR 166, FOR 170

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14 Claims, 5 Drawing Sheets

