GE Infrastructure
Security

Differences between the production RCR versions and the RCR-REX.

Summary:
The main difference in the microwave circuitry between the production RCR (Range Controlled Radar) series of products previously authorized under the original and subsequent Class II permissive changes and the RCR-REX, currently seeking authorization as a Class II permissive change, is in the number and spacing of shells used for a given range. The RCR-REX is a request-to-exit sensor used in an access control system.

Discussion:
The pulse repetition rate and 5.8 GHz fundamental frequency remains unchanged from our previous applications for the RCR series.

The shell locations have always been a variable and determine our range. On the 35' units (RCR-A and RCR-C) we have shells at 9', 18', 27' and 35'. On the RCR-50 they are at 20', 30', 40', and 50'. On the RCR-90 they are at 60', 70', 80', and 90'. On this application, which is one of our shortest-range devices, the range may be set from 3' to 15' using a potentiometer. There is only one shell, as in the RCR-01, which has also been previously authorized. When you look at the spectrum generated by these various units, you will see that they all look alike. The shell spacing changes only by nanoseconds between the various models.

If you were to lay the original AR435 (first of the series) microstrip circuit on top of any of the other derivative products, including the RCR-REX, you would see that they are almost identical. The small differences in microstrip layout allow the circuit to fit on the PCB in the allotted space. The main circuit changes are in the processing circuitry, and even that has changed very little.

*NOTE: A shell is defined as an area of sensitivity on the RCR and is generated by the spacing between the first and second transmitter pulse. See Theory of Operation.

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