GE Interlogix

Differences between the production RCR versions and the RCR-90.

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-90, currently seeking authorization as a Class II permissive change, is in the number and spacing of shells used for a given range.

Discussion:
The PRF and 5.8 GHz fundamental frequency remain unchanged from our previous application, the RCR-50.

The shell locations have always been a variable and determine our range. On the 35' unit 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 (this application) they are at 60', 70', 80', and 90'. 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 units. We are using two shells instead of four on the maximum range. This is also normal operation for all the other RCR products when they are running range limited to the second shell, i.e., 18' for the RCR-35 and 30' for the RCR-50.

In short, if you were to lay the original AR435 microstrip circuit on top of any of the other derivative products, including the RCR-90, you would see that they are identical. The circuit changes are in the processing circuitry, and even that has changed very little.

The biggest change in the RCR-90 is the new optical design which uses two lenses and two pyroelectric detectors instead of one to get 90', 90° of coverage. The housing is a complete redesign because of the two lenses but is still constructed completely out of plastic, which is transparent to the microwave signals.

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