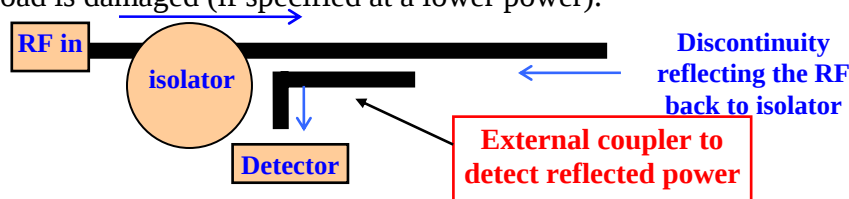


RADITEK INC. Bulletin on reverse power detection.

Many inquiries have been made regarding forward power rating of isolators and reverse rating and what options exist for certain high power applications.

1. The forward power rating of an isolator assumes a reasonable load VSWR (2:1 or better). In the case of an output open circuit (or short), most of the transmitted power will be reflected back into the isolator and dumped on the load, at the isolator third port. For high power amplifiers, it is preferable to have a detector at the third port, or (traditionally) to install a reverse directional coupler at the isolator output, with good directivity. Reflected power can be detected, and the amplifier can be disabled before the isolator load is damaged (if specified at a lower power).



2. The alternative way is to build in the coupler and detector into the isolator. As excessive RF energy will be present at the load when improperly terminated. We have included a tab for some Cellular isolators, whereby the user must add a diode, to generate a voltage to allow their amplifier or oscillator to be disabled. At higher frequencies (above 4GHz), the complexity increases as the isolator performance will be compromised with a poor termination on the isolator. It is recommended that the user adds the coupler and detector as shown, or, of course, we could quote a larger much more expensive isolator with a detector built in, but for a 14GHz amplifier, for example, the size (as well as cost) penalty could be a problem. A more accurate and repeatable approach is to add a high power, 20dB attenuator, instead of resistor, so as to always obtain precise detector power. **We can supply attenuator models.**

3. The best of all solutions is for us to supply a three terminal circulator, or an isolator with a high power 20dB attenuator. The user can then add their own termination and/or attenuator plus detector, (if required) to the third port

