

**How to ensure high performance with minimal reflections and losses?**

It is important to understand that a connector is not just a mechanical connection between two transmission lines. It is also an RF connection with the express purpose of transferring as much of the RF energy as possible through the transmission line from Point A to Point B. All of the mechanical dimensions and materials used in the design of the connector will have an impact on its RF performance, particularly internal diameters. These diameters set up the transmission line impedances which must be close to the characteristic impedance ( $Z_0$ ) of the system (i.e. 50 ohms) or else the reflections in the connector will be excessive. Where significant deviations from  $Z_0$  are required, perhaps for a barb or knurl on a contact, proper compensation steps must be added to minimize reflections.