

# APPLICATION NOTE

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High Temperature Coaxial Systems

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## The Challenge

The challenge was to provide an RF connector (SMA) with a 'compliant pin' contact into the customer's equipment, capable of continuous operation at 250°C for a life of 25 years. In addition a set of 12 phase matched RF cable assemblies, one end of which would be attached to the SMA at the high temperature was required. Although the specification was set at 250°C it was known that in many cases the operating environment would be below 200°C.



*Coaxial SMA connector press-fitted into the customers housing*

## The ITT Solution ...

Following extensive testing of a range of materials and designs, the RF team of ITT ICS in Basingstoke developed a contact that could be press-fitted into the customers assembly, and would meet the 250°C operating requirements.

For the cable we arrived at two solutions. For operation up to 250°C a cable with a Silicone Dioxide dielectric is used. For applications up to 200°C we are able to provide a lower cost solutions based on a cable with PTFE dielectric.

## Product Features

- Pressfit contact for use in temperatures up to 250°C
- Semi-rigid cable sets phase matched to  $\pm 2^\circ$  at 3GHz maintained over a range of temperatures to 200°C (250°C for SO<sup>2</sup> dielectric)

## Benefit to the Customer

- RF connector can be fitted into the customers housing with a center contact blind mated well below the interface

## Applications

- Military and industrial markets where reliable performance at high temperature for a prolonged period is required

**For application assistance, please contact:**

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