



Project: Design & prototype RF connector for client's customer who required working model to justify production order

Scope:

Develop a bulkhead pass-thru connector, where each of 36 coaxial contacts must pass a 5 GHz RF signal @ 50 ohm. Two brass housings to be machined and plated, contacts to be photo-etched and rolled, and insulators to be cut from stock Teflon extrusion if possible.

Project definition:

Working from IEEE specs, we knew the interface dimensions and electrical requirements. Project required technical acumen to make it work electrically in the required 3 weeks.

Technical hurdles:

Our utilization of electromagnetic analysis (FEA) tools, allowed us to achieve first samples that tested to within 5% of theoretical target. Since stock insulators with the required dimensions were not available in the short lead-time required, we designed a custom rapid prototype insulator and tested it to work at the required 50 ohms. Less than .75 mm I.D., this insulator represents the state-of-the-art in rapid prototyping very small parts.

Communications:

To meet the time requirements, weekly design reviews with our client and 12 vendors in regards to the insulator and micro-component fabrication were required. We utilized e-mail and video conferencing capabilities to assure mid-day progress reports and most importantly communicate and deal with setbacks quickly and effectively.

Results:

Customer was delighted that the project was completed on time. Device passed customer criteria, meeting all lab requirements.

