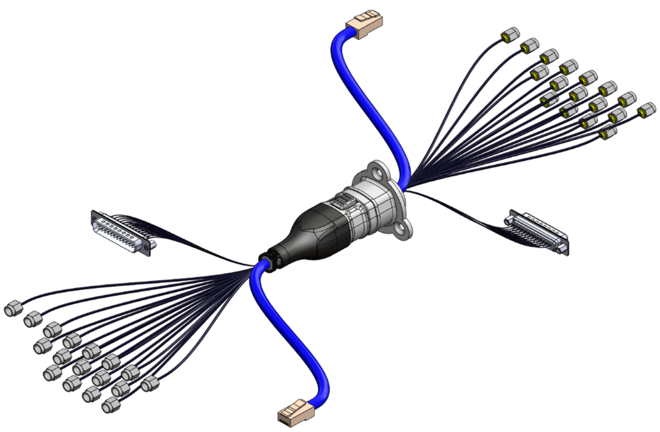
Custom Grid Array Technology for Medical Applications



Specifically designed and tested to offer RF performance to medical systems

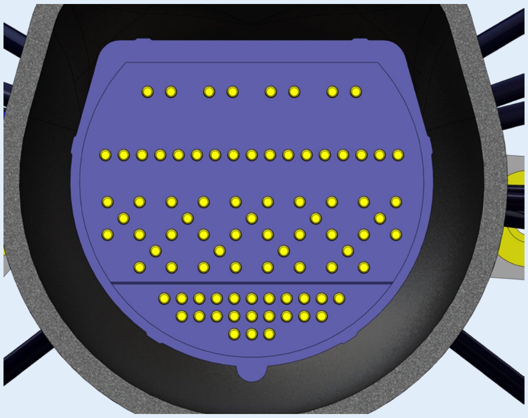
Features & Benefits

- 50% smaller than cabled coax solutions
- 30% cost reduction thanks to the material reduction and to the lower cost of the contacts
- Up to 100k mating cycles
- Temperatures: from -15° to 35°
- Contact resistance ≤ 50m Ω
- RF Performance from DC to 300MHz for the 2A and 4B configurations:
  -1dB of Insertion Loss
  -20dB of Return Loss
- Crosstalk:
  -35dB for a 2A configuration
  -50dB for a 4B configuration

Custom Grid Array layout to offer RF performance with the same stable signal integrity offered by cabled coax solutions but with reduced size, weight and cost.

The use of spring probes and target contacts in a grid array layout reduces the size, weight, and cost of the connector. Comparing the relative size of the grid array and coaxial contact connectors in selected applications, the Spring Probe based Grid Array contacts occupy only about ½ the space of traditional coaxial contacts.
Also by replacing pin and socket contacts with spring probes, cleaning the cable connector can be faster and easier since flat target contacts are simpler to clean than coaxial sockets, thus improving throughput in a medical devices.

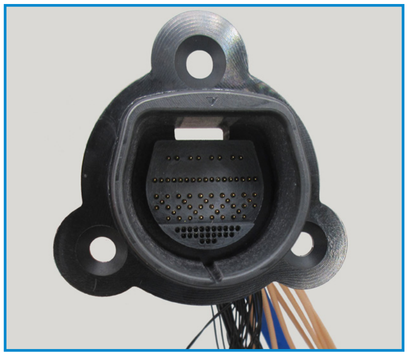
Pin Grid Array (PGA) Layout

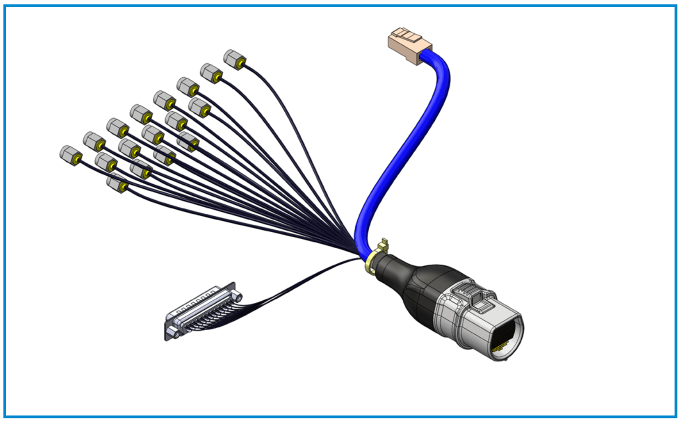


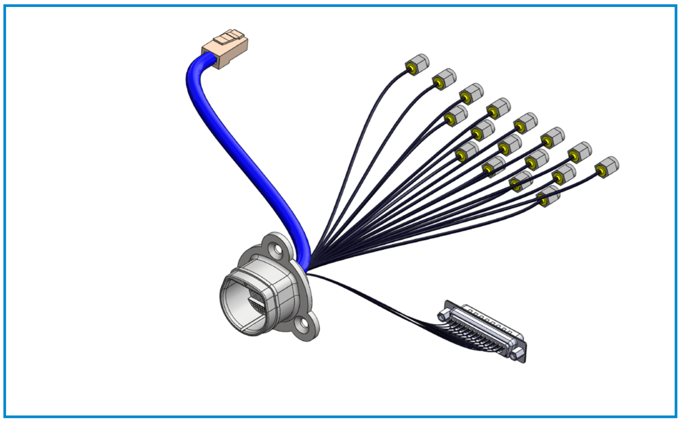
Using a spring probe grid array allows for the designer to customize the number of ground pins used to optimize the performance of the connector for specific frequencies/ coil designs, saving size, weight, and cost while maintaining the performance of a coax channel where needed. Spring probe grid arrays also simplify cable termination activities by allowing mass solder termination to printed circuit boards.

This grid array layout shows multiple configurations that can be used for different purposes. The top configuration demonstrates the capability of transmitting digital signals from an Ethernet cable through our connector as it is made up of 4 differential transmission lines. The second section from the top shows a whole line of contacts that represent 8 single-ended channels in what is called a 2A or ground-signal-ground configuration, which can transmit analog or digital signals from a coaxial cable. Similar to this, the third section from the top shows an array of contacts that represent 9 channels in a 4B configuration, which has a single signal contact surrounded by 4 ground contacts. These two configurations demonstrate the same performance with different degrees of crosstalk protection. The bottom section demonstrates the standard method of transferring power through a connector using multiple contacts.

Pin Grid Array D-shape connector







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