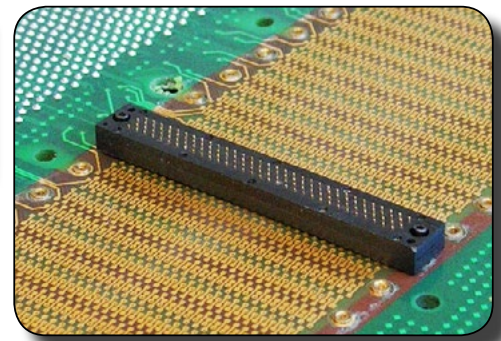
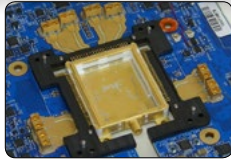


# Application Case Study

ACS #0007



## Flight Qualified Mezzanine Connector Assembly

### Problems Faced During Application

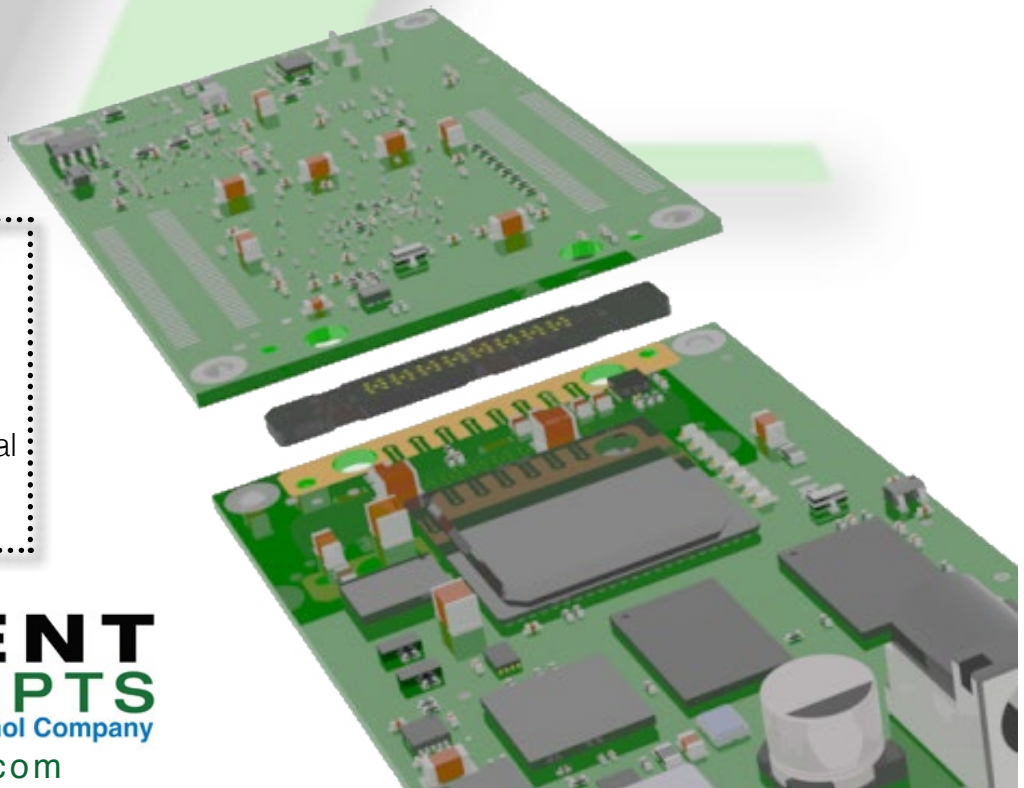
A major defense contractor needed a reliable, high speed (12 Gbps) connector solution that would allow them to easily replace or upgrade expensive Circuit Card Assemblies (CCA's). These CCA's were mounted to a motherboard and had a number of expensive components and IC's like FPGA's. Each motherboard contained 9 of these CCA's. Soldering to the motherboard would mean that if an upgrade or repair was necessary to one of the CCA's, the customer would be forced to replace the entire motherboard, a very costly proposition.

### The Ardent Solution

Using its patented CR contact technology, Ardent worked with the defense contractor to develop a connector solution that allowed them to mount these CCA's with screws vs. having to solder them down. The connector was being used for an airborne application and this 'Mezzanine' style connector passed vigorous environmental and shock and vibration testing (Mil Spec 810G) in order to qualify for use.

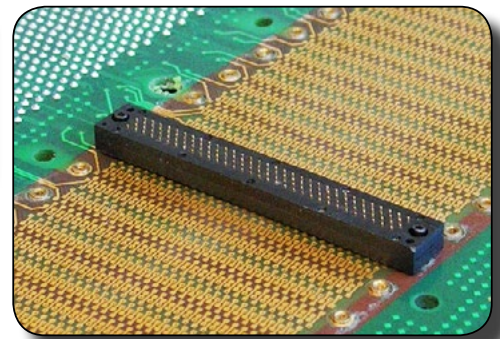
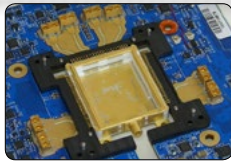
### Key Benefits

- Solderless option meant expensive components were easily replaceable and upgradeable.
- Not having to replace entire motherboard led to exponential cost savings like SMAs and SMPs





# Application Case Study

ACS #0007



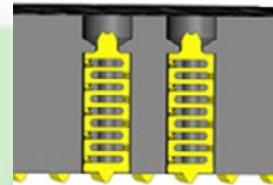
## Key Performance Data

	CR08-062	CR08-01
		
Contact Material	Gold Plated Beryllium Copper	Gold Plated Beryllium Copper
Mated Height	.062" (1.57 mm)	.087" (2.21 mm)
Pitch	.031" (.80 mm)	.031" (.80 mm)
Compression Force/Contact (Grams +/- 20%)	45	45
Compression Range	.010" (.25 mm)	.015" (.38 mm)
Contact Resistance	45 mΩ	50 mΩ
Inductance	.61 nH (self)	.98 nH (self)
High Freq Capacity (-1 dB point S21)	40 GHz	36 GHz
Characteristic Impedance @ Native Pitch (Ohms)	56.7 ohms	61.1 ohms
Durability	1000+ cycles	1000+ cycles
Current Carrying Capacity (single contact at 30°C)	2 A	2.63 A

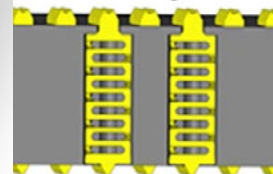
## Applications

- Board to Board
- Chip to Board
- Chip to Chip
- Flex to Board
- High Node, Low Force
- Mezzanine

## BGA Configuration



## LGA Configuration



## Related Products

### CA Series™ - Connectors & Interposers

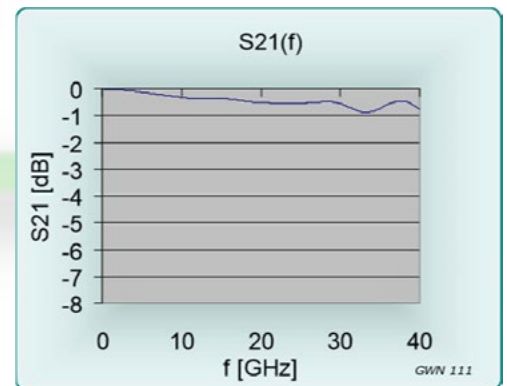


- 32 Gbps+
- Area array to 0.4mm pitch
- Compression mount & solderless
- Pure vertical interface – no offset required
- Ideal for high shock and vibration/extreme temperatures applications

### SK Series™ - Multi-GHz Sockets



- 40 Ghz+/32 Gbps+ performance
- Thermal management ready
- Solderless/compression mount system provides flexibility throughout design
- Quick connection of multiple signals to PCB
- Custom designed to your application



## Insertion Loss

## More Information

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