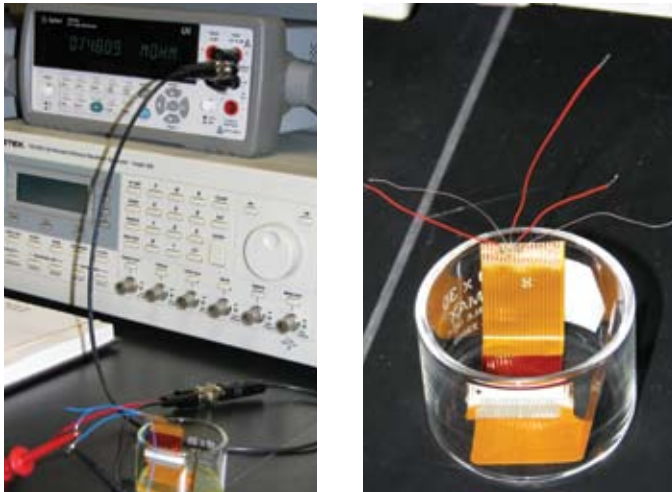




Repellix™ Flex Connector Performance

Flex Circuits are in heavy use in the electronics industry. Each Flex Cable has connectors mounted, many with very small dimensions (<1mm). Since male and female connectors have to connect to their mates, designers cannot protect the connectors with conformal coatings that physically block electrical contact, so the connectors are left exposed to potential water damage. Repellix™ from IST™ provides the solution with an ultra-thin super molecular vapor coating, that protects male and female connectors, while maintaining electrical contact. Repellix provides excellent isolation from electrical leakage between adjacent lines, while maintaining low contact resistance between connected lines.

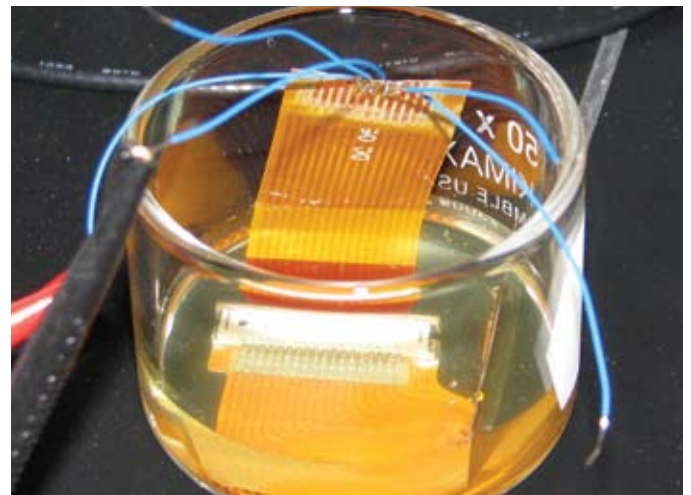
Test Description



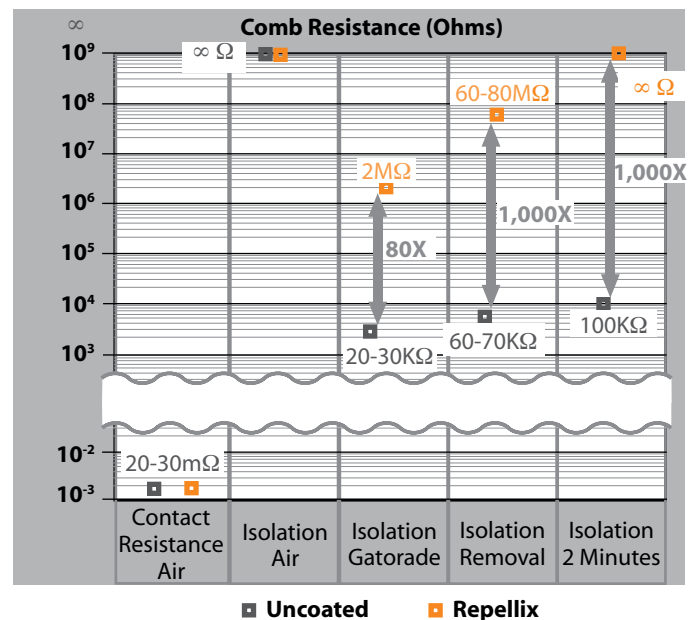
Lab Test at University of Auburn

We tested Repellix at the University of Auburn to characterize the contact resistance across the series connection and the isolation resistance between parallel lines—first in air, then submersed in Gatorade electrolyte solution. After the submersed measurements, we removed the connectors, remeasured, and then remeasured again after two more minutes in air. The Repellix connector performed as well as the control connector in terms of contact resistance - 28 mΩ versus 24 mΩ. The protection between submersed adjacent lines was dramatic. Repellix achieved 2 MΩ, about 100 times greater than the 20-30 KΩ of the control. When removed from the solution, the control only recovered to 40-70 KΩ, in contrast to 60-80MΩ for Repellix (1000 times greater). After two minutes in atmosphere, the Repellix connector recovered to its previous state (infinite Ohms), whereas the control languished at 100 KΩ.

Test Results



Flex Connector Immersed in Gatorade

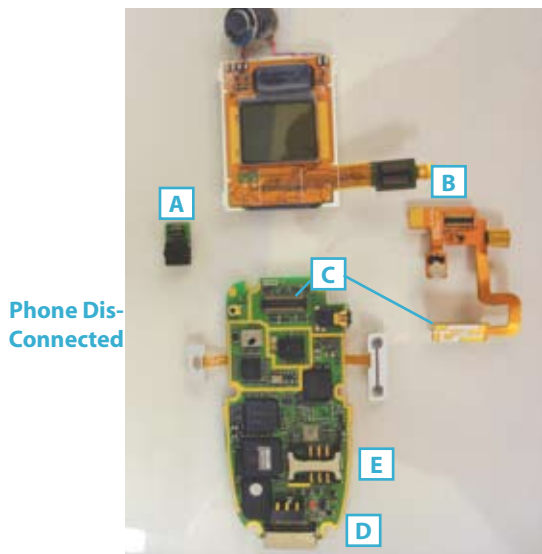


Flex Connector Example – Cell Phone

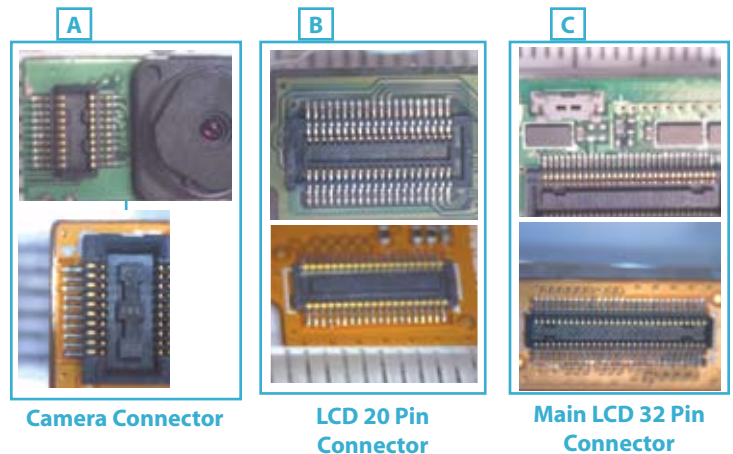


Disassembled Phone – Connectors Highlighted

The importance and prevalence of flex connectors can be seen immediately when we disassemble a popular model cell phone. In this example, the designer used connectors for at least seven (7) points: the LCD to the board (adhesive), the camera, the LCD assembly to the assembly, the feed through to the mother board, the SIM card, and the battery. Some of the pins are less than half a millimeter thick, so only a very thin film like Repellix can be feasible to protect the tight spaces and still allow contact to be made when they are snapped together.



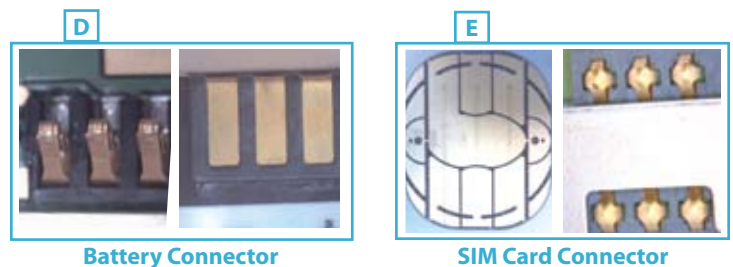
Phone Dis-Connected



Camera Connector

LCD 20 Pin Connector

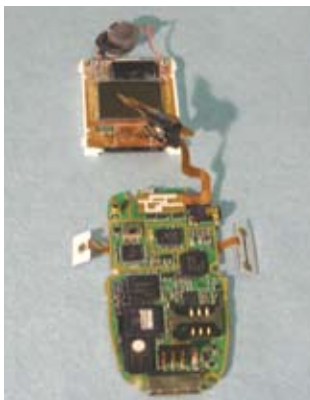
Main LCD 32 Pin Connector



Battery Connector

SIM Card Connector

Repellix Coated Phone Connected



The battery and SIM card areas have comparatively large connector pins, and use a compression mechanism to make contact. In these examples, we show how Repellix scrapes away from the connector when the hard metal surfaces are joined, making good electrical contact.