GENGARD F801™

Specialized Process for High Durability Optically Bonded Displays

In General Digital's unrelenting quest to provide elite engineering services and products, our Optical Bonding Laboratories has created a revolutionary bonding process that enables LCD assemblies to survive the most demanding military, avionic, marine and industrial environments. Our next generation **GenGard F801** is the result of continual process improvements, which include space-age materials, as well as our 16 years of experience as a bonding luminary.

Through proprietary means, the **GenGard F801** process optically couples touch screens, EMI filters, heaters and other popular overlays directly to the display's surface, and to one another. This enhances the assembly's performance, enabling it to meet specialized requirements.

The use of indices of reflection-matched bonding materials reduces internal reflections off of the display and overlay, maximizing display contrast. Improved contrast greatly improves display readability in high ambient lighting conditions, such as direct sunlight.

GenGard F801 includes the use of bonding materials to fill the gaps between all of the overlays located in front of the display, virtually eliminating the formation of moisture and condensation.

Additionally, bonded overlays increase safety by minimizing the potential for damaged or cracked overlays to injure the operator or nearby personnel.

General Digital continues our tradition of providing our customers with products and services that exceed their expectations. Please call a Sales Engineer at 800.952.2535 to discuss how **GenGard F801** can overcome your challenges and improve your bottom line.

GENERAL DIGITAL

LCDs prepared with the **GenGard F801** process will endure:

» Extreme Altitude

› Optical bond survives altitude simulation testing up to 60,000 feet with no evidence of delamination or other visual anomalies

› Ideal for use in commercial and military aircraft, as well as other products that must endure extended airborne transportation (e.g., transcontinental or international shipment)

» Extended Temperature*

› Select space-age bonding materials rated for operation between -45°C and 200°C.† Additionally, bond can survive limited exposure down to -55°C.

» Shock and Vibration

› Cured bonding materials designed to absorb military-grade shock and vibration, enabling bond to survive most military environments‡

» Severe Force

› Optical bond has been empirically tested, demonstrating the ability to survive ~10,000 clamping cycles with a force of 1000 N

» Humidity

› Cured bonding materials eliminate air gap between bonded surfaces, thereby preventing formation of condensation or moisture between overlays located in front of the display

» Vandalism/Misuse

› Provides a protective shield for the display, preventing operators and external forces from making direct and/or destructive contact

› Improves operator safety by minimizing potential for overlay to become airborne if fractured

» Poor Surface Energy

› Bonding process is compatible even with surfaces that exhibit poor surface energy

**Extremes are limited by component selection (e.g., LCD and overlay)*
†Optical bond only; selection of display, overlay and other electronics will affect temperature extremes of the assembly.
‡Compliance is influenced by many design and integration factors, which is best discussed with an Applications Engineer to ensure that the customer's requirements are met

GENGARD F801

TYPICAL PROPERTIES	
Viscosity (Mixed)	4,575 cP 4,575 mPa-sec 4.6 PA-sec
Specific Gravity (Cured)	1.03
Color	Clear
Tensile Strength	1105 psi 7.6 Mpa 76 kg/cm^2
Elongation	105%
Tensile Modulus	1050 psi 7.3 MPa 73 kg/cm^2
Tear Strength (Die B)	25 ppi 17 N/cm^2
Durometer Shore A	51
Dielectric Strength	475 Volts/mil 19 kV/mm
Volume Resistivity	1.61 E+15 Ohm*cm
Refractive Index	1.41
Linear CTE (by TMA)	325 ppm/°C
Thermal Conductivity	0.277 BTU/hr ft degF
Service Temperature	-45°C to 200°C
UL Flammability Classification	94 V-1
Key Specifications	MIL-I-81550C/UL 94 V-0

DISCLAIMER

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Engineering What's Next

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