

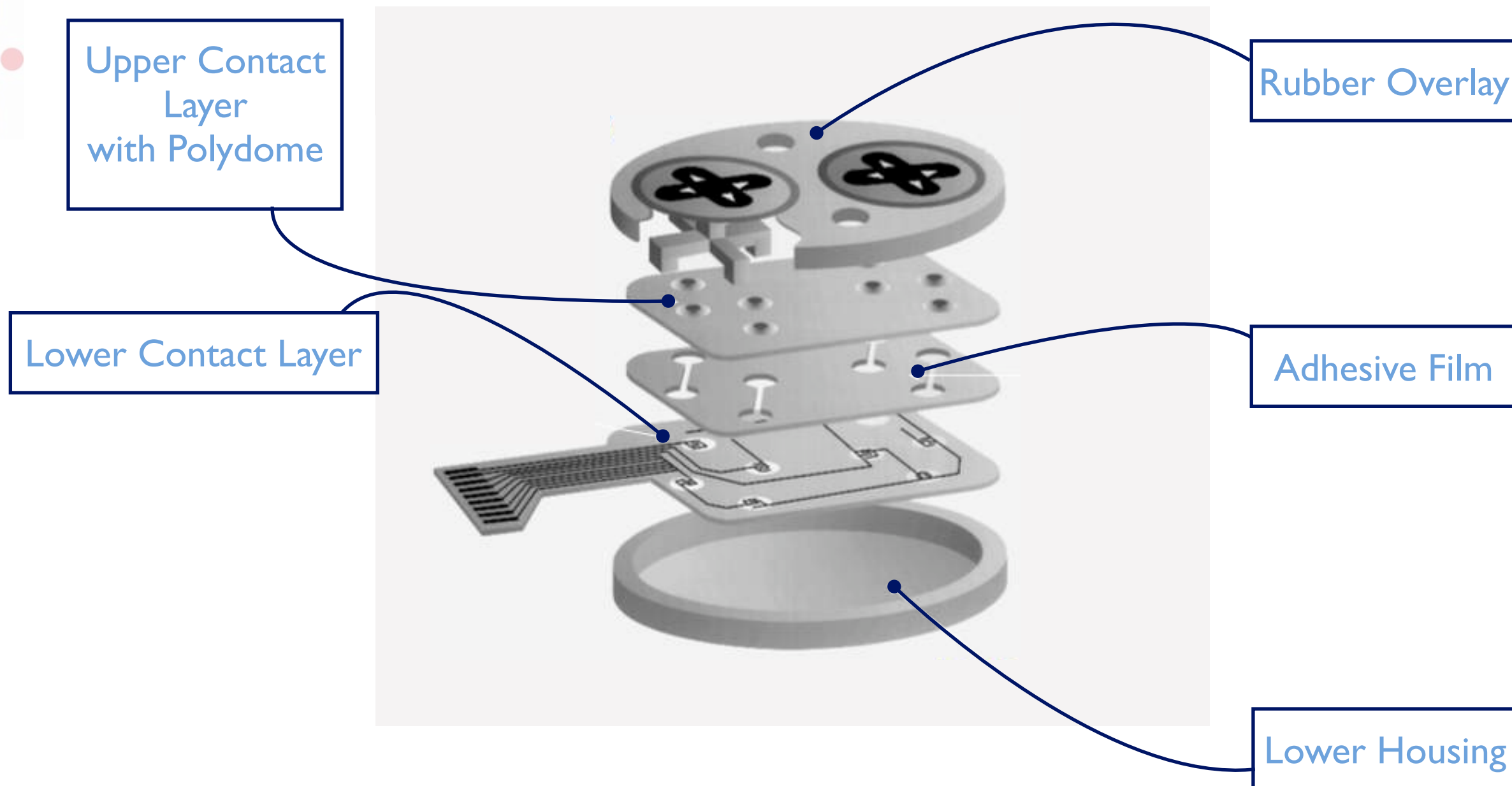
Membrane Keypads



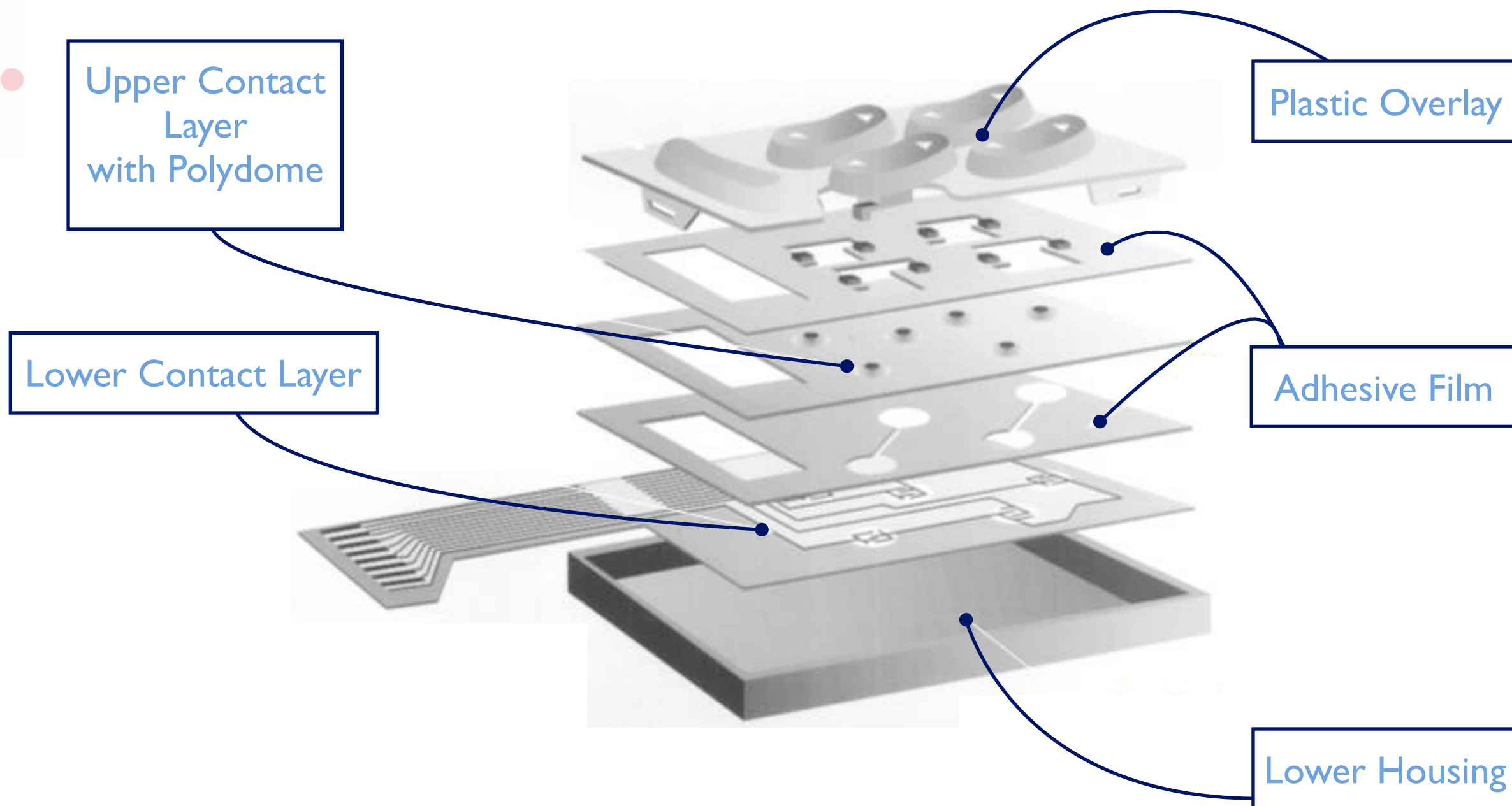
Quality Certified



Products - Stack up Example



Products - Stack up Example



Products - Overlay / Decal

Etronics excels in the quality and appearance of our of overlays

Membrane Keypads

Materials:

- PET, PC, PU, FOIL
- SRK
- IMD (in-mold decoration)
- Plastic Injection Overlay
- Others (e.g., glass, wood...)



Membrane Keypads

- In-house we use Pantone colors
- The color spectrophotometer is another important tool ensure the color is right
- Color reports can be provided to customers

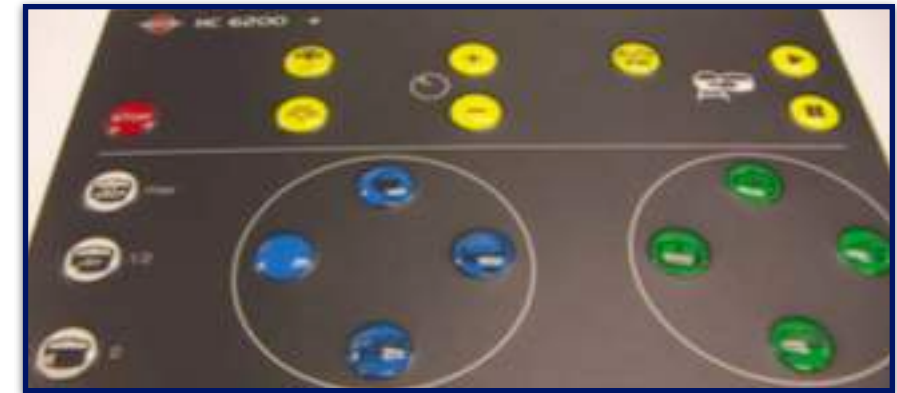


Products

Products - W / Epoxy

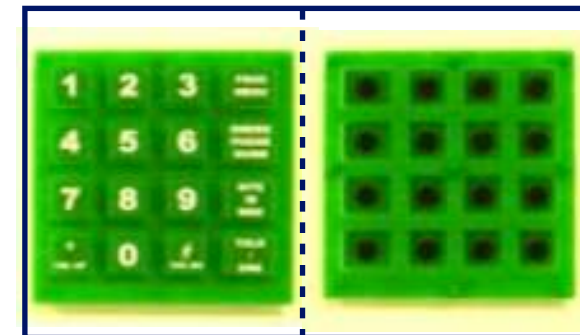
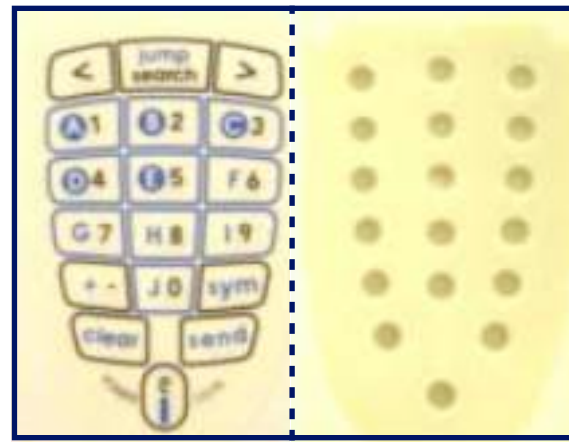
Etronics has the capability to drip epoxy onto our overlays keys

- Stylist Appearance
- Better Tactile Feel
- Qualitative product



Products - Actuators

- Metal Dome Array
- Polyester Dome Array
- SRK
- Tact-Switch
- Membrane Shorting Pad
- Pushgate (Duraswitch)
- Others



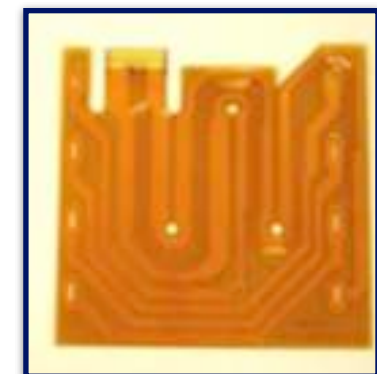
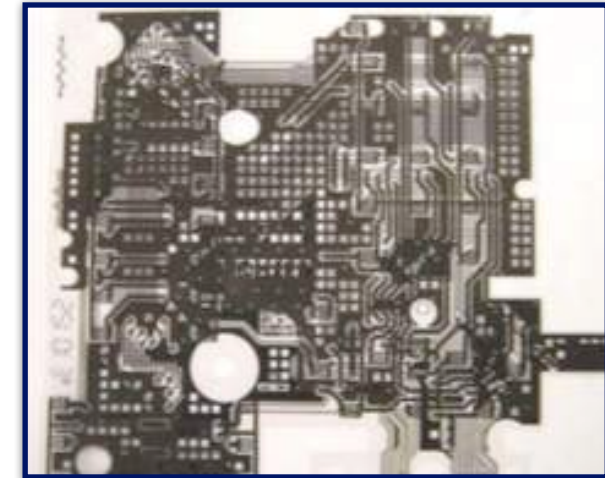
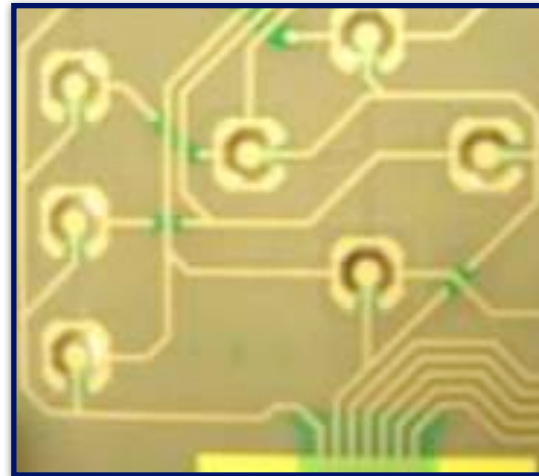
Products - Circuit Layer

Circuit Layer Available

- PET Membrane
- Flex PCB
- Rigid PCB (FR4)
- Circuit Foil

Circuit Options

- Jumper Wire (W/Bridge)
- Through-hole (Via Holes)



Products - Backlighting

Led Backlighting

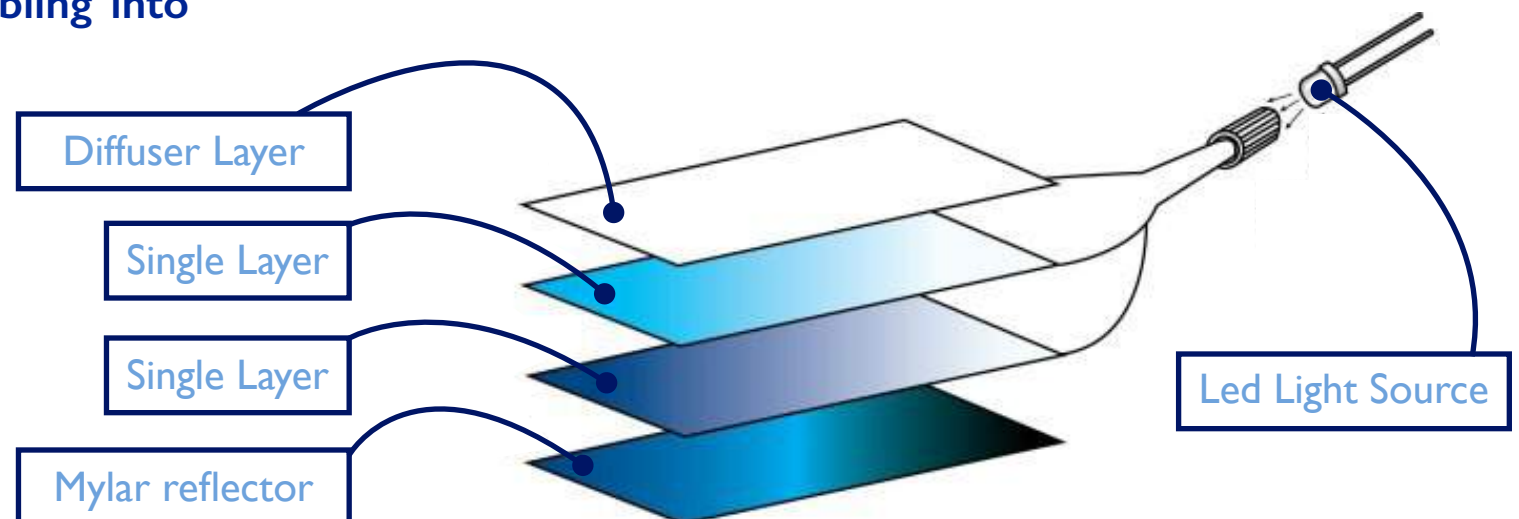
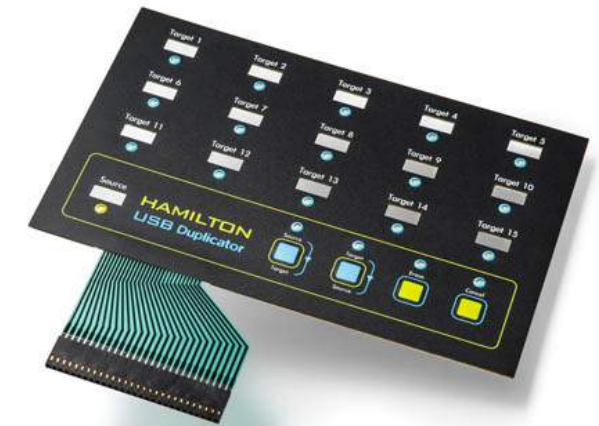
- Numerous brands, sizes, color, bi-color.
- SMT Machines in both Taiwan & China
- Different LED brightness available
- Low cost

EL Backlighting

- Easily integrated into any membrane design
- No soldering of components
- Multiple colors available
- Can reduce the thickness of the membrane

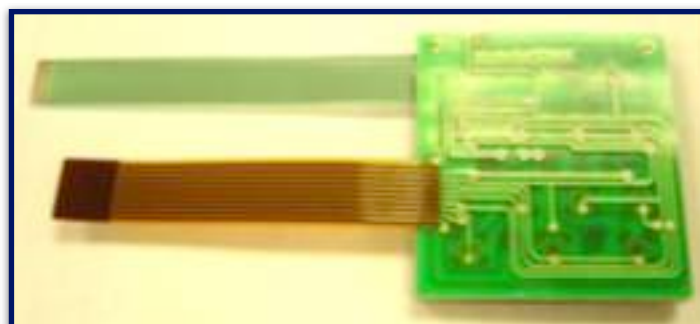
Fiber Optic Backlighting

- We can integrate fiber optic cabling into our membrane switch design
- Evenly distributed lighting
- Long life and Flexible

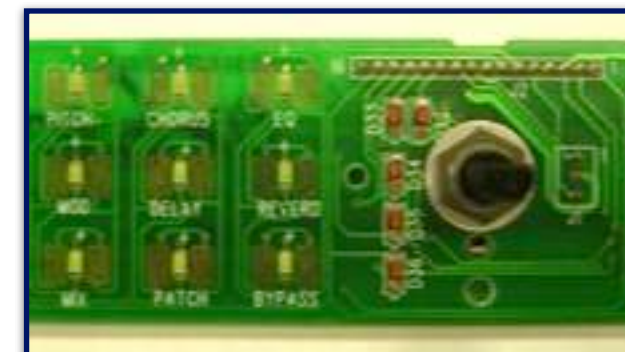
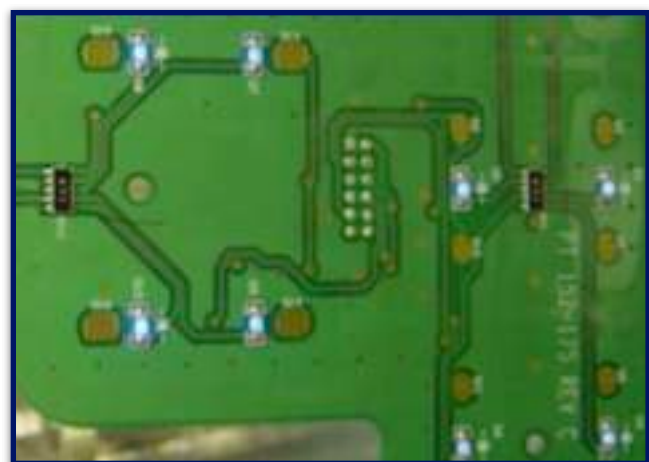


Products - Others

Complex Stack ups Available



SMT of PCB & FPC Component



Industry - Telecommunication

Etronics is a major player within the telecommunications industry

- Accounts for 25% of our membrane business
- Products include :
 - ✓ Keypads / Plastic Keycaps
 - ✓ Dome Array
 - ✓ Display Overlay / Decal



Industry - Appliances

We have already been a top performer within the whitewear industry

- Accounts for 25% of our membrane business
- Products include :
 - ✓ Appliance Overlays / Decal
 - ✓ Appliance Membrane Switches (PET/FPC)
 - ✓ Complete Switches
 - ✓ **HEAT SEAL ADHESIVES FOR APPLIANCES - SPECIALLY FOR WATER TIGHTNESS & CAN WITHSTAND 105 DEGREES**
 - ✓ Control Panels



Panasonic



SANYO

SIEMENS

PHILIPS

Industry - Peripherals

Taiwan is a world leader in the computer industry

- Accounts for 20% of our membrane business
- Products include :
 - ✓ Keyboard (Plastic / Rubber)
 - ✓ Keyboard Membrane Switch
 - ✓ Mouse Flexible Circuit
 - ✓ Laptop Mouse Pad
 - ✓ CD Rom / DVR rom - Flexible circuits







Industry - Medical



A perpetual growing industry

- Accounts for 17% of our membrane business
 - ✓ First membrane switch manufacturer to attain ISO 13485 in ASIA.
 - ✓ Quality and documentation is paramount



Bayer HealthCare



Industry - Other

Securities

Fitness Equipment



Others

SIEMENS



Thermo
SCIENTIFIC

JABIL



ACU-RITE

3M

GARMIN

Honeywell

nikkai

GRUNDFOS

Factory Characteristic

- Quality Focused
- High-tech machinery
- Clean & Organized



Factory Engineering Software

Etronics has the software and the expertise to create & modify files according to the customer's first needs

Software that is used most frequently include :

- AutoCAD (Mechanical Drawings)
- Adobe illustrator (Overlay / Decal Artwork)
- Corel Draw (Mechanical &/Or Overlay Artwork)
- Gerb Tool (3D files)
- PDF (For visual purposes only)
- Solid Works (3D files)

Factory Engineering

- For product development or creation of sample, we have a large team of engineers to do the job right
- We provide our engineers with the latest software & technology
- Engineering is responsible for the creation of our devise master record
- Engineering is an important support for our sales teams providing advise on quotations, drawings or general customer enquiries



Factory - Technology

- Etronics prides itself of having the latest technology
- No more overlay / decal silk-screens
- One pass = multiple color
- Cheaper printing costs
- 3 machines in Taiwan, 2 machines in China
- Quick and accurate placement of both LEDs and Metal Domes
- Runs 24 hours, 7 days a week



Factory - Processes



Silkscreen
Printing



CDD
punching



Metal Dome
Assembly



Thermal
Embossing



Assembly



Inspection &
Packaging

Factory - Quality Control

Incoming Quality Control

- All incoming goods / components are quality inspected
- Vendor performance is record & displayed
- Regular quality meeting with vendors



Production In-Process Quality Control

- Overlay / Decal colors are carefully mixed and tested
- Printed circuits are randomly tested off the print machine
- Quality staff walk the factory floor randomly inspecting parts
- Parts are 100% visually (ASTM standard F1595-00)
- Switches and circuits are 100% functionally tested
- Correct packaging to prevent damage



Production Out-Going Quality Control

- Random number of parts are inspected before final shipment
- Use an in-house AQL Form (Similar to MIL-STD-105E)





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