
3M Science.
Applied to Life.™
New 3M™ Electrically Conductive Tapes Application Profiles
Solutions that help enable the next generation of technology

GENERAL ELECTRONICS

Flexible Printed Circuit (FPC) Grounding

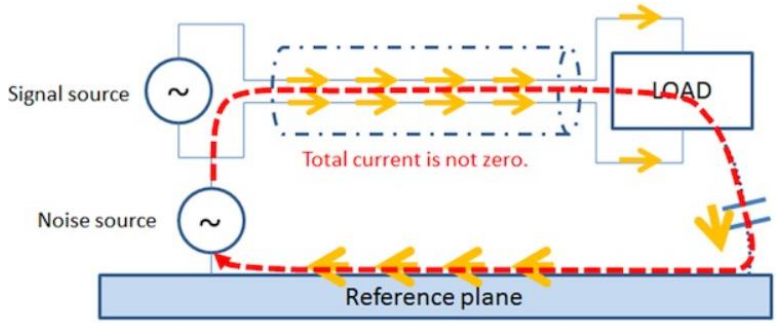
FPCs are often used in compact spaces due to their flexibility and light weight. When the FPC is not grounded properly, the “bias” voltage yields unwanted signal transmission or EMI. 3M™ Electrically Conductive tapes help improve grounding, reduce bias, and lower radiated RF noise while preserving the mechanical freedom of the FPC.

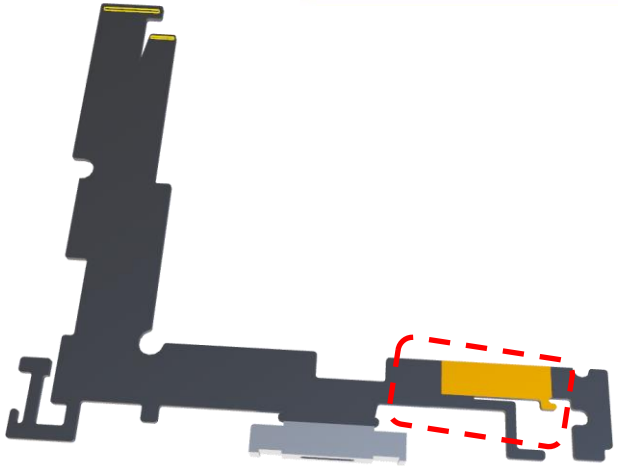
3M Electronics Materials Solutions

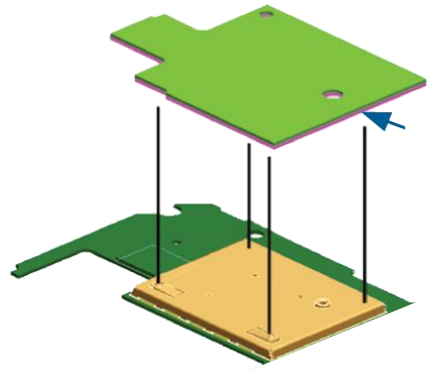
Attached the FPC to the grounding surface

Create a reliable grounding connection to decrease EMI noise with 3M™ Electrically Conductive Double-Sided Tape 5113DFT-50.

» The high adhesion and low R create an initial and ongoing reliable grounding path
» The temperature durability and long shelf-life help maintain the bond
» Conformability of a woven fabric carrier helps preserve the FPC flexibility







Flexible Printed Circuit

- Flex
- 3M tape 5113DFT
- Grounding surface
- Substrate layer

For Z-axis only, use 3M™ Electrically Conductive Adhesive Transfer Tape 9703

GENERAL ELECTRONICS

Display Wrap EMI Shielding

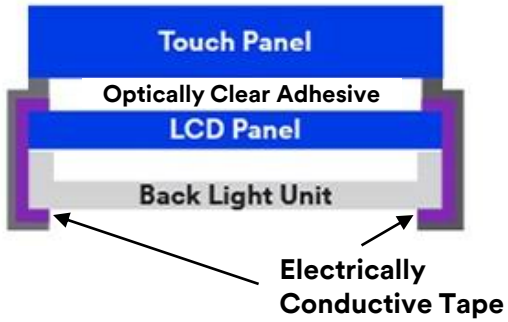
A device is only as good as its display. Cutting-edge features mean little if the display isn't working as it should. LCD touch displays are often built with plastic frames to meet weight specifications. The frames still need structural support and EMI control in a small space. 3M™ Electrically Conductive Tapes can help provide both.

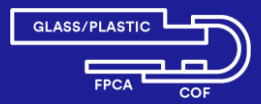
3M Electronics Materials Solutions

Wrapped around edge of LCD panel and backlight

Provide lightweight mechanical stability while shielding EMI, grounding, and helping preventing electrostatic discharge (ESD) issues with 3M™ Electrically Conductive Single-Sided Tape 5113SFT-50.

- The fabric carrier's conformability helps create a strong and stable bond around corners
- A low contact R and high adhesion create a reliable grounding path to help reduce induced EMI noise caused by repeated touch pressure
- The proprietary conductive matrix carrier and conductive polyolefin PSA shields EMI of 40 – 50 db at select frequencies





CONSUMER ELECTRONICS

Display Chip on Flex (COF) Shielding

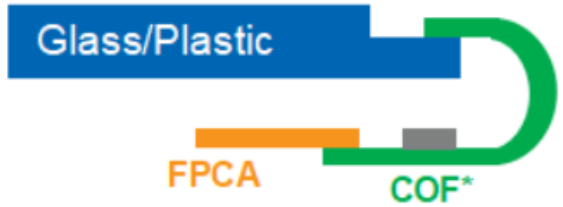
Vivid electronic displays leverage COF when the display driver is mounted directly to an FPC. COF speeds up the display response time as it shortens the signal path, but it leaves the COF vulnerable to EMI. 3M™ Electrically Conductive Tapes shield EMI to help protect the COF.

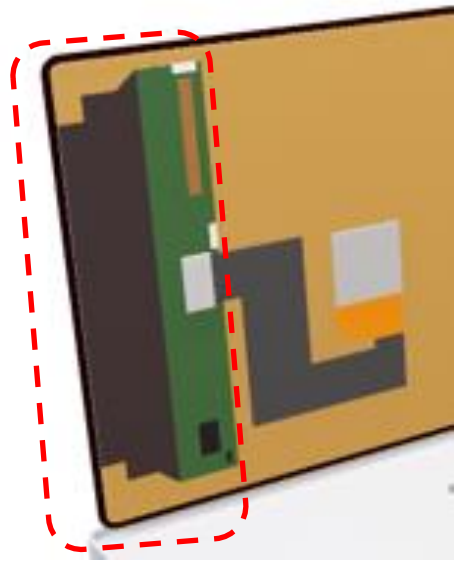
3M Electronics Materials Solutions

Attached COF to glass/plastic substrate

Help protect the COF from EMI noise by shielding EMI with a high-performing, conformable, thin profile, copper foil tape– 3M™ Electrically Conductive Single-Sided Tape 1050TC Series.

» The adhesive tack helps overcome stress following lamination and helps prevents lifting issues
» The thin profile helps the tape conform around curved edges
» The foil provides high shielding effectiveness between 40 – 70 db at select frequencies





GENERAL ELECTRONICS

Sensor Grounding

A higher signal-to-noise (SNR) ratio is essential for accurate detection (sensing) and classification. Inputs from data sources must not be distorted. Messages must be quickly and accurately analyzed, prioritized, and processed. The SNR decreases as electrical current and ground impedance increases. 3M™ Electrically Conductive Tapes help enlarge the grounding plane beneath the signal to increase the SNR.

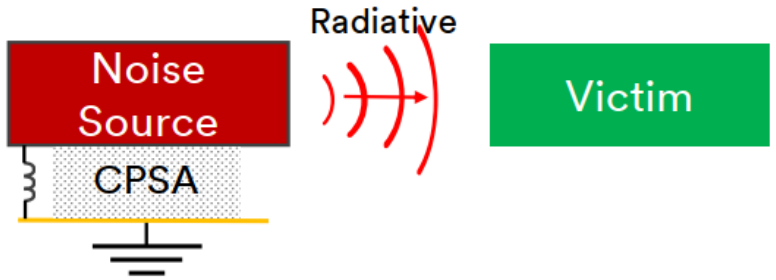
3M Electronics Materials Solutions

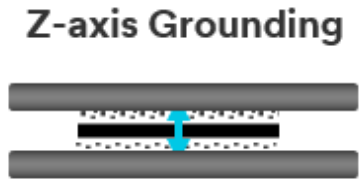
Attached sensor to flexible circuit board

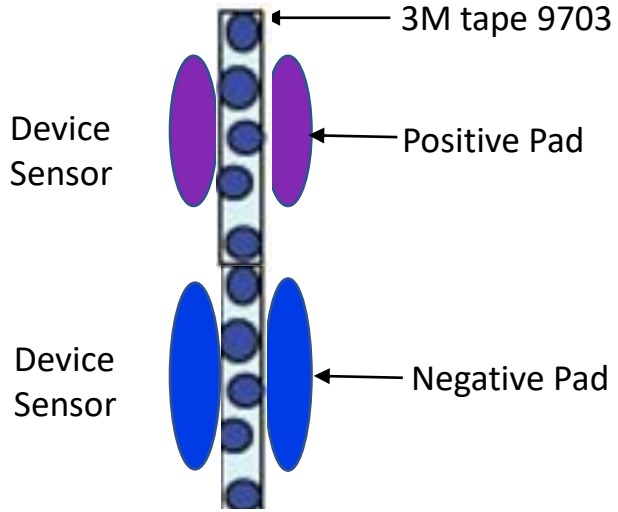
Stabilize and reinforce the grounding plane to help decrease the EMI noise with 3M™ Electrically Conductive Adhesive Transfer Tape 9703.

» Anisotropic conductivity enables Z-axis interconnection without shorting adjacent circuitry

» The low outgassing adhesive makes 3M tape 9703 a great solution in aerospace and automotive







For XYZ-axis conductivity, use 3M™ Electrically Conductive Single-Sided Tape 5113SFT.

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