



MGX Mixed Technology SIR Test Board



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The MGX Mixed Technology SIR Test Board is a purpose built Surface Insulation Resistance (SIR) and electrochemical reliability test platform designed to evaluate flux behavior, cleaning effectiveness, and process robustness across a range of component geometries. Combining fine-pitch, bottom-terminated, through-hole, and passive components on a single standardized board enables comprehensive cleanliness and reliability characterization aligned with J-STD-001 Section 8 requirements.

Key Features

The Mixed Technology SIR test board is populated with a diverse suite of components engineered to expose different contamination entrapments, standoff heights, and electrochemical risk factors. The test board is double sided with four channels on the front and back. Ideal for modeling processes with multiple reflows.

QFN 48 11 (Glass or Standard Substrate)

- 48 lead bottom terminated package
- Exposed thermal pad (11 mm class)
- Extremely low standoff height for worst case under component residue entrapment
- Ideal for SIR studies involving no clean fluxes and cleaning process validation

BGA 244 with Heat Lug

- 244 ball grid array
- Central thermal/ground lug to simulate high power devices
- Solder mask defined and non SMD pad interactions
- Enables evaluation of flux spread, voiding, and under ball residue behavior

QFN 80

- Rectangular pads with fine pitch spacing (0.5 mm pitch)
- Extremely low standoff height

20 Pin Through Hole Header

- Represents mixed technology soldering
- Allows evaluation of cleaning fluid penetration into plated through holes
- Supports comparative studies of wave, selective, or hand soldering

Chip Capacitors and Resistors

- Standard 0402/0603/0805 passives (depending on board revision)
- Provide SIR comb structures and residue sensitive geometries
- Useful for baseline contamination and process control monitoring



- Evaluates leakage currents, dendritic growth, and electrochemical migration
- Tailor made for temperature humidity and bias (THB) testing

- Determines how residues behave under QFN, BGA, QFP, and TH components
- Validates wash processes, chemistry compatibility, and under component cleaning

- Generates objective evidence of acceptable cleanliness
- Supports process qualification and periodic verification

- Flux chemistry benchmarking
- Reflow profile optimization
- Cleaning agent and equipment evaluation
- Material compatibility studies

