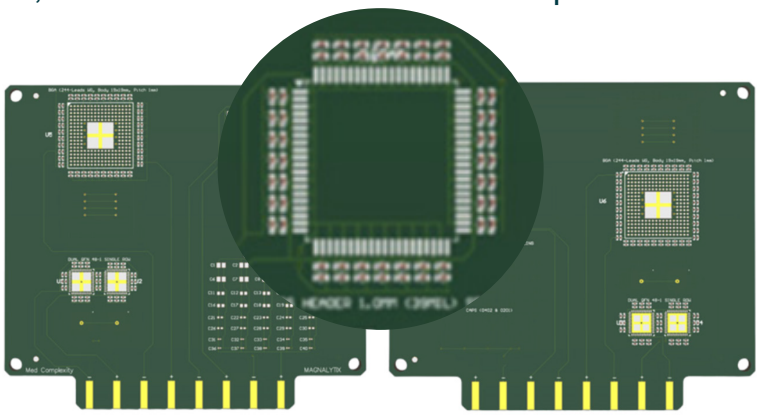
MAGNALYTIX®

OBJECTIVE EVIDENCE IN A BOX HIGH DENSITY

The OE in a Box - High Density kit is the step up for manufacturers who produce assemblies with the highest levels of complexity and need IPC J-STD-001 electrochemical reliability documentation. If your line produces high-density boards, supplies to aerospace, defense, or medical customers, or requires worst-case entrapment validation, this is your kit. One purchase delivers everything you need to run IPC-compliant SIR testing through your real process and receive a third-party Certificate of Compliance, no in-house SIR infrastructure required.

This Kit Enables Qualification of:



- High Density assemblies with worst-case component entrapment
- Top-side & bottom-side SMT Assembly on the same card
- Selective Soldering
- Through-hole and manual soldering
- Rework soldering
- Conformal Coating (where applied as part of the standard production process)

The High Density card builds on the Full Process Mixed Technology design, adding small chip capacitors around each bottom-terminated component to replicate the tighter component spacing found in high-density production assemblies. This surrounding geometry replicates the confined component spacing where flux residue and ionic contamination are most likely to persist. Flux residue activity at I/O and under component terminations is captured across all 8 SIR channels (4 front, 4 back).

How Objective Evidence in a Box Uses the High Density Cards:

Magnalytix's OE in a Box - High Density kits provide a complete, standardized workflow for generating objective evidence. When using the High Density cards, the process typically includes:

1. Assemble the boards using your actual production process

The test structures undergo all real manufacturing steps, materials, equipment, reflow, cleaning, and conformal coating, so that objective evidence reflects the true process.

2. Submit Boards for SIR Testing - SIR testing follows IPC-9202A methodology:

- 40°C / 90% RH environmental stress
- 5V DC bias across comb patterns
- 168-hour test duration with continuous monitoring

MAGNALYTIX

OBJECTIVE EVIDENCE IN A BOX HIGH DENSITY

How Objective Evidence Is Generated

When used with IPC-9202A methodology, the High Density cards support a complete electrochemical reliability assessment:

- Visual inspection of assembled boards
- SIR testing under controlled temperature/humidity for at least 168 hours post test inspection and residue correlation
- Acceptance criteria: SIR ≥ 100 MΩ after 24 hours of chamber stabilization
- Third Party Reporting, including a Certificate of Compliance to IPC J-STD-001 Section 8

Qualification Scope:

- Solder paste characterization
- Flux residue activity assessment
- No clean soldering validation
- Cleaning effectiveness under BTCs (bottom terminated components)
- Rinse effectiveness and wash bath life studies
- Conformal coating compatibility
- Electrochemical migration risk evaluation
- Process change requalification (new flux, paste, cleaning chemistry, or equipment)

Key elements include in Objective Evidence in a Box:

- 10 High Density test cards
- Components (tape & reel) for full assembly
- A dedicated stencil will be provided
- ESD return bags
- Quick start process parameters
- Return shipping for third party analysis
- SIR testing on the 10 Boards
- Data reporting
- Certificate of Compliance to IPC J-STD-001 Section 8 (issued on passing results)

This kit is specifically built to produce defensible, audit ready, objective evidence for J-STD-001 and related cleanliness requirements. Manufacturers simply assemble the boards using their normal process, ship them back, and receive a certified report.

For lines that do not require worst-case density simulation, the Full Process kit provides equivalent coverage at standard component spacing.

For more information contact us at: www.magnalytix.com/GetTheBox