MAGNALYTIX®

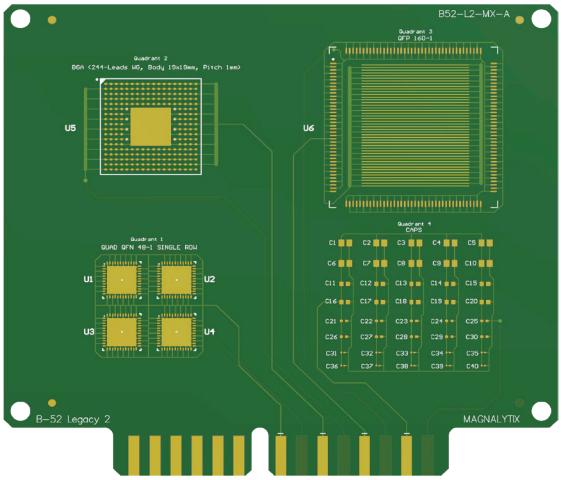
MGX B-52 Legacy 2 SIR Test Board

Practical Uses

The Magnalytix MGX B-52 Legacy 2 SIR test board evaluates the activity of flux residue at both the signal pin and under component terminations. MGX B-52 Legacy 2 is used to characterize solder paste, process development, and process control.

Solder Paste Characterization

- The activity of the Solder Paste residue
- In the presence of moisture and humidity, the risk of the flux residue mobilizing metal oxides to cause current leakage



Process Development

- Characterizing solder Pastes on both No-Clean and Cleaning Applications
- Reflow conditions for proper flux outgassing
- Cleaning Agent effectiveness in removing process residues
- Cleaning Tools effectiveness in cleaning at and under component terminations

Process Control

- Solder Paste life
- Reflow profile
- Flux outgassing under leadless and bottom terminated components
- Cleaning Process
  - Cleanliness at the component site
  - Rinsing
  - Bath life

Test Card Comparison

	MGX B-52 Legacy 2 SIR Test Board	IPC B-52 SIR Test Board
Quadrant 1	QFN-48 - 0.5mm pitch	Not Included
Quadrant 2	244 I/O BGA with Ground Lug	Not Included
Quadrant 3	QFP 160 - 0.65 mm Pitch	Included
Quadrant 4	Chip Caps - 0201 to 0805	Included

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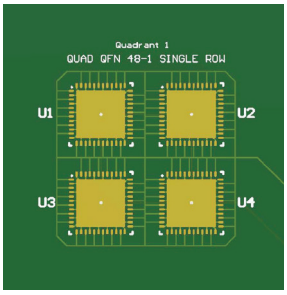
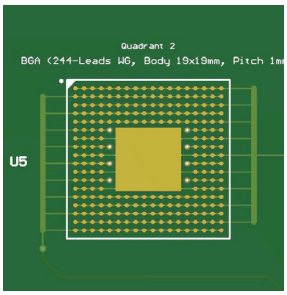
SIR Test Parameters



QUADRANT 1

EDGE PIN 1 =
ODD PADS

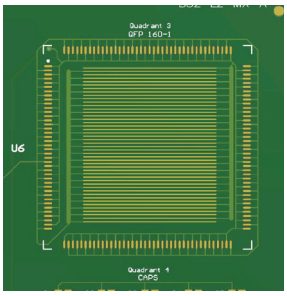
EDGE PIN 2 =
EVEN PADS + GND
LUG



QUADRANT 2

EDGE PIN 3 =
ODD ROW PADS + GND
LUG

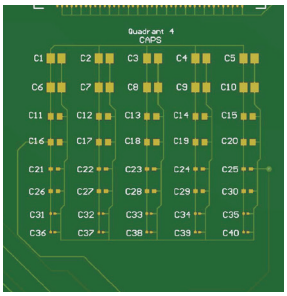
EDGE PIN =
EVEN ROW PADS



QUADRANT 3

EDGE PIN 5 =
EVEN PADS + LEFT COMB
BUS

EDGE PIN 6 =
ODD PADS + RIGHT COMB
BUS



QUADRANT 4

EDGE PIN 7 =
LEFT PAD OF ALL CAPS

EDGE PIN 8 =
RIGHT PAD OF ALL CAPS

Component Descriptions

The MGX B-52 Legacy 2 SIR test board finds use in Materials Characterization and Process Control.

- **QFN48** is one of the more challenging components to clean. With a standoff gap lower than 50µms, flux residues bridge the lands and thermal lug. The residues tend to be active due to poor outgassing channels.
- **BGA244** with a center lug has a high standoff gap and easier to clean. This component tends to be representative of the BGA family of components. The center lug adds some degree of complexity by obstructing flow channels.
- **QFP160** is a challenging component due to the 0.65mm pitch on screen-printed lands. The SIR comb pattern represents an excellent component for detecting cleaning and rinsing issues.
- **0201, 0402, 0603, & 0805 10pF** represents common leadless components with tight pitch and low standoff heights. The bottom termination under these chip caps are challenging to clean and excellent for materials characterization and cleaning studies.

MGX B-52 Legacy 2 Test Set

Each Magnalytix Test Set includes the substrates and components to build complete assemblies needed for 1 standard testing cycle and provide the objective evidence needed to meet IPC J-STD-001G-Am1. This includes:

10 Each – MGX B-52 Legacy 2 PCB | Reel of 40 – MGX QFN48 | Reel of 10 – MGX BGA244
Reel of 10 – MGX QFP160 | Reel of 100 – 10pF 0201 | Reel of 100 – 10pF 0402 | Reel of 100 – 10pF 0603
Reel of 100 – 10pF 0805

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