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**Case Study**

**Low Cost PCBA Functional  
Test Software**

# PCBA MANUFACTURING TEST CONTEXT

FAB &  
Assembly



Assembled PCB



FUNCTIONAL  
TEST



Tested PCBA

# Burn-in Board PCBA Manufacturing Functional Test Software

## PROJECT

Manufacturing Functional Test Software for Burin-in Board PCBA

## EXECUTION MODE

Offsite Development with Remote Integration Support

## CUSTOMER

- Mid-sized EMS company
- End Customer - Tier 1 Semiconductor Chipset Vendor

# Burn-in Board PCBA Manufacturing Functional Test Software

## PROJECT DESCRIPTION

Burn-In Board(BIB) is a printed circuit board which functions as an interface board in the Burn-in process. The burn-in board is used as part of the ASIC reliability testing process during which the components are stressed to detect failures

## PROJECT REQUIREMENTS

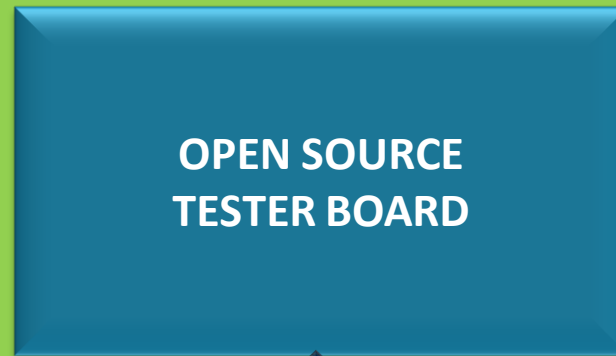
- Development of Manufacturing Functional Test Software for the BIB card
- Board level Functional Testing of the Assembled PCBs before shipment to customers

# FUNCTIONAL TEST SOFTWARE TEST SETUP

Test User Interface



Running Functional Test Software



PCBA Under Test

# BURN-IN BOARD DETAIL

## MAJOR COMPONENTS

Microcontrollers

EEPROM

I2C Port expanders

FPGA

Clock Generators

ADCs

DDR memory

Power Management IC

Timing Devices



# FCT TESTS

TESTS DEVELOPED

EEPROM Access Test

EEPROM  
Programming

Microcontroller  
access/protocol test

Clock generation/  
monitoring tests

Voltage generation  
/monitoring tests

ADC test

Timing tests

Port expander tests

Many more

# FUNCTIONAL TEST SOFTWARE

## OPERATOR FRIENDLY TEST INTERFACE

- Step by step test directions
- Single button to execute all the tests

## Board Level/Test Level/Component Level Failure Log

## TEST SCRIPTS AND LOG CAPTURE



# Functional Test of PCBA– Advantages

**LOW COST TEST STRATEGY - NO PROBES OR FIXTURES**

**MANUFACTURING FAULTS IDENTIFIED**

- Open, short,
- Missing components
- Faulty components
- Incorrectly aligned components

**EDGE CONNECTORS TESTED**

**BOARD POWERED AND FUNCTIONALITY ENSURED**

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