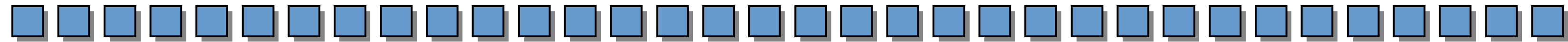

HDP User Group International, Inc.

Reliability of Halogen-free Flip Chip Package and PCBA

ITRI, Taiwan

April 26, 2007

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Purpose

- The objective of the Halogen-free Properties Project is to build up the database of different halogen-free material. It is very important, but Taiwanese manufacturers need much more, such as their workability, cost, yield and reliability.
- The yield of PCBA combines both Pb-free and Halogen-free.
- Make Taiwanese manufacturer involve in halogen-free.

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Project Goals

- A reliable total green package and PCBA technology

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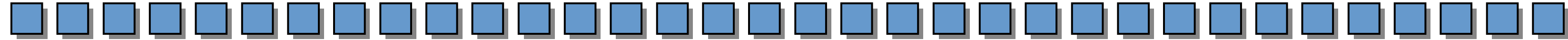
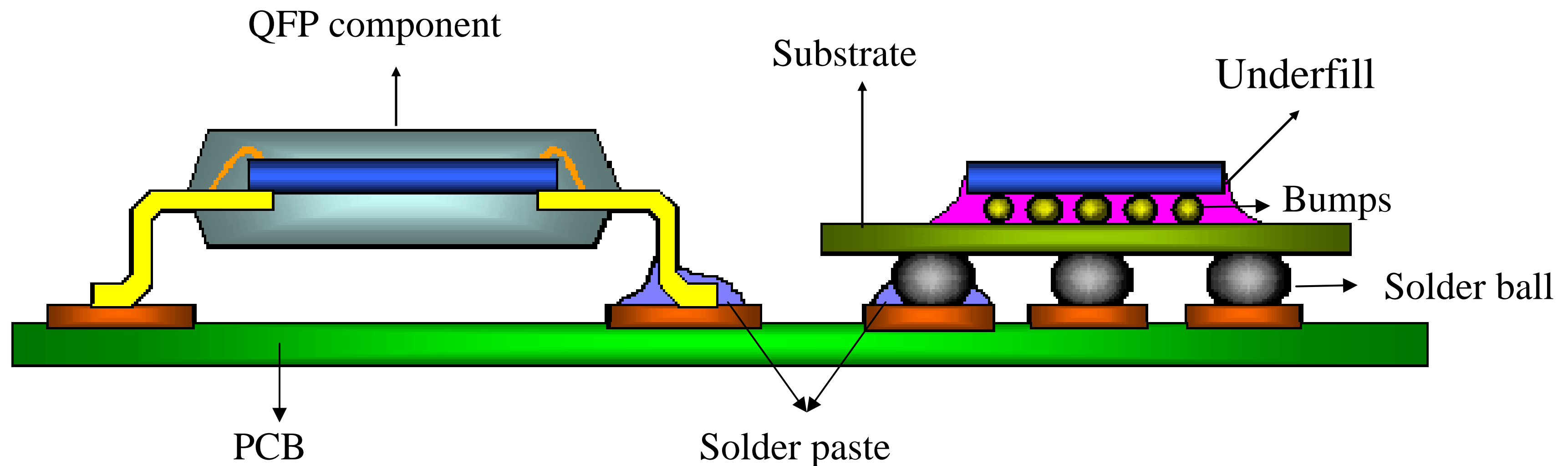
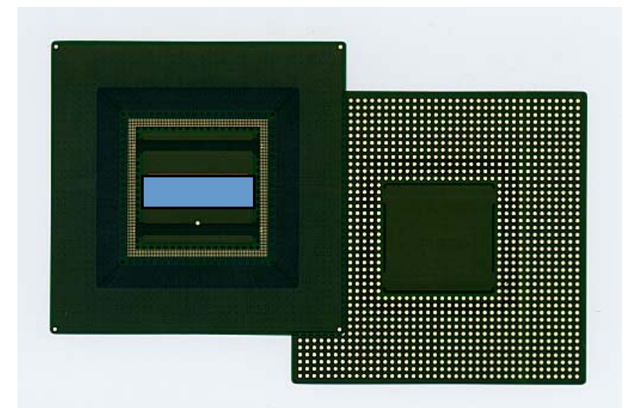
Test Vehicle of Package





Bumps (4355 IOs, 100 um): Sn37Pb (IBM), SAC305 (IBM), Sn (ITRI), Cu (ITRI) and Compliant bumps (Japanese vender)
Solder ball (1521 IOs, 640 um): SAC (Shenmao), SACC (NTU & Shenmao)
Halogen-free solder paste: SAC (Shenmao & NS), SACC (Shenmao)
Substrate: 6 layers PI coreless substrate (Japanese vender)
Halogen-free QFP component (ASE or SPIL & NEC)
Halogen-free PCB: Nanya CCL & Nanya PCB and NEC
Halogen-free underfill: Japanese vender



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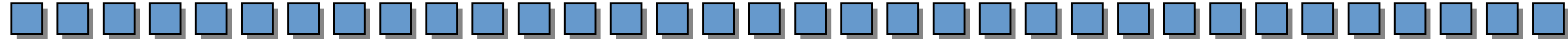
Possible team members



Halogen-free package
QFP ~ ASE, NEC and NSC
Halogen-free package and SMT
ITRI

Solder material
Shenmao and NS
Bump materials
IBM, ITRI and Japanese vender

ITRI
IBM
NEC
NSC

Reliability test
Electromirgation
NSC – UCLA
ITRI – NCTU or NCU
Rapid test method
NEC – University of Tokyo
ITRI - NTU
Drop test
NSC – UCLA
ITRI - Dage

Substrate and PCB
Japanese vender, Nanya PCB and NEC

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