

Hirose IT3 Board Assembly Yield Test

AMT-Asia

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JABIL

Build Matrix

Process order	Test board	Connector part No.	Board Qty.	Connector Qty.	Comments
1	DC	IT3D-200S-BGA(57)	45	225	Nitrogen atmosphere 2x reflow (2nd reflow with connector on bottom side)
		IT3D-300S-BGA(57)		225	
2	MB	IT3M-200S-BGA(57)	50	250	Nitrogen atmosphere 1 X reflow
		IT3M-300S-BGA(57)		250	
Total			95	950	

IT3x-200S-BGA(57) : 200 signal pin (Total 380 joints including ground pin)

IT3x-300S-BGA(57) : 300 signal pin (Total 570 joints including ground pin)

Note: All the builds were reflowed in Nitrogen environment with $O_2 < 100\text{ppm}$

Pre-Build Activities

Profiles

Due to limited Channels available on AMT Asia temperature profiler, i.e. 9 versus 11 channels, profile was split into two portions.

Actual Profiles used #1:

- i) **Conn7PCB**
PCB temperature close to Connector 7.
- ii) **Conn2CompBody**
Body temperature of Connector 7.
- iii) **Conn1PCB**
PCB temperature close to Connector 1.

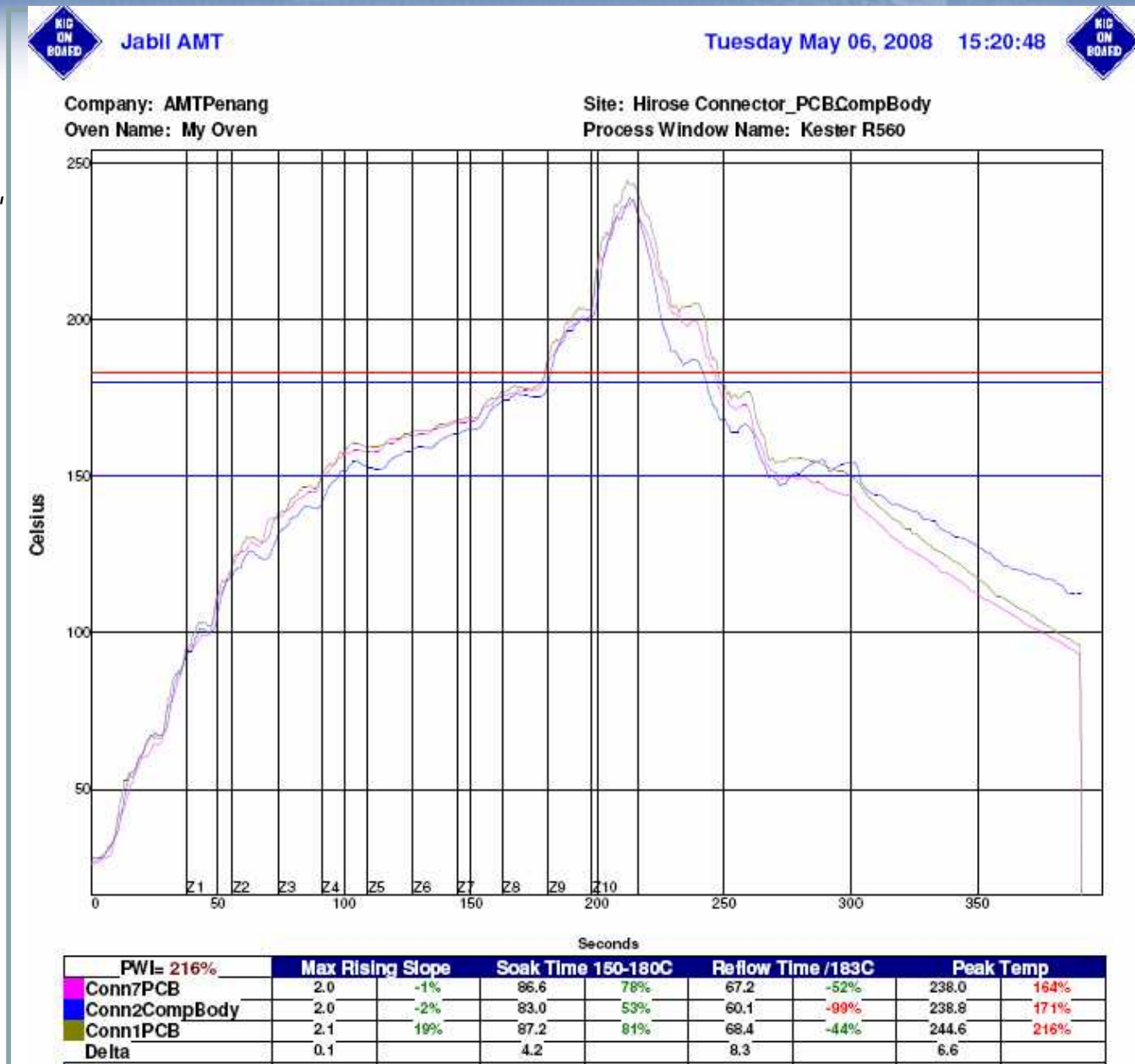


Fig 8 Actual profile 1

Pre-Build Activities

Actual Profiles used – #2:

- i) **Conn7S**
Connector 7-side.
- ii) **Conn7C**
Connector 7 - center.
- iii) **Conn2S1**
Connector 2 –Side 1 (left)
- iv) **Conn2C**
Connector 2 - Center
- v) **Conn2S2**
Connector 2 –Side 2 (Right)
- vi) **Conn1S**
Connector 1 - side.
- vii) **Conn1C**
Connector 1 – center
- viii) **PCB**
PCB temperature

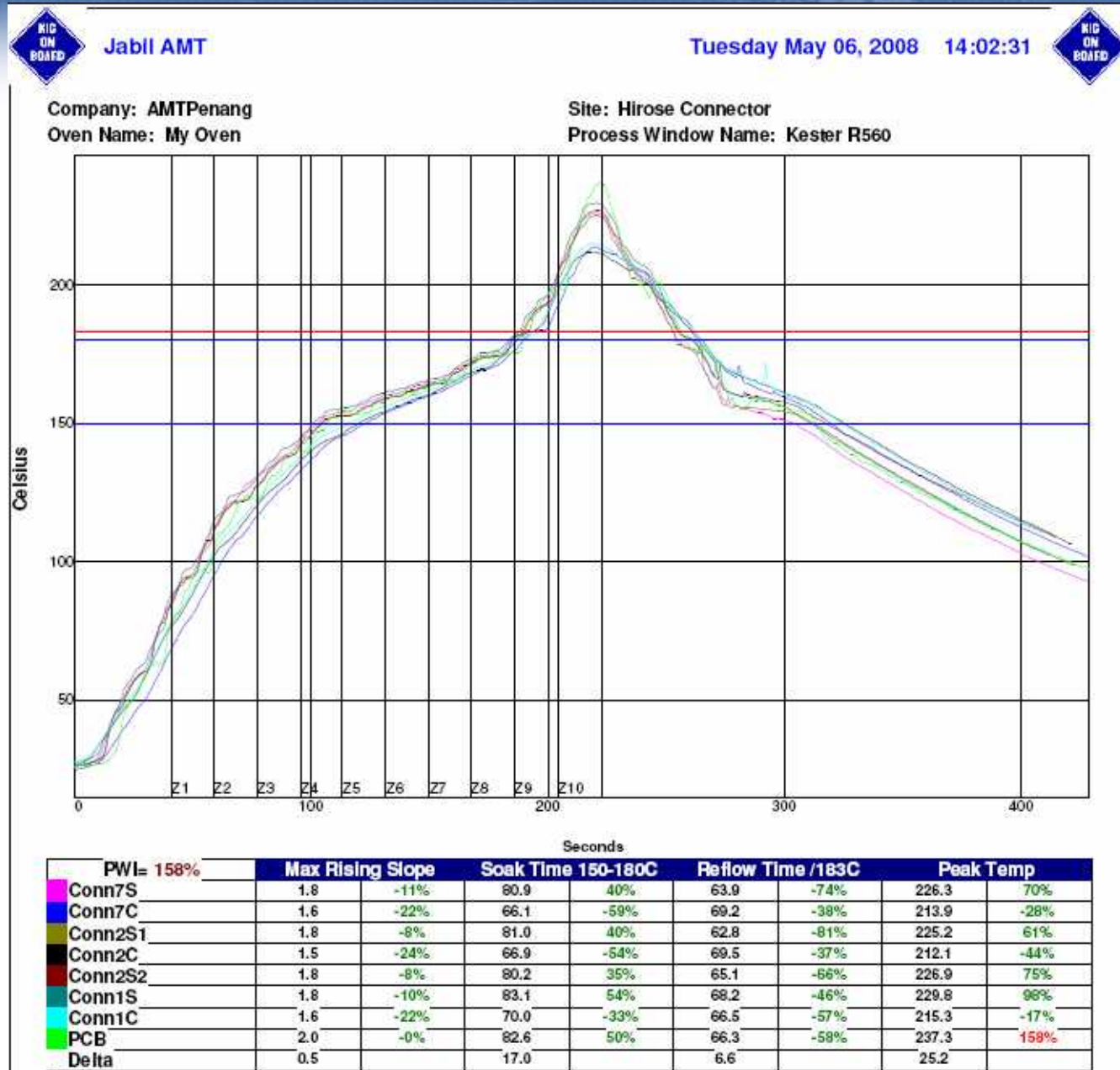


Fig. 9 Actual profile #2

Assembly

Process Flow



DEK 265
Screen Printer



Koh Young (offline)
Paste Inspection



Fuji NXT
Pick & Place Machine



Vitronics XPM2
Reflow Oven



Hirox Scope
Optical Microscope



Aquastorm 200
PCBA Wash System



VJ Electronics
X-Ray Machine



Final Inspection
&
Packing

★ -Visual Inspection for
Alignment , reject if >25%

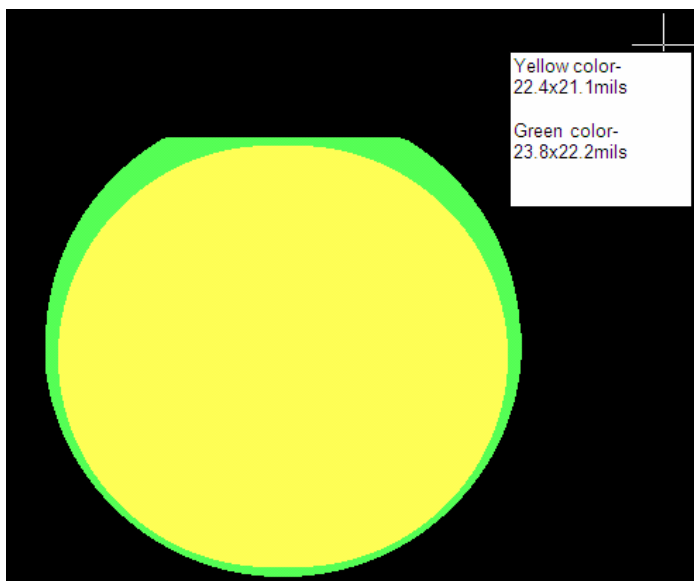


Machines used for the built

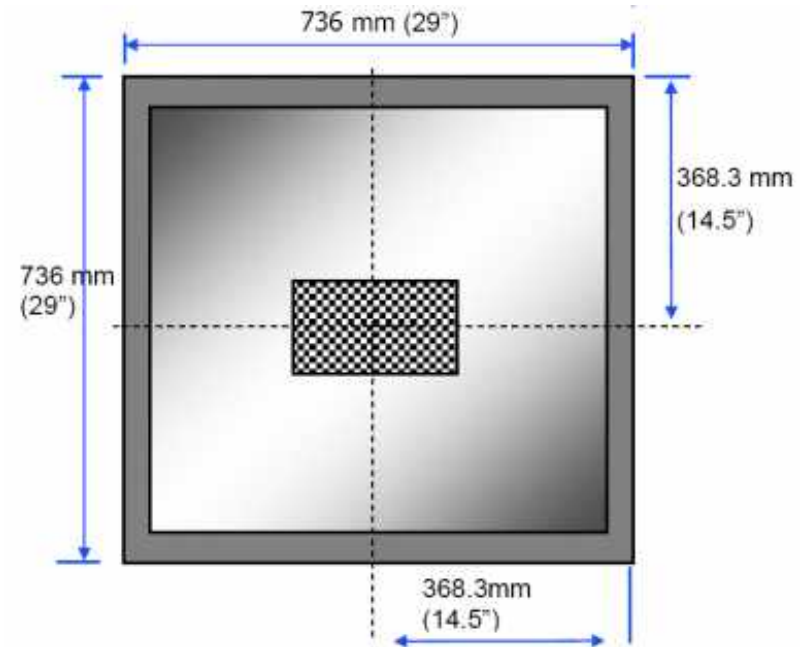
Solder Paste Printing

Stencil

- Fab Method - Laser With Electropolished
- Dimension -29" X 29"
- Foil Thickness – 5 mils
- Aperture size – 90%



Aperture opening



Stencil Dimension

Solder Paste

- Water Soluble Solder Paste

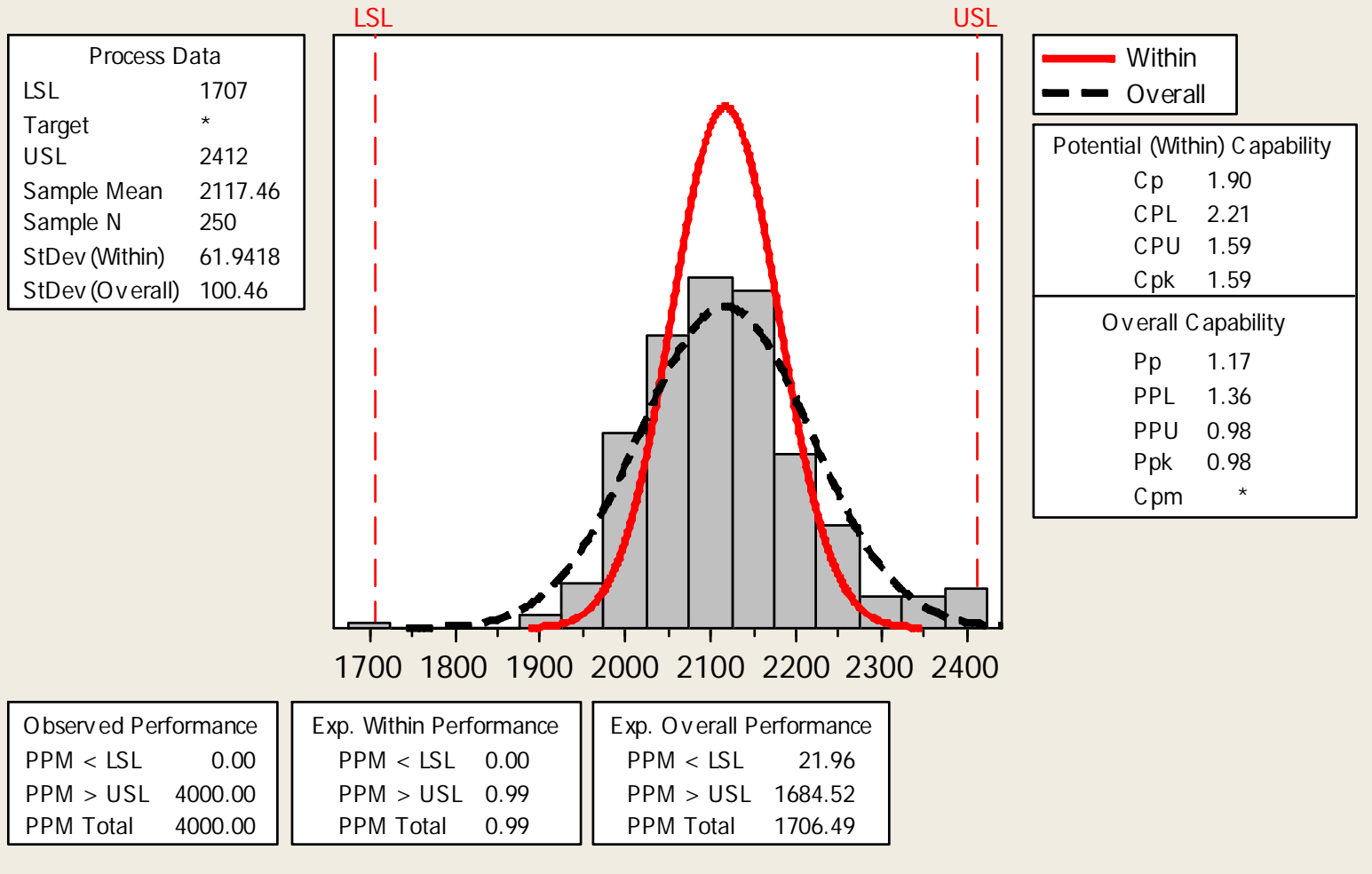
Kester R560, Sn63Pb37 Type 3

[http://www.kester.com/Data%20Sheets/Solder%20Pastes/Water%20Soluble/R560%20Global%20\(10Sep04\).pdf](http://www.kester.com/Data%20Sheets/Solder%20Pastes/Water%20Soluble/R560%20Global%20(10Sep04).pdf)

Koh Young Solder Paste Inspection

Process Capability of Paste Volume (mil³)

Solder Paste: Kester R560 Stencil Thickness : 5mil Aperture Opening : 90%



5DX Inspections Result

	Signal Pin	Connectors Tested	Pins Tested	5DX Calls				Failure			
				Connector		Pin		Connector		Pin	
				# of Conn.	Call Rate %	# of Pins	Call Rate DPMJ	# of Conn.	Failure Rate %	# of Pins	Failure Rate DPMJ
MB	300 pins	250	142,500	0	0.00	0	0.00	0	0.00	0	0.00
	200 pins	250	95,000	0	0.00	0	0.00	0	0.00	0	0.00
DC	300 pins	225	128,250	0	0.00	0	0.00	0	0.00	0	0.00
	200 pins	225	85,500	0	0.00	0	0.00	0	0.00	0	0.00
Total		950	451,250	0	0.00	0	0.00	0	0.00	0	0.00

Build Final Inspection Summary

Description	5Dx	Missing Comp	Polarity	Pillow (outer ball)	Cold Solder	Comp. Damage	Skewed	Label	Solder Beading	PCB Scratches
P2DC-N-R560_2X006	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X007	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X008	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X009	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X010	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X011	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X012	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X013	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X014	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X015	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X016	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X017	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X018	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X019	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X020	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X021	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X022	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X023	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X024	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X025	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK

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Description	5Dx	Missing Comp	Polarity	Pillow (outer ball)	Cold Solder	Comp. Damage	Skewed	Label	Solder Beading	PCB Scratches
P2DC-N-R560_2X026	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X027	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X028	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X029	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X030	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X031	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X032	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X033	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X034	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X035	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X036	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X037	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X038	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X039	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X040	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X041	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X042	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X043	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X044	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X045	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X046	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X047	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X048	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X049	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2DC-N-R560_2X050	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK

Build Final Inspection Summary

Description	5Dx	Missing Comp	Polarity	Pillow (outer ball)	Cold Solder	Comp. Damage	Skewed	Label	Solder Beadin	PCB Scratches
P2MB-N-R560_2X001	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X002	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X003	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X004	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X005	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X006	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X007	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X008	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X009	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X010	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X011	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
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P2MB-N-R560_2X013	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X014	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X015	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X016	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X017	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X018	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X019	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X020	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X021	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X022	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X023	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X024	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
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P2MB-N-R560_2X029	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X030	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X031	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X032	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X033	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X034	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X035	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X036	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X037	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X038	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X039	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X040	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X041	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
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P2MB-N-R560_2X043	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X044	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X045	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X046	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X047	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X048	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X049	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK
P2MB-N-R560_2X050	Pass	OK	OK	OK	OK	OK	OK	OK	OK	OK

No Issues were found in this validation run with respect to board design and it's manufacturability.

No defects nor false call that related to soldering quality reported at 5DX

Defects rate was 0% resulted 100% yield.