This is a condensed version of Lintech's Component Authenticity Inspection Report made from excerpts. Complete CAIRs contain approximately 20 pages.

Advanced Component Testing

Certificate of Compliance

Prepared For: **Sample Report**
711 Imaginary Street
Ronkonkoma, NY 11779

PO :	B5988C	Date Received:	August 10, 2015
Customer P/N:	STK14C88-3N35I	Customer Pkg slip count:	6
Mfr Part No:	STK14C88-3N35I	ACT Actual count:	6
Manufacturer:	SIMTEK	Lot Quantity Passed:	5
Date Code:	0622	Samples Destroyed:	1
Lot Code :	CA0978E	Screening Spec:	CAIR
Dwg / Datasheet:	SIMTEK STK14C88-3 D/S Doc. # ML0015 Rev. 2.0 Feb. 2008		

Test Procedure

In accordance with ACT Quote # 30327 testing was performed to assess the authenticity of the components. Test results are on file and available for inspection at our facility upon request. This report may not be reproduced in any format unless the reproduction is a complete and true copy of the original.

Analysis Summary

Six (6) devices were received for component authenticity testing. One (1) of these devices was subjected to XRF lead analysis, dimensional analysis, Remarking and Resurfacing inspection utilizing various chemical solutions, V-I Curve Trace testing, internal X-Ray inspection, and die inspection following de-encapsulation. During inspection and testing, no issues were observed that would indicate these parts are not authentic.

Based on the results of the tests performed, we have no reason to question the authenticity of the components. All devices passed inspection and testing.

This is to certify that the materials and / or services listed and shipped herewith under your purchase order referenced above have been processed and tested in accordance with the requirements of said purchase order and specification applicable to that order . Inspection evidence, appropriate test data, necessary to substantiate this certification are on file and available for review upon request

Quality Assurance Manager — 8/17/2015 Date

Engineering Manager — 8/17/2015 Date

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Component Assessment Checklist

Date: 08/17/2015 Work Order: 10603
Page: 1 of 18 Operator: 210

Sample Report P/N: STK14C88-3N35I

Work Order	Customer	Customer Part Number
10603	Sample Report	STK14C88-3N35I
Quantity	**Manufacturer**	**Date Code**
6	SIMTEK	0622
Bottom Marking	**Top Marking**	**Side Marking**
CA0978E	S SIMTEK D - STK14C88-3N35I - 0622 CA0978E	N/A

General Criteria	Samples	Yes	No	NA	Notes
Were all the parts received as a single shipment?	6	X			
Was a single lot / date code received?	6	X			DC-0622
Do the parts appear to have been maintained as one lot?	6	X			
Are all of the parts consistently packaged?	6	X			
Are the parts date codes consistent with the quality of packaging?	6	X			
Is the label information consistent with the parts received?	6	X			
Is the label free of typographical and grammatical errors?	6	X			
Is the label formmatting and/or branding correct?	6	X			

Package Surface Inspection	Samples	Yes	No	NA	Notes
Is the package thickness inconsistent, including bevelled areas?	1		X		
Any dimples with uneven depth?	1		X		
Any significant package variation for parts with the same date/lot code?	1		X		
Any differences in the corner radius between the top and bottom surfaces?	1		X		
Any cracks or visible damage such as burn marks?	1		X		
Any color discrepancy between the top and bottom of the part?	1		X		
Any glue, adhesives or other residues on the surface of the package?	1		X		
Any evidence of color fade on the body of the part?	1		X		
Any signs of corrosion on body of part or exposed areas of lead-frame?	1		X		
Do indicators have the same texture as the rest of the package surface?	1		X		
Any anomalies in surface texture when inspected and compared at a minimum of 40x magnification?	1		X		
Any ink marks or colored dots on the parts?	1		X		
Are any of the parts chipped?	1		X		
Do any parts show evidence of Blacktopping?	1		X		
If the parts have a Pin Indicator, does the Pin Indicator location vary between any of the parts?	1		X		
Is Pin1 hole filled in?	1		X		
Are indicators on top and bottom of part inconsistent?	1		X		
Are there inconsistent circles on part bottom?	1		X		

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Component Assessment Checklist

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 Operator: 210

Sample Report P/N: STK14C88-3N35I

Condition of Component Leads	Samples	Yes	No	NA	Notes
Any non-uniform color?	1		X		
Any tooling marks present?	1	X			(1)
Any coating over base metals on the end of the leads?	1		X		
Any bent or non planar leads?	1		X		
Any excessive or uneven plating?	1		X		
Any missing leads?	1		X		
Any dirt or residue on leads?	1		X		
Any scratches/insertion marks on the inside and outside faces of the leads?	1	X			Some scratching.
Any gross oxidation?	1	X			(2)
Any signs of corrosion on leads?	1		X		
Any excessive solder on leads?	1		X		
Do the leads appear to have signs of possible re-tinning?	1		X		
Are the leads trimmed?	1		X		
Any evidence of repairs, extensions or other forms of rework?	1		X		

Notes:
1. Lead forming tool marks.
2. Some slight oxidation.

Inspection of Manufacturer's Datasheet	Samples	Yes	No	NA	Notes
Verified number of pins per part	1	X			
Verified package type	1	X			
Verified dimensions	1	X			
Verified Pin 1 placement	1	X			
Verified part markings	1			X	No golden device.

Package Marking Inspection or Placement	Samples	Yes	No	NA	Notes
Any inconsistent marking styles for parts with the same date / lot code?	1		X		
Any inconsistent country of origin for parts with the same date / lot code?	1		X		C.O.O. Philippines
Any inconsistent body molds for parts with the same date / lot codes?	1		X		
Any inconsistent markings for parts with the same date / lot codes?	1		X		
Any previous marking partially visible on the surface?	1		X		
Any inconsistent markings on the bottom of parts?	1		X		
If available, any discrepancies when comparing the part logo(s) to a part received from the OEM?	1			X	(3)

Notes:
3. A golden device was not received.

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Component Assessment Checklist

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 Operator: 210

Sample Report P/N: STK14C88-3N35I

Remarking and Resurfacing Test Steps	Samples	Yes	No	NA	Notes
Tested marking permanence with a solution of 3 parts mineral spirits and 1 part alcohol. Are markings acceptable?	1	X			
Tested part surfaces by wiping them with a swab dipped in Acetone. Is surface acceptable?	1	X			
Tested part surfaces by wiping them with a swab after soaking in heated Dynasolve 711/750. Is surface acceptable?	1	X			
Tested part surfaces by wiping them with a swab after soaking in heated 1-Methyl-2-pyrrolidinone. Is surface acceptable?	1			X	(4)
Tested part surfaces by mechanically scraping. Is surface acceptable?	1			X	(5)

Notes:
4. Not part of CAIR testing.
5. Not part of CAIR testing.

Internal Part Evaluation Steps	Samples	Yes	No	NA	Notes
Hermetically sealed device?	1		X		
Is DIE free of damage or defects(scribe marks, surface scratches, chipouts or cracks)?	1	X			
Are DIE markings present and consistent with external package markings?	1	X			(6)
Is DIE free of contamination or foreign materials?	1	X			
Acceptable DIE bonding?	1	X			
Acceptable DIE attach?	1	X			
Acceptable flag / substrate materials?	1	X			
Acceptable DIE map layout?	1			X	(7)
Overall quality acceptable?	1	X			
Is the quality of the wirebonds acceptable?	1	X			

Notes:
6. Die Marking: CSM 256K - SIMTEK - STK14C88V3N M C 2002
7. No die map on file.

Radiographic Inspection	Samples	Yes	No	NA	Notes
Verified homogeneity, consistency and uniformity of parts with same date / lot code?	1	X			
Inspected images using the appropriate Mil-Std requirements?	1	X			
Is wire bond quality acceptable? (loop height, bond alignment)	1	X			

Lead Finish Evaluation/Solder Ball &Column Comp	Samples	Yes	No	NA	Notes
Does the lead finish / solder ball & column composition match the datasheet?	1	X			
Are the devices RoHS compliant?	1		X		

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Component Assessment Checklist

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Sample Report P/N: STK14C88-3N35I

Electrical Test Parameters	Samples	Yes	No	NA	Notes
Microcircuits and Semiconductors: Pin to Pin Curve Tracer comparison?	1	X			(8)
Resistors, heaters, fuses: DC resistance measurement at ambient temperature?	1			X	
Capacitors, filters: Capacitance and dissipation measurement at ambient temperature, insulation resistance.	1			X	
Inductors: Inductance measurement at ambient temperature	1			X	
Transformers: Winding to winding isolation, winding continuity, winding inductance at ambient temperature.	1			X	
Connectors: Pin-Pin isolation and Pin-Case isolation. A minimum of 10 pins randomly selected or 25% of pins, whichever is greater.	1			X	
Relays: Input inductance, contact resistance.	1			X	

Notes:
8. Device passed. See Curve Trace results to follow..

Test Standards Reference

Test Item	MIL-STD-883	MIL-STD-202	MIL-STD-750	AS 6081	IDEA-STD-1010	ACT
External Visual Receiving	-	-	-	4.2.6.4.1	10.1.5	Various
External Visual	2009	-	2071	4.2.6.4.2.1	10.3.1	ES2250
External Visual 40x	2009	-	2071	4.2.6.4.2.2	10.3.1	ES2250
Physical Dimensions	2016	-	2066	4.2.6.4.2.2	10.3.3	ES2300
Remark Inspection (Marking Permanency)	2015	215	1022	4.2.6.4.3A	10.3.2.1	ES2270
Blacktop (Acetone)	-	-	-	4.2.6.4.3.B.1	10.3.2.2	ES2220
Blacktop (1-Methyl-2-pyrrolidinone)	-	-	-	4.2.6.4.3.B.2	11.6	ES2220
Blacktop (Dynasolve)	-	-	-	4.2.6.4.3.B.3	11.6	ES2220
X-Ray	2012	209	2076	4.2.6.4.4	11.4	ES2230
XRF	2037	-	-	4.2.6.4.5	11.3	ES2200
Internal Visual Inspection (DPA)	2013	-	2078	-	-	Various
Solderability	2003	208	2026	-	11.1	ES2240
Bake and Dry-Packing	J-STD-033	J-STD-033	J-STD-033	J-STD-033	6.2	Various
V-I Curve Trace @ 25° C	5003	Various	Various	4.2.6.5	-	Various
Electrical Functional Testing	Various	Various	Various	4.2.6.5	-	Various
Electrical Parameters @ 25° C	Various	Various	Various	4.2.6.5	-	Various
Device Up-screening	5004	-	-	-	-	Various
Burn-in Tests	1015	-	1038 - 1040	4.2.6.5	-	Various
Scanning Electron Microscopy (SEM)	2018	-	2077	4.2.6.4.3C	-	Various
Fine / Gross Leak Testing	1014	112	1071	-	-	Various
Particle Impact Noise Detection PIND	2020	217	2052	-	-	Various

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Sample Report P/N: STK14C88-3N35I

Tests Performed

Test Item	Samples	Qty Good	Qty Fail	Pass/Fail	Date	Tech	Comments
External Visual Receiving	6	6	0	Pass	8/10/2015	WV	
External Visual	6	6	0	Pass	8/10/2015	WV	(1)
External Visual 40x	1	1	0	Pass	8/10/2015	NH	(2)
Physical Dimensions	1	1	0	Pass	8/10/2015	NH	(5)
Remark Inspection (Marking Permanency)	1	1	0	Pass	8/10/2015	NH	(6)
Blacktop (Acetone)	1	1	0	Pass	8/10/2015	NH	(7)
Blacktop (1-Methyl-2-pyrrolidinone)	N/A	N/A	N/A	N/A	N/A	N/A	
Blacktop (Dynasolve)	1	1	0	Pass	8/12/2015	NH	(8)
X-Ray	1	1	0	Pass	8/11/2015	NH	(3)
XRF	1	1	0	Pass	8/11/2015	NH	(4)
Internal Visual Inspection (DPA)	1	1	0	Pass	8/12/2015	NH	(10)
Solderability	N/A	N/A	N/A	N/A	N/A	N/A	
Bake and Dry-Packing	N/A	N/A	N/A	N/A	N/A	N/A	
V-I Curve Trace @ 25° C	1	1	0	Pass	8/11/2015	NH	(9)
Electrical Functional Testing	N/A	N/A	N/A	N/A	N/A	N/A	
Electrical Parameters @ 25° C	N/A	N/A	N/A	N/A	N/A	N/A	
Device Up-screening	N/A	N/A	N/A	N/A	N/A	N/A	
Burn-in Tests	N/A	N/A	N/A	N/A	N/A	N/A	
Scanning Electron Microscopy (SEM)	N/A	N/A	N/A	N/A	N/A	N/A	
Fine / Gross Leak Testing	N/A	N/A	N/A	N/A	N/A	N/A	
Particle Impact Noise Detection PIND	N/A	N/A	N/A	N/A	N/A	N/A	

Excerpt of Tests Performed page.

Tests Performed

(continued)

Comments:

1. A gross visual of the devices did not cause concern about the components indicating the devices are not authentic.

2. An external visual 40x of the devices did not present signs that would indicate the components are not authentic.

3. An X-Ray of the devices did not present any obvious defects that would indicate the components are not authentic. All devices appear to have uniform die shape, die size, die bonding, and lead frame geometry. Exposure: 45.1 kV 1 minutes 25 seconds

4. An XRF of the devices did not present any obvious incorrect composition that would indicate the components are not authentic.

5. Physical dimensions measurements of the device did not present any obvious defects that would indicate the components are not authentic.

Part History Analysis:

GIDEP checked 8/17/2015 : No alerts found
ERAI checked 8/17/2015 : Suspect counterfeit alert found for DC-0630 on 10/29/2014
ACT history checked 8/17/2015 : No previous history on file
Device MFG status checked 8/17/2015 : Discontinued, LTB- 29-Sep-2006

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Sample Report P/N: STK14C88-3N35I

Results will appear on separate pages in full report.

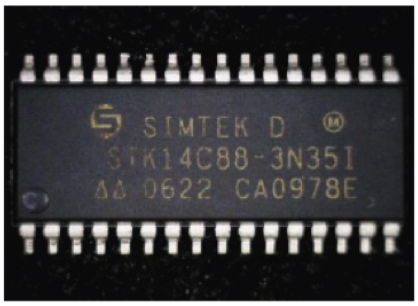

Figure 1
Typical Top View of Devices

A full report will also contain photos of leads and Isopropyl, Acetone and Dynasolve 750 test results...

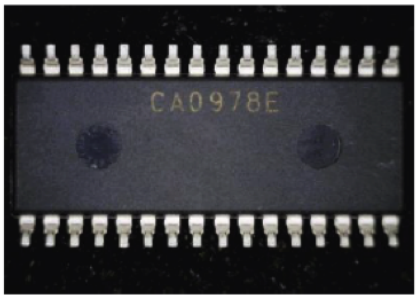

Figure 2
Typical Bottom View of Devices

XRF Composition Analysis / RoHS Test

Typical Test Summary

XL3t-89837

Reading No	2108
Mode	Electronics Metals
Time	2015-08-11 10:17
Duration	30.00
Units	ppm
Sigma Value	2
Sequence	Final
PART NUMBER	STK14C88-3N351
DATE CODE	0622

	ppm	±	Error
Sn	684547.375	±	18523.031
Cd	0	:	N/A
Pb	143795.078	±	5379.172
Hg	0	:	N/A
Cu	162816.969	±	6430.678
Ni	0	:	N/A
Cr	0	:	N/A
Al	0	:	N/A
Ag	0	:	N/A
Au	0	:	N/A

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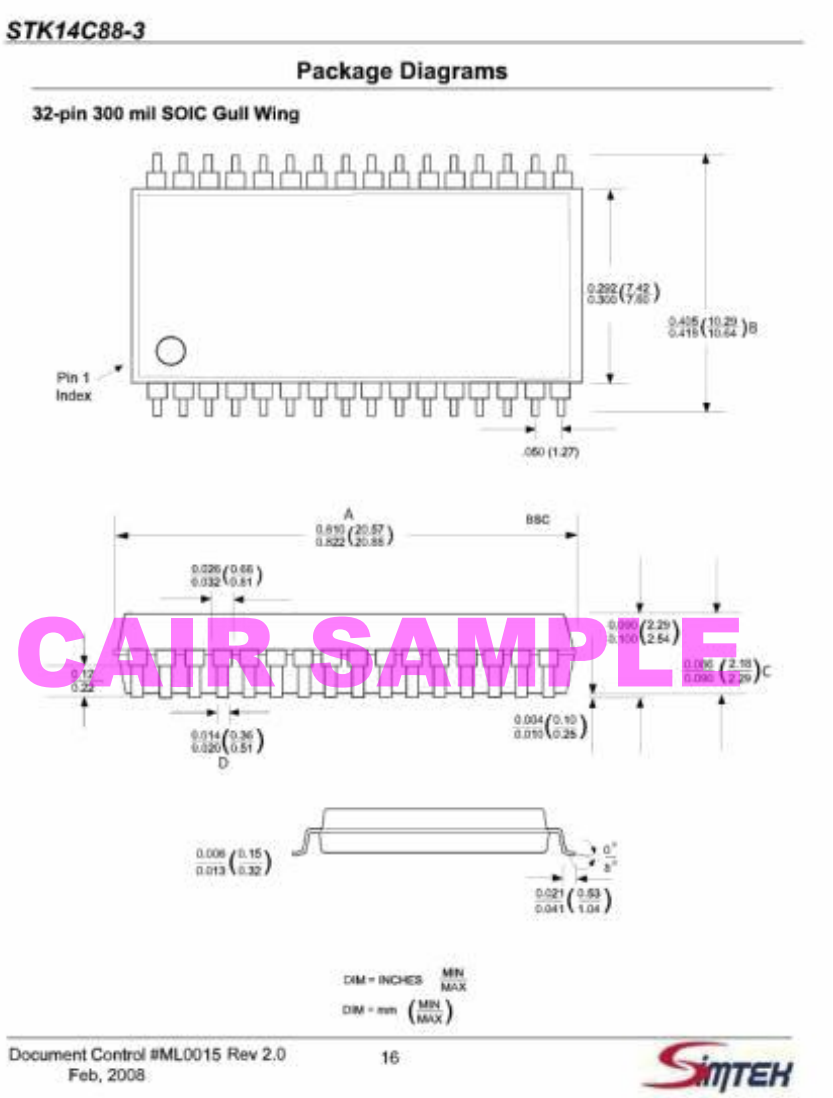
Sample Report P/N: STK14C88-3N35I

Physical Dimensions



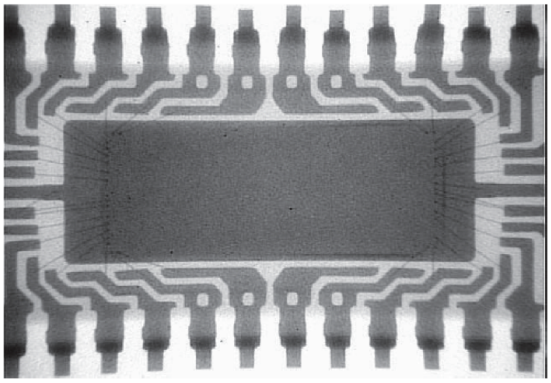
X-Ray results will appear on separate page in full report.

Dimensions	A	B	C	D
Minimum	0.810	0.405	0.086	0.014
Typical	-	-	-	-
Maximum	0.822	0.419	0.090	0.032
Sample Number				
A	0.8205	0.4125	0.0885	0.0160

X-Ray

Typical Test Summary

Glenbrook Jewel Box 70T



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Sample Report P/N: STK14C88-3N35I

V-I Curve Trace Testing

Pin Print Comparison Report

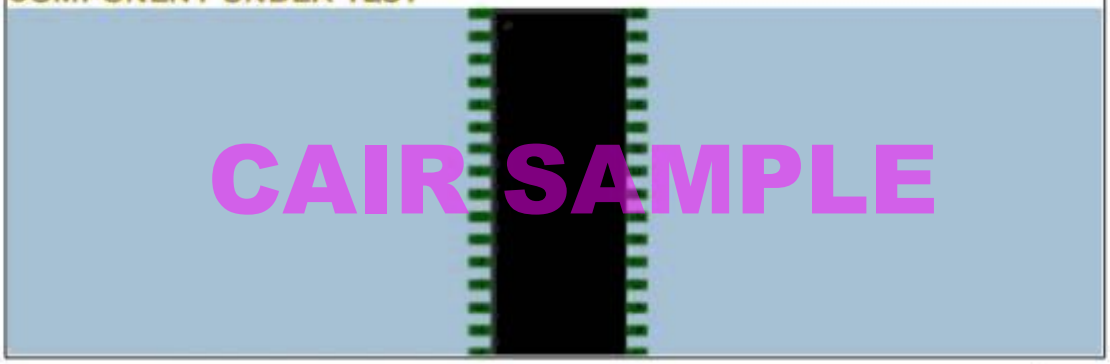
COMPONENT DETAILS
Component Reference : STK14C88-3N351
Package : 32 pin SOIC wide
Adapter : ABI Universal SOIC Adapter (32 pins)
Manufacturer : SIMTEK

Operator : Administrator

Comparison Tolerances
Horizontal Tolerance : 5
Vertical Tolerance : 5
Pin Fail Tolerance : 65
Pin Suspect Tolerance : 90
Fail if Fails Tolerance : 5
Fail if Suspects Tolerance : 15
Suspect if Fails Tolerance : 3
Suspect if Fails Tolerance : 10

OVERALL RESULT
SUCCESS

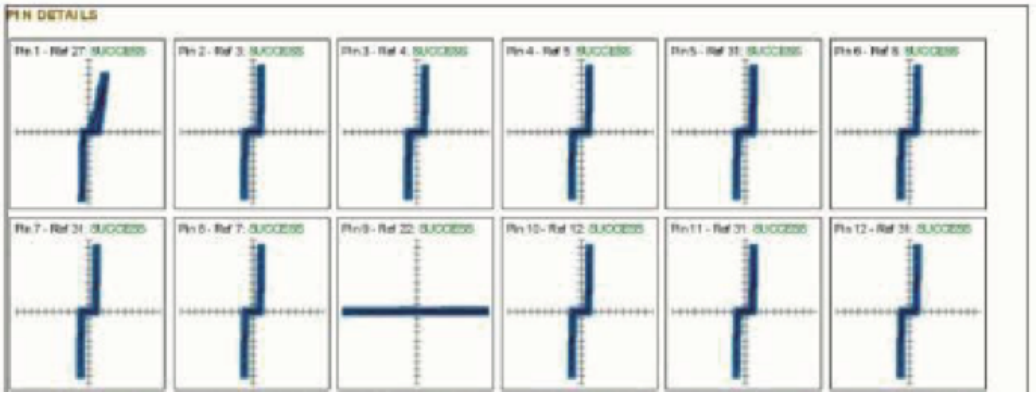
COMPONENT UNDER TEST



PIN SUMMARY

Pin 1: 100% SUCCESS	Pin 2: 100% SUCCESS	Pin 3: 100% SUCCESS
Pin 4: 100% SUCCESS	Pin 5: 100% SUCCESS	Pin 6: 100% SUCCESS
Pin 7: 100% SUCCESS	Pin 8: 100% SUCCESS	Pin 9: 100% SUCCESS
Pin 10: 100% SUCCESS	Pin 11: 100% SUCCESS	Pin 12: 100% SUCCESS
Pin 13: 100% SUCCESS	Pin 14: 100% SUCCESS	Pin 15: 100% SUCCESS
Pin 16: 100% SUCCESS	Pin 17: 100% SUCCESS	Pin 18: 100% SUCCESS
Pin 19: 100% SUCCESS	Pin 20: 100% SUCCESS	Pin 21: 100% SUCCESS
Pin 22: 100% SUCCESS	Pin 23: 100% SUCCESS	Pin 24: 100% SUCCESS

Excerpt of Testing Images from next page (removed for sampling purposes).



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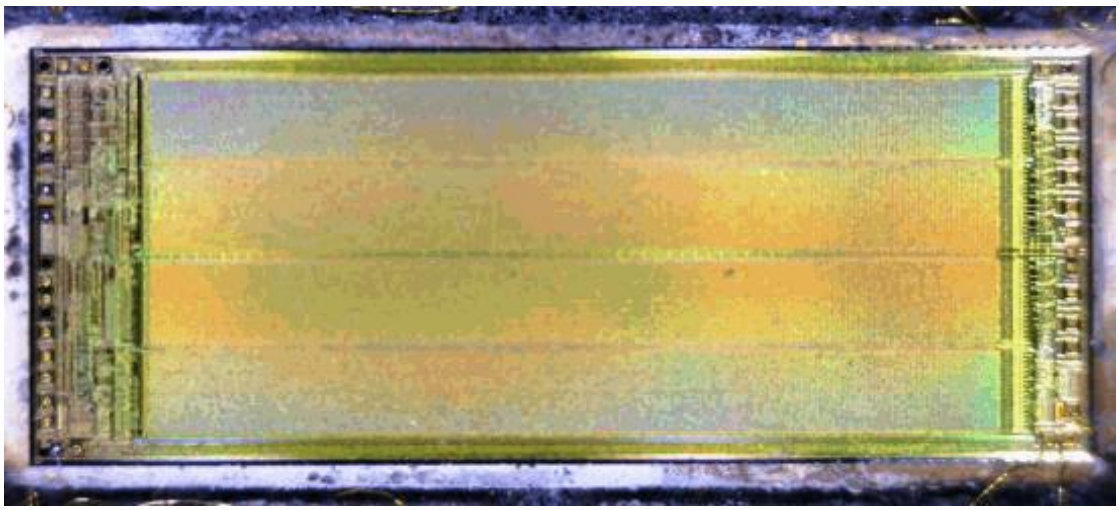
Sample Report P/N: STK14C88-3N35I

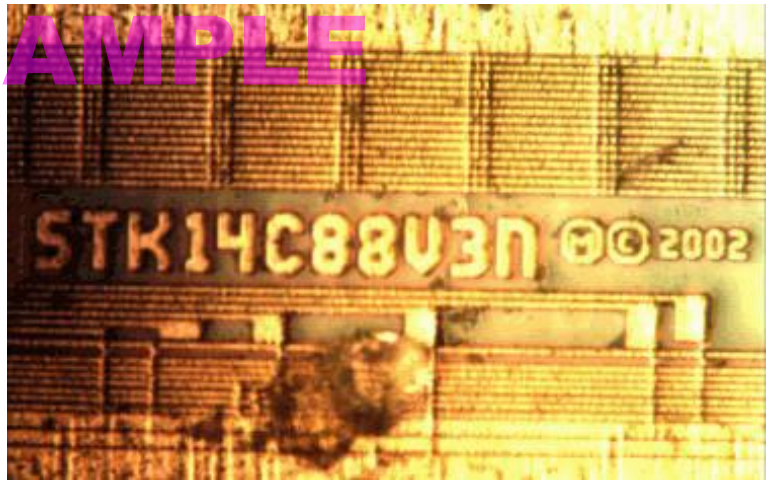
Device Die

Device A



Overall Die

Die Marking



Die Marking