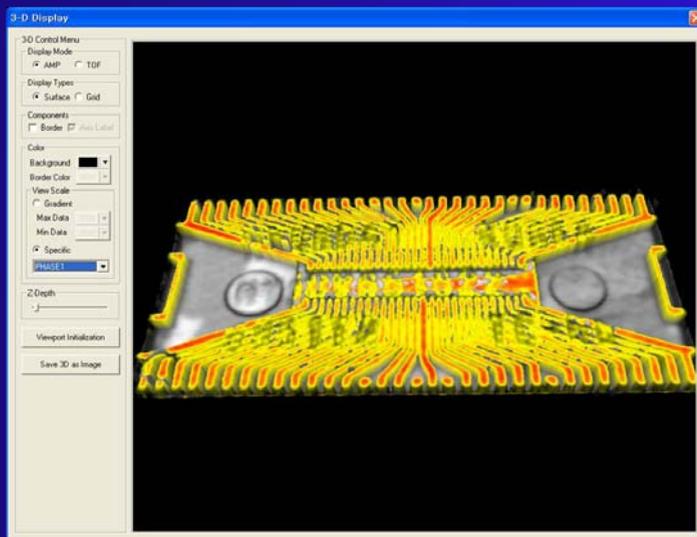




AcouLab
New generation acoustic solution

Scanning Acoustic Microscope SAM2400™



#151 ~ 152 Chungnam Techno Park

244-19 Songkok-ri Yeomchi-uep Asan-city Chungcheongnam-do, Korea

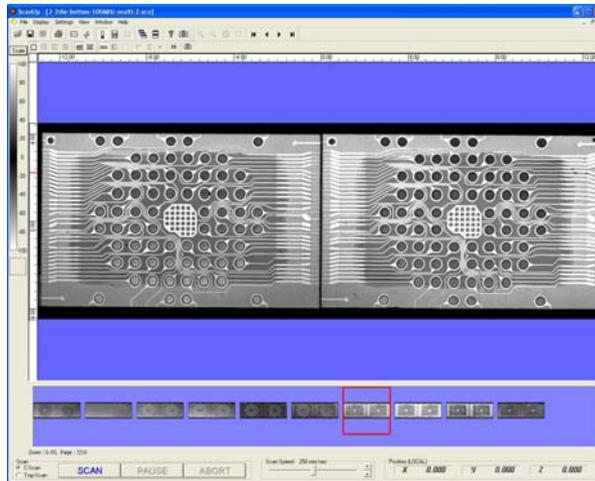
Tel : 82-41-543-8072~3, Fax : 82-41-543-8074



Scanning Acoustic Microscope

Features of AcouLab SAM2400™

- Easy to use and user friendly operation
- Linear servo motor mechanism provides high speed, smooth scanning and good repeatability
- Well matched, high performance ultrasonic electronics and transducers enable the user to make high resolution images
- Quantitative and qualitative image analysis with advanced ScanUp and ScanAnalysis software
- Multi layer view from single scan
- Applications in semiconductor, electronic part, bio & life science and material Testing





Specification of SAM2400™

Ultrasonic Pulser/Receiver

- Low noise, high performance pulser/receiver derives the ultrasonic signal of ultra wide-bandwidth characteristics from the transducer.
- Frequency Range : 1 - 150MHz (OPTION 500MHz)
- Continuous High/Low Pass Filter to eliminate high & low frequency noise, step 1MHz

A/D Converter

- 2 GS/s Sampling Rate, 1 GHz Bandwidth

Scan Axis

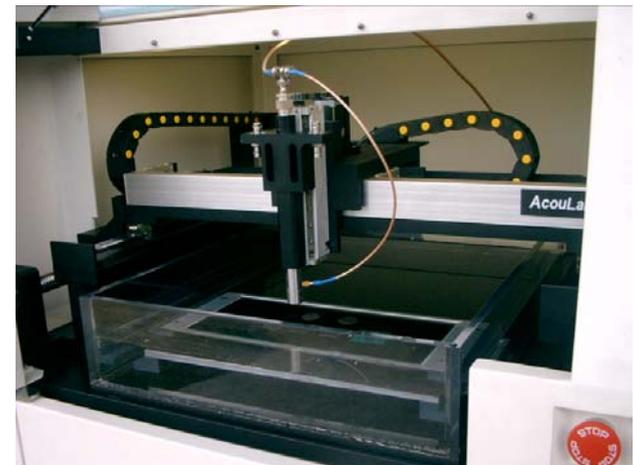
- Linear servo motor
- Max. Stroke : 500mm (Option 800mm)
- Max. Speed : 1000mm/s
- Repeatability : +/-0.5 micron
- Encoder Resolution : 0.5 micron

Index Axis

- Micro stepping motor with lead screw
- Max. Stroke 400mm (Option 800mm)
- Step Resolution 0.1 micron

Vertical Axis

- Micro stepping motor with lead screw
- Max. Stroke 100mm
- Vertical Resolution 2.5 micron (Option 0.1 micron)

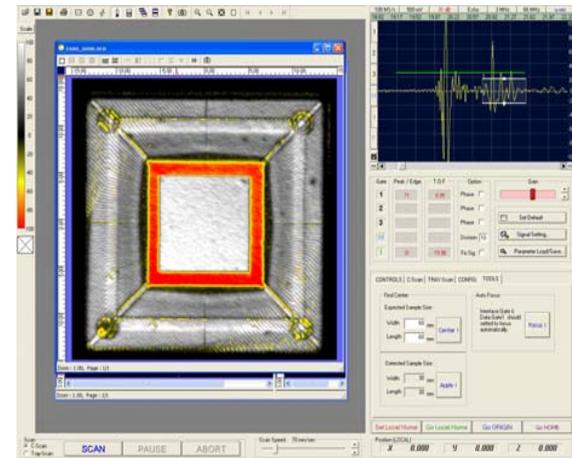




Specification of SAM2400™

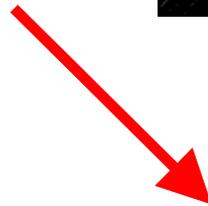
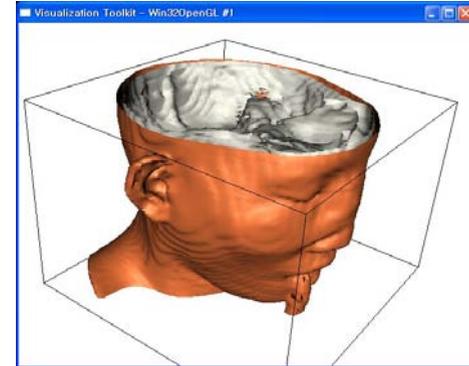
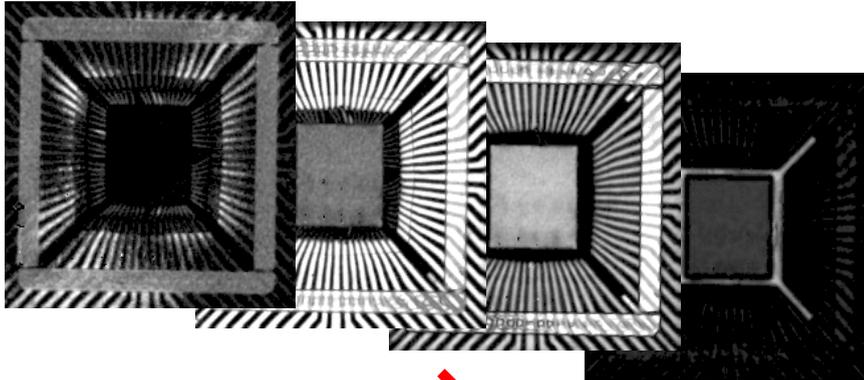
ScanUp and Scan Analysis Software

- Windows XP base software for system control and image analysis
- Image Processing : Zoom In/Out, Image Inversion (B&W), Brightness and Contrast Adjustment, Contrast Enhancement, Edge Enhancement, Filtering Options
- Automatic and manual setup
- Automatic focusing
- Pulse-echo and thru-transmission modes of operations
- A, B, C-Scan, TOF 3D display & V3D™
- Bulk Scan for Off-line Analysis
- Multi-Layer Scan (Upto 20 layers), Tray Scan and Specific Area Scan
- C-Scan image for amplitude, time of flight and phase inversion
- FFT for transducer evaluation
- Size measurement
- 24 bit pseudo color and black & white display
- Large Area Scanning System upto 750 x750mm
- Waterfall scanning system
- Automatic loading/unloading system
- Other options are available upon request

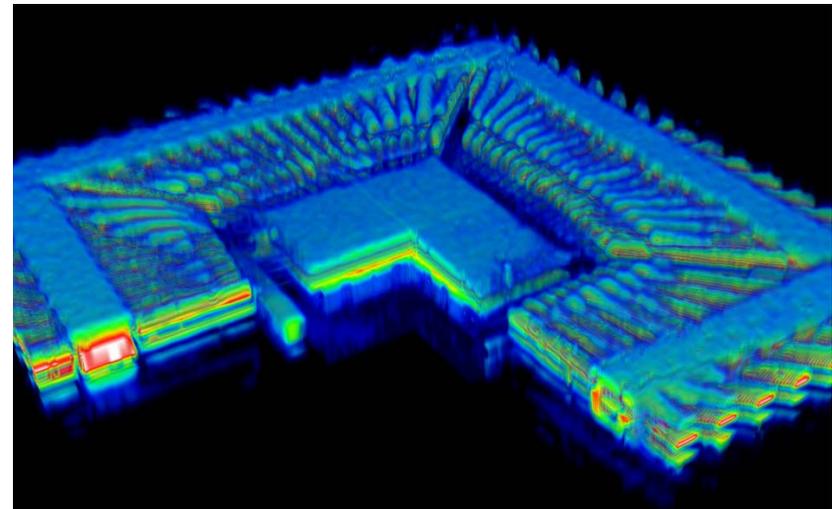




What is V3D™ ?



**Virtual 3D Image using
10 layers C-Scan images**



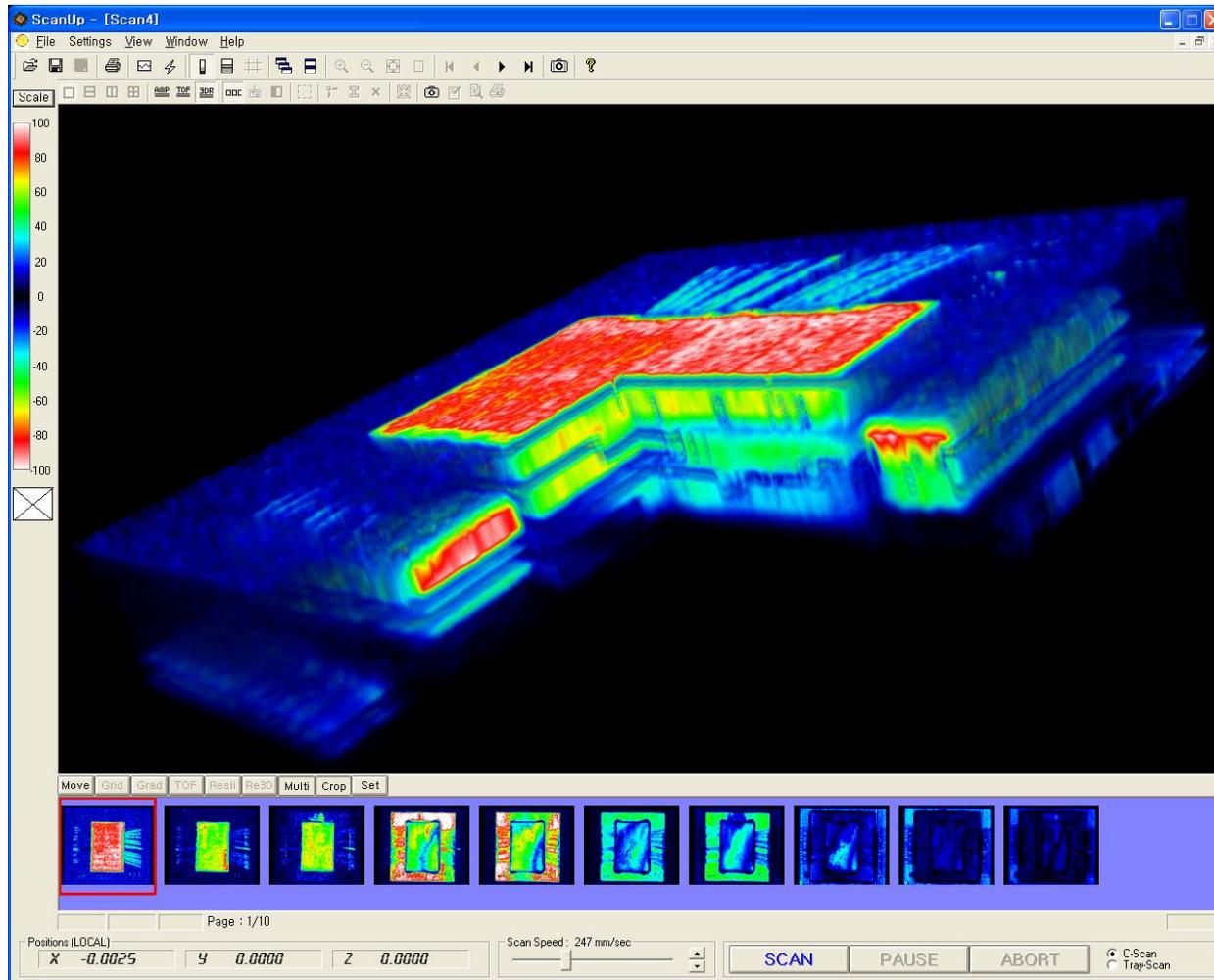


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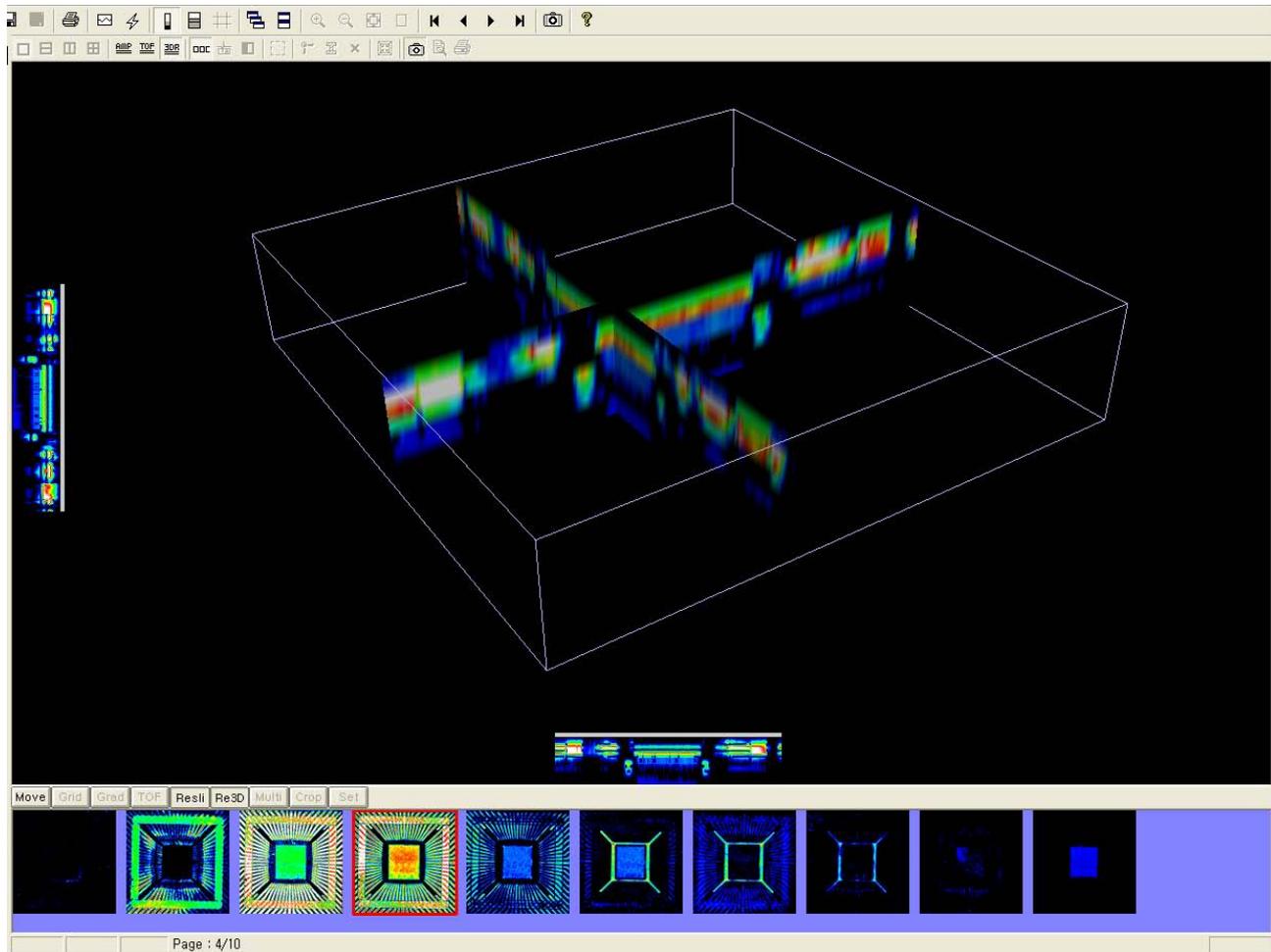


Application with Virtual 3D





Application with Virtual 3D





User friendly Report

ScanUp - [psi_phase_ascan2.scn]

Scale | Print... | Next Page | Prev Page | One Page | Zoom In | Zoom Out | Close

Inspection Report

User Info.

Company: _____
 Part & Position: _____
 Name: _____

Specimen Info.

No. _____ Size (mm) 50.0/18.0 Date 05/05/02 10:08
 Comment: _____

Sensor Info.

Frequency _____ Focal Len. _____ Diameter _____

Signal Info.

Gain (dB)	6 dB	H.P. Filter	510Hz	L.P. Filter	67 MHz
Receiver Mode	Echo	Pulse Voltage	200V	Pulse Width	5.00 ns
Sampling Rate	500 MHz	Voltage Level	500 mV	Offset	0
Unit	u-sec	Gate Start	0.65	Gate Length	0.42

Scan Image

AScan List					
No.	Position	AMP	TOP	Comment	
1	6.2 -1.1	55%	1.31		
2	6.0 0.8	-30%	2.51		
3	18.0 6.0	-45%	1.31		
4	22.1 6.2	-35%	2.52		

1 20.2 30.8 31.4 32.0 32.6 33.2 33.9 34.5 35.1

2 20.2 30.8 31.4 32.1 32.7 33.3 33.9 34.5 35.1

3 20.9 30.5 31.1 31.7 32.4 33.0 33.6 34.2 34.8

4 20.9 30.4 31.0 31.7 32.3 32.9 33.5 34.1 34.7

Positions [LOCAL] X 0.0000 Y 0.0000 Z 0.0000 Scan Speed: 498 mm/sec

SCAN PAUSE ABORT C-Scan Tray-Scan

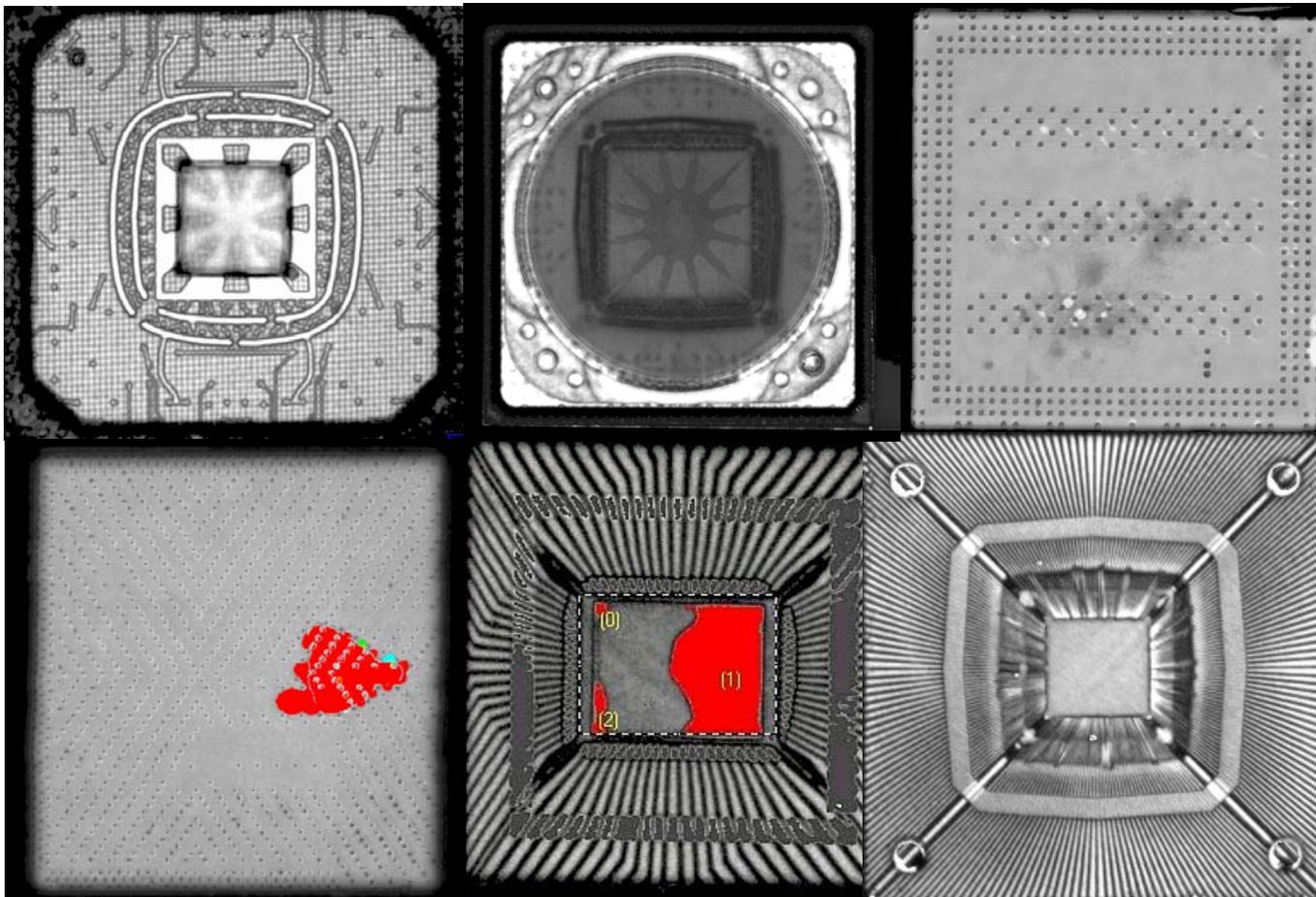


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Various Applications



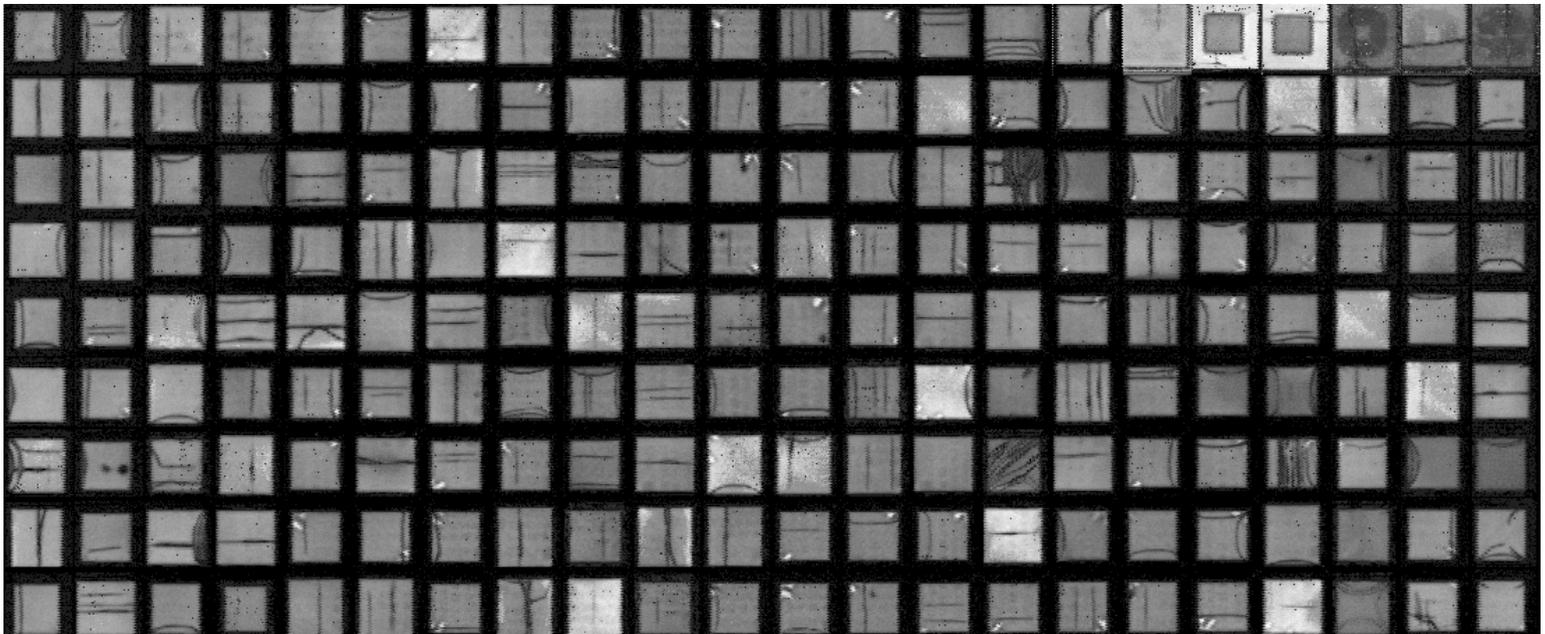


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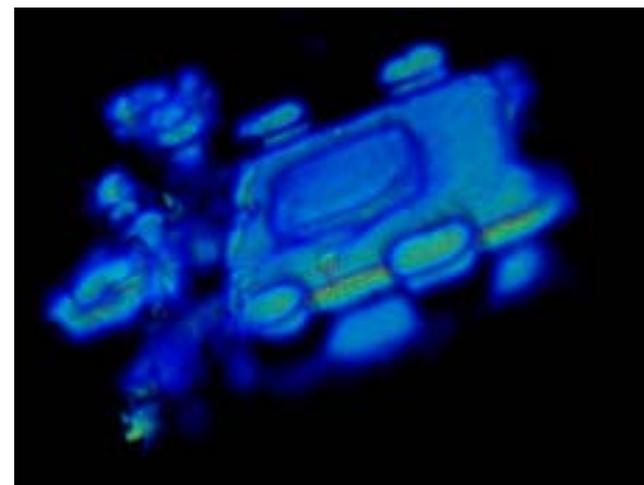
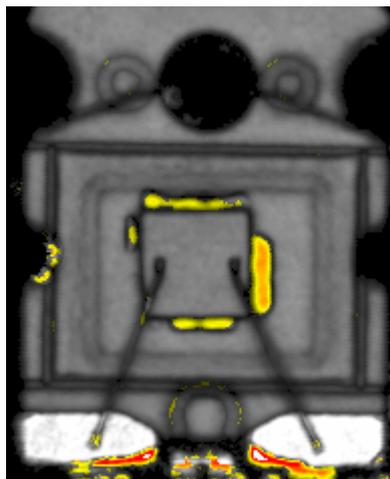
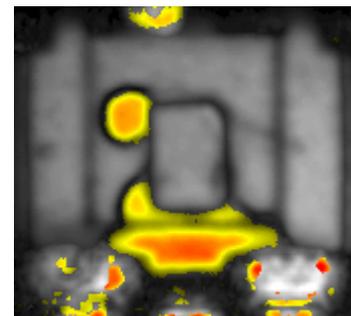


Application with Tray Scan





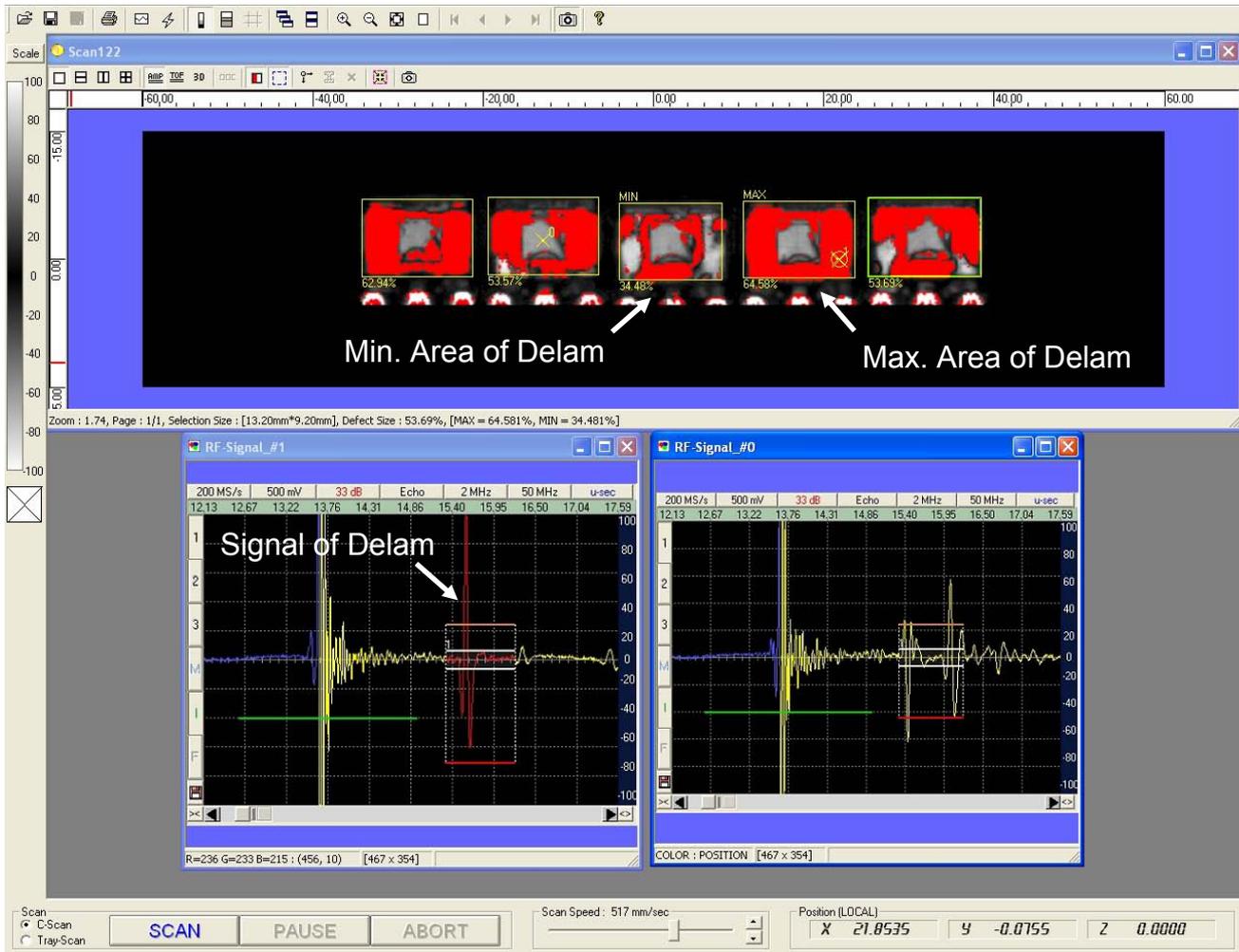
Applications (Power, FET)



Two Kind measurement of Delamination



Applications (Power, FET)



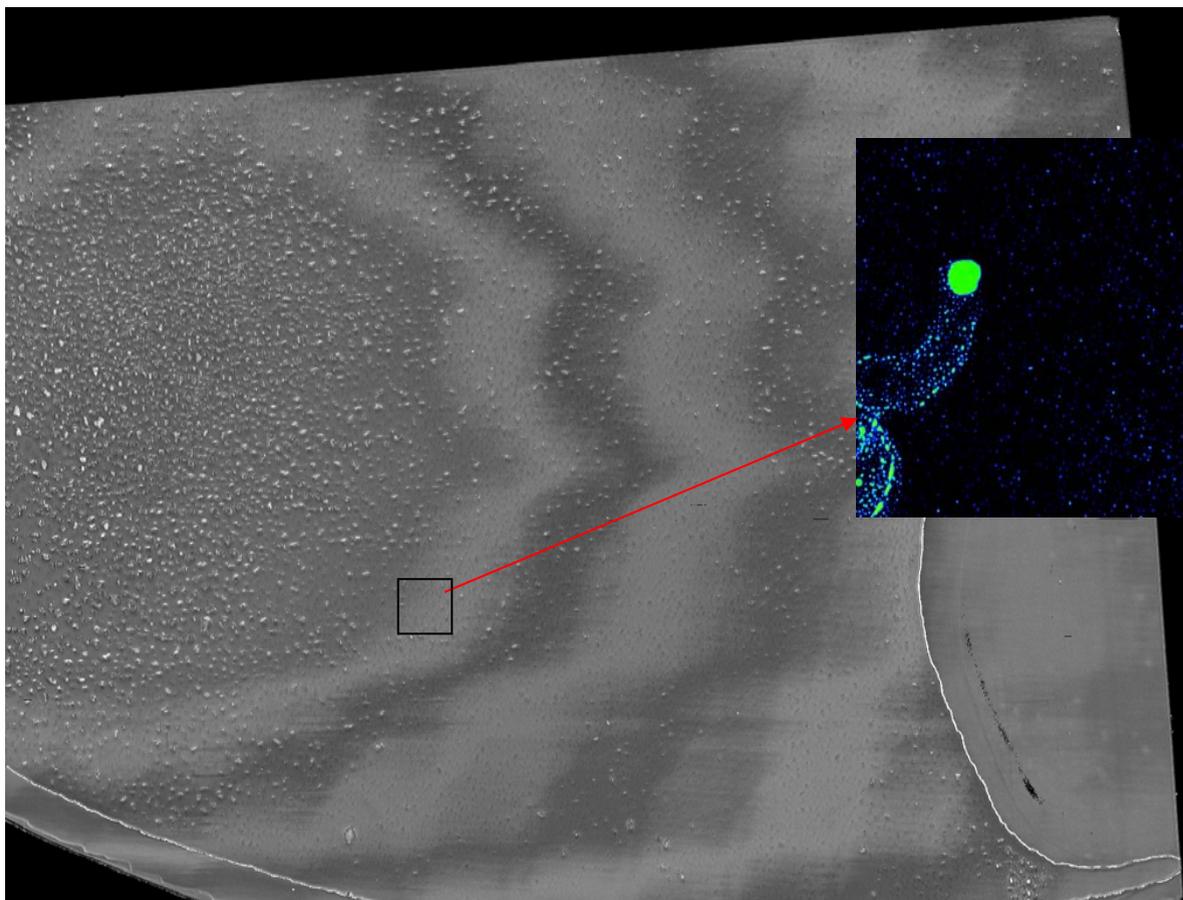


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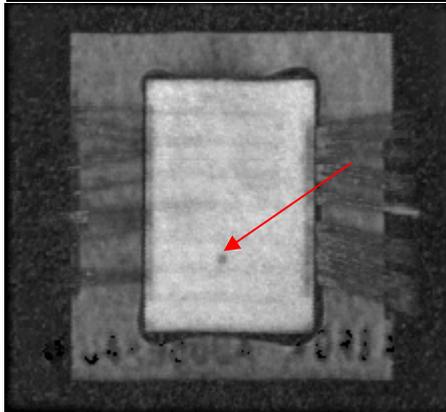
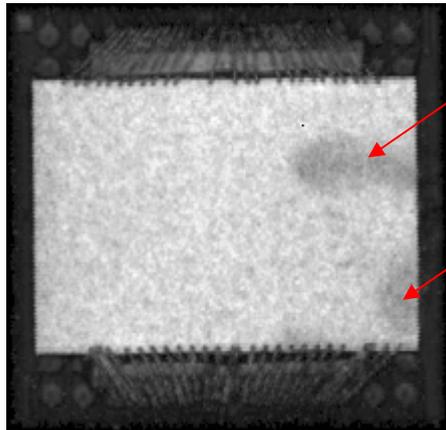


Applications (Wafer)

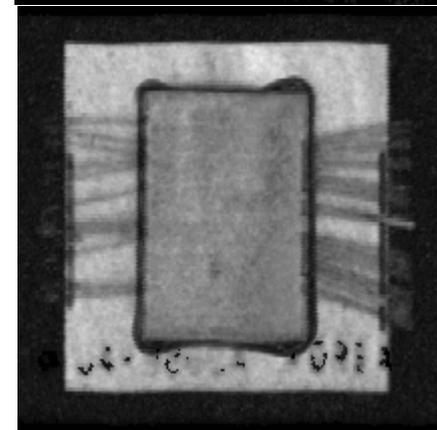
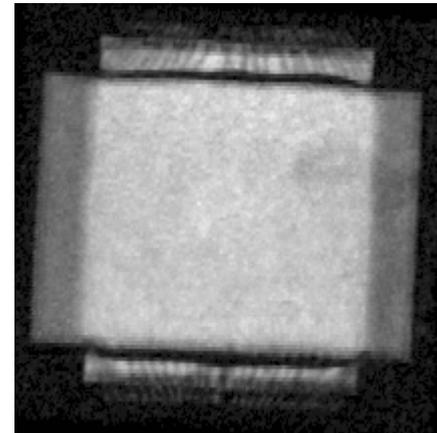




Application for 2 Chip Stacks, TBGA



Focusing on the 1st Layer

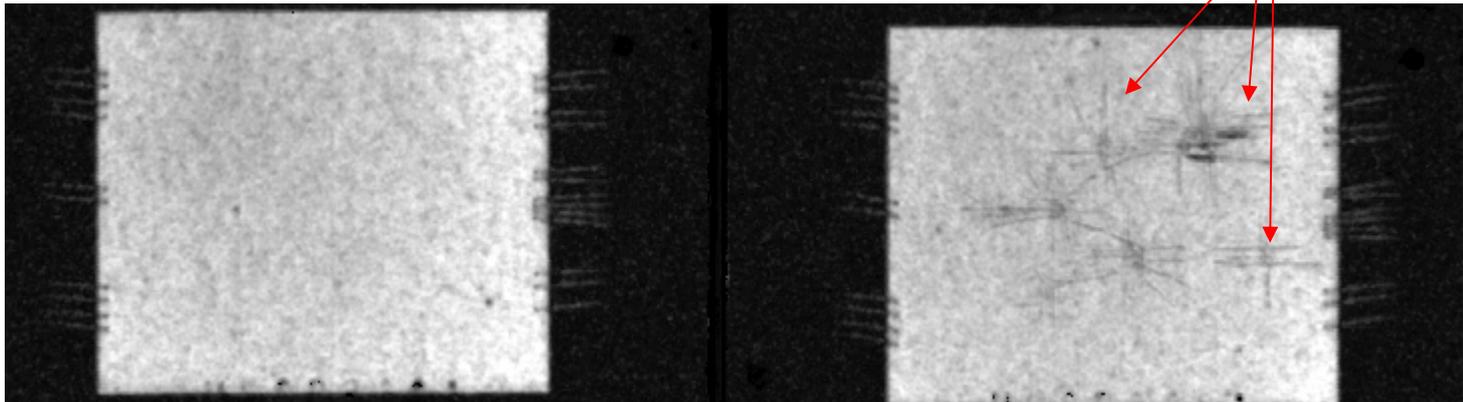


Focusing on the 2nd Layer



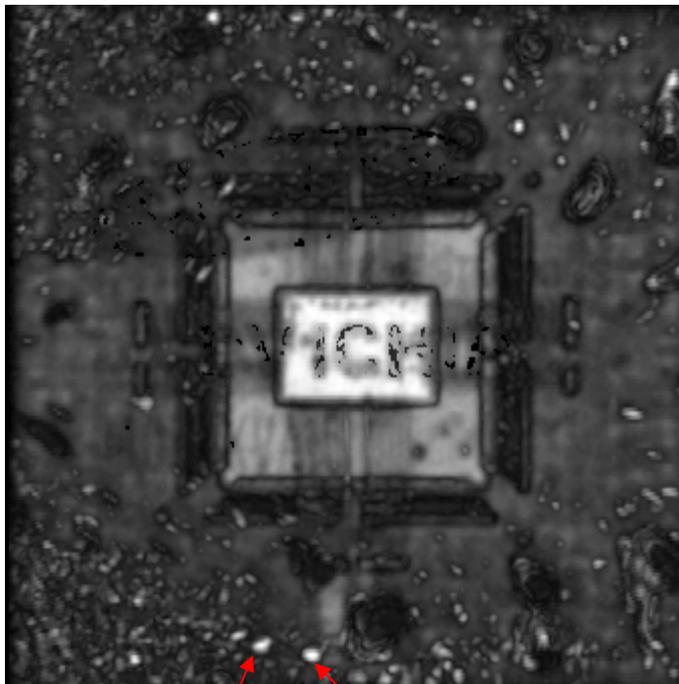
Application for 4 Chip Stacks, FBGA

Micro Crack in Die





Applications



Void in Mold

