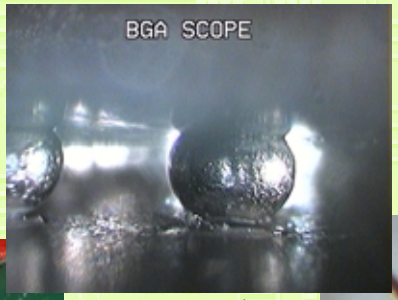
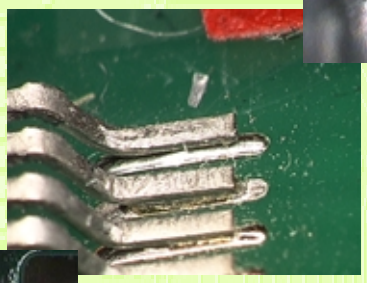
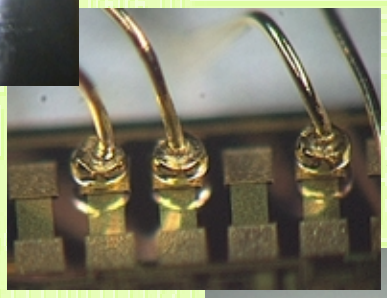
CALTEX
SYSTEMS

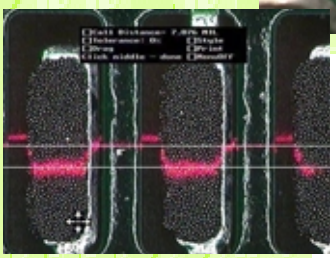
www.BGAscope.com

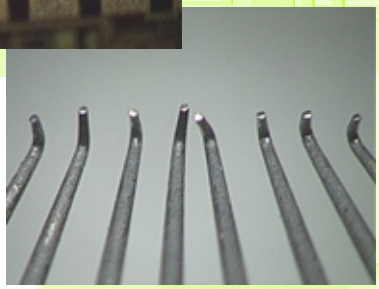


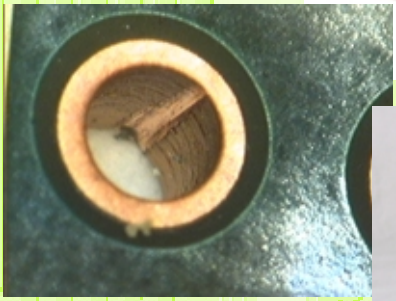
BGA Inspection


SMT Fine Pitch

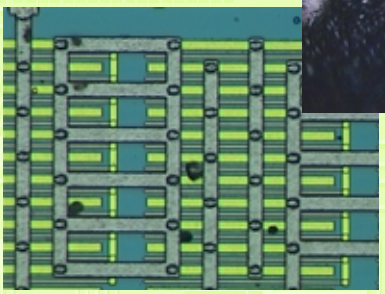

Wire Bond


Solder Paste Measurement


Probe


Through Holes


Handheld Scope


IC/Wafer

Wafer Bump

www.3Dscope.com

3-D DIGITAL-VIDEO TOTAL INSPECTION AND MEASUREMENT SYSTEM

For Surface Mount, Semiconductor, and Microscopy Applications

SYSTEM CONFIGURATION

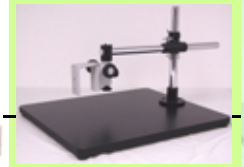
3-D DIGITAL-VIDEO *TOTAL* INSPECTION AND MEASUREMENT

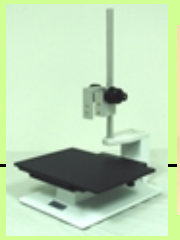
CALTEX 3-D Scope and BGA Scope Systems are MODULAR and EXPANDABLE design system for inspection and measurement, with Interchangeable BGA Scope for BGA and Micro BGA, 3-D Scope for SMT and package level, and high power Mega Zoom for IC, wafer and probe applications.

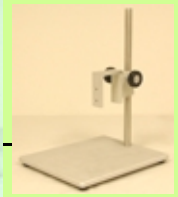
Caltex Systems are capable of magnification from <1x to 4000x, with high resolution RGB video capture and display card for Digital-Video imaging, editing, archiving and email on any PC. Measurement software can perform high precision sub-pixel measurement for X-Y, width, ball height, diameter, radius, pitch, length, area, angle, etc. and completes with Statistical Process Control, Image Analysis and Images Database.

Caltex Systems can be configured with large multi-position boom stand for large circuit board, high precision XY stage for wafer level inspection, and programmable XY measurement stage for outside-field-of-view automatic or manual measurement.


CH-1000


SMF-B Mulit-position boom stand


SM-XY8 High precision XY stage


DS-8 Basic Microscope stand

12MMC
Macro View Lens <1x-20x
For viewing from the whole board to whole component

MX-BGAZ
BGA Scope Lens 50x-200x with 90° view and 3-D Optical Rotation. New! Replaceable Prism Tip, integrated articulated lighting and optic fiber brush.
For viewing underneath and inside BGA and Micro BGA packages, for inspection and measurement

MX-5030RZ with AD-5030RVS
3D Scope: Power Zoom Lens 50x-300x with motorized 3-D Rotary Head and Variable Oblique viewing angles (25 to 55 degree variable), Snap-On design to accept various Snap-On adapters.
For Fine Pitch, J-lead, SMT, Wire Bond, Probe, Wafer Bump, semiconductor package, medical devices and general microscopic inspection & measurement

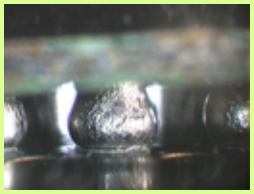
MX-2005C / MX-2525CS
Mega Zoom Lens with Coaxial Lighting: 200x-4000x or 250x-2500x
High resolution images, incredible range of magnification, with **14 mm** working distance
For IC, wafer, probe, metallurgic inspection and measurement

AD-5030SL
50x-300x with Laser Slit Light, Snap-On design
For Solder Paste Height and Volume Measurement
Precision +/- 12 micron at 50x to +/- 2 micron at 300x

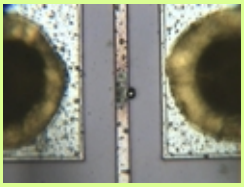
MX-2010Z / MX-1060Z
Super Zoom lens 20x-100x / Ultra Zoom lens 100x-600x
Compact, light-weight, and integrated lighting handheld digital-video microscope with high resolution images output
For SMT inspection, material and metallurgic, and general microscopy

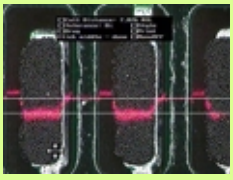
APPLICATIONS


Circuit Board (1x)


BGA solder crack (150x, 90° view)

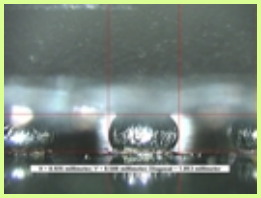
J-lead crack (75x, 45° oblique view)

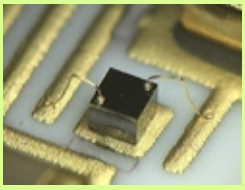

IC/Wafer defect (2000x)

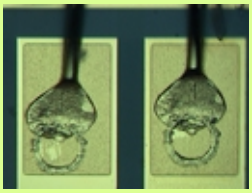

Solder Paste Measurement with Laser Light (150x)

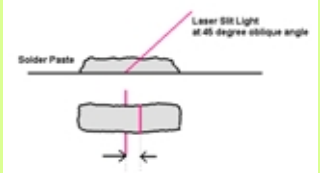

Textile Fiber (100x)


Disk drive head


BGA ball and pitch measurement


Hybrid

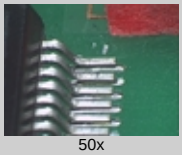

Wire Bond



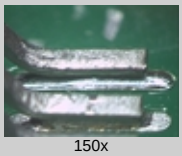
Caltex 3D Scope offers unique 3-D & 360° Rotational Oblique Angle views for inspection and measurement of Surface Mount and Semiconductor Technologies. Powerful zoom lens (50x-300x) with easily interchangeable SNAP-ON Adapters expand your magnification to 20x-600x for straight view or 3D Oblique angle view.

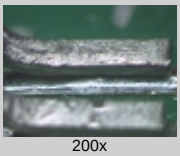
3DSCOPE.COM

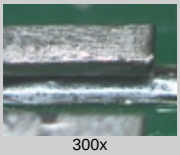
ZOOM


50x


100x

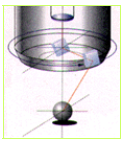

150x


200x


300x

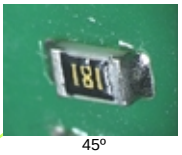
MX-5030RZ
(50x-300x)
with AD5030RVS
(25° to 55° Variable Oblique and 360° 3-D Rotation)

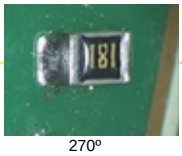
360º Rotation

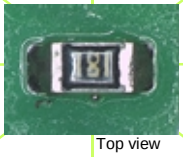


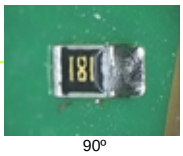

315º


0º

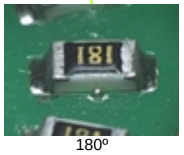

45º

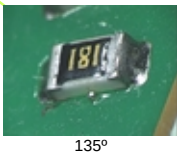

270º


Top view

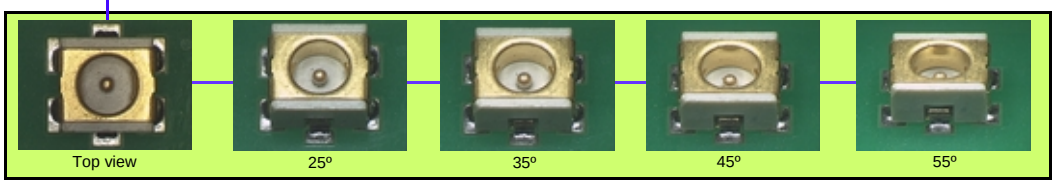

90º

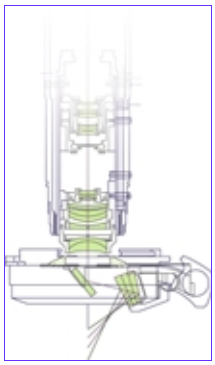

225º


180º


135º

VARIABLE OBLIQUE ANGLES VIEW

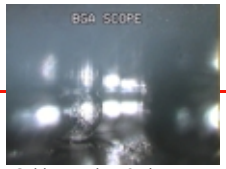

Top view 25º 35º 45º 55º



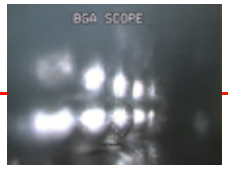
BGAscope.com

BGA Scope offers non-destructive visual inspection underneath and inside BGA package, uses no radiation, requires no training, and cost tens of thousands less than X-ray system.

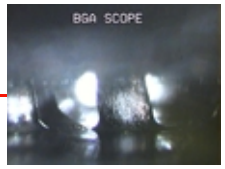

BGA ball size, pitch, diameter & angel measurement



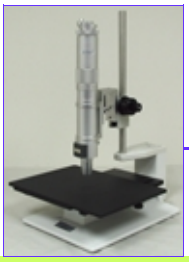
Solder crack at 2nd row inspection inside BGA



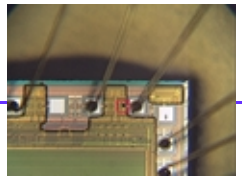
Cold solder at 3rd row inspection inside BGA

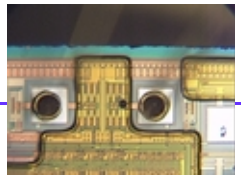


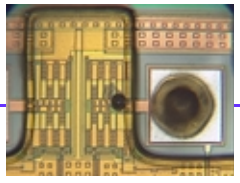
Deformed BGA ball & quick inspection for bridging

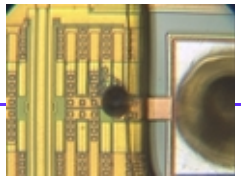


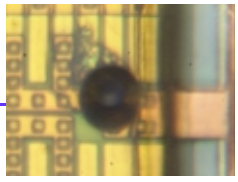
MEGA ZOOM


IC/wafer inspection at 200x


500x

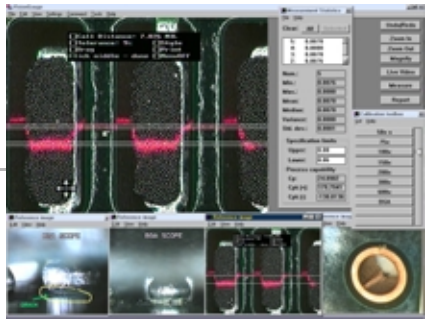

1,000x


2,000x


4,000x

Digital-Video Imaging system VIA Measurement software

Live video windows with thumbnail images on PC


Sub-pixel high precision measurement with statistic calculation

SPECIFICATIONS

CALTEX SYSTEMS

Main Unit:	KH-1000
Camera Capture Device	1/2" Interline Transfer CCD, RGB true color filter, effective pixel 850(H) x 984(V) approx. 900,000 pixels
Resolution	H: >550 TV lines, V: >400 TV lines
Controls	Auto/Manual White Balance, Auto/Manual Light Gain Control, Light Output, Edge Enhancement On/Off, Color Emphasis 4 settings, Auto/Manual Shutter Speed (1/30 to 1/10,000)
Video Output	RGB, Y/C, NTSC Composite
Light Source	100W Halogen
Power	100-240 VAC +/- 10% (50/60Hz)

Digital-Video Imaging	VICA (video capture card & software)	VIA (Measurement Software)
Hardware	High resolution video frame grabber and display PCI card, RGB/YC/NTSC input cable and monitor output	VIA software is also designed to control Programmable Measurement Stage and PCB Inspection Stage with plug-in cards
Software	Video card driver plus PhotoSuite software for image archiving, editing, annotation, thumbnail viewing, basic image enhancement functions, image file conversion of bmp, tif, jpg, gif, and email	High accuracy, sub-pixel measurement of point-to-point, X-Y, arbitrary parallel lines, radius, diameter, angle, area, and image analysis. Statistic calculation, image overlay comparison, counting and sizing, and image databasing and reporting
PC minimum Requirement	Pentium 200 MHz, 64 MB RAM, 1 GB Hard Drive, Windows 95 and above, available PCI bus and IRQ	Pentium 200 MHz, 64 MB RAM, 1 GB Hard Drive, Windows 95 and above, available PCI bus and IRQ

Lenses	12MMC	MX-BGAZ	MX-5030RZ	MX-2005C	MX-2525CS	MX-2010Z	MX-1060Z	MX-2100Z
Magnification (on 15" monitor)	<1x-20x	50x-200x	50x-300x	200x-4000x	250x-2500x	20x-100x	100x-600x	200x-1000x
Inspection Area H : (mm)	infinity to 16mm	6.2 - 1.5mm	6.2 - 1.1mm	1.5 - 0.075mm	1.2 - 0.12mm	14.5 - 2.9mm	3.0 - 0.5mm	1.5 - 0.3mm
Depth of Field (mm)	variable	variable	3.0 - 0.136mm	200-2.4 microns	168-3.8 microns	14.6 - 3.0mm	0.66 - 0.234mm	0.134 - 0.023mm
Working Distance (mm)	infinity to 20mm	variable	55.5mm	14mm	14mm	41.0mm	3.1mm	3mm

SNAP-ON Adapters

AD-5030HS
Snap-on straight view
50x-300x

AD-5030RVS
Snap-on Variable Oblique Angles view (25-55 deg)
50x-300x

AD-5030RLS45
Snap-on 45 deg Oblique Angle
50x-300x

AD-5030HIRLS
Snap-on 2x doubler 45 deg Oblique Angle
100x-600x

AD-5030HIS
Snap-on 2x doubler straight view
100x-600x

AD-5030LOWRLS
Snap-on reducer 45 deg Oblique Angle
20x-120x

AD-5030LOWRVS
Snap-on reducer Variable Oblique Angle
20x-120x

AD-5030LOWS
Snap-on reducer straight view
20x-120x

AD-5030SL
Laser Slit Light snap-on for Z-height profiling & measuring
50x-300x

Stands and Stages	SMF-B	MXY-1515	SM-XY8	DS-8	PM-1212	PI-1824
Dimensions	17" x 20" Base, 16" (V) x 18" (H) Multi-position arms with focus block	15" x 15" roller bearing stage with 13.78" x 10.63" X-Y Travel, Black anodized with X-Y lock down screws	Stage size 8"x8" X-Y travel. Also available in 4"x4", 6"x6", 12"x12"	11" x 13" Base, 16" Vertical post with Focus block	12"x12" measurement stage with 1 micron resolution. Also 4"x4" to 12"x12" with 0.5, 1, or 2 micron resolution	18"x24" PCB inspection stage with 2 micron positional resolution. Other sizes: 24"x24", up to 44"x44"
Features	Accommodating large circuit board	Easy sliding for inspecting large circuit board or samples	High precision, X-Y ball bearing slide stage, with drop-down coaxial rubber knobs, vertical post, base, and Fine Focus block	Space-saving, basic microscope stand for small samples	Programmable high accuracy Measurement stage, fully automated and programmable	Fast motion, long travel stage, programmable step-and-repeat for PCB inspection and measurement

Specifications subject to change without notice

Distributed by:

CALTEX SCIENTIFIC INC.
192-T TECHNOLOGY DR.
IRVINE, CA 92618 USA
Tel: 949-788-0101
Fax: 949-788-0202
Web: www.caltexsci.com
Email: info@caltexsci.com