

By order of  
**Bookham Technology PLC**

**LIVE AND WEBCAST AUCTION SALE**

**Entire Contents of  
6" Silicon Wafer  
Fabrication Plant,  
Assembly, QA,  
and Test Facility**

At: Milton Park Industrial Estate, Abingdon, UK

On: Thursday 18th March 2004 at 10.30AM

On View: Wednesday 17th March 2004 9.00am – 5.00pm  
On Day of Sale or By Appointment

**AUCTION**



GoIndustry

**HENRY  
BUTCHER**

INDUSTRIAL ASSET DISPOSAL & VALUATION

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## Wafer Fabrication

### Thin Film Deposition Tools

Applied P5000 'Precision 5000 Mk II' PECVD Dual chamber cluster tool fitted with 2 DxZ Nitride/Oxide chambers

Trikon 'Delta PECVD Turbo' configured for Nitride and Oxide thin film deposition (2001) (Qty 2)  
(Located in Canada)

Aixtron '2400' MOCVD Reactor Configured for growth of 3" wafers on InP based Emitter structures (2000) (Qty 3)  
(Located in Canada)

### Metal Deposition

Tel 'MkIV Eclipse' 6 inch PVD Sputterer (4 chamber) (2001)

Varian '3290' 4 inch Cassette sputtering system ( Al, TiW & Au )

Emitech 'K650T' Gold Coater

### Photolithography

#### Resist Spinning

Gryo set resist spinner

SVG 86 series track 6 inch positive resist and positive develop

SVG 86 series track 6 inch 2 x positive resist modules

#### Image Transfer

ASML '5500/150' Stepper capable of running 4 to 8 inch wafers. Fitted with ARMS system and ariel illumination. Resolution 0.35um. (2001)

Micralign 'HTR+6' 6 inch ASML Projection aligner

Asyst 'ALU2150' Reticle transfer system (Qty 2)

Karl Suss 'MA150' 4 inch single sided mask aligner, 'MA150' back side mask aligner (with 6 inch kit)

### Dry Etching Systems

Alcatel '601E' 6 inch Silicon Etcher with Intellemetrics endpoint system (2001)

Matrix Bobcat '208S' Photo resist stripper and etcher Cassette processing capable of running 4 and 6 inch wafers.

Trikon 'Omega' MORI Etcher fitted with



ASML '5500/150' Stepper



Tel 'MkIV Eclipse' 6 inch PVD Sputterer



Varian '3290' 4 inch Cassette Sputtering System



Alcatel '601E' 6 inch Silicon Etcher



Applied P5000 'Precision 5000 Mk II' PECVD Dual Chamber Cluster Tool



Micralign 'HTR+6' 6 inch ASML Projection Aligner



Matrix Bobcat '208S' Photo Resist Stripper and Etcher



STS RIE Single Chamber TiW Etch



Applied Centura Dual eMxP Chamber Oxide Etch Tool



STS Two Chamber Cluster



AMAT 'VeraSEM 3D' CD-SEM

a cooled electrostatic chuck used as a single chamber MORI ICP etcher and is configured for high rate, uniform etching of a variety of substrate materials.(2000)

(Located in Canada)

Oxford Instruments 'PRS801' Barrell Etcher Resist Stripper  
 STS RIE single TiW etch chamber - cassette to cassette robot handling set for 6 inch wafers. With Intellimetrix endpoint system(2001)  
 Tepla Asher '300 autoloader PC' Multiplex RIE capable of running 4 and 6 inch wafers

Applied Centura Dual eMxP chamber oxide etch tool configured for 6 inch wafers

STS Two chamber cluster - 1 standard Silicon etch/1 high rate silicon etch both run 6 inch wafers and have Intellimetrix endpoint system

STS 6 inch ICP Etcher with MACS robot (1996)

OPT 'RIE80TTL' Reactive Ion Etch tool

**Metrology & Inspection Equipment**

AMAT 'VeraSEM 3D' CD-SEM Set up for 6 inch wafers. Capable of running 55 wafers/hour at 5 sites per wafer (2002)

SCHLUMBERGER 'IVS120' CD measurement system

Tencor 7700 Surfscan model '269913' Patterned wafer inspection system. Set up for 6 inch wafers

Tencor Surfscan 5500 model '12889' Particle measurement system capable of running 4 and 6 inch wafers

Tencor 'RS75' Omnimap wafer mapper KLA-Tencor P22 Profiler Cassette to Cassette Surface profiler capable of running 4 and 6 inch wafers

BioRad 'QS-2200A' FTIR Film thickness measurement tool

Nikon 'Optistation V' set up for 6 inch (Qty 2)

SGT Wafer presentation/inspection tool

Nanometrics '7000-0657' Nanospec 8000X Film thickness analyser. Dual



SCHLUMBERGER 'IVS120' CD Measurement System

station capable of running wafers from 3 to 8 inch (2001)

Rudolph 'AutoEL' Ellipsometer  
 Mactronix 'UKA425' & 'L2625E' 6 inch Wafer Transfer Systems  
 Olympus 'MX50' Auto loader microscope with wafer loader  
 Jeol '7550' SEM configured for 6 inch wafers resolution 5nm @ 1KV accV (2001)

**Wet Processing**

Semitoool '302' Spray Acid Tool for 4 and 6 inch wafers  
 SemiTool 'W/PSC-102' Rinser/Dryer Dual stack (Qty 5)  
 Various Laminar Flow Units and wetbenches (Qty 10)

**Dicing, Polishing and Component Measuring**

Disco 'DFD641' fully automatic dicing saw  
 Loadpoint '040368' Microace 3 wafer saw,  
 Loadpoint wash station  
 Logitec 'LP50' Polisher (Qty 5),  
 Logitec 'PM5' polisher,  
 Logitec polishing jigs (Qty 12),  
 Logitec 'GI 20' Flatness measurement system  
 Nikon 'VM-250' CNC video measuring system,  
 Metalurgical Microscope (2 off),  
 RS '2014'UV Exposure unit,  
 Die ejection station,  
 Ultron systems Film mount tool  
 Wentworth Labs Wafer Component Probe

**Furnaces and Ovens**

Semco 4 tube Furnace stack (Qty 2)  
 YES 'HMDS' Oven  
 Jencons Bake Carbolite 'CR130(201)'Oven (Qty 2)  
 Hitech Sinter 'H4-6926' Furnace  
 Quartz Tube storage unit  
 Polypropylene cabinet for storage of furnace quartzware

**Ancillary Fab Equipment**

Lumonics 'WMSDSC' Sigma DSC Laser



Jeol '7550' SEM

2001



KLA-Tencor P22 Profiler Cassette to Cassette Surface Profiler

2001



BioRad 'QS-2200A' FTIR Film Thickness Measurement Tool

2000



Semitoool '302' Spray Acid Tool

2001



Nikon 'Optistation V'



Nanometrics '7000-0657' Nanospec 8000X Film Thickness Analyser

2001



Disco 'DFD641' Fully Automatic Dicing Saw



Semco 4 Tube Furnace Stack



Lumonics 'WMSDSC' Sigma DSC Laser Wafer Scriber.



Tencor 7700 Surfscan Model '269913' Patterned Wafer Inspection System.



Stainless Steel Tables and Racking



Karl Suss 'FC250' Automatic Die Bonder



Cammax 'EDB 600' Manual Pick and Place Bonder



Esec 'Micron 2' High Speed

wafer scriber. Runs 4 and 6 inch wafers (2002)

Windrush Cassette to cassette programable wafer transferer

'Accu-seal 35' Bag sealer

Lancer '1600UP' Box washer

Large quantity of excellent stainless steel tables and racking, hotplates, scales, cleaning and storage containers

Leybold 'UL200' vacuum leak checker

## Assembly & Reliability

### Bonders

Karl Suss 'FC250' Automatic die bonder

Cammax 'EDB 600' manual pick and place bonder

Esec 'Micron 2' High speed high accuracy component pick and place with dispense capability

Esec '3088' Automated High precision Gold ball wirebonder

Delvotek '5430' automatic wedge bonder

### Cleaning

Tepla '660' Plasma cleaner

Various ultrasonic baths

### Ovens and Environmental Test

Instron Eutectic solder reflow

Votsch 'VT7004' 'VC7018' 'VC7018' 'VC7020' 'VT7012S2' Environmental Test Chambers and ovens

Wiess 'TS130' Oven

Sanyo 'HCC065-PF4.J' Oven

Sharetree 'TCH250/640' & 'TC600' Burn in systems

Hirayama 'PC-422R7' Hastest burn in unit (2002)

### Miscellaneous

Perkin Elmer 'DMA7E' Dynamic mechanical analyser

Royce 'DE35' Die Sorter

Esec Cure System

Hotplates

### Fiber Splicing

Fujikura 'FSM-30' & 'FSM40' fusion splicers



Delvotek '5430' Automatic Wedge Bonder

Seikoh 'SFP-550' Fiber polisher  
York 'FK11' Cleavers

**Test and Measurement**

Agilent / Hewlett Packard '83427A' CD Test Set, '86037C' Chromatic Dispersion Test Solution, '8753ES' Network Analyser, '8509C' Polarisation Analyser, '11896A' Polarization State Controllers (Qty 20), '34401A' Digital Multimeter (Qty 2), '3458A' Digital Multimeters (Qty 5), '4145A' Semiconductor Parameter Analyser, '8164A' Lightwave Measurement System Mainframes and Tuneable laser sources (Qty 19), '8166A' Lightwave Multichannel Systems (Qty 4), '8169A' Polarization Controllers (Qty 4), '83430A' Lightwave Source, '8509B' Polarisation Analyser, '8509C' Polarisation Analyser, '86120C' Multi-Wavelength Meters (Qty 2), '86142A' Optical Spectrum Analysers (Qty 5), '86142B' Optical Spectrum Analysers (Qty 8), 'E3632A' (Qty 2), 'E3631A' Power Supply Units (Qty 10), 'E5574A' Optical Loss Analyzers (Qty 2), 70950' Optical Spectrum Analysers (Qty 2), '4140PA' DC modular source. AFC 'BBS 1550' Broadband Light Sources (Qty 19),

Ando 'AQ2140' Optical Multimeter, Anritsu 'MG9638A' Tunable Laser Source, Boonton 7200 Capacitance Meter, Burleigh 'WA-1000' Wavemeter, DBM Optics '2004' Optical CSA (Qty 3), Dicon 'GP700-4-1' Multi-Channel Fibreoptic Switches ElectroPhotonics 'BLS1550A' Broadband Light Sources(Qty 6), Efos 'Novacure' UV light sources (Qty 2), EG & G '7260' Lock in Amplifiers (Qty 2), Exfo 'IQ-206' Expansion Unit, Fiberpro 'PS-155-A' Fiber Optic Polarisation Scramblers (Qty 4), Fitel 'S541A' Fibre Recoater, ILX Lightwave 'LCM-39440' (Qty 3), 'LDC3724B', 'LDC-3900' Laser Diode Controllers, 'LDT 5910B' Temperature Controller, 'PDA-6424' Photodiode Amplifier, Keithley '2510' Sourcemeters (Qty 8), '487' Picoameter / Voltage Sources (Qty 3),



Various Votsch Environmental Test Chambers and Ovens



Hiramaya 'PC-422R7' Hastest Burn-in Unit



'8166A' Lightwave Multichannel Systems



Fujikura 'FSM-30' & 'FSM40' Fusion Splicers



'8164A' Lightwave Measurement System Mainframes and Tuneable Laser Sources



Agilent / Hewlett Packard '83427A' CD Test Set, '86037C' Chromatic Dispersion Test Solution



Large Quantity of Test Equipment

'2500' Dual Photodiode Meter, '2010' Digital Multimeters (Qty 2), '2000' Multimeter, '7001' & '7002' Switch Systems (Qty 3), Photonetics 'WALICS HR-15' Multiwavelength Analysers (Qty 2), '3688-PR-13' Lefevres Loops (Qty 5), '3642CR00' Wavelength Tunable Laser Diode Sources (Qty 3), Profile 'PRO8000' (Qty 16), 'LDC1000' Laser Diode Controllers (Qty 3) Newport '3040' Temperature Controllers (Qty 9), '2832C' Dual Power Meters (Qty 15), 'ESA-C' Drive Controllers (Qty 6), Thurlby Thandar power supplies (Qty 7)

### Vision and Inspection

Mitutoyo Profile projectors (Qty 3) PJ-3000  
 Prior 'Proscan' inspection stations with Nikon microscopes (Qty 3)  
 Meiji 'EMZ' (Qty 21), Leica 'MZ6' (Qty 8), Nikon 'SMZ800' Microscopes (Qty 12), Prior 'G104' Fibrescopes (Qty 2), Intralux '5000-1' (Qty 15), Fostec '20750' (Qty 12), Leica 'CLS100' Light Sources (Qty 7),  
 Electrophysics 'Micronviewer' cameras (Qty 6),  
 Various JVC & Panasonic video cameras,  
 Wattec 'WAT-202B' video cameras and lenses

### Build and Alignment

Newport and Melles Griot Optical Isolation tables (Qty 30)  
 Melles Griot '17PCZ003' Piezoelectric position controllers (Qty 12)  
 '17MAX303' Nano-max, '17ANC001/MD' piezo electric 3 axis stages and numerous manual position controllers, Newport 'PM500C' Precision Motion Controllers (Qty 30), Newport 'PMA11252', 'MPM40243', 'MPM4SD0250', 'PMA10831' precision movement stages, Kensington servo position controllers and precision stages, Elliot Martock precision 3 axis stages. Various table mounts, spacers, plates and gantries



Agilent / Hewlett Packard '8753ES' Network Analyser



'86142B' Optical Spectrum Analyser

Qty 8



Newport and Melles Griot Optical Isolation Tables



Prior 'Proscan' Inspection Stations with Nikon Microscopes



Newport and Melles Griot Stages

# ALL ASSETS SUBJECT TO PRIOR SALE

## Facilities Equipment

Facilities chillers and air handling units, gas cabinets, gas monitoring unit, safety showers, emergency breathing apparatus, Draper 'D16/16' Pillar drill (16 speed 16 mm), Rong Fu 'RF-30' Milling machine, Dewalt 'DW710' circular saw

## Furniture & Computers

Office furniture comprising large quantity of high quality desks, chairs, storage cabinets, drawer units, whiteboards and meeting tables

Cleanroom Furniture comprising ESD benches and chairs (over 100), stainless steel tables and racking, Personal lockers and storage cupboards.

Computer equipment comprising various Compaq PII Computer systems (Qty 50) ELU Touch screen TFT monitors (Qty 90)

**Certain Assets may be available for sale prior to the auction.**

**For further information, please contact:**

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### Directions

Milton park is ½ mile east of the A34 about 10 miles south west of Oxford. Exit off A34 at 'Milton Interchange'. The estate is immediately off the exit roundabout.

Follow the signs into the estate and continue straight on for ½ mile to the 2ND Estate roundabout.

Take 3RD exit.

The entrance to the Auction Site is 250 yds on the left.

### Buyers Premium

A buyers premium of 12.5% + VAT is charged to the purchaser. An additional 3.5% + VAT will be charged to Webcast purchasers.

### Conditions of Sale

All goods will be sold in accordance with the auctioneers standard conditions of sale which will be detailed in the sale catalogue. Further information will be available on request.

### Clearance

All lots to be removed from site by Friday 2nd April with the exception of certain wafer fabrication tools which have to be removed in specific order for logistics reasons

### Important Notice

Although information has been obtained from sources deemed reliable, Henry Butcher make no warranty or guarantee, expressed or implied, as to the accuracy of the information contained herein.

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GoIndustry

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