

Corporate Presentation

Cicor Group – Your technology partner

2020

cicor

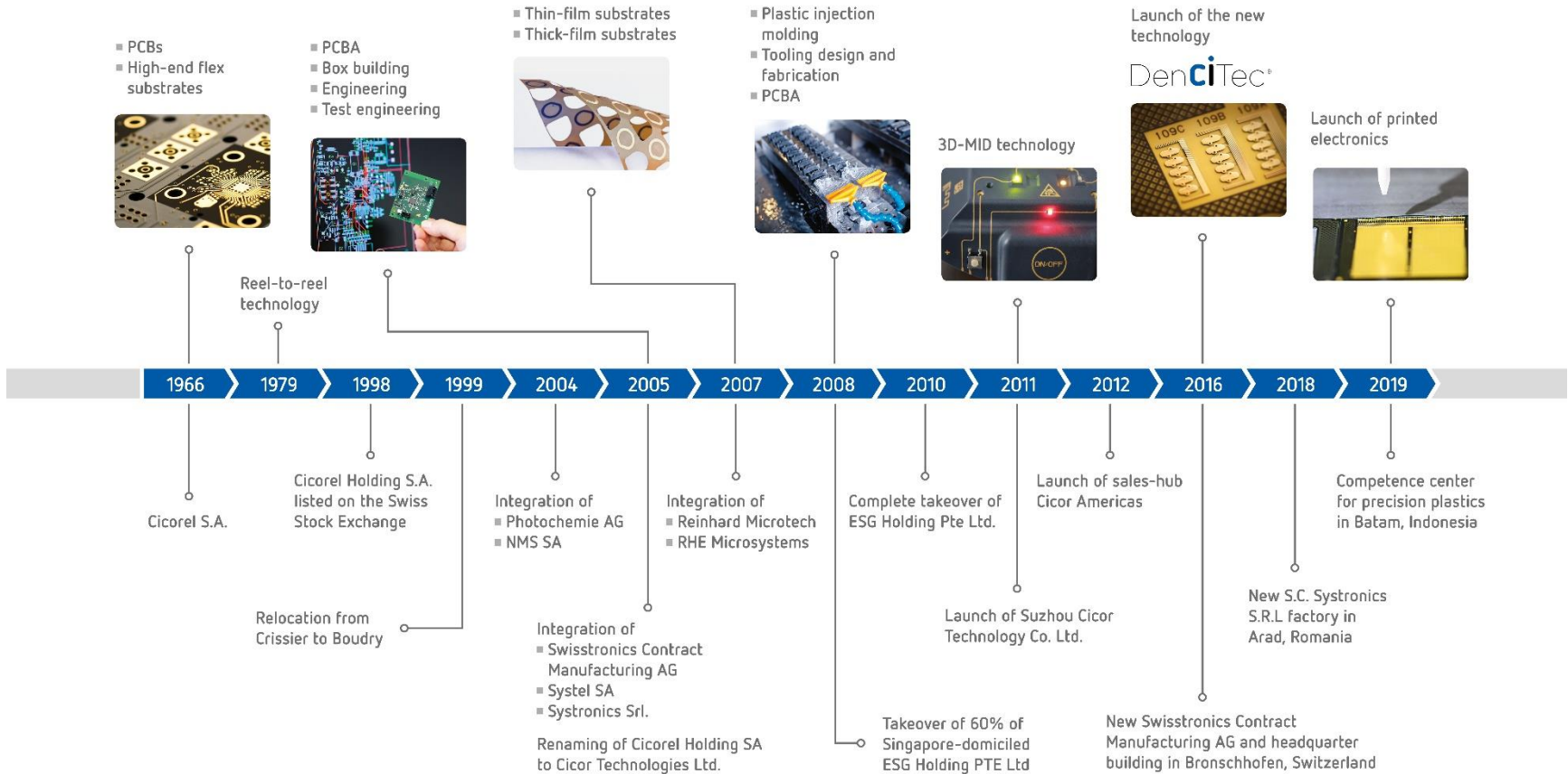
Cicor Group – Your technology partner

At a glance

- The Swiss leader in design and manufacturing of advanced electronics
 - Advanced Microelectronics and Substrates (AMS) Division: Technology leader
 - Electronic Solutions (ES) Division: Full solution provider
- Milestones
 - 1966: Founded as manufacturer of Printed Circuit Boards (PCB)
 - 1998: Listed on the Swiss Stock Exchange
 - 2005-2008: Established the present service offerings through acquisitions
 - Since 2016: Focus on technology leadership, accelerated growth, operational excellence, lean organization
- 2,029 employees worldwide at 10 production sites in Europe and Asia

History

Building up group competencies



Leading technologies for advanced electronics

An unparalleled offering of products and services

AMS Division



Hybrids & microelectronics

- High precision electronic substrates using a wide variety of materials and deposition processes
- Packaging and assembly of semiconductors and miniaturized electronic components

ES Division



Printed circuit boards (PCB)

- High-density and ultra-high-density PCB for miniaturized electronics

Printed electronics (Aerosol Jet Printing)

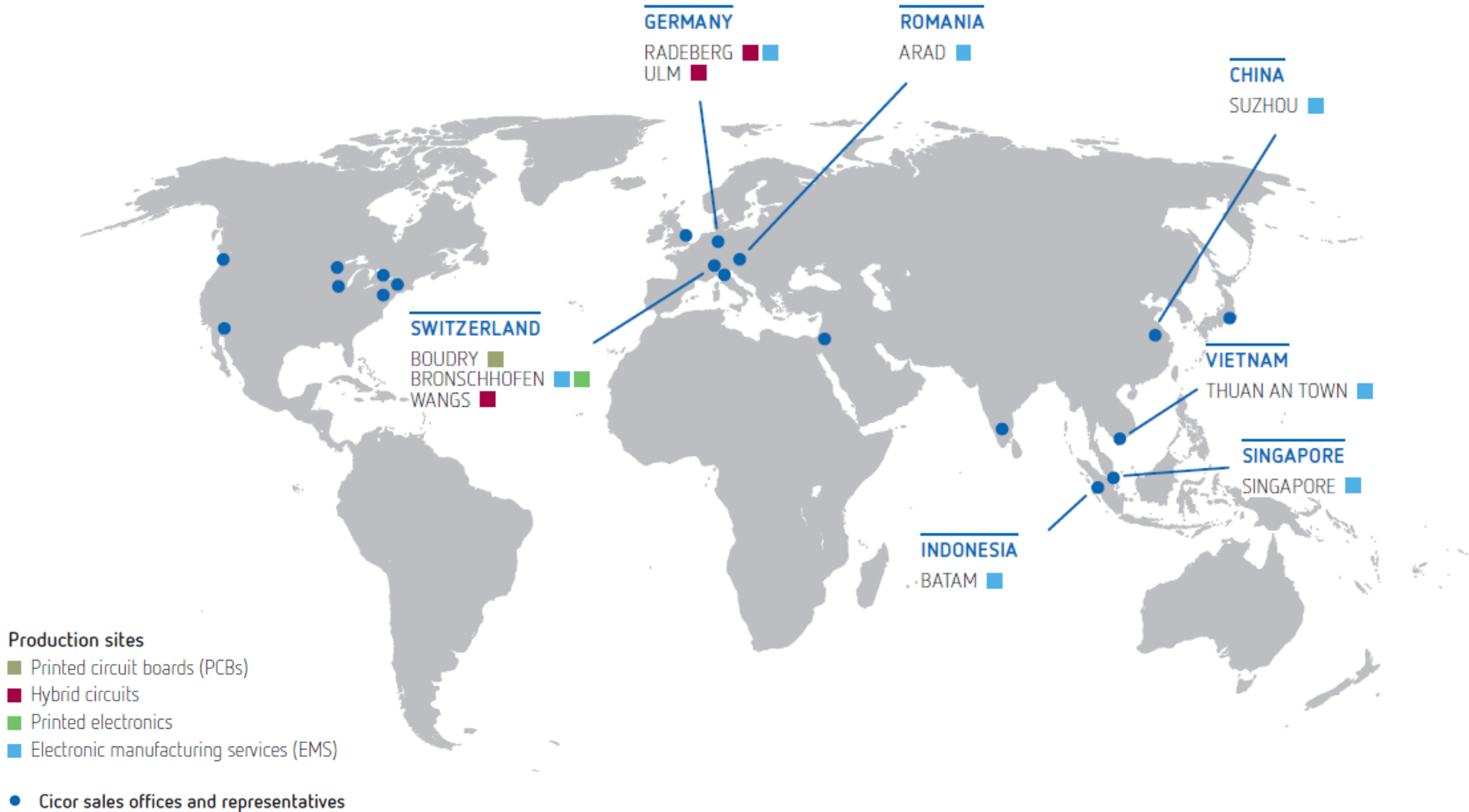
- A revolutionary technology to manufacture electronic circuits
- First to market in Europe with application lab set up in Bronschhofen in 03/2019

Electronic manufacturing services (EMS)

- Engineering of advanced electronics
- PCB assembly, system assembly and box building
- High precision plastic injection molding and toolmaking

Global footprint

High tech and competitiveness - close to the customer

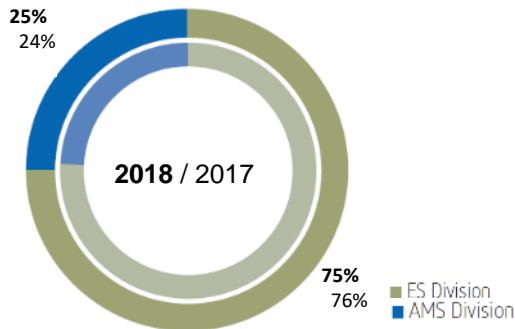


Cicor in 2018

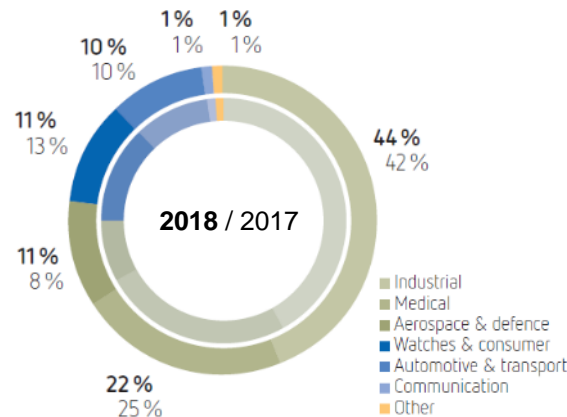
Year of high growth and successful projects

- AMS Division further increased its share of group sales to 25.4 % (2017: 24.4 %)
- Strategic markets very strong: Share of industrial, medical, aerospace & defence markets at 77.0 % (2017: 74.4 %)
- Acceleration in Europe, ROW mostly flat

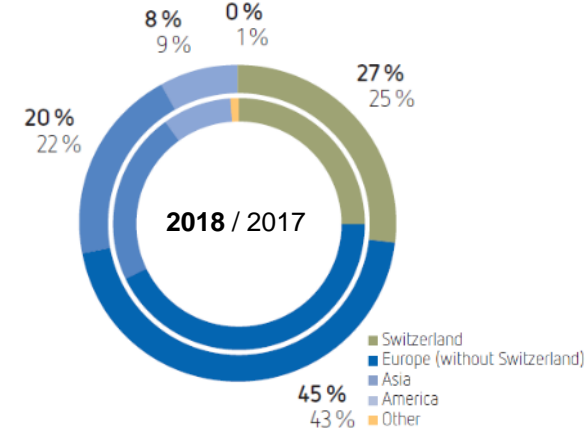
Net sales by division



Net sales by industry



Net sales by export region



Served markets

Partnering with market and technology leaders



Medical

Industrial

Aerospace

medela 

sivantos
the hearing company

Belimed
Infection Control

SIEMENS

BERNINA+

INFICON

THALES

plus
a HECO company

RUAG

... and many more

Leading process capabilities

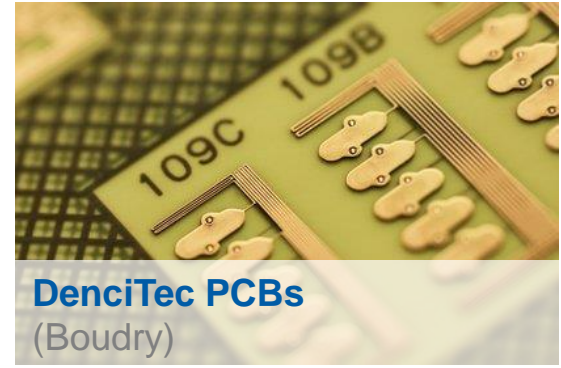
Continued investment in innovative technologies



Cleanline micro assembly
(Radeberg)



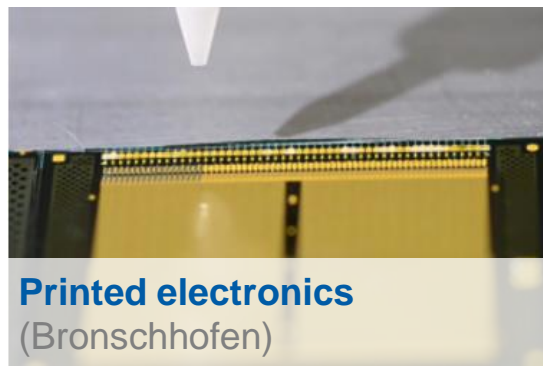
Flexible thin-film multilayer substrates (Wangs/Ulm)



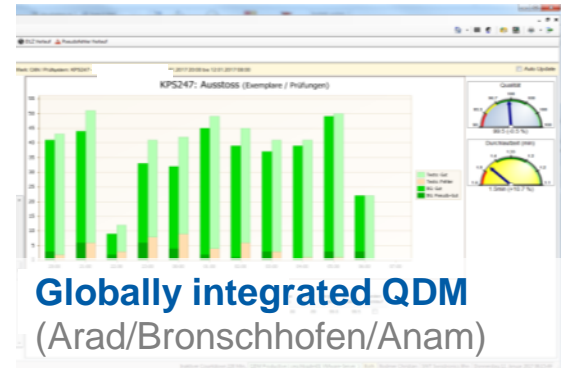
DenciTec PCBs
(Boudry)



Ready to use (RTU) medical consumables (Batam)



Printed electronics
(Bronschhofen)



Globally integrated QDM
(Arad/Bronschhofen/Anam)

Quality management

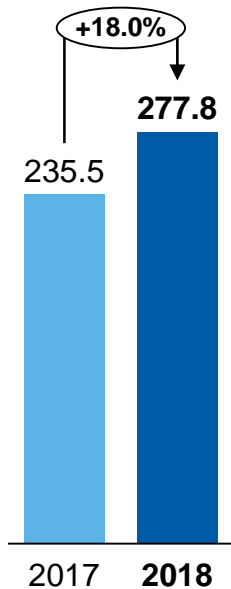
Certificates



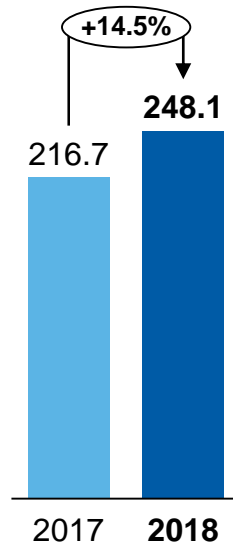
Financial achievements 2018

All figures at actual FX rates

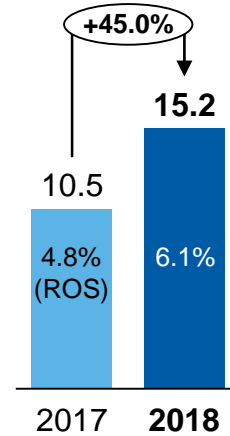
Orders received



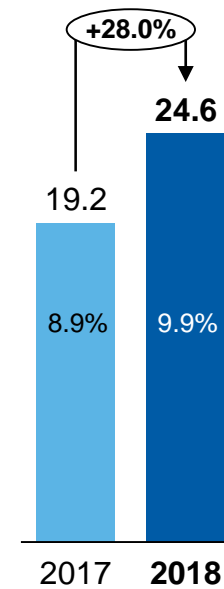
Net sales



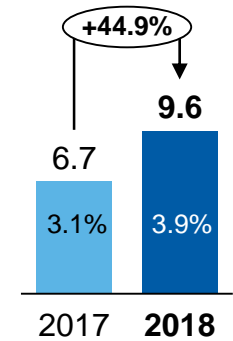
EBIT



EBITDA



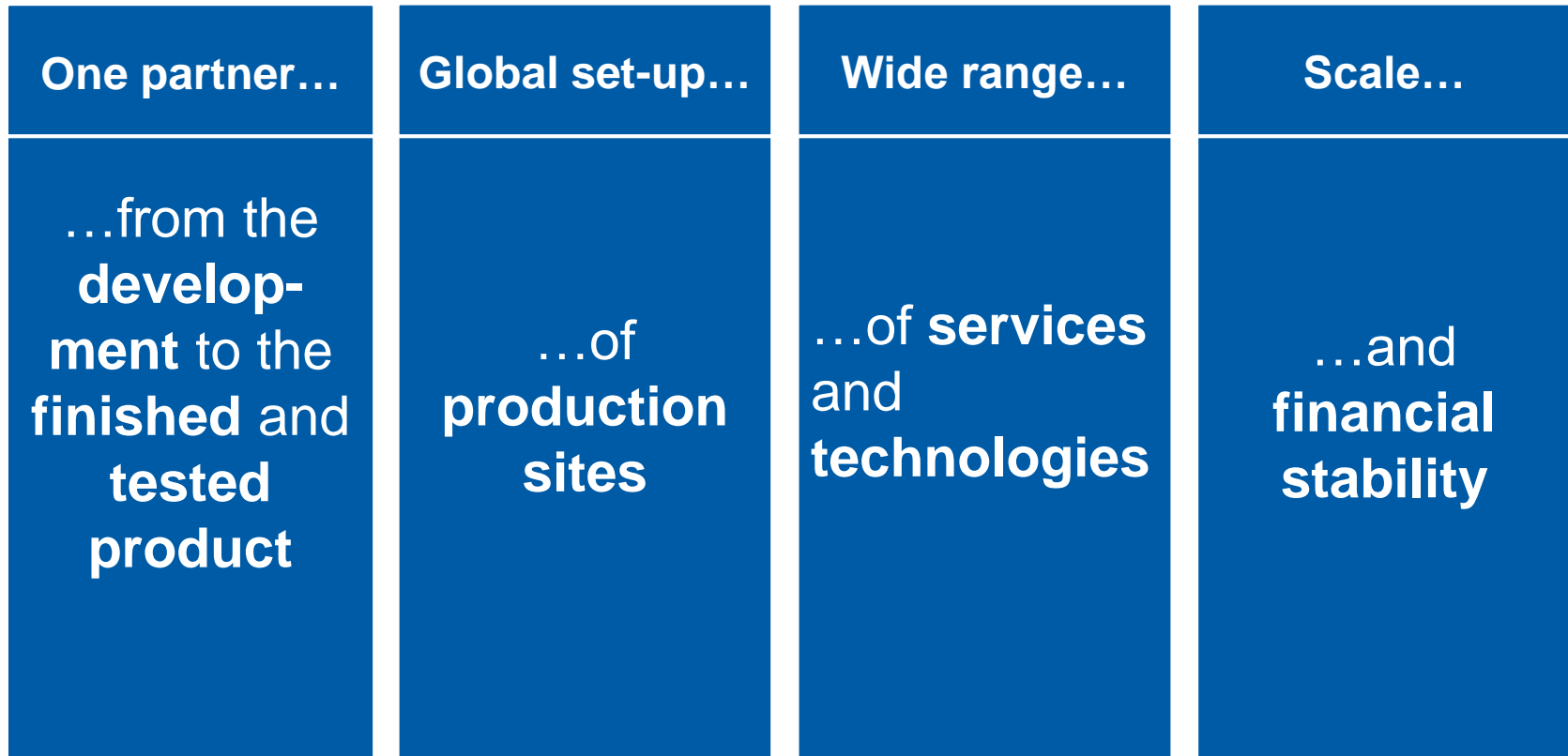
Net profit



- 2018 Book-to-bill ratio of 1.12 (2017: 1.08)
- Sales growth of 12.7% in local currencies

Conclusion

Why Cicor



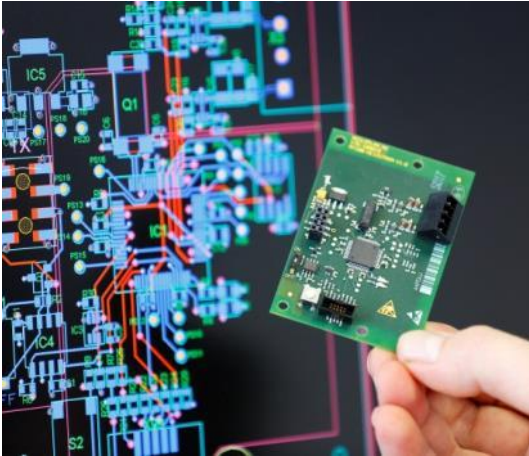
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Technologies & Services

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Engineering services

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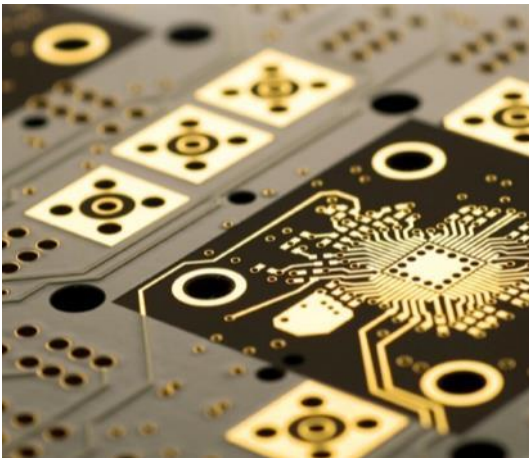


- Hardware development
- Software development
- PCB layout
- Mechanics design
- Test engineering
- Project management



Printed circuit boards (PCB)

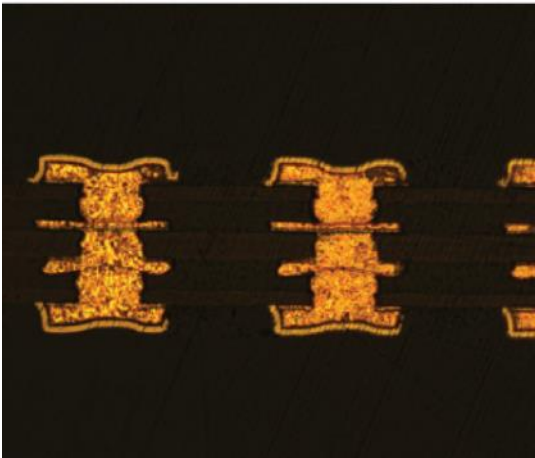
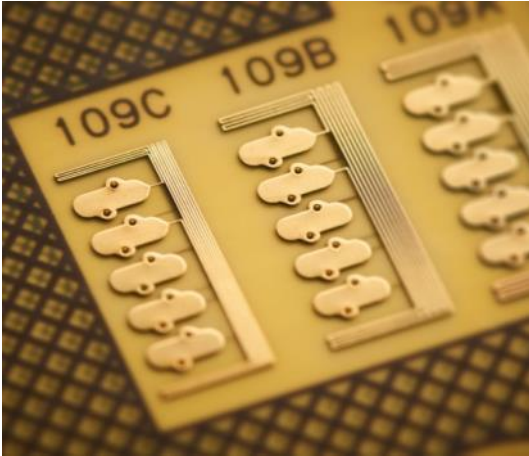
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- High-end flex, rigid-flex, and rigid MLBs
- Rigid PCBs with 1-20 layers
- Impedance-controlled PCBs +/- 5%
- Panel and reel-to-reel production lines
- HDIs: laser and mechanical drilling
- Laser openings (cavities) + depth controlled routing
- Final finishing: ENIG, ENEPIG, Imm. Sn, Imm. Ag, ISIG, EPIG, OSP, electroplated Au
- Copper filled blind vias, copper filled through holes
- Lines/spaces down to 25/25 μm (1 mil)
- Microvias down to 30 μm (1.2 mil)
- Non conductive epoxy via plugging

DenciTec®

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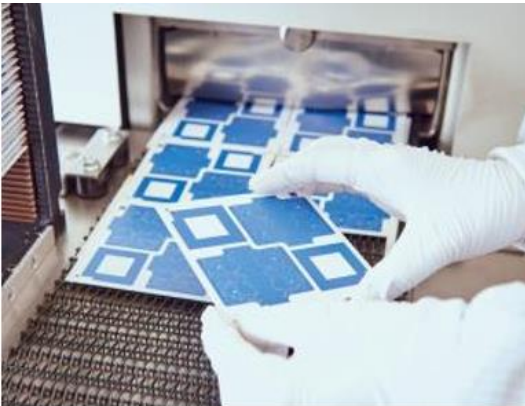
- **Miniaturization**
 - Lines/spaces down to 25/25 μm (1 mil) with 20 μm Cu thickness
 - Significantly higher level of integration
For example: more volume for energy supply, batteries, etc.
- **Higher packaging densities**
 - More design options
- **More functionality**
 - Smarter products with more features
- **Lower costs compared to other technologies**
 - Economic

Hybrid circuits

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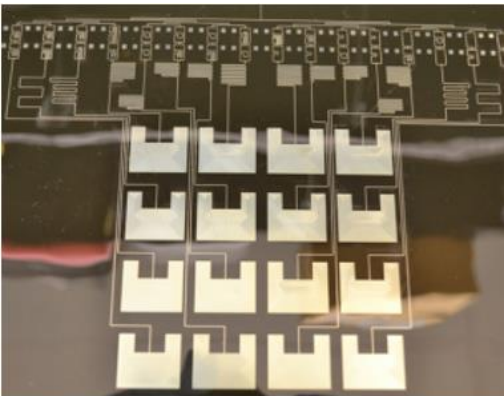
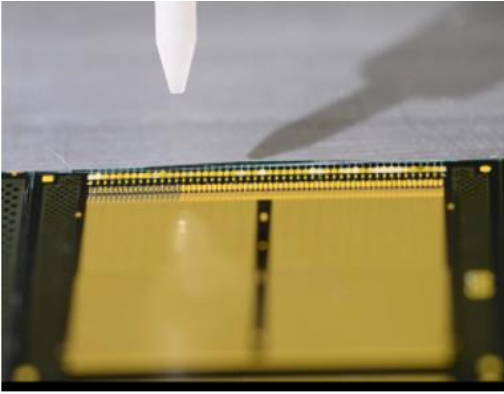


- Thin film (polymer, multilayer, ceramic, steel, glass, ferrites)
- Thin film flex boards
- Traces below 10 μm
- Cu-filled through holes
- Thick Cu
- Thick film (ceramic, steel)
- High ohmic R layer



Printed electronics

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Technical capabilities

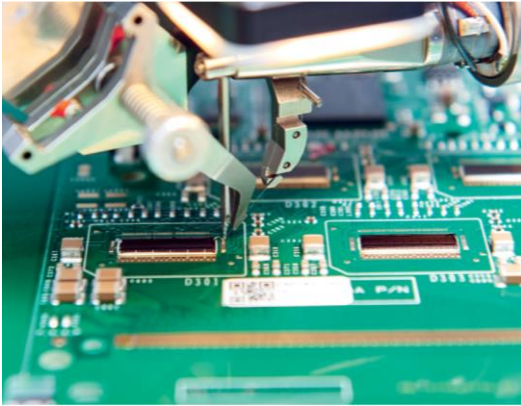
- Lines/spaces down to 10 μm
- Printing thickness from < 100 nm to tens of μm
- Large material portfolio (conductive, non-conductive, resistors, biocompatible, photoresist, etc.)
- Printing on standard materials
- Efficient printing process

Possible applications

- Printed flex and rigid circuits
- Printed embedded passives
- Printed circuits on ceramics (2D + 3D)
- Printed circuits on plastics
- Biocompatible circuits

Electronic manufacturing services (EMS)

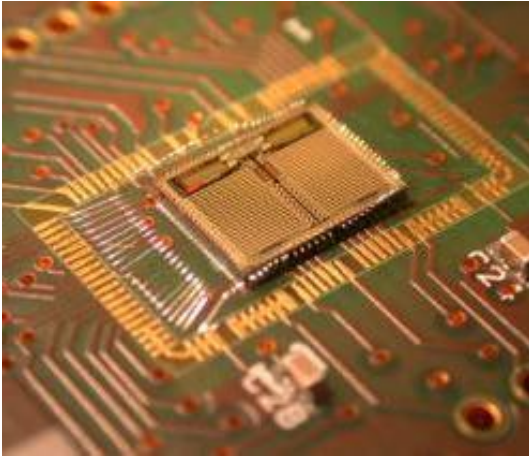
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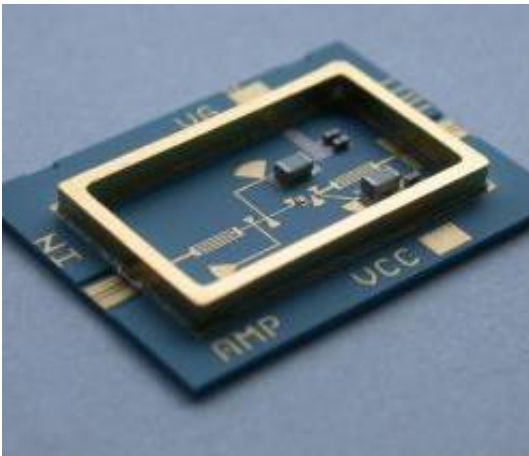
- Engineering services
- PCB assembly
- System assembly
- Box building
- Cable assembly
- Coating, potting
- Testing
- Wire bonding
- Coil winding
- Service & repair

Microelectronic assembly

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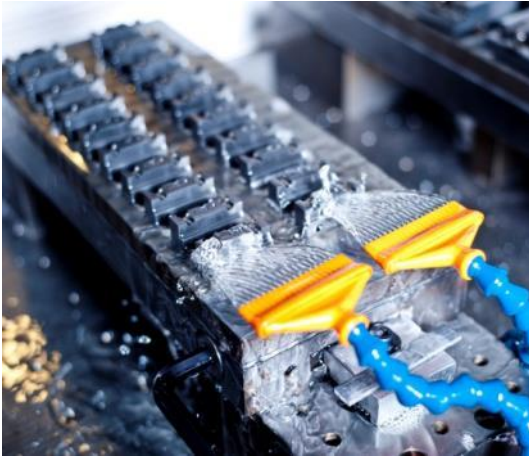


- Die attach, COB, flip chip, bare die, MMICs, SMD (min. 01005), μ BGA
- Wire/ribbon bonding
- Automatic ball-wedge and wedge-wedge wire bonding
- Soldering
- Packaging, glob top
- MEMS / RF MEMS packaging
- Hermetic housing (metal, ceramic)



Plastic services

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- Tool design and fabrication
- Plastic injection molding (20 tons to 468 tons)
- Thin wall molding
- Insert molding
- 2k molding
- Ultrasonic welding
- Box building
- Clean room packaging
- High precision mechanical assembly
- 3D-MID technology

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