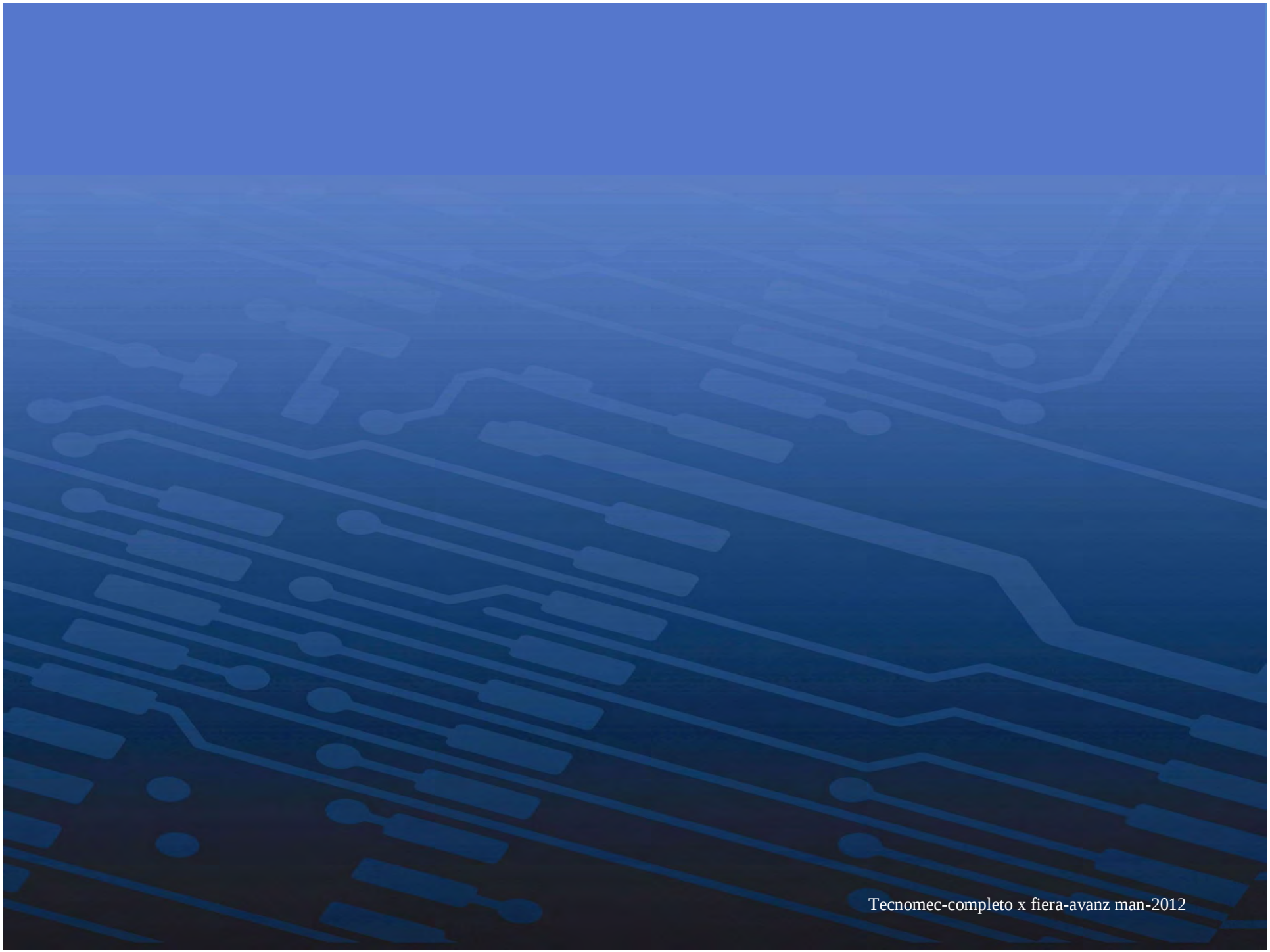

Tecnomec-completo x fiera-avanz man-2012

PARTNER


tecno 77 s.r.l.
E-mail : info@tecno77.com
Sito web: www.tecno77.net
Tel.+39-0444-601511 Fax.+39-601573


CMG S.R.L.
CENTRO
MATRICI
GRAFICHE


TECNOMEC


INDIC
EMS ELECTRONICS PVT. LTD.
Bangalore, India


µtec MITEC

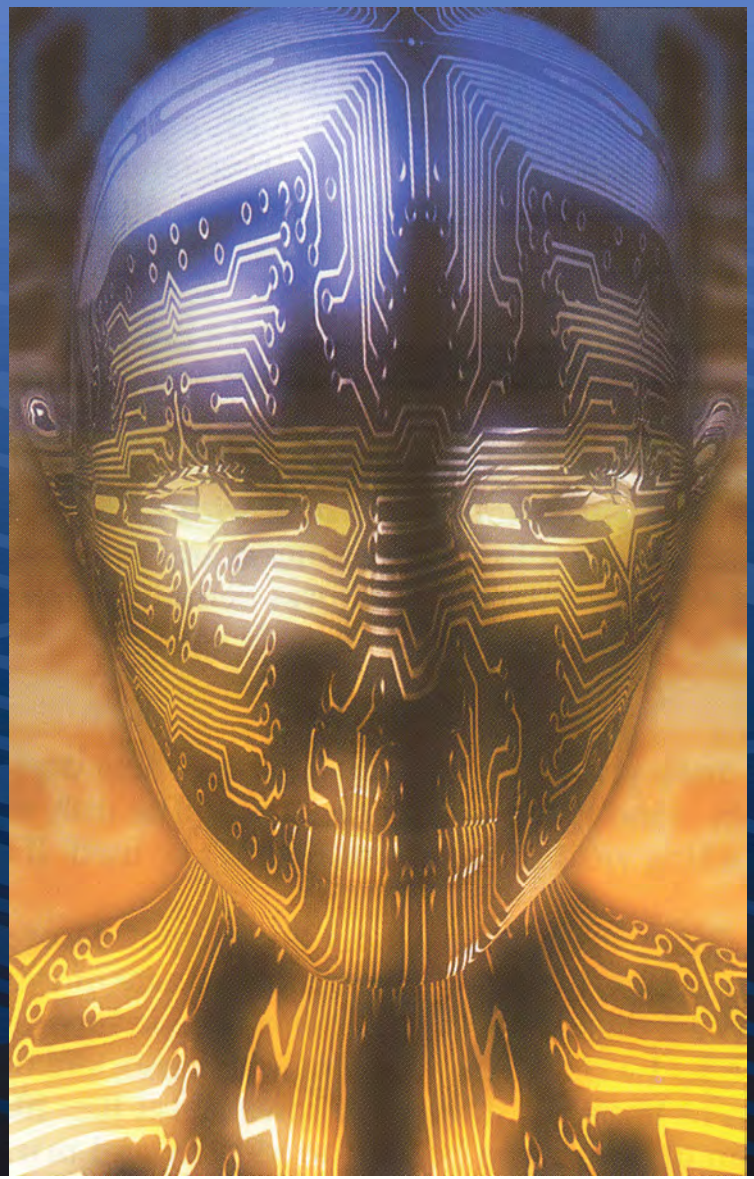

CIPSA TEC India Pvt. Ltd.
Bangalore, India

PARTNER

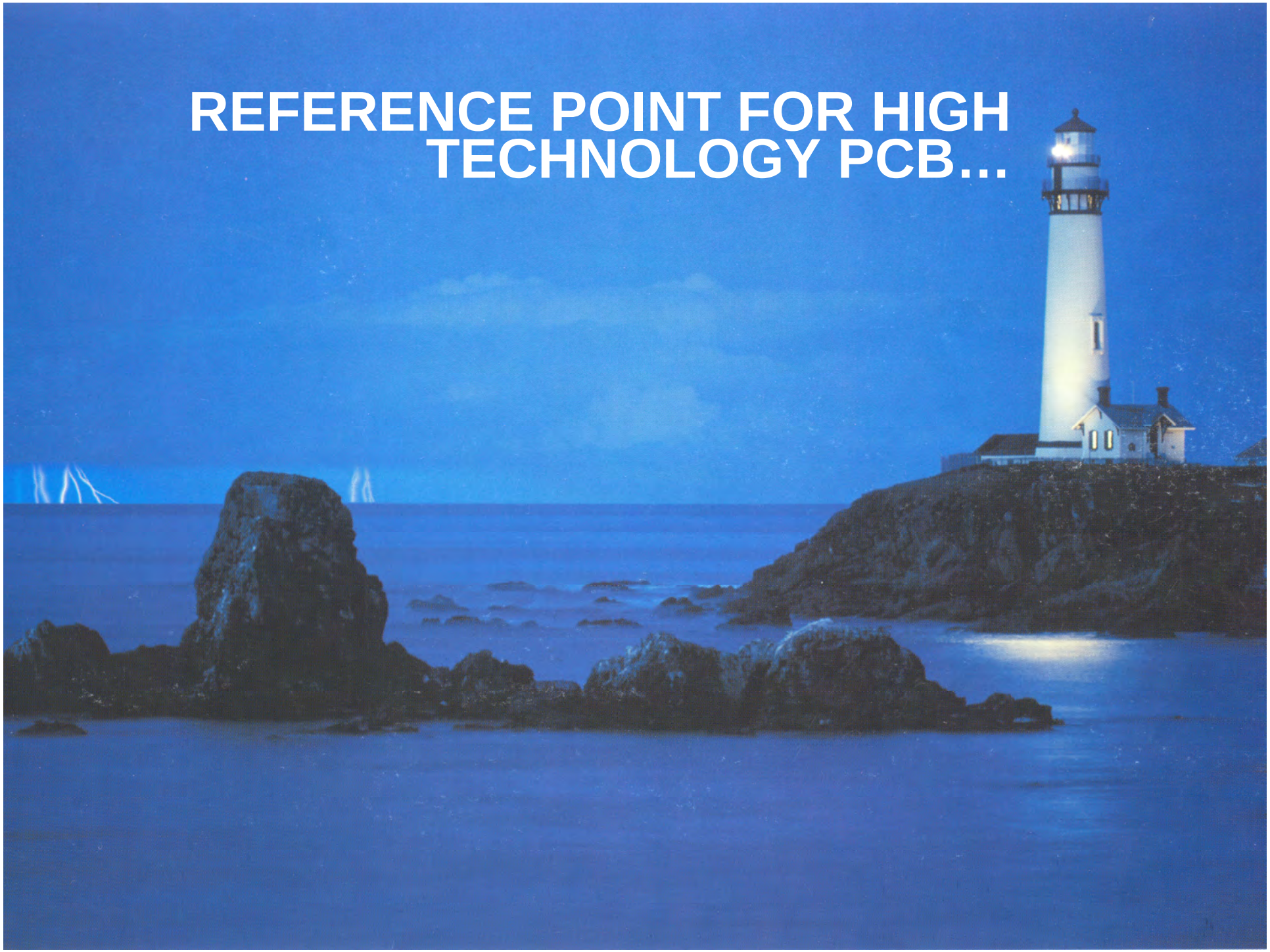
- CMG: PCB CAM engineering, artwork, laser plotting
- CIPSA-TEC INDIA: PCB plant manufactoring located in Bangalore
- INDIC: PCB assembling located in Bangalore
- TECNO 77: PCB layout generation
- MITEC: RF layout and engineering, RF packaging

welcome to Tecnomec

WHO WE ARE...



Tecnomec

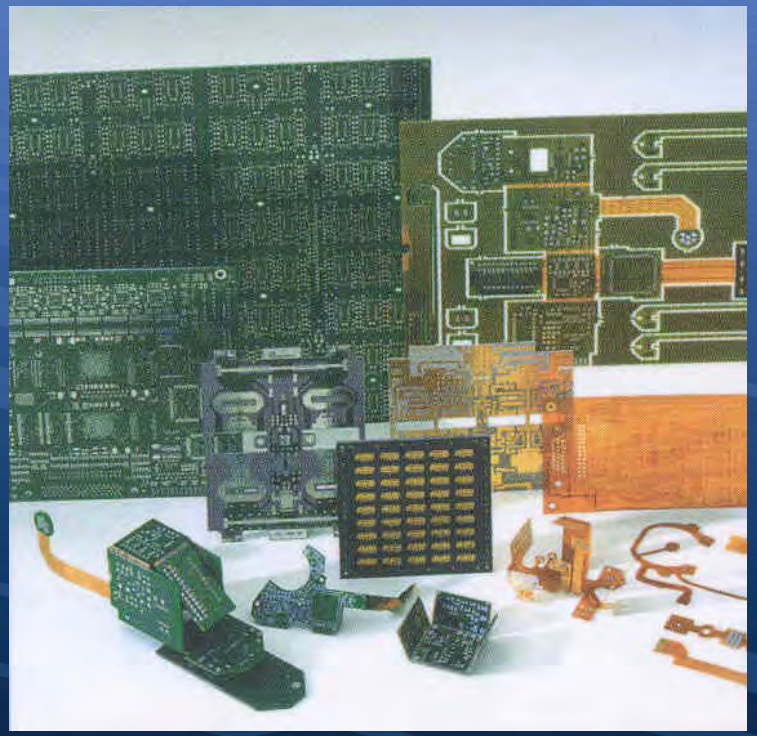

REFERENCE POINT FOR HIGH
TECHNOLOGY PCB...

FIRM ORGANIZATION

CHAIRMAN	Franco Pigato
GENERAL MANAGER	Sandro Pigato
QUALITY MANAGER	Gianluca Lovato
SALES MANAGER	Eugenia Fornaro
SALES AND TECH. MANAGER	Andrea Pigato
PRODUCTION MANAGER	Peter Saccardo
PRODUCTION PLANNING	Gabriele Giacomin
ADMINISTRATIVE OFFICE	Anna Capozzo
PURCHASE OFFICE	Francesca Dal Lago

PRODUCTS

- SINGLE SIDED
- DOUBLE SIDED
- MULTILAYERS
- FLEXIBLES
- RIGID – FLEX
- TEFLON
- HIGH FREQUENCY MATERIALS
- HIGH TG MATERIALS
- ALLUMINIUM
- METAL BACK
- METAL CORE



SAMPLES IN 2-3 DAYS

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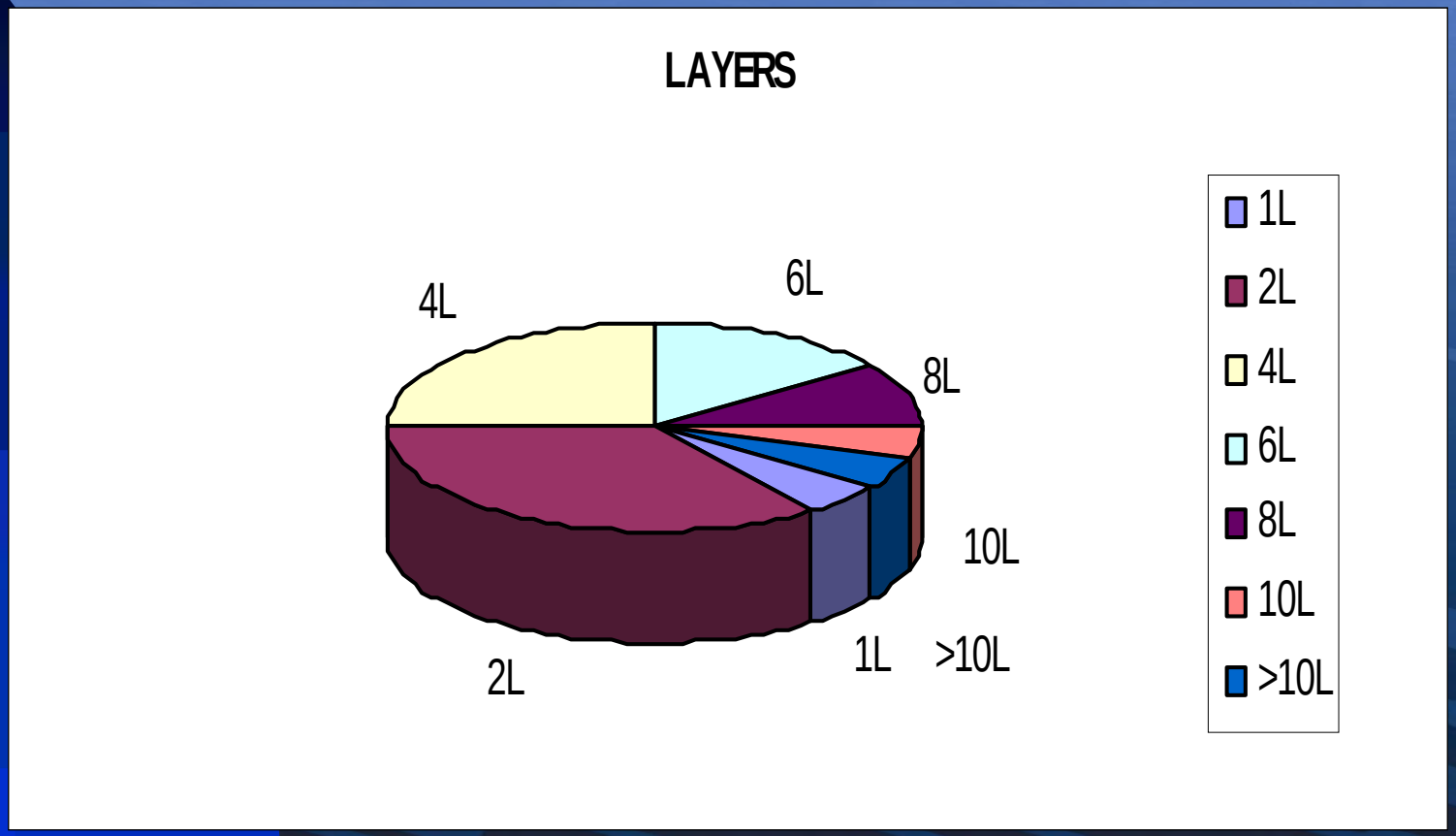
PRODUCTION



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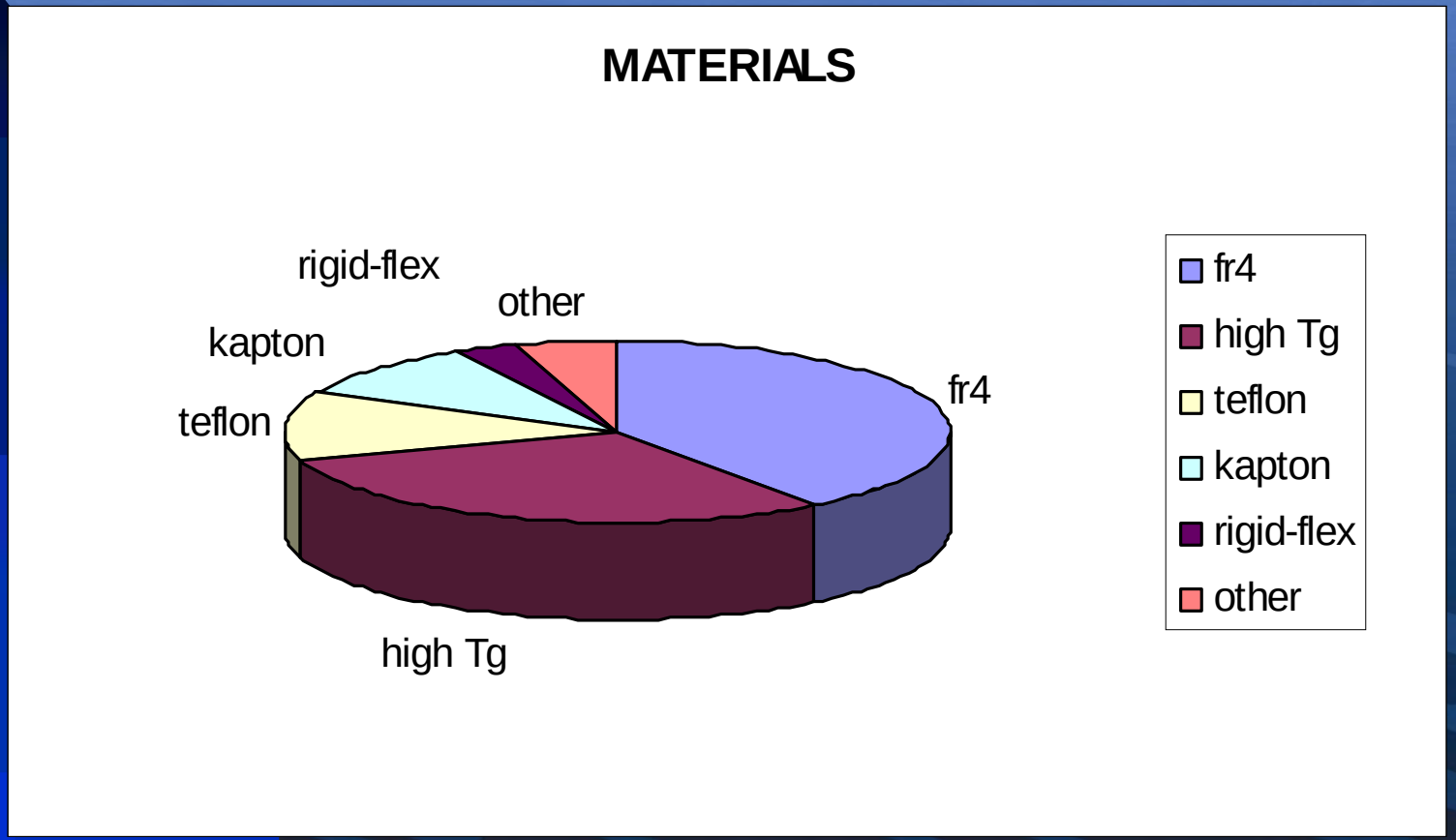
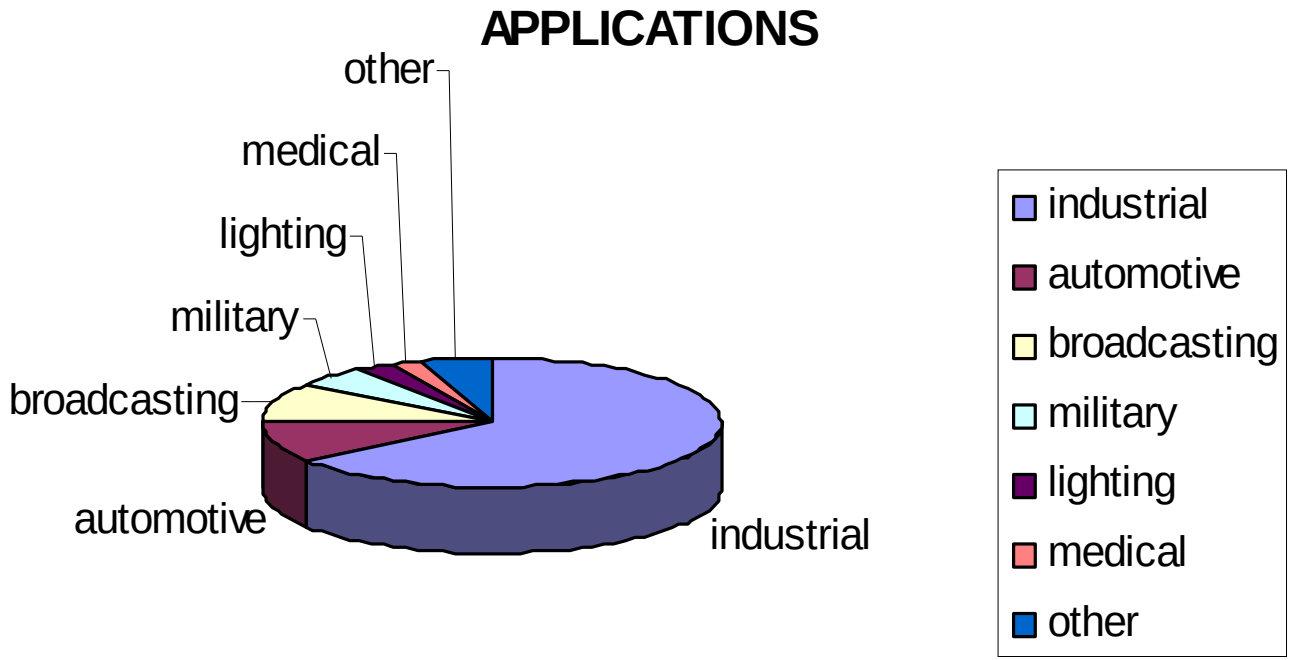
PRODUCTION


MATERIALS
rigid-flex
other
kapton
teflon
fr4
high Tg
fr4
high Tg
teflon
kapton
rigid-flex
other

PRODUCTION



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CERTIFICATIONS

- UL FILE: E146387
- ISO 9001:2008

TURNOVER and INVESTMENT

Year	Turnover	Investment
2001	€ 5.000.000	€ 780.000
2002	€ 5.500.000	€ 930.000
2003	€ 5.000.000	€ 980.000
2004	€ 6.200.000	€ 720.000
2005	€ 5.700.000	€ 530.000
2006	€ 7.000.000	€ 760.000
2007	€ 6.700.000	€ 490.000
2008	€ 7.500.000	€ 250.000
2009	€ 5.650.000	€ 200.000
2010	€ 8.150.000	€ 300.000
2011	€ 8.740.000	€ 350.000

STANDARD PRODUCTION

- MINIMUM HOLE 100 µ
- MINIMUM TRACK 100 µ
- MINIMUM ISOL. 100 µ
- NUMBER OF LAYERS 20
- BOARD THICKNESS 0.2÷5 mm
- COPPER THICKNESS 17÷150 µ
- MULTILAYER MAX BOARD 810x500 mm
- PLUGGED VIAS (drill on pad)

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MINIMUM HOLE	50 µ
MINIMUM TRACK	50 µ
MINIMUM ISOL.	50 µ
NUMBER OF LAYERS	30
BOARD THICKNESS	0.05÷6 mm
COPPER THICKNESS	5÷500 µ
MULTILAYER MAX BOARD	900x600 mm
PRESSFIT	
BLIND AND BURIED VIAS	
CONTROLLED IMPEDENCE	

Tecnomec

Via Meiaro 21 Alte di Montecchio M. (VI) - Italy
Tel. 0039 444 694333 Fax 0039 444 695322
E-mail: info@pcb-tecnomec.co.uk
http://www.pcb-tecnomec.com

TECNOMEC

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TECHNOLOGICAL SPECIFIC

	standard	special	critic	limit
ϕ minimum hole (drilled)	0,45 mm	0,35 mm	0,1 mm	0,05 mm
ϕ minimum hole (finished)	0,3 mm	0,2 mm		
tolleranza ϕ fori met.	−0,1-0,05 mm	+0,1-0,05 mm ± 0,05 mm		
tolerance ϕ not plated holes	± 0,05 mm	+0,05-0 mm		
minimum plated holes distance	0,3 mm	0,25 mm	0,2 mm	
minimum not plated holes distance	0,25 mm	0,2 mm	0,15 mm	
positioning holes tolerance	± 0,05 mm	± 0,025 mm		
"Z" axis tolerance	± 0,1 mm	± 0,05 mm	± 0,025 mm	
aspect ratio	1:8	1:10	1:14	1:16
rigid pcb routing tolerance	± 0,1 mm	± 0,05 mm		
flex pcb routing tolerance	± 0,2 mm	± 0,1 mm		
plated slot tolerance (chemical surf.)	± 0,15 mm	± 0,1 mm		
minimum internal radius	0,5 mm	0,3 mm	0,2 mm	
scoring positioning tolerance	± 0,5 mm	± 0,2 mm		
scoring core tolerance	± 0,1 mm			
pcb tolerance after scoring breaking	± 0,5 mm			
minimum track	0,25 mm	0,15 mm	0,1 mm	0,05 mm
minimum isolation	0,25 mm	0,15 mm	0,1 mm	0,05 mm
pattern tolerance	± 25%	± 20 µ	± 10 µ	± 5 µ
minimum track function of copper thickness>100 µ	= copper thickness x2	= copper thick. +50 µ	= copper thickness	
minimum isolation function of copper thickness>100 µ	= copper thickness x2	= copper thick. +100 µ	= copper thick. +80 µ	
layer alignment	± 0,1 mm	± 0,05 mm	± 0,04 mm	
hole-pad alignment	± 0,1 mm	± 0,05 mm	± 0,025 mm	± 0,02 mm
routing-pad alignment	± 0,1 mm	± 0,05 mm		
hole (drilled)-pad anular ring	0,15 mm	0,1 mm	0,05 mm	0,025 mm
hole (drilled)-ground plane isolation (inner later)	0,2 mm	0,12 mm	0,1 mm	0,08 mm
internal hole copper thickness	20 µ	25-30 µ	35-50 µ	
galvanic copper increment tolerance	± 10 µ	± 5 µ		
minimum pcb thickness	0,8 mm	0,2 mm	0,1 mm	0,05 mm
maximum pcb thickness	1,6 mm	3,2 mm	5 mm	6 mm
thickness tolerance pcb rigid	± 10%			
thickness tolerance pcb flex	± 10% (min ±50 µ)			
max pcb dilatation	0,04% (max 0,1mm)			
maximum pcb 2 layer width	500 mm	600 mm		
maximum pcb multilayer width	400 mm	500 mm	550 mm	
maximum pcb 2 layer lenght	800 mm	900 mm	> 1000 mm	
maximum pcb multilayer lenght	500 mm	800 mm	850 mm	
solder thickness	20 µ			
pad-solder anular ring	0,1 mm	0,07 mm	0,05 mm	
solder alignment	± 0,1 mm	± 0,07 mm	± 0,05 mm	
minimum solder dam (bridge)	0,2 mm	0,1 mm	0,08 mm	
minimum legend width	0,2 mm	0,1 mm		
legend alignment	± 0,2 mm	± 0,1 mm		
bow and twist	2%	1%	0,5%	
nikel thickness pcb rigid	4 µ			
nikel thickness pcb flex	2 µ			
chemical gold thickness	0,05 µ			
galvanic gold thickness	0,6 µ			
chemical tin thickness	0,6 µ			
chemical silver thickness	0,3 µ			

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ENGINEERING SYSTEMS and FILE FORMATS

- BARCO WORKSTATIONS
- CAM 350 WORKSTATION
- BARCO LASER PLOTTERS
- BARCO SCANNER

- EXTENDED GERBER 274X
- DPF (BARCO)
- ODB++
- HPGL
- DXF
- DWG
- EAGLE
- PROTEL
- ORCAD
- TANGO

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WORKED MATERIALS

- FR4
- BT
- POLYMIDE
- TEFLON (PTFE)
- DUROID
- HIGH TG MAT.
- CERAMIC
- THERMAL CLAD
- KAPTON
- MYLAR
- PET
- PEN

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FINAL PROTECTIONS

- FOTOGRAPHIC SOLDER
- SERIGRAPHIC SOLDER
- SPECIAL SOLDER FOR FLEX
- VIAS FILLED
- COMPONENT SILKSCREEN
- INK JET LEGEND
- PEELABLE
- KAPTON COVER LAYER

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SURFACE FINISHINGS

- IMMERSION GOLD
- ELECTROLITIC GOLD
- GOLD BOND
- H.A.L.
- TIN LEAD
- PASSIVATED COPPER
- IMMERSION TIN
- IMMERSION SILVER
- GRAPHITE

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MECHANICAL FINISHING

- MILLING
- SCORING
- PUNCHING
- SOFT PUNCHING FOR FLEX

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SUPPLIERS

- MAS
- KL LAMINATES
- ARLON
- NELCO
- POLYCLAD
- TACONIC
- DUPONT
- ROGERS
- ITEQ
- VON ROLL ISOLA
- KREMPEL

- ALPHAMETALS
- ALFACHIMICI
- CIMATEC
- COATES
- ELGA
- ENTHONE OMI
- MAC DERMID
- SHIPLEY
- SIRPI
- UNION TOOL
- ATOTECH

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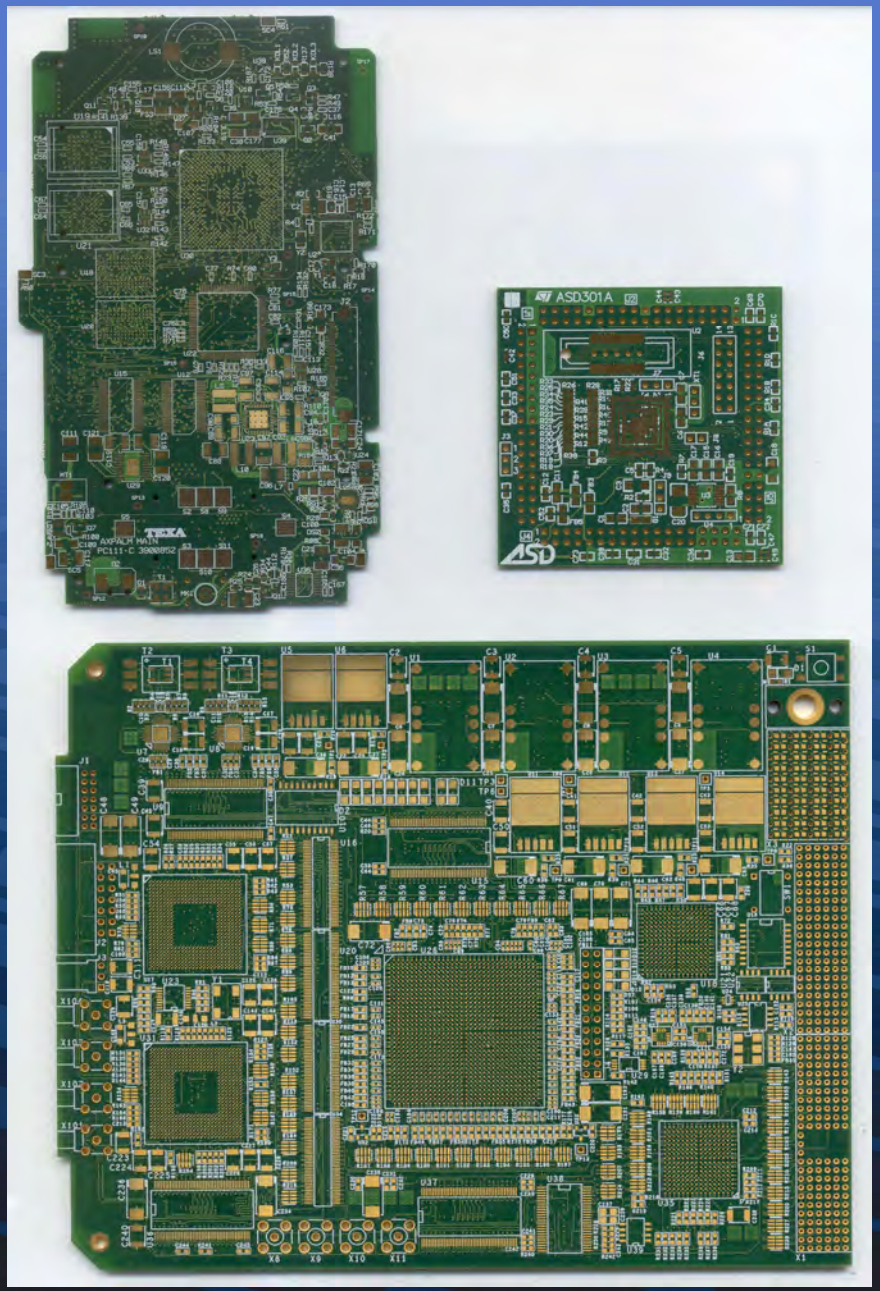
PRODUCTS
MULTILAYERS



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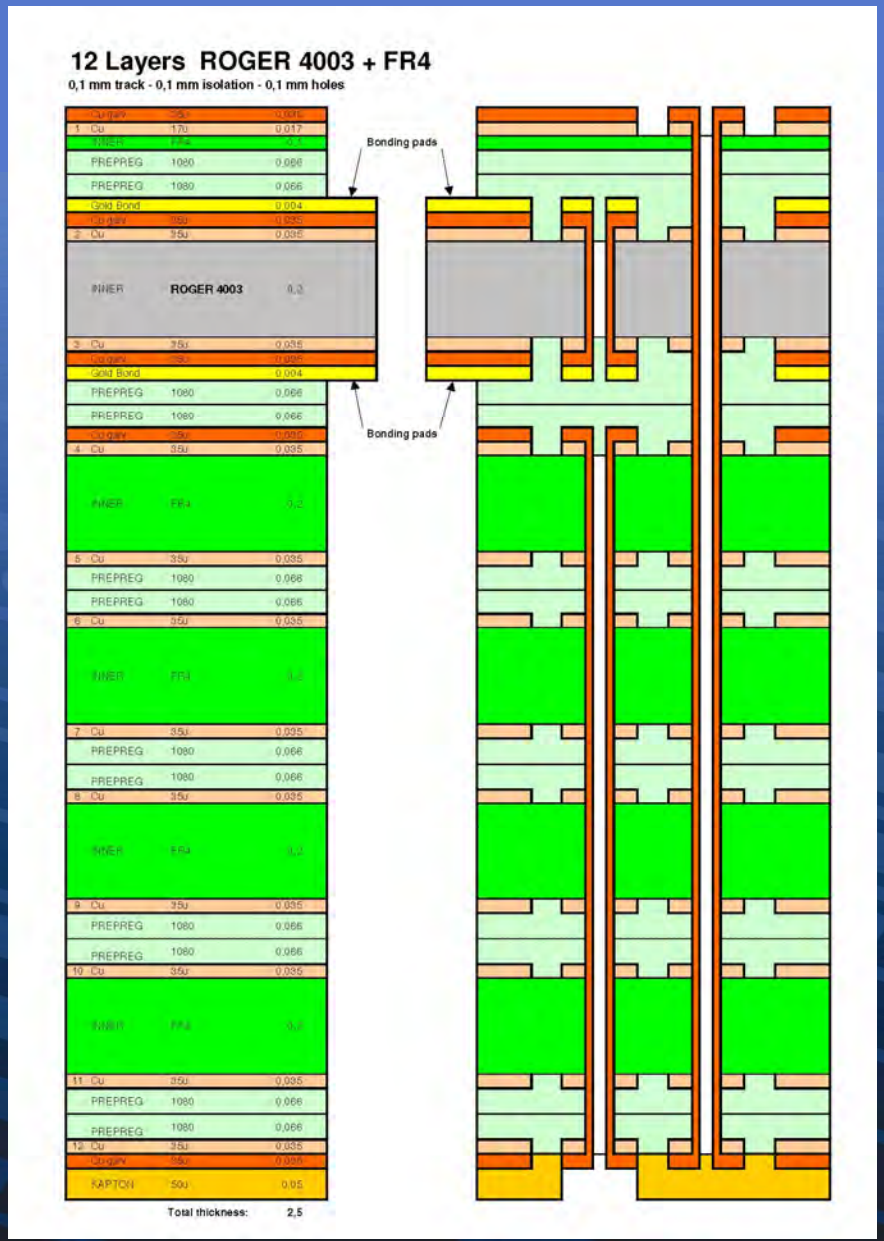
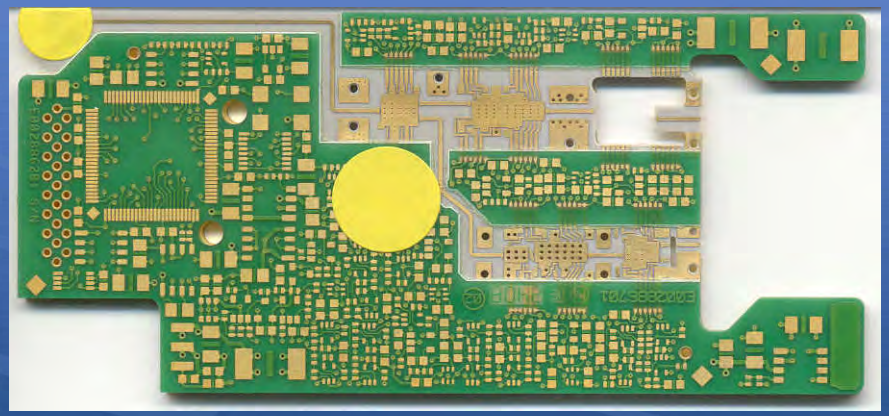
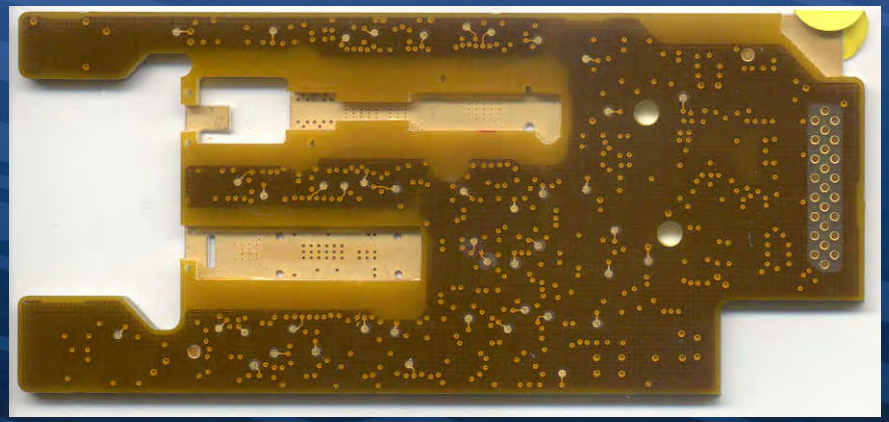
PRODUCTS







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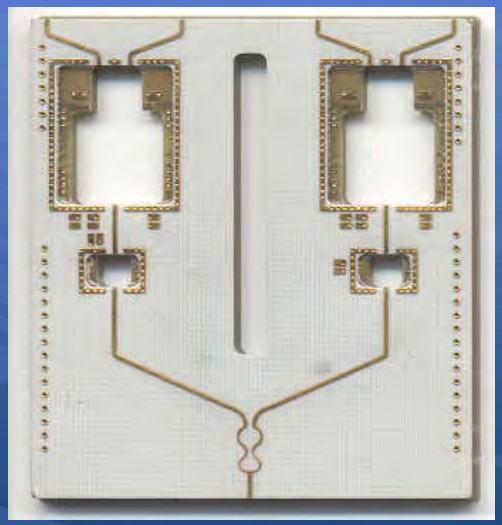
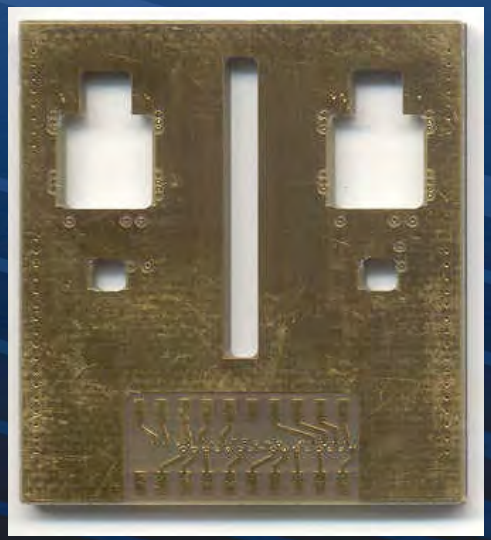
PRODUCTS

10 Layers ROGER 4350 + FR4

0,2 mm track - 0,13 mm isolation - 0,2 mm holes

	Cu galv	35u	0,035
1	Cu	35u	0,035
	INNER	ROGER 4350	0,17
2	Cu	35u	0,035
	Cu galv	35u	0,035
	PREPREG	1080	0,066
	PREPREG	1080	0,066
	PREPREG	1080	0,066
	Cu galv	35u	0,035
3	Cu	35u	0,035
	INNER	FR4	0,2
4	Cu	35u	0,035
	PREPREG	2116	0,105
	PREPREG	2116	0,105
5	Cu	35u	0,035
	INNER	FR4	0,2
6	Cu	35u	0,035
	PREPREG	2116	0,105
	PREPREG	2116	0,105
7	Cu	35u	0,035
	INNER	FR4	0,2
8	Cu	35u	0,035
	PREPREG	2116	0,105
	PREPREG	2116	0,105
9	Cu	35u	0,035
	INNER	FR4	0,2
10	Cu	35u	0,035
	Cu galv	35u	0,035
	Total thickness:		2,3





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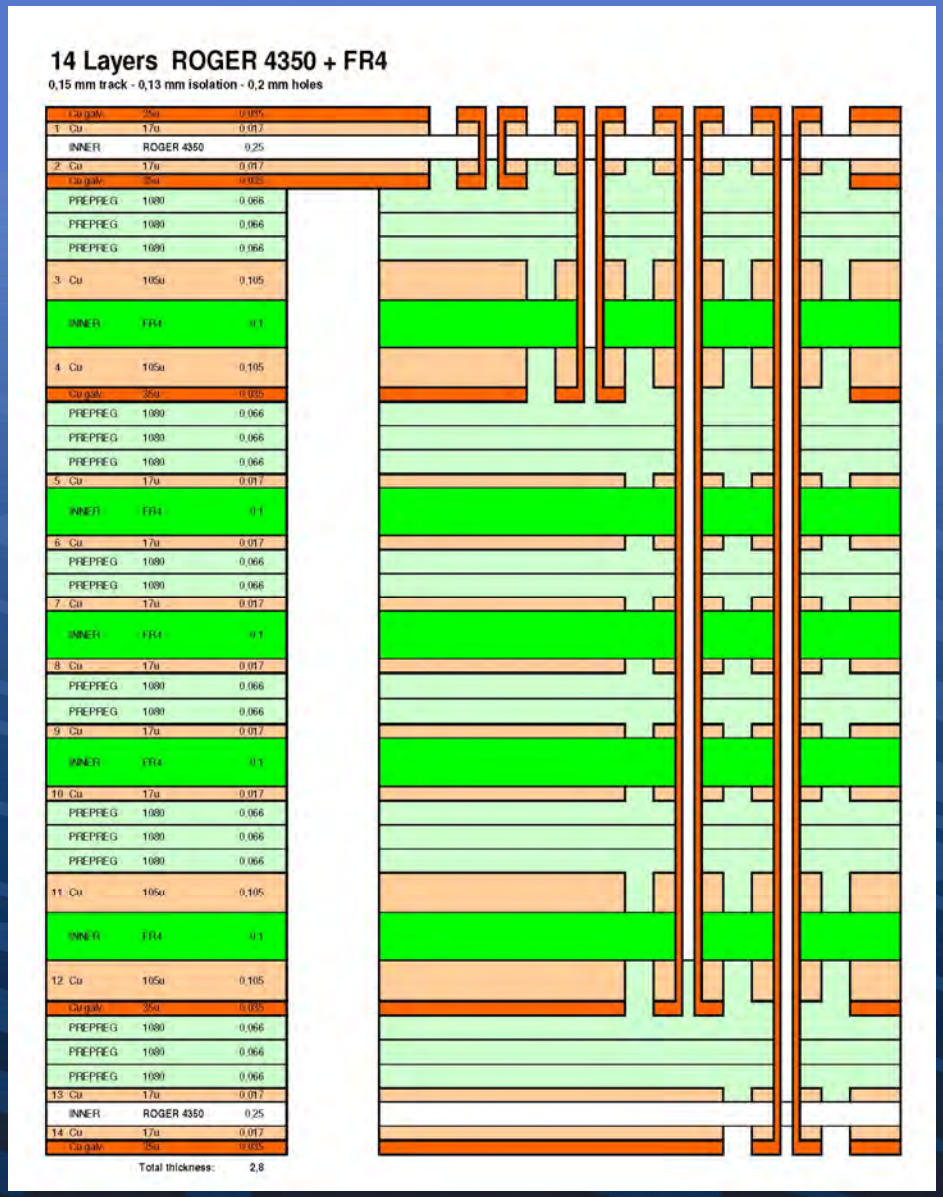
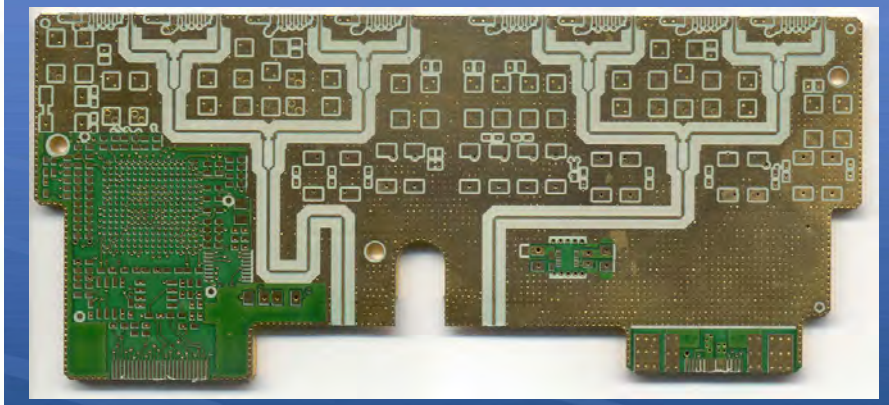
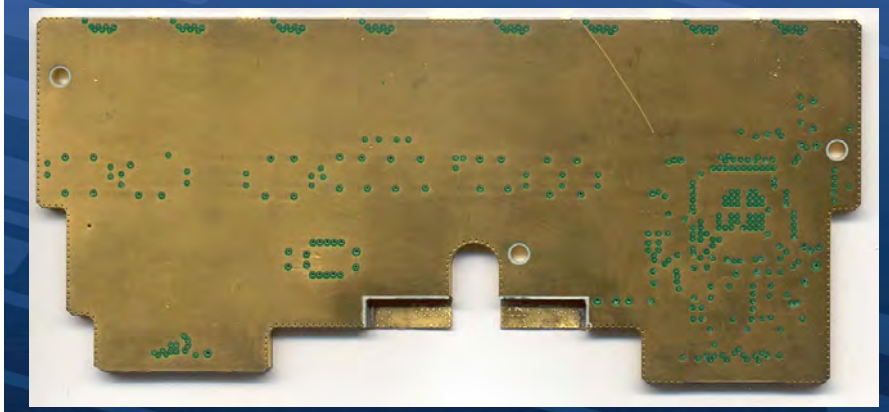
PRODUCTS







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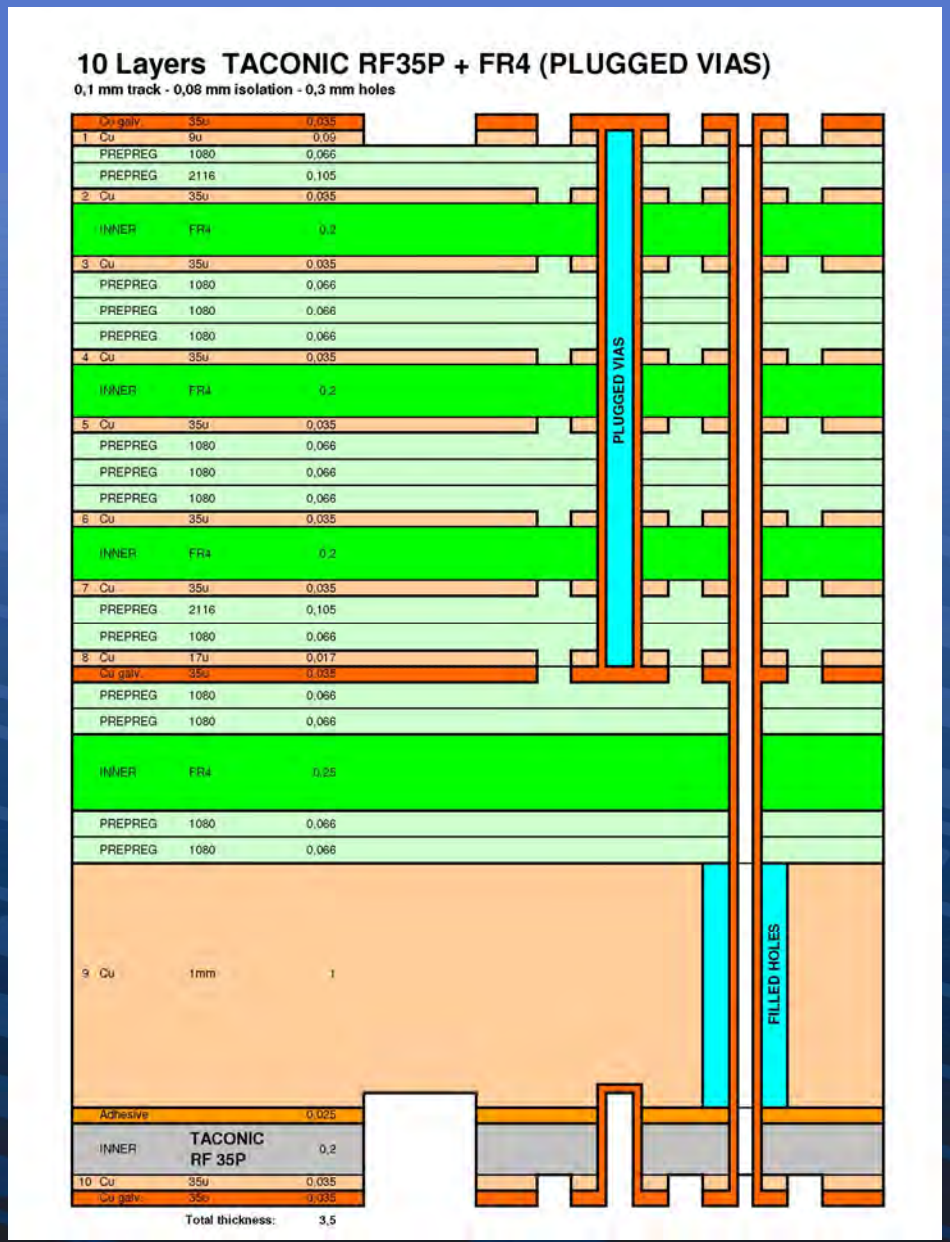
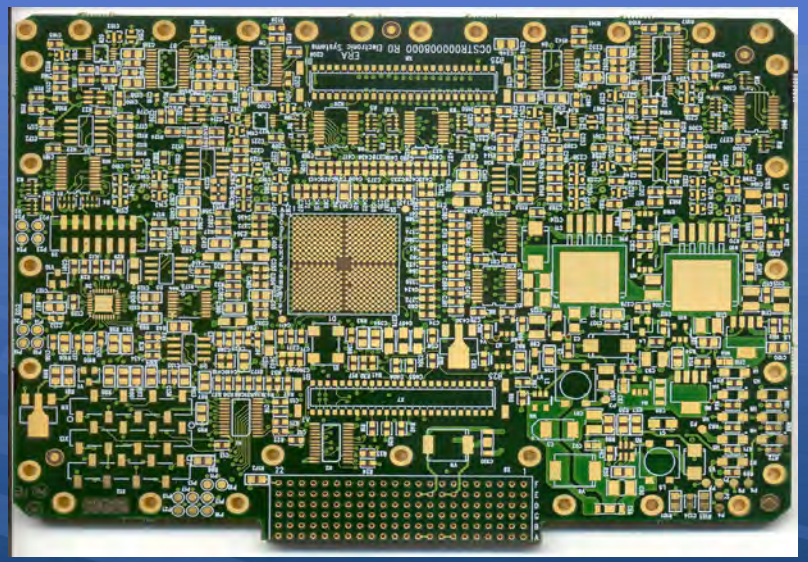
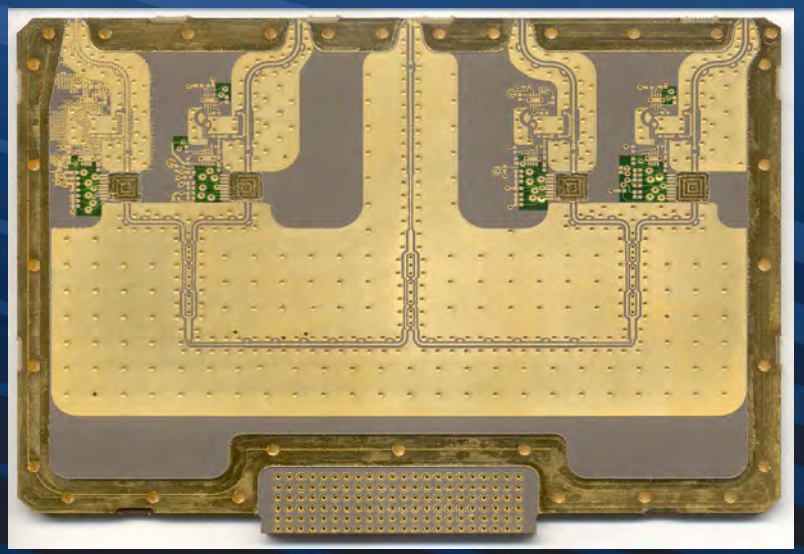
PRODUCTS







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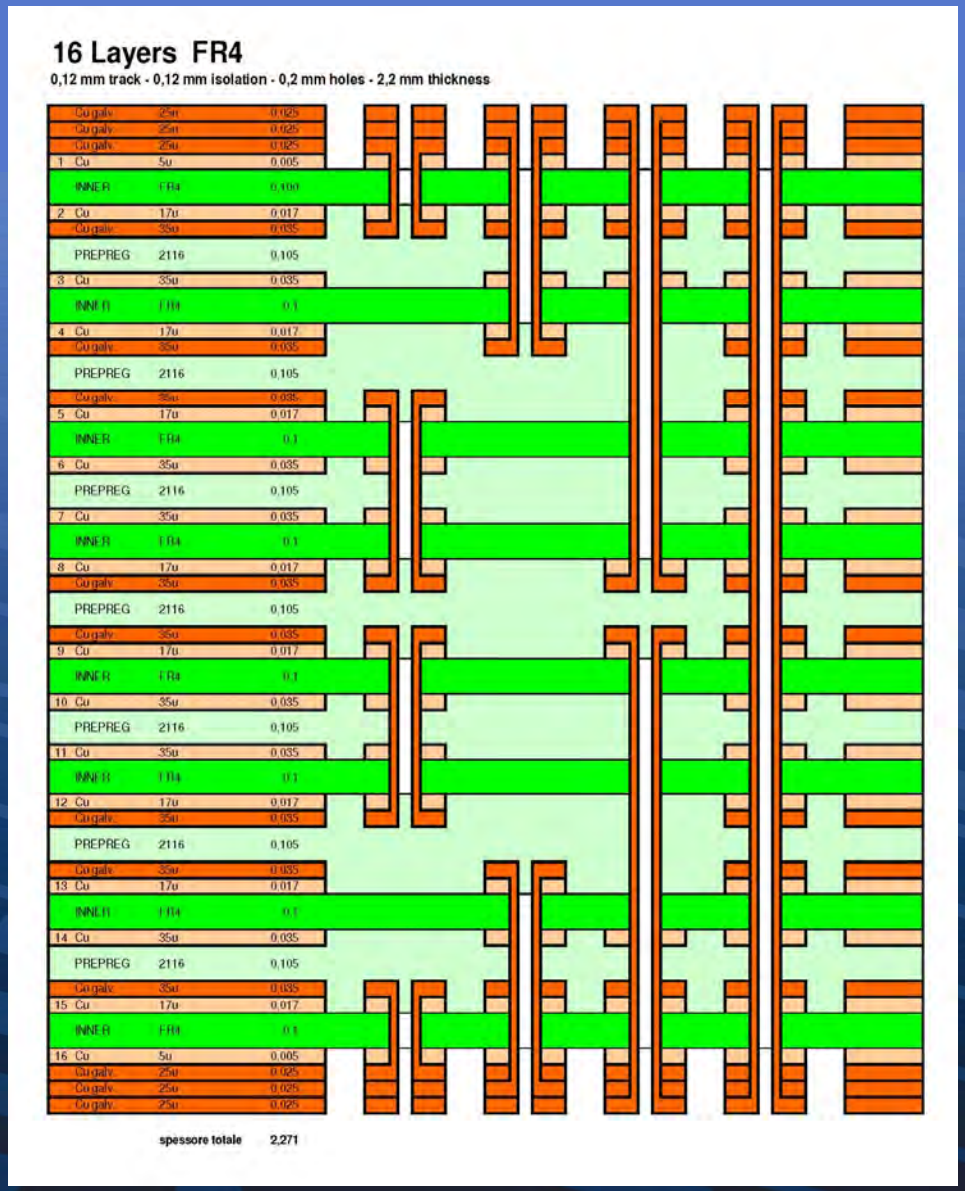
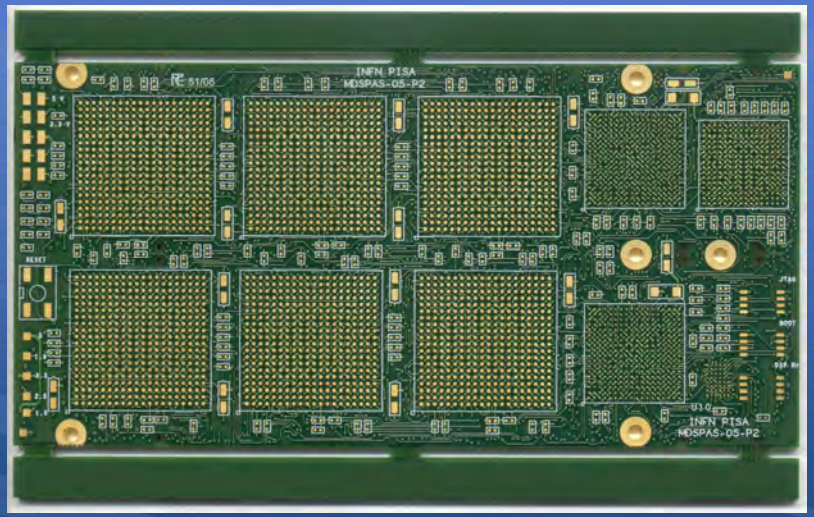
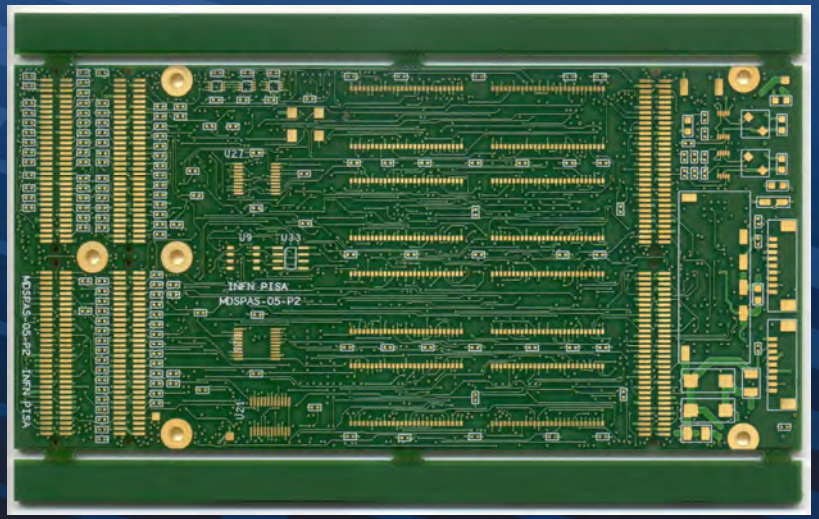
PRODUCTS


16 Layers FR4
0,12 mm track - 0,12 mm isolation - 0,2 mm holes - 2,2 mm thickness
Cu galv. 25u 0,025
Cu galv. 25u 0,025
Cu galv. 25u 0,025
1 Cu 5u 0,005
INNER FR4 0,100
2 Cu 17u 0,017
Cu galv. 35u 0,035
PREPREG 2116 0,105
3 Cu 35u 0,035
INNER FR4 0,1
4 Cu 17u 0,017
Cu galv. 35u 0,035
PREPREG 2116 0,105
Cu galv. 35u 0,035
5 Cu 17u 0,017
INNER FR4 0,1
6 Cu 35u 0,035
PREPREG 2116 0,105
7 Cu 35u 0,035
INNER FR4 0,1
8 Cu 17u 0,017
Cu galv. 35u 0,035
PREPREG 2116 0,105
Cu galv. 35u 0,035
9 Cu 17u 0,017
INNER FR4 0,1
10 Cu 35u 0,035
PREPREG 2116 0,105
11 Cu 35u 0,035
INNER FR4 0,1
12 Cu 17u 0,017
Cu galv. 35u 0,035
PREPREG 2116 0,105
Cu galv. 35u 0,035
13 Cu 17u 0,017
INNER FR4 0,1
14 Cu 35u 0,035
PREPREG 2116 0,105
Cu galv. 35u 0,035
15 Cu 17u 0,017
INNER FR4 0,1
16 Cu 5u 0,005
Cu galv. 25u 0,025
Cu galv. 25u 0,025
Cu galv. 25u 0,025
spessore totale 2,271


INFN PISA
MDSPAS-05-P2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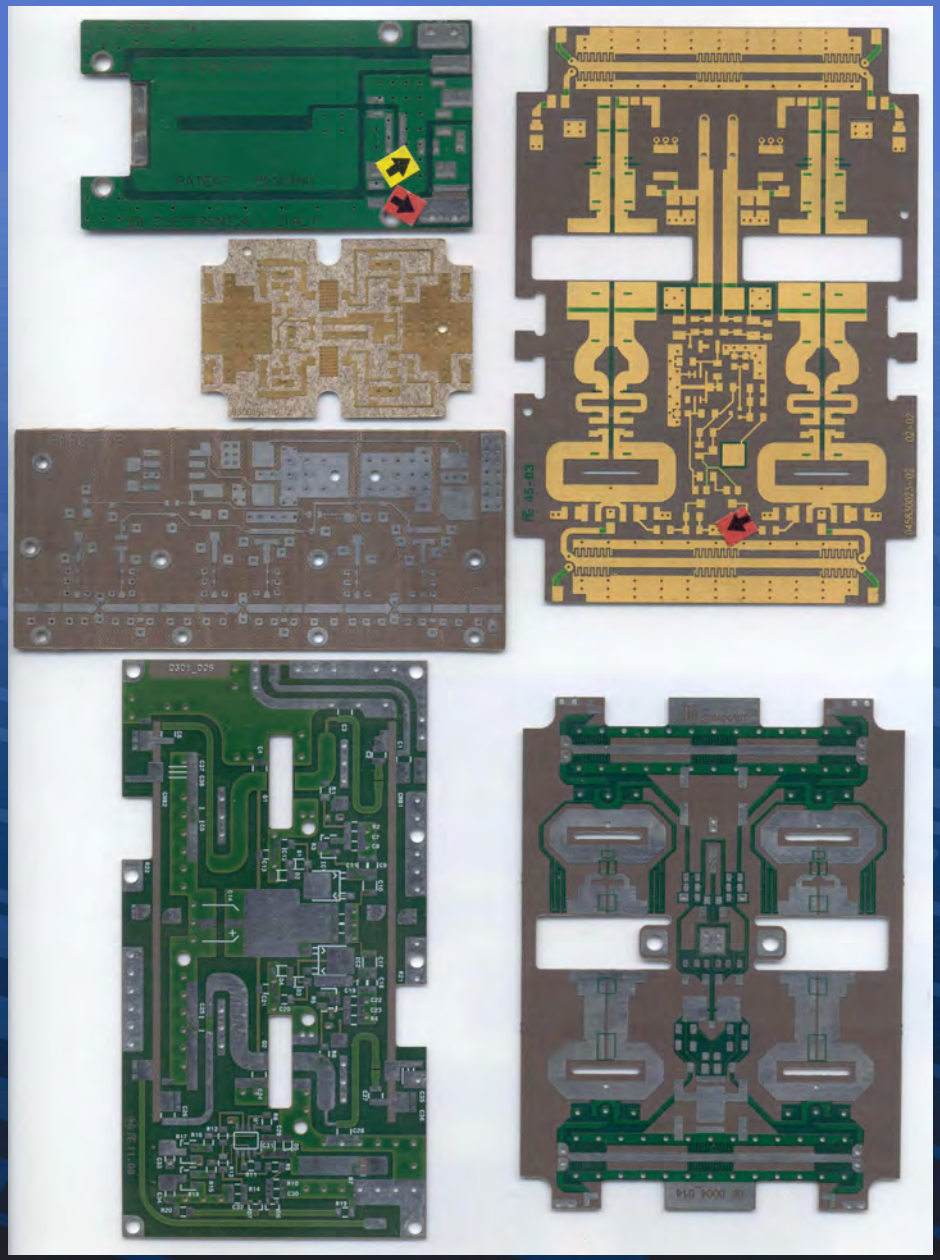

PRODUCTS TEFLON

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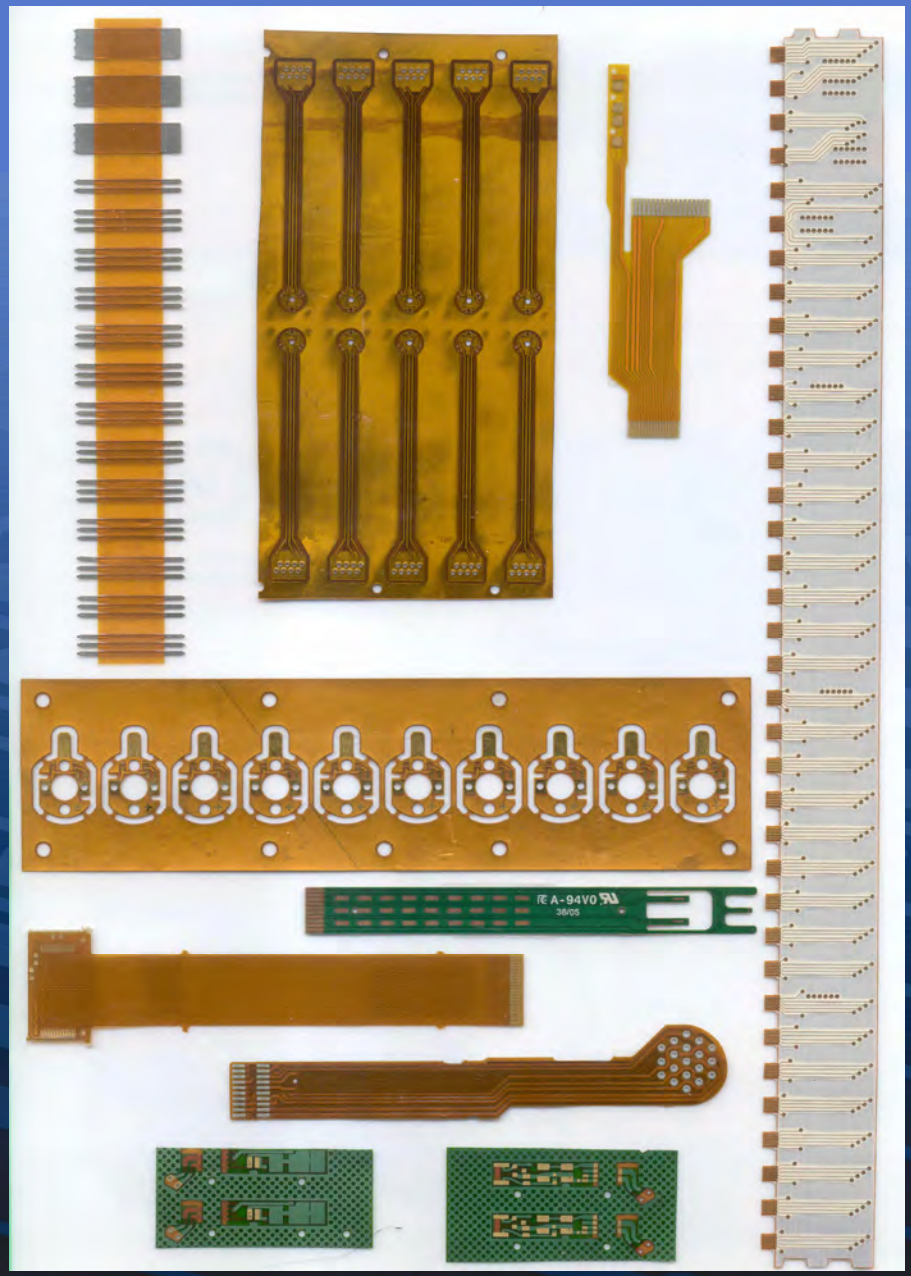
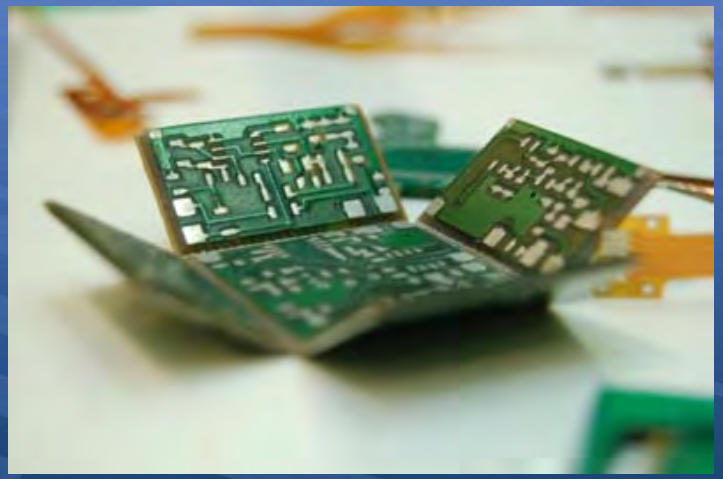
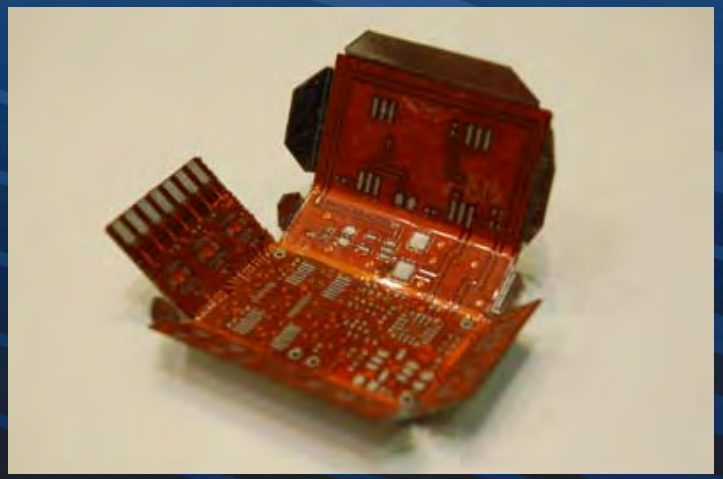
PRODUCTS
FLEX







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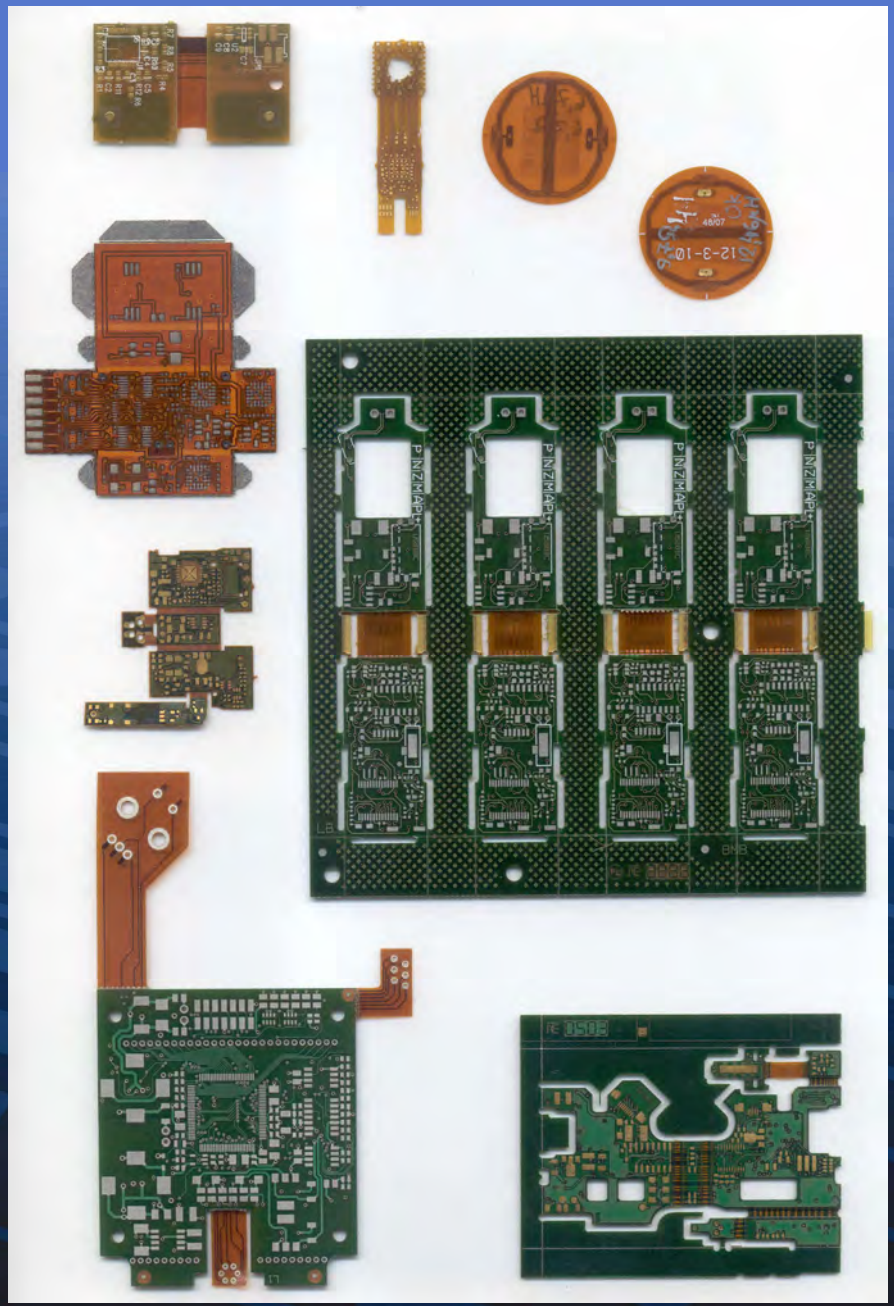
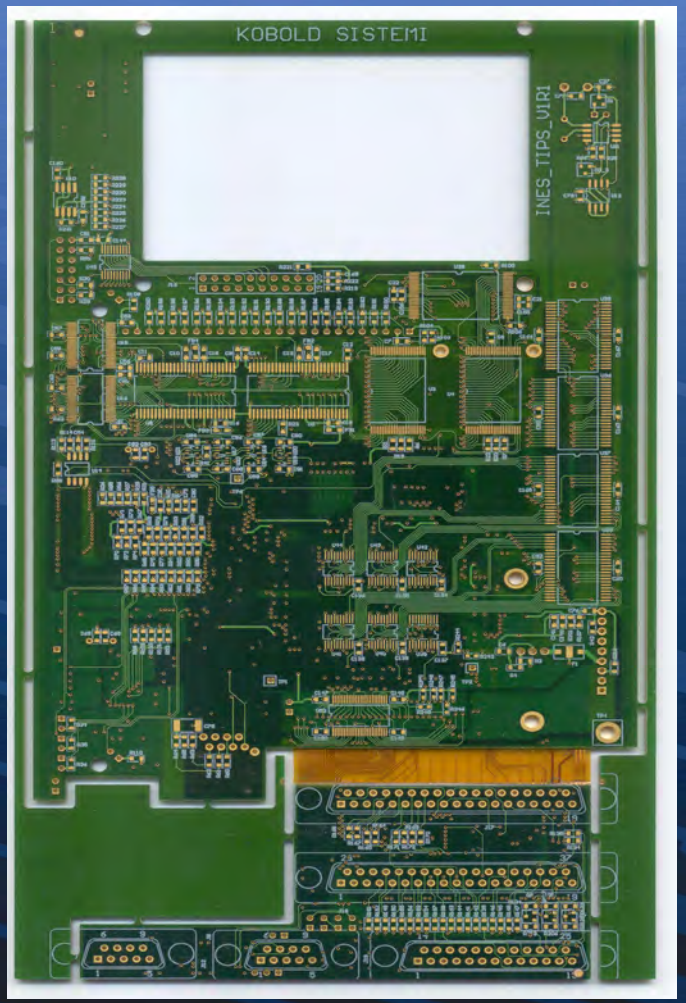
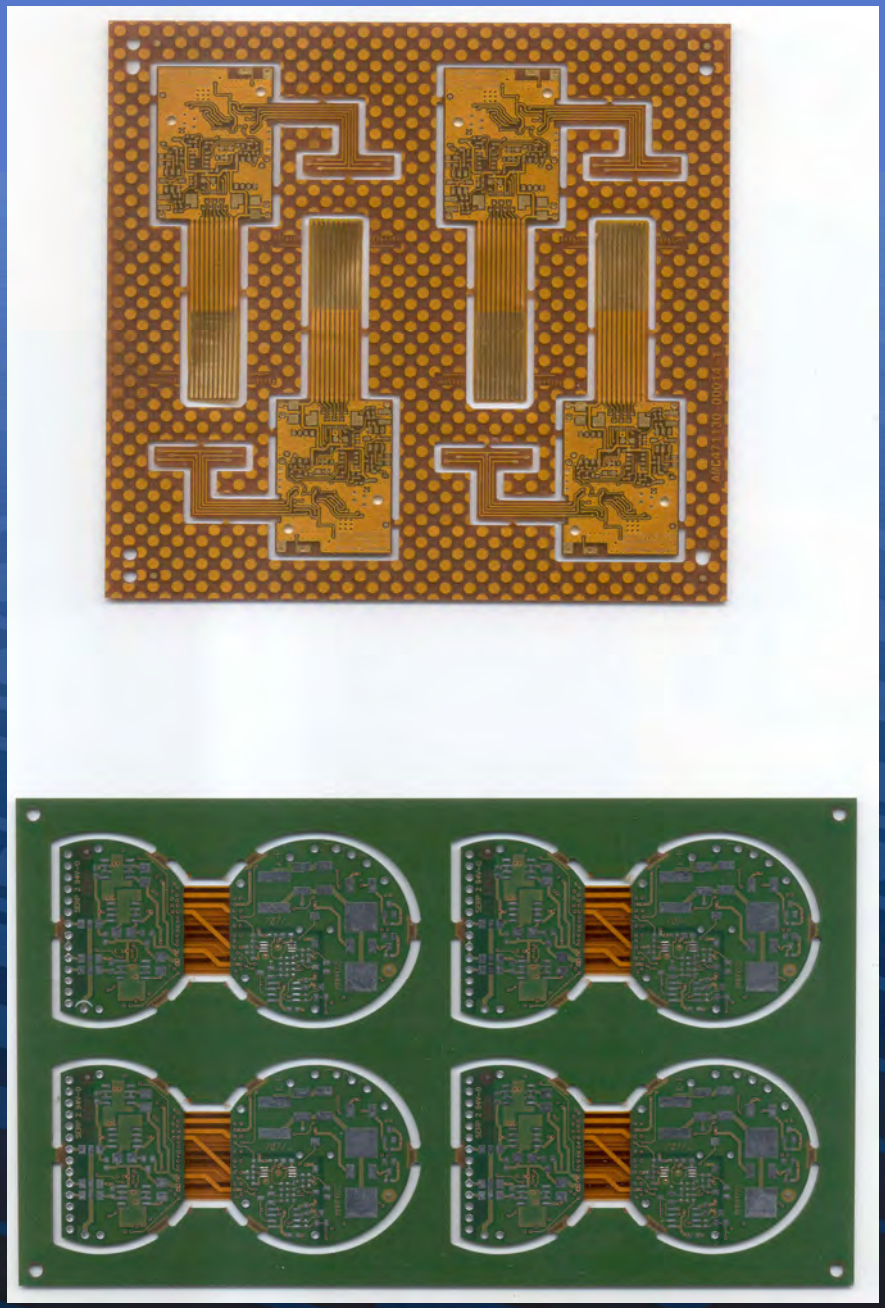
PRODUCTS
RIGID-FLEX





Tecnomec

PRODUCTS
RIGID-FLEX



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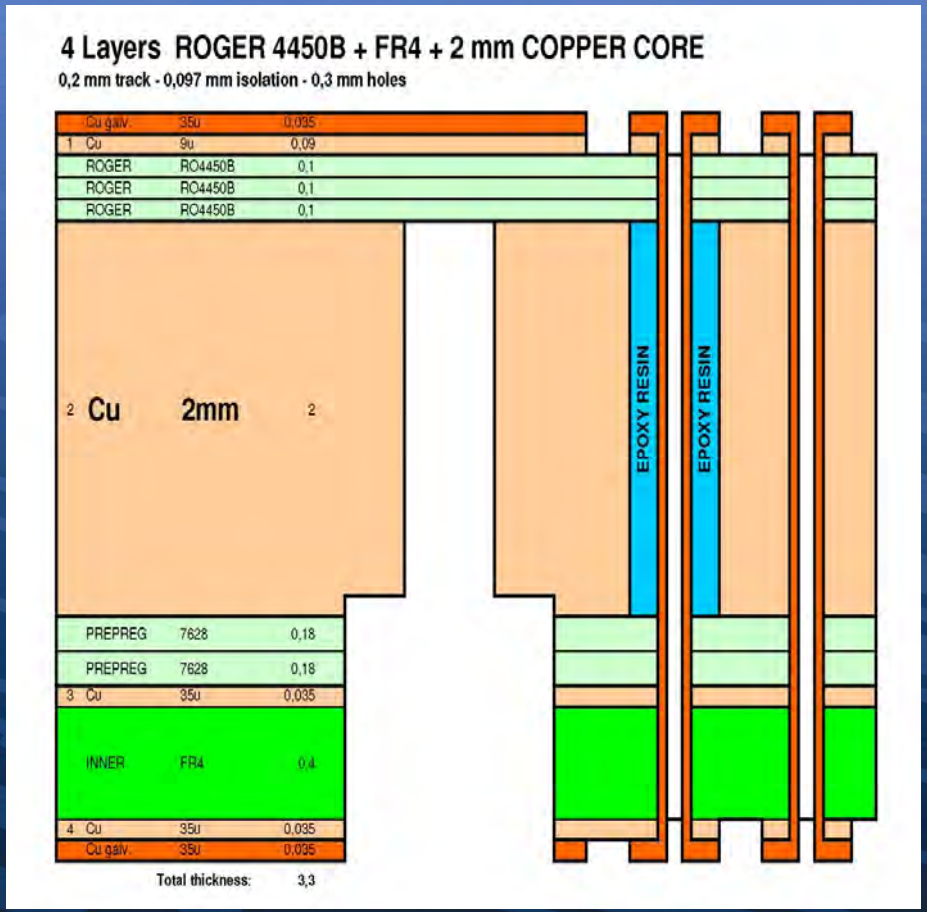
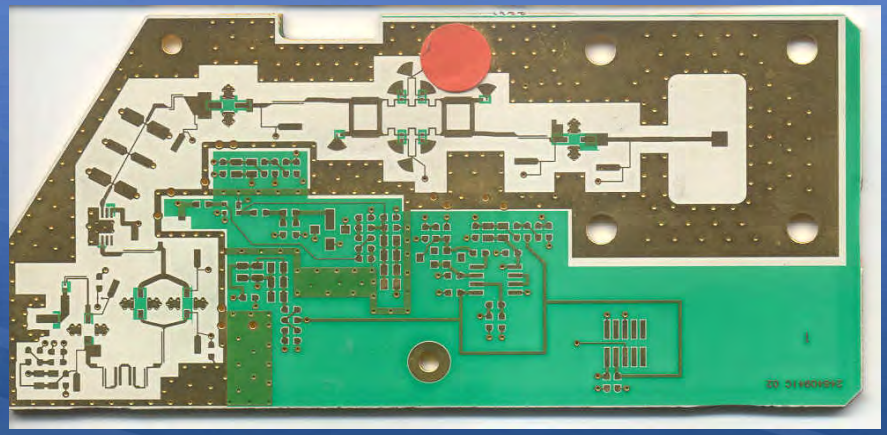
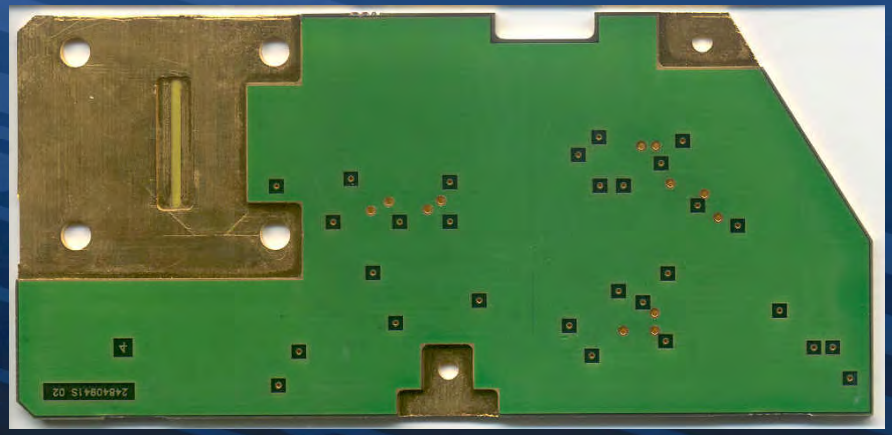
PRODUCTS
METAL CORE







Tecnomec

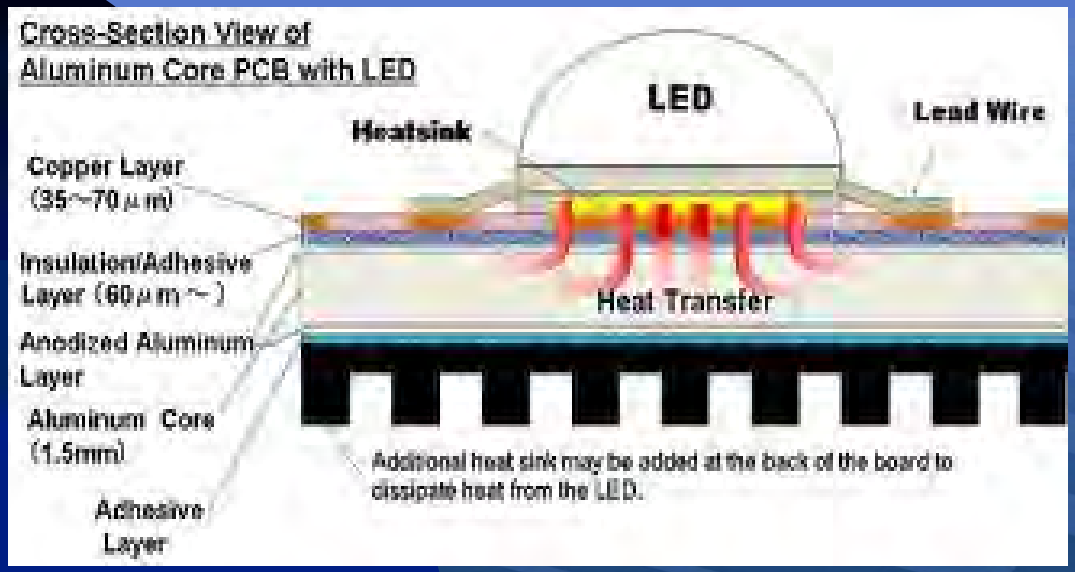
INSULATED METAL SUBSTRATE (IMS)

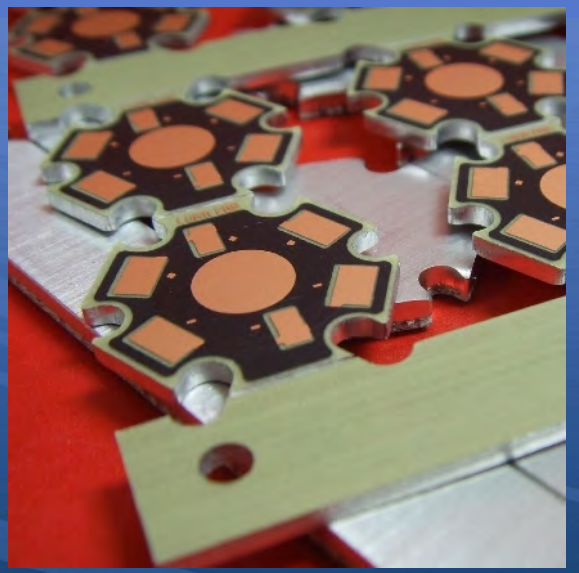
BASE MATERIALS

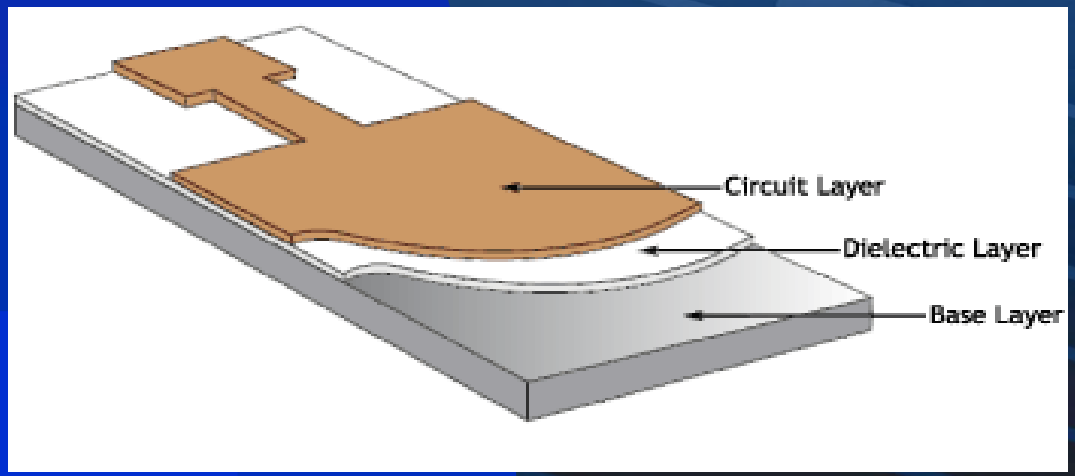
- Bergquist Thermal Clad
- Aismalibar Cobritherm
- Laird Tlam
- DBC (Direct Bonded Copper)
  - Allumina (Al2O3)
  - Nitruro di Alluminio (AIN)
- Hard Alluminium & High cond. Epoxy (made by Tecnomec)

Thermal conductivity: 1.1 - 2.2 W/m°K

METAL BACK







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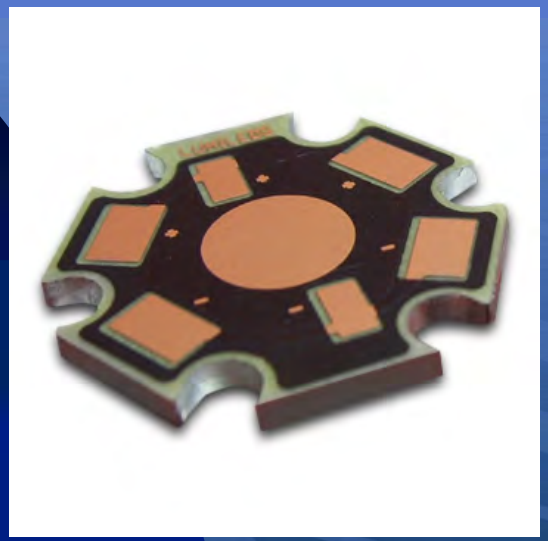
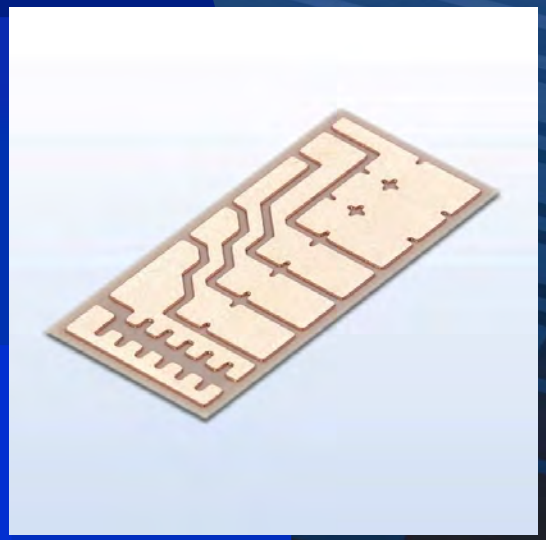
METAL BACK





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WHERE WE ARE IN ITALY…

PRODUCTION...

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ENGINEERING-LASERPLOTTER

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DRILLING-MILLING

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PLASMA DESMEARING & DIRECT PLATING

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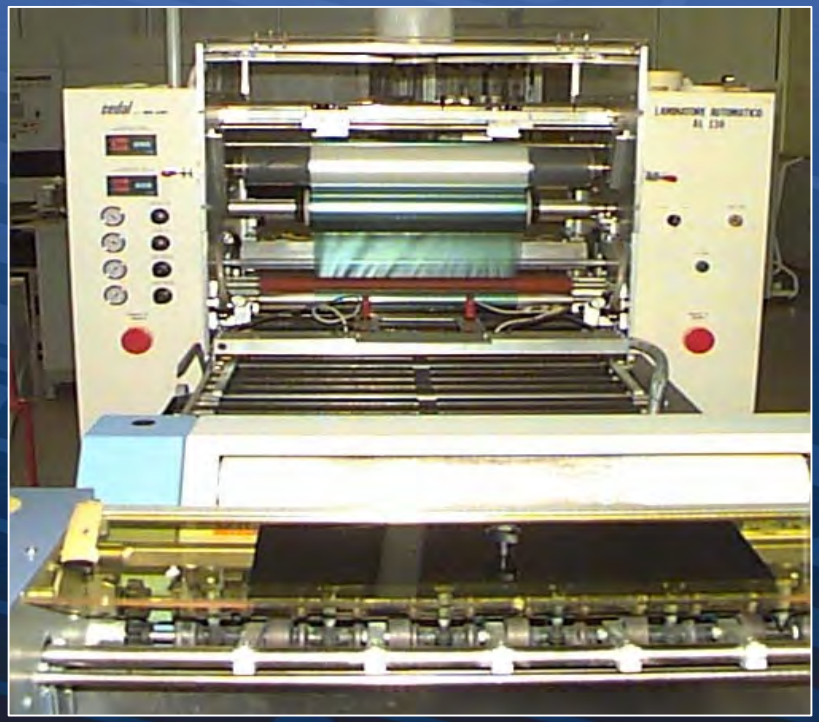
DRY FILM LAMINATION



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EXPOSING-Laser Direct Imaging

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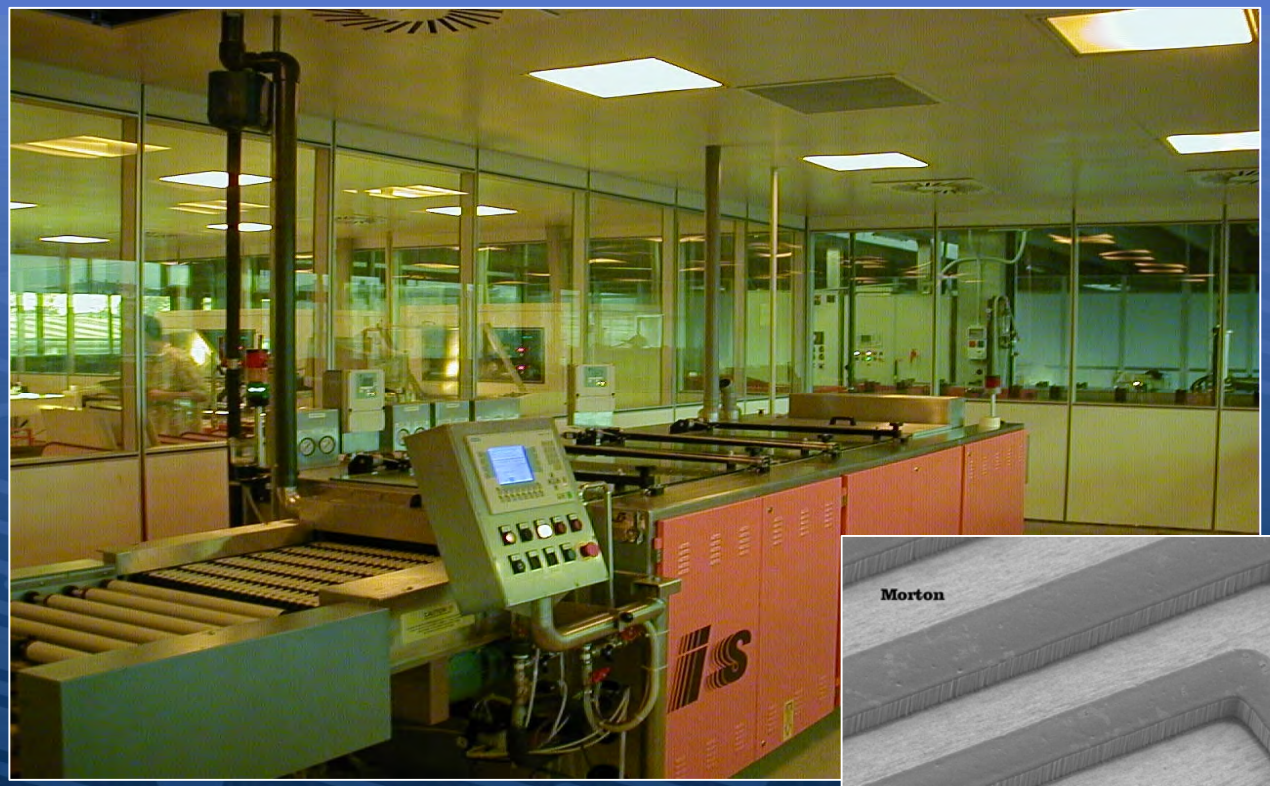
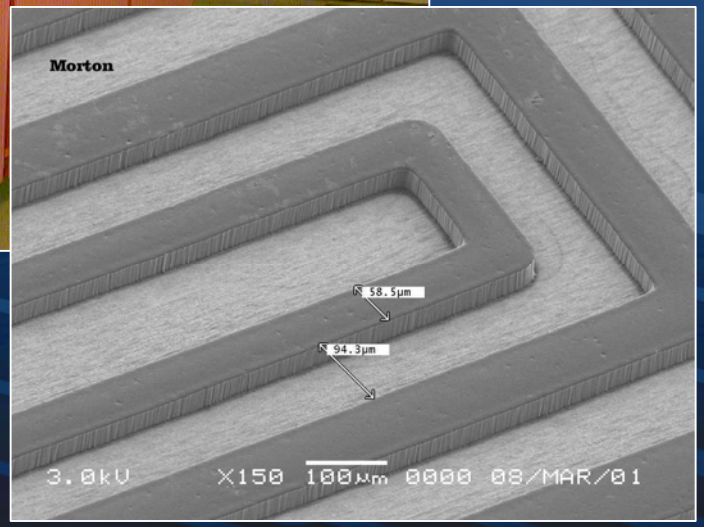
DRY FILM DEVELOPING





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ELECTROPLATING

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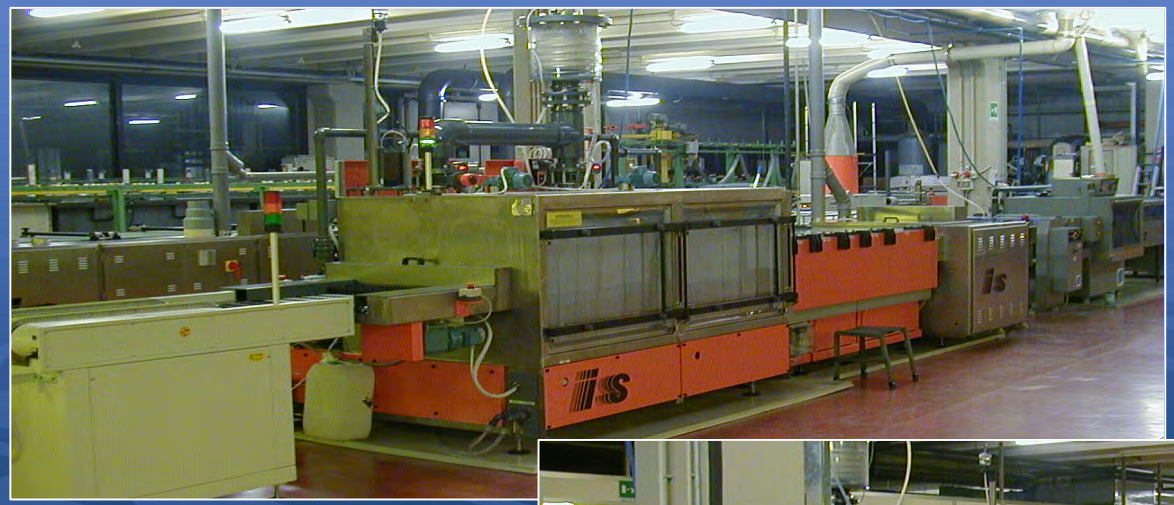
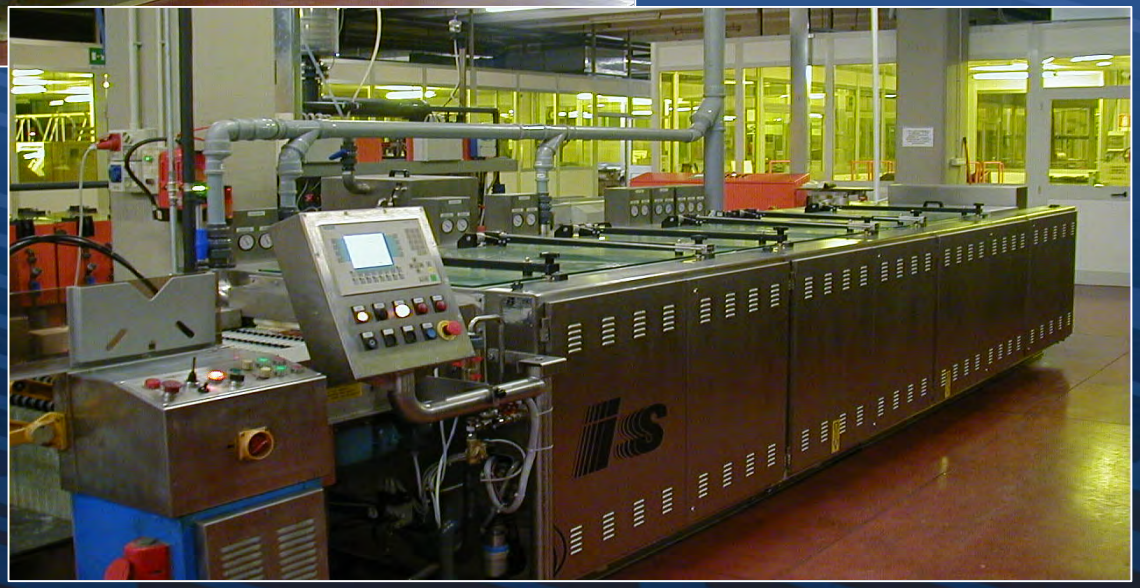
STRIPPING-ETCHING





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AOI CONTROL

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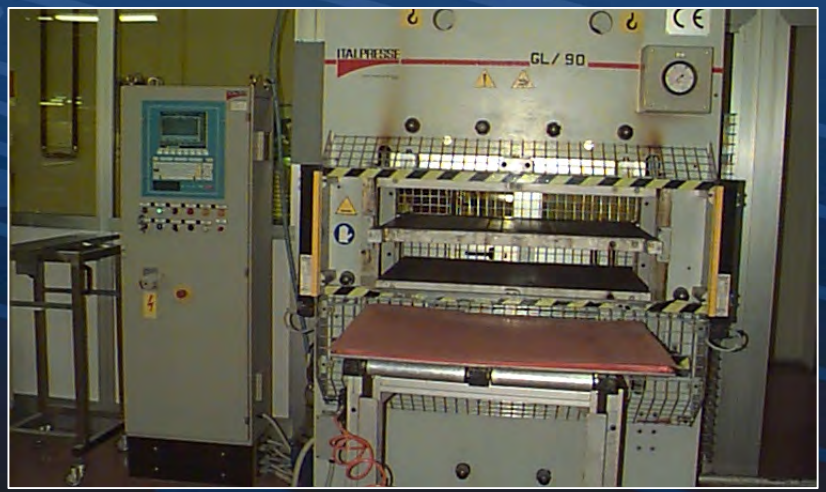
MULTILAYERS PRESS



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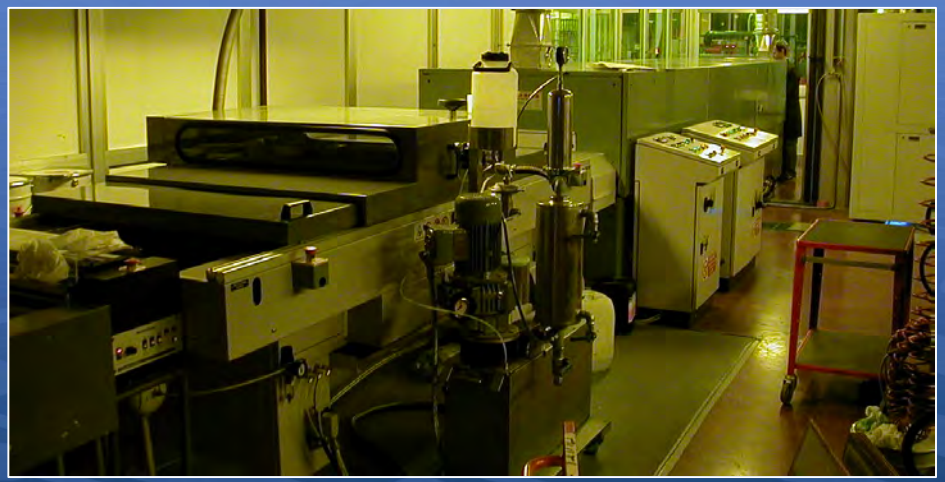
SOLDER RESIST-LEGEND



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SURFACE FINISHING

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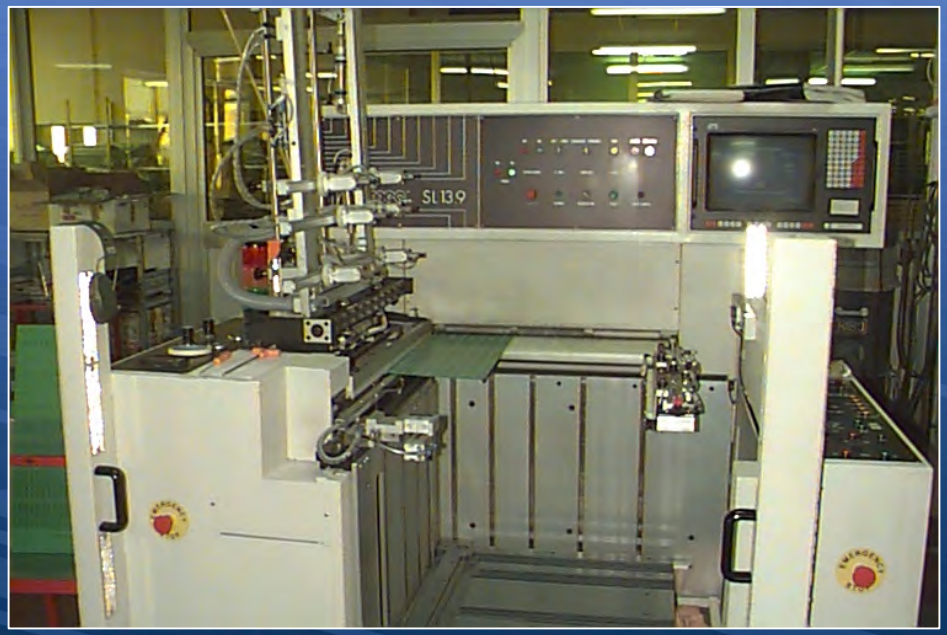
CNC SCORING



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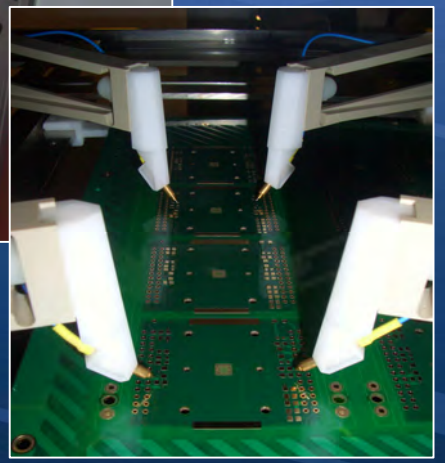
ELECTRICAL TEST



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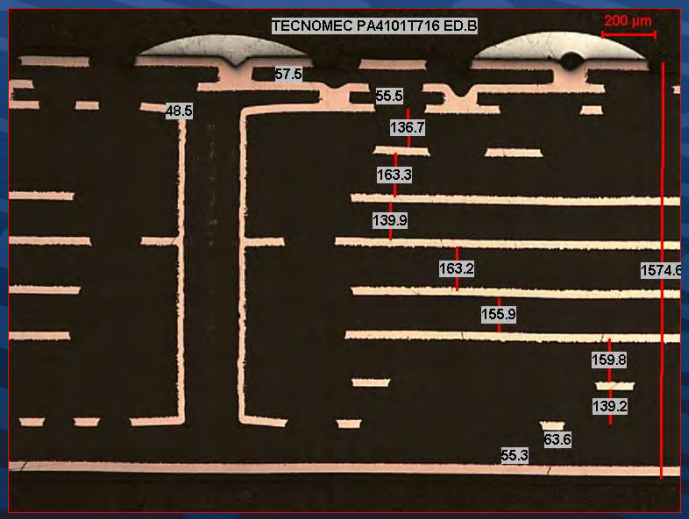
ANALYSIS



- MICROSCOPE WITH CAMERA
- SPETTROFOTOMETER
- ATOMIC ABSORPION
- METALLOGRAFIC ANALYSIS
- CHEMICAL ANALYSIS
- METALLIC THICKNESS AND HOLE MEASUREMENTS
- THERMAL STRESS
- FISCHER X-RAY
- IONIC CONTAMINATION
- CONTROL IMPEDENCE

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Where we are going?

Where we are going…

- Ø vias 50 µ
- Bilnd and buried vias
- Track-isolation of 50 µ
- 36 layers
- Special materials
- Special finishings
- Samples in 1 day
- Production in 3-5 days

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WHERE WE ARE IN ITALY…

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PRINTED CIRCUIT BOARDS

2 LAYERS IN 1-3 DAYS

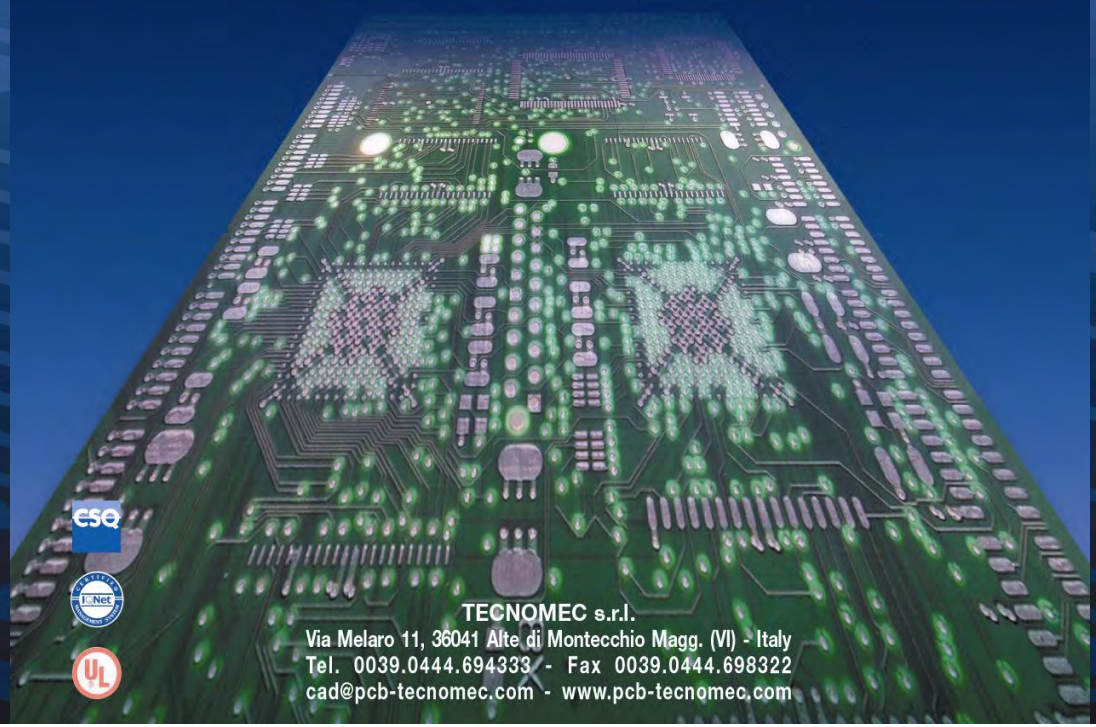
MULTILAYERS IN 3-5 DAYS

STANDARD PRODUCTION IN 2-3 WEEKS

FLEX, RIGID-FLEX, TEFLON

HIGH TG MATERIALS

FINE LINE, MICRODRILLING



TECNOMEC s.r.l.
Via Melaro 11, 36041 Alte di Montecchio Magg. (VI) - Italy
Tel. 0039.0444.694333 - Fax 0039.0444.698322
cad@pcb-tecnomec.com - www.pcb-tecnomec.com

L & P COMUNICAZIONE

TECNOMEC

CIRCUITI STAMPATI PROFESSIONALI

via Melaro 11, 36041 Alte di Montecchio Maggiore (VI) - ITALY

Tel. 0039 0444 694333 – Fax 0039 0444 68322

Info@pcb-tecnomec.com - www.pcb-tecnomec.com