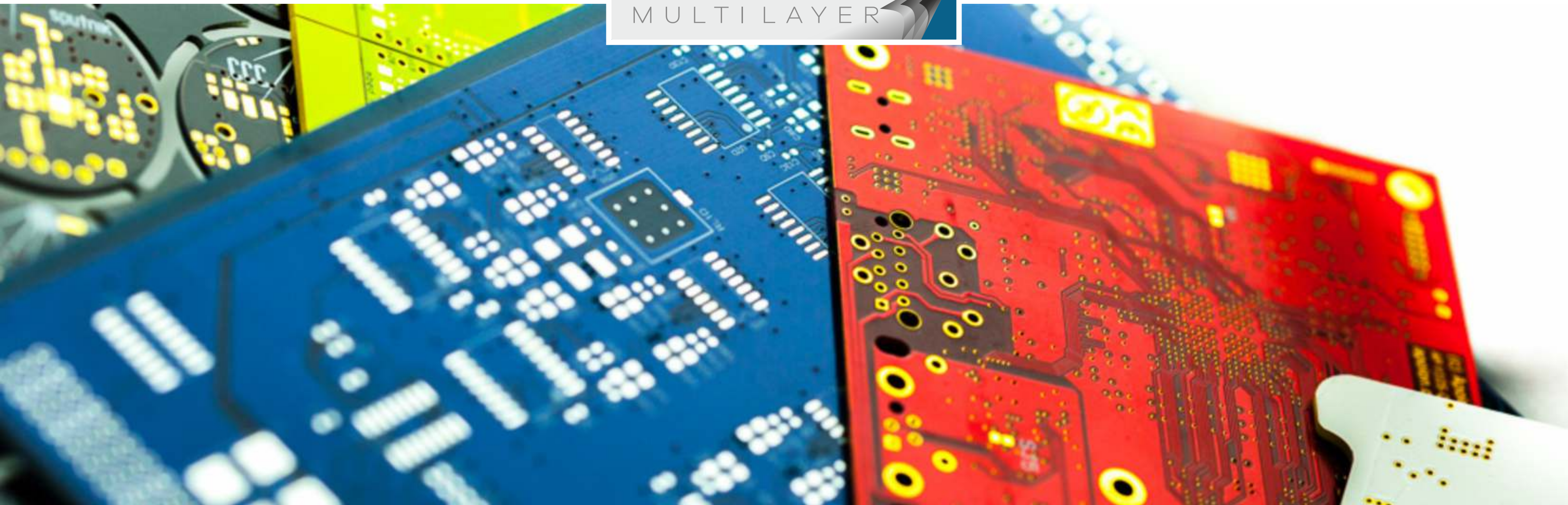
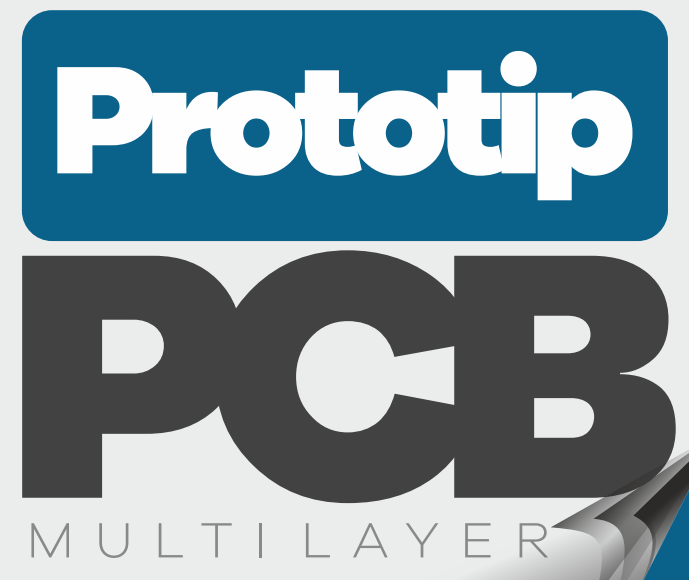




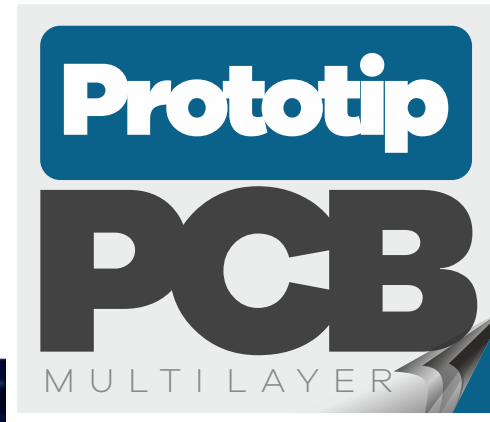
Prototip**PCB**.com

1-4 Layer PCB

Rapid Prototype
LPKF-Tamara

1-18 Layer PCB

Mass Production
Europe Based Production



Tamara Electronics is representing LPKF Rapid PCB Systems over 25 years in Turkey.

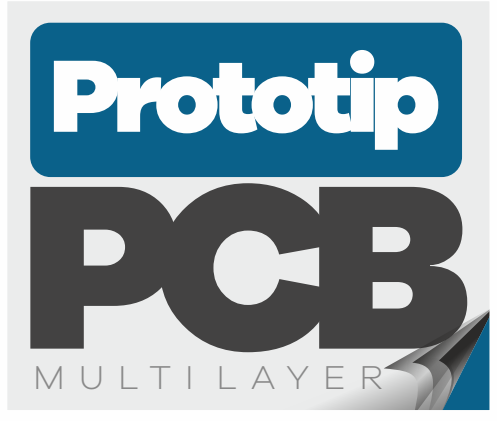
Since last years, providing in house solutions for the increasing demands on rapid PCB prototypes up to **4 layers**.

www.PrototipPCB.com

To be able to answer the demands of our customers, we are providing a prototype and mass production services with our Europe based partners up to **18 layers**.

Multi Layer PCB

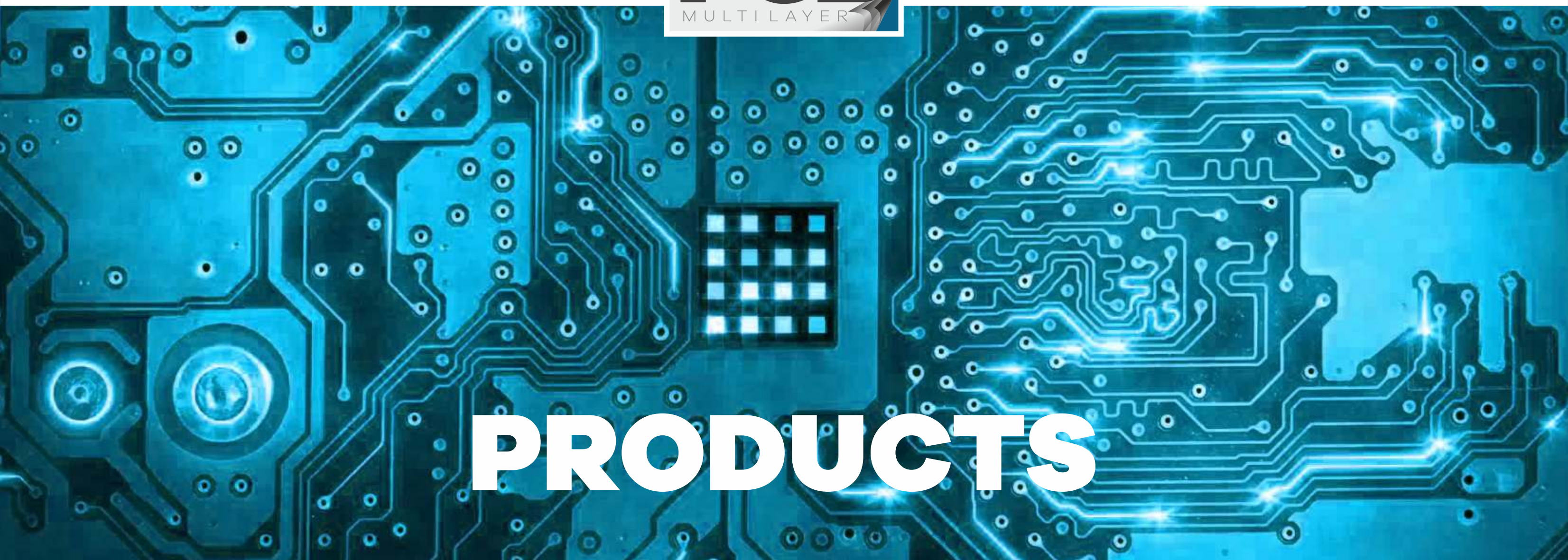




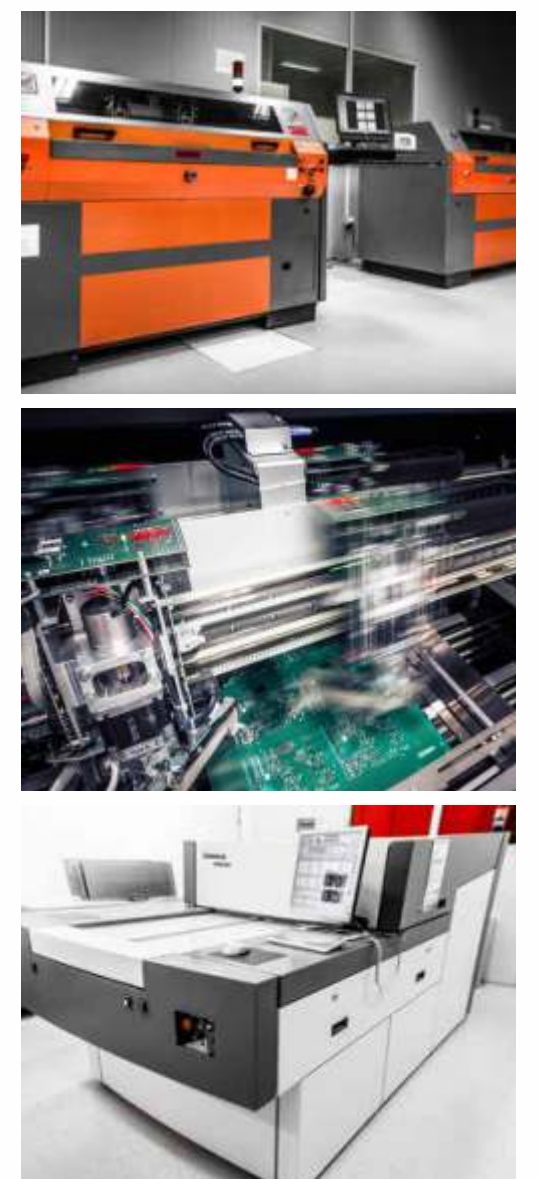
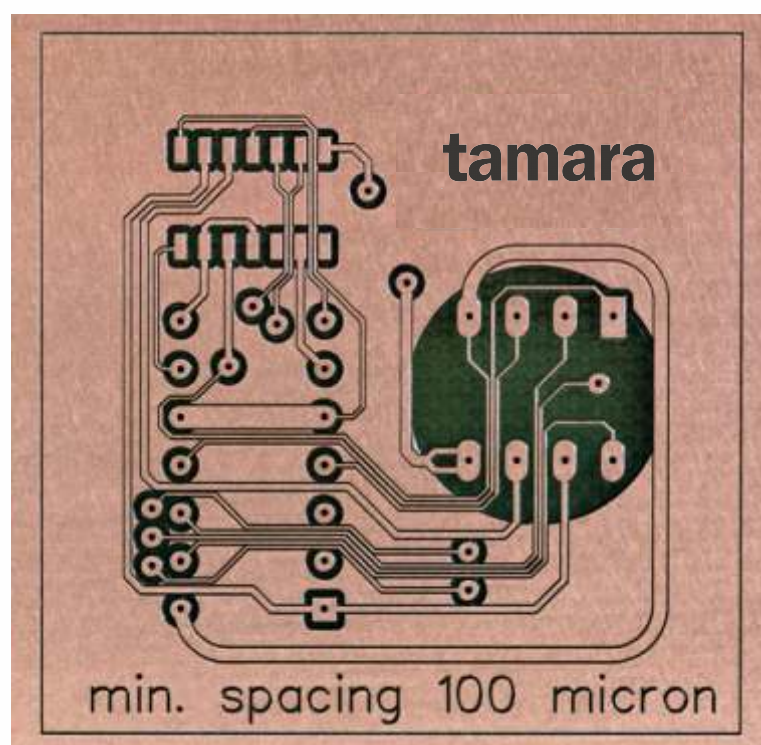
TECHNICAL CAPABILITES of PCB

Requirement attribute:	Product capability
Board Type:	Single -, Double sided, Flex, Teflon, Multilayer, High Freq, MetalCore,...
Nr. of conductive layers:	Up to 18
Laminate Materials:	FR4, Halogen free, CEM1, CEM3
	High-freq materials
	High Tg/CTI materials
	Alu materials
	PTFE, Rogers, Brass,Titanium, Polyimide, Stainless
Max board size in production:	610 x 457 mm for ML
	1200 x 457 mm for SE and DS
	5000 x 340 mm for flex
Total board thickness:	0,20 mm – 3,2 mm
Inner layer thickness:	0,10 mm – 1,6 mm
Min line width, space:	75 µm (25 µm)
Copper Foil Thickness on outer layers:	12 µm – 105 µm, 210 µm, 400 µm
Copper Foil Thickness on inner layers:	12 µm – 105 µm
Diameter of drilled holes:	0,15 mm – 6,40 mm
Finished hole diameter:	0,10 mm – 6,35 mm
Metallization Aspect Ratio:	12:01
Blind VIAS Aspect Ratio:	01:01
Solder resist:	Green matt and glossy, Black matt and glossy, White, Blue, Red, Yellow (Min. gap in fine-pitch 50 µm)

Requirement attribute:	Product capability
Legend Print:	White, Green, Yellow, Black, Red, Blue
Peelable Solder Mask:	Peters Blue
Vias filler:	with solder resist
Carbon print:	40 Ohm ± 5%
Surface Finishes:	HAL Lead Free
	HAL Tin-Lead
	Immersion NiAu (ENIG)
	Immersion Ag
	Immersion Tin
	OSP
	Hard gold
Tolerances:	Routing ± 0,10 mm
	Scoring ± 0,10 mm
	Etching ± 10%
	Hole Tol. (Press fit) ± 0,05 mm
Quality Management:	UL conformance
	Micro section
	Automatic Optical Inspection
	CCD
	Electrical Testing



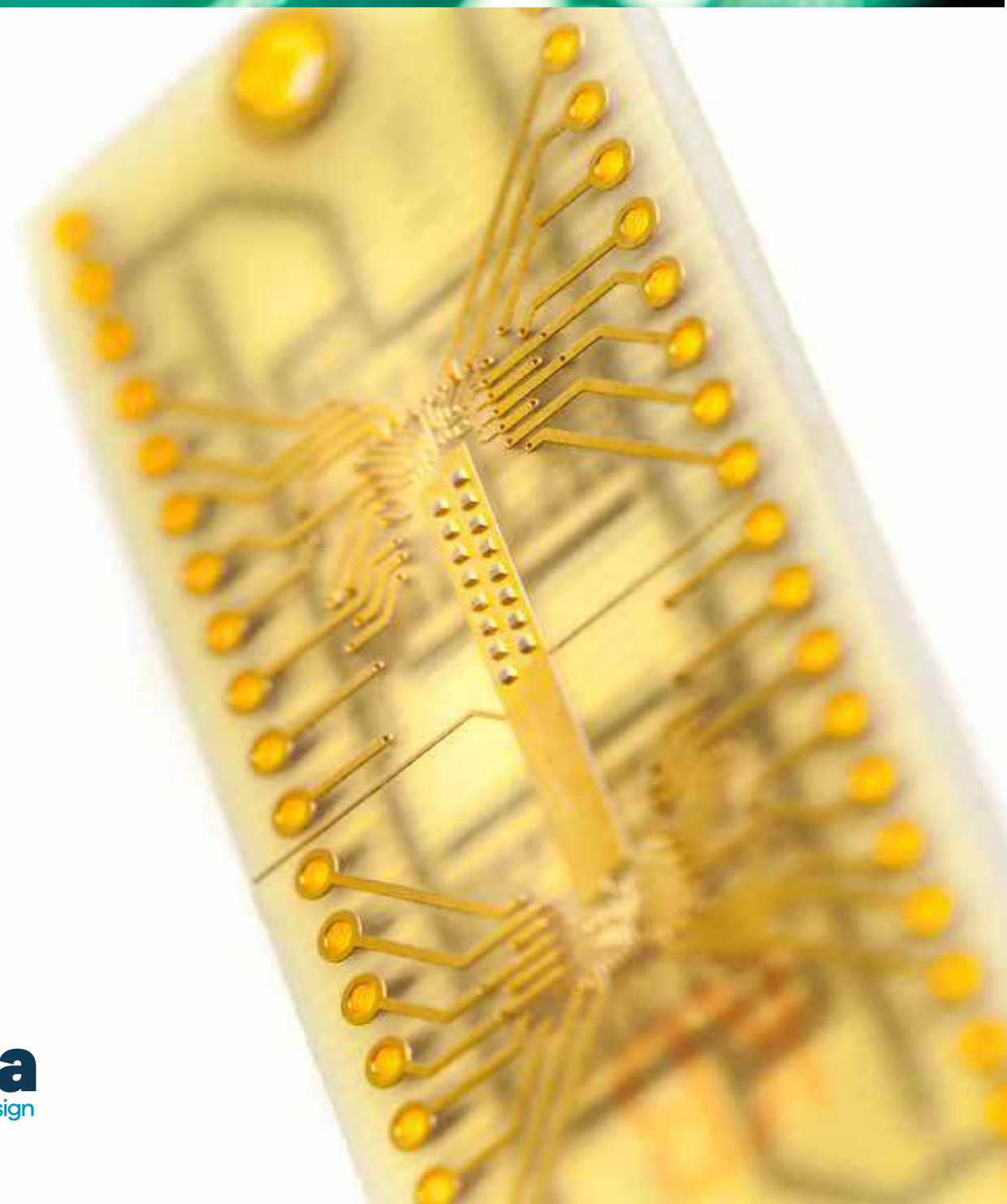
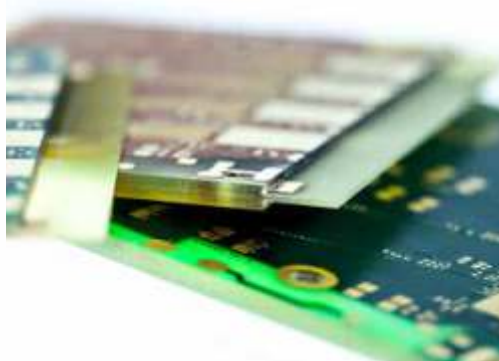
PRODUCTS





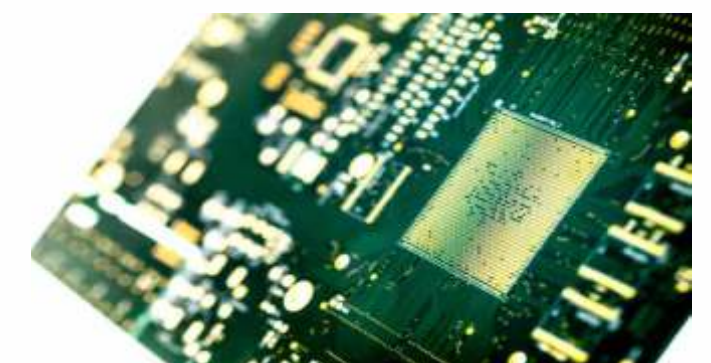
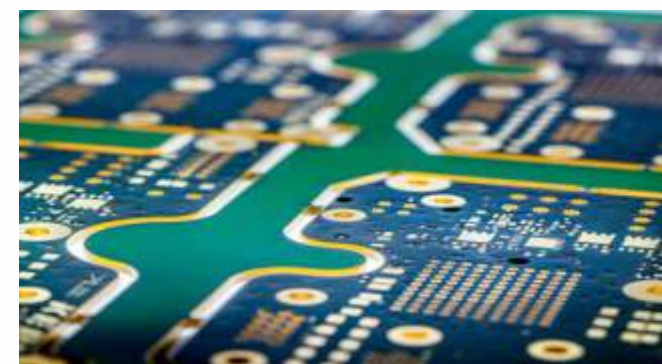
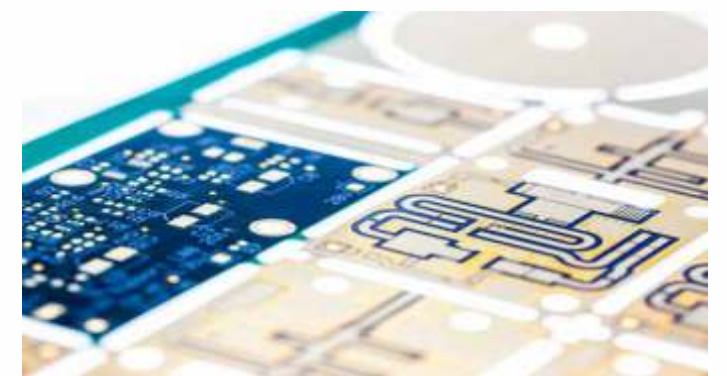
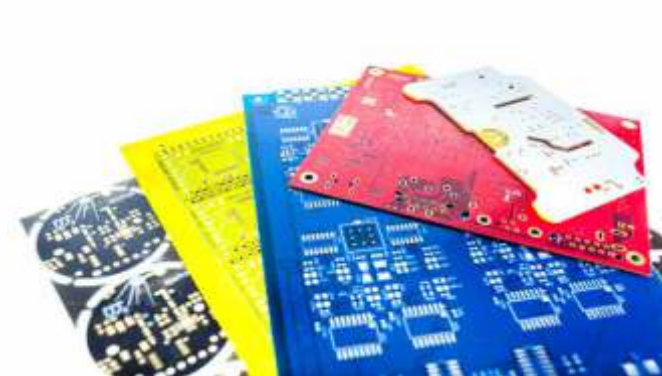
PRODUCTS

- Thick copper PCB
- Embedded PCB
- BGA raster 0.5
- Spacing 75 micron
- Edge plating
- Deep routing
- High-freq materials
- Brass / titanium / stainless etching
- Burried Via
- Via in pad
- Plugged Via
- PRESS FIT
- Jump scoring
- Rigid-flex PCB
- Flex - boards
- Ribbon cables (up to 5 m)
- PCB up to 1.2 m





PRODUCTS



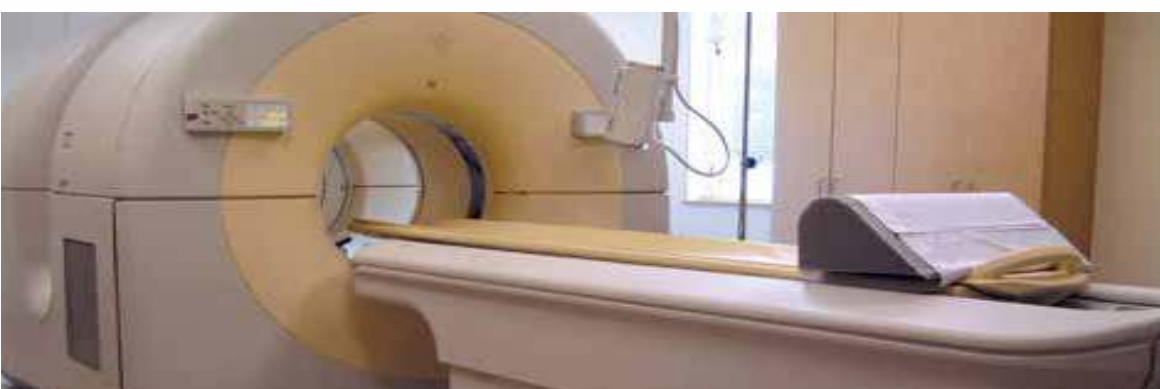


END PRODUCTS RUNNING WITH OUR PCB

Industrial computer
Automotive
Military
Electro counters

Medical
Linear accelerator in Cern
Entertainment
Smart furniture

Measuring equipment
Security & surveillance
Telecommunications
Traffic control signals

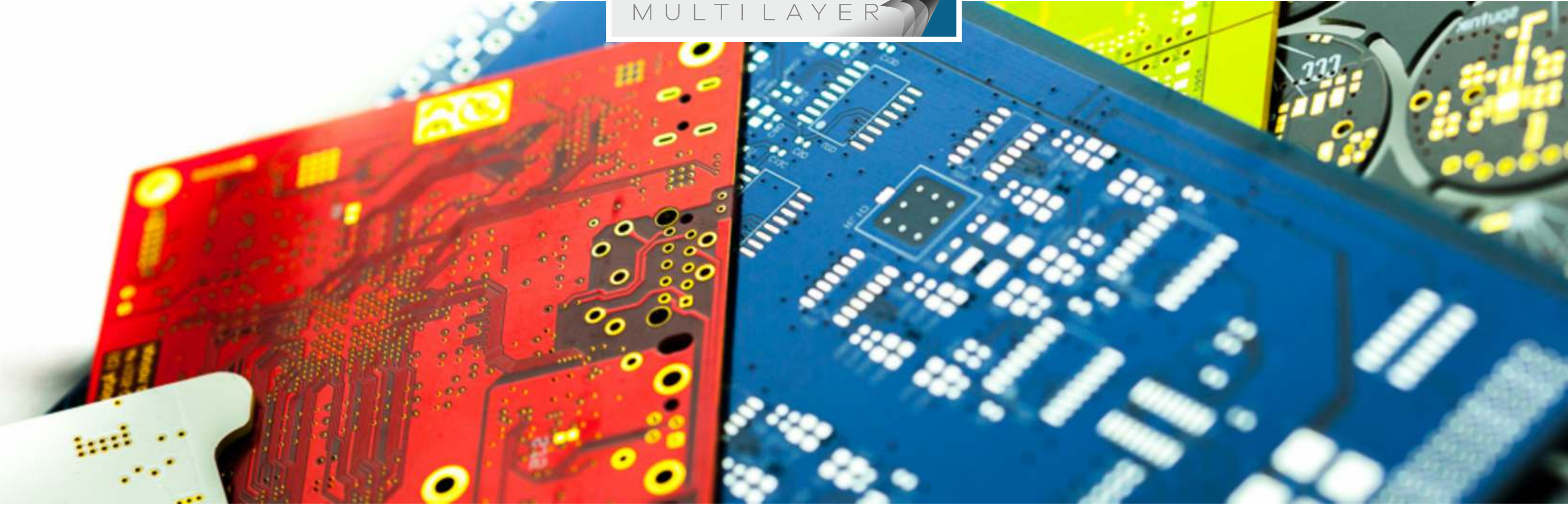
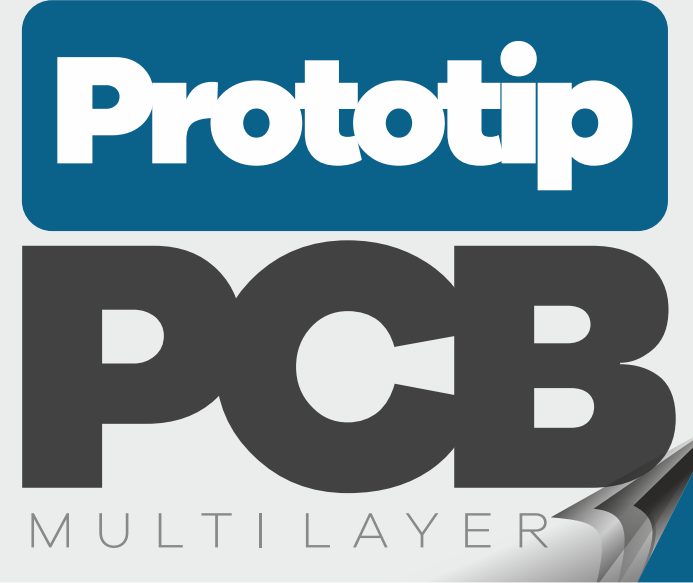




Quality

- Our products are UL & UL Canada approved - Nr. E312947
- ISO 9001 - obtainment in progress
- ISO 14001 - obtainment in progress
- Compliance with RICH and RoHS





Prototip**PCB**.com

www.tamara.com.tr www.PrototipPCB.com

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Tamara Elektronik Ltd. Şti.

İstanbul Teknopark

B Blok 1. Kat No:30 Pendik İstanbul

Prototip**PCB** bir TAMARA markasıdır.

LPKF
Laser & Electronics

distributor
years
21 of
Turkey

 **tamara**
electronics design