

PCB Services - ITTM is what you need

2002^{V2}



Who is Introlines Industrial (HK) Limited

Year established: 1996

Capital invested: US\$2,500,000.00

Plant area: 45,000 Sq.Ft.

Office area: 1,500 Sq.Ft.

Banker: Wing Lung Bank Ltd.

Total staffs: 200 (China factory)

Monthly Capacity: 200,000 Sq.Ft.

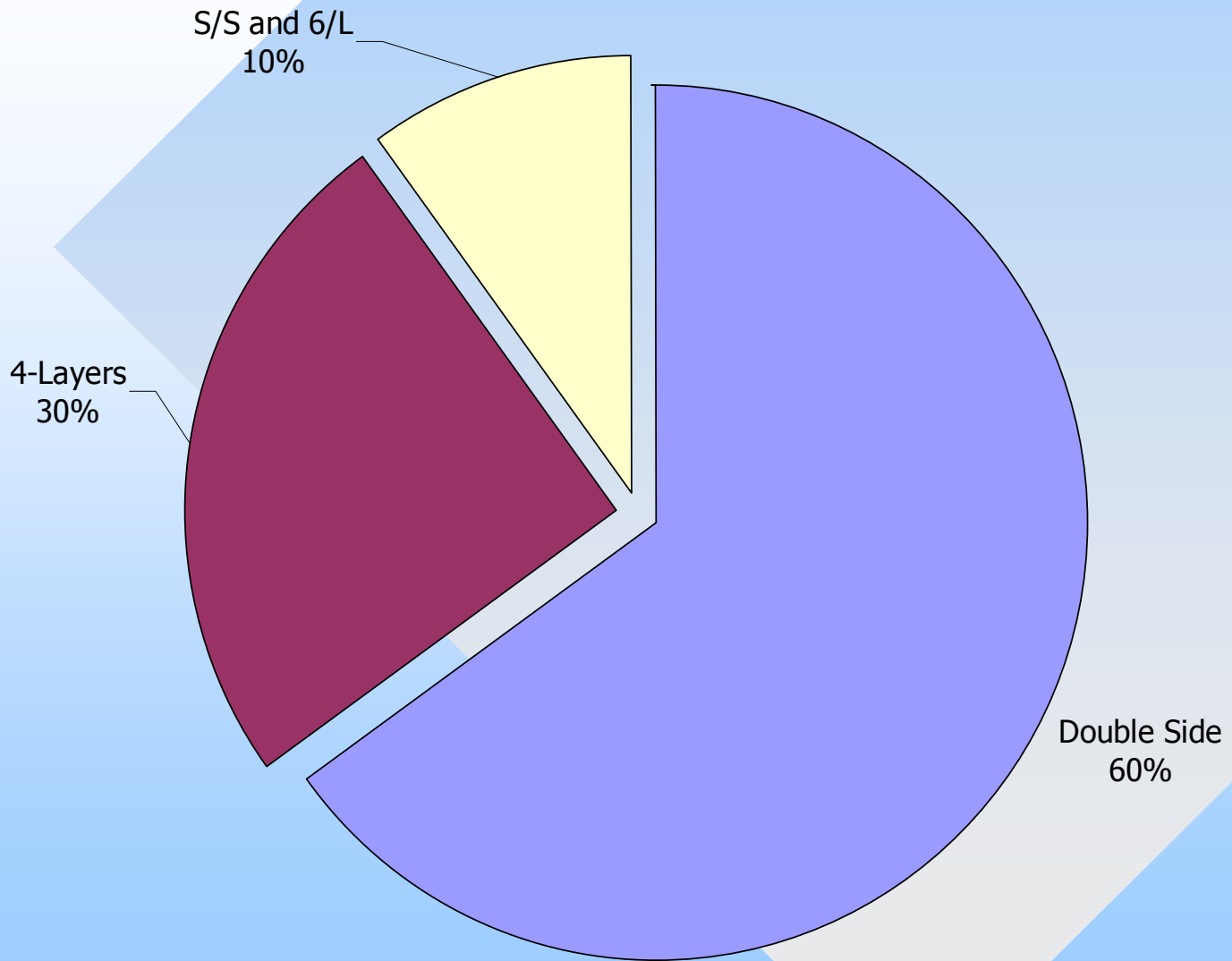
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ISO9001:2000 No.: AJA01/15528

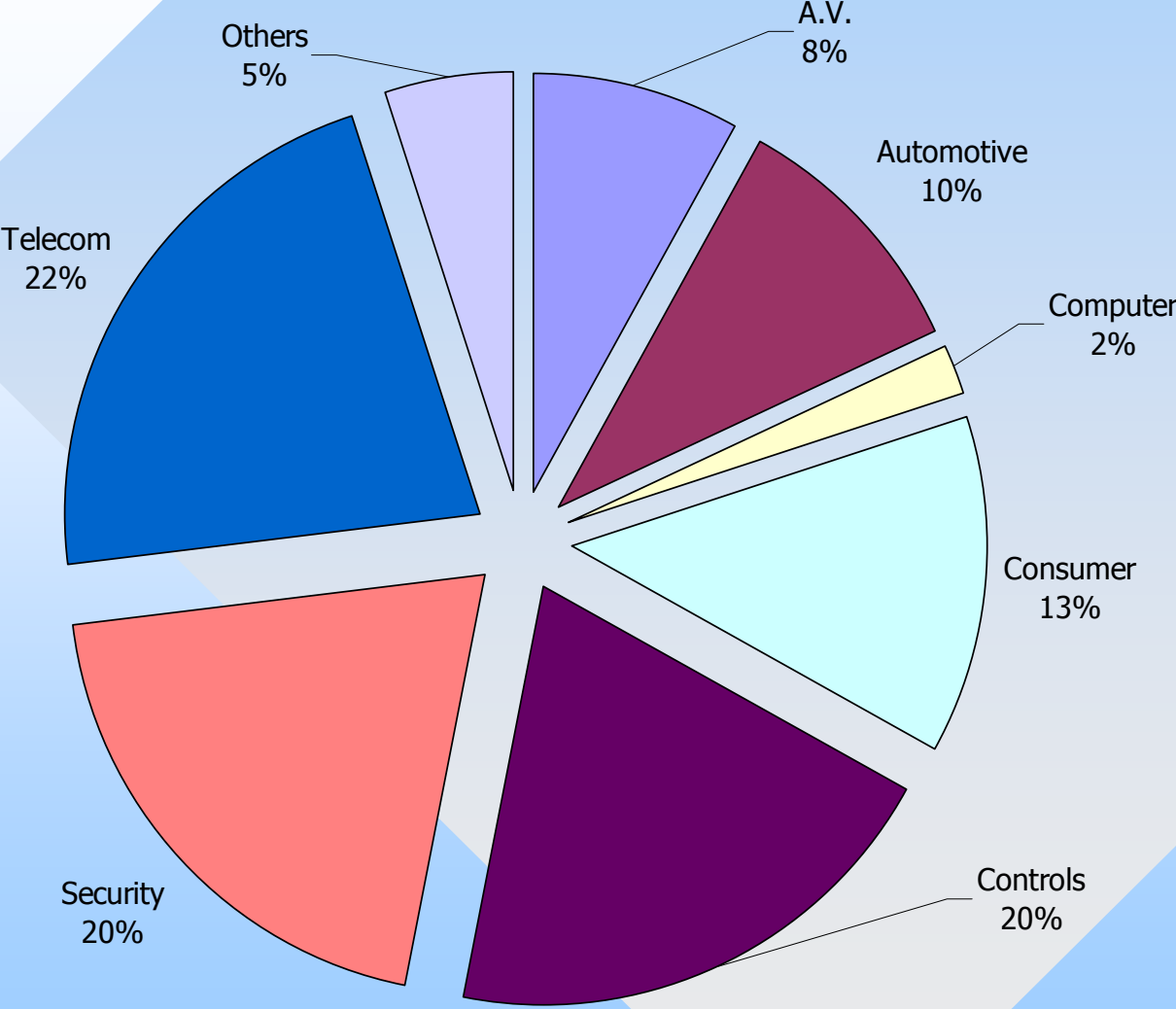
Annual Sales Turnover of Introlines

1998	: USD5,500K
1999	: USD6,000K
2000	: USD6,700K
2001	: USD7,300K
2002	: USD8,300K (Forecast)
2003	: USD9,500K (Forecast)

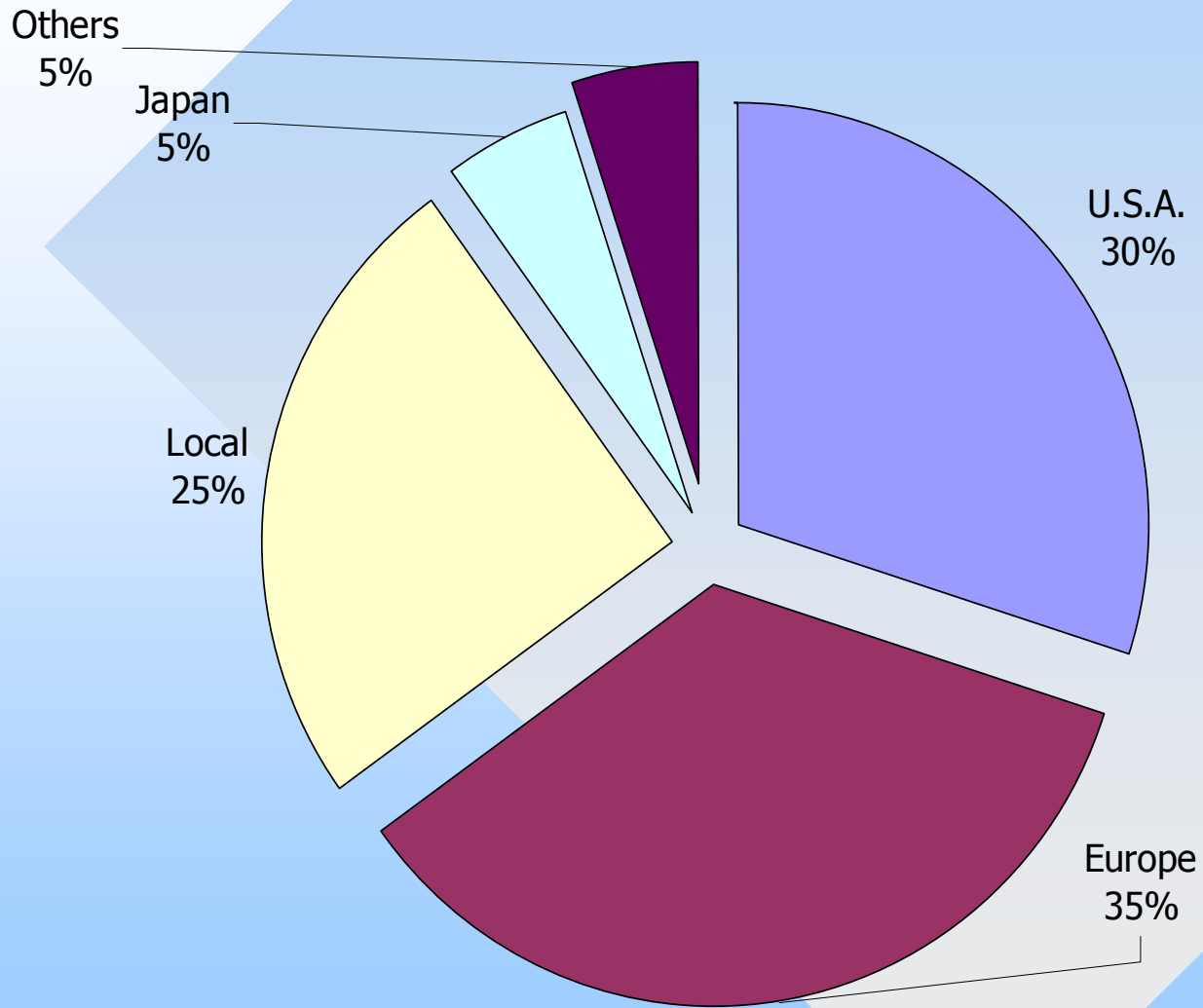
Sales Distribution by Layer Count



Sales Distribution by Product



Sales Distribution by Region



What Products can we provide ?

-  **Flash / Hard Gold Plating**
-  ***Hot Air Solder Leveling***
-  **Peelable Mask / Carbon Ink Printing**
-  **Immersion Nickel / Gold (Flash)**
-  **Selective Plating / Entek Coating**
-  **V-Cut Process**
-  **Gold Finger Process**

Major Equipment List

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✘	CNC Drilling Maching	Swiss	3	Posalux
✘	Excellon Drilling Machine	USA	8	Excellon
✘	Pumice Scrubbing Machine	H.K.	2	U.S.
✘	Deburring Machine	H.K.	3	Sam Wo
✘	Auto. PTH Line	H.K.	1	Universal
✘	Auto Cu Plating Line	H.K.	1	Universal
✘	Auto Ni / Au Line	H.K.	1	Universal
✘	Auto Cu, Sn Pattern plating line	H.K.	2	Universal
✘	DES, develop,etch,stripping	H.K.	1	Universal
✘	Dry Film Exposure	USA	2	ORC
✘	Dry Film Developer	H.K.	1	Universal
✘	Dry Film Laminator	USA	1	W Magnum
✘	GC CAM Software w/station		9	
✘	Air Compressor (40 & 60 HP)	Belgium	2	Atlas Copo

Major Equipment List

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✘	Auto Gold finger	H K	1	W. Wide
✘	Cleaning Line	H K	3	LOO's
✘	Unloader	H K	6	Sam Wo
✘	Silk Screen M/C	H K	14	Tung Yuan
✘	Conveyor Oven	H K	2	Universal
✘	Wet Film Exposer	USA	2	Colight
✘	Wet Film Developer	H K	1	Universal
✘	UV Curing M/C	Taiwan	1	CSUN
✘	Flux Coater	Taiwan	1	C Sun
✘	V-cutting machine	Taiwan	2	Shun Ru
✘	X-Ray thickness test	U S A	1	Coating Measurement Inc.
✘	Open short tester	H K	10	Centalic
✘	Electricity Generator	England	1	Wilson
✘	Ecam Software		1	
✘	AutoCAD 2000 Software		1	
✘	Laser Plotter	Belgium	1	EIE

General Capability

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Positioning

	+ / - mm	+/- inches
1. Hole or center position tolerance	0.050	0.002
2. Pattern registration with outline	0.076	0.003
3. Punching shift with outline	0.150	0.006
4. Min. clearance between Holes and outline	Equal to Board Thickness	

Hole size Tolerance

1. Smallest metallised Hole size	0.300	0.012
2. Maximum drill size	6.500	0.256
3. Maximum Aspect Ratio	6	
4. Hole size tolerance (PTH)	0.075	0.003
(NPTH)	0.050	0.002
5. Drill hole to drill hole pitch tolerance ($t < 0.6$ mm)	0.075	0.003

Outline Tolerance

1. Punched Outline Dimension	0.150	0.006
2. Routed outline Dimension	0.130	0.005

Plating Tolerance

1. Minimum PTH thickness	3 μ M	120 microinch
2. Minimum Gold thickness	0.05 μ M	2 microinch
3. Minimum Nickel thickness	3 μ M	120 microinch
4. Max. Cu thk.	28 μ M	
5. Max. Ni thk.	10 μ M	400 microinch
6. Max. Au thk.	0.5 μ M	20 microinch
7. Hot Air solder Levelling	2 - 38 μ M	

General Capability

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Engineering Capability List

Solder Mask

	+ /- mm	+/- inches
1. Minimum Opening	0.10	0.004
2. Minimum trace	0.076	0.003
3. Min. trace between pads	0.20	0.008
4. Registration tolerance	0.10	0.004
5. Mask thickness on bare base material	0.7 to	1.2 mil
pads	0.6 to	1.0 mil
traces	0.2 to	0.5 mil

V - Cutting (scoring)

Board shape must have at least 2 parallel lines for V-score !

1. Min. remaining thickness	for FR4	0.3+/-0.1
	for CEM3 or CEM 1	0.5+/-0.1
2. Location tolerance		+/-0.2
3. Maximum board size for V-cut		15.25"
4. Min. board size for V-cut		4"
5. Min. thk. requirement for V-cut		0.6 mm
6. Angle available to choose		30 and 45
7. V-cut to outline tolerance		+/- 0.15

CHAMFERING

1. Tolerance	+/-0.15mm
2. Angles in bevelling	45° & 60°

ANGULAR TOLERANCE

For board thk. = or < 0.6mm's outline	+/- 0.5°
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General Capability

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Engineering Capability List

Outer/Inner Layers

	+ /- mm	+/- inches
1. Min. annular ring	0.01	0.0004
2. Min. line width	0.10	0.0040
3. Min. line spacing	0.10	0.0040
4. Registration tolerance	+/-0.125	+/- .005
5. Min. Finish Board Thickness	D/S 0.2 mm	0.0080
	4/L 0.4 mm	0.0160
	6/L 0.8 mm	0.0310

Panel Size

Maximum Panel Size

18 " X 24"

Maximum Circuit Size

17" X 22"

Customer Reference

👍	Apache Tech.	Measure Instrument	U.S.A.
👍	Beckert GmbH	OEM	Germany
👍	Alcatel	Data-Communication	France
👍	Linx Tech.	RF Module	U.S.A.
👍	Doro	Telecom (DECT)	Sweden
👍	Ericsson	2.5G Cordless Phone	Sweden
👍	Ivancare/Zoll	Medical Equip.	U.S.A.
👍	Primo	Condenser Microphone	Singapore/Japan
👍	Deltrans	S.M.P.S.	U.S.A.
👍	Kingsfield	Automotive Parts	Hong Kong
👍	Tandy Corporation	Consumer Electronics	U.S.A./Hong Kong
👍	VFJ	Paid/Access System	Australia

How **Quick** we can deliver your sample (bare boards) ?

- **Single Side:** 5 days, normal
3 days, quick turnaround
- **Double Sides:** 7 days, normal
5 days, quick turnaround
- **3 - 6 Layers:** 9 days, normal
7 days, quick turnaround