

**NTI-100 2014, World Top PCB Makers with Revenue >\$100 million**

| Rank | Taiwan            | Nationality | 2013  | 2014  | Growth  | Brief Comments                    |
|------|-------------------|-------------|-------|-------|---------|-----------------------------------|
| 1    | Nippon Mektron*   | Japan       | 2,209 | 3,176 | 43.78%  | A big Apple supplier              |
| 2    | ZDT*              | Taiwan      | 2,106 | 2,483 | 17.90%  | A big Apple supplier              |
| 3    | Unimicron         | Taiwan      | 2,009 | 2,130 | 6.02%   | Building PCB plants in Huangxi    |
| 4    | SEMCO             | S. Korea    | 1,795 | 1,562 | -12.98% | Building plants in Vietnam        |
| 5    | Young Poong Grp*  | S. Korea    | 2,100 | 1,523 | -27.48% | Interflex & YPE poor in 2014      |
| 6    | Ibiden            | Japan       | 1,315 | 1,493 | 13.54%  | Boosting growth from Malaysia     |
| 7    | TTM Technologies  | USA         | 1,326 | 1,422 | 7.24%   | Purchased Viasystems on 5/15      |
| 8    | Sumitomo Denko*   | Japan       | 1,121 | 1,414 | 26.14%  | A big Apple supplier              |
| 9    | Tripod            | Taiwan      | 1,337 | 1,391 | 4.08%   | Pushing into automotive PCB       |
| 10   | Viasystems        | USA         | 1,171 | 1,204 | 2.82%   | Purchased by TTM 5/31/2015        |
| 11   | Daeduck Group     | S. Korea    | 1,297 | 1,159 | -10.64% | Careful investment                |
| 12   | Nanya PCB         | Taiwan      | 1,016 | 1,146 | 8.09%   | IC substrates seem to grow        |
| 13   | Compeq            | Taiwan      | 1,013 | 1,110 | 9.55%   | Chongqing plant contributing      |
| 14   | PSA PCB Group     | Taiwan      | 957   | 970   | 1.36%   | NB motherboards reduced           |
| 15   | KB PCB Group      | China       | 922   | 963   | 4.45%   | Elec& Eltek is the largest        |
| 16   | AT&S              | Austria     | 784   | 886   | 13.01%  | CKG plant starts business soon    |
| 17   | Meiko             | Japan       | 692   | 850   | 22.83%  | #3 automtoive PCB maker           |
| 18   | Kinsus            | Taiwan      | 757   | 818   | 7.97%   | Flip-Chip CSP strong              |
| 19   | LG Innotek        | S. Korea    | 581   | 791   | 36.14%  | LGE & Qualcomm                    |
| 20   | T.P.T.            | Taiwan      | 684   | 784   | 14.60%  | NB motherboards increasing        |
| 21   | Multek            | USA         | 750   | 780   | 2.74%   | Profitable since Oct 2013         |
| 22   | WUS Group         | Taiwan      | 658   | 698   | 6.08%   | Kunshan & Huangxi new plants      |
| 23   | Chin Poon         | Taiwan      | 634   | 697   | 9.93%   | #1 automotive PCB maker           |
| 24   | CMK               | Japan       | 621   | 689   | 10.95%  | #2 automotive PCB maker           |
| 25   | Nitto Denko*      | Japan       | 485   | 684   | 41.03%  | FPC for HDD among others          |
| 26   | Shinko Denki Ind* | Japan       | 664   | 675   | 1.66%   | IC substrates                     |
| 27   | Fujikura*         | Japan       | 358   | 662   | 80.00%  | A big Apple supplier              |
| 28   | Gold Circuit      | Taiwan      | 593   | 661   | 13.35%  | Network & Servers                 |
| 29   | Mflex*            | USA         | 788   | 633   | -19.67% | A big Apple supplier              |
| 30   | Simmtech          | S. Korea    | 513   | 621   | 21.05%  | Recovered from fire               |
| 31   | Kyocera CS        | Japan       | 523   | 570   | 8.99%   | \$1.9 billion if ceramic included |
| 32   | Career*           | Taiwan      | 443   | 528   | 19.33%  | A big Apple supplier              |
| 33   | Isu-Petasys       | S. Korea    | 520   | 522   | 0.38%   | S.Korea, China & US plants        |
| 34   | Shennan           | China       | 425   | 480   | 12.94%  | Wuxi plant inaugurated            |
| 35   | Ellington         | China       | 450   | 460   | 2.22%   | Trying hard for automotive        |
| 36   | Unitech           | Taiwan      | 435   | 455   | 4.60%   | HDI & automotive                  |
| 37   | Flexium*          | Taiwan      | 448   | 429   | -3.92%  | A big Apple supplier              |
| 38   | Founder           | China       | 380   | 423   | 11.32%  | 2nd largest China-based maker     |
| 39   | SI Flex*          | S. Korea    | 726   | 419   | -42.29% | Poor Samsung business             |
| 40   | Kinwong           | China       | 301   | 374   | 24.25%  | Jinagxi plant contributing        |
| 41   | ASE               | Tawian      | 327   | 360   | 10.09%  | Expanding capacity                |
| 42   | Sanmina           | USA         | 360   | 360   | 0.00%   | US (3), Sinagpore & Wuxi          |
| 43   | Dynamic           | Tawian      | 331   | 350   | 6.01%   | Into automotive PCB               |
| 44   | Kyoden            | Japan       | 280   | 340   | 21.43%  | Thai plant expanding              |
| 45   | KCE               | Thailand    | 300   | 340   | 13.33%  | Huge new plant in Latkrabang      |
| 46   | Wuzhou            | China       | 298   | 330   | 10.74%  | Emphasis on HDI & FPC             |
| 47   | Ichia Technology* | Tawian      | 203   | 324   | 59.60%  | Over 90% comes from FPC           |

|    |                    |           |     |     |         |                                  |
|----|--------------------|-----------|-----|-----|---------|----------------------------------|
| 48 | CCTC               | China     | 302 | 324 | 7.28%   | HDI is high                      |
| 49 | MGC Group          | Japan     | 247 | 316 | 27.93%  | JCI & Tai Hong Industry          |
| 50 | Hitachi Chemical   | Japan     | 288 | 308 | 6.94%   | Singapore is important           |
| 51 | 3CEMS              | Tawian    | 277 | 298 | 7.58%   | First Int'l Computer's PCB arm   |
| 52 | APCB               | Tawian    | 265 | 294 | 10.75%  | Second plant in China planned    |
| 53 | Aoshikan           | China     | 220 | 280 | 27.27%  | Export portion is large          |
| 54 | BH Flex*           | S. Korea  | 330 | 279 | -15.45% | A back-end plant in Vietnam      |
| 55 | Gul Technology     | Singapore | 261 | 274 | 4.98%   | Wuxi second plant                |
| 56 | SZ Fast Print      | China     | 203 | 272 | 44.56%  | Acquired eXpress & Multitest     |
| 57 | Boardtek           | Tawian    | 253 | 268 | 5.69%   | Microwave specialist             |
| 58 | Fujitsu            | Japan     | 245 | 266 | 8.57%   | Japan & Vietnam                  |
| 59 | Shirai             | Japan     | 215 | 266 | 23.72%  | Automotive PCB & AVI             |
| 60 | Palwonn            | Tawian    | 252 | 265 | 5.16%   | Former APCB Shenzhen             |
| 61 | Flexcom*           | S. Korea  | 497 | 262 | -47.28% | 90% is produced in Vietnam       |
| 62 | SZ Sun Tak         | China     | 203 | 259 | 27.59%  | Second plant in Jiangmen         |
| 63 | Guangdong Xinda    | China     | 230 | 246 | 5.96%   | ?                                |
| 64 | Apex               | Taiwan    | 208 | 242 | 16.03%  | Expanded Phase I in Thailand     |
| 65 | Redboard           | China     | 203 | 240 | 18.23%  | Jiangxi plant expanded           |
| 66 | Shenzhen Bomim     | China     | 159 | 230 | 44.65%  | Dafeng plant operational         |
| 67 | DAP                | S. Korea  | 296 | 206 | -30.40% | Big fire in 2014 February        |
| 68 | Olympic            | China     | 188 | 200 | 6.38%   | Planning expansion               |
| 69 | Würth Elektronik   | Germany   | 177 | 196 | 10.73%  | Big fire, new plant under const. |
| 70 | GD Chuohua         | China     | 151 | 195 | 29.13%  | Laminate business besides PCB    |
| 71 | DG Shengyi         | China     | 197 | 192 | -2.54%  | Under Shenyi Laminate            |
| 72 | Sun & Lynn         | China     | 140 | 190 | 35.71%  | New plant contributing           |
| 73 | Tigerbuilder       | China     | 200 | 180 | -10.00% | Reducing dependence on cellp     |
| 74 | 3M*                | USA       | 180 | 180 | 0.00%   | Wild guess                       |
| 75 | Elna               | Japan     | 161 | 179 | 11.18%  | Taiyo Yuden owns 26%             |
| 76 | Kunshan Huaxin     | China     | 205 | 178 | -13.17% | ?                                |
| 77 | Victory Giant Tech | China     | 159 | 178 | 11.95%  | Growing                          |
| 78 | Daisho Denshi      | Japan     | 153 | 165 | 7.84%   | Steady                           |
| 79 | Kyosha             | Japan     | 141 | 165 | 17.02%  | Claims the largest SSB maker     |
| 80 | Liangdar           | Taiwan    | 128 | 163 | 27.34%  | Dongguang plant contributes      |
| 81 | MFS*               | Singapore | 133 | 160 | 20.30%  | Under a new owner                |
| 82 | STEMCO*            | S. Korea  | 150 | 157 | 4.67%   | COF                              |
| 83 | Seil Electronics*  | S. Korea  | 200 | 152 | -24.00% | FPC, RFC for automotive          |
| 84 | Onpress            | China     | 145 | 150 | 3.45%   | Into automotive PCB              |
| 85 | Schweizer          | Germany   | 134 | 146 | 8.95%   | Tie with Meiko, Wus, Infineon    |
| 86 | Eastern            | Japan     | 126 | 140 | 11.11%  | 30+% owned by NTK                |
| 87 | Cosmotech          | S. Korea  | 147 | 135 | -8.16%  | 30% owned by SEMCO               |
| 88 | Huading Group      | China     | 130 | 135 | 3.85%   | ?                                |
| 89 | Million Group Hdg  | China     | 100 | 135 | 35.00%  | Consisting of 4 PCB units        |
| 90 | 3win Group         | China     | 123 | 135 | 9.75%   | Consisting of 8 units (4 PCB)    |
| 91 | Kunshan Wanzhen    | China     | 127 | 130 | 2.36%   | ?                                |
| 92 | Jiangsu Suhan      | China     | 144 | 123 | -14.48% | ?                                |
| 93 | Somacis            | Italy     | 110 | 123 | 11.82%  | Italy, China (largest) & US      |
| 94 | Yamamoto           | Japan     | 94  | 121 | 27.72%  | Japan and China (Dongguang)      |
| 95 | Xiamen Hongxin*    | China     | 109 | 121 | 11.01%  | The largest China-based FPC      |
| 96 | Changzhou O Hong   | China     | 98  | 109 | 11.22%  | ?                                |
| 97 | Ji'An Mankun       | China     | 98  | 106 | 8.16%   | ?                                |

|    |                     |         |               |               |              |                          |
|----|---------------------|---------|---------------|---------------|--------------|--------------------------|
| 98 | Plotech             | Taiwan  | 102           | 102           | -0.01%       | Now growth               |
| 99 | KSG                 | Germany | 93            | 101           | 8.16%        | Congratulations!         |
|    | <b>Top 99 Total</b> |         | <b>47,703</b> | <b>51,376</b> | <b>7.68%</b> | Big gets bigger & faster |

\* Primary products are FPC & FPCA

*(N.T. Information Ltd, June/2015)*