

# **DKN Research Newsletter**

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## **Taiwan Electronics Revenues Nosedive**

The barometer for the Taiwanese electronics industry is falling – signaling bad weather ahead. December shipments for PWB manufacturers in Taiwan was 49.1 billion Taiwan dollars (1.596 billion US\$); a 20.9% decline from the previous month, and 19.1% decline from the same month last year. This is the worst month relative to declining revenue since 2009 (all of us remember those tough economic days).

The flex circuits segment suffered larger losses in percentage terms compared to the rigid boards segment. December shipments for rigid circuit boards were 35.6 billion Taiwan dollars; a 13.6% decline from previous month and an 8.1% decline from the same month last year. December's revenue for flex circuits was 13.5 billion Taiwan dollars; a whopping 35.3% decline from the previous month and a 38.6% decline from the same month last year. The largest flex circuit manufacturer in Taiwan, Z.D. Technology, saw revenue in December slip by 36.7% to 9.445 billion Taiwan dollars. This is a 41% decline in revenue comparing December 2018 with December 2019.

Total industry revenue for 2018 was 636.2 billion Taiwan dollars (11.91 US dollars). Revenue did grow compared with 2017; however, growth was almost flat for the last three months of the year compared with the same time in 2017. Revenue includes production in China - many Taiwanese manufacturers conduct volume productions in their Chinese plants.

I consider Taiwanese circuit board production a reliable barometer for global consumer electronics industry. This barometer is falling; a prediction of bad weather. I surveyed a few purchasing managers connected to the supply chain for mobile electronics that includes Apple's iPhone. All agreed the slowdown for iPhone sales are having rippling effects throughout the supply chain. Market analysts expected weaker iPhone X sales due to the significant price increase. Supply chain manufacturers cut production, and this impacted circuit board manufacturers, assemblers, components & material suppliers and equipment manufacturers.

**The slowdown was sudden and abrupt. Suppliers are sitting on inventory and labor is almost idle. Hon Hai Precision, the largest EMS Company in Taiwan, canceled plans to open an assembling plant in China.**

**iPhone shipments fell 22% during the fourth quarter in China. Suppliers expect further declines during January and February, and second quarter forecasts are pessimistic. The supply chain for the iPhone extends to Japan, Korea, China and the other Far Eastern countries. Could the lackluster sales from the iPhone trigger a recession? Is a price cut needed to stimulate sales? Will a price decrease cut margins? A lot of questions that will be answered during first quarter.**

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#### **Headlines of the week**

**(Please contact [haverhill@dknresearch.com](mailto:haverhill@dknresearch.com) for further information and news.)**

**1. Tokyo University (Japan) 1/7**

**Has developed a new wireless power transfer sheet for the wireless power charging devices. The sheet can be cut according to the design of the devices.**

**2. Mitsubishi Materials (Major material supplier in Japan) 1/8**

**Has developed a new metal-base substrate material “nBoard” with high thermal conductivity for LED modules of the automobile applications.**

**3. DIC (Major ink material supplier in Japan) 12/26**

**Has rolled out a new resist resin “RZ-230 Series” as the thick film resist for the semiconductor packages. It is capable to make 0.5 ~ 1.0 patterns.**

**4. Tohoku University (Japan) 1/21**

**Has co-developed a new near field capacitance image sensor with OHT an test equipment manufacturer. The sensor detects  $10 \times \exp(-18)$  Farads.**

**5. MURATA (Major module supplier in Japan) 1/21**

**Has developed a new RF antenna module for the next generation wireless network with millimeter wave length (60GHz) telecommunications.**

**6. Panasonic (Major electronics company in Japan) 1/21**

**Has commercialized new laminate series “Halogen-free MEGTRON6” for high multilayer boards over 20 layers in use of telecommunication infrastructures.**

**7. Solar Frontier (Venture company in Japan) 1/17**

**Has developed a new CIS base thin film photovoltaic cell with a high conversion rate of 23.35% without cadmium component.**

**8. Toshiba (Major electric & electronics company in Japan) 1/22**

**Has developed a new tandem transparent photovoltaic cell with Cu<sub>2</sub>O. It will make a higher efficiency and lower cost combining with silicon base devices.**

**9. Toray (Major material supplier in Japan) 1/21**

**Has developed a new transparent thermo shielding film “PICUSUS”. It reduces air conditioning energy cost 39%.**

**10. Xenoma (Venture company of Tokyo University) 1/25**

**Has developed motion capture spats with 6 axis sensor. It detects leg motion without camera.**

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