

Trends and Challenges of Flexible Display in IoT era

Xiaoguang Xu

Chief Technology Officer, BOE Technology Group Co., Ltd, China

Abstract:

As IoT (Internet of Things) is a crucial future trend which will reshape the world and society, flexible electronics enable massive data interaction between people and machine. In this sunrise industry, flexible AMOLED is a promising technology as it can meet the needs of various application scenarios in IoT era.

Some technical challenges must be overcome to realize a flexible display panel. Mechanical structure is one of the biggest difference between flexible and rigid display panel. Every single layer should be redesigned to be thinner and flexible. Suitable materials and fabrication methods used in flexible substrate, TFT arrays and encapsulation layer are discussed.

Other components of display module in spite of the panel are also required to be thinner, more flexible or even integrated. These key factors include TSP (Touch Screen Panel), Polarizer film, cover glass, PSA (Pressure Sensitive Adhesive) and so on. BOE has solved many of these problems and achieved stable R1 dynamic in-folding even after 200,000 times experiment cycle. In the near future, more and more functions will be integrated in display to provide an “intelligent interface”. Flexible display could serve as an ideal and universal window for information interaction in diversified scenarios of IoT era.