EPSON

ECM-A0662

August 1993

Drive method: Passive matrix
Display mode: FTN transflective, monochrome liquid crystal
Screen size: 37 x 31 mm (1.9 inch)
Viewing angle: 6 o'clock direction
Display capacity: 5 x 8 pixels 10 digits, 3 lines + 5 x 8 pixels 12 digits, 1 line + icon display
Drive duty factor: 1/32
Power consumption: 15 mW

Product Features

Full production of ECM-A0662 monochrome super twisted nematic (STN) LCD modules began in August 1993. As an LCD panel module designed for mobile phones, the ECM-A0662 featured a large panel yet consumed only 15 mW of power. It featured a liquid crystal material that was driven at lower voltage and was designed to operate at a wider range of temperatures than previous products (-20°C to 60°C). The panel measured approximately 1.9 inches (diagonal), which was large enough to accommodate 3 lines of 10 digits, one line of 12 digits, plus an icon display field. The drive duty ratio was just 1/32. As the first panel module for mobile phones, the ECM-A0662 took advantage of Epson's component packaging technologies and benefited from early commercial development. The module included a TAB-mounted LCD driver that was linked to the panel via a heat-seal connection.

Background

Epson's passive matrix LCD panel business began in 1973 with its development of twisted nematic (TN) LCD panels for watches. At first, the main products were small and medium panels for watches and calculators, but following the construction of a volume production system for STN panels in 1985, the company started developing and manufacturing larger panels for products such as personal computers and word processors. However, the presence of several major manufacturers in the large-LCD panel market made for a harsh business environment. During the early 1990s, Epson adopted a bold new strategy whereby it would boost the profitability of its passive-matrix LCD panel business by retreating from the large-panel market and instead concentrate fully on small- and medium-sized panels that took advantage of the company's strengths in energy saving technologies. It was about that time that people began to notice a new application for small and medium panels: the newly emerging market for mobile phones. After receiving an inquiry from a major European mobile phone manufacturer, Epson took on the challenge of developing LCD panel modules for mobile phones. The first fruit of those efforts was the ECM-A0662, introduced in August 1993.

Impact

The introduction of the ECM-A0662 LCD panel module for mobile phones marked the entry of Epson's display business into the mobile phone market. Since then, Epson has filled out its line of products boasting energy saving operation combined with high-density assembly. The company's LCD panel module business grew rapidly along with the fast-expanding mobile phone market, so that today it is one of Epson's main businesses.