



Liquid crystal panel: Thin-film transistor active-matrix TN color liquid crystal

Screen size: 2 inches

Pixels: 52,800

Dimensions: (W)160 x (D)80 x (H)31 mm

Weight: 450g (dry cell batteries included)

Power source: 4 power source system (5 AA dry-cell batteries, rechargeable NiCd battery, 100V AC adaptor, car battery adaptor)

Power consumption: Approximately 1.9 watts with internal fluorescent tube; approximately 1.1 watts with external lighting

Battery life: 5 hours (with alkaline manganese cell batteries using external lighting), 2.5 hours (with alkaline manganese cell batteries using internal lighting)

Reception range: VHF1 - 12 ch / UHF 13 - 62 ch  
Video monitor terminal (image and sound input terminal) attached

ø 36-mm internal circular dynamic speaker

### Product Features

In 1984, the ET-10 became the world's first commercial liquid crystal pocket color television. This groundbreaking liquid crystal color TV was given the pet name Telebian. And, as the "anytime, anywhere, Telebian" catchphrase suggests, it was easily portable, thanks to a conveniently small, thin shape that allowed it to be slipped into a pocket and taken anywhere. Its greatest feature was the independently developed TFT liquid-crystal color display. Announced at the international SID (Society for Information Display) society in 1983, this, the world's first color liquid crystal panel, was a transmissive type display that had an effective screen size of 2.13 inches (43.2 x 34.2 x 2.5 mm). The panel had a total of 57,600 pixels arranged in a 240 x 240 matrix, at a pixel pitch of 180  $\mu\text{m}$  x 135  $\mu\text{m}$  (the display that was actually commercialized was 2 inches and had 52,800 pixels). In each pixel was a transistor for driving the liquid crystal, and the response speed was 40 msec. To enable the display to render a wide range of colors, an RGB color filter matched to the pixels was formed on the interior face of the glass, and the light passing through the filter was controlled at each individual pixel.

The ET-10 was thus the embodiment of Epson's\* advanced technologies. It combined Epson's existing semiconductor, LCD and high-density assembly technologies with the company's new technologies, including color filters and TV circuits.

### Background

Epson, which announced the world's first liquid crystal digital watch (the Seiko Quartz LC V.F.A. 06LC) in 1973, began developing active-matrix liquid crystal panels in 1977 with the objective of creating a visual display. The company succeeded in developing a single-silicon transistor liquid-crystal display and, in 1982, released the world's first black-and-white TV watch. Then, shifting the direction of development to a polysilicon TFT system, the company succeeded the following year in developing the world's first pocket-type liquid crystal color television. Finally, 15 months later, in August 1984, Epson released the ET-10, the world's first commercialized liquid crystal color TV.

### Impact

The development of the ET-10, the world's first liquid crystal pocket color TV, invited a tremendous worldwide response. Epson went on to develop the polysilicon TFT-liquid-crystal technology that it developed for the ET-10 into a booming liquid crystal display business that has given the world a succession of outstanding products, from viewfinders for video cameras to light valves for liquid crystal projectors.

\*Then known as Suwa Seikosha Co., Ltd.