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1969

Production of PMOS LSIs for calculators begins (North American Rockwell, U.S.A.)

~ Integrated Circuit ~

It was in 1967 when semiconductor devices for calculators changed from transistors to ICs and it had a big effect in reducing the size and weight. However, the evolution of the calculator did not stop there. The next target was to convert the ICs for calculators to LSI. At that time, LSIs were used for military and space applications in the United States, but this time it was aimed for a consumer application. It was Sharp 's Tadashi Sasaki who led this movement. Sasaki visited major semiconductor makers in Japan and the United States to inquire about the development of LSIs for calculators, but most companies hesitated on the plan. Under such circumstances, North American Rockwell, which had accumulated technology in space application, undertook the order. The contract at that time was a huge amount of 3 million dollars for 3 million LSIs, which had a great impact on both the semiconductor industry and the calculator industry.

The calculator composed of four LSIs and two ICs was named "Microcompet QT-8D", which was overwhelmingly smaller, lighter, lower power, and lower price than the conventional model. It weighed 1.4 kg, and the price was 99,800 yen, which renewed the image of the calculator until then.

Inspired by Sharp's movement, other Japanese companies accelerated the development of LSIs for calculators, among which Hitachi, the top company in the domestic LSI, released eight products of "MOS LSI Series for Calculators" in April 1970. With this, it started aggressive sales operation and Hitachi's one-chip LSI was used for the 6-digit calculator "Casio Mini" (selling price 12,800 yen), which was released in 1972 by Casio. Hitachi established a systematic custom design structure and gained a high market share in LSI for calculator. Other Japanese manufacturers also entered the market, and the US manufacturers gradually disappeared from this market in Japan.

Figure: World first LSI Calculator QT-8D(Sharp)

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