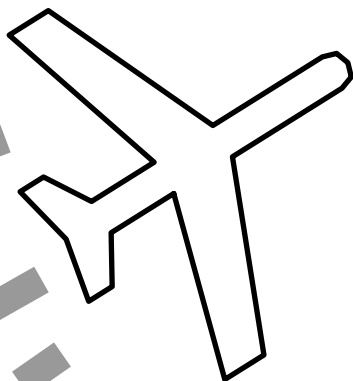


Technology of the SN3308



The Sandel Avionics SN3308 is the first member of an entire family of products to be based on a new, state-of-the-art display technology. This new type of display, along with a reduced instruction-set (RISC) microprocessor and highly integrated peripheral chips, makes it possible to acquire and display data from many different cockpit instruments.

Traditional electronic cockpit displays have been based on either cathode-ray tube (CRT) or direct-view liquid-crystal display (LCD) technology. One disadvantage of both CRTs and LCDs is that neither can display an image out to the very edge of the screen. This becomes especially significant when the outside dimension is constrained to only three inches across! In a 3 inch cockpit instrument, the amount of unusable display area on a traditional CRT or LCD can approach 50%.

The SN3308 solves this problem by using a much smaller LCD as the heart of an image projection system. The light beam from a ruggedized halogen bulb is first passed through a series of color splitters, with each color beam aimed at the corresponding set of pixels in the LCD. The resulting high-intensity color image is then projected through a magnifying lens onto a high-contrast optical screen. The final result is a crisp, clear color image which spans the full height and width of the instrument.

Internally, the physical design of the SN3308 is as unique as the display. Circuit boards are mounted lengthwise, close to the metal case, to keep clear of the light path between the projection lens and the screen. The nine pushbuttons are actually at the ends of long connecting rods which curve back to their switches so as not to cast a shadow on the screen. Even the two knobs actually turn long segmented shafts connected by universal joints, which provide a precise mechanical connection while remaining clear of the light path.

The display flexibility of the SN3308 is made possible by the high-speed digital conversion of all analog signals coming into the unit. Heading gyro input, ADF bearing, and even composite VOR signals are received, conditioned, and immediately converted into a common digital format. This allows completely different types of navigation signals, such as VOR, ADF, and GPS, to be displayed simultaneously.



Taken together, the image projection system, unique mechanical design, and digital conversion technologies of the SN3308 provide new levels of sophistication to cockpit displays.

