

Features

- Continuous, rapid graphical display of data using conventional oscilloscopes
- Rapid graphical display of large amounts of semi-static data using storage-type oscilloscopes
- Plotting of graphical data using an analog X-Y plotter to obtain low-to-medium resolution point plots
- Providing programmed voltage references for use in programming power supplies

Description

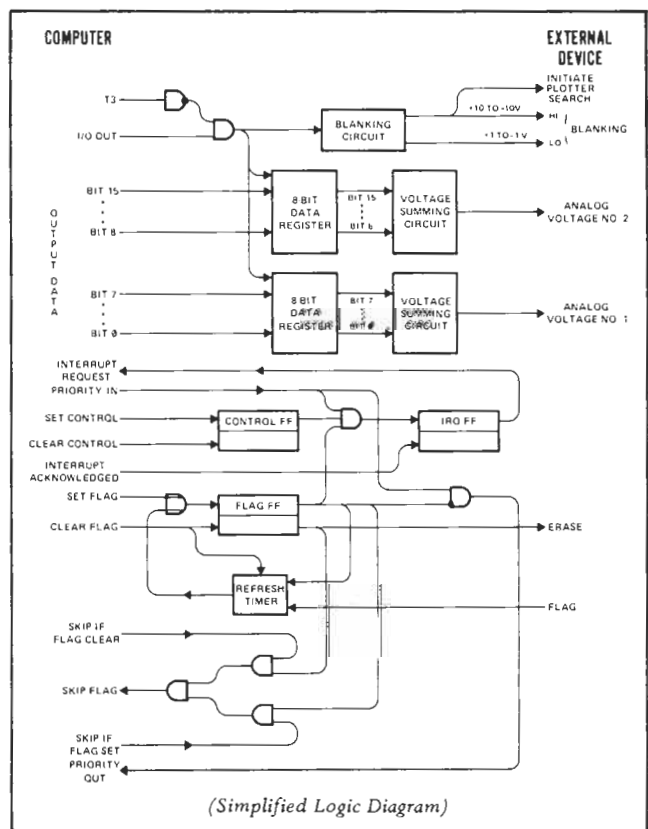
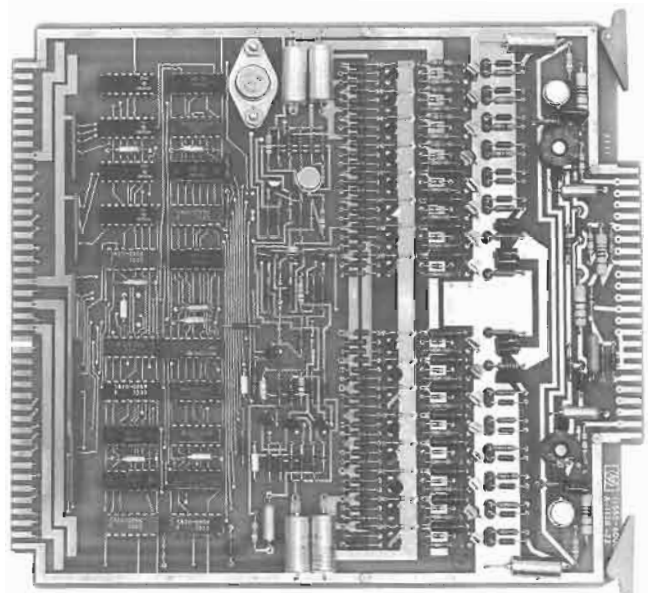
The D-A Converter provides two analog outputs ranging between 0 and +10 volts. Resolution of each channel is 8 bits. Blanking and "erase" signals are also provided by the D-A Converter for use with oscilloscopes and X-Y plotters. D-A Converter operation may be under program control or Direct Memory Access (DMA) with Dual Channel Port Controller (DCPC).

The Dual 8-Bit D-A Converter consists of the D-A Converter card and a connector kit, which together form Interface Kit 12555B. The D-A Converter card can be plugged into any computer Input/Output slot. It contains control and interrupt logic, and a timer for use in maintaining a graphical display on conventional oscilloscopes and to determine erase signal duration in storage-type oscilloscope operation. Two summing networks on the card convert the digital data from the computer to the two analog output voltages. Additionally, two voltage levels are provided by the D-A Converter card as blanking signals for conventional oscilloscopes. The blanking signal turns off the electron beam after a point has been excited so that the beam is not observed between that point and the next point to be excited. During use of the D-A Converter card with storage-type oscilloscopes, an erase signal can be made available to remove the existing display on the oscilloscope screen when a new pattern is to be displayed.

The two analog voltages can also be connected to X-Y plotters for graphic display of data.

When used with oscilloscopes or X-Y plotters, the D-A Converter card will cause a unique point in a 256-by-256 array to be displayed or plotted.

The D-A Converter card can be used with Direct Memory Access in 2100 or with the Dual Channel Port Controller in the 21MX for analog outputs at high data rates.



Description

Analog Voltage Outputs

Output operations to obtain the two analog voltages from the D-A Converter are *very simple*. A Load A (LDA) or a Load B (LDB) instruction, followed by an Output instruction is all that is required to program the two analog output voltages from a data word in memory. The Output instruction transfers 16 bits from the computer A- or B-register to the data register of the D-A Converter card.

These bits then enter the voltage summing circuits of the card where the analog voltages are formed and made available to the external device. Analog Voltage No. 1 is formed by bits 0 through 7 from the computer A- or B-register and Analog Voltage No. 2 is formed by bits 8 through 15. The magnitude of each analog output voltage is given by $10N/255$, where N is the decimal value represented by the combination of bits in each group of 8 bits from the computer.

Specifications

ANALOG OUTPUT VOLTAGES

Voltage Range: 0 to +10V nominal (full scale accuracy: ± 100 mV)

Zero Offset: ± 40 mV (1 count)

Linearity: To ± 40 mV within one machine cycle from the end of the Output (OTA/B) program instruction.

BLANKING PULSES

Blanking Pulses

High: +10 to -10 volts (nominal)

Low: +1 to -1 volt (nominal)

Pulse length: 2 memory cycles (2114/2115/2116) or 2 instruction times (2100, 21MX)

Erase Signal: Transistor closure to ground

Current Requirements (Max.)

+4.5V Supply: 2.4A

-2V Supply: 1.08A

+12V Supply: 0.5A

-12V Supply: 0.36A

PHYSICAL CHARACTERISTICS

Dimensions:

Width: 8-11/16 in. (220.7 mm)

Height: 7-3/4 in. (196.8 mm)

Weight: 17 oz. (482 g)

Terminated Cables

The use of 75 ohm coaxial cables terminated with 75 ohm resistive loads is recommended for cable runs of more than 15 feet when used with high speed devices, such as oscilloscopes (Analog output voltages then = 0 to about 5V).

HARDWARE SUPPLIED

Interfact Kit 12555B, consisting of:

1. Dual 8-Bit D-to-A converter card, HP Part No. 02116-6198.
2. Connector Kit, 24-Pin, HP Part No. 02116-6264

ORDERING INFORMATION

12555B D-to-A Converter Kit

INSTALLATION

Installation of the HP 12555B is the responsibility of the customer. HP installation assistance is provided on request, at prevailing rates.

Specifications subject to change without notice.



For more information, call your local HP Sales Office or East (301) 948-6370 • Midwest (312) 677-0400 • South (404) 434-4000 • West (213) 877-1281. Or write: Hewlett-Packard, 1501 Page Mill Road, Palo Alto, CA 94304. In Canada: 275 Hymus Blvd., Point Claire, Quebec. In Europe: Hewlett-Packard, P.O. Box 85, CH-1217 Meyrin 2, Geneva, Switzerland. In Japan: Yokogawa-Hewlett-Packard, 1-59-1, Yoyogi, Shibuya-ku, Tokyo, 151.