



OP7100

Serial Graphic Display User's Manual

019-0065 • 070831-O

Introduction

The OP7100 is a serial graphic display in a compact, easy to integrate module. The OP7100 features an LCD that has a white background with blue images. The LCD has pixel graphics and provides two-color (monochrome) displays. Five standard fonts are included in the supplied software. Additional custom fonts are easily created to meet the needs of an application.

The OP7100 can operate with Rabbit Semiconductor single-board computers or other serial displays over an RS-485 network. The OP7100 also supports RS-232 communication.

The OP7100 display terminal uses display technologies that require minimal mounting depth and offer maximum viewing angles. The memory allows up to 25 application-screen bitmaps (240 × 320) to be stored without compression in a 256K flash EPROM. A further 256K is available for the application in a second flash EPROM.

Figure 1-1 illustrates the standard OP7100 board layout.

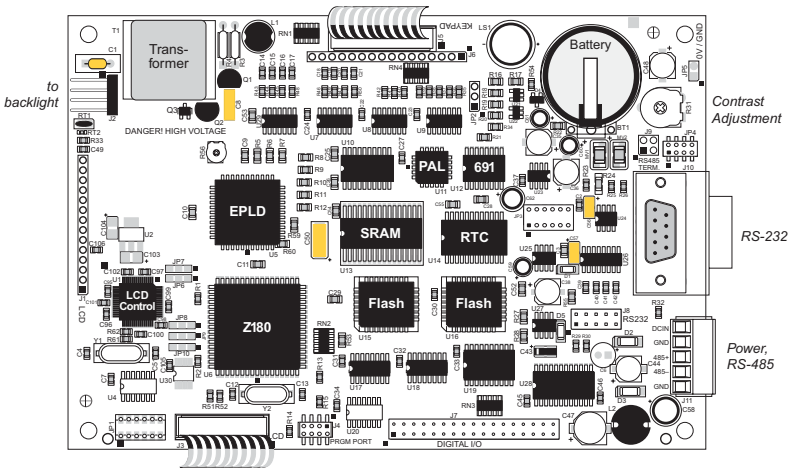


Figure 1-1. OP7100 Board Layout

Features

The OP7100 includes the following features.

- 240 × 320 ¼ VGA LCD (with touchscreen on OP7100 only)
- jumper-selectable background—positive (blue images on white background) or negative (white images on blue background)
- software-controlled cold-cathode fluorescent backlighting
- software-controlled contrast is enabled/disabled with jumper setting
- temperature compensation for LCD contrast changes with temperature
- RS-485 and RS-232 serial communication up to 57,600 bps
- 8 CMOS/TTL-level digital inputs and 8 CMOS/TTL-level digital outputs
- 18.432 MHz clock with Z180 microprocessor, 9.216 MHz LCD controller
- 256K flash EPROM for program, 256K flash EPROM for screen bitmaps
- switching voltage regulator

 Appendix B provides detailed specifications for the OP7100.

The OP7100 also includes battery-backed RAM (128K) and a battery-backed real-time clock a watchdog timer, and power-failure interrupt.

Options

The OP7100 series of serial displays has two versions. Table 1-1 lists their standard features.

Table 1-1. OP7100 Series Features

Model	Features
OP7100	Serial graphic display, touchscreen, blue and white screen, ¼VGA LCD with bezel mount, software contrast control
OP7110	OP7100 with no touchscreen, manual contrast control

Either model may be used in either a portrait or a landscape orientation by using the corresponding software library.



For ordering information, call your Rabbit Semiconductor Sales Representative.

Development and Evaluation Tools

The OP7100 is supported by a Tool Kit that include everything you need to start development with the OP7100.

The Tool Kit includes these items.

- Serial cable
- 24 V DC power supply capable of delivering 1.1 A
- User's manual with schematics

An optional Serial Interface Board (SIB) is available to program the OP7100 when a second RS-232 serial port is needed by the application being developed.



For ordering information, call your Rabbit Semiconductor Sales Representative.

Software

The OP7100 is programmed using Rabbit Semiconductor's Dynamic C, an integrated development environment that includes an editor, a C compiler, and a debugger. Library functions provide an easy and robust interface to the OP7100.



Rabbit Semiconductor's Dynamic C reference manuals provide complete software descriptions and programming instructions.

CE Compliance

The OP7100 has been tested and was found to be in conformity with applicable EN immunity and emission standards. Note the following requirements for incorporating the OP7100 into your application to comply with CE requirements.



- The power supply provided with the Tool Kit is for development purpose only. It is the customer's responsibility to provide a CE compliant power supply for their end-product application.
- The OP7100 has been tested to meet the following immunity standards.
 - EN61000-4-2 (ESD)
 - EN61000-4-3 (Radiated Immunity)
 - EN61000-4-4 (EFT)
 - EN61000-4-6 (Conducted Immunity)

Additional shielding or filtering may be required for a heavy industrial environment.

- The OP7100 has been tested to meet the EN55022 Class A emissions standard with ferrite RFI suppressors on the I/O cables. Additional shielding or filtering may be needed to meet Class B emissions standards.

Since Rabbit Semiconductor products are connected to other devices, good EMC practices should be taken to ensure compliance. CE compliance is eventually the responsibility of the integrator. For more information on tips and technical assistance, visit our Web site at www.rabbit.com/products/ce_certification/, or contact your local authorized Rabbit Semiconductor distributor.