uLCD-220RD

Datasheet

Revision 1.5

Copyright © 2024 4D Systems

Content may change at any time. Please refer to the resource centre for latest documentation.

Contents

1. Description 4
2. Features 0
3. Pin Configuration and Summary 0
4. Hardware Interface - Pins 0
    4.1. Serial Ports - TTL Level 0
    4.2. General Purpose I/O 0
    4.3. System Pins 0
    4.4. Alternate Pin Functions - Overview 0
    4.5. SPI 0
    4.6. I2C 0
    4.7. Pulse Out 0
    4.8. PWM Out 0
    4.9. Pin Counter 0
    4.10. Quadrature In 0
    4.11. Analog Inputs 0
5. PmmC/Firmware Programming 0
6. Module Features 0
    6.1. Display - 1.38" Round TFT Screen 0
    6.2. DIABLO16 Processor 0
    6.3. Audio 0
    6.4. SD/SDHC Memory Cards 0
    6.5. FAT16 0
7. Display Precautions 0
8. Hardware Tools 0
    8.1. 4D Programming Cable/Adaptor 0
9. Programming Language 0
10. Workshop4 IDE 0
11. Mechanical Details 0

12. Schematic Diagram 0

13. Specifications 0

14. Legal Notice 0

14.1. Proprietary Information 0

14.2. Disclaimer of Warranties & Limitations of Liabilities 0

1. Description

The uLCD-220RD is a unique 1.38" Round LCD Intelligent Display Module powered by the 4D Systems' DIABLO16 Graphics Processor. Designed for applications such as gauges and instruments or special applications such as robotics.

The 1.38" Round LCD on the uLCD-220RD has a diameter of 220 pixels, however since the display is round there are only ever 110 pixels from the centre of the display, in any given direction. The pixels are in a round configuration instead of the normal square configuration found on other TFT LCD Displays.

Driving the display and peripherals is the DIABLO16 processor, a very capable and powerful chip that enables stand-alone functionality, programmed using the 4D Systems Workshop4 IDE Software. The WorkshopIDE enables graphic solutions to be constructed rapidly and with ease due to its design being solely for 4D graphics processors.

The DIABLO16 Processor offers considerable FLASH and RAM upgrades over the PICASO processor, and also provides mappable functions such as I2C, SPI, Serial, PWM, Pulse Out, and Quadrature Input, to various GPIO, and also provide up to 4 Analog Input channels.

The display module has an array of features including PWM for Sound, micro-SD memory storage, general-purpose I/O including Analog Inputs, multiple TTL Serial, I2C and SPI channels and multiple millisecond resolution timers, amongst many more features.

Anything that has been designed in the past to run on a PICASO Processor can theoretically run on this DIABLO16 Module with minor changes. Please ensure you contact the 4D Systems' support team if unsure if upgrading from a PICASO product and wanting to design with or change over to this uLCD-220RD Module.

The uLCD-220RD features a 30-way 2.54mm pitch male pin header, where all of the IO available on the DIABLO-16 processor have been broken out for the User. It also features a 10-way 2.54mm pitch male pin header which is common to a majority of 4D Systems' display modules, and is used for programming the module with our Workshop4 IDE, using a 4D Programming Cable or Adaptor.