

PIC16F1937 I2C/UART/GPIO Processor Board

MK-82075

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IONOTRONICS Corporation

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1 Introduction

Full breakout of the PIC16F1937 with Hirose DF11 Series connectors. Support for I2C Bus interconnect. The board fully supports ICSP programming and debug through the PICKit3 or ICD-3. Also the device supports programming using CCS IDE and the ICD-U64 programmer.

Applications include I2C GPIO Expander as well as I2C to UART bridge.

2 Specifications

- PIC16F1937 Based
- 16 MHz Clock
- Multiple GPIO DF11 Series Connectors (32 GPIO)
- ICSP Support
- UART Support (Tx and Rx)
- I2C 4-pin Hirose DF11 Series Connector

3 Overview

The PIC16F1937 Breakout Board can be used in many applications. For example as an I2C GPIO expander. Or as an I2C to Serial (UART) bridge. Using the many cores in the SoC, various capabilities can be provided as an I2C slave.

The processor can act as a controller in its own right as an I2C Master also providing control of serial devices.

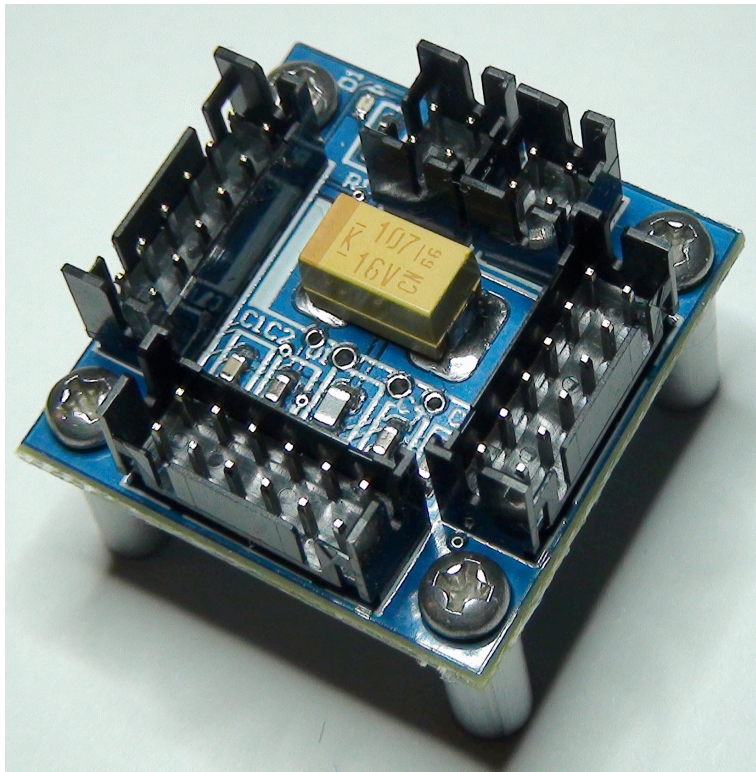


Figure 1 Top view MK-82075 illustrating DF11 Hirose Connectors for GPIO and 4 Pin I2C Bus

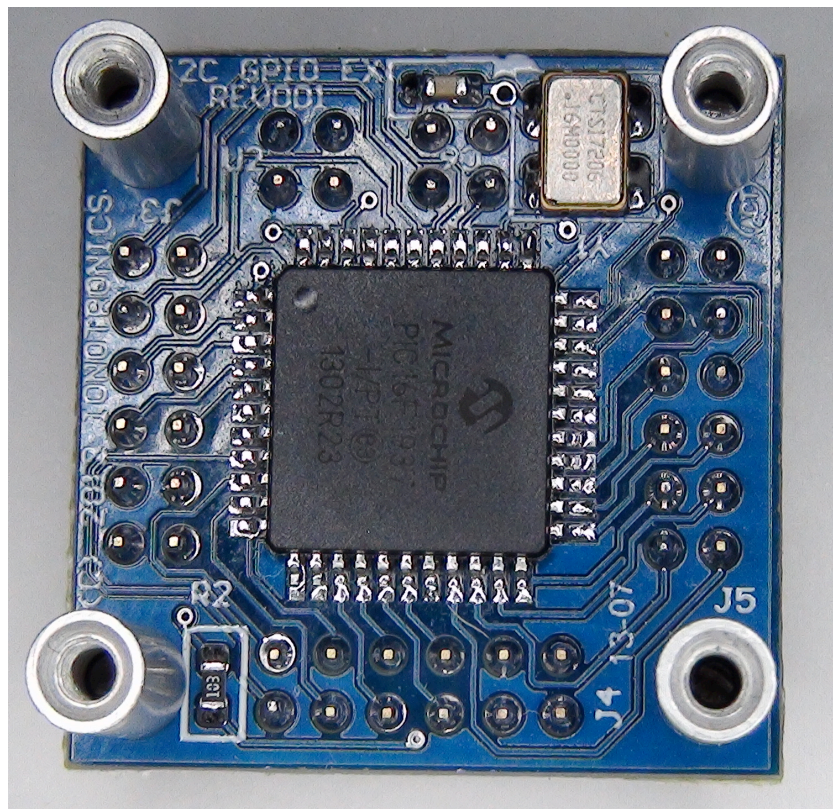


Figure 2 Bottom view of MK-82075 showing PIC16F1937 and 16 MHz clock

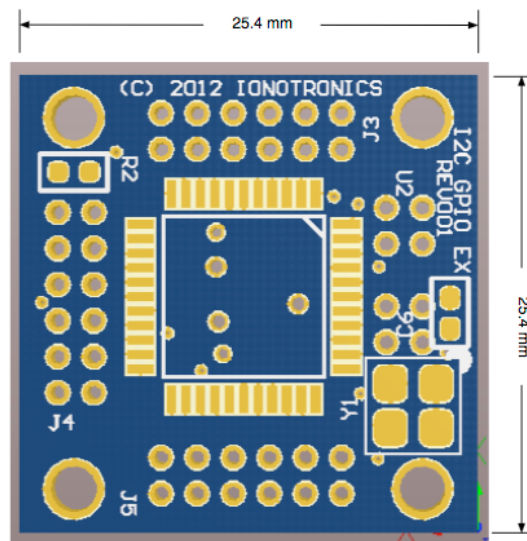


Figure 3 Board Dimensions for the MK-82075

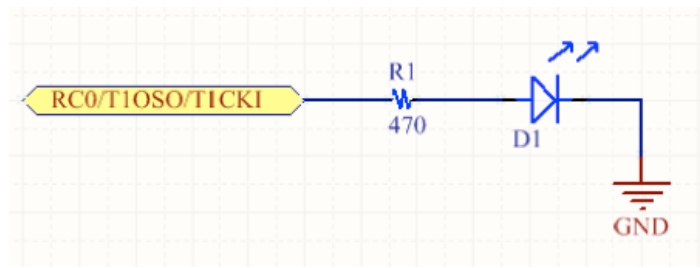


Figure 4 Port RC0 drives an LED that can be used for tests and status

4 Connections

The MK-82075 supports three 12 pin DF11 Hirose connectors and two I2C 4 pin DF11 Hirose Connectors. The two I2C 4 pin connectors are bussed together. The Figures below provide all the information that is needed for how signals from the PIC16F1937 are mapped to the connectors.

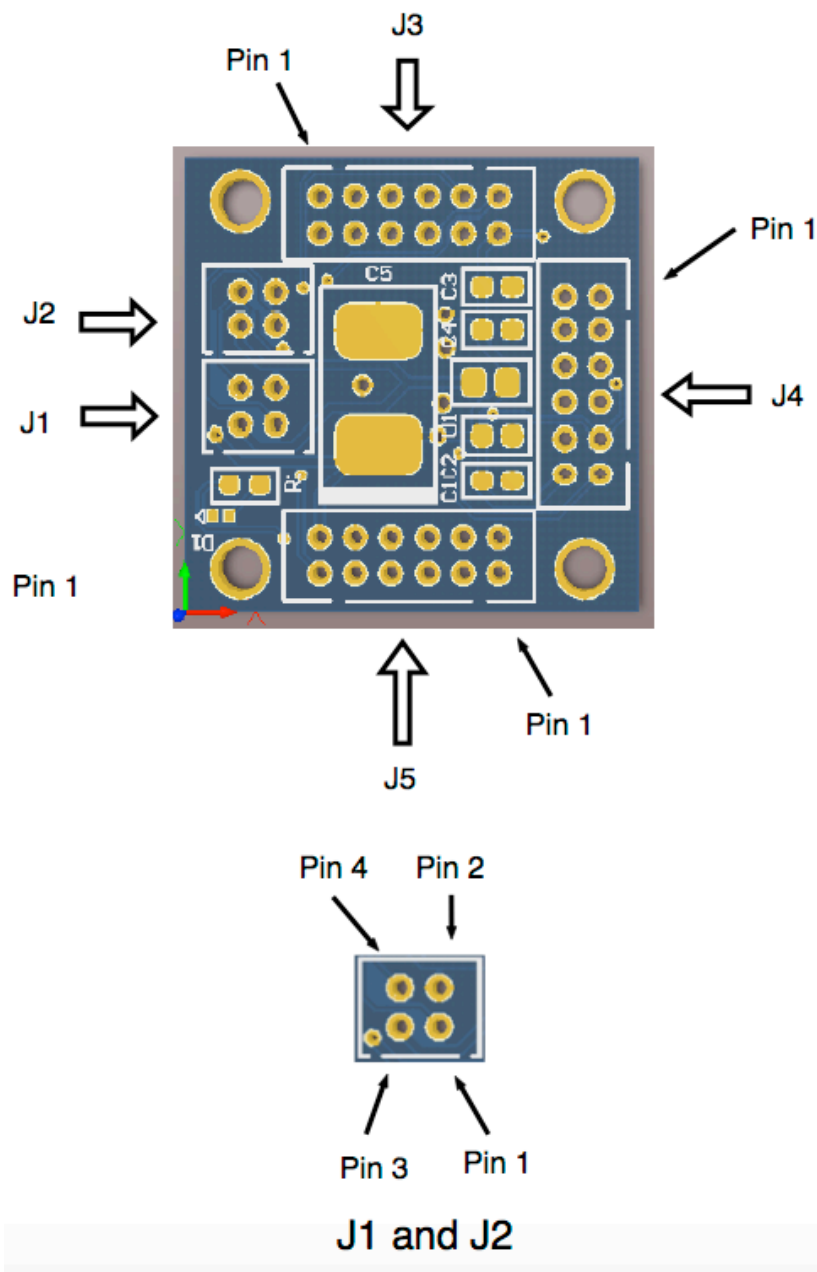


Figure 5 MK-82075 Connectors

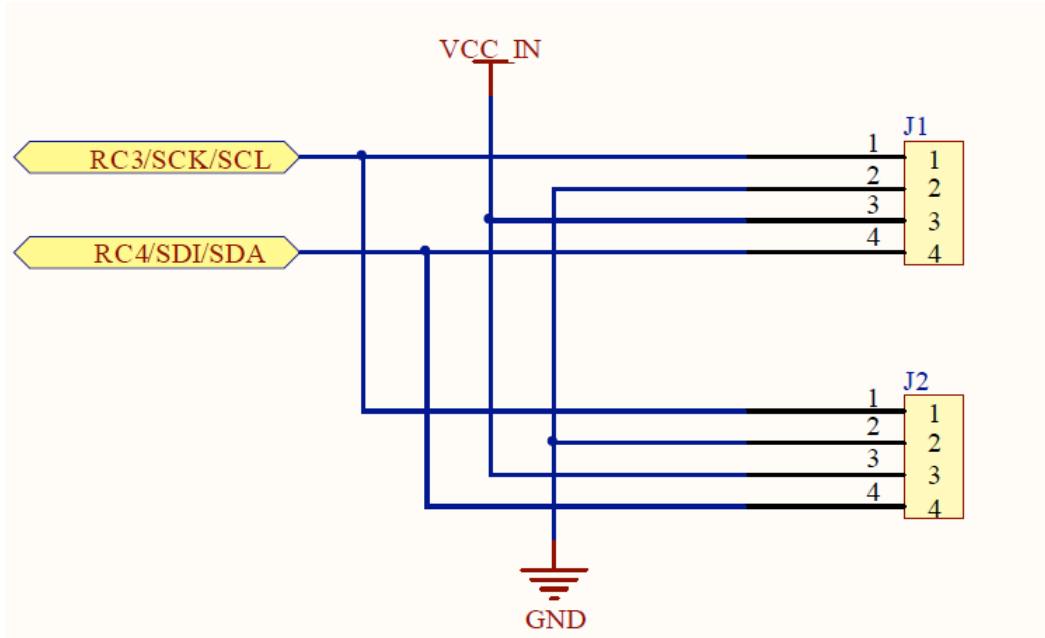


Figure 6 I2C Bus J2 and J1 4 Pin Hirose DF1 Series Connectors

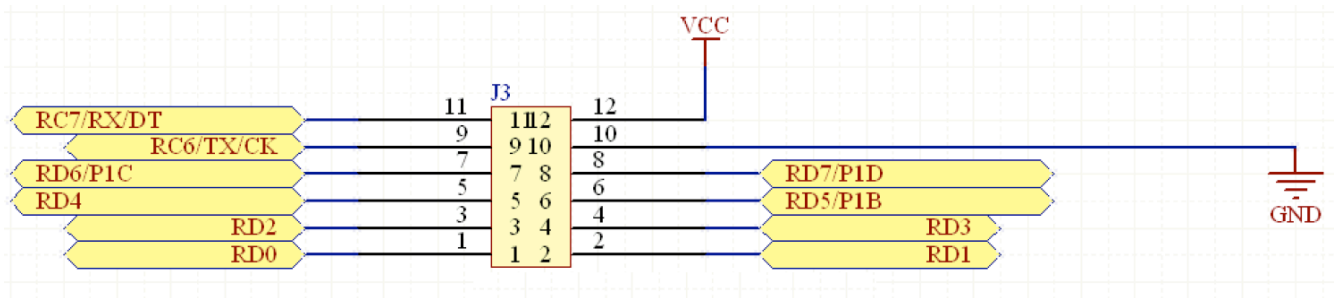


Figure 7 J3 12Pin Hirose DF11 Series. Note UART Signals RC7 (RX) and RC6 (TX)

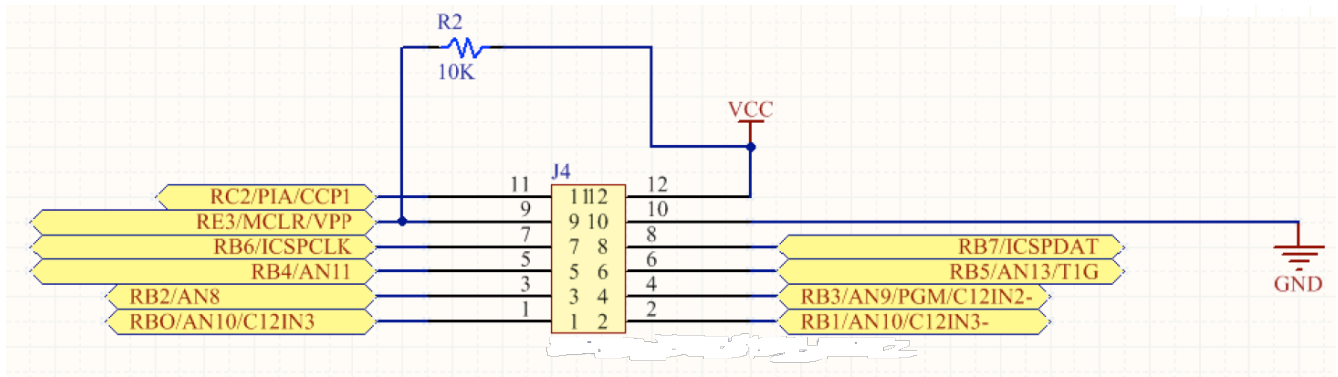


Figure 8 J4 12 pin Hirose DF11 Series. Note In Circuit Programming Pins RB6(ICSP Clock) RB7 (ICSP Data) and RE3 (MCLR)

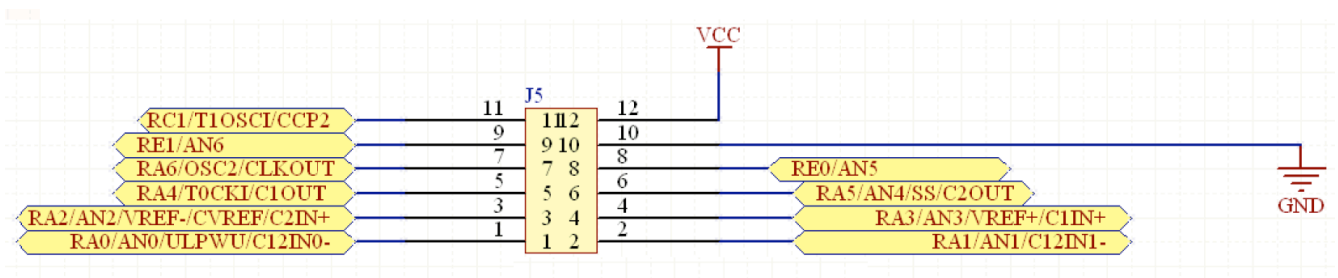


Figure 9 J5 12 pin Hirose DF11 Series Connector

5 Hirose DF11 Series Connectors

Figure 11 shows a 12 pin Hirose DF11 Series connector. This is useful when building cabling systems. Note pin 1 marker and numbering scheme.

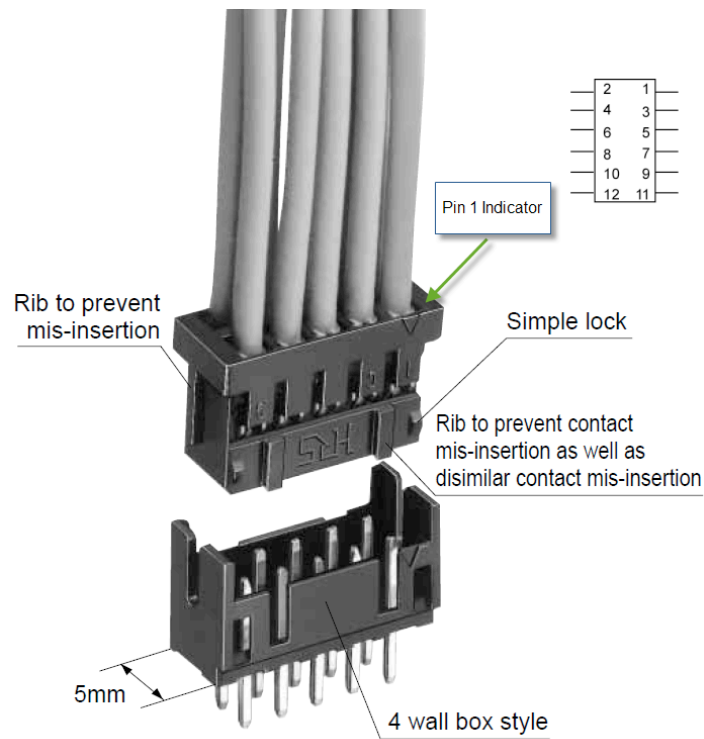


Figure 10 Guide to the Hirose DF11 series connector

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