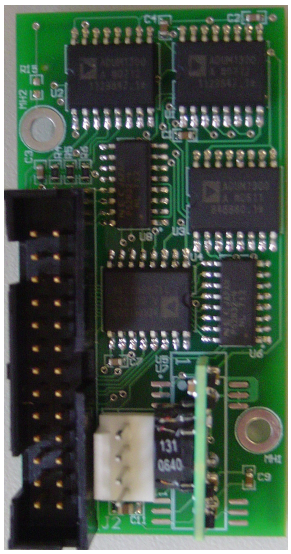
FEATURES

- MDK-8 Interface Form Factor
- 9 Digital Outputs
  - 6 Low Speed (< 5 us) Opto-Isolated Outputs
  - 3 High Speed (<20 ns) Magnetically Isolated 5V Outputs
- 9 Digital Inputs
  - 6 Low Speed (< 5 us)
  - 3 High Speed (<20 ns)
  - Magnetically Isolated 5V Inputs
- 5 Volt Isolated Reference Supply
- 2 Input/Outputs
  - Magnetically Isolated 5V Input/Output Range
  - 1 Mbps Data/Clock Rate
  - Suitable for I2C Interfaces

APPLICATIONS

- External Hardware Interfacing
- Embedded Instrumentation



DESCRIPTION

The MDK8-DigIOISO provides electrically isolated digital input/output interface circuitry in the MityDSP Development Kit 8 (MDK-8) series form factor. The MDK8-DigIO is compatible with the MityDSP hardware and software development kit API. Refer to the User's Manual provided with the libraries for further information.

A block diagram of the MDK8-DigIOISO is illustrated in Figure 1. The card provides an isolated 5 V DC reference supply capable of driving 200 ma of current. The magnetic coupled inputs and outputs are high speed, capable of 50 MHz clock rates. The optoisolator outputs include a jumper-able pull-up resistor to the isolated 5 Volt supply.

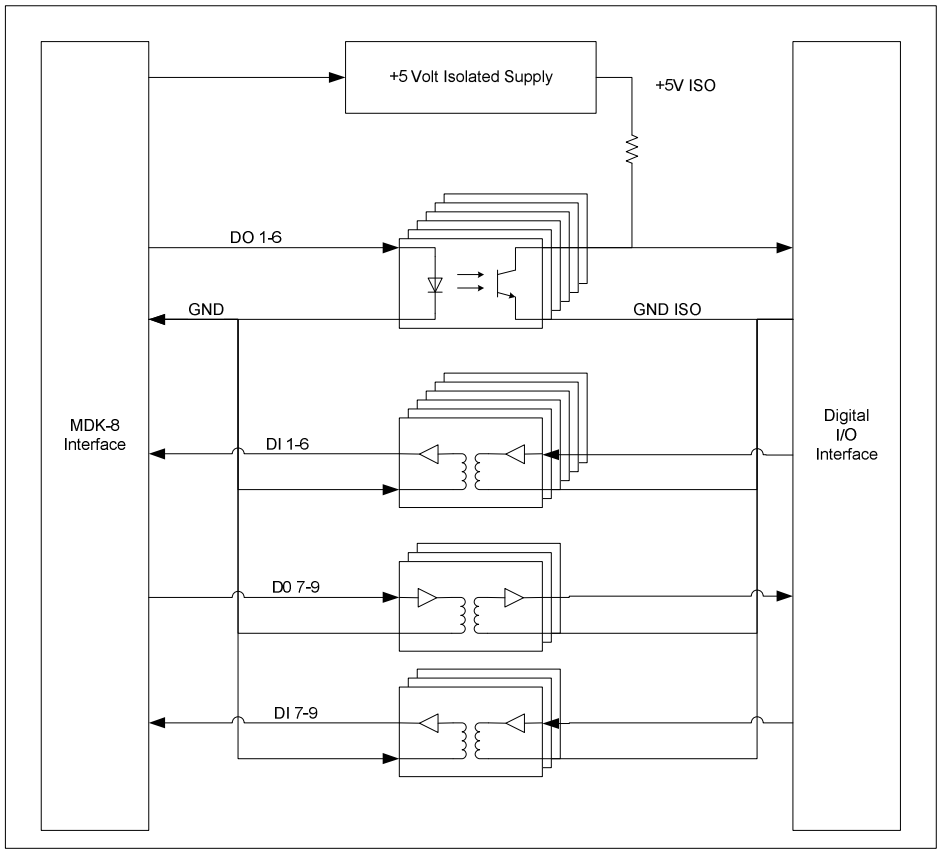


Figure 1 MDK8-DigIOISO Block Diagram

ABSOLUTE MAXIMUM RATINGS

If Military/Aerospace specified cards are required, please contact the Critical Link Sales Office or unit Distributors for availability and specifications.

Storage Temperature Range	-65 to 80C
Shock, Z-Axis	±10 g
Shock, X/Y-Axis	±10 g

OPERATING CONDITIONS

Ambient Temperature Range	0 to 55C
Humidity	0 to 95% Non-condensing
Vibration, Z-Axis	TBS
Vibration, X/Y-Axis	TBS

MDK-8 Socket Interface Description

The bottom connector of the MDK-DigIOISO card uses the required Hirose FX6-50P-0.8SV 50 position socket. The pin assignments for the card are listed in Table 1.

Table 1 MDK-8 Connector Pin Assignments

Pin	Signal	I/O	Pin	Signal	I/O
A1	DO_HS_1	Out	B1	+5 V	-
A2	DO_HS_2	Out	B2	+5 V	-
A3	DO_HS_3	Out	B3	+3.3 V	-
A4	DI_HS_1	In	B4	+3.3 V	-
A5	DI_HS_2	In	B5	+12 V	-
A6	DI_HS_3	In	B6	+12 V	-
A7	IO_1	In / Out	B7	GND	-
A8	IO_2	In / Out	B8	GND	-
A9	DO_LS_1	Out	B9	GND	-
A10	DO_LS_2	Out	B10	-12 V	-
A11	DO_LS_3	Out	B11	-12 V	-
A12	DO_LS_4	Out	B12	-5 VA	-
A13	DO_LS_5	Out	B13	AGND	-
A14	DO_LS_6	Out	B14	AGND	-
A15	Not Used	-	B15	+5 VA	-
A16	DI_LS_1	In	B16	Not Used	-
A17	DI_LS_2	In	B17	Not Used	-
A18	DI_LS_3	In	B18	Not Used	-
A19	DI_LS_4	In	B19	Not Used	-
A20	DI_LS_5	In	B20	Not Used	-
A21	DI_LS_6	In	B21	Not Used	-
A22	Not Used	-	B22	Not Used	-
A23	Not Used	-	B23	Not Used	-
A24	Not Used	-	B24	Not Used	-
A25	Not Used	-	B25	Not Used	-

Digital Interface Description

The digital interface to the MDK-DigIOISO uses a dual row TBD 24 pin connector on standard 0.100 inch spacing. AMP TBD connectors (or equivalent) should be used with interface cables.

Table 2 J2 Pin Assignments

Pin	Signal	I/O	Pin	Signal	I/O
1	GND_ISO	In	2	DI_HS_1_ISO	In
3	DI_HS_2_ISO	In	4	DI_HS_3_ISO	In
5	DI_LS_1_ISO	In	6	DI_LS_2_ISO	In
7	DI_LS_3_ISO	In	8	DI_LS_4_ISO	In
9	DI_LS_5_ISO	In	10	DI_LS_6_ISO	In
11	+5V_ISO		12	DO_HS_1_ISO	Out
13	DO_HS_2_ISO	Out	14	DO_HS_3_ISO	Out
15	OPTO1+	Out	16	OPTO1-	Out
17	OPTO2+	Out	18	OPTO5-	Out
19	OPTO3+	Out	20	OPTO6-	Out
21	OPTO4+	Out	22	OPTO2-	Out
23	OPTO5+	Out	24	OPTO3-	Out
25	OPTO6+	Out	26	OPTO4-	Out

Software API and Supported Modes

The MityDSP software and firmware development kit includes a core interface and C++ API for interfacing to general purpose I/O (GPIO). Refer to the MDK Software User's Guide for more information. Users may also modify the FPGA and software in order to implement hard real-time or system synchronous signals as required.