

Features and Benefits

PTC04 interface board for testing devices, supporting MUST/MICE, LIN and Fast LIN protocols

Applications

Experimental tool for Lab and Prototyping
Production Equipment for Serial Programming

Ordering Information

Part No.	Description
PTC04-DB-FastLoader PTC04)	Default Daughter Board (Board + rear panel)

Accessories

Part No.	Description
DLL's for all supported products	
User Inter Faces for supported products	

1. Functional Diagram

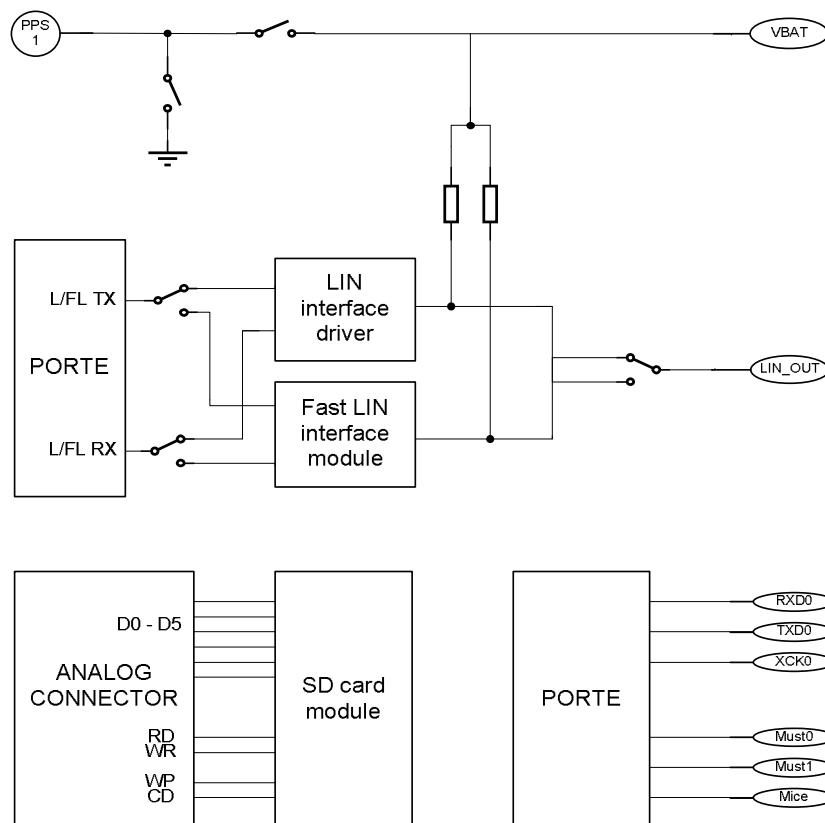


Figure 1

TABLE OF CONTENTS

FEATURES AND BENEFITS	1
APPLICATIONS.....	1
ORDERING INFORMATION	1
ACCESSORIES	1
1. FUNCTIONAL DIAGRAM.....	1
2. BOARD DESCRIPTION	3
2.1. BOARD LAYOUT.....	3
2.2. BOARD SCHEMATIC.....	4
2.3. DAUGHTER BOARD CONNECTORS	5
2.4. ANALOGUE DB CONNECTOR (48 PINS)	6
2.5. APPLICATION CONNECTOR	6
2.5.1. DB 15 Female Connector.....	6
2.5.2. DB 15 Screw Terminal.....	7
3. DISCLAIMER	8

2. Board description

2.1. Board Layout

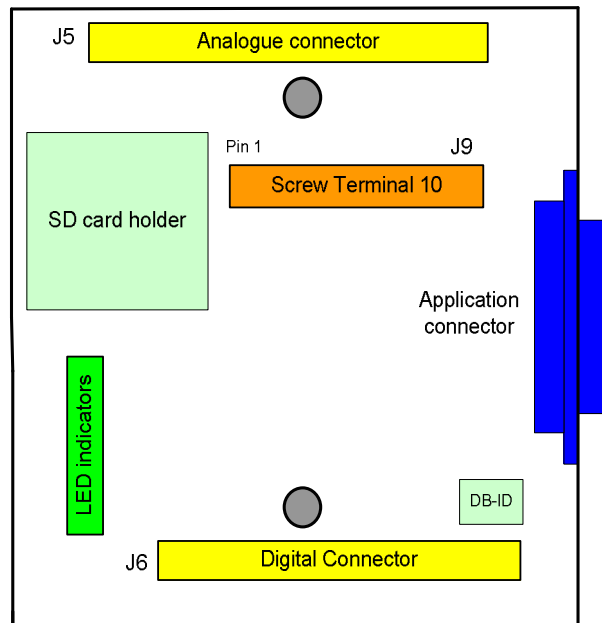


Figure 2

- DB-ID: This ID keeps a few initial variables in mind. It allows for example to detect what DB is connected to the programmer and if the DB is not expired.
- J5 and J6: these are the Analogue and Digital connectors. See below for a detailed description.
- Application Connector: Connection to the application. See below for details
- J9: 10 pins screw terminal. It provides the same signals as the application connector.

2.2. Board Schematic

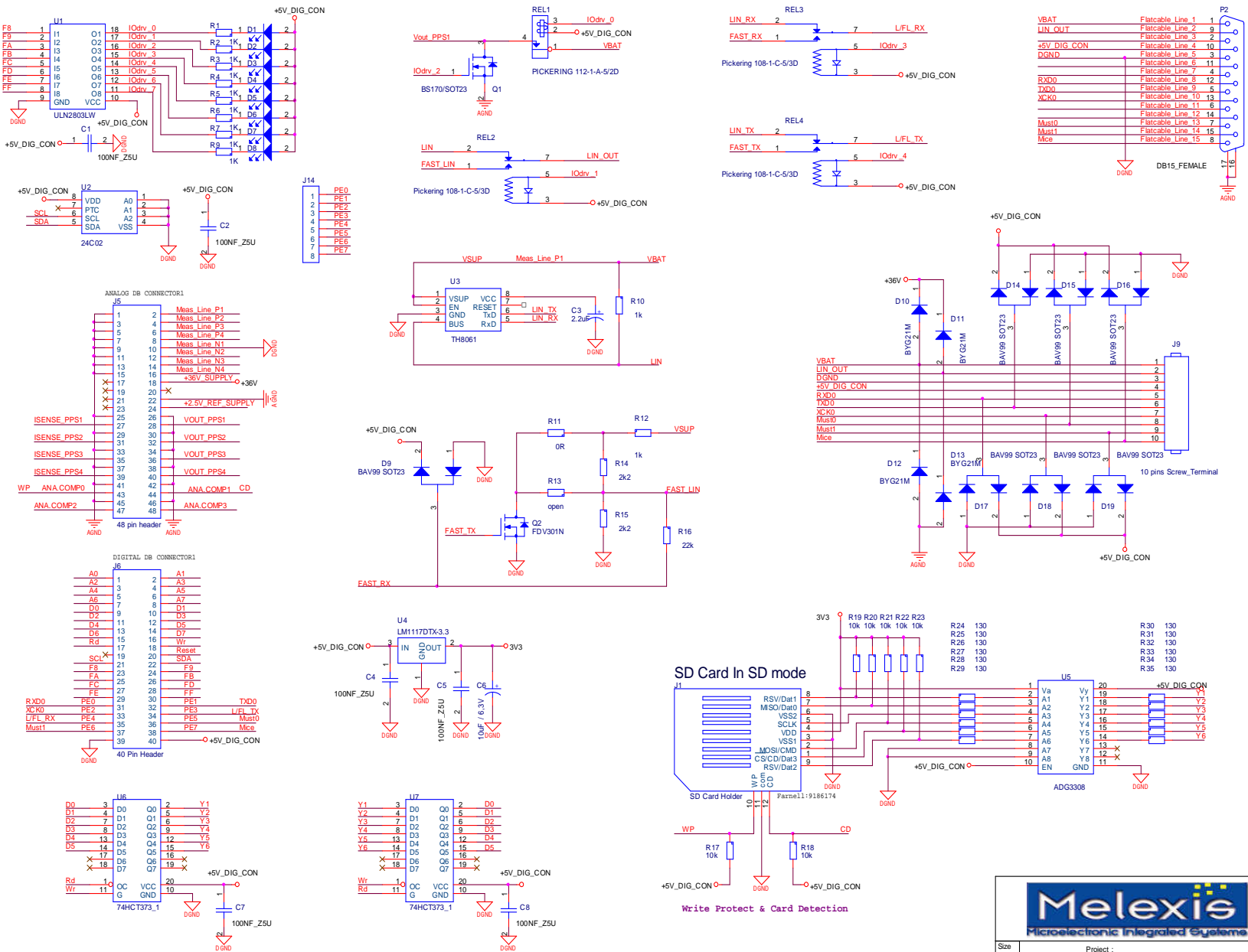


Figure 3

Size	Project :	Rev
	Schematic : PTC04_DB_FastLoader	1
Date: Friday, April 18, 2008	Sheet	1 of 1

2.3. Daughter board Connectors

The main board has two connectors to the interface with the application. The PTC allows adding a full PCB in between. This daughter board can be mounted on the two connectors. In some exceptional cases, a daughter board contains only a few wires from the Analogue connector to the application connector. The pins on of the connectors are described below.

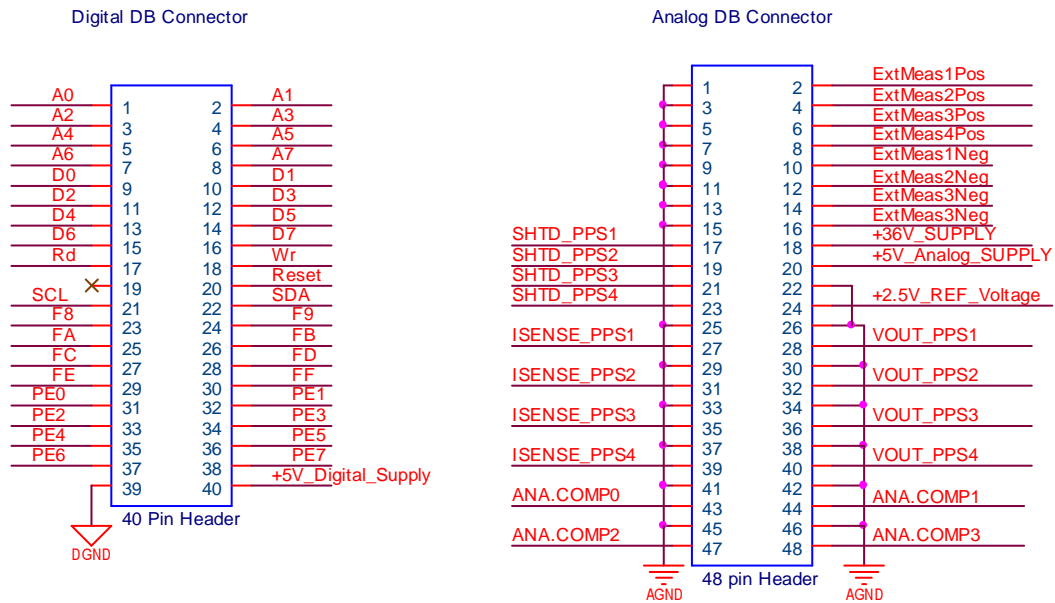


Figure 4

Mainly, the digital connector is meant to expand the programmer to extra needs. Address lines A0-A7 together with the Map Select Lines F8-FF allows to direct access an area of 2 K. Examples would be adding a simple addressed I/O register by using the selection lines. If more complexity is needed, a full FPGA can be mounted on the DB board

Pin	Name	Description
1 – 8	A0 – A7	Address lines
9 – 16	D0 – D7	Data Lines active during Rd or Wr signals
17	Rd	Read: A negative pulse will indicate a sampling of the data on the Data Bus
18	Wr	Write: A Negative pulse will indicate when data is available on the Data Bus
20	Reset	This signal goes low by powering the PTC or by pressing the reset button. This line can be pulled low by application. Check firmware documentation for resetting by software.
21-22	SCL / SDA	I2c Bus
23-30	F8,F9,...,FF	CS lines when the address areas are accessed
31-38	Port E	Note: These pins are limited to 5 Volt input/output!!!! The full Port E of the Atmega core is mounted to these pins. This allows us to use advanced features like PWM, UARTS, Time Measurements, etc.... By using firmware that supports these, functions, application specific requirements can be fulfilled.
39	Dgnd	Digital Ground
40	+5V Digital	5 Volt Digital Supply. Maximum current to get out of this supply: 250mA

Table 1

Note:

- All the pins are limited to 5 Volt input/output!!!! However, there are Protections, please take precautions in order to avoid damage of the main board.

2.4. Analogue DB Connector (48 Pins)

Mainly, the analogue connector provides all the analogue signals and measure possibilities.

Pin	Name	Description
28,32,36	PPS 1-3	Output of the Programmable Supplies
40	PPS 4	Output of the Fast DAC Programmable Power Supply
27,31,35,39	Isense_PP1-4	Outputs (Driver outputs before Rsens) for current evaluations. These outputs could be used to connect to the analogue comparators in order to create fast digital signals based on current.
2,4,6,8	ExtMeas1-4Pos	There are 4 differential inputs for making measurements
10,12,14,16	ExtMeas1_4Neg	The negative inputs of ExtMeas1-4Pos
17,19,21,23	Shtd_PPS1-4	Outputs that shows the status of the Drivers. Signals are meant to connect LED's to put the front panel
43,44,47,48	AnaComp0-3	See *Note. Input (limited to 5V) Fast Level comparators in order to remove time consuming measurement
18	+35V_Supply	Supply to extend the daughter board with some extra drivers
24	+2.5V Ref	Output of internal reference
All other	AGND	Analogue Ground

Table 2

Note:

- All the pins are limited to 35 Volt input/output! However, there are Protections, please take precautions in order to avoid damage of the main board.
- Some pins are protected and limited to 5 Volt! However, there are Protections, please take precautions in order to avoid damage of the main board.

2.5. Application Connector

2.5.1. DB 15 Female Connector

DB15 Female Connector

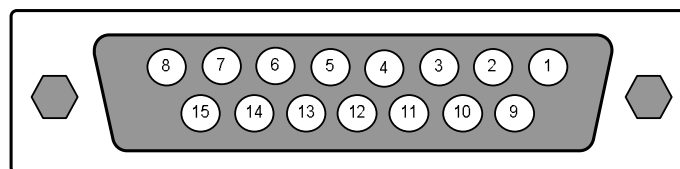


Figure 5

Pins	Name	Description	Direction
1	VBAT	Power Supply	Input/Output
2	N.C.	Not connected	-
3	DGND	Digital Ground	Power
4	NC	Not connected	-
5	TXD0	USART Transmit Data	Output
6	N.C.	Not connected	-
7	MUST0	Digital test pin	Output
8	MICE	Digital test pin	Input
9	LIN_OUT	LIN BUS	Input/Output
10	+5V_DIG_CON	+5V DC Supply	Power
11	N.C.	Not connected	-
12	RXD0	USART Receive Data	Input
13	XCK0	USART Clock	Output
14	N.C.	Not connected	-
15	MUST1	Digital test pin	Output

Table 3

2.5.2. DB 15 Screw Terminal

10 Pin Screw Terminal

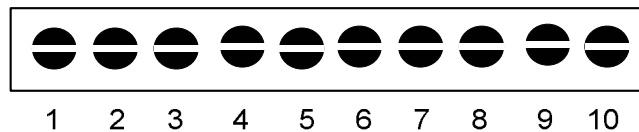


Figure 3

Pin	Name	Description	Direction
1	VBAT	Power Supply	Input/Output
2	LIN_OUT	LIN BUS	Input/Output
3	DGND	Digital Ground	Power
4	+5V_DIG_CON	+5V DC Supply	Power
5	RXD0	USART Receive Data	Input
6	TXD0	USART Transmit Data	Output
7	XCK0	USART Clock	Output
8	MUST0	Digital test pin	Output
9	MUST1	Digital test pin	Output
10	MICE	Digital test pin	Input

Table 4

3. Disclaimer

Devices sold by Melexis are covered by the warranty and patent indemnification provisions appearing in its Term of Sale. Melexis makes no warranty, express, statutory, implied, or by description regarding the information set forth herein or regarding the freedom of the described devices from patent infringement. Melexis reserves the right to change specifications and prices at any time and without notice. Therefore, prior to designing this product into a system, it is necessary to check with Melexis for current information. This product is intended for use in normal commercial applications. Applications requiring extended temperature range, unusual environmental requirements, or high reliability applications, such as military, medical life-support or life-sustaining equipment are specifically not recommended without additional processing by Melexis for each application.

The information furnished by Melexis is believed to be correct and accurate. However, Melexis shall not be liable to recipient or any third party for any damages, including but not limited to personal injury, property damage, loss of profits, loss of use, interrupt of business or indirect, special incidental or consequential damages, of any kind, in connection with or arising out of the furnishing, performance or use of the technical data herein. No obligation or liability to recipient or any third party shall arise or flow out of Melexis' rendering of technical or other services.

© 2002 Melexis NV. All rights reserved.

For the latest version of this document, go to our website at:

www.melexis.com

Or for additional information contact Melexis Direct:

Europe and Japan:

Phone: +32 13 67 04 95
E-mail: sales_europe@melexis.com

All other locations:

Phone: +1 603 223 2362
E-mail: sales_usa@melexis.com

QS9000, VDA6.1 and ISO14001 Certified