PTC04-DB-HALL02
Daughter Board for Melexis PTC devices

Features and Benefits

PTC04 interface board for testing devices:
90275
90264
91205

Applications

Experimental tool for Lab and Prototyping
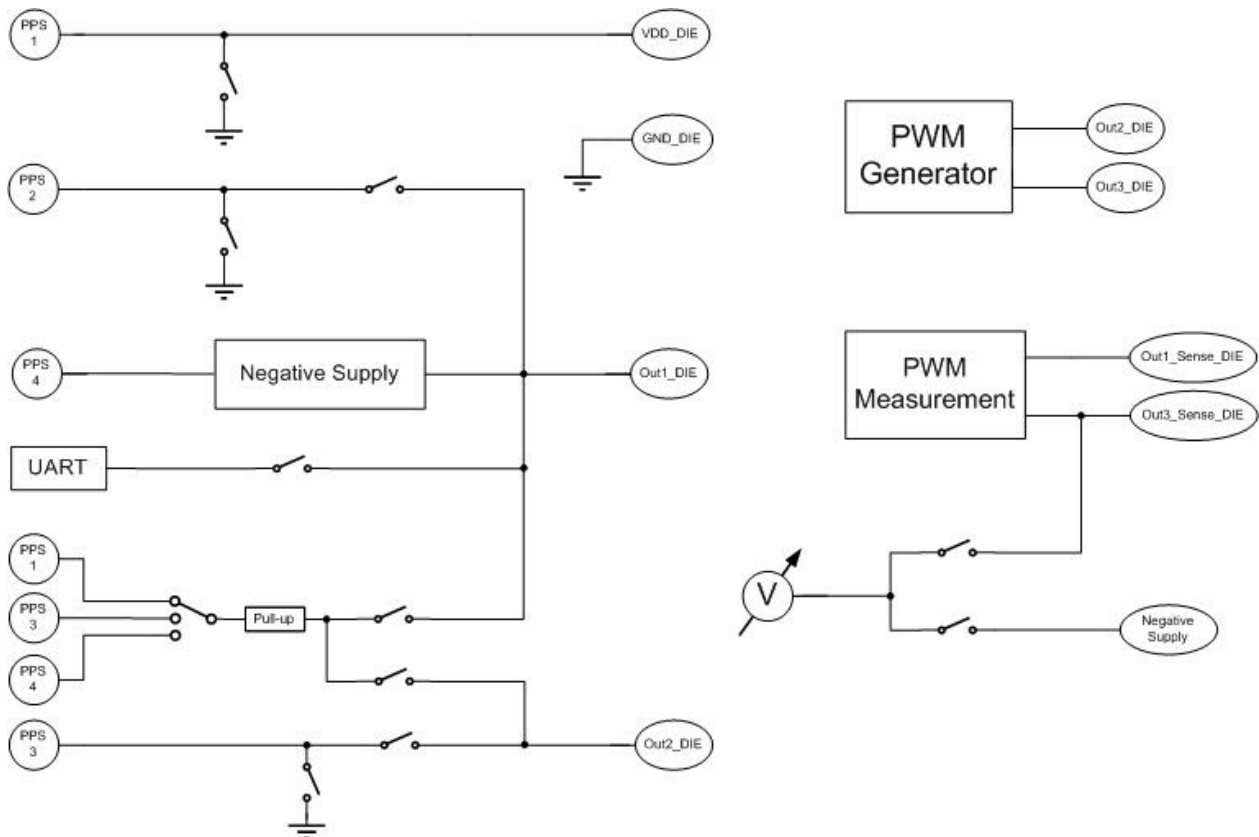Production Equipment for Serial Programming

Ordering Information

Part No.	Description
PTC04-DBHall-02	Daughter Board (Board + rear panel PTC04)

Accessories

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

## 1. Functional Diagram

TABLE OF CONTENTS

2. Board description

2.1. Board Layout
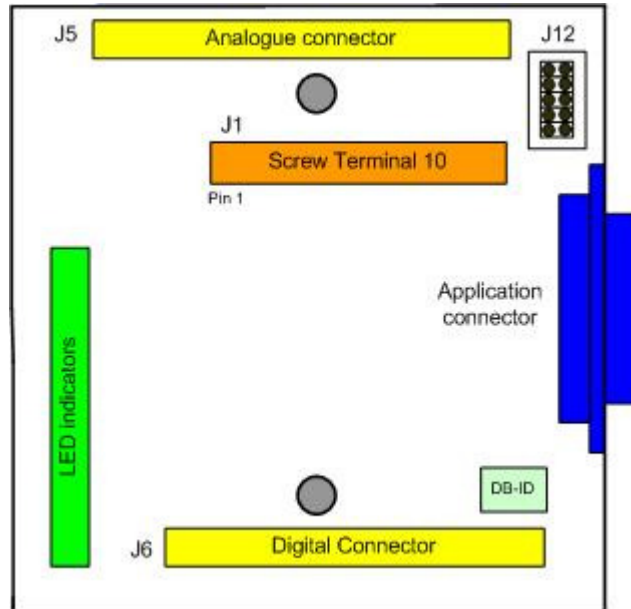
- J12: Jumpers to connect the measurement sense lines immediately to the force lines. These jumpers are needed when no force and sense is used.
- DB-ID: This ID keeps a few initial variables in mind. It allows for example to detect what DB is connected to the programmer and if the DB is not expired.
- J5, J6: Analog and Digital connector: See below for a detailed description.
- DB Connector: Connector to the application. See below for details.
- LED Indicators: 16 LED Indicators for the DB_IOdrv lines.
- J1: 10 pins Screw Terminal. It provides the same signals as the application connector.
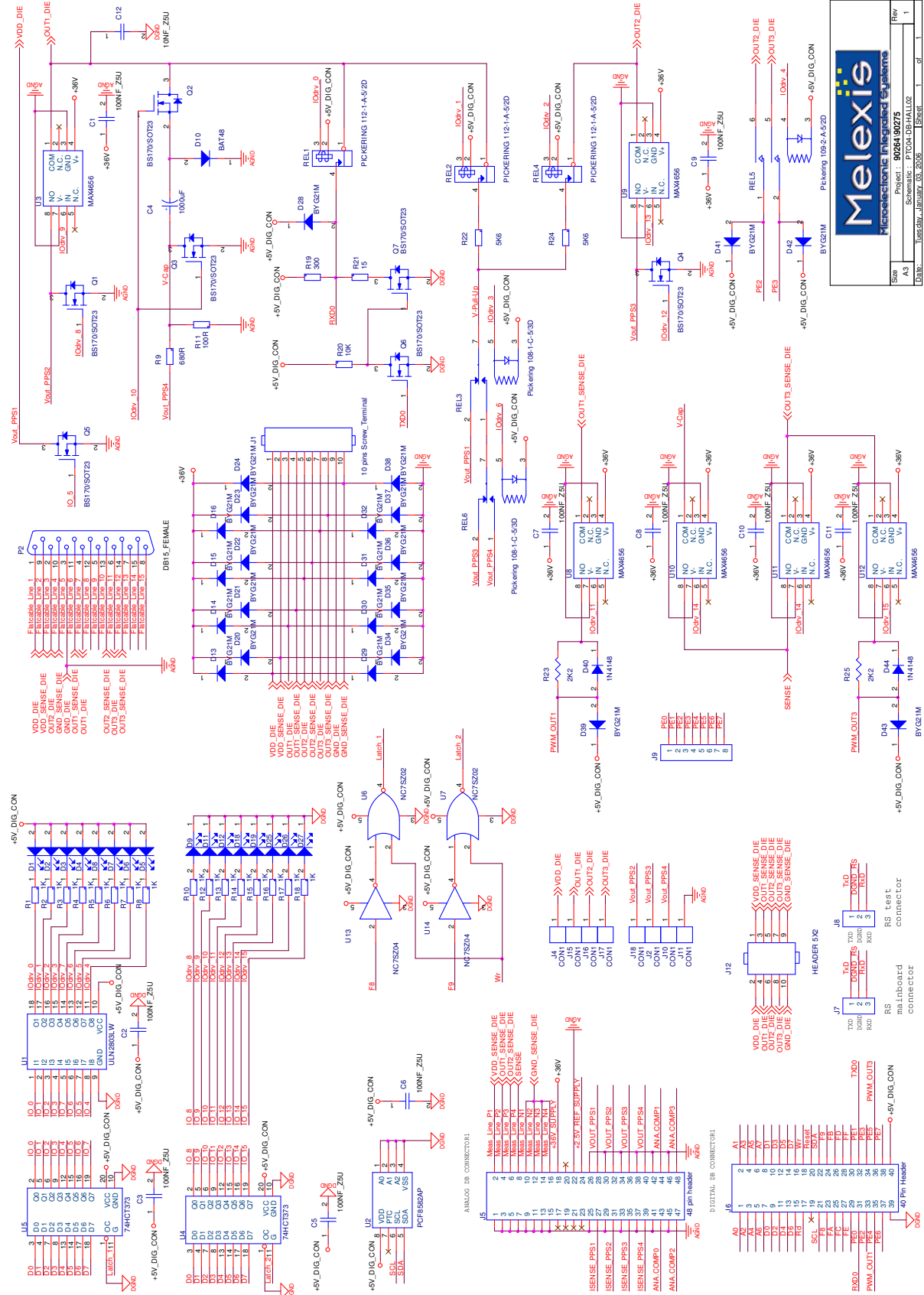
Microelectronic Integrated Systems

2.2. Board Schematics

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 Analog connector to the application connector. The pins on of the connectors are described below.

DIGITAL DB CONNECTOR

ANALOG DB CONNECTOR
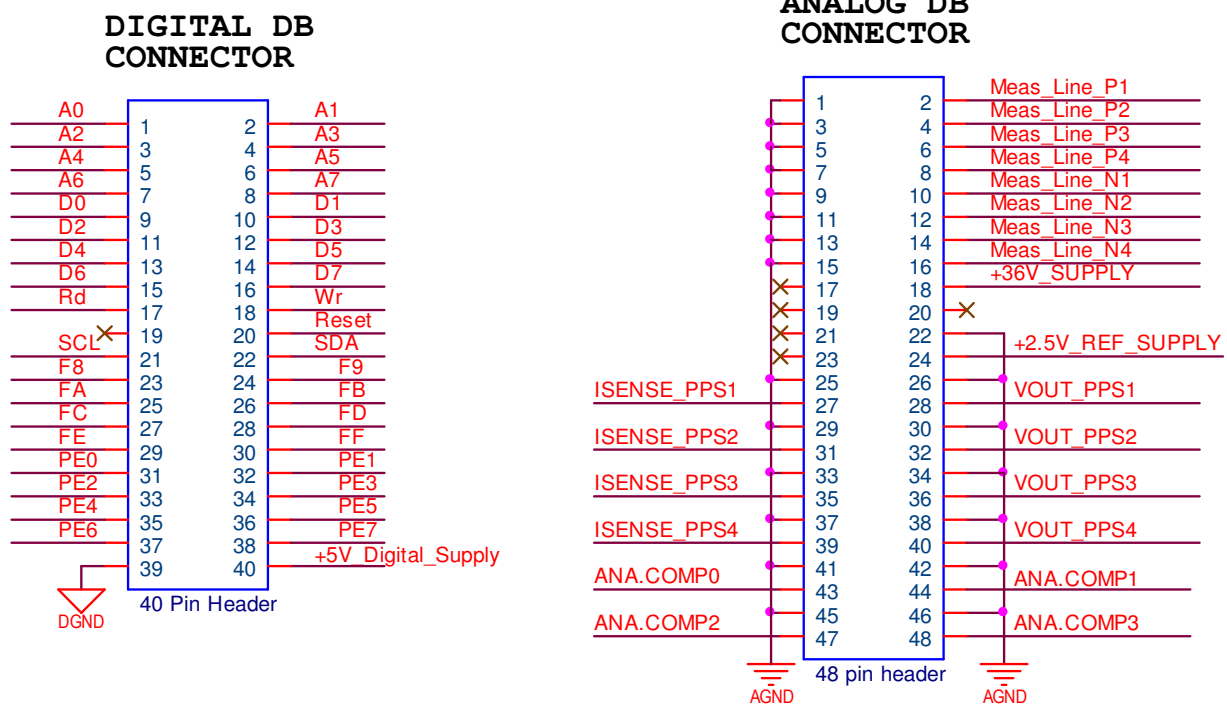
2.3.1. Digital DB Connector (40 Pins)

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

Pins	Names	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

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.

2.3.2. Analog DB Connector (48 Pins)
Mainly, the analog connector provides all the analog signals and measure possibilities.

Pins	Names	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 analog 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	Input (limited to 5V) See *Note. 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	Analog Ground

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.
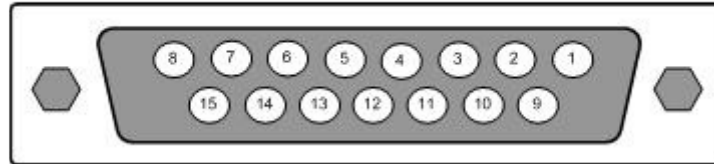* Note: Some pins are protected and limited to 5 Volt!!!! However, there are Protections, please take precautions in order to avoid damage of the main board.

2.4. Application Connector

There are two ways to connect the application to PTC04:

### 2.4.1. The DB15_Female connector (application connector)

DB15 Female Connector

Pins	Names	Description
1	VDD_DIE	Device Supply
2	OUT2_DIE	Device Output 2
3	GND_DIE	Analog Ground Device
4	OUT1_ DIE	Device Output 1
5	NC	Not Connected
6	OUT3_ DIE	Device Output 3
7	NC	Not Connected
8	NC	Not Connected
9	VDD_SENSE_DIE	Sensing Device Supply
10	GND_SENSE_DIE	Sensing Analog Ground Device
11	OUT1_SENSE_DIE	Sensing Device Output 1
12	NC	Not Connected
13	OUT2_SENSE_DIE	Sensing Device Output 2
14	OUT3_SENSE_DIE	Sensing Device Output 3
15	NC	Not Connected

2.4.2. The screw terminal

10 Pin Screw Terminal
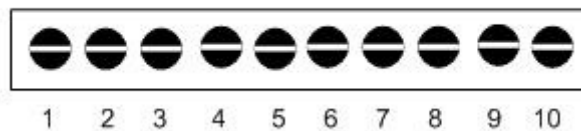
Pins	Names	Description
1	VDD_DIE	Device Supply
2	VDD_SENSE_DIE	Sensing Device Supply
3	OUT1_ DIE	Device Output 1
4	OUT1_SENSE_DIE	Sensing Device Output 1
5	OUT2_DIE	Device Output 2
6	OUT2_SENSE_DIE	Sensing Device Output 2
7	OUT3_ DIE	Device Output 3
8	OUT3_SENSE_DIE	Sensing Device Output 3
9	GND_DIE	Analog Ground Device
10	GND_SENSE_DIE	Sensing Analog Ground Device

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