

Features and Benefits

PTC04 interface board for programming MLX91209 devices.

Applications

Experimental tool for Lab and Prototyping
Production Equipment for Serial Programming

Ordering Information

Part No.	Description
PTC04-DB-91209	Daughter Board (PCB + rear panel PTC04)

Accessories

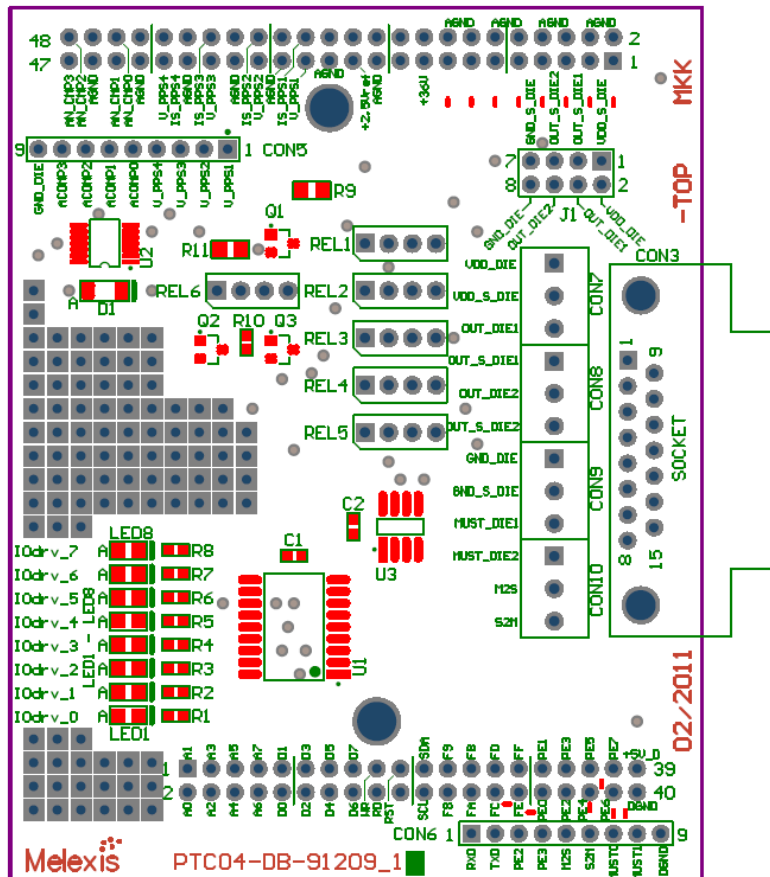
Part No.	Description
	DLL's for all supported products
	User Interfaces for supported products
	Firmware for supported products

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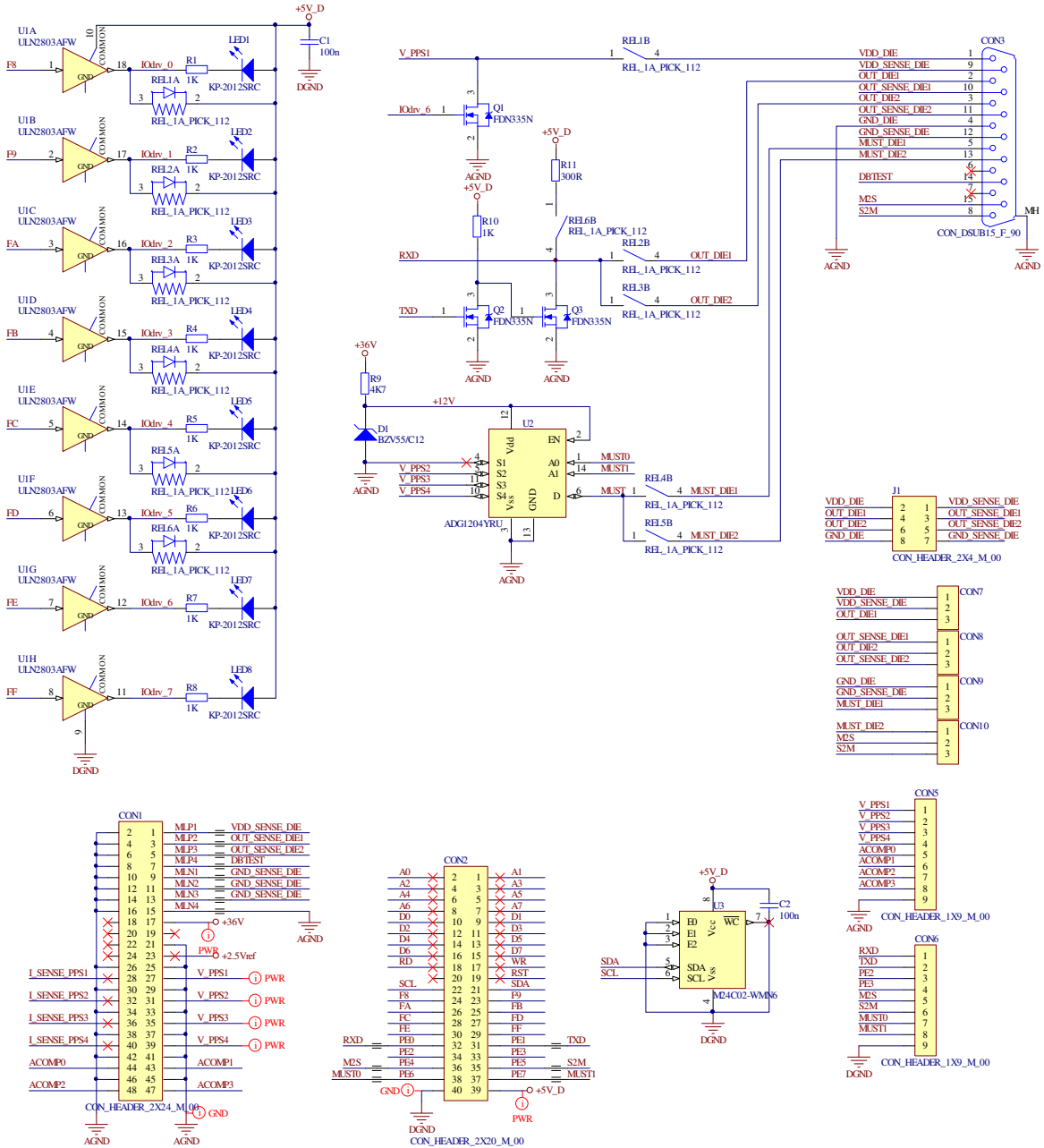
1. Board description

1.1. Board Layout



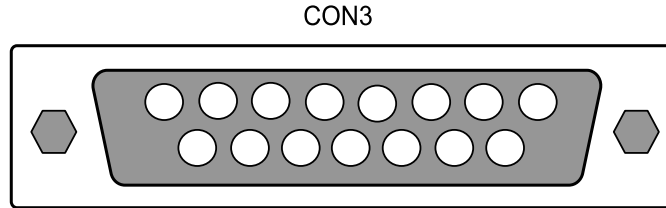
Part	Description
CON3	D-SUB application connector
CON7-CON10	Screw terminals application connectors
J1	Jumpers to short-circuit the force and sense lines

1.2. Board Schematics



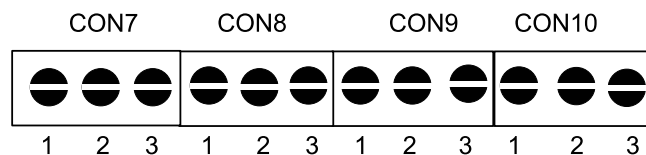
1.3. Application Connectors

1.3.1. D SUB 15 connector – CON3



Pin	Name	Description
1	VDD_DIE	Supply (single and double die)
2	OUT_DIE1	Output of die 1
3	OUT_DIE2	Output of die 2
4	GND_DIE	Ground (single and double die)
5	MUST_DIE1	MUST of die 1
6	NC	Not Connected
7	NC	Not Connected
8	S2M	Slave PTC04 to Master PTC04 communication line
9	VDD_SENSE_DIE	Sense line for the supply
10	OUT_SENSE_DIE1	Sense line for the output of die 1
11	OUT_SENSE_DIE2	Sense line for the output of die 2
12	GND_SENSE_DIE	Sense line for the ground
13	MUST_DIE2	MUST of die 2
14	DBTEST	Daughter board test pin (not used in application)
15	M2S	Master PTC04 to Slave PTC04 communication line

1.3.2. Screw terminals - CON7, CON8, CON9, CON10



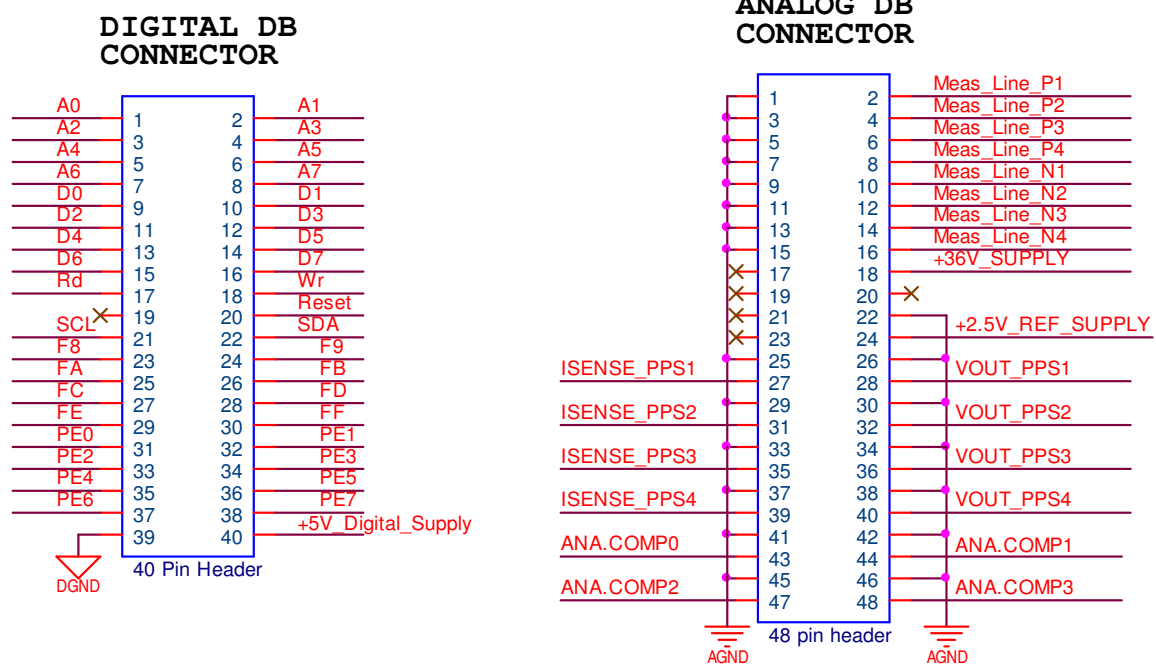
Connector	Pin	Name	Description
CON7	1	VDD_DIE	Supply (single and double die)
	2	VDD_SENSE_DIE	Sense line for the supply
	3	OUT_DIE1	Output of die 1
CON8	1	OUT_SENSE_DIE1	Sense line for the output of die 1
	2	OUT_DIE2	Output of die 2
	3	OUT_SENSE_DIE2	Sense line for the output of die 2
CON9	1	GND_DIE	Ground (single and double die)
	2	GND_SENSE_DIE	Sense line for the ground
	3	MUST_DIE1	MUST of die 1
CON10	1	MUST_DIE2	MUST of die 2
	2	M2S	Master PTC04 to Slave PTC04 communication line
	3	S2M	Slave PTC04 to Master PTC04 communication line

1.3.3. Force / Sense jumpers – J1

Force pin	Name	Sense pin	Name
1	VDD_DIE	2	VDD_SENSE_DIE
3	OUT_DIE1	4	OUT_SENSE_DIE1
5	OUT_DIE2	6	OUT_SENSE_DIE2
7	GND_DIE	8	GND_SENSE_DIE

1.4. Daughter board Connectors

The PTC04 main board has two connectors to the interface with the application. The PTC allows adding a full PCB in between (Daughter Board). 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.



1.4.1. 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	I ² C Bus
23-30	F8,F9,...,FF	CS lines when the address areas are accessed
31-38	Port E	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 pins are limited to 5V. Despite of these protections, please take precautions in order to avoid damage of the main board.

1.4.2. 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 high current 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, these are the positive inputs.
10,12,14,16	ExtMeas1-4Neg	The negative inputs of ExtMeas1- 4Pos
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

Note: All pins are limited to 35V. Despite of these protections, please take precautions in order to avoid damage of the main board.

Note: Some pins are protected and limited to 5 Volt! Despite of these protections, please take precautions in order to avoid damage of the main board.

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