USER'S MANUAL

CPLDICY

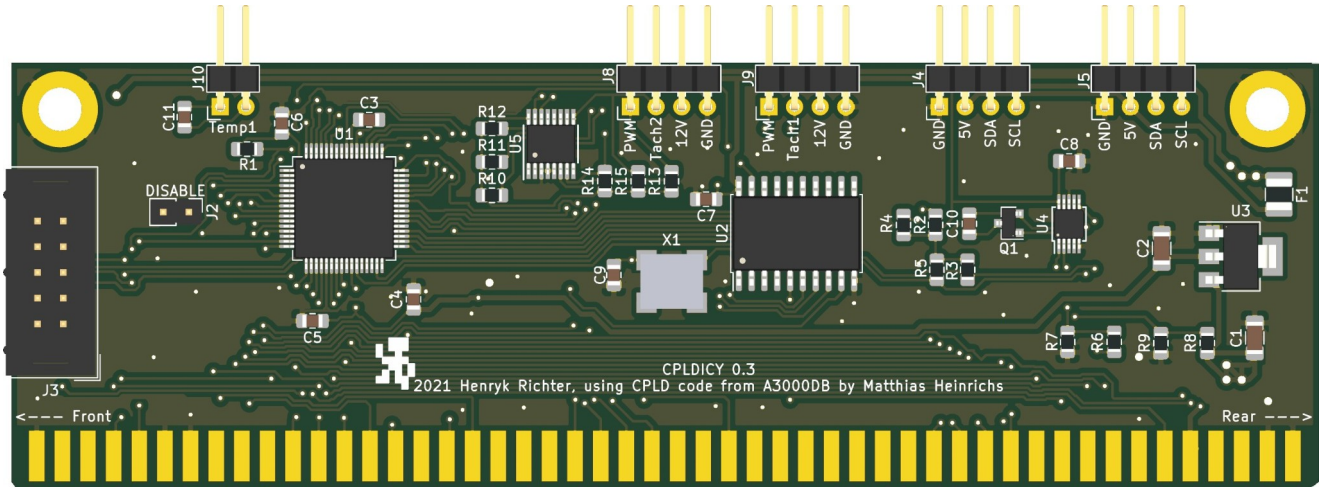
I²C Controller as Zorro II Card for Amiga 2000, 3000 and 4000

The CPLDICY is an I²C controller for a Zorro slot and is software compatible with the ICY board by Michael Böhmer. I²C gives access to sensors, clocks and other devices, e.g. the voltage and temperature monitor of the BFG9060. In addition, the board carries a fan controller for two PWM fans and its own voltage and temperature monitor.

1 FEATURES

* PCF8584 I²C controller, software compatible with the ICY board (i2c.library)
* MAX31760 fan controller for two 4-pin PWM fans (12 V), compatible with the Fanny board
* LTC2990 voltage and temperature monitor
* Connector for an external temperature sensor
* Two I²C connectors for external devices, board can be disabled with a jumper

2 BOARD LAYOUT



Component side of the CPLDICY

Part	Function
J4, J5	I²C connectors (GND, 5V, SDA, SCL) for external devices
J8, J9	Fan connectors Fan2 and Fan1 (PWM, Tach, 12V, GND)
J10	External temperature sensor (Temp1) for the fan controller
J2	DISABLE: jumper closed disables the board (open = normal operation)
J3	JTAG of the CPLD, for programming only
U2 / U4 / U5	PCF8584 I²C controller / LTC2990 monitor / MAX31760 fan controller

3 INSTALLATION

CAUTION: Electrostatic discharge can damage the board and the Amiga. Grounding is required before touching the components, e.g. on a radiator. Install and remove the board only with the Amiga switched off and disconnected from mains power.

1) Switch the Amiga off, disconnect it from mains power and open the case.
2) Insert the board into a free Zorro slot (component side as with the other cards) and screw it down.
3) Connect fans, temperature sensor and external I²C devices. For the BFG9060, connect SDA, SCL and GND to its JP2 connector.
4) Close the Amiga and switch it on. The board registers itself via Autoconfig.

4 SOFTWARE

The following programs are included on the floppy disk supplied:

* **i2c.library** for the ICY board (Aminet: docs/hard/i2clib40). Use the included I2CScan tool to check that the connected devices respond.
* **Sensei** (Aminet: driver/other/Sensei) or **simplesensors** display voltages and temperatures of the LTC2990 and of connected boards such as the BFG9060.
* **FannyCtl** configures the fan controller (i2csensors project, folder «Fanny»).

4.1 Setting up the Fan Controller

From the factory, the MAX31760 runs the fans at full speed. FannyCtl defines how the speed follows the temperature:

```
FannyCtl                    show status
FannyCtl TMIN=35 TMAX=50    control fans: 10 % at 35 °C to 100 % at 50 °C
FannyCtl FIXEDPWM=30        fixed speed 30 %
FannyCtl NOFAULT=2          only fan 1 connected
FannyCtl SAVEEEPROM         save settings permanently
```

Without SAVEEEPROM, the settings are lost at power-off. If only one fan is connected, NOFAULT prevents an error for the missing speed signal.

5 TROUBLESHOOTING

Symptom	Remedy
Board is not detected	Open the DISABLE jumper (J2). Check that the board is seated correctly in the slot.
I2CScan finds no devices	Use the i2c.library for the ICY board. For external devices, check SDA, SCL and GND.
Fans always run at full speed	Configure the fan controller with FannyCtl and save with SAVEEEPROM.

6 SOURCES AND LICENSE

Project: gitlab.com/HenrykRichter/cpldicy · Software: gitlab.com/HenrykRichter/i2csensors · Forum: a1k.org, threads 78612 and 84758

Design: Henryk Richter; CPLD logic based on the A3000 daughterboard by Matthias Heinrichs. License: CC BY-NC-SA 4.0.