iC384
SPI/I2C TO USB ADAPTER

preliminary

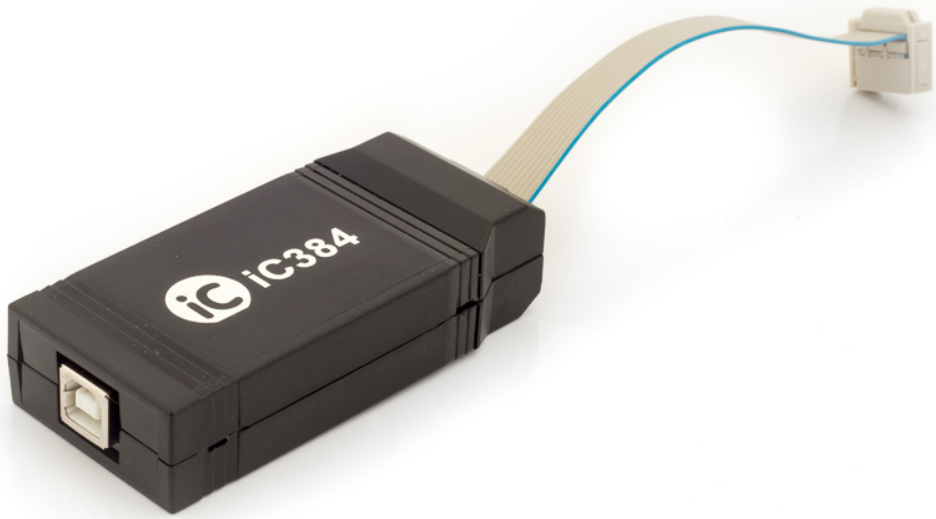
FEATURES

- USB 2.0 compatible PC interface
- USB powered 5 V supply for external applications
- Supported interfaces: SPI/I2C

APPLICATIONS

- Interfacing iC-Haus laser driver evaluation boards with SPI or I2C

SYSTEM VIEW



DESCRIPTION

The USB port can supply connected board via the SPI/I2C plug with 5 V (up to 100 mA, through Pin 4 - no galvanic isolation). If there is load applied to the I2C multi-master capability is not provided.

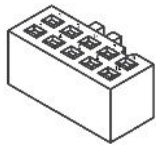
The SPI and I2C master are only supported by product specific APIs and software for iC-Haus product evaluation and programming.

10 Pin Pigtail 5x2 Female SPI and I2C Interface Connector Functions and Features:

- SPI or I2C capable by pin connection
- Up to 6 MBit/s maximum data transfer rate with SPI
- 100 kBit/s maximum data transfer rate with I2C
- Single master systems
- Master operation based on FTDI™ USB dual serial bridging device
- USB 2.0 compatible with up to 12 MBit/s data transfer
- USB bus provides power adapter and optionally to devices
- No galvanic isolation, supply sourced from the USB port (5 V up to 200 mA)
- Available 32 and 64 bit FTDI™ drivers for Windows 10, 8, 7, Vista, XP, 2000

CONNECTOR

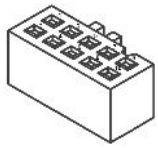
PIN CONFIGURATION I2C (RM2.54 2x5 female)



PIN FUNCTIONS

No.	Name	Function
1	SCL	Serial Clock Line
2	GND	Ground
3	n.a.	Reserved5
4	VDD	5 V logic power supply
5	n.a.	Reserved
6	n.a.	Reserved
7	SDA	Serial Data Line Output, short to pin 9
8	n.a.	Reserved
9	SDA	Serial Data Line Input
10	GND	Ground

PIN CONFIGURATION SPI (RM2.54 2x5 female)



PIN FUNCTIONS

No.	Name	Function
1	SCL	Serial Clock Line
2	GND	Ground
3	n.a.	Reserved
4	VDD	5 V logic power supply
5	n.a.	Reserved
6	n.a.	Reserved
7	MOSI	Serial Data Line Output
8	NCS	Chip Select (low active)
9	MISO	Serial Data Line Input
10	GND	Ground

ABSOLUTE MAXIMUM RATINGS

These ratings do not imply operating conditions; functional operation is not guaranteed. Beyond these ratings device damage may occur.

Item No.	Symbol	Parameter	Conditions	Min.	Max.	Unit
G001	P(VDD)	Load at VDD			1	W
G002	V()	Input Voltage	SDA (according to FT2232)	-0.5	V_USB +0.5	V
G003	I()	Output Current	SCL, SCLK, SDA, NCS (according to FT2232D or compatible)		24	mA

THERMAL DATA

Item No.	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
T01	Ta	Operating Temperature		0		30	°C
T02	RH	Relative Humidity	Non condensing	5		95	%

All voltages are referenced to ground unless otherwise stated.
All currents flowing into the device pins are positive; all currents flowing out of the device pins are negative.

ELECTRICAL CHARACTERISTICS

Operating conditions: USB 2.0, port maximum 500 mA, Ta = 0..30 °C

Item No.	Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Supply							
001	Vusb	Supply Voltage	By USB port	4.5	5.0	5.5	V
002	Iusb	Current Consumption	From USB port			500	mA
003	VDD	VDD Supply Output		4.5	5	5.5	V
004	I(VDD)	Permissible VDD Load Current	load at VDD, no other load at MOSI, SCL, NCS			200	mA
SPI / I2C							
101	Vin()	Input Switching Threshold Voltage at SDA (MISO)	Standard level (according to FT2232)	1.2	1.3	1.5	V
102	Vhyst()	Input Switching Hysteresis Voltage at SDA	Standard level (according to FT2232)	50	30	25	mV
103	Vo()hi	Output Voltage high at SCL, SCLK, SDA	I(source) = -2 mA, standard level (according to FT2232)	3.2	4.1	4.9	V
104	Vo()lo	Output Voltage high at SCL, SCLK, SDA	I(sink) = 2 mA, standard level (according to FT2232)	0.3	0.4	0.6	V

SCHEMATIC

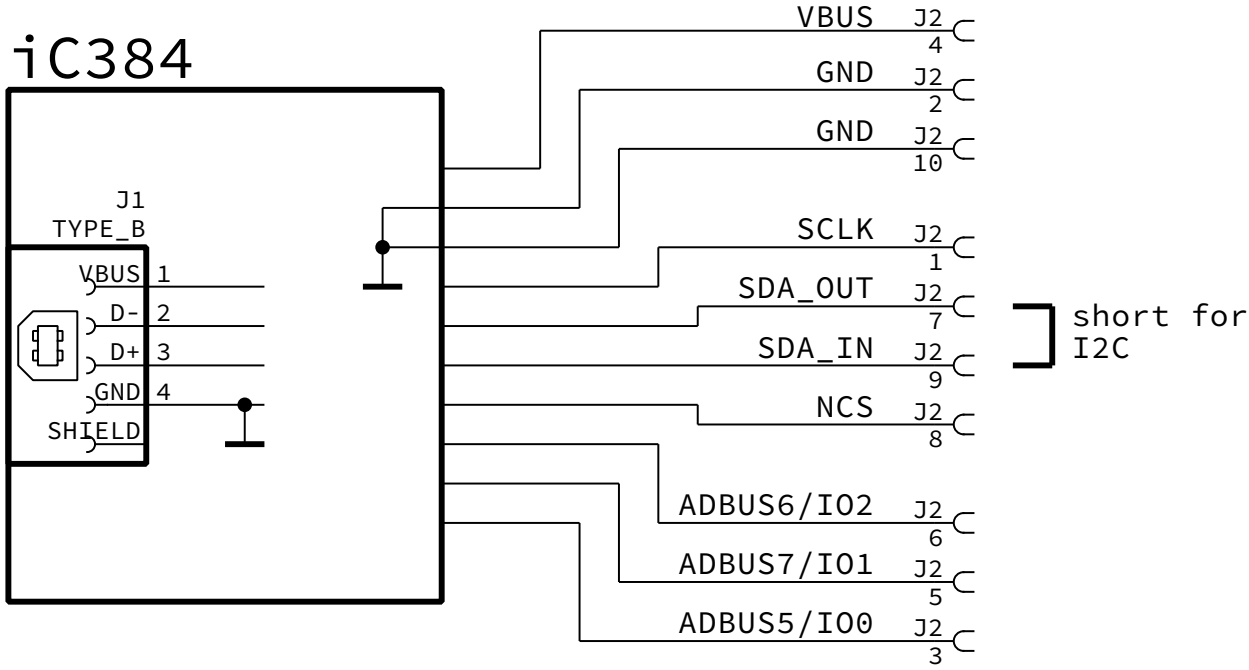


Figure 1: Block diagram

ORDERING INFORMATION

Type	Order Designation
iC384	iC384 iCSY iC384

Please send your purchase orders to our order handling team:

Fax: +49 (0) 61 35 - 92 92 - 692
E-Mail: dispo@ichaus.com

For technical support, information about prices and terms of delivery please contact:

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