CPT-COM Card

RS-232/422/485 Interface Board

Technical Brief

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Manual Release 1.1
Card Version 1.3

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CPT-COM Manual Revision History

CARD VERSION 1.0: Internal Use

CARD VERSION 1.1: Internal Use

CARD VERSION 1.2: Added Battery and External Supply Support
This version should be used for isolated RS-232 operation with an on-card Battery option

Release 1.0 – Initial Release

CARD VERSION 1.3: Added RS-422/485 support, made battery an external add on
This version should be used for isolated RS-232/422/485 operation. Battery to be mounted separately

Release 1.1 – Initial Release

Table of Contents

CPT-COM RS-232 Interface Board

1.0 Overview of the CPT-COM

The CPT-COM is an isolated interface board that converts 3.3V-TTL level serial communications signals to a fully isolated RS-232/422/485 output. The board can be powered from the 3.3V-TTL level serial port connector or an external 9V DC power source.

The CPT-COM card measures 60mm x 51mm.

On-card facilities include:

- Optional 9V Power Supply
- Link Selectable Power Supply Selection
- Link Selectable DCE/DTE operation
- Link selectable RS-232/422 or 485
- 1000V Isolation between 3.3V-TTL level signals and RS-232/422/485

Figure 1-1 shows a functional block diagram of the CPT-COM card.

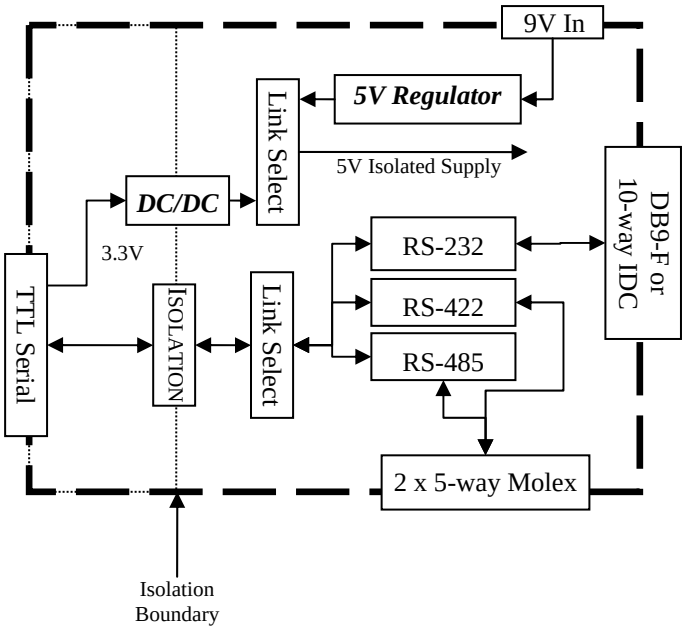

Figure 1-1: Functional Diagram of CPT-COM Board

2.0 Specifications

2.1 Communications Interface

Definition	Configurable to support either RS-232 or RS-422/485 communication modes through a single UART. Both modes cannot operate simultaneously
Configuration	Links are provided to choose between RS-232, RS-422 and RS-485 modes (**LK2**) **DEFAULT** is RS-232
Isolation	1kV

2.1.1 RS-232 Interface

Definition	RS-232 connection, providing two pin serial communications for interface between a standard PC serial port and a 3.3V-TTL serial interface, as used on Creative Power Technologies DSP controller boards **DEFAULT MODE:** 3.3V-TTL level serial connection, providing two pin serial communications for interface to an off-card 3.3V-TTL level to RS-232 translation card. This is necessary for interfacing to a standard PC serial port
Isolation	1kV
Compatibility	Links provided to enable the board to be configured as a DTE or a DCE (**LK3**) Default is configuration as a DCE
PCB Connections: 3.3V	4 way MASCON/MOLEX header with VCC (3.3V) and GND connections (**X4**)
PCB Connections: RS-232	10-way IDC connector, with pin outs to suit standard PC 9 pin serial port (**X2**) OR 9-way DSUB connector, with pin outs to suit standard PC 9 pin serial port (**X3**)

2.1.2 RS-422/RS-485 Interface

Definition	Selectable RS-422/RS-485 connection, providing a multi-drop communications interface using a differential signal
Compatibility	Links are provided which enable the communications interface to be connected as either an RS-422 or RS-485 interface. Connection of the interface for loopback is also provided for test purposes (**LK6**, **LK7**)
Bus termination	Linkable terminating 220 ohm resistor across input and output channels (**LK5**, **LK8**)
PCB Connections	Two paralleled MOLEX 5 way connectors, to allow daisy chain multi drop connection (**X5**, **X7**)

2.2 General

Physical Dimensions	L: 60mm
	W: 51mm
	H: 20mm approx.
Mounting Arrangement	4 off 3.5 mm holes spaced 52 x 43mm apart in the corners of the board
Environmental	-40 – 85°C ambient operating temperature 5% - 95% non condensing humidity

2.3 Power Supply

Input Voltage Range	8-12VDC (nominal 9V)
Standalone Input Current	**<11mA**
Max Input Power	Approx. **TBD ~100mW**
Supplies Generated on-card	+5V Isolated
Input Power Connector	**LK1** connected between pin 1 and 2 2-way MASCON/MOLEX (**X1**) +9V on pin 1, CGND on pin 2. *or* **LK1** connected between pin 3 and 2 4-way MASCON/MOLEX (**X4**) +3.3V on pin 1, GND on pin 4