

CPT-COM Card
RS232/422/485 Interface Board
Technical Brief

June 2014
Manual Release 1.1
Card Version 1.3

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Creative Power Technologies P/L
P.O. Box 714
MULGRAVE
Victoria, 3170

Tel: +61-3-9543-8805
Fax: +61-3-9543-8802
Email: tech@creativepower.com.au

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TECHNOLOGIES

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 RS232 operation with an on-card Battery option

Renamed as CPT-COM-B Board

CARD VERSION 1.3: Added RS422/485 support, made battery an external add on
This version should be used for isolated RS232 / RS422 / RS485 operation. Battery to be mounted separately.

Release 1.1 – Initial Release

Available as CPT-COM - Generic RS232 / RS422 / RS485 interface support.

Table of Contents

1.0	CPT-COM Board Range Selection Guide.....	i
2.0	Overview of the CPT-COM	1
3.0	Specifications	2
3.1	Communications Interface	2
3.1.1	RS232 Interface.....	2
3.1.2	RS422/RS485 Interface.....	2
3.2	General	2
3.3	Power Supply	3
Appendix A	Component Layout.....	5

1.0 CPT-COM Board Range Selection Guide

Board Name	Features								
	TTL Input	RS232	RS422	RS485	USB	SPI	On-card Battery	External Supply	On-Card Isolation
CPT-COM-B	3.3V	•					•	•	•
CPT-COM	3.3V	•	•	•				•	•
CPT-COM-4	3.3V			•				•	•
CPT-COM-U	3.3/5V				•			•	•
CPT-COM-S	3.3V					•		•	•

CPT-COM RS232 Interface Board

2.0 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 RS232 / RS422 / RS485 output. The board can be powered from the 3.3V-TTL level serial port connector or an external nominal 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 RS232/422 or 485
- 1000V Isolation between 3.3V-TTL level signals and RS232/422/485

Figure 2-1 shows a functional block diagram of the CPT-COM card.

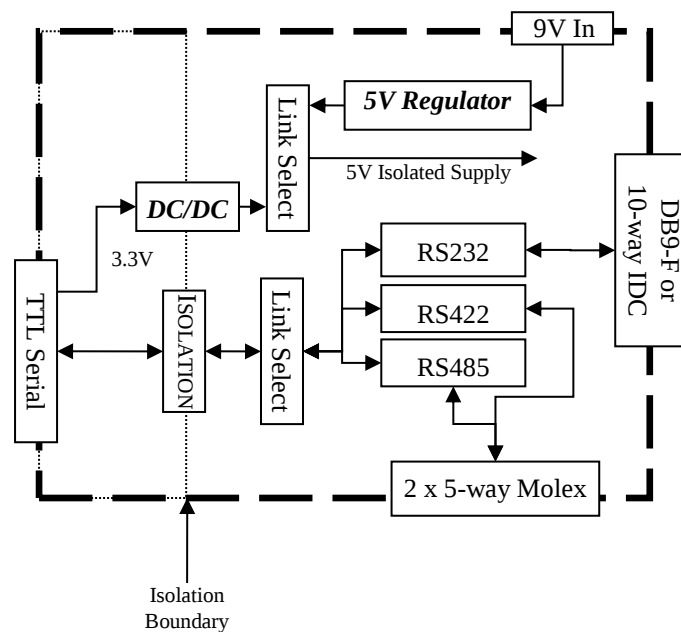


Figure 2-1: Functional Diagram of CPT-COM Board

3.0 Specifications

3.1 Communications Interface

Definition	Configurable to support either RS232 or RS422/RS485 communication modes through a single UART. Both modes cannot operate simultaneously
Configuration	Links are provided to choose between RS232, RS422 and RS485 modes (LK2) DEFAULT is RS232
Isolation	1kV

3.1.1 RS232 Interface

Definition	RS232 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 RS232 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 MASCONE/MOLEX header with VCC (3.3V) and GND connections (X4)
PCB Connections: RS232	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)

3.1.2 RS422/RS485 Interface

Definition	Selectable RS422/RS485 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 RS422 or RS485 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)

3.2 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

3.3 Power Supply

Input Voltage Range	8-25VDC (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. <i>or</i> LK1 connected between pin 3 and 2 4-way MASCON/MOLEX (X4) +3.3V on pin 1, GND on pin 4

Appendices

Appendix A Component Layout

Top Layer

