TECHNICAL & OPERATIONS MANUAL

For

BC720 (SFP)

Dual Channel Data Transceiver Card

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Contents

The BC720 is a dual channel copper to fibre data transceiver that provides bi-directional data transmission over fibre.

Data level conversion is provided for each input and output to provide two RS422/ RS485 or four RS232 digital data channels plus four independent GPI digital data channels on each card.

Conversion between 485 duplex, 485 half duplex and RS232 modes is possible.
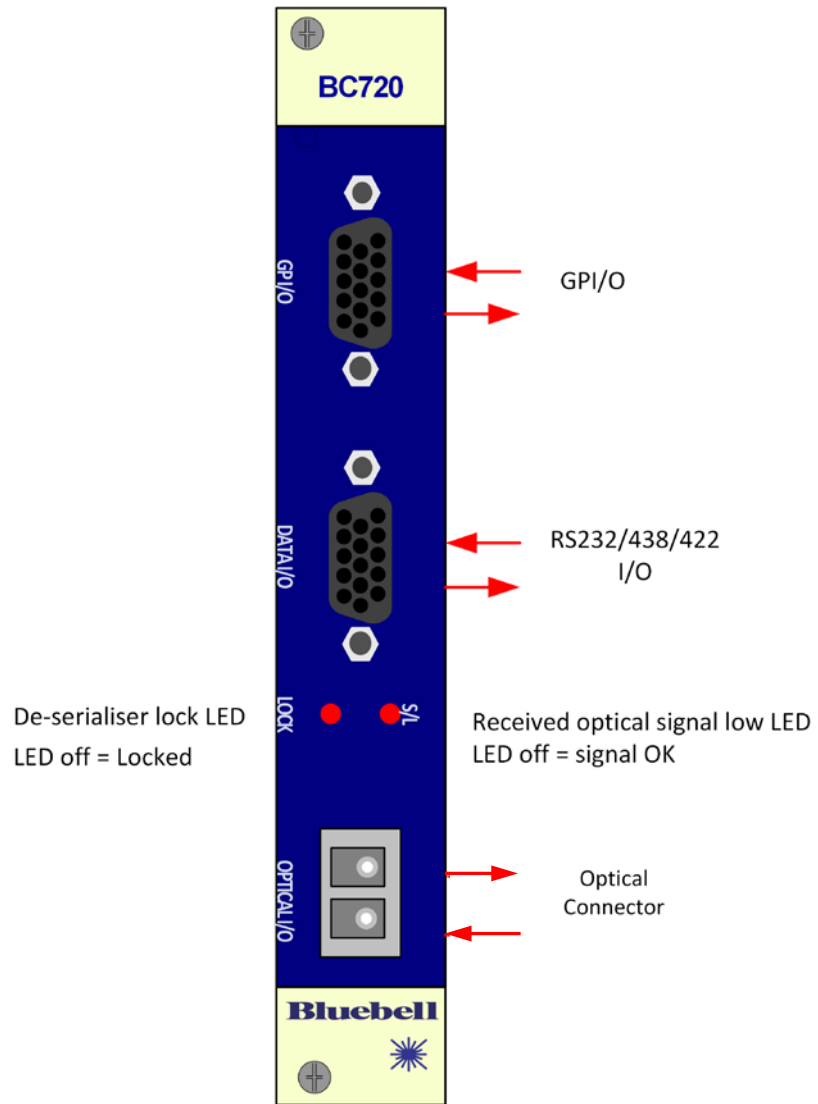
Incorporates on-board half duplex control circuitry.

Electrical inputs and outputs are via two 15 Pin D type connectors.

The four GPIO inputs are fed to comparators with link selectable polarity.

The four GPIO outputs are relays with normally open isolated contacts. Optional factory fitted open collector outputs are available.

Fibre optic connectors are made with pluggable SFP modules.

BC720

GPI/O — GPI/O

DATA I/O — RS232/438/422 I/O

LOCK   S/L

De-serialiser lock LED
LED off = Locked

Received optical signal low LED
LED off = signal OK

OPTICAL I/O — Optical Connector

Bluebell

Pin 5 ——→   ←—— Pin 1
Pin 15 ——→   ←—— Pin 11

General

Depth	74mm incl. connectors
Width	20mm (4HP)
Height	129mm (3RU)
Weight	150g
Operating Temp	-30°C - 70°C
MTTF	69x10E5 hours
Power Supply	5.8v @ 160mA
Signal Detect	LED on for loss of signal
Optical Signal lock	LED on for optical signal not locked

Optical

Optical Connectors	SFP pluggable modules

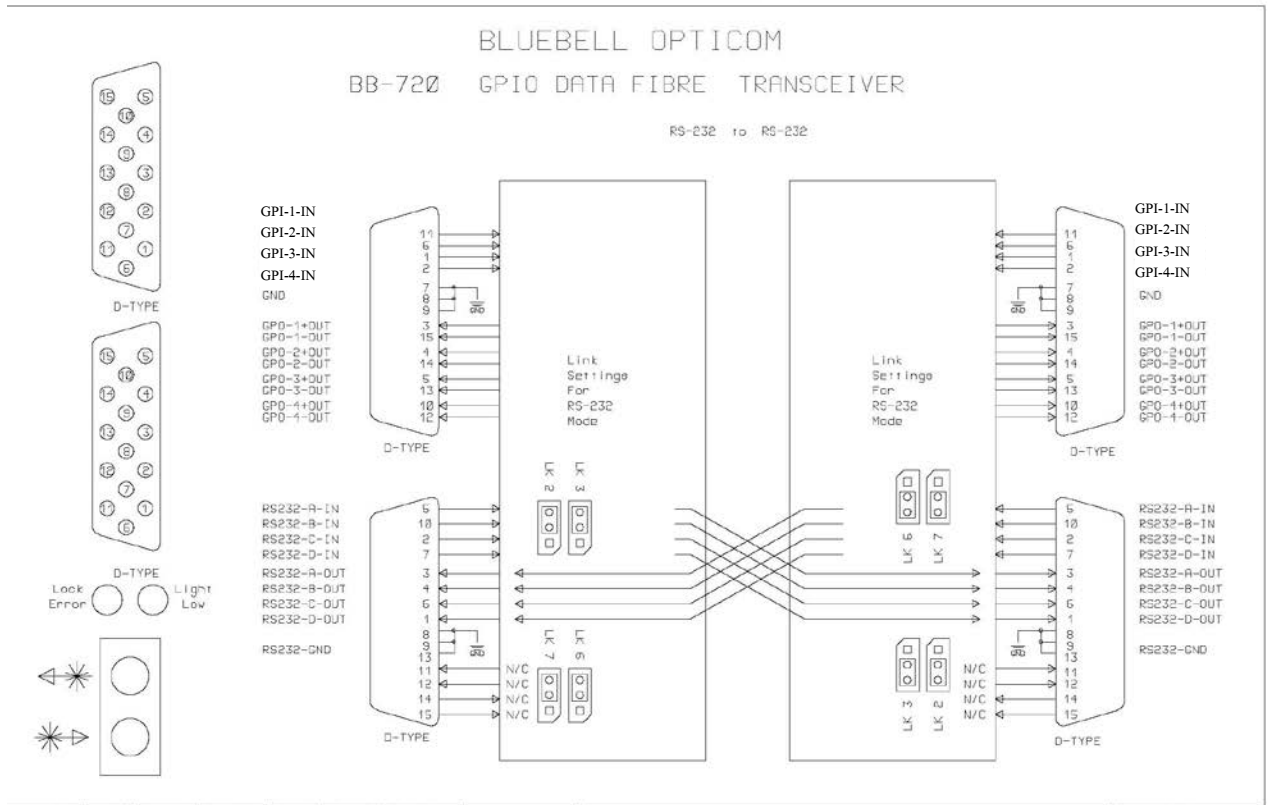**Data**

Configurable formats	RS232 Rx Tx - Full duplex (up to 1Mbps)
	RS485 Full or half duplex (up to 5Mbps)
	RS422 Full duplex (up to 5Mbps)
GPI	Input trigger polarity selectable high or low (high = 3.3V)
GPO	Relay – normally open.

BLUEBELL OPTICOM

BB-720 GPIO DATA FIBRE TRANSCEIVER

DRAWN BY:	ISSUE	DATE	ECN No.	ISSUE	DATE	ECN No.	TITLE:		DRAWING NO.
R. WARE	1	01-11-08	DRAWN					FIBRE OPTIC GPIO TRANCEIVER	BB-720-03
CHECKED:	2	01-03-09					SCALE: 1:1	BLUEBELL OPTICOM	SHEET 1 OF 1
APPROVED:							A3		

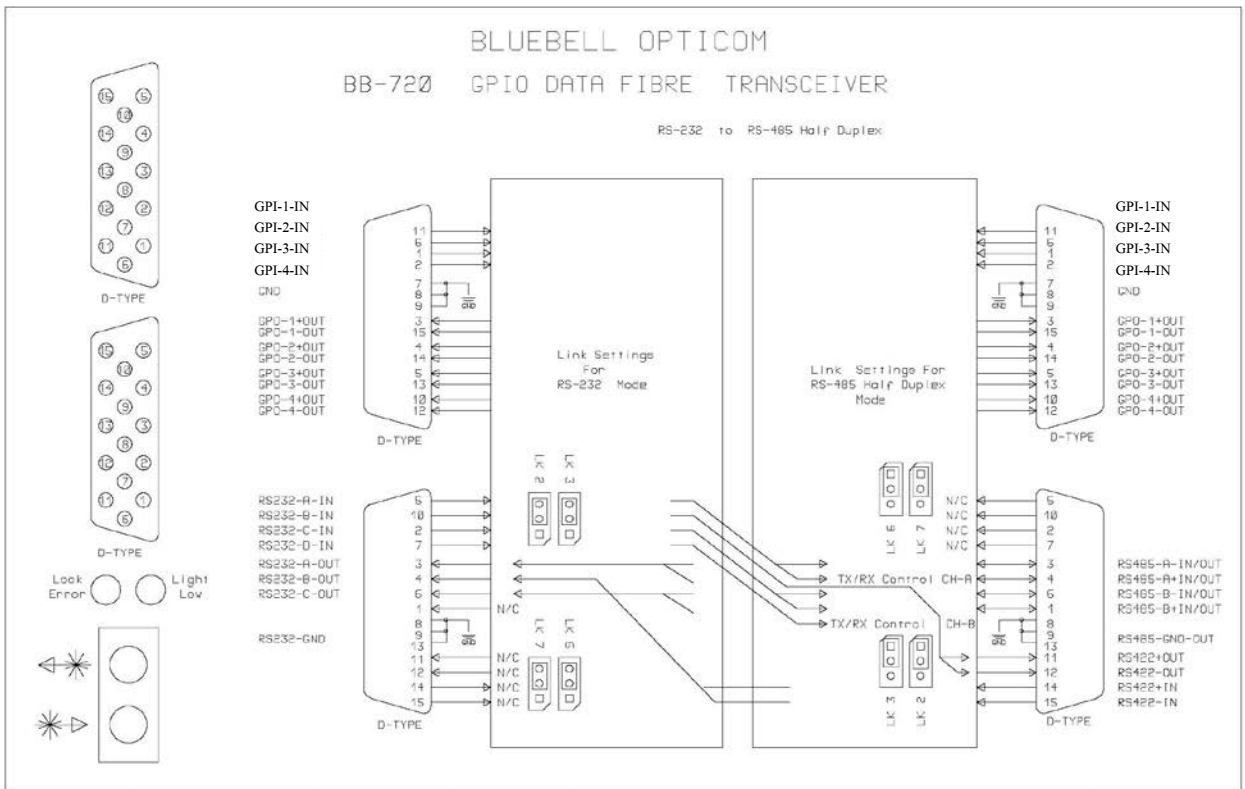**Configuration 1**   **RS232 to RS232**
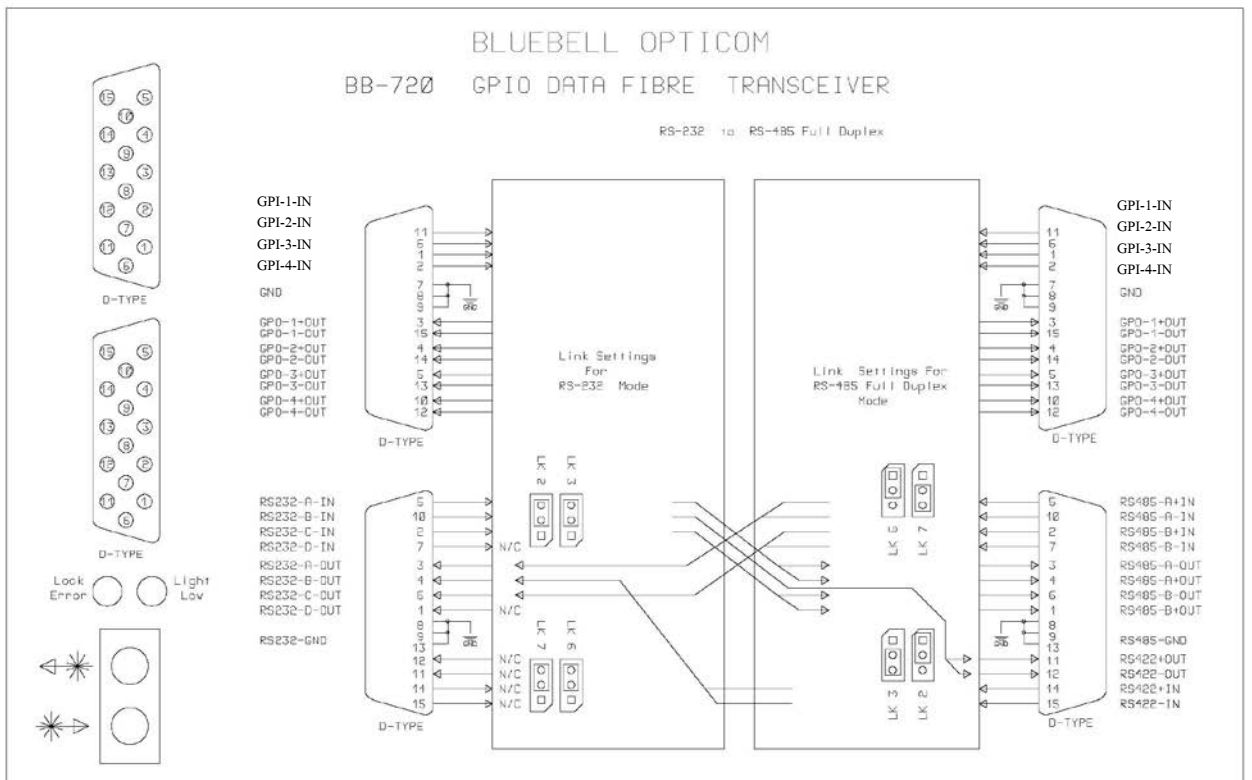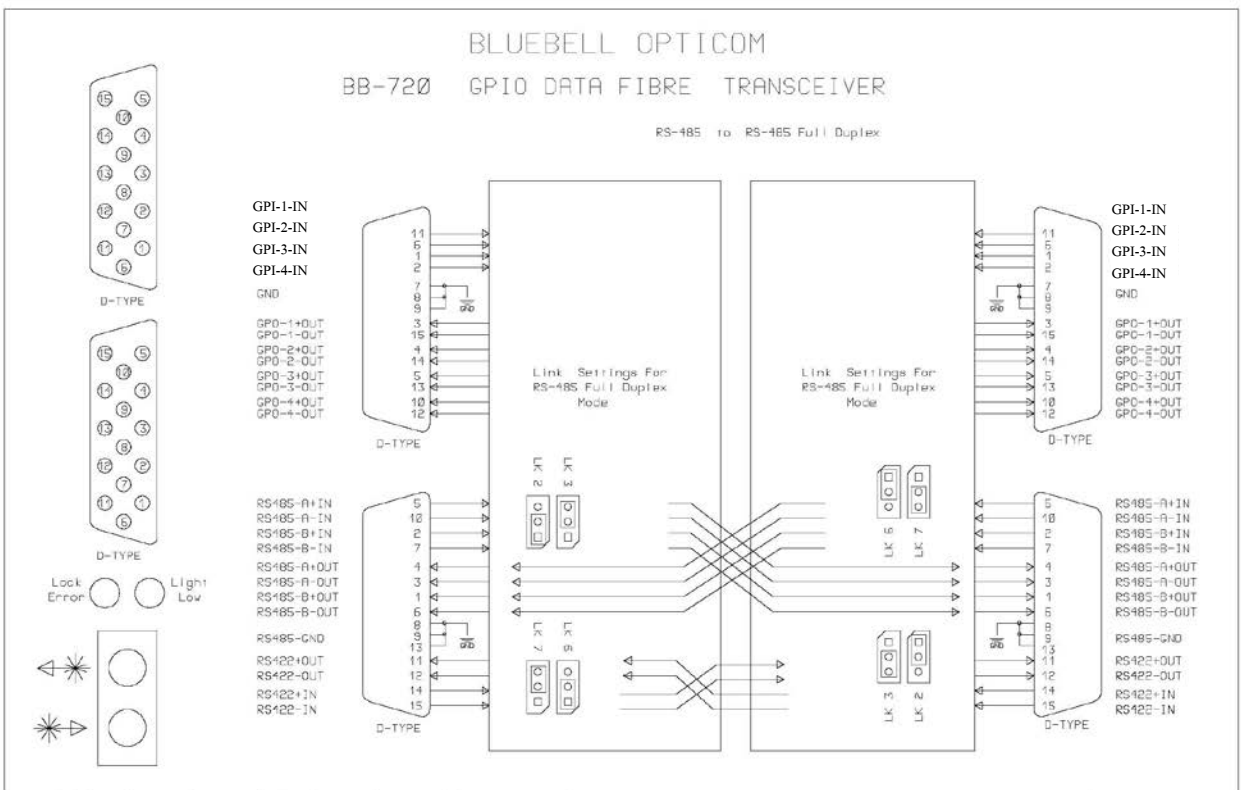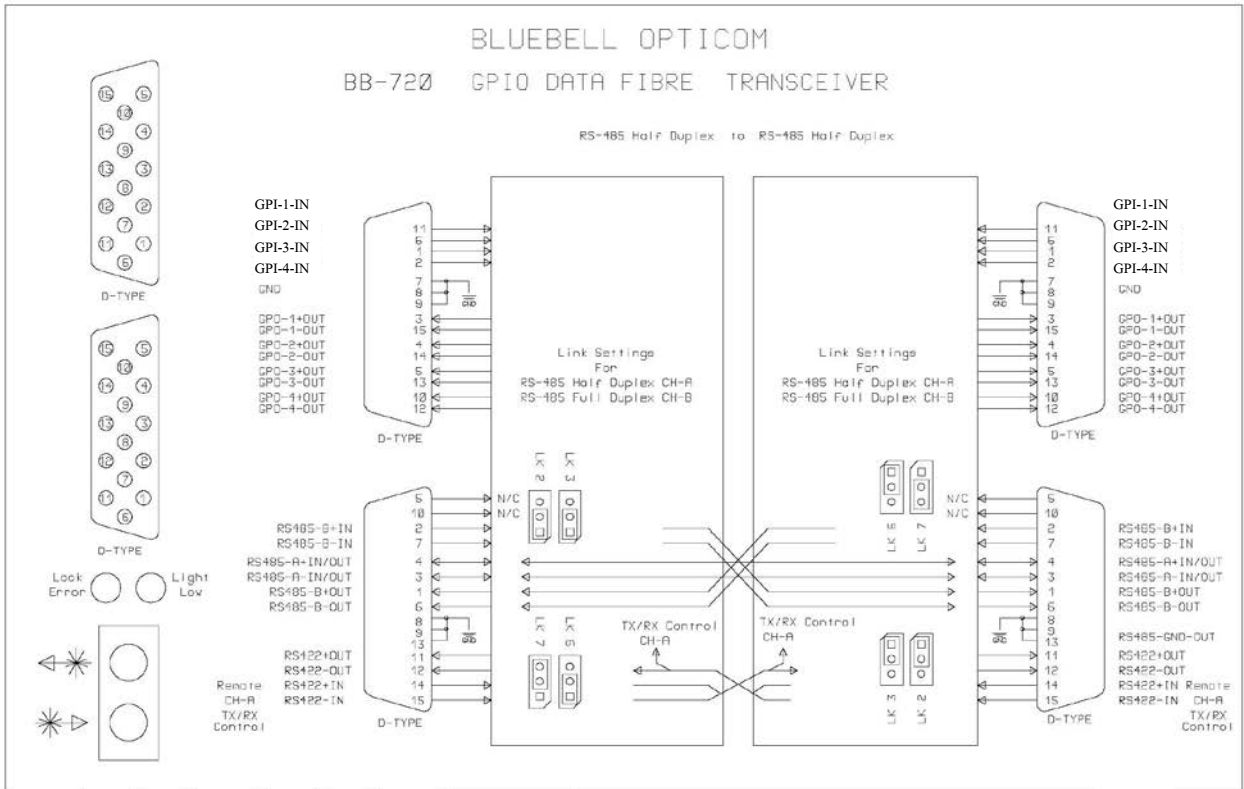

Configuration 2   **RS232 to R485 Full Duplex**

Configuration 3   RS232 to R485 Half Duplex
(Control chA can also act as a single channel of Full Duplex RS232 (chB) to RS422)

Configuration 4   RS485 Full Duplex to R485 Full Duplex
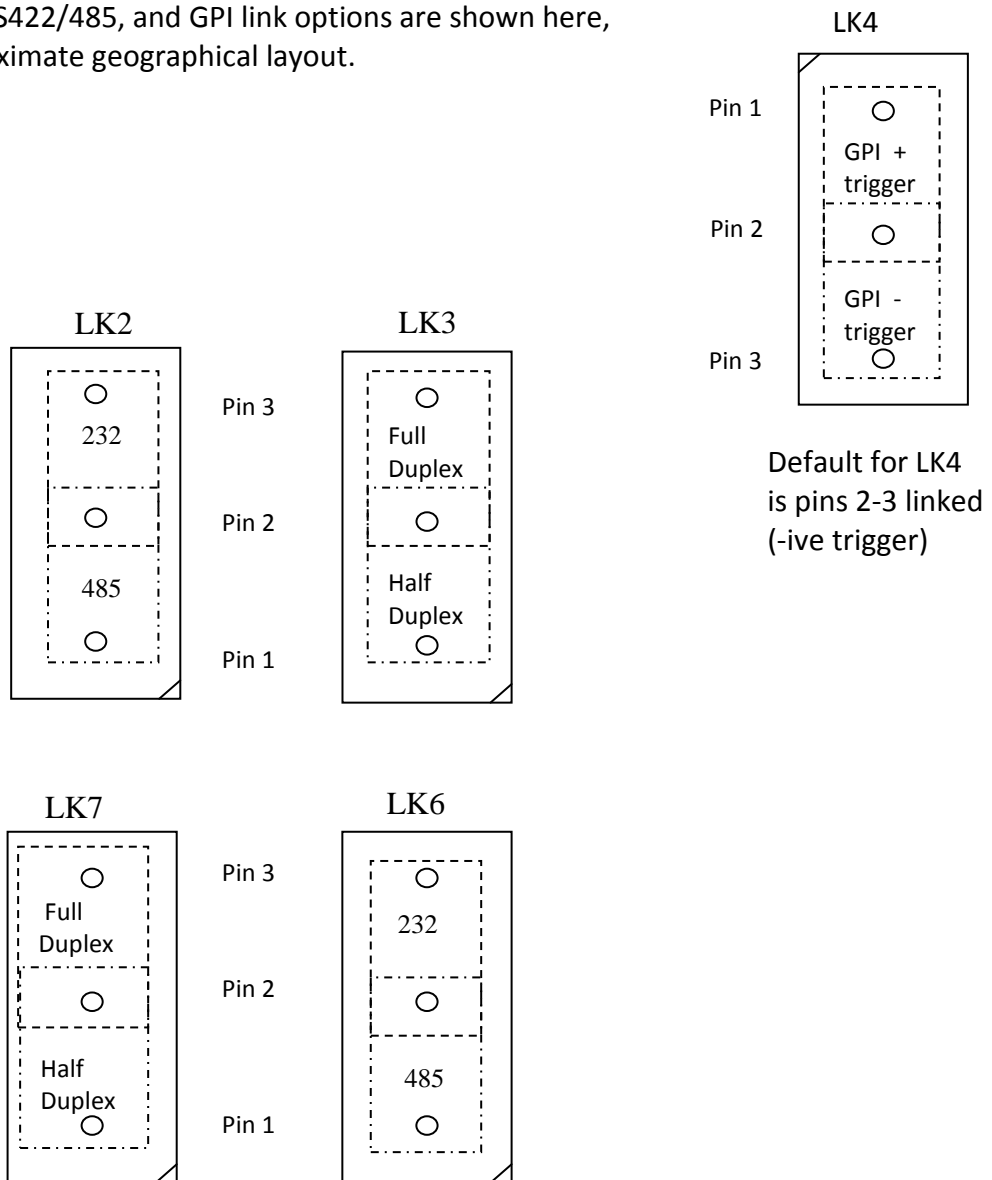(Including full duplex RS422)

Configuration 5   RS485 Half & Full Duplex to R485 Half & Full Duplex

Mode	RS232 board channel	becomes	RS485 board channel
RS232 to RS485 Full Duplex (Configuration diagram 2)	RS232 - A	=	RS485 - A
	RS232 - B	=	RS422
	RS232 - C	=	RS485 - B
RS232 to RS485 Half Duplex (Configuration diagram 3)	RS232 - A	=	RS485 - A
	RS232 - B	=	Control for A &/or RS422 Full Duplex
	RS232 - C	=	RS485 - B
	RS232 - D	=	Control B

Half duplex channel notes;
Half duplex control is a differential signal on pins 14 (-), 15 (+)

The RS232, RS422/485, and GPI link options are shown here, in very approximate geographical layout.

LK4

Pin 1

GPI + trigger

Pin 2

GPI - trigger

Pin 3

Default for LK4 is pins 2-3 linked (-ive trigger)

LK2

232

Pin 3

Pin 2

485

Pin 1

LK3

Full Duplex

Half Duplex

LK7

Full Duplex

Pin 3

Pin 2

Half Duplex

Pin 1

LK6

232

Pin 3

Pin 2

485

Pin 1

Note: unless specified at the time of order, cards are set by default to RS232 mode.
Note also that in RS232 mode, LK3 and LK7 have no effect.

Other links (added on iss 4 PCBs)

LK1   The I2C EEPROM write enable (Factory use only)
      Link pins 1 to 2 (or no link fitted) to disable writes to eeprom (Default).
      Link pins 2 to 3 to enable writes to eeprom.

LK5   Selection of SFP type:
      link pins 1 to 2 for MSA, data type SFPs (SDA on SFP pin 4) (Default)
      link pins 2 to 3 for non-MSA, video type SFPs (SDA on SFP pin 6)