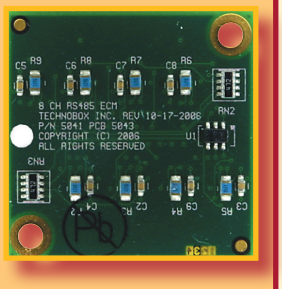
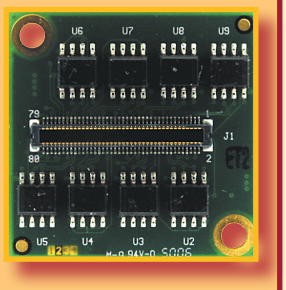
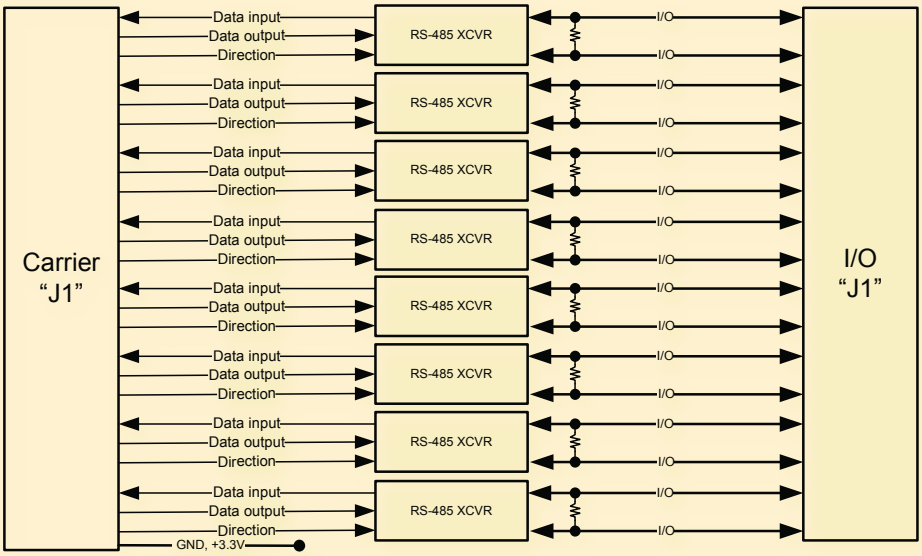
# Conversion Module

## 8-channel RS485/422 Async Converter





**5041**




- **8-channel RS485/422 I/O**
- **120-ohm termination**
- **30 Mbits per second**
- **TI 65HVD10-4860 transceivers**
- **Powers up as inputs**
- **Software enabled inputs or outputs**
- **On-board serial identification circuit**
- **Industrial temperature**
- **RoHS compliant**
- **Patented**

### Specifications

Temperature (Operating): -40 to +85 degrees C

Temperature (Storage): -55 to +100 degrees C

Altitude: Not Specified or Characterized. Typical similar equipment is at 15,000 ft.

Humidity (Operating/Storage): 5% to 90% non-condensing

Vibration: Not specified or Characterized

Shock: Not specified or Characterized

MTBF: Available on request

Weight: 3 grams

Power: TBD

### Ordering Information

5041: 8-channel RS485/422 Async Converter with Fixed Termination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140 Mount Holly Bypass
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The Technobox P/N 5041 Interface ECM module provides eight channels of RS485/422 I/O with a rate of 30M bits per second. Built around a TI 65HVD10-4860 20 Mb transceivers, the module features software-enabled input or output (on a channel-by-channel basis). Termination is fixed as 120 ohms.

Transceiver inputs are always enabled for loop back diagnostic use when the outputs are enabled.

Transceiver outputs are disabled on power up.

The 5041 has a fixed 121 ohm termination, ESD protection of 16 KV HBM and a common mode range of -7 V to +12V.

Each P/N 5041 channel represents a 1/8 unit load allowing up to 256 nodes on a RS485 network. However in the case where the 5041 is used mid-bus the corresponding differential terminating 121 ohm resistor may need to be removed.

Pull down resistors force all channels to come up as inputs preventing the 5041 from driving spurious signals or contending with other drivers. After power up the user should carefully consider start up sequence

The 5041 fails safe to a high output when the inputs are shorted or floating. Thermal protection prevents excessive power dissipation in the case of bus contention or a short circuit.

| User IO | J1 Pin number | Direction J1 | Description |
|---|---|---|---|
| IO0 | 16 | BIDIR | U2 Differential IO + |
| IO1 | 18 | BIDIR | U2 Differential IO - |
| IO2 | 28 | BIDIR | U3 Differential IO + |
| IO3 | 30 | BIDIR | U3 Differential IO - |
| IO4 | 52 | BIDIR | U4 Differential IO + |
| IO5 | 54 | BIDIR | U4 Differential IO - |
| IO6 | 64 | BIDIR | U5 Differential IO + |
| IO7 | 66 | BIDIR | U5 Differential IO - |
| IO8 | 65 | BIDIR | U6 Differential IO + |
| IO9 | 63 | BIDIR | U6 Differential IO - |
| IO10 | 53 | BIDIR | U7 Differential IO + |
| IO11 | 51 | BIDIR | U7 Differential IO - |
| IO12 | 29 | BIDIR | U8 Differential IO + |
| IO13 | 27 | BIDIR | U8 Differential IO - |
| IO14 | 17 | BIDIR | U9 Differential IO + |
| IO15 | 15 | BIDIR | U9 Differential IO - |

**Table 1 User IO signal connections**

| Carrier Data | J1 Pin number | J1 Direction | Description |
|---|---|---|---|
| DA0 | 10 | OUTPUT | U2, Receive Data |
| DA1 | 12 | INPUT | U2, Output enable when High |
| DA2 | 22 | INPUT | U2, Transmit Data |
| DA3 | 24 | OUTPUT | U3,Receive Data |
| DA4 | 34 | INPUT | U3, Output enable when High |
| DA5 | 36 | INPUT | U3, Transmit Data |
| DA6 | 46 | OUTPUT | U4,Receive Data |
| DA7 | 48 | INPUT | U4, Output enable when High |
| DA8 | 58 | INPUT | U4, Transmit Data |
| DA9 | 60 | OUTPUT | U5,Receive Data |
| DA10 | 70 | INPUT | U5, Output enable when High |
| DA11 | 72 | INPUT | U5, Transmit Data |
| DA12 | 71 | OUTPUT | U6,Receive Data |
| DA13 | 69 | INPUT | U6, Output enable when High |
| DA14 | 59 | INPUT | U6, Transmit Data |
| DA15 | 57 | OUTPUT | U7,Receive Data |
| DA16 | 47 | INPUT | U7, Output enable when High |
| DA17 | 45 | INPUT | U7, Transmit Data |
| DA18 | 35 | OUTPUT | U8,Receive Data |
| DA19 | 33 | INPUT | U8, Output enable when High |
| DA20 | 23 | INPUT | U8, Transmit Data |
| DA21 | 21 | OUTPUT | U9,Receive Data |
| DA22 | 11 | INPUT | U9, Output enable when High |
| DA23 | 9 | INPUT | U9, Transmit Data |
| DA24 | 40 | N/C | No connection |
| DA25 | 41 | N/C | No connection |
| DA26 | 42 | N/C | No connection |
| DA27 | 39 | N/C | No connection |

**Table 2 Carrier DA signal connections**