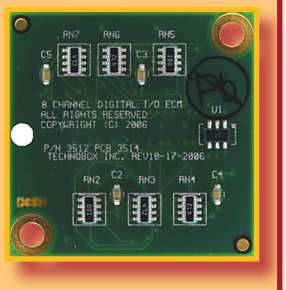
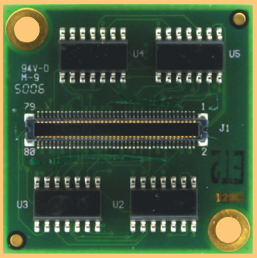
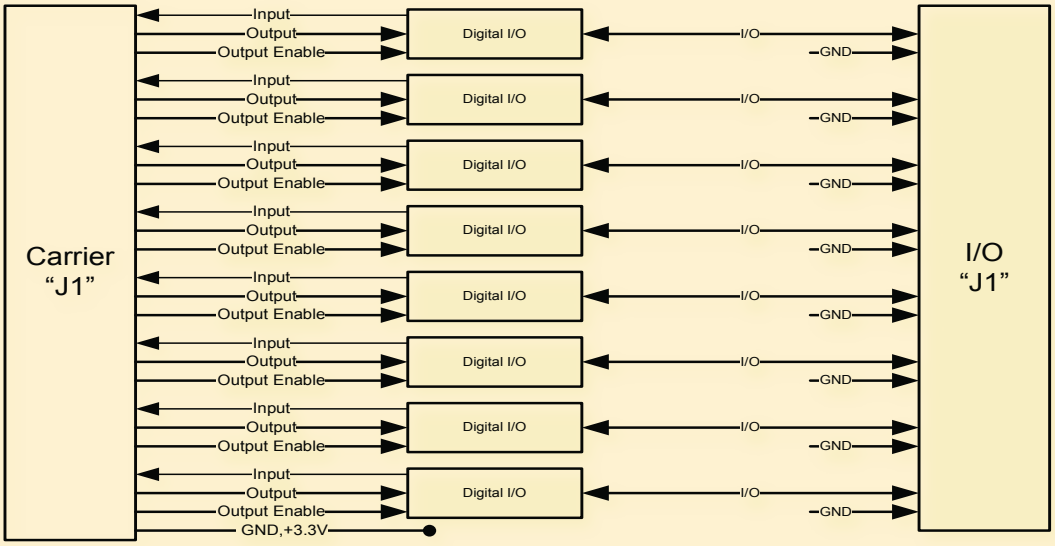
Conversion Module

8-channel, 8-bit Digital I/O





3512



- **8-bit digital I/O**
- **Pull ups ensure known power up state**
- **74LVTH125, 3.3V output drivers**
- **Output drivers enabled on a bit by bit basis**
- **Output drivers power up disabled**
- **74LCX14, 5V tolerant input buffers with hysteresis**
- **10 ohm series resistor**
- **On board serial identification circuit**
- **Industrial temperature range**
- **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

3512: 8-channel, 8-bit Digital I/O

Technobox, inc.®

140 Mount Holly Bypass
Unit 1
Lumberton, NJ 08048

Tel: 609-267-8988
Fax: 609-261-1011

www.technobox.com

Start up conditions: Before being initialized by the ECM carrier card, P/N 3512 comes up as described below.

Start up - Outputs: The digital signal DA2 from the carrier should be tri-stated on power up, therefore the 4.7K pull up resistor on DA2 will tri-state the 74LVTH125's output on IO0. The user should take care to set DA1 from the carrier to the desired state before setting DA2 low.

Start up - Inputs: If IO0 from the users wiring is driven to a definite level then DA0 will be the inversion of that level. When the input to IO0 is un-driven the 4.7K pull up resistor sets IO0 high, the 74LCX14 will then invert DA0 low. This might be the case where a cable is disconnected.

Monitor: Since DA0 is never tri-stated it can monitor IO0 when it is an output, and detect shorts and other fault conditions.

Note also the 10 ohm series output resistor. See also the bold text in the tables.

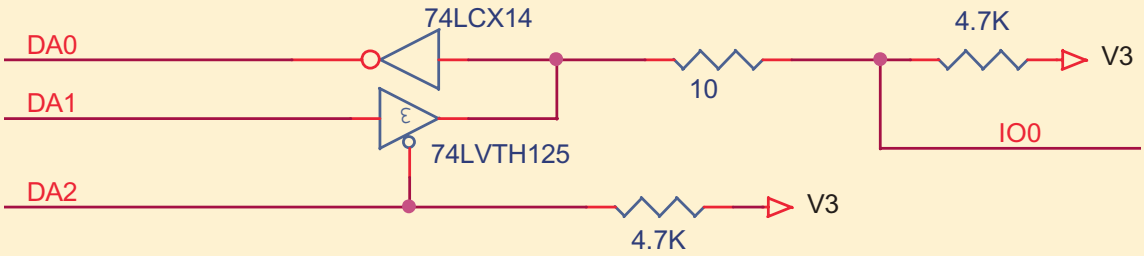


Figure 1 Typical circuitry for 1 user IO bit 3512

User IO	J1 Pin number	Direction	Description
IO0	16	BIDIR	Digital IO
IO1	18	POWER	GND
IO2	28	BIDIR	Digital IO
IO3	30	POWER	GND
IO4	52	BIDIR	Digital IO
IO5	54	POWER	GND
IO6	64	BIDIR	Digital IO
IO7	66	POWER	GND
IO8	65	BIDIR	Digital IO
IO9	63	POWER	GND
IO10	53	BIDIR	Digital IO
IO11	51	POWER	GND
IO12	29	BIDIR	Digital IO
IO13	27	POWER	GND
IO14	17	BIDIR	Digital IO
IO15	15	POWER	GND

Table 1 User IO signal connections

Carrier Data	J1 Pin number	Direction	Description
DA0	10	INPUT	Input from IO0
DA1	12	OUTPUT	Output to IO0
DA2	22	OUTPUT	Enable for Output IO0
DA3	24	INPUT	Input from IO3
DA4	34	OUTPUT	Output to IO3
DA5	36	OUTPUT	Enable for Output IO3
DA6	46	INPUT	Input from IO5
DA7	48	OUTPUT	Output to IO5
DA8	58	OUTPUT	Enable for Output IO5
DA9	60	INPUT	Input from IO7
DA10	70	OUTPUT	Output to IO7
DA11	72	OUTPUT	Enable for Output IO7
DA12	71	INPUT	Input from IO9
DA13	69	OUTPUT	Output to IO9
DA14	59	OUTPUT	Enable for Output IO9
DA15	57	INPUT	Input from IO11
DA16	47	OUTPUT	Output to IO11
DA17	45	OUTPUT	Enable for Output IO11
DA18	35	INPUT	Input from IO13
DA19	33	OUTPUT	Output to IO13
DA20	23	OUTPUT	Enable for Output IO13
DA21	21	INPUT	Input from IO15
DA22	11	OUTPUT	Output to IO15
DA23	9	OUTPUT	Enable for Output IO15
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