IsoPod Users Manual
Virtually Parallel
Rev 2.0 Addendum

This addendum contains data on the IsoPod V2 hardware & software configuration and how they differ from the V1 hardware configuration.

This addendum supplements, and should be used in conjunction with, the IsoPod Users Manual. **Part 1** of this document covers the new hardware add-ons that are unavailable the version 1, while **Part 2** covers how some of the present hardware features in the version 1 have changed in version 2. **Part 3** covers how all of these hardware changes will affect your software development. At the end of the document a detailed layout of the pins and their respective locations of the board is available.

Part 1 Add-Ons

Size is smaller by .3 inch
Two Mounting Holes Added
Added 4 more timer lines
Optional 2 RS232 or 1 RS232 and 1 RS422

Part 2 Hardware Feature Changes

2.1 LED Changes

Do to changes in the address line locations the LED's where moved.

Table 1: LED Addressing Corrections

LED Color	***Moved to Port D line:***
Red	0
Yellow	1
Green	2

2.2 Junction 3 Changes

Junction 3 is now dedicated to Analog-to-Digital conversion functions on the version 2. Added filtering was also added to the ADC process to insure an even cleaner conversion.

Table B: Junction 3 Pin Locations

Function	***Pin #***	***Function***	***Pin #***
VREF	1	VSSA	2
ANA0	3	ANA1	4
ANA2	5	ANA3	6
ANA4	7	ANA5	8
ANA6	9	ANA7	10

2.3 Junction 4 Changes

Junction 4 was reconfigured to support the CAN Bus and RS232 communication. The IsoPod V2 offers two RS232 ports. One of the RS232 ports can be changed at the manufacture to an optional RS-422/485 port as customer request.

Table C: Junction 4 Pin Locations

RS-422/485(optional)	***RS-232***	***Pin #***	***Function***	***Pin #***
+XMT		1	+5.0V	2
-XMT		3	GND	4
GND	GND	5	CANL	6
-RCV	SIN1	7	GND	8
+RCV	SOUT1	9	CANH	10

2.4 Junction 5 Changes

Since the CAN Bus was moved to Junction 4, Junction 5 is primarily used for SPI or I/O access to Port E.

Table D: Junction 5 Pin Locations

Function	***Pin #***	***Function***	***Pin #***
+5.0V	1	GND	2
+3.3V	3	PE4/SCLK	4
RSTO	5	PE5/MOSI	6
PE2/A6	7	PE6/MLSO	8
PE3/A7	9	PE7/SS	10

2.5 Junction 6 Changes

The redundant +V and GND pins were removed to make the board more compact. Junction 6 is now home to all of the PWM lines, Quadrature encoding, and IRQ A & B. There is a special breakout adapter available for this junction if the connections are to tight for the low end users.

Table E: Junction 6 Pin Locations

Function	*Pin #*	*Function*	*Pin #*	*Function*	*Pin #*
PWMA0	1	+5V	2	+3.3V	3
PWMA1	4	GND	5	GND	6
PWMA2	7	PHASEA0	8	TC0	9
PWMA3	10	PHASEB0	11	TC1	12
PWMA4	13	INDEX0	14	IRQA	15
PWMA5	16	HOME0	17	IRQB	18
PWMB0	19	+5V	20	+3.3V	21
PWMB1	22	GND	23	GND	24
PWMB2	25	PHASEA1	26	TD0	27
PWMB3	28	PHASEB1	29	TD1	30
PWMB4	31	INDEX1	32	TD2	33
PWMB5	34	HOME1	35	TD3	36

2.6 Junction 7 Changes

Junction 7 changed radically, it is now unpopulated, but can be if it's requested. This junction consists of all of FAULT lines and the IS lines.

Table F: Junction 7 Pin Locations

Function	*Pin #*	*Function*	*Pin #*
FAULTA0	1	NC	2
FAULTA1	3	ISA0	4
FAULTA2	5	ISA1	6
FAULTA3	7	ISA2	8
FAULTB0	9	ISB0	10
FAULTB1	11	ISB1	12
FAULTB2	13	ISB2	14
FAULTB3	15	NC	16

Part 3 Affects on Software

The only hardware change that creates problems with the programming is the moving of the LED's to free up the Timer lines.

3.1 Using the LED's

The addressing lines for the LED's have changed, however the commands: REDLED, YELLED, and GRNLED, still function as they did before. You also still have the option to manually turn on and off the LED's by using their Pin locations as addresses.
Example:

```
PD0 ON              ( This would cause the Red LED to turn on.
```

3.2 Using the Timer lines

Now that 4 of the Timer lines where liberated from the LED's they can be used in your projects. The 4 new timer lines work exactly the same at the 2 original Timer lines.

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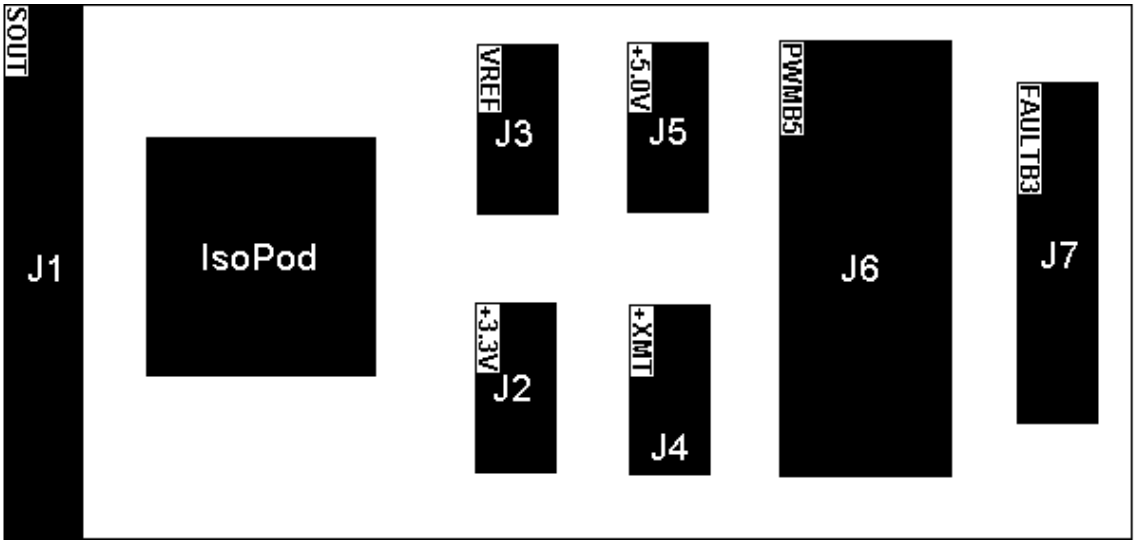
IsoPod V 2.0 Layout



J1	
Top Side	*Back Side*
SOUT	VIN
SIN	GND
ATN	RESET
GND	+5V
PB0	PA0
PB1	PA1
PB2	PA2
PB3	PA3
PB4	PA4
PB5	PA5
PB6	PA6
PB7	PA7

J2	
+3.3V	GND
TD1	GND
TD0	TMS
TCK	DF
RESET	TRST

J3	
VREF	VSSA
ANA0	ANA1
ANA2	ANA3
ANA4	ANA5
ANA6	ANA7

J4	
+XMT	+5.0V
-XMT	GND
GND	CANL
-RCV	GND
+RCV	CANH

J5	
+5.0V	GND
+3.3V	PE4/SCLK
RSTO	PE5/MOSI
PE2/A6	PE6/MLSO
PE3/A7	PE7/SS

J6		
PWMA0	+5V	+3.3V
PWMA1	GND	GND
PWMA2	PHASEA0	TC0
PWMA3	PHASEB0	TC1
PWMA4	INDEX0	IRQA
PWMA5	HOME0	IRQB
PWMB0	+5V	+3.3V
PWMB1	GND	GND
PWMB2	PHASEA1	TD0
PWMB3	PHASEB1	TD1
PWMB4	INDEX1	TD2
PWMB5	HOME1	TD3

J7 Not Populated	
FAULTA0	NC
FAULTA1	ISA0
FAULTA2	ISA1
FAULTA3	ISA2
FAULTB0	ISB0
FAULTB1	ISB1
FAULTB2	ISB2
FAULTB3	NC