



IsoPod

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**

<i>LED Color</i>	<i>Moved to Port D line:</i>
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**

<i>Function</i>	<i>Pin #</i>	<i>Function</i>	<i>Pin #</i>
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 2 RS232 port, one that is TTL and the other is CMOS. One of the RS232 ports can be changed at the manufacture to an optional RS-422/485 port.

**Table C: Junction 4 Pin Locations**

<i>RS-422/485(optional)</i>	<i>RS-232</i>	<i>Pin #</i>	<i>Function</i>	<i>Pin #</i>
+XMT		1	+3.3V	2
B		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 and access to Port E.

**Table D: Junction 5 Pin Locations**

<i>Function</i>	<i>Pin #</i>	<i>Function</i>	<i>Pin #</i>
+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**

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

<i>Function</i>	<i>Pin #</i>	<i>Function</i>	<i>Pin #</i>
FAULTB3	1	NC	2
FAULTB2	3	ISA0	4
FAULTB1	5	ISA1	6
FAULTB0	7	ISA2	8
FAULTA3	9	ISB0	10
FAULTA2	11	ISB1	12
FAULTA1	13	ISB2	14
FAULTA0	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 were liberated from the LED's they can be used in your projects. The 4 new timer lines work exactly the same as the 2 original Timer lines.

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**How to reach us:**

**USA:** New Micros, Inc.  
1601 Chalk Hill Rd.  
Dallas, TX 75212

**Tel:** (214) 339-2204

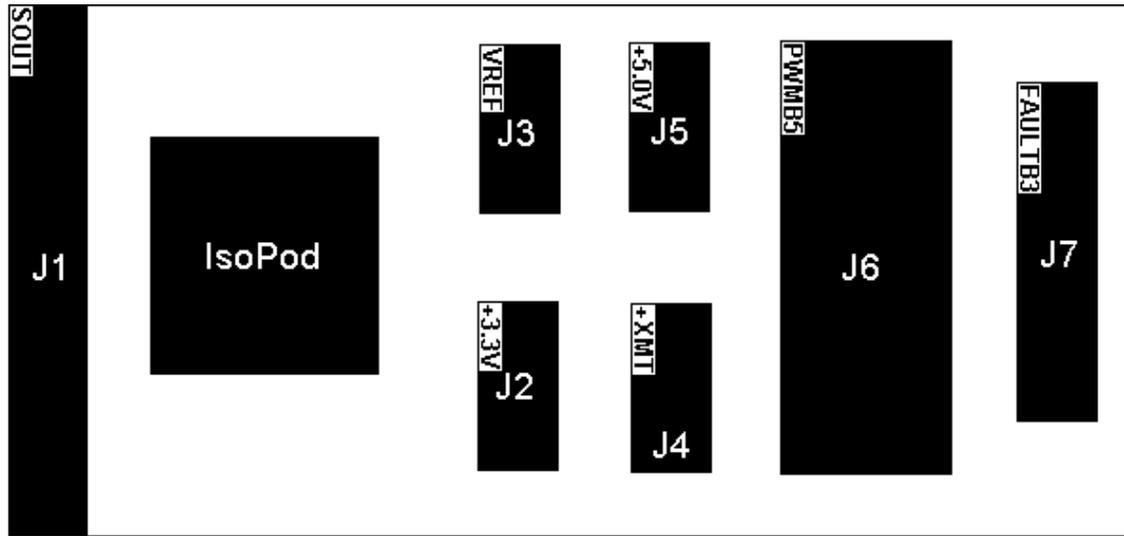
**Fax:** (214) 339-1585

**Email Technical Questions:** [nmitech@newmicros.com](mailto:nmitech@newmicros.com)

**HOME PAGE:** <http://www.newmicros.com>

Or <http://www.isopod.net>

## IsoPod V 2.0 Layout



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

<u>J3</u>	
VREF	VSSA
ANA0	ANA1
ANA2	ANA3
ANA4	ANA5
ANA6	ANA7

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

<u>J2</u>	
+3.3V	GND
TD1	GND
TD0	TMS
TCK	DF
RESET	TRST

<u>J4</u>	
+XMT	+3.3V
B	GND
GND	CANL
-RCV	GND
+RCV	CANH

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

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