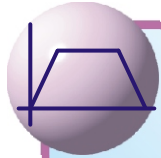




Bridging the Gap between Real World and Computer



MPC-2042 2-Axis Motion Control Card (Servo/Stepping Motor Control)



Features

- ▶ 2-axis servo/stepping motor control
- ▶ 2 28-bit up/down counter for incremental encoder
- ▶ 2 28-bit up/down counter for pulse handler input
- ▶ Pulse output rate up to 6.55MHz
- ▶ Pulse output options : OUT/DIR,CW/CCW
- ▶ Linear / circular interpolation
- ▶ Continuous interpolation
- ▶ Speed change on-the-fly
- ▶ Position latch function
- ▶ Programmable acceleration / deceleration time
- ▶ Linear and S-curve acceleration curve
- ▶ Programmable interrupt conditions
- ▶ Backlash compensation
- ▶ Pulse handler function
- ▶ Software limit switches protection
- ▶ 8 TTL input
- ▶ 8 photo isolated input
- ▶ 8 photo isolated output
- ▶ PC-104 piggy-back socket
- ▶ PWM D/A output

Introduction

MPC-2042 is a 2-axis motion control card for low cost precision motion requirements. It involved point to point, linear and circular interpolation control function. Up to 16 identical cards can be hooked on same IPC provision for multiple-axes control DII and Driver are provided for WIN NT/98/2000/XP or LINUX platform and its sample programs come with VC/VB source code also prepared on CD-ROM.

Various Homing Modes

Total of 14 homing modes are available to meet various mechanism requirements. Additional zero phase inputs from encoder for accurate positioning and absolute homing reference.

Motion Control

Linear and circular interpolation are standard functions. Backlash compensation for accurate position. Speed change on the fly, 2 28-bit counter for feedback and 2 28-bit counter for pulse handler input give the maximum extend of motion control.

Digital I/O

Motion related I/O's such as LS+,LS-,Home and general I/O are all isolated by photo couplers. I/O signals polarity can be changed by DIP switch or software,2 extra nibble configurable TTL IO for general purpose application.

PWM DA

8 bit PWM DA provide control for the application needs extra speed control.

Application Tips

1. Use PC-104 piggy-back socket to mount DIO-4264 as 64 bit TTL I/O extension
2. Use PC-104 piggy-back socket to mount CPU card to configure a small motion control system.

Specifications (With Matched Wiring Board)

Motion

- ▶ Max Pulse Rate : 6,553,500 pps
- ▶ Pulse Output Mode : Single phase: CLOCK,DIR
Dual phase: CW, CCW
- ▶ Acceleration / Deceleration mode-linear, S-curve
- ▶ Homing Mode : 14 types
- ▶ Encoder Up/Down Counter : 2 28bit counter
- ▶ Pulse Handle Up/Down Counter : 2 28bit counter
- ▶ Linear Interpolation
- ▶ Circular Interpolation

Digital I/O

- ▶ Motion Specific Input : SRDY, ALM, LS+, LS-,SD ,ORG ,PCS , LTC, INP per axis, EMG per card
- ▶ Motion Specific Output : CMP, SVON, ERC, FIN per axis
- ▶ General Input : 8 bit, photo isolated
- ▶ General Output : 8 bit, photo isolated
- ▶ TTL I/P : 8 bits

Special I/O

- ▶ D/A : 8 bits, 0-10Vdc

General

- ▶ Card Address : Set by DIP switch
- ▶ Insulation Resistance : 100M Ohm (min) at 1000Vdc
- ▶ Isolation Voltage : 2500Vac 1Min
- ▶ I/O Connector : 68pin female SCSI-II centronic connector
25p D-type connector
- ▶ External Supply : DC 24 ± 4V
- ▶ Operation Temperature : 0 to +70 degree C
- ▶ Storage Temperature : -20 to +80 degree C
- ▶ Operation Humidity : 5~95% RH, non-condensing
- ▶ Dimensions : 175(W)*110(H) mm , 6.89(W)*4.33(H)in



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Pin Assignments

JF2		
+24Vin	1 35	EXTG
+24Vin	2 36	EXTG
EXTG	3 37	+5Vout
EXTG	4 38	+5Vout
EXTG	5 39	EXTG
XLS+	6 40	YLS+
XLS-	7 41	YLS-
XORG	8 42	YORG
XLTC	9 43	YLTC
XSD	10 44	YSD
XPCS	11 45	YPCS
EMG	12 46	EMG
XFIN	13 47	YFIN
XCMP	14 48	YCMP
XSTA	15 49	YSTA
EXTG	16 50	EXTG
XINP	17 51	YINP
XALM	18 52	YALM
XSRDY	19 53	YSRDY
XSVON	20 54	YSVON
XERC	21 55	YERC
EXTG	22 56	EXTG
XCW+	23 57	YCW+
XCW-	24 58	YCW-
XCCW+	25 59	YCCW+
XCCW-	26 60	YCCW-
EXTG	27 61	EXTG
XEA+	28 62	YEA+
XEA-	29 63	YEA-
XEB+	30 64	YEB+
XEB-	31 65	YEB-
XEZ+	32 66	YEZ+
XEZ-	33 67	YEZ-
EXTG	34 68	EXTG

JM3		
+5Vout_PC	1 14	+5Vout_PC
PA1	2 15	PB1
PA2	3 16	PB2
GND	4 17	GND
NC	5 18	NC
NC	6 19	NC
GND	7 20	GND
+5Vout_PC	8 21	+5Vout_PC
DI0	9 22	DI1
DI2	10 23	DI3
DI4	11 24	DI5
DI6	12 25	DI7
GND	13	

JM1		
IN0	1 2	OUT0
IN1	3 4	OUT1
IN2	5 6	OUT2
IN3	7 8	OUT3
IN4	9 10	OUT4
IN5	11 12	OUT5
IN6	13 14	OUT6
IN7	15 16	OUT7
0V	17 18	0V
EXT +24Vin	19 20	EXT +24Vin

Applications

- ▶ Precision positioning control
- ▶ X-Y table control
- ▶ Rotary machine control
- ▶ Robotics control
- ▶ Biotech sampling and handling
- ▶ Any combined control servo and stepping Motor
- ▶ Contouring control
- ▶ Precision speed control

Software Support

▶ PC OS Support

Windows 2000/XP & Linux O.S.
Embedded XP, Win CE (at request)

▶ Library

DLLs , VI library

▶ Develop Software

Visual C++ , Visual Basic ,
Borland C/C++ Builder , LabVIEW etc

▶ Example Source Code

Visual Basic

Ordering Information

- ▶ **MPC-2042** : 2-axis Motion Control Card for Servo/Stepping Motor Control (include SM23404)
- ▶ **MPC-2042P** : 2-axis Motion Control Card for Servo/Stepping Motor Control (include SM23404) with PC104 socket
- ▶ **ADP-2042DIN(N)** : N-MOS output DIN rail mounted wiring board for JF2
- ▶ **ADP-2042DIN(P)** : P-MOS output DIN rail mounted wiring board for JF2
- ▶ **ADP-2042DIN(R)** : Relay output DIN rail mounted wiring board for JF2
- ▶ **JS51050** : DIN rail mounted dummy wiring board (for JM3)
- ▶ **ADP-9201DIN(R)** : DIN rail mounted wiring board with 16 I/O LED indicators and relay output for 8 DI, 8DO (for JM1)
- ▶ **ADP-9201DIN(P)** : DIN rail mounted wiring board with 16 I/O LED indicators and PMOS output for 8 DI, 8DO (for JM1)
- ▶ **ADP-9201DIN(S)** : DIN rail mounted wiring board with 16 I/O LED indicators and SSR output for 8 DI, 8DO (for JM1)
- ▶ **FVC01** : F to V Module
- ▶ **M266868154** : 68-pin SCSI-II centronic cable 1.5 M
- ▶ **M266868302** : 68-pin SCSI-II centronic cable 3.0 M
- ▶ **M270325X4** : D type 25p male-female cable 1.5M
- ▶ **M270325X4S** : D type 25p male-female cable 1.5M,shielding
- ▶ **M270325X0** : D type 25p male-female cable 3.0M
- ▶ **M270325X0S** : D type 25p male-female cable 3.0M,shielding
- ▶ **M23207** : 20 pin flat cable 1.5M
- ▶ **M23209** : 20 pin flat cable 3.0M
- ▶ **SM23404** : Extension kit for JM3 (bracket and flat cable for 25p D-type connector)