

SMC-4

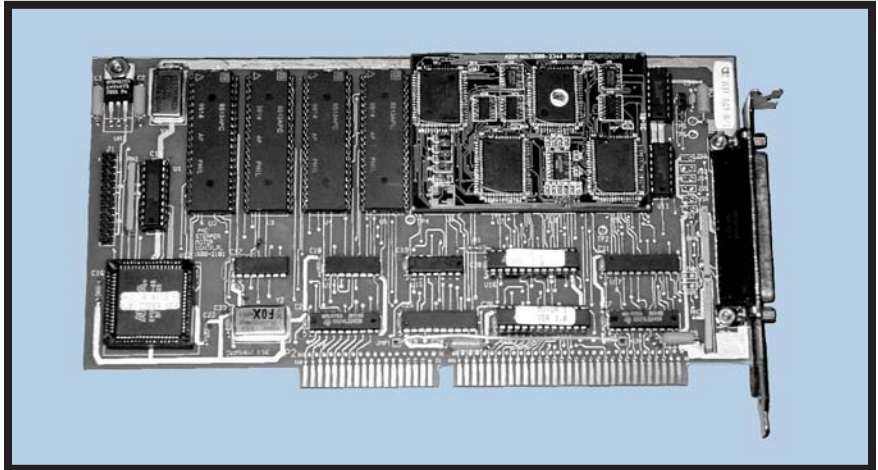
Stepper Motor and Motion Control Board

Features

- PC-ISA Bus
- 4-axis control
- Closed/Open loop control
- Monitor coordinates in real time
- Software driver included

Applications

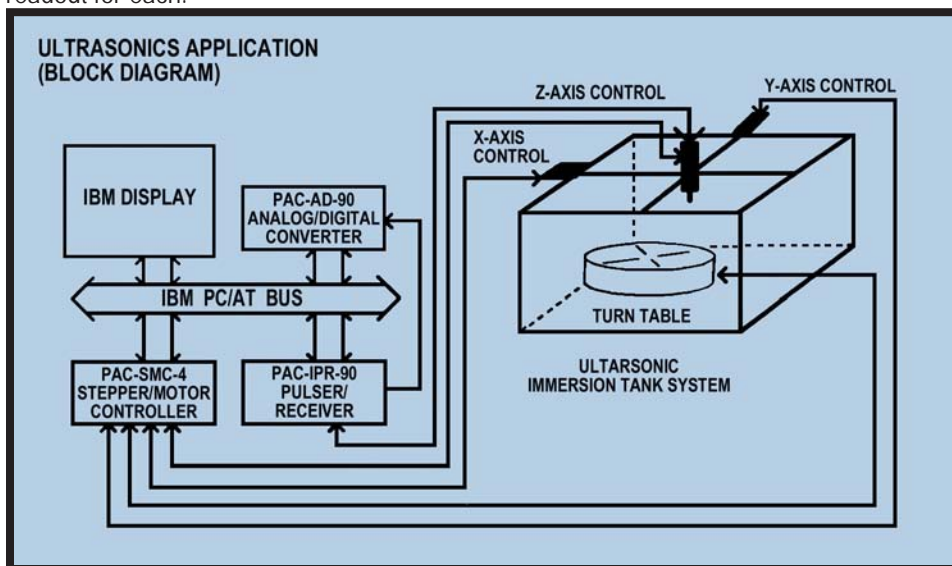
- Ultrasonic Scanners
- X-Y-Z and turn table control
- Optical scanners
- Plotters
- Robotics
- Motion control
- Assembly equipment



NDT Automation's (NDTA) SMC-4 is a plug-in Motor Controlled board that offers a complete four-axes motion control solution. The newly designed four-axes controls with greater accuracy and movement. NDTA's Stepper Motor controller Board combines the motor movement control and the instantaneous position readout feature into one board. Four-axes provides a capability in Stepper Motor mobility through X, Y, Z and turntable control. This new design can control up to four motors and provide a high-speed position readout for each.

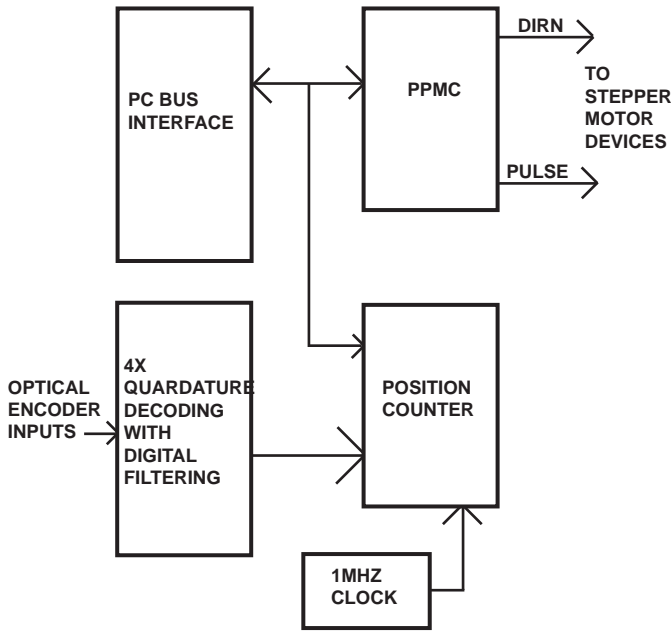
Other system design improvements include acceleration and deceleration. SMC-4 controls the movement, gradually easing into a high-speed scanning, then evenly decreasing speed to a complete halt. Movements are smooth and precise, without rough starts or finish. Acceleration and deceleration modes are user programmable.

The SMC-4 board also offers improved repeatability in reaching the same position or location within the tank. Location of each axis is instantly available. With the precision optical encoder included for the closed-loop system, the scanner positions can be precisely controlled.



SMC-4 board requires a full IBM-AT expansion slot (16 bits) for operation. External connections are made through a standard 37-pin, D-type connector located in the rear plate and with the encoded option a 25-pin, D-type connector.

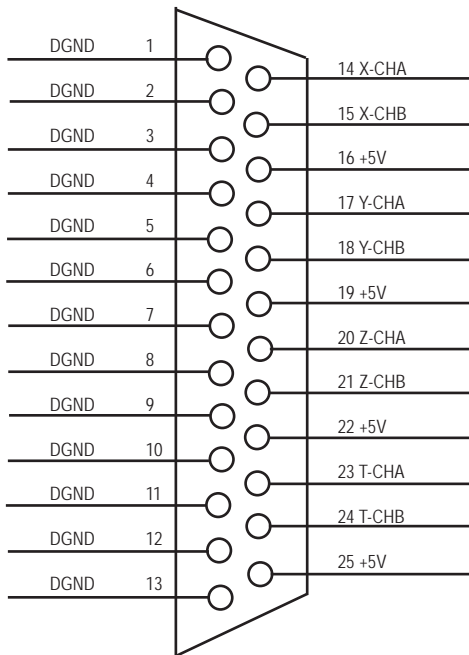
BLOCK DIAGRAM WITH OPTICAL ENCODERS



CONNECTOR PIN-OUT ASSIGNMENTS

CLOCK (Y)	1	20	DIRN (Y)
DGND	2	21	CW (T)
DGND	3	22	CCW (T)
X-AXIS SHUT DOWN	4	23	DGND
DIRN (X)	5	24	CLOCK (X)
DGND	6	25	Y-AXIS SHUT DOWN
NC	7	26	DIRN (T)
CLOCK (T)	8	27	T-HOME (T)
DGND	9	28	DGND
+5V	10	29	+5V
NC	11	30	X-HOME (X)
Y HOME (Y)	12	31	Z-HOME (Z)
NC	13	32	L-LIMIT (X)
DWN LIMIT (Z)14	14	33	UP-LIMIT (Z)
R-LIMIT (X)	15	34	BACK LIMIT (Y)
FRT LIMIT (Y)	16	35	DGND
Z-AXIS SHUT DOWN	17	36	CLOCK (Z)
DIRN (Z)	18	37	T-AXIS SHUT DOWN
DGND	19		

PIN-OUT OF OPTICAL ENCODER INPUT DB25F



SPECIFICATIONS

Electrical:	
Number of Axes	4
Number of Steps	16 million
Stepping Rate	12,500 steps/sec
Limit Switch Inputs	8
Home Position Inputs	4
Optical Encoder Channels	4
	1x, 2x or 4x Quadrature decoding with digital filtering
	Count resolution-32bits (+/-4,000 million counts)
Physical:	
Form Factor	PC-AT BUS standard
Size	9½" x 5" H
Power Dissipation	+5V @ 1.0A, +12V @1.0A



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