

ANALOG OUTPUT RUBY-MM-416



16-BIT D/A, 16 CHANNELS INCLUDES 24 DIGITAL I/O

SPECIFICATIONS

ANALOG OUTPUTS

Quantity / resolution	4 channels, 16 bits
Output ranges	0-10V, $\pm 5V$, $\pm 10V$
Settling time	10 μ s max to .003%
Linearity error	± 2 LSB max
Differential nonlinearity	± 2 LSB max
Monotonicity	15 bits minimum
Output current	± 5 mA max per channel
Minimum load	2K Ω
Reset	All DACs reset to mid-scale

DIGITAL I/O

No. of lines	24, TTL/CMOS compatible
Input voltage	Logic 0: -0.5V min, 0.8V max Logic 1: 2.0V min, 5.5V max
Output voltage	Logic 0: 0.0V min, 0.4V max Logic 1: 3.0V min, 4.6V max
Output current	± 2.5 mA max per line

GENERAL

Dimensions	3.55" x 3.775"
Operating temp.	-40 to +85°C
Power requirements	+5VDC $\pm 10\%$ @ 650mA typical
Weight	3.0oz / 85g

Ruby-MM-416 contains 4 channels of high-resolution analog output using 4 16-bit D/A converter chips. Each chip has its own user-configurable output range (see table). Calibration circuitry is provided on board to achieve accuracy of ± 2 LSB. Analog output specifications include 10 μ s settling time and ± 5 mA max output current per channel.

The board also contains an 82C55 chip to provide 3 8-bit digital I/O ports with programmable direction. Each digital I/O line has a 10K Ω pull-up resistor.

ANALOG OUTPUT RANGES

OUTPUT RANGE	RESOLUTION (1 LSB)
$\pm 5V$	153 μ V
$\pm 10V$	310 μ V
0 - 10V	153 μ V

The output range can be configured independently for each output channel.



- ◆ 16-bit D/A converters (1/65536)
- ◆ 4 output channels
- ◆ Unipolar and bipolar output ranges
- ◆ Independent output range for each channel
- ◆ Simultaneous update of all channels
- ◆ External trigger capability
- ◆ 24 digital I/O lines (82C55)
- ◆ -40 to +85°C operating temperature
- ◆ FREE Universal Driver software included

ORDERING GUIDE

RMM-416-XT 4 16-bit D/A channels, 24 digital I/O

For cables and accessories, see pages 46-47.

I / O HEADER

ANALOG GND	1	2	VOUT 0
ANALOG GND	3	4	VOUT 1
ANALOG GND	5	6	VOUT 2
ANALOG GND	7	8	VOUT 3
N/C	9	10	N/C
N/C	11	12	N/C
N/C	13	14	N/C
N/C	15	16	N/C
N/C	17	18	N/C
ANALOG GND	19	20	+15V
-15V	21	22	ANALOG GND
DIGITAL GND	23	24	EXT TRIGGER
A7	25	26	A6
A5	27	28	A4
A3	29	30	A2
A1	31	32	A0
C7	33	34	C6
C5	35	36	C4
C3	37	38	C2
C1	39	40	C0
B7	41	42	B6
B5	43	44	B4
B3	45	46	B2
B1	47	48	B0
+5V	49	50	DIGITAL GND

RUBY-MM-416 BLOCK DIAGRAM

