



Rockwell

RM 65 DATA SHEET

16-SLOT CARD CAGE

RM 65

The RM 65 product line is designed for OEM and end user microcomputer applications requiring state-of-the-art performance, compact size, modular design and low cost. Software for RM 65 systems can be developed in R6500 Assembly Language, PL/65, BASIC and FORTH. Both BASIC and FORTH are available in ROM and can be incorporated into the user's system.

The RM 65 product line uses a motherboard interconnect concept and accepts any card in any slot. The 64-line RM 65 Bus offers memory addressing up to 128K bytes, high immunity to electrical noise and includes growth provisions for user functions. A set of card cages allows a broad variety of packaging options. RM 65 products may also be used with Rockwell's AIM 65 Advanced Interactive Microcomputer for product development and desktop microcomputer applications.

PRODUCT OVERVIEW

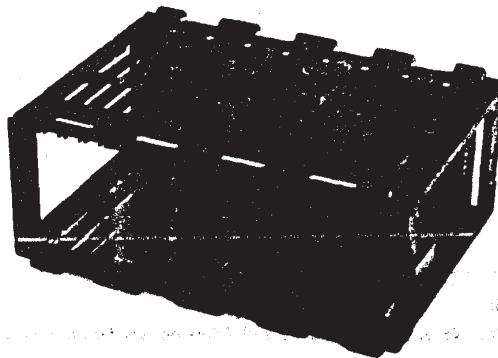
The 16-slot card cage consists of a 16-slot RM 65 Bus compatible motherboard in a card cage. Memory, I/O or special functions may be added to AIM 65 by use of the 16-slot card cage. When connected to the AIM 65 through the Adapter/Buffer, the card cage may be mounted over, under, or behind the AIM 65 in a variety of orientations to meet unique application requirements. The form factor of the 16-slot card cage allows low profile placement in a table top or terminal style enclosure.

ORDERING INFORMATION

Rockwell offers all RM 65 modules in both Edge Connector and Eurocard versions. If you plan to use Edge Connector modules, order the RM65-7016 model of the card cage. Conversely, if you plan to use Eurocard modules, order the RM65-7016E model of the card cage.

FEATURES

- 16-slot card cage with integral module guides
- Rugged, yet lightweight construction
- Screw-down terminals for connecting external power (+5V, +12V/+V, -12V/-V, GND)
- Predrilled holes for various mounting configurations
- Assembled, tested and warranted
- Removable jumpers on motherboard support $\pm 12V$ as well as $\pm V$.



16-SLOT CARD CAGE

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RM 65 Bus Pin Assignments

Bottom (Solder Side)			Top (Component Side)		
Signal Mnemonic	Signal Name	Pin	Pin	Signal Mnemonic	Signal Name
	Not Connected (See Note)	Wa	Wc		Not Connected (See Note)
+5V	+5 Vdc Line (See Note)	Xa	Xc	+5V	+5 Vdc (See Note)
GND	Ground	1a	1c	+5V	+5 Vdc
BADR/	Buffered Bank Address	2a	2c	BA15/	Buffered Address Bit 15
GND	Ground	3a	3c	BA14/	Buffered Address Bit 14
BA13/	Buffered Address Bit 13	4a	4c	BA12/	Buffered Address Bit 12
BA11/	Buffered Address Bit 11	5a	5c	GND	Ground
BA10/	Buffered Address Bit 10	6a	6c	BA9/	Buffered Address Bit 9
BA8/	Buffered Address Bit 8	7a	7c	BA7/	Buffered Address Bit 7
GND	Ground	8a	8c	BA6/	Buffered Address Bit 6
BA5/	Buffered Address Bit 5	9a	9c	BA4/	Buffered Address Bit 4
BA3/	Buffered Address Bit 3	10a	10c	GND	Ground
BA2/	Buffered Address Bit 2	11a	11c	BA1/	Buffered Address Bit 1
BA0/	Buffered Address Bit 0	12a	12c	Bφ1	Buffered Phase 1 Clock
GND	Ground	13a	13c	BSYNC	Buffered Sync
BSO	Buffered Set Overflow	14a	14c	BDRQ1/	Buffered DMA Request 1
BRDY	Buffered Ready	15a	15c	GND	Ground
	User Spare 1	16a	16c	-12V/-V	-12 Vdc/-V
+12V/+V	+12 Vdc/+V	17a	17c		User Spare 2
GND	Ground Line	18a	18c	BFLT/	Buffered Bus Float
BDMT/	Buffered DMA Terminate	19a	19c	Bφ0	Buffered External Phase 0 Clock
	User Spare 3	20a	20c	GND	Ground
BR/W/	Buffered Read/Write "Not"	21a	21c	BDRQ2/	Buffered DMA Request 2
	System Spare	22a	22c	BR/W	Buffered Read/Write
GND	Ground	23a	23c	BACT/	Buffered Bus Active
BIRQ/	Buffered Interrupt Request	24a	24c	BNMI/	Buffered Non-Maskable Interrupt
Bφ2/	Buffered Phase 2 "Not" Clock	25a	25c	GND	Ground
Bφ2	Buffered Phase 2 Clock	26a	26c	BRES/	Buffered Reset
BD7/	Buffered Data Bit 7	27a	27c	BD6/	Buffered Data Bit 6
GND	Ground	28a	28c	BD5/	Buffered Data Bit 5
BD4/	Buffered Data Bit 4	29a	29c	BD3/	Buffered Data Bit 3
BD2/	Buffered Data Bit 2	30a	30c	GND	Ground
BD1/	Buffered Data Bit 1	31a	31c	BD0/	Buffered Data Bit 0
+5V	+5 Vdc	32a	32c	GND	Ground
+5V	+5 Vdc (See Note)	Ya	Yc	+5V	+5 Vdc (See Note)
	Not Connected (See Note)	Za	Zc		Not Connected (See Note)

NOTE

Pins Wa, Wc, Xa, Xc, Ya, Yc, Za and Zc are not used on Eurocard version.

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INSTALLATION

1. Connect power to TB1 and/or TB2. The power lines should be long enough to allow the card cage to be oriented and positioned as required.

WARNING

Ensure that the external power supplies are turned off before connecting to TB-1 or TB-2.

- a. Connect +5V from an external power supply to either terminal marked "+5". "+5" is connected to all +5V pins on all module receptacles.
- b. Connect GND from the power supply to either terminal marked "G". Both of these terminals are connected to all GND pins on all module receptacles.
- c. Connect +12V/+V from an external power supply to the terminal marked "+V". "+V" is connected to Pin 17a on each module receptacle.

NOTES

1. If both +12V and +V (e.g., +15V) are required, remove the soldered jumper corresponding to pin 17a between receptacle 6 and 7 on the soldered side of the motherboard. Connect +12V to TB1 if six or less modules require +12V, or to TB2 if more than six modules require +12V. Connect +V to the other terminal strip.
 2. If the jumper has been removed and only one voltage is required (i.e., +12V or +V), connect the power lead to both TB1 and TB2.
- d. Connect GND from the +12V/+V power supply to either "G" terminal.
 - e. Connect -12V/-V from an external power supply to the terminal marked "-V". "-V" is connected to Pin 16c on each module receptacle.

NOTES

1. If both -12V and -V (e.g., -15V) are required, remove the soldered jumper corresponding to pin 16c between receptacle 6 and 7 on the soldered side of the motherboard. Connect -12V to TB1 if six or less modules require -12V or to TB2 if more than six modules require -12V. Connect -V to the other terminal strip.
 2. If the jumper has been removed and only one voltage is required (i.e., -12V or -V) connect the power lead to both TB1 and TB2.
- f. Connect GND from the -12V/-V power supply to either "G" terminal.

2. Install the card cage in the desired position. Mounting holes are provided to allow attachment at the top or bottom of the card cage.

CAUTION

Ensure that adequate cooling is provided to keep the temperature of the installed modules within specified operating limits.

3. To install a module in the card cage:

CAUTION

Ensure that power is turned off to the card cage motherboard before installing a module.

- a. Position the module, component side facing TB1 end, in front of the desired card slot.

Card slot No. 1 (slot closest to TB1) has 0.85 inch of component clearance whereas the other fifteen slots are 0.6 inch centers. If a module is higher than 0.4 inch above the surface of the module, install it in card slot No. 1.

CAUTION

If $\pm 12V$ and $\pm V$ have been connected to different terminal strips (TB1 or TB2), ensure that any modules requiring $\pm 12V$ or $\pm V$ are installed in the slots corresponding to the proper voltage.

- b. Insert the module into the card guide and slide the module straight in until it touches the mating motherboard receptacle.

NOTE

The card slot guides may be snug on the inserted module.

- c. Ensure that the module connector is positioned properly against the mating receptacle.

CAUTION

A key is installed in each edge connector receptacle between pin 5 and pin 6. Forcing an edge connector module without a corresponding slot in the plug may damage the receptacle and/or the module.

- d. Press in firmly on the exposed edge of the module until it is firmly seated.

4. To remove a module from the card cage:

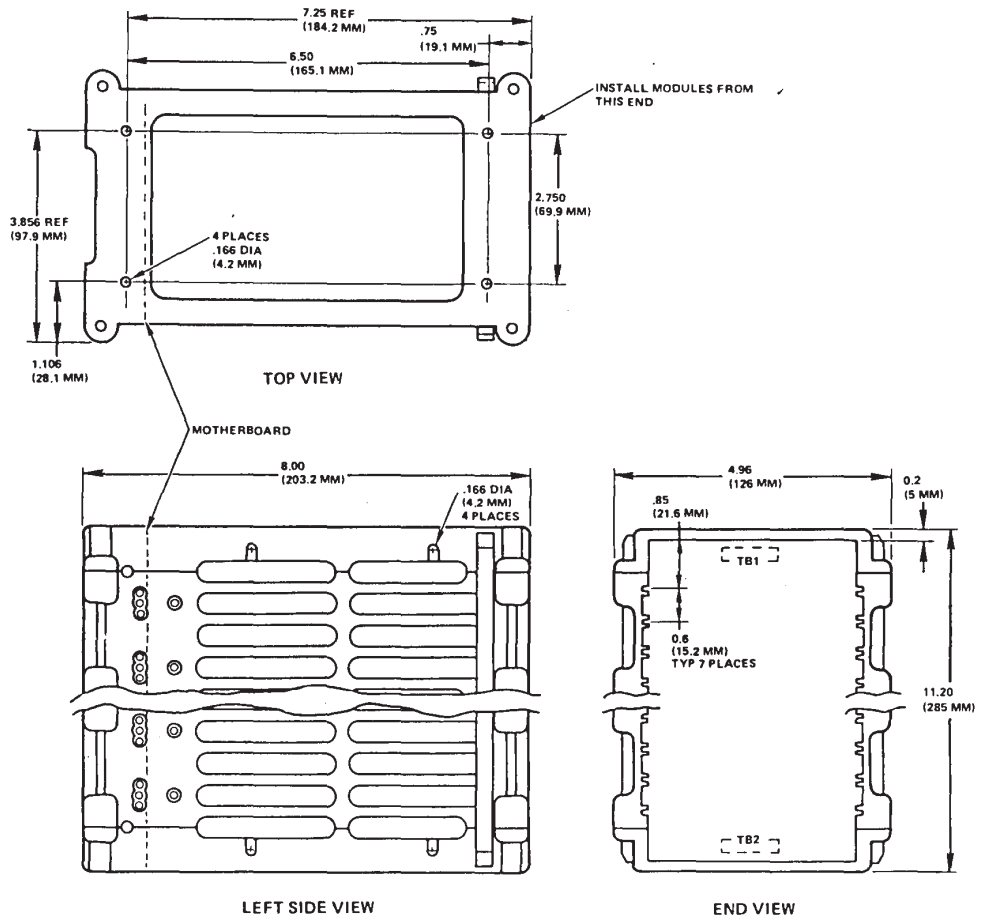
CAUTION

Remove power from the card cage motherboard before removing a module.

- a. Lift up on the module ejector tab, if installed; otherwise grasp the exposed edge of the module and pull, to release the module from the mating receptacle.
- b. Pull the module straight back until it is free from the card slot guides.

Module Specification Table

Characteristics	Value
Outer Dimensions	
Width	4.96 in. (126 mm)
Length	8.00 in. (203 mm)
Height	11.20 in. (285 mm)
Module Separation:	
Slot 1: Center line to Inside Top Cover	0.85 in. (22 mm)
Other Slots: Centerline to Centerline	0.6 in. (15 mm)
Weight	2 lb. 10 oz. (1.20 kg)



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