

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

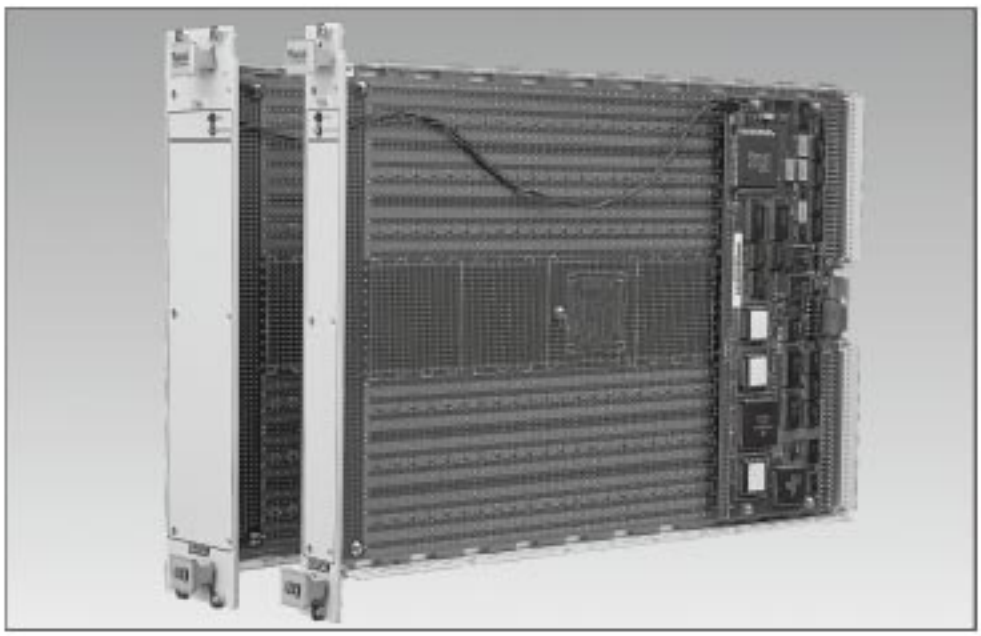
Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Astronics / EADS / Racal 405096* at our website: ***Click HERE***

PRODUCT INFORMATION

Message-Based Prototyping Modules Series 7064M



- **Message-Based Interface Supports IEEE-488.2 Instrument Protocol**
- **Multiple Slot Widths with Local Bus Support**
- **96 Buffered Digital I/O Control Lines**
- **On-Board 68000 CPU Bus Directly Accessible to User**
- **VXI*plug&play* Install Disk Included (WIN, Windows 95 or Windows NT)**
- **82in^2 of Prototyping Space**

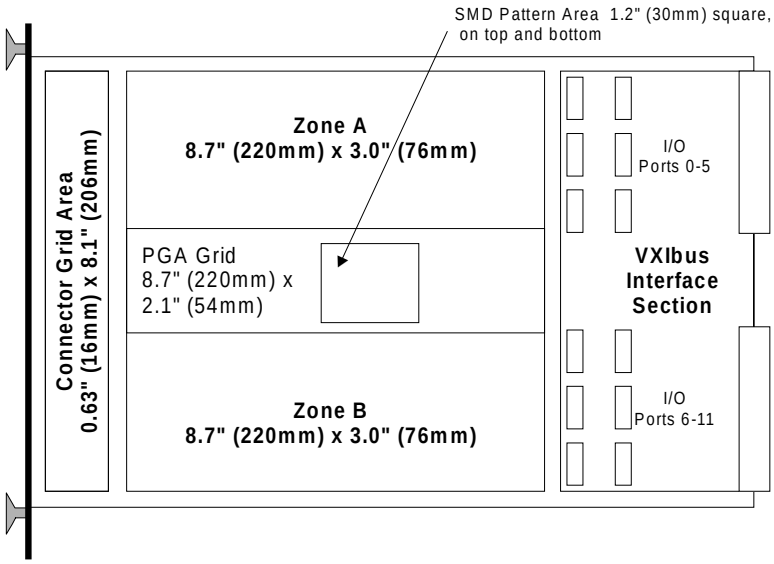
Custom VXIbus Circuit Design Made Easy

The 7064M Series of C-sized, message-based prototyping modules simplifies the engineer's task of developing VXIbus-based products. The 7064M combines 96 digital I/O lines, an IEEE-488.2 compliant message-based interface, shared memory and master/slave expansion capability to simplify the task of interfacing to the VXIbus. These features afford the user the opportunity to concentrate on product and/or circuit design.

The "master" Message-based 7064M includes a 68000-based daughter board which provides a simple interface between the VXIbus and the user's prototype circuitry. If a system requires more than one 7064M, up to eleven more "slave" 7064M's can be added which may be controlled by the "master" via the VXI local bus. Either type of 7064M includes eighty-two square inches of development area which can accommodate Dual-Inline Packages (DIPs), Pin Grid Arrays (PGAs), Plastic Leaded Chip Carriers (PLCCs) and Small Outline (SO) surface mount packages.

The Message-based Daughter Board

The Message-based interface (Opt 05, included with "master" modules) is a daughter board that plugs into the prototyping board. This interface allows control of user circuitry via the 96 digital I/O lines or via the microprocessor's local bus (available only on the master version). The upper half of the 68000's address space is available for the user to interface with memory-mapped devices.



The lower half is reserved for the 7064M's I/O ports, on-board memory, and VXIbus registers. All VXIbus registers are implemented including the VXIbus user-definable registers. The Message-based interface supports the local bus on the VXIbus backplane, which can either be used for proprietary signals or for expansion by adding up to eleven "slave" 7064M's.

When to Use the Message-based 7064M

The Message-based 7064M should be used in situations where a user-friendly interface and built-in I/O ports are required to speed prototype development. Software features in the 7064M such as channel scanning, the soft front panel, or native language drivers can also speed the prototyping process. If maximum throughput across the VXIbus interface is critical, consider using the 7064R, Register-based prototyping module, also from Racal Instruments.

Development Area

Eighty-two square inches of prototyping space are available to the user along with all the appropriate VXIbus backplane signals. The user circuitry in the breadboard area is controlled through twelve 8-bit individually configurable ports. The user circuitry can also be controlled through the message-based module's 68000 microprocessor directly. The upper half of the 68000 address space is available for this purpose.

As shown above, the 7064M's prototyping area is divided into five prototyping zones for maximum flexibility. The Connector Grid Area is a 0.1" (2.54mm) x 0.1" (2.54mm) grid designated for user I/O connectors. Holes may be cut in the 7064M's front panel to facilitate connection to the "outside world." Zones A and B are identical areas for locating circuitry utilizing Dual-Inline Packages (DIPs). Both zones have six rows for DIP IC's or sockets, including locations for bypass capacitors (to +5V and the "B" and "T" user-selectable power planes) for each chip. The PGA Grid area contains a 0.1" (2.54mm) x 0.1" (2.54mm) grid with access to +5V and ground along the edges. The area can be used to mount Pin Grid Array (PGA) style packages or discrete components. The SMD Pattern Area is a general-purpose surface-mount area which allows component mounting on both the top and bottom sides of the prototyping card. Various combinations of PLCC packages from 20 to 68 pins and 20 pin SO packages can be accommodated. All pins are brought out to pads located at the edges of the area with +5V and ground available at the four corners. All seven VXIbus supply lines are available to the user and are fused, reducing the risk of damage to the backplane. The 7064M module also provides the EMI power filtering required by the VXIbus specifications, removing the need for the user to design this circuitry.

Digital Control

The 7064M Message-based prototyping module, provides 96 buffered TTL control lines, programmable in either binary, octal, decimal or hex. These 96 I/O lines can also be accessed in bit, byte or word format.

Automatic Channel Scanning

The 7064M includes a Scanlist feature which allows the user to set up an on-board memory buffer to write to or read from the 7064M's 96 TTL I/O lines. I/O ports can be updated and read automatically at programmable rates up to 100kHz using the Scanlist Internal Delay Timer feature. This feature effectively turns the 7064M into a 100kHz digital pattern generator. As an alternative, 7064M Scanlists can be advanced using a trigger. Breakpoints can be added to scanlists to facilitate hardware trouble-shooting. Scanlist input masks can be specified to filter out unwanted data bits.

7064M Specifications

CPU CONFIGURATION

Type

16MHz MC68000

Memory

RAM	ROM	Non-vol	Shared RAM
64k	128k	16k	64k

Digital I/O Ports

12 Eight-bit ports

Digital I/O Modes

Clocked Input: Input data latched with external clock
Buffered Input: Input data sampled during VXIbus read
Latched Output: Output data is latched (with readback capability)
Scanlist Input/Output: To/From a User-Defined Buffer
Scanlist Advance Source: Internal Delay or Trigger
Scanlist Internal Delay Range: to 100kHz
Scanlist Internal Delay Resolution: 1µs

Software Features

Bit and Byte Access, Scanlists, Breakpoints, Internal Scan Delay, Trigger I/O Support (TTLTRG0-7), IEEE-488.2 Command Set

PROTOTYPING FEATURES

Buffered I/O

96 Channels, TTL levels

I/O Drive Current

Sink: 64mA @ 0.55V max
Source: 15mA @ 2.4V min

User Current (fused)

	+24V	+12V	+5V	-2V	-5.2V	-12V	-24V
I_{user}(A)	1.0	1.0	7.0	2.0	7.0	1.0	1.0

I/O Port Reset State

0 or 1, jumper selectable

Breadboarding Space

82in^2

Prototyping Area Clearances

Type	Ckt. Side	Comp. Side
1-slot	0.13" (3.3mm)	0.75" (19mm)
2-slot	1.30" (33mm)	0.75" (19mm)
3-slot	1.30" (33mm)	1.95" (49.5mm)

VXI Local Bus Access

A single "master" 7064M can control itself plus up to eleven "slave" 7064M's via the VXI local bus.

CPU Interface

Shared Memory Access: D16, A24 (user supplied shared memory)
CPU Local Bus: D16, A24 and control lines

VXIbus INTERFACE DATA

(Message-based, VXIbus Rev. 1.4 compliant)

Software Compliance

IEEE-488.2

VXI*plug&play* Install Disk

WIN, WIN95 and Windows NT Frameworks

Shared Memory

A24, 64k

Status Lights

Red: Failed Self-Test
Green: Access

Backplane Signal Support

TTLTRG0-7, LBUS, ACFAIL, SERCLK, SERDAT, CLK10, SUMBUS, BERR, +5VSTDBY, SYSRESET, SYSCLK (buffered)

Trigger Support

TTLTRG lines

Cooling (10°C Rise)

0.5l/s @ 0.04mmH_2O

Peak Current & Power Consumption

(excluding circuitry)

	+5
I_{Pm}(A)	1.25
I_{Dm}(mA)	10.0

Total Power: 6.25Watts

ENVIRONMENTAL DATA

Temperature

Operating: 0°C to +55°C
Storage: -40°C to +71°C

Humidity (non-condensing)

11°C-30°C: 95% ± 5%
31°C-40°C: 75% ± 5%
41°C-55°C: 45% ± 5%

Altitude

Operating: 10,000ft.
Storage: 15,000ft.

Vibration (non-operating)

0.013" double amplitude, 5-55Hz

Weight

7064M-100: 1kg (2.2lbs)
7064M-200: 1.13kg (2.5lbs)
7064M-300: 1.26kg (2.8lbs)
7064M-Opt 05: 0.3kg (0.65lbs)

EMC (Council Directive 89/336/EEC)

EN55011, Group 1, Class A
EN50082-1, IEC 801-2,3,4

Safety (Low Voltage Directive 73/23/EEC)

EN6010-1, IEC1010-1

CE The CE Mark indicates that the product has completed and passed rigorous testing in the area of RF Emissions, Immunity to Electromagnetic Disturbances and complies with European electrical safety standards.

ORDERING INFORMATION

Model	Description	Part Number
7064M-100	Single Slot, Message-Based Prototyping Module (Master)	407620-100
7064M-101	Single Slot, Message-Based Prototyping Module (Slave*)	407620-101
7064M-200	Double Slot, Message-Based Prototyping Module (Master)	407620-200
7064M-201	Double Slot, Message-Based Prototyping Module (Slave*)	407620-201
7064M-300	Triple Slot, Message-Based Prototyping Module (Master)	407620-300
7064M-301	Triple Slot, Message-Based Prototyping Module (Slave*)	407620-301
7064M-Opt 05	Message-Based Interface Card Only	407620-Opt 05
7064R-001	Single Slot Enclosure Only	407620-001
7064R-002	Dual Slot Enclosure Only	407620-002
7064R-003	Triple Slot Enclosure Only	407620-003
7064M-Opt 95	Source Code for Message-Based Interface with Manual	407620-Opt 95
*Note: One or more "master " modules must be present before a "slave" module may be controlled.		

The Racal policy is one of continuous development and consequently the equipment may vary in detail from the description and specification in this publication.

RACAL INSTRUMENTS

Racal Instruments, Inc., 4 Goodyear St., Irvine, CA 92618-2002. Tel: (800) RACAL-ATE, (800) 722-2528, (949) 859-8999; FAX: (949) 859-7139
Racal Instruments Ltd., 480 Bath Road, Slough, Berkshire, SL1 6BE, United Kingdom. Tel: +44 (0) 1628 604455; FAX: +44 (0) 1628 662017
Racal Systems Electronique S.A., 18 Avenue Dutartre, 78150 LeChesnay, France. Tel: +33 (1) 3923 2222; FAX: +33 (1) 3923 2225
Racal Systems Elettronica Srl, Strada 2-Palazzo C4, 20090 Milanofiori Assago, Milan, Italy. Tel: +39 (2) 5750 1796; FAX +39 (02) 5750 1828
Racal Instruments GmbH, Technologiepark Bergisch Gladbach, Friedrich-Ebert-Strasse, D-51429 Bergisch Gladbach, Germany. Tel.: +49 2204 8442 00; FAX: +49 2204 8442 19
Racal Australia Pty Ltd., 3 Powells Road, Brookvale, NSW 2100, Australia. Tel: +612 9936 7000, FAX: +612 9936 7036

12/98 Rev 2

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP