



ALLEN-BRADLEY

VMEbus Remote I/O Scanner

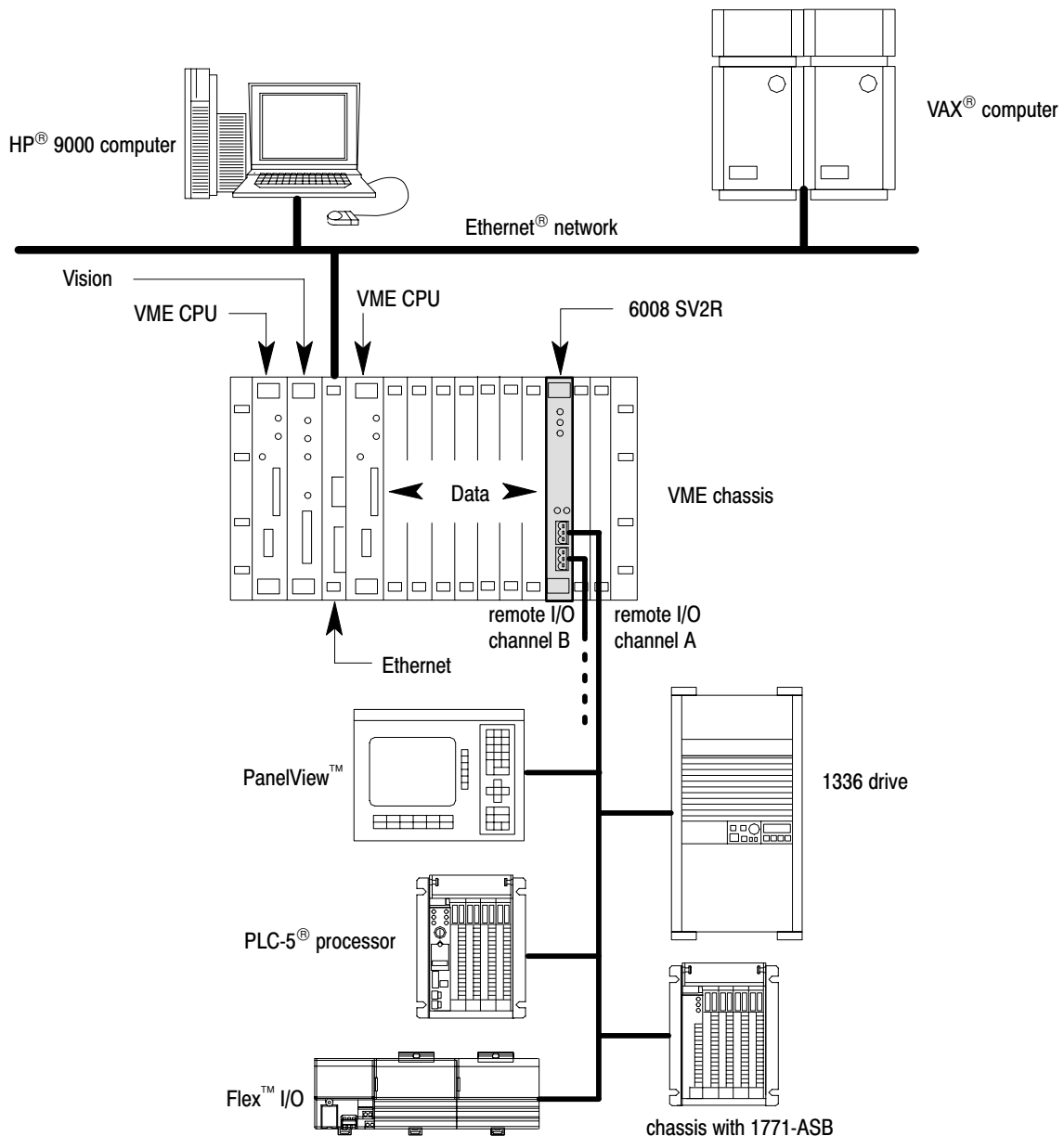
(catalog numbers 6008-SV1R, 6008-SV2R)

Product Data

VMEbus Remote I/O Scanner (catalog numbers 6008-SV1R, 6008-SV2R)

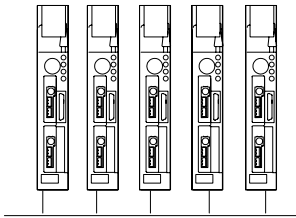
The Allen-Bradley VMEbus remote I/O scanner allows a VME computer direct access to A-B I/O products via the remote I/O link. The scanner monitors and controls remote A-B I/O modules without requiring a PLC[®] processor in the VME chassis. The 6008-SV1R supports one remote I/O channel and can control as many as 32 remote adapters. The 6008-SV2R supports two remote I/O channels and can control as many as 64 remote adapters (32 adapters per channel). One VME master processor can control multiple scanners. The scanner is always a VMEbus slave.

The scanner can communicate with a wide variety of A-B I/O modules. The scanner transfers the information necessary to control discrete and block transfer data to and from the VMEbus.



Note: The 6008-SV1R scanner is interchangeable with the 6008-SV2R scanner, except that the SV1R scanner supports only one channel of remote I/O.

Use your own VME master processor to control remote Allen-Bradley I/O



Large and flexible I/O subsystems

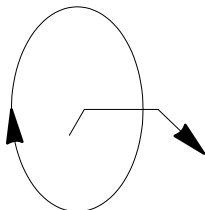
Reduce set-up time, as well as installation and integration costs. Use the industrially-rugged single twisted-pair cable for the remote I/O link to replace bundles of I/O ribbon cables.

You don't need a programmable logic controller or PLC programming software. Your VME master processor(s) send(s) commands to the scanner to control A-B remote I/O.

The scanner occupies any 6U (full-height) slot in a VME chassis. The scanner uses the P1 connector to interface to the VMEbus. You can have multiple scanners per VME chassis; you can have multiple master processors per VME chassis.

To the VMEbus, the scanner is a memory-mapped slave that responds to 8-bit or 16-bit accesses in either A16 or A24 address space. The scanner can act as a VME interrupter on any of the seven VMEbus interrupt lines.

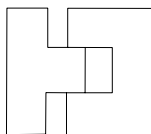
Reduce programming overhead



Improved block transfer operations

Allen-Bradley intelligent I/O modules (vision, motion, analog, etc.) require transfers of complete blocks of data at one time. The scanner can initiate single block transfer operations and maintain continuous block transfer operations with intelligent I/O modules. A single block transfer is a single read or write transfer to a specific intelligent I/O module. If your application needs to continuously poll a module to receive up-to-date data, use a continuous block transfer request. The continuous block transfer requests uses less programming overhead than programming a single block transfer request each time you need the data.

Maintain existing scanner systems while gaining improved technology and performance



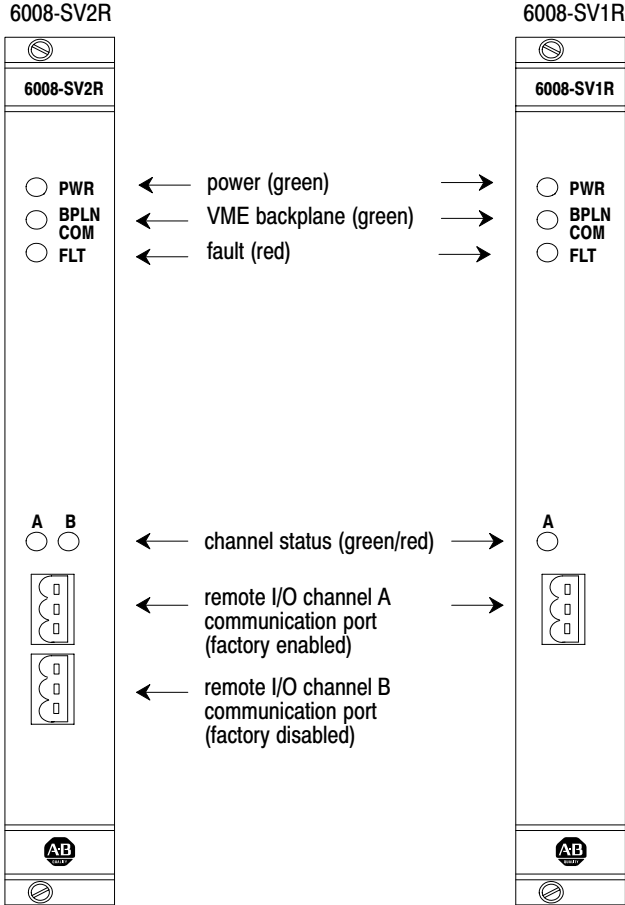
Improved performance

The scanner offers these technology improvements:

- each channel controls as many as 32 adapters
- configurable communication rate of 230.4, 115.2, or 57.6 kbps lets you select I/O scan time
- embedded communication microprocessor increases scanner performance
- changes in the scanner input table can cause VME interrupts
- configurable VME operating mode lets you select the scanner features you need for your application

The 6008-SV1R and 6008-SV2R scanners replace and are backward compatible with the Allen-Bradley 6008-SV VMEbus remote I/O scanner.

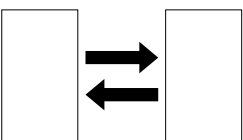
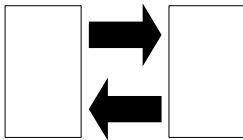
Scanner front plates



When this indicator:	is:	it means:
PWR (power) green LED	illuminated	power is applied to the module
BPLN COM (backplane communication) green LED	illuminated for approximately a half second	a VMEbus access is made to the scanner board
FLT (fault) red LED	illuminated	the scanner board is reset, performing a self test, or a fault has been detected

When the status indicator is:	the scanner:
off	is off line
green	is on line, in Run mode, and scanning the racks in the scan list
blinking green	is on line, in Run mode, and scanning only some of the racks in the scan list
red	has an unrecoverable fault
blinking red	has a recoverable fault

Configurable VME operating mode



SV-supersat

Use this mode to take full advantage of additional memory, configurable communication rates, and continuous block transfer operations. In SV-supersat mode, the scanner supports as many as 32 adapters per scanner channel.

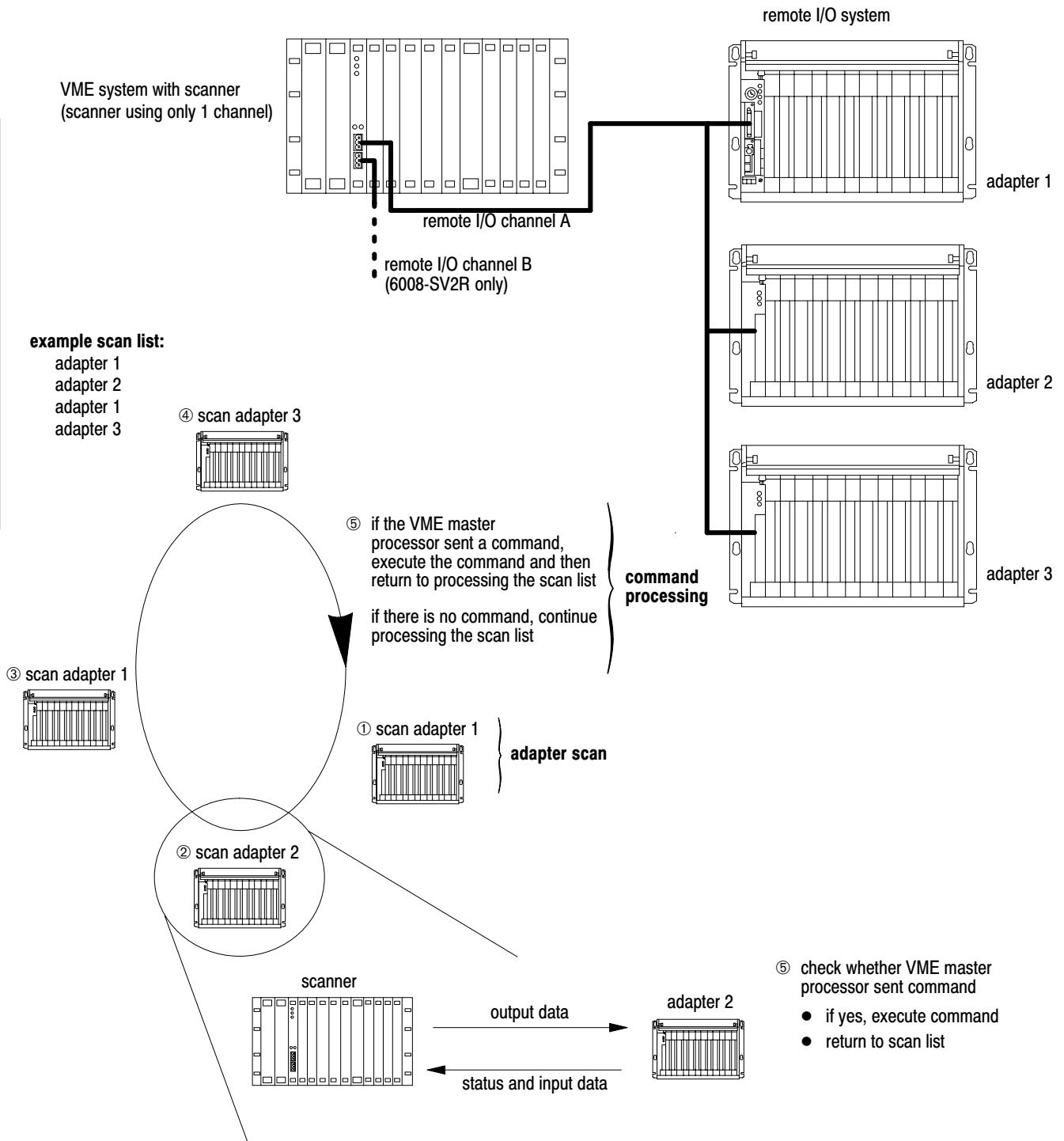
SV-compatible

Use this mode if you are replacing a 6008-SV scanner and want the 6008-SV1R or 6008SV2R scanner to operate exactly as the scanner you are replacing. In SV-compatible mode, the scanner supports as many as 16 adapters per scanner channel.

You can run previously-developed applications with minor modifications. If you use the SCAN LIST command, you must set two additional bits to specify the logical rack size of the physical chassis.

How it scans

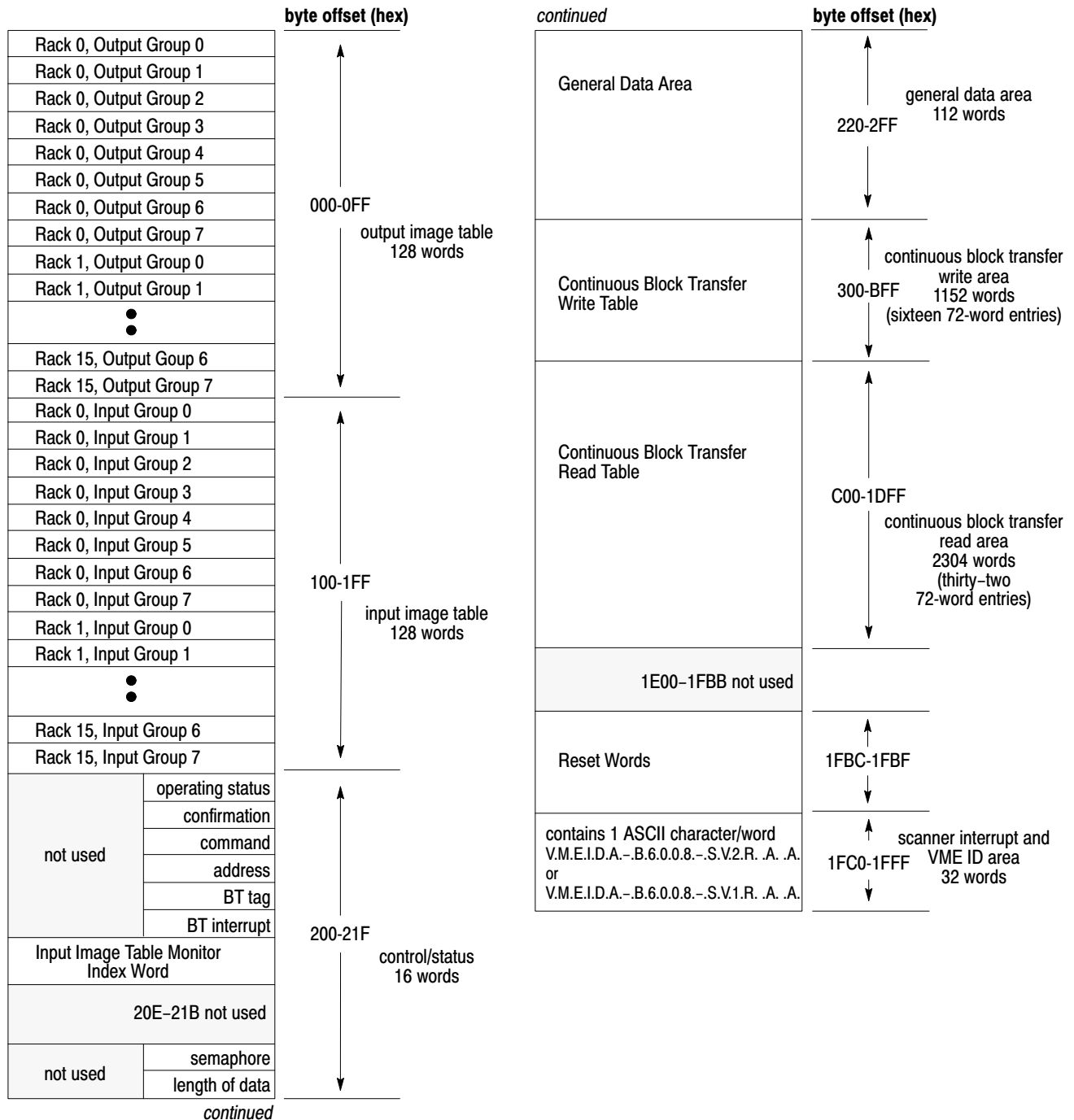
The 6008-SV1R and 6008-SV2R scanners run asynchronously to VME master processors. Once in Run mode, the scanner continuously scans all the adapters in its scan list. The scan list identifies which adapters to scan and in what order to scan them. An adapter can appear several times in the scan list.



VMEbus relationship

The following shows the global RAM structured for channel A in SV-superset mode.

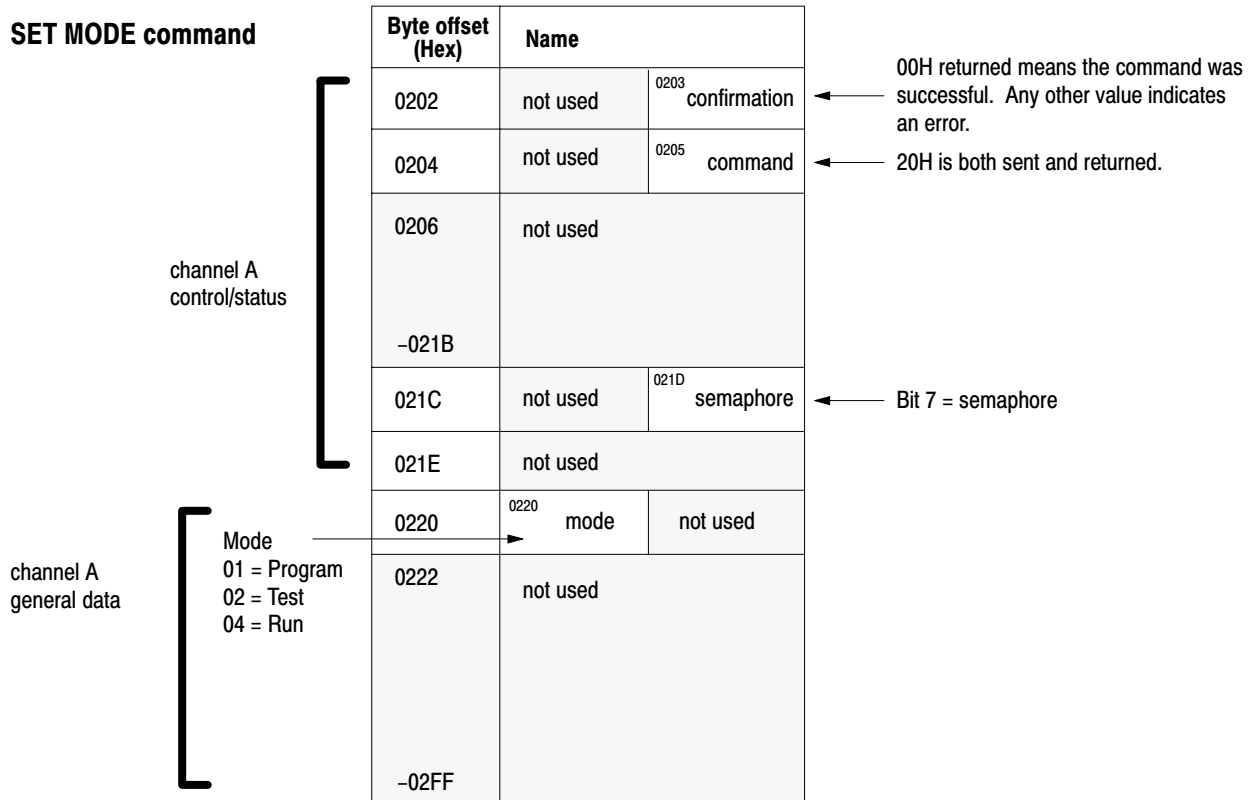
global RAM structure for SV-superset mode
Channel A



Communicating with the scanner

Write programs to interface with C-callable functions and to tell the scanner how to control its remote I/O. The following example illustrates a scanner command:

SET MODE command



Command overview

Command:	Description:	Execution time (ms):
SETUP	configures the scanner	5
AUTOCONFIGURE	builds the scan list by polling every possible adapter address	unbounded ^①
SCAN LIST	modifies or replaces the current scan list	5
FAULT DEPENDENT GROUP	associates a set of adapters so that if one adapter in the group faults, all the other adapters in the group fault	5
SET MODE	changes the operating mode of the scanner	5
LINK STATUS	determines the current status of the adapters on the remote I/O link	1
BT WRITE	transfers a block of data from the scanner to the specified I/O module	2
BT READ	transfers a block of data from specified I/O module into the scanner	2
CONTINUOUS BT WRITE (SV-superset mode only)	transfers a block of data from the scanner to the specified I/O module. When one block-transfer write completes, it begins again.	2
CONTINUOUS BT READ (SV-superset mode only)	transfers a block of data from the specified adapter through the scanner to the VME master processor at regular intervals.	2
RESET	causes the scanner to reset itself	unbounded ^①

^① The execution times are unbounded because the scanner polls each legal address on the I/O link for each channel, incurring a timeout for each unoccupied address.

Environmental Specifications

Characteristic:		Value:
Temperature	Operating	0° to 60° C derated 2° C per 1000 ft (300m) over 6600 ft (2000m)
	Storage	-40° to 85° C
Humidity	Operating	5 to 95% noncondensing
	Storage	5 to 95% noncondensing
Altitude	Operating	0 to 10,000 ft (3000 m)
	Storage	0 to 40,000 ft (12,000 m)
Vibration	Operating	2.5 g peak (max)
	Storage	5.0 g peak (max)
		acceleration over 5-2000 Hz sine wave (point-to-point) 1 oct/min sine sweep
Shock	Operating	30 g, 11 ms duration, 1/2 sine shock pulse
	Storage	50 g, 11 ms duration, 1/2 sine shock pulse
Power	Maximum	5V dc at 2.5A
	Typical	5V dc at 2.3A
Weight	6008-SV1R	297.67 g (10.2 oz)
	6008-SV2R	297.67 g (10.5 oz)

VMEbus Specifications

Characteristic (revision C.1):	Value:
Slave address	A16, A24
Slave transfer	D08(E0), D16
Interrupter	I(1-7), D08(O)

Scan Times

Communication rate:	Scan time per logical rack (ms):	Maximum cable length (ft):
230.4 kbps	3	2500 (750m)
115.2 kbps	6	5000 (1500m)
57.6 kbps	12	10,000 (3000m)

Maximum Total I/O per Channel

I/O mix:	Number of I/O points:
any mix	2048
complimentary	2048 in and 2048 out

PLC and PLC-5 are registered trademarks of Allen-Bradley Company, Inc.
Flex and PanelView are trademarks of Allen-Bradley Company, Inc.
HP is a registered trademark of Hewlett-Packard Company.
VAX is a registered trademark of Digital Equipment Corporation.
Ethernet is a registered trademark of DEC, Intel, and Xerox Corporation.



Allen-Bradley, a Rockwell Automation Business, has been helping its customers improve productivity and quality for 90 years. We design, manufacture, and support a broad range of control and automation products worldwide. They include logic processors, power and motion control devices, man-machine interfaces, sensors, and a variety of software. Rockwell is one of the world's leading technology companies.



Worldwide representation.

Algeria • Argentina • Australia • Austria • Bahrain • Belgium • Brazil • Bulgaria • Canada • Chile • China, PRC • Colombia • Costa Rica • Croatia • Cyprus • Czech Republic
Denmark • Ecuador • Egypt • El Salvador • Finland • France • Germany • Greece • Guatemala • Honduras • Hong Kong • Hungary • Iceland • India • Indonesia • Israel • Italy
Jamaica • Japan • Jordan • Korea • Kuwait • Lebanon • Malaysia • Mexico • New Zealand • Norway • Oman • Pakistan • Peru • Philippines • Poland • Portugal • Puerto Rico
Qatar • Romania • Russia-CIS • Saudi Arabia • Singapore • Slovakia • Slovenia • South Africa, Republic • Spain • Switzerland • Taiwan • Thailand • The Netherlands • Turkey
United Arab Emirates • United Kingdom • United States • Uruguay • Venezuela • Yugoslavia

Allen-Bradley Headquarters, 1201 South Second Street, Milwaukee, WI 53204 USA, Tel: (1) 414 382-2000 Fax: (1) 414 382-4444