E1406A VXI Command Module

Slot 0, GB-IB, Resource Manager, C-Size

Description

The Keysight Technologies E1406A Command Module is a C-size, 1-slot VXI message-based commander that provides Slot 0 and Resource Manager functions. It can act as a VMEbus system controller and GPIB (IEEE-488)-to-VXIbus interface device for transparently communicating with any manufacturer's message-based VXI modules. The E1406A Command Module has FLASH memory for downloadable drivers, so you can program Keysight register-based devices using the high-level SCPI programming language. It also translates SCPI commands for register-based instruments and therefore, makes these VXI devices as easy to program as message-based instruments.

This command module also includes a MXIbus Resource Manager for VXIbus extensions. This allows you to maintain high-throughput performance in multiple mainframe systems. With its flexible triggering and clock interfacing, you can synchronize the VXI backplane 10 MHz clock to an external TTL signal.

Key Features

- 1-Slot, C-size, Message-based commander
- GP-IB, RS-232, Slot 0, and Resource Manager
- 2 MB RAM
- MXIbus protocol support for high throughput
- Easy to program as message-based instruments

Technical Specifications and Characteristics

General Charcteristics	
Interface	IEEE-488
Processor	16 MHz 68000
IBasic	Yes
Slot 0 functions	Yes
Resource manager	Yes
MXIbus resource manager	Yes
Memory	
Flash memory	1.75 MB maximum
Volatile RAM	256 KB
Non-volatile RAM	512 KB to 2 MB RAM maximum
Non-volatile memory life	NiCad battery backed (10-month minimum lifetime for modules with 512 Kbyte of non-volatile RAM, 5 months for modules with 1 Mbyte of non-volatile RAM, and 2.5 months for modules with 2 Mbyte of non-volatile RAM following a 15 hour battery charge).
Shared memory	512 kB maximum
Real time clock	
Clock accuracy	0.005% elapsed time
Temperature coefficient	0.001%, to 0.012% of time since last set (per ºC change in
Resolution	1.0 seconds
Non-volatile lifetime	10 months minimum for a module with 512 Kbyte memory (following a 15-hour battery charge). 5 months for a module with 1 Mbyte of memory. 2.5 months for a module with 2 Mbyte of memory.
CLK10	
Input	TTL or low-level AC
Minimum input level	40 mV p-p
Maximum input level	42.5 V p-p
Output	TTL
Jitter	0.03% (-55db)
Initial accuracy	50 ppm
Maximum stability	± 20 ppm/year (0-55 ºC)
Typical stability	± 3 ppm/year (25 ºC)
Trigger input	
Levels	TTL, ECL
Input load	55 kΩ, 50 pF
Maximum rate	12.5 MHz (TTL), 40 MHz (ECL)
Minimum pulse width	30 ns (TTL), 12.5 ns (ECL)
Maximum trigger delay	30 ns

General Charcteristics, cont.

RS-232 Interface (for terminal only)

Baud rate	300, 1200, 2400, 4800, 9600, 19200
Parity	Even, Odd, One, Zero, None
Character size	7,8
Pace	Xon/Xoff, None
Hardware handshake	DTR, RTS
Buffer size	16 characters
VXI compliance	Revision 1.4 compliance

VXI Characteristics (nom)

VXI device type	Message-based commander
Data Transfer	A16, A24, A32, D08, D16, D32, D64
Size	C
Slots	1
Connectors	P1/P2
Shared memory	Yes
VXI buses	TTL trigger bus, ECL trigger bus, Local bus A

Module current (typ)	I_{PM} (A)	I_{DM} (A)
+5 V	3.2	0.32
+12 V	0.01	0.01
-12 V	0.01	0.01
+24 V	0.03	0.003
-24 V	0	0
-5.2 V	0.4	0.04
-2 V	0.01	0.01

Cooling/slot	
Watts/slot	19
ΔP mm H_2O	0.3
Air flow liters/s	1.5

Definitions and Conditions

Specification (spec)

The warranted performance of a calibrated instrument that has been stored for a minimum of 1 hour within the operating temperature range of 0 to 50 °C and after a 30-minute warm up period. All specifications account for the effects of measurement and calibration-source uncertainties and were created in compliance with ISO-17025 methods. In addition, a driver session must be opened to initialize the power supplies. This can be done programmatically or by opening SFP and connecting to the instrument. Data published in this document are specifications (spec) only where specifically indicated.

Typical (typ)

The characteristic performance, which 80% or more of manufactured instruments will meet. This data is not warranted, does not include measurement uncertainty or calibration-source, and is valid only at room temperature (approximately 25°C).

Nominal (nom)

The mean or average characteristic performance, or the value of an attribute that is determined by design such as a connector type, physical dimension, or operating speed. This data is not warranted and is measured at room temperature (approximately 25°C).

Measured (meas)

An attribute measured during the design phase for purposes of communicating expected performance, such as amplitude drift vs. time. This data is not warranted and is measured at room temperature (approximately 25°C).

Additional Information

All data are measured from multiple units at room temperature and are representative of product performance within the operating temperature range unless otherwise noted. The data contained in this document is subject to change.

Ordering Information

Model	Description
E1406A	VXI GPIB Command Module; C-size
E1406A-0B3	Service manual
E1406A-ABA	English Documentation
Related Products	
E8401A	13-slot, C-size, VXI Mainframe with 550W Power Supply and basic monitoring
E8403A	13-slot, C-size, VXI Mainframe with 1000W Power Supply and basic monitoring
E8404A	13-slot C-size VXI Mainframe, 1000W PS, Enhanced monitor, color graphic display
E1406A	VXI GPIB Command Module; C-size

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