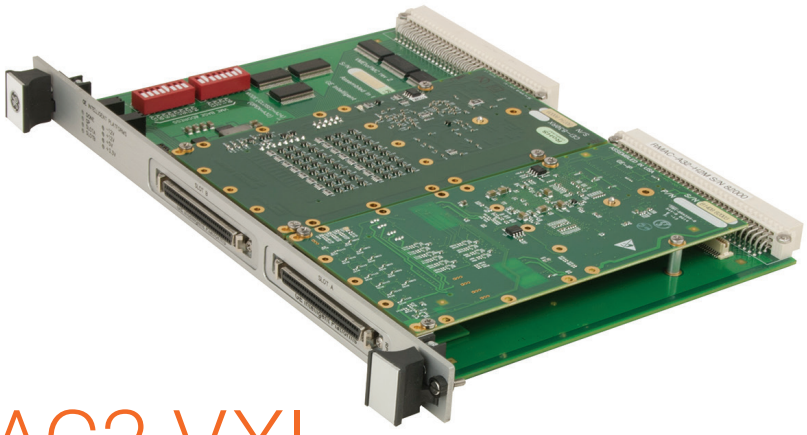

RMAC-VME & MAC2-VXI

VME/VXIbus Modular Avionics Controller

The Modular Avionics Controller (RMAC/MAC2) is Abaco Systems' new family of intelligent, high performance 6U VME and C-size VXI interface solutions for ARINC 429, serial communications and other avionics protocols. As an evolutionary follow-on product from Abaco's successful VME/VXI-AIC product line, the RMAC/MAC2 family provides a single integrated interface to multiple avionics protocols on VMEbus or VXIbus platforms.

Software

An integrated Application Programming Interface (API) is provided for high-level access to all RMAC/MAC2-based protocol functions. The efficient and easy-to-use MAC API provides high performance access to all protocol, control and data functions. A comprehensive transition library is also provided to seamlessly migrate applications from the AIC API to the MAC API. Support for Microsoft Windows 7, 8, 8.1, 10, Server 2012 R1/R2, Vista, and XP is provided for PC-based hosts across the Abaco Systems 810/820 and National Instruments PCI-MXI-2 desktop VME interfaces. Linux support is available for select Abaco Systems x86-based VME SBCs. VxWorks support is available for PowerPC based VME SBCs incorporating the Tundra Universe interface. High level ARINC 429 support is optionally available for LabVIEW.

Hardware Architecture

Architecturally, the RMAC/MAC2 has two PMC slots which can be populated with one or two powerful PMC Modules. All user I/O is via front panel connectors, with optional single-PMC VME P2 rear-I/O connection available. Transition cabling to 68-pin SCSI III connectors are provided with every module.

ARINC 429 product configurations have a minimum of 2 receive and 2 transmit channels, up to a maximum configuration of 48 receive and 16 transmit channels or 32 receivers and 32 transmitters, front I/O on a single board populated with two PMC modules. Data rates, parity, filtering, message scheduling, error injection, self-test operation and protocol features are controlled on-board. All ARINC 429 channels operate independently and simultaneously at full data throughput.

In addition to ARINC 429, RMAC/MAC2 configuration options offer concurrent, integrated support for numerous other 2-wire ARINC interfaces including ARINC 419, 453, 571, 573, 575, 582, 585, 708 and 717. Serial interfaces, including RS-232 and RS-422 are also supported.

FEATURES:

- Up to 64 ARINC 429 channels
- ARINC 429, 419, 453, 573, 575, 708, 717, RS-232, and RS-422 support
- Powerful, on-board processing
- Modular, multi-protocol support
- Fully independent channel operation
- Easy-to-use functionality
- Multiple data buffering mechanisms
- On-board message scheduling
- 64-bit time-tagging
- ARINC 429 message error injection and detection
- VxWorks® support for the Tundra Universe interface included
- Support for Microsoft® Windows® 7, 8, 8.1, 10, Server 2012 R1/R2, Vista, XP, with Abaco Systems 8x0 and NI PCI-MXI-2 interfaces
- LabVIEW support available
- Linux® kernel version 2.6x support for
- select Abaco Systems x86 SBC hosts

abaco SYSTEMS

RMAC-VME & MAC2-VXI *VME/VXIbus Modular Avionics Controller*

Specifications

ARINC 429 Receive Channels

- Number of channels: 2 to 64 (32 max per module)
- Data rates: 12.5 KHz, 100 KHz or programmable from 5 KHz to 150 KHz
- Standard Input levels: ± 6.5 to ±13 VDC (A to B)
- Filtering: channel, label and/or SDI
- Parity: odd, even or none
- Error reporting: parity, gap, high or low bit count
- Buffer up to 2,048 messages per channel

ARINC 429 Transmit Channels

- Number of channels: 2 to 32 (16 max per module)
- Data rates: 12.5 KHz, 100 KHz or programmable from 5 KHz to 150 KHz
- Programmable slew rate
- Standard Output level: ±10 VDC (A to B)
- Parity: Odd, even or none
- Error injection: Parity, gap, high or low bit count
- Buffer up to 8192 messages per channel

ARINC 717/573 Channels

- Number of channels: Up to 4 (1 transmit and 1 receive per module)
- Selectable encoding: Harvard Bi-Phase or BiPolar Return-to-Zero Operation
- Programmable data rate/sub-frame size: 384 bps/32 words to 48 Kbps/4K words
- Buffer up to 2048 words per receive channel
- Buffer up to 8192 words per transmit channel

ARINC 708 Channels

- Number of channels: Up to 4 (2 per module)
- Channels are programmable transmit/receive
- Data rate: 1 MHz
- Bits per frame: 64 bits control, 1536 bits data (1600 total)
- Scheduled sweep transmit buffers: Up to 2600 frames per channel
- Received frame buffers: 2 600 frames
- Error injection: Short/long frames, sync inversion

Operating Temperature

- 0°C to 60°C

Physical VME (6U board) / VXI (C-size)

- Height: 9.2" (23.34 cm)
- Depth: [VME] 6.3" (16.0 cm) / [VXI] 13.4" (33.99 cm)
- Front panel width: 0.8" (1.98 cm)

VME/VXI Interface

- Optional P-2 Rear I/O for single PMC Slot
- A24, A32 addressing
- D16, D32 data transfer
- VME/VXI slave

Power (typical)

- +5 VDC: TBD
- +12 VDC: TBD
- -12 VDC: TBD

Warranty

- 2 year limited hardware warranty

LabVIEW™ Support

CEI-LV provides ready-to-use, ARINC 429 LabVIEW application programming interface VI's that can be integrated into your custom LabVIEW application. Rapidly build applications to simulate or monitor multiple ARINC 429 channels in real-time, filter and time-tag data and create custom displays. VI's are provided for initialization, channel configuration, error handling, transmitting or receiving multiple messages, and engineering unit conversion.

Ordering information

RMAC-A13J-A13JM	Modular 6U VME card with 26 RX, 26 TX ARINC 429 channels & 2 RX, 2 TX DUAL-MODE (either HBP or BPRZ) ARINC 717 channels. ROHS Compliant
RMAC-A13JM	Modular 6U VME card with 13 RX, 13 TX ARINC 429 channels & 1 RX, 1 TX DUAL-MODE (either HBP or BPRZ) ARINC 717 channels. ROHS Compliant
RMAC-A16-A16M	Modular, 6U VME card with 32 RX and 32 TX ARINC 429 channels. ROHS Compliant
MAC2-A16-A16X	Modular, 6U VXI card with 32 RX and 32 TX ARINC 429 channels.
RMAC-A16M	Modular, 6U VME card with 16 RX and 16 TX ARINC 429 channels. ROHS Compliant
MAC2-A2J-A2JX	Modular, C-SIZE VXI card with 4 RX, 4 TX channels of ARINC 429 and 2 RX, 2 TX channels of dual-mode ARINC 717/573.
MAC2-A4-C422M	Modular, C-SIZE VME card with 4 RX and 4 TX ARINC 429 channels & 8 PORTS RS422
MAC2-A8-C44X	Modular, C-SIZE VXI card with 8 RX and 8 TX ARINC 429 channels, 4 PORTS RS-232 and 4 ports of RS-422.
RMAC-A8M	Modular, 6U VME card with 8 RX and 8 TX ARINC 429 channels. ROHS Compliant
MAC2-A8X	Modular, C-SIZE VXI card with 8 RX and 8 TX ARINC 429 channels.
RMAC-AIC-A3216Q1	Modular, 6U VME card with AIC adaptor, 32 RX and 16 TX ARINC 429 channels, PMC'S on VME carrier, ROHS Compliant
MAC2-H2X	Modular, C-SIZE VXI card with 1 RX, 1 TX 708 channel.
RMAC-W16-W16M	Modular, 6U VME card with 32 RX AND 32 TX ARINC 429 channels, WITH IRIG, ROHS Compliant
RMAC-W4M	Modular, 6U VME card with 4 Rx, 4 Tx ARINC 429 channels, with IRIG-B, ROHS Compliant
MAC2-A8J-SERX	Modular, C-SIZE VXI card 8RX, 8TX channels ARINC 429, 1 RX, 1 TX channels of DUAL MODE 717AND 12 selectable serial channels RS485/RS-422/RS232, 8 bidirectional discrete, IRIG-B receiver (AM OR DC/TTL)/generator (DC/TTL)

WE INNOVATE. WE DELIVER. YOU SUCCEED.

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Europe, Africa, & Middle East: +44 (0) 1327-359444

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