



## IC7 - VME

### This course covers VME bus, including 2eSST

#### Objectives

- This course is based on the ANSI-VITA 1 1994 specification and ANSI-VITA 1.1 extensions.
- The new 2eSST protocol is also described.
- The training highlights synchronization methods like mailbox generally used in VME based calculators.
- The daisy-chain acknowledge mechanism is viewed in detail.
- Shared resource management is also emphasized.
- The training shows how to configure a VME backplane.
- After having reminded the 68K interrupt management, the VME priority interrupt bus is described.
- VME timing diagrams are studied with the assistance of the VSYSTEMS analyser board.
- The course focuses on the configuration space specified in the VME64 and VME64x standards.
- This course has been delivered several times to companies developing defence and avionics equipments.

*A more detailed course description is available on request at [info@ac6-training.com](mailto:info@ac6-training.com)*

#### Prerequisites

- Experience of a parallel digital bus is recommended.

#### Plan

##### INTRODUCTION TO THE VME BUS

- VME based calculator architecture
- Connectors pinout
- The four bus parts

##### THE ARBITRATION BUS

- Explanation of the daisy-chain acknowledge mechanism
- RRS, PRI and ONE Arbiter options
- RWD, ROR, FAIR requester options
- Arbitration sequence analysis

##### THE DATA TRANSFER BUS

- Byte locations accessed during a data transfer
- Address pipelining

- Burst transfers
- Address Only transactions
- BTO timer utility
- Shared resource management

## **THE INTERRUPT BUS**

- Interrupt generator structure
- Interrupt handler structure
- Status/ID read cycle
- ROAK and RORA interrupt generator options

## **THE UTILITY BUS**

- SYSFAIL management
- Reset timing diagram
- Power control
- Auto system controller

## **ELECTRICAL SPECIFICATION**

- The 5 signal types
- Bus driving and receiving requirements
- Noise margins
- Board powering, current ratings for power pins
- Line terminations
- The ETL transceiver logic required for 2eSST

## **THE CONFIGURATION SPACE**

- Determination of the mapping of the A24 config space
- Detail of the CR and CSRs
- Auto slot ID mechanism

## **VME64x EXTENSIONS**

- New P0/J0 connector
- P1/J1, P2/J2 connectors pinouts, rows z and d pin assignments
- Live insertion support
- EMC front panel and subracks
- ESD protection
- ETL technology
- 2eVME protocol

## **2eSST PROTOCOL**

- 3U and 6U implementations
- Broadcast transfers
- Source synchronous transfers, data centered strobes
- Skew calculation

## Renseignements pratiques

**Duration : 4 days**  
**Cost : 1950 € HT**



SARL au capital de 15400€ - SIRET 449 597 103 00026 - RCS Nanterre - NAF 722C - Centre de Formation : 19, rue Pierre Curie - 92400 Courbevoie  
Siège social et administration : 21, rue Pierre Curie - 92400 Courbevoie - Tél. 01 41 16 80 10 - Fax. 01 41 16 07 78

Last site update: Mon 13 Feb 2012 02:28:18 PM CET

<http://www.ac6-formation.com/>