

VMEbus Technology Features

VMEbus Technology acceptance after more than 20 years of market presence is still growing. It is here to stay for a long time to come. VMEbus Renaissance, VXS and the 'New Modular System Architecture' projects are stepping stones into future *VMEbus Technology* development. Why is this so? Some of the reasons are given below.

VMEbus Technology

... is made for the real world

VMEbus Technology is made for harsh industrial or military environments, for hard real-time applications with deterministic behaviour and for demanding multiprocessing applications. Events are handled by fine-grained priority-based processing.

... scales to the application

VMEbus Technology accommodates data and addresses on 8 bit to 64 bit wide signal paths. There are two popular board sizes of 3 U (100 mm x 160 mm) and 6U (233 mm x 160 mm). There is a wide selection of mezzanine busses and modules as well as secondary busses on the front or rear edges of the card. *VMEbus Technology* accepts up to 21 boards on a single bus segment without bridges or repeaters at all speeds.

... lasts as long as the equipment it controls

VMEbus Technology has always been compatible over time, even in mixed generation environments. All boards can work at their maximum speed in mixed speed configurations. No need to down-rate to the slowest component. Products can be upgraded or expanded over decades without complete replacement. Printing machines, power plant control equipment, planes or ships may be in continuous usage for 10 to 30 or more years. Debugged software in VMEbus systems can be safely used over such a period of time, without any need to re-evaluate it with different generations of PC-based hardware and software.

... is standardized

VMEbus Technology, including secondary busses and mezzanines are standardized by accredited open standards bodies like ANSI, DIN, IEC or IEEE. No single company or private consortium can change the specifications to their advantage. The Eurocard form factor (3U & 6U) is the most widely used standardized board form factor in industrial applications. The infrastructure for Eurocards has been developed over more than 25 years. Many other technologies are also using it.

... doesn't depend on yesterday's technology

In the more than 20 years of VMEbus history it has progressed seamlessly from 5 MB/s to 320 MB/s now and to much more in the near future. *VMEbus Technology* is asynchronous which means it is not fixed to any one clock rate or chip technology, not even within the same system. It runs as fast as drivers can clock it. There are not even wait cycles to synchronize with any arbitrary clock rates.

... advances into the future

VMEbus Technology is carried into the next generation technology by the VSO (VITA Standards Organisation) standardisation committees within VITA (VMEbus International Trade Association). VITA 34 (New Modular System Architecture), and VITA 41 (Switched Serial) are draft standards in development meeting future requirements.

... is friendly to others

Industrial applications are so widely different that no one technology can become a monopoly. There is always a need for specialized or differently focussed technologies. CompactPCI (CPCI) from PICMG (PCI Industrial Computers Manufacturers Group) is an example. VMEbus and CPCI complement each other. Many industrial systems contain both technologies. Both organisations sponsor the once-a-year industry and marketing experts 'Bus and Board' conference.

Mezzanine module standards were created by VITA members for identical use on VMEbus, CPCI and other form factor carrier boards.

... is recognized

Since most VMEbus systems are 'embedded', their existence inside products is not readily obvious. The '*VMEbus Technology*' logo, which is shown on the global VITA web site <<http://www.vita.com>>, shows on the outside of products what is hidden inside and it attracts attention to *VMEbus Technology* and products that use it.

... is a global technology

VMEbus Technology traces its roots to the days of the minicomputers in the USA. It was adapted to industrial applications and to multiprocessing, using a rugged board format (Eurocard). *VMEbus Technology* is still the leading technology for open, modular industrial computer systems world-wide.

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