

## Summary of Changes between VIPER V1I6 and V2I2

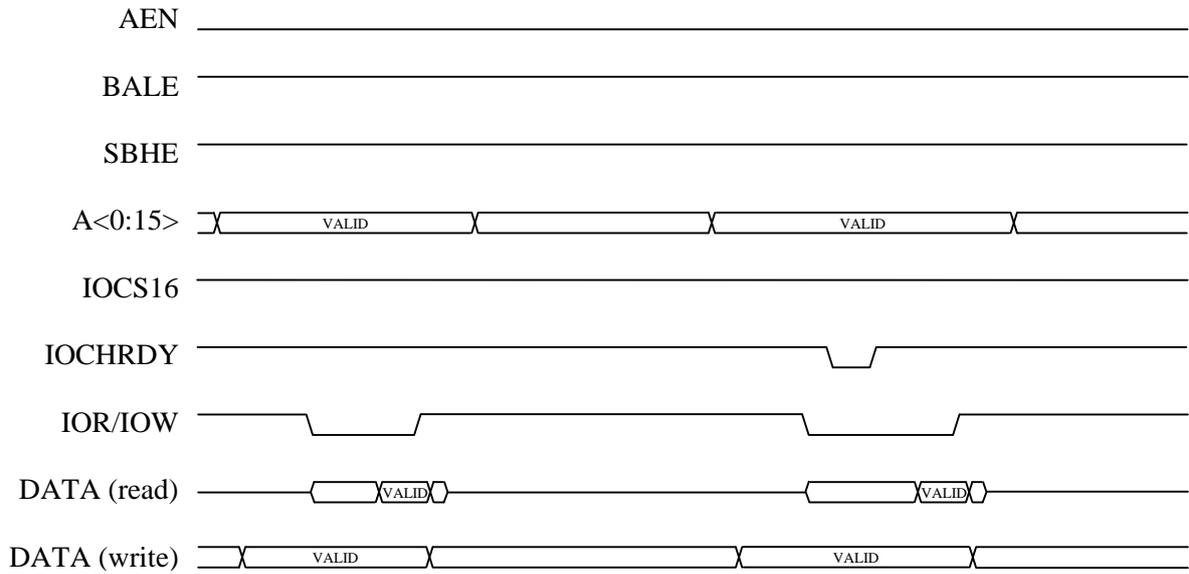
<b>Issue Date:</b>	23-May-05	<b>Circulation:</b>	General
<b>PCB Version:</b>	2	<b>Schematic Version:</b>	2
<b>PCB Issue:</b>	2	<b>Schematic Issue:</b>	2

### Enhancements to VIPER V1I6 Functions

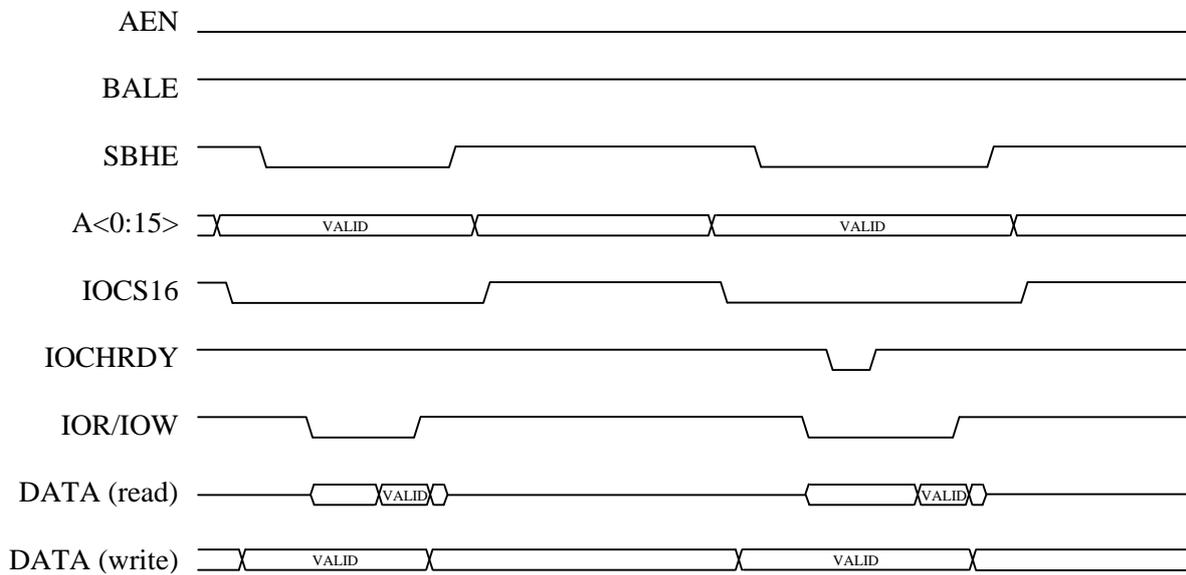
- COM2 max transmission rate has been increased from 230.4kb/s to 921.6kb/s.
- COM4 (RS232) & COM5 (RS422/485) max transmission rates can be increased from 115.2kb/s to 921.6kb/s with a special build option to increase the DUART reference clock. *Please contact Arcom for details.*  
The default COM4 & COM5 transmission rates remain at 115.2kb/s for backwards compatibility.
- The single jumper header used on VIPER V1I6 has been split into two headers and silkscreen added to PCB for identification of jumper functions.  
See V2I2 connector positions for location details.
- VIPER V2I2 standby current consumption is now down to 49mA  $\pm$ 3mA.  
That is 46% of the current consumption of the VIPER V1I6.
- Ethernet LED connector PL2 has been changed for a shrouded type. This connector has the same 2mm (0.079") pitch as the connector used on V1I6, but has locking tabs. The mating connector used for VIPER V1I6 is compatible with the new PL2 connector.
- Adjustments have been made to the PC/104 interface control signals.  
Reports of timing issues with the VIPER V1I6 PC/104 BALE and AEN control signals before Mod Level I have been addressed. These control signals have been changed to behave as follows:
  - BALE (Address Latch Enable)  
Set permanently active (high) as the address is always valid during Read and Write commands.
  - AEN (Address Enable)  
Set permanently inactive (low) as the VIPER does not support DMA accesses.

The following pages show the waveform diagrams for the emulated PC/104 I/O and Memory access cycles.

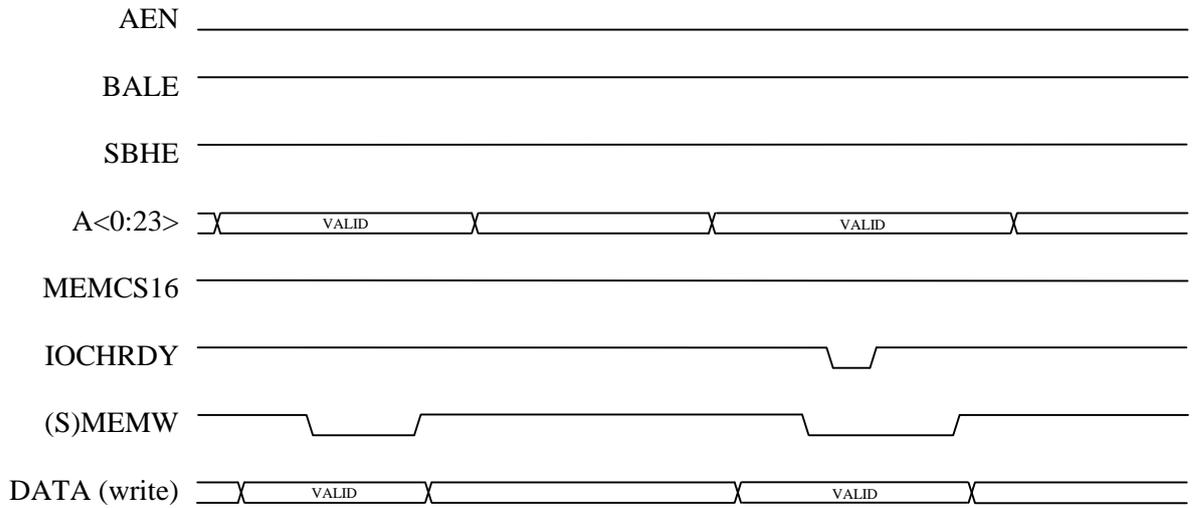
### PC/104 8-bit I/O Read / Write Access Cycles



### PC/104 16-bit I/O Read / Write Access Cycles

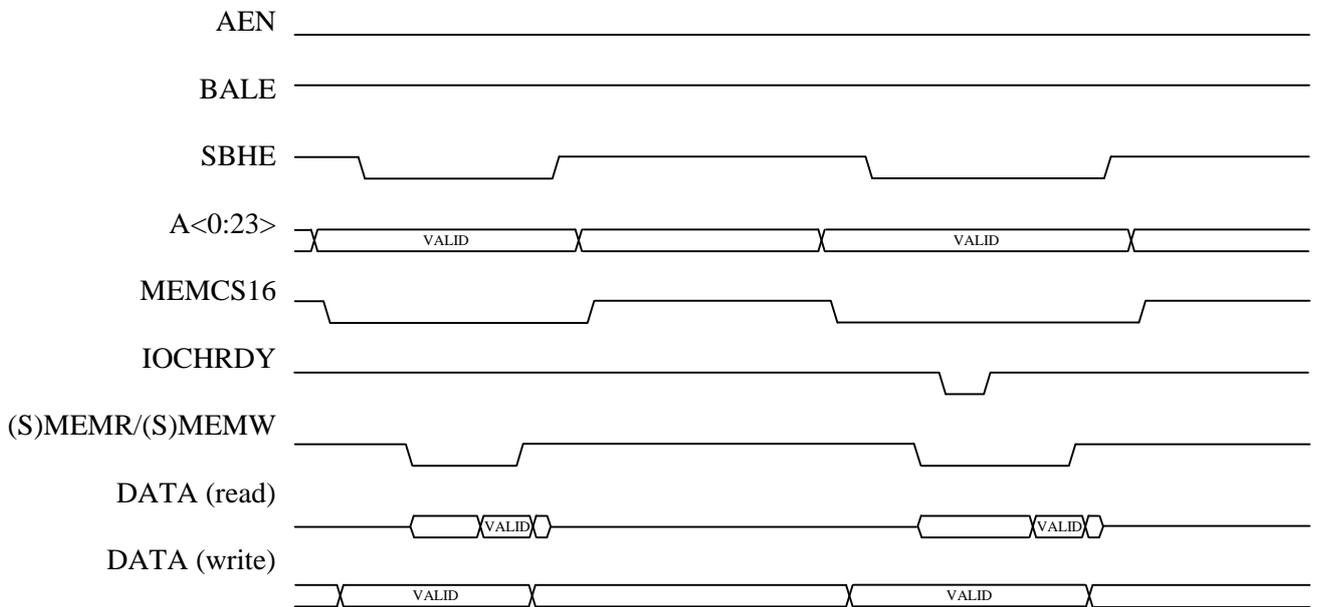


### PC/104 8-bit Memory Write Access Cycle



**Note:** 8-bit Memory Read access cycles are not supported by the PXA255 PCMCIA controller for common memory space.

### PC/104 16-bit Memory Read / Write Access Cycles



## New Functionality for VIPER V2I2

- An onboard battery holder with CR2032, 3V / 220mAh battery fitted. The external battery can still be fitted to the power connector PL16 when the onboard battery is installed.
- An optional Trusted Platform Module IC ([Atmel AT97SC3201](#)) with tamper detect connector PL8 can be fitted on request. *Please contact Arcom for details.* When fitted OUT6 and OUT7 functionality is disabled from GPIO connector PL9.
- An I<sup>2</sup>C interface is now available from the Serial Communications connector PL4. The I<sup>2</sup>C interface supports fast mode operation at 400kbits/sec and standard mode operation at 100kbits/sec.
- New Jumper added to select 3.3V (Default) or 5V LCD logic power supply.
- PC/104 interrupts IRQ9, IRQ14 and IRQ15 are now supported for Embedded Linux only. These new interrupts are supported in a new register "PC104I2" located at address 0x14100004 – 0x14100005. Windows CE .NET interrupt capacity is at full utilization for the VIPER, therefore the PC104I2 register is disabled in hardware when the ICR register is setup for Windows CE .NET.

## Compatibility Differences between VIPER V1I6 and V2I2

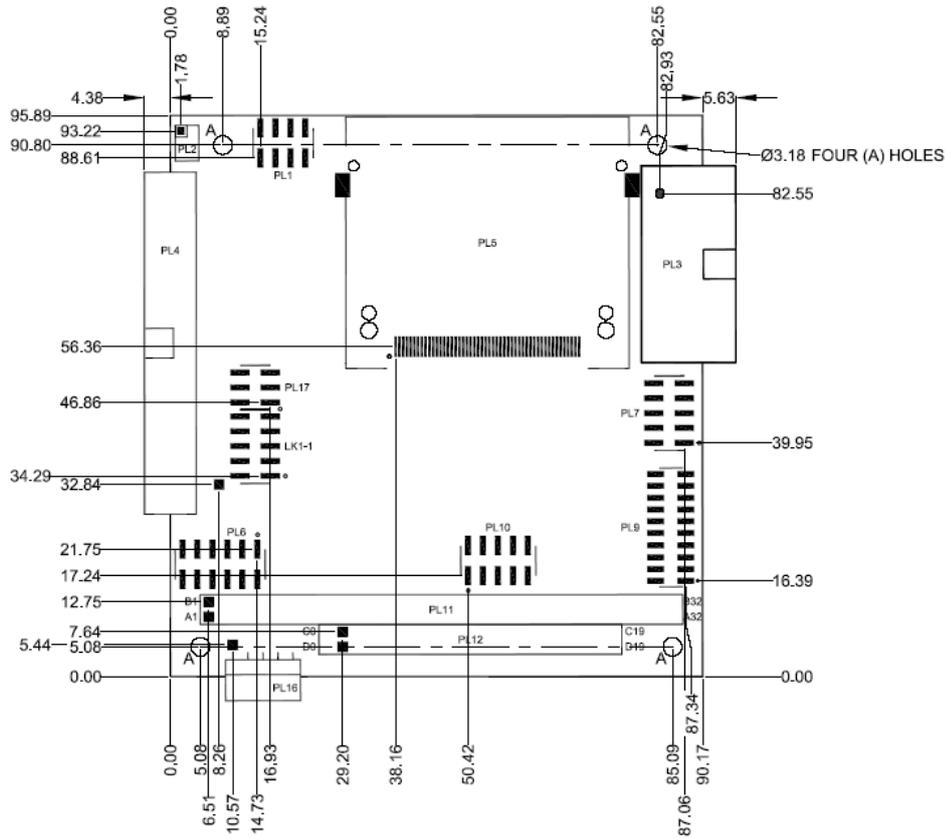
- Eight PC/104 interrupts are supported on VIPER V1I6. From VIPER V2I2 eleven PC/104 interrupts are supported for Embedded Linux. The three new supported interrupts are IRQ9, IRQ14 and IRQ15. Windows CE .NET cannot support these interrupts.
- A different Audio cable is required for VIPER V2I2 if the Microphone and Speaker outputs are required. The Microphone voltage reference has been added to the cable and DC coupling capacitors are now required in the cable for the speaker left and right channel outputs.

## Mechanical Differences between VIPER V1I6 and V2I2

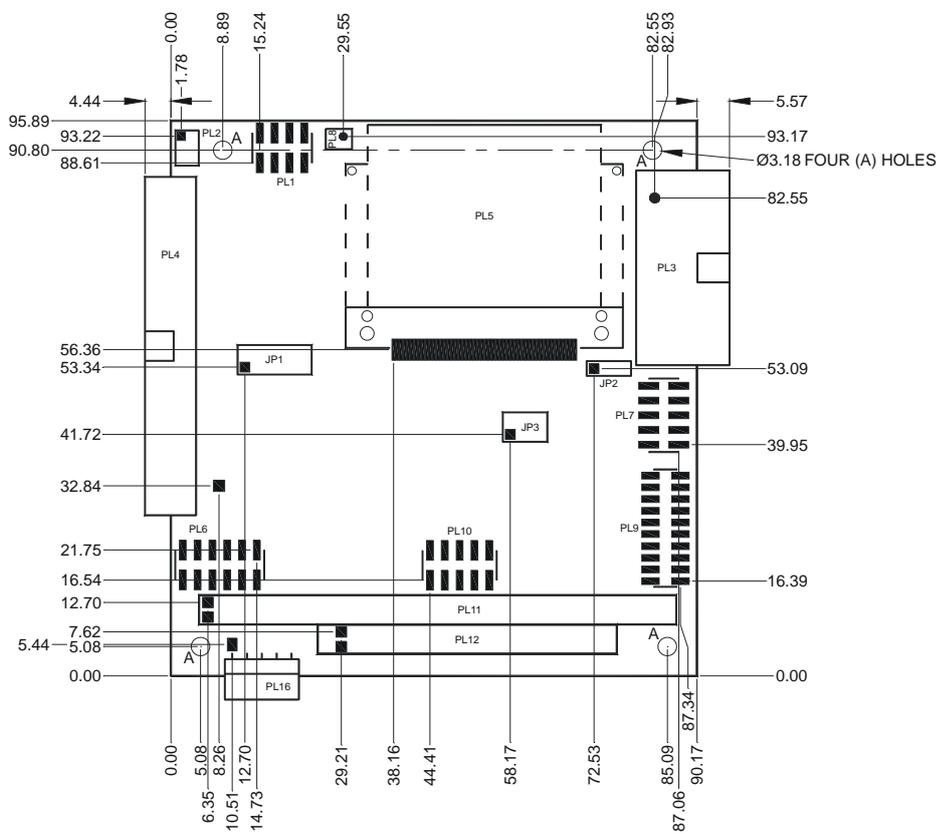
- Jumpers are now split into three jumper groups and placed near associated circuitry.
- The JTAG connector PL10 has been moved by 6.0419mm (0.23787") to the left to accommodate placement of critical logic.
- The PC/104 connectors have been moved slightly, this does not affect stacking of add-on-boards in any way.  
PL11 has moved by 0.0483mm (0.0019") down and 0.1549mm (0.0061") to the left.  
PL12 has moved by 0.0178mm (0.0007") down and 0.1524mm (0.0006") to the left.
- The Ethernet LED connector PL2 has been changed from an un-shrouded type to a shrouded type. The recommended VIPER V1I6 mating connector can still be used with the VIPER V2I2.
- A new connector, PL8 has been added for the Trusted Platform Module tamper detect [Only fitted if TPM IC is fitted].

Drawings of the VIPER V1I6 and V2I2 connector positions are shown on the following page.

## VIPER V1I6 Connector Positions



## VIPER V2I2 Connector Positions



If you have any questions about this or about any of our products please contact Eurotech Ltd Technical Support.

Will Frazer  
Technical Support Manager