

ASP-V15

Quad SHARC VME with PMC and SHARCPAC sites



- 1-4 40MHz SHARC DSPs
- Up to 64Mbytes fast DRAM
- 3Mbytes SRAM
- SHARCPAC site
- PMC site
- 12x 40Mbyte/sec link ports
- Up to 3Mbytes FLASH
- VME Format

Overview

The ASP-V15 is a 6U VME board combining the benefits of up to four SHARC DSPs and 64Mbytes of memory with SHARCPAC and PMC expansion sites and flexible multi-processor inter-communications

SHARCPAC Site

For extra processing power, the ASP-V15's SHARCPAC site can be used to fit up to eight additional SHARCs for a total of twelve - up to 1.44GFLOPs. Alternatively, SHARCPACs can be used for high speed I/O attached directly to the SHARC host bus.

PMC Site

The PCI Mezzanine Card (PMC) format (IEEE P1386.1) provides access to a wide range of I/O modules such as acquisition, networking and high speed busses. Using PCI, PMC modules exploit a widely accepted bus to which new devices are constantly being added and supported.

Master/Slave VME64 Interface

The ASP-V15 incorporates a Tundra Universe™ VME64 interface which has become an industry standard device for PCI based VME boards. The ASP-V15 supports master, slave and DMA for maximum VME throughput.

Fast DRAM

Fitted via a mezzanine module, the ASP-V15 can accommodate 16, 32 or 64Mbytes of fast 32-bit wide DRAM.

SRAM

As standard, the ASP-V15 is fitted with 3Mbytes SRAM. The board can also be supplied with up to 3Mbytes (48-bits

wide) for boards with ADSP-21062 devices, 2Mbytes (32-bits wide) for ADSP-21060 boards.

FLASH

512kbytes of FLASH memory is fitted as standard. Any onboard processor or device that can access the shared bus can read or write to the FLASH memory. This could also include remote VME boards. FLASH memory could be used to store system parameters unique to a particular installation or data logging of critical data in the event of system failure.

The FLASH memory can also be used to boot the ASP-V15 in embedded applications.

Debugging

The ASP-V15 incorporates an EZ-ICE/Mountain-ICE header to provides in-circuit emulation via JTAG. To use this facility, an EZ-ICE emulator and PC-add-in card (available separately) is required. This provides the basis for a complete development and debug environment. Using EZ-ICE allows C-source level debugging within a user-friendly GUI interface and complete control over loading, execution and inspection of program variables.

Link Ports

The ASP-V15 has direct SHARC-SHARC link port connections with all DSPs having at least one link to every other DSP. Reflecting the requirements of many applications, these permanent links simplify cabling. For maximum flexibility, the ASP-V15 provides twelve external link port connections in addition to the dedicated links: six for the local DSPs and six for the SHARCPAC. This large amount of links

allows a wide choice in network topologies by allowing DSPs to have more links with other DSPs - locally or on other boards. All of the ASP-V15's link ports, including the external connections, support the maximum of 40Mbytes/sec per link.

Additional I/O

The ASP-V15 provides the option of routing five SPORTs through the VME P2 connector. This simplifies the cabling if SPORT connections are required. (note: SPORT headers are also available on the ASP-V15 directly). The module to do this is the TP2-AD1.

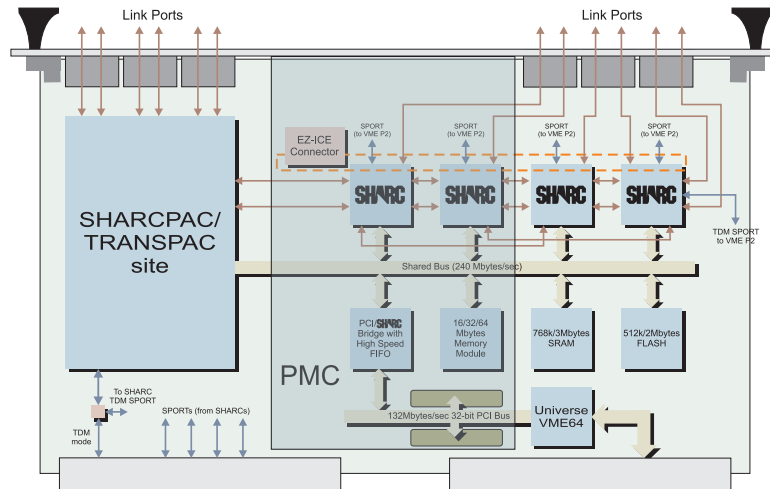
Software Support

Software support includes Transtech's ASP Toolset and a range of 3rd party products including Virtuoso™.



www.transtech-dsp.com

Block Diagram



Technical Specification

Overview

Architecture	1 or 4 DSPs in a Cluster
DSP inter-connect	Shared bus and link ports
Bus Bandwidth	240Mbytes/sec
DSP Processors	ADSP-21060 or ADSP-21062
DSP DMAs	10 channel, 240Mbytes/sec

Memory

On-chip SRAM	4Mbits - ADSP-21060
(per chip)	2Mbits - ADSP-21062
Fast DRAM	0, 16, 32 or 64Mbytes (32-bit)
SRAM	768k/3Mbytes (48-bit) -ADSP21062
	512k/2Mbytes (32-bit) -ADSP21060
FLASH	512kbytes standard/2M optional

Link Ports

External	6 (ADSP-2106xs) + 6 (SHARCPAC)
Bandwidth	40Mbytes/sec
External Connector	AMP 1-104074-0, 8-way Ribbon-Ax™

SPORTs

Total	5 (routed to VME P2)
TDM mode	SHARC-SHARCPAC routed via VME P2
Bandwidth	40Mbytes/sec

SHARCPAC site

Compliance	SHARCPAC and TRANSPAC™
Link Ports	6 - routed to VME front panel

PMC

Size	IEEE P1386.1 size 1 (32-bit)
I/O	Front Panel

VME Interface

Device Compliance	Tundra Universe II A16, A24, A32, ADO, ADOH, A16:LCK, A24:LCK, A32:LCK, D08(EO), D08(EO):RMW, D08(EO):BLT, D16, D16:RMW, D16:BLT, D32, D32:RMW, D32:BLT, D64:MBLT, D32:UAT D08(O), IH(1-7)
Interrupt Handler	I(1-7)
Interrupter	SGL, RRS, PRI, BCLR* generation
VMEbus Arbiter	ROR, RWD, early BBSY* release, bus capture and hold
VMEbus Requester	IACK* daisy chain driver, SYSCLK, first slot detector and auto slot ID
Other	

Debug Port

EZ-ICE/Mountain-ICE	14-way 0.1" key IDC header
---------------------	----------------------------

Power Requirement

5V	26W (typ)
----	-----------

Software

ASP Toolset, Virtuoso, 21K DSP libraries, Mountain-ICE and EZ-ICE
Contact Transtech for further details of software support

Contact Details

Transtech DSP

20 Thornwood Drive, Ithaca, NY 14850-1263, USA
Tel: 607 257 8678 Fax: 607 257 8679
email: sales@transtech-dsp.com

Transtech DSP

19 Manor Courtyard, Hughenden Avenue, High Wycombe, HP13 5RE, UK
Tel: +44(0)1494 464432 Fax: +44(0)1494 464472
email: sales@transtech-dsp.com



www.transtech-dsp.com