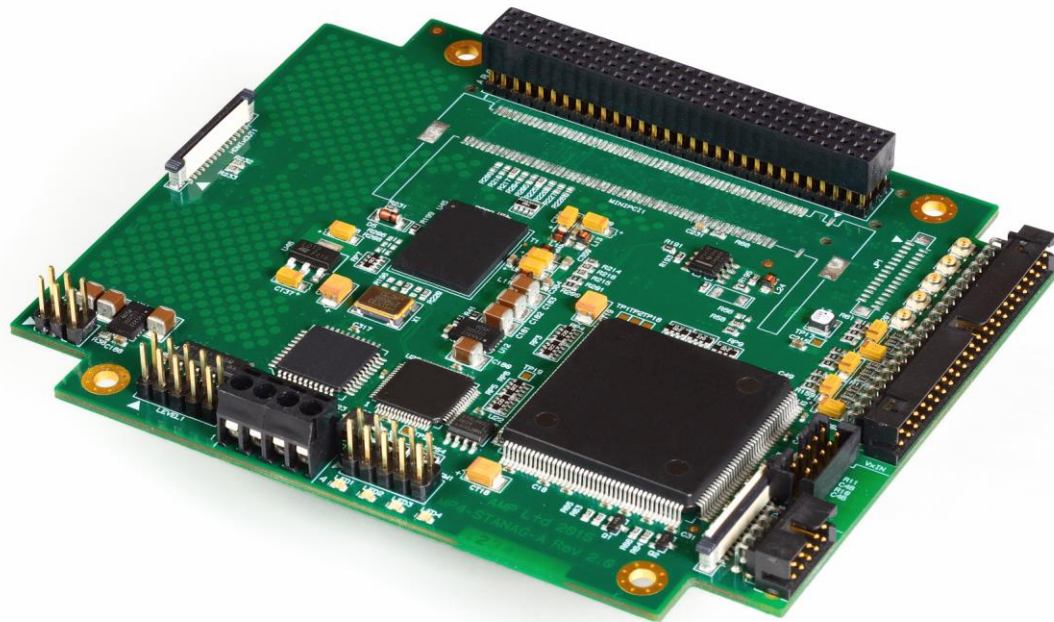


DVICOMP-IS

DVI to Composite Scan Converter Board

Document version: A.01

HARDWARE REFERENCE MANUAL



**Advanced Micro
Peripherals**
THE EMBEDDED VIDEO EXPERTS

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Revision History

Document version	Date	Comments	Approved
A.00	1 st September 2017	Initial version derived from VGASTANAG	
A.01	6 th February 2018	Updated power figures	

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Introduction

The DVICOMP-IS is a scan converter module that accepts progressive scan DVI signals at resolutions up to 1280 x 1024 from any standard graphics card for conversion to NTSC or PAL composite. The module is a standard PCI-104 form factor module.

The DVICOMP-IS is an intelligent stand-alone device with its own on-board CPU and does not require device driver software. It can however be mounted on the PCI-104 stack for mechanical convenience without consuming host CPU resources.

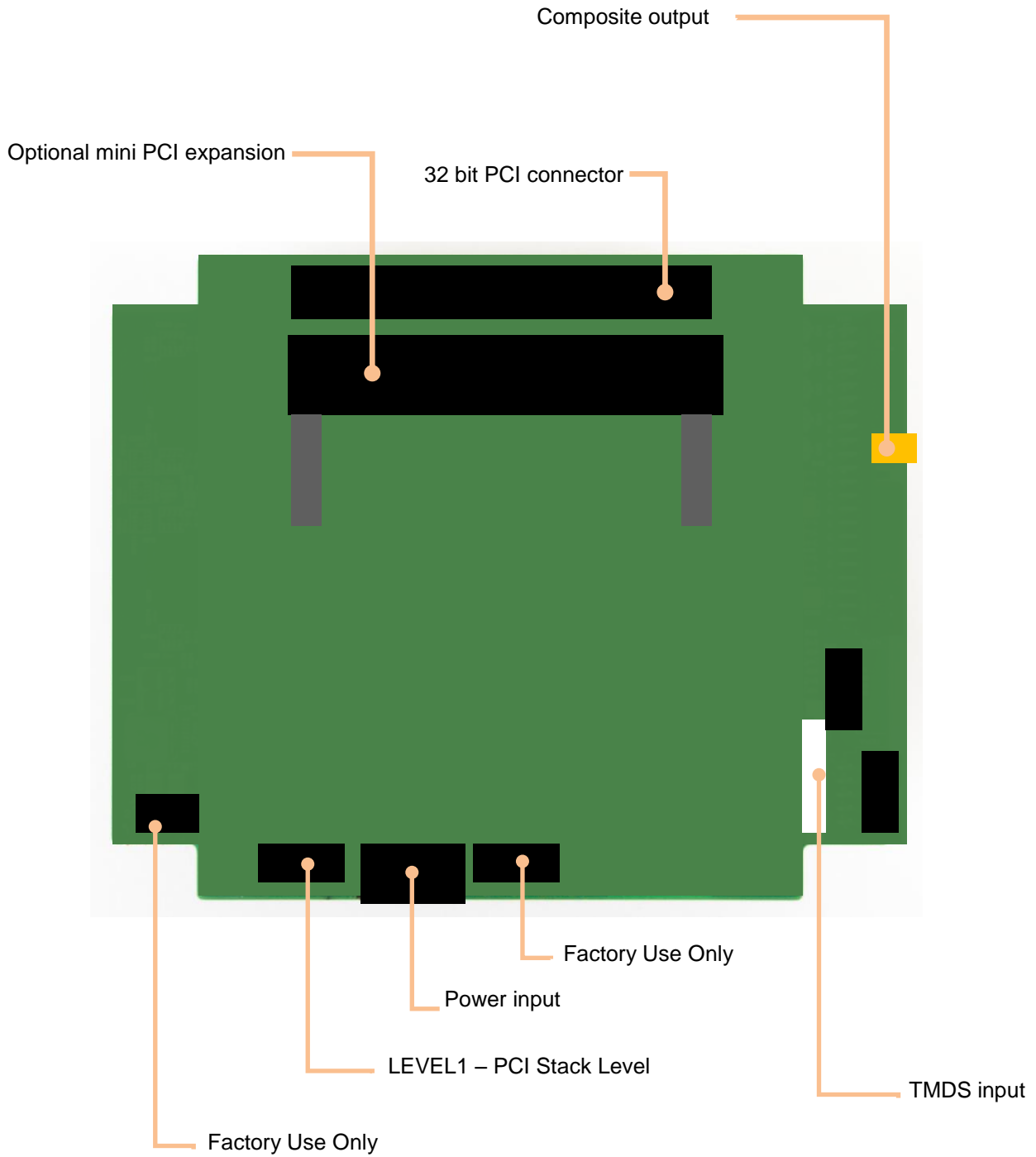
The DVICOMP-IS also features a mini PCI socket that enables an AMP video codec module to be hosted on a *PC/104-Plus* or PCI-104 stack.

AMP can provide custom configurations (subject to a minimum order quantity) for the DVICOMP. Please contact our Sales team (see [A: Contacting Advanced Micro Peripherals](#), page [17](#)) to discuss your requirements.

Features

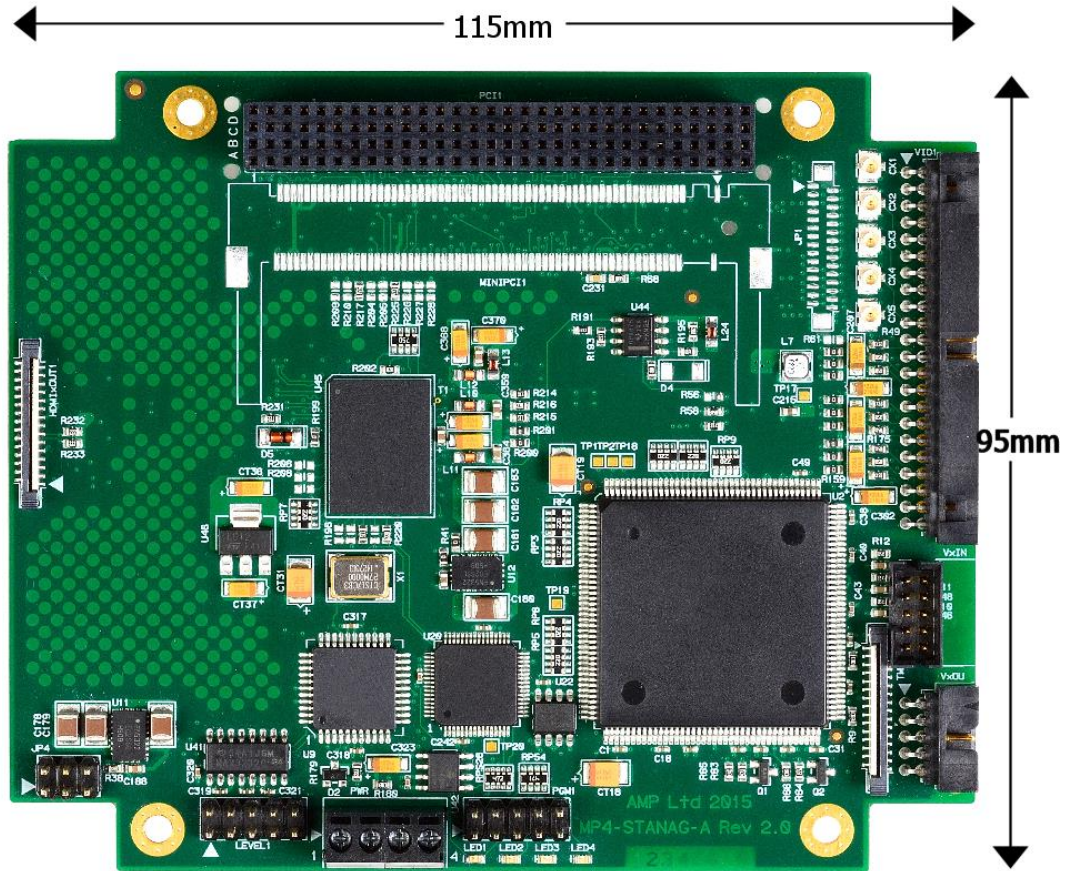
- Converts computer DVI to composite output
- Supports graphics display resolutions of 800 x 600, 1024 x 768 and 1280 x 1024
- Operating modes:
 - PAL 625 lines @ 25 fps
 - NTSC/RS-170A 525 lines @ 30 fps
- Standard PCI-104 form factor
- Stand-alone operation and O/S-neutral
- Single +5V power supply
- Mini PCI expansion socket
- Standard 3.8" x 4.5" PCI-104 stackable card.

DVICOMP-IS 'at a glance'



Technical specification

DVI input:	Standard progressive scan DVI input supporting resolutions of 800x600, 1024x768 and 1280 x 1024. Automatic detection of input resolution.
Composite output:	625 lines @ 25 fps (PAL option) 525 lines @ 30 fps (NTSC / RS-170A option) (Note: fps means 'frames per second'. Double this for fields per second) 75Ω signal output
PCI-104:	133MB/sec bus bandwidth. 3.3v Add-in Module - compliant with 3.3V PCI-104 bus signaling. Jumper-selectable PCI-104 stack level.
mini PCI:	Optional connector for mini PCI module
Power:	Single +5V @ 1.1A (max).
Environmental:	0°C to 60°C. -40°C to +85°C (-EXT option).
Physical size:	Standard 3.8" x 4.5" PCI-104 stackable card form factor (with I/O extension area).



Functional summary

Video Scaling

The DVICOMP-IS provides automatic vertical and horizontal up-scaling and down-scaling of the input video, allowing resolutions of up to 1280x1024 to be displayed on a 625 line (PAL) or 525 line (NTSC) video monitor.

Video Encoder

The video encoder features composite output with sync.

Host interface

The core functionality of the DVICOMP-IS is completely autonomous to the host PCI bus. The DVICOMP-IS is factory configured for NTSC or PAL output operation and will auto-detect the input resolution prior to performing the rescaling.

The PCI host bus is connected directly only to the [optional] mini PCI socket and enables a range of mini PCI modules to be fitted to the board. The DVICOMP-IS is specifically designed to accommodate an AMP video codec module such as the microMPEG4, microMPEG-D4 or microH264-D4. The PCI connector is also used to provide the power supply to the board. Alternatively, input power may be connected via the screw terminal block.

Please note: mini PCI is specified for 3.3v operation only and therefore the DVICOMP-IS is a 3.3v add-in card when used with a mini PCI module.

Ordering information

The following part number(s) can be used when ordering:

DVICOMP-IS-P PAL output
DVICOMP-IS-N NTSC/RS-170A output

DVICOMP-IS-P-EXT PAL output (-40°C to +85°C)
DVICOMP-IS-N-EXT NTSC output (-40°C to +85°C)

Cable-ST-MMCX-TO-BNC-S Composite output cable (MMCX to BNC)
Cable-STANAG/TMDS TMDS input cable (flat flex to DVI)

Anti-static handling

The board(s) supplied contain electrostatic components that are susceptible to permanent damage from electrostatic discharge (static electricity). To prevent electrostatic discharge, the boards are supplied in anti-static packaging.

When handling a board, observe the following anti-static precautions to alleviate risk of damage:

- Remove the board(s) from the packaging only when you are working on an anti-static, earthed surface and wearing an anti-static wrist strap.
- Retain the anti-static packaging that the board(s) were supplied in. If you remove a board from a system, store it in this packaging.

RoHS compliance



The European RoHS Directive (Restriction on the use of certain Hazardous Substances – Directive 2002/95/EC) limits the amount of six specific substances within the composition of the product. The DVICOMP-IS is RoHS compliant.

2:

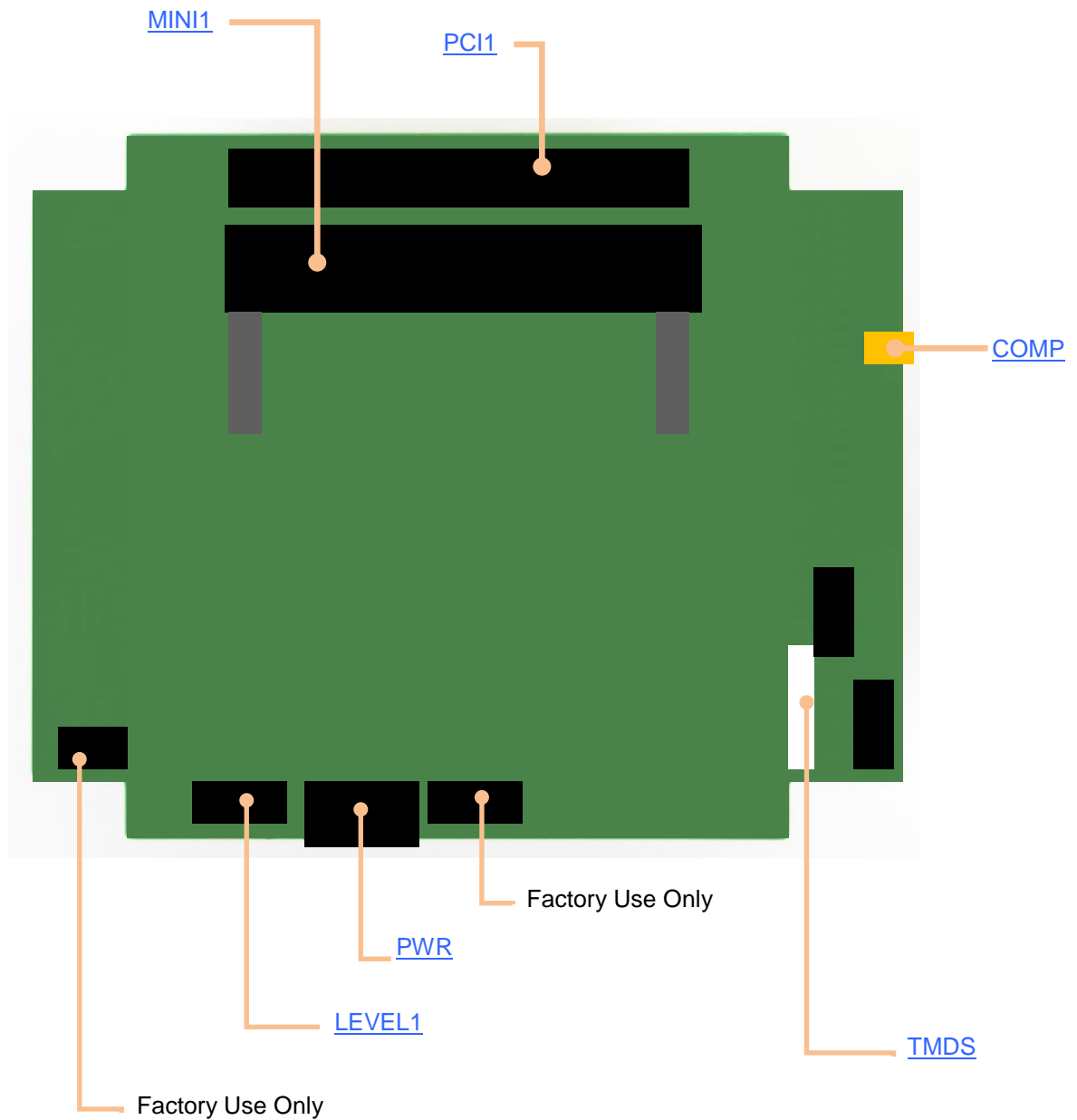
Installation

System requirements

Computer form factor	PC/104- <i>Plus</i> / PCI-104 compliant 3.3v bus signaling.
Bus	32 bit PC/104- <i>Plus</i>
Operating system	The DVICOMP-IS is self configuring and does not required any intervention from a host CPU.

Jumpers and connectors



The following diagram shows the location of the jumpers and connectors available on the DVICOMP-IS:



Conventions

The following pages provide information about these jumpers and connectors. All illustrations on these pages are shown in the same orientation as the photograph above, unless otherwise stated.

The following table explains the conventions adopted when specifying jumper settings:

Symbol	Explanation
	Jumper is fitted.
	Jumper is not fitted.

COMP – Composite output

The MMCX connector is used to provide the composite output.

Connector	Signal
COMP	Composite output

TMDS – DVI compatible (TMDS) input connected via 30-way flat flex cable

Pin	Signal	Pin	Signal
1	GND	2	Reserved
3	GND	4	Reserved
5	GND	6	GND
7	TX2-	8	TX2+
9	TX2/4 Shield	10	TX4-
11	TX4+	12	DDC CLK
13	DDC DATA	14	GND
15	TX1-	16	TX1+
17	TX1/3 Shield	18	TX3-
19	TC3+	20	Reserved
21	GND	22	GND

23	TX0-	24	TX0+
25	TX0/5 Shield	26	TX5-
27	TX5+	28	TXC Shield
29	TXC+	30	TXC-

Note: This connector is compatible with the TMDS output of the VAC2000 board.

PWR – Auxiliary power input (may also be used to supply power to the stack)

Pin	Signal
1	Not connected
2	GND
3	GND
4	+5v

PCI1 - PC/104-Plus bus.

Standard 32-bit PCI-104 bus PCI Rev 2.1 compliant, 3.3V operation.

The standard PCI bus signals are only connected to the mini PCI socket. Since mini PCI is defined as 3.3v only (not 5v compliant), the DVICOMP-IS may only serve as a 3.3v Add-in card when fitted with a module.

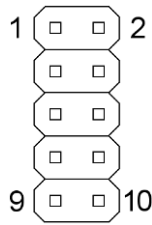
MINI1- mini PCI Type III 32-bit PCI (3.3V operation)

Standard 3.3v mini PCI bus expansion connector.

LEVEL1 – links 1-2 and 3-4

Used for IDSEL card selection.

The setting of the first two links on the LEVEL header determine the logical stack position of the DVICOMP-IS on the PCI-104 stack. This setting routes the appropriate IDSEL, PCICLK, REQ and GNT signals to the mini PCI card hosted on the DVICOMP-IS card.



The following configurations are valid.

Jumpers	IDSEL	PCICLK	REQ/GNT
	IDSEL0	PCICLK0	0/0
	IDSEL1	PCICLK1	1/1
	IDSEL2	PCICLK2	2/2
	IDSEL3	PCICLK3	2/2

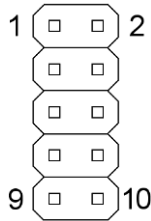
Default setting:

NOTE: WHEN USING MULTIPLE DVICOMP-IS DEVICES TO HOST MULTIPLE MINIPCI CARDS IN A SYSTEM, EACH CARD MUST HAVE DIFFERENT REQ/GNT PAIR DEPENDING ON THE LEVEL OF THE DEVICE ON THE PCI-104 STACK.

LEVEL1 – links 5-6 and 7-8

Used for PCI card interrupt selection.

The settings of the third and fourth links on the LEVEL header determine which of the four PCI interrupts service the mini PCI module hosted on the DVICOMP-IS card.



The following configurations are valid.

Jumpers	Interrupt
	INTA
	INTB
	INTC
	INTD

Default setting:

Cable set

The DVICOMP-IS may be supplied with a DVI breakout board that plugs into the TMDS connector via a flat flex cable (part CABLE-STANAG/TMDS).

A composite output cable may also be included in the form of a BNC to MMCX coaxial lead (part CABLE-ST-MMCX-TO-BNC-S). The MMCX connector interfaces with the COMP header on the board.

A:

Contacting AMP

Sales

AMP's sales team is always available to assist you in choosing the board that best meets your requirements. Contact your local sales office or hotline.

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Technical support

Comprehensive technical information is available on our websites (see above).

If you can't find the information or solution you require, AMP has a team of technical support engineers / embedded video experts available to provide a quick *and free* response to your technical queries.

Please submit your technical support query to the appropriate email address:

Technical support US

E-mail: support@amp-usa.com

Technical support UK

E-mail: support@ampltd.com