

XAAR 1003 HPC3

PRODUCT GUIDE

Overview

The Xaar Head Personality Card 3 (Xaar HPC3) provides optimal and dependable data communication between a Xaar 1003 printhead and the remainder of the digital inkjet print management chain.

This proven solution significantly reduces costs and risks faced by Original Equipment Manufacturers (OEMs) developing bespoke printing systems with consequential improvement in the time-to-market.

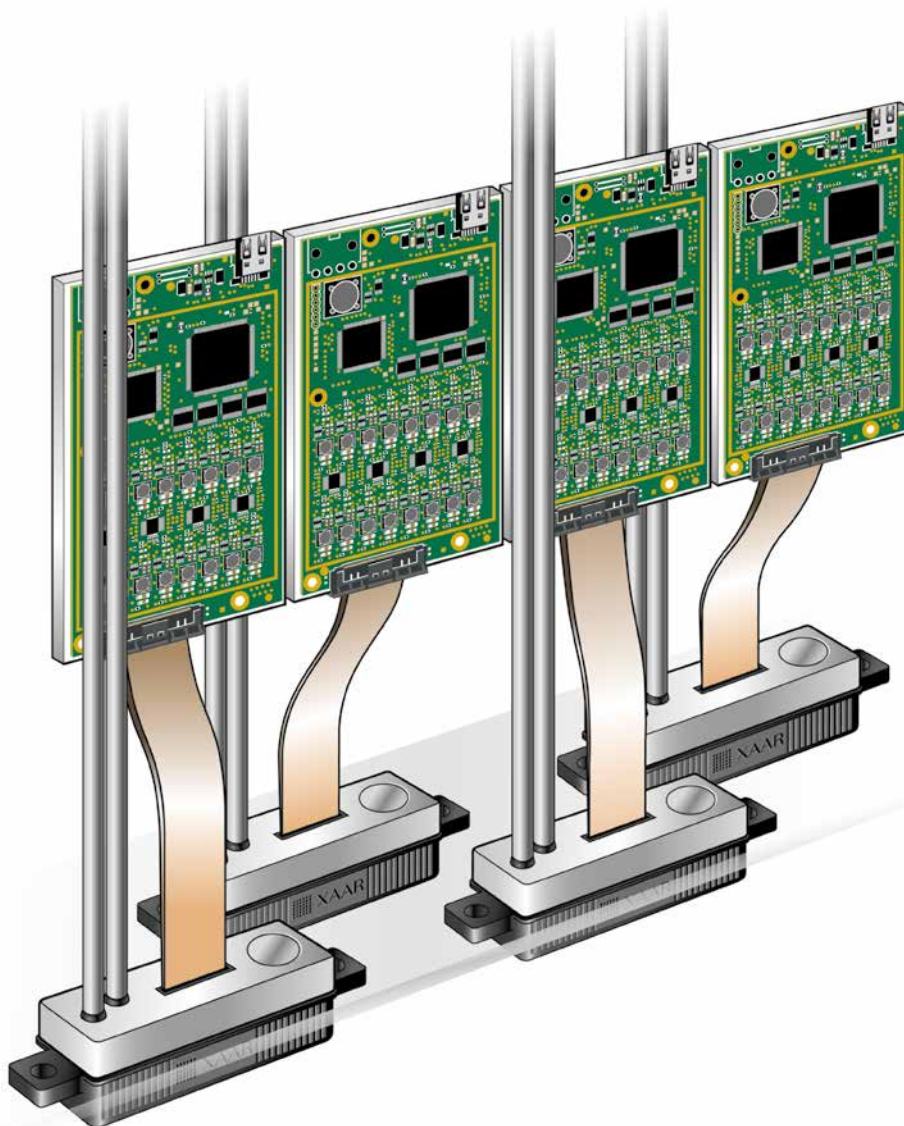
The Xaar HPC3 is extremely mechanically robust and reliable, and has a more compact footprint than the Xaar HPC2 which it replaces. The Molex connector ensures precise alignment with the Xaar printhead and the inherent locking mechanism prevents accidental disconnection.

XAAR 1003 HPC3

The narrow form factor (width) allows for flexibility in the design of the printhead. The Xaar HPC3 can be located directly above the printhead and accessed via the printhead aperture which means that maintenance is easy.

A bi-coloured diagnostic LED provides an immediate indication of system, print and power status.

The on-board temperature sensor can be used to ensure that the Xaar HPC3 is maintained within the recommended operating parameters.



The Xaar HPC3 is available in 2 versions; the Xaar HPC3 (below) and Xaar HPC3 HV (below right).

The Xaar HPC3 supports the Xaar 1003 GS6 printhead, whilst the HPC3 HV, when combined with an external power supply, can be used with Xaar 1003 GS6, Xaar 1003 GS12 and Xaar 1003 GS40 printheads.

The Xaar HPC3 is part of Xaar's range of systems components, which includes the XPM, XUSB and Xaar's Hydra. The range is designed to optimise the performance of the Xaar printheads; they are also easy to configure and integrate, reducing time-to-market.



PART NAME: XAAR 1003 HPC3
PART NUMBER: XP55500037



PART NAME: XAAR 1003 HPC3 HV
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Xaar 1003 HPC3

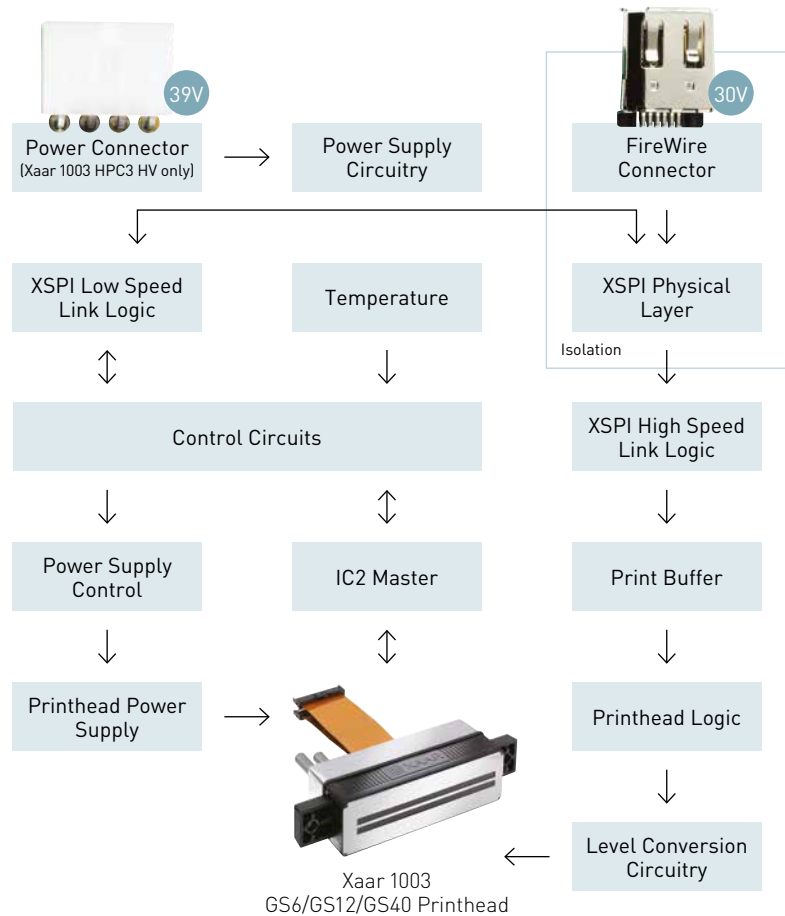
The Xaar HPC3 block diagram (right) shows the key functional modules of the Xaar HPC3 architecture.

The Xaar HPC3 is designed to:

- Pass timing commands for print triggering to Xaar 1003 GS6, Xaar 1003 GS12 and Xaar 1003 GS40 printheads
- Convert the print data received over the XSPI High Speed Link to the format required for the Xaar 1003 GS6, Xaar 1003 GS12 and Xaar 1003 GS40 printheads. The High Speed Link maintains low latency and reduces jitter
- Provide control signals and voltage supplies to the Xaar 1003 GS6, Xaar 1003 GS12 and Xaar 1003 GS40 printheads. This ensures the correct power sequencing
- Provide feedback from the printhead and Xaar 1003 HPC3 to the XPM and XUSB.

The XSPI cabling and interconnect are electrically compatible with the IEEE 1394 specification and is a cost effective solution.

The Power Supply Control block maintains sixteen (16) independently controllable power supplies for the drive channels embedded within the printhead.



Generic system design

Xaar offers a scalable data path solution. An example of a typical Xaar inkjet print chain is shown in the diagram below.

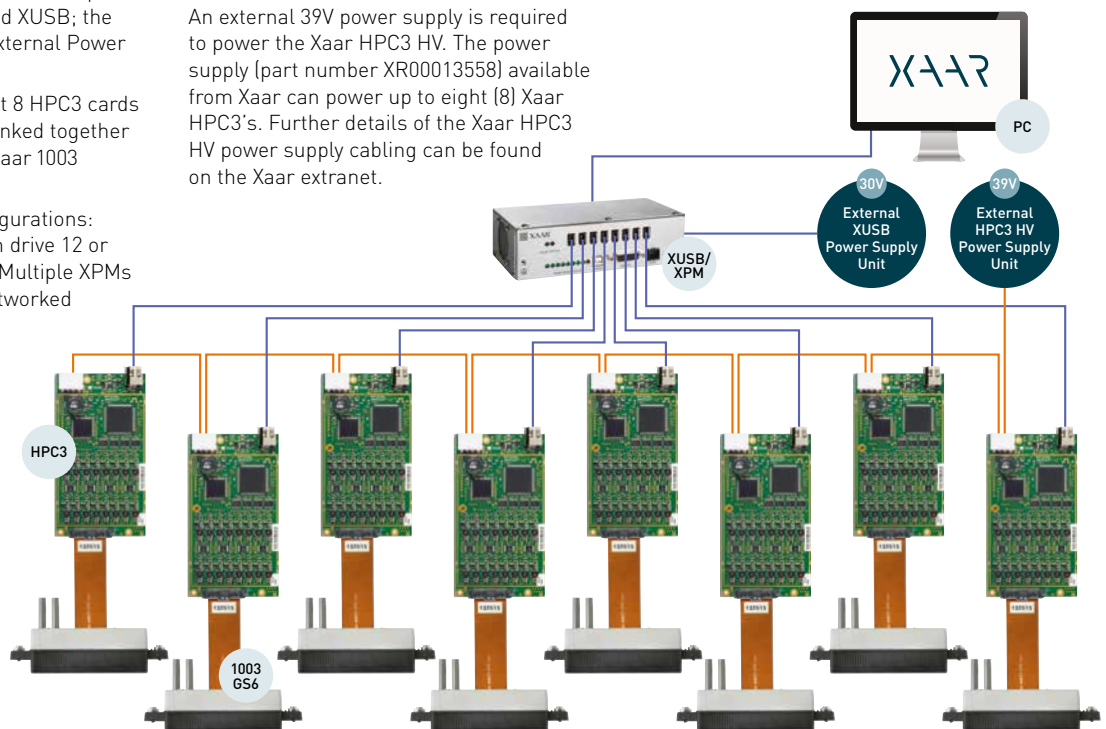
The Xaar HPC3 connects directly to the Xaar XPM and XUSB drive electronics via the Xaar Serial Printhead Interface (XSPI). Power for the Xaar HPC3 is supplied by the same IEE1394 cable used to transport data to and from the XPM and XUSB; the Xaar HPC3 HV requires an external Power Supply Unit (PSU).

Each XUSB is able to support 8 HPC3 cards and up to 12 XUSBs can be linked together to construct a printer of 96 Xaar 1003 printheads.

XPM is available in two configurations: XPM 12 or XPM 16 which can drive 12 or 16 HPC3 cards respectively. Multiple XPMs can be easily and reliably networked together using off-the-shelf Ethernet switches.

A PC running Windows is used to control the complete inkjet printer system and provides the graphical interface to the end user. The XPM and XUSB connect via a USB 2.0 data interface and the XPM via Gigabit Ethernet Connections to the OEM Windows based PC and both are controlled by the Xaar Scorpion.DLL supplied by Xaar.

An external 39V power supply is required to power the Xaar HPC3 HV. The power supply (part number XR00013558) available from Xaar can power up to eight (8) Xaar HPC3's. Further details of the Xaar HPC3 HV power supply cabling can be found on the Xaar extranet.



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Xaar 1003 HPC3 Specification

Power supply

Xaar 1003 HPC3 HV Input voltage (Dedicated power connector)	39V DC, 2.1A
Xaar 1003 HPC3 Input voltage (FireWire connector)	30V DC, 1.5A
Input power (max)	97.5W
HV voltage per output	35V DC
HV current per output	125mA @ 35V DC
HV power per output	4.4W
HV total power	70W

Physical characteristics

Height	125mm
Width	66mm
Depth	20mm
Weight	200g
Operating temperature	0°C to 40°C
Humidity	85% RH (non condensing)
Storage temperature	0°C to 65°C

Connections

Power input	1 x IEE 1399, 1 x 4-way socket
Data and power to printhead	2 x 50 way – FCC-FPC
Data input	Xaar Serial P Interface
Scorpion XPM/XUSB software	Version 5.2

The Xaar 1003 HPC3 complies with European EMC directives. However any system incorporating the Xaar 1003 HPC3 must be independently tested for EMC conformity. Please refer to the Xaar Customer Extranet, <https://extranet.xaar.com> for more details on the Xaar 1003 HPC3.



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