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VisionRGB-PRO
User Manual



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FCC Compliance

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial, industrial or business environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturers instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning! Any changes or modifications to this product not expressly approved by the manufacturer could void any assurances of safety or performance and could result in violation of Part 15 of the FCC Rules.

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DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)

Responsible Party Name:	Datapath Limited
Address:	Alfreton Road, Derby,
Phone:	+441332-294441

Hereby declares the product:

Product Name:	VisionRGB-PRO
Model Number:	DGC103

Conforms to the following specifications:

FCC Part 15 Subpart B	Class B Digital Device

Supplementary Information:

This device has been shown to be in compliance with and was tested in accordance with the measurement procedures specified in the Standards & Specifications listed above and as indicated in the measurement report number: 03U2396-1

Representative Persons Name: Tony Jones, Chairman



Signature: Date: 09 December 2003

DECLARATION OF CONFORMITY

Per EN55022

CE

Responsible Party Name:	Datapath Limited
Address:	Alfreton Road, Derby,
Phone:	+441332-294441

Hereby declares the product:

Product Name:	VisionRGB-PRO
Model Number:	DGC103

Conforms to the following specifications:

CE Regulation EN55022	Class B Digital Device

Supplementary Information:

This device has been shown to be in compliance with and was tested in accordance with the measurement procedures specified in the Standards & Specifications listed above and as indicated in the measurement report number: 03U2396-2

Representative Persons Name: Tony Jones, Chairman



Introduction

The VisionRGB-PRO captures most RGB/VGA video sources.

The VisionRGB-PRO is an ideal solution in many applications where information is distributed as RGB/VGA, including display/process monitoring in engineering, and for secure data in financial institutions and trading floors.

Windows Media Encoder® can be used to stream video across a network or save the video to disk. Windows Media Player® can be used to display the stream or the video that has previously been saved.

Using our SDK, you can interface to your own application programs.



Hardware Overview

Each VisionRGB-PRO channel can capture up to 1664x1260 pixels from a RGB source with a dot clock up to 280MHz. The RGB data is stored in a 6MB frame buffer on the VisionRGB-PRO card in real time.

The RGB data is transferred using PCI bus master DMA with scatter gather.

The RGB data can be transferred to system memory or to off-screen memory on a Datapath iH graphics card.

The RGB data can be displayed or processed in other ways.

Typical update rates with a standard VGA graphics card are:

- 1 channel at 1280 x 1024 - 12Hz.
- 1 channel at 1024 x 768 - 17Hz.

Typical update rates with a Datapath iH4 or Horizon graphics card are:

- 1 channel at 1280 x 1024 - 35Hz.
- 1 channel at 1024 x 768 - 60Hz.

Models

VisionRGB-PRO1 - A single channel PCI capture card.

VisionRGB-PRO2 - A dual channel PCI capture card.

Specification

Board Format:	PCI Level 2.1 compliant, half size plug-in card 105mm x 170mm. PCI Bus Master with scatter/gather DMA providing up to 132 Mbytes per second data transfer.
Connectors:	Two VGA D Type connectors
Maximum Sample Rate:	280 Mpixels per second.
Video Sampling:	16 bits per pixel/5-6-5 format, 24 bits per pixel/8-8-8 format.
Video Capture Memory:	6MB per channel (updated in real time).
RGB Mode Support:	640 x 480, 800 x 600, 1024 x 768, 1280 x 1024, 1600 x 1200.
Pixel Display Formats:	5-5-5, 5-6-5 or 8-8-8 pixels.
Update Rate:	User defined, typically up to 30 frames per second.
Video Format Options:	RGB plus HSync and VSync (5 wire). RGB with Sync on Green (3 wire). RGB with Composite Sync (4 wire).
Operating System Support	Windows® 2000, Windows® Server 2003 and Windows® XP.
Power Requirements:	VisionRGB-PRO1: 8 watts (max), +5 @ 1.5A, +12v @ 150mA. VisionRGB-PRO2: 10 watts (max), +5 @ 2A, +12 @ 200mA.
Operating Temperature:	0 to 35 deg C.
Storage Temperature:	-20 to 70 deg C.
Relative Humidity	5% to 90% non-condensing.

Unpacking

Your packing box should contain the following items:

- The VisionRGB-PRO data capture card.
- Installation CD ROM.

If there are any discrepancies, you should contact Datapath immediately.

Note:

All plug-in cards are static sensitive and are packed in anti-static material. Please keep the card in its packaging until you are ready to install.

It is recommended that you do not discard the packing box until you are completely satisfied with the VisionRGB-PRO and it is fully installed and working correctly. We also recommend that you make a note of the serial number of the card in a prominent place before the card is plugged into the computer. This should hasten any query should you need to contact our Technical Support Department. The serial number is displayed on the card itself and the box label.

Installing the VisionRGB-PRO

You are likely to need a flat blade and a Phillips head screwdriver for the installation of the VisionRGB-PRO card; it would be useful to have these to hand before you begin.

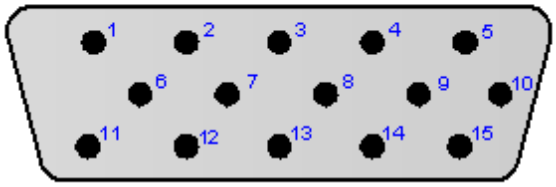
Installing the VisionRGB-PRO is a simple process, follow the steps below to be up and running in a few minutes:

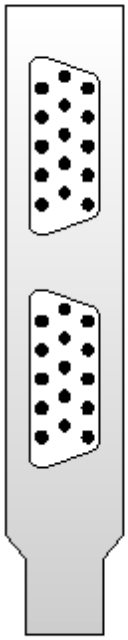
- Power down the PC (including peripherals), switch off at the mains and disconnect all the cables connected to the computer, noting the positions for accurate reconnection. Remove the PC cover.
- Locate a vacant PCI slot on the motherboard and remove the backing plate (retain all screws).
- Remove the VisionRGB-PRO card from its packaging and secure it firmly into the empty PCI slot. Extreme care should be taken when sliding the card into the PCI slot.
- Screw the VisionRGB-PRO bracket to the back panel of the PC and replace the cover.
- Connect the cable(s) distributing the RGB signals to the connectors on the VisionRGB-PRO card located on the back panel. Re-connect all cables to the PC.

VisionRGB-PRO Connections

The VisionRGB-PRO2 card has two VGA D-type connectors for two separate, simultaneous inputs. The top connector is referred to as Channel 1, the bottom connector, Channel 2. These connections have identical pin outs as illustrated on the following page.

The VisionRGB-PRO1 also has two VGA D connectors however only the top connector (Channel 1) can be used for RGB capture.





Pin 1	Red Video	**Pin 9**	N/C
Pin 2	Green Video	**Pin 10**	Ground
Pin 3	Blue Video	**Pin 11**	N/C
Pin 4	N/C	**Pin 12**	Ground
Pin 5	Ground	**Pin 13**	Horizontal Sync
Pin 6	Ground	**Pin 14**	Vertical Sync
Pin 7	Ground	**Pin15**	N/C
Pin 8	Ground		

The VisionRGB-PRO card is connected using a VGA to VGA (male) cable (not supplied). Connect one end of the VGA cable to the source i.e. the computer you wish to display on your desktop. The source is the actual VGA output from the machine, the port where you would normally plug in a monitor.

Connect the other end of the VGA cable to a VGA D connector located on the VisionRGB-PRO card in your computer.

Multiple VisionRGB-PRO Cards

If you need to capture more than 2 RGB sources, more VisionRGB-PRO cards can be installed up to a maximum of 32 cards (64 RGB sources).

Software Installation

The VisionRGB-PRO software (Driver and Application) is installed using one of the following methods:

The Datapath Software Installation CD

Insert the CD that was shipped with your card into your CD ROM drive. The installation process will start automatically.

Should the CD fail to autorun use **Explorer** to browse the CD, locate then double click on **setup.exe** file e.g. **d:/setup.exe** and click on **Install Software…** and follow the installation wizard instructions as prompted.

Also available on the Datapath CD:

The VisionRGB-PRO Release Notes - The release notes contain the latest information on the VisionRGB-PRO including:

- Installation instructions.
- Release history
- Known problems.

The VisionRGB-PRO Help File - Instructions on how to use the VisionRGB-PRO application. The help file is in **d:/software/vsnrgb.hlp**

Test patterns to assist in setting up an RGB source (see help file topic – *How to set up an RGB Source*).

From The Datapath Website:

The most up to date VisionRGB-PRO drivers can be downloaded from the web site www.datapath.co.uk/DRIVERS/vrgbpro.zip and installed using the Driver Install Wizard.

Follow the Installation Wizard instructions as prompted.

Once the installation is complete, reboot the system.

VisionRGB-PRO Application Overview

The VisionRGB-PRO application displays the RGB source in a window, it has the following features:

- Scales the RGB data to fit in the window.
- Ability to set up RGB sources accurately (settings automatically saved).
- Save a single frame to a file in one of the following formats:
  BMP, JPEG, GIF, TIFF, PNG.
- Print a single frame.
- Maintain the aspect ratio of the displayed RGB data.
- Cropping.
- Display text over the RGB data (on-screen display).
- Command line interface.
- Help file documenting all features.

Note:

The supplied drivers and software require that you are using:

- **A Pentium PCI bus computer.**
- **At least 64 Mbytes RAM.**
- **Windows® 2000, Windows® Server 2003 or Windows® XP**
- **CD ROM Drive.**
- **Vacant PCI Slot**.

Using VisionRGB-PRO With Other Datapath Products

If a non-Datapath graphics card is being used, the RGB data must be transferred to system memory and then the operating system is asked to display it. The RGB data then has to be transferred to the graphics card so that it can be displayed.

If a Datapath iH/Vantage4 multi-screen graphics card is used to display the RGB data, the RGB data can be transferred into off screen memory attached to the graphics chip on the iH/Vantage4 card. This means the data does not have to be transferred a second time. All the graphics chips that are displaying a part of the RGB data will scale the RGB data at the same time. This means that an RGB source can be displayed over a number of screens in a video or data wall application and reasonable update rates can be achieved.

Datapath Limited

Datapath has a long and very successful history in the computer graphics industry. Datapath has been designing and supplying high performance, high quality graphics display systems to the worlds largest and most demanding companies and institutions since 1982. Datapath was one of the founding companies of multi-screen Windows acceleration using single and multi board solutions. Now using the very latest display technology Datapath offers some of the world's leading multi screen graphics accelerators for the most demanding applications.

As new technology advances, so we at Datapath improve the performance and functionality of both our hardware and software to give our customers more. Following a continuous development program, we pride ourselves on our support and responsive nature towards all our customers and their changing needs. As more sophisticated equipment and techniques become readily available, so we are there to exploit the power and potential that this technology presents.

Technical Support

Users can access our technical support line using, email, and the Support page on the Datapath Website, usually with a response within 24 hours (excluding weekends).

www.datapath.co.uk/suppnew.asp

Via Email:

Send an email to support@datapath.co.uk with as much information about your system as possible. To enable a swift response we need to know the following details:

- Specification of the PC - including processor speed
- Operating System
- Application Software
- Datapath Hardware / Software
- The exact nature of the problem - and please be as specific as possible.

Please quote version and revision numbers of hardware and software in use wherever possible.

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