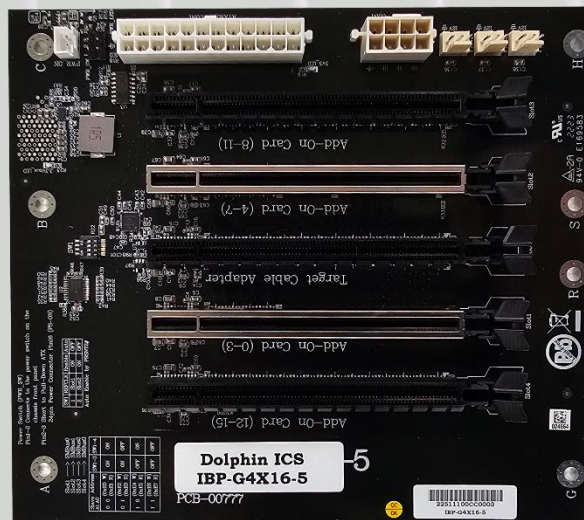




IBP-G4x16-5



IBP-G4x16-5 Backplane Users Guide
Version 1.01

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DISCLAIMER

DOLPHIN INTERCONNECT SOLUTIONS RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY OF ITS PRODUCTS TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN.

TO THE FULLEST EXTENT PERMITTED BY LAW, DOLPHIN WILL NOT BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS, LOST DATA, OR LOSS OF USE) ARISING OUT OF ANY USE OF DOLPHIN'S PRODUCTS, SOFTWARE OR SERVICE PROVIDED. DOLPHIN'S MAXIMUM LIABILITY WILL NOT EXCEED THE TOTAL AMOUNT PAID FOR THE PRODUCT BY THE PURCHASER.

LIFE SUPPORT POLICY

DOLPHIN INTERCONNECT SOLUTIONS' PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES.

ENVIRONMENTAL POLICY

Dolphin is minimizing the amount of printed documentation and software CDs in its shipments; please download additional documentation and software from www.dolphinics.com.

Terms and acronyms

Important terms and acronyms used in this manual

Dolphin Uplink card	Any Dolphin Transparent host adapter cards configured for Transparent Target functionality.
Add-in card	Any standard PCIe plug in card.

Specifications

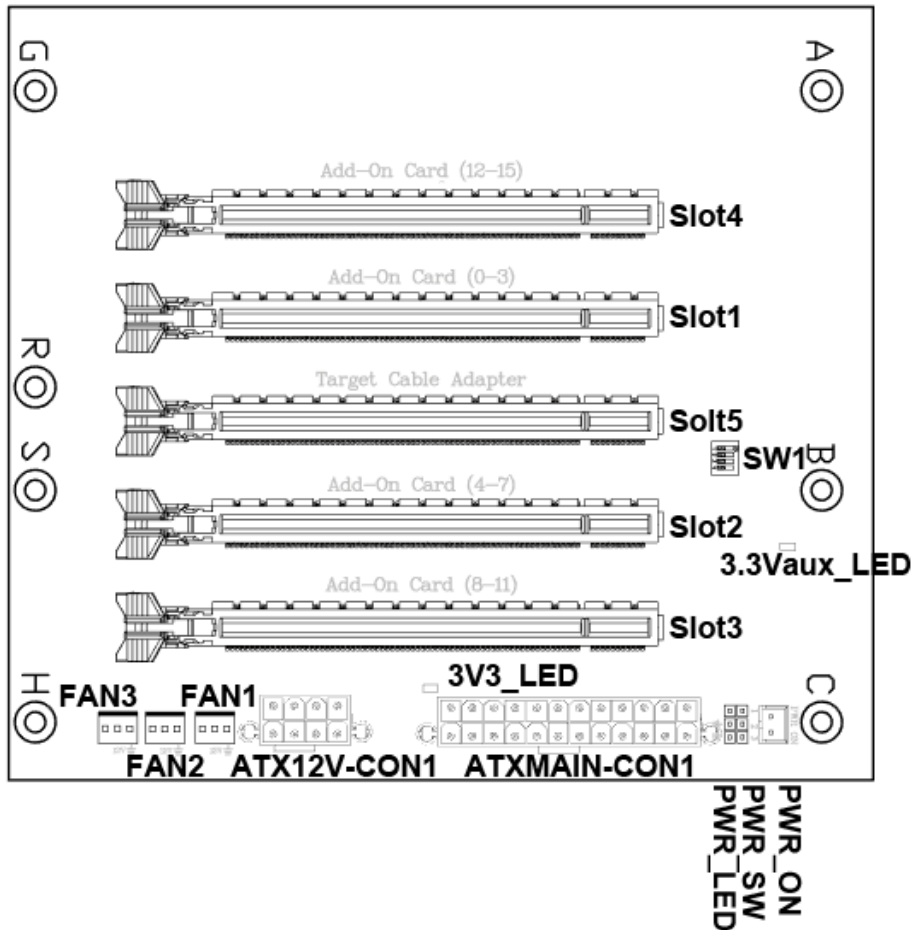
The IBP-G4X16-5 is a passive backplane supporting PCIe Gen1, Gen2, Gen3 and Gen4 speeds and x1, x2, and x4 link-widths. All Add-in slots are equal and can be used by any PCIe card. The silk print specifies an Add-in and Target cable adapter slot.

- Four PCIe x4 slot for customer Add-in Card
- Support PCIe x1/ PCIe x4/ PCIe 1.0 / PCIe 2.0 / PCIe 3.0 / PCIe 4.0
 - 152.4 mm (W) x 170.31 mm (L)
- Compliant to ATX / MicroATX cabinets.
- Micro-ATX Form Factor Mounting

Form Factor	Mounting hole location
IBP-G4X16-5	A, B, C, G, H, R, S

IBP-G4X16-5 Overview

The drawing below shows the various connectors and components on the card.



LEDs

3V3_LED: 3.3V Power LED (Green)

- Indicates the ON/OFF of ATX Power Supply

3.3Vaux_LED: 3.3Vaux Power LED (Red)

- Indicates the 3.3Vaux Power Rail is available

DIP switches

The card has one DIP-Switch. Leave it in factory default mode, ALL=OFF. Reserved for future extensions.



Pin headers and connectors

The card has the following pin headers and connectors:

Slot1, Slot2, Slot3, Slot4: PCIe x16 PCI-E 4.0 SMT Type Slot

- For PCIe Add-in Card – 4 lanes connected

Slot5: PCIe x16 PCI-E 4.0 SMT Type Slot

- For Dolphin adapter card in transparent mode.

ATXMAIN-CON1: Power Connector

• ATX 24-Pin Power Connector

Pin	12	11	10	9	8	7	6	5	4	3	2	1
Signal	3V3	+12V	+12V	5VSB	NC	GND	+5V	GND	+5V	GND	3V3	3V3
Pin	24	23	22	21	20	19	18	17	16	15	14	13
Signal	GND	+5V	+5V	+5V	NC	GND	GND	GND	PS-ON	GND	NC	3V3

Note: +5V (Pin 4, 6, 21, 22, 23) are not connected.

ATX12V-CON1: Power Connector

• ATX 8-Pin Power Connector

Pin	4	3	2	1
Signal	GND	GND	GND	GND
Pin	8	7	6	5
Signal	+12V	+12V	+12V	+12V

FAN1, FAN2, FAN3: FAN Power Connector (12V Output)

The card has 3 connectors for connecting optional cabinet fans.

- JST compatible wafer 3pin (pitch=2.54mm) connector



PWR_SW: Power Switch

• 3pin Header (pitch=2.54mm)

- Pin 1-2: Connects to the power switch on the chassis front panel

- Pin 2-3: Short to Pull-Down ATX 24pin Power Connector Pin16 (PS-ON)

(For using the ON/OFF Switch on Switching Mode Power Supply)



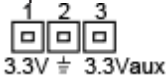
PWR_ON: Not in use

- +

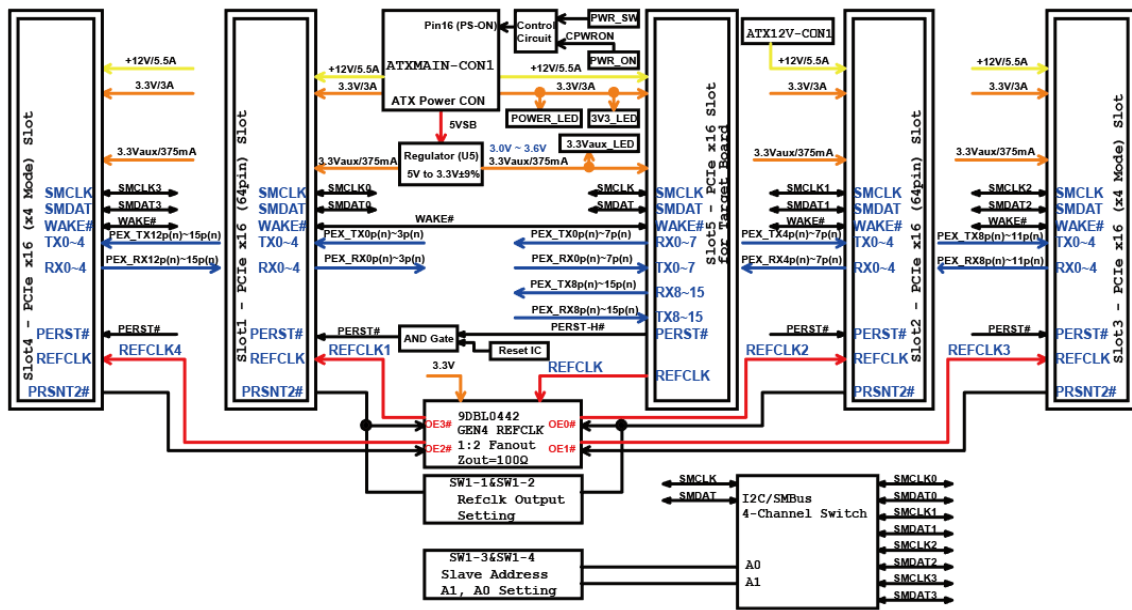


PWR_LED: 3.3V Power LED Pin Header

• 3pin Header (pitch=2.54mm)



Block diagram



Operating Environment

To maximize lifetime for the products and maintain the warranty, please honor the specified operating temperature for the PCIe uplink card and the installed PCIe device and make sure the proper air flow is present. Special care should be considered when IBP-G4X16-5 is used in office type cabinets in combination with other high energy consuming PCIe devices, e.g. not active cooled GPUs. Please consult the PCIe uplink card users guide and the installed PCIe devices users guide for details.

Installation

Step 1 - Unpack board

The IBP-G4X16-5 is shipped in an anti-static bag to prevent static electricity damage. The card should only be removed from the bag after ensuring that anti-static precautions are taken. Static electricity from your clothes or work environment can damage your PCI Express adapter card or your PC. Always wear a grounded anti-static wrist strap while opening the expansion chassis and when the IBP-G4X16-5 is removed from the anti-static bag.



Unpack the IBP-G4X16-5 from the anti-static bag using proper anti-static procedures.

Step 2 – Install the IBP-G4X16-5 in an cabinet

The backplane can be installed in an Micro-ATX compliant Chassis with proper airflow to meet the requirements of both the Dolphin uplink card and the installed IO card.

Step 3 – Connect the Power Supply

The backplane must be powered from an ATX 24-Pin Power Supply. The power supply must provide enough power for both the Dolphin uplink card and the PCIe adapter card installed.

Step 4 – Configure the Dolphin PCIe uplink card

To create a PCIe uplink to the PC Host system, you can use any Dolphin PCIe 4.0 card supporting being configured as a transparent target (MXH932, MXH94x or MXH95x) – Select the DIP switch setting “Transparent Target x4-x16 Upstream Port / Quad x4 Downstream Ports”. Please refer to the Users Guide for the selected PCIe card. The guides can be found at <https://www.dolphinics.com/MX>.

Step 5 – Install the Dolphin PCIe uplink card

Install the configured card in the slot designated for the “Target Cable Adapter” – this is the middle slot.

Step 6 – Connect a power toggle switch or jumper

Connect a power toggle switch or a jumper to the ‘PWR ON’ pin headers. This connects to the ATX power-supply Power-good pins and signals the PSU unit to start and provide power. With a toggle switch, the ATX PSU can be left switched on, and power to the device can be controlled with this switch, while with a jumper, the expansion system can be turned on or off with the ATX PSU power switch.

Support

More information about the product, support and software download can be found at <http://www.dolphinics.com>.

For general support questions, please contact Dolphin via the Jira Service Management portal:

<https://www.dolphinics.com/csp>.

Compliance and Regulatory Testing

EMC Compliance

The IBP-G4X16-5 is not tested for EMC compliance. It is the customer's responsibility to install the backplane in a proper cabinet and install the PCIe adapter cards of choice before conducting their own EMC test.

This does not ensure that it will comply with the relevant standards in any random cabinet. It is the responsibility of the integrator to ensure that their products are compliant with all regulations where their product will be used.

RoHS Compliance

The Dolphin IBP-G4X16-5 is RoHS compliant. A Compliance certificate issued by the manufacturer is available upon request.



WEEE Notice

The IBP-G4X16-5 is labelled in accordance with European Directive 2002/96/EC concerning waste electrical and electronic equipment (WEEE). The Directive determines the framework for the return and recycling of used appliances as applicable throughout the European Union. This label is applied to products to indicate that the product is not to be thrown away but returned to your local approved WEEE waste collector.



Limited Warranty

Dolphin Interconnect Solutions warrants this product to be free from manufacturing defects under the following terms:

Warranty Period

The warranty applies for one (1) year from the date of purchase. Extended warranty is available.

Coverage

To the extent permitted by applicable law, this warranty does not apply to:

- Damage caused by operator error or non-compliance with instructions available for the product.
- Use or attempt to use or program firmware not approved by Dolphin.
- Damage due to accidents, abuse, misuse, improper handling or installation, moisture, corrosive environments, high voltage surges, shipping, or abnormal working conditions.
- Damage caused by acts of nature, e.g. floods, storms, fire, or earthquakes.
- Damage caused by any power source out of range or not provided with the product.
- Normal wear and tear.
- Attempts to repair, modify, open, or upgrade the product by personnel or agents not authorized by Dolphin.
- Products for which the serial number label has been tampered with or removed.
- Damage to the product caused by products not supplied by Dolphin.

Service Procedure

In the event that the product proves defective during the Warranty Period, you should contact the seller that supplied you with the product, or if you purchased it directly from Dolphin, visit <https://www.dolphinics.com/csp> to obtain a valid RMA number and instructions. Products returned to Dolphin without a proper RMA number will not be serviced under this warranty.