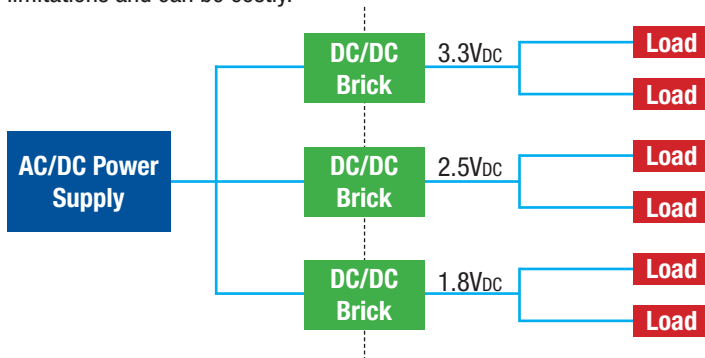


# Why IBAs work better for you

In recent years IBA (Intermediate Bus Architecture) and PoL (point-of-load) power have become familiar terms in the electronics industry. But what are the advantages of IBA over the more traditional DPA (Distributed Power Architecture)?

## What is a DPA?

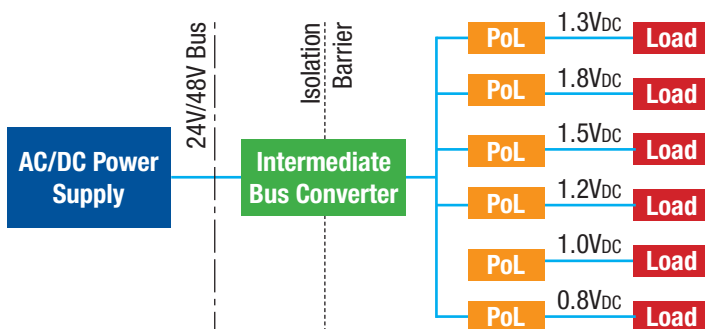
A front-end power supply generates a DC voltage that is ‘bussed’ around the system (either at 24V or 48V) with individual brick converters supplying each load with their required voltage. This architecture provides isolation from the power supply to each card and from card to card. However, in many applications - when no isolation is required or very low voltages are needed - this type of system has limitations and can be costly.



## What is an IBA?

An intermediate bus converter (or multiples in parallel for higher power applications) provide power to the intermediate bus - typically at 5V or 12V DC.

PoL converters then convert from this voltage right at the point of requirement. This removes the need for high current pcb tracking which is expensive, occupies valuable pcb space, and wastes power due to copper losses.



## The IBA advantage

In many applications, moving to an intermediate bus system using point-of-load converters can bring considerable financial savings as well as performance benefits, including:

- **Improved efficiency**

By placing highly efficient converters right at the point of demand, pcb design becomes easier with lower losses. EMC performance is also improved as high current pcb tracking is reduced.

- **Reduced cost and size**

By utilising lower cost non-isolated PoL modules to supply each voltage rail the number of relatively expensive half and quarter bricks converters is dramatically reduced. This not only reduces the cost, but also saves space on the pcb. Bus converters are also more simple in their design – and consequently less expensive - than traditional brick converters because high levels of voltage regulation are not needed (this regulation is performed by PoL converters in an IBA).

- **Improved transient response**

Due to their design and positioning close to the load itself, PoL converters offer excellent transient load response as demanded by today’s DSP, FPGA and ASIC processor chips.

- **More functionality**

Functional features, such as load sequencing or tracking (the sequence in which supply voltages are powered up and down), are all easily achievable with today’s highly specified PoL converters. Digital control via a data bus is also now available, offering on-the-fly PoL re-configuration of PoL transient response, output voltage, etc.

## C&D Technologies

With the widest range of power electronics products available today, C&D Technologies has all the components you need for your IBA - from the AC input right down to the point of load.

Bus converters, on-board AC/48VDC power modules, high specification processor support DC/DC converters and even inductors for filtering and isolation can also be sourced from C&D’s high quality product portfolio.

# Examples of IBA products

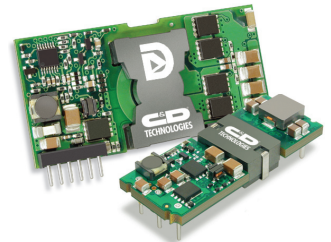
## Front End Power supply - D1U-W-1600-48 AC/DC

|                      |                                 |           |
|----------------------|---------------------------------|-----------|
| Total output power   | 1600W                           |           |
| Form factor          | 1U height x 120.6mm(W) x 305(D) |           |
| Output Voltage       | Vdc1                            | 48V       |
|                      | Vdc2                            | 3.3 or 5V |
| Rated Output Current | Iout-1                          | 33A       |
|                      | Iout-2                          | 6A        |
| Input Voltage Range  | 90-264Vac                       |           |
| Efficiency           | 90.6%                           |           |
| Input Connector      | IEC 320 C20                     |           |
| Output Conenctor     | FCI Powerblade #51732-021       |           |
| Features             | Active Power Factor Correction  |           |
|                      | Active Current Share            |           |
|                      | Hot-plug                        |           |
|                      | I <sup>2</sup> C Interface      |           |
|                      | EMI Class A                     |           |



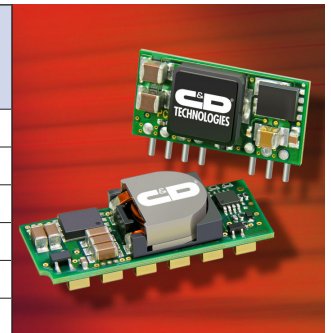
## Bus Converters

| Output Voltage | Rated Output Current | Total Output Power | Input Voltage (Nom) | Input Voltage Range | Isolation Voltage | Efficiency | Package style | Product          |
|----------------|----------------------|--------------------|---------------------|---------------------|-------------------|------------|---------------|------------------|
| 12Vdc          | 15A                  | 180W               | 48Vdc               | 36-55Vdc            | 2.25kVdc          | 96%        | 1/8 Brick     | <b>EUS15-120</b> |
| 12Vdc          | 20A                  | 240W               | 48Vdc               | 36-55Vdc            | 2.25kVdc          | 96%        | 1/8 Brick     | <b>EUS20-120</b> |



## PoL Converters (with user-selectable output voltage)

| Output Voltage | Rated Output Current | Total Output Power | Input Voltage (Nom) | Input Voltage Range | Efficiency | Package style  | Product              |
|----------------|----------------------|--------------------|---------------------|---------------------|------------|----------------|----------------------|
| 0.75-5V        | 6A                   | 30W                | 12Vdc               | 8.3-14Vdc           | 95%        | Open Frame SIP | <b>LSN2-6A, D12</b>  |
| 0.75-5V        | 6A                   | 30W                | 12Vdc               | 8.3-14Vdc           | 95%        | Open Frame SMD | <b>LSM2-6A, D12</b>  |
| 0.75-5V        | 10A                  | 50W                | 12Vdc               | 8.3-14Vdc           | 95%        | Open Frame SIP | <b>LSN2-10A, D12</b> |
| 0.75-5V        | 10A                  | 50W                | 12Vdc               | 8.3-14Vdc           | 95%        | Open Frame SMD | <b>LSM2-10A, D12</b> |
| 0.75-5V        | 10A                  | 80W                | 12Vdc               | 8.3-14Vdc           | 94%        | Open Frame SIP | <b>LSN2-16A, D12</b> |
| 0.75-5V        | 10A                  | 80W                | 12Vdc               | 8.3-14Vdc           | 94%        | Open Frame SMD | <b>LSM2-16A, D12</b> |



If you require more details and datasheets for these or any other C&D products please got to [www.cd4power.com](http://www.cd4power.com).