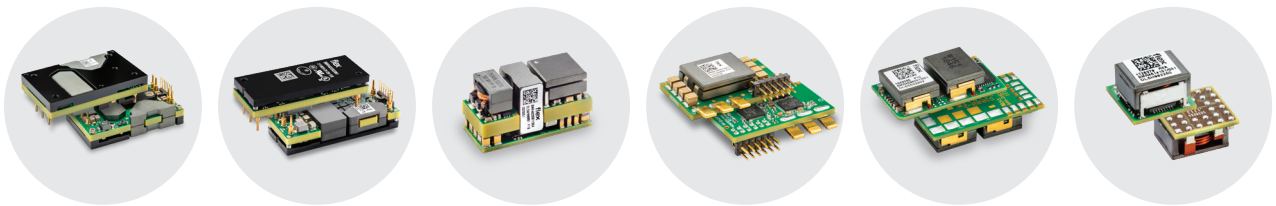




Power Modules

# DC/DC Converters Powering Network Security



## REQUIREMENTS FOR NETWORK SECURITY AND ROUTERS

Digital businesses have created a new ecosystem where there is an increased demand for more complex security measures. With this demand, several trends have developed in the area of network security and router equipment.

First, limited board space brought the emergence of smaller modules, with height reduction being the most apparent change.

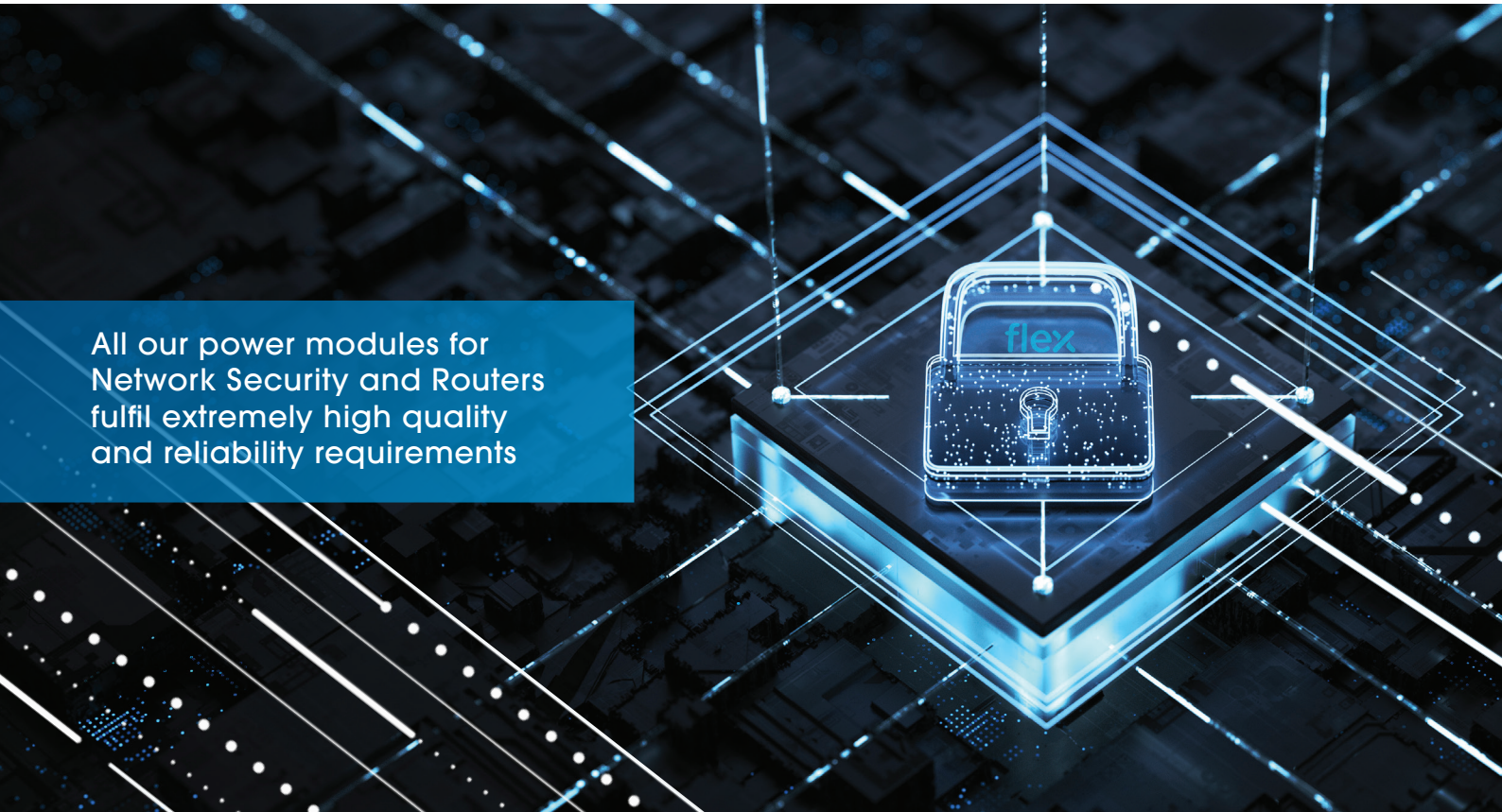
Second, there has been a transition from 12 Vdc to 48 Vdc distribution. By increasing voltage four-fold, the current needed to deliver the same amount of power can be similarly decreased. This reduces loss by a factor of 16 thus avoiding the need for large, expensive power cables.

Third, conversion approaches have evolved.

In a two-stage conversion approach, the 48 Vdc supply to a board is first converted to 12 V by an Intermediate Bus Converter (IBC), then by a local Point of Load (PoL) converter to the low voltage required by some components. This architecture is very efficient and can deliver high currents if required. Conversely, it can provide low currents in a cost-effective system.

The direct conversion approach uses a single stage to convert the 48 V supply voltage directly to the low voltage required by a load, which is typically less than 2 V. By keeping the power supply at the higher 48 V voltage right up to the load, this can be helpful where high current is required. Examples of such applications are for high-end processors, ASICs and FPGAs.

Whether using the two-stage or direct conversion approach, today's DC/DC converters typically include sophisticated digital controls such as the industry-standard PMBus.



All our power modules for  
Network Security and Routers  
fulfil extremely high quality  
and reliability requirements

## LATEST DIGITAL MODULES FOR NETWORK SECURITY AND ROUTERS

### BMR491 – high power DC/DC IBC in a quarter brick (up to 2450 W peak)



- Continuous power up to 1540 W
- Hybrid regulated ratio & fixed regulated versions
- High efficiency of 97.7%

### BMR492 – high power DC/DC IBC in an eighth brick (up to 1100 W peak)



- Continuous power up to 800 W
- Excellent thermal behavior
- Digital interface available in 7 pin industrial standard

### BMR482 – 48 V to load direct conversion (up to 660 A)



- Small ½ in<sup>2</sup> footprint
- 1 main and up to 5 satellite units can be used in parallel
- High efficiency and excellent thermal performance

### BMR474 – digital PoL regulator (80 A)



- Board space efficient design using vertical SIP mounting
- Wide output range with 0.6-3.3 V
- Improved fast load transient response

### BMR469 – digital PoL regulator (2 x 25 A or 2 x 40 A)



- Dual output non-isolated converter
- Wide input range with 7.5 – 14 V
- High efficiency of 92.6 %

### BMR461– non-isolated digital PoL regulator (6-18 A)



- Small package 0.48 x 0.48 x 03.2 in
- PMBus compatible
- High MTBF value of 24 Mhrs

### Product Variants (more available at [flexpowermodules.com](https://flexpowermodules.com))

PRODUCT NUMBER	V <sub>out</sub> (V)	V <sub>in</sub> (V)	I <sub>out</sub> (A)	I <sub>out_peak</sub> (A)	P <sub>out</sub> (W)	η (%)
BMR491 xx08/857	8-13.2	48-60	205	2450	1540	97.6
BMR491 xx03/851	8-13.2	40-60	108.3	-	1300	97.2
BMR492 0302/861	12	40-60	50	-	600	96.7
BMR492 0300/864	9.5-12	40-60	92	1100	800	97.3
BMR482 0001/004	0.5-1.35	40-60	110	-	88	91.3
BMR474 xx01/001	0.6-3.3	6-15	80	-	198	95.1
BMR469 6001/001	0.6-5.5	7.5-14	25/50	-	50/100	94.3
BMR469 0000/001	0.6-5.5	7.5-14	40/80	-	100/200	92.6
BMR461 4x01/0xx	0.6-1.8	4.5-14	18	-	32.4	96
BMR461 3x01/0xx	0.6-5	4.5-14	12	-	60	96
BMR466 xxxx/xxx	0.6-1.8	4.5-14	60	-	108	95
PMU	0.6-5.5	4.5-17	4/6/8	-	22/33/44	95

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