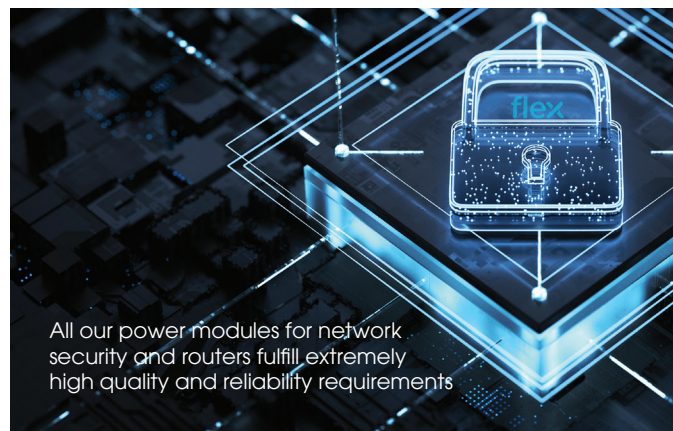


DC/DC Converters powering Network Security

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.

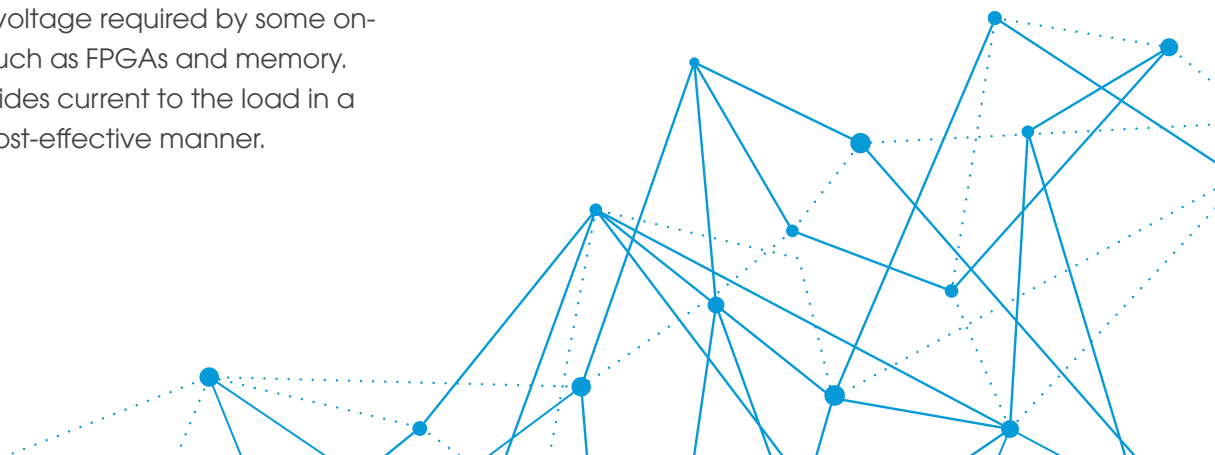
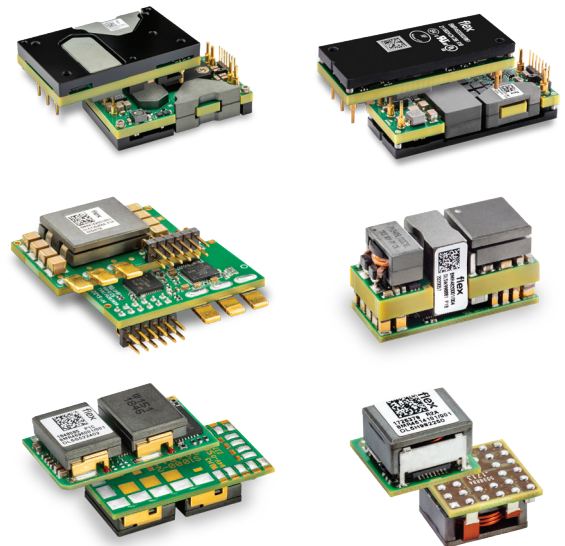
There has been a transition from 12V_{DC} to 48V_{DC} distribution for cloud applications. By increasing voltage four-fold, the current needed to deliver the same amount of power can be similarly decreased. This reduces loss by a factor of 16 thus avoiding the need for large, expensive power cables.



Power conversions have also evolved as chassis power increased. In a two-stage conversion approach, the 48V_{DC} supply to a board is first converted to 12V by an Intermediate Bus Converter (IBC), then by a local Point of Load (PoL) converter to the low voltage required by some on-board components such as FPGAs and memory. This architecture provides current to the load in a highly efficient and cost-effective manner.

The direct conversion approach uses a single stage to convert 48V supply voltage directly to the low voltage required by a load, which is typically less than 2V. By keeping the power supply at the higher 48V 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.



Latest Network Security Power Modules



BMR491 – High power DC/DC IBC in a quarter brick (up to 2450W_{peak})

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

Dimensions: 58.4 x 36.8 x 14 mm
2.3 x 1.45 x 0.55 in



BMR474 – Digital PoL regulator (80A)

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

Dimensions: 33 x 8.6 x 19 mm
1.3 x 0.34 x 0.75 in



BMR492 – High power DC/DC IBC in an eighth brick (up to 1100W_{peak})

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

Dimensions: 58.4 x 22.7 x 12.7 mm
2.3 x 0.89 x 0.5 in



BMR469 – Digital PoL regulator (2x25A or 2x40A)

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

Dimensions: 25.4 x 14.5 x 5.8 mm
1 x 0.57 x 0.23 in



BMR482 – 48V to load direct conversion (up to 110A)

- Small ½ in² footprint
- 1 main and up to 5 satellites can be used in parallel for up to 660A
- High efficiency of 91.3% and excellent thermal performance

Dimensions: Main 30 x 12.7 x 16.3 mm
1.18 x 0.5 x 0.64 in
Satellite 30 x 12.7 x 14.9 mm
1.18 x 0.5 x 0.59 in



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

- Small package
- PMBus compatible
- High MTBF value of 24 Mhrs

Dimensions: 12.2 x 12.2 x 8 mm
0.48 x 0.48 x 0.31 in

Focus Products

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

Visit flexpowermodules.com for more product variants and a wide range of non-isolated Point of Load converters.