

## Ultimate 100G Performance

### Maximum capacity and reach for Agile Core Express networks

Telecom service providers and enterprises have made it clear – they need 100Gbit/s transport technology in their networks in order to handle increased data traffic and bandwidth consumption. While the industry has moved quickly with the development of 100G, there is no one-size-fits all in 100Gbit/s transport. Part of ADVA Optical Networking's application optimized 100G family, the 100G Coherent Transponder has been designed to provide the ultimate capacity and reach for Agile Core Express networks.



### Product Overview

The ADVA FSP 3000 is a scalable optical transport solution with state-of-the-art 100Gbit/s transmission technology. A key strength of the FSP 3000 is its market-leading price-performance ratio for a wide range of network applications. ADVA Optical Networking has developed a diverse family of 100Gbit/s linecards, each optimized for their role in the network. The 100G Coherent Transponder has been developed to transport huge amounts of traffic over ultra-long haul distances with higher spectral efficiency.

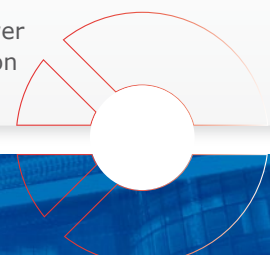
### The Ultimate in Performance

The 100Gbit/s Coherent Transponder is a high performance network interface using OIF compliant DP-QPSK modulation plus coherent detection. Polarization multiplexing and multi-level modulation format reduces symbol rate to 28GBaud. Due to the integrated digital signal processing, chromatic and polarization mode dispersion is compensated for up to 2500km on standard single mode fiber. G.709 compliant multiplexing and mapping allows both 100GbE and OTU4 to be carried. Nyquist Criteria are fully met with a 60GS/s sampling rate ADC. SD-FEC based on turbo product codes yields many benefits,

including a coding gain  $>11\text{dB}$  with 15% overhead, a FEC limit better than  $1 \times 10^{-2}$ , an error floor below 10<sup>-18</sup>, and burst error tolerance above 2000 bits. The OSNR required at FEC threshold is below 13dB. Link performance monitoring is integrated for DGD, CD, and pre-FEC statistics.

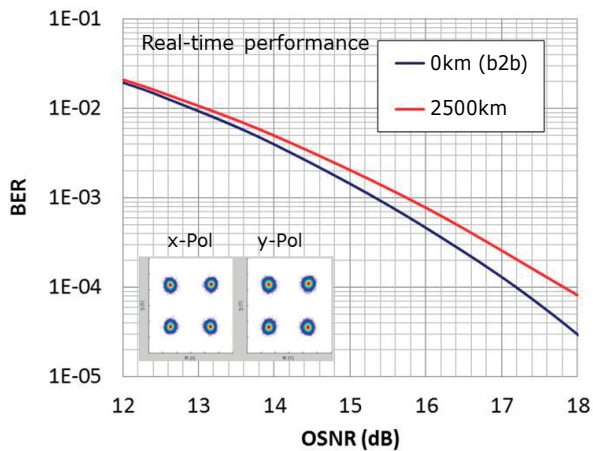
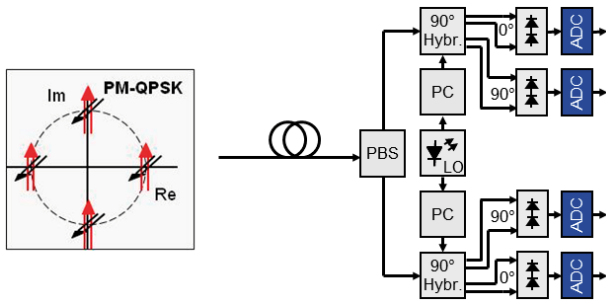
### Features & Benefits

- 100G In, 100G Out, ULH Performance
- 10x spectral efficiency of 10Gbit/s  
9.6Tbit/s system capacity
- DP-QPSK & high-gain SD-FEC  
Clear upgrade due to 10G OSNR performance
- DSP-based CD/PMD compensation 2500km+  
w/o any inline compensation
- Intradyne receiver  
Tunable filter function in ROADMs
- Hybrid Raman/EDFA  
amplification,  $>4\text{dB}$  lower  
optical noise contribution  
over EDFA only



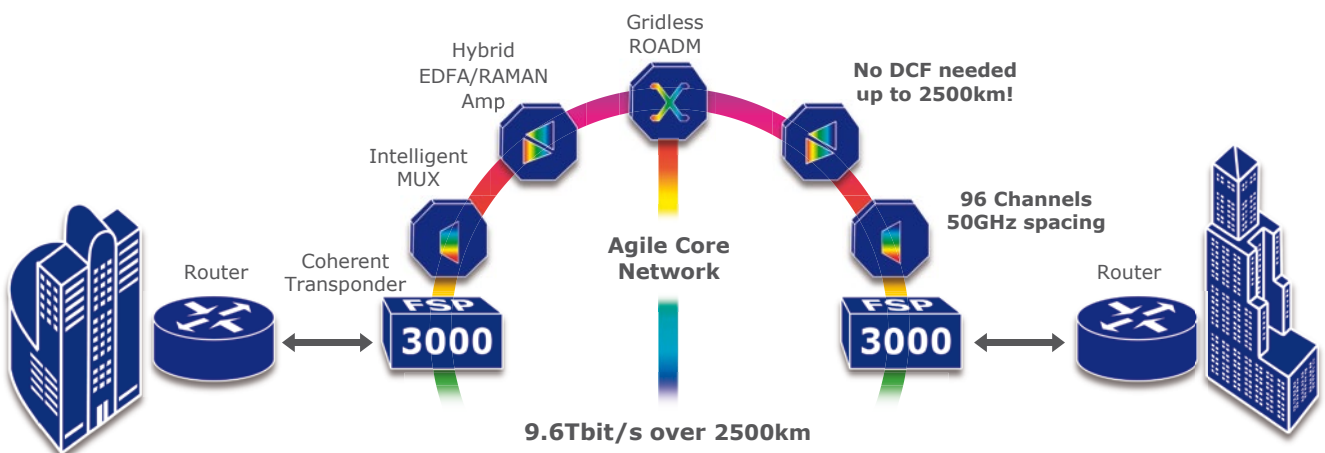
## Technical Information

Card (with clients)	Typ. Power (W)	Max. Power (W)	Slots	Supported Shelves	Capacity Per Shelf
WCC-PCTN-100G (Core 100G Transponder)	139W	157W	4	SH9HU	400Gbit/s



### Specifications

- OSNR performance
  - Typical 13dB @ FEC threshold
- PMD tolerance
  - Measured beyond 30ps PMD, >100ps DGD @ polarization rotation of 2000rad/s
- CD compensation
  - 50,000ps/nm
- 16 ROADMs cascaded
  - <1dB OSNR penalty
- Latency per pair
  - 11μs (w/o SDFEC, w/ GFEC)



For more information please contact an ADVA Optical Networking consultant or visit us at [www.advaoptical.com](http://www.advaoptical.com)

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**ADVA**<sup>TM</sup>  
Optical Networking