

# PHOTONICS spectra®

## WHITE PAPERS & APPLICATION NOTES

### The Application of WDM Channel Skip Filters

Channel skip filters enable precision band splitting in telecommunications options, offering improved performance over edge pass filters at a cost adaptable to any project budget.



By Rebecca Saurbrik and Xiaonan Zeng, Iridian Spectral Technologies

Channel skip filters are components added to wavelength division multiplexing (WDM) add/drop modules — in both coarse wavelength division multiplexing (CWDM) and dense wavelength division multiplexing (DWDM) applications — to facilitate band splitting and to manage multiple ITU channels.

These filters feature narrow transitions from pass band to blocking band, minimizing lost channels while maintaining high spectral efficiency (i.e., limiting insertion loss) since the express channels undergo only one reflection.

Channel skip filters are designated in terms of “skip(N)” where “N” represents the channels separated by the filter blocking multiple wavelengths from multiplexed signals, and “0” represents skipped channels. For example, a skip(0) filter covers four channels, with all channels accounted for and zero channels being skipped. A skip(1) filter covers five channels, but one is skipped, meaning its signal is lost.

For a long time, edge pass filters primarily filled this role, despite being limited in that they only permit short wavelength bands or long wavelength bands to pass (while blocking the others). Skip filter technology was available, but its implementation into WDM add/drop modules was prohibitively expensive and its performance was questionable.

With vision of the forefront, skip filter technology has evolved over the past 20 years to the point where it presents not only a feasible telecommunications design option but a superior option in terms of performance and cost.

### The Application of WDM Channel Skip Filters

Telecom channel skip filters are components added to wavelength division multiplexing (WDM) add/drop modules — in both coarse wavelength division multiplexing (CWDM) and dense wavelength division multiplexing (DWDM) applications — to facilitate band splitting and to manage multiple ITU channels. These filters feature narrow transitions from pass band to blocking band, minimizing lost channels while maintaining high spectral efficiency (i.e., limiting insertion loss) since the express channels undergo only one reflection.

[DOWNLOAD WHITE PAPER](#)



# IRIDIAN

SPECTRAL TECHNOLOGIES

### More White Papers from This Sponsor

- [Multiband Optical Filters Are Telecom Networks' Multitaskers](#)
- ["Fingerprint" vs Handheld Raman Applications and the Different Optical Filters That Enable Them](#)
- [Hybrid Gain Flattening Filters in Optical Fiber Amplifiers](#)

Visit [Photonics Media](#) to download other white papers and learn more about the latest developments in lasers, imaging, optics, biophotonics, machine vision, spectroscopy, microscopy, photovoltaics and more.

[www.photonics.com/WhitePapers.aspx](http://www.photonics.com/WhitePapers.aspx)

We respect your time and privacy. You are receiving this email because you are a Photonics Spectra magazine subscriber. You may use the links below to manage your subscriptions or contact us.

Questions: [info@photonics.com](mailto:info@photonics.com)

[Unsubscribe](#) | [Subscribe](#) | [Subscriptions](#) | [Privacy Policy](#) | [Terms and Conditions of Use](#)

Photonics Media, 100 West St., PO Box 4949, Pittsfield, MA 01202-4949

© 1996 - 2021 Laurin Publishing. All rights reserved. Photonics.com is Registered with the U.S. Patent & Trademark Office. Reproduction in whole or in part without permission is prohibited.



LAURIN PUBLISHING

PHOTONICS MEDIA