WaveXpander™
4 Channel

WAVESPLITTER™
Technologies, Inc.

WaveXpander™ 4 Channel Interleaver

Features

- Dense channel spacings
- Low insertion loss
- Good channel uniformity
- Wide wavelength coverage
- Expandable and scaleable

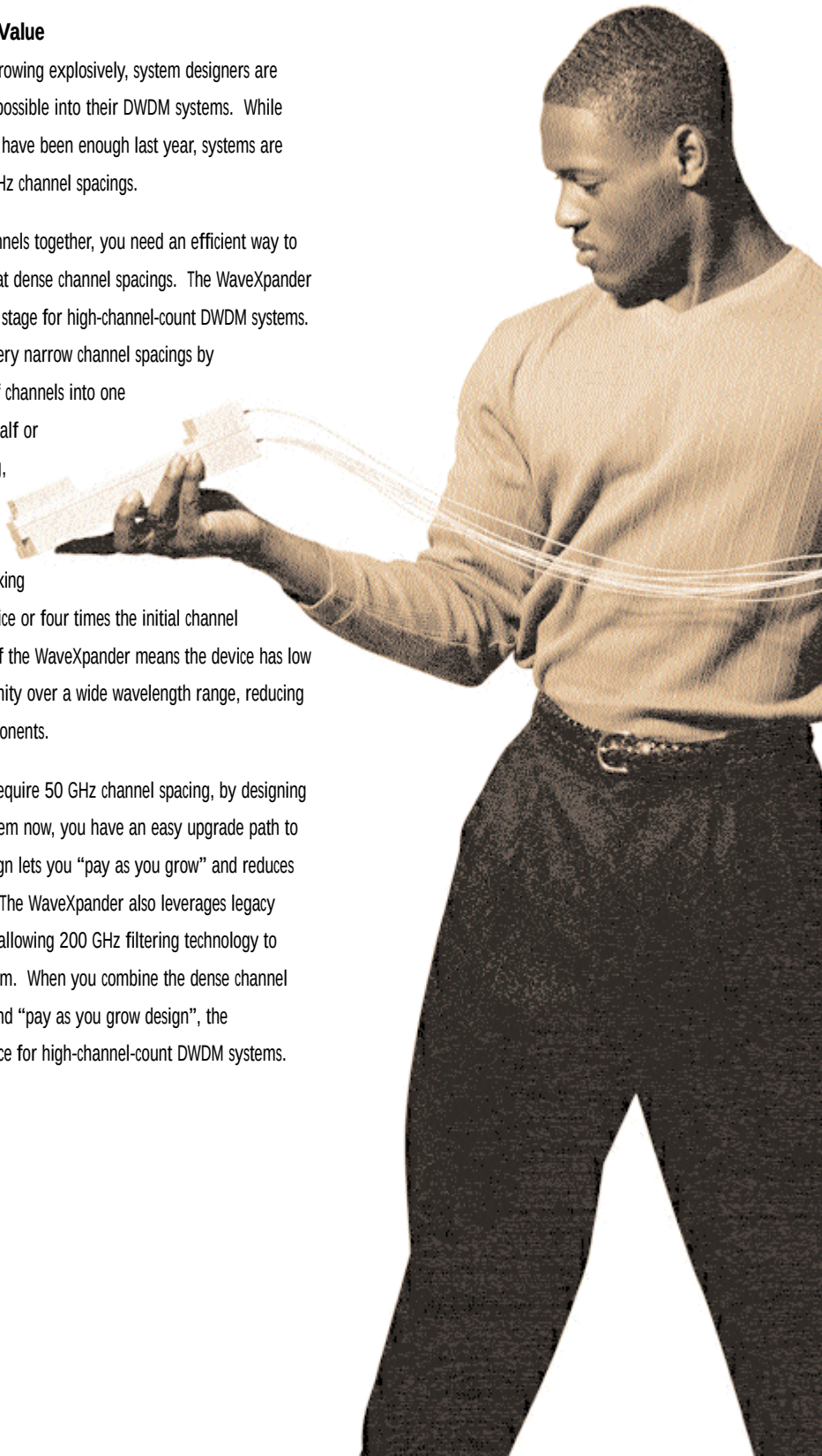
Benefits

- "Pay as you grow" design
- Efficient use of bandwidth
- Allows use of existing filter technology
- Low first installed cost

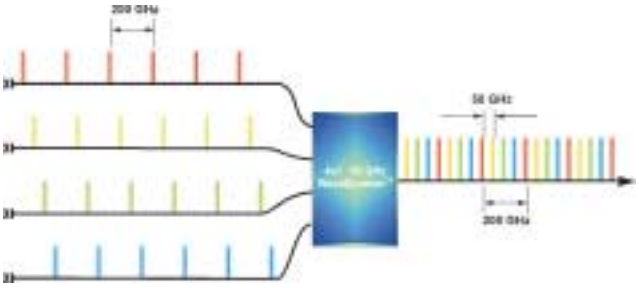
Product Capabilities and Value

With the need for bandwidth growing explosively, system designers are packing as many channels as possible into their DWDM systems. While 200 GHz channel spacing may have been enough last year, systems are now being designed with 50 GHz channel spacings.

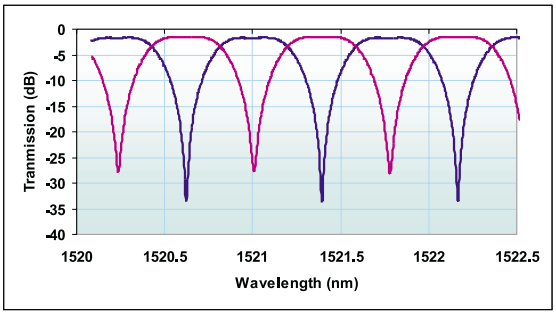
To tightly pack the DWDM channels together, you need an efficient way to combine and filter the signals at dense channel spacings. The WaveXpander is a dense channel interleaving stage for high-channel-count DWDM systems. The WaveXpander allows for very narrow channel spacings by interleaving two or four sets of channels into one densely packed set with one-half or one-fourth the channel spacing, respectively. Applied in reverse, the WaveXpander greatly simplifies the demultiplexing task by allowing filtering at twice or four times the initial channel spacing. The all-fiber design of the WaveXpander means the device has low insertion loss and good uniformity over a wide wavelength range, reducing the load on other system components.



While not all current systems require 50 GHz channel spacing, by designing the WaveXpander into the system now, you have an easy upgrade path to add bandwidth later. This design lets you “pay as you grow” and reduces the first installed system cost. The WaveXpander also leverages legacy infrastructure and technology, allowing 200 GHz filtering technology to work in a 50 GHz DWDM system. When you combine the dense channel capability, low insertion loss, and “pay as you grow design”, the WaveXpander is a natural choice for high-channel-count DWDM systems.



In the example depicted above, the WaveXpander™ allows for very narrow channel spacing by interleaving four sets of 200 GHz-spaced channels into one densely packed set of 50 GHz channels. Applied in reverse, the WaveXpander greatly simplifies the demultiplexing task by allowing filtering to occur at 200 GHz spacings, rather than 50 GHz.



Typical spectra of a 1x2 flat-top WaveXpander.™ Features include low insertion loss performance over a large channel passband.

For more information on any WaveSplitter product contact your sales representative listed on our web site www.wavesplitter.com. Or contact WaveSplitter Technologies, Inc. directly at 510.580.8888.

Performance Specifications for WaveXpander™ 4 Channel

Parameters	1 x 4 Demultiplexer				4 x 1 Multiplexer			
Spectral Shape	Gaussian		Flat-Top		Gaussian		Flat-Top	
Channel Spacing (GHz)	50	100	50	100	50	100	50	100
Available Channel Wavelength Range (nm)	1520 to 1610				1520 to 1610			
Max. number of DWDM Channels Allowed	80	40	80	40	80	40	80	40
Max. Center Wavelength Offset from ITU (nm)	± 0.03	± 0.06	± 0.03	± 0.06	± 0.03	± 0.06	± 0.03	± 0.06
Min. 0.5 dB Bandwidth (nm)	≥ 0.09	≥ 0.18	≥ 0.16	≥ 0.32	≥ 0.13	≥ 0.26	≥ 0.20	≥ 0.40
Min. 1.0 dB Bandwidth (nm)	≥ 0.13	≥ 0.25	≥ 0.20	≥ 0.40	≥ 0.18	≥ 0.36	≥ 0.26	≥ 0.52
Max. Insertion Loss (dB)	≤ 2.4	≤ 2.4	≤ 5.0	≤ 5.0	≤ 1.2	≤ 1.2	≤ 2.8	≤ 2.8
Min. Adjacent Crosstalk (dB)	≥ 28				≥ 14			
Min. Non-Adjacent Crosstalk (dB)	≥ 28				≥ 14			
Max. PDL (dB)	≤ 0.2				≤ 0.2			
Operating Temperature (°C)	0 to 70				0 to 70			

Insertion loss, crosstalk, and PDL are measured at the ITU grid wavelengths.

US patent no. 5,809,190

Note: All data taken prior to connectorization.

WaveXpander Ordering Information: Standard WaveXpander devices are specified with appropriate part number options. If you require devices with different specifications, please see below for more information.**

	Channel Spacing	Channel Count	Wave Form	Starting Wavelength Channel Number	Ending Wavelength Channel Number	Connector Type
WXD– (Demux)	__	__ __	__ -	__ __ __ __ __ __ -	__ __ __ __ __ __ -	__ __
WXM– (Mux)	__	__ __	__ -	__ __ __ __ __ __ -	__ __ __ __ __ __ -	__ __
	2 = 50GHz 1 = 100GHz	02 = 4 ch 01 = 2 ch	2=Gaussian* 1=Flat-Top	Select a starting and ending wavelength Ex. (starting) 1530.33nm=153033	Ex. (ending) 1574.54nm=157454	08 = LC 07 = ST 06 = FC/UPC 05 = FC/APC 04 = SC/UPC 03 = SC/APC 02 = ST/PC 01 = None*

* Denotes standard product

** Custom orders are those that require a specification or configuration other than what is printed. Add "9's" to the appropriate section of the order number.

WaveSplitter™ Technologies, Inc.

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