

# Product Guide

## UltraSpan® for the Lab

Amplification Products for Test  
and Measurement Applications

**FINISAR®**



# UltraSpan® for the Lab

Research and Development is a critical component of innovation and relies on a variety of instruments used during the design, verification, and production of optical communications network equipment. Finisar's market leading UltraSpan® products for Test and Measurement are ideal instruments that deliver reliable optical amplification where needed. Optical amplifiers and ASE light sources are useful in R&D and manufacturing environments to assist with signal boosting, recuperating test-set losses, simulating long network links, or acting as wideband sources of power for final testing of optical components during mass-production.

## UltraSpan Amplifiers for Test and Measurement

Optical telecom labs utilize multiple instruments to support the design, verification and test of next-generation network equipment. These instruments range from simple optical components (e.g. couplers, filters, photodetectors, lasers, etc) to complex hardware enabling key functions in telecom networks. Such hardware includes high bit-rate transponders and transceivers, wavelength selective switches, Multi-Cast-Switches, optical amplifiers, and integrated subsystems like ROADM linecards.

Finisar's UltraSpan® amplifier products for Test and Measurement deliver optical amplification where needed in the lab or on the production floor.

UltraSpan® amplifiers can be used as bench-top or rack-mountable instruments, making them suitable for many types of applications including research and development as well as mass-production.

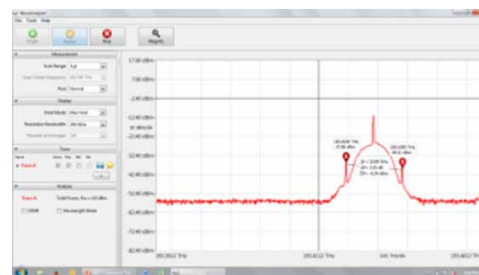
Our products are easy-to-use and offer local or remote control using a standard ethernet connection and proprietary GUI. Drivers are available for easy integration in existing test-sets.

The UltraSpan Amplifier product line includes the following:

- ▶ Single Amplifier with 17dBm output power and 17dB fixed gain
- ▶ Dual Amplifier with 20dBm output power and 23dB fixed gain
- ▶ Single Amplifier with 19.5dBm output power and variable gain range of 13-21dB
- ▶ High power ASE source with 26.5dBm output power

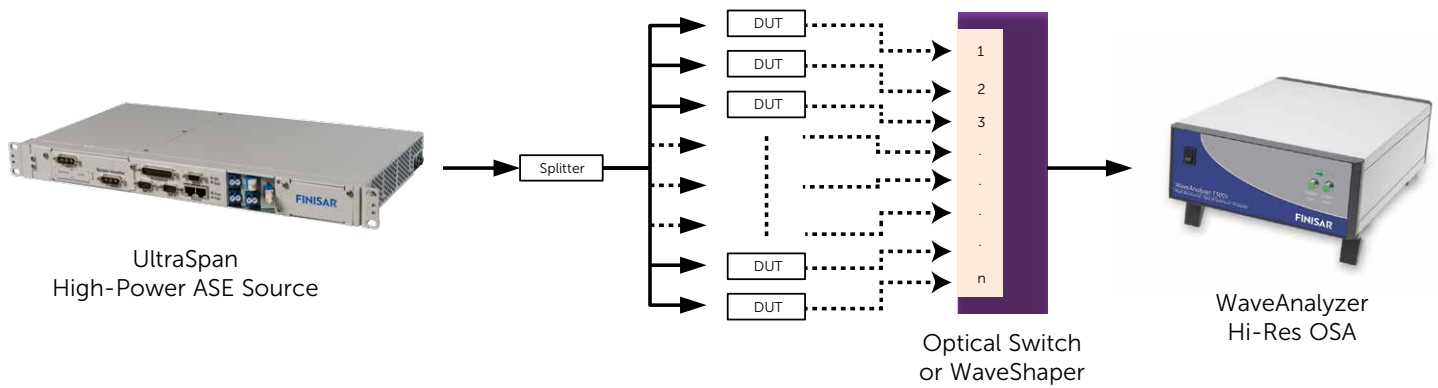
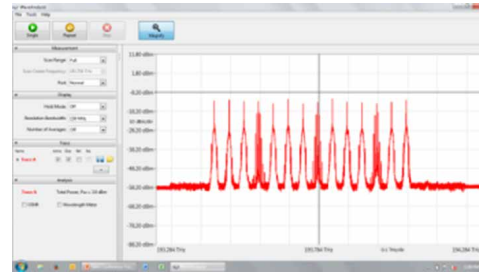
## Application example 1: Transceiver Testing in Lab or Production Environment

- ▶ UltraSpan ASE for OSNR loading
- ▶ WaveShaper for Transmission Emulation (Filtering, Attenuation)
- ▶ WaveAnalyzer for Signal Measurement



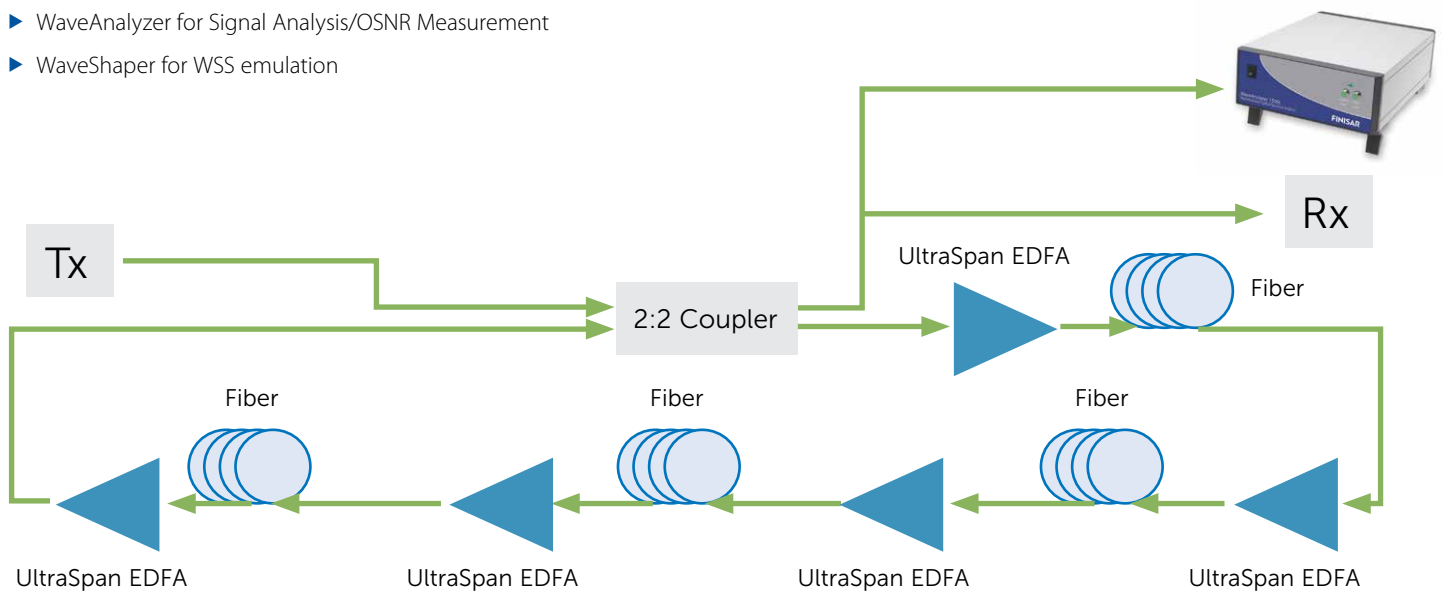
## Application example 2: Optical Components Batch Testing in Manufacturing

- ▶ UltraSpan ASE for C-band signal loading
- ▶ Optical Switch or Waveshaper for multiple DUT processing
- ▶ WaveAnalyzer for Signal Measurement



## Application example 3: Recirculating Loop in R&D

- ▶ UltraSpan Amplifiers
- ▶ WaveAnalyzer for Signal Analysis/OSNR Measurement
- ▶ WaveShaper for WSS emulation

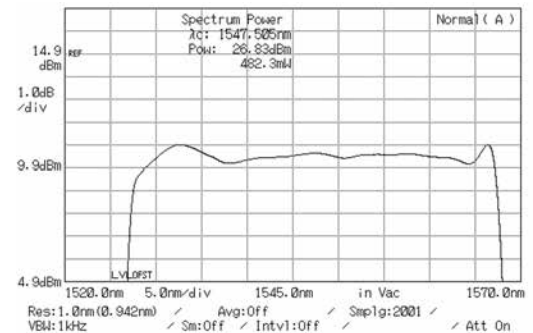


## Specifications: UltraSpan Amplifiers for Test and Measurement

Parameter	UoM	Fixed Gain		Dual Fixed Gain		Variable Gain		Notes
		Min	Max	Min	Max	Min	Max	
Operating Wavelength Range	nm	1529	1564	1529	1564	1527.6	1565.5	
Input Power Range	dBm	-10	12	-35	-3	-25	8	
Output Power Range	dBm	-2	17	-8	20	0	19.5	
Gain Range	dB	17		20		13	21	Optimal Flat Gain (OFG) shown for Fixed Gain Amplifiers
Gain Flatness	dB		1.2		±0.6		1	Spectrum tilts for for FGAs when gain setting differs from the OFG
Noise Figure	dB		6.5		5.5		5.5	At OFG for FGAs At max gain for VGAs
Transient Over/Undershoot	dB		±1		±1		±1	
Transient Settling Time	µs		500		500		500	

## Specifications: UltraSpan High-Power ASE Source for Test and Measurement

Parameter	UoM	Fixed Gain		Notes
		Min	Max	
Operating Wavelength Range	nm	1528.7	1567.13	
Output Power Range	dBm	15	26.5	
Output Power Spectral Flatness	dB		±0.9	±0.5 typical
Output Power Stability	dB		±0.2	



## Selection Guide

Description	Gain and output power	Part Number
Fixed Gain Single Amplifier	17dB Gain, 17dBm Output Power	FOA-M2200TM-EFG1C-AA060
Dual Variable Gain Amplifier	23dB Gain, 20dBm Output Power (per amp)	FOA-M2200TM-EFG2C-AA061
Variable Gain Amplifier	13-21dB Gain, 19.5dBm Output Power	FOA-M7100TM-EFG2C-AA027
High Power ASE Source	26.5dBm output power	FOA-S2100TM-ASE3C-AA062

**FINISAR**<sup>®</sup>

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1389 Moffett Park Drive  
Sunnyvale, CA 94089-1133  
www.finisar.com

Telephone: +1 408-548-1000  
Sales: +1 408-541-5690  
Email: sales@finisar.com



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