

Optical Spectrum Analyzer

AQ6319

Unparalleled Optical Performance and Functions

ANDO's New Generation OSA

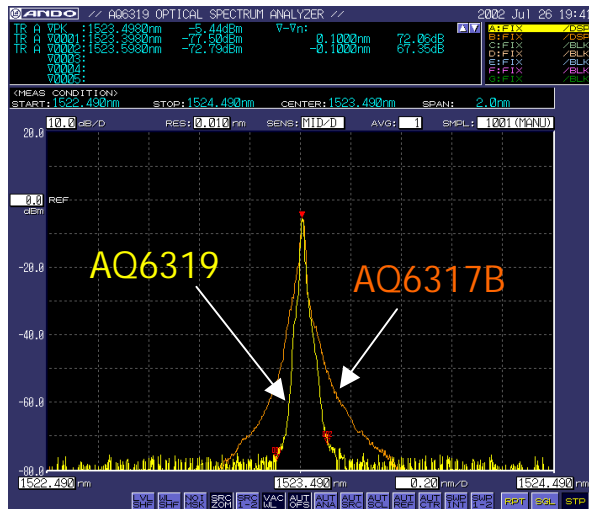


Features

- **Best Optical Performance**
 - Wide Close-in Dynamic range : 70dB @ $\pm 0.2\text{nm}$, 60dB @ $\pm 0.1\text{nm}$
 - High Wavelength Accuracy: $\pm 10\text{pm}$
 - High Wavelength Resolution: 10pm
 - High Wavelength Resolution Accuracy : $\pm 2\%$
- **Fast Sweep & Quick Response**
- **User Friendly GUI & Powerful Functions**
 - Easy Operation with Mouse/Keyboard
 - Waveform Zooming & Overview window
 - Multiple Interfaces (GP-IB, LAN, Printer, etc.)
 - Large Data Storage Area & Fast Data Transfer(FTP)
 - Enhanced Built-in Applications

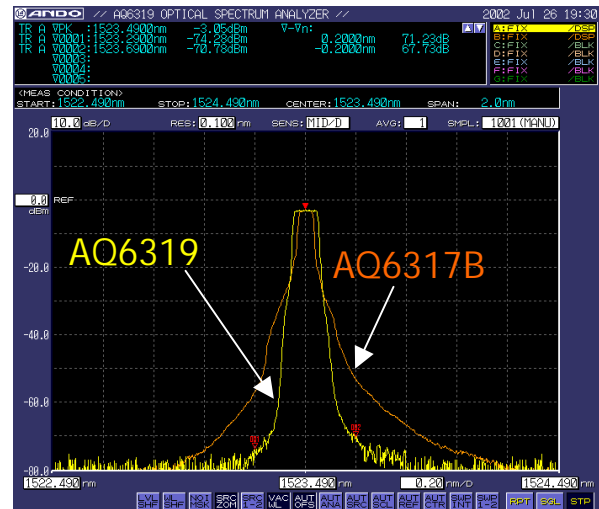
Enhanced Performance

Wide Close-in Dynamic range



Res. 0.01nm

Close-in dynamic range:
60dB @ peak±0.1nm
70dB @ peak±0.2nm



Res. 0.1nm

Close-in dynamic range:
60dB @ peak±0.2nm

Considerable Improvement of Measurement Speed

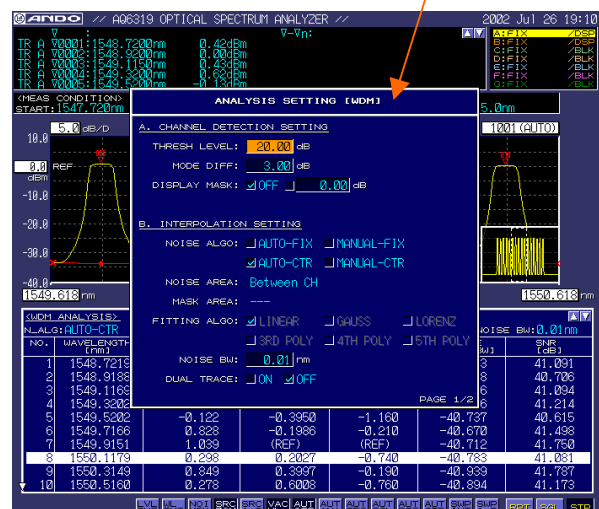
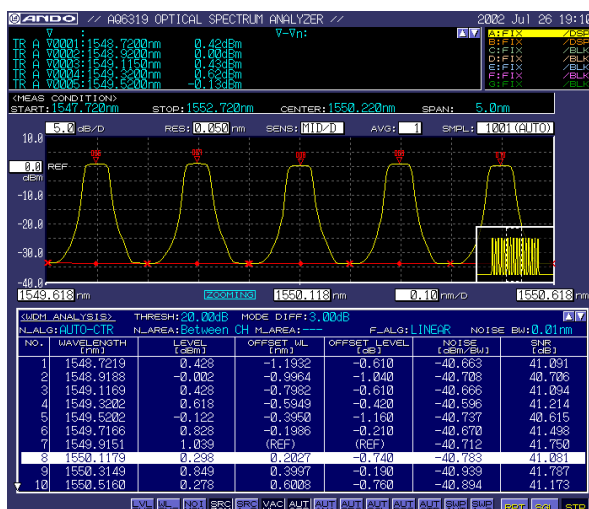
- 5 times faster than AQ6317B *
- Faster auto-ranging in all of sensitivities
- Quicker key response while changing measurement conditions

* Depends on measurement settings and input light condition.

Powerful Function

Zooming Function & OSNR/Gain/NF analysis

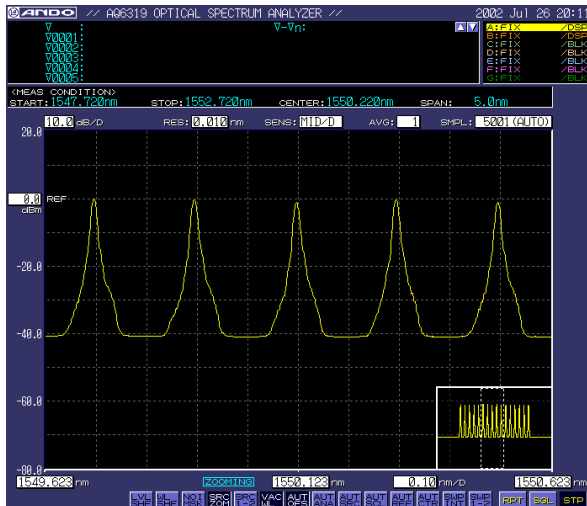
Parameter dialog box



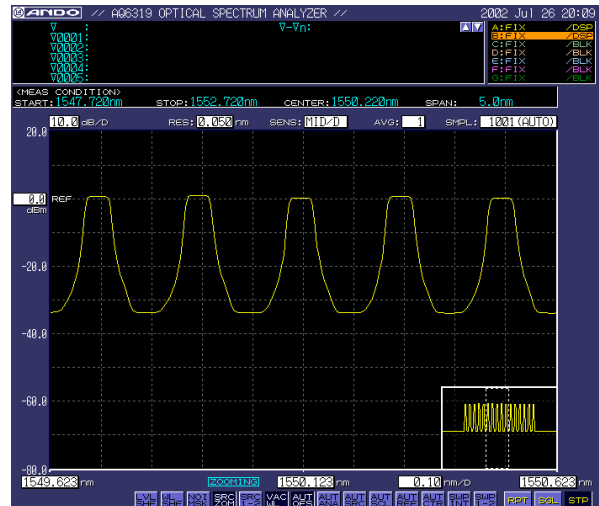
- Waveform zooming & display overview window
- Implement in the automatic interpolation setting function
- Easier setting with displayed parameter dialog box
- Selectable display mode (Trace&Table/Table/Trace)

Measurement Examples

- 25 GHz Spacing DWDM Signal
SNR 40dB (@Noise BW=0.01nm)



Res. 0.01nm

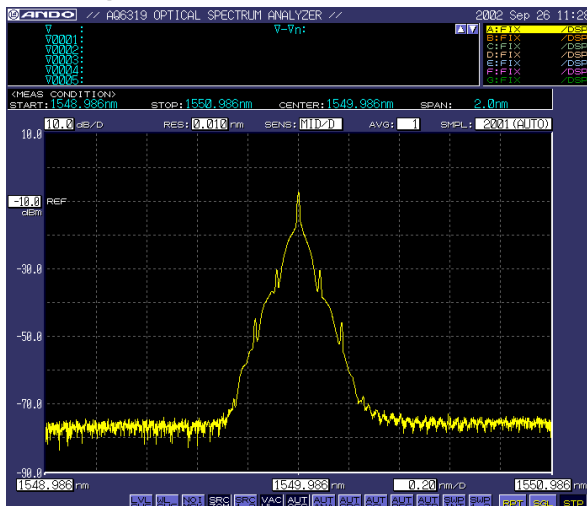


Res. 0.05nm

The wide close-in dynamic range makes it possible to accurately measure OSNR of DWDM signal with 25GHz spacing and even narrower. Even with 0.05nm resolution setting there is a flat portion in ASE noise between channels.

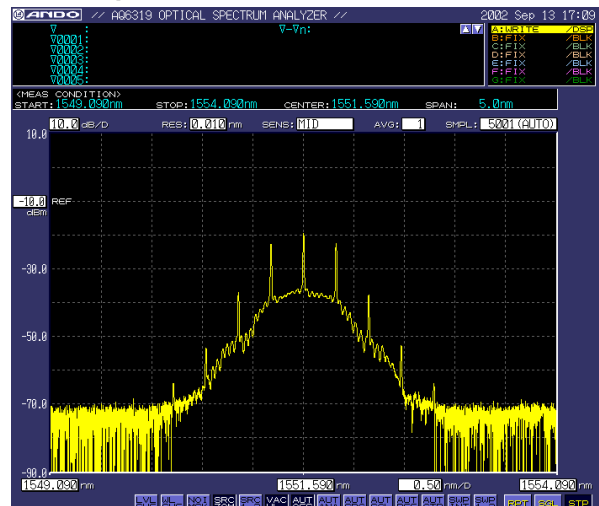
- Modulated signal Measurement

10 Gbps, NRZ, PRBS 2³¹



Res. 0.01nm

40 Gbps, RZ, PRBS 2⁷



Res. 0.01nm

With its high resolution and wide close-in dynamic range, a side-band derived from 10Gbps or 40Gbps modulated signal can be observed clearly.

Specifications

Wavelength		
Range	600 to 1700nm	
Span	0.1nm to full range and zero span	
Accuracy	±10 pm (1520 to 1580nm, after calibration with built-in source) ±20 pm (1450 to 1520nm, after calibration with built-in source) ±20 pm (1580 to 1620nm, after calibration with built-in source) ±50 pm (Full range, after calibration with built-in source)	a, c, h, k
Linearity	±10 pm (1520 to 1580nm, after calibration with built-in source) ±20 pm (1450 to 1520nm, after calibration with built-in source) ±20 pm (1580 to 1620nm, after calibration with built-in source)	a, c, h, k
Repeatability	±2pm (1min. or less., 1450 to 1620nm)	a, c, h, k
Number of samplings	101 to 50001	
Resolution		
Resolution bandwidth	0.01, 0.02, 0.05, 0.1, 0.2, 0.5 and 1nm	
Bandwidth accuracy	±2% (RES.: 0.05nm or wider, 1450 to 1620nm) ±3% (RES.: 0.02nm, 1450 to 1620nm) ±7% (RES.: 0.01nm, 1520 to 1620nm)	a, d, h, k
Level		
Sensitivity setting	NORM_HOLD, NORM_AUTO, MID, HIGH1, HIGH2 and HIGH3	e
Sensitivity	-90dBm (1250 to 1620nm, RES.: 0.05nm or wider, SENS.: HIGH3) -80dBm (1000 to 1250nm, RES.: 0.05nm or wider, SENS.: HIGH3) -60dBm (800 to 1000nm, 1620 to 1680nm, RES.: 0.05nm or wider, SENS.: HIGH3)	a, b, d, h
Accuracy	±0.3dB (1550/1600nm, 0/-20dBm, RES.: 0.02nm or wider) ±0.3dB (1310nm, 0/-20dBm, RES.: 0.05nm or wider)	a, b, d, f
Linearity	±0.05dB (-50 to +10dBm, RES.: 0.02nm or wider, SENS.: HIGH1 to 3)	a, b, d, h
Flatness	±0.1dB (1520 to 1620nm, 20dBm, RES.: 0.02nm or wider)	a, b, d, f
Stability	±0.01dB at 1min., ±0.02dB at 15min. (1550/1600nm, -20dBm, RES.: 0.05nm or wider)	a, b, d, f
Maximum input power	+23dBm (Per channel, Full span, Attenuation on)	a
Maximum safe power	+27dBm (Total safe power, Attenuation on)	a
Close-in dynamic range	40dB (±50pm from peak at 1523nm, RES.: 0.01nm) 60dB (±100pm from peak at 1523nm, RES.: 0.01nm) 70dB (±200pm from peak at 1523nm, RES.: 0.01nm) 60dB (±200pm from peak at 1523nm, RES.: 0.1nm)	a, b, d, g
Polarization dependency	±0.05dB (1520 to 1620nm, RES.: 0.02nm or wider) ±0.07dB (1450 to 1520nm, RES.: 0.02nm or wider) ±0.07dB typ. (1310nm, RES.: 0.05nm or wider)	a, b, d
Sweep		
Sweep speed	0.5sec (any 100nm, SMPL.: 1001, SENS.: NORM_HOLD) 1sec (any 100nm, SMPL.: 1001, SENS.: MID) 3sec (any 100nm, SMPL.: 1001, SENS.: HIGH1) 15sec (any 100nm, SMPL.: 1001, SENS.: HIGH3) 120sec (any 100nm, SMPL.: 1001, SENS.: HIGH3 with chop mode on)	i i i j j
Function		
Automatic measurement conditions	Program function (64programs, 200steps) Span setting: 0 to 1100nm, Number of averaging setting: 1 to 999 times, Automatic measuring condition setting function, Sweep between line markers function, 0nm sweep function, External trigger measurement function, Air/Vacuum wavelength measurement function	
Display	Level scale setting: 0.1 to 10dB/div., Vertical division number setting: 8, 10 or 12, Ref level position setting function, Linear scale display, Simultaneous display of 7 independent traces, Data table display, Label display, Split display, Normalized display, Curve-fit display, Power density display, % display, dB/nm display, dB/km display, Template display, horizontal scale zoom in/out display, Frequency display of horizontal axis scale	
Trace	7 independent traces, Max/Min hold, Calculate between traces, Roll average, Normalize, Curve-fit	
Marker/Search	Delta marker (Max. 1024), Line marker, Peak search, Next peak search, Bottom search, Next bottom search, Auto search, Peak/Bottom search between line markers, Search in the zooming area	
Analysis	WDM analysis, EDFA analysis, Optical filter analysis, WDM filter analysis, Spectral width, Notch width, SMSR analysis, PMD analysis, LED/FP-LD/DFB-LD analysis, Power analysis, Go/NoGo judgment, Auto analysis, Analysis between line markers, Analysis in the zooming area	
Ethernet	TCP/IP Protocol, FTP function	
External printer	ESC/P	l
Others	Self wavelength calibration with built-in reference light source, Optical alignment with built-in reference light source	m
Computer interface		
Remote control compatibility	AQ6317 series compliant commands (IEEE488.1), IEEE488.2 full support	
Interface	GPIB×2, RS232C, Printer port, External SVGA, PS/2×2, LAN	
Storage	FDD (MS-DOS format), HD (FAT32), Binary/CSV(Text) and BMP/TIFF	
Optical input		
Fiber	SM (9.5/125μm), GI (50/125μm)	
Coupling	Free space	
Connector	Connector adapter	m
Dimension and mass		
Dimension	Approx. 425 (W) × 222 (H) × 500 (D) mm (Except protector)	
Mass	Approx. 30 kg	
Power requirement		
Input voltage and frequency	100 to 240 VAC, 50/60 Hz, Approx. 400VA	
Environment		
Operation temperature	+5 to +40 °C	
Storage temperature	-10 to +50 °C	
Humidity	80% or less (No condensation)	

- a. With 9.5/125μm SMF, after 1 hour warm-up, after optical alignment
 b. With applied input fiber Type B1.1 9.5/125μm SMF defined on IEC60793-2 (Mode field diameter: 9.5μm, NA: 0.104 to 0.107, PC polished), attenuation off, vertical scale: absolute power display mode
 c. At 15 to 30 °C
 d. At 23 ± 3 °C
 e. Internal chop mode available at HIGH1 to 3 sensitivity settings
 f. Sensitivity setting is MID, HIGH1 to 3 and chop mode off
 g. Sensitivity setting is HIGH3 and chop mode on
 h. At chop mode off
 i. For wavelength resolution ≤ 0.2nm
 j. For wavelength resolution ≤ 0.5nm
 k. Horizontal scale: wavelength display mode
 l. Please ask local agent for printer type.
 m. Supports FC, SC and ST connector. (Optional connector adapters are required.)

Specifications are subject to change without notice.

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