VIAVI Solutions

Data Sheet

VIAVI

Nano OSA™ Modules (4100 Series)

OSA-4100 Optical Spectrum Analyzer Module and
OCV-4100 Optical Channel Verifier Module for
T-BERD®/MTS-2000 V2, -4000 V2, -5800, CellAdvisor 5G
and OneAdvisor 800, OneAdvisor 1000 Platforms

As CWDM and DWDM technology adoption for broadband services continue to grow in Access Networks, technicians require comprehensive and lightweight xWDM test tools. VIAVI OSA-4100 Optical Spectrum Analyzer and OCV-4100 Optical Channel Verifier module are designed to speed up deployment, maintenance and trouble shooting of passive and active CWDM and DWDM fiber networks. The module's optical performance, combined with the platform's suite of testing features, ensures that comprehensive testing is performed right — the first time.

OCV-4100 scans any optical CWDM or DWDM system over the full wavelength range and automatically records all channels with the ITU-T channel (ch) number, wavelength or frequency, offset and the related power level.

OSA-4100 provides an addition measurement of the optical signal to noise ratio (OSNR) per channel to qualify amplified links.

The test results can be displayed in a graphical spectrum format or in a table of results. The built-in wavelength and power drift test application together with customizable thresholds for pass/fail analysis help to simplify and speed up CWDM and DWDM system validation and performance verification.

An integrated SFP/SFP+ slot can drive fixed or tunable pluggables to validate or program transceivers in the field to activate links faster and improve first time turn-up rate.

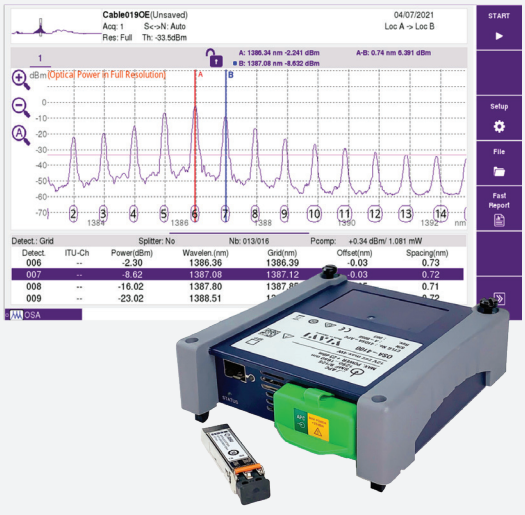
2021 DIAMOND TECHNOLOGY REVIEWS 4.5 BTR BROADBAND TECHNOLOGY REPORT®

2022 4.0 LIGHTWAVE INNOVATION REVIEWS

'Nano OSA' is a trademark of VIAVI Solutions Inc.

Features and Benefits

- Turn up and verify any new WDM service with confidence (CWDM, DWDM, MWDM, LWDM)
- Meet future requirements for high-speed service activation, OSA plus Ethernet/BERT test
- Reduce service turn-up, activation and troubleshooting times
- Field ready, light, compact and robust
- Minimal learning time and improved usability for easier operation



Optical Specifications (typical at 23°C ±5°C)

Modes	
Operating modes	WDM, OO-OSNR[1], Drift[2]
Display modes	Graph (trace + overview) WDM table and graph + table
Measurement parameters	Ch- #, Ch-power, Ch-wavelength, Ch-OSNR[1], Ch-offset, Drift[2]
SFP functions[3]	SFP info (type, Ch-#, tuning range) SFP tuning and programming
Spectral Measurement Ranges	
Wavelength range	1260 nm to 1650 nm
Wavelength uncertainty[4,6]	±0.150 nm (±18.75 GHz)
Wavelength reference	Internal
Readout resolution	0.01 nm
Res. bandwidth (FWHM[4])	0.1 nm
Channel spacing[5]	33 GHz to 200 GHz, CWDM
Number of channels	Max 256
Power Measurement Ranges	
Dynamic range	–55 to to +23 dBm (per channel)
Total safe power	+25 dBm
Noise floor RMS	–60 dBm
Absolute accuracy[4]	±0.8 dB
Readout resolution	0.01 dB
Scanning time	< 5 s (full band)
Optical Measurements	
Optical Rejection Ratio (ORR)[7]	
– at 0.2nm (25GHz)	25dB
– at 0.4nm (50GHz)	30dB
OSNR measurement range	up to 25dB
In-Band OSNR measurements	up to 30dB with On/Off OSNR
Optical Port	
Input port	SM/APC and SM/PC
Switchable optical adapters	SC mounted (FC, LC and ST on request)
Optical return loss	>35 dB
SFP/SFP+ Bay	
Can host one SFP/SFP+ transceivers or one tunable laser (not included)	
General	
Weight	0.45 kg (1 lb)
Dimensions (W X H X D)	128 x 134 x 40 mm (5.04 x 5.28 x 1.57 in)
Temperature	
Operation	+5 to +40°C (41 to 104°F)
Storage	–20 to +60°C (–4 to 140°F)

Features

- Smallest full-band/high res. OSA on the market
  - Tests CWDM and DWDM signals (1260–1650 nm)
  - Min. ch-spacing 37.5/50/100 GHz (ITU-T G.694)
- Measures ch-power, wavelength, offset and OSNR
- Drift test application for ch-power and ch-wavelength
- High input power range for testing CATV signals
- SFP/SFP+ slot for fixed or tunable transceivers

Applications

- Fiber Deep, Remote-PHY, 5G, and C-RAN
- Amplified 10G/100G+ Metro/Access networks
- Validate new wavelength routes through MUX/Demux
- Perform OSNR tests on amplified DWDM links
- Verify channel offset and actual channel spacing

T-BERD/MTS-2000 V2
One-slot handheld modular platform for testing fiber networks

T-BERD/MTS-4000 V2
Two-slot handheld modular platform for testing fiber networks

CellAdvisor 5G
Cell site test solution

T-BERD/MTS-5800
Handheld test instrument for testing 10/100G Ethernet and fiber networks

OneAdvisor 800
All-in-One Cell-site Installation and Maintenance Test Solution

OneAdvisor 1000
High-Speed, portable Network Tester Up to 400G

[1] Enables out-of-service in-band OSNR measurements Included with OSA-4100, OCV-4100 requires OSNR SW-option
[2] Included with OSA-4100, OCV-4100 requires Drift SW-option
[3] Requires SFP SW-option
[4] Typical at –5 dBm between 1520 and 1565 nm including PDL
[5] Two channels at equal power level
[6] Typical at 23°C +/- 5°C
[7] Typical for 1520 to 1565 nm at 18 to 23°C

Ordering Information

Modules	Part Number
OCV-4100 Optical Channel Verifier APC	41OCV-APC
OCV-4100 Optical Channel Verifier PC	41OCV-PC
OSA-4100 Optical Spectrum Analyzer APC	41OSA-APC
OSA-4100 Optical Spectrum Analyzer PC	41OSA-PC
SW-Options	**Part Number**
When ordered together with mainframe	
OCV Drift SW Option (for OCV-4100)	41DRIFT
OCV OSNR SW Option (for OCV-4100)	41OSNR
SFP SW Option	41SFP
When ordered as an upgrade, without mainframe	
OCV Drift SW Option (for OCV-4100)	41DRIFT-UPG
OCV OSNR SW Option (for OCV-4100)	41OSNR-UPG
SFP SW Option	41SFP-UPG
Accessories: Adapters	**Part Number**
Switchable ST adapter	2155/00.32
Switchable FC adapter	2155/00.05
Switchable SC adapter	2155/00.06
Switchable LC adapter	2155/00.07

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