

E7042B/E7062B SignalPROFILER™ RF Analyzer

Key Benefits

- RF, fiber and wireless signal quality testing – in a single instrument
- Perform traditional RF feedline tests, inspect fiber connectors with auto pass/fail results and measure RF/Optical power
- Perform comprehensive spectrum and signal analysis for complete site profile and monitoring of signal environment
- Test MIMO 4x4 antenna performance
- Detect signal degradation and system performance over time with trace overlay
- Handheld, lightweight, field-proven design withstands harsh environments and lighting conditions



Verify RF and fiber-based cell site performance with a single instrument

The SignalPROFILER combines the power and functionality of cable and antenna system analysis, fiber inspection, spectrum analysis, cellular signal demodulation, interference analysis, signal coverage mapping and RF/optical power measurements in a single instrument.

As a multi-functional instrument, the SignalPROFILER can be configured to meet your specific test needs at the time of purchase or at a later date as your test needs evolve. Additional measurement capability can be added on the fly in the field in a matter of seconds.

Designed specifically for wireless communication field engineers and technicians who install, maintain and troubleshoot wireless communication sites, the SignalPROFILER was developed to get the job done right – the first time – with multiple cutting edge features that deliver accurate results, improve productivity and reduce OPEX and CAPEX.

Standard Measurements & Applications (Cable & Antenna Analysis)

- Reflection – Return Loss or VSWR
- Fault Location – DFT/RL or DTF/VSWR
- Cable Loss
- 1-Port Phase
- Smith Chart
- FiberScope Fiber Connector Inspection (DML-OPI)
- Optical Power Meter (DML-OPM)
- Visual Fault Location (DML-VFL)

Standard Measurements & Applications (Spectrum Analysis)

- Spectrum Analysis
- Channel Power
- Occupied Bandwidth (OBW)
- Adjacent Channel Leakage Ratio (ACLR)
- Field Strength
- AM/FM

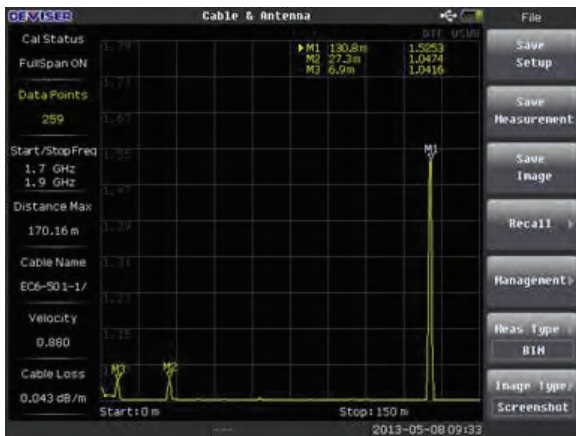
Optional Measurement Modes

- High Precision Power Meter (DML-015)
- Interference Analysis (DML-110)
- Coverage Mapping (DML-120)
- Transmission Measurement (DML-025)
- GPS Receiver (DML-999)

Key Measurements

Distance-to-Fault (DTF) identifies the fault location of impairments within the cell-site transmission cable system. Fault location impairments and discontinuities can be detected by either DTF-Return Loss or DTF-VSWR measurements.

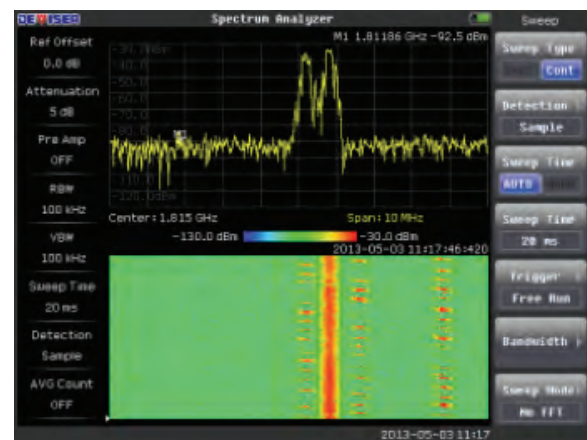
- Identify faults up to 5,000 feet (1,524m)
- High resolution enables up to 2,065 data points for locating pesky faults
- Includes over 100 different cable types with the ability to add more
- User definable limit-line automatically indicates pass/fail condition
- Set up to 6 markers for detailed analysis



- Fiber Inspection eliminates the most common fiber link problems by verifying that fiber optic connectors are not contaminated, letting users quickly inspect and clean fiber connector connections with a clear pass/fail indication.
- Visual Fault Location checks that fiber for continuity and detects damaged fibers or splices, including fiber breaks, excessive bends and brakes. Can also trace the path of fiber through multiple connections and identify the correct fibers for loss test.
- Cellular Signal Analysis provides detailed insight to LTE-FDD, LTE-TDD, WCDMA/HSDPA, TD-SCDMA, CDMA/EV-DO, GSM/GPRS/EDGE signals and modulation quality.

Interference Analysis can detect signal as low as -152 dBm and supports spectrogram display, RSSI, signal strength and signal ID capabilities.

- Spectrogram display features a three-dimensional display of frequency, power and time of spectrum activity enabling identification of intermittent signal interference, tracking these signals over time. The dual display screen allows for easy, simultaneous viewing of both the spectrum and spectrogram analysis
- Received Signal Strength Indicator (RSSI) observes and reports the signal strength of a single frequency over time
- Signal strength meter helps to locate interfering signals with the use of a directional antenna



RF/Optical Power Meter measures true RMS power for both CW and digitally modulated signals with an external power sensor.

- Users can set minimum and maximum power limits to automatically indicate pass/fail status



Additional Benefits:

- **Reduces maintenance time** with a complete multifunctional toolset that performs spectrum analysis, interference analysis, coverage mapping, cellular signal demodulation quality, RF/Fiber-Based feedline analysis and RF/Optical Power measurements in a single instrument.
- **Ensure optimal performance of fiber** with fiber connector inspection, visual fault location and optical power measurements.
- **Quickly identify and locate** Cable & Antenna signal reflections and faults and take two-port measurements for insertion gain/loss tests of amplifiers, filters, and antenna isolation measurements.
- **Ensure RF metrics and modulation quality** of any cellular technology including LTE-FDD, LTE-TDD, cdma2000/EV-DO, WCDMA/HSDPA, TD-SCDMA and GSM/GPRS/EDGE with the signal analysis measurement function.
- **Perform channel scanner measurements** to measure channel power up to 20 carriers in a single test
- **Assess non-intrusive PIM** detection across the complete frequency spectrum in a signal instrument
- **Quickly identify signal interference** with the interference analysis measurement function to detect and locate the position of interference through automatic triangulation and mapping.
- **Trace Overlay** enables users to easily detect signal and system degradation over time
- **Multiple Display Modes** enables users to set the display to lighting condition. Modes include standard view, nighttime, high contrast
- **Measurement Center Software** provides users with all the necessary functionality to manage measurements and increase the instruments, including:
 - Quickly exchange data via USB or LAN connection
 - Retrieve or save measurements results
 - Export measurement results
 - Analyze measurement results and activate multiple markers and limit lines
 - Compare measurement results
 - Create and export new cable types, frequency bands and test setups
 - Generate and print reports

Specifications: Cable Analyzer

Frequency	
Frequency Range	2 MHz - 4.4 GHz (E7042B) 2 MHz - 6.1 GHz (E7062B)
Resolution	1 kHz
Measurement Speed	
Reflection	< 0.8 mS/point
DTF	< 1 mS/point
Data Points	130, 259, 517, 1033, 2065
Measurement Accuracy	
Corrected Directivity	42 dB (typical, after standard OSL calibration) 38 dB (typical, after eCAL calibration)
Output Power	
O dBm (Nominal)	
Interference Immunity	
On-channel	+20 dBm @ >1 MHz of carrier frequency
Off-channel	+10 dBm within ± 10 kHz of carrier frequency
Measurements	
Return Loss	0 to 60dB (resolution 0.01 dB)
VSWR	1:1 to 65:1 (resolution 0.01)
Cable Loss	0 to 30dB (resolution: 0.01 dB)
DTF Range (Distance)	1500 meters (4921 feet)
Connectors (Reflection/RF Out)	
RF Out	Type N, female, 50Ω
RF Out Damage Level	25 dBm, ± 50 VDC peak
Impedance	50Ω

Specifications: Optical Measurements

Optical Microscope	
Field of view	680 mm x 510 mm
Resolution	0.5 mm
Light source	Blue LED
Focus control	Adjustable
Dimensions	175 mm x 435 mm
Weight	200 g
Optical Power Meter	
Accuracy	±0.25dB
Probe Type	InGaAs Φ300µm
Dynamic Range	-50dBm ~ +27dBm
Resolution	0.01 dBm, mW, uW, nW
Wave Length	850 nm, 980 nm, 1300 nm, 1310nm, 1490 nm, 1550nm, 1610 nm
Adapter	FC/SC/ST
VFL	
Output Power	10mW
Adapter	FC/PC