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Portable Decimator D4 spectrum and signal analyzer

Transports conveniently in a standard laptop case

The Portable Decimator D4 is a fourth-generation spectrum measurement and analysis product providing high-end performance at a low price.

It's conveniently packaged for use by field technologists or it can be installed anywhere in satellite, cable or terrestrial wireless networks.

The Portable Decimator D4 is a small enclosure easily transported in a typical laptop case. It can be connected to any AC power source worldwide.

The powerful GUI is available using any standard web browser.

The Portable Decimator D4 uses state-of-the art digital technology and fast fourier transformations to make fast and accurate measurements.

With a very low noise floor and large dynamic range, it is well-suited to measure any type of satellite, cable or terrestrial wireless carrier, including very small carriers, beacon signals and for carrier monitoring applications.

The Portable Decimator D4 accepts all signals from 5 MHz to 6.5 GHz and input power levels ranging from –110 to +5 dBm. RBW varies from 1 Hz to 15 MHz.

The Portable Decimator D4 can be connected to an external 10 MHz reference for improved frequency accuracy and stability.

All data communications with the Portable Decimator D4 occurs via its built-in Ethernet port. No additional software is required.

The GUI is very easy to use and operates like most traditional spectrum analyzers. It provides user selectable colours for markers and traces, allows storage of multiple traces and provides measurement reporting.

The Decimator D4 also includes a powerful built-in carrier monitoring function, which provides notification via email or SNMP of carrier measurements that exceed user-defined thresholds, offering you peace of mind that up to 100 of your carriers are operating as expected.

The signal analysis engine demodulates and decodes the MPEG transport stream-based DVB-S/S2/S2X signal and provides signal characteristics, modulation accuracy, power measurements and constellation display to view the digital modulation quality.

Specifications

Overview

- Full satellite L-band, standard C-band, plus cable & wireless bands from 5 MHz to 6.5 GHz (50 ohm SMA)
- Built-in carrier monitoring
- External 10 MHz reference or internal reference
- Web browser control
- Small enclosure
- Connects to AC power worldwide
- Custom design versions supporting other frequency bands or form factors available upon request

Add-on options

Options available at time of order or later via license key

Spectator software	• Enhanced carrier monitoring for a single Decimator
Detector software	• View multiple signal constellation displays on a single screen

Physical interfaces

RF Inputs	• SMA, 50 ohms
Control	• RJ-45
Reference	• BNC, 50 ohms
Power	• External AC adapter with IEC 60320
Mechanical	• 2.3"H x 6.9"W x 9.5"D
Weight	• 3.6 lbs

Certifications

EMC/EMI	• EN 61000-6-2, EN 61000-6-4
Safety	• EN 61010-1

RF input

Input frequency range	• 5 MHz to 6.5 GHz
Usable dynamic range	• -110 to +5 dBm (aggregate)
Noise floor	• -160 dBm/Hz typical at min atten • -140 dBm/Hz typical at max atten
Phase noise	• -80 dBc/Hz at 1 kHz offset • -95 dBc/Hz at 100 kHz offset • -125 dBc/Hz at 1 MHz offset
Maximum safe input	• +15 dBm

Measurements

Amplitude accuracy	• ±0.5 dB (at 25°C)[1] • ±1.0 dB (0 to 50°C)
Frequency accuracy	• ±2.6 ppm (internal) or as per external
Frequency resolution	• 1Hz
Resolution bandwidth	• 1 Hz to 15 MHz
Analysis bandwidth	• up to 260 MHz

Spurious

Images	• < -55 dBc (typical)
Aliasing	• < -55 dBc (typical)
DC offset	• < -30 dBc (typical)
Averaging	• up to 255 averages

Measurement speed[3]

500 MHz span, 1 MHz RBW	• 200 ms
200 MHz span, 30 kHz RBW	• 630 ms
80 MHz span, 100 kHz RBW	• 170 ms
3.5 MHz span, 8 kHz RBW	• 90 ms

Other specifications

Reference input	• 10 MHz, -5 dBm to +13 dBm, +3 dBm to +13 dBm (auto-sensing)
Control interface	• TCP/IP, API, SNMP, HTTPS
Power requirements	• 100–240 VAC, 50/60 Hz, 20W
Operational temperature	• 0 to 40°C

MODCODs supported

DVB-S	• **QPSK** ½, 2/3, ¾, 5/6, 7/8 DVB-S2: • **QPSK** ¼, 1/3, 2/5, ½, 3/5, 2/3, ¾, 5/6, 8/9, 9/10; • **8PSK** 3/5, 2/3, ¾, 5/6, 8/9, 9/10; • **16APSK** 2/3, ¾, 4/5, 5/6, 8/9, 9/10; • **32APSK** ¾, 4/5, 5/6, 8/9, 9/10
DVB-S2	• **QPSK** ¼, 1/3, 2/5, ½, 3/5, 2/3, ¾, 5/6, 8/9, 9/10; • **8PSK** 3/5, 2/3, ¾, 5/6, 8/9, 9/10; • **16APSK** 2/3, ¾, 4/5, 5/6, 8/9, 9/10; • **32APSK** ¾, 4/5, 5/6, 8/9, 9/10
DVB-S2X	• **QPSK** 13/45, 9/20, 11/20; • **8APSK** 5/9L, 26/45L, 23/36, 25/36, 13/18; • **16APSK** 1/2L, 8/15L, 5/9, 26/45, 3/5, 3/5L, 28/45, 23/36, 2/3L, 25/36, 13/18, 7/9, 77/90; • **32APSK** 2/3L, 32/45, 11/15, 7/9

Notes

1. Measurement conditions: 10 averages, input level between -8 dBm and -68 dBm, 3 sigma.
2. Resolution bandwidths auto or manual adjustable.
3. Expected rates with 10 averages, speed optimization.
4. All specification at 25°C unless otherwise noted and are subject to change without notice.
5. Specifications are stated for performance up to 3 GHz.

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For more information, contact: decimator@calian.com

calian.com | info@calian.com | 1.877.225.4264 |