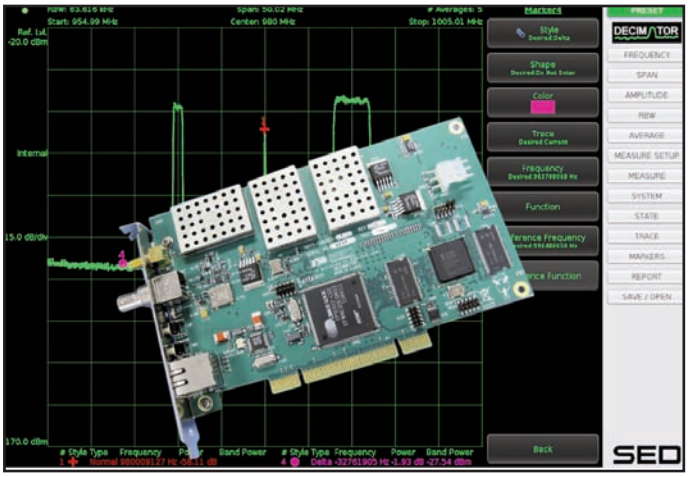
SED Decimator D2

SED's Decimator D2 is a second generation spectrum measurement and analysis card providing high-end performance at a low price. It can function as either an independent spectrum analyzer or can easily be integrated into a satellite terminal, equipment enclosure or as part of a larger measurement network.



Decimator is only 4" x 7" x 0.8" and is therefore ideal for integration into small spaces. It can be installed in any enclosure or computer chassis. It is a half size PCI card and can be installed in an available computer PCI slot, providing power to the card. Alternately, it can be mounted on standoffs and powered through a +12/+5 Vdc 3-pin connector for integration into any enclosure.

It uses state of the art digital technology and Fast Fourier Transformations to make quick and accurate measurements. With a very low noise floor and large dynamic range, it is well-suited to measurement of any type of satellite carrier, including very small carriers, beacon signals and for carrier monitoring applications. Decimator accepts all L-band signals from 950 to 2,150 MHz and input power levels ranging from –110 to +5 dBm. RBW varies from 4 Hz to 500 kHz. The Decimator can be connected to an external 10 MHz reference for improved frequency accuracy and stability. All data communications with the Decimator occurs via its built-in Ethernet port.

The Decimator's powerful Graphical User Interface (GUI) is available using any standard web browser. No additional software is required. The GUI is very easy to use and operates like most traditional spectrum analyzers. It provides user-selectable colors for markers and traces, allows storage of multiple traces and provides measurement reporting. The Decimator GUI also includes two powerful applications: The built-in **Carrier Monitoring** function, provides notification via email or SNMP of carrier measurements that exceed user-defined limits, offering you peace of mind that up to 100 of your carriers are operating as expected.

The Decimator provides network access to all technical staff connected to the facility network or a corporate wide area network. This allows all technical staff the ability to monitor feeds and carriers at any time and from any location in the world using only a web browser.

For integration into a satellite terminal or measurement system, the Decimator can be operated via its built-in GUI or the user can create a separate user interface using the publicly available API. An SNMP status interface is also provided.

Features

Overview

- covers full L-band from 950 to 2,150 MHz
- built-in Carrier Monitoring function
- external 10 MHz reference or internal reference
- web browser or API control
- SNMP status interface
- installs in half size PCI slot or equipment enclosure

Physical Interfaces

RF inputs:	SMA, 50 ohms
Control:	RJ-45
Reference:	BNC, 50 ohms
Power:	PCI or 3-pin Molex connector
Mechanical:	half size PCI card, 6.875 by 4.2 inches

FFT sizes

256
512
1024
2048
4096
8192

Windows

Flattop
Hanning
Hamming
Uniform
Blackman-Harris

Measurement Speed[3]

52 MHz span, 16 kHz RBW, 0.9 seconds

3.5 MHz span, 8 kHz RBW, 0.30 seconds

Custom designed versions supporting other frequency bands or form factors are available. Contact SED for more information.

SED
a division of CALIAN Ltd.

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Specifications

RF (L-Band) Input:

Input Frequency Range:	950 MHz to 2,150 MHz
Useable Dynamic Range:	-110 to +5 dBm (aggregate)
Noise Floor:	-145 dBm/Hz typical at minimum attenuation -115 dBm with RBW=1 kHz
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:	+10 dBm

Measurements:

Amplitude Accuracy:	± 0.5 dB (at 25°C)[1] ± 1.0 dB (0 to 55°C)
Frequency Accuracy:	± 2.6 ppm (internal) ± 10 Hz (external)
Frequency Resolution:	4 Hz
Resolution Bandwidth:	4 Hz to 508.928 kHz[2]
Spurious:	
DC Offset:	< -55 dBc (typical)
Images:	< -55 dBc (typical)
Aliasing:	< -45 dBc (typical)
Single Measurement Span:	16 kHz to 52 MHz
Multiple Measurement Span:	52 MHz to 1200 MHz
Averaging:	up to 100 averages

Other Specifications:

Reference Input:	10 MHz, -5 dBm to +13 dBm
Control Interface:	TCP/IP API, SNMP, HTTP
Power Requirements:	PCI or +12/+5 Vdc, 15W max.
Operational Temperature Range:	0 to 55°C

Modes of Operation:

Raw Snapshot Mode: Number of IQ time samples is approx 1 million
Linear Power/Bin
Log Power/Bin
Raw IQ Samples - decimated 16 - 4092 in steps of 4
Selectable Spectral Inversion
Programmatic measurement and control over ethernet based API

Notes:

1. Measurement conditions: 10 averages, input level between -8 dBm and -68 dBm, 3 sigma.
2. Resolution bandwidths auto or manual adjustable. Available bandwidth limited by span, decimation rate and window type.
3. Expected rates with 2 MHz to 52 MHz span, 10 averages, 50% overlap, speed optimization, using API.
4. All specification at 25°C unless otherwise noted and are subject to change.