Diamond$_X$ VIS16

Precision Voltage / Current Source and Measurement with Advanced Features

Exceptionally flexible instrument suitable for testing a variety of devices in the consumer, wireless, and automotive markets requiring flexible timing.

The VIS16 is a 16 channel, four quadrant voltage/current source and measurement instrument.

Highlights

- V/I source mode
- AWG and digitizer functions
- Time measurement
- Differential voltage measurement
- Timers, triggers and gates
- Alarms

Features

- 16 channels of precision four quadrant V/I source and measurement capability are integrated into a single instrument for efficient multisite testing
- Advanced features such as an AWG and a digitizer per channel enable the VIS16 to be used for a wide variety of device measurements
- A combination of internal and external triggers can be used for gating and sampling for maximum testing flexibility
- A time measurement unit measures rise and fall times, pulse, period, frequency and time difference, making the VIS16 a truly versatile instrument
- Ganging capability extends the normal current limits allowing the VIS16 to be used for testing a wider range of devices
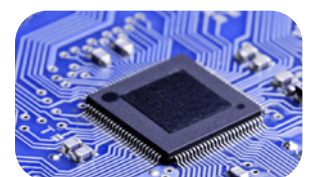

Automotive

Consumer

Flat Panel Display

Wireless/RF

Industrial & Medical

MCU

Power Management

- **Four Quadrant VI Source/Measure**
- **Ganging capability for extended current range**
- **4:1 SmartMux**
- **Differential Vmeas**
- **±20 V / 300 mA, ±60 V / 100 mA**
- **AWG and Digitizer Functions**

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V/I Source Mode

The primary function of the VIS16 is to source voltage and current. With multiple programmable force, clamp and measure ranges, the VIS16 is versatile enough to be used for a broad spectrum of consumer, wireless and automotive applications. Adjacent channels can be ganged to achieve higher current for devices requiring extra power. The VIS16 is a four-quadrant, four-wire source for precise voltage programming and accurate voltage measurement.

AWG and Digitizer Functions

The VIS16 has a built-in analog waveform generator (AWG) and a signal digitizer per channel. The AWG has a bandwidth of 10 kHz and a resolution of 16 bits. Easy setup of VIS16 modulation is possible by using predefined signals like sine and triangle waveforms.

Sampling rates up to 100 kS/s per channel are possible for voltage and current digitizing, and the capture memory holds up to 8 kS per channel. Testing of numerous applications is possible with the high sampling rate and the high resolution of the AWG and digitizer functions.

Time Measurement

The VIS16 has per-channel time measurement capabilities. The input signals are sampled by voltage and current comparators with 16-bit resolution. The internal routing architecture allows inter-channel time difference measurements or measurements of events on the external trigger bus. Many parameters can be measured, such as rise and fall time, pulse width, period, frequency and time differences.
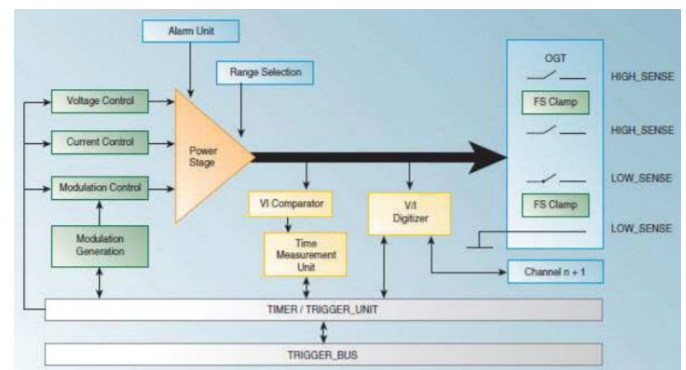
Differential Voltage Measurement

The VIS16 offers the ability to make high-precision differential voltage measurements between adjacent channels on the instrument. Four voltage ranges are available for differential measurements: ±20 mV, ±200 mV, ±2 V and ±5 V.

Timers, Triggers and Gates

A powerful network of timers, triggers and gates allows VIS16 events to be precisely timed according to the many programmable modes available. Six timers are available for each channel, and 16 synchronization lines connect to the system bus for signaling with other instruments. The user has full program control over each source and measure event.

Alarms

Alarms can be strobed by measurement or checked by a software query. The following functions are monitored: clamp alarm, source-not-ready alarm, over temperature alarm, and over-voltage protection.

Advanced test capabilities such as time measurement, modulation, and differential DC measurements make the VIS16 an exceptionally flexible instrument, suitable for testing a full spectrum of devices in the consumer and wireless markets.

- **Four Quadrant VI Source/Measure**
- **Ganging capability for extended current range**
- **4:1 SmartMux**

- **Differential Vmeas**
- **±20 V / 300 mA, ±60 V / 100 mA**
- **AWG and Digitizer Functions**

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Specifications

VI Pin Configurations

- ±60 V, 100 mA
- ±20 V, 300 mA (Gangable to 600 mA)

Force Voltage

Range	Resolution	Accuracy
±2 V	16 bit	±0.03% FSR
±6 V	16 bit	±0.03% FSR
±20 V	16 bit	±0.03% FSR
±60 V	16 bit	±0.03% FSR

Current Clamp

Range	Resolution	Accuracy
±300 µA	16 bit	±0.2% FSR +1 nA/V
±3 µA	16 bit	±0.05% FSR +1 nA/V
±300 µA	16 bit	±0.05% FSR
±3 mA	16 bit	±0.05% FSR
±30 mA	16 bit	±0.05% FSR
±300 mA / 100 mA	16 bit	±0.05% FSR

Pattern Source Memory

- Range: DC to 10 kHz
- Resolution: 16 bit
- Waveforms: sine, triangle, arbitrary
- Waveforms Memory: 8 kS/channel

Timer

- Timers/Channel: 6
- Range: 100 ns to 6,7 s
- Resolution: 100 ns
- Programmable gates for SGT, CGT, MGT, OGT_HI/LO Meas. Strobe

Differential Voltage Measurement (Available between adjacent channels)

Range	Accuracy
±20 mV	0.5% FSR
±200 mV	0.1% FSR
±2 V	0.1% FSR
±5 V	0.1% FSR

All specifications are subject to change without notification and are for reference only. For detailed performance specifications, please contact Cohu.