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Find the *Analogic DBS9900* at our website: *Click HERE*

DBS902
DBS902HV

14-Bit, 80 MS/s Digitizer Plug-In Module

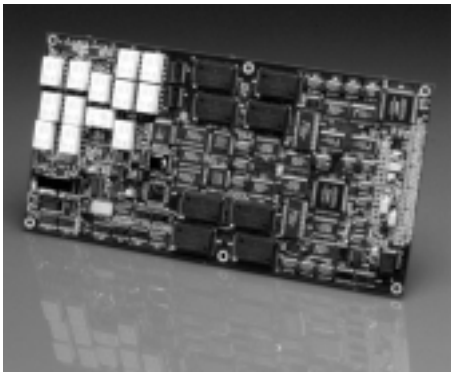
Plugs into the Analogic DBS9900 VXI C-Size Dual InstrumentCarrier

The DBS902 and DBS902HV are high-speed (80 MHz), 14-bit, Waveform Digitizer modules that plug into the Analogic DBS9900 VXI C-size Dual Instrument Carrier. Up to two DBS902s can be installed in a single DBS9900. This mother/daughterboard concept allows a single VXI chassis slot to provide multiple functions, thereby maximizing VXI resources and decreasing the cost per slot. The DBS902 provides a combination of speed and resolution that, until now, was not available and continues the Analogic tradition of providing the highest possible state-of-the-art performance at the lowest price available.

Acquisition may be triggered from the input signal itself or external inputs having programmable thresholds. Acquired data can be pre-trigger, post-trigger or anywhere in between. A programmable sample counter that controls the number of data points to be acquired is also provided. The ability to tag sample(s) on the fly for purposes of identifying external events such as time stamps is available via a front panel digital input.

The DBS902, when combined with the DBS9900 carrier, provides extremely versatile clock and trigger sources via internal circuitry, front panel connectors, and VXI TTLTRG lines. The internal clock can drive all plug-in function modules simultaneously so that clock skew and delays are reduced to an absolute minimum. This allows coherent operation with other plug-in modules in the DBS9XX series of digitizers and waveform generators as well as multiple DBS902s. Trigger and clock thresholds are programmable for each plug-in function module.

The VXI Plug & Play compliant software driver supports all functions of the DBS902 and provides automatic recognition and configuration for all plug-in modules that are installed in the DBS9900 carrier unit. Source code is included as well as .DLL files to allow easy porting to most popular programming environments. These drivers go beyond VXI Plug & Play requirements to ensure system integration and software development time are reduced to an absolute minimum.



Features

- Over-Range Data Detection
- Multiple Clock and Trigger Sources
- Programmable Trigger and Clock Thresholds
- Auto Calibration
- Pre- and Post-Trigger Data Acquisition
- Data Dependent Triggering
- Programmable Sample Counter
- Sample(s) Tagging via Front Panel Input

Applications

- Semiconductor Device Testing
- Digital Communications Testing
- Vibration Analysis
- Research & Development
- Ultrasound

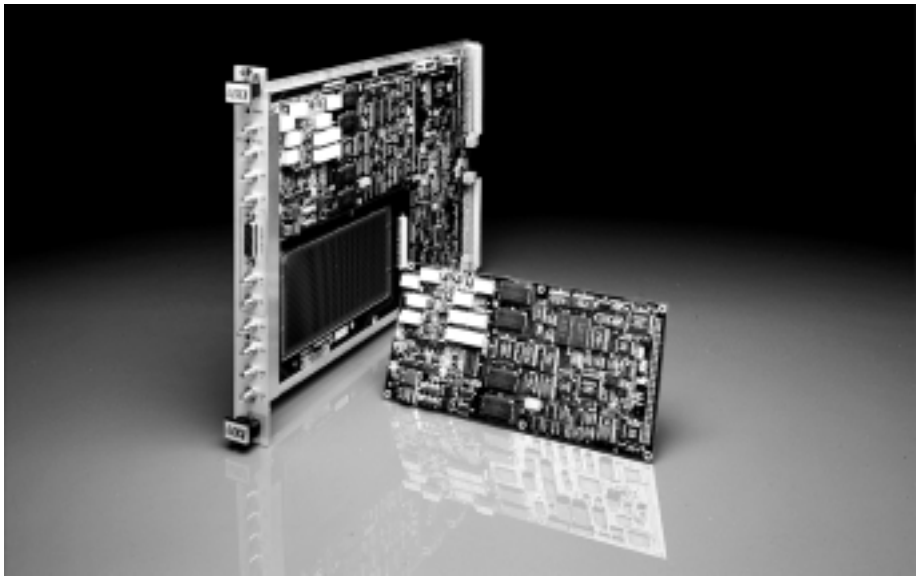


Figure 1. DBS9900 with Two DBS9XX Boards (One Installed).

VXI bus

CE

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DBS902/ DBS902HV

Specifications [1]

ANALOG INPUT		
Parameter	*Conditions*	*Value*
Channels		One differential
Resolution		14-Bit
Full Scale Input Ranges	Low (All) High (902) High (902HV)	±0.5V, ±1.0V, ±2.5V ±5.0V, ±10V, ±25V ±20V, ±40V, ±100V
Impedance	< ±20V range ≥ ±20V range	50, 75 or 1 MΩ 1 MΩ
Capacitance		50 pF max.
Common Mode	DC to 20 kHz Low ranges High ranges	 ≥ 50 dB ≥ 30 dB
Overvoltage Protection	Low ranges High ranges High range (902HV)	±3.1 VDC typ. ±31 VDC typ. ±124V typ.
Offset	T_{cal} ±5°C	±0.2% of FS
DC Gain Accuracy		±1% of FS

DYNAMIC CHARACTERISTICS		
Parameter	*Conditions*	*Value*
Frequency Response	No filter, –1 dBfs @ 50Ω, ±0.5V range, 100 kHz to 30 MHz All other ranges, 100 kHz to 5 MHz 5 MHz to 30 MHz	 ±0.5 dB ±0.5 dB ±2 dB
Lowpass Filter	Software selectable, 3rd order Bessel	None, 20 MHz or 40 MHz
(S/[N+D])	±0.5V range. –1 dBfs @ Fin=1 MHz Fs=10 MS/s, BW=5 MHz Fs=80 MS/s, BW=40 MHz	 >65 dB typ., 62 dB min. >63 dB typ., 60 dB min.
SFDR	±0.5V range, –1 dBfs@ Fin=1 MHz, Fs=10 MS/s, BW=5 MHz. Fin=10 MHz, Fs=80 MS/s, BW=40 MHz.	 >78 dBc typ., 68 dBc min. >75 dBc typ., 65 dBc min.
Noise	40 MHz filter, ±0.5V range @ 50Ω source impedance	220 µV RMS typ. 250 µV RMS max.

CLOCK		
Parameter	*Conditions*	*Value*
Internal	See DBS9900 carrier module specs.	10 kHz to 80 MHz
External	Pipeline delay = 11 clock periods. Also see DBS 9900 carrier module specs.	10 kHz to 80 MHz
External Reference Clock	Via front panel input. Also see DBS9900 carrier module specs.	10 MHz

TRIGGERS		
Parameter	*Conditions*	*Value*
Internal	Set software bit	
External	Via front panel inputs Via VXI TTLTRG lines	See DBS9900 specs. Per VXI Specification
Data Dependent	Derived from a sequence of two level comparisons. Latency of 3 sample periods between first and second level. Also see DBS9900 carrier module specs.	8 bit programmable level and slope

1. All specifications are for rev 3F and higher installed on DBS9900 VXI-C Dual Instrument Carrier and are subject to change without notice.
2. Modules not sold separately.
   Consult factory for available configurations
3. Refer to DBS9900 data sheet for power specifications.

DATA MEMORY		
Parameter	*Conditions*	*Value*
Coding & Format	Bit 15 is sign, bits 14-2 are magnitude, bit 1-0 used for data tagging via external inputs	2's complement or offset binary

INTERRUPTS		
Parameter	*Conditions*	*Value*
Level	Programmable	IRQ 1 through 7
Interrupt Sources	Programmable	Triggered Condition Done Condition Overrange Condition Diagnostic IRQ

RELIABILITY		
Parameter	*Conditions*	*Value*
MTBF	Determined by the Generic Parts Count method of MIL-HDBK-217F for a Ground Benign environment at a temperature of 25°C.	>38,000 hours

ENVIRONMENTAL & MECHANICAL		
Parameter	*Conditions*	*Value*
Operating Temperature		+10°C to +40°C for rated accuracy
Non-Operating Temperature	Non-condensing	–20°C to +70°C
Cooling Air Flow	For 15°C Rise at 0.5 mm H_2O back pressure	4 litre/sec.
Operating Humidity	IEC 68-2-3 Test (Ca)	90% RH @ 40°C
Non Operating Vibration	IEC 68-2-6 Test (Fc)	<2G's
Non Operating Bump	IEC 68-2-29 Test (Eb)	10G
Non Operating Altitude	IEC 68-2-13 Test M	2 Hrs. @ 12,192M
Weight		5.0 oz (142g)
Size		8 in. x 4 in., (20.32 cm x 10.16 cm)

STABILITY		
Parameter	*Conditions*	*Value*
Offset Tempco		±150 ppm/°C max.
Gain Tempco		±250 ppm/°C typ.
Long-Term Stability		12 months for rated accuracy

EMC & SAFETY AGENCY COMPLIANCE

Designed to meet all requirements for safety, RF emissions and immunity for marketing in the U.S., Canada and Europe.

CALIBRATION

Offset calibration is fully automatic via software driver provided.

Calibration values are stored in on-board NVRAM.

Available Options

DBS902	2 MS memory, 50V p-p input
DBS902HV	2 MS memory, 200V p-p input

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