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Find the *Analogic DBS8752A* at our website: ***Click HERE***

16-Bit, 200 kHz, 4 Channel D/A Waveform Generator

in a "C" Size VXI Module

Introduction

The DBS 8751A/8752A is a high speed, 16-bit, 4-channel waveform generator of superior performance, fully compliant with the VXI subsystem specification Rev. 1.3 for a Register Based "C" size module. The DBS 8751A/8752A is designed to meet the stringent requirements of waveform generation for testing of audio range components such as Codec chips used in communications equipment and driving exciters for vibration testing.

Each output channel of the DBS 8751A/8752A consists of a 64K word block of data memory that is transformer coupled to a high speed, 16-bit, digital-to-analog converter (DAC); followed by a deglitching amplifier; a 6-pole, 21 kHz Butterworth filter of superior performance; and 2 differential/single-ended output drivers per channel. All channels are updated by a precision, programmable sampling clock whose rates are 204.8 kS/s to 3.6 kS/s in 1006 steps. The user can supply sampling clock and external trigger signals via front panel BNCs or TTLTRG lines. Data sets are downloaded from VXI resident memory using the on-board DMA controller or via PIO operations.

Full electrical isolation is provided by deriving all analog power from the +5V input to the card, using an ultra-low-noise DC-DC converter.

For ease of integration, a selection of available software drivers is offered for use with the card. No device specific coding is required of the user as all commands are included in the driver.

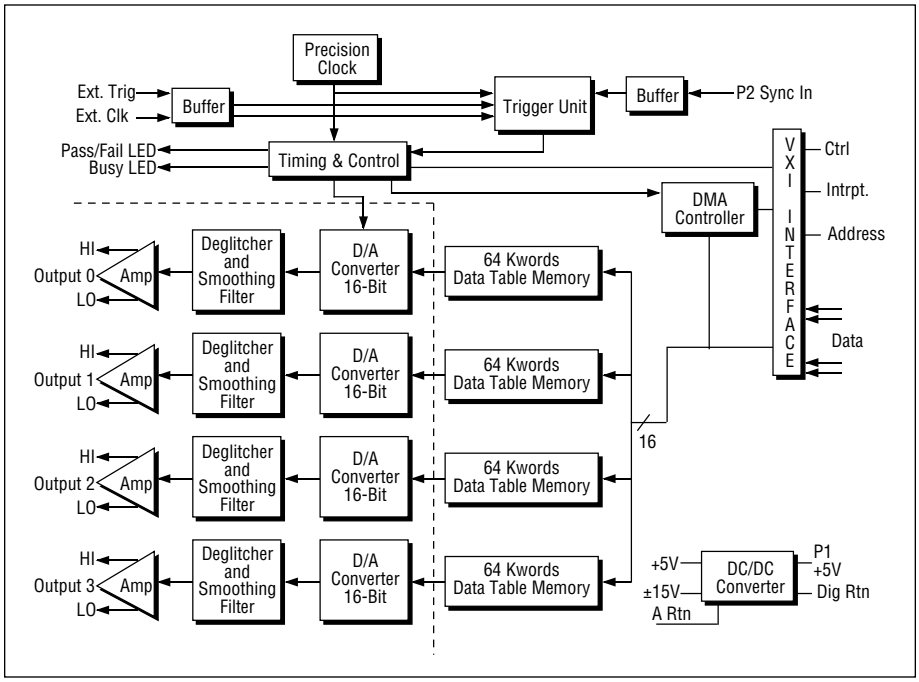
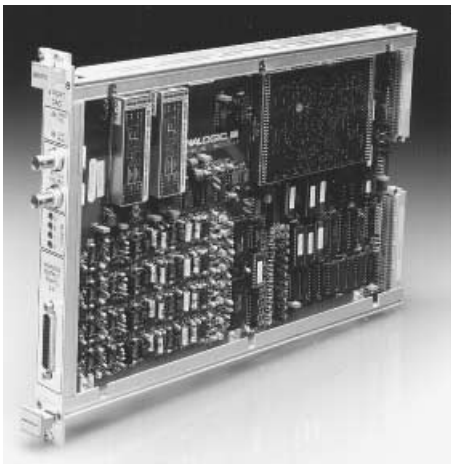


Figure 1. The DBS 8751A/8752A Block Diagram.



Features

- 16-Bit Resolution
- 4 Independent Channels
- Differential/Single Ended Outputs
- 64K Word Data Memory/Channel
- Programmable Sampling Clock
  204.8 kHz to 3.0 kHz in 1006 Steps
- Reconstruction Filter
  6 Pole Butterworth
- Output Isolation
  500 Vdc Max.
- Software Drivers Available

Applications

- Audio Signal Generation
- Communications Testing
- Arbitrary Waveform Generation
- Vibration Excitation
- Acoustic Signature Analysis
- Biomedical Device Testing

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DBS 8751A/8752A

Specifications[1]

ANALOG OUTPUT

Number of Channels
4 with 2 Outputs per Channel

Resolution
16 Bits

Output Voltage
Differential/Single Ended
±5V/±10V (DBS 8752A)
±3V/± 6V (DBS 8751A)

Offset
±30 mV Max.

Slew Rate
7 V/µs Min.

Output Drive Current
40 mA per Output

DC Gain Error
±0.5%

FILTER CHARACTERISTICS

Corner Frequency
21 kHz

Attenuation Rate
36 dB per Octave

Settling Time (Step input)
100 µs Typ.

Overshoot (Step input)
30% of FSR Typ.

Flatness in Pass Band
±0.2 dB Max. at 0–10 kHz

DYNAMIC CHARACTERISTICS

Sampling Rate
204.8 kHz to 3.6 kHz in 1006 Steps

Channel to Channel Crosstalk
–88 dB Max.

Signal to Noise (with filter)
+84 dB Typ.

Peak Distortion[2]
–95 dB @ 10 kHz Typ.

Total Harmonic Distortion[3]
–90 dB @ 10 kHz Typ.

TRANSFER CHARACTERISTICS

Integral Non-Linearity
30 ppm FSR

Differential Non-Linearity
60 ppm FSR

Monotonicity
14 Bits Guaranteed

STABILITY (0°C TO +50°C)

Required Warm-up Time
(for ultimate specifications)
15 Minutes

Offset Tempco
12 ppm FSR/°C Max.

Gain Tempco
70 ppm FSR/°C Max.

Precision Clock
3.6864 MHz ±0.001%

DIGITAL INPUTS

Logic Levels
TTL/CMOS Compatible

Logic "1"
2.0V Min.

Logic "0"
0.8V Max.

Termination
50Ω in Series with 200 pF

External Clock
As a Sampling Clock via Front Panel Connection or TTLTRG Line
TTL Active Low
2.0 µs Min.

As a Precision Clock via Front Panel Connection or TTLTRG Line
2.4 MHz to 4.0 MHz

External Trigger (Start/Stop)
Input via front panel connector or TTLTRG line.
Negative-going pulse, 30 nS wide min.
Output via TTLTRG line.

SAMPLING MODES

Internal
Derived from Internal Precision Crystal Controlled Clock

External
Supplied by User, either as Precision 2 MHz to 4 MHz Clock for Division or as Absolute Sampling Clock

DATA TRANSFER

Input Coding
Two's Complement

On-Board DMA Controller
0.8M Word/Sec. Typ.

PIO Operation
Register Write of Each Data Word

VXI/VME COMPLIANCE

VXI
Master A24 D16 RWD
Resister Based, Local Bus User

Interrupt
Seven Level, Jumper Selectable

VME
Slave A16 D16 I7

GROUP ISOLATION

500 Vdc Max.

FRONT PANEL INDICATORS

Pass/Fail LED
Green/Red

DMA Transfer Active
Green

DAC #0 Running LED
Green

DAC #1 Running LED
Green

DAC #2 Running LED
Green

DAC #3 Running LED
Green

POWER REQUIRED

+5V Supply
+4.75V to +5.25V

Power Dissipation
20 watts Max.

ENVIRONMENTAL AND MECHANICAL

Temperature Range
Rated performance
0°C to 50°C

Storage
–25°C to 75°C

Relative Humidity
0 to 85% Non-condensing to 40°C

Cooling
1.6 litre/sec. airflow for 10°C rise at 0.49 mm H_2O back perssure

Dimensions
VXI "C" Size, Single Slot

Front Panel Potential
Chassis Ground

Weight
3 lbs, 4 oz/1.47 kg

Notes:

1. Unless otherwise noted, all specifications apply at +25°C.
2. Peak Distortion represents the ratio between the highest spurious frequency component below the Nyquist rate and the test signal.
3. Total Harmonic distortion represents the ratio between the RMS sum of all harmonics up to the 20th harmonic and the RMS value of the test signal.

Specifications subject o change without notice.

Ordering Guide

DBS 8751A
16-Bit Waveform Generator

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16-Bit Waveform Generator

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