



# VERASONICS PRODUCT QUOTATION

Master Agreement Number/Quotation Number: 20230913/2504081

THIS QUOTATION IS MADE A PART OF, AND SUBJECT TO THE TERMS OF, THE MASTER SYSTEM AGREEMENT AND LICENSE BETWEEN VERASONICS, INC. AND THE CUSTOMER IDENTIFIED BELOW WITH THE MASTER AGREEMENT NUMBER IDENTIFIED ABOVE (THE "AGREEMENT"). ALL CAPITALIZED TERMS NOT DEFINED IN THIS QUOTATION HAVE THE MEANINGS SET FORTH IN THE AGREEMENT. IF THERE IS A CONFLICT OR INCONSISTENCY BETWEEN THIS QUOTATION AND THE MASTER SYSTEM AGREEMENT AND LICENSE, THE TERMS OF THIS QUOTATION TAKE PRECEDENCE WITH RESPECT TO THE PURCHASE UNDER THIS QUOTATION ONLY.

CUSTOMER NAME: TEXAS A&M UNIVERSITY

EQUIPMENT LOCATION: The Vantage System(s) will be used at the following location(s):  
235B Wisenbaker Engineering Research Center  
College Station, Texas 77843-3128  
United States

REQUESTED BY: Kenneth Hoyt, [hoyt@tamu.edu](mailto:hoyt@tamu.edu)

This Quotation includes the following attachments:

- \* Vantage NXT Specifications
- \* Vantage NXT Acceptance Testing Protocol

## 1. Product Configuration and Pricing

PART NO.	DESCRIPTION	QTY	UNIT PRICE
K00003	<b>VANTAGE NXT 256 – HIGH FREQUENCY CONFIGURATION</b> <ul style="list-style-type: none"> <li>Acquisition System - 256 Transmit channels / 256 Receive channels</li> <li>Optical PCI Express Cable</li> <li>Performance Host Controller - includes installation of PCI express adapter card. Installation of firmware and drivers; custom configuration of BIOS; loading of VERASONICS software including HAL, VSX, example scripts and licenses; thorough testing of the entire configuration</li> <li>Image Reconstruction</li> <li>Synchronization Triggers</li> <li>One-year hardware manufacturing defect warranty starting from the delivery date– As set forth in the Master Agreement</li> </ul>	1	\$205,000.00
S00002	<b>Upgrade Included Adapter To NXT UTA 1024 MUX</b> PN: P03172 Vantage NXT UTA 1024 MUX	1	\$6,500.00
	University Discount – 10%		(\$21,150.00)
P01921	<b>8MHz Matrix Array Transducer</b>	1	\$36,000.00
	Limited University Discount – 5% on Matrix Arrays		(\$1,800.00)
K00010	<b>Vantage NXT Arbitrary Waveform Package</b> Includes Extended Transmit & ArbWave option	1	\$12,800.00
	Special Discount – 50% if PO and signed quote are received by 4/30		(\$6,400.000)
S00018	<b>One year Extended Warranty for Vantage NXT 256</b>	1	\$8,500.00
	Special Discount – 20% valid if purchased with the system		(\$1,700.00)
	Subtotal		\$237,750.00
	Shipping & Handling		\$1,200.00
	(Invoice will include any applicable taxes) <b>Total</b>		<b>\$238,950.00</b>

Note: **ALL PRICES IN USD.**

This Quotation is only valid if executed by Customer on or before April 30, 2025. Public Purchase or any requested

changes other than system serial numbers, dates, amounts and modifications to this table (i.e. any items requiring legal review) will result in the removal of the discount noted in Section 1 of this Quotation.

## **2. Shipment and Risk of Loss; Delivery Terms**

Verasonics Hardware, Third Party Products, or other goods included in a shipment will be shipped by Verasonics to the designated Customer location in accordance with Incoterms 2020 Carriage and Insurance Paid (CIP) by Verasonics. The risk of loss or damage shall pass to Customer from Verasonics at Verasonics' dock.

## **3. Payment Terms**

Payments shall be Net 30 Days from issuance of invoice in USD. Interest shall accrue at one percent (1%) per month or if lower, at the maximum rate allowed under Washington State laws, for all past due payments.

The purchase price excludes all taxes. Customer is solely responsible for payment of all applicable sales, use, withholding, or similar tax, or duties or other governmental charges or fees, required to be paid with respect to payments made pursuant to this Agreement. Where required, Verasonics will add all sales, use, and similar taxes to the total price and reflect such amount on the invoice. If any withholding tax is levied on any payments made by Customer to Verasonics pursuant to this Agreement, Customer shall increase the amounts paid to Verasonics so that the amount received by Verasonics after the withholding tax is deducted is the full amount Verasonics would have received if no withholding or deduction had been made.

## **4. Extended Warranty Term/Hardware and Support Package Term**

Notwithstanding anything contrary in the Agreement, the term of this Quotation is effective for the period described in the Table above, beginning on the later of the expiration of the existing warranty or Verasonics' receipt of this Quotation (**Term**).

## **5. Vendor Information**

Vendor: Verasonics Inc.

Address: 11335 NE 122nd Way, Suite 100, Kirkland, WA 98034 USA

Pay To: The Commerce Bank of Washington  
601 Union Street, Suite 3600 Seattle Washington

ABA/ Routing Number: 125008013

Account Name: Verasonics, Inc.

Account Number: 3167291

**ACCEPTED AND AGREED:**

**THIS QUOTATION MUST BE SIGNED ON BEHALF OF CUSTOMER BY A PERSON WHO HAS THE POWER AND AUTHORITY TO LEGALLY BIND CUSTOMER**

**CUSTOMER: TEXAS A&M UNIVERSITY**

\_\_\_\_\_  
Name: \_\_\_\_\_ Dated: \_\_\_\_\_, 2025  
Title:

**VERASONICS, INC.**

\_\_\_\_\_  
Name: \_\_\_\_\_ Dated: \_\_\_\_\_, 2025  
Title:

**This signed Product Quotation and your Purchase Order must be returned to [sales@verasonics.com](mailto:sales@verasonics.com). This purchase is contingent upon receipt of an executed Master System Agreement and License and completed Customer Information Form.**

**All Legal Notices should be directed to:**

Jon Daigle, President and CEO, VERASONICS Inc., 11335 NE 122nd Way, Suite 100, Kirkland, WA 98034

Copy to: Louisa Barash, Davis Wright Tremain, as follows: hard copy to Suite 2200 1201 Third Avenue, Seattle, WA 98101-3045, United States, and via email by PDF attachment to [louisabarash@dwt.com](mailto:louisabarash@dwt.com). Notice provided to Ms. Barash shall neither constitute nor substitute for any notice to Verasonics required to be made herein.

# Vantage® NXT Research Ultrasound System Specifications

Vantage NXT 32LE\* | Vantage NXT 64\* | Vantage NXT 64LE | Vantage NXT 128 | Vantage NXT 256

## Intended Use

The Vantage NXT System is a laboratory research and/or development platform and is intended to be used to acquire, store, display, and analyze ultrasound data. The system as provided by Verasonics is not approved for patient use. Users must perform additional testing to comply with local regulatory requirements for patient use.

## System Configurations

The Vantage NXT Research Ultrasound System is available in five models with several optional configurations:

### **Vantage NXT 32LE\* System** with 64 transmit and 32 receive channels

- Vantage NXT 32LE – High-Frequency configuration
- Vantage NXT 32LE – Mid-Frequency configuration
- Vantage NXT 32LE – Low-Frequency configuration

### **Vantage NXT 64\* System** with 64 transmit and 64 receive channels

- Vantage NXT 64 – High-Frequency configuration
- Vantage NXT 64 – Mid-Frequency configuration
- Vantage NXT 64 – Low-Frequency configuration

### **Vantage NXT 64LE System** with 128 transmit and 64 receive channels

- Vantage NXT 64LE – High-Frequency configuration
- Vantage NXT 64LE – Mid-Frequency configuration
- Vantage NXT 64LE – Low-Frequency configuration\*
- Vantage NXT 64LE – HIFU configuration

### **Vantage NXT128 System** with 128 transmit and 128 receive channels

- Vantage NXT 128 – High-Frequency configuration
- Vantage NXT 128 – Mid-Frequency configuration
- Vantage NXT 128 – Low-Frequency configuration\*
- Vantage NXT 128 – HIFU configuration

### **Vantage NXT 256 System** with 256 transmit and 256 receive channels

- Vantage NXT 256 – High-Frequency configuration
- Vantage NXT 256 – Mid-Frequency configuration
- Vantage NXT 256 – Low-Frequency configuration\*
- Vantage NXT 256 – HIFU configuration
- Vantage NXT 256 – External Clock configuration

## Transmit Specifications\*\*

- Transmit Frequency Range:
  - 1.0 MHz to 60 MHz for the High-Frequency configuration
  - 250 kHz to 24 MHz for the Mid-Frequency configuration
  - 20 kHz to 750 kHz for the Low-Frequency configuration\*
  - 250 kHz to 8 MHz for the HIFU Operating Band

- Time Delay Resolution: 2.0 nsec
- Minimum Pulse Width: 4.0 nsec
- Programmable Pulser Amplitude: 3.0 to 192 V p-p
- Tri-State Drive: + high voltage, – high voltage, and ground
- Per-Channel Programming of Tri-State Transitions on a 2 ns Grid (option for analog waveform design tool)
- Per-Channel Programmable Center Frequency, pulse width (pulse duty cycle), polarity and delay
- Per channel transmit apodization using pulse width modulation
- Max burst length (without Extended Transmit option): a few microseconds
- Power limit, single channel: up to 100 Watts peak, 8 W average, into 50 Ohms ( $\sim \mu$  seconds)
- Transmit Options:
  - Extended Transmit option: Enables long bursts for radiation force methods and long coded excitation pulses, up to a few milliseconds
  - HIFU: Additional hardware and an external power supply for a range of focused ultrasound applications

## Receive Specifications\*\*

- Frequency Range:
  - 250 kHz to 60 MHz for the High-Frequency configuration
  - 250 kHz to 60 MHz for the Mid-Frequency configuration
  - 20 kHz to 750 kHz for the Low-Frequency configuration\*
- Programmable anti-aliasing filter cutoff: 10, 15, 20, 30 MHz, and, in addition, 40, 50, 60 MHz with High-Frequency configuration
- 16-bit A/D converters with a sample rate of 125 MHz
- Subsampling by integer and non-integer rational factors
- User-programmable multi-rate RF data digital filters
- Transmit / receive clock jitter: less than 4ps RMS
- Noise figure: 1.5 to 3.0 dB over programmable input impedance range of 115 to 3000 Ohms (for 100 Ohm probe impedance)
- Data acquisition into local memory limited by acoustic travel time, up to 100,000 frames/second

## Additional System Specifications

### External Synchronization

- Four user-programmable BNC connectors (two on the front panel and two on the rear panel), configurable for use either as a Trigger Input or Trigger Output signal. Standard on the Vantage *NXT* 256 and Vantage *NXT* 128; optional on the Vantage *NXT* 64LE, Vantage *NXT* 64 and Vantage *NXT* 32LE systems
- Master clock input and output for phase-locked operation of multiple systems

### 256 MB of Memory per Channel

- Digital averaging, filtering, and decimation may be performed on data prior to transfer to the host controller to improve signal-to-noise and reduce data bandwidth

### RF Signal Accumulation

- Over 1000 acquisitions can be summed, with offset subtraction

### Data Transfer to Host Computer via Gen 3x8 FireFly™ Optical Connection

- Sustained data transfer rates up to 52.8 Gbits/s (6.6 GB/s)

## Host Controller

- Host controller configured and provided with system purchase. GPU-compatible model available
- Windows® or LINUX Ubuntu operating system
- MATLAB® with Signal Processing Toolbox installed and configured (MATLAB user license not included). Refer to the Vantage *NXT* Software Release Notes for more information.

## System Control and Simulation Software

- System software includes MATLAB scripts to control Verasonics' proprietary beamforming and image processing algorithms and ultrasound imaging example scripts
- Individual channel acquisition data and complex reconstruction data available in MATLAB workspace for storage and offline processing, or for custom inline processing in real-time
- User-provided MATLAB functions (scripts or compiled 'mex' files) can be executed in real time
- Built-in media scattering Simulation Software for evaluating and verifying acquisition and processing sequences; Includes transmit beam visualization and script analysis tools
- Interactive Help System provides assistance with over 400 structure names, attributes, and keywords to facilitate script development and reduce runtime errors. Integrated into MATLAB Document Editor, it also provides easy access to Structure Visualization and Utility Tools

## Documentation

- Documentation includes the Vantage *NXT* System User Manual and Vantage *NXT* Sequence Programming Manual, an extensive programming reference manual

## Extended Transmit Option ("extended burst" or "push")

Increases the high voltage power supply capability to support long burst sequences up to several milliseconds. Not available on the Vantage *NXT* 64 or Vantage *NXT* 32LE system configurations. Specifications available upon request.

## HIFU Configuration

This option includes the Extended Transmit option. Additional hardware and an external power supply for a range of focused ultrasound applications.

## Arbitrary Waveform Generation Package

This package includes the Extended Transmit option and a software package (GUI and programming API) for tri-level encoding of arbitrary analog acoustic waveforms.

## Arbitrary Waveform Generation Option

Software package (GUI and programming API) for tri-level encoding of arbitrary analog acoustic waveforms. This option is available for Vantage *NXT* 64 and Vantage *NXT* 32LE systems only.

## NDE Imaging Software

Software GUI package provides advanced full matrix capture, multi-mode imaging and convenient data acquisition, without the need for MATLAB programming.

## Signal Breakout Board

Printed circuit board adapter that plugs into the 260-pin system connector and provides 0.1" headers for ribbon cable connection to custom transducers. Also includes some space for impedance matching elements. Symmetric boards for left and right connectors on dual connector Vantage *NXT* 256 system.

## Verasonics 260-pin Transducer Backshell Kit

For up to 128 channels. Ideal for customers who are developing their own transducers, and/or those who want to integrate commercial transducers and have the pin-out information. Available with 0 Ohm tuning or unpopulated with pads for tuning elements.

## GE-408-pin Transducer Backshell Kit

As above, but with connections for up to 256 channels

## 260-pin Offset Adapter

Provides test access to RF signals during signal transmit and receive operations

## Multi-System Synchronization Module

Provides the ability to synchronize 2-8 Vantage systems (up to 2048 channels) to within 2 ns phase offset

## Quadrature Encoder Inputs\*

Position registration is provided through three-axis position tagging of ultrasonic data and pulse-on-position modes of operation. Located on the rear panel of the system, the three encoder inputs are DB9 connectors with custom pinouts.

## Analog Inputs

For +/-5V "low" frequency signals, with a 25 MHz sample rate and 16-bit ADC. Provides synchronized acquisition of auxiliary signals, such as physiological data, for co-registration with ultrasonic data in addition to real-time processing and display. Located on the rear panel of the system, the two analog inputs are bulkhead-mounted SMA connectors.

## Volume Imaging Packages

1-system, 2-system or 4-system solutions to acquire real-time data from up to 1024 element transducers. Packages include RDMA licenses, sync module, cables, rack computers and rack assembly, example scripts and support based on package choice. (Linux only)

## GPU Toolkit & GPU Toolkit with GPU Direct

Both options provide programming tools and capabilities for signal processing or image reconstruction using GPUs. GPU Toolkit (Windows and Linux), GPU Toolkit with GPU Direct (Linux Only)

## Available Options and Accessories

### Universal Transducer Adapter

- Permits rapid transducer connector change (requires restart of both the host controller and the Vantage *NXT* hardware system)
- Adapter Options:
  - UTA 260-S is a single Verasonics 260-pin, 128-channel connector compatible with Vantage *NXT* 128 and Vantage *NXT* 64LE system configurations
  - UTA 260-D is a dual Verasonics 260-pin, 128-channel connector compatible with the Vantage *NXT* 256 system, Vantage *NXT* 128 and Vantage *NXT* 64LE configurations. UTA 260-D provides two

- connectors (identical to the single connector on UTA 260-S), which can be used to connect two different probes or a 256-element probe that can be wired to both connectors
- UTA 260-MUX for the Vantage NXT 64 and Vantage NXT 32LE, to support transducers with up to 128 elements
  - UTA 408-GE enables compatibility with certain Verasonics probes and select transducers from GE that use the 408 connector; the UTA 408-GE is available on the Vantage *NXT* 64LE, 128, 256
  - UTA 1024-MUX offers 1024 element connectivity with MUX for high-element count arrays
  - UTA 256 Direct is offered for custom transducers with up to 256 elements
  - UTA 64 LEMO provides an array of 64 LEMO 00 coax connectors for use with single-element transducers; this UTA can be used with all system configurations
  - UTA 128 LEMO provides an array of 128 LEMO 00 coax connectors for use with single-element transducers; this UTA can be used with any system configuration, but the number of usable connectors will be reduced on the Vantage NXT 64 and Vantage NXT 32LE configurations
  - UTA 160-SH/8 LEMO and UTA 160-DH/32 LEMO have single or dual Hypertronix connectors and LEMO 00 connectors
  - UTA 160-SI/8 LEMO has a single I-PEX connector (Olympus transducer) and 8 LEMO 00 connectors
  - UTA 408-GE MUX\* enables compatibility with certain Verasonics probes and select transducers from GE that use the 408-GE connector; this UTA can be used with the Vantage NXT 64 and Vantage NXT 32LE
  - UTA 360\* enables compatibility with select VisualSonics MS-series transducers. This adapter is compatible with Vantage NXT 256 channel systems. There is not a Vantage NXT version of this adapter

## Transducer Options

### General Imaging Transducers

- **P4-2v phased array:** 64-element phased array probe
- **C5-2v curved linear array:** 128-element array probe
- **L11-5v broadband linear array:** 128-element array probe
- **P4-2gH phased array:** 96-element phased array probe
- **C5-2gH curved linear array:** 128-element array probe
- **L11-5gH broadband linear array:** 128-element array probe
- **L22-14vX broadband linear array:** 128-element array probe (also available as the L22-14vXLF - long focus - for applications requiring a greater elevation focus depth)
- **L35-16vX broadband high-frequency linear array:** 128-element probe
- **L22-8v CMUT linear array:** 256-element array probe with HVMux from Kolo Medical
- **L38-22v CMUT high-frequency linear array:** 256-element array probe with HVMux from Kolo Medical

### Transducers from GE

- **GE L3-12-D:** 256-element linear array probe with HVMux
- **GE C1-6-D:** 192-element curved array probe
- **GE IC5-9-D:** 192-element intracavitary curved array
- **GE M5Sc-D:** 80x3 elements phased array
- **GE 9L-D:** 192-element linear array probe



## Specialty Transducers

- FUS transducers from Sonic Concepts, Inc.
- 1024-element (32x32) matrix array transducers at 3 & 8 MHz from Vernon s.a
- Row-Column Array Transducers with 2x128 elements at 6 MHz, and 2x80 elements at 15MHz from Vernon s.a
- 5 MHz phased array transducers for NDE with 128 or 64 elements from Imasonic SAS

## Safety Certifications

- IEC 61010-1:2010, IEC 61010-1:2010/AMD1:2016
- CSA C22.2 No. 61010-1-12, UPD1:2015, UPD2:2016, AMD1:2018
- UL 61010-1 3rd ed (2018)

## Power Requirements and Physical Dimensions

- 100V-240V (50-60 Hz)
- Size (Data Acquisition System) L-47.6cm (+10cm clearance) x W-28cm x H-48.9cm
- Size (Performance Host Controller) L-61cm x W-30.5cm x H-67.3cm
- Total weight of all components (Vantage NXT 64LE, 128 or 256 channel configuration with Performance Host Controller): approx. 40.8 Kg
  - Configuration weight can vary based on number of channels, frequency range and host controller

## Notes

- Transmit and Receive performance may be limited at frequency extremes.
- Maximum display frame rates may be limited by MATLAB® display software.

*VERASONICS® is a registered trademark of VERASONICS, Inc.  
MATLAB® is a registered trademark of The MathWorks, Inc.  
Windows® operating system is a registered trademark of Microsoft, Inc.  
Sonic Concepts is a registered trademark of Sonic Concepts, Inc  
Sonosite, Inc.  
Imasonic is a protected trademark owned by IMASONICS SAS*

*GE is a registered trademark of the General Electric Company  
Kolo is a registered trademark of Kolo Medical Inc.  
Vernon is a trademark of Vernon s.a.  
VisualSonics is a registered trademark owned by Fujifilm*

*For current specifications, including optional features, accessories, and transducers, visit our website.  
**Verasonics reserves the right to change specifications without notice.***

*\* Future availability*

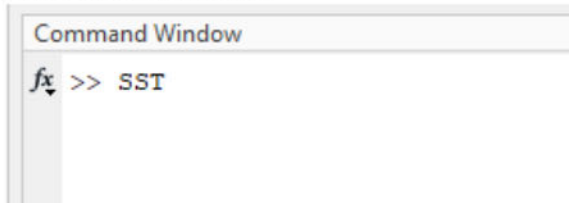
*\*\* Transmit and Receive performance is limited near frequency extremes*

**ATTACHMENT – SYSTEM SELF TEST ACCEPTANCE TESTING PROTOCOL**  
**(Updated 9/1/2023)**

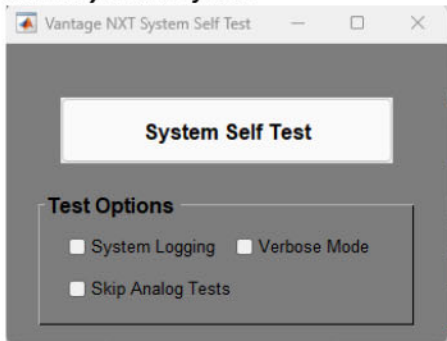
The System Self Test protocol consists of an automated script that verifies the system is performing correctly. The following instructions presume the user has already completed the steps in the getting started guide.

**Verasonics System Self Test Sequence**

1. Follow Initial Setup guide and connect the Verasonics Vantage NXT System to the provided computer.
2. Open **MATLAB**
3. Type **SST** and press Enter



4. Select **System Self Test**



5. Passing Result Log

```
=====
Vantage NXT System Self Test
=====
```

Discover Hardware Test

Configuration Results:

SYSTEM: Vantage NXT 256 Mid Frequency

DRIVER: 15.0.0

HA: P01987-02 ASGQ0005 Host x8 Optical PCIe Adapter

BKP: P02754-02 ASHD0011 Backplane Module

Sync I/O: P02735-02 ASGY0008 Sync I/O Panel

AUX I/O: P02737-02 ASHC0007 Aux I/O Panel

TPC: P01974-03 ASEK0045 Transmit Power Controller

SHI: P02757-02 ASGX0011 UTA Base Board

UTA: P01344-02 PL005079 Adapter Dual 260 ZIF

SLOT 3: P02591-02 ASGZ0043 Acquisition Module

SLOT 4: P02591-02 ASGJ0045 Acquisition Module

SLOT 1: P02591-02 ASGZ0026 Acquisition Module

SLOT 2: P02591-02 ASGZ0032 Acquisition Module

Discover Hardware Test: PASS

#### PCIe Link Test

-----  
PEX-8734 Port #1 VDAS Link: PASS  
PEX-8734 Port #2 VDAS Link: PASS  
PCIe PEX-8734 CPU Link: PASS  
ASC Bus Check: PASS  
PCIe PEX-8724 #2 Upstream Link: PASS  
PCIe PEX-8724 #1 Upstream Link: PASS  
PCIe PEX-8724 ASC Link: PASS  
Host Adapter Switch Link Integrity: PASS  
Backplane Switch(es) Link Integrity: PASS  
PCIe Link Test: PASS

#### PEX Configuration/CRC Test

-----  
PEX Configuration/CRC Test: PASS

#### I/O Communication Test

-----  
Sync I/O Communication: PASS  
AUX I/O Communication: PASS  
I/O Communication Test: PASS

#### System Module Communication Test

-----  
ASC Communication: PASS  
TPC Communication: PASS  
ACQ3 Communication: PASS  
ACQ4 Communication: PASS  
ACQ1 Communication: PASS  
ACQ2 Communication: PASS  
ACQ Boards Communication: PASS  
ACQ#3 CGD/CGT Status: PASS  
ACQ#4 CGD/CGT Status: PASS  
ACQ#1 CGD/CGT Status: PASS  
ACQ#2 CGD/CGT Status: PASS  
SHI Communication: PASS  
System Module Communication Test: PASS

#### Backplane Memory Test

-----  
Data Bus Test: PASS  
Address Bus Test: PASS  
Backplane Memory Test: PASS

#### Acquisition Memory Test

-----  
Acq Board3, CGD1 Data Bus Test: PASS  
Acq Board3, CGD2 Data Bus Test: PASS  
Acq Board4, CGD1 Data Bus Test: PASS  
Acq Board4, CGD2 Data Bus Test: PASS  
Acq Board1, CGD1 Data Bus Test: PASS

Acq Board1, CGD2 Data Bus Test: PASS  
Acq Board2, CGD1 Data Bus Test: PASS  
Acq Board2, CGD2 Data Bus Test: PASS  
Acq Board3 CGD1 Address Bus Test: PASS  
Acq Board3 CGD2 Address Bus Test: PASS  
Acq Board4 CGD1 Address Bus Test: PASS  
Acq Board4 CGD2 Address Bus Test: PASS  
Acq Board1 CGD1 Address Bus Test: PASS  
Acq Board1 CGD2 Address Bus Test: PASS  
Acq Board2 CGD1 Address Bus Test: PASS  
Acq Board2 CGD2 Address Bus Test: PASS  
Acquisition Memory Test: PASS

#### Backplane Fan Control Test

-----  
Fan #1 Tachometer: PASS  
Fan #2 Tachometer: PASS  
Backplane Fan Control Test: PASS

#### Backplane Temperature Test

-----  
Backplane Temperature Test: PASS

#### Host Adapter Board Temperature Test

-----  
Host Adapter Board Temperature Test: PASS

#### Command Bus Communication Test

-----  
Reference Start ACQ Pulse: PASS  
ACI 3 Command Bus: PASS  
ACQ 3 CGD 1 Command Bus: PASS  
ACQ 3 CGD 2 Command Bus: PASS  
ACI 4 Command Bus: PASS  
ACQ 4 CGD 1 Command Bus: PASS  
ACQ 4 CGD 2 Command Bus: PASS  
ACI 1 Command Bus: PASS  
ACQ 1 CGD 1 Command Bus: PASS  
ACQ 1 CGD 2 Command Bus: PASS  
ACI 2 Command Bus: PASS  
ACQ 2 CGD 1 Command Bus: PASS  
ACQ 2 CGD 2 Command Bus: PASS  
Command Bus Communication Test: PASS

#### Load FPGA Runtime Test

-----  
SHI Runtime: PASS  
TPC Runtime: PASS  
ACQ3 Runtime: PASS  
ACQ4 Runtime: PASS  
ACQ1 Runtime: PASS  
ACQ2 Runtime: PASS  
Load FPGA Runtime Test: PASS

#### OEM Power Supply Test

-----  
Input Voltage: 117.62

OEM Power Supply Test: PASS

#### System Module Fault Condition Test

-----  
TPC Fault: PASS

SHI Fault: PASS

BKP Fault: PASS

ACQ3 Fault: PASS

ACQ4 Fault: PASS

ACQ1 Fault: PASS

ACQ2 Fault: PASS

CGDs Faults: PASS

System Module Fault Condition Test: PASS

#### Acquisition Board Temperature Test

-----  
Acq Board #3: PASS

Acq Board #4: PASS

Acq Board #1: PASS

Acq Board #2: PASS

Acquisition Board Temperature Test: PASS

#### UTA Configuration Check Test

-----  
UTA Configuration Check Test: PASS

#### Adapter Voltage Test

-----  
3.3 Voltage: PASS

12.0 Voltage: PASS

Adapter Voltage Test: PASS

#### SHI Voltage Test

-----  
Vcc Int Voltage: PASS

Vcc Aux Voltage: PASS

2.5 I/O Voltage: PASS

3.6 Voltage: PASS

SHI Voltage Test: PASS

#### SHI HV MUX Voltage Test

-----  
Connector: 1 HV MUX Power: PASS

Connector: 2 HV MUX Power: PASS

SHI HV MUX Voltage Test: PASS

#### Calibrate Hardware Test

-----  
Calibrate Hardware Test: PASS

Sequence Test

Sequence Test: PASS

DMA Test

DMA Test Acq #3 CGD #1: PASS  
DMA Test Acq #3 CGD #2: PASS  
DMA Test Acq #4 CGD #1: PASS  
DMA Test Acq #4 CGD #2: PASS  
DMA Test Acq #1 CGD #1: PASS  
DMA Test Acq #1 CGD #2: PASS  
DMA Test Acq #2 CGD #1: PASS  
DMA Test Acq #2 CGD #2: PASS  
All CGDs DMA: PASS  
DMA Test: PASS

Transmitter Test

Offset Average for Acq3: 0.4054 mA  
Offset Average for Acq4: 0.3493 mA  
Offset Average for Acq1: 0.4949 mA  
Offset Average for Acq2: 0.6329 mA  
Transmitter Test: PASS

ALL DIGITAL TESTS PASS

===== Starting Analog Tests =====

ALL ANALOG TESTS PASS