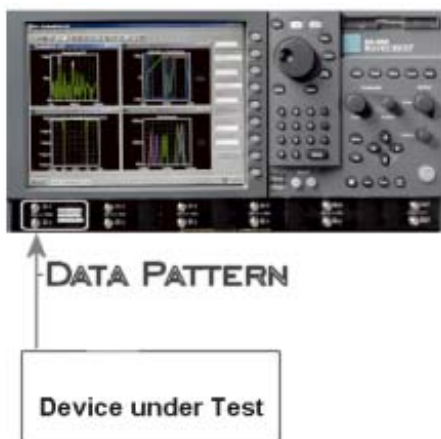# SERIAL ATA TOOL

For the SIA-3000 with GigaView Software

This paper describes the setup and results of the Serial ATA (SATA) Measurement tool. The first section focuses on the setup; the second section, making the measurement and understanding the results.

Tool Setup

This tool is able to measure SATA compliance on any data stream. Any data (random data or repeating pattern) can be used. If a repeating pattern is used, the Known Pattern with Pattern Marker tool can be used for more detailed diagnostics.

DATA PATTERN

Device under Test

From the Main Menu, press "Data Standards" and "Serial ATA" to Open the tool.


The Data Channel defaults to channel 1 and does not need to be changed if your data in entering channel 1.

The "Specifications" pull down menu enables you to select the compliance point you are measuring.
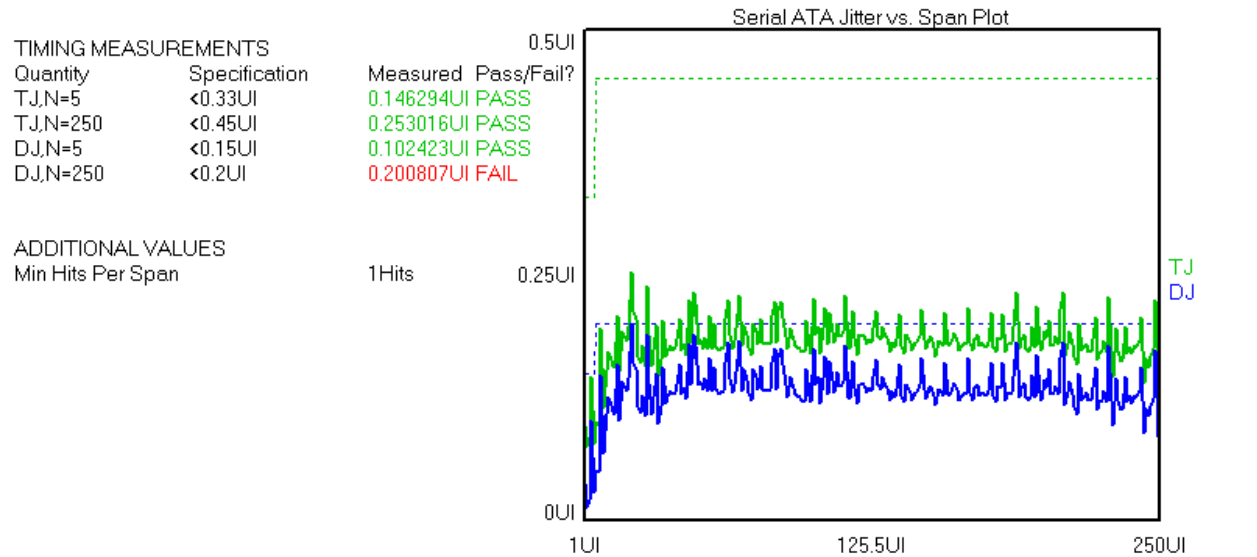
Making the Measurement and Understanding Results

To perform the measurement press "Run" [icon]. Several views are available once the measurement is complete. All views are displayed with the results summarized to the left of the plot. The specification value, the measured value and Pass or Fail is displayed.
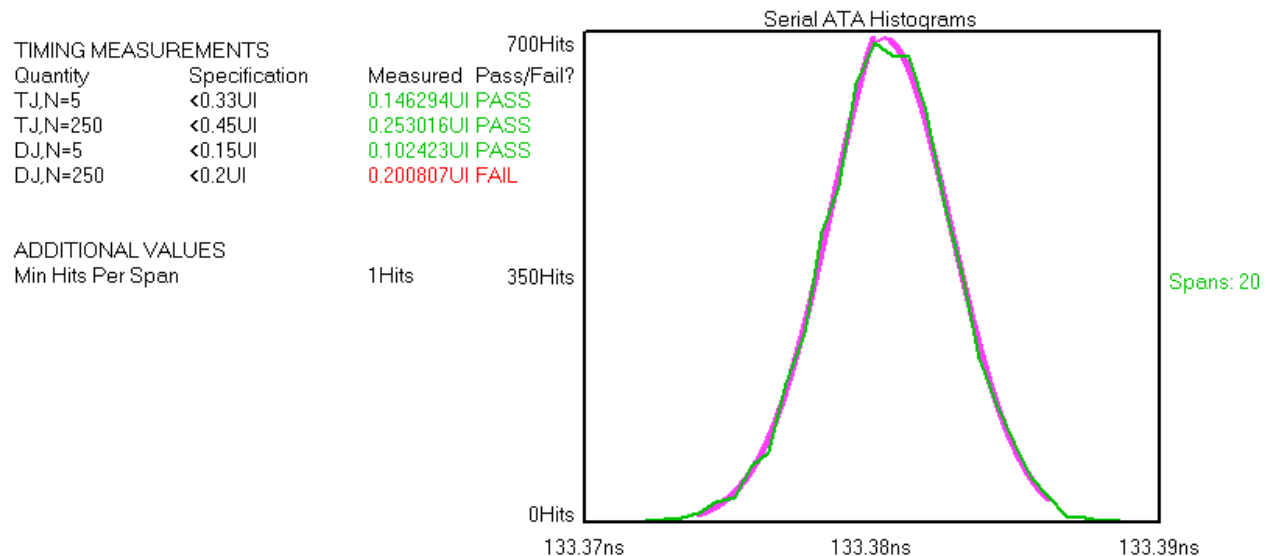
Jitter vs. Span View

This view shows the SATA compliance regions or 1 to 5 UI and 6 to 250UI. It shows both the DJ and TJ compliance levels from the SATA spec (dotted lines). It then displays the actual data (solid lines) and on the left if you pass or fail at each UI span.

```
TIMING MEASUREMENTS                                    0.5UI        Serial ATA Jitter vs. Span Plot
Quantity        Specification    Measured  Pass/Fail?
TJ,N=5          <0.33UI          0.146294UI PASS
TJ,N=250        <0.45UI          0.253016UI PASS
DJ,N=5          <0.15UI          0.102423UI PASS
DJ,N=250        <0.2UI           0.200807UI FAIL

ADDITIONAL VALUES
Min Hits Per Span            1Hits        0.25UI                                          TJ
                                                                                         DJ

                                          0UI
                                          1UI            125.5UI              250UI
```

Histograms View

This view shows a sampling of the individual histograms that make up each UI span. The Histograms for spans 1,2,3,4,5,10,20,50,100,200, and 250 are available.

```
TIMING MEASUREMENTS                                    700Hits       Serial ATA Histograms
Quantity        Specification    Measured  Pass/Fail?
TJ,N=5          <0.33UI          0.146294UI PASS
TJ,N=250        <0.45UI          0.253016UI PASS
DJ,N=5          <0.15UI          0.102423UI PASS
DJ,N=250        <0.2UI           0.200807UI FAIL

ADDITIONAL VALUES
Min Hits Per Span            1Hits        350Hits                                  Spans: 20

                                          0Hits
                                          133.37ns          133.38ns          133.39ns
```

Summary View

Shows the results displayed on the left on the other views in a table that can be cut and pasted into another document.

```
Serial ATA Summary NOT CONNECTED

TIMING MEASUREMENTS
Quantity          Specification     Measured          Pass/Fail?
TJ,N=5            <0.33UI           0.146294UI        PASS
TJ,N=250          <0.45UI           0.253016UI        PASS
DJ,N=5            <0.15UI           0.102423UI        PASS
DJ,N=250          <0.2UI            0.200807UI        FAIL


ADDITIONAL VALUES
Min Hits Per Span                   1Hits

*SATA Specification Version 1.0
```

DRAFT