LeCroy Application Briefs (1/30/03)

TRIGGERING

LAB 107 - Serial Pattern Trigger
Pass-Fail Mask Test Used To Acquire Serial Data Pattern

LAB 108 - Qualified First Trigger
Unique Trigger Captures Data From Cyclic Processes

ACQUISITION

LAB 204 - Debugging Asynchronous Interrupts
Sequence Mode Characterizes Interrupt Timing

LAB_WM205 - XXL Memory - 100 MSamples
Scope Option Offers Longest Acquisition Memory Yet

DISPLAY

LAB 303B - Constellation Displays
Analyze Data Communications Signals Using X-Y Displays

LAB 305 - Dot Plot Displays
Externally Clock Oscilloscope To Analyze PRML Channels

LAB 306A - Analog Persistence
Analog-like Intensity Or Color Graded Persistence In A DSO

LAB 307 - Surface Map Displays
View Signal change History Using This Unique Display

LAB WM308 -Splitting The Grid
The Effect Of Multiple Display Grids On Signal Integrity

LAB WM309 Virtual Memories in WaveMaster
Here is a way to make more than 4 memory channels

MEASURE

LAB 405A Modulation Analysis – FM
Using Jitter And Timing Analysis Functions To Analyze FM Signals

LAB_WM405 Modulation Analysis – FM *WaveMaster version*
Using Jitter And Timing Analysis Functions To Analyze FM Signals

LAB 406A Modulation Analysis – AM
Time And Frequency Domain Analysis Of AM Signals

LAB 407A Modulation Analysis – PM
Using Jitter And Timing Analysis Functions To Analyze PM Signals

LAB_WM407 Modulation Analysis – PM *WaveMaster version*
Using Jitter And Timing Analysis Functions To Analyze PM Signals

LAB 412 - The diaBolical dB
Understanding Logarithmic Scales And The deciBel

LAB 413 - Jitter Measurement Tools
New And Traditional Tools Make Jitter Measurements Easy

LAB 414 - dBm Measurements in 600 Ohm Systems
Scaling dBm Power Spectrum Readouts for 600 Ohm Systems

LAB 415 - Error Vectors
Measure Error Vectors In Quadrature Modulation Systems

LAB 416 - Measuring Exponential Decay Slope
Waveform Math Determines Exponential Time Constants

LAB 417 - Position Error Analysis
Histograms Measure Servo Runout and On-Track Percent

LAB 418 - Measure Device Capacitance
Easy Circuit Measures Voltage Dependent Capacitance

LAB 419 - Measuring Clock Stability
Jitter And Timing Analysis Measures Clock Stability

LAB 420 - Characterizing Gated Oscillators
Measuring Stability And Envelope Shape In Gated Oscillators

LAB 421 - Modulation Analysis – PWM
Use Jitter And Timing Functions To Analyze PWM Signals

LAB 422 - Regulation And Ripple
Trend Functions Analyze Load Related Power Supply Specs

LAB 423 - Mechanical Measurements I
Using A DSO To Measure Vibration Using Accelerometers

LAB 424 - Mechanical Measurements II
Using A DSO To Measure Basic Rotating Machine Dynamics

LAB 425 - Mechanical Measurements III
Measuring Self Excited Mechanical Resonances

LAB 426 - Noise Measurements
Time Frequency And Statistical Domain Analysis

LAB 427 - Rescaling Measurement Units

Use The Rescale Function For Non-Voltage Measurements

LAB 428 - Power - Real And Apparent
A Tutorial On Basic Power Measurements

LAB 429 - How Fast Must I Sample?
How Sampling Rate Affects Time Measurement Uncertainty

LAB 430 - Using Waveform History
Fast Acquisition And Display Of Signal Changes Over Time

LAB 431 - Using Wavepilot Graph
Quick Graph Feature Helps Analyze Waveform Variations

LAB 432 - Wavepilot
Operating Aid Puts All A Scope's Power At Your Fingertips

LAB 433 - Wavepilot Too
Operating Aid Opens The Power Of Waverunner-2 To All

LAB 435- USB 2.0 Compliance Testing
DSO Offers Waveform Analysis Lacking In Other Devices

LAB_WM436 Differential Crossing Voltage
Utilizing LeCroy M1 To Measure Differential Crossover

PROCESSING

LAB 707A - Calculating Area In X-Y Displays
Waveform Math Finds Area Enclosed In X-Y Display

LAB 713 - Testing Wireless Devices
Waveform Math Used To Test Keyless Entry Transmitters

LAB 714 - Setting Up FFT Span And Resolution
A Logical Approach To Setting Up The FFT Function

LAB_WM714 Setting Up FFT In WaveMaster *WaveMaster version*
A Logical Approach To Setting Up The FFT Function

LAB 715 - Characterize Jitter Using Histograms
Direct Readout Of Jitter Using Histograms Of Parameters

LAB 716 - Relative Jitter Measurements
Using Histograms To Characterize Relative Timing Jitter

LAB 717 - Correlation Measurements
Signal Detection And Propagation Studies Using Correlation

LAB 718 - Using Histograms I
Use Statistical Analysis To Characterize Random Events

LAB 719 - Using Histograms II
Statistical Analysis Helps Determine Product Specifications

LAB 720 - Using Histograms III
Statistical Analysis As A Diag stic Tool

LAB 721 - Using Histograms IV
Viewing Waveforms Related To Specific Histogram Data

LAB 722 - Power Measurements I
Measuring Peak And Average Power In Complex Signals

LAB 723 - Amplitude, Phase, and Power
Measuring Vector Modulated Signals

LAB 724 - Comparing Waveforms
De-skewing And Comparing Waveforms

LAB 725- Using Parameter Trend Plots
Power Supply Regulation Measurements Using Trend Plots

LAB 726 - Dynamic Response Measurements
Trend Plots Measure Phased Locked Loop Dynamics

LAB 727A - Locating Clock Jitter Anomalies
Trend Plots Locate Period And Width Violations

LAB 728 - Parameter Mathematics
Performing Basic Mathematics On Measured Parameters

LAB 729 - Finding Setup/Hold Timing Violations
Analyze And measure Sequential Logic Timing Statistically

LAB 730A - Finding Maximum Incremental Jitter
Locate Largest Cycle To Cycle Timing Changes

LAB 731 - Data Logging Using Trend Plots
Trend + Sequence Mode + Trigger Holdoff = Data Logger

LAB 732 - High Pass Filtering Acquired Signals
Using Enhanced Resolution To High Pass Filter Waveforms

LAB 733- Visualizing Signal Variation
Persistence Trace Function Shows Statistical Limits

LAB 734 - Eye Diagram Analysis Tool
Persistence Histograms Measure Eye Diagram Statistics

LAB 735 - Spread Spectrum Clocking
Spread Spectrum Clock Measurements Using A DSO

LAB 736 - Dynamics Of A PLL Timebase
Analyzing A Phase Locked Loop Synthesized Timebase

LAB 737 - Cycle To Cycle Jitter Of CPU Clocks
Evaluating Multi-frequency Clock Distribution Functions

LAB 738 - SSC Measurements
More Spread Spectrum Clock Measurements Using A DSO

LAB 739 - Jitter Effects On 100BASE-T Timing
Time Interval Error Detects Excessive Phase Jitter

LAB 740 - Frequency Response Measurements
Derive Frequency Response From Step Response

LAB 741 - Measure Power In 3-Phase Systems
Use A DSO To Measure Power In 3 Wire, 3-Phase Systems

LAB 742 - Measuring Energy
Verifying Energy Measurements Using Capacitor Discharge

LAB 743 - Histogram Constellation Diagrams
Determine The Statistical Population Of Each State

LAB 744 - Phase Noise Measurements
Convert Time Interval Error Into Phase Noise

LAB 745 - Frequency Analysis Of Jitter
Frequency Selective Determination Of RMS Jitter

LAB 746 - Multi-Stage, Multi-Rate Filters
Extending the Range Of Digital Filter Cutoff Frequencies

LAB747 - Digital Filter Applications
Useful Applications Of The Digital Filter Package (DFP)

LAB_WM747 Digital Filter Applications
Useful Applications Of The Digital Filter Package 2 (DFP2)

LAB 748 - Measuring Phase Margin
Measure The Phase Margin Of Power Supply Control Loops

LAB749 - Validating Clock Designs
Diag sing Clock Jitter Problems During Design Validation

LAB 750A - PLL Loop Bandwidth

Measuring Jitter Transfer Function In Phase Locked Loops

LAB_WM750 -PLL Loop Bandwidth *WaveMaster version*
Measuring Jitter Transfer Function In Phase Locked Loops

LAB751 - Accumulated Jitter
Making Accumulated Jitter Measurements

LAB 754 - Separating Jitter Sources
Frequency Selective Separation of Jitter Components

LAB 755 - Parameter Mathematics
Custom Measurement Parameters Using Parameter Math

LAB 756 - PLL Phase Offset
Measuring Static and Dynamic Phase Offsets In PLL's

LAB757 - Custom Measurements *WaveMaster version*
Create Custom Processing Functions In Your WaveMaster

LAB758 - Custom Math with VBScript *WaveMaster version*
Create Custom Math Functions using simple scripts

LAB WM759 -Log Horizontal with VBScript *WaveMaster version*
Create a Logarithmic Frequency Scale using VBScripts

LAB WM760 - Filter Signals Using MATLAB *WaveMaster version*
Apply MATLAB Based Filters In The DSO's Processing Path

LAB WM763 Digital Filtering *WaveMaster version*
Digital Filter Option Offers Both FIR And IIR Filters

LAB WM762 CDMA *WaveMaster version*
RF Wireless Signal Analysis using Oscilloscopes

LAB_WM763 Digital Filtering *WaveMaster version*
Digital Filter Option Offers Both FIR And IIR Filters

LAB_WM764 The Processing Web *WaveMaster version*
Create Custom Math functions and Parameters

INTERFACING

LAB 808 - Understanding Active X Controls

LAB 809 - Making the Most of ActiveDSO
Creating Command Buttons in Microsoft Excel

LAB 810 - Floppy Free Documentation
Saving Data, Panels, Setups, & Images Via Remote Control

LAB 811 - Using the Remote Control Assistant
How your oscilloscope can help debug your source code

LAB812 - Customize Your Scope
CustomDSO Files Create Custom Menus And Operations

LAB 813 - Remote Control Shortcuts
Using Queries to Define Correct Remote Commands

LAB 814 - 1 If By LAN, 2 If By GPIB…
Full Remote Control Via LAN, GPIB, or RS232

LAB 815 - LeCroy Scope & Internet
Configuring LeCroy Scopes To Communicate Via Internet

SIGNAL SOURCES

LAB 910 - Pulse Width Modulated Waveforms
Dynamically Stepping Duty Cycle From 1% To 99%

LAB911 - Phase Modulated Waveforms
Creating PM Waveforms For PLL Loop Bandwidth Tests

MISCELLANEOUS

LAB 1005 - Clock Oscillator Basics
Precision Time Measurements OF Crystal Oscillators

LAB 1006 - Clock Oscillator Stability
Measuring Clock Oscillator Frequency Stability

LAB 1007 - Phase Locked Loop basics
An Introduction To Phase Locked Loops

LAB 1009 - Jitter Analysis On Data Streams
Automatically Determining Clock Frequency From Data

LAB 1010 - Video Basics
Video Format Overview

LAB 1011 - Active Probes
Active Probes for the LeCroy Analog Oscilloscopes

LAB 1012 - Probing LVDS Signals
Functional Testing Of LVDS Bus Signals Using HPF Probes

LAB 1013 - Using Current Probes
Some Practical Hints On Effective Current Measurements

Analog Oscilloscope Application Briefs

TRIGGERING

LAB 1100 - TV Triggers
Video triggers and Pedestal Camping

ACQUISITION

LAB 1200 - De-skew
Adjustment for Critical Time Measurements

DISPLAY

LAB1300 - LA354 Dual Delay
What is Dual Delay and how does it work

LAB1301 - LA354…In Living Color!
Why a Color Storage Analog Scope and how does it work?

MEASURE

LAB 1400 - Analog Scope Displays
Scopes and Sunglasses

LAB 1401 - SCH Phase Adjustments
Sub Carrier Horizontal (SCH) Phase Adjustments

LeCroy Operating Notes

TRIGGERING

LON 102 - Runt Trigger
Triggering On Low Amplitude Logic Signal Transitions

LON 103A - Setup/Hold Trigger
Triggering On Setup/Hold Timing Violations

LON 104 - Eye Diagram Triggering
Set Up Eye Diagram Triggering Without A Symbol Clock

LON 105 - Window Trigger
Setting Up A Bi-Level Window Trigger

LON 106 - Roll Mode Operation
The Characteristics Of Roll Mode Are Scope Dependent

LON 107 - OR'ed Trigger
Trigger On Any Of Four Input Channels

ACQUISITION

LON 200 - Offset, Sensitivity, And Noise
Matching The Oscilloscope To Your Signal Input

DISPLAY

LON 302 - Zoom Display Of Large Waveforms
How To Use Zoom Displays Effectively With Long Memory

LON 303 - Display Compaction
Displaying Long Waveforms Without Losing Detail

PROCESSING

LON 701A - Accuracy Of Time Histograms
Demonstrating The Accuracy Of Time Parameter Histograms

LON 702 - Power Spectral Density
Understanding Power Spectral Density Measurements

LON 703 - Bandwidth And Risetime
Relating Frequency And Time Domain Figures Of Merit

LON_WM704 Time And Spectral Response
Frequency And Time Domain Responses In Scopes

INTERFACING

LON 801 - Printer, Plotter Compatibility
Connecting Printer and Plotters to LeCroy DSO's

LON 802 - MaskMaker Backgrounds
Creating Backgrounds In MaskMaker

LON_WM803 WaveMaster Remote Control *WaveMaster version*
Replacing Existing LeCroy Scopes in Remote Systems

PROBING& MISC

LON 1002 - Probing High Speed Circuits
Active And Low Capacitance Probes Reduce Capacitive Loading

LON 1003 - IP-2 Instapulser Battery Replacement
Use a lithium battery in place of the mercury battery

LON 1004 - Cleaning DSO Non-Volatile Memory
Procedure to clear LeCroy Oscilloscope non-volatile memory

ANALOG SCOPES

LON 1400 - LA3XX Series Analog Scopes Intensity Adjustments
Kids, don't try this at home, we are trained professionals!