

TEST & MEASUREMENT SOLUTIONS

C A T A L O G 2 0 2 4 / 2 0 2 5

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Everything Power

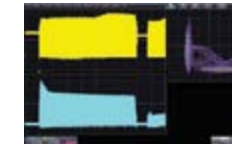
35 CHAPTER 4
RF and Microwave



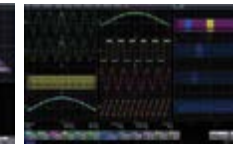
CHAPTER 1

Oscilloscopes & More

View



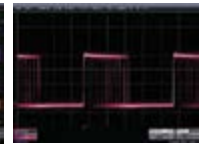
X-Y Mode



Zoom-Zoom-Zoom



Multi-Display



Fast Update Rate Mode

Capture

Capture with confidence,
never miss any events



Basic & Advance Triggers



Sequence Mode

- Store up triggered events into oscilloscope memory
- Go back and look at the waveform with time stamp
- Various segments viewing mode

Documentation

LabNotebook

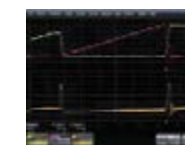
Printer

Hard Drive

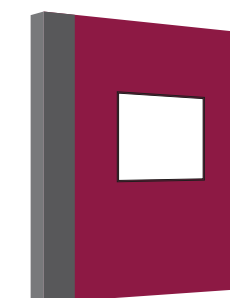
USB Drive

Email

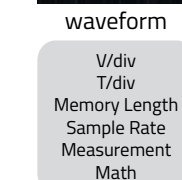
Document your work
Finish!



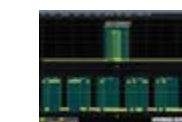
One-touch Functionality
Very easy to save all essential waveforms, setting, and screen images.



Save your work
Quickly save all necessary files



Oscilloscope Setup



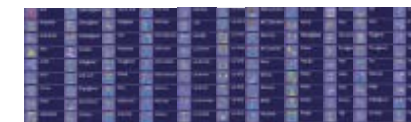
Screen Dump

Recall Jobs
Recall set up from report

FLASHBACK

Measure

Measure EVERY pulse/
waveform, never miss anything

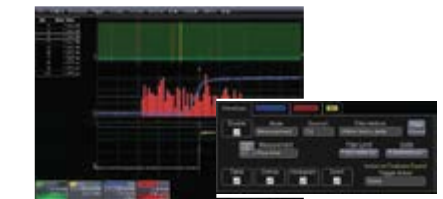


Measurement
Over 100 measurement parameters



Statistics & Histogram
Understand your waveform behavior

Analyze



Wavescan

The advanced search & analysis
detect abnormal waveforms easily



Custom DSO & Math Beyond limits

XDEV Customization software
package being used to implement
a 1 MHz Butterworth filter using
MATLAB.

8 Bit ADC Oscilloscope Models



WaveSurfer 3000Z

Bandwidth selection: 200 MHz, 350 MHz, 500 MHz, 1 GHz
Resolution: 8-bits
Sampling rate: 2 GS/s, 4 GS/s interleaved
Max Memory: 10 Mpts/ch, 20 Mpts interleaved
Channels: 4



Waverunner 9000

Bandwidth selection: 500 MHz, 1 GHz, 2.5 GHz, 4 GHz
Resolution: 8-bits
Sampling rate: 10 GS/s to 40 GS/s
Max Memory: 16 Mpts/ch, 64 Mpts/ch
Channels: 4



WaveMaster8Zi-B

Bandwidth selection: 4 GHz, 6 GHz, 8 GHz, 13 GHz, 16 GHz
Resolution: 8-bits
Sampling rate: 40 GS/s to 80 GS/s
Max Memory: 256 Mpts/ch, 512 Mpts 2-channel interleaved
Channels: 4



LabMaster 10Zi-A

Bandwidth selection: 20 GHz, 25 GHz, 30 GHz, 36 GHz, 50 GHz, 59 GHz, 65 GHz
Resolution: 8-bits
Sampling rate: 80 GS/s to 160 GS/s
Max Memory: 512 Mpts/ch, 1024 Mpts 2-channel interleaved
Channels: Up to 80 channels at 36 GHz, 20 channels at 65 GHz



Sample Rate x Time Window = Memory

$BW = 0.35/Tr$

Sample Rate = 2 x BW (min)

12 Bit ADC Oscilloscope Models



WaveSurfer 4000HD

Bandwidth selection: 200 MHz, 350 MHz, 500 MHz, 1 GHz
Resolution: 12-bits
Sampling rate: 2.5 GS/s, 5 GS/s interleaved
Max Memory: 12.5 Mpts/ch, 25 Mpts interleaved
Channels: 4



HDO4000A

Bandwidth selection: 200 MHz, 350 MHz, 500 MHz, 1 GHz
Resolution: 12-bits
Sampling rate: 2.5 GS/s, 5 GS/s interleaved
Max Memory: 12.5 Mpts/ch, 25 Mpts interleaved
Channels: 4



HDO6000B

Bandwidth selection: 350 MHz, 500 MHz, 1 GHz
Resolution: 12-bits
Sampling rate: 10 GS/s
Max Memory: 250 Mpts/ch
Channels: 4



WaveRunner 8000HD and MDA 8000HD

Bandwidth selection: 350 MHz, 500 MHz, 1 GHz, 2 GHz
Resolution: 12-bits
Sampling rate: 10 GS/s
Max Memory: 1.25 Gpts/ch, 2.5 Gpts 4-channel interleaved, 5 Gpts 2-channel interleaved
Channels: 8 + 8 (Synchronize to 16 channels)



WaveProHD

Bandwidth selection: 2.5 GHz, 4 GHz, 6 GHz, 8 GHz
Resolution: 12-bits
Sampling rate: 20 GS/s
Max Memory: 2.5 Gpts/ch, 5 Gpts interleaved
Channels: 4



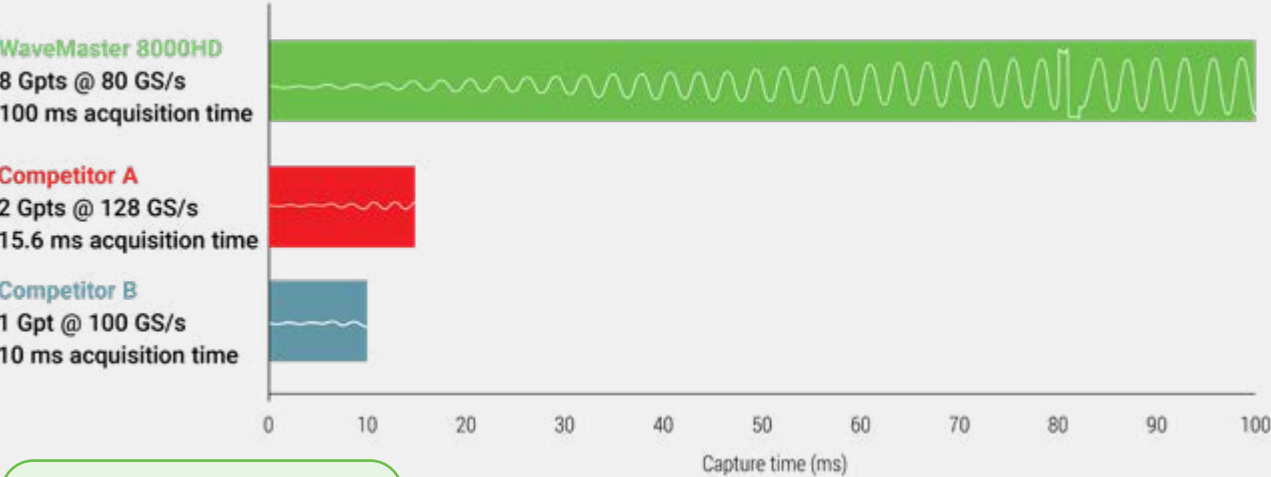
12 Bit ADC Oscilloscopes – Ultra High Bandwidth Models



WaveMaster8000HD
Bandwidth selection: 20GHz, 25GHz, 33GHz, 50GHz, 59GHz, 65GHz
Resolution: 12-bits
Sampling rate: Upto 320 GS/s
Max Memory: 200Mpts/ch, Upto 8Gpts
Channels: 4



Industry’s longest memory



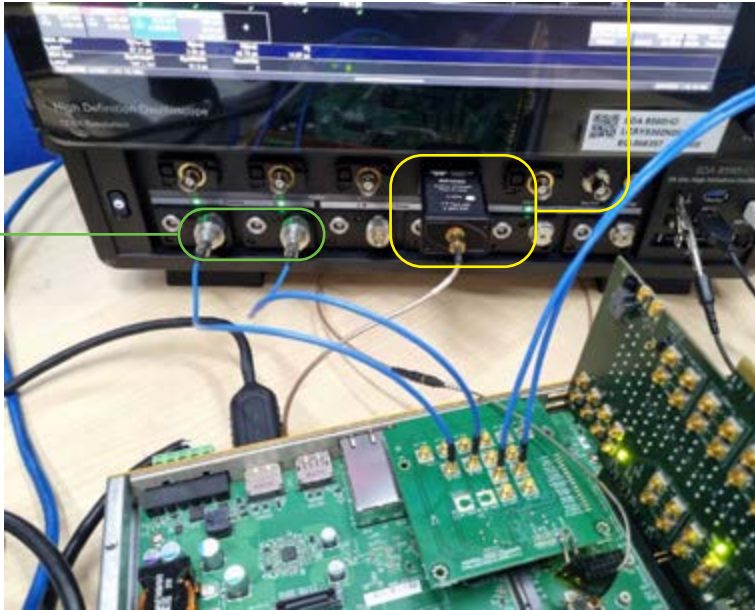
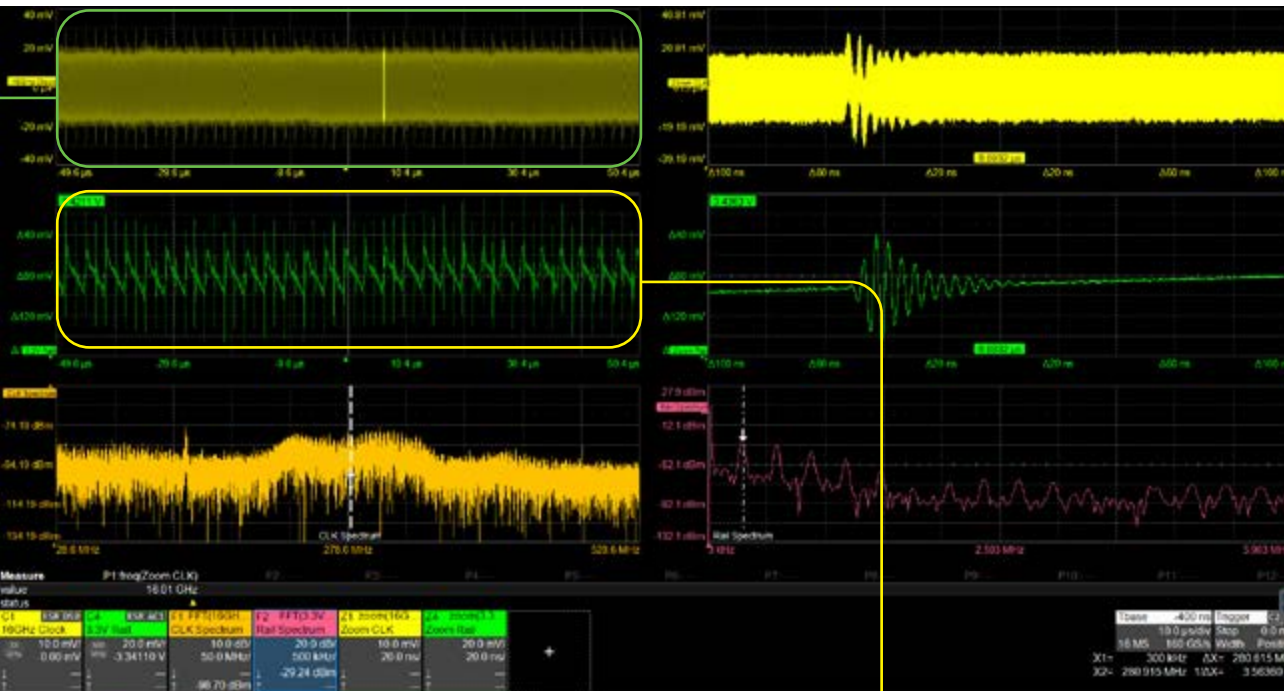
- DC and Low-Bandwidth signals**
- Selectable 50Ω/1MΩ termination
 - Connect passive probes, active probes, current probes, power rail probes

- High-speed serial data signals**
- 2.92mm inputs – 33GHz @ 160GS/s
 - 1.85mm inputs – 65GHz @ 320GS/s

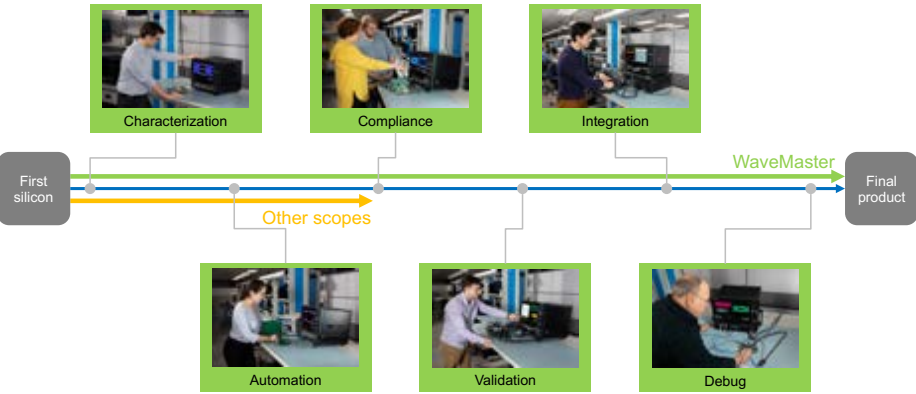
- Digital logic signals**
- 16 channels, 500MHz, 2.5GS/s
 - 18 channels, 3GHz, 12.5GS/s



Gain insights using a single oscilloscope



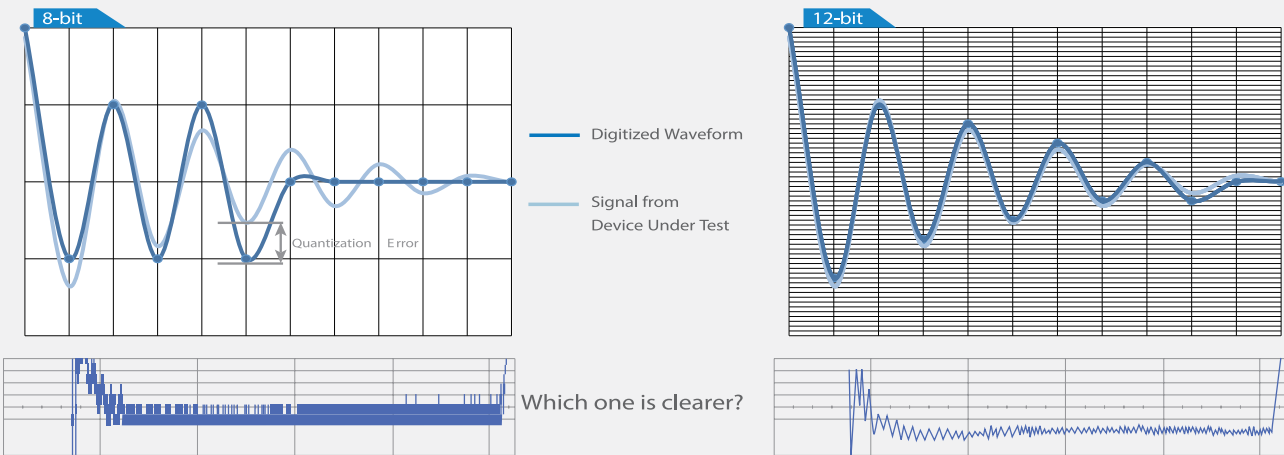
Viewing 16GHz clock and DC power rail simultaneously



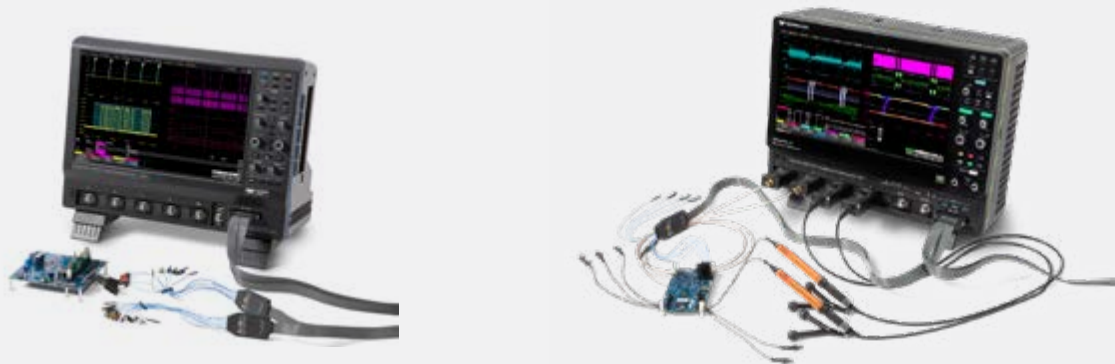
- ✓ Characterization
- ✓ Compliance
- ✓ Integration
- ✓ Automation
- ✓ Validation
- ✓ Debug

True 12-bits ADC

With HD4096 levels, capture what you've been missing out!
16 times higher resolution means a cleaner, crisper waveform

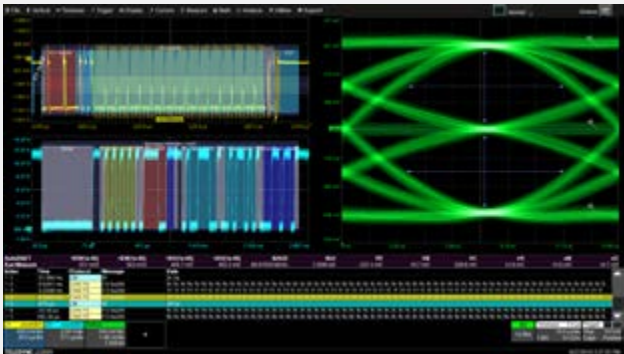


Analog + digital = Mixed Signal Oscilloscope



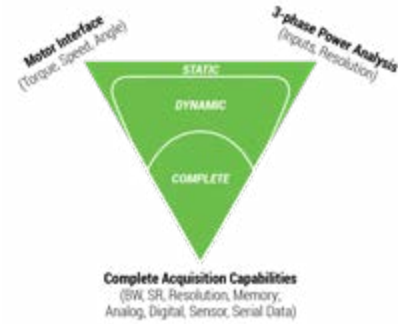
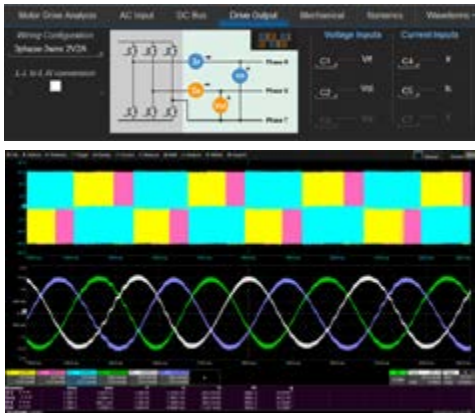
Mixed signal capabilities add-on. 16 to 36 digital channels, up to 500 MHz. Fully compatible with serial trigger/decoders.

Trigger/decoders for serial protocols



- Embedded computing – I3C, I2C, SPI, UART-RS232, USB 2.0 HSIC
- Automotive + Industrial – 10Base-T1S, 100Base-T1/ BroadR-Reach, CAN/CAN FD, FlexRay, LIN, SENT
- Avionics – ARINC-429, MIL-STD-1553, SpaceWire
- Peripherals – USB3.2, USB2.0, USB-PD (power delivery), USB4-SB (sideband), Display Port AUX
- Power Management – SMBus, PMBus, SPMI
- MIPI – C-PHY, D-PHY, DigRF 3G, DigRF v4, I3C
- Others – Audio (I2S, LJ, RJ, TDM), Manchester, NRZ

3 Phase Power and Motor Drive Tests



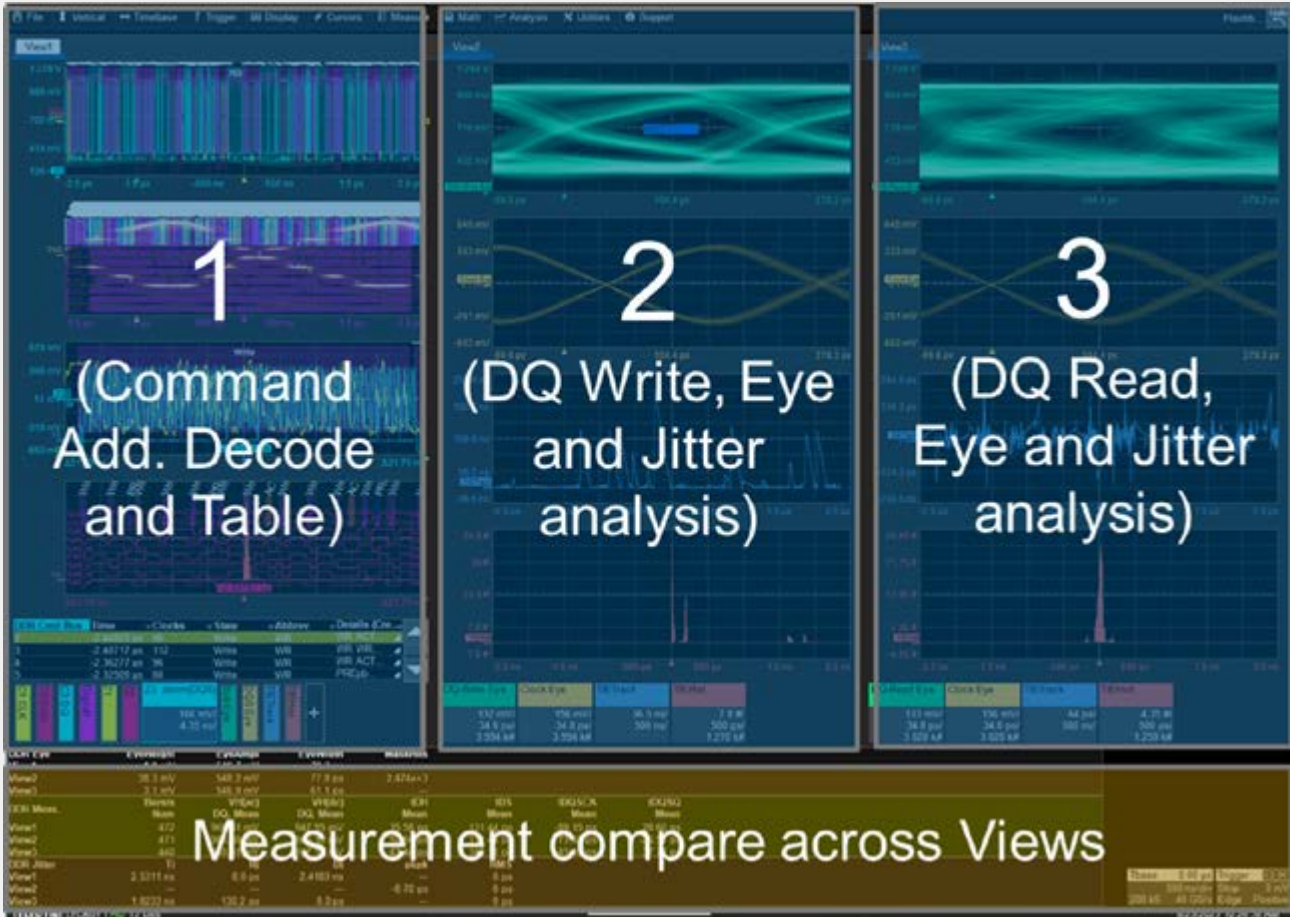
THREEPHASEPOWER on HDO6000B & WavePro HD	THREEPHASEPOWER on WaveRunner 8000HD	MDA 8000HD Motor Drive Analyzer
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Analog Input Channels	4	8 (16 with OscilloSYNC)	8 (16 with OscilloSYNC)
Digital Input Channels	16 (on -MS models)	16 (with MSO option)	16 (with MSO option)
Resolution	12 bits	12-bits	12-bits
Bandwidth	350 MHz - 8 GHz	350 MHz - 2 GHz	350 MHz - 2 GHz
1-Phase Power Analysis	✓	✓	✓
3-Phase Power Analysis	✓ (2-wattmeter method only)	✓	✓
Mechanical Power Analysis	✗	✗	✓
X-Y Traces	✗	✗	✓
Harmonics Calc Option	✓	✓	✓
Vector Display Option	✓	✓	✓
Waveform Transform Option	✓ (α β γ & dq0 only)	✓ (α β γ & dq0 only)	✓

Serial Data Analysis and Jitter Measurements

DDR



- 1 Oscilloscope (WM8200HD)
- 2 DDR Software
 - DDR Decode and Trigger
 - DDR Debug Tool
 - QualiPHY-DDR5 (DDR compliance test tool)
- 3 High-bandwidth analog differential probes (DH-20PL)
- 4 High-speed Digital Analyzer (HDA125)

Command Bus: Decode, Trigger and R/W Separation



Protocol Decode List of "Command Truth Table"
Bank Activate "ACT"
Write "WR"
Read "RD"
Mode Register Write "MRW"
Mode Register Read "MRR"
Write Pattern "WRP"
RFU
Refresh All "REFab"
Refresh Management All "RFMab"
Refresh Same Bank "REFsb"
Refresh Management Same Bank "RFMsb"
VrefCA Command "VrefCA"
VrefCS Command "VrefCS"
Precharge "PRE"
Precharge All "PREab"
Precharge Same Bank "PREsb"
Self Refresh Entry "SRE" & "SREF"
Power Down Entry "PDE"
NOP/Power Down Exist "NOP/PDX"
MPC

- Read/Write Visual Overlay
- Decode 21 packet types Trigger 6 packet types
- Decode Table. View signals at the corresponding decode



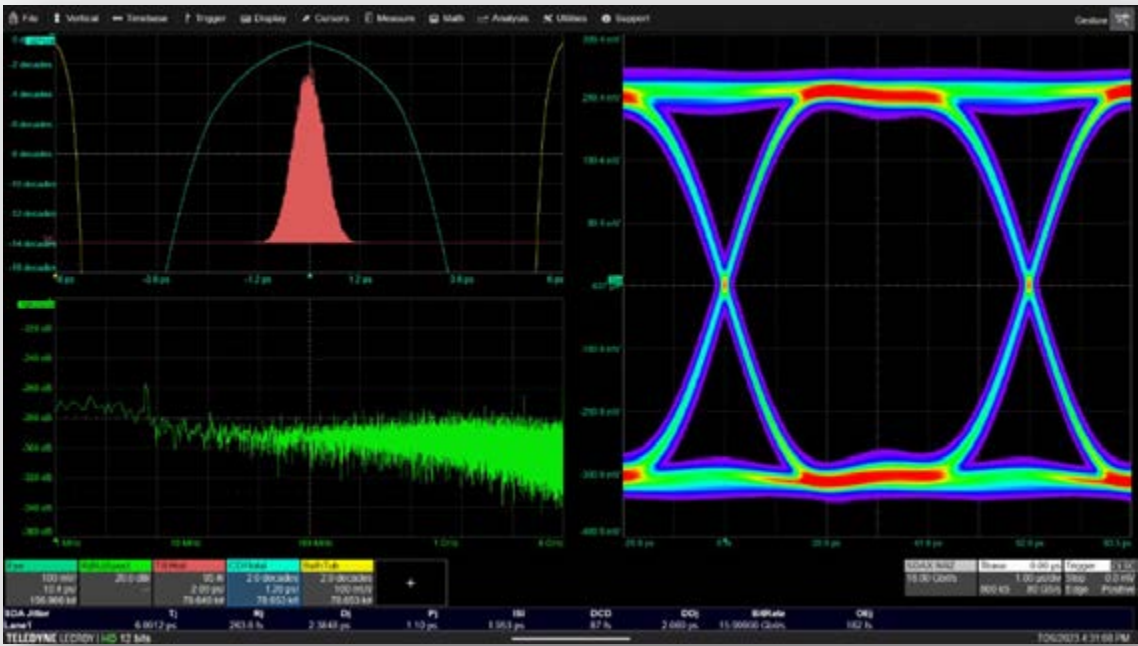
- Highly Recommended HDA125
- 12.5 GS/s on 9 or 18 probes
 - 3 GHz Bandwidth
 - Swap between oscilloscopes

Eye Diagram, Mask Test and JEDEC Measurements in each View



SDA EXPERT

Serial Data Analysis Software



Advanced serial data analysis software

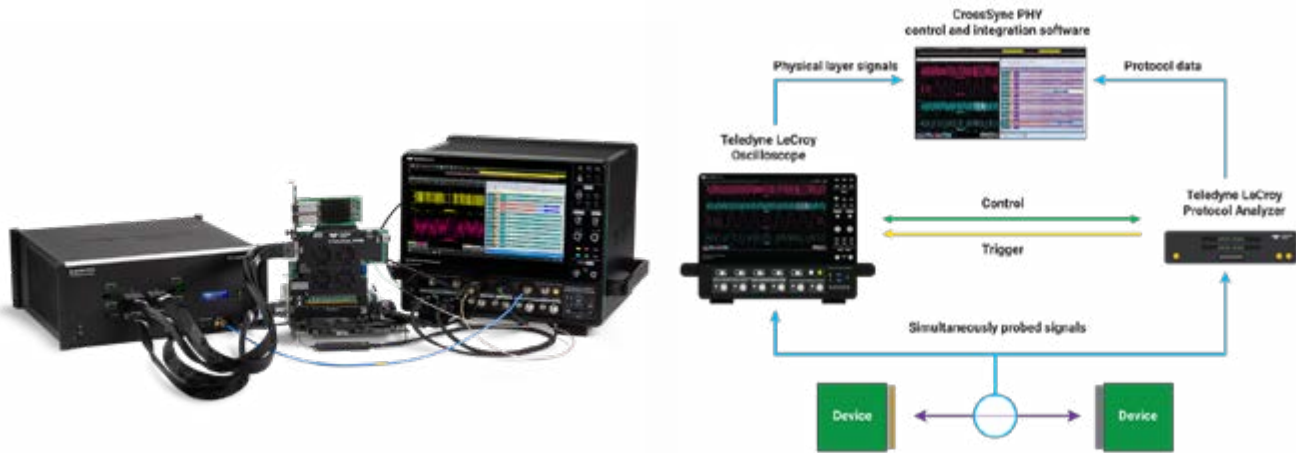
- Eye diagram and jitter analysis
- Channel De-Embedding and Emulation
- FFE, DFE, CTLE equalization

Tailored analysis for PCIe, USB, TBT, DP

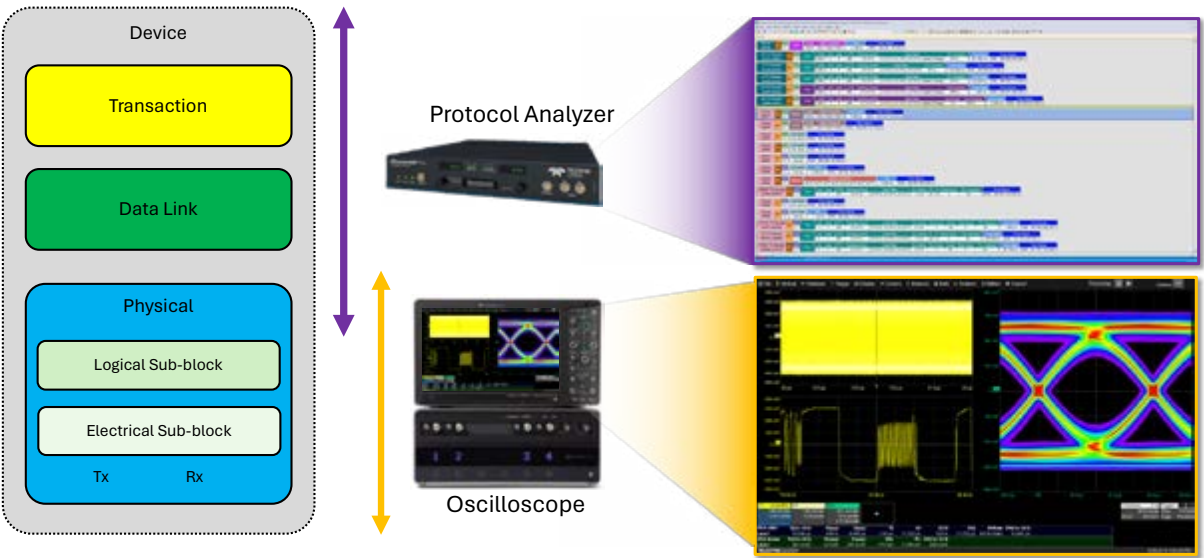
- Built-in technology-specific expertise
- Sets up specific PLL, test point, TX and RX equalization automatically
- Makes specific measurements
- Debug and analyze beyond compliance testing

CATEGORY	SELECT SERIAL STANDARD
ALL	NRZ
Custom	PAM3
DisplayPort	PAM4
PCI Express	DisplayPort RBR 1.62 Gb/s
USB3	DisplayPort HBR 2.7 Gb/s
USB4 and Thunderbolt	DisplayPort HBR2 5.4 Gb/s
	DisplayPort HBR3 8.1 Gb/s
	DisplayPort UHBR 10 Gb/s
	DisplayPort UHBR 13.5 Gb/s
	DisplayPort UHBR 20 Gb/s

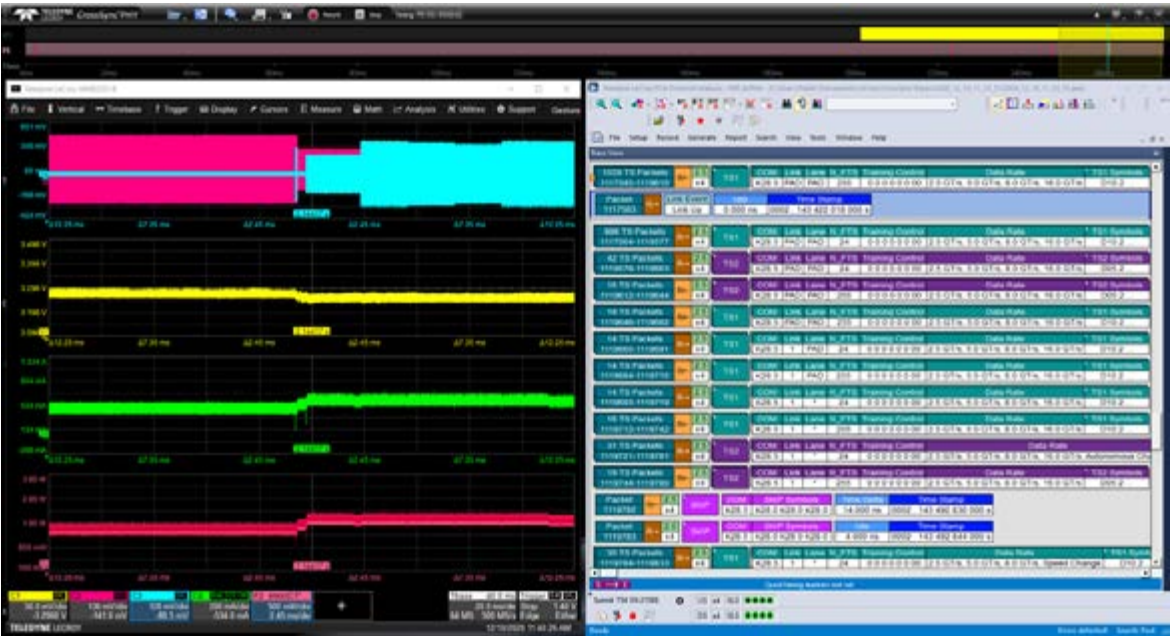
CrossSyncPhy
Only Provider of cross synchronization between protocol analyzers and time domain oscilloscopes



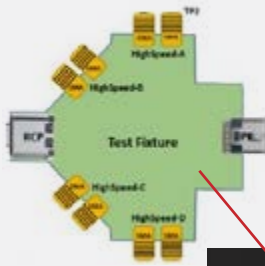
Linking our tools would let us cover the whole stack better



Dynamic rail voltage, current and power measurements as lane changes speed to 16 GT/s.



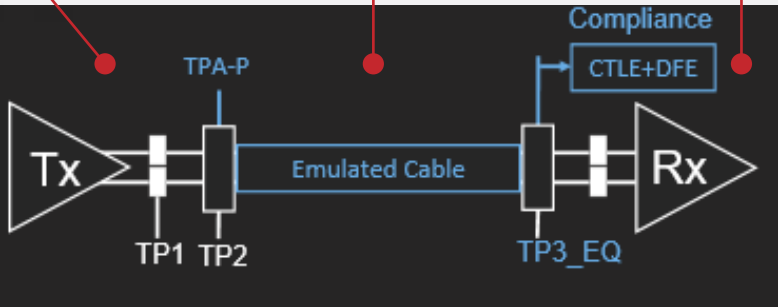
Signal is measured with a test fixture at the output of the device



Cable is emulated using S-parameter file



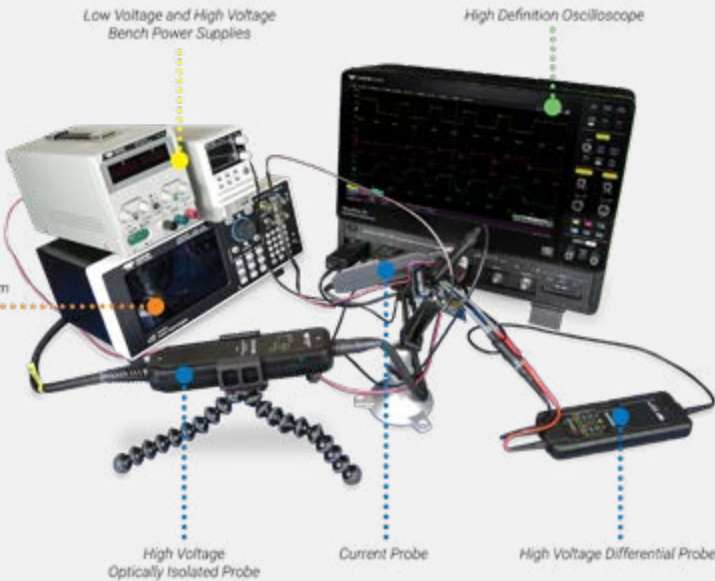
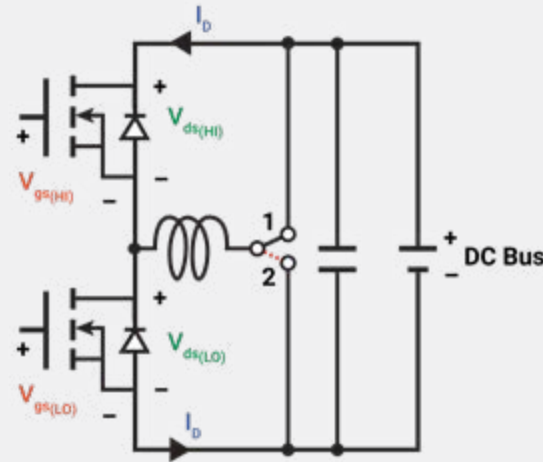
Equalizer is simulated in software



Power Integrity and Sequencing



Double Pulse Tests for Wide Band Gap Devices



Unmatched Characterization Insight



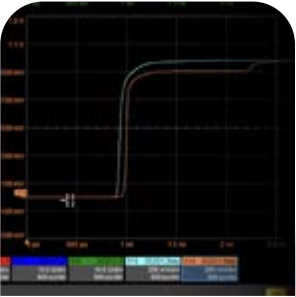
TDR and S-Parameter Analyzers – WavePulser 40iX and T3SP15D	
Frequency Range:	DC to 40 GHz (WP40iX), DC to 15 GHz (T3SP)
Number of ports:	4 (WP40iX), 2 (T3SP)
Impulse/Step Rise Time:	8.5 ps (WP40iX), 35 ps (T3SP)
Impedance Profile:	Differential and Common Mode (WP40iX), Differential (T3SP)
TDR/TDT Solution:	TDR/TDT (WP40iX), TDR (T3SP)



S-parameters
Wave Pulser 40iX: S-parameter Characterization

Complete Frequency Characterization

- Frequency Range from DC to 40 GHz
- Single-ended and Mixed-mode
- Internal Automatic Calibration



Impedance Profile
WavePulser 40iX: TDR Characterization

Precisely Locates Impairments

- Spatial Resolution < 1mm
- Differential and Common-mode
- TDR and TDT Capability



Deep Toolbox
WavePulser 40iX: Eye Diagram Channel Performance

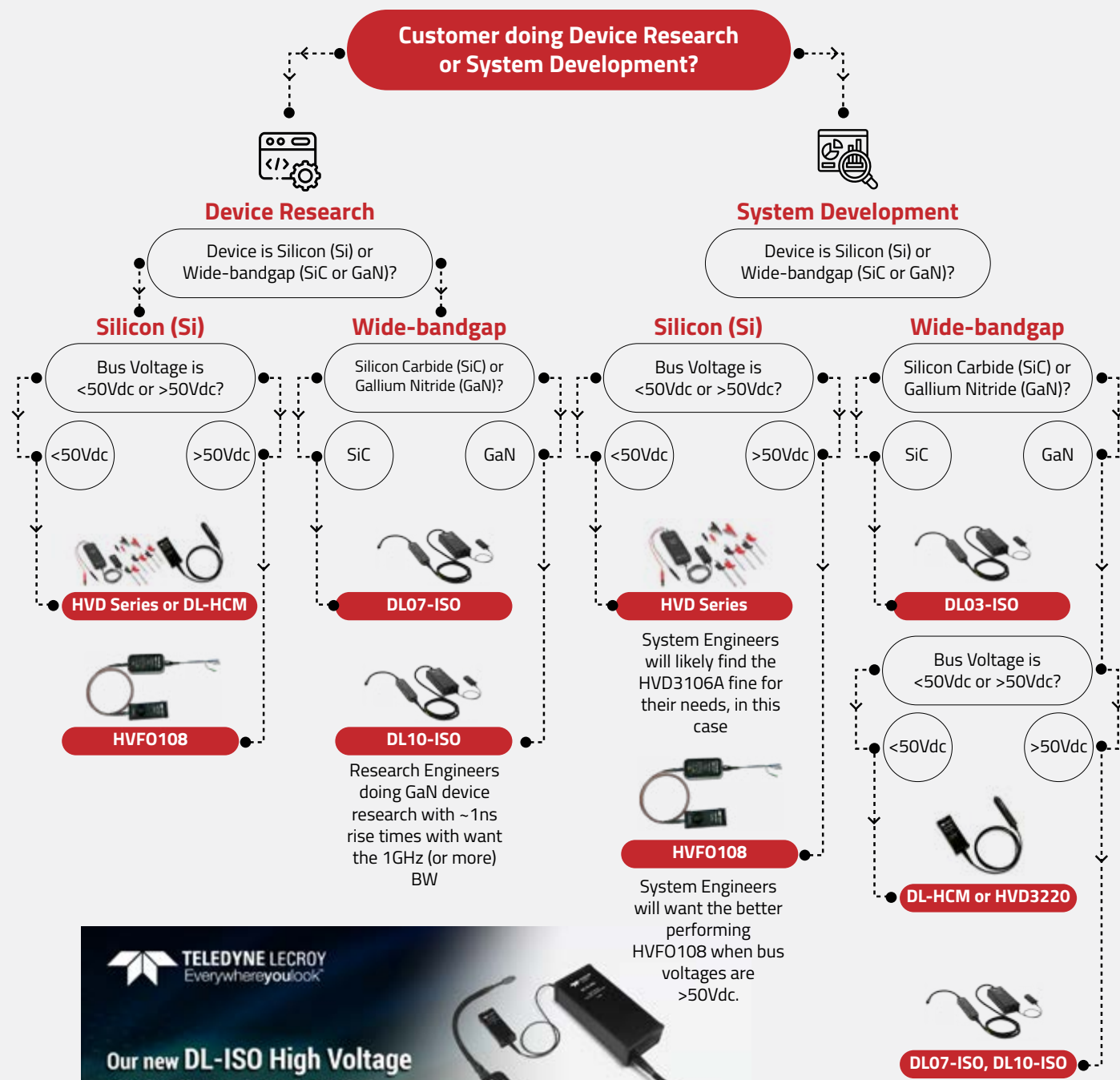
Measurements Ready for Simulation

- Built-in Simulation, De-embedding and Time-gating
- Built-in Eye Diagram Display with Equalized Emulation
- Built-in Advanced Jitter Analysis

		WavePulser 40iX	T3SP15D
FREQUENCY	Frequency Range	DC to 40GHz	DC to 15 GHz
	S-parameters	Single-ended, Differential, and Mixed-mode Full S-parameters (S_{11} , S_{12} , S_{21} , S_{22})	Single-ended S_{11} , S_{12} , S_{21} , S_{22} Differential S_{11}
	Calibration	Internal automatic & manual OSLT	
TIME	Impulse/Step Rise Time	8.5 ps	35 ps
	Impedance Profile	Differential and Common-mode	Differential
	TDR/TDT Solution	TDR/TDT	TDR
	Spatial Resolution	< 1mm	< 3mm
DEEP TOOLBOX	Simulation and De-embedding	Yes	No
	Time-gating	Yes	No
	Emulation of Eye Diagrams	Yes	No
	Jitter Analysis	Yes	No
PLATFORM	Number of Ports	4	2
	USB-connected	Yes	Yes
	Size/Weight	105mm H x 305mm W x 230mm D, 3.3kg	82.5mm H x 210mm W x 220mm D, 2.6 kg
	Battery-powered	No	Yes (optional)



Differential probe selection





Our new **DL-ISO High Voltage Optically Isolated Probe** enables highest confidence in GaN and SiC device Characterization.





Low Voltage and High Voltage Bench Power Supplies

High Definition Oscilloscope

Arbitrary Waveform Generator


High Voltage Optically Isolated Probe

Current Probe

High Voltage Differential Probe

Oscilloscope Probing Solutions



Model	Active Voltage Rail Probe RP2060, RP4060	Active Voltage Probe ZS1000, ZS1500, ZS2500, ZS4000	Current Probe CP030B, CP031, CP031A, CP150B, CP500	Differential Probe ≤ 1.5 GHz ZD200, ZD500, ZD1000, ZD1500, AP033	
Bandwidth	2 GHz, 4 GHz	Up to 4 GHz	Up to 100 MHz	ZD Series Up to 1.5 GHz	AP033 500 MHz
Offset Range	Offset: ±60 V Input: ±800 mV	Offset: Up to ±12 V Input: ±8 V	Offset: Up to ±5 A Input: Up to 500 A	ZD Series Offset: Up to ±18 V Input: Up to ±20 V	AP033 Offset: ±40 V Input: ±40 V
Common Mode / CMRR	Not applicable	Not applicable	Not applicable	ZD Series CM: Up to ±60 V CMRR: 25 dB or better	AP033 CM: ±42 V CMRR: 14 dB or better
					

4 GHz to 6 GHz Differential Probe D4x0-A, D6x0-A, D400-A-AT, D600-A-AT	8 GHz to 30 GHz Differential Probe DH08-PL, DH13-PL, DH16-PL, DH20-PL, DH25-PX, DH30-PX	High Voltage Differential Probe HVD310xA, HVD3206A, HVD3220, HV-D3605A	High Voltage Probe PPE6KV, HVP120	High Voltage Fiber Optically Isolated Probe HVFO108, DL03-ISO, DL07-ISO, DL10-ISO	60 V Common Mode Differential Probe DL02-HCM, DL05-HCM, DL10-HCM
4 GHz 6 GHz	Up to 30 GHz	Up to 400 MHz	400 MHz, 500 MHz	150 MHz, 300 MHz, 700 MHz, 1 GHz	500 MHz, 1 GHz
Offset: ±3 V Input: Up to ±2.5 V	Offset: ±4 V Input: ±1.75 V	Offset: Up to 6000 V Input: Up to 7000 V	Input: Up to 6 kV	Offset: Up to 40 V (HVFO108), Up to 2500 V (DL-ISO) Input: Up to 150 V	Offset: Up to 80 V Input: ±60 V
CM: Up to ±4 V	CM: ±5 V	CM: Up to 7600 V CMRR: 30 dB or better	Not applicable	CM: 35 kV (HVFO108), 60 kV (DL-ISO) CMRR: 35 dB or better	CM: ±60 V CMRR: 30 dB or better

Teledyne Test Tools

Test equipment solutions to complement Teledyne LeCroy's family of oscilloscopes and analyzers.



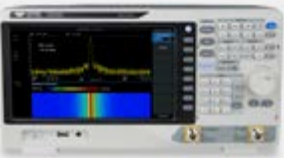
AWG - T3AFG/T3AWG2K/T3AWG3K

Bandwidth selection: 5 MHz to 500 MHz
Resolution: Up to 16 bits resolution
Sampling rate: 125 MS/s to 2.4 GS/s
Max Memory: Up to 1 Gpt/ch
Channels: 1, 2, 4, 8



VNAs – T3VNA1500/T3VNA3200

Vector Network Analyzer
Frequency Range: 100 kHz to 3.2 GHz
Spectrum Analyzer
Frequency Range: 9 kHz to 3.2 GHz
BW Resolution: 1 Hz to 1 MHz, in 1-3-10 sequence
Pre-amplifier: Built-in switchable pre-amplifier
Connectivity: USB and LANChannels: 4



Spectrum Analyzers – T3SA3100/T3SA3200

Frequency Range: 9 kHz to 3.2 GHz
BW Resolution: 1 Hz to 1 MHz, in 1-3-10 sequence
DANL: -161 dBm/Hz Displayed Average Noise Level (Typ.)
Pre-amplifier: Built-in switchable pre-amplifier
Connectivity: USB and LAN



Digital Multimeters – T3DMM4-5/6-5

4.5 (60K counts)and 6.5 digit models (2.2M counts)
Max, Min, Average, Standard Deviation, dBm/dB, Relative Measurement, Pass/Fail Histogram, Trend Chart, Bar Meter etc.
True RMS AC Voltage and Current Measurements.



Digital Oscilloscopes – T3DSO2000 (8 bit ADC models)

Bandwidth selection: 100 MHz, 200 MHz, 350 MHz
Resolution: 12-bits
Sampling rate: 1 GS/s or 2 GS/s interleaved
Max Memory: 100 Mpts/Ch or 200 Mpts Interleaved
Channels: 2 or 4
Includes: Low Speed Serial Bus Trigger Decode, Power Analysis and Bode Plot



HD Digital Oscilloscopes – T3DSO2000HD (12 bit ADC models)

Bandwidth selection: 100 MHz, 200 MHz, 350 MHz
Resolution: 12-bits
Sampling rate: 1 GS/s or 2 GS/s interleaved
Max Memory: 100 Mpts/Ch or 200 Mpts Interleaved
Channels: 2 or 4
Includes: Low Speed Serial Bus Trigger Decode, Power Analysis and Bode Plot



HD Low Profile Oscilloscope – T3DSO4000L-HD (12 bit ADC models)

Bandwidth selection: 500 MHz, 1GHz, 2GHz
Resolution: 12-bits
Sampling rate: 10 GS/s
Max Memory: 125 Mpts/Ch, upto 500Mpts/ch
Channels: 4 or 8 models
Includes: Low Speed Serial Bus Trigger Decode, Power Analysis, Eye/Jitter Analysis



Universal probes

Current
High and Low Voltage Differential
EMC Sniffer Probes
Rogowski Coils

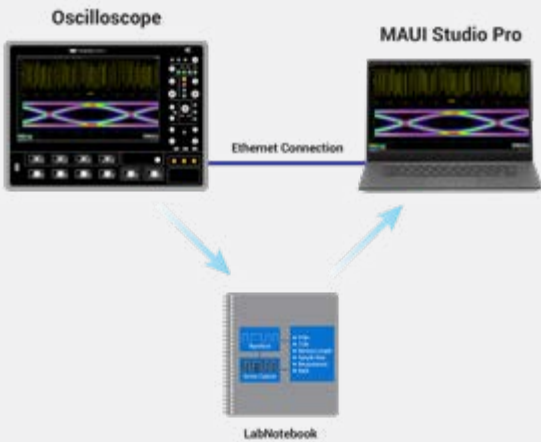


Tools to help complete the job



Maui Studio Pro – Full Teledyne LeCroy oscilloscope experience on your PC.

- **Flexibility** – work remotely, simulate lab setups, portable software options
- **Productivity** – easily share data, better collaboration, move faster
- **Power** – unbelievable analytical capability at your fingertips



Compliance testing for a wide array of serial data standards, accepted by corresponding compliance bodies, such as USB-IF, PCI-SIG, JEDEC.



- USB 1.0 to 4.0
- PCIE upto Gen 6
- DDR 2/3/4/5
- HDMI 2.0/2.1
- DisplayPort 1.4/2.0
- ENET and Auto ENET 10Base to 10GBase
- MIPI CPHY/DPHY
- And many more!



Fast Pulse & Waveform Generators



Arb Rider AWG-5000 Series

- 6.16GS/s, 16-bit, 2/4/8 Channels
- Maximum 5Vpp into 50 ohm
- Up to 4 Gpts waveform memory per channel
- 12GS/s RF mode (I/Q Up-Conversion up to 6 GHz)



Arb Rider AWG-4000 Series (suitable for double pulse tests)

- 1.2 GS/s, 16-bit, 2/4/8 Channels
- Maximum 24Vpp into 50 ohm
- Up to 1 Gpts waveform memory per channel



Arb Rider AWG-2000 Series

- 600 MS/s, 16-bit, 2/4 Channels
- 500 kHz/3 MHz
- 100/200/500 kHz/1 MHz



Pulse Rider PG-1500

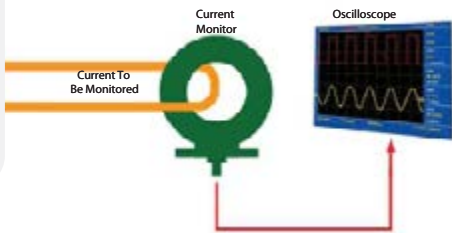
- 400 ps rise/fall time (20%-80%)
- Maximum repetition rate 400 MHz per channel
- <400ps rise time, pulse width from 1 ns to > 1 s
- Maximum 50Vpp into 50 ohm, 1/2 channels

Wide Band Current Sensors



Precision Wide-Band Current Transformers for accurate and precise measurement of AC currents.

- Pulse, harmonic, transient, sine-wave, EMI, surge and other complex current wave shapes
- 3dB bandwidth 1 Hz -20 MHz
- 1% accuracy across the mid-band
- Frequencies up to 350 MHz
- Minimum current of 80uA
- Pulse current up to 1MA



Teledyne SP Devices – Modular Digitizers and Signal Generators



Hardware

Digitizers up to 14-bit
Waveform generators
Extension modules



Firmware

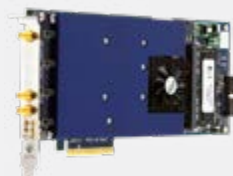
ADQ development kit
Advanced time domain (FWATD)
Pulse detection (FWPD)
Software defined radio (FWSDR)
Digital down-conversion (FW2DDC)
Peer-to-peer disk streaming (FWDSU)



Software

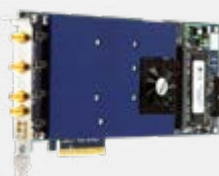
Digitizer studio
ADCaptureLab
Labview drivers
EPICS drivers
Operating system support

Modular Digitizers and AWG Solutions



A/D Cards

- 1/2/4 Channels, up to 6.4 GS/s
- 8/12/14/16 bit
- PCIe/PXIe/PCI/PCI-X/PXI



D/A Cards

- 1/2/4 Channels, up to 1.25 GS/s
- 8/14/16 bit
- PCIe/PXIe/PCI/PCI-X/PXI/cPCI



digitizerNETBOX (A/D or D/A)

- A/D up to 64 Channels, 5 GS/s
- D/A up to 24 Channels, 1.25 GS/s
- 8/12/14/16 bit
- Ethernet/LXI



SBench Instrumental Software

- Powerful, intuitive and interactive measurement software
- Oscilloscope like usage of digitizers, A/D or D/A cards
- Transient recording and display of several GByte of data with a powerful streaming engine

CHAPTER 2

Protocol Analyzers



Test Platform

- Gen1/2/3/4/5
- Link widths of x1, x2, x4, x8 x16



Summit M616 Protocol Analyzer / Exerciser

- Gen1/2/3/4/5/6
- Link widths of x1, x2, x4, x8 and x16
- Supports PCIe & CXL
- Multiports (bifurcation) support



Summit T516 Analyzer

- Gen1/2/3/4/5
- Link widths of x1, x2, x4, x8 and x16
- Supports PCIe & CXL
- Multiports (bifurcation) support



Summit M5x Analyzer/Jammer

- Gen1/2/3/4/5
- Link widths of x1, x2, x4, x8 and x16
- Supports PCIe & CXL



Summit T54 Analyzer

- Gen1/2/3/4/5
- Link widths of x1, x2, x4
- Supports PCIe & CXL
- Multiports (bifurcation) support



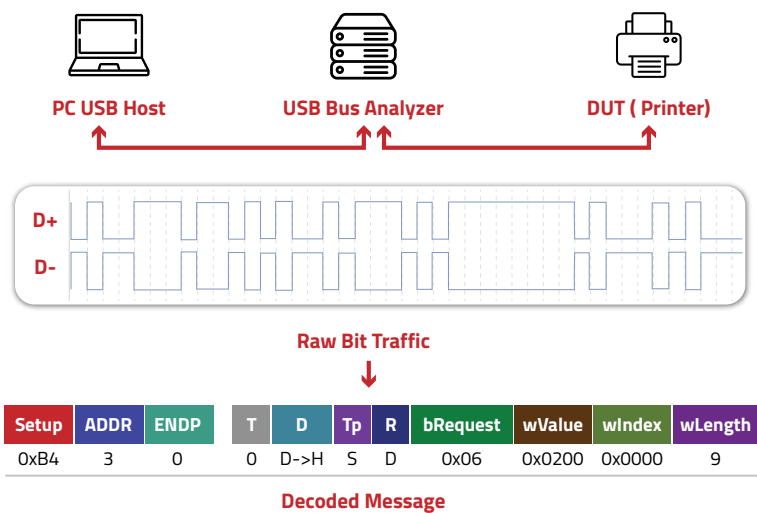
Summit T416/T48 Analyzer

- Gen1/2/3/4
- Link widths of x1, x2, x4, x8 and x16
- Multiports (bifurcation) support



Summit Z5/Z4/Z3 Exerciser

- Gen1/2/3/4/5
- Link widths of x1, x2, x4, x8 x16
- Supports PCIe & CXL



USB Protocol Analyzers



- Voyager M4x**
- USB 2.0, 3.0, 3.1, 3.2, 4.0 (Thunderbolt 3/4)
 - Data Rate up to 40 Gb/s
 - USB Power Delivery, Type-C
 - Compliance Test



- Voyager M310e**
- USB 2.0, 3.0, 3.1, Type-C
 - Data Rate up to 10 Gb/s
 - USB Power Delivery (EPR)
 - Compliance Test



- Mercury T2P/T2C/T2**
- USB 2.0
 - Data Rate up to 480 Mb/s
 - USB Power Delivery (T2C)
 - USB Power Tracker (T2P)

MIPI Protocol Analyzers



- Eclipse T42 UniPro/UFS**
- Entry level analyzer
 - MIPI M-PHY Gear 1/2/3/4
 - x2 Lanes, UniPro & UFS



- Eclipse M42x/M52 UniPro/UFS**
- Advance analyzer & exerciser
 - MIPI M-PHY Gear 1/2/3/4/5
 - x2 Lanes, UniPro & UFS
 - Compliance conformance verification



- Envision x14 C/D-PHY Analyzer**
- Combination C-PHY (6G)/D-PHY (9Gbps)
 - Camera Serial Interface (CSI-2)
 - Display Serial Interface (DSI/DSI-2)



- Envision x84 C/D-PHY Analyzer/Generator**
- Combination C-PHY (3G)/D-PHY (2.5Gbps)
 - Camera Serial Interface (CSI-2)
 - Display Serial Interface (DSI/DSI-2)
 - Conformance Test Specification (CTS) capability

SAS / SATA Protocol Analyzers



- SAS Sierra T244**
- SATA 3.0, SAS 4.0
 - 3/6/12/24 Gbps
 - Support up to 4 ports



- SAS Sierra M244**
- SATA 3.0, SAS 4.0
 - 3/6/12/24 Gbps
 - Support up to 4 ports
 - Jammer option



- SAS Sierra M124A**
- SATA 3.0, SAS 3.0
 - 1.5/3/6/12 Gbps
 - Support up to 4 ports



- SAS Sierra M122A**
- SATA 3.0, SAS 3.0
 - 1.5/3/6/12 Gbps
 - Support up to 2 ports

SAN - Ethernet & Fibre Channel



- SierraNet M1288**
- 50/100/200/400/800GE PAM4
 - 25/50/100GE NRZ
 - 64/128GFC PAM4
 - QSFP-dd SFP-112 (native retimed ports)



- SierraNet M648**
- 50/100/200 GbE PAM4, 64GFC PAM4
 - 10/25/50/100 GbE NRZ, 16/32GFC NRZ
 - Layer 1 link layer negotiation analysis
 - Error Injection/Traffic Jamming Capabilities



- SierraNet T328**
- 10/25/40/50/100 Gbps Ethernet
 - 1/2/4/8/16G Fibre Channel
 - Error Injection/Traffic Jamming Capabilities



- SierraNet M328/M328Q**
- 25/50/100 Gbps Ethernet
 - 1/2/4/8/16/32G Fibre Channel
 - Up to x8 SFP28 FlexPorts™
 - Up to x2 QSFP28 FlexPorts™
 - Error Injection/Traffic Jamming Capabilities



Ethernet Traffic Generator



Software



XenaManager
TGA & Network Emulation



Standalone
Applications



XOA Scripting & test
automation

Hardware - Test Chassis



XenaCompact



Xena Bay

Hardware - Test Modules



Z10 Odin s 10G



Z100 Loki s
100G



Z400 Thor s
400G



Z800 Freya s
800G



E100 Chimera s
100G

Traffic Generation & Analysis

Network Emulation

Bluetooth Protocol Analyzers



- X500**
- BR/EDR/LE, WiFi5/6/6e, ZigBee
 - One box wireless sniffer
 - Audio over LE
 - Excursion Mode (Battery Powered)



- X240**
- BR/EDR/LE, WiFi5, ZigBee
 - Full Bluetooth 5.0 Support
 - Audio over LE
 - Excursion Mode (Battery Powered)



- TLF3000 Tester**
- PHYTester/ Production Tester
 - Support all RF-PHY Test



- Harmony BLE**
- BLE Conformance Tester
 - HCI and Link Layer Tests
 - Compliant with latest Bluetooth LE Spec

Video Protocol Analyzers



- M42de**
- DP2.1/1.4 Analyzer & Generator
 - Support LTTTPR, DSC, HDCP2.2/3
 - Functional and Compliance Test



- M41h**
- HDMI 2.1/2.0 Analyzer & Generator
 - Support FRL, DSC and eARC
 - Functional and Compliance Test

SSD Test Solutions



- Desktop Appliance**
- PCIe Gen4/5
 - NVMe M.2, U.2, U.3, EDSFF
 - Enduro Controller Application



- R-Series Rackmount**
- PCIe Gen4/5
 - NVMe M.2, U.2, U.3, EDSFF
 - Enduro Controller Application



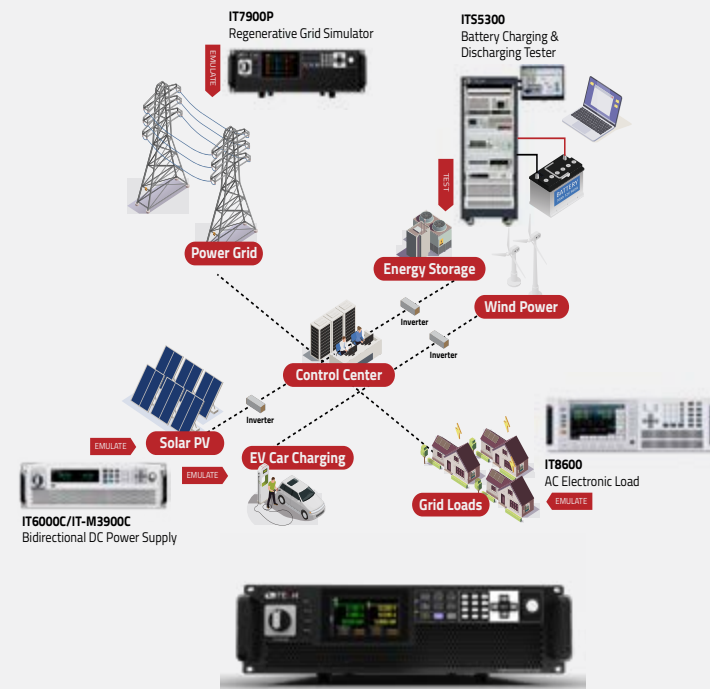
- E-Series Enclosures**
- PCIe Gen4/5
 - NVMe M.2, U.2, U.3, EDSFF
 - Enduro Controller Application



- PIC PCIe/NVMe SSD Tester**
- PCIe Gen4/5
 - Form Factor AIC, M.2, U.2, U.3, EDSFF
 - Greenlight Manufacturing Test Application
 - Temperature Range: -40°C to +85°C

Everything Power

Programmable DC Power Supply



IT-N6900 Precision DC Power Supply

- Voltage: 60V, 150V
- Power: 800W, 1500W, wide range output
- Two current ranges, 1 μ A current resolution
- Linear + switching structure, lower ripple and noise



IT6000 C/B/D Series The new solution of choice

- Up to 2250V/2040A/1152kW
- Bidirectional Power Supply
- Regenerative E-Load
- High power density, 18kW in 3U
- Bidirectional seamless switching (B & C series)



IT-M3100/M3100D/M3200 Ultra-compact size 1U half rack

- Ultra-Compact 1U half rack
- Up to 850W per unit, parallel up to 16 units
- Dual channel support (IT-M3100D)
- High current resolution, up to 10nA (IT-M3200)
- Supports USB, LAN, CAN, RS232, RS485, Analog & IO



IT6600 C/ D High Power DC Solution

- Bidirectional power supply and e-load in one
- Up to 42kW in 3U
- Dual-channel design, can be connected in series or parallel
- Dynamic response $\leq 200\mu$ s
- Rise time ≤ 1 ms



IT-M3900 C/B/D Series Ultra-compact size 1U half rack

- Up to 1500V/1020A/12kW
- Bidirectional Power Supply
- Regenerative E-Load
- Compact design, 1U@6kW, 2U@12kW
- Bidirectional seamless switching (B & C series)



IT-M3400/M3600 Ultra-compact size 1U half rack

- Ultra-Compact 1U half rack
- Bidirectional DC power supply
- Independent regenerative E-load (IT-M3600)
- Battery simulation and battery test
- Up to 800W per unit, parallel up to 16 units
- Supports USB, LAN, CAN, RS232, RS485, Analog & IO

Programmable DC Electronic-Load



IT8000 Series Regenerative DC E-Load

- Up to 2250V/2040A/1152kW
- 95% power regenerative efficiency
- High power density, 18kW in 3U
- Patented parallel technology



IT8900A/E Series High Power DC E-Load

- 150V, 600V, 1200V
- Up to 2400A/54kW
- Master/slave parallel
- OCP/OPP test function



IT-M3300 Series Regenerative DC E-Load

- Ultra-Compact 1U half rack
- Up to 600V/30A/800W
- Parallel connection, up to 16 units
- Power grid automatic detection



IT8400 Series High Performance DC E-Load

- 600V/1200V, up to 54kW
- Parallel up to 600kW
- Fast loop response, current rise/fall speed
- Current readback resolution up to 40 μ A



IT-M3800 Series Regenerative DC E-Load

- Up to 1500V/720A/12kW
- 1U@6kW, 2U@12kW
- Master/slave parallel
- Power grid automatic detection



IT8700P+ Series Multi-channel DC E-Load

- Mainframe for 2/4 modules
- Expansion mainframe for 4 modules
- Up to 80V/120A/600W per module
- Master/slave parallel up to 16-channels
- Built-in LAN, USB, RS232 interfaces

Programmable AC Power Supply



- IT7900EP**
High Power High Performance Regenerative Grid Simulator
- Up to 21 kVA at 3U
 - Voltage can reach 350V L-N
 - Highly efficient power regeneration + AC E-Load
 - Master and slave equal flow, parallel machines up to 1MVA
 - Working mode: single-phase, three-phase, reversed phase and multi-channel, Voltage extension to 200% of rated voltage in reversed mode



- IT7900E**
High Power Regenerative Grid Simulator
- Up to 21kVA, 16Hz - 150Hz at 3U
 - Regenerative grid simulator & full 4-Quadrant AC&DC power sources
 - Power Amplifier function for PHIL applications
 - Compliance tests incl LVRT /Phase Jump/ Frequency variation



- IT7900P Series**
High Performance Regenerative Grid Simulator
- Grid simulator, 4-quadrant power amplifier
 - 4-quadrant regenerative AC/DC E-load
 - 15kVA in 3U single unit
 - Master-slave parallel up to 960kVA
 - Built-in USB/CAN/LAN/ digital I/O port -optional GPIB/ analog & RS232



- IT7900 Series**
Regenerative Grid Simulator
- Grid simulator, 4-quadrant power amplifier
 - 15kVA in 3U single unit
 - Master-slave parallel up to 960kVA
 - Built-in USB/CAN/LAN/ digital I/O port -optional GPIB/ analog & RS232



- IT7800 Series**
High Power AC/DC Power Supply
- Voltage ranges up to 350V L-N & 500V L-N
 - 15kVA in 3U single unit, single or three phase
 - Master-slave parallel up to 960kVA
 - 4 output modes: AC/DC/AC+DC/DC+AC
 - Output frequency: 16-2400Hz
 - Built-in USB/CAN/LAN/ digital I/O port -optional GPIB/ analog & RS232



- IT-M7700 Series**
High Performance AC/DC Power Supply
- Ultra-Compact 1U half rack size
 - Built-in AC power meter & AWG
 - AC, DC, AC + DC output modes
 - Optional USB, LAN, GPIB & RS232 interface

Programmable AC Electronic-Load



- IT8200 Series**
Regenerative AC/DC Electronic Load
- Highly efficient energy regeneration
 - 4-quadrant regenerative AC/DC E-load
 - 15kVA in 3U single unit
 - Single or three phase mode
 - Master-slave parallel up to 960kVA
 - Frequency: 16-500Hz
 - Built-in USB/CAN/LAN/ digital I/O port - optional GPIB/ analog & RS232



- IT8600 Series**
AC/DC Electronic Load
- Maximum power 14.4kVA
 - Frequency: 45-450Hz
 - Parallel connection/ three-phase control
 - Built-in USB/LAN interface

Itech Specialized Products



- IT-N2100 Series**
Solar Array Simulator
- Simulation of the IV characteristics output of Si, GaAs and other PV panels
 - Built-in solar array simulation software, support multi-channel control
 - Support fast MPPT for microinverters
 - Simulate I-V curve under different temperature and light
 - Real-time data and curve recording



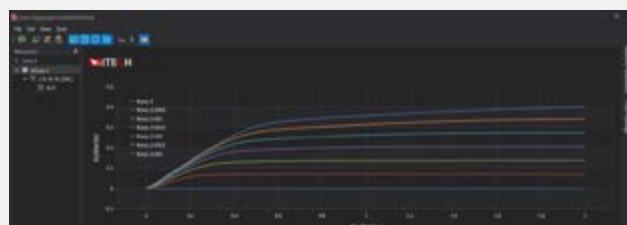
- IT2800 Series**
Source Measure Unit
- 6 devices in one: Voltage & Current Source, 6 ½ DMM, Battery Simulator, E-load and Pulse Generator
 - 4-quadrant source & measure, Two-wire& Four-wire
 - Resolution up to 10fA/100nV, sampling rate up to 10us
 - Three graphic display modes: Graph View, Scope View and Record View



MPPT Curve



Ideal IV Curve Tracer Replacement



Test System



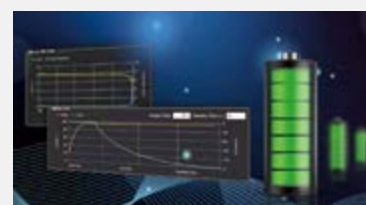
ITS5300 Battery Charge & Discharge Test System

- Customized & integrated test system
- Multi-channels battery pack/cell test
- Multi-channels independent control
- Intuitive control and data logging software
- Temperature measurement & logging
- DC/AC IR measurement & logging
- Sampling rate and data storage time down to 1 ms
- Real-time online monitoring
- Fully integrated protection modules - under voltage
 - anti-reverse & anti-ignition
 - emergency stop

SPS5000 Semiconductor Test Software

- Intuitive GUI
- Ready-to-use test items for MOSFETs/BJTs/ Diodes/Resistors
- Automated test sequence function
- Real-time data plotting
- Perform up to 32ch DUTs test simultaneously
- Used with IT2800 SMU, Min resolution up to 100nV/10fA

Software



BSS2000/2000 Pro Battery Simulation Software

- Battery simulation range: 2250V / 1152kW
- Support user-defined battery characteristic curve import
- Built-in various battery types
- Battery curve preview and real-time curve display function
- Support multi-channel simulation (BSS2000M)



SAS1000/1000L Solar Array Simulation Software

- Simulation range: 2250V / 1152kW
- Built-in I-V curve mathematical formula
- Simulate I-V curve under different temperature and irradiation
- Static & dynamic MPPT efficiency test

Leader in Impedance (LCR) Measurement



6500B Series

- Impedance Analyzer
- Frequency range up to 120MHz
- High measurement accuracy
- Graphical sweep of components
- Equivalent circuit analysis
- Polar and complex plots
- Multi measurement mode
- Variable drive and bias levels
- Bin handling
- Protection against charged capacitors



6500P Series

- Impedance Analyzer
- 5/10/15/20/30/50/120 MHz



3260B + 3265B

- High DC Bias Current Tester
- 1/3 MHz, Max 125A



6400 Series

- Precision Component Analyzer
- 500 kHz/ 3 MHz



4300 Series

- LCR Meter
- 100/200/500 kHz/ 1 MHz



1EV1905X

- SMD probe leads with 1023



1EVA40150

- Kelvin Clips



1J1012

- SMD 2Terminal Fixture



1EVA40120

- SMD Tweezers

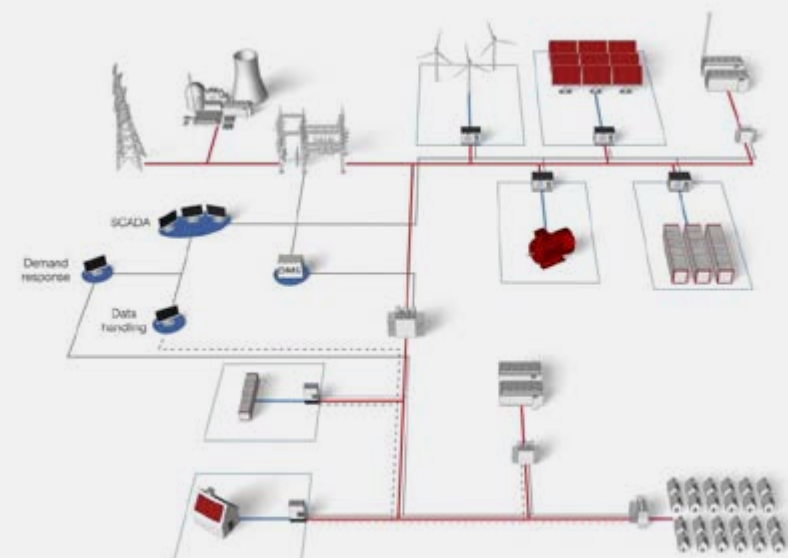


1J1020

- Dielectric Material Fixture

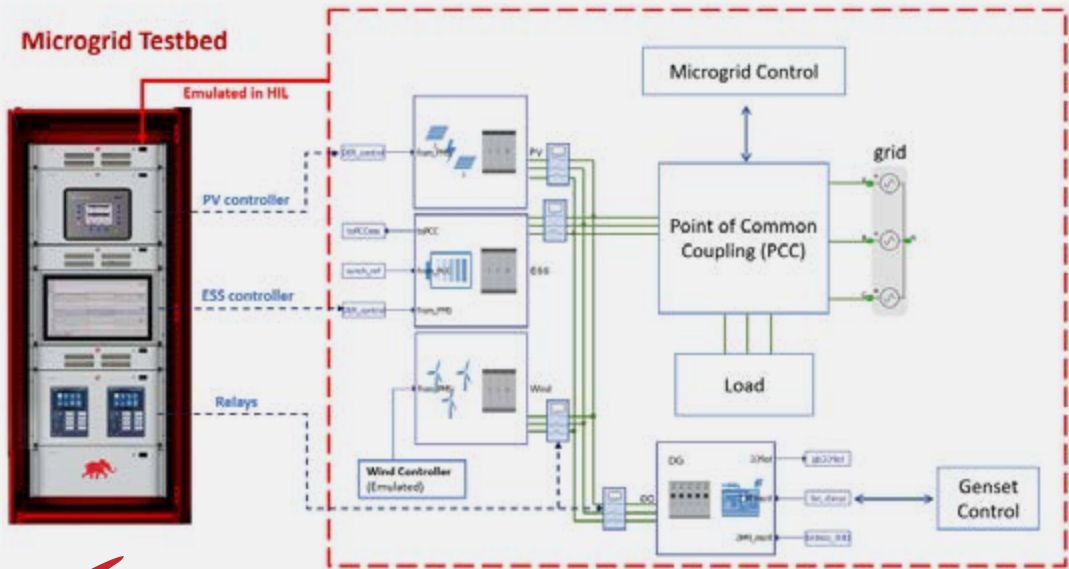
Typhoon HIL

Real-time simulation for power electronics & systems



Model the Microgrid in HIL

Microgrid Testbed

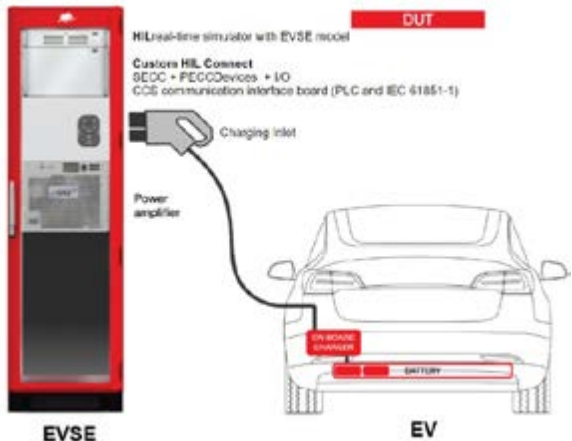


Monitor and Control with built-in SCADA

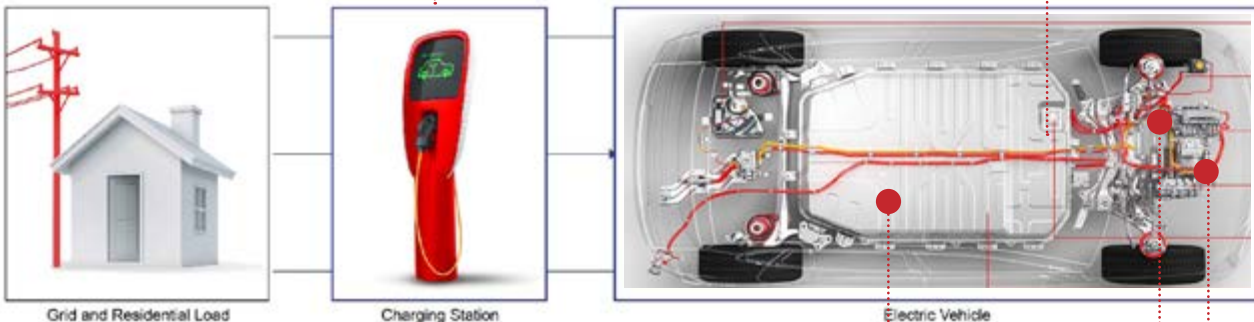
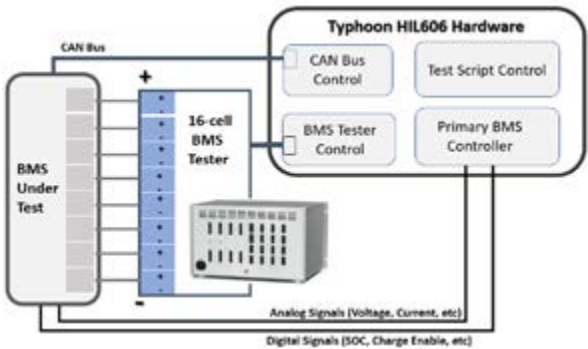


Test every EV power electronics system

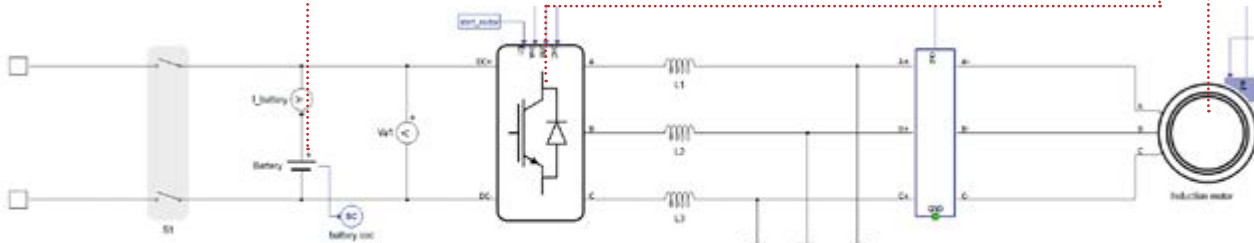
EVSE Testing



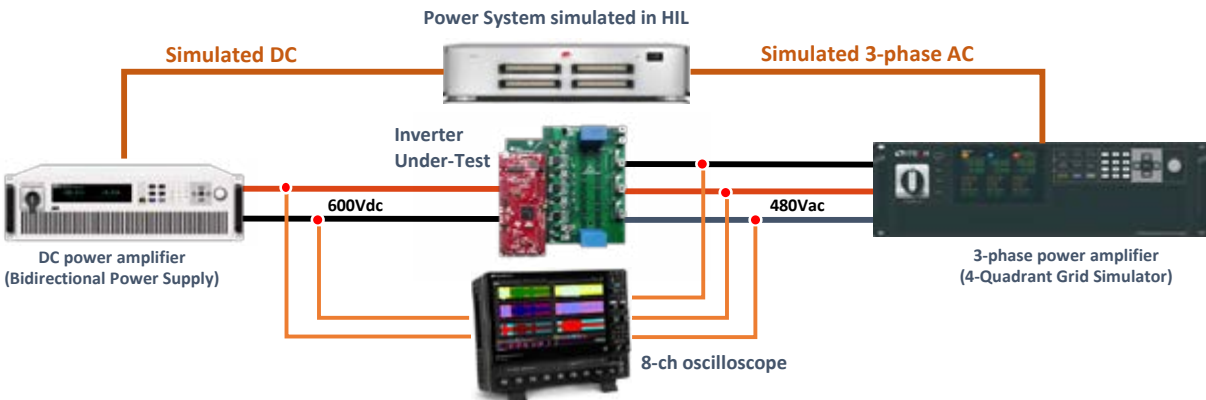
BMS Testing



Drivetrain Testing



Inverter Test at full power with Power-HIL Setup



RF and Microwave

SAR, OTA & Dielectric Measurements



sim4Life

Sim4Life is a revolutionary simulation platform, combining computable human phantoms with the most powerful physics solvers and the most advanced tissue models, for directly analyzing biological real-world phenomena and complex technical devices in a validated biological and anatomical environment. The Sim4Life platform also offers leading performance with all the features expected from a multiphysics CAE/TCAD platform.

- Computable Human Phantoms
- Physics Solvers
- Tissue Models
- Framework



cSAR3D

- Fast, high-precision SAR measurements
- Most advanced vector array system
- Compliant with IEC 62209-3
- SAR compliance evaluation of wireless devices
- Quality Assurance testing of RF emissions from mobile devices.



Dielectric Assessment Kit (DAK)

- 10 MHz to 67 GHz
- Bulk material/thin layers
- Permittivity, permeability

s p e a g

Schmid & Partner Engineering AG

DASY8

- Specific absorption rate (SAR) measurements
- SAR compliance, and HAC evaluations
- Meets all national and international regulatory requirements e.g. IEC-IEEE 62209-1528, FCC KDB 865664
- Flexible, high-precision near-field scanner
- Compliant with IEC/IEEE 63195 for mmWave power density measurement



EM-Phantom

- Certification of mobile phone devices
- CTIA OTA certification standard
- 10 MHz to 100 GHz



TDS System

- Near EM field measurement (RF) over fiber technologies
- EM Transparent

RF and Microwave Test Equipments

Anritsu
envision: ensure



Signal Generator

- Up to 70GHz
- ≤600us switching
- -144dBm to 30dBm



Benchtop Spectrum Analyzer

- Up to 44.5GHz
- NL: -164dBm/Hz
- PN: -123 dBc/Hz @ 1 GHz



High Performance Bit Error Rate Testers

- Supports high speed interfaces for NRZ and PAM4

Benchtop VNA

- Up to 145GHz
- 142dB Dynamic Range
- Noise floor down to -129dBm



RF Power Meter & Sensors

- Up to 70 GHz



SIGLENT®



RF Generators SSG5000/30000 Series

- Frequency range up to 20GHz
- IQ Modulation
- +26dBm max power output
- -120dBc/Hz phase noise



Spectrum Analyzer SSA5000/3000/1000 Series

- Frequency range up to 26.5GHz
- -165 dBm/Hz DANL
- Less than -105 dBc/Hz
- Up to 40MHz analysis bandwidth



Vector Network Analyzer SNA5000A

- Frequency range up to 8.5 GHz
- 2 or 4 ports
- 125dB dynamic range
- 0.003dB rms trace noise

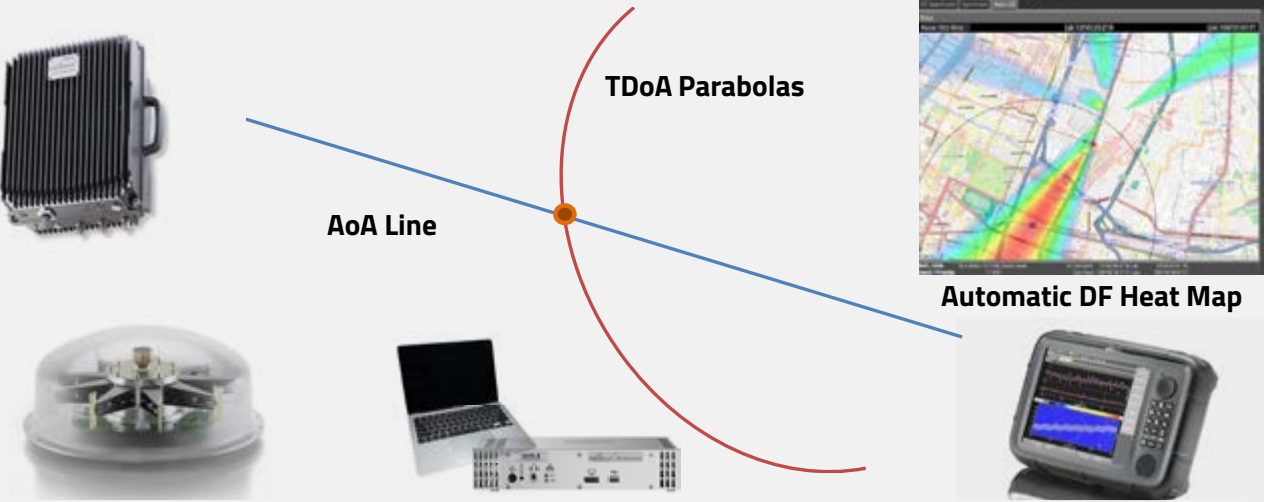
RF Direction Finding



- Real-Time Analyzer (8kHz-8GHz)
- 40MHz real-time measurement bandwidth
- 50GHz/s scan rate ensures fast detection
- High sensitivity with a wide intermodulation-free dynamic range
- DANL (preamp. off/on): -160 dBm/Hz/-167 dBm/Hz

Teledyne LeCroy Calibration

All of Genetron calibration laboratories are set up to allow calibration of most Teledyne LeCroy products, at a standard price. Our strict laboratory setup replicates the outgoing test department of the original manufacturer, Teledyne LeCroy.



Outdoor Fixed Station

- Signal Shark Outdoor (receiver)
- Automatic DF Antenna
- AoA software

Indoor Remote Station

- Signal Shark Remote (receiver)
- Omnidirectional antenna
- TDoA & Localizer software

Outdoor Mobile Station

- Signal Shark Handheld (receiver)
- Omnidirectional antenna
- TDoA software

OUR COMPANY

Well trained sales engineers
Quality products from renowned partners
Calibration and repair services
Applications training
Automation assistance

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