



Responding to Our Customers' Needs

YOUR PERSONAL CONTACT:

NADJA LÄÄPERI – DIPL-ING. ELECTRICAL ENGINEERING

NADJA.LAEAPERI@TEKTRONIX.COM

0173 7010861

About Tektronix



Company Background



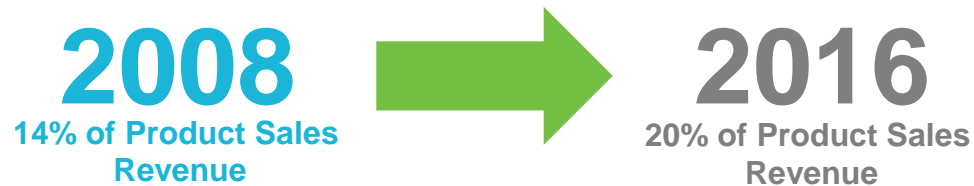
- Tektronix is a leading T&M company serving engineering and technical professionals
- Founded in 1946, acquired by Danaher in 2007 and now part of Fortive as of 2016
- Headquartered in Beaverton, Oregon
- Leadership positions in key products and markets
- Highly-respected brand based on high quality innovative products, engineering excellence and global service and support
- Award winning:
 - Oscilloscopes
 - Signal Sources
 - Logic Analyzers
 - Spectrum Analyzers
 - Video Test



- Keithley is a leader in precision electrical test
- Founded in 1946, acquired by Tektronix in 2010
- Headquartered in Solon, OH
- Offering instruments and systems to meet any measurement requirement from nanovolts to gigahertz
- 21 R&D 100 awards as well as honors from Semiconductor International, Solid State Technology, Electronic Products, Test & Measurement World magazines

Investing in Innovation & Growth to Support Our Customers

Continuing to grow our investment in R&D



Over
1475
patents
issued since 2000

Using Fortive Business Systems (FBS) tools

- Driving continual improvement in quality, cost, delivery, & innovation
- Customers talk, we listen.

10year
technology
roadmap

Broadening our product offerings

- Keithley
- Optametra
- BERTscopes
- Picosecond Pulse Labs

Long term
co-innovation
partnership
with **IBM**



Tektronix – a FORTIVE company

Professional Instrumentation

Revenue	GM%	OP Margin
\$3.1B	>50%	23%

Field Solutions*



QUALITROL®

INDUSTRIAL
SCIENTIFIC

Product Realization*



Invetech

PACIFIC
SCIENTIFIC
ENERGETIC MATERIALS COMPANY

Sensing Technologies



setra

ANDERSON-NEGELE

Industrial Technologies

Revenue	GM%	OP Margin
\$3.5B	>40%	20%

Transportation Technologies



TELETRAC NAVMAN



GLOBAL TRAFFIC TECHNOLOGIES

Automation & Specialty



THOMSON™

Portescap

Jacobs Vehicle Systems™

HENGSTLER

Franchise Distribution



AMMCO® COATS
Hennessy Industries

All financial metrics based on 2017 annual results
*Advanced Instrumentation & Solutions

Strong Brands, Leading Market Positions in Attractive Industrial Verticals

Key Product News

Tektronix 12 Bit 5 & 6 Series MSO



Unprecedented flexibility.

Unmatched visibility into complex embedded systems.



REVOLUTION **ENGINEERING**

12 Bit Oscilloscopes 5 & 6 Series MSO



Delightful Analysis.

Upgradability to fit your needs for years to come.



15.6"
HD display



Pinch-swipe-zoom
touchscreen



4, 6, or 8
FlexChannel® inputs



12-bit analog to
digital converters



350 MHz to 8 GHz
bandwidth



Starting
at \$13k

Key Specs of the 5 & 6 Series MSO



	5 SERIES MSO	6 SERIES MSO
Bandwidth	350 MHz, 500 MHz, 1 GHz, 2 GHz	1 GHz, 2.5 GHz, 4 GHz, 6 GHz, 8 GHz
Analog Channels	4, 6 or 8	4
Digital Channels	Up to 64 ¹	Up to 32 ¹
Sample Rate (All Channels)	6.25 GS/s	25 GS/s
Display	15.6 inch HD (1920x1080) w/ Capacitive Touch	15.6 inch HD (1920x1080) w/ Capacitive Touch
Record Length	62.5 Mpoints 125 Mpoints ¹	62.5 Mpoints 125 Mpoints ¹ 250 Mpoints ¹
Integrated Instruments	Oscilloscope; Logic Analyzer ¹ ; Protocol Analyzer ¹ ; Arbitrary/Function Generator ¹ ; Digital Voltmeter ² ; Frequency Counter ²	
Optional Advanced Analysis ¹	Advanced Jitter and Eye Analysis; Aerospace (MIL-STD-1553, ARINC-429); Audio (I ² S, LJ, RJ, TDM); Automotive (CAN, CAN FD, LIN, FlexRay); Automotive Ethernet Compliance; Automotive Sensors (SENT); Computer (RS-232/422/485/UART); Embedded (I ² C, SPI); Ethernet (10BASE-T, 100BASE-TX); Power Analysis; Power Management (SPMI); USB2.0 (LS, FS, HS); USB2.0 Compliance	
Base Price Range	\$13,000 to \$41,800	\$23,500 - \$75,000
	TEK.COM/5SERIESMSO	TEK.COM/6SERIESMSO



¹ Optional and Upgradeable.

² Free with product registration.

5 & 6 Series MSO

Powerful Analysis

- 36 standard measurements with trend, histogram, and spectrum plots
- Advanced Jitter Analysis option
- Power Measurement option

15.6" HD (1,920 x 1,080) display w/ capacitive touchscreen

Next generation user interface designed for both touch and mouse

- Provides simple, intuitive scope operation
- Access controls directly through objects on the display rather than navigating menus to get to menus

Record length

- 62.5 Mpts Standard
- 125 Mpts Optional
- 250 Mpts (only available as an option on the 6 series)

12-bit ADCs and new High Res mode offer up to 16-bit vertical resolution

Built in Arbitrary/Function Generator option

When removable SSD w/ Windows 10 license is:

- Installed: scope boots as open Windows OS (w/ desktop)
- Not installed: scope boots as a dedicated scope

FlexChannel inputs

- 4, 6, or 8 (5 Series)
- 4 (6 Series)
- 1 analog or 8 digital signals each

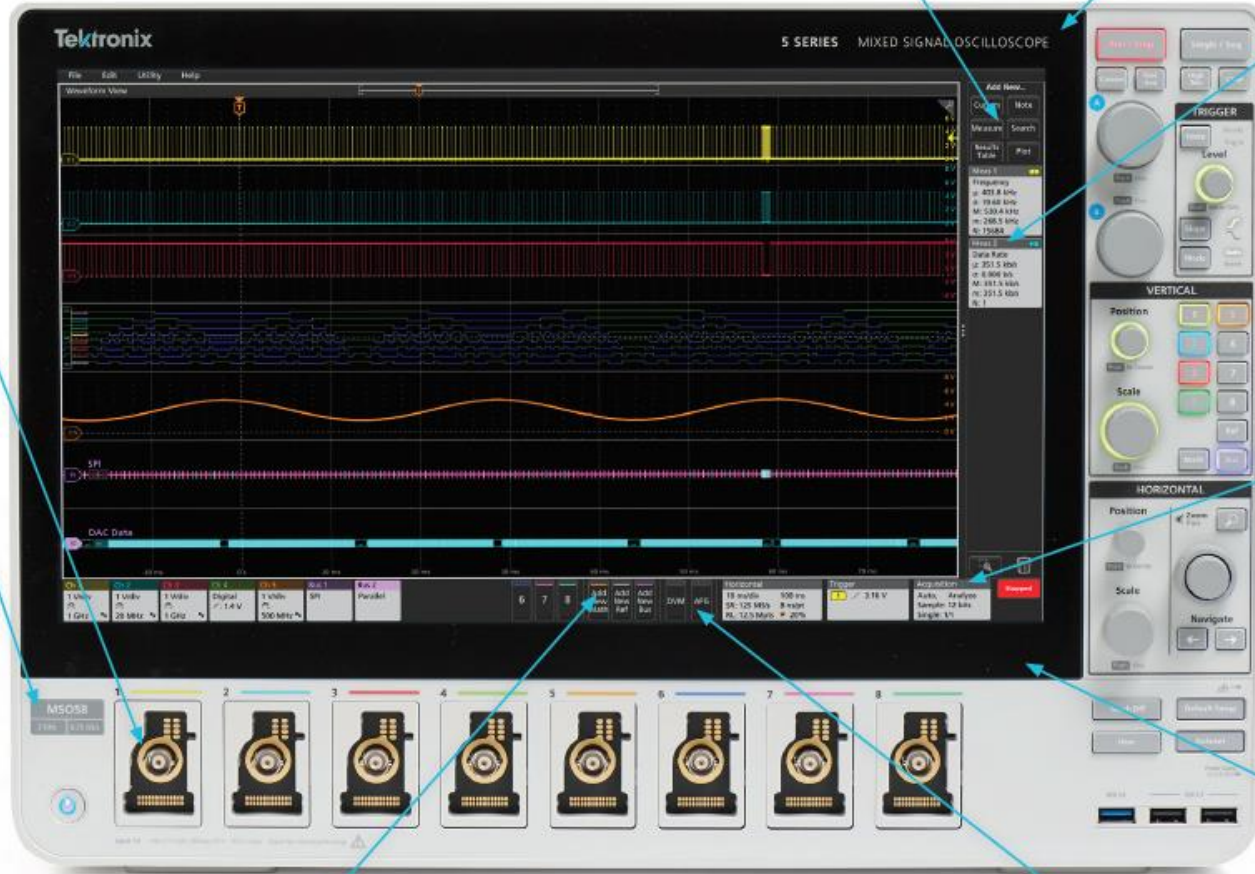
Available bandwidth (upgradeable)

- 350 MHz to 2 GHz (5 Series)
- 1 GHz to 8 GHz (6 Series)

Protocol options

Serial bus trigger and analysis

- I²C/SPI
- RS-232/UART
- CAN/CAN FD/LIN/FlexRay
- USB 2.0
- Ethernet
- Audio
- Aerospace
- SENT
- SPMI



Tektronix AWG5200 Arbitrary Waveform Generator

8 CHANNELS -- FLEXIBILITY

- **Cleanest Signal**
 - Industry's best combination of sample rate and vertical resolution
 - 16 bits of resolution
 - 10 GS/s
 - Extremely low noise floor
 - Build reliable setups with pre-calibration and pre-compensation software
- **Massively Scalable**
 - Best in class! - Up to 8 independent Channels/unit at a low cost/channel
 - Multi-unit synchronization
- **Simplifying the Rack and Setup**
 - Direct generation of RF signals up to 8 GHz eliminates the need for more equipment
 - Matlab compatibility
 - Code compatible with previous Tektronix AWG products
- **Excellent Price / Performance**
 - Starting at a base of \$11,000 per channel
 - Digital interpolation, complex modulation and (NCO) improve waveform creation efficiency and extends play times



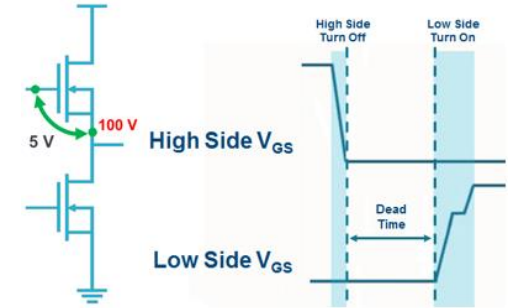
- 10 Gsamples/s sample rate
- 16 bit vertical resolution
- 2 GHz (-3 db) bandwidth, usable to 8 GHz
- 2 GSamples/channel memory
- -70 dBc SFDR (In-band, 10 GS/s, DC-1.25 GHz)
- 1.5 Vp-p Diff @ 2 GHz
- -85 to +10 dBm @ 10 MHz to 2 GHz

IsoVu™ Technology

THE WORLD'S ONLY HI-DEF POWER MEASUREMENT SYSTEM

IsoVu™ technology is a radically new measurement system platform

- Enables high-resolution measurements on differential signals
 - Utilizes an electro-optic sensor to convert the input signal to optical modulation
 - Galvanically isolates the device-under-test
- **Complete** optical isolation
- The only **complete** measurement system:
 - Bandwidth up to 1GHz
 - High Dynamic range
 - Common mode range
 - Common mode rejection up to 120dB
- Designers can finally **SEE** signals that were previously hidden



TBS2000 Series

NEXT-GENERATION BASIC OSCILLOSCOPE

- **LONGEST** record length in its class, at 20M points
- **BIGGEST** 9 inch WVGA display with 15 horizontal divisions, for 50% more signal viewing
- Easily and confidently analyze signals with on-waveform cursor readouts and 32 automatic measurements
- **ONLY** basic oscilloscope with the TekVPI Probe Interface for better application coverage with a wide range of active and current probes
- Guaranteed reliability with a 5 year standard warranty
- Starting at \$1200



70 MHz or 100 MHz Bandwidth
2 or 4 Channels

*See more. Measure more.
Learn more.*

Disruptive USB Real-Time Spectrum Analyzers

- RSA306B for General Purpose Applications, 6.2GHz
- RSA500A Series for Field RF, 7.5 GHz
- RSA600A Series for Lab Applications, up to 18GHz
- **Unmatched** PC controlled spectrum analyzer
- **State of the art** specifications
- **Industry leading** price/performance



RSA306B USB Real-Time Spectrum Analyzer

- **UNMATCHED** Price/Performance at \$3890
- **UNMATCHED** form factor:
 - USB powered and controlled, highly portable
 - Ruggedized and meets Mil-Std 28800 Class 2 specifications
- **UNMATCHED** HW features in its class:
 - **6.2 GHz Signal Analyzer with 40 MHz Real-Time Bandwidth**
- **UNMATCHED** SW features:
 - Benchtop features with a low cost analyzer
 - Runs with SignalVu-PC software
 - Optional capabilities, such as Wi-Fi, P25, and Audio Analysis
 - Long duration signal recording
- **BEST-IN-CLASS** 3 year warranty



The Perfect Tool for Spectrum Management

RSA500 USB REAL-TIME SPECTRUM ANALYZER

- **Spectrum Management, Regulatory Monitoring**
 - See signal compliance at a glance using industry's best open signal database
- **Interference Hunting**
 - Quickly discover co-channel interference and transients with DPX, direction finding, GPS mapping
- **Installation and Maintenance**
 - Complete cable & antenna testing easily with DTF, VSWR
- **Field Ready**
 - Take the weight out of your hands – carry a tablet, keep the instrument in your bag



RSA500 State of the Art Specifications

- ***18 GHz Signal Analyzer with 40 MHz Real-Time Bandwidth***
- Tracking Generator: VSWR and DTF
- Measurement range: +30 dBm to -161 dBm*

Cutting Edge RF Analysis for the Lab

RSA600 USB REAL-TIME SPECTRUM ANALYZER

- R&D

- Powerful debug tools like DPX and Domain correlation
- Address today & tomorrow's most popular wideband signals with 40 MHz bandwidth



RSA600 State of the Art Specifications

- ***7.5 GHz Signal Analyzer with 40 MHz Real-Time Bandwidth***
- Tracking Generator: VSWR and DTF
- Measurement range: +30 dBm to -161 dBm*
- Wide analysis bandwidth: 40 MHz VSA and RTSA

DPO70000SX 70GHz ATI Performance Oscilloscope

- **FIRST** with 70GHz oscilloscope leveraging patented ATI signal acquisition architecture
- **FIRST** with new innovative compact ultra-performance package
- **FIRST** completely scalable performance oscilloscope solution



Lowest Noise.

Highest Fidelity.

Maximum Performance.

DPO70000SX Series Banner Specifications

- **70GHz Analog Bandwidth**
 - <6ps rise time
- 200GS/s Sample Rate
- 100fs jitter noise floor
- $\geq 25\text{GHz}$ Edge trigger bandwidth
- **Low-noise** ATI architecture
- **Best-in-class** signal capture
- **Compact, Scalable** oscilloscope package
- **Precise** multi-unit sync



- 1 channel x 70GHz bandwidth
- Single-ended, 100mVfsr to 300mVfsr
- 200GS/s sample rate
- Up to 1 Gsamples record length

[OR]

- 2 channels x 33GHz bandwidth
- Single-ended, 62.5mVfsr to 6Vfsr
- 100GS/s sample rate per channel
- Up to 1 Gsamples record per channel

DMM7510 7½-Digit Graphical Sampling Multimeter

- **FIRST** in a new class of DMMs: the graphical sampling multimeter
- **FIRST** 7½-digit DMM with a capacitive touchscreen/display
- **FIRST** DMM to integrate a 1MS/sec, 18-bit digitizer and interactive display



- ✓ Higher accuracy
- ✓ Faster and easier to use
- ✓ Integrated signal capture
- ✓ U.S. List price: \$3,990

Go Beyond the Numbers with a
Graphical Sampling Multimeter

Model 2460 High Current Interactive SourceMeter[®]

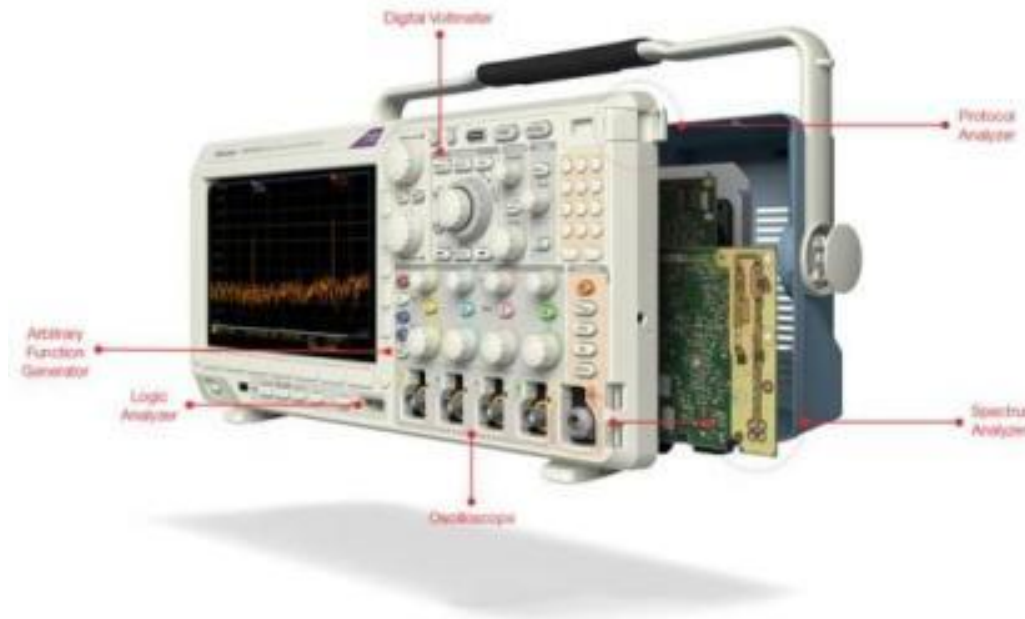
- Touch Test Invent[®] Class of Keithley's Next Generation Instruments
 - High Current DC Version of the highly successful Model 2450 SourceMeter
 - **FIRST** touchscreen SMU to offer:
 - 7A DC, 7A Pulse, 100 Watt Source/Sink
 - Icon menuing, built-in graphing to help learn faster and get results faster
 - Integrates capabilities of I-V systems, curve tracers, and analyzers at a fraction of their cost
 - Price/Performance at \$7,500 U.S. MSRP



High Power Source & Measure
in one Integrated Instrument

MDO3000 Series Mixed Domain Oscilloscopes

- 6 instruments in 1 small, portable package
- Completely customizable and fully upgradeable
- Provides insight in both time domain and frequency domain



1. Oscilloscope
2. Spectrum Analyzer
3. Arbitrary Function Generator
4. Logic Analyzer
5. Protocol Analyzer
6. DVM/Counter

6 Instruments, 1 Oscilloscope, Infinite Versatility

Tektronix MDO4000 – Innovation Leader

World's
first mixed
domain
Oscilloscope

- ✓ **Industry first** oscilloscope with real hardware spectrum analyzer integrated
- ✓ **Industry first** integrated analog, digital and RF acquisition system
- ✓ **Industry first** Spectrum Time
- ✓ **Industry first** 1 GHz capture bandwidth
- ✓ **Industry first** comprehensive RF triggers
- ✓ **Industry first** automated RF markers
- ✓ **Industry first** RF probing
- ✓ **Tektronix first** to address wireless megatrend with breakthrough innovation



Overwhelmingly positive
market reception

Achieved **2X** return-on-investment
in **first year alone**



Contact for GSi

Tektronix contact for GSI

NADJA LÄÄPERI – DIPL-ING ELECTRICAL ENGINEERING

- Feel free to get in touch with me for an reasons:

- Nadja.Laeaeperi@Tektronix.com

- +49 173 7010861

- Tektronix GmbH

Heinrich-Pesch-Str. 9 – 11

50739 Köln



Additional Information

The background is a solid dark blue. On the right side, there are several diagonal, parallel bands of lighter blue. One of these bands features a fine halftone dot pattern. The overall design is modern and minimalist.

Total Product Protection

You Break It. We Fix It. Simple.

- **FIRST** repair plan in the industry to cover **accidental damage**
- Protection from wear and tear
- Coverage for electrostatic discharge and electrical overstress
- Factory-certified calibration and cleaning with each repair event



- 3 or 5-year plan options
- 5-day turnaround time
- Currently available exclusively on the MDO4000C

Gold Care Service Plan

- Extends warranty period to 3 or 5 years
- Reduced downtime with the availability of a **loaner unit** during repair period
- Coverage for electrostatic discharge and electrical overstress
- Discounts on scheduled and on-demand calibration



- 3 or 5-year plan options
- Loaner unit of equal or higher performance than instrument being repaired
- Includes email notifications of calibration due dates

Maximize your uptime with Gold Care.

Service and Repair Plans

TEKTRONIX OFFERS A NUMBER OF SERVICE PLANS DESIGNED TO PROTECT YOUR INVESTMENT AND KEEP YOUR BUSINESS MOVING

Service Plan Summary

Extended Repair Plan (R3, R5)	Total Product Protection (T3, T5)	Gold Care (G3, G5)
<ul style="list-style-type: none">• Extended Warranty• 20% Discount on Scheduled Calibration• Priority Bench Service	<ul style="list-style-type: none">• Extended Warranty• Accidental Damage• Wear and Tear• ESD and EOS• Priority Bench Service	<ul style="list-style-type: none">• Extended Warranty• Loaner Unit• ESD and EOS• 30% Discount on Scheduled Calibration• Priority Bench Service

Global Repair and Calibration Services

Our calibration programs are designed to provide you with the confidence that your instruments are performing accurately. We offer several calibration options customized to meet your needs.



- Broad Range of Services
 - On demand calibration and repair services
 - Comprehensive Single Source Provider services
 - Asset management programs
- Extensive Capabilities and Experience
 - Ability to calibrate >140,000 items across 9,000 vendor
- Multiple delivery models
 - Permanent and temporary on-site
 - Regional depots
 - National centers of excellence
- Superior quality and broad based accreditation



Tektronix Component Solutions

- Turnkey services for IC packages & complex assemblies
 - Design, manufacturing, test & supply-chain management
 - Broad range of package types and process technologies
- RF/Microwave Modules
 - Precision placement, interconnect & mechanical assembly
 - Full RF/microwave performance testing
- High-speed Data Converter Modules
 - Designed for embedded, real-time streaming applications
 - Available as reference designs or custom modules
- Certifications
 - ISO9001:2008
 - ISO14001:2004
 - ITAR-registered
 - Secure Facility
 - Accredited Trusted Supplier
 - Validated as Ready For IBM Technology (Foundry) partner



Flip-chip BGA



Frequency Converter & LPF Module



15 GHz 50 GS/s
Track & Hold



DAC Module



Digitizer Module

Module	Bandwidth	Sample Rate	Resolution
Digitizer	6.25 GHz	12.5 GS/s	8 bits
DAC	9 GHz	12 GS/s	10 bits

40 years
of custom
microelectronics
experience