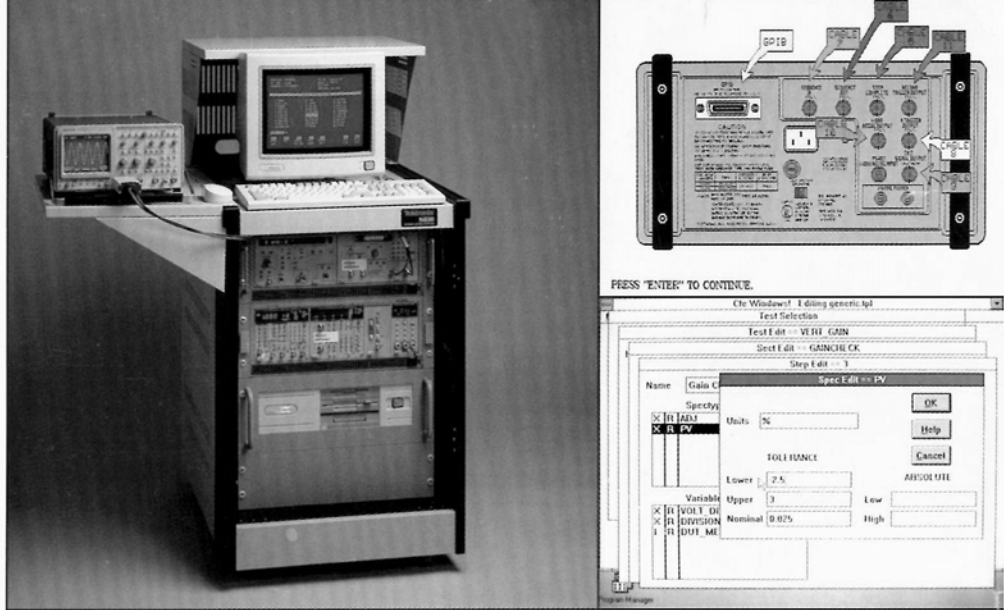


# ScopeCal™ SCAL-101 SCAL-102

## Oscilloscope Calibration System



Tektronix ScopeCal SCAL-102 - Running Bandwidth limit tests on a Tektronix 2430A oscilloscope. On-line help screens simplify calibration procedures and Windows driven menu eases test development.

- Complete Turn-Key systems
- Over 50 scope procedures
- Industry proven calibration instruments
- Reduced calibration times
- Easy to use
- Test development tool kit

When you've been around as long as we have, you tend to get a reputation. So when most people see our name, one thing pops to mind — oscilloscopes. It's understandable. Tektronix has been designing and building some of the finest oscilloscopes in the world — for longer than anybody. Tektronix knows oscilloscopes.

Tektronix knows oscilloscopes are becoming faster — more complex — taking longer to calibrate, at a nearly exponential rate. We've had to work hard to stay ahead of these changes — just as you have. Improved productivity; accuracy and repeatability; reliable results; reporting and data management. We needed more information that was simpler to interpret, exceptionally accurate, easier to get, easier to use — well, you can see where this was leading — scope calibration had to evolve to respond to this new technology.

This created a problem. There was no accurate, sophisticated (but easy-to-use) system for calibrating oscilloscopes — so we had to design one. We did a good job. We've been using scope calibration systems for over ten years. We couldn't function without one. The U.S. Army uses our systems — and the Navy and Air Force have signed up for theirs. We think you could use one, too.

Introducing the new standard — Tektronix' ScopeCal™ SCAL-101 and SCAL-102 Turn-Key Scope Calibration Systems which:

- Are individually tailored to fit the product mix of the user
- Supply true, Turn-Key Systems (sit down, turn it on — it's working)
- Support wide variety of products (over 50 models)
- Supply varied solutions and system configuration to support specific oscilloscope-type products

For the first time, the same stable, repeatable, calibration test solutions that are used worldwide, in Tektronix Service Centers and manufacturing facilities, are available to our customers.

ScopeCal delivers immediate, complete, turn-key oscilloscope calibration. Unlike other software, ScopeCal doesn't require long, lost months of operator training and procedure development to begin earning its keep. System installation and user training takes place one day — and production is being met on the next.

## The ScopeCal System

ScopeCal is a Microsoft™ DOS, PC-based, menu-driven, Turn-Key Calibration System with enhanced adjustment procedures for a variety of oscilloscopes and DSOs. The systems, with their performance, verification, and adjustment procedures:

- **Comply with MIL-STD-45662A, comply with NQA-1, and will soon comply with ISO-STD-9000**
- **Are traceable to NIST**
- **Dramatically reduce calibration times**
- **Provide increased accuracies and repeatable results**
- **Automate data collection, with report generation**
- **Provide the data to improved SPC (Statistical Process Control) implementation**
- **Are used in the worldwide Tektronix Service organization**

## Hardware

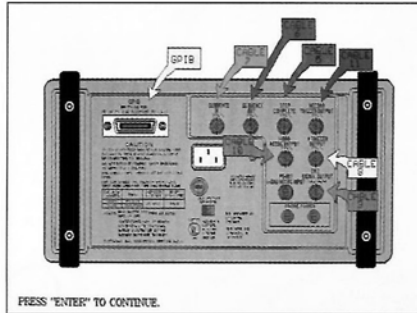
Tek's SCAL-101 and -102 come with the best hardware available. We've utilized every bit of DSO, and scope calibration know-how to design a system that can anticipate your needs, and exceed them.

We begin with the Calibration Generator that's become an industry-standard, the Tektronix CG 5011. We've included the comparator head for CAL OUT testing. Then we follow-up with the SG 5030, Leveled Sine Wave Generator. With its remote leveling head, this sine source provides a precision constant amplitude between 0.1 Hz and 550 MHz — giving your amplifier bandwidth, and trigger sensitivity the highest measurement accuracy. This could be the difference between failing a piece of equipment that should have passed — or worse still — passing one that should have failed.

DSOs and modern scopes are getting more and more complex — so we have added products in our SCAL-102 system to meet these extended requirements. A DC 5010, 350 MHz Universal Counter Timer makes testing of triggers, internal clocks, and calibrator functions easier, and the FG 5010, 20 MHz Function Generator adds increased ability to test unique scope functions. And, our SCALCF1 Calibration Fixture provides stimulus for special test requirements.

## Software

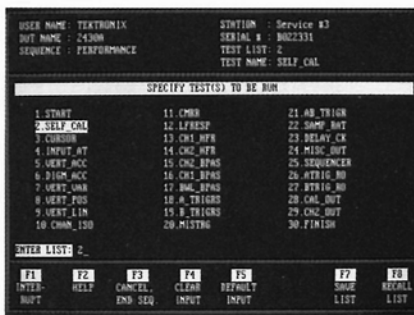
So you won't be required to develop your own — Tektronix provides an extensive software library of over 50 calibration and adjustment procedures. These procedures have readily available, on-line HELP files that describe the test methods, test trouble-shooting hints, and user interface information.



Graphic Representation of on-line HELP file — shows cable definition points.

## Test Method Tool Kit

Each procedure was created from a selection of over 30 test methods. These test methods (such as: bandwidth, vertical gain, and trigger sensitivity) are the processes that scope people (including our competitors) have used for years. Tektronix doesn't ask anyone to learn a special language in order to develop new procedures with our system, but provides easy access through a Microsoft™ Windows-driven tool — even for non-computer-science-skilled people. This also gives you the flexibility to modify our procedures to fit your calibration policy. We package these easy-to-access test methods in a test development "tool kit" — to make it easy for you to cut down on waste in development time.



Test method "tool kit" menu for Tek 2430A.

## Features/Options

Our systems deliver ready flexibility to scope calibration — offering choices that make sense — like a bar code reader for speedy input — or a GPIB Pod Adapter which reduces calibration time on non-programmable 2445A/B

and 2465A/B oscilloscopes. And, we know how difficult it can be to pull useful information from a report that's cluttered with unnecessary extras — our report generation feature allows you to collect the information you need — and output it in the format that suits you best.

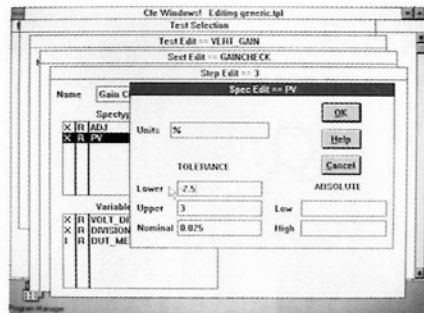
## Support

Every ScopeCal package includes a variety of software, on-site installation and training, 90 day on-site System Support, and 180 days of System/Application Support, including a Newsletter that will be delivered throughout the subscription period. These combine to make system fixes and modifications simple.

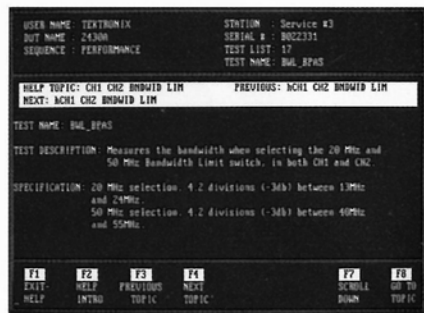
Tektronix won't leave until the equipment is fully installed, configured to your specifications, is completely operational, all questions have been answered, and reduced calibration time is achieved. This is a promise. We want to make sure that there are no loose ends. Tektronix is committed to providing total, turn-key solutions — and we won't settle for anything less.

We have a commitment to you, our customers, to continue to deliver the best equipment we can make. Many of you have invested in Tektronix equipment which can be integrated into a ScopeCal system — we'll work with each of you on an individual basis to craft a system that meets your scope calibration needs — today and tomorrow. The solution is easy. It's ScopeCal. It's Turn-Key. It's available now. It's Tektronix.

## Tek Knows Scopes.



Windows driven menu eases test development.



System on-line HELP screen for 2430A.

## Standard System Offerings:

### SCAL-101

Tektronix' "Core" System delivers ScopeCal Turn-Key procedures for companies with a need to calibrate standard, analog oscilloscopes

Description: 550 MHz Core Oscilloscope Calibration System. This configuration supports the products listed in software packages: S75SC01, S75SC02, S75SC03, and S75SC08

### SCAL-102

Tektronix' "Enhanced" System delivers ScopeCal Turn-Key calibration to users of more advanced analog scopes and DSOs

Description: 550 MHz Enhanced Oscilloscope Calibration. This configuration supports the products listed in software packages: S75SC01, S75SC02, S75SC03, S75SC04, S75SC05, S75SC06, S75SC07, and S75SC08

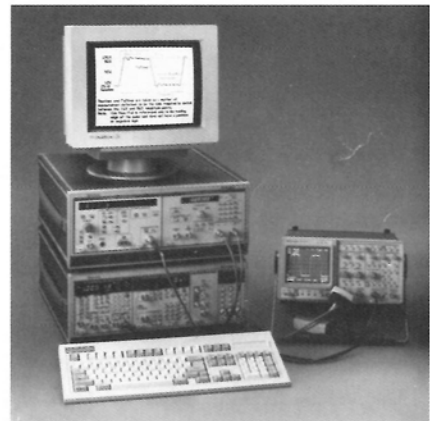
### For System content see table below:

		SCAL-101	SCAL-102
<b>HARDWARE</b>			
<b>CG 5011</b>	Calibration Generator with Remote Pulse Head, Remote Comparator head	yes yes	yes yes
<b>SG 5030</b>	550 MHz Leveled Sine Wave Generator	yes	yes
<b>DM 5110</b>	4 1/2 Digit Digital Multimeter	yes	yes
<b>FG 5010</b>	20 MHz Function Generator	no	yes
<b>DC 5010</b>	350 MHz Universal Timer/Counter	no	yes
<b>SCALCF1</b>	Calibration Fixture	no	yes
<b>TM 5006A</b>	Two Mainframes	yes	yes
<b>Compaq 386 PC</b>	2 MB RAM, 80 MB Hard Disk, 3 1/2" floppy, Mag Tape Drive, 2 GPIB Cards	yes	yes
<b>Bar Code Reader</b>		opt	opt
<b>DP8200</b>	Data Precision Voltage Calibrator	no	opt
<b>Accessories Package</b>		opt	opt
<b>Rackmounts for TM 5006A</b>		opt	opt
<b>Equipment Mounted in Mobile Workstation</b>		opt	opt
<b>SOFTWARE</b>			
<b>System Software</b>		yes	yes
<b>MS-DOS 5.0</b>		yes	yes
<b>Test Development Toolkit</b>		yes	yes
<b>MS-Windows 3.0 with Serial Mouse</b>		yes	yes
<b>XTree Gold</b>		yes	yes
<b>Norton Utilities</b>		yes	yes
<b>Full System Documentation</b>		yes	yes
<b>On-Site Installation and Training</b>		yes	yes
<b>90 Day On-Site System Service and Support</b>		yes	yes

## Calibration Procedure Packages

Software package options offer calibration tools designed to support specific products. ScopeCal software is not a stand-alone package — and does require the ScopeCal system in order to function.

Package #	Oscilloscopes supported
S75SC01	422,434,453,454,465, 465B, 475, 475A, 485
S75SC02	2205, 2211, 2213/A, 2215, 2215A, 2235, 2235A, 2235L, 2236, 2236A
S75SC03	7603, 7613, 7623A, 7704A, 7904, 7A16A, 7A18, 7A24, 7A26, 7B53A, 7B80, 7B85 Includes required calibration accessories
S75SC04	2445A, 2445B, 2465A, 2465B Includes required calibration accessories
S75SC05	2430, 2430A, 2432, 2432A, 2440 Includes required calibration accessories
S75SC06	TDS520, TDS540 NOTE: SCAL-102 opt. 3 is required
S75SC07	2220, 2221A, 2230, 2232
S75SC08	2245, 2245A, 2246, 2246A, 2247, 2247A



ScopeCal System without rackmount.

## ORDERING INFORMATION

When ordering please use the exact nomenclature given here:

### SCAL-101 550 MHz Core Oscilloscope Calibration System

- Option 01** — Bar Code Reader
- Option 02** — Accessories Package
- Option 05** — Rackmounts for TM 5006As
- Option 06** — Equipment rackmounted
- Option 09** — Delete PC 386. Integrate customer's PC.
- Option 10** — Delete CG 5011
- Option 11** — Delete SG 5030
- Option 12** — Delete DM 5110
- Option 13** — Delete 1 TM 5006A
- Option 14** — Delete 2 TM 5006As
- Option 21** — S75SC01 Application Software
- Option 22** — S75SC02 Application Software
- Option 23** — S75SC03 Application Software
- Option 28** — S75SC08 Application Software
- A1-A5** — Power Cord Options

### SCAL-102 550 MHz Enhanced Oscilloscope Calibration System

- Option 01** — Bar Code Reader
- Option 02** — Accessories Package
- Option 03** — Data Precision DP 8200 Voltage Calibrator
- Option 05** — Rackmounts for TM 5006As
- Option 06** — Equipment rackmounted
- Option 09** — Delete PC 386. Integrate customer's PC.
- Option 10** — Delete CG 5011
- Option 11** — Delete SG 5030
- Option 12** — Delete DM 5110
- Option 13** — Delete 1 TM 5006A
- Option 14** — Delete 2 TM 5006As
- Option 15** — Delete FG 5010
- Option 16** — Delete DC 5010
- Option 21** — S75SC01 Application Software
- Option 22** — S75SC02 Application Software
- Option 23** — S75SC03 Application Software
- Option 24** — S75SC04 Application Software
- Option 25** — S75SC05 Application Software
- Option 26** — S75SC06 Application Software
- Option 27** — S75SC07 Application Software
- Option 28** — S75SC08 Application Software
- A1-A5** — Power Cord Options

SCALCF1 — SCAL-102 Calibration Fi

SCALPA1 — GPIB Pod Adapter  
& 2465 A/B

S75SC01 — 400 Series Application

S75SC02 — 2200 ART Series Application Software

S75SC03 — 7K Series Application Software

S75SC04 — 2400 ART Series Application Software

S75SC05 — 2400 DSO Series Application Software

S75SC06 — TDS 500 Series Application Software

S75SC07 — 2200 DSO Series Application Software

S75SC08 — 224X ART Series Application Software

**For more information on equipment specifications, system upgrades, and accessories, please call 1-800-426-2200.**

30W-8313-0 — ScopeCal Upgrades and Accessories

75W-7882 — SG 5030 Programmable Sine Wave Generator for Scope Calibration data sheet

75W-7960 — CG 5011 Programmable Calibration Generator for Analog and Digital Oscilloscopes data sheet

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Test and Measurement