TSAnalog

Tester for Incoming Inspection of Analog IC's

Purpose

TSAnalog is a budget software and hardware complex for carrying out functional control, testing, measuring static and dynamic parameters of various products:

· Analog ICs (operational amplifiers, comparators, signal generators, filters, analog multipliers, etc.)
· Power management ICs (pulse voltage converters, linear voltage converters, etc.)
· Semiconductor devices (transistors, diodes, thyristors, etc.)
· Passive components
· Assembly component and integrated systems
· Printed circuit boards

Applications

· Input inspection of analog integrated circuits and semiconductor devices, as well as integrated systems.
· In research laboratories as a set of standalone tools (mixed signal oscilloscope, arbitrary waveform generator, digital signal generator / analyzer, programmable current and voltage sources, digital multimeter, etc.)

Features and Benefits

· Quick and cost effective deployment in production process
· The ability to use software and hardware turn-key solutions for different types of analog ICs, taking into account standatts and other regulatory documents
· Setting up test plans (setting the sequence and list of tests,test setups for each test and limits for inspection and sorting) in a graphical environment, without using special programming languages
· The ability to control various peripheral devices (thermal chamber etc.)
· Ability to use internal devices as standalone instruments
· Compatibility with the SINUS automated testing software platform
· Availability of PCB fixture kit for PCB test automation
· Availability of a calibration and self-test kits

Automated Testing Software Platform

SINUS

"SINUS" automated testing software platform is a specialized software that has an intuitive and easy-to-use graphical user interface designed to manage various tester blocks during the execution of tests. The software allows to create, edit and execute measurement programs and test sequences.
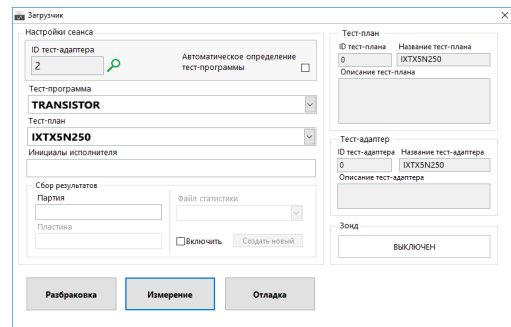
An important advantage of the software is the ability to customize the test setups for each test, change the list and order of their execution without restarting it.

The software allows to collect measurement results into a database for further processing, as well as export measurement results to documents in .CSV (compatible with MS Excel) or HTML formats, which creates additional convenience for their storage and further use.
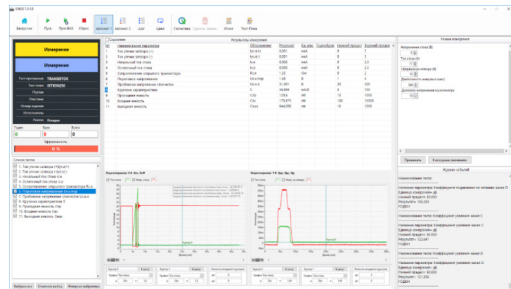
"SINUS" is designed to control the operation of the tester

- Automatic detection of loadboards
- Selection of test programs and test plans
- Selection of the program execution mode:

  Pass/Fail, Measurement, Debugging
- Collection of measurement results in a database
- Display information about the selected test plan

Selection of test plan

- Tester self-test at power on
- Display brief information on the tester and the DUT pass/fail status, as well as output efficiency in percent
- Ability to select tests for execution
- Display of measurement results as table
- Selection of one of four measurement modes
- Setting test setups without restarting the program
- Report generation
- Save reports in .CSV and HTML formats

Operator Interface in Debug Mode

- Printing a report using one of the available printers
- Opening a report in the default browser
- Statistical analyze of measurement results

*Statistical analyze
of measurement results*

Report generation

The "SINUS - Test Plans Manager" program is designed to create, edit and save test plans

- Creation of new or editing the existing test plans
- Work in an off-line mode without a tester
- Adding, editing, deleting, copying or moving tests in the list
- Adding, editing, deleting, copying or moving parameters in the list
- Setting pass/fail mode and limits
- Setting test setups
- Setting Classification rules

SINUS - Test Plans Manager

The "SINUS - Maintenance" program is designed for self-testing and calibration of the tester

- Tester self-test
- Tester calibration
- Hardware and software report generation

SINUS - Maintenance

Main Technical Specifications

Instrument	Parameter	TSAnalog 12	TSAnalog 34	TSAnalog 54
		Value		
Mixed signal oscilloscope	Number of Analog channels	2	4	4
	Number of Digital channels	34		
	Bandwidth	100 MHz	350 MHz	500 MHz
	Resolution	8 bit		
	Vertical range	from 40 mV to 40 V		
	Sampling rate	1 Gs/s	1.5 Gs/s	2 Gs/s
Functional generator	Waveforms	Sinusoid, rectangular, sawtooth, triangular, constant, arbitrary		
	Update rate	125 Ms/s	200 Ms/s	
	Resolution	14 bit		
	Max frequency	20 MHz	40 MHz	
	Number of Channels	1		
Digital multimeter	Functions	DC and AC voltage measurement, DC and AC current magnitudes, resistance measurement, diode checking, wire identification		
	Resolution	5 ½ characters		
Programmable power supply	Channels	3		
	Channel 1	Up to +6 V and 1 A	Up to +6 V and 3 A	
	Channel 2	Up to +6 V and 1 A	Up to +25 V and 1 A	
	Channel 3	Up to +6 V and 1 A	Up to -25 V and 1 A	
		The ability to measure current consumption		
Fixed event sources	Channel 1	+18 V, 100 mA		
	Channel 2	-18 V, 100 mA		
	Channel 3	+15 V, 100 mA		
	Channel 4	-15 V, 100 mA		
	Channel 5	+5 V, 100 mA		
	Channel 6	-5 V, 100 mA		
Digital input/output (Group 1)	Number of Channels	96		
	Logical levels	5 V TTL, LVTTL compatible input		
	Load capacity	Up to 24 mA		
	Update rate	Up to 10 MHz		
Digital input/output (Group 2)	Number of Channels	8		
	Logical levels	5 V TTL, LVTTL compatible input		
	Load capacity	Up to 4 mA		
Analog input	Number of Channels	32 differential or 64 single ended		
	Resolution	18 bit		
	Sampling rate	625 ks/s		
	Input range	Up to ±10 V		
Analog output	Number of Channels	8		
	Resolution	16 bit		
	Update rate	2.86 Ms/s		
	Output range	±10 V		
	Load capacity	±5 mA		
Operation of relay	Number of Channels	56		
	Voltage	5 V		
	Load capacity	100 mA		
Dimensional specifications	Width	46 cm		
	Length	33 cm		
	Height	24 cm		
	Weight	12 cm		

Services

- Providing turnkey test solutions for different types of DUTs
- Development of new equipment for different types of families and individual DUTs
- Development of new measurement programs
- Deployment in the territory of the customer
- Customer training

Tester for the incoming inspection of operational amplifiers based on TSAnalog hardware and software

Purpose:

The tester of operational amplifiers is designed for automated functional control, as well as measurements of static and dynamic parameters of an operational amplifiers with up to 4 channels.

Features:

- Platforms for electrostatic discharge, providing protection for DUT and electrical components located on the daughter-board
- A ZIF sockets to avoid damaging the DUT leads
- Test program libraries compatible with SINUS software are used to functional control and measurement of the following key parameters:
    - offset voltage
    - input bias currents
    - input offset current
    - open loop gain
    - output voltage swing
    - common-mode rejection ratio
    - output current
    - quiescent current

An abbreviated list of input-control ICs for which turn-key solutions are offered based on TSAnalog

Analog ICs	Power management ICs	Semiconductor devices
1401УД1	1074FDS	КТ973Б
1401УД2	13727FBS	КТД540А
40УД7	117012FH	КТ8214В
140УД9	ADP3050	КТ972А
140УД11	LM2594	MJD50T4G
140УД16	LM2676	STX93003
140УД19	TPS62044	STP03D200
140УД20	L296	BCW71
153УД1	L5988DTR	MPSA05RA
153УД2	L4975A	MJD340T4G
153УД3	78Lxx Series	KSH50TF
153УД4	79Lxx Series	MJE340STU
153УД5	78Mxx Series	TIP29
154УД1	79Mxx Series	TIP47G
154УД2	L78xx Series	DSC2001R0L
154УД3	L79xx Series	MJD350TF
154УД4	LM2937-xx Series	NJVMJD50T4G
157УД1	LT1963xx Series	BD159G
157УД2	TPS770xx Series	STX13003G-AP
LM833N	LM1117xx Series	MJD350T4
LM358	TLV713xx Series	STD1NK60T4
LM324	LP295x Series	STN1NK60Z
TS46	TLV700xx Series	BSS84-7-F
TS97	LP3985-xx Series	RK7002BT116
TL97	LP2985-xx Series	FDV301N
TL343	LP5951-xx Series	MMBF170LT1G
etc.	LD29150DTxxR Series	2N7000TA
	LD1086xx Series	FDN352AP
	TPS788xx Series	NDS356AP
	ADP170	1N4148WS-E3-08
	ADP171	
	etc.	