

Tube Analyzer

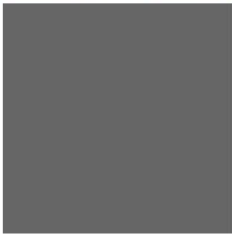
LV 124 Measurement and Analysis Device



LV 124



WKS
Informatik
Experts in Testing



SELECT
YOUR
SOLUTION!



RF /
Radar



RTStand
HIL - TEST AND SIMULATION



Industrial
Automation



Tube
Analyzer
µfi Ultra Fast
Interrupter

NATIONAL INSTRUMENTS™ ALLIANCE PARTNER OF 2015/2016
WINNER OF THE NATIONAL INSTRUMENTS™ TECHNICAL INNOVATION AWARD | WINNER OF THE WIR TECHNICAL INNOVATION AWARD!

Why LV 124?



<http://www.freepik.com>



<http://www.freepik.com>

Autonomous driving
brings many advantages...

... but also requires a lot
more complex test scenarios
for ECU validation...

... and norms which define the
ECU behaviour during tests.

Original
Equipment
Manufacturers

LV 124 Norm

LV 124 - Key requirements

- All functions of the DUT must perform as specified before, during and after stimulation.
- Key parameters, e.g. operating currents, voltages etc., must be recorded during each test.

Requires high-resolution measurements to detect disturbances [10 μ s] on all I/O simultaneously

Tube Analyzer

BUILT TO DETECT



- detects short sporadic errors
- continuously monitors all pins
- supports analog/pwm channels
- TDMS logging

FLEXIBLE USE



- stand-alone component
- integrable in automated test systems
- complete tool chain with Generator and Viewer

LV 124 READY



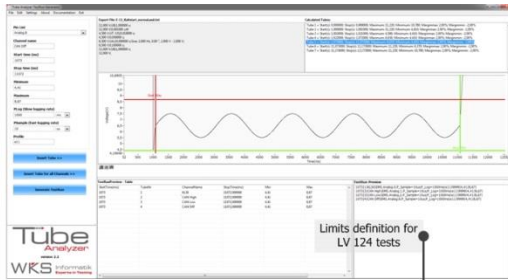
- event detection with 100kHz
- monitoring before, during and after event
- import of LV 124 battery supply simulation curves



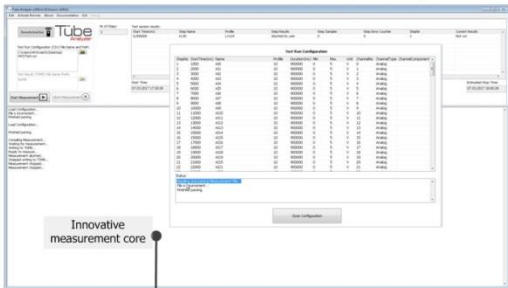
Winner of the WiR technical innovation award

Tube Analyzer - Workflow

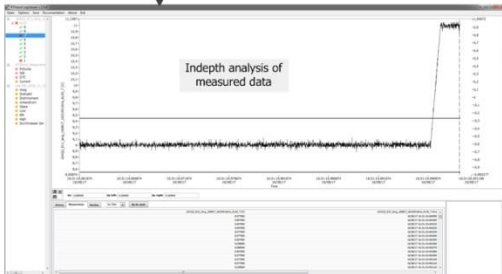
Tube Analyzer
TestRun Generator



Tube
Analyzer



Tube Analyzer
RTStand Log Viewer

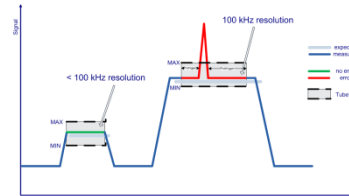


LV 124 – Limits Generation

- Easy and comfortable measurement configuration
- Import of (ArbNet) battery supply and TDMS curves
- Editing of existing configurations
- Scalable, reliable and correct configurations

LV 124 – Adaptive logging

- Overview of the measurement status and error count
- Parallel execution of several instances
- Remote control
- Adaptive logging for all pins in parallel



*Time = defines the bins and the time interval, during the first analysis of the measured signal is performed.

LV 124 – Data analysis

- Fast visualization tool for measurement data
- Powerful data reduction algorithms
- Comfortable comparison of multiple channels
- Default Word reporting

Tube Analyzer – Adaptive Logging

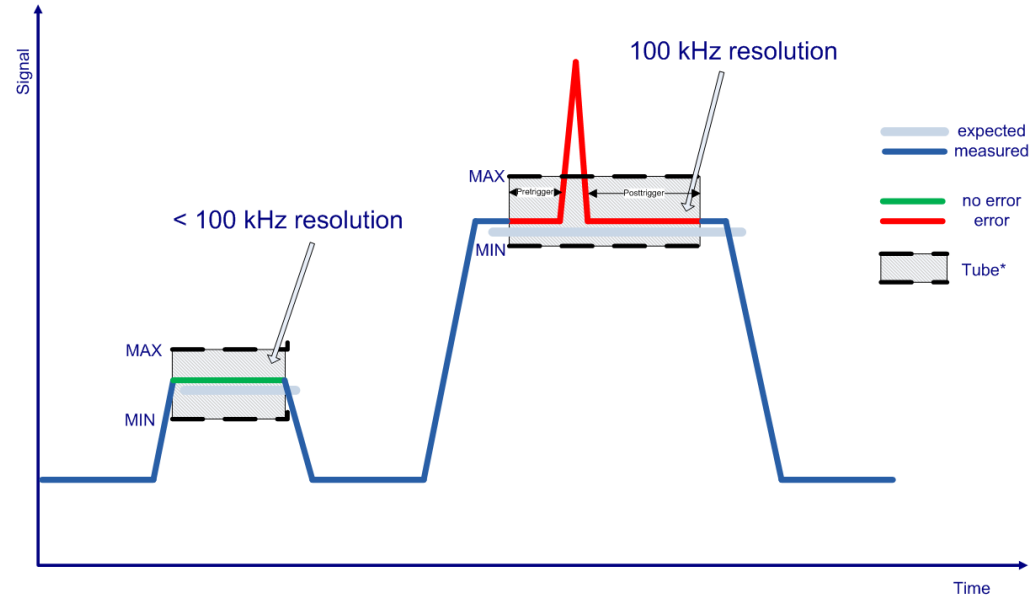
Innovative Monitoring and Analysis Concept

- Based on signal envelopes – „tubes“: expected values, corresponding to expected device behaviour
- Parallel measurement for all configured signals
- Measurement data is analyzed online and the tubes are „marked“ accordingly
- Adaptive logging: „Good“ behaviour is logged in higher time laps, „bad“ behaviour in smaller ones



The amount of data is reduced

Failure search is much faster



*Tube = defines the limits and the time interval, during which the limit analysis of the measured signal is performed.

Tube Analyzer – Hardware layouts



Tube Analyzer F8

8 analog channels
(one is also used as
analog trigger)



Tube Analyzer F24

20 analog, 4 PWM
channels and digital
triggering



Tube Analyzer F96

96 configurable analog
and PWM channels and
digital triggering

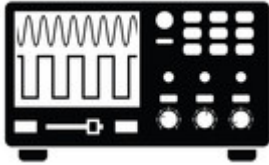


COMING SOON!

Tube Analyzer I6

up to 6 channels for
current measurement

Tube Analyzer vs. Oscilloscope



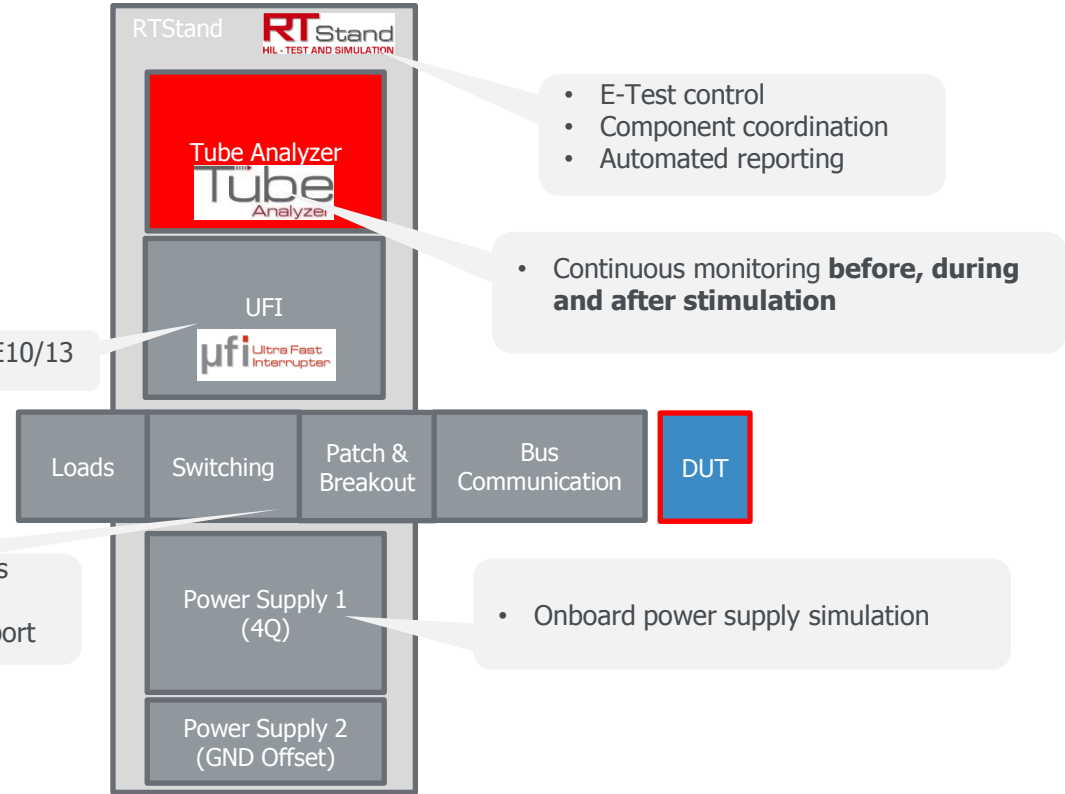
- ✗ Few signals in parallel
- ✗ Uncertain error detection – only the first error is detected (triggered)
- ✗ Irreproducible error detection
- ✗ Imprecise analysis – visual analysis prone to human failure



- ✓ Up to 400 pins in parallel
- ✓ Precise, reliable and reproducible error detection
- ✓ Online analysis, based on programmed criteria
- ✓ Deeper and accurate measurement data analysis

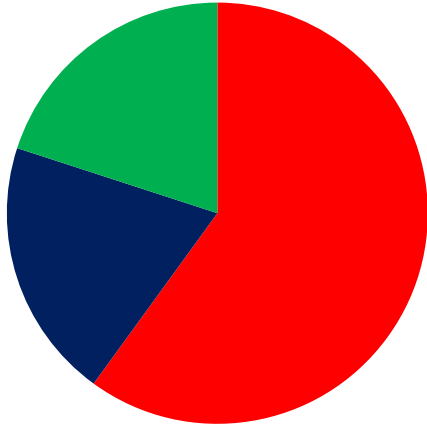
RTStand LV124 – fully-automated testing system for LV 124




LV 124 Tests
E-01 Long-term overvoltage
E-02 Transient overvoltage
E-03 Transient undervoltage
E-04 Jump start
E-05 Load dump
E-06 Superimposed alternating voltage
E-07 Slow decrease and increase of the supply voltage
E-08 Slow decrease, quick increase of the supply voltage
E-09 Reset behavior
E-10 Short interruptions
E-11 Start pulses
E-12 Voltage curve with electric system control
E-13 Pin interruption
E-14 Connector interruption
E-15 Reverse polarity
E-16 Ground offset
E-17 Short circuit in signal circuit and load c
E-18 Insulation resistance
E-19 Closed-circuit current
E-20 Dielectric strength
E-21 Backfeeds
E-22 Overcurrents



Manual approach

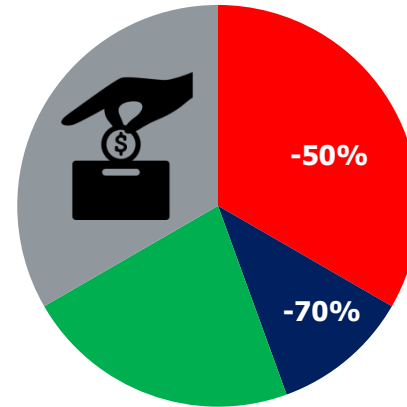
Testing times



-  Test analysis
-  Test execution
-  Test preparation

Automated approach

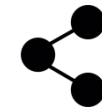
Testing times



Reproducible test environment



Reliable testing 24/7



Correlated test results

Want to learn more?

Our websites:

www.wks-informatik.de

www.rtstand.com

www.tube-analyzer.com

Our social channels:



<https://www.linkedin.com/company/wks-informatik-gmbh>

<https://www.youtube.com/user/WKSinformatikTV>

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