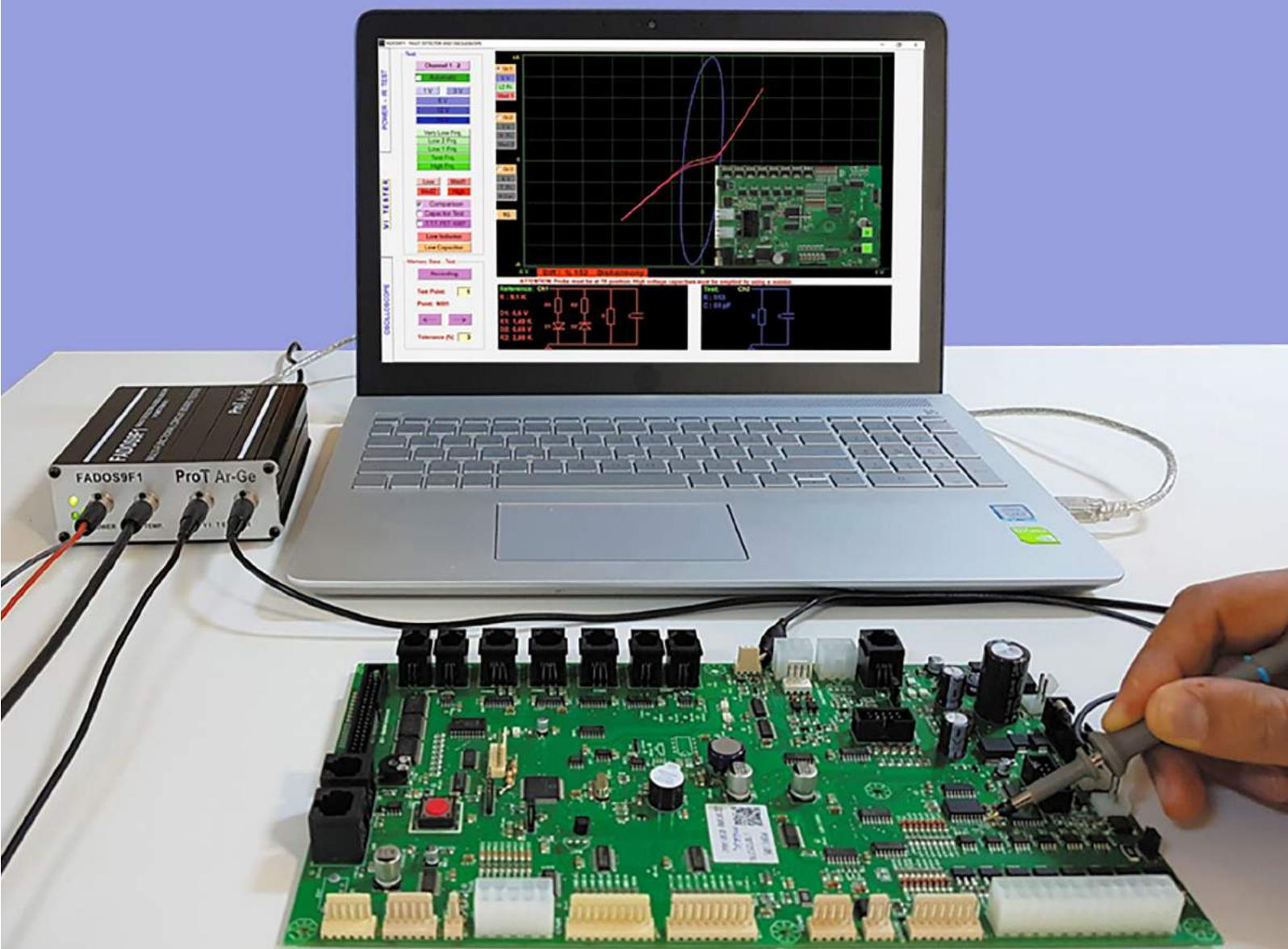


Tomorrow's Tools Today

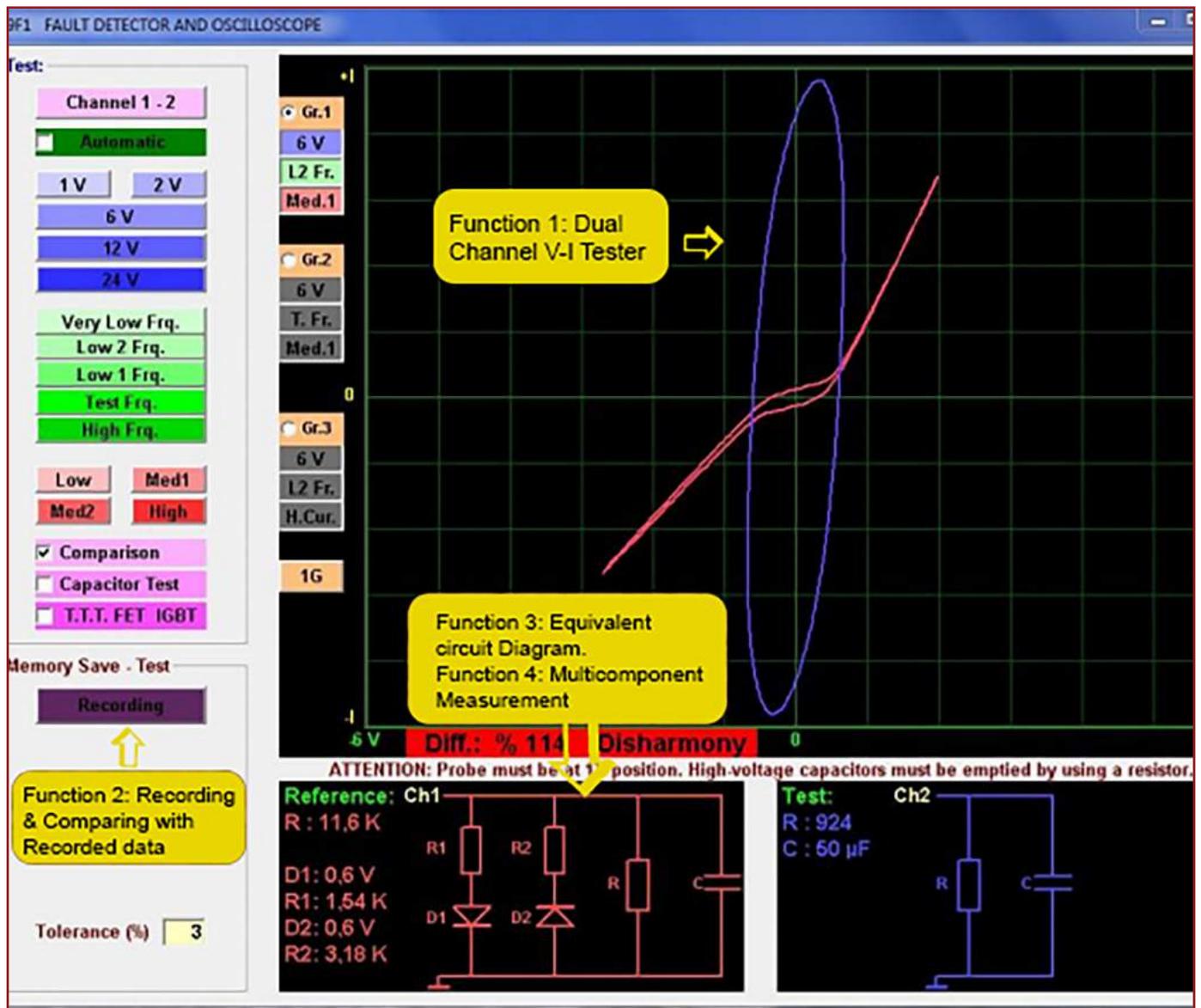
FADOS

PCB FAULT DETECTOR & OSCILLOSCOPE

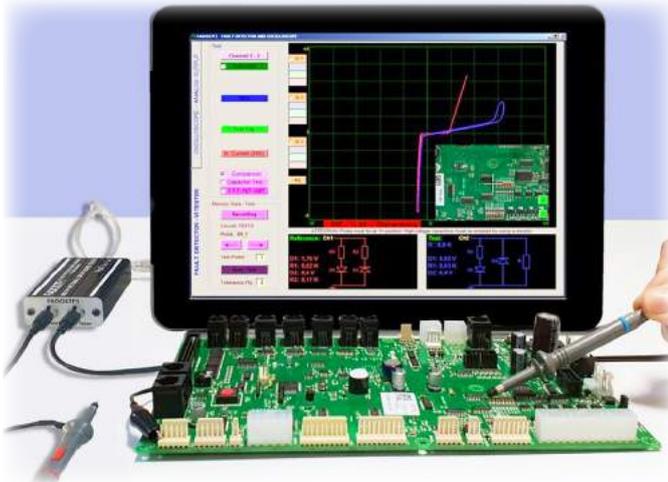


GSAS Micro Systems Pvt Ltd (GSASMSPL) has established a strategic partnership with **ProT Ar-Ge**, a renowned expert in designing and manufacturing cutting-edge **FAult Detector & OScilloscope (FADOS)** modules. The innovation achieved the esteemed **Best Technological Certificate** from Germany.

FADOS is built to improve the efficiency, accuracy, and sustainability of electronics testing and troubleshooting processes. Its benefits encompass accelerated fault detection, reduced downtime, E-Waste environmental sustainability, etc.



Troubleshooting PPCBs (Populated Printed Circuit Boards) via V-I (Voltage-Current) characteristics is a valuable approach that involves analyzing the behavior of electronic components in relation to voltage and current interactions. This method allows technicians and engineers to diagnose faults, identify anomalies, and pinpoint problematic areas on the circuit board.



FADOS7F1



FADOS9F1

Features

1. Dual channel fault detection by V-I tester

Identify faults by directly comparing the voltage-current characteristics of a functional circuit board and a faulty one, all without powering the circuit board.

2. Fault Detection by Comparison with Stored Signatures

Signatures of a functioning board can be saved and used at a later time as a reference for troubleshooting a faulty board.

3. Equivalent Circuit Diagram ***

Display of an equivalent circuit that corresponds to the characteristic of the probe point.

4. Display Values of Resistor, Capacitor and Diode***

Display the measured values of resistance, capacitors and diode threshold voltages corresponding at the contacted node. Can also be used for components identification (out of the circuit).

5. Dual-Channel Digital Basic PC Oscilloscope

If the situation calls for, the device can be used as basic oscilloscope.

6. 0.2 to 25kHz Square Wave Generator

Channel 2 is used as a square wave generator. Channel 1 can be used as an oscilloscope.

7. Analog Voltage Output

Channel 2 is used as Analog DC output. Channel 1 can be used as an oscilloscope.

8. Variable DC Power Supply for Creating V-I Graph****

The output voltage is adjustable from 0V to 16V with an output current 0mA to 1500 mA, to feed the power to circuit board and observe the graph of DC Voltage-Current.

9. Non Touched IR Temperature Sensor****

To detect above room temperature to 120°C and draw a temperature map of the circuit board at location of IR probe.

*** These Functions are Unique Features of FADOS7F1 and FADOS9F1

**** These Functions are New Unique Features of FADOS9F1

FADOS MUX (Multiplexer)



FADOS MUX module is an advanced version of FADOS9F1. This module stands as a powerful tool that enhances testing efficiency, precision, and scalability, making it an invaluable asset for professionals in electronics testing and troubleshooting.

The FADOS MUX module's benefits encompass faster testing, efficient resource utilization, precise fault detection, scalability, enhanced analysis, reduced downtime, and a sustainable approach to electronics maintenance. These advantages collectively elevate electronics testing and fault detection processes, empowering technicians to make data-driven decisions.

It has 100 I/O lines which are divided into 2 channels, 50 lines each

Channel A



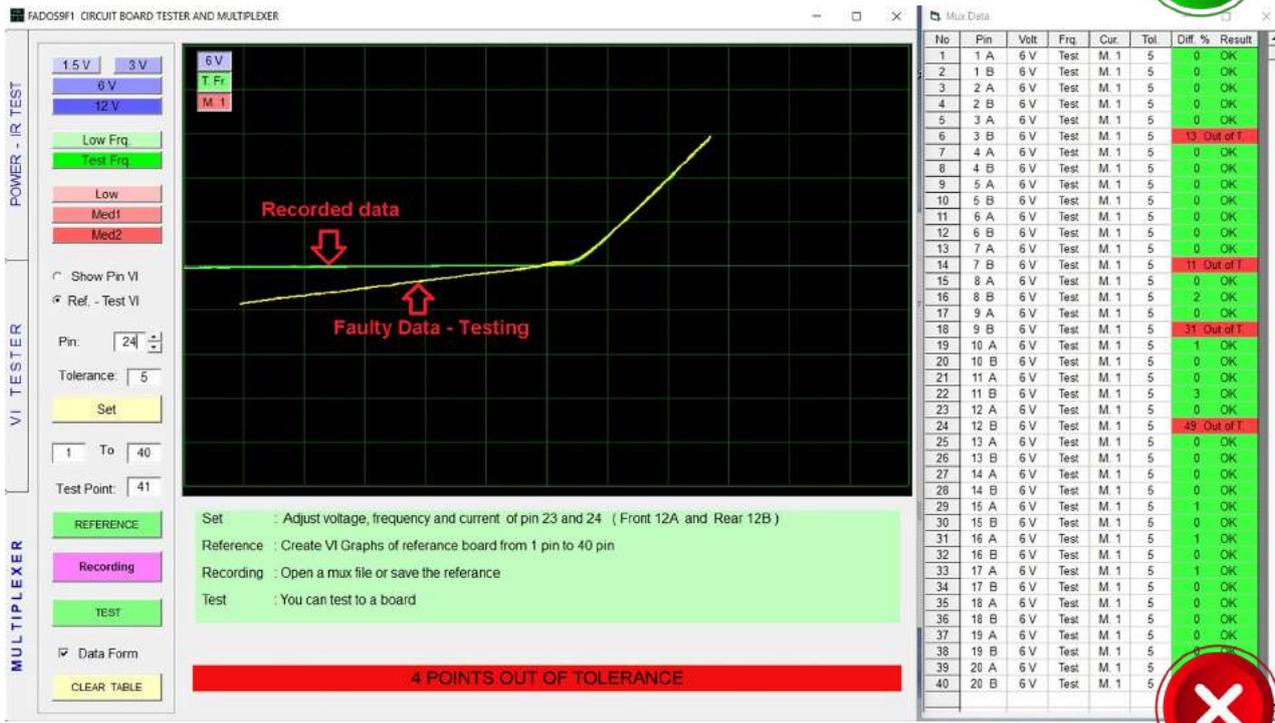
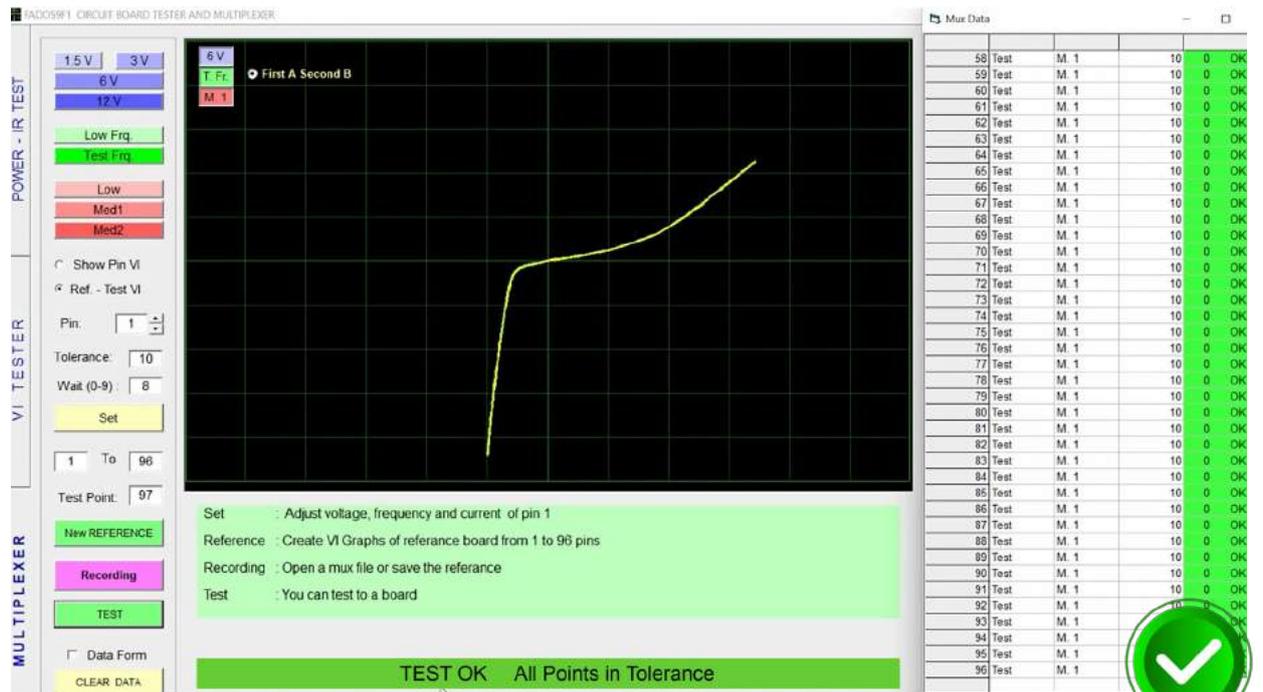
Channel B



These MUXs can be cascaded and the number of I/O lines can be scaled up to 200 lines.

Configure the MUX with the settings of Voltage, Current, Frequency, etc., specify the desired number of test points for recording. Next, initiate the process by selecting “Reference”, which will generate a V-I graph based on the designated test points. Allow a brief period for the system to confirm by displaying “REFERENCE OK”.

Subsequently, store the recorded V-I data in a designated folder. When conducting a primary inspection or troubleshooting, retrieve the previously saved file and activate the “TEST” function for comparison purposes.

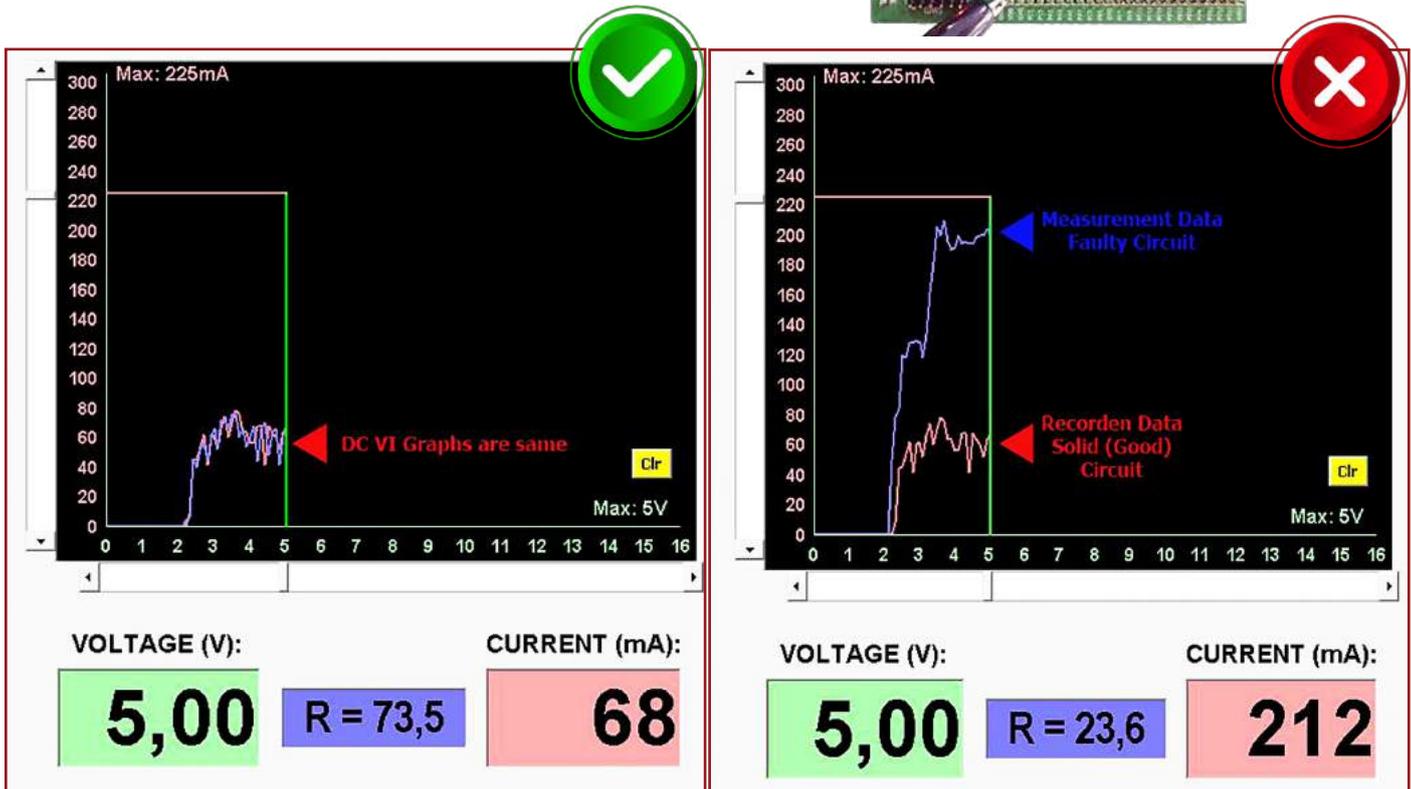


DC Power Supply and Power ON Analysis

Voltage: 0V to 16V DC

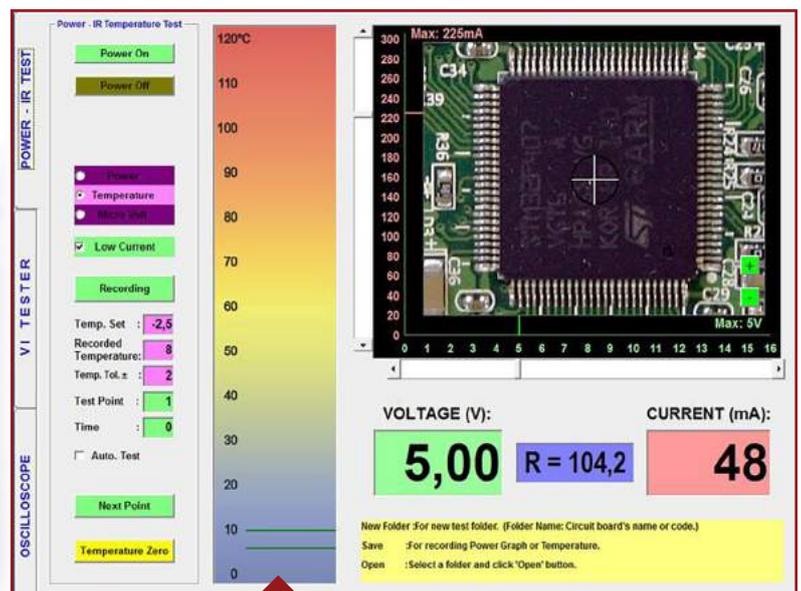
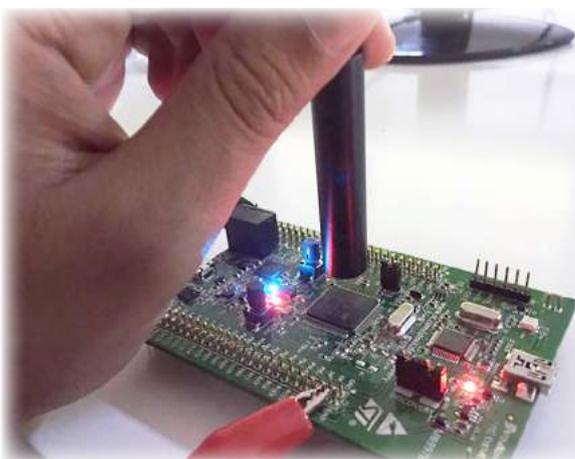
Current: 0mA to 1500mA

Resolution: 100mV / 10mA



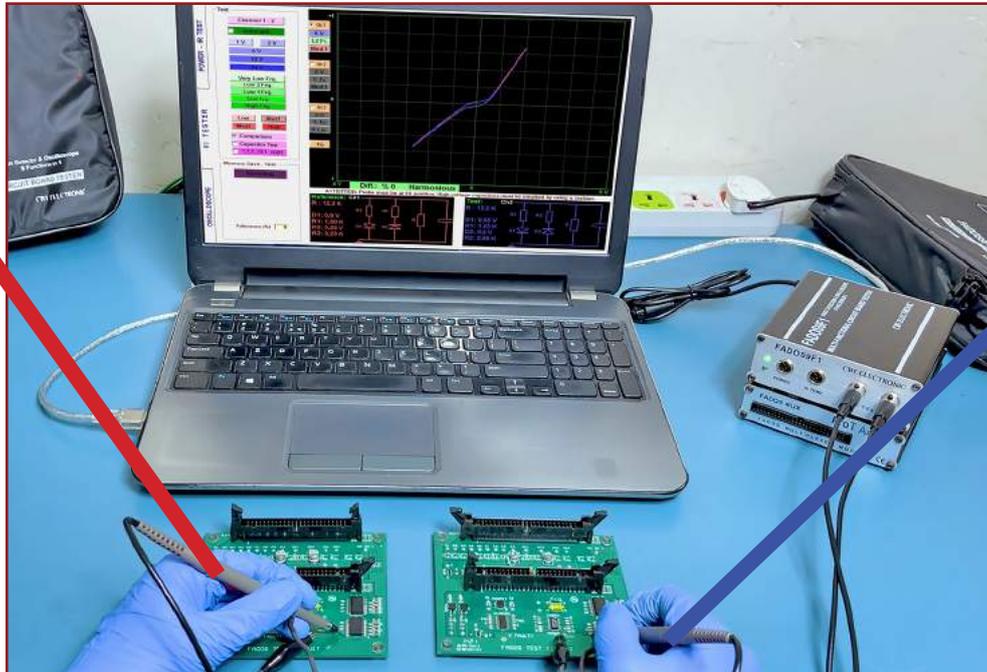
IR Temperature Measurement

Above room temperature to **120°C**



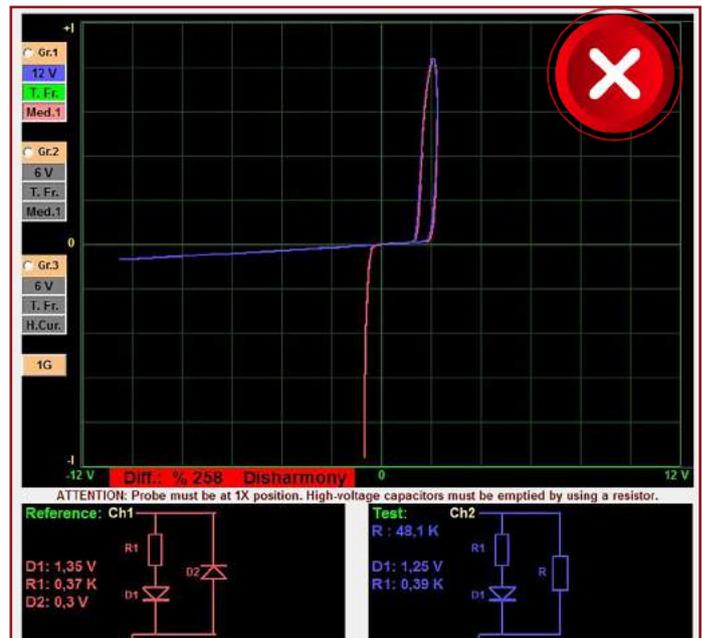
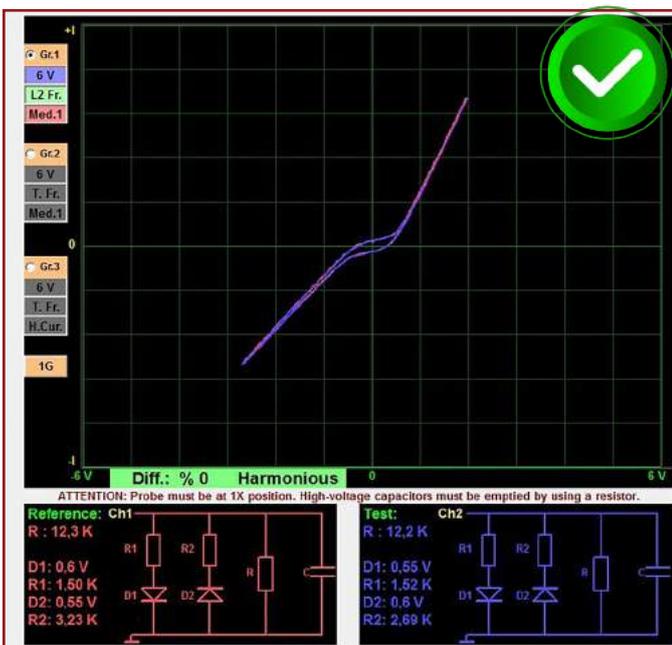
Live Comparison V-I Tester

Channel 1
RED
Probe
for
Good
Board

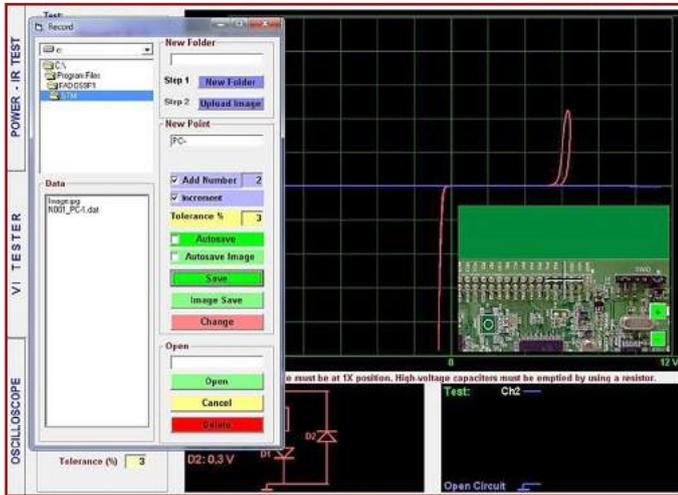


Channel 2
BLUE
Probe
for
Faulty
Board

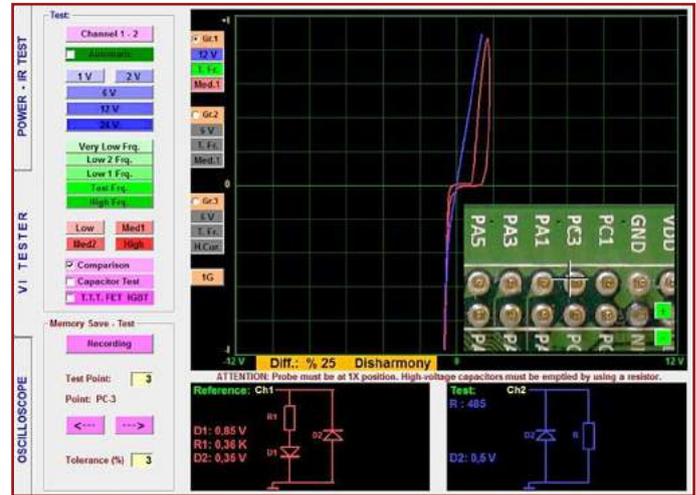
FADOS perform live comparison by transmitting a precisely controlled sinusoidal wave through the electronic circuit board, using the ground as its reference point. Subsequently, the V-I graph, often referred to as Analogue Signal Analysis (ASA), or in certain scenarios as Impedance Test, is visually presented on the computer screen. Notably, ASA conducted in power OFF condition of the PPBC.



Comparison from stored V-I data



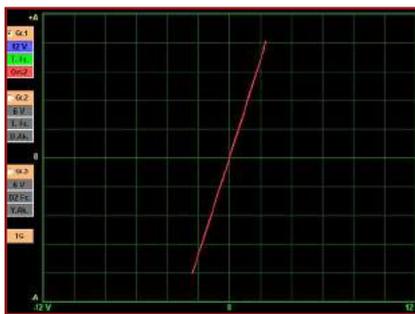
Record / Save Good Board V-I Data



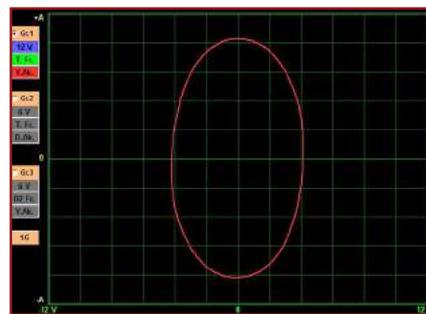
Comparison: Faulty Board with Good Board V-I Data

An additional advantageous facet of FADOS lies in its capacity to capture and store V-I data from the PPCB directly into a computer. The extent of data is contingent upon the hard disk capacity of the computer. This attribute, allows retrieval and comparison of stored V-I data in cases where a reference board is unavailable in the future.

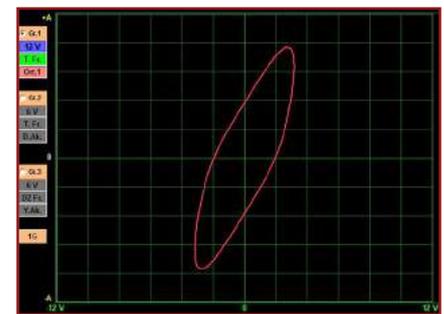
The V-I characteristics of a few electronic components



Resistor V-I Curve



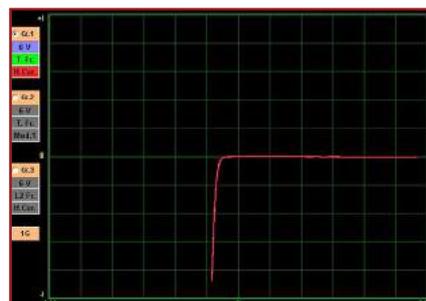
Capacitor V-I Curve



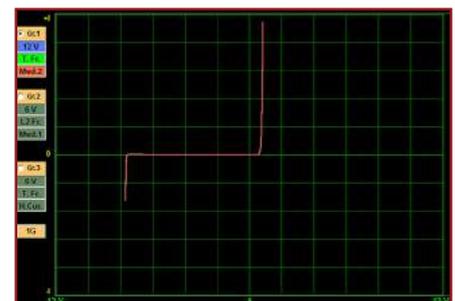
Inductor V-I Curve



Diode - Forward Bias V-I Curve

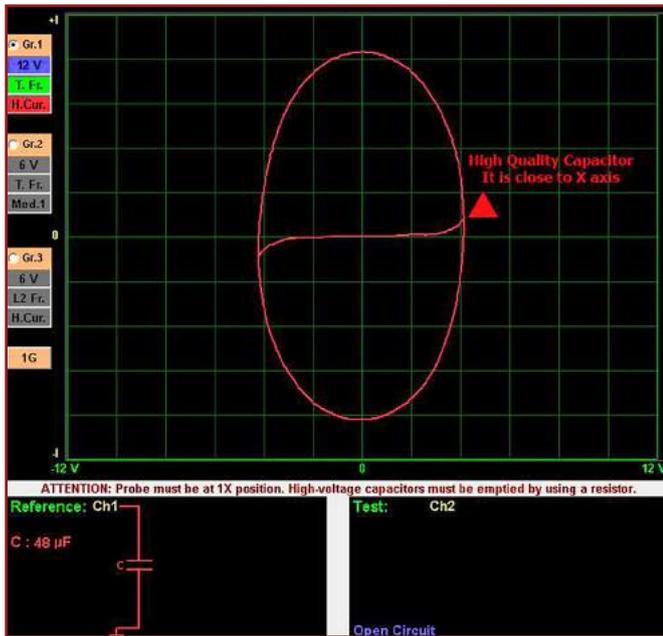


Diode - Reverse Bias V-I Curve

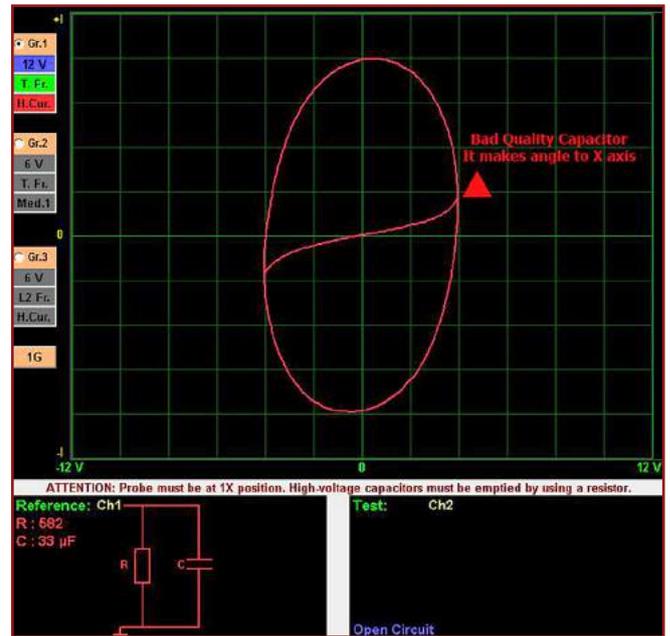


Zener Diode V-I Curve

Capacitor Quality Test



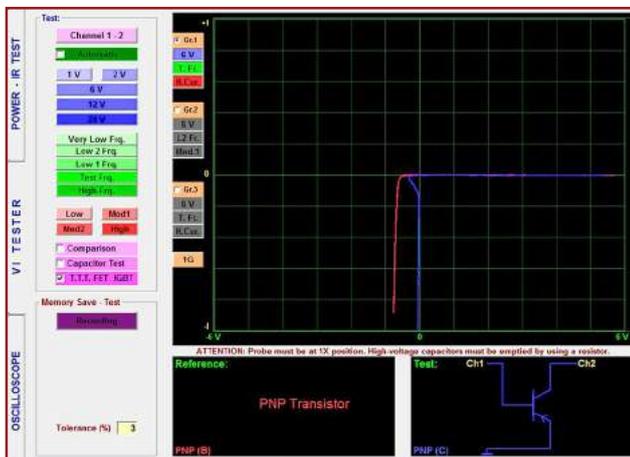
High Quality Capacitor



Low Quality Capacitor

Component Identification

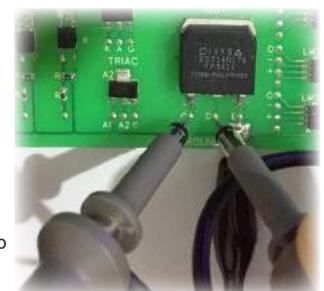
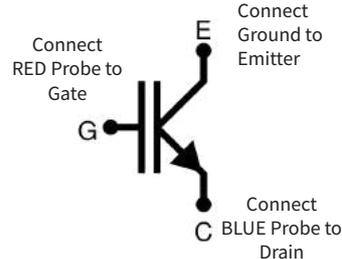
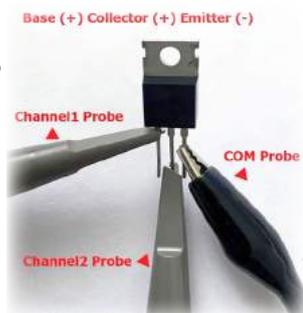
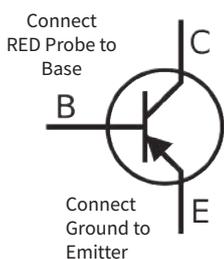
FADOS identifies the Transistor, Triac, Thyristor, FET, IGBT ,etc.



PNP Transistor

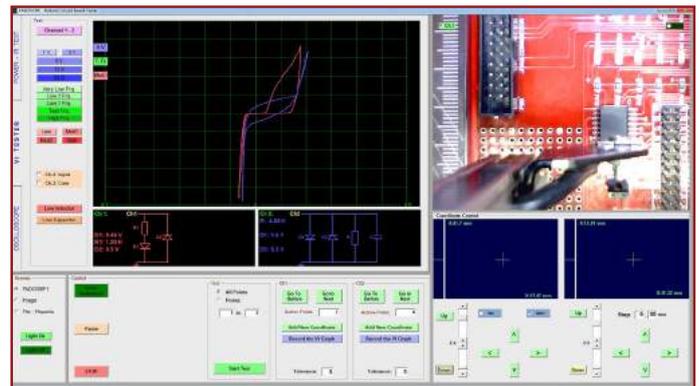
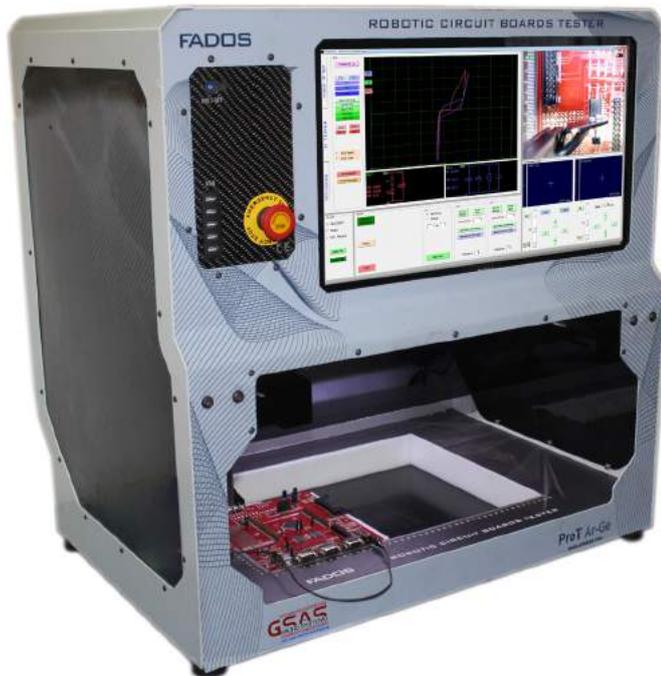


IGBT



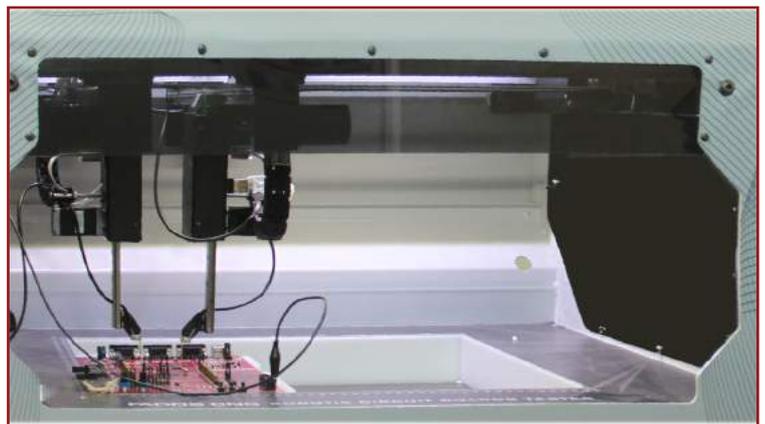
FADOS ROBOTIC IN-CIRCUIT TESTER

FADOS RICT is built to diagnoses faults at component level and it can test 300 points on a PPCB in a minute.



FADOS ROBOTIC IN-CIRCUIT TESTER KEY FEATURES

- » Dual Flying Probe
- » DUT Power Analysis
- » Thermal Analysis on PPCB
- » Equivalent Circuit Diagram
- » In-Circuit Component Values
- » Component Identification
- » Memory Function



Dual Flying Probe V-I Tester

Fault detection by direct comparison of the V-I characteristics of PPCB without applying power to the device under test (DUT). RICT will detect faulty components in circuit by comparing with the reference board.

These flying probes are fitted with a specially designed spring loaded pins with camera, can move in X Y Z directions simultaneously on single PPCB. The movement of these flying probes can be programmed manually / CAD Data. The Flying probe movement pitch can be programmed as per user's requirements in case of manual programming.

Comparison between FADOS7F1 & FADOS9F1

V-I Tester Features	FADOS7F1	FADOS9F1
Step of Voltages Plus Values	±1V, ±2V, ±6V, ±12V, ±18V	±1V, ±3V, ±6V, ±12V, ±24V
Step of Resistances Plus Values	Low 47 kΩ, Medium 2.6 kΩ, High 385 Ω	Low 47 kΩ, Med1 3.5 kΩ, Med2 700Ω, High 250 Ω
Step of Frequencies Plus Values	2.71Hz, 5.71Hz, 45.68Hz, 781.2Hz	2.16Hz, 6.85Hz, 20.56Hz, 54.82Hz @ ±1V : 7.8kHz , @ ±3V : 2.2kHz
Number of Channels	2 Channels: Channel1, Channel2	
Scan Modes	Manual / Automatic selection steps of voltage, current, and frequency	
Memory Function: Recording data with image & Fault detection by comparison with stored signatures.	Yes	
Equivalent Circuit Diagram	Yes	
Resistor, Capacitors, Diodes etc Measurement.	Yes	
3 graphs at different adjustments can be screened simultaneously.	Yes	
Test sounds different at points	Yes	
POWER – IR TEMPERATURE FEATURES		
Variable DC Power Supply	No	0 to 16V @ 0 to 1500 mA
Non touched IR Temperature	No	Room temperature to 120°C
BASIC PC OSCILLOSCOPE FEATURES		
	Sampling Rate: 400 K/S, Channel / ADC: 2 Channel / 12 Bit, Sensitivity: 2.5 mV, Image Rate: 0.02 mS/div....100 mS/div, Instant Memory: 64 Kbyte	
Input Voltage	Probe 1X: ±5 V, 10X: ±50 V	
SQUARE WAVE GENERATOR		
	From 0.2 to 25kHz	
ANALOG OUTPUT SIGNAL		
	-5V to +5V	-12V to +12V
OTHERS		
Dimensions	105mm L x 54mm W x 24mm H	125mm L x 113mm W x 40mm H
Weight	500 grams approx	1500 grams approx
Content of FADOS	FADOS7F1 x1, Probe x2 (oscilloscope probes) A-B USB Cable x1 CD x1 FADOS7F1 Carry Case x1	FADOS9F1 x1, Probe x2 (Oscilloscope Probes) A-B USB Cable x1 DC Power Cable x1 IR Temperature Probe x1 Power Adapater x1 CD x1 FADOS9F1 Carry Case x1

BENEFITS

- * Unified testing station
- * PPCB power OFF test
- * V-I tester
- * Variable DC power supply
- * Power Analytics
- * IR temperature measurement
- * Ease-of use & Portability
- * Basic oscilloscope
- * Square wave signal generator
- * Capacitor quality test
- * Component measurement
- * Component identification
- * Equivalent circuit diagram
- * Comparison from stored V-I Data

It facilitates the identification of faults across diverse electronic circuit boards in every industry



Our Clientele



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