

# APEX TEST TECHNOLOGIES PVT. LTD.

QUALITY PCB TESTING, MADE AFFORDABLE

## **ABOUT US**

- Established in 1995 at Bangalore, India
- The PCB Test fixture is an integral part of board /product testing
- Apex consistently deliverers state of the art solutions for most complex test interface problems

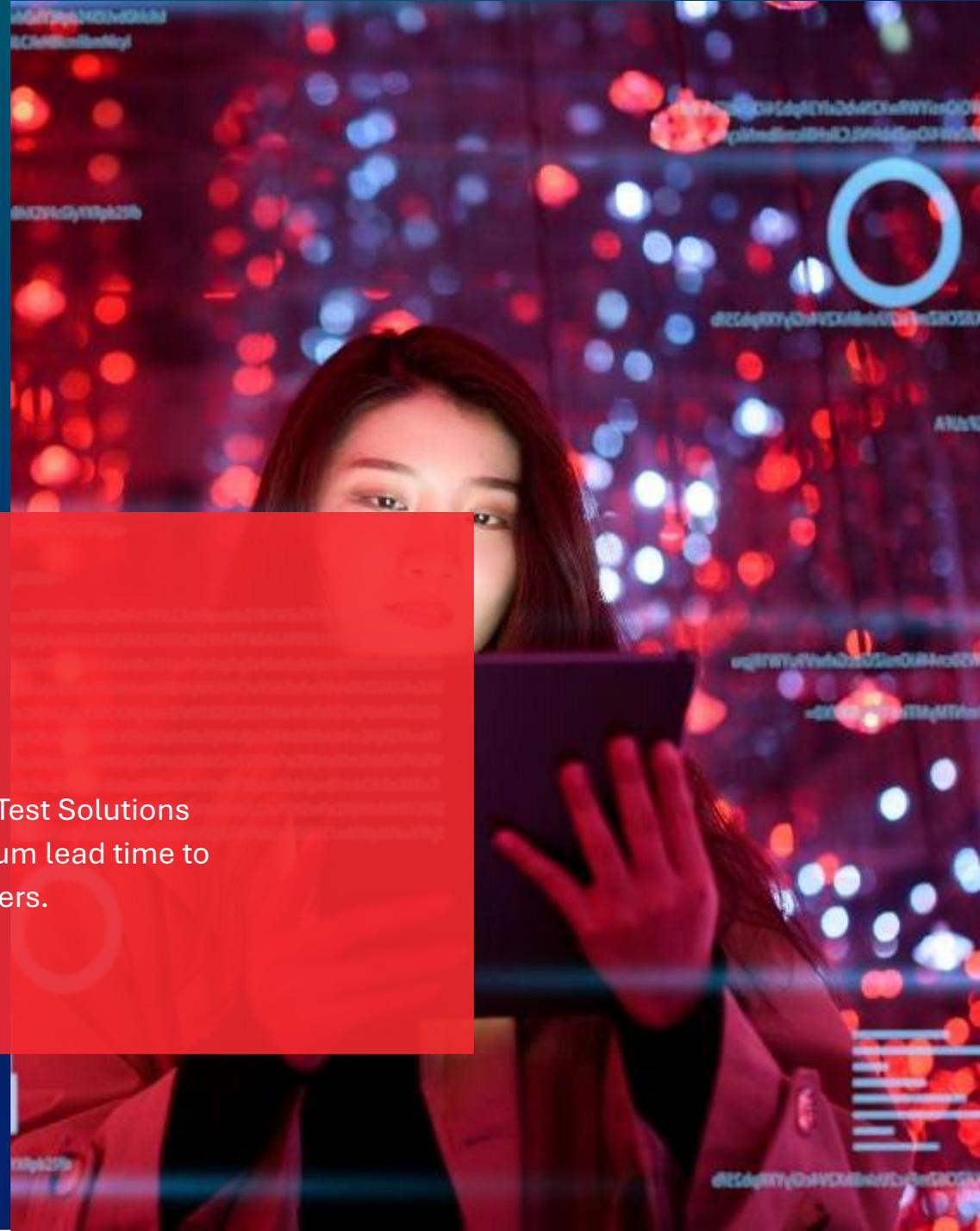


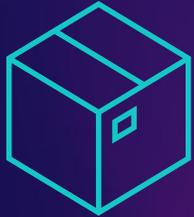
## VISION

To serve every corner of the electronic/manufacturing industries by providing excellent customized test solutions.

## MISSION

Providing best quality Fixtures and Test Solutions suitable for any budget with minimum lead time to increase the profitability of customers.





# OUR FEATURES

## CERTIFICATION

An ISO 9001:2015 certified company & rated by Dun & Bradstreet Information Services

## IDEA

Fresh approach / concept for every complex needs to enhance productivity with customized solution

## SCHEDULE

Best quality, On dot Delivery & committed service support

## APPROVAL

25 Years of continuous association with many PSU, MNC, EMS companies

## TEAM

Dedicated team of well experienced Engineers, Programmers and Technicians

## LOCATION

Located at Bangalore city well connected by Air traffic for both domestic & international shipments with same day clearance

# PRODUCTS & SERVICES



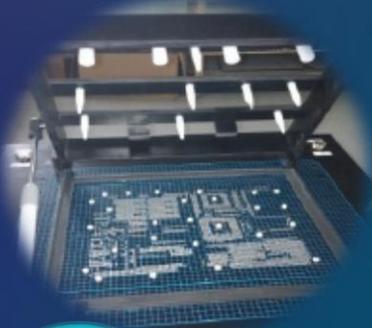
**30+ YEARS**  
**APEX**  
Quality PCB testing, made affordable

In-Circuit Test (ICT) fixtures

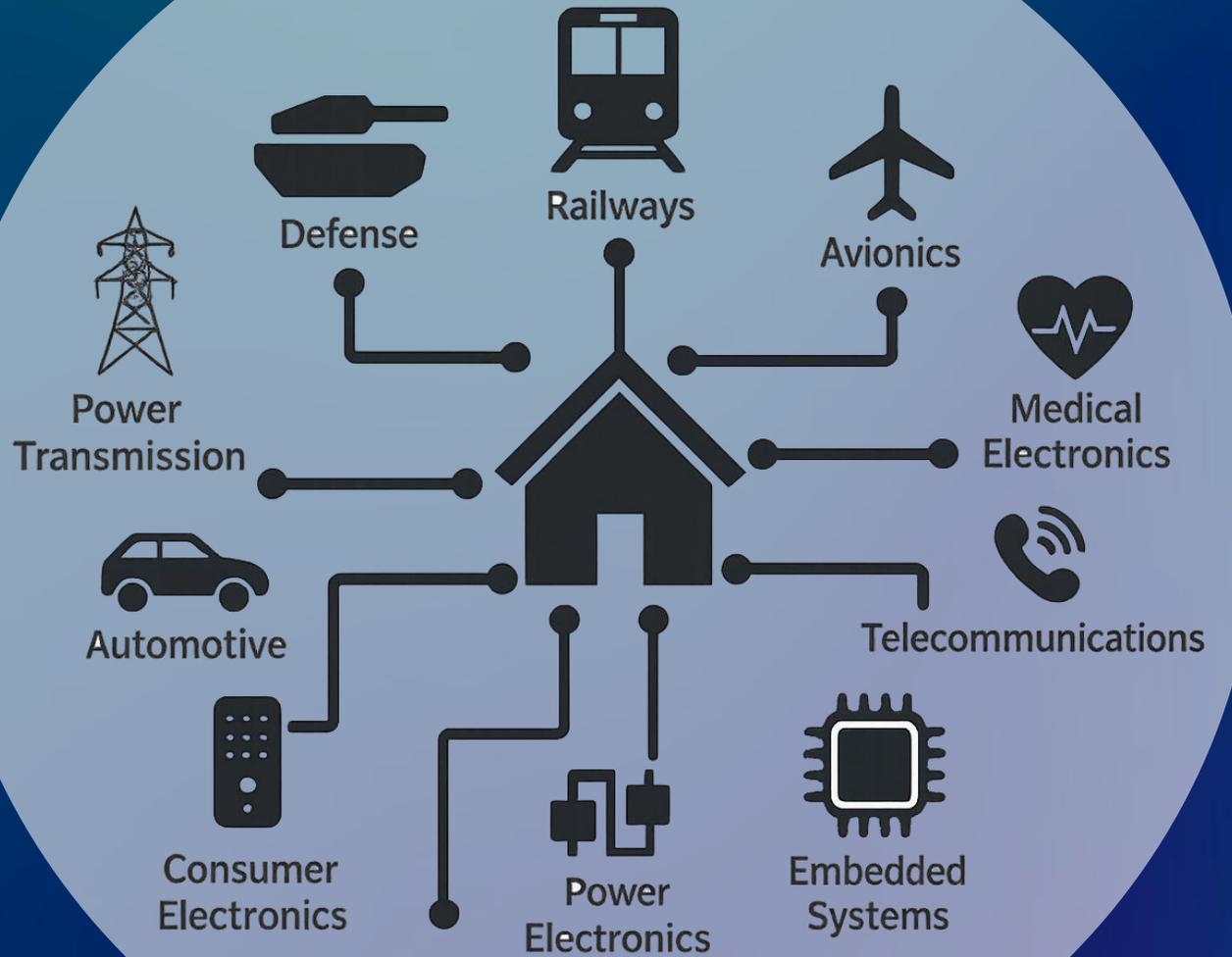
Turnkey solution / Industrial Automation

Existing system Customization

Functional Test fixtures



# INDUSTRY SEGMENTS SERVED UNDER ONE ROOF



# TURNKEY- FROM TEST HARDWARE DESIGN TO TEST SOFTWARE

## ATE – AUTOMOTIVE PCBA

- Fully automated bed of nail test fixture
- Pneumatic CAM operation
- Resistance, Voltage and current measurement
- Automated programming of PIC microcontroller

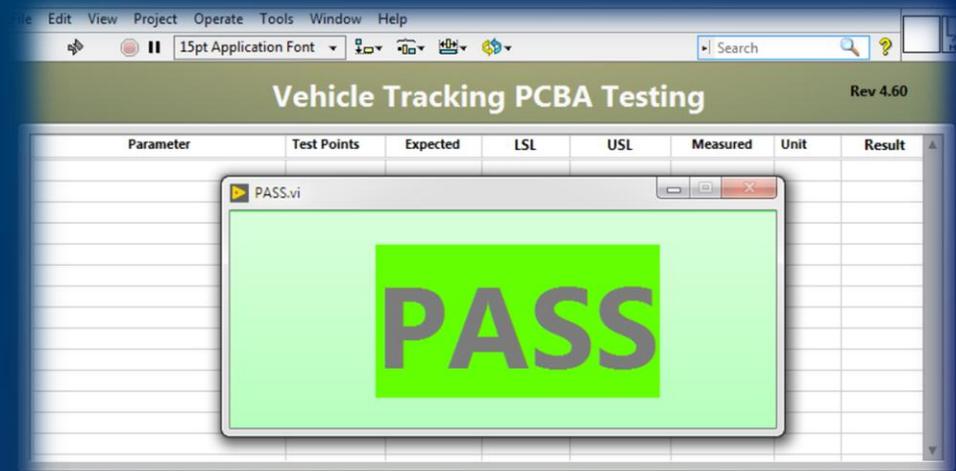
Vehicle Tracking PCBA Testing

SI No : WVE00003847  
 Tested By : 613625  
 Test date : 13-Sep-20 Time: 3:32 PM  
 LV Rev 4.2  
 Result : PASS

SL Nos.	Item	Test Point	Expected	LSL	USL	Measured	Unit	Result
1	TP1 Impedance	TP 1 to RTN	900000	1000	1000000000	366011.4	Ohms	PASS
2	TP2 Impedance	TP 2 to RTN	900	100	1000000000	233.7	Ohms	PASS
3	TP3 Impedance	TP 3 to RTN	250000	1000	1000000000	318503.2	Ohms	PASS
4	TP4 Impedance	TP 4 to RTN	500000	1000	1000000000	530375.5	Ohms	PASS
5	TP5 Impedance	TP 5 to RTN	550000	1000	1000000000	566785.7	Ohms	PASS
6	TP11 Impedance	TP 11 to RTN	700	100	1000000000	768.2	Ohms	PASS
7	24V_Input	UUT Input Voltage	24	23.5	24.5	24	V	PASS
8	TP1 Voltage	TP 1 to RTN	4.4	4.3	4.5	4.4	V	PASS
9	TP2 Voltage	TP 2 to RTN	1.8	1.7	1.9	1.8	V	PASS
10	TP4 Voltage	TP 4 to RTN	24	23	25	23.7	V	PASS
11	TP5 Voltage	TP 5 to RTN	5.1	5.1	5.3	5.2	V	PASS
12	TP11 Voltage	TP 11 to RTN	3.295	3.2	3.4	3.3	V	PASS
13	Current	Along Power Line	0.02	0.01	0.04	0.02	A	PASS
14	Flashing		PASS			PASS		PASS

\*\*\*\*\*

Connecting to MPLAB PICkit 3...  
 Currently loaded firmware on PICkit 3  
 Firmware Suite Version.....01.55.01  
 Firmware type.....PIC32MZ  
 Target voltage detected  
 Target device PIC32MZ0512EFK100 found.  
 WVE00003847 091320153230 PA





**ATE - TURNKEY SOLUTIONS**

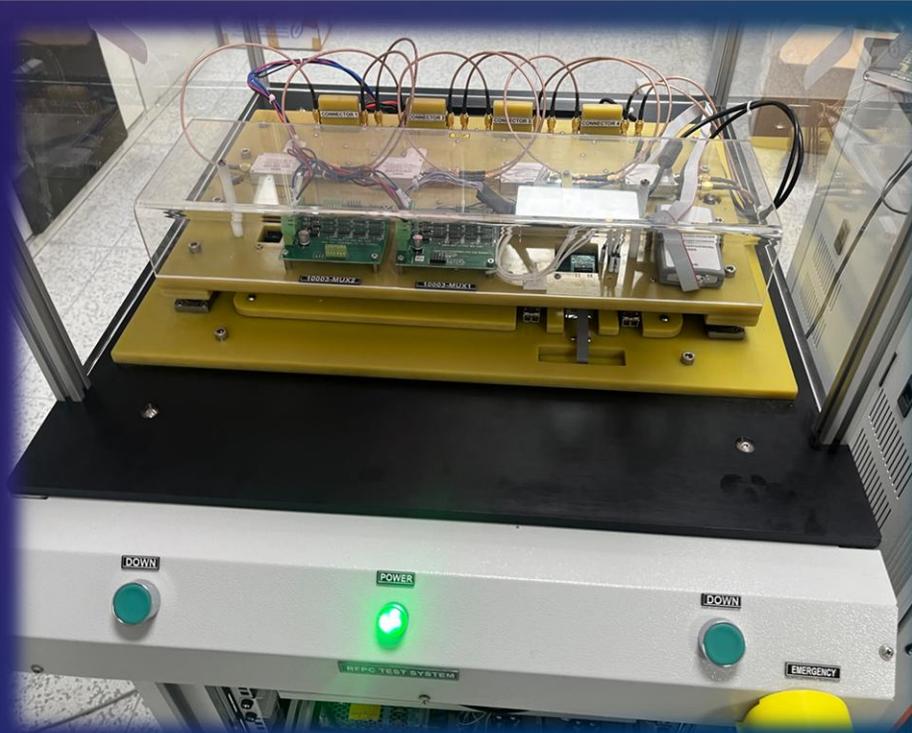


**ATE – SAFETY RELAY**



ATE SETUP for





## REMOTE RADIO HEAD (RRH FIXTURE)

Project for



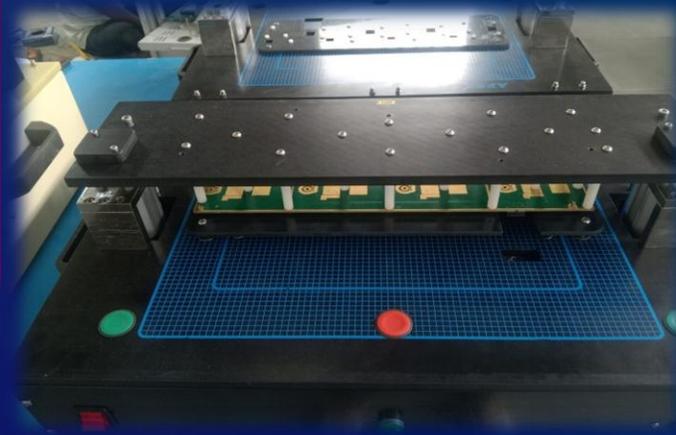
**TEJAS**  
NETWORKS

We successfully collaborated with Tejas Networks to develop a customized test fixture for their 4G rollout within a short span. Our fixtures have been deployed across various leading contract manufacturing sites such as Foxconn, Iljin, and Optimus Electronics, enabling smooth and large-scale production for nationwide implementation.

Project for



**TEJAS**  
NETWORKS





## MODULE EOL

Application REV-7

Test Start Time

Test Duration

Module ID

Module Type A/B

**▶ Start**

### TEST 1 - THERMISTOR HEALTH CHECK

Thermistor No.	Temperature (C)	Result
Thermistor 1	<input type="text"/>	<input type="text"/>
Thermistor 2	<input type="text"/>	<input type="text"/>
Thermistor 3	<input type="text"/>	<input type="text"/>
Thermistor 4 (Ambient)	<input type="text"/>	<input type="text"/>
Max Temperature	<input type="text"/>	<input type="text"/>
Min Temperature	<input type="text"/>	<input type="text"/>
8S- temperature imbalance	<input type="text"/>	<input type="text"/>
Ambient Temperature imbalance	<input type="text"/>	<input type="text"/>

### TEST 2 - VOLTAGE HEALTH CHECK

Cell No.	Voltage (V)	Result
Cell 1	<input type="text"/>	<input type="text"/>
Cell 2	<input type="text"/>	<input type="text"/>
Cell 3	<input type="text"/>	<input type="text"/>
Cell 4	<input type="text"/>	<input type="text"/>
Cell 5	<input type="text"/>	<input type="text"/>
Cell 6	<input type="text"/>	<input type="text"/>
Cell 7	<input type="text"/>	<input type="text"/>
Cell 8	<input type="text"/>	<input type="text"/>
Max Voltage	<input type="text"/>	<input type="text"/>
Min Voltage	<input type="text"/>	<input type="text"/>
8S - Voltage	<input type="text"/>	<input type="text"/>
8S - Voltage Imbalance (mV)	<input type="text"/>	<input type="text"/>

### TEST 3 - INSULATION RESISTANCE TEST

Probing Points	Insulation Resistance (Mohm)	Result
Baseplate to Negative	<input type="text"/>	<input type="text"/>
Baseplate to Positive	<input type="text"/>	<input type="text"/>

### TEST 4 - WELD RESISTANCE TEST

Probing Points	Resistance (uohms)	Result
Cell 1- End Busbar	<input type="text"/>	<input type="text"/>
Cell 1 - Cell 2	<input type="text"/>	<input type="text"/>
Cell 2 - Cell 3	<input type="text"/>	<input type="text"/>
Cell 3 - Cell 4	<input type="text"/>	<input type="text"/>
Cell 4 - Cell 5	<input type="text"/>	<input type="text"/>
Cell 5 - Cell 6	<input type="text"/>	<input type="text"/>
Cell 6 - Cell 7	<input type="text"/>	<input type="text"/>
Cell 7 - Cell 8	<input type="text"/>	<input type="text"/>
Cell 8 - End Busbar	<input type="text"/>	<input type="text"/>

Limits Revision NO

### TEST RESULT SUMMARY

Test 1 - THERMISTOR HEALTH CHECK

Test 2 - VOLTAGE HEALTH CHECK

Test 3 - INSULATION RESISTANCE TEST

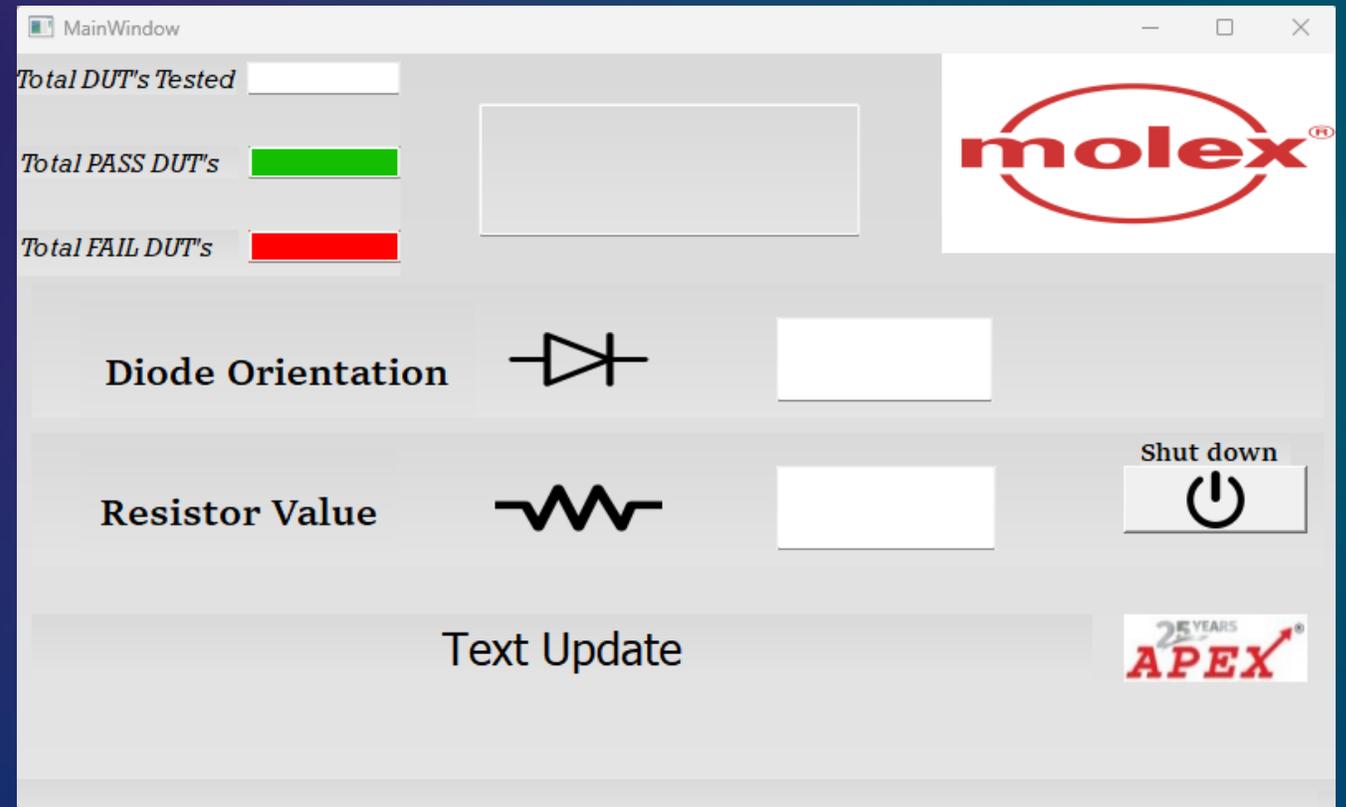
Test 4 - WELD RESISTANCE TEST

**Admin**

# EV BATTERY PACK TEST FIXTURE

Project for

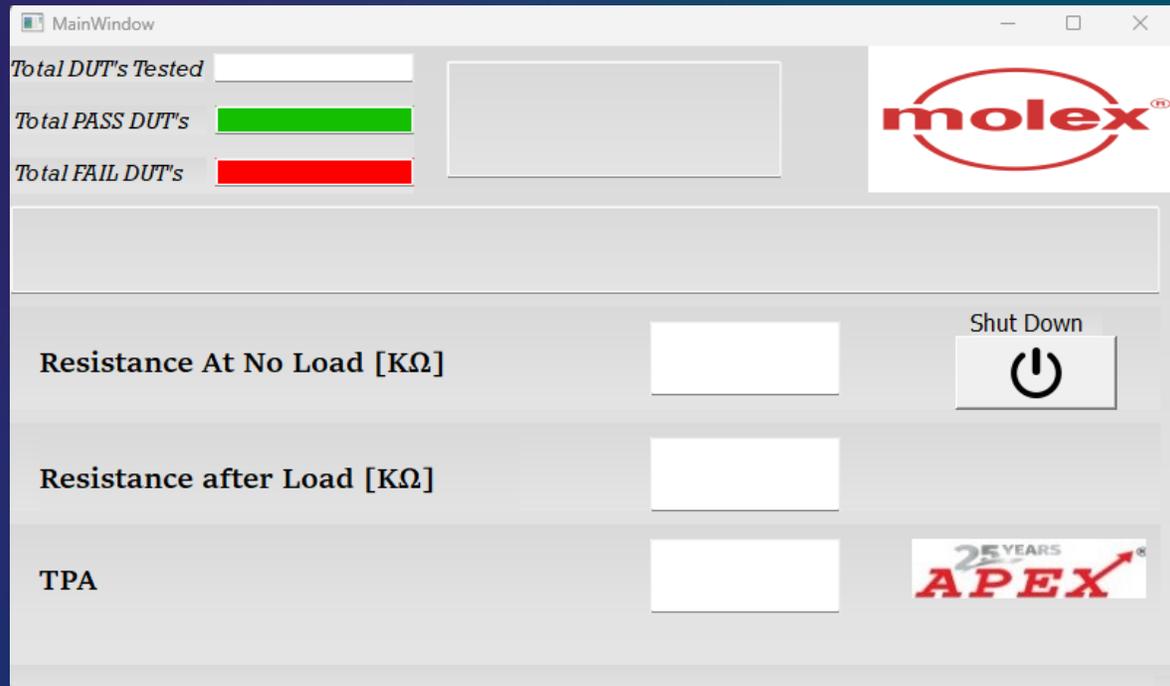
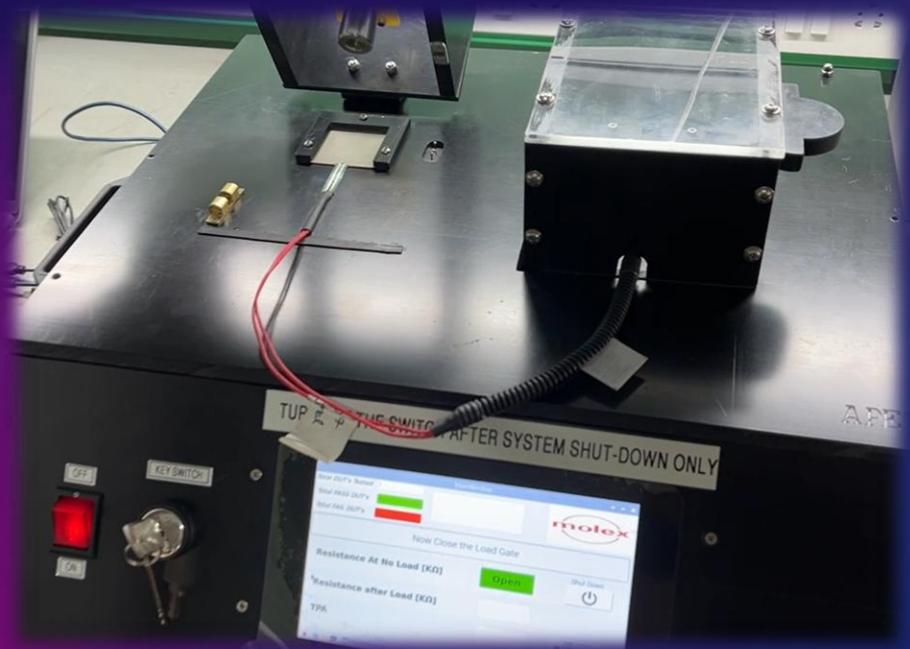




## STAND ALONE TEST FIXTURE

Project for

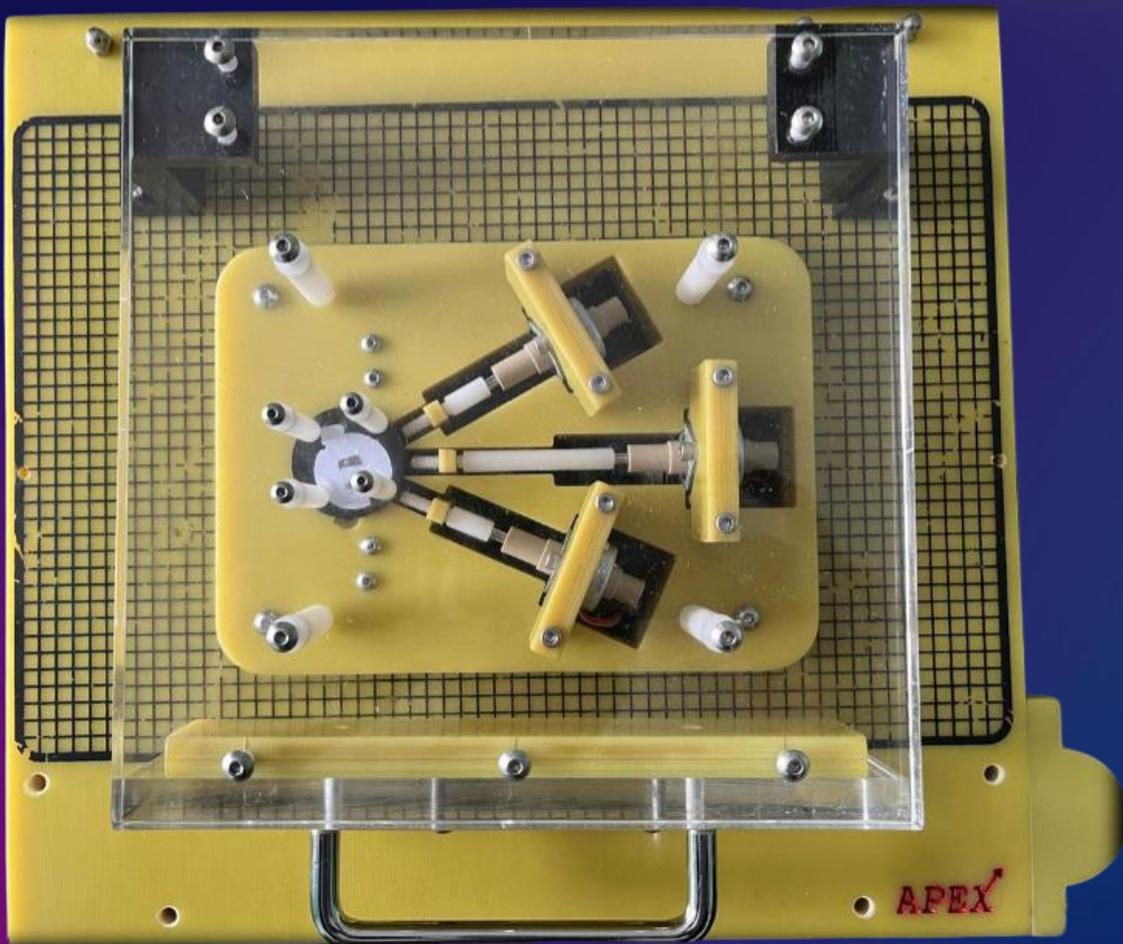
# molex



# STAND ALONE TEST FIXTURE

Project for

**molex**



## ANALOG SMART WATCH TESTER

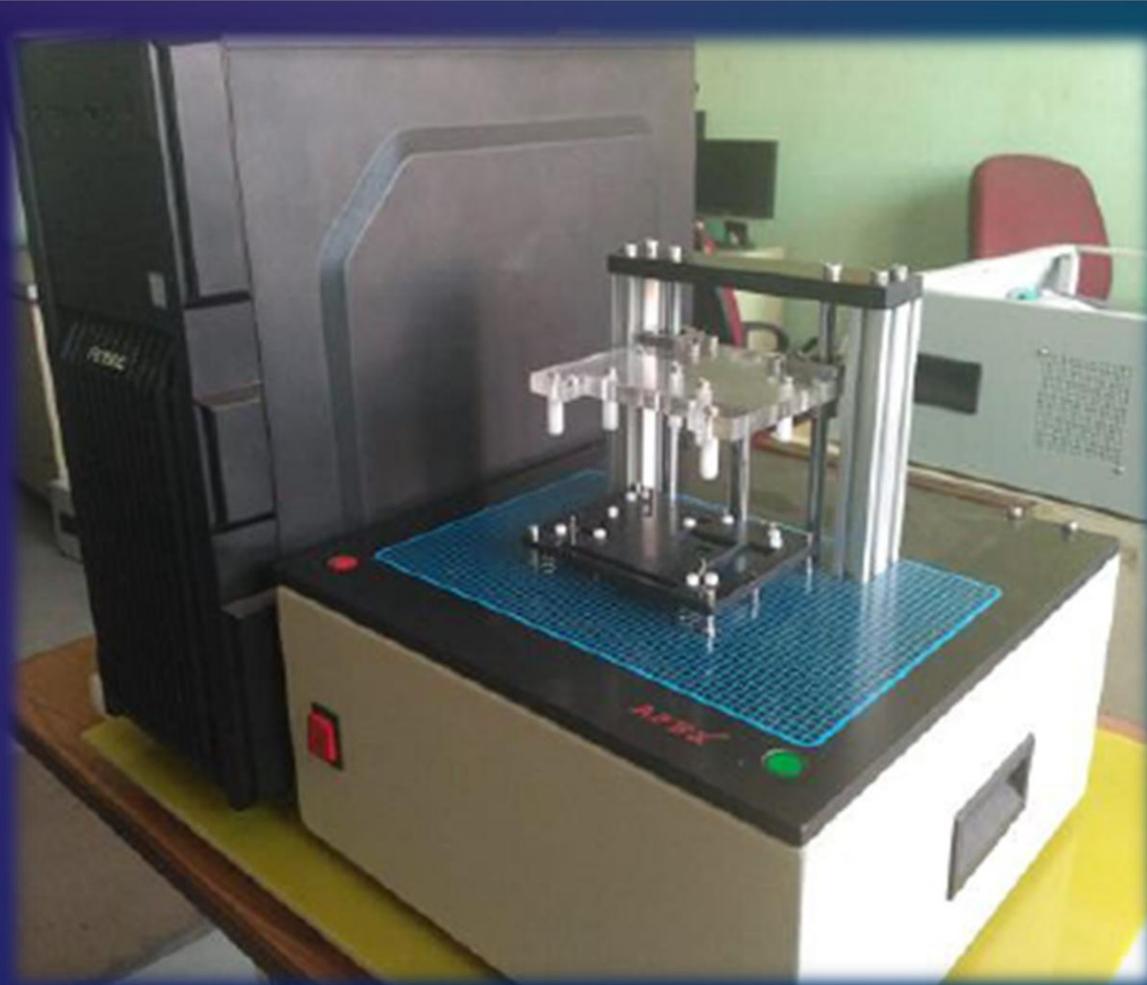
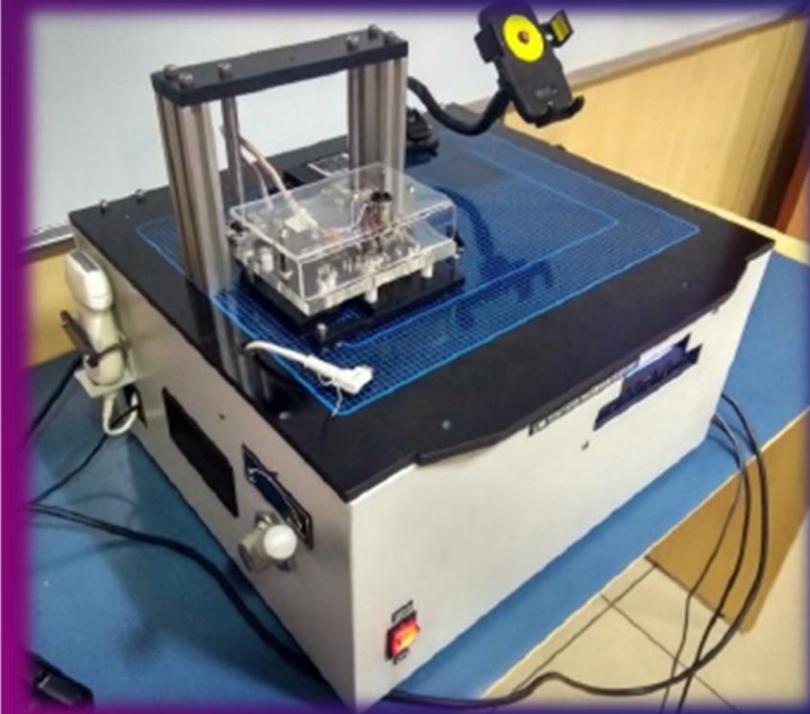
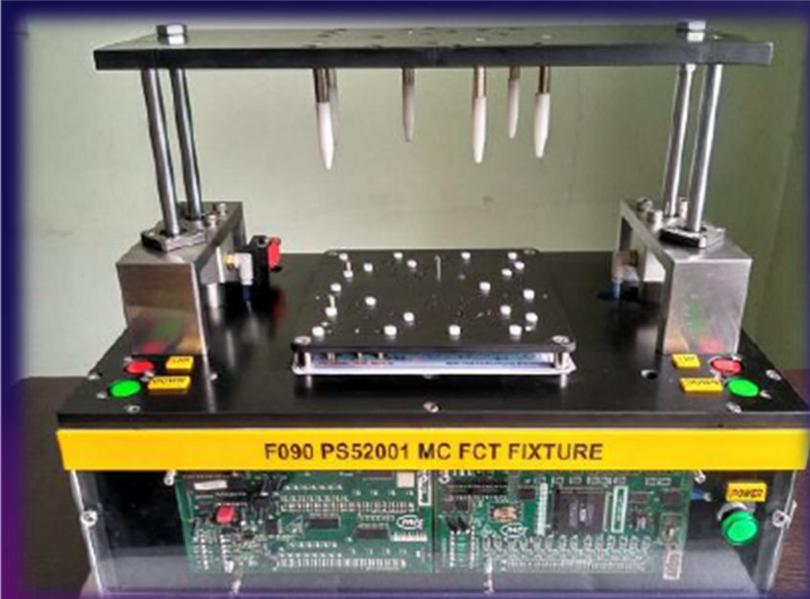
Project for  
CONSUMEX



# TURNKEY- RF TEST FIXTURE SOLUTION

Project for





**PNEUMATIC OPERATED FIXTURES**



Fixture integrated with a camera and resistance measurement setup for validating both the color of the harness and measuring the NTC (Negative Temperature Coefficient) resistance, designed with both visual inspection and electrical testing

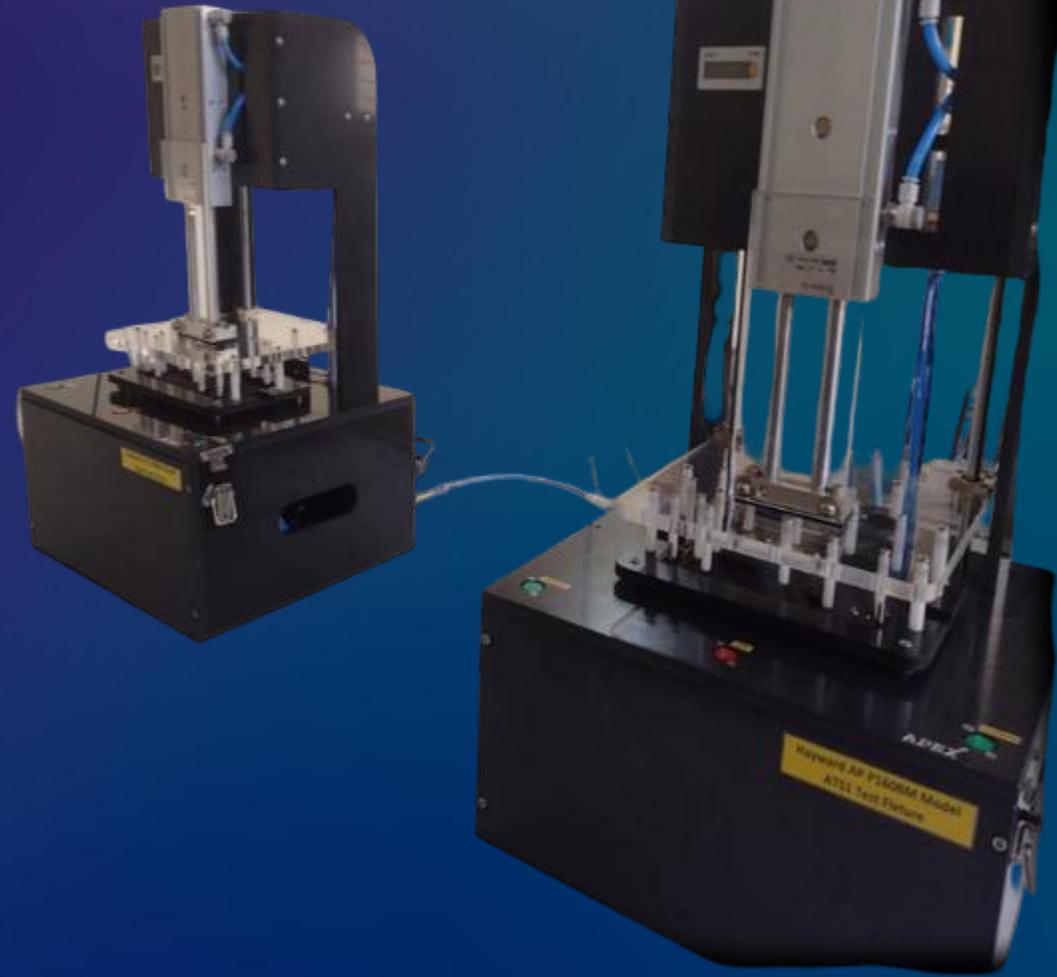


**PNEUMATIC OPERATED**

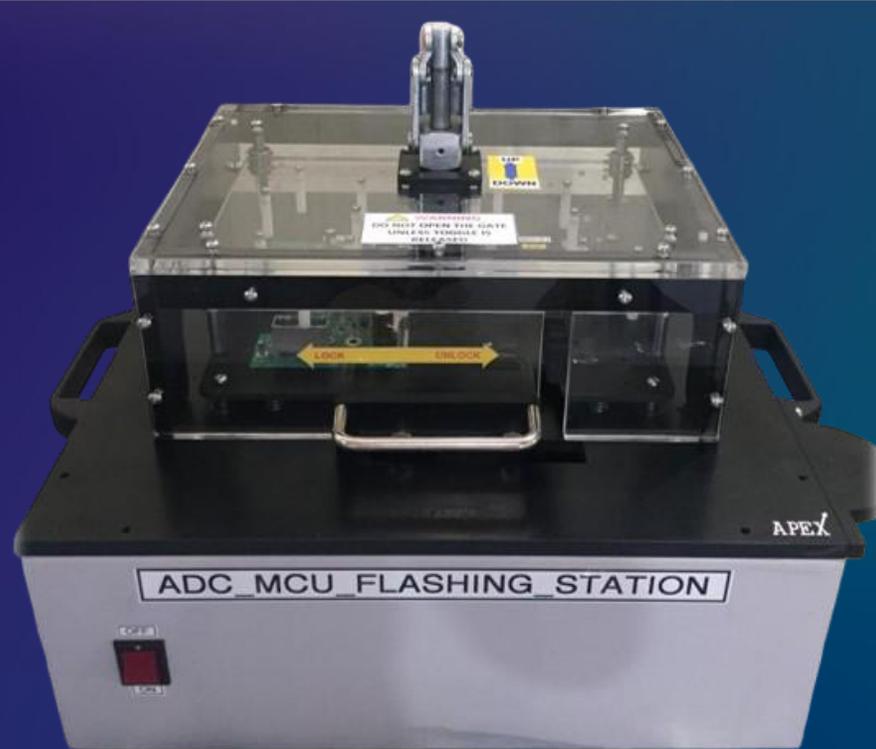
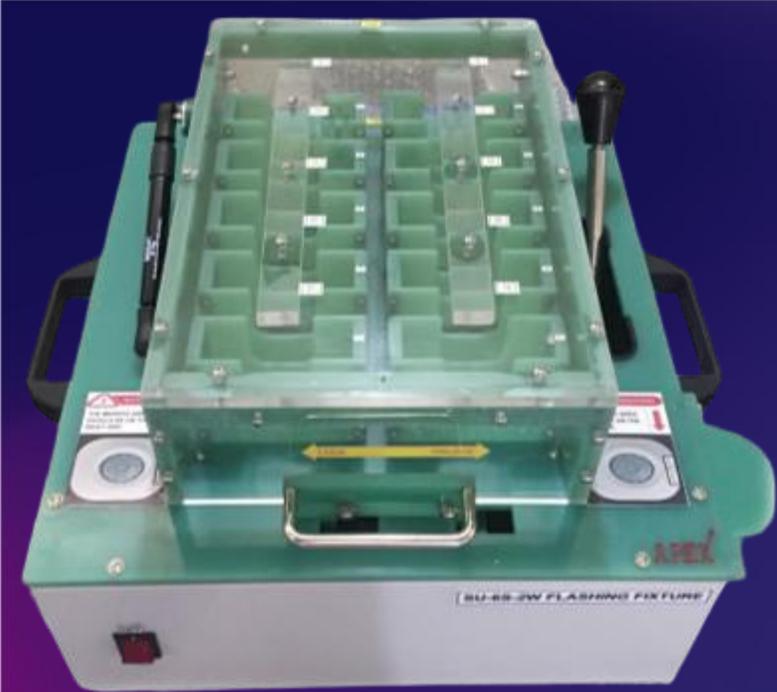
**FIXTURES**

Project for

**molex**



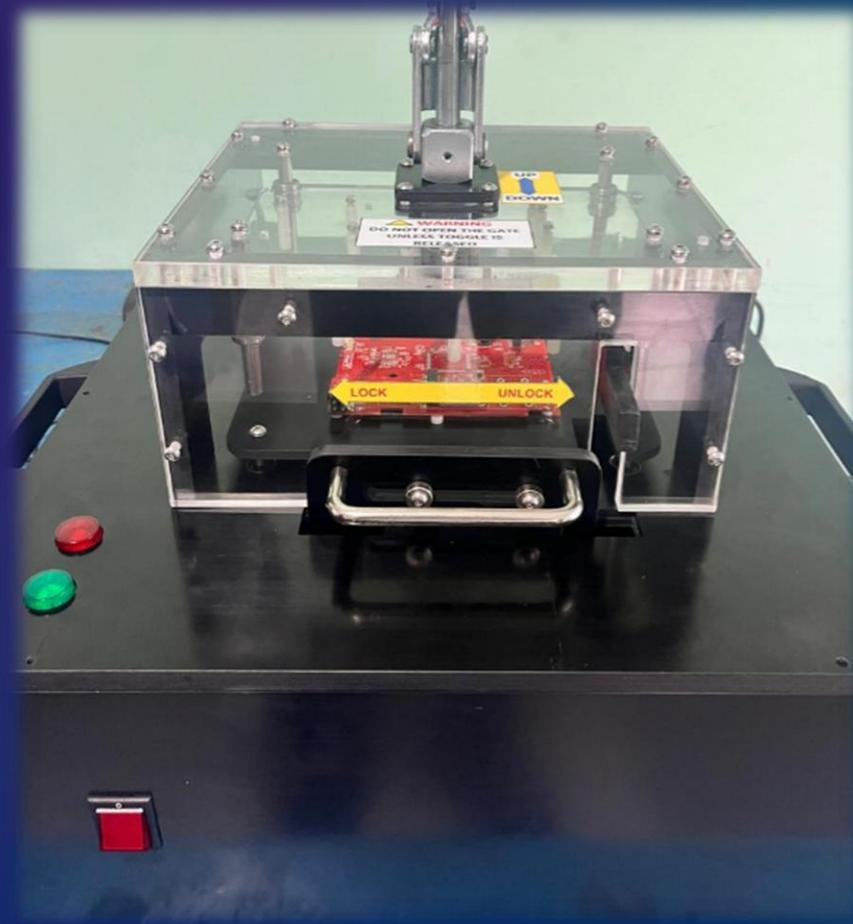
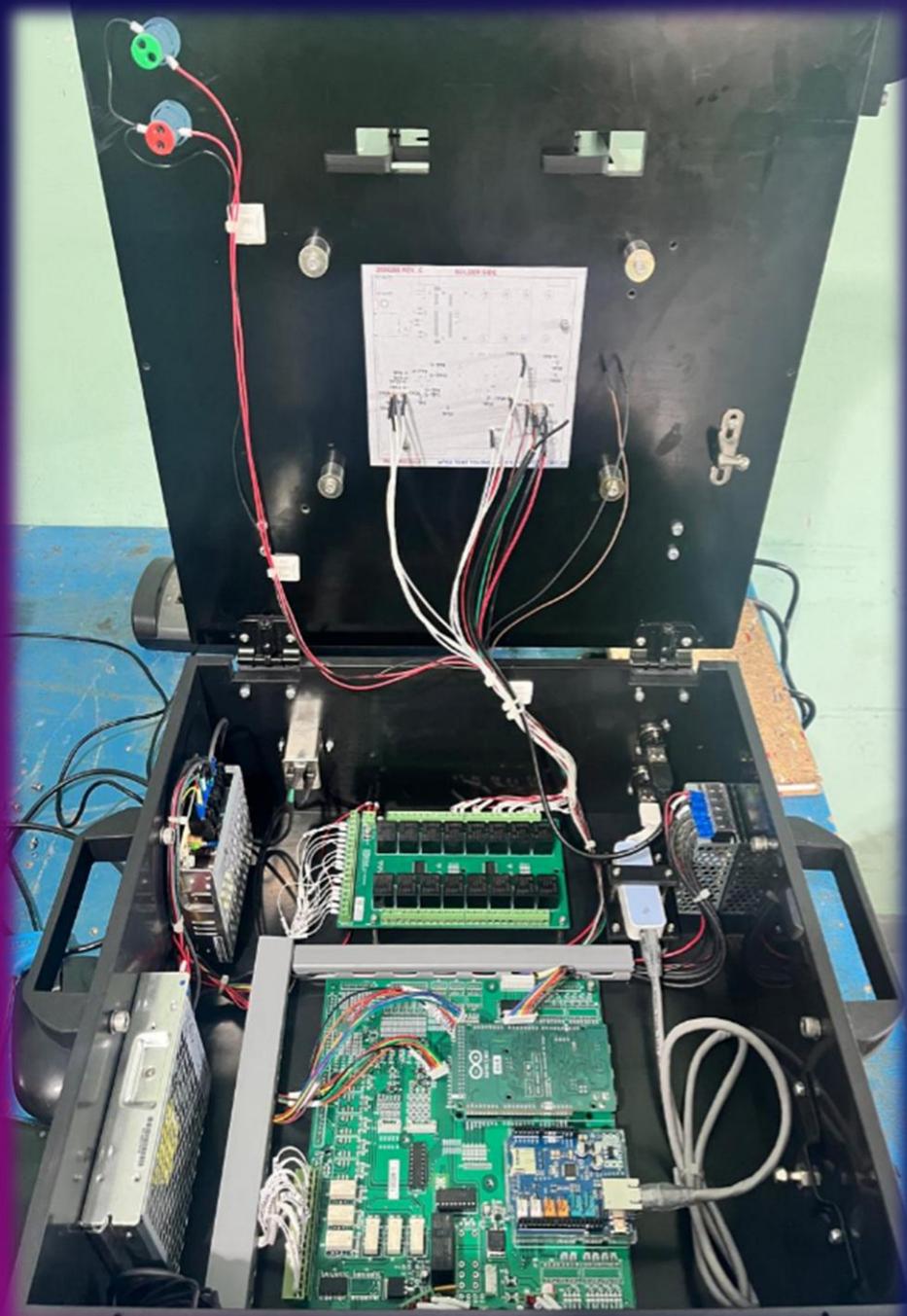
**PNEUMATIC OPERATED FIXTURES**



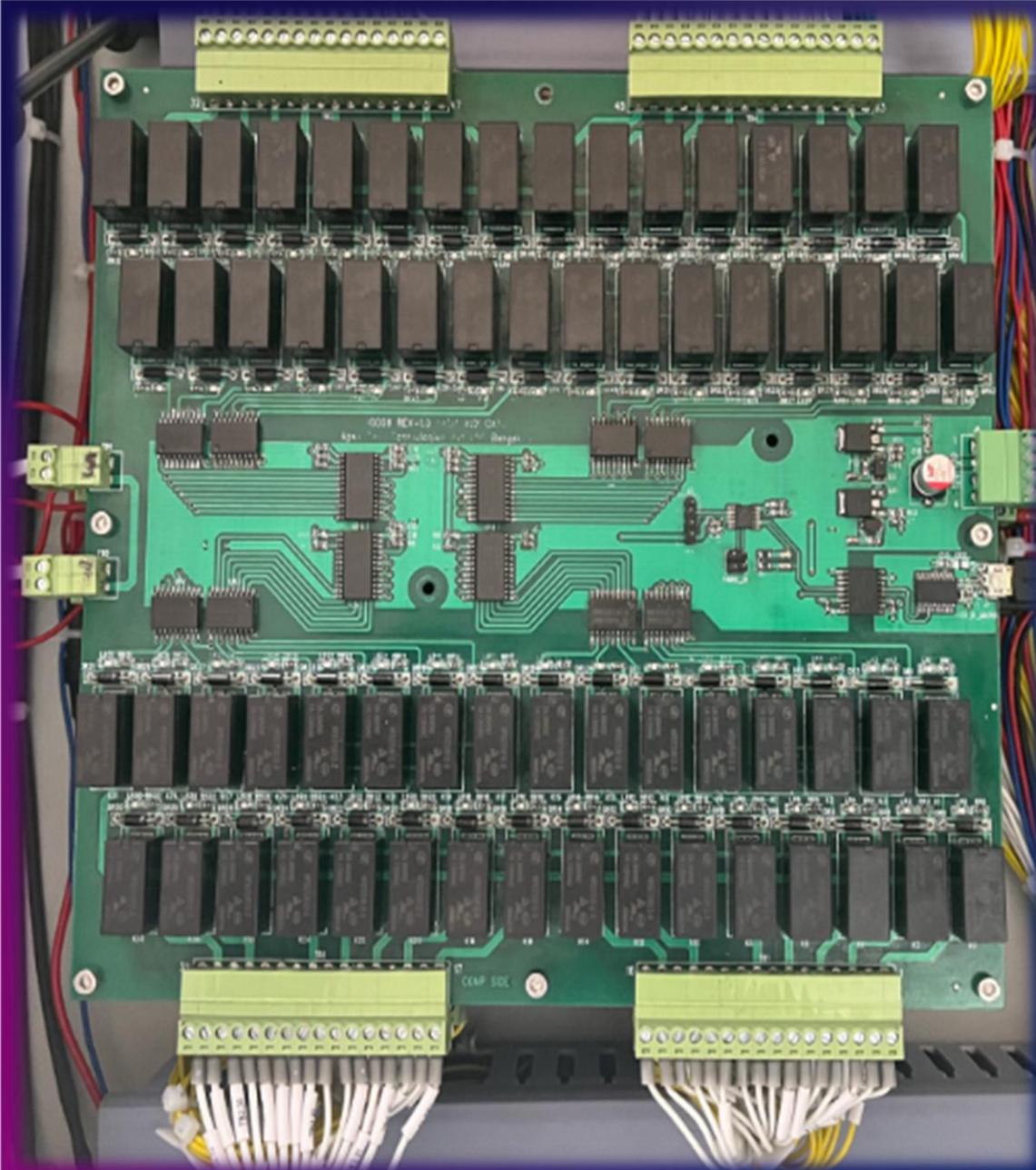
**MANUALLY OPERATED FIXTURES**



**MANUALLY OPERATED FIXTURES**



**FIXTURE WITH IN-HOUSE  
INSTRUMENTATION**



64 CH Multiplexer Card with  
USB interface

**IN-HOUSE PCBA DESIGN**

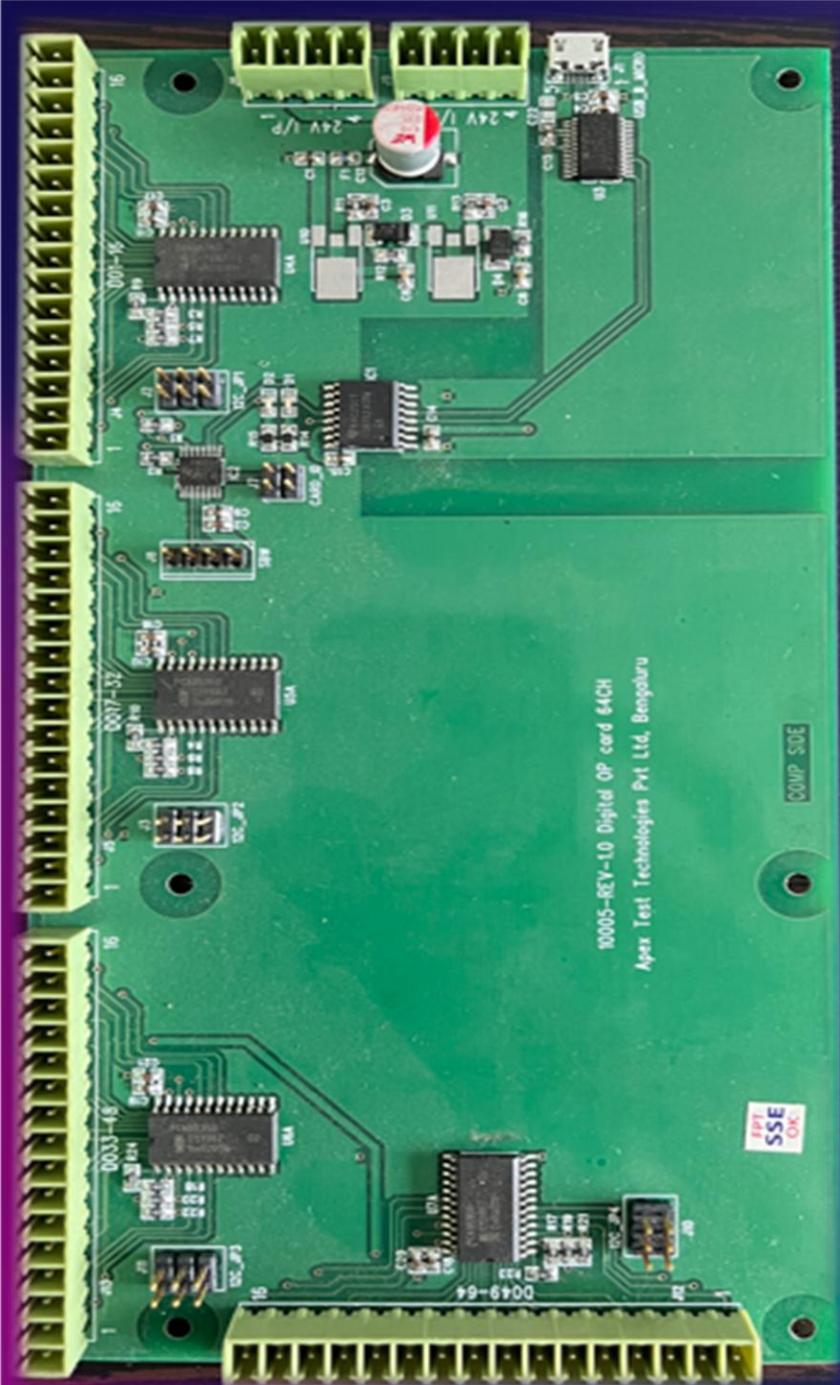


32 Channel Configurable Digital  
Input/Output Card With **Self Test**

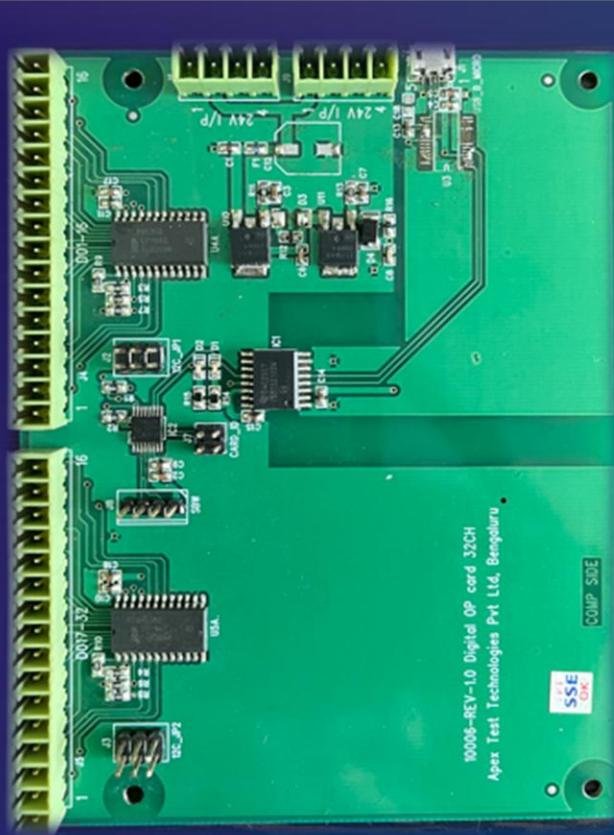


Fixture Controller Using Arduino  
Due

**IN-HOUSE PCBA DESIGN**



64 CH & 32 CH  
Digital IP/OP Card



JTAG Mux Card

IN-HOUSE PCBA DESIGN

**System Status**

Control ON Input

System Voltage Low

E Stop Indication

Enclosure Open

HVDC Contactor Activated

Pre-Charge Circuit Activated

Chiller Fault

**Voltage & Current Control**

**High Voltage Power Supply**

HV Voltage Set Point: 0 V

HV Current Set Point: 0 A

**Low Voltage Power Supply**

LV Voltage Set Point: 0 V

LV Current Set Point: 0 A

**Voltage & Current Status**

Set Voltage Feedback (HV): 0.0 V

Set Current Feedback (HV): 0.0 A

Actual Output Voltage (HV):

Actual Output Current (HV):

Ramp: 0 V

0.0 A

Set Voltage Feedback (LV): 0.0 V

Set Current Feedback (LV): 0.0 A

Actual Output Voltage (LV):

Actual Output Current (LV):

0 V

0.0 A

**Relay Buttons**

**Controls**

Active Discharge  Off

HV Volt Step Size or Ramp Time: 1

HV VOLT Method: Volt per Sec

**Control ON**

Pre-Charge  Off

Status Bar

**Coolant Temperature, Pressure & Flow**

**Inlet Valve**

Coolant Temp:

Coolant Flow:

Coolant Pressure:

1.0 Deg °C

1.0 lpm

0.0 Bar

**Outlet Valve**

Coolant Temp:

Coolant Flow:

Coolant Pressure:

1.0 Deg °C

1.0 lpm

0.0 Bar

Interlock for control ON -->

Project	Switch Filter Bank
Module	^SFB
Part No	
Serial No	
Account Name	Admin
User Name	Admin
App_Version	REV_1

Test Time

Total SFB Tested

Passed SFB's

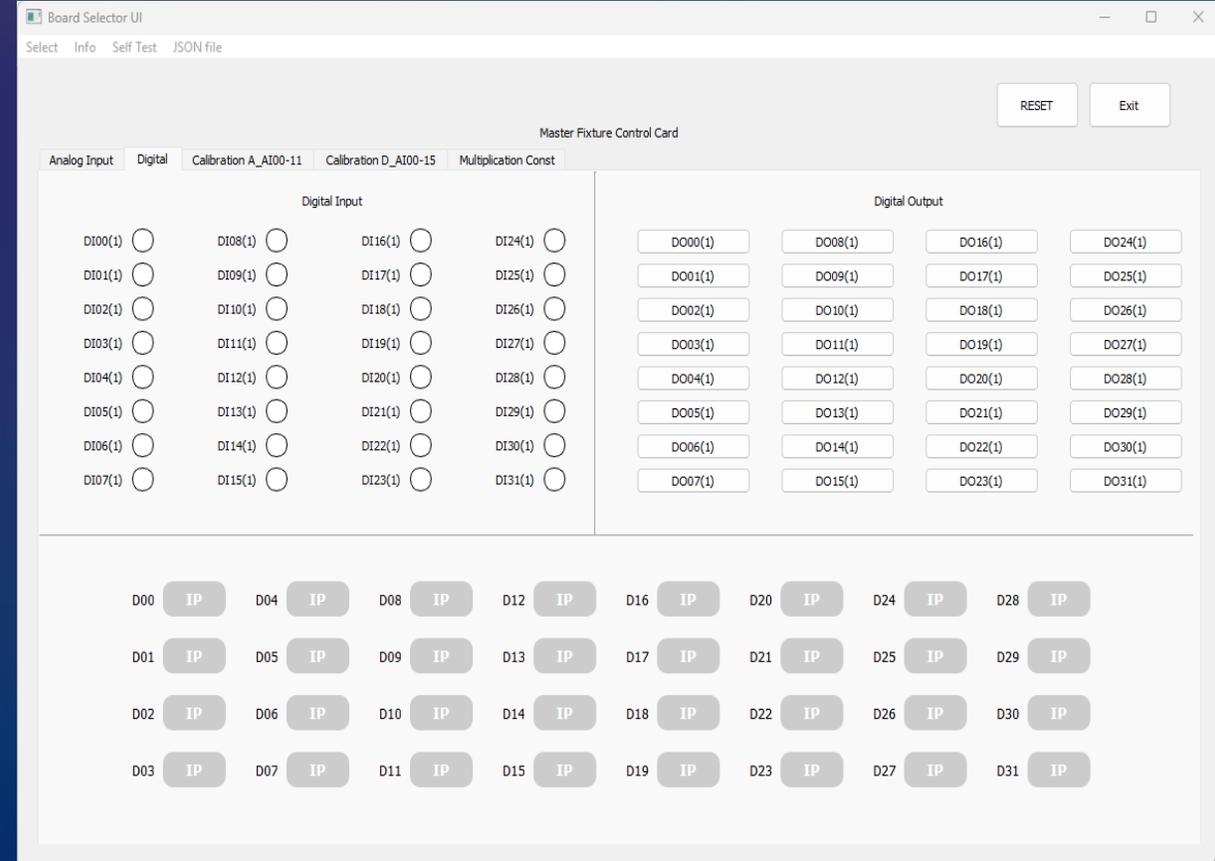
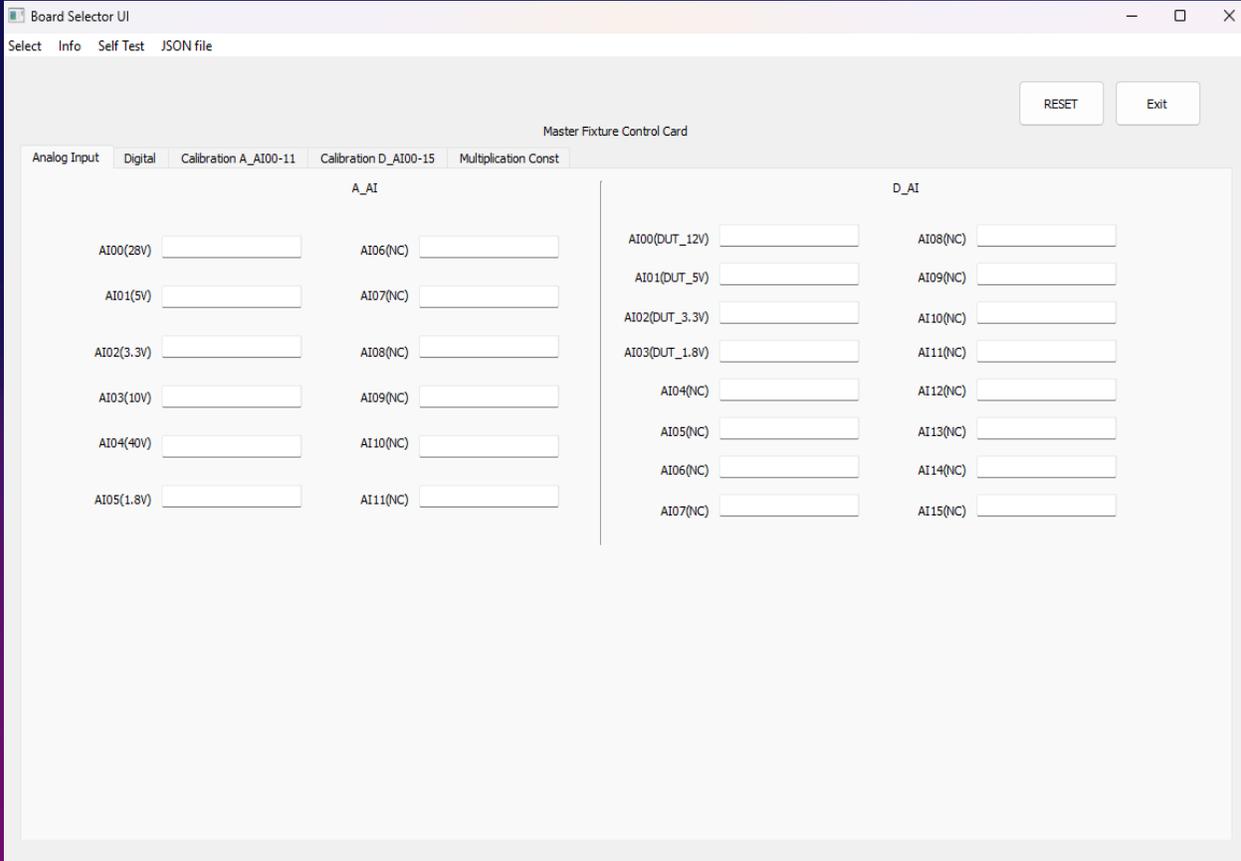
Failed SFB's

Report Path: D:\Himil\_SFB\_Reports

>>>> Executing "Idle State" <<<<<

Sl. no.	Test description	Expected	Lower Limit	Upper Limit	Value	Result
<input checked="" type="checkbox"/> 1	Power SFB		0.00	0.00		
<input checked="" type="checkbox"/> 2	Low Power Insertion Loss		2.00	0.00		
<input checked="" type="checkbox"/> 3	Low Power Input VSWR		1.40	0.00		
<input checked="" type="checkbox"/> 4	Low Power Output VSWR		1.40	0.00		
<input checked="" type="checkbox"/> 5	Low Power 3dB filter bandwidth		7.00	10.00		
<input checked="" type="checkbox"/> 6	Low Power Harmonics		70.00	0.00		
<input checked="" type="checkbox"/> 7	Low Power Spurious		70.00	0.00		
<input checked="" type="checkbox"/> 8	High Power 100 Watts SSPA Mesurment		49.00	50.00		
<input checked="" type="checkbox"/> 9	High Power Insertion Loss		49.00	50.00		
<input checked="" type="checkbox"/> 10	High Power Harmonics		70.00	0.00		
<input checked="" type="checkbox"/> 11	High Power Spurious		70.00	0.00		

Software Development(LabVIEW)



Software Development(Python)

# TECHNICAL CAPABILITY

FIXTURE MECHANICAL DESIGN



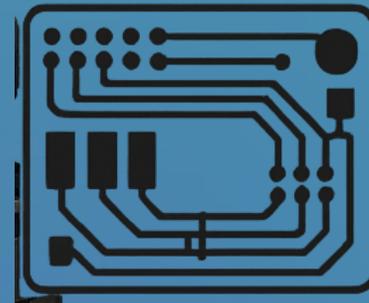
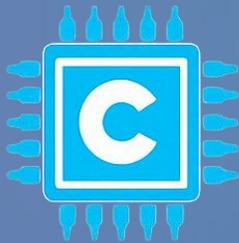
CNC MACHINING



NI TestStand



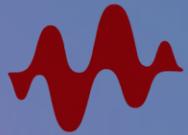
LabVIEW



PROGRAMMING PLATFORM

CUSTOM PCB DESIGN

# INSTRUMENTATION HARDWARE INTERFACING FROM



**KEYSIGHT**  
TECHNOLOGIES

**GW INSTEK**



*Chroma*

**Tektronix**<sup>®</sup>

**YOKOGAWA** 

**Instruments** : DMM, Oscilloscopes, Hi-Pot testers, Electronic loads, Programmable power supply, Power analyzer etc.

**Interface** : PXI, USB, LAN, LXI, PCI, GPIB, RS232



**OKANO**



**TERADYNE**

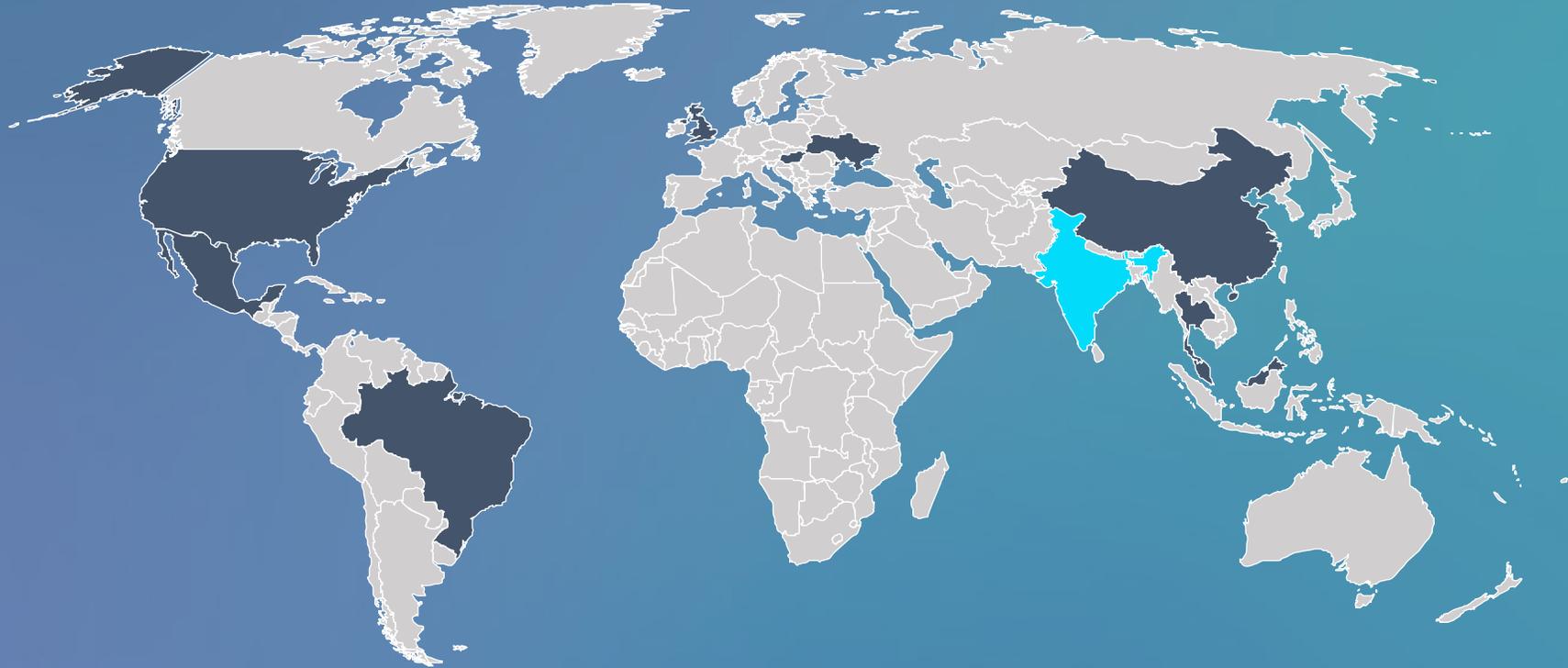


**CNC MACHINE**



**GENRAD**

**INFRASTRUCTURE**



- USA
- MEXICO
- BRAZIL

- UK
- HUNGARY
- UKRAINE

- CHINA
- THAILAND
- MALAYSIA
- SINGAPORE

## EXPORT REGIONS



# OUR CLIENTS

# CONTACT US

#80/18, Industrial Suburb,  
Yeshwanthpur, Bangalore-560022  
Karnataka, India



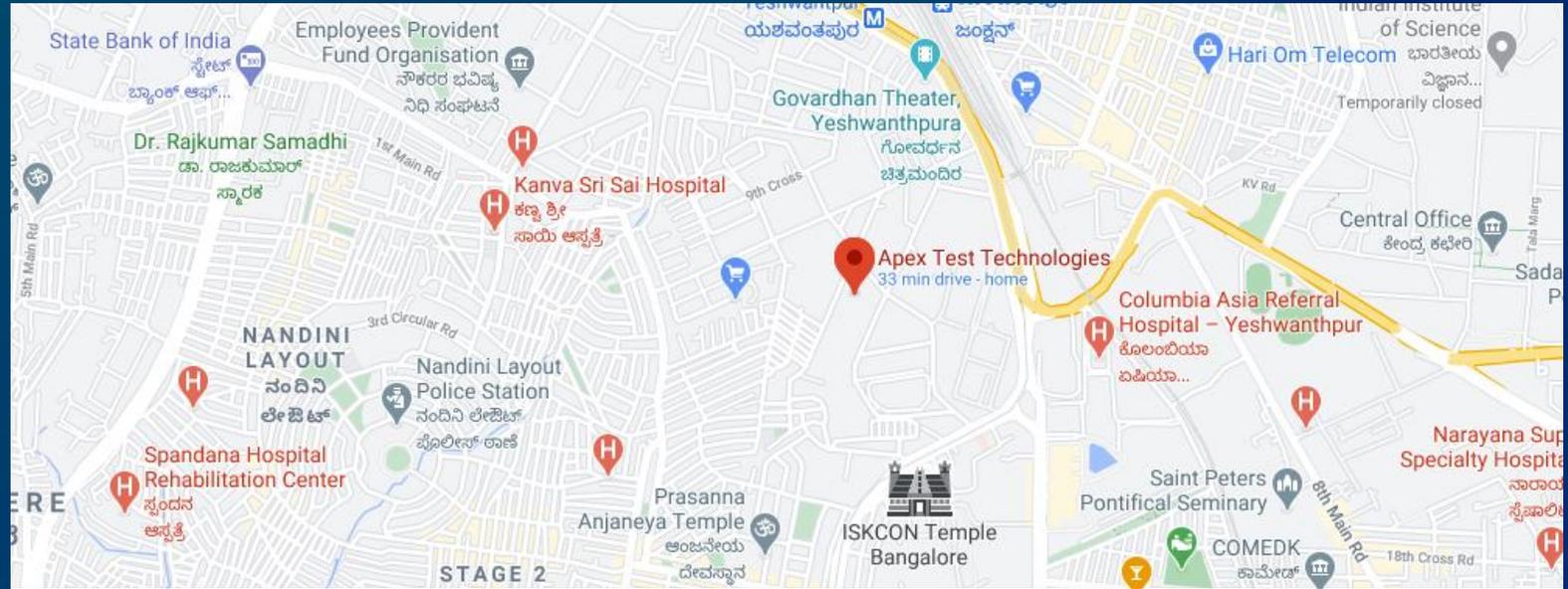
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[pcbtesting@gmail.com](mailto:pcbtesting@gmail.com)





THANK YOU

