



# GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE

Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi-110001

### **CERTIFICATE OF DESIGNATION**

## M/s SWASTIK ELECTRONICS TESTING CENTRE (OPC) PRIVATE LIMITED

has been assessed and designated as Conformity Assessment Body (CAB) for its facilities at

### PLOT NO-16, MAINAPUR INDUSTRIAL AREA, Uttar Pradesh, GHAZIABAD - 201 003

In the field of Testing

Certificate No. TEC/MRA/CAB/IND-D/103

Issue Date: 02/12/2024 Validity: 02/12/2024 to 01/12/2027

This Certificate remains valid for the Scope of Designation as specified in the Annexure subject to the continued validity of NABL Accreditation and satisfied compliance to the Standards/specifications against which lab has been designated and strict compliance to the relevant terms and conditions of TEC CAB Designation Scheme.

(To see the scope of designation of this laboratory, you may also visit TEC website www.tec.gov.in)

Signed for and on behalf of TEC

Sanjeev Kumar Arya Director (CA) For Designating Authority TEC

Certificate No: TEC/MRA/CAB/IND-D/103 dated 02/12/2024 issued to M/s Swastik Electronics Testing Centre (OPC)
Private Limited, Ghaziabad
Plot No-16, Mainapur Industrial Area, Uttar Pradesh,



**Ghaziabad - 201 003** 

Validity: 02/12/2024 to 01/12/2027

#### **Terms & Conditions**

This certificate is issued as per the terms and conditions stipulated in the TEC SCHEME FOR DESIGNATING DOMESTIC CONFORMITY ASSESEMENT BODIES AND CERTIFICATION BODIES FOR CONFORMITY ASSESEMENT AND CERTIFICATION OF TELECOMMUNICATION EQUIPMENT ISSUE 3 NO. TEC 04019:2023.

Some of the conditions are reiterated as under:

#### A. Obligations of the Designated CAB.

- 1. It shall ensure that it maintains its accreditation status from any recognized Indian accreditation body like NABL during validity period of certificate.
- 2. It shall follow the stipulated procedures, rules and policies laid down by Designating Authority (DA) or Mutual Recognition Agreement (MRA)\* partner for testing and evaluation.
- 3. In respect of tests for which it is seeking designation, it shall have no interest whatsoever in any business to carry on testing in an unfair or biased manner.
- 4. It shall fully indemnify DA from and against all liabilities, damages, claims, costs, and expenses incurred or sustained by DA as a result of any action taken or omitted by DA relating to the process of designation.
- 5. It shall comply with DA's or MRA partner's terms and conditions for designation and recognition as modified from time to time.
- 6. It shall be under obligation to participate in the online process prescribed by TEC for test and certification against TEC's GR/IR/ER and standards.
- 7. It shall have a record system which shall have a retention period of at least 5 years for documents related to the equipment testing. It shall maintain all the relevant documents including list of products submitted for testing, product-wise testing and evaluation reports. These documents shall be produced before the DA within seven days, as and when required.
- 8. It shall ensure the Intellectual Property Rights of the customers in the course of testing by maintaining professional ethics, secrecy and keeping all the product related information confidential.

<sup>\*</sup>Applicable only if recognized by MRA (Mutual Recognition Agreement) partner.

9. It shall notify the DA in writing of occurrence of any of the following incident(s) within 2 weeks of its occurrence

- a) Cessation of its business of conformity assessment for which it is Designated or accredited
- b) Changes in its legal, commercial, or Organizational status
- c) Changes, which may affect continuing compliance with any of the criteria or requirement specified by DA or MRA partner.
- d) Change of premises

#### B. REFERENCE TO DESIGNATION STATUS

- 1. Designated CABs may advertise their designation status with regard to standards or parts thereof which are included in the scope of designation.
- 2. The advertisement should not imply, or otherwise suggest that DA or MRA Partner has endorsed the product or imply that the designated CAB is an agent or representative of DA or MRA Partner.
- 3. CABs whose designations have been suspended or withdrawn for any reason, shall discontinue advertisement of their designated status and not make any misleading statements regarding their designation status.

#### C. POST-DESIGNATION SURVEILLANCE

As and when required, DA shall conduct surveillance assessments and other non-routine assessments on the Designated CABs to ensure that standards of practices are maintained as well as to investigate complaints made against them.

#### D. SUSPENSION OR WITHDRAWAL OF DESIGNATION

- 1. DA shall suspend or withdraw the designation of a CAB if
  - a. Its accreditation is withdrawn.
  - b. It is found that the CAB is not complying with the stipulated criteria or requirements.
  - c. It is guilty of any offence involving fraud or dishonesty.
  - d. DA concludes that there is a just cause for withdrawing the designation.
- 2. A CAB whose designation, and recognition in case of MRA, has been suspended or withdrawn shall be removed from the list of designated CABs, in case it fails to take corrective measures.
- 3. DA shall keep the designation of a Designated CAB under suspension, until the completion of formal review process.

#### E. AMENDMENT TO THE SCHEME

DA reserves the rights to amend the scheme, as and when required, for the purpose of streamlining designation process

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### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

**Ghaziabad - 201 003** 

Certificate Number: TEC/MRA/CAB/IND-D/103 Page 1 of 42

Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
1.	Information Technology	Power Interface Clause-1.6	IEC 60950-1
	Equipment- Safety	Marking and Instructions Clause- 1.7	IEC 60950-1
	Requirements	Protection from Electric Shock and Energy Hazards Clause-2.1	IEC 60950-1
		Protection in Operator Access areas Clause- 2.1.1	IEC 60950-1
		Access to Energized Parts Clause-2.1.1.1	IEC 60950-1
		Battery Compartments Clause-2.1.1.2	IEC 60950-1
		Access to ELV Wiring Clause-2.1.1.3	IEC 60950-1
		Access to Hazardous Voltage Circuit Wiring Clause-2.1.1.4	IEC 60950-1
		Energy Hazards Clause-2.1.1.5	IEC 60950-1
		Manual Controls Clause-2.1.1.6	IEC 60950-1
		Discharge of Capacitors in Equipment Clause- 2.1.1.7	IEC 60950-1
		Energy Hazards-d. c. main Supplies Clause- 2.1.1.8	IEC 60950-1
		Audio Amplifiers in Information Technology Equipment Clause-2.1.1.9	IEC 60950-1
		Protection in Service Access Areas Clause- 2.1.2	IEC 60950-1

<sup>\*</sup>The validity of Certificate is up to 01/12/2027 or the continued validity of NABL Accreditation, whichever is earlier.

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
L	110000		L
	Information Technology	Protection in Restricted Access Locations Clause-2.1.3	IEC 60950-1
	<b>Equipment-</b>	SELV Circuit	IEC 60950-1
	Safety Requirements	Clause- 2.2  Voltage under Normal Conditions Clause-2.2.2	IEC 60950-1
		Voltage under Fault Conditions Clause- 2.2.3	IEC 60950-1
		Connection of SELV Circuits to Other Circuits Clause-2.2.4	IEC 60950-1
		TNV Circuit Clause- 2.3	IEC 60950-1
		Limits Clause-2.3.1	IEC 60950-1
		Separation of TNV Circuits from Other Circuits and from Accessible Parts Clause-2.3.2	IEC 60950-1
		Protection by Basic Insulation Clause- 2.3.2.2	IEC 60950-1
		Protection by Earthing Clause-2.3.2.3	IEC 60950-1
		Protection by Other Constructions Clause- 2.3.2.4	IEC 60950-1
		Separation from Hazardous Voltages Clause-2.3.3	IEC 60950-1
		Connection of TNV circuits to Other Circuits Clause-2.3.4	IEC 60950-1
		Test for Operating Voltages generated Externally Clause-2.3.5	IEC 60950-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Information Technology	Limited Currents Clause-2.4	IEC 60950-1
	<b>Equipment- Safety</b>	Limit Values Clause- 2.4.2	IEC 60950-1
	Requirements	Connection of Limited Current Circuits to Other Circuits Clause-2.4.3	IEC 60950-1
		Limited Power Sources Clause-2.5	IEC 60950-1
		Provisions for Earthing and Bonding Clause-2.6	IEC 60950-1
		Protective Earthing Clause-2.6.1	IEC 60950-1
		Functional Earthing Clause-2.6.2	IEC 60950-1
		Protective Earthing Conductors and Protective Bonding Conductors Clause- 2.6.3	IEC 60950-1
		Size of Protective Earthing Conductors Clause-2.6.3.2	IEC 60950-1
		Size of Protective Bonding Conductors Clause-2.6.3.3	IEC 60950-1
		Resistance of Earthing Conductors and their Terminations Clause- 2.6.3.4	IEC 60950-1
		Colour of Insulation Clause- 2.6.3.5	IEC 60950-1
		Terminals Clause- 2.6.4	IEC 60950-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Information Technology Equipment-	Protective Earthing and Bonding Terminals Clause-2.6.4.2	IEC 60950-1
	Safety	Separation of the Protective Earthing Conductor from Protective Bonding Conductors Clause-2.6.4.3	IEC 60950-1
		Integrity of Protective Earthing Clause-2.6.5	IEC 60950-1
		Interconnection of Equipment Clause-2.6.5.1	IEC 60950-1
		Components in Protective Earthing Conductors and Protective Bonding Conductors Clause- 2.6.5.2	IEC 60950-1
		Disconnection of Protective Earth Clause-2.6.5.3	IEC 60950-1
		Parts that can be removed by an Operator Clause- 2.6.5.4	IEC 60950-1
		Parts removed during Servicing Clause- 2.6.5.5	IEC 60950-1
		Corrosion Resistance Clause-2.6.5.6	IEC 60950-1
		Screws for Protective Bonding Clause-2.6.5.7	IEC 60950-1
		Reliance on Telecommunication Network or Cable Distribution System Clause-2.6.5.8	IEC 60950-1
		Over Current and Earth Fault Protection in Primary Circuits Clause-2.7	IEC 60950-1

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Sl. No.	Telecom Equipment/P	Test Parameter or Type of Testing	Standard/ Specification
	roduct		
	Information	Basic Requirements Clause-2.7.1	IEC 60950-1
	Technology Equipment-	Short-Circuit Backup Protection Clause-2.7.3	IEC 60950-1
	Safety Requirements	Number and Location of Protective Devices Clause-2.7.4	IEC 60950-1
		Protection by Several Devices Clause-2.7.5	IEC 60950-1
		Warning to Service Persons Clause-2.7.6	IEC 60950-1
		Safety Interlocks Clause-2.8	IEC 60950-1
		General Principles Clause-2.8.1	IEC 60950-1
		Protection Requirements Clause- 2.8.2	IEC 60950-1
		Inadvertent Reactivation Clause- 2.8.3	IEC 60950-1
		Fail-Safe Operation Clause-2.8.4	IEC 60950-1
		Overriding Clause- 2.8.6	IEC 60950-1
		Mechanical Actuators Clause-2.8.8	IEC 60950-1
		Electrical Insulation Clause-2.9	IEC 60950-1
		Properties of Insulating Materials Clause-2.9.1	IEC 60950-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
			•
	Information	Humidity Conditioning	IEC 60950-1
	Technology	Clause-2.9.2	
	<b>Equipment-</b>	Grade of Insulation	IEC 60950-1
	Safety	Clause-2.9.3	
	Requirements	Separation from Hazardous Voltages Clause-2.9.4	IEC 60950-1
		Clearances, Creepage Distances and Distances through Insulation Clause-2.10	IEC 60950-1
		Frequency Clause- 2.10.1.1	IEC 60950-1
		Pollution Degrees Clause-2.10.1.2	IEC 60950-1
		Reduced Values for Functional Insulation Clause-2.10.1.3	IEC 60950-1
		Intervening Unconnected Conductive Parts Clause-2.10.1.4	IEC 60950-1
		Insulation with Varying Dimensions Clause-2.10.1.5	IEC 60950-1
		Special Separation Requirements Clause- 2.10.1.6	IEC 60950-1
		Insulation in Circuits generating Starting Pulses Clause- 2.10.1.7	IEC 60950-1
		Determination of Working Voltage Clause-2.10.2	IEC 60950-1
		RMS Working Voltage Clause-2.10.2.2	IEC 60950-1
		Peak Working Voltage Clause-2.10.2.3	IEC 60950-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Information	Clearances	IEC 60950-1
	Technology	Clause- 2.10.3	
	<b>Equipment-</b>	Mains Transient Voltages	IEC 60950-1
	Safety	Clause- 2.10.3.2	
	Requirements	Clearances in Primary Circuits Clause- 2.10.3.3	IEC 60950-1
		Clearances in Secondary Circuits Clause-2.10.3.4	IEC 60950-1
		Clearances in Circuits having Starting Pulses Clause-2.10.3.5	IEC 60950-1
		Transients from an a.c. mains supply Clause-2.10.3.6	IEC 60950-1
		Transients from a d.c. mains Supply Clause- 2.10.3.7	IEC 60950-1
		Transients from Telecommunication Networks and Cable Distribution Systems Clause-2.10.3.8	IEC 60950-1
		Measurement of Transient Voltages Clause-2.10.3.9	IEC 60950-1
		Creepage Distances Clause-2.10.4	IEC 60950-1
		Material Group and Comparative Tracking Index Clause-2.10.4.2	IEC 60950-1
		Minimum Creepage Distances Clause- 2.10.4.3	IEC 60950-1
		Solid Insulation Clause-2.10.5	IEC 60950-1
		Distances through Insulation Clause-2.10.5.2	IEC 60950-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Information	Insulating Compound as Solid Insulation	IEC 60950-1
	Technology	Clause-2.10.5.3	
	<b>Equipment-</b>	Semiconductor Devices	IEC 60950-1
	Safety	Clause-2.10.5.4	
	Requirements	Cemented Joints	IEC 60950-1
		Clause-2.10.5.5	
		Thin Sheet Material- General	IEC 60950-1
		Clause-2.10.5.6	
		Separable Thin Sheet Material	IEC 60950-1
		Clause- 2.10.5.7	
		Non-Separable Thin Sheet Material	IEC 60950-1
		Clause-2.10.5.8	
		Thin Sheet Material- Standard Test Procedure	IEC 60950-1
		Clause- 2.10.5.9	
		Thin Sheet Material- Alternative Test Procedure	IEC 60950-1
		Clause- 2.10.5.10	
		Insulation in Wound Components	IEC 60950-1
		Clause- 2.10.5.11	
		Wire in Wound Components	IEC 60950-1
		Clause-2.10.5.12	
		Additional Insulation in Wound Components	IEC 60950-1
		Clause-2.10.5.14	
		Construction of Printed Boards	IEC 60950-1
		Clause-2.10.6	
		Uncoated Printed Boards	IEC 60950-1
		Clause- 2.10.6.1	
		Coated Printed Boards	IEC 60950-1
		Clause-2.10.6.2	

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Information	Insulation between Conductors on the Same Inner	IEC 60950-1
	Technology	Surface of a Printed Board	
	<b>Equipment-</b>	Clause- 2.10.6.3	
	Safety	Insulation between Conductors on different Surfaces	IEC 60950-1
	Requirements	of a Printed Board	
		Clause-2.10.6.4	
		Component External Terminations	IEC 60950-1
		Clause- 2.10.7	TT C 100 TO 1
		Tests on Coated Printed Boards and Coated Components Clause-2.10.8	IEC 60950-1
		Sample Preparation and Preliminary Inspection Clause-2.10.8.1	IEC 60950-1
		Thermal Conditioning Clause-2.10.8.2	IEC 60950-1
		Electric Strength Test Clause-2.10.8.3	IEC 60950-1
		Abrasion Resistance Test Clause-2.10.8.4	IEC 60950-1
		Thermal Cycling Clause-2.10.9	IEC 60950-1
		Test for Pollution Degree1 Environment and for Insulating Compound Clause- 2.10.10	IEC 60950-1
		Tests for Semi Conductor Devices and for Cemented Joints Clause-2.10.11	IEC 60950-1
		Enclosed and Sealed Parts Clause-2.10.12	IEC 60950-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Information	Wiring, Connections and Supply	IEC 60950-1
	Technology	Clause-3	
	<b>Equipment-</b>	Current Rating and Over Current Protection	IEC 60950-1
	Safety	Clause-3.1.1	
	Requirements	Protection against Mechanical Damage	IEC 60950-1
		Clause-3.1.2	
		Securing of Internal Wiring	IEC 60950-1
		Clause-3.1.3	
		Insulation of Conductors	IEC 60950-1
		Clause-3.1.4	
		Beads and Ceramic Insulators	IEC 60950-1
		Clause- 3.1.5	
		Screws for Electrical Contact Pressure	IEC 60950-1
		Clause-3.1.6	
		Insulating Materials in Electrical Connections	IEC 60950-1
		Clause-3.1.7	
		Self-Tapping and Spaced Thread Screws	IEC 60950-1
		Clause-3.1.8	
		Termination of Conductors	IEC 60950-1
		Clause-3.1.9	
		Sleeving on Wiring	IEC 60950-1
		Clause-3.1.10	
		Connection to a Mains Supply	IEC 60950-1
		Clause-3.2	
		Connection to an a.c. Mains Supply	IEC 60950-1
		Clause-3.2.1.1	
		Connection to a d.c. Mains Supply	IEC 60950-1
		Clause-3.2.1.2	

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Information Technology	Multiple Supply Connections Clause- 3.2.2	IEC 60950-1
	Equipment- Safety	Permanently Connected Equipment Clause-3.2.3	IEC 60950-1
	Requirements	Appliance Inlets Clause-3.2.4	IEC 60950-1
		Power Supply Cords Clause-3.2.5	IEC 60950-1
		AC Power Supply Cords Clause-3.2.5.1	IEC 60950-1
		DC Power Supply Cords Clause-3.2.5.2	IEC 60950-1
		Cord Anchorages and Strain Relief Clause-3.2.6	IEC 60950-1
		Protection against Mechanical Damage Clause-3.2.7	IEC 60950-1
		Cord Guards Clause- 3.2.8	IEC 60950-1
		Supply Wiring Space Clause-3.2.9	IEC 60950-1
		Wiring Terminals for Connection of External Conductors Clause- 3.3	IEC 60950-1
		Wiring Terminals Clause-3.3.1	IEC 60950-1
		Connection of Non- detachable Power Supply CordsClause-3.3.2	IEC 60950-1
		Screw Terminals Clause-3.3.3	IEC 60950-1

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Sl. No.	Telecom Equipment/P	Test Parameter or Type of Testing	Standard/ Specification
	roduct		_
•			1
	Information	Conductor Sizes to be Connected	IEC 60950-1
	Technology	Clause- 3.3.4	
	<b>Equipment-</b>	Wiring Terminal Sizes	IEC 60950-1
	Safety	Clause-3.3.5	
	Requirements	Wiring Terminal Design	IEC 60950-1
		Clause-3.3.6	
		Grouping of Wiring Terminals	IEC 60950-1
		Clause- 3.3.7	
		Stranded Wire	IEC 60950-1
		Clause- 3.3.8	
		Disconnection from the Mains Supply	IEC 60950-1
		Clause-3.4	
		Disconnect Devices	IEC 60950-1
		Clause-3.4.2	
		Permanently Connected Equipment	IEC 60950-1
		Clause-3.4.3	
		Parts which remain Energized	IEC 60950-1
		Clause- 3.4.4	
		Switches in Flexible Cords	IEC 60950-1
		Clause-3.4.5	
		Number of Poles -Single-Phase and d.c. Equipment	IEC 60950-1
		Clause-3.4.6	
		Number of Poles- Three Phase Equipment	IEC 60950-1
		Clause-3.4.7	
		Switches as Disconnect Devices	IEC 60950-1
		Clause-3.4.8	
		Plugs as Disconnect Devices	IEC 60950-1
		Clause-3.4.9	

<sup>\*</sup>The validity of Certificate is up to 01/12/2027 or the continued validity of NABL Accreditation, whichever is earlier.

#### GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

**Ghaziabad - 201 003** 

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Sl.	Telecom	Test Parameter or Type of Testing	Standard/
No.	Equipment/P		Specification
	roduct		
Ī	1		
	Information	Interconnected Equipment	IEC 60950-1
	Technology	Clause-3.4.10	
	<b>Equipment-</b>	Multiple Power Sources	IEC 60950-1
	Safety	Clause-3.4.11	
	Requirements	Interconnection of Equipment	IEC 60950-1
		Clause- 3.5	
		Types of Interconnection Circuits	IEC 60950-1
		Clause-3.5.2	
		ELV Circuits as Interconnection Circuits	IEC 60950-1
		Clause-3.5.3	
		Data Ports for Additional Equipment	IEC 60950-1
		Clause-3.5.4	
		Stability	IEC 60950-1
		Clause-4.1	
		Mechanical Strength	IEC 60950-1
		Clause-4.2	
		Steady Force Test, 10N	IEC 60950-1
		Clause-4.2.2	
		Steady Force Test, 30N	IEC 60950-1
		Clause-4.2.3	
		Steady Force Test, 250 N	IEC 60950-1
		Clause-4.2.4	
		Impact Test	IEC 60950-1
		Clause- 4.2.5	
		Drop Test	IEC 60950-1
		Clause- 4.2.6	
		Stress Relief Test	IEC 60950-1
		Clause-4.2.7	

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#### GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Information	Wall or Ceiling Mounted Equipment	IEC 60950-1
	Technology	Clause-4.2.10	
	<b>Equipment-</b>	Design and Construction	IEC 60950-1
	Safety	Clause- 4.3	
	Requirements	Edges and Corners	IEC 60950-1
		Clause-4.3.1	
		Handles and Manual Controls	IEC 60950-1
		Clause-4.3.2	
		Adjustable Controls	IEC 60950-1
		Clause-4.3.3	
		Securing of Parts	IEC 60950-1
		Clause-4.3.4	
		Connection by Plugs and Sockets	IEC 60950-1
		Clause- 4.3.5	
		Direct Plug-in Equipment	IEC 60950-1
		Clause- 4.3.6	
		Heating Elements in Earthed Equipment	IEC 60950-1
		Clause-4.3.7	
		Batteries	IEC 60950-1
		Clause- 4.3.8	
		Flammable Liquids	IEC 60950-1
		Clause-4.3.12	
		Other Types	IEC 60950-1
		Clause- 4.3.13.6	
		Protection against Hazardous Moving Parts	IEC 60950-1
		Clause-4.4	
		Protection in Operator Access Areas	IEC 60950-1
		Clause-4.4.2	

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#### GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



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### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

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Sl. No.	Telecom Equipment/P	Test Parameter or Type of Testing	Standard/ Specification
	roduct		
	1- 0		TTG (00 50 4
	Information	Protection in Restricted Access locations	IEC 60950-1
	Technology	Clause-4.4.3	
	<b>Equipment-</b>	Protection in Service Access Areas	IEC 60950-1
	Safety	Clause-4.4.4	
	Requirements	Thermal Requirements	IEC 60950-1
		Clause-4.5	
		Temperature Tests	IEC 60950-1
		Clause-4.5.2	
		Temperature Limits for Materials	IEC 60950-1
		Clause-4.5.3	
		Touch Temperature Limits	IEC 60950-1
		Clause-4.5.4	
		Resistance to Abnormal Heat	IEC 60950-1
		Clause-4.5.5	
		Openings in Enclosures	IEC 60950-1
		Clause-4.6	
		Top and Side Openings	IEC 60950-1
		Clause-4.6.1	
		Bottoms of Fire Enclosures	IEC 60950-1
		Clause- 4.6.2	
		Doors or Covers in Fire Enclosures	IEC 60950-1
		Clause- 4.6.3	
		Openings in Transportable Equipment	IEC 60950-1
		Clause- 4.6.4	
		Constructional Design Measures	IEC 60950-1
		Clause- 4.6.4.1	
		Evaluation Measures for Larger Openings	IEC 60950-1
		Clause-4.6.4.2	

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Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

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Sl. No.	Telecom Equipment/P roduct  Test Parameter or Type of Testing		Standard/ Specification
	Information	Use of Metallized Parts	IEC 60950-1
	Technology	Clause-4.6.4.3	
	<b>Equipment-</b>	Adhesives for Constructional Purposes	IEC 60950-1
	Safety	Clause- 4.6.5	
	Requirements	Resistance to Fire	IEC 60950-1
		Clause-4.7	
		Reducing the Risk of Ignition and Spread of Flame Clause-4.7.1	IEC 60950-1
		Conditions for a Fire Enclosure Clause- 4.7.2	IEC 60950-1
		Parts requiring a Fire Enclosure Clause- 4.7.2.1	
		Parts not requiring a Fire Enclosure Clause-4.7.2.2	IEC 60950-1
		Materials Clause- 4.7.3	
		Materials for Fire Enclosure Clause- 4.7.3.2	IEC 60950-1
	Materials for Components and Other Parts outside Fire Enclosure Clause-4.7.3.3		IEC 60950-1
		Materials for Components and Other Parts inside Fire Enclosure Clause- 4.7.3.4	IEC 60950-1
		Materials for Air Filter Assemblies Clause-4.7.3.5	IEC 60950-1
		Materials used in High- Voltage Components Clause-4.7.3.6	IEC 60950-1

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#### GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

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Sl. No.	Telecom Equipment/P roduct	nent/P	
	Todact		
	Information Technology	Touch Current and Protective Conductor Current Clause-5.1	IEC 60950-1
	Equipment- Safety	Single Connection to an a.c. Mains Supply Clause-5.1.2.1	IEC 60950-1
		Simultaneous Multiple Connections to an a.c. Mains Supply Clause-5.1.2.3	IEC 60950-1
		Redundant Multiple Connections to an a.c. Mains Supply Clause-5.1.2.2	IEC 60950-1
		Test Circuit Clause- 5.1.3	IEC 60950-1
		Application of Measuring Instrument Clause-5.1.4	IEC 60950-1
		Test Procedure Clause-5.1.5	IEC 60950-1
		Test Measurements Clause-5.1.6	IEC 60950-1
		Equipment with Touch Current Exceeding 3.5 mA Clause-5.1.7	IEC 60950-1
		Simultaneous Multiple Connections to the Supply Clause-5.1.7.2	IEC 60950-1
		Touch Currents to Telecommunication Networks and Cable Distribution Systems and from Telecommunication Networks Clause-5.1.8	IEC 60950-1

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## GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



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Sl. No.	Telecom Equipment/P roduct	Equipment/P	
	•		
	Information	Limitation of the Touch Current to a Telecommunication	IEC 60950-1
	Technology	Network or to a Cable Distribution System	
	<b>Equipment-</b>	Clause-5.1.8.1	
	Safety	Summation of Touch Currents from	IEC 60950-1
	Requirements	Telecommunication Networks	
		Clause-5.1.8.2	
		Electric Strength	IEC 60950-1
		Clause-5.2	
		Test Procedure	IEC 60950-1
		Clause-5.2.2	
		Abnormal Operating and Fault Conditions	
		Clause-5.3	
		Protection against Overload and Abnormal Operation	
		Clause-5.3.1	
		Motors	IEC 60950-1
		Clause-5.3.2	
		Transformers	IEC 60950-1
		Clause- 5.3.3	
		Functional Insulation	IEC 60950-1
		Clause-5.3.4	
		Electromechanical Components	IEC 60950-1
		Clause- 5.3.5	
		Audio Amplifiers in Information Technology Equipment Clause-5.3.6	IEC 60950-1
		Simulation of Faults	
		Clause-5.3.7	
		Compliance Criteria for Abnormal Operating and	IEC 60950-1
		Fault Conditions	
		Clause- 5.3.9	

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Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

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Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	•		1
	Information	During the Tests	IEC 60950-1
	Technology	Clause-5.3.9.1	
	<b>Equipment-</b>	After the Tests	IEC 60950-1
	Safety	Clause- 5.3.9.2	
	Requirements	Connection to Telecommunication Networks	IEC 60950-1
		Clause-6	
		Protection of Telecommunication Network Service	IEC 60950-1
		Persons, and Users of Other Equipment Connected to	
		the Network, from Hazards in the Equipment	
		Clause-6.1	
		Protection from Hazardous Voltages	IEC 60950-1
		Clause-6.1.1	
		Separation of the Telecommunication Network from	IEC 60950-1
		Earth	
		Clause-6.1.2	
		Exclusions	IEC 60950-1
		Clause- 6.1.2.2	
		Protection of Equipment Users from Over Voltages on Telecommunication Networks	IEC 60950-1
		Clause-6.2	IEC 60950-1
		Separation Requirements Clause-6.2.1	IEC 60950-1
			IEC 60950-1
		Electric Strength Test Procedure	IEC 60950-1
		Clause- 6.2.2	IEC 60050 1
		Impulse Test	IEC 60950-1
		Clause- 6.2.2.1	IEC (0050 1
		Steady-State Test	IEC 60950-1
		Clause-6.2.2.2	

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#### GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

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Certificate Number: TEC/MRA/CAB/IND-D/103 Page 20 of 42

Sl.	Telecom	Test Parame	ter or Type of Testing	Standard/			
No.	Equipment/P roduct			Specification			
	Information	Compliance C	Compliance Criteria				
	Technology	Clause-6.2.2.3	3				
	<b>Equipment-</b>	Protection of	the Telecommunication Wiring	IEC 60950-1			
	Safety	System from	Overheating				
	Requirements	Clause-6.3					
		Connection to Clause-7	Cable Distribution Systems	IEC 60950-1			
			Cable Distribution System, Service	IEC 60950-1			
			Jsers of Other Equipment Connected to the	ILC 00730 1			
			Hazardous Voltages in the Equipment				
		Clause- 7.2					
		Protection of	Protection of Equipment Users from Over Voltages				
		on the Cable l					
		Clause-7.3					
		Insulation bet	IEC 60950-1				
		Distribution S					
			Clause-7.4				
		Voltage Surge	e Test	IEC 60950-1			
		Clause-7.4.2					
		Impulse Test Clause- 7.4.3		IEC 60950-1			
2.	Router	Interface:					
	Routei	Wi-Fi	ETSI EN 300 328	TEC ER No. TEC37682410			
		****	Clause-4.3.1.2, 4.3.2.2 & 5.4.2	1200,002.10			
			Power Spectral Density	TEC ER No.			
			(Conductive only)	TEC37682410			
			ETSI EN 300 328	•			
			Clause-4.3.2.3 & 5.4.3				

<sup>\*</sup>The validity of Certificate is up to 01/12/2027 or the continued validity of NABL Accreditation, whichever is earlier.

#### GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



Standard/

Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

**Ghaziabad - 201 003** 

Sl. Telecom

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**Test Parameter or Type of Testing** 

No.	Equipment/P roduct	1cst 1 arame	ter of Type of Testing	Specification
		1	,	
	Router	Interface:	Duty Cycle, Tx Sequence, Tx-gap	TEC ER No.
		Wi-Fi	(Conductive only)	TEC37682410
			ETSI EN 300 328	
			Clause-4.3.1.3, 4.3.2.4 & 5.4.2	
			Accumulated Transmit Time, Frequency	TEC ER No.
			Occupation and Hopping Sequence	TEC37682410
			(Conductive only)	
			ETSI EN 300 328	
			Clause- 4.3.1.4 & 5.4.4	
			Hoping Frequency Separation	TEC ER No.
			(Conductive only)	TEC37682410
			ETSI EN 300 328	
			Clause- 4.3.1.5 & 5.4.5	
			Hopping Sequence (Conductive only)	TEC ER No.
			ETSI EN 300 328	TEC37682410
			Clause-4.3.1.4&5.4.4	
			Medium Utilization	TEC ER No.
			(Conductive only)	TEC37682410
			ETSI EN 300 328	
			Clause-4.3.1.6,4.3.2.5 & 5.4.2	
			Occupied Channel Bandwidth	TEC ER No.
			(Conductive only)	TEC37682410
			ETSI EN 300 328	
			Clause- 4.3.1.8, 4.3.2.7 & 5.4.7	
			Transmitter Unwanted Emission in	TEC ER No.
			OOB Domain	TEC37682410
			(Conductive only)	
			ETSI EN 300 328	
			Clause- 4.3.1.9, 4.3.2.8 & 5.4.8	

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#### GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



Standard/

**Specification** 

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### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

**Ghaziabad - 201 003** 

**Telecom** 

Equipment/P

No.

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**Test Parameter or Type of Testing** 

1 1			
roduct			
Router	Interface:	Transmitter Unwanted Emissions in the	TEC ER No.
Kouter	Wi-Fi		TEC EK No. TEC37682410
	VVI-F1	Spurious Domain (Conductive only) ETSI EN 300 328	1EC3/082410
		Clause-4.3.1.10, 4.3.2.9 & 5.4.9	TECED N.
		Receiver Spurious Emission	TEC ER No.
		(Conductive only)	TEC3768241
		ETSI EN 300 328	
		Clause- 4.3.1.11, 4.3.2.10 & 5.4.10	TEC ED M
		Receiver Blocking	TEC ER No.
		(Conductive only)	TEC3768241
		ETSI EN 300 328	
		Clause-4.3.1.12, 4.3.2.11 & .4.11	TEC ED M
		Carrier Frequencies (Conductive only)	TEC ER No.
		ETSI EN 301 893	TEC3768241
		Clause-4.2.1 & 5.4.2	TEC ED M
		Nominal and Occupied Channel	TEC ER No.
		Bandwidth (Conductive only)	TEC3768241
		ETSI EN 301 893	
		Clause-4.2.2 & 5.4.3	
		RF Output Power, Transmit Power	TEC ER No.
		Control (TPC), Power Density	TEC3768241
		(Conductive only)	
		ETSI EN 301 893	
		Clause-4.2.3 & 5.4.4	
		Transmitter Unwanted Emissions	TEC ER No.
		Outside the 5 GHz RLAN Bands	TEC3768241
		(Conductive only)	
		ETSI EN 301 893	

<sup>\*</sup>The validity of Certificate is up to 01/12/2027 or the continued validity of NABL Accreditation, whichever is earlier.

Clause-4.2.4.1 & 5.4.5

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**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

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Sl.	Telecom	Test Parameter or Type of Testing	Standard/
No.	Equipment/P		Specification
	roduct		

Router	Interface:	Transmitter Unwanted Emissions within	TEC ER No.
	Wi-Fi	the5 GHz RLAN Bands	TEC37682410
		(Conductive only)	
		ETSI EN 301 893	
		Clause-4.2.4.2	
		Receiver Spurious Emissions	TEC ER No.
		(Conductive only)	TEC37682410
		ETSI EN 301 893	
		Clause- 4.2.5 & 5.4.7	
		Receiver Blocking	TEC ER No.
		(Conductive only)	TEC37682410
		ETSI EN 301 893	
		Clause-4.2.8 & 5.4.10	
		Designation of Centre Frequencies and	TEC ER No.
		Frequency Error	TEC37682410
		(Conductive only)	
		ETSI EN 302 502	
		Clause-4.2.1 & 5.4.2	
		Transmitter RF Output Power	TEC ER No.
		(Conductive only)	TEC37682410
		ETSI EN 302 502	
		Clause-4.2.2 & 5.4.3	
		EIRP Spectral Density	TEC ER No.
		(Conductive only)	TEC37682410
		ETSI EN 302 502	
		Clause-4.2.2 & 5.4.3	
		EIRP (Conductive only)	TEC ER No.
		ETSI EN 302 502	TEC37682410
		Clause-4.2.2 & 5.4.3	

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#### **GOVERNMENT OF INDIA** MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### **SCOPE OF DESIGNATION** (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

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Validity: 02/12/2024 to 01/12/2027 Last Amended on: ----

Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing		Standard/ Specification
	Router	Interface: Wi-Fi	Transmitter Unwanted Emissions (Conductive only) ETSI EN 302 502 Clause- 4.2.3 & 5.4.4 Transmitter Power Control (Conductive only) ETSI EN 302 502 Clause-4.2.4 & 5.4.3	TEC ER No. TEC37682410 TEC ER No. TEC37682410
			Receiver Spurious Emissions (Conductive only) ETSI EN 302 502 Clause- 4.2.5 & 5.4.5 Receiver Blocking (Conductive only) ETSI EN 302 502 Clause-4.2.7 & 5.4.7	TEC ER No. TEC37682410 TEC ER No. TEC37682410
3.	Equipment's Operating in 2.4 GHz and 5 GHz Frequency Bands	Interface: Wi-Fi	RF Output Power (Conductive only) ETSI EN 300 328 Clause-4.3.1.2, 4.3.2.2 & 5.4.2 Power Spectral Density (Conductive only) ETSI EN 300 328 Clause-4.3.2.3 & 5.4.3 Duty Cycle, Tx Sequence, Tx-gap (Conductive only) ETSI EN 300 328 Clause-4.3.1.3, 4.3.2.4 & 5.4.2	TEC ER No. TEC59432407  TEC ER No. TEC59432407  TEC ER No. TEC59432407

<sup>\*</sup>The validity of Certificate is up to 01/12/2027 or the continued validity of NABL Accreditation, whichever is earlier.

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Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

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Equipment/P	Test Parame	eter or Type of Testing	Standard/ Specification
roduct			
Equipment's Operating in 2.4 GHz and 5 GHz Frequency Bands	Interface: Wi-Fi	Accumulated Transmit Time, Frequency Occupation and Hopping Sequence (Conductive only) ETSI EN 300 328 Clause- 4.3.1.4 & 5.4.4 Hoping Frequency Separation (Conductive only) ETSI EN 300 328 Clause- 4.3.1.5 & 5.4.5 Hopping Sequence (Conductive only) ETSI EN 300 328 Clause-4.3.1.4&5.4.4 Medium Utilization (Conductive only) ETSI EN 300 328 Clause-4.3.1.6,4.3.2.5 & 5.4.2 Occupied Channel Bandwidth (Conductive only) ETSI EN 300 328 Clause- 4.3.1.8, 4.3.2.7 & 5.4.7 Transmitter Unwanted Emission in OOB Domain (Conductive only) ETSI EN 300 328	TEC ER No. TEC59432407  TEC ER No. TEC59432407  TEC ER No. TEC59432407  TEC ER No. T EC59432407  TEC ER No. T EC59432407  TEC ER No. T EC59432407
	Equipment/P roduct  Equipment's Operating in 2.4 GHz and 5 GHz Frequency	Equipment/P roduct  Equipment's Interface: Wi-Fi 2.4 GHz and 5 GHz Frequency	Equipment's Operating in 2.4 GHz and 5 GHz Frequency Bands  Bands    Conductive only   ETSI EN 300 328   Clause- 4.3.1.4 & 5.4.4

<sup>\*</sup>The validity of Certificate is up to 01/12/2027 or the continued validity of NABL Accreditation, whichever is earlier.

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Standard/

**Specification** 

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Private Limited, Ghaziabad

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**Telecom** 

No. | Equipment/P

Certificate Number: TEC/MRA/CAB/IND-D/103 Page 26 of 42

**Test Parameter or Type of Testing** 

140.	roduct			Specification
	<b>Equipment's</b>	Interface:	Transmitter Unwanted Emissions in the	TEC ER No.
	Operating in	Wi-Fi	Spurious Domain	TEC59432407
	2.4 GHz and		(Conductive only)	
	5 GHz		ETSI EN 300 328	
	Frequency		Clause-4.3.1.10, 4.3.2.9 & 5.4.9	
	Bands		Receiver Spurious Emission	TEC ER No.
			(Conductive only)	TEC59432407
			ETSI EN 300 328	
			Clause- 4.3.1.11, 4.3.2.10 & 5.4.10	
			Receiver Blocking	TEC ER No.
			(Conductive only)	TEC59432407
			ETSI EN 300 328	
			Clause-4.3.1.12, 4.3.2.11 & 5.4.11	
			Carrier Frequencies	TEC ER No.
			(Conductive only)	TEC59432407
			ETSI EN 301 893	
			Clause-4.2.1 & 5.4.2	
			Nominal and Occupied Channel	TEC ER No. T
			Bandwidth	EC59432407
			(Conductive only)	
			ETSI EN 301 893	
			Clause-4.2.2 & 5.4.3	
			RF Output Power, Transmit Power	TEC ER No. T
			Control (TPC), Power Density	EC59432407
			(Conductive only)	
			ETSI EN 301 893	
			Clause-4.2.3 & 5.4.4	

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Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

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Sl. No.	Telecom Equipment/P roduct	Test Parame	ter or Type of Testing	Standard/ Specification
	Equipment's Operating in 2.4 GHz and 5 GHz Frequency Bands	Interface: Wi-Fi	Transmitter Unwanted Emissions Outside the 5 GHz RLAN Bands (Conductive only) ETSI EN 301 893 Clause-4.2.4.1 & 5.4.5 Transmitter Unwanted Emissions within the5 GHz RLAN Bands (Conductive only) ETSI EN 301 893 Clause-4.2.4.2 Receiver Spurious Emissions (Conductive only) ETSI EN 301 893 Clause-4.2.5 & 5.4.7 Receiver Blocking (Conductive only) ETSI EN 301 893 Clause-4.2.8 & 5.4.10 Designation of Centre Frequencies and Frequency Error (Conductive only) ETSI EN 302 502 Clause-4.2.1 & 5.4.2 Transmitter RF Output Power (Conductive only) ETSI EN 302 502 Clause-4.2.2 & 5.4.3	TEC ER No. T EC59432407  TEC ER No. T EC59432407

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Sl. No.	Telecom Equipment/P roduct	Test Parame	eter or Type of Testing	Standard/ Specification
	Equipment's Operating in 2.4 GHz and 5 GHz Frequency Bands	Interface: Wi-Fi	EIRP Spectral Density (Conductive only) ETSI EN 302 502 Clause-4.2.2 & 5.4.3 EIRP (Conductive only) ETSI EN 302 502 Clause-4.2.2 & 5.4.3 Transmitter Unwanted Emissions (Conductive only) ETSI EN 302 502 Clause-4.2.3 & 5.4.4	TEC ER No. T EC59432407  TEC ER No. T EC59432407  TEC ER No. T EC59432407
			Transmitter Power Control (Conductive only) ETSI EN 302 502 Clause-4.2.4 & 5.4.3  Receiver Spurious Emissions (Conductive only) ETSI EN 302 502 Clause- 4.2.5 & 5.4.5	TEC ER No. T EC59432407 TEC ER No. T EC59432407
			Receiver Blocking (Conductive only) ETSI EN 302 502 Clause-4.2.7 & 5.4.7	TEC ER No. T EC59432407

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Sl.	Telecom	<b>Test Parameter or Type of Testing</b>	Standard/
No.	Equipment/P		Specification
	roduct		
	A 30 /870 B		IEC (22(0.1
4.	Audio/Video,	Energy Source Classifications	IEC 62368-1
	Information and		IEC (22(0.1
	Communication	$\mathcal{E}$	IEC 62368-1
	Technology	Clause-4.3	
	Equipment:	Safeguards between a Class 1 Energy Source and an	IEC 62368-1
	Safety	Ordinary Person	
	Requirements	Clause-4.3.2.1	
		Safeguards between a Class 2 Energy Source and an	IEC 62368-1
		Ordinary Person	
		Clause-4.3.2.2	
		Safeguards between a Class 2 Energy Source and an	IEC 62368-1
		Ordinary Person during Ordinary Person Servicing	
		Conditions	
		Clause-4.3.2.3	
		Safeguards between a Class 3 Energy Source and an	IEC 62368-1
		Ordinary Person	
		Clause-4.3.2.4	
		Safeguards between a Class 1 Energy Source and an	IEC 62368-1
		Instructed Person	
		Clause-4.3.3.1	
		Safeguards between a Class 2 Energy Source and an	IEC 62368-1
		Instructed Person	
		Clause- 4.3.3.2	
		Safeguards between a Class 3 Energy Source and an	IEC 62368-1
		Instructed Person	
		Clause-4.3.3.3	
		Safeguards for Protection of a Skilled Person	IEC 62368-1
		Clause-4.3.4	
L	I		

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Audio/Video,	Safeguards between a Class 2 Energy Source and a	IEC 62368-1
	Information and	Skilled Person	
	Communication	Clause-4.3.4.2	
	Technology	Safeguards between a Class 3 Energy Source and a	IEC 62368-1
	Equipment:	Skilled Person	
	Safety	Clause-4.3.4.3	
	Requirements	Fixing of Conductors Clause- 4.6	IEC 62368-1
		Equipment for Direct Insertion into Mains Socket- Outlets Clause-4.7	IEC 62368-1
		Compliance Criteria Clause-4.7.3	IEC 62368-1
		Stress Relief Test Clause-4.8.4.2	IEC 62368-1
		Battery Replacement Test Clause-4.8.4.3	IEC 62368-1
		Drop Test Clause- 4.8.4.4	IEC 62368-1
		Impact Test Clause- 4.8.4.5	IEC 62368-1
		Crush Test Clause- 4.8.4.6	IEC 62368-1
		Compliance Criteria Clause-4.8.5	IEC 62368-1
		Classification and Limits of Electrical Energy Sources Clause-5.2	IEC 62368-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
L			
	Audio/Video,	ES1	IEC 62368-1
	Information and		
	Communication	ES2	IEC 62368-1
	Technology	Clause-5.2.1.2	
	Equipment:	ES3	IEC 62368-1
	Safety	Clause-5.2.1.3	
	Requirements	Electrical Energy Source ES1 and ES2 Limits Clause-5.2.2	IEC 62368-1
		Steady State Voltage and Current Limits Clause-5.2.2.2	IEC 62368-1
		Capacitance Limits Clause-5.2.2.3	IEC 62368-1
		Limits for Repetitive Pulses Clause- 5.2.2.5	IEC 62368-1
		Ringing Signals Clause-5.2.2.6	IEC 62368-1
		Audio Signals Clause-5.2.2.7	IEC 62368-1
		Protection against Electrical Energy Sources Clause-5.3	IEC 62368-1
		Accessibility to Electrical Energy Sources and Safeguards Clause-5.3.2	IEC 62368-1
		Compliance Criteria Clause-5.3.2.3	IEC 62368-1
		Terminals for Connecting Stripped Wire Clause-5.3.2.4	IEC 62368-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Audio/Video, Information and Communication	Test for Pollution Degree 1 Environment and for an Insulating Compound Clause- 5.4.1.5.2	IEC 62368-1
	Technology Equipment:	Determination of Working Voltage Clause-5.4.1.8	IEC 62368-1
	Safety Requirements	RMS Working Voltage Clause- 5.4.1.8.2	IEC 62368-1
	-	Thermoplastic Parts on which Conductive Metallic Parts are directly Mounted Clause-5.4.1.10	IEC 62368-1
		Vicat Test Clause- 5.4.1.10.2	IEC 62368-1
		Ball Pressure Test Clause-5.4.1.10.3	IEC 62368-1
		Clearances Clause- 5.4.2	IEC 62368-1
		Determining Transient Voltages Clause-5.4.2.3.2	IEC 62368-1
		Determining AC Mains Transient Voltages Clause- 5.4.2.3.2.2	IEC 62368-1
		Determining DC Mains Transient Voltages Clause- 5.4.2.3.2.3	IEC 62368-1
		Determining External Circuit Transient Voltages Clause-5.4.2.3.2.4	IEC 62368-1
		Determining Transient Voltage levels by Measurement Clause-5.4.2.3.2.5	IEC 62368-1
		Determining Required Withstand Voltage Clause-5.4.2.3.3	IEC 62368-1

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Sl.	Telecom	Test Parameter or Type of Testing	Standard/
No.	Equipment/P	V1 8	Specification
	roduct		-
	Audio/Video,	Determining Clearances using Required Withstand	IEC 62368-1
	Information and		
	Communication		
	Technology	Determining the adequacy of a Clearance using an	IEC 62368-1
	Equipment:	Electric Strength Test	
	Safety	Clause-5.4.2.4	
	Requirements	Compliance Criteria	IEC 62368-1
		Clause-5.4.2.6	
		Creepage Distances	IEC 62368-1
		Clause-5.4.3	
		Antenna Terminal Insulation	IEC 62368-1
		Clause-5.4.5	
		Antenna Terminal Insulation Test Method	IEC 62368-1
		Clause-5.4.5.2	
		Antenna Terminal Insulation Compliance Criteria	IEC 62368-1
		Clause-5.4.5.3	
		Insulation of Internal Wire as a Part of a Supplementary	IEC 62368-1
		Safeguard	
		Clause-5.4.6	
		Humidity Conditioning	IEC 62368-1
		Clause-5.4.8	
		Electric Strength Test	IEC 62368-1
		Clause-5.4.9	
		Test Procedure for Type Testing of Solid Insulation	IEC 62368-1
		Clause- 5.4.9.1	
		Test Procedure for Routine Tests	IEC 62368-1
		Clause-5.4.9.2	
			l

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Sl.	Telecom	Test Parameter or Type of Testing	Standard/
No.	Equipment/P	••	Specification
	roduct		
	Audio/Video,	Impulse Test	IEC 62368-1
		Clause-5.4.10.2.2	
	Communication	Steady State Test	IEC 62368-1
	Technology	Clause-5.4.10.2.3	
	<b>Equipment:</b>	Compliance Criteria	IEC 62368-1
	Safety	Clause-5.4.10.3	
	Requirements	Test Method and Compliance Criteria for Separation	IEC 62368-1
		between External Circuits and Earth	
		Clause-5.4.11.3	
		Protective Conductor	IEC 62368-1
		Clause- 5.6	
		Requirements for Protective Conductors	IEC 62368-1
		Clause-5.6.2	
		Colour of Insulation	IEC 62368-1
		Clause-5.6.2.2	
		Requirements for Protective Earthing Conductors	IEC 62368-1
		Clause- 5.6.3	7777 (2010)
		Requirements for Protective Bonding Conductors Clause-5.6.4	IEC 62368-1
		Determination of the Protective Current Rating	IEC 62368-1
		Clause-5.6.4.2	
		Other than Mains Supply as the Source	IEC 62368-1
		Clause- 5.6.4.2.2	
		Current Limiting and Over Current Protective Devices	IEC 62368-1
		Clause-5.6.4.2.4	
		Terminals for Protective Conductors	IEC 62368-1
		Clause- 5.6.5	

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Audio/Video, Information and	Test Method for Resistance of the Protective Bonding System	IEC 62368-1
	Communication Technology Equipment:	Clause- 5.6.6.2 Compliance Criteria for Resistance of the Protective Bonding System	IEC 62368-1
	Safety Requirements	Clause- 5.6.6.3 Functional Earthing	IEC 62368-1
		Clause-5.6.8  Prospective Touch Voltage, Touch Current and Protective Conductor Current Clause-5.7	IEC 62368-1
		Measuring Devices and Networks Clause-5.7.2	IEC 62368-1
		Measurement of Touch Current Clause-5.7.2.1	IEC 62368-1
		Measurement of Voltage Clause- 5.7.2.2	IEC 62368-1
		Equipment Set-up, Supply Connections and Earth Connections Clause-5.7.3	IEC 62368-1
		Earthed accessible Conductive Parts Clause-5.7.5	IEC 62368-1
		Requirements when Touch Current exceeds ES2 Limits Clause-5.7.6	IEC 62368-1
		Prospective Touch Voltage and Touch Current associated with External Circuits Clause-5.7.7	IEC 62368-1

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Sl.	Telecom	Test Parameter or Type of Testing	Standard/
No.	Equipment/P roduct		Specification
	Touter		
	Audio/Video,	Touch Current from Coaxial Cables	IEC 62368-1
	Information and		
	Communication Technology	Prospective rouch voltage and rouch Current	IEC 62368-1
	Equipment:	associated with Paired Conductor Cables Clause-5.7.7.2	
	Safety Requirements	Classification of Power Sources (PS) and Potential Ignition Sources (PIS) Clause-6.2	IEC 62368-1
		Power Source Circuit Classifications Clause-6.2.2	IEC 62368-1
		PS1Circuit Clause- 6.2.2.4	IEC 62368-1
		PS2Circuit Clause- 6.2.2.5	IEC 62368-1
		PS3Circuit Clause- 6.2.2.6	IEC 62368-1
		Classification of Potential Ignition Sources Clause-6.2.3	IEC 62368-1
		Arcing PIS Clause- 6.2.3.1	IEC 62368-1
		Resistive PIS Clause-6.2.3.2	IEC 62368-1
		Safeguards against Fire under Normal Operating Conditions and Abnormal Operating Conditions Clause- 6.3.2	IEC 62368-1
		Injury Caused by Hazardous Substances Clause- 7	IEC 62368-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Audio/Video, Information and Communication		IEC 62368-1
	Technology Equipment:	MS1 Clause- 8.2.2 MS2	IEC 62368-1
	Safety Requirements	Clause-8.2.3 MS3	IEC 62368-1
		Clause-8.2.4 Safeguards against Moving Parts Clause-8.5	IEC 62368-1
		Instructional Safeguard Requirements Clause-8.5.2	IEC 62368-1
		Compliance Criteria (Safeguards against Moving Parts) Clause-8.5.3 Special Categories of Equipment Containing Moving	IEC 62368-1
		Parts Clause-8.5.4	IEC 02308-1
		Equipment Containing Work Cells with MS3 Parts Clause-8.5.4.2	IEC 62368-1
		Protection of Persons in the Work Cell Clause-8.5.4.2.1	IEC 62368-1
		Access Protection Override Clause-8.5.4.2.2 Visual Indicator	IEC 62368-1
		Clause-8.5.4.2.2.2 Emergency Stop System	IEC 62368-1
		Clause- 8.5.4.2	

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#### GOVERNMENT OF INDIA MINISTRY OF COMMUNICATIONS DEPARTMENT OF TELECOMMUNICATIONS TELECOMMUNICATION ENGINEERING CENTRE



Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi - 110 001

### SCOPE OF DESIGNATION (ANNEXURE)

**Laboratory Name:** M/s Swastik Electronics Testing Centre (OPC)

Private Limited, Ghaziabad

Plot No-16, Mainapur Industrial Area, Uttar Pradesh,

**Ghaziabad - 201 003** 

Certificate Number: TEC/MRA/CAB/IND-D/103 Page 38 of 42

Sl.	Telecom	Test Parameter or Type of Testing	Standard/
No.	Equipment/P	••	Specification
	roduct		
	,		T
	Audio/Video,	Endurance Requirements	IEC 62368-1
	Information and	Clause-8.5.4.2.4	
	Communication	Equipment having an Electro Mechanical Device for	IEC 62368-1
	Technology	Destruction of Media	
	Equipment:	Clause- 8.5.4.3	
	Safety Requirements	Instructional Safeguards against Moving Parts Clause-8.5.4.3.2	IEC 62368-1
		Disconnection from the Supply Clause- 8.5.4.3.3	IEC 62368-1
		Test Method for High Pressure Lamps Clause- 8.5.5.2	IEC 62368-1
		Compliance Criteria for High Pressure Lamps Clause- 8.5.5.3	IEC 62368-1
		Stability of Equipment Clause- 8.6	IEC 62368-1
		Static Stability Clause-8.6.2	IEC 62368-1
		Test Setup for Static Stability Clause- 8.6.2.1	IEC 62368-1
		Static Stability Test Clause-8.6.2.2	IEC 62368-1
		Downward Force Test Clause-8.6.2.3	IEC 62368-1
		Compliance Criteria for Stability of Equipment Clause:8.6.2.4	IEC 62368-1
		Test Method and Compliance Criteria for Relocation Stability Clause- 8.6.3.2	IEC 62368-1

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Sl.	Telecom	Test Parameter or Type of Testing	Standard/
No.	Equipment/P		Specification
	roduct		
	A 30 /570 3	H. J. J. B. W. J. G. J. G. J. G. J. J. G. J. J. G. J. J. G. J. J. J. G. J.	IEC (22(0.1
	Audio/Video,	Horizontal Force Test and Compliance Criteria	IEC 62368-1
	Information and		
	Communication	Equipment Mounted to a Wall, Ceiling or Other	IEC 62368-1
	Technology	Structure	
	Equipment: Safety	Clause-8.7	
	Requirements	Test Methods for Equipment Mounted to a Wall,	IEC 62368-1
	Requirements	Ceiling or Other Structure	
		Clause- 8.7.2	
		Handle Strength	IEC 62368-1
		Clause-8.8	
		Test Method (Handle Strength)	IEC 62368-1
		Clause-8.8.2	
		Wheels or Casters Attachment Requirements	IEC 62368-1
		Clause-8.9	TEG (22(0.1
		Carts, Stands and Similar Carriers	IEC 62368-1
		Clause-8.10	TEG (22 (0.1
		Cart, Stand or Carrier Loading Test and Compliance	IEC 62368-1
		Criteria	
		Clause-8.10.3	IEC 62368-1
		Cart, Stand or Carrier Impact Test Clause-8.10.4	IEC 62368-1
			IEC 62368-1
		Touch Temperature Limits Clause-9.3	IEC 02308-1
		Normal Operating Condition Tests, Abnormal	IEC 62368-1
		Operating Condition Tests, Abnormal Operating Condition Tests and Single Fault Condition	1LC 02306-1
		Tests	
		Clause-Annex B	
		Clause-Alliex D	

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Toduct		
	Audio/Video, Information and	Input Test Clause- Annex B.2.5	IEC 62368-1
	Communication Technology Equipment: Safety Requirements	Operating Temperature Measurement Conditions Clause-Annex B.2.6	IEC 62368-1
		Simulated Abnormal Operating Conditions Clause- B.3	IEC 62368-1
		DC Mains Polarity Test Clause-Annex B.3.3	IEC 62368-1
		Setting of Voltage Selector Clause- Annex B.3.4	IEC 62368-1
		Maximum Load at Output Terminals Clause-Annex B.3.5	IEC 62368-1
		Reverse Battery Polarity Clause-AnnexB.3.6	IEC 62368-1
		Audio Amplifier Abnormal Operating Conditions Clause- Annex B.3.7	IEC 62368-1
		Compliance Criteria during and after Abnormal Operating Conditions Clause- Annex B.3.8	IEC 62368-1
		Simulated Single Fault Conditions Clause-Annex B.4	IEC 62368-1
		Temperature Controlling Device Clause-Annex B.4.2	IEC 62368-1
		Motor Tests Clause- Annex B.4.3	IEC 62368-1
		Functional Insulation Clause-Annex B.4.4	IEC 62368-1

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Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Audio/Video, Information and	Clearances for Functional Insulation Clause-Annex B.4.4.1	IEC 62368-1
	Communication Technology Equipment:	Creepage Distances for Functional Insulation Clause-Annex B.4.4.2	IEC 62368-1
	Safety Requirements	Functional Insulation on Coated Printed Boards Clause-Annex B.4.4.3	IEC 62368-1
	requirements	Short-Circuit and Interruption of Electrodes in Tubes and Semiconductors Clause-Annex B.4.5	IEC 62368-1
		Short-Circuit or Disconnection of Passive Components Clause-Annex B.4.6	IEC 62368-1
		Continuous Operation of Components Clause-Annex B.4.7	IEC 62368-1
		Compliance Criteria during and after Single Fault Conditions Clause- Annex B.4.8	IEC 62368-1
		Battery Charging and Discharging under Single Fault Conditions Clause-Annex B.4.9	IEC 62368-1
	Secondary Cells and Batteries	Charging Procedure for Test Purpose Clause- 7.1	IEC 62133-2
	(Lithium-ion System)- Safety	Continuous Charging at Constant Voltage (Cell) Clause- 7.2. 1	IEC 62133-2
	Requirements	Crush (Cells) Clause- 7.3.5	IEC 62133-2
		External Short Circuit (Cell) Clause- 7.3.1	IEC 62133-2

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Certificate Number: TEC/MRA/CAB/IND-D/103 Page 42 of 42

Sl. No.	Telecom Equipment/P roduct	Test Parameter or Type of Testing	Standard/ Specification
	Casandany Calls	Formed Discharge (Calle)	IEC 62133-2
	Secondary Cells and Batteries	Forced Discharge (Cells) Clause- 7.3.7	IEC 02133-2
	(Lithium-ion	External Short Circuit (Battery)	IEC 62133-2
	System)- Safety	,	
	Requirements	Free Fall	IEC 62133-2
		Clause- 7.3.3	
		Insulation Resistance Test	IEC 62133-2
		Clause- 5.2	
		Mechanical Shock	IEC 62133-2
		Clause- 7.3.8.2	
		Overcharging of Battery	IEC 62133-2
		Clause- 7.3.6	
		Thermal Abuse (Cell)	IEC 62133-2
		Clause- 7.3.4	
		Vibration	IEC 62133-2
		Clause- 7.3.8.1	
		Case Stress at High Ambient Temperature	IEC 62133-2
		Clause- 7.2.2	

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