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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-110001

CERTIFICATE OF DESIGNATION

M/s Deltaphi Labs Private Limited, Mumbai

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

Unit No. 606, Meadows, Sahar Plaza, JB Nagar, Andheri East, Mumbai-400 059

In the field of Testing

Certificate No. TEC/MRA/CAB/IND-D/98

Issue Date: 01/08/2024 **Validity: 01/08/2024 to 31/07/2027**

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

Signed by Sanjeev Kumar Arya
Date: 01-08-2024 17:04:56

Sanjeev Kumar Arya
Director(CA)
For Designating Authority
TEC

Certificate No: TEC/MRA/CAB/IND-D/98 dated 01/08/2024 issued to
M/s Deltaphi Labs Private Limited, Mumbai
Unit No. 606, Meadows, Sahar Plaza, JB Nagar,
Andheri East, Mumbai-400 059

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Validity: -01/08/2024 to 31/07/2027

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.

*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 Deltaphi Labs Private Limited, Mumbai**
Unit No. 606, Meadows, Sahar Plaza, JB Nagar,
Andheri East, Mumbai-400 059

Certificate Number: TEC/MRA/CAB/IND-D/98 **Page 1 of 11**

Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
1.	Router	Parameters Linked with Product Variant	BGP for IPv6 RFC 2545. Annex-P11	TEC ER No. TEC37682407
			BGP4 RFC 4271 and MBGP RFC 4760 Annex-P11	TEC ER No. TEC37682407
			Dynamic Routing Annex-P11	TEC ER No. TEC37682407
			IPv4 Parameters Set-D RFC 791. Annex-P11	TEC ER No. TEC37682407
			IPv6 RFC 2460 or 8200 Annex-P11	TEC ER No. TEC37682407
			IPv6 Dual Stack RFC 4213 Clause-2.1 and 2.2, Annex-P6	TEC ER No. TEC37682407
			Manageability SNMPV2 or V3 RFC 3410 3416, Annex-P11	TEC ER No. TEC37682407
			OSPFv2 RFC 2328, Annex-P11	TEC ER No. TEC37682407
			OSPFv3 for IPv6 RFC 2740, Annex-P11	TEC ER No. TEC37682407
			PPPoE RFC 2516, Annex-P11	TEC ER No. TEC37682407
			Radius RFC 2865, Annex-P11	TEC ER No. TEC37682407
			Static Routing Annex-P11	TEC ER No. TEC37682407
			TCP Parameters RFC 793, Annex-P11	TEC ER No. TEC37682407
			LDP RFC 5036, Annex-P11	TEC ER No. TEC37682407

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Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	Router	**Parameters Linked with Product Variant**	IPv6 Complete Suite RFC 2460 or 8200, RFC 4861, RFC4862, RFC 1981, RFC 4443, Annex- P7 and Annex-P11	TEC ER No. TEC37682407
		Interface: 1 G Optical Ethernet	Average Launch Power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC37682407
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC37682407
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC37682407
		Interface: 10 G Optical Ethernet	Average Launch Power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC37682407
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC37682407
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC37682407
		Interface: 25 G Optical Ethernet	Average Launch Power IEEE 802.3-2018 Cl. 114, Annex-H	TEC ER No. TEC37682407
			Receiver Sensitivity IEEE 802.3-2018 Cl. 114, Annex-H	TEC ER No. TEC37682407
			Wavelength IEEE 802.3-2018 Cl. 114, Annex-H	TEC ER No. TEC37682407
		Interface: 40 G Optical Ethernet	Average Launch Power IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC37682407
			Receiver Sensitivity IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC37682407
			Wavelength IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC37682407

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Certificate Number: TEC/MRA/CAB/IND-D/98 **Page 3 of 11**

Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	Router	**Interface: 100 G Optical Ethernet**	Average Launch Power IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC37682407
			Receiver Sensitivity IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC37682407
			Wavelength IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC37682407
		Interface: 200 G Optical Ethernet	Average Launch Power IEEE 802.3cn Cl 121 122, Annex-H	TEC ER No. TEC37682407
			Receiver Sensitivity IEEE 802.3cn Cl 121 122, Annex-H	TEC ER No. TEC37682407
			Wavelength IEEE 802.3cn Cl 121 122, Annex-H	TEC ER No. TEC37682407
		Interface: 400 G Optical Ethernet	Average Launch Power IEEE 802.3cn Cl 122 124, Annex-H	TEC ER No. TEC37682407
			Receiver Sensitivity IEEE 802.3cn Cl 122 124, Annex-H	TEC ER No. TEC37682407
			Wavelength IEEE 802.3cn Cl 122 124, Annex-H	TEC ER No. TEC37682407
		Interface: Fast Ethernet Optical	Average Launch Power IEEE 802.3u, Annex-H	TEC ER No. TEC37682407
			Receiver Sensitivity IEEE 802.3u, Annex-H	TEC ER No. TEC37682407
			Wavelength IEEE 802.3u, Annex-H	TEC ER No. TEC37682407
2.	**LAN Switch**	**Parameters linked with Product Variant**	Dynamic Routing Functional Test Annex-P11	TEC ER No. TEC37942407
			IPv4 Set-D RFC 791, Annex-P11	TEC ER No. TEC37942407

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Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	LAN Switch	**Parameters linked with Product Variant**	IPv6 RFC 2460 or 8200, Annex-P11	TEC ER No. TEC37942407
			Mac Learning and Packet Forwarding, Annex-P11	TEC ER No. TEC37942407
			Manageability SNMP V2 or V3 RFC 3410, RFC 3416, Annex-P11	TEC ER No. TEC37942407
			Spanning Tree Protocol IEEE 802.1d, Annex-P11	TEC ER No. TEC37942407
			Static Routing Annex-P11	TEC ER No. TEC37942407
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC37942407
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC37942407
		Interface: Fast Ethernet Optical	Average Launch Power IEEE 802.3u, Annex-H	TEC ER No. TEC37942407
			Receiver Sensitivity IEEE 802.3u, Annex-H	TEC ER No. TEC37942407
			Wavelength IEEE 802.3u, Annex-H	TEC ER No. TEC37942407
		Interface: 1 G Optical Ethernet	Average Launch Power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC37942407
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC37942407

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Certificate Number: TEC/MRA/CAB/IND-D/98 **Page 5 of 11**

Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	LAN Switch	**Interface: 1 G Optical Ethernet**	Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC37942407
		Interface: 10 G Optical Ethernet	Average Launch Power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC37942407
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC37942407
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC37942407
		Interface: 40 G Optical Ethernet	Average Launch Power IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC37942407
			Receiver Sensitivity IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC37942407
			Wavelength IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC37942407
		Interface: 100 G Optical Ethernet	Average Launch Power IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC37942407
			Receiver Sensitivity IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC37942407
			Wavelength IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC37942407
3.	**IP Security Equipment**	**Parameters linked with Product Variant**	IDS Functional Test Annex-P11	TEC ER No. TEC34732403
			IPS Functional Test Annex-P11	TEC ER No. TEC34732403
			IPSec Functional Test Annex-P11	TEC ER No. TEC34732403

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Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	IP Security Equipment	**Parameters linked with Product Variant**	IPv4 Parameters Set-D RFC 791, Annex-P11	TEC ER No. TEC34732403
			LDP RFC 5036, Annex-P11	TEC ER No. TEC34732403
			Manageability SNMP V2 or V3 RFC 3410, RFC 3416, Annex P11	TEC ER No. TEC34732403
			NAT Functional Test Annex-P11	TEC ER No. TEC34732403
			Policy Functional Test Annex-P11	TEC ER No. TEC34732403
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC34732403
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC34732403
		Interface: Fast Ethernet Optical	Average Launch Power IEEE 802.3u, Annex-H	TEC ER No. TEC34732403
			Receiver Sensitivity IEEE 802.3u, Annex-H	TEC ER No. TEC34732403
			Wavelength IEEE 802.3u, Annex-H	TEC ER No. TEC34732403
		Interface: 1 G Optical Ethernet	Average Launch Power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC34732403
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC34732403

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Certificate Number: TEC/MRA/CAB/IND-D/98 **Page 7 of 11**

Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	IP Security Equipment	**Interface: 1 G Optical Ethernet**	Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC34732403
		Interface: 10 G Optical Ethernet	Average Launch Power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC34732403
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC34732403
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC34732403
		Interface: 40 G Optical Ethernet	Average Launch Power IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC34732403
			Receiver Sensitivity IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC34732403
			Wavelength IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC34732403
		Interface: 100 G Optical Ethernet	Average Launch Power IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC34732403
			Receiver Sensitivity IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC34732403
			Wavelength IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC34732403
4.	**PON Family of Broadband Equipment**	**Parameters linked with Product Variant**	DOS Prevention SSH v1-2 for CLI in PON. ITU-T G.984.3 section V.2 SSH v2 RFC 4251, Annex-J3	TEC ER No. TEC14762407
			Dual IP Layer Operation RFC 4213 – Address RFC 4213 Cl. 2.1, Annex-P6	TEC ER No. TEC14762407

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Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	PON Family of Broadband Equipment	**Parameters linked with Product Variant**	Dual IP Layer Operation RFC 4213 – DNS RFC 4213 Cl. 2.1 and 2.2, Annex-P6	TEC ER No. TEC14762407
			Frame loss of PON RFC 2544. Annex-J3	TEC ER No. TEC14762407
			IPV6 Extn Header Parameters RFC 2460 or RFC 8200, Annex-P7	TEC ER No. TEC14762407
			IPV6 Header Parameters RFC 2460 / RFC 8200, Annex-P7	TEC ER No. TEC14762407
			Latency of PON RFC 2544, Annex-J3	TEC ER No. TEC14762407
			MAC Address Learning and Aging Control G.984.1, Annex-J3	TEC ER No. TEC14762407
			MAC Address Limitation in PON IEEE 802.3, Annex-J3	TEC ER No. TEC14762407
			MAC Learning Support at OLT G.984.1, Annex-J3	TEC ER No. TEC14762407
			Max Throughput of PON RFC 2544, Annex-J3	TEC ER No. TEC14762407
			MAC Based 802.1x Authentication in PON IEEE802.1x, Annex-J3	TEC ER No. TEC14762407
			Maximum Bandwidth Limiting in PON ITU-T-REC-G.984.3, Section 7.5, Annex-J3	TEC ER No. TEC14762407

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Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	PON Family of Broadband Equipment	**Parameters linked with Product Variant**	Minimum Two Classifications in PON ITU-T-REC G. 984.3 Section 7.5, Annex-J3	TEC ER No. TEC14762407
			Minimum Guaranteed Bandwidth in PON ITU-T-REC G. 984.3 Section 7.5, Annex-J3	TEC ER No. TEC14762407
			Password Based Authentication in PON ITU-T G. 988, IEEE 802.3, Annex-J3	TEC ER No. TEC14762407
			Port-id Based VLAN Support at OLT G.984.1 and IEEE 802.1Q (testing Procedure), Annex-J3	TEC ER No. TEC14762407
			Switch Fabric Throughput Capability OLT G.984.1, Annex-J3	TEC ER No. TEC14762407
			VLAN Stacking to Network Support at OLT G.984.1 and IEEE 802.1Q (testing procedure), Annex-J3	TEC ER No. TEC14762407
		Interface: GPON	Operating Wavelength in Upstream direction G.984.2, Annex-J2	TEC ER No. TEC14762407
			Operating Wavelength in downstream direction G.984.2, Annex-J2	TEC ER No. TEC14762407
			Optical Output Power for GPON Int. at OLT G.984.2, Annex-J2	TEC ER No. TEC14762407

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Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	PON Family of Broadband Equipment	**Interface: GPON**	Optical Output Power for GPON Int. at ONT G.984.2, Annex-J2	TEC ER No. TEC14762407
			Receiver Sensitivity for GPON Int. at OLT G.984.2, Annex-J2	TEC ER No. TEC14762407
			Receiver Sensitivity for GPON Int. at ONT G.984.2, Annex-J2	TEC ER No. TEC14762407
			Throughput for GPON Interface G.984.1, RFC 2544, Annex-J3	TEC ER No. TEC14762407
		Interface: EPON	Operating Wavelength in Upstream direction for EPON Int. IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762407
			Operating Wavelength in downstream direction for EPON Int. IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762407
			Optical Output Power for EPON Int. at OLT IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762407
			Optical Output Power for EPON Int. at ONT IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762407
			Receiver Sensitivity for EPON Int. at OLT IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762407
			Receiver Sensitivity for EPON Int. at ONT IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762407

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(ANNEXURE)

Laboratory Name: **M/s Deltaphi Labs Private Limited, Mumbai**
Unit No. 606, Meadows, Sahar Plaza, JB Nagar,
Andheri East, Mumbai-400 059

Certificate Number: TEC/MRA/CAB/IND-D/98 **Page 11 of 11**

Validity: 01/08/2024 to 31/07/2027 **Last Amended on: ----**

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing		Standard/ Specification
	PON Family of Broadband Equipment	**Interface: EPON**	Throughput IEEE 802.3ah, RFC 2544, Annex-J2	TEC ER No. TEC14762407
		Interface: 1 G Optical Ethernet	Average Launch Power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC14762407
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC14762407
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC14762407
		Interface: 10 G Optical Ethernet	Average Launch Power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC14762407
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC14762407
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC14762407
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC14762407
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC14762407

Signed by Sanjay Bhardwaj
Date: 01-08-2024 17:27:13
AD (CA), TEC

***The validity of Certificate is up to 31/07/2027 or the continued validity of NABL Accreditation, whichever is earlier.**