



**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 GRANITE RIVER LABS INDIA SERVICES PRIVATE LIMITED,
BENGALURU**

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

**Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5, Outer Ring Road,
Doddanekundi, K R Puram Hobli, Bengaluru-560 037**

In the field of Testing

Certificate No. TEC/MRA/CAB/IND-D/88

Issue Date: 15/01/2024

Validity: 15/01/2024 to 14/01/2027

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 Vijay Dixit

Date: 15-01-2024 11:55:41

Director (CA)

For Designating Authority

TEC

Certificate No: TEC/MRA/CAB/IND-D/88 dated 15/01/2024 issued to
M/S Granite River Labs India Services Private Limited, Bengaluru
Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5,
Outer Ring Road, Doddanekundi, K R Puram Hobli,
Bengaluru-560037



Validity: - 15/01/2024 to 14/01/2027

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 recognised 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 Organisational 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 Granite River Labs India Services Private Limited,
Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5,
Outer Ring Road, Doddanekundi, K R Puram,
Hobli, Bengaluru-560037

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Validity: 15/01/2024 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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1.	Router	Parameters Linked with Product Variant	BGP4 RFC 4271 and MBGP RFC 4271, RFC 4760, Annex-P11	TEC ER No. TEC 37682308
			Dynamic Routing Annex-P11	TEC ER No. TEC 37682308
			IPv4 Parameters Set-D RFC 791, Annex-P11	TEC ER No. TEC 37682308
			IPv6 Dual Stack RFC 4213 clause 2.1 and 2.2, Annex-P6	TEC ER No. TEC 37682308
			Manageability SNMPV2 or V3 RFC 3410, RFC 3416, Annex-P11	TEC ER No. TEC 37682308
			OSPFv2 RFC 2328, Annex-P11	TEC ER No. TEC 37682308
			OSPFv3 for IPv6 RFC 2740, Annex-P11	TEC ER No. TEC 37682308
			PPPoE RFC 2516, Annex-P11	TEC ER No. TEC 37682308
			Radius RFC 2865, Annex-P11	TEC ER No. TEC 37682308
			Static Routing Annex-P11	TEC ER No. TEC 37682308
			TCP Parameters RFC 793, Annex-P11	TEC ER No. TEC 37682308
			LDP RFC 5036, Annex-P11	TEC ER No. TEC 37682308

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Validity: 15/01/2024 to 14/01/2027

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Router	Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 37682308
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 37682308
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 37682308
		Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 37682308
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 37682308
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 37682308
		Interface: 25 G Optical Ethernet	Average Launch power IEEE 802.3-2018 Cl. 114, Annex-H	TEC ER No. TEC 37682308
			Receiver Sensitivity IEEE 802.3-2018 Cl. 114, Annex-H	TEC ER No. TEC 37682308
			Wavelength IEEE 802.3-2018 Cl. 114, Annex-H	TEC ER No. TEC 37682308
		Interface: 40 G Optical Ethernet	Average Launch power IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 37682308
			Receiver Sensitivity IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 37682308
			Wavelength IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 37682308

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Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Router	Interface: 100 G Optical Ethernet	Average Launch power IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 37682308
			Receiver Sensitivity IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 37682308
			Wavelength IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 37682308
		Interface: 200 G Optical Ethernet	Average Launch power IEEE 802.3cn Cl 121 122, Annex-H	TEC ER No. TEC 37682308
			Receiver Sensitivity IEEE 802.3cn Cl 121 122, Annex-H	TEC ER No. TEC 37682308
			Wavelength IEEE 802.3cn Cl 121 122, Annex-H	TEC ER No. TEC 37682308
		Interface: 400 G Optical Ethernet	Average Launch power IEEE 802.3cn Cl 122 124, Annex-H	TEC ER No. TEC 37682308
			Receiver Sensitivity IEEE 802.3cn Cl 122 124, Annex-H	TEC ER No. TEC 37682308
			Wavelength IEEE 802.3cn Cl 122 124 Annex-H	TEC ER No. TEC 37682308
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC 37682308

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Router	Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC 37682308
		Interface: STM-1 Electrical	Nominal Bit Rate with Tolerance ITU-T G.703, Annex-K	TEC ER No. TEC 37682308
		Interface: STM-1 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
		Interface: STM-4 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC 37682308

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Router	Interface: STM-4 Optical	Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
		Interface: STM-16 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC 37682308
		Interface: STM-64 Optical	Mean Launched Power ITU-T G.691, Annex-K	TEC ER No. TEC 37682308
			Nominal Bit Rate with Tolerance ITU-T G.707, Annex-K	TEC ER No. TEC 37682308
			Operating Wavelength Range ITU-T G.691, Annex-K	TEC ER No. TEC 37682308
			Receiver Overload ITU-T G.691, Annex-K	TEC ER No. TEC 37682308
			Receiver Sensitivity ITU-T G.691, Annex-K	TEC ER No. TEC 37682308

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing		Standard/ Specification
2.	LAN Switch	Parameters linked with Product Variant	Dynamic Routing Functional Test Annex-P11	TEC ER No. TEC 37942308
			IPv4 Set-D RFC 791, Annex-P11	TEC ER No. TEC 37942308
			Mac Learning and Packet Forwarding Annex-P11	TEC ER No. TEC 37942308
			Manageability SNMP V2 or V3 RFC 3410, RFC 3416, Annex-P11	TEC ER No. TEC 37942308
			Spanning Tree Protocol IEEE 802.1d, Annex-P11	TEC ER No. TEC 37942308
			Static Routing Annex-P11	TEC ER No. TEC 37942308
		Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 37942308
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 37942308
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 37942308
		Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 37942308
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 37942308
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 37942308

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	LAN Switch	Interface: 40 G Optical Ethernet	Average Launch power IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 37942308
			Receiver Sensitivity IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 37942308
			Wavelength IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 37942308
		Interface: 100 G Optical Ethernet	Average Launch power IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 37942308
			Receiver Sensitivity IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 37942308
			Wavelength IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 37942308
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC 37942308
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC 37942308
		Interface: STM-1 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC 37942308

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Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	LAN Switch	Interface: STM-1 Optical	Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
		Interface: STM-4 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
		Interface: STM-16 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC 37942308
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC 37942308

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing		Standard/ Specification
3.	IP Security Equipment	Parameters linked with Product Variant	IDS Functional test Annex-P11	TEC ER No. TEC 34732401
			IPS Functional test Annex-P11	TEC ER No. TEC 34732401
			IPSec Functional test Annex-P11	TEC ER No. TEC 34732401
			IPv4 Set-D RFC 791, Annex-P11	TEC ER No. TEC 34732401
			LDP RFC 5036, Annex-P11	TEC ER No. TEC 34732401
			Manageability SNMP V2 or V3 RFC 3410, RFC 3416, Annex P11	TEC ER No. TEC 34732401
			NAT Functional Test Annex-P11	TEC ER No. TEC 34732401
			Policy Functional Test Annex-P11	TEC ER No. TEC 34732401
			UTM URL Content & Anti-virus Filtering Annex-P11	TEC ER No. TEC 34732401
	Interface: 1 G Optical Ethernet		Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 34732401
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 34732401
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC 34732401

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	IP Security Equipment	Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 34732401
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 34732401
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC 34732401
		Interface: 40 G Optical Ethernet	Average Launch power IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 34732401
			Receiver Sensitivity IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 34732401
			Wavelength IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC 34732401
		Interface: 100 G Optical Ethernet	Average Launch power IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 34732401
			Receiver Sensitivity IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 34732401
			Wavelength IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC 34732401
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC 34732401
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC 34732401

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
4.	Hybrid Set Top Box	Parameters linked with Product Variant	IPv6 Dual Stack as per RFC 4213 RFC 4213 Clause 2.1 and 2.2, Annex-P6
		TCP Parameters RFC 793, Annex-P11	TEC ER No. TEC30042401
		TCP Parameters RFC 793, Annex-P4	TEC ER No. TEC30042401
		UDP Parameters RFC 768, Annex-P5	TEC ER No. TEC30042401
		Interface: USB 2.0	Data Transfer rates USB 2.0
			Maximum Power Output USB 2.0
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H
		Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H
			Wavelength IEEE 802.3z Cl. 38, Annex-H

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SCOPE OF DESIGNATION **(ANNEXURE)**

Laboratory Name: M/S Granite River Labs India Services Private Limited,
Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5,
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Hobli, Bengaluru-560037

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
5.	Session Border Controller	Dual IP Layer Operation RFC 4213 Address RFC 4213 Cl. 2.1, Annex-P6	TEC ER No. TEC67222401
		Dual IP Layer Operation RFC 4213 – DNS RFC 4213 Cl. 2.1 and 2.2, Annex-P6	TEC ER No. TEC67222401
		RTCP Parameters RFC 3551 Set-B RFC 3551, Annex-P3	TEC ER No. TEC67222401
		RTP Parameters RFC 3550 Set-C RFC 3550, Annex-P2	TEC ER No. TEC67222401
		SIP Parameters Set-C RFC 3261, Annex-P1	TEC ER No. TEC67222401
		TCP Parameters RFC 793, Annex-P4	TEC ER No. TEC67222401
		UDP Parameters RFC 768, Annex-P5	TEC ER No. TEC67222401
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H TEC ER No. TEC67222401
		Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H TEC ER No. TEC67222401
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H TEC ER No. TEC67222401
			Wavelength IEEE 802.3z Cl. 38, Annex-H TEC ER No. TEC67222401

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	Session Border Controller	Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC67222401
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC67222401
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC67222401
6.	Media Gateway	Parameters linked with Product Variant	DTMF Parameters Set-A RFC 4733, Annex-P8	TEC ER No. TEC66492401
			IPv4 Parameters Set-A RFC 791, Annex-P6	TEC ER No. TEC66492401
			RTP Parameters RFC 3550 Set-B RFC 3550, Annex-P2	TEC ER No. TEC66492401
			SCTP Parameters Set- A RFC 4960, Annex-P9	TEC ER No. TEC66492401
			SIP Parameters Set-B RFC 3261, Annex-P1	TEC ER No. TEC66492401
			TCP Parameters RFC 793, Annex-P4	TEC ER No. TEC66492401
			UDP Parameters RFC 768, Annex-P5	TEC ER No. TEC66492401
			MGCP Connection Model H.248 Cl. 6, Annex-P5	TEC ER No. TEC66492401

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	Media Gateway	Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC66492401
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC66492401
		Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC66492401
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC66492401
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC66492401
		Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC66492401
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC66492401
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC66492401
		Interface: STM-1 Electrical	Nominal Bit Rate with Tolerance ITU-T G.703, Annex-K	TEC ER No. TEC66492401

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	Media Gateway	Interface: STM-1 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC66492401
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC66492401
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC66492401
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC66492401
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC66492401
7.	IP Terminal	Parameters linked with Product Variant	Dual IP Layer Operation RFC 4213 – Address RFC4213 Cl. 2.1, Annex-P6	TEC ER No. TEC67472401
			Dual IP Layer Operation RFC 4213 – DNS RFC 4213 Cl. 2.1 and 2.2, Annex-P6	TEC ER No. TEC67472401
			RTCP Parameters RFC 3551 Set-A RFC 3551, Annex-P3	TEC ER No. TEC67472401
			RTP Parameters RFC 3550 Set-A RFC 3550, Annex-P2	TEC ER No. TEC67472401
			SIP Parameters Set-A RFC 3261, Annex-P1	TEC ER No. TEC67472401
			TCP Parameters RFC 793, Annex-P4	TEC ER No. TEC67472401

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	IP Terminal	Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC67472401
			Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC67472401
		Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC67472401
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC67472401
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC67472401
8.	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. TEC14762401
			Dual IP Layer Operation RFC 4213 – Address RFC 4213 Cl. 2.1, Annex-P6	TEC ER No. TEC14762401
			Dual IP Layer Operation RFC 4213 – DNS RFC 4213 Cl. 2.1 and 2.2, Annex-P6	TEC ER No. TEC14762401

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	PON Family of Broadband Equipment	Parameters linked with Product Variant	Frame loss of PON RFC 2544, Annex-J3	TEC ER No. TEC14762401
			IPv4 Parameters Set-A RFC 791, Annex-P6	TEC ER No. TEC14762401
			Latency of PON RFC 2544, Annex-J3	TEC ER No. TEC14762401
			MAC Address Learning and Aging Control G.984.1, Annex-J3	TEC ER No. TEC14762401
			MAC Address Limitation in PON IEEE 802.3, Annex-J3	TEC ER No. TEC14762401
			MAC Learning Support at OLT G.984.1, Annex-J3 IEEE 802.3	TEC ER No. TEC14762401
			Max Throughput of PON RFC 2544, Annex-J3	TEC ER No. TEC14762401
			MAC Based 802.1x Authentication in PON IEEE 802.1x., Annex-J3	TEC ER No. TEC14762401
			Minimum Two Classifications in PON Annex-J3	TEC ER No. TEC14762401
			Minimum Guaranteed Bandwidth in PON Annex-J3	TEC ER No. TEC14762401
			Maximum Bandwidth Limiting in PON ITU-T-REC-G.984.3-200803 Section 7.5, Annex-J3	TEC ER No. TEC14762401

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	PON Family of Broadband Equipment	Parameters linked with Product Variant	Password Based Authentication in PON ITU-T G.984.3 section 9.2.2 12, Annex-J3	TEC ER No. TEC14762401
			Port-id Based VLAN Support at OLT G.984.1 IEEE 802.1Q (testing procedure), Annex-J3	TEC ER No. TEC14762401
			Switch Fabric Throughput Capability OLT Annex-J3	TEC ER No. TEC14762401
			VLAN Stacking to Network Support at OLT IEEE802.1ad and IEEE 802.1Q (testing procedure), Annex-J3	TEC ER No. TEC14762401
		Interface: GPON	Operating Wavelength in Upstream direction G.984.2, Annex-J2	TEC ER No. TEC14762401
			Operating Wavelength in downstream direction G.984.2, Annex-J2	TEC ER No. TEC14762401
			Opt Output Power for GPON Int. at OLT G.984.2, Annex-J2	TEC ER No. TEC14762401
			Opt Output Power for GPON Int. at ONT G.984.2, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for GPON Int. at OLT G.984.2, Annex-J2	TEC ER No. TEC14762401

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SCOPE OF DESIGNATION **(ANNEXURE)**

Laboratory Name: M/S Granite River Labs India Services Private Limited,
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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	PON Family of Broadband Equipment	Interface: GPON	Receiver Sensitivity for GPON Int. at ONT G.984.2, Annex-J2	TEC ER No. TEC14762401
			Throughput for GPON Interface G.984.1, RFC 2544, Annex-J3	TEC ER No. TEC14762401
		Interface: EPON	Operating Wavelength in Upstream direction for EPON Int. IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762401
			Operating Wavelength in downstream direction for EPON Int. IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762401
			Optical Output Power for EPON Int. at OLT IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762401
			Optical Output Power for EPON Int. at ONT IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for EPON Int. at OLT IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for EPON Int. at ONT IEEE 802.3ah, Annex-J2	TEC ER No. TEC14762401
			Throughput IEEE 802.3ah, RFC 2544, Annex-J2	TEC ER No. TEC14762401

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	PON Family of Broadband Equipment	Interface: XGPON	Operating Wavelength in downstream direction for XGPON Interface ITU-T G987.2, Annex-J2	TEC ER No. TEC14762401
			Operating Wavelength in upstream direction for XGPON Interface ITU-T G987.2, Annex-J2	TEC ER No. TEC14762401
			Opt Output Power for XGPON Interface at OLT G987.2, Annex-J2	TEC ER No. TEC14762401
			Opt Output Power for XGPON Int. at ONT G987.2, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for XGPON Int. at OLT G.987.2, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for XGPON Int. at ONT G.987.2, Annex-J2	TEC ER No. TEC14762401
			Throughput G.987.1, RFC 2544, Annex-J3	TEC ER No. TEC14762401
		Interface: XGSPON	Operating wavelength in upstream direction for XGSPON Interface G9807.1, Annex-J2	TEC ER No. TEC14762401
			Operating wavelength in downstream direction for XGSPON Interface G9807.1, Annex-J2	TEC ER No. TEC14762401

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing		Standard/ Specification
	PON Family of Broadband Equipment	Interface: XGSPON	Optical Output Power for XGSPON Interface at OLT G.9807.1, Annex-J2	TEC ER No. TEC14762401
			Opt Output Power for XGSPON Interface at ONT G.9807.1, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for XGSPON Int. at OLT G.9807.1, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for XGSPON Int. at ONT G.9807.1, Annex-J2	TEC ER No. TEC14762401
			Throughput G.9807.1, RFC 2544, Annex-J3	TEC ER No. TEC14762401
		Interface: NGPON2	Operating Wavelength in downstream direction for NGPON2 Interface G.989.2, Annex-J2	TEC ER No. TEC14762401
			Operating Wavelength in upstream direction for NGPON2 Interface G.989.2, Annex-J2	TEC ER No. TEC14762401
			Optical Output Power for NGPON2 Interface at OLT G.989.2, Annex-J2	TEC ER No. TEC14762401
			Optical Output Power for NGPON2 Interface at ONT G.989.2, Annex-J2	TEC ER No. TEC14762401

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	PON Family of Broadband Equipment	Interface: NGPON2	Receiver Sensitivity for NGPON2 Interface at OLT G.989.2, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for NGPON2 Interface at ONT G.989.2, Annex-J2	TEC ER No. TEC14762401
			Throughput G.989.2, RFC 2544, Annex-J3	TEC ER No. TEC14762401
		Interface: WDMPON	Operating Wavelength in Upstream direction for WDMPON Interface ITU-T G.694.1, Annex-J2	TEC ER No. TEC14762401
			Operating Wavelength in downstream direction for WDMPON Interface ITU-T G.694.1, Annex-J2	TEC ER No. TEC14762401
			Opt Output Power for WDMPON Int. at OLT ITU-T G.694.1, Annex-J2	TEC ER No. TEC14762401
			Opt Output Power for WDMPON Int. at ONT ITU-T G.694.1, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for WDMPON Int. at OLT ITU-T G.694.1, Annex-J2	TEC ER No. TEC14762401
			Receiver Sensitivity for WDMPON Int. at ONT ITU-T G.694.1, Annex-J2	TEC ER No. TEC14762401

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	PON Family of Broadband Equipment	Interface: WDM PON	Throughput for WDM PON Int. ITU-T G.694.1, RFC 2544, Annex-J3	TEC ER No. TEC14762401
		Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC14762401
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC14762401
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC14762401
		Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC14762401
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC14762308
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC14762401
		Interface: 10 BASE-T Ethernet	Link Speed IEEE 802.3. Annex-H	TEC ER No. TEC14762401
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC14762401
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC14762401

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	PON Family of Broadband Equipment	Interface: STM-1 Optical	Mean Launched Power for STM-1 Optical Interface ITU-T G.957, Annex-K	TEC ER No. TEC14762401
			Nominal Bit Rate with Tolerance for STM-1 Optical Interface ITU-T G.957, Annex-K	TEC ER No. TEC14762401
			Operating Wavelength Range for STM-1 Optical Interface ITU-T G.957, Annex-K	TEC ER No. TEC14762401
			Receiver Sensitivity for STM-1 Optical Interface ITU-T G.957, Annex-K	TEC ER No. TEC14762401
9.	Transmission Terminal Equipment-2	Interface: STM-1 Electrical	Nominal Bit Rate with Tolerance for STM-1 Electrical Interface ITU-T G.703	TEC ER No. TEC70122401
		Interface: STM-1 Optical	Mean Launched Power for STM-1 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Nominal Bit Rate with Tolerance for STM-1 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Operating Wavelength Range for STM-1 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Receiver Overload for STM-1 Optical Interface ITU-T G.957	TEC ER No. TEC70122401

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SCOPE OF DESIGNATION **(ANNEXURE)**

Laboratory Name: M/S Granite River Labs India Services Private Limited,
Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5,
Outer Ring Road, Doddanekundi, K R Puram,
Hobli, Bengaluru-560037

Certificate Number: TEC/MRA/CAB/IND-D/88

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Transmission Terminal Equipment-2	Interface: STM-1 Optical	Receiver Sensitivity for STM-1 Optical Interface (ITU-T G.957)	TEC ER No. TEC70122401
		Interface: STM-4 Optical	Mean Launched Power for STM-4 Optical Interface ITU-T G.957, G.691	TEC ER No. TEC70122401
			Nominal Bit Rate with Tolerance for STM-4 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Operating Wavelength Range for STM-4 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Receiver Overload for STM-4 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Receiver Sensitivity for STM-4 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
		Interface: STM-16 Optical	Mean Launched Power for STM-16 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Nominal Bit Rate with Tolerance for STM-16 Optical Interface ITU-T G.957	TEC ER No. TEC70122401

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Transmission Terminal Equipment-2	Interface: STM-16 Optical	Operating Wavelength Range for STM-16 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Receiver Overload for STM-16 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
			Receiver Sensitivity for STM-16 Optical Interface ITU-T G.957	TEC ER No. TEC70122401
		Interface: STM-64 Optical	Mean Launched Power for STM-64 Optical Interface ITU-T G.691	TEC ER No. TEC70122401
			Nominal Bit Rate with Tolerance for STM-64 Optical Interface ITU-T G.707	TEC ER No. TEC70122401
			Operating Wavelength Range for STM-64 Optical Interface ITU-T G.691	TEC ER No. TEC70122401
			Receiver Overload for STM-64 Optical Interface ITU-T G.691	TEC ER No. TEC70122401
			Receiver Sensitivity for STM-64 Optical Interface ITU-T G.691	TEC ER No. TEC70122401
		Interface: OTU-1	Central frequency for OTU-1 Interface ITU-T G959.1, G.693, Annex-L	TEC ER No. TEC70122401

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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Transmission Terminal Equipment-2	Interface: OTU-1	Mean Total Input Power for OTU-1 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Mean Total Output Power for OTU-1 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Receiver Sensitivity for OTU-1 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Nominal Bit Rate with Tolerance for OTU-1 Interface ITU-T G.709, Annex-L	TEC ER No. TEC70122401
		Interface: OTU-2	Central frequency for OTU-2 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Mean Total Input Power for OTU-2 Interface ITU-T G.959.1, G. 693, Annex-L	TEC ER No. TEC70122401
			Mean Total Output Power for OTU-2 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Minimum Receiver Overload for OTU-2 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Nominal Bit Rate with Tolerance for OTU-2 Interface ITU-T G.709, Annex-L	TEC ER No. TEC70122401

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Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Transmission Terminal Equipment-2	Interface: OTU-2	Receiver Sensitivity for OTU-2 Interface ITU-T G.959.1 (Clause No. 7, 8), G.693 (Clause No. 6, 7), Annex-L	TEC ER No. TEC70122401
		Interface: OTU-3	Central frequency for OTU-3 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Maximum Mean total Input Power for OTU-3 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Minimum Mean Total output Power for OTU-3 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Minimum Receiver Overload for OTU-3 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Receiver Sensitivity for OTU-3 Interface ITU-T G.959.1, G.693, Annex-L	TEC ER No. TEC70122401
			Nominal Bit Rate with Tolerance for OTU-3 Interface ITU-T G.709, Annex-L	TEC ER No. TEC70122401
		Interface: OTU-4	Central frequency for OTU-4 Interface ITU-T G.959.1, G.695.1, Annex-L	TEC ER No. TEC70122401
			Maximum Mean Total Input Power for OTU-4 Interface ITU-T G.959.1, G.695, Annex-L	TEC ER No. TEC70122401

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SCOPE OF DESIGNATION
(ANNEXURE)

Laboratory Name: M/S Granite River Labs India Services Private Limited,
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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Transmission Terminal Equipment-2	Interface: OTU-4	Mean Total Output Power for OTU-4 Interface ITU-T G.959.1, G.695, Annex-L	TEC ER No. TEC70122401
			Receiver Sensitivity for OTU-4 Interface ITU-T G.959.1, G. 695, Annex-L	TEC ER No. TEC70122401
			Nominal Bit Rate with Tolerance for OTU-4 Interface ITU-T G.709, Annex-L	TEC ER No. TEC70122401
		Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC70122401
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC70122401
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC70122401
		Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC70122401
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC70122401
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC70122401
		Interface: 40 G Optical Ethernet	Average Launch power IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC70122401
			Receiver Sensitivity IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC70122401

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SCOPE OF DESIGNATION **(ANNEXURE)**

Laboratory Name: M/S Granite River Labs India Services Private Limited,
Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5,
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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing		Standard/ Specification
	Transmission Terminal Equipment-2	Interface: 40 G Optical Ethernet	Wavelength IEEE 802.3ba Cl. 86 87, Annex-H	TEC ER No. TEC70122401
		Interface: 100 G Optical Ethernet	Average Launch power IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC70122401
			Receiver Sensitivity IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC70122401
			Wavelength IEEE 802.3ba Cl. 86 88, Annex-H	TEC ER No. TEC70122401
		Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC70122401
		Interface: 10/100 BASE-T Ethernet	Link Speed and Auto Negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC70122401
10.	Transmission Terminal Equipment-1	Interface: GPON	Operating Wavelength in Upstream direction for GPON Interface G.984.2, Annex-J2	TEC ER No. TEC78832401
			Operating Wavelength in downstream direction for GPON Interface G.984.2, Annex-J2	TEC ER No. TEC78832401

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SCOPE OF DESIGNATION **(ANNEXURE)**

Laboratory Name: M/S Granite River Labs India Services Private Limited,
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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Transmission Terminal Equipment-1	Interface: GPON	Opt Output Power for GPON Int. at OLT G.984.2, Annex-J2	TEC ER No. TEC78832401
			Opt Output Power for GPON Int. at ONT G.984.2, Annex-J2	TEC ER No. TEC78832401
			Receiver Sensitivity for GPON Int. at OLT G.984.2, Annex-J2	TEC ER No. TEC78832401
			Receiver Sensitivity for GPON Int. at ONT G.984.2, Annex-J2	TEC ER No. TEC78832401
11.	Equipment's Operating in 2.4 GHz and 5 GHz Band	Parameters link with product Variant	Dual IP Layer Operation RFC 4213 – Address RFC 4213 Cl. 2.1, Annex-P6	TEC ER No. TEC59432308
		Interface: Fast Ethernet Electrical	Link Speed and Auto negotiation Test FE IEEE 802.3, Annex-H	TEC ER No. TEC59432308
		Interface: Gigabit Ethernet Electrical	Link Speed and Auto negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC59432308
		Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC59432308
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC59432308
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC59432308

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SCOPE OF DESIGNATION **(ANNEXURE)**

Laboratory Name: M/S Granite River Labs India Services Private Limited,
Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5,
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Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
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	Equipment's Operating in 2.4 GHz and 5 GHz Band	Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC59432308
			Receiver Sensitivity IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC59432308
			Wavelength IEEE 802.3ae Cl. 52, Annex-H	TEC ER No. TEC59432308
		Interface: STM-1 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Nominal Bit Rate with Tolerance ITU-TG.957, Annex-K	TEC ER No. TEC59432308
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC59432308
		Interface: STM-1 Electrical	Nominal Bit Rate with Tolerance ITU-T G.703, Annex-K	TEC ER No. TEC59432308
		Interface: STM-16 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC59432308

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SCOPE OF DESIGNATION **(ANNEXURE)**

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Validity: 15/01/2024 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing		Standard/ Specification
	Equipment's Operating in 2.4 GHz and 5 GHz Band	Interface: STM-16 Optical	Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC59432308
		Interface: STM-4 Optical	Mean Launched Power ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Nominal Bit Rate with Tolerance ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Operating Wavelength Range ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Receiver Overload ITU-T G.957, Annex-K	TEC ER No. TEC59432308
			Receiver Sensitivity ITU-T G.957, Annex-K	TEC ER No. TEC59432308
		Parameters linked with Product Variant	TCP Parameters RFC 793, Annex-P4	TEC ER No. TEC67792401
			UDP Parameters RFC 768, Annex-P5	TEC ER No. TEC67792401
12.	Soft Switch	Interface: 10/100/1000 BASE-T Ethernet	Link Speed and Auto Negotiation Test GE IEEE 802.3, Annex-H	TEC ER No. TEC67792401

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SCOPE OF DESIGNATION
(ANNEXURE)

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Certificate Number: TEC/MRA/CAB/IND-D/88

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Validity: 15/01/2024 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing		Standard/ Specification
	Soft Switch	Interface: 1 G Optical Ethernet	Average Launch power IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC67792401
			Receiver Sensitivity IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC67792401
			Wavelength IEEE 802.3z Cl. 38, Annex-H	TEC ER No. TEC67792401
		Interface: 10 G Optical Ethernet	Average Launch power IEEE 802.3ae Cl. 52 Annex-H	TEC ER No. TEC67792401
			Receiver Sensitivity IEEE 802.3ae Cl. 52 Annex-H	TEC ER No. TEC67792401
			Wavelength IEEE 802.3ae Cl. 52 Annex-H	TEC ER No. TEC67792401

Signed by Sanjay Bhardwaj
 Date: 15-01-2024 12:05:36

AD (CA), TEC

*The validity of Certificate is up to 14/01/2027 or the continued validity of NABL Accreditation, whichever is earlier.

Government of India
Department of Telecommunications
Telecommunication Engineering Centre
Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi – 110001



No. 1-106/2023-CA/TEC

Dated: 22.03.2024

To,

M/s Granite River Labs India Services Private Limited, Bengaluru
Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5,
Outer Ring Road, Doddanekundi, K R Puram Hobli, Bengaluru – 560 037
Mob: +91- 9620288828, E-Mail Id: kvarma@graniteriverlabs.com

[Kind attention to **Shri Kalyan Varma, Director**)]

Subject: Enhancement of Scope of CAB Designation of M/s Granite River Labs India Services Private Limited, Bengaluru

- Ref: 1. TEC CAB Designation Certificate no. TEC/MRA/CAB/IND-D/88 dated 15.01.2024**
2. This office forwarding letter no. 1-106/2023-CA/TEC dated 15.01.2024
3. This office letter no. 1-106/2023-CA/TEC dated 26.02.2024 for site visit of remaining IP V6 Testing Parameters

This is in reference to this office letter no. **1-106/2023-CA/TEC dated 26.02.2024 for site visit of remaining IP V6 Test Parameters** in respect of CAB Designation Certificate No. TEC/MRA/CAB/IND-D/88 dated 15.01.2024, valid up to 14.01.2024.

2. In reference to the recommendations of Site visit assessment team, the Scope of Designation of CAB Certificate no. referred above is hereby enhanced in respect of test parameters of IP V6 as per detail mentioned in Annexure attached.

3. All other details, terms and conditions and validity of CAB Designation Certificate no. TEC/MRA/CAB/IND-D/88 dated 15.01.2024 shall remain unchanged.

4. This is issued with the approval of Competent Authority.

Encl: as above.

Signed by Vijay Dixit
Date: 22-03-2024 14:55:56

(Vijay Dixit)
Director (CA), TEC

Copy to:

1. DDG (TC), TEC, New Delhi for kind information and necessary action
2. DDG (NR)/DDG(ER)/DDG (WR)/DDG (SR) TEC for kind information

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Validity: 22/03/2024 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
1.	Router	Parameters Linked with Product	BGP for IPv6 RFC 2545. Annex- P11
		Variant	IPv6 Complete suite RFC 2460 or 8200, RFC 4861, RFC 4862, RFC 1981, RFC 4443, Annex- P11
2.	LAN Switch	Parameters linked with Product Variant	IPV6 RFC 2460 or RFC 8200 Annex-P11
3.	Hybrid Set Top Box	Parameters linked with Product Variant	IPv6 Complete suite RFC 2460 or 8200, RFC 4861, RFC 4862, RFC 1981, RFC 4443 , Annex- P11
			IPV6 Destination Options Header RFC 2460 or RFC 8200 Clause No. 4.6 Annexure-P7
			IPV6 Extension Header Order RFC 2460 or RFC 8200 Clause No. 4.1 RFC 4213 Clause No. 5 Annexure-P7
			IPV6 Extension headers RFC 2460 or RFC 8200 Clause No 4
			IPV6 Extn. Header Parameters RFC 2460 or RFC 8200. Annex-P7
			IPV6 Fragment Header RFC 2460 or RFC 8200 Clause No. 4.5 Annexure-P7

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Validity: 22/03/2024 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
	Hybrid Set Top Box	Parameters linked with Product Variant	
		IPV6 Header Parameters RFC 2460 / RFC 8200. Annex-P7	TEC ER No. TEC30042401
		IPV6 No Next Header RFC 2460 or RFC 8200 Clause No. 4.7 Annexure-P7	TEC ER No. TEC30042401
		IPV6 Options RFC 2460 or RFC 8200 Clause No. 4.2 Annexure-P7	TEC ER No. TEC30042401
		IPV6 Packet Size issues RFC 2460 or RFC 8200 Clause No. 5 Annexure-P7	TEC ER No. TEC30042401
		IPV6 Parameters RFC 2460 / 8200. Annex-P7	TEC ER No. TEC30042401
		IPV6 Responding to Packets Carrying Routing Headers RFC 2460 or RFC 8200 Clause No. 8.4, Annexure-P7	TEC ER No. TEC30042401
		IPV6 Routing Header RFC 2460 or RFC 8200 Clause No. 4.4, Annexure-P7	TEC ER No. TEC30042401
		IPV6 Upper-Layer Checksums RFC 2460 or RFC 8200 Clause No. 8.1, Annexure-P7	TEC ER No. TEC30042401
		IPV6 as per RFC 2460 or 8200 (RFC 2460 or RFC 8200 Annex-P11)	TEC ER No. TEC30042401

***The validity of Certificate is up to 14/01/2027 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 Granite River Labs India Services Private Limited,
Unit No.10, 1st Floor, ROACH ICON, Survey No 28 & 36/5,
Outer Ring Road, Doddanekundi, K R Puram,
Hobli, Bengaluru-560037

Certificate Number: TEC/MRA/CAB/IND-D/88

Page 3 of 3

Validity: 22/03/2024 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment / Product	Test Parameter or Type of Testing	Standard/ Specification
	Hybrid Set Top Box	Parameters linked with Product Variant	IPV6 as per RFC 2460 or 8200 4861 4862 1981 4443 Annex-P11
			IPV6 as per RFC 2460 (RFC 2460 / RFC 8200) Annex-P7
4.	Session Border Controller	Parameters linked with Product Variant	IPV6 Header Parameters RFC 2460 / RFC 8200. Annex-P7
5.	IP Terminal	Parameters linked with Product Variant	IPV6 Header Parameters RFC 2460 / RFC 8200. Annex-P7
6.	Equipment's Operating in 2.4 GHz and 5 GHz Band	Parameters linked with Product Variant	IPV6 Extn Header Parameters RFC 2460 Or RFC 8200, Annex-P7
			IPV6 Header Parameters (RFC 2460 / RFC 8200. Annex-P7)

Signed by Sanjay Bhardwaj
Date: 22-03-2024 14:59:32

AD (CA), TEC

***The validity of Certificate is up to 14/01/2027 or the continued validity of NABL Accreditation, whichever is earlier.**

Government of India
Department of Telecommunications
Telecommunication Engineering Centre
Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi-110001

No. 1-106/2026-CA/TEC

Dated: 01.09.2026

To,

Mr. Sanjay Kumar Sharma, General Manager

M/s Granite River Labs India Services Private Limited, Bengaluru

Unit No. 10, 1st Floor, Roach Icon, Survey No. 28 & 36/5

Outer Ring Road, Doddanakundi, K R Puram Hobli, Bengaluru-560037

Mob: +91-9306746079

E-mail: sanjay.sharma@graniteriverlabs.com

Subject: Enhancement of scope of CAB Designation- M/s Granite River Labs India Services Private Limited, Bengaluru - regarding.

Ref.:- (i) CAB Designation Certificate No. TEC/MRA/CAB/IND-D/88 dated 15.01.2024, valid up to 14.01.2027.
(ii) NSW Portal Application ID SW3011866842-M008_D001_A194-1774954619616 dated 31.03.2026 and re-applied on dated 09.04.2026.

This is in reference to your application for enhancement of Scope of CAB Designation of Certificate No. TEC/MRA/CAB/IND-D/88 dated 15.01.2024, valid up to 14.01.2027, submitted vide Application ID SW3011866842-M008_D001_A194-1774954619616 dated 31.03.2026 and re-applied on dated 09.04.2026 in online mode on NSW CAB Designation Portal for the following specifications as per certificate enclosed:-

Sl. No	Name of the Product/ Test Method	STANDARD
1.	IP Security Equipment	TEC ER No. TEC34732410

2. In reference to the recommendations of Site visit assessment report, the scope of designation of CAB Certificate no. referred under ref. (i) above is hereby enhanced in respect of test parameters of IP Security Equipment as per detail mentioned in Annexure attached below.

3. All other details, terms and conditions and validity of CAB Designation Certificate no. TEC/MRA/CAB/IND-D/88 dated 15.01.2024 shall remain unchanged.

4. This is issued with the approval of Competent Authority.

Encl: as above

Digitally signed by
Buddha Priya Rahul
Date: 01-09-2026
17:35:25

AD (CA-II)

Copy to:

- DDG (IT), TEC, New Delhi for kind information and necessary action please.
- DDG (NR)/DDG(ER)/DDG (WR)/DDG (SR) TEC for kind information please.



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

CERTIFICATE OF DESIGNATION

M/s Granite River Labs India Services Private Limited, Bengaluru
has been assessed and designated as Conformity Assessment Body (CAB)
for its facilities at

**Unit No. 10, 1st Floor, Roach Icon, Survey No. 28 & 36/5
Outer Ring Road Doddanakundi, K R Puram Hobli, Bengaluru-560037**

In the field of Testing

Certificate No. TEC/MRA/CAB/IND-D/88

Issue Date: 01/09/2026

Validity: 01/09/2026 to 14/01/2027

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

**Digitally signed by
Sanjeev Kumar Arya
Date: 01-09-2026
17:30:11**

**Sanjeev Kumar Arya
Director (CA)
For Designating Authority
TEC**

Certificate No: TEC/MRA/CAB/IND-D/88 dated 01/09/2026 issued to
M/s Granite River Labs India Services Private Limited, Bengaluru
Unit No. 10, 1st Floor, Roach Icon, Survey No. 28 & 36/5
Outer Ring Road Doddanakundi, K R Puram Hobli, Bengaluru-560037



Validity: - 01/09/2026 to 14/01/2027

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 recognised 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 Organisational 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 Granite River Labs India Services Private Limited,
Bengaluru Unit No. 10, 1st Floor, Roach Icon, Survey No. 28
& 36/5, Outer Ring Road Doddanakundi, K R Puram Hobli,
Bengaluru-560037**

Certificate Number: TEC/MRA/CAB/IND-D/88

Page 1 of 3

Validity: 01/09/2026 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing#	Standard/Specification
1.	IP Security Equipment	Parameters Linked with Product Variant	Network Visibility, Monitoring and Logging
			TEC ER No. TEC34732410
			Encrypted traffic analysis
			TEC ER No. TEC34732410
			Application visibility and control
			TEC ER No. TEC34732410
			SSL proxy
			TEC ER No. TEC34732410
			Data Loss Prevention
			TEC ER No. TEC34732410
			L3 DDoS Protection
			TEC ER No. TEC34732410
			L4 DDoS Protection
			TEC ER No. TEC34732410
			L7 DDoS Protection
			TEC ER No. TEC34732410
			Static analysis
			TEC ER No. TEC34732410
			Dynamic analysis
			TEC ER No. TEC34732410
			Manageability SNMP V2 or V3/Netconf/Yang
			TEC ER No. TEC34732410
			Reverse Proxy
			TEC ER No. TEC34732410
			Radius / AAA / Diameter
			TEC ER No. TEC34732410
			IDS for Management & Analytic Equipment
			TEC ER No. TEC34732410

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Page 2 of 3

Validity: 01/09/2026 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment/ Product	Test Parameter or Type of Testing#		Standard/ Specification
	IP Security Equipment	Protecting against OWASP top 10 vulnerabilities	SQL Injection	TEC ER No. TEC34732410
			Cross Site Scripting (XSS)	TEC ER No. TEC34732410
			Side Request Forgery (SSRF)	TEC ER No. TEC34732410
			SSRF	TEC ER No. TEC34732410
			HTTP Method validation	TEC ER No. TEC34732410
			Command Injection	TEC ER No. TEC34732410
			Path traversal	TEC ER No. TEC34732410
			Cross Side Request Forgery (CSRF)	TEC ER No. TEC34732410
			Protection against File inclusion attack	TEC ER No. TEC34732410
			Protection against Brute forcing	TEC ER No. TEC34732410
		Monitoring & Audit event generation	TEC ER No. TEC34732410	
		Interface 10: 50G Ethernet Optical	Average Launch power for 50 GE Opt	TEC ER No. TEC34732410
			Receiver Sensitivity 50 GE Opt	TEC ER No. TEC34732410
Wavelength for 50 GE Opt	TEC ER No. TEC34732410			

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Certificate Number: TEC/MRA/CAB/IND-D/88

Page 3 of 3

Validity: 01/09/2026 to 14/01/2027

Last Amended on: ----

Sl. No.	Telecom Equipment/Product	Test Parameter or Type of Testing#		Standard/Specification
	IP Security Equipment	Interface 15: Fast Ethernet Optical	Average Launch power for FE Opt	TEC ER No. TEC34732410
			Receiver Sensitivity FE Opt	TEC ER No. TEC34732410
			Wavelength for FE Opt	TEC ER No. TEC34732410

Digitally signed by
Buddha Priya Rahul
Date: 01-09-2026
17:33:35

AD (CA-II), TEC

***The validity of Certificate is up to 14/01/2027 or the continued validity of NABL Accreditation, whichever is earlier.**