

**अनिवार्य आवश्यकताएँ**

**संख्या : TEC34731911**

**Essential Requirements**

**ER No. : TEC34731911**

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## **IP Security Equipment**

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## Essential Requirements for:

### IP Security Equipment

Certification Scheme: **GCS**

Product Fee Group: **C**

All types of IP Security Equipment including UTM, IPS, IDS, Firewall

*Note: Annexures referred to in this ER are Annexures as mentioned in "Annexures to ERs" No. TEC/SD/DD/TCP-222/02/June19 as updated from time to time and available on MTCTE portal.*

This product has the following variants:

1. Unified Threat Management (UTM) Equipment
2. Intrusion Prevention System (IPS) Equipment
3. Intrusion Detection System (IDS) Equipment
4. Firewall Equipment

#### 1. Variant 1 : Unified Threat Management (UTM) Equipment

##### 1.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
1.1.1	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
1.1.2	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
1.1.3	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
1.1.4	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
1.1.5	Conducted And Radiated Emission - Class A	TEC EMI EMC Standard CISPR 22/32

		EN55022/32. Annex-B
1.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
1.1.7	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
1.1.8	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
1.1.9	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
1.1.10	UTM URL Content & Anti-Virus Filtering	Annex-P11
1.1.11	IDS Functional Test	Annex-P11
1.1.12	IPS Functional Test	Annex-P11
1.1.13	IPSec Functional Test	Annex-P11
1.1.14	IPV4 Parameters Set-D	RFC 791. Annex-P11
1.1.15	IPV6	RFC 2460 or 8200 4861 4862 1981 4443 Annex-P11
1.1.16	Manageability SNMP V2 or V3	RFC 3410 3416 Annex-P14
1.1.17	NAT Functional Test	Annex-P11
1.1.18	Policy Functional Test	Annex-P11

## 1.2 Interface 1 : 1 G Optical Ethernet

S.No.	Parameter Name	Standard Name
1.2.1	Average Launch power for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
1.2.2	Receiver Sensitivity 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
1.2.3	Wavelength for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H

## 1.3 Interface 2 : 10 100 1000 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
1.3.1	Link Speed and Autonegotiation Test GE	IEEE 802.3. Annex-H

## 1.4 Interface 3 : 10 100 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
1.4.1	Link Speed and Autonegotiation Test FE	IEEE 802.3 Annex-H

### 1.5 Interface 4 : 10 G Optical Ethernet

S.No.	Parameter Name	Standard Name
1.5.1	Average Launch power for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H
1.5.2	Receiver Sensitivity 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H
1.5.3	Wavelength for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H

### 1.6 Interface 5 : 100 G Optical Ethernet

S.No.	Parameter Name	Standard Name
1.6.1	Average Launch power for 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H
1.6.2	Receiver Sensitivity 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H
1.6.3	Wavelength for 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H

### 1.7 Interface 6 : 40 G Optical Ethernet

S.No.	Parameter Name	Standard Name
1.7.1	Average Launch power for 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H
1.7.2	Receiver Sensitivity 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H
1.7.3	Wavelength for 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H

### 1.8 Interface 7 : Fast Ethernet Optical

S.No.	Parameter Name	Standard Name
1.8.1	Average Launch power for FE Opt	IEEE 802.3u. Annex-H
1.8.2	Receiver Sensitivity for FE Opt	IEEE 802.3u. Annex-H
1.8.3	Wavelength for FE Opt	IEEE 802.3u. Annex-H

## 2. Variant 2 : Intrusion Prevention System (IPS) Equipment

### 2.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
2.1.1	Conducted And Radiated Emission - Class A	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
2.1.2	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B

2.1.3	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
2.1.4	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
2.1.5	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
2.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
2.1.7	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
2.1.8	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
2.1.9	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
2.1.10	IPS Functional Test	Annex-P11
2.1.11	IDS Functional Test	Annex-P11
2.1.12	IPSec Functional Test	Annex-P11
2.1.13	IPV4 Parameters Set-D	RFC 791. Annex-P11
2.1.14	IPV6	RFC 2460 or 8200 4861 4862 1981 4443 Annex-P12
2.1.15	Manageability SNMP V2 or V3	RFC 3410 3416 Annex-P15
2.1.16	Policy Functional Test	Annex-P11
2.1.17	NAT Functional Test	Annex-P11

## 2.2 Interface 1 : 1 G Optical Ethernet

S.No.	Parameter Name	Standard Name
2.2.1	Average Launch power for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
2.2.2	Receiver Sensitivity 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
2.2.3	Wavelength for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H

## 2.3 Interface 2 : 10 100 1000 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
2.3.1	Link Speed and Autonegotiation Test GE	IEEE 802.3. Annex-H

#### 2.4 Interface 3 : 10 100 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
2.4.1	Link Speed and Autonegotiation Test FE	IEEE 802.3 Annex-H

#### 2.5 Interface 4 : 10 G Optical Ethernet

S.No.	Parameter Name	Standard Name
2.5.1	Average Launch power for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H
2.5.2	Receiver Sensitivity 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H
2.5.3	Wavelength for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H

#### 2.6 Interface 5 : 100 G Optical Ethernet

S.No.	Parameter Name	Standard Name
2.6.1	Average Launch power for 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H
2.6.2	Receiver Sensitivity 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H
2.6.3	Wavelength for 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H

#### 2.7 Interface 6 : 40 G Optical Ethernet

S.No.	Parameter Name	Standard Name
2.7.1	Average Launch power for 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H
2.7.2	Receiver Sensitivity 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H
2.7.3	Wavelength for 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H

#### 2.8 Interface 7 : Fast Ethernet Optical

S.No.	Parameter Name	Standard Name
2.8.1	Average Launch power for FE Opt	IEEE 802.3u. Annex-H
2.8.2	Receiver Sensitivity for FE Opt	IEEE 802.3u. Annex-H
2.8.3	Wavelength for FE Opt	IEEE 802.3u. Annex-H

### 3. Variant 3 : Intrusion Detection System (IDS) Equipment

#### 3.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
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3.1.1	Conducted And Radiated Emission - Class A	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
3.1.2	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
3.1.3	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
3.1.4	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
3.1.5	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
3.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
3.1.7	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
3.1.8	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
3.1.9	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
3.1.10	IDS Functional Test	Annex-P11
3.1.11	IPSec Functional Test	Annex-P11
3.1.12	IPV4 Parameters Set-D	RFC 791. Annex-P11
3.1.13	IPV6	RFC 2460 or 8200 4861 4862 1981 4443 Annex-P13
3.1.14	Manageability SNMP V2 or V3	RFC 3410 3416 Annex-P16
3.1.15	Policy Functional Test	Annex-P11
3.1.16	NAT Functional Test	Annex-P11

### 3.2 Interface 1 : 1 G Optical Ethernet

S.No.	Parameter Name	Standard Name
3.2.1	Average Launch power for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
3.2.2	Receiver Sensitivity 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
3.2.3	Wavelength for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H

### 3.3 Interface 2 : 10 100 1000 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
3.3.1	Link Speed and Autonegotiation Test GE	IEEE 802.3. Annex-H

### 3.4 Interface 3 : 10 100 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
3.4.1	Link Speed and Autonegotiation Test FE	IEEE 802.3 Annex-H

### 3.5 Interface 4 : 10 G Optical Ethernet

S.No.	Parameter Name	Standard Name
3.5.1	Average Launch power for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H
3.5.2	Receiver Sensitivity 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H
3.5.3	Wavelength for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H

### 3.6 Interface 5 : 100 G Optical Ethernet

S.No.	Parameter Name	Standard Name
3.6.1	Average Launch power for 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H
3.6.2	Receiver Sensitivity 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H
3.6.3	Wavelength for 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H

### 3.7 Interface 6 : 40 G Optical Ethernet

S.No.	Parameter Name	Standard Name
3.7.1	Average Launch power for 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H
3.7.2	Receiver Sensitivity 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H
3.7.3	Wavelength for 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H

### 3.8 Interface 7 : Fast Ethernet Optical

S.No.	Parameter Name	Standard Name
3.8.1	Average Launch power for FE Opt	IEEE 802.3u. Annex-H
3.8.2	Receiver Sensitivity for FE Opt	IEEE 802.3u. Annex-H
3.8.3	Wavelength for FE Opt	IEEE 802.3u. Annex-H

## 4. Variant 4 : Firewall Equipment



#### 4.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
4.1.1	Conducted And Radiated Emission - Class A	TEC EMI EMC Standard CISPR 22/32 EN55022/32. Annex-B
4.1.2	Immunity to AC Voltage Dips and Short Interruptions	TEC EMI EMC Standard EN/IEC:61000-4-11. Annex-B
4.1.3	Immunity to DC Voltage Dips and Short Interruptions	EN/IEC:61000-4-29. Annex-B
4.1.4	Immunity to Electrostatic Discharge	TEC EMI EMC Standard EN/IEC:61000-4-2. Annex-B
4.1.5	Immunity to Fast Transients (Burst)	TEC EMI EMC Standard EN/IEC:61000-4-4. Annex-B
4.1.6	Immunity to Radiated RF	TEC EMI EMC Standard EN/IEC:61000-4-3. Annex-B
4.1.7	Immunity to RF Field Induced Conducted Disturbance	TEC EMI EMC Standard EN/IEC:61000-4-6. Annex-B
4.1.8	Immunity to Surges	TEC EMI EMC Standard EN/IEC:61000-4-5. Annex-B
4.1.9	IT Equipment Safety	IS 13252-1 or IEC:60950-1 or IEC 62368-1. Annex-A1
4.1.10	IPSec Functional Test	Annex-P11
4.1.11	IPV4 Parameters Set-D	RFC 791. Annex-P11
4.1.12	Policy Functional Test	Annex-P11
4.1.13	Manageability SNMP V2 or V3	RFC 3410 3416 Annex-P17
4.1.14	NAT Functional Test	Annex-P11
4.1.15	IPV6	RFC 2460 or 8200 4861 4862 1981 4443 Annex-P14

#### 4.2 Interface 1 : 1 G Optical Ethernet

S.No.	Parameter Name	Standard Name
4.2.1	Average Launch power for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
4.2.2	Receiver Sensitivity 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H
4.2.3	Wavelength for 1 GE Opt	IEEE 802.3z Cl. 38. Annex-H

#### 4.3 Interface 2 : 10 100 1000 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
4.3.1	Link Speed and Autonegotiation Test GE	IEEE 802.3. Annex-H

#### 4.4 Interface 3 : 10 100 BASE-T Ethernet

S.No.	Parameter Name	Standard Name
4.4.1	Link Speed and Autonegotiation Test FE	IEEE 802.3 Annex-H

#### 4.5 Interface 4 : 10 G Optical Ethernet

S.No.	Parameter Name	Standard Name
4.5.1	Average Launch power for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H
4.5.2	Receiver Sensitivity 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H
4.5.3	Wavelength for 10 GE Opt	IEEE 802.3ae Cl. 52. Annex-H

#### 4.6 Interface 5 : 100 G Optical Ethernet

S.No.	Parameter Name	Standard Name
4.6.1	Average Launch power for 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H
4.6.2	Receiver Sensitivity 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H
4.6.3	Wavelength for 100 GE Opt	IEEE 802.3ba Cl. 86 88. Annex-H

#### 4.7 Interface 6 : 40 G Optical Ethernet

S.No.	Parameter Name	Standard Name
4.7.1	Average Launch power for 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H
4.7.2	Receiver Sensitivity 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H
4.7.3	Wavelength for 40 GE Opt	IEEE 802.3ba Cl. 86 87. Annex-H

#### 4.8 Interface 7 : Fast Ethernet Optical

S.No.	Parameter Name	Standard Name
4.8.1	Average Launch power for FE Opt	IEEE 802.3u. Annex-H
4.8.2	Receiver Sensitivity for FE Opt	IEEE 802.3u. Annex-H
4.8.3	Wavelength for FE Opt	IEEE 802.3u. Annex-H