

अनिवार्य आवश्यकताएँ

संख्या : TEC40162602

Essential Requirements

ER No. : TEC40162602

SIM

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Telecommunication Engineering Centre

Government of India

Khurshid Lal Bhawan, Janpath, New Delhi-110001, INDIA

Essential Requirements for:

SIM

Certification Scheme: **SCS**

Product Fee Group: **C**

This document lays down the ER under Telecommunications Framework to Notify Standards, Conformity Assessment and Certification Rules, 2025 notified by GoI vide Gazette Notification No. G.S.R. 315(E) dated 16-05-2025 for SIM to be used in Indian Telecom Network for Consumer or Machine and Machine interfaces up to 5G cellular technology

Note: The product under testing may support have any of the interfaces mentioned in the as a part of product variant.

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. eUICC - Consumer (GSMA compliance) / eSIM-Consumer
2. eUICC-IoT (GSMA compliance)/eSIM-IoT
3. eUICC-M2M (GSMA compliance) / eSIM-M2M
4. eUICC -M2M (Non-GSMA compliance)
5. Integrated eUICC-Consumer(GSMA comp)/iSIM-Consumer

6. Integrated eUICC-IoT (GSMA compliance)/iSIM -IoT
7. Integrated eUICC-M2M (GSMA compliance)/iSIM –M2M
8. SIM- Pluggable form factor
9. UICC based ISIM- Pluggable form factor
10. USIM- Pluggable form factor

1. Variant 1 : eUICC - Consumer (GSMA compliance) / eSIM-Consumer

1.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
1.1.1	Answer to reset eUICC	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
1.1.2	If there is no Enabled Profile on the eUICC	Clause 3.4.3 of GSMA SGP.22 RSP Technical Specification v2.6 and above Annex.-S
1.1.3	Local eUICC management- Retrieve eID, eUICC memory Reset	Clause 3.3.1 and 3.3.2 of GSMA SGP .22 RSP Technical Specification v2.6 and above Annex.-S
1.1.4	Local Profile Management	Clause 3.2 of GSMA SGP .22 RSP Technical Specification v2.6 and above Annex.-S
1.1.5	Remote provisioning- Profile download and installation	Clause 3.1.3 of GSMA SGP .22 RSP Technical Specification v2.6 and above Annex.-S
1.1.6	Remote provisioning- Profile download initiation	Clause 3.1.1 of GSMA SGP .22 RSP Technical Specification v2.6 and above Annex.-S
1.1.7	Voltage classes eUICC	Clause 5 of ETSI TS 102 221 Rel 9 and above, Clause 7.1 of ETSI TS 102 671 (UICC shall not Power Class A) Rel 9 and above Annex.-S

2. Variant 2 : eUICC-IoT (GSMA compliance)/eSIM-IoT

2.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
2.1.1	Answer to reset eUICC Content	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
2.1.2	eUICC Package Handling-Generic eUICC Package Download and Execution and Profile Rollback	Clause 3.3 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
2.1.3	If there is no Enabled Profile on the eUICC, eUICC File structure	Clause 3.8.3 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
2.1.4	Local eUICC management-eUICC memory Reset	Clause 5.9.5 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
2.1.5	Profile download and installation for eSIM-IoT	Clause 3.2 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
2.1.6	Profile State Management-disable profile, enable profile, Delete profile	Clause 3.4 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
2.1.7	Voltage classes eUICC	Clause 5 of ETSI TS 102 221 Rel 9 and above, Clause 7.1 of ETSI TS 102 671 (UICC shall not Power Class A) Rel 9 and above Annex.-S

3. Variant 3 : eUICC-M2M (GSMA compliance) / eSIM-M2M

3.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
3.1.1	Answer to reset eUICC	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
3.1.2	eUICC Profile Package: Interoperable Format Technical Specification	Trusted connectivity alliance V2.3.1 and above Annex.-S
3.1.3	ISD-R shall be able to perform Platform management function on ISD-Ps	Clause 2.2.1.1 of GSMA SGP .02 v4.2.1 and above Annex.-S
3.1.4	No LOCKED state supported to ISD-R	Clause 2.2.1.1 of GSMA SGP .02 v4.2.1 and

		above Annex.-S
3.1.5	Physical and Logical Characteristics eUICC	Clause 6 and 7 of ETSI TS 102 671 Rel 9 and above Annex.-S
3.1.6	Profile download and installation	Clause 3.1 GSMA SGP .02 v4.2.1 and above Annex.- S
3.1.7	Secure Packet and Remote APDU structure for UICC based Applications	Clause 5 of ETSI TS 102 225 Rel 9 and above Clause 5, 7, 8 of ETSI TS 102 226 Rel 9 and above Global Platform Card Specification 2.2 Amendment B v1.1.3 – RAM over HTTP Annex.-S
3.1.8	Subscription Manager send disable commands to the eUICC with a previously downloaded profile	Clause 4.1.1.3 of GSMA SGP .02 v4.2.1 and above Annex..-S
3.1.9	Subscription Manager send enable commands to the eUICC with a previously downloaded profile	Clause 4.1.1.2 of GSMA SGP .02 v4.2.1 and above Annex.-S
3.1.10	Subscription Manager sends commands to delete a disabled profile	Clause 4.1.1.4 of GSMA SGP .02 v4.2.1 and above Annex.-S
3.1.11	The ECASD application Shall be installed by EUM during eUICC manufacturing	GSMA-SAS-UP compliance manufacturing certificate Annex.-S
3.1.12	There shall be only one ECASD present	Clause 2.2.1.2 of GSMA SGP .02 v4.2.1 and above Annex. -S
3.1.13	There shall be only one ISD-R and it is personalized by EUM during manufacturing	Clause 2.2.1.1. GSMA SGP .02 v4.2.1 and above Annex.- S
3.1.14	Voltage classes eUICC	Clause 5 of ETSI TS 102 221 Rel 9 and above, Clause 7.1 of ETSI TS 102 671 (UICC shall not Power Class A) Rel 9 and above Annex.-S

3.2 Interface 1 : Pre-personalised Profiles ISIM

S.No.	Parameter Name	Standard Name
3.2.1	Pre-personalised Profiles ISIM	Clause 4 of ETSI TS 131 103 Rel 9 and above Annex.-S

3.3 Interface 2 : Pre-personalised Profiles SIM

S.No.	Parameter Name	Standard Name
3.3.1	Pre-personalised Profiles SIM	Clause 10 of ETSI TS 151 011 release 4 Annex.-S

3.4 Interface 3 : Pre-personalised Profiles USIM

S.No.	Parameter Name	Standard Name
3.4.1	Pre-personalised Profiles USIM	Clause 4 of ETSI TS 131 102 Rel 9 and above Annex.-S

4. Variant 4 : eUICC -M2M (Non-GSMA compliance)

4.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
4.1.1	Administrative commands for telecommunications applications in Integrated Circuit Cards (ICC)	Clause 6 of ETSI TS 102 222 Release 9 and above Annex.- S
4.1.2	Electrical specification of UICC with terminal interface	Clause 5 of ETSI TS 102 221 Rel 9 and above Annex.-S
4.1.3	Minimum application clock frequency USIM	Clause 5.3.1 of ETSI TS 131 101 Rel 9 and above Annex.-S
4.1.4	Security mechanisms for the (U)SIM application toolkit Stage 2	Clause 5, 6, 7, 8, 9 of ETSI 123 048 Rel 5 and above Annex.-S
4.1.5	Subscriber Identity Module Application Programming Interface (SIM API) for JAVA Card (Stage 2)	Clause 6 and Annexure-A of ETSI TS 143 019 Rel 5 and above Annex.-S
4.1.6	Support for PIN and PUK USIM	Clause 9 of ETSI TS 102 221 Rel 9 and above Annex.-S
4.1.7	Transmission protocols USIM	Clause 7 of ETSI TS 102 221 Rel 9 and above Annex.-S
4.1.8	Transmission Speed USIM	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
4.1.9	USIM shall support special SSD (Supplementary Secure Domain)	Clause 7.2 of Global Platform Specifications version 2.1.1 and above Annex.-S
4.1.10	Voltage classes (Class A Class B Class C at least two consecutive classes Eg AB or BC)	Clause 6A.2 of ETSI TS 131 101 Rel 9 and above Annex.-S

	USIM	
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4.2 Interface 1 : Pre-personalised Profiles ISIM

S.No.	Parameter Name	Standard Name
4.2.1	Pre-personalised Profiles ISIM	Clause 4 of ETSI TS 131 103 Rel 9 and above Annex.-S

4.3 Interface 2 : Pre-personalised Profiles SIM

S.No.	Parameter Name	Standard Name
4.3.1	Pre-personalised Profiles SIM	Clause 10 of ETSI TS 151 011 release 4 Annex.-S

4.4 Interface 3 : Pre-personalised Profiles USIM

S.No.	Parameter Name	Standard Name
4.4.1	Pre-personalised Profiles USIM	Clause 4 of ETSI TS 131 102 Rel 9 and above Annex.-S

4.5 Interface 4 : SIM-ME

S.No.	Parameter Name	Standard Name
4.5.1	Subscriber Identity Module Mobile Equipment (SIM ME) interface	Clause 6 of ETSI TS 151 011 Rel 4 and above Annex.-S

5. Variant 5 : Integrated eUICC-Consumer(GSMA comp)/iSIM-Consumer

5.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
5.1.1	Answer to reset Integrated eUICC	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
5.1.2	Hardware Characteristics	Clause 5 and 6 of ETSI TS 102 221 Rel 9 and above, Clause 5 of ETSI TS 102 225 Rel 9 and above, Clause 5, 7, 8 of ETSI TS 102 226 Rel 9 and above , Global Platform Card Specification 2.2 Amendment B v1.1.3 – RAM over HTTP Annex.-S

5.1.3	If there is no Enabled Profile on the integrated eUICC	Clause 3.4.3 of GSMA SGP.22 RSP Technical Specification v 2.6 and above Annex.-S
5.1.4	Local integrated eUICC management- Retrieve eID, Integrated eUICC memory Reset	Clause 3.3.1 and 3.3.2 of GSMA SGP .22 RSP Technical Specification v 2.6 and above Clause 5.7.8 of GSMA SGP .22 RSP Technical Specification v2.6 and above Annex.-S
5.1.5	Local Profile Management	Clause 3.2 of GSMA SGP .22 RSP Technical Specification v2.6 and above Annex.-S
5.1.6	Remote Provisioning- Profile download and installation, trePProperties and treProductReferences	Clause 3.1.3 of GSMA SGP .22 RSP Technical Specification v2.6 and above Clause 5.7.8 of GSMA SGP .22 RSP Technical Specification v2.6 and above Annex-S
5.1.7	Remote provisioning- Profile download initiation	Clause 3.1.1 of GSMA SGP .22 RSP Technical Specification v2.6 and above Annex.-S
5.1.8	Voltage classes Integrated eUICC	Clause 5 ETSI TS 102 221 Rel 9 and above, Clause 7.1 of ETSI TS 102 671 (UICC shall not Power Class A) Rel 9 and above Annex.-S

6. Variant 6 : Integrated eUICC-IoT (GSMA compliance)/iSIM -IoT

6.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
6.1.1	eIM Configuration at Integrated eUICC	Clause 3.5 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
6.1.2	eUICC Package Handling-Generic eUICC Package Download and Execution and Profile Rollback	Clause 3.3 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
6.1.3	Hardware Characteristics	Clause 5 and 6 of ETSI TS 102 221 Rel 9 and above, Clause 5 of ETSI TS 102 225 Rel 9 and above, Clause 5, 7, 8 of ETSI TS

		102 226 Rel 9 and above , Global Platform Card Specification 2.2 Amendment B v1.1.3 – RAM over HTTP Annex.-S
6.1.4	If there is no Enabled Profile on the integrated eUICC, Integrated eUICC File structure	Clause 3.8.3 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
6.1.5	IoT Device and Integrated eUICC Initialization	Clause 3.8 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
6.1.6	Local UICC management-Integrated eUICC memory Reset	Clause 5.9.5 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S
6.1.7	Profile download and installation , treProperties and treProductReferences	Clause 3.2 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Clause 5.7.8 of GSMA SGP .22 RSP
6.1.8	Profile State Management-disable profile, enable profile, Delete profile	Clause 3.4 of GSMA SGP .32 eSIM IoT Technical Specification v1 and above Annex.-S

7. Variant 7 : Integrated eUICC-M2M (GSMA compliance)/iSIM –M2M

7.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
7.1.1	Answer to reset Integrated eUICC	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
7.1.2	Hardware Characteristics for iSIM-M2M	Clause 5 and 6 of ETSI TS 102 221 Rel 9 and above, Annex.-S
7.1.3	Integrated eUICC Profile Package: Interoperable Format Technical Specification	Trusted connectivity alliance V2.3.1 and above Annex.-S
7.1.4	ISD-R shall be able to perform Platform management function on ISD-Ps	Clause 2.2.1.1 of GSMA SGP .02 v4.2.1 and above Annex.-S
7.1.5	Logical Characteristics Integrated eUICC	Clause 7 of ETSI TS 102 671 Rel 9 and above Annex.-S
7.1.6	No LOCKED state supported to ISD-R	Clause 2.2.1.1 of GSMA SGP .02 v4.2.1 and above Annex.-S
7.1.7	Profile download and installation	Clause 3.1 GSMA SGP .02 v4.2.1 and

		above Annex.- S
7.1.8	Secure Packet and Remote APDU structure for UICC based Applications	Clause 5 of ETSI TS 102 225 Rel 9 and above Clause 5, 7, 8 of ETSI TS 102 226 Rel 9 and above Global Platform Card Specification 2.2 Amendment B v1.1.3 – RAM over HTTP Annex.-S
7.1.9	Subscription Manager send disable commands to the Integrated eUICC with a previously downloaded profile	Clause 4.1.1.3 GSMA SGP .02 v4.2.1 and above Annex..-S
7.1.10	Subscription Manager send enable commands to the Integrated eUICC with a previously downloaded profile	Clause 4.1.1.2 GSMA SGP .02 v4.2.1 and above Annex.-S
7.1.11	Subscription Manager sends commands to delete a disabled profile	Clause 4.1.1.4 of GSMA SGP .02 v4.2.1 and above Annex.-S
7.1.12	The ECASD application Shall be installed by EUM during eUICC manufacturing	GSMA-SAS-UP compliance manufacturing certificate Annex.-S
7.1.13	There shall be only one ECASD present	Clause 2.2.1.2 of GSMA SGP .02 v4.2.1 and above Annex. -S
7.1.14	There shall be only one ISD-R and it is personalized by EUM during manufacturing	Clause 2.2.1.1. GSMA SGP .02 v4.2.1 and above Annex.- S
7.1.15	Voltage classes Integrated eUICC	Clause 5 ETSI TS 102 221 Rel 9 and above, Clause 7.1 of ETSI TS 102 671 (UICC shall not Power Class A) Rel 9 and above Annex.- S

8. Variant 8 : SIM- Pluggable form factor

8.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
8.1.1	Interface protocols SIM	Clause 5.4 of ETSI TS 131 101 Rel 9 and above Annex-S
8.1.2	Minimum application clock frequency SIM	Clause 5 of ETSI TS 102 221 Rel 9 and above Annex.-S
8.1.3	Passive authentication SIM	Clause 7 of ETSI TS 151 011 Rel 4 and above Annex.-S
8.1.4	Physical and Logical Characteristics SIM	Clause 4A, 5 Of ETSI TS 131 101 Rel 9 and

		above Annex.-S
8.1.5	Read or Update access to NVM controlled by Operating System and Issuer SIM application	Clause 9 of ETSI TS 151 011 Release 4 and above Annex. -S
8.1.6	Security Features-SIM	Clause 7 of ETSI TS 151 011 Rel 4 and above Annex.-S
8.1.7	Security mechanisms for the SIM application toolkit Stage 2	Clause 5 6 7 8 9 of ETSI 123 048 Rel 5 and above Annex.-S
8.1.8	SIM Application	Clause 4 5 6 7 of ETSI TS 102 223 Rel 9 and above Annex.-S
8.1.9	SIM shall support special SSD (Supplementary Secure Domain) for SIM based apps. for JAVA Card based SIMs	Clause 7.2 of Global Platform Specifications Version 2.1.1 and above Annex.-S
8.1.10	Subscriber Identity Module Application Programming Interface (SIM API) for JAVA Card TM(Stage 2)	Clause 6 and Annexure-A of ETSI TS 143 019 Rel 5 and above Annex.-S
8.1.11	Transmission Speed SIM	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
8.1.12	Voltage classes (Class A Class B Class C at least two consecutive classes eg AB or BC) SIM on UICC	Clause 6A.2 of ETSI TS 131 101 Rel 9 and above Annex.-S

8.2 Interface 1 : SIM-ME

S.No.	Parameter Name	Standard Name
8.2.1	Subscriber Identity Module Mobile Equipment (SIM ME) interface	Clause 6 of ETSI TS 151 011 Rel 4 and above Annex.-S

9. Variant 9 : UICC based ISIM- Pluggable form factor

9.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
9.1.1	Administrative commands for telecommunications applications in Integrated Circuit Cards (ICC) ISIM	Clause 6 of ETSI TS 102 222 Rel 5 and above Clause 4, 5, 6, 7 of ETSI TS 131 103 Rel 9 and above Annex.-S
9.1.2	Get IDENTITY for SUPI type NSI or GLI	Clause 7.5.2.1 of ETSI TS 131 102 Rel 17

	when SUCI calc done by ISIM Hw	and above Annex.- S
9.1.3	Get Identity (SUCI)	Clause 7.5 of ETSI 131 102 Rel 16 and above Annex.-S
9.1.4	Interface protocols ISIM on UICC	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
9.1.5	ISIM Commands	Clause 7 of ETSI 131 103 Rel 9 and above Annex.- S
9.1.6	Minimum application clock frequency ISIM	Clause 5.3.1 of ETSI TS 131 101 Rel 9 and above Annex.-S
9.1.7	Physical and Logical Characteristics ISIM	Clause4A and 5 of ETSI TS 131 101 Rel9 and above Annex.-S
9.1.8	Security mechanisms for the (U)SIM application toolkit Stage 2 ISIM	Clause 5, 6, 7, 8, 9 of ETSI 123 048 Rel 5 and above Annex.-S
9.1.9	SIM shall support special SSD (Supplementary Secure Domain) for SIM based apps ISIM.	Clause 7.2 of Global Platform Specifications version 2.1.1 and above Annex.-S
9.1.10	Support for PIN and PUK	Clause 9 of ETSI TS 102 221 Rel 9 and above Annex.-S
9.1.11	Transmission Speed ISIM	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
9.1.12	Voltage classes (Class A Class B Class C at least two consecutive classes e.g. AB or BC) ISIM	Clause 6A.2 of ETSI TS 131.101 Rel.9 and above Annex.-S

10. Variant 10 : USIM- Pluggable form factor

10.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
10.1.1	Administrative commands for telecommunications applications in Integrated Circuit Cards (ICC) USIM	Clause 6 of ETSI TS 102 222 Release 9 and above Clause 4, 5, 6, 7 of ETSI TS 131 103 Rel 9 and above Annex.- S
10.1.2	Authentication 3G/4G procedure	Clause 11.1.16 of ETSI TS 102 221 Rel 9 and above Clause 7.1 of ETSI TS 131 102 Rel 9 and above Annex.-S
10.1.3	Authentication procedure for 5G AKA	Clause 6.1.3.2 of ETSI TS 133 501 Rel 15 and above Annex.- S

10.1.4	Characteristics of the Universal Subscriber Identity Module (USIM) application	Clause 4 of ETSI TS 131 102 Rel 9 and above Annex.-S
10.1.5	Get Challenge	Clause 11.1.18 of ETSI 102 221 Rel 9 and above Annex.-S
10.1.6	Get IDENTITY for SUPI type NSI or GLI when SUCI calc done by USIM Hw	Clause 7.5.2.1 of ETSI TS 131 102 Rel 17 and above Annex.- S
10.1.7	Get Identity (SUCI)	Clause 7.5 of ETSI 131 102 Rel 16 and above Annex.-S
10.1.8	Interface protocols USIM	Clause 6.3 of ETSI TS 102 221 rel 9 and above Annex.- S
10.1.9	Manage Channel	Clause 11.1.17 of ETSI 102 221 Rel 9 and above Annex.- S
10.1.10	Minimum application clock frequency USIM	Clause 5.3.1 of ETSI TS 131 101 Rel 9 and above Annex.-S
10.1.11	Physical and Logical Characteristics USIM	Clause 4A and 5 of ETSI TS 131 101 Rel 9 and above Annex.-S
10.1.12	Power saving mode	Clause 5.1.10 of ETSI TS 131 102 Rel 15 and above Annex.- S
10.1.13	Security mechanisms for the (U)SIM application toolkit Stage 2	Clause 5, 6, 7, 8, 9 of ETSI 123 048 Rel 5 and above Annex.-S
10.1.14	SIM shall support special SSD (Supplementary Secure Domain) for SIM based apps.	Clause 7.2 of Global Platform Specifications Version 2.1.1 and above Annex.-S
10.1.15	Subscriber Identity Module Application Programming Interface (SIM API) for Java Card TM Stage 2 USIM	Clause 6 and Annexure-A of ETSI TS 143 019 Rel 5 and above Annex.-S
10.1.16	Support for PIN and PUK USIM	Clause 9 of ETSI TS 102 221 Rel 9 and above Annex.-S
10.1.17	Transmission Speed USIM	Clause 6.3 of ETSI TS 102 221 Rel 9 and above Annex.-S
10.1.18	Voltage classes (Class A Class B Class C at least two consecutive classes Eg AB or BC) USIM	Clause 6A.2 of ETSI TS 131 101 Rel 9 and above Annex.-S

10.2 Interface 1 : SIM-ME-USIM

S.No.	Parameter Name	Standard Name
10.2.1	Subscriber Identity Module Mobile Equipment (SIM ME) interface USIM	Clause 4 of ETSI TS 131 102 Rel 18 and above Annex.- S