



**SLOVENSKI STANDARD  
SIST ETS 300 608 E9:2003**

**01-december-2003**

---

8 [[ ]HJb]`WV] b]`hY`Y\_ca i b]\_UW`g\_]`g]ghYa `fZuU&L`3`E`GdYWZ\_UW`Uj a Ygb]\_U  
a cV]`bY`cdfYa YnU`bUfc b]y`\_c`]XYbhZ\_UW`g\_c`\_UfhWt`fG-A!A9L`f! GA`%%`%%  
fUh`] ]WU( "%%%%

Digital cellular telecommunications system (Phase 2) (GSM); Specification of the  
Subscriber Identity Module - Mobile Equipment (SIM - ME) interface (GSM 11.11 version  
4.21.1)

**iteh STANDARD PREVIEW  
(standards.iteh.ai)**

[SIST ETS 300 608 E9:2003](https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003)

[https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-](https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003)

[555709dfc1ac/sist-ets-300-608-e9-2003](https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003)

**Ta slovenski standard je istoveten z: ETS 300 608 Edition 9**

---

**ICS:**

33.070.50	Globalni sistem za mobilno telekomunikacijo (GSM)	Global System for Mobile Communication (GSM)
-----------	--	---

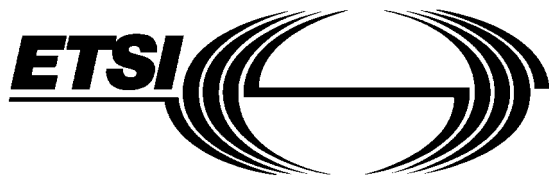
**SIST ETS 300 608 E9:2003**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST ETS 300 608 E9:2003

<https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003>



**E**UROPEAN  
**T**ELECOMMUNICATION  
**S**TANDARD

**ETS 300 608**

December 1999

Ninth Edition

Source: SMG

Reference: RE/SMG-091111PR9

ICS: 33.020

**Key words:** Digital cellular telecommunications system, Global System for Mobile communications (GSM)



**Digital cellular telecommunications system (Phase 2);  
Specification of the Subscriber Identity Module -  
Mobile Equipment (SIM - ME) interface  
(GSM 11.11 version 4.21.1)**

**ETSI**

European Telecommunications Standards Institute

**ETSI Secretariat**

**Postal address:** F-06921 Sophia Antipolis CEDEX - FRANCE

**Office address:** 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

**Internet:** secretariat@etsi.fr - <http://www.etsi.org>

Tel.: +33 4 92 94 42 00 - Fax: +33 4 93 65 47 16

**Copyright Notification:** No part may be reproduced except as authorized by written permission. The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 1999. All rights reserved.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST ETS 300 608 E9:2003](https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003)

<https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003>

## Contents

Intellectual Property Rights .....	7
Foreword .....	7
1 Scope .....	9
2 Normative references .....	9
3 Definitions, abbreviations and symbols .....	11
3.1 Definitions .....	11
3.2 Abbreviations .....	12
3.3 Symbols .....	13
4 Physical characteristics .....	13
4.1 Format and layout .....	13
4.1.1 ID-1 SIM .....	13
4.1.2 Plug-in SIM .....	13
4.2 Temperature range for card operation .....	14
4.3 Contacts .....	14
4.3.1 Provision of contacts .....	14
4.3.2 Activation and deactivation .....	14
4.3.3 Inactive contacts .....	14
4.3.4 Contact pressure .....	14
4.4 Precedence .....	15
4.5 Static Protection .....	15
5 Electronic signals and transmission protocols .....	15
5.1 Supply voltage Vcc (contact C1) .....	15
5.2 Reset (RST) (contact C2) .....	16
5.3 Programming voltage Vpp (contact C6) .....	16
5.4 Clock CLK (contact C3) .....	16
5.5 I/O (contact C7) .....	16
5.6 States .....	17
5.7 Baudrate .....	17
5.8 Answer To Reset (ATR) .....	17
5.8.1 Structure and contents .....	17
5.8.2 PTS procedure .....	19
5.9 Bit/character duration and sampling time .....	19
5.10 Error handling .....	20
6 Logical Model .....	20
6.1 General description .....	20
6.2 File identifier .....	20
6.3 Dedicated files .....	21
6.4 Elementary files .....	21
6.4.1 Transparent EF .....	21
6.4.2 Linear fixed EF .....	21
6.4.3 Cyclic EF .....	22
6.5 Methods for selecting a file .....	23
6.6 Reservation of file IDs .....	24
7 Security features .....	24
7.1 Authentication and cipher key generation procedure .....	24
7.2 Algorithms and processes .....	24
7.3 File access conditions .....	25

8	Description of the functions .....	26
8.1	SELECT .....	26
8.2	STATUS .....	26
8.3	READ BINARY .....	26
8.4	UPDATE BINARY .....	27
8.5	READ RECORD .....	27
8.6	UPDATE RECORD .....	28
8.7	SEEK .....	28
8.8	INCREASE .....	29
8.9	VERIFY CHV .....	29
8.10	CHANGE CHV .....	29
8.11	DISABLE CHV .....	30
8.12	ENABLE CHV .....	30
8.13	UNBLOCK CHV .....	30
8.14	INVALIDATE .....	31
8.15	REHABILITATE .....	31
8.16	RUN GSM ALGORITHM .....	31
8.17	SLEEP .....	31
9	Description of the commands .....	31
9.1	Mapping principles .....	32
9.2	Coding of the commands .....	33
9.2.1	SELECT .....	34
9.2.2	STATUS .....	37
9.2.3	READ BINARY .....	37
9.2.4	UPDATE BINARY .....	37
9.2.5	READ RECORD .....	37
9.2.6	UPDATE RECORD .....	38
9.2.7	SEEK .....	38
9.2.8	INCREASE .....	39
9.2.9	VERIFY CHV .....	39
9.2.10	CHANGE CHV .....	39
9.2.11	DISABLE CHV .....	40
9.2.12	ENABLE CHV .....	40
9.2.13	UNBLOCK CHV .....	40
9.2.14	INVALIDATE .....	40
9.2.15	REHABILITATE .....	40
9.2.16	RUN GSM ALGORITHM .....	41
9.2.17	SLEEP .....	41
9.2.18	GET RESPONSE .....	41
9.3	Definitions and coding .....	41
9.4	Status conditions returned by the card .....	43
9.4.1	Responses to commands which are correctly executed .....	43
9.4.2	Memory management .....	43
9.4.3	Referencing management .....	43
9.4.4	Security management .....	43
9.4.5	Application independent errors .....	44
9.4.6	Commands versus possible status responses .....	44
10	Contents of the Elementary Files (EF) .....	45
10.1	Contents of the EFs at the MF level .....	45
10.1.1	EF <sub>ICCID</sub> (ICC Identification) .....	45
10.2	Contents of files at the GSM application level .....	46
10.2.1	EF <sub>L<sub>P</sub></sub> (Language preference) .....	46
10.2.2	EF <sub>IMSI</sub> (IMSI) .....	46
10.2.3	EF <sub>K<sub>c</sub></sub> (Cipherring key K <sub>c</sub> ) .....	47
10.2.4	EF <sub>PLMNsel</sub> (PLMN selector) .....	48
10.2.5	EF <sub>HPLMN</sub> (HPLMN search period) .....	48
10.2.6	EF <sub>ACMmax</sub> (ACM maximum value) .....	49
10.2.7	EF <sub>SST</sub> (SIM service table) .....	50
10.2.8	EF <sub>ACM</sub> (Accumulated call meter) .....	51
10.2.9	EF <sub>GID1</sub> (Group Identifier Level 1) .....	52
10.2.10	EF <sub>GID2</sub> (Group Identifier Level 2) .....	52

## ETS 300 608 (GSM 11.11 version 4.21.1): December 1999

10.2.11	EFSPN (Service Provider Name) .....	52
10.2.12	EFPUCT (Price per unit and currency table) .....	53
10.2.13	EFCBMI (Cell broadcast message identifier selection) .....	54
10.2.14	EFBCCH (Broadcast control channels) .....	54
10.2.15	EFACC (Access control class) .....	54
10.2.16	EFFPLMN (Forbidden PLMNs) .....	55
10.2.17	EFLOCI (Location information) .....	56
10.2.18	EFAD (Administrative data) .....	57
10.2.19	EFPhase (Phase identification) .....	58
10.3	Contents of files at the telecom level .....	59
10.3.1	EFADN (Abbreviated dialling numbers) .....	59
10.3.2	EFFDN (Fixed dialling numbers) .....	62
10.3.3	EFSMS (Short messages) .....	62
10.3.4	EFCCP (Capability configuration parameters) .....	63
10.3.5	EFMSISDN (MSISDN) .....	64
10.3.6	EFMSMP (Short message service parameters) .....	64
10.3.7	EFMSMS (SMS status) .....	66
10.3.8	EFLND (Last number dialled) .....	66
10.3.9	EFEXT1 (Extension1) .....	67
10.3.10	EFEXT2 (Extension2) .....	68
10.4	Files of GSM (figure 7) .....	68
11	Application protocol .....	70
11.1	General procedures .....	71
11.1.1	Reading an EF .....	71
11.1.2	Updating an EF .....	71
11.1.3	Increasing an EF .....	71
11.2	SIM management procedures .....	72
11.2.1	SIM initialization .....	72
11.2.2	GSM session termination .....	72
11.2.3	Language preference .....	73
11.2.4	Administrative information request; .....	73
11.2.5	SIM service table request .....	73
11.2.6	SIM phase request .....	73
11.2.7	SIM Presence Detection .....	73
11.3	CHV related procedures .....	73
11.3.1	CHV verification .....	74
11.3.2	CHV value substitution .....	74
11.3.3	CHV disabling .....	74
11.3.4	CHV enabling .....	74
11.3.5	CHV unblocking .....	74
11.4	GSM security related procedures .....	75
11.4.1	GSM algorithms computation .....	75
11.4.2	IMSI request .....	75
11.4.3	Access control request .....	75
11.4.4	HPLMN search period request .....	75
11.4.5	Location information .....	75
11.4.6	Cipher key .....	75
11.4.7	BCCH information .....	75
11.4.8	Forbidden PLMN .....	75
11.5	Subscription related procedures .....	75
11.5.1	Dialling numbers .....	75
11.5.2	Short messages .....	77
11.5.3	Advice of Charge (AoC) .....	78
11.5.4	Capability configuration parameters .....	78
11.5.5	PLMN selector .....	78
11.5.6	Cell broadcast message identifier .....	78
11.5.7	Group identifier level 1 .....	79
11.5.8	Group identifier level 2 .....	79
11.5.9	Service Provider Name .....	79
Annex A (normative):	Plug-in SIM .....	80

Annex B (informative):	FDN Procedures .....	81
Annex C (informative):	Suggested contents of the EFs at pre-personalization .....	85
Annex D (informative):	Bibliography .....	86
Annex E (Informative):	Change History .....	87
History .....		88

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST ETS 300 608 E9:2003](https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003)

<https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003>



## Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://www.etsi.org/ipr>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

## Foreword

This European Telecommunication Standard (ETS) has been produced by the Special Mobile Group (SMG) of the European Telecommunications Standards Institute (ETSI).

This ETS specifies the Subscriber Identity Module (SIM) to Mobile Equipment (ME) interface within the digital cellular telecommunications system (Phase 2).

The specification from which this ETS has been derived was originally based on CEPT documentation, hence the presentation of this ETS may not be entirely in accordance with the ETSI/PNE Rules.

Transposition dates	
Date of adoption of this EN:	3 December 1999
Date of latest announcement of this ETS (doa):	31 March 2000
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 September 2000
Date of withdrawal of any conflicting National Standard (dow):	30 September 2000

Blank page

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST ETS 300 608 E9:2003](https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003)

<https://standards.iteh.ai/catalog/standards/sist/fbd1e8b4-65b3-4e85-9670-555709dfc1ac/sist-ets-300-608-e9-2003>

## 1 Scope

This European Telecommunication Standard (ETS) defines the interface between the Subscriber Identity Module (SIM) and the Mobile Equipment (ME) for use during the network operation phase of GSM as well as those aspects of the internal organization of the SIM which are related to the network operation phase. This is to ensure interoperability between a SIM and an ME independently of the respective manufacturers and operators. The concept of a split of the Mobile Station (MS) into these elements as well as the distinction between the GSM network operation phase, which is also called GSM operations, and the administrative management phase are described in the Technical Specification GSM 02.17 [6].

This ETS defines:

- the requirements for the physical characteristics of the SIM, the electrical signals and the transmission protocols;
- the model which shall be used as a basis for the design of the logical structure of the SIM;
- the security features;
- the interface functions;
- the commands;
- the contents of the files required for the GSM application;
- the application protocol.

Unless otherwise stated, references to GSM also apply to DCS 1800.

This ETS does not specify any aspects related to the administrative management phase. Any internal technical realization of either the SIM or the ME are only specified where these reflect over the interface. This ETS does not specify any of the security algorithms which may be used.

This ETS defines the SIM/ME interface for GSM Phase 2. While all attempts have been made to maintain phase compatibility, any issues that specifically relate to Phase 1 should be referenced from within the relevant Phase 1 specification. (standards.iteh.ai)

## 2 Normative references

This ETS incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- |     |   |
|-----|---|
| [1] | GSM 01.02 (ETR 99): "Digital cellular telecommunications system (Phase 2); General Description of a GSM Public Land Mobile Network (PLMN)".     |
| [2] | GSM 01.04 (ETR 100): "Digital cellular telecommunications system (Phase 2); Abbreviations and acronyms".  |
| [3] | GSM 02.07 (ETS 300 505): "Digital cellular telecommunications system (Phase 2); Mobile Station (MS) features".                                  |
| [4] | GSM 02.09 (ETS 300 506): "Digital cellular telecommunications system (Phase 2); Security aspects".  |
| [5] | GSM 02.11 (ETS 300 507): "Digital cellular telecommunications system (Phase 2); Service accessibility".   |
| [6] | GSM 02.17 (ETS 300 509): "Digital cellular telecommunications system (Phase 2); Subscriber Identity Modules (SIM), Functional characteristics". |
| [7] | GSM 02.24 (ETS 300 510): "Digital cellular telecommunications system (Phase 2); Description of Charge Advice Information (CAI)".                |
| [8] | GSM 02.30 (ETS 300 511): "Digital cellular telecommunications system (Phase 2); Man-Machine Interface (MMI) of the Mobile Station (MS)".        |

- [9] GSM 02.86 (ETS 300 519): "Digital cellular telecommunications system (Phase 2); Advice of charge (AoC) supplementary services - Stage 1".
- [10] GSM 03.20 (ETS 300 534): "Digital cellular telecommunications system (Phase 2); Security related network functions".
- [11] GSM 03.38 (ETS 300 628): "Digital cellular telecommunications system (Phase 2); Alphabets and language-specific information".
- [12] GSM 03.40 (ETS 300 536): "Digital cellular telecommunications system (Phase 2); Technical realization of the Short Message (SMS) Service Point-to-Point (PP)".
- [13] GSM 03.41 (ETS 300 537): "Digital cellular telecommunications system (Phase 2); Technical realization of the Short Message Service Cell Broadcast (SMSCB)".
- [14] GSM 04.08 (ETS 300 557): "Digital cellular telecommunications system (Phase 2); Mobile radio interface layer 3 specification".
- [15] GSM 04.11 (ETS 300 559): "Digital cellular telecommunications system (Phase 2); Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".
- [16] GSM 09.91 (ETR 174): "Digital cellular telecommunications system (Phase 2); Interworking aspects of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface between Phase 1 and Phase 2".
- [17] CCITT Recommendation E.118: "The international telecommunications charge card".
- [18] CCITT Recommendation E.164: "Numbering plan for the ISDN era".
- [19] CCITT Recommendation T.50: "International Alphabet No. 5". (ISO 646: 1983, Information processing - ISO 7-bit coded characters set for information interchange).
- [20] ISO/IEC 7810 (1995): "Identification cards - Physical characteristics".
- [21] ISO/IEC 7811-1 (1995): "Identification cards - Recording technique - Part 1: Embossing".
- [22] ISO/IEC 7811-3 (1995): "Identification cards - Recording technique - Part 3: Location of embossed characters on ID-1 cards".
- [23] ISO 7816-1 (1987): "Identification cards - Integrated circuit(s) cards with contacts, Part 1: Physical characteristics".
- [24] ISO 7816-2 (1988): "Identification cards - Integrated circuit(s) cards with contacts, Part 2: Dimensions and locations of the contacts".
- [25] ISO/IEC 7816-3 (1989): "Identification cards - Integrated circuit(s) cards with contacts, Part 3: Electronic signals and transmission protocols".
- [26] GSM 11.12 (ETS 300 641): "Digital cellular telecommunications system (Phase 2); Specification of the 3 Volt Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".

### 3 Definitions, abbreviations and symbols

#### 3.1 Definitions

For the purposes of this ETS, the following definitions apply. For further information and definitions, refer to GSM 01.02 [1].

**access conditions:** A set of security attributes associated with a file.

**application:** An application consists of a set of security mechanisms, files, data and protocols (excluding transmission protocols).

**application protocol:** The set of procedures required by the application.

**card session:** A link between the card and the external world starting with the ATR and ending with a subsequent reset or a deactivation of the card.

**current directory:** The latest MF or DF selected.

**current EF:** The latest EF selected.

**data field:** Obsolete term for Elementary File.

**Dedicated File (DF):** A file containing access conditions and, optionally, Elementary Files (EFs) or other Dedicated Files (DFs).

**directory:** General term for MF and DF.

**Elementary File (EF):** A file containing access conditions and data and no other files.

**file:** A directory or an organized set of bytes or records in the SIM.

**file identifier:** The 2 bytes which address a file in the SIM.

**GSM or DCS 1800 application:** Set of security mechanisms, files, data and protocols required by GSM or DCS 1800.

**GSM session:** That part of the card session dedicated to the GSM operation.

**IC card SIM:** Obsolete term for ID-1 SIM.

**ID-1 SIM:** The SIM having the format of an ID-1 card (see ISO 7816-1 [23]).

**Master File (MF):** The unique mandatory file containing access conditions and optionally DFs and/or EFs.

**padding:** One or more bits appended to a message in order to cause the message to contain the required number of bits or bytes.

**plug-in SIM:** A second format of SIM (specified in clause 4).

**record:** A string of bytes within an EF handled as a single entity (see clause 6).

**record number:** The number which identifies a record within an EF.

**record pointer:** The pointer which addresses one record in an EF.

**root directory:** Obsolete term for Master File.

### 3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply, in addition to the those listed in GSM 01.04 [2].

A3	Algorithm 3, authentication algorithm; used for authenticating the subscriber
A5	Algorithm 5, cipher algorithm; used for enciphering/deciphering data
A8	Algorithm 8, cipher key generator; used to generate $K_C$
A38	A single algorithm performing the functions of A3 and A8
ACM	Accumulated Call Meter
ADN	Abbreviated Dialling Number
ADM	Access condition to an EF which is under the control of the authority which creates this file
ALW	ALWays
AoC	Advice of Charge
APDU	Application Protocol Data Unit
ATR	Answer To Reset
BCCH	Broadcast Control CHannel
BCD	Binary Coded Decimal
BTS	Base Transmitter Station
CB	Cell Broadcast
CBMI	Cell Broadcast Message Identifier
CCITT	The International Telegraph and Telephone Consultative Committee (now also known as the ITU Telecommunications Standardization sector)
CCP	Capability/Configuration Parameter
CHV	Card Holder Verification information; access condition used by the SIM for the verification of the identity of the user
CLA	CLAss
DCS	Digital Cellular System
DF	Dedicated File (abbreviation formerly used for Data Field)
DTMF	Dual Tone Multiple Frequency
EF	Elementary File
ETSI	European Telecommunications Standards Institute
etu	elementary time unit
FDN	Fixed Dialling Number
GSM	Global System for Mobile communications
HPLMN	Home PLMN
IC	Integrated Circuit
ICC	Integrated Circuit(s) Card
ID	IDentifier
IEC	International Electrotechnical Commission
IMSI	International Mobile Subscriber Identity
ISO	International Organization for Standardization
Kc	Cryptographic key; used by the cipher A5
Ki	Subscriber authentication key; the cryptographic key used by the authentication algorithm, A3, and cipher key generator, A8
LAI	Location Area Information; information indicating a cell or a set of cells
lgth	The (specific) length of a data unit
LND	Last Number Dialed
LSB	Least Significant Bit
MCC	Mobile Country Code
ME	Mobile Equipment
MF	Master File
MMI	Man Machine Interface
MNC	Mobile Network Code
MS	Mobile Station
MSISDN	Mobile Station international ISDN number
MSB	Most Significant Bit
NET	NETwork
NEV	NEVer
NPI	Numbering Plan Identifier
PIN/PIN2	Personal Identification Number / Personal Identification Number 2 (obsolete terms for CHV1 and CHV2, respectively)

PLMN	Public Land Mobile Network
PTS	Protocol Type Select (response to the ATR)
PUK/PUK2	PIN Unblocking Key / PIN2 Unblocking Key (obsolete terms for UNBLOCK CHV1 and UNBLOCK CHV2, respectively)
RAND	A RANDom challenge issued by the network
RFU	Reserved for Future Use
SIM	Subscriber Identity Module
SMS	Short Message Service
SRES	Signed REsponse calculated by a SIM
SSC	Supplementary Service Control string
SW1/SW2	Status Word 1 / Status Word 2
TMSI	Temporary Mobile Subscriber Identity
TON	Type Of Number
TP	Transfer layer Protocol
TPDU	Transfer Protocol Data Unit
TS	Technical Specification
UNBLOCK CHV1/2	value to unblock CHV1/CHV2
VPLMN	Visited PLMN

### 3.3 Symbols

For the purposes of this ETS, the following symbols apply.

Vcc	Supply voltage
Vpp	Programming voltage
'0' to '9' and 'A' to 'F'	The sixteen hexadecimal digits

## 4 Physical characteristics

Two physical types of SIM are specified. These are the "ID-1 SIM" and the "Plug-in SIM".

The physical characteristics of both types of SIM shall be in accordance with ISO 7816-1,2 [22, 23] unless otherwise specified. The following additional requirements shall be applied to ensure proper operation in the GSM environment.

### 4.1 Format and layout

The information on the exterior of either SIM should include at least the individual account identifier and the check digit of the IC Card Identification (see clause 10, EF<sub>ICCID</sub>).

#### 4.1.1 ID-1 SIM

Format and layout of the ID-1 SIM shall be in accordance with ISO 7816-1,2 [22, 23].

The card shall have a polarization mark (see GSM 02.07 [3]) which indicates how the user should insert the card into the ME.

The ME shall accept embossed ID-1 cards. The embossing shall be in accordance with ISO/IEC 7811 [21]. The contacts of the ID-1 SIM shall be located on the front (embossed face, see ISO/IEC 7810 [20]) of the card.

NOTE: Card warpage and tolerances are now specified for embossed cards in ISO/IEC 7810 [20].

#### 4.1.2 Plug-in SIM

The Plug-in SIM has a width of 25 mm, a height of 15 mm, a thickness the same as an ID-1 SIM and a feature for orientation. (see figure A.1 in normative annex A for details of the dimensions of the card and the dimensions and location of the contacts).

Annexes A.1 and A.2 of ISO 7816-1 [23] do not apply to the Plug-in SIM.