

SIM CARD MEDIA SET

Representative SIM card set for testing purposes



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Informer:

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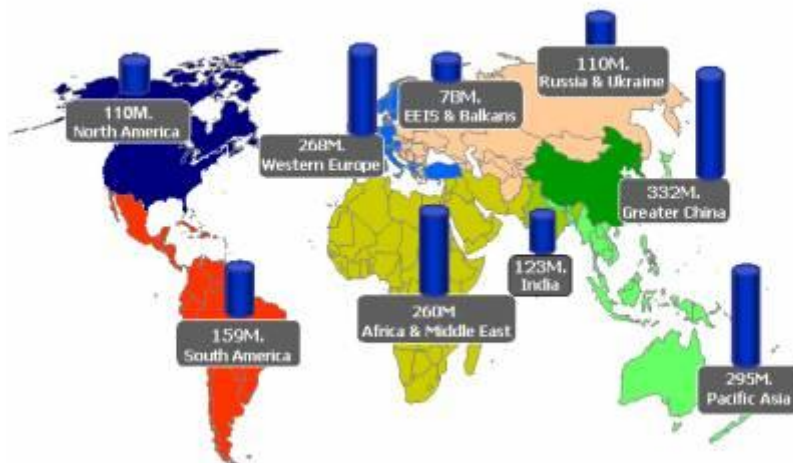
P3 communications GmbH offers an independent testing facility for manual testing as well as usability.

1 INTRODUCTION

Due to new developments, the amount of different SIM cards available and present on the market (e.g. mobile phones) is growing constantly. This leads to variances and an increasing number of possible error sources when using these cards in different devices. In order to test interoperability between SIMs and an end-user device, it is inescapable to know the behavior of different card-types when inserting them into the end-user device. Although SIM cards are very small, the impact on the daily life of users is very high because the end-user device will not be usable when the SIM is not functional.

Due to the vast amount of produced and shipped SIM cards which are in use, errors in SIM handling are uncondonable because even smallest reproducibility rates would lead to an unmanageable amount of complaints.

Global SIM card shipments (source: SIMposium)



2 DISTINGUISHING FEATURES

The following characteristics can be used to differ between SIM card types:

- Voltage (5V, 3V ...)
- Free memory
- SIM type (SIM, USIM...)
- Supported technology (2G, 3G)
- Manufacturer (data system, directories, time line ...)
- (Network) Operator (specific applets, memory usage...)

3 TRENDS:

Operator brand is more and more an issue of SIM cards as well as phones. Due to over-the-air updates, it may occur that new applications are installed on the SIM card (without the user even knowing about it). Increasing memory available on SIMs leads to more intensive use of this device and the possibilities for applications running on the SIM are becoming more attractive (e.g. mobile phone use case: telephone book with several entries).

Examples include home zones of the operators or SIM menus with operator-specific features (SIM-ATK).

4 SIM-CARDS AVAILABLE IN P3 COMMUNICATIONS EQUIPMENT POOL

Germany	Netherlands
• EPlus	• O2 NL
• O2 DE	• Orange
• T-Mobile	• KPN
• Vodafone D2	• T-Mobile NL
Italy	• Vodafone NL
• Tim	Belgium
• Vodafone - Omnitel	• Base
• Wind	• Mobistar
• Tre (Hutchinson 3G)	• Proximus
UK	Luxembourg
• O2 UK	• Mobilux
• Orange	Russia
• T-Mobile	• BeeLine
• Vodafone	• MTS
• Three (Hutchinson 3G)	• MegaFon
France	Austria
• Bouygues Telecom	• A1
• Orange	• One
• SFR	• Teling
Spain	• T-Mobile Austria
• Amena	• Drei (Hutchinson 3G)
• Movistar - Telefonica	Ireland
• Vodafone	• O2
Portugal	• Meteor
• Optimus	• Vodafone
• TMN	Denmark
• Vodafone	• Telia
Switzerland	• TDC Mobil
• Swisscom	• Sonofon
• Sunrise	• Three (Hutchinson 3G)
• Orange	• Orange
Sweden	Norway
• Telia	• Telenor Mobil
• Vodafone	• Lebara
• 3 Fri	• NetCom
• Comviq	• Teletopia T3

Poland	Finland
• Era GSM	• Elisa
• Polkomtel Plus	• DNA
• Idea Centertel	• Kolumbus
Czech Republic	• Sonera
• Eurotel	Albania
• Oskar	• AMC Alba Karta
• T-Mobile	• Vodafone
Turkey	Ukraine
• Turkcell	• Kyvistar GSM
• Vodafone	• Ukrainian GSM
• AVEA	• Life
Honkong	Egypt
• Hutchinson 3G	• Vodafone
• Sunday	• Mobinil
• Peoples	Bahrain
• CSL	• Batelco
• Smarttone	• Vodafone MTC
United Arab Emirates	Saudi-Arabia
• EtiSalat	• Mobily
• Du	• Ministry of PTT
Pakistan	Saudi-Arabia
• Ufone	• Mobily
• Paktel	• Ministry of PTT
• Warid	Greece
• Telenor	• Cosmote
• Mobilink	• Vodafone
Estonia	• Wind (TIM)
• Tele2	Czech Republic
• ZEN	• T-Mobile
• Simpel	Russia (+ St. Petersburg)
Croatia	• Bee Line
• Vipnet	• Megafon
South Africa	• MTS
• MTN	Hungary
• Vodacom	• T-Mobile
• Cell C	• Vodafone
• Simpel	• Pannon

5 COMPOSING A REPRESENTATIVE SIM SET

5.1 Representative test set creation

As can be seen on our available set, we cover different test scenarios.

With main focus on Europe, a sample set can be composed considering the following issues:

- European countries / network operators
- SIM cards EMEA
- SIM and USIM format
- Supported technologies (2G/3G)
- Post-paid and pre-paid cards
- rejected / defect / invalid SIM-cards

With such a SIM card set, the interoperability between phone (or other such systems like car environments) and the SIM can be verified

5.2 Test scenarios

Based on all these influencing parameters, P3 communications GmbH is able to support the customer in testing issues. We have vast experience in different testing fields and can support the customer during development (which we recommend) as well as in verifications or after-market scenarios.

- Registration of different SIM cards to the network
- Phonebook functionality (copy function, entry composition)
- Verification of special USIM features
- Basic telephony functions
- Special network functions (USSD commands)
- Emergency call functionality (rejected SIM, non-roaming SIM etc. - especially in countries where IMSI attach is needed (e.g. UK))
- Roaming Scenarios (e.g. border crossing)