

手机卡的分类和读取

手机要能够无线上网很大程度上依赖于手机卡，同时手机卡里面也可以存储少部分信息，如用户的电话联系人，短信等。因此手机卡也成为取证人员取证的依据之一，下面讲解手机卡的分类，以及如何对卡进行读取和复制。

1、手机卡的分类

所有移动通信终端接入移动通信网络都会用到各种用户识别模块，而这些身份识别模块通常都以通用集成电路卡的形式存在，所以不论哪种卡，它们的外形看起来都是一致的，但在不同制式的移动通信网络中，用户识别模块就会有差别。

针对手机卡有几个重要参数要进行说明。

ICCID: ICC 是集成电路卡，ID 是身份证，这个就是手机卡的物理身份，一般由 20 位数字组成。不同的运营商前缀也有所不同，一般新办理的手机卡背后都有 ICCID。

IMSI:IMSI 是国际移动用户标识，在用户使用移动通信终端接入移动网络时，IMSI 是重要的身份验证和鉴权信息。是由 15 位的数字组成，然后分成三个结构 MCC(3 位)+MNC(2 位)+MSIN(10 位)。MCC: 移动国家码，共 3 位，中国一般是 460。MNC:移动网络号码，就是识别运营商的号码，中国移动使用 00、02、04、07，中国联通使用 01、06、09，中国电信使用 03、05。MSIN:移动用户识别号码，用于识别某一移动通信网。不是研究的重点。

PLMN:公共陆地移动网络，组成就是 MCC+MNC。

介绍三个重要参数，我们用专业的手机读卡设备来看看三大运营商卡的区别

1.1、中国移动手机卡参数

中国移动的 ICCID 一般是 898600；898602；898604；898607

中国移动使用 00、02、04、07 作为 MNC，如下图：

Reader(PC/SC): ACS ACR38U 0 Refresh Read Card Write Card Save Data

Batch Write Card
Data File: Select File Go First Prev Next Last

Common Parameter
ATR: 3B9D95801FC78031E073FE211365D00223125F67 Type: LTE(*)LTE+GSM Language:
ICCID: 8986004022170F815788 Inc (DEC20) PIN1: 1234 PUK1: 88888888 PIN2: 1234 PUK2: 88888888 (ASC8) ADM:

GSM/WCDMA/LTE CDMA/EVDO/CSIM

GSM Parameter
IMS118: 809460020086775788 IMS115: 460020086775788 Inc (DEC18/15)
ACC: 0100 Input (DEC4) AD: 00000002
Inc KI: 000102030405060708090A0B0C0D0E0F (HEX32)
PLMN: 46000; 46002; 46007; 46008; 45412; 41004 Auto
EHPLMN: 46000; 46007; 46002; 46008
FPLMN: 46001; 46003; 46004; 46020
HPLMN: 50 (HEX2) GID1: GID2: (HEX)
SMSP: +8613800280500 MSISDN: Inc (ASC)
SPN: CMCC (ASC)
ECC:
Algorithm: Comp128-1 Comp128-2 Comp128-3 Milenage

LTE/WCDMA Parameter
IMS118: 809460020086775788 IMS115: 460020086775788
ACC: 0100 Input (DEC4) AD: 00000002
Inc KI: 000102030405060708090A0B0C0D0E0F
OPC: 000102030405060708090A0B0C0D0E0F
OP: 000102030405060708090A0B0C0D0E0F
PLMNwAct:
OPLMNwAct: 46000; 4000; 46000; 8000; 46000; 0080; 45412; 4000; 45412
HPLMNwAct: 46000; 4000; 46000; 8000; 46000; 0080
EHPLMN: 46000; 46007; 46002; 46008
FPLMN: 46001; 46003; 46004; 46020
HPPLMN: 50 (HEX2) GID1: GID2: (HEX)
SMSP: +8613800280500 (ASC) MSISDN:
SPN: CMCC (ASC)
ECC:
Algorithm: Milenage XOR R&C Para Other files

中国移动的前缀 中国移动的网络制式是LTE+GSM
460代表中国, 02代表移动
PLMN

LTE 协议代表 4G,GSM 是 3G 时代就开始用的网传协议。

1.2、中国联通手机卡参数

中国联通的 ICCID: 898601、898606、898609。

中国联通使用 01、06、09 作为 MNC,如下图:

Reader(PC/SC): ACS ACR38U 0 Refresh Read Card Write Card

Batch Write Card
Data File: Select File Go F

Common Parameter
ATR: 3B9E94801F478031E073FE211B66868842084B530E Type: WCDMA(*)WCDMA+GSM
ICCID: 89860117831006831084 Inc (DEC20) PIN1: 1234 PUK1: 88888888 PIN2: 1234 PUK2:

GSM/WCDMA/LTE CDMA/EVDO/CSIM

GSM Parameter
IMS118: 809460017076904480 IMS115: 460017076904480 Inc (DEC18/15)
ACC: 0100 Input (DEC4) AD: 000000
Inc KI: 000102030405060708090A0B0C0D0E0F (HEX32)
PLMN: 46001 Auto
EHPLMN:
FPLMN: 46000; 46002; 46004; 46007; 46008; 46003; 46011
HPLMN: FF (HEX2) GID1: GID2: (HEX)
SMSP: +8613010314500 MSISDN: Inc (ASC)
SPN: (ASC)
ECC:
Algorithm: Comp128-1 Comp128-2 Comp128-3 Milenage

LTE/WCDMA Parameter
IMS118: 809460017076904480
ACC: 0100 Input (DEC4)
Inc KI: 000102030405060708090A0B0C0D0E0F
OPC: 000102030405060708090A0B0C0D0E0F
OP: 000102030405060708090A0B0C0D0E0F
PLMNwAct: 46001; 4000; 46009; 4000;
OPLMNwAct: 46001; 4000; 46009; 4000;
HPLMNwAct: 46001; 4000; 46009; 4000;
EHPLMN: 46001
FPLMN: 46000; 46002; 46004; 46011
HPPLMN: FF (HEX2) GID1: GID2: (HEX)
SMSP: +8613010314500 (ASC)
SPN: (ASC)

联通前缀 网络制式
46001代表中国联通

WCDMA 可以理解为 3G 高速版, 下载速度能达到 4G, 联通通过这种方式实现 4G

1.3、中国电信手机卡参数

中国电信的 ICCID: 898603

中国联通使用 03、05 作为 MNC,如下图:

Personalize Tools(Copyright: GreenCard Co.,Ltd ver 3.1.0)

Reader(PC/SC): ACS ACR38U 0 Refresh Read Card Write Card Save Data Load Data Exit

Batch Write Card
Data File: / Select File Go First Prev Next Last Find Continue Temp

Common Parameter
ATR: 3B9F94801FC78031E073FE211B6362134E83009000FA Type: LTE+CDMA(*)LTE+CSIM(EVDO)+GSM Language: ... ADM: 3838383838383838 (HEX)

ICCID: 89860318240251811998 Inc (DEC20) PIN1: 1234 PUK1: 88888888 PIN2: 1234 PUK2: 88888888 (ASC8) ADM: 3838383838383838 (HEX)

GSM/CDMA/LTE CDMA/EVDO/CSIM

CDMA/EVDO Parameter
IMSI: 460038221360529 Inc (HEX15) ACCOLC: 09 Input (DEC2) Home SPN: 中国电信
IMSLT: Inc (HEX15) AKEY: 8090010101010101 Inc (HEX16)
Use UIUID: 80FAFAF5 (HEX8) Use ME-ESN: 00000000 (HEX8) Use MEID: 0000000000000000 (HEX14) Inc
MDN: Inc (ASC20) SID: 14174 NID: 65535 (NUM)
NAI Name: 460038221360529@mycdma.cn Inc (ASC) NAI Pass: (ASC)
SIP Name: 23200F6374776170406D7963646D612E636E21 (ASC) SIP Pass: (ASC)
MIP Name: F2FDF5019343630303338323231333630353235 (ASC) MIP Pass: (ASC)
ECC: 110:119:120:112

电信特有的ICCID 中国电信支持的网络制式最多，因此上网会更稳定些

4600中国，03电信

由于协议不同，电信存储的参数更多

电信可以免费拨打紧急电话

PRL Size: 775 / EPRL Size: 4228
Load PRL
Load EPRL

3A030720DE20E2D49800030410287FC00B02007A03082BF50401283A09E003082BF308C074378C1005013C0B2A08190832084B0864087D089608AF08E108FA09130945097709D
B0A0D0A260A580A710A8A0AA30B070B5240400000000301C058E0082300A8C00060301C30401000002304018533000304020000000406090000001030050E0981A00840ACD0206
040400058400102C058E0282300A8A0400102C40404070000001040070E07837FE00000000008010400304030117800307030117C00306038115C00306038115800306038115A00
3060381164003060381166002800403CF2304040430E00304048804800304050000000306050727E00304058805800304068682600304060698200304060695000306060615A00306
060615E003060606160003040585244002820005200282000548228200052FE304040588E003040807C6200304090530400304088115C003040484CC0002D2632A8

108401F403810100010300030B391B1923C85004E0EE09400B0E0025004E007700A000C900F2011B0A12282F2837283C2861286E289328A028D229040B040025004E4040006C00
0301C071E002460FFF013600FFFF0180E04060006C020301C04060006C040301C04060006C060301C04060006C080301C04060006C0A0301C04060006C0C0301C04060006C0E03
01C04060006C100301C04060006C120301C04060006C140301C04060006C160301C04060006C180301C04060006C1A0301C04060006C1C0301C04060006C1E0301C04060006C20
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