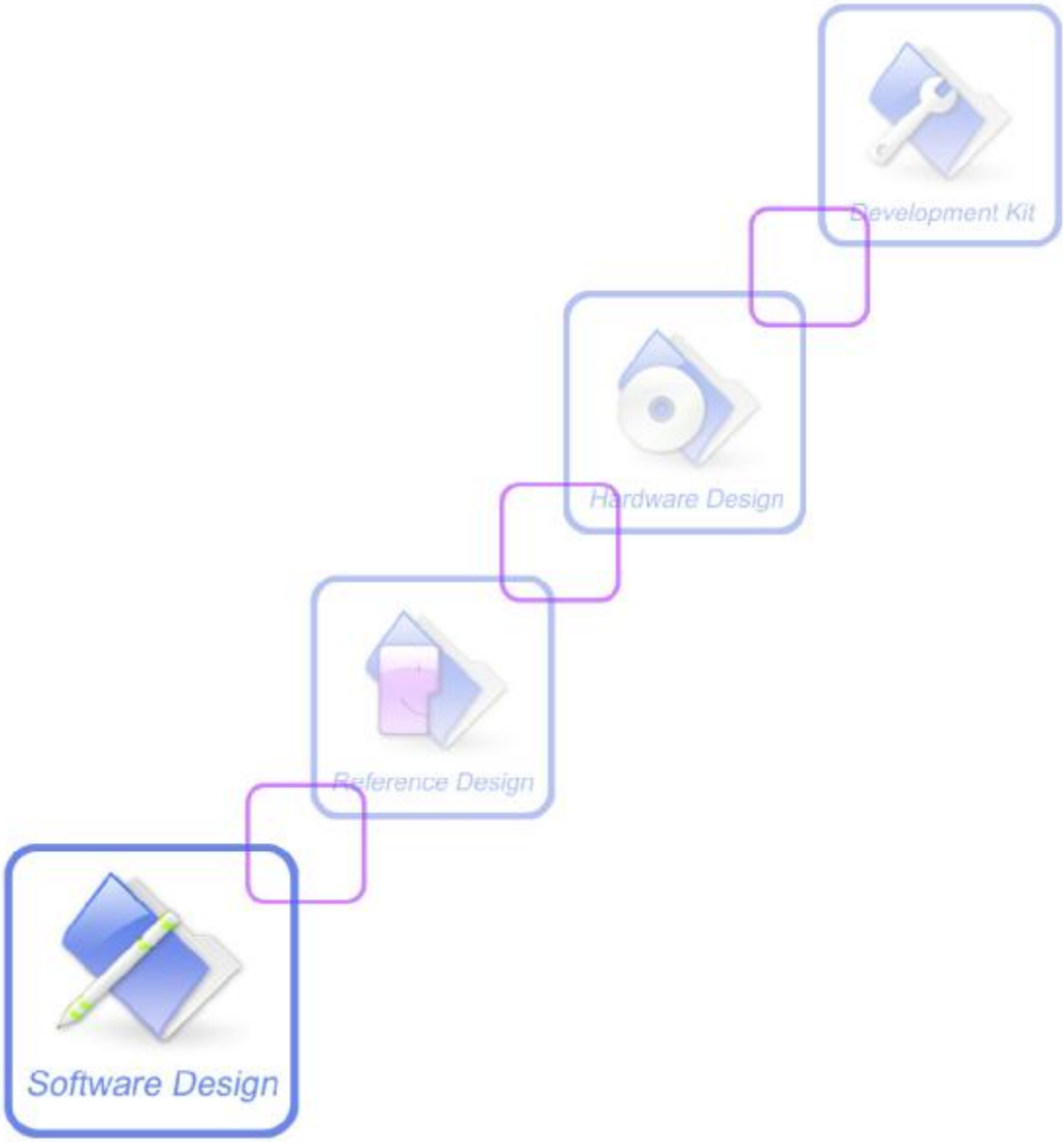
AGPS Application Note



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Version History

Version	Chapter	Comments
V1.00	New Version	
V1.01		Modify error for MS-based mode

SIM52xx AGPS application note

(For in-company and agent)

SIM52xx supports both A-GPS (Assisted GPS) and Standalone GPS. And there are two types of A-GPS: MS-assisted and MS-based. (Details reference HD specification)

Using AGPS must be provided with prerequisite:

1. The module must camp on WCMDA or GSM when using AGPS mode
2. Setting the correct APN (AT+CGSOCKCONT), i.e. make sure the module can dialup connection
3. SIM52xx support certificate, the certificate could get from the telecom operators and it must be imported into EFS (Embedded File System) by PC tool
4. Get the AGPS server address from the telecom operators

Direction for use A-GPS:

1. setting the correct APN (AT+CGSOCKCONT)
2. Setting the correct service address (AT+CGPSURL)
3. Select the transport security (AT+CGPSSSL)
4. If select the transport security (AT+CGPSSSL=1), certificate is necessary. The certificate must be imported into EFS by PC tool

Example:

1. AGPS server doesn't support certificate:

MS-assisted mode	no certificate
Set APN	AT+CGSOCKCONT=1,"IP","*CMNET*" (set APN)
Set server address (not support certificate)	AT+CGPSURL="111.222.333.444:8888"
Set security mode	AT+CGPSSSL=0
Start GPS	AT+CGPS=1,3
AT port response (URC)	+CAGPSINFO:3122256517,12135328531,135,15052009,012749.0
NMEA port response	$GPGSV,3,1,10,02,22,135,26,08,11,045,23,09,11,180,22,10,33,056,22*71 $GPGSV,3,2,10,15,78,281,44,21,22,315,41,24,67,315,47,26,45,225,30*78 $GPGSV,3,3,10,27,33,157,,29,22,247,46*76 ……
MS-based mode	no certificate
Set APN	AT+CGSOCKCONT=1,"IP","*CMNET*" (set APN)
Set server address (not support certificate)	AT+CGPSURL="111.222.333.444:8888"
Set security mode	AT+CGPSSSL=0

Start GPS	AT+CGPS=1,2
AT command (get fixed position)	AT+CGPSINFO
AT port response	*+CGPSINFO: 3113.393766,N,12121.176625,E,061108,075358.0,19.5,0*
NMEA port response	$GPGSV,3,1,11,02,19,142,20,08,16,045,21,09,19,180,22,10,41,063,29*7B $GPGSV,3,2,11,15,77,317,46,18,09,286,31,21,28,315,43,24,73,310,47*7F $GPGSV,3,3,11,26,53,241,31,27,39,158,20,29,30,250,41*45 $GPGGA,013925.0,3113.340070,N,12121.176208,E,1,08,2.9,164.0,M,,,,*08 $GPRMC,013925.0,A,3113.340070,N,12121.176208,E,,,150509,,,A*61 $GPGSA,A,3,08,10,15,18,21,24,26,29,,,,,4.4,2.9,3.3*37 $GPVTG,,T,,M,0.0,N,0.0,K*4E ……

2. AGPS server support certificate:

MS-assisted mode	use certificate
Import certificate	By PC tool
Set APN	AT+CGSOCKCONT=1,"IP","*CMNET*" (set APN)
Set server address (support certificate)	AT+CGPSURL="111.222.333.444:8888"
Set security mode	AT+CGPSSSL=1
Start GPS	AT+CGPS=1,3
AT port response (URC)	+CAGPSINFO:3122256517,12135328531,135,15052009,012749.0
NMEA port response	$GPGSV,3,1,10,02,22,135,26,08,11,045,23,09,11,180,22,10,33,056,22*71 $GPGSV,3,2,10,15,78,281,44,21,22,315,41,24,67,315,47,26,45,225,30*78 $GPGSV,3,3,10,27,33,157,,29,22,247,46*76 ……
MS-based mode	use certificate
Import certificate	By PC tool
Set APN	AT+CGSOCKCONT=1,"IP","*CMNET*" (set APN)
Set server address (support certificate)	AT+CGPSURL="111.222.333.444:8888"
Set security mode	AT+CGPSSSL=1
Start GPS	AT+CGPS=1,2
AT command (get fixed position)	AT+CGPSINFO
AT port response	*+CGPSINFO: 3113.393766,N,12121.176625,E,061108,075358.0,19.5,0*
NMEA port response	$GPGSV,3,1,11,02,19,142,20,08,16,045,21,09,19,180,22,10,41,063,29*7B $GPGSV,3,2,11,15,77,317,46,18,09,286,31,21,28,315,43,24,73,310,47*7F $GPGSV,3,3,11,26,53,241,31,27,39,158,20,29,30,250,41*45 $GPGGA,013925.0,3113.340070,N,12121.176208,E,1,08,2.9,164.0,M,,,,*08

	$GPRMC,013925.0,A,3113.340070,N,12121.176208,E,,,150509,,,A*61 $GPGSA,A,3,08,10,15,18,21,24,26,29,,,,,4.4,2.9,3.3*37 $GPVTG,,T,,M,0.0,N,0.0,K*4E ……

Note:

1. When using MS-based mode, it will transform to standalone mode automatically after get the ephemeris information from the server
2. When using MS-assisted mode, the NMEA port response sentences include GSV only
3. When using MS-based mode, the NMEA port response sentences include GSV, GGA, RMC, GSA, and VTG
4. MS-assisted mode is single fixed, MS-based mode is seriate fixed
5. Make sure the server address supports certificate or not
6. If set the GPS start automatic when module power on, it support standalone mode only
7. Other information reference AT command document or hardware specification

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