

# SIM900 Firmware Release Note

**Latest Version: 1137B11SIM900M64\_ST**

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# SIM900 GSM Cellular Engine

## 1 Preamble

This Release Note introduces SIM900 firmware versions and briefly describes the benefits over preceding release. Also user can find differences compared to preceding release.

**New Features:** It lists features or AT commands which are newly developed compared to the preceding version.

**Improved Features:** It lists features or parameters that have been changed or improved compared to the preceding version.

## 2 Related documents

[1] SIM900 AT Command Set, V1.05

[2] SIM900 Hardware Design, V1.06

**Version: 1137B11SIM900M64\_ST**

**[New Features]**

1. Added "AT+CMGS=">index"" function to simplify short message sending operation.
2. Added "AT+CNETSCAN" command to scan available network when there is no card in the module.
3. Added three parameters of "AT+CIPCCFG" command: (Rxmode:0,1),(RxSize:50-1460),(Rxtimer:20-1000). If "Rxmode" is set to 1, the function is enabled that the data received from network in transparent mode will be partitioned into small blocks then sent to serial port by time sharing processing.
4. Added "AT+SRSPT" command to reduce the response time of SMS. It can be set as 0 or 1. The default value is 0 which means not to enable this function. 1 means enable this function.

**[Improved Features]**

1. Solved the problem that the voltage of 1.8v SIM card is still 3v after operating "AT+CFUN=1" operation in some special cases.
2. Changed the initial return value of \*CELLLOCK reading command from 255 to 0.
3. Solved the problem that no response would return from serial port when SHUTDOWN the TCP/UDP connection immediately after it was established.
4. Solved the problem that the module will reset itself if customer sending the "AT+CBAND="EGSM\_DCS\_MODE" command quickly and repeatedly.
5. Optimized the command "AT+EXUNSOL="UR",1".
6. Solved the problem that after hanging up a unconnected call by HVOIC, ATDL command will not work.
7. Solved the problem if the module was reset by key depression, the information "SIM PUK2 required" will be shown when unlocking the pin after "AT+CFUN=1" operation.
8. Delete the extra response "OK" of "AT\*CELLLOCK=0" command.
9. Solved the problem that SMS process could not exit if the module enters into transparent mode during its editing process, it would cause the serial port impassable.
10. Extend the function of "AT+CLDTMF" command that user can generate square-wave by setting an extra optional parameter which is newly added to the end of the command.
11. Solved the problem of Ukrainian customer: Set up a call connection between SIM900 and mobile phone, and the mobile phone was set to call hold, then it reconnect this call, after which user cannot make the microphone of SIM900 mute by setting "AT+CMUT=1".

**Version: 1137B10SIM900M64\_ST****[New Features]**

1. Added a new function of GSMBUSY command. By setting "AT+GSMBUSY=2" user can reject all the voice calls but allow CSD calls to access.
2. Added "AT+CR99" command to set the GPRS release number according to the user's operator. It can be set as 0 or 1. 1 means the default value 99, 0 means 97.
3. Added "AT+CEXTERNTONE" command to switch on/off audio function of MIC.
4. Added a parameter of HTTPPARA that customer can set http timeout period.
5. Added a parameter of HTTPPARA command that customer can set http context type.
6. Added "AT+CUSACC" command to accelerate uart speed.
7. Added "AT+FTPDELE" command to delete file.
8. Added "AT+FTPSIZE" command to require the size of gain file.
9. Added "AT+FTPSTATE" to read the state of FTP session. 1 means in the FTP session, 0 means not in the FTP session
10. Added "AT+CWHITELIST" command to support white list function, only the calling number from the white list is allowed to access, other numbers will be rejected directly without incoming call ring and any hint. It can set 30 numbers at most.
11. Added "AT+CNETLIGHT" command to close/open network light. 0 means close, 1 means open.

**[Improved Features]**

1. Solved the problem that incoming call cannot be picked up automatically in transparent mode and SMS editing mode.
2. Made the default value of time set by SS command equivalent to that set by "AT+CCFC" command.
3. Solved the problem that user cannot write a SMS with the send number of 161 or 177 type.
4. Solved the problem that DCD pin cannot recover to high level itself in some special cases.
5. Fixed a bug that "MO CONNECT" cannot be reported in each Logic Channel.
6. Solved the problem that GPRS does not worked temporarily when ussd is sending IND signal.
7. Solved the problem that the serial port would be blocked while using AT+HVOIC to

hang up a call.

8. Solved the problem that there is no response returned from serial port when active a call with some card for Brazilian customer.
9. Optimized the network searching method to accelerate the speed of searching network in some special cases.
10. Modified the digital gain set problem of "AT+AUDG" command.
11. Solved the problem of DNS crash while using "AT+CIPSHUT" in decrypting process
12. Fixed a bug that SIMCard cannot be recognized after read or delete SMS in "TIM" card.
13. Further improved the command "AT+CIPTXISS=1" to prevent the response of AT command mix in TCP data.
14. Under the condition that the module is in sleep mode and the RF is closed, the module will enter into super sleep mode, the net light will be turned off for decreasing the decreasing the current consumption until the module exit the super sleep mode.
15. Solved the packet loss problem in MUX mode during the PPP dial process in LINUX platform.
16. Solved the problem that the module would reset if user input "AT+COPS=?" command continuously in some special case.
17. Modified some URC errors of CSD call in MUX mode.

### **Version: 1137B09SIM900M64\_ST**

#### **[New Features]**

1. Added a new AT command "AT+CIPTXISS" of TCP function. If it is set to 1 (enabled), the module can not respond to AT commands when TCP is sending data to this port, the default value is 0 (disabled). It has no effect in transparent mode when it is enabled.

#### **[Improved Features]**

1. Reduced errors which happened when previous redundant data affected next FTP operation by adding the initialization of FTP control data.
2. Solved the problem that module reported overtime for some FTP server after it received data.
3. Solved the problem that sending data would be failed if user input the data immediately after the ">" was shown.
4. Solved the problem in Poland that the module would disconnect from the network after registered successfully previously because of its missing of some SIM card files.

5. Improved the recognition accuracy of keyboard.
6. Made the return value to be "ERROR" if user forwarded an inexistent SMS by executing "AT+CMSS" command.
7. Solved the problem that failure would occur if user forwarded some SMS.
8. Solved the problem that sender number of SMS would not be changed if this SMS was forward for several times.
9. Solved the problem that when "AT+CNMI=2,2" was set and user sent an empty SMS there was neither "+CMT" nor "+CDS" reported.
10. Solved the problem in MUX mode that when user closed a channel unconventionally, the serial port might be blocked if user operated TCP command after that.
11. Solved the problem that user could not activate a call successfully which was caused by STK.

#### **Version: 1137B08SIM900M64\_ST**

##### **[New Features]**

1. Added "AT+SLEDS" command to configure the flicker frequency of network lights in the status of unregistered, registered or PPP.
2. Added the value "UR" to the parameter <exunsol> of "AT+EXUNSOL" command to support unsolicited result code.

##### **[Improved Features]**

1. Solved the problem of not reporting "NO ANSWER" in the case of calling the other side who was busy when user set ATS7=15.
2. Solved the problem that voltage alarm urc was only reported in a logical serial port in MUX mode.
3. Modified the format of returning information when setting "AT+CENG=3".
4. Solved the reset problem when user input wrong value of parameter to change the frequency band.
5. Added AT+CGAS command to increase the speed of GPRS attachment since it is not necessary to re-attach each time.
6. Fixed the bug that executing ATA command can not pull RI to high level in MUX mode.
7. Solved the problem that USSD information reported was incorrect found by Indian customer.
8. Fixed the bug that the local time converted by the time NITZ reported was wrong and

“CI” of operator’s name was wrong.

9. Optimized the SIDETONE function.
10. Solved the problem that it would take a long time for network indicator light to flash for some SIM cards when user powered on the module in roaming status.
11. Solved the problem that unrecognizable code would be reported when user executed the CLCC or CLIP command to get information of an incoming call whose name was saved in the phonebook in UCS2 mode previously.
12. Solved the problem that there is no response returned from serial port if user executes the following steps: 1. Plug out the SIM card and then dial emergency number. 2. Plug in the SIM card then execute "AT+CFUN=0" command.
13. Limited the scope of input parameters of "AT+CRLP" command.
14. Fixed the bug of CLCC, CLIP, CMGR command that Chinese name and English name could not display in UCS2 mode if user sets CSCS to UCS2 mode.
15. Modified the CPBW command when CSCS was set to HEX mode, the name could be written up to 28 characters.
16. Limited the scope of input parameters of AT+CALD command.
17. Modified the error response of AT command "AT+CSTA=", the error response should be "ERROR" instead of "OK".
18. Solved the problem that the responses of reading empty record in phone book via CPBR command were not consistent.
19. Modified the response of test command of EXUNSOL by adding the parameter value "UR".
20. Solved the problem that the module can not register to the network successfully with SIM card of Orange operator when user sets "AT+CBAND="ALL\_BAND""
21. Added the content "resource limitation" of error code 99.
22. Solved the problem that the calling record of some special number can not be saved in recent call lists.
23. Solved the problem that the CSD connection can not be established successfully anymore after user dials a number in call record list in CSD mode.
24. Solved the problem that "CALL READY" will not report in some special conditions when URC presentation was enabled by executing CIURC command.
25. Solved the problem that no response would return from serial port if "AT\*PSENGMODE=0" is executed and modified the response format of test command to "\*PSENGMODE: (1)".

26. Solved the problem that CTS varied when user sent or received AT command with no flow control.
27. Limited the scope of inputting parameter when executing HTTPREAD and HTTPDATA command in writing mode.
28. Solved the problem that Shenzhen customer can not originate a phone call or send SMS after a successful call.
29. Altered the RI pin status when the module reported "RING" of incoming CSD call. If CRIPULSE is set to 1, it presents RI pulse otherwise it is continuously in high level.
30. Solved the problem that there was no ring back tone if user dialed a number of MAXIS sim card through the CELECOM sim card in Malaysia.
31. Solved the problem which happened after user sent a sms via AT command accidentally that the module would "freeze" for about 50 seconds before it replied, during that time, the module did not respond to any commands.
32. Supported GPRS multislots class 2, user is allowed to set class 2 by executing CGSMCLASS command.
33. Solved the problem that SIM PIN2 couldn't be modified.
34. Solved the problem that the module couldn't attach to the GPRS network if it had activated GPRS previously and then restarted manually.
35. Solved the problem raised by Shenzhen customer that some special SIM card could not be recognized by the module.
36. Improved the CENG function to show more neighbor cells.

#### **Version: 1137B07SIM900M64\_ST**

##### **[New Features]**

1. Added the buzzer function to AT command "AT+SPWM".
2. Added the function to disable the ECHO algorithm.
3. Added "AT+CBUZZERRING" command, the default value of which is 0. If it is set to 1, the ring of incoming call will be sent out from buzzer, with the frequency of 1HZ, it is valid only when the module has buzzer.

##### **[Improved Features]**

1. Solved the problem that module could crash when user sets the CLVL continuously.
2. Solved the SIM900 problem that the module will reset if user executes "AT+CFUN=0" or changes the band rate by AT command "AT+CBAND" at module initiating time.
3. Modified the "AT+CENG" command to make it consistent with SIM300 series: 1,



- enlarged the length of MNC to support 3 bytes; 2, used number "99" to represent invalid parameter "rxquality" instead of "FF"; 3, added MCC and MNC information of neighborhood cell, 4, changed the show location of LAC which is set to hex mode.
4. Fixed the problem that self adaptive baud rate was not precise which led to failure of baud rate adaption.
  5. Fixed the problem that the module would not receive any data which were sent immediately after the connection was established successfully if it is set to be a server.
  6. Fixed the problem that the module reported error information of incoming call when user used "ATH" command to hang up before the "RING" was reported, and it would ring continuously and keep connected.
  7. Optimized the "ATH" function to make possible to hang up a call by sending consecutive ATH command when COLP is set to 1.
  8. Fixed the bug that the record of a successful CSD call could not be saved in the phonebook.
  9. Fixed the bug that the out of range hints of dialing record 0 by "ATD>" command when the current phonebook has no record were different from that when the current phonebook has records.
  10. Optimized the broken transfer resuming function of http.
  11. Fixed the bug that short name display function was not implemented when user queried the network list.
  12. Fixed the problem that module could not search for the network if AT command "AT+COPS" was set to short alphanumeric format, when executing AT+COPS=1,1,"CMCC".
  13. Fixed the response failure problem when user responds to the "get input" item of STK with data in UCS2 format.
  14. Solved the problem that it would fail easily when user activated GPRS context immediately after executing the "AT+CIPSHUT" command.
  15. Modified the VTS function not to return OK until implementation was executed successfully.
  16. Fixed the problem that some of the CLCC and CLIP URC can not be reported normally in MUX mode.

**Version: 1137B06SIM900M64\_ST\_AM**

**[New Features]**

1. Added the function to disable the sidetone algorithm.

2. Added "AT+CIPRXGET" command to get data from RX manually. If the parameter is 0, this function is closed and the module is set to normal mode, data will be pushed to serial port directly; if the parameter is set to 1, user enables the function; if the parameter is set to 2, the module can get data, but the length of output data can not exceed 1460 bytes at a time; if the parameter is set to 3, it is in HEX mode, the module can get 730 bytes maximum at a time; and if the parameter is set to 4, user can also query how many data are not read with a given ID.
3. Added "AT+CIPQRCLOSE" command to speed up disconnection of the remote server. This function is disabled by default (0).
4. Added query status function to command "AT+CIPSTATUS", it will be valid only when "CIPMUX=1", and it will report the status first, then return "OK".
5. Added "AT+CAAS" command to enable or disable the function to switch audio channel automatically and put a call through by hook key. But the headset detection function is still reserved, when "AT+CEXTHS=1" is set, the status of headset plug in or out will be reported.
6. Added "AT+CIPSCONT" command to save APPTCP parameters in flash and support flash interface to save and load the value.
7. Added "AT+FTPSCONT" command to save FTP parameters in flash and support flash interface to save and load the value.
8. Added "AT+HTTPSCONT" command to save HTTP parameters in flash and support flash interface to save and load the value.
9. Added "AT+SAPBR" command to save SAPBR parameters in flash and support flash interface to save and load the value.
10. Added "AT+GSMBUSY" command, if it is set to 1, all the incoming calls can be rejected directly when there is no response from the module, this command is designed for the user's convenience in some special cases, such as simulating offhooking dialing and no incoming call interruption during GPRS data transmission. This function is disabled by default (0).
11. Added AT&T authentication supported parts.

#### [Improved Features]

1. Modified the problem that the data received from a HTTP server in a poor network was inconsistent with the HTTP data received from a better network.
2. Modified the return value of "AT+CSCA=" command when it is executed and no parameter is entered.
3. Modified the problem that neither "+CMT" nor "+CDS" was reported when blank SMS message was sent in the case of "AT+CNMI=2,2".

4. Fixed the bug that there was no message reported in case of SMS message incoming when "AT+CNMI=2,0,0,0,0" and "AT+CSMP=17,167,0,240" are set.
5. Modified the problem that not all the call records can be queried for characters in UCS2 mode.
6. Fixed the bug that the value of the current frequency band was not consistent with the value queried by the AT command.
7. Modified the problem that both CNUM and CPBR can not show the record written by CPBW command when AT+CPBS="ON" is set and some special SIM cards with the volume 1 are used.
8. Modified the downstream mode of headset channel and set it to be non-VCM mode.
9. Modified the power on voltage and set it to be 3.1v.
10. Fixed the problem that there is no RING message reported during a coming call if the corresponding name in the phonebook is blank.
11. Modified the default mic value of "AT+AUTEST" to be 18, and added a function to use "AT+AUTEST=0" separately to close headset channel loop, which is disabled in SIM900 or SIM900A products.
12. Modified the problem that call cannot be set up when vivacom Sim card is used and added the auto-reply function of remove menu.
13. Fixed the bug that wrong apn will lead to ppp dial exit failure in WINCE platform.
14. Modified the SIM card unrecognizing problem in Taiwan.
15. Fixed the reset problem during a call in Argentina.
16. Fixed the bug that no message was reported during releasing PPP dial when "AT+CGEREP=1,1" was set.
17. Modified the power off voltage and set it to be 3.1v.

**Version: 1137B06SIM900M64\_ST**

#### **[New Features]**

1. Added HTTP and FTP functions.
2. Added "ME" phonebook function for "AT+CPBS" command.

#### **[Improved Features]**

1. Fixed the bug that CLCC will report error information when a CSD call is dialed after a different CSD connection has already been established.
2. Modified the hands-free audio parameters by adding two additional settable parameters

of es and of ses respectively for "AT+ECHO".

3. Modified the character case sensitive problem by using "AT+CPBF" command to search for phonebook entries.
4. Modified the problem that the module will not report error when some illegal characters are entered as parameters of "AT+CLDTMF" command.
5. Fixed the bug of "AT+CPBR" command, that the display number of which was not converted to the right format under UCS2 mode.
6. Fixed the bug of wrong name display format when "AT+CCVM?" command was executed under UCS2 mode.
7. Modified the problem that dial-up program can not be running successfully when module is connected to LINUX platform.
8. Modified the default parameters of "AT+CMUX" command to be "+CMUX: 0,0,5,127,10,3,30,10,2".
9. Fixed the problem that DCD pin will not return to low level if CSD call is dropped by pulling DTR to high level after "AT&D2" is set.
10. Modified the problem that module will take a long time to register to the network if another SIM card which belongs to a different network operator is used.
11. Changed the return value of "ERROR" to "OK" when the command "AT+CMGR=1" is executed if there is no SMS on index 1, which is compatible with SIM300.
12. Optimized AT+VTS command that "AT+VTS=1" can be used to generate DTMF tone directly, which is compatible with SIM300.
13. Optimized the "ATH" function to make it possible to hang up a call by sending consecutive "ATH" command when "COLP" is set to 1.
14. Discarded UDP data directly if its length exceeds 1460 bytes in a single package.
15. Improved the stability of reading SMS under low-speed baud rate.
16. Fixed the problem that "AT+HVOIC" command can not take effect under special cases.

#### **Version: 1137B05SIM900M64\_ST**

##### **[New Features]**

1. "AT+ECHO" command is available now.
2. Added a new hands-free logic channel.

##### **[Improved Features]**

1. Extended the range of CMIC parameter.
2. Modified the "AT+CLTS" command by adding the network time acquirement function.
3. Modified the precision of CLDTMF and SIMTONE
4. Fixed some bugs of TCP.
5. Modified the problem of working at multiplexed mode in WINCE platform through 3 serial port pins (RXD, TXD, GND).

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