



TC35i Module TC35i Terminal

Siemens Cellular Engines

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TC35i Siemens Cellular Engines

1 Preamble

This Release Note introduces **TC35i Version 02.07** and briefly describes the advantages over the preceding release. You also find a list of problems and deficiencies known of the present version.

Referred to as TC35i, the software applies to the Siemens GSM engines **TC35i** and **TC35i Terminal**.

1.1 Related documents

- [1] TC35i AT Command Set, Version 02.07
- [2] TC35i Hardware Interface Description, Version 02.07
- [3] TC35i Terminal Hardware Interface Description, Version 01.05
- [4] Remote-SAT User's Guide
- [5] DSB35 Support Box - Evaluation Kit for Siemens Cellular Engines
- [6] Application Note 02: Audio Interface Design for GSM Applications
- [7] Application Note 07: Li-Ion Batteries in GSM Applications
- [8] Application Note 16: Upgrading TC35i Firmware
- [9] Application Note 14: Audio and Battery Parameter Download
- [10] Multiplexer User's Guide
- [11] Multiplex Driver Developer's Guide for Windows 2000 and Windows XP
- [12] Multiplex Driver Installation Guide for Windows 2000 and Windows XP
- [13] Application Note 24: Application Developer's Guide

To visit the Siemens Website you can use the following link:

<http://www.siemens.com/wm>

2 New features

AT command	Brief description
<p>AT^SCFG</p> <p>Automatic execution of AT commands</p>	<p>Siemens defined AT command that allows you to configure TC35i to automatically execute any AT command or sequence of AT commands. You can choose whether to launch the execution by toggling the DTR signal or using a timer (maximum 240 hours). The AT command(s) to be performed can be any command supported by TC35i. This gives you the flexibility to run any procedure whatsoever - all you need to do is entering, via AT^SCFG, the entire AT command sequence.</p> <p>A typical solution is to schedule a cyclic restart of the mobile, for example if the network usually deregisters a mobile after inactivity. For this purpose, use AT^SCFG to set the timer and specify an appropriate command sequence, such as AT+CFUN=1,1, followed by any further commands to initialize the module.</p> <p>Another useful approach is sending a short message once the DTR signal is activated.</p> <p>The AT^SCFG command offers more options than the AT%D command you may also use to configure automatic procedures driven by the DTR signal. The major difference is that AT%D is intended only to automatically set up a call. Furthermore note that there is a difference in handling an ongoing event when DTR is toggled again: The DTR signal cannot be toggled when a call initiated due to settings made with AT%D is still ongoing. However, when there is a call initiated due to DTR settings made with AT^SCFG, DTR toggling is accepted, disconnects the ongoing call and dials the same call again. It is not possible to configure DTR driven events via AT%D and AT^SCFG at the same time.</p>
<p>SMS concatenation</p>	<p>TC35i now offers full support of SMS concatenation to send and receive "long" SMS in text mode.</p> <p>For this purpose, the following Siemens defined AT commands are provided:</p> <p>AT^SCMW: Write concatenated SMS to memory AT^SCMS Send concatenated SMS from TE to network AT^SCML: List concatenated SMS from preferred storage AT^SCMR: Read concatenated SMS</p> <p>The handling of concatenated SMS in text mode is quite similar to non-concatenated SMS. In addition, each part of a concatenated SMS must be assigned the same reference number and a sequence number incremented by one. This way, concatenated messages are split apart for transmission over the GSM network, and can then be composed to one message on the receiving mobile.</p> <p>If stored on the mobile, each part of a concatenated SMS requires one memory location of the preferred SMS storage. To send a concatenated SMS saved with AT^SCMW the standard AT command AT+CMSS will be used. Also, to delete concatenated SMS simply use the standard command AT+CMGD.</p>

AT command	Brief description
AT^SHUP	<p>Siemens defined AT command to disconnect a call and, in addition, to send a specific release cause message to the network for being forwarded to the remote party.</p> <p>The feature can be used to reject an incoming call, terminate an active or held call, end all calls at a time, or disconnect a party from a telephone conference.</p> <p>The call release cause can be freely chosen from a list of 6 response types. It depends on the network whether or not a delivered release cause is forwarded to the remote subscriber.</p>
AT^SMSO	<p>After receiving the AT^SMSO command TC35i issues the URC “^SHUTDOWN” to indicate that data have been stored non-volatile and the power-off procedure has been completed. The module then enters the POWER DOWN mode.</p>
AT^SIND	<p>New Siemens defined AT command, similar to the GSM 07.07 command AT+CIND, but with extended functionality:</p> <p>Ciphering:</p> <ul style="list-style-type: none"> • AT^SIND provides the indicator “ciphcall”. The ciphering indicator feature allows the ME to detect that ciphering is not switched on and to indicate this to the user as defined in GSM specifications 02.07 and 02.09. <p>Extended indicator control:</p> <ul style="list-style-type: none"> • The handling of event indicators is much easier than with AT+CIND. With AT^SIND you can control the registration of all indicators supported by both commands and query their current status. The presentation mode of all indicators is set with AT+CMER.
AT^SALS	<p>The AT^SALS command is designed to support Alternate Line Service. This allows the subscriber to use two voice numbers on the same SIM card (service requires a dual line SIM card).</p>
AT^STPB	<p>Siemens defined command for use with 7E1 and 7O1 mode. If 7E1 or 7O1 is activated with AT+ICF only, the parity bit will not be transmitted over the air. If the parity bit is required by the remote party, AT^STPB can be used in addition to AT+ICF to enable the transmission of the parity bit.</p>

3 Improved features

The following table lists features or parameters that have been improved over the preceding TC35i release.

AT command / feature	Brief description
AT^SSYNC	<p>The latest addition to the AT^SSYNC command is a second LED mode designed for better control of power saving.</p> <p>The new LED mode (<mode>=2) enables different flashing patterns in SLEEP mode, depending on the status of PIN authentication and network registration. This allows you to check whether power saving works properly (if PIN authentication is valid) or does not work (because the mobile is not registered to the GSM network).</p> <p>If AT^SSYNC is set to <mode>=1, the LED is only off during SLEEP mode.</p> <p>All other flashing patterns used to indicate the mobile's status in full functionality mode, Alarm mode or Charge-only mode are still the same as in earlier releases and are identical in <mode>=1 and <mode>=2.</p>
AT^SNFD	<p>AT^SNFD restores the audio mode to its factory default. The restored setting is <audMode>=1 together with <outstep>=4 which is the fix volume used in this mode. The <outstep> values selected in audio modes 2–6 are retained and will be effective when you return to an audio mode other than 1.</p>
Audio parameters	<p>The audio parameters for handsfree operation have been improved, especially to ensure better performance in automotive applications.</p>
File size of customized audio profile parameters	<p>The size of files created to download a customized audio profile has been reduced and varies from 2600 Bytes to 5310 Bytes.</p> <p>Please refer to [9] for more information on the audio and battery parameter download service provided by Siemens.</p>

4 Important notes

The following table contains a list of known problems and provides workarounds where appropriate.

Item / Category	Problem / Workaround
ATZ / AT&F	<p>Concatenated commands which include ATZ and AT&F on the same command line will return different responses on ASC0 / Mux1 and ASC0 /Mux2/Mux3.</p> <p>Workaround:</p> <p>As stated in [1], any commands appended to ATZ or AT&F on the same command line will be ignored. Therefore, it is strongly recommended to enter these commands separately.</p>
AT+CPMS	<p>Every time before using the AT command AT+CPMS to change the parameter <mem3> (during normal operation mode or at start up / initial sequence), you have to deregister manually from the network by using the AT command AT+COPS=2. After the execution of the AT+CPMS write command is finished you can switch back to your previously used settings of the AT+COPS <mode> parameter.</p> <p>Please keep in mind that the settings of parameter <mem3> will be stored non-volatile, and therefore, the command needs to be executed only once.</p>
AT^SCMW	<p>If the parameters <seq> and <max> are set to 0 the current release of TC35i does not handle these short messages as non-concatenated messages and therefore, fails to write, send or read such messages.</p> <p>Workaround:</p> <p>Do not set the parameters <seq> and <max> to 0.</p>
AT+CLIP	<p>If the URC "+CLIP" is enabled with AT+CLIP=1 and stored to the user profile with AT&W, the setting will be loaded after restart, but will be used only for voice calls. In the case of data or fax calls, the URC will not be presented.</p> <p>Workaround:</p> <p>If the module is required to run with CLIP enabled, AT+CLIP=1 must be issued each time ATZ or AT&F is executed or the module restarted.</p>
Using "+CREG URCS" on more than one MUX channel	<p>If the "+CREG" URC was activated (AT+CREG=1 or 2) on MUX1 as well as on MUX2/MUX3, and then deactivated (AT+CREG=0) on MUX1, its presentation will also be disabled both on MUX2 and MUX3.</p> <p>A similar error occurs when AT+CMER is activated on MUX1, and "+CREG" URCS are disabled on MUX1, but enabled on MUX2/MUX3: In this case the "+CREG" URC also fails to appear on those channels where its presentation was enabled before.</p> <p>Workaround: To benefit from "+CREG" URCS on other interfaces than MUX1 we recommend that you enable their presentation on MUX1, too.</p>

Item / Category	Problem / Workaround
Usage of flow control if autobauding is enabled	<p>If the serial interface is configured to use autobauding (AT+IPR=0) and software flow control (AT\Q1), it is possible that reading a complete phonebook is aborted and the serial interface is blocked.</p> <p>Workaround: Choose hardware flow control AT\Q3 instead of software flow control.</p>
AT^SPBS	<p>This command uses an internal counter (from 0 to <maxindex>) incremented or decremented each time the write command AT^SPBS=1 or AT^SPBS=2 is executed.</p> <p>The internal counter cannot be directly changed with AT^SPBS, but can be reset to 0 using the AT commands ATZ or AT&F. Please note that the predecessor TC35 was also able to reset the internal counter to 0, once the AT+CPBS write command was executed. In the case of TC35i, the AT+CPBS command does not affect the internal counter.</p>
AT^SPBG	<p>As stated in [1] and done in earlier releases of TC35i, the AT^SPBG command sorts the active phonebook records by name in alphabetical order using an own index which is not identical with the location numbers of the active phonebook.</p> <p>In the current TC35i release, the indicated index numbers are the location numbers of the active phonebook which can be used for dialing out or editing entries. This means, however, that the index is not compatible with earlier releases of TC35i and the predecessor TC35.</p>
AT+CPBR	<p>If a phonebook contains entries where the <text> string was coded in UCS2 characters on a non-Siemens mobile, it is possible that reading this phonebook from a Siemens mobile fails, even though the Siemens mobile uses UCS2 (AT+CSCS="UCS2"). In case of failure, the AT+CPBR command returns CME ERROR 26 ("dial string too long").</p> <p>The error occurs only if the conflicting entry was edited on a non-Siemens mobile that is not fully compliant with GSM 11.11, Annex B, which specifies the coding of alpha fields in the SIM for UCS2.</p>
AT+CSNS	<p>Mobile terminated calls without bearer service information received immediately after switching the Single Numbering Scheme from Fax to CSD (AT+CSNS=4 after previous setting +CSNS: 2), are still assumed to be fax calls.</p> <p>Workaround: To solve the problem you can choose one the following options: After entering the AT+CSNS command</p> <ol style="list-style-type: none"> a) enter the current data bearer service setting (AT+CBST) once again or b) set up just one mobile originated data call.
AT+COPS	<p>The AT+COPS commands (test, read, write) are only accepted by the module after a valid PIN has been entered.</p>

Item / Category	Problem / Workaround
AT^SMOND	<p>When using monitor commands with periodic output (AT^MONI=<n>, AT^MONP=<n> and AT^SMOND=<n>), output can be stopped if "at"/"AT" is entered on the interface delivering the output. It is possible that an additional line of output may already be in the output buffer of the module when the input character is received, leading to the output of another line after receipt of this character.</p> <p>Workaround:</p> <p>Since the input character will not be echoed by the module even if the serial echo is enabled, an external application must expect additional output lines until the final "OK" is issued by the module.</p>
<p>AT^SNFI=<inBbcGain>, <inCalibrate> and AT^SNFW</p> <p>Storing microphone gain to user defined audio profile</p>	<p>If included in the user defined audio profile stored with AT^SNFW, any <inCalibrate> value other than 32767 (factory default) will be ignored after restarting the module.</p> <p>Workarounds:</p> <p>To ensure that the stored microphone gain is properly initialized after restart we suggest that you choose one of the two following workarounds:</p> <p>Store all individual audio parameters, including <inCalibrate>, to the user profile, using AT^SNFW as described in [1]. When the user profile is loaded after restart, then</p> <ol style="list-style-type: none"> either query, via the read command AT^SNFI?, the stored <inCalibrate> value and set the same value once again, using the write command AT^SNFI=<inBbcGain>,<inCalibrate> or toggle the audio mode by sending the AT^SNFS write command twice. For example, you can send AT^SNFS=1, followed by AT^SNFS=x.
<p>Presentation of URCs if TA-TE link is reserved in an automatically accepted data call</p>	<p>URCs that are received when the TE-TA link is reserved during an automatically accepted CSD call will not be indicated, neither as a BREAK, nor as URC when the TE-TA link is free again.</p> <p>For example, a short message received during the call will be correctly stored to the active SMS memory, though not notified by a URC. Other URCs are lost at all.</p>
<p>Sending dial string modifiers with ATD</p>	<p>In the AT command ATD, the dialstring modifiers "A", "B", "C" are currently not interpreted correctly.</p> <p>Generally, if a required functionality of ATD is not explicitly stated in the documentation we recommend rather to use specific AT commands, such as AT+CUSSD for USSD, and AT+VTS for DTMF sequences.</p>
<p>Line feed after AT commands</p>	<p>The number of empty lines between AT command, response and final "OK" is explicitly undefined. Applications incorporating TC35i should not parse for line breaks.</p>