

# Overview AT Commands



INSYS GSM 4.x

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# 1 General

The INSYS GSM 4.x is configured and controlled using two AT command sets: The standard **AT** commands control the GSM engine to establish data connections using the GSM network. The extended INSYS **AT** commands control the extensions implemented by INSYS for the digital inputs/outputs, alarm functions, security functions and timer-controlled functions.

The standard **AT** commands can be entered locally via the serial interface if the device is either in offline state (no active data connection) or in online command mode (interrupted data connection).

The extended INSYS **AT** commands (Chap. 5) can be entered locally as well as remote (remote configuration) and in most cases also via SMS. The configuration via SMS is restricted to commands with responses of up to 140 characters.

The modem guideline V.25ter is applicable with regard to the time sequence of interface commands. The **AT** standard is a line-oriented command language. The input is not context-sensitive. All commands are finalized using the carriage return character set, which is set with the command **ATS3** (default = **<CR>** - 0Dh -). The backspace character set with the command **ATS5** can be used to delete incorrectly entered characters (default = **<BS>** - 08h -).

Each command is acknowledged with a response according to V.25ter (set with **ATV**):

Response	Code	Type	Meaning
OK	0	Final	Command executed, no error
CONNECT	1	Final	Connection established if parameter setting X=0
CONNECT[ <text> ]		Final	Connection established if parameter setting X>0 <text>: E.g. 'connect 9600'. The data transmission rate is then 9.600 bit/s.
RING	2	Non-synchronized	Ring tone recognized
NO CARRIER	3	Final	Connection not established or disconnected
ERROR	4	Final	Invalid command or command line too long
NO DIALTONE	5	Final	No dial tone, connection setup not successful, wrong operating mode
BUSY	6	Final	Remote terminal busy
NO ANSWER	7	Final	Timeout for connection setup

To ease the legibility of further comments, <CR> (carriage return) is always used as end-of-line character, and the standard responses **OK** or **ERROR** are used as responses, regardless of the actually selected responses according to V.25.

Note: Lining up several commands per input line is not possible for the extended INSYS **AT** commands. Further commands can be sent only after the processing of the previous command is completed, i.e. the response has been output.

For lining up standard **AT** commands please refer to the detailed command set of the GSM engine.

The IT commands implemented in INSYS GSM 2.0 are replaced by the extended INSYS **AT** commands of the form **AT\*\*name**, so there is no more need to switch to the configuration mode. A replacement table for the IT commands can be found in Chap. 3.

## 2 Short Description INSYS AT Commands

For a detailed description of syntax and parameters see Chap. 5.

Command	Short description	Configuration		
		Local	Remote	SMS
<b>AT**ALIVE</b>	Periodic alive SMS	X	X	S
<b>AT**BAUD</b>	Baud rate of the serial interface	X	X	X
<b>AT**CALLBACK</b>	Target number security callback	X	X	X
<b>AT**CLIP</b>	Selective Call Answer	X	X	S
<b>AT**COMBINE</b>	Combination of the alarm text with a target number from the number pool ( <b>AT**POOL</b> )	X	X	S
<b>AT**DATE</b>	Date	X	X	X
<b>AT**DAY</b>	Weekday	X	X	X
<b>AT**DEFAULT</b>	Factory settings of the INSYS AT commands	X	X	X
<b>AT**DIAL</b>	Dial-up attempts for periodic alive or alarm messages	X	X	X
<b>AT**DST</b>	Main target number for alarm messages	X	X	S
<b>AT**DTC</b>	Idle connection control (Data Transmit Controller)	X	X	X
<b>AT**DTMF</b>	Enable DTMF processing	X	X	X
<b>AT**ESC</b>	Escape character for remote command mode	X	X	X
<b>AT**EXIT</b>	Exiting the remote command mode		X	
<b>AT**FLASH</b>	Firmware update of the controller	X	X	
<b>AT**FORMAT</b>	Data format of the serial interface	X	X	X
<b>AT**GSMREQ</b>	Periodical query of the field strength and the login state in the GSM network	X	X	X
<b>AT**HISTORY</b>	History function (event memory)	X	X	S
<b>AT**IN</b>	Querying the Alarm Inputs	X	X	X
<b>AT**INPUT</b>	Configuration of the alarm inputs	X	X	X
<b>AT**LOGOUT</b>	Timer-controlled logout/re-login or reset respectively	X	X	X
<b>AT**MSG</b>	Alarm message texts	X	X	S
<b>AT**OUT</b>	Set/reset the switch outputs	X	X	X

Command	Short description	Configuration		
		Local	Remote	SMS
<b>AT**OUTPUT</b>	Configuration of the switch outputs	X	X	X
<b>AT**PASS</b>	Password Protection	X	X	X
<b>AT**PIN</b>	PIN of the SIM card	X	X	X
<b>AT**POOL</b>	Phone number pool for alarm messages	X	X	S
<b>AT**POWER</b>	Power up SMS	X	X	S
<b>AT**PROFILE</b>	Query of the INSYS AT command settings	X	X	
<b>AT**PROVIDER</b>	Manual GSM provider selection	X	X	X
<b>AT**RESET</b>	Device reset	X	X	X
<b>AT**SCN</b>	SMS service center number	X	X	X
<b>AT**SIGNAL</b>	GSM signal field strength	X	X	X
<b>AT**SMS</b>	Manual SMS dispatch of the stored alarm messages	X		X
<b>AT**SMSRX</b>	Automatic SMS reception processing	X	X	X
<b>AT**SMSBUF</b>	Specification of existing SMS storage locations on the SIM card	X	X	X
<b>AT**TIME</b>	Time	X	X	X
<b>AT**VERSION</b>	Query of the software version	X	X	X

X = completely implemented

S = only setting implemented



### 3 Comparison Previous IT Commands/INSYS AT Commands

For a detailed description of syntax and parameters see Chap. 5.

IT command	INSYS AT** command	New
ITA	AT**OUTPUT AT**INPUT	Configuration outputs Configuration inputs
ITA*	AT**OUT	Switching also locally
ITAS	AT**OUTPUT AT**SMSRX	Automatic SMS reception processing has to be enabled with AT**SMSRX
ITB	AT**BAUD	Common baud rate for controller and GSM engine
ITD	AT**DST	
ITDC	AT**CALLBACK	
ITE	Not applicable	Standard AT command <b>ATE</b>
ITF	AT**FORMAT	Common baud rate for controller and GSM engine
ITI	AT**IN	Query also locally
ITM	AT**DATE AT**DAY	New: Weekday with AT**DAY
ITN	AT**MSG	
ITO	AT**LOGOUT	Additional device reset possible
ITP	AT**PIN	4 – 8 digit PIN possible
ITR	AT**PROFILE	
ITS	AT**SCN	
ITT	AT**TIME	Extended with seconds
ITU	AT**PROVIDER	
ITV	AT**DIAL	
ITW	AT**PASS	
ITX	AT**EXIT	
ITY	AT**SMS	
ITZ	AT**RESET	

## 4 Short Description Standard AT Commands

The standard **AT** commands comprise the specification according to V.25ter, GSM 07.07 and GSM 07.05. Only the most important standard **AT** commands with syntax and parameters are described in the following.

The applicability of single features may depend on the functionality of the selected GSM network.

Syntax – see also Chap. 5:

- <expression>**     Input of a parameter
- <Pause>**            Means a waiting period of one second
- [expression]**        Optional input of a parameter

The factory settings in Chap. 4 are marked with “(default)”.

### 4.1 AT Commands According To V.25ter

<b>ATA</b>	<u>Answer mode</u> The modem is switched into response mode. This is only effective in Germany, if the connected phone goes off-hook or if a call comes in.
<b>AT&amp;C&lt;n&gt;</b>	<u>Set function type of the control line DCD</u> <b>AT&amp;C0</b> DCD is always active <b>AT&amp;C1</b> DCD shows the presence of the carrier signal (default)
<b>ATD&lt;n&gt;</b>	<u>Establish connection</u> Dialing the phone number <n>
<b>AT&amp;D&lt;n&gt;</b>	<u>Function type of the control line DTR</u> Set (Switch ON→Off) <b>AT&amp;D0</b> Ignored <b>AT&amp;D1</b> Change to command mode, connection maintained <b>AT&amp;D2</b> Switch to command mode, connection terminated, no automatic connection acceptance while DTR is off (default)
<b>ATDL</b>	<u>Last number re-dialing</u>
<b>ATE&lt;n&gt;</b>	<u>Command entry Echo</u> This command toggles the responses, which the modem creates as reactions from PC commands (Echo). <b>ATE0</b> Switch off Echo <b>ATE1</b> Switch on Echo (default)

<b>AT&amp;F</b>	<u>Load factory settings</u> The factory settings are loaded. The <b>AT**</b> -commands in Chap. 5 are excluded. All factory settings in this <b>AT</b> -command list are marked with “(default)”.
<b>ATH</b>	<u>Disconnect connection</u> The modem hangs up. Immediately after the disconnect, the controller will not respond to external AT commands for a certain period. This period is made up of the query duration of the field strength ( <b>AT**GSMREQ</b> ; 5 s at 19200 baud) and the duration of the SMS polling ( <b>AT**SMSBUF</b> ).
<b>ATI</b>	<u>Identification</u>
<b>ATO&lt;n&gt;</b>	<u>Return to online data mode</u> <b>ATO0</b> Return to online data mode If the modem is in online command mode, it will return to online data mode. If the modem is in offline command mode, it will report <b>ERROR</b> . <b>ATO1</b> Before the modem switches to online data mode, a retrain procedure is provoked.
<b>ATQ&lt;n&gt;</b>	<u>Quiet control</u> This command toggles sending messages from the modem to the PC on and off. <b>ATQ0</b> Send messages to PC (default) <b>ATQ1</b> Don't send messages to PC
<b>AT\Q&lt;n&gt;</b>	<u>Data flow control of the serial interface</u> <b>AT\Q0</b> Off (default) <b>AT\Q1</b> Software handshake (XON/XOFF) <b>AT\Q2</b> Only CTS <b>AT\Q3</b> Hardware handshake (RTS/CTS)
<b>ATS0?</b>	<u>Query automatic call acceptance</u>
<b>ATS&lt;n&gt;</b>	<u>Read/write of the S registry</u> Some S registries may only be modified within certain limits. The modem still reports <b>OK</b> although the value has not changed as specified. Certain registries are read-only. We recommend checking the results after each write attempt using the <b>ATSn?</b> command. <b>ATS&lt;n&gt;=x</b> Sets the S registry n to the value x. <b>ATS&lt;n&gt;?</b> Shows the value of the S registry n

<b>AT&amp;S&lt;n&gt;</b>	<u>Sets function type of the control line DSR</u> <b>AT&amp;S0</b> DSR always on (default) <b>AT&amp;S1</b> TA in command mode: DSR off <b>AT&amp;S2</b> TA in data mode: DSR on
<b>ATX&lt;n&gt;</b>	<u>Extended result messages, dialing tone recognition</u> <p>The command determines which group of messages the modem sends to the PC. This is important for PBXs, as often a leading 0 or 9 must be dialed, before a dialing tone is heard on the line. <b>Blind dialing</b> (dialing without detecting the dialing tone) is activated or deactivated according to the parameter. The detection of the dialing tone, however, can always be enforced using the parameter <b>W</b> in the <b>ATD</b> dialing string (see command <b>ATD</b>). In the mode <b>AT+FCLASS=1, 2</b>, the modem always sends the message <b>CONNECT</b> to the PC without specifying the transmission speed.</p> <p><b>ATX0</b>              No detection of the dialing tone, i.e. an unsuccessful dialing attempt leads to the message <b>NO CARRIER</b>.  Busy signal detection not active, i.e. when calling a busy line the message  <b>NO CARRIER</b> is displayed. The message is displayed without specifying the speed.</p> <p><b>ATX1</b>              As <b>ATX0</b>, but the <b>CONNECT</b> message contains the speed specification.</p> <p><b>ATX2</b>              Dialing tone detection is active, i.e. a dialing attempt without the presence of a dialing tone leads to the message <b>NO DIALTONE</b>.  Busy signal detection not active, i.e. when calling a busy line the message  <b>NO CARRIER</b> is displayed.</p> <p><b>ATX3</b>              No detection of the dialing tone, i.e. an unsuccessful dialing attempt leads to the message <b>NO CARRIER</b>.  Busy signal detection active, i.e. when calling a busy line the message <b>BUSY</b> is displayed.</p> <p><b>ATX4</b>              Dialing tone detection is active, i.e. a dialing attempt without the presence of a dialing tone leads to the message <b>NO DIALTONE</b>. (default)  Busy signal detection is active, i.e. when calling a busy line the message <b>BUSY</b> is displayed.</p>
<b>ATV&lt;n&gt;</b>	<u>Format of modem messages</u> <p>This command determines if the modem transmits messages to the PC in short or long format.</p> <p><b>ATV0</b>              Messages to PC in short format, i.e. only the error number (default)  <b>ATV1</b>              Messages to PC in long form, i.e. the error text</p>

<b>AT&amp;V</b>	<u>Display configurations</u> With this command the active configuration of the modem, the saved user defaults and the saved phone numbers 0 to 3 are displayed.
<b>AT&amp;W</b>	<u>Save configuration</u> The command saves the current modem configuration including the S registry in one of the two user-defined defaults.  Directly after that, for <ul style="list-style-type: none"> <li>• Normally 700 ms (at 19200 bps)</li> <li>• 1000 ms when <b>AT**DTMF=1</b> or <b>AT**CLIP=1</b></li> <li>• 1200 ms when <b>AT**DTMF=1</b> or <b>AT**CLIP=1</b></li> </ul> no entry of AT commands is possible.
<b>ATZ</b>	<u>Software reset/load default</u> The command causes the modem to perform a software reset. The modem will load the default setting saved by the user.  Directly after that, for <ul style="list-style-type: none"> <li>• Normally 700 ms (at 19200 bps)</li> <li>• 1000 ms when <b>AT**DTMF=1</b> or <b>AT**CLIP=1</b></li> <li>• 1200 ms when <b>AT**DTMF=1</b> or <b>AT**CLIP=1</b></li> </ul> no entry of AT commands is possible.
<b>&lt;Pause&gt; +++</b> <b>&lt;Pause&gt;</b>	<u>Change from data mode to command mode (online command mode).</u> 1 second pause before and after the entry, no <b>&lt;CR&gt;</b> . After the response "OK", an additional waiting period of 2 seconds for the re-entering of AT commands must be observed.
<b>&lt;Pause&gt; ***</b> <b>&lt;Pause&gt;</b>	<u>Start of the remote configuration at the local modem</u> 1 second pause before and after the entry, no <b>&lt;CR&gt;</b> . After the response "OK", an additional waiting period of 2 seconds for the re-entering of AT commands must be observed.  <b>Note: see also Chap. 2 – remote -</b>

## 4.2 AT Commands For GSM Connection

<b>AT+CBST?</b>	<u>Queries the transmission service type</u>
<b>AT+CBST=&lt;n&gt;</b>	<u>Sets transmission service type to modem and ISDN TA</u>  <b>AT+CBST=0</b> auto bauding <b>AT+CBST=4</b> 2400 bps (V.22bis) <b>AT+CBST=6</b> 4800 bps (V.32) <b>AT+CBST=7</b> 9600 bps (V.32) - default <b>AT+CBST=68</b> 2400 bps (V.110) <b>AT+CBST=70</b> 4800 bps (V.110) <b>AT+CBST=71</b> 9600 bps (V.110)
<b>AT+COPS?</b>	<u>Display selected network provider</u>
<b>AT+COPS=&lt;n&gt;</b> <b>[ ,&lt;format&gt; ,</b> <b>&lt;oper&gt; ]</b>	<u>Select network provider</u>  <b>AT+COPS=0</b> Automatic (default) <b>AT+COPS=1</b> Manual selection <oper> <b>AT+COPS=2</b> Logout from GSM network <b>AT+COPS=4</b> Manual selection <oper> - automatic selection if not accessible  <format>    0            Alphanumerical information (up to 16 digits) for <oper> (default) 2            Numerical information for <oper>  <oper>                    Network provider information
<b>AT+CPIN?</b>	<u>Query required password</u>  Response (selection): <b>READY</b> No input required <b>SIM PIN</b> Enter SIM card PIN <b>SIM PUK</b> Enter SIM card PUK (after repeated false entry of the PIN)
<b>AT+CPIN=&lt;n&gt;</b>	<u>Enter SIM card PIN</u>  <n>                      4 digit number  The PIN is permanently stored in the controller with the extended command <b>AT**PIN</b> . After repeated false entries the PUK must be typed in.  To type in the PUK use the following command: <b>AT+CPIN=&lt;PUK&gt; , &lt;new PIN&gt;</b>

<b>AT+CREG?</b>	<u>Display registration state (network state)</u> Response: <n>,<stat>  <table><tr><td>&lt;stat&gt;</td><td>0</td><td>Not registered, no GSM network search</td></tr><tr><td></td><td>1</td><td>Registered at standard provider</td></tr><tr><td></td><td>2</td><td>Not registered, GSM network search</td></tr><tr><td></td><td>3</td><td>Refused</td></tr><tr><td></td><td>5</td><td>Registered, roaming</td></tr></table>	<stat>	0	Not registered, no GSM network search		1	Registered at standard provider		2	Not registered, GSM network search		3	Refused		5	Registered, roaming			
<stat>	0	Not registered, no GSM network search																	
	1	Registered at standard provider																	
	2	Not registered, GSM network search																	
	3	Refused																	
	5	Registered, roaming																	
<b>AT+CSQ</b>	<u>Display signal quality (intensity of the GSM signal)</u> Response: <rssi>,<ber>  <table><tr><td>&lt;rssi&gt;</td><td colspan="2">Received signal strength indication</td></tr><tr><td></td><td>0..10</td><td>Poor GSM signal, change location</td></tr><tr><td></td><td>11..31</td><td>Good GSM signal</td></tr><tr><td></td><td>99</td><td>Not detectable</td></tr><tr><td>&lt;ber&gt;</td><td colspan="2">Bit error rate</td></tr><tr><td></td><td colspan="2">The bit error rate is only measured during an existing connection. Otherwise the value 0 or 99 is returned.</td></tr></table>	<rssi>	Received signal strength indication			0..10	Poor GSM signal, change location		11..31	Good GSM signal		99	Not detectable	<ber>	Bit error rate			The bit error rate is only measured during an existing connection. Otherwise the value 0 or 99 is returned.	
<rssi>	Received signal strength indication																		
	0..10	Poor GSM signal, change location																	
	11..31	Good GSM signal																	
	99	Not detectable																	
<ber>	Bit error rate																		
	The bit error rate is only measured during an existing connection. Otherwise the value 0 or 99 is returned.																		

## 4.3 AT Commands For SMS

<b>AT+CMGD=&lt;n&gt;</b>	<u>Delete SMS message &lt;n&gt;</u>						
<b>AT+CMGF?</b>	Query SMS message format						
<b>AT+CMGF=&lt;n&gt;</b>	Set SMS message format  <table> <tr> <td><b>AT+CMGF=0</b></td><td>PDU mode – (default)</td></tr> <tr> <td><b>AT+CMGF=1</b></td><td>Text mode</td></tr> </table>	<b>AT+CMGF=0</b>	PDU mode – (default)	<b>AT+CMGF=1</b>	Text mode		
<b>AT+CMGF=0</b>	PDU mode – (default)						
<b>AT+CMGF=1</b>	Text mode						
<b>AT+CMGL=&lt;stat&gt;</b>	<u>List SMS messages in selected memory</u>  <table> <tr> <td><b>AT+CMGL=0</b></td><td>unread messages</td></tr> <tr> <td><b>AT+CMGL=1</b></td><td>read messages</td></tr> <tr> <td><b>AT+CMGL=ALL</b></td><td>All messages</td></tr> </table>	<b>AT+CMGL=0</b>	unread messages	<b>AT+CMGL=1</b>	read messages	<b>AT+CMGL=ALL</b>	All messages
<b>AT+CMGL=0</b>	unread messages						
<b>AT+CMGL=1</b>	read messages						
<b>AT+CMGL=ALL</b>	All messages						
<b>AT+CMGR=&lt;n&gt;</b>	<u>Read SMS message &lt;n&gt;</u>						

<b>AT+CMGS=&lt;nr&gt;</b> <b>&lt;CR&gt;&lt;text&gt;</b> <b>&lt;Ctrl-Z&gt;</b>	<u>Send SMS message</u>  <b>&lt;no&gt;</b> Phone number <b>&lt;CR&gt;</b> Enter/return key <b>&lt;text&gt;</b> Text of the SMS message <b>&lt;Ctrl-Z&gt;</b> Press the Ctrl key and Z (1Ah)  The phone number is completed with <b>&lt;CR&gt;</b> , the actual text with <b>&lt;Ctrl-Z&gt;</b> .
<b>AT+CSCA?</b>	<u>Query the number of the SMS service center</u>
<b>AT+CSCA=&lt;nr&gt;</b>	<u>Set number of the SMS service center</u>  <b>&lt;no&gt;</b> Number in international format +49...
<b>AT^SMGL</b>	<u>List SMS messages from preferred memory (without changing the status)</u>
<b>AT^SMGO?</b>	<u>Query display SMS overflow</u> Response: <b>^SMGO: &lt;n&gt;, &lt;mode&gt;</b>
<b>AT^SMGO=&lt;n&gt;</b>	<u>Set display SMS overflow</u>  <b>AT^SMGO=0</b> inactive (default) <b>AT^SMGO=1</b> active – change of <b>&lt;mode&gt;</b> is displayed <b>&lt;mode&gt;</b> 0                                memory available 1                                memory full 2                                memory full, message waiting
<b>AT^SMGR=&lt;n&gt;</b>	<u>Read SMS message &lt;n&gt; (without changing the status)</u>



## 5 Description of INSYS AT Commands

The **prefix** always consists of the letters “**AT**”; the only exception is the command “**A/**”.

The **body** consists of individual characters which are described in the following chapter. The body consists of a name and pertinent values, if applicable.

### Syntax:

<expression>	Input of a parameter
<Pause>	Means a waiting period of one second
[expression]	Optional input of a parameter

The factory settings are marked with “default”.

The standard end character is “return” (Dh) or “<CR>”. “Return” may not be entered after “\*\*\*\*” or “+++”.

Commands can be grouped to one command line. Space characters between the individual main parts are ignored. The commands can be categorized as follows:

Basic instruction set

Extended instruction set      (Main part starts with “+” or “^”)

The commands are acknowledged with “OK” or “**ERROR**”. A command that is being edited will be interrupted by any further incoming character. Therefore, the next command must wait for acknowledgement to avoid the deletion of the current command.

All settings via **AT\*\*** commands are immediately stored in the EEPROM.

The parameter explanations for query responses can be found at the write commands. Most of the **AT\*\*** commands can also be executed via SMS – exceptions are noted explicitly.

<b>AT**ALIVE</b>	<b><u>Periodic alive SMS</u></b>
Read:	<b>AT**ALIVE?</b> Response: <b>ALIVE: &lt;mode&gt;[,&lt;day&gt;][,&lt;time&gt;]</b> <b>ALIVE: DST = &lt;number&gt;</b> <b>ALIVE: MSG= &lt;text&gt;</b>  <b>OK</b> Parameters: <b>&lt;mode&gt;</b> <b>inactive</b> function deactivated  <b>Note:</b> This query cannot be made via SMS.
Write:	<b>AT**ALIVE=&lt;mode&gt;</b> <b>AT**ALIVEDST=&lt;number&gt;</b> target number <b>AT**ALIVMSG=&lt;text&gt;</b> message text Parameters: <b>&lt;mode&gt;</b> <b>D,&lt;time&gt;</b> Daily dispatch of the periodic alive SMS at the time <time>; <day> omitted <b>W,&lt;day&gt;,&lt;time&gt;</b> Weekly dispatch of the periodic alive SMS at weekday <day> and time <time> <b>M,&lt;day&gt;,&lt;time&gt;</b> Monthly dispatch of the periodic alive SMS at weekday <day> and time <time>  <b>&lt;time&gt;</b> time in format hh:mm, e.g. 09:35 <b>&lt;day&gt;</b> <b>&lt;mode&gt; = D:</b> omitted <b>&lt;mode&gt; = W:</b> weekday in format: <b>MO, TU, WE, TH, FR, SA, SU</b> <b>&lt;mode&gt; = M:</b> day from 1 ... 31 If a month has less days as given in <day>, the function will be executed at the last day of the month. <b>&lt;number&gt;</b> target number of the respective alarm message, max. 20 digits <b>&lt;text&gt;</b> message text of the periodic alive SMS, max. 140 digits  If no data connection is active and no alarm is processed, the time for the periodic alive SMS is checked in intervals of 30 seconds.
Delete:	<b>AT**ALIVEDST=</b> deleting the target number <b>AT**ALIVMSG=</b> deleting the message  If the input line is immediately closed with <CR> after "=", the entry will be deleted.
Default:	<b>AT**ALIVE=inactive</b>

<b>AT**BAUD</b>	<b><u>Baud rate at the serial interface</u></b>																																				
Read:	<b>AT**BAUD?</b>  Response: <b>BAUD: &lt;baud&gt;</b> <b>OK</b>																																				
Write:	<b>AT**BAUD=&lt;baud&gt;</b>  Parameters: <table><tr><td><b>AT**baud=300</b></td><td>300</td><td>bps</td></tr><tr><td><b>AT**baud=600</b></td><td>600</td><td>bps</td></tr><tr><td><b>AT**baud=900</b></td><td>1200</td><td>bps</td></tr><tr><td><b>AT**baud=2400</b></td><td>2400</td><td>bps</td></tr><tr><td><b>AT**baud=4800</b></td><td>4800</td><td>bps</td></tr><tr><td><b>AT**baud=9600</b></td><td>9600</td><td>bps</td></tr><tr><td><b>AT**baud=14400</b></td><td>14400</td><td>bps</td></tr><tr><td><b>AT**baud=19200</b></td><td>19200</td><td>bps</td></tr><tr><td><b>AT**baud=28800</b></td><td>28800</td><td>bps</td></tr><tr><td><b>AT**baud=38400</b></td><td>38400</td><td>bps</td></tr><tr><td><b>AT**baud=57600</b></td><td>57600</td><td>bps</td></tr><tr><td><b>AT**baud=115200</b></td><td>115200</td><td>bps</td></tr></table> For local or SMS configuration, the output of the response takes place with the old baud rate; the baud rate will be changed immediately after. For remote configuration, the change takes place after a reset of the device only.	<b>AT**baud=300</b>	300	bps	<b>AT**baud=600</b>	600	bps	<b>AT**baud=900</b>	1200	bps	<b>AT**baud=2400</b>	2400	bps	<b>AT**baud=4800</b>	4800	bps	<b>AT**baud=9600</b>	9600	bps	<b>AT**baud=14400</b>	14400	bps	<b>AT**baud=19200</b>	19200	bps	<b>AT**baud=28800</b>	28800	bps	<b>AT**baud=38400</b>	38400	bps	<b>AT**baud=57600</b>	57600	bps	<b>AT**baud=115200</b>	115200	bps
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<b>AT**baud=57600</b>	57600	bps																																			
<b>AT**baud=115200</b>	115200	bps																																			
Default:	<b>AT**BAUD=19200</b>																																				

<b>AT**CALLBACK</b>	<b><u>Target number for security callback</u></b>		
Read:	<b>AT**CALLBACK?</b>  Response: <b>CALLBACK: &lt;number&gt;</b> <b>OK</b>		
Write:	<b>AT**CALLBACK=&lt;number&gt;</b>  Parameters: <table><tr><td><b>&lt;number&gt;</b></td><td>Phone number for security callback. The maximum length is 20 characters.</td></tr></table> Requirement for the security callback function is the activation of the data password ( <b>AT**PASSC</b> ).	<b>&lt;number&gt;</b>	Phone number for security callback. The maximum length is 20 characters.
<b>&lt;number&gt;</b>	Phone number for security callback. The maximum length is 20 characters.		
Delete:	<b>AT**CALLBACK=</b>  If the input line is immediately closed with <b>&lt;CR&gt;</b> after "=", the entry will be deleted.		
Default:	<b>AT**CALLBACK=</b>		

<b>AT**CLIP</b>	<b><u>Selective Call Answer</u></b>	
Read:	<b>AT**CLIP=?</b>	Detect status
	Response: <b>CLIP: &lt;status&gt;</b> <b>OK</b>	
	<b>AT**CLIP?</b>	Detect phone numbers. This query is not possible via SMS!
	Response: <b>CLIP: 01=&lt;number&gt;</b> <b>...</b> <b>CLIP: 15=&lt;number&gt;</b> <b>OK</b>	
Write:	<b>AT**CLIP=&lt;status&gt;</b>	enable / disable call acceptance
	Parameters: <b>&lt;status&gt;</b> 0 1	selective call acceptance inactive selective call acceptance active
	<b>AT**CLIP&lt;index&gt;=&lt;number&gt;</b>	enter allowed phone numbers
	Parameters: <b>&lt;index&gt;</b> 1 ... 15 99	15 entries for phone numbers delete complete list
	<b>&lt;number&gt;</b>	Phone number from which a call or an SMS are accepted by the INSYS GSM 4.x. The maximum length is 20 characters. It is possible to allow whole blocks of numbers: The wildcard character „*“ stands for exactly one digit.
	The caller has to activate the calling line identification presentation (CLIP) to use this security function.	
	The selective call acceptance is only active after a device reset. The GSM engine will then work with the setting ( <b>AT+CLIP=1</b> ). The phone number is displayed in connection with the message “ <b>RING</b> ” for each incoming call.	
	Example: <b>RING</b> <b>+CLIP: "+49941560061",145,,,,,0</b>	
	The allowed number has to be entered in exactly the same format, as it is output for a call with “+CLIP”: (without “”).	
	Note:                      The transmitted format of the number may depend on the provider – e.g. the leading “+49” may be replaced by “0049”. We urgently recommend verifying the number by placing a test call.	
	Incoming calls of numbers that are not allowed are displayed until the caller ends the signaling. They can neither be accepted manually ( <b>ATA</b> ). The caller receives the signal BUSY.	
Delete:	<b>AT**CLIP&lt;index&gt;=</b>	If the input line is immediately closed with <b>&lt;CR&gt;</b> after “=”, the single entry will be deleted.
	<b>AT**CLIP99=&lt;CR&gt;</b>	deletes the complete list
Default:	Inactive, all numbers empty	



<b>AT**DATE</b>	<b><u>Date</u></b>
Read:	<b>AT**DATE?</b>  Response: <b>DATE: &lt;dd&gt;.&lt;mm&gt;.&lt;yy&gt;</b>  <b>OK</b>
Write:	<b>AT**DATE= &lt;dd&gt;.&lt;mm&gt;.&lt;yy&gt;</b>  Parameters: <b>&lt;dd&gt;</b> day (two digits) <b>&lt;mm&gt;</b> month (two digits) <b>&lt;yy&gt;</b> year (two digits)  The setting is immediately stored in the RTC.
Default:	<b>AT**BAUD=01.01.03</b>
<b>AT**DAY</b>	<b><u>Weekday</u></b>
Read:	<b>AT**DAY?</b>  Response: <b>DAY: &lt;day&gt;</b>  <b>OK</b>
Write:	<b>AT**DAY=&lt;day&gt;</b>  Parameters: <b>&lt;day&gt;</b> current weekday <b>MO</b> Monday <b>TU</b> Tuesday <b>WE</b> Wednesday <b>TH</b> Thursday <b>FR</b> Friday <b>SA</b> Saturday <b>SU</b> Sunday  The setting is immediately stored in the RTC.
Default:	<b>AT**DAY=SU</b>

**AT\*\*DEFAULT****Load factory settings****Write:****AT\*\*DEFAULT**

The following factory settings for the **AT\*\*** commands are set. See also **AT&F** – Chap. 4 -

**TIME:** 00:00:00**DAY:** SU**DATE:** 01.01.03**BAUD:** 19200**FORMAT:** 8N1**ESC:** \***PROVIDER:****LOGOUT:** 00:00,inactive**SCN:****DTC:** 000**SMSRX:** 0**SMSBUF:** 10**GSMREQ:** 1**DIAL:** 03**POWER:** inactive**POWER:** DST =**POWER:** MSG =**ALIVE:** inactive**ALIVE:** DST =**ALIVE:** MSG =**PASSC:** inactive**PASSD:** inactive**PASST:** inactive**CALLBACK:****CLIP:** 0**CLIP:** 01=

...

**CLIP:** 15=**INPUT:** IN1 = 0**INPUT:** IN2 = 0**OUTPUT:** OUT1 = 1,0,0,0**OUTPUT:** OUT2 = 1,0,0,0**OUT:** OUT1 = CLOSE**OUT:** OUT2 = CLOSE

**AT\*\*DEFAULT**      **DST: IN1,01=**

**Write:**              **...**  
**(CONTINUATION)**      **DST: IN1,10=**

**DST: IN2,01=**

**...**  
**DST: IN2,10=**

**MSG: IN1,00=**

**...**  
**MSG: IN1,10=**

**MSG: IN2,00=**

**...**  
**MSG: IN2,10=**

**POOL: 01=**

**...**  
**POOL: 20=**

**COMBINE: IN1, 01=**

**...**  
**COMBINE: IN1, 10=**

**COMBINE: IN2, 01=**

**...**  
**COMBINE: IN2, 10=**

**OK**

**Note:**              **A set PIN will not be deleted (see AT\*\*PIN)**  
**The event memory of the history function is deleted.**

After a maximum of 25 seconds, the GSM 4.x automatically performs a reset to correctly accept the modified settings and to re-initialize the GSM engine!  
The device reset needs another 25 seconds.

**AT\*\*DIAL**              **Dial-up attempts for periodic alive or alarm messages**

**Read:**              **AT\*\*DIAL?**

**Response:**  
**DIAL: <count>**

**OK**

**Write:**              **AT\*\*DIAL=<count>**

**Parameters:**  
**<count>**          1 .. 12              number of attempts for the dispatch of messages or  
the connection set-up for alarm and periodic alive  
messages

The dispatch will only be attempted once for an acknowledgement SMS.

**Default:**              **AT\*\*DIAL=3**



<b>AT**DST</b>	<b><u>Main target number for alarm messages</u></b>
Read:	<b>AT**DST?</b>  Response: <b>DST: IN1,01=&lt;number&gt;</b>  ... <b>DST: IN1,10=&lt;number&gt;</b>  <b>DST: IN2,01=&lt;number&gt;</b>  ... <b>DST: IN2,10=&lt;number&gt;</b>  <b>OK</b>  This query cannot be made via SMS.
Write:	<b>AT**DST[&lt;input&gt;,&lt;index&gt;=&lt;number&gt;</b>  Parameters: <b>&lt;input&gt;</b> Alarm input for which the target number shall be valid. <b>IN1</b> Alarm input 1 <b>IN2</b> Alarm input 2  If <b>&lt;input&gt;</b> is not specified, alarm input 1 is used.  <b>&lt;index&gt;</b> 01 .. 10            Index of the alarm- equals the number of incoming impulses at the alarm input.  <b>&lt;number&gt;</b> target number for the alarm recipient – max. 20 digits The text belonging to it is defined with <b>AT**MSG</b>  This target number is the main number for an alarm message. Up to 10 further targets can be given using a combination ( <b>AT**COMBINE</b> ) from the number pool ( <b>AT**POOL</b> ) additionally.
Delete:	<b>AT**DST[&lt;input&gt;,&lt;index&gt;=</b>  If the input line is immediately closed with <b>&lt;CR&gt;</b> after "=", the entry will be deleted.
Default:	All empty

<b>AT**DTC</b>	<b><u>Idle connection control (Data Transmit Controller)</u></b>
Read:	<b>AT**DTC?</b>  Response: <b>DTC: &lt;timeout&gt;</b>  <b>OK</b>
Write:	<b>AT**DTC=&lt;timeout&gt;</b>  Parameters: <b>&lt;timeout&gt;</b> 0            inactive 1 .. 255        Waiting time in seconds. The data connection will be terminated if no data is transmitted within this time.  The timer will be reset with every character that is transmitted via the serial interface.
Default:	<b>AT**DTC=0</b>

<b>AT**DTMF</b>	<b><u>Enable DTMF processing</u></b>
Read:	<b>AT**DTMF?</b>  Response: <b>DTMF: &lt;status&gt;</b>  <b>OK</b>
Write:	<b>AT**DTMF=&lt;status&gt;</b>  Parameters: <b>&lt;status&gt;</b> 0              inactive 1              active: DTMF tones are processed. (Password protection with <b>AT**PASST</b> )  The following extended responses are displayed instead of RING for activated DTMF processing: <b>+CRING: VOICE</b> for voice/DTMF connections <b>+CRING: REL ASYNC</b> for data connections  Incoming voice calls are automatically accepted for enabled DTMF processing (selective call acceptance remains valid).  <b>Note:</b> The setting becomes effective after a reset only.
Default:	<b>AT**DTMF=0</b>
<b>AT**ESC</b>	<b><u>Escape character for remote command mode</u></b>
Read:	<b>AT**ESC?</b>  Response: <b>ESC: &lt;esc&gt;</b>  <b>OK</b>
Write:	<b>AT**ESC=&lt;esc&gt;</b>  Parameters: <b>&lt;esc&gt;</b> 1 ASCII character  The escape sequence results in switching to the remote configuration mode during a connection. You will be required to enter the following sequence (without <CR>): 1 second pause <esc> <esc> <esc> 1 second pause The command <b>AT**EXIT</b> switches back to the data connection.
Default:	<b>AT**ESC=*</b>

<b>AT**EXIT</b>	<p><b><u>Exiting the remote command mode</u></b></p> <p>Write: <b>AT**EXIT</b></p> <p>Response: <b>REMOTE CONFIGURATION MODE EXIT</b></p> <p><b>OK</b></p> <p>Response for input failure / not in remote configuration mode: <b>ERROR</b></p> <p>After this command is executed correctly, the INSYS GSM 4.x returns to data transmission mode.</p> <p><b>Note:</b> <b>This command cannot be executed via SMS.</b></p>
<b>AT**FLASH</b>	<p><b><u>Firmware update of the controller</u></b></p> <p>Write: <b>AT**FLASH</b></p> <p>During a local flash process the terminal baud rate has to be set to 19,200 bps. With this fixed baud rate, the following responses are returned:</p> <p><b>Start Update with Esc, Reset with @</b></p> <p>The flash process must then be started by entering <b>&lt;ESC&gt;</b> (= 0x1Bh).</p> <p>The following prompt appears: <b>Expecting download with 8N1</b></p> <p>The firmware must be sent as *.mhx file.</p> <p>Settings of the terminal program:</p> <p>Protocol: ASCII Data format: 8N1 Handshake: Hardware</p> <p>The process can be started locally as well as in remote command mode.</p> <p>Attention: The use of hardware handshake is absolutely necessary; make sure, that the modem of the remote terminal is set to hardware handshake as well as the terminal program.</p> <p>To avoid a remote flash crash, the GSM 4.x baud rate must be set to 19,200 bps (for remote configuration this new baud rate will only be active after the device is reset).</p> <p>In addition, the terminal program that initiates the flash process must be set to a line delay of at least 100 ms (line end character TX=CR). The duration of the remote flash is approx. 5 minutes.</p> <p><b>After the end of a remote flash, "@" must be entered to initiate a reset.</b></p> <p>After the flash process is completed, all parameters are reset to default settings like with <b>AT**DEFAULT</b>. The PIN is kept.</p> <p><b>Note:</b> <b>This command cannot be executed via SMS.</b></p>

**AT\*\*FORMAT      Data format of the serial interface**Read:            **AT\*\*FORMAT?**

Response:

**FORMAT: <format>****OK**Write:           **AT\*\*FORMAT=<format>**

Parameters:

<b>&lt;format&gt;</b>	<b>8N1</b>	8 data bits, 1 stop bit, no parity
	<b>8E1</b>	8 data bits, 1 stop bit, even parity
	<b>8O1</b>	8 data bits, 1 stop bit, odd parity
	<b>8N2</b>	8 data bits, 2 stop bit, no parity
	<b>7N1</b>	7 data bits, 1 stop bit, no parity
	<b>7E1</b>	7 data bits, 1 stop bit, even parity
	<b>7O1</b>	7 data bits, 1 stop bit, odd parity
	<b>7N2</b>	7 data bits, 2 stop bit, no parity

During local configuration the response at the serial interface is output with the old data format. The data format will be changed afterwards.

For remote configuration, the changes will be active after a reset of the device only.

Default:        **AT\*\*FORMAT=8N1****AT\*\*GSMREQ      Periodical query of the field strength and the login state in the GSM network**Read:            **AT\*\*GSMREQ?**

Response:

**GSMREQ: <status>****OK**Write:           **AT\*\*GSMREQ=<status>**

Parameters:

<b>&lt;status&gt;</b>	<b>0</b>	periodical GSM network query activated
	<b>1</b>	periodical GSM network query deactivated

If the setting is activated, the controller queries the GSM signal strength and the login state of the GSM engine in the network cyclically every minute to control the LEDs STATUS and SIGNAL. The query duration is approx. 5 seconds at 19200 baud.

Any activity at the serial interface (AT commands) restarts the query interval. Also, no query is made during an active data connection.

If the query is already started, commands, which are entered at the serial interface during the query are not processed.

If the periodical query is deactivated, the LED SIGNAL is off during operation and the LED STATUS does not display the network state anymore, but only a data connection (blinking) or an alarm processing (flashing).

**Note:**

**If the periodical network query is deactivated, the output cannot be automatically activated during network failure (see AT\*\*OUTPUT).**

Default:        **AT\*\*GSMREQ=1**

<b>AT**HISTORY</b>	<b><u>Event memory</u></b>  Read: <b>AT**HISTORY?</b>  Response: <b>HISTORY:</b> <Cause> <Detail> <Dir> <Number> <Time> <Date> ... (200 entries) ... <Cause> <Detail> <Dir> <Number> <Time> <Date> OK  Description of the parameter see manual INSYS GSM 4.x.  <b>Note:</b> <b>This command cannot be executed via SMS.</b>  Delete: <b>AT**HISTORY=&lt;CR&gt;</b>  The event memory in the EEPROM is deleted.
<b>AT**INPUT</b>	<b><u>Configuration of the alarm inputs</u></b>  Read: <b>AT**INPUT?</b>  Response: <b>INPUT: IN1 = &lt;mode&gt;</b> <b>INPUT: IN1 = &lt;mode&gt;</b>  OK  Write: <b>AT**INPUT [&lt;input&gt;]=&lt;mode&gt;</b>  Parameters: <input> Alarm input for which the combination shall be valid. <b>IN1</b> Alarm input 1 <b>IN2</b> Alarm input 2  If <input> is not specified, alarm input 1 is used.  <mode> action for operated alarm input 0 no action 1 individual SMS dispatch (no pulse detection) 2 data connection (no pulse detection, no combination with number pool) 3 data connection, automatic hang-up after dispatching the message 4 SMS dispatch equal to the number of alarm pulses 5 voice connection (no pulse detection, no combination with number pool)  During the pulse detection (<mode>=4) the alarm messages from the collective message (Index 0) and the message for the number of detected impulses are combined and dispatched to the relevant target number via SMS. For the settings <mode>=1,2,3 only the collective message (Index 0) is sent to the first target number. For functionalities and combination options see manual INSYS GSM 4.x.  Default: <b>AT**INPUT1=0</b> <b>AT**INPUT2=0</b>

AT**IN	<b><u>Querying the Alarm Inputs</u></b>
Read:	<b>AT**IN?</b>  Response: IN: IN1 = <status> IN: IN2 = <status>  OK  Parameters: <status>      open              Idle state: alarm input open (not connected with GND) close             alarm operated: alarm input connected with GND
AT**LOGOUT	<b><u>Timer-controlled logout/login</u></b>
Read:	<b>AT**LOGOUT?</b>  Response: LOGOUT:                      <starttime>,<duration> OK  if the function is deactivated, "inactive" appears
Write:	<b>AT**LOGOUT=&lt;starttime&gt;,&lt;duration&gt;</b>  Parameters: <starttime> input in the format hh:mm  <duration>    0                      function deactivated 1 .. 98                logout time in minutes after reached start time; tolerance +/-1 minute 99                      logout with subsequent device reset  <b>Note:</b> <b>The setting is immediately stored in the RTC.</b>
Default:	<b>AT**LOGOUT=00:00,0</b>

**AT\*\*MSG****Alarm message texts**

Read:

**AT\*\*MSG?**

Response:

**MSG: IN1,00=<text>**

...

**MSG: IN1,10=<text>****MSG: IN2,00=<text>**

...

**MSG: IN2,10=<text>****OK****Note:****This command cannot be executed via SMS.**

Write:

**AT\*\*MSG[<input>,<index>=<text>**

Parameters:

**<input>** Alarm input for which the target number shall be valid.**IN1** Alarm input 1**IN2** Alarm input 2If **<input>** is not specified, alarm input 1 is used.**<index>** Alarm message for which the combination shall be valid.**00** Collective message for all pulses**01** Individual message for 1 pulse

...

**10** Individual message for 10 pulses**<text>** message text max. 140 characters

Collective and individual messages can have up to 140 characters. For an activated pulse input the text is combined from the collective message and the individual message. Only the first 140 characters are transmitted.

To find out which characters are permitted in the SMS see Chap. 6.

For a simple alarm only the collective message is transmitted.

Delete:

**AT\*\*MSG[<input>,<index>=**

If the input line is immediately closed with **<CR>** after "=", the entry will be deleted.

Default:

All empty

**AT\*\*OUTPUT****Configuration of the switch outputs**

Read:

**AT\*\*OUTPUT?**

Response:

**OUTPUT: OUT1 = <man>,<ri>,<net>,<alarm>****OUTPUT: OUT2 = <man>,<ri>,<net>,<alarm>****OK**

Write:

**AT\*\*OUTPUT[<output>]=<man>[,<ri>[,<net>[,<alarm>]]]**

Parameters:

**<output>** Switch output, for which the setting shall be valid.

1 Switch output 1

2 Switch output 2

If **<output>** is not specified, the switch output OUT 1 is used.**<man>** manual switching with command **AT\*\*OUT**, via SMS or DTMF

0 not allowed

1 allowed; the settings **<ri>**, **<net>** and **<alarm>** are deactivated (no input necessary)**<ri>** switching for incoming connection request (RING signal of the GSM engine)

0 not activated

1 activated

**<net>** switching for GSM network failure

0 not activated

1 activated (update interval approx. 1 minute, synchronous with periodical log-in state query); is only performed when the periodical field strength and log-in state query is activated (**AT\*\*GSMREQ=1**).**<alarm>** Switching for alarm at the relevant alarm input (Input 1 → OUT1, Input 2 → OUT2)

0 not activated

1 activated

Default:

**AT\*\*OUTPUT1=1,0,0,0****AT\*\*OUTPUT2=1,0,0,0**



**AT\*\*OUT      Set/reset the switch outputs**Read:            **AT\*\*OUT?**

Response:

**OUT: OUT1 = <status>****OUT: OUT2 = <status>****OK**Write:           **AT\*\*OUT[<output>]=<status>**

Parameters:

**<output>**      Switch output, for which the setting shall be valid.

1                Switch output 1

2                Switch output 2

If **<output>** is not specified, the switch output OUT 1 is used.**<status>**      0                Switch output on normally closed (NC)

CLOSE          Switch output on normally closed (NC)

1                Switch output on normally open (NO)

OPEN           Switch output on normally open (NO)

PULSE&lt;xx&gt;    Switch output is pulsed

**<xx>**           01 .. 10          Number of pulses (two-digit)

The state of the output is permanently stored in the EEPROM and restored after a reset.

Default:        **AT\*\*OUT1=close****AT\*\*OUT2=close**

<b>AT**PASS</b>	<b><u>Password Protection</u></b>									
Read:	<p><b>AT**PASS?</b></p> <p>Response:</p> <p><b>PASSC: &lt;status&gt;</b></p> <p><b>PASSD: &lt;status&gt;</b></p> <p><b>PASST: &lt;status&gt;</b></p> <p><b>OK</b></p> <p>Parameters:</p> <table> <tr> <td><b>&lt;status&gt;</b></td><td><b>active</b></td><td>password stored</td></tr> <tr> <td></td><td><b>inactive</b></td><td>no password stored</td></tr> </table>	<b>&lt;status&gt;</b>	<b>active</b>	password stored		<b>inactive</b>	no password stored			
<b>&lt;status&gt;</b>	<b>active</b>	password stored								
	<b>inactive</b>	no password stored								
Write:	<p><b>AT**PASS&lt;type&gt;=[&lt;oldPW&gt;][[,]&lt;newPW&gt;,&lt;newPW&gt;]</b></p> <p>response for input failure or if password incorrect:</p> <p><b>ERROR</b></p> <p>Parameters:</p> <table> <tr> <td><b>&lt;type&gt;</b></td><td><b>D</b></td><td>password for data connection, security callback (max. 16 characters)</td></tr> <tr> <td></td><td><b>C</b></td><td>password for remote configuration, SMS processing (max. 16 characters)</td></tr> <tr> <td></td><td><b>T</b></td><td>PIN for DTMF (4 digits)</td></tr> </table> <p><b>&lt;oldPW&gt;</b> old password; leave this space empty if no password is active</p> <p><b>&lt;newPW&gt;</b> new password (enter twice for confirmation)</p> <p>The passwords must be separated with commas but without additional spaces.</p>	<b>&lt;type&gt;</b>	<b>D</b>	password for data connection, security callback (max. 16 characters)		<b>C</b>	password for remote configuration, SMS processing (max. 16 characters)		<b>T</b>	PIN for DTMF (4 digits)
<b>&lt;type&gt;</b>	<b>D</b>	password for data connection, security callback (max. 16 characters)								
	<b>C</b>	password for remote configuration, SMS processing (max. 16 characters)								
	<b>T</b>	PIN for DTMF (4 digits)								
Delete:	<p><b>AT**PASS&lt;type&gt;=&lt;oldPW&gt;</b></p> <p>If the input line is closed with <b>&lt;CR&gt;</b> after <b>&lt;oldPW&gt;</b>, the entry will be deleted.</p>									
Default:	No passwords assigned									
Example:	<p><u>Example 1:</u></p> <p>Input of a new password for the connection. Currently no password is stored:</p> <p><b>AT**PASS&lt;type&gt;=&lt;oldPW&gt;,&lt;newPW&gt;</b></p> <p>The new password is: "test":</p> <p><b>AT**PASSD=test,test</b></p> <p><u>Example 2:</u></p> <p>Input of a new PIN for the DTMF evaluation. The old password is "0000":</p> <p><b>AT**PASS&lt;type&gt;=&lt;oldPW&gt;,&lt;newPW&gt;,&lt;newPW&gt;</b></p> <p>The new password is: „1111“:</p> <p><b>AT**PASST=0000,1111,1111</b></p>									

<b>AT**PIN</b>	<b><u>PIN of the SIM card</u></b>						
Read:	<b>AT**PIN?</b>  Response: <b>PIN: &lt;status&gt;</b>  <b>OK</b>  Parameters: <table><tr><td><b>&lt;status&gt;</b></td><td><b>active</b></td><td>PIN stored</td></tr><tr><td></td><td><b>inactive</b></td><td>no PIN stored</td></tr></table>	<b>&lt;status&gt;</b>	<b>active</b>	PIN stored		<b>inactive</b>	no PIN stored
<b>&lt;status&gt;</b>	<b>active</b>	PIN stored					
	<b>inactive</b>	no PIN stored					
Write:	<b>AT**PIN=&lt;pin&gt;</b>  Parameters: <b>&lt;pin&gt;</b> four to eight digit number with the PIN of the inserted SIM card  The setting will only be accepted after the device has been reset.  Attention:        Before inserting a new SIM card you have to ensure that the correct PIN is stored or if the PIN must be deleted. Otherwise the INSYS GSM tries to login with a wrong PIN, which results in a locking of the PIN if the attempt is repeated.						
Delete:	<b>AT**PIN=</b>  If the input line is immediately closed with <b>&lt;CR&gt;</b> after "=", the entry will be deleted. This enables the operation of SIM cards with deactivated PIN query.						
Default:	no PIN stored						

<b>AT**POOL</b>	<b><u>Phone number pool for alarm messages</u></b>					
Read:	<b>AT**POOL?</b>  Response: <b>POOL: 01=&lt;number&gt;</b> ... <b>POOL: 20=&lt;number&gt;</b> <b>OK</b>  Parameters: see write command This query cannot be made via SMS.					
Write:	<b>AT**POOL&lt;index&gt;=&lt;number&gt;</b>  Parameters: <table><tr><td><b>&lt;index&gt;</b></td><td>01 ... 20</td><td>up to 20 entries are possible</td></tr></table> <table><tr><td><b>&lt;number&gt;</b></td><td>Phone number, the maximum length is 20 characters</td></tr></table> Up to 10 numbers from this pool can be defined as additional recipients ( <b>AT**COMBINE</b> ) for each alarm message.	<b>&lt;index&gt;</b>	01 ... 20	up to 20 entries are possible	<b>&lt;number&gt;</b>	Phone number, the maximum length is 20 characters
<b>&lt;index&gt;</b>	01 ... 20	up to 20 entries are possible				
<b>&lt;number&gt;</b>	Phone number, the maximum length is 20 characters					
Delete:	<b>AT**POOL&lt;index&gt;=</b>  If the input line is immediately closed with <b>&lt;CR&gt;</b> after "=", the entry will be deleted.					
Default:	Empty					

**AT\*\*Power      Power up SMS****Read:            AT\*\*POWER?**

Response:

**POWER: <status>****POWER: DST = <target number>****POWER: MSG= <text>****Write:****AT\*\*POWER=<status>****AT\*\*POWERDST=<target number>****AT\*\*POWERMSG=<text>**

Parameters:

**<status>**            **active**            Power up SMS activated                     **inactive**            Power up SMS deactivated**<target number>**            Phone number, the maximum length is 20 characters**<text>**            Message text approx. 30 characters

The function power up will only be activated after a voltage failure of a minimum of 15 seconds occurs. One SMS is sent after each power up (not reset).

The text of the power up SMS consists of a part which has been assigned by the  $\mu$  controller

**"INSYS GSM 4.x: POWER UP AT hh:mm dd.mm.yy LAST TIMESTAMP WAS hh:mm dd.mm.yy (INTERVAL EVERY 5 MINUTES)"**

and the text defined by the user (max. 30 characters).

Last "TIMESTAMP" describes the last valid entry in the "Time stamp buffer", in which time and date are entered every 5 minutes. Thus, when a power failure occurs, the time of the power failure can be determined with a 5-minute accuracy.

**Default:            AT\*\*POWER=inactive**

**AT\*\*PROFILE****Query of the INSYS AT command settings**

Read:

**AT\*\*PROFILE?**

Response:

**INSYS MICROELECTRONICS**  
**INSYS GSM 4.x**  
**SW-Version 1.23, 10.01.2005**

**BL: ACFA**  
**FW: 78FE-01D0**  
  
**TIME: 10:30:37**  
**DAY: MO**  
**DATE: 04.03.03**  
  
**BAUD: 19200**  
**FORMAT: 8N1**  
**ESC: \***  
**OH: 1**

**PIN: active**  
**PROVIDER:**  
**SIGNAL: 22**  
**LOGOUT: 00:00,inactive**  
**SCN: +491710760000**  
**DTC: 000**  
**SMSRX: 0**  
**GSMREQ: 1**  
**DTMF: 0**  
**DIAL: 03**

**POWER: inactive**  
**POWER: DST =**  
**POWER: MSG =**

**ALIVE: inactive**  
**ALIVE: DST =**  
**ALIVE: MSG =**

**PASSC: inactive**  
**PASSD: active**  
**PASST: inactive**

```
AT**PROFILE      CALLBACK:
Read:            CLIP: 0
(Continuation)   CLIP: 01=
                  (...)
                  CLIP: 15=
                  DIR: IO1 = OUT
                  DIR: IO2 = IN
                  DIR: IO3 = OUT
                  DIR: IO4 = IN
                  INPUT: IO1 = OUT
                  INPUT: IO2 = 1
                  INPUT: IO3 = OUT
                  INPUT: IO4 = 5
                  OUTPUT: IO1 = 1,0,0
                  OUTPUT: IO2 = IN
                  OUTPUT: IO3 = 1,0,0
                  OUTPUT: IO4 = IN
                  IN: IO1 = OUT
                  IN: IO2 = 1
                  IN: IO3 = OUT
                  IN: IO4 = 1
                  OUT: IO1 = 1
                  OUT: IO2 = IN
                  OUT: IO3 = 0
                  OUT: IO4 = IN
                  DST: IO1=
                  DST: IO2=017112345678
                  DST: IO3=
                  DST: IO4=0941560061
                  MSG: IO1=
                  MSG: IO2=Failure in system 1
                  MSG: IO3=
                  MSG: IO4=
                  POOL: 01=0172987654321
                  (...)
                  POOL: 20=
                  COMBINE: IO1=1
                  COMBINE: IO2=
                  COMBINE: IO3=
                  COMBINE: IO4=
                  OK
```

The settings are displayed in the same format as the query of an individual command.

**Note:**

**This command cannot be executed via SMS.**

<b>AT**PROVIDER</b>	<b><u>Manual GSM provider selection</u></b>
Read:	<b>AT**PROVIDER?</b>  Response: <b>PROVIDER: &lt;mode&gt;[,&lt;format&gt;[,&lt;oper&gt;]]</b> <b>OK</b>
Write:	<b>AT**PROVIDER=&lt;mode&gt;[,&lt;format&gt;[,&lt;oper&gt;]]</b>  Parameters: <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <b>&lt;mode&gt;</b>             Empty            0            1             2            4 </div> <div style="width: 65%;">           automatic operation; <b>&lt;oper&gt;</b> is ignored            automatic operation; <b>&lt;oper&gt;</b> is ignored            manual network provider selection; <b>&lt;oper&gt;</b> has to exist; <b>&lt;format&gt;</b> has to be 2            manual logout of the network            automatic, manually pre-selected; if the manual login at provider <b>&lt;oper&gt;</b> fails, the automatic operation is used </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 30%;"> <b>&lt;format&gt;</b>             0            2 </div> <div style="width: 65%;">           alphanumerical format for <b>&lt;oper&gt;</b>            numerical format for <b>&lt;oper&gt;</b>: <i>GSM Location Area Identification Number</i>; 5-digit, unique identifier of a network provider </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 30%;"> <b>&lt;oper&gt;</b>   <b>Note:</b> </div> <div style="width: 65%;">           Description of the network provider:   <b>This command corresponds with the command AT+COPS= of the GSM engine. It is managed as string by the controller and handed over to the GSM engine for login when initializing the INSYS GSM 4.x.</b> </div> </div>
Delete:	<b>AT**PROVIDER=</b> If the input line is closed with <CR> after "=", automatic operation will be selected.
Default:	<b>AT**PROVIDER=</b>
<b>AT**RESET</b>	<b><u>Device reset</u></b>
Write:	<b>AT**RESET</b>  When the input is correct the INSYS GSM will execute a full reset. After a reset, the previously entered values are re-loaded. The command is similar to pressing the key on the device.

<b>AT**SCN</b>	<b><u>SMS service center number</u></b>
Read:	<b>AT**SCN?</b>  Response: <b>SCN: &lt;number&gt;</b> <b>OK</b>
Write:	<b>AT**SCN=&lt;number&gt;</b>  Parameters: <b>&lt;number&gt;</b> SMS service center number of the GSM provider. Has to be set to be able to dispatch an SMS (alarm SMS, periodic alive SMS, acknowledgement SMS). The number should be stored in international format +49... to ensure the SMS dispatch when roaming (example Germany: +49...) . (max. 20 digits) You will find the number in the contract documents. A list with access numbers of several network providers is enclosed.
Delete:	<b>AT**SCN=</b>  If the input line is immediately closed with <b>&lt;CR&gt;</b> after "=", the entry will be deleted.
Default:	Empty

<b>AT**SIGNAL</b>	<b><u>GSM signal field strength</u></b>
Read:	<b>AT**SIGNAL?</b>  Response: <b>SIGNAL: &lt;signal&gt;</b> <b>OK</b>  Parameters: <b>&lt;signal&gt;</b> value of the received GSM field strength 0                    -113 dBm or less 1                    -111 dBm 2 .. 30              -109 dBm ... -53 dBm in steps of 2 dB 31                    -51 dBm or better 99                    field strength can not be determined (e.g. GSM network failure, antenna defective, HF module of the GSM engine defective)  Antenna locations with values below 10 should be avoided.



<b>AT**SMS=&lt;output&gt;</b>	<p><b><u>Manual SMS dispatch of the stored alarm messages</u></b></p> <p>Write: <b>AT**SMS=&lt;output&gt;</b></p> <p>Response if SMS was successfully dispatched: <b>OK</b></p> <p>Immediate response for input or send failure: <b>ERROR</b></p> <table border="0"> <tr> <td>Parameters:</td><td>SMS dispatch:</td></tr> <tr> <td><b>&lt;output&gt;</b>           <b>1</b></td><td>Output 1</td></tr> <tr> <td>                             <b>2</b></td><td>Output 2</td></tr> </table> <p>The combinations with <b>AT**POOL/AT**COMBINE</b> are not executed!</p>	Parameters:	SMS dispatch:	<b>&lt;output&gt;</b> <b>1</b>	Output 1	<b>2</b>	Output 2
Parameters:	SMS dispatch:						
<b>&lt;output&gt;</b> <b>1</b>	Output 1						
<b>2</b>	Output 2						
<b>AT**SMSBUF</b>	<p><b><u>Specification of existing SMS storage locations of the SIM card</u></b></p> <p>Read: <b>AT**SMSBUF</b></p> <p>Response: <b>SMSBUF: &lt;number&gt;</b> <b>OK</b></p> <p>Write: <b>AT**SMSBUF=&lt;number&gt;</b></p> <p>Parameters: <b>&lt;number&gt;</b>     The number of SMS SIM storage locations</p> <p>The SIM cards of the various mobile phone providers have different numbers of SMS storage locations. The command <b>AT**SMSRX</b> will report to the µController how many storage locations must be queried for incoming SMS.</p> <p>The duration of the polling increases with the number of storage locations and takes place every 60 seconds after the last query. No AT commands are processed during the polling procedure.</p> <p>The baud rate and the number of configured SMS storage locations determine the duration of the query.</p> <p>Example:</p> <table border="0"> <tr> <td>Baud rate</td><td>19200 bps</td></tr> <tr> <td>Configured SMS storage locations</td><td>15</td></tr> <tr> <td>Query duration</td><td>5 seconds</td></tr> </table> <p>If this query period will result in a critical condition for the application, the number of storage locations to be queried can be set individually.</p> <p>The SMS messages incoming during an existing data connection are stored in the storage locations and will only be processed after the disconnection. If more storage locations are used than queried by the polling, the SMS messages in these storage locations will not be processed.</p> <p><b>Note:</b> The setting becomes effective after a reset only.</p> <p>Default: <b>AT**SMSBUF=10</b></p>	Baud rate	19200 bps	Configured SMS storage locations	15	Query duration	5 seconds
Baud rate	19200 bps						
Configured SMS storage locations	15						
Query duration	5 seconds						

**AT\*\*SMSRX****Automatic SMS reception processing**

Read:

**AT\*\*SMSRX?**

Response:

**SMSRX: <status>****OK**

Write:

**AT\*\*SMSRX=<status>**

Parameters:

<b>&lt;status&gt;</b>	0	deactivated
	1	activated
	2	activated; SMS which are not intended for the controller are left in the buffer

General:

When this function is activated, the GSM engine is operated in the operation mode **AT+CMGF=1** (SMS text mode).

Every 60 seconds the controller will query the input buffer of the GSM engine (number of storage locations for incoming SMS messages may be set with **AT\*\*SMSBUF**).

However, any activity at the serial interface (**AT** commands) will restart the query interval without executing the query. No query is made during an active data connection.

During the query of the SMS messages, the LED **Status** is flashing. Commands entered at the serial interface during this period are ignored. The query duration depends on the baud rate and the number of the SMS storage locations to be queried.

Incoming SMS messages are optionally protected with the remote configuration password.

To **<status> 1:**

Each SMS is checked for validity (format, password, selective call acceptance). After processing, a response SMS is possibly sent, and the SMS is deleted from the storage location.

If the SMS is not usable, it will be deleted from the SMS buffer immediately. The usage of the SMS reception by the user application is only possible in a restricted way.

To **<status> 2:**

The SMS which are not processed by INSYS GSM 4.x stay in the buffer of the SIM card, until they are retrieved and deleted by the application via the serial interface. When the buffer of the SIM card is full, no further SMS messages will be accepted:

The INSYS GSM 4.x processes and deletes the following SMS messages:

- a) all SMS messages with correct configuration password (when set), irrespective if the password is followed by a valid command or not.
- b) All SMS messages with correct syntax, if no password is set. Those are:
  - SMS messages starting with **AT\*\***
  - SMS messages with the text "**ACKN**" as content
  - SMS messages, where the content is an alarm message saved in the device (acknowledgement of alarms)

Write: (CONTINUATION)	<p>Possible solution:</p> <p>A configuration password should be allocated and introduced to the application. The application can then leave SMS messages with this password to the INSYS GSM 4.x and process and delete the rest of the SMS messages.</p> <p>In addition should the query cycle of the application be larger than the one for the controller (e.g. factor 2 to 3), as otherwise the controller will re-trigger its query cycle for each query of the application (= activity at the RS232 interface). If this is not considered, the controller can no longer start queries of the SMS input buffer.</p>
Default:	<b>AT**SMSRX=0</b>
<b>AT**TIME</b>	<b><u>Time settings</u></b>
Read:	<p><b>AT**TIME?</b></p> <p>Response:</p> <p><b>TIME: &lt;hh&gt;:&lt;mm&gt;:&lt;ss&gt;</b></p> <p><b>OK</b></p>
Write:	<p><b>AT**TIME=&lt;hh&gt;:&lt;mm&gt;:&lt;ss&gt;</b></p> <p>Parameters:</p> <p><b>&lt;hh&gt;</b> hour (two digits)  <b>&lt;mm&gt;</b> minute (two digits)  <b>&lt;ss&gt;</b> second (two digits)</p> <p><b>Note: The setting is immediately stored in the RTC.</b></p>
Default:	<b>AT**TIME=00:00:00</b>
<b>AT**VERSION</b>	<b><u>Query of the software version</u></b>
Read:	<p><b>AT**VERSION?</b></p> <p>Response:</p> <p><b>INSYS MICROELECTRONICS</b>  <b>INSYS GSM 4.x</b>  <b>SW-Version 1.23, 10.01.2005</b></p> <p><b>BL: ACFA</b>  <b>FW: 78FE-01D0</b></p> <p><b>OK</b></p> <p>Command:                      Meaning:</p> <p><b>BL: ACFA</b>                      Boot loader checksum  <b>FW: 78FE-01D0</b>                Firmware version  <b>D537:</b> Firmware checksum</p>

## 6 GSM Character Set for SMS

The internal GSM character set GSM 03.38 does not match the usual ASCII character set of PCs in all positions. Therefore, the following restrictions must be observed for SMS texts.

When entering data via the masks of the configuration software HSComm:

Permitted text characters in SMS messages are only letters (without umlauts), digits, punctuation marks, brackets, underscore, % & \*.

8-bit characters (e.g. umlauts) and the characters \$ @ { } [ ] ^ ° ` ´ are not supported.

The character @ of an e-mail address must be replaced by an asterisk \*.

For direct entry into a terminal program the following applies:

The underscore must be replaced by the character number 11h (hexadecimal).

The character 00h (hexadecimal) may not be used in any case.

## 7 Network Provider Identification Numbers

Identifiers and names of the network providers (GSM Location Area Identification Number) for the GSM module in alphabetic order – for the commands **AT+COPS**, **AT+\*PROVIDER** (output for model TC35i Firmware V2.7).

The following table can be output with the command **AT^SPLM**.

## Network Provider Identification Numbers

ID	Name
23210	3 AT
50506	3 AUS
45403	3 HK
22299	3 ITA
24002	3 SE
23420	3 UK
41702	94 SYRIA
23201	A1
46668	ACeS
51000	ACeS
51511	ACeS
52020	ACeS
41201	AF AWCC
41220	AF TDCA
60702	AFRICELL
40402	AirTel
40403	AirTel
40410	AirTel
40431	AirTel
40445	AirTel
40449	AirTel
40490	AirTel
40492	AirTel
40493	AirTel
40494	AirTel
40495	AirTel
40496	AirTel
40497	AirTel
40498	AirTel
42001	ALJAWAL
27601	AMC-AL
60301	AMN
34430	APUA-PCS
72234	AR PERSONAL
722310	ARG CTI Movil
3E+05	AT&T Wireless
40001	AZE-AZERCELL GSM
20610	B mobistar
21803	BA-ERONET
40002	BAKCELL GSM 2000
20620	BASE
36439	BaTelCell
42601	BATELCO
61604	BBCOM
47003	BD ShebaWorld
25099	BEE LINE
20601	BEL PROXIMUS
61302	BF CELTEL
28405	BG GLOBUL
47002	BGD AKTEL

ID	Name
47001	BGD-GP
21890	BH GSMBIH
43701	BITEL
61603	BJ BENINCELL
73602	BOMOV
34020	BOUYGTEL-C
40421	BPL MOBILE
40427	BPL MOBILE
40443	BPL MOBILE
40446	BPL MOBILE
72405	BRA CL
52811	BRU-DSTCom
40434	BSNL MOBILE
40438	BSNL MOBILE
40451	BSNL MOBILE
40453	BSNL MOBILE
40454	BSNL MOBILE
40455	BSNL MOBILE
40457	BSNL MOBILE
40458	BSNL MOBILE
40459	BSNL MOBILE
40462	BSNL MOBILE
40464	BSNL MOBILE
40466	BSNL MOBILE
40471	BSNL MOBILE
40472	BSNL MOBILE
40473	BSNL MOBILE
40474	BSNL MOBILE
40475	BSNL MOBILE
40476	BSNL MOBILE
40477	BSNL MOBILE
40479	BSNL MOBILE
40480	BSNL MOBILE
40481	BSNL MOBILE
40211	BT B-Mobile
35002	BTC MOBILITY LTD
70267	BTL
65201	BW MASCOM
25701	BY VELCOM
20820	BYTEL
338180	C&W
342600	C&W
346140	C&W
23455	Cable & Wireless
45618	CAMSHIN
63089	CD OASIS
65507	CELL C
310560	Cell One
63004	CELLCO GSM
61701	CELLPLUS-MRU

ID	Name
65010	CELTEL
62901	CELTEL CD
62803	CELTEL GA
63002	CELTEL RC
61901	CELTEL SL
62201	CELTEL TCD
64005	CELTEL TZ
46000	China Mobile
46001	China Unicom
61201	CI CORA
310410	Cingular
310150	Cingular
3101	Cingular
73001	CL ENTEL PCS
73010	CL ENTEL PCS
62910	COG LIBERTIS
732103	COL MOVIL
732101	COMCEL
62501	CPV MOVEL
45400	CSL
36269	CT GSM
36801	CU/C_COM
28001	CY CYTAGSM
310940	DCT
50216	DiGi
70602	DIGICEL
73402	DIGITEL TIM
63801	DJ EVATIS
60302	Djezzy
23802	DK SONOFON
21403	E AMENA
62120	ECONET NG
24801	EE EMT GSM
24802	EE RLT
60201	EGY MobiNiL
61710	EMTEL-MRU
26203	E-Plus
26002	Era
70601	ESV PERSONAL
63601	ETH-MTN
45702	ETLMNW
23002	EUROTEL - CZ
23102	EUROTEL-SK
25028	EXTEL RUS
65102	EZI-CEL
20810	F SFR
46601	FarEasTone
41601	Fastlink
24414	FI AMT
24409	FI FINNET

ID	Name
24405	FI RADIOLINJA
24491	FI SONERA
24403	FI TELIA
24412	FI2GFI12
302370	Fido
29505	FL1
64702	F-OMT
34001	F-Orange
55001	FSM Telecom
28801	FT-GSM
54720	F-VINI
62802	GAB TELECEL
60701	GAMCEL
28201	GEO-GEOCELL
62002	GH ONEtouch
62001	GH SPACEFON
62003	GH-MOBITEL
26601	GIBTEL GSM
62150	Glo NG
51502	Globe
61102	GN LAGUI
62701	GNQ01
27821	go mobile
20201	GR COSMOTE
20209	GR Q-TELECOM
20210	GR TELESTET
21601	H PANNON GSM
31070	Highland
45410	HK NEW WORLD
45404	HK ORANGE
45412	HK PEOPLES
45416	HK SUNDAY
74401	HPGYSA
21910	HR VIP
21901	HTmobile HR
65401	HURI
40401	Hutch
40405	HUTCH
40411	HUTCH
40413	HUTCH
40415	Hutch
40460	Hutch
40484	HUTCH
40486	HUTCH
45503	Hutchison MAC
22201	I TIM
22288	I WIND
71201	I.C.E.
26003	IDEA
40404	IDEA

## Network Provider Identification Numbers

ID	Name
40407	IDEA
40422	IDEA
40424	IDEA
40478	IDEA
61002	IKATEL ML
42502	IL Cellcom
42501	IL Orange
51021	IM-3
310690	IMMIX
40442	INA AIRCEL
40440	INA AIRTEL
40430	INA HUTCH
40420	INA MaxTouch
40441	INA RPG
51001	IND SATELINDOCEL
51010	IND TELKOMSEL
40412	INDEH
40419	INDEK
40456	INDEU
40470	INDH1
43602	Indigo-T
40468	IN-DOLPHIN
40469	IN-DOLPHIN
70268	INTELCO
43214	IR KISH
43219	IR MTCE
27203	IRL-METEOR
43211	IR-TCI
27401	IS SIMINN
27402	IS TAL
51501	Islacom
310770	IWS
42505	JAWWAL
33805	JM DIGICEL
41677	JO MobCom
44010	JP DoCoMo
44020	J-PHONE
23450	JT GSM
28802	KALL
46688	KGT
45602	KHM-Hello GSM
54509	KL-Frigate
476193	KP SUN
45002	KR KTF
45008	KR KTF
41902	KT MTCNet
41903	KT WATANIYA
40102	KZ KCELL
40101	KZ K-MOBILE
27001	L LUXGSM

ID	Name
27077	L TANGO
45701	LAO GSM
45703	LATMOBIL
29577	LI TANGO
62801	LIBERTIS
51008	LIPPO TEL
41371	LK Mobitel
24701	LMT GSM
61801	LoneSTAR
24602	LT BITE GSM
24702	LV TELE2
45501	MAC-CTMGSM
28202	MAGTI-GSM-GEO
61001	MALITEL ML
64111	mango
23458	Manx Pronto
25902	MD MOLDCELL
25901	MD VOXTEL
25002	MegaFon
64602	MG ANTARIS
64601	MG Madacom
61902	MILLICOM SL
29402	MKD COSMOFON
29401	MKD-MOBIMAK
41401	MM 900
42899	MN MobiCom
26213	MobilCom
21805	MOBI'S
46693	MobiTai
64002	MOBITEL - TZ
63401	MobiTel SDN
45601	MOBITEL-KHM
22004	MONET
60401	MOR IAM
60400	MOR MEDITEL
21407	MOVISTAR
33403	MOVISTAR
64301	MOZ-mCel
60901	MR MATTEL
64901	MTC NAMIBIA
42602	MTC-VFBH
28401	M-TEL GSM BG
62130	MTN - NG
62401	MTN CAM
65510	MTN-SA
64110	MTN-UGANDA
25702	MTS BY
25001	MTS-RUS
47201	MV DHIMOBILE
65001	MW CP 900

ID	Name
50219	MY CELCOM
50212	MY Maxis Mobile
24202	N NetCom GSM
24201	N Telenor
25044	NC-GSM
54601	NCL MOBILIS
61402	NE CELTEL
310450	NECCI
62140	NG NITEL
20408	NL KPN
20412	NL Telfort
26207	o2 - DE
27202	O2 - IRL
23410	O2 - UK
27403	Og Vodafone
72431	Oi
42202	OMAN MOBILE
24601	OMNITEL LT
23205	one
23433	Orange
23830	Orange
37001	orange
65202	Orange
62402	Orange CAM
22803	Orange CH
61203	Orange CI
20801	Orange F
29502	Orange FL
20420	Orange NL
64700	Orange re
23101	Orange SK
52099	Orange Th
25011	ORENSOT
23003	OSKAR
26803	P OPTIMUS
26806	P TMN
71401	PANCW
74402	PGY Porthable
51505	PH Sun Cellular
41003	PK-UFONE
26001	Plus GSM
53701	PNGBMobile
74001	PORTA GSM
72235	PORT-HABLE
25092	Primtel
22002	ProMonte
51011	proXL
310500	PSC Wireless
42701	QAT QATARNET
28304	RA 04

ID	Name
28301	RA-ARMGSM
63510	R-CELL
25012	RF Far East
41501	RL Cellis
41503	RL LibanCell
22601	RO CONNEX
22603	RO Cosmorom
22610	RO ORANGE
302720	ROGERS
25017	RUS 17
25010	RUS DTC
25020	RUS ECC
25013	RUS Kuban-GSM
25019	RUS_Bashcell
25016	RUS16 250 16
24007	S COMVIQ
42101	SabaFon
63902	Safaricom
64202	SAFARIS
25005	SCS RUS
71073	SERCOM
36301	SETAR GSM
63301	SEYCEL
63310	SEZ AIRTEL
64710	SFR REUNION
52503	SGP M1-GSM
29341	SI MOBITEL GSM
29370	SI VEGA 070
29340	SI.MOBIL
25004	SIBCHALLENGE RUS
52501	SingTel
52502	SingTel-G18
51503	SMART
45406	SmarTone
45500	SmarTone
25007	SMARTS
25015	SMARTS
60801	SN ALIZE
60802	SN-SENTEL SG
43601	Somoncom
63701	SOMTELESOM
42102	SPACETEL
64201	Spacetel BI
40414	SPICE
40444	SPICE
41302	SRI DIALOG
41303	SRI-CELLTEL
21303	STA-MOBILAND
52505	STARHUB-SGP
62601	STP CSTmovel

## Network Provider Identification Numbers

ID	Name
22802	sunrise
65310	Swazi-MTN
24004	SWEDEN
24005	Sweden 3G
22801	SWISS GSM
41709	SYR MOBILE SYR
41701	SYRIATEL
46689	T3G
45708	TANGO LAO
62202	TD LIBERTIS
23801	TDC MOBIL
33420	TELCEL
36251	Telcell GSM
29001	TELE Greenland
24603	TELE2
24803	TELE2
64803	TELECEL ZW
61205	TELECEL-CI
35001	TELECOM BDA
29501	telecom FL
73002	TELEFONICA
74602	TeleG
23207	telering
23820	TELIA DK
24001	TELIA S
63782	Telsom Mobile
50501	Telstra
61501	TG-TOGO CELL
52015	TH ACT 1900
52001	TH GSM
52023	TH GSM 1800
52018	TH-DTAC
90105	Thuraya
71610	TIM
72402	TIM
72403	TIM
72404	TIM
50217	TIMECel
43603	TJK MLT
43605	TJT - Tajik Tel
61602	TLCL-BEN
51402	TLS-TT
310740	TLXT
31026	T-Mobile
31031	T-Mobile
310160	T-Mobile
310200	T-Mobile
310210	T-Mobile
310220	T-Mobile
310230	T-Mobile

ID	Name
310240	T-Mobile
310250	T-Mobile
310260	T-Mobile
310270	T-Mobile
310660	T-Mobile
23203	T-Mobile A
23001	T-Mobile CZ
26201	T-Mobile D
20416	T-Mobile NL
23430	T-Mobile UK
23431	T-Mobile UK
23432	T-Mobile UK
50213	TMTOUCH
28603	TR ARIA
28604	TR AYCELL
28602	TR TELSIM
28601	TR TURKCELL
46699	TransAsia
37412	TSTT
60503	TUNISIANA
60502	TUNTEL
46606	TUNTEX
46692	TWN Chunghwa
46697	TWN GSM 1800
352130	TWTCGN
25501	UA UMC
42402	UAE ETISALAT
25505	UA-GT
25503	UA-KYIVSTAR
53901	U-CALL
64101	UG CeTel
25502	UKR-WellCOM
72207	UNIFON
63102	UNITEL
25039	Uraltel
310100	US PLATEAU
31080	USA 080
310340	USA 340
310640	USA AE Airadigm
310190	USA Dutch Harbor
310460	USA ONELINK
310790	USA Pinpoint
310320	USA-CellularOne
310910	USAF
31040	USATX
310530	USA-WVA WIRELESS
36291	UTS
43405	UZB COSCOM GSM
43404	UZB DAEWOO-GSM
43407	UZB-UZD

ID	Name
43402	UZMACOM
64004	VadaCom
65101	VCL COMMS
27404	Viking
73601	VIVA
45201	VN MOBIFONE
45202	VN VINAPHONE
63001	VODACOM CD
64304	VodaCOM-MZ
65501	VodaCom-SA
27602	vodafone AL
50503	VODAFONE AU
26202	Vodafone D2
60202	vodafone EG
21401	vodafone ES
54201	Vodafone FJ
20205	vodafone GR
21670	Vodafone HU
27201	vodafone IE
22210	vodafone IT
27801	vodafone MT
20404	vodafone NL
53001	vodafone NZ
26801	vodafone P
24008	vodafone SE
23415	vodafone UK
54101	VUT SMILE
73401	VZ INFO
21630	WESTEL
21404	XFERA
310590	XTNDAREA
50502	YES OPTUS
63903	YES!
22001	YU MOBTel
22003	YUG 03
64003	ZANTEL-TZ
64501	ZM CELTEL
64804	ZW ECONET



## 8 Hardware

Version	Description
INSYS GSM 4.0	GSM Engine TC35
INSYS GPRS 4.0	GSM/GPRS Engine MC35
INSYS GSM 4.x	GSM Engine TC35i
INSYS GPRS 4.x	GSM/GPRS Engine MC35i

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Space for Comments:

