INSYS
MICROELECTRONICS

AT Commands

Sparklet Step III

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Publisher:

INSYS MICROELECTRONICS GmbH
Waffnergasse 8
D-93047 Regensburg, Germany
Phone: +49 (0)941/56 00 61
Fax: +49 (0)941/56 34 71
e-mail: insys@insys-tec.de
Internet: http://www.insys-tec.de

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0.01	11/02/2008	Initial Version
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1 General

Sparklet is controlled internally via **AT** commands. The **AT** commands can be directly entered with a terminal program.

We recommend the terminal program *Tera Term Pro Web (Version 3.1.3 or higher)* by T. T. Teranishi. The free software can be downloaded at

http://www.ayera.com/teraterm/

Each **AT** command starts with the letters **AT** and ends with a “Carriage Return” (CR). Upper case or lower case spelling ignored. The command line is evaluated after the modem receives a "Return" command (CR). In the description of the AT commands, the parameters are surrounded by "<" and ">". When entering the command, these characters must be ignored.

An example with the command **AT&D<n>**:

- <n> can have the values 0, 1, 2 or 3.
- e.g. **AT&D3** means: reboot of Sparklet on DTR drop
- For commands which expect a parameter but don't have a parameter, the modem will automatically assume the parameter 0
- e.g. **ATE0** or **ATE** mean: no Echo on serial interface

The commands are acknowledged with “**OK**” or “**ERROR**”

The standard **AT** commands (see next chapter) can be entered locally via the serial interface if the device is in offline state.

Note

Lining up several commands per input line is usually not possible. Further commands can be sent only after the processing of the previous command is completed with the output of the response. After the response a pause of 100ms has to be kept, before sending the next command.

The standard **AT** commands can be entered locally via the serial interface if the device is in offline state. For entering AT commands during data connections (CSD, TCP or IPT), Sparklet has to be switched to remote configuration mode or online command mode (see document *Sparklet Supervisor Manual Step III*).

1.1 Non-synchronized Event Codes (URC)

Apart from the non-synchronized event codes of the GSM engine, the advanced options by INSYS offer the following messages:

URC	Type	Meaning
+PPPIP: SETUP	Non-synchronized	In operating mode “Tunneling” TCP/UDP Listen (**AT*IPLISTEN**), the PPP connection was successfully established, an IP address was received, and the device can be reached via a TCP/UDP connection.
+PPPIP: RELEASE	Non-synchronized	In the operating mode “Tunneling” TCP/UDP Listen (**AT*IPLISTEN**), the PPP connection was terminated and the device can no longer be reached.
+LINKUP	Non-synchronized	In operating mode “IPT”, the device registered itself successfully to an IPT server and is now ready to be contacted from another IPT client.
+LINKDOWN	Non-synchronized	In operating mode “IPT”, the device unsubscribed itself successfully from the IPT server and can no longer be reached from another IPT client.

There is no short form for non-synchronized event codes, i.e. the output will always be in long form, regardless of the settings for **ATV** and **ATQ.**

2 Short Description of Sparklet AT Commands

2.1 Overview

Command	Brief description	Implementation possible				
		offline local	online local	remote CSD	remote TCP	remote SMS
ATD	Call to specific number	X				
ATDL	Redial last number used	X				
ATE	Command echo handling	X	X	X	X	X
ATH	Terminate active CSD or active TCP connection		X			
ATQ	Set result code presentation mode	X	X	X	X	X
ATS0	Number of rings for automatically call acceptance	X	X	X	X	X
ATV	Result code format mode	X	X	X	X	X
AT&D	DTR function mode	X	X	X	X	X
AT&F	Set Echo, and text result back to factory default	X	X	X	X	X
AT&S	DSR function mode	X	X	X	X	X
AT&W	Equals AT*SAVE	X	X	X	X	X
AT+COPS	Operator selection	X	X	X	X	X
AT+CREG	Network registration	X	X	X	X	X
AT+CSQ	GSM signal field strength	X	X	X	X	X
AT+ICF	Data format of serial interface	X	X	X	X	X
AT+IPR	Baud rate of serial interface	X	X	X	X	X
AT\Q	Flow control of serial interface	X	X	X	X	X
AT^MONI	Monitor idle mode and dedicated mode	X	X	X	X	
AT^MONP	Monitor neighbour cells	X	X	X	X	
AT^SBV	Check battery charging	X	X	X	X	X
AT^SMONC	Cell monitoring	X	X	X	X	
AT*AGG	IP block formation timer	X	X	X	X	X
AT*APN	APN for GPRS attach	X	X	X	X	X
AT*BLOCK	IP block size	X	X	X	X	X
AT*CBCK	Auto dial function callback	X	X	X	X	X
AT*CKSUM	Checksum of manufacturing ini.-file	X	X	X	X	X
AT*CLP	Selective call acceptance	X	X	X	X	X

Command	Brief description	Implementation possible				
		offline local	online local	remote CSD	remote TCP	remote SMS
AT*COM	Interface format of serial interface	X	X	X	X	X
AT*CPW	Remote configuration password	X	X	X	X	X
AT*CSDPRIO	Termination of GPRS connections for incoming CSD calls	X	X	X	X	X
AT*CSQOFF	Signal-strength value	X	X	X	X	X
AT*DEFAULT	Load ini-x-xx-manu.txt + active PIN as active profile	X	X	X	X	X
AT*EXIT	Leave CSD/TCP remote configuration mode			X	X	
AT*GPRSDELAY	GPRS attach delay time	X	X	X	X	X
AT*GPRSDETACH	GPRS detach interval	X	X	X	X	X
AT*GSMREQ	HMI update interval	X	X	X	X	X
AT*IDLE	Idle timeout of active IP connection	X	X	X	X	X
AT*IPLISTEN	Operating mode IP listen	X	X	X	X	X
AT*IPT	IPT status	X	X	X	X	X
AT*IPTACCOUNT	IPT authentication user-name and password	X	X	X	X	X
AT*IPTADDR	IPT server address	X	X	X	X	X
AT*IPTDELAY	IPT attach delay time	X	X	X	X	X
AT*IPTTIMEOUT	IPT command response and receive timeout	X	X	X	X	X
AT*KILL	Destroy Java until next start-up	X	X*	X		X
AT*MCLP	Master Caller	X	X	X	X	X
AT*MI	IP server authentication	X	X	X	X	X
AT*MPW	Password for master caller	X	X	X	X	X
AT*MODE	Change active mode	X	X	X	X	X
AT*MSGOUT	Content of Outage-SMS	X	X	X	X	X
AT*OPER	Operator selection	X	X	X	X	X
AT*PAPN	APN for GPRS connection needed to start an update from HTTP Server	X	X	X	X	X
AT*PDNS	DNS for GPRS connection needed to start an update from HTTP Server	X	X	X	X	X
AT*PIN	PIN of SIM-card	X	X	X	X	X
AT*PPPPW	PPP password for GPRS attach	X	X	X	X	X

Command	Brief description	Implementation possible				
		offline local	online local	remote CSD	remote TCP	remote SMS
AT*PPPUN	PPP user name for GPRS attach	X	X	X	X	X
AT*PPW	PPP password for GPRS connection needed to start an update from HTTP Server	X	X	X	X	X
AT*PRESET	Periodical logout/reset	X	X	X	X	X
AT*PROFILE	Display settings	X	X	X	X	X**
AT*PUN	PPP user name for GPRS connection needed to start an update from HTTP Server	X	X	X	X	X
AT*RESET	Reset device	X	X	X	X	X
AT*RNOUT	Receiver number for Outage-SMS	X	X	X	X	X
AT*SAVE	Save active settings non-volatile	X	X	X	X	X
AT*SCNOUT	Service-center number for sending SMS	X	X	X	X	X
AT*UDC	URL of download-center for updating via HTTP	X	X	X	X	X
AT*UPD	Firmware and/or ini file update	X	X***	X	X	X
AT*UPW	Update password	X	X	X	X	X

X: implemented/enabled

*: only in CSD online command mode, not in TCP online command mode

: only firmware version and active mode are displayed via SMS, see command **AT*PROFILE

***: not executable, only readable

2.2 Availability/Storage

The following Sparklet AT-Commands are immediately saved non-volatile without entering **AT*SAVE**. Furthermore the device will automatically do a restart, if the parameter value has changed.

- **AT*MODE**

The following Sparklet AT-Commands are immediately saved non-volatile without entering **AT*SAVE**. They are activated after a reset.

- **AT*PIN**

Following Sparklet AT-Commands are immediately saved non volatile and activated:

- **AT*OPER**

All other settings are immediately accepted, but only saved non-volatile if **AT*SAVE** is entered afterwards.

3 Description of Sparklet AT commands

ATD **Establish a CSD connection**

Execute: **ATD<n>**

Dialling the phone number <n>

Note
This command works only in offline command mode since firmware version 2-82.

Note
If IPT mode is active (**AT*MODE=3**), dialling is only possible if the IPT Link is down.

ATDL **Redial last CSD connection**

Execute: **ATDL**

Note
This command works only in offline command mode since firmware version 2-82.

Note
If IPT mode is active (**AT*MODE=3**), dialling is only possible if the IPT Link is down.

ATE **Enable command echo**

Write: **ATE[<value>]**

Response:

OK

Parameter:

<value>	0	Echo mode off
	1	Echo mode on

Note
In case of use the command without parameter, **<value>** is set to 0.

ATH **Terminate connection**

Execute: **ATH**

- Terminate active CSD connections
- Terminate active TCP connections

Note
Before the connection can be terminated, switching to online command mode is required for data connections ("**+++**" or DTR-Drop for **AT&D1**)

ATQ **Set result code presentation mode**

Write: **ATQ[<n>]**

Response:

if <n>=0:

OK

if <n>=1:

(none)

Parameter:

<n>	0	transmit result code
	1	result codes are not transmitted

Note

In case of use the command without parameter, **<n>** is set to 0.

ATS0 **Set number of rings before automatically answering a CSD call**

Read: **ATS0?**

Response:

S0: <n>

OK

Parameter:

<n>		see write instruction

Write: **ATS0=<n>**

Response:

OK

Parameter:

<n>	2...100	enable automatic answering after specified number of rings

ATV **Set result code format**

Write: **ATV[<value>]**

Response:

if <value>=0:

0

if <value>=1:

OK

Parameter:

<value>

0	short result code format: numeric code
1	long result code format: verbose code

Note

In case of use the command without parameter, **<value>** is set to 0.

Verbose format	Numeric format	Meaning
OK	0	command executed, no errors
CONNECT	1	link established
RING	2	ring detected
NO CARRIER	3	link not established or disconnected
ERROR	4	invalid command
NO DIALTONE	6	no dial mode, dialling impossible, wrong mode
BUSY	7	remote station busy
CONNECT 9600/RLP	49	link with 9600bps and radio link protocol
ALERTING		alerting at called phone
DIALING		mobile phone is dialling

AT&D **Set circuit Data Terminal Ready (DTR) function mode**

Write: **AT&D[<value>]**

Response:

OK

Parameter:

<value>	0	no action on DTR drop
	1	switch into online command mode on DTR drop (only during CSD or TCP data connection)
	2	disconnect active connection on DTR drop
	3	reboot of Sparklet on DTR drop

Note

In case of use the command without parameter, **<value>** is set to 0.

DTR isn't active if Sparklet is RS486 populated

(see command **AT*COM**).

AT&F **Set Echo and transmission of result code back to factory default settings**

Execution: **AT&F**

Response:

OK

AT&F activates Echo mode of serial interface.

Furthermore the result code transmission is set to text result code and is activated.

For further details, see commands **ATE**, **ATV**, **ATQ**.

Note

Command **AT&F** has the same result as entering the three commands, **ATE1**, **ATV1** and **ATQ0** .

AT&S **Set circuit Data Set Ready (DSR) function mode**

Write: **AT&S[<value>]**

Response:

OK

Parameter:

<value>	0	DSR always active
	1	Sparklet in command mode: DSR is OFF Sparklet in data mode: DSR is ON

Note
In case of use the command without parameter, **<n>** is set to 0.

AT&W **Save active settings non-volatile**

Note
see command **AT*SAVE,** since **AT&W** has the same effect

AT+COPS **Check operator selection**

Read: **AT+COPS?**

Response:

+COPS:<mode>[,<format>[,<oper>]]

OK

Parameter:

<mode>	see command **AT*OPER**
<format>	see command **AT*OPER**
<oper>	see command **AT*OPER**

Test: **AT+COPS=?**

Response:

+COPS: [list of present operators(<opStatus>,long alphanumeric <oper>s,,numeric <oper>s], ,(list of supported <mode>s,(list of supported <format>s)

Parameter:

<opStatus>	0	unknown
	1	operator available
	2	current operator
	3	operator forbidden
<oper>		see command **AT*OPER**
<mode>		see command **AT*OPER**
<format>		see command **AT*OPER**

Note

AT+COPS=? is not executable via SMS or in CSD remote configuration mode

AT+CREG **Check network registration**

Read: **AT+CREG?**

Response:

+CREG: <n>,<stat>[,<lac>,<ci>]

OK

Parameter:

<n> 0 +CREG URC is disabled

<state> 0 Not registered, device is currently not searching for new operator

Normally, status 0 occurs temporarily between two network search phases (status 2). However, if it persists, one of the following reasons may apply:

- Automatic network selection is active, but probably there is:
  - no SIM card available
  - no PIN entered
  - no valid Home PLMN entry found in the SIM
- Manually network selection is active and the selected network is available, but login fails due to one of the following reasons:
  - #11 ... PLMN not allowed
  - #12 ... Location area not allowed
  - #13 ... Roaming not allowed in this location area

1 Registered to home network

2 Not registered, but device is currently searching for new operator. The device searches for an available network. Failure to log in until after more than a minute may be due to one of the following reasons:

- No network available of insufficient Rx level
- The device has no access rights to the networks available
- Networks from the SIM list of allowed networks are around, but login fails due to one of the following reasons:
  - #11 ... PLMN not allowed
  - #12 ... Location area not allowed
  - #13 ... Roaming not allowed in this location area

  After this, the search will be resumed (if automatic network search is enabled).
- The home PLMN or an allowed PLMN is available, but login is rejected by the cell (reasons: Access Class or LAC).

3 Registration denied

Authentication or registration fails after Location Update Reject due to one of the following reasons:

- #2 ... IMSI unknown at HLR

			▪ #3 ... Illegal MS ▪ #6 ... Illegal ME Either the SIM or the MS or the ME are unable to login into any network. No further attempt is made to search or log into a network. User intervention is required.
		4	Unknown (not used)
		5	Registered, roaming The ME is registered at a foreign network (national or international network)
	<lac>		two byte location area code in hexadecimal format
	<ci>		two byte cell ID in hexadecimal format

AT+CSQ **Check received signal strength and channel bit error rate**

Execution: **AT+CSQ**

Response:

+CSQ:<rssi>,<ber>

OK

Parameter:

<rssi>	0	-113 dBm or less
	1	-111 dBm
	2...30	-109 ... -53 dBm
	31	-51 dBm or greater
	99	not known or not detectable
<ber>	0 ... 7	as RXQUAL values in the table in GSM 05.08 section 8.2.4
	99	not known or not detectable

Note

The cannel bit error rate <ber> can only be read during an active connection

AT+ICF **Serial Interface Character Framing**

Read: **AT+ICF?**

Response:

+ICF: <format>[,<parity>]

OK

Parameter:

<format> see write instruction

<parity> see write instruction

Write: **AT+ICF=<format>[,<parity>]**

Response:

OK

Parameter:

<format> Specifies the character format used for receiving and transmitting

- 2 8 data – 1 parity – 1 stop
- 3 8 data – 0 parity – 1 stop
- 5 7 data – 1 parity – 1 stop

<parity> Specifies the method of calculating the parity bit, if a parity bit is supported by **<format>**. If **<format>** does not support parity, this parameter has to be omitted.

- 0 odd
- 1 even

AT+IPR **Set fixed local rate**

Read: **AT+IPR?**

Response:

+IPR: <baud>

OK

Parameter:

<baud> see write instruction

Write: **AT+IPR=<baud>**

Response:

OK

Parameter:

<baud> bit rate per second (bps)

RS232 population:	RS485 population:
300	300
600	600
1200	1200
2400	2400
4800	4800
9600	9600
14400	14400
19200	19200
28800	---
38400	---
57600	---
115200	---
230400	---
460800	---

Note

Response is sent back with old baud rate, after this baud rate is changed to new value.

AT\Q **Flow control**

Write: **AT\Q[<n>]**

Response:

OK

Parameter:

<n>	0	disable flow control
	3	RTS / CTS hardware flow control

Note

In case of use the command without parameter, **<value>** is set to 0.

If **COM** is 1 (RS485 populated Sparklet), no hardware flow control is active, even if **<n>** is set to 1.

AT^MONI **Monitor idle mode and dedicated mode**

Execution: **AT^MONI**

Response:

see AT^MONI responses

OK

AT^MONI responses:

see Siemens AT command set TC65_ATC_V02.000 page 210

Note

AT^MONI isn't executable via SMS

AT^MONP **Monitor neighbour cells**

Execution: **AT^MONP**

Response:

see AT^MONP responses

OK

AT^MONP responses:

see Siemens AT command setTC65_ATC_V02.000 page 213

Note

AT^MONP isn't executable via SMS

AT^SBV	**Battery / Supply Voltage**
Execution:	**AT^SBV**
	Response:
	^SBV: <value>
	OK
	Parameter:
	<value> Battery voltage in mV

AT^SMONC **Cell monitoring**

Execution: **AT^SMONC**

Response:

^SMONC: <MCC>$_1$, <MNC>$_1$, <LAC>$_1$, <cell>$_1$, <BSIC>$_1$, <chann>$_1$, <RSSI>$_1$, <C1>$_1$, <C2>$_1$,<MCC>$_2$, <MNC>$_2$,<LAC>$_2$,<cell>$_2$,<BSIC>$_2$, <chann>$_2$, <RSSI>$_2$, <C1>$_2$, <C2>$_2$, …

OK

Parameter:

<MCC>	Mobile country code (3 digits); 000: not decoded
<MNC>	Mobile network code (2 or 3 digits); 000: not decoded
<LAC>	Location area code (4 hexadecimal digits); 0000: not decoded
<cell>	Cell identifier (4 hexadecimal digits) 0000: not decoded FFFF: cell ID currently not available, e.g. because the cell ID information is not yet read from the Sysinfo 3 transmitted by the base station.
<BSIC>	Base station identity code (2 digits); 000: not decoded
<chann>	ARFCN (Absolute Frequency Channel Number) 0: not decoded. In this case, all remaining parameters related to the same channel are neither decoded. E.g., a non existing cell appears as follows: 000,000,0000,0000,00,0,0,-,-
<RSSI>	Received signal level of the BCCH carrier (0...63). The indicated value is composed of the measured value in dBm plus an offset. This is in accordance with a formula specified in 3GPP TS 05.08
<C1>	Coefficient for base station reselection, e.g. 30. In dedicated mode, under certain conditions the parameter cannot be updated. In such cases a '-' is presented.
<C2>	Coefficient for base station reselection, e.g. 30. In dedicated mode, under certain conditions the parameter cannot be updated. In such cases a '-' is presented.

Note

AT^SMONC isn't executable via SMS

AT*AGG **TCP / UDP formation time of the integrated IP stack**

Read: **AT*AGG?**

Response:

AGG: <agg-time>

OK

Write: **AT*AGG=<agg-time>**

Parameter:

<agg-time>	10...5000	To form TCP/UDP data packets in steps of 10 ms

For IP-based transmission channels such as the "UDP transparent" connection, the transmitted amount of data consists no only of the sum of all user data of the application. They are rather packet into TCP/IP or UDP/IP packets, which also generate network loads and therefore add to the total costs.

E.g. each TCP/IP message has a protocol overhead of 40 bytes. For every message there is also a confirm message from the remote station with 40 bytes as well.

It is important to select the suitable parameters for the application to form the IP packets in the integrated IP stack; a data packet is sent to the remote terminal, if

- The maximum size has been reached: see command **AT*BLOCK**
- The maximum waiting time has expired: command **AT*AGG**, adjustable in ms in 10 ms steps

Small values for AT*AGG result in fast transmission of short packets, but also in a higher amount of data. Large values, however, result in small data packets being delayed.

Note

This parameter should be selected with care to avoid sending many small packets.

AT*APN	**GPRS-APN for integrated IP Stack**
Read:	**AT*APN?**
	Response:
	APN: <apn>
	OK
Write:	**AT*APN=<apn>**
	Parameter:
	<apn> APN (Access Point Name) of the GPRS provider. Maximum length is 30 characters, e.g. **web.vodafone.de**
	Note Some providers offer various APNs, which sometimes also distinguish themselves in different "Qualities of services". If necessary ask your provider which APN is the most suitable for your application.
Delete:	**AT*APN=<CR>**

AT*BLOCK **TCP / UDP block size of the integrated IP stack**

Read: **AT*BLOCK?**

Response:

BLOCK: <block-size>

OK

Write: **AT*BLOCK=<block-size>**

Parameter:

<block-size> 1...1500 Number of bytes to form IP data packets

For IP-based transmission channels such as the "UDP transparent" connection, the transmitted amount of data consists no only of the sum of all user data of the application. They are rather packet into TCP/IP or UDP/IP packets, which also generate network loads and therefore add to the total costs.

E.g. each TCP/IP message has a protocol overhead of 40 bytes. For every message there is also a confirm message from the remote station with 40 bytes as well.

It is important to select the suitable parameters for the application to form the IP packets in the integrated IP stack; a data packet is sent to the remote terminal, if

- The maximum size has been reached: command **AT*BLOCK**
- The maximum waiting time has expired: see command **AT*AGG**

To select smaller packet sized makes sense for lower data rates at the serial interface (e.g. 300 bps) to avoid possible timeouts of the application software.

Note

This parameter should be selected with care to avoid sending many small packets.

AT*CBCK **Auto dial function callback**

Read: **AT*CBCK<value>?**

Response:

CBCK<value>: <mode>[,<number/IP>[,<port>]]

OK

Write: **AT*CBCK<value>=<mode>[,<number/IP>[,<port>]]**

Parameter:

<value>	1…5 or M	Parameter, which connects callback with the a specific CLP number (see also command **AT*CLP** or **AT*MCLP**)
<mode>	0	no callback, accept **CLP<x>** caller
	1	CSD callback
	2	TCP callback
<number/IP>		CSD number or IP (URL also possible), due to selected mode (max. 100 characters for TCP callback; max. 30 characters for CSD callback).
<port>	1…65535	Port number needed for TCP callback

Note
Command **AT*CBCK<value>** is connected to command **AT*CLP<value>** or to **AT*MCLP** if <value> is **M**.

Example for no or different callbacks, if CLP3 is calling Sparklet:
AT*CLP3=+4929384729847

1) AT*CLP3=0
   → no Callback; CLP3 is accepted
2) AT*CLP3=1,+3392847293847
   → CSD callback; CLP3 caller is rejected and a CSD callback to +3392847293847 is done
3) AT*CLP3=2,172.21.21.7,6789
   → TCP callback (only active in Tunneling, or IPT mode); CLP3 is rejected and a TCP callback is done

For every defined CLP number it is possible to define via the connected CBCK setting, if the CLP caller is accepted, or a callback to a remote station should be done.

Note
TCP callback is not possible if Sparklet is configured in GSM only mode. If a TCP callback is defined anyway, the caller is accepted.

AT*CKSUM **Display checksum of manufacturing ini file**

Executable: **AT*CKSUM**

Response:

CKSUM: <checksum>

OK

Parameter:

<checksum> displays 8 digit CRC32 checksum of ini manufacturing file

AT*CLP **Selective call acceptance for connections and SMS-analyses**

Read: **AT*CLP<index>?**

Response:

CLP<index>: <number>

OK

Parameter:

<index> see write instruction

<number> see write instruction

Write: **AT*CLP<index>=<number>**

Parameter:

<index>	1…5	5 numbers possible
<number>		calling number (max. 30 characters), which is admitted to call or send a SMS to Sparklet. To use this safety function, the caller must call with activated call number transmission.

Note
For further details of selective call acceptance, see *Sparklet Supervisor Manual Step III*.

Note
If no CLP is defined, every caller is accepted

Delete: **AT*CLP<index>=<CR>**

AT*COM	**RS232 / RS485**		
Read:	**AT*COM?**		
	Response:		
	COM: <mode>		
	OK		
	Parameter:		
	<mode>	0	RS232 mode
		1	RS485 mode
Write:	▶		**Note** **<mode>** cannot be changed via AT Command or ini file update, since this parameter is bound to PCB population.
Default:	always fix, due to PCB population		

AT*CPW

Remote Configuration Password

Note
for further details using CPW see
Sparklet Supervisor Manual Step III.

Read:

***if remote station is masterclip (see command* AT*MCLP) :**

AT*CPW?

CPW: <status>

OK

Parameter:

<status>	active	remote configuration password deposited
	inactive	no remote configuration password deposited

***if remote station isn't masterclip (see command* AT*MCLP) :**

AT*CPW?

CPW: <active-cpw>

OK

Parameter:

<active-cpw>	see write instruction

Write:

AT*CPW=<active-cpw>,<new-cpw>

Parameter:

<active-cpw>	active remote configuration password
<new-cpw>	new remote configuration password (max. 30 characters)

Note
Character ',' is not allowed in CPW, as well as the password "error".

Delete:

AT*CPW=<active-cpw>,<CR>

Parameter:

<active-cpw>	see write instruction

AT*CSDPRIO

Termination of GPRS connections for incoming CSD calls

Note
for further details using CSDPRIO see
Sparklet Supervisor Manual Step III

Read:

```
AT*CSDPRIO?

CSDPRIO: <status>[,<clip_1>[,<clip_2>[,<clip_3>[,<clip_4>
         [,<clip_5>[,<clip_M>]]]]]]

OK
```

Write:

```
AT*CSDPRIO=<status>[,<clip_1>[,<clip_2>[,<clip_3>[,<clip_4>
         [,<clip_5>[,<clip_M>]]]]]]
```

Parameter:

<status>	**0**	CSDPRIO is inactive, no incoming CSD call is allowed to terminate a GPRS connection
	1	CSDPRIO is activated in general.
<clip_1>	**0**	CLP1 can't terminate a GPRS connection
	1	CLP1 can terminate a GPRS connection
<clip_2>	**0**	CLP2 can't terminate a GPRS connection
	1	CLP2 can terminate a GPRS connection
<clip_3>	**0**	CLP3 can't terminate a GPRS connection
	1	CLP3 can terminate a GPRS connection
<clip_4>	**0**	CLP4 can't terminate a GPRS connection
	1	CLP4 can terminate a GPRS connection
<clip_5>	**0**	CLP5 can't terminate a GPRS connection
	1	CLP5 can terminate a GPRS connection
<clip_M>	**0**	MCLP can't terminate a GPRS connection
	1	MCLP can terminate a GPRS connection

CSDPRIO provides the possibility to terminate an existing GPRS connection via an incoming CSD call. This feature can be used

- to enable service technicians to access the application or Sparklet, which are not integrated in the communication system based on IP connections.
- to still have remote access to the application in case the GPRS network fails.
- to still have remote access to the application in case the IP infra-structure of the control center fails.

If **CSDPRIO=1** every caller is allowed to terminate a GPRS connection, even if the caller is not defined as CLP.

If **CSDPRIO=0** no caller is allowed to terminate a GPRS connection.

If **CSDPRIO** starts with **'1'**, the next six values are used to define, if the linked CLP value is allowed to terminate the GPRS connection (see command **AT*CLP** for this).

AT*CSQOFF **Signal Strength LED switch off value**

Note
for further details, see *Sparklet Supervisor Manual Step III*

Read: **AT*CSQOFF?**

Response:

CSQOFF: <value>

OK

Parameter:

<value> see write instruction

Write: **AT*CSQOFF=<value>**

Parameter:

<value> 1...20 switch green Signal LED “off value”

Note
It is recommended to use a value below 11, so all flashing intervals of LED can be possible.

AT*DEFAULT **Set active profile to factory default settings with active PIN**

Execution: **AT*DEFAULT**

Response:

OK

Note
After execution a reset is done and Sparklet starts with factory default settings, but with last PIN, so a proper GSM network attach is guaranteed.

AT*EXIT **Leave remote configuration mode**

Execution: **AT*EXIT**

Response:

OK

If Sparklet is in CSD ,TCP or IPT remote configuration mode, the device can be switched back to pure data tunnelling mode via command **AT*EXIT**.

Note
This command is only active in remote configuration mode!

AT*GPRSDELAY **GPRS attach delay time**

Read: **AT*GPRSDELAY?**

Response:

GPRSDELAY: <n>

OK

Parameter:

<n>		see write instruction

Write: **AT*GPRSDELAY=<n>**

Parameter:

<n>	0	try GPRS attach in kind of failure every minute
	1	try new GPRS attach after ○ 1 minute ○ 5 minutes ○ 15 minutes ○ 30 minutes ○ 60 minutes in kind of failure

To limit the connection costs for failed connection setups the delay time for every new repeated attempt can be configured via AT command **AT*GPRSDELAY**. It is possible that the GPRS setup is tried every minute, or that the time rises to max. one hour every time the setup fails.

AT*GPRSDETACH **GPRS detach interval**

Read: **AT*GPRSDETACH?**

Response:

GPRSDETACH: <n>

OK

Parameter:

<n>		see write instruction

Write: **AT*GPRSDETACH=<n>**

Parameter:

<n>	1...24	GPRS detach interval time in hours

If Sparklet is configured for TCP or UDP Listening (see command **AT*IPLISTEN**) and no remote station does a connection to Sparklet for the defined GPRSDETACH time, a GPRS detach is done. After the successful detach, an attachment is tried due to parameter **AT*GPRSDELAY**.

AT*GSMREQ **HMI update + SMS read interval**

Note
For further details see *Supervisor Manual Step III*

Read: **AT*GSMREQ?**

Response:

GSMREQ: <n>

OK

Parameter:

<n>		see write instruction

Write: **AT*GSMREQ=<n>**

Parameter:

<n>	20...60	time in seconds for periodically updating HMI and check SMS receiver memory

Note
During an active TCP, UDP or IPT connection, no received SMS are processed. This is done after the GPRS connection.

AT*IDLE **Idle timeout of active IP connection**

Read: **AT*IDLE?**

Response:

IDLE: <idle-time>

OK

Parameter:

<idle-time>		see write instruction

Write: **AT*IDLE=<idle-time>**

Parameter:

<idle-time>	0	idle timer inactive
	1...99	idle timeout in minutes

Note
Idle timer can be used to terminate TCP, UDP or IPT data connections.

If for a defined time, called idle time, no data was transferred from remote station to serial interface or vice versa during an active data connection based on IP, Sparklet will terminate the connection.

The idle time can be configured via AT command **AT*IDLE**. It can be set in a range from 0 till 99 minutes. The idle timer will start after a successful TCP, UDP or TCP data connection is established. Every time a character is received from serial interface or from remote side, the timer is set back.

AT*IPLISTEN **Operation mode IP Listen**

Read: **AT*IPLISTEN?**

Response:

IPLISTEN: <status>[,<mode>,<port>]

OK

Write: **AT*IPLISTEN=<status>[,<mode>,<port>]**

Parameter:

<status>	0	IP listen deactivated
	1	IP listen activated
<mode>	0	TCP listening
	1	UDP listening
<port>	1…65535	listening port

Note

If status is set to '1', **<mode>** and **<port>** have to be defined.

Besides this, an APN, PPP Username and PPP Password must be already defined and **AT*MODE** must be set to '1'. For this see commands:

- **AT*APN**
- **AT*PPPPW**
- **AT*PPPUN**
- **AT*MODE**

If the GPRS connection succeeds and TCP or UDP listening mode is activated the message "**+PPPIP: SETUP**" appears on serial interface. Furthermore the orange GSM / GPRS signal LED is permanently switched on.

Note

For further details how to use IP listening, see *Sparklet Supervisor Manual Step III*.

AT*IPT **Query IPT status**

Read: **AT*IPT?**

Response, if IPT Link is up:

```
LINK is up
Watchdog: <watchdog>
Local: <local-ip>:<local-port>
Remote: <remote-ip>:<remote-port>

OK
```

Response, if IPT Link is down:

```
LINK is down
```

Response, if IPT is not supported in this mode (AT*MODE != 3):

```
IPT not supported in this mode

OK
```

Parameter:

<watchdog>	time in minutes for sending watchdog package to IPT server Note: this time is defined by IPT server
<local-ip>	IP Address of Sparklet
<local-port>	Sparklet local port
<remote-ip>	IP Address of IPT Server
<remote-port>	IPT Client port of IPT Server

AT*IPTACCOUNT **IPT username and password for authentication**

Read: **AT*IPTACCOUNT?**

Response:

IPTACCOUNT: <username>,<password>

OK

Write: **AT*IPTACCOUNT=<username>,<password>**

Parameter:

<username>	IPT username (max. 62 characters) needed for IPT client authentication
<password>	IPT password (max. 30 characters) needed for IPT client authentication

Note

This parameter is only used, if Sparklet is running in “IPT” mode (**AT*MODE=3**).

AT*IPTADDR **IPT server address**

Read: **AT*IPTADDR<x>?**

Response:

IPTADDR<x>: <url/ip>:<port>

OK

Write: **AT*IPTADDR<x>=[<url/ip>:<port>]**

Parameter:

<x>	1	1st IPT server
	2	2nd IPT server (alternative)
<url/ip>		reachable URL or IP address of IPT server (max. 99 characters for a URL or a valid IP address)
<port>	1…65535	IPT server listening port for IPT clients

Note

The 2nd IPT server address is automatically used, if the authentication with the 1st server address fails. If the login was once successful, this destination will be used for next re-logins until it fails.

If there is no success even with the alternative IPT server, a re-login time defined via AT command **AT*IPTDELAY** is used.

Note

This parameter is only used, if Sparklet is running in “IPT” mode (**AT*MODE=3**).

AT*IPTDELAY **IPT attach delay time**

Read: **AT*IPTDELAY?**

Response:

IPTDELAY: <n>

OK

Write: **AT*IPTDELAY=<n>**

Parameter:

<n>	0	try GPRS attach in kind of failure every minute
	1	try new GPRS attach after ○ 1 minute ○ 5 minutes ○ 15 minutes ○ 30 minutes ○ 60 minutes in kind of failure

To limit the connection costs for failed connection setups the delay time for every new repeated attempt can be configured via AT command **AT*IPTDELAY**. It is possible that the GPRS setup is tried every minute, or that the time rises to max. one hour every time the setup fails.

Note
This parameter is only used, if Sparklet is running in "IPT" mode (**AT*MODE=3**).

AT*IPTTIMEOUT **IPT command response and receive timeout**

Read: **AT*IPTTIMEOUT?**

Response:

IPTTIMEOUT: <resp-timeout>,<rec-timeout>

OK

Write: **AT*IPTTIMEOUT=<resp-timeout>,<rec-timeout>**

Parameter:

<resp-timeout>	1…255	IPT command response timeout [sec.]
<rec-timeout>	1…255	IPT command receive timeout [sec.]

Note
This parameter is only used, if Sparklet is running in "IPT" mode (**AT*MODE=3**).

at*kill	**Switch off Java**
Execute:	**at*kill=<active-mpw>,now**
	Response:
	kill Java
	Parameter:
	<active-mpw> active master password

Note

This command must be entered in small letters. After entering this command, no Java is active until next reset (approx. 3-4 minutes). Thus Sparklet acts like a pure TC65 engine for this time. This command shouldn't be used normally!

AT*MCLP **Master of selective call acceptance**

Note
The master caller has the permission to read out all passwords. A normal CLP caller isn't allowed to do this.

Read:

if remote station isn't masterclip :

AT*MCLP?

Response:

MCLP: <status>

OK

Parameter:

<status>	active	master call number deposited
	inactive	no master call number deposited

if remote station is masterclip :

AT*MCLP?

MCLP: <number>

OK

Parameter:

<number>	see write instruction

Write:

AT*MCLP=<active-mpw>,<number>

Parameter:

<active-mpw>	active master caller password
<number>	new master caller number (max. 30 characters; no ',' is allowed; "error" also not allowed)

Delete:

AT*MCLP=<active-mpw>,<CR>

Parameter:

<active-mpw>	see write instruction

AT*MI **IP server authentication**

Read: **AT*MI?**

Response:

MI: <n>[,<mi>,<ip>,<port>,<mode>]

OK

Write: **AT*MI=<n>[,<mi>,<ip>,<port>,<mode>]**

Parameter:

<n>	0	IP server authentication deactivated
	1	IP server authentication without HMAC-MD5
	2	IP server authentication with HMAC-MD5
<mi>		meter identification string (max. 20 characters)
<ip>		IP address or URL (max. 100 characters) of remote server
<port>	1...65535	port of remote server
<mode>	0	TCP authentication
	1	UDP authentication

If Sparklet is configured in "Tunneling Mode" (see command **AT*MODE**) and a new IP address is assigned, Sparklet can send its IP address together with a message called meter identification (mi) string to a remote TCP or UDP server.

Note

For further details and examples see chapter "Server authentication in Tunneling Mode" in document *Sparklet Supervisor Manual Step III*.

AT*MPW **Password of master of selective call acceptance**

Read: ***if remote station isn't masterclip :***

AT*MPW?

Response:

MPW: <status>

OK

Parameter:

<status>	active	master password deposited
	inactive	no master password deposited

if remote station is masterclip :

AT*MPW?

Response:

MPW: <active-mpw>

OK

Parameter:

<active-mpw>	see write instruction

Write: **AT*MPW=<active-mpw>,<new-mpw>**

Parameter:

<active-mpw>	active master password
<new-mpw>	new master password (max. 30 characters; no ',' allowed; password "error" not allowed)

Delete: **AT*MPW=<active-mpw>,<CR>**

Parameter:

<active-mpw>	see write instruction

AT*MODE **Mode Setting**

Read: **AT*MODE?**

Response:
MODE: <setting>

OK

Parameter:

<setting>		see write instruction

Write: **AT*MODE=<setting>**

Parameter:

<setting>	0	GSM only
	1	Tunneling mode
	3	IPT mode

Note

This command is responsible for the man behaviour of Sparklet. GSM only mode doesn't support GPRS, thus no IP listening mode can be activated (see command **AT*IPLISTEN**). Sparklet is only reachable via CSD or SMS from remote. If GPRS should be used, **AT*MODE=1** must be entered. If until now, Sparklet was configured in GSM only mode a restart is done automatically. The command is immediately saved non-volatile.

If Sparklet should be reachable for another IPT client, **AT*MODE=3** must be used.

Be aware, that Mode changing will result in a device reset.

AT*MSGOUT	**Content of outage SMS**
Read:	**AT*MSGOUT?**
	Response: **MSGOUT: <text>** **OK**
	Parameter: **<text>** see write instruction
Write:	**AT*MSGOUT=<text>**
	Parameter: **<text>** this text (max. 160 characters) is sent via SMS if an outage occurs. **Note** For sending an outage SMS, also a receiver number must be defined, this is done via command **AT*RNOUT**.
Delete:	**AT*MSGOUT=<CR>**

AT*OPER **Operator Selection for GSM attach**

Read: **AT*OPER?**

Response:
OPER: <mode>[,<format>[,<oper>]]

OK

Write: **AT*OPER=<mode>[,<format>[,<oper>]]**

Parameter:

<mode>	0	Automatic mode; <oper> field is ignored
	1	Manual operator selection. Write command requires <oper>in numeric format, i.e. <fomat> shall be 2. Read command returns the current <mode> and the currently selected <oper>. If no operator is selected, <format> and <oper> are omitted.
	2	---
	3	---
	4	Automatic /manual selection, if manual selections fails automatic mode is entered.
<format>	0	Long alphanumeric format of <oper>. Should be up to 16 characters long.
	2	Numeric format of <oper>. This is the GSM Location Area Identification (LAI) number, which consists of the 3-digit Mobile Country Code (MCC) plus the 2- or 3-digit Mobile Network Code (MNC).
<oper>		operator name

Note
Parameter **OPER** is immediately saved non volatile, no **AT*SAVE** command is necessary..

AT*PAPN **APN for firmware and / or ini file update via GPRS from a HTTP server**

Read: **AT*PAPN?**

Response:
PAPN: <entry point>

OK

Write **AT*PAPN=<entry point>**

Parameter:

<entry point> GPRS access point name (max. 30 characters);

Note
This parameter is mandatory for doing a update from a HTTP Server.

Note
for further details see TC65 AT Command Set TC65_ATC_V02.000 page 521.

Delete: **AT*PAPN=<CR>**

AT*PDNS **DNS for firmware and / or ini file update via GPRS from a HTTP server**

Read: **AT*PDNS?**

Response:
PDNS: <dns>

OK

Write: **AT*PDNS=<dns>**

Parameter:

<dns> Primary DNS server (max. 30 characters)

Note
This parameter isn't mandatory for doing a update from a HTTP Server.

Note
for further details see TC65 AT Command Set TC65_ATC_V02.000 page 521.

Delete: **AT*PDNS=<CR>**

AT*PIN	**PIN Authentication**		
Read:	**AT*PIN?**		
	Response: **PIN: <status>**		
	OK		
	Parameter:		
	<status>	active	PIN deposited
		inactive	no PIN deposited
Write:	**AT*PIN=<pin>**		
	Parameter:		
	<pin>	4-digit number with PIN of inserted SIM card	
	OK		
	▶	**Note** Parameter **PIN** is immediately saved non volatile, no **AT*SAVE** command is necessary.	
Delete:	**AT*PIN=<CR>**		

AT*PPPPW **Password for GPRS attach**

Read: **AT*PPPPW?**

Response:

PPPPW: <pw>

OK

Write: **AT*PPPPW=<pw>**

Parameter:

<pw> Password used for GPRS attach (max. 30 characters)

Note

Even if your provider needs just an APN for the GPRS attach and no password. Anyway enter some characters here, otherwise GPRS attachment will fail.

Delete: **AT*PPPPW=<CR>**

AT*PPPUN **Username for GPRS attach**

Read: **AT*PPPUN?**

Response:

PPPUN: <un>

OK

Write: **AT*PPPUN=<un>**

Parameter:

<un> Username used for GPRS attach (max. 40 characters)

Note

Even if your provider needs just an APN for the GPRS attach and no username. Anyway enter some characters here, otherwise GPRS attachment will fail.

Delete: **AT*PPPUN=<CR>**

AT*PPW	**Password of provider for firmware and / or ini file update via GPRS from a HTTP server**
Read:	**AT*PPW?**
	Response: **PPW: <password>** **OK**
	Parameter: **<password>** see write instruction
Write:	**AT*PPW=<password>**
	Parameter: **<password>** Specifies the password (max. 30 characters) for access to the dialup network.
	Note Even if your provider needs just an APN for the GPRS attach and no password. Anyway enter some characters here, otherwise GPRS attachment for doing the update will fail.
Delete:	**AT*PPW=<CR>**

AT*PRESET **Periodically logout / reset**

Read: **AT*PRESET?**

Response:
PRESET: <hour>,<mode>

OK

Parameter:

<hour>		see write instruction
<mode>		see write instruction

Write: **AT*PRESET=<hour>,<mode>**

Parameter:

<hour>	1...99	cycle period in hours for action specific to **<mode>.**
<mode>	0	logout from GSM network, re-login after one minute; not done if a connection is active at the event. The action is done after the connection.
	1	reset / reboot of Sparklet; not done if a connection is active at the event. The action is done after the connection.
	2	"ultimate" reset / reboot of Sparklet. If a connection is active, this connection is terminated.

AT*PROFILE **Profile display**

Execution: **AT*PROFILE**

Response:
SPARKLET
FW-VERSION: 3-20

BAUD: 19200
FORMAT: 8none1

MODE: 3
COM: 0
PIN: active
OPER: 0

E: 1
Q: 0
V: 1

\Q: 0
&S: 0
&D: 1
S0: 2

GSMREQ: 20
CSQOFF: 5

PAPN:
PPW:
PUN:
PDNS:
UDC:

CLP1:
CLP2:
CLP3:
CLP4:
CLP5:
MCLP: inactive

RNOUT:
SCNOUT:
MSGOUT:

PRESET: 24,2

APN: internet.eplus.de
PPPUN: test
PPPPW: test

CSDPRIO: 0
CBCK1: 0
CBCK2: 0
CBCK3: 0
CBCK4: 0
CBCK5: 0
CBCKM: 0

IPLISTEN: 1,0,703
AGG: 150
BLOCK: 1450
GPRSDETACH: 12
GPRSDELAY: 0
IDLE: 5
MI: 0

IPTADDR1: 62.109.85.115:26862
IPTADDR2:
IPTTIMEOUT: 30,20
IPTACCOUNT: insys_spark01,insys
IPTDELAY: 1

UPW: active
CPW: active
MPW: inactive

OK

Note
if the master caller queries AT*PROFILE via remote configuration mode, all passwords are visible.

Note
AT*PROFILE displays all active parameters. If these parameters should be saved non volatile, command AT*SAVE must be executed.

Note
command AT*PROFILE only returns firmware version and active MODE, if queried via remote SMS.
e.g.:
SPARKLET
FW-VERSION:3-20
MODE:1
OK

AT*PUN

Username of provider for firmware and / or ini file update via GPRS from a HTTP server

Read: **AT*PUN?**

Response:
PUN: <login>

OK

Parameter:
<login> see write instruction

Write;	**AT*PUN=<login>**
	Parameter: **<login>** Specifies the login name (max. 40 characters) for access to the dialup network. **Note** Even if your provider needs just an APN for the GPRS attach and no username. Anyway enter some characters here, otherwise GPRS attachment for doing the update will fail.
Delete:	**AT*PUN=<CR>**
AT*RESET	**Reset Sparklet**
Execution:	**AT*RESET** Response: **OK** **Note** If this command is entered via remote configuration mode, the connection is immediately terminated and a reset is done

AT*RNOUT	**Receiver number for outage SMS**
Read:	**AT*RNOUT?**
	Response: **RNOUT: <rec-number>** **OK**
	Parameter: **<rec-number>** see write instruction
Write:	**AT*RNOUT=<rec-number>**
	Parameter: **<rec-number>** receiver number for outage SMS (max. 30 characters) ▶ **Note** For further details see *Supervisor Manual Step III*.
Delete:	**AT*RNOUT=<number>**
AT*SAVE	**Save active settings non volatile**
Execution:	**AT*SAVE** Response: **OK**

AT*SCNOUT **Service center number for SMS response messages**

Read: **AT*SCNOUT?**

Response:
SCNOUT: <sca>[,<tosca>]

OK

Parameter:

<sca>	see write instruction
<tosca>	see write instruction

Write: **AT*SCNOUT=<sca>[,<tosca>]**

Parameter:

<sca> Service Center Address

GSM 04.11 RP SC address Address-Value field in string format, BCD numbers (or, GSM default alphabet characters) are converted to characters of the currently selected TE character set type of address given by <tosca>.

<tosca> 0...255 Type of Service Center Address

GSM 04.11 RP SC address Type-of-Address octet in integer format

Note

If no service center number is defined, the default service center number saved in SIM card is used.

Delete: **AT*SCNOUT=<number>**

AT*UDC	**Download center for firmware and / or ini file update**
Read:	**AT*UDC?**
	Response: **UDC: <path>** **OK**
	Parameter: **<path>** see write instruction
Write:	**AT*UDC=<path>**
	Parameter: **<path>** URL (max. 150 characters), where update files for firmware and / or ini-file update are deposited. **Example:** Update files are deposited within folder `update`, the UDC parameter must be set the following way: **AT*UDC=http://servername.dyndns.org:<port>/update/**
Delete:	**AT*UDC=<CR>**

AT*UPD **Start of firmware and / or ini file update**

Execution: **Start local update:**

AT*UPD=<upw>,LOCAL

Response for RS232 population:
Start FW Update (115200, 8N1, Hardware Handshake)

Response for RS485 population:
Start FW Update (19200, 8N1)

Parameter:

<upw> see read command

Start remote CSD update within CSD remote configuration mode:

AT*UPD=<upw>,CSD

Response:

Start FW Update

Parameter:

<upw> sea read command

Start remote TCP update within TCP remote configuration mode:

AT*UPD=<upw>,GPRS

Response:

Start FW Update

Parameter:

<upw> sea read command

Start update via GPRS from a HTTP server triggered via SMS:

[<cpw>,]AT*UPD=

<upw>,HTTP,GPRS[,<username>:<password>][;<papn>;<pun>;<ppw>;]

Parameter:

<cpw> active remote configuration password, see **AT*CPW**

<upw> active update password, see **AT*UPW**

<username> username for HTTP authentication

<password> password for HTTP authentication

<papn> APN for GPRS attach

<pun> Username for GPRS attach

<ppw> Password for GPRS attach

Note

Before starting an update via SMS, the parameters **UDC**, **PAPN**, **PUN**, **PPW** must be set for access to the dialup network, if **<papn>, <pun>** and **<ppw>** are not used.

If these parameters are invalid the update will fail.

An opportunity is to send APN, Username and Password within the "Update SMS". In that case, the parameters within the SMS are used, not the parameters entered via **AT*PAPN**, **AT*PUN** and **AT*PPW**.

With this feature, only the **UDC** must be defined via AT*UDC. The other needed parameters can be sent within the SMS.

Start update via GPRS from a HTTP server triggered via serial interface:

AT*UPD=

<upw>,HTTP,GPRS[,<username>:<password>][;<papn>;<pun>;<ppw>;]

Parameter:

<cpw> active remote configuration password, see **AT*CPW**

<upw> active update password, see **AT*UPW**

<username> username for HTTP authentication

<password> password for HTTP authentication

<papn> APN for GPRS attach

<pun> Username for GPRS attach

<ppw> Password for GPRS attach

Note

Before starting an update via SMS, the parameters **UDC**, **PAPN**, **PUN**, **PPW** must be set for access to the dialup network, if **<papn>, <pun>** and **<ppw>** are not used.

If these parameters are invalid the update will fail.

An opportunity is to send APN, Username and Password within the "Update Command". In that case, the parameters within the command are used, not the parameters entered via **AT*PAPN**, **AT*PUN** and **AT*PPW**.

With this feature, only the **UDC** must be defined via AT*UDC. The other needed parameters can be sent within the update command.

Read:

Note

With the AT*UPD read opportunity it is possible to read out the factory default ini-file, as well as the active ini-file, which holds all active non volatile saved parameters.

This can be done in offline, online or remote configuration mode.

Note

Ini file reading is not possible via SMS.

Read of factory default ini file:

AT*UPD=<upw>,MANUINI

Parameter:

<upw> active update password, see **AT*UPW**

Read active ini file:

AT*UPD=<upw>,ACTIVEINI

Parameter:

<upw> active update password, see **AT*UPW**

AT*UPW **Update password**

Read: ***if remote station isn't masterclip (see AT*MCLP):***

AT*UPW?

UPW: <status>

OK

Parameter:

<status>	**active**	update password deposited
	inactive	no update password deposited

if remote station is masterclip (see AT*MCLP):

AT*UPW?

UPW: <active-upw>

OK

Parameter:

<active-upw>	see write instruction

Write: **AT*UPW=<active-upw>,<new-upw>**

Parameter:

<active-upw>	active password for starting updates
<new-upw>	new password for starting updates (max. 30 characters; no ',' are allowed; "error" as password not allowed)

Delete: **AT*UPW=<active-upw>,<CR>**

Parameter:

<active-upw>	see write instruction

4 Network Provider Identification Numbers

Identifiers and names of the network providers (GSM Location Area Identification Number) for the GSM module, in alphabetic order:

41802	2
23430	30
23431	31
23432	32
310150	150
310170	170
310410	410
45703	45703
27202	02 - IRL
23210	3 AT
23806	3 DK
45403	3 HK
22299	3 ITA
24002	3 SE
23420	3 UK
45404	3(2G)
50506	3TELSTRA
62801	628 01/LIBERTIS
23207	A tele.ring
23201	A1
46668	ACeS
51000	ACeS
51511	ACeS
52020	ACeS
41201	AF AWCC
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
41501	alfa
60301	ALG Mobilis
42001	ALJAWAL
79502	Altyn Asyr
41902	KT MTCNet
41903	KT WATANIYA
40102	KZ KCELL
40101	KZ K-MOBILE
27001	L LUXGSM
27077	L TANGO
27099	L VOX.LU
61801	LBR Lonestar Cell
29577	LI TANGO
61802	LIBERCELL
60600	LIBYANA
51008	LIPPO TEL
65102	LS-ECONET-EZI-CEL
24602	LT BITE GSM
24701	LV LMT GSM, LV LMT
24702	LV TELE2
45501	MAC-CTMGSM
28202	MAGTI-GSM-GEO
61001	MALITEL ML
23458	Manx Pronto
90112	MCP Maritime Com
25902	MD MOLDCELL
25901	MD VOXTEL
25002	MegaFon RUS
70801	Megatel GSM
64602	MG ANTARIS
64601	MG Madacom
61902	MILLICOM SL
29402	MKD COSMOFON
29401	MKD-MOBIMAK
41401	MM 900
42899	MN MobiCom
21805	MOBI'S
29341	MOBITEL
41301	Mobitel
45601	MOBITEL-KHM
64002	MOBITEL - TZ
63401	MobiTel SDN
22004	MONET
60401	MOR IAM
60400	MOR MEDITEL
21407	movistar
70403	MoviStar
64501	ZM CELTEL
64804	ZW ECONET
64801	ZW NET*ONE
61801	LBR Lonestar Cell
29577	LI TANGO
61802	LIBERCELL
60600	LIBYANA
51008	LIPPO TEL
65102	LS-ECONET-EZI-CEL
24602	LT BITE GSM
24701	LV LMT GSM, LV LMT
24702	LV TELE2
45501	MAC-CTMGSM
28202	MAGTI-GSM-GEO
61001	MALITEL ML
23458	Manx Pronto
90112	MCP Maritime Com
25902	MD MOLDCELL
25901	MD VOXTEL
25002	MegaFon RUS
70801	Megatel GSM
64602	MG ANTARIS
64601	MG Madacom
61902	MILLICOM SL
29402	MKD COSMOFON
29401	MKD-MOBIMAK
41401	MM 900
42899	MN MobiCom
21805	MOBI'S
29341	MOBITEL
41301	Mobitel
45601	MOBITEL-KHM
64002	MOBITEL - TZ
63401	MobiTel SDN
22004	MONET
60401	MOR IAM
60400	MOR MEDITEL
21407	movistar
70403	MoviStar
70604	MoviStar
64301	MOZ-mCel
60901	MR MATTEL
64901	MTC NAMIBIA

72424	AMAZONIA
27601	AMC-AL
34008	AMIGO
362951	ANT
36269	ANT CURACAO TELECOM GSM
34430	APUA PCS ANTI-GUA
72234	AR PERSONAL
28010	areeba
41702	areeba
63402	areeba SDN
722310	ARG CTI Movil
41800	ASIACELL
41805	ASIACELL
41820	Atheer Iraq
28603	AVEA
40001	AZE-AZERCELL GSM
20610	B mobistar
43604	Babilon-M
21803	BA-ERONET
40002	BAKCELL GSM 2000
47003	Banglalink
20620	BASE
36439	BaTelCell
42601	BATELCO
25028	Bee Line
25099	Bee Line
20601	BEL PROXIMUS
61604	BELL BENIN COMMUNICATION
61302	BF Celtel
28405	BG GLOBUL
47002	BGD AKTEL
47004	BGD bMobile
47001	BGD-GP
21890	BH GSMBIH
43701	BITEL KGZ
61603	BJ BENINCELL
73602	BOMOV
34020	BOUYGTEL-C
40421	BPL MOBILE
40427	BPL MOBILE
40443	BPL MOBILE
40446	BPL MOBILE
72416	BRA BrTCelular
72415	BRA SCTL
52811	BRU-DSTCom
40211	BT B-Mobile
35002	BTC MOBILITY LTD.
70604	MoviStar
64301	MOZ-mCel
60901	MR MATTEL
64901	MTC NAMIBIA
42602	MTC VODAFONE BH
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
33403	MX MOVISTAR GSM
33420	Mx Telcel GSM
50219	MY CELCOM
50213	MY CELCOM 3G
50212	MY MAXIS
24202	N NetCom GSM
24201	N Telenor
42203	NAWRAS
54601	NCL MOBILIS
61403	NE TELECEL
62140	NG Mtel
20408	NL KPN
20412	NL Telfort
26207	o2 - de
26208	o2 - de
23410	O2 - UK
27402	Og Vodafone
27403	Og Vodafone
72431	Oi
732111	OLA
42202	OMAN MOBILE
24601	OMNITEL LT
23205	one
23433	Orange
23830	Orange
37001	Orange
40420	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

70267	BTL
64202	BUSAFA
65201	BW MASCOM
25701	BY VELCOM
338180	C&W
342600	C&W
344920	C&W
346140	C&W
352110	C&W
354860	C&W
356110	C&W
358110	C&W
360110	C&W
365840	C&W
366110	C&W
376350	C&W
23455	Cable & Wireless Guernsey
45618	CAMBODIA SHI-NAWATRA
302720	CAN Rogers Wire-less Inc.
348570	CCT Boatphone
63089	CD OASIS
61803	Celcom GSM
65507	Cell C
311130	Cell One Amarillo
310450	Cell One of NE Colorado
40434	CellOne
40438	CellOne
40451	CellOne
40453	CellOne
40454	CellOne
40455	CellOne
40457	CellOne
40458	CellOne
40459	CellOne
40462	CellOne
40464	CellOne
40466	CellOne
40471	CellOne
40472	CellOne
40473	CellOne
40474	CellOne
40475	CellOne
40476	CellOne
40477	CellOne
40479	CellOne
40480	CellOne
40481	CellOne
61701	CELLPLUS-MRU
20420	Orange NL
64700	Orange re
23101	Orange SK
52099	Orange Th
25011	ORENSOT
23003	OSKAR
26803	P OPTIMUS
26806	P TMN
41004	PAK - PL
71401	PANCW
70401	PCS
311170	PetroCom
51505	PH Sun Cellular
31180	Pine Cellular
41001	PK MK
41003	PK-UFONE
26001	Plus GSM
53701	PNGBMobile
74001	PORTA GSM
25092	Primetelefone RUS
22002	ProMonte
74402	PRY Porthable
310500	PSC Wireless
74405	PY Personal
42701	QAT QATARNET
28301	RA-ARMGSM
63510	R-CELL
25012	RF FAR EAST
41503	RL MTC Lebanon
22601	RO CONNEX
22603	RO Cosmorom
22610	RO ORANGE
41220	ROSHAN
25007	RUS 07, RUS SMARTS
25017	RUS 17
25010	RUS DTC
25013	RUS Kuban-GSM
25044	RUS North Caucasian GSM
25019	RUS_BASHCELL
25015	RUS15, RUS SMARTS
25016	RUS16,250 16
24007	S COMVIQ
42101	SabaFon
63902	Safaricom
61401	SAHELCOM
41808	SanaTel
25005	SCS RUS
71073	SERCOM
25011	ORENSOT
23003	OSKAR
26803	P OPTIMUS
26806	P TMN
41004	PAK - PL
71401	PANCW
70401	PCS
311170	PetroCom
51505	PH Sun Cellular
31180	Pine Cellular
41001	PK MK
41003	PK-UFONE
26001	Plus GSM
53701	PNGBMobile
74001	PORTA GSM
25092	Primetelefone RUS
22002	ProMonte
74402	PRY Porthable
310500	PSC Wireless
74405	PY Personal
42701	QAT QATARNET
28301	RA-ARMGSM
63510	R-CELL
25012	RF FAR EAST
41503	RL MTC Lebanon
22601	RO CONNEX
22603	RO Cosmorom
22610	RO ORANGE
41220	ROSHAN
25007	RUS 07, RUS SMARTS
25017	RUS 17
25010	RUS DTC
25013	RUS Kuban-GSM
25044	RUS North Caucasian GSM
25019	RUS_BASHCELL
25015	RUS15, RUS SMARTS
25016	RUS16,250 16
24007	S COMVIQ
42101	SabaFon
63902	Safaricom
61401	SAHELCOM
41808	SanaTel
25005	SCS RUS
71073	SERCOM
36301	SETAR GSM
63301	SEYCEL
63310	SEZ AIRTEL
64710	SFR REUNION

310560	Cellular One DCS
61402	CELTEL
62901	CELTEL
63903	CELTEL
64005	celtel
63002	CELTEL DRC
62803	CELTEL GA
65010	CELTEL MW
61901	CELTEL SL
62201	CELTEL TCD
70802	CELTELHND
31030	Centennial Communications
46000	CHINA MOBILE
46001	CHN-CUGSM
46692	Chunghwa
310380	Cingular
342810	Cingular
344930	Cingular
35010	Cingular
35230	Cingular
35830	Cingular
36010	Cingular
36620	Cingular
54801	CK KOKANET
73001	CL ENTEL PCS
73010	CL ENTEL PCS
72405	Claro
62910	COG LIBERTIS
732101	COLOMBIA - COMCEL S.A
70402	Comcel_GSM
62501	CPV MOVEL
72432	CTBC CEL
72433	CTBC CEL
72434	CTBC CEL
36801	CU/C_COM
28001	CY CYTAGSM
25014	Di-ex
50216	DiGi
33805	DIGICEL
342750	DIGICEL
35250	Digicel
35850	DIGICEL
36070	DIGICEL
70602	Digicel
310940	Digital Cellular
73402	DIGITEL TIM
63801	DJ EVATIS
60302	Djezzy
23802	DK SONOFON
60303	DZA-NEDJMA
36301	SETAR GSM
63301	SEYCEL
63310	SEZ AIRTEL
64710	SFR REUNION
52503	SGP-M1-3GSM
29370	SI VEGA 070
29340	SI vodafone
25004	SIBCHALLENGE RUS
52501	SingTel
52502	SingTel-G18
51503	SMART
45406	SmarTone
45500	SmarTone
45415	SmarTone 3G
60801	SN ALIZE
60802	SN-SENTEL SG
63704	SOMAFONE
43601	Somoncom
63701	SOMTELESOM
42102	SPACETEL
64201	Spacetel Bl
30801	SPM AMERIS
24010	SpringMobil SE
74602	SR.TELESUR.GSM
41303	SRI-CELLTEL
41302	SRI DIALOG
21303	STA-MOBILAND
52505	STARHUB
62601	STP CSTmovel
45419	SUNDAY
22802	Sunrise
65310	Swazi-MTN
24004	SWEDEN
24005	Sweden 3G
22801	Swisscom
29501	SwisscomFL
41709	SYR MOBILE SYR
41701	SYRIATEL
46689	T3G
45708	TANGO LAO
23801	TDC MOBIL
36251	Telcell GSM
29001	TELE Greenland
24603	TELE2
24803	TELE2
25020	TELE2
61602	TELECEL BENIN
74404	Telecel GSM
64502	TELECEL ZM
64803	TELECEL ZW
52503	SGP-M1-3GSM
29370	SI VEGA 070
29340	SI vodafone
25004	SIBCHALLENGE RUS
52501	SingTel
52502	SingTel-G18
51503	SMART
45406	SmarTone
45500	SmarTone
45415	SmarTone 3G
60801	SN ALIZE
60802	SN-SENTEL SG
63704	SOMAFONE
43601	Somoncom
63701	SOMTELESOM
42102	SPACETEL
64201	Spacetel Bl
30801	SPM AMERIS
24010	SpringMobil SE
74602	SR.TELESUR.GSM
41303	SRI-CELLTEL
41302	SRI DIALOG
21303	STA-MOBILAND
52505	STARHUB
62601	STP CSTmovel
45419	SUNDAY
22802	Sunrise
65310	Swazi-MTN
24004	SWEDEN
24005	Sweden 3G
22801	Swisscom
29501	SwisscomFL
41709	SYR MOBILE SYR
41701	SYRIATEL
46689	T3G
45708	TANGO LAO
23801	TDC MOBIL
36251	Telcell GSM
29001	TELE Greenland
24603	TELE2
24803	TELE2
25020	TELE2
61602	TELECEL BENIN
74404	Telecel GSM
64502	TELECEL ZM
64803	TELECEL ZW
64282	TELECEL-BDI
61205	TELECEL-CI
73002	TELEFONICA
310740	TELEMETRIX

21403	E AMENA
31090	Edge Wireless
24802	EE elisa
24801	EE EMT GSM
60201	EGY MobiNiL
61710	EMTEL-MRU
311160	EMW
26203	E-Plus
26002	Era
70601	ESV PERSONAL
63601	ETH-MTN
42003	Etihad Etisalat
45702	ETL MOBILE NET-WORK
23002	EUROTEL - CZ
20820	F - BOUYGUES TELECOM
20810	F SFR
46601	Far EasTone
311210	FARMERS
41601	Fastlink
24414	FI AMT
24491	FI SONERA
302370	Fido
24403	FINNET
24412	FINNET
54201	FJ VODAFONE
24405	FL elisa
29505	FL1
34001	F-Orange
34002	FR
55001	FSM Telecom
54720	F-VINI
28801	F□oya Tele
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 Telecom-PH
61102	GN LAGUI
62701	GNQ01
27821	go mobile
20201	GR COSMOTE
20209	GR Q-TELECOM
73802	GUY CLNK PLS
73801	GUY TW
21601	H PANNON GSM
311110	High Plains
64282	TELECEL-BDI
61205	TELECEL-CI
73002	TELEFONICA
310740	TELEMETRIX
72423	TELEMIG CEL
70603	TELEMOVIL
41006	Telenor PK
23820	TELIA DK
24001	TELIA S
50501	Telstra Mobile
310900	Texas Cellular
61501	TG-TOGO CELL
52015	TH ACT 1900
52001	TH GSM
52023	TH GSM 1800
52018	TH-DTAC
71610	TIM
72402	TIM BRASIL
72403	TIM BRASIL
72404	TIM BRASIL
20210	TIM GR
43603	TJK MLT
51402	TLS-TT
31026	T-Mobile
31031	T-Mobile
310160	T-Mobile
310200	T-Mobile
310210	T-Mobile
310220	T-Mobile
310230	T-Mobile
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
21630	T-Mobile H
21901	T-Mobile HR
20416	T-Mobile NL
23102	T-Mobile SK
28602	TR TELSIM
28601	TR TURKCELL
37412	TSTT
60503	TUNISIANA
60502	TUNISIE TELECOM
46697	TWN GSM 1800
46693	TWN MOBITAI
25506	UA life:)
25501	UA UMC
42402	UAE ETISALAT
25505	UA-GT
25503	UA-KYIVSTAR

31070	Highland
45400	HK CSL
45402	HK CSL
45418	HK CSL
45410	HK NEW WORLD
45412	HK PEOPLES
45416	HK SUNDAY
70830	HND
74401	HOLA PARAGUAY S.A.
21910	HR VIP
65401	HURI
40401	Hutch
40405	Hutch
40411	Hutch
40413	Hutch
40415	Hutch
40430	Hutch
40484	Hutch
40486	Hutch
40488	Hutch
40566	Hutch
41308	Hutch
45503	Hutchison MAC
22201	I TIM
22288	I WIND
71201	I.C.E.
40404	IDEA
40407	IDEA
40412	IDEA
40419	IDEA
40422	IDEA
40424	IDEA
40456	IDEA
40478	IDEA
26003	IDEA, PL IDEA, PL 03
61002	IKATEL ML
42502	IL Cellcom
42501	IL ORANGE
42503	IL Pelephone
22807	In&Phone
40442	INA AIRCEL
40441	INA RPG
40414	INA SPICE
40444	INA SPICE
51011	IND - Excelcom
40440	IND AIRTEL
40551	IND AirTel
40552	IND AirTel
40553	IND AirTel
40554	IND AirTel
25501	UA UMC
42402	UAE ETISALAT
25505	UA-GT
25503	UA-KYIVSTAR
53901	U-CALL
64101	UG CelTel
25502	UKR-WellCOM
41603	UMNIAH
72207	UNIFON
63102	UNITEL
25039	Uraltel
74810	URYAMWU
310870	US
31020	US - Union Telephone
310100	US PLATEAU
310320	USA-CellularOne
310590	USA - Extended Area
310690	USA - Immix Wireless
31080	USA 080
310340	USA 340
310640	USA AE Airadigm
310630	USA AmeriLink
310190	USA Dutch Harbor
310400	USA i CAN
311250	USA i CAN
31100	USA Mid-Tex Cellular, Ltd
310790	USA Pinpoint
31046	USA SIMMETRY
310950	USA XIT
310950	Cellular
310880	USAACSI
311190	USAC1ECI
31170	USAEC
310910	USAFC
31190	USASXLP
31040	USATX
310530	USA-WVA WIRELESS
64111	UTL-Mango
43405	UZB CSOCOM GSM
43404	UZB DAEWOO-GSM
43407	UZB-UZD
27404	Viking
73601	VIVA
45201	VN MOBIFONE
45202	VN VINAPHONE
45204	VNM and VIETTEL
64004	VodaCom
63001	VODACOM CD
65101	Vodacom Lesotho
64304	VodaCom-MZ
65501	VodaCom-SA
27602	vodafone AL
50503	vodafone AU
60202	vodafone EG

40555	IND AirTel
51001	IND INDOSAT
51021	IND INDOSAT
51010	IND TELKOMSEL
40470	INDH1
31130	Indigo
43602	Indigo-T
310770	Iowa Wireless USA
43214	IR KISH
43219	IR MTCE
43232	IR, VALIACOM
41830	IRAQNA
27203	IRL-METEOR
43211	IR-TCI
27401	IS SIMINN
51501	ISLACOM
42505	JAWWAL-PALESTINE
41677	JO MobCom
44010	JP DoCoMo
28802	KALL
46688	KGT-Online
45602	KHM-Hello GSM
54509	KL-Frigate
45005	KOR SK Telecom
46703	KP SUN
45002	KR KTF
45008	KR KTF
65501	VodaCom-SA
27602	vodafone AL
50503	vodafone AU
60202	vodafone EG
21401	vodafone ES
20205	vodafone GR
21670	vodafone HU
27201	vodafone IE
22210	vodafone IT
44020	Vodafone JP
27801	vodafone MT
20404	vodafone NL
53001	vodafone NZ
26801	vodafone P
24008	vodafone SE
23415	vodafone UK
26202	Vodafone.de
54101	VUT SMILE
73401	VZ INFO
41007	WaridTel
23450	wave
31101	Wilkes USA
31105	Wilkes USA
50502	YES OPTUS
22001	YU MOBTEL
22003	YUG 03
64003	ZANTEL-TZ

21401	vodafone ES
20205	vodafone GR
21670	vodafone HU
27201	vodafone IE
22210	vodafone IT
44020	Vodafone JP
27801	vodafone MT
20404	vodafone NL
53001	vodafone NZ
26801	vodafone P
24008	vodafone SE
23415	vodafone UK
26202	Vodafone.de
54101	VUT SMILE
73401	VZ INFO
41007	WaridTel
23450	wave
31101	Wilkes USA
31105	Wilkes USA
50502	YES OPTUS
22001	YU MOBTEL
22003	YUG 03
64003	ZANTEL-TZ

64501	ZM CELTEL
64804	ZW ECONET
64801	ZW NET*ONE