NOKIA

NOKIA DATA SUITE

17.04.2000

Nokia Data Suite 3.0 On-line Help

AT commands

Computers use AT commands to communicate with modems. Most communications applications have a user-friendly interface that hides AT commands from the user.

You can make a call from the menu of your communications application or you can enter AT commands manually in the command mode of the application you are using.

AT command syntax

All AT commands require the prefix "AT" or "at" except the re-execute command (A/) and the escape code (+++).

If you type several AT commands on the same AT command line, you only need to type "AT" or "at" once at the beginning of the line.

In the list of frequently used AT commands, a letter 'n' in the command syntax represents the setting value that is typed in as a part of the command. The parameters in square brackets are optional.

When you want to select, display or assign a value for a setting, use AT+ commands.

AT command line

AT command lines must obey the AT command syntax:

Command lines must begin with the "AT" or "at" prefix.

- Multiple AT commands can appear on a single line.
- AT+ commands must be separated by a semi-colon (;).
- Command lines can contain up to 255 characters.
- Space characters on command lines are ignored unless they are inside quotation marks (" ").
- Command lines must end with a carriage return (¿). If a carriage return is missing from the command line, the whole line is ignored.
- Commands can only be edited before the carriage return is entered.
- The line feed character after the carriage return is optional.

NOKIA

AT+ Commands

Use AT+ commands when you want to select, display or assign a value for a setting.

Type in AT+ and the command string followed by "=n", "?", or "=?", and press Enter.

- AT+__= n   To write in a new setting with the command.
- AT+__?   Displays the current setting for the command.
- AT+__= ?   Displays all valid parameters that can be used with the command.

- AT+ commands must be separated by a semi-colon (;) in an AT command line.

Note: When you select a setting value using AT commands, the setting is valid until it is changed.

Frequently used AT commands

ATA   Answer Command

Answers an incoming call. If there is already a voice call active, the call is switched to data/fax receiving mode (depending on the application you are using).

ATD   Dial Command

Initiates a call. When a data call is initiated, the command has to contain the recipient's number or a directory entry which contains the stored number.

ATEn   Command Echo

Determines whether or not characters are echoed in the command mode.
n = 0 / n not present echoing disabled
n = 1   echoing enabled

ATHn   Hang-Up

Hangs up the call.
n = 0 / n not present, clears the call

NOKIA

ATO   Go On-Line

Returns Nokia Data Suite to on-line mode, after a connection has been established and the escape sequence (+++) has been issued.

ATS   Select an S-Register

ATSr?   Displays the value of S-register r.

ATSr=n   Sets the value of S-register r.

ATV   Define Response Format
Determines whether result codes are transmitted in numeric or alphanumeric form.

ATV[0]   Numeric responses (short form)

ATV1   Textual responses (long form)

AT&F   Restore Factory Settings
Restores all factory settings including S-register settings but does not save them.

AT&V   View Active Configuration
Displays the current S-register settings

A/   Re-execute Command Line
Re-executes the command preceding this request. If this was the first request, then an OK status will be returned.

+++   Escape Sequence (On-Line Command Mode)
Returns Nokia Data Suite to command mode after a connection has been established, without breaking the connection. Nokia Data Suite must be in the command mode to accept AT Commands.

NOKIA

S-registers

S-register settings can have any value from 0 to 255, unless otherwise specified.

Default settings are given in parenthesis after the S-register number. To change S-register values using AT commands, see the list of frequently used AT commands.

S0 (0)
Defines the number of rings after which the phone automatically answers the call (Auto Answer Function).

S0=0   automatic answer disabled.

S1 (0)
Ring count (read only)

S2 (43)
Escape code character

S3 (13)
Carriage return character

S4 (10)
Line feed character

S5 (8)
Backspace character

S7 (30)
Wait for connection completion (seconds)

S7=0   connection waiting time unlimited

S10 (60)
DCD OFF to hang-up delay (seconds/10).
Default is 6 seconds.

S10=255   connection not cleared even if the DCD drops.

S12 (50)
Escape Guard Time (seconds/50).

S12=0   escape disabled.

NOKIA

S14 (10)

Use the following AT commands to change S14 setting:

ATE1	enable key presses to be displayed on screen
ATE0	disable
ATQ0	enable responses
ATQ1	disable responses
ATV1	textual (long format) responses
ATV0	numerical (short format) responses

Bit-mapped options
bit 1:
0=ATE0
1=ATE1 (default)
bit 2:
0=ATQ0 (default)
1=ATQ1
bit 3:
0=ATV0
1=ATV1 (default)
S21 (112)

Use the following AT commands to change S21 settings:

AT&C[0]	DCD signal is always on
AT&C1	normal DCD signal usage
AT&Dn	defines DTR signal usage
AT&S[0]	DSR signal is always on
AT&S1	normal DSR signal usage

Bit-mapped options
bits 4&3:
00=AT&D0
01=AT&D1
10=AT&D2 (default)
11=AT&D3
bit 5:
0=AT&C0
1=AT&C1 (default)
bit 6:
0=AT&S0
1=AT&S1 (default)
S22 (16)

NOKIA

Use the following AT commands to change S22 response ranges:

ATX0	responses 0-4 are enabled
ATX1	responses 0-5, 10 are enabled
ATX2	responses 0-5, 10 are enabled
ATX3	responses 0-5, 7, 10 are enabled
ATX4	responses 0-5, 7, 8, 10 are enabled
ATX5	all responses are enabled

Bit-mapped options
bits 6&5&4:
000=ATX0
100=ATX1
101=ATX2
110=ATX3
111=ATX4
001=ATX5 (default)
S25 (0)
Detect DTR change (seconds)
S27 (0)

Use the AT&Qn command to change S27 settings and define the communications mode
option:

AT&Q0	normal asynchronous operation,
AT&Q2	DTR controlled dialling

(on the DTR ON-OFF transition the terminal adapter automatically dials the number in slot &Z0).
Bit-mapped options
bit 1:
0=AT&Q0 (default)
1=AT&Q2
S34 (2)
Local flow control

S34=0	none
S34=1	XON/XOFF
S34=2	CTS/RTS
S34=3	both XON/XOFF and CTS/RTS

S35 (7)
Remote modem type

S35=0	none (ISDN connection)
S35=1	V.21
S35=2	V.22

NOKIA

S35=3	V.22bis
S35=4	V.23
S35=5	V.26ter
S35=6	V.32
S35=7	autobauding (mobile switching centre selects a compatible modem)
S35=8	undefined
S38 (0)	

Command Interpreter mode

S38=0	EIA/TIA - 602
S38=1	CCITT V.25bis
S39 (0)	

The ID number of the terminal adapter in decimal format.
The ID can be displayed with the ATI0 command.

S40 (0)
Type of number

S40=0	Unknown
S40=1	International
S40=2	National
S40=3	Network specific
S40=4	Dedicated PAD

S41 (1)
Numbering plan

S41=0	Unknown
S41=1	ISDN/telephony (E.163/E.164)
S41=2	Data (X.121)
S41=3	Telex (F.69)
S41=4	National
S41=5	Private
S42 (61)	

Radio Link Protocol uplink window size (0-61)
S43 (61)
Radio Link Protocol downlink window size (0-61)
S44 (48)
Radio Link Protocol T1 timer value (39-255) seconds/100
S45 (6)
Radio Link Protocol N2 repetition count (1-255)
S47 (0)

NOKIA

Error Correction Mode with F Classes 2 and 2.0

S47=0	Disabled
S47=1	Enabled, 64 byte frames
S47=2	Enabled, 256 byte frames

LEGAL NOTICE