AT Commands

What you should know

14 Sep 2008

Different phones support different sets of AT commands. This means that a specific phone might not support all AT commands listed below. Currently there is no authoritative list available of supported AT commands by all phones.

Note: Windows Phone supports a very limited set of AT Commands (and these are not documented here.)

Overview

AT commands are also known as Hayes AT commands. There are different views to understand the meanings of "AT". Some call it "Attention Telephone", whereas others interpret it as "Attention Terminal" commands. A Hayes Microcomputer Products, where it was invented, AT was merely short for "ATtention"

AT commands allow giving instructions to both mobile devices and ordinary landline telephones. The commands are sent to the phone's modem, which can be a GSM modem or PC modem. This article focuses on AT commands on Nokia's GSM and WCDMA products only. Different manufacturers may have different sets of AT commands. Fortunately, many AT commands are the same. Mobile device manufacturers may also give attention to operators to allow or not to allow some commands on phones.

AT commands can be used for operations that are usually done from the keypad, for instance calling a number, sending, reading, or deleting an SMS, setting the SMSC number, looking for a GPRS access point, reading and deleting phonebook data, reading the battery status, reading the signal strength, and so on. When you want to make a PC-based application to interface a mobile phone using USB, IR, or Bluetooth, these commands are needed to communicate with mobile phones. Basically such commands are the application layer of MBUS or FBUS commands. Nokia provides an AT command set guide, where you can see the basic command syntax and the response of the command in various situations. See the Related Links section at the end of this article).

Using AT Commands with HyperTerminal

AT commands work on devices that have a built-in GSM modem. If there is one, you do not need to install virtual modem software on your PC. If you are using very old Nokia devices, you have to find out the DATA suite, not the PC Suite, for these devices (such as the Nokia 5110) to be able to use AT commands. This article focuses on mobile devices that have a built-in GSM modem.

To use AT commands:

- Connect the mobile phone to your PC in PC Suite mode using any available connection (Bluetooth, USB, or IR).
- Make sure that you have installed the correct GSM modem driver on your PC. You can check it from Control Panel | System | Hardware | Device Manager. Check the Modems section. If you see something like "Nokia XY USB Modem" or "Nokia XY Bluetooth Modem", the device has a built-in GSM modem. If you don't have it, go to the Nokia Web site and download the driver from the product page of your device.

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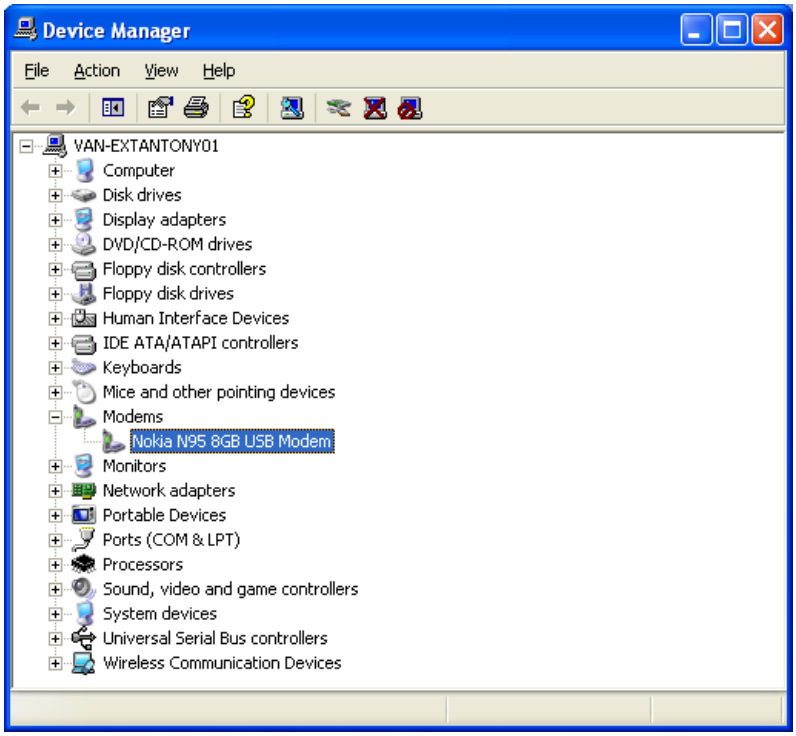
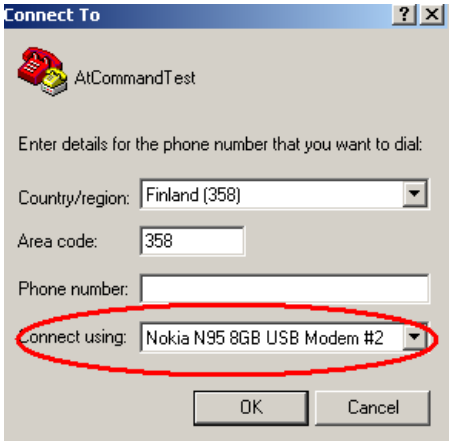
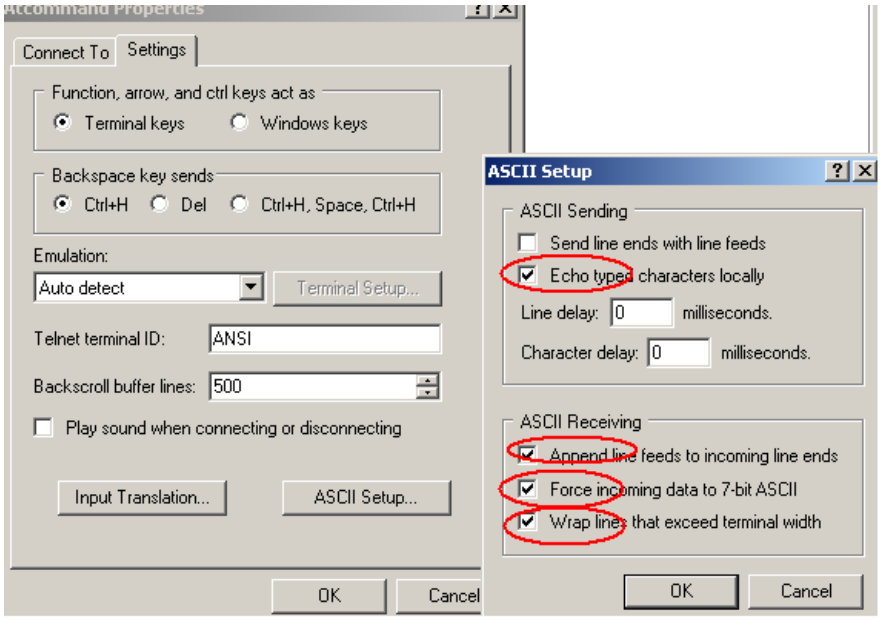


- Right Click on Nokia N95 8GB USB Modem and find the port used by selecting the modem tab, in our case it is COM 4. Also it is good to test the modem by selecting Diagnostics | Query Modem, this will tell us if the modem is working properly.
- Open the HyperTerminal, which is a communication utility on Microsoft Windows OS. HyperTerminal is located in Start | Programs | Accessories | Communication.
- Create a new connection set on HyperTerminal and give a name to the connection.
- Select the port number by seleting drop down box "Connect using". In our case the port number is COM 4



- You need to select some settings related to ASCII setup, To do select File | Properties | Settings (tab) | ASCII Setup



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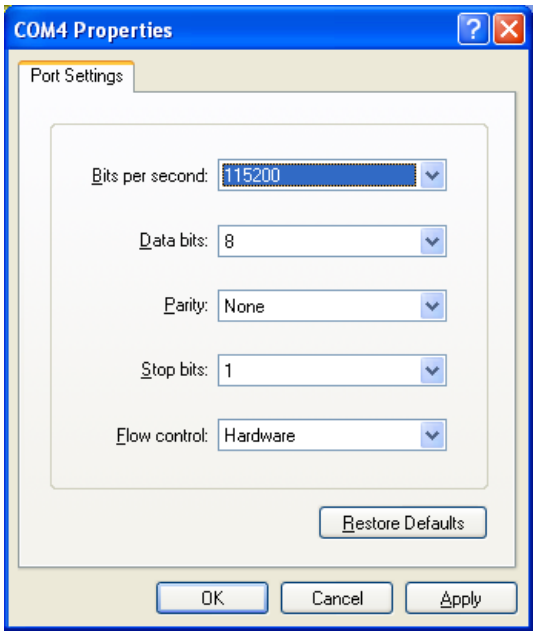
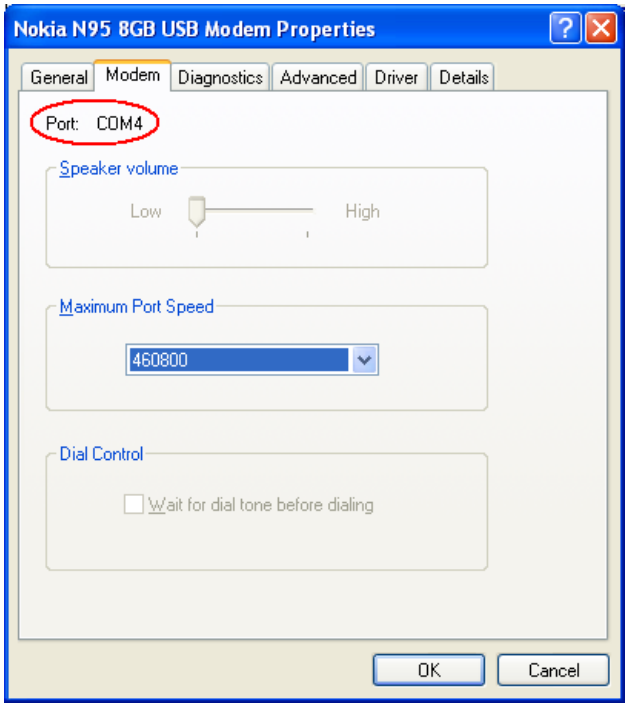
- You may need to set some parameters, such as baud rate (for example, 9600), handshaking mode (Xon-Xoff), parity bit (default), and so on.



- Note that you also need to select the communication port on which your mobile has been connected. The port number can be found by right-clicking the modem item in Control Panel.



- After this, you can give the basic AT command. Simply type **AT** in the window and you will get the "OK" response.

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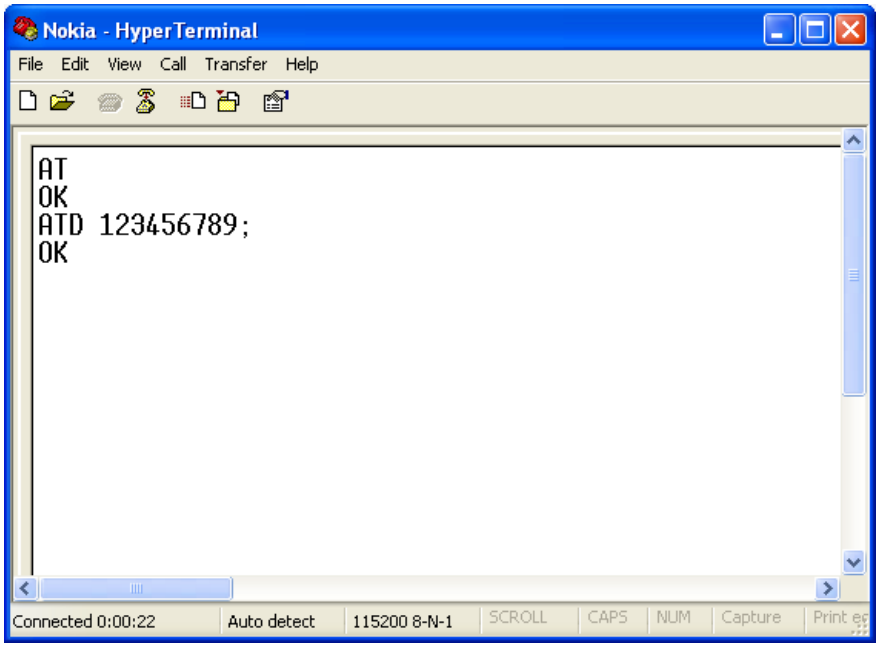

The above picture also shows how to dial a number using the ATD command. Note that there is a semi-colon (;) at the end of the phone number indicating that this is a voice call. If there is no semi-colon, a data call (CSD call) is will be performed.

AT commands set for Nokia GSM and WCDMA products

Call control

Command	Description
ATA	Answer command
ATD	Dial command
ATH	Hang up call
ATL	Monitor speaker loudness
ATM	Monitor speaker mode
ATO	Go on-line
ATP	Set pulse dial as default
ATT	Set tone dial as default
AT+CSTA	Select type of address
AT+CRC	Cellular result codes

Data card control commands

Command	Description
ATI	Identification
ATS	Select an S-register
ATZ	Recall stored profile
AT&F	Restore factory settings
AT&V	View active configuration
AT&W	Store parameters in given profile
AT&Y	Select Set as powerup option
AT+CLCK	Facility lock command
AT+COLP	Connected line identification presentation

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AT+GCAP	Request complete capabilities list
AT+GMI	Request manufacturer identification
AT+GMM	Request model identification
AT+GMR	Request revision identification
AT+GSN	Request product serial number identification (IMEI)

Phone control commands

Command	Description
AT+CBC	Battery charge
AT+CGMI	Request manufacturer identification
AT+CGMM	Request model identification
AT+CGMR	Request revision identification
AT+CGSN	Request product serial number identification
AT+CMEE	Report mobile equipment error
AT+CPAS	Phone activity status
AT+CPBF	Find phone book entries
AT+CPBR	Read phone book entry
AT+CPBS	Select phone book memory storage
AT+CPBW	Write phone book entry
AT+CSCS	Select TE character set
AT+CSQ	Signal quality

Computer data card interface commands

Command	Description
ATE	Command Echo
ATQ	Result code suppression
ATV	Define response format
ATX	Response range selection
AT&C	Define DCD usage
AT&D	Define DTR usage
AT&K	Select flow control
AT&Q	Define communications mode option
AT&S	Define DSR option
AT+ICF	DTE-DCE character framing
AT+IFC	DTE-DCE Local flow control
AT+IPR	Fixed DTE rate

Service

Command	Description
AT+CLIP	Calling line identification presentation
AT+CR	Service reporting control

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AT+DR	Data compression reporting
AT+ILRR	DTE-DCE local rate reporting

Network communication parameter commands

Command	Description
ATB	Communications standard option
AT+CBST	Select bearer service type
AT+CEER	Extended error report
AT+CRLP	Radio link protocol
AT+DS	Data compression

Miscellaneous commands

Command	Description
A/	Re-execute command line
AT?	Command help
AT*C	Start SMS interpreter
AT*T	Enter SMS block mode protocol
AT*V	Activate V.25bis mode
AT*NOKIATEST	Test command
AT+CESP	Enter SMS block mode protocol

SMS commands

SMS text mode

Command	Description
AT+CSMS	Select message service
AT+CPMS	Preferred message storage
AT+CMGF	Message format
AT+CSCA	Service centre address
AT+CSMP	Set text mode parameters
AT+CSDH	Show text mode parameters
AT+CSCB	Select cell broadcast message types
AT+CSAS	Save settings
AT+CRES	Restore settings
AT+CNMI	New message indications to TE
AT+CMGL	List messages
AT+CMGR	Read message
AT+CMGS	Send message
AT+CMSS	Send message from storage
AT+CMGW	Write message to memory
AT+CMGD	Delete message

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SMS PDU ode

Command	Description
AT+CMGL	List Messages
AT+CMGR	Read message
AT+CMGS	Send message
AT+CMGW	Write message to memory

Related links

- AT Command Set For Nokia GSM And WCDMA Products v1.2
- AT Command Set For Nokia GSM Products
- File:Send AT Commands.zip
- Using AT commands to send and read_SMS

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