

# Newton Modem Compatibility Test Plan

## 1 Document Information

### 1.1 Revision Information

v1.0 5/19/96 Rob Hafer Adapted from NOS 2.1 GSM test plan

### 1.2 Executive Summary

- This is a guide for determining whether a modem is "Newton Compatible"
- The tests cover all modem-related functions of the Newton Operating System
- Newton 2.0 machines (120, 130) and 2.1 machines (MP2000, eMate300) differ in hardware implementation and modem profiles...modem-related functions on both sets of machines must be tested before "Newton Compatibility" can be claimed.

## 2 Introduction to Newton Modem Compatibility

Modem compatibility is dependent on several factors:

- The serial chips in the Newton and modem can communicate reliably
- The AT commands that the Newton uses are recognized by the modem

For PCMCIA modems:

- The Newton modem driver recognizes the CIS data on the modem
- The modem physically fits within the PCMCIA slots on the Newton device
- The modem's power draw does not reset Newton hardware. The power specifications for the Newton product line are as follows:

- MP100	+5 volts +/- 10%, 60 mA max
- MP110	+5 volts +/- 10%, 110 mA max
- MP120 & MP130	+5 volts +/- 10%, 380 mA max
- eMate & MP2K	+5 volts +/- 10%, 500 mA (can get up to 800 mA with fully charged NiMH battery)

The most frequent compatibility problem is when the modem requires specific AT commands to dial, answer, etc. These commands are stored inside a Modem Profile (several are built-in the Newton's ROM). The active profile is set via a popup in Prefs/Modem and others may be installed via package. If none of the built-in profiles work with the modem you're testing...a custom modem profile may be required...check the modem compatibility page at <http://newton.info.apple.com/> for information on how to do this.

Testing is done manually. The following equipment is required to run the test suite:

- Newton devices (MP120, MP130, MP2000, eMate 300)
- Modem hardware (to be tested)
- A cellular/PCS phone with cables to connect to the modem (if the modem supports cell connections)
- An analog line with a telephone connected and a spare jack for the modem to be tested
- Another phone line with a fax machine and a computer with a modem and terminal software
- ToolTime software (a Newton terminal emulator) available on the Newton Developer CD

## 3 Test Cases By Functional Area

Each run of this functional suite can take up to 4 hours. Repeat this suite for each method of connecting (i.e. landline vs. cellular/GSM modes) and for each Newton to be tested.

### 3.1 Send Faxes

Setup: Create a 2 page document in NotePad containing styled text, ink (unrecognized) text, drawings, and sketches.

Test Cases:

- Fax to a fax machine w/plain format, fine resolution, and fax now options

- Fax to another computer w/letter format, low resolution, and fax later options
- Fax to any 2 addresses using memo format and manually connect option (dial manually)
- Fax when the cable from the modem is disconnected, verify error message. appears
- Fax when the phone is busy on a voice call, verify error message appears

For wireless connections...

- Fax when the phone does not have radio reception, verify error message appears
- Fax when the phone is off, verify error message appears

### 3.2 Receive Faxes

Setup: Locate a 3 page document and a fax machine, make sure the Newt has storage space available

Test Cases:

- From InBox, receive fax (using wait for call option)
- From InBox, receive fax (using manually connect option)
- From Fax Prefs in InOut box, receive 2 consecutive faxes (using auto receive mode)

Tip: When receiving faxes, the Newton may spend too much time finding contiguous space to store the fax...this is indicated by long appearances of the "busy box" (Newton logo appearing at top of screen) followed by a broken connection at the end of a page. If this occurs, remove unneeded documents/files and retry.

### 3.3 Internet Connection

Setup: Install Newton Internet Enabler and NetHopper email package. Configure NIE to connect via Compuserve PPP.

Test Case:

- Connect to the Internet, verify that you can browse web sites for 5 minutes

### 3.4 Email

Setup: Install EnRoute (if not available, Compuserve Mail for Newton is a good substitute), make sure there's some mail in the account waiting to be delivered.

Test Cases:

- Send an email message from the NotePad using send now option
- Connect, receive, review, and delete waiting mail
- Send 2 emails from the NotePad using the send later option

### 3.5 Initiate Data Connection (via Modem tool)

Setup: Install Tool Time terminal software (availability ???) and "Tools" extension that accompanies it. Set mode to Terminal and connect via Modem tool to a Newton or a desktop computer with a similar setup. Press the "Close Endpoint" button to reset Tool Time after each test case.

Test Cases:

- Connect using "no EC" option, verify text can be sent and received
- Connect using "Modem's EC with Fallback" option, verify text can be sent and received
- Connect using "Modem's ED with no Fallback" option, verify text can be sent and received
- Connect using "Newton's EC with Fallback" option, verify text can be sent and received
- Connect using "Newton's EC with no Fallback" option, verify text can be sent and received

### 3.6 Initiate Data Connection (via Serial tool)

Setup: Choose Serial from Connect popup in Tool Time, select highest speed the modem will support, establish connection with the modem, type in AT<return> to make sure you have a connection.

Test Case:

- ATDT#####<return>, verify connect speed is reasonable and text can be sent/received

Tip: With some chip sets, the best connection you'll get is 1200/2400 baud...this is a failing result and indicates a potential incompatibility between serial chips in the Newton and modem.

### 3.7 Receive Data Connection (via Modem tool)

Setup: Choose Modem from Connect popup in Tool Time. setup another computer (either Mac or MP with terminal emulation software) so its ready to call the MP being tested.

Test Cases:

- Choose Listen option on MP, call it from another computer, verify it connects and text can be sent/received.

### 3.8 Receive Data Connection (via Serial tool)

Setup: Choose Serial from Connect popup in Tool Time. setup another computer (either Mac or MP with

terminal emulation software) so its ready to call the MP being tested.

Test Cases:

- Choose Listen option on MP, call it from another computer, when RING appears, type ATA<return>, verify it connects and text can be sent/received

#### 4 Test Strategy By Configuration

All NOS 2.x configurations have the same test approach but there are some differences in the interface. First, the principle email application switched from the Compuserve Mail for Newton to EnRoute (Note: to use EnRoute on an MP120, only NIE 1.0 and patch 516205 will work properly). The second configuration change is that the built-in modem profiles changed names between NOS 2.0 (MP120/130) and 2.1 (MP2000/eMate300), these are functionally equivalent.

NOS 2.0	NOS 2.1
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Hayes 28.8	28.8 and faster
Hayes EC	14.4 Normal
Hayes Compatible	14.4 Alternate
Hayes Basic	14.4 Alternate 2