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For Windows Mobile phones that have a built in keyboard, keyboard shortcuts offer a way to access specific function keys very rapidly. You will find this table in the Help Menu of Aton Connect for Windows Mobile. We have reproduced it here for your convenience.

For the Smartphone (Standard) mobile device, the help menu selection is located in the menu activated by the right soft key.

For the Pocket PC (Professional or Classic) mobile device, the online help file is available during an active session by clicking on the help item in the Aton Connect session menu. This menu appears when the X button next to the keyboard button is pressed on the touch screen, or the right soft key is pressed on the device.

In any other Aton Connect screen on the Pocket PC (Professional) mobile device, the help file is opened up by clicking on the main menu (Windows 'flag' button on top left corner of screen) and selecting the Help item on the bottom of the screen. This brings up the Pocket PC help system in the Aton Connect context. The Help file is also available from the Aton Connect main screen menu selection.

If the Aton Connect application is not visible on a Pocket PC (Professional) mobile device, then the Aton Connect help file can be reached by clicking on the "Help for Added Applications" link at the bottom of the main Windows Mobile help file Index.

The keyboard information is located at the bottom of the Aton Connect help file. If you click on the "Hardware 'QWERTY' Keyboard Map" link at the top of the help file, it will reposition itself to the section describing the keyboard shortcuts.

For further information on tips, techniques and new features for Aton Connect, visit our Support Knowledgebase at www.aton.com/support.

About Aton Connect 3270 & 5250 for Windows Mobile

Version 8

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Use Aton Connect for Windows Mobile Pocket PC to interact with any enterprise server or mainframe capable of communicating with a 3270 equivalent terminal over a TCP/IP link using the TN3270 protocol.

Also use Aton Connect to interact with IBM iSeries and AS/400 midrange computing systems capable of communicating with an IBM 5250 equivalent terminal over a TCP/IP link using the TN5250 protocol.

The TCP/IP link might be an internal LAN or the Internet. The host server responds exactly the same as it would if you were using an actual IBM 3270 or 5250 terminal. No modifications are needed at the server to operate with Aton Connect.

Because the Pocket PC is so much smaller, you may need to scroll the screen display area. Also, the location of the keys may differ from the IBM terminal. This built-in help file explains how to execute the command for most keys available on an IBM 3270 or 5250 terminal. In this help, the terms **server** and **host** are equivalent.

At any time, you can use the built in integrated help system of the Pocket PC for information on basic operation and details about the Aton implementation of TN3270 and TN5250. An extensive implementation of "Tooltips" is available on the host display screen. By tapping and holding a soft keyboard button or status line icon, a more descriptive caption will be displayed for that key or icon.

How to register Aton Connect

The Aton Connect free trial download software is set for a 30 day free trial. At any time, before or after the end of the trial, you can purchase a license where you obtained the free trial download.

The installation of a licensed version of Aton Connect gives you an option to save your host profile settings so you will not need to reconfigure the settings. You may also choose to erase all of the old settings for a complete reinstallation of Aton Connect.

Connecting to a Server

First, make sure that your Pocket PC can make a connection to your network. If your network supports connection to the Internet, check to see that you can view your favorite web site using Pocket Internet Explorer. Next, navigate to **Start** and select **Aton Connect**. The first screen is the Select Host screen. This screen lists the servers that have been "profiled" or described by recording the set of values needed to establish a host server connection. The last server you connected to is highlighted.

Two profiles are shipped with the software. These two profiles are designed to connect to publically available TN3270 servers located at public universities. One of these profiles connects using 3270 over unsecured Telnet protocol, the other uses SSL security. Note: The two sample profiles point to public servers that may be temporarily unavailable outside of normal work hours or slow in operation at times.

Selecting one of these two public servers should display the login screens for TN3270 on your Pocket PC display. If you can access an Internet web site via Pocket Internet Explorer, but cannot access either of the two public library TN3270 servers over the Internet, then either the communication path between the Pocket PC and the Internet has a node that is blocking "Telnet port 23", or the profile descriptions for these default profiles have been inadvertently modified. Uninstalling, then reinstalling Aton Connect will restore the default profiles. Finding the communication path node that is blocking Telnet port 23 can be facilitated through the use of third party tracing tools.

Select the server profile name that you want to connect to. This takes you to the Host session display screen that includes a terminal screen display area, a custom "soft" keyboard, scroll bars, and a status line. When the host display screen is brought up, a connection to the host is immediately attempted and the status of the connection is displayed on the bottom status line.




If you have not yet purchased a full license, you will be notified that you are in trial mode. If you are still within the trial time period, the connection will be initiated. Connections to the host during the trial period are limited in duration and will automatically disconnect after the time limit. Once a full license is purchased and installed, the reminder message, and the connection time limit are removed.

When the host session is established, the initial logon screen is displayed. The cursor is positioned in the first input field, waiting for you to enter the login information. At any time you can disconnect or reconnect to the host by selecting the Disconnect / Connect menu item or tapping the connect button



on the bottom right part of the Host display screen.

Now that you have verified basic operation of Aton Connect using one of the supplied default profiles that connect to a public TN3270 server attached to the Internet, you are ready to define additional host profiles to connect to your private enterprise TN3270 or TN5250 servers.

If you have enabled SSL security in the host profile and the host has enabled SSL security for this session, then the secure session symbol  will appear on the status line instead of the controller type symbols  or .

Adding or Editing a Server Profile

A server profile is a set of several values required to describe how to establish a host server session with your Pocket PC.

You can add or edit a server profile by using the menu to navigate from the main host selection screen, which lists existing profiles, to the Profile screen. The Profile screen has four sub-screens or views that are accessed by the menu at the bottom: Connection, Host, Terminal, and Options. You can reach the Profile screen either by adding a new profile, or editing an existing profile as selected by the menu on the main host selection screen.

To add a server profile, choose **New** in the menu on the main host selection screen.

To modify a server profile, choose **Edit** in the menu on the main host selection screen.

To delete a server profile, choose **Delete** in the menu on the main host selection screen.

On the Profile screen, use the tabs to select the Connection sub-screen and replace the default server name with a more descriptive name of your choosing. In most of the other fields, the default values should be acceptable but you can confirm these settings with your system administrator.

The sub-screen accessed by the Host tab selection has the only field with a non-functional default value (10.0.0.0). Replace this with the address of the server you want to use. Both numeric and alphabetic formats are valid for the address. Alphabetic host name formats include DNS style names with dots (e.g. tn3270.aton.com) or the shorter NetBIOS style intranet host name that does not include dots.

It is important to know that a numeric or alphabetic host name that includes dots will cause the Pocket PC connection manager to automatically use the "The Internet" (My ISP) connection route. The shorter NetBIOS style intranet host name that does not include dots will cause the Pocket PC connection manager to automatically use the "Work" (My Work Network) connection route. This automatic behavior can be changed, as described next.

Important Note About VPNs

Traditional VPN connections typically are set up to use the "Work" (My Work Network) connection route. If the host name contains dots, then the Pocket PC Connection Manager will automatically switch to the "The Internet" (My ISP) connection route, and drop the VPN connection located on the "Work" (My Work Network) connection route.


If you wish to use a numeric or alphabetic host name that includes dots on the "Work" (My Work Network) connection route, you can override this automatic switching by identifying "Work URL Exceptions".


You can get to the settings screen that allows you to enter "Work URL Exceptions" by navigating: Start>Settings>Connections>Advanced>Work URL Exceptions. This will get you to a screen titled "Work URL Exceptions" You can use the Add menu selection to enter the URL of the host server and this should cure the VPN drop problem. Tap the ? in the blue circle next to the title at the top of the screen to get further information on how to use the exceptions. Note that the exceptions apply to the default VPN and if you are using multiple VPN's, you may need to redesignate the default VPN exception configuration.

Timeouts For Pocket PC Cell Phone Service

The sub-screen accessed by the Advanced tab has the "Operation Timeout" field. The default Operation Timeout is 30 seconds. We recommend setting this to either 45 or 60 seconds for cell phone connections. The initial call setup, on occasion, will take longer than 30 seconds. In our experience, once the call is set up and data begins to flow, the response time to get host screens is excellent, almost as fast as over the local LAN.

Disconnecting from a Server

At any time you can disconnect or reconnect to the host by tapping the connect button  on the bottom right part of the Host display screen.


When you tap the  in the bottom right of the Host display screen a menu pops up.

The menu at the bottom right of the Host display screen allows you several options. Choose the "Cancel" option and you will be returned to the Server Profile screen. You will be presented with a message box asking if you want to disconnect from the host or leave the session run in the background.

Other menu selections allow you to select full screen mode which will cause the area of the top and bottom navigation bars to be included on the host display screen, substantially increasing the number of rows displayed. The full screen mode will automatically be ended when the right soft key is pressed. The right soft key displays the menu, which can again be used to enter full screen mode.

You can also allow the host session to continue in the background by selecting another task from the Start button (flag) navigation dropdown. You can then return to the active 3270 session by selecting **Aton Connect** from the Start menu.

Aton Connect for Windows Mobile Pocket PC supports only one active session at a time, so choosing another host requires shutting down the currently active session. Note: The Aton .NET component can support multiple sessions. However, the Aton Connect user interface currently restricts the number of sessions to just one at a time.

Other menu selections allow you to select Internet Explorer or Inbox and "hot switch" between these applications and a live host session. If you select Internet Explorer from the Aton Connect pop up menu and start an Internet or intranet web session, then click the " Smart minimize"  button in the upper right corner of the screen, you will be immediately returned to the active host session. If you again select Internet Explorer from the Aton Connect pop up menu, you will be immediately switched to the live web session.

Additional Aton Connect host display screen menu selections allow access to the display fonts screen, and access to this Aton Connect help file.

Troubleshooting Connection Problems


If you are having problems connecting, here is a list of items to check:

1. Make sure that your Pocket PC has established a connection to your network by checking to see that you can view your corporate intranet portal or your favorite web site using Pocket Internet Explorer.
 2. Check to see if you can access one of the two default profiles in the host listing of Aton Connect.
 3. If not, check to see if port 23 is blocked somewhere in the communication path between the Pocket PC and the Internet. The block will likely be at a firewall or wireless access point. Finding the communication path node that is blocking Telnet port 23 can be facilitated through the use of third party tracing tools.
 4. If you can access the default library TN3270 servers on the Internet, but cannot access your enterprise private TN3270 server, then check to see if the host name of your private TN3270 server contains dots (periods). If it does and you expect to use the "Work" (My Work Network) connection route, you will need to add a "Work URL Exception" as described above in the "Adding or Editing a Server Profile" topic.
 5. If you are using a cell phone connection on a Pocket PC device, then you may need to increase the "Operation Timeout" from 30 to 45 or 60 seconds as described above in the "Adding or Editing a Server Profile" topic.
 6. Check connectivity on the "Work" (My Work Network) connection route through the use of third party tracing tools.
 7. Aton Connect contains a built in trace mechanism that generates a simple ASCII .txt file for Aton staff to use in assisting you. First, enable tracing by selecting the "I/O Trace" menu on the bottom command bar on the same Aton Connect screen that lists the library profiles mentioned above. Choose the Open... menu option that will automatically select a file location on your device. If this file already exists, you will be given the option to overwrite or append to this file. You will then be presented with an option to begin tracing now. Next, attempt to connect to one of the library profiles, or your internal TN3270 server host profile. After the connection attempt fails or times out, close the trace file with the Close menu option of the "I/O Trace" menu.
- Finally, with the device in your desktop computer cradle and connected via USB ActiveSync, use the desktop computer file explorer to access the trace file. The Mobile Device icon is listed under "My Computer". The trace file default folder is "Aton Connect" under the "Mobile Device" in File Explorer. The full path name for the trace file is \My Documents\Aton Connect Logs\Trace01.txt. Note that you need to copy the trace file from the device to somewhere in your desktop computer folders before you can examine it with Notepad. Please attach the trace file to an email and send the email to support@aton.com for further analysis.

3270 and 5250 Dialogs

The server by default responds with 24 lines of text, each one 80 characters wide. Typically, this screen includes at least one field for user input, often at the bottom of the screen. A 25th line, called the Status Line, is created by the Aton Connect terminal emulator at the very bottom of the screen below the bottom scroll bar. This line displays the 5250 error line when connecting to an IBM System i, iSeries or AS/400 host. The number of characters per line and the number of lines per page is adjusted by selecting an appropriate terminal device type when setting up the profile.

The host display screen characteristics can be changed at any time, even when a session is active. The Display Options screen can be accessed from the Host Selection screen "Fonts" menu selection at the bottom of the screen, or from the "Change Display Font" menu item on the host display screen.

User input fields have certain constraints specified by the server application that determine valid input, including length. If you make an invalid entry, the terminal beeps and goes into Locked mode. The symbol  appears in the bottom status line until you tap the Reset key to unlock user input. The Undo/Back key can be used to reset the error condition or you can use the keyboard combination shown below in the section Hardware "QWERTY" Keyboard Map.

To enter data, tap the keyboard icon  on the bottom right of the screen.

If you are new to 3270 or 5250 usage, listen for beeps and look for the "Red X" Locked condition icon on the status line. Once the terminal is locked, it will not accept any input until you tap Reset. This is the server's way of telling you that it cannot understand your entry.

The server application determines the meaning of all the function keys. Certain conventions usually apply. For example in 3270 usage, **F7** scrolls back one screen and **F8** scrolls forward one screen; **PA2** requests the host to cancel the previously submitted request if it is still being processed.

Depending on the site, the function keys and their effects are sometimes displayed on the screen, sometimes in a help file on the server, and sometimes in paper documentation you may not have. Function keys in this context are **F1** through **F24**, **PA1**, **PA2/CNCL**, and **PA3**.

If you do not see a desired function key, tap the Alt shift key on the soft keyboard to see a complete set of functions. Alternately, please refer to the section at the end of this document titled: Hardware "QWERTY" Keyboard Map. This section describes how you can access all of the 3270 and 5250 function keys from the Pocket PC keyboard.

Fonts

You can select the font face and font size that displays on the screen. Host 3270 or 5250 terminal applications are best viewed with fixed spacing (fixed pitch or monospaced) fonts. Aton Connect for Windows Mobile Pocket PC includes with a fixed pitch font face that is legible down to about 6 point size. It is possible to license additional fonts for your use. While it is possible to download fonts installed on your desktop to the Pocket PC, this type of use may not be included in your company's software/font license. If in doubt, check with your company's Administrator.

Aton Connect for Windows Mobile Pocket PC will automatically detect all fixed pitch font faces installed on your Pocket PC to allow you to select the one you want to display. Fonts, sizes and colors are selected from a selection box on the Display Options screen.

3270 and 5250 Keys

The keyboard contains key functions that are unique to the 3270 or 5250 host usage. Please refer to the section at the end of this document titled: Hardware "QWERTY" Keyboard Map. That section describes how you can access all of the 3270 and 5250 function keys from the Pocket PC keyboard.

The custom soft keyboard available on the Aton Connect host display screen contains a very complete set of the keys available on the IBM 3270 and 5250 terminals. Sometimes keycap inscriptions must be truncated due to space limitations, but the full caption can be viewed through the "tool tip" mechanism. To see the tool tip, hold the stylus down on the key cap for a short period of time, the tool tip will then pop up with a more complete description of the key caption. If you then release the stylus, the keystroke will be completed as if you had just tapped the keycap. If you want to examine the tooltip, but not active the keystroke, slide the stylus outside of the area of the keycap before releasing the stylus. The tooltip will be activated after the delay, but the keystroke will not be activated.

Note that some functions can only be viewed by first pressing the Alt or Shift keys. When the display is rotated into portrait orientation, the numeric keypad on the right does not display, but all functions are still available by using the Alt key. The table below lists the function name and the abbreviation for some of the 3270 special function keys. The function name is also a link to the function description.

The table below lists the function name and the abbreviation for some of the 3270 and 5250 special function keys. The function name is also a link to the function description.

[BACK SPACE](#) - Bold back arrow key

[BACK TAB](#) - Shift Tab

[CLEAR](#) - Alt Clr

[CURSOR UP](#) - Up arrow key

[CURSOR DOWN](#) - Down arrow key

[CURSOR RIGHT](#) - Right arrow key

[CURSOR LEFT](#) - Left arrow key

[CURSOR HOME](#) - Hm (numeric keypad), Alt Hm

[DELETE](#) - Del (numeric keypad), Alt Del

[DUP FIELD](#) - Dup (numeric keypad), Alt Dup

[NEW LINE](#) - NewL key

[ENTER](#) - Return key with down/back arrow

[ERASE EOF](#) - ErEOF (numeric keypad), Alt ErE

[ERASE INPUT](#) - Alt Erlnp (numeric keypad), Alt ErI

[FIELD MARK](#) - FM (numeric keypad), Alt Fm

[INSERT](#) - Ins (numeric keypad), Alt Ins

[PA2/CNCL](#) - P2 (numeric keypad), Alt P2

[RESET](#) - Reset key

[TAB](#) - Tab key

[SYSTEM REQUEST](#) - Sys (numeric keypad), Alt Sys

Status Line

The bottom line of the host display screen is the Status Line. It is generated locally by the terminal or terminal emulator from host and local information. It includes what is termed "Operator Information Area" or OIA messages along with other status information useful for knowing what is occurring with the terminal and communication connection to the host.

You can use the "tool tip" feature to identify the meaning of symbols or icons in the status line, or to see the complete version of a message truncated on the status line. To see the tool tip, hold the stylus down on the status line symbol for a short period of time, the tool tip will then pop up with a description of the symbols or icon. If you then release the stylus, the symbol function will be completed as if you had just tapped the status line icon. If you want to examine the tooltip, but not active the function, slide the

stylus outside of the area of the icon before releasing the stylus. The tooltip will be activated after the delay, but the function will not be activated.

The set of symbols or icons that may appear on the status line include:



Keystrokes interpreted in Mode unshifted state.



Keystrokes interpreted in Mode shift state.



Keystrokes interpreted in Mode shift state, locked in shift state.



Keystrokes recorded.



Keystrokes interpreted in Mode shift state and recorded.



Keystrokes interpreted in Mode shift state and recorded, locked in shift state.



Connection to virtual IBM 3274 controller (3270) is ready.



Connection to virtual IBM 5494 controller (5250) is ready.



Connection to virtual IBM controller is SSL secured.



SNA connection under rule set B is active.



Terminal is currently in a host application session.



Terminal is currently in an SSCP (system) session.



Terminal is currently not in any session, use SYS REQ key to login.






Keyboard is locked (input inhibited); use the Reset (Undo/Back) button to unlock.



Waiting for host system response.

SYS

Host response did not unlock the keyboard.

	Operator input error, see characters or symbols to the right of this icon for the reason.
<>	Cursor not located in an input field, move cursor to a field on the screen where data may be entered.
<>	Input field is full, use RESET key to unlock the keyboard and adjust field data as necessary.
NUM	Keyboard is in numeric shift mode, but operator attempted input of non-numeric data.
	Local terminal emulator program error, see reason to the right on the status line.
	Communication error with host, see reason to the right on the status line.
PROG	Error or unrecognized data detected in 3270 data stream from host application program, see reason to the right on the status line.
Insert	Keyboard is in Insert mode; toggle with the Ins button.
NUM Shift	Host has set keyboard into numeric shift mode; allows use of the 0 through 9 keys, the decimal sign, minus and DUP keys only.

The current location of the cursor is reported as a number pair, e.g. "12/23" which means row 12, column 23.

Trace File

Aton Connect contains a built in trace mechanism you can enable that generates a simple ASCII .txt file for Aton staff to use in assisting you. First, enable tracing by selecting the **I/O Trace** menu on the bottom command bar on the same Aton Connect screen that lists the library profiles mentioned above. Choose the **Open...** menu option that will automatically to select a file location on your device. If this file already exists, you will be given the option to overwrite or append to this file. You will then be presented with an option to begin tracing now. Next, attempt to connect to one of the library profiles, or your internal TN3270 server host profile. After the connection attempt fails or times out, close the trace file with the **Close** menu option of the **I/O Trace** menu.

Finally, with the device in your desktop computer cradle and connected via USB ActiveSync, use the desktop computer file explorer to access the trace file. The Mobile Device icon is listed under "My

Computer". The trace file default folder is "Aton Connect" under the "Mobile Device" in File Explorer. The full path name for the trace file is \My Documents\Aton Connect Logs\Trace01.txt. Note that you need to copy the trace file from the device to somewhere in your desktop computer folders before you can examine it with Notepad. Please attach the trace file to an email and send the email to support@aton.com for further analysis.

Primer on 3270 and 5250 Specific Key Functions

Please refer to the section at the end of this document titled: Hardware "QWERTY" Keyboard Map. This section describes how you can access all of the 3270 and 5250 function keys from the Pocket PC keyboard.

[Cursor Positioning Keys](#)

[Field Positioning Keys](#)

[Erase Keys](#)

[Special Function Keys](#)

[Program Attention Keys](#)

Cursor Positioning Keys

CURSOR ARROW KEYS: The four arrow keys move the cursor one location at a time into any character position. The cursor may be moved into any character location, whether or not that position is part of a valid user input field.

Cursor wrap can occur when using the arrow keys. If the cursor is at an edge of the 24x80 area of the Host screen, it wraps to the opposite edge.

HOME: Moves the cursor to the beginning of the first input field, if there is one. If there are no input fields, the cursor moves to the beginning of the top line.

Field Positioning Keys

These field-oriented keys move the cursor to the beginning of an input field. These keys can cause the cursor to wrap from the end of the last line on the display and continue at the beginning of the top line.

TAB: Moves the cursor to the beginning of the next input field. In a display with no input fields, using TAB is equivalent to using HOME. The Tab function is available only by tapping the Tab button above the Host screen. The Tab key on the soft keyboard is not useful for moving between input fields in the Host screen.

BACK TAB: If the cursor is at the beginning of an input field, BACKTAB moves the cursor to the beginning of the preceding input field (cursor may wrap from top to bottom of screen). If the cursor is located inside an input field beyond the first character, this key moves the cursor to the beginning of the current field.


In a display with no input fields, using BACKTAB is equivalent to using HOME. The BACKTAB function is available only by tapping the Prev button above the Host screen. The Shift+Tab key on the soft keyboard is not useful for moving between input fields in the Host screen.

NEW LINE: Moves the cursor to the beginning of the first input field of the next line that contains an input field.

Erase Keys

BACK SPACE: Deletes the character to the left of the cursor and moves the cursor one space to the left.

DEL (Delete): Erases the character at the cursor position if the cursor is located in an input field. All remaining characters in that field move one column to the left, overlaying the character at the cursor. Only characters on the line containing the cursor are affected, even if the field wraps to the next line. Using this key never moves the cursor.

CLEAR: Clears everything on the screen, and then moves the cursor to the beginning of the first line. This key is also a program-attention key, so the keyboard is disabled ( on the Status Line) until the host processes the attention request and returns a message to unlock the keyboard.

ERASE EOF: Erase to End of Field. Deletes all characters from the cursor to the end of the current input field.

ERASE INPUT: Clears all input fields. The cursor moves as if HOME had been used. If the cursor was not located within an input field, the terminal beeps, further input is inhibited, and no locations are cleared.

Special Function Keys

INS (Insert): Toggles between inserting characters and replacing existing characters. The default mode is replacement, when insert mode is active the word "Insert" appears on the status line.


Using RESET or any key that causes host communications (e.g., ENTER, PA, PF, CLEAR) turns off Insert mode and removes the Insert indicator from the Status Line.

DUP (Duplicate): Inserts a special code in the input field that signals to the host application program that the rest of the field is to be duplicated from previous data on the screen. Any duplication is performed by the host application program, not by the 3270 terminal. Using DUP causes only the single DUP special character to be stored in the input field. It is displayed as an asterisk (*). After DUP is placed in the input field, a standard TAB operation is performed to move the cursor to the next field.

If the cursor was not located in an input field, the terminal beeps, further input is inhibited, no locations are changed, and the cursor is not moved.

FIELD MARK: Inserts a special FM code in the input field that signals to the host application program that the end of a sub-field has been reached. The host application interprets the FM character according to its needs. The FM character is displayed as a semicolon (;).

If the cursor was not located in an input field, the terminal beeps, further input is inhibited, no locations are changed, and the cursor is not moved.

RESET: Unlocks the keyboard and removes the  on the Status Line if the keyboard was locked by a keyboard operation. RESET has no effect if a host command is being processed. RESET clears a program-attention key operation if data transfer to the host has not yet started.


Program Attention Keys


This group of keys (**CLEAR**, **ENTER**, **SYS REQ**, the **PF** keys, and **PA1**, **PA2**, and **PA3**) signals the host application that some response or action is required. The keyboard is disabled (Locked condition icon indicator on the Status Line) until the host processes the attention request and then sends a message to unlock the keyboard. Using **CLEAR** also has the effect of clearing the entire display, and it positions the cursor at the **HOME** location.

Hardware "QWERTY" Keyboard Map




The "QWERTY" style hardware or touch keyboard included on many Windows Mobile devices has less than half the number of keys that you find on a laptop or desktop PC computer. To access all the letters, digits, and symbols, the typical Windows Mobile QWERTY keyboard includes several shift keys, variously labeled Shift, CAPS, Alt, Function, or simply a large dot.

Using these shift keys in combination with one of the other keys provides the ability to input most of the graphics found on a laptop or desktop PC computer keyboard. For Aton Connect terminal emulation, an additional set of keyboard inputs is required for the various 3270 and 5250 terminal functions.




The additional keyboard inputs are generated using a new shift mode unique to Aton Connect. This shift mode is accessed by using the left soft key. When Aton Connect is in active connection with a host and displaying the terminal emulation screen, the left soft key is labeled "Mode". The left soft key is found directly below the screen on the left side. For Windows Mobile devices with slide out keyboards, the left soft key is also often found on the keyboard, typically labeled with a large dash or hyphen. Some phones do not include a left soft key button on the hardware keyboard, but you can use the Mode key on the screen, or tap the  mode indicator on the status line.

When Aton Connect has lost host connection, then the left soft key is labeled "Done", and can be used to exit the terminal emulation screen. The "Mode" key or tapping the  mode indicator on the status line will move the keyboard shift mode status from normal to Mode shift. Depressing a key other than the Mode key will turn the Mode shift off. If the "Mode" key is pressed twice with no intervening other keystroke, the Mode shift will be locked on. Pressing the Mode key when the Mode shift is locked will turn off Mode shift. This is similar to the way the ordinary Shift key operates on many Windows Mobile phones.

The "Mode" shift is comparable to "Alt" shift on a full sized desktop PC keyboard. The Alt shift present on some Windows Mobile phones does not provide the same function as the "Mode" shift, but rather is used to multiplex the small number of keys on the Windows Mobile QWERTY keyboard to provide symbols and digits.

The current mode shift state is displayed on the bottom left corner of the screen on the Aton Connect status line. For Mode shift state, the symbol  will be displayed. For Mode shift state locked, the symbol  will be displayed. For the normal/unshifted state, this location on the status line will be .

When keystroke recording is enabled on the Keystroke Macros screen, the current mode shift state is displayed with a turquoise, rather than yellow background on the bottom left corner of the screen on the

Aton Connect status line. For Mode shift state, the symbol  will be displayed. For Mode shift state locked, the symbol  will be displayed. For the normal/unshifted state, this location on the status line will contain the symbol .

When in Mode shift state, the keystrokes that normally produce a lower or upper case letter or other graphic symbol characters will instead produce a terminal emulation function according to the tables listed below. The default mappings shown in the tables below can be modified by the Keystroke Macros function selected in the main menu.

Not all the terminal functions listed below are meaningful for all emulation types (3270, 5250). Terminal functions not meaningful for a particular emulation are ignored.

If the keyboard of your mobile device does not have an explicit hardware TAB key, the TAB function is also available using the numeric "0" key when the user interface is in "Mode" shift as described in the documentation mentioned above. It is also available on the Aton Connect soft keyboard.

On a Palm Treo mobile phone, the TAB function can be activated by using the shift key followed by the space key.

Note that most Windows Mobile phones provide only a subset of the control keystrokes. If one of these keystrokes is missing from your phone keypad, then the equivalent function is available using the "Mode" shift and one of the letter or number keys as described in the tables below.

The following keystrokes without Mode shift convert into terminal functions as described below.

<u>Keystroke Char</u>	<u>Terminal Function</u>
Backspace	BACK_DELETE (Cursor Left & Delete)
Delete	DELETE
Tab (Unshifted)	FIELD_ADVANCE (Tab)

Tab (Shifted)	FIELD_BACK (Back Tab)
Return	RECORD_ADVANCE (Page Down, Enter)
Left Arrow	CURSOR_LEFT
Up Arrow	CURSOR_UP
Right Arrow	CURSOR_RIGHT
Down Arrow	CURSOR_DOWN
Page Up (PgUp)	ROLL_UP
Page Down (PgDn)	ROLL_DOWN

The following keystrokes with Mode shift convert into terminal functions as described below.

<u>Keystroke Char</u>	<u>Terminal Function</u>
Backspace	RECORD_BACK (Page Up)
Delete	BACKSPACE (Cursor Left)
Tab	FIELD_BACK (Back Tab)
Return	NEW_LINE
Left Arrow	SCROLL_LEFT
Up Arrow	SCROLL_UP
Right Arrow	SCROLL_RIGHT
Down Arrow	SCROLL_DOWN

Page Up (PgUp)	ROLL_LEFT
Page Down (PgDn)	ROLL_RIGHT
"a"	PF1
"b"	PF2
"c"	PF3
"d"	PF4
"e"	PF5
"f"	PF6
"g"	PF7
"h"	PF8
"i"	PF9
"j"	PF10
"k"	PF11
"l"	PF12
"m"	PF13
"n"	PF14
"o"	PF15
"p"	PF16

"q"	PF17
"r"	PF18
"s"	PF19
"t"	PF20
"u"	PF21
"v"	PF22
"w"	PF23
"x"	PF24
"y"	TEST_REQUEST
"z"	SYS_REQUEST
". " (period, dot)	ERROR_RESET
"0"	FIELD_ADVANCE (Tab)
"1"	ROLL_DOWN
"2"	ROLL_UP
"3"	ROLL_LEFT
"4"	ROLL_RIGHT
"A"	PA1

"B"	PA2
"C"	PA3
"D"	DELETE
"E"	ATTENTION
"F"	ERASE_EOF
"G"	ERASE_INPUT
"H"	HELP
"I"	INSERT
"J"	ESC key mode
"K"	DUP_FIELD
"L"	SCROLL_TO_CURSOR
"M"	FIELD_MARK
"N"	PRINT
"O"	CANCEL_PRINT
"P"	FIELD_EXIT
"Q"	SLP_AUTO_ENTER
"R"	FET_AUTO_ENTER
"S"	CLEAR
"T"	FIELD_PLUS

"U"	FIELD_MINUS
"V"	ALT_CURSOR
"W"	FIELD_BACK (Back Tab)
"X"	BACKSPACE
"Y"	CURSOR_SELECT
"Z"	HEX

Keystroke Macros

This feature of Aton Connect allows you to remap the function produced by keystrokes on the "QWERTY" style hardware keyboard included on many Windows Mobile devices. This feature allows you to:

- * associate a host function you regularly use to a particular hardware keyboard keystroke.
- * remap character producing keys to use any extended graphic included on the Windows Mobile soft keyboard
- * define a word or phrase that will be automatically entered as keystrokes, and associate that word or phrase with a particular hardware keyboard keystroke.
- * record an extended sequence of keystrokes during a host session and associate the playback of that recording to a particular hardware keyboard keystroke.

The use of this feature is quite simple and is controlled by a single Keystroke Macros function screen located on the main menu of Aton Connect. This function screen can also be accessed while in an active host session, using the host session menu feature located on the toolbar.

When the Keystroke Macro screen initially displays, it is in a state that accepts a keystroke from the hardware keyboard (the software or SIP keyboard is suppressed). This keystroke can be modified by the Mode shift, which is controlled by the Toggle Mode menu item. Upon entry, this keystroke is identified by name and hex value.

Also displayed is the current mapping for that keystroke, which is the graphic character, host function code, or macro sequence, associated with that code. The default mapping for a keystroke is the graphic character associated with that keystroke by Windows Mobile, or the host functions as described above in the Hardware "QWERTY" Keyboard Map section.

This default mapping can be changed in several ways. One or more keystrokes can be entered from the hardware and/or the software or SIP keyboard. The SIP keyboard offers a way to enter extended graphics, such as characters with diacritical marks, the Euro currency symbol, ligatures, etc.

Additionally, one or more host function codes can be entered by using the Add Function item on the Edit Macro menu. The Add Function item will present a dropdown list containing all possible host function codes. Selecting one of these codes will enter that code as a keystroke in the macro string you are creating.

The Edit Macro menu also presents a Backspace and an Erase Macro function. These functions can be used to erase the last keystroke entered, or the entire macro. Note that characters can only be added to the end of the macro string, and not inserted or erased anywhere except at the end of the currently defined macro string.

When entering keystrokes for the macro, the Mode shift is controlled by the Toggle Mode menu item. The Mode shift only applies to one keystroke at a time. When Mode shift is active, the word Mode in red is shown on the upper right of the display.

Macro Record and Playback

Another powerful technique for defining keystroke macros is the macro record and playback feature. With this feature, enter the keystroke to be associated with the recorded macro as described above. Then, instead of entering more keystrokes to define the macro, use the Record menu item. The Keystroke Macros screen will exit. You can then start or resume a host session. All keystrokes entered in the host session will be recorded until you return to the Keystroke Macros display screen. At that point you can cancel to erase the recording, or choose Done to associate the recording with the keystroke you selected before starting the recording. The next time you use that keystroke in the host session, the recording will be played back.

The recording can contain multiple AID keys and the playback function will wait for a host response for each AID key in the recording. Multiple recordings can be made, each associated with a different keystroke.

It is recommended to NOT record logon procedures, as the passwords are not encrypted by Aton Connect and can be revealed inadvertently to the wrong person.