Wavecom Product Support Tool Software Release Notes

SW version	WPST 1.4
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Compatibility Notes

Wavecom Product Support Tool Software Release WPST 1.4

Release availability
- This release notes document
- WPST 1.4 software release
- The WPST Quick Start Guide

Tool compatibility
- CDMA Server 3.1.0.2 or later
- Event Server 1.3.0.0 or later

Module compatibility
- Wismo Quik WQ24x8 hardware
- WZ1.52X and later software

System Requirements
- Windows 2000 SP1 or later
- Windows XP SP2 or later

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1 Introduction

The Wavecom Product Support Tool, WPST, is a Windows® 2000/XP based application. WPST provides a means for manually configuring WISMOQ Q2438 module NVRAM parameters. These parameters establish the carrier specific operating characteristics of the module. WPST also provides functionality for updating the module operating software and carrier roaming lists.

The WPST application includes the CDMA Server and Event Server applications which are used to communicate with the module using a computer COM port. The computer COM port must be connected to the WISMOQ Q2438 module serial 'Data' port using an appropriate serial interface cable.

After WPST installation is complete, refer to the 'WPST Quick Start Guide' located in the C:\Program Files\Wavecom folder for information on using WPST. This document can also be accessed using the Windows® Start button at: Start -> Programs -> Wavecom -> WPST Quick Start Guide.

1.1 Software Installation

Installation of WPST requires administrator privilege on the target computer system. The WPST software is provided as a Windows® compatible "setup.exe" file. This file must be run on the computer to install the WPST application. Any previous version of the WPST application present on the target computer will be upgraded.

1.2 Software Identification

Once installed, WPST and CDMA Server software version information can be displayed as follows.

1. Start the WPST program.

2. Click the WPST Help->About WPST menu item.
   Version: 1.4.0.3
   Date: January 26, 2006 8:41 pm

3. In the Windows® task bar, right click on the white Wavecom icon and select the 'About' item from the popup menu.
   Version: v3.1.0.2

1.3   Software Removal

To remove the WPST application from the computer, use the 'Add/Remove Programs' item located in the Windows® Control Panel.

2   Special Notes or Restrictions

This section identifies special notes or restrictions in this release.

In WPST 1.4, the initial device selection screen is no longer presented to the user each time the program is started. Instead, the program will now default to the last used computer COM port. To select or change the COM port used by WPST, use the WPST menu item File -> Connect. Following a WPST installation, a COM port must be selected using this menu item. The WPST status bar will display the current COM port selection.

Beginning with WPST 1.4, some security related user prompts of the program can be bypassed by the use of a HASP4 M1 USB security key. This feature is intended for Wavecom internal use. Overall program functionality is not effected by the presence or absence of the USB security key.

The read only field 'Directory Number PCS' has been added to the NAM1 and NAM2 sections of the WPST screen and reflects the value of the NV_DIR_NUMBER_PCS_I item. This field will always contain the same displayed value as the read/write 'Directory Number' field (NV_DIR_NUMBER_I) item. Each of these NV items is a different internal format for the same MDN value.

In WPST 1.4, functionality to save the module PRL data to a file is provided. This functionality is used as follows:

1. Select the PRL page in WPST.
2. Select or enter the file name to save the PRL data to for the desired NAM(s). A new or existing file may be specified.
3. Select the 'Read -> Module' menu item or click the 'Read from Module' tool bar icon to read the PRL data from the module and write it to the specified file(s).

2.1 NV Recovery

The WPST Download function performs the following sequence of operations.

1. Save current module NV data.
2. Erase module memory.
3. Download specified operating software.
4. Restore saved module NV data.

Beginning in WPST 1.4, functionality to automatically recover module NV settings in the event of a download failure (steps 2 through 4) is now implemented. During step 1 of the Download operation, the current module NV settings are saved to a backup file named <Module ESN>.nvb in the C:\Program Files\Wavecom\Server\backup folder. Upon successful completion of step 4 of the Download operation, the NV backup file is deleted.

If the Download operation abnormally terminates, the module NV data in the backup file will be used in a subsequent Download attempt to the same module. Step 1 of the Download operation is not performed if a NV backup file with the modules ESN is present. In this case, the NV settings in the backup file will be used when restoring the NV items to the module (step 4). When the subsequent Download operation is successful, the NV backup file is deleted.

The WPST main menu item 'File -> Restore NV File…' is also available for manually performing an NV restore operation. This menu item is available for use only when an operational load is present on the module. If a previous incomplete download operation resulted in the module being in boot block mode (WismoQuik reported in 'File -> Connect' screen), the 'Restore NV File…' item will be disabled. In this case, use the WPST Downloader to reload the module operating software and automatically recover the NV settings.

When using the Restore NV File… menu item, the user is prompted to specify the folder and file name containing the NV data to be restored. Once specified, the backup file is read and the NV data it contains is written to the module. It is important to note that WPST makes no checks for suitability of the NV backup file data in the target module. NV data is module specific and care must be exercised when using the NV restore functionality. Specifying an incorrect NV backup file for the restore operation could result in a non-operational or marginally operational module.

Note that if the specified NV backup file is located in the C:\Program Files\Wavecom\ Server\backup folder, the backup file will be deleted after successful restore of the module NV data. Deletion of the NV backup file occurs only for this directory path.

2.2   Special RUIM Software Note

Recall that for RUIM software loads, the ESN specified by the RUIM card masks the module factory provisioned ESN. The automatic NV backup functionality of the WPST downloader works properly when updating an existing RUIM based software load to another RUIM based load. A NV backup file is created using the RUIM card specified ESN (card inserted) or ESN 00000000 (card not inserted) during step 1. As long as the card insertion state is not changed, the NV backup file will be properly accessed in step 4 and the module calibration data will be properly restored.

In the case of 'RUIM to non-RUIM' or 'non-RUIM to RUIM' download operation, an additional manual step is required to restore the module calibration data. This is necessary because the 'old' ESN value is used to create the NV backup file in step 1. Following step 3, the 'new' ESN value is reported by the module. Since a NV backup file with this new ESN does not exist, WPST will report an error at step 4 and terminate the downloader. In this situation, it is necessary to use the WPST 'Restore NV File…' menu item to manually reload the NV backup file, named with the 'old' ESN value, into the module and restore the module calibration data.

3   New Features and Changes

This section identifies new features or operational changes in this release.

Id	Description
1987	NV Item erase/restore logic During any download operation (download only, provisioning) all the NV items are erased by the application software. The tool used has to save all of them and then restore them at the end of the process. If the process is interrupted for any reason all or part of the items are lost.
1683	WPST security protections For internal analysis purposes, it would be useful to have a WPST that allows reading the module content without asking for any security code. The audience for this open version of WPST would be Wavecom Inc customer return analysis only.

4   Corrected Defects

This section identifies the corrected defects in this release.

4.1   WPST Corrections

Id	Description
2044	Create PRL file popup After clicking a 'Browse' button on the PRL screen, a screen titled 'Open' is used to select/entry the PRL file name. If a PRL file name is entered that does not exist, another 'Open' screen is presented asking for file creation confirmation.
2043	Entry of invalid PRL file name If an invalid/non-existent file name is entered in either PRL box, no error is reported when a subsequent "Write Module" is performed.
2042	Blank PRL screen On the WPST PRL screen, click mouse on either of the file name entry boxes. Press return and the screen will blank. Screen can be restored by selecting another view and then reselecting the PRL view.
2041	NAM2 SID NID pairs field name The NAM2 'SID NID Pairs' field name contains two spaces prior to the word 'Pairs'; there should be just one space. Pairs is also capitalized; it should be lowercase as in NAM1.
2011	WPST - Del key removes screen objects It is possible to remove screen objects in the "Settings" view using the Del key.
1999	Repeated PRL and ERI writes may corrupt files If a PRL or ERI file is re-used (i.e. repeatedly read from and written to), the file may

Id	Description
	become corrupt.
1997	WPST modify/repair/re-install removes HASP drivers On Windows XP, if the WPST software is re-installed over itself, the HASP key drivers are deleted from the system. Requires that WPST be removed first via the control panel. This problem does not occur on Windows 2000. Other observation on both O/S's, the install shield modify/repair/remove options output the error message "Could not find INSTALL.LOG file."
1994	Transfer function corrupts MIN1 and MIN2 Use the WPST transfer screen to copy Settings, PRL, and ERI values from one module to another. Used COM1 setting for both ports. MIN1 and MIN2 values were incorrect in both NAMs following a subsequent read of the target module.
1990	Incorrect ACCOLC and MDN values The values for the NAM1 ACCOLC and Directory Number fields are incorrectly saved to the nvm file.
1986	Memory leaks WPST leaks memory when reading and/or writing from a module or file.
1983	Too many Level 4 warnings There are 165 level 4 warnings when building the WPST application. This is unsatisfactory for a commercial product.
1917	Default NV parameters Improper saving of default SMS NV parameters.
1915	NZT Module Reset Failure Observed indications when using WPST to investigate this issue. The module is powered on and detected by WPST. An initial read of the module NV items is not performed. WPST is used to write 0000 to the Lock Code NV item. The starter kit LED1 indicator goes out and then re-illuminates following the completion of the module reset. The module is functional for other operations. WPST is then used to write the 'ENGLISH' selection to the MO SMS Language NV item. The starter kit LED1 indicator goes out and never re-illuminates. The module requires a reset of power cycle to re-establish communication.
1829	Release notes file should be SWReleaseNote.pdf instead of Readme Embed the release notes file using the file SWReleaseNoteWPST.pdf instead of Readme.txt. This will help to ensure WPST release note consistency.
1827	Automate the installation and cleanup of older WPST versions and CDMA server
1619	Read/write scheme is incorrect The read / write scheme is incorrect. A read from the module or file should invalidate any values displayed and update the display with the new values. Uses cases need to be determined for module and file write operations.
1615	Temporary files are unnecessary The temporary files created at application initialization are unnecessary. The file extensions should be registered via the document template.
1614	File open and save dialogs should default to the last used folder
1607	No view creation error handling

Id	Description
	WPSTView::OnUpdate function deletes the active view before creating the new view. There is no mechanism for handling a creation failure. There is a lot of redundant code in this function.
1448	Application frame title update is slow The update of the application's frame title is slow as the operation is performed during idle processing - CWPSTApp::OnIdle.
1298	The first ERI file is not written in a multiple write operation When writing multiple ERI files, the first ERI file is not committed to nv. The second file appears as expected.
1257	The ability to read and write PRL's is needed The WPST should allow the user to: 1) read a PRL from the module and write it to a file. 2) read a PRL from a file and write it to a module. The application currently hard codes the read file names to the current directory\\tempPRL1.prl. This should be a user selected item.
1190	NV File Header application and file version hard coded During a save to file operation, the header values written to the nv file for the application and file versions are hard coded. The ESN field and creation date values are empty strings and should be utilized.
1188	WPST - Upgrade License Agreement WPST only displays the license agreement screen on a new install. The screen should also be displayed on an upgrade to a different version to ensure any changes to the license are agreed to by the user. The screen can probably be suppressed if reinstalling the same version.
1023	WPST - Download of Code If an unsuccessful software download occurs, it is not possible to re-download to the module. Using the WPST File -> New menu item, the WismoQuick device is selected. The .hex file for the module is then selected. When the FLASH button is clicked, the prompt is presented for the SPC code. After the SPC code is entered, no download is performed.

4.2   CDMA Server Corrections

Id	Description
2024	Irrelevant error messages Use a module with a Fujitsu flash and J'tagged only with the boot loader. Use WPST to download WZ2.10G to the module. This results in a download failure and the error message "Fujitsu Flash not supported for 2.10G" being reported.
2014	Update nvitemtypes.h file CDMAServer nvitemtypes.h is out of sync with nv.h. Two new nv items and item types were added in nv.h revision 1.4
2013	Add download support for Q2438 V6 Add support for Spansion S71WS064JB0 and S71PL064JA0 flash parts.
1965	Add support for 4800 bps baud rate.

Id	Description
1930	CDMA Server - Update to DP3420 merge nv.h
	Update the CDMA Server application to include the nv.h file used in the DP3420 merge. This provides compatibility with the WZ3.00 releases.
1703	CDMA Server 2.19 download error:
	Module with preprogrammed Toshiba flash image (2.10G). An attempt to download the WZ2.10G release may result in an error.
1684	The NV list in current download Tools does not match NV list in WZ2.10G software release.
1478	ERI files need to be retrieved / restored during a download operation.
1384	Module does not respond to AT$QCDMG:
	The CDMA Server is often unable to detect WZ2.01 and later modules on UART1 especially when data related NV items have been modified. The module does not acknowledge the AT$QCDMG command when sent and never switches to DM mode.
	An application note will be created to inform users of the risk associated with the auto packet detection item.
1032	Update CFlashDownload class
357	CDMA Server NV Retrieve/Restore does not support multiple NAM's.

5   Known Issues

This section identifies the known issues in this release.

5.1   WPST Known Issues

Id	Description
2048	Transfer Dialog does not work as intended
2000	Incorrect data read from legacy nvm file
	If an older nvm file is read by WPST, the NV_WV_SMS_SETTINGS_I formatting will be overwritten and the packet format will be incorrect. WPST should always populate the nv_wvsms_settings_type structure with defaults on file reads for the non-modifiable parameters to protect against incorrect legacy files.
1907	WPST 1.2.0.1 install issues on Win2000, SP4
	Tried to install 1.2.0.1 over 1.1.0.2 on Windows 2000 Professional SP4, but it wouldn't because early in the Install Shield, it complained of a lack of H:. Tried it on a XP Home SP2, and it worked fine.
1821	TAB key does not move cursor to next IP field:
	Once three digits are entered into a sub-field of the IP address, the input cursor should auto-advance to the next sub-field. Tab and period keys should also advance the input cursor to the next sub-field. Currently, a mouse click or arrow key is required to fill each sub-field of the IP address.

Id	Description
1797	SID value verification: A value greater than 32768 can be entered into a SID field. No warning is presented to the user. If a write to module is performed, the incorrect value is not written and a subsequent read will show the original NV value.
1001	Document Overridden Fields: A number of field values are overridden by the release software in the module. These fields should be described in the WPST documentation and include the value that is set. Some of these fields are: Lock Code, Channel Numbers, VoCoder Gain, and MDR Settings.
981	White space prevents SID/NID value entry in NAM: When entering values for the SID/NID fields in the NAM, sometimes it is not possible to enter a complete value. Once all white space characters are highlighted and deleted, an entry can be made. Data entry should overwrite white space for these entries.
642	A user's guide is needed for the WPST application. The user's guide should detail the program functionality and features.
395	Phonebook feature is not supported

5.2   CDMA Server Known Issues

Id	Description
1308	Corrupt hex file can cause an unhandled exception: A lack of error checking in the CFlashDownload class allows a corrupt hex file to cause an unhandled exception.
869	The phonebook is not restored during a module software upgrade: During the software upgrade process, the entire phonebook is not restored - only index zero.
495	CDMA Server needs an expanded GetDeviceInfo method In order to pass additional device information available in CS1.06 CDMA Server versions, an expanded GetDeviceInfo method and structure need to be implemented. The structure should add the port state, baud rate, and 2 place holders for future expansion.
494	CDMA Server needs to return downloader error codes CDMA Server needs to return downloader error codes as defined in DWLWin return codes version 1.0.
368	CDMA Server fails unpredictably if stopped during download: If applications try to stop a download that is in progress, the CDMA Server fails unpredictably. Partially fixed. Additional work needs to be done to allow the server to be more responsive to shut down requests while downloading

6 Glossary

Acronym	Definition
AT	Attention – DTE DCE command set originated by Hayes (see TIA-707)
AVS	Audio/vocoding/sound
BSP	Board support package
BTS	Base station transceiver subsystem
CDMA	Code division multiple access
CP	Call processing
CRC	Cyclic redundancy check
DIAG	Diagnostic Services subsystem – responds to the Diagnostic Monitor (DM) and QPST;may also be used to refer to a diagnostic task
Dload	Download Services – handles the asynchronous download protocol using the UART to retrieve new software into the phone; also used for the software upgrade of the internal phone Flash ROM
DM	Diagnostic monitor
DMSS	Dual-mode subscriber station – refers to QUALCOMM CDMA software
DTMF	Dual-tone multifrequency
E911	Emergency call system (in the United States)
EVRC	Enhanced variable rate coder
GPIO	General-purpose input/output
GPRS	General packet radio system
GPS	Global Positioning System
GSM	Global system for mobile communication
ID	Identifier
IMSI	International mobile station ID
JTAG ICD	Joint Test Action Group In-Circuit Debugger
MCC	Mobile country code
MDM	Mobile diagnostic monitor
ME	Mobile equipment
MMI	Man-machine interface
MS	Mobile station, also referred to as the mobile
MSC	Mobile services switching center
MSID	Mobile station identifier
MSM	Mobile station modem – one of the types of ASICs produced by QUALCOMM CDMA Technologies
MT	Mobile-terminated
MUI	Mobile user identifier
NAM	Number assignment module
NID	Network identification number
NV	Nonvolatile
OS	Operating system

Acronym	Definition
OTA	Over-the-air
OTAPA	Over-the-air parameter administration
OTASP	Over-the-air service programming
PCS	Personal communications services
PDU	Protocol data unit
PN	Pseudorandom noise
PRL	Preferred roaming list
PST	Product support tool
PSTN	Public-switching telephone network
QCELP	QUALCOMM codebook excited linear prediction
QXDM	QUALCOMM extensible diagnostic monitor
REX	Real-time executive kernel – preemptive, multitasking real-time operating system that provides APIs for task control, task synchronization, mutual exclusion, timers, and interrupt control
RF	Radio frequency
RL	Roaming list or radio link, depending upon the context
RSSI	Receive signal strength indicator
RT	Real-time
RTOS	Real-time operating system
RTT	Radio Transmission Technology
R-UIM	Removable user identity module – similar to the SIM card concept in the GSM standard
SAT	Supervisory audio tone
SCI	Slot cycle index
SER	Symbol error rate
SID	System identification number
SMS	Short Message Services
SPC	Service programming code
SURF	Subscriber unit reference platform
TMSI	Temporary mobile station identifier
Tone	An identifier that directs the Sound Server to play a predefined pair of frequencies for a specific duration.
Trimode	Ability to operate in 1900 MHz CDMA, 800 MHz CDMA, and 800 MHz analog in one MSM build
UART	Universal asynchronous receiver transmitter
UI	User interface
UMTS	Universal Mobile Telecommunications System
USB	Universal serial bus
VBR	Variable bit rate
WAP	Wireless application protocol
WCDMA	Wideband code division multiple access
WPST	Wavecom Product Support Tool