

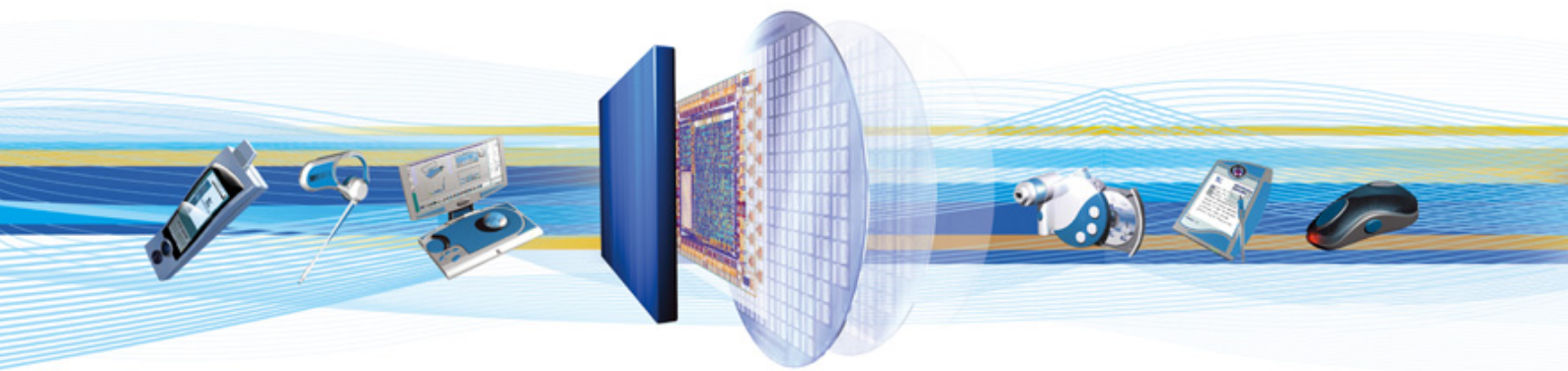


BlueCore™

BlueSuite v1.22

Release Note

December 2005



CSR

Churchill House
Cambridge Business Park
Cowley Road
Cambridge CB4 0WZ
United Kingdom

Registered in England 3665875

Tel: +44 (0)1223 692000
Fax: +44 (0)1223 692001

www.csr.com

Contents

1	Introduction	3
2	Target Devices	4
3	Target Software	5
3.1	Windows CE	5
4	Components	6
4.1	Source Code Release	6
4.1.1	Building HCISource Source Code	7
4.1.2	Building USBDriver Source Code.....	7
5	Testing	8
5.1	Win32	8
Appendix A	Functional Changes Relative to v1.21	9
Appendix B	Known Issues	11
	Terms and Definitions	13
	Document History	14

1 Introduction

This document describes software release BlueSuite™ v1.22 for CSR's **BlueCore™** Bluetooth® wireless technology chips. This adds bug fixes and some functional enhancements to BlueSuite v1.21, the previous BlueSuite release.

2 Target Devices

The release runs with all previously released versions of the BlueCore Chip and all firmware releases, although some features present in this software (including some new Persistent Store keys) may not be pertinent or present on all firmware releases.

3 Target Software

The software can run on the following Win32 platforms:

- Windows 2000
- Windows XP Home + Professional

3.1 Windows CE

BTcli (and associated transports) has been developed for Windows CE. Source code is provided which may be built for various CE platforms; project files for ARMV4 (Xscale) are provided. Other BlueSuite tools are not currently supported for CE.

4 Components

This release contains the following software components:

- BlueChat
- BlueTest
- BlueTest3
- PSTool (and PSCli)
- BlueFlash (and BlueFlashCmd)
- BTCli
- RFCli
- E2Write
- E2util
- Test DLLs
- PTTtransport layer
- DFU Tools

CDs are prepared containing the releases for incorporation with the CSR hardware products. The CD containing BlueSuite for Casira contains the following:

- BlueSuite
- Acrobat
- Microsoft installer
- Readme file
- Casira User Guide
- HCI Source code (for Win32 and Windows CE)
- USB Device Driver
- USB Device Driver Source Code
- SPI device driver
- Install program

4.1 Source Code Release

The source code releases provided are HCISource and USBDriverSource as .zip files, which can be extracted by the CD Installer.

4.1.1 Building HCISource Source Code

The following .dsw project files may be opened in Visual Studio v6.0 to build the appropriate targets (ignore missing .dsp files):

- `CSRSource\devHost\Hoststack\Bluechat2\Bluechat2.dsw` to build BlueChat2
- `CSRSource\devHost\Hoststack\BTCLI\BTCLI_single.dsw` to build BTCLI
- `CSRSource\devHost\Hoststack\BTCLI\BTCLICTrl\BTCLICTrl.dsw` to build BTCLICTrl (a GUI to launch BTCLI)
- `CSRSource\devHost\ProdTest\TestEngine\TestEngine.dsw` to build TestEngine
- `CSRSource\devHost\ProdTest\TestFlash\TestFlash.dsw` to build TestFlash
- `CSRSource\devHost\spi\E2Util\E2Util.dsw` to build E2Util

The following .sln solution file can be opened in Visual Studio.NET 2003 to build BlueTest3:

- `CSRSource\devHost\ProdTest\BlueTest3\Bluetest3.sln`

The following project files can be opened in eMbedded Visual C++ 4.0 to build the appropriate targets:

- `CSRSource\devHost\Hoststack\BTCLI\BTCLI_single.vcw` to build the CE version of BTCLI
- `CSRSource\devHost\engine\HCITransporta\hcitransport.vcw` to build the CE version of the host transport.

Note:

The corresponding Win32 project must be built before the CE project.

4.1.2 Building USBDriver Source Code

Refer to the text document `CSRSource\devHost\UsbDeviceDriver\sys\BuiltTips.txt` installed with the source code.

Refer to `CSRSource\devHost\UsbDeviceDriver\sys\CSR USB Kernel Interface Note.pdf` for information on the device driver interface.

5 Testing

5.1 Win32

The software has been tested on Windows XP.

Testing was performed with the 21 HCI firmware build.

No formal testing was performed on e2util or e2write. However, these applications were smoke-tested outside, in addition to extensive exercise in test environments.

The source code releases were shown to compile successfully under the environment described in the install note.

Test Summary

A total of 228 manual test cases, two test scripts and one soak test were run on the following areas of BlueSuite v1.22:

- General : 7 manual test cases
- BlueTest : 33 manual test cases
- BlueTest3 : 33 manual test cases
- BlueFlash : 36 manual test cases
- BlueChat : 23 manual test cases
- PSCli : 10 manual test cases and 1 scripted test
- PSTool : 39 manual test cases
- RFCli : 19 manual test cases and 1 soak test
- E2Tools : 9 manual test cases
- BTCli: 16 manual test cases
- DFUTools : 3 manual test cases and 1 scripted test

These tests cover the software's functionality as well as testing against known and resolved issues.

Appendix A Functional Changes Relative to v1.21

This section lists the significant functional changes made to the tools relative to build BlueSuite v1.21. In addition, see the list of known issues addressed in Appendix B

B-184	Some copyright fields in software versions contained the wrong date
B-633	Added search facility to PSTool that allows searches for substrings in name/programmer's ids of PS keys
B-1487	In BlueFlash chip variants beyond BlueCore2 are now identified
B-1583	Added H4DS, a new transport that allows either device to deep sleep. It has a much lower CPU overhead than BCSP / H5.
B-2284	BTCLI's parity setting option had stopped working
B-2623	When the user changes the Stores in PSTool, the application will now attempt to re-read the currently selected key from the appropriate store on the chip
B-3131	Changed CSR's host software installation packages to use InnoSetup rather than Wise installer
B-3229	The BlueFlash application is now associated with firmware image files, so a user can launch it by clicking on an .xdv file
B-3231	BlueFlash could contain more than one reference to the same filename, but which could contain different or old versions of the file. This was confusing. BlueFlash no longer allows duplicate entries in the drop down filelist. If an .xpv or .xdv file has been modified since last download/verify it should update without any problems
B-3597	The delay for some applications to enumerate the COM ports has been reduced
B-4017	Write and erase operations failed on the M28W160ECB
B-4089	M28W160ECB in BlueFlash is now supported
B-4162	BlueTest3 provided as a new version of BlueTest that can access the chip via a SPI connection
B-4699	SPI transports, no longer fail on fast (> 2.1 GHz) machines. The problem was caused by a signed integer being used for storing the clock speed
B-4826	Support of Radio Power Tables for EDR has been added,(PSKEY_LC_ENHANCED_POWER_TABLE) in PSTool
B-5452	A couple of potential problems with XapResetAndGo were fixed
B-5530	Com port enumeration was slow
B-5596	Added support for DM_LP_WRITE_POWERSTATES_REQ, DM_LP_WRITE_POWERSTATES_CFM and DM_LP_POWERSTATE_IND in RFCLi
B-5599	sputil truncated first characters of commands
B-5657	An eSCO connection could not be setup in RFCLi
B-5664	Disabled VM library test harness support by default
B-5672	DFU Tools installation incorporated into BlueSuite installation
B-5717	Host Stack now allows tools to support HQ get requests as well as HQ set requests
B-5732	BlueFlashCmd now supports querying BlueCore for the chip version and flash size; this is used to automatically identify suitable firmware
B-6064	Added BlueTest over TrueTest to BlueSuite installers
B-6536	In RFCLi, extended primd to control displaying of all primitive channels individually, and added "all" to control all at once
B-6696	Certain PS functions were not working in RFCLi
B-6708	The cancel button in the 'edit' dialog of BlueFlash did not cancel any edits made
B-6757	If an .xpv/.xdv file was changed after loading it into BlueFlash this was not picked up by the application and it would continue to use the old version
B-6774	Added BlueCore3 and BlueCore4 support to BlueTest
B-6775	USB driver did not permit a second instance of an application to connect
B-6811	BlueTest3 sometimes failed to load its dlls without informing the user of a problem

B-7053	Included TrueTest code in source code release
B-7081	If a firmware image was loaded into BlueFlash and then changed attempting to download the new version would cause corruption
B-7331	HCI data could be lost over USB
B-7332	The USB driver was prone to hang on initialisation
B-7439	Explicit support for MBM29SL800BE was missing from BlueFlash and BlueFlashCmd. It has been added
B-7600	BTCLI for Windows CE did not support hex numbers
B-7611	If a file was selected (in BlueFlash) and successfully downloaded then changing the filename and trying to do a subsequent download caused a crash
B-7796	Occasionally BTCLI printed a command and its response intermingled piecewise. This was confusing for the reader
B-7838	BlueSuite 1.22 provides source code releases for the HCI source code (including BTCLI) and the USBDeviceDriver
B-7944	An issue has been resolved in BlueFlash which could lead to it reporting an incorrect firmware ID
B-8059	Command history was not working properly on BTCLI
B-8103	pttransport.dll was missing version information
B-8268	BlueFlash now supports the .xbv file format
B-8425	There was a problem in the CE ROM Initialisation routines for BlueCores with Serial HCI interfaces; there was a race condition in some re-entrant code around the core BCCMD processor
B-8433	Installer for BlueSuite CD has changed in light of new requirements
B-8437	USB Driver reset failed
B-8498	Function in the TestEngine API that get or set BCCMDs (bccmdXXX) will return a status indicating unsupported if the BCCMD is not recognised by the device
B-8687	Tiny alteration to the Blueflash dialog layout
B-8901	A potential crash has been fixed in radiotestSettle
B-8909	An Arithmetic error was generated entering too many 1s in the Values editbox on the SetPIO test in BlueTest3
B-8914	Some documentation has been added to the overview pages of the help files for TestEngine, TestFlash and E2Api describing how to pass values greater than 32767 to functions that take a uint16 (represented as a Short in VB)
B-9450	Despite success, an error message claiming that an unexpected packet had been received was erroneously displayed when transferring files with BlueChat2
B-9585	The last value entered in PSTool's Raw Edit Dialog was sometimes ignored
B-9647	The remote Bluetooth addresses listed in BlueChat2 could be manually edited. This was not supposed to be the case
B-9648	BlueTest3 caused error on initialisation on some systems
B-9676	BlueTest3 transport selection boxes collapsed to a line when the system font was too large
B-9682	Extraneous debugging code removed from support for SCO over USB2 on winXP
B-9684	Added E2Util to BlueSuite installer
B-9784	.bin extension was missing from raw files dumped by BlueFlashCmd
B-9795	BlueTest3 listed BlueCore4 chips as "Unrecognised BlueCore"
B-9922	Set Pio on Bluetest3 did not work
B-10040	dfykeyinsert overwrote key file if output file not specified
B-10098	BlueTest now correctly identifies BlueCore4-External chips
B-10185	Bluetest and Bluechat transport histories were lost every time the option dialogue was used
B-10615	BTCLI transport selection interface does not display correct version information

Appendix B Known Issues

The following issues are known and unresolved at the time of release.

B-247	Requested enhancement to PSTool dump output to include user-friendly presentation keys
B-400	BlueChat2 should warn user if bandwidth is limited by host transport
B-401	PSTool lacks the means to manipulate PS keys directly in flash, without having to send messages to the firmware
B-659	The Edit Raw facility in PSTool is not flexible enough with the format of entered numbers
B-704	The keyboard shortcuts for PSTool do not work
B-705	BTCLI can be executed against firmware that does not support straightforward HCI. It would be preferable if BTCLI could report a sensible error as opposed to failing silently
B-799	BlueFlash's tolerance of SPI errors could be improved
B-841	Boot mode support should be handled better
B-962	PSTool Error string says "look table" rather than "look-up table"
B-988	List view in PSTool would be more useful as a tree
B-1120	BlueFlash : Erase Full Chip does not erase second bank on a dual bank device
B-1178	E2Write and PSCLI should be allowed to use HCI transports
B-1264	Appropriate build notes required for CE source code releases
B-1476	An autosort feature for PSTool power table entry might be useful
B-1876	e2write, pshelp should use bccmd_trans cooperatively
B-2278	It would be desirable to command BlueFlash to dump subsections of flash, as opposed to the entirety
B-2558	At the moment, Broadcast mode will transmit image contents greater than 4Mbit even if all the devices have 4Mbit flash. This causes problems with Hoisted images, since the contents are amenable to truncation, but partially filled sectors will cause errors
B-2919	BlueChat2 silently fails to send small files
B-2959	There is some ambiguity with the firmware version reported by BlueFlash. When the chip is running, BlueFlash reports the Stack version. When the chip is stopped, BlueFlash reports the Loader version. BlueFlash should be modified to make this distinction clear
B-2966	PSTool needs option to act as a database, displaying all keys for all builds
B-2971	If a key is clicked on that exists on the current device the editable field for that key appears. If the user then chooses to reconnect to another device where the same key does NOT exist the 'Entry not present' button appears without removing the editable field. However, the unwanted editable field is higher in the Z order making it difficult to press the button to add the entry
B-3094	The function teGetLastError has been added to get more detailed information if a particular TestEngine function should happen to fail e.g. if a particular BCCMD VARID is not supported
B-3259	In the event of an SPI failure, PSTool still displays too many warning messages
B-3799	Incorrect message generated by BlueFlash about Image being too big
B-3800	Message in BlueFlash indicating image too large covers flash size data
B-4073	When using BlueFlash to program a 4Mbit flash part (such as BlueCore2 Kato) with a build which is 4.7Mbit an error message is produced. However, there is no option to cancel the request to program (or the OK should not attempt to program), so the data gets truncated
B-4151	BlueFlash's Flash Erase function does not preserve original contents
B-4226	Dumped .psr files cannot be merged with PSTool
B-4319	PSTool truncates too much of FW version string
B-4340	PSCLI: communication error then possible application error
B-4574	Command line tools should display version information as a matter of course
B-4808	xap_go function in flashdll does not work

B-5643	parspi.sys lacks version info
B-5708	Chip CRC operations take too long
B-6171	The RAM test within BlueFlash occasionally gives a false negative
B-6445	Poor address validation for SPI transactions
B-6767	RSSI values should be averaged
B-6810	Cannot use blueTest3 over the network
B-6970	BtCli's command buffer is too short
B-7119	BTCli on CE requires user to repeatedly press enter in order to see output
B-7334	There is an inefficiency in the user-mode interface of the USB device driver. The IRP_MAJOR_READ function does not block, and returns when there is no data, necessitating the use of IRP_HCI_DATA_BLOCK
B-7442	Bluetest cannot detect built in comports in Japanese versions of Windows 2000
B-7964	Several minor problems with the USB device driver were addressed
B-8436	USB reset causes problems
B-9452	The Audio Transfer box in BlueChat2 is greyed out yet selectable on connection
B-9458	SCO over HCI demo in BlueChat2 causes master to use 100% CPU and leak memory
B-9492	The PSTool canned operation '@hci_internal' is no longer supported
B-9547	Manual entry for l2cap_rcv states incorrect number of parameters
B-9605	rfc_rcv does not return console if packets already received
B-9613	RFCLi's l2_xmit procedure fails to generate payload
B-9645	Repeatedly connecting and disconnecting BlueChat2 from a device makes the application unresponsive
B-9751	RFCLi hangs when incorrect command line parameters are passed
B-9809	It is unclear where files transferred using BlueChat2 end up
B-9820	Bluechat2 interface prevents the simultaneous sending and receiving of file transfers
B-9837	RFCLi crashes when sending data down two server channels
B-9897	Migrate dfubuild to recognise medium and small vm applications
B-9901	In PSTool and PSCli, using the Key Difference function of a Persistent Store Query (.psq) may give false results
B-9967	The halt chip on spi access box when selected does not halt the chip when pstool is connected via spi.
B-10042	dfukeyinsert happy to insert public key in an already signed stack psr
B-10049	dfubuild crashes if stack data file given without stack prog file
B-10154	When creating DFU files with dfubuild, any stack for a chip later than BlueCore2 is labelled as a BlueCore2 stack in the verbose output
B-10161	dfubuild fails to build DFU file if more dfu triples than stack firmware
B-10243	BlueTest cannot reconnect with H4 without resetting device
B-10608	BlueChat2's file selection button stays selectable during file transfers
B-10625	redundant "HCI Commands" menu entry in BlueChat2
SLX-171	PSTool now has easier editing for some keys where hex is inappropriate

Terms and Definitions

AGP	Automatically Generated Payload (in RFCLI; used for data transfer testing)
BCSP	BlueCore Host Software
BIST	Built In Self Test
BlueChat	Software for demonstrating and exercising BlueCore chips
BlueCore™	Group term for CSR's range of Bluetooth chips
BlueFlash	Software for programming BlueCore's associated flash device
BlueSuite™	Suite of development tools that contains all of the BlueCore utilities. BlueSuite includes BlueChat2, BlueFlash, PSTools, BlueTest and BTCLI
BlueTest	Software for executing the BlueCore's BIST functions
Bluetooth®	Set of technologies providing audio and data transfer over short-range radio connections
BTCLI	Command-line based software for exercising the HCI layer of BlueCore
Casira™	CSR's main Bluetooth evaluation hardware
CSR	Cambridge Silicon Radio
DFU	Device Firmware Upgrade
DLL	Dynamically Linked Library
dsw	Developer Studio Workspace file; lists projects for use with Microsoft Visual Studio 6
HCI	Host Controller Interface
HCI Source Code	Source code for CSR's BCSP, H4 and USB Host Controller interface implementations along with primitive conversion and device management
Install scripts	Auto-generated programs that perform the installation on Win32 platforms
Persistent Store	Storage of BlueCore's configuration values in non-volatile memory
PS Key	Persistent Store Key
psq	Persistent Store Query
PSTool	Software for manipulating the BlueCore's Persistent Store
RFCLI	Command line application to communicate with the RFCOMM firmware Uses TCL for configurability
RFCOMM	Protocol layer providing serial port emulation over L2CAP; element of Bluetooth
sln	Solution file; lists projects for Microsoft Visual Studio.net
SPI	Serial Peripheral Interface
TCL	Tool Command Language
USB	Universal Serial Bus
USB device driver	USB Device driver for BlueCore chips, as used by the USB layer in the HCI
vcw	Visual C Workspace file; lists projects for Microsoft Embedded Visual Studio
VM	Virtual Machine
Windows CE	Embeddable version of Microsoft's Windows operating system

Document History

Revision	Date	History
a	19 DEC 05	Original publication of this document. (CSR reference: bcore-srn-082Pa)

BlueCore™

BlueSuite v1.22 Release Note

bcore-srn-082Pa

December 2005

BlueSuite™ v1.22 Release Note

Unless otherwise stated, words and logos marked with ™ or ® are trademarks registered or owned by CSR plc or its affiliates. Bluetooth® and the Bluetooth logos are trademarks owned by Bluetooth SIG, Inc. and licensed to CSR. Other products, services and names used in this document may have been trademarked by their respective owners.

The publication of this information does not imply that any licence is granted under any patent or other rights owned by CSR plc.

CSR reserves the right to make technical changes to its products as part of its development programme.

While every care has been taken to ensure the accuracy of the contents of this document, CSR cannot accept responsibility for any errors.

CSR's products are not authorised for use in life-support or safety-critical applications.