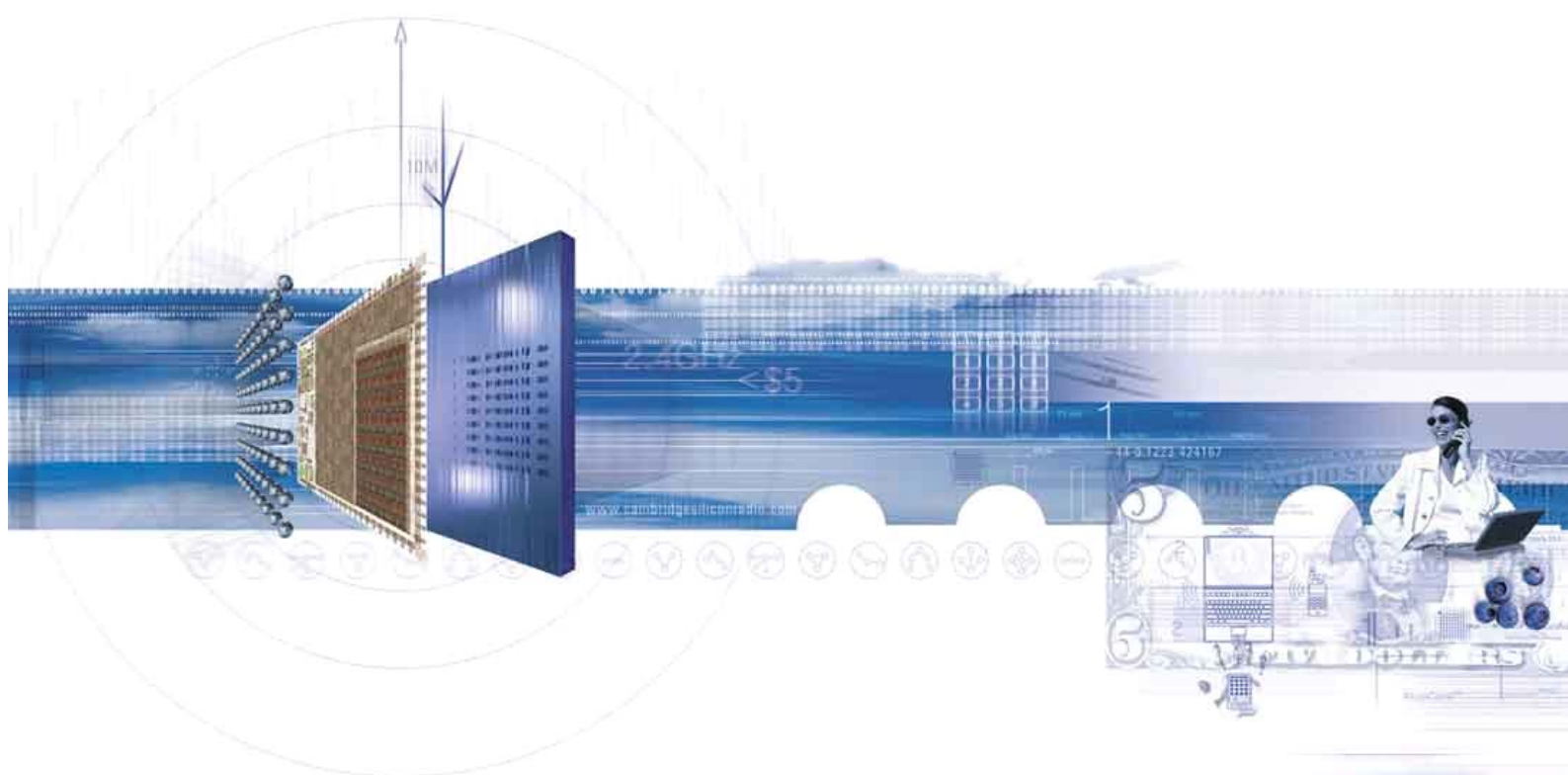**BlueCore™**

TrueTest™ v1.02

Release Note

January 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

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1 Introduction

TrueTest™ is a software development kit (SDK) for use in production test environments. It consists of the necessary libraries and documentation to enable customers to quickly and easily develop applications for testing **BlueCore™** functionality suited to their own production test environment.

It is possible to write TrueTest applications in a variety of languages including C/C++, Visual Basic and Delphi, and to connect to BlueCore devices via a number of different transports including BCSP, H4, USB and SPI.

The TestEngine and TestFlash components were previously distributed as part of BlueSuite™. These components were last released in BlueSuite v1.20.

1.1 Purpose

This document describes software release TrueTest v1.02 for CSR's BlueCore Bluetooth® chips.

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2 Target Platforms

2.1 Host

The software is designed to run on the following Windows ® 32 platforms:

- Windows 2000
- Windows XP Home + Professional

Depending on the method used, connection to BlueCore devices will require the use of a parallel, serial or USB port.

2.2 Target Devices

The release runs with all previously released versions of the BlueCore chip and all firmware releases, although some functions present in the API may not be supported by some firmware releases.

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3 Software Components

This release is comprised of the following software components:

- E2Api: API for programming I^{2}C EEPROM devices via SPI

- TestFlash: API for programming flash devices via SPI

- TestEngine: API for running radio tests, accessing Persistent Store and running simple dm/hci commands via BCSP, H4, USB or (with limited commands) SPI.

- Supporting libraries: pshelp, spi, spicommon, spifns, spilpt

The SDK is distributed as a .zip file, available on request and via www.csrsupport.com. The structure of the release is as follows:

TrueTest

      Drivers (drivers required for creating a connection)
         install.bat
         csrbc01.sys
         parspi.sys
         csrbc01.inf
      Help (help documentation for each API)
         E2Api.chm
         TestEngine.chm
         TestFlash.chm
      Include (C/C++ header files)
         Delphi (Delphi function declaration units)
            E2Api.pas
            TestEngine.pas
            TestFlash.pas
         VB6 (Visual Basic 6 function declarations)
            E2Api.bas
            TestEngine.bas
            TestFlash.bas
         VB7 (Visual Basic 7 (.NET) function declarations)
            E2Api.vb
            TestEngine.vb
            TestFlash.vb
         E2api.h
         TestEngine.h
         TestFlash.h
      Lib (C/C++ import libraries)
         E2Api.lib
         TestEngine.lib
         TestFlash.lib
      E2Api.dll
      TestFlash.dll
      TestEngine.dll
      pshelp.dll
      spi.dll
      spicommon.dll
      spifns.dll
      spilpt.dll

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4   Functional Changes Since TrueTest v1.01

This section lists the functional changes since the release of TrueTest v1.01.

ID	Description
B-2515	The TestEngine module now contains functions for performing ACL data transmission of files and arbitrary byte arrays. See hciSendAclData and hciSendAclFile in the TestEngine API help file.
B-2999	TestEngine commands now work correctly over a H4 connection after a bccmdColdReset function has been issued.
B-3087	All TestEngine radiotest functions that generate HQ traffic now return TE_UNSUPPORTED_FUNCTION when called over a SPI connection as HQ messages cannot be received over SPI.
B-3762	Five new functions have been added to the TestEngine API to support configuration of the battery charger for BlueCore3-Flash. The functions are: bccmdBc3BuckReg; bccmdBc3Led0; bccmdBc3Led1; bccmdBc3MicEn; and bccmdBc3PsuTrim. See the TestEngine API help file for more information.
B-3846	BCCMD functions in TestEngine no longer return an incorrect value of success when they fail.
B-3991	A new function has been added to TestFlash, flStopProcessor, to stop the XAP processor over SPI connection.
B-4212	A number of functions have been added to the TestEngine API to allow encrypted connections to be set up. The added functions are used to execute HCI commands and wait for specific HCI events. The functions are hciCreateConnectionNoWait; hciLinkKeyRequestNegativeReply; hciPinCodeRequestReply; hciSetConnectionEncryption; hciWaitForConnectionComplete; hciWaitForEncryptionChange; hciWaitForLinkKeyRequest; and hciWaitForPinCodeRequest.
B-4621	A new function - bccmdRouteClock - has been added to route the external clock to the AIO1 pin. This will require firmware that supports the BCCMD_ROUTE_CLOCK PDU.
B-5091	The hciCreateScoConnection function was incorrectly returning the connection handle from the previous ACL connection instead of the SCO connection that it had just made. This caused hciDisconnect to pull down the ACL connection when given the handle returned by hciCreateScoConnection.
B-5148	The radiotestTxstart function within the TestEngine module returned an incorrect status when called with firmware which does not contain the radiotest module.
B-5151	A new function, radiotestStereoCodecLB, has been added to the TestEngine module. This function can be used to enable loopback mode of the stereo CODEC on supported devices.

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5 Known Issues

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

ID	Description
B-2553	The e2CheckSize function in E2Api does not take account of devices that ignore address bits out of the address range of the device. This may cause the function to report a device's size as valid, even if it is smaller than specified.

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6 Testing

The software has been tested in the following environments:

- Windows$^{®}$ 2000
- Windows XP Professional

Testing was performed with the following firmware builds:

- BlueCore2-ROM: 4Mb RFCOMM (1493)
- BlueCore-External: 8Mb Unified (1591)
- BlueCore2-Flash Plug-n-Go: 8Mb Unified (1773)
- BlueCore3-Multimedia: 8Mb Unified (1592)
- BlueCore3-ROM: 6Mb Unified (1595)

Testing of the TrueTest libraries was performed with a set of Visual Basic v7.0 (.NET) test scripts. These exercised approximately 80% of the functions provided in the SDK. This also tested the VB7 declarations provided with the SDK.

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Acronyms and Definitions

ACL	Asynchronous Connection-Less
API	Application Programming Interface. Set of functions with documentation for building software applications.
BCSP	BlueCore Serial Protocol;CSR-defined protocol for communicating with BlueCore devices over a UART link
BlueCore™	Group term for CSR's range of Bluetooth chips
BlueSuite™	Suite of development tools that contains all of the BlueCore utilities
Bluetooth®	Set of technologies providing digital audio and data transfer over short-range radio connections
Casira™	CSR's main Bluetooth evaluation hardware
CSR	Cambridge Silicon Radio
dm	Device Manager
EEPROM	Electrically Erasable Programmable Read Only Memory
H4	UART HCI transport
HCI	Host Controller Interface
Persistent Store	Storage of BlueCore's configuration values in non-volatile memory
SDK	Software Development Kit; set of software libraries and documentation for an developing application
SPI	Serial Peripheral Interface; Three-wire serial interface
UART	Universal Asynchronous Receiver Transmitter
USB	Universal Serial Bus
VB	Microsoft® Visual Basic®

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Record of Changes

Date	Revision	Reason for Change
02 JUL 04	a	Original publication of this document. (CSR reference: bcore-srn-046Pa)
11 JAN 05	b	Updated functionality and bug fixes. (CSR reference: bcore-srn-046Pb)

BlueCore™

TrueTest™ v1.02

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bcore-srn-046Pb

January 2005

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