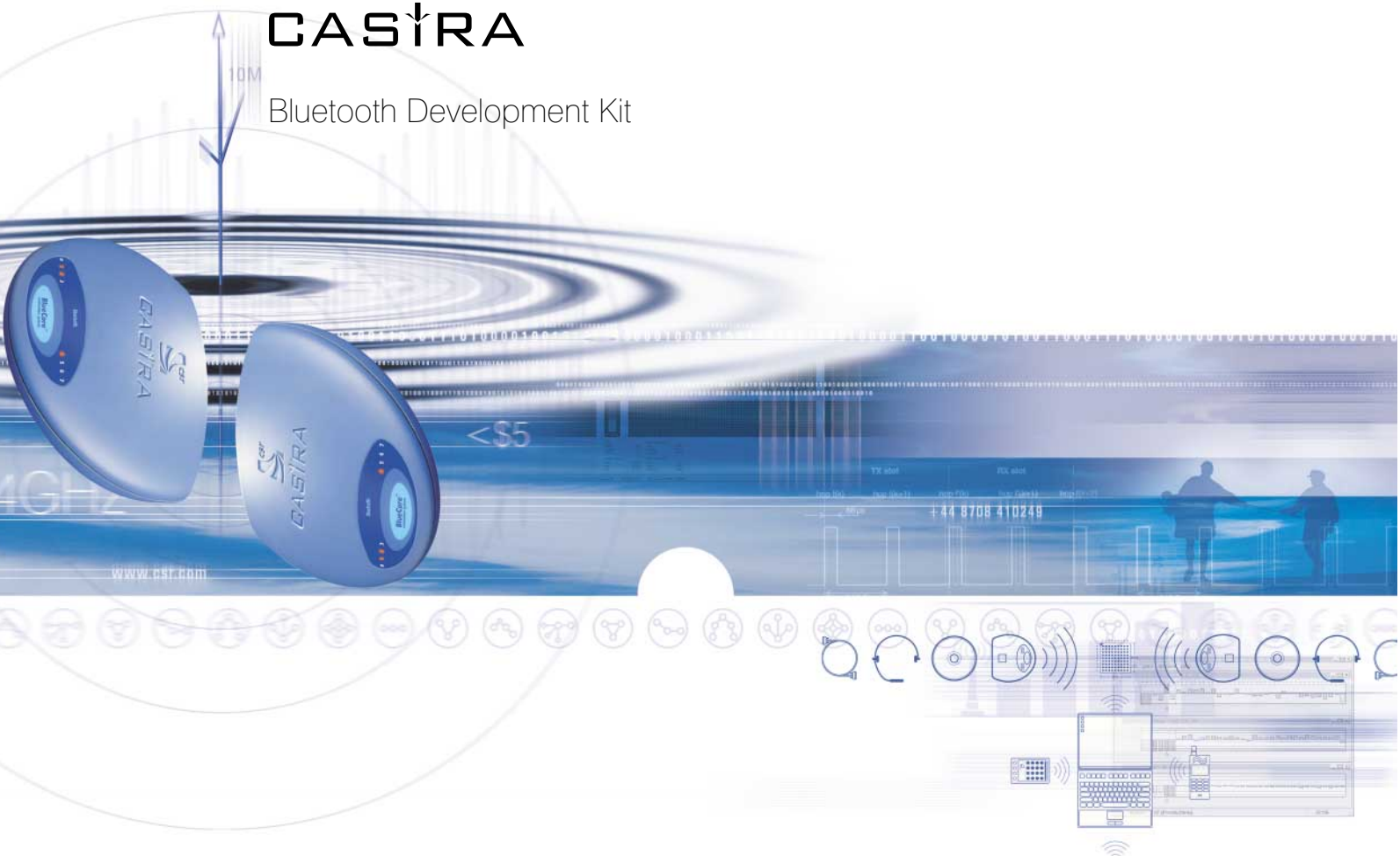




# CASIRA

Bluetooth Development Kit



[www.csr.com](http://www.csr.com)



## Overview

**BlueCore™** is the world's first true single chip solution for Bluetooth™ wireless technology. CASIRA™ provides a platform that enables Bluetooth software and hardware application developers to begin the integration of Bluetooth technology within the end product using the **BlueCore™** chip. CASIRA™ gives the Bluetooth designer access to:

### Software Provided by CSR

- A full Bluetooth™ Protocol Stack running on the **BlueCore™** Chip. The protocol stack will be re-configurable for different partitions between the Bluetooth™ host and host controller.
- A simple, PC based host application BlueChat™ allowing the transfer of text and files and the establishment/teardown of an audio connection.
- A full description of the firmware APIs and example source code in 'c' of a host-side HCI transport driver written as a Windows™ DLL.
- Flash memory programming utility to allow future releases of the Bluetooth stack firmware to be downloaded from a PC to the **BlueCore™** chip.



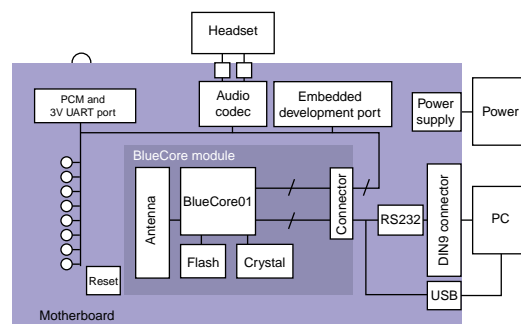
## Hardware Features

The system hardware consists of two units each containing:

- A module including the **BlueCore™** single chip Bluetooth IC, flash memory (for the host controller protocol stack firmware), crystal reference and antenna.
- A motherboard containing host I/O and man/machine interface elements including RS232 and USB drivers & external connector, audio codec, external audio socket for a headset and internal connectors for audio PCM stream & synchronous serial interfaces.

The kit additionally includes 2 x headsets, 2x RS232 cables, 2 x universal power supplies and 2 x moulded cases designed for desktop operation and connection to a serial or USB port of a PC. The lid of the case is removable to allow access to the PCM and synchronous serial interfaces for embedded software development (for the embedded s/w development toolkit, available later). Each desktop unit is approximately 150mm x 130mm x 30mm.

### Block Diagram



## Piconets and Prototyping

The Bluetooth radio inside Casira is a Class 1 module with 100m range. However, Casira users can also buy extra modules - supplied as bare PCBs, without software - for cost-effective construction of piconets, and simpler connection to host equipment (the bare PCB can easily be mounted as a daughterboard for example).

For further development flexibility, users may buy these modules configured as a Class 1 device, or in two Class 2 variants: with either a printed antenna supporting a range of >10m, or an external balun which extends the range to >20m.

The additional modules are shipped as:

- a set of three: one Class 1 device, one Class 2 with printed antenna, one Class 2 with external balun
- in quantities of 10 for any variant desired

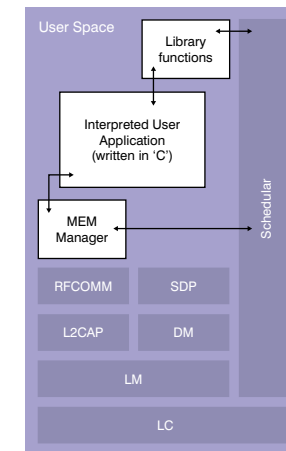
	BC01M2LC	BC01M2HP	BC01M1
Output Power dBm	0	0	20
Range m	>10	>20	>100
Dimensions mm	17x27x3	20x27x3	19x48x3
Antenna	External	External	External
Min order quantity	10	10	10
Max order quantity	100	100	100
Mounting	Surface mounting direct to motherboard	Surface mounting direct to motherboard	Solder to connector to UART/USB port
Comments	Stripline distributed filter and balun RF design	External balun and RF Tx/Rx switch. Optional extra RF switch for antenna diversity and optional external LNA	Distributed RF filter and balun. External RF Tx/Rx switch and external LNA and PA

## BlueCore™ Embedded Software Development Tools

From September 2000, CSR can support directly customers who wish to write their own software applications running directly on the **BlueCore™** chips. These software tools will be offered as a software upgrade to existing customers of the CASIRA™ development kit.

The software environment will allow customers to create on-chip program in user space whilst maintaining the integrity of the pre-certified Bluetooth Protocol Stack Kernel. This will ensure that true, stand-alone, single chip applications can be developed on **BlueCore™** without the need to submit the protocol stack software components for re-certification.

CSR software environment for embedded software development on **BlueCore™**.





## Documentation

---

Provided on CD-ROM are:

- User manual
- API allowing code to be developed to interface with the provided transport driver. This includes a description of the options for different host/host controller stack partitions.
- Reference design schematics, PWB artwork and detailed bill-of-materials of the **BlueCore™** module.
- Applications notes describing the radio and software design approach needed to embed **BlueCore™** into a system.



## Application Support

---

When you buy a CASIRA™ development kit you also get the application support package which includes the artwork (Gerber), schematics and bill-of-materials comprehensive of the CSR **BlueCore™** module. Also available are application notes describing the RF design constraints and the software API's needed to design the application around **BlueCore™**.

## Seminar Program

---

Casira customers will also be offered the opportunity to participate in an exclusive series of technology seminars dealing with the implementation of Bluetooth technology.

## Third Party Software Tools supplied with CASIRA™

---

The software is provided by Cambridge Consultants Ltd. (CCL):

### Bluestack™ Software Development Kit Demonstration

The BlueStack™ SDK is a PC based software application that opens command and watch windows to view a fully working Bluetooth host side stack. These windows allow the transmission and monitoring of individual commands/events and the exchange of simple data sequences (ACL and SCO packets) between Bluetooth systems. It also allows simple applications to be built in the form of macro script languages.

### Additional Third Party Software Tools

---

Available separately from our software partner, CCL as a software upgrade to the existing CASIRA™ hardware:

### BlueStack™ Software Development Kit

This kit provides a professional development environment for Bluetooth host applications destined ultimately to be cross-compiled onto embedded systems such as cellular telephones. Access is provided to the APIs and object code of BlueStack™, as well as the run-time environment, permitting the Bluetooth stack and applications to run as a single thread under Windows NT, for subsequent porting to an embedded operating system.

### BlueStack™ Source Licence

Full 'C' files source files of the Bluetooth layers L2CAP, RFCOMM and Service Discovery, allowing development of Bluetooth applications that can then be cross compiled to any target hardware platform.

For availability contact Cambridge Consultants Ltd:  
bluetooth@camcon.co.uk, or telephone +44 1223 420024 or  
fax +44 1223 423373.

**To order the CASIRA™ Bluetooth Development Kit, complete the order form on [www.csr.com](http://www.csr.com)**

BlueCore™, BlueStack™ BlueChat™ and CASIRA™ are trademarks of Cambridge Silicon Radio Ltd. Windows is a trademark of Microsoft Corporation. All other trademarks are acknowledged.

BLUETOOTH is a trademark owned by Telefonaktiebolaget L M Ericsson, Sweden and licensed to Cambridge Silicon Radio Ltd.

**For price and availability information contact [sales@csr.com](mailto:sales@csr.com) +44 (0)1223 424167**

Printed in England. © 2000 Cambridge Silicon Radio Ltd

Ref: LT02V3.0