

**Applied Data Sciences / PCEBBC®**  
*High Speed Data Link between an EISA PC and Harris BBC*

This product is based upon the proven design of the PCEHSD board. The PCEBBC board provides an EISA bus PC computer emulation of the Harris Buffered Block Channel (BBC), and Input/Output channel board. This product is an intelligent device emulator with an onboard processor, data buffering, special data reformatting, and supports conventional BBC Host to Device mode & Interprocessor Communications Facility (ICF) Host-to-Host mode.

Transfer rates between the PCEBBC's BBC port and the external device's BBC port are determined by the external device; however, the PCEBBC can operate in excess of 2.5 Megabytes/second. Transfer rates between the PCEBBC board and the EISA bus are dependent upon the PC's system configuration and tasks in progress. EISA burst rate is 33 Mbytes per second.

This product has a special feature whereby an external device can interrupt the PCEBBC. The interrupt signal is configured as either a differential or single ended edge triggered pulse.

Ordering Information:

Specify **PCEBBC, Part Number: 0700410**. Includes adapter board, technical and user documentation, 20 foot cables, binary interactive test/diagnostic program, and binary DOS "C" callable I/O routines. You can E-mail us at [sales@appdatasci.com](mailto:sales@appdatasci.com) or call us at 972-242-7944 for pricing information.

Applications:

- Gateway
- Network
- Drive BBC peripherals from an EISA bus PC
- Interface workstations to Harris host
- Data Link between an EISA bus PC and Harris host
- Test existing BBC compatible devices with a PC

Benefits:

- **Save on host overhead** - the PCEBBC has much lower overhead for networking or communication applications and is faster than conventional ethernet.
- **Save money** - continue to use your existing BBC peripherals without having to make changes.
- **Save on installation time** - simple to install and easy to use software drivers.
- **Save on evaluation time** - simple to use interactive diagnostic/test program performing wrap around self-tests.

- **Save on repair and testing** - fast and economical way to verify the integrity of an existing data link.

### Features:

- Emulation of the following Harris BBC modes:
- BBC normal Host to Device mode, or
- ICF Host to Host mode.
- EISA bus Master using onboard DMA chip.
- PC addressing is 32 bits.
- PC data is 32 bits & BBC data is 24 bits.
- On-board FIFO.
- Standard PC EISA board form factor.
- Compatible with Harris BBC or ICF mode cable pinout.
- Built in self-test for memory and data paths.
- Data format conversion on-the-fly.
- Motorola 68020 processor.
- External device interrupt.
- Intel BMIC chip for bus compatibility.
- Timing is deterministic.

### Software Support:

The PCEBBC comes with a Microsoft C, FORTRAN or PASCAL compatible relocatable object code device driver which is used to control the board. It is written for DOS Version 3.1 or higher. There are 6 separate subroutines for either the BBC or ICF mode. The subroutine names and functions are:

- **BBCOPEN:** installs the driver in the DOS interrupt structure and initializes the data structures.
- **BBCSTRT:** starts a data transfer.
- **BBCTEST:** waits for completion on a NOWAIT operation.
- **BBCTERM:** terminates any existing transfer in progress.
- **BBCCTL:** direct control of functions that are not available through other I/O routines.
- **BBCCLOS:** restores the DOS interrupt structure back to its normal configuration.

Optional File Transfer software is available.

### Interactive Test Program:

An Interactive/Diagnostic Test program is supplied with the PCEBBC (which is DOS compatible), and has a Harris BBC I/O word structure compatible format. It does not require a device driver and can be installed on any DOS system allowing direct user level access to the PC EISA bus memory space.

The user can create a list of up to 20 Harris compatible I/O words on a PC system and then execute the list. This I/O word list may also be validated and saved for future usage. The user can transfer the I/O list to the Harris computer for incorporation into the respective program under development. This program operates in either standard BBC or ICF mode.

### Installation:

Installation of the PCEBBC is easy because the board configuration is entirely software selectable. Just plug the PCEBBC into any EISA slot in the PC chassis. Attach the J5 adapter board. If you are operating in the ICF mode, then use the supplied Link cable. Attach the end of the cable, which has two 80-pin IDC connectors, to the adapter board and the other end, which has two 80-pin edge connectors, to the Harris host. Each PCEBBC comes complete with installation and programming instructions, and the supporting software.

### Data Formats:

The PCEBBC reformats data between the 32-bit PC and 24-bit Harris word structures. The PCEBBC can transfer data in any of three formats:

1. floating point,
2. integer or fixed point, and
3. bit format.

Sign bits are never altered during reformatting.

### Specifications:

#### **Physical:**

- **Board:** PCB is .06 inch thick FR-4 flame retardant epoxy glass. Eight layers.
- **Dimensions:** Length is 13.25 inches, Height is 4.5 inches, and Thickness is .60 inches.

- **Connectors:**
  - **PC to Chassis:** Two edge connectors - 124 pin and 72 pin gold edge-wiping contacts.
  - **PC to Adapter Board:** One 100-pin hi-density connector on rear edge of board.
  - **Adapter Board to BBC Interface:** Two 80-pin IDC compatible male headers.
- **Weight:** 1.2 pounds.

#### **Electrical:**

- Power is supplied via the PC EISA chassis backplane. Voltage is +5 VDC and Current is 2.2 amps.

#### **Environmental:**

- **Temperature:** 0 to 55 degrees Celsius operating, and -40 to +80 standby.
- **Humidity:** Up to 95% RH without condensation.
- **Altitude:** 0 to 10,000 feet AMSL operating, and 0 to 40,000 feet AMSL standby.
- **Vibration:** Withstands normal transportation stresses.
- **Cooling:** Provided by built-in fans in the Encore chassis.

#### **Modes Supported:**

- **ICF:** PC to PC and PC to Host.
- **BBC:** PC to External Device.

#### **Transfer Rates:**

- **PCEBBC to EISA bus:** Determined by PC Host, processes and internal bus. Burst is 33 Mbytes per second.
- **PCEBBC to BBC bus:** In excess of 2.5 Mbyte per second.