# Personality Board Buyer's Guide
## From Intercontinental Micro Systems

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## PERSONALITY BOARDS:
## PERIPHERAL INTERFACE
### CPZ, SBC = SINGLE BOARD COMPUTER. CPS, SBSP = SINGLE BOARD SLAVE PROCESSOR.
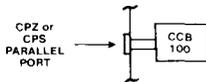
**ICM'S PERSONALITY BOARDS** offer a very versatile, cost effective technique for peripheral interface. The 3" x 4" personality boards mount on the back of your system's mainframe or chassis. Whenever you decide to change peripherals or protocols, all you have to do is change the small, inexpensive personality board - not make expensive and complicated changes to your CPU board. ICM has existing PERSONALITY BOARDS and Software Drivers for most peripherals and protocols on the market today. New PERSONALITY BOARDS are constantly being developed as new peripherals enter the market.

**PERSONALITY BOARDS** are not only cost effective and inexpensive, they also protect the CPZ or CPS whenever new or different peripherals are placed on your system. First, since the buffers and drivers necessary to interface to the peripherals are on the personality board and not on the CPZ, there is no need to make costly and complicated cuts or jumpers on the CPZ. Second, any current surges on the communication lines between the CPZ and the peripheral will blow the surge supressors on the Personality Board and not the CPZ. Thus you only have to replace a small, inexpensive board - not a large, expensive SBC board.

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## CCB100 - CLOCK/CALENDAR
### Function

The CCB100 provides a highly accurate real time clock which may be set by the CPZ, SBCP or the CPS, SBSP under software control. The time of year, month, day, hour, minute and second is maintained and may be read back by the CPU. A rechargable Ni-Cad battery is used to provide backup power (2000 HR) to the time control chip. In this manner the real time clock is continuously maintained even during extensive down time. This feature is quite useful for point-of-sale systems, inventory systems and other applications where continuous clock monitoring is required. This board is also very useful in operating systems which feature date and time stamping such as TurboDOS. In a TurboDOS based system, this board may be connected to the master (CPZ) parallel port or may be connected to any one slave (CPS) parallel port.
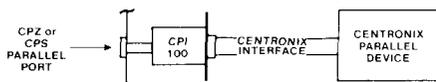


## CPI100 - CENTRONICS PRINTER
### Function

The Centronics Printer Personality Board provides line drivers, receivers, terminators, jumper options and data strobe generator logic to interface to any printer compatible with the Centronics parallel interface.

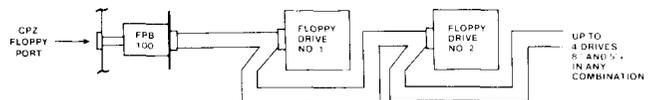This module may be used with either the CPZ, SBCP or the CPS, SBSP.



## FPB158 - FLOPPY DISK CONTROLLER
### Function

The FLOPPY DISK CONTROLLER personality board provides line drivers and receivers, terminators, logic to interface to both 8-inch and 5¼-inch floppy disk drives with the CPZ, SBCP. A DB25 connector is available as the means to interface with the drive interface; however, if other types of commonly used connectors are required, adapters are available to tailor the interface appropriately.

This module is used only on the CPZ, SBCP.



## LDS100 - LONG DISTANCE SERIAL CONVERTER
### Function

The LDS100 personality board provides RS422 differential line receivers and RS232 line drivers. Drivers and receivers are provided to support full handshake protocols.

The LDS100 in combination with the RS422 Serial Communications Personality Board (FTT100), provides a means of connecting terminals, printers and other RS232 serial devices remotely located from the CPU mainframe. Jumper options are provided to minimize the number of cable lines connected if no handshaking signals are required as in the case of simple RS232 Terminals where only transmit and receive signals are used. Ground is also provided but is not used in most cases.

AC power must be provided to the board. The board may be strapped for either 115VAC/60HZ or 230VAC/50HZ operation. A separate enclosure with fused power supply can be purchased separately from ICM (LDS-PS).

## FTT100 - RS422 SERIAL COMMUNICATIONS
### Function

The FTT100 Personality Board provides RS422 differential line drivers and receivers. These balanced drivers and receivers can provide serial communications for distances of up to 4000 feet at a communications rate of 100 Kbits/second. This assumes that 24 AWG twisted pair cable is used. Higher rates may be attained for shorter cable lengths. If the CPU's SIO controller is used in synchronous communications mode at its maximum rate of 800 Kbits/second, the maximum cable length recommended is 325 feet. Drivers and receivers are provided for all signals of the SIO to support full handshake protocols.

The FTT100 in combination with the Long Distance Serial Personality Board, (LDS100), provides a means of connecting terminals, printers and other RS232 serial devices remotely located from the CPU mainframe. CPU-to-CPU communications may also be set-up over long distances by using the FTT100 at both CPUs. In this case, the interconnecting cable is cross-connected to tie receiver-to-transmitter and transmitter-to-receiver devices. No cross-connection is required between the FTT100 and the LDS100.

Jumper options are provided to minimize the number of cable lines required if no handshaking signals are required as in the case of simple RS232 Terminals where only transmit and receive signals are required. Ground is also provided but is not used in most cases.

This module may be used with either the CPZ, SBCP or the CPS, SBSP.
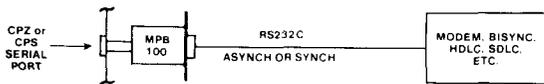


## MPB100 - RS232/FULL MODEM
### Function

The RS232C/FULL MODEM Personality Board provides RS232 drivers/receivers and jumper options to interface asynchronous or synchronous modems with varying types of bit oriented protocols such as IBM Bi-Sync, HDLC of SDLC. Jumpers provided enable the user to configure the board for either asynchronous or synchronous operation.

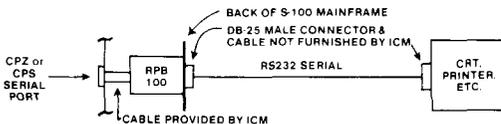This module may be used with either the CPZ, SBC or the CPS, SBSP.



## RPB100 - RS232/NO MODEM
### Function

The RS232/NO MODEM Personality Board provides RS232 drivers and receivers, terminations and jumper options to interface any simple RS232 device such as CRT terminals, serial printers or any other serial device not requiring an extensive handshake protocol.

This module may be used with either the CPZ, SBC or the CPS, SBSP.
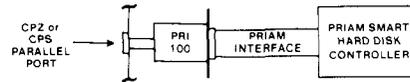




## PRI100 - PRIAM INTELLIGENT HARD DISK
### Function

PRIAM provides two intelligent hard disk interface controllers referred to as "SMART" and the "SMART-E". These are preprogrammed microprocessor based controllers. They may be used for the entire line of PRIAM Winchester disc drives which range in capacity from 10 megabytes to 157 megabytes and come in eight or fourteen inch packaging. Up to four drives in any combination of drive sizes may be interconnected. The controllers support a variety of read sector, write sector and format commands. Data transfers may be either programmed I/O or DMA. The SMART-E has all the features that the SMART has in addition to error detection & correction, logical sector addressing, sector interleaving, parity generation & testing, direct data transfers and a 2 Kbyte data buffer (SMART has a 1 Kbyte buffer). The interface performs the entire function of detailed disc control while presenting to the host a basic and cost effective interface.

The PRI100 Personality Board connects the parallel port of the CPZ, SBCP or the CPS, SBSP to the SMART or SMART-E controllers. Thus, a very powerful disc subsystem may be directly connected to the ICM line of processors via the PRI100.

A jumper option is provided on the PRI100 to configure it for either the SMART or the SMART-E controller. The controllers mount along the drive sides alleviating the need for additional S-100 Bus slots. An adapter, PRI100-1, is provided allowing direct connection of the PRI100 to the smart controllers.
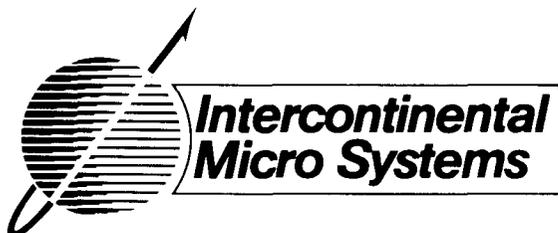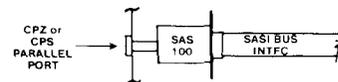


## SAS100 - SHUGART ASSOCIATES SYSTEM INTERFACE
### Function

The Shugart Associates System Interface (SASI) defines a Local I/O Bus which can be operated at data rates up to 1.5 megabytes per second. This bus provides I/O device independence so that disk drives, tape drives, printers and various other peripherals may be interfaced on the same I/O bus without modification to the host CPU's hardware or software. The interface protocol provides for connection of multiple initiators (devices capable of initiating an operation) and multiple targets (devices capable of responding to requests for operations). Arbitration logic is built in and a priority system awards control to the device that wins arbitration.

The SAS100 personality board converts the parallel port of either the CPZ, SBCP or the CPS, SBSP to a SASI I/O bus. Software is provided to emit bus timing in conformance with the SASI specification. The system integrator may interface SASI controllers such as the Data Technology Corporation, Zebec, Sysgen and Iomega line of controllers. Each have powerful attributes such as connecting hard disks with floppies, hard disks with tape streamers, connecting to high performance SMD hard disk drives, and to removeable cartridge disk drives.

The SAS100 personality board is accompanied by an adapter board (SAS100-1). This adapter board converts the SAS100 DB25 connector interface to a 50 pin header connector interface with a pin assignment in exact conformance with the SASI Bus specification. The integrator may connect directly to the SAS100 with a DB25-to-SASI Interface cable or may connect via the SAS100-1 with a 50 pin flat ribbon cable.



**Intercontinental Micro Systems**

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### PERSONALITY BOARDS:
### PERIPHERAL INTERFACE

**ICM'S PERSONALITY BOARDS** offer a very versatile, cost effective technique for peripheral interface. The personality boards mount on the back of your system's mainframe or chassis. Whenever you decide to change peripherals or protocols, all you have to do is change the small, inexpensive personality board - not make expensive and complicated changes to your CPU board. ICM has existing PERSONALITY BOARDS and Software Drivers for most peripherals and protocols on the market today. New PERSONALITY BOARDS are constantly being developed as new peripherals enter the market.

**PERSONALITY BOARDS** are not only cost effective and inexpensive, they also protect the CPZ48000 SBC whenever new or different peripherals are placed on your system. First, since the buffers and drivers necessary to interface to the peripherals are on the personality board and not on the CPZ, there is no need to make costly and complicated cuts or jumpers on the CPZ. Second, any current surges on the communication lines between the CPZ and the peripheral will blow the surge suppressors on the Personality Board and not the CPZ. Thus you only have to replace a small, inexpensive board - not a large, expensive SBC board.

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### PERSONALITY BOARD - RS232/NO MODEM
### Part Number - RPB100
### Function

The RS232/NO MODEM Personality Board provides RS232 drivers and receivers, terminations and jumper options to interface any simple RS232 device such as CRT terminals, serial printers or any other serial device not requiring an extensive handshake protocol.

This module may be used with either the CPZ48000 SBCP or the CPS-MX SBSP.

### PERSONALITY BOARD - RS232/FULL MODEM
### Part Number - MPB100
### Function

The RS232C/FULL MODEM Personality Board provides RS232 drivers/receivers and jumper options to interface asynchronous or synchronous modems with varying types of bit oriented protocols such as IBM Bi-Sync, HDLC or SDLC. Jumpers provided enable the user to configure the board for either asynchronous or synchronous operation.

This module may be used with either the CPZ48000 SBCP or the CPS-MX SBSP.

### PERSONALITY BOARD - RS422 SERIAL COMMUNICATIONS
### Part Number - FFT100
### Function

The FFT100 personality board provides RS422 differential line drivers and receivers. These balanced drivers and receivers can provide serial communications for distances of up to 4000 feet at a communications rate of 100 Kbits/second. This assumes that 24 AWG twisted pair cable is used. Higher rates may be attained for shorter cable lengths. If the CPU's SIO controller is used in synchronous communications mode at its maximum rate of 800 Kbits/second, the maximum cable length recommended is 325 feet. Drivers and receivers are provided for all signals of the SIO to support full handshake protocols.

The FFT100 in combination with the Long Distance Serial Personality Board (LDS100), provides a means of connecting terminals, printers and other RS232 serial devices remotely located from the CPU mainframe. CPU-to-CPU communications may also be set-up over long distances by using the FFT100 at both CPUs. In this case, the interconnecting cable is cross-connected to tie receiver-to-transmitter and transmitter-to-receiver devices. No cross-connection is required between the FFT100 and the LDS100.

Jumper options are provided to minimize the number of cable lines required if no handshaking signals are required as in the case of simple RS232 Terminals where only transmit and receive signals are required.

Ground is also provided but is not used in most cases.

This module may be used with either the CPZ48000 SBCP or the CPS-MX SBSP.

### PERSONALITY BOARD - LONG DISTANCE SERIAL COMMUNICATIONS
### Part Number - LDS100
### Function

The LDS100 personality board provides RS422 differential line drivers and receivers. This SHORT HAUL MODEM can provide serial communications for distances of up to 4000 feet at a communications rate of 100 Kbits/second. This assumes that 24 AWG twisted pair cable is used. Drivers and receivers are provided to support full handshake protocols.

The LDS100 in combination with the RS422 Serial Communications Personality Board (FFT100), provides a means of connecting terminals, printers and other RS232 serial devices remotely located from the CPU mainframe. Jumper options are provided to minimize the number of cable lines connected if no handshaking signals are required as in the case of simple RS232 Terminals where only transmit and receive signals are used. Ground is also provided but is not used in most cases.

AC power must be provided to the board. The board may be strapped for either 115VAC/60HZ or 230VAC/50HZ operation.

### PERSONALITY BOARD - FLOPPY DISK CONTROLLER
### Part Number - FPB100-XY
### Function

The FLOPPY DISK CONTROLLER personality board provides line drivers and receivers, terminators, logic and a jumper option to interface either an 8-inch of a 5¼-inch floppy disk drive with the CPZ48000 SBCP. A DB25 connector is available as the means to interface with the drive interface; however, if other types of commonly used connectors are required, adapters are available to tailor the interface appropriately.

This module is used only on the CPZ48000 SBCP.

### PERSONALITY BOARD - CENTRONICS PRINTER
### Part Number - CPI100
### Function

The Centronics Printer Personality Board provides line drivers, receivers, terminators, jumper options and data strobe generator logic to interface to any printer compatible with the Centronics parallel interface.

This module may be used with either the CPZ48000 SBCP or the CPS-MX SBSP.

## PERSONALITY BOARD - PRIAM INTELLIGENT HARD DISK
**Part Number - PRI100**
**Function**

PRIAM provides two intelligent hard disk interface controllers referred to as the "SMART" and the "SMART-E". These are preprogrammed microprocessor based controllers. They may be used for the entire line of PRIAM Winchester disc drives which range in capacity from 10 megabytes to 157 megabytes and come in eight or fourteen inch packaging. Up to four drives in any combination of drive sizes may be interconnected. The controllers support a variety of read sector, write sector and format commands. Data transfers may be either programmed I/O or DMA. The SMART-E has all the features that the SMART has in addition to error detection & correction, logical sector addressing, sector interleaving, parity generation & testing, direct data transfers and a 2 Kbyte data buffer (SMART has a 1 Kbyte buffer). The interface performs the entire function of detailed disc control while presenting to the host a basic and cost effective interface.

The PRI100 Personality Board connects the parallel port of the CPZ48000 SBCP or the CPS-MX SBSP to the SMART or SMART-E controllers. Thus, a very powerful disc subsystem may be directly connected to the ICM line of processors via the PRI100.

A jumper option is provided on the PRI100 to configure it for either the SMART or the SMART-E controller. The controllers mount along the drive sides alleviating the need for additional S-100 Bus slots. An adapter, PRI100-1, is provided allowing direct connection of the PRI100 to the smart controllers.

## PERSONALITY BOARD - SHUGART ASSOCIATES SYSTEM INTERFACE
**Part Number - SAS100**
**Function**

The Shugart Associates System Interface (SASI) defines a Local I/O Bus which can be operated at data rates up to 1.5 megabytes per second. This bus provides I/O device independence so that disk drives, tape drives, printers and various other peripherals may be interfaced on the same I/O bus without modification to the host CPU's hardware or software. The interface protocol provides for connection of multiple initiators (devices capable of initiating an operation) and multiple targets (devices capable of responding to requests for operations). Arbitration logic is built in and a priority system awards control to the device that wins arbitration.

The SAS100 personality board converts the parallel port of either the CPZ48000 SBCP or the CPS-MX SBSP to a SASI I/O bus. Software is provided to emit bus timing in conformance with the SASI specification. The system integrator may interface SASI controllers such as the Data Technology Corporation, Zebec and Sysgen line of controllers. Each have powerful attributes such as connecting hard disks with floppies, hard disks with tape streamers and connecting to high performance SMD hard disk drives.

The SAS100 personality board is accompanied by an adapter board (SAS100-1). This adapter board converts the SAS100 DB25 connector interface to a 50 pin header connector interface with a pin assignment in exact conformance with the SASI Bus specification. The integrator may connect directly to the SAS100 with a DB25-to-SASI Interface cable or may connect via the SAS100-1 with a 50 pin flat ribbon cable.

## PERSONALITY BOARD - CLOCK/CALENDAR
**Part Number - CCB100**
**Function**

The CCB100 provides a highly accurate real time clock which may be set by the CPZ48000 SBCP or the CPS-MX SBSP under software control. The time of year, month, day, hour, minute and second is maintained and may be read back by the CPU. A Ni-Cad battery is used to provide backup power to the time control chip. In this manner the real time clock is continuously maintained even during extensive down time. This feature is quite useful for point-of-sale systems, inventory systems and other applications where continuous clock monitoring is required. This board is also very useful in operating systems which feature date and time stamping such as TurboDOS. In a TurboDOS based system, this board may be connected to the master (CPZ48000) parallel port or may be connected to any one slave (CPS-MX) parallel port.

## PERSONALITY BOARD - KONAN DAVID JR. INTELLIGENT HARD DISK
**Part Number - KHD100**
**Function**

The KONAN "DAVID JUNIOR" is an ST-506 Seagate compatible hard disk controller which controls a great variety of 5¼ inch hard disk drives. The controller mounts adjacent to the drive thus alleviating the requirement for additional S-100 Bus slots. The controller features 11 bit error detection & correction, automatic bad track mapping, write precompensation, data clock separator, power-on diagnostics, up to two hard disks per controller and other powerful features. Disk compatibilities include:

> Seagate Technology
> Texas Instruments
> Tandon
> BASF
> Olivetti
> Shugart Associates
> Rotating Magnetic Memories
> International Memories Inc.
> Moxor (114 megabyte)
> Atasi (30 milli-second voice-coil)
> Disctron
> Ampex
> Evotek
> Micropolis
> Priam (model 502)

The KHD100 Personality Board connects the parallel port of the CPZ48000 SBCP or the CPS-MX SBSP to the DAVID JR. controller. Thus, a great variety of 5¼ inch drives may be directly connected to the ICM line of processors via the KHD100.

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INTERCONTINENTAL MICRO SYSTEMS CORPORATION