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## **Software User's Guide (Linux)**

# **PMC-BiSerial-VI-ORN1 SDLC & NRZL**

**2 Ports SDLC**

**2 Ports NRZL**

## PMC-BiSerial-Orn1

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Connection of incompatible hardware is likely to cause serious damage.



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## Product Description

The PMC-BiSerial-VI-ORN1 implementation supports 2 ports of SDLC function and 2 ports of NRZL. The card also supports parallel port operation as well as populated with a LM75 temperature sensor.

For a detailed description of the hardware including register definitions, see HW User Manual, ccPMC-BiSerial-VI-ORN1\_HwMan.

## Software Description

The Orn1 driver supports simultaneous full-duplex operation of the four protocol ports (SDLC & NRZL). The frame length for SDLC read/write functions is specified in bytes and must be a multiple of 16 bits. The packet length for NRZL can be specified in bytes or bits. This is configurable via the configuration IOCTL. All ports must be configured prior to issuing any reads or writes.

Although HW supports configuration of all data I/O lines as either register or protocol controlled, software reserves the first 18 bits for SDLC & NRZL. I/O bits 31-18 may be configured for parallel port operation

An IOCTL is provided to read the onboard LM75 temp sensor. The value returned is of type long, units are Celsius. Other IOCTLs are provided to return board parameters, configure ports, and return port statistics. Port transmit/receive counts are always in units of bytes. A PLL ioctl is provided to allow programming or reading current PLL settings. By default, the PLL is programmed upon initial port configuration

## Installation

- 1) Extract tar ball, tar -xvf de\_BiSerOrn1v1\_x\_x.
- 2) cd to de\_BiSerOrn1/build
- 3) Invoke ./build\_all script, this will build driver and applications
- 4) Invoke the ./bnm script, it will create the devices required by the driver and install the driver.

## Sample applications

The sample application, de\_loApp.c (dyn\_io) is provided to demonstrate configuration, and frame/packet transfer operations as well as validating proper I/O operation. de\_ioctlApp.c (dyn\_ioctl) demonstrates the usage of other IOCTLs.



## Invocation parameters

```
./dyn_io port(0-3), r(eader |w(riter), frame_len (bytes/bits), iterations(optional)
```

Ports 0 and 1 are SDLC ports, ports 2 and 3 are NRZL. To test a port, a Dynamic Engineering Loopback fixture must be attached. Ports are externally looped back to themselves. Two instances of the application must be invoked to test a port, a reader and a writer. All invocation parameters must be identical except for the reader parameter. The reader must be invoked first, then the writer in a separate terminal window:

Example testing port 0, frame length = 2048, iterations = 10000

1<sup>st</sup> Terminal (reader):

```
./dyn_io 0 r 2048 10000
```

2<sup>nd</sup> Terminal (writer):

```
./dyn_io 0,w 204810000
```

Application executes until iteration count is reached, terminated by hitting any key (kbhit), or an error is encountered during I/O execution.

The reader validates data received from the writer.

Other IOCTLs maybe invoked/demonstrated by executing de\_ioctlApp.c.

```
./dyn_ioctl
```

Upon invocation, a menu will be displayed of options that can be invoked.

## Warranty and Repair

Please refer to the warranty page on our website for the current warranty offered and options.

<https://www.dyneng.com/warranty.html>

## Service Policy

Before returning a product for repair, verify as well as possible that the suspected unit is at fault. Then call the Customer Service Department for a RETURN MATERIAL AUTHORIZATION (RMA) number. Carefully package the unit, in the original shipping carton if this is available, and ship prepaid and insured with the RMA number clearly written on the outside of the package. Include a return address and the telephone number of a technical contact. For out-of-warranty repairs, a purchase order for repair charges must accompany the return.

Dynamic Engineering will not be responsible for damages due to improper packaging of returned items. For service on Dynamic Engineering Products not purchased directly from Dynamic Engineering contact your reseller. Products returned to Dynamic Engineering for repair by other than the original customer will be treated as out-of-warranty.

list price for that unit. Return transportation and insurance will be billed as part of the repair and is in addition to the minimum charge.

## For Service Contact:

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