

## Proteus 2 Features

*Proteus 2 has a number of interfaces that can be combined as input/output mediums with Proteus Protocol stacks for a complete Communications System. This Technical Specification defines only one element of Proteus that should be read in conjunction with other interface specifications.*

## Proteus and ISDN

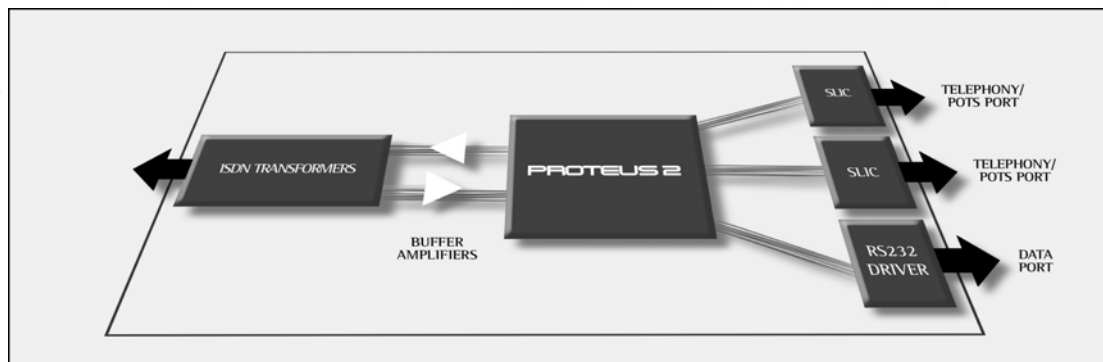
ISDN Basic Rate interfaces are one of the options available on Chiron's Proteus communications processor range. A Proteus processor can support one 'S' interface to an ISDN network and/or one 'T' interface to downstream ISDN devices.

The ISDN interface includes all the low layer functions - Phase Locked Loop, Framers, HDLC drivers, Codec, DTMF tone detector and CLID generator so no external ISDN interface chips are required.

The ISDN interface can carry both voice and data calls from the Proteus Serial Data and POTS/Voice interfaces. Protocol stacks are included for call signalling and for carrying the voice and data traffic.

This gives a 'single chip' implementation for ISDN that is both cost effective and easy to integrate within your own product.

The ISDN interface can be used by itself or with the other communications interfaces available on the Proteus range such as Ethernet or GSM/GPRS.



## Feature Overview

Within a single Integrated Circuit package, Proteus includes all the major functions required for the ISDN interfaces:

- ISDN low level interface including Phase Locked Loop and Framers
- ISDN 'D' Channel HDLC driver
- ISDN 'D' Channel stacks for Layers 1,2 and 3 of the ISDN signalling protocols
- ISDN 'B' channel codecs for voice or 3.1KHz audio calls
- ISDN 'B' channel HDLC drivers for data calls
- ISDN 'B' channel protocol stacks, including V.120, PPP async to sync conversion, full TCP/IP with PAP & CHAP, X.25 and HDLC
- X.25 support over the ISDN 'D' Channel
- Line failure detection
- Line and call status indication LED drivers
- Application Programming Interface for user customisation



## Applications

Proteus ISDN is ideal for converting any existing design of PSTN equipment to ISDN or for new ISDN products, such as:

- Intruder alarm communicators
- Telephones
- Payphones
- Credit card terminals
- Telemetry devices
- Call routers

## Cost Effectiveness

Unlike other solutions for ISDN that require a number of major components, Proteus contains all the major elements for ISDN within a single component, making it particularly cost effective.

By incorporating the full range of functionality into a single device, Proteus is also ideal for designs where PCB area is restricted.

## Ease of Use

The Proteus ISDN interface is very easy to incorporate into product designs and does not require detailed knowledge of ISDN protocols. The user can interface to ISDN using other Proteus interfaces, e.g.:

Data calls: Serial data interface with simple modem 'look and feel'.

Voice/analogue calls: Analogue interface with simple PSTN line 'look and feel'.

## Technical Specification

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| <b>ISDN Interface</b> <ul style="list-style-type: none"><li>• Basic rate 2B+D, Q.921 and Q.931 Euro compliant</li><li>• 'S' bus compatible, point to multipoint and point to point</li><li>• Acts as both ISDN terminal and ISDN network</li><li>• Conformance to European TBR3 attachment requirements</li><li>• Drivers for ISDN activity and line failure indication</li><li>• Special 'Line Snatch' feature for alarm applications</li><li>• Multiple Subscriber Numbering</li></ul> <b>Voice/POTS calls</b> <ul style="list-style-type: none"><li>• G.711 compatible codec with A-law coding</li><li>• DTMF tone recognition</li><li>• Calling number (CLI) validation on incoming calls</li></ul> | <b>Data calls</b> <ul style="list-style-type: none"><li>• HDLC driver included</li><li>• Bit stuffing/unstuffing</li><li>• CRC generation and checking</li><li>• V.120 rate adaption over ISDN 'B' channel (error correcting and non-error correcting modes)</li><li>• PPP asynchronous to synchronous conversion over ISDN 'B' channel</li><li>• Full TCP/IP with PAP and CHAP authentication</li><li>• X.25 rate adaption over the ISDN 'B' channel</li><li>• X.31 dial-up to X.25 networks</li><li>• X.25 over ISDN 'D' channel</li><li>• Configurable packet size and window size</li><li>• Integral X.3/X.29 PAD</li><li>• HDLC over ISDN 'B' channel</li></ul> |
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## Further Information Available

The following further information is available for Proteus with ISDN

- Technical specification (see web site [www.chiron.uk.com](http://www.chiron.uk.com))
- Application Programming Interface Guide
- Reference Circuit Diagram
- Evaluation Board