Voice board CORPORATION

ISDN and LapD Software Protocol Stacks

Product Description

MediaPro Integrated Services Digital Network (ISDN) protocol stack software provides layer 2 Q.921 and layer 3 Q.931 D channel signaling on T1/E1 PRI and BRI network interfaces. MediaPro ISDN is compatible with user side and network side protocol variants on a worldwide basis. Full support is provided for LapD and QSIG.

MediaPro ISDN software runs on a fully programmable HDLC controller available on all Voiceboard T1 and E1 Network Interface cards and Basic Rate Interface cards.

The MediaPro ISDN product is provided as a complete design package, including advanced APIs for simplified applications software programming and in depth technical training.

ISDN Background

ISDN signaling is transported out of band on a separate D channel. Out-of-band signaling allows network switches the option of reviewing data on incoming calls and making routing decisions, including accept/reject, before permitting connections to occur. Consequently, ISDN significantly reduces call setup time over in-band signaling methods, offering significant savings to users and service providers. ISDN also provides a physical isolation between the signaling and voice/data paths that enhances fault-tolerance and reduces the potential for fraud.

MediaPro ISDN Benefits

- D channel signaling may be run on selected DS0 channels of any T1/E1 span or BRI channel via SCSA or H.110 backplane bus switching, providing system design flexibility
- Up to 64 D signaling channels may be run on a single HDLC controller, providing high density and system capacities
- Global protocol variants cover every common switch type in use today
- Full implementation of LAP-D and extended API simplifies application software programming tasks
- Q.SIG supplementary service integrates MediaPro switching with related PBX equipment
- Protocol stack source code may be purchased, allowing system designers to independently customize and maintain their equipment

Product Architecture

MEDIAPRO ISDN has been designed to protect equipment investments against obsolescence as technology changes. The availability of continued feature enhancements and interoperability is assured by issuing updates to the downloadable ISDN software.

MEDIAPRO ISDN is deployed in the form of an embedded solution. In most cases, selection of ISDN switch or service type is accomplished by

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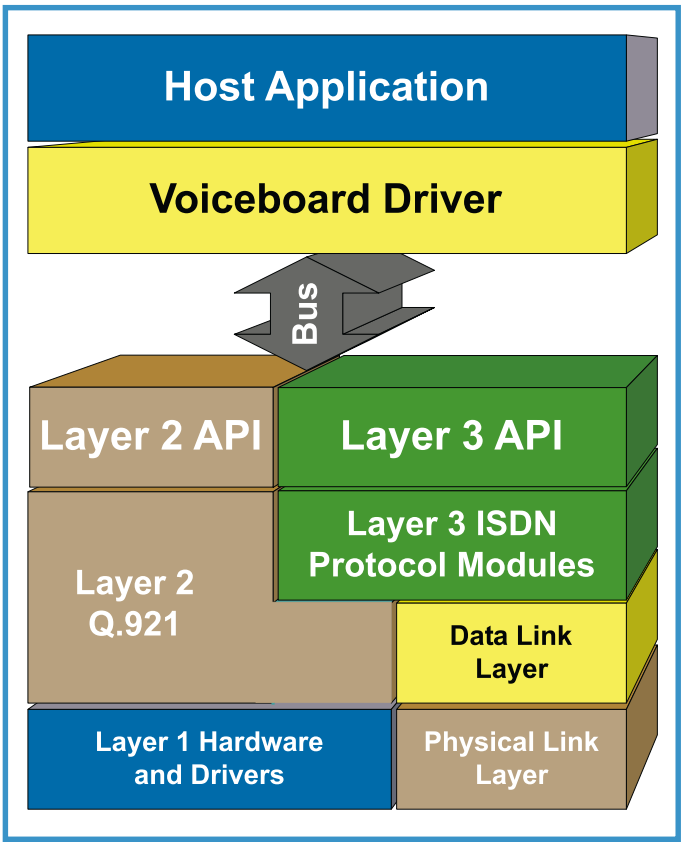


a setup message from the host CPU to the interface card. Some less commonly used variants may require special order firmware.

ISDN Core

The ISDN Core provides comprehensive, modular implementation of Q.921 Layer 2 and Q.931 Layer 3 signaling. To support these layers, Voiceboard provides an API and driver for the specified host operating system. The Data Link Layer as a replacement for Layer 2 is optional, depending on the specific application.

Layer 3 Description

Q.931 Layer 3 ISDN Protocols and Call Control software modules implement the Protocol Control portions of the layer 3 protocols defined in the Q.931 recommendation. The Call Control software module, one of the Layer 3 Protocol Modules, implements B-Channel management and Q.931 message and information element parsing and validation for all switch type variants. Layer 3 provides support of multiple calls on a single logical link, multiple logical links on a single subscriber connection, and multiple subscriber connections under the control of a single ISDN stack.

Layer 2 Description

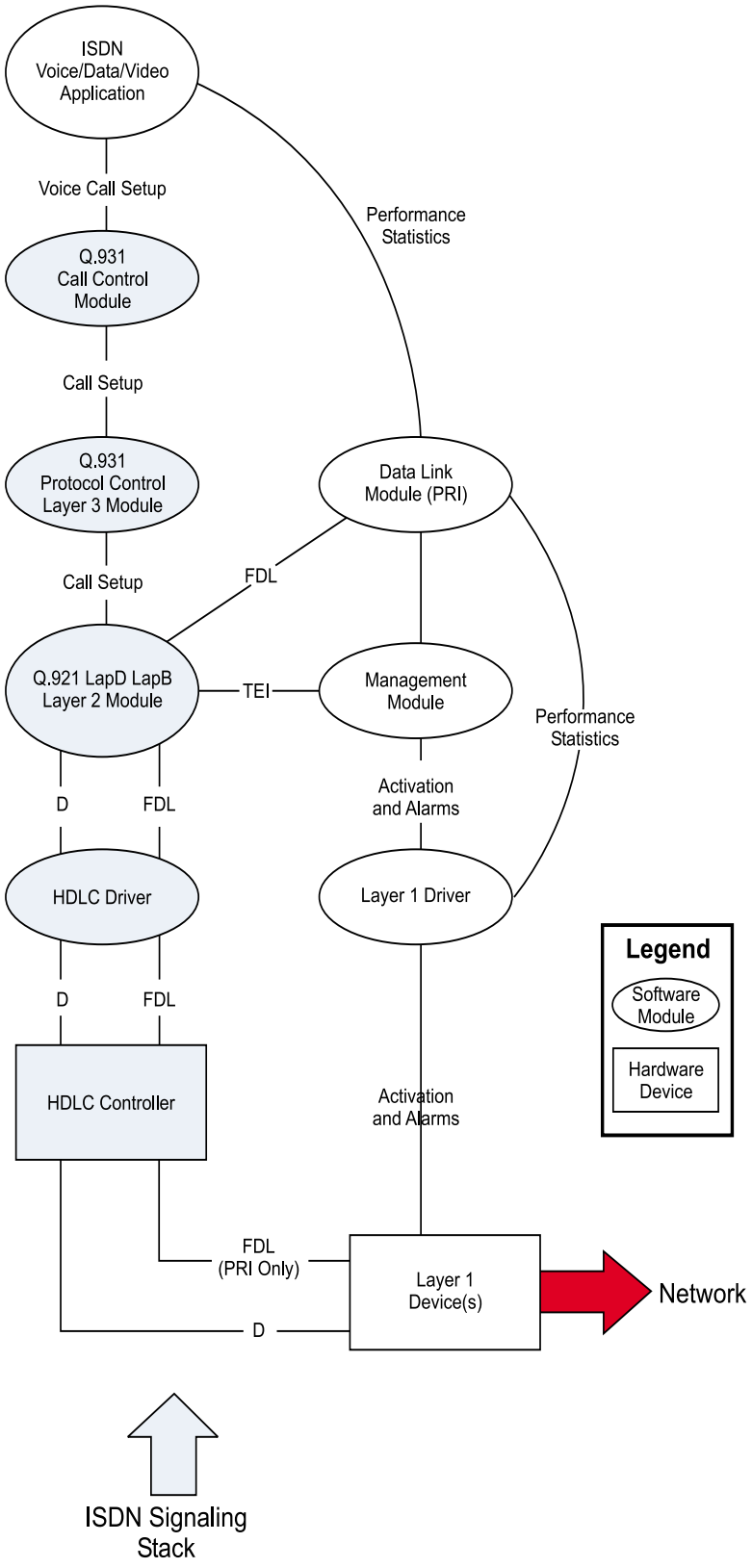
The ISDN Layer 2 software implements Link Access Procedures for D-Channel (LapD) in accordance with recommendation Q.921.

Layer 2 provides error-free in-sequence transmission and multiplexing of D signaling channel messages via the HDLC controller. Layer 2 software supports multiple links running simultaneously over multiple physical Digital Subscriber Loops (DSLs). Both Basic Rate Interface (BRI) and Primary rate Interface (PRI) types of DSLs can be supported simultaneously.

Data Link Layer

The Data Link Layer supplements Layer 2 to provide signaling protocols including LapD, LapF and DL-CORE (a subset of Frame Relay). The MediaPro implementation supports 10-bit DLCI lengths.

ISDN Voice/Data/Video Signaling Application



Ordering Information

List of available Modules

Layer 2 Signaling Protocols

LapB for HDLC Controller
LapD for HDLC Controller

Primary Rate Interfaces and Switch Types (1.544 mb/s T1 and 2.048 mb/s E1)

ISDN PL3U User Side	
ISDN PL3U NAM	Switch Type North American
ISDN PL3U ITR6	Switch Type ITR6
ISDN PL3U Net-5	Switch Type Net-5 (includes QSig)
ISDN PL3U TS014	Switch Type TS014
ISDN PL3U VN3/VN4	Switch Type VN3/VN4
ISDN PL3U NTT	Switch Type NTT
ISDN PL3N Network Side	
ISDN PL3N NAM	Switch Type North American
ISDN PL3N ITR6	Switch Type ITR6
ISDN PL3N Net-5	Switch Type Net-5
ISDN PL3N TS014	Switch Type TS014
ISDN PL3N VN3/VN4	Switch Type VN3/VN4
ISDN PL3N NTT	Switch Type NTT/KDD
ISDN PRI Vari-Bill	4ESS Vari-Bill Service
ISDN PRI ANI-ON-DEMAND	4ESS ANI-on-demand
ISDN PRI D-Ch Backup	NI-2 D-Channel Backup

Basic Rate Interfaces and Switch Types (144 kb/s BRI)

ISDN BL3U User Side	
ISDN BL3U NAM	Switch Type N, American
ISDN BL3U ITR6	Switch Type ITR6
ISDN BL3U Net-5	Switch Type Net-5
ISDN BL3U TS013	Switch Type TS013
ISDN BL3U VN3/VN4	Switch Type VN3/VN4
ISDN BL3U NTT	Switch Type NTT/KDD
ISDN BL3N Network Side	
ISDN BL3N NAM	Switch Type N, American
ISDN BL3N ITR6	Switch Type ITR6
ISDN BL3N Net-5	Switch Type Net-5
ISDN BL3N TS013	Switch Type TS013
ISDN BL3N VN3/VN4	Switch Type VN3/VN4
ISDN BL3N NTT	Switch Type NTT
ISDN BRI SSU NI-1	BRI NI-1 Supplementary Service User Side
ISDN BRI SSU 5ESS	BRI 5ESS Supplementary Service User Side
ISDN BRI SSU Net-3	BRI Net-3 Supplementary Service User Side
ISDN BRI SSN Net-3	BRI Net-3 Supplementary Service Network Side
ISDN BRI QSIG	BRI QSig Including Generic Functionality
ISDN BRI Auto-Detect	BRI Auto SPID & Switch
ISDN BRI Download	BRI parameter Download Support

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