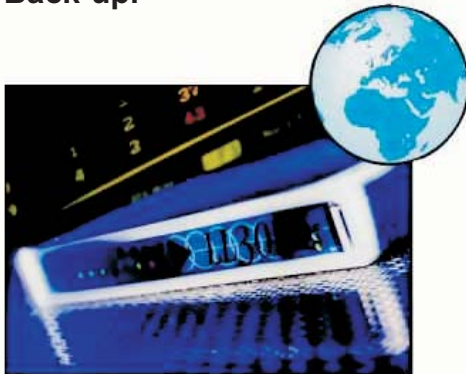


Databand LLN

G.704 Aggregate ISDN Backup Unit

Providing leased line backup for structured G.704 Circuits

- **Support for a G.704 Structured Trunk from the Network.**
- **Compact Desk-Top Unit.**
- **Up to 30 Channels Continually Monitored.**
- **64kbps and N*64kbps Logical Channel Backup.**
- **Fast Dialling of Replacement Capacity.**
- **Integral ISDN PRI Access for Back-up.**
- **Inter-Works with Databand LLB and Mini Back-up Units.**
- **Highly Compact.**
- **Point-to-Point, Triangulated & Meshed Networks.**
- **Dual Power.**
- **Relay Protected**
- **Secure.**
- **Very low Per-Line Back-up Costs.**



Focussed on automatic ISDN back-up for circuits within a structured 2.048Mbps (G.704) aggregated trunk, the Databand LLN and LL30 provide alternate ISDN connectivity for reliable, inexpensive system resilience.

At larger locations many PTTs/carriers will combine multiple remote circuits into a single structured 2.048Mbps trunk. This is achieved at the exchange by aggregating the discrete links from multiple remote locations into a single structured 2.048Mbps trunk.

The Databand LLN and LL30 continually monitor each path within the 2Mbps trunk. Fast and reliable ISDN back-up action is taken when any or all of the channels fail. Service to users are maintained whilst the circuit is repaired.

Inter-working with all other Databand family members provides the range with unequalled flexibility.

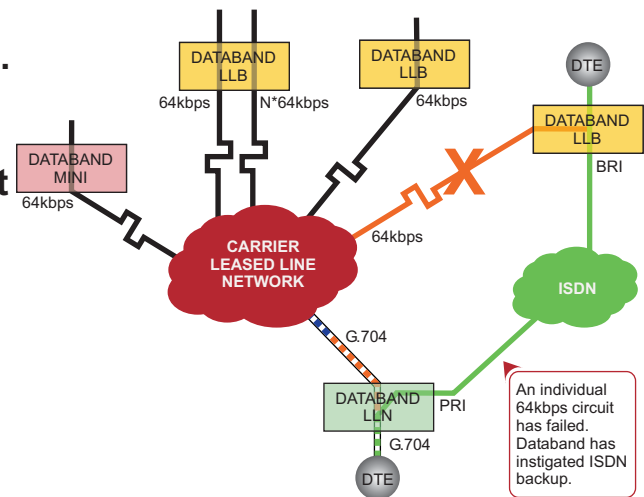
The LLN supplies reliable, low cost back-up for logical channels from 64kbps to 1.920Mbps. whilst the LL30 is tailored for economical backup of 64kbps channels. Other members of the Databand range provide back-up for Leased Lines at speeds of up to 2.048Mbps for the remote site locations.

Various models within the LLx range support different numbers of logical channels and backup. PRI and BRI units are available. Please contact Patapsco for information.

The Databand LL30 provides back-up for up to 30 x 64kbps leased lines presented as channels within a structured 2.048Mbps trunk.

Databand LLN provides back-up at speeds from 64kbps to 1.920 Mbps.

ISDN capacity is automatically dialled as a temporary replacement when one or more circuits fail.



Why choose Databand LLx?

Providing multiple circuits at a central site using separate 64kbps lines is expensive and difficult to manage. The large number of DTE ports required, space, cabling and management issues can be greatly reduced and simplified by using a single interface and cable containing multiple logical circuits.

Back-up of "normal" X.21/V.35 lines at central sites can require a number of units equipped with multiple BRI ISDN access or a chassis with multiple cards. The Databand LLN and LL30 reduce costs and complexity in many areas, particularly DTE port costs. They provide a very cost-effective central-site back-up solution and in conjunction with the Databand LLB and Databand Mini units at remote sites, offer *the* most flexible, secure and manageable system available.

Furthermore, network investments in the Databand family are protected due to the in-built modularity and flexibility, allowing growth and speed changes to match user requirements.

How does the LLx detect a leased line has failed?

The Databand LLN and LL30 continually monitor the 2.048Mbps trunk for AIS and each 64kbps circuit for loss of data. Line failure / recovery criteria, timers, back-up windows and ISDN test periods are some of the many user-configurable parameters. Once a circuit has been classified as failed, the Databand will immediately dial replacement ISDN capacity to the remote Databand unit(s). [Alternatively the remote units can dial the LLx.]
The failed leased line is continually checked for full duplex recovery. Switch-back from ISDN to the primary route may be initiated manually or automatically using user configurable timers to ensure the link is reliable.

How will I know that the leased line has failed?

A sophisticated Network Management System, the Databand DbMgr, identifies any problems on links or units graphically within a network map window, and in an 'Outstanding Event' window. Historical events are also logged and made available for performance analysis software. In addition the Databand front panel displays the unit's status; an alarm relay is activated and remote LLB units report alarms via a short ISDN call.
The Databand LLN and LL30 can be configured to require manual acknowledgement of a back-up action. Unless the acknowledgement is made within a user-set period, the Databand clears the dialled ISDN calls, irrespective of the state of the leased line. The LLN and LL30 provide back-up capacity so quickly that the trunk failure may go unnoticed this facility provides an immediate indication that a leased line has failed and protection against "surprise" ISDN bills.

What systems are suitable for use with the Databand LLN?

Any device that supports a G.704 interface can be safeguarded.

What can I use for the smaller remote sites?

The Databand LLN inter-works with the Databand LLB operating at speeds between 64kbps to 1.920Mbps or the Databand Mini at 64 to 1.920Mbps. The LLB units support one or two leased lines using BRI and/or PRI ISDN for back-up (see separate Product Guide which should be read in conjunction with this document).
The Databand LL30 inter-works with the 64kbps LLB or the 64kbps Databand Mini.
All LLB models are remotely configurable, down-line-loadable, and are specifically designed as a remote "feeder" product to both the Databand LLN, the LL30 and the Databand 120 hub (see separate Product Guide).
The Databand LLB units are upgradeable and back-up leased lines at speeds to a full 2Mbps on a point-to-point basis, or with the Databand 120 hub system.

How do I manage and install Databand LLN?

The whole Databand range is very simple to install and manage. The units are configured and controlled via an intuitive PC-based Network Management System (DbMgr).
Databand DbMgr provides an intuitive graphical user interface via which all units are configured. There are no complex menus or commands to learn and configuration is achieved by simply ticking options and entering the required values for the user configurable timers.
Databand DbMgr also provides a very easy to use fault management system showing the status of all links and nodes, colour coded within a network map structure. Text windows show a historical alarm log and an outstanding event window so that the status of the entire network can be seen at a glance.

What about security?

Incoming calls can be screened by a variety of methods, such as DDI, CLI and a user-programmable password.
There is also the ability to take advantage of a very secure system which uses a unique factory-set code which is specific to one Databand LLN or LLB hardware unit.

Technical Details & Functionality

Overview

- LLN supports up to 30 channels and individual channel speeds to 1.920Mbps (30 timeslots) within a structured G.704 2.048Mbps trunk.
- LL30 supports up to 30 64kbps channels.
- The leased line port presents an RJ45 socket suitable for a structured balanced 120 Ohm 2.048Mbps line from the carrier (conversions to unbalanced 75 Ohm BNC available).
- The DTE/application port presents an RJ45 socket suitable for a structured balanced 120 Ohm 2.048Mbps circuit (conversions to unbalanced 75 Ohm BNC available).
- The integral ISDN PRI interface presents an RJ45 socket supporting NET5/Q931 (other country-specific protocols are available).
- The local management/GUI port presents an RJ11 socket (both local and remote Alarms and Events are routed via this port).
- Dimensions: 290mm wide, 199mm deep and 41mm high.
- Various models supporting different numbers of channels are available.

Power

- An external unit provides power.
- For added resilience there is the option of a second supply.

Phone +44 (0) 1428 752900
Fax +44 (0) 1428 752901
Web Site www.patapsco.co.uk
Email info@patapsco.co.uk

Patapsco Communications
The Passfield Oak
Passfield
Near Liphook
Hampshire
GU30 7RL
England

Leased Line Failure

- Continually monitors each element of the structured leased line for loss of data, and timeslot 0 for AIS. Configuration parameters enable users to define the out-of-service criteria.
- All Databand LLN, LL30 and LLB units monitor loss of transitions from the application and will inhibit back-up action should the application fail (without this facility the remote unit would detect a loss of transitions and initiate ISDN dialling even though the leased line has not failed).
- Half duplex failures and recoveries of the circuit will be detected.
- Dialling is fully automatic when a leased line fails, and can be performed from either end of the circuit. Should the primary back-up destination be unavailable an alternative location can be automatically dialled.
- ISDN dialled circuit(s) will be inserted in the same timeslot/s as the failed channel(s) within the structured circuit to the DTE/application.
- Once back-up action has been taken the two Databand units attempt to communicate over the failed leased line. When the circuit has recovered for a user-set period, data is switched back and the ISDN calls cleared.
- Back-up time windows are configurable.
- Scheduled test dialling between locations can be pre-programmed to occur at suitable intervals, ensuring the Databand units and ISDN circuits are periodically checked. This self-test, which occurs without affecting leased line operation, provides valuable added security to overall system resilience.
- All Databand models automatically handle all aspects of the leased line failure, including ISDN call dialling, ISDN management and monitoring of the circuits, leased line recovery and switch-back.
- The system is fully independent of, and transparent to, user data.

Security

- Incoming calls can be screened using CLI, DDI and a password. Calls for management purposes are also password protected.
- Enhanced security is available using a unique factory-set identifier. This means calls will only be accepted from authorised Databand units.

Management

- A clear easy-to-follow intuitive Graphical User Interface (GUI) with help files.
- SNMP is available as an upgrade contact Patapsco for information.
- The DbMgr allows configuration of the local unit and access to remote devices via an ISDN call.
- Databand LLN and Databand LLB can be configured to dial remote systems to report critical alarms.
- Software down-line loadable.
- All configuration and events are held in NV memory.