

LINK  
INTEGRATED  
CONNECTIVITY  
SYSTEM

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*Advanced Bandwidth  
Management for  
Efficiency and Versatility*



**TimePlex Group**  
*Networking Your World*



**LINK/2+**™ Integrated Connectivity System

# LINK+ ICS

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Integration of voice, data, and  
image transmission

Support for fractional T-1/E-1  
and channelized services

Extensive I/O functionality

Low bit rate, high quality voice  
compression with G-3 fax support

Extensive subrate data  
multiplexing support

Asymmetrical and Simplex operation  
to enhance satellite operation

International Gateway interface  
for connecting North American  
and CCITT networks

Advanced Bandwidth Management  
capabilities

Unified Network Management  
with TIME/VIEW™ 2000

Fully Year 2000 Compliant



*The LINK Integrated Connectivity Systems are the most full-featured, high-performance networking products available.*

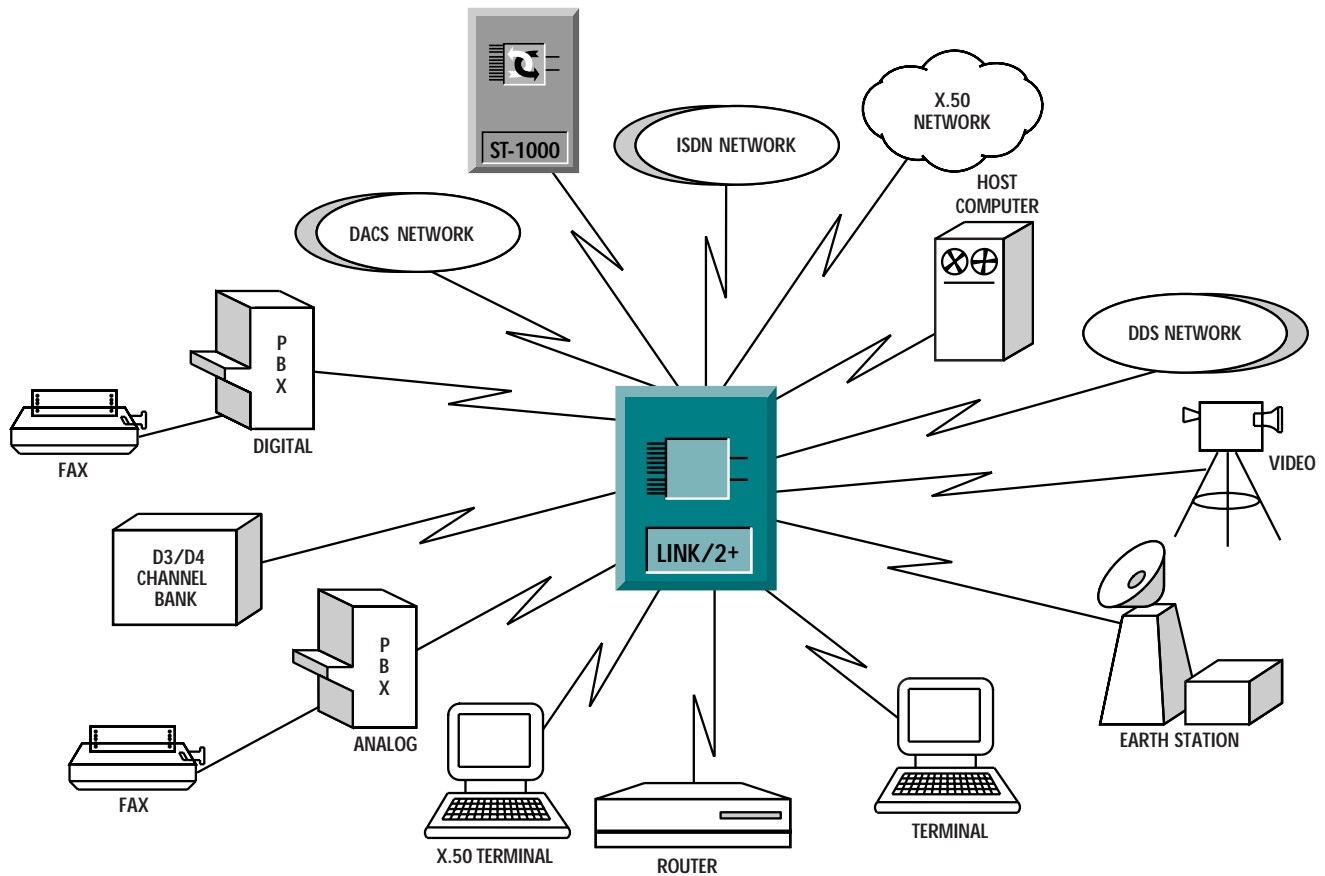
### Overview

In both private and hybrid networking applications, LINK Systems form powerful digital networks characterized by bandwidth efficiency, integrated communications, robust redundancy and resident network management capabilities.

The highly reliable design of a LINK Family System ensures minimal interruption of critical communication functions. Fully redundant system control elements are available on all LINK models. After a communications facility failure, automatic alternate routing reconnects critical circuits according to user identified priorities.

LINK Systems form the basis for powerful and efficient private and hybrid public networks. In private networks, LINK components use an optimized protocol that integrates network traffic and provides an error protected channel for control and supervisory information.

In hybrid public networks, LINK Systems also connect to public facilities using standard D4/G.732/TTC formatting to take advantage of the full voice and data services offered by carriers and service providers worldwide. Hybrid public network users enjoy convenient and transparent access to fractional T-1/E-1/NTT and switched 56 kbps, and other carrier based services.



**Figure 1**  
Displays the broad range of possible input devices and forms of connectivity available with the LINK Integrated Connectivity System.

**LINK+ ICS Family:**

The LINK+ Integrated Connectivity System (ICS) is the most full-featured, high-performance TDM networking product available.

The LINK+ Family includes:

- > **LINK/2+<sup>®</sup>** for large network nodes with heavy I/O requirements
- > **miniLINK/2+<sup>™</sup>** for smaller, stand-alone networks and a wide range of secondary and feeder connections

- > **microLINK/2+<sup>™</sup>** for cost-effective extensions of backbone networks
- > **entreeLINK** for table top implementations in office environment
- > **LINK/100+<sup>™</sup>** to provide large network connectivity



## Advanced Features Supported by LINK ICS Family Members

Some of the advanced features supported by all of the LINK+ Integrated Connectivity System family members are:

### Transmission Integration

LINK Systems deliver full integration for a total range of voice, data, and image transmission over T-1/E-1/NTT or lower speed serial facilities. Fractional T-1/E-1/NTT services, are also supported. LINK Family offer full automatic alternate routing, advanced bandwidth management, and other critical network capabilities through an embedded ARQ control channel.

### Soft Load Capability

Code and databases are soft loadable from an attached PC and held in nonvolatile memory making them immune to memory loss in the event of a power outage and easy to upgrade and maintain.

## Redundancy

Redundancy of the network control module, interlink modules, and power supplies is available as an option for all LINK+ family products.

Since LINK/100+ is a central hubbing device that can broadly affect all network operation, its redundancy includes its buses and the bypassing and interfacing functions as well.

## Network Management

First level network management support is provided in the resident intelligence of LINK Systems via an integral Supervisory Port. The Supervisory Port features node level password protection for network security.

Comprehensive, second level network management is provided by the TIME/VIEW 2000 Network Management System. This system provides unified network management on a single platform for the LINK+ family.

## International Gateway Capability

LINK Systems provide full international gateway capability to interconnect North American and (CCITT) networks. The LINK Family supports D4, D5, ESF, G.704, or NTT (Japan) compatible framing patterns, over DS-1 or E-1 communications facilities.



### Advanced Bandwidth Management

LINK Systems offer advanced bandwidth management functions that give network administrators added tools to optimize the use of network resources.

#### *LINK+ family supports:*

#### **Contention Channel Operation**

Bandwidth pooling to reserve idle voice channels for use by critical applications (Video Conferencing).

#### **Channel Bumping of Low Priority Circuits**

Grooming to reestablish channel connections over optimum paths.

#### **Selective Routing**

Selective routing to meet special criteria for sensitive channels, eg. satellite avoidance.

#### **Diverse Routing**

Ensures that channels traverse separate paths between end points.

### Asymmetrical and Simplex Operation

LINK Systems support both asymmetrical and simplex I/O channels or network facility operations. This enables applications with different transmit and receive speeds (asymmetrical), and transmit only or receive only (simplex) information utilizing the LINK System. This capability can provide significant cost savings on facilities where bandwidth may be purchased separately in each direction, such as satellite circuits.

### Requirements Common to LINK+ ICS Family

#### **Operation**

- Microprocessor-based synchronous, time-division, character-interleaved multiplexer

#### **Environmental Requirements**

- Ambient operating temperature from 0° to 45° C
- Relative humidity from 20% to 95% (noncondensing)
- Altitude to 10,000 ft (3048 m)

#### **TimePlex Group Forum Membership**

- IPNSS
- ATM Forum
- Frame Relay Forum



# [ LINK/2+, miniLINK/2+ & microLINK/2+ ]

## LINK/2+, miniLINK/2+, microLINK/2+ OVERVIEW

The LINK/2+, miniLINK/2+, and microLINK/2+ use a modular design and software downloading for flexibility and high reliability. All three use the same modules and support the same features and functionality. The Network Control Module (NCL) oversees the operation of the entire system and also interfaces to the network management system. The Interlink Module (ILC) controls distributed communications on digital inter-machine links between LINK/2+ Systems at speeds from 4.8 kbps to 2.048 Mbps.

**LINK/2+** can be configured as one, two or three nests, each having the capacity to hold 18 modules. The first nest houses the NCLs and the ILCs with the remaining slots and nests available to house the various other modules. The NCL, ILCs, and power supplies are available with 1:1 redundancy. LINK/2+ optionally offers the ability to be powered from +48VDC.

**miniLINK/2+** has a single nest with the capacity to hold up to 13 modules. The NCL, ILC, and power supply are available with 1:1 redundancy.

**microLINK/2+** has a single nest with the capacity to hold up to 6 modules. The NCL, ILC and power supply are available with 1:1 redundancy.

## FEATURES

### Modules That Broaden Capabilities:

#### **SYNCHRONY LINK Gateway Module (LGM)**

Provides a convenient and inexpensive way to add VBR (Variable Bit Rate) packet services such as Frame Relay and HDLC transport to the proven CBR (Constant Bit Rate) services that the LINK Family has always provided.

This module provides transport to and from SYNCHRONY nodes and between LINK/2+ nodes via a SYNCHRONY node. Thus, LGM makes it possible to integrate LINK and SYNCHRONY into one unified network, extending the capability of the LINK products.

**Integrated Trunk Module (ILQ)** Integrates both public and private network facilities on a single interface for ISDN PRI support. The ILQ supports public framing for up to 31 DS-0s over T-1/E-1 or NTT facilities. It also supports up to 24 proprietary bundles of mixed speeds as well as 64 kbps PCM.

**D-Channel Module (DCM)** Provides North American and CEPT ISDN signaling, enabling the ILQ to support standard 23B+D and 30B+D PRI interfaces.



## [ LINK/2+, miniLINK/2+ & microLINK/2+ ]

### **Digital Voice Processor Module (ILP)**

Provides voice trunk connections to digital PBXs meeting U.S., European, and Japanese standards and to other D4 or G.732 formatted transmission facilities. The ILP Module can be programmed for PCM (A- or  $\mu$ -law) to AD PCM (G.721 or ANSI) conversion of voice channels. Conversion can be selective or in ranges. The ILP, in conjunction with the LINK Framing Modules (LFM .10, .11, .12), that provide N x 64 kbps or N x 56 kbps bundled output over a T-1 facility, enable low-cost access to fractional T-1 service.

### **Extensive I/O Functionality Offered**

The wide range of I/O supported by the LINK System ensures more efficient, cost-effective, and flexible TDM networks.

### **Voice Modules:**

#### **Secure Voice Server (VSM.5) Module**

Operates in either Clear Mode or in a STU-III Secure Mode for military operations. In the Clear Mode it compresses a 64 kbps PCM channel to either 4.8 or 9.6 kbps using VCELP compression, with or without echo cancellation. In the STU-III Secure Mode it transports encrypted secure voice and data at rates of 2, 4, 4.8 or 9.6 kbps. In either mode it supports 12 channels per module.

**Voice Server (VSM.3) Modules** Supports 8 or 16 channels of PCM from an ILP and QVM. Channels can be compressed individually to 16 kbps, 8 kbps (CELP) or 5.33 kbps (CELP). Operation supports in-band signaling and integrated echo cancellation to 32 msec and supports fax traffic on compressed channels.

**Enhanced Voice Module (EVM)** Provides four analog voice ports with compression to 5.33 kbps. Three interface options support 2- or 4-wire E&M, loop-start or ground-start applications.

**FXS.1/FXO.1 Modules** Provide Off-Premise Extension (OPX) and Auto-Ringdown (ARD) Application support at 64 kbps.

**FXS.3/FXO.3 Modules** Support compression at 5.33 kbps and 8 kbps using CELP voice compression. The FXS/FXO modules support 4 loop-start ports and 4 ports per module. The FXO supports compression at 5.33 kbps and 8 kbps using CELP voice compression.

**Quad Voice (QVM) Module** This 4-port module provides PCM, ADPCM, CVSD, or proprietary 16 kbps digital encoding of analog tie trunks. QVM Modules, using PCM or ADPCM, can digitally cross connect to other QVM Modules or to ILP Modules with compression to provide voice channel connectivity throughout a complex network.

Voice channels compressed to 8 kbps through the EVM and VSM Modules use in-band signaling for maximum bandwidth efficiency. The modules include integral echo cancellation programmable on a per channel basis.



## [ LINK/2+, miniLINK/2+ & microLINK/2+ ]

### Integrated Fax Support

Fax transmission is supported by LINK Systems on compressed voice channels. Channels compressed to 16 kbps can support fax transmission speeds up to 14.4 kbps while channels compressed to 6 kbps can support fax speeds up to 4.8 kbps.

### Data Modules:

#### Quad Synchronous Processor (QSP) Module

Interfaces up to four independently programmable synchronous data channels at speeds to 1.984 Mbps. The QSP Module also provides T-1 access to switched 56 kbps Digital Data System (DDS) service. The QSP Module supports the use of IBM LPDA-1 diagnostics. The multipoint functionality of the QSP Module is also useful for host-based polling of remote devices. An enhanced version of the QSP (QSP.1x) Module is able to generate all  $N \times 64$  kbps and  $N \times 56$  kbps clock frequencies where  $N=1$  to 24 (64k) or 1 to 28 (56k). The QSP.1x modules are 4 port synchronous channel interface cards which support the current range of QSC, QSP, and DSC data rates as well as broadcast polling, Accunet Switch-56 and LPDA-1.

The following versions are available:

- > QSP.12 (RS422)
- > QSP.14 (V.35)
- > QSP.18 (RS422IV.35)

#### Subrate Channel Processor (SCP) Module

Can multiplex up to five subrate channels (2.4, 4.8, and 9.6 kbps) into a single 64 kbps logical DS-0 channel for accessing carrier based digital data services. The SCP Module performs the functions of Office Channel Units (OCUs) and Subrate Data Multiplexers in a DDS environment.

#### Isochronous Communications (ICM) Module

Meets the needs of applications where I/O must be clocked independently of the network. Channel speeds up to 1.544 Mbps are supported. With the Frequency Discrimination feature, the ICM Module can detect changes in clock rate and adjust the channel speed in the LINK network to match.

This feature is used to transport telemetry data.

### KG Resync

As a convenience for high security systems all LINK+ family members provide support for a KG resync output to synchronize data encryption devices.

#### Optional 48 VDC Power Supply Module for miniLINK/2+

- > Physical Configuration: Rack mounted only in power supply chassis
- > Weight 11 lbs (5 kg)
- > DC Power Requirements: -48 VDC at 22 A
- > Power Consumption: 1,000 watts maximum

#### Database Memory Protection

Battery backup maintains database for 10 years.



#### entréeLINK+ OVERVIEW:

- > Support for up to four intermachine links with maximum bandwidth of 4.096 Mbps
- > Up to 44 I/O ports with extensive I/O functionality
- > Voice compression to 6, 8 or 16 Kbps
- > Redundant AC or DC power supplies
- > Fax support
- > Compatible with **SYNCHRONY** Products

All entréeLINK+ Systems are compatible with the entire LINK+ ICS family of networking products including:

- > LINK/2+ Systems
- > miniLINK/2+ Systems
- > microLINK/2+ Systems
- > LINK/100+ Systems

entréeLINK+ offers the ability to serve a large network with full gateway capabilities and inter-machine link speeds from 4.8 kbps to 2.048 Mbps and still provide outstanding flexibility to connect multiple sites with widely varying requirements throughout the world, at a very attractive price.

In private networks, entréeLINK+ Systems use the same optimized protocol as LINK/2+, miniLINK/2+, and microLINK/2+ to integrate network traffic and provide an error protected channel for control and supervisory information. The entréeLINK+ System also connects across public networks using standard D4 or D5 framing for more flexible access to common facilities.

The entréeLINK+ System design ensures minimal interruption of critical communication functions. After a communications facility failure, automatic alternate routing reconnects critical circuits according to programmable priorities.

#### System Description

The entréeLINK+ design offers flexibility and reliability. An embedded Network Control Module (el/NCL) oversees the operation of the entire system and interfaces to a supervisory terminal for management functions. The el/NCL also controls automatic rerouting in the event of facility failures.

Input/output, bypass, and intermachine link modules guide the flow of information through the system.



### Transmission Integration

The entréeLINK+ System delivers full integration for a total range of voice, data, and image transmission over T-1/E-1 or lower speed facilities. Multiple DDS lines are also supported. The entréeLINK+ System offers fully automatic alternate routing and other management capabilities through an embedded ARQ control channel.

An embedded Interlink Module (el/ILC) plus additional plug-in el/ILCs control distributed communications on digital intermachine links among entréeLINK+ and LINK Systems at speeds from 4.8 kbps to 2.048 Mbps. The Bypass Module (el/BPM) provides software controlled digital cross connections for over 250 voice / data / image channels. The Channel Service Unit Module (el/CSU) provides D4 or D5 framing for el/ILCs over North American T-1 facilities. The Digital Termination Module (el/DTU) provides a G.703 interface to unframed CCITT E-1 communications facilities.

### Extensive I/O Functionality

The wide range of I/O supported by the entréeLINK+ System ensures more efficient, cost-effective, and flexible access to digital networks.

### Voice modules:

#### entréeLINK+ Enhanced Voice (el/EVM.1, .2, .3)

**Module** Provides four analog voice ports with E & M interface for conversion to standard PCM encoding. The el/EVM.2 module also offers proprietary digital voice compression to 8 or 16 kbps, echo cancellation up to 64 msec, and fax support for any single channel. In addition to PCM encoding and 16 kbps compression, the el/EVM.3 module provides CELP voice compression to 6 or 8 kbps with fax support on all four channels.

#### Foreign Exchange Station (el/FXS.1, .2, .3)

**Module** Supports standard PCM encoding for four analog voice ports with 2-wire loop start or ground start interface. The el/FXS.2 module also offers proprietary compression to 8 or 16 kbps, echo cancellation up to 64 msec, and fax support for any single channel. In addition to PCM encoding and 16 kbps compression, the el/FXS.3 provides CELP voice compression to 6 or 8 kbps with fax support on all four channels.

Compressed voice channels use in-band signaling for maximum bandwidth efficiency.

### Data Modules:

#### Quad Synchronous Processor (el/QSP)

Module interfaces up to four independently programmable synchronous data channels at speeds to 1.984 Mbps. The el/QSP also supports host-based polling on a per-module basis.

#### Quad Asynchronous (el/QAM) Module

Interfaces up to four independently programmable asynchronous data channels at speeds from 45.5 bps to 19.2 kbps.



#### LINK/100+ Overview:

- > Support for more than 4990 data/voice/image channels
- > Superior reliability and system uptime
- > System redundancy with automatic fallback on modules, buses, and power supply
- > Provide tandem switching in large link based networks

The LINK/100+'s centralized switching function allows increased performance and simplified network configuration in LINK+ ICS solutions.

LINK/100+ Systems can be configured in a number of topologies, including star, ring or mesh. This flexibility permits the LINK/100+ ICS to address a wide range of customer requirements, including increased capacity, reduced tariff costs, disaster recovery, and local and wide area network integration.

#### Applications

Figure 2 shows the LINK/100+ System in a hierarchical or hub configuration and illustrates LINK/100+ System compatibility with other LINK Family solutions. The LINK/100+ System in this configuration is a central resource manager, allowing ease of network control and the ability to concentrate data processing facilities where needed. The large number of network tracks supported by the LINK/100+ System allows multiple links to areas with especially heavy traffic and frees up LINK/2+ slots in other LINK Products for increased I/O capacity.

In Figure 2, routing is controlled by the LINK/100+ System, thereby reducing network complexity and minimizing path delay. Redundant lines can be set up to increase reliability and to ensure the continuity of communications

via alternate routes without additional path delays. A simplified topology also reduces the work of network planning and expansion.

#### System Description

The LINK/100+ System enables users to create powerful and efficient T-1/E-1 networks that can adapt to changing needs and grow to very large configurations while maintaining a relatively small site footprint.

#### Single and Dual Mainframe Systems

The LINK/100+ System is available in either single or dual configurations. A self-contained chassis and one or two power supplies make up the Single Mainframe System. It is mounted in a LINK/100+ cabinet.

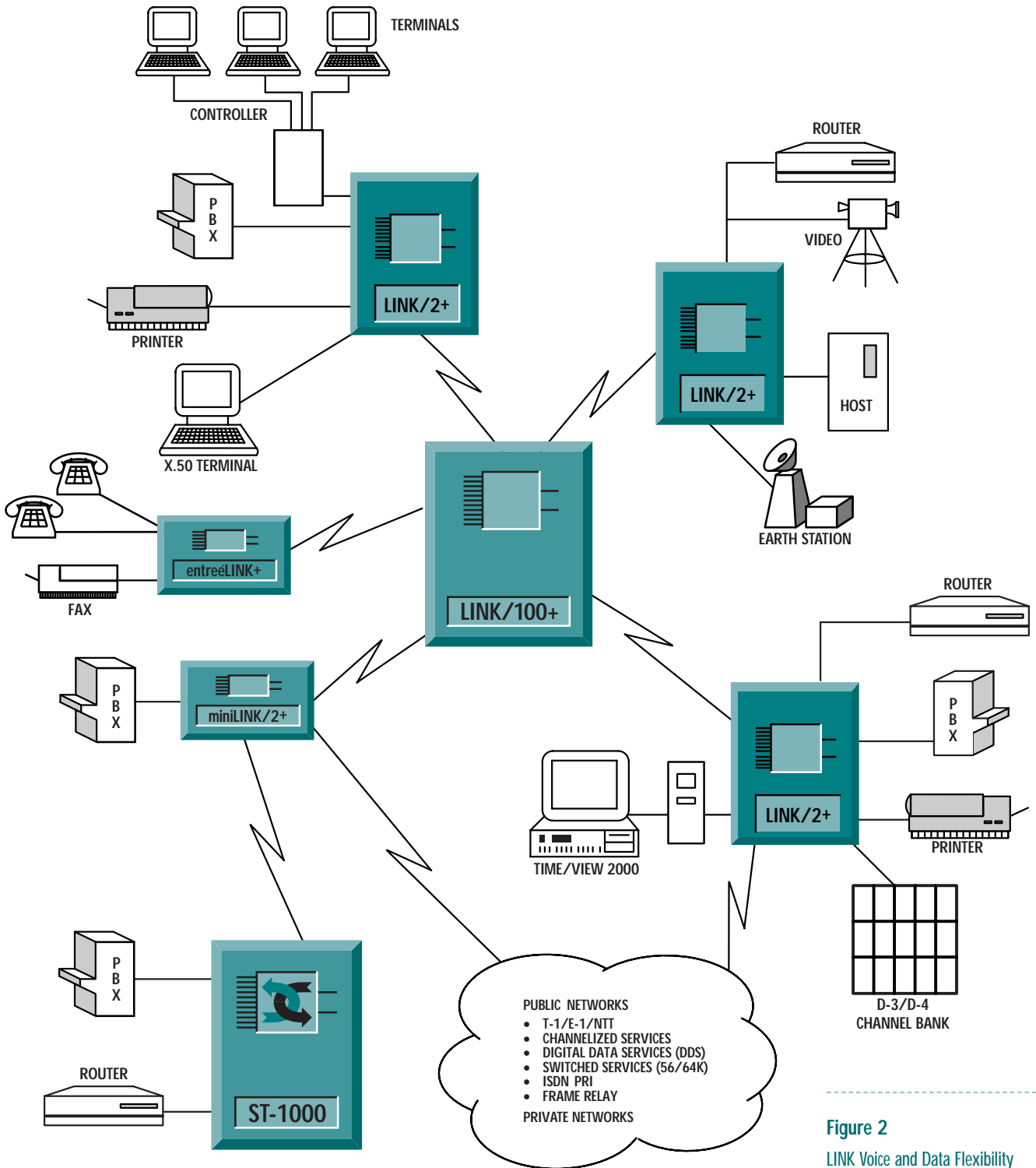
#### Link Capacity

Intermachine links from other LINK+ family members to the LINK/100+ ICS support a variety of proprietary formats and public framed facilities in both terrestrial and satellite applications. The Dual Mainframe System accepts up to 48 links at speeds from 32 kbps to 2.048 Mbps. The Single Mainframe System accepts up to 28 links.

#### Channel Capacity

The LINK/100+ System acts as a powerful hubbing device for wide area networks. Working with the other LINK Family Products, it switches more than 4990 data/voice/image channels including:

- > Direct analog and digital voice channels with compression
- > Synchronous, asynchronous, and isochronous data channels



**Figure 2**  
LINK Voice and Data Flexibility



## Modules

### **Control and Clock (CCM) Module**

Provides system control and clocking with 1:1 redundancy. It maintains operating system and parameters in nonvolatile storage.

### **Dual Link Control (DLC) Module**

Terminates two intermachine links. Up to 14 in a nest with 1: n redundancy.

### **Single Nest Driver (SND) Module**

Provides network bypass for more than 4990 channels and internal routing for channels connected through both Mainframes and Dual Mainframes. There can be from 1 to 4 SNDs in a node (optional 1:1 redundancy).

### **Dual Link Interface (DLI) Module**

Provides a single physical interface between the DLC Module and attached ILCs. System allows 1 redundant or 2 per non-redundant DLC Module. These are available with DSX-1, RS422, CCITT G.703, V.35 or KG Resync interfaces.

### **System Interface (SIM) Module**

Provides interface to the LINK/100+ Supervisory console, station clock, and alarm relays. One is required per mainframe and a second can be added for redundancy.

### **Interrest Interface (INI) Module**

Provides the physical interface to the 125 Mbps coaxial connection between the two mainframes of a Dual Mainframe system. One is required per Dual Mainframe and a second can be added for redundancy.

### **Redundant Slot Adapter (RSA) Module**

Provides redundancy for the DLC Module by routing traffic to the 1:n redundant DLC Module. One is required if DLCs are to be redundant.

### **Power Supply (PS/L100) Module**

Provides DC power to the Mainframe. The system can have one per mainframe and an additional one which is 1:n redundant.

## Operation

Multiprocessor-based, synchronous, time-division switching system.

## Database Protection

Rechargeable batteries maintain the user-programmed database in memory for approximately 45 days (between 0° and 60° C) without AC power. Batteries will automatically recharge during 14 hours of normal operation. The database may also be backed up to disk via the Supervisory Console.

## Supervisory Control

Nodal control is provided by an external Supervisory Console supplied by TimePlex Group. Full network management is provided through connection to the TIME/VIEW 2000 Network Management System.

## LINK/2+

### Module Slots

Up to 54

### Physical Configurations

Rack mounted only

### Size\*

Mainframe: 13.125 in. (33.3 cm) high by 19 in. (48 cm) wide by 20.25 in. (51.6 cm) deep; LTS Chassis: 13.125 in. (33.3 cm) high by 19 in. (48 cm) wide by 17.5 in. (44.8 cm) deep; Fan Housing: 5.25 in. (13.3 cm) high by 19 in. (48 cm) wide by 20.25 in. (51.6 cm) deep; Power Supply Chassis: 7 in. (17.8 cm) high by 19 in. (48 cm) wide by 20.25 in. (51.6 cm) deep

### Weight

Mainframe or LTS Chassis (without internal power supplies or modules): 24.5 lb. (11.1 kg); Typical Module: 2.5 lb. (1.1 kg); Fan Housing: 10 lb. (4.5 kg); Power Supply Chassis: 16.6 lb. (7.5 kg); Power Supply Module: 18.5 lb. (8.4 kg)

### AC Power Requirements

Each Mainframe: 100 ±10VAC at 12A, 115 ±10VAC at 12A, 200 ±20VAC at 6A, or 230 ±20 VAC at 6A, 47 to 68 Hz, single phase; Fan Assembly: 115 ±10VAC at 0.9A or 230 ±20VAC at 0.45A, 47 to 63 Hz, single phase; -48 VDCE & M Power Supply Module for certain E & M voice signaling types: 115±10VAC at 3A or 230 ±20VAC at 1.5 A, 47 to 68 Hz, single phase

### AC Power Consumption

1000 watts maximum per Mainframe; 250 watts maximum per -48 VDCE & M Power Supply Module

## Heat Dissipation

3400 BTUs/hour maximum per Mainframe plus 850 BTUs/hour maximum per -48 VDCE & M Power Supply Module

## miniLINK/2+

### Module Slots

13

### Physical Configurations

Rack mounted only

### Size\*

Mainframe: 13.125 in. (33.3 cm) high by 19 in. (48 cm) wide by 20.25 in. (51.6 cm) deep; Fan Housing: 3.5 in. (8.9 cm) high by 19 in. (48 cm) wide by 16.5 in. (41.9 cm) deep

### Weight

Mainframe (without internal power supplies or modules): 24.5 lb. (11.1 kg); Typical Module: 2.5 lb. (1.1 kg); Power Supply Module: 18.5 lb. (8.4 kg)

### AC Power Requirements

100 ±10 VAC at 12A, 15 ±10 VAC at 12A, 200 ±20 VAC at 6A, 230 ±20 VAC at 6A, 47 to 63 Hz; single phase

### AC Power Consumption

685 watts maximum

### Heat Dissipation

2330 BTUs/hour maximum

## microLINK/2+

### Module Slots

6

### Physical Configurations

Freestanding with case.

Rack mounted without case.

### Size\*

With Case: 23.25 in. (59 cm) high by 8.375 in. (21.3 cm) wide by 24.75 in. (62.9 cm) deep; Floor Plate: 13.375 in. (34 cm) wide; Without Case: 22.75 in. (57.8 cm) high by 6.75 in. (17.1 cm) wide by 20.375 in. (51.8 cm) deep

### Weight

With Case: 60 lb. (27.2 kg); Without Case: 33 lb. (15.0 kg); Typical Module: 2.5 lb. (1.1 kg)

### AC Power Requirements

100 ±8 VAC at 5.5A, 115 ±10 VAC at 5A, 200 ±16 VAC at 3A, or 230 ±20 VAC at 2.5A, 47 to 63 Hz; single phase

## AC Power Consumption

280 watts maximum

## Heat Dissipation

958 BTUs/hour maximum

## entréeLINK+

### Module Slots

12

### Program Memory

256-kbyte flash EPROM holds program code indefinitely

### Database Memory

Battery backup maintains database for up to 10 years

### Physical Configuration

Desktop, rack mounted, wall mounted, or free-standing tower

### Size

Desktop or rack mount unit: 8.75 in. (22.2 cm) high, 17.5 in. (44.5 cm) wide, 19.6 in. (49.8 cm) deep; Wall mount or tower unit: 17.5 in. (44.5 cm) high, 8.75 in. (22.2 cm) wide, 19.6 in. (49.8 cm) deep

### Weight

34 lb. (15.5 kg) minimum with one plug-in module; 50 lb. (22.7 kg) maximum with 11 plug-in modules

### AC Power Requirements

90-132 VAC at 6.0 amp; 180-264 VAC at 3.0 amp; 47-63 Hz single phase

### AC Power Consumption

310 watts maximum

### Heat Dissipation

1060 BTU/hour maximum

## LINK/100+

### Module Slots

Up to 38

### Physical Configuration

Mountable only in custom LINK/100+ cabinet

### Size

Cabinet: 79 in. (202.6 cm) high by 22 in. (56.4 cm) wide by 36 in. (92.3 cm) deep  
Mainframe: 15 3/4 in. (40.4 cm) high by 19 in. (48.7 cm) wide by 23 in. (59.0 cm) deep

Power Supply Shelf: 7 in. (17.9 cm) high by 19 in. (48.7 cm) wide by 25 in. (63.5 cm) deep

115/230 VAC Power Supply: 5 in. (12.8 cm) high by 8 in. (20.5 cm) wide by 24 in. (61.5 cm) deep  
-48 VDC Power Supply: 10 in. (25.4 cm) high by 5 in. (12.7 cm) wide by 16 in. (40.6 cm) deep

### Weight

Cabinet (with blower assembly): 315 lb. (142.9 kg)

Mainframe (without modules): 50 lb. (22.7 kg)

Average module weight: 3.5 lb. (1.6 kg)

Power Supply Shelf: 25 lb. (11.3 kg)  
115/230 VAC Power Supply: 25 lb. (11.3 kg)

-48 VDC Power Supply: 40 lb. (18 kg)

### Power Requirements

115/230 VAC Power Supply: 90-132 VAC at 30 amp maximum; 180-264 VAC at 15 amp maximum; 47 to 63 Hz; single phase  
-48 VDC Power Supply: -42 to -60 VDC 60 amp maximum

### Heat Dissipation

7,000 BTUs/hour maximum

### Supervisory Console

Ambient operating temperature from 10° to 33° C

Relative humidity from 20% to 80% (noncondensing)

Altitude to 10,000 ft. (3048 m)

## LINK/2+ & microLINK/2+ Optional -48 VDC Power Supply

### Physical Configuration

Rack mounted only in power supply chassis

### Weight

11 lb. (5 kg)

### AC Power Requirements

-48 VDC at 22A

### AC Power Consumption

1,000 watts maximum

*\*External modules may increase base measurements.*

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