An Introduction To
Serengeti Systems Incorporated

Serengeti Systems Incorporated began in January of 1986 as a software consulting company founded by David L. Keenan. At the time the company was known simply as Serengeti Software. Today Serengeti is a diversified corporation offering consulting services, hardware solutions, and mainframe communications products – with the emphasis on the latter.

The development of communications products for PCs has become the life's work for many of us even dating back to before there were PCs – in those days communications software products were developed and supported for Texas Instruments' micro- and mini-computers.

Prior to the creation of Serengeti in 1986, some current members of the Serengeti team were responsible for developing communication software products that were sold under different names by other companies. Since that time, Serengeti Systems has developed and markets several micro-to-mainframe connectivity products of its own. These products are:
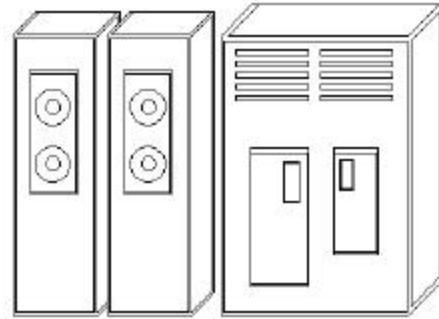
- 3780Link – This is our flagship Binary Synchronous Communications (BSC) 2780/3780 terminal emulation package. 3780Link is primarily used for Remote Job Entry (RJE) PC-to-mainframe connectivity using the BSC communications protocol. 3780Link supports attended operation, and unattended sessions controlled via a powerful script language or from an external program. Up to 32 RJE sessions can be supported. 3780Link is available for Windows 95/98 and Windows NT as well as for DOS, Windows 3.x, OS/2, UNIX, AIX, Solaris for Sparc, and HP-UX.

- BSCLIB – This product is an Applications Program Interface (API) tool kit for developing custom applications that incorporate a BSC communications link. BSCLIB supports both point-to-point contention operation typical of RJE terminals and multi-point operation typical in interactive terminal environments. Up to 32 BSC sessions can be supported. BSCLIB is available for Windows 95/98 and Windows NT as well as for DOS, Windows 3.x, OS/2, UNIX, AIX, Solaris for Sparc, and HP-UX.

- 3770Link – 3770Link provides complete IBM 3776/3777 Model 3 or Model 4 emulation with unlimited concurrent sessions including both LU-LU and SSCP-LU sessions. 3770Link supports attended operation, and unattended sessions controlled via a powerful script language or from an external program. 3770Link may be run in conjunction with Microsoft SNA Server, IBM Communications Server for Windows NT, Novell Netware for SAA, or as a standalone product. 3770Link is available for Windows 95/98 and Windows NT.

Our customers represent a cross section of corporations and institutions worldwide. Some of our recent customers include AT&T, 3Com Corporation, Barnes & Noble, Michigan State University, Federal Home Loan Bank, Liz Claiborne, Lockheed, Unisys, the Dutch Mercedes-Benz dealer network, Swiss air traffic control, and the Internal Revenue Service. Most of our business is in North America but our products are also in use in Europe, Central America, and the Pacific Rim.

Serengeti Systems, a privately held corporation, was incorporated in Austin, Texas in March of 1988. Our business objective is to establish Serengeti as the premier worldwide supplier of legacy system communications solutions for PC and workstation class computer systems.
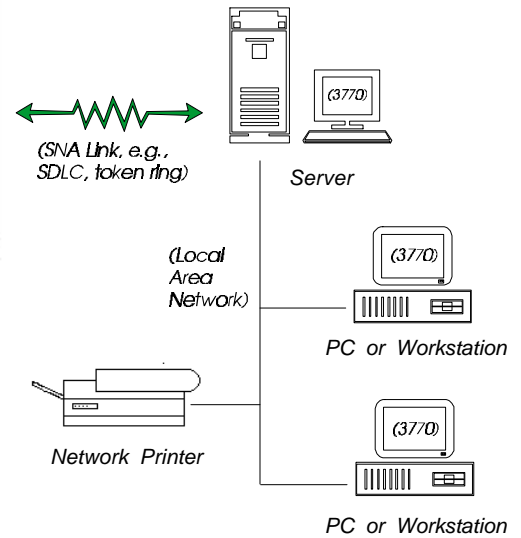
3770*Link*™

Enterprise Host

Typical 3770Link Client/Server Environment

(SNA Link, e.g., SDLC, token ring)

Server

(Local Area Network)

PC or Workstation

Network Printer

PC or Workstation

3770Link™ offers full-featured IBM 3770 terminal emulation for modern PC and workstation computing platforms. You can use the intuitive menus for interactive operations or take advantage of the powerful script language for automated, unattended sessions. 3770Link also supports a DDE interface for script commands permitting tight integration with user-written application programs.

Menu-Driven Interactive Interface
When direct interactive control is desired, 3770Link's GUI user interface is state-of-the-art -- a precise point and click interface with pull-down menus, dialog boxes, and context sensitive help. A single mouse click can log you on to the remote host, multiple LU sessions can be viewed simultaneously with real-time status information visible during file transmission and reception.

Scripts for Unattended Operation
3770Link's script language automates the functions of 3770Link menus. There are commands for establishing a "hot reader", looping, branching, and error control. There's a command to run external processes, and others that provide the linkage for 3770Link RJE server operation.

Auto-dial, answer, and time activated commands are available. Operation of 3770Link in unattended mode can be as simple as click-ing on a desktop icon. Later, after a session has been run, you can review the results by viewing 3770Link's log file which contains a complete session history.

Application Integration
For developers, 3770 sessions can be invoked from and directly controlled from a user-written program to integrate mainframe connectivity into your custom applications. For advanced applications, 3770Link can be configured as a server to provide an RJE gateway for multiple users in a networked environment.

Client/Server Operation
The client version of 3770Link operates with Microsoft SNA Server, Novell Netware for SAA, and IBM Communications Server. 3770Link can reside either on the server machine or a network station. Multiple copies of 3770Link may be in use across the network simultaneously.

Standalone Operation
The standalone version of 3770Link is completely self-contained and operates without the need for a server. This version typically is used for dial-up or leased line sessions over a SDLC connection. In dial-up environments, AutoSync support eliminates the requirement for the installation of an SDLC adapter.

3770 Emulation Features

- IBM 3776/3777 Model 3 or Model 4 emulation (SNA Logical Unit type 1)
- LU-LU and SSCP-LU sessions
- Unlimited number of concurrent sessions supported
- Receive to console, printer, or disk file
- Automatic ASCII - EBCDIC translation
- PDIR record recognition
- FMH 1 and FMH 3 support
- Bi-directional data compression and expansion
- Expansion of compacted host data streams

Supported Host Environments

- Host systems: POWER (DOS/VSE); JES2 and JES3 (MVS); other VTAM environments; and others

Client/Server Version
- Host connections: SDLC; AutoSync; 802.2; X.25; Channel; DFT; TwinAx (or other supported link)

Standalone Version
- Host connections: SDLC; AutoSync; Token Ring

Advanced Features

- Detailed log file with date and time stamps
- Session level diagnostics
- Automatic server LU recognition (on SNA Server)
- Formatted (automatic) and unformatted logons
- "Hot reader" feature for automatic file transmission
- Automatic concatenation of transmitted files
- Automatic naming of received files
- Supports multiple configurations
- Supports large record sizes (>256 bytes)
- Supports connections to multiple hosts all at once
- Transmission and reception of binary files
- Real-time session statistics
- Configurable ASCII - EBCDIC translation tables
- PDIR support allows host to name files, pass parameters, route files, and more
- Submit commands to 3770Link "RJE Server" from user-written client program via Windows DDE

Script Language For Unattended Operation

- Execute scripts from the command line, batch files, parent process, or menu
- Execute external processes and evaluate results
- Accept commands from a client process
- Command line parameter substitution
- Call scripts from within scripts
- Time activated commands
- Branching and looping commands
- Extensive result codes and error testing

RISK-FREE GUARANTEE!

If you are not completely satisfied with any Serengeti product, return it within 30 days of purchase for a refund of your purchase price.

3770Link System Requirements

- Pentium PC (or compatible)
- Windows 95, 98, NT, or 2000

Microsoft SNA Server Version
- Microsoft SNA Server or SNA Workstation 3.0 (or later)
- SNA Server supported link adapter
- Available COM port with Hayes Optima modem using AutoSync

IBM Communications Server Version
- IBM Communications Server for Windows NT 5.0 (or later)
- IBM Communications Server supported link adapter

Novell Netware for SAA Version
- Novell Netware 4 (or later) and Novell Netware for SAA 3 (or later)
- Supported Novell Netware for SAA link adapter

Standalone Version
- Serengeti's SyncPlus or SyncXp (multi-port) SDLC adapter; or
- NetSoft AdaptCom, Attachmate, or MicroGate T1 SDLC adapter (for Windows NT or 2000 and leased line applications only); or
- Available COM port with Hayes Optima modem using AutoSync

Serengeti SDLC Adapters

- For use with 3770Link Standalone Version; or
- Drivers available for Microsoft SNA Server
- Auto-dial and auto-answer modem support fully integrated

SyncPlus SDLC ISA-Bus Adapter
- Link speeds up to 128Kbps (RS232C interface)
- Dual-channel DMA support; eight (8) IRQ settings
- Virtual modem panel display software included

Sync/XP Multi-Port SDLC Adapter
- 2-, 4-, or 8-ports supported simultaneously
- Link speeds up to T1/E1 (1.544Mbps/2.048Mbps) on each port
- RS232C, RS422, V.35 interfaces supported

It's Easy Doing Business With Serengeti Systems

- We always provide printed documentation
- Unlimited, life-time technical support from our technical staff
- 3770Link demo programs available online or on diskette
- Technical support 24-hours a day at www.serengeti.com

SNA Server Version

Designed for
Microsoft®
BackOffice™

For more information call
800/634-3122 Today!

Serengeti Systems Incorporated

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Serengeti Systems

AUTOSYNC SUPPORT STILL AVAILABLE FOR SERENGETI PC-HOST EMULATION PACKAGES

AUSTIN, Texas — Serengeti Systems announced that the AutoSync versions of its IBM terminal emulation family of products, including *3770Link*, *3780Link* and *BSCLIB* for Windows® PC's, remain viable at least until mid-2000 despite the demise of Hayes Microcomputer Products, Inc. who were the makers of Optima family of modems.

Traditionally, PC-to-host products such as *3770Link*, *3780Link* and *BSCLIB* have required the installation of a synchronous adapter in order to connect with a host system. However, when utilizing Hayes Optima 336 or 56K Business Modems, these products connect via a standard async COM port while the modem performs an internal asynchronous-to-synchronous conversion on the fly. This eliminates the need for any type of synchronous adapter – the advantages to the user are significant:

- *Installation of the product is greatly simplifed since no adapters need to be installed.*
- *The same modem and phone line is easily shared for async and host communication.*
- *The net cost of an AutoSync 2 installation is less than the traditional equivalent.*

The bankrupcy and eventual shutdown of Hayes MicroComputer Products, Inc. means the Optima modems which support AutoSync 2 are no longer being manufactured. However, in recognition of the significant benefits AutoSync support offers to its customers, Serengeti Systems purchased a large number of both Optima 336 and 56K Business Modems to ensure an uninterrupted supply for as long as possible – currently estimated to be until mid-year 2000. Furthermore, Serengeti is honoring the original manufacturer's 24 month warranty to fully protect each customer's investment.

For more information on these products and the Optima warranty program, visit Serengeti Systems at www.serengeti.com, call 800/634-3122 or 512/345-2211, or e-mail sales@serengeti.com.

3770LINK GAINS APPROVAL FOR MICROSOFT BACKOFFICE LOGO

AUSTIN, Texas — Serengeti Systems announced that its *3770Link for SNA Server* Remote Job Entry (RJE) emulation package for Windows 95 and Windows NT has gained approval to bear the "Designed for Microsoft BackOffice Logo."   *3770Link,* a Microsoft SNA Server client application, joins the third-party family of Microsoft BackOffice client/server products.

3770Link features complete IBM 3776/3777 Model 3 or Model 4 terminal emulation supporting up to six concurrent host sessions. *3770Link* features intuitive menus for interactive operations and a powerful script language for automated, unattended sessions. *3770Link* also reveals a programmatic interface for commands and for reader/printer/punch/exchange data streams permitting tight integration with user-written application programs.

David Keenan, President of Serengeti Systems, points out that SNA RJE is commonly used for remote mainframe printing, automated funds transfer, medical claims filing, electronic data interchange (EDI), Point-of-Sale (POS) systems, credit card verification and many other modern data transfer applications. "*3770Link* fills a void in the RJE marketplace, and offers a solid solution for companies wishing to migrate SNA RJE applications to the Microsoft SNA Server environment."

3770Link for SNA Server is priced at $1,495.00 for a single seat license. Quantity discounts, site licenses, and OEM pricing are available. Standalone versions available soon.

Serengeti has developed micro-to-mainframe communications products for Windows, OS/2, MS-DOS, UNIX, and AIX systems since 1986. The company is based in Austin, Texas. For information contact Serengeti Systems at 800/634-3122 or 512/345-2211.

3770 Emulator Product Comparison

If you have not already determined that 3770Link is first choice when your needs call for SNA/RJE connectivity from a Windows platform, we have prepared the following (relatively) objective comparison of many of the key features found in 3770Link against two other emulation products currently in the marketplace. We based the features of Product C and Product P on actual hands-on testing when possible and/or documentation provided with the product. We believe this comparison to accurately reflect the key technical features and support policies associated with each product.

3770 Emulator Product Comparison (Page 1 of 2)	3770Link	Product C	Product P
Supported Environments			
Standalone Version (SDLC Adapter Required)	Yes	Yes	No
AutoSync Version (No SDLC Adapter Required)	Yes	Yes	No
Standalone Version (Token Ring link)	Yes	No	No
Client Version (for Microsoft SNA Server)	Yes	No	Yes
Client Version (for IBM Communications Server)	Yes	No	No
Server Setup Documentation Included With Client Version	Yes	n/a	No
3770 Emulation Features			
Separate LU and Console Windows	Yes	No	Yes
Support for Formatted Logon	Yes	No	No
Maximum Size of Print/Punch/Exchange Data Records	>4096	255	80 or 132
Maximum BTU (Basic Transmission Unit) Size	4096	521	n/a
Formatting Control Options for Received Print Data	Extensive	Limited	Limited
Font Selection Supported During Forms Configuration	Yes	No	No
"Hot Reader" Function (Automatic File Transmission)	Yes	Yes	Uncertain
Programmatic Control			
Complete Remote Control From User Application Program	Yes	No	No
Execute User Application Program from Within Script File	Yes	Yes	Yes

(continued)

3770 Emulator Product Comparison (Page 2 of 2)	3770Link	Product C	Product P
Scripting (Unattended Operation) Features			
Intuitive, Comprehensive "English-like" Script Language	Yes	No	No
Error Handling and Recovery Capabilities	Extensive	Limited	Limited
Parameter Substitution From Command Line	Yes	No	No
"Wildcard" Characters Permitted for File Operations	Yes	No	Yes
Access to PDIR Values for Dynamic Data Stream Control	Yes	No	No
Support for Embedded and Recursive Script File(s)	Yes	No	No
General Usability Issues			
Printed Documentation Provided	Yes	Yes	No
Understandable, Concise Error Messages	Yes	No, Cryptic Text	No, Often Numeric
Straightforward, Integrated Configuration Tool	Yes	No	Yes
Hardware Copy Protect Device ("dongle") Required	No	Yes	No
Easily Supports Configurations for Multiple Hosts	Yes	Yes	No
Tracing, Diagnostic, Logging Capabilities	Extensive	Limited	Limited
Technical Support Policy			
Unlimited FREE Technical Support	Yes	No	No
Proven Track Record of Prompt, Expert Support	Yes	Can You Afford to Find Out?	Can You Afford to Find Out?
Restocking Fee (Unopened Returns)	No	Yes, 25%	No
Pricing			
Software Pricing for Standalone Version (Qty 1)	$995	$990 (plus support)	n/a
Software Pricing for Client Version (Qty 1)	$1,495	n/a	>$4,000 (plus support)

PRICE LIST

Serengeti Systems

SNA/SDLC SOFTWARE

PRODUCT	DESCRIPTION	PRICE
3770/S	3770Link Windows 95/NT Standalone (requires SDLC adapter or AutoSync modem)	$995
3770/W	3770Link Windows 95/NT Client (for MS SNA Server, IBM Comm Server, Netware SAA)	$1,495
3770/WM	3770Link Workstation for Windows NT (3770/W bundled with MS SNA Workstation)	$1,695
MSSNA/W	Microsoft SNA Workstation for Windows NT (single user license)	$295
MSSNA/W5	Microsoft SNA Server for Windows NT (5-user license for Win 95/NT clients)	$1,495
MSSNA/W25	Microsoft SNA Server for Windows NT (25-user license for Win 95/NT clients)	$3,595
MSSNA/AL	AutoLink SDLC Link Service for Microsoft SNA Server (for AutoSync modems)	$299

SDLC ADAPTERS

PRODUCT	DESCRIPTION	PRICE
Sync+/SDLC	SSI SyncPlus 64 Kbps SDLC ISA-bus adapter (w/ MS SNA Server driver; cable)	$395 [1]

MODEMS

PRODUCT	DESCRIPTION	PRICE
HYS/336	AutoSync 336 Business Modem - V.34 (33.6 Kbps) external modem	$299 [2]
HYS/56K	AutoSync 56K Business Modem - V.34 (56 Kbps) external modem	$379 [2]
USR/56K	U.S. Robotics V.Everything 56K Modem - V.34 (56 Kbps) external modem	$329 [3]
UDS/2860	Motorola/UDS 2860 - sync 208 (4800 bps) auto-dial external modem	$1,350 [3]
TB/8396A	Telebit Xpresso 8396A V.34/208B combo external modem	$799 [3]

DISCOUNT SCHEDULE

Serengeti offers this end-user discount schedule for volume purchases. These discounts apply only to standalone or workstation software manufactured by Serengeti. Hardware discount is 10% for quantity 2-10, 15% for quantity 11-50. Resellers and major corporate purchasers may qualify for additional discounts.

QTY	Discount
1	0%
2-5	10%
6-10	15%
11-50	20%
51-100	30%

FINE PRINT

[1] Add $100.00 when purchased without 3770Link software
[2] For use with AutoSync version of 3770Link
[3] For use with Standard (non-AutoSync) version of 3770Link

Serengeti Systems Incorporated

812 West 11th Street
Austin, Texas 78701
512/345-2211

1. CUSTOMER INFORMATION

Contact _____
Title _____
Company _____
Address _____
City,ST Zip _____
Phone _____FAX_____

2. SHIP TO (IF DIFFERENT)

_____
_____
_____
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3. ORDER INFORMATION

ITEM	QTY	PRICE	TOTAL
1_____	____	_____	_____
2_____	____	_____	_____
3_____	____	_____	_____
4_____	____	_____	_____
5_____	____	_____	_____
SUB-TOTAL	-	-	_____
SALES TAX (SHIPMENTS WITHIN TEXAS ONLY)	-	CALL	_____
SHIPPING & HANDLING	-	CALL	_____
TOTAL DUE	-	-	_____

4. PAYMENT INFORMATION

- ☐ Check   Check #_____
- ☐ COD   Cashier's Check or Money Order
- ☐ Visa   Card #_____ Exp. Date ____/____
- ☐ MasterCard   Name on Card_____
- ☐ AmEx
- ☐ Wire Xfer   Signature_____
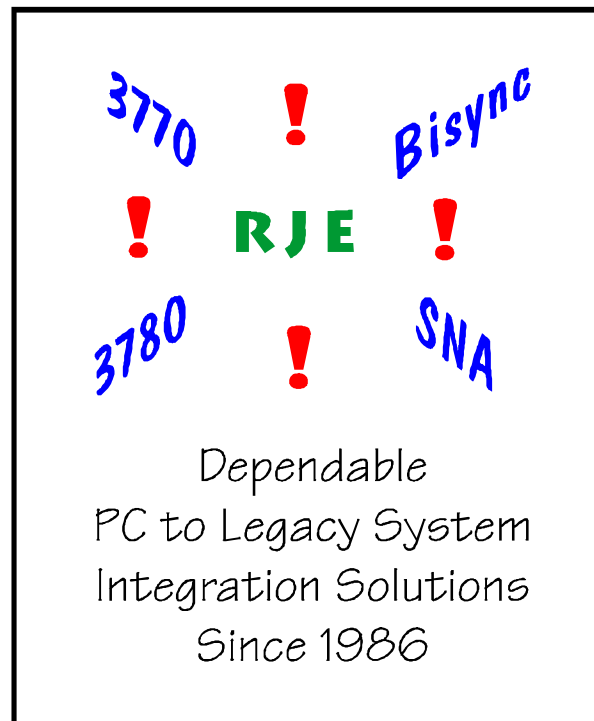
5. TERMS & CONDITIONS

SHIPPING & HANDLING: All pricing is FOB Serengeti's facility in Austin, Texas. Shipping options include Airborne Express, Select, or Two Day service. Federal Express, Emery, or other service upon request. Call for shipping and handling charges.

WARRANTY & SERVICE: Unless otherwise specified, all products include a 30 day money back guarantee. If for any reason you are not satisfied with your purchase within 30 days, return it to us in its original packaging for a full refund of the purchase price less shipping. Certain items may require up to a 20% restocking fee. Serengeti's products include a 12 month defect warranty. If a product should fail under normal use within 12 months from date of purchase, Serengeti will repair or replace the product at no charge. Other manufacturer's products that are sold by Serengeti are covered by the manufacturer's warranty only.

See Following Pages for

Brief Descriptions of Other Connectivity Products

from

<u>Serengeti Systems Incorporated</u>

3770 ! Bisync
! RJE !
3780 ! SNA

Dependable
PC to Legacy System
Integration Solutions
Since 1986

Serengeti Systems Incorporated

3780Link ™

3780/2780 BSC RJE Emulation *for* DOS, OS/2®, Windows 3.x, Windows 95/98, Windows NT, UNIX®, & AIX®

(If you'd like more information on 3780Link, please request the full 3780Link product datasheet.)

Introduction
3780Link combines full-featured 3780/2780 BSC RJE communications with a comfortable user interface. You can use the intuitive menus for interactive operations or take advantage of the powerful script language for automated, unattended sessions. Our customers tell us that 3780Link is very easy to get "up and running."

Menu-Driven Interactive Interface
3780Link's user interface utilizes pull-down menus, dialog boxes, and context sensitive help. There are no confusing, cryptic commands to remember. Real-time status windows are visible during file transmission and reception. Current session statistics can be viewed instantly.

Scripts for Unattended Operation
3780Link's script language commands automate the functions of 3780Link menus. There are commands for looping, branching, and error control. There's a command to run external processes, and others that provide the linkage for 3780Link client/server operation. Auto-dial, auto-answer, and time activated commands are available. Later, after a script is run, you can review the results by viewing 3780Link's log file which contains a complete session history. For developers, script sessions can be invoked and controlled by your application to fully integrate BSC connectivity into your environment.

Client/Server Ready
For advanced applications, 3780Link can be configured as a 3780/2780 RJE server in a client/server environment. Your custom written applications may become clients to the 3770Link RJE server.

Multiple BSC RJE Sessions
3780Link supports multiple BSC sessions with multi-port co-processor(s) for up to 32 simultaneous, independent sessions from a single PC.

Serengeti Systems Incorporated

BSCLIB ™

3780/2780 & Multi-Point Bisync API *for* DOS, OS/2®, Windows 3.x, Windows 95/98, Windows NT, UNIX®, & AIX®

(If you'd like more information on BSCLIB, please request the full BSCLIB product datasheet.)

Introduction
BSCLIB is a software tool kit that emulates both the point-to-point Binary Synchronous Communications (BSC) protocol specific to IBM 3780 and 2780 data terminals, and multi-point BSC protocol found utilized by 3270 terminals. The tool kit provides an Applications Program Interface (API) that can support most programming languages.

Applications Program Interface (API)
The tool kit's API provides a straight-forward means of controlling the information flow between your application and a BSC communications link. You may integrate BSC connectivity that is totally transparent to end-users of your application. With BSCLIB, accessing a BSC communications link is similar to record-oriented sequential file I/O. Your application opens a link, reads or writes fixed or variable length records, and closes the link. BSCLIB shields your application from virtually all of the details of the BSC protocol.

Software Development Kit vs. Run-Time Library
BSCLIB is available as both a Software Developer's Kit (SDK) and as a Run-Time (RT) package. One SDK license is required to develop your application, and additional Run-Time licenses are required for each application site.

Sample Program Code
The BSCLIB SDK is shipped with a fully functional example program plus source code that exercises all of the API functions. The BSCLIB API calls are 100% compatible across all supported hardware and software platforms. Use our code to quick start your application.

Multiple BSC Sessions
BSCLIB also supports up to 32 simultaneous, independent sessions from a single PC.

Serengeti Systems Incorporated

3770Link™

3770 SNA/RJE Emulation
for Microsoft® SNA Server,
IBM Comm Server,
Novell Netware for SAA, &
for Standalone PC's
Running Windows 95/98 &
Windows NT

*(If you'd like more information on 3770Link,
please request the full 3770Link product datasheet.)*

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Client/Server Operation
The client version of 3770Link operates with Microsoft SNA Server, Novell Netware for SAA, and IBM Communications Server. Multiple copies of 3770Link may be in use across the network.

Standalone Operation
The standalone version of 3770Link is completely self-contained and operates without the need for a server. This version typically is used for dial-up or leased line sessions over a SDLC connection. Support for AutoSync modems eliminates the need for an SDLC adapter.

Serengeti Systems Incorporated

SyncPlus/SDLC™

Low Cost SDLC
Adapter *for* Microsoft
SNA Server & 3770Link
Standalone Emulator

Introduction
The SyncPlus/SDLC adapter is a versatile, low-cost SDLC adapter for Windows 95/98 and Windows NT PC's. The SyncPlus may be used with Microsoft SNA Server for any type of SDLC connection including (but not limited to) 3770Link RJE sessions. The SyncPlus is also available for SDLC connections with the standalone version of 3770Link.

Features
- 16-bit ISA adapter
- Includes software drivers for Microsoft SNA Server
- Link speeds up to 128Kbps (RS232C interface)
- Dual-channel DMA support
- Eight (8) IRQ settings & I/O address settings
- Auto-dial with V.25bis and 'AT' command set modems (fully integrated with 3770Link)
- Auto-answer with most modems
- Virtual modem display and line trace software included
- 100% compatible with Serengeti BSC emulation products

For more information,
call 512/345-2211.