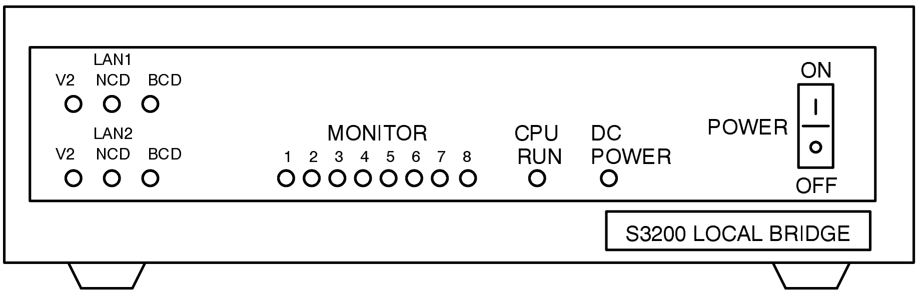
S3200–NSUG4–10E

Local Bridge

Revised June 1990



For Your Safety

OMRON products are manufactured for use by qualified operators according to proper procedures and only for the purposes stated in this manual. Thoroughly familiarize yourself with both the product and this manual before attempting operation.

The following conventions are used to indicate warnings and important information in this manual. Always heed the information provided with them:

DANGER! indicates information that, if not heeded, could result in loss of life or serious injury.

Caution indicates information that, if not heeded, could result in minor injury or damage to the product.

Note indicates important supplementary information and clarifications.

Product References

The names of OMRON products are capitalized in this manual. The word “Unit” is capitalized when it refers to an OMRON product, regardless of whether “Unit” is part of the proper name of the product.

The letters “Ch” and “CH” appearing in some displays and on some OMRON products represent the term “word”; “Wd” is also used in text as an abbreviation for “word.”

Table Of Contents

About this Manual...

This manual explains operation of the Bridge Unit, a device used to allow nodes on different network loops to communicate with each other. This manual is organized as follows:

The Sysmac Net local area network (LAN) is based on token ring architecture. Up to 126 nodes may be connected onto a network loop using Optical Fiber Cable. PC–AT compatible computers are added to the network using the Network Support Board. Serial devices are added to the network using the Network Service Unit. C–series PCs are added to the network using the Net Link Unit. A token is passed along the network loop, and whichever node has the token has the right to pass a message to another node of the network loop. This message is called a datagram, and is explained in Section 2, Communication Protocols.

The Bridge Unit is used to inter-connect two individual SYSMAC Net network loops. Each Bridge Unit may contain routing addresses for up to 20 other network loops. This allows virtually thousands of nodes to communicate with each other.

Section 1 Introduction, explains the switches and indicators of the Unit. Possible system configurations are also described.

Section 2 Communication Protocols, describes routing tables and datagram communication.

Section 3 Error Processing, describes possible errors messages and procedures to correct these errors.

Section 1
Introduction

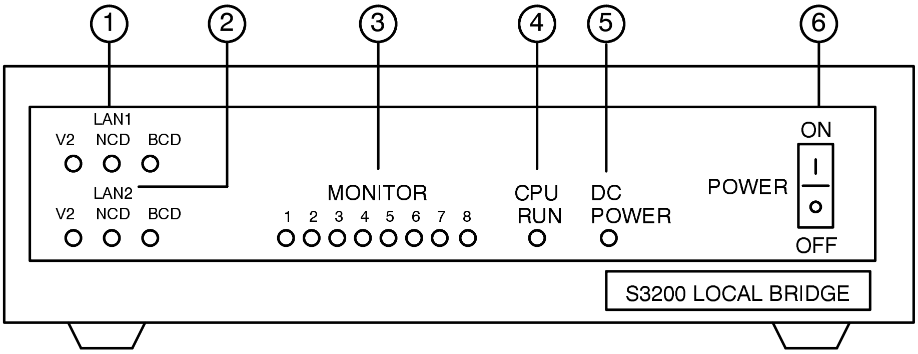
Introduction

Section 1 describes the functions of the Bridge Unit's switches and indicators. Several possible system configurations are described with instructions for connecting the Unit onto the network.

1–1 Switches and Indicators

Front Panel

Inspection of the Unit's front panel will reveal the following components:



1. LAN1 Monitor LEDs — Indicates connection status of LAN1

   V2 — Lit when Local Power Supply Unit is being used.

   NCD — Lit when data can pass along normal loop of Optical Fiber Cable.

   BCD — Back loop Carrier Detect. Lit when data can pass along back loop of Optical Fiber Cable.

During normal operation, both NCD and BCD indicators should be lit. Upstream back looping is indicated when NCD is lit and BCD is blinking. Downstream back looping is indicated when NCD is blinking and BCD is lit.

2. LAN2 Monitor LEDs — Indicates connection status of LAN2

   V2 — Lit when Local Power Supply Unit is being used.

   NCD — Normal Carrier Detect. Lit when data can pass along normal loop of Optical Fiber Cable.

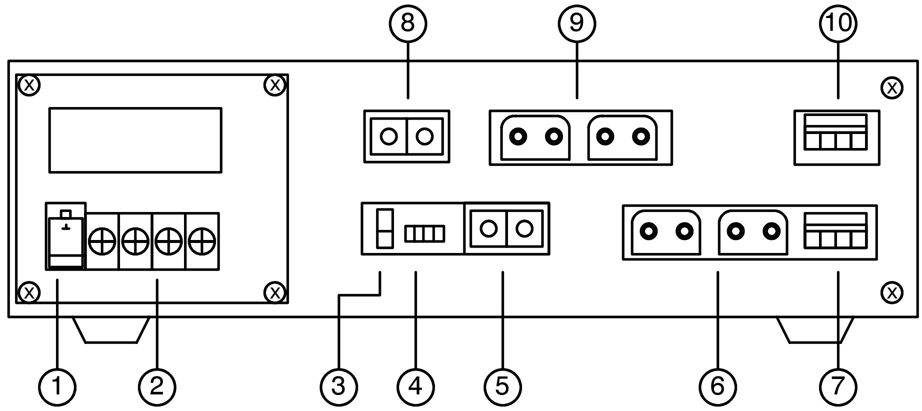
   BCD — Back loop Carrier Detect. Lit when data can pass along back loop of Optical Fiber Cable.

During normal operation, both NCD and BCD indicators should be lit. Upstream back looping is indicated when NCD is lit and BCD is blinking. Downstream back looping is indicated when NCD is blinking and BCD is lit.

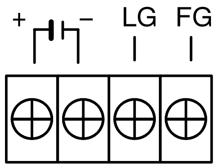
3. Monitor LEDs — General purpose LEDs controlled by software. Also indicates error status if all LEDs blink simultaneously.
4. CPU RUN — Lit when CPU is operating
5. DC Power monitor LED — Lit when Unit is powered ON
6. Power switch — Power ON/OFF switch

Back Panel

Inspection of the Unit's back panel will reveal the following components:



1. Fuse: Slow–burn 5 A fuse.
2. Terminal block: Ground LG at a resistance of less than 100 Ω to prevent electric shock. Ground FG at a resistance of less than 100Ω to improve noise immunity and to prevent electric shock.



3. RESET switch: Resets the CPU when pressed
4. SW1: General–purpose input switches (down is ON) .
5. Node No. SW: Rotary DIP switch used to set the node number for LAN1 side of Bridge. Select a unique number 0AH through 7EH hexadecimal.
6. SL1, SL2: Used for LAN1 Optical Fiber Cable connections. Each has normal and back loop paths for sending and receiving data. These are abbreviated NSD, NRD, BSD, and BRD.
7. 1CH: Local Power Supply Connector. Used when Local Power Supply Unit is connected to provide Node Bypass feature.
8. Node No. SW Rotary DIP switch used to set the node number for LAN2 side of Bridge. Select a unique number 0AH through 7EH hexadecimal.
9. SL1, SL2: Used for LAN2 Optical Fiber Cable connections. Each has normal and back loop paths for sending and receiving data. These are abbreviated NSD, NRD, BSD, and BRD.
10. 2CH: Local Power Supply Connector. Used when Local Power Supply Unit is connected to provide Node Bypass feature.

Note If a Local Power Supply Unit is installed, it is used preferentially over the Bridge’s own power supply, and the V2 LED is lit. The Local Power Supply allows communication to continue through its node even if the node is powered OFF. Refer to the SYSMAC Net System Manual for more information regarding this Node Bypass feature.

1–2 DIP Switch Settings

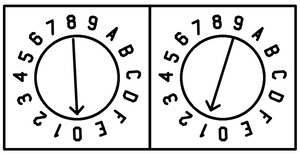
There are three sets of DIP switches on the Bridge Unit. Each LAN side of the Bridge Unit has a set of rotary DIP switches to set node numbers. There is also a general purpose four-pin DIP switch used for initialization and data traces. *Section 1–3 Optical Fiber Cable Connections* describes these DIP switches.

1–2–1 Rotary DIP Switches

A node number must be set for both the LAN1 and LAN2 sides of the Bridge Unit. When data packets are sent on the network loop, the packet includes the address of the intended destination. When the destination node number matches a node's registered address, the data packet is processed. For this reason, no two nodes of a network loop may share the same node number. Because a single Bridge Unit functions as a node on two separate network loops, a node number must be set for both LANs.

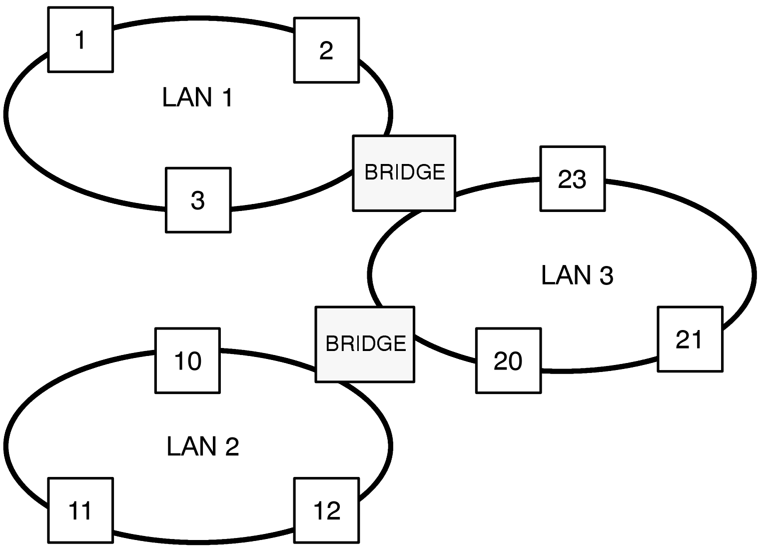
There are 126 valid addresses from 0AH through 7EH. While the Unit is powered OFF, use the left switch to set the left digit and the right switch to set the right digit. Record these settings for future reference. The following diagram shows the rotary DIP switches set to address 01H.

RSW1 Left digit | RSW2 Right digit



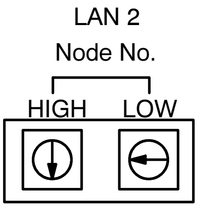
Setting Network Numbers

Each network loop that will participate in communication with other network loops must have its own network number. This network number is set with the utility software provided with the Net Support Board. If setting a node number is considered analogous to specifying a street address, then setting the network number is analogous to specifying a city. Refer to the SYSMAC System Overview or the Net Support Board Operation Manual for more information on using the utility software to set network numbers. All nodes of a single network loop must have the same network address. Each network loop that will have nodes sharing information across Bridge Units requires a different network address to be set.



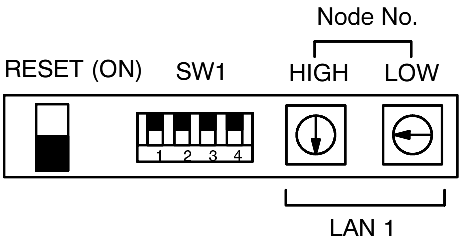
1–2–2 DIP Switch SW1

The four-pin DIP switch on the Unit's back panel uses pins 1 and 4. Pin 1 determines if the Unit should maintain a record of transmissions and receptions in its trace memory. Pin 4 is used to initialize the Unit's battery backed-up SRAM, where configuration settings are stored.



SW1 (Four-pin DIP switch)

1	2	3	4
Trace	Not used	Not used	Initialization

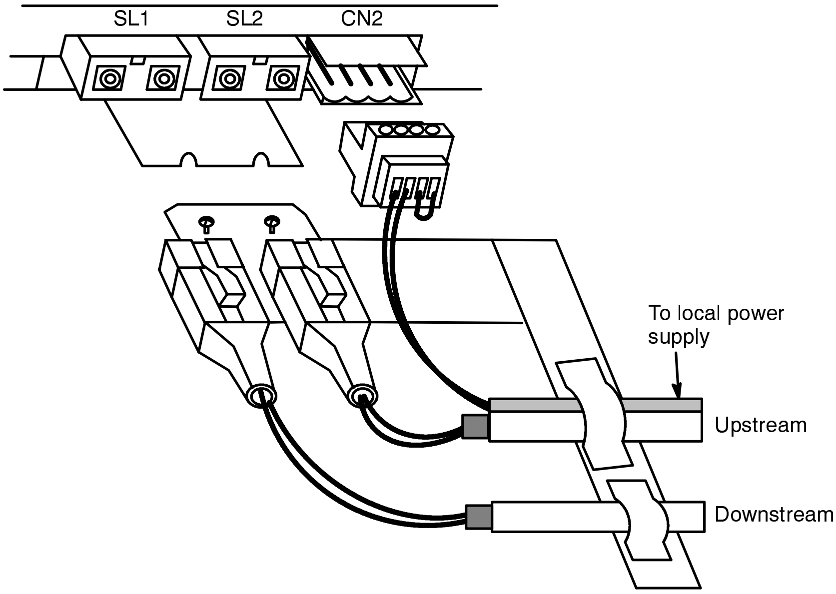


When the trace switch is ON, a record of transmission and reception through the Unit is stored and may be examined by performing a memory dump from a computer node on the network. The trace switch should be set to OFF, unless troubleshooting, since this slows the Unit's performance. For information regarding performing a memory dump, refer to the Net Support Board Operation Manual.

When pin 4 is OFF, the the Bridge Unit boots with parameters stored in the battery backed-up SRAM. This pin should be set to OFF in normal operation. When set to ON, the information in the SRAM is cleared to default values.

1–3 Optical Fiber Cable Connections

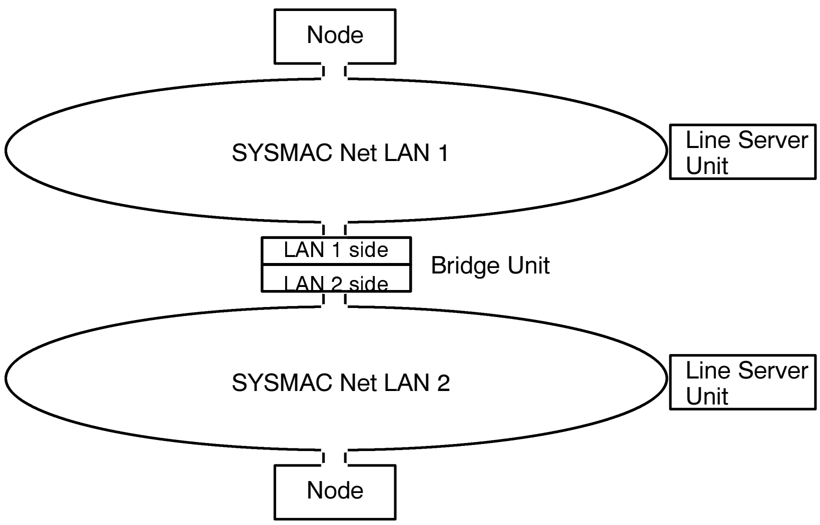
It is important to establish a good connection between the Bridge Unit and Optical Fiber Cables. The cables should have connectors attached and tested as described in the Optical Fiber Cables Installation Guide. They should be attached to the Bridge Unit with a minimum of bending. The following diagram shows the cable mounting bracket, the two Optical Fiber Cables, and the optional wires connecting the Local Power Supply.



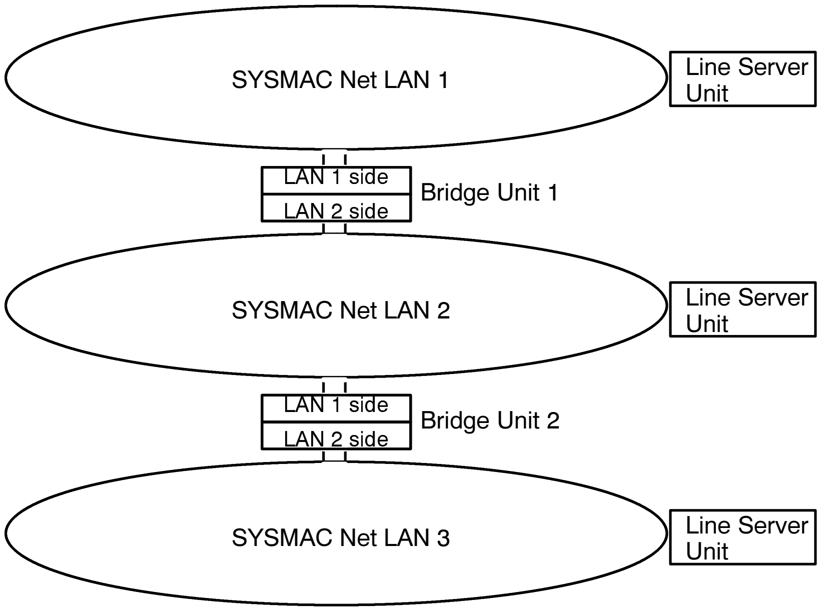
The SL1 connection of each node should be connected to the SL2 connection of the adjacent node. Likewise, the SL2 connection should be connected to SL1.

1–4 System Configurations

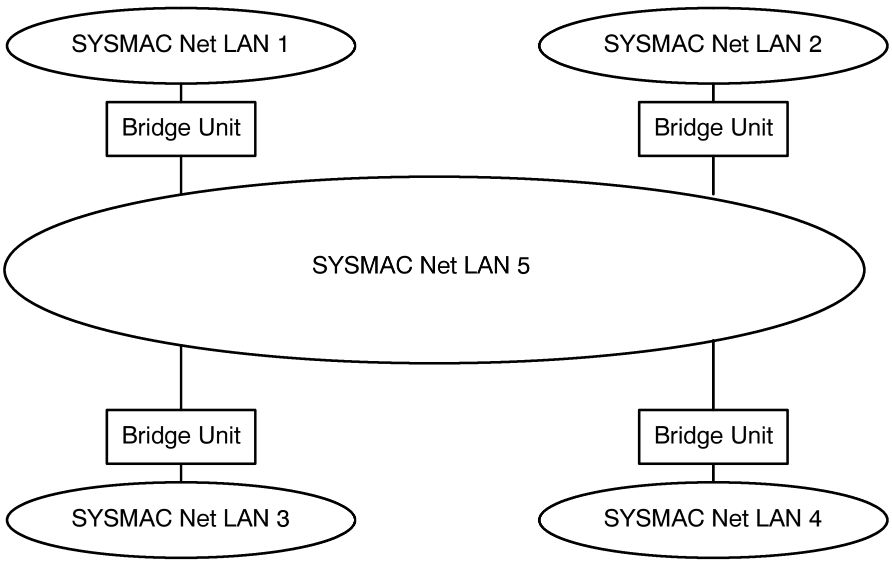
The Bridge Unit allows nodes on separate SYSMAC Net LANs to communicate. The next figure shows a Bridge Unit connecting two network loops.



If more network loops will be interconnected, more Bridge Units may be used. The following diagram shows two Bridge Units connecting three network loops. Each of the loops requires its own Line Server Units.



Network loops do not need to arranged linearly, as in the above configurations. They may also be arranged as the following figure indicates:



Again, each SYSMAC Net loop requires its own Line Server Unit to generate and monitor that loop's token. The routing table established at each of the Bridge Units sets the communication path between network loops. This is discussed in the next section.

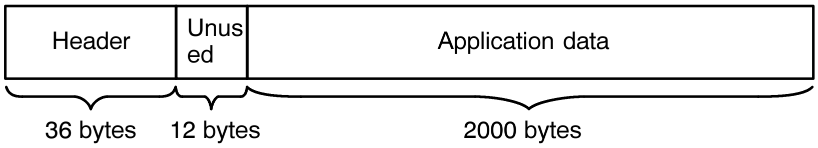
Section 2
Communication Protocols

Introduction

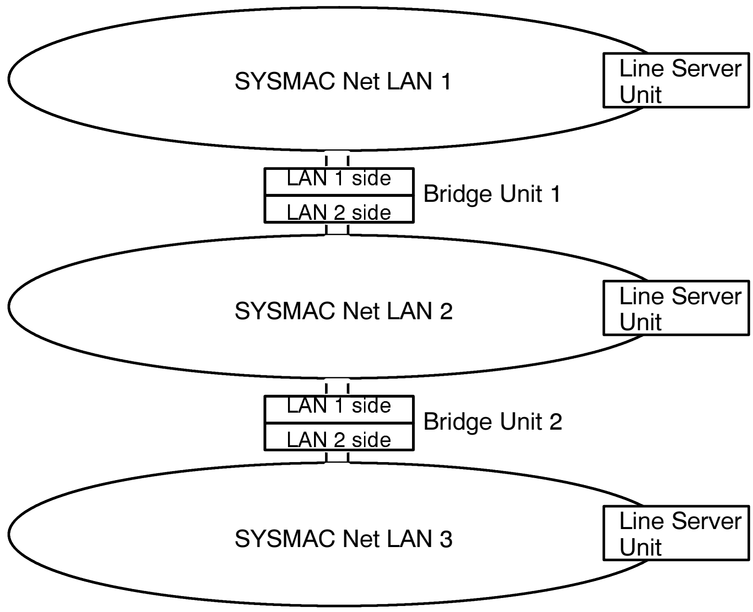
The Bridge Unit is responsible for passing data packets between two network loops. Any number of the 126 possible nodes on a network loop may be Bridge Units, and each node can have a routing table connecting it with up to 20 other network loops. This section will explain how the Bridge Unit routes datagrams across SYSMAC network loops to their destination.

2-1 Routing Tables

Routing tables are used to direct datagrams through the Bridges. Datagrams are 2K-byte (2048 bytes) packets that are composed of a header and the data which the node wants to send. More specifically, the 36-byte header contains the address of the sending node and the address of the node that is to receive the datagram. There are 12 bytes reserved for a tail, unused at present. The remaining 2000 bytes of the datagram are available for the data that will be sent to the receiving node.



Routing tables are used to direct the datagrams to their intended destinations. Routing tables must be established at each Bridge Unit of the network loop. A single routing table may be set to contain addresses of up to 20 other Bridge Units. This table gives the Bridge a node and network number for each of the LANs it is connecting. The following diagram shows three SYSMAC Net LANs and the first hop address to be set in the routing tables of the two bridges:



An AT-compatible computer equipped with a Net Support Board is required to set the Unit's network address and the routing tables. Once this information has been set, switch the initialization switch OFF and turn the power OFF and ON again.

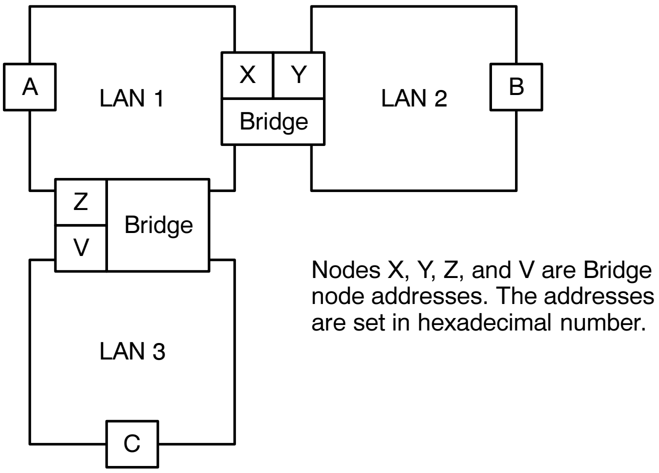
In the following system configuration table, one computer equipped with an NSB can set the required information for both Bridges serving the three network loops. This is true because the LAN 2 side of Bridge Unit 1 and the LAN 1 side of Bridge Unit 2 are both on network 2.

Own Network	Destination Network	First Hop Address
Network 1	Network 2 Network 3	Bridge 1 (LAN1) node number Bridge 1 (LAN1) node number
Network 2	Network 1 Network 3	Bridge 1 (LAN2) node number Bridge 2 (LAN1) node number
Network 3	Network 1 Network 2	Bridge 2 (LAN2) node number Bridge 2 (LAN2) node number

Any node that will be communicating outside of its own network loop requires a routing table to be set. The routing table is used to direct the datagram through a network loop's Bridge and onto a separate network loop. Each of the bridged loops requires a unique network address. All nodes of the same network loop must have the same network address but unique node addresses.

The node address is set with the rotary DIP switches on the Unit's back panel. The Unit's network number is set as 00 when shipped, and must be changed with the CONFIG32 commands sent from an NSB equipped computer. Hardware and software settings for the node address must agree. Once set, the node's configuration remains stored in the HR memory area even when powered OFF since this information is in static RAM (SRAM.)

Refer to the following diagram for an example of how a PC node communicates with a node located on a separate network loop:



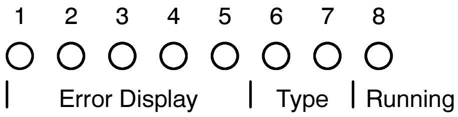
If node A of LAN 1 wants to communicate with node B of LAN 2, three processes occur in the exchange. First, node A sends information to X, the Bridge's node address on LAN 1. Then node X transfers the information to node Y, the same Bridge Unit but a different LAN loop. Finally, node Y transfers the information to node B. The response is then directed back to the sending PC along the same path.

SYSMAC Net LANs require that routing tables be established and stored in the BIOS. The file "ROUTE.DAT", containing the routing table, serves this purpose. Other manufactures do not require routing tables, and they have the sending node do a broadcast to determine routing to the message's destination. By keeping the routing table in the BIOS, SYSMAC Net LAN transfers are dependable and faster.

Section 3
Error Processing

Introduction

The Bridge is equipped with eight LEDs which indicate the operational status of the Unit. The LEDs are assigned as shown in the following figure:



This section will explain the interpretation of these indicators as well as troubleshooting information.

3–1 Types of Errors

There are three types of possible errors that may occur: system errors, I/O errors, and SRAM errors. LEDs 6 and 7 are used as described in the following table to indicate which of these classes of errors is occurring.

LED Number		Type
6	7	
OFF	OFF	Normal
OFF	ON	I/O error
ON	OFF	General error
ON	ON	System error

When a serious system error is detected, LEDs 6 and 7 are lit and the Unit restarts. The LEDs will remain lit to indicate the error until the Unit is powered OFF and ON again, or a memory write is executed from a computer elsewhere on the network loop.

When an I/O error is detected on the network loop, LEDs 6 and 7 are lit and I/O reset processing occurs. The LEDs will remain lit to indicate the error until the Unit is powered OFF and ON again, or a memory write is executed from a computer elsewhere on the network loop.

When a SRAM error is detected on the network loop, LEDs 6 and 7 are lit and processing continues. Again, the LEDs will remain lit to indicate the error until the Unit is powered OFF and ON again, or a memory write is executed from a computer elsewhere on the network loop.

The Bridge initializes itself with the parameters stored in SRAM as long as the initialization switch is OFF. As a check on the RAM contents, a check–sum is used. If this check–sum fails to match, all eight LEDs blink simultaneously, and the system stops. The solution to this problem is to boot with the initialization switch ON, which bypasses the RAM, and then restore the RAM to its default settings. If this fails to solve the problem, the RAM itself probably needs to be replaced.

Refer to the following table for more information regarding interpreting the LEDs.

Error Type	Error	LED No. 1	2	3	4	5	6	7	8
System	Illegal Interrupt							ON	ON
	Bus Error			ON				ON	ON
	Address Error		ON	ON				ON	ON
	Illegal Instruction				ON			ON	ON
	Zero Divide		ON		ON			ON	ON
	CKK Instruction			ON	ON			ON	ON
	Trap Instruction		ON	ON	ON			ON	ON
	Privledge Violation					ON		ON	ON
	Spurious Interrupt		ON			ON		ON	ON
	System Area Access			ON		ON		ON	ON
	Watch Dog Timeout		ON	ON		ON		ON	ON
I/O	CPU Receive Error								ON
	CPU Transmit Error				ON				ON
	Loop Transmit Error					ON			ON
	Loop Receive Error				ON	ON			ON
General	Get Block Error								ON
	Invalid Data Reception					ON			ON
	SEND Error (Data Drop)						ON		ON
	Data Length Error					ON	ON		ON

3–2 I/O Error Logging

If the trace switch on the four-pin DIP switch is set to the ON position, then Bridge transmission and reception error information is stored. Information is stored in four different memory areas as indicated below:

LAN1 Reception	1135FA
LAN1 Transmission	11560A
LAN2 Reception	11761A
LAN2 Transmission	11962A

Each of these areas store the trace information in the following format:

Next Trace pointer
Trace buffer starting address
Trace buffer ending address
Overflow counter
Trace information (64 bytes x 128 bytes)

This information can be examined by performing a memory dump from a computer node on the network loop.

3–3 System Error Logging

Information regarding system errors is stored in two buffers: the logging buffer and the trace buffer. The logging buffer will not be cleared if the Unit auto-resets after an error. It is cleared, however, when the Unit is powered ON and OFF manually.

Information concerning errors is stored in memories areas that may be accessed by performing a memory dump from a computer node on the network. The following diagram shows the format of system error information:

170150	Vector number
52	Not used
54	Not used
58	Not used
5A	Access address
5E	Instruction register
60	Status register
62	Program counter
66	D0
6A	D1
6E	D2
72	D3
76	D4

7A	D5
7E	D6
82	D7
86	A0
8A	A1
8E	A2
170192	A3
96	A4
9A	A5
9E	A6
A2	User stack pointer
A6	Not used
A8	Illegal interupt counter
AA	Not used
AC	Not used

If the trace switch is set ON from the four-pin DIP switch on the Unit's back panel, then system error information is also stored in SRAM memory areas. This information may be examined by performing a memory dump from location 10100H. The following diagram shows the format of system error information in the SRAM:

10100	Dummy
10101	Counter
10102	Dummy
10103	LED information
	Dummy
	LED information
	Not used
101FE	Dummy
101FF	LED information

Note Only odd addresses are used in SRAM.

If the initialization pin on the four-pin DIP switch is switched to the ON position, all information in the SRAM is cleared.

3–4 General Error Logging

Information concerning general errors may be examined by performing a memory dump from address 174000H. The “task ID” information is 16 bytes and constitues one trace. It has the format indicated in the following diagram:

Pointer
Buffer ending address
Overflow counter
Task ID
Priority
Error parameter 1
Error parameter 2
Error parameter 3

3–5 SRAM Configuration

Odd addresses are used in the battery-backed up SRAM. The following charts indicate the format of the memory areas backed up by SRAM. This information will not be cleared when the Unit is powered down, but will be cleared when the initialization pin of the four-pin DIP switch on the Unit’s back panel is switched ON. Following the description of the information stored in the SRAM is a map of this memory areas. The numbers preceding each information category are used in the maps that follow.

1. LAMP Information

Purpose:	Record current LED display
Length:	1 byte
Starting Address:	100C1H
Format and Contents:	LED display

2. Remote Reset Specification

Purpose:	Writing an “R” (52H) into this field from a personal computer on the loop with the remote write function will cause a software reset. When such a reset is performed, the LEDs display 1FH.
Length:	1 byte
Starting Address:	100CFH
Format and Contents:	Normally zero. When an “R” (52H) is written here, a reset is performed. After the reset, the value returns to zero.

3. SRAM Check Sequence

Purpose:	When the initialization switch is ON, write a pattern; when it is off, check the pattern to verify the SRAM is functioning properly.
Length:	12 bytes
Starting Address:	100E1H
Format and Contents:	Set by S3200 and JIS8

4. Lamp Information Trace Register

   Purpose: Information about occurrences of system errors is retained in the trace buffer, and the Bridge Unit is restarted. This field counts such occurrences, and serves as the trace pointer. When the initialization switch is ON, this field is cleared to zero.

   Length: 1 byte

   Starting Address: 10101H

   Format and Contents: Contains a value from 0 to 63

5. Lamp Information Trace Area

   Purpose: System error information is displayed on the LEDs. This area provides a trace of that information. It is cleared to zeroes if the initialization switch is ON.

   Length: 1 byte per LED, total 64 bytes

   Starting Address: 10103H

   Format and Contents: LED Contents. Next trace area starts at (trace counter*2) +10103H

6. Routing Table (LAN1 Side)

   Purpose: Contains the network ID and first hop address for routing purposes.

   Length: 8 bytes per network Total 160 bytes (up to 20 networks)

   Starting Address: 10501H

   Format and Contents:

	1	3	5	7	9	B	D	F
10500	– 1	– 1	– 1	– 1	– 2	– 2	– 2	– 2

   Where “1” is the four–byte network ID, and “2” is the four–byte first hop address. Reset to zero when the initialize switch is ON.

7. Routing Table (LAN2 Side)

   Purpose: Contains the network ID and first hop address for routing purposes.

   Length: 8 bytes per network Total 160 bytes (up to 20 networks)

   Starting Address: 10641H

   Format and Contents:

	1	3	5	7	9	B	D	F
10641	– 1	– 1	– 1	– 1	– 2	– 2	– 2	– 2

   Where “1” is the four–byte network ID, and “2” is the four–byte first hop address. Reset to zero when the initialize switch in ON.

8. Network Address (LAN1 Side)

   Purpose: Gives the network address of the network to which the LAN1 side belongs.

   Length: 1 byte

   Starting Address: 10781H

   Format and Contents: Gives the IP class A network address in one byte.

   7 0

   |–|––––––––––––||0| 0–127 | |–|––––––––––––|

   Reset to zero when the initialize switch is ON.

9. Network Address (LAN2 Side)

Purpose:	Gives the network address of the network to which the LAN2 side belongs.
Length:	1 byte
Starting Address:	10781H
Format and Contents:	Gives the IP class A network address in one byte.
	7 0
	|–|––––––––––||0| 0–127 | |–|––––––––––|
	Reset to zero when the initialize switch is ON.

10. Gateway TTL Initial Value

Purpose:	When packets pass through a gateway or bridge, some value is subtracted from TTL. This field gives it the initial value.
Length:	1 byte
Starting Address:	10785HFormat and
Contents:	Value from 0 to 255.
	If the initialize switch is ON, reset to 1.

11. Gateway TTL Decrement Value

Purpose:	When packets pass through a gateway or bridge, some value is subtracted from TTL. This field gives the decrement.
Length:	1 byte
Starting Address:	10787H
Format and Contents:	Value from 0 to 255.
	If the initialize switch is ON, reset to 1.

12. Gateway TTL Limit Value

Purpose:	Used to check the TTL value of packets pass through a gateway or bridge. If the post–decrement value is less than the limit, the packet is discarded.
Length:	1 byte
Starting Address:	10789H
Format and Contents:	Value from 0 to 255.
	If the initialize switch is ON, reset to 1.

13. IP Trace Switch

Purpose:	Specifies whether packets passing through the gateway or bridge are to be logged.
Length:	1 byte
Starting Address:	1078BH
Format and Contents:	1: Log
Any other value:	Not log

SRAM Memory Allocation

The following map shows allocation of memory area in the SRAM. Numbers correspond to those described in the preceding section.

10000	/		/		/		/		/		/		/		/	
10	/		/		/		/		/		/		/		/	
20	/		/		/		/		/		/		/		/	
30	/		/		/		/		/		/		/		/	
40	/		/		/		/		/		/		/		/	
50	/		/		/		/		/		/		/		/	
60	/		/		/		/		/		/		/		/	
70	/		/		/		/		/		/		/		/	
80	/		/		/		/		/		/		/		/	
90	/		/		/		/		/		/		/		/	
A0	/		/		/		/		/		/		/		/	
B0	/		/		/		/		/		/		/		/	
C0	/	1	/		/		/		/		/		/		/	2
D0	/		/		/		/		/		/		/		/	
E0	/	3	/	3	/	3	/	3	/	3	/	3	/	3	/	3
F0	/	3	/	3	/	3	/	3	/		/		/		/	
100	/	4	/	5	/	5	/	5	/	5	/	5	/	5	/	5
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1D0	/	5	/	5	/	5	/	5	/	5	/	5	/	5	/	5
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2E0	/		/		/		/		/		/		/		/	
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4C0	/		/		/		/		/		/		/		/	
4D0	/		/		/		/		/		/		/		/	
4E0	/		/		/		/		/		/		/		/	
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5B0	/	6	/	6	/	6	/	6	/	6	/	6	/	6	/	6
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7D0	/		/		/		/		/		/		/		/	
7E0	/		/		/		/		/		/		/		/	
7F0	/		/		/		/		/		/		/		/	

Appendixes

A Standard Models

Name	Model
Line Server	S3200-LSU03-01E
Network Support Board and software	S3200-NSB11-E
Network Support Board for FIT	FIT10-IF401
Net Link Unit for C500, C1000H, C2000H	C500-SNT31-V4
Net Link Unit for C200H	C200H-SNT31
Network Service Unit	S3200-NSUA1-10E
Network Bridge	S3200-NSU-G4-10E
Plastic-Clad Optical Fiber Cable	S3200-FH-L-C22T
H-PCF Optical Fiber Cable for C200H-SNT31 only	S3200-HC#####*
Optical Fiber Cable Connectors	S3200-COCH62M
	S3200-COCF2511
	S3200-COCF62M
	S3200-COCF62F

* The last five characters in the model number vary depending on type and size of cable

B Specifications

Optical LAN Specifications

Communication Method	Token Ring (n:n)
Data Transmission Speed	2M bps
Transmission Method	Manchester Coding, base-band method
Network Distance	Up to 1 km, extendable with repeaters or quartz cabling
Transmission Method	Two–fiber Optical Fiber Cable
Error Handling	Auto back loop Node by–pass (based on Local Power Supply Unit)
Message Length	2K bytes
Send/Receive Buffer	32K bytes, thus with a message length of 2K bytes, buffer can hold up to 15 messages
Maximum Number of Nodes	126 per network loop

Glossary

Analog I/O Units — Special I/O Units that convert analog input values to digital signals to be sent to the CPU, and convert the digital signals from the CPU to analog output values.

data trace: — Function of Bridge Unit set by DIP switch which records transmitted and received messages passing through the Unit. Trace data is accessed by performing a memory dump from a computer node. Information from a data trace may prove helpful in troubleshooting.

hop address: — Node address of the network loop's Bridge where a datagram is first directed before it exits the node's network loop. The hop addresses are stored in the node's routing table.

routing table: — Information stored in a node's SRAM that allows it to direct datagrams to other network loops. The routing table lists the other network loops that are connected to this loop via Bridges, as well as the Bridge's node address. All network nodes, including Bridge Units, may have up to 20 entries stored in their routing tables. Different nodes on the same loop may have different routing tables registered if they will be communicating with different network loops.

INDEX

Manual Revision History

The manual revision code appears as a suffix to the catalog number on the cover of each manual.

Cat. No. W159–E1–2

Revision code

Revision code	Date	Revision content
1	Dec. 1989	Original production
2	June 1990	Several changes and additions to text and graphics.