Installation and Maintenance

EDACS®

Data Gateway

ERICSSON

TABLE OF CONTENTS

PREFACE **4**

NETWORK PLANNING **5**

ADDRESS TYPES 5
IP Addresses 5
EDACS Addresses 6
Ethernet Addresses 6
IP HOST CONFIGURATIONS 7
Assigning Network IP Addresses 7
Assigning Individual IP Addresses 9
Assigning LIDs to IP Hosts 9
Sample SYSTEM.TXT File with Network Layer RDTs and radios 10
Sample SYSTEM.TXT File with Non-Network Layer RDTs 11
RDI HOST CONFIGURATIONS 12
Sample SYSTEM.TXT File with RDI Hosts 13
COMBINED IP AND RDI HOST CONFIGURATIONS 14
Sample SYSTEM.TXT File for Combined Configuration 16
MULTIPLE EDACS NODES 17
Network with Bridges Between EDGs 17
Sample SYSTEM.TXT File For EDG 1 22
Sample SYSTEM.TXT File For EDG 2 23
Sample SYSTEM.TXT File For EDG 3 24
Network with Routers Between EDGs 25
Using RDI Hosts 26
Addresses seen on the Customer Network 27
MISCELLANEOUS SAMPLE SYSTEM.TXT FILES 28
Sample SYSTEM.TXT File with TWO TSI Masters and A TSI Slave 28

INSTALLATION **29**

EDG CONTENTS 29
INSTALLATION ORDER 30
BOARD HARDWARE SETUP 31
CONNECTING THE DIAGNOSTIC TERMINAL 34
CONNECTING THE PRINTER (OPTIONAL) 34
CONNECTING TO AN AC SOURCE 34
CONNECTING THE EDG CONTROL LINE(S) TO THE IMC/CEC 35
CONNECTING THE EDG DATA LINES TO THE IMC/CEC 36
TURNING ON THE EDG AND LOADING THE SOFTWARE AND CONFIGURATION 38
TIGHTENING THE EDG'S PASSWORD SECURITY (OPTIONAL) 38
CONNECTING RDI HOST COMPUTERS 39
CONNECTING IP HOST COMPUTERS 39
MODIFYING THE HOSTS' CONFIGURATION (IP HOSTS ONLY) 39
MODIFYING THE CUSTOMER NETWORK FOR MULTIPLE EDACS NODES 39

MAINTENANCE **40**

MODIFYING PASSWORDS 40
HARD DISK CLEANUP 40
LOADING NEW SOFTWARE RELEASES 40
EDG BOOT SEQUENCE 41
VCOM24 BOOT ERROR CODES 42
TROUBLE-SHOOTING GUIDE 43
ICMP MESSAGES RETURNED BY EDG 47

TABLE OF CONTENTS - CONTINUED

DEBUGGING A MULTIPLE NODE CONFIGURATION 48
FORCING A HARD DISK REFORMAT 48
FUSES AND CIRCUIT BREAKERS 49
Power Supply 49
CAP Board Fuse 49
SCSI Fuse 49
VCOM24 Fuses 50
PARTS LIST 51
PIN OUT FOR THE DIAGNOSTIC TERMINAL CABLE 51
PIN OUT FOR THE TSI CONTROL LINK CABLE 51
HARDWARE/SOFTWARE REQUIREMENTS 52
INSTALLATION PROCEDURE 53
Installation Order 53
Upgrade the IMC 53
Configure the IMC 53
Setting the Output Audio Level From the EDG 54
Install the EDG 54
Set up IDs for data 54
Upgrade the Site Controller 54
Upgrade the site channels 54
Upgrade the uplinks and downlinks 54
Configure site channels through the System Manager 55
Program Auto-Login Capability Into Radios 55
Check modem audio levels at the site 55
RESTORATION PROCEDURE 55

PREFACE

This is one of four manuals for the Ericsson EDACS® Data Gateway (EDG™). It contains instructions for installing and maintaining an EDG. Network planning and the boot sequence are also documented in this manual. Note there is no revision A of this document. Other relevant documents are:

EDG Technical Description (LBI-38961B):

This manual contains a detailed description of the EDG capabilities, interfaces, and hardware.

EDG User's Reference Manual (LBI-38963B):

This manual contains information for using the EDG command shell. This command shell services the Diagnostic Terminal and Telnet logins.

EDG Configuration Reference Manual (LBI-38964B):

This manual contains the information required to configure the EDG.

Internetworking with TCP/IP, Volume I, by Douglas E. Comer:

This is an excellent (but unofficial) source of information about Internet Protocol.

EDACS CommServ Programmers Guide (LBI-38835):

This manual documents the CommServ product. CommServ provides an application program interface that simplifies **R**adio **D**ata **T**erminal (**RDT**) programming by providing an RDI Data Link Layer. It is for use with MS-DOS (trademark of Microsoft Corporation) and PC-DOS.

Mobile Data Terminal Interface, Hardware and Protocol, Version 1.92

This manual documents the RDI Interface. Contact Ericsson for more information.

EDACS CEC and IMC Digital Audio Switch (LBI-38662):

This manual provides basic information for the IMC and CEC.

NETWORK PLANNING

Prior to configuring and installing the EDG, it is important to determine the addresses that will be used. In addition to this document, the *EDG Technical Description* explains the concepts behind the EDG.

ADDRESS TYPES

There are three main types of addresses used when configuring the EDG; IP Addresses, EDACS Addresses, and Ethernet Addresses. This section provides basic information on the address types. IP and Ethernet Addresses are not important for single node configurations with only RDI Host Computers.

IP Addresses

IP Addresses are made up of four octets separated by periods. The addresses are typically written in decimal, but can be hexadecimal. 1.0.0.2 is an example IP Address. Each octet can range from decimal 0 to 255 or hex 0x00 to 0xff.

IP Addresses contain a **Network ID** portion and a **Host ID** portion. The number of octets in each is based on the **Class** of the address. The Class of the address is determined by the value of the first octet.

CLASS	First Octet	Network ID Portion	Host ID Portion	Number of Host IDs
A	1-126	First octet	Last three octets	16M
B	128-191	First two octets	Last two octets	65K
C	192-223	First three octets	Last octet	254
D	224-239	N/A	N/A	N/A
E	240-255	N/A	N/A	N/A

Several conventions and special cases should be noted:

1. If the IP Address is all zeros, it refers to this host.
2. If the IP Address is all ones, the destination is all hosts on the local network.
3. If the Network ID is all zeros, the IP Address refers to a host on this network. This is only valid at system startup and is not a valid destination address.
4. If the Host ID is all zeros, the IP Address refers to the Network ID.
5. If the Host ID is all ones, the IP Address refers to all hosts on the specified network (not valid on the EDACS Network).
6. If the first octet is 127, then this is a local loop-back.
7. Class D addresses are multicast.
8. Class E addresses are reserved.

EDACS Addresses

There are two types of EDACS Addresses, **L**ogical **ID**s (**LID**s) and **G**roup **ID**s (**GID**s). LIDs are used to reference a single host, RDT, radio, or TSI Master. GIDs are used to reference one or more RDTs or radios. Note that EDACS makes no differentiation between any of the before-mentioned types in its addressing. LIDs and GIDs are programmed into radios and can be changed as desired.

TYPE	Sub-Type	Range
LID	Host ID	1-63
LID	RDT ID or Radio ID	64-16,382
LID	TSI EDACS ID	64-16,382
GID	RDT_Group ID or Radio_Group ID	1-2047

Note: RDT and Radio IDs can also be in the range from 1-63, but it is not recommended.

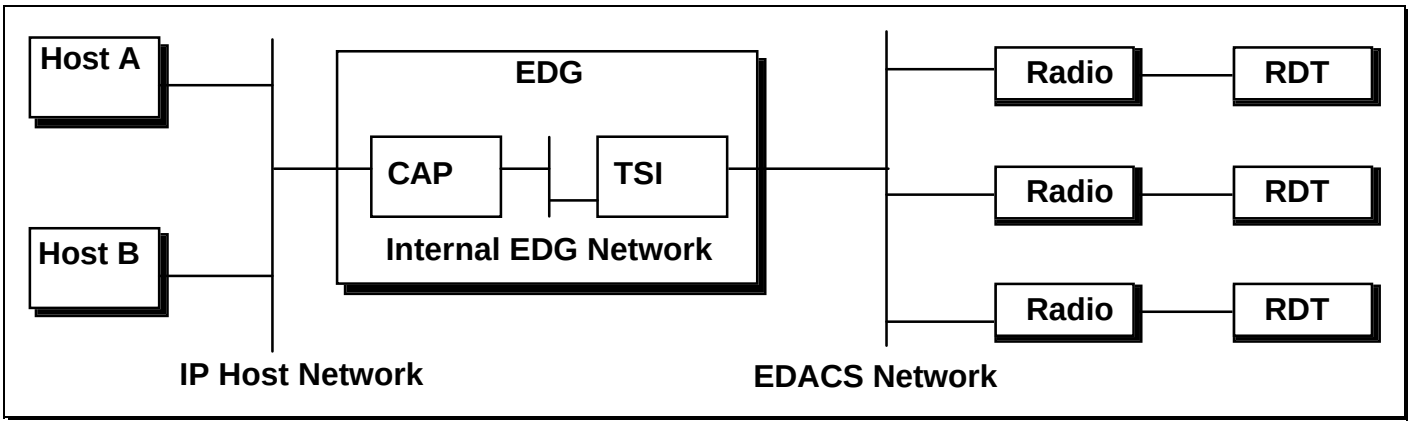
Ethernet Addresses

Ethernet Addresses are 6 byte addresses assigned by hardware vendors. Normally, an Ethernet Address is permanently assigned to a hardware device. The **A**ddress **R**esolution **P**rotocol (**ARP**) that is built into the Internet Protocol allows devices to query each other for their Ethernet Address. For these reasons, Ethernet Addresses are of minor importance when setting up a network, and are not discussed in detail.

IP HOST CONFIGURATIONS

Assigning Network IP Addresses

An **internet** consists of multiple networks connected together, with each network on the internet assigned a unique network address. The first step in setting up an internet is to determine the IP Network Addresses that will be used. In the simplest case, three network addresses will be used: one each for the IP Host Network, the Internal EDG Network, and the EDACS Network. A Class A, B, or C address can be used for any of the addresses. Class D and E addresses can not be used. **A Network Address can only be used once in an internet.**



An IP Host Internet With No IP Addresses

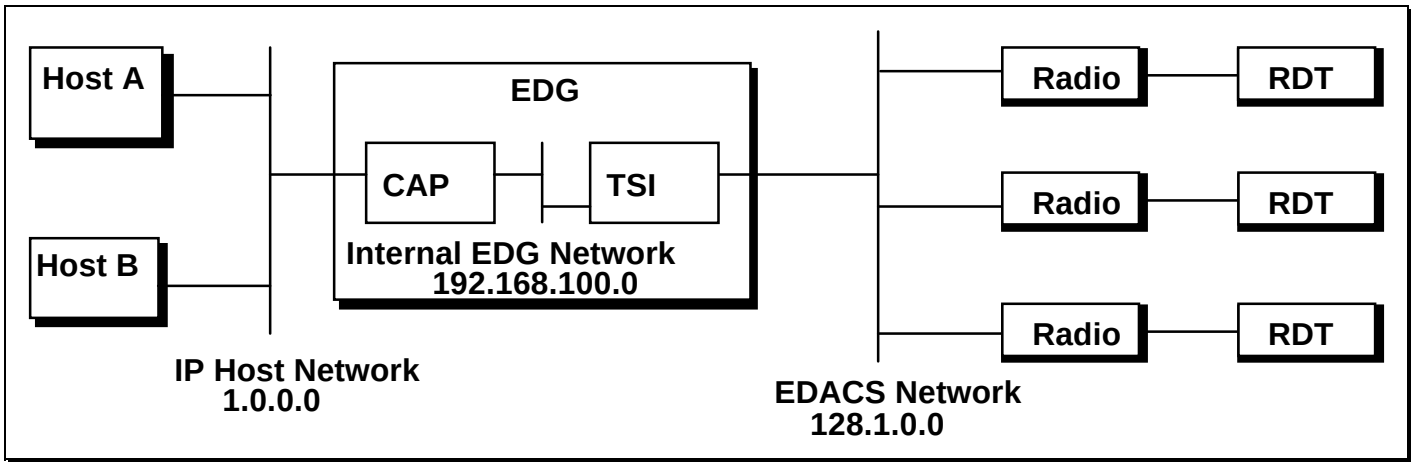
If the IP Host Network already exists, its Network Address will have already been assigned. Otherwise it will need to be assigned. For this example, the IP Host Network is an existing network with an address of 1.0.0.0.

Next, the internal EDG Network Address needs to be assigned. Since the number of individual addresses required on this network is small (one address per board), a Class C address is recommended. The EDG will default its internal Network Address to 199.0.0.0. If this Network Address isn't available, another one can be used.

Finally, an available Network Address needs to be chosen for the EDACS Network. A Class C address typically isn't used since each radio must be assigned an address, and most EDACS Networks have more than 254 radios. A Class B address can be used to conserve Class A Network IDs. If an EDACS network ID is not specified, the EDG will default to a value of 140.1.0.0. For this example, it is assumed that you have chosen to assign Network Address 128.1.0.0 to your EDACS Network.

Remember that since each Network Address must be unique, the addresses selected should be reserved with the Network Administrator so that they are not used elsewhere on the internet.

*Note: In compliance with standards, the defaults for the Internal Network Address and EDACS Network ID will be changed in the next release of the EDG. The new values will be 172.16.0.0 for the EDACS Network ID and 192.168.100.0 for the Internal Network Address. To avoid confusion during a future upgrade, it is advisable to use the commands “EDACS_IP_NETWORK_ID 172.16.0.0” and “INT_NETWORK_ID 192.168.100.0” to override the current defaults for those settings to the future default values. See the *EDG Configuration Reference Manual* LBI 38964B for more information on use of these commands.



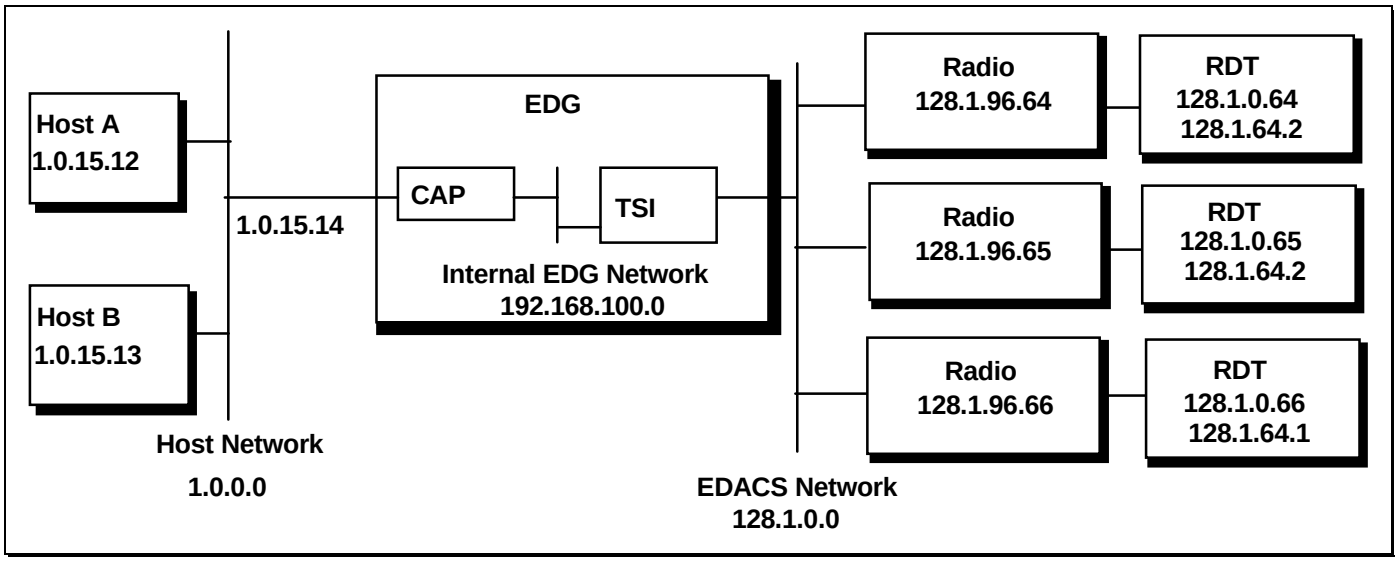
An IP Host Internet With Network Addresses Assigned

Assigning Individual IP Addresses

After the Network Addresses have been decided upon, individual addresses within each network should be assigned.

For the purposes of this example, Host A has previously been assigned an address of 1.0.15.12 and Host B has previously been assigned an address of 1.0.15.13. The CAP's External Interface must be assigned an individual address on Network 1.0.0.0. For this example, it is assumed that address 1.0.15.14 has been chosen.

The EDG can auto-configure the individual IP addresses for its Internal Network and the EDACS Network. While the defaults can be overridden by explicitly assigning individual addresses, one can also let the EDG do the work.



An IP Host Internet With Individual Addresses Assigned

Notice that a radio/RDI/RDT can have multiple IP addresses associated with it. The radio may have its own IP address, the RDT may have its own IP address, and any groups associated with either the radio or RDT have their own IP addresses. Under EDACS addressing scheme however, each radio/RDI/RDT has but a single LID and zero or more GIDs. Therefore, each of these EDACS addresses may be mapped to one or more IP Addresses.

NOTE

If a radio's LID is changed, a new unit IP Address will be associated with the radio and/or RDT. If this is not desired, the mapping can be changed.

In this configuration the EDG and the Hosts are on the same network. In a more complex configuration, there could be multiple gateways between the EDG and the Hosts. Regardless of the configuration, the CAP's external IP Address must be a valid address on the network that it is connected. Routing table entries would be used to allow the EDG and Hosts to communicate.

Assigning LIDs to IP Hosts

If the EDACS Network Layer is used, both the Hosts and RDTs primarily communicate using the IP Addresses. There are currently two versions of the EDACS Network Layer: version 0 and version 1. The version 0 header is used for all devices that used the EDACS Network Layer header before EDG Release 3(EDG Group 2 release). This is currently limited to RDTs and RDT groups only. The version 1 header may be used for devices from EDG Release 3 onward. Currently this is limited to single radio units using Profile over-the-air programming. The EDACS Address is only used to get messages across the EDACS Network, just as the Ethernet Address is only used to get messages across the Ethernet Network. IP Hosts do not need LIDs in this case.

If the EDACS Network Layer isn't used, EDACS Addresses become more important. To the RDTs, the EDG is a proxy for the IP Host computer. IP Hosts still primarily communicate with the RDTs using IP Addresses. However the RDTs primarily communicate using EDACS Addresses. IP Hosts need LIDs in this case.

Sample SYSTEM.TXT File with Network Layer RDTs and radios

The following SYSTEM.TXT configuration file matches the example configuration if all RDTs use the version 0 EDACS network layer header and if all radios use the version 1 EDACS network layer header. Note that no entries are required in the [device_config_table] for the IP hosts. The *EDG Configuration Reference Manual* contains a detailed explanation of each command.

```
################################################
# SYSTEM.TXT configuration file.
################################################

[board 1]
type cap

[board 2]
type tsi_master
tsi_edacs_id 16382

[ip]
cap_ext_address          1.0.15.14

[edacs_network]
edacs_ip_network_id              128.1.0.0
int_network_id                   192.168.100.0

[device_config_table]
RDT             64 - 16381       128.1.0.64      # defaults to V0 ENL
RDT_Group       1 -   2047                       # defaults to V0 ENL
radio           64 - 16381       128.1.96.64     # defaults to V1 ENL
```

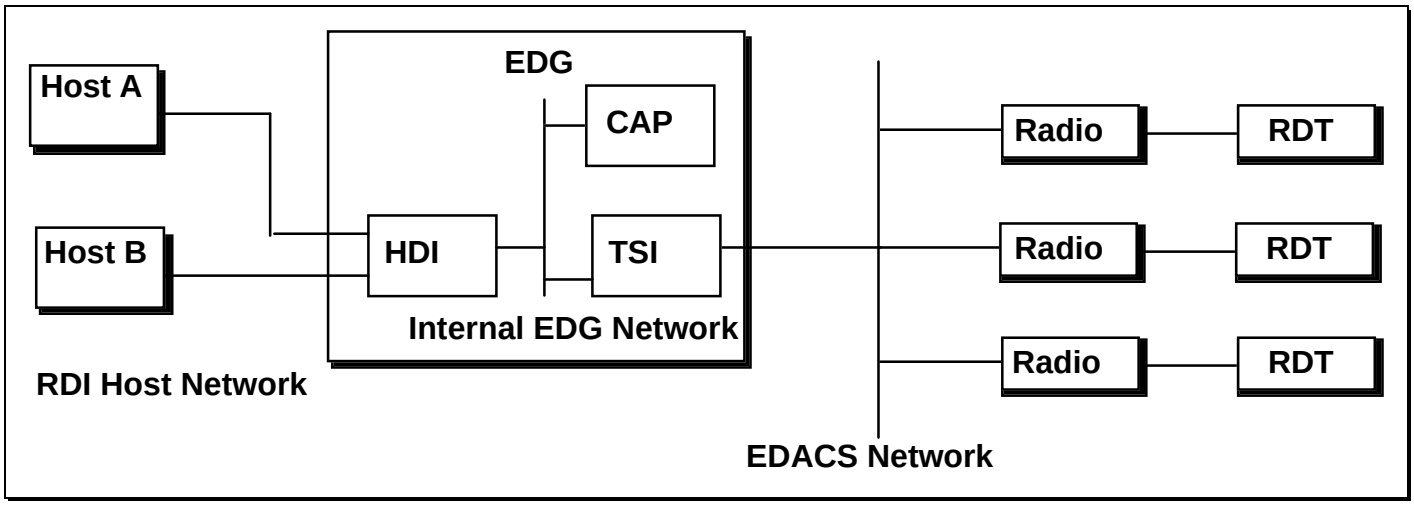
Sample SYSTEM.TXT File with Non-Network Layer RDTs

The following SYSTEM.TXT configuration file matches the example configuration if none of the RDTs use the network layer. Note that entries are required in the [device_config_table] to assign EDACS Addresses to the IP hosts and to configure RDTs as non-network layer devices. The *EDG Configuration Reference Manual* contains a detailed explanation of each command.

```
################################################
# SYSTEM.TXT configuration file.
################################################

[board 1]
type cap

[board 2]
type tsi_master
tsi_edacs_id 16382

[ip]
cap_ext_address         1.0.15.14
int_network_id          192.168.100.0

[edacs_network]
edacs_ip_network_id             128.1.0.0

[device_config_table]
host            1               1.0.15.12               # Host A
host            2               1.0.15.13               # Host B
RDT             64 - 16381      128.1.0.64      NONE
RDT_Group       1 -   2047                      NONE
```

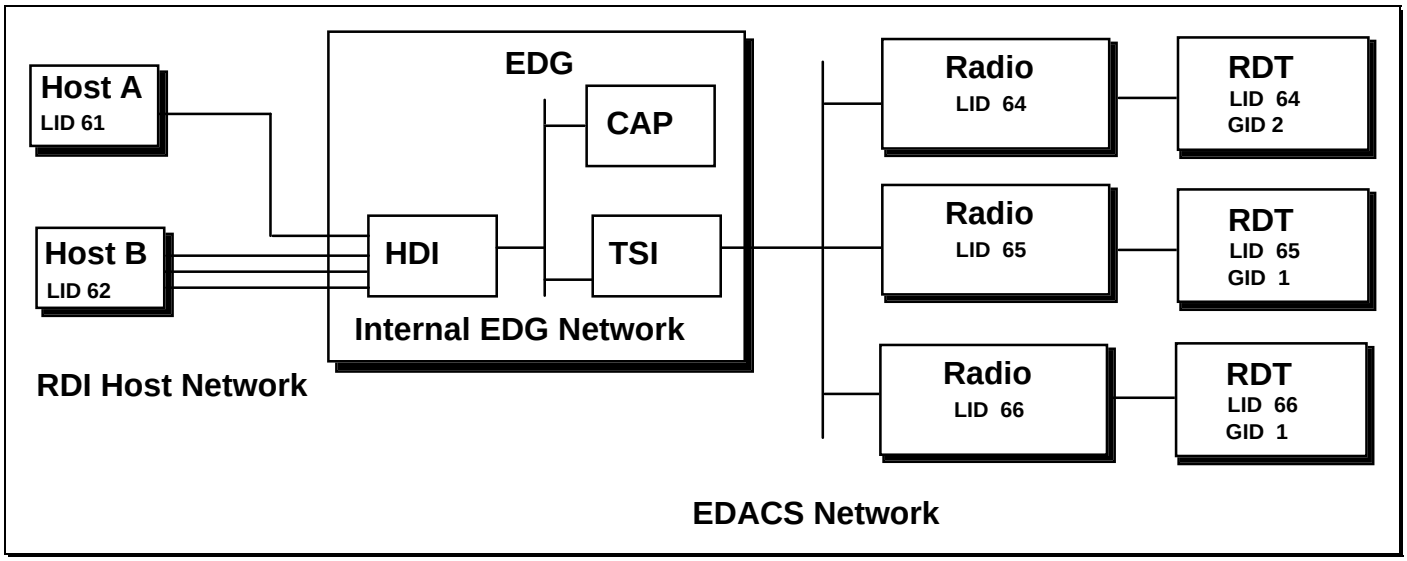
RDI HOST CONFIGURATIONS

RDI hosts communicate directly to the EDG, through an HDI board, over 9600 baud asynchronous serial data links using the RDI protocol. RDI hosts use EDACS addresses to specify the source and destination for all data messages. IP Addresses aren't used when configuring an EDG with only RDI Hosts.



An RDI Host Configuration With No Addresses

To configure an EDG with only RDI Hosts, assign EDACS Addresses to the hosts and allocate ports to the hosts. A host may be connected to one or more ports on a single HDI, or multiple HDIs. Also, up to four separate hosts may be connected to a single HDI. In addition, a single host can be assigned multiple Host IDs.



An RDI Host Configuration With Addresses Assigned

For this example, it was determined that Host A would be lightly loaded and a single serial link is sufficient to handle all data traffic. Conversely, it was determined that Host B would be heavily loaded and would require three separate serial links.

Sample SYSTEM.TXT File with RDI Hosts

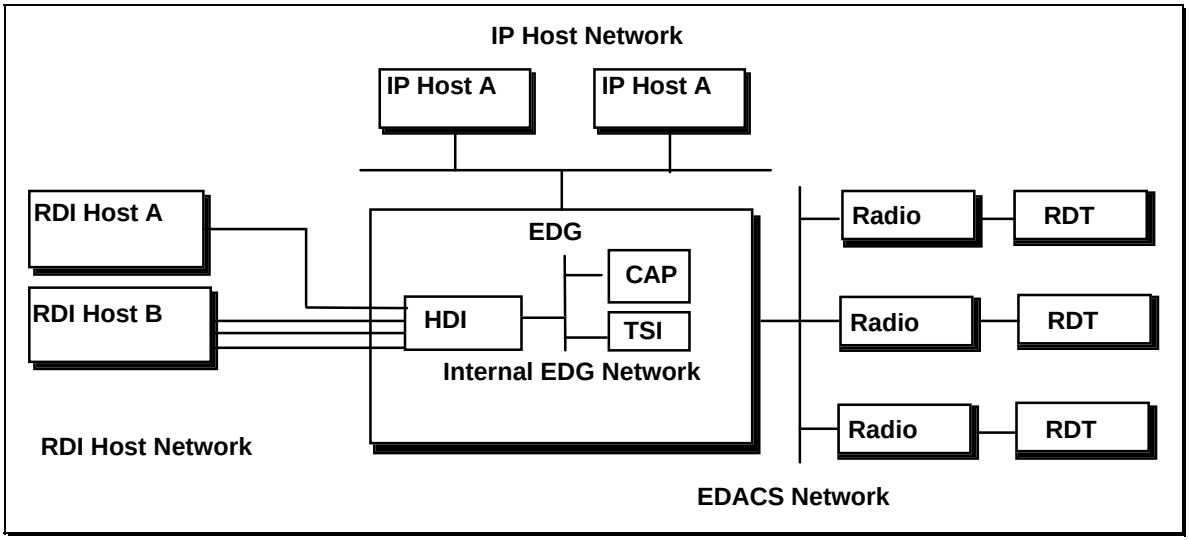
The following is a SYSTEM.TXT configuration file that would match the example configuration. The *EDG Configuration Reference Manual* contains a detailed explanation of each command.

```
################################################
# SYSTEM.TXT configuration file.
################################################

[board 1]
type cap

[board 2]
type tsi_master
tsi_edacs_id 16382

[board 3]
type hdi
hdi_port_hosts  1       61      # Host A
hdi_port_hosts  2       62      # Host B
hdi_port_hosts  3       62      # Host B
hdi_port_hosts  4       62      # Host B

[ip]
int_network_id          192.168.100.0

[edacs_network]
edacs_ip_network_id             172.16.0.0

[device_config_table]
host            61              192.168.200.61          # Host A
host            62              192.168.200.62          # Host B
RDT             64 - 16381      172.16.0.64     NONE
RDT_Group       1 -   2047                      NONE
```

COMBINED IP AND RDI HOST CONFIGURATIONS

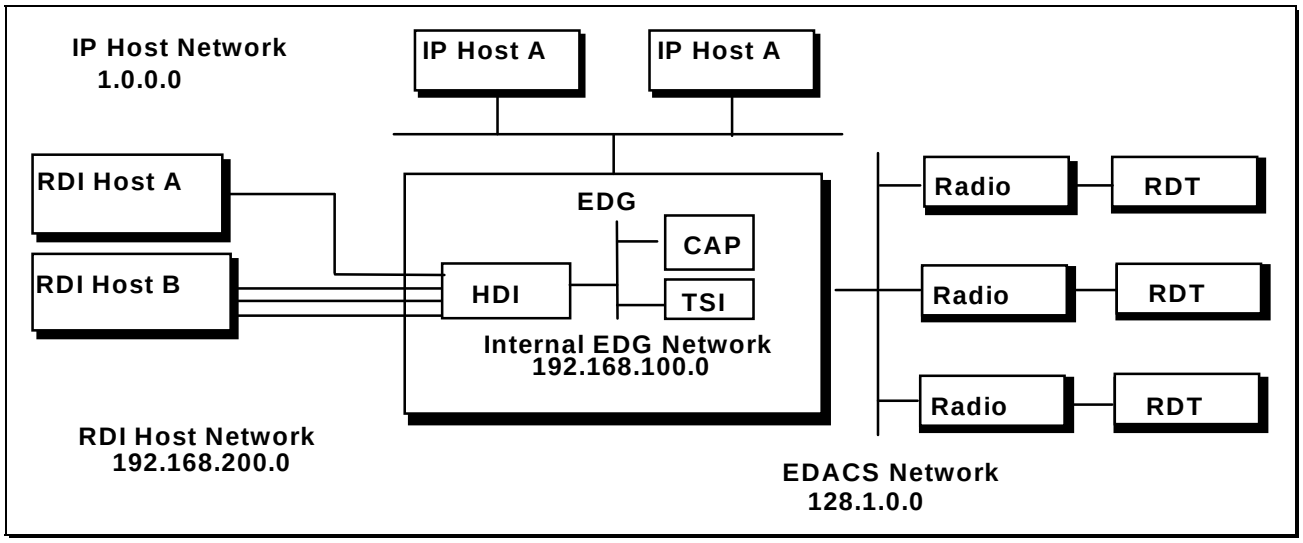
Both IP and RDI hosts may exist in an EDACS system configuration. It is recommended that if you have not read the two previous sections, "Network Planning for IP Host Configurations" and "Network Planning for RDI Host Configurations", that you do so at this time.

This example is combination of the examples used in the previous sections. It contains an RDI Host network in addition to the networks in the IP Host example.



An IP And RDI Host Internet With Network Addresses Assigned

As in the IP Host example, the first step is to assign IP addresses to all networks. It is assumed that 192.168.200.0 will be used for the RDI Host network address and that the addresses of the other networks are the same as in the IP host example.



An IP And RDI Host Internet With Network Addresses Assigned

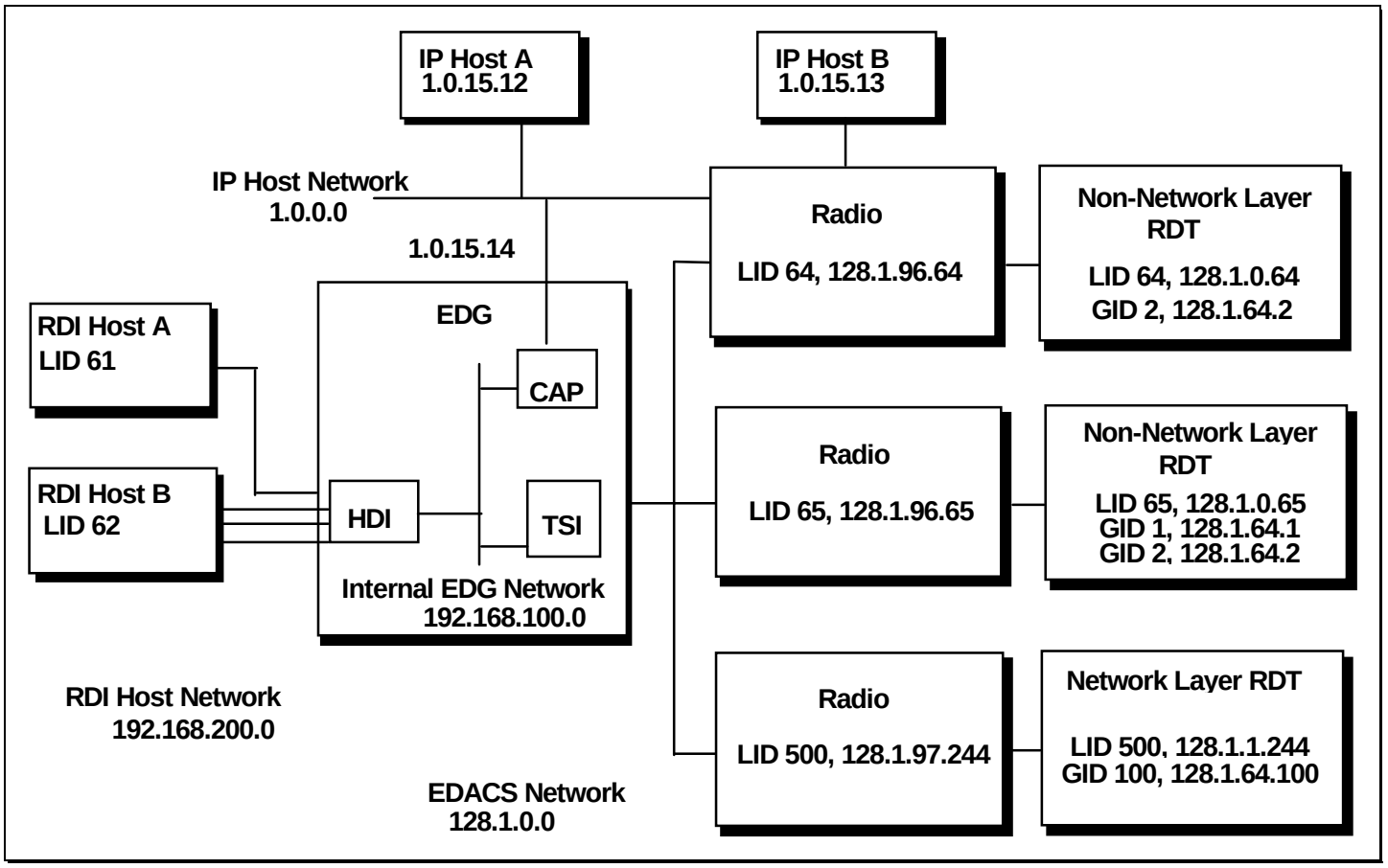
The Network Address assigned to the RDI Hosts needs to be unique and reserved within the internet to avoid conflicts.

In the example with only RDI Hosts, the EDG assigned an IP Network Address to the RDI Hosts for its own use. However, in that example, the Network Address did not have to be unique or reserved because the EDG was not connected to any internet.

Next, individual addresses should be assigned. There are several assumptions made for this example. They are:

1. There is a mixture of Network Layer and non-Network Layer RDTs and Network Layer radios.
2. RDTs without a network layer will not be communicating with IP Hosts. This means that IP Hosts will not need EDACS Addresses.
3. RDTs and radios with a network layer will not be communicating with RDI Hosts. This means that the RDI Hosts will not need IP Addresses.

We will use the same addresses as in the IP and RDI Host examples for everything except the third RDT/radio. The addresses assigned to the RDTs and radios have been divided into blocks based on whether the RDT and/or radio is using the EDACS Network Layer.



An IP And RDI Host Internet With Addresses Assigned

In this example, the EDG assigns individual IP Addresses for the RDI Hosts for its own use. They are not shown.

If desired, EDACS Addresses can be assigned to the IP Hosts in the event that the second assumption above changes. In addition, RDTs that use a network layer can access both the IP Hosts and the RDI Hosts since the EDG always assigns IP Addresses to RDI Hosts. For simplicity, these situations have been left out of this example.

Sample SYSTEM.TXT File for Combined Configuration

The following is a SYSTEM.TXT configuration file that would match the example configuration. The *EDG Configuration Reference Manual* contains a detailed explanation of each command.

```
################################################
# SYSTEM.TXT configuration file.
################################################

[board 1]
type cap

[board 2]
type tsi_master
tsi_edacs_id 16382

[board 3]
type hdi
hdi_port_hosts  1       61      # Host A
hdi_port_hosts  2       62      # Host B
hdi_port_hosts  3       62      # Host B
hdi_port_hosts  4       62      # Host B

[ip]
cap_ext_address         1.0.15.14
int_network_id          192.168.100.0

[edacs_network]
edacs_ip_network_id     128.1.0.0

[device_config_table]
host            61              192.168.200.61          # Host A
host            62              192.168.200.62          # Host B
RDT             64 - 499        128.1.0.64      NONE    # Units 64 - 499 are non-network layer
RDT             500 - 16381
RDT_Group       1 -99                           NONE    # Groups 1 - 99 are non-network layer
RDT_Group       100 -   2047
```

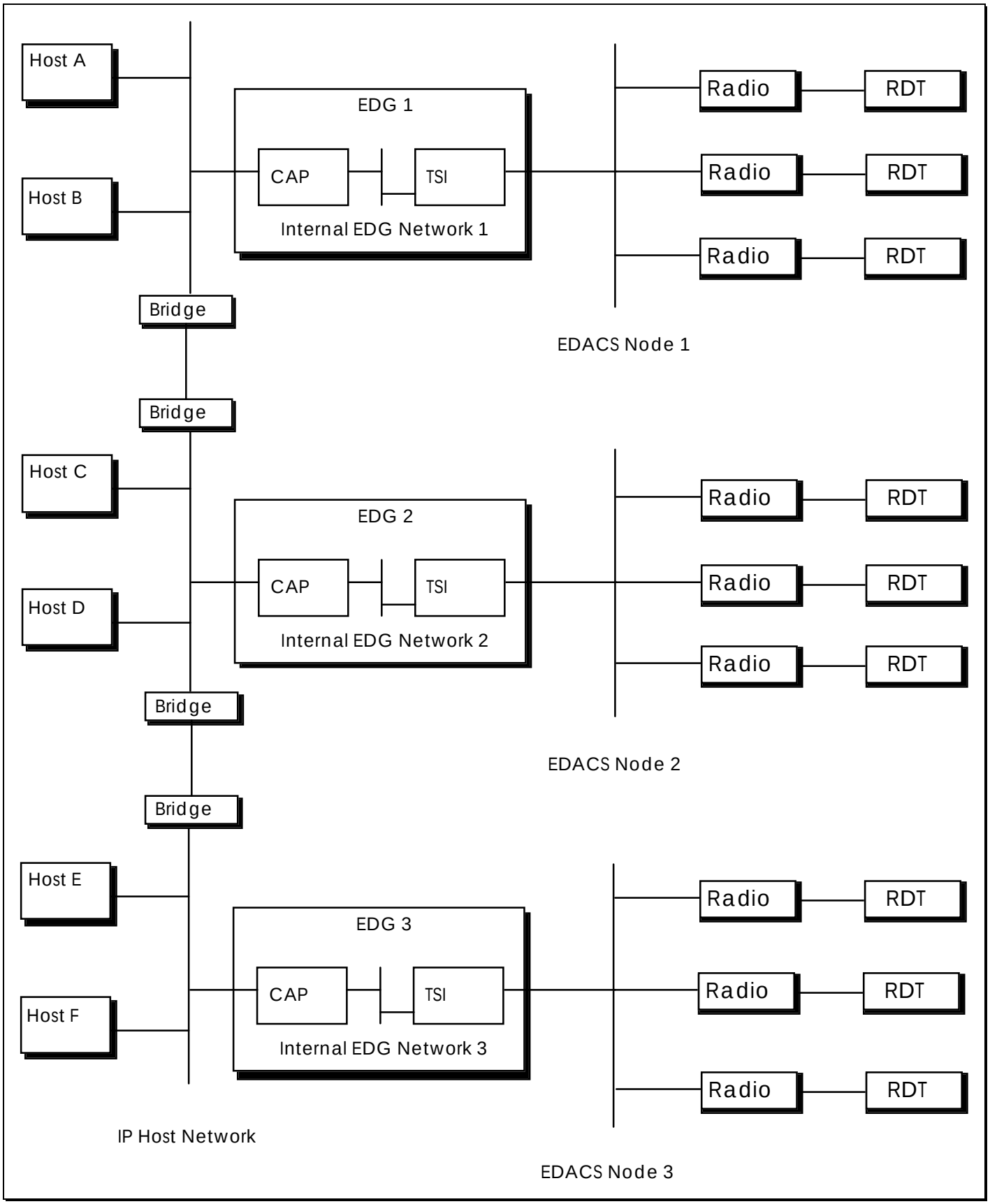
MULTIPLE EDACS NODES

When multiple EDACS Nodes are used, the EDGs re-route data using IP Addresses. IP Networks view each EDACS Node as an independent IP Network.

This section assumes familiarity with the section *Network Planning for IP Host Configurations.*

Network with Bridges Between EDGs

This example uses a simple configuration. The changes for more complex configurations are discussed in later sections.



Initial Configuration

First, assign network addresses.

As in the section *Network Planning for IP Host Configurations*, the IP Host network is an existing network with an address of 1.0.0.0. Since this configuration uses bridges, all of the IP Hosts are on the same network.

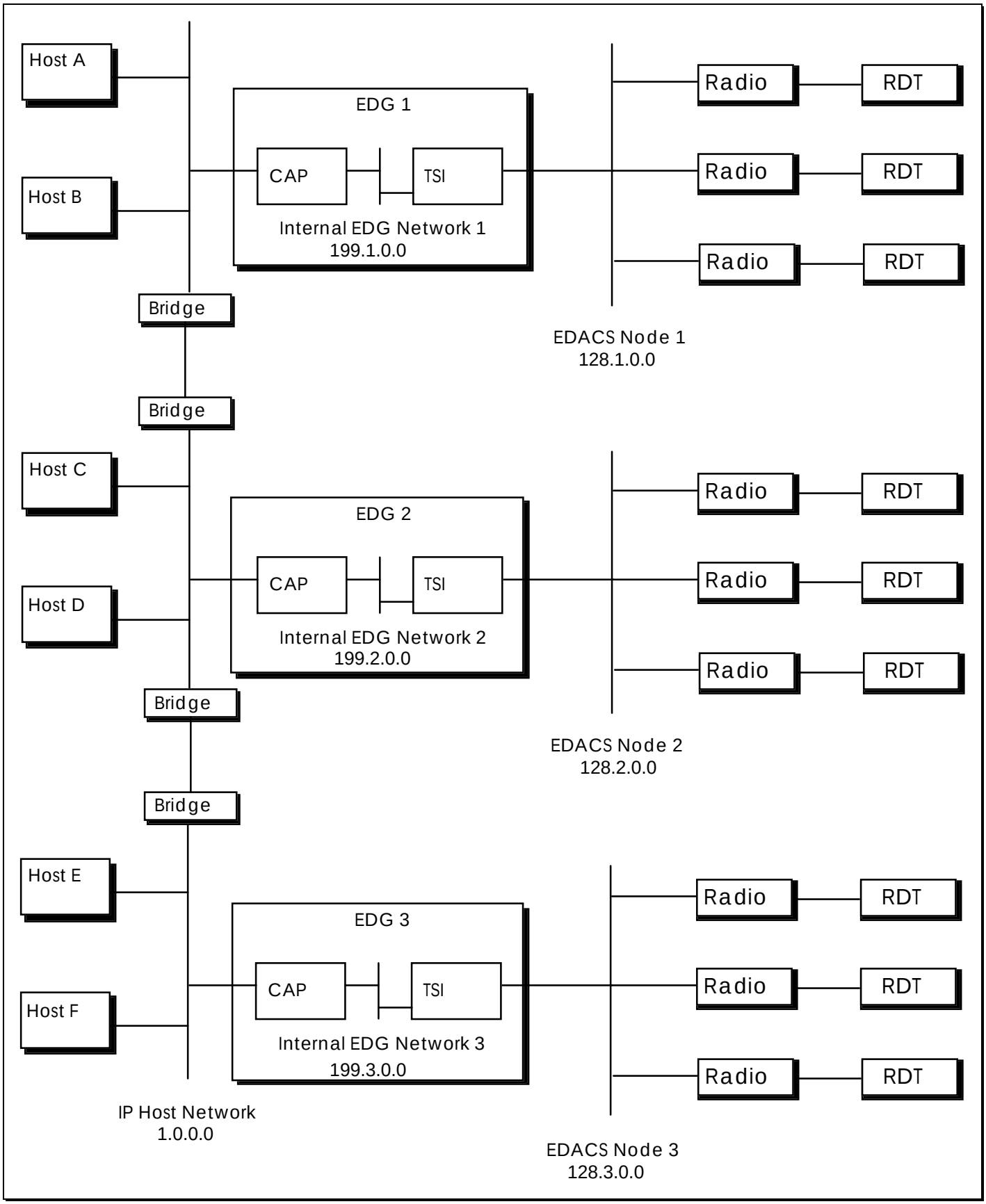
This example assumes that you have chosen the following addresses for the internal EDG Networks.

EDG1 199.1.0.0
EDG2 199.2.0.0
EDG3 199.3.0.0

This example assumes that you have chosen the following addresses for the EDACS Nodes.

EDG1 128.1.0.0
EDG2 128.2.0.0
EDG3 128.3.0.0

Remember that since each Network Address must be unique, the addresses selected should be reserved with your Network Administrator.



Configuration With Network Addresses Assigned

Next, individual addresses should be assigned. The addressing of the IP Hosts is the same as in previous examples and has been omitted. This example assumes that the following addresses for the CAP External Addresses have been chosen.

EDG 1	1.0.15.14
EDG 2	1.0.15.15
EDG 3	1.0.15.16

For the EDGs' Internal Networks, unique IP Network ID's should be assigned. Any class "C" address will be more than sufficient. For this example the following network id's were chosen to make it easy to distinguish the EDG to which the internal network belonged. i.e the second octet matches the EDG number.

EDG	Internal Network ID
EDG 1	199.1.0.0
EDG 2	199.2.0.0
EDG 3	199.3.0.0

The RDTs and/or radios are assigned an IP Address on the node where they are expected to spend most of their time. This is known as their "Home" node. Partitioning the RDTs and/or radios among EDGs by specifying their individual IP Addresses overrides the default assignment. This example assumes that the RDTs and/or radios are assigned IP Addresses as follows:

EDG	**LID Range**	**Starting IP Address**
EDG 1	64 - 1999	128.1.0.64 (RDTs) 128.1.96.64 (radios)
EDG 2	5000 - 6999	128.2.0.64 (RDTs) 128.2.96.64 (radios)
EDG 3	10000 -11,999	128.3.0.64 (RDTs) 128.3.96.64 (radios)

Data groups can be used a variety of ways. This example assumes that calls to any of the groups need to be broadcast on all of the EDACS Nodes. A simple way to accomplish this is to send all of the group calls to a single EDG and let it rebroadcast them to the other EDGs. This example assumes that the groups are assigned IP Addresses as follows:

EDG	**GID Range**	**Starting IP Address**
EDG 1	1 - 2047	128.1.64.0

There are several other configuration parameters used in this example that have not been used in the previous examples. They are:

1. The *Internodal_EDG_Route_Table*. This table provides an EDG the IP Address and the Next Gateway of the other EDGs on the EDACS Network. Each EDG has a Routing Address on its Internal EDG Network. This is the address used when EDGs communicate with each other.
2. The *IP_CAP_External_Routing_Table*. Each EDG in a multi-node configuration needs routing information for the radios that home on other nodes. The EDGs use this information to return queued messages in the event that a radio roams to an EDG and then leaves.
3. The *Host_Name*. This IP Section command is optionally used to name the EDG. The names are used by the *status* command.

NOTE

All Host Ids that radios send to must be configured on any EDG that those radios roam to.

Sample SYSTEM.TXT File For EDG 1

The following is a SYSTEM.TXT configuration file that would match the example configuration for EDG1. The *EDG Configuration Reference Manual* contains a detailed explanation of each command.

```
################################################
# SYSTEM.TXT configuration file.
################################################

[board 1]
type cap
load 01.02/loads/CAP.SX

[board 2]
type tsi_master
load 01.02/loads/TSI.SX
port_dir 1 bi
port_dir 2 bi
port_dir 3 bi
port_dir 4 bi
tsi_edacs_id 16380

[ip]
cap_ext_address         1.0.15.14
int_network_id          199.1.0.0
host_name               edg_1

[edacs_network]
edacs_ip_network_id     128.1.0.0

[device_config_table]
RDT     64 - 1999       128.1.0.64      # RDTs that home on this node.
radio   64 - 1999       128.1.96.64     # radios that home on this node.
#
RDT_Group 1  - 2047     128.1.64.0      # All possible groups.

[ip_cap_ext_routing_table]
#
# Routes to radios on other EDGs are used for messages to the radios from radios or RDI Hosts
# on this EDG and for returning queued messages if one of the radios had roamed here and left.
#
net 128.2.0.0   1.0.15.15               # EDG 2's radios.
net 128.3.0.0   1.0.15.16               # EDG 3's radios.

[internodal_edg_route_table]
199.2.0.1       1.0.15.15               # EDG 2
199.3.0.1       1.0.15.16               # EDG 3
```

Sample SYSTEM.TXT File For EDG 2

The following is a SYSTEM.TXT configuration file that would match the example configuration for EDG 2. The *EDG Configuration Reference Manual* contains a detailed explanation of each command.

```
################################################
# SYSTEM.TXT configuration file.
################################################

[board 1]
type cap

[board 2]
type tsi_master
tsi_edacs_id 16381

[ip]
cap_ext_address         1.0.15.15
int_network_id          199.2.0.0
host_name               edg_2

[edacs_network]
edacs_ip_network_id             128.2.0.0

[device_config_table]
RDT    5000 - 6999     128.2.0.64      # RDTs that home on this node.
Radio  5000 - 6999     128.2.96.64     # Radios that home on this node.

[ip_cap_ext_routing_table]
#
# Routes to radios on other EDGs are used for messages to the radios from radios or RDI Hosts
# on this EDG and for returning queued messages if one of the radios had roamed here and left.
#
net 128.1.0.0   1.0.15.14               # EDG 1's radios.
net 128.3.0.0   1.0.15.16               # EDG 3's radios.

[internodal_edg_route_table]
199.1.0.1       1.0.15.14               # EDG 1
199.3.0.1       1.0.15.16               # EDG 3

[internodal_group_repeat_table]
RDT_Group       1 - 2047                # Accept messages to all groups.
```

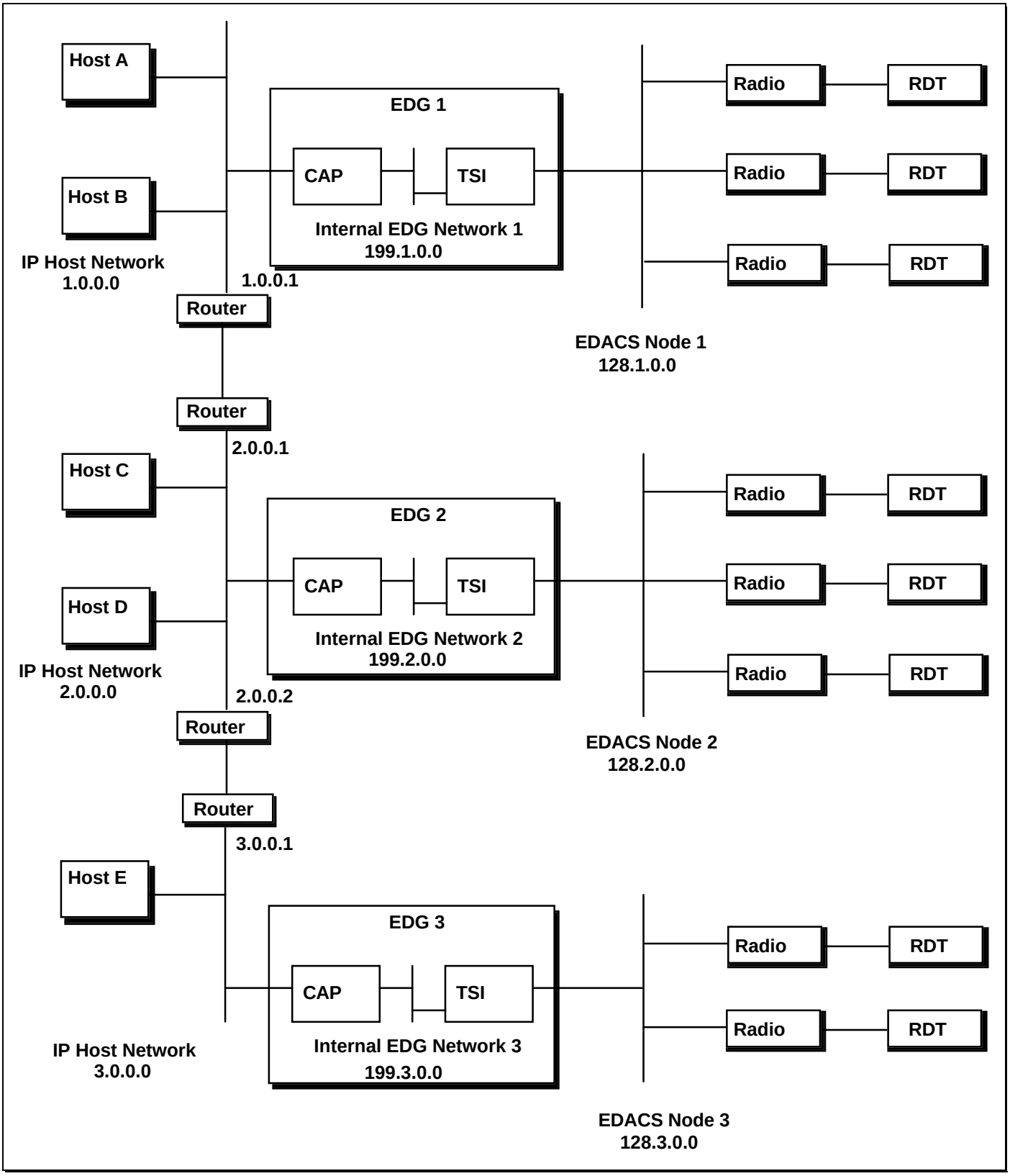
Sample SYSTEM.TXT File For EDG 3

The following is a SYSTEM.TXT configuration file that would match the example configuration for EDG 3. The *EDG Configuration Reference Manual* contains a detailed explanation of each command.

```
################################################
# SYSTEM.TXT configuration file.
################################################

[board 1]
type cap

[board 2]
type tsi_master
tsi_edacs_id 16382

[ip]
cap_ext_address         1.0.15.16
int_network_id          199.3.0.0
host_name               edg_3

[edacs_network]
edacs_ip_network_id             128.3.0.0

[device_config_table]
RDT    10000 - 11999  128.3.0.64      # RDTs that home on this node.
Radio  10000 - 11999  128.3.96.64     # Radios that home on this node.

[ip_cap_ext_routing_table]
#
# Routes to radios on other EDGs are used for messages to the radios from radios or RDI Hosts
# on this EDG and for returning queued messages if one of the radios had roamed here and left.
#
net 128.1.0.0   1.0.15.14               # EDG 1's radios.
net 128.2.0.0   1.0.15.15               # EDG 2's radios.

[internodal_edg_route_table]
199.1.0.1       1.0.15.14               # EDG 1
199.2.0.1       1.0.15.15               # EDG 2

[internodal_group_repeat_table]
RDT_Group   1 - 2047                    # Accept messages to all groups.
```

Network with Routers Between EDGs

In this example, each EDG is connected to a separate Host network. Routers are used to connect the networks.



EDGs Connected By Routers

When routers are used, the following changes need to be made to the each EDG's SYSTEM.TXT file:

1. The CAP External Address needs to be an address on the Network that the CAP is connected.

2. The IP_CAP_Ext_Routing_Table and the Internodal_EDG_Route_Tables need to be updated with the correct next gateways. The tables in the previous SYSTEM.TXT files would be replaced with:

EDG1

```
[ip_cap_ext_routing_table]
net 128.2.0.0    1.0.0.1          # EDG 2's radios.
net 128.3.0.0    1.0.0.1          # EDG 3's radios.

[internodal_edg_route_table]
199.2.0.0        1.0.0.1          # EDG 2
199.3.0.0        1.0.0.1          # EDG 3
```

EDG 2

```
[ip_cap_ext_routing_table]
net 128.1.0.0    2.0.0.1          # EDG 1's radios.
net 128.3.0.0    2.0.0.2          # EDG 3's radios.

[internodal_edg_route_table]
199.1.0.0        2.0.0.1          # EDG 1
199.3.0.0        2.0.0.2          # EDG 3
```

EDG 3

```
[ip_cap_ext_routing_table]
net 128.1.0.0    3.0.0.1          # EDG 1's radios.
net 128.2.0.0    3.0.0.1          # EDG 2's radios.

[internodal_edg_route_table]
199.1.0.0        3.0.0.1          # EDG 1
199.2.0.0        3.0.0.1          # EDG 2
```

Using RDI Hosts

When RDI Host computers are used with multiple EDACS Networks, the following changes must be made:

1. Routes must be added to the EDGs and Routers directing messages to the RDI Hosts to the correct EDG. For instance, if RDI Host 200.0.0.1 was connected to EDG1 and routers were not being used, the IP_Cap_Ext_Routing_Table for EDG 2 would need the following line added:

   net 200.0.0.0 1.0.0.15

2. The Device_Config_Table on all EDGs with radios that are communicating with RDI Hosts must include entries for the RDI Hosts.

3. The IP Network Address assigned to the RDI Hosts must be unique and reserved with the Network Administrator.

Addresses seen on the Customer Network

Messages will be sent to destinations on the Internal Networks of the EDGs (199.1.0.0, 199.2.0.0, and 199.3.0.0) and on the EDACS Networks (128.1.0.0, 128.2.0.0, and 128.3.0.0). If RDI Hosts are present, messages will also be sent to the RDI Hosts' IP Addresses. The Host Network is responsible for routing these messages to the correct EDG.

When a Home EDG receives a message to radio that has roamed, it encapsulates the message and forwards it to the Roam EDG. To routers, these messages look like messages between EDGs. The EDACS System performs all of the work associated with rerouting messages to radios that have roamed.

If any board in any EDG detects an error that prevents it from forwarding a message, the board will attempt to send an ICMP back to the originating Host or RDT. The board will be the source of the message.

MISCELLANEOUS SAMPLE SYSTEM.TXT FILES

Sample SYSTEM.TXT File with TWO TSI Masters and A TSI Slave

The following SYSTEM.TXT configuration file is based on the sample SYSTEM.TXT for IP Host Configurations if all RDTs use the network layer. A TSI Slave and a second TSI Master have been added. The *EDG Configuration Reference Manual* contains a detailed explanation of each command.

```
##############################################
# SYSTEM.TXT configuration file.
##############################################

[board 1]
type cap

[board 2]
type tsi_master
tsi_edacs_id 16382

[board 3]
type tsi_slave    2              # This slave's master is board 2.

[board 4]
type tsi_master
tsi_edacs_id 16381

[ip]
cap_ext_address         1.0.15.14
int_network_id          192.168.100.0

[edacs_network]
edacs_ip_network_id             128.1.0.0
```

INSTALLATION

EDG CONTENTS

The EDG is shipped with the following items:

- VT100 compatible terminal with power cord
- Terminal interface cable
- EDACS Data Gateway Technical Description manual
- EDACS Data Gateway Installation and Maintenance Manual
- EDACS Data Gateway Configuration Reference Manual
- EDACS Data Gateway User's Reference Manual
- EDG Loader Diskette on one 3 1/2" floppy
- EDG Application Diskettes on three 3 1/2" floppies
- EDG Configuration Diskette on one 3 1/2" floppy
- EDG Cabinet
- TSI Control Link Cable
- AC line cord (US version)
- AC line cord (International version)

The following items are ordered and shipped separately:

- Two 50 pin Concentrator Cables 19D903880, P120 through P129 (e.g. 19D903880P121)

The following items are not provided as part of the EDG:

- IBM compatible printer and cable (optional)
- DB15 AUI Ethernet Transceiver and cable (not required for configurations using only RDI Hosts)

INSTALLATION ORDER

Appendix A. Landline Data contains the installation procedure for Landline Data. This section provides the installation steps for the EDG and the Host Computers as part of that procedure. The steps documented in this section are:

1. Set the board jumpers and install EPROMs.
2. Connect the Diagnostic Terminal to the EDG.
3. Connect the printer to the EDG (optional).
4. Connect the EDG to an AC source.
5. Connect the EDG Control lines to the IMC/CEC.
6. Connect the EDG Data lines to the IMC/CEC.
7. Customize the EDG Configuration.
8. Turn on the EDG and Load the Software and Configuration.
9. Tighten the EDG's Password Security (optional).
10. Connect the Host Computer(s).
11. Modify the Host Computers Routing (IP Hosts Only).
12. Modify the Host Network (Multi-node Only).

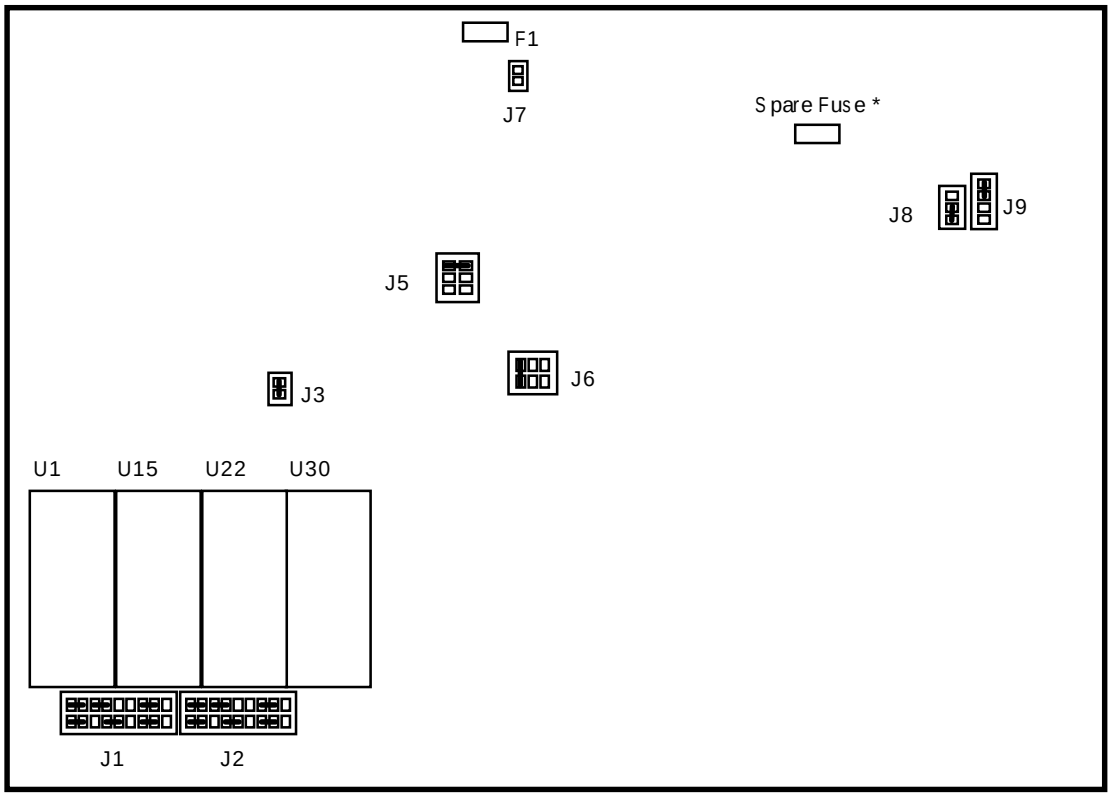
BOARD HARDWARE SETUP

WARNING

The EDG must be powered off when removing or inserting processor boards.

There are two types of boards installed in the EDG: MVME147S and VCOM24. There will be only one MVME147S board, located in the leftmost slot (slot 1). There will be one or more VCOM24 boards, beginning at slot 3. Each of these boards requires the installation of an EPROM set and the correct jumper settings for normal operation.

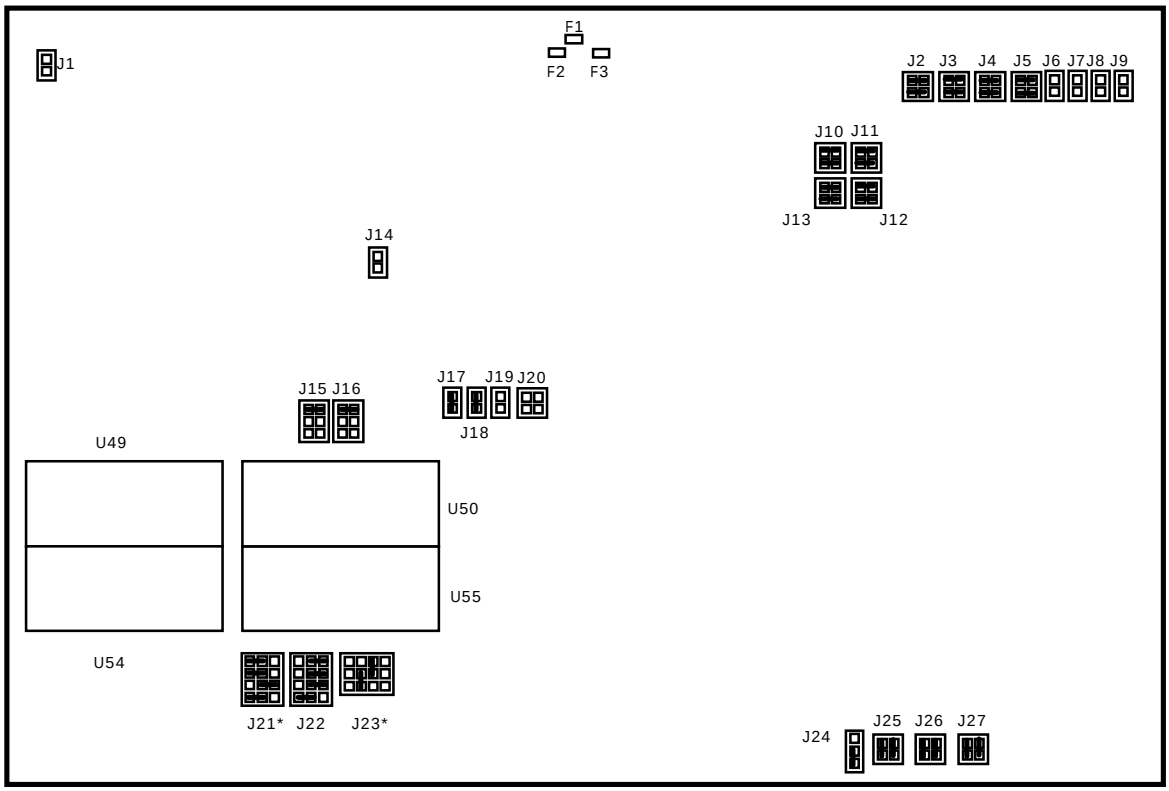
Shown below are the jumper settings for the MVME147S board. The two EPROMs for this board are to be installed in U22 and U30. U1 and U15 will not have any EPROMs installed.



MVME147S Board Jumper Settings, Fuses, And Sockets

* The Spare Fuse is on the 1992 revision of the board, but not the 1988 revision. The revision date is generally on the back near the VME connectors.

Shown below are the jumper settings for the VCOM24 board. The two EPROMs for this board are to be installed in U49 and U50. U54 and U55 will not have any EPROMs installed.

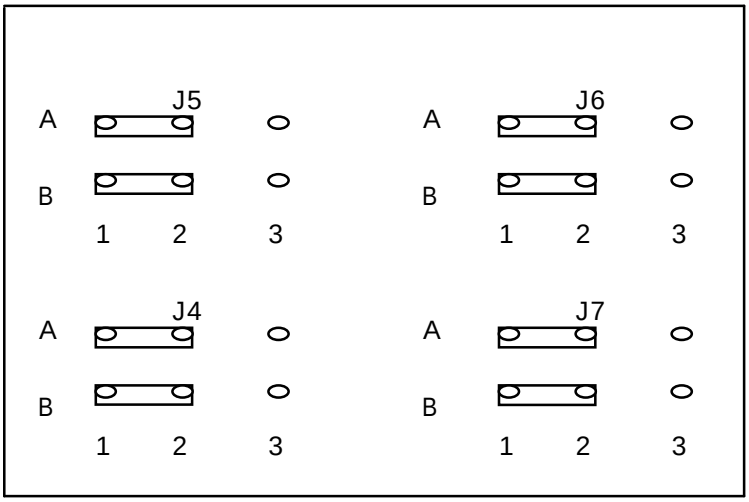


VCOM24 Board Jumper Settings, Fuses, And Sockets

* Jumpers J21 and J23 are for sockets U54 and U55. Any settings should work. Suggested settings are shown above.

Each VCOM-24 board supports four serial data communication ports. Signals for all four ports are brought to P2 at TTL levels and require off-board translation to the proper signal levels as required by the selected communication standard. For the EDG, the Serial Communication Interface (SCI) module board allows each VCOM-24 port to be configured for EIA-232-C communication standard. The SCI-232 module boards are not directly connected to the VCOM-24 board, but through a small connector board for adapting SCI boards to the VCOM-24.

When communicating with a host computer, a serial port on VCOM24 functions as DCE. The DTE/DCE option is jumper-selectable. If upgrading from a Data Advantage to an EDG, verify that the jumpers on all four SCI-232 boards are set on each VCOM24 HDI board as shown below to configure the VCOM24 serial ports as DCEs. This should be opposite to the jumpers on the SCI-232 boards of the VCOM24 WNI boards of the Data Advantage.



Jumping SCI-232 For DCE

CONNECTING THE DIAGNOSTIC TERMINAL

A VT100 compatible terminal with a power cord and a terminal cable is included with the EDG. To connect the terminal to the EDG, perform the following:

1. Attach the female connector of the terminal cable to the ***Modem*** connector on the terminal (refer to the terminal user's manual for location).
2. Attach the male connector of the terminal cable to the EDG ***SERIAL PORT 1/CONSOLE*** connector on the rear of the EDG chassis.
3. Turn on the power to the terminal per the instructions in the terminal's manual.
4. Verify that the terminal is in VT100 emulation mode via the setup screen. Change and save the setup if it isn't.
5. Set the tabs to a tab every eight columns via the setup screen.

CONNECTING THE PRINTER (OPTIONAL)

NOTE

A printer and printer cable are NOT included with the EDG.

1. Connect the female end of the printer cable to your printer.
2. Connect the male end of the cable to the EDG ***PRINTER*** port on the rear of the EDG chassis.
3. Turn on the printer.

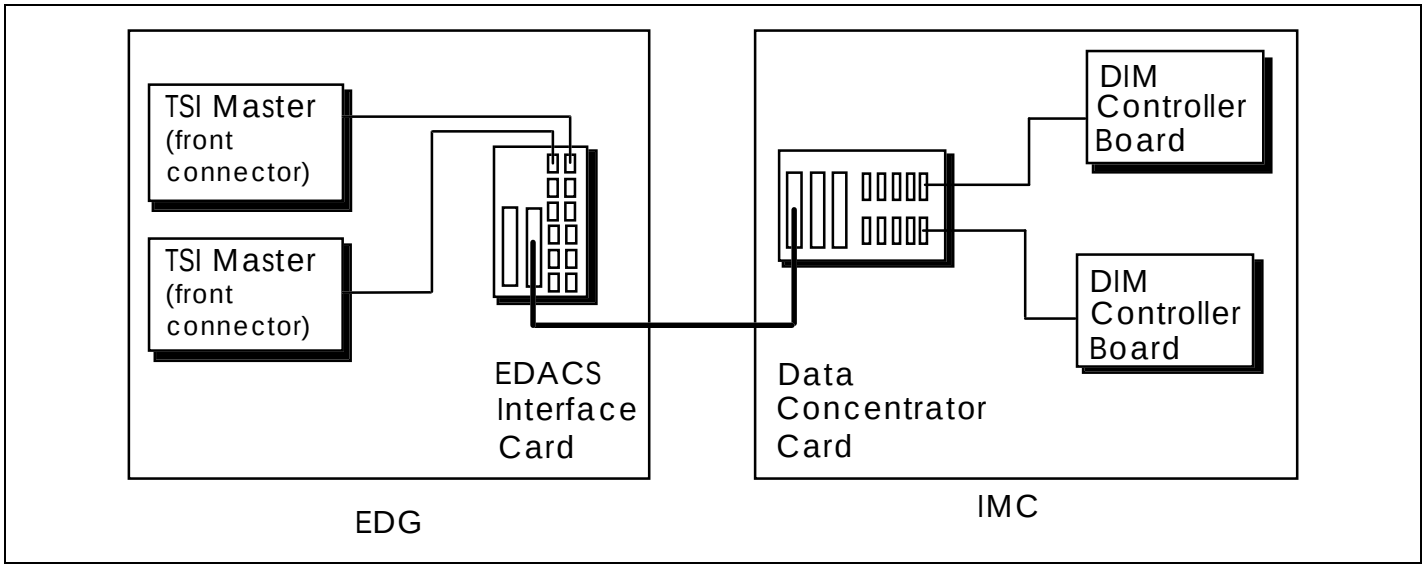
CONNECTING TO AN AC SOURCE

The EDG comes with two different AC line cords: one for use in the United States and the other for international use. One end of the international line cord does not have a plug on it so that you can add the connector needed for your country. Use the following instructions to connect the EDG to an AC source.

1. Open the back door of the EDG cabinet and locate the ***J1*** connector on the back of the power supply subassembly.
2. Insert the twist lock connector on the line cord into the ***J1*** connector and turn it clockwise to lock it in place.
3. Plug the other end of the line cord into the outlet.

CONNECTING THE EDG CONTROL LINE(S) TO THE IMC/CEC

TSI Control Link Cables run from the TSI Masters to the EDACS Interface Card on the back of the EDG. A single 50 pin Concentrator Cable (19D903880 P120 through P129) connects the EDACS Interface Card to a Data Concentrator Card on the IMC's Swing Out Tray. The control lines are split out and run to DIM Controller Boards using IMC/CEC Data Concentrator Card Cables (19D903628 P1 through P3).



EDG/IMC Control Lines

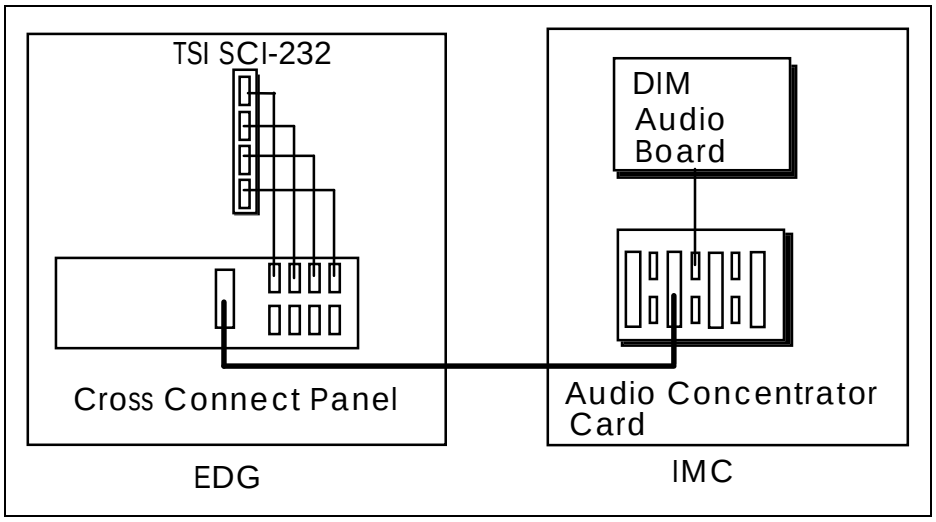
Use the following procedure to install the EDG control lines to the IMC/CEC.

1. Connect the first TSI Master to the EDACS Interface Card using a TSI Control Link Cable. The DB-15 connector plugs into the port on the front of the TSI Master board. The RJ-12 connector plugs into the EDACS Interface Card in rear of the EDG cabinet. Any available socket from J1 through J10 can be used. Do not use J11 or J12. Repeat this step for each TSI Master.
2. Plug one end of the 50 pin Concentrator Cable into the ***J15*** connector on the EDACS Interface Card.
3. Plug the other end of the 50 pin Concentrator Cable into the ***J13*** connector on the IMC Data Concentrator Card assigned to the EDG.
4. Connect the first DIM Controller to the IMC Data Concentrator Card using a IMC/CEC Data Concentrator Card Cable. Use the same connector number on the Data Concentrator Card that was used on the EDACS Interface Card. For example, if the first TSI Master on the EDG is connected into the EDACS Interface Card using J1, connect the desired DIM Controller into the IMC Data Concentrator Card using J1. Repeat this step for each DIM Controller/TSI Master pair. See the *EDACS CEC and IMC Digital Audio Switch* (LBI 38662) for additional information.

CONNECTING THE EDG DATA LINES TO THE IMC/CEC

Each TSI Master/Slave pair has its own modem shelf. On the back of each modem shelf is a Cross Connect Panel that is accessible from the back of the EDG. The four ports on the TSI Master connect into ports 1 through 4 on the Cross Connect Panel. TSI Slaves use ports 5 through 8 on the Cross Connect Panel. The TSI data lines are connected to the Cross Connect Panel when the EDG is built.

A 50 pin Concentrator Cable (19D903880 P120 through P129) is used to connect the EDG's Cross Connect Panel with an Audio Concentrator Card on the IMC's Swing Out Tray. An IMC/CEC Audio Concentrator Card Cable (19D903628 P11 through P13) is used to connect the DIM Audio Boards to the Audio Concentrator Card. Each DIM Audio Board supports up to four TSI ports.



EDG/IMC Data Lines

Use the following procedure to connect the data lines between the EDG and the IMC.

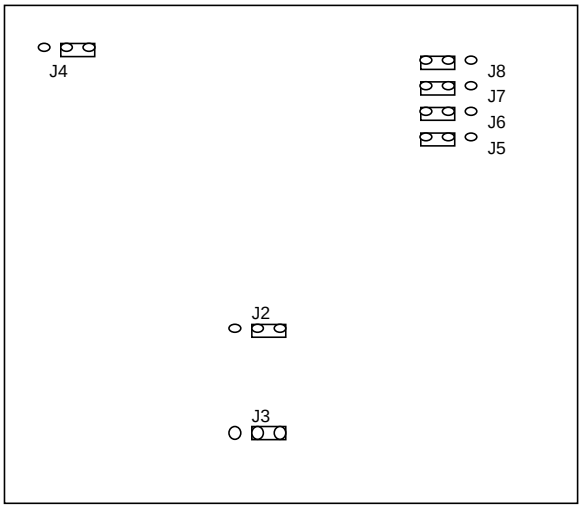
1. Plug one end of the 50 pin Concentrator Cable into the ***C01*** connector on the Cross Connect Panel.
2. Plug the other end of the 50 pin Concentrator Cable into the ***J9 or J10*** connector on the IMC Audio Concentrator Card assigned to the EDG.
3. Locate the TSI Master, DIM Controller Board and DIM Audio Board(s) associated with the modem rack.
4. Run an IMC/CEC Audio Concentrator Cable from the Audio Concentrator Card to the first DIM Audio Board. Use location **J1 or J4** on the Audio Concentrator Card depending on the location used for the 50 pin Concentrator Cable. If a TSI Slave is being used, run another cable from location **J2 or J5** on the Audio Concentrator Card to the second DIM Audio Board associated with the DIM Controller. The table below restates the connector relationships on the Audio Concentrator Card.

Champ Connector Used	Concentrator Card Connector	
	First Four EDG Ports	Additional Four EDG Ports
J9	J1	J2
J10	J4	J5

Champ To Audio Concentrator Card Connector Mapping

Repeat this procedure for each TSI Master on the EDG.

On the modem shelf, there are Rockwell modem cards and interface cards for the modems. The interface cards should be jumpered as shown in the following diagram:



Jumper Settings for Rockwell Modem Interface Cards

Customizing the EDG Configuration

NOTE

Diskettes must be Double Sided High Density (1.44MB).

1. Copy the files on the Configuration diskette to a working diskette using a MS-DOS PC.
2. Edit the SYSTEM.TXT configuration file to customize it using information gathered during network planning. In addition, the TSI EDACS IDs entered into the System Manager must be entered in this file using the TSI_EDACS_ID command.

   Security can be increased by setting the maximum number of Telnet and FTP sessions to 0. This disables Telnet and FTP sessions into the EDG.
3. Verify your configuration when done by entering "syscheck" at the DOS prompt, while on the working diskette.
4. When the system boots up, the configuration may be further verified by checking the system.rpt file in the /1.02/cnfg directory.

Refer to the *EDG Configuration Reference Manual* for more information.

TURNING ON THE EDG AND LOADING THE SOFTWARE AND CONFIGURATION

To turn on the EDG and load the software and configuration perform the following steps.

1. If the software has not been loaded previously, insert the Loader diskette into the floppy drive. If the software has been previously loaded but the configuration hasn’t, insert your configuration working diskette.
2. Flip the circuit breaker to the ON position. Turn the key on the power supply (if present) to the UNLOCK position. Details of the boot sequence are documented in the maintenance section.
3. If the EDG was turned on with a diskette inserted, it will prompt for a new diskette after it loads the current one. Each time the EDG prompts for a diskette, insert an Application diskette or Configuration Working diskette and press return. When all disks have been loaded, press return with no diskette inserted.

TIGHTENING THE EDG'S PASSWORD SECURITY (OPTIONAL)

The EDG comes with three user id's installed; "root", "user", and "guest". The passwords for these user id's are the same as the user id. All of the user ids and passwords are in lower case. The passwords can be changed using the "passwd" command. See the EDG User's Reference Manual for more information.

CONNECTING RDI HOST COMPUTERS

This is required only if your configuration includes RDI hosts.

RDI Host Computers connect to the SCI-232 Card on the rear of the EDG. The top DB-25 connector is port 0. The table below shows the pins used on those connectors. The EDG serial interfaces are configured as a DCE talking to a DTE. Only four signals are used. The EDG ignores the rest.

Description	Pin Number
RxD	2
TxD	3
CTS	4
RTS	5
Ground	7

CONNECTING IP HOST COMPUTERS

This is required only if your configuration includes IP hosts.

1. Connect your Ethernet Transceiver to the EDG using the DB15 AUI Ethernet port on the rear of the EDG electronics chassis.
2. Connect your Ethernet Cable to your Ethernet Transceiver.

MODIFYING THE HOSTS' CONFIGURATION (IP HOSTS ONLY)

For most computers, a routing entry must be added to instruct the host computer to use the EDG as the next gateway for the IP Network ID assigned to the EDACS Network. Symbolic names can also be defined as desired for the EDG CAP External Address, radios, and groups. These changes will normally be made by the System Administrator of the host computer(s). The following example commands will work on most Unix (trademark of Unix System Laboratories, Inc.) systems. Refer to the host computer's documentation for the actual commands.

Assuming that the CAP External Address had been assigned to 1.0.15.14, the following statement could be added to the /etc/hosts file to assign a symbolic name to the EDG Ethernet Network Interface.

```
1.0.15.14  edg_gateway
```

Assuming that the IMC IP Network ID had been assigned to 128.1.0.0, the following statement could be added to the /etc/rc.local file to route all messages destined to radios or groups through the EDG.

```
route  add  net  128.1.0.0  edg_gateway  5
```

If the customer network contains routers between the Hosts and the EDGs, the routers and the Hosts will need updated routing information. Normally, the administrators of the customer’s network are involved in the planning the network and making the routing changes.

MODIFYING THE CUSTOMER NETWORK FOR MULTIPLE EDACS NODES

The Customer Network will normally require additional routing information when multiple EDACS Nodes are used. The section *Addresses Seen on the Customer Network* in the *Network Planning* section contains the types of addresses that need to be routed on the Customer’s Network. Normally, the administrators of the customer’s network are involved in the planning the network and making the routing changes.

MAINTENANCE

MODIFYING PASSWORDS

Passwords can be changed by logging in and using the *passwd* command.

They can be added when logged in as root by entering the *passwd* command with the new User-id as the first parameter.

They can be deleted by copying the /etc/passwd file to diskette, using an editor on an MS-DOS PC to remove the line containing the user-id, copying the file back to the EDG and rebooting the EDG.

HARD DISK CLEANUP

The logs in the /activity directory should be deleted periodically to prevent the disk from filling up. The amount of data written to the log files can be reduced by limiting the types of messages logged. In most cases, information messages should be disabled unless maintenance work is being performed on the system. The command “log -m warn” will enable error and warning messages and disable informational messages. On heavily loaded systems, it may even be necessary to disable warning messages. The command “log -m none” will disable both informational and warning messages. The “df” command displays the amount of free space on the hard disk.

LOADING NEW SOFTWARE RELEASES

1. Insert the Loader diskette into the floppy drive.
2. Enter "reboot -h" from the Diagnostic Terminal, press the reset button on the CAP Board, or turn on the EDG.
3. Each time the EDG prompts for a diskette, insert an Application diskette or Configuration Working diskette. When all disks have been loaded, press return with no diskette inserted.

NOTE

Do not press the reset button on the CAP Board while the hard disk is active. Doing so may lock up the drive, requiring power to be cycled on the EDG.

EDG BOOT SEQUENCE

The following sequence occurs when the EDG is booted (via power cycle, reset key, or reboot command):

Step	CAP Board	VCOM24 Board(s)
1.	Board Initializes Itself. The FAIL, STATUS, and SCON LEDs are lit for 1 second. FAIL is turned off, STATUS flickers, and RUN is lit for around 10 seconds. RUN flickers. If the hard disk has never been formatted, or has been replaced, a prompt will appear asking if a high level format should be performed. If the response is 'Y', a high level format will begin.	Board Initializes Itself. SYSFAIL and all of eight small LEDs flash on for 1 second. The RUN LED is lit and all others are turned off for around 10 seconds. The sixth LED is lit to indicate that the VCOM24 Board has posted an interrupt to the CAP Board.
2.	If present, LOADER.SX is copied from the floppy to the hard drive. The LOADER.SX from the hard drive is loaded into RAM and executed. If present, CAP.SX, TSI.SX, HDI.SX, and SYSTEM.TXT are copied from the floppy to the hard drive.	
3.	Board extends multiprocessor OS across all boards.	Board joins the multiprocessor OS. The small LEDs walk from 0 to 7 and back to indicate that the board will accept a download.
4.	The Loader parses the SYSTEM.TXT file for the application pathnames. It then copies the applications to the CAP Board and VCOM24 Boards.	Board accepts download. When the download completes, the board number (2 through 10) is displayed on the small LEDs. If the board isn't configured, they sequence indefinitely.
5.	A banner is displayed on the Diagnostic Terminal. SYSTEM.TXT is parsed a second time. /cnfg/system.rpt is built with the results. Phase 1 verifies each command and its parameters. Phase 2 verifies that the commands are valid for the board type and that all required commands are present. Phase 3 supplies default values as necessary. Phase 4 does a complete check of the configuration. Phase 5 builds the internal routing tables.	Board waits for parser to complete. On configured boards, all small LEDs are lit.

Step	CAP Board	VCOM24 Board(s)
6.	Application is started on board. Board reports when it is ready.	Application is started on board. If no errors, the board number is redisplayed, otherwise an error code is displayed. Board reports when it is ready. If it is a TSI Master, the DIM Link must be established. If the board is a TSI Master, LED 7 cycles on & off every 7 seconds if DIM Link established.
7.	If all boards have reported that they are ready, all boards are told to start accepting data calls. If after 30 seconds, all boards haven't reported that they are ready, an error is displayed on the Diagnostic Terminal and written into the Activity Log.	Boards starts accepting data calls when told to. If board is a TSI Master and DIM Link is down or goes down, board continually attempts to reestablish link.

VCOM24 BOOT ERROR CODES

If an error is detected while starting the application on the VCOM24, one of the following LED patterns will be displayed on the eight small LEDs.

LEDs	Error	Severity
7 and 0	OS Clock could not be started.	Fatal
7 and 1	Memory Manager could not be initialized.	Fatal
7 and 3	Object could not be created.	Fatal
6 and 1	User Interface Gateway could not be started.	Non-fatal
6 and 3	Task could not be started.	Fatal

Fatal errors will prevent the proper operation of the EDG, and is usually indicative of a board hardware failure. Non-fatal errors will still allow the core EDG features, such as call processing, to operate correctly. However, reduced functionality may result. For example, if the User Interface Gateway cannot be started on a VCOM24 board, the User Interface 'network' command will not be able to obtain statistics from that board.

TROUBLE-SHOOTING GUIDE

WARNING

The EDG power must be off when removing or inserting the CAP or VCOM boards. The Modem Interface Module can be inserted or removed with power on. **If the power is on, modems can only be insert or removed with their associated Modem Interface Module removed.**

Some of the actions below should only be performed by Ericsson Service Representatives. **If a problem** can not be resolved or the Corrective Action **involves checking EDG hardware, contact your Ericsson Service Representative**.

When trying to correct problems, the activity log, /cnfg/system.rpt, ICMP messages, and Site Reports can be useful in locating problems.

Problem	Corrective Actions
A board fails to power up	1. Verify that circuit breaker is in **ON** position. 2. Verify that key is in **UNLOCKED** position. 3. Verify that power supply is plugged into a live source. 4. Verify that all circuit breakers on the power supply are on. 5. Verify that all of the boards are fully inserted. 6. Verify that the voltages levels at the back of the EDG are correct**. This should only be checked by qualified personnel**. If they are not correct, replace the power supply. 7. Verify that boards contain the correct ROMs and that the ROMs are inserted correctly. If a ROM is upside down and power is applied, it should be replaced. 8. Replace the board. 9. Replace EDG Chassis.
FAIL, SYSFAIL, or HALT LED(s) are on.	1. Verify that the software on the hard drive is compatible with the ROMs. 2. Verify that boards contain the correct ROMs and that they are inserted correctly. If the ROMs are upside down and power is applied, they should be replaced. 3. Verify that the boards are jumpered correctly. 4. Verify that the boards are fully inserted. 5. Replace the board. 6. Replace EDG Chassis.
CAP doesn't know sideboards exist.	1. Check the slot 2 jumper on the back of the backplane. 2. Replace the boards. 3. Replace EDG Chassis.
Software Load Fails	1. Use the *df* command to determine if there is any space on the hard drive. Delete files if necessary. If activity files are the problem, set the reporting level to *Warning* using the log command (*log -m warn*). 2. Try a different floppy disk. 3. Replace the floppy drive. 4. Replace the hard drive.

Problem	Corrective Actions
EDG Fails to successfully boot	1. Check /cnfg/system.rpt for problem parsing SYSTEM.TXT. 2. If using an EDG Group 2 SYSTEM.TXT file, verify that a TSI_Hosts command is being used. See Release notes for more info. 3. Check Diagnostic Terminal for problem with LOADER.SX. Reload from floppy if necessary. 4. Check Diagnostic Terminal for problem accessing hard drive. Power cycle EDG if access light stays on (reset may have been pressed while the disk was active). 5. Check Diagnostic Terminal for other problems and attempt to correct.
EDG reboots itself	1. Check /activity/fatal.log for sideboard that requested the reboot. Swap out the board and see if that corrects the problem. Note: The EDG is not able to reboot itself for CAP problems and some types of sideboard problems. 2. Replace the boards. 3. Replace EDG Chassis. 4. Replace the EDG power supply.
DIM Link could not be initialized.	1. Check physical connections. 2. Verify that EDG configuration in SYSTEM.TXT matches physical connections. 3. Verify that the IMC or CEC is operational. 4. Disconnect DIM link for 10 seconds and reconnect. 5. Reset IMC or CEC. 6. Reboot EDG.
EDG Fails System Startup	1. Verify that EDG booted successfully (see above). 2. Verify that DIM Link was initialized (see above).
Diagnostic Terminal Fails to respond.	1. Verify that the terminal isn’t in block mode. If it is, press the block mode key again. 2. Check Terminal power and cable to EDG. 3. Check Terminal fuse (if present). 4. Verify that EDG is operational. 5. Restore factory setup, change emulation to VT100, and set tabs to every 8 columns. 6. Replace the Terminal.
Diagnostic Terminal display doesn't line up correctly.	1. Set tabs to every 8 columns. 2. Restore factory setup, change emulation to VT100, and set tabs to every 8 columns. 3. Replace the Terminal.
Printer doesn't work.	1. Verify that printer is on-line and has paper. 2. Check power and cable to EDG. 3. Check for other alarms on printer and correct. 4. Verify that the EDG is operational. 5. Replace the printer.
Telnet or FTP are not accepted	1. Verify that host has the correct IP Address of the EDG CAP External Address. 2. Verify that the Host and EDG can reach each other by using "ping" or equivalent. 3. Verify both the EDG's and host's network connections. 4. Verify that both the EDG and host are operational. 5. Verify that the Max Telnet or FTP sessions is greater than 0 on the EDG.
Login not accepted.	1. Verify spelling and case of login name and password. 2. Verify that login name is still valid in /etc/passwd.

Problem	Corrective Actions
Excessive errors on the DIM Link	1. Verify the cabling. 2. If a punch block is used on the 50 pin concentrator cable, run a new direct cable. 3. Swap out the DIM Controller. 4. Swap out the TSI Master. 5. Convert the DIM Link to RS-232. 6. Change the DIM number. 7. Change the DIM slot. 8. Replace the cables, starting with the 50 pin concentrator cable. 9. Replace the concentrator panels.
Call to radio fails due to port open failure.	1. Replace the modem and controller. 2. Verify that the modem and SCI-232 are connected. 3. Check fuse 3 on VCOM Board. 4. Verify that the modem rack has power. 5. Replace the SCI-232. 6. Replace the modem rack.
Call to radio fails due to too many write retries and the 5th modem light is lit.	1. Check fuse 2 on the VCOM Board. 2. Replace the modem and controller. 3. Replace the SCI-232.
Ping from IP Host to EDG CAP fails.	1. Verify the EDG and Host are connected. 2. Verify the Host and the network can route to the EDG. The net command can show if data is reaching the EDG. 3. Verify that the EDG and network can route back to the host. 4. Verify that the Yellow Ethernet LED is lit on the EDG's 714 module. If it isn't check the fuse on the CAP Board. 5. Verify that the EDG's wiring is correct.
Radio fails to go to a working channel to receive an Individual Data Call	1. Verify that radio is on, in range, and logged into the site. 2. Verify that radio is programmed correctly. 3. Check mic. Some radios display 'nd' or 'no data' when mic is connected or when it is off the hook, preventing data calls. 4. Verify that the RDI is connected to an RDT and that the correct application is running. Radios will not accept data calls if the RDI isn't seeing a CTS. 5. Verify that the LID is registered in the System Manager. 6. Verify that the EDG successfully started up. 7. Verify that the DIM Link hasn't failed. 8. Check for other errors in EDG activity log or site reports and correct problem.
Radio fails to go to a working channel to receive a Group Data Call	1. Verify that the data group has been programmed into the radio (using the RDI interface). 2. Verify that the group is either forced at the site or that at least one radio has logged in with the same voice group. 3. Check mic. Some radios display 'nd' or 'no data' when mic is connected or when it is off the hook, preventing data calls. 4. Verify that the radio supports Group Data Calls. 5. See Individual Call Problems.

Problem	Corrective Actions
Radio receives data call, but message doesn't reach RDT.	1. Check the cabling on the radio, RDI and RDT. 2. Verify that RDT is on and executing the correct application software. 3. Cycle power on the radio and RDT. 4. Verify that both the EDG and the RDT are or aren't using the EDACS Network Layer or the correct EDACS Network Layer version. 5. Verify that the entry in the Device_Config_Table of the EDG and the RDI are using the same setting for BREN Anti-Biasing.
Excessive Error Rate	1. Verify that the radio is in range and isn't being interfered with. 2. Verify that the channels are tuned correctly. 3. Attempt to isolate the problem to a site and channel. Or drop back to a site and channel that work and add others one at a time. 4. Enable BREN. 5. Verify that the SYSTEM.TXT Msg_Timeout value is long enough. 6. Verify that the SYSTEM.TXT Max_Msgs value is set high enough. 7. Verify that the SYSTEM.TXT Outbound_Msg_Delay value is large enough. 8. Verify that the TSI Board isn't running out of memory.
Time interval between consecutive calls is excessive.	1. Verify that the radio is in range and isn't being interfered with. 2. Verify that the SYSTEM.TXT Outbound_Msg_Delay value isn't too large.
TSI Boards run out of memory.	1. Reduce the SYSTEM.TXT Max_Msgs or the Msg_Timeout values.
Radio originated message doesn't reach the host	1. Verify that the data is reaching the EDG using the activity log. If it isn't correct the EDACS problem. See #2 below. 2. Verify the Host EDACS Ids being used are the same for both EDG and RDT/Radio. 3. Verify that both the EDG and the RDT are or aren't using the EDACS Network Layer. 4. Verify that the entry in the Device_Config_Table of the EDG and the RDI are using the same setting for BREN Anti-Biasing. 5. If the CAP External Route table contains any required entries. 6. Verify the path from the host to the EDG and back by pinging the EDG's CAP Board from the host.
Extra data bytes prepended to data received at RDT.	1. RDT LID or GID is defined as a network layer RDT in SYSTEM.TXT, but EDACS Network Driver is not installed at RDT.
Data received at RDT or host is garbled.	1. RDI set up to use BREN, but TSI_Anti_Biasing field in Device_Config_Table entry of SYSTEM.TXT is not set to ON. 2. TSI_Anti_Biasing field in Device_Config_Table entry of SYSTEM.TXT is set to ON, but RDI is not set up to use BREN.
No response to port assign.	1. Verify that the LID is logged into the IMC via the MOM PC. 2. Verify that the radio is configured with wide area enabled on the System Manger. Perform a database upload in unsure. 3. Verify that the site is connected to the switch by originating a multi-site voice call from the radio. 4. Verify that a multi-site individual call can be placed to the radio.

ICMP MESSAGES RETURNED BY EDG

This section is relevant only to those configurations containing IP hosts.

ICMP TYPE	ICMP Code	Reason
Echo Reply	N/A	Echo Request received
Destination Unreachable	Network Unreachable	1. No message can reach any radio on the network. See the activity log for more information.
Destination Unreachable	Host Unreachable	1. A message to a specific radio failed. See the activity log for more information.
Destination Unreachable	Protocol Unreachable	1. Attempt to send an ICMP message other than an Echo Request to an RDT.
Destination Unreachable	Fragmentation Needed and DF set	1. Message exceeds 512 bytes.
Source Quench	N/A	1. Maximum Number of messages exceeded on a TSI Master. 2. All channels on a Site are busy (4 attempts/msg). 3. An EDG board is out of memory. 4. Message rate too high for CAP.
Time Exceeded for a Datagram	Fragment reassembly time exceeded	1. Maximum message time-out exceeded for a message.
Timestamp Reply	N/A	1. Timestamp Request received.
Information Reply	N/A	1. Information Request received.
Address Mask Reply	N/A	1. Address Mask Request received.

DEBUGGING A MULTIPLE NODE CONFIGURATION

In addition to the normal debugging that occurs in a single node configuration, there are a few additional considerations for multiple node configurations.

1. If the Home EDG is unreachable, radio destined messages cannot be received by a radio that has roamed to another node. This is because radio destined messages are always sent to the Home EDG and then routed to the Roam EDG. While this prevents messages from reaching radios while their Home EDG is down, it allows large numbers of radios to roam without risk of disrupting the host network.
2. The EDGs cross check their configurations with other EDGs. It is important that the IP Addresses and LIDs are unique.
3. When an EDG reboots, it gets the current LID tracking information from the IMC. This can take several minutes. During this period, some messages will be handled less efficiently and the error rate may be slightly higher.
4. RDI Host computers will not always get an ACK2 or ACKA back for every message. If messages are lost between EDGs or if a radio isn't logged into any node, the RDI Host won't receive an ack back. This doesn't require any changes to existing RDI Host applications as long as they are adhering to the time-out mechanism in the RDI Protocol specification.

FORCING A HARD DISK REFORMAT

The EDG will only reformat the Hard Drive if it detects a problem This procedure can be used to force the EDG to reformat its Hard Drive.

1. Verify that the EDG Installation disks are available. If they aren't, copy the files /LOADER.SX, /loads/CAP.SX, /loads/TSI.SX, and /loads/HDI.SX to four floppies. The EDG User's Manual contains the commands used to copy files to the floppy.
2. Verify that the current SYSTEM.TXT file is available on floppy. If it isn't, copy the file /cnfg/SYSTEM.TXT to a floppy.
3. Save other files such as /etc/passwd and activity logs to floppies as desired.
4. Login and remove the LOADER.SX file by entering "rm LOADER.SX".
5. Reboot the EDG. The reboot will fail and ask if you want to attempt to reboot again. Enter "n" to bring up the diagnostic shell.
6. Enter "format". It will warn that the command will destroy all data on the hard drive twice. Enter "y" to continue each time. It will ask if a low level format should be performed. Enter "n".
7. When the prompt returns, insert the Loader Disk into the floppy drive and reboot the EDG. Reload the SX files and the SYSTEM.TXT file as prompted.
8. After the EDG has finished rebooting, restore other files as desired. The default root, user, and guest passwords must be used until the /etc/passwd file is restored.

FUSES AND CIRCUIT BREAKERS

This section is for Ericsson Service Personnel only.

The EDG contains several fuses. It is extremely rare for one of the fuses to need replacement under normal circumstances. The Trouble Shooting section indicates when to check the fuses. This section provides detailed information about the fuses.

Power Supply

Most versions of the power supply use a circuit breaker as the On/Off Switch. Some versions have additional circuit breakers on the back of the power supply.

CAP Board Fuse

Fuse Info:	A 1 Amp fuse is located in the middle of the CAP Board, near the VME bus connectors. The 1992 boards contain a spare in the upper right corner. See the Board Hardware Section for picture of location.
Purpose:	Protects +12V supply to Ethernet Interface.
Indications of Bad Fuse:	IP Interface doesn't work. Yellow Ethernet LED on Transition Module isn't lit.
Possible Causes of Burn out.	Lightening, power surges, bad CAP board, bad EDG power supply, bad Transition Module, bad Adapter Board.

SCSI Fuse

Fuse Info:	A 1 Amp fuse is located on the Adapter Board on the back of the VME backplane behind the CAP Board. The fuse is located near pin 1 of the J1 ribbon cable connector.
Purpose:	Protects +5V supply to SCSI Terminator Logic.
Indications of Bad Fuse:	EDG can't access the hard disk on boot up, attempts to reformat the disk fail. Green SCSI Terminator LED on Transition Module isn't lit.
Possible Causes of Burn out.	VMEAdapt boards not plugged in. Bad hard drive, floppy, Adapter Board, CAP, or Transition Module.

VCOM24 Fuses

Fuse Info: Three 3 Amp fuses are located in the middle of the VCOM Board, near the VME bus connectors. See the Board Hardware Section for picture of locations. The fuses protect the voltages that the VCOM board supplies the VMEAdapt card via the P2 (bottom) VME bus connector. The pins are in 3 columns (A - C from the left) and 32 rows (row 1 is at the top).

Fuse 1 is on the +5V supply. It goes out on pin 1A. The VMEAdapt also gets unfused +5V from other pins on the connector. This fuse is available as a spare.
Fuse 2 is on the -12V supply. It goes out on pin 23C.
Fuse 3 is on the +12V supply. It goes out on pin 8C.

Purpose: Protects the -12V and +12V supplies to the VMEAdapt and SCI-232 Modules.

Indications of Bad Fuse: Fuse 2: Calls fail due to "Too Many Write Retries" and the 5th LED on each modem stays on.
Fuse 3: Calls fail due to "Port Open Failed".

Possible Causes of Burn out. Bad EDG hardware. Perform the following steps to isolate the problem.

1. Verify that the location on the p2 connector isn't grounded.

   Turn the power off and remove the VCOM board. Insert a wire into the p2 connector on the backplane that corresponds to the blown fuse.

   Verify that the connector location on the backplane isn't grounded. Both pins 23C and 8C should read open. If the connector is grounded, go to step 2a. If it isn't go to step 2b.

2a. The p2 location is grounded, check the check the SCI-232.

   There are 4 SCI-232 modules on each SCI-232 card on the back of the chassis. Label and remove the ribbon cables from the 4 SCI-232 modules that connect to the corresponding VMEAdapt board. Check the p2 connector as in step 1. If the connector is now OK, replace the SCI-232 card.

3a. The p2 location is still grounded, check the chassis and the VMEAdapt Board.

   Remove the VMEAdapt module from the back of the backplane. Check the p2 location as in step 1. If the p2 location is still grounded, replace the chassis. Otherwise replace the VMEAdapt Board.

2b. If the p2 location isn't grounded, check the power to the chassis.

   Turn the power back on and verify that the voltage levels at the back of the EDG are correct. If they are not correct, check for loose wiring connections. If none are found, contact Technico for further instructions.

3b. If the voltage levels are correct at the chassis, check the fuse and VCOM board. Turn the power off while replacing components.

   Replace the fuse (see the parts list), and reinsert the VCOM card . If the fuse still blows, replace the VCOM card. If the fuse still blows, contact Technico.

PARTS LIST

The following are the part numbers and descriptions of the basic spare parts available from Technico. Delivery ranges from 1 to 6 weeks.

Part Number/Name	Description
4203750G1	Power Supply
MVME147SA-001	CAP Board
MVME712	Transition Module, Adapter Board
FD235JS711	3.5” 1.44MB Floppy Drive
7290S	3.5” 235MB Hard Drive
VCOM-24	TSI or HDI Board
3203327G1	SCI-232 Card (4 ports) and VMEAdapt Board
4203340G1	Cross Connect Panel on back of modem rack

The following parts are available from Ericsson Service Parts.

Part Number/Name	Description
SXCA1D	69” Cabinet
SXFN1A	Fan
902542G1	Modem Unit Shelf without Cross Connect Panel
902442P1	Modem Interface Module
705178P1	Rockwell Modem

PIN OUT FOR THE DIAGNOSTIC TERMINAL CABLE

The following diagram shows the minimum number of pin connections required in the Diagnostic Terminal cable. If DTR handshaking is to be used, pin 20 must also be connected.

Description	Terminal	EDG
Shield Ground	1	1
Terminal TX Data	2	2
Terminal RX Data	3	3
Signal Ground	7	7
DTR (optional)	20	20

PIN OUT FOR THE TSI CONTROL LINK CABLE

The following pin out should be used for the TSI Control Link Cable:

Description	DB15	RJ-12
IMC/CEC TX	2	2
IMC/CEC RX	3	4
Ground	7	3
Ground	7	5

The TSI Control Link Cable must be twisted pair having both the TX and RX signals paired with a ground.

Appendix A. Landline Data

HARDWARE/SOFTWARE REQUIREMENTS

EDACS Product	Software Release Minimum/ Recommended	Software Revision	Hardware Revision (recommended minimum In parenthesis)	Other Requirements
Station GETC 1E	349A9607G4/ CXC 112 1266 (Kit=AE/LZY 213 767)	 R7B	19D902104 Rev 0 or 19D904266 Rev A (19D902104 Rev F or 19D904266 Rev A or later)	• Rockwell modem on each data-capable channel • Landline data enable set in GETC personality • Normal messaging is Transmission Trunked Data. Message Trunked Data should be OFF, unless being used in the radio.
Station Turbo GETC. Required for all channels	344A4414G4/ CXC 112 1267 (Kit=AE/LZY 213 768)	 R7B	19D903536P1 Rev 0 (or later).	• Rockwell modem on each data-capable channel • Landline data enable set in GETC personality • Normal messaging is Transmission Trunked Data. Message Trunked Data should be OFF, unless being used in the radio.
Uplink and Downlink GETC	344A4895G4 CXC 112 1268 (Kit=AE/LZY 213 769)	 R7A	19D902104 Rev 0 or 19D904266 Rev A (19D902104 Rev F or 19D904266 Rev A or later).	
Downlink Turbo GETC.	344A4414G4 CXC 112 1269 (Kit=AE/LZY 213 770)	 R7A	19D903536P1 Rev 0 (or later).	
IMC Controller Board	350A2024G11A U58 350A2025G11A U59 350A2023G11A U3 Recommended 349A3567G12 U58 344A3568G12 U59 344A3565G11A U3	4.12 4.12 5.01 5.10 or later 5.10 or later latest	19D903299P1 Rev G or 19D903299P3 Rev 0	
IMC Audio Board	344A3564G10	3.00	19D903302P1 Rev H or 19D903302P3 Rev 0	
EDACS Data Gateway Application	CXC 112 1288 (Kit=AE/LZY 213 818)	R3A	19D904713 (350A1069G1)	Properly configured for • # of ports • port direction • host IDs
EDG MVME 147 ROMs	CXC 112 1303 (Kit=AE/LZY 213 831)	R1A		
EDG VCOM 24 ROMs	CXC 112 1304 (Kit=AE/LZY 213 832)	R1A		
VAX Site Controller	349A9639G3 Data Queueing requires PROM=RON 107 784 (Kit=AE/LZY 213 XXX)	3.59 R8A(V8.xx)	Controller Computer • 19A149302P5 Application Assembly • 19D438315P1	Landline data enable set in Site Controller personality using Personality Utility Rev 5.3

Table 1 - Landline Data Compatibility Matrix

INSTALLATION PROCEDURE

The Landline Data feature requires software upgrades for all of the EDACS® system components. In addition, some hardware upgrades may be necessary for those systems without Turbo GETCs or VAX Site Controllers.

Installation Order

Upgrade the IMC

Configure the IMC

Set the output audio levels from the EDG.

Install the EDG

Set up IDs for data

Upgrade the Site Controller

Upgrade the site channels and down links

Configure site channels through the System Manager

Check modem audio levels at the site

Upgrade the IMC

The EDG communicates to the EDACS® system through the Data Module. The Data Module consists of an IMC controller board and one IMC audio board. (If the EDG has eight ports, two audio boards are required). Follow the installation instructions provided with the Data Module to install it in the IMC.

Landline data requires Group 11 softwareor higher in the IMC Data Module and Group 10 software or higher in the IMC audio board. If the software level in the IMC is lower than specified, follow the instructions in the applicable release notes to install the software. In addition, the IMC audio boards which talk to the EDG must be revision H or higher.

Configure the IMC

After adding the Data Modules, you must allocate TDM bus slots to the board and set the output audio level from the EDG to the IMC using the following procedure and the MOM PC.

From the main screen of the MOM PC, select the `System Audio Configuration` menu and then the `TDM Bus and Slot Configuration` submenu.

Of the three choices presented, select the `System Slot Configuration` option. You should now see three options. Pick the `Configure Slots` option and then `Console Slots`.

In the `Console Slots` window, enter the number of EDACS® ports in your EDG next to the console number you assigned to your Data Module via the controller board's DIP switch setting.

When you are done allocating the slots in the console slots window, press the ESC key until you return to the `System Slot Configuration` option menu.

Send the new slot configuration by selecting the `Send Slots` option. This sends the slot configuration to the MOM controller in the IMC.

For the new configuration to take effect, you must cycle power on the IMC or reset each controller board individually.

Setting the Output Audio Level From the EDG

Using the MOM PC, you must tell the IMC to expect 0 dBm of loss between the EDG and the IMC.

From the main screen of the MOM PC, select the `System Audio Configuration` menu and then the `Trunked Channel Configuration` submenu.

Of the two choices presented, select the `Console Channel` option. Enter the console number assigned for the EDG. This number is determined by the DIP switch setting on the Data Module controller board.

For each port in the EDG, set the input level to 0 dBm.

Note: This setting may not be optimal. Refer to document AE-LZB 117 1915/1 for proper system alignment settings and procedures.

Install the EDG

The EDG is shipped mounted in a cabinet with all internal cabling in place. It is configured to match the customer's application before shipping. Once the cabinet is in place, follow the installation instructions in the Installation section of this document.

Set up IDs for data

Any EDACS unit ID valid for voice calls is also valid for data calls. Each group ID that receives data calls from the host must have its *Wide Area Enable* and *Automatic Tracking* bits set in its Unit ID Database record. Since data call queuing is disabled in the Site Controller, the dequeue priority field is ignored. You can check these values through the System Manager's `Unit Identification` **`Database Maintenance`** submenu. No other unit ID parameters need to be adjusted.

When adding or modifying a unit ID record, you must upload the entire unit ID database to all sites in the system.

Each host that wants to talk directly to a mobile data terminal needs a valid EDACS unit ID. Host IDs are restricted to be between 1 and 63 and cannot have the same ID as a conventional channel defined in the MOM PC or another radio LID. The *Wide Area Enable* and *Automatic Tracking* bits can have any value for a host ID.

Upgrade the Site Controller

The Site Controller must be running Group 3 application software or a later revision for Landline Data. To use the Data Queueing feature, the minimum required application software is Ericsson Part Number RON 107 784 revision R9A.

In addition, the personality profile option, which specifies the data call mode in which the site controller is to operate: RF (default, for backward compatibility) or Landline must be set to Landline. All data calls processed by the site controller are subject to the same data call mode. Follow the instructions provided in the Site Controller release notes for installing and configuring the software.

Upgrade the site channels

EDACS® Landline Data requires a Turbo GETC board for data capable channel. Also, each GETC board servicing a data capable channel must have a Rockwell 9600 baud modem attached to it and be running Group 4 software or a later revision. The GETC personality must have the Landline Data bit set. Follow the procedure documented in 349A9945 to set the Landline Data bit.

Upgrade the uplinks and downlinks

All site down links must have a Turbo GETC board running Group 1 of DLGETC software or a later revision. Follow the installation instructions in the release notes for the DLGETC.

Configure site channels through the System Manager

The channels on each site capable of handling data calls must be configured through the System Manager's `Site/Device Definition` **`Database Maintenance`** submenu. In the `Channel Configuration` screen, enter a Y on the *Data* row and *Modem* row under all channels that you use for data. Also, enter a N on the *Allowed CC* row under at least one channel per site in your system. This keeps one data capable channel free from being used as a control channel. When you finish configuring the channels for a site, upload the new site configuration to the site.

In systems where all channels are not available for data, the location of the data capable channels and the channel allocation method is important. For example, if the site is configured to assign channels in ascending fashion, as opposed to descending or rotating, and the data capable channels are also the lowest numbered channels, those channels will often be busy with voice traffic when data call requests come into the site. In that situation, it would be better to either make higher numbered channels data capable or change the allocation method to descending. This would make the limited data channel resources more available to data call traffic.

Program Auto-Login Capability Into Radios

Currently, all login databases are cleared in the IMC when the IMC receives a database download from the System Manager. From then on, a remote unit will not be reachable from the data application host computer until its radio logs back into the IMC. This will happen if a voice or data call is initiated from the radio but only if the auto-login feature is programmed into the radio. Use the radio personality programmer to enable the auto-login feature in those radios used for data calls.

Check modem audio levels at the site

The modem levels for all GETC data capable channels must be properly adjusted to insure a high percentage of successful calls. This should only be done after the line loss between the site and the IMC is already accounted for through the MOM PC. The procedure is specified in document AE-LZB 117 1915/1.

RESTORATION PROCEDURE

There are two options available to restore the system back to a previous configuration: restore to RF data capability and remain at current hardware and software revisions or restore to RF data capability and return to previous hardware and software revisions. To choose the second option, follow the restoration procedures documented in the release notes for the GETC, Site Controller, and IMC. Uninstall the EDG by removing the DIM interface from the IMC and deallocating the TDM bus slots assigned through the MOM PC.

To return to RF data capability but keep current hardware and software revisions:

On each site, replace the Site Controller personality with a personality that has the RF data enabled.

For each data capable channel, reprogram the GETC personality so that the RF data is enabled.

Disconnect the data application host computer from the EDG and connect it to RF control stations. These control stations must be properly programmed, using the radio personality programmer, to be data hosts.

Ericsson Inc.
Private Radio Systems
Mountain View Road
Lynchburg, Virginia 24502
1-800-592-7711 (Outside USA, 804-592-7711)

Printed in U.S.A.