



**Generic V5.0
FSR00 PUN24
Release Notes**

61220300050-09P

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generated, used, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manuals, may cause interference in which case the user will be required to correct the interference at his/her own expense.

NOTICE: Customers connecting this device to the network shall, upon request of the telephone company, inform the telephone company of the particular lines such connections are made, the FCC registration number, and ringer equivalence number of this device. This information is contained on the label located on the rear panel of the system.

If this device causes harm to the network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be notified in advance to give you the opportunity to maintain uninterrupted service.

If you experience trouble with the system, please contact Summa Four, Inc., 25 Sundial Avenue, Manchester, NH 03103-7251, (800) 978-6624 for repair information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected, or you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

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For further information about this product, contact:

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Printed In U.S.A.



This symbol on the product's nameplate means it has been tested by Electronic Testing Labs, Inc.

Section 1 Introduction

1.1 Introduction to Generic V5.0

Summa Four's VCO/4K switch with a capacity of 4,096 ports is now available. Generic V5.0 software is the first system software that addresses the 4,096 port (4K) configuration. Generic V5.0 requires a software and hardware upgrade to your current VCO switch: the V5.0 software included with this shipment must be installed in your switch, and a C-bus retrofit kit hardware upgrade is required (if not already installed) in order to operate your VCO in 4K mode.

In addition, you may need to upgrade some of your existing Summa Four cards to the current firmware requirements. Refer to *Section 3, System Requirements*, for these requirements.

To take advantage of the 4K port capability, an extended Host API has been developed; the Host API command and report fields have been extended, and additional fields have been added. The extended Host API is designed for messages to handle the 4,096 address range and tone plan identification. The extended Host API is required for the switch to operate in extended operational mode. This extended version of the API also supports the existing 2,048 port configuration with existing hardware.

Systems can operate with either the standard (existing) version of the Host API or the extended API. The switch must be set to operate in one mode or the other. The method for setting and viewing the mode is specified in *Section 2*.

Generic V5.0 can run on VCO/Series or SDS switches, but only VCO/Series switches can use all 4,096 timeslots. The C-bus hardware is installed on VCO/4K systems at the time of manufacture; VCO/20 and VCO/80 systems may be upgraded using an optional upgrade kit.

Table 1.1 System Feature Compatibility

System Feature	VCO/20	VCO/4K	VCO/80	SDS
2,048 ports	Yes	Yes	Yes	Yes
4,096 ports ^a	Yes ^b	Yes	Yes ^b	No
Standard operational mode	Yes	Yes	Yes	Yes
Extended operational mode	Yes	Yes	Yes	Yes
A- and B-bus	Yes	Yes	Yes	Yes
C-bus	Yes ^b	Yes	Yes ^b	No

^a To take advantage of the 4,096 ports, both the Extended Operational Mode and C-bus Enabled System Feature flags must be enabled.
^b With optional upgrade kit.

1.2 NEW FEATURES

New features in the Generic V5.0 software release and 4K system include:

- Extended Host API
- Increased system limits
- Extended Operational Mode (4,096 timeslots)
- Extended Operational Mode reporting
- 4K port configuration
- Interface Controller Card (ICC)
- Service Platform Card (SPC)
- Timeslot Allocation Licensing increase
- Redundancy enhancements
- System administration enhancements

Detailed information for each above mentioned feature, and screen layouts when applicable, are provided in *Section 2*.

1.3 Summary of Recommended Steps for Performing V5.0 Test

To upgrade your system to V5.0 FSR 00 the following steps are recommended:

1. Verify system requirements and make any required firmware changes (*Section 3*).
2. Back up your current database.
3. On side A:
 - a. Perform incremental installation of generic software (*Section 4.4.1*).
 - b. Perform a database conversion (*Section 4.4.2*).
 - c. Install Ethernet for Host and SNMP Communication (*Section 4.4.3*).
4. If redundant, repeat steps 3.a through 3.c on side B.
5. If running SNMP, install MIB on the network management system (*Section 4.6.1*).
6. Test the system with your existing application in Standard Operational Mode.
7. Back up the database(s).
8. Bring down the switch and set the system to Extended Operational Mode (*Section 4.7*).
NOTE: At this point the application should also be switched to send and receive the Extended Host API.
9. Test the system in Extended Operational Mode.
10. To return to standard mode, the saved database files must be used (*Section 4.8*).

CAUTION: If running a redundant system, set both sides to the same mode.

1.4 REFERENCES

You may want to refer to the following documents that apply to your configuration.

- SDS and VCO *Installation Manual*
- Technical Description: *Interface Controller Card (ICC)*
- Technical Description: *Interface Controller Card I/O Module*
- Technical Description: *Service Platform Card (SPC)*
- Technical Description: *Central Processing Unit (CPU - 16 MB 68030)*
- Technical Description: *Network Bus Controller 3 (NBC3) Card*
- Product supplements for optional software, including:
 - *VCO V4.1 Management Information Base (MIB) Reference Guide*
 - *VCO V4.1 Management Information Base (MIB) User's Guide*
 - *V4.0 VCO & SDS Programming Reference*
 - *V5.0 Extended API Programming Reference*
 - *V5.0 Standard and Extended ASIST/API Programming Reference*
 - *V4.0 TeleRouter Reference Guide*
 - *V4.0 ISDN Supplement*
 - *V4.0 Ethernet Supplement*
 - *V4.2 DPNSS Supplement*
 - *V4.2 DASS2 Supplement*
 - *V4.0 IPRC Supplement*
 - *V4.2 ISDN NET5*
 - *V4.0 Applicable country supplements*

2.1 EXTENDED HOST API

The Extended Host API is designed for messages to handle the 4096 address range and tone plan identification. The host interface supports both the Standard and Extended Host API. The Extended Host API is required for the increased system limits, and is used when the switch is in Extended Operational Mode.

The major functional modifications included in the Extended Host API include:

- Port Addresses — 4 bytes, bit packing removed
- Resource Group IDs — 2 bytes
- Impulse/Outpulse Rule IDs — 2 bytes, bit packing removed
- Conference Call ID — 2 bytes
- Address Ranges — 4 bytes

Additional field modifications include:

- Spacer Bytes — 4 bytes for User Function ID in commands
(Use as a command or ID tag field. The echoed command response contains the value contained in the spacer bytes for the command.)
- Tone Plans — 4 bytes

NOTE: Refer to the Extended API Programming Reference for more information.

The following tables display the differences between the standard and extended versions of the host messages.

Table 2.1 Host Command Message Changes

ID	Command	Spacer Byte	Tone Plan	Port	Group	Rule
\$49	ISDN Port Control	X	X	X		
\$65	Subrate Port Control	X	X	X		
\$66	Voice Path Control	X		X		
\$67	DTMF Collection Control	X	X	X	X	
\$67	DTMF Collection Enhanced	X	X	X	X	
\$68	MF Collection Control	X	X	X	X	
\$69	Outgoing Port Control	X	X	X	X	X
\$6A	Incoming Port Control	X	X	X		X
\$6B	Change Incoming Port	X	X	X	X	
\$6C	Voice Port Control	X	X	X	X	
\$6C	Voice Port Enhanced	X	X	X	X	
\$6D	Conference Control	X	X	X	Conf #	
\$70	Port Hook State Control	X	X	X		X
\$72	Port Supervision Control	X	X	X		
\$80	Request Resource Allocation			X	X	
\$81	Req. Hardware Allocation			X		
\$83	Port Status Command			X		
\$90	Change Port Status Cmd	X		X		
\$91	Voice Prompt Maintenance	X	X	X		
\$C0 02	Configure T1 Sync			X		
\$C0 05	Host Assume/Relinquish			X		

Table 2.2 Host Report Message Changes

ID	Report	Port	Group	Rule
\$80	Resource Allocation	X	X	
\$81	Hardware Allocation	X		
\$82	Card Status Command	X		
\$83	Port Status Command	X		
\$D0	MF Digit	X		
\$D1	DTMF Digit Enhanced	X		
\$D2	Permanent Signal Condition	X	X	
\$D3	System Port Status	X	X	
\$D5	Routing Action (TeleRouter)	X		
\$D6	Resource Limitation	X	X	
\$D9	System Card Status	X		
\$DA	Outgoing Port Change State	X	X	
\$DB	Incoming Port Change State	X	X	
\$DD	Inpulse Rule Complete	X		X
\$DE	Voice Port Status	X		
\$EA	ISDN Port Change of State	X		X
\$ED	ISDN Impulse Rule Compl.	X		X

Table 2.3 Host Command/Report Messages Not Changed

ID	Command
\$82	Card Status Command
\$C0 00	Config VCA/Set Sys Clock
\$C0 01	Change Active Controllers
\$C0 03	Set/Reset Host Alarms
\$C0 04	Host Call Load Control
\$F0	Alarm Condition

2.2 INCREASED SYSTEM LIMITS

Generic V5.0 features increased system limits for inpulse and outpulse rules, resource groups, maximum ports in a resource group, and virtual ports. *Table 2.4* lists the resource and maximum system limits.

Table 2.4 System Limits

System Resource	Old Limit	New Limit
Inpulse Rules	30	256
Outpulse Rules	30	256
Resource Groups	63	224
Max. Ports in a Resource Group	999	1920
Virtual Ports	256	999

NOTE: The increased system limits do not apply when your system is operating in standard mode.

2.3 EXTENDED OPERATIONAL MODE

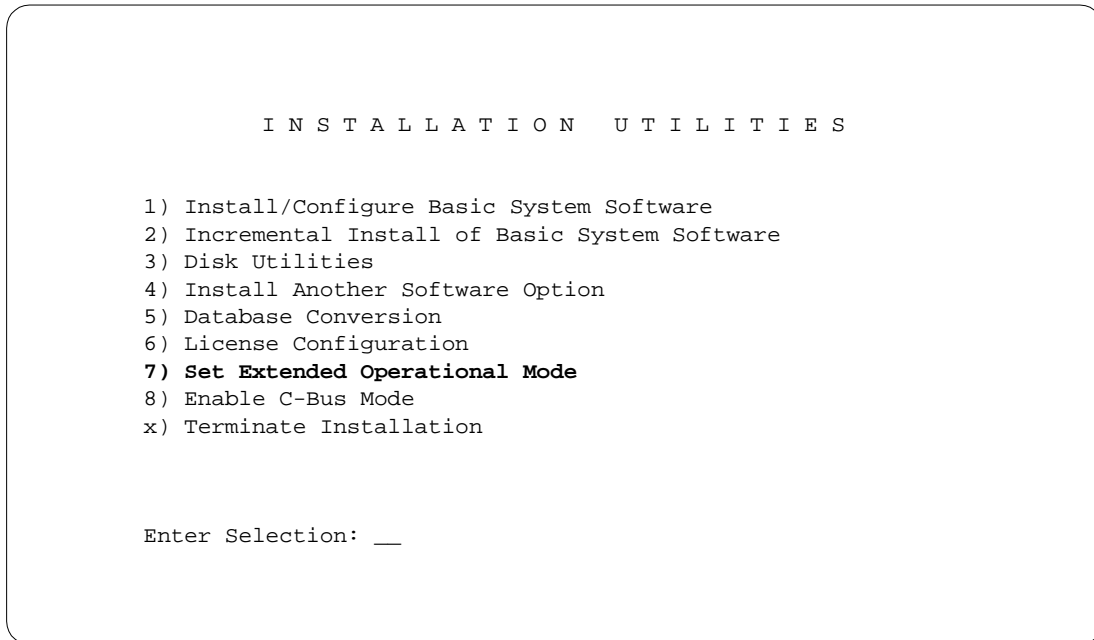
To take advantage of the increased system limits, a menu option, Set Extended Operational Mode, has been added to the Installation Utilities screen. This screen, shown in *Figure 2.1*, appears during the installation process.

The Extended Host API is required to use the full 4,096 ports. Refer to *Section 2.1* for detailed information on Extended Host API.

2.3.1 Set Extended Operational Mode Option

Extended Operational Mode requires an addition to the Installation Utilities screen as shown in *Figure 2.1*. Select **7** for the new Set Extended Operational Mode option.

CAUTION: Extended Operational Mode is not backward compatible. To revert to standard mode you must restore a saved or empty database.



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Figure 2.1: Installation Utilities Screen

When selected, a Setting the Operational Mode To Extended Mode. Are you sure(Y/N)=N? prompt displays on the screen. If unsure, press **ENTER**. Otherwise, press **Y** then **ENTER** to continue. Once activated, an Extended Mode of Operational is Set Now message appears.

If the system is already in Extended Operational mode, when you press **7** an Already in Extended Mode message appears.

NOTE: Change both sides in a redundant system.

2.3.2 Extended Operational Mode Verification Screen

An Extended Operational Mode flag is added to the System Features screen, as shown in *Figure 2.2*. This flag is read-only and shows whether Extended Operational Mode is activated. If Y, the Extended Operational Mode is used. If N, the Standard Operational Mode is used.

S Y S T E M F E A T U R E S			
FEATURES	ALLOWED (Y,N)	FEATURES	ALLOWED (Y,N)
Redundant System	N	Send All ISDN Connect Reports	N
Output Periodic Alarm Reports	N	Enable \$66 Cmd Host Checking	N
Card/Alarm Status at Init.	N	Cut Thru For Non-ISDN Alerting	N
Manual Intervention For SLIP/OOF	N	Enable 4th Column DTMF	N
Enable Grace Timing On Null Rule	N	Set System to A-Law	Y
Disable Card Error Report/Reset	N	Enable AllPortsDeactivated Alarm	N
Enable Digit Field Reporting	N	\$EA Reports on DChannel RESTART	N
Suppress PSC/Rule Abort Messages	N	Enable NET5 Overlap Receiving	N
Enable Host Password Check	N	Send All ISDN Disconnect Report	N
Force Bearer/Lap Activation	N	Convert Reorder Tone To Busy	N
Enable MFC-R2 Supervised Clear	N	K1197 Layer 3 Testing	N
Enable SLIC Guarded Disconnect	N	Extended Operation Mode Set	N
Enable CPA Monitor Disconnect	N	C-bus Mode Enabled	N
Revert to Basic Redundancy	N		
Send Reports Before Guard Time	N		
Enable ISDN Manual Disconnect	N		

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Figure 2.2: Extended Operational Mode Verification Flag

2.4 Operational Mode Reporting

The \$DC report is generated each time the host connects and each time a switchover occurs. This report has been enhanced to indicate the operational mode in which the system is running: standard or extended. The third bit, formerly reserved, now represents the operational mode.

Refer to the *System Reports* section of the *Extended API Programming Reference* for detailed information. This documentation is provided on CD-ROM as part of your V5.0 shipment.

2.5 4K PORT CONFIGURATION

The vehicle for providing the additional port capability for a 4K port configuration is the C-bus. The C-bus provides the additional 2,048 timeslots, for a total of 4,096 timeslots. Systems configured with only A- and B-buses are limited to 2,048 (2K) timeslots.

The backplane of the 2K port switch being upgraded to a 4K port switch must be physically augmented to enable the C-bus. A C-bus retrofit kit is included in the V5.0 upgrade shipment.

NOTE: VCO/4K systems are shipped with the 4K port backplane installed.

In addition, the Alarm Arbiter Card (AAC), with a revision of COUR or later, is required. The system controller requires the 16MB 68030 CPU. Refer to the *Central Processing Unit Technical Description* for detailed information.

To operate in 4K mode, Type 2 cards are required. Type 2 cards are compatible with the C-bus, and are designated as Type 2 by the IV K label on the front panel of the card.

NOTE: Refer to Table 1.2 in Section 1 of the System Administrator's Guide for the attributes of all available Summa Four cards.

All cards must be situated in a single switch subrack. This is required because the Bus Repeater Card (BRC) is not able to carry the C-bus.

NOTE: To utilize the 4K timeslots, your system may need a hardware upgrade. Follow these guidelines: The VCO/4K is configured at the factory at the time of manufacture. The VCO/20 can be upgraded in the field. The VCO/80 can be upgraded in the field, but can use only one switch subrack. The SDS/Series does not support 4K; it is restricted to 2K port operation.

2.5.1 C-Bus Enabled Mode

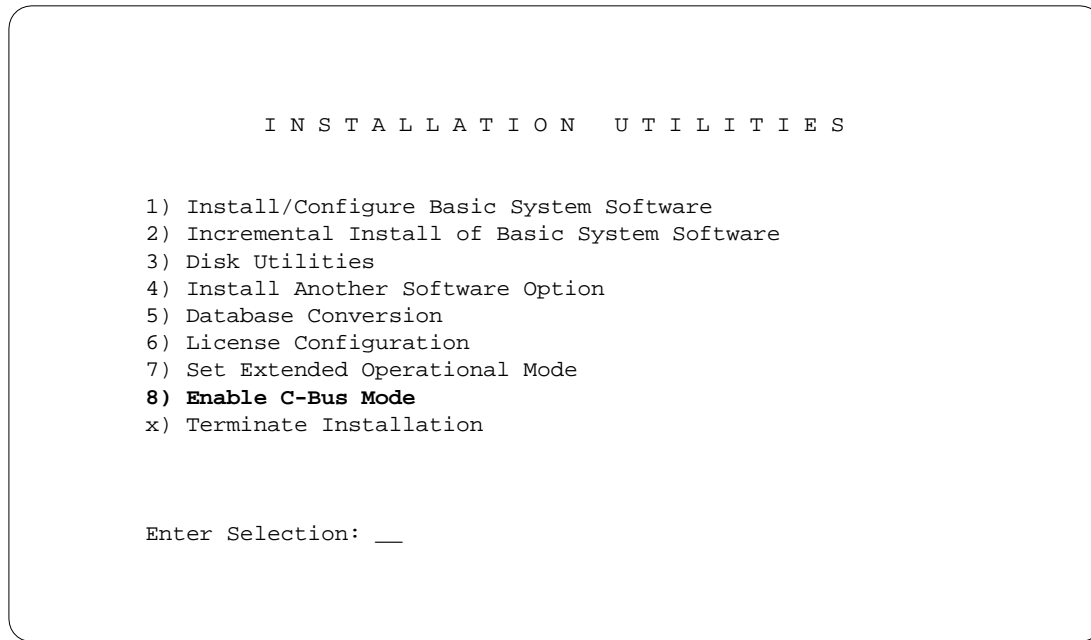
To take advantage of the increased number of timeslots, you must enable the C-bus from the Installation Utilities screen. This screen appears during the installation process. To use the C-bus timeslots for the full 4,096 ports, you must enable both the C-bus mode and Extended Operational mode.

Enabling C-bus mode, in addition to the Extended Operational Mode, allows the switch to use C-bus timeslots, and is required to use the full 4096 ports. Three screens have been modified to accommodate the C-bus enable option:

- Installation Utilities
- Administrator Main Menu
- System Features

Installation Utilities Menu

C-bus Operational Mode requires an addition to the Installation Utilities menu as shown in *Figure 2.3*. Select **8** for the new Enable C-Bus Mode option.



TP000006

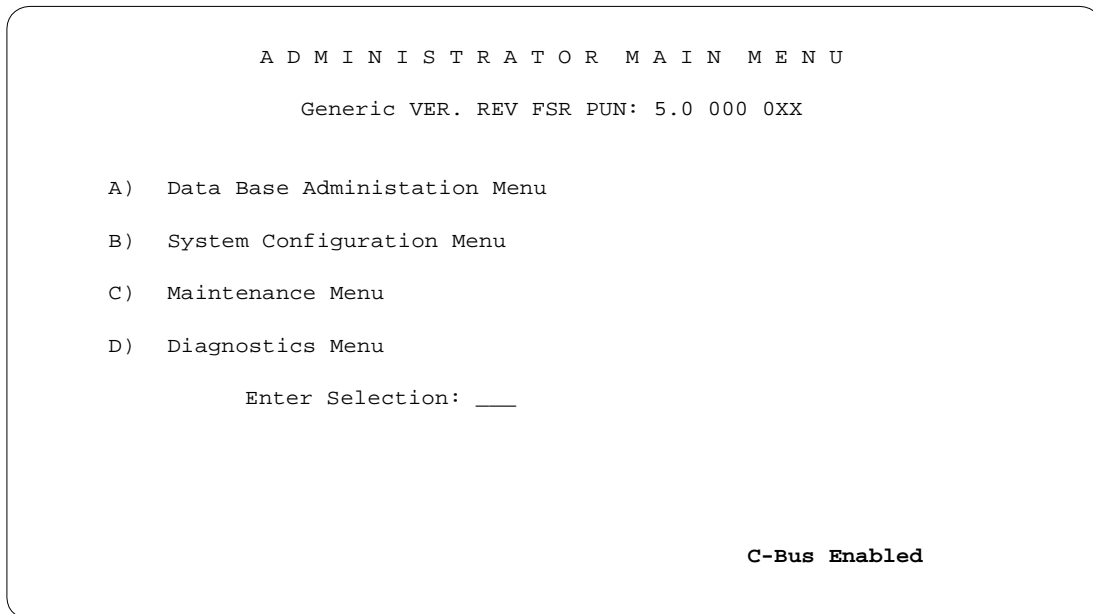
Figure 2.3: Installation Utilities Screen

When selected, an Enable C-Bus Mode. Are you sure (Y/N) =N? prompt displays on the screen. If unsure, press **ENTER**. Otherwise, press **Y** then **ENTER** to continue.

If the C-bus is already enabled but the C-bus is not installed, an Error: C-Bus is enabled but it is not installed message is displayed. If the C-bus is not enabled and the C-Bus is not installed, an Error: C-Bus is not installed message displays.

Administrator Main Menu Screen

The Administrator Main Menu screen (see *Figure 2.4*) displays a message if C-bus is enabled. If C-bus is installed and the hardware is detected, a C-Bus Enabled message appears on the lower right corner of the screen. However, in the unusual event that the hardware is not detected, a C-Bus ERROR message displays.

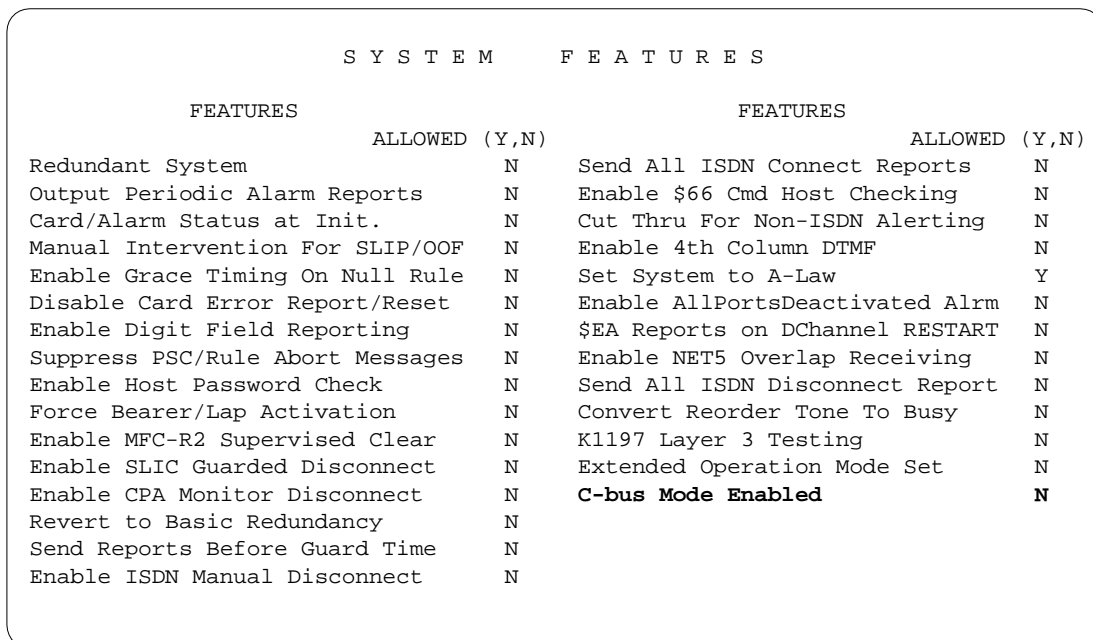


TP000003

Figure 2.4: Administrator Main Menu Screen

System Features Screen

A C-Bus Mode Enabled flag is added to the System Features screen, as shown in *Figure 2.5*. This flag is read-only and is used to verify if the C-bus is enabled. If Y, C-bus is enabled, and your switch can take advantage of the 4000 ports. If N, C-bus is disabled, and your system is limited to approximately 2000 ports.



TP000089

Figure 2.5: C-bus Mode Verification Flag

2.5.2 VCO 4K Series Label

New VCO/4K systems display a VCO 4K Series label on the front of the VCO chassis and an IV K label on the front panel of each individual card. If upgrading your existing VCO switch to a VCO/4K switch, the 4K labels are included in your upgrade package.

2.5.3 Card Type Attributes

Currently, the MVDC T1 and IPRC, and the new Interface Controller Card programmable card and Service Platform Card, are supported for 4K mode (can use the C-bus timeslots) when running Generic V5.0 software. Refer to the Interface Controller Card and Service Platform Cards for more information.

2.6 INTERFACE CONTROLLER CARD

The Interface Controller Card (ICC) is a Type 2 programmable interface card that supports up to 16 spans. The ICC supports T1/E1 voice communications capabilities for the VCO switch. The ICC is not a stand-alone interface: a multi-span T1/E1 I/O module must be physically connected to the ICC from the rear of the switch. The I/O module controls the transmission of signaling to and from the switch. Refer to the *Interface Controller Card (ICC)* and *Interface Controller Card I/O Module* technical descriptions for more information.

With the ICC, you can assign the signaling protocol for each port. This is done from the new ICC Programmable Trunk Configuration screen, as displayed in *Figure 2.6*. You can also define your own signaling protocols using the protocol generation software included as part of your V5.0 shipment.


```

I C C  P R O G R A M M A B L E  T R U N K  C O N F I G U R A T I O N

SPAN LOCATION: R,L,S 1 1 4-1-1      STATUS: Out of Service
CARD TYPE: ICC-T1                   SPAN TYPE: SF           CODE: AMI
TXGAIN: 0db      TXCLK: SCLK         SLIP: 255             LENG: 0-133
RXGAIN: 0db      RFCLK: LOOP         OOF: 17
    
```

PORT	TRUNK NAME	GROUP	GROUP NAME	SIG. TYPE	INPULSE RULE	COS	LAW
1	T1	4	T1S	E&M	0	2	
2	T2	4	T1S	CLEAR	0	2	
3	T3	4	T1S	CLEAR	0	2	
4	T4	4	T1S	CLEAR	0	2	
5	T5	4	T1S	CLEAR	0	2	
6	T6	4	T1S	E&M	0	2	
7	T7	4	T1S	E&M	0	2	
8	T8	4	T1S	E&M	0	2	

TP000081

Figure 2.6: ICC Programmable Trunk Configuration Screen

The functionality of the ICC is similar to the 4xT1 or MVDC T1 programmable interface cards, with the exception of additional spans. Refer to the *System Administrator's Guide, Programmable Trunk Card Configuration Screen* for field values and defaults.

NOTE: The ICC Programmable Trunk Configuration screen has been changed in V5.0 FSR 00 software: the TIMING field has been replaced by the LAW field. The LAW field indicates the voice coding of the port rather than the span as in other programmable trunk cards. Valid values for the LAW field are A-law, μ -law, and SYS (system backplane law). When the port is set to SYS, the port law is configured to match the entry in the Set System to A-Law field in the System Features screen. This is useful for ports carrying signaling data which can not undergo law conversion.

2.6.1 Valid Signaling Protocols

The ICC T1 signaling protocols supported with Generic V5.0 software include:

- D4 E&M
- D4 Clear Channel
- ESF (robbed-bit signaling)
- ESF Clear Channel

The ICC E1 signaling protocols supported with Generic V5.0 software include:

- CAS/R2
- CCS/31

NOTE: There are six additional protocols that may appear as a selection: USER1 to USER6. Although visible on the screen, these protocols can not be implemented; they are to be used in a future enhancement.

2.6.2 ICC and SNMP

SNMP support for the ICC is provided with Generic V5.0. Two new tables have been added: iccTable for interface configuration, and iccPortTable for port configuration.

2.6.3 ICC and NFAS

Implementation of NFAS support is planned for a future release.

2.7 SERVICE PLATFORM CARD

The Service Platform Card (SPC) is a Type 2 control circuit card that combines the capabilities of service circuit cards into a single card. The SPC contains all of the functions provided previously by each individual card.

The SPC supports download of configuration data from the system controller. Therefore, you can modify operating parameters without requiring a new application download. You can easily generate country support packages for SPC service types by modifying the SPC download data files.

The SPC currently supports the following functions:

- DTMF Receiver
- DCC - Conferencing
- MFCR2
- CPA (Call Progress Analysis)

The SPC conferencing feature is currently supporting the functionalities that exist with the DCC card generic software. Refer to the *Technical Description: Digital Conference Card* for more information.

Only one type of conference card may be configured in the resource group at a time, i.e., DCC or SPC-CONF. Up to 255 concurrent conferences, and a maximum of 8 legs per conference, are supported.

Refer to the *Service Platform Card (SPC)* technical description for more information.

2.8 TIMESLOT ALLOCATION LICENSING INCREASE

New systems are now shipped with generic software V5.0 FSR 00 or greater and 880 pre-allocated timeslots, which support up to 880 individual ports. Once your system configuration reaches 880 ports, you can not add more cards to the system until you upgrade your timeslot license. Timeslot licenses are now sold in 536 slot increments, up to a maximum of 4096 timeslots for 4K port systems and 1808 for 2K port systems.

Previously, new systems were shipped with 696 pre-allocated timeslots, and timeslots were sold in 360 slot increments, up to 1776.

*NOTE: You can now exit the License Configuration screen, which appears during the installation process, by pressing the **Enter** key without entering any numbers.*

2.8.1 License Configuration Screen Modification

The License Configuration screen has changed to better reflect the timeslot information that is displayed at the bottom of the main menu and Card Maintenance screens. See *Figure 2.7* for a sample of the new screen.

The number of timeslots licensed refers to the actual number of purchased timeslots. The number of timeslots available may be more or less than the number of timeslots licensed for the following reasons:

- A 2K system may have more than 2000 timeslots licensed. The maximum number of timeslots available in a 2K system is 1936.
- The DTG timeslots are “free.” The number of timeslots available is adjusted upward to reflect the free DTG timeslots.

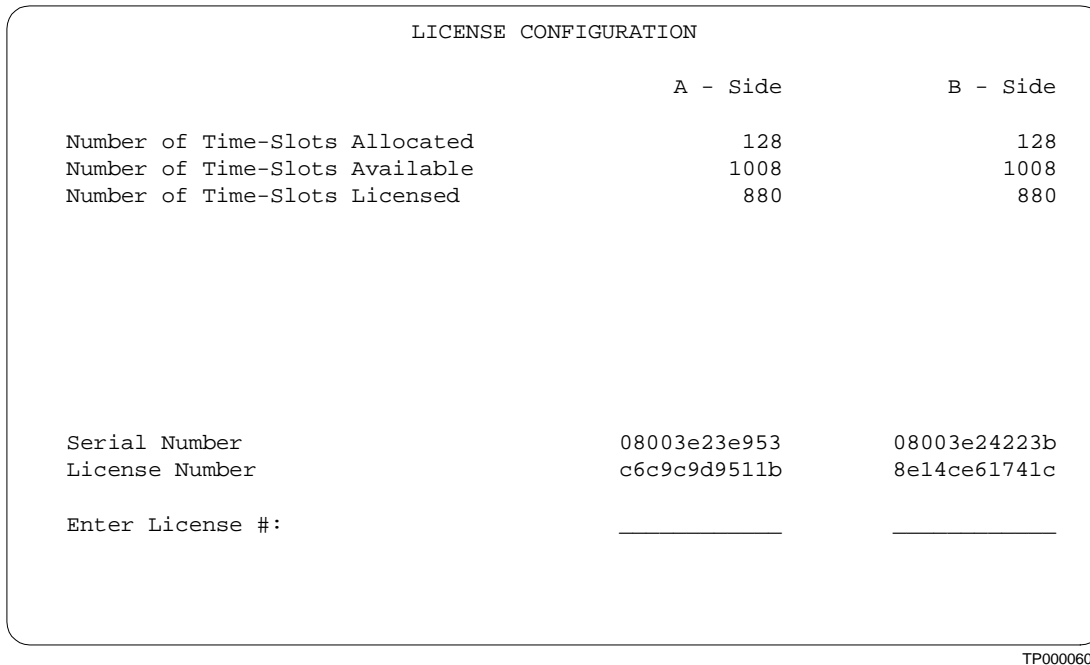


Figure 2.7: License Configuration Screen

Refer to *Section 4* of the *V5.0 System Administrator's Guide*, for detailed information regarding timeslot allocation licensing.

2.9 REDUNDANCY ENHANCEMENTS

Enhancements have been added to various redundancy functions in order to decrease the processing/initialization time.

2.9.1 Modify Initialization of Subracks

In previous releases, during system initialization, delays existed between the initialization of subracks. This delay occurred regardless of the card population of the subrack. The system has been enhanced to initialize each subrack based on population requirements. In a V5.0 system, this enhancement decreases the system initialization time by 30 seconds.

2.9.2 Eliminate Redundancy Messages for Empty Conferences

In previous software releases, empty conference structures were passed over the update channel to the standby controller. This method presented update queue overflow issues. System redundancy has been modified so that these structures are no longer sent to the standby controller.

2.9.3 Flow Control for Update Channel

Flow control has been improved on the update channel protocol for file synchronization. This enhancement eliminates queue overflows and unnecessary delays. File synchronization on a redundant system now completes in less than one minute.

2.10 SYSTEM ADMINISTRATION ENHANCEMENTS

To accommodate the 4K port configuration, various enhancements have been made within the system administration functions. These enhancements appear on the master console screen.

2.10.1 Add/Delete Type 2 Cards by Span

You can now add or delete the MVDC T1 card by span (interface). The ICC can be added by group and relative span. The Group and Span (relative interface) fields apply to Type 2 cards.

In software versions prior to Generic V5.0, you entered the Rack, Level, and Slot fields. You can now enter the Rack, Level, and Slot/Group/Span, if applicable.

NOTE: Only "add by card" is supported for the MVDC T1 via SNMP.

2.10.2 Start Number Field

With the increase in system limits, the ability to quickly locate a particular inpulse/outpulse rule or resource group is important. In previous versions of the software, you paged through the list. In V5.0 you may also type the number of the inpulse/outpulse rule or resource group at the new field in the upper right corner of the screen.

Figure 2.8 displays the new field in the Inpulse Rules screen. A similar field is also included in the Outpulse Rules Table and Resource Group Summary screens.

The screenshot shows a terminal-style interface for 'IMPULSE RULES TABLE'. It features a table with five columns labeled 'RULE # 1' through 'RULE # 5'. Above the table, the text 'IMPULSE RULES TABLE' is displayed. To the right of the table, there is a label 'Start Rule # 1' above the 'RULE # 5' column. The table contains 15 rows of data, each represented by a line of dashes. The text 'TP000010' is located at the bottom right of the screenshot area.

RULE # 1	RULE # 2	RULE # 3	RULE # 4	RULE # 5
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
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-----	-----	-----	-----	-----
-----	-----	-----	-----	-----

Figure 2.8: Impulse Rules Screen

2.10.3 Extended "Slot" Field

The size of the slot (**S**) field in the system administration screens has been extended from four to six characters. The new field size allows you to display card information including its group or relative span interface.

A sample screen showing the extended slot field entry (**S** field) is displayed in *Figure 2.9*.

C A R D S U M M A R Y						
LOCATION			CARD TYPE	STATUS	UNUSED PORTS	DISP CARD
R	L	S				
1	1	1-1	Network Bus	A	0	-
1	1	1-2	Tone Generator	A	1	-
1	1	3-2-1	ICC-T1	O	0	-
1	1	3-4-1	ICC-T1	O	0	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

TP000023

Figure 2.9: Slot/Group/Span Field Display

The system administration screens affected by the **S** field change include:

- Card Summary (Go to Database Administration/Card Summary)
- Resource Group Configuration (Go to Database Administration/Resource Group Summary/ Resource Group Configuration)
- Card Maintenance (Go to Maintenance/Card Maintenance)
- Card Alarm Display (Go to Maintenance/Card Alarm Display)
- Set Up Paths (Go to Diagnostics/Set Up Path)
- Card Display (Go to Diagnostics/Display Card Data)
- Port Display (Go to Diagnostics/Display Port Data)
- Service Circuit Test Utility (Go to Diagnostics/Test Service Circuits)
- Test Port Card (Go to Diagnostics/Test Port Card)
- Call Progress Tone Monitor (Go to Diagnostics/Monitor Call Progress Tones)
- Generic Packet Utility (Go to Diagnostics/Send Packet Utility)
- Conference Display (Go to Diagnostics/Display Conference Data)
- Master Timing Link Selection (Go to Maintenance/Master Timing Link Selection)

2.10.4 Propagate Port Parameters

The Programmable Trunk Configuration screens (for 4XT1, 4XE1, MVDC T1, ICC T1, and ICC E1) support propagation of port parameters across an entire span. When you select or modify the SIG. TYPE, IMPULSE RULE, COS (class of service), or LAW fields on port 1 for a given span, a prompt appears on the screen: Enter Y to propagate port 1 values. Press Y and all remaining ports are configured with the same parameter entered for port 1. This feature reduces duplicate data entry.

NOTE: Propagate parameter data does not appear for other ports until a screen refresh is performed.

NOTE: With Generic V5.0 and later, when adding any programmable trunk card, the default for the COS field is 2.

2.10.5 Change Card Status For Multi-span Cards

You can now change the status of all spans of a card with a single command from the Card Maintenance option. With this new feature, you no longer need to specify a particular span, although that option is still available.

In software versions prior to V5.0, to activate a card you had to type each span individually, e.g., 1 1 4-1, 1 1 4-2, 1 1 4-3, etc. With V5.0 and above, you type 1 1 4, and all spans in the 4 group become active.

2.11 MISCELLANEOUS SOFTWARE ENHANCEMENTS

2.11.1 Turbo NBC Download

The NBC download process has been improved. The present NBC download takes approximately one-third of the time of the previous NBC download process. Since NBC download occurs during every system reboot, this will result in improved system availability.

2.11.2 ASIST

As part of the V5.0 release an updated version of ASIST is provided. This release supports both versions of the Host API. It also provides a new command which allows the application to switch between standard (2K) and extended (4K) mode.

The data structures within previous releases of ASIST must be expanded to accommodate the Extended Host API. This includes additional fields and larger field sizes. ASIST provides both versions of the structures in order to remain backward compatible. For the sake of description, the smaller structures (V4.0 and earlier) are referred to as V4.0 structures and the updated expanded structures (V5.0 and beyond) are referred to as V5.0 structures.

V5.0 structures must be used when the Extended API is used. You can use either structure set with the Standard API. In cases where the V5.0 structures are used with the standard API, unused fields, such as tone plan, are ignored, and the larger field sizes are masked in the message being built. Initialize any unused fields to 0.

Instead of providing two physically separate sets of files to handle the two structure sets, the files are combined. Conditional compiling specifies which structure set to use. Set constants to **STANDARD** to specify the V4.0 structures and **EXTENDED** to specify the V5.0 structures. These constants are set up on a per message basis. This allows you to migrate from the V4.0 structures to the V5.0 structures one message at a time. The constants may also be set as a group by setting **DEFAULT_API_MODE** to the desired mode.

NOTE: Refer to the Standard and Extended ASIST/API Programming Reference for detailed information and installation instructions.

2.11.3 SNMP

Changes made to SNMP include the addition of the read-only Extended Operation Mode Set feature flag (shown in *Figure 2.2*). Type 1 cards (for 2K port systems) can not be added to a C-bus enabled switch.

NOTE: MIB files are not backward compatible: the current SNMP agent is not compatible with earlier versions of MIB files. You must download and use the MIB file shipped with the V5.0 release.

Figure 2.10 displays the section added to the MIB.

```
featureOperationModeExtended OBJECT-TYPE
    SYNTAX INTEGER {
        no (1),
        yes (2)
    }
    ACCESS read-only
    STATUS mandatory
    DESCRIPTION
        " If this feature is set to no, the current operational
        mode is standard mode. If set to yes, the operational
        mode is extended mode."
    ::= { features 22 }
```

TP000021

Figure 2.10: MIB Changes

2.12 MASTER CONSOLE MESSAGES

Prompts, warnings, and error messages that appear on the lower right corner of the system administration screen have been revised as needed to accommodate the changes made to the system administration functions. These on-screen messages are listed below. (Refer to the *System Administrator's Guide, Appendix A*, for a complete list of system administration messages.)

2.12.1 New Error Messages

The following error messages may appear in various system administration screens that utilize the Rack-Level-Slot/Group/Span feature.

- ERROR: Interface Not In Database
- ERROR: Interface Already Exists
- ERROR: Interface Is Not Out Of Service
- ERROR: Interface Does Not Have Ports

2.12.2 Error Messages Previously Restricted to Card Maintenance Screen

The following error messages previously appeared only in the Card Maintenance screen. These messages are now general support error messages and may appear in various system administration screens in which the Rack-Level-Slot/Group/Span field is displayed.

- ERROR: Card Already Exists
- ERROR: Card Does Not Have Ports
- ERROR: Card Is Not Out Of Service
- ERROR: NBC in 1 1 1 Cannot Be Deleted
- ERROR: Perform Operation On Card
- ERROR: Ports Still In Resource Group X

2.12.3 Messages Added to Card Maintenance Screen

The following messages may appear when working within the Card Maintenance option. These message are added to support the new cards and the “add/delete card by span” feature.

- Interface Is Deleted
- This Type Is Not Compatible To The Slot

2.12.4 Messages Deleted From Card Maintenance Screen

The following message have been deleted from the Card Maintenance option.

- Card Must Be Taken OOS Before Active
- Operation Supported by Subrate Card Only

2.13 4K Port Restrictions

When running a 4K port system with Generic V5.0 software, you may find certain restrictions in system functionality. Those restrictions are listed below.

2.13.1 IPRC Record Function Disabled

The IPRC is allowed in a C-bus enabled switch; however, the IPRC record function is disabled. When running Generic V5.0, if you attempt to execute the MAXRECORD or RECORD token in a C-bus switch, the following error messages are displayed:

- MAXRECORD feature has been disabled due to C-bus
- RECORD feature has been disabled due to C-bus

A network status byte of 62 indicates that a record operation was attempted for the IPRC in a C-bus switch

- Network Status Byte: 62 RECORD_DISABLE

Section 3

System Requirements

This section provides a listing of system requirements for running Generic V5.0 FSR 00 software. These requirements are divided into hardware, firmware, and software. Contact Summa Four, Inc. Technical Support at 1-800-9SUMMA4 (+603-695-1293) for any site-specific information.

3.1 HARDWARE REQUIREMENTS

To operate Generic V5.0, a system must be equipped with the following minimum components:

System Controller

- VME-147 System Controller Card (must have updated boot PROMs) or Combined Controller (16 MB 68030-based CPU).
- CPU Transition Module (CPU-TM) or Storage/Control I/O Module
- SWI Version A0AR

Storage Subsystem

- SCSI interface hard drive, 42 Megabytes or larger
- 3.5" SCSI Interface Floppy Drive

Control Circuit Cards

- NBC-3 card Rev C0GR (or later) or E0AR (or later)
(Two NBC-3 cards are required for redundant systems; one NBC-3 for non-redundant systems.)

NOTE: For detailed information regarding NBC-3 card hardware requirement, see the Technical Description: Network Bus Controller-3 (NBC-3) Card.

- Alarm Arbiter Card Rev COUR (or later) is required for C-bus operation

Service Circuit Cards

- DTG-2 or DTG—Digital Tone Generator
(All systems require a tone card to provide a quiet tone to the network.)

If you are planning to use SNMP on your system, an SNMP network management application or platform is recommended. You will need an SNMP application to perform SNMP tests on your system. One alternative is to use the tools available with applications such as Hewlett Packard's OpenView™ or Sun Microsystem's Net Manager®.

3.2 FIRMWARE REQUIREMENTS

System firmware requirements common to all systems are listed in *Table 3.1*. *Table 3.2* lists domestic (U.S.) firmware requirements. Refer to the technical descriptions in Volumes 3 and 4 of your hardware documentation set for firmware locations for each card.

For country specific firmware requirements (which affect DTG-2 or DTG, CPA, and MFCR2 cards) refer to the applicable country supplement.

NOTE: The firmware label applied by Summa Four may list only the last four digits of the checksum.

The checksum for the NBC-3 LP125 is not listed because the programming for this item is part of the NBC-3 download file and is included in the checksum for the NBC download file.

Table 3.1 Common Firmware Requirements

Card	Firmware	Checksum ¹	Version	Location	Changed Since V5.0 FSR50 PUN2
North American Requirements					
BRC	BRC	00002412	2.01	U2	N
CPA	CPA	0000A7A2	1.03	U2	N
CPU	Boot EVEN	006E691D	5.00	U1	Y
	Boot ODD	00866CBF	5.00	U15	Y
	MVME147-023 ODD	5741B41F	2.44	U30	Y
	MVME147-023 EVEN	5741B42F	2.44	U22	Y
D+I	D+I	00A998F6	2.01	U9	Y
DID-2	DID-2	000010C3	1.41	U2	N
DRC-8	DRC	00009625	5.23	U2	N
DRC-24/48	DRC-2	00004241	3.08	U2	N
DVC	DVC	000095BE	2.07	U2	N
E+M	E+M	0000D381	2.06	U2	N
E1-CAS	E1-CAS/MERC	0000F1C6	2.13	U23	N
	E1-CAS/R2	00002654	2.01	U23	N
	E1-31B	0000EF58	3.03	U23	N
	E1-CAS/R2 (No CRC4)	000EDF08	3.43	U23	N
	CAS PROC	00001E78	1.04	U85	N
	32 CHAN SETUP	0000CDDE	1.00	U113	N
	GAIN/LAW PROM	000011D2	1.02	U45/53	N
ICC	ICC	—	—	—	NEW

Table 3.1 Common Firmware Requirements (Continued)

Card	Firmware	Checksum ¹	Version	Location	Changed Since V5.0 FSR50 PUN2
IPRC-8	IPRC 8-PORT	00220D75	1.03	U2	N
IPRC-64	IPRC 64-PORT	00220DC1	1.03	U2	N
IPRC-128	IPRC 128-PORT	00220E0A	1.03	U2	N
MRC	MRC	0000EE80	3.08	U2	N
MVDC-T1	Local Bus	000D373B	LP100A	U35	Y
	Com Bus	00186169	LP101A	U19	
	Interrupt	000AE787	LP102	U75	
	PCM Interface	001748E3	LP103A	U107	
	Framer	0005FE2C	LP104	U76	
	Gain/Law	0005A153	LP105B	U49	
	T1 Clock	000BE051	LP106	U80	
	Gain/Law	00776220	—	U50	
	Boot PROM	0066DF90	1.06	U10	
NBC-3 Card Rev C	LP122 SWI	00194974	LP122C	U66	N
	LP123 Counter	0018E096	LP123E	U13	
	LP124 Chip Select	000D7B43	LP124C	U12	
	LP125 Com Bus FPGA ²	—	LP125C	U43	
	LP126 Com Bus EPLD	0005CED8	LP126B	U47	
	LP127 Mezzanine Add.	0006C919	LP127A	U105	
	Boot PROM	00F597BE	1.02	U4	N
NBC-3 Card Rev E	LP141 SWI	0019204D	LP141A	U31	N
	LP140 Counter	00187206	LP140C	U73	
	LP139 Chip Select	000D4209	LP139A	U30	
	LP125 Com Bus FPGA ²	—	LP125C	U53	N
	Boot PROM	00F597BE	1.02	U1	N
SLIC-2	SLIC-2	000010B9	1.41	U2	N

Table 3.1 Common Firmware Requirements (Continued)

Card	Firmware	Checksum ¹	Version	Location	Changed Since V5.0 FSR50 PUN2
SSC	Com Bus Control	00186169	LP101A	U24	N
	PCM Interface	00185A34	LP130B	U76	N
	Quad 9 to 1	0017878C	LP129A	U71/U70	N
	Redundancy Control	0017F249	LP128A	U100	N
	Subrate Matrix Control	000BB573	LP131	U31	N
	Boot PROM	00400736	1.02	U10	N
T1	T1	00002BA5	1.26	U2	N
	T1 Aux Proc	00007125	1.00	U45	N
UTC-2 Rev A UTC-2 Rev B	UTC	0000F91E	6.00	U2	N
	UTC	0000ECF0	6.54	U2	N
4XT1/E1	4XT1 68340 VIRT CM	00291041	1.08	U10	N
	4XT1 68302 ODD	00277AE4	1.14	U47, 93, 150, 185	N
	4XT1 68302 EVEN	00242750	1.14	U48, 94, 151, 186	N
	GAIN/LAW CCITT G.711	000FCD68	1.03	U25, 28, 67, 78, 120, 131, 158, 170	N
	PATH SETUP ROM	0000CDDE	1.00	U35, 86, 116,178	N
International Requirements					
E1-PRI (NTDASS2, DPNSS)	E1-PRI FW Odd	00105999	1.03	U38	N
	E1-PRI FW Even	000DA6C3	1.03	U39	N
	E1-PRI 32 Chan Setup	0000CDDE	1.00	U113	N
	PCM Gain/Law	000011D2	1.02	U45/53	N
E1-PRI 120Ω (NET5)	Net5 ODD	1075A4	1.04	U38	Y
	Net5 EVEN	DB375	1.04	U39	Y
PRI	PRI FW Odd	00107EA5	1.02	U38	N
	PRI FW Even	000DB30B	1.02	U39	N
	32 Chan Setup	0000CDDE	1.00	U29	N
	PCM GAIN/LAW	000011D2	1.02	U45/53	N

Table 3.1 Common Firmware Requirements (Continued)

Card	Firmware	Checksum ¹	Version	Location	Changed Since V5.0 FSR50 PUN2
International Requirements (Continued)					
PRI/N	ODD	00115CB1	1.09	U38	Y
	EVEN	000DEE1D	1.09	U39	Y
	32 Chan Setup	0000CDDE	1.00	U29	N
	PCM Gain/Law	000011D2	1.02	U45/53	N
4XE1	4XE1 68340 VIRT CM	00291041	1.08	U10	N
	4XE1 68302 ODD	00263E25	1.04	U47, 93, 150, 185	N
	4XE1 68302 EVEN	002313DD	1.04	U48, 94, 151, 186	N
	GAIN/LAW CCITT G.711	000FCD68	1.03	U25, 28, 67, 78, 120, 131, 158, 170	N
	PATH SETUP ROM	0000CDDE	1.00	U35, 86, 116,178	N

Table 3.2 Domestic (North American) Firmware Requirements

Card	Firmware	Checksum	Version	Location	Changed Since V5.0 FSR50 PUN2
DCC	DCC	0000A575	2.02	U2	N
	LIN/PCM 0 DB	0000B9A2	1,00	U43	N
	LIN/PCM -3 DB	0000AB04	1.00	U44	N
	PCM/LIN Odd	0000AFA2	1.00	U33	N
	PCM/LIN Even	0000B736	1.00	U34	N
	DTG/DTG-2 (North American Tone Plan)	DTG-FW ^a	00007991	1.24	U2
		00007C30	1.25	U2	
Tone ODD		00000078	2.04	U54	
Tone EVEN		00004217	2.04	U53	

a. Version 1.24 or 1.25 is required. Version 1.25 differs by supplying an additional tone for North American customers. For firmware supporting other countries see the Master Configurator Release Notes (63098350133).

3.3 SOFTWARE REQUIREMENTS

Valid software checksums and versions for the Generic V5.0 FSR 00 software and optional software products are listed in *Table 3.3*.

Use the Software/Firmware Configuration utility to identify the version and checksum of each software file installed on the system (refer to the *System Administrator's Guide* for more information). Generic software files are distributed across the installation floppy diskettes. Each optional software product is contained on a single floppy diskette.

Table 3.3 V5.0 Software Requirements

Software Product	Software Version	Filename	Checksum	File Version	Changed since V5.0 FSR 50 PUN2
Executable Files	5.0.00	GLOBALS.EXE	0154825B	5.00	Y
		HOSTMGR.EXE	03661846	5.00	Y
		SYSWD.EXE	021E8592	5.00	Y
		REDMGR.EXE	00ED0792	5.00	Y
		PERMGR.EXE	014CBA92	5.00	Y
		NETMGR.EXE	02DABF63	5.00	Y
		SNMP.EXE	0199E834	5.00	Y
		INSTALL.EXE	021C4C07	5.00	Y
Download Files		MVDCT1.DWN	00F2D33A	1.08	Y
		NBC.DWN	01095DE7	1.08	Y
		SSC.DWN	006C84CB	1.00	N
		CPA.DWN	003079F3	8.09	N
		DVC.DWN	005ADA02	1.08	N
		DTMF.DWN	00053D1A	2.02	N
		IPRC.DWN	0022E1EA	1.04	N
		4xT1.DWN	00349052	1.49	Y
		4xE1.DWN	003773FA	1.39	Y
		SPC.DWN	0613A81B	4.07	Y
		ICC.DWN	04FD9FF6	4.07	Y
		ICCCASR2.UPG			NEW
		ICCCCS31.UPG			NEW

Table 3.3 V5.0 Software Requirements (Continued)

Software Product	Software Version	Filename	Checksum	File Version	Changed since V5.0 FSR 50 PUN2
Download Files		ICCCLEAR.UPG			NEW
		ICCEM.UPG			NEW
Operating System Files		VRTX OS	—	1.08	N
		IFX	—	1.11	N
		TNX	—	1.45	N
Options					
Ethernet	5.0.00	ETHERMGR.EXE	00007B0C	5.00	N
TeleRouter	5.0.00	TELERTE.EXE	00007ADA	5.00	N
MotorRouter	5.0.00	MOTORTE.EXE	00007ADA	5.00	NEW
ISDN Options					
ISDN-NFAS	5.0.00	NFAS.EXE	00007B0C	5.00	N
ISDN-PRI	5.0.00	PRI.DWN	0089FAF0	5.09	Y
ISDN-PRIN	5.0.00	PRIN.DWN	00927AA2	5.09	Y
NI-2	5.0.00	NI2.EXE	00007B0C	5.00	N
NTTPRI	5.0.00	NTTPRI.DWN	008CD811	1.03	Y
NTDASS2	5.0.00	NTDASS2.DWN	009F44C9	3.08	Y
DPNSS	5.0.00	DPNSS.DWN	00AB15B6	3.12	Y
NET5	5.0.00	NET5.DWN	0086E64B	1.21	Y

Section 4

Installing V5.0 Software

4.1 Introduction

This section describes the procedures for installing Generic V5.0 FSR 00 software.

Firmware should be brought up to the revision levels specified in *Section 3*.

CAUTION: This section provides detailed installation instructions for loading system software. Deviating from these instructions can result in lost data. Read all the material in this section prior to installing the software. If you encounter any problems during the installation, contact Summa Four.

To perform an upgrade of the system and/or optional software, you must take both redundant and non-redundant systems off-line for a brief period.

NOTE: To upgrade current system software to Generic V5.0, Generic V4.2 FSR00 or greater is required. Refer to Generic V4.2 Release Notes for possible upgrade restrictions. Call Summa Four at 1-800-978-6642 (or 1-603-695-1293) if you are running a version of the Generic prior to 4.2 FSR00.

4.2 Overview of the Installation Procedure

Redundant systems require software installation on both sides, and since the optional software varies from customer to customer, there will very likely be a slightly different path for each upgrade. If you follow the instructions sequentially and perform the tasks as they apply to your system, you will be assured of a successful installation.

Performing a database conversion is required when installing Generic V5.0 software, regardless of the software version from which your current database originated. The conversion utility is designed to determine what is required and to perform the appropriate conversions. If conversions are not required, no action is taken.

4.3 What you need

You need the following software, hardware, and firmware to perform the installation:

Software:

- Six (6) diskettes labeled as follows:

35008350150
FSR00 PUN24

VCO SYSTEMS V5.0
GENERIC V5.00
DISK x OF 6

NOTE: The x is a number from 1 to 6, indicating the sequence in which the diskettes must be loaded when you install the generic software. Only Disk 1 contains the installation utilities.

- Ethernet software
- MIB software

NOTE: No other optional software is included. If required, please call Summa Four at 1-800-978-6642.

Hardware:

- AAC card Rev COUR (or later) is required for C-bus operation
- New 68030 16MB CPU (or Combined Controller with 68030 16MB)

NOTE: Refer to Section 3, System Requirements, for detailed information.

Firmware

- 68030 CPU PROMs, ODD and EVEN V5.00 (or later)
- NBC-3 Card Boot V1.02

NOTE: Refer to Section 3, System Requirements, for detailed information.

Other

For redundant systems, be sure you can connect a system console to both system controllers. Depending on your equipment's arrangement, you can:

- Set up a separate system console for each controller (A- and B-side).
- Use an A/B transfer switch wired to both system controller CPU-TM front panels to switch access.
- Physically remove and reconnect the system console cable from one CPU-TM front panel to the other.

4.4 Installing the Software

The following section provides instructions for installing Generic V5.0 software. Installation procedures for Ethernet and optional software follow the Generic installation.

NOTE: Before starting, make certain to back up your database.

On Disk 1, the Incremental Install Basic System Software option installs the Generic software and downloads files onto the hard disk. This selection does not format the hard drive.

The instructions in the following subsections assume that the system console is connected to the CPU-TM of the side being installed.

NOTE: The MIB software is installed on the Host computer. Refer to Section 4.6.1, Installing the MIB Software. Do this after completing the installation of the Generic software on the switch.

4.4.1 Installing the Generic Software

After confirming the hardware and firmware V5.0 requirements, *Section 3*, install the new Generic software on your system:

NOTE: Before beginning, power down the switch.

1. Insert Disk 1 into the floppy diskette drive (A-side if this is a non-redundant system, B-side if you are returning to this procedure to install software for that side).
2. Connect or switch the administration console to the A-side CPU-TM, or go to the A-side system console.
3. Power on the A-side.
4. After the system performs diagnostic tests, the Installation Utilities menu appears (*Figure 4.1*).
5. The cursor is located in the Enter Selection data entry field. Type **2**, (for Incremental Install of Basic System Software) then press **Return**.

The following message appears:

Do You Wish To Back-Up The System Data Base? (Y/N) =N?_

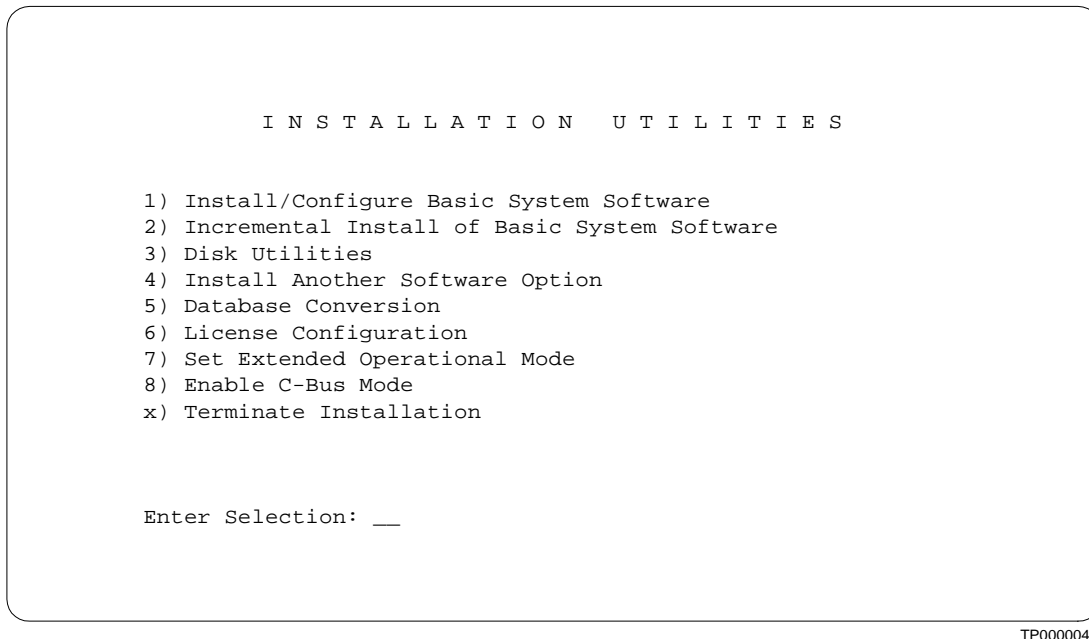


Figure 4.1: Installation Utilities Menu

6. Press **Return** (this defaults to N).

The database will not be backed up at this time. Make certain that the database was backed up previously.

7. The following message appears:

Insert disk 2 of Installation Set

Press return to continue

Remove the current diskette from the drive, insert Disk 2, and press **Return**. The system copies the files from Disk 2 to the C: drive in the /BOOT, /DBASE, /LOG and /TRACE directories.

8. When all the files from Disk 2 are copied, the following message appears:

Insert disk 3 of Installation Set

Press return to continue

Remove the current diskette from the drive, insert Disk 3 then press **Return**. The system copies the files from Disk 3 onto the C: drive.

9. This pattern, of the system copying from the diskette then prompting for the next, continues until all diskettes have been loaded and copied onto the system. Continue to remove and insert the installation diskettes when prompted to do so.

When the installation is complete, the Installation Utilities menu appears again (Figure 4.1).

10. If no optional software is to be installed, perform a database conversion now. (Refer to Section 4.4.2 for instructions.) If optional software is to be installed, proceed to Step 11.

11. Optional software needs to be installed every time you update the Generic to ensure NVRAM update. For options such as TeleRouter, ISDN-NFAS, or Ethernet, type **4**, Install Another Software Option, then press **Return**.

The following message appears:

Insert Another Install Disk

Press Return To Continue

Instructions for installing Ethernet for the Host and SNMP communications are contained in *Section 4.4.3*.

NOTE: When you install a software option (such as TeleRouter, etc.) on a system, the installation process makes changes to the nonvolatile RAM (NVRAM) on the CPU. These changes make operation of software options specific to the CPU on which you installed the options. For this reason:

- *Software options must be installed on both system controllers in a redundant system.*
- *Software options must be reinstalled if the CPU is replaced.*

Because of the reliability of the CPU, failures requiring replacement are very rare occurrences.

4.4.2 Performing a Database Conversion

Performing a database conversion is required. To do this, select option **5** in the Installation Utilities menu.

The conversion takes a few seconds. The following message is displayed on the screen:

Data base path for conversion: C:/dbase/

If the database does not need to be converted, i.e., it had previously been converted, no other messages are displayed. However, if you do convert the database, several other messages may be displayed. For example:

Converting the System Configuration table ...

This will take just a few seconds.

If finished with the installation, press **X** for Terminate Installation.

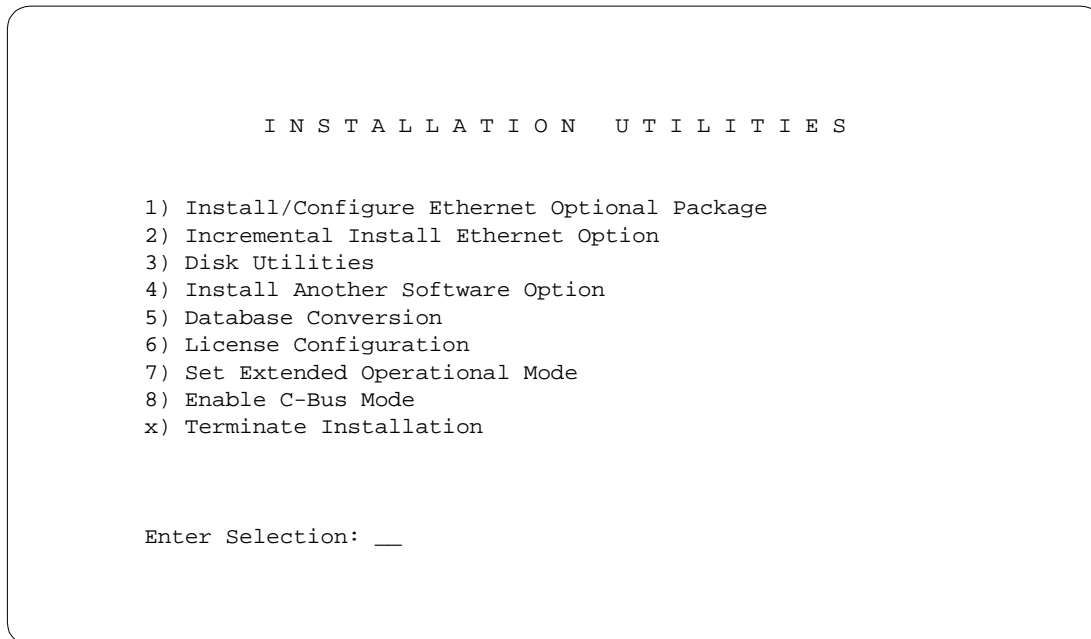
4.4.3 Installing Ethernet for Host and SNMP Communication

You can install Ethernet software as part of the generic software installation or separately. For complete installation instructions, refer to the supplement provided with the Ethernet software.

The following section provides generalized instructions for installing Ethernet optional software package. It is assumed that this step is being completed as part of the overall install and is being done as a continuation of *Installing the Software*.

To install and configure the Ethernet optional software, follow these steps:

1. Insert the Ethernet software diskette and press the **Return** key. After the system loads the Ethernet files from the diskette, the Ethernet Installation Utilities menu appears with the cursor located in the Enter Selection field (see *Figure 4.2*).



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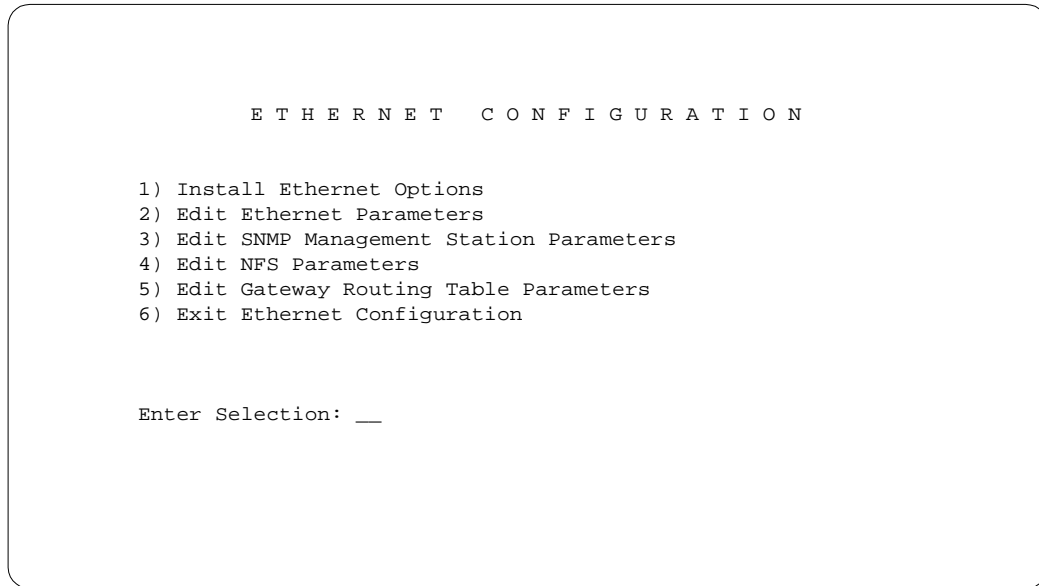
Figure 4.2: Ethernet Installation Utilities Menu

2. To install and configure the Ethernet software, type **1** and press **Return**. The following message appears:

Do You Wish To Back-Up The System Data Base? (Y/N) =N?_

Press **Return** (this defaults to N). You will not be backing up the data base at this time.

The Ethernet Configuration menu appears (see *Figure 4.3*).



TP000019

Figure 4.3: Ethernet Configuration Menu

3. Type **1** and press **Return**. The following message appears:

Copy A:/BOOT/ETHERNET.EXE

1 files(s) copied

Ethernet Option Enabled

4. To set the Ethernet Parameters, type **2** and press **Return**. The following message appears:

System Internet Address = 107.3.254.98?

NOTE: The Ethernet and Internet address numbers that you see in the screen messages in this section are only examples. In your system these numbers are replaced by numbers that represent your system addresses.

5. Set the Internet Address of this system and press **Return**.

Set System Internet Address To 107.3.254.98 (Y/N) =Y?

6. If you change the address, you are prompted to confirm your new address. Type **Y** to confirm your selections. The following confirmation message appears:

System Internet Address Configured

7. Set the System Subnet Mask, or press **Return** to accept the displayed value.

After you complete this step, you can connect a remote console to your system via Telnet.

- If you are *not* going to manage this system with SNMP, go to Step 10.
- If you *are* going to manage this system with SNMP, type **3** and press **Return** to set the SNMP Management Station Internet address. The following message appears:

SNMP Management Internet Address = 0.0.0.0?

8. Set the Internet address to the address of the system that you are using as the NMS (Network Management System). Press **Return**. The following message appears:

Set SNMP Management Internet Station Address To 189.7.107.44 (Y/N) =Y?

9. Type **Y** to confirm your selections. The following confirmation message appears:

SNMP Management Station Internet Address Configured

After you complete this step, the system will report SNMP trap messages to the NMS that you selected.

- a. If you are not going to boot your system over the network, go to Step 12
 - b. If you are going to boot your system over the network, continue with Step 10.
10. Type **4** to set the Network File System (NFS) server parameters. The following selections appear one at a time. Enter the information for your system. Type **Y** and press **Return** after each selection.

Enable NFS Access (Y/N) =Y?

NFS Server Internet Address = 000.0.000.000?

NFS Server Name =xxx?

NFS Mount Directory Point #?

Target System Name =

Target System User Id =

Target System Group Id =

Target System Umask =

Update NFS Configuration With Above Data (Y/N) =Y?

11. After you update the NFS configuration with the new data, the following message appears:

NFS Configuration Updated

You can now save the log files and database to a remote location.

Type **6** to exit and press **Return**. The Installation Utilities screen appears (see *Figure 4.2*).

12. To end the Ethernet installation, and if no optional software is to be installed, type **7** and press **Return**. If optional software is to be installed, see *Step 14*.
13. Remove the Ethernet diskette from drive A.
14. If additional optional software is to be installed, press **4**.

4.5 Installing the Software on the B-Side

If you have a redundant system, repeat all the steps in *Section 4.4, Installing the Software*.

If you do not have a redundant system, proceed to *Section 4.6.1, Installing the MIB Software*.

4.5.1 Verifying File Synchronization

For redundant systems, after you have installed the software on both sides and rebooted the system, you must verify that file synchronization has occurred. Check the messages at the bottom of the screen until you see:

ACT FILE SYNC COMPLETED

NOTE: This message may be replaced by subsequent messages before it can be seen. Check the active and standby log files to confirm completion.

When file synchronization has been verified, the installation of system software is complete. Proceed to the next section to install the MIB software.

4.6 SNMP

If you use SNMP (Small Network Management Protocol) to manage your switch, install the MIB software on your network management system. Otherwise, you are finished with the installation process.

NOTE: You must download and use the MIB file shipped with the V5.0 software release as MIB files are not backward compatible.

Summa Four provides snmptalk on the MIB disk but does not support the application. It runs on the SUN operating system only.

4.6.1 Installing the MIB Software

To move the MIB software which is provided on the MIB - Supplemental Disk to a network management system:

1. Place the MIB - Supplemental Disk in the floppy drive of the Host computer.

Note that snmptalk is a SunOS executable file and is usable only on SunOS computers. The three other files can be used on a non-SunOS platform.

2. Create a directory in which the MIB files are to reside. Define the location and name of the directory.
3. Move the files from the disk into the new directory created in *Step 2*.

NOTE: All four files must reside in the same directory.

4.6.2 Setting up snmptalk

Once you invoke the snmptalk program, you need to enter the following setup information so it can communicate with your system. Prior to doing the setup, you need to know the Internet Protocol (IP) address of your system.

Table 4.1 snmptalk Setup Commands

Command	Meaning
v 1	Use to select the SNMP Version 1 mode
write-comm public	Use to set write community to "public"
dest <i>nnn.nnn.nnn.nnn</i>	Use to enter the IP address of the VCO (where <i>nnn.nnn.nnn.nnn</i> is the IP address)
?	Use to provide a list of the commands available
get sysUpTime.0	Example of get command
tset sysLocation.0 string here	Example of set command
quit	use to exit program

NOTE: This program cannot handle white space or quotes, so you must enter commands without spaces. This is a limitation of the basic test program.

The vco.mib file is the ASN.1 notation MIB for the V5.0 system. This file can be compiled by a SNMP Network Management Station and used to provide the management station with information on the VCO MIB structure. The information in this file is also listed in the *VCO V4.2 Management Information Base (MIB) Reference Guide*.

4.6.3 Public Access

The community names for read and write access must be set to public for a NMS to properly access the Summa Four Enterprise MIB.

4.7 Setting Extended Operational Mode

Perform the following steps to set the switch for extended mode.

1. Back up the database(s).

WARNING: A backed up standard mode database is required to return to standard mode, if needed.

2. Bring down the switch.
3. Insert Install Disk 1.
4. Go to the Installation Utilities screen and press **7** for Set Extended Operational Mode.
5. A Setting the Operational Mode To Extended Mode. Are you sure (Y/N) =N? prompt is displayed. Type **Y**. If unsure, type **N**.
6. Bring up the switch.
7. Verify that Extended Operational Mode is set: Go to the System Features screen and view the Extended Operational Mode Set field. If set for extended operation, this field should display **Y**.

NOTE: Be sure to change both sides in a redundant system.

4.8 Resetting to Standard Mode

The system does not allow the operational mode to be set back to standard once it has been set to extended. This is due to larger values which could be set in extended mode and are not valid in standard mode.

The mode is stored in one of the database files. If you must return to standard mode during testing, do so by reverting to the saved database files which were copied before you set the extended mode.

Section 5

Generic V5.0 Design Constraints

Summa Four has identified the following design constraints in Generic V5.0 FSR 00 and related software.

U803300005: Field Limitation for Inpulse/Outpulse Rules

The Programmable Trunk Configuration (non ICC or 4xT1/E1), Diagnostics Port Display, Call Progress tone monitor, and Routing Statistics Display screens support only two digits for inpulse rules. In a future release, all appropriate fields will be increased to three digits to support the increased inpulse rule system limits.

No NFAS Support for ICC T1 Card

Implementation of PRI and PRI/NFAS support for the ICC T1 card is planned for a future release. |

Drop and Insert Card Not Supported in C-bus Mode

Generic V5.0 FSR 00 does not support the Drop and Insert (D+I) card in C-bus mode. The D+I card can be used in 2K mode.

SNMP Walk Freezes

When an SNMP walk is performed on the entire MIB, the walk may freeze but does not appear to affect other switch processing.

MVDC T1 Not Supported in C-bus Mode

The current MVDC T1 firmware does not support card operation in C-bus mode. A firmware upgrade is required for C-bus support. The current firmware will, however, support operation in a 2K system.

ICC Requires Reboot After Download

After a download to the ICC card, the card will reset itself in order for the new download to take effect.

Section 6

Known V5.0 Functional Constraints

Summa Four has identified and evaluated functional constraints in Generic V5.0 software, firmware, and hardware.

6.1 INTRODUCTION

This section provides explanations and, where applicable, workarounds for functional constraints in the areas that follow:

- System Administration
- System Configuration Utilities
- Special Redundant Systems Considerations
- Disk Operations
- Digit Collection
- Inpulse/Outpulse Rule Processing
- Call Processing
- Command/Report Processing
- Initialization
- Network Bus Controller-3 (NBC-3)
- Digital Tone Generator (DTG) and Digital Tone Generator-2 (DTG-2)
- Four Span Cards
- Interface Controller Card (ICC)
- Miscellaneous Card Issues
- Multiple Host Connections
- TeleRouter
- Service Platform Card (SPC)
- Simple Network Management Protocol (SNMP)
- ASIST API Programming Reference
- Ethernet
- ISDN Issues
- International Issues

6.2 SYSTEM ADMINISTRATION

The constraints described in this subsection apply to system administration tasks performed from the System Administration console.

NOTE: Not all system administration tasks are supported by SNMP. See Section 6.19 for a list of the tasks not supported.

Database Conversion Error Reported

A DB CONVERT ERROR message is generated when you perform an incremental install and then do a database conversion. This occurs when upgrading from V4.0 or V4.1 to V5.0.

U507315162/TR 5162: No Automatic Database Conversion

You may experience a problem if you inadvertently try to load a backup copy of an outdated database. The system does not detect the outdated database and does not automatically perform the database conversion.

U508295234/TR 5234: Adding Cards to End of Configured Database

If you try to add cards to the end of a configured database, you may see the following message: NO AVAILABLE PORT MEMORY. This is caused by port fragmentation, which means that there are enough total ports, but they are not contiguous.

This could happen, for example, if 1576 ports are assigned out of the 1776 that were licensed, and you try to add a 64-port IPRC.

Resolution

Rebuild the database to reallocate the ports in a contiguous block.

U512071001: Aux1 Alarm Not Set on System Alarms Display Screen

Aux1 alarms triggered by the hardware (i.e., power supply, fan unit, or ring voltage failure) are not displayed on the System Alarms Display screen. Therefore, remote users cannot determine if a major hardware alarm is set.

U604041001: IPRC Voice Prompt Maintenance

The following error message can occur when you add voice prompts for the IPRC card in the Voice Prompt Maintenance screen:

ERROR — Cannot Add Prompt Err = 780

You might have entered a bad directory path, or the file might not be in the location specified.

Resolution

Verify that you have specified the correct directory and path name.

U605010004: Keyboard Type is Reset During System Reboots

The administration console intermittently gets re-initialized when the system reboots. This causes the keypad to reset to Numeric, instead of Application, which is required by the Generic.

Resolution

To correct this condition on systems with VT220 consoles, complete the following steps:

1. From the login screen, press PF3. The Set-Up Directory menu appears.
2. Use the arrow keys to position the cursor in the General field and press ENTER. The General Set-Up Menu appears.
3. Use the arrow keys to position the cursor in the Keypad=Numeric field and press ENTER. The field toggles to Keypad=Application.
4. Press PF3 to save the setting and return to the login screen.

To correct this condition on systems with WYSE consoles, complete the following steps:

1. From the login screen, press PF3. The Set-Up Directory menu appears.
2. Press PF11 (Kbd2). The Keyboard2 Set-Up Menu appears with the cursor in the Keypad=Numeric field.
3. Press ENTER. The field toggles to Keypad=Application.
4. Press PF4 to save the setting and return to the login screen.

U611260002: Abort Button

Pressing the ABORT button on the system controller has no effect if the Ethernet option has not been installed.

U704100002: No Error Logged Upon Failure

No error indication is logged when the switch fails. Earlier versions logged an error indication to aid in determining the cause of failure.

U705050001: FTP Quote Command Inconsistent

The quote compress command requires a drive specification (c:), but the uncompress and the split commands can't accept it.

U705050002: FTP Quote Join Command Error

The FTP command: quote join c:core1 c:core1.x?? does not work. The command results in the error: 500, Command not understood.

U802020002: Large Trace Files Can Not Be Deleted

When attempting to delete large trace files, an Error During Disk Operation message may appear.

Resolution

Do not create a large trace file.

U802060004: Prompt Library Not Working Properly

When the prompts are loaded, the library menu lists the prompts and the duration of each, but the total usage field displays an invalid sum of the prompt times. The IPRC behaves normally, and no other effects are noticed in the system.

6.3 SYSTEM CONFIGURATION UTILITIES

The constraints described in this subsection apply to system configuration changes performed through the System Administration console.

U411304788/TR 4788: Viewing Software Configuration on Floppy Disks

Avoid using the Software/Firmware Configuration screen to view the contents of floppy diskettes (device A:). This screen does not produce consistent information.

Resolution

To view the contents of a floppy diskette, use the Disk Utilities Show Directory function.

6.4 SPECIAL REDUNDANT SYSTEMS CONSIDERATIONS

The constraints described in this subsection apply to redundant systems only.

U606190001: System Host Configuration Update Problem

On redundant systems, when you change the System Host configuration, you may get the error, "Standby DB Update Error - Bad Record Count." When this error occurs, the changes made on the Active side do not get written to the Standby side.

U701290006/U508191001: DVC \$9 Timeout on Transfer to Standby

When you insert a DVC, it intermittently fails the download. A \$9 timeout message is generated and also an FRM006 Transition From Standby To Active message. The system, however, does NOT change from Standby to Active.

Resolution

Reinsert the card or activate the card from the Card Maintenance screen.

U801300003: Mismatched Time Slot Allocation Numbers

On a redundant system, the active and standby sides may not correctly reflect the license of the opposite side, e.g., the numbers match but the active side reports a lower number of timeslots being allocated on the active side than on the standby side.

Resolution

Set the license on both sides from the install diskettes.

U806100006: Code Errors Received when Performing Resource Group Maintenance

Multiple code errors may be displayed and logged when performing resource group maintenance on multi-span trunk or SPC cards. The code errors indicate a fatal alarm, however, the alarm is less than fatal in severity.

6.5 DISK OPERATIONS

The constraints described in this subsection apply to actions involving the Disk Utilities.

U409224673/TR 4673: Database Utility Covers File Access Errors

If an error occurs in the disk operation when you use the Data Base Store or Data Base Retrieve commands (under File Utilities), no warning is displayed to indicate that all files may not have been copied correctly.

U505035026/TR 5026: Formatting a Floppy During Reboot

Attempting to format a floppy diskette while the system is downloading a card causes the system to reboot with the error "FRM506: Fatal Processing Error Due To - ALM002: Network Manager Failure (SA)."

Resolution

Do not use the Disk Utilities function to format a floppy diskette.

U604121001: Mismatch between On-line and Diskette Disk Utilities

Files that are created with the diskette disk utilities and which have special characters in them, such as underscores, are not readable with the on-line generic disk utilities when the system is up and running.

U801170001: System Crashes When Reading an Incorrectly Labeled Floppy Disk

The disk format screen allows you to enter invalid characters in the label field. Doing so causes the controller to crash when you attempt to read the incorrectly labeled disk. Floppy disks formatted successfully on the switch may subsequently produce an error when a directory is attempted or may cause a core dump and system reboot when a read is attempted.

Resolution

The Format Disk function, located within Disk Utilities, has been disabled. When you attempt to format a floppy diskette in the A: drive, the following message appears:
Formatting A drive is Not Permitted.

6.6 DIGIT COLLECTION

The constraints described in this subsection apply to DTMF/MF digit collection. The type of collection (DTMF or MF) is specified where necessary.

TR 2274: Single Digit Collections (8-Port DTMF Cards Only)

Using single digit end flags while performing DTMF digit collection may result in misplaced or unreported digits. The receiver requires processing time to detect a digit string, report the string to the generic software, and then reset itself for another collection. Collecting single digits as start/end designators between larger strings can result in missed digits because the DTMF receiver does not have sufficient time to reset before the next digit is entered. This situation can be aggravated when the digit timing does not match the optimum timing of 60ms of tone followed by 60ms of quiet. DRC 24/48 port cards function properly.

Resolution

Collect and store incoming DTMF digits as a single digit string. Digit fields 1 through 4 can store up to 40 digits; the ANI field can store up to 20 digits. Digit strings are reported to the host in either a DTMF Digit (\$D1) report or as a segment in an Inpulse Rule Complete (\$DD) report. Using these reports, the host application can parse digit strings into their functional groups, as required.

U507315157/TR 5157: Garbled MF Digit Reports Not Sent to Host

MF Digit (\$D0) reports indicating garbled digits are not sent to the host when the Inpulse Rule performing the collection contains the reporting control tokens REP EACH or REP NEXT. The system sends an Inpulse Rule Complete (\$DD) report informing the host that the Inpulse Rule was aborted, but does not send a subsequent \$D0 report. All other conditions that cause an Inpulse Rule to abort generate an additional report explaining the cause. If you use the reporting control token REP END in the Inpulse Rule, the \$DD report correctly contains a \$D0 segment indicating that the MF digits are garbled.

If an Inpulse Rule with a REP EACH or REP NEXT token aborts while performing MF digit collection without generating an additional report, assume that the digit collection is garbled.

6.7 INPULSE/OUTPULSE RULE PROCESSING

The constraints described in this subsection apply to values for Inpulse Rule tokens.

U503234961/TR 4961: RELEASE Inpulse Rule Requires Resource Type

You must specify a resource type when you use the Inpulse rule token RELEASE. If you do not specify a resource (IPRC, MRC, DRC, DTG, or CPA), the RELEASE token has no effect.

U511211001/TR 5009: Limited Support for RETAIN and RELEASE Token

The RETAIN token is supported for only the IPRC and DRC in the Inpulse rules, and only partially supported in the Outpulse rules.

The RELEASE token is supported in the screen manager for the resource types IPRC, MRC, DRC, DTG, and CPA, but not fully supported in the run time processing. There is also an inconsistency in that the resources DTG and CPA, are not relevant to the IP rules but are supported for the RELEASE token. Resources IPRC, MRC, and DRC are not relevant to OP rules, but are supported for the RELEASE token. It is not possible to add a resource type for only an IP or OP rule.

U608140005: RELEASE DTG Token Does Not Work

The RELEASE Outpulse rule token does not release the DTG/DTG-2 and causes the system to log an error during Inpulse rule execution.

6.8 CALL PROCESSING

The constraints described in this subsection apply to call processing.

U407064606/TR 4606: DASS Ports Stuck in MAINT-NE State

DASS ports may become stuck in a MAINT_NE state.

Resolution

Clear a port by deactivating it and then activating it with the Port control function of the Card Maintenance submenu. Or, take the card out of service and then reactivate it.

U410264726/TR 4726: After Switchover, SLIC OGT Keeps Ringing

If a SLIC ICT (Incoming Trunk) is telerouted to SLIC OGT (Outgoing Trunk), and the SLIC OGT is ringing during a switchover, the SLIC OGT does not stop ringing when the SLIC ICT goes back on hook.

U503284968/TR 4968: Disconnect Fails Unless Port Goes Through Stable

A voice path must be established between incoming and outgoing ports (both ports are CP_STAB) in order for those ports to successfully disconnect.

U505085035/TR 5035: Multiple Host and High Load Causes System Failure

Using an Ethernet system /Host interface with up to four hosts and high loads may cause the system to fail. Higher loads may support even fewer host connections.

U505115041/TR 5041: Interval between Seizure and Wink

One of the fields in Trunk Timing configuration is the Wink Send. For E1, this is the time period of the delayed dial signal. Tests have shown that this is about 60ms as opposed to the 30ms stated in the specifications.

6.9 COMMAND/REPORT PROCESSING

The constraints described in this subsection apply to all host-issued commands and received reports.

U505105037/TR 5037: SIT Tone Detection Failure

The SIT tone for the North American DTG and CPA is not reported correctly. The SIT tone (4C8) is reported as Dial Tone in the SDA reports.

U507315159/TR 5159: Appending Digits via the \$67 Command

When appending an odd number of digits to a field, which already contains an odd number of digits, the last digit of the first string and the first digit of the last string are lost. Two zeros are added to the end of the string to provide the correct number of digits.

Resolution

To avoid this condition, use two digit fields for digit storage instead of appending digits to an existing field.

U507315160/TR 5160: Number of Digits to Collect (\$67 Command)

You can use the \$67 command to collect up to 40 digits. Specify the number of digits that you want to collect in the Digit Collection Control (byte offset 9) byte. Command processing does not currently check this value to verify that the number is less than 40. If you specify a number greater than 40, the system still attempts to collect only 40 digits. The command is not rejected with a Network Status byte value of \$2C, as would be expected.

Resolution

Specify 40 or less in the Digit Collection Control byte.

U507315161/TR 5161: Inpulse Rule Complete (\$DD) Report Processing

A \$DD generated when an Inpulse Rule aborts due to a CPA exhaust condition, does not correctly specify the cause for the abort. The report indicates that the rule aborted because no Outpulse channels were available (T = 1 in the Inpulse Rule/DVC Port byte offset 10). However, the CPA exhaust condition is identified, by a Resource Allocation (\$D6) report, which specifies a resource limitation for the CPA resource group.

U508175187/TR 5187: \$67 Command and Inpulse Rule—Digit Collection

When the caller enters digits, it appears that a combination of the \$67 command and Inpulse rule is being processed. The digits that are reported are the first three digits that the caller input. Those digits are reported in a \$DD report and are also stored in field 1.

A second collection command (via the Inpulse rule specified in the \$6A command) does not completely override the first collection command (in the \$67 command). The DRC collects only 3 digits and reports them to the host, per the \$67 command, but then stores those digits in field 1 per the Inpulse rule.

Resolution

Have the application remove the receiver attached with the \$67 command when the outgoing hangs up. Then send the \$6C, and then the \$6A to start the Inpulse rule.

U603210001: NSB \$02 Returned for \$65 and \$49 Commands

A Network Status Byte of \$02 (Invalid command function ID) is returned by the Subrate Path Control (\$65) Command when the \$65 command contains 82 destinations. The ISDN Port Control (\$49) Command also returns a Network Status Byte of 02 if the \$49 command contains between 258 and 261 bytes.

U803150002: NSB \$23 Returned for \$65

A Network Status Byte of \$23 (Illegal address error) is returned by the Subrate Path Control (\$65) Command when the \$65 command contains an address greater than 0x7ff. This occurred when the Subrate Card (SSC) was active and C-bus was enabled. Several spans of an ICC-E1 card were then added. The spans were located at address 0x900 and above. When a \$65 command was sent to connect a subrate path through the spans the switch returned NSB = 23.

6.10 INITIALIZATION

The constraints described in this subsection apply to system initialization.

U311104202/TR 4202: System Sends \$DC Report too Early

After a warm start, the system sends a (\$DC) report to start call processing before IPRC prompt downloading is complete.

Resolution

You can use the feature flag and not start call processing until the system receives a command from the host (\$C0 04) to send that command when the IPRC changes from Maintenance to Active.

6.11 NETWORK BUS CONTROLLER (NBC3)

The constraints described in this subsection apply to the NBC3 card.

U803230005: NBC3 Crashes when Connected Switch Reboots

When a switch is connected to the VCO via a T1 or 4xT1 card, and that T1 is the master timing source, the NBC3 and that side of the switch crashes when the switch is rebooted.

Resolution

If your system is experiencing this problem, please call Summa Four Technical Support at 1-800-978-6684 or 1-603-625-2984.

6.12 DTG AND DTG-2

The constraints described in this subsection apply to the DTG and DTG-2 card.

U610020003: DTG/DTG-2 Add/Delete during Outputting

If you add or delete a tone generator card while another tone generator is outputting, the switch may be unable to do further outputting and may even fail.

Resolution

Do not add or delete tone generator cards while the switch is processing calls.

U703120001: Deleting a DTG from the Database Stops Outputting

If you delete a DTG from the database in an active system, outputting ceases. This occurs even when there is no DTG physically present but there is a working DTG-2 available.

Resolution

A system reboot, or a system switchover to the other side, restores normal operation of the DTG-2. A switch back (after the switchover) to the first side will continue to operate normally.

6.13 FOUR SPAN CARDS

The constraints described in this subsection apply to the MVDC T1 and Four Span T1/E1 cards.

U507201007: Processing WINK Command

When the Four Span T1 is configured as FX0-LX, the card processes a WINK command after it seizes out.

Resolution

Do not use a WINK in an Outpulse rule when Four Span T1 cards are configured as FX0-LX.

U603151001: Inconsistent Handling of Channels on Four Span E1

With Four Span E1 cards, resource groups can include channel 17, depending on whether the card spans are provisioned for CCS/31B or CAS. In CCS/31B mode, channel 17 is a bearer channel and can be added to a resource group. In CAS mode, channel 17 is used as the D-channel, and therefore, cannot be in a resource group.

After a Four Span E1 card is added and configured, you can change the mode from the Resource Group Configuration screen. However, the system does not automatically remove channel 17 from the resource group when the mode is changed from CCS/31B to CAS, or automatically add channel 17 to the resource group when the mode is changed from CAS to CCS/31B. When the span is changed from CCS/31B to CAS, all call attempts on channel 17 fail, because channel 17 is no longer a bearer channel. When a span is changed from CAS to CCS/31B mode, bandwidth is wasted.

Resolution

Verify that resource groups properly reflect the nature of channel 17 when changing the mode of a Four Span E 1 card span between CCS and CAS.

NOTE: The System Administration console and SNMP do not prevent users from configuring bearer-channel signaling and timing parameters for channels that are not truly bearer channels. This applies to channel 17 for CAS mode and channel 1 for both modes. (Channel 1 is used for framing.) Users may find this misleading, but it is harmless.

U604260001: Testing Patterns from TTS-3 Analyzer Causes Errors

MVDC T1 and Four Span T1/E1 cards perceive the test patterns from a TTS-3 Analyzer as incoming seizures and generate FRM373 (Internal Message Length Error) and FRM102 (Card MSG) errors.

Resolution

Remove the test boxes before connecting the system to the network and processing calls.

U606101001: MVDC T1s/Four Span T1s Generate FRM90 Before Download

Multiple iterations of the FRM090 message (Card restored, card alarm cleared) are generated while MVDC T1 and Four Span T1 cards are downloading, coming into service, and going active.

U606241001: Four Span T1/E1 Internal Errors During Boot

During the broadcast download cycle, Four Span T1 and Four Span E1 cards intermittently generate an internal error code 1. The broadcast download fails, but the system recovers and successfully performs a direct download to each card.

Resolution

None. This problem does not affect service.

U611140005: Problem with Four Span T1 on Switchover

If you change the mode on a Four Span T1 card from active to maintenance, and then to out of service, from the Active side of the system, the changes also occur on the Standby side. However, if you change the mode back to active from the Active side, the card stays in maintenance mode on the Standby side. If the switch changes over while this condition exists, calls are lost.

Resolution

From the Active side of the switch, change the mode back to out of service, to active, to maintenance, and then back to active. This causes the Standby side to change from maintenance to active mode.

U611250003: FRM523 Queue Overflow

The messages FRM523 Queue Overflow, Data Lost and Data lost on Screen_Msg Queue may appear when the system broadcasts a download to a large number (14 or more) of MVDC T1 cards.

U611260001: Rotary Resource Group

If the outgoing Four Span T1 trunk resource groups are set to ROTARY search, the ports in the resource group get stuck in CP_WTFSUP.

Resolution

Use CYCLIC search.

U704140004: Display ACTIVE while Downloading

Following a warm reset, the 4xE1 cards display ACTIVE while downloading.

U710290005: MVDC T1 Fails to Clear Alarms

When multiple MVDC T1 cards are installed in a subrack, some cards re-download after a warm restart. The cards finally clear alarms after the download is complete. Also, there are queue overflows with data lost on RED_TX_Q, SCR_MSG_Q, CP_TX_Q, and SNMP_MSG_Q.

U710300008: Aborted Download Does Not Resume After Switchover

In a redundant system, when a download is in progress and an Active to Standby switchover occurs, the MVDC T1 download aborts on the previously Active side but does not resume on the new Active side.

U710310001: Display Card Data Screen Not Recording Slips

The Display Card Data screen does not record slips. The system was forced to slip by changing the AM2-D bulk call generator from internal to LINE A. Slips are recorded at the load box but the slip count does not increase on the Display Card Data screen.

6.14 INTERFACE CONTROLLER CARD (ICC)

Slips and Out-of-Frame Conditions Not Reported by ICC

Currently, the ICC does not support the SLIP/OOF command, or report slip or out-of-frame errors.

Gain/Law Conversion Not Supported by ICC

Currently, the ICC does not support gain or a-/mu-law conversion. The PCM data is passed through the card without conversion.

U803040001/802260013: ICC E1 Spans Reporting FRM113

The ICC E1 card, with Flash 2.2, is reporting FRM113 remote alarms in the log files even when the ICC E1 spans are not connected to a carrier. In some cases, ports which were previously IDLE go into a CP_MBUSY DIAG_OEND state following either a switchover from the AAC or reseating an ICC.

U803150001: Blue Alarms Received on ICC E1

When both the ICC E1 and Subrate Card (SSC) are set to CCS/31, the ICC E1 receives FRM123: T1/E1 BLUE ALARM DETECTED messages. This message should only appear when the span is out of service and not ready to receive calls.

U806170006: ICC Goes into Maintenance During Switchover

During switchover the ICC-T1 may transmit remote alarm to the far end. Please contact Summa Four Technical Support if this problem persists.

6.15 SERVICE PLATFORM CARD (SPC)

U804300003: SPC Fails Multi-field DTMF Collection

The SPC may fail multi-field DTMF collection.

U806160007: SPC-SRM Port Failure

When configuring an SPC-DTMF, some SRMs may fail. Therefore, not all ports are available.

U806230005: SPC Goes OOS When Running a DTMF T1/E1 Load

The SPC goes out of service (OOS) when running a DTMF T1/E1 load. An “FRM101: CARD OOS - RLS x x xx-x-x (CARD ALARM SET)” message is reported to the log file. No calls can be processed after this error is generated. All DTMF collection ceases even after the SPC becomes Active again.

U806300002: SPC-CPA Sensitive to DTMF Digits

The SPC-CPA (V4.07) may report DTMF digits as voice detect.

U806300007: Error Opening Specs File

The following error message may appear when activating the SPC, “DWNLD Error opening specs file (filename)”. This error is expected and should not indicate any unusual error condition.

6.16 MISCELLANEOUS CARD ISSUES

The constraints described in this subsection are miscellaneous card issues.

U409124662/TR 4662: UTC Firmware Causing T1 INIT Code F Error

The UTC firmware does not initialize the serial port in order to disable it. This might cause T1 INIT CODE F errors. Summa Four recommends that all firmware be checked to make sure that the serial port is disabled.

U505105038/TR 5038: Reorder Tone is Not Reported/Detected (UK)

The Call Progress Analyzer (CPA) in use in the UK does not detect the Reorder Tone from the Dial Tone Generator (DTG).

U603021003: IPRC Load Problems with More than 22 Seizures

Load seize on impulse rules with record and speak tokens at 22 seizures cause IPRC cards to go OOS. If simultaneous seizures occur while the IPRC is recording and playing temporary prompts, on systems configured with MFCR2 and Four Span E1 cards, which use Channel Associated Signaling (CAS) with CRC4 set to ON, the IPRC card goes out of service and causes the system to fail.

The IPRC also goes out of service and causes the system to dump and reboot when an impulse rule, used to collect DTMF or MFCR2 digits, is followed by an impulse rule, used to record a prompt with the GOTO RULE or DO IRULE token.

U609230005: Outgoing T1 Stuck in CP_OUTPUL

Outgoing ports on Single Span T1 cards intermittently become stuck in CP_OUTPUL after incoming seizures.

6.17 MULTIPLE HOST CONNECTIONS

The constraints described in this subsection apply to SDS/VCO systems connected to multiple hosts.

U605091001: Major Alarm Not Set on Loss of Hosts

The system does not generate the following alarm when all external host connections are lost and TeleRouter has been enabled:

ALM011: No Hosts Available

If TeleRouter is disabled after being enabled, the alarm is still not generated unless a new Ethernet host is configured and all host connections are then lost.

6.18 TELEROUTER

The constraints described in this subsection apply to systems with the Telerouter option.

U606041001: TeleRouter \$D5 (Routing Action) Reports

Telerouter \$D5 (Routing Action) Reports do not appear in the system trace file, but they are sent to the host.

6.19 SIMPLE NETWORK MANAGEMENT PROTOCOL (SNMP)

The constraints described in this subsection apply to SNMP operation.

Functions Not Supported

NOTE: There is no SNMP support for Network Side NET5, the REORDER tone feature for Japanese networks, or for other V5.0 features.

The Management Information Base (MIB) does not support the functions on the following System Administration screens.

- Disk Utilities Menu
- Print/Display System Log File Submenu
- Print/Display System Trace File Submenu
- Set Up Path Submenu
- Conference Display Screen
- Service Circuit Test Utility Screen
- Test Port Card Screen
- Call Generation Ports Display Screen
- Call Progress Tone Monitor Screen
- System Trace Configuration Screen

In addition, the MIB does not support the Routing Statistics Display function on the TeleRouter screen.

U608130005: SNMP Resource Group Configuration Problem

If you use SNMP to configure resource groups on redundant systems, the port.tbl file gets corrupted and ports are missing from resource group.

U708140005: D+I Card Not Supported Via SNMP

Configuration of the Drop and Insert card can only be done via the system administration master console. SNMP support for this card will be added in a future release. Until this occurs, a log message may appear upon switch startup: FRM340: CODE Error - serv_listupdator.cc,822: ERROR.

6.20 ETHERNET

The constraints described in this subsection apply to Ethernet.

U608080006: Problem with Ethernet Install

If you attempt to update the gateway routing tables before Ethernet is installed and enabled, the gateway routing tables get corrupted.

Resolution:

Install and enable Ethernet before you attempt to update the routing tables.

6.21 ISDN ISSUES

The constraints described in this subsection apply to PRI and PRI/N ISDN configurations.

U401054297/TR 4297: ISDN Ports Remain in DISC_REQ State

If phantom-to-DASS port calls are set up and torn down periodically for all the ports on a card, the DASS ports may become stuck in a CP_GARD, NORMAL, DISC_REQ state. If this happens to only a few ports on a card (some ports remain idle), incoming call attempts from the PSTN fail and no indication of the call is received. Outgoing calls from the SLIC connect but the DASS ports remain in a CP_WTSUP, O_INITED state.

6.22 INTERNATIONAL ISSUES

The constraints described in this subsection apply to international issues.

U505125048/TR 5048 Chile CPA Does Not Detect any Tones

The Chile Call Progress Analyzer (CPA 8.51) used with the Dial Tone Generator (DTG 1.02) does not detect DIAL, BUSY, RING, and CONGESTION tones, and reports CPA Internal Errors (Code 44).

U505155052/TR 5052: Finland CPA Does Not Detect Tones

The Finland Feature Package (CPA 8.70 with DTG FW V1.00) does not detect tones. All tones are detected as Voice Detect and Voice Cessation.

U505255069/TR 5069/TR 5068: Colombia CPA Tone Detection Problems

The Colombia CPA (V19.02) detects the SIT (04D4) tone intermittently. SIT tone is detected as PAGER CUE, VOICE, and VOICE CESSATION tones. RING tone is detected only 60% of the time; REORDER tone 40% of the time. SPECIAL REORDER tone is not detected at all.

U508075168/TR 5168: Multiple MFCR2 Cards with Colombia V19.02

When you add more than one MFCR2 board to a system running Colombia V19.02, some of the calls might fail to seize ports. Occasionally, the boards fail and need to be reset before they start working again.