

# *Building a New Configuration*

## **Introduction**

This section helps you build a new configuration file. The configuration editor graphical user interface (GUI) uses standard Windows conventions and users are expected to be familiar with Windows features. If you are unfamiliar with Windows, refer to the Microsoft documentation accompanying the Windows operating system.

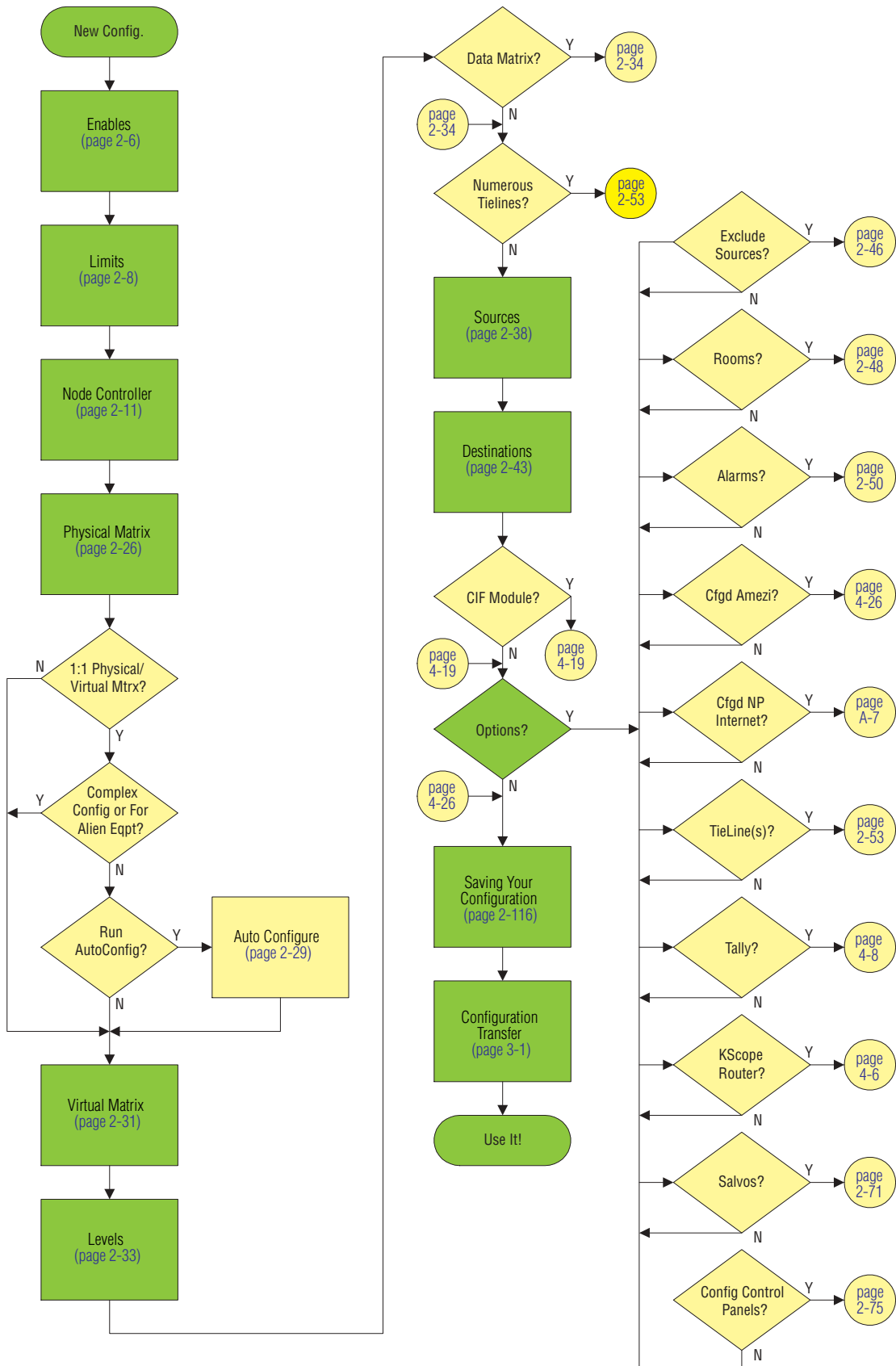
## **Starting a New Configuration**

The following information assumes you are working on a new configuration which is done offline. Online configuration adjustments are covered in Section 3 - [\*Connecting to the SMS 7000 Router\*](#). Configuration information about options is in Section 4 - [\*Configuring Options\*](#).

Before you create a configuration, it's important that you plan as thoroughly as possible. Be sure to check your equipment documentation for specific configuration setting requirements to accommodate product features or limitations. Careful planning will help you set up your system and configure it faster and more efficiently. You can however, modify existing configurations as needed.

The configuration process usually progresses as depicted in [\*Figure 2-1\*](#).

Figure 2-1. Typical Configuration Flow

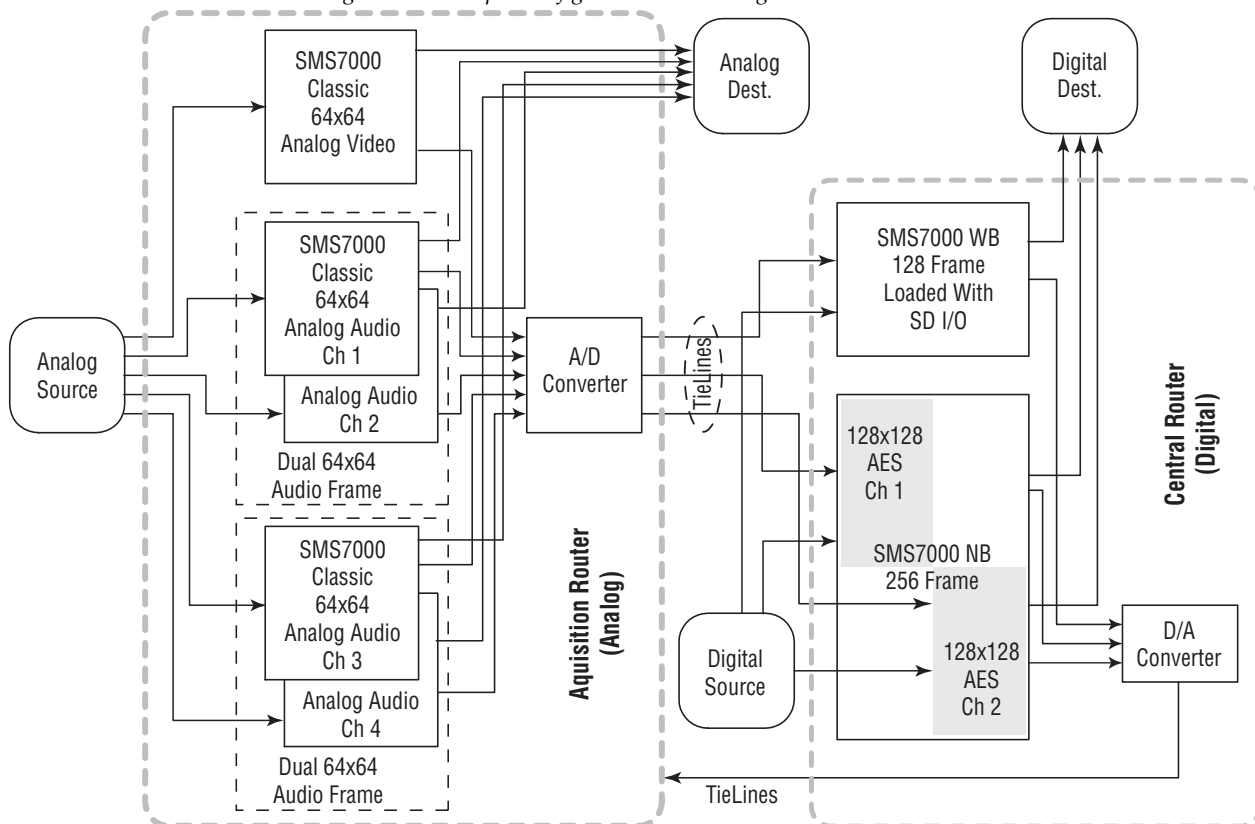


For tutorial purposes, we'll configure these components in this section:

- 128 squared 7500 wide band loaded with SD cards
- 256 squared 7500 narrow band loaded with dual 128x128 synchronous AES
- Classic with 64x64 video
- Classic dual 64x64 analog audio (Channels 1 & 2)
- Classic dual 64x64 analog audio (Channels 3 & 4)
- Third Party ("alien") 128 port switch (data router)  
(Requires the purchase of the SMS-key option)

When we're done, our system should be set up like the one in [Figure 2-2](#).

Figure 2-2. Sample Configuration Block Diagram



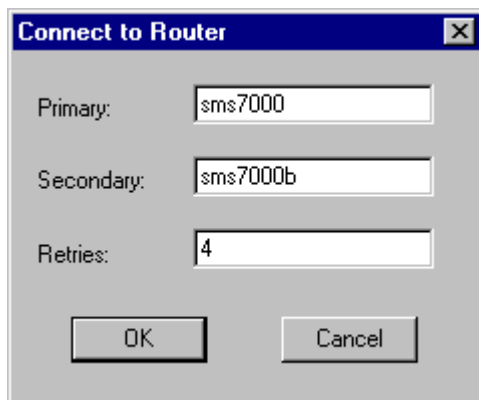
## To Launch the GUI and Create a New Configuration File



GUI

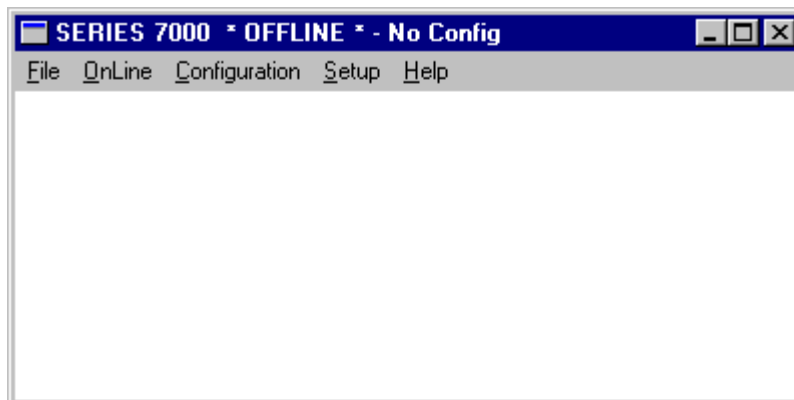
1. Double-click the SMS7000 icon.
2. Click **Cancel** when the Connect to Router window is displayed.

Figure 2-3. Connect to Router Window



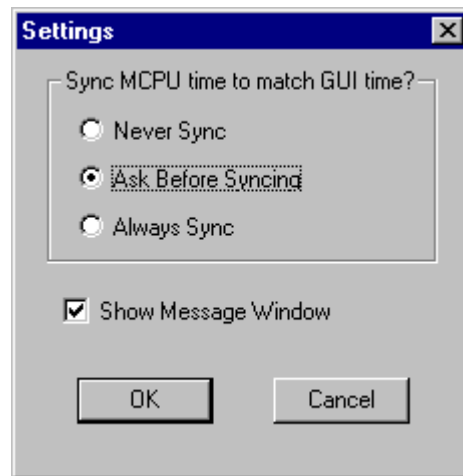
The Series 7000 main window will appear.

Figure 2-4. Series 7000 Main Window



3. Choose **Settings** from the **Setup** menu to display the settings window.

Figure 2-5. Settings Window.



The Sync options dictate whether the clock time for the SMS7000 MCPU will be synchronized to the clock time on the PC running the GUI. This could be especially important for features such as *Timed Salvos*, but it's generally recommended that all systems be synchronized to the house clock.

4. Ensure that **Show Message Window** is checked, then click **OK**. The Message Window helps you know what's happening behind the scenes, especially when you're online.
5. Select **New** from the **File** menu in the main window. When you first launch the configuration editor, no configuration is loaded. Since we're not editing an existing configuration, this will create a blank configuration file and display **Untitled** in the application's title bar.

The configuration editor is set up to encourage a logical progression from one configuration step to the next. Therefore if you were to click around the menus at this point, you'd see that very few commands are enabled. This will change as your configuration develops.

# Enables

Both Enables and Limits must be set for every configuration. These settings allocate RAM to accommodate the configuration.

**Enables** lets you enable system features. This section covers all features, even though you may not need, and therefore have not enabled them. Note that this also means that you may not see some features or options on your menus.

Table 2-1. Enable Flags

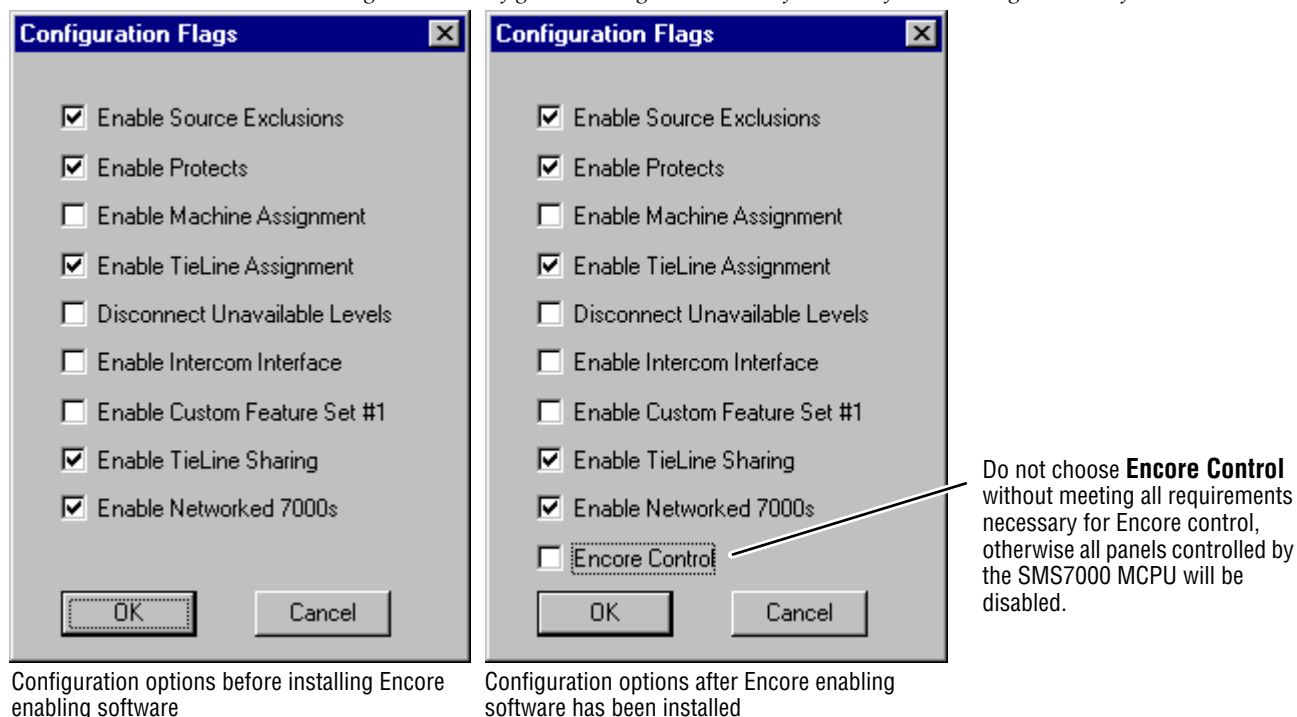
| Default Setting | Flag                          | Action if Enabled                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On              | Enable Source Exclusions      | Sources may be excluded from selection by specified Destinations during system configuration. Leave this on.                                                                                                                                                                                                                                                                                                            |
| On              | Enable Protects               | Control devices can protect their Source/Destination choices from change by other control devices. Leave this on.                                                                                                                                                                                                                                                                                                       |
| Off             | Enable Machine Assignment     | Source machines may be assigned to control by specific destinations or rooms through the GUI Assignments menu or an automated facility control system.                                                                                                                                                                                                                                                                  |
| Off             | Enable TieLine Assignment     | TieLines may be assigned to control by specific Destinations through the GUI Assignments menu or an automated facility control system.                                                                                                                                                                                                                                                                                  |
| Off             | Disconnect Unavailable Levels | Connections on the data matrix level(s) will be dropped when a destination selects a new source that has no data level or the data level is unavailable (protected or not assigned). This prevents data matrix connections from remaining busy when the user switches to other sources/destinations not applicable to the data matrix level.                                                                            |
| Off             | Enable Intercom Interface     | The 7000 will send control messages to intercom routers and will automatically assign an Intercom Index number to some items during configuration.                                                                                                                                                                                                                                                                      |
| Off             | Enable Custom Feature Set 1   | Custom feature set including Studio, Cubicle, and Room control functions will be active. This allows an external automation system to assign control of a machine, a TieLine, etc. to the Studio, Cubicle, or Room as a single destination.                                                                                                                                                                             |
| Off             | Enable TieLine Sharing        | TieLines may be shared by more than one destination allowing more efficient TieLine use.                                                                                                                                                                                                                                                                                                                                |
| Off             | Enable Networked 7000s        | One SMS7000 router can control another. Enables the creation of remote Sources and/or Destinations.                                                                                                                                                                                                                                                                                                                     |
| Off, Hidden     | Encore Control                | Visible and available only if you've installed Encore enabling software on the same PC as the SMS7000 configuration editor. Increases the maximum number of names (the total of all Source and Destination names) from 2,048 to 4,096, Salvo Elements from 4,096 to 8,192, and Salvo Pages from 256 to 512. The increased maximums are available <i>only</i> if control panels are connected to an Encore Panel Server. |

**CAUTION** “Encore Control” allows you to control the SMS7000 panels only from the Encore Panel Server. Enabling this feature, even if you do not exceed current limits, will remove all panel-related settings from this configuration. If you send this configuration to the SMS7000 MCU all of the control panels controlled by the SMS7000 MCU will be taken offline and you will not be able to retrieve template information from the panels. This feature also provides Increased Source & Destination names and Increased Salvo Elements & Salvos. Before you proceed, ensure that you’ve backed up your configuration. See the Encore documentation for requirements and approved procedures for the changeover to Encore Control.

## To Enable Configuration Flags

1. Under the **Setup** menu select **Enables/Limits** and then **Enables** to access the Configuration Flags window.

Figure 2-6. Configuration Flags Windows Before and After Installing Encore Software



2. Select features supported by your system that you want enabled. See [Table 2-1](#) for explanations of the selections.

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For tutorial purposes we’ve selected two non-default settings:

- a. **Enable TieLine Assignment** because we want to use TieLines.
  - b. **Enable TieLine Sharing** to more efficiently use our TieLines.
3. Click **OK** to enable the features with check marks in the Configuration Flags window.

## Recovery From Encore Control

In the event that you save a configuration which changed to Encore Control and then send it to the 7000 MCPU (See [Table 2-1 on page 2-6](#) for requirements), you will disable all panels controlled by the Series 7000 Control Frame. These instructions will help you recover the use of your control panels in case you did not intend to transfer control to Encore.

Reload your last working configuration which did not allow Encore Control. To send the SMS7000-compliant configuration to the MCPU, use the procedure documented under [Configuration Transfer](#) in Section 3.

## Limits

**Limits** let you set the maximum number of physical or configurable components you will employ in your system. This allows the MCPU to allocate sufficient memory to each area. Memory constraints will cause the system to slow down if all the limits are set to their maximum number. Set numbers to the largest limit you will employ.

Table 2-2. Configuration Limits

| Limit         | Default | Min. | Max                | Limit               | Default | Min. | Max                | Limit           | Default | Min. | Max |
|---------------|---------|------|--------------------|---------------------|---------|------|--------------------|-----------------|---------|------|-----|
| Coprocessors  | 20      | 2    | 20                 | TieLines            | 0       | 0    | 1024               | Pxy Pnl Grps    | 0       | 0    | 64  |
| Node Ctrls    | 32      | 1    | 64                 | Amezis              | 8       | 0    | 64                 | Src Pages       | 0       | 0    | 200 |
| Physical Mtxs | 32      | 1    | 64                 | Salvo Elements      | 32      | 0    | 4,096 <sup>a</sup> | Dst Pages       | 0       | 0    | 200 |
| Virtual Mtxs  | 32      | 1    | 32                 | Salvos              | 16      | 0    | 255 <sup>b</sup>   | Salvo Pages     | 0       | 0    | 32  |
| Levels        | 32      | 1    | 32                 | Timed Salvos        | 0       | 0    | 1,024              | Src Page sets   | 0       | 0    | 8   |
| Data Mtxs     | 0       | 0    | 128                | Panel Suffix Sets   | 2       | 2    | 8                  | Dst Page sets   | 0       | 0    | 32  |
| Sources       | 128     | 2    | 2,048 <sup>c</sup> | Panel Keypad Sets   | 8       | 2    | 64                 | Salvo Page sets | 0       | 0    | 32  |
| Destinations  | 128     | 2    |                    | Panel Dst Excl Sets | 8       | 0    | 255                | Panel Templates | 10      | 0    | 400 |
| Rooms         | 0       | 0    | 128                | Panel Svo Perm Sets | 8       | 0    | 255                | Tally Modules   | 0       | 0    | 40  |
| TieLine Types | 0       | 0    | 32                 | Cln-Svr Pnl Grps    | 0       | 0    | 64                 |                 |         |      |     |

<sup>a</sup> Choosing Encore Control raises this limit to 8,192. In either case, memory must be available.

<sup>b</sup> Choosing Encore Control raises this limit to 512.

<sup>c</sup> The maximum sum of all Sources and all Destinations without choosing Encore Control. Choosing Encore Control raises this limit to 4,096, but requires that control panels are connected to an Encore Panel Server.

**CAUTION** “Encore Control” allows you to control the SMS7000 panels only from the Encore Panel Server. Enabling this feature, even if you do not exceed current limits, will remove all panel-related settings from this configuration. If you send this configuration to the SMS7000 MCPU all of the control panels controlled by the SMS7000 MCPU will be taken offline and you will not be able to retrieve template information from the panels. This feature also provides Increased Source & Destination names and Increased Salvo Elements & Salvos. Before you proceed, ensure that you’ve backed up your configuration. See the Encore documentation for requirements and approved procedures for the changeover to Encore Control.



## To Set Configuration Limits

1. Under the **Setup** menu select **Enables/Limits** and then **Limits** to access the Configuration Limits window.

Figure 2-7. Configuration Limits Window

| Maximum Number of |     |
|-------------------|-----|
| Coprocessors      | 20  |
| Node Ctrls        | 32  |
| Physical Mtxs     | 32  |
| Virtual Mtxs      | 32  |
| Levels            | 32  |
| Data Mtxs         | 0   |
| Sources           | 256 |
| Destinations      | 256 |
| Rooms             | 0   |
| TieLineTypes      | 2   |
| TieLines          | 32  |
| Amezis            | 8   |
| Salvo Elements    | 32  |
| Salvos            | 16  |
| Timed Salvos      | 0   |
| Pnl Suffix Sets   | 2   |
| Pnl Keypad Sets   | 8   |
| Pnl Dst Excl Sets | 8   |
| Pnl Svo Prm       | 8   |
| Cln-Svr Pnl Grps  | 0   |
| Pxy Pnl Groups    | 0   |
| Src Pages         | 0   |
| Dst Pages         | 0   |
| Svo Pages         | 0   |
| Src Page Sets     | 0   |
| Dst Page Sets     | 0   |
| Svo Page Sets     | 0   |
| Panel Templates   | 10  |
| Tally Modules     | 0   |

OK Cancel

Figure 2-8. Configuration Limits Window With Encore Control

| Maximum Number of |      |
|-------------------|------|
| Coprocessors      | 2    |
| Node Ctrls        | 6    |
| Physical Mtxs     | 6    |
| Virtual Mtxs      | 6    |
| Levels            | 32   |
| Data Mtxs         | 0    |
| Sources           | 3000 |
| Destinations      | 1096 |
| Rooms             | 0    |
| TieLineTypes      | 0    |
| TieLines          | 0    |
| Amezis            | 8    |
| Salvo Elements    | 8192 |
| Salvos            | 512  |
| Timed Salvos      | 0    |
| Pnl Suffix Sets   | 2    |
| Pnl Keypad Sets   | 8    |
| Pnl Dst Excl Sets | 8    |
| Pnl Svo Prm       | 8    |
| Cln-Svr Pnl Grps  | 0    |
| Pxy Pnl Groups    | 0    |
| Src Pages         | 0    |
| Dst Pages         | 0    |
| Svo Pages         | 0    |
| Src Page Sets     | 0    |
| Dst Page Sets     | 0    |
| Svo Page Sets     | 8    |
| Panel Templates   | 10   |
| Tally Modules     | 0    |

OK Cancel

2. Enter numbers for the limits to be used with this configuration. [Table 2-2](#) shows the minimum and maximum number limits that can be used to create a Series 7000 configuration file. When entering the numbers allow for backup MCPU modules, Communication Interface modules, Alien Matrix Node Controllers, backup Node Controllers, and future additions. Some of the fields are self-explanatory, comments on others follow. The features they address are discussed elsewhere in the documentation.

Table 2-3. Tutorial Variations from Default Configuration Limits

| Limit         | Setting | Default |
|---------------|---------|---------|
| Sources       | 256     | 128     |
| Destinations  | 256     | 128     |
| TieLine Types | 2       | 0       |
| TieLines      | 32      | 0       |

**Data Mtxs** - Only enter the number of Grass Valley Group data matrices you have in your system. The entry must be greater than 0 to activate the **Data Matrix** option under **Matrix** on the **Setup** menu.

**Sources and Destinations** - Enter numbers large enough to accommodate some system changes.

**TieLine Types** - Enter one for each path between functional routing system areas. For our example we're going to enter 2 — one for the analog-to-digital matrix and a second one for the digital-to-analog matrix.

**TieLines** - For our system we're going to have 16 lines going to Central and 16 returning so we'll enter 32.

**Amezis** - The maximum number of serial interfaces you want to accommodate in your system.

**Timed Salvos** - Very powerful; use with caution.

**Panel Dst Excl Sets** - Recommend one per panel or one for each production area of your installation. We'll leave the default setting.

3. Click **OK** to accept currently displayed entries.

# Coproprocessor

Coprocessors reside on the MCPU module and on Communications Interface (CIF) Mezzanine cards.

Coprocessors are used to control three types of interfaces:

- Global Serial (GS) used for control panels and node buses
- Asynchronous Mezzanine (AS) used for RS-422/RS-232 connections
- Tally Bus (GS) used for Source Tally Managers

Automatic configuration of Coprocessors takes place upon initial connection with the MCPU. Manual entry may not be required except to fine tune mezzanines on CIF modules. In fact, we recommend that you allow automatic Coprocessor configuration whenever possible.

**Note** For in depth description of Coprocessor Configuration, see [Configuration for Control of Alien Matrices](#), under [Configuring Options](#) in the *Configuration Manual*.

# Node Controller

The Node Controller is a frame module which controls communications on the Node Bus between the MCPU and the Matrix Element Controllers (MECs) located on each signal processing circuit board. The MCPU provides overall control of the 7000 System. The Node Controller translates MCPU commands and directly controls up to 128 outputs.

A single Node Controller, (without Expander module) can control a maximum of 1024 inputs and 128 outputs. Multiple Node Controllers can work together to control a larger matrix. Conversely, a single Node Controller can be fragmented into as many as four segments (called Slices) to control different signal types in smaller matrices. Refer to [Figure 2-9](#).