APPENDIX D

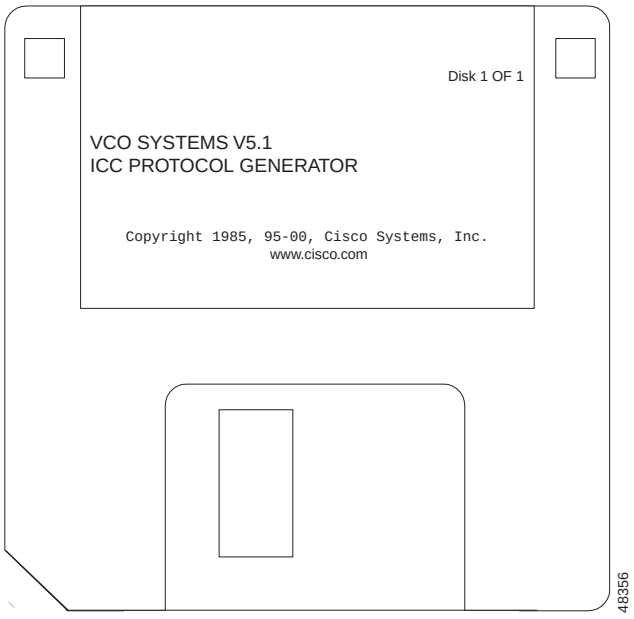
Customized Signaling and Span Types

ICC UPG Update Tool—Introduction

The Interface Controller Card (ICC) Universal Protocol Generator (UPG) Update Tool is available for users of VCO/4K system software version 5.1(3) and higher. The tool allows users to modify the default .upg files in order to create custom ICC protocol data files for E&M and CAS/R2 protocols. Two versions of the ICC UPG Update Tool are provided on a floppy disk, shown in Figure D-1.

- upgedsol.exe—For Sun Solaris workstation users
- upgedwin.exe—For Microsoft Windows (2000, NT, 98, and 95) PC users

Figure D-1 ICC Protocol Generator Floppy Disk



Two versions of the default files are provided on a disk:

- iccem.upg—For the E&M, T1 protocol
- icccasr2.upg—For the CAS/R2, E1 protocol

Note Default files do not need to be customized for the system software to function properly. The ability to customize the default .upg files is provided for flexibility in signaling configurations.

Users must modify a system default .upg file to create a custom .upg file. Customize the iccem.upg file when using the E&M, T1 protocol. Customize the icccasr2.upg file when using the CAS/R2, E1 protocol. A maximum of four customized .upg files may be created; the ability to customize .upg files is provided for configuring flexibility in three signaling areas:

- ABCD signaling bit pattern
- Minimum and maximum detection times of signals (wink, seize, flash, etc.)
- Guard time

Installation Instructions

The ICC UPG Update Tool is a command line executable software program. The following sections describe the installation of the ICC UPG Update Tool and the creation of customized .upg files using either a Sun Solaris workstation or a PC workstation.

Install and Start the ICC UPG Update Tool with a Sun Solaris Workstation

Complete the following steps to install the ICC UPG Update Tool on a SUN Solaris workstation and create a customized .upg data file. For Microsoft Windows PC users, refer to the "Install and Start the ICC UPG Update Tool with a Microsoft Windows PC Workstation" section on page D-4 for tool installation instructions.

Step 1 Create a directory named UPGTOOL on your Sun workstation.

Step 2 Copy the upgedsol.exe executable file—the ICC UPG Update Tool—from the ICC PROTOCOL GENERATOR floppy disk to the UPGTOOL directory.

Step 3 Copy the appropriate default .upg file from floppy disk 6 to the UPGTOOL directory according to the following rules:

- Copy the iccem.upg file if you are using the E&M, T1 protocol.
- Copy the icccasr2.upg file if you are using the CAS/R2, E1 protocol.

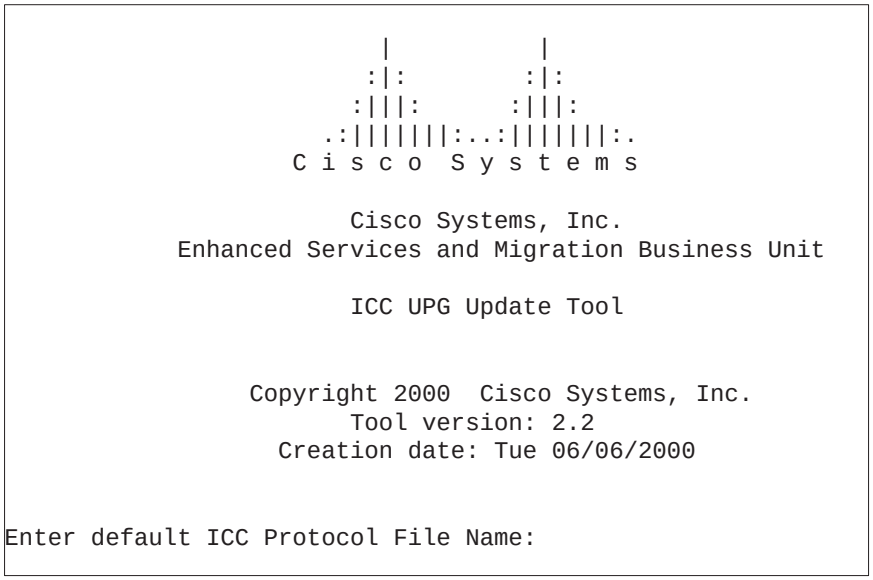
Step 4 Start a new shell.

Step 5 Change to the UPGTOOL directory within the new shell.

Step 6 Type **./upgedsol.exe** and press **Enter** to start the tool.

An introductory message and prompt are displayed. (See Figure D-2.)

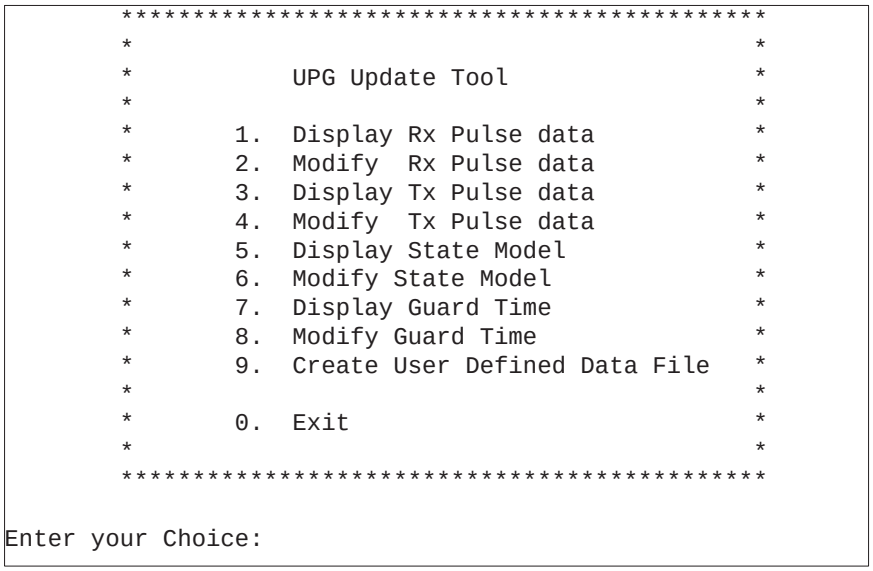
Figure D-2 ICC UPG Tool Introductory Message and Prompt—Sun Solaris Workstation



Step 7 Enter the file name of the default .upg file copied in Step 3.

The ICC UPG Update Tool menu, and a prompt, are displayed. (See Figure D-3.)

Figure D-3 ICC UPG Update Tool Menu and Prompt—Sun Solaris Workstation



The ICC UPG Update Tool menu options, and custom .upg file creation instructions, are described in the "Custom .upg File Creation Instructions" section on page D-5.

Install and Start the ICC UPG Update Tool with a Microsoft Windows PC Workstation

Complete the following steps to install and start the ICC UPG Update Tool on a Microsoft Windows PC workstation. For Sun Solaris users, refer to the "Install and Start the ICC UPG Update Tool with a Sun Solaris Workstation" section on page D-2 for tool installation instructions.

Step 1 Create a directory named UPGTOOL on your PC.

Step 2 Copy the upgedwin.exe executable file—the ICC UPG Update Tool—from the ICC PROTOCOL GENERATOR floppy disk to the UPGTOOL directory.

Step 3 Copy the appropriate default .upg file from floppy disk 6 to the UPGTOOL directory according to the following rules:

- Copy the iccem.upg file if using the E&M, T1 protocol.
- Copy the icccasr2.upg file if using the CAS/R2, E1 protocol.

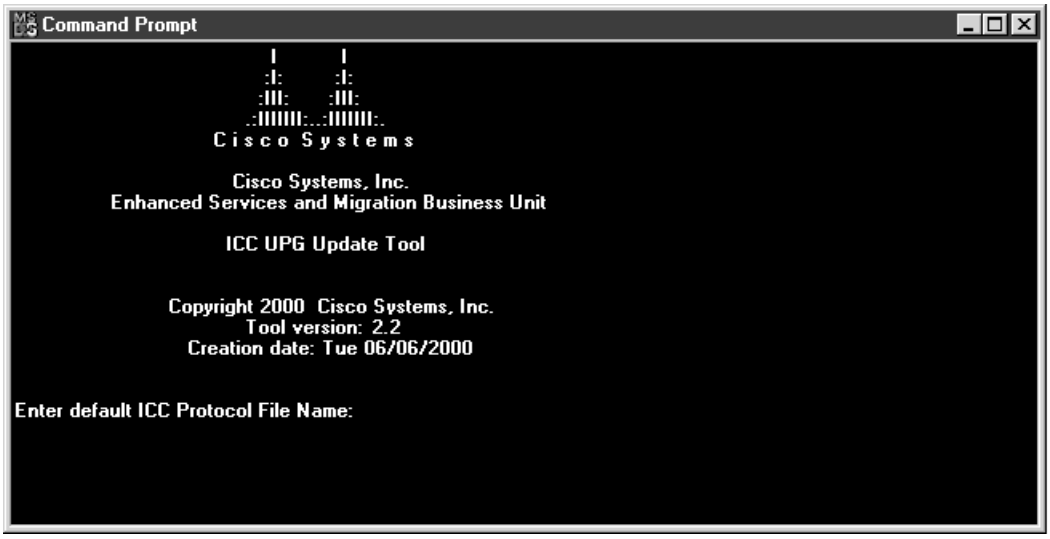
Step 4 Open a Command Prompt window.

Step 5 Change to the UPGTOOL directory within the window.

Step 6 Type **upgedwin.exe** and press **Enter** to start the tool.

An introductory message and prompt are displayed in the window. (See Figure D-4.)

Figure D-4 ICC UPG Tool Introductory Message and Prompt—PC Workstation



Step 7 Enter the file name of the default .upg file copied in Step 3.

The ICC UPG Update Tool menu, and a prompt, are displayed. (See Figure D-5.)

Figure D-5 ICC UPG Update Tool Menu and Prompt—PC Workstation

Refer to the “Custom .upg File Creation Instructions” section on page D-5 for a description of the ICC UPG Update Tool menu options, and custom .upg file creation instructions.

Custom .upg File Creation Instructions

The creation of custom .upg files is accomplished with the ICC UPG Update Tool. All customizing instructions are illustrated with figures representative of those seen while using a Sun Solaris workstation. PC workstation users see the same information, but in a Command Prompt window.

Sun Solaris workstations users, refer to Figure D-3 for the ICC UPG Update Tool menu. PC workstation users, refer to Figure D-5 for the ICC UPG Update Tool menu. The ICC UPG Tool menu options are described in Table D-1.

Table D-1 ICC UPG Tool Menu Options

Menu Option	Description
1. Display Rx Pulse data	Displays a list of receive pulse data (incoming signals)—data traveling from the network to the card—and describes how each is decoded by the protocol.
2. Modify Rx Pulse data	Allows users to modify the active bit pattern (ABCD bits) and the minimum and maximum detection times of each received pulse. The ABCD signaling bits for the CAS/R2, E1 protocol must not be modified.
3. Display Tx Pulse data	Displays a list of transmit pulse data (outgoing signals)—data traveling from the card to the network—that can be transmitted by the protocol, and describes how each is decoded by the protocol.

Table D-1 ICC UPG Tool Menu Options (continued)

Menu Option	Description
4. Modify Tx Pulse data	Allows the user to modify the active bit pattern (ABCD bits) and the minimum and maximum detection times of each transmitted pulse. The ABCD signaling bits for the CAS/R2, E1 protocol must not be modified.
5. Display State Model	Displays the current state model.
6. Modify State Model	Not available for customer use at this time.
7. Display Guard Time	Displays the current value of the guard time—the length of time that a port is held in guard state, after the port is abandoned.
8. Modify Guard Time	Allows the user to modify the length of the guard time.
9. Create User Defined Data File	Allows the user to save the customized .upg file.
0. Exit	Allows the user to exit the ICC UPG Update Tool menu.

Follow the procedures in the following sections to customize a default .upg file.

Display and Modify Receive Pulse Data—Options 1 and 2

Complete the following steps to display and modify the receive pulse data of a default .upg file:

Step 1 From the ICC UPG Update Tool menu, type **1** and press **Enter**.

The receive pulse data is displayed on your screen (see Figure D-6), followed by the ICC UPG Update Tool menu and the Enter your Choice prompt.

Figure D-6 Display Rx Pulse Data Screen

```
  ****  Receive Pulses  ****

                                Timing (ms)
Name                   ABCD bits   Min   Max
--------------------   ---------  -----------
rx_seize                   12       375     0
rx_wink                    12       100   350
rx_flash                    0       100   350
rx_idle                     0       375     0
```

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Each protocol can detect a certain number of receive pulses (our example, Figure D-6, contains four). Each pulse is described by four parameters. (See Table D-2.)

Table D-2 Display Rx Pulse Data Parameters

Parameter	Description
Name	Name for the pulse; for debugging and maintenance only.
ABCD bits	The ABCD bit pattern identifying a specific signal. The pattern is a binary number from 0000 to 1111, which is displayed as decimal, 0 to 15.
Timing (ms), Min	Represents the minimum time, in milliseconds, that the active bit pattern (see Table D-3) must be present on the incoming line.
Timing (ms), Max	Represents the maximum time, in milliseconds, that the active bit pattern (see Table D-3) can be present on the incoming line.

Step 2 Type **2** and press **Enter** to modify the receive pulse data.

The first receive pulse data is displayed. (See Figure D-7.) The cursor is located after the Enter ABCD Bits value (0-15) [n] prompt. The default, or current, value is contained within the square brackets.

Figure D-7 First Receive Pulse Data Display—New ABCD Bits Prompt

```
Enter your Choice: 2

  ****  Receive Pulses  ****

Signal: 'rx_seize'
Enter ABCD Bits value (0-15)   [  12]:
```

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Step 3 Modify the ABCD bit pattern, taking into account the following considerations:

Note Only the active bit pattern is stored in the customized .upg file.

- For the E&M, T1 protocol, the receive pulses are defined by a certain sequence of changes in the A and B bits; the C and D bits are not used for defining receive pulses. Refer to Table D-3 for the default values of the ABCD bit patterns.

Table D-3 Default Values of the ABCD Bit Pattnerns

Signaling Name	Start Pattern	Active Pattern	End Pattern
Seize	0000	1100	—
Wink	0000	1100	0000
Flash	1100	0000	1100
Idle	1100	0000	—

- For the CAS/R2, E1 protocol, the receive pulses are defined as specific ABCD bit patterns. Refer to Table D-4 for the default values of the ABCD bit patterns.

Table D-4 Default ABCD Bit Pattern Values for the CAS/R2, E1 Protocol

Signaling Name	Bit Pattern
Seize	0001
Seize Acknowledge	1101
Answer	0101
Clear Back	1101
Idle	1001

a. Convert the appropriate binary ABCD bit pattern to decimal.

b. Type the decimal value.

c. Press **Enter**.

Note Pressing **Enter** without first entering a value leaves the default, or current, value unmodified.

A new prompt—Enter Minimum Timer Value (ms) [n]—followed by the cursor, is displayed. (See Figure D-8.) The default, or current, value is contained within the square brackets.

Figure D-8 First Receive Pulse Data Display—Minimum Timer Selection Prompt

```
Enter your Choice: 2

  ****  Receive Pulses  ****

Signal: 'rx_seize'
Enter ABCD Bits value (0-15)   [  12]:
Enter Minimum Timer Value (ms) [ 375]:
```

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Step 4 Modify the minimum timer value, taking into account the following considerations:

- For the E&M, T1 protocol, the receive pulses are defined by a minimum time, in milliseconds, that the active bit pattern must be present on the incoming line. Refer to Table D-5 for the default minimum timer values. Adhere to E&M protocol industry standards for valid timer selections.

Table D-5 Default Minimum Timer Values for the E&M, T1 Protocol

Signaling Name	Minimum Time (ms)
Seize	375
Wink	100
Flash	100
Idle	375

- For the CAS/R2, E1 protocol, all bit patterns are valid the instant they are present; default minimum timer values are always 0. You must select 0 (zero) for the minimum timer value.

d. Type the appropriate minimum timer value for the seize receive pulse.

e. Press **Enter**.

Note Pressing **Enter** without first entering a value leaves the default, or current, value unmodified.

A new prompt—Enter Maximum Timer Value (ms) [n]—followed by the cursor, is displayed. (See Figure D-9.) The default, or current, value is contained within the square brackets.

Figure D-9 First Receive Pulse Data Display—Maximum Timer Selection Prompt

```
Enter your Choice: 2

  ****  Receive Pulses  ****

Signal: 'rx_seize'
Enter ABCD Bits value (0-15)   [  12]:
Enter Minimum Timer Value (ms) [ 375]:
Enter Maximum Timer Value (ms) [   0]:
```

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Step 5 Modify the maximum timer value, taking into account the following considerations:

- For the E&M, T1 protocol, the receive pulses are defined by a maximum time, in milliseconds, that the ABCD bit pattern can be present on the incoming line. Refer to Table D-6 for the default maximum timer values. Adhere to E&M protocol industry standards for valid timer selections.

Table D-6 Default Macimum Timer Values for the E&M, T1 Protocol

Signaling Name	Maximum Time (ms)
Seize	0
Wink	350
Flash	350
Idle	0

- For the CAS/R2, E1 protocol, the receive pulses are not defined by a maximum time; default maximum timer values are always 0. You must select 0 (zero) for the maximum timer value.

Note A zero maximum timer value indicates that the pattern can remain indefinitely.

a. Type the appropriate maximum timer value for the seize receive pulse.

b. Press **Enter**.

Note Pressing Enter without first entering a value leaves the default, or current, value unmodified.

The second receive pulse data is displayed, along with the Enter ABCD Bits value (0-15) [n] prompt.

Step 6 Repeat Step 3 through Step 5 for this and all remaining receive pulse data.

When all receive pulse data are modified, the ICC UPG Update Tool screen is displayed. Sun Solaris workstation users, refer to Figure D-3. Microsoft Windows PC workstations users, refer to Figure D-5.

Display and Modify Transmit Pulse Data—Options 3 and 4

Complete the following steps to display and modify the transmit pulse data of a default .upg file:

Step 1 From the ICC UPG Update Tool menu, type **3** and press **Enter**.

The transmit pulse data is displayed (see Figure D-10), followed by the ICC UPG Update Tool menu and the Enter your Choice prompt.

Figure D-10 Display Tx Pulse Data Screen

```
Enter your Choice: 3

  ****  Transmit Pulses  ****

Pulse                 Segment  ABCD bits  On Time (ms)
--------------------  -------  ---------  ------------
tx_seize                 1        12         350
tx_idle                  1         0         350
tx_wink                  1        12         240
tx_wink                  2         0         350
tx_flash                 1         0         240
tx_flash                 2        12         350
```

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Each protocol can send a certain number of transmit pulses (our example, Figure D-10, contains four). Each pulse is described by four parameters. (See Table D-7.)

Note The transmit pulses wink and flash are assigned two segments. Each segment contains an ABCD bit pattern value and an active bit pattern timing value. Both can be modified.

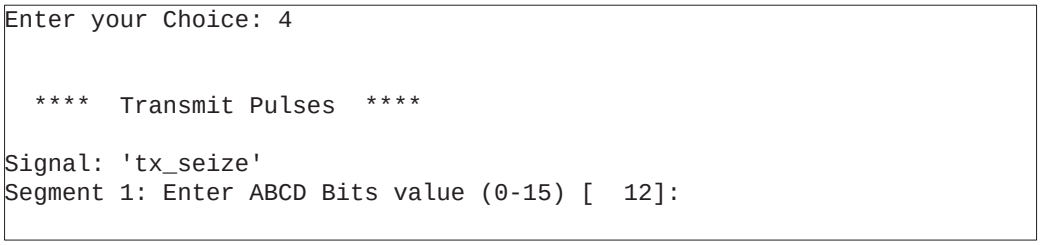
Table D-7 Display Tx Pulse Data Parameters

Parameter	Description
Pulse	Name of the pulse.
Segment	A numerical identifier for each segment of a pulse; a pulse is assigned one or two segments.
ABCD bits	The ABCD bit pattern that is to be transmitted. The pattern is a binary number from 0000 to 1111, which is displayed as decimal, 0 to 15.
On Time (ms)	Represents the guaranteed time, in milliseconds, that the active bit pattern (refer to Table D.8) will be transmitted on the outgoing line.

Step 2 Type **4** and press **Enter** to modify the transmit pulse data.

The first transmit Pulse ID data is displayed (seize). (See Figure D-11.) The cursor is located after the Enter ABCD Bits value (0-15) [n] prompt. The default, or current, value is contained within the square brackets.

Figure D-11 Transmit Pulse Data Display—ABCD Bits Value Prompt



Step 3 Modify the ABCD bit pattern, taking into account the following considerations:

- For the E&M, T1 protocol, the transmit pulses contain a certain sequence of changes in the A and B bits; the C and D bits are not used for defining transmit pulses. Refer to Table D-8 for the default values of the ABCD bit patterns.

Table D-8 Default ABCD Bit Pattern Values for the E&M, T1 Protocol

Signaling Name	Start Pattern	Active Pattern	End Pattern
Seize	0000	1100	—
Wink	0000	1100	0000
Flash	1100	0000	1100
Idle	1100	0000	—

- For the CAS/R2, E1 protocol, the transmit pulses are defined as specific ABCD bit patterns. Refer to Table D-9 for the default values of the ABCD bit patterns.

Table D-9 Default ABCD Bit Pattern Values for the CAS/R2, E1 Protocol

Signaling Name	Bit Pattern
Seize	0001
Seize Acknowledge	1101
Answer	0101
Clear Back	1101
Idle	1001

a. Convert the appropriate binary ABCD bit pattern to decimal.

b. Type the decimal value.

c. Press **Enter**.

Note Pressing Enter without first entering a value leaves the default, or current, value unmodified.

A new prompt—Enter Time On Value (ms) [n]—followed by the cursor, is displayed. (See Figure D-12.)

Figure D-12 Transmit Pulse Data Display—Time On Prompt

```
Enter your Choice: 4


  ****  Transmit Pulses  ****

Signal: 'tx_seize'
Segment 1: Enter ABCD Bits value (0-15) [  12]:
Segment 1: Enter Time On Value (ms)     [ 350]:
```

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Step 4 Modify the minimum timer value (segment 1 timer value), taking into account the following considerations:

- For the E&M, T1 protocol, the transmit pulses are described in part by the length of time, in milliseconds, that the active bit pattern must be present on the outgoing line. Refer to Table D-10 for the default minimum timer values. Adhere to E&M protocol industry standards for valid timer selections.

Table D-10 Default Minimum Timer Values for the E&M, T1 Protocol

Signaling Name	Minimum Time (ms)
Seize	375
Wink	100
Flash	100
Idle	375

- For the CAS/R2, E1 protocol, all bit patterns are valid the instant they are present; default minimum timer values are always 0. You must select 0 (zero) for the maximum timer value.

a. Type the appropriate minimum timer value for the seize receive pulse.

b. Press **Enter**.

Note Pressing **Enter** without first entering a value leaves the default, or current, value unmodified.

Step 5 Use the following considerations to determine your next step.

- If the seize or idle transmit pulse was configured in Step 4, configuration for that transmit pulse in complete. Repeat Step 1 through Step 5 for the next transmit pulse displayed.
- If the wink or flash transmit pulse was configured in Step 4, proceed to Step 6.

Step 6 Modify the ABCD end bit pattern (segment 2) following the guidelines discussed in Step 3.

Step 7 Modify the maximum timer value (segment 2 timer value), taking into account the following considerations.

Note Transmit pulses wink and flash are the only transmit pulses with maximum timer values. The maximum timer values are always contained in segment 2 of a transmit pulse.

- For the E&M, T1 protocol, the transmit pulses are defined by a maximum time, in milliseconds, that the ABCD bit pattern can be present on the outgoing line. Refer to Table D-11 for the default maximum timer values. Adhere to the E&M protocol standards for valid timer selections.

Table D-11 Default Maximum Timer Values for the E&M, T1 Protocol

Signaling Name	Maximum Time (ms)
Seize	0
Wink	350
Flash	350
Idle	0

- For the CAS/R2, E1 protocol, the transmit pulses do not contain by a maximum time; default maximum timer values are always 0. You must select 0 (zero) for the maximum timer value.

Note A zero maximum timer value indicates that the pattern can remain indefinitely.

a. Type the appropriate maximum timer value for the transmit pulse.

b. Press **Enter**.

Note Pressing Enter without first entering a value leaves the default, or current, value unmodified.

The next transmit pulse data is displayed, along with the Enter ABCD Bits value (0-15) [n] prompt.

Step 8 Repeat Step 3 through Step 5 for this and all remaining transmit pulse data.

When all transmit pulse data is modified, the ICC UPG Update Tool screen is displayed. SUN Solaris workstation users, refer to Figure D-3. Microsoft Windows PC workstation users, refer to Figure D-5.

Display and Modify the State Model—Options 5 and 6

Note It is not necessary to access option 5 or option 6 to create a customized .upg file. Option 5 is display only, and option 6 is not available for customer use at this time. We advise proceeding to the "Display and Modify the Guard Time—Options 7 and 8" section on page D-14.

Complete the following steps to display the state model:

Step 1 From the ICC UPG Update Tool screen, type **5** and press **Enter**, to display the current state model. The current state model, which describes protocol states, is displayed. (See Figure D-13.)

Figure D-13 State Model Screen

```
Enter your Choice: 5


  ****  State Model  ****

#    State           Event            Next State
--  ------------     -----------      -----------
1    1:idle          1:tx_seize       3:wait_for_rx_ans
2    1:idle          4:abandon        7:guard
3    1:idle          5:alarm          8:alarm
.    .               .                .
.    .               .                .
.    .               .                .
```

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The state model is described by four parameters. (See Table D-12.)

Table D-12 State Model Parameters

Parameter	Description
#	A sequential number list which gives the state model display structure.
State	The current state of the protocol.[1]
Event	Transition identifier; event possibly encountered.[1]
Next State	Resulting state; the state achieved if State and Event conditions are met.[1]

1. The last three parameters described in Table D-12 require some explanation. Using the #2 row of Figure D-13 as an example, if the current protocol state is idle (1:idle) and the abandon event is encountered, the next state which the protocol assumes is guard (7:guard).

The state model display is followed by the ICC UPG Update Tool menu.

Step 2 Proceed to the "Display and Modify the Guard Time—Options 7 and 8" section on page D-14. Do not select option 6.

Note Option 6 is not supported for customer use at this time. However, if you happen to select option 6, press **Enter** to accept default values until the ICC UPG Update Tool menu is displayed.

Display and Modify the Guard Time—Options 7 and 8

Complete the following steps to display and modify the guard time of a default .upg file:

Step 1 Type **7** and press **Enter**, to display the guard time.

The message in Figure D-14 is displayed, followed by the ICC UPG Update Tool menu and the Enter your Choice prompt.

Figure D-14 Display Guard Time Screen

```
Enter your Choice: 7


Guard Time = 200 ms.
```

A port is held in the guard state, after it is abandoned (the call associated with that port has ended), for the length of time specified by the guard time.

Step 2 Type **8** and press **Enter** to modify the guard time.

The message in Figure D-15 is displayed. The cursor is located after the Enter new Guard Time in milliseconds [n] prompt. The default, or current, value is contained within the square brackets.

Figure D-15 Modify Guard Time Screen

```
Enter your Choice: 8


Enter new Guard Time in milliseconds [ 200]:
```

Step 3 Type an appropriate guard time value and press **Enter**.

Note Pressing **Enter** without first entering a value leaves the default, or current, value unmodified.

The ICC UPG Update Tool menu is displayed. Sun Solaris workstation users, refer to Figure D-3. Microsoft Windows PC workstation users, refer to Figure D-5.

Save a Customized .upg Data File—Option 9

Complete the following steps to save the customized receive and transmit pulse modifications to a new .upg file:

Step 1 From the ICC UPG Update Tool screen, type **7** and press **Enter**.

The message in Figure D-16 is displayed. The cursor is located after the Enter (3-6) prompt.

Figure D-16 Create a User Defined Data File Screen

```
Enter your Choice: 9
Select the user defined file name (icc0x.upg),
Enter (3-6) :
```

Step 2 Type a number from 3 to 6.

Step 3 Press **Enter**.

The information in Figure D-17 is displayed.

Figure D-17 Created File Screen

```
Enter your Choice: 9
Select the user defined file name (icc0x.upg),
Enter (3-6) : 4


protocol id:14
protocol name:E&M04
```

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The number entered in Step 2 is used to create three items:

- A customized .upg file containing the number entered in Step 2 in the form of icc0n.upg, where n is the number entered. For example, if the number 4 is entered, a file with the name icc04.upg is created.
- An identifier for the customized protocol in the form of USER0n, where n is the number entered in Step 2. For example, if the number 4 is entered, a protocol identifier with the name USER04 is created.
- A new protocol name—signaling type—in one of two forms:
  - E&M0n, for the E&M, T1 protocol, where n is the number entered in Step 2
  - Cas0n, for the CAS/R2, E1 protocol, where n is the number entered in Step 2

Note A maximum of four customized .upg data files can be created and saved. Reuse an existing data file to create subsequent data files.

Table D-13 describes the items created with Step 2 for the E&M, T1 protocol.

Table D-13 Customized .upg File Elements for the E&M, T1 Protocol

Step 2 Number Entry	File Name	Protocol ID	Signaling Type
3	icc03.upg	USER03	E&M03[1]
4	icc04.upg	USER04	E&M04[1]
5	icc05.upg	USER05	E&M05[1]
6	icc06.upg	USER06	E&M06[1]

1. T1 signaling types are displayed as selectable SIG. TYPE field values within the VCO/4K software administration's ICC Programmable Trunk Configuration screen.

Table D-14 describes the items created with Step 2 for the CAS/R2, E1 protocol.

Table D-14 Customized .upg File Elements for the CAS/R2, E1 Protocol

Step 2 Number Entry	File Name	Protocol ID	Span Type
3	icc03.upg	USER03	Cas03[1]
4	icc04.upg	USER04	Cas04[1]
5	icc05.upg	USER05	Cas05[1]
6	icc06.upg	USER06	Cas06[1]

1. E1 signaling types are displayed as selectable SPAN TYPE field values within the VCO/4K software administration's ICC Programmable Trunk Configuration screen.

Note Switch configuration with the customized .upg file makes use of the different files and names created in Step 2; keep accurate records.

Step 4 Press **Enter** to return to the ICC UPG Update Tool screen.

Exit from the ICC UPG Update Tool—Option 0

From the ICC UPG Update Tool screen, type **0** and press **Enter** to exit from the tool.

Copy the customized .upg file from the hard drive to a floppy disk.

A new custom .upg file is now ready for implementation on the VCO/4K switch. Refer to the "Switch Configuration with a Customized .upg File" section on page D-17 for complete configuration instructions.

Switch Configuration with a Customized .upg File

Complete the following steps to configure the VCO/4K switch with a customized .upg file.

Step 1 Access the VCO/4K software administration's Copy Files screen.

Step 2 Copy the customized .upg file from the floppy disk (the file created on the floppy disk with instructions in the "Custom .upg File Creation Instructions" section on page D-5) to the C:/BOOT directory on both the A and B sides of the switch.

Step 3 Access the VCO/4K software administration Card Maintenance screen.

Step 4 Take the entire ICC out of service (OOS).

Step 5 Access the Card Summary screen via the Database Administration menu.

Step 6 Display the span of the ICC you want to configure with the customized .upg file.

The ICC Programmable Trunk Configuration screen is displayed.

Step 7 Use the SIG. TYPE field (for the E&M, T1 protocol) to select the customized .upg file signaling type for each port for which it is appropriate. Use the SPAN TYPE field (for the CAS/R2, E1 protocol) to select the customized .upg file signaling type for each port for which it is appropriate.

Note The customized SIG. TYPE (T1) or SPAN TYPE (E1) field selections are those created in the "Save a Customized .upg Data File—Option 9" section on page D-15, and described in Table D-13 and Table D-14.
When you select or modify the signaling type on port 1, the "Enter Y to propagate port 1 values" message is displayed. Enter **Y** to configure all remaining ports with the same signaling type as that of port 1. Enter **N** to configure only port 1 with a particular signaling type.

Step 8 Access the VCO/4K software administration Card Maintenance screen.

Step 9 Activate the ICC.

The customized .upg file is now configured in the switch and the new protocol is implemented.

ICC UPG Update Tool Restrictions and Limitations

Keep the following restrictions and limitations in mind when configuring the switch with customized .upg files.

Caution The ICC UPG Update Tool allows you to create customized .upg files that may not be valid for the VCO/4K system. Interruption of service and loss of calls may occur.

- A maximum of four customized .upg data files can be created and saved. Reuse an existing data file to create subsequent data files.
- The customized .upg file names are fixed—icc03.upg through icc06.upg.
- The customized .upg file names are not protocol specific; the names can designate either the E&M, T1 or the CAS/R2, E1 protocol.
- Users of customized .upg files must create new customized .upg files when upgrading system software. The new customized .upg files must be created using the new default .upg files.