

USER MANUAL

CStrunk

Trunking Configuration Software for RTS Digital Matrix Intercom Systems

RTSTM

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INTRODUCTION

This manual describes the CStrunk Trunking Configuration Software for the RTS Digital Matrix Intercom Systems. The manual is divided into three sections. *Section 1, Getting Started*, briefly describes basic CStrunk operation. *Section 2, Editing Procedures*, provides step-by-step procedures for the most commonly used features of CStrunk. *Section 3, Reference*, provides additional information about CStrunk features.

IF YOU ARE IN A HURRY!

If you wish to run CStrunk immediately, simply insert the CStrunk disk in your computer, type **cstrunk**, and press the ENTER key. If you encounter problems while using the CStrunk menus, press the F1 key on your computer keyboard to get help for the CStrunk screen that you are currently viewing.

VERSION NUMBERS

The information contained in this manual applies to the following software and Trunking Master Controller versions:

CStrunk version: 7

Trunking Master Controller version: 7

The CStrunk version number should be imprinted on the software diskette. CStrunk and master controller version numbers are also available while running CStrunk (see *Status, Diagnostics*, page 3-9).

COMPUTER REQUIREMENTS FOR CSTRUNK

- An IBM® or compatible personal computer with at least 2M of extended memory (4M recommended). CStrunk cannot be run under any other operating system other than **DOS**.
- A Microsoft® serial mouse (optional). Two serial ports required for use with a mouse, with COM1 as the default port for the Trunking Master Controller connection.

USE OF SPECIAL TYPE STYLES IN THIS MANUAL

Certain type styles which appear in the text of this manual (not in titles) have special meanings as follows:

Bold in Text	Anything the user must type
<i>Italics in Text</i>	References to other areas of this manual
<i>Italics in Text</i>	Names of controls on a keypanel
ALL CAPS IN TEXT	Directory names, filenames and names of keys on a computer keyboard
Initial Caps In Text	References to CStrunk menus, menu items, tables and lists

SECTION 1

GETTING STARTED

INSTALLING CSTRUNK

The minimum requirement to run CStrunk is a 386 computer with at least 2M of extended memory (4M preferable). Also, CStrunk should not be installed to run under any other operating system other than DOS.

To install CStrunk: insert the CStrunk disk, then change to the drive where the disk is inserted. Type **install** and press the ENTER key.

Store the original disk in a safe place.

STARTING CSTRUNK

Change to the drive and directory where the CStrunk files are located. Type **cstrnk**, then press the ENTER key.

CSTRUNK START-UP ROUTINE

When CStrunk is started, it will present the CStrunk menu screen (Figure 1-1). Next, it will check for a connection to the Trunking Master Controller. If it finds a connection, it will upload the current trunk configuration file from the Trunking Master Controller. While CStrunk is uploading the configuration, it will report the percentage completed at the bottom of the menu screen.

Note The default port for communication between the computer and the Trunking Master Controller is COM1 and 19.2 kbaud. If the trunk configuration file does not upload, check the CStrunk COM port setting. See *Options Menu*, pages 3-4 to 3-7.

Note If you are using a laptop computer or other computer with a monochrome display, you will have to change the CStrunk color mode for proper screen display, See *Options Menu*, pages 3-4 to 3-7.

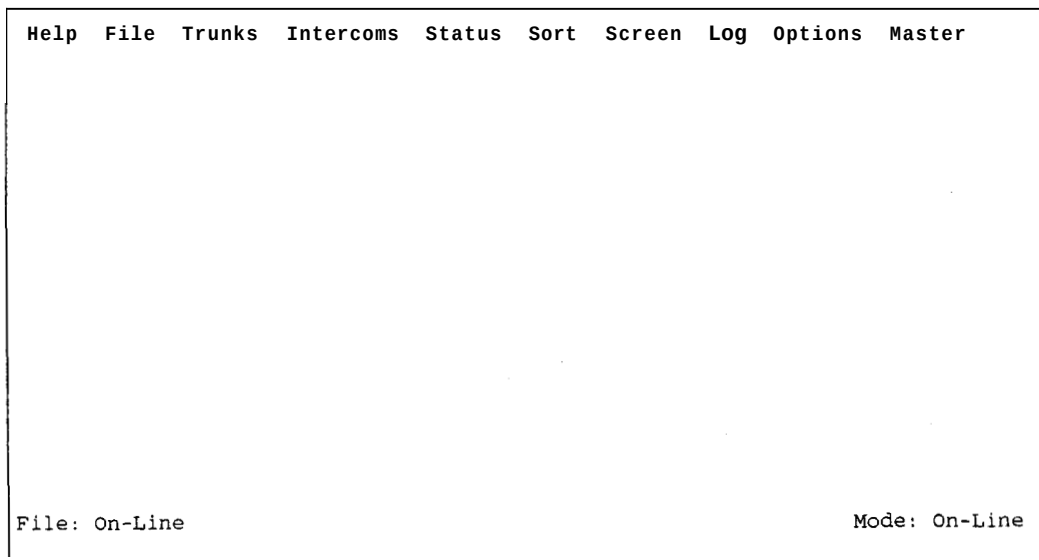


Figure 1-1. The CStrunk Menu Screen

CSTRUNK MENU SCREEN

The CStrunk menu screen displays the menu bar across the top of the screen. The menu bar lists all of the available CStrunk menus from which you will make selections. The filename of the currently opened system configuration file displays in the lower-left corner of the screen. The mode (either on-line or off-line) displays in the lower-right corner of the screen.

Note If the computer is on-line with the Trunking Master Controller when CStrunk is started, the on-line configuration file will automatically be opened for editing in CStrunk. If the computer is off-line, no file will be opened, and the filename will be "New".

Menu Selection Using the Computer Keyboard

1. Use the LEFT and RIGHT cursor keys on the computer keyboard to move the cursor from one menu to another on the menu **bar**. The currently selected menu will be highlighted.
2. Press the ENTER key or DOWN cursor key to open the selected menu. Figure 1-2 shows the opened File menu, for example.
3. Use the UP/DOWN cursor keys to highlight a menu item, then press the ENTER key to select it.
4. Press the ESCAPE key to cancel a selection. Press ESCAPE again to close a menu and return to the menu **bar**.

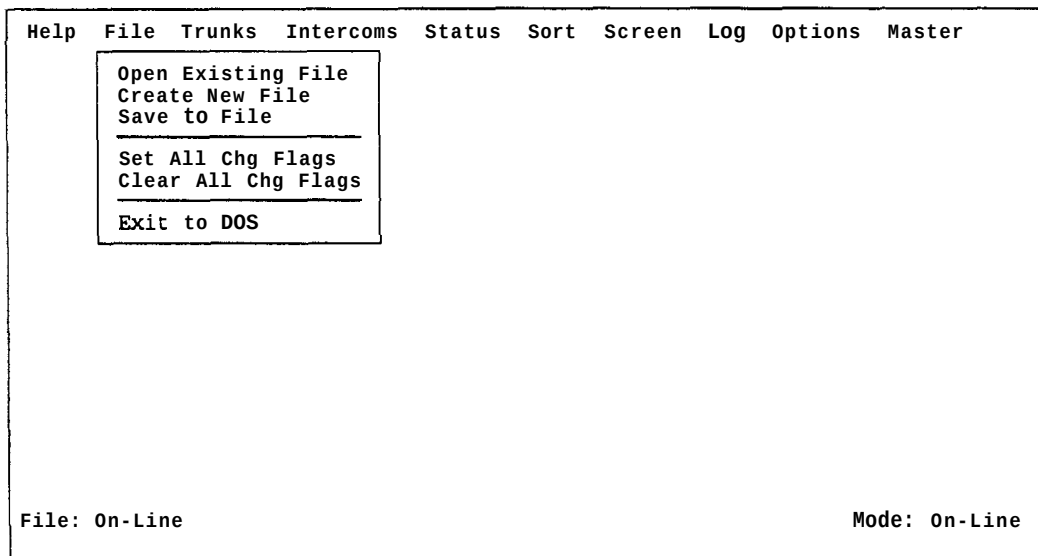


Figure 1-2. Typical CStrunk Menu (File Menu Shown)

The function keys also drop down menus from the menu bar as follows:

F1	Help	F6	Sort
F2	Files	F7*	Screen
F3	Trunks	F8	Log
F4	Intercoms	F9	Options
F5	Status	F10	Master

* This menu is accessible only during certain editing procedures.

Menu Selection Using a Mouse

You must install the mouse and its software prior to running CStrunk. Follow the instructions that came with your mouse. If there is a choice, install your mouse as a Microsoft® compatible mouse.

Note If your mouse does not work, the CStrunk com port setting for communication with the Trunking Master Controller may be incorrect. (CStrunk may be trying to communicate with the Trunking Master Controller using the port to which your mouse is connected.) To change the com port setting, see *Options Menu*, page 3-4.

To use a mouse with **CStrunk**:

1. From the CStrunk menu bar, point and click the left mouse button on a menu to open it.
2. Point and click the left mouse button on a menu item to select that item.
3. To cancel a selection, click on any selectable item with the right mouse button. To close a menu and return to the menu bar, click on any menu item with the right mouse button.

CSTRUNK EDITING SCREENS

Figure 1-3 shows a typical editing screen in CStrunk. This screen contains two windows. The window at the left is an edit table to configure trunks. This table has several columns in which you enter information to configure the trunks. The window at the right is a pick list from which you can pick items to insert into the edit table as you configure the Trunking Master Controller. Some pick lists open up into sub lists when you pick items.

The screenshot displays the CStrunk application interface. At the top is a menu bar with the following items: Help, File, Trunks, Intercoms, Status, Sort, Screen, Log, Options, and Master. The main window is divided into two panes. The left pane contains a table titled "Trunk Line Assignments". The table has columns: Trnk, Chg, Intercom, Port, Use, Alo, Cas, Fix, Func, and an empty column. The rows are numbered 1 through 8. The right pane contains a "Select Intercom" pick list with the following items: TGB, JHP, HUB, JPH, and JFY. At the bottom left of the window, it says ".le: On-Line". At the bottom right, it says "Mode: On-Line".

Trnk	Chg	Intercom	Port	Use	Alo	Cas	Fix	Func	
1	.	----	----	.	.	.	.	----	
2	.	----	----	.	.	.	.	----	
3	.	----	----	.	.	.	.	----	
4	.	----	----	.	.	.	.	----	
5	.	----	----	.	.	.	.	----	
6	.	----	----	.	.	.	.	----	
7	.	----	----	.	.	.	.	----	
8	.	----	----	.	.	.	.	----	

Select Intercom

- TGB
- JHP
- HUB
- JPH
- JFY

.le: On-Line

Mode: On-Line

Figure 1-3. Typical CStrunk Edit Screen

Movement in Editing Screens Using the Computer Keyboard

ESCAPE Key	Exits a sub list or menu item and returns you to the previous screen.
TAB Key	Moves the cursor from one window to another. The border around the currently selected window will be highlighted.
SHIFT+TAB Keys	Moves the cursor back into the previous window.
Cursor Keys (↑ ↓ → ←)	Move the cursor within the current window. Some tables and pick lists may also have scroll buttons (▼) like the one shown in Figure 1-3; use the UP/DOWN cursor keys (↑ ↓) to scroll the screen and view additional items.
ENTER Key	Enters information that you have typed into a field, and moves the cursor to the next field or line. Enters the currently selected item in a pick list into the currently selected position in an edit table in another window.
"+" key on numeric keypad	Inserts the currently selected item in a pick list into the currently selected position in an edit table, and then advances the cursor to the next row of the edit table.

Movement in Editing Screens Using a Mouse

Click on any item in an edit table to select the edit table. Move the cursor over a pick list to select it. The border around the currently selected window will be highlighted. Clicking on an item in a pick list will insert that item into the currently selected position in an edit table.

USING HELP

F1 Key	Calls context-sensitive help from within CStrunk. Context sensitive means the help screens will provide information about the currently selected menu or menu item.
Key Words	Certain words may be highlighted in a help screen. Select these words with the UP/DOWN/LEFT/RIGHT cursor keys, then press the ENTER key to get additional help. Or, if you are using a mouse, click on the key word for additional help.
Scroll Buttons	Some help topics may take more than one screen. In such cases, there will be a highlighted scroll button near the bottom of the screen. When there is a scroll button present, use the DOWN/UP cursor keys to scroll down or up. Or , click on the scroll button if you are using a mouse. If you scroll beyond the end of the help topic, the cursor will automatically return to the beginning of the topic.
BACK SPACE Key	Returns you to the previous help screen.
ESCAPE Key	Returns you to CStrunk.

CREATING/EDITING CONFIGURATION FILES

If the computer is on-line with the Trunking Master Controller when CStrunk is started, the on-line configuration file is automatically opened for editing. To create a new file or edit an existing configuration other than the on-line configuration, select one of two options from the File menu:

Open Existing File	This opens a configuration file that is already on disk. If you have done any editing before selecting this option, you will be prompted to save your work or send it to the Trunking Master Controller before a new file is opened. You will also be asked "What Would You Like To Do With Change Flags". See the Change Flag description, page 1-8.
Create New File	This clears all settings and creates a blank Trunking Master Controller configuration. If you have done any editing before selecting this option, you will be prompted to save your work or send it to the Trunking Master Controller before all settings are cleared. You will also be asked "What Would You Like To Do With Change Flags". See the Change Flag description, page 1-8.

If, after creating a new file or editing a file on disk, you wish to make changes to the on-line trunking configuration file, select "Open On-Line" from the "Master" menu.

EDITING A CONFIGURATION

Once you have selected one of the above file options, you may edit the opened file using the editing procedures described in Section 2 of this manual.

SAVING YOUR CHANGES

When you are finished creating a new configuration or editing an existing configuration, save your changes using the "Save to File" option on the File menu.

ACTIVATING A NEW FILE OR SENDING CHANGES

To send your changes to the Trunking Master Controller, use one of two options on the "Master" menu:

Activate Chgs	Active only when you have modified the on-line file. This option sends all the changes which have been made since the last time the file was saved or sent to the Trunking Master Controller.
Send File	Active only when CStrunk is in communication with the Trunking Master Controller, but editing a file other than the on-line file. This option sends only those items that have change flags set. To send the entire contents of a file, first select "Set All Chg Flags" from the File menu. See the Change Flag description on page 1-8 for further information about the use of change flags.

QUITTING CSTRUNK

To quit CStrunk when you are finished editing, select "Exit to **DOS**" from the File menu and then press the ENTER key. If you have not saved your changes, CStrunk will ask you if you want to do this.

CHANGE FLAGS

Whenever you open a new file or create a new file, you will first see the following prompt:

What would you like to do with Change Flags ?
Set All Chg Flags? Leave Chg Flags? Clear All Chg Flags?

Change flags are used by CStrunk to determine what items should be downloaded to the Trunking Master Controller when a file is sent. Only those items that have change flags turned on (set) will be sent.

Selecting "Set All Chg Flags" will turn on all change flags in the file that you are currently editing. If you send the file to the Trunking Master Controller after selecting this option, the current Trunking Master Controller configuration will be completely overwritten by the new configuration.

Selecting "Leave Chg Flags" will leave all change flags on that are currently on and will leave all change flags off that are currently off. Only those items that have change flags set would be sent to the Trunking Master Controller during a download, resulting in only a partial modification of the current Trunking Master Controller configuration.

Selecting "Clear All Chg Flags" will turn off all change flags in the file that you are currently editing. If you then tried to send the file to the Trunking Master Controller, it would have no effect.

As you make changes to a Trunking Master Controller configuration file, a change flag is automatically set for each item that you change.

Change flags can be used in three ways to create various configuration changes:

1. If you are on-line with the Trunking Master Controller and editing the on-line configuration, change flags will automatically be set for any items that you change. Selecting "Activate Chgs" from the "Master" menu will download all items with change flags set.
2. If you want to completely over-write the current Trunking Master Controller configuration with a new configuration, open the new configuration file, then select "Set All Chg Flags". This will assure that all items in the file are sent. Now send the file using the "Send File" command on the "Master" menu.
3. The "Send File" command can also be used to make periodic updates to the Trunking Master Controller using files that you prepared previously. Only the items that you wish to change will be sent, which means that updating can proceed much more quickly than if you send an entire configuration file. Here is how periodic updating works:

- a) Set up a basic, or starting, Trunking Master Controller configuration. You can base this file on a previously existing configuration file by selecting "Open Existing File" from the File menu. **Or**, you can make a completely new file by selecting "Create New File" from the File menu. Whichever method you use, just make sure that you select "Set All Chg Flags" when prompted.
- b) Go ahead and configure the Trunking Master Controller as you want it to operate at the start. When your starting configuration is completed, save it to file. Again, select "Set All Chg Flags" when prompted (in case you inadvertently turned off any change flags while editing).
- c) Send your configuration to the Trunking Master Controller using the "Send File" command in the "Master" menu. Since all the change flags are set, the entire configuration file will be sent, and the current Trunking Master Controller configuration will be entirely overwritten. Your basic configuration is now in place.
- d) Prepare your first update file: Using the "Save to File" command on the File menu, save your basic configuration to a new file with a new name. Select "Clear All Chg Flags" when prompted.
- e) Go ahead and make any changes that you want to put into effect during updating. As you make your changes, the change flags for those items will automatically be set.
- f) Again, save your update file to **disk**, but select "Leave Chg Flags" when prompted.
- g) Prepare any additional update files that you need by saving the PREVIOUS UPDATE FILE with a new name. As before, select "Clear All Chg Flags" before you start editing the new file, and select "Leave All Chg Flags" when you save or re-open the file.
- h) To send your first update, open the desired update file. Always select "Leave Chg Flags" when opening your update files. Then select "Send File" from the "Master" menu. Only those items that have change flags set will be sent.
- i) Continue to make periodic updates as needed by sending new update files. To return to your basic configuration at any time, simply send your basic configuration file to the Trunking Master Controller. Just remember when opening your basic configuration or any update files, always select "Leave Chg Flags".

SECTION 2

EDITING PROCEDURES

INTRODUCTION

The following editing procedures are arranged in the general order that you would typically use them when creating a new trunking configuration file.

ASSIGNING NAMES FOR INTERCOM SYSTEMS

From the "Intercoms" menu, select "Names". The edit screen for intercom names should appear (Figure 2-1). Up to 12 intercom systems can be connected to the Trunking Master Controller, so CStrunk lets you assign **up** to 12 intercom system names. Names can be any combination of up to four characters.

Note The "Icm" numbers are not the actual hardware ports on the Trunking Master Controller. They are just arbitrary numbers that CStrunk associates with each intercom name. **As** you will see in a moment, any intercom name can be "mapped" to any port of the Trunking Master Controller. For now, enter names of intercom systems in any order that you wish.

Intercom Names		
Icm	Chg	Name
1	✓	TGB
2	✓	JHP
3	✓	HUB
4	✓	JPH
5	✓	JFY
6	.	----
7	.	----
8	.	----
9	.	----
10	.	----
11	.	----
12	.	----

File: On-Line Mode: On-Line

Figure 2-1. Intercom Name Assignment

ASSIGNING INTERCOM SYSTEMS TO PORTS OF THE TRUNKING MASTER CONTROLLER

1. From the "Intercoms" menu, select "Setup". The port setup screen should appear (Figure 2-2). For each intercom system that you have **named**, position the cursor in the "Baud" column, and press the SPACE BAR to set the baud rate. The default baud rate for **all** intercom systems is 76.8K baud. 9600 baud should only be selected when a port of the Trunking Master Controller is linked to a remote intercom system over a modem.
2. For each intercom system, position the cursor in the "Port" column, **and** enter the actual hardware port number that the intercom system is connected to on the Trunking Master Controller.

Note CStrunk will not allow you to assign the same port number to more than one intercom system. To erase a port assignment so that it can be used elsewhere, position the cursor over the port number and press the SPACE BAR. In the example below, the Port 8 assignment was erased from Icm 8 so that it could be used for Icm 5.

Intercom Setup			
Icm	Name	Baud	Port
1	TGB	76.8K	3
2	JHP	76.8K	1
3	HUB	76.8K	5
4	JPH	76.8K	9
5	JFY	76.8K	8
6	----	-----	6
7	----	-----	7
8	----	-----	--
9	----	-----	--
10	----	-----	10
11	----	-----	11
12	----	-----	12

File: On-Line Mode: On-Line

Figure 2-2. Intercom Port Setup

DOWNLOADING PORT ASSIGNMENTS AND VERIFYING CONNECTIONS

1. From the "Master" menu, select "Activate Chgs".
2. Verify that all defined matrices are now communicating with the Trunking Master Controller: From the "Status" menu, select "Intercom". The status screen should display the type and status of each connected intercom system (Figure 2-3). In the example, all defined intercom systems except HUB are now communicating with the Trunking Master Controller. Possible causes of a "Bad Off" indication are an incorrect port assignment, an incorrect baud rate setting, a deactivated intercom system, or a disconnected/miswired cable from the intercom system to the Trunking Master Controller.

Help File Trunks Intercoms Status Sort Screen Log Options Master			
Icm Confiuration			
Icm	Alpha	Config	
1	TGB	Ok CS9700	
2	JHP	Ok CS9600	
3	HUB	Bad Off	
4	JPH	Ok CS9500	
5	JFY	Ok CS9500	
6	----	Bad Off	
7	----	Bad Off	
8	----	Bad Off	
9	----	Bad Off	
10	----	Bad Off	
11	----	Bad Off	
12	----	Bad Off	

File: On-Line Mode: On-Line

Figure 2-3. Verifying Intercom System Status

DEFINING THE TRUNKS

- 1 From the "Trunks" menu, select "Defs for All". The Trunks pick list should appear (Figure 2-4). You can define up to 999 trunk lines. In actual practice, however, you will probably never use more than 50-100 maximum. The trunks have been divided into blocks of 50 for convenience. Selecting "Trunks 1 - 50" will cause a setup screen for these trunks to appear (Figure 2-5).

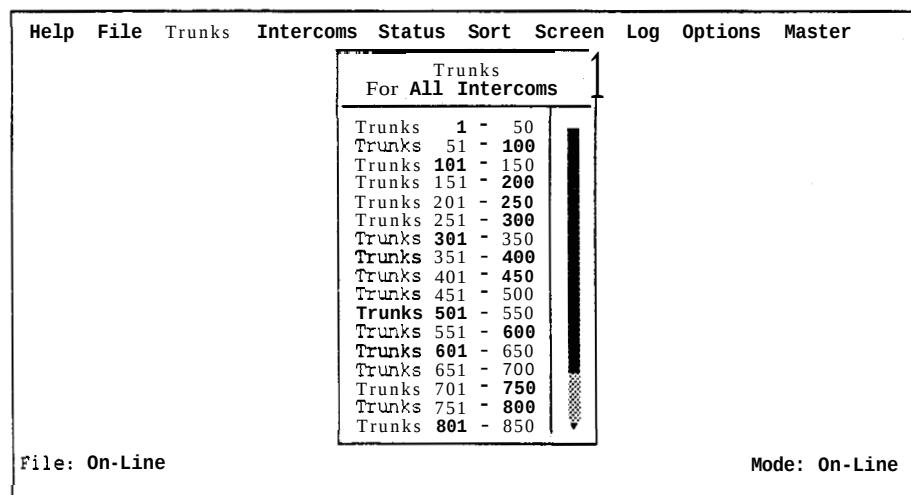


Figure 2-4. The Trunks Pick List

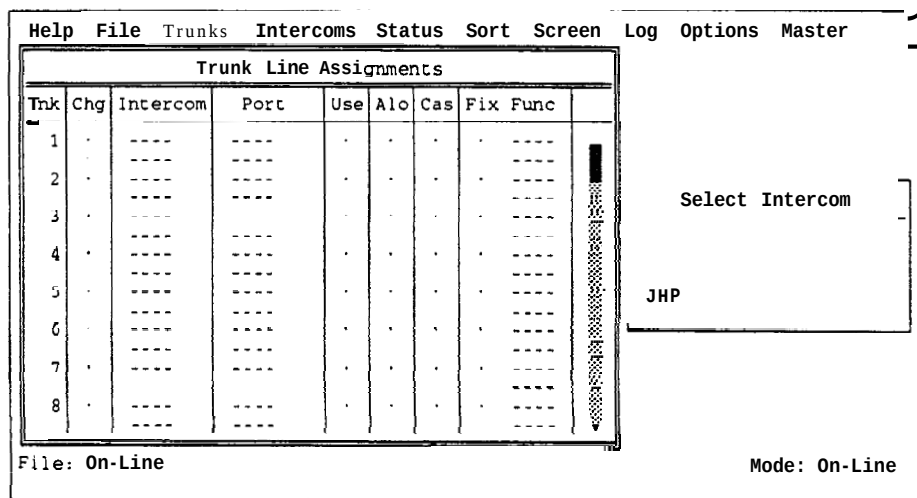


Figure 2-5. The Trunking Assignment Screen

¹ If you had already defined some *trunks* and now wished to edit the trunks to/from a particular intercom system, you could select "Defs for Icom" from the "Trunks" menu instead of "Defs for All".

Note

The following steps define a method for setting up trunks using the pick lists for the various intercom systems. This is only a suggested method. In actual practice, you could also type in the names and port numbers to define trunks if you wished.

In order to set up the trunks, you will need to have a list of the audio ports that have been interconnected between the various intercom systems.

2. Define one end of the first **trunk**
 - a) Position the cursor in the "Port" column for Trunk #1.
 - b) TAB to the matrix pick list at the right side of the screen, and select the matrix where the port is located (or click on a matrix with a mouse). In the example in Figure 2-6, matrix "TGB" has been selected, and the pick lists for that intercom system have been uploaded. Since **trunk** lines are always connected to ports, you would select "Ports" to get a pick list of ports for matrix "TGB" (Figure 2-7).

The screenshot displays the CStrunk software interface. At the top is a menu bar with the following options: Help, File, Trunks, Intercoms, Status, Sort, Screen, Log, Options, and Master. Below the menu bar is a table titled "Trunk Line Assignments". The table has the following columns: Trnk, Chg, Intercom, Port, Use, Alo, Cas, Fix, and Func. The table contains 8 rows, numbered 1 through 8 in the "Trnk" column. The "Port" column for row 1 is highlighted with a shaded box. To the right of the table is a pick list titled "Select Function For TGB". The pick list contains the following options: Ports, Party Lines, IFBs, Special Lists, Relays, and ISOs. At the bottom left of the screen, it says "File: On-Line". At the bottom right, it says "Mode: On-Line".

Trnk	Chg	Intercom	Port	Use	Alo	Cas	Fix	Func
1	.	----		.	.	.	.	----
2	.	----	----	.	.	.	.	----
3	.	----	----	.	.	.	.	----
4	.	----	----	.	.	.	.	----
5	.	----	----	.	.	.	.	----
6	.	----	----	.	.	.	.	----
7	.	----	----	.	.	.	.	----
8	.	----	----	.	.	.	.	----

Select Function For TGB

- Ports
- Party Lines
- IFBs
- Special Lists
- Relays
- ISOs

File: On-Line Mode: On-Line

Figure 2-6. Pick List for Matrix "TGB"

- c) When you select a port and press the ENTER key (or click on a port with a mouse) **CStrunk** automatically inserts the intercom system and port number into the **trunk** assignment table. In the example in Figure 2-7, port N001 was selected. Press the **ESCAPE** key twice to close the "Ports For TGB" pick list and return to the "Select Intercom" pick list.

Help File Trunks Intercoms Status Sort Screen Log Options Master									
Trunk Line Assignments									
Trnk	Chg	Intercom	Port	Use	Alo	Cas	Fix	Func	
1	✓	TGB 1	N001	1	.	.	.	----	
2	.	----	----		.	.	.	----	
3	.	----	----		.	.	.	----	
4	.	----	----		.	.	.	----	
5	.	----	----		.	.	.	----	
6	.	----	----		.	.	.	----	
7	.	----	----		.	.	.	----	
8	.	----	----		.	.	.	----	

Ports For TGB	
Alpha	Port
N001	1
N002	2
N003	3
N004	4
N005	5
N006	6
N007	7
N009	9
N010	10
N011	11
N012	12
N013	13
N014	14
N015	15
N016	16

File: On-Line Mode: On-Line

Figure 2-7. Defining the First End of a Trunk

3. Define the other end of the first **trunk**. Position the cursor in the "Ports" column directly under the first assignment, then select the port on the second intercom system to which the first intercom system port is connected. In the example in Figure 2-8, port N015 on matrix "JHP" was selected.

Help File Trunks Intercoms Status Sort Screen Log Options Master									
Trunk Line Assignments									
Trnk	Chg	Intercom	Port	Use	Alo	Cas	Fix	Func	
1	✓	TGB 1	N001	1	.	.	.	----	
2	.	JHP 2	N015	15	.	.	.	----	
3	.	----	----		.	.	.	----	
4	.	----	----		.	.	.	----	
5	.	----	----		.	.	.	----	
6	.	----	----		.	.	.	----	
7	.	----	----		.	.	.	----	
8	.	----	----		.	.	.	----	

Ports For JHP	
Alpha	Port
N001	1
N002	2
N003	3
N004	4
N005	5
N006	6
N007	7
N009	9
N010	10
N011	11
N012	12
N013	13
N014	14
N015	15
N016	16

File: On-Line Made: On-Line

Figure 2-8. Defining the Second End of a Trunk

4. Specify whether or not you want the trunk to be cascable. A trunk can be cascaded by positioning the cursor in the "Cas" column and pressing the **SPACE BAR** to place a check mark ✓ in the column. Cascading provides a means for two intercom systems to communicate with each other even when there is no interconnecting trunk line. If both intercom systems have trunk lines to other intercom systems, the trunks may be cascaded through the other intercom systems as required to provide a communication path. An example of the use of cascaded trunks is shown in Figure 2-9. Note that matrix "TGB" has no direct connection to matrix "JFY"; however, a path can be "cascaded" through matrix "JHP" and matrix "HUB" to provide communication between matrix "TGB" and matrix "JFY". If the cascade flag was not set for any one of the matrices shown, no communication would be possible between the two end points. One drawback of cascading is that multiple trunks are required to support a single conversation.

Help File Trunks Intercoms Status Sort Screen Log options Master									
hunk Line Assignments									
Trnk	Chg	Intercom	Port	Use	Alo	Cas	Fix	Func	
1	✓	TGB	1	N001	1	•	•	✓	•
		JHP	2	N015	15	•	•	✓	•
2	✓	JHP	2	N016	16	•	•	✓	•
		HUB	3	N020	20	•	•	✓	•
3	✓	HUB	3	N021	21	•	•	✓	•
		JFY	5	N010	10	•	•	✓	•
4	•	----	----	----	----	•	•	•	•
5	•	----	----	----	----	•	•	•	•
6	•	----	----	----	----	•	•	•	•
7	•	----	----	----	----	•	•	•	•
8	•	----	----	----	----	•	•	•	•

Ports For JFY	
Alpha	Port
N001	1
N002	2
N003	3
N004	4
N005	5
N006	6
N007	7
N009	9
N010	10
N011	11
N012	12
N013	13
N014	14
N015	15
N016	16

File: On-Line Mode: On-Line

Figure 2-9. An Example of Cascaded Trunks

5. Specify whether you want an end of a trunk to be fixed to a port, party line etc. In the example in Figure 2-10, one end of trunk #4 has been fixed to the port called "1DIR" on matrix "HUB"; the other end has been fixed to party line "PL07" on matrix "JFY". Note that this trunk is not cascaded because you would not want anyone else using it.

Help File Trunks Intercoms Status Sort Screen Log Options Master														
Trunk Line Assignments										Party Lines For JFY				
Tnk	Chg	Intercom	Port	Use	Alo	Cas	Fix	Func		Alpha	PL			
1	✓	TGB	1 NO01	1	.	.	✓	.	----					
2	✓	JHP	2 NO15	15	.	.	✓	.	----	PL01	1			
3	✓	HUB	3 NO20	20	.	.	✓	.	----	PL02	2			
4	✓	HUB	3 NO21	21	.	.	✓	.	----	PL03	3			
5	.	JFY	5 NO10	10	.	.	.	.	----	PL04	4			
6	.	HUB	3 NO22	22	.	.	.	.	1DIR	PL05	5			
7	.	JFY	5 NO11	11	.	.	.	.	PL07	PL06	6			
8	.	----	----	----	.	.	.	.	----	PL07	7			
										PL09	9			
										PL10	10			
										PL11	11			
										PL12	12			
										PL13	13			
										PL14	14			
										PL15	15			
										PL16	16			

File: On-Line Mode: On-Line

Figure 2-10. An Example of a Trunk with Both Ends Fixed

Note The "Use" and "Alo" columns are not assigned by you when setting up trunks. These columns are used to provide trunk status information during operation. See Checking Trunk Status, page 2-9.

6. Set the trunking timeout. Press ESCAPE as required to return to the menu bar. Then, from the "Trunks" menu, select "Options". The "Trunk Allocation Timeout" screen will appear (Figure 2-11). The number you enter here determines the amount of time that a trunk will remain allocated to a user after that person stops using the trunk. After the timeout period, the trunk becomes available for anyone to use. The default timeout period is 15 seconds. This may be changed to any period from 0-99 seconds.

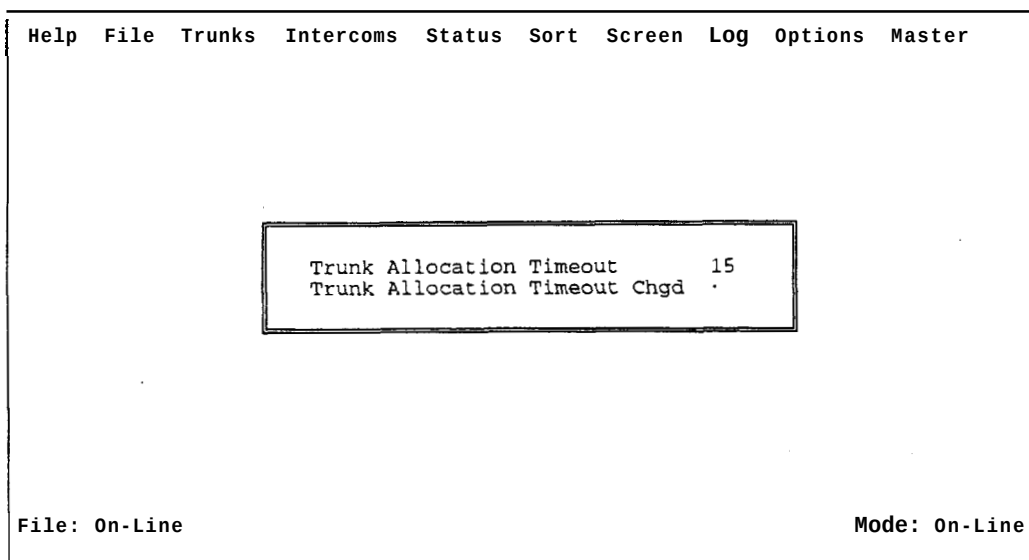


Figure 2-11. The Trunking Timeout Screen

7. Send the changes to the trunking master. From the "Master" menu, select "Activate Chgs".
8. Be sure to save your file to disk using "Save to File" on the "File" menu.

CHECKING TRUNK STATUS

To check *trunk* status, select "Defs for All" or "Defs for Icom" from the "Trunks" menu. The current status of each trunk is indicated in the "Use" and "Alo" columns as follows:

"Use" Column: A check **mark** is placed in this column by CStrunk during operation to indicate that the trunk is in use. While the Trunk Line Assignments Window is highlighted, the user may press the ENTER key to get updated information. (To see who is using a *trunk*, run CSedit and open the key assignments table for the port being used for the *tunk*. To update the key assignments table, select "Cancel Screen Changes" from the "Screen" menu.)

"Alo" (allocation) Column: A check mark is placed in this column by CStrunk to indicate that the trunk is allocated, whether or not it is in use. A *trunk* will tend to remain allocated to the last user. However, if the *trunk* is not in use and the timeout period has expired, the *trunk* will be available for general use.

SECTION 3

REFERENCE

Note This section contains additional information about *CStrunk* features that may be of interest to some users. Topics in this section are arranged in alphabetical order.

CHANGING SCREEN COLORS

Note If you have already created a customized color scheme for CSedit, you may use the same color scheme for CStrunk by copying the CSEDIT.SET file to a file named CSTRNK.SET in the CStrunk directory.

There are several reasons why you may wish to change the default screen colors for CStrunk:

- You may have a laptop computer which maps colors to shades of grey, and the screen is unreadable.
- You may have more than one intercom, and you wish to distinguish which one you are working with by the screen colors.
- You may prefer different color choices.

Here is how to change the screen colors:

1. Using a DOS text editor, open the CSTRNK.SET file in the CStrunk directory.

Note If there is no CSTRNK.SET file, you can create one by running CStrunk and temporarily changing the baud rate setting as described on page 3-5. When you exit the Options menu, CStrunk will create the CSTRNK.SET file in the CStrunk directory. You can now restore the original baud rate setting.

2. The CSTRNK.SET file contains **28** lines of numbers. Lines **1-3** each contain one number; lines **4-28** each contain three numbers separated by single spaces. The first two numbers (foreground and background color) are used when line **3** is set to "0" (Automatic). The last number is used when line **3** is set to "1" (Force Mono). The function of each line is described in Table 3-1. Available colors and their corresponding values are listed in Table 3-2. Change the values in each line of the CSTRNK.SET file to create the color scheme that you want.
3. After you have created the desired color scheme, save the file as a plain ASCII file.
4. Run CStrunk and check the color scheme.

Table 3-1. CSTRNK.SET File Line Usage

Line#	Use	Settings	Default Value
1	Baud Rate	0=9600, 1=38.4K, 2=19.2K	2
2	Communications Port	0=COM1, 1=COM2	0
3	Color/Mono Select	0=Automatic, 1=Force Monochrome	0
Lines 4 - 7 set the colors in the menus:			
4	Unselected menu items	See Table 3-2	1 3 7 0
5	Selected menu item	See Table 3-2	7 1 0 f
6	Menu bar	See Table 3-2	9 3 7 0
7	Unselectable menu item'	See Table 3-2	
Lines 8 & 9 set the colors in the error messages:			
a	Error message	See Table 3-2	f 4 0 7
9	Error message border	See Table 3-2	f c f 7
Lines 10 - 20 set the colors in the editing windows:			
10	Regular field, edit window	See Table 3-2	f 1 0 f
11	Selected field, edit window	See Table 3-2	f 3 7 0
12	Background (non field), edit window	See Table 3-2	7 1 0 7
13	Border, current window	See Table 3-2	f 1 0 f
14	Border, non current window	See Table 3-2	2 1 0 7
15	Selected field, non-current window	See Table 3-2	f 3 7 0
16	Restricted field	See Table 3-2	c 1 0 7
17	Selected restricted	See Table 3-2	4 3 0 7
18	Non-editable field	See Table 3-2	a 1 0 7
19	Invalid field	See Table 3-2	e 1 0 7
20	Selectable invalid field	See Table 3-2	e 3 0 7
Lines 21 - 24 set the colors for the overall screen:			
t 21	File/on-line status line	See Table 3-2	1 3 7 0
22	Bottom status line	See Table 3-2	7 1 0 7
23	Background	See Table 3-2	1 1 0 7
24	Background selected field	See Table 3-2	1 1 0 7
Lines 25 - 28 set the colors in the help screens:			
25	Help background	See Table 3-2	7 1 0 7
26	Help key words	See Table 3-2	e 1 0 f
27	Help selected key word	See Table 3-2	e 3 7 0
28	Help border	See Table 3-2	7 1 0 7
• The Screen menu, for example, when no edit screen is open,			

Table 3-2. Color Chart

Foreground Color (First Number)	Background Color (Second Number)	Monochrome Setting (Third Number)
0 black	0 black	07 normal
1 blue	1 blue	70 reverse
2 green	2 green	0f bold
3 cyan	3 cyan	f7 blinking
4 red	4 red	01 underline
5 magenta	5 magenta	09 bold underline
6 brown	6 brown	f1 blink underline
7 white	7 white	f0 blink reverse
8 dark grey	8 black, blinking	
9 light blue	9 blue, blinking	
a light green	a green, blinking	
b light cyan	b cyan, blinking	
c light red	c red, blinking	
d light magenta	d magenta, blinking	
e light yellow	e brown, blinking	
f bright white	f white, blinking	
Example: 5 1 70 = magenta foreground, blue background, reverse in monochrome		

COPYING AND PASTING EDIT SCREENS

You will probably not copy any screens in CStrunk; however, the procedure is the same for CStrunk as for CSedit. For further information about copying and pasting screens, see this topic in the CSedit manual.

CSTRUNK FILES

The following files are supplied on the CStrunk disk.

\$\$\$STALL.EXE	Used to install CStrunk on your hard drive.
INSTALL.BAT	
README.TXT	Release notes for CStrunk.
CSTRNK.EXE	The CStrunk program file.
CSTRNK.HLP	The help file for CStrunk (must be in the CStrunk directory)

Any time you change any settings in the Options menu, CStrunk creates an additional file, called CSTRNK.SET, in the directory where CSTRNK.EXE is located. **You** can use a text editor to customize the color settings in CSTRNK.SET. See *Changing Screen Colors*, page 3-1.

LOG MENU (F8 KEY)

Logging is not implemented in the current version of CStrunk.

OPTIONS MENU (F9 KEY)

The Options menu (Figure 3-1) contains options for screen colors and communication settings. Use the LEFT/RIGHT arrow keys on the computer keyboard to highlight "Options", then press the ENTER key to open the menu. Use the UP/DOWN arrow keys to select the desired option, then press ENTER again. For information about the color settings, see *Options, Color*, below. For information about COM port and baud rate settings, see *Options, Communications*, page 3-5.

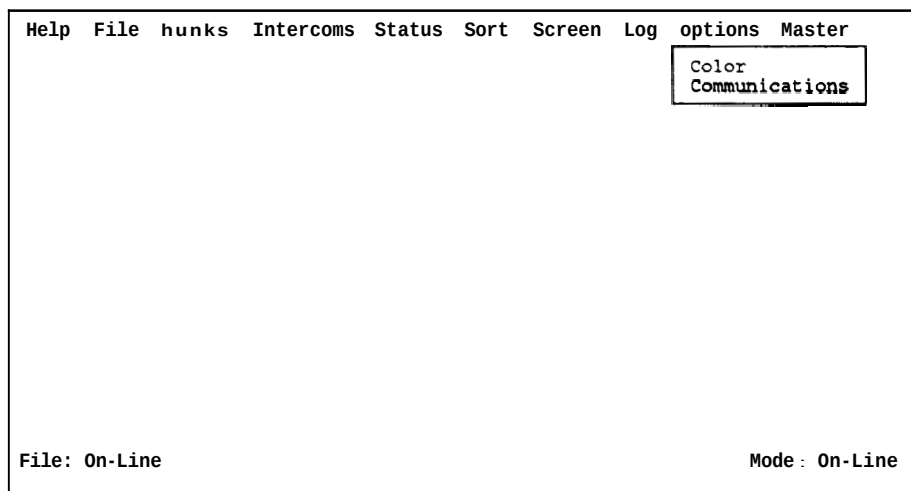


Figure 3-1. The Options Menu

Options, Color

When you select "Color" from the Options menu, the "Color and Mono Setup" screen will appear (Figure 3-2). Press the SPACE BAR on the computer keyboard to select "Automatic" for color operation or "Force Mono" for monochrome operation.

"Automatic" detects the presence of a color adaptor (CGA, EGA, VGA) and sets up screen colors for color operation. "Force Mono" overrides automatic color setup and forces monochrome (black and white) operation. Force mono is the correct choice, for example, with many laptop computers that have a monochrome LCD display.

The CStrunk color selection is saved in a file called CSTRNK.SET, (located in the same directory as the CStrunk program). When you change the color option and press ESCAPE, CSTRNK.SET is automatically updated.

Note For color operation, you can customize the colors used by CStrunk. See *Changing Screen Colors*, page 3-1.

IMPORTANT: IF YOU HAVE A CGA MONITOR.

Do not select "Force Mono" unless you know that your computer also supports monochrome operation. Most CGA machines abort when forced to monochrome. If you select "Force Mono" and the computer aborts, proceed as follows:

1. Reboot the computer, but do not run CStrunk.
2. Erase the file CSTRNK.SET.
3. Run CStrunk. CStrunk will revert to the default color selection.

NOTE TO LAPTOP COMPUTER USERS

Many LCD laptop computers emulate the CGA video interface. The important note above applies to most of these machines as well. A further consideration is that many of these machines map color selections to grey-scale values. There are no standards for this mapping, so on some machines, the standard CStrunk color scheme will not be readable. If this is the case, you may have to make changes in the CSTRNK.SET file. See *Changing Screen Colors*, page 3-1.

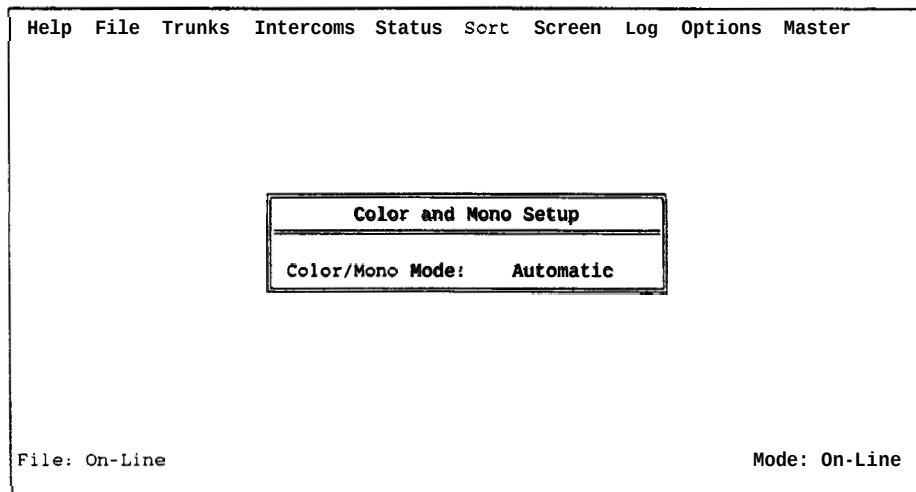


Figure 3-2. Color / Monochrome Setup Screen

Options, Communications

This menu item is used to set the comm port and baud rate for communication between the computer and the Trunking Master Controller. If the computer cannot get on-line with the Trunking Master Controller, check the comm port and baud rate settings as follows:

Comm Port

1. From the Options menu, select "Communications". The communications setup screen should appear (Figure 3-3).

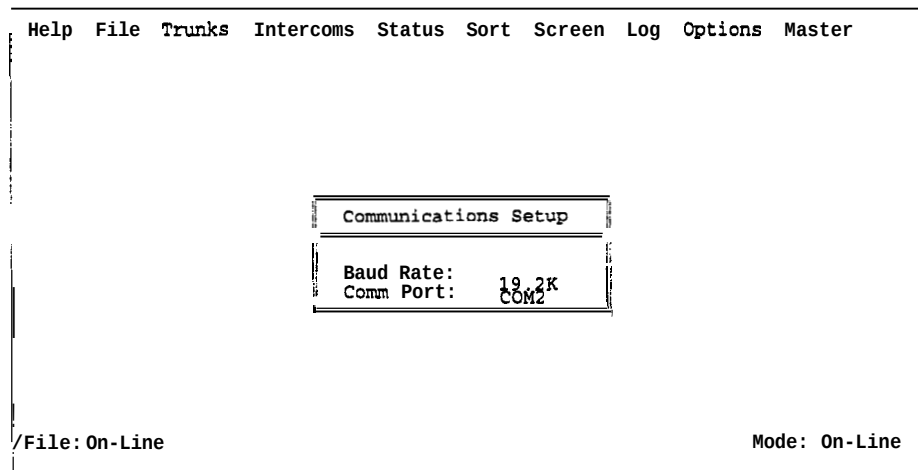


Figure 3-3. The Communications Setup Screen

2. Select "COM1", then press the SPACE BAR (or click with a mouse) to change "COM1" to "COM2" (or vice versa).
3. Press the ESCAPE key. After a few moments, the message "Uploading data" should appear in the lower-left corner of the CStrunk screen, and "On-line" should appear in the lower-right side of the screen. If this does not happen, the cable from the computer to the Trunking Master Controller may be incorrectly wired. See **Appendix A** for information about cable wiring.

Note If you are using a mouse, you must exit CStrunk and restart the program to re-initialize the mouse. Use the LEFT/RIGHT now keys on the keyboard to select the "File" menu on the menu bar. Use the DOWN arrow key to open the menu and select "Exit to DOS". Then press ENTER. When you restart CStrunk, the mouse should be operational.

Baud Rate

Three baud rates are available: 9600 baud, 19.2K baud and 38.4K baud. 19.2K baud is the software default for CStrunk. This is also the hardware default for the FR9589 Master Control Unit. If operation at 9600 baud or 38.4K baud is desired, the DIP switches must be reset on the bottom IOU board in the FR9589. Refer to the FR9589 Drawings Manual for location and settings of the **DIP** switches.

Operation at 19.2K baud allows the use of medium-length cable (up to about 50 ft, or 15 m), and results in medium-speed communication between the computer and the Trunking Master Controller.

Operation at 9600 baud allows the use of a longer cable, but results in slower communication between the computer and the Trunking Master Controller. The parameters for operation at 9600 baud are: no parity, 1 stop bit, 8 data bits, 1 start bit, 9600 baud.

38.4K baud results in fastest operation, but requires a short cable from the computer to the Trunking Master Controller (less than 10 ft, or 3 m). Also, the serial port on some computers may not support operation at this speed.

SCREEN MENU (F7 KEY)

The Screen menu is generally selectable only when an edit screen is currently open (for example the trunking assignment screen).

Screen, Cancel Screen Chg

If editing a file other than the on-line file, selecting "Cancel Screen Chgs" will cause all settings in the currently opened edit screen to be restored to the settings when the screen was entered.

If editing the on-line file, selecting "Cancel Screen Chgs" will cause all changes to the current screen to be cleared, and the current Trunking Master Controller configuration will be uploaded.

Screen, Paste Screen

"Paste Screen" is selectable only after an edit screen has been copied using "Copy Screen". Selecting "Paste Screen" will cause the copied configuration to be pasted to the current edit screen. All settings for all items in the copied screen will be pasted.

Screen, Copy Screen

"Copy Screen" will copy the entire configuration for the current edit screen, including the settings for all items in all windows not currently opened.

STATUS MENU (F5 KEY)

To access all items on this menu, the computer must be connected to the Trunking Master Controller, and the on-line file must be opened in CStrunk.

Status, Intercom

When you select this item, you will be presented with the intercom status screen (Figure 3-4).

Help File hunks Intercoms Status Sort Screen Log options Master			
Icm Configuration			
Icm	Alpha	Config	
1	TGB	Ok	CS9700
2	JHP	Ok	CS9600
3	HUB	Bad	Off
4	JPH	Ok	CS9500
5	JFY	Ok	CS9500
6	----	Bad	Off
7	----	Bad	Off
8	----	Bad	Off
9	----	Bad	Off
10	----	Bad	Off
11	----	Bad	Off
12	----	Bad	Off

File: On-Line Mode: On-Line

Figure 3-4. Typical Intercom Status Screen

The information displayed in the "Config" column indicates intercom status as follows:

- Bad Off** Indicates that there has never been any data communication with this intercom system during the current edit session. Possible causes of a "Bad Off" indication are an incorrect port assignment or baud rate setting (Intercoms menu, "Setup"), a deactivated intercom system, or a disconnected/miswired cable from the intercom system to the Trunking Master Controller,
- Bad Cut** Indicates that there was an intercom system at the port at some time during the current edit session, but it is not now transmitting data.
- Ok CS9...** Indicates that an intercom system is connected and transmitting data. If "Ok" is followed by a question mark (?), this indicates that the intercom system controller has an earlier version of software.

Status, Standby TM

When you select this item, you will be presented with the status screen for the Standby Trunking Master Controller (Figure 3-5).

Help	File	hunks	Intercoms	Status	Sort	Screen	Log	Options	Master
------	------	-------	-----------	--------	------	--------	-----	---------	--------

Stby TM Configuration		
Stby TM	Config	
1	Ok	Cur

File: On-Line	Mode: On-Line
---------------	---------------

Figure 3-5. The Standby Trunking Master Status Screen

The information displayed in the "Config" column indicates status as follows:

- | | |
|----------------|---|
| Bad Off | Indicates that there has never been any data communication with a standby trunking master during the current edit session. This could be because the device is not connected or has not been turned on. |
| Bad Cut | Indicates that there was a data device at the port at some time during the current edit session, but it is not now transmitting data. |
| Ok Cur | Indicates that the standby trunking master is connected and operating, and that it has been updated with the current Trunking Master Controller configuration. |
| Ok Old | Indicates that the standby trunking master is connected and operating, but that it has not been updated with the current Trunking Master Controller configuration. |
| Ok ? | Indicates that the device is a standby trunking master with an earlier version of software. |

Status, Diagnostics

When you select this item, you will be presented with a pick list of available diagnostics (Figure 3-6).

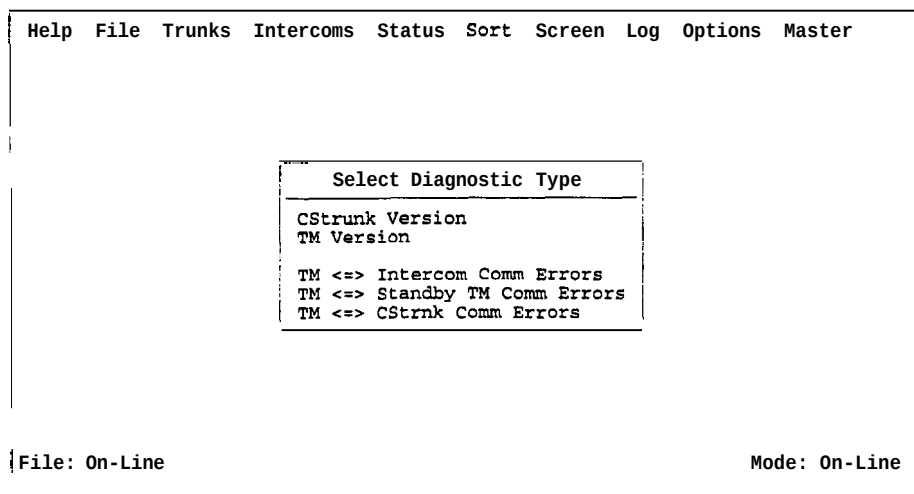


Figure 3-6. The CStrunk Diagnostics Selection Screen

Diagnostics, CStrunk Version

This manual documents version 7 of the CStrunk software.

Diagnostics, TM Version

This selection indicates the version number of the ROM in the Trunking Master Controller.

Diagnostics, Comm Error Screens

When you select any of the comm error items, a screen similar to Figure 3-7 will appear. This particular screen shows communication errors between the Trunking Master Controller and each intercom system.

TM <=> Intercom Comm Errors						
Icom	Description	Msgs From Err	Icom BER	Msgs To Err	Icom BER	
1	TGB	0	0	0	0	
2	JHP	0	0	0	0	
3	HUB	0	0	0	0	
4	JHP	0	0	0	0	
5	JFY	0	0	0	0	
6	----	0	0	0	0	
7	----	0	0	0	0	
8	----	0	0	0	0	
9	----	0	0	0	0	
10	----	0	0	0	0	
11	----	0	0	0	0	
12	----	0	0	0	0	

Figure 3-7. Typical Communication Error Screen

Errors are listed separately for communication from the intercom system to the Trunking Master Controller and from the Trunking Master Controller to the intercom system. Two types of errors are listed: the total accumulated errors are listed in the "Err" column; the bit error rate is listed in the "Ber" column. The bit error rate is the number of errors during the last ten minutes of operation. All counters are reset to zero on reset or power-up of the Trunking Master Controller. All counters may be updated by pressing the ENTER key while viewing the screen.

In general, error rates of no more than one error per hour are normal. Error rates between one per hour and one per minute are higher than normal but may not cause significant problems. Error rates greater than 1 per minute usually require immediate attention.

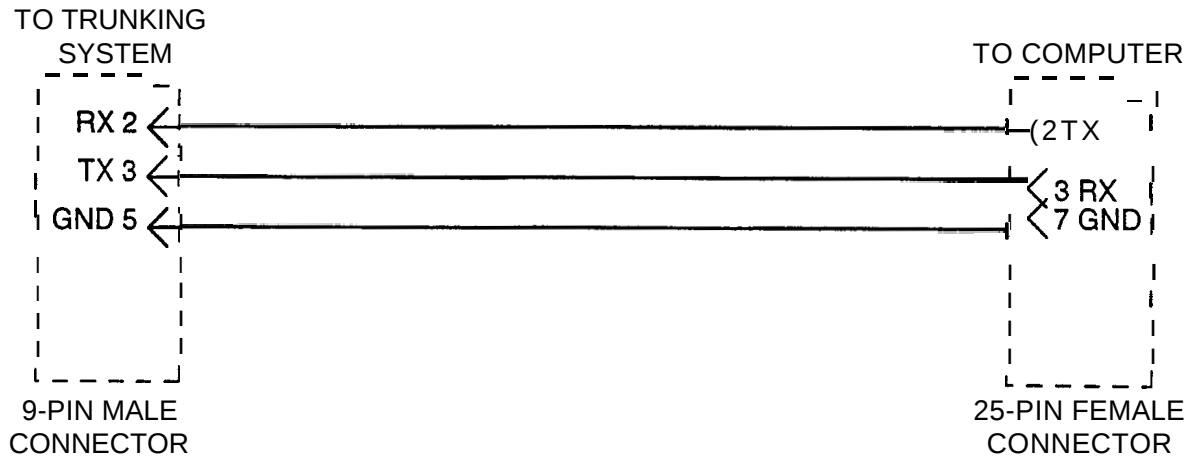
Systems installed in facilities with good grounding, using high quality telephone type twisted pair wiring will normally operate with error rates between 0 and 20 per 24 hours. With shielded wire, the rates are generally higher, because of the additional cable capacitance (5-30 per 24 hours). Symptoms of higher error rates begin to appear when the rate exceeds 1 per minute. Symptoms include cross points which remain closed for no apparent reason, IFB's with muted program when no keys are closed, slow response (especially to keypad), and general inconsistent or "flaky" operation. General causes of high error rates include:

- Cables too long
- Poor facility grounding practices
- Crosstalk, especially when using non-twisted wiring, with long parallel runs of data cables in close proximity to each other containing differing data streams.
- Noise Induction: intercom data cabling running parallel to lighting cables etc.
- One side of a data line shorted to ground or audio

APPENDIX

PC to Trunking Master Controller Interconnect Cable Wiring

9-PIN TO 25-PIN CABLE



9-PIN TO 9-PIN CABLE

