

The Direct File Transfer Utility for the TRS-80 Tape based Color Computer

by Bob Withers

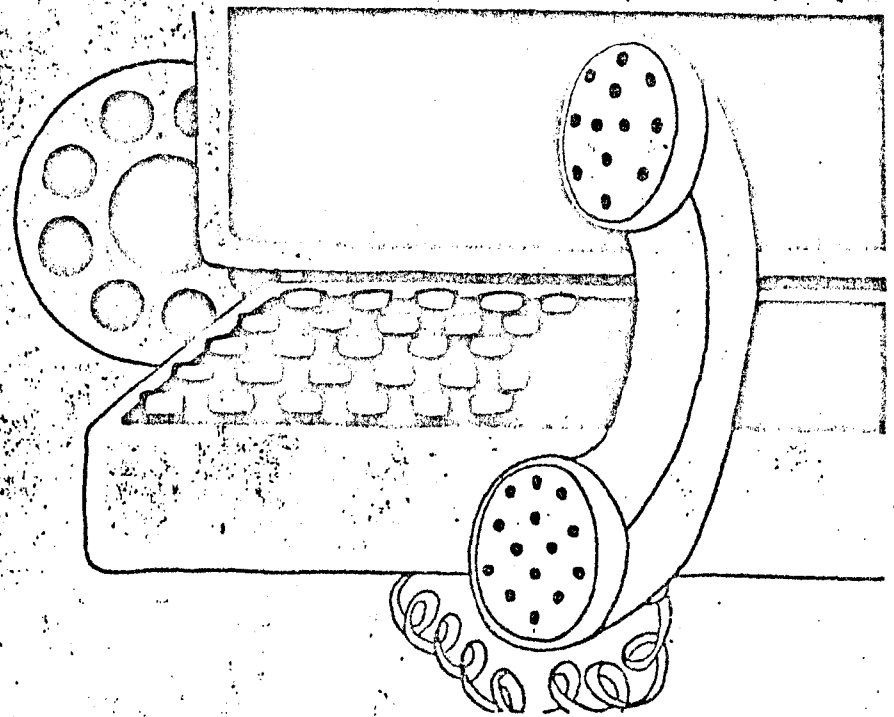
DFT is a utility program for the TRS-80 Color Computer. The purpose of DFT is to allow two TRS-80's equipped with a modem and the DFT package to transmit any file from one to the other over telephone lines. The real benefit is that the file may be transmitted without any conversation. This includes machine language, basic programs, ASCII files, and even Data files that are too big to load into a buffer. (i.e. a 50K data base in a 16K machine.) In fact the transfer is much like copying the file from one tape to another. DFT takes care of many file conversions in an attempt to make your tape based Color Computer compatible with as many other TRS-80's as possible. DFT also has a chat mode and software controlled full or half-duplex.



COMPUTER SHACK

1691 Eason
Pontiac, Michigan 48054
(313) 673-2224 • (313) 673-8700

D.F.T./TAPE For The TRS-80 Color Computer or TDP-100



COMPUTER SHACK

1691 Eason
Pontiac, Michigan 48054

LOADING PROCEDURE

DFT is a normal Color Computer machine language program and will load using the CLOADM command. The file name of the DFT master tape is CCDFT.

A sample load of the program follows:

CLOADM (ENTER) typed by operator

The screen clears and an "S" is displayed

Push PLAY on the recorder

The "S" turns into an "F" and the name
CCDFT
is displayed on the screen

OK displayed after load

EXEC (ENTER) typed by operator to
start the DFT program

(C) 1982 Computer Shack page 2

DFT PRIMARY MENU OPTIONS

Once DFT starts up it will display the primary menu. This menu displays all the options you have available while using DFT. The primary menu is returned to after completion of each DFT function. Let's look at each of the options.

Option 1 : DFT Chat Mode

The DFT chat mode serves several purposes. First it allows you to "chat" with the person you are transferring files with. This allows you to determine such things as who is going to be the sender and the name/function of the file to be transmitted. Secondly, you can use the chat mode as a mini-terminal program to communicate with a host system. Although DFT chat mode is lacking in many areas for use as a terminal program, it does work and plans are currently underway to provide you with some very nice download systems based on using the DFT chat mode.

While in chat mode all of the letters, numbers, and special characters may be displayed. The (CLEAR) key is also available for use. The function of the (CLEAR) key is to transmit a bell control code (07H). If the person you are online with is in DFT chat mode and has a beep device hooked up to his system, the (CLEAR) key may be used to sound the buzzer on his printer. (the Color Computer version uses the audio sound output in the BEEP routine). This is useful to get someone's attention if they have stepped away for a minute and you need to "chat" with them.

(C) 1982 Computer Shack page 3

Option 2 : File Transmission

This option is really the heart of the DFT system in that it is the portion of the program which allows you to transmit files from TRS-80 to TRS-80 without the need for conversion to an ASCII file. This has several advantages including:

1. Files do not require any conversion to the common "ASCII-HEX" format so the amount of data you have to transmit is cut in half along with the amount of time it takes to transmit the file.
2. You do not need any special utility program to perform the above mentioned conversion.
3. Every block of data that is sent is checked for transmission errors and re-sent if an error is detected.

(C) 1982 Computer Shack page 4

After selecting option two (2) from the DFT primary menu, you are asked a question about the transmission that is about to take place. How you answer this question determines if you send or receive a file.

The first question DFT asks is:

Are you sending or receiving (S or R)?

Type an "S" if you are sending a file to another TRS-80 or an "R" if you want to receive a file. Of course, if you respond to this question with an "R" DFT assumes the TRS-80 at the other end of the phone line is sending. If both TRS-80's are trying to receive a file, not much will be accomplished.

DFT sends control codes back and forth between systems to determine the status of the remote system. When both systems indicate that they are ready, file transmission will begin. Because of this unique "sync" procedure you do not need to worry about the remote system being ready to receive when you attempt to send. If it is, DFT will transmit the file, if not DFT will wait until it's ready.

(C) 1982 Computer Shack page 5

Option 2 : continued

At any time during file transmission you may abort and return to the primary menu by pressing the (BREAK) key. The (BREAK) will not abort in the middle of transmitting a block of data so if it doesn't abort right away just hold the (BREAK) key down. As soon as DFT finishes sending the current block it will abort. Either the sender or the receiver may abort the transmission by pressing (BREAK). If either end aborts (either because of (BREAK) or because of an error) the other end is informed and will also abort with a message indicating what happened.

At the end (either normal or aborted) of a transmission the BEEP routine will be executed so you can be out of the room and be "paged" at the end of a transmission. For more information on BEEPing see the section on BEEP procedures.

Option 3 : Set Chat mode duplex

This option allows you to change the duplex used in the DFT chat mode. Two options are available either HALF duplex or FULL duplex. Half duplex means that everything you type is sent out to the RS232 interface and displayed on your screen. Full duplex means the information you type is only sent out the RS232 interface and NOT displayed on your video screen. You will have to use HALF duplex when "chatting" DFT to DFT (so you can see what you type). Use FULL duplex when you are using the DFT chat mode as a terminal program on a full duplex host system. If you are in HALF duplex and every character you type is displayed on your screen twice you should switch to FULL duplex because the system you are on is echoing characters back to you.

Option 4 : Set DFT Baud Rate

The DFT program initializes the RS232 interface to 300 baud when it starts. If for some reason you wish to transmit at a different baud rate you may use this option to change the DFT baud rate. On entry you are given the baud rate change sub-menu. This sub-menu displays the current baud rate and the baud rates that are available to you. You may press the (ENTER) key to exit with the current rate unchanged, or select one of the 7 allowable rates.

The baud rate sub-menu looks like this:

```
DFT - SET BAUD RATE ( 300 BAUD)
1- 110 2- 300 3- 600 4-1200
5-2400 6-4800 7-9600 C/R=EXIT
SELECT BAUD RATE (1-7,C/R) ==<
```

This option allows you to load a program or data tape into the DFT buffer. All file transmission (sending or receiving) is done by way of the DFT buffer. In other words you can't send a program until after you've loaded it into the buffer and after receiving a program you must dump the buffer to tape. The load buffer option allows for loading of all standard Color Computer tape files.

On entry to this option you will be asked to ready the cassette recorder and press (ENTER) to load the tape. If you decide not to load a tape at this time (or if you selected option #5 by mistake) you may press (BREAK) to return to the primary menu option.

A special note is in order concerning the loading of Basic programs stored in binary (compressed format). The internal format of a Basic program on the Color Computer is vastly different from a TRS-80 Model I or III program. For one thing the Color Computer contains many commands that do not exist on other TRS-80's. Because the aim of DFT is to allow all TRS-80 computers to exchange files with each other some internal conversion of Basic programs is required. This conversion takes place automatically and should be of no concern to the user. The only reason for mentioning it here is that on long Basic programs DFT may require several seconds to perform this conversion. If you load a Basic program and the computer seems to lock up for a few seconds after the tape is finished loading do not be concerned. It is just DFT performing this conversion and you will be returned to the primary menu as soon as it is complete.

6 : Save the DFT buffer to tape

This option permits you to save a copy of the programs/files you receive to tape. DFT will determine the type of tape file to be created and generate it automatically. You do not need to worry about such things as load addresses and entry points for machine language programs; DFT will handle it for you. You may dump the buffer to tape as many times as you like. The current buffer contents are retained until you load in another file or receive a new file. If the buffer is empty when you select this option you will be returned to the primary menu with an error message.

Upon entry to this function you will be asked to supply a 1 to 8 character filename for the tape to be created. Enter the name and press (ENTER). You will then receive a message to ready the recorder and press (ENTER). At either of these points you may press the (BREAK) key to return to the primary menu without creating a tape file.

Option 7 : End DFT and return to BASIC

This option simply allows you to end DFT without resetting the system. After selecting this option you will be returned to the Basic OK prompt. If you wish to re-enter DFT after selecting this option simply enter EXEC (ENTER). This will work as long as you haven't done anything while in Basic that caused part of the DFT program to be destroyed.

BEEP ROUTINE

The BEEP routine of DFT is executed at the end of a file transmission (either normal or aborted) and while in chat mode when the BEL control character (07H, generated by pressing (CLEAR)) is received. The BEEP routine in the Color version of DFT will sound a tone through the audio speaker of your TV set. Be sure to adjust the volume of the TV high enough to hear the beep if you wish to use this feature.

COMPATABILITY OF DFT

The Color Computer tape version of DFT is fully compatible with both the tape and disk versions for the Model I and III. This means that you may exchange programs with any other DFT user without worrying about the type of equipment he is using. A word of caution though, if a Model I/III program will not work on the Color Computer transferring it with DFT will NOT make it work. You may find that Model I/III Basic programs require some manual conversion to function on the Color.

Machine language programs are another matter. The Color Computer and the TRS-80 Model I/III do not use the same MPU (Microprocessing Unit). The Color uses a MPU called the M6809E while the Model I/III uses a Z-80. These two microprocessors do NOT have the same machine language and a program written for one will not work on the other. DFT will allow you to download a Model I/III machine language program and save it as a data tape but it will not execute on your machine. If the machine language program was written for the Color Computer it may be downloaded and saved as a CLOADM format tape and will function properly. When dealing with machine language program be sure you know what you're getting when you download from another computer.

CREDITS

DFT is a trademark of Big Systems Software and is sold to the purchaser for his sole use on one system. No efforts have been made to protect this program from being duplicated (in fact it will duplicate itself). It is the feeling of the author and Computer Shack the publisher that the end user has a right to produce duplicate backup copies of this program. Please respect our trust and don't provide copies to your friends. Instead give them a review of DFT and information on how they may purchase a copy. If the author and the publisher make money selling this program they will be much more inclined to make updates at a very low price to registered owners.

This program is:
Copyright (C) 1982 by COMPUTER SHACK

If this program is found on any download system, we will sue the owner for copyright infringement.

DISCLAIMER

We have spent many many hours in the testing of this program, but as with any large program, some errors may exist. All reports of errors by registered owners will be investigated and corrected if possible.

We do not guarantee this software in any way and will not be liable for any damage resulting from its use.