Hamsoft ™

Manual For The TRS-80C

Send / Receive
MORSE / RTTY / ASCII

HAMSOFT FOR THE TRS-80C

Hamsoft is a software program for use with the Kantronics Interface or Interface II. Hamsoft allows reception and transmission of Morse Code, Radioteletype, and ASCII. Features of Hamsoft include:

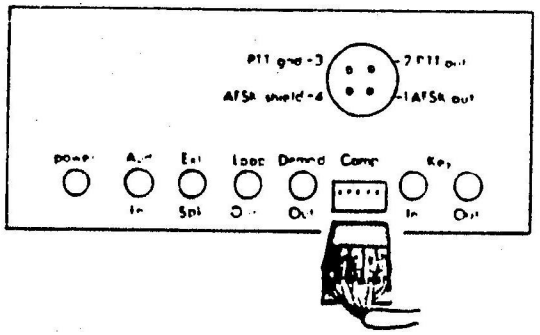
Morse Code send/receive - 5-99 WPM
Radioteletype send/receive - 60, 67, 75, 100, and 132 WPM
ASCII send/receive - 110, 150, 200 and 300 baud
Split screen display
1024 character transmit buffer
Automatic Morse speed tracking
CW-ID during RTTY/ASCII
10 programmable message ports
Printer compatibility - Centronics compatible parallel or TRS serial

This program is warranted to work with the Kantronics Interface or Interface II. Instructions for use with an alternate terminal unit are included, but this in no way guarantees operation of the program with any other terminal unit.

INSTALLATION

Connecting the Hamsoft program to your computer is a simple process. First, make sure the power of the computer is off. Plug the Hamsoft cartridge into the computer cartridge port. Next, attach the cable to the computer jack of the Interface. Insert the cable into the Interface with the exposed wire side up. See diagram.

The Interface Back Panel



The computer cable is the only connection necessary between the computer and the Interface. Now follow the instructions in the Interface manual for connection of the Interface to the transceiver.

To familiarize yourself with the program, plug in the Hamsoft cartridge and leave the computer cable disconnected. This allows operation in an "off the air" mode.

INITIAL OPERATION

With the Hamsoft cartridge inserted in the expansion port, turn on the computer and the main menu will appear.

```
KANTRONICS     00:00:00
HAMSOFT  V2.0
COPYRIGHT   1 FEB 1984

CHOOSE

   A(ASCII)
   C(CW-MORSE)
   P(MESSAGE PORTS)
   R(RTTY)
   T(SET TIME)
   X(XMIT/RCV OPTIONS)
```


The menu gives six choices. Menu selection is made by pressing the letter to the left of the the mode you wish to address.

Three of the main menu choices are transmit/receive modes. But before attempting to use the T/R modes you should understand all the options of the program.

TO RETURN TO THE MENU FROM ANY POINT IN THE PROGRAM, HOLD DOWN THE CLEAR KEY AND PRESS THE BREAK KEY.

Additional operation options are as follows:

SET TIME

This option lets you to set the 24 hour clock by simply typing in the proper digits. The program will automatically return to the menu after the sixth digit is typed.

MESSAGE PORTS

The Message Ports feature of Hamsoft allows you to preprogram up to ten separate messages which can be transmitted with a single command.

From the menu select the Message Ports mode by pressing the P key. The following screen will appear.

```
PRESS NUMBER TO EDIT MESSAGE
PRESS S TO SAVE MESSAGE PORTS
PRESS L TO LOAD MESSAGE PORTS
```

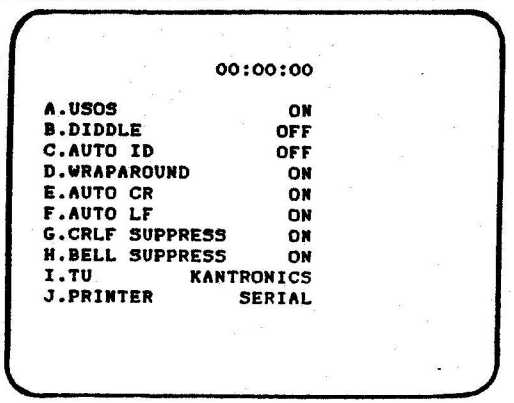
Pressing any number will access the message port of that number. Enter information by typing in the message, using the cursor and delete keys to edit the message. Each of the ten Message Ports will hold 256 characters. While in a transmit/receive mode any message can be placed into the transmit buffer by holding down the CLEAR key and pressing the message port number.

Because all memory is lost when the computer is shut off, the message ports can be saved to cassette tape for later retrieval. To store the message ports to the tape cassette, attach the cassette recorder and follow the saving procedures as instructed in the TRS manual. Press the S key to begin the saving process, and the L key to load message ports from the tape.

The motor on and motor off commands cannot be used with the Hamsoft program. Therefore you must take special care to denote the location on the cassette to which you save the message ports. The tape must be cued properly for you to store and recall information. All ten message ports are saved as a single unit.

XMT/RCV OPTIONS

To enter the Transmit/Receive Options mode, depress the letter X. The screen should look like this:



The following options directly affect operation of the Transmit/Receive modes. CAREFULLY READ THROUGH THESE INSTRUCTIONS BEFORE ATTEMPTING TO USE THE TRANSMIT/RECEIVE MODES.

Each option is set in an ON or OFF position. To change the status of an option, depress the letter to the left of that option.

A. USOS - UNSHIFT ON SPACE ON - With this option ON, the program will automatically return to the letters mode after each space received in RTTY. When receiving some transmissions with multiple numbers transmitted in groups, such as the National Weather Service Teletype, you will want to switch the USOS feature OFF. Normal operation would be to leave the USOS feature ON.

B. DIDDLE OFF - This option gives the program the ability to send a null character when there is no character in the transmit buffer. This allows the receiving station to have a solid signal, for tuning purposes, during pauses in transmissions. The diddle feature only affects RTTY/ASCII transmissions.

C. AUTO ID OFF - With this option On the program will automatically transmit a CW-ID in the RTTY/ASCII transmit modes if your call sign is entered in message port 0. Following every ten minuters of continuous transmission, message port zero will be transmitted in the CW-ID mode.

D. WRAPAROUND ON - To keep the program from breaking words at the end of a screen dispay line, the signal display jumps to the next line if a space is encountered in the last five spaces of the screen display line. To

get more characters per line turn the wraparound option OFF. Wraparound works on both the receive and transmit displays.

E. AUTO CARRIAGE RETURN ON - During transmission of RTTY/ASCII this feature sends a carriage return automatically at the first space encountered after 65 characters, or after the 71st character if there is no space.

F. AUTO LINE FEED ON - This option allows the program to send a line feed automatically with each carriage return transmitted.

G. CRLF SUPPRESS ON - This option affects output of received information to the printer. With option G ON, any carriage return or line feed received immediately following a carriage return will not be sent to the printer.

H. BELL SUPPRESS ON - With this option ON the printer will not receive any bell characters received by the computer. The character will appear on the screen, usually as a reversed G, but the character will not be output to the printer.

I. TU KANTRONICS - Hamsoft is designed to be used with the Kantronics Interface or Interface II. If you decide to use an alternate terminal unit, press the letter G and the screen will change to show OTHER in place of KANTRONICS. To connect your terminal unit check the ALTERNATE TU CONNECTION section of this manual.

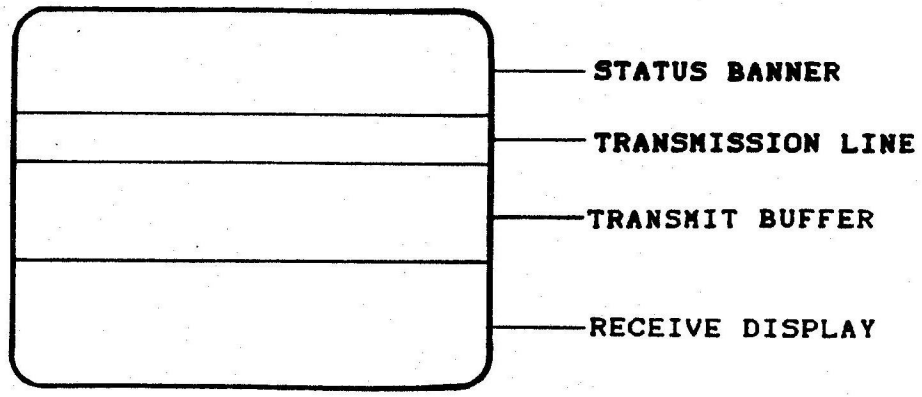
J. PRINTER SERIAL - Hamsoft can drive either a serial or parallel printer. You must set this option for the type of printer you will be using. See the Printer Connection section of this manual for connecting instructions.

Hamsoft is warranted to work with the Kantronics Interface or Interface II. We cannot guarantee operation of the program with any other terminal unit.

This completes the OPTIONS portion of the manual. To familiarize yourself with all the options available, attempt using the options without connecting the computer cable. Once you feel comfortable with the options, return to the main menu and follow the Transmit/Receive Instructions.

CW/RTTY/ASCII TRANSMIT/RECEIVE OPERATION

Selecting the CW, RTTY, or ASCII transmit/receive mode from the menu will bring a split screen display up on the monitor.



The lower portion of the screen will print the received signal while scrolling upward. The top portion of the screen is the status banner, showing the mode, speed, clock, and indicating transmit or receive. In the CW mode an arrow indicates if the program is in the transmit or receive mode. With the first

character typed into the transmit buffer the screen will divide into four areas. The center of the screen is the type ahead buffer display, allowing you to type in up to 1024 characters for transmission. The transmission line is just above the transmit buffer display, and it will show the signal as it is transmitted.

Once one of the transmit/receive modes has been selected commands are used to operate the program. Control commands are given by holding down the CLEAR key and pressing the proper letter or number.

TO RETURN TO THE MENU FROM ANY POINT IN THE PROGRAM HOLD DOWN THE CLEAR KEY AND PRESS THE BREAK KEY.

Control Commands

CLEAR R - RECEIVE - This command places the program in the receive mode. It can also be used to synchronize the program to incoming signals. If the signal seems to be properly tuned but not printing legibly, press the CLEAR R command. This may help the program to properly decode the signal, especially with CW signals.

CLEAR T - TRANSMIT - This command transmits any text in the transmit buffer. You can type into the transmit buffer while receiving, then press CLEAR T command to transmit the message.

CLEAR S - SPEED CHANGE - To change the transmit speed press CLEAR S. In the CW mode pressing CLEAR S will cause an ENTER TWO DIGITS command to appear in the transmission line. Enter any two digits from 05 to 99, and the transmit speed will change to the figure entered. CLEAR S will cycle the RTTY and ASCII modes through all available speeds. Transmit speed changes can occur only when you are in the receive mode.

CLEAR U - INVERT - A practice sometimes encountered in using radioteletype is inversion of a signal, reversing the space and mark frequencies. CLEAR U allows you to invert the incoming RTTY or ASCII signals to check for inversion. In the inverted mode the letter R of RTTY in the status banner will be reversed on the screen. In the ASCII mode the letter A will be reversed. Transmitted RTTY/ASCII signals will not be affected by CLEAR U.

CLEAR P - PRINTER CONTROL - CLEAR P toggles the printer ON and OFF. A letter P will appear in the status banner when the printer is turned ON.

The following commands appear in the transmit buffer screen display as reversed letters or numbers.

CLEAR E - Placing this command in the transmit buffer returns the program to the receive mode when it is encountered. Use CLEAR E at the end of a transmission or message port for an automatic return to receive.

CLEAR (0-9) - Places the message port of the number chosen in the transmit buffer.

CLEAR I - CW-ID during RTTY/ASCII transmisions. Place a CLEAR I command before and after your ID in the transmission buffer or message port. The program will shift to a CW-ID mode when the command is encountered, and return to normal transmission with the second CLEAR I.

CLEAR J - Line feed.

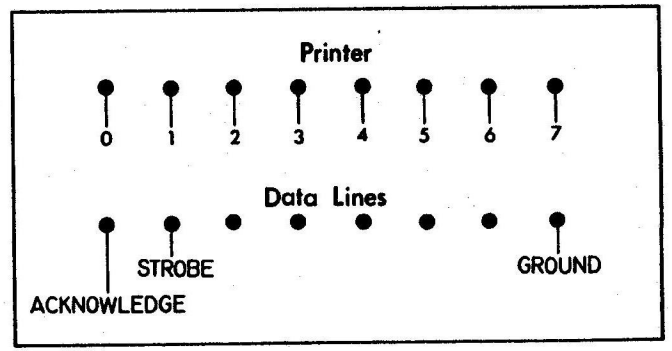
CLEAR M or RETURN - Carriage return

CLEAR L - this command sends the "LETTERS" character in the RTTY mode.

CLEAR N - This command sends the "NUMBERS" character in the RTTY mode.

PRINTER CONNECTION

If you are using the TRS serial printer follow the connection instructions included with the printer. A parallel printer can be connected directly to the PC board of the Hamsoft cartridge. After removing the cartridge you will see a portion of the PC board marked "PRINTER" wil 16 holes directly below it. Use a DIP socket and attach the printer cable lines as shown on the diagram below. Any Centronics compatible printer will work.



Connect the lines to the corresponding function pins of the printer connector, according to the printer manual. The ground connection is a signal ground, not the chasis ground. If your Data lines are listed as Data 1 through 8 use pin C for Data 1, pin D for Data 2, and so on. While in the receive mode a CLEAR P command is used to toggle the printer on and off. A letter P will appear in the status banner when the printer is on.

ALTERNATE TU CONNECTION

This software is written for use with the Kantronics Interface or Interface II; therefore Kantronics does not warrant the use of Hamsoft/Amtor with any other terminal unit. However, if you choose to use an alternate TU we suggest the following connections:

Terminal Unit	Function
White-CW Key Out	Morse signals, active low
Red-RTTY Out	RTTY/ASCII signals Mark high-Space low
Brown-Receive/Send	Normally high, Active low for RTTY ASCII transmitting
Green-Demod Out	Normally high, Active low when CW signal present, Active low when Space frequency present
Black- Ground	

CAUTION-Make sure the voltages on the lines of your transciver and TU are TTL level compatible, not RS232. Kantronics is NOT responsible for inter-connection of any hardware not of our manufacture.

TROUBLESHOOTING

To check for problems in operation of the Interface/Hamsoft system it is necessary to isolate the problem. This is done by connecting all components in the order given below. You must follow these instructions exactly for the troubleshooting system to work.

1. Disconnect all cables and turn power off.

2. Insert the program cartridge into the computer.

3. Turn on the computer and check the displays for Morse, RTTY, and ASCII.

4. Turn the power off again. Attach the cable from the cartridge to the Interface. Also connect the cable from the external speaker of the receiver to the audio in of the Interface, and attach the external speaker and power to the Interface.

5. Power on the computer, Interface, and transceiver, in that order.

6. Tune in a RTTY, Morse, or ASCII signal and check for operation of the 10 segment bar graph on the front of the Interface.

7. Place the program in the proper mode. Tune the signal until letters begin to appear on the screen. Display of characters at this point means that both the program and Interface are operating properly.

8. By carefully tuning the signal you should be able to get legible display. Not all signals are acceptable, if the first does not print, try another. Follow the tuning instructions included in the Interface manual.

9. Now add the cables for transmission. If problems arise as you attach additional cables, you have an improper cable connection. Check the Interface manual for correct cabling instruction.

Follow the troubleshooting steps exactly. By stepping through the troubleshooting guide you will be able to isolate the problem.

Warranty

Kantronics warrants each new Hamsoft to be free from material, workmanship, and program defects under normal use and service for a period of 90 days. Following this period, for nine months, Kantronics will replace or repair, at our option, your Hamsoft at cost plus shipping and handling. This warranty is void if any attempt has been made to copy or alter the software.

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