MFJ-1285
RTTY/CW Terminal Program
for MFJ-1224/1225/1229 Computer Interfaces
Instruction Manual

INTRODUCTION

1.1 What You Get

Thank you for purchasing the MFJ-1285 Starter Pack for the IBM and compatible computers. This Starter Pack contains programs on 3-1/2 inch floppy disk and a cable which connects between the RS-232 serial port (COM1:) of your computer and the MFJ-1224 or MFJ-1225 computer interface.

The two programs supplied allow Morse, Baudot, and ASCII send and receive operation. the morse speed selection on reception is automatic, i.e. the program automatically tracks the speed of the sending station. ASCII and Baudot are run from the same program, RTTY.EXE. Morse is run from the program MORSE.EXE.

The directory of the MFJ-1285 disk is as follows:

```
 Volume in drive A is MFJ-1285
 Directory of A:\
```

MORSE	EXE	18560	3-15-90 5:42a
RTTY	EXE	30016	2-01-89 9:33p
MESSAGE	TTY	283	4-03-90 9:03a
MESSAGE	CW	20	1-01-80 1:03a

2. HARDWARE REQUIREMENTS

The MFJ-1285 programs will run with just about any computer configuration. The programs will run on the original IBM machines with only 54 K of memory. Either a monochrome (MDA) or color card (CGA) can be used.

You must have a serial port configured as COM1:

3. INSTALLATION

3.1 Hardware Installation.

Turn all you equipment OFF during installation of the serial port cable.

Install an RS-232 serial cable (not supplied) between your computer serial port (COM1:) and the RS-232 (DB-25F) connector of the MFJ-1285 adapter cable. Connect the other end of the adapter cable to the MFJ-1224, MFJ-1225 or the now discontinued MFJ-1229 computer interface GENERAL PURPOSE CONNECTOR. Insert the connector into the GENERAL PURPOSE port so the wires are coming out the bottom of the connector.

3.1.1 MFJ-1224 Installation.

The cable that comes with the MFJ-1285 Morse/Baudot/ASCII programs is wired up according to Table 1 for the MFJ-1224 and the MFJ-1229 or it is wired according to Table 3 for the MFJ-1225. To hook-up, connect the 25-pin DIN connector from your RS-232 SERIAL PORT (COM:1) to the adapter cable's DB-25(S). The other end of the adapter cable plugs into the 8-pin General Purpose connector of the MFJ computer interface. The wires should be coming out the bottom of the 8-pin connector.

For CW operation, a coaxial cable should be connected between the GRID BLOCK or DIRECT output of the interface to the KEY jack of your radio. Use GRID BLOCK if your key up voltage on your KEY line is NEGATIVE. Use DIRECT if the voltage is POSITIVE.

RS-232 Serial Port DR25 Pin#	MFJ-1224 General Purpose Connector Pin Name
2 - Transmit Data (to TU)	RTTY
3 - Receive Data (from TU)	RTTY DEMOD
4 - RTS	PTT (and to CW KEY)
7 - Ground	GND
8 - CD	CW DEMOD

TABLE 1 -- MFJ-1224 WIRING DIAGRAM

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3.1.2.1 DIP SWITCH SETTINGS FOR MFJ-1224

SW #	Status	Function	Condition
1	OFF	CW KEY	Mark = 5 V; Space = 0 V
2	OFF	NOT USED	
3	OFF	NOT USED	
4	OFF	RTTY TX	Mark = 0 V; Space = 5 V
5	ON	PTT ENABLE	ON = PTT Enabled
6	ON	PTT POLARITY	Xmit = 5 V; Rcv = 0 V
7	OFF	RTTY DEMOD	
8	ON	CW DEMOD	Mark = 5 V; Space = 0 V

TABLE 2 -- MFJ-1224 DIP SWITCH SETTINGS

3.1.3 MFJ-1229 Installation.

MFJ-1229 Dip Switch	Switch Position
1	ON
2	OFF
3	OFF
4	OFF
5	ON
6	OFF
7	ON
8	OFF

TABLE 3 -- MFJ-1229 DIP SWITCH SETTINGS

3.1.4 MFJ-1225 Installation

RS-232 Serial Port DB25 Pin#	MFJ-1225 General Purpose Connector Pin Name
3 - Receive Data (from TU)	RTTY DEMOD (INV)
7 - Ground	GND
8 - CD	CW DEMOD (INV)

TABLE 4 -- MFJ-1225 to Serial Port Cable

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3.1.5 Operating with the MFJ-1225 Computer Interface

When operating the MFJ-1225 on RTTY, set the RTTY/CW button to RTTY. Set the shift buttons to whatever shift you are copying (hint: the phase lock LED must be solid ON, not blinking). The NORMAL/REV button should be to NORMAL. For CW, the RTTY/CW button should be set to CW and the NORMAL/REV button should be on REV.

3.2 Software Installation

3.2.1 Making Back-up Copies

Before using the program disk, make a copy of it and store the original in a safe place. Use only the copy for day to day use.

To make a copy, use the DOS copy command:
1. Place a write-protect tab over the notch in the original disk.
2. Place the original disk in drive A: and a formatted disk in drive B:.
3. Type: COPY A:*.* B: <CR>
4. Place your DOS disk which has COMMAND.COM on it in drive A: Type: COPY COMMAND.COM B:.
5. When all the files have been copied to the work disk, store the original in a safe place (away from heat, television sets, transmitters, magnets, etc.)

3.2.2 Floppy Disk Operation

For Morse operation, install the disk into the drive of choice and at the DOS prompt type MORSE, then a carriage return <CR>.

For RTTY (Baudot or ASCII), type: RTTY then a carriage return <CR>.

3.2.3 Hard Drive Operation

The MFJ-1285 programs may be run from a hard drive. Install the programs from the original disk to the hard drive by using the DOS copy command:

Place the original disk in drive A: and type: COPY A:*.* C: then <CR>. If your hard drive is other then logical drive C:, use whatever drive letter is appropriate. When all the files have been copied to the hard drive, file away the original for safe-keeping. Do not use the original as your work disk.

Make sure COMMAND.COM is available to the program. Either place a copy of COMMAND.COM in the same sub-directory as your MFJ-1285 programs or place a PATH = command in your CONFIG.SYS file of the root directory.

4. MORSE OPERATION

The program comes up in the Receive Mode with the following default conditions:

Speed -- speed at which program last exited.
Preprogrammed Messages -- As they were last programmed.

4.1 Receive Operation

4.1.1 Menu Options

The program initializes to receive mode when running. The speed setting is that of the last received mode.

4.1.1.1 F1 - F6 Keys

PREPROGRAMMED MESSAGES (Default = Messages as they were last programmed.)

There are six pre-programmed message buffers available, corresponding to the F1 through F6 keys. Pressing on of these function keys will display its present contents. To leave the message as-is, press <Esc>. To change the contents of the buffer just begin typing in the message. To end message storage, press 'Enter."

Each message can be up to 256 characters in length. If that length is exceeded, keyboard input will no longer be accepted and a beep will sound.

The F1 - F6 keys display the contents of that particular buffer. If you do not wish to make a change, type the ESC key. If you want to make a change, start typing a new message. End the message with a carriage return <CR>.

4.1.1.2 F9 Transmit/Receive Toggle

Press F9 to enter transmit mode.

Text received will appear in the upper screen. The speed is automatically synchronized with the received code.

4.1.1.3 F10 Exit Program

Press F10 to leave the program.

4.2 TRANMIT

Toggle to the Transmit mode from the Receive Mode with the F9 key.

4.2.1 Transmit Screen

Text to be transmitted will appear in the upper screen. As each character is being sent it will appear in the lower screen.

4.2.2 Procedural Keys

The following keys are used to send the following non-standard characters:

:	SK (. . . - . -)
;	AR (. - . - .)
=	Eight dits (error)
BT	Grey minus key

4.2.3 F7 Key MONITOR ON

The program comes up with PC audio off so that you can use the CW monitor tone from your transmitter. You can turn on the PC tone by pressing F7. Pressing F7 with the audio turned on will turn it back off. The F7 key works only in transmitting.

4.2.4 F8 Deactivate transmitter

if you wish to send code without keying your transmitter, you can press F8. The prompt 'Key TX' in the upper right corner will go away. To reactivate transmitter keying, press F8 once again.

4.2.5 ARROW KEYS -- Changing speed

The speed can be changed by using the up and down arrow (cursor) keys. At speeds below approximately 13 wpm, the dot and dash length stays fixed, and interval between characters is varied. Each press of the arrow keys at speeds above 13 wpm will vary the speed by approximately 1 wpm. Please note that the number

that appears in the upper left hand corner of the screen is not necessarily the speed in words-per-minute. Because of different clock speeds,

these numbers will mean different speeds on different computers. Use these numbers as references only.

4.2.6 F10 Key Exit Program

To exit the program, press the F10 key. All files are closed and the program exits to DOS.

5 SmaRTTY Receiving and Transmitting Program

5.1 RTTY Receive

The program comes up in the Receive Mode with the following default conditions:

Speed	60 wpm
Printer	Off
CR / LF	Off
Preprogrammed Messages	As they were last programmed
Text file storage	Off
Text file assigned	RECEIVED.TXT

5.1.1 F9 Key - Transmit/Receive Toggle

Toggle to the Receive Mode from the Transmit Mode with the F9 key.

Text received will appear in the upper screen. The upper screen can be cleared with the Home key.

5.1.2 Speed: (Default = 60 wpm)

The speed can only be changed in the Receive Mode. Using the up and down arrow keys the speed can be stepped through 60, 67, 75, and 100 wpm Baudot and 110 and 300 baud ASCII. An indication of the current speed setting appears in the header line. The parameters of the COM port for ASCII can be changed by using the right arrow key in the receive mode. Default settings are N72 (No parity, 7-bit word length, and 2 stop bits).

5.1.3 Printer: (Default = Off)

A hard copy of received text can be directed to the printer attached to the computer by using the Alt-L key. If the printer is on, the letters 'Prt' will appear to the right side of the header line and the Alt-L function will change to 'Print Off' in the prompt area at the bottom of the screen. If there is no printer on-line, a printer timeout will occur. A message to that effect will be displayed in the bottom screen and a beep will sound.

5.1.4 CR/LF: (Default = Off)

with this function off, all received carriage return and line feed codes are sent to the screen as received. To insert local LF when CR is received, use the Alt-F key. When activated, 'CR/LF' will appear on the right side of the header line and the Alt-F function will change to 'CR/LF Off' in the prompt area.

5.1.5 PRE-PROGRAMMED MESSAGES (Default = Messages as they were last programmed)

There are eight pre-programmed message buffers available, corresponding to the F1 through F8 keys. Pressing one of these function keys will display its present contents in the lower screen. To leave the message as-is, press <Esc>. To change the contents of the buffer just begin typing in the message. To end message storage, enter a carriage return <CR>.

Each message can be up to 1024 characters in length. If that length is exceeded, keyboard input will no longer be accepted and a beep will sound.

If you would like to automatically go to the Receive Mode after sending a pre-programmed message (i.e. calling CQ), end the message with a back-slash (\ ) character.

All eight messages can be stored with their current contents into a text file by using Alt-F2. All eight messages can be restored from the text in this file, using Alt-F1 to retrieve the messages. This is especially helpful in storing and retrieving Bulletin Board commands. When the program is exited, the messages are written to disk in their last state.

5.1.6 STORING RECEIVED TEXT TO A FILE: (Default = Off)

This function when first activated will attempt to store incoming text to file RECEIVED.TXT (the default filename). The name of the active file will appear on the left side of the header line, followed by the status as indicated by the word 'On' or 'Off.' The active filename can be changed by pressing the 'Ins' key and entering the new filename. If a file is already open, pressing 'Ins' will close that file and ask for the new filename.

To start storing incoming text to file RECEIVED.TXT, press 'Alt-R.' The incoming text will be appended to the end on any existing text on the file.
Existing text on the file can be erased by pressing the 'Del' key. Storage is halted by pressing the 'Alt-R' key. If a RAM disk is configured in your machine, storing text to that drive will enhance this feature. Just remember, if you want to keep the file, be sure to copy to permanent media before powering down the computer.

5.2 RTTY TRANSMIT

5.2.1 F9 KEY TRANSMIT/RECEIVE TOGGLE

Toggle to the Transmit Mode from the Receive Mode with the F9 key. Text to be transmitted will appear in the upper screen. As each character is being sent, it will appear in the lower screen. Key clicks will be heard as each character is loaded into the transmit buffer. When typed entry passes the 70th character on a line, a beep will be heard, indicating that the end of the line is coming up. This is a god reminder to give a CR if you are watching the keys instead of the screen. The program does not automatically insert a carriage return after the 70th character. It is a good operating habit to send the return character because many operators still have the old mechanical teleprinters which need a CR/LF pair to properly print.

5.2.2 PRE-PROGRAMMED MESSAGES

Pre-programmed messages can be inserted into the text to be transmitted at any time. Press F1 through F8 to send the pre-programmed message.

5.2.3 AUTOMATIC TOGGLE TO RECEIVE

If you are typing ahead of the sending buffer (You are really good!), and want to end with a 'Toggle to Receive' command, end with a back-slash (\ ) character as mentioned previously.

5.2.4 SENDING AN ASCII FILE FROM DISK

You can send the text from an ASCII file on disk by using '@{FILENAME} <Enter>'. The text file can be of any length as buffer overflow is automatically self-limiting. The '@{FILENAME} <Enter>' command can be used in a preprogrammed message. It is possible to stack these commands in a buffer. A typical preprogrammed message with QTH and RIG as the text files as such would look like this:

> @QTH
> @RIG

5.2.5 ASCII Operation

ASCII operation is invoked when the speed is changed to 110 or 300 baud. The ASCII parameters are shown immediately to the right of the speed indication. Default is N (no parity), 7 (7-bit word length), and 2 (two stop bits). To change, press the right arrow key.

6. Technical Assistance

If you have any problem with this unit first check the appropriate section of this manual. If the manual does not reference your problem or your problem is not solved by reading the manual you may call *MFJ Technical Service* at **601-323-0549** or the *MFJ Factory* at **601-323-5869**. You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by mail to MFJ Enterprises, Inc., 300 Industrial Park Road, Starkville, MS 39759; by Facsimile to 601-323-6551; or by email to techinfo@mfjenterprises.com. Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.