

CL9 Service Center

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Instructions accompanying floppy disk for use with a CORE UC-100 Universal Remote Control, an IBM PC, PC/XT, or PC/AT Computer and a CS-232 Serial Interface.

These instructions are for:

1. downloading CORE Operating Code
2. uploading CORE Key Definitions from CORE to computer disk
3. downloading CORE Key Definitions from computer disk to CORE
4. using the CORE Key Definition Dump Interpreter.

The disk is formatted for an IBM PC, PC/XT, or PC/AT computer. CORE Operating code is downloaded at 19200 baud. All references in these instructions to 'computer' are references to the IBM PC.

All code was built with either MicroSoft C Version 5.10 or MicroSoft Assembler Version 5.00 and has been tested on IBM PC, PC/XT, PC/AT, and Zenith 286 Machines. It should function properly on all IBM PC's and Clones.

PLEASE READ ALL INSTRUCTIONS THOROUGHLY BEFORE STARTING ANY OF THE PROCEDURES.

If you have any questions or comments please call or write to the address above. We would like to hear from CORE users who have developed other software applications for CORE using the CS-232 Serial Interface. This IBM PC version of the CORE procedures was developed by a CORE user.

DISK CONTENTS

This information can also be found on the floppy disk in the file **Read.me**.

Files on this disk:


CORED1.EXE	- CORE Dump Interpreter - this program reads the memory image written by UPLOAD or OUPLOAD and provides a formatted dump of the information. It is provided for experimentation only.
OUPLOAD.EXE	- OLD UPLOAD - this program uploads CORE key definitions to a file using the old CORE-TEST (b-reset) protocol.
DOWNLOAD.EXE	- DOWNLOAD - this program downloads CORE key definitions from a file using the CSUI protocol.
UPLOAD.EXE	- UPLOAD - this program uploads CORE key definitions to a file using the CSUI protocol.
CORELOAD.EXE	- CORE LOADER - this program reloads the CORE operating system from a file.
CORED1.C	- C source code for CORED1.EXE
OUPLOAD.C	- C source code for OUPLOAD.EXE
DOWNLOAD.C	- C source code for DOWNLOAD.EXE
UPLOAD.C	- C source code for UPLOAD.EXE
CORELOAD.C	- C source code for CORELOAD.EXE
AH.ASM	- Assembly Language support routines used by UPLOAD, DOWNLOAD, OUPLOAD, and CORELOAD.
MAKEFILE	- Makefile for building the above utilities.
CORE41.OS	- CORE 4.1 OS modules for loading with CORELOAD.
ORIGKEY.DTA	- Factory default key definitions for CORE.

Downloading CORE Operating Code.





1. Use the following command line:



```
coreload [-options] core41.os
```

NOTE: The file "core41.os" contains the operating code to be loaded.

2. A prompt will appear on the display asking you to perform a d-reset. To do this, hold down the -key on CORE while poking a paper clip in the reset hole (located at the bottom of the programming keys). A d-reset destroys a specific location in CORE memory which must be destroyed before downloading Operating Code.

3. After performing a d-reset, press any key on the IBM PC (the space bar for example) to begin the downloading process. (The computer will prompt you to do this as part of the same message for a d-reset.) A row of dots will be written across the display as the downloading process takes place.

4. After the download procedure is complete the display of the CORE will show the word "Clear?". At this point you have several options. If CORE gave you six (6) reject tones as it came up with the word "Clear?" you must now press the  key on CORE. (NOTE: These tones are rather rapid and, though they always repeat in the same format, may be difficult to count. It is safe to assume that you should proceed as indicated in the preceding instructions.) The six (6) tones indicates that there is garbage in the key definition memory. Pressing the  key when prompted with 'Clear?' will erase all the garbage in the key definition memory. If you did not hear six reject tones when the 'Clear?' prompt appeared, you can either press  to clear the key definition memory of the unit OR you can press any other key on CORE ( for example) to save what is already contained in the CORE key definition memory. (What was in the memory just before downloading.)

NOTE: Once you press  (and only the  key) when the prompt 'Clear?' appears, all key definition memory will be erased. Any other key pressed on the CORE will cancel the complete memory erase. CORE Operating Code is not affected by either choice.

PROCEDURE FOR DOWNLOADING CORE OPERATING CODE.

Summary.

This procedure allows you to download CORE Operating Code version 4.1 into a CORE. The CORE you are downloading to does not have to be functioning at the time of download (CORE could be locked up in code, i.e. a display will come on with a reset but the unit does not function). Before you proceed further to download Operating Code make sure the CORE has fresh batteries.

Initial preparations.

1. Start up the computer using your standard DOS boot procedure. A prompt will come up on the computer screen.
2. Remove the master module from your CORE. To remove the Master Module, turn the CORE over and grab onto the ridges on the sides of the Module. Slide and/or wiggle the Module forward and then up.
3. Connect CORE to the serial port (you can use either communication port 1, COM1, or communication port 2, COM2) of the computer using the CS-232 Serial Interface.
4. Remove the programming key door from the CORE. To remove the programming key door, slide it down until it locks open. Put your finger under the programming door and push up while sliding the door completely off. This keeps the small tabs which lock the programming door open from breaking off. Removing the programming key door will expose two switches labeled JA and JB. Switch JA is located on the left and is the write-protect for the CORE Operating Code stored in RAM. (Note: JB, the switch on the right, is the lithium battery connect. If JB is not connected, the lithium battery, stored inside the unit, will not back up Operating Code or Key definitions when the four AAA batteries are removed.)
5. Disconnect JA. On some CORE units a small jumper wire will need to be cut. On other units there is an actual switch (the left position for the switch is the disconnect (or not write-protected position).

NOTE: Connection JA is only used for downloading OPERATING CODE and NOT for Downloading Key Definitions (See Downloading Key Definitions).

All the above code was built with either MicroSoft C Version 5.10 or MicroSoft Assembler Version 5.00 and has been tested on IBM PC, PC/XT, PC/AT, and Zenith 286 Machines. It should function properly on all IBM PC's and Clones.

A Brief Summary Of Instructions For Using CORE Utilities

All utilities support access through either COM1 or COM2 and at either 9600 baud or 19200 baud. **(NOTE: CORELOAD ONLY SUPPORTS 19200 BAUD)** Selection of this option is done via command line parameters. The general format for a command line is as follows:

command [-options] filename

where options are

-1	to select COM1
-2	to select COM2
-l (small L)	to select Low Speed (9600 baud)
-h	to select High Speed (19200 baud)

Some examples are:

upload -1 -l junk	-this would upload CORE key definitions to the file "junk" via COM1 at 9600 baud from CORE.
download -2 -h junk	- this would download CORE key definitions from the file "junk" via COM2 at 19200 baud to CORE.

All utilities provide help if you execute them without parameters.

5. Before going any further you need to check the software to make sure the download was successful. To do this you press the right arrow key, located on CORE, twice (→, the programming key on the middle row on the right side). The first time the CORE should buzz at you, and with the second press some numbers and letters should appear on the status line. There should be four digits on the left, and these should read: "74F9". This is the checksum for the software you just downloaded. This checksum is the last four digits of a summation of the Operating Code running in the unit. This checksum matches up with the two numbers on the right, "41". 4.1 is the version of software now running in the unit. Each version of software has a different checksum. If the checksum on the unit does not show 74F9 then follow the steps above to download the unit again. You will notice (maybe accidentally) that if you press the right arrow key a third time, all the segments on the display are activated. This is a test to make sure all the segments are operating properly. If you press the right arrow key again (a fourth time), the display will go off. These presses of the right arrow key are looped. If you miss the checksum the first time, just keep pressing the right arrow key until they appear again.

6. To write protect the Operating Code you must re-connect jumper JA (the jumper on the left) . If there is a switch, simply slide it to the right. If you do not have a switch you will need to solder the connection. Make sure the display is off when you do this (Press the right arrow key four (4) times if the display is on.)

7. Replace the programming door (gently), disconnect the CORE from the serial interface and replace the Master Module.

PROCEDURE FOR UPLOADING KEY DEFINITIONS FROM CORE TO DISK.

Summary.

This procedure allows you to copy the key definition memory of the CORE onto computer disk. This can be used as a backup of your IR codes and programs. The CORE must be functioning properly before uploading the key definitions. The key definitions uploaded are for the entire user memory of CORE. This procedure does not upload single key locations. Please note the difference between the two upload utilities.

Uploading Key Definitions (Using OUPLOAD.EXE).

SPECIAL NOTE FOR OUPLOAD.EXE

OUPLOAD.EXE uses an older CORE-TEST protocol that requires b-reset to initiate. The utility UPLOAD.EXE is used the same way but uses the newer CSUI protocol that does not require the b-reset. The data is the same in both cases and either file can be used by DOWNLOAD and COREDI.

1. Remove the master module and connect the CORE to the serial port using the Serial Interface.
2. Perform a 1-reset on the CORE (Hold the ☐ key down while poking a paper clip into the reset hole). This sets the baud rate to 19200.
3. Use the following command line:

oupload [-options] filename <return>

4. The program will prompt you to perform a b-reset. Hold the ☐ key down on CORE while pressing the reset hole with a paper clip. After doing this the display of CORE should read "Coretest." Once this is on the CORE display, press any key on the computer (the space bar for example).
5. It may take a minute for the program to upload. It reads the information in CORE first, and then writes it to the disk. If after a minute or so you don't see or hear the disk being written to and the nothing seems to be happening, start the procedure again at step 3. (Make sure you have reset the CORE to

Using the CORE Key Definition Dump Interpreter.

This program provides a formatted "dump" of the Infrared Data from CORE memory. The dump can be either printed or graphed.

The input file to be used in this procedure is produced by using the CORE utility programs UPLOAD or OUPLOAD. Either of these programs creates a file of CORE user memory. The file created by either UPLOAD or OUPLOAD will contain both IR data and programs created by the user (Macros).

CORED1 (CORE Dump Interpreter) is called as follows:

```
coredi [-options] ifile [ofile]
```

[-options] are:

- I Dump IR data words in hex format
- B Dump bin data in hex format
- Px Select key definitions on Page x only
- Kx Select key x definitions only
- G Draw graph of IR code
- X Dump graph x,y information to report file

If the "G" option is selected, the graphics output will be to the screen regardless of the "ofile" (output file) specification. After the printed dump information is produced, the user will be prompted to enter "CR" to plot the entire graph (automatically scaled) or "z" to enter zoom mode and produce only a portion of the graph. With the graph on the screen, entering a "CR" will continue COREDI on to the next key, entering "z" will enter zoom mode on the current key, and any other key will replot the current key graph.

If you have any questions or comments please call or write to the address on the front page. We would like to hear from CORE users who have developed other software applications. This IBM PC version of the CORE procedures was developed by a CORE user.

PROCEDURE FOR DOWNLOADING KEY DEFINITIONS FROM DISK TO CORE.

Summary.

This procedure will allow you to take any file of key definitions previously stored on disk and copy them from the computer to the CORE. The key definitions downloaded are for the entire user memory of CORE. This procedure does not download single locations.

Downloading Key Definitions.

1. Remove the Master Module and connect the CORE to the serial port using the CS-232 Serial Interface.

2. Wake up the CORE and move to location 0-0 (Page 0 Key 0) by pressing



3 Use the following command line:

`download [-options] filename`

NOTE: "FILENAME" is the name of the file which contains CORE key definitions.

A row of dots will appear on the display as the key definition file is being downloaded into CORE.

4. Remove the CORE from the CS-232 Serial Interface and replace the master module.

the same Baud rate you have indicated in step 3, i.e. 9-reset for 9600 baud or 1-reset for 19200 baud.)

6. Once the file containing the key definitions has been saved the prompt (I) will reappear on the IBM PC display.

7. Type: "DIR <return>" on the computer to view the directory of the disk. Your file should be save as "FILENAME" (In our example the file would be "FILENAME").

Uploading Key Definitions (Using UPLOAD.EXE).

1. Remove the master module and connect the CORE to the serial port using the Serial Interface.

2. Perform a 1-reset on the CORE (Hold the ☐ key down while poking a paper clip into the reset hole). This sets the baud rate to 19200.

3. Use the following command line:

upload [-options] filename <return>

4. It may take a minute for the program to upload. It reads the information in CORE first, and then writes it to the disk. If after a minute or so you don't see or hear the disk being written to and the program seems to hang, press control-reset and start again at step 3. (make sure you do a 1-reset to set the baud rate to 19200)

5. Once the file containing the key definitions has been saved the prompt (I) will reappear on the IBM PC display.

6. Type: "DIR" on the computer to view the directory of the disk. Your file should be save as "FILENAME" (This is the name we used in our example).

COREEDIT

This program is provided for CORE users who wish to have more ability to modify captured Infrared codes. Included is a description of the structure of Infrared codes as well as how CORE stores these codes. This program is formatted for the IBM-PC and compatible. It should be noted that the program contained on this disk was written by a CORE user.

This program edits the values in CORE memory. The present value is displayed for each parameter. Entering a "CR" will retain the current value. If a new value is entered, it will replace the previous value.

COREEDIT is called as follows:

```
coreedit [-options] ifile [ofile]
```

[options] are:

- Px Select key definitions on Page x only
- Kx Select key x definitions only
- G Draw graph of IR code

If an output file (ofile) is specified, the output will be written to that file. Otherwise, the edited information will be written back over the input (ifile). The "G" option is the same as provided by COREDI.