UVIPROM 16/32

EPROM PROGRAMMER FOR THE BBC MICROCOMPUTER

Manufactured in England by GROUND CONTROL ELECTRONICS LIMITED

OPERATING INSTRUCTIONS

****** WARNING ******

PLEASE READ ALL THE INSTRUCTIONS BEFORE CONNECTING THE UVIPROM

1.1   PERMANENT DAMAGE TO EPROMS CAN BE CAUSED BY FAILURE TO READ
       AND UNDERSTAND THE INSTRUCTIONS. WE WILL NOT ACCEPT ANY
       LIABILITY FOR CONSEQUENTIAL DAMAGE CAUSED TO EPROMS   OR
       EQUIPMENT BY MISUSE OF THE UVIPROM OR WRONG INSERTION OF
       EPROMS INTO THE UVIPROM. NOTE THAT A PROGRAMMING VOLTAGE
       (Vpp) OF 21 OR 12.5 VOLTS IS AVAILABLE AND SHOULD BE
       CORRECTLY SELECTED FOR THE TYPE OF EPROM IN USE. THE EPROM
       TYPE SWITCH SETTINGS SHOULD ALWAYS BE MADE BEFORE INSERTING
       AN EPROM (EXCEPT NO.3).

1.2   The UVIPROM is connected to the BBC computer user port by the
       20-way socket on the ribbon cable. Ensure that the power to
       the computer is off and plug the UVIPROM 20 way socket into
       the 20 way latching header under the BBC. Plug the UVP 1.1
       ROM into the required priority Sideways ROM socket, ensuring
       correct orientation, then power up the computer.

       ** INCORRECT INSERTION WILL ENSURE EPROM DESTRUCTION **

1.3   The   UVIPROM   architecture   has   been   chosen to ensure
       compatibility with all models of BBC microcomputer, from the
       Model A + VIA, right up to the Master. This is the reason
       that the method of switching 27256 EPROMs in 16k banks was
       chosen, as the lower memory capacity models would not be able
       to hold a 32k file in the buffer. The UVIPROM will not work
       with the Electron or at present with the Master Compact.

2.1   The   first step with the UVIPROM connected to the BBC computer
       is to familiarise yourself with the operation of the
       switches, labelled Vcc and Vpp. The Vcc switch powers down
       the UVIPROM to enable an EPROM to be inserted or removed.
       Only switch Vpp ON when an EPROM is in the socket if you wish
       to program it.

2.2   You can try out the operation of the switches without an
        EPROM inserted in the socket. If you do a *READ with Vcc OFF
        then the computer will "hang". With Vpp ON you may notice a
        noise from the BBC loudspeaker, this is quite normal, caused
        by the Vpp generator in the UVIPROM. The Eprom type switch
        settings are shown below.

        EPROM Type   1.   2.   3.   4.

        27128   ON   OFF   OFF   OFF   (21 Volt Vpp)
        27128A   ON   OFF   OFF   ON   (12.5 Volt Vpp)
        27C128   ON   OFF   OFF   ON   (12.5 Volt Vpp)

        27256   OFF   ON   ON   ON   (UPPER 16K)
        27256   OFF   ON   OFF   ON   (LOWER 16K)

        Settings for 27256 assume 12.5 Volt Vpp. If 21 Volts required
        (unlikely) then change No.4 to OFF position. Settings for
        2764/2764A are the same as 27128/27128A.

3.1   We will describe, for the purpose of illustrating all the
        commands, how to program a blank 27128 EPROM from a master
        EPROM. In this case we will use the file name MASTER,
        although you can of course use any other file name that you
        like.

3.2   The first step is to set the DIP switch for the type of EPROM
        in use, in our example a 27128. Refer to the switch setting
        table and set the switches accordingly.

3.3   Note that if you already have your MASTER file saved to disk,
        then you can now go directly to paragraph 4.2.

3.4   With both Vcc and Vpp switched OFF place the master EPROM in
        the ·socket on the UVIPROM. Please ensure correct orientation
        of the Eprom. Pin 1 is at the notched end of the EPROM, and
        should be inserted into the corresponding hole of the ZIF
        socket which is marked by an arrow pointing to it.

        ** <u>INCORRECT INSERTION WILL ENSURE EPROM DESTRUCTION</u> **

3.5   Switch ON Vcc and read the EPROM onto disk by typing in the
        command:- *READ MASTER

3.6   The disk drive will run as the master EPROM is read onto disk
        under the filename MASTER, and also into memory locations
        &2000 >. Use the DFS *DUMP command to look at the data on
        disk, or to look at the data in memory type in:- *VIEW

4.1   Switch OFF Vcc and remove the master EPROM from the socket.

4.2   Ensuring that Vcc is off, insert a blank EPROM, once again
        ensuring correct orientation. Switch ON Vcc, press the BREAK
        key and type in the command:- *TEST

4.3　　This tests that the EPROM is actually blank. If the EPROM is blank you will see this message:-

OK

If the EPROM fails the test then the first location found not blank will be displayed.

4.4　　To program the blank EPROM with your MASTER file, type in the command:- *BLOW MASTER

4.5　　The disk will run as it loads in the file to memory and passes the file length to the UVP 1.1 program. If the file is longer than &4000 then it will not fit into the available 16k block and you will see the message:-

FILE LENGTH &...., TOO LONG.

5.1　　Otherwise the screen will display:-

File length= &...., do you wish to program this EPROM (Y/N)

5.2　　If the file length will fit the EPROM (i.e. less than &4000 long) then type in:- Y

The screen will clear and you will see displayed:-

Do you want it fast (Y/N)?-

5.3　　Answer as appropriate (But see Appendix 7.3)

The screen will clear and you will see displayed:-

Switch on Vpp then press <RET>

5.4　　Switch ON Vpp, press return and the programming sequence is started. A hex and ASCII dump of the data being programmed is displayed on the screen. When programming is finished you will hear a beep and see the message:-

Programming terminated
Switch off Vpp then press <RET>

The cursor will "hang" until Vpp is switched off. Be sure to switch OFF Vpp before pressing the RETURN key.

6.1　　When this has been done the data programmed into the EPROM can be compared to the source by typing in the command:-

*COMP MASTER

The display should all be in green, any bytes which are not programmed correctly will be in red with a summary of any mismatches at the end. If all the bytes are programmed then the new EPROM with your MASTER file on it is ready for use.

6.2   If there are mismatches, possible causes are:- Vpp not switched ON, Vcc not ON before para 5.4 operation, incorrect file on disk being compared, faulty file on disk, protected file, wrong page selected, or faulty/not erased EPROM.

6.3   You will now have used all of the UVP 1.1 commands available and, by reference to the switch setting table on page 2, be able to repeat the foregoing operations using any other type of EPROM.

6.4   There is a summary of the commands available by typing in:-
       *HELP U

       The screen will clear and you will see the HELP screen displayed.

Appendix

7.1   An EPROM must be blank, i.e., all locations at FF, before it can be programmed.

7.2   A file name should always be specified when using *READ, *BLOW & *COMP.

7.3   The fast algorithm may not be available on versions of the program not supplied by us. The fast mode of programming is mainly intended for development work as the long term integrity of the data has not been proven using this method. For final versions of an EPROM use the standard 50mS method by answering NO when asked if you want it fast.

7.4   Note that EPROMs intended to run as Sideways ROMs in the BBC must be saved to disk in the appropriate format, i.e., with a ROM Filing System header, (not supplied) or they will not work. Various RFS routines have been published in magazines.

7.5   PLEASE CHECK MANUFACTURERS DATA IF YOU ARE UNSURE ABOUT Vpp REQUIREMENTS, BEFORE PROGRAMMING.

7.6   Vcc signifies the normal 5 Volt rail on the printed circuit board. Vpp signifies the programming voltage applied to the EPROM. ZIF socket is the Zero Insertion Force socket fitted to the UVIPROM that holds the EPROM.