

SAMPLER TAPE FOR THE COMPUKIT UK101

The tape supplied comes with an extended monitor on one side and two games on the other side. The two games are called:—

1. NEW YORK TAXI
2. HECTIC

To load the games, go into BASIC and type LOAD. After the game has loaded in type RUN to execute the program. Instructions on how to play the game are contained within the program.

EXTENDED MONITOR FOR THE COMPUKIT UK101

The extended monitor enables you to write machine code programs and debug them very efficiently providing such features as setting breakpoints and displaying register contents.

To load the program hit both RESET keys and go into the monitor by typing M.

Use the Monitor load command by typing L and start your cassette. This will load a checksum loader. You will notice the numbers in the middle of the machine flickering; this is the program loading into the machine. After the loader has been entered it will automatically execute and start loading the extended monitor; this is signified by numbers being entered from the bottom of the screen. When complete, the program automatically executes again and will leave a colon in the bottom left corner of the screen followed by the cursor. The machine is now ready to accept your commands which are listed below.

MEMORY DISPLAY AND MODIFICATION

@NNNN	Opens location NNNN. The COMPUKIT responds with "/CC" where CC is the contents of that location. CC may be changed by typing another 8 Bit Byte in Hex e.g. DD.
(CR)	Exits from this mode and closes current location.
(LF)	Increments to next location.
(↑)	Decrements to previous location.
(")	Prints ASCII or graphic character at that location.
DXXXX,YYYY	Dumps memory block from XXXX to YYYY (XXXX & YYYY are both 16 Bit addresses)
FXXXX,YYYY = DD	Fills memory from XXXX to YYYY — 1 with DD.
MZZZ = XXXX,YYYY	Moves block of memory between XXXX and YYYY to a block starting at ZZZZ.
RZZZ = XXXX,YYYY	Relocates rather than moves — same format as above.
QNNNN	Dissassembles block of 13 lines and pauses (LF) continues for another 13 lines, (CR) exits this mode. Non-executable codes are printed as ???.
N HEX > XXXX,YYYY	Searches for Hex String between XXXX and YYYY; if found goes to open mode at first occurrence of first Byte of Hex String. Hex may be up to 8 Bytes.
WASCII > XXXX,YYYY	Same as N but searches for ASCII String instead of Hex String. ASCII String can be up to 8 Bytes long.
HNNNN, XXXX (OP) = YYYY	Hex calculator — The operation (OP) which can be +, -, *, / is performed on NNNN and XXXX to produce an answer YYYY.
0	Prints overflow/remainder from Hex calculator.

ZYYYY

Some .1 capacitors are specified in the manual as being supplied in mylar, but in some kits are supplied as disc ceramics; these should be used in place of the mylar capacitors. The manual states that 68pf, 47pf and 22pf capacitors are supplied; these are not critical values and the nearest values supplied should be used. One of the keyswitches supplied has a stronger spring in it than the rest; this switch is for the space bar so before inserting keyswitches check each one first to determine which is the special switch for the space bar.
Component change: R67: 27k changed to 56k. C48: .22 changed to .1

BREAKPOINTS

BN,XXXX	Installs breakpoint N at location XXXX. N can be from 1 to 8.
EN	Eliminates breakpoint N.
T	Prints table of breakpoint addresses.
C	Continue from last breakpoint (if and only if stopped by a breakpoint)
I	Prints address the machine last entered by a breakpoint. Also prints contents of registers and stack pointer.
A X Y P K	These five print contents of accumulator X REG; Y REG; status and stack pointer respectively. Open mode is entered and contents of any of these may be changed before program is continued.

AUDIO CASSETTE COMMANDS

S	Turns on save flag as in BASIC; all output then goes to cassette and screen.
L	Loads data in checksum format (same as KIM1) if error detected will display ERR. Stop tape; rewind and press G to restart.
SXXX,YYYY	Saves in checksum format from XXXX to YYYY. Format is; LEN; ADD; DATA; CHKSUM; where — LEN is the length of the block; ADD is the start address of the block; DATA is the data in the block; CHKSUM is the checksum of the block.
V	This allows you to view the contents of a cassette without actually loading it into memory.
GXXXX	This transfers control to location XXXX.

The extended monitor uses 2K of RAM from 0800 to 0FFF plus 48 locations in page zero locations 00D0 to 00FF and also a checksum loader from 0700 to 07EF.

For complete initialisation enter at 0800 but to bypass this enter at 081F.

There are 3 spare letters — J, U and Z.

For extra user routines these functions have call addresses as follows:—

J = 0974

U = 098A

Z = 0994

Functions must end by RTS.

e.g. to call a routine at 0400 with "U" :—

LOAD 098A with 00

LOAD 098B with 04

NOTES

Most prompting of ",," AND "=" is automatically produced by the monitor.

">" WITH N or W is not automatically prompted.

So there you have the extended monitor for the COMPUKIT UK101 which we hope will assist those of you that have the desire to program in 6502 machine code.

Should any fellow programmers come up with system programs that you have written, like an assembler for instance or any other useful programs we would be interested to hear about them.

Best Wishes and Happy Programming,
ANDY FISHER — Software Consultant.