

**CEDRIC**

**A SCREEN-ORIENTED EDITOR FOR FLEX**

**VERSION 2.1**

**CALCULUS CONSULTANCY**

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**CEDRIC VERSION 2.1**  
**By M.J.RANDALL**  
**Adapted to EurocomII/V7**

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## **INTRODUCTION**

CEDRIC is a screen-oriented text editor specifically designed for software development, rather than word-processing. That is not to say however that CEDRIC cannot be used to prepare text - this manual was written using CEDRIC together with the text processor JUST. CEDRIC runs under the FLEX operating system on a 6809-based micro-computer. The user may verify for himself that the design goals of speed and flexibility have been met.

Speed has been achieved in three ways. The program has been written in assembly language - it occupies only 23 sectors on disc so it loads quickly. Text is kept memory resident and is efficiently stored - for example the editor source program (35 pages of well-documented code, taking 112 sectors on disc) leaves 14400 bytes free in the text when memory to \$BFFF is available; the text buffer holds about 165 sectors altogether. Once an editing operation (most require only a single keystroke) is complete internally, the screen "repainting" is aborted if another operation is pending; thus avoiding continual "repainting" delays.

Flexibility is achieved through the comprehensive selection of single-keystroke editing operations and the menu commands; together with a configuration overlay feature that allows the program to be easily configured to the particular terminal.

CEDRIC is a single-mode editor. Printable ASCII characters entered from the keyboard are inserted in the text at the cursor position. Certain control or "meta" characters defined at configuration cause appropriate editing operations to occur. Text can at any time be inserted at the cursor position from selected disc files. Part or all of the text can be saved to disc with a freely selected file name. Part of the text may be "cut" and is stored in a "paste buffer" from where it can be re-inserted at any place (or even several places). Search target and replacement words can be defined (a "word" being any printable string not including a space).

The text is to be seen displayed as through a window whose width and length is determined on configuration. The width is (at most) the number of characters displayable per line, while the length is (at most) one less than the number of lines displayable on the terminal. The bottom line is reserved for certain status information:- (i) A decimal count of the free space available in the text buffer. (ii)

The current search target word. (iii) The current replacement word. (But only if the screen width is greater than 60 characters).

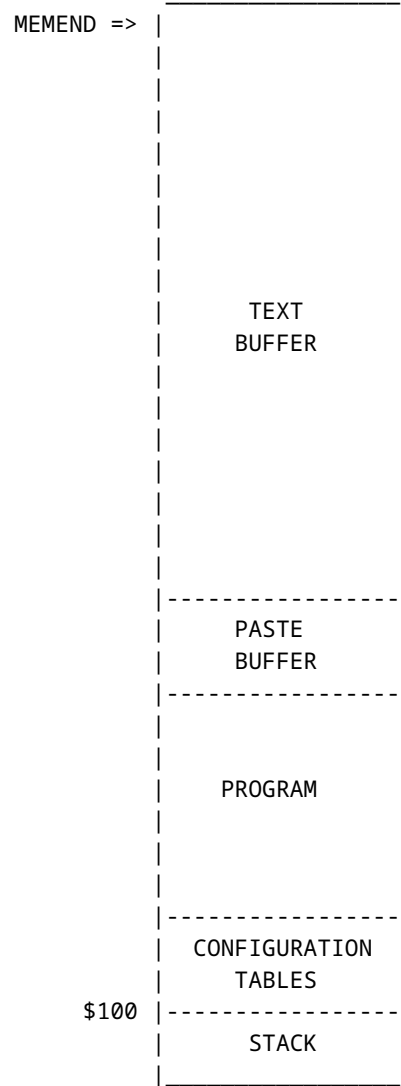
There is no restriction (apart from available memory!) on the length of lines. If a line longer than the width of the screen is within the window, moving the cursor right along the line will eventually cause the display window to move to the right past the beginning of the line. Characters will disappear to the left of the window as more appear at the right.

Searches can be performed forwards or backwards in the text. Replacement can take place either word by word or globally.

A very useful decimal counter function is available. The counter can be set to zero, incremented, or inserted in the text, each with a single keystroke.

A "macro" feature is available whereby a sequence of up to 40 keystrokes (including most of the editing operations) may be defined as a macro and be recalled at any time by a single keystroke. This allows a complicated editing sequence to be easily repeated. In addition most single-key operators can be repeated automatically a chosen number of times. Two "permanent" macros can be defined at configuration.

# RUN-TIME MEMORY MAP



## CALLING CEDRIC

The version of the editor on the distribution disc is named "CED.CMD". First read the section on configuration of CEDRIC to check whether this version suits your terminal. If not, edit "CED-CNFG.TXT" according to the instructions within it. After assembling this file append the .BIN file to "CED.CMD" to form a re-configured version. We will assume this is copied to your system disc and named "CED.CMD".

To run CEDRIC type "CED" following the FLEX prompt (+++). The MENU should be displayed:-

SCREEN EDITOR (C) M.J.RANDALL 1985

T--TOP	I--INPUT	Y--REPLACE WORD
B--BOTTOM	W--WRITE	C--COPY PART
P--REPLACEMENT	!--ERASE ALL	X--EXIT TO FLEX
M--SEARCH TARGET	V--VIEW TEXT	L--LOOK AT TABS
N--NEW TABS	R--REPEAT	S--START MACRO
E--END MACRO	U--PAGE UP	D--PAGE DOWN
tab-TO NEXT WORD		

An input text file may be specified on the command line if desired, in which case the file is loaded and displayed instead of the menu. The menu can be displayed at any time by typing the <MU> key [ESC] twice. Commands are performed by typing one of the option keys listed. Once you are familiar with the menu, commands may be performed without displaying it by typing just one <MU> followed by the appropriate option key.

## MENU COMMANDS

T--TOP The cursor is moved to the top of the text and the text, if any, will be seen through a window at the top left of the text.

B--BOTTOM The cursor is moved to the end of the bottom line of the text, if any.

I--INPUT The name of a text file will be requested. Type the name of an existing file (the default extension is .TXT and the default drive is the current working drive) followed by a carriage return (CR). The contents of the file will be inserted at the cursor position. Control characters other than CR will be ignored. The FLEX space compression convention for text files is observed. If you wish to abort the command type "#" instead of the filename. This also applies to W--WRITE and C--COPY.

W--WRITE The name of a text file will be requested. The original input file name will be displayed, if you wish use the same name just type "=" followed by a carriage return. If a file of the same name and extension already exists on that drive it will be renamed with the extension .BAK (an existing .BAK file will in this case be deleted first). The whole text will be written to a new file of the selected name, with FLEX space compression.

C--COPY PART The marked text will be stored as a disc file but retained in the text. The name of the file will be requested as for W--WRITE.

!--ERASE ALL The whole text will be erased, freeing the text buffer. You can now edit another file without re-loading the editor. Any contents of the paste buffer and the macro buffer will be preserved, as will the target and replacement word.

M--SEARCH TARGET You will be asked to define a target word. Spaces and control characters will be ignored but backspace will be honoured as in FLEX. A carriage return terminates the definition. Up to 20 characters are allowed in the target.

P--REPLACEMENT You will be asked to define a replacement word as in M--SEARCH TARGET.

Y--REPLACE WORD Assumes you are at the target word, which is replaced by the replacement word. (See also <SR> and <GR>.)

X--EXIT TO FLEX Returns to FLEX. In case you have forgotten to save any wanted text you will be asked if you are sure. Type "Y" to return to FLEX. All text in memory will be lost.

tab-TO NEXT WORD The cursor goes to the beginning of the next word.

D--PAGE DOWN The display window moves forward one screen.

U--PAGE UP The display window moves back one screen.

S--START MACRO Starts the definition of a "macro". Subsequent key-strokes are remembered in a 40-character MACRO BUFFER until the command <MU>E is encountered. The command itself does not affect the text, but the following keys perform their normal function as they are being entered

in the macro buffer. It is as if the editor is "learning" as it goes.

E--END MACRO Ends the macro sequence definition, but does not affect the text.

R--REPEAT COMMAND A (decimal) repeat count will be asked for. Type a number followed by a carriage return. The command to be repeated will be requested. Type the desired operation key. The <MU> key is invalid and will be ignored.

L--LOOK AT TABS The tab positions will be displayed on the status line.

N--NEW TABS You will be prompted to define a new set of tab positions (up to 5).

V--VIEW TEXT Repaints the screen. This is useful to force a repaint without displaying the menu. Because screen updating can be aborted by new keyboard input it is possible for the screen to "lie" if the last operation did not completely repaint it. If you are suspicious <MU>V will force a complete repaint.

Any other character typed will return the text display.

### **SINGLE-KEY OPERATIONS**

As the actual control character corresponding to a given operation can be re-defined by the user by re-configuring the editor to suit his own preferences or to take advantage of a key-pad, function keys etc, we will refer to the operators with the notation <..> and provide the distributed control character thus:- [^L] (for control L) or [1C] (the ascii code in hexadecimal).

#### **(i) CURSOR MOVEMENT OPERATIONS**

<CB> [Arrow left] CURSOR BACK The cursor goes back one position. If it is at the beginning of a line it goes to the end of the previous line.

<CF> [Arrow right] CURSOR FORWARD The cursor goes forward one position. If at the end of the line it has the effect of inserting a space - the cursor moves into the white space at the end of a line.

- <CU> [Arrow up] CURSOR UP The cursor moves up one line. If at the top line already the screen scrolls down by half a screen if possible so that the cursor line is centred.
- <CD> [Arrow down] CURSOR DOWN The cursor moves down one line. If already at the bottom line the screen scrolls up by half a screen if possible so that the cursor line is centred.
- <LB> [Home] LINE BACK The cursor goes back to the beginning of the line. If already at the beginning it goes back to the beginning of the previous line.
- <LF> [End] LINE FORWARD The cursor goes forward to the beginning of the next line.
- <LE> [^J] LINE END The cursor goes forward to the end of the line. If already at the end it goes to the end of the next line. (^J is usually available as the "linefeed" key.)

#### (ii) ERASE OPERATIONS

- <EC> [^E] ERASE CHARACTER The character under the cursor is erased from the text.
- <EW> [^W] ERASE WORD Erases from the cursor to the end of the word.
- <EL> [^X] ERASE LINE Erases from the cursor to the end of the line.
- <DL> [^H] DELETE LEFT The character to the left of the cursor is deleted from the text.

#### (iii) SEARCH OPERATIONS

- <SF> [^F] SEARCH FORWARD As for search back but searches right (forward) for the target word. If the target is not found the cursor will be at the end of the text.
- <SB> [^B] SEARCH BACK The text will be searched to the left (back) for the next occurrence of the target word, and the window centered there with the cursor on its first character. If the target is not found the cursor will be at the beginning of the text.



<SR> [^N] SEARCH+REPLACE Searches forward (right) for the next occurrence of the target word and replaces it with the replacement word.

<GR> [^A] GLOBAL REPLACE Repeats <SR> until the end of the text is reached.

#### (iv) COUNTER OPERATIONS

<ZC> [^Z] ZERO COUNTER Sets the decimal counter to zero "0". The text is not affected.

<IC> [^V] INCREMENT COUNTER Adds one to the decimal counter. The text is not affected.

<PC> [^Q] PUT COUNTER Inserts the current value of the decimal counter at the cursor position. Leading zeroes are suppressed. When the counter is zero a single "0" is inserted.

#### (v) MACRO OPERATIONS

<PM> [^K] PERFORM MACRO Causes the defined macro sequence to be performed as though you had entered the key-strokes individually. Certain keys are invalid (for fairly obvious reasons) - <PM> and <MU>. You will be given the opportunity to either abort the rest of the macro or continue, with the illegal operation ignored.

<M1> [^T] MACRO 1 is called.

<M2> [^G] MACRO 2 is called. These "permanent" macros may be defined by the user on configuration - see the CED.CNFG listing.

#### (vi) OTHER OPERATIONS

<TB> [^I] TAB Spaces will be inserted to bring the cursor to the next tab position. If past the last tab a single space will be inserted.

<PH> [^R] POINT HERE The present cursor position will be remembered. Subsequent movement of the cursor to the right (forward) will cause the text between the present position and the subsequent position to be "marked" (by displaying it in reverse video if the terminal permits). Subsequent movement of the cursor to the left (back) of the present position will cancel the MARK function. Marking is used to define text to

be copied to disc or cut to the paste buffer.

- <CT> [^Y] CUT TEXT The marked text will be cut from the text and saved in the paste buffer. If the marked text is too long for the paste buffer you will be so advised and asked if you want to erase it anyway.
- <PT> [^P] PASTE TEXT The contents of the paste buffer will be re-inserted in the text at the present cursor position.
- <CC> [^S] CHANGE CASE The case of the cursor character will be changed (lower => upper, upper => lower) and the cursor moved one place to the right (forward).
- <MU> [Esc] MENU Precedes a menu command. If <MU> is typed again the menu will be displayed. If a legal menu option is typed the appropriate function will be performed, otherwise the text will be re-displayed.

#### (vii) ORDINARY CHARACTERS

When an ordinary character is typed it will be entered in the text at the cursor position and the cursor and the characters following it on the line will be moved right. To speed text entry the screen is not completely repainted unless the window has been moved; this happens only at the right of very long lines.

## CONFIGURATION

The information CEDRIC needs to communicate correctly with the video terminal is contained in configuration tables located from \$100 to \$1CD. While this data can be altered by using a utility such as FIX, it is better to assemble a small overlay program and append it to the end of the distributed file CED.CMD. This will give the user complete documentation of his reconfigured version.

There follows an assembler listing of the file CED-CNFG.TXT which reproduces the configuration of CED.CMD as distributed. It contains comments that fully explain the purpose of each section of the configuration tables.

The single-key operators are best left as they are until the user is familiar with the operation of CEDRIC. Ascii control characters are used as they are generated by most keyboards. If your terminal has a separate keypad that generates either control characters or "meta" characters (\$81-\$FF) you may wish to change the operator assignments to take advantage of it and to achieve a logical layout of the operator keys.

The minimum complement of sendable characters and receivable video control strings needed for CEDRIC are:-

- (1) 29 control characters \$01..\$1F or \$81..\$FF that may be sent from the terminal. This number may be reduced by using special printable characters at the expense of their not being available for insertion in the text from the keyboard.
- (2) A direct-cursor-addressing control string that takes the form:- string, row (or column) byte, column (or row) byte.
- (3) A cursor-left string.
- (4) A cursor-up string.
- (5) A cursor-down string.
- (6) An erase-to-end-of-line string.
- (7) A TLHC-and-clear-screen string.

### STOP PRESS

See READ-ME.TXT for instructions on using the program CONFIGUR to configure CEDRIC easily!

```

TTL    CEDRIC CONFIGURATION FOR EUROCOM II
STTL   OVERLAY
OPT     PAG
PAG

```

CEDRIC CONFIGURATION FOR EUROCOM 12-27-23 TSC ASSEMBLER PAGE 1  
OVERLAY

```

*****
* CEDRIC CONFIGURATION OVERLAY
* FILE "CED-EURO.TXT"
* THIS EXAMPLE RE-PRODUCES THE CONFIGURATION
* AS ORIGINALLY DISTRIBUTED
* M.J.RANDALL 1985
*****
* TO RECONFIGURE CEDRIC ASSEMBLE CED-EURO.TXT
* "+++ASEMB CED-EURO CED-EURO.BIN"
* THEN APPEND IT TO CED.BIN:
* "+++APPEND CED.BIN,CED-EURO.BIN,CED.CMD"
* TRY "+++1.CED" TO MAKE SURE THAT IT WORKS
* IF IT DOES THEN COPY CED.CMD TO YOUR
* SYSTEM DISC. IF NOT YOU SHOULD RE-READ
* YOUR TERMINAL DOCUMENTATION AND CHECK
* YOUR VERSION OF CED-EURO. IF ALL ELSE FAILS
* GET IN TOUCH WITH THE AUTHOR
*****

```

0100                   ORG     \$0100

```

*****
*                   OPERATOR CHARACTER TABLE
*****

```

```

* ANY 8-BIT CHARACTER AVAILABLE FROM THE
* KEYBOARD CAN BE USED - ASCII CONTROL
* CHARACTERS ARE AVAILABLE ON MOST TERMINALS.
* IF A KEYPAD IS AVAILABLE THAT GENERATES
* SINGLE CONTROL OR "META" CHARACTERS, THESE
* CAN BE CONFIGURED TO MAKE THE LAYOUT
* CONVENIENT OR LOGICAL.
* MAKE SURE YOUR FLEX I/O ROUTINES DON'T
* STRIP PARITY IF USING "META" CHARACTERS
* (THEY HAVE BIT 7 MSB SET).
* ANY PRINTABLE CHARACTER COULD BE USED
* AS A COMMAND BUT THEN IT WOULD NOT BE
* AVAILABLE FOR INSERTION IN THE TEXT FROM
* THE KEYBOARD!

```

0100 F6	CF	FCB	\$F6	Arrow right
0101 F4	CB	FCB	\$F4	Arrow left
0102 F2	CD	FCB	\$F2	Arrow down
0103 F8	CU	FCB	\$F8	Arrow up
0104 F9	LF	FCB	\$F9	End
0105 F1	LB	FCB	\$F1	Home
0106 05	EC	FCB	\$05	^E
0107 18	EL	FCB	\$18	^X
0108 13	CC	FCB	\$13	^S
0109 1B	MU	FCB	\$1B	Esc

010A 08	DL	FCB	\$08	^H Backspace
010B 09	TB	FCB	\$09	^I Tab
010C 01	GR	FCB	\$01	^A
010D 17	EW	FCB	\$17	^W
010E 0E	SR	FCB	\$0E	^N
010F 10	PT	FCB	\$10	^P
0110 19	CT	FCB	\$19	^Y
0111 06	SF	FCB	\$06	^F
0112 02	SB	FCB	\$02	^B
0113 12	PH	FCB	\$12	^R
0114 1A	ZC	FCB	\$1A	^Z
0115 16	IC	FCB	\$16	^V
0116 11	PC	FCB	\$11	^Q
0117 14	M1	FCB	\$14	^T
0118 0B	PM	FCB	\$0B	^K
0119 07	M2	FCB	\$07	^G
011A 00		FCB	0	SPARE
011B 0A	LE	FCB	\$0A	^J Linefeed
011C 20	SPACE	FCB	\$20	
011D 0D	RETURN	FCB	\$0D	
011E 00 00		FCB	\$0,\$0	SPARE

\*\*\*\*\*

\* CONFIGURABLE "CONSTANTS"

\*\*\*\*\*

0120 0800	PASLEN	FDB	\$800	PASTE BUFFER LENGTH
0122 54	WIDTH	FCB	84	SCREEN WIDTH
0123 18	LINES	FCB	24	ONE LESS THAN DISPLAYABLE

\*\*\*\*\*

\* TERMINAL CONTROL SEQUENCES ETC

\*\*\*\*\*

\* IT IS ASSUMED THAT DIRECT CURSOR ADDRESSING

\* IS ACHIEVED BY SENDING A SEQUENCE OF BYTES

CEDRIC CONFIGURATION FOR EUROCOM 12-27-23 TSC ASSEMBLER PAGE 2  
OVERLAY

\* FOLLOWED BY TWO BYTES THAT SPECIFY THE ROW  
\* AND COLUMN IN ANY ORDER. ROW OR COLUMN MAY  
\* HAVE A CONSTANT OFFSET ADDED TO THE BYTE

0124 01	XFIRST	FCB	1	
	* THIS BYTE IS NON-ZERO IF THE Y (ROW)			
	* CO-ORDINATE IS SENT FIRST			

0125 20	CUROFS	FCB	\$20	
	* THIS IS THE OFFSET TO BE ADDED.			
	* CUROFS,CUROFS IS THE T.L.H.C.			

0126 00	LFFLG	FCB	0	
	* THIS BYTE IS ZERO IF THE TERMINAL AUTOMATICALLY			
	* PUTS THE NEXT CHARACTER AFTER THE LAST DISPLAYABLE			
	* ON A LINE AT THE BEGINNING OF THE NEXT LINE.			
	* THAT IS NO CR/LF IS NECESSARY.			

0127 01	RVFLG	FCB	1	
	* THIS BYTE IS ZERO IF THE TERMINAL DISPLAYS AN			
	* INCOMING CHARACTER WITH BIT 7 SET IN REVERSE			
	* VIDEO, BUT NON-ZERO IF REVERSE VIDEO NEEDS			

\* A CONTROL SEQUENCE

\* CONTROL SEQUENCES - THESE ARE TERMINATED BY 0

\* THUS A NULL (0) CANNOT BE INCLUDED IN A SEQUENCE

\* 8 BYTES MAXIMUM INCLUDING TERMINATOR

0128 1B 45 00 00	CURADD	FCB	\$1B,'E,0,0 CURSOR ADDRESS SEQUENCE, ESC, E
012C 00 00 00 00		FCB	0,0,0,0
0130 14 00 00 00	CURLFT	FCB	\$14,0,0,0 CURSOR LEFT, CTRL-T
0134 00 00 00 00		FCB	0,0,0,0
0138 1B 4B 00 00	ERALIN	FCB	\$1B,'K,0,0 ERASE TO END OF LINE
013C 00 00 00 00		FCB	0,0,0,0
0140 1C 0C 00 00	HOMERA	FCB	\$1C,\$0C,0,0 CURSOR TO T.L.H.C AND, CTRL-\, CTRL-L
0144 00 00 00 00		FCB	0,0,0,0 CLEAR SCREEN
0148 1C 00 00 00	HOMCUR	FCB	\$1C,0,0,0 CURSOR TO T.L.H.C., CTRL-\
014C 00 00 00 00		FCB	0,0,0,0
0150 1B 50 00 00	RV_ON	FCB	\$1B,'P,0,0 REVERSE VIDEO ON, ESC, P
0154 00 00 00 00		FCB	0,0,0,0
0158 1B 51 00 00	RV_OFF	FCB	\$1B,'Q,0,0 REVERSE VIDEO OFF, ESC, Q
015C 00 00 00 00		FCB	0,0,0,0
0160 11 00 00 00	CUR_UP	FCB	\$11,0,0,0 CURSOR UP, CTRL-Q
0164 00 00 00 00		FCB	0,0,0,0
0168 12 00 00 00	CUR_DN	FCB	\$12,0,0,0 CURSOR DOWN, CTRL-R
016C 00 00 00 00		FCB	0,0,0,0

0170 LAST EQU \* IT MUST BE \$0170

\*\*\*\*\*

\* ADVANCED CONFIGURATION

\*\*\*\*\*

\* PRE-CONFIGURED MACROS

0170 00	MACRO1	FCB	0 COUNT OF MACRO BYTES
0171 00 00 00 00		FCB	0,0,0,0,0,0,0,0,0 UP TO 40 CAN BE USED
0175 00 00 00 00			
0179 00 00			
017B 00 00 00 00		FCB	0,0,0,0,0,0,0,0,0,0
017F 00 00 00 00			
0183 00 00			
0185 00 00 00 00		FCB	0,0,0,0,0,0,0,0,0,0
0189 00 00 00 00			
018D 00 00			
018F 00 00 00 00		FCB	0,0,0,0,0,0,0,0,0,0
0193 00 00 00 00			
0197 00 00			
0199 00	MACRO2	FCB	0 COUNT OF MACRO BYTES
019A 00 00 00 00		FCB	0,0,0,0,0,0,0,0,0,0 UP TO 40 CAN BE USED
019E 00 00 00 00			
01A2 00 00			
01A4 00 00 00 00		FCB	0,0,0,0,0,0,0,0,0,0
01A8 00 00 00 00			
01AC 00 00			
01AE 00 00 00 00		FCB	0,0,0,0,0,0,0,0,0,0
01B2 00 00 00 00			
01B6 00 00			
01B8 00 00 00 00		FCB	0,0,0,0,0,0,0,0,0,0
01BC 00 00 00 00			
01C0 00 00			

\* DEFAULT TABS

```

01C2 0008 0010    TABS    FDB    8,16,24,32,40 5 AVAILABLE TAB POSITIONS
01C6 0018 0020
01CA 0028
01CC 0000                FDB    0            GUARD WORD

                                END

```

0 ERROR(S) DETECTED

SYMBOL TABLE:

CB	0101	CC	0108	CD	0102	CF	0100	CT	0110
CU	0103	CURADD	0128	CURLFT	0130	CUROFS	0125	CUR_DN	0168
CUR_UP	0160	DL	010A	EC	0106	EL	0107	ERALIN	0138
EW	010D	GR	010C	HOMCUR	0148	HOMERA	0140	IC	0115
LAST	0170	LB	0105	LE	011B	LF	0104	LFFLG	0126
LINES	0123	M1	0117	M2	0119	MACRO1	0170	MACRO2	0199
MU	0109	PASLEN	0120	PC	0116	PH	0113	PM	0118
PT	010F	RETURN	011D	RVFLG	0127	RV_OFF	0158	RV_ON	0150
SB	0112	SF	0111	SPACE	011C	SR	010E	TABS	01C2
TB	010B	WIDTH	0122	XFIRST	0124	ZC	0114		