

Store, Recall and Exchange Byte STOB, RCLB, X<>B

Dependencies : None , LEX @ 1229
 Routines Used : ERRNE @ 02E0 , BCDBIN @ 02E3 , GENNUM @ 05E8
 Input : RCLB - Byte address in M in ZENROM format
 STOB - As RCLB and value to be stored (0-255) in X
 X<>B - As RCLB and value to be exchanged (0-255) in X
 Output : All - Leave M unchanged
 STOB - None
 RCLB - Stack is lifted as necessary and byte placed in X
 X<>B - As RCLB but exchanged value placed in X
 Errors : NONEXISTENT indicates any of the following - byte value in X is out of range 0-255, byte position > 6 or register not available.

x270		082 B: 00F 0 014 T 013 S	
x274	STOB:	ST=0	; For STOB clear flag 0 and 1
x275	COM2:	READ 3(X) NC XQ BCDBIN ?C#0 XS JC+13 ERR R=0 C<>G	; X<>B comes in here and exits with RCLB ; Convert number from X into Binary ; Check its value is in range 0-255 ; If not then give error ; Put binary number in G
x27C	COMMON:	READ 5(M) A=C ALL RSHFA ALL RAM SLCT READ DATA A=C M C=C-1 M WRITE DATA READ DATA C=C-1 M WRITE DATA ?A#C M JC+04 ERR R=2 LD@R 7 ?A<C XS NC G0 ERRNE R=0 ?A#0 XS JNC+05 DONE A=A-1 XS R=R+1 R=R+1 JNC05 LOOP	; Get address into C[S&X] ; Put byte into A[XS] ; Get register and using standard technique ; check it exists ; Give error if register not there
	ERR:		; Check byte requested is in range 0-6 ; Give error "NONEXISTENT"
	LOOP:		; If byte is valid move pointer to ; correct byte position using ; value in A[XS]. When exits to ; DONE the byte is ready to be ; used via G.
	DONE:	READ DATA C<>G ?FSET 0 JC+12 CONT2 WRITE DATA RTN	; Get register contents ; Swap in the contents of G ; If flag 0 set pass back swapped out ; value to the user (RCLB & X<>B) ; Else (STOB only) write the updated ; register back and end

		082	B:		
		00C	L		
		003	C		
		012	R		
x29F	RCLB:	SETF	0		; RCLB requires no update of register
		CLRF	1		; But value to be passed back for user
		JNC-25	COMMON		; Otherwise jump to common code
		082	B		
		03E	>		
		03C	<		
		018	X		
x2A6	X<>B:	SETF	1		; X<>B requires update, stuff to be
		CLRF	11		; unchanged and value to be returned
		SETF	0		; to user
		JNC-34	COM2		; Starts off like STOB (gets value from X)
x2AA	CONT2:	?FSET	1		; Flag 1 indicates update of register
		JNC+02			; (for X<>B only)
		WRITE	DATA		
		R=0			; Get value swapped out of register
		C=G			; The next bit is as from BIN-BCD in
		A=C	S&X		; "M-code For Beginners"
		A=0	XS		
x2B1	BIN-BCD:	LDI	010		; Select nonexistent RAM chip
		RAM	SLCT		
		R=13			
		LDOR	4		; Max 4 digits
		A=C	MS		
		NC	XQ GENNUM		; Generate number
		A<>C	ALL		
		R=B			
		C=0	R<-		
		RAM	SLCT		
		R=0			
		LDOR	3		; Format number to normalised form
		LDOR	0		
		A<>C	ALL		
		?A#0	@R		
		JC+04			
		LSHFA	M		; Normalise for leading zeros
		A=A-1	S&X		
		JNC-04			
		A<>C	ALL		
		?C#0	M		; or whole word zero
		JC+02			
		C=0	ALL		
x2CA/B		NC	GO LEX		; Finally exit by putting C onto stack (in X)