	ADD	LABEL	B	MC	MN.	OPERAND(S)		OPCODE(S)		COM
R→	000		1	1	NOP			ØØ		
			1	1	NOP			ØØ		
			1	1	NOP			ØØ		
I→			1	1	NOP			ØØ		
			1	1	NOP			ØØ		
			1	1	NOP			ØØ		
			1	1	NOP			ØØ		
TI→			1	1	NOP			ØØ		Patch
			1	1	NOP			ØØ		
	009		1	1	CLR	A		27		Zero Acc
	A		1	1	SEL	RB1		D5		
	B		1	1	MOV	R5	A	AD		mode = ØØ
	ØØC	NEWMODE	2	2	ANL	A	Ø3	53	Ø3	mask mode
	E		1	1	MOV	R5	A	AD		
	F		1	1	SEL	RBØ		C5		
	1Ø		1	1	INC	A		17		
	1		1	1	MOV	R7	A	AF		mode +1 beeps: → count 2
	Ø12	BEEPTONE	2	2	MOV	RØ	1F	B8	1F	beep freq ~3100Hz
	4		2	2	MOV	R1	Ø2	B9	Ø2	for ~0.1 sec
	6		2	2	MOV	R5	ØØ	BD	ØØ	
	8		2	2	MOV	R6	ØA	BE	ØA	
	A		2	2	CALL	TONE		54	27	output beep
	C		2	2	MOV	R5	ØØ	BD	ØØ	~0.2sec rest.
	E		2	2	MOV	R6	ØA	BE	34	
	2Ø		2	2	CALL	WAIT		54	ØØ	output rest.
	2		2	2	DJNZ	R7	BEEPTONE	EF	12	
	Ø24	MAINLOOP	1	1	SEL	RB1		D5		
	5		2	2	JT1	NOMODE		56	2D	check mode button
	7		1	1	NOP			ØØ		Patch
	8		1	1	NOP			ØØ		
	9		1	1	MOV	A	R5	FD		

Ø2A		1	1	INC	A		17		mode = mode + 1
B		2	2	JMP	NEWMODE		Ø4	ØC	
Ø2D	NOMODE	2	2	CALL	SCANKEY		54	39	check keypad
F		2	2	JFØ	MAINLOOP		B6	24	no key → back to mainloop.
31		1	1	MOV	A	R5	FD		
2		2	2	JB1	REDBOX		32	66	if mode = 2 or 3, go to REDBOX
4		1	1	ORL	A	R6	4E		
5		1	1	MOV	R7	A	AF		
6		2	2	DJNZ	R7	L1	EF	3A	Jump over JMP if not 2600,
8		2	2	JMP	DO2600		Ø4	59	else goto DO2600
Ø3A	L1	1	1	INC	R7		1F		
B		1	1	MOV	A	R7	FF		
C		1	1	RR	A		77		table pointer:
D		1	1	RR	A		77		mode → 1 x key 0 0
E		2	2	ORL	A	8Ø	43	8Ø	
4Ø		1	1	MOV	R4	A	AC		get frac2 → RØ'
1		1	2	MOVP3			E3		
2		1	1	MOV	RØ	A	A8		
3		1	1	INC	R4		1C		Bump pointer
4		1	1	MOV	A	R4	FC		get int2 → R1'
5		1	2	MOVP3			E3		
6		1	1	MOV	R1	A	A9		
7		1	1	INC	R4		1C		Bump pointer
8		1	1	MOV	A	R4	FC		R4' → R4
9		1	1	SEL	RBØ		C5		
A		1	1	MOV	R4	A	AC		
B		1	2	MOVP3			E3		frac1 → RØ
C		1	1	MOV	RØ	A	A8		
5D		1	1	INC	R4		1C		Bump pointer
E		1	1	MOV	A	R4	FC		int1 → R1
F		1	2	MOVP3			E3		
5Ø		1	1	MOV	R1	A	A9		

Ø51		2	2	MOV	R5	ØØ	BD	ØØ	pushbutton tone delay; 0.25 sec.
3		2	2	MOV	R6	ØD	BE	ØD	
5		2	2	CALL	DUALTONE		54	Ø9	output dualtone
7		2	2	JMP	MAINLOOP		Ø4	24	go to mainloop
Ø59	DO2600	1	1	SEL	RBØ		C5		
A		2	2	MOV	RØ	C5	B8	C5	freq≈2602
C		2	2	MOV	R1	Ø1	B9	Ø1	
E		2	2	MOV	R5	ØØ	BD	ØØ	blast for ~1 sec.
6Ø		2	2	MOV	R6	5C	BE	5C	
2		2	2	CALL	TONE		54	27	output tone
4		2	2	JMP	MAINLOOP		Ø4	24	
Ø66	REDBOX	2	2	MOV	RØ	A4	B8	A4	2200
8		2	2	MOV	R1	Ø2	B9	Ø2	
A		1	1	MOV	A	R6	FE		
B		1	1	SWAP	A		47		takes bits 1&0 of KEY to determine
C		2	2	ANL	A	Ø3	53	Ø3	Nic, Dim, or Q.
E		1	1	SEL	RBØ		C5		
F		2	2	MOV	RØ	ØA	B8	ØA	1700
71		2	2	MOV	R1	Ø2	B9	Ø2	
3		2	2	JB1	NICDIM		32	87	Goes to N,D for 10, 11
5		2	2	MOV	R7	Ø5	BF	Ø5	
Ø77	QLOOP	2	2	MOV	R5	B8	BD	B8	33ms · generate 5 33ms pulses
9		2	2	MOV	R6	Ø1	BE	Ø1	alternating w/ 33ms pauses.
B		2	2	CALL	DUALTONE		54	Ø9	
D		2	2	MOV	R5	98	BD	98	33ms
F		2	2	MOV	R6	Ø8	BE	Ø8	
81		2	2	CALL	WAIT		54	ØØ	
3		2	2	DJNZ	R7	QLOOP	EF	77	
5		2	2	JMP	MAINLOOP		Ø4	24	
Ø87	NICDIM	2	2	XRL	A	Ø3	D3	Ø3	- reverse (1's not harmful)
9		1	1	INC	A		17		

08A		1	1	MOV	R7 A	AF		- do loop twice if Dime, once if N.
08B	NDLOOP	2	2	MOV	R5 70	BD	70	66ms
D		2	2	MOV	R6 03	BE	03	
F		2	2	CALL	DUALTONE	54	09	one or two pulses of 66ms
91		2	2	MOV	R5 30	BD	30	alt. w/ 66ms pauses.
3		2	2	MOV	R6 11	BE	11	
5		2	2	CALL	WAIT	54	00	
7		2	2	DJNZ	R7 NDLOOP	EF	8B	
9		2	2	JMP	MAINLOOP	04	24	back to mainloop.

		B	MC						
200	WAIT	1	1	NOP			00		THIS IS THE WAIT
201		1	1	NOP			00		SUBROUTINE USED FOR
202	LOOPW	1	1	NOP			00		TIME DELAYS.
203		1	1	NOP			00		
204		2	2	DJNZ	R5	WAIT	ED	00	
206		2	2	DJNZ	R6	LOOPW	EE	02	
208		1	2	RETR			93		
209	DUALTONE	1	1	NOP			00		— SUBROUTINE OUPUTS
20A		1	1	NOP			00		TWO TONES
20B	LOOP1	1	1	SEL	RB1		D5		
20C		1	1	MOV	A	R0	F8		
20D		1	1	ADD	A	R2	6A		
20E		1	1	MOV	R2	A	AA		WADD2H,L = WADD2H,L + INT2,FRAC2
20F		1	1	MOV	A	R1	F9		
210		1	1	ADDC	A	R3	7B		
211		1	1	MOV	R3	A	AB		
212		2	2	ANL	A	0F	53	0F	SAVE LOW NIBBLE
214		1	2	MOVP3			E3		LOOK AT SINE TABLE @ 300
215		1	1	SEL	RB0		C5		
216		1	1	MOV	R4	A	AC		
217		1	1	MOV	A	R0	F8		
218		1	1	ADD	A	R2	6A		WADD1H,L = WADD2H,L + INT2,FRAC2
219		1	1	MOV	R2	A	AA		
21A		1	1	MOV	A	R1	F9		
21B		1	1	ADDC	A	R3	7B		
21C		1	1	MOV	R3	A	AB		
21D		2	2	ANL	A	0F	53	0F	SAVE LOW NIBBLE
21F		1	2	MOVP3			E3		LOOK AT SINE TABLE @ 300
220		1	1	ADD	A	R4	6C		ADD SINEWAVES

		B	MC						
221		1	2	OUTL	BUS	A	Ø2		OUTPUT TO DAC
222		2	2	DJNZ	R5	DUALTONE	ED	Ø9	
224		2	2	DJNZ	R6	LOOP1	EE	ØB	
226		1	2	RETR			93		
227	TONE	1	1	NOP			ØØ		SUBROUTINE OUTPUTS A SINGLE TONE
228		1	1	NOP			ØØ		
229	LOOPX	1	1	MOV	A	RØ	F8		— — — ┐
22A		1	1	ADD	A	R2	6A		│
22B		1	1	MOV	R2	A	AA		WADDH,L = WADDH,L + INT1, FRAC1
22C		1	1	MOV	A	R1	F9		│
22D		1	1	ADDC	A	R3	7B		│
22E		1	1	MOV	R3	A	AB		— — — ┘
22F		2	2	ANL	A	ØF	53	OF	SAVE LOW NIBBLE
231		1	2	MOVP3			E3		LOOK AT SINE TABLE @ 300
232		1	1	RL	A		E7		MULTIPLY BY 2 (FULL AMPLITUDE)
233		1	2	OUTL	BUS	A	Ø2		OUPPUT TO DAC
234		2	2	DJNZ	R5	TONE	ED	27	LOOP BACK
236		2	2	DJNZ	R6	LOOPX	EE	29	LOOP BACK
238		1	2	RETR			93		GO HOME
239	SCANKEY	1	1	CLR	FØ		85		SUBROUTINE SCANS KEYPAD FØ = Ø
23A		2	2	MOV	RØ	Ø4	B8	04	CROWN COUNT = 4
23C		2	2	MOV	A	7F	23	7F	MASK = 01111111
23E	LOOPR	1	1	MOV	R2	A	AA		SAVE MASK
23F		1	2	OUTL	PORT1	A	39		WRITE MASK TO KEYPAD
24Ø		1	1	NOP			ØØ		WAIT
241		1	1	NOP			ØØ		"
242		1	2	IN	A	PORT1	Ø9		READ FROM KEYPAD
243		2	2	MOV	R1	Ø4	B9	Ø4	COLUMN COUNT = 4
245	LOOPC	1	1	RRC	A		67		ROTATE INTO CARRY TO TEST BIT

		$	MC						
246		12	2	JNC	KEYDN		E6	5Ø	IS CARRY AØ? (KEY DOWN)
248		2	2	DJNZ	R1	LOOPC	E9	45	LOOP BACK
24A		1	1	MOV	A	R2	FA		READ MASK
24B		1	1	RR	A		77		ROTATE MASK
24C		2	2	DJNZ	RØ	LOOPR	E8	3E	LOOP BACK
24E		1	1	CPL	FØ		95		FØ = 1 (KEY WAS NO PRESSED)
24F		1	2	RET			83		GO HOME
25Ø	KEYDN	1	1	DEC	RØ		C8		CORRELT ROW CNT
251		1	1	MOV	A	RØ	F8		CONSTRUCT KEY CODE
252		1	1	RL	A		E7		
253		1	1	RL	A		E7		
254		1	1	DEC	R1		C9		
255		1	1	ORL	A	R1	49		
256		1	1	SWAP			47		PUT CODE IN HIGH 4 BITS xxxxØØØØ
257		1	1	MOV	R6	A	AE		SAVE IN R6 (KEY)
258		1	2	RET			83		GO HOME