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1      * REALM SOUND GENERATOR
2      * SIMPLE TONES, CHIRPS, SIRENS
3
4          ORG      $300
5
6      * ZERO PAGE PARAMETERS *****
7      * (HITONE-LOTONE)/RATE MUST BE INTEGRAL
8
9      LOTONE      EQU      $06
10     HITONE      EQU      $07
11     CYCLES      EQU      $08          ; CYCLES PER TONE
12     REPS        EQU      $09          ; CHIRP OR SIREN REPS
13     RATE        EQU      $1E          ; RATE OF CHIRP
14
15     * ZERO PAGE VARIABLES *****
16
17     PERIOD      EQU      $CE
18
19     * ROM / IO *****
20
21     WAIT        EQU      $FCA8
22     SPKR        EQU      $C030
23
24     * SUBROUTINES *****
25
26     * STACK REPAIR FOR ONERR-RESUME
27     * FROM APPLESOFT REFERENCE MANUAL
28
0300: 68          29     RPRSTK      PLA
0301: A8          30             TAY
0302: 68          31             PLA
0303: A6 DF       32             LDX      $DF
0305: 9A          33             TXS
0306: 48          34             PHA
0307: 98          35             TYA
0308: 48          36             PHA
0309: 60          37             RTS
                                38
030A: A4 08       39     TONE      LDY      CYCLES
030C: A6 CE       40     :CLOOP    LDX      PERIOD
030E: CA          41     :PLOOP    DEX
030F: D0 FD       42             BNE      :PLOOP
0311: 8D 30 C0    43             STA      SPKR
0314: 88          44             DEY
0315: D0 F5       45             BNE      :CLOOP
0317: 60          46             RTS
                                47
0318: A4 08       48     FATTONE   LDY      CYCLES
031A: A5 CE       49     :CLOOP    LDA      PERIOD
031C: 20 A8 FC    50             JSR      WAIT
031F: 8D 30 C0    51             STA      SPKR
0322: 88          52             DEY
0323: D0 F5       53             BNE      :CLOOP
0325: 60          54             RTS
                                55
0326: A5 06       56     UPCHIRP   LDA      LOTONE
0328: 85 CE       57             STA      PERIOD
032A: 20 0A 03    58     :LOOP     JSR      TONE
032D: 38          59             SEC

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032E:	A5	CE	60		LDA	PERIOD
0330:	E5	1E	61		SBC	RATE
0332:	85	CE	62		STA	PERIOD
0334:	C5	07	63		CMP	HITONE
0336:	D0	F2	64		BNE	:LOOP
0338:	C6	09	65		DEC	REPS
033A:	D0	EA	66		BNE	UPCHIRP
033C:	60		67		RTS	
			68			
033D:	A5	07	69	DNCHIRP	LDA	HITONE
033F:	85	CE	70		STA	PERIOD
0341:	20	0A	71	:LOOP	JSR	TONE
0344:	18		72		CLC	
0345:	A5	CE	73		LDA	PERIOD
0347:	65	1E	74		ADC	RATE
0349:	85	CE	75		STA	PERIOD
034B:	C5	06	76		CMP	LOTONE
034D:	D0	F2	77		BNE	:LOOP
034F:	C6	09	78		DEC	REPS
0351:	D0	EA	79		BNE	DNCHIRP
0353:	60		80		RTS	
			81			
0354:	A5	06	82	UPFAT	LDA	LOTONE
0356:	85	CE	83		STA	PERIOD
0358:	20	18	84	:LOOP	JSR	FATTONE
035B:	38		85		SEC	
035C:	A5	CE	86		LDA	PERIOD
035E:	E5	1E	87		SBC	RATE
0360:	85	CE	88		STA	PERIOD
0362:	C5	07	89		CMP	HITONE
0364:	D0	F2	90		BNE	:LOOP
0366:	C6	09	91		DEC	REPS
0368:	D0	EA	92		BNE	UPFAT
036A:	60		93		RTS	
			94			
036B:	A5	07	95	DNFAT	LDA	HITONE
036D:	85	CE	96		STA	PERIOD
036F:	20	18	97	:LOOP	JSR	FATTONE
0372:	18		98		CLC	
0373:	A5	CE	99		LDA	PERIOD
0375:	65	1E	100		ADC	RATE
0377:	85	CE	101		STA	PERIOD
0379:	C5	06	102		CMP	LOTONE
037B:	D0	F2	103		BNE	:LOOP
037D:	C6	09	104		DEC	REPS
037F:	D0	EA	105		BNE	DNFAT
0381:	60		106		RTS	
			107			
0382:	A5	09	108	SIREN	LDA	REPS
0384:	48		109		PHA	
0385:	A9	01	110		LDA	#01
0387:	85	09	111		STA	REPS
0389:	20	26	112	03	JSR	UPCHIRP
038C:	A9	01	113		LDA	#01
038E:	85	09	114		STA	REPS
0390:	20	3D	115	03	JSR	DNCHIRP
0393:	68		116		PLA	

0394:	85 09	117	STA	REPS
0396:	C6 09	118	DEC	REPS
0398:	D0 E8	119	BNE	SIREN
039A:	60	120	RTS	
		121		
039B:	A5 09	122	FATSIREN LDA	REPS
039D:	48	123	PHA	
039E:	A9 01	124	LDA	#01
03A0:	85 09	125	STA	REPS
03A2:	20 54 03	126	JSR	UPFAT
03A5:	A9 01	127	LDA	#01
03A7:	85 09	128	STA	REPS
03A9:	20 6B 03	129	JSR	DNFAT
03AC:	68	130	PLA	
03AD:	85 09	131	STA	REPS
03AF:	C6 09	132	DEC	REPS
03B1:	D0 E8	133	BNE	FATSIREN
03B3:	60	134	RTS	

--End assembly, 180 bytes, Errors: 0

Symbol table - alphabetical order:

CYCLES	=\$08	DNCHIRP	=\$033D	DNFAT	=\$036B	FATSIREN	=\$039B
FATTONE	=\$0318	HITONE	=\$07	LOTONE	=\$06	PERIOD	=\$CE
RATE	=\$1E	REPS	=\$09	?	RPRSTK	=\$0300	SIREN
SPKR	=\$C030	TONE	=\$030A		UPCHIRP	=\$0326	UPFAT
WAIT	=\$FCA8						

Symbol table - numerical order:

LOTONE	=\$06	HITONE	=\$07	CYCLES	=\$08	REPS	=\$09
RATE	=\$1E	PERIOD	=\$CE	?	RPRSTK	=\$0300	TONE
FATTONE	=\$0318	UPCHIRP	=\$0326		DNCHIRP	=\$033D	UPFAT
DNFAT	=\$036B	SIREN	=\$0382		FATSIREN	=\$039B	SPKR
WAIT	=\$FCA8						

