

NOVENA

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"NOVENA"
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```
SCR #40
0 ( SYNTHESIS.S TO FORTH 7/17/85 )
1 HEX
2
3 5 CONSTANT SSLOT ( APPLE SLOT )
4 COB0 SSLOT 10 * + CONSTANT CONTROL
5 COB0 SSLOT 10 * + CONSTANT STATUS
6 COB1 SSLOT 10 * + CONSTANT PAR
7 COB2 SSLOT 10 * + CONSTANT DATAI
8 OC CONSTANT T1ADR
9 OE CONSTANT SRADR
10 11 CONSTANT SR
11 0 CONSTANT K1ADR
12 OD CONSTANT SLOTS
13 3FE CONSTANT INTVCT
14 50 CONSTANT BUFPTR ( ZP PTR TO DATA )
15 52 CONSTANT FRCTR ( INSTEAD OF X REG )
16 VARIABLE NT1S ( REPEAT COUNTER )
17 VARIABLE RC ( REPEAT COUNT )
18 VARIABLE NSLOTS ( SLOTS COUNTER )
19 VARIABLE DONE ( FLAG 1= WORD OVER )
20 VARIABLE DATA ( HI LEVEL PTR )
21
22 -->
23
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SCR #41
0 ( CONTINU 1 )
1 HEX
2
3 CODE INCP ( INCREMENT ZP POINTER )
4 BUFPTR INC,
5 0= IF,
6 BUFPTR 1+ INC, THEN,
7 RTS,
8 END-CODE
9
10
11 ( 1= FETCH FROM V-XX )
12 VARIABLE XFLAG VARIABLE V-EX ( EXTYP )
13 VARIABLE NFLAG VARIABLE V-EN ( ENRGY )
14 VARIABLE PFLAG VARIABLE V-PT ( PITCH )
15 VARIABLE RFLAG VARIABLE V-RP ( REPEAT )
16 VARIABLE NOTE ( FOR MIDI )
17 VARIABLE CHAN ( " )
18
19 -->
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SCR #42
0 ( CONTINU 2 )
1 HEX
2
3 CODE WFRM ( WRITE A FRAME TO SP1000 )
4 SLOTS # LDA, NSLOTS STA,
5 KIADR # LDA, PAR STA, 0 # LDY, ( !!! )
6 BEGIN,
7 BEGIN, STATUS LDA, 0< NOT UNTIL,
8 BUFPTR )Y LDA, DATAI STA,
9 ' INCP JSR,
10 NSLOTS DEC,
11 NSLOTS LDA, 3 # CMP,
12 0= UNTIL,
13
14 ( THIS LOADS IN K10-K1 )
15 ( NOW PROCEED WITH EXCEPTIONS )
16
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18 -->
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SCR #43
0 BEGIN, STATUS LDA, 0< NOT UNTIL,
1 XFLAG LDA, 0= IF, BUFPTR )Y LDA,
2 DATAI STA, ELSE, V-EX LDA, DATAI STA,
3 THEN, ' INCP JSR, NSLOTS DEC,
4
5 BEGIN, STATUS LDA, 0< NOT UNTIL,
6 NFLAG LDA, 0= IF, BUFPTR )Y LDA,
7 DATAI STA, ELSE, V-EN LDA, DATAI STA,
8 THEN, ' INCP JSR, NSLOTS DEC,
9
10 BEGIN, STATUS LDA, 0< NOT UNTIL,
11 PFLAG LDA, 0= IF, BUFPTR )Y LDA,
12 DATAI STA, NOTE STA, ELSE,
13 V-PT LDA, DATAI STA, NOTE STA,
14 THEN, ' INCP JSR, NSLOTS DEC,
15
16 RFLAG LDA, 0= IF, BUFPTR )Y LDA,
17 RC STA, ELSE, V-RP LDA, RC STA,
18 THEN, ' INCP JSR,
19 FRCTR DEC,
20 0= IF,
21 1 # LDA, DONE STA, THEN,
22 RTS, END-CODE -->
23

```

SCR #44

```
0 ( CONTINU 3 )
1 HEX
2 CODE ISR
3
4 NT1S INC, TYA, PHA, TXA, PHA,
5 STATUS LDA, RC LDA, NT1S CMP,
6 O= IF,
7 O # LDA, NT1S STA,
8 ' WFRM JSR,
9 THEN,
10 PLA, TAX, PLA, TAY,
11 45 LDA, RTI,
12 END-CODE
13
14 CODE ENABLE CLI, NEXT JMP, END-CODE
15 CODE DISABLE SEI, NEXT JMP, END-CODE
16
17
18
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20 -->
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23
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SCR #45

```
0 ( CONTINU 4 )
1 HEX
2 CODE SYNTH ( START SPEAKING )
3 DATA LDA, BUFPTR STA,
4 DATA 1+ LDA, BUFPTR 1+ STA,
5 O # LDA, NT1S STA, RC STA, DONE STA,
6 44 # LDA, CONTROL STA,
7 T1ADR # LDA, PAR STA,
8 FF # LDA, DATAI STA,
9 BEGIN, STATUS LDA,
10 O< NOT UNTIL,
11 SRADR # LDA, PAR STA,
12 SR # LDA, DATAI STA,
13 BEGIN, STATUS LDA,
14 O< NOT UNTIL,
15 O # LDY, BUFPTR >Y LDA, FRCTR STA,
16 ' INCP JSR,
17 ' WFRM JSR, CLI,
18 64 # LDA, CONTROL STA,
19 NEXT JMP, END-CODE
20 -->
21
22
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```

SCR #46
0 ( ALLTOGETHER = SYN )
1 HEX
2 VARIABLE WALLER 0 WALLER !
3 : CLRFLGS 0 0 0 0 XFLAG ! NFLAG !
4   PFLAG ! RFLAG ! ;
5
6 : MSDONE 5 0 DO LOOP DONE @ 1 = ;
7
8
9 CLRFLGS ( MAKE SURE TO START WITH )
10
11 : SYN
12 DATA !
13 ' ISR INTVCT !
14   SYNTH
15 BEGIN ( NOTE C@ MD>SP + C@
16   ON 40 MS ) DONE @ 0= NOT UNTIL
17   DISABLE ;
18
19 -->
20
21
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SCR #47
0 ( FILL LPC PARAM SLOT WITH A VALUE )
1 ( FOR GI FORMAT )
2
3 DECIMAL
4
5 13 CONSTANT RP
6 12 CONSTANT PT
7 11 CONSTANT EN
8 10 CONSTANT EX
9 VARIABLE ADDR
10 VARIABLE VAL
11 VARIABLE PARAM
12
13 : LPCFILL ( PARAM# VAL ADDR ---- )
14   ADDR ! VAL ! PARAM !
15   ADDR @ C@ 0 DO
16   VAL C@ ADDR @
17   I 14 * + PARAM @ +
18   1+ C!
19   LOOP I ;
20
21 -->
22
23

```

SCR #48

```
0 ( COMPILE PITCH-CURVE FILE INTO DICT )
1 ( ASSUMES GI FORMAT LPC FILE AT $9000 )
2
3 HEX VARIABLE XXX
4
5 ( USAGE: <SCR#> CURV-FILE! <NAME> --- )
6
7 : CURV-FILE!
8 CREATE ( NAME ) BLOCK XXX !
9 XXX @ C@ DUP C, ( NUM OF FRMS )
10 O DO
11 XXX @ I OE * + PT + 1+ C@ C,
12 LOOP ;
13
14 : CURV-SEE ( ' NAME --- )
15 DUP C@ O DO DUP I + C@ . LOOP DROP ;
16
17
18
19 -->
20
21
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SCR #49

```
0 ( COMPILE LPC RECORD AT $9000 TO DICT )
1 ( ASSUMES GI FORMAT LPC FILE AT $9000 )
2
3 HEX
4
5 ( USAGE: <SCR#> LPC-FILE! <NAME> )
6
7 : LPC-FILE!
8 CREATE ( NAME ) BLOCK XXX !
9 XXX @ C@ DUP C, ( NUM OF FRMS )
10 OE * O DO
11 XXX @ I + 1+ C@ C,
12 LOOP ;
13
14
15
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17 -->
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SCR #50

- 0 -->
- 1
- 2
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SCR #51

- 0 -->
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SCR #52

```
0 ( MIDI SCREENS 6/29/85 )
1 HEX
2
3 : MS 0 DO 5 0 DO LOOP LOOP ;
4
5
6 4 CONSTANT SLOT
7 SLOT 8 + 10 * C000 + CONSTANT CREG
8 ( CONTROL REGISTER )
9 CREG 1+ CONSTANT TREG
10 ( TRANSMIT/RECEIVE REGISTER )
11
12 : MIDI-INIT
13 3 CREG C! 0 CREG C! 12 CREG C! ;
14
15 CODE POL
16 BEGIN, CREG LDA, 2 # AND,
17 0= NOT UNTIL, RTS, END-CODE
18
19 CODE POLL ' POL JSR, NEXT JMP, END-CODE
20
21
22
23 -->
```

SCR #53

```
0 ( MORE MIDI )
1 HEX
2
3 : SEL 8 + ;
4 : INT 20 + ;
5
6 : V1 C0 TREG C! POLL 1- TREG C! POLL ;
7 : V2 C1 TREG C! POLL 1- TREG C! POLL ;
8 : V3 C2 TREG C! POLL 1- TREG C! POLL ;
9 : V4 C3 TREG C! POLL 1- TREG C! POLL ;
10
11 -->
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SCR #54

```
0 ( NEW MIDI )
1 HEX
2 CODE ONN ( FOR ASSEMBLER USE )
3 CHAN LDA, 90 # ORA, TREG STA,
4 ' POL JSR,
5 NOTE LDA, 7F # AND, TREG STA,
6 ' POL JSR,
7 40 # LDA, TREG STA,
8 ' POL JSR,
9 RTS, END-CODE
10
11 CODE ON2 ( PARAMS FROM NOTE, CHAN )
12 ' ONN JSR, NEXT JMP, END-CODE
13
14 : ON ( NOTE CHAN --- )
15 90 OR TREG C! POLL
16 7F AND TREG C! POLL
17 40 TREG C! POLL ;
18
19 : OFF ( NOTE CHAN --- )
20 80 OR TREG C! POLL
21 7F AND TREG C! POLL
22 00 TREG C! POLL ;
23 -->
```

SCR #55

```
0 ( NEW MIDI )
1 HEX
2
3 : ALLOFF ( SETS MONO MODE )
4 80 TREG C! POLL
5 7F TREG C! POLL
6 00 TREG C! POLL
7 80 TREG C! POLL
8 7E TREG C! POLL
9 0 TREG C! ;
10
11 -->
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SCR #56

0 (TABLE MIDI TO SPEECH PITCHES)
1 (MIDI PITCHES 36-96) DECIMAL
2 CREATE MD>SP
3 240 C, 228 C, 214 C, 200 C, 190 C,
4 178 C, 170 C, 160 C, 150 C, 144 C,
5 134 C, 126 C, 120 C, 114 C, 107 C,
6 100 C, 95 C, 89 C, 85 C, 80 C, 75 C,
7 72 C, 67 C, 63 C, 60 C, 57 C, 53 C,
8 50 C, 47 C, 44 C, 42 C, 40 C, 38 C,
9 35 C, 33 C, 31 C, 29 C, 28 C, 26 C,
10 25 C, 24 C, 23 C, 22 C, 21 C, 20 C,
11 19 C, 17 C, 16 C, 15 C, 14 C, 13 C,
12 12 C, 12 C, 11 C, 11 C, 10 C, 10 C,
13 9 C, 9 C, 8 C, 8 C, 7 C, 7 C,
14
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SCR #57

0 (SP1000 PITCHES TO MIDI PITCH TAB)
1 DECIMAL CREATE SP>MD
2
3 96 C, 96 C, 96 C, 96 C, 96 C,
4 89 C, 87 C, 85 C, 84 C, 83 C, 82 C,
5 81 C, 80 C, 79 C, 78 C, 77 C, 76 C,
6 75 C, 74 C, 73 C, 72 C, 72 C, 71 C,
7 71 C, 70 C, 70 C, 69 C, 69 C, 68 C,
8 68 C, 68 C, 67 C, 67 C, 66 C, 66 C,
9 65 C, 65 C, 64 C, 64 C, 64 C, 63 C,
10 63 C, 63 C, 62 C, 62 C, 62 C, 61 C,
11 61 C, 61 C, 60 C, 60 C, 60 C, 60 C,
12 59 C, 59 C, 59 C, 59 C, 58 C, 58 C,
13 58 C, 58 C, 57 C, 57 C, 57 C, 57 C,
14 56 C, 56 C, 56 C, 56 C, 55 C, 55 C,
15 55 C, 55 C, 55 C, 54 C, 54 C, 54 C,
16 54 C, 54 C, 53 C, 53 C, 53 C, 53 C,
17 53 C, 53 C, 52 C, 52 C, 52 C, 52 C,
18 51 C, 51 C, 51 C, 51 C, 51 C, 50 C,
19 50 C, 50 C, 50 C, 50 C, 50 C, 50 C,
20 49 C, 49 C, 49 C, 49 C, 49 C, 49 C,
21 48 C, 48 C, 48 C, 48 C, 48 C, 48 C,
22 48 C,
23 -->

SCR #58

0 (CONTINUED)
1 47 C, 47 C, 47 C, 47 C, 47 C, 47 C,
2 47 C, 46 C, 46 C, 46 C, 46 C, 46 C,
3 46 C, 46 C, 46 C, 46 C, 46 C, 45 C,
4 45 C, 45 C, 45 C, 45 C, 45 C, 45 C,
5 45 C, 44 C, 44 C, 44 C, 44 C, 44 C,
6 44 C, 44 C, 44 C, 43 C, 43 C, 43 C,
7 43 C, 43 C, 43 C, 43 C, 43 C, 43 C,
8 43 C, 42 C, 42 C, 42 C, 42 C, 42 C,
9 42 C, 42 C, 42 C, 42 C, 41 C, 41 C,
10 41 C, 41 C, 41 C, 41 C, 41 C, 41 C,
11 41 C, 41 C, 41 C, 40 C, 40 C, 40 C,
12 40 C, 40 C, 40 C, 40 C, 40 C, 40 C,
13 40 C, 39 C, 39 C, 39 C, 39 C, 39 C,
14 39 C, 39 C, 39 C, 39 C, 39 C, 39 C,
15 39 C, 39 C, 38 C, 38 C, 38 C, 38 C,
16 38 C, 38 C, 38 C, 38 C, 38 C, 38 C,
17 38 C, 38 C, 38 C, 38 C, 37 C, 37 C,
18 37 C, 37 C, 37 C, 37 C, 37 C, 37 C,
19 37 C, 37 C, 37 C, 37 C, 37 C, 37 C,
20 37 C, 37 C, 36 C, 36 C, 36 C, 36 C,
21 36 C, 36 C, 36 C, 36 C, 36 C, 36 C,
22 36 C, 36 C, 36 C, 36 C, 36 C, 36 C,
23 36 C, 36 C, 36 C, 36 C, 36 C, -->

SCR #59

0 -->
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```
SCR #60
0 ( NEW GUIT SCANNING PROGRAM CONSTANTS)
1 HEX
2
3 0400 CONSTANT GSLOT ( SLOT * 100 )
4
5 C000 GSLOT + CONSTANT GPORTD
6 C001 GSLOT + CONSTANT GPORTC
7 C002 GSLOT + CONSTANT GDDR
8 C003 GSLOT + CONSTANT GDDRC
9
10 C00D GSLOT + CONSTANT GIFR2
11 C00C GSLOT + CONSTANT GPCR2
12
13
14
15 -->
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```
SCR #61
0 ( BIG SCAN ... )
1 HEX
2 VARIABLE SCAN1 20 ALLOT
3 VARIABLE SCAN1' 20 ALLOT
4 VARIABLE GUIT1 VARIABLE GUIT1A
5 VARIABLE G1 VARIABLE G1' VARIABLE G1''
6 VARIABLE G1A VARIABLE G1A'
7 VARIABLE G1A''
8
9
10 ( VALUE CHANGED TO ACCOMODATE TITAN
11 ACCELERATOR 10/85 )
12 CODE KILLTIME
13 60 # LDY,
14 BEGIN, DEY, 0= UNTIL,
15 NEXT JMP, END-CODE
16
17
18
19 : RST FF GPORTC C! KILLTIME
20 00 GPORTC C! KILLTIME ;
21
22 -->
23
```

SCR #62

```
0 ( NEW GUIT SCAN, TITAN ACC 10/85 )
1
2 CODE SCANALL XSAVE STX, 0 # LDY,
3 GPORTC INC, GPORTC INC,
4 GPORTC INC, GPORTC INC,
5 10 # LDX, BEGIN, DEX, 0= UNTIL,
6 BEGIN,
7 NOP, NOP, INY,
8 SCAN1 ,Y LDA, SCAN1' ,Y STA,
9 GIFR2 LDA, 2 # AND, 0= NOT IF,
10 FF # LDA, ELSE, 0 # LDA, THEN,
11 SCAN1 ,Y STA,
12
13
14 GPORTC INC, GPORTC INC, GPORTD LDA,
15 10 # LDX, BEGIN, DEX, 0= UNTIL,
16 21 # CPY, 0= UNTIL,
17 -->
18
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SCR #63

```
0 ( NEW GUITAR SCAN CONTINUED )
1
2
3
4 G1A' LDA, G1A'' STA,
5 G1A LDA, G1A' STA,
6 0 # LDA, GUIT1A STA,
7 8 # LDY,
8 BEGIN,
9 SCAN1 ,Y LDA,
10 0= NOT IF,
11 GUIT1A STY,
12 THEN,
13 DEY, 0= UNTIL,
14 GUIT1A LDA, G1A STA,
15
16
17
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23 -->
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SCR #64

```
0 ( NEW GUITAR SCAN CONTINUED )
1 G1' LDA, G1'' STA,
2 G1 LDA, G1' STA,
3 0 # LDA, GUIT1 STA,
4 20 # LDY,
5 BEGIN,
6 SCAN1 ,Y LDA,
7 0= NOT IF,
8 GUIT1 STY,
9 THEN,
10 DEY, 8 # CPY,
11 0= UNTIL,
12 GUIT1 LDA, G1 STA,
13
14 XSAVE LDX, NEXT JMP, END-CODE
15
16
17
18 -->
19
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23
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SCR #65

```
0 ( GUITINIT GUITTEST )
1 HEX
2 : GUITINIT
3 FF GDDRC C!
4 FF GDDRD C!
5 55 GPCR2 C! ;
6
7 : GUITTEST
8 GUITINIT
9 BEGIN
10 SCANALL
11 GUIT1 @ . GUIT1A @ . SPACE
12 CR
13 RST
14 ?TERMINAL UNTIL ;
15
16
17
18 -->
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SCR #66

0 -->
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SCR #67

0 (SP1000 PITCHES TO MIDI PITCH TAB)
1 DECIMAL CREATE SP>MD2
2 96 C, 96 C, 96 C, 96 C, 96 C,
3 96 C, 96 C, 96 C, 94 C, 92 C, 90 C,
4 88 C, 86 C, 86 C, 84 C, 84 C, 82 C,
5 82 C, 80 C, 80 C, 78 C, 78 C, 76 C,
6 76 C, 74 C, 74 C, 72 C, 72 C, 72 C,
7 72 C, 70 C, 70 C, 70 C, 70 C, 68 C,
8 68 C, 68 C, 68 C, 66 C, 66 C, 66 C,
9 66 C, 66 C, 64 C, 64 C, 64 C, 64 C,
10 64 C, 62 C, 62 C, 62 C, 62 C, 62 C,
11 62 C, 60 C, 60 C, 60 C, 60 C, 60 C,
12 60 C, 60 C, 58 C, 58 C, 58 C, 58 C,
13 58 C, 58 C, 58 C, 58 C, 58 C, 58 C,
14 56 C, 56 C, 56 C, 56 C, 56 C, 56 C,
15 56 C, 54 C, 54 C, 54 C, 54 C, 54 C,
16 54 C, 54 C, 54 C, 54 C, 54 C, 52 C,
17 52 C, 52 C, 52 C, 52 C, 52 C, 52 C,
18 52 C, 52 C, 52 C, 50 C, 50 C, 50 C,
19 50 C, 50 C, 50 C, 50 C, 50 C, 50 C,
20 50 C, 50 C, 50 C, 50 C, 48 C, 48 C,
21 48 C, 48 C, 48 C, 48 C, 48 C, 48 C,
22 48 C,
23 -->

SCR #68

0 (CONTINUED)
1 48 C, 48 C, 48 C, 48 C, 46 C, 46 C,
2 46 C, 46 C, 46 C, 46 C, 46 C, 46 C,
3 46 C, 46 C, 46 C, 46 C, 46 C, 46 C,
4 46 C, 46 C, 46 C, 46 C, 44 C, 44 C,
5 44 C, 44 C, 44 C, 44 C, 44 C, 44 C,
6 44 C, 44 C, 44 C, 44 C, 44 C, 44 C,
7 44 C, 42 C, 42 C, 42 C, 42 C, 42 C,
8 42 C, 42 C, 42 C, 42 C, 42 C, 42 C,
9 42 C, 42 C, 42 C, 42 C, 42 C, 42 C,
10 42 C, 42 C, 42 C, 42 C, 42 C, 40 C,
11 40 C, 40 C, 40 C, 40 C, 40 C, 40 C,
12 40 C, 40 C, 40 C, 40 C, 40 C, 40 C,
13 40 C, 40 C, 40 C, 40 C, 40 C, 40 C,
14 40 C, 40 C, 40 C, 40 C, 38 C, 38 C,
15 38 C, 38 C, 38 C, 38 C, 38 C, 38 C,
16 38 C, 38 C, 38 C, 38 C, 38 C, 38 C,
17 38 C, 38 C, 38 C, 38 C, 38 C, 38 C,
18 38 C, 38 C, 38 C, 38 C, 38 C, 36 C,
19 36 C, 36 C, 36 C, 36 C, 36 C, 36 C,
20 36 C, 36 C, 36 C, 36 C, 36 C, 36 C,
21 36 C, 36 C, 36 C, 36 C, 36 C, 36 C,
22 36 C, 36 C, 36 C, 36 C, 36 C, 36 C,
23 36 C, 36 C, 36 C, 36 C, 36 C, -->

SCR #69

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SCR #70
0 ( CONTINU 2 )
1 HEX
2
3 CREATE QUIET 00 C, 00 C, 00 C, 00 C,
4 00 C, 00 C, 00 C, 00 C, 00 C, 00 C,
5 35 C, 00 C, FF C, 00 C,
6 VARIABLE QHOLD
7 ' QUIET QHOLD !
8
9 CODE BFRM SEI, ( QUIET TO SP1000 )
10 QHOLD LDA, BUFPTR STA,
11 QHOLD 1+ LDA, BUFPTR 1+ STA,
12 SLOTS # LDA, NSLOTS STA,
13 K1ADR # LDA, PAR STA, 0 # LDY,
14 BEGIN,
15 BEGIN, STATUS LDA, 0< NOT UNTIL,
16 BUFPTR >Y LDA, DATAI STA,
17 ' INCP JSR,
18 NSLOTS DEC,
19 0= UNTIL,
20 NEXT JMP, END-CODE
21 -->
22
23

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```

SCR #71
0 ( TESTS OF PLAY PITCH CURVES )
1
2
3 ( PLAY SP1000 NUMBERS AS MIDI )
4 : CP ( ADDR ---- )
5 DUP C@ 1- 0 DO
6 DUP I + 1+ C@ 0 ON
7 300 MS LOOP DROP ;
8
9
10
11 VARIABLE TRNSP ( TRANSPOSE MIDI )
12 0 TRNSP !
13
14 ( ACTUALLY FOLLOW PITCH OF VOICE )
15 : CP2
16 DUP C@ 1- 0 DO
17 DUP I + 1+ C@ SP>MD + C@ TRNSP @ +
18 0 ON 300 MS LOOP DROP ;
19
20 : TEST2 BEGIN 12 RANDOM TRNSP !
21 PT1 CP2 ?T UNTIL ;
22
23 -->

```

SCR #72

0 (STATE VARIABLES)
1 VARIABLE GFLAG (1 IF NEW KEY ON GUIT)
2 VARIABLE P-CTR (COUNTER THRU PITCH)
3 VARIABLE PIT-ADDR (BASE ADDRESS)
4 VARIABLE TEMPO 500 TEMPO !
5 VARIABLE CAS-CTR (WHICH VOICE 1,2,3)
6 0 CAS-CTR !
7 VARIABLE LASTNOTE (A HISTORY)
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12 -->
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SCR #73

0 -->
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SCR #74

```
0 ( INITIALIZATION )
1
2 : INIT
3 GUITINIT
4 ' ISR INTVCT !
5 MIDI-INIT
6 ALLOFF 100 MS
7 1 V1 1 SEL V2 7 SEL V3 5 SEL V4
8 [ HEX ]
9 ( B2 TREG C! POLL 41
10 TREG C! POLL 7F TREG C! POLL )
11 ;
12
13 DECIMAL
14
15
16
17
18 -->
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SCR #75

```
0 ( STATE MACH'S )
1
2 : DONE-CHK
3 DONE @ 0= NOT IF DISABLE THEN ;
4
5 : GUIT-CHK
6 SCANALL RST
7 G1 @ G1' @ = NOT IF
8 1 ELSE 0 THEN GFLAG ! ;
9
10 : SPEECH-START
11 GFLAG @ 0= NOT IF
12 GUIT1 C@ 9 - 2* SPS + @ DATA !
13 SYNTH THEN
14 GUIT1 C@ 0= IF DISABLE
15 BFRM THEN ;
16
17 -->
18
19
20
21
22
23
```

SCR #76

```

0 ( STATE MACH'S )
1
2 : CASIO-PLAY
3 GFLAG C@ 0= NOT IF ( A CHANGE )
4 GUIT1 C@ 9 - 2* PTS + @ PIT-ADDR !
5 PIT-ADDR @ C@ ( GET LENGTH )
6 P-CTR ! 0 TRNSP ! THEN
7 GUIT1 @ 0= NOT IF
8 P-CTR @ PIT-ADDR @ + 1+ C@
9 SP>MD2 + C@ TRNSP @ +
10 CAS-CTR @ ON
11
12 CAS-CTR @ 1+ DUP 3 = IF DROP
13 0 THEN CAS-CTR !
14 P-CTR @ 1+ P-CTR !
15 PIT-ADDR @ C@ P-CTR C@ < IF
16 0 P-CTR ! TRNSP @ 1+ TRNSP ! THEN
17 THEN
18 NOTE @ LASTNOTE @ = NOT IF
19 NOTE @ DUP LASTNOTE ! 3 ON
20 ELSE LASTNOTE @ 3 OFF THEN ;
21
22 -->
23

```

SCR #77

```

0 ( BOTTOM KEYS )
1 DECIMAL
2 : BODY-CHK
3 GUIT1A C@
4 CASE
5 0 OF CLRFLGS ;;
6 1 OF 1 RFLAG ! 10 V-RP ! ;;
7 3 OF 1 PFLAG ! 60 V-PT ! ;;
8 5 OF 1 XFLAG ! 35 V-EX C! ;;
9
10 2 OF 1 INT V1 1 INT V2
11 3 INT V3 ;;
12 4 OF 5 INT V1 1 SEL INT V2
13 8 INT V3 ;;
14 6 OF 1 V1 1 SEL V2 7 SEL V3
15 5 SEL V4 ;;
16 7 OF 500 TEMPO ! ;;
17
18 8 OF 2000 TEMPO ! ;;
19
20 ENDCASE ;
21
22 -->
23

```

SCR #78

0 -->
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

SCR #79

0 -->
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

SCR #80

```
0 ( TEST )
1
2 : TEST3
3 INIT 2000 TEMPO !
4 BEGIN
5 DONE-CHK
6 GUIT-CHK
7 BODY-CHK
8 SPEECH-START
9 CASIO-PLAY
10 TEMPO @ RANDOM MS
11 ?T UNTIL DISABLE ALLOFF ;
12
13
14 : NOVENA TEST3 ;
15
16
17
18
19
20
21
22
23
```

SCR #81

```
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
```

SCR #100

```
0 ( FOLLOWING SCREENS CAN BE LOADED TO )
1 ( TRANSFER AND CONVERT SPEECH FILES )
2 ( TRANSLATE ADISA FORMAT TO G.I. )
3 DECIMAL
4 CREATE TTAB
5 14 C, 13 C, 12 C, 11 C, 10 C, 09 C,
6 08 C, 07 C, 06 C, 05 C, 04 C, 00 C,
7 01 C, 02 C,
8
9 HEX
10
11 ( MOVES IT FROM ONE ADDR TO ANOTHER )
12 ( IT WORKS 7/18/85 )
13 : GI.TRAN ( SRC DEST #FRMS --- )
14   O DO
15     OE O DO
16     2 PICK TTAB I + C@ + C@ ( .S )
17     2 PICK I + C!
18     LOOP
19     OE + SWAP OF + SWAP
20     LOOP ;
21 -->
22
23
```

SCR #101

```
0 ( RECEIVE FILES FROM IBM )
1
2 HEX
3
4 4 CONSTANT PSL0T
5 C000 PSL0T 100 * + CONSTANT PORTB
6 PORTB 2 + CONSTANT DDRB
7 PORTB 0C + CONSTANT PCR
8 PORTB 0D + CONSTANT IFR
9 VARIABLE LOBYTE 2 ALLOT
10 8000 CONSTANT FBUF
11 ( REC2 STICKS DATA AT $8000 )
12
13 : POLL
14   BEGIN
15     IFR C@ 10 AND
16     0= NOT UNTIL
17     PORTB C@ DROP ;
18
19 : READY E0 PCR C! ; ( HIGH )
20
21 : BUSY C0 PCR C! ; ( LOW )
22 -->
23
```

SCR #102

```
0 ( CONTINUED )
1
2 DECIMAL
3
4 : REC2
5 PORTB C@ DROP
6 POLL BUSY
7 PORTB C@ LOBYTE !
8 READY
9 POLL BUSY
10 PORTB C@ LOBYTE 1+ C! READY
11 LOBYTE @ 0 DO
12 POLL BUSY
13 PORTB C@ FBUF I + C!
14 READY
15 LOOP ;
16
17
18 -->
19
20
21
22
23
```

SCR #103

```
0 ( SAVE LPC FILE TO SCREEN AFTER REC2 )
1 HEX VARIABLE B HOLD ( BLOCK NUM )
2
3 ( CONVERT AN ADISA FILE TO GI FORMAT
4 AND STORE TO A SCREEN )
5
6 : STOR ( SCR# --- )
7 E/B BLOCK DUP B HOLD !
8 8000 SWAP 1+ LOBYTE @ OF / GI.TRAN
9 LOBYTE @ OF / B HOLD @ C!
10 UPDATE FLUSH ;
11
12 ( PLAY A SCREEN )
13
14 : FPLAY ( SCR# --- )
15 BLOCK SYN ;
16
17
18
19
20
21
22
23
```


SCR #110

0 (LOAD IN SPEECH SCREENS TO DICT)
1 DECIMAL
2 160 LPC-FILE! SP1 160 CURV-FILE! PT1
3 161 LPC-FILE! SP2 161 CURV-FILE! PT2
4 162 LPC-FILE! SP3 162 CURV-FILE! PT3
5 163 LPC-FILE! SP4 163 CURV-FILE! PT4
6 164 LPC-FILE! SP5 164 CURV-FILE! PT5
7 165 LPC-FILE! SP6 165 CURV-FILE! PT6
8 166 LPC-FILE! SP7 166 CURV-FILE! PT7
9 167 LPC-FILE! SP8 167 CURV-FILE! PT8
10 168 LPC-FILE! SP9 168 CURV-FILE! PT9
11 169 LPC-FILE! SP10 169 CURV-FILE! PT10
12 170 LPC-FILE! SP11 170 CURV-FILE! PT11
13 171 LPC-FILE! SP12 171 CURV-FILE! PT12
14 172 LPC-FILE! SP13 172 CURV-FILE! PT13
15 173 LPC-FILE! SP14 173 CURV-FILE! PT14
16 174 LPC-FILE! SP15 174 CURV-FILE! PT15
17 175 LPC-FILE! SP16 175 CURV-FILE! PT16
18 176 LPC-FILE! SP17 176 CURV-FILE! PT17
19 177 LPC-FILE! SP18 177 CURV-FILE! PT18
20 178 LPC-FILE! SP19 178 CURV-FILE! PT19
21 179 LPC-FILE! SP20 179 CURV-FILE! PT20
22
23 -->

SCR #111

0 (CONTINUED)
1 180 LPC-FILE! SP21 180 CURV-FILE! PT21
2 181 LPC-FILE! SP22 181 CURV-FILE! PT22
3 182 LPC-FILE! SP23 182 CURV-FILE! PT23
4 183 LPC-FILE! SP24 183 CURV-FILE! PT24
5
6 -->
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

SCR #112

```
0 ( TABLES OF STARTING ADDR'S )
1 CREATE SPS ( TABLE OF SPEECH FILES )
2 ' SP1 , ' SP2 , ' SP3 , ' SP4 ,
3 ' SP5 , ' SP6 , ' SP7 , ' SP8 ,
4 ' SP9 , ' SP10 , ' SP11 , ' SP12 ,
5 ' SP13 , ' SP14 , ' SP15 , ' SP16 ,
6 ' SP17 , ' SP18 , ' SP19 , ' SP20 ,
7 ' SP21 , ' SP22 , ' SP23 , ' SP24 ,
8
9
10
11
12 CREATE PTS ( TABLE OF PITCH CURVES )
13 ' PT1 , ' PT2 , ' PT3 , ' PT4 ,
14 ' PT5 , ' PT6 , ' PT7 , ' PT8 ,
15 ' PT9 , ' PT10 , ' PT11 , ' PT12 ,
16 ' PT13 , ' PT14 , ' PT15 , ' PT16 ,
17 ' PT17 , ' PT18 , ' PT19 , ' PT20 ,
18 ' PT21 , ' PT22 , ' PT23 , ' PT24 ,
19
20
21
22
23
```

SCR #113

```
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
```


SOUND DATA

TONE NAME	CARTRIDGE NO.	TONE NO.
NOVENA 1	INTERNAL	1

PARAMETER

LINE SELECT
1

(1,2,1+2,1+1)

MODULATION	
RING	NOISE
OFF	OFF

(ON/OFF)

DETUNE			
+/-	OCTAVE	NOTE	FINE
+	0	00	00

(+/-) (0-3) (0-11) (0-60)

VIBRATO			
WAVE	DELAY	RATE	DEPTH
4	00	00	00

(1-4) (0-99) (0-99) (0-99)

OCTAVE	
+/-	RANGE
	0

(+/-) (0-1)

1

DCO 1

WAVE FORM	
FIRST	SECOND
1	0

(1-8) (0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	76	00						
LEVEL	00	00						
SUS/END	SUS	END						

(0-99) (0-99)

DCW 1

KEY FOLLOW
0

(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	76	47	37	26				
LEVEL	00	00	00	00				
SUS/END			SUS	END				

(0-99) (0-99)

DCA 1

KEY FOLLOW
0

(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	99	42	67					
LEVEL	99	99	00					
SUS/END		SUS	END					

(0-99) (0-99)

2

DCO 2

WAVE FORM	
FIRST	SECOND
1	0

(1-8) (0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	99	68						
LEVEL	33	00						
SUS/END		END						

(0-99) (0-99)

DCW 2

KEY FOLLOW
0

(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	76	47	37	26				
LEVEL	99	96	52	00				
SUS/END			SUS	END				

(0-99) (0-99)

DCA 2

KEY FOLLOW
0

(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	99	77	67	79	33			
LEVEL	50	99	91	59	00			
SUS/END			SUS		END			

(0-99) (0-99)

COMMENT

SOUND DATA

TONE NAME	CARTRIDGE NO.	TONE NO.
NOVENA 2	INTERNAL	3

PARAMETER

LINE SELECT 1+2' (1,2,1+2,1+1')	MODULATION		DETUNE				VIBRATO				OCTAVE	
	RING OFF	NOISE OFF	+/- +	OCTAVE 0	NOTE 10	FINE 60	WAVE 1	DELAY 00	RATE 57	DEPTH 00	+/- -	RANGE 1
	(ON/OFF)		(+/-)	(0-3)	(0-11)	(0-60)	(1-4)	(0-99)	(0-99)	(0-99)	(+/-)	(0-1)

1

DCO 1

WAVE FORM	
FIRST	SECOND
2	0
(1-8)	(0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	00							
LEVEL	00							
SUS/END	END							

2

DCO 2

WAVE FORM	
FIRST	SECOND
3	8
(1-8)	(0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	00							
LEVEL	00							
SUS/END	END							

DCW 1

KEY FOLLOW
9
(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	99	12						
LEVEL	49	0						
SUS/END		END						

DCW 2

KEY FOLLOW
0
(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	99	12						
LEVEL	91	00						
SUS/END		END						

DCA 1

KEY FOLLOW
0
(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	99	30						
LEVEL	35	00						
SUS/END		END						

DCA 2

KEY FOLLOW
0
(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	95	30	50					
LEVEL	55	49	00					
SUS/END		SUS	END					

COMMENT

SOUND DATA

TONE NAME	CARTRIDGE NO.	TONE NO.
NOVENA 3	INT	5

PARAMETER

LINE SELECT (1,2,1+2,1+1)	MODULATION (ON/OFF)		DETUNE (+/-) (0-3) (0-11) (0-60)				VIBRATO (1-4) (0-99) (0-99) (0-99)				OCTAVE (+/-) (0-1)	
	RING	NOISE	+/-	OCTAVE	NOTE	FINE	WAVE	DELAY	RATE	DEPTH	+/-	RANGE
1+1'	OFF	OFF	+	0	00	01	4	16	61	12	+	1

1

DCO 1

WAVE FORM	
FIRST	SECOND
5	4
(1-8)	(0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	99	47	00					
LEVEL	65	66	00					
SUS/END		SUS	END					

2

DCO 2

WAVE FORM	
FIRST	SECOND
5	4
(1-8)	(0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	99	47	00					
LEVEL	65	66	00					
SUS/END		SUS	END					

DCW 1

KEY FOLLOW
0
(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	87	87	87	87	87	87	86	00
LEVEL	99	75	99	75	99	75	99	00
SUS/END							SUS	END

DCW 2

KEY FOLLOW
0
(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	87	87	87	87	87	87	86	00
LEVEL	99	75	99	75	99	75	99	00
SUS/END							SUS	END

DCA 1

KEY FOLLOW
0
(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	80	75						
LEVEL	87	00						
SUS/END	SUS	END						

DCA 2

KEY FOLLOW
0
(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	80	75						
LEVEL	87	00						
SUS/END	SUS	END						

COMMENT

SOUND DATA

0.	TONE NAME	CARTRIDGE NO.	TONE NO.
	NOVENA 4	INT	9

PARAMETER

LINE SELECT (1,2,1+2,1+1)	MODULATION (ON/OFF)		DETUNE (+/-) (0-3) (0-11) (0-60)				VIBRATO (1-4) (0-99) (0-99) (0-99)				OCTAVE (+/-) (0-1)	
	RING	NOISE	+/-	OCTAVE	NOTE	FINE	WAVE	DELAY	RATE	DEPTH	+/-	RANGE
1+2	OFF	OFF	+	1	00	06	2	43	60	00		0

1

DCO 1

WAVE FORM	
FIRST	SECOND
3	7
(1-8)	(0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	99	99	99					
LEVEL	66	00	00					
SUS/END		SUS	END					

DCW 1

KEY FOLLOW
0
(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	99	00						
LEVEL	50	00						
SUS/END	SUS	END						

DCA 1

KEY FOLLOW
0
(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	99	33	57	99				
LEVEL	90	16	00	00				
SUS/END			SUS	END				

2

DCO 2

WAVE FORM	
FIRST	SECOND
3	7
(1-8)	(0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	99	99						
LEVEL	00	00						
SUS/END	SUS	END						

DCW 2

KEY FOLLOW
0
(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	99	00						
LEVEL	50	00						
SUS/END	SUS	END						

DCA 2

KEY FOLLOW
0
(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	76	94	58	44	99			
LEVEL	01	99	90	00	00			
SUS/END				SUS	END			

COMMENT

SOUND DATA

TONE NAME	CARTRIDGE NO.	TONE NO.
NOVENA 5	INT	8

PARAMETER

LINE SELECT 1+2' (1,2,1+2,1+1)	MODULATION		DETUNE				VIBRATO				OCTAVE	
	RING	NOISE	+/-	OCTAVE	NOTE	FINE	WAVE	DELAY	RATE	DEPTH	+/-	RANGE
	ON	OFF	r	0	00	12	1	54	49	12	-	1
	(ON/OFF)		(+/-)	(0-3)	(0-11)	(0-60)	(1-4)	(0-99)	(0-99)	(0-99)	(+/-)	(0-1)

1

DCO 1

WAVE FORM	
FIRST	SECOND
1	5
(1-8)	(0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	66	72	43	65				
LEVEL	58	00	05	00				
SUS/END				END				

DCW 1

KEY FOLLOW
9
(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	82	42	00					
LEVEL	88	63	00					
SUS/END			END					

DCA 1

KEY FOLLOW
9
(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	99	28	56					
LEVEL	99	00	00					
SUS/END			END					

2

DCO 2

WAVE FORM	
FIRST	SECOND
2	0
(1-8)	(0-8)

E N V (PITCH)								
STEP	1	2	3	4	5	6	7	8
RATE	00							
LEVEL	00							
SUS/END	END							

DCW 2

KEY FOLLOW
7
(0-9)

E N V (WAVE)								
STEP	1	2	3	4	5	6	7	8
RATE	92	44	00					
LEVEL	80	62	00					
SUS/END			END					

DCA 2

KEY FOLLOW
0
(0-9)

E N V (AMP)								
STEP	1	2	3	4	5	6	7	8
RATE	90	33	86					
LEVEL	99	00	00					
SUS/END			END					

COMMENT
REMAINING 3 VOICES FOR 'NOVENA' ARE BUILT IN VOICES # 1, # 9, # 15, # 13.

