

The Use of Atari KNOBS

KNOBS is a machine language subroutine that allows the use of two extra "control knobs" for S.A.M.'s voice. If we make rough analogies to the physical structures that produce speech, these KNOBS allow us to adjust the size of S.A.M.'s throat and his mouth. Doing this creates different voices without altering the pitch or speed of the speech (and, of course, you can still do this independently with S.A.M.).

KNOBS has to be loaded into memory just like RECITER. Follow the directions for loading RECITER (with the "L" command) that appear on page 8 of your S.A.M. manual. If you are using S.A.M. only, load in "KNOBS.SAM" at this time. If you are using RECITER as well, load in RECITER and then load in "KNOBS.REC" at this time. Then return to BASIC.

To use KNOBS in your program, simply POKE values between 0 and 255 into the "throat" and "mouth" registers. A value of 128 in each register results in S.A.M.'s normal voice. POKEing higher numbers constricts the throat or mouth; POKEing lower numbers dilates the throat or mouth. Go ahead and experiment with different combinations of values and see what different voices you can get!

KNOBS from S.A.M.:

Throat = 18050
Mouth = 18051

KNOBS from RECITER:

Throat = 24039
Mouth = 24040

After the two POKes, the KNOBS subroutine is called by the A=USR (address) statement in BASIC.

When using KNOBS from S.A.M., this is

A = USR (17800)

When using KNOBS from RECITER, this is

A = USR (23789)

Have fun with the KNOBS feature. Make sure you have loaded in the proper version of KNOBS depending upon whether you want to use S.A.M. or RECITER.

Here are a few sample voices to use from KNOBS:

Description	Speed	Pitch	Throat	Mouth
Elf	72	64	110	160
Little Robot	92	60	190	190
Stuffy Guy	82	72	110	105
Little Old Lady	82	32	145	145
Extra-terrestrial	100	64	150	200
S.A.M.	72	64	128	128

Example: To have your Atari talk like an extra-terrestrial using RECITER, you would use this program:

```
10    DIM SAM$ (255)
20    POKE 8208, 100    REM sets speed
30    POKE 8209, 64    REM sets pitch
40    POKE 24039, 150    REM sets throat
50    POKE 24040, 200    REM sets mouth
60    A = USR (23789)    REM calls KNOBS
70    SAM$ = "I NEED TO PHONE HOME."
80    A = USR (8199)    REM calls RECITER
```