



speakers to create a "middle" effect. Each voice has control of pitch, envelope, and volume; programmable independently for each voice. And one voice from each stereo position (left, right, and middle) can be used in "normal mode" for tonal notes (the piano scale) or in "fuzz mode" for white noise effects (such as percussive sounds).

## **SONG PLAYBACK IS QUICK AND EASY**

Whether you're playing the sample songs provided with the Apple Music II, songs you've programmed, or programmed songs from our "Album" series of disks, playing a song is quick and easy. First, type RUN PLAY. The prompt character for the PLAY program (a period) will appear. To play the sample song DIXIE BOOGIE, for example, you type PLAY:DIXIE BOOGIE. The song will be read from disk, and then a suggested playback speed (tempo) will be shown on the screen. Rotating the paddle 0 knob allows you to select various speeds; when you've set the speed you just press the paddle 0 button to begin playback. During playback, the screen shows the title, composer, and conductor of the song (or any text information). Above the text is an amazing color display of the music as it plays (it is also suitable for black and white monitors). The pitch of each voice is shown by a moving dot above a line with a "Middle C" marker. The color of each dot indicates the current volume of each envelope. This lively display allows you to follow the melody of each part, without having to

read special notations.

The DISCO program allows you to play several songs in a row. Once set up, you just type RUN DISCO (for a random playback order) or EXEC ALBUM (to play the songs in the same order) and all the songs on a disk can be played — without having to type in each song name. And you can choose whether or not the play program should wait before a song for you to change the playback speed.

## **ENTERING YOUR OWN SONGS**

You can easily enter songs from sheet music in a simple, straightforward fashion. Entry displays the music you've entered in a sheet music format which allows you to compare what you've entered with the sheet music fairly quickly. To enter a note, you select the type of note from a menu of notes on the screen by pointing an arrow to it. This is done by turning one of the paddle knobs, then pressing the button to select the note. The other paddle is used to position the note on the treble or bass staff shown on the screen. Pressing the paddle button then causes the note to be entered, drawn on the screen, and its pitch played through the synthesizer. The pitch is automatically corrected for the current key signature (0 to 6 sharps or flats) which can be changed whenever the key changes in the music. Accidentals (sharps, flats, and naturals other than the key signature) are easily entered and continue within the voice throughout the measure, as required by standard music notation.

In addition to the instant verification of pitch as the entered note is played, Entry automatically shows measure bars at the end of each measure. These two features allow you to catch little mistakes almost immediately — you can simply back up and correct them. The excellent "human engineering" of Entry lets you work in a carefree mood — with confidence that anything done inadvertently is readily changed — that you are "in control". As of this writing, thousands of customers have used the Entry program, and none have ever reported any "bugs" or errors. By contrast, we've seen music entry programs which erase your song at the slightest error — one even erases all active disks and draws random lines on the screen if you merely try to back up past the first note!

## **A LARGE SELECTION OF FEATURES**

Entry has one of the largest selections of features available in any personal computer music entry program. Nearly the full pitch range of the synthesizer is available on the treble and bass staves for entry in standard positional notation — no "octave numbers" or other nonsense. The full pitch range of the synthesizer, plus the notes in between piano scale notes, is available using the transpose feature. Pitches and rests can have durations from whole to sixty-fourth, plus triplet and dotted — and all these "tied" together in any combinations. Non-standard durations can also be specified. There are com-

mands to transpose, change time and key signatures, change envelope and volume settings, and more. All these can be placed anywhere in the score, not just at the beginning. And a very powerful call/subroutine capability allows you to easily repeat sections, make "rounds",

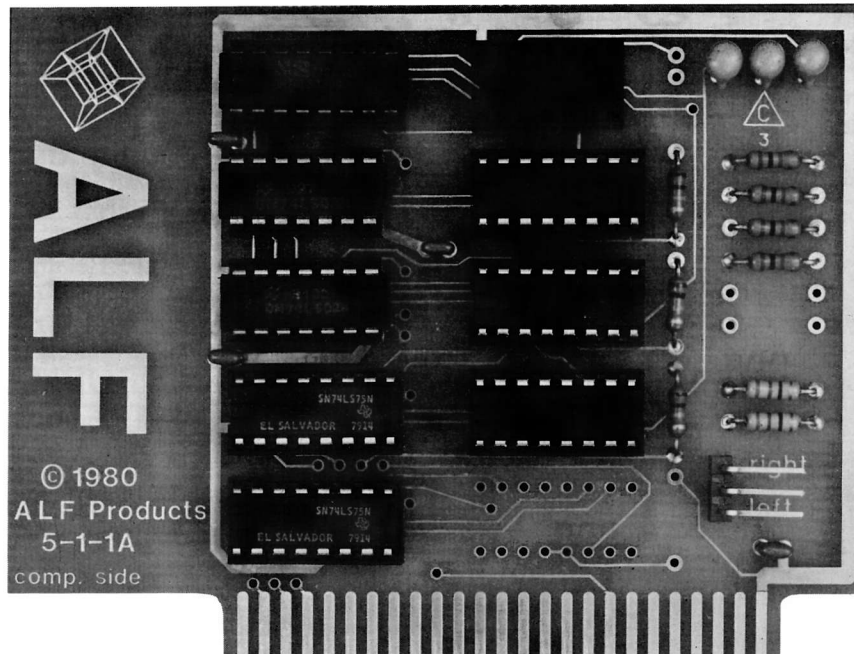


through notes.

## WE'VE DONE ALL THE HARD WORK FOR YOU

Entry is written entirely in 6502 Assembly Language — the

is finished you can instantly continue editing right where you left off. There are no disk transfers, "compile phases", or other delays to disturb your creative mood. Entry's easygoing interactive-graphics operation eliminates the annoying distractions found in less advanced soft-



and simplify a variety of other musical constructions.

## EASY EDITING

Another important feature of Entry is editing. You can easily change, insert, and delete notes, rests, and commands. Entry has *both* "replace" and "insert" modes so you can use the mode that best suits the editing you're doing. You can even step through notes one at a time, with the pitch of each note played through the synthesizer. This lets you find particular notes easily. MEASURE and GOTO commands let you move to particular sections without stepping

fastest and most efficient language on the Apple II™. Long execution pauses and other annoying delays — often found in less sophisticated programs — are virtually non-existent in Entry. And since both Entry and your song fit entirely within the Apple's memory, there are no time-consuming disk transfers. Once run, Entry uses the disk (or cassette tape on systems without a disk) only when you store a song on disk or recall one. For most convenient music entry, it is desirable to be able to quickly and easily play the song you're working on, then go back to editing. With Entry, you just type PLAY, select the tempo, and press a button. The song plays immediately, and when playback

ware and lets you enjoy working with music.

## WE COULD GO ON AND ON

The Apple Music II's features would fill pages. (If you like, you can order the comprehensive owner's manual to see a complete description of the features.) But for a look at the excitement of this music system, see your local Apple dealer for a demonstration. Or, order our Apple Music II Demo Record for just 75¢ (plus 25¢ per order for postage).

## TECHNICAL DETAILS & SPECIFICATIONS

**SYSTEM REQUIREMENTS:** Apple II™ or Apple II-Plus™ computer with 32K or more memory. Order optional cassette version if for use without an Apple Disk II.

**STEREO SYSTEM REQUIREMENTS:** Connects to any standard stereo amplifier or receiver, cable supplied has two standard RCA-type phono plugs. If for use on a mono system, obtain a "Y" adapter from a local stereo store, or order the Mono Cable accessory (number 10-1-2) which has one phono plug.

**CHANNELS:** 9 independent monophonic voices.

**STEREO:** 3 voices left, 3 voices right, and 3 voices both ("middle").

**MODES:** 6 channels pitch mode only, 3 channels (one per stereo position) pitch mode and tuned "white noise"-like mode.

**FREQUENCIES:** Nine independent pitch generators, each produces any frequency  $63920/D$  Hz where D is an integer from 1 to 1023.

**VOLUME LEVELS:** Nine independent volume control circuits, each with 16 settings over a 28 dB range.

**WAVEFORM:** Square.

**ENVELOPES:** See Entry specifications.

**SOFTWARE SUPPLIED:** Integer BASIC and Applesoft BASIC compatible versions of: ENTRY, PLAY, PERFORMANCE, DISCO (sequenced song playback) and 7 sample songs.

Apple II and Apple II-Plus are trademarks of Apple Computer Inc.

## ENTRY PROGRAM SPECIFICATIONS

**PITCHES AVAILABLE:** Without transpose, 55 half-steps. With transpose, 145 quarter-steps (6 octaves starting at the C 2 octaves below middle C) approximately 65.4 Hz to 4186 Hz.

**STANDARD NOTE DURATIONS:** Without tie, 20 (whole through sixty-fourth, plus dotted (except sixty-fourth) and triplet). With tie, 13,106 (normal 20 plus any combinations).

**TOTAL NOTE DURATIONS:** 65,535 (standard plus non-standard).

**REST DURATIONS:** Same as note durations above.

**SONG DATA SAVE AND LOAD:** From Apple Disk II and/or cassette tape.

**MEASURE BARS:** Automatic during entry, with one to nineteen counts per measure and whole to sixteenth note per count. Changeable at any point.

**KEY SIGNATURES:** Notes are altered automatically during entry, with one to six sharps or flats, plus key of C. Changeable at any point.

**INSERT MODE:** Allows insertion of notes, rests, and commands.

**DELETE:** Delete single or multiple notes, rests, and commands.

**SUBROUTINES:** Up to 100 subroutines, callable from any or all parts simultaneously.

**EDITING COMMANDS:** DEL (single delete), INS (insert mode), TIE, cursor left, cursor right, DELETE (multiple), EDIT, GOTO, MEASURE, NEW, PART, SPEED, STEREO, and SUBROUTINE.

**COMMANDS STORED IN MUSIC DATA:** ATTACK, CALL, DECAY, FUZZ, GAP, KEY, QUARTER, RELEASE, SUSTAIN, TIME, TRANSPOSE, and VOLUME.

**OTHER COMMANDS:** INTEGER (returns to BASIC), LOAD, and SAVE.

**ENVELOPE FEATURES:** Attack rate, decay rate, sustain level, release rate, gap size between notes, and volume level. 65,536 settings each.

**MONITOR ROM COMPATIBILITY:** Compatible with both regular and Auto-Start ROMs.

**BASIC COMPATIBILITY:** Compatible with Integer BASIC and Applesoft BASIC.

**REF:** Relative Enjoyment Factor typically exceeds 82.

## ORDERING INFORMATION

Order number 10-5-1, Apple Music II. Includes circuit card, stereo audio output cable, software on disk, and owner's manual. \$195.00\*.

Order number 10-5-1 option 2, Apple Music II. Same as 10-5-1 (above), but with software on cassette tape. \$195.00\*.

## ACCESSORIES

Order number 10-1-2, mono audio output cable. \$6.00\*.

(Various numbers), ALF ALBUM series of pre-programmed songs on disk or tape. The Apple Music II will play both the ALBUM series for the Apple Music II and the ALBUM series for the Apple Music Synthesizer. (Apple Music II play program must be used in either case.) \$14.95\* each.

\*Suggested U.S. list price.

Order from your local Apple dealer.

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