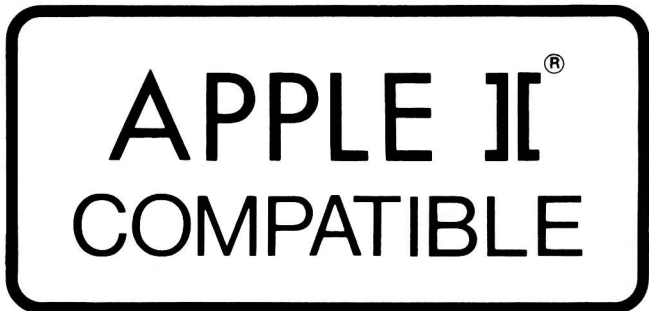


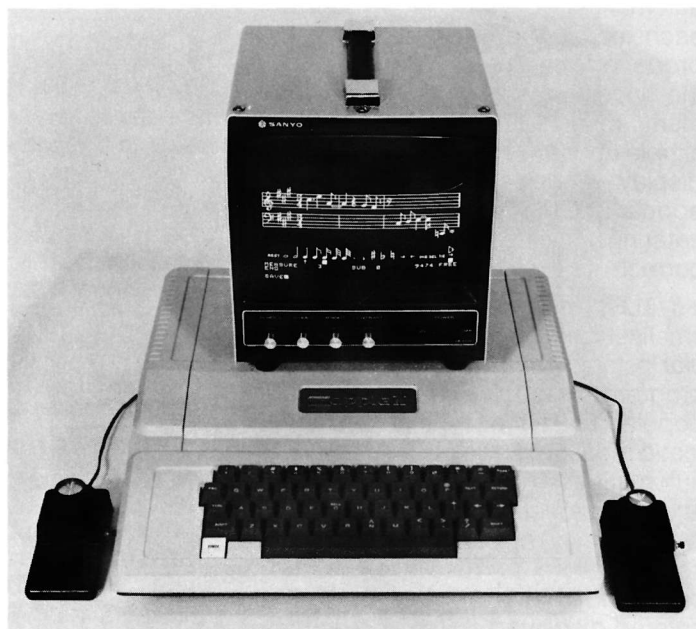
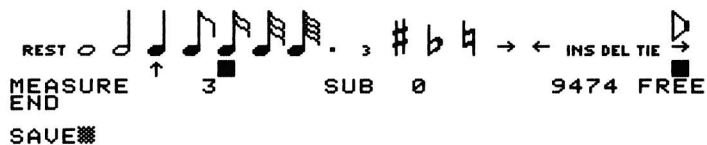
A L F Products Inc.

1448 Estes

Denver, CO 80215



MUSIC ENTRY SYSTEM



A STAR IS BORN

Early in 1979, ALF Products unleashed a new music entry system on an unsuspecting personal-computer world. The heart of this new system was a very sophisticated program named ENTRY. Taking a bold step into unique innovations, ALF showed that music programming could be done more easily than ever before.

ALF: THE LEADER IN COMPUTER MUSIC

Today, ALF's ENTRY program is being used by thousands of computer music enthusiasts, bringing music into the lives of many who previously could not play a musical instrument. In just a few minutes, even someone who's never played an instrument can program a

song and play it. Since mistakes can be corrected easily and without difficulty, there's no need for practice; an entered song can be played time and time again, flawlessly, at any tempo. Yet that's not all. Improvements, changes, and even whole new voices can be added at any time.

THE APPLE II COMPUTER

The Apple II personal computer is the most popular internally-expandable home computer available today. That's why ALF chose to create ENTRY for use with the Apple. Sold at hundreds of computer stores across the U.S. and around the world, the Apple II is ideal not only for use with ALF's fine quality music synthesizers, but for a variety of other functions, too.

The Apple II computer has two "game

paddles" which resemble the controllers for the popular "pong" television games. Each paddle has a knob and a button. Using these simple game paddles, and the Apple's built-in typewriter-like keyboard, you quickly and easily select the various functions available in the ENTRY program.

JUST LIKE SHEET MUSIC

Programming a song with ENTRY is amazingly easy. The Apple's television display shows the familiar staves of conventional sheet music. Across the bottom of the display the various notes are shown. Using the two paddles, you just select the note from the "menu" at the bottom of the display, and position a small circle on the musical staves at the position the note appears in the sheet music. When you press the

paddle button, ENTRY draws the note on the screen and simultaneously plays the pitch for audible verification. You watch the song you're programming appear in the display note by note, in virtually the same notation as your sheet music.

AUTOMATIC MEASURE BARS AND NUMBERS

Although you'll notice most mistakes immediately when the pitch is played (and then just use "backspace" to enter the correct note over the mistake), you wouldn't notice mistakes made in the length of the note. Musicians write music so that each measure contains the same total length, and the end of each measure is indicated by a vertical line called a "bar". You don't have to enter these bars, because ENTRY will automatically compute the length of each measure and draw bars at the proper places. This not only eliminates the inconvenience of entering the many measure bars, it provides a simple check. If the bars appear in the display at the same places they appear in the sheet music you're entering, the note lengths are probably correct.

It's ALF's meticulous attention to the smallest detail, not only in this particular instance but throughout the ENTRY program, that makes this system so popular. ENTRY doesn't stop at automatic measure bars. Each measure is automatically numbered, by ENTRY, and the number of the current measure is constantly displayed. With a few keystrokes, you can use the MEASURE command to have any measure you've entered displayed on the screen. Any following measures which fit on the display are shown too.

AUTOMATIC KEY AND TIME SIGNATURES

Need a time signature of 6/8? Just type TIME:6/8 and press return, and ENTRY will instantly draw a 6/8 on the display. Measure bars in the following measures will occur at the proper points for the selected time signature. Have a song where the time signature keeps changing? No problem. Type in a new time signature whenever you like. They're stored in the song data along with the notes, rests, and other parameters; and they're displayed along with the notes and rests in standard musical notation.

Key signatures changing on you too? Again, ENTRY is written to do the work for you. Let's say you have a key signature with 3 sharps. Just type KEY:3S and press return. Three sharps are

instantly displayed. When you enter notes, ENTRY will automatically make the proper notes sharp as indicated by the key signature. You don't have to remember which notes are sharp, or do anything special; ENTRY will handle the key signature just like a professional musician would. What if the song changes to a key with 2 flats? Type KEY:2F and press return. Notes entered in measures before the new key signature remain in the old key; and notes entered in measures after the new key are created with the new key. Key changes appear in the display in standard notation, and you can have as many changes as you like.

A GREAT SELECTION OF NOTE DURATIONS

ENTRY allows the use of nearly all standard note durations. From whole notes down to sixty-fourth notes; they're all there. Dotted notes, triplets, tied notes — all available in a simple and straightforward manner. Need five notes in the space of a single quarter note? Just type in a LENGTH command to get virtually any duration you need. (It's all available for rests, too.) Have notes that start in one measure but end up in another? Whether you enter them as tied notes, or just enter the full duration, ENTRY will automatically show them as being tied across the measure bar.

A GREAT SELECTION OF PITCHES, TOO

You get direct access to the full 61-note harpsichord range. Using TRANSPOSE, you can play any note within a full 8 octave range (which includes the full standard piano range). Quarter-tones (the notes between piano notes) are available with TRANSPOSE, too. Accidentals (notes which are indicated individually as sharp, flat, or natural in the sheet music) can easily be entered by selecting the standard musical notation from the "menu" on the screen. And of course accidentals are automatically applied to the pitch all through the rest of the measure, as required by standard notation.

AND MANY OTHER IMPORTANT FUNCTIONS

Subroutines (for repeated sections or rounds), envelope and volume control, stereo positioning, saving and loading songs (from cassette tape or disk), inserting and deleting notes, color playback display, transposing sections, tempo control, entering additional voices — there's too much to go into in detail here. And pre-programmed songs are available, too.

SPECIFICATIONS

Memory consumption: 20K bytes (required only when in use).

Maximum number of monophonic voices (parts): 9.

Pitches available (without transpose): 63 half-steps (the harpsichord range plus 2).

Pitches available (with transpose): 192 quarter-steps (including the piano range).

Standard note durations (without tie): 20 (whole through sixty-fourth, plus dotted (except sixty-fourth) and triplet).

Standard note durations (with tie): 13,107 (as above, plus any combinations).

Total note durations (including non-standard): 65,535

Rest durations: same as note durations above.

Song data save and load: from cassette tape and/or Apple DISK II.

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: 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, GAP, KEY, QUARTER, RELEASE, SUSTAIN, TEMPO, 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: with both regular and Auto-Start ROMs.

BASIC compatibility: with Integer BASIC and Applesoft BASIC.



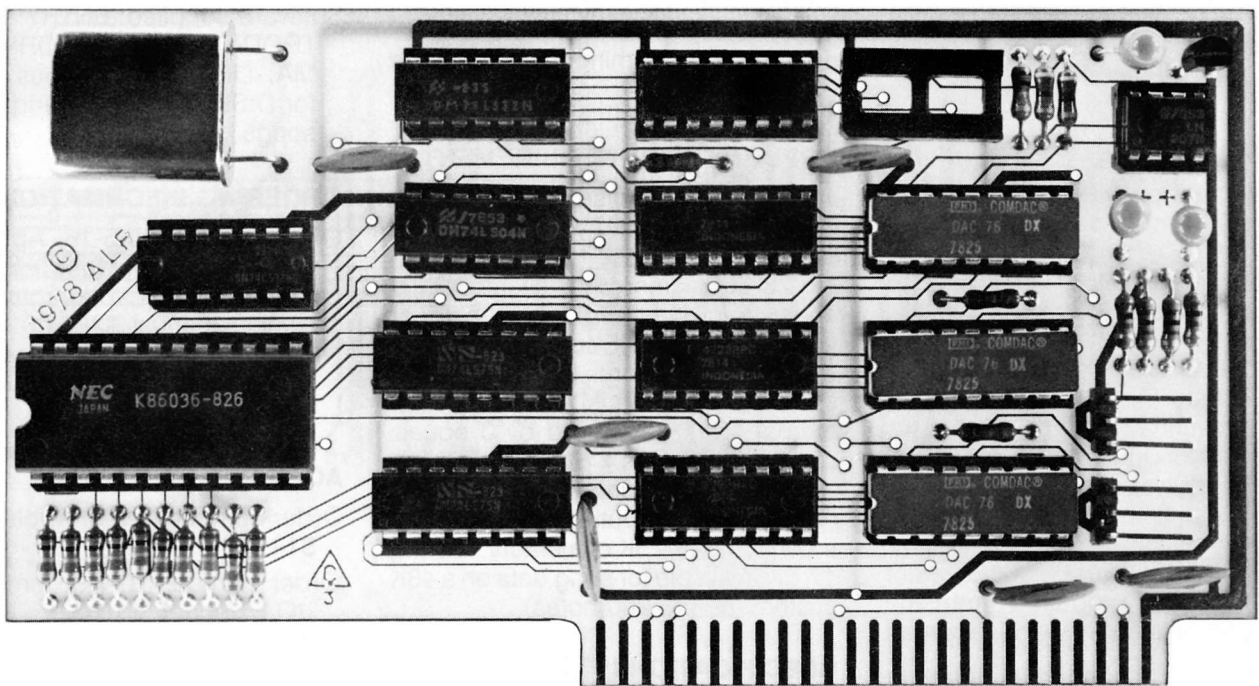
APPLE II[®]
COMPATIBLE

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MUSIC SYNTHESIZER



A COMPLETE LOW COST SYNTHESIZER FOR THE APPLE II COMPUTER

SOUND QUALITY IS "THE BOTTOM LINE"

It doesn't matter how brilliant your masterpiece is if there's noise in the synthesizer output. That's why ALF's Apple Music Synthesizer is designed with the same attention to detail as a fine stereo system. The flawless audio output contains no audible noise; it easily rivals even the best conventional synthesizers, which sell for thousands of dollars more. Located in the heart of a complex digital computer, a noise-free signal is no trivial task. But even

when your disk drive is making its largest demands on the power supply and bus, you won't hear it through the synthesizer at any normal amplification level. The Apple Music Synthesizer is designed to be connected to your home stereo system. Just plug the standard RCA-type phono plug cable (included) into the aux, tuner, tape play, or similar jack on your amplifier or receiver. You'll get the best sound your stereo system can provide, without the noise and distortion that might be present if an inexpensive "on-board"

amplifier were used on the synthesizer.

HOW ABOUT STEREO?

The synthesizer has only one output, so with one unit you get a mono signal. However, for those applications where two units are required the two outputs can be connected to a stereo amplifier (or receiver) for separate "left" and "right" signals. Or a simple Y adapter (available at any stereo store) can be used for mono. Special circuitry on the card allows three units to be connected to a stereo system with "left", "right", and "middle" (both) signals.

ENTER THE FASCINATING FIELD OF COMPUTER-CONTROLLED MUSIC

THREE VOICES ON A SINGLE CARD

Each synthesizer is really three separate independent monophonic synthesizers. "Monophonic" means they can play any available pitch, but only one pitch at a time. This is similar to conventional instruments like flutes, trumpets, or clarinets which also only play one note at a time. Having three synthesizers on each card allows you to play a song which would require three such instruments playing at once. Since the synthesizer can be changed from one sound quality to another instantly, you could play a song that is normally played with many instruments, but of course only three instruments can play simultaneously. Or, you can play a three note piano chord. If you need more than three simultaneous pitches, additional units can be added. Nine simultaneous voices can be played using three synthesizers.

ACCURATE, STABLE PITCHES

Frequencies (pitches) are produced with a crystal-controlled digital circuit which never requires tuning and is scarcely affected by temperature and humidity changes. The entire piano scale, with standard A=440 Hz tuning, is accurately created with all pitches within 2 cents. (A "cent" is 1/100 of the range between two piano notes.) This is excellent for virtually any application. Even quarter-tones, the notes between piano notes (including both white and black keys) within the piano range are highly accurate. Over 65,000 different pitches can be produced, from the lowest piano note to well above human hearing.

AMPLE VOLUME SETTINGS

There are three volume control circuits (one for each voice) with 256 settings each. Since they are arranged in an exponential fashion, the 256 levels function as well as 8,160 levels arranged in a simple linear fashion would. Since the volume control circuitry is used to create envelopes

(note loudness contours) by advanced programs such as ENTRY, the large number of settings available assures a variety of envelopes and smooth fade outs.

ADVANCED SOFTWARE

The synthesizer is supplied with BASIC compatible software (and sample songs). Sheet music can be entered using the ENTRY program, and played back using either ENTRY or PLAY. The INTRODUCTION program gives a brief demonstration of basic synthesizer terminology. The PERFORM program is used to play songs from your own BASIC programs. CHROMA can be used from a BASIC program for creating complex sounds. If you like to create your own programs, the Owner's Manual gives complete instructions on programming the synthesizer directly.

APPLE MEMORY REQUIREMENTS

When run, ENTRY uses the lowest 20K of the Apple's memory. On a 48K computer using cassette tape, the remaining 28K of memory is available for the song being entered. Each note or function (such as KEY or TIME) requires 3 bytes of memory. (28K equals 28 times 1024, which is 28672, bytes of memory. 28672 divided by 3 equals over 9,500 notes.) Some additional memory is consumed for each part (voice) and subroutine. Apple's DISK II consumes 10.5K of memory, leaving 17.5K available for song data on a 48K system (over 5,900 notes).

SPECIFICATIONS

Channels (independent monophonic voices): 3 per synthesizer.

Audio output: standard RCA-type phono plug cable. Connects to virtually any audio input except phono-graph inputs. Amplifier, stereo system, or receiver plus speaker is required. Stereo outputs available when 2 or 3 units are used.

Apple compatibility: plugs directly into any Apple expansion slot. Designed to meet all Apple recommendations. Software requires multiple units to be in adjacent slots (when more than one synthesizer is used).

Frequencies: three independent pitch generators, each produces any frequency $1782000/D$ Hz where D is an integer from 32 to 65536.

Volume levels: three volume control circuits, each with 256 settings with an exponential range over 78 dB.

Waveform: square. Variable duty cycle pulse waves available on one or two channels when frequency is controlled by third channel.

Relative Enjoyment Factor (REF): typically exceeds 82.

Software supplied: ENTRY, PLAY, INTRODUCTION, PERFORM, CHROMA, DISCO (continuous playback for DISK II systems), and 5 sample songs.

ORDERING INFORMATION

Order number 10-5-16, Apple Music Synthesizer. Includes circuit card, audio output cable, software, and owner's manual. \$265.00*

Option 1: Integer & Applesoft BASIC disk.

Option 2: Integer BASIC cassette.

ACCESSORIES

Order number 13-2-3, Applesoft tape. \$14.95*

Order number 10-1-9, Timing Mode I/O Extender. \$18.00*

(various numbers) ALF ALBUM series of pre-programmed songs on tape or disk. \$14.95* each.

Order number 11-1-6, owner's manual (for evaluation). \$7.00*

Order from your local Apple dealer.

*Suggested U.S. list price.