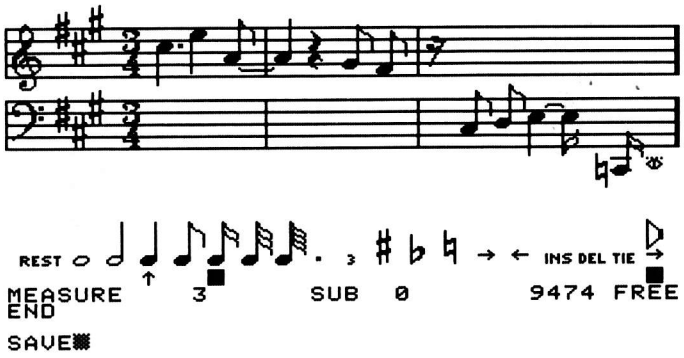
APPLE® II COMPATIBLE

A L F Products Inc.; 1448 Estes; Denver, CO 80215; (303) 234-0871

MC1 & MC16 MUSIC CARDS



APPLE II COMPUTER

ENTER THE EXCITING FIELD OF COMPUTER MUSIC

Now you can get into the exciting field of computer-controlled music at our lowest price ever. For less than $22 per voice, the MC1 is ideal for getting started. Or, for less than $82 per voice, the MC16 features super-accurate tuning and extra-fine volume discrimination. Both come with complete software for an Apple® II or Apple® II-Plus computer — in just minutes you can play the sample songs provided. You can enter songs yourself from standard sheet music and play them using the Entry program provided. Just follow the simple instructions in our detailed manual.

INSTALLATION

Either Music Card plugs into any expansion slot in your Apple® . (When using more than one MC16 they must be in adjacent slots.) The audio cable provided attaches to the Music Card and plugs into your home stereo system. Installation is that easy. When you "boot" the Disk II-compatible software disk, the start-up program will automatically configure the software to work with the expansion slot(s) you've selected. (Cassette software is also available.)

THE HARDWARE

The MC1 Music Card has nine independent "voices". The MC16 has three voices per card, and you can

use two MC16's for six voices or three MC16's for nine voices. Each voice can play a melody like you could play on a piano using only one finger. Using several voices adds more "fingers". Three voices of the MC1 (or one MC16 card) play through the left speaker of your stereo system. Three other voices (or another MC16) play through the right speaker. The remaining three voices (or the third MC16) play through both speakers to create a "middle" effect. Each voice has control of pitch, envelope, and volume; programmable independently for each voice. On the MC1, one voice from each stereo position can be used either in "normal mode" for tonal notes (the piano scale) or in "fuzz mode" for white-noise-like effects (such as percussive sounds).

SONG PLAYBACK IS QUICK AND EASY

Whether you're playing the sample songs provided, 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 on the screen. To play the song DIXIE BOOGIE (provided with the MC1), 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. (Or the volume range on the MC16.) 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.

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 quickly compare what you've entered with the sheet music. 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 Music Card. 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". It has been highly praised by both musicians and computer enthusiasts. 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 Music Card 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 Music Card, plus the notes in between the 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 commands 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, so you can change the sound of a voice from one note to the next. And a very powerful call/subroutine capability allows you to easily repeat sections, define standard sounds, make "rounds", and simplify a variety of other musical constructions.

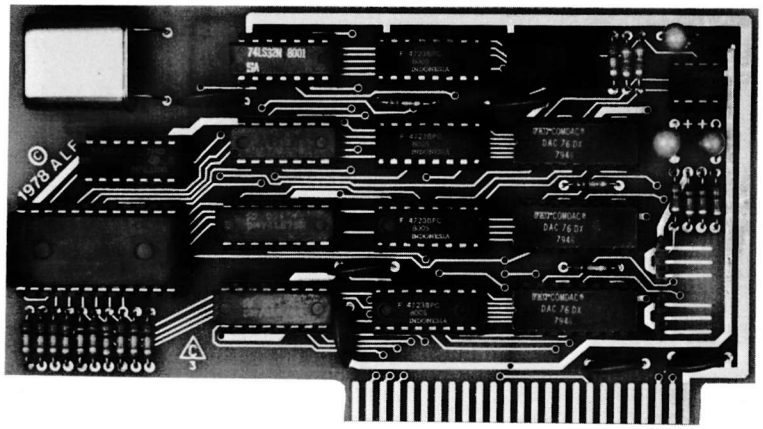
EASY EDITING

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 Music Card. This lets you find particular notes easily. MEASURE and GOTO commands let you move to particular sections without stepping through notes.

WE'VE DONE ALL THE HARD WORK FOR YOU

Entry is written entirely in 6502 Assembly Language — the fastest and most efficient language on the Apple® . Long execution pauses and other annoying delays — often found in less sophisticated programs — are virtually non-existant 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 im-

mediately, and when playback is finished you can instantly continue editing right where you left off. You don't have to load other programs, and there are no disk transfers, "compile phases", or other delays to disturb your creative mood. What other system is so advanced? Entry's easygoing interactive-graphics operation eliminates the annoying distractions found in less advanced software and lets you enjoy working ↓



MC16 3 voices

with music.

WE COULD GO ON AND ON

The MC1 and MC16's features would fill pages. (If you like, you can order one of our comprehensive owner's manuals to see a complete description of all the incredible features.) But for a look at the excitement of these Music Cards, see your local Apple dealer for a demonstration. To be sure you get our top quality hardware and software, be sure to ask for ALF Music Cards.

A demonstration record of the MC1 is available for $1, order number 13-1-2. MC1 owner's manual is order number 11-1-1, MC16 manual is 11-1-6.

TECHNICAL DETAILS & SPECIFICATIONS

SYSTEM REQUIREMENTS: Apple® II or Apple® II-Plus 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 standard RCA-type phono plug(s). To use an MC1 (or three MC16's) on a mono system, obtain a "Y" adapter from a local stereo store. (The MC1 has an optional Mono Cable, order number 10-1-2.)

STEREO: The MC1 has 3 voices on the left output, 3 on the right, and 3 voices on both ("middle"). The MC16 has a single output, so one MC16 is mono. With 2 MC16's the ouput is stereo, with 3 voices on the left and 3 on the right. Three MC16's have the same stereo configuration as the MC1.

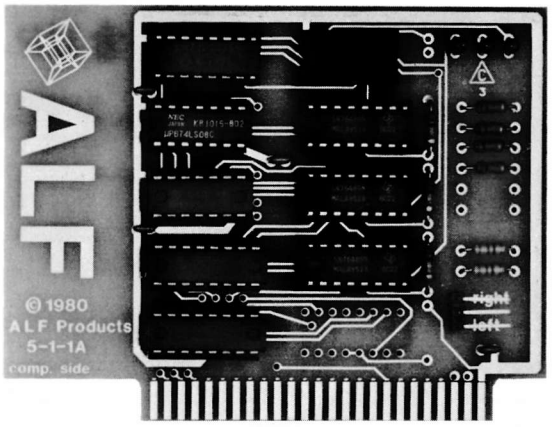
MODES: MC1: 6 channels pitch mode only, 3 channels (one per stereo position) pitch mode and tuned "white noise"-like mode. MC16: 2 channels can be set to variable pulse width mode (with frequency controlled by the third channel), this feature is not available through the ENTRY and PLAY programs.

FREQUENCIES: MC1: 9 independent pitch generators, each produces any frequency 63920/D Hz where D is an integer from 1 to 1024. MC16: 3 independent pitch generators, each produces any frequency 1782000/D Hz where D is an integer from 32 to 65536.

TUNING INACCURACY: (Halftones with Entry, ±0.015% crystal.) MC1: within 1.75 cents at the lowest octave, to a worst case of 33 cents at the highest octave. MC16: within 0.3 cents at the lowest octave, to a worst case of less than 1.5 cents at the highest octave. (One cent = 1/100th of a half step.)

VOLUME LEVELS: MC1: 9 independent volume control circuits, each with 16 settings over a 28 dB range. MC16: 3 independent volume control circuits, each with 256 settings over a 78 dB range. Both units feature exponential control.

WAVEFORMS: Square. (The MC16 can also produce variable duty cycle pulse waves, see MODES above.)



MC1 9 voices

ENVELOPES: See ENTRY specifications.

SOFTWARE SUPPLIED: Integer BASIC and Applesoft BASIC compatible versions of: Entry, Play, Perform, Disco (sequenced song playback), Introduction (MC16 only), and Chroma (MC16 only). The MC1 is supplied with 7 sample songs, the MC16 with 5. Software is compatible with both regular and Auto-Start monitor ROMS.

ENTRY PROGRAM SPECIFICATIONS

PITCHES AVAILABLE: Without transpose, 55 (MC1) or 63 (MC16) halftones. With transpose, MC1: 145 quarter tones (6 octaves starting at the C two octaves below middle C) approx. 65.4 Hz to 4186 Hz.; MC16: 192 quarter tones (8 octaves starting at the lowest note on a piano, the A three octaves below middle C) approx. 27.5 Hz to 6645 Hz.

STANDARD NOTE DURATIONS: Without tie, 20 (whole through sixty-fourth, plus dotted (except sixty-

fourth) and triplet). With tie, 13106 (normal 20 plus any combinations).

TOTAL NOTE DURATIONS: 65535 (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.

REPLACE MODE: (Normal mode.) Allows changing of notes, rests, and commands without first deleting them.

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

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

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 (MC1 only), GAP, KEY, QUARTER, RELEASE, SUSTAIN, TEMPO (MC16 only). TIME, TRANSPOSE, and VOLUME.

OTHER COMMANDS: INTEGER (returns to either BASIC), LOAD, and SAVE (both to either disk or tape).

ENVELOPE FEATURES: Attack rate, decay rate, sustain level, release rate, gap size between notes, and volume level. 65536 settings each.

REF: Relative Enjoyment Factor typically exceeds 82 (MC1 and MC16).

ORDERING INFORMATION

Order number 10-5-1, Music Card MC1. Includes circuit card, stereo audio output cable, software on disks, and owner's manual. $195.00*.

Order number 10-5-16, Music Card MC16. Includes circuit card, audio output cable, software on disk, and owner's manual. $245.00*.

Order number 10-5-1 option 2, Music Card MC1. Same as 10-5-1 (above), but with software on cassette tapes. $195.00*

Order number 10-5-16 option 2, Music Card MC16. Same as 10-5-16 (above), but with software on cassette tape. $245.00*.

NOTE: tape software can be saved on disk for disk use if desired, and disk software can be saved on tape for tape use. Automatic configuration on "boot up" available on disk software only.

ACCESSORIES

PROCESS & OTHER PROGRAMS, order number 13-3-11, is a disk of programming aids for Music Card owners. Includes playback mode changer, automatic DISCO file construction, envelope design/experiment program, alphanumeric song lister, advanced song editing functions including append, and PERFORM program with lores graphics. Request the PROCESS data sheet.

BASIC EAR-TRAINING SKILLS, order number 13-3-9 (Integer) or 13-3-10 (Applesoft), is a disk of basic ear-training programs for the MC16 (not available for the MC1). Includes pitch discrimination, interval recognition, chord recognition, and scale recognition. Request the EAR-TRAINING data sheet.

PROGRAMMED SONG "ALBUMS" MC1: Album A (13-3-12), Album B (13-3-13), Album C (13-3-14), Album D (13-3-15), and Album E (13-3-17). MC16: Album 0 (13-3-5), Album 1 (13-3-2), Album 2 (13-3-4), Album 3 (13-3-6), and Album 4 (13-3-16). Each of these "Albums" is a disk containing at least 12 programmed songs. $14.95* each. (Tape versions also available.) Albums 0, 3 and 4 require two MC16's. Song titles are given on the ALBUMS data sheet.

More albums will be available. Information is available on submitting songs you've programmed to be purchased for use in the Album series.

TIMING MODE, order number 10-1-17 (Timing Mode Input Board) or 10-1-9 option 1 (Timing Mode I/0 Extender), to be used with the MC16 only. Allows dynamic programmable control of playback tempo. Request the TIMING MODE IMPUT BOARD and GAME I/0 EXTENDER data sheets.

*Suggested U.S. list price.

Order from your local Apple dealer.