

MC1 & MC16 MUSIC CARDS



ENTER THE EXCITING FIELD OF COMPUTER MUSIC

Now getting into the exciting field of computer-controlled music is easier than ever! ALF's model MC1 and model MC16 Music Cards are low-cost accessories for your Apple Computer. Both come with complete software—in just minutes you can play the sample songs provided. Entering your own songs from standard sheet music is fast and easy (just follow the simple instructions in our detailed manual).

INSTALLATION

Either Music Card simply plugs into any expansion slot in your Apple II, Apple II+, Apple IIe, Basis 108, Frankling Ace, or similar computer. An audio cable (provided) attaches to the Music Card and plugs into your home stereo system. Installation is that easy.

The MC1 card can also be used on the Apple III. Except on the Apple IIe and Apple III systems, game paddles are required to use the Music Cards.

THE HARDWARE

The MC1 Music Card has nine independent "voices". The MC16

has three voices per card (you can use two MC16's to get 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. For example, a three-note chord would take three voices to play. Using nine voices, you could play three such chords at the same time.

The MC1 is a low-cost card ideal for most applications. It features nine voices all on one card, three of which can produce either notes (the piano scale) or "white noise"-like effects such as percussive sounds and wind sounds. It has a six octave range, and 16 volume levels per voice. These features make the MC1 ideal for music entry and playback, playing the disks of songs available from ALF and others, sound effects in games, as a tool for composition or experimentation, for notation practice, and many other applications.

The MC16 is the gourmet version of the MC1. It has all the features of the MC1 except the "white noise" feature. In addition, the MC16 has an eight octave range, 256 volume levels per voice, and tuning accuracy which is perfect for all practical purposes. The MC16 is suitable for all

the applications just described for the MC1, and is ideal for more demanding applications such as ear training, connection to other synthesis equipment, psychoacoustic research and other scientific uses, and so on.

SONG PLAYBACK IS QUICK AND EASY

Whether you're playing the sample songs provided or songs you've entered yourself, playback 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 playback will begin. During playback, the screen shows the title, composer, and conductor of the song (or any desired 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 voice. Unlike sheet music notation, which is difficult to follow when racing across a

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display, the lively color display allows you to visualize the melody of each voice (and how the voices are related) with ease. And of course the sheet music notation can be examined note by note with the Entry program, at your own pace.

The Disco program provided allows you to play several songs in a row. Once set up, you type EXEC ALBUM to play several songs in a preselected order, or RUN DISCO to play them in a random order. Programs for setting up and editing the list of songs to play are included.

Additional songs are available on disk. "Songs for the MC16" contains 150 songs, and "Songs for the MC1" has 175. All are ready to play back instantly.

ENTERING YOUR OWN SONGS

You can easily enter songs from sheet music in a simple, straightforward fashion. The Entry program supplied lets you enter notes, and display them in a sheet music format. To enter a note, you select the type of note from a menu of notes on the screen. This is done using the left and right arrow keys on the Apple IIe or Apple III, or with one game paddle on other systems. Then, position the note on the treble or bass staff (shown on the screen) using the up and down arrow keys (or, with the other game paddle). When the desired position is selected, pushing a button causes the note to be drawn on the screen and sounded through the Music Card.

Each note is automatically corrected for the current key (0 to 6 sharps or flats), which can be changed whenever the key changes in the music. Accidentals (sharps, flats, and naturals) are easily entered, and continue within the voice throughout the measure (as required by standard music notation). Unlike many other systems, both sharp and flat notes can be displayed regardless of whether the current key signature has sharps or flats.

The sheet music format display lets you easily compare what you've entered to the notes shown in the sheet music. And Entry automatically shows measure bars at the end of each measure. By listening to the pitch of each note as it is entered, and comparing the music displayed on the screen with the sheet music, you can catch little mistakes almost immediately. You simply back up and correct them easily.

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. (In fact, Apple Computer's "Apple IIe Design Guidelines" booklet praises only two programs for good human interfacing: VisiCorp's VisiCalc™ and ALF's Entry program.) As of this writing, thousands of customers have used the Entry program, and none has ever reported any "bug" or error.

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 (including the quarter tones between the regular 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 change playback tempo, time and key signatures, envelope and volume settings, and much more. All these commands can be placed anywhere in the score (not just

once for each voice, as in some systems), 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

With Entry, 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.

The Process program supplied lets you make major changes to a song. You can also append two songs together. Or, you can move a melody from one song to another.

DESIGNING YOUR OWN SOUNDS

The Envelope program supplied is used to experiment with the envelope parameters used to create different sounds with the Music Cards. A short melody can be entered along with various parameters. The Envelope program can play the melody while simultaneously drawing the envelope contour in high-resolution graphics on the Apple display. You can change any parameter, and instantly play the melody again to hear (and see) the new sound. Several sample melodies and sounds are pre-programmed.

WE'VE DONE ALL THE HARD WORK FOR YOU

The Entry program is written entirely in 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-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 only when you wish to save or load a song.

For most convenient music entry, it is desirable to be able to play the song you're working on, then continue editing. With Entry you just type PLAY at any



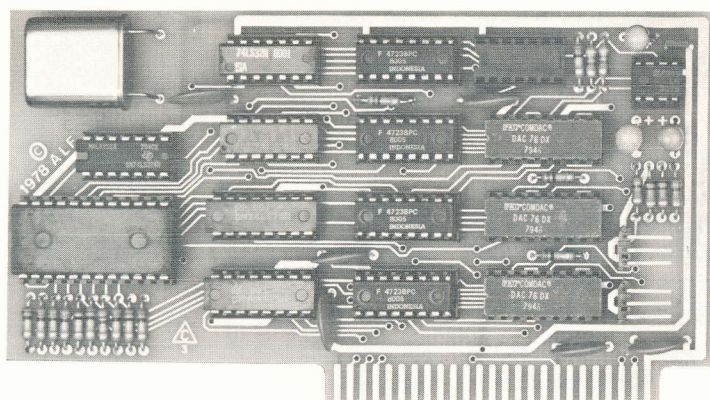
See your dealer today. To be sure you get our top quality hardware and software, remember to ask for ALF Music Cards.

TECHNICAL DETAILS & SPECIFICATIONS

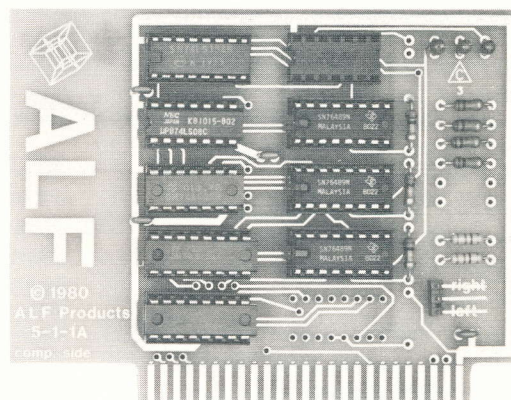
SYSTEM REQUIREMENTS: Apple II, Apple II+, Apple IIe, Apple III (MC1 only), Basis 108, Franklin Ace, or similar computer with Applesoft BASIC, disk drive, and 48K or more memory. Music Cards can be installed in any expansion slot. (When using two or three MC16's,

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

TUNING INACCURACY: (Halftones with Entry program, 0.015% crystal accuracy.) 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.)



MC16 3 voices



MC1 9 voices

time. The song plays immediately, and when playback is finished you can instantly continue editing right where you left off. The delays in other systems—loading other programs for playback, long disk operations, and “compile” phases—can destroy your creative mood. Entry's easygoing interactive-graphics operation eliminates these annoyances and lets you enjoy working with music. What other system is so advanced?

WE COULD GO ON AND ON

Glance through the following specifications. A complete explanation of the MC1 and MC16 features would fill pages. (If you like you can order the owner's manual for full details on all the incredible features.) ALF's Music Cards have been the standard of excellence for Apple music since 1979.

they must be in adjacent slots.) Game paddles required on all systems except the Apple IIe and Apple III.

STEREO SYSTEM REQUIREMENTS: Use any standard stereo amplifier or receiver. Cable supplied has standard RCA-type phono plug(s), plug into “tape”, “tuner”, “aux” or similar inputs (not into turntable or microphone inputs).

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 two MC16's the output is stereo, with 3 voices on each output. 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 per card can be set to variable pulse mode, with frequency controlled by the third channel (this feature is not used by the software supplied).

FREQUENCIES: MC1: 9 independent pitch generators, each produces any fre-

VOLUME LEVELS: MC1: 12 independent volume control circuits (9 pitch mode and 3 “white noise” mode), each with 16 settings over a 28 dB range. MC16: 3 independent volume control circuits per card, each with 256 settings over a 78 dB range. Both the MC1 and the MC16 feature exponential control.

WAVEFORMS: Square. More complex waveforms can be created by combining several voices for additive synthesis. The MC16 can also produce variable duty cycle pulse waves (see MODES, above).

ENVELOPES: Software generated (see the Entry program specifications).

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

SOFTWARE SUPPLIED: “Disco”, “Entry”, “Envelope”, “Hustle”, “Mlist”, “Perform”, “Play”, and “Process”; see descriptions below. Programs are supplied on Apple format disks. Applesoft BASIC is required to use the programs. Sample songs are also provided. (Additional songs are available separately.)

DISCO PROGRAM

Causes the Play program to play all songs listed in an "album" file in a random order. Disco is also used to create an album file or to add new song titles to the file.

ENTRY PROGRAM

Allows a song to be entered from sheet music, edited, played back, and saved. Also allows a saved song to be loaded for examination, playback or editing.

PITCHES AVAILABLE: Without transpose, 55 (MC1) or 63 (MC16) halftones. With transpose, MC1: 144 quarter tones (6 octaves starting at the C two octaves below middle C) approx. 65.4 Hz to 4066 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 6840 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.

SONG DATA SAVE AND LOAD: Save and load to Apple "Disk II" drive.

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 at any point.

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

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

SUBROUTINES: Up to 100 subroutines may be entered, callable from any or all parts (voices) simultaneously (and from other subroutines).

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, RATE, RELEASE, SUSTAIN, TIME, TRANSPOSE, and VOLUME.

OTHER COMMANDS: FP (returns to BASIC), PLAY, LOAD, and SAVE.

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

ENVELOPE PROGRAM

Used to design envelopes (sound contours). Plays short melody while displaying loudness contour in hi-resolution graphics. Includes sample melodies.

COMMANDS: ATTACK, DECAY, DISPLAY, EDIT, END, EXAMPLE, FP, FUZZ, GAP, INT, PLAY, RELEASE, SUSTAIN, TRANSPOSE, and VOLUME. Also has commands for entering notes and rests for simple melody in alphanumeric format.

SPECIAL REQUIREMENTS: Requires game paddles, regardless of system used. Cannot be used on the Apple III.

HUSTLE PROGRAM

Creates an "album" file (see Disco program) which allows the Play program to play several songs in sequence. Album file created contains the titles of all songs on the disk. Individual titles can also be deleted.

MLIST PROGRAM

Prints out a listing of an Entry-created song in alphanumeric format (not in sheet music notation). The listing can be limited to certain parts or subroutines, and to certain note ranges or particular commands.

PERFORM PROGRAM

Allows your Applesoft program to play a song. Perform program and song data is BLOADED, then Perform is called when playback is desired.

PLAY PROGRAM

Plays Entry-created songs. The Play program is essentially the PLAY command from the Entry program. Since it is shorter than Entry, it can be loaded more quickly from disk, and it can play songs too large to play with Entry (for example, two large songs appended together with Process). It also allows the use of DOS commands (such as CATALOG) and can use "album" files for sequential playback of several songs.

PROCESS PROGRAM

Used mainly to delete parts or subroutines from an Entry-created song, or to append parts or songs together. Also changes parts to subroutines and vice versa.

APPEND FUNCTIONS: Append a part or subroutine from an "auxiliary" song to the desired part or subroutine in the current song. All subroutines, or all subroutines numbered higher than the last subroutine in the current song, can be moved from the auxiliary song to the current song.

DELETE FUNCTION: Delete any part or subroutine in the current song.

EDITING FUNCTION: Change calls in any or all subroutines and parts so they call any desired subroutine.

STATUS FUNCTIONS: Prints the number of parts and subroutines in a song, its stereo an speed settings, and its titles. Also, computes the final value of all envelope and display parameters in a part or subroutine, and its playing time in time periods.

BSAVE/BLOAD FUNCTION: Allows a song to be BSAVED in a simplified format for easy processing with your own programs. BLOAD function converts the simplified format back to Entry format for editing or playback.

COMMANDS: APPEND, AUXILIARY, BLOAD, BSAVE, CHANGE, DELETE, LOAD, SAVE, STATUS, and WIDTH. Also allows several DOS commands.

ORDERING INFORMATION

MUSIC CARD MC1: part number 10-5-1. Includes circuit card, stereo audio output cable, software on disk, and owner's manual.

MUSIC CARD MC16: part number 10-5-16. Includes circuit card, audio output cable, software on disk, and owner's manual.

2ND OR 3RD MC16 CARD: part number 10-2-16. Includes circuit card only.

MC16 AUDIO CABLE: part number 10-1-7. One required with 2nd MC16 card.

SONGS FOR THE MC1, PART 1: part number 13-3-35. Over 130 songs supplied on disk.

SONGS FOR THE MC1, PART 2: part number 13-3-36. Over 35 intricate songs on disk.

SONGS FOR THE MC16, PART 1: part number 13-3-37. Over 100 songs supplied on disk. Most require two MC16's for playback.

SONGS FOR THE MC16, PART 2: part number 13-3-38. Over 35 intricate songs on disk. Three MC16's required for playback.

BASIC EAR-TRAINING SKILLS: order number 13-3-10. A disk containing four basic ear training programs, for use with an MC16: pitch discrimination, interval recognition, chord recognition, and scale recognition. Request the Ear-Training Data Sheet for additional information.

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