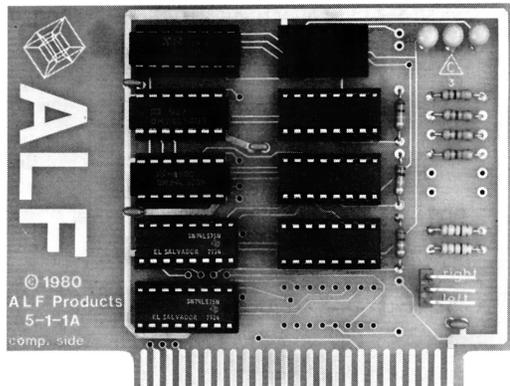


A L F Products Inc. 1448 Estes Denver, CO 80215

NEW PRODUCTS



**10-5-1
APPLE MUSIC]]**

The "Apple Music]]" is a simple music synthesizer with price and performance designed for the hobby market. With a suggested list price of only \$195.00 (\$21.67 per voice), this synthesizer is easily one of the lowest priced synthesizers of its class. Although the synthesizer is somewhat limited by the necessities of economics, each feature available has been exploited virtually to the limits of the hardware and of the Apple II computer it plugs into.

The synthesizer consists of a circuit card, an audio output cable, software on tape or disk, and an owner's manual. (The manual is available separately for product evaluation, see details in this section.) The circuit card is designed to plug into an Apple II computer (manufactured and sold by Apple Computer Inc.), and the audio output cable connects to this card and to a home stereo system. The software tape or disk contains programs which are loaded into the Apple. These programs are used to easily enter songs from sheet music and play them back.

The circuitry of the synthesizer consists of nine nearly identical "channels". Each channel can produce about a thousand different pitches, ranging from about 62.5 Hz to about 64,000 Hz. The software allows production of a 7 octave range which starts at the lowest C on a standard piano. The pitch can be produced at any of 16 volume levels, which increase exponentially. Nine independent pitches can be played at once. When using a stereo sound system, three voices are heard on the Left, three voices in the Middle (on both Left and Right), and the remaining three voices are heard on the Right. One voice from each stereo position can either produce normal tones, or can be used to create "white noise" percussive effects.

The programs provided allow for the convenient entry of songs from standard sheet music, and for song playback. Notes can be entered for the 7 octave range. Whole notes through sixty-fourth notes (plus dotted and triplet notes) can be entered and tied to other notes. Entered notes are shown on a television display in standard musical form (see photo). Typing is minimized by an interactive graphics system which uses the two rotary knobs of the Apple computer to select note types and positions on a treble and bass staff. Errors made during entry are easily detected since each pitch is played by the synthesizer as it is entered, and measure bars are automatically drawn at the correct places. Key signatures are easily specified, and notes entered are automatically corrected for the current key.



Once entered, songs can be saved on cassette tapes or on disk (if the Apple is equipped with a DISK II). Since the song is written on the tape or disk in a special digital format, there is no degradation of sound quality. Each performance sounds exactly like the first. Corrections and additions can be made at any time. Songs entered by ALF and by other ALF synthesizer owners are available in this digital format in our ALF ALBUM tape and disk series. Songs entered for the 10-5-16 Apple Music Synthesizer can also be played back on the 10-5-1 Apple Music]].

Differences between the Apple Music Synthesizer and the new Apple Music]] are as follows. **TUNING ACCURACY:** The AMS has excellent tuning accuracy (within 2 cents over 8 octaves) whereas the tuning accuracy of the AM]] is reduced (worst case for half-tones is 33 cents in the top octave, but accuracy increases in the lower octaves to a worst case of about 1.5 cents). The AMS can produce about 65,500 different pitches whereas the AM]] can produce 1,023 pitches. **FREQUENCY RANGE:** The AMS has an 8 octave range starting at 27.5 Hz (the lowest note on a piano). The AM]] has a 7 octave range starting 3 half-tones higher. **VOLUME CONTROL:** the AMS has a 78 dB volume span with 256 exponential levels (similar to 8,160 linear levels). The AM]] has a 28 dB volume span with 16 exponential levels (similar to 25 linear levels). **ENVELOPE CONTROL:** both are similar, but AMS envelopes are smoother since the AMS has 256 volume steps to the AM]]'s 16. **AUDIO OUTPUTS:** both are designed for use with a customer-supplied amplifier and speakers (stereo system). The AMS has stereo when two or three cards are used; the AM]] has stereo outputs. **NUMBER OF VOICES:** The AMS has 3 voices per card and 3 cards can be used for a maximum of 9 voices. The AM]] has 9 voices and only one card can be used. **SOFTWARE: ENTRY and PLAY** are similar for both synthesizers. The AM]] has a "FUZZ" command for white noise control, and does not need a distinction between STEREO:2 and STEREO:3. (There are other small changes as well.) The AM]] is not provided with an INTRODUCTION program or the CHROMA subroutine. **PRICE:** The AMS is \$265.00 (\$88.33 per voice), and the AM]] is \$195.00 (\$22.67 per voice).

For further information, request the 10-5-1 Data Sheet. Order "Option 1" for software supplied on disk, or "Option 2" for software on tape. (If no option is specified, Option 1 is assumed.) Suggested list price is \$195.00. Limited quantities available starting in mid-July, 1980.

11-1-1
APPLE MUSIC][OWNER'S MANUAL

For those wishing to see full details on the Apple Music][, the owner's manual is available separately.

Suggested list price is \$7.00.

13-1-2
APPLE MUSIC][DEMO RECORD

"Tesseract Records" rides again! Probably few of you remember our previous Tesseract Record, "Computer-controlled Synthesizer Performances", which is long out of print (as are the synthesizers on the record). Well, we've done it again. This time it's a 7 inch 33-1/3 RPM record demonstrating the 10-5-1 Apple Music][synthesizer. And unlike our other "albums", you don't need a computer to play it. It will play on a standard record player.

Price is \$0.75 (add \$0.25 per order for postage).

NEW PRODUCTS FOR
THE APPLE MUSIC SYNTHESIZER

11-1-6B
OWNER'S MANUAL

A new Owner's Manual has been written for the 10-5-16 Apple Music Synthesizer. It is now included with each synthesizer in place of the old manual. The old manual can be identified by the 11-1-6 part number and the 1979 copyright date, and the new identified by the 11-1-6B part number and the 1980 copyright date.

This new manual replaces both the old 11-1-6 manual and the 11-1-7 Technical Insert, since the technical information is now included. The new manual contains 105 pages, as opposed to about 55 in the previous version. The significant changes include: (a) a detailed sample-session/example on using ENTRY which includes over 35 screen pictures, (b) complete instructions on playing ENTRY-created songs from BASIC programs using PERFORM when a DISK II is available, (c) inclusion of the 11-1-7 Technical Insert, and (d) source listings of CHROMA and PERFORM.

Suggested list price is \$7.00.

13-2-4 (tape)
13-3-4 (disk)
ALBUM 2

This disk (or tape) contains 12 songs programmed for the 10-5-16 Apple Music Synthesizer (the songs cannot be played without the synthesizer).

There are 6 songs for use with one or more synthesizer:

Cleopatra Rag by Lamb (Green)
Love is Blue by Popp (Mest)
Music Box Dancer by Mills (Kragelj & Audette)
Julida Polka Traditional (Bailey)
Sonata in D Major by Scarlatti (Fickas)
What's New Pussycat? by Bacharach (Silveria)

There are 6 songs for use with two or three synthesizers:

Gymnopedie #1 by Satie (Kellner)
Song of India by Rimsky-Korsakov (Kellner)
Get Me to the Church by Loewe (Sauter)
With a Little Bit of Luck by Loewe (Sauter)
Camelot by Loewe (Sauter)
Swingin in the Country by Crossman (Crossman)

Suggested list price is \$14.95.

13-2-6 (tape)
13-3-6 (disk)
ALBUM 3

Those of you who haven't sent in your self-stamped, self-addressed envelopes asking for Publications 7901 and 7902 on submitting songs had better get with it! We've been buying songs, and some of these are included in ALBUM 3.

ALBUM 3 cannot be played without two or three 10-5-16 Apple Music Synthesizers. There are ten selections for those

with two or three units, and five for those with three.

In the two-or-three-units class, there are four pieces by the infamous Kellners. Jo and Charlie Kellner both work for Apple Computer Inc., and their songs are the highlight of many computer conventions. In this album, they have "Bugler's Holiday" (by Leroy Anderson), "Sarabande" (by Georg Fredrich Handel), "The Syncopated Clock" (by Leroy Anderson), and an amusing concoction entitled "Duet for Three Hands" (Eric Larson helped them on this one). Also for two or three units are some tidbits from the usual crowd at ALF. There's "Pastoral from the Messiah" (by Handel), "Amoeba Jig" (by Greg Bloom), and the ever popular "Champagne Tango" (by M. Aroztegui). A little on the unusual side are "Tranquil Tension", "Chimes", and of course "Alien Chopper Death", all by Greg Bloom. Unlike the other items on the album, these three selections have no end. They play continuously to form a sonic environment (and to give the RESET button a little exercise!).

For those with three synthesizers, there are two more selections from the ALF collection: "Kiddie" (by John Ridges), and "Orpheus" (by Carl Orff); and the album is topped off by three impressive pieces programmed by Antone Walloch, M.D., who has a real flair for jazz. They are "Goodbye" (by Gordon Jenkins), "Four Brothers" (by Jimmy Guiffre), and "How High the Moon" (by Morgan Lewis).

Suggested list price is \$14.95.

NEW APPLICATION NOTES AVAILABLE

Note: application note AN 79-3 (see Alpha 1) is obsolete and no longer available. A much better discussion of song entry is given in the new 11-1-6B Owner's Manual.

FIXED PLAYBACK SPEED USING PADDLE 3.

This application note elaborates on a method of using a resistor on paddle 3 for fixed playback speed, as mentioned in the new Owner's Manual.

1 sheet. Order AN 80-1. Price: \$0.50.

ARTICLES
FOR APPLE MUSIC SYNTHESIZER OWNERS

USING ENTRY WITH DOS 3.1

If you have a copy of ENTRY from the 13-2-1B tape or the 13-3-1B disk, these programs are written for use with DOS 3.2 (or DOS 3.2.1) with or without an Auto-Start ROM. If you wish to use DOS 3.1, you will have to make the following change in ENTRY (be sure to save a copy of the original version of ENTRY for use with DOS 3.2):

```
INT
HIMEM:21504
LOAD ENTRY
POKE 4124,24
POKE 18400,1
SAVE ENTRY
INT
```

THE PADDLE SETUP PATCH
By Philip Tubb

Those of you who have Album 0 (the Xmas Album) know that the songs have been entered to play back at the same paddle setting. The album recommends that you wrap a rubber band around the game paddle to hold the button down in order to avoid the paddle setup routine. Many people have asked for a more elegant procedure. Behold:

```
INT
HIMEM:9216
LOAD PLAY
POKE 9103,0
SAVE PLAY1
INT
```

The program PLAY1 will not wait for you to set the paddle. (Note that if the suggested speed is non-zero, that is, if you're not using Timing Mode, the paddle setting will still control the playback speed.) If you're going to be using DISCO, you'll have to use SAVE PLAY instead of SAVE PLAY1; be sure to save the original copy of PLAY somewhere before you do this. Note that this patch (and the patches given in Alpha 1) require Integer BASIC and a disk system.

ARTICLES (cont.)

A NOTE FOR DOS USERS

By Philip Tubb

Here's a simple way to get a little more memory when using ENTRY. Before you RUN ENTRY, type MAXFILES 1. On a 48K system, the "notes free" will go up from 5,906 to 6,303. Of course, to load very long songs created in this fashion it will always be necessary to use the MAXFILES 1 before running ENTRY. Even longer songs can be entered if you ignore DOS and use cassette. (To do this, press RESET and type control-B return unless you have an Auto-Start ROM, in which case you press RESET after turning on the power.)

INTERESTED IN TRADING SONGS?

Gary LaPoten (333 North Palm Drive, Suite 404; Beverly Hills, CA 90210) is interested in trading songs with other ALF users. If you have any songs to trade, be sure to contact him. Many of the songs he has will play with one board.

MORE ON 'TIMING MODE', PADDLES, AND STEREO

By Philip Tubb

Some people are confused about the role the paddles play in controlling song playback speed (tempo). Apple has given everyone the impression that the paddle knobs give the computer a number from 0 to 255, like the PDL functions do. This is not quite the case. Actually, each paddle knob controls a simple timer. The computer can "start" the timer, and can tell when the time is up. The position of the paddle knob determines the amount of time that passes after the timer is started before the time is up. The PDL functions "count up" the amount of time that passes, and this is the number given by the function. The PERFORM program (which runs when you type PLAY in either PLAY or ENTRY) uses the timers to control the song tempo. The speed is controlled by the amount of time that passes after the timer has been started. Therefore, the tempo is actually controlled by the physical position of the paddle knob (since it controls the Apple's timer). It is not possible to merely change variables in PERFORM to vary the song tempo.

"Timing Mode" offers an alternative method for controlling song tempo. Instead of using Apple's paddle-controlled timer, it uses one of the synthesizer channels as a timer. A synthesizer channel can be programmed to function almost exactly like one of Apple's timers, except the "time that passes" can be selected numerically by a program, rather than by a knob position. Naturally, when a channel is being used as a timer, it cannot be used to perform music. There are two problems with the Timing Mode technique: one is finding a way for the Apple to read the channel's (and thus the "timer's") output, and the other is specifying the desired tempo and outputting it to one of the synthesizer channels.

There are two easy ways to read a channel's output. One is using a Timing Mode Input Board (see Alpha 1) which plugs into an Apple slot, and has a cable that connects to a synthesizer to read the output. PLAY and ENTRY have special programming for using the Timing Mode board. Each has a line 20 which normally is 20 TSL0T=8. This line must be changed to indicate the slot number the Timing Mode Input Board is plugged into. PLAY and ENTRY will then automatically use the Timing Mode board when Timing Mode is enabled. The other method is to connect the synthesizer's digital output into SW2 on the Apple game I/O connector. This is most easily done with a Timing Mode I/O Extender (part # 10-1-9 Option 1). This connects in the same fashion as the Timing Mode Input Board, except it plugs into the game I/O connector instead of into an expansion slot. In PLAY and ENTRY, 20 TSL0T=8 directs the program to use the SW2 input. No matter which method you use, programming in PLAY and ENTRY expects the cable that connects to the synthesizer's digital output (at the empty 14-pin socket near the top of the board) to be plugged into the board in the higher numbered slot (the "right" board) when two synthesizers are used, or in the next-to-highest numbered slot (the "middle" board) when three synthesizers are used. (If you're only using one board, then there isn't any question about which board to connect, is there?)

Obviously, PLAY and ENTRY have no difficulty in selecting the proper synthesizer to program with timing information, since that has been defined (above). But how is a channel selected? Actually, it's quite simple. When you type in a STEREO command, ENTRY assigns particular channels based on the requested stereo positioning. Let's go through an example with

two synthesizers. If you type STEREO:2,RLLRL to assign stereo for a five part song, ENTRY will place parts 0 and 3 on the higher numbered slot (so they will be on the "right"), and parts 1, 2, and 4 on the lower numbered slot (so they will be on the "left"). Channels are assigned from channel 2 down. Thus part 0 will be on channel 2, part 1 on channel 2 (of the other board), part 2 on channel 1, part 3 on channel 1, and part 4 will be on channel 0. Notice that channel 0 of the higher numbered board is not assigned to any part, since only 5 channels were needed. When you use Timing Mode with two boards, channel 0 on the higher numbered board is always the one used as a timer. So, as long as your stereo command has fewer than 3 "R"s in it, no musical part will ever be assigned the same channel as the timer.

What if you have three boards? Then the timing channel is channel 0 of the middle board. So, don't use more than two "M"s. (If you have one board, just don't use more than 2 parts. You don't have to worry about the stereo command.) This brings up another question: if I have only two boards, should I ever use a STEREO:3 command, and if so why? (Or, if I only have one board, should I ever use any STEREO command?) The answer may well be yes. The STEREO command tells how your song will be played on a system with the number of boards indicated. So, even if you have only one board, the STEREO command will serve to select stereo to be used when your song is played on a system with two boards (STEREO:2,string) or with three boards (STEREO:3,string). Thus, if you plan on submitting your song to ALF, or trading it with others, or whatever might cause it to be played on another system, then you should program the stereo. For compatibility, avoid using more than two R's in the STEREO:2 command or more than two M's in the STEREO:3 command; otherwise the song can't be played back with Timing Mode (as just explained).

Now, how is the desired tempo specified? This is done with the TEMPO command. You can enter a TEMPO command in any part and anywhere in the music, just like a VOLUME or other envelope command. When the playback program sees a TEMPO command, it programs the timer with the new tempo. Since there is only one timer, it doesn't matter which part you put the TEMPO command in; it will control the tempo of all parts. There is one thing you should watch out for: you must have a TEMPO command in one of the parts before the first note or rest (or call to a subroutine that causes a note or rest). Otherwise, the timer will not be set up, causing difficulties when the song is playback back with Timing Mode.

Only one question remains unexamined. How do PLAY and ENTRY know whether to play a song using the paddle or using Timing Mode? They tell by looking at the "suggested speed". If it is non-zero, the paddle is used for tempo control. If the suggested speed for the song being played is zero, then Timing Mode is used. This scheme allows "album" playback (with DISCO) of songs with some being in Timing Mode and some with normal (paddle) mode; which is required when Timing Mode is to be used with nine and fewer than nine part songs (nine parts songs cannot use Timing Mode). To change the suggested speed to zero so you can use Timing Mode, just run ENTRY and load the song. Type EDIT (return), and press return at each question except SUGGESTED SPEED?. At this question type the new suggested speed (0) and press return. When you've answered all EDIT questions, save the song. This will change the suggested speed of the saved song.

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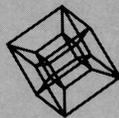
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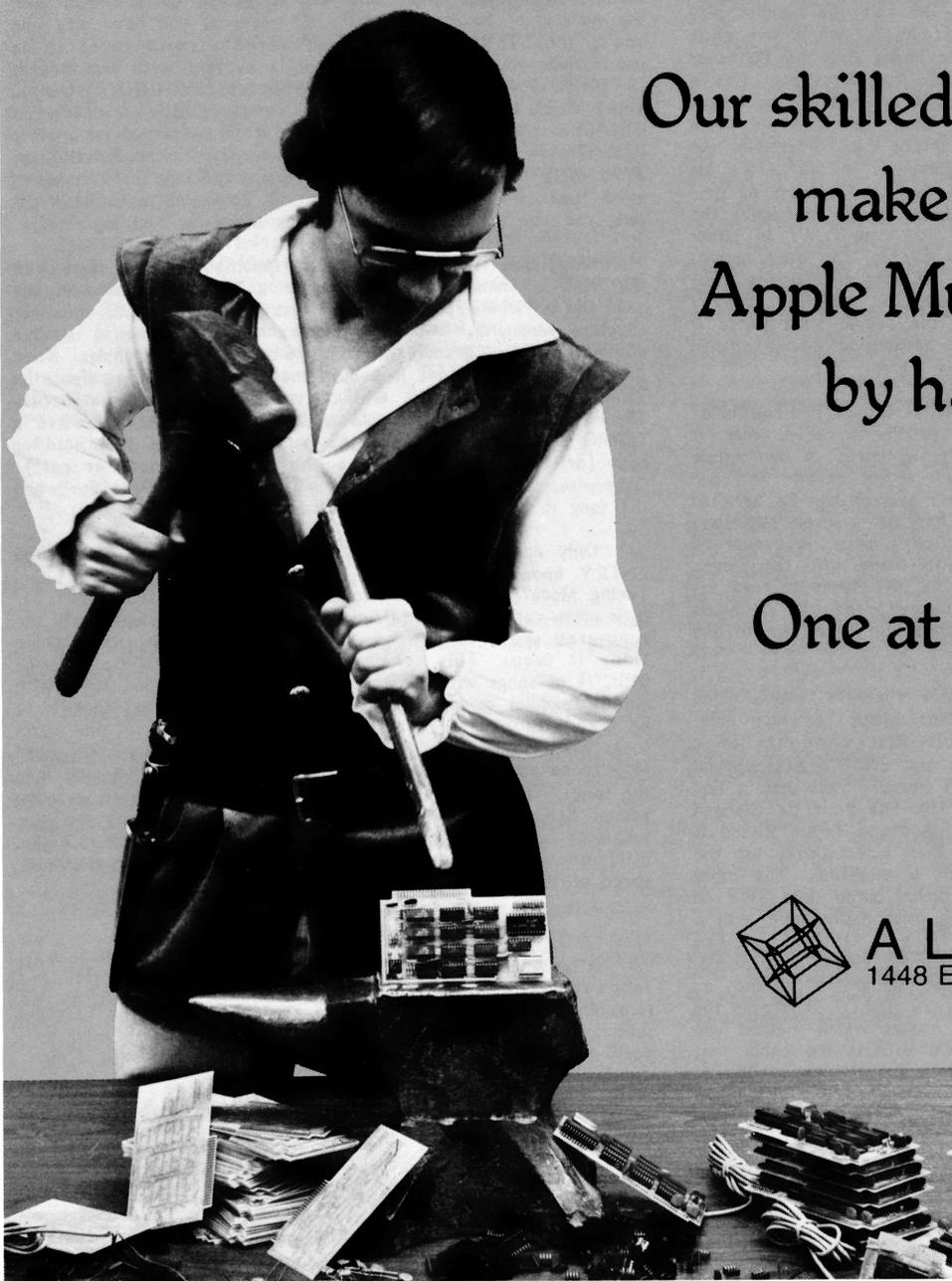
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