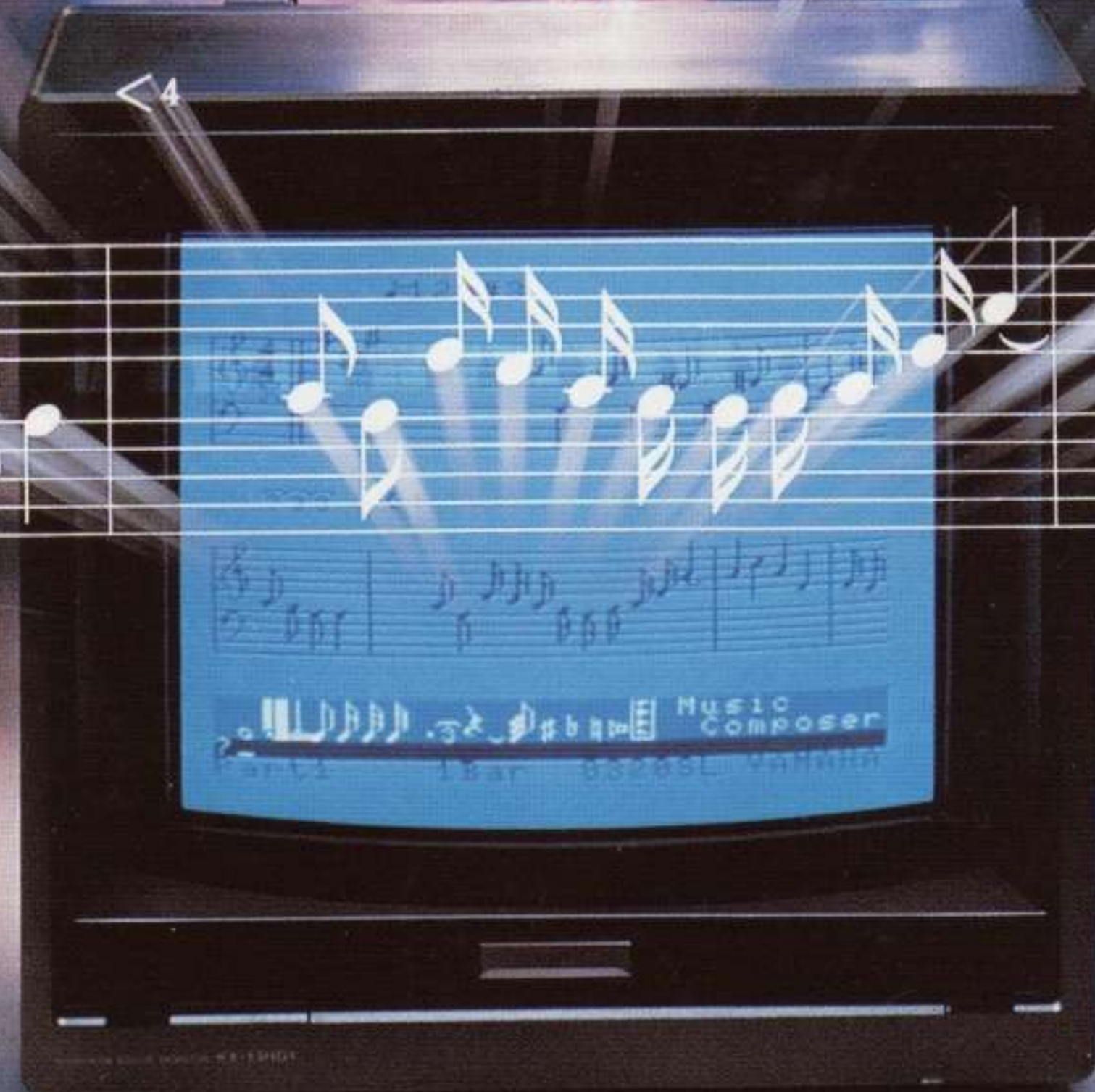


YAMAHA

X5M

MUSIC COMPUTER

MSX



YAMAHA  
MUSIC KEYBOARD YK-01







## **CX5M: A Computer Designed Specifically for the Musician**

The CX5M is a computer. But certainly not an ordinary computer. It has been designed specifically to be used by musicians, composers and arrangers, both amateur and professional, to produce music in ways that were never before possible.

The CX5M has a Yamaha digital FM voice generator built-in—the same type of voice generator as our DX series Digital Programmable Algorithm Synthesizers. That means it is capable of producing rich, realistic sounds that are amazingly lifelike. In fact, 46 pre-programmed voices are provided. But you can also program your own to create virtually any voice you like, and save your original voices on a standard cassette tape. With the YK-01 “mini” music keyboard or the standard-size YK-10 music keyboard, the CX5M becomes a high-quality performance synthesizer, with 8-note polyphonic output and a programmable split keyboard function.

The CX5M is also a tremendous tool for composers or arrangers. You can compose music right on the monitor screen, entering notes from the computer keyboard or directly from the music keyboard. You can arrange your composition for up to 8 parts, using the pre-programmed FM voices or ones you have programmed yourself. Compose, arrange and rearrange with ease—and hear the results immediately. A built-in MIDI interface also makes it possible to use the CX5M as a sophisticated sequencer to control MIDI compatible synthesizers, drum machines and other instruments.

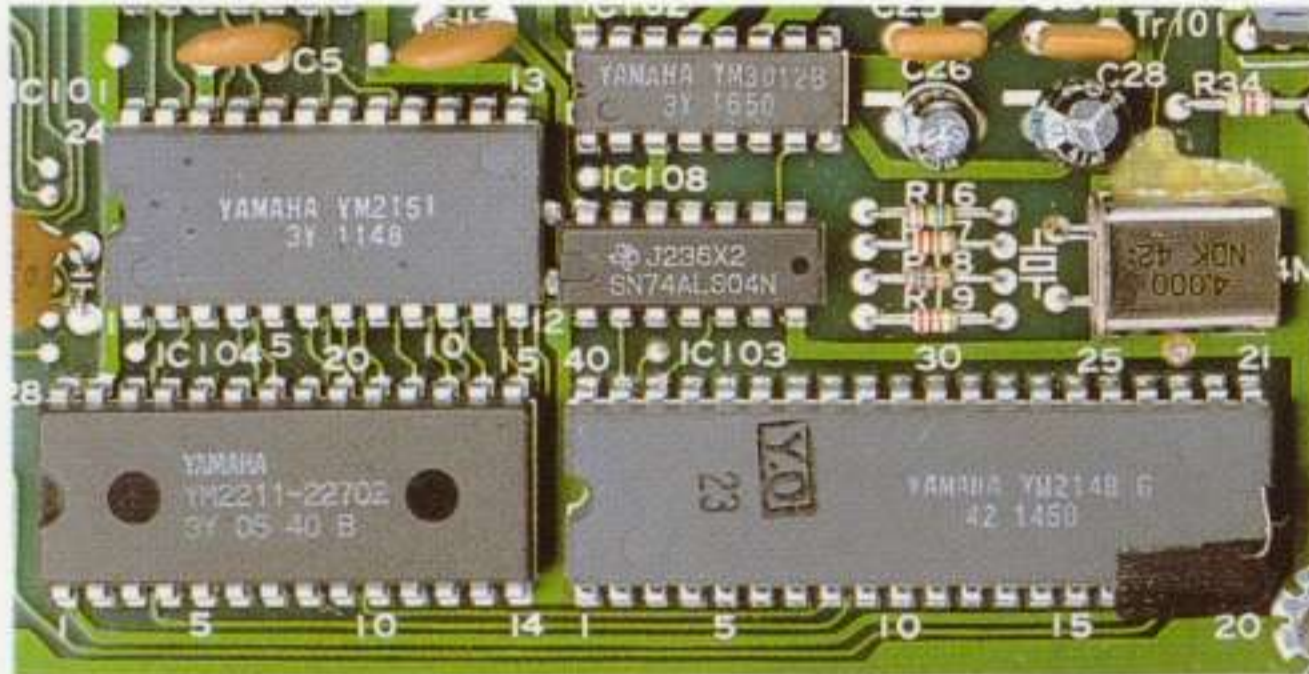
There's some really good news for DX7 synthesizer owners, too. The CX5M allows you to program your DX synthesizer via the MIDI interface, with full on-screen parameter display—including graph-type envelope generator waveforms so you can SEE what you're programming.

The CX5M is a virtually indispensable tool for today's musician. And with the constantly expanding line of Yamaha CX5M music software, not to mention the increasing range of instruments that support MIDI control, it's a tool that will continue to grow in importance in virtually all music-related fields.

# Outstanding Musical Quality, Operati

## The FM Voice Generator

Yamaha's digital FM voice generation has already revolutionized electronic music around the world. Those familiar with Yamaha's DX series synthesizers already know the stunning realism and depth of the voices FM synthesis can produce.



Original Yamaha FM Voice Generation LSIs

The CX5M incorporates a similar digital FM voice generation system, with similarly stunning voice generation capabilities. Basically, the key to the FM voice generation system is the ability to produce music waveforms with extremely complex harmonic structures similar to those of acoustic instruments. Furthermore, the harmonic structure can be varied throughout the length of a note—also effectively simulating the timbral characteristics of acoustic instruments. And since the CX5M is a computer,

the many parameters determining the actual sound of the voices can be programmed and controlled with great precision—and NOT with great difficulty.

## The Basic CX5M System

The basic CX5M Music Computer system consists of the computer itself with the FM Sound Synthesizer module, either the 44-key YK-01 mini keyboard or the full-size 49-key YK-10 keyboard, and a video monitor. For sound, you can either use a video monitor with a built in speaker, or

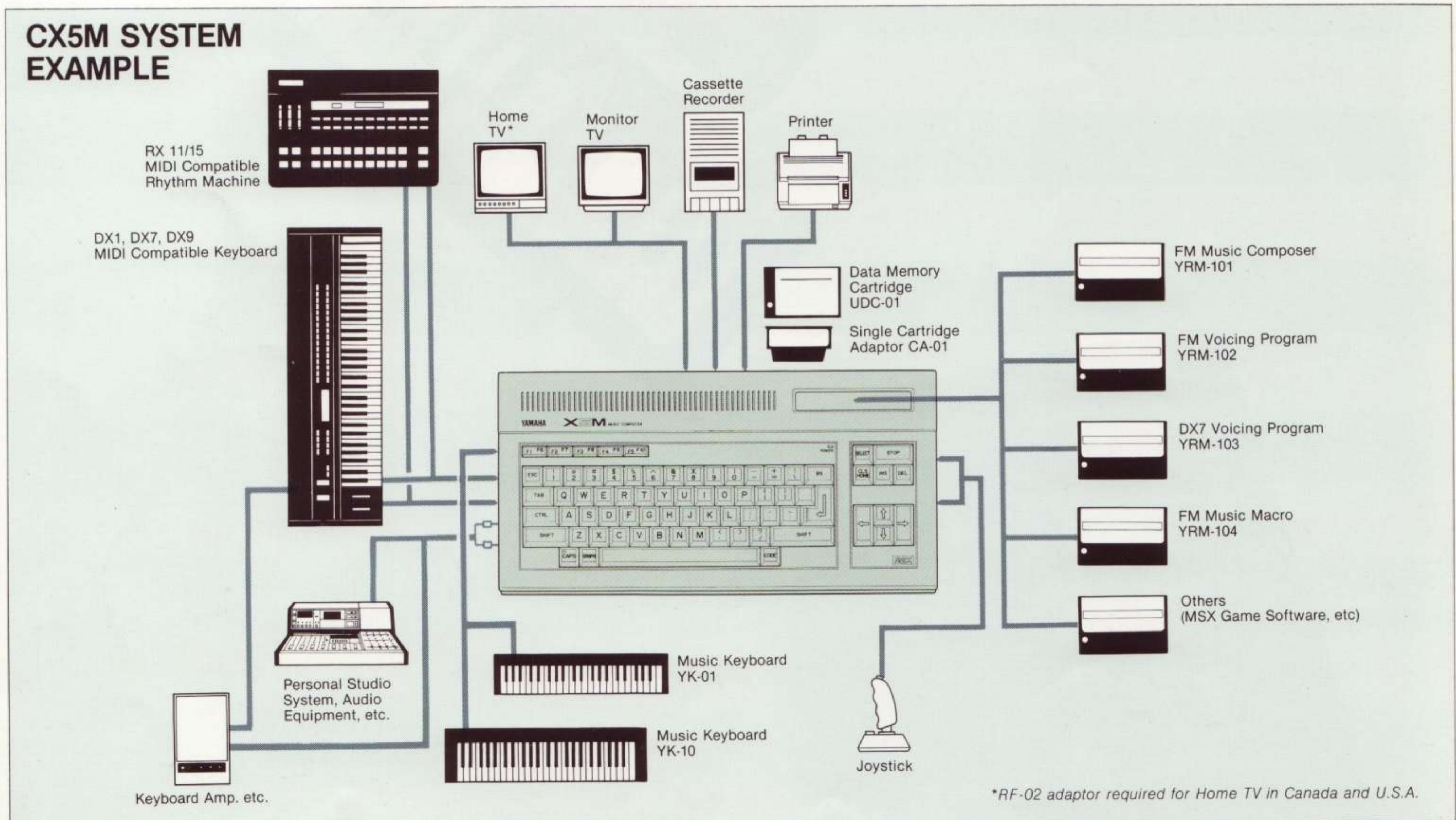


plug the stereo line outputs into any audio system or music instrument amplifier. Naturally, a high-quality stereo system delivers the full impact of the CX5M's outstanding FM voices.

Once you're set up, you're ready to play. 46 pre-programmed 8-note polyphonic FM voices are all available, plus a subset of the same voices in monophonic form. Once you start programming your own voices using the FM Voicing program cartridge (optional), you can use those, too. You can play any of the polyphonic or monophonic voices over the entire keyboard, or split the keyboard at any key and play one of the polyphonic voices on one side and one of the monophonic voices on the other. You can even reverse the positions of the polyphonic and monophonic voices. You could play a monophonic bass voice with the left hand, for example, and a polyphonic brass voice with the right for an "ensemble" sound.

## A Wide Range of Effects and Options

There are several ways you can alter the basic voices to suit your musical needs. You can add any degree of tremolo and/or vibrato. Two types of variable portamento are available for "slide" effects. You can change the brilliance of the sound, transpose the keyboard pitch over a broad range, and



# ing Ease and Total Control

tune in precise, minute increments. There is even an automatic bass, rhythm and chord feature. You have a choice of several auto-start rhythm patterns, bass patterns, and automatic one-finger chord accompaniment. Use one at a time, or combine them all for a complete rhythm section.

## Real-Time Sequencer

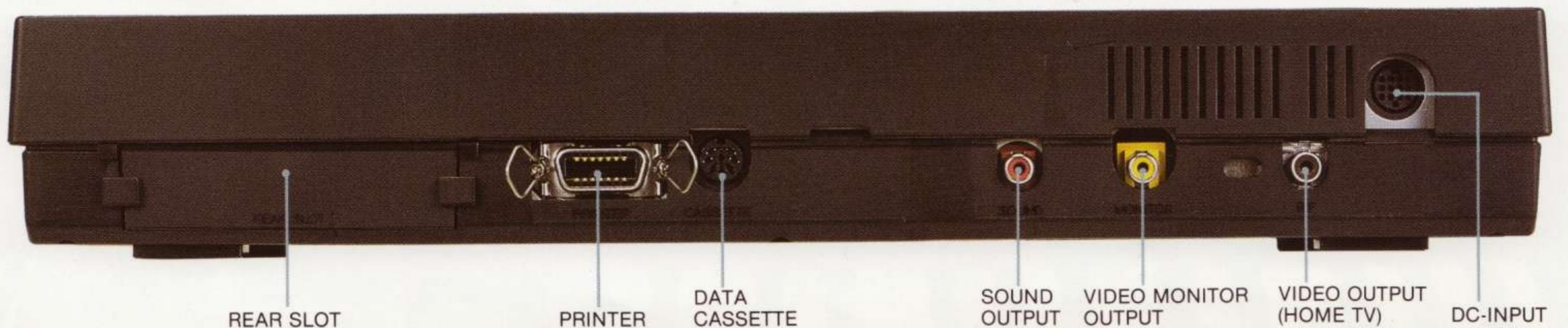
The CX5M allows you to "record" anything you play on the keyboard

into the computer's memory, and play it back exactly as it was recorded. This is a great practice feature, because it lets you record an accompaniment chord progression or bass line, then you can play along with it on the keyboard when you play the recorded accompaniment back.

## And It's a Computer, Too!

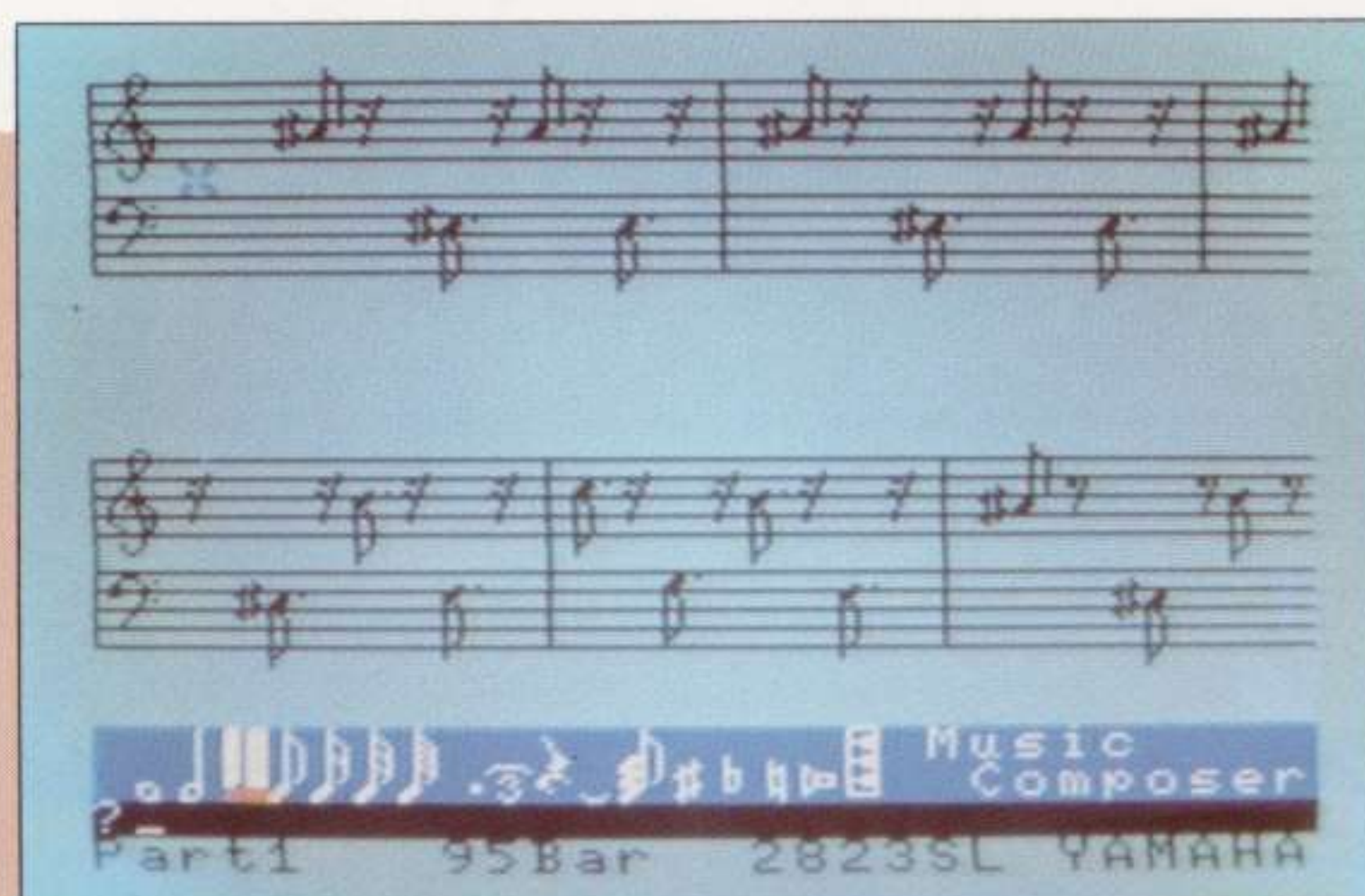
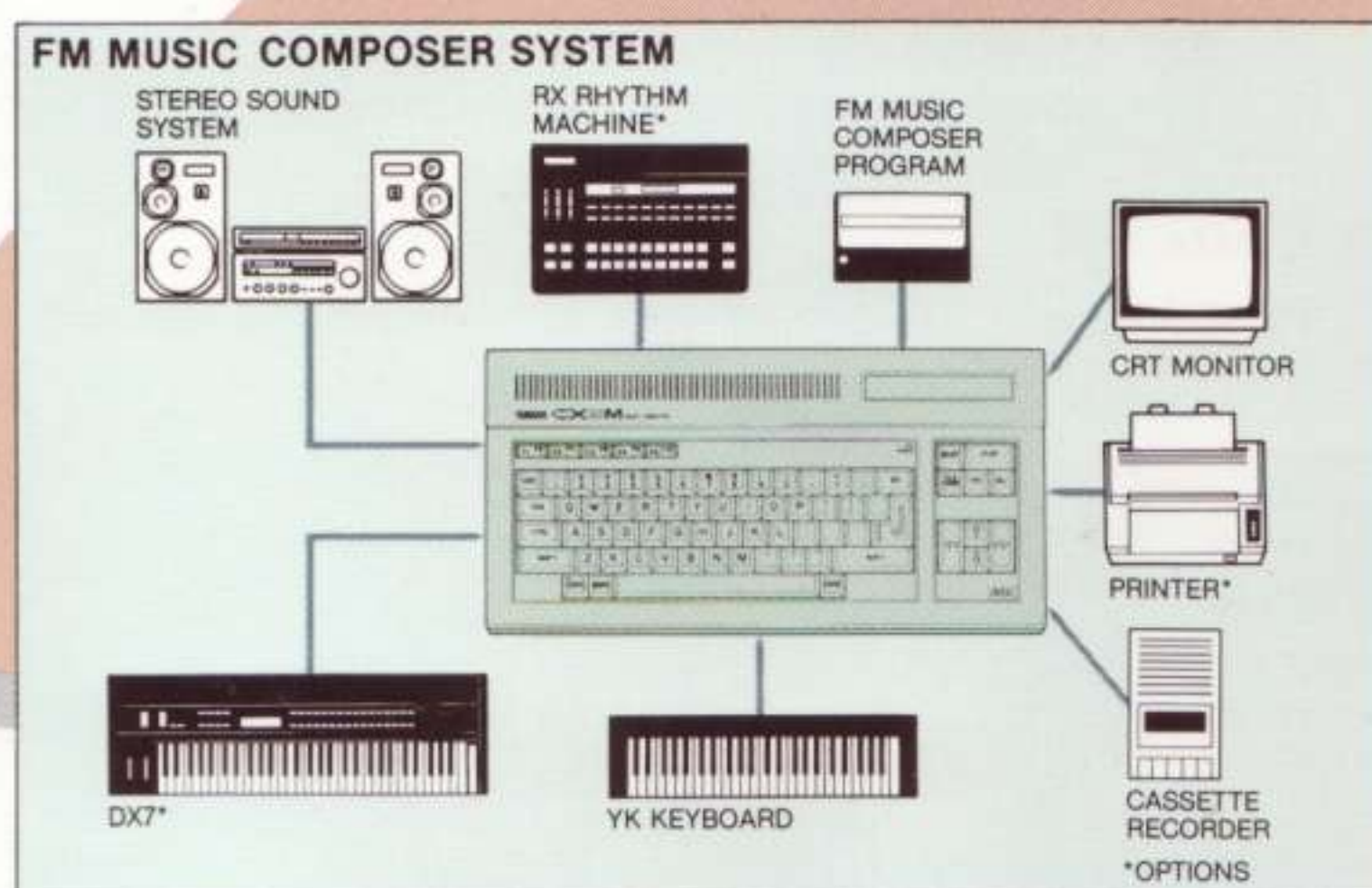
Yes, computer buffs, the CX5M is a full-fledged Z-80 based microcomputer

with Microsoft's\* MSX BASIC built in. It also accepts any of the growing line of MSX program cartridges offering games, word processing, business and other software applications packages. If it's graphics you're after, the CX5M is quite capable, with a full 16-color palette, sprites, and a number of time-saving plotting functions. If you're into music AND computers, the CX5M is the machine you've been dreaming about.



# SOPHISTICATED MUSIC SOFTWARE

## YRM101 FM Music Composer

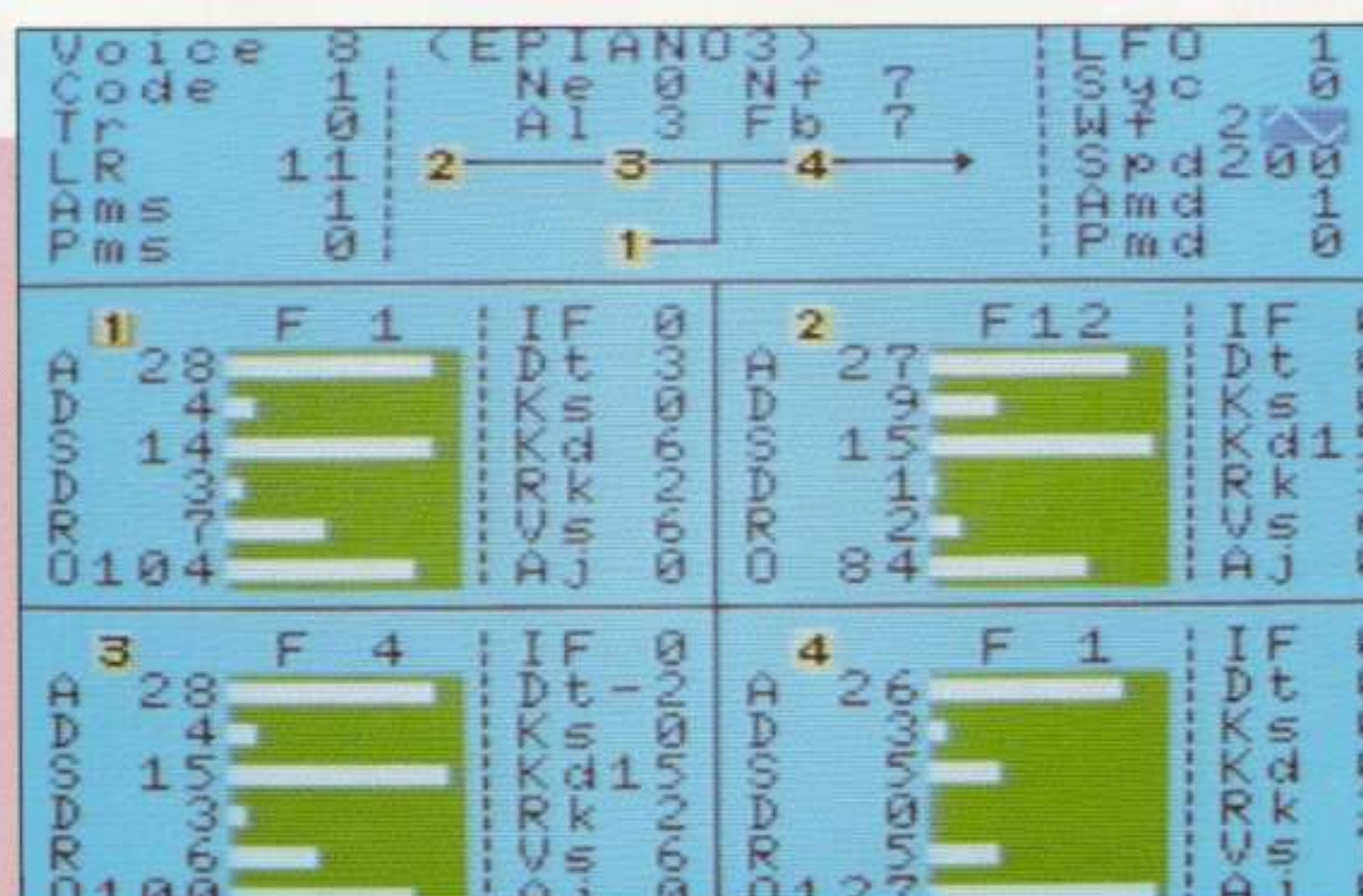
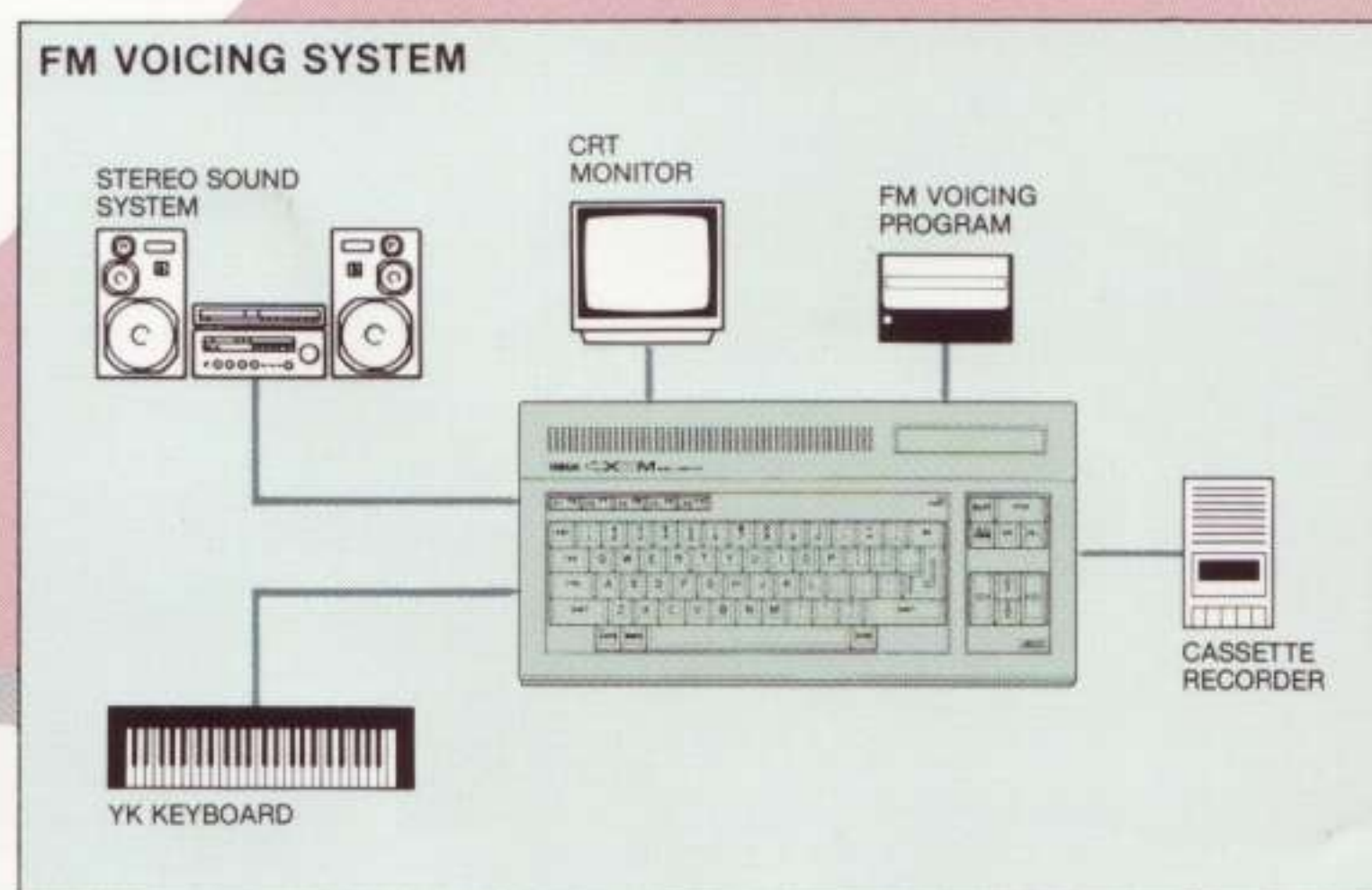


This optional program cartridge is a must for composers and arrangers. It is a sophisticated, versatile, easy-to-use music composition and arrangement software package. You get an on-screen music staff onto which you "write" notes by entering them from the computer keyboard or directly from the music keyboard. The ability to input notes from a piano-type keyboard is a real bonus for musicians. Up to eight parts can be entered, and each part can be assigned a different "instrument". You can use the pre-programmed FM voices in the CX5M, or voices you have programmed yourself. You also have full control over time signature, key signature, tempo, dynamics and phrasing.

You can enter crescendo and decrescendo, accelerando and ritardando, atempo, accents, sforzando, staccato, legato, and fermata commands, as well as a variety of repeats. What's more, any parameter can be changed at any time during the piece, including key, tempo, time and voice assignment. Of course, your compositions can be saved on a standard cassette recorder and reloaded whenever needed.

Furthermore, compositions written on the FM Music Composer can be used to "sequence" MIDI synthesizers, drum machines, etc via the CX5M's MIDI interface. The possibilities of this software package are nearly endless.

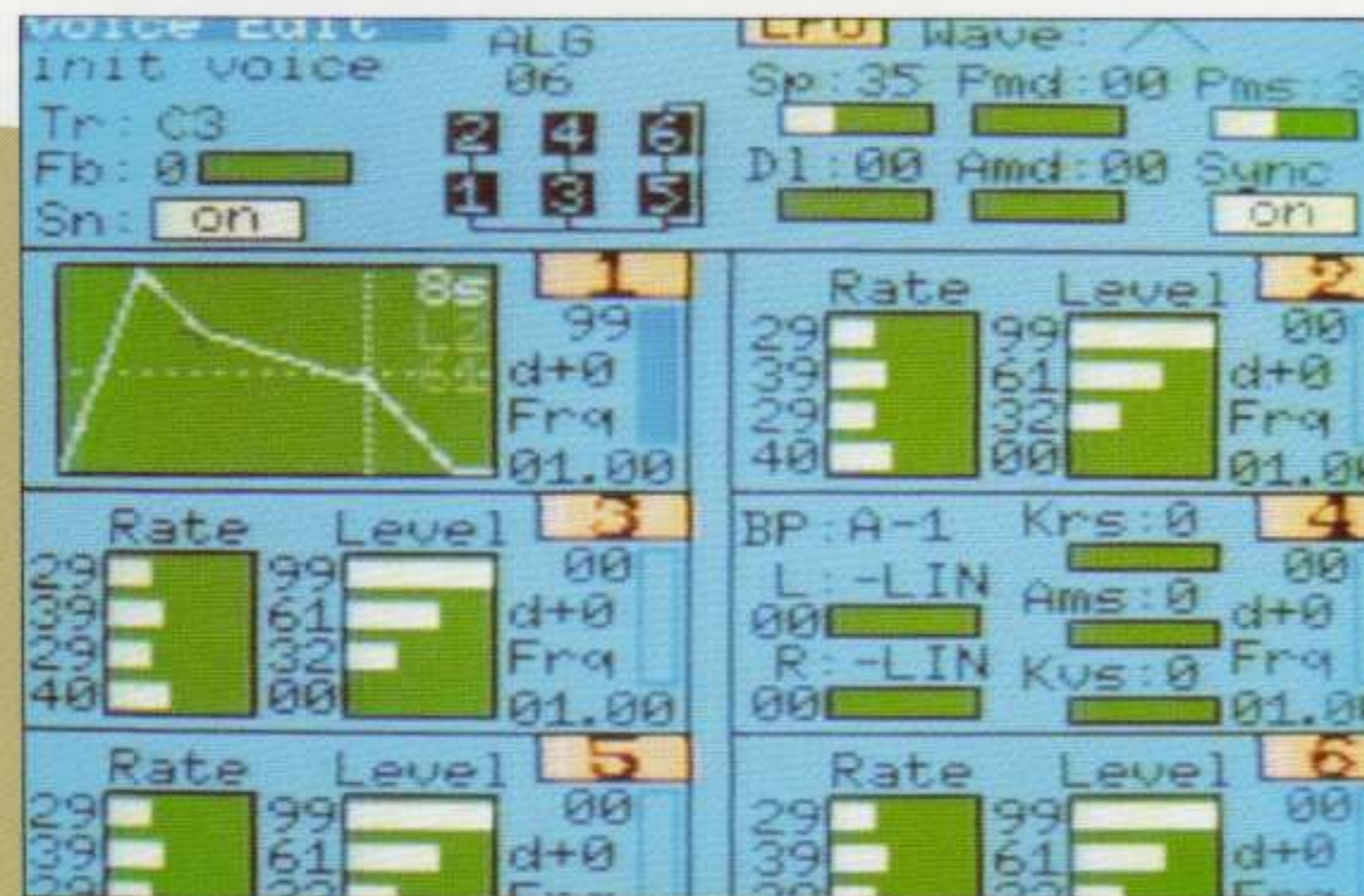
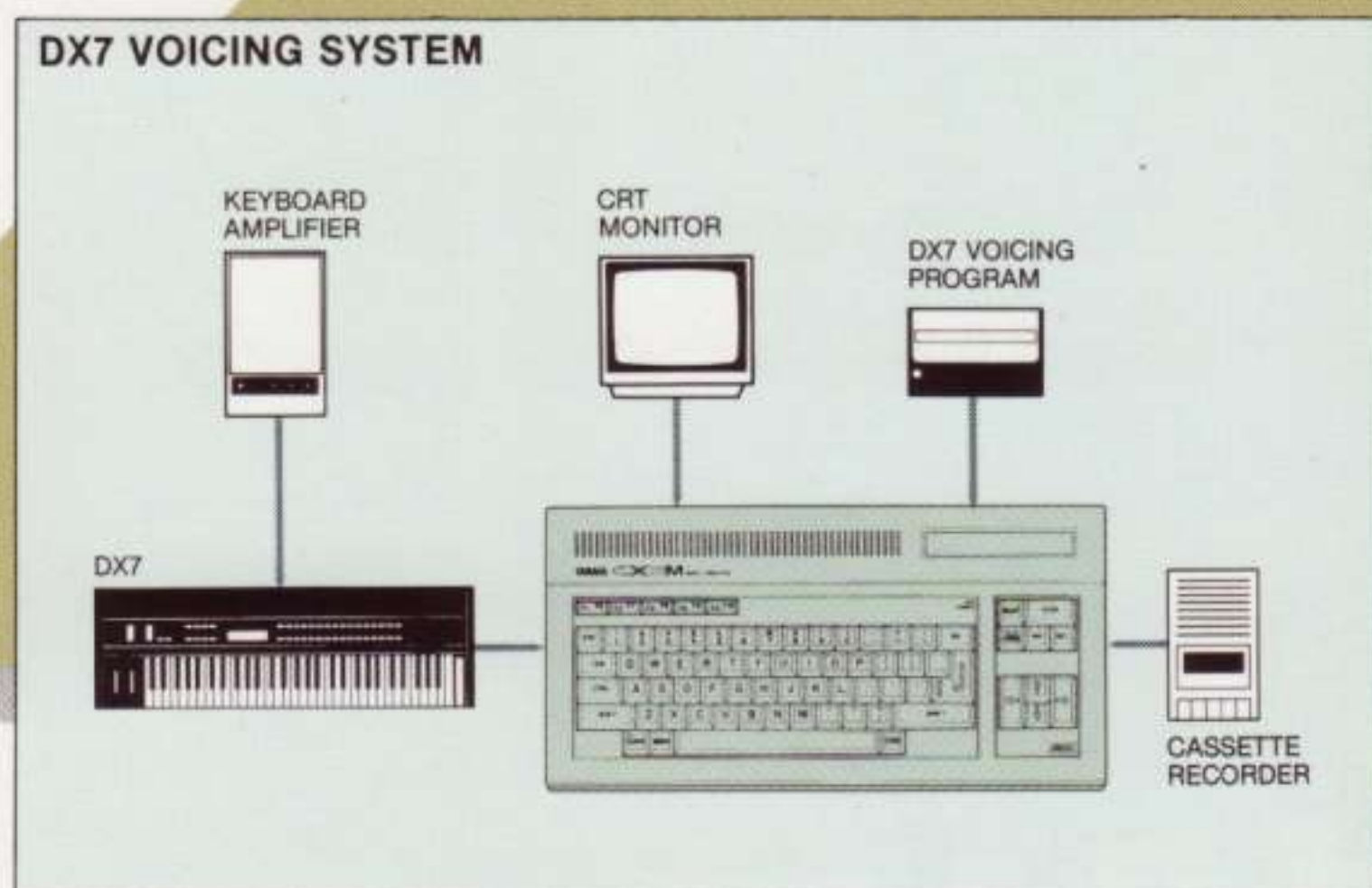
## YRM102 FM Voicing Program



This program gives you precise control over the CX5M digital FM voice generator to edit and alter the pre-programmed voices or create totally new voices of your own. The FM voice generator employs 4 operators, each with a sophisticated envelope generator, and a choice of 8 algorithms (different configurations of operators with different modulator-to-carrier relationships). The YRM102 FM Voicing Program lets you precisely set all parameters relating to the operators and algorithms, as well as am-

plitude and pitch modulation, LFO waveform, keyboard scaling, transpose, etc. With a little practice you should be able to easily program just about any voice you can imagine. Save your original voices on any standard cassette recorder, and build up an original voice library. Voices you create can be used when playing the CX5M as a synthesizer, and they can be used in arrangements created with the FM Music Composer program.

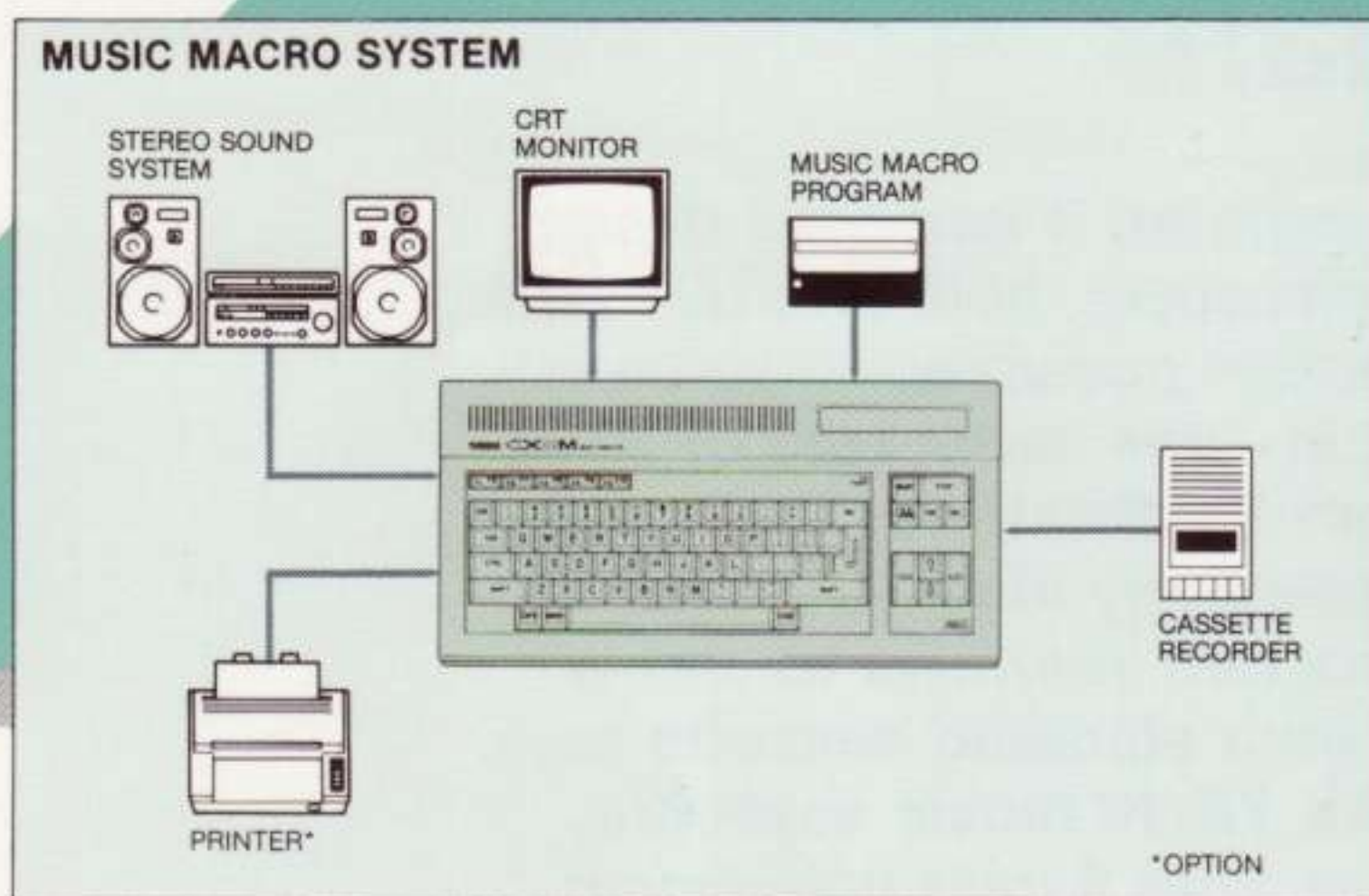
## YRM103 DX7 Voicing Program



DX7 owner's, here is the key to easy DX7 voice programming. This program displays all DX7 voice parameters right on the video monitor, and lets you program from the CX5M computer keyboard. The data is transferred to the DX7 via the built-in MIDI interface. Voice parameters are displayed in easy-to-understand graph form. For example, when pro-

gramming envelope generator parameters you can actually see what the programmed envelope curve looks like, rather than having to think entirely in terms of numbers. The DX7 voicing program makes programming the DX7 so easy, that even if you're not interested in the CX5M's other capabilities, it's worth having one just to program your DX.

## YRM104 FM Music Macro



```

INIT: _INIT(2)
INST(1,110)
INST(1,4,2): _INST(2,3,2)
MODI(1,1): MODI(2,3)
PHRA(1,A#): _PHRA(2,B#+C#)
PLAY(1,1): _PLAY(2,2)

```

The FM Music Macro is for people who want to incorporate top-quality musical voices into their BASIC computer programs. The Music Macro adds a special set of commands to the CX5M MSX BASIC language, permitting control of

the digital FM voice generator from within BASIC programs. This makes it possible to program games or audio/visual type programs incorporating music or sound effects using FM voices for real quality and impact.

## Much More to Come

The applications certainly don't end here. There are many more sophisticated music software packages ready for release and many more under development. With your CX5M, you'll always have the most up-to-date computer music system capabilities.

## ACCESSORIES



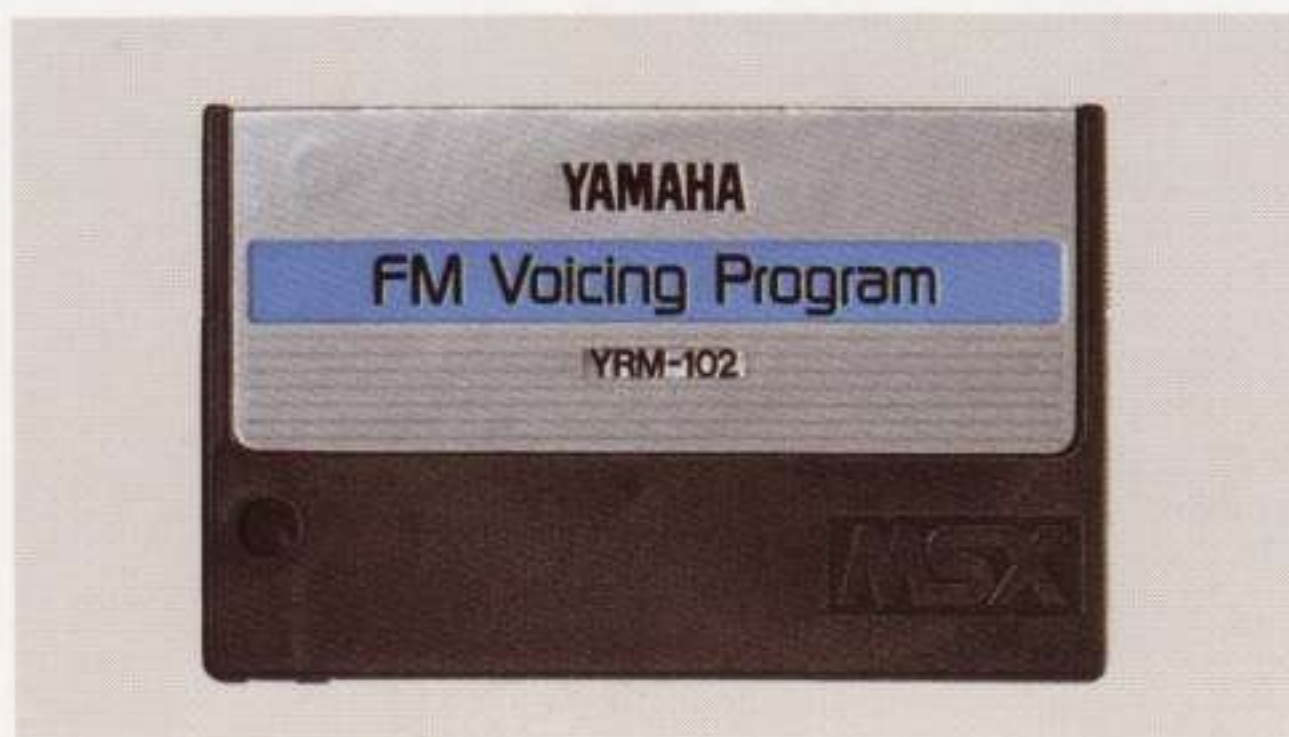
YK-10 Music Keyboard



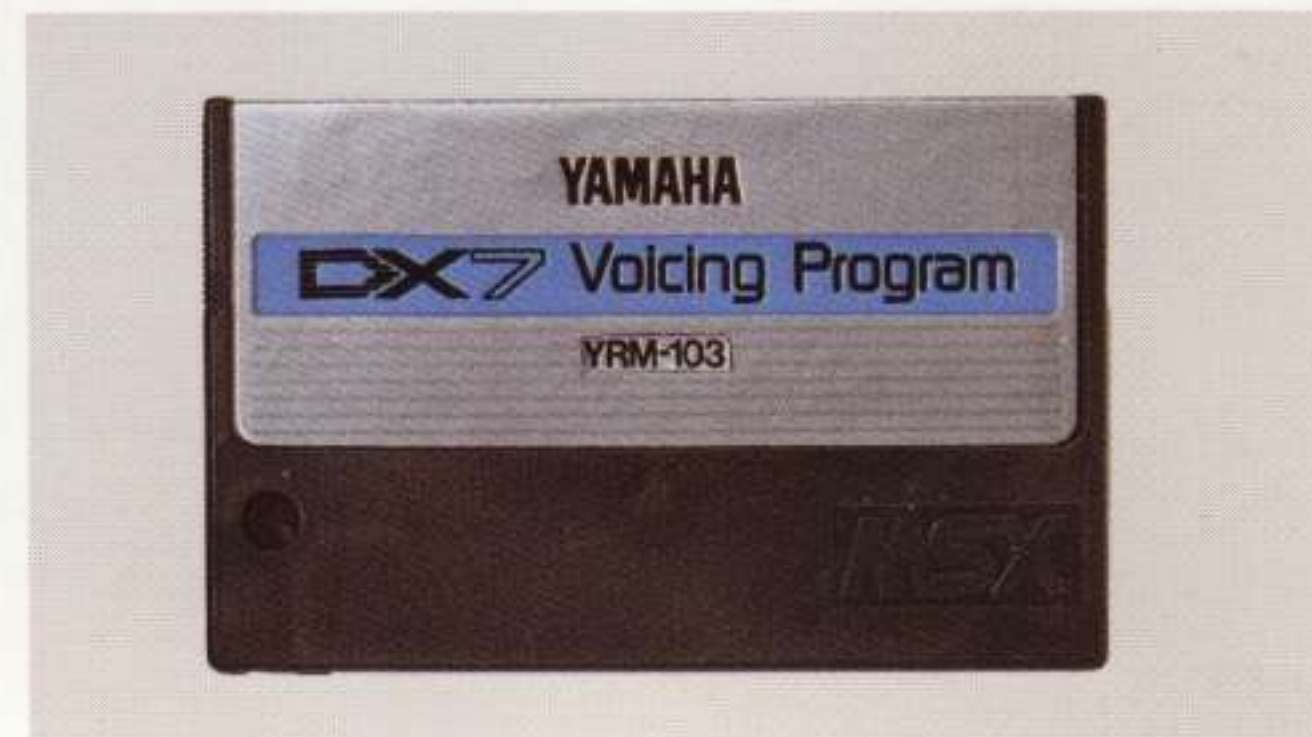
YK-01 Music Keyboard



YRM-101 Music Composer



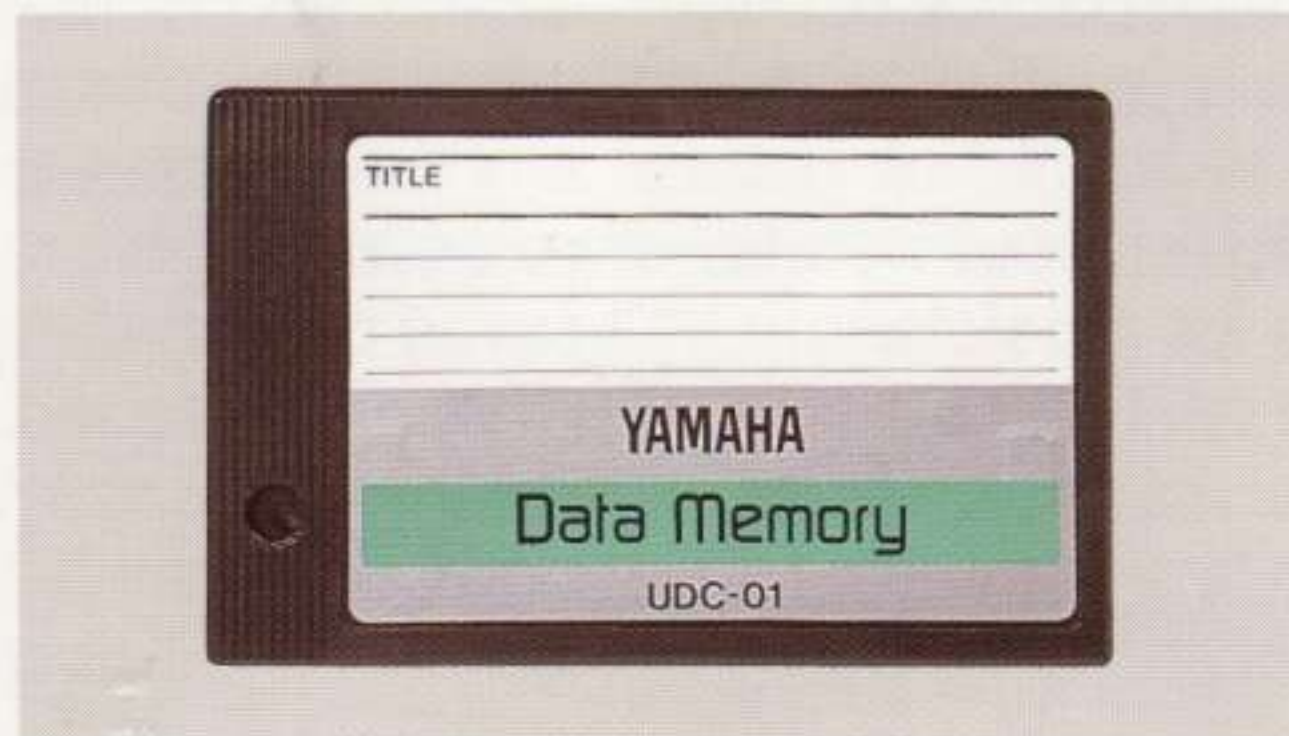
YRM-102 FM Voicing Program



YRM-103 DX7 Voicing Program



YRM-104 FM Music Macro



UDC-01 Data Memory Cartridge



CA-01 Single Cartridge Adaptor

■ MIDI-03/MIDI-15 MIDI Cable

## SPECIFICATIONS

CPU	Z 80A
ROM	32 kB
RAM	RAM 32 kB, VRAM 16 kB
CRT Controller LSI	TMS 9929A
Character Display	32 x 24
Graphics Display	256 dot x 192 dot
Graphics Colors	16

FM Voice Generator	8 oct. 8 note polyphonic
FM Voice Generation LSI	YM-2151 (YAMAHA)
Power Supply Unit	AC220/240V 30W—DC5/12V—12V
Dimensions (W x H x D)	423 x 68 x 208 mm (16-5/8" x 2-11/16" x 8-1/8")
Weight	Computer 2.8 kg (6 lbs. 3 oz) Power Supply Unit 1.0 kg (2 lbs. 3 oz)

*Specifications are subject to change without notice.*

**MSX**

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SINCE 1887



**YAMAHA**

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN