



Yamaha QY10 Synthesizer and Sequencer

Author(s): Mark Kahrs and Tom Killian

Source: *Computer Music Journal*, Vol. 17, No. 1 (Spring, 1993), pp. 82-83

Published by: The MIT Press

Stable URL: <http://www.jstor.org/stable/3680580>

Accessed: 19/03/2009 15:50

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/action/showPublisher?publisherCode=mitpress>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is a not-for-profit organization founded in 1995 to build trusted digital archives for scholarship. We work with the scholarly community to preserve their work and the materials they rely upon, and to build a common research platform that promotes the discovery and use of these resources. For more information about JSTOR, please contact support@jstor.org.



The MIT Press is collaborating with JSTOR to digitize, preserve and extend access to *Computer Music Journal*.

<http://www.jstor.org>

Products of Interest

User's Reports

Yamaha QY10 Synthesizer and Sequencer

*Reviewed by Mark Kahrs
and Tom Killian
Murray Hill, New Jersey USA*

The design of convenient and portable electronic musical instruments has been of interest since the creation of the transistor. In late 1982, a design team at Sony, led by Kozo Ohson, began development of a portable compact disk player with the unheard of dimensions of 130 mm by 130 mm by 40 mm. Two years later, the D-50 Discman was released in Japan to the astonishment of consumers worldwide. Comparably, Yamaha has recently released the QY10 synthesizer-sequencer. Like the Sony D-50, the QY10 is most notable because of its concept and not its performance: a portable "music workstation" in a small physical size (in this case, the size of a videocassette box). Like the D-50, the QY10 packs considerable music "versatility" in a small package despite a user interface that rivals the worst found in videocassette recorders.

This review will concentrate on the underlying compositional model and the user interface of the QY10. We will conclude with some suggestions for future improvement of portable compositional tools.

A photograph of the instrument shows a rather confusing layout of various shaped keys. The four round white buttons to the left and below the liquid-crystal display (LCD) are the moded function keys. Note the one octave of piano-like black and white keys on the lower right. The triangular up and down keys are octave keys. The keys on the lower left are the record keys, much like a tape recorder's. In the upper right, over-

loaded keys select either rhythm values or chords.

The QY10 was designed to be a portable composition tool for the creation of popular music. A "song" is composed of bars of sequencer tracks built on top of the "backing" tracks. The backing tracks are built out of rhythmic patterns and backing chords. The QY10 has eight "tracks"—four sequencer tracks and four backing tracks. Two of the backing tracks (called C-I and C-II) are devoted to chords, and the remaining two tracks are bass BS and rhythm RT (another word for drum set).

A typical "recording session" begins by selecting a "song," then a "track," and finally a record mode (that depends on which track you chose). So, an example of tune construction would be selection of a backing track, with chords being entered first, then a rhythmic pattern being selected next. The final step is entering of the sequencer tracks. The full sequence of required actions can best be shown by looking at the quick reference card supplied by Yamaha (Fig. 2).

The QY10 has 20 chords available and 100 rhythmic patterns (of which 25 can be defined by the user; the other 75 are in read-only-memory).

Note that the primary user interface is a 16-character LCD. Some keys are overloaded: the "mini-keyboard" of one octave of black and white keys also selects the RT instrumentation. It is also record track select. The rhythm select is overloaded with chords and numbers. Some keys directly affect the menu shown on the LCD display; others transfer out of the menu mode.

The user enters backing chords by root note on the mini-keyboard and pressing the ENTER key. The feedback is a click (not a chord). Note that the chord progressions (in C major, by chord root) are automatically "harmoni-

nized" to the key signature of the measure-by-heuristics. The following is from the manual: "In some patterns, however, certain notes have been omitted in order to create a particular 'feel'" However, no detail is given about what exactly has been done.

As you enter the rhythm pattern, the feedback is only the increase in measure and beat count (in 96ths) that appears in the LCD. There are minor details: rhythm notes are sticky—hitting ENTER again will get the same duration, but this doesn't work for sequencer tracks. But when entering sequencer notes, at least when you touch a keyboard key, you'll hear it. The same cannot be said for backing chords.

We first tried to enter a score (in this case, a piano accompaniment) using the techniques described in the tutorial section of the manual. The procedure is tedious at best, but the nature of the feedback given to the user makes it almost impossible. The input language is based on common music notation and is fairly straightforward. However, the display is based on MIDI time code (24 clicks to a quarter note) and simply indicates the presence or absence of events. Notes can be heard, but not seen, as they are entered from the keyboard. Chords are entered one note at a time, but the result cannot be heard; even though playback is polyphonic, the keyboard is monophonic. If a mistake is made, one is led to back up to the beginning of a measure and try again, but this results in an overdub! Errors, one discovers, are corrected in *edit mode*, which requires going through a different top-level menu and dealing with a different display format. In sum, we found this method of score entry completely unusable.

The QY10 also functions as a simple MIDI recorder, so we ended up feeding it the real-time output of an-

Fig. 1. Yamaha QY10 micro musical workstation.

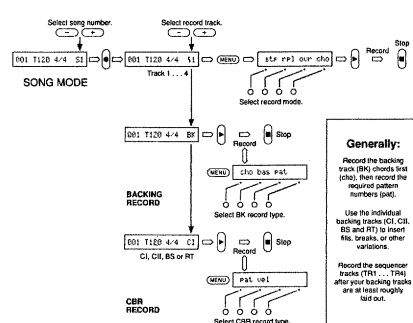


other sequencer. This worked more or less as expected, but because of small differences in clock rates the down-beat would drift back and forth across bar lines, so the QY10's measure numbers were unreliable. The proper way to load data from another machine, of course, is to send the QY10 a system-exclusive message. A quick glance at the documentation makes it clear that this is possible, but, incredibly, the format is not specified. A fully described output format (NSEQ) is given, but this is not accepted as input; the documentation describes only the header bytes of the input format (QYSEQ). One wonders whether this is a deliberate insult or merely an oversight that will be corrected in the next printing.

As to the final acoustic result, we found that very few QY10 voices are useful for accompaniment. In general, they seem designed to impress or seduce the listener and do not wear well over prolonged periods. The piano and organ are acceptable, but simple, decent strings and woodwinds are sorely lacking. A programmable voice capability would probably solve this problem nicely.

Here we make some suggestions for possible improvements in a portable synthesizer/sequencer. Although much more expensive, a real two-staff display with real bar lines and key signatures would have been delightful. The QY10 pretends that music notation doesn't exist (perhaps it isn't

Fig. 2. QY10 sequence recording procedure.



Hotz MIDI Translator for Atari Computers

Reviewed by Arthur Roberts
Honolulu, Hawaii USA

The Hotz MIDI Translator, an extensive software system, together with the Hotz Box, provides a comprehensive system of music composition with Atari computers. The Hotz Box is a new kind of musical controller that replaces the conventional keyboard. The software can be used, albeit with some difficulty, independently of the Hotz Box, using instead any conventional device such as a musical keyboard to introduce musical input. This review was undertaken with the software only, without the Hotz Box, using a musical keyboard for input, and accordingly may be somewhat handicapped in judging the ease of operation of the system as a whole.

The first thing to say about the translator program is that it is long and complex and will take a long time to master. In this it is by no means unique; most professional sequencer programs are complex. The manual, which is massive, detailed, and thorough, promises useful understanding within a few days of operation; and that is indeed true, in the same sense that a few days of intensive work will permit an average adult to play a recognizable tune on the piano. It also warns that complete mastery takes a long (unspecified) time; this also is patently true.

I have not invested the time and effort necessary to master this program; therefore I am not in a position to comment on the yield of such an investment. I can, however, offer a judgment on what the usefulness of mastering this system will be to a composer.

The Hotz software system is organized in terms of conventional har-

needed for pop music—after all, the Beatles got away with not writing down notes). The addition of a real display also makes editing much easier. It's impossible to use the QY10 without a pad of paper to keep track of the measure and beat numbers; use of a real display would mean it would be possible to use cursors to mark the beginning and ending of selected passages and apply various editing operations to it. The same display could easily be used for piano-roll notation.

Complicated rhythmic patterns (say, beating 2 against 3) are just not within the realm of possibility. The knowledge of harmony is so limited that it doesn't know about anything other than chords. Perhaps a better method of entering notes would be to establish a key or mode, then entered notes would be with respect to that key or mode.

What about the sounds themselves? A full range of orchestral instruments together with some knowledge about transposition would have been appreciated. Also, as stated above, if a true synthesizer is included, then the user must be able to program it. A thin removable disk would have been nice too.

Extra special thanks are due to Tech Kunii, of Yamaha Communications, New York, who provided us with the QY10 and thereby made us think about the problems of user interfaces in small boxes.