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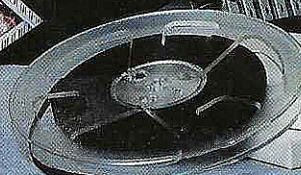
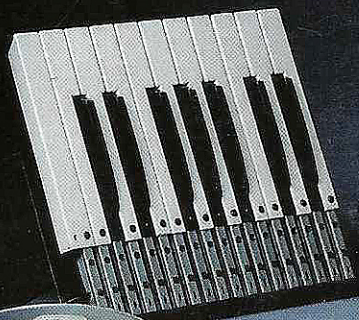
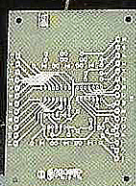
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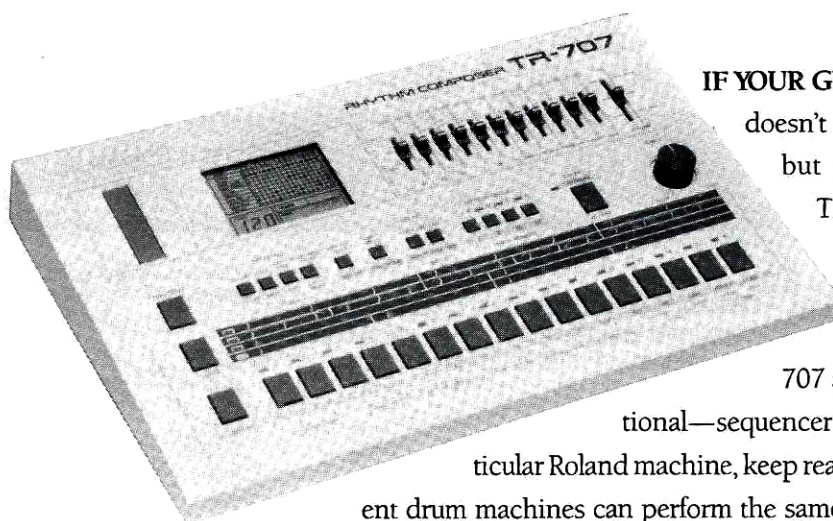
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# Roland TR-707: Drum Machine or Sequencer?

**Solutions to your musical needs don't always come in the most obvious packages.  
Here's a way to make your "old reliable" TR-707 do more than you expected it could.**



## **IF YOUR GROWING MIDI STUDIO**

doesn't include a sequencer yet, but you *do* have a Roland TR-707 Rhythm Composer ("drum machine") and a MIDI synthesizer or two, you can use the

707 as a very basic—but functional—sequencer. If you don't have this particular Roland machine, keep reading anyway; many differ-

ent drum machines can perform the same trick.

**Transmitting MIDI Messages**—Among the many complex features in the TR-707 is the way it transmits MIDI messages. By applying the information on page 46 of the TR-707 manual—*Transmitting MIDI Messages From the Composer*—each note event the TR-707 sends can be assigned to play a separate key of a synthesizer. For example, triggering Bass Drum 1 could send a Note-On message to C1, Bass Drum 2 could play C#, and so on. In *MIDI Transmit Mode #2*, drum sounds 1 through 15 of the TR-707 play the keyboard sequentially from C2 up to E3.

**BY KEITH MEIERE**



The most difficult thing about using the TR-707 this way is programming the notes you want it to play to the synthesizer. When your music is composed, arranged, and ready to record, first translate the notes into MIDI note numbers. Next, enter each note of the sequence individually into the TR-707 by hitting the drum that corresponds to that note. You'll find it handy to put a small template on the synth above these 15 synth keys (Fig. 1), so BD1 appears above C2, BD2 above C#2, and so forth. Then make a 707-to-synthesizer conversion chart ("BD1=C2," and so on) to keep near the drum unit. These will make the translation much easier. Build patterns and combine them into tracks, just as if you were programming a drum part. The 707's copy, delete, insert, and other editing features will save time and labor.

## MAKING IT WORK

To feed MIDI note data from the TR-707 to your synth, patch a MIDI cable from the TR-707's MIDI Out to the synthesiz-

er's MIDI In, and select the track or pattern (i.e. the sequence you just programmed) to send to the synthesizer. Set the TR-707 to the same MIDI channel as that of the synthesizer, and follow these three steps, in order, to program the 707 for MIDI Transmit Mode #2:

1. Enter *Track Play Mode* with the track not running.
2. While holding the *Shift* key down,



FIG. 1: Keyboard-note-to-drum-sound conversion chart.

push the *MIDI Channel* button, release it, and, still holding down the *Shift* key, press the *Instrument Guide* button. This puts the TR-707 into MIDI Transmit Mode #1; we still need to get to MIDI Transmit Mode #2, though.

3. Once again, hold down the *Shift* key and press the *MIDI Channel* button and release it, but this time, while still holding down the *Shift* key, press the *Last Step* button.

Now the TR-707 is in MIDI Transmit Mode #2. Press the *Start* key and notes should sound from the synthesizer; adjust the tempo up or down with the *Tempo* knob. Note that for all the examples in this article, MIDI Transmit Mode #2 is used exclusively—in Transmit Mode #1, the keyboard layout is completely different.

The TR-707 does not produce drum sounds in MIDI Transmit Mode #2, so it's impossible to record a drum track and use the unit as a sequencer simultaneously. If the sequenced song produced by the synthesizer sounds irregular or off-

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## Tailoring Synth Notes For Your TR-707 Sequencer

**S**INCE THE TR-707 was designed to send and receive drum sounds over its MIDI circuits, it takes a bit of wig-wagging to trick it into acting like a normal sequencer. One of the principal problems is note length. When the TR-707 sends one of its tracks or patterns over MIDI, not surprisingly, the note events it sends are pretty short, just like drum sounds.

If you intend the notes in your sequence to be short too, this won't be a problem, but if you want your notes to be any longer than a drum hit, some work is in order.

Here's the problem. The TR-707 (or any drum machine) sends a MIDI Note-On message, triggering the synthesizer's note. Then—literally a drum-beat after that—it sends a Note-Off (or a Note-On with a velocity of zero, which amounts to the same thing) and triggers the release of the synth's

EG. Therefore, any of the stages of your envelope generators (whether they affect the VCAs, the VCFs or anything else) between the attack and the release have only a very short time in which to do their things.

When you program the synth sounds that you want to sequence with your TR-707, remember the total time of all the envelope generator stages up to (but not including) the release stage can be no longer than the sound on the drum machine. Mostly, this means what you'd normally think of as sustain will come principally from the EG's release stage. The stages between attack and release will work, but are enabled for such short durations that they're far less effective than usual. Experiment with these parameters, and you'll be able to come up with some good sounds for your TR-707 sequencer.

—Tim Tully

key, be sure the TR-707 is in MIDI Transmit Mode #2.

To return to the Internal Voice Mode, where the drum sounds are sent through the audio output or headphones, holding down the Shift key and pressing the Instrument Guide button will act as a toggle switch between the MIDI Transmit Mode and the Internal Voice Mode. Similarly, holding down the Shift key and pressing the Last Step button will act as a toggle switch between MIDI Transmit Mode #1 and MIDI Transmit Mode #2.

### TAILORING DIFFERENT SYNTHESIZER SOUNDS

Not all synth sounds work equally well with this technique; see the sidebar for more details. Also note that using portamento and chord functions, if available, can make the sequence more interesting.

Try changing the accents on the 707 to alter your keyboard's velocity sensitivity and volume. Also, when creating a sequence, experiment with the 707's Shuffle and Flam options for different types of tempo patterns. There's quite a bit you can do, even with this limited sequencer.

I use the TR-707 for sequencing bass

lines. Entering the notes one at a time is pretty easy, and then I can turn the tempo up and play the notes at a speed I couldn't play myself. This setup works well with repetitive rhythm lines like those found in Tangerine Dream and other "Space Age" music. Once the bass line is laid down on track one of a multi-track recorder, I flesh out the song on the other tape tracks... and that's all there is to it.

EM



Keith Meiere is an EET major whose hobbies include synthesized electronic music, electric guitar, building special effects, and interfacing MIDI devices with computers. His stereo usually has The Doors or Tangerine Dream cranked up to about 8½. His GENie e-mail address is K.MEIERE.

## Program ~~Compose~~ Your Own Music!

### C Programming for MIDI

by Jim Conger

Here, finally, is the opportunity for you to exercise your creative flair in a technical environment. Whether you are an artistically inclined computer user or a technically oriented musician, **C Programming for MIDI** will allow you to write useful programs to create your own music applications.

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