Roland WORSHIP Connection
A Roland Users Group

MIDI in MINISTRY

THE INFO SOURCE FOR CHURCH MUSICIANS VOL. III NO. 2

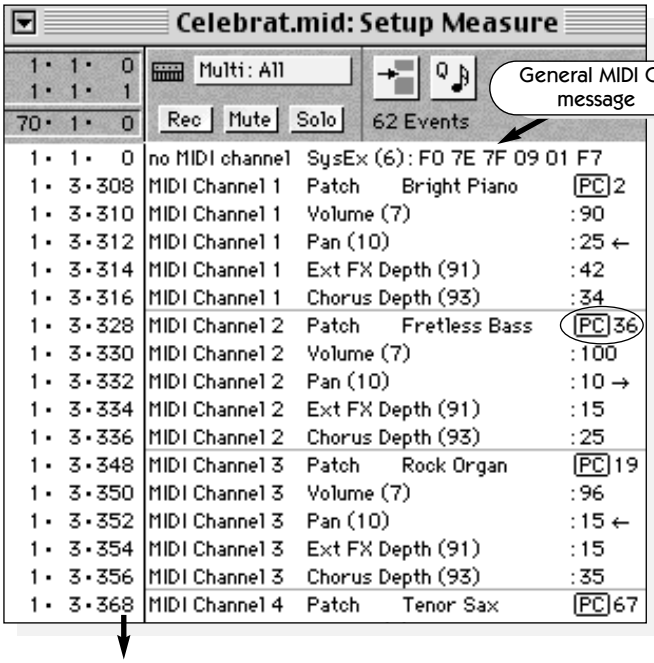
STANDARD MIDI FILES

PART 3: Customizing .MID Files

In the previous two issues of MIDI in Ministry, we've tackled a number of issues relating to using Standard MIDI Files (SMF's) in music ministry. In the first article, we covered "Where to Find 'Em" and provided a list of resources and contact information. In the last issue, we "Demystified the Setup Measure" with diagrams and explanations of the components contained therein. In this article, we'll discuss ways to optimize .MID files for your synthesizer and your service. As always, never modify the original .MID file; instead, make a copy first and make changes to the copy.

SHORTEN THE SETUP

When it comes to optimizing a MIDI file for a worship application, the first place to start is Measure 1, or the "setup measure." In the Event List below, you can see the typical messages in a setup measure. Let's assume for the moment that you don't need to alter the data in the setup measure, but you just want it to be shorter so there is less time between songs. There are a couple of ways to shorten the setup measure without modifying its content.



❶ Change the Tempo (BPM) of the Setup Measure

All MIDI files start with a message that determines the tempo of the song. Most sequencers allow you to change the value (beats per minute) of this message and add additional tempo messages. This can be useful for creating accellerandos and ritardandos, or instant tempo changes.

Since there is typically no note information in the setup measure, it can be "sped-up" without affecting the music. In other words, even though the true tempo of the song may be 90BPM, the setup measure can be 180BPM—twice as fast. In the Tempo Track window pictured right, you can see that there are two messages: one on the first beat of the first measure (1•1•0) setting the tempo to 180BPM, and another on the first beat of the second measure (2•1•0) setting the song back to the correct tempo of 90BPM. This is a quick way to shave a couple seconds off "the flow killer."

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5 MINUTES with Smitty Price

Smitty Price is no stranger to worship music direction and performance. Through his work with Promise Keepers and Maranatha's Worship Leader Workshops and recordings, he's become one of the most respected figures in music ministry. In this issue of Worship Connection, Smitty shares some of the insight he's gained throughout his varied career.

MIDI in Ministry: Tell our readers about your musical approach and attitude to the Promise Keepers events.

Smitty Price: My approach is the same as any other worship setting. My number one goal is to model and encourage worship. For me, music equals emotion and passion. But especially, music equals worship… Whether I'm rocking or playing classical music, I want to take it to another place.

MM: How much leeway is there for getting away from specific written parts in the music?

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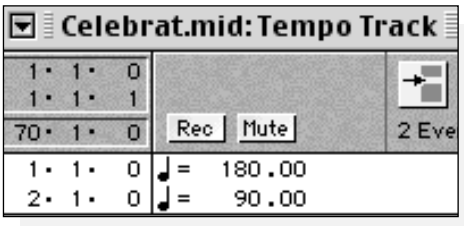

Customizing .MID Files

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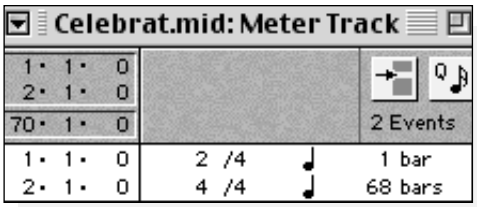
❷ Change the Time Signature (Meter) of the Setup Measure

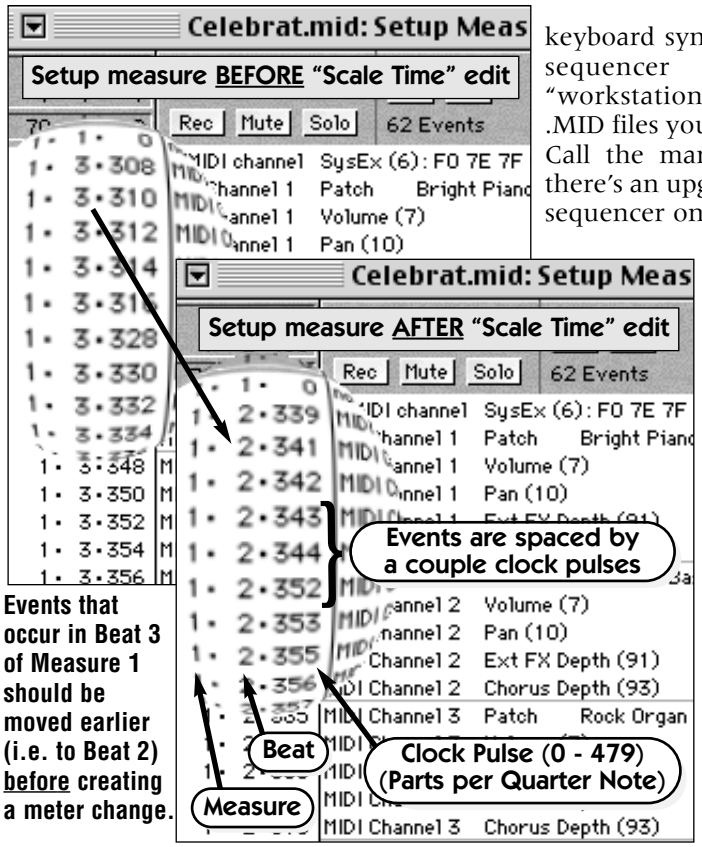
Usually, the messages in a setup measure don't necessarily need a full measure's worth of space. For example, a song in 4/4 time will have a setup measure with four beats, during which only two or three of the beats actually contain setup information. Or, the setup data occupying four beats could easily be condensed into two or three. If this is the case, as it often is, you can create a meter change on the first beat of the first measure to reclaim a beat or two and perhaps another second of awkward silence between songs.

This is done in much the same manner as the tempo change message. In the Meter Track window pictured here, you can see that there are two meter messages on the downbeats of the first two measures respectively. Here's the trick: Don't create a meter change message for Measure 1 until all the setup data is



moved within the same number of beats as the new meter. In other words, if the setup data in Measure 1 can fit into two beats instead of four, make sure all the messages (SysEx, program changes and controllers) are occupying only those first two beats before you create the 2/4 meter message (see Event Lists on page 1).

You may have to move some or all of the messages to earlier times within the first two beats. A general rule is to keep a few clock pulses (parts per quarter note) between each event (see diagram at top of next column). You don't want too many events occurring at the exact same time. Depending on the synthesizer you're using, this could overload its processor and create an error, or some of the data could be ignored.



Events that occur in Beat 3 of Measure 1 should be moved earlier (i.e. to Beat 2) before creating a meter change.

Many sequencing software programs allow you to select a range of MIDI events in the Event List and choose a function called "Scale Time" or "Fit to Time" which will move the selected events (i.e., 1•1•0 thru 1•4•479—four full beats of measure 1) proportionately to a range of bars and beats that you specify (i.e., 1•1•0 thru 1•2•479—the first two full beats of measure 1). And thus, you haven't modified the MIDI data, only the amount of time it takes to transmit it.

❸ Use Non-General MIDI Sounds (Patches)

In the last issue of *MIDI in Ministry* we posed the question, "If I don't have a General MIDI-compatible synth, can I still use Standard MIDI Files?" The short answer is, "Yes." (In fact, even if your synth ***is*** GM compatible, you don't have to use the GM sounds. More on this later.)

If your synthesizer is not GM compatible, it will still respond to the MIDI data being played into it from a sequencer, assuming that the sequencer is capable of reading/playing a .MID file (which most are) and that your synthesizer is *multitimbral* (capable of responding to several channels of MIDI data simultaneously). If you're using a keyboard synth with an onboard sequencer (also called a "workstation") that can't read .MID files you have three choices: Call the manufacturer to see if there's an upgrade, use a software sequencer on your Mac or PC, or get a current workstation (e.g., Roland XP-60/80).

If your synthesizer is at least 8-part multitimbral but not General MIDI compatible, chances are good that you can make it work with most commercial MIDI files. Most MIDI files don't use more than eight tracks/channels of MIDI data and they usually include documentation to tell you which sounds are intended for which tracks. As you play the file, you can assign the sounds on each channel of your synth to the appropriate track of the MIDI file.

So, if you know that Track/Channel 2 of the MIDI file is the bass track, set Part/Channel 2 of your synth to a bass sound. Your synth may not have the exact sound intended by the composer, but you can probably find something close, if not better or more suitable to your taste. The program changes at the beginning of the .MID file (in the setup measure) are set for the GM sound map and thus will need to be reassigned to address the sounds available in your synthesizer. If you don't reassign the program changes, you'll have to change the sounds manually every time you want to play that file—not practical.

On the Event List on page 1, the program change message on Track/Channel 2 is PC36. On a GM synth, this message will ensure that Fretless Bass is the Patch (sound) assigned to Part/Channel 2. On your non-GM synth however, PC36 might be Breathy Flute—obviously not a good choice for the bass line. The bass Patch you like in your synth might be

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5 MINUTES with Smitty Price

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SP: There's quite a bit. We have real good charts to start from, but they're just kind of a starting point just to keep us within the same harmonic framework. We have some amazing musicians and I'll defer to them musically.

MM: How are the playing and equipment demands different for a big arena as opposed to other live settings?

SP: The big thing I keep reminding the guys and reminding myself is to play less, especially in the arenas because there's so much reverb to deal with. For instance, the first time we played the ***RCA Dome*** in Indianapolis, I asked our drummer, ***Bob Wilson***, to hit his snare, and the decay was like 13 seconds. So [when] you start dealing with that kind of stuff, it means you really need to play less.

MM: How do you adjust your equipment to accommodate this?

SP: I've edited some sounds to specifically deal with that problem, like I have some piano sounds that are intentionally real bright for rock and gospel so they'll cut through. And I'll take off, or drastically minimize, effects on pads and string Patches because I know that the arena environment is going to play a lot into the sound.

Smitty and his keyboard rig at a rehearsal for Promise Keepers. Left to right is the XP-80 and A-90EX. Not pictured is the VK-7 and a rack containing the JV-1080.

MM: What Roland gear are you using for Promise Keepers?

SP: I've got the ***A-90EX*** [Expandable Controller]. It's got great pianos and great MIDI control. I think the ergonomic design of the A-90 is the best I've ever seen. It's like Roland really listened to the player's input, and I think they've really nailed it with the A-90. It has a whole lot of flexibility and it plays great.

MM: How do you use the A-90 live?

SP: I have things pretty well set up to where I just punch buttons on the A-90 and never have to really touch any of my modules. When I hit Patch 19 on the A-90, everything just lines up with the edits that I want.

MM: Which modules are you using?

SP: I have the ***1080*** [JV-1080 Synth Module] with an ***Orchestral*** [expansion board], and an ***880*** [JV-880 Synth Module] with a ***Pop*** [expansion board], and a stock ***XP-80*** [Music Workstation]. And a ***VK-7*** [Combo Organ] with a Leslie. The VK-7 is way cool by itself, but man you put a Leslie on it, then it starts feeling like the real thing! Our second keyboardist also uses an A-90, an XP-80 and usually a VK-7.

MM: What Patches are your favorites?

SP: The pianos on the A-90 are really realistic. I love the stereo field that you get. It's at least as good as you get in a studio with two or three mics and a set of headphones. And I'd be lost without the Orchestral card in my 1080. And the stock pad sounds in all the JV/XP-Series are great.

MM: What advice do you give people about their equipment in your workshops?

SP: I encourage them to really spend time with their gear and to know how to make common edits, like how to change the attack of the strings or turn the effects on and off. And, I think it would really help a lot of players [to know] just how to transpose the keyboard. Especially for playing unfamiliar keys, you can just transpose down a half step and go. And on a practical level, to organize Patches efficiently—put all your common sounds together.

MM: What changes do you see in contemporary worship settings?

SP: Generally, it's just getting better and better. The players, the sounds, the production values keep growing by leaps and bounds. In worship music, and I think Promise Keepers may be largely responsible for this to some degree, all the musical styles seem to be more readily accepted.

MM: Where can we look for your work in the future?

SP: I'm currently working on some tracks that will be used at the ***Franklin Graham*** crusades which will be played live with the mass choir. I've been working with ***Matthew Ward*** on a new worship album that will be out later this year. And I'm finishing up a project for Maranatha featuring 25 of their top worship songs. And Promise Keepers will keep me busy this summer. But I'm really looking forward to it. It's a lot of fun.

Look for Smitty this Fall at the Maranatha Worship Leader Workshops in Omaha, Portland, Grand Rapids, and Allentown. For more info, call (800) 245-SONG.

Customizing .MID Files

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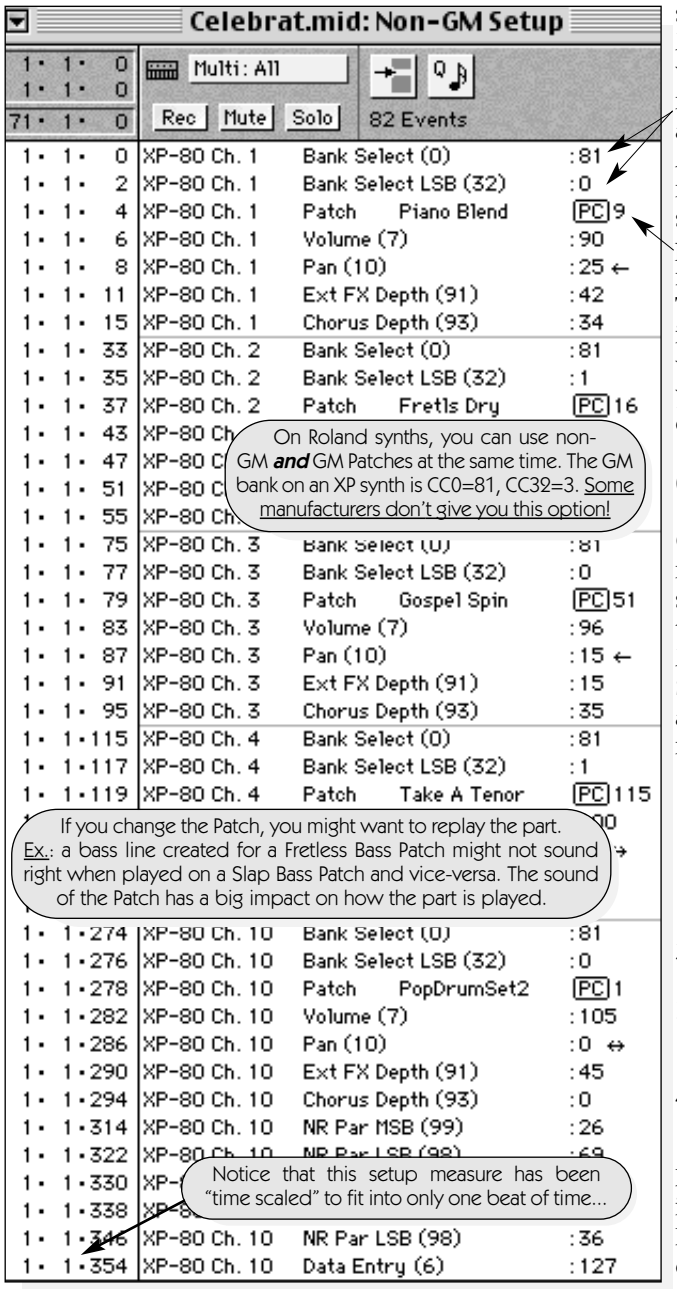
located at PC99. So you can do one of two things: Copy the bass Patch on your synth to the Patch location Breathy Flute is in, or, modify the PC number in the setup measure on Track/Channel 2 from PC36 to PC99. Continue this process for the other tracks, keeping in mind that you don't *have* to use all the tracks in a pre-fab .MID file and you can always record your own new tracks using any Patch you like.

Even if you do have a GM synth, you might want to see if there are other sounds you favor above the 128 GM Patches. Most manufacturers include the 128 specified GM sounds in a separate bank of Patches to ensure that the synth is compatible with the growing library of software and .MID files that are designed for GM synths. However, there are often higher quality sounds available on the same synth in other banks that you can use to enhance the realism and fidelity of the MIDI file.

As you play the file on your GM synth, you'll get a good idea what sounds the composer intended for each track. If the composer intended Track/Channel 2 to play on Fretless Bass, that's what you'll hear. But, what if you'd prefer to use a different bass Patch in your synth that isn't in the GM bank? It's worth your time to find out! Once you do, you'll need to modify the program changes to reflect your preferences.

As we discussed in the last issue, there is a SysEx message at the beginning of most MIDI files called "General MIDI On" which tells a GM compatible synth that the events in the setup measure will address only the GM sound bank. Therefore, if you want to use sounds/Patches in the synth that are outside the GM bank, you must remove this message from the setup measure. If your synth is not GM compatible, it won't recognize this message anyway so it doesn't matter if you delete it or not. (Again, make sure you're editing a copy of the MIDI file—not the original.)

With the "GM On" SysEx message gone, a program change will now address a Patch in whatever "bank" you specify. MIDI can only count as high as 128 (0-127), and most synthesizers have more than 128 Patches. As a result, the Patches are organized into multiple "banks" of 128 Patches each. In order to address a specific Patch, you have to first specify the bank in which that Patch resides. So when you edit the setup measure, you have to add a Bank Select message (Continuous Controller 0 and 32) before each program change message.



Depending on what synth you're using, you may have to insert two bank select messages before each program change. The Event List pictured left illustrates how this would look for a Roland XP-60/80. In the MIDI Implementation section of your Owner's Manual, you will find the values for each bank select message (CC0 and 32) to access the correct bank. After the bank select messages are in place, simply enter the correct program change number for the Patch you desire. Though this may seem involved, the results are well worth it. And once you do it for one song, you can use it as a template.

❹ Make a Setup Measure Template

Once you create a setup measure that suits your synth, you can economize the process for the other MIDI files in your library. Simply do a little copying and pasting, plus some minor editing.

1) In the Event List of your sequencer, select the entire first measure of a file to which you've made the above changes.
2) Activate the Copy command.
3) Open a different MIDI file and select the entire first measure.
4) Activate the Paste command.

Now that all the hard work is done, simply modify the PC (program change) and controller values to suit this particular song.

Check-out the next issue where we'll show you how to make a one-event setup measure!

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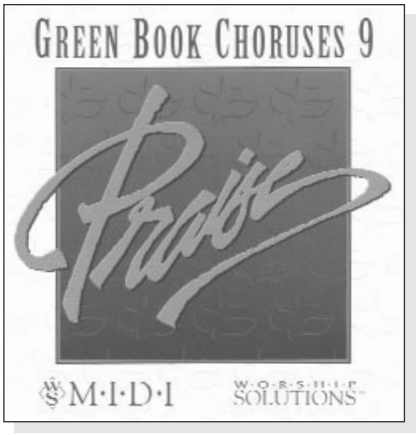
audio recordings and printed music from Maranatha. They're available in multiple song collections or as single Master Song Arrangements that contain all the components for one song, even including an overhead transparency!

Like all disks from Worship Solutions, the Green Book files are optimized specifically for General MIDI and Roland GS instruments. For a catalog or a sample disk, call Worship Solutions at (800) 249-MIDI or visit their Website at www.worshipsolutions.com. For more information about the Maranatha Green Book products, visit their Website at www.maranathamusic.com.



For specific information on using MIDI in worship, refer to this and previous issues of the Worship Connection newsletter and the* Electronic Music in Worship Demo Video*. Both are available from the Roland SuperStore by calling (800) 386-7575. You can also find back issues of* MIDI in Ministry *on Roland's Website at www.rolandus.com

The Setup Measure when playing with a Live Drummer

(Yes, it can be done!)

Celebrat.mid: 2 bar countoff

Multi: All | Rec | Mute | Solo | 5663 Events

1 1 0	MIDI Channel 10	Volume (7)	:127	
1 1 0	MIDI Channel 10	Claves	0 ♩+240	127↓
1 2 0	MIDI Channel 10	Side Stick	0 ♩+240	127↓
1 3 0	MIDI Channel 10	Side Stick	0 ♩+240	127↓
1 4 0	MIDI Channel 10	Side Stick	0 ♩+240	127↓
2 1 0	MIDI Channel 10	Claves	0 ♩+240	127↓
2 2 0	MIDI Channel 10	Side Stick	0 ♩+240	127↓
2 2 139	General MIDI On	SysEx (6): F0 7E 7F 09 01 F7		
2 2 339	MIDI Channel 1	Patch *6: Bright Piano*	PC 2	
2 2 341	MIDI Channel 1	Volume (7)	:90	
2 2 342	MIDI Channel 1	Pan (10)	:25	←
2 2 343	MIDI Channel 1	Ext FX Depth (91)	:42	
2 2 344	MIDI Channel 1	Chorus Depth (93)	:34	
2 2 352	MIDI Channel 2	Patch *39: Fretless Bass*	PC 36	
2 2 353	MIDI Channel 2	Volume (7)	:100	
2 2 355	MIDI Channel 2	Pan (10)	:10	→
2 2 356	MIDI Channel 2	Ext FX Depth (91)	:15	
2 2 357	MIDI Channel 2	Chorus Depth (93)	:25	
2 2 365	MIDI Channel 3	Patch *36: Rock Organ*	PC 19	
2 2 366	MIDI Channel 3	Volume (7)	:96	
2 2 368	MIDI Channel 3	Pan (10)	:15	←
2 2 369	MIDI Channel 3	Ext FX Depth (91)	:15	
2 2 370	MIDI Channel 3	Chorus Depth (93)	:35	
2 2 378	MIDI Channel 4	Patch *74: Tenor Sax*	PC 67	
2 2 379	MIDI Channel 4	Volume (7)	:100	
2 2 381	MIDI Channel 4	Pan (10)	:0	↔
2 2 382	MIDI Channel 4	Ext FX Depth (91)	:60	
2 2 383	MIDI Channel 4	Chorus Depth (93)	:0	
2 2 430	MIDI Channel 10	Patch *0: GM Drum Kit*	PC 0	
2 2 431	MIDI Channel 10	Volume (7)	:105	
2 2 432	MIDI Channel 10	Pan (10)	:0	↔
2 2 434	MIDI Channel 10	Ext FX Depth (91)	:45	
2 2 435	MIDI Channel 10	Chorus Depth (93)	:0	
2 3 0	MIDI Channel 10	Side Stick	0 ♩+240	127↓
2 4 0	MIDI Channel 10	Side Stick	0 ♩+240	127↓
3 1 0	MIDI Channel 1	E2	0 ♩+340 111↓	64↑
3 1 0	MIDI Channel 5	E4	3 ♩+414 80↓	64↑
3 1 0	MIDI Channel 6	E2	0 ♩+326 118↓	64↑
3 1 0	MIDI Channel 10	Claves	0 ♩+240	127↓

Start with a volume message of 127 (max.) on the drum channel (10) to help ensure that the drummer will hear the click.

The first beat is a different sound (Claves) than the next three (Side Stick) to help the drummer identify "1," for obvious reasons.

Each beat is played at full velocity (127), again to aid the drummer in hearing the click. To further distinguish Beat 1 you can decrease the velocity of the other three beats to "110" or so.

Here at Meas. 2, Beat 1, the drummer has had a measure to get the tempo in his/her head and knows where "1" is. Now, he/she can count-off the tune verbally or with sticks, keeping time with the MIDI click.

While the drummer is counting-off the tune during Measure 2, the setup data is sent to the synth preparing it for the notes to begin at Measure 3. This should not affect the timing accuracy of the click, but if it does, place the clicks on either side of the setup data as illustrated in this example.

If a drummer will be playing along with the MIDI file, don't shorten the setup measure or change its tempo. Instead, insert a blank measure before Measure 1, so there will be two bars of blank time before the notes begin. The Event List pictured here shows how this might look using a typical commercial MIDI file.

This gives the drummer a full measure to get the tempo in his/her head. During the second blank measure, he/she can count-off the tune with a live "stick click" for the rest of the band. This creates a solid start and makes for a more "live" feel.

Commercial MIDI files don't come with a designated "click" track. So, you'll need to create a new track in your sequencer assigned to channel 10. Create a measure like Measure 1 above, and copy it until the track is as long as the song. You can then mute the original drum track or create your own that will complement what the live drummer will be doing, i.e. some Latin percussion, chimes, tambourine, etc.

In the next issue, we'll discuss how to isolate the click track so it doesn't interfere with the main/house mix.

Beats 3 and 4 occur after the setup data to ensure accuracy.

The actual song/note data begins at Measure 3.

The click track continues so the drummer can stay in sync.

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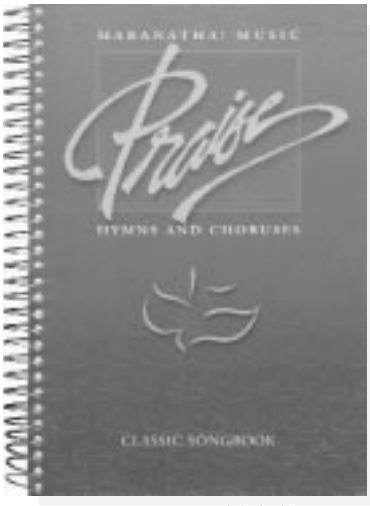
In This Issue:

Maranatha! Music Green Book

An integrated set of resources for every aspect of music ministry



Music ministry leaders know that it can sometimes be difficult to find sheet music and a recording of a given worship song or praise chorus. And if you do find them, consider yourself very lucky if they're in the same key using the same chords, arrangement and harmonies. And what about the brass, string or synth parts? Not likely.

Problem Solved. ***The Maranatha Green Book*** is an integrated system of sheet music, rhythm section charts, song books, audio CD's, lyric files and Standard MIDI Files. The CD recordings match the written music note-for-note, word-for-word, lick-for-lick—and so do the MIDI files. In fact, the "Split-Track" CD has a recording of the MIDI file arrangement of the song on the left channel and 3-part vocal harmonies played on piano on the right channel. There are separate chord charts for rhythm instruments, notation for keyboard and synth lines, and 3-part vocal charts, all of which line-up measure-for-measure.

Worship Solutions has more than 250 Green Book MIDI files to support the

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