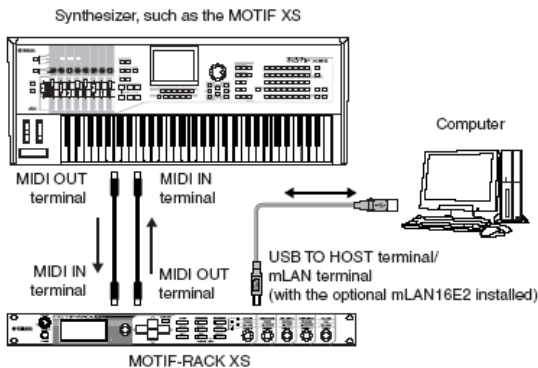




YAMAHA POWER USER

MUSIC PRODUCTION With the **MOTIF-RACK XS**

Working with the Motif-Rack XS Arpeggios Tips 101: Printing Drum Arps



If you are using the Motif Rack ES as your USB-MIDI interface (shown above):

[UTILITY] → Select "MIDI" → [ENTER] → On page 1 of 6 set MIDI IN/OUT = USB

If you are using the Motif-Rack XS in an mLAN/FW setup:

[UTILITY] → Select "MIDI" → [ENTER] → On page 1 of 6 set MIDI IN/OUT = mLAN

If using any other (external) MIDI interface:

[UTILITY] → MIDI screen → MIDI IN/OUT = MIDI

If you are using the Motif-Rack XS and wish to record its arpeggio data as MIDI, this article will give you the background information you will need. The outline for working with Arps and a DAW sequencer is found in the Owner's Manual on pages 42-43. This article will, hopefully fill in some of the details and give you the reasons behind how it works.

This article will concentrate on transferring a Drum Arpeggio to a DAW software sequencer. There are more than 1900 different drum grooves in the arpeggio data.

Recording the output of the Motif-Rack XS arpeggio can be a bit tricky and is definitely at the deeper end of the pool when it comes to operations. If you are not a MIDI-Jedi Knight, is recommended that you take your time and follow this article step-by-step. We use Cubase in this tutorial but you can use whatever sequencer you prefer. The process will be similar in most DAW software, however the actual setup may be different...your mileage may vary. Enjoy.

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ISSUES IN MIDI RECORDING OF ARPS

Recording the output of the Motif-Rack XS arpeggiator is a bit tricky but when you think it through, it is logical. I will be using Cubase 5 in the example to show you how you can go about connecting and accomplishing the goal. Many users are surprised to discover that recording the arpeggio output to an external sequencer is more complicated than first imagined. This is due to several factors. First, you need to understand that what is normally output from the MIDI OUT (be it the 5-pin MIDI jack or the USB-MIDI OUT or the mLAN/Firewire MIDI OUT) of the Motif-Rack XS, or most any rack module, for that matter, is nothing. Unless you are bulk-dumping data from a rack module, you are usually **thoroughly unconcerned** about the data that is *output* from the MIDI OUT Port of a sound module. So it is the very rare occasion that you would want to record the MIDI output of a module – after all most modules do not generate their own data. Usually they are just passive receive devices.

The second point is: the output of the arpeggiator is not normally routed to the MIDI Out – this is true in a keyboard with an arpeggiator and is true of the Motif-Rack XS. After all, 99 times out of 100 you are only interested in what YOU play... here we will be interested in what the arpeggio pattern is generating. We will learn how to turn the “Arp Out Switch” ON and how to select a *separate* MIDI track for this data - very important.

The notes used to start and/or control the arpeggio, we will refer to these as the “*trigger notes*”, and the “*arpeggio output*”, are two separate things. Your keyboard controller can generate the “trigger notes”. They can be pre-recorded to a track in your DAW and later routed to the module. When recording to a sequencer you will be dealing with your **trigger-notes**, which must be sent **to** the Motif-Rack XS. And you must also deal separately with the returning Arp output – the results of the Motif-Rack XS’s arpeggiator – that can only be generated in response to the incoming MIDI data.

Then, of course, there is the third matter: clock/sync. Most external software sequencers do **not** default to sending clock. You must consult the manual or online “Help” manual for your particular sequencer to determine what steps are necessary to turn the clock out to ON. Do not assume that because you have selected “INTERNAL” as the DAW’s clock source that it sends this to the MIDI Out... most software does not send clock until you activate clock out and select a port on which you send it. Of course, you will want the Motif-Rack

XS to slave to MIDI clock, so you will need to set all of this up.

If you are beginning to see that this is a bit complex, then do not feel frustrated if your first attempts to get this going turned into a mild disaster.

Add to the mix, the fact that if you are experimenting with clock and wind up creating a MIDI loop with multiple clocks on the wire, you may have bad errors. Typical bad symptoms are: arpeggios that start and then stop unexpectedly or are consistently off time (even though you have MIDI SYNC set properly). You may even wind up with double or triple tempos to what you have set. Clock loops are, in fact, *dangerous* and are the result of starting a clock into a MIDI loop – sometimes it is difficult to reset your gear and rebooting is the only way. Try to avoid this MIDI clock loop, if at all possible. There should only be one device that is sending clock into the system.

But let’s not scare ourselves – once you set it up and get it working you will have a better understanding of how it all works together. We will be transferring a drum arpeggio in this example.

MOTIF-RACK XS SETUP

Let’s begin by preparing the Motif-Rack XS to work with an external sequencer. We will be using **MULTI** mode. It is very typical to work in [MULTI] mode when working with an external sequencer because it allows you to use 16 PARTS of data.

First, let’s switch the unit’s [AUDITION] button to an ARPEGGIO ON/OFF Switch. The Audition button is useful when you want to hear what a particular Voice sounds like, but in this situation an ARP ON/OFF button will be more useful:

- Press [UTILITY]
- Select “GENERAL” > press [ENTER]
- Scroll down or PAGE down to screen 3 of 6
 - *Note: You can either hold down the [DOWN] cursor button to increment through parameters or you can move by pages by holding [DOWN] while tapping the [UP] cursor.*
- Set “Audition Button” = arpeggio sw
- Press [EXIT] to return to the UTILITY SELECT screen.

Next we will setup the MIDI settings for your Rack XS:

- Select “MIDI” > press [ENTER] > select page 1/6
- Set **MIDI IN/OUT** to match your particular setup, i.e., USB, MIDI, mLAN

- PAGE down to 3/6 and highlight the “QUICK SETUP” parameter > press [ENTER]
- Turn the rotary ENCODER to select “Quick Setup = 2”
- Press [ENTER] to execute this template.

Quick Setups¹ make all the critical MIDI settings for you. You would use **Quick Setup #2** when recording performance data including Arpeggio data to a computer-based DAW software program. It makes the following critical Motif-Rack XS MIDI settings – each is explained below:

- Local control: on
- MIDI: auto
- Clock Out: off
- Arp MIDI Out Sw: all on

Local Control allows the Rack XS’s front panel knobs to be routed to the tone engine first so that you can hear what will be recorded into your external sequencer. When recording the output of the arpeggio, data will **not** be echoed back from your DAW (see below) – so knob movements are merged prior to sending OUT via MIDI.

MIDI (clock) Auto This setting is a useful alternative to “external” when you wish to alternate between external clock and internal clock. It will slave to external clock and yet let you audition the arpeggios even if your DAW’s transport is not running. The Motif-Rack XS will slave at the tempo of the last received clock info.

Clock Out OFF to avoid hesitations and other timing anomalies you only want one clock on the wire. In this case the master clock is the DAW and we want the Motif-Rack XS to slave to it.

Arp MIDI Out Switches = ALL ON Allows the arpeggio data to be heard **and** to be recorded in an external device.

- Press [STORE] to lock in your settings
- Press [MULTI]

There is a note on page 101 (a very important note) that goes with Quick Setup #2:

Make sure that Echo Back (MIDI Thru) on the DAW software is set to “off.”

If you fail to make this a reality, you may never get this working, properly. Here is why it is so very important: As we started to explain in the beginning of this article, there is nothing more complex than a synth module that generates its

¹ Quick Setups are explained in detail in the Motif-Rack XS Owner’s Manual on pages 100-101.

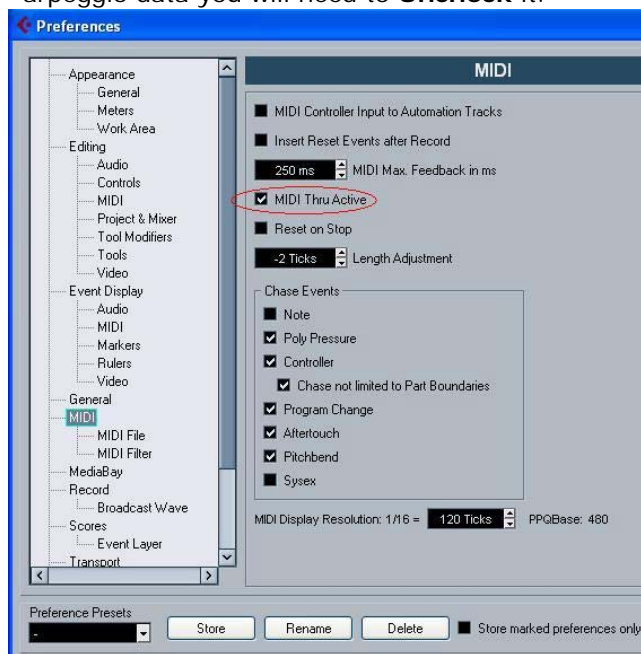
own data. You must send trigger notes in, have the unit generate data (in this case: arpeggio data), and it must do so at the Project tempo, and then send that data out – and keep it completely separate from your trigger events.

Typically when you work with a DAW track, you have the target track send data back to the tone generator, but in this case if you were to do that, the arpeggio data would start to arpeggiate the arpeggio... you will have the worst kind of MIDI loop. Therefore the arpeggio data must “dead end” in the software’s target track. This is the one case where the note data once generated by the arpeggio **cannot** be allowed to “echo” or “thru” back to the tone generator during the record process. We don’t want that data returning – at least not until playback... so you must ensure that the DAW MIDI THRU function is set to OFF.

In Cubase this is handled in the **Preferences**

- Go to PREFERENCES > MIDI > and **find** the item “MIDI THRU ACTIVE”.

This item is normally checked but for recording arpeggio data you will need to **Uncheck** it.



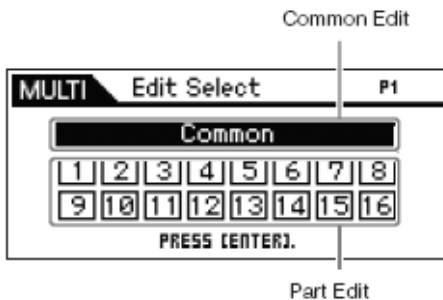
- Uncheck the MIDI THRU ACTIVE item
- Click APPLY
- Click OK

Next, let’s select an Initialized Multi. You can quickly initialize a Multi from the front panel of the Motif-Rack XS:

- Press and hold [MULTI] + [ENTER]

Now select a Voice with an arpeggio to record. We'll start with transferring a Drum arpeggio. While we set this up we will learn a few tricks about how arps are assigned.

- Press [MULTI] to return to the main screen
- Press [EDIT]

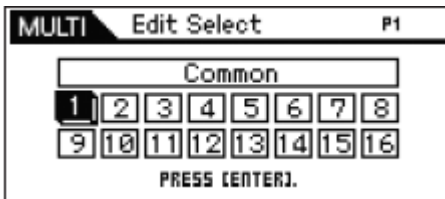


There are typically two levels of EDITING.

COMMON: which are parameters that affect the entire Multi

PART: which are parameter sets numbered, 1-16, and represent the individual Voices in the MULTI

- Select PART 1 > press [ENTER]



You arrive at the EDIT SELECT screen with "P1" (Part 1) in the upper right corner.

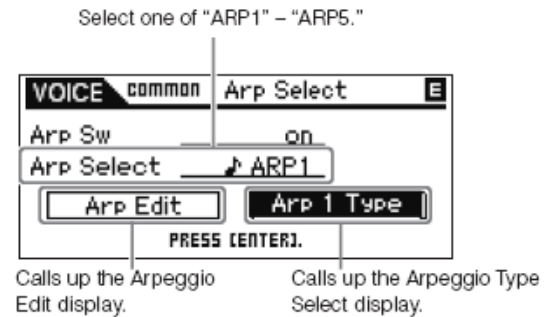
- Select VOICE > press [ENTER]
- Find the item "Parameter with Voice" and set it to ON



TIP: What this parameter does is, it will automatically copy the VOICE mode arpeggios (and other settings) to the MULTI. You can follow the tutorial in the manual if you wish to select your own favorite arpeggios, but Parameter With Voice is a useful shortcut that we will use here to ensure that arpeggios assigned in Voice mode are quickly recalled when you select the VOICE in a MULTI.

Find a Drum Kit VOICE for PART 1.

- Try **PDR: 050 Wacko Kit**
- Press [EXIT] to return to the EDIT SELECT screen
- Select "Arpeggio" > press [ENTER]



- Highlight "**ARP EDIT**" > press ENTER
- Set "Arp Switch" = **ON**
- Set "Arp Hold" = **ON**
- Set "Arp MIDI Out Switch" = **ON**
- Set "Arp Transmit Channel" = **1**
- Leave "Arp With Voice" = OFF

Parameter Explanations:

The **ARP SWITCH** found here, is the individual PART Arpeggio Switch, not to be confused with the main ARP ON/OFF switch. Remember up to four PARTS can simultaneously be arpeggiating to their own settings.

The **ARP HOLD** item is great for when you don't want to hold the key down yourself, the arpeggio will continue without MIDI data being applied constantly from a controller. A simple quick note trigger will start the playback. Perfect for drums.

The **ARP MIDI OUT SWITCH** is responsible for routing the data generated by the Motif-Rack XS to the MIDI OUT port – be that the 5-pin jack, the USB-MIDI jack or the mLAN/Firewire jack.

The **ARP TRANSMIT CHANNEL** is the MIDI channel on which the arpeggio data will be output. And this is an important thing to understand: your "trigger note(s)" those that are responsible for starting the arpeggio must be kept separate from the data generated by the arpeggio pattern. We stated this at the top of the article and here is where that happens. You will actually be using **two Tracks** in your DAW software.

- Track 1 will be responsible for sending the "trigger notes" to the Motif-Rack XS
- Track 2 will be for recording the "arp notes" (and knob controller data) generated by the Motif-Rack XS

ARP WITH VOICE is only used when you are searching by arpeggio – it will recall the original Voice that was used to create the arp pattern. This does not apply here in our example.

DAW SETUP

In Cubase 5 you will need to set the program to output clock information. Clock setup is found under the **TRANSPORT**. We want to send standard **MIDI** beat **Clock** (not MTC).

- Go to TRANSPORT > select Project Synchronization Setup...
- Under MIDI CLOCK OUT set the MIDI Clock Destination = the Motif-Rack XS port 1

If you are using the Motif-Rack XS as your USB-MIDI interface, or if you are using mLAN to route MIDI to the Motif-Rack XS or some other MIDI interface, select the port that will communicate **directly** to the Motif-Rack XS.

- Check the option for **"MIDI Clock Follows Project Position"**.

While you are here in the TRANSPORT area find the METRONOME SETUP and create a click and count-in that makes you comfortable. Please consult the documentation of your DAW for details.

In Cubase verify your MIDI PORT setup. It will be necessary, as mentioned, to receive MIDI data from the Motif-Rack XS – typically you would not be concerned with MIDI data arriving from a tone module, but this arpeggio thing is not typical.

- Go to DEVICES > DEVICE SETUP > MIDI > MIDI PORT SETUP
- Make sure in the **"IN 'ALL INPUTS'"** column that both PORTS 1 and 3 are marked.²
 - **Port 1** will be the data generated by the Motif-Rack XS arpeggiators and knobs
 - **Port 3** will be if you are using the Motif-Rack XS as MIDI interface for your keyboard controller (i.e., with USB or mLAN).

Next you will need to create two MIDI tracks. One is simply to send a "trigger note" to the Motif-Rack XS, the second is to record the output of the Motif-Rack XS's arpeggio. In sequencing software you typically have a MIDI IN and MIDI OUT routing for each track.

- Go to PROJECT > ADD TRACK > MIDI
- Add two MIDI tracks to your project

Track 1 – MIDI IN will be set to **"Not Connected"**. This is because the trigger note will be already recorded on the track – remember, this track is only the *trigger-note*. The MIDI transmit (OUT) function from this track should be set to

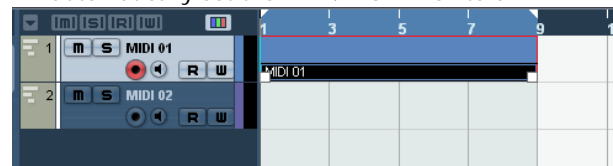
² These may be identified as "Motif-R XS-1" and "Motif-R XS-3" or as "Motif-R XS Main" and "Motif-R XS MIDI In"

arrive at the Motif-Rack XS (MIDI channel 1), where it will trigger the drum arpeggio. You are simply **routing** this track's output to the module.

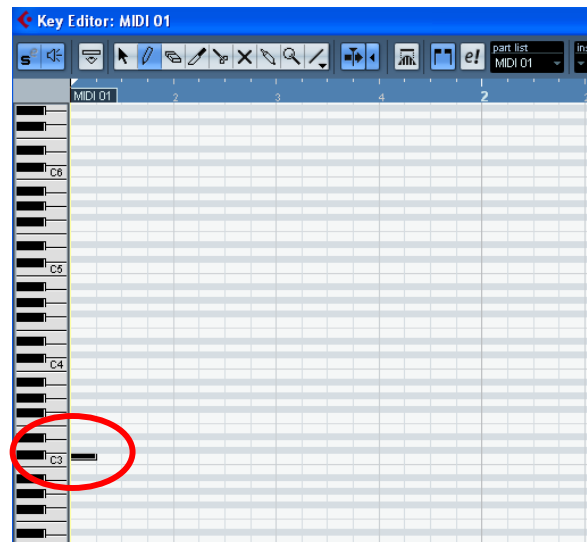
Next we'll place a single Trigger Note (event) on Track 1. Place it precisely at the measure 1, beat 1, clock 0 – you can have this act as your start command.

Let's create a trigger note to start playback of the drum arpeggio:

- Grab the PENCIL tool and draw a region of 8 measures... that is, drag the pencil from the top to the top of measure 9. This will create an eight-measure region.
- On your QWERTY keyboard touch the letter "P" to automatically set the LEFT/RIGHT Pointers



- Double click on this region to open the "piano roll" view.
- Grab the PENCIL tool and create a note-on event at measure 1, for note C3.



We have set "ARP HOLD" to ON, so the note can be extremely short (the duration of the note will not matter).

Track 2 – will be set to receive (IN) **from** the Motif-Rack XS. Set the MIDI IN Port so that it corresponds to the MIDI Port that the Motif-Rack XS is set to transmit the arp data. The MIDI channel of this track should also be **1** (this will match the Arp Transmit Out channel we set in the Motif-Rack XS). The MIDI OUT of this track can be

set Motif-Rack XS-1 (Port 1). Although you **do not** want the output of this track going to the Motif-Rack XS during record, we have prevent this by deactivating Cubase's MIDI THRU. This track **should** be armed for Record. It will **not** echo back because we defeated MIDI THRU ACTIVE. The arp data will “dead end” in this track.

The last thing to do is to turn the main **ARP ON/OFF** switch **ON** –

- Press the AUDITION BUTTON (now our ARP ON/OFF switch) so it lights up red

Make sure in your software that you have set your tempo and metronome. I do not recommend quantizing the arpeggio data, as this will change some of the natural nuance (but this is your call).

- On the Cubase TRANSPORT you can set the PUNCH IN and PUNCH OUT points by highlighting the symbols as shown here circled in red:



Above we're set to punch in at measure 1.1.1.0 and punch out at the top of measure 9.

- Press Record and record your track.
- While it is recording work the “Cutoff” and “Resonance” Knobs on the front panel – this is just to illustrate that this data will be transferred as you hear to your record track. By having LOCAL CONTROL ON in the Rack XS, the knob movements immediately affect the tone engine and are merged with the out going arpeggio note data (on MIDI channel 2).
- You can **stop** recording in a number of ways other than punch in/out.
 - You can alternatively stop your DAW
 - Press the ARP ON/OFF switch to end transmitting the data
 - Insert a Controller message cc90 value 0 ARP SWITCH OFF

PLAYBACK Setup

Once you have completed the recording:

- Press STOP on your DAW and turn the **ARP ON/OFF** switch to **OFF** on the Motif-Rack XS

This is very important because once you have recorded the output of the arpeggio – you do not want anything to trigger the arp during playback... arpeggiating the arpeggio data).

In the DAW:

- MUTE that track with the trigger note.

It will only get in the way (the trigger notes are unnecessary now that you have recorded the output of the arpeggio data to a second track).

Your arp data should be on the track as MIDI note event data, and will be in time with your metronome.

Final note: Once you have finished working with transferring arpeggio data, you will want to remember to reset two important items.

- Go to Cubase PREFERENCES > MIDI > and recheck the MIDI THRU ACTIVE option. This will allow you to work normally again
- In the Motif-Rack XS set the QUICK SETUP template for what you need to do next. (See page 101 in your Owner's Manual for details).

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